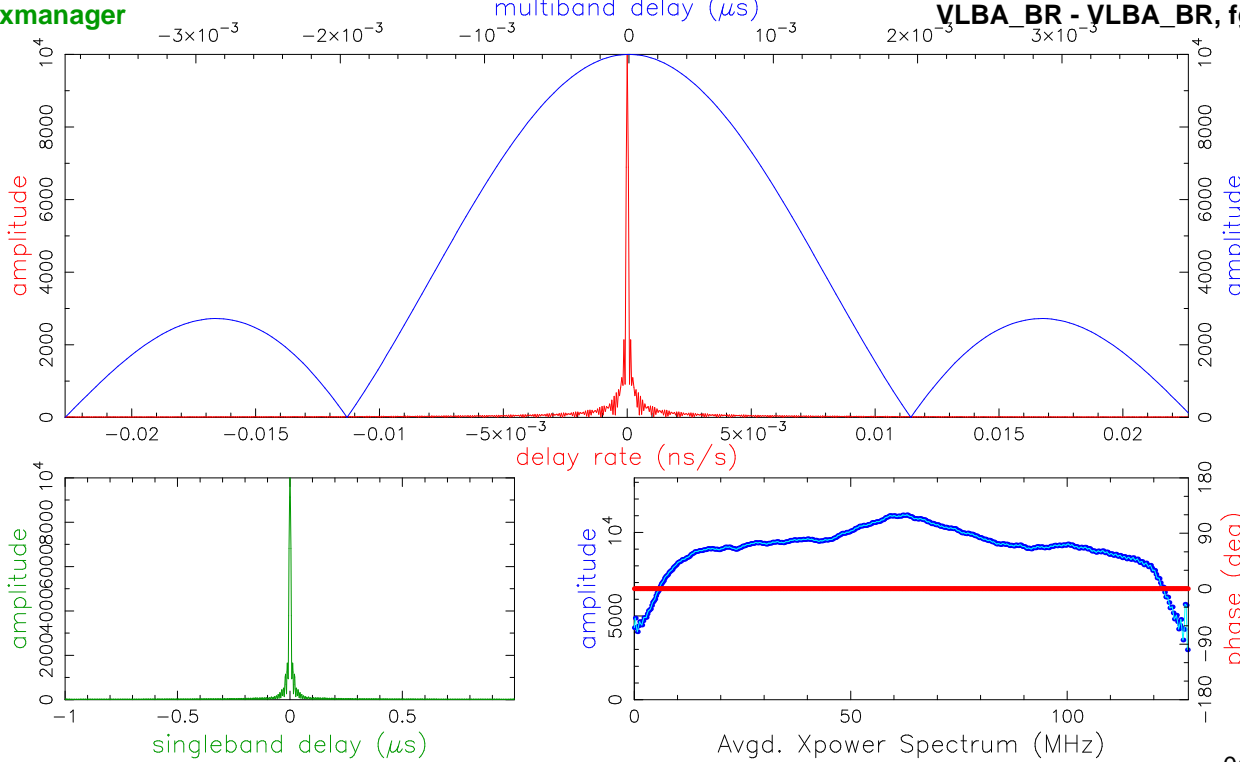


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bb

VLBA\_BR - VLBA\_BR, fgroup Q, pol RR

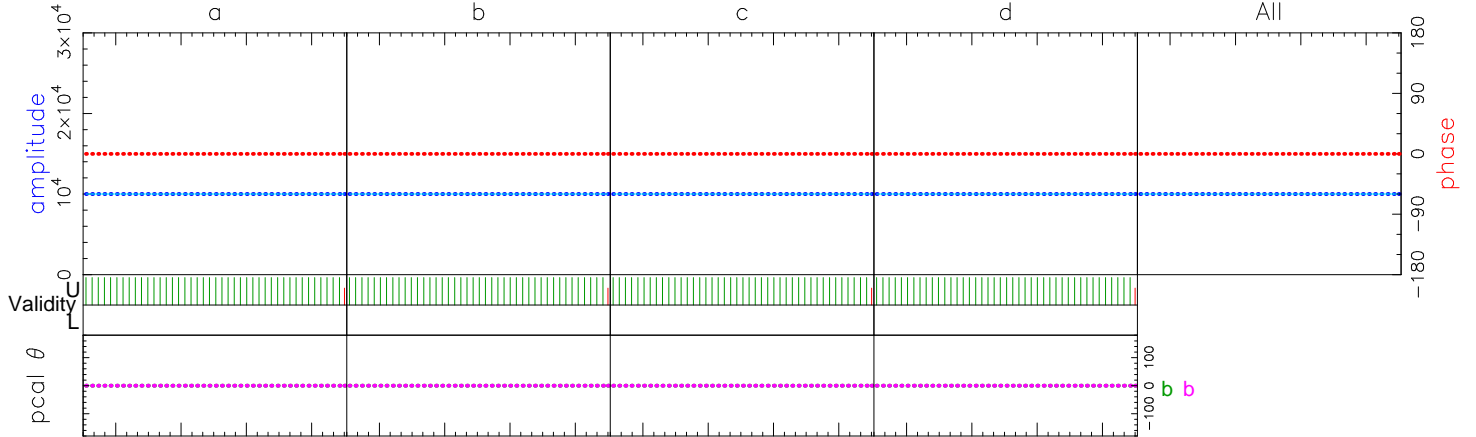


Fringe quality 9

SNR 423633.3  
Int time 239.985  
Amp 10000.000  
Phase 0.0  
PFD 0.0e+00  
Delays (us)  
SBD 0.000000  
MBD 0.000000  
Fringe rate (Hz)  
0.000000  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132935  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|           |          |          |          | Freq (MHz) | All     |
|-----------|----------|----------|----------|------------|---------|
| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Phase      | 0.0     |
| 0.0       | 0.0      | 0.0      | 0.0      | Ampl.      | 10000.0 |
| 10000.0   | 10000.0  | 10000.0  | 10000.0  | Sbd box    | 513.0   |
| 513.0     | 513.0    | 513.0    | 513.0    | APs used   |         |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | PC freqs   |         |
| b 1000    | 1000     | 1000     | 1000     | PC phase   |         |
| b 1000    | 1000     | 1000     | 1000     | Manl PC    |         |
| b:b 0:0   | 0:0      | 0:0      | 0:0      | PC amp     |         |
| b:b 0:0   | 0:0      | 0:0      | 0:0      | Chan ids   |         |
| b 1000    | 1000     | 1000     | 1000     | Tracks     |         |
| b 1000    | 1000     | 1000     | 1000     | Chan ids   |         |
| b Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |         |
| b Q00UR   | Q01UR    | Q02UR    | Q03UR    |            |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                               |
|--------------|-----|--------|------------------|---------------------|--|-------------------------------|
| ph/seg (deg) | 0.0 | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |     |        | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

b: az 192.3 el 42.9 pa 8.1      b: az 192.3 el 42.9 pa 8.1      u,v (fr/asec) 0.000 0.000      simultaneous interpolator

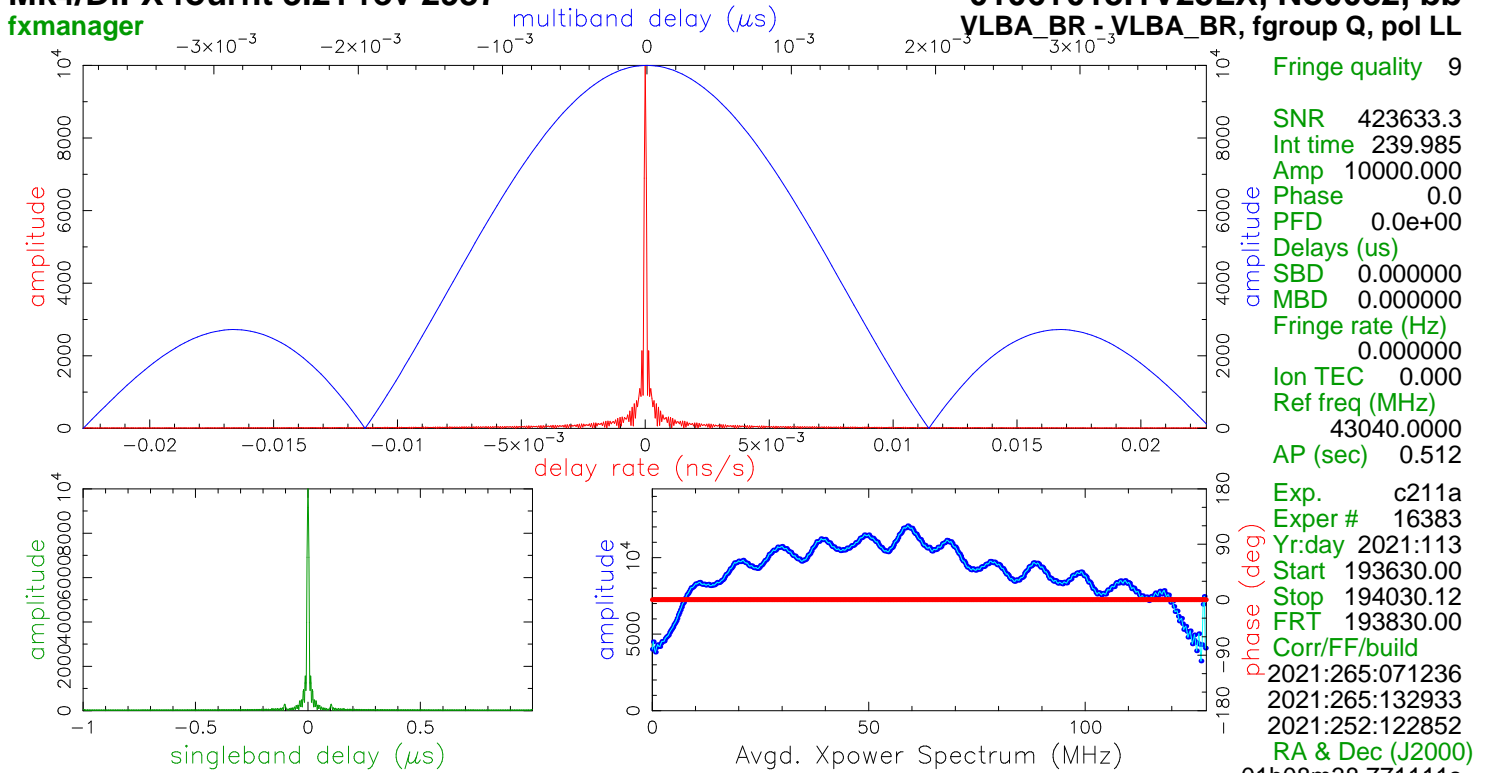
Control file: cf\_1234\_gmva7mm      Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bb..1V25LX      Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bb.Q.21.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

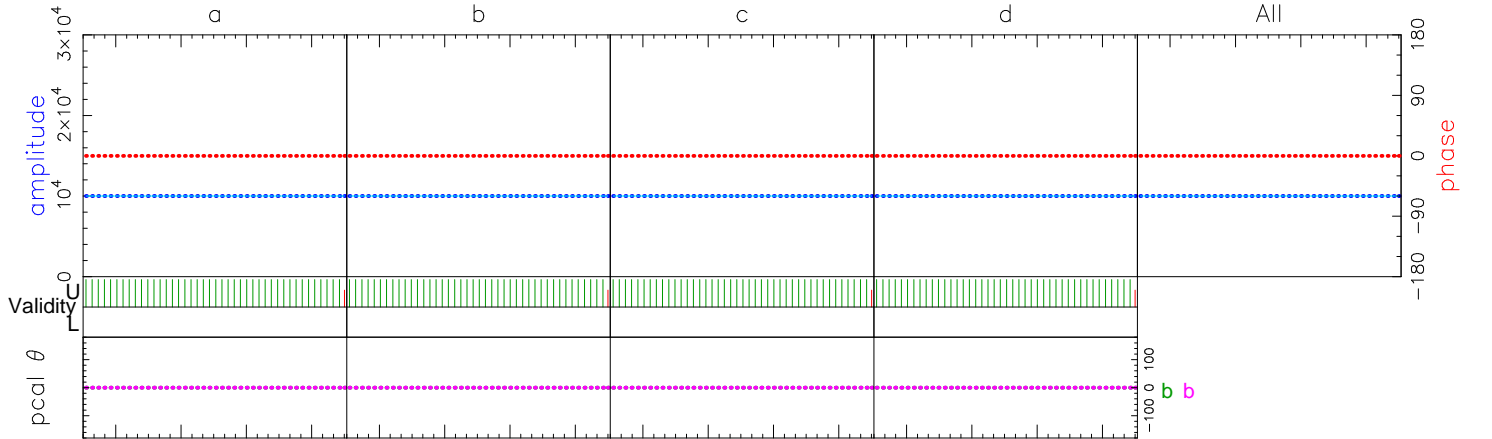
fxmanager

0106+013.1V25LX, No0082, bb

VLBA\_BR - VLBA\_BR, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



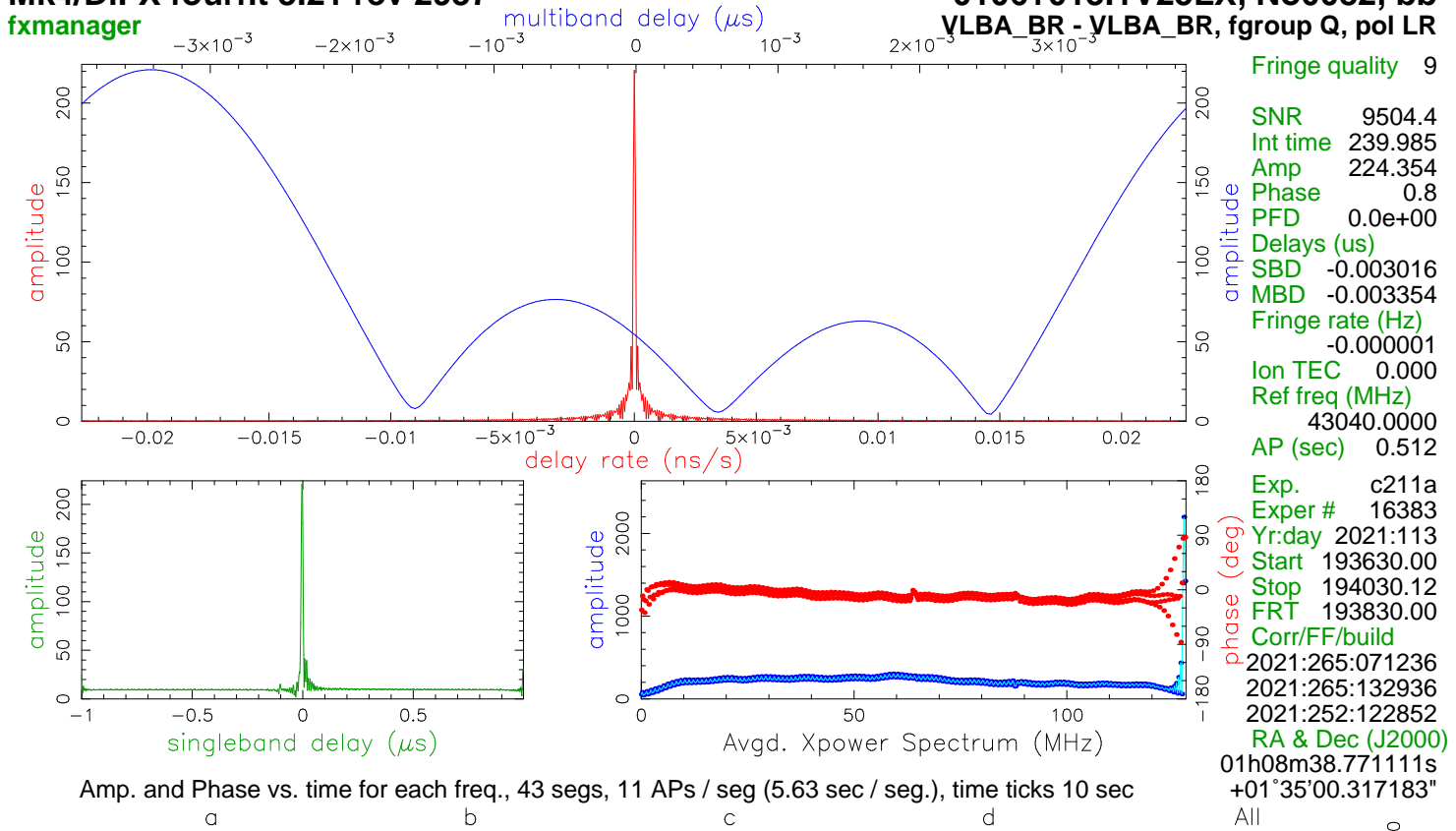
|                               |  |  |  | 42912.00   |  |  |  | 43040.00   |  |  |  | 43168.00           |  |  |  | 43296.00             |  |  |  | Freq (MHz)                             |  | All                           |
|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|--------------------|--|--|--|----------------------|--|--|--|--|--|-------------------------------|
|                               |  |  |  | 0.0  |  |  |  | 0.0  |  |  |  | 0.0                |  |  |  | 0.0                  |  |  |  | Phase                                  |  | 0.0                           |
|                               |  |  |  | 10000.0  |  |  |  | 10000.0  |  |  |  | 10000.0            |  |  |  | 10000.0              |  |  |  | Ampl.                                  |  | 10000.0                       |
|                               |  |  |  | 513.0  |  |  |  | 513.0  |  |  |  | 513.0              |  |  |  | 513.0                |  |  |  | Sbd box                                |  | 513.0                         |
| U/L                           |  |  |  | 469/0  |  |  |  | 469/0  |  |  |  | 469/0              |  |  |  | 469/0                |  |  |  | APs used                               |  |                               |
| b                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000               |  |  |  | 1000                 |  |  |  | PC freqs                               |  |                               |
| b                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000               |  |  |  | 1000                 |  |  |  | PC freqs                               |  |                               |
| b:b                           |  |  |  | 0:0  |  |  |  | 0:0  |  |  |  | 0:0                |  |  |  | 0:0                  |  |  |  | PC phase                               |  |                               |
| b:b                           |  |  |  | 0:0  |  |  |  | 0:0  |  |  |  | 0:0                |  |  |  | 0:0                  |  |  |  | Manl PC                                |  |                               |
| b                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000               |  |  |  | 1000                 |  |  |  | PC amp                                 |  |                               |
| b                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000               |  |  |  | 1000                 |  |  |  |  |  |                               |
| b                             |  |  |  | Q00UL  |  |  |  | Q01UL  |  |  |  | Q02UL              |  |  |  | Q03UL                |  |  |  | Chan ids                               |  |                               |
| b                             |  |  |  | Q00UL  |  |  |  | Q01UL  |  |  |  | Q02UL              |  |  |  | Q03UL                |  |  |  | Tracks                                 |  |                               |
|                               |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |                      |  |  |  | Chan ids                               |  |                               |
|                               |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |                      |  |  |  | Tracks                                 |  |                               |
| Group delay (usec)(sbd)       |  |  |  | 0.000000000000E+00                                       |  |  |  | Apriori delay (usec)   |  |  |  | 0.000000000000E+00 |  |  |  | Resid mbdelay (usec) |  |  |  | 0.000000E+00                           |  | +/- 2.6E-09                   |
| Sband delay (usec)            |  |  |  | 0.000000000000E+00                                       |  |  |  | Apriori clock (usec)   |  |  |  | 0.00000000E+00     |  |  |  | Resid sbdelay (usec) |  |  |  | 0.000000E+00                           |  | +/- 1.0E-08                   |
| Phase delay (usec)            |  |  |  | 0.000000000000E+00                                       |  |  |  | Apriori clockrate (us/s)                                     |  |  |  | 0.00000000E+00     |  |  |  | Resid phdelay (usec) |  |  |  | 0.000000E+00                           |  | +/- 1.7E-11                   |
| Delay rate (us/s)             |  |  |  | 0.000000000000E+00                                       |  |  |  | Apriori rate (us/s)  |  |  |  | 0.000000000000E+00 |  |  |  | Resid rate (us/s)    |  |  |  | 0.000000E+00                           |  | +/- 1.3E-13                   |
| Total phase (deg)             |  |  |  | 0.0  |  |  |  | Apriori accel (us/s/s)                                       |  |  |  | 0.000000000000E+00 |  |  |  | Resid phase (deg)    |  |  |  | 0.0                                    |  | +/- 0.0                       |
|                               |  |  |  | RMS  |  |  |  | Theor.   |  |  |  | Amplitude          |  |  |  | 10000.000 +/- 0.024  |  |  |  | Pcal mode: MANUAL, MANUAL              |  | PC period (AP's) 5, 5         |
| ph/seg (deg)                  |  |  |  | 0.0  |  |  |  | 0.0  |  |  |  | Search (1024X16)   |  |  |  | 10000.000            |  |  |  | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |  | sb window (us) -1.000 1.000   |
| amp/seg (%)                   |  |  |  | 0.0  |  |  |  | 0.0  |  |  |  | Interp.            |  |  |  | 0.000                |  |  |  | Bits/sample: 2x2                       |  | mb window (us) -0.004 0.004   |
| ph/frq (deg)                  |  |  |  | 0.0  |  |  |  | 0.0  |  |  |  | Inc. seg. avg.     |  |  |  | 10000.000            |  |  |  | Sample rate(MSamp/s): 256              |  | dr window (ns/s) -0.023 0.023 |
| amp/frq (%)                   |  |  |  | 0.0  |  |  |  | 0.0  |  |  |  | Inc. frq. avg.     |  |  |  | 10000.000            |  |  |  | Data rate(Mb/s): 2048                  |  | ion window (TEC) 0.00 0.00    |
| b: az 192.3 el 42.9 pa 8.1    |  |  |  | b: az 192.3 el 42.9 pa 8.1                               |  |  |  | u,v (fr/asec) 0.000 0.000                                    |  |  |  |                    |  |  |  |                      |  |  |  | simultaneous interpolator              |  |                               |
| Control file: cf_1234_gmva7mm |  |  |  | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bb..1V25LX |  |  |  | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bb.Q.3.1V25LX |  |  |  |                    |  |  |  |                      |  |  |  |  |  |                               |

Mk4/DiFX fourfit 3.21 rev 2937

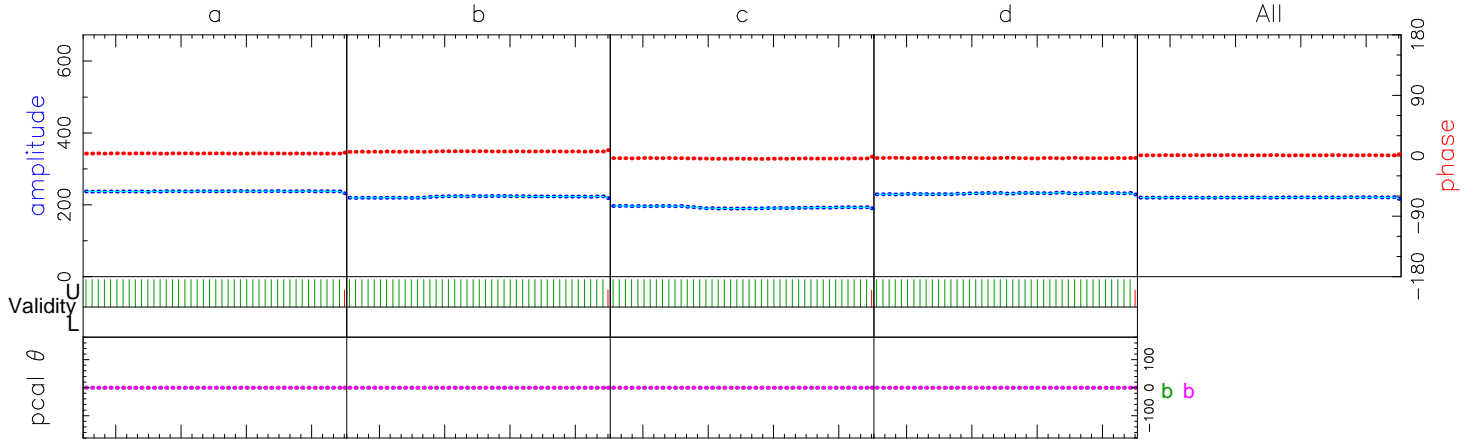
fxmanager

0106+013.1V25LX, No0082, bb

VLBA\_BR - VLBA\_BR, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|           |          |          |          |            |       |
|-----------|----------|----------|----------|------------|-------|
| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
| 3.5       | 6.4      | -3.9     | -3.4     | Phase      | 0.8   |
| 237.6     | 222.4    | 193.1    | 231.7    | Ampl.      | 221.2 |
| 511.7     | 511.1    | 511.2    | 511.9    | Sbd box    | 511.5 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| b 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| b 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| b:b 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:b 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| b 1000    | 1000     | 1000     | 1000     |            |       |
| b Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| b Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -3.35390625000E-03 | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | -3.35391E-03 | +/- | 1.2E-07 |
| Sband delay (usec)      | -3.01600000000E-03 | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | -3.01600E-03 | +/- | 4.5E-07 |
| Phase delay (usec)      | 5.09704151353E-08  | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | 5.09704E-08  | +/- | 7.8E-10 |
| Delay rate (us/s)       | -1.98534420751E-11 | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | -1.98534E-11 | +/- | 5.6E-12 |
| Total phase (deg)       | 0.8                | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | 0.8          | +/- | 0.0     |

|              |     |        |                  |                   |  |                              |                  |              |
|--------------|-----|--------|------------------|-------------------|--|------------------------------|------------------|--------------|
|              | RMS | Theor. | Amplitude        | 224.354 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |              |
| ph/seg (deg) | 0.2 | 0.0    | Search (1024X16) | 220.941           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000        |
| amp/seg (%)  | 1.7 | 0.1    | Interp.          | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg) | 6.2 | 0.0    | Inc. seg. avg.   | 220.545           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)  | 7.8 | 0.0    | Inc. frq. avg.   | 221.189           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |

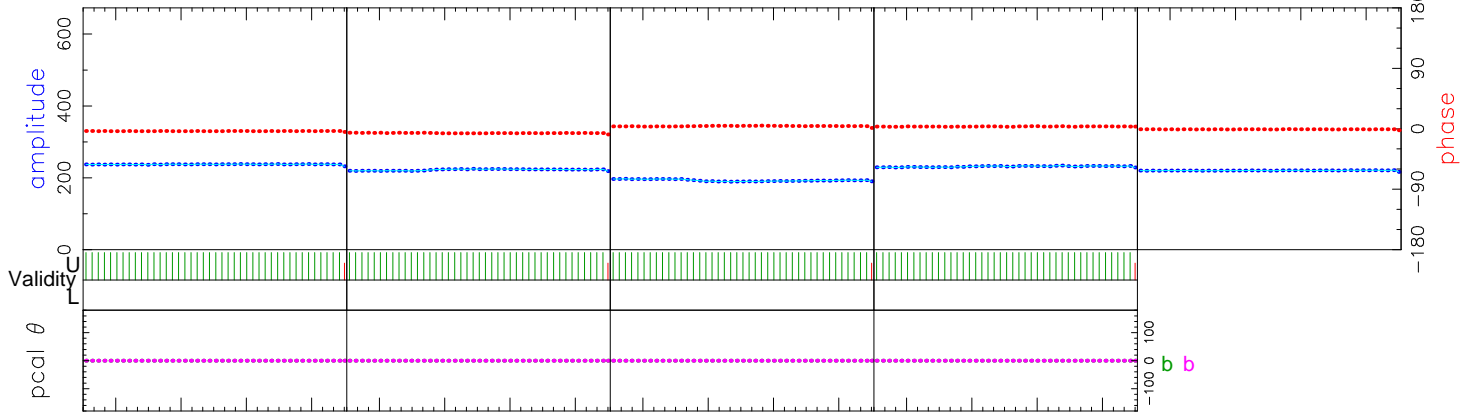
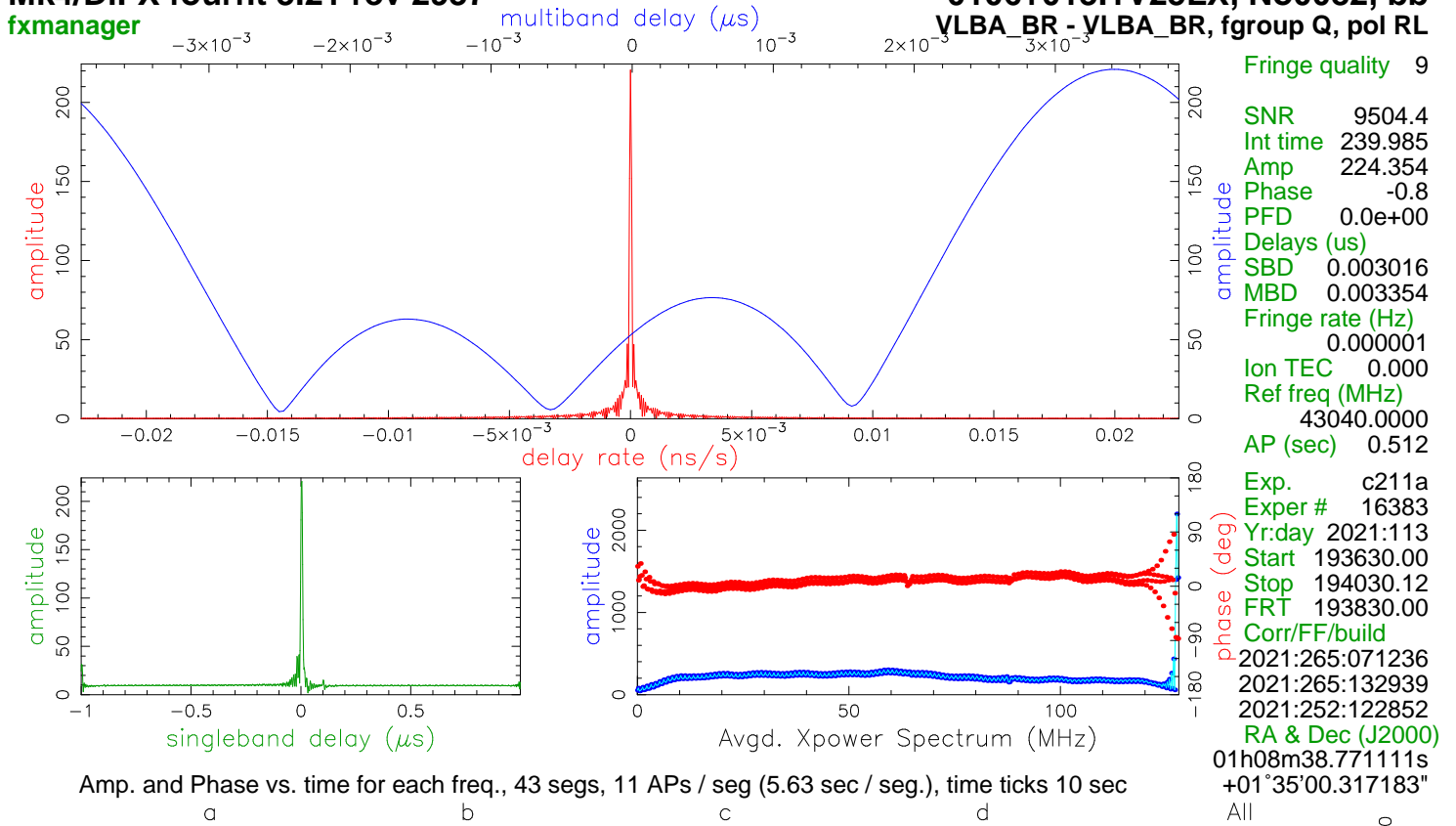
b: az 192.3 el 42.9 pa 8.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bb..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bb.Q.35.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bb

VLBA\_BR - VLBA\_BR, fgroup Q, pol RL



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -3.5      | -6.4     | 3.9      | 3.4      | Phase      | -0.8  |
| 237.6     | 222.4    | 193.1    | 231.7    | Ampl.      | 221.2 |
| 514.3     | 514.9    | 514.8    | 514.1    | Sbd box    | 514.5 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| b 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| b 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| b:b 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:b 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| b 1000    | 1000     | 1000     | 1000     |            |       |
| b Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| b Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 3.35390625000E-03  | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | 3.35391E-03  | +/- | 1.2E-07 |
| Sband delay (usec)      | 3.01600000000E-03  | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | 3.01600E-03  | +/- | 4.5E-07 |
| Phase delay (usec)      | -5.09704150729E-08 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | -5.09704E-08 | +/- | 7.8E-10 |
| Delay rate (us/s)       | 1.98534420751E-11  | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | 1.98534E-11  | +/- | 5.6E-12 |
| Total phase (deg)       | -0.8               | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | -0.8         | +/- | 0.0     |

|              |     |        |                  |                   |  |                       |                   |                  |       |
|--------------|-----|--------|------------------|-------------------|--|-----------------------|-------------------|------------------|-------|
|              | RMS | Theor. | Amplitude        | 224.354 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |
| ph/seg (deg) | 0.2 | 0.0    | Search (1024X16) | 220.941           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |
| amp/seg (%)  | 1.7 | 0.1    | Interp.          | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |
| ph/frq (deg) | 6.2 | 0.0    | Inc. seg. avg.   | 220.545           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |
| amp/frq (%)  | 7.8 | 0.0    | Inc. frq. avg.   | 221.189           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  |

b: az 192.3 el 42.9 pa 8.1 b: az 192.3 el 42.9 pa 8.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bb..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bb.Q.59.1V25LX

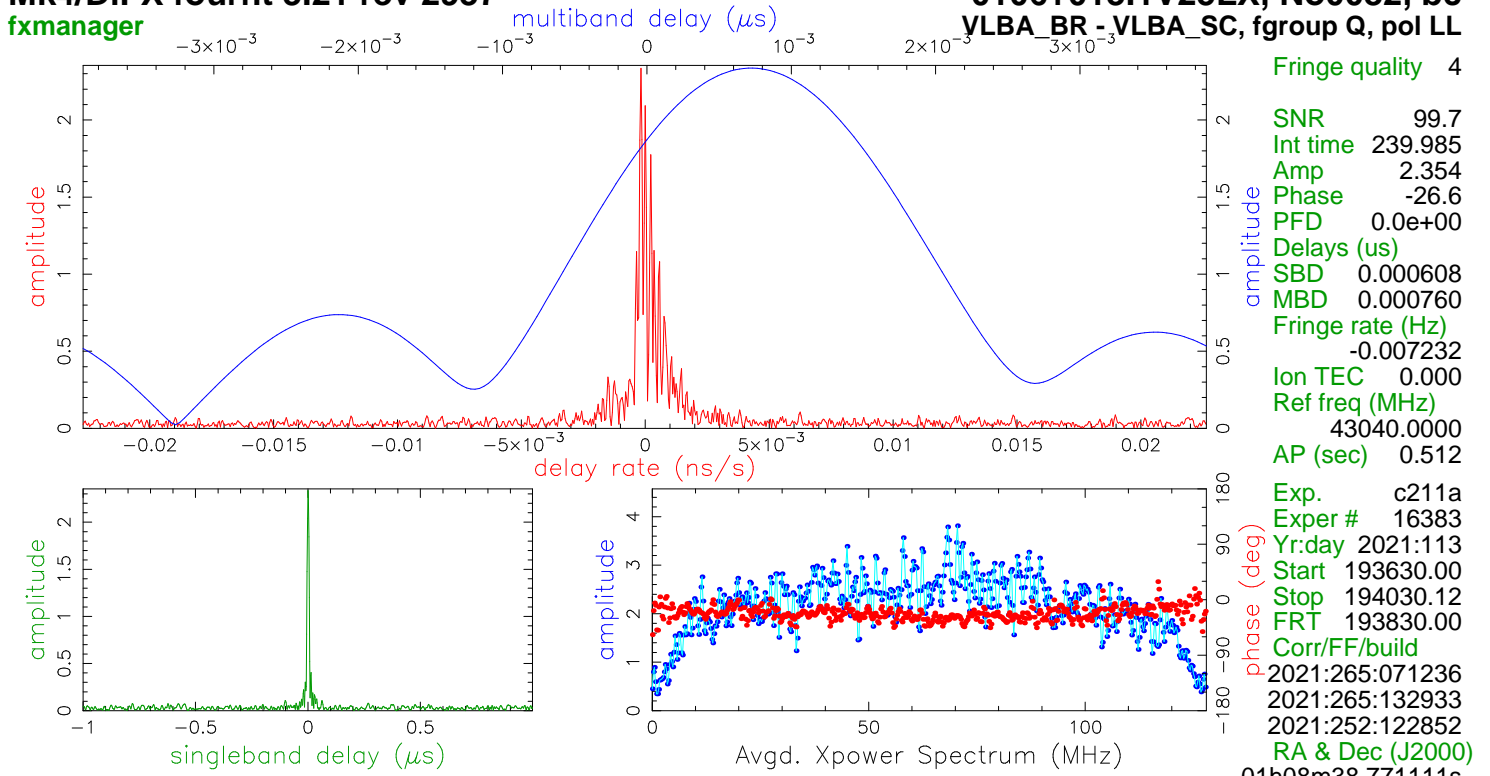


Mk4/DiFX fourfit 3.21 rev 2937

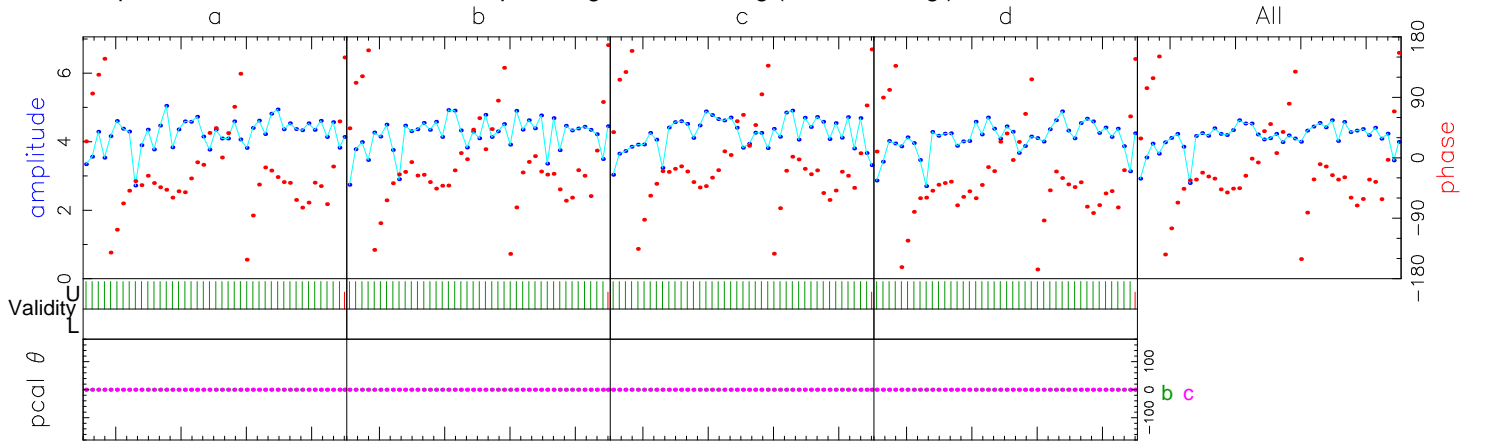
fxmanager

0106+013.1V25LX, No0082, bc

VLBA\_BR - VLBA\_SC, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -26.6 |
| b   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 2.4   |
| c   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 513.3 |
| b:c | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| b:c | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| c   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| b   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.61749554563E+03 | Apriori delay (usec)     | 5.61749478551E+03  | Resid mbdelay (usec) | 7.60118E-04  | +/- | 1.1E-05 |
| Sband delay (usec)      | 5.61749539364E+03 | Apriori clock (usec)     | -1.5142937E+01     | Resid sbdelay (usec) | 6.08125E-04  | +/- | 4.3E-05 |
| Phase delay (usec)      | 5.61749478380E+03 | Apriori clockrate (us/s) | -4.1600000E-07     | Resid phdelay (usec) | -1.71900E-06 | +/- | 7.4E-08 |
| Delay rate (us/s)       | 1.16282857986E+00 | Apriori rate (us/s)      | 1.16282874790E+00  | Resid rate (us/s)    | -1.68037E-07 | +/- | 5.3E-10 |
| Total phase (deg)       | 178.0             | Apriori accel (us/s/s)   | -2.84860746598E-05 | Resid phase (deg)    | -26.6        | +/- | 1.1     |

|                               |      |  |       |                       |                    |  |                       |
|-------------------------------|------|--|-------|-----------------------|--------------------|--|-----------------------|
| ph/seg (deg)                  | 68.8 | Theor.   | 3.8   | Amplitude             | 2.354 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)                   | 77.3 | Search (1024X16)   | 2.256 | Interp.               | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg)                  | 13.9 | Inc. seg. avg.   | 4.124 | Inc. frq. avg.        | 2.369              | Bits/sample: 2x2                       | SampCntNorm: enabled  |
| amp/frq (%)                   | 2.5  | Inc. frq. avg.   | 2.369 | u,v (fr/asec)         | -3341.893 1909.855 | Sample rate(MSamp/s): 256              | mb window (us)        |
| b: az 192.3 el 42.9 pa 8.1    |      | c: az 263.3 el 25.2 pa 71.1                              |       | Data rate(Mb/s): 2048 |                    | nlags: 512                             | t_coherence infinite  |
| Control file: cf_1234_gmva7mm |      | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bc..1V25LX |       |                       |                    |  | ion window (TEC)      |

simultaneous interpolator

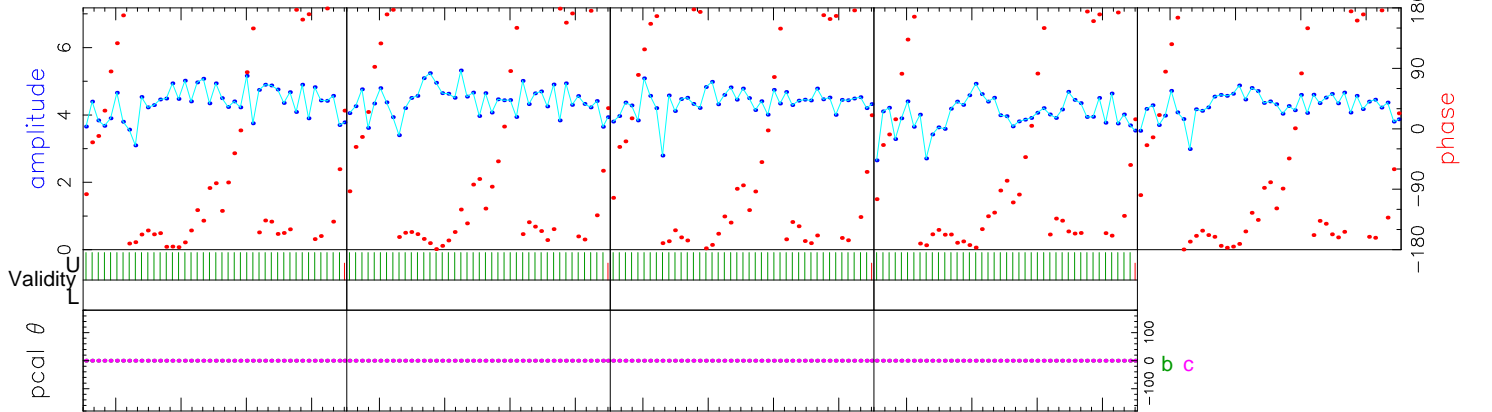
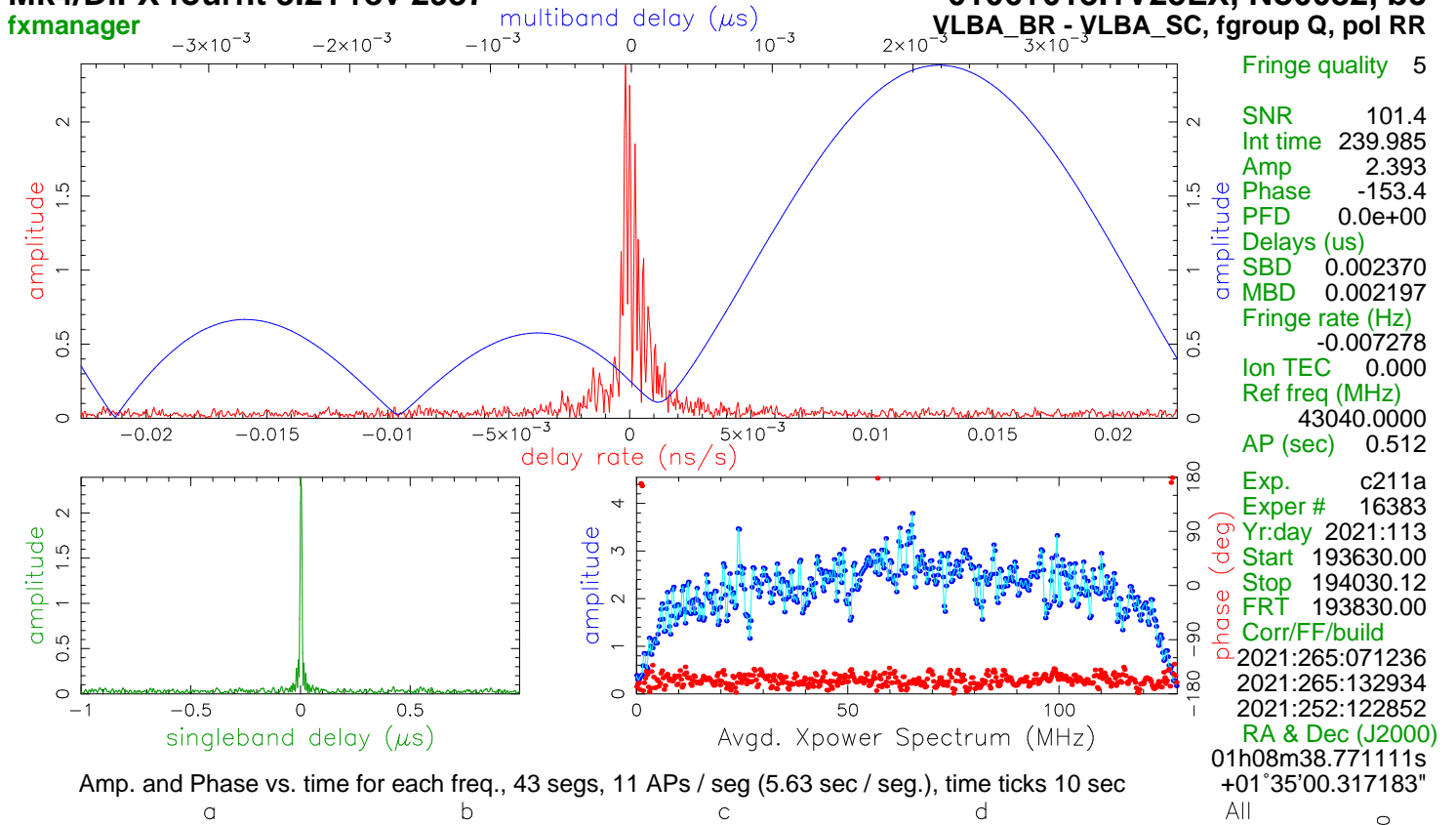
Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bc.Q.1.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bc

VLBA\_BR - VLBA\_SC, fgroup Q, pol RR



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -153.4 |
| b   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 2.4    |
| c   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 514.2  |
| b:c | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |        |
| b:c | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |        |
| b   | 1000     | 1000     | 1000     | 1000     | PC phase   |        |
| c   | 1000     | 1000     | 1000     | 1000     | Manl PC    |        |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |        |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.61749698276E+03 | Apriori delay (usec)     | 5.61749478551E+03  | Resid mbdelay (usec) | 2.19724E-03  | +/- | 1.1E-05 |
| Sband delay (usec)      | 5.61749715514E+03 | Apriori clock (usec)     | -1.5142937E+01     | Resid sbdelay (usec) | 2.36963E-03  | +/- | 4.2E-05 |
| Phase delay (usec)      | 5.61749477561E+03 | Apriori clockrate (us/s) | -4.1600000E-07     | Resid phdelay (usec) | -9.90332E-06 | +/- | 7.3E-08 |
| Delay rate (us/s)       | 1.16282857879E+00 | Apriori rate (us/s)      | 1.16282874790E+00  | Resid rate (us/s)    | -1.69106E-07 | +/- | 5.3E-10 |
| Total phase (deg)       | 51.2              | Apriori accel (us/s/s)   | -2.84860746598E-05 | Resid phase (deg)    | -153.4       | +/- | 1.1     |

|              |      |        |     |                  |                 |  |                       |
|--------------|------|--------|-----|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | 68.6 | Theor. | 3.7 | Amplitude        | 2.393 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 80.6 |        | 3.7 | Search (1024X16) | 2.306           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 3.5  |        | 1.1 | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  |
| amp/frq (%)  | 3.9  |        | 2.0 | Inc. seg. avg.   | 4.280           | Sample rate(MSamp/s): 256              | mb window (us)        |
|              |      |        |     | Inc. frq. avg.   | 2.386           | Data rate(Mb/s): 2048                  | dr window (ns/s)      |
|              |      |        |     |                  |                 | nlags: 512                             | t_cohere infinite     |
|              |      |        |     |                  |                 |  | ion window (TEC)      |

b: az 192.3 el 42.9 pa 8.1 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -3341.893 1909.855 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bc.Q.15.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

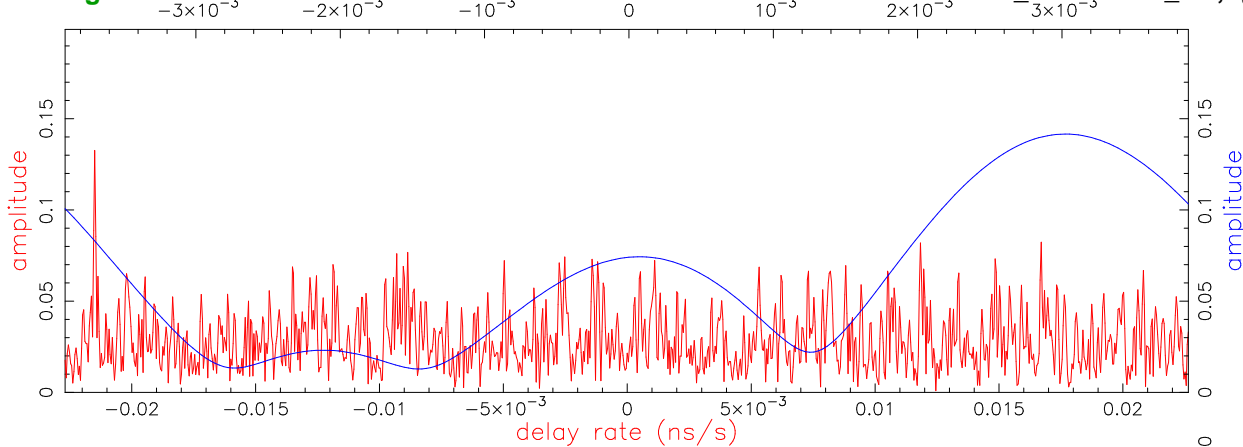
fxmanager

0106+013.1V25LX, No0082, bc

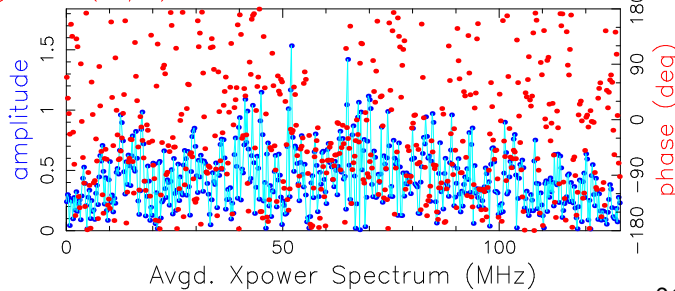
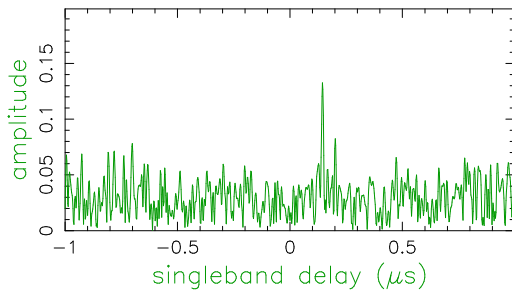
VLBA\_BR - VLBA\_SC, fgroup Q, pol LR

multiband delay ( $\mu$ s)

Fringe quality 0

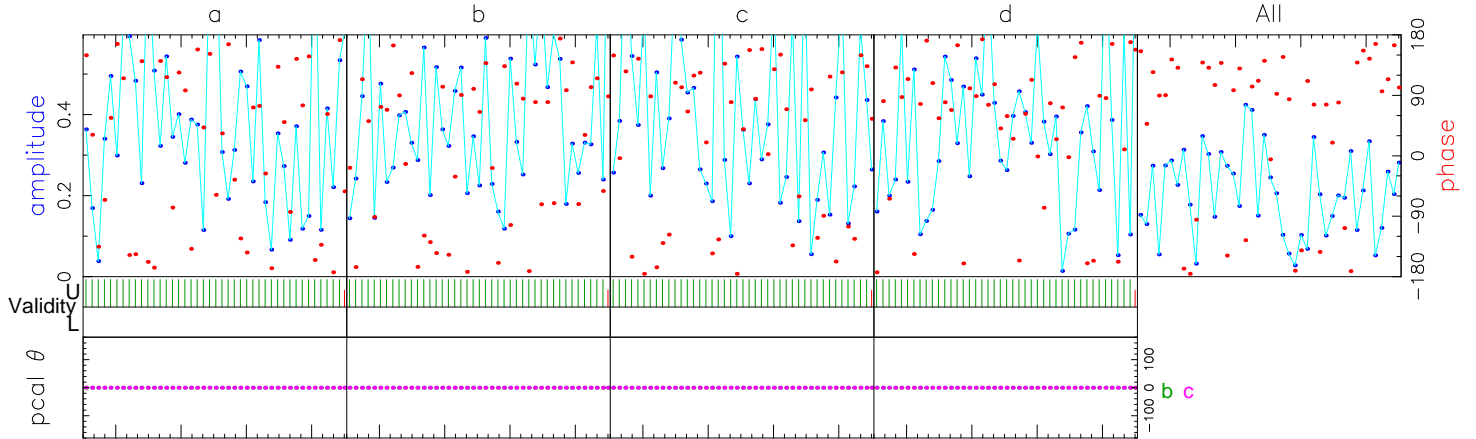


SNR 5.6  
Int time 239.985  
Amp 0.199  
Phase 135.3  
PFD 8.8e-01  
Delays (us)  
SBD 0.144910  
MBD -0.004395  
Fringe rate (Hz)  
-0.926970  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132936  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 169.3    | 120.4    | 147.2    | 101.8    | Phase      | 135.3 |
| b   | 0.2      | 0.2      | 0.3      | 0.2      | Ampl.      | 0.2   |
| c   | 254.2    | 966.0    | 586.3    | 134.8    | Sbd box    | 587.2 |
| b:c | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| b:c | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| b   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.61763882848E+03 | Apriori delay (usec)     | 5.61749478551E+03  | Resid mbdelay (usec) | -4.39453E-03 | +/- | 2.0E-04 |
| Sband delay (usec)      | 5.61763969601E+03 | Apriori clock (usec)     | -1.5142937E+01     | Resid sbdelay (usec) | 1.44910E-01  | +/- | 7.6E-04 |
| Phase delay (usec)      | 5.61749479425E+03 | Apriori clockrate (us/s) | -4.1600000E-07     | Resid phdelay (usec) | 8.73192E-06  | +/- | 1.3E-06 |
| Delay rate (us/s)       | 1.16280721049E+00 | Apriori rate (us/s)      | 1.16282874790E+00  | Resid rate (us/s)    | -2.15374E-05 | +/- | 9.5E-09 |
| Total phase (deg)       | 340.0             | Apriori accel (us/s/s)   | -2.84860746598E-05 | Resid phase (deg)    | 135.3        | +/- | 20.3    |

|              |      |        |                  |                 |  |                       |                   |                            |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|----------------------------|
|              | RMS  | Theor. | Amplitude        | 0.199 +/- 0.035 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| ph/seg (deg) | 57.6 | 66.7   | Search (1024X16) | 0.137           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| amp/seg (%)  | 96.0 | 116.3  | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| ph/frq (deg) | 36.3 | 20.3   | Inc. seg. avg.   | 0.185           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
| amp/frq (%)  | 24.7 | 35.5   | Inc. frq. avg.   | 0.207           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

b: az 192.3 el 42.9 pa 8.1 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -3341.893 1909.855 simultaneous interpolator

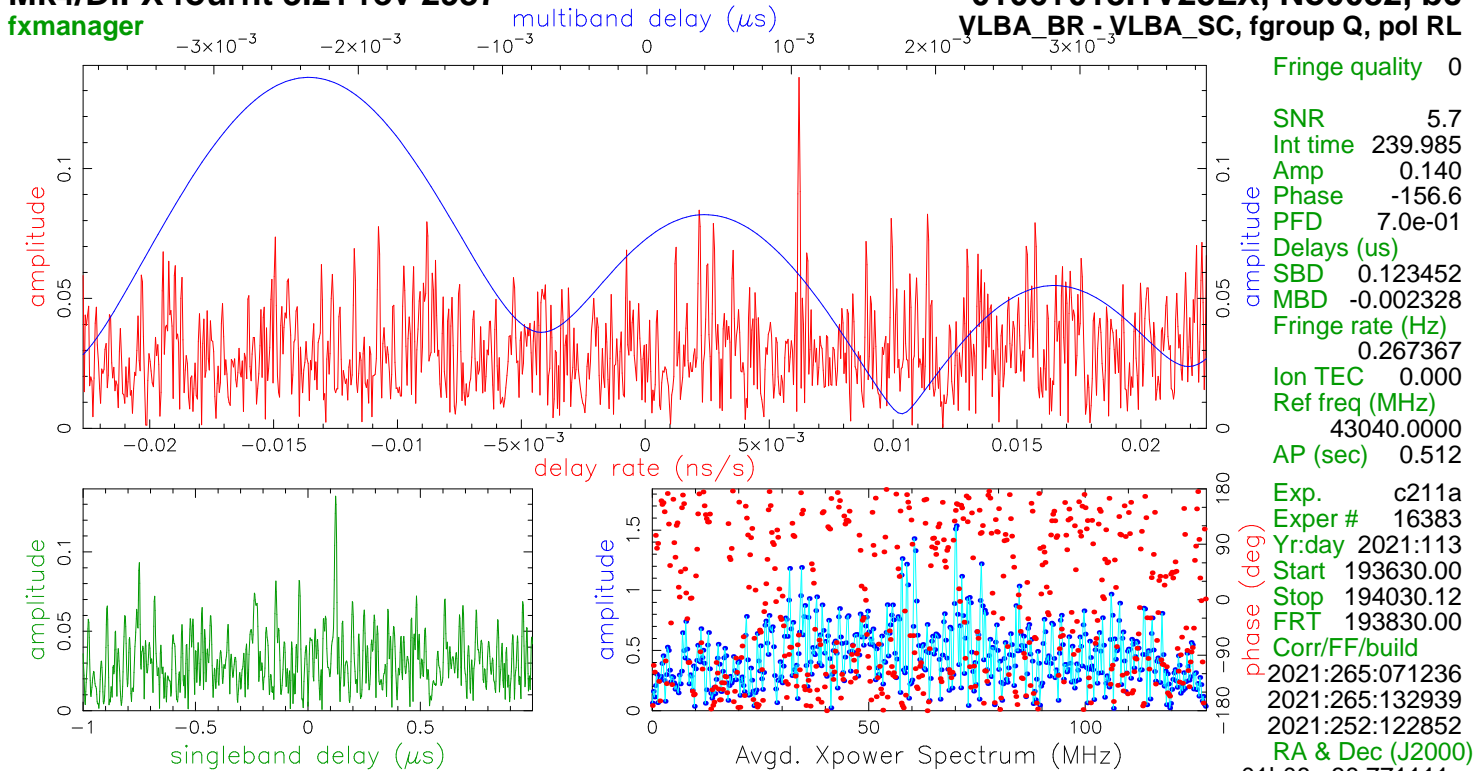
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Mk4/DiFX fourfit 3.21 rev 2937

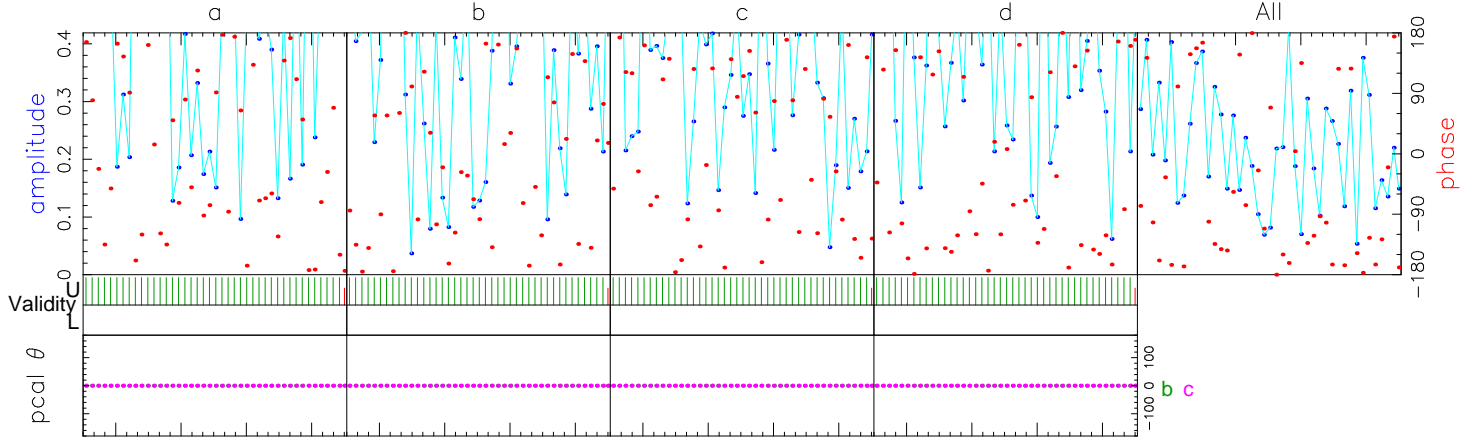
fxmanager

0106+013.1V25LX, No0082, bc

VLBA\_BR - VLBA\_SC, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



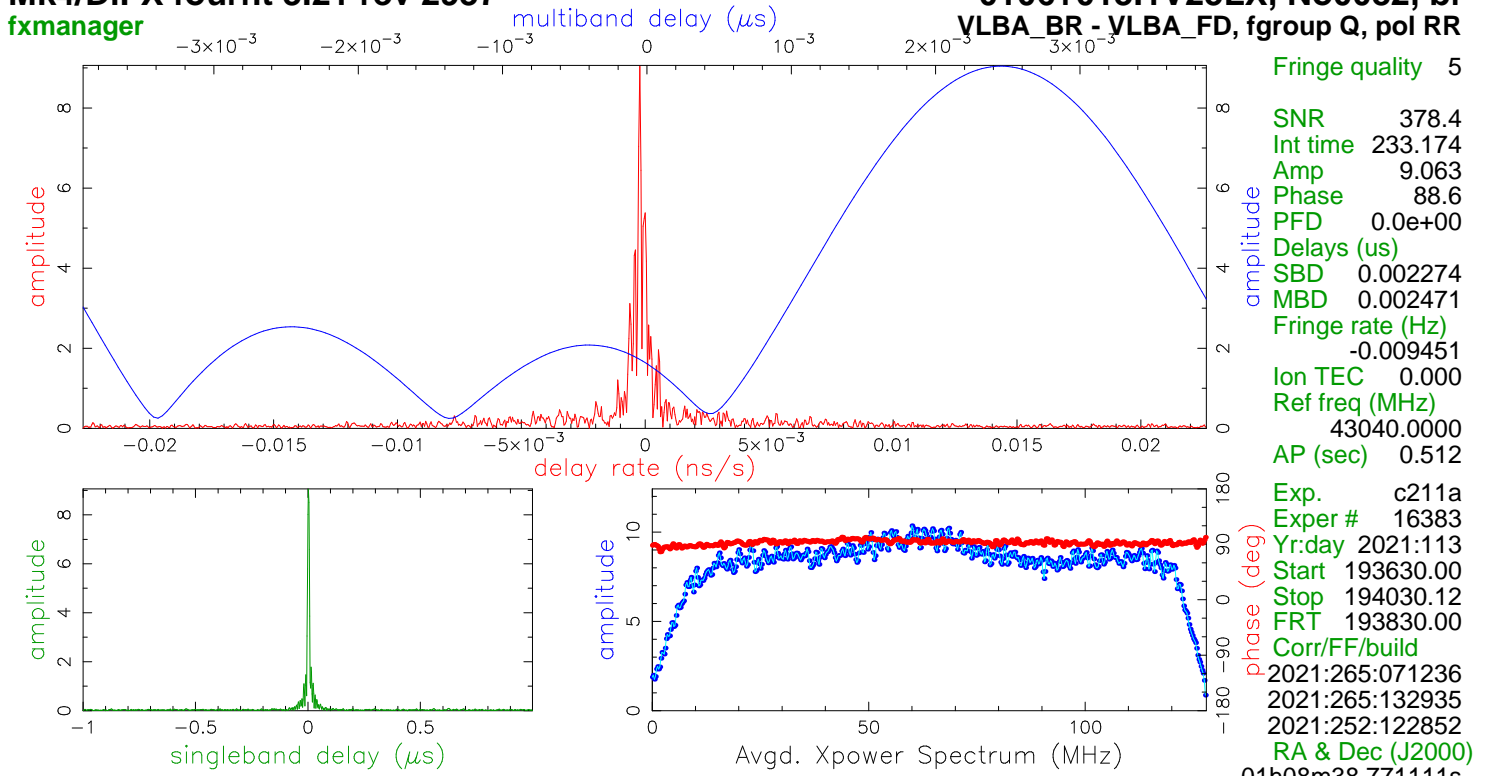
|                               |  |  |  | 42912.00   |  |  |  | 43040.00  |  |  |  | 43168.00           |  |  |  | 43296.00                               |  |  |  | Freq (MHz)                   |  | All                         |
|-------------------------------|--|--|--|--|--|--|--|---|--|--|--|--------------------|--|--|--|--|--|--|--|------------------------------|--|-----------------------------|
|                               |  |  |  | -154.7   |  |  |  | -139.9  |  |  |  | -173.2             |  |  |  | -152.4                                 |  |  |  | Phase                        |  | -156.6                      |
|                               |  |  |  | 0.1  |  |  |  | 0.1   |  |  |  | 0.1                |  |  |  | 0.2                                    |  |  |  | Amp.                         |  | 0.1                         |
|                               |  |  |  | 127.1  |  |  |  | 824.3   |  |  |  | 780.6              |  |  |  | 575.9                                  |  |  |  | Sbd box                      |  | 576.2                       |
| U/L                           |  |  |  | 469/0  |  |  |  | 469/0   |  |  |  | 469/0              |  |  |  | 469/0                                  |  |  |  | APs used                     |  |                             |
| b                             |  |  |  | 1000   |  |  |  | 1000  |  |  |  | 1000               |  |  |  | 1000                                   |  |  |  | PC freqs                     |  |                             |
| c                             |  |  |  | 1000   |  |  |  | 1000  |  |  |  | 1000               |  |  |  | 1000                                   |  |  |  | PC phase                     |  |                             |
| b:c                           |  |  |  | 0:0  |  |  |  | 0:0   |  |  |  | 0:0                |  |  |  | 0:0                                    |  |  |  | Manl PC                      |  |                             |
| b:c                           |  |  |  | 0:0  |  |  |  | 0:0   |  |  |  | 0:0                |  |  |  | 0:0                                    |  |  |  | PC amp                       |  |                             |
| b                             |  |  |  | 1000   |  |  |  | 1000  |  |  |  | 1000               |  |  |  | 1000                                   |  |  |  | Chan ids                     |  |                             |
| c                             |  |  |  | Q00UR  |  |  |  | Q01UR   |  |  |  | Q02UR              |  |  |  | Q03UR                                  |  |  |  | Tracks                       |  |                             |
|                               |  |  |  | Q00UL  |  |  |  | Q01UL   |  |  |  | Q02UL              |  |  |  | Q03UL                                  |  |  |  | Chan ids                     |  |                             |
|                               |  |  |  |  |  |  |  |   |  |  |  |                    |  |  |  |  |  |  |  | Tracks                       |  |                             |
| Group delay (usec)(sbd)       |  |  |  | 5.61761745727E+03  |  |  |  | Apriori delay (usec)  |  |  |  | 5.61749478551E+03  |  |  |  | Resid mbdelay (usec)                   |  |  |  | -2.32824E-03                 |  | +/- 1.9E-04                 |
| Sband delay (usec)            |  |  |  | 5.61761823739E+03  |  |  |  | Apriori clock (usec)  |  |  |  | -1.5142937E+01     |  |  |  | Resid sbdelay (usec)                   |  |  |  | 1.23452E-01                  |  | +/- 7.5E-04                 |
| Phase delay (usec)            |  |  |  | 5.61749477541E+03  |  |  |  | Apriori clockrate (us/s)                                      |  |  |  | -4.1600000E-07     |  |  |  | Resid phdelay (usec)                   |  |  |  | -1.01056E-05                 |  | +/- 1.3E-06                 |
| Delay rate (us/s)             |  |  |  | 1.16283495996E+00  |  |  |  | Apriori rate (us/s)   |  |  |  | 1.16282874790E+00  |  |  |  | Resid rate (us/s)                      |  |  |  | 6.21206E-06                  |  | +/- 9.3E-09                 |
| Total phase (deg)             |  |  |  | 48.1   |  |  |  | Apriori accel (us/s/s)  |  |  |  | -2.84860746598E-05 |  |  |  | Resid phase (deg)                      |  |  |  | -156.6                       |  | +/- 20.0                    |
| RMS                           |  |  |  | Theor.   |  |  |  | Amplitude   |  |  |  | 0.140 +/- 0.024    |  |  |  | Pcal mode: MANUAL, MANUAL              |  |  |  | PC period (AP's) 5, 5        |  |                             |
| ph/seg (deg)                  |  |  |  | 65.1   |  |  |  | Search (1024X16)  |  |  |  | 0.130              |  |  |  | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |  |  |  | sb window (us)               |  | -1.000 1.000                |
| amp/seg (%)                   |  |  |  | 99.6   |  |  |  | Interp.   |  |  |  | 0.000              |  |  |  | Bits/sample: 2x2                       |  |  |  | SampCntNorm: enabled         |  | mb window (us) -0.004 0.004 |
| ph/frq (deg)                  |  |  |  | 17.0   |  |  |  | Inc. seg. avg.  |  |  |  | 0.140              |  |  |  | Sample rate(MISamp/s): 256             |  |  |  | dr window (ns/s)             |  | -0.023 0.023                |
| amp/frq (%)                   |  |  |  | 42.7   |  |  |  | Inc. frq. avg.  |  |  |  | 0.133              |  |  |  | Data rate(Mb/s): 2048                  |  |  |  | nlags: 512 t_cohere infinite |  | ion window (TEC) 0.00 0.00  |
| b: az 192.3 el 42.9 pa 8.1    |  |  |  | c: az 263.3 el 25.2 pa 71.1                              |  |  |  | u,v (fr/asec) -3341.893 1909.855                              |  |  |  |                    |  |  |  |  |  |  |  | simultaneous interpolator    |  |                             |
| Control file: cf_1234_gmva7mm |  |  |  | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bc..1V25LX |  |  |  | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bc.Q.57.1V25LX |  |  |  |                    |  |  |  |  |  |  |  |                              |  |                             |

Mk4/DiFX fourfit 3.21 rev 2937

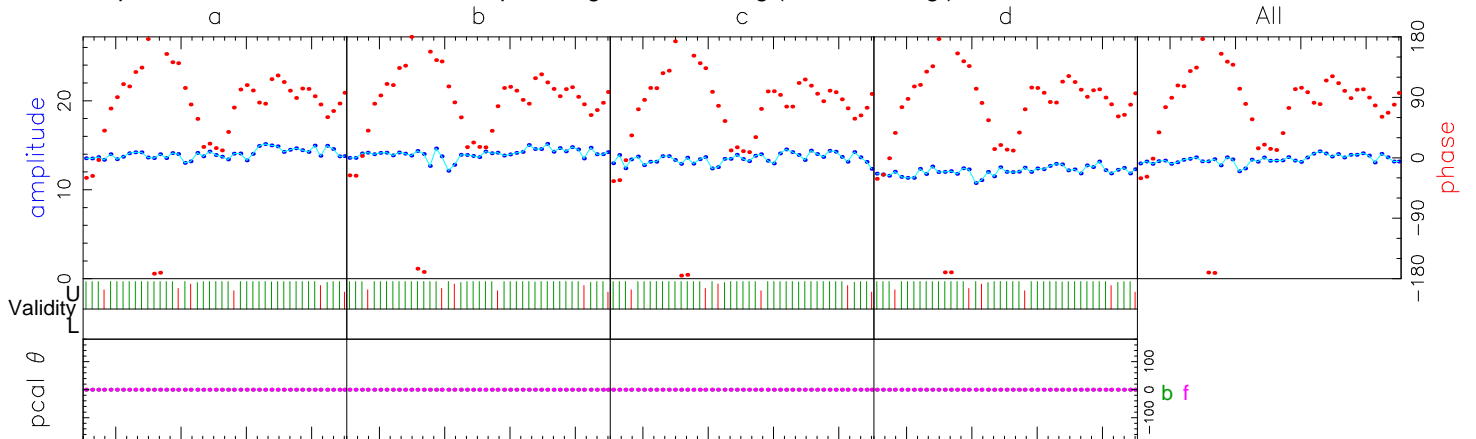
fxmanager

0106+013.1V25LX, No0082, bf

VLBA\_BR - VLBA\_FD, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               | 42912.00   | 43040.00  | 43168.00           | 43296.00             | Freq (MHz)      | All         |
|-------------------------------|--|---|--------------------|----------------------|-----------------|-------------|
| U/L                           | 89.5   | 91.1  | 84.7               | 88.8                 | Phase           | 88.6        |
| b                             | 9.5  | 9.5   | 9.1                | 8.1                  | Ampl.           | 9.0         |
| f                             | 513.9  | 514.2   | 514.0              | 514.7                | Sbd box         | 514.2       |
| b:f                           | 463/0  | 463/0   | 463/0              | 463/0                | APs used        |             |
| b:f                           | 1000   | 1000  | 1000               | 1000                 | PC freqs        |             |
| b:f                           | 0:0  | 0:0   | 0:0                | 0:0                  | PC phase        |             |
| b                             | 1000   | 1000  | 1000               | 1000                 | Manl PC         |             |
| f                             | 1000   | 1000  | 1000               | 1000                 | PC amp          |             |
| b                             | Q00UR  | Q01UR   | Q02UR              | Q03UR                | Chan ids        |             |
| f                             | Q00UR  | Q01UR   | Q02UR              | Q03UR                | Tracks          |             |
|                               |  |   |                    |                      | Chan ids        |             |
|                               |  |   |                    |                      | Tracks          |             |
| Group delay (usec)(sbd)       | -2.40272545218E+03                                       | Apriori delay (usec)  | -2.40272792281E+03 | Resid mbdelay (usec) | 2.47062E-03     | +/- 2.9E-06 |
| Sband delay (usec)            | -2.40272564868E+03                                       | Apriori clock (usec)  | -1.3195129E+01     | Resid sbdelay (usec) | 2.27413E-03     | +/- 1.1E-05 |
| Phase delay (usec)            | -2.40272791709E+03                                       | Apriori clockrate (us/s)                                      | -1.6000000E-07     | Resid phdelay (usec) | 5.71679E-06     | +/- 2.0E-08 |
| Delay rate (us/s)             | 3.98669755363E-01  | Apriori rate (us/s)   | 3.98669974950E-01  | Resid rate (us/s)    | -2.19588E-07    | +/- 1.4E-10 |
| Total phase (deg)             | -198.6   | Apriori accel (us/s/s)  | 1.34898533069E-05  | Resid phase (deg)    | 88.6            | +/- 0.3     |
| RMS                           | 51.6   | Theor.  | 1.0                | Amplitude            | 9.063 +/- 0.024 |             |
| ph/seg (deg)                  | 48.2   | Search (1024X16)  | 8.980              | Interp.              | 0.000           |             |
| amp/seg (%)                   | 3.3  | Inc. seg. avg.  | 13.410             | Inc. frq. avg.       | 9.050           |             |
| ph/frq (deg)                  | 6.2  |   |                    |                      |                 |             |
| amp/frq (%)                   |  |   |                    |                      |                 |             |
| b: az 192.3 el 42.9 pa 8.1    | f: az 223.7 el 52.8 pa 36.8                              | u,v (fr/asec)   | -1136.049 1055.344 |                      |                 |             |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bf..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bf.Q.20.1V25LX |                    |                      |                 |             |

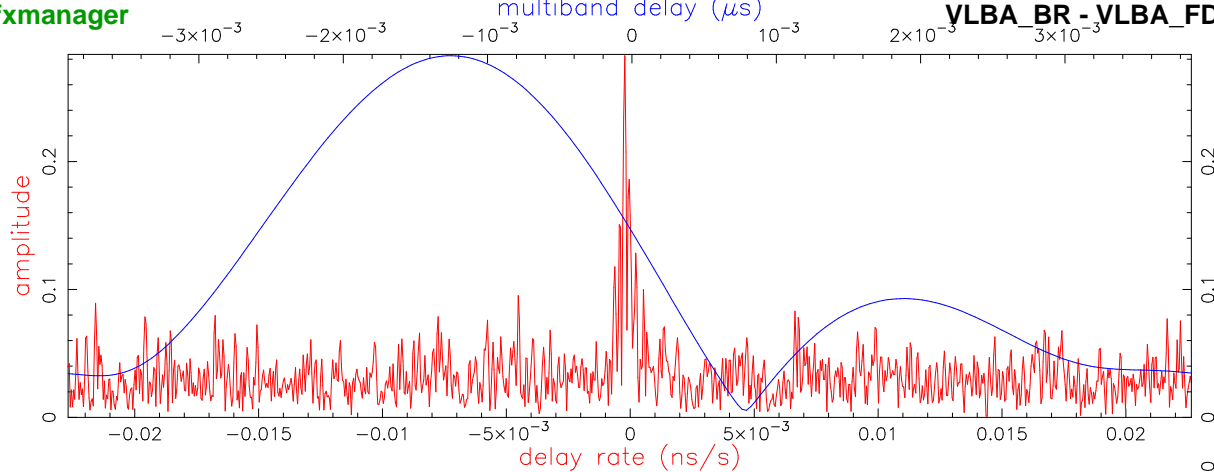


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

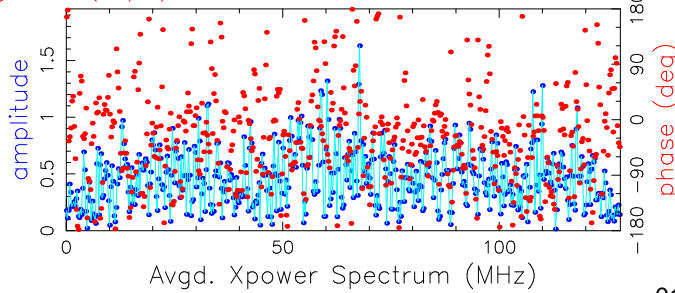
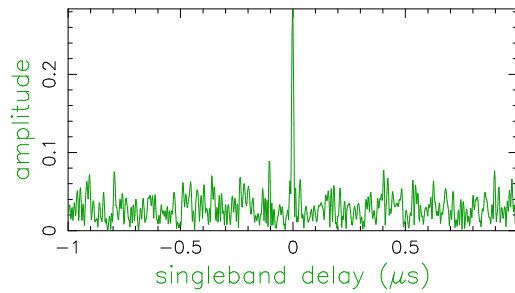
0106+013.1V25LX, No0082, bf

VLBA\_BR - VLBA\_FD, fgroup Q, pol LR



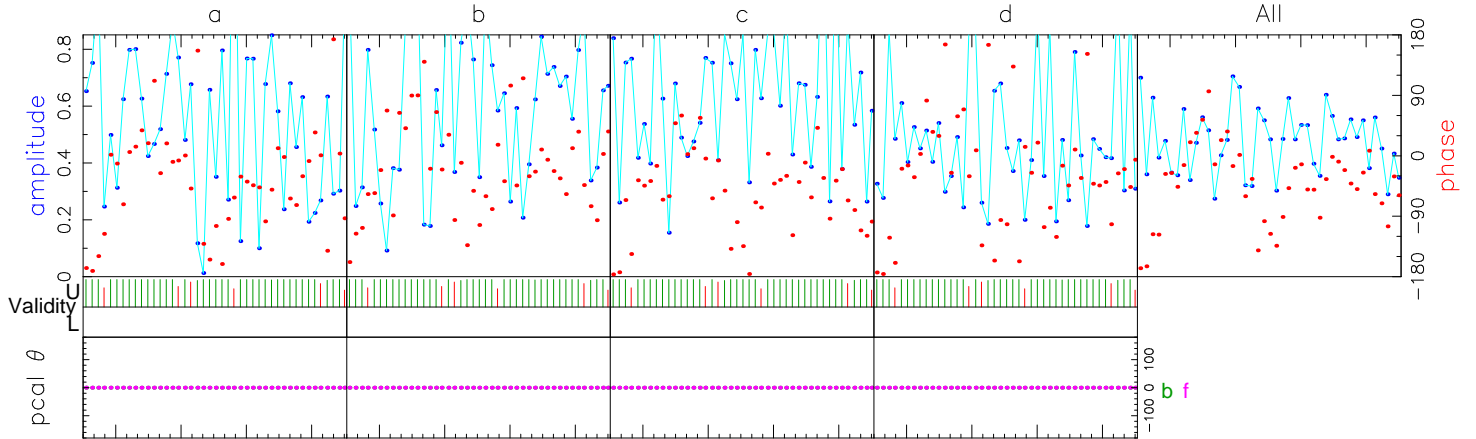
Fringe quality 9

SNR 11.8  
Int time 233.174  
Amp 0.284  
Phase -39.3  
PFD 5.5e-24  
Delays (us)  
SBD -0.001513  
MBD -0.001239  
Fringe rate (Hz)  
-0.009250  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132936  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | Phase      | -39.3 |
| b   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.3   |
| f   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.2 |
| b:f | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| b:f | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| f   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| b   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| f   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |  |                       |                      |                            |
|-------------------------|--------------------|--------------------------|--------------------|--|-----------------------|----------------------|----------------------------|
| Group delay (usec)(sbd) | -2.40272916222E+03 | Apriori delay (usec)     | -2.40272792281E+03 | Resid mbdelay (usec)                   | -1.23941E-03          | +/-                  | 9.4E-05                    |
| Sband delay (usec)      | -2.40272943606E+03 | Apriori clock (usec)     | -1.3195129E+01     | Resid sbdelay (usec)                   | -1.51325E-03          | +/-                  | 3.6E-04                    |
| Phase delay (usec)      | -2.40272792534E+03 | Apriori clockrate (us/s) | -1.6000000E-07     | Resid phdelay (usec)                   | -2.53382E-06          | +/-                  | 6.2E-07                    |
| Delay rate (us/s)       | 3.98669760037E-01  | Apriori rate (us/s)      | 3.98669974950E-01  | Resid rate (us/s)                      | -2.14914E-07          | +/-                  | 4.6E-09                    |
| Total phase (deg)       | -326.4             | Apriori accel (us/s/s)   | 1.34898533069E-05  | Resid phase (deg)                      | -39.3                 | +/-                  | 9.7                        |
| RMS                     | 57.8               | Search (1024X16)         | 0.274              | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| ph/seg (deg)            | 57.8               | Interp.                  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| amp/seg (%)             | 78.9               | Inc. seg. avg.           | 0.414              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| ph/frq (deg)            | 16.5               | Inc. frq. avg.           | 0.285              | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
| amp/frq (%)             | 22.3               |                          |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

b: az 192.3 el 42.9 pa 8.1

f: az 223.7 el 52.8 pa 36.8

u,v (fr/asec) -1136.049 1055.344

simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bf..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bf.Q.37.1V25LX

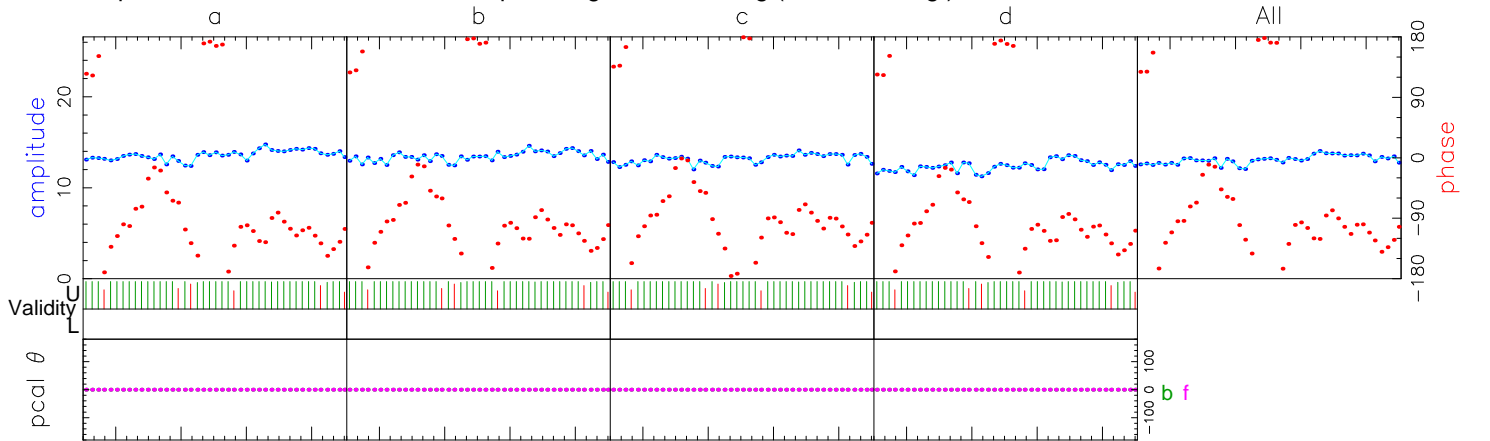
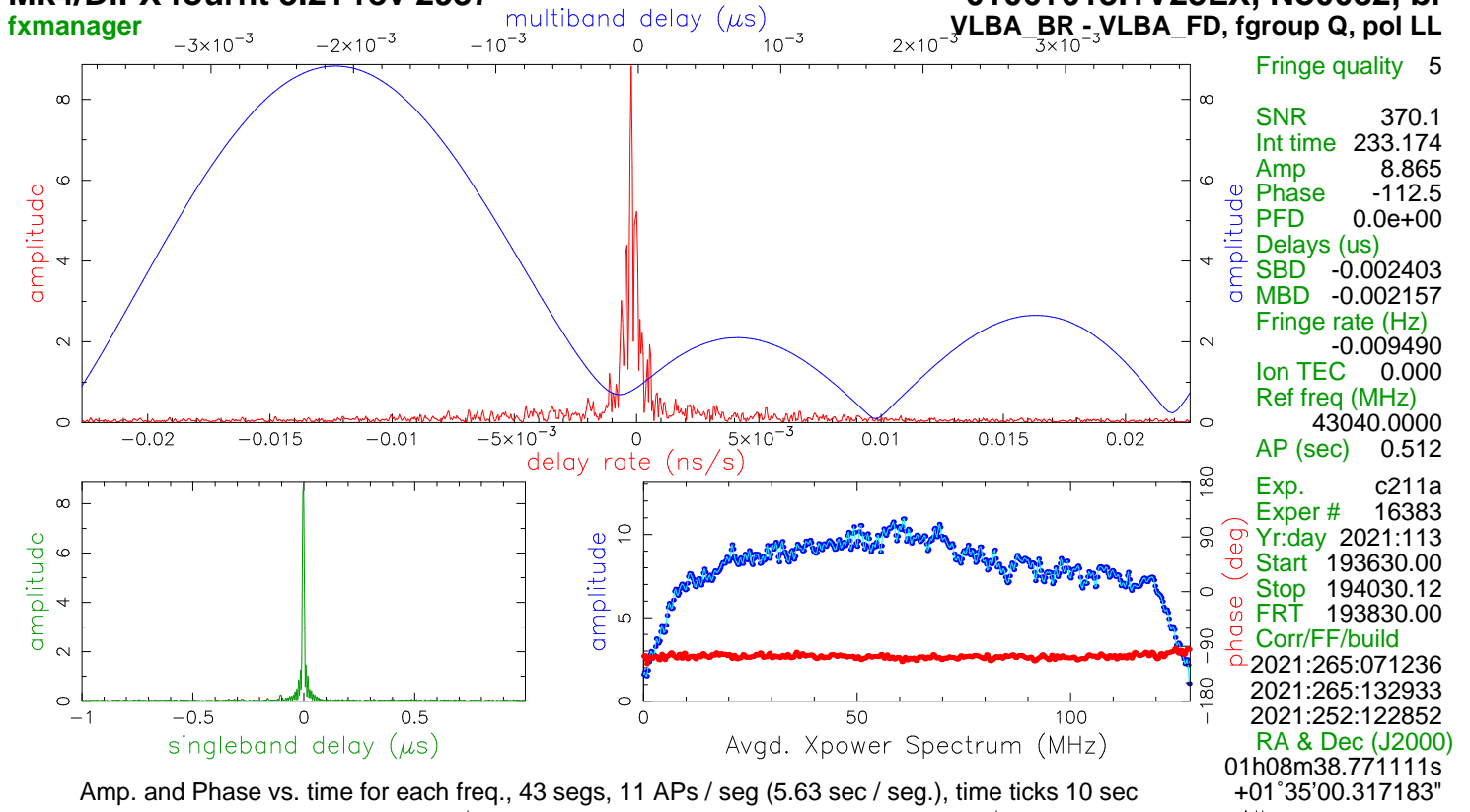


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bf

VLBA\_BR - VLBA\_FD, fgroup Q, pol LL



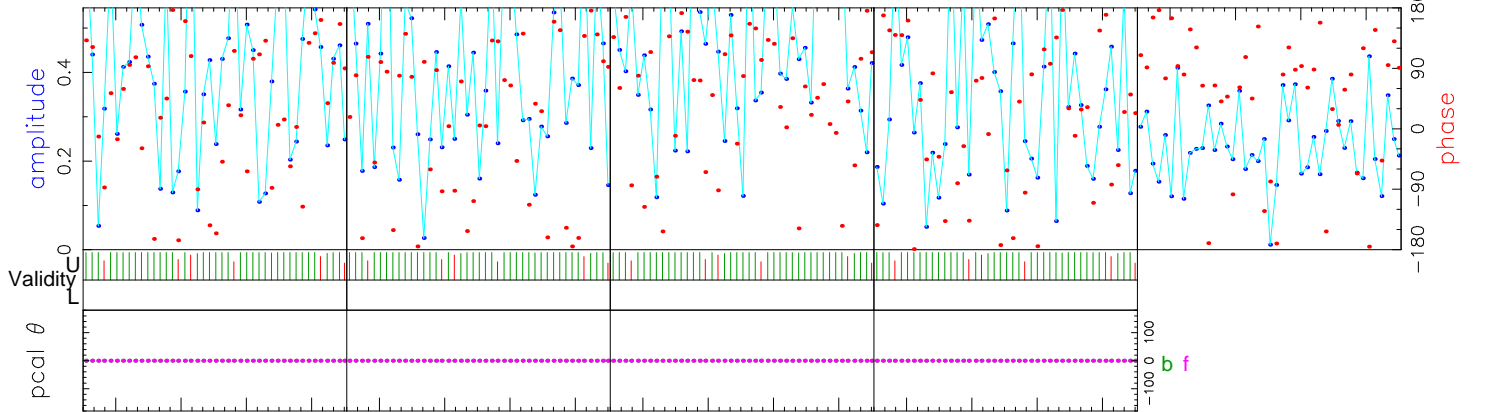
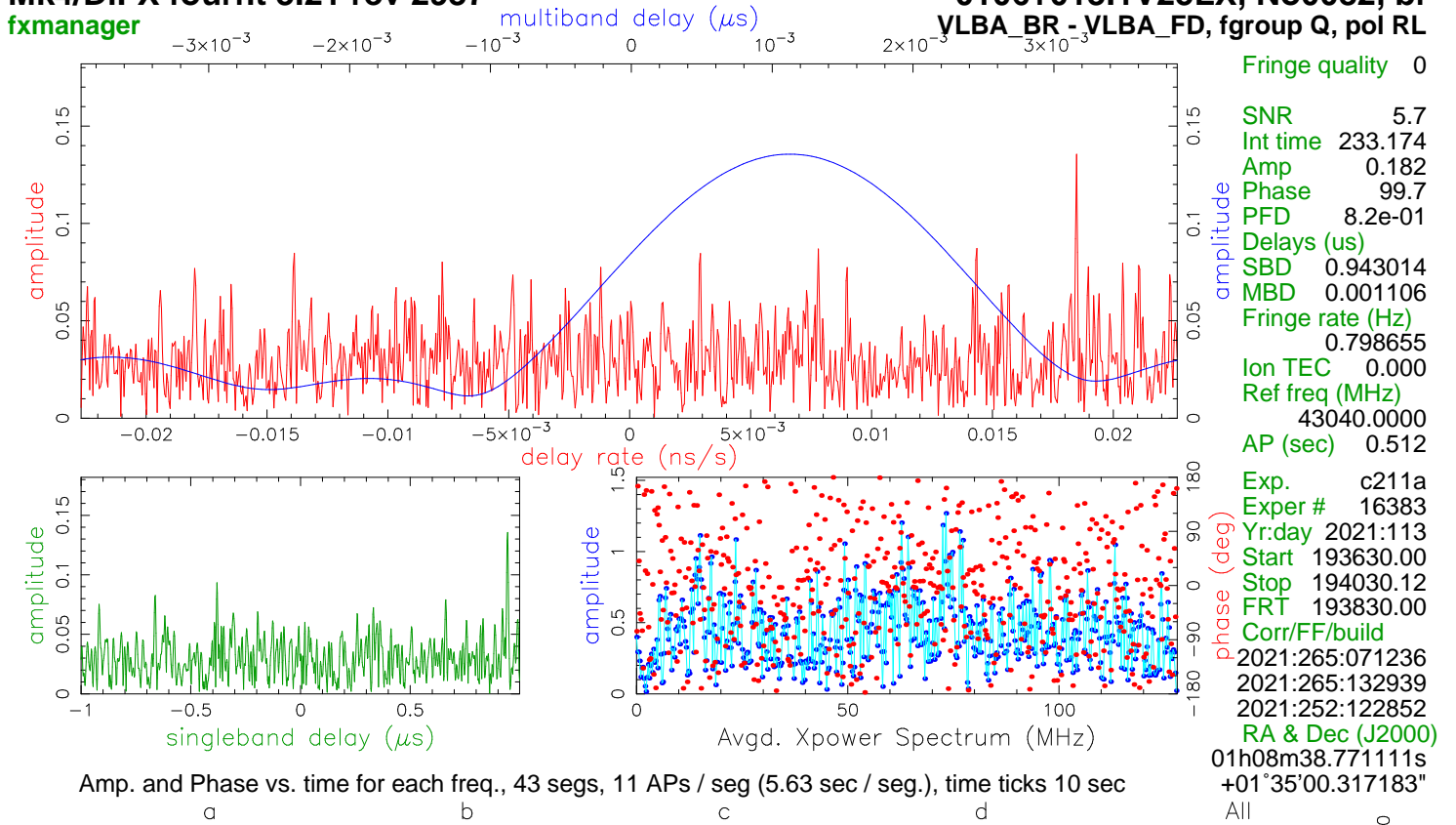
|                               |  |                          |                    |  |                              |                  |              |
|-------------------------------|--|--------------------------|--------------------|--|------------------------------|------------------|--------------|
| 42912.00                      | 43040.00   | 43168.00                 | 43296.00           | Freq (MHz)                             | All                          |                  |              |
| -117.4                        | -112.5   | -103.8                   | -116.2             | Phase                                  | -112.5                       |                  |              |
| 9.2                           | 9.1  | 8.8                      | 8.3                | Ampl.                                  | 8.9                          |                  |              |
| 511.8                         | 512.0  | 511.7                    | 511.3              | Sbd box                                | 511.8                        |                  |              |
| U/L 463/0                     | 463/0  | 463/0                    | 463/0              | APs used                               |                              |                  |              |
| b 1000                        | 1000   | 1000                     | 1000               | PC freqs                               |                              |                  |              |
| f 1000                        | 1000   | 1000                     | 1000               | PC freqs                               |                              |                  |              |
| b:f 0:0                       | 0:0  | 0:0                      | 0:0                | PC phase                               |                              |                  |              |
| b:f 0:0                       | 0:0  | 0:0                      | 0:0                | Manl PC                                |                              |                  |              |
| b 1000                        | 1000   | 1000                     | 1000               | PC amp                                 |                              |                  |              |
| f 1000                        | 1000   | 1000                     | 1000               |  |                              |                  |              |
| b Q00UL                       | Q01UL  | Q02UL                    | Q03UL              | Chan ids                               |                              |                  |              |
| f Q00UL                       | Q01UL  | Q02UL                    | Q03UL              | Tracks                                 |                              |                  |              |
|                               |  |                          |                    | Chan ids                               |                              |                  |              |
|                               |  |                          |                    | Tracks                                 |                              |                  |              |
| Group delay (usec)(sbd)       | -2.40273007993E+03   | Apriori delay (usec)     | -2.40272792281E+03 | Resid mbdelay (usec)                   | -2.15713E-03                 | +/- 3.0E-06      |              |
| Sband delay (usec)            | -2.40273032593E+03   | Apriori clock (usec)     | -1.3195129E+01     | Resid sbdelay (usec)                   | -2.40312E-03                 | +/- 1.2E-05      |              |
| Phase delay (usec)            | -2.40272793007E+03   | Apriori clockrate (us/s) | -1.6000000E-07     | Resid phdelay (usec)                   | -7.25782E-06                 | +/- 2.0E-08      |              |
| Delay rate (us/s)             | 3.98669754466E-01  | Apriori rate (us/s)      | 3.98669974950E-01  | Resid rate (us/s)                      | -2.20484E-07                 | +/- 1.5E-10      |              |
| Total phase (deg)             | -39.6  | Apriori accel (us/s/s)   | 1.34898533069E-05  | Resid phase (deg)                      | -112.5                       | +/- 0.3          |              |
| RMS                           | Theor.   | Amplitude                | 8.865 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |              |
| ph/seg (deg)                  | 51.8 1.0   | Search (1024X16)         | 8.697              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000 1.000     |              |
| amp/seg (%)                   | 48.2 1.8   | Interp.                  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg)                  | 7.5 0.3  | Inc. seg. avg.           | 13.106             | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)                   | 3.9 0.5  | Inc. frq. avg.           | 8.864              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |
| b: az 192.3 el 42.9 pa 8.1    | f: az 223.7 el 52.8 pa 36.8                                  | u,v (fr/asec)            | -1136.049 1055.344 | simultaneous interpolator              |                              |                  |              |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bf..1V25LX     |                          |                    |  |                              |                  |              |
|                               | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bf.Q.5.1V25LX |                          |                    |  |                              |                  |              |

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bf

VLBA\_BR - VLBA\_FD, fgroup Q, pol RL



|                               |  |   |                    |  |   |
|-------------------------------|--|---|--------------------|--|---|
| 42912.00                      | 43040.00   | 43168.00  | 43296.00           | Freq (MHz)                             | All   |
| 87.8                          | 112.4  | 100.5   | 93.1               | Phase                                  | 99.7  |
| 0.2                           | 0.2  | 0.2   | 0.1                | Amp.                                   | 0.2   |
| 835.0                         | 311.6  | 533.6   | 605.3              | Sbd box                                | 995.8   |
| U/L 463/0                     | 463/0  | 463/0   | 463/0              | APs used                               |   |
| b 1000                        | 1000   | 1000  | 1000               | PC freqs                               |   |
| f 1000                        | 1000   | 1000  | 1000               | PC phase                               |   |
| b:f 0:0                       | 0:0  | 0:0   | 0:0                | ManI PC                                |   |
| b:f 0:0                       | 0:0  | 0:0   | 0:0                | PC amp                                 |   |
| b 1000                        | 1000   | 1000  | 1000               |  |   |
| f 1000                        | 1000   | 1000  | 1000               |  |   |
| b Q00UR                       | Q01UR  | Q02UR   | Q03UR              | Chan ids                               |   |
| f Q00UL                       | Q01UL  | Q02UL   | Q03UL              | Tracks                                 |   |
| Group delay (usec)(sbd)       | -2.40178150434E+03                                       | Apriori delay (usec)  | -2.40272792281E+03 | Resid mbdelay (usec)                   | 1.10597E-03 +/- 2.0E-04                                 |
| Sband delay (usec)            | -2.40178490843E+03                                       | Apriori clock (usec)  | -1.3195129E+01     | Resid sbdelay (usec)                   | 9.43014E-01 +/- 7.6E-04                                 |
| Phase delay (usec)            | -2.40272791637E+03                                       | Apriori clockrate (us/s)                                      | -1.6000000E-07     | Resid phdelay (usec)                   | 6.43472E-06 +/- 1.3E-06                                 |
| Delay rate (us/s)             | 3.98688531072E-01  | Apriori rate (us/s)   | 3.98669974950E-01  | Resid rate (us/s)                      | 1.85561E-05 +/- 9.5E-09                                 |
| Total phase (deg)             | -187.4   | Apriori accel (us/s/s)  | 1.34898533069E-05  | Resid phase (deg)                      | 99.7 +/- 20.2   |
| RMS                           | Theor.   | Amplitude   | 0.182 +/- 0.032    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| 71.4                          | 65.8   | Search (1024X16)  | 0.130              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 101.0  | Interp.   | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 13.2   | Inc. seg. avg.  | 0.194              | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 21.3   | Inc. frq. avg.  | 0.173              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| b: az 192.3 el 42.9 pa 8.1    | f: az 223.7 el 52.8 pa 36.8                              | u,v (fr/asec)   | -1136.049 1055.344 |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bf..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bf.Q.61.1V25LX |                    |  |   |

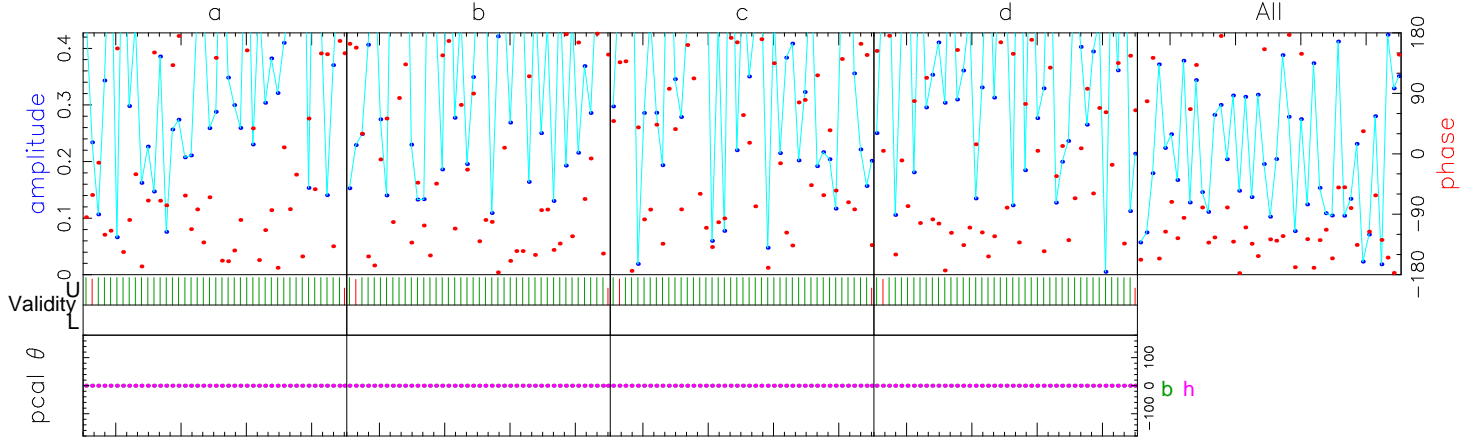
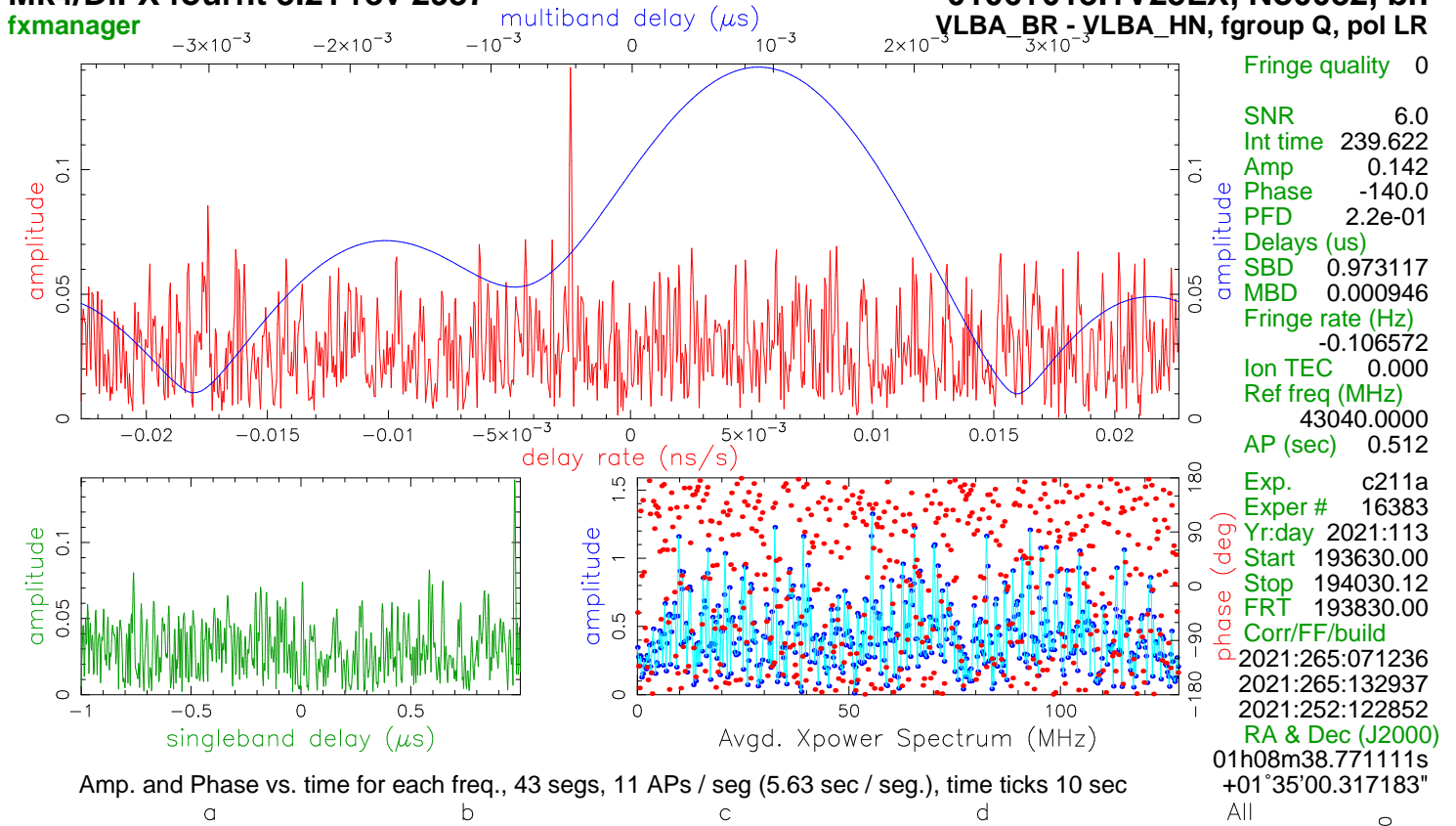


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bh

VLBA\_BR - VLBA\_HN, fgroup Q, pol LR



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -140.0 |
| b   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.1    |
| h   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 1011.2 |
| b:h | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |        |
| b:h | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |        |
| b   | 1000     | 1000     | 1000     | 1000     | PC phase   |        |
| h   | 1000     | 1000     | 1000     | 1000     | Manl PC    |        |
| b   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |        |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.62668861956E+03 | Apriori delay (usec)     | 5.62571892385E+03  | Resid mbdelay (usec) | 9.45709E-04  | +/- | 1.9E-04 |
| Sband delay (usec)      | 5.62669204123E+03 | Apriori clock (usec)     | -5.7468109E+00     | Resid sbdelay (usec) | 9.73117E-01  | +/- | 7.2E-04 |
| Phase delay (usec)      | 5.62571891482E+03 | Apriori clockrate (us/s) | -2.2999999E-07     | Resid phdelay (usec) | -9.03417E-06 | +/- | 1.2E-06 |
| Delay rate (us/s)       | 7.84133357725E-01 | Apriori rate (us/s)      | 7.84135833841E-01  | Resid rate (us/s)    | -2.47612E-06 | +/- | 8.9E-09 |
| Total phase (deg)       | 33.8              | Apriori accel (us/s/s)   | -2.97326864289E-05 | Resid phase (deg)    | -140.0       | +/- | 19.1    |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 0.142 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 59.9 | 62.6   | Search (1024X16) | 0.137           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 94.6 | 109.3  | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 22.1 | 19.1   | Inc. seg. avg.   | 0.134           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 34.6 | 33.3   | Inc. frq. avg.   | 0.138           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

b: az 192.3 el 42.9 pa 8.1 h: az 247.1 el 25.0 pa 42.6 u,v (fr/asec) -2257.439 246.265 simultaneous interpolator

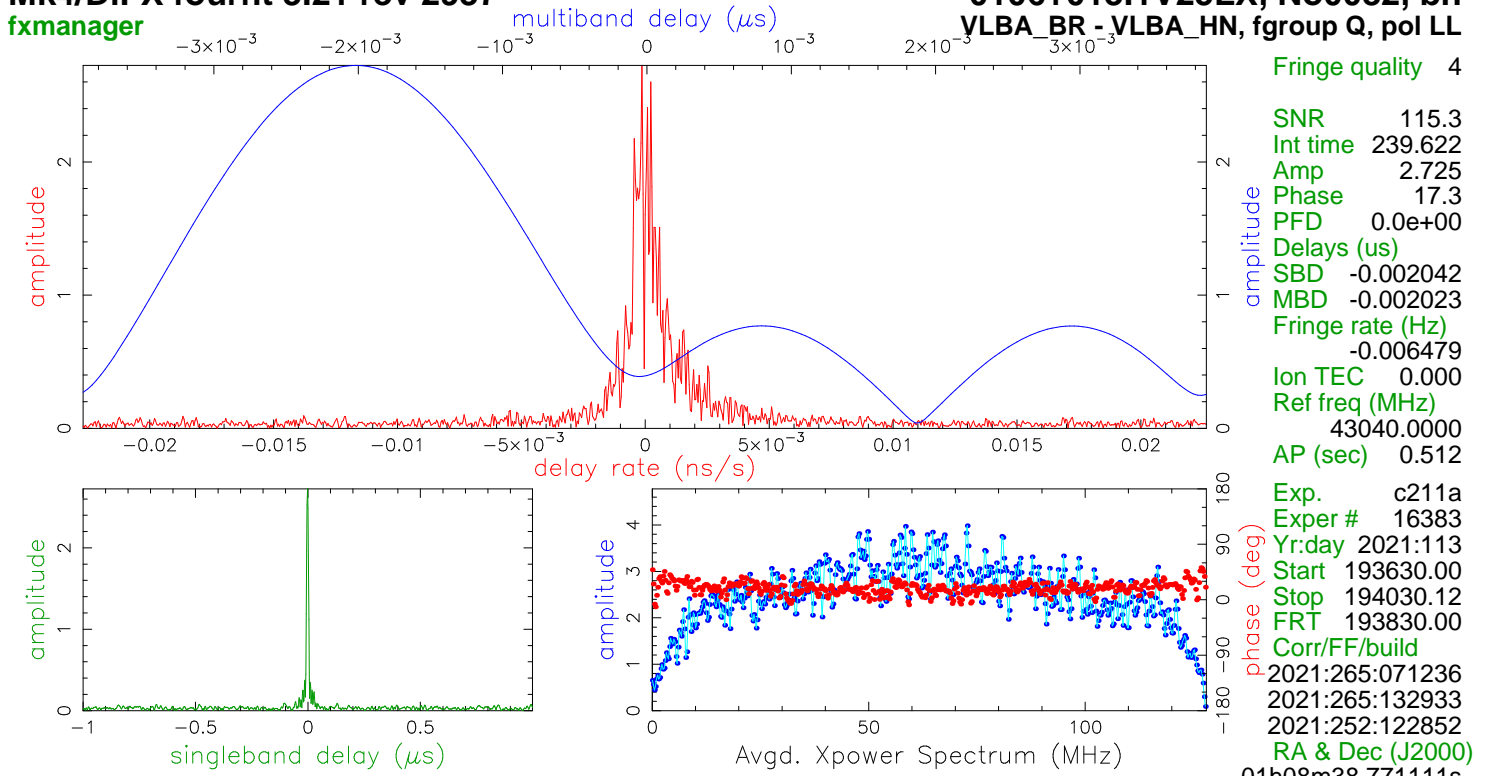
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bh..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bh.Q.38.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

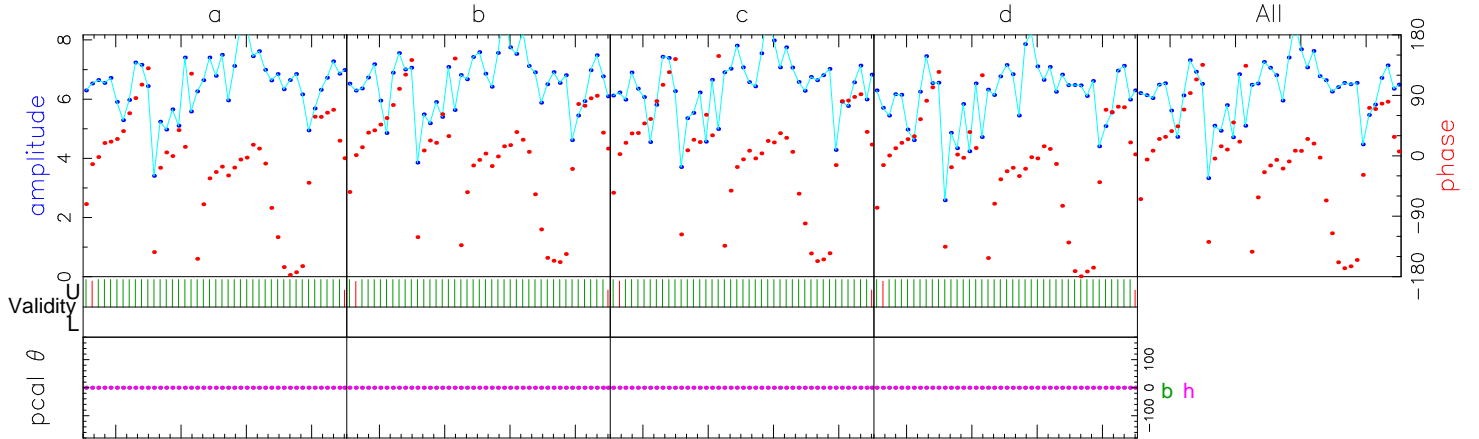
fxmanager

0106+013.1V25LX, No0082, bh

VLBA\_BR - VLBA\_HN, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|   |                   |                          |                    |                           |  |                             |                               |                            |
|---|-------------------|--------------------------|--------------------|---------------------------|--|-----------------------------|-------------------------------|----------------------------|
| 42912.00  | 43040.00          | 43168.00                 | 43296.00           | Freq (MHz)                | All                                    |                             |                               |                            |
| 7.9   | 26.0              | 26.8                     | 7.6                | Phase                     | 17.3                                   |                             |                               |                            |
| 2.8   | 2.9               | 2.8                      | 2.6                | Ampl.                     | 2.8                                    |                             |                               |                            |
| 512.4   | 512.2             | 511.7                    | 511.3              | Sbd box                   | 512.0                                  |                             |                               |                            |
| U/L 469/0   | 469/0             | 469/0                    | 469/0              | APs used                  |  |                             |                               |                            |
| b 1000  | 1000              | 1000                     | 1000               | PC freqs                  |  |                             |                               |                            |
| h 1000  | 1000              | 1000                     | 1000               | PC freqs                  |  |                             |                               |                            |
| b:h 0:0   | 0:0               | 0:0                      | 0:0                | PC phase                  |  |                             |                               |                            |
| b:h 0:0   | 0:0               | 0:0                      | 0:0                | Manl PC                   |  |                             |                               |                            |
| b 1000  | 1000              | 1000                     | 1000               | PC amp                    |  |                             |                               |                            |
| h 1000  | 1000              | 1000                     | 1000               |                           |  |                             |                               |                            |
| b Q00UL   | Q01UL             | Q02UL                    | Q03UL              | Chan ids                  |  |                             |                               |                            |
| h Q00UL   | Q01UL             | Q02UL                    | Q03UL              | Tracks                    |  |                             |                               |                            |
|   |                   |                          |                    | Chan ids                  |  |                             |                               |                            |
|   |                   |                          |                    | Tracks                    |  |                             |                               |                            |
| Group delay (usec)(sbd)   | 5.62571690084E+03 | Apriori delay (usec)     | 5.62571892385E+03  | Resid mbdelay (usec)      | -2.02301E-03                           | +/- 9.6E-06                 |                               |                            |
| Sband delay (usec)  | 5.62571688223E+03 | Apriori clock (usec)     | -5.7468109E+00     | Resid sbdelay (usec)      | -2.04163E-03                           | +/- 3.7E-05                 |                               |                            |
| Phase delay (usec)  | 5.62571892497E+03 | Apriori clockrate (us/s) | -2.2999999E-07     | Resid phdelay (usec)      | 1.11334E-06                            | +/- 6.4E-08                 |                               |                            |
| Delay rate (us/s)   | 7.84135683306E-01 | Apriori rate (us/s)      | 7.84135833841E-01  | Resid rate (us/s)         | -1.50534E-07                           | +/- 4.6E-10                 |                               |                            |
| Total phase (deg)   | 191.0             | Apriori accel (us/s/s)   | -2.97326864289E-05 | Resid phase (deg)         | 17.3                                   | +/- 1.0                     |                               |                            |
| RMS   | Theor.            | Amplitude                | 2.725 +/- 0.024    | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5                  |                             |                               |                            |
| ph/seg (deg)  | 80.8              | 3.3                      | Search (1024X16)   | 2.563                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |                               |                            |
| amp/seg (%)   | 136.0             | 5.7                      | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled        | mb window (us) -0.004 0.004   |                            |
| ph/frq (deg)  | 13.2              | 1.0                      | Inc. seg. avg.     | 6.292                     | Sample rate(MSamp/s): 256              |                             | dr window (ns/s) -0.023 0.023 |                            |
| amp/frq (%)   | 4.6               | 1.7                      | Inc. frq. avg.     | 2.760                     | Data rate(Mb/s): 2048                  | nlags: 512                  | t_cohere infinite             | ion window (TEC) 0.00 0.00 |
| b: az 192.3 el 42.9 pa 8.1 h: az 247.1 el 25.0 pa 42.6 u,v (fr/asec) -2257.439 246.265 simultaneous interpolator                                    |                   |                          |                    |                           |  |                             |                               |                            |
| Control file: cf_1234_gmva7mm Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bh..1V25LX Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bh.Q.4.1V25LX |                   |                          |                    |                           |  |                             |                               |                            |



Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bh

VLBA\_BR - VLBA\_HN, fgroup Q, pol RL

multiband delay ( $\mu$ s)

Fringe quality 9

SNR 8.3

Int time 239.622

Amp 0.195

Phase 178.2

PFD 2.7e-08

Delays (us)

SBD 0.001482

MBD 0.001783

Fringe rate (Hz)

-0.005912

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132938

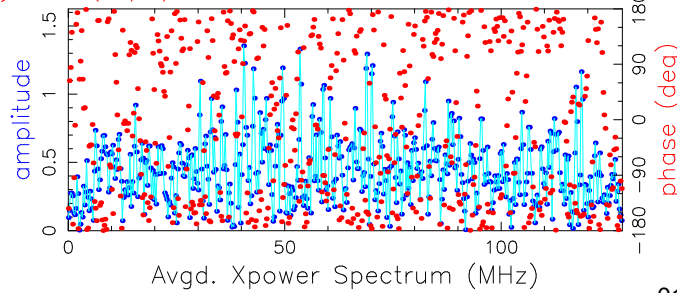
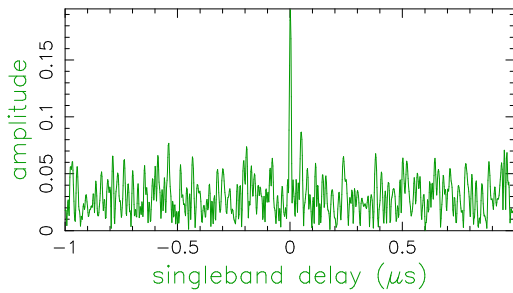
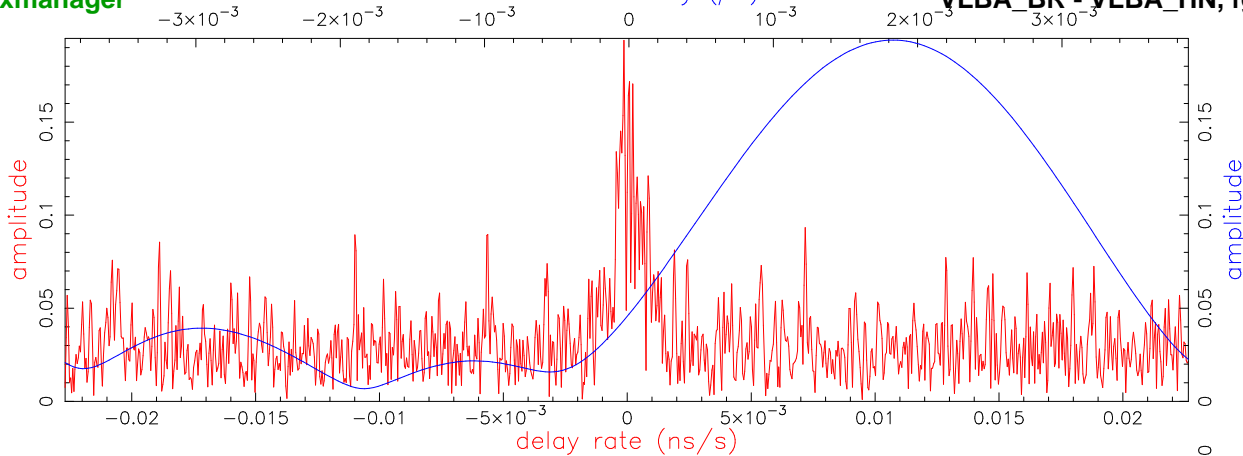
2021:252:122852

RA &amp; Dec (J2000)

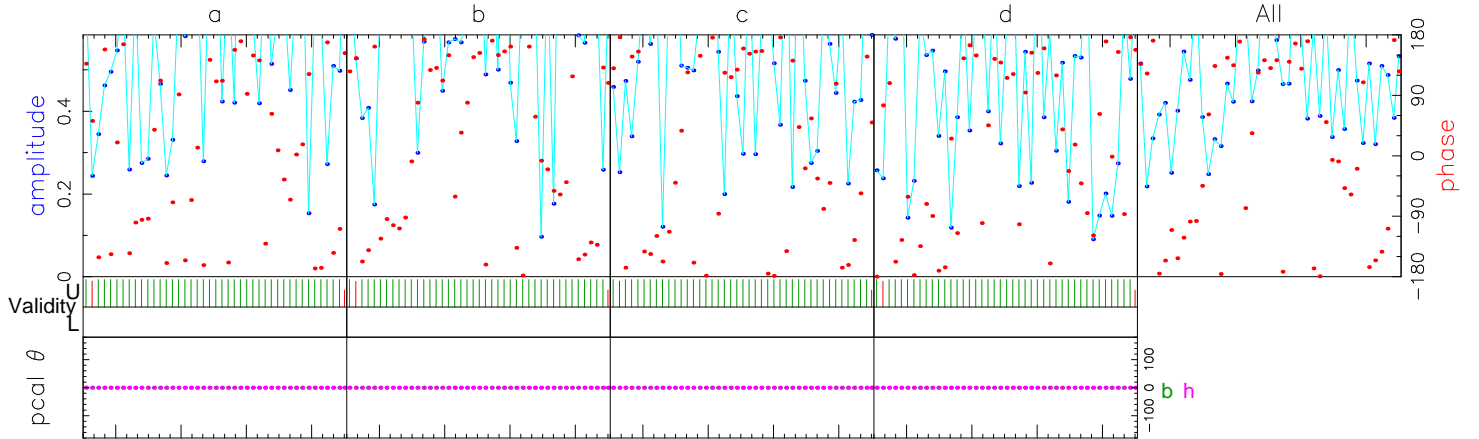
01h08m38.771111s

+01°35'00.317183"

All



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 164.2    | -174.8   | -178.1   | 175.0    | Phase      | 178.2 |
| b   | 0.1      | 0.2      | 0.2      | 0.2      | Ampl.      | 0.2   |
| h   | 107.3    | 513.9    | 513.9    | 513.3    | Sbd box    | 513.8 |
| b:h | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| b:h | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:h | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:h | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| h   | 1000     | 1000     | 1000     | 1000     |            |       |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.62572070722E+03 | Apriori delay (usec)     | 5.62571892385E+03  | Resid mbdelay (usec) | 1.78336E-03  | +/- | 1.3E-04 |
| Sband delay (usec)      | 5.62572040635E+03 | Apriori clock (usec)     | -5.7468109E+00     | Resid sbdelay (usec) | 1.48250E-03  | +/- | 5.2E-04 |
| Phase delay (usec)      | 5.62571893536E+03 | Apriori clockrate (us/s) | -2.2999999E-07     | Resid phdelay (usec) | 1.15023E-05  | +/- | 9.0E-07 |
| Delay rate (us/s)       | 7.84135696486E-01 | Apriori rate (us/s)      | 7.84135833841E-01  | Resid rate (us/s)    | -1.37355E-07 | +/- | 6.5E-09 |
| Total phase (deg)       | 352.0             | Apriori accel (us/s/s)   | -2.97326864289E-05 | Resid phase (deg)    | 178.2        | +/- | 13.9    |

|              |       |        |                  |                 |  |                       |                   |                  |       |
|--------------|-------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|
|              | RMS   | Theor. | Amplitude        | 0.195 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |
| ph/seg (deg) | 78.4  | 45.5   | Search (1024X16) | 0.192           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |
| amp/seg (%)  | 161.1 | 79.5   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |
| ph/frq (deg) | 11.6  | 13.9   | Inc. seg. avg.   | 0.362           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |
| amp/frq (%)  | 21.2  | 24.2   | Inc. frq. avg.   | 0.190           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  |

b: az 192.3 el 42.9 pa 8.1 h: az 247.1 el 25.0 pa 42.6 u,v (fr/asec) -2257.439 246.265 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bh..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bh.Q.56.1V25LX



Mk4/DiFX fourfit 3.21 rev 2937

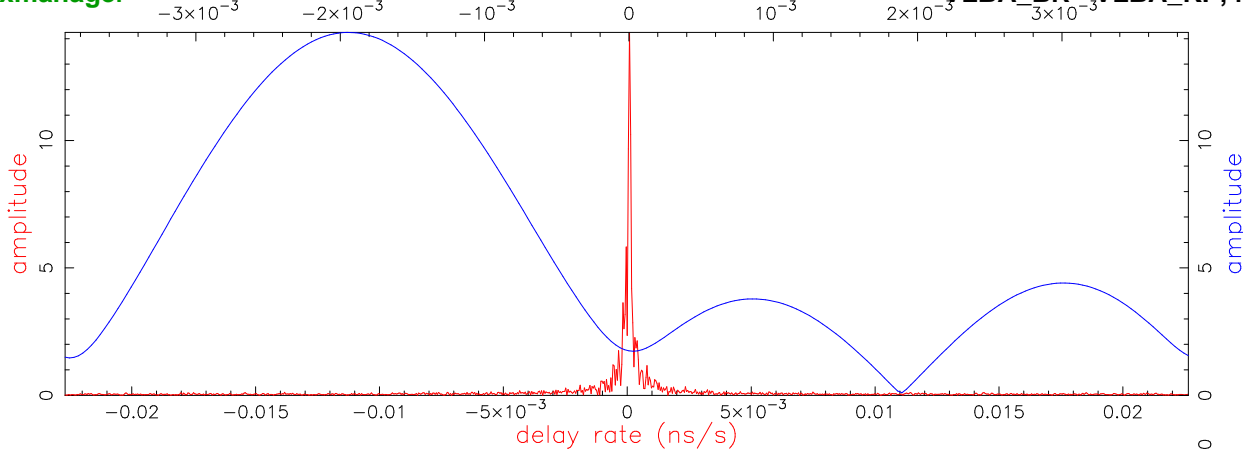
fxmanager

0106+013.1V25LX, No0082, bk

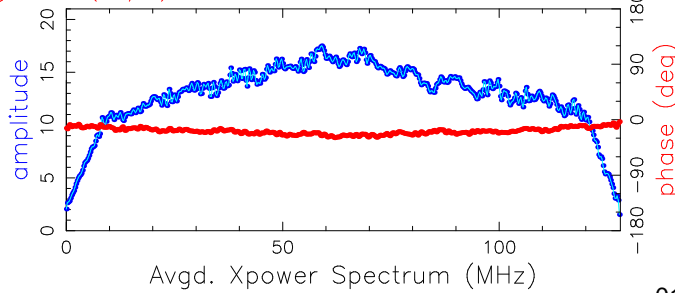
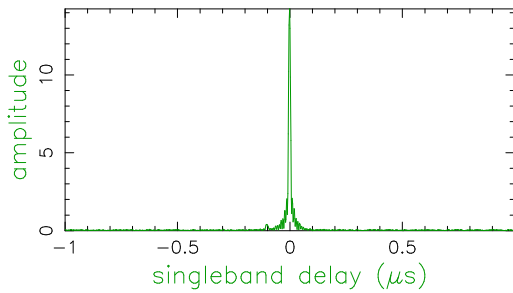
VLBA\_BR - VLBA\_KP, fgroup Q, pol LL

multiband delay ( $\mu$ s)

Fringe quality 6

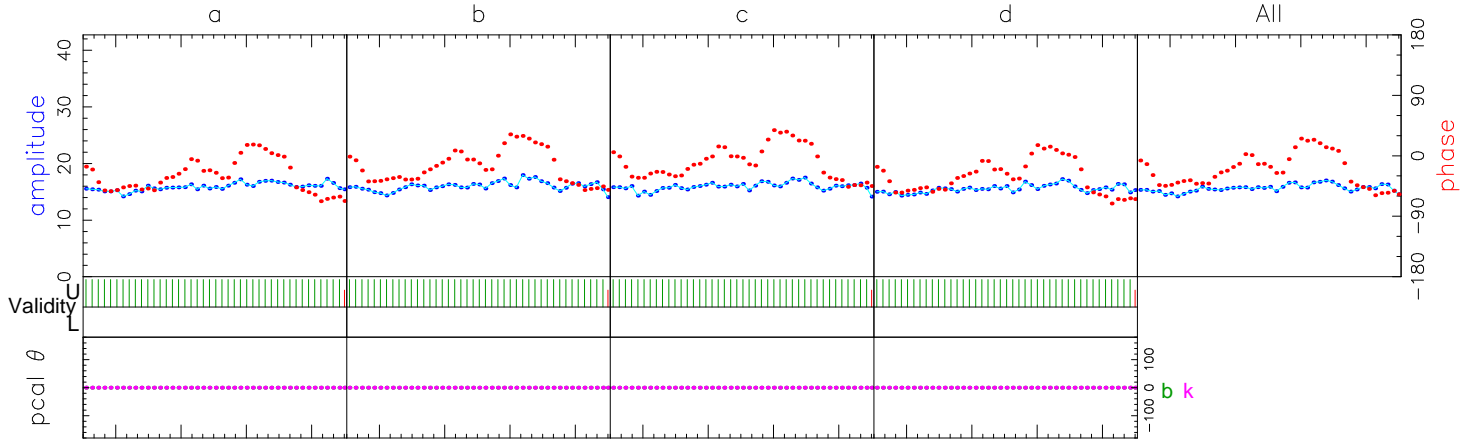


SNR 603.5  
Int time 239.982  
Amp 14.246  
Phase -21.5  
PFD 0.0e+00  
Delays (us)  
SBD -0.002044  
MBD -0.001948  
Fringe rate (Hz)  
0.002893  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132934  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -21.5 |
| b   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 14.4  |
| k   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.0 |
| b:k | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| b:k | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| k   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| b   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |  |                       |                      |                            |
|-------------------------|--------------------|--------------------------|--------------------|--|-----------------------|----------------------|----------------------------|
| Group delay (usec)(sbd) | -3.06125136813E+03 | Apriori delay (usec)     | -3.06124941971E+03 | Resid mbdelay (usec)                   | -1.94842E-03          | +/-                  | 1.8E-06                    |
| Sband delay (usec)      | -3.06125146333E+03 | Apriori clock (usec)     | -3.2878304E+00     | Resid sbdelay (usec)                   | -2.04363E-03          | +/-                  | 7.1E-06                    |
| Phase delay (usec)      | -3.06124942110E+03 | Apriori clockrate (us/s) | -9.9999998E-08     | Resid phdelay (usec)                   | -1.38844E-06          | +/-                  | 1.2E-08                    |
| Delay rate (us/s)       | 2.26858149932E-01  | Apriori rate (us/s)      | 2.26858082725E-01  | Resid rate (us/s)                      | 6.72067E-08           | +/-                  | 8.8E-11                    |
| Total phase (deg)       | -30.2              | Apriori accel (us/s/s)   | 1.69784480519E-05  | Resid phase (deg)                      | -21.5                 | +/-                  | 0.2                        |
| RMS                     | 24.4               | Theor.                   | 14.246 +/- 0.024   | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| ph/seg (deg)            | 24.4               | Search (1024X16)         | 13.170             | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| amp/seg (%)             | 10.8               | Interp.                  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| ph/frq (deg)            | 13.1               | Inc. seg. avg.           | 15.643             | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)     | -0.023 0.023               |
| amp/frq (%)             | 1.9                | Inc. frq. avg.           | 14.432             | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

b: az 192.3 el 42.9 pa 8.1

k: az 211.3 el 55.7 pa 26.6

u,v (fr/asec) -642.697 972.312

simultaneous interpolator

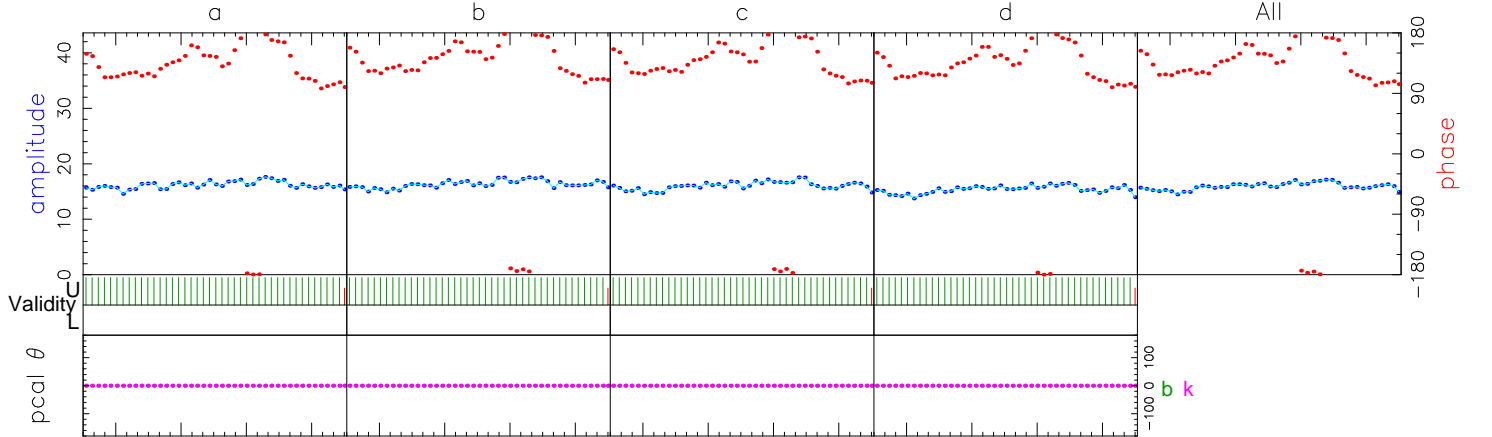
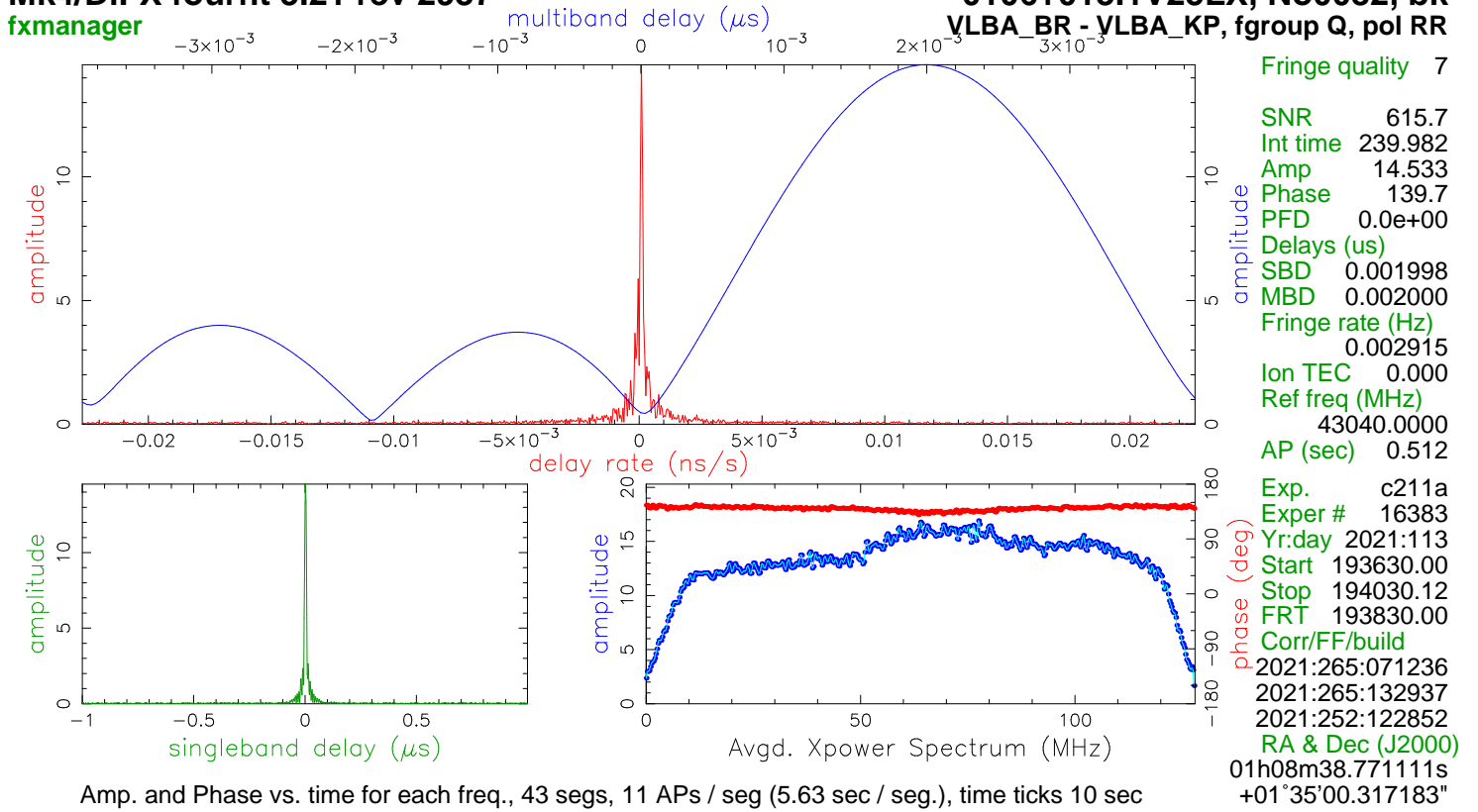
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bk.Q.18.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bk

VLBA\_BR - VLBA\_KP, fgroup Q, pol RR



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 136.2    | 144.0    | 141.9    | 136.5    | Phase      | 139.7 |
| b   | 14.7     | 14.9     | 14.6     | 14.0     | Ampl.      | 14.6  |
| k   | 514.0    | 514.1    | 513.8    | 514.1    | Sbd box    | 514.0 |
| b:k | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| b:k | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:k | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| k   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |

|                         |                    |                          |                    |                      |             |             |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|-------------|-------------|
| Group delay (usec)(sbd) | -3.06124741922E+03 | Apriori delay (usec)     | -3.06124941971E+03 | Resid mbdelay (usec) | 2.00049E-03 | +/- 1.8E-06 |
| Sband delay (usec)      | -3.06124742171E+03 | Apriori clock (usec)     | -3.2878304E+00     | Resid sbdelay (usec) | 1.99800E-03 | +/- 7.0E-06 |
| Phase delay (usec)      | -3.06124941069E+03 | Apriori clockrate (us/s) | -9.9999998E-08     | Resid phdelay (usec) | 9.01659E-06 | +/- 1.2E-08 |
| Delay rate (us/s)       | 2.26858150453E-01  | Apriori rate (us/s)      | 2.26858082725E-01  | Resid rate (us/s)    | 6.77286E-08 | +/- 8.7E-11 |
| Total phase (deg)       | 131.0              | Apriori accel (us/s/s)   | 1.69784480519E-05  | Resid phase (deg)    | 139.7       | +/- 0.2     |

|              |          |            |                            |  |                               |
|--------------|----------|------------|----------------------------|--|-------------------------------|
| ph/seg (deg) | RMS 24.4 | Theor. 0.6 | Amplitude 14.533 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 10.7     | 1.1        | Search (1024X16) 0.000     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 4.8      | 0.2        | Interp. 15.955             | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 2.4      | 0.3        | Inc. seg. avg. 14.559      | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023 |
|              |          |            | Inc. frq. avg. 14.559      | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

b: az 192.3 el 42.9 pa 8.1 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) -642.697 972.312 simultaneous interpolator

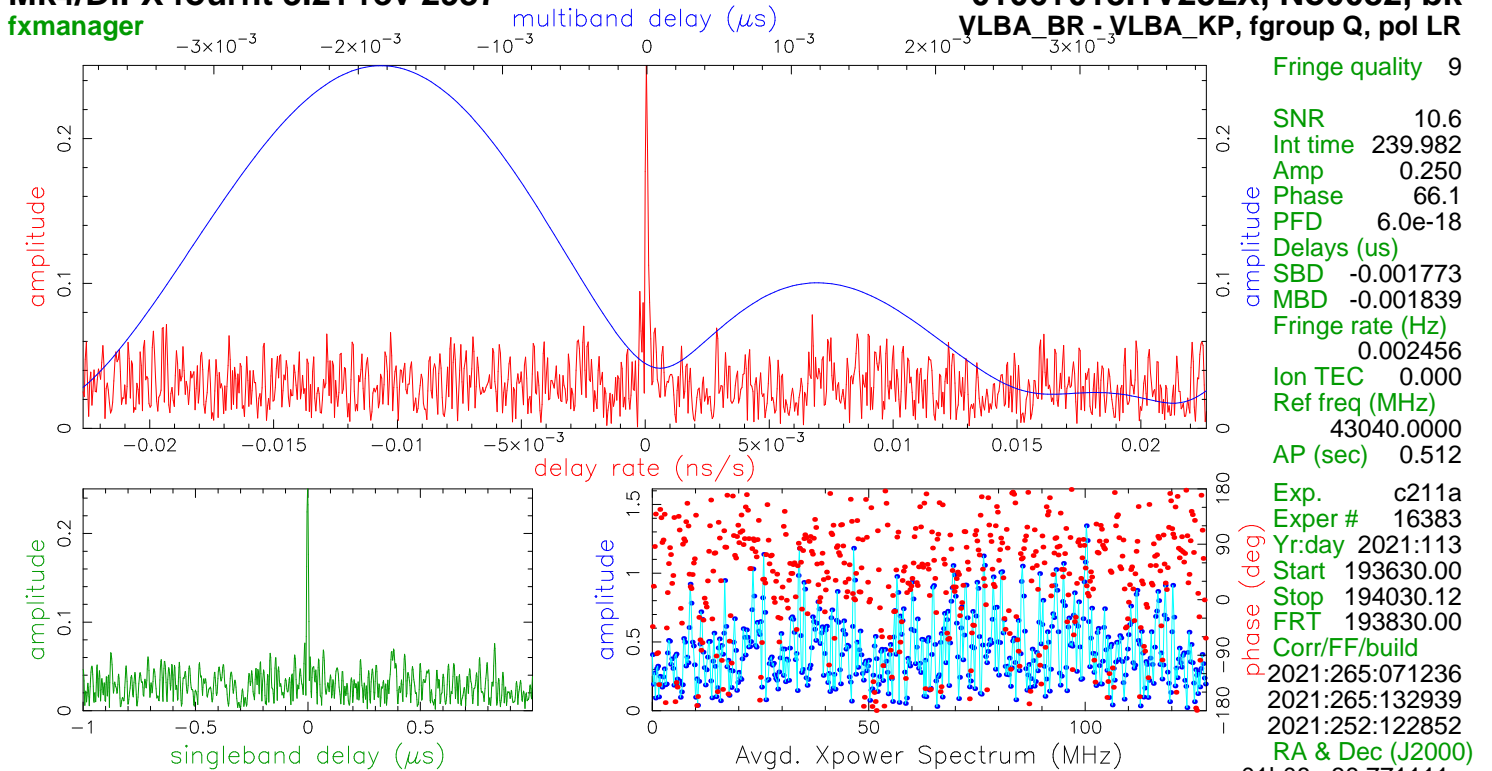
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bk.Q.41.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

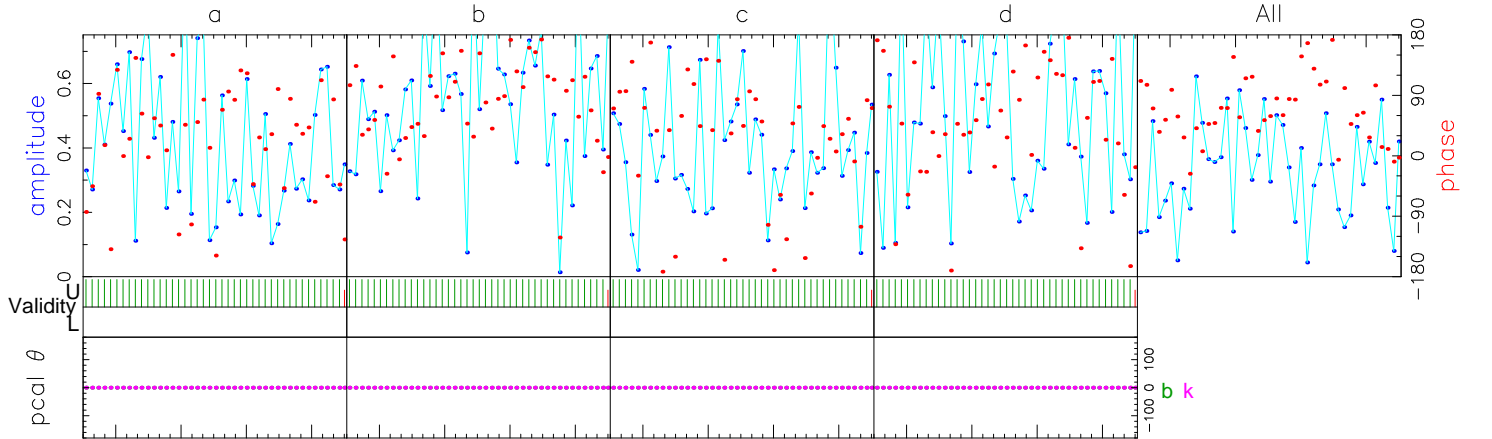
fxmanager

0106+013.1V25LX, No0082, bk

VLBA\_BR - VLBA\_KP, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



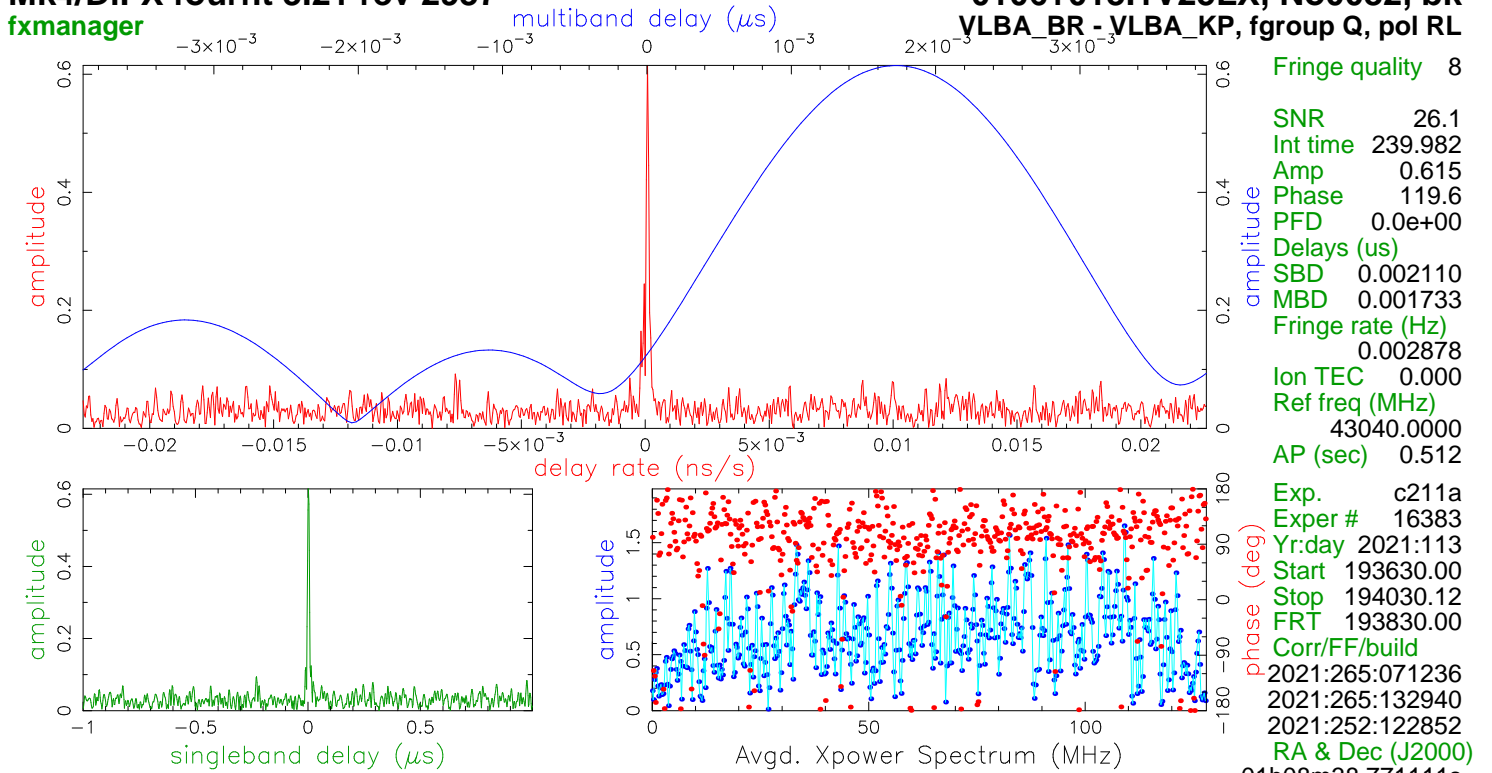
|                               |  |   |                    |  |                       |                   |                  |                           |
|-------------------------------|--|---|--------------------|--|-----------------------|-------------------|------------------|---------------------------|
| 42912.00                      | 43040.00   | 43168.00  | 43296.00           | Freq (MHz)                             | All                   |                   |                  |                           |
| 48.1                          | 81.9   | 64.8  | 59.5               | Phase                                  | 66.1                  |                   |                  |                           |
| 0.2                           | 0.4  | 0.2   | 0.3                | Ampl.                                  | 0.3                   |                   |                  |                           |
| 512.8                         | 512.3  | 511.7   | 511.4              | Sbd box                                | 512.1                 |                   |                  |                           |
| U/L 469/0                     | 469/0  | 469/0   | 469/0              | APs used                               |                       |                   |                  |                           |
| b 1000                        | 1000   | 1000  | 1000               | PC freqs                               |                       |                   |                  |                           |
| k 1000                        | 1000   | 1000  | 1000               | PC freqs                               |                       |                   |                  |                           |
| b:k 0:0                       | 0:0  | 0:0   | 0:0                | PC phase                               |                       |                   |                  |                           |
| b:k 0:0                       | 0:0  | 0:0   | 0:0                | Manl PC                                |                       |                   |                  |                           |
| b 1000                        | 1000   | 1000  | 1000               | PC amp                                 |                       |                   |                  |                           |
| k 1000                        | 1000   | 1000  | 1000               |  |                       |                   |                  |                           |
| b Q00UL                       | Q01UL  | Q02UL   | Q03UL              | Chan ids                               |                       |                   |                  |                           |
|                               |  |   |                    | Tracks                                 |                       |                   |                  |                           |
| k Q00UR                       | Q01UR  | Q02UR   | Q03UR              | Chan ids                               |                       |                   |                  |                           |
|                               |  |   |                    | Tracks                                 |                       |                   |                  |                           |
| Group delay (usec)(sbd)       | -3.06125125846E+03                                       | Apriori delay (usec)  | -3.06124941971E+03 | Resid mbdelay (usec)                   | -1.83876E-03          | +/- 1.0E-04       |                  |                           |
| Sband delay (usec)            | -3.06125119233E+03                                       | Apriori clock (usec)  | -3.2878304E+00     | Resid sbdelay (usec)                   | -1.77263E-03          | +/- 4.1E-04       |                  |                           |
| Phase delay (usec)            | -3.06124941544E+03                                       | Apriori clockrate (us/s)                                      | -9.9999998E-08     | Resid phdelay (usec)                   | 4.26431E-06           | +/- 7.0E-07       |                  |                           |
| Delay rate (us/s)             | 2.26858139778E-01  | Apriori rate (us/s)   | 2.26858082725E-01  | Resid rate (us/s)                      | 5.70531E-08           | +/- 5.0E-09       |                  |                           |
| Total phase (deg)             | 57.4   | Apriori accel (us/s/s)  | 1.69784480519E-05  | Resid phase (deg)                      | 66.1                  | +/- 10.8          |                  |                           |
| RMS                           | Theor.   | Amplitude   | 0.250 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |                           |
| ph/seg (deg)                  | 47.1   | Search (1024X16)  | 0.243              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |                           |
| amp/seg (%)                   | 68.1   | Interp.   | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |                           |
| ph/frq (deg)                  | 17.6   | Inc. seg. avg.  | 0.277              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023     |                           |
| amp/frq (%)                   | 23.7   | Inc. frq. avg.  | 0.252              | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| b: az 192.3 el 42.9 pa 8.1    | k: az 211.3 el 55.7 pa 26.6                              | u,v (fr/asec)   | -642.697 972.312   |  |                       |                   |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bk..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bk.Q.58.1V25LX |                    |  |                       |                   |                  |                           |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bk

VLBA\_BR - VLBA\_KP, fgroup Q, pol RL



Fringe quality 8

SNR 26.1

Int time 239.982

Amp 0.615

Phase 119.6

PFD 0.0e+00

Delays (us)

SBD 0.002110

MBD 0.001733

Fringe rate (Hz)

0.002878

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132940

2021:252:122852

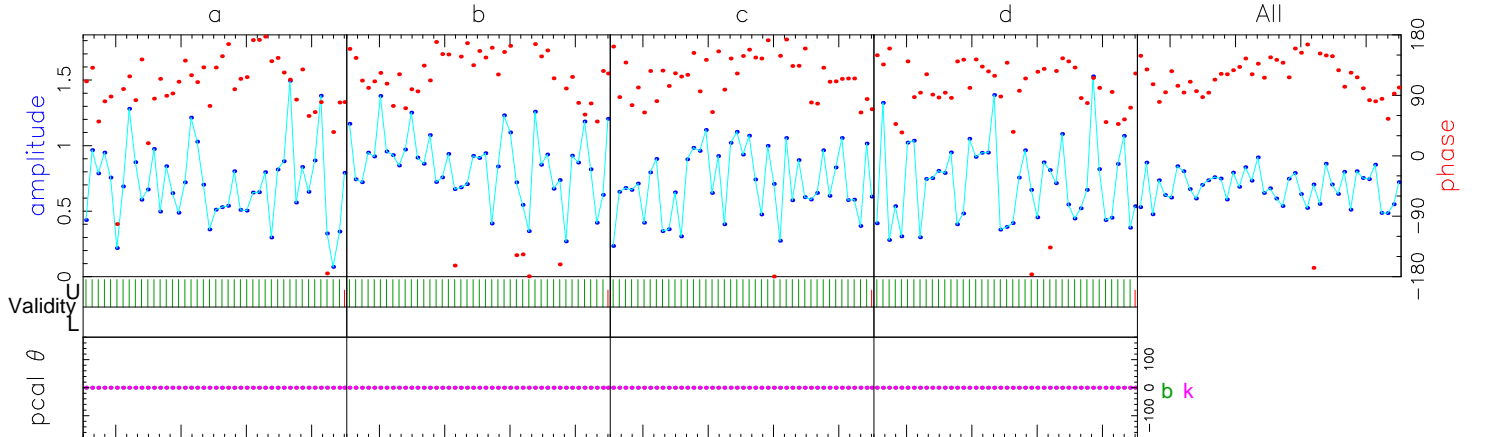
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 109.7    | 131.0    | 124.0    | 111.6    | Phase      | 119.6 |
| b   | 0.6      | 0.7      | 0.6      | 0.6      | Ampl.      | 0.6   |
| k   | 514.3    | 514.0    | 513.8    | 514.2    | Sbd box    | 514.1 |
| b:k | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| b:k | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:k | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:k | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| k   | 1000     | 1000     | 1000     | 1000     |            |       |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |

|                         |                    |                          |                    |                      |             |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|-------------|-----|---------|
| Group delay (usec)(sbd) | -3.06124768650E+03 | Apriori delay (usec)     | -3.06124941971E+03 | Resid mbdelay (usec) | 1.73321E-03 | +/- | 4.3E-05 |
| Sband delay (usec)      | -3.06124731008E+03 | Apriori clock (usec)     | -3.2878304E+00     | Resid sbdelay (usec) | 2.10962E-03 | +/- | 1.7E-04 |
| Phase delay (usec)      | -3.06124941199E+03 | Apriori clockrate (us/s) | -9.9999998E-08     | Resid phdelay (usec) | 7.71911E-06 | +/- | 2.8E-07 |
| Delay rate (us/s)       | 2.26858149597E-01  | Apriori rate (us/s)      | 2.26858082725E-01  | Resid rate (us/s)    | 6.68721E-08 | +/- | 2.0E-09 |
| Total phase (deg)       | 110.9              | Apriori accel (us/s/s)   | 1.69784480519E-05  | Resid phase (deg)    | 119.6       | +/- | 4.4     |

|              |      |        |                  |                 |  |  |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|--|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 0.615 +/- 0.024 | Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5    |  |                  |        |       |
| ph/seg (deg) | 27.6 | 14.4   | Search (1024X16) | 0.555           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)             |  | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 22.4 | 25.2   | Interp.          | 0.000           | Bits/sample: 2x2 SampCntNorm: enabled              |  | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 12.5 | 4.4    | Inc. seg. avg.   | 0.666           | Sample rate(MSamp/s): 256                          |  | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 6.9  | 7.7    | Inc. frq. avg.   | 0.620           | Data rate(Mb/s): 2048 nlags: 512 t_cohere infinite |  | ion window (TEC) | 0.00   | 0.00  |

b: az 192.3 el 42.9 pa 8.1 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) -642.697 972.312 simultaneous interpolator

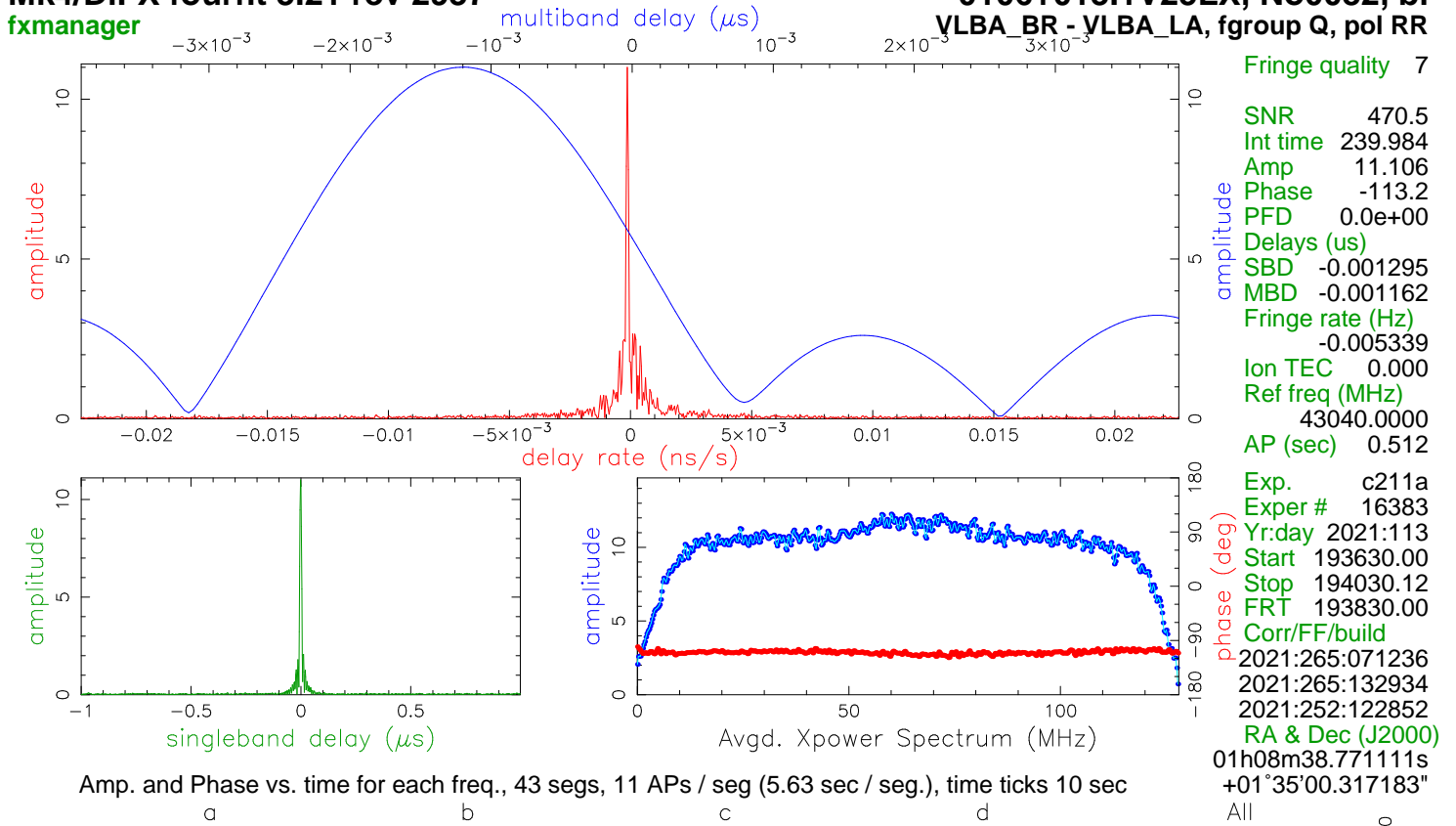
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bk.Q.73.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

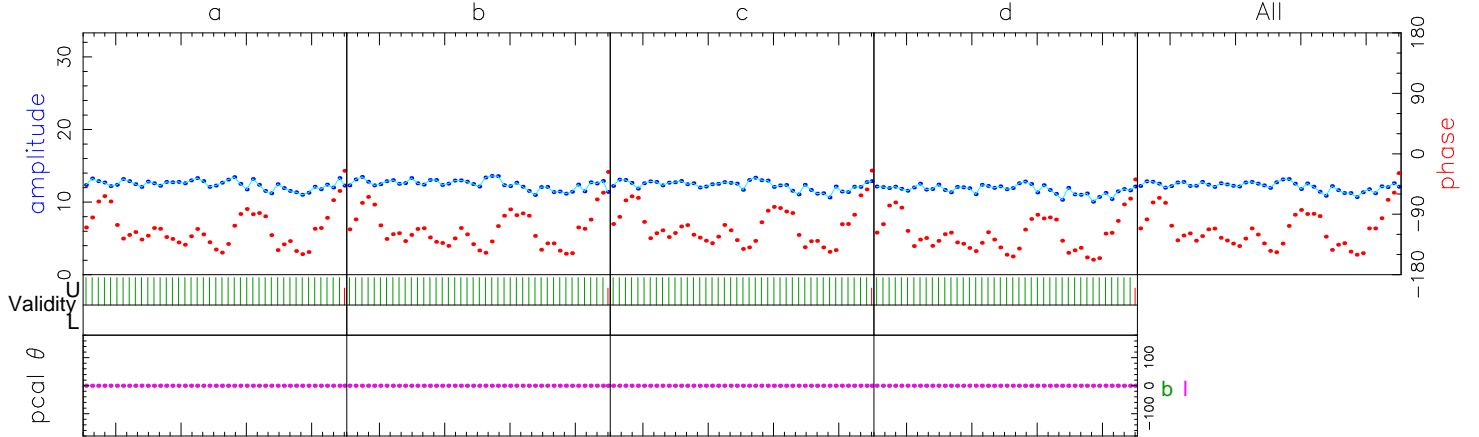
fxmanager

0106+013.1V25LX, No0082, bl

VLBA\_BR - VLBA\_LA, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -112.0   | -113.0   | -108.4   | -119.8   | Phase      | -113.2 |
|     | 11.2     | 11.3     | 11.1     | 10.6     | Ampl.      | 11.0   |
|     | 512.5    | 512.4    | 512.3    | 512.1    | Sbd box    | 512.3  |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| b   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| l   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| b:l | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| b:l | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| b   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| l   | 1000     | 1000     | 1000     | 1000     |            |        |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                               |                    |                           |                    |  |                                 |                  |              |
|-------------------------------|--------------------|---------------------------|--------------------|--|---------------------------------|------------------|--------------|
| Group delay (usec)(sbd)       | -1.78096869907E+03 | Apriori delay (usec)      | -1.78096753743E+03 | Resid mbdelay (usec)                   | -1.16164E-03                    | +/-              | 2.4E-06      |
| Sband delay (usec)            | -1.78096883293E+03 | Apriori clock (usec)      | -3.8887405E-01     | Resid sbdelay (usec)                   | -1.29550E-03                    | +/-              | 9.2E-06      |
| Phase delay (usec)            | -1.78096754474E+03 | Apriori clockrate (us/s)  | 1.8600001E-07      | Resid phdelay (usec)                   | -7.30736E-06                    | +/-              | 1.6E-08      |
| Delay rate (us/s)             | 3.20085486263E-01  | Apriori rate (us/s)       | 3.20085610307E-01  | Resid rate (us/s)                      | -1.24044E-07                    | +/-              | 1.1E-10      |
| Total phase (deg)             | -45.2              | Apriori accel (us/s/s)    | 1.00016366280E-05  | Resid phase (deg)                      | -113.2                          | +/-              | 0.2          |
| RMS                           | 26.2               | Theor.                    | 11.106 +/- 0.024   | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5           |                  |              |
| ph/seg (deg)                  | 26.2               | Amplitude                 | 11.106 +/- 0.024   | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)                  | -1.000           | 1.000        |
| amp/seg (%)                   | 11.1               | Search (1024X16)          | 10.649             | Bits/sample: 2x2                       | SampCntNorm: enabled            | mb window (us)   | -0.004 0.004 |
| ph/frq (deg)                  | 5.8                | Interp.                   | 0.000              | Sample rate(MSamp/s): 256              | dr window (ns/s)                | -0.023           | 0.023        |
| amp/frq (%)                   | 2.6                | Inc. seg. avg.            | 12.196             | Data rate(Mb/s): 2048                  | nlags: 512 t_coherence infinite | ion window (TEC) | 0.00 0.00    |
|                               |                    | Inc. frq. avg.            | 11.026             |  |                                 |                  |              |
| b: az 192.3 el 42.9 pa 8.1    |                    | u,v (fr/asec)             | -912.393 719.387   |  |                                 |                  |              |
| Control file: cf_1234_gmva7mm |                    | simultaneous interpolator |                    |  |                                 |                  |              |

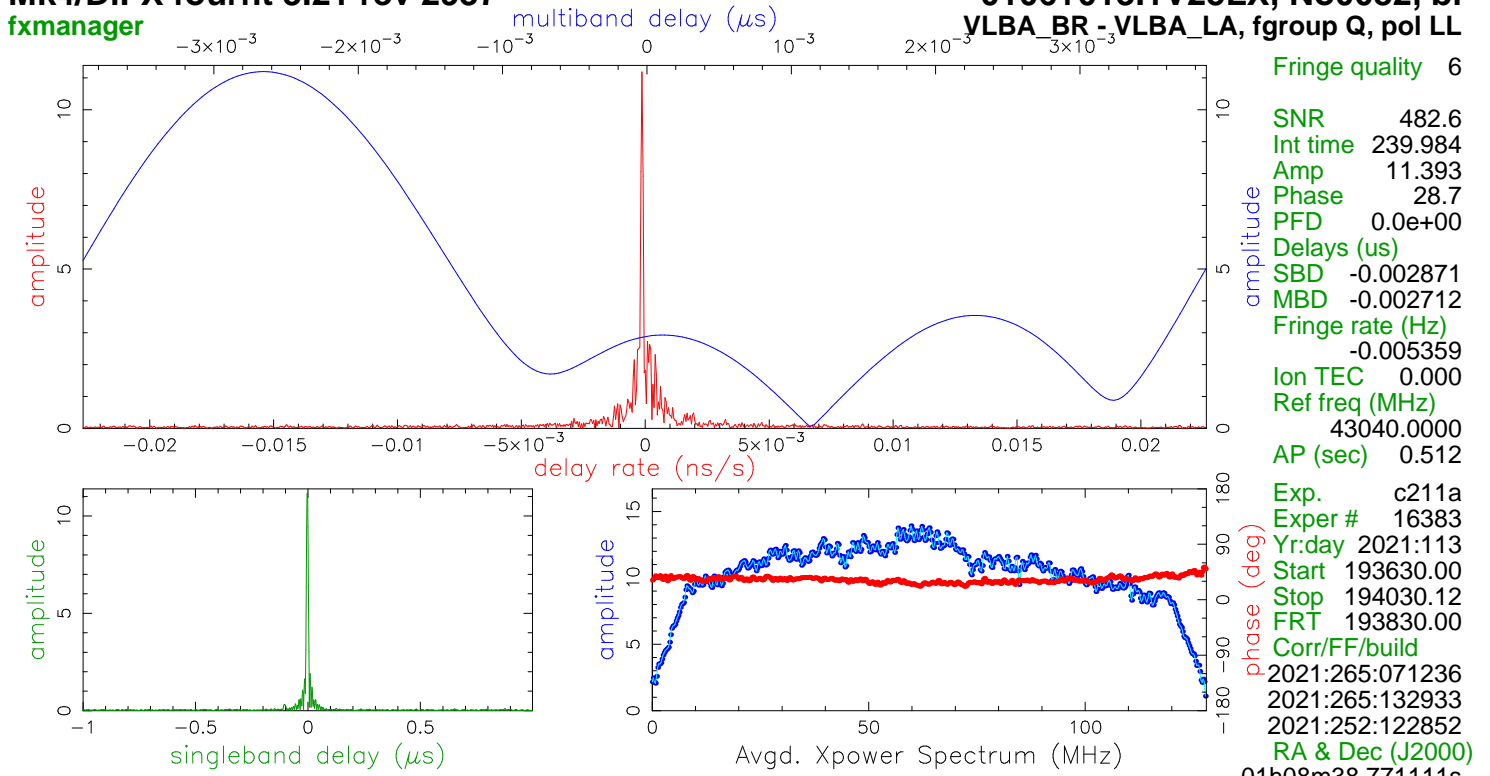
Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bl.Q.17.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

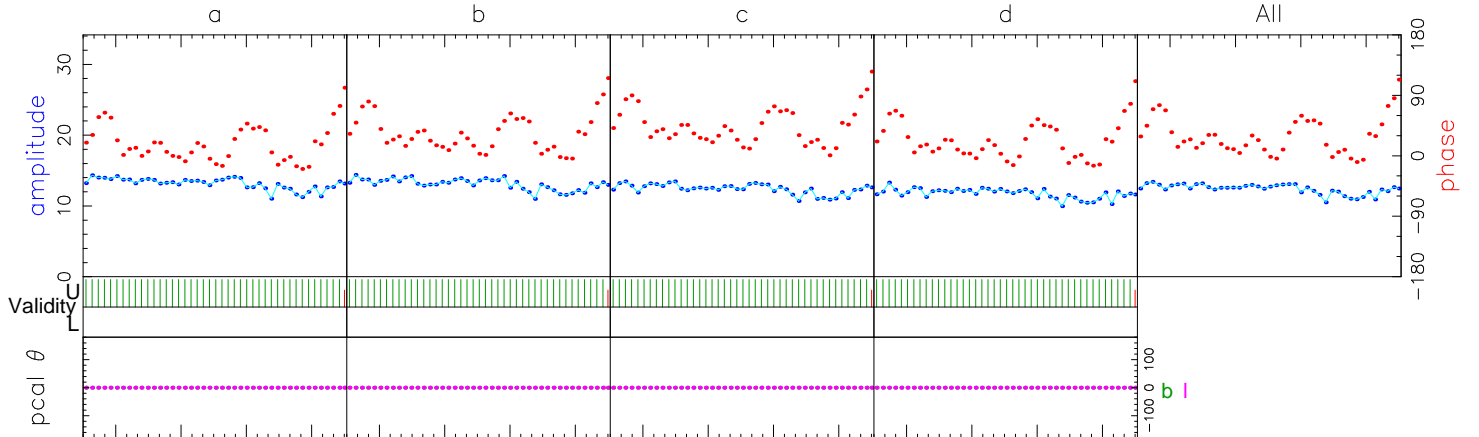
fxmanager

0106+013.1V25LX, No0082, bl

VLBA\_BR - VLBA\_LA, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|   |          |                    |                          |                    |                           |  |                       |                      |                   |                  |       |      |
|---|----------|--------------------|--------------------------|--------------------|---------------------------|--|-----------------------|----------------------|-------------------|------------------|-------|------|
| U/L   | 42912.00 | 43040.00           | 43168.00                 | 43296.00           | Freq (MHz)                | All                                    |                       |                      |                   |                  |       |      |
|   | 17.4     | 32.8               | 43.6                     | 21.3               | Phase                     | 28.7                                   |                       |                      |                   |                  |       |      |
|   | 11.9     | 11.8               | 11.2                     | 10.6               | Ampl.                     | 11.4                                   |                       |                      |                   |                  |       |      |
|   | 512.1    | 511.7              | 511.3                    | 511.0              | Sbd box                   | 511.5                                  |                       |                      |                   |                  |       |      |
|   | 469/0    | 469/0              | 469/0                    | 469/0              | APs used                  |  |                       |                      |                   |                  |       |      |
|   | b 1000   | 1000               | 1000                     | 1000               | PC freqs                  |  |                       |                      |                   |                  |       |      |
|   | l 1000   | 1000               | 1000                     | 1000               | PC freqs                  |  |                       |                      |                   |                  |       |      |
|   | b:l 0:0  | 0:0                | 0:0                      | 0:0                | PC phase                  |  |                       |                      |                   |                  |       |      |
|   | b:l 0:0  | 0:0                | 0:0                      | 0:0                | Manl PC                   |  |                       |                      |                   |                  |       |      |
|   | b 1000   | 1000               | 1000                     | 1000               | PC amp                    |  |                       |                      |                   |                  |       |      |
| l 1000  | 1000     | 1000               | 1000                     |                    |                           |  |                       |                      |                   |                  |       |      |
| b   | Q00UL    | Q01UL              | Q02UL                    | Q03UL              | Chan ids                  |  |                       |                      |                   |                  |       |      |
| l   | Q00UL    | Q01UL              | Q02UL                    | Q03UL              | Tracks                    |  |                       |                      |                   |                  |       |      |
|   |          |                    |                          |                    | Chan ids                  |  |                       |                      |                   |                  |       |      |
|   |          |                    |                          |                    | Tracks                    |  |                       |                      |                   |                  |       |      |
| Group delay (usec)(sbd)   |          | -1.78097024932E+03 | Apriori delay (usec)     | -1.78096753743E+03 | Resid mbdelay (usec)      | -2.71189E-03                           | +/-                   | 2.3E-06              |                   |                  |       |      |
| Sband delay (usec)  |          | -1.78097040880E+03 | Apriori clock (usec)     | -3.8887405E-01     | Resid sbdelay (usec)      | -2.87138E-03                           | +/-                   | 8.9E-06              |                   |                  |       |      |
| Phase delay (usec)  |          | -1.78096753557E+03 | Apriori clockrate (us/s) | 1.8600001E-07      | Resid phdelay (usec)      | 1.85375E-06                            | +/-                   | 1.5E-08              |                   |                  |       |      |
| Delay rate (us/s)   |          | 3.20085485803E-01  | Apriori rate (us/s)      | 3.20085610307E-01  | Resid rate (us/s)         | -1.24504E-07                           | +/-                   | 1.1E-10              |                   |                  |       |      |
| Total phase (deg)   |          | -263.2             | Apriori accel (us/s/s)   | 1.00016366280E-05  | Resid phase (deg)         | 28.7                                   | +/-                   | 0.2                  |                   |                  |       |      |
| RMS   |          | Theor.             | Amplitude                | 11.393 +/- 0.024   | Pcal mode: MANUAL, MANUAL |  | PC period (AP's) 5, 5 |                      |                   |                  |       |      |
| ph/seg (deg)  |          | 26.2               | 0.8                      | Search (1024X16)   | 10.869                    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                       | sb window (us)       | -1.000            | 1.000            |       |      |
| amp/seg (%)   |          | 10.8               | 1.4                      | Interp.            | 0.000                     | Bits/sample: 2x2                       |                       | SampCntNorm: enabled | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg)  |          | 14.5               | 0.2                      | Inc. seg. avg.     | 12.408                    | Sample rate(MSamp/s): 256              |                       |                      | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)   |          | 4.6                | 0.4                      | Inc. frq. avg.     | 11.366                    | Data rate(Mb/s): 2048                  |                       | nlags: 512           | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |
| b: az 192.3 el 42.9 pa 8.1 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) -912.393 719.387 simultaneous interpolator                                     |          |                    |                          |                    |                           |  |                       |                      |                   |                  |       |      |
| Control file: cf_1234_gmva7mm Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bl..1V25LX Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bl.Q.2.1V25LX |          |                    |                          |                    |                           |  |                       |                      |                   |                  |       |      |

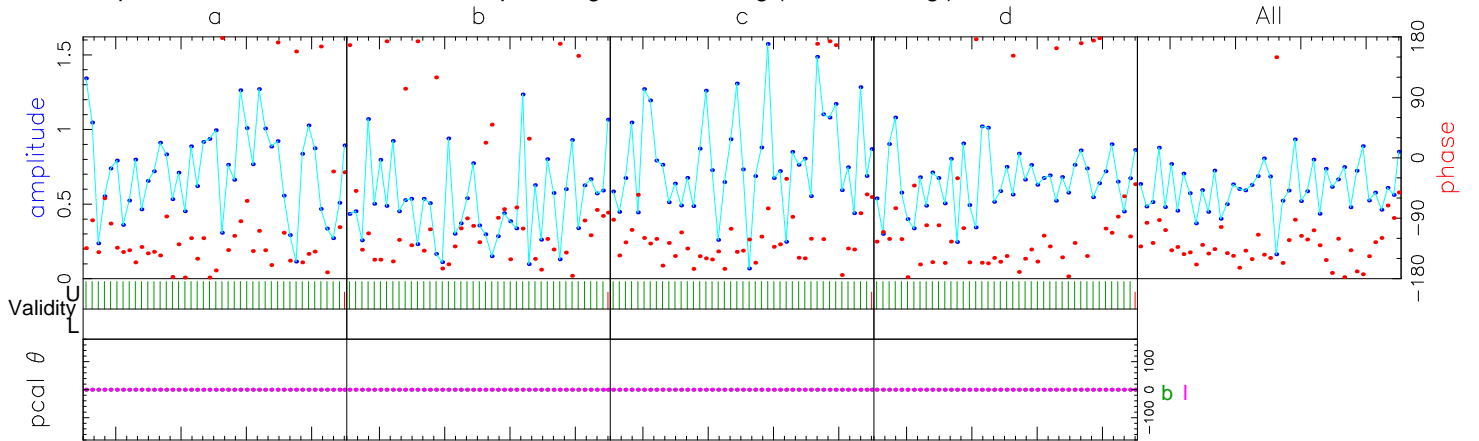
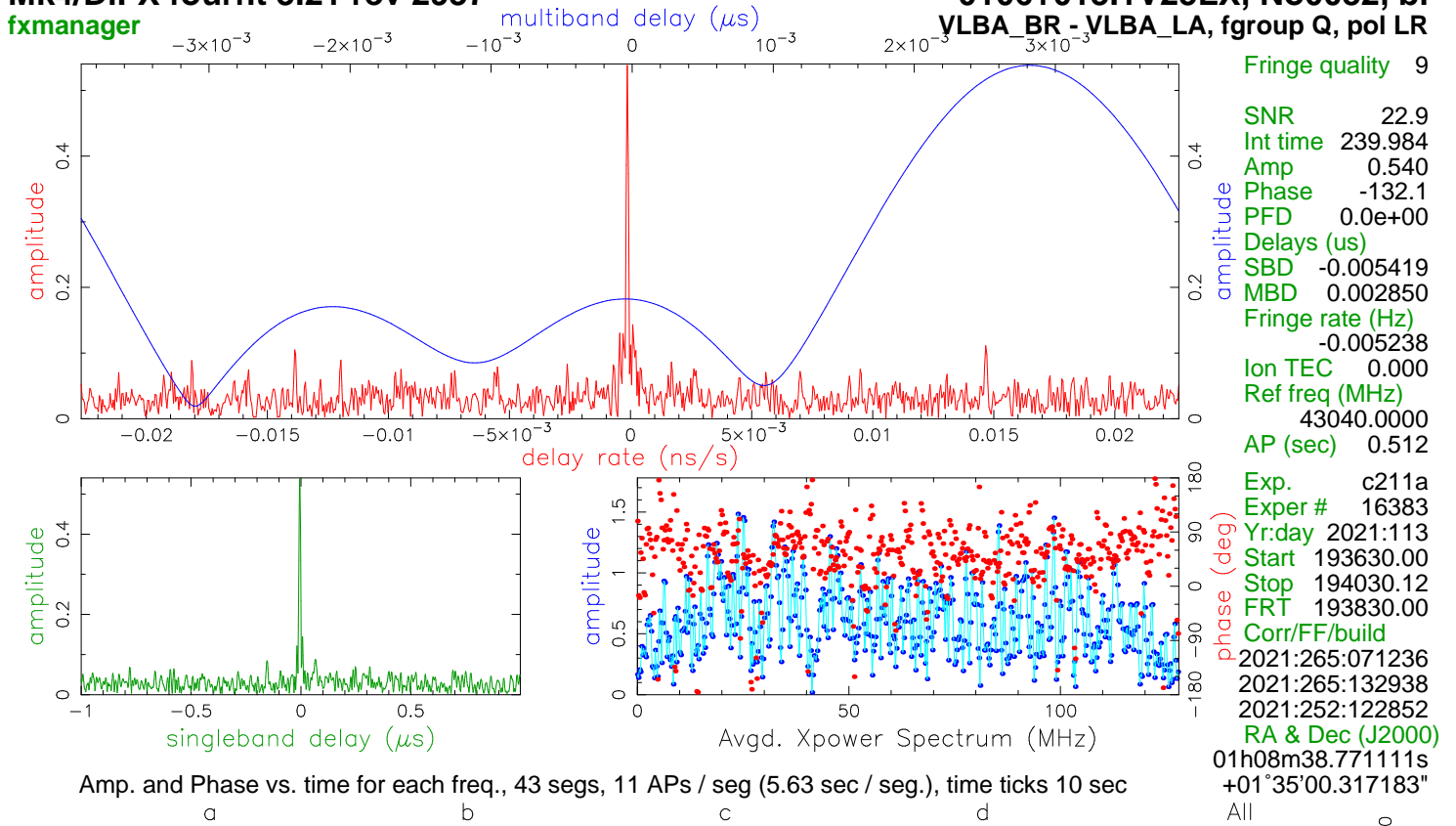


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bl

VLBA\_BR - VLBA\_LA, fgroup Q, pol LR



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----------|----------|----------|----------|------------|--------|
| -132.2    | -127.8   | -130.8   | -136.7   | Phase      | -132.1 |
| 0.6       | 0.4      | 0.7      | 0.5      | Ampl.      | 0.5    |
| 510.0     | 510.6    | 510.4    | 509.8    | Sbd box    | 510.2  |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |        |
| b 1000    | 1000     | 1000     | 1000     | PC freqs   |        |
| l 1000    | 1000     | 1000     | 1000     | PC phase   |        |
| b:l 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| b:l 0:0   | 0:0      | 0:0      | 0:0      | PC amp     |        |
| b 1000    | 1000     | 1000     | 1000     |            |        |
| l 1000    | 1000     | 1000     | 1000     |            |        |
| b Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| l Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |
|           |          |          |          | Chan ids   |        |
|           |          |          |          | Tracks     |        |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.78097250041E+03 | Apriori delay (usec)     | -1.78096753743E+03 | Resid mbdelay (usec) | 2.84952E-03  | +/- | 4.9E-05 |
| Sband delay (usec)      | -1.78097295680E+03 | Apriori clock (usec)     | -3.8887405E-01     | Resid sbdelay (usec) | -5.41937E-03 | +/- | 1.9E-04 |
| Phase delay (usec)      | -1.78096754595E+03 | Apriori clockrate (us/s) | 1.8600001E-07      | Resid phdelay (usec) | -8.52607E-06 | +/- | 3.2E-07 |
| Delay rate (us/s)       | 3.20085488605E-01  | Apriori rate (us/s)      | 3.20085610307E-01  | Resid rate (us/s)    | -1.21702E-07 | +/- | 2.3E-09 |
| Total phase (deg)       | -64.0              | Apriori accel (us/s/s)   | 1.00016366280E-05  | Resid phase (deg)    | -132.1       | +/- | 5.0     |

|              |      |                  |       |                  |                 |  |                       |
|--------------|------|------------------|-------|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | 28.4 | Theor.           | 16.4  | Amplitude        | 0.540 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 30.6 | Search (1024X16) | 0.525 | Search (1024X16) | 0.525           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 4.6  | Interp.          | 0.000 | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 18.9 | Inc. seg. avg.   | 0.582 | Inc. seg. avg.   | 0.582           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      | Inc. frq. avg.   | 0.537 | Inc. frq. avg.   | 0.537           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

b: az 192.3 el 42.9 pa 8.1 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) -912.393 719.387 simultaneous interpolator

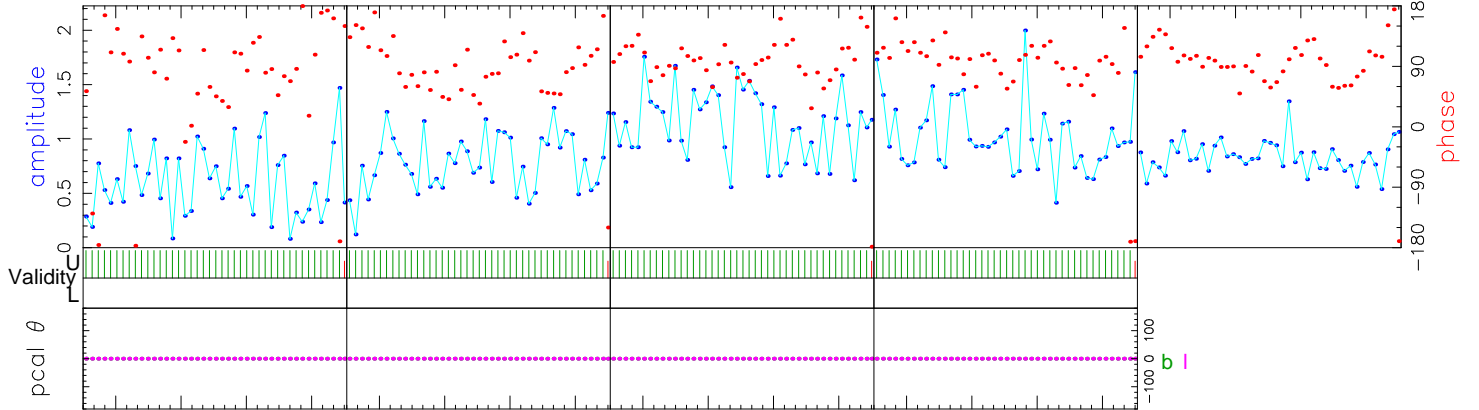
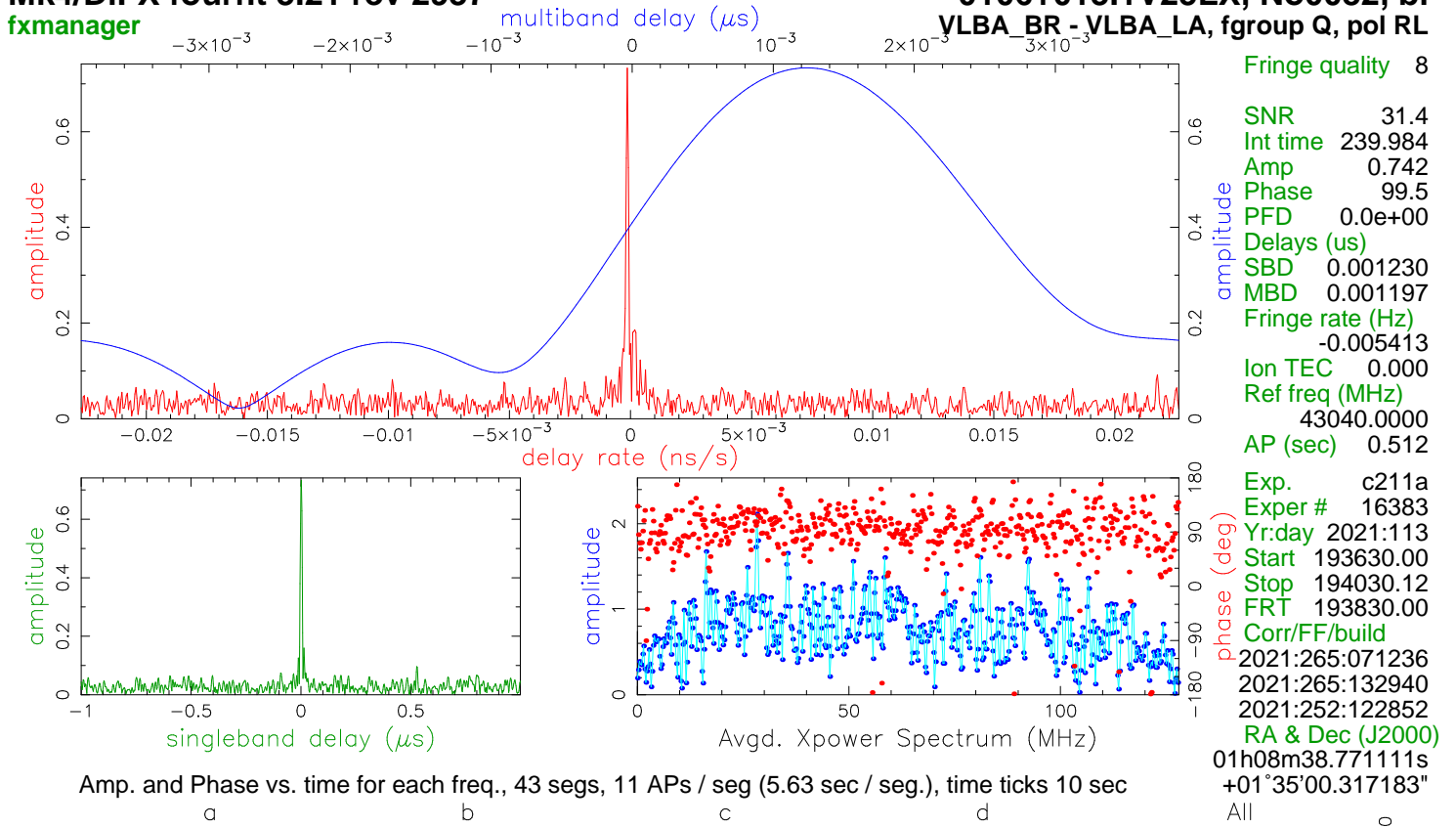
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bl.Q.48.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bl

VLBA\_BR - VLBA\_LA, fgroup Q, pol RL



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 105.7    | 89.8     | 98.4     | 104.8    | Phase      | 99.5  |
| b   | 0.4      | 0.6      | 1.0      | 0.9      | Ampl.      | 0.7   |
| l   | 513.0    | 513.5    | 513.8    | 513.9    | Sbd box    | 513.6 |
| b:l | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| b:l | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:l | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b   | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| l   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.78096634088E+03 | Apriori delay (usec)     | -1.78096753743E+03 | Resid mbdelay (usec) | 1.19655E-03  | +/- | 3.5E-05 |
| Sband delay (usec)      | -1.78096630780E+03 | Apriori clock (usec)     | -3.8887405E-01     | Resid sbdelay (usec) | 1.22962E-03  | +/- | 1.4E-04 |
| Phase delay (usec)      | -1.78096753101E+03 | Apriori clockrate (us/s) | 1.8600001E-07      | Resid phdelay (usec) | 6.42136E-06  | +/- | 2.4E-07 |
| Delay rate (us/s)       | 3.20085484541E-01  | Apriori rate (us/s)      | 3.20085610307E-01  | Resid rate (us/s)    | -1.25766E-07 | +/- | 1.7E-09 |
| Total phase (deg)       | -192.4             | Apriori accel (us/s/s)   | 1.00016366280E-05  | Resid phase (deg)    | 99.5         | +/- | 3.6     |

|              |      |                  |       |                |                 |  |                       |
|--------------|------|------------------|-------|----------------|-----------------|--|-----------------------|
| ph/seg (deg) | 29.0 | Theor.           | 12.0  | Amplitude      | 0.742 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 23.8 | Search (1024X16) | 0.714 | Search         | 0.714           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 9.0  | Interp.          | 0.000 | Inc. seg. avg. | 0.819           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 31.8 | Inc. frq. avg.   | 0.735 | Inc. frq. avg. | 0.735           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |                  |       |                |                 | Data rate(Mb/s): 2048                  | ion window (TEC)      |
|              |      |                  |       |                |                 | nlags: 512                             | t_coherence infinite  |

b: az 192.3 el 42.9 pa 8.1 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) -912.393 719.387 simultaneous interpolator

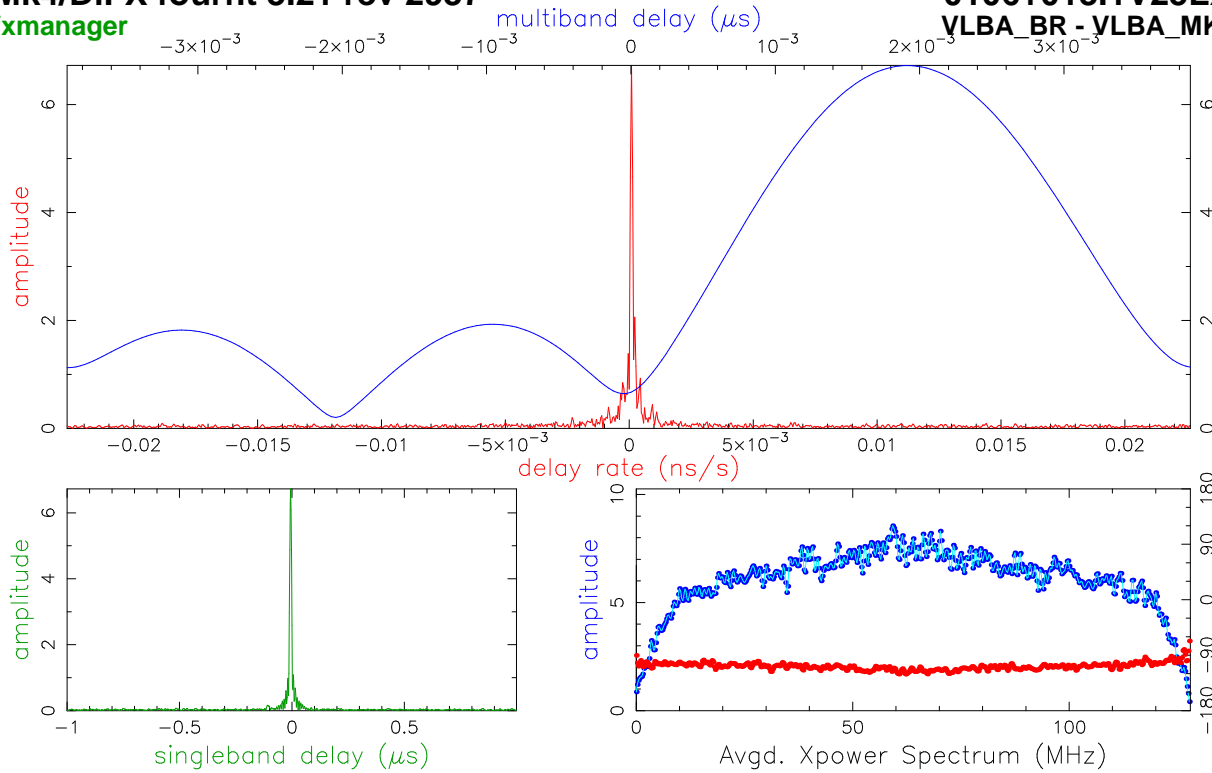
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bl.1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bl.Q.69.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bm

VLBA\_BR - VLBA\_MK, fgroup Q, pol LL



Fringe quality 7

SNR 285.0

Int time 239.982

Amp 6.727

Phase 68.2

PFD 0.0e+00

Delays (us)

SBD -0.006031

MBD 0.001905

Fringe rate (Hz)

0.003922

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 16383

Start 2021:113

Stop 193630.00

FRT 194030.12

Corr/FF/build

2021:265:071236

2021:265:132934

2021:252:122852

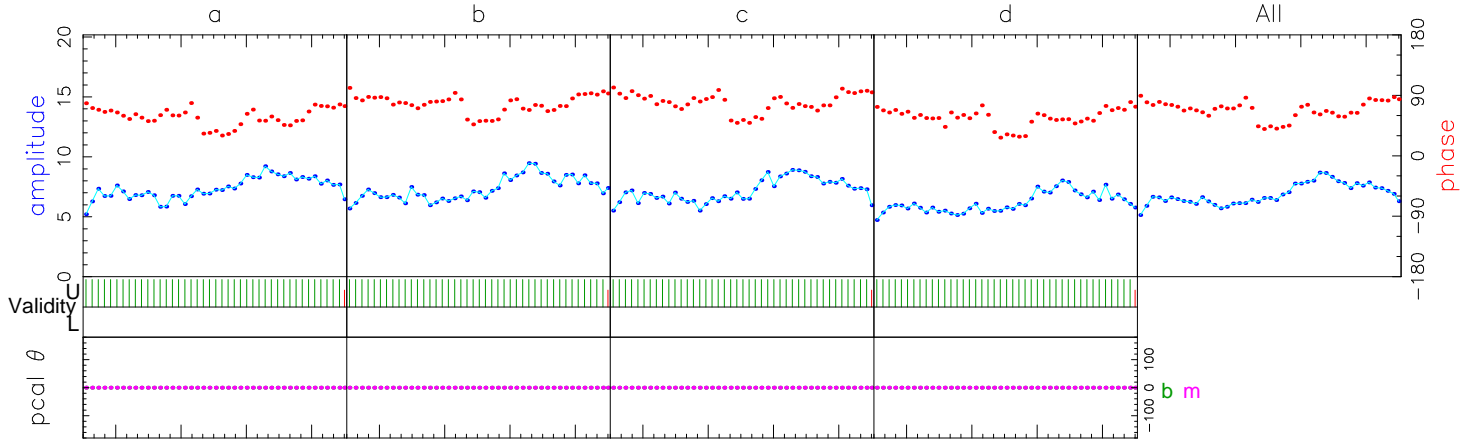
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 57.9     | 77.2     | 79.4     | 56.8     | Phase      | 68.2  |
| b   | 7.2      | 7.2      | 7.0      | 6.0      | Ampl.      | 6.8   |
| m   | 510.3    | 510.2    | 509.6    | 509.3    | Sbd box    | 509.9 |
| b:m | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| b:m | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:m | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| b   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| b   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| m   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -3.71356448502E+03 | Apriori delay (usec)     | -3.71355857773E+03 | Resid mbdelay (usec) | 1.90521E-03  | +/- | 3.9E-06 |
| Sband delay (usec)      | -3.71356460886E+03 | Apriori clock (usec)     | -1.8611012E+01     | Resid sbdelay (usec) | -6.03112E-03 | +/- | 1.5E-05 |
| Phase delay (usec)      | -3.71355857333E+03 | Apriori clockrate (us/s) | -4.1800000E-07     | Resid phdelay (usec) | 4.40220E-06  | +/- | 2.6E-08 |
| Delay rate (us/s)       | -8.17209940238E-01 | Apriori rate (us/s)      | -8.17210031368E-01 | Resid rate (us/s)    | 9.11301E-08  | +/- | 1.9E-10 |
| Total phase (deg)       | 1.4                | Apriori accel (us/s/s)   | 2.09989753659E-05  | Resid phase (deg)    | 68.2         | +/- | 0.4     |

|              |      |                  |       |                |                 |  |                       |
|--------------|------|------------------|-------|----------------|-----------------|--|-----------------------|
| ph/seg (deg) | 13.1 | Theor.           | 1.3   | Amplitude      | 6.727 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 12.8 | Search (1024X16) | 6.696 | Interp.        | 0.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 14.9 | Inc. seg. avg.   | 6.894 | Inc. frq. avg. | 6.837           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 7.2  | Inc. frq. avg.   | 6.837 |                |                 | SampCntNorm: enabled                   | dr window (ns/s)      |
|              |      |                  |       |                |                 | Sample rate(MSamp/s): 256              | ion window (TEC)      |
|              |      |                  |       |                |                 | Data rate(Mb/s): 2048                  |                       |
|              |      |                  |       |                |                 | nlags: 512                             | t_coherence infinite  |

b: az 192.3 el 42.9 pa 8.1 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 2347.166 1818.909 simultaneous interpolator

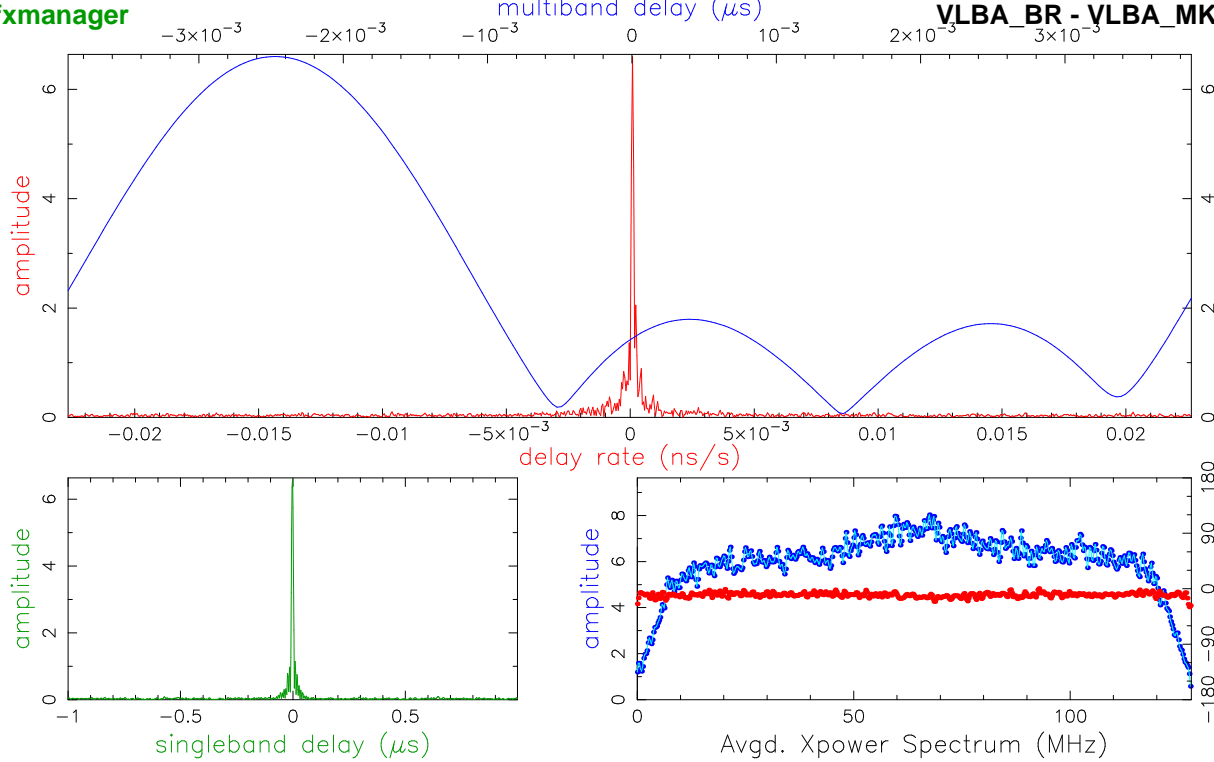
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bm.Q.16.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bm

VLBA\_BR - VLBA\_MK, fgroup Q, pol RR



Fringe quality 8

SNR 281.3

Int time 239.982

Amp 6.641

Phase -9.6

PFD 0.0e+00

Delays (us)

SBD -0.002483

MBD -0.002505

Fringe rate (Hz)

0.003924

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 16383

Start 2021:113

Stop 193630.00

FRT 194030.12

Corr/FF/build

2021:265:071236

2021:265:132936

2021:252:122852

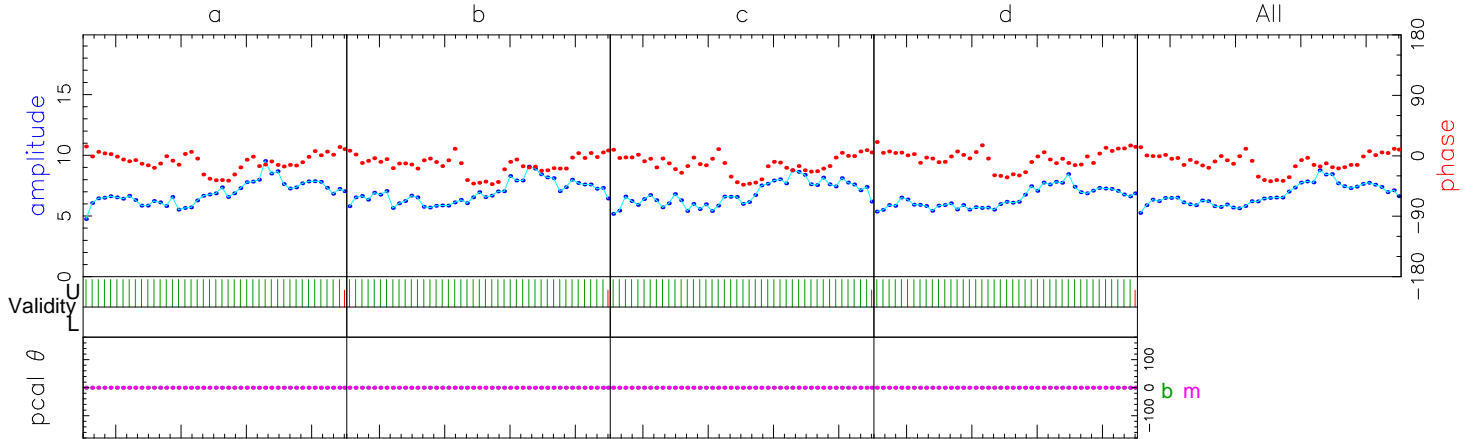
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -8.7      | -13.0    | -12.9    | -3.5     | Phase      | -9.6  |
| 6.7       | 6.8      | 6.6      | 6.3      | Ampl.      | 6.6   |
| 511.5     | 511.7    | 511.7    | 512.0    | Sbd box    | 511.7 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| b 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| m 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| b:m 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:m 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| m 1000    | 1000     | 1000     | 1000     |            |       |
| b Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| m Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -3.71356108274E+03 | Apriori delay (usec)     | -3.71355857773E+03 | Resid mbdelay (usec) | -2.50501E-03 | +/- | 4.0E-06 |
| Sband delay (usec)      | -3.71356106098E+03 | Apriori clock (usec)     | -1.8611012E+01     | Resid sbdelay (usec) | -2.48325E-03 | +/- | 1.5E-05 |
| Phase delay (usec)      | -3.71355857835E+03 | Apriori clockrate (us/s) | -4.1800000E-07     | Resid phdelay (usec) | -6.20795E-07 | +/- | 2.6E-08 |
| Delay rate (us/s)       | -8.17209940195E-01 | Apriori rate (us/s)      | -8.17210031368E-01 | Resid rate (us/s)    | 9.11727E-08  | +/- | 1.9E-10 |
| Total phase (deg)       | -76.4              | Apriori accel (us/s/s)   | 2.09989753659E-05  | Resid phase (deg)    | -9.6         | +/- | 0.4     |

|              |      |        |                  |                 |  |                       |                   |                  |       |      |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|------|
|              | RMS  | Theor. | Amplitude        | 6.641 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
| ph/seg (deg) | 13.2 | 1.3    | Search (1024X16) | 6.576           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 13.0 | 2.3    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 5.5  | 0.4    | Inc. seg. avg.   | 6.769           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 2.7  | 0.7    | Inc. frq. avg.   | 6.614           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

b: az 192.3 el 42.9 pa 8.1 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 2347.166 1818.909 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bm.Q.32.1V25LX



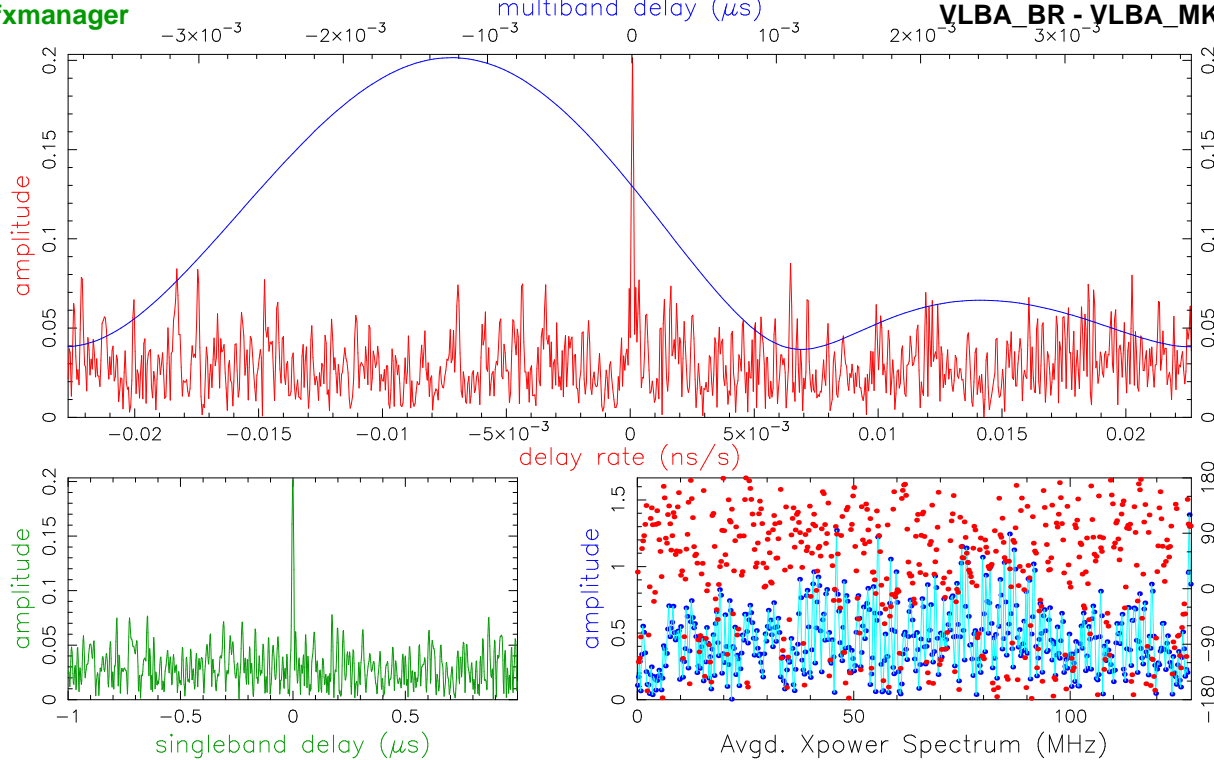


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bm

VLBA\_BR - VLBA\_MK, fgroup Q, pol RL



Fringe quality 9

SNR 8.6

Int time 239.982

Amp 0.203

Phase 93.8

PFD 1.3e-09

Delays (us)

SBD -0.000658

MBD -0.001300

Fringe rate (Hz)

0.003827

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 16383

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132940

2021:252:122852

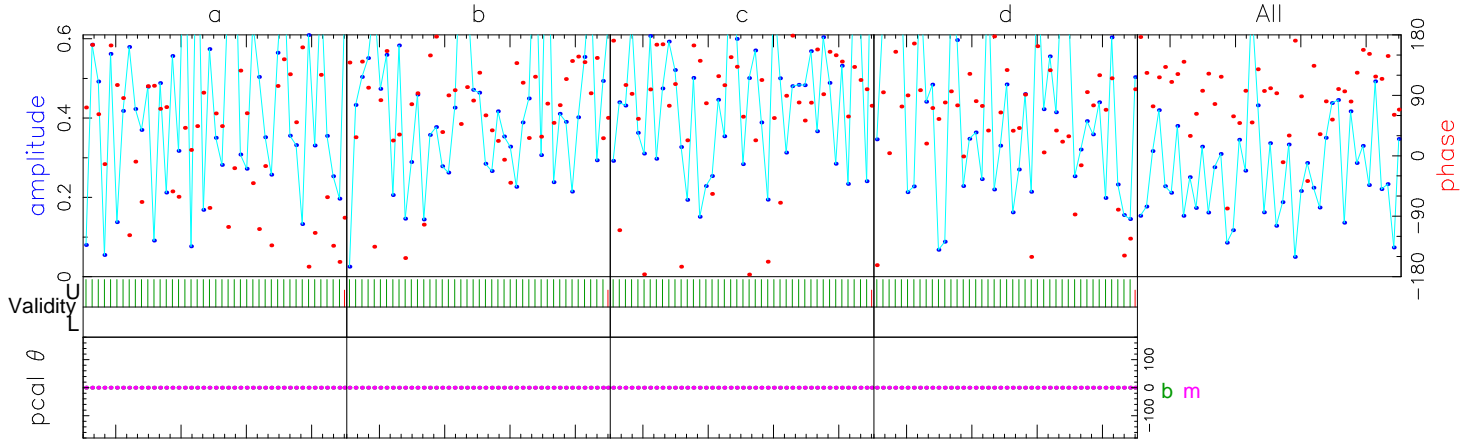
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 55.9     | 88.7     | 114.7    | 81.7     | Phase      | 93.8  |
| b   | 0.0      | 0.3      | 0.3      | 0.2      | Ampl.      | 0.2   |
| m   | 181.6    | 513.0    | 512.5    | 512.6    | Sbd box    | 512.7 |
| b   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b   | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| m   | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| m   | 1000     | 1000     | 1000     | 1000     |            |       |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| m   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -3.71355987740E+03 | Apriori delay (usec)     | -3.71355857773E+03 | Resid mbdelay (usec) | -1.29967E-03 | +/- | 1.3E-04 |
| Sband delay (usec)      | -3.71355923523E+03 | Apriori clock (usec)     | -1.8611012E+01     | Resid sbdelay (usec) | -6.57500E-04 | +/- | 5.0E-04 |
| Phase delay (usec)      | -3.71355857168E+03 | Apriori clockrate (us/s) | -4.1800000E-07     | Resid phdelay (usec) | 6.05142E-06  | +/- | 8.6E-07 |
| Delay rate (us/s)       | -8.17209942456E-01 | Apriori rate (us/s)      | -8.17210031368E-01 | Resid rate (us/s)    | 8.89122E-08  | +/- | 6.2E-09 |
| Total phase (deg)       | 27.0               | Apriori accel (us/s/s)   | 2.09989753659E-05  | Resid phase (deg)    | 93.8         | +/- | 13.3    |

|              |          |             |                           |  |                       |                      |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 52.0 | Theor. 43.6 | Amplitude 0.203 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 52.0     | 43.6        | Search (1024X16) 0.199    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 70.3     | 76.1        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 32.0     | 13.3        | Inc. seg. avg. 0.208      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)     | -0.023 0.023               |
|              | 48.1     | 23.2        | Inc. frq. avg. 0.204      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

b: az 192.3 el 42.9 pa 8.1 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 2347.166 1818.909 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bm.Q.67.1V25LX

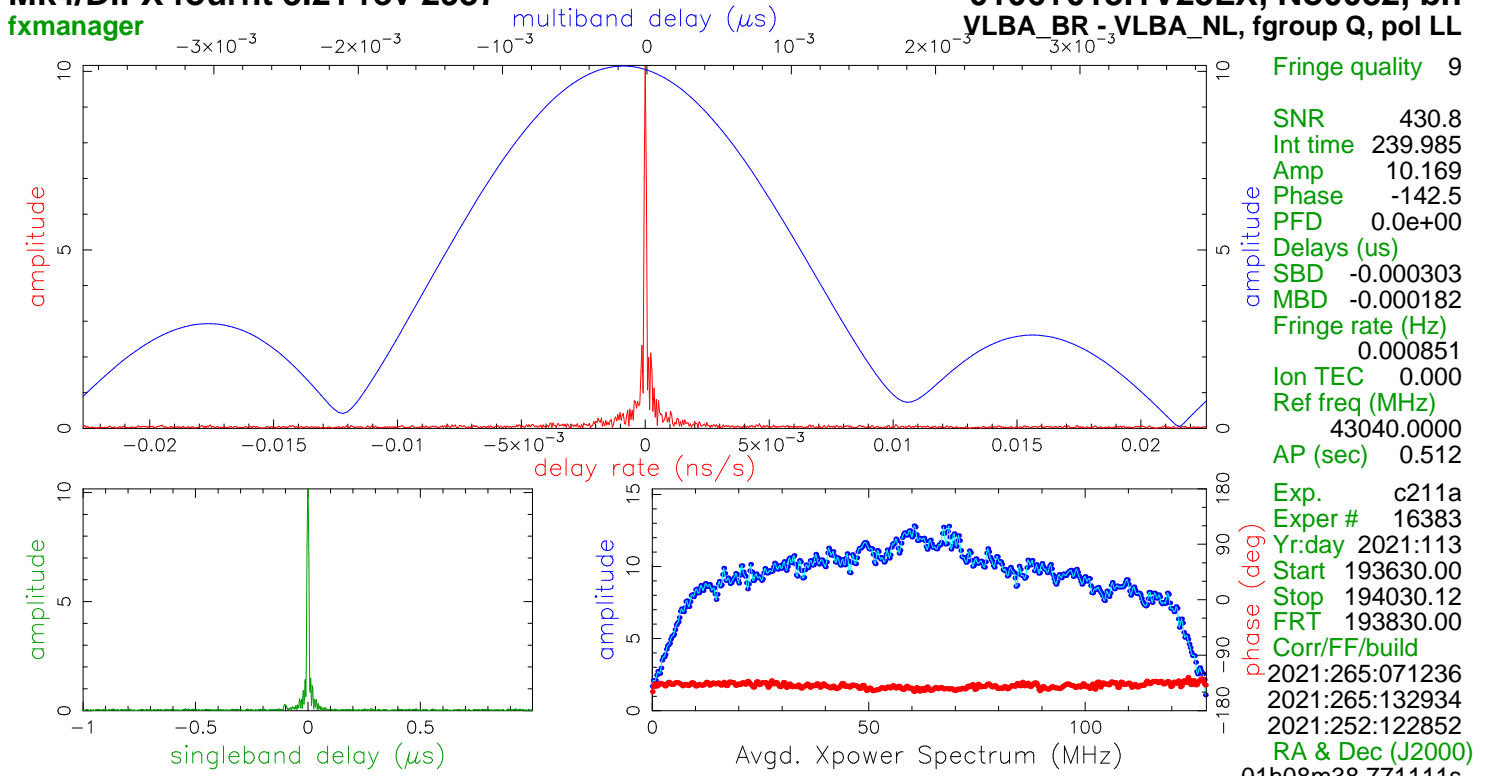


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bn

VLBA\_BR - VLBA\_NL, fgroup Q, pol LL



Fringe quality 9

SNR 430.8

Int time 239.985

Amp 10.169

Phase -142.5

PFD 0.0e+00

Delays (us)

SBD -0.000303

MBD -0.000182

Fringe rate (Hz)

0.000851

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132934

2021:252:122852

RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

All

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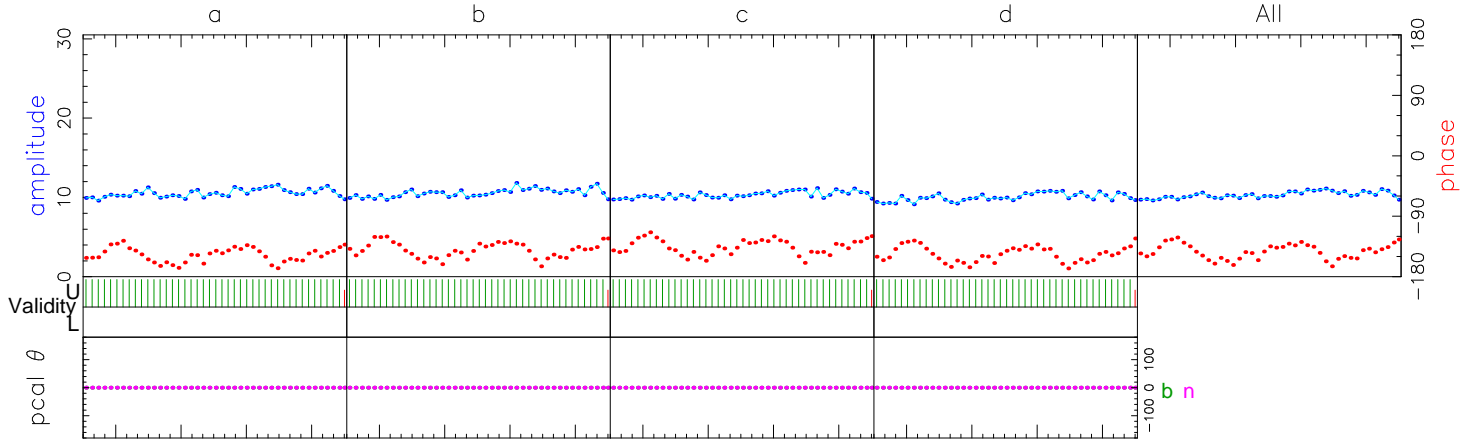
All

All

All

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----------|----------|----------|----------|------------|--------|
| -147.6    | -140.3   | -135.6   | -146.7   | Phase      | -142.5 |
| 10.4      | 10.4     | 10.1     | 9.8      | Ampl.      | 10.2   |
| 513.0     | 513.1    | 512.7    | 512.4    | Sbd box    | 512.8  |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |        |
| b 1000    | 1000     | 1000     | 1000     | PC freqs   |        |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |        |
| b:n 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |        |
| b:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| b 1000    | 1000     | 1000     | 1000     | PC amp     |        |
| n 1000    | 1000     | 1000     | 1000     |            |        |
| b Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| n Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|           |          |          |          | Chan ids   |        |
|           |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 1.49279823656E+03 | Apriori delay (usec)     | 1.49279841863E+03  | Resid mbdelay (usec) | -1.82063E-04 | +/- | 2.6E-06 |
| Sband delay (usec)      | 1.49279811600E+03 | Apriori clock (usec)     | -8.3683243E+00     | Resid sbdelay (usec) | -3.02625E-04 | +/- | 1.0E-05 |
| Phase delay (usec)      | 1.49279840943E+03 | Apriori clockrate (us/s) | -3.9999999E-07     | Resid phdelay (usec) | -9.19921E-06 | +/- | 1.7E-08 |
| Delay rate (us/s)       | 5.35592020596E-01 | Apriori rate (us/s)      | 5.35592000834E-01  | Resid rate (us/s)    | 1.97627E-08  | +/- | 1.2E-10 |
| Total phase (deg)       | 195.0             | Apriori accel (us/s/s)   | -7.72021968513E-06 | Resid phase (deg)    | -142.5       | +/- | 0.3     |

|              |      |        |                  |                  |  |                       |                   |                  |       |      |
|--------------|------|--------|------------------|------------------|--|-----------------------|-------------------|------------------|-------|------|
|              | RMS  | Theor. | Amplitude        | 10.169 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
| ph/seg (deg) | 10.9 | 0.9    | Search (1024X16) | 9.377            | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 4.3  | 1.5    | Interp.          | 0.000            | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 6.9  | 0.3    | Inc. seg. avg.   | 10.334           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 2.2  | 0.5    | Inc. frq. avg.   | 10.186           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

b: az 192.3 el 42.9 pa 8.1 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -1536.632 338.444 simultaneous interpolator

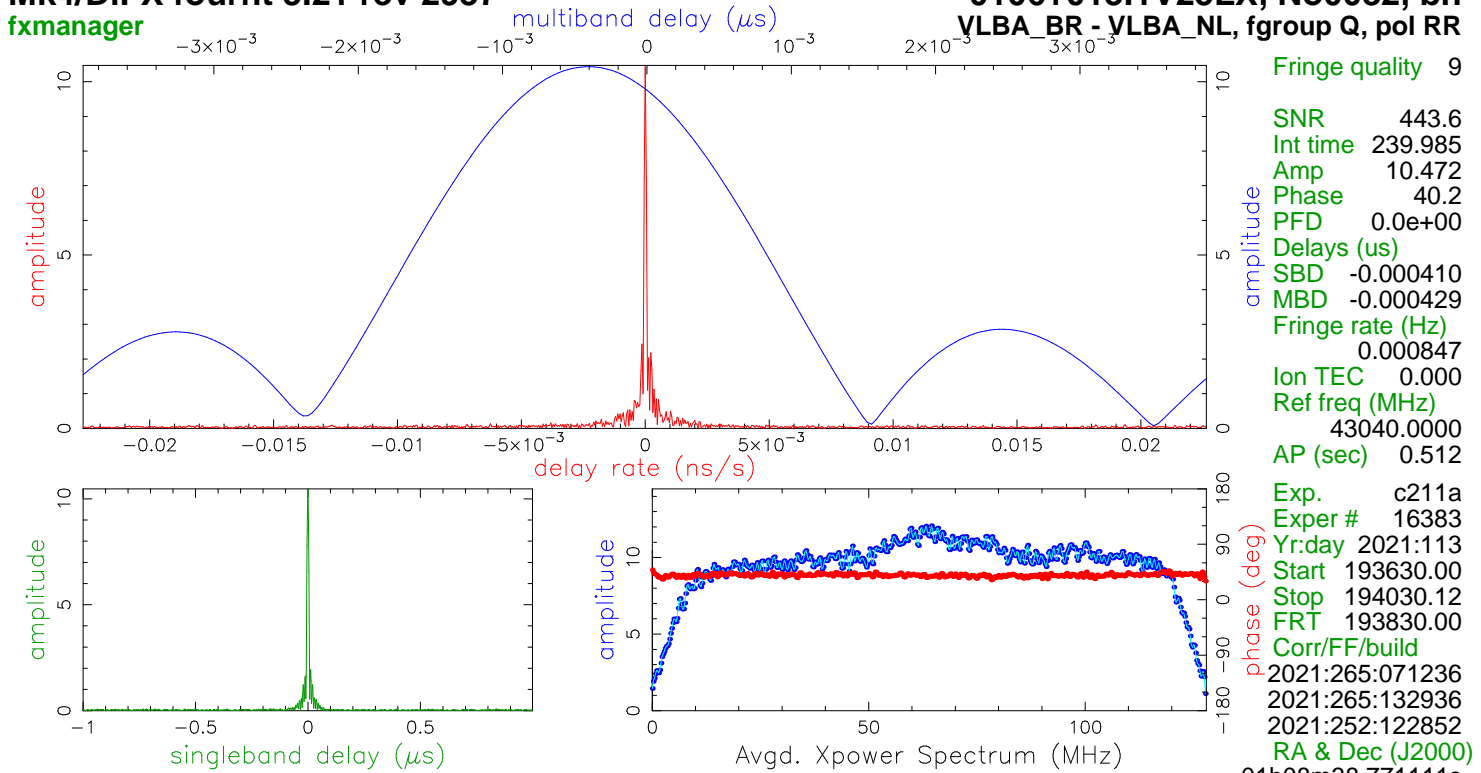
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bn.Q.10.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bn

VLBA\_BR - VLBA\_NL, fgroup Q, pol RR

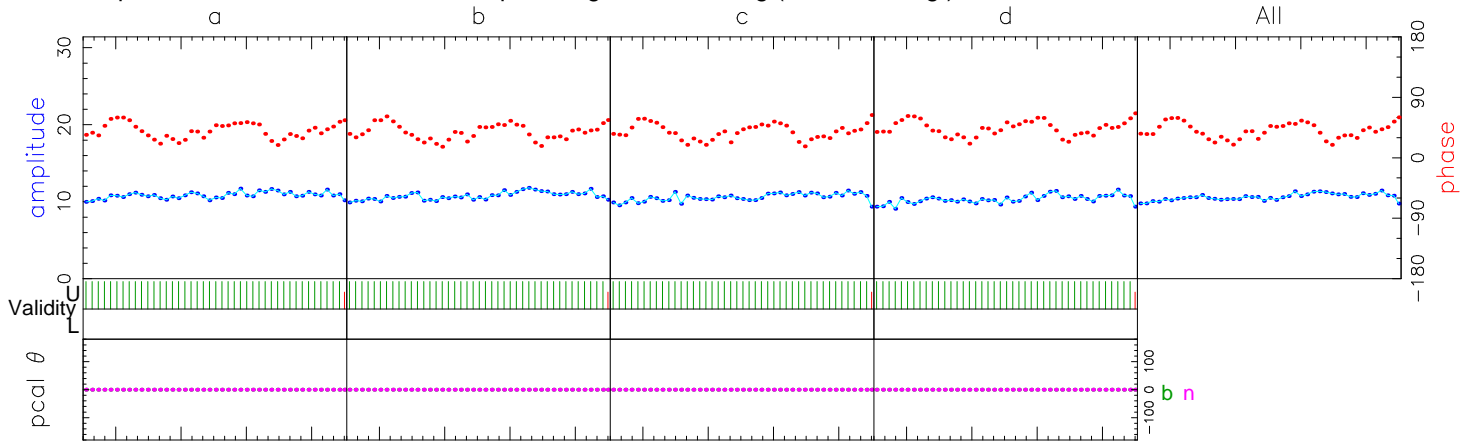


Fringe quality 9

SNR 443.6  
Int time 239.985  
Amp 10.472  
Phase 40.2  
PFD 0.0e+00  
Delays (us)  
SBD -0.000410  
MBD -0.000429  
Fringe rate (Hz) 0.000847  
Ion TEC 0.000  
Ref freq (MHz) 43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132936  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



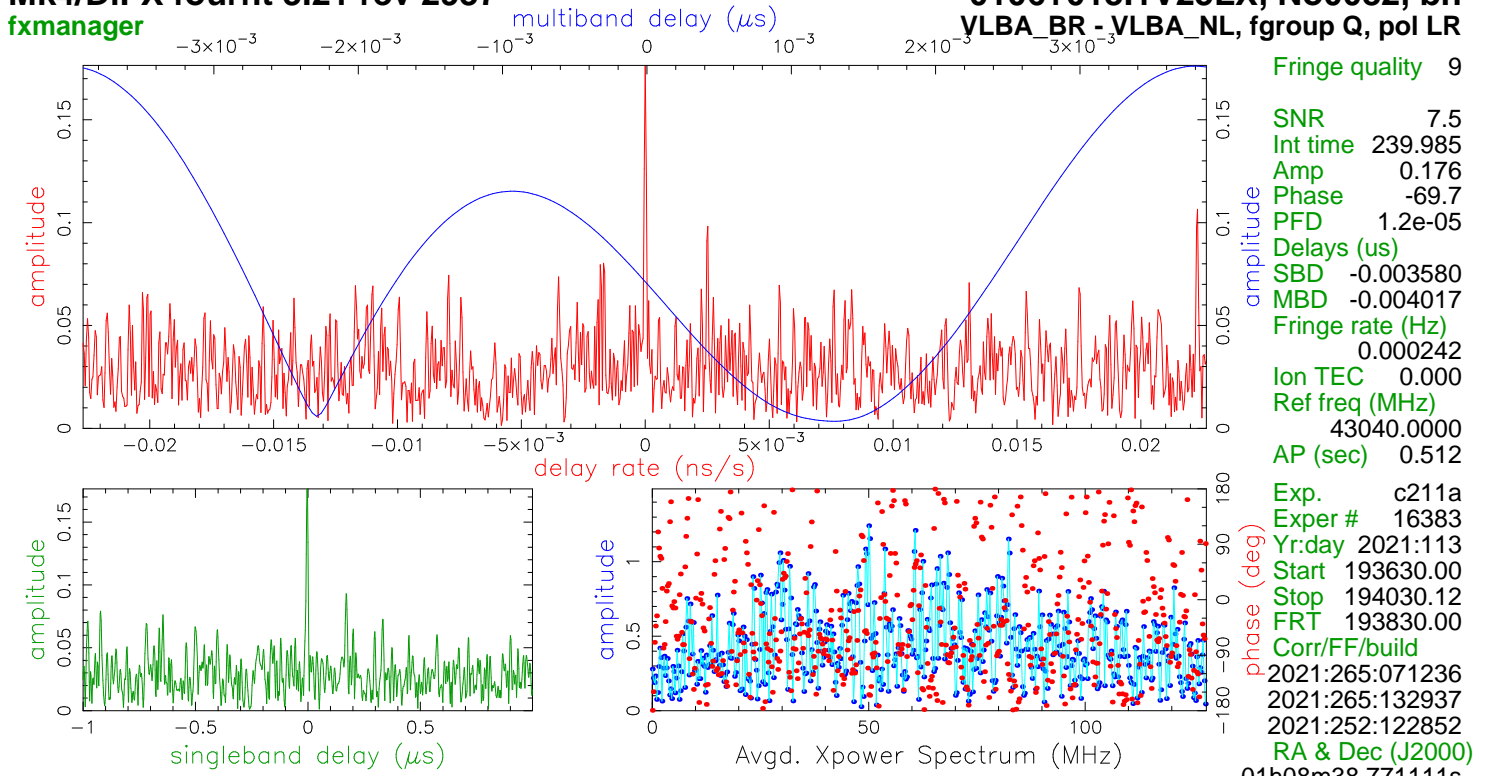
|   |       |  |  | Freq (MHz)  |       |  |  | All   |
|---|-------|--|--|---|-------|--|--|-------|
| 42912.00  |       |  |  | 43040.00  |       |  |  |       |
| 40.2  |       |  |  | 38.3  |       |  |  | 40.2  |
| 10.6  |       |  |  | 10.6  |       |  |  | 10.4  |
| 512.8   |       |  |  | 512.7   |       |  |  | 512.8 |
| U/L   | 469/0 |  |  | U/L   | 469/0 |  |  |       |
| b   | 1000  |  |  | b   | 1000  |  |  |       |
| n   | 1000  |  |  | n   | 1000  |  |  |       |
| b:n   | 0:0   |  |  | b:n   | 0:0   |  |  |       |
| b:n   | 0:0   |  |  | b:n   | 0:0   |  |  |       |
| b   | 1000  |  |  | b   | 1000  |  |  |       |
| n   | 1000  |  |  | n   | 1000  |  |  |       |
| b   | Q00UR |  |  | b   | Q01UR |  |  |       |
| n   | Q00UR |  |  | n   | Q01UR |  |  |       |
| 43168.00  |       |  |  | 43296.00  |       |  |  |       |
| 38.5  |       |  |  | 43.8  |       |  |  |       |
| 10.4  |       |  |  | 10.2  |       |  |  |       |
| 512.7   |       |  |  | 513.0   |       |  |  |       |
| 469/0   |       |  |  | 469/0   |       |  |  |       |
| 1000  |       |  |  | 1000  |       |  |  |       |
| 1000  |       |  |  | 1000  |       |  |  |       |
| 0:0   |       |  |  | 0:0   |       |  |  |       |
| 0:0   |       |  |  | 0:0   |       |  |  |       |
| 1000  |       |  |  | 1000  |       |  |  |       |
| 1000  |       |  |  | 1000  |       |  |  |       |
| Q02UR   |       |  |  | Q03UR   |       |  |  |       |
| Q02UR   |       |  |  | Q03UR   |       |  |  |       |
| Group delay (usec)(sbd)                                       |       |  |  | Group delay (usec)(sbd)                                       |       |  |  |       |
| 1.49279798941E+03   |       |  |  | 1.49279841863E+03   |       |  |  |       |
| Sband delay (usec)  |       |  |  | Sband delay (usec)  |       |  |  |       |
| 1.49279800913E+03   |       |  |  | 1.49279800913E+03   |       |  |  |       |
| Phase delay (usec)  |       |  |  | Phase delay (usec)  |       |  |  |       |
| 1.49279842122E+03   |       |  |  | 1.49279842122E+03   |       |  |  |       |
| Delay rate (us/s)   |       |  |  | Delay rate (us/s)   |       |  |  |       |
| 5.35592020522E-01   |       |  |  | 5.35592020522E-01   |       |  |  |       |
| Total phase (deg)   |       |  |  | Total phase (deg)   |       |  |  |       |
| 17.7  |       |  |  | 17.7  |       |  |  |       |
| Apriori delay (usec)  |       |  |  | Apriori delay (usec)  |       |  |  |       |
| 9.722   |       |  |  | 9.722   |       |  |  |       |
| Apriori clock (usec)  |       |  |  | Apriori clock (usec)  |       |  |  |       |
| -3.9999999E-07  |       |  |  | -3.9999999E-07  |       |  |  |       |
| Apriori rate (us/s)   |       |  |  | Apriori rate (us/s)   |       |  |  |       |
| -7.72021968513E-06  |       |  |  | -7.72021968513E-06  |       |  |  |       |
| Apriori accel (us/s/s)  |       |  |  | Apriori accel (us/s/s)  |       |  |  |       |
| -7.72021968513E-06  |       |  |  | -7.72021968513E-06  |       |  |  |       |
| Resid mbdelay (usec)  |       |  |  | Resid mbdelay (usec)  |       |  |  |       |
| -4.29219E-04  |       |  |  | -4.29219E-04  |       |  |  |       |
| Resid sbdelay (usec)  |       |  |  | Resid sbdelay (usec)  |       |  |  |       |
| -4.09500E-04  |       |  |  | -4.09500E-04  |       |  |  |       |
| Resid phdelay (usec)  |       |  |  | Resid phdelay (usec)  |       |  |  |       |
| 2.59347E-06   |       |  |  | 2.59347E-06   |       |  |  |       |
| Resid rate (us/s)   |       |  |  | Resid rate (us/s)   |       |  |  |       |
| 1.96889E-08   |       |  |  | 1.96889E-08   |       |  |  |       |
| Resid phase (deg)   |       |  |  | Resid phase (deg)   |       |  |  |       |
| 40.2  |       |  |  | 40.2  |       |  |  |       |
| Pcal mode: MANUAL, MANUAL                                     |       |  |  | Pcal mode: MANUAL, MANUAL                                     |       |  |  |       |
| Pcal rate: 0.000E+00, 0.000E+00 (us/s)                        |       |  |  | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                        |       |  |  |       |
| Bits/sample: 2x2  |       |  |  | Bits/sample: 2x2  |       |  |  |       |
| Sample rate(MSamp/s): 256                                     |       |  |  | Sample rate(MSamp/s): 256                                     |       |  |  |       |
| Data rate(Mb/s): 2048   |       |  |  | Data rate(Mb/s): 2048   |       |  |  |       |
| nlags: 512  |       |  |  | nlags: 512  |       |  |  |       |
| t_coherence infinite  |       |  |  | t_coherence infinite  |       |  |  |       |
| sb window (us)  |       |  |  | sb window (us)  |       |  |  |       |
| -1.000  |       |  |  | -1.000  |       |  |  |       |
| mb window (us)  |       |  |  | mb window (us)  |       |  |  |       |
| -0.004  |       |  |  | -0.004  |       |  |  |       |
| dr window (ns/s)  |       |  |  | dr window (ns/s)  |       |  |  |       |
| -0.023  |       |  |  | -0.023  |       |  |  |       |
| ion window (TEC)  |       |  |  | ion window (TEC)  |       |  |  |       |
| 0.00  |       |  |  | 0.00  |       |  |  |       |
| b: az 192.3 el 42.9 pa 8.1                                    |       |  |  | b: az 192.3 el 42.9 pa 8.1                                    |       |  |  |       |
| n: az 229.8 el 37.9 pa 34.8                                   |       |  |  | n: az 229.8 el 37.9 pa 34.8                                   |       |  |  |       |
| u,v (fr/asec) -1536.632 338.444                               |       |  |  | u,v (fr/asec) -1536.632 338.444                               |       |  |  |       |
| simultaneous interpolator                                     |       |  |  | simultaneous interpolator                                     |       |  |  |       |
| Control file: cf_1234_gmva7mm                                 |       |  |  | Control file: cf_1234_gmva7mm                                 |       |  |  |       |
| Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bn..1V25LX      |       |  |  | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bn..1V25LX      |       |  |  |       |
| Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bn.Q.31.1V25LX |       |  |  | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bn.Q.31.1V25LX |       |  |  |       |

## Mk4/DiFX fourfit 3.21 rev 2937

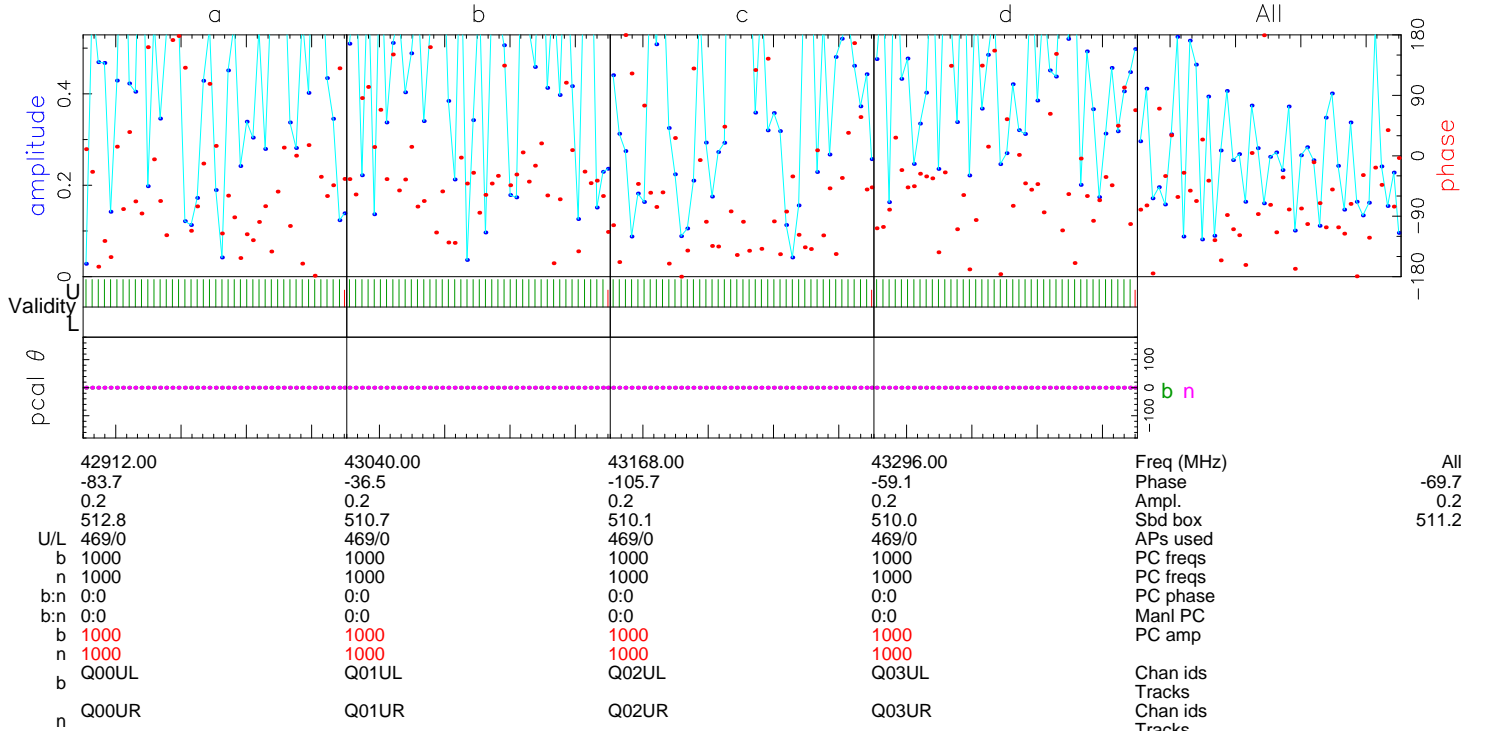
fxmanager

0106+013.1V25LX, No0082, bn

VLBA\_BR - VLBA\_NL, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| Group delay (usec)(sbd)       | 1.49279440185E+03  | Apriori delay (usec)  | 1.49279841863E+03  | Resid mbdelay (usec)                   | -4.01678E-03          | +/-               | 1.5E-04                    |
|-------------------------------|--|---|--------------------|--|-----------------------|-------------------|----------------------------|
| Sband delay (usec)            | 1.49279483838E+03  | Apriori clock (usec)  | -8.3683243E+00     | Resid sbdelay (usec)                   | -3.58025E-03          | +/-               | 5.8E-04                    |
| Phase delay (usec)            | 1.49279841413E+03  | Apriori clockrate (us/s)                                      | -3.9999999E-07     | Resid phdelay (usec)                   | -4.49626E-06          | +/-               | 9.9E-07                    |
| Delay rate (us/s)             | 5.35592006455E-01  | Apriori rate (us/s)   | 5.35592000834E-01  | Resid rate (us/s)                      | 5.62136E-09           | +/-               | 7.1E-09                    |
| Total phase (deg)             | 267.9  | Apriori accel (us/s/s)  | -7.72021968513E-06 | Resid phase (deg)                      | -69.7                 | +/-               | 15.3                       |
| RMS                           | Theor.   | Amplitude   | 0.176 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| ph/seg (deg)                  | 60.0   | Search (1024X16)  | 0.174              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| amp/seg (%)                   | 85.2   | Interp.   | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| ph/frq (deg)                  | 36.8   | Inc. seg. avg.  | 0.190              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
| amp/frq (%)                   | 14.2   | Inc. frq. avg.  | 0.190              | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |
| b: az 192.3 el 42.9 pa 8.1    | n: az 229.8 el 37.9 pa 34.8                              | u,v (fr/asec)   | -1536.632 338.444  | simultaneous interpolator              |                       |                   |                            |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bn..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bn.Q.47.1V25LX |                    |  |                       |                   |                            |

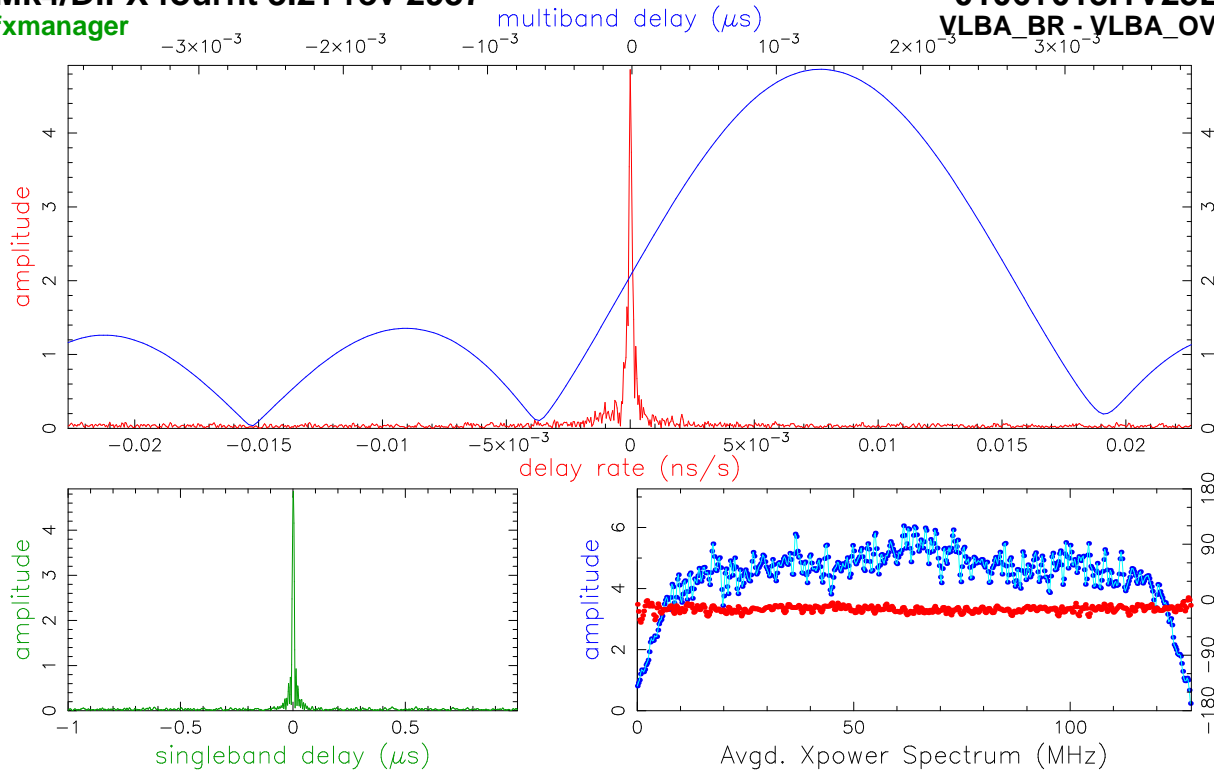


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bo

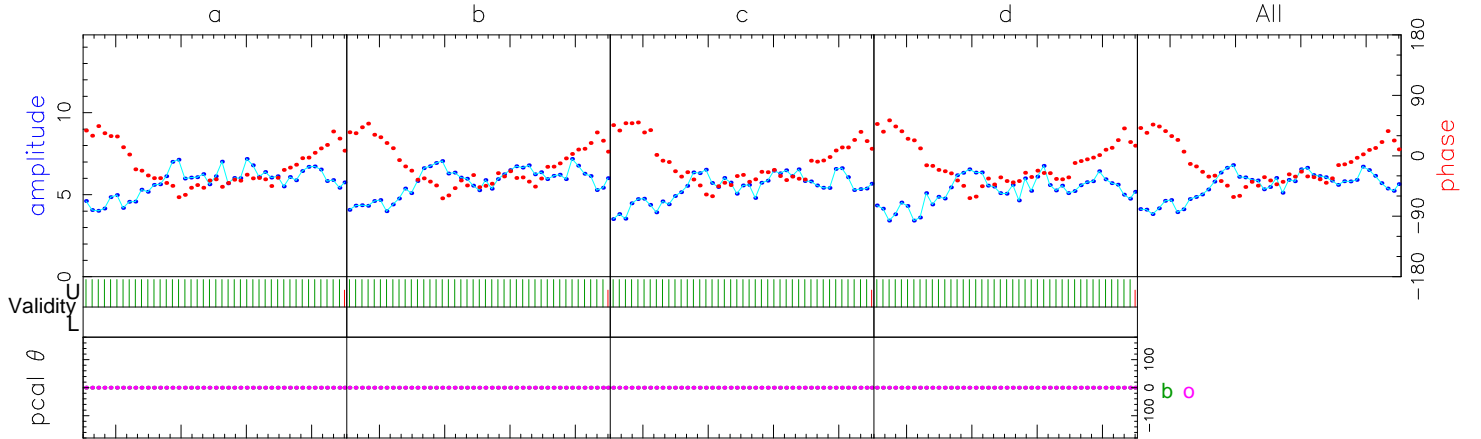
VLBA\_BR - VLBA\_OV, fgroup Q, pol RR



Fringe quality 6

SNR 208.3  
Int time 239.959  
Amp 4.916  
Phase -15.9  
PFD 0.0e+00  
Delays (us)  
SBD 0.001242  
MBD 0.001264  
Fringe rate (Hz) 0.000510  
Ion TEC 0.000  
Ref freq (MHz) 43040.0000  
AP (sec) 0.512  
Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132935  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -19.0    | -17.1    | -13.0    | -14.2    | Phase      | -15.9 |
|     | 5.1      | 5.1      | 4.7      | 4.6      | Ampl.      | 4.9   |
|     | 513.6    | 513.7    | 513.4    | 513.8    | Sbd box    | 513.6 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:o | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:o | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| o   | 1000     | 1000     | 1000     | 1000     |            |       |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -2.54203573750E+03 | Apriori delay (usec)     | -2.54203700188E+03 | Resid mbdelay (usec) | 1.26438E-03  | +/- | 5.3E-06 |
| Sband delay (usec)      | -2.54203575950E+03 | Apriori clock (usec)     | -6.6066227E+00     | Resid sbdelay (usec) | 1.24238E-03  | +/- | 2.1E-05 |
| Phase delay (usec)      | -2.54203700290E+03 | Apriori clockrate (us/s) | -4.5999999E-07     | Resid phdelay (usec) | -1.02781E-06 | +/- | 3.6E-08 |
| Delay rate (us/s)       | 6.30481998757E-02  | Apriori rate (us/s)      | 6.30481880147E-02  | Resid rate (us/s)    | 1.18610E-08  | +/- | 2.6E-10 |
| Total phase (deg)       | -217.8             | Apriori accel (us/s/s)   | 1.39476108518E-05  | Resid phase (deg)    | -15.9        | +/- | 0.6     |

|              |        |                  |                 |  |                       |                   |                            |
|--------------|--------|------------------|-----------------|--|-----------------------|-------------------|----------------------------|
| RMS          | Theor. | Amplitude        | 4.916 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| ph/seg (deg) | 30.6   | Search (1024X16) | 4.713           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| amp/seg (%)  | 20.9   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| ph/frq (deg) | 3.4    | Inc. seg. avg.   | 5.546           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
| amp/frq (%)  | 4.5    | Inc. frq. avg.   | 4.864           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

b: az 192.3 el 42.9 pa 8.1 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) -174.889 634.081 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bo.Q.25.1V25LX

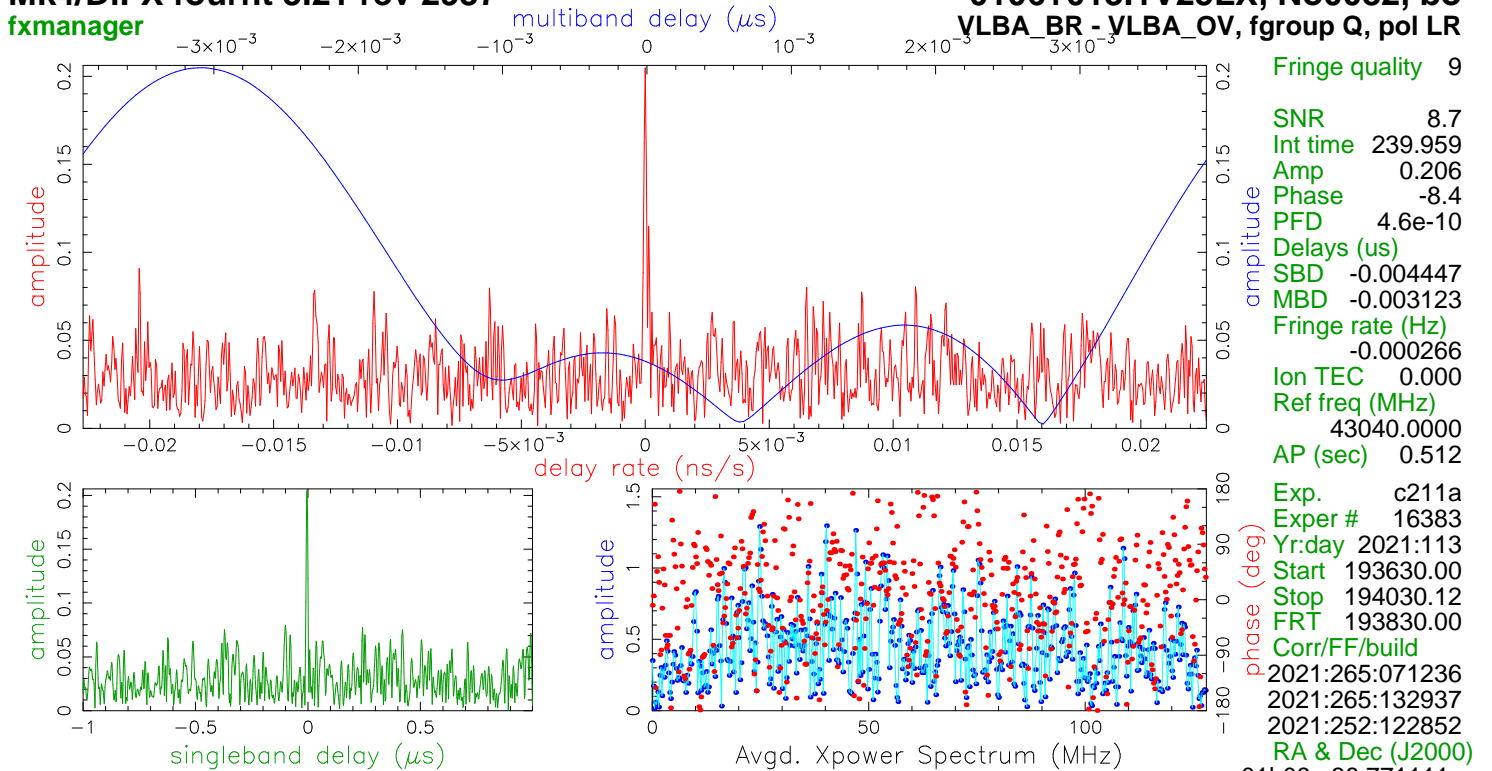


Mk4/DiFX fourfit 3.21 rev 2937

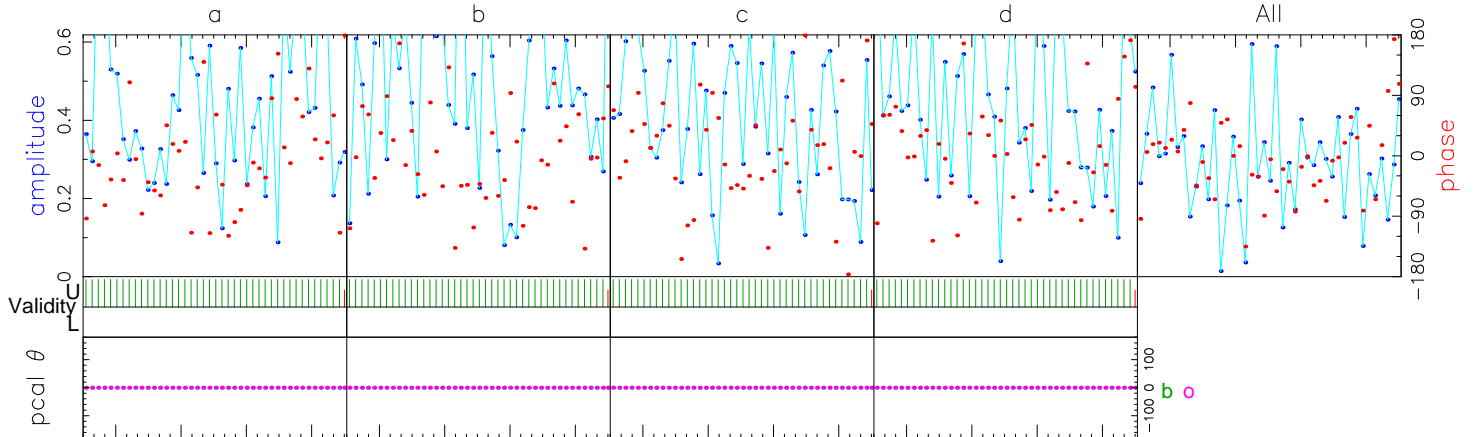
fxmanager

0106+013.1V25LX, No0082, bo

VLBA\_BR - VLBA\_OV, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



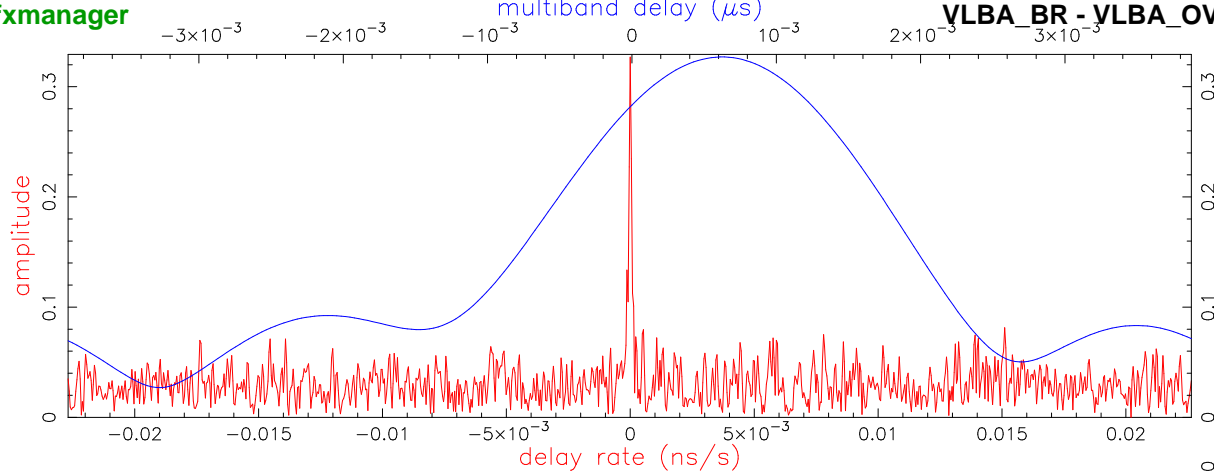
|                               |   |                          |                    |                           |  |                      |                   |                  |       |      |
|-------------------------------|---|--------------------------|--------------------|---------------------------|--|----------------------|-------------------|------------------|-------|------|
| 42912.00                      | 43040.00  | 43168.00                 | 43296.00           | Freq (MHz)                | All                                    |                      |                   |                  |       |      |
| -13.5                         | -8.8  | 2.6                      | -14.2              | Phase                     | -8.4                                   |                      |                   |                  |       |      |
| 0.2                           | 0.2   | 0.2                      | 0.2                | Ampl.                     | 0.2                                    |                      |                   |                  |       |      |
| 510.3                         | 511.9   | 510.2                    | 544.0              | Sbd box                   | 510.7                                  |                      |                   |                  |       |      |
| U/L 469/0                     | 469/0   | 469/0                    | 469/0              | APs used                  |  |                      |                   |                  |       |      |
| b 1000                        | 1000  | 1000                     | 1000               | PC freqs                  |  |                      |                   |                  |       |      |
| o 1000                        | 1000  | 1000                     | 1000               | PC freqs                  |  |                      |                   |                  |       |      |
| b:o 0:0                       | 0:0   | 0:0                      | 0:0                | PC phase                  |  |                      |                   |                  |       |      |
| b:o 0:0                       | 0:0   | 0:0                      | 0:0                | Manl PC                   |  |                      |                   |                  |       |      |
| b 1000                        | 1000  | 1000                     | 1000               | PC amp                    |  |                      |                   |                  |       |      |
| o 1000                        | 1000  | 1000                     | 1000               |                           |  |                      |                   |                  |       |      |
| b Q00UL                       | Q01UL   | Q02UL                    | Q03UL              | Chan ids                  |  |                      |                   |                  |       |      |
|                               |   |                          |                    | Tracks                    |  |                      |                   |                  |       |      |
| o Q00UR                       | Q01UR   | Q02UR                    | Q03UR              | Chan ids                  |  |                      |                   |                  |       |      |
|                               |   |                          |                    | Tracks                    |  |                      |                   |                  |       |      |
| Group delay (usec)(sbd)       | -2.54204012494E+03  | Apriori delay (usec)     | -2.54203700188E+03 | Resid mbdelay (usec)      | -3.12306E-03                           | +/- 1.3E-04          |                   |                  |       |      |
| Sband delay (usec)            | -2.54204144875E+03  | Apriori clock (usec)     | -6.6066227E+00     | Resid sbdelay (usec)      | -4.44687E-03                           | +/- 4.9E-04          |                   |                  |       |      |
| Phase delay (usec)            | -2.54203700242E+03  | Apriori clockrate (us/s) | -4.5999999E-07     | Resid phdelay (usec)      | -5.41543E-07                           | +/- 8.5E-07          |                   |                  |       |      |
| Delay rate (us/s)             | 6.30481818232E-02   | Apriori rate (us/s)      | 6.30481880147E-02  | Resid rate (us/s)         | -6.19144E-09                           | +/- 6.1E-09          |                   |                  |       |      |
| Total phase (deg)             | -210.3  | Apriori accel (us/s/s)   | 1.39476108518E-05  | Resid phase (deg)         | -8.4                                   | +/- 13.1             |                   |                  |       |      |
| RMS                           | Theor.  | Amplitude                | 0.206 +/- 0.024    | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5                  |                      |                   |                  |       |      |
| ph/seg (deg)                  | 57.3  | 43.0                     | Search (1024X16)   | 0.202                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)       | -1.000            | 1.000            |       |      |
| amp/seg (%)                   | 76.8  | 75.1                     | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg)                  | 9.5   | 13.1                     | Inc. seg. avg.     | 0.229                     | Sample rate(MSamp/s): 256              |                      | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)                   | 11.7  | 22.9                     | Inc. frq. avg.     | 0.201                     | Data rate(Mb/s): 2048                  | nlags: 512           | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |
| b: az 192.3 el 42.9 pa 8.1    | o: az 197.5 el 53.2 pa 14.3                                   | u,v (fr/asec)            | -174.889           | 634.081                   | simultaneous interpolator              |                      |                   |                  |       |      |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bo..1V25LX      |                          |                    |                           |  |                      |                   |                  |       |      |
|                               | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bo.Q.46.1V25LX |                          |                    |                           |  |                      |                   |                  |       |      |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

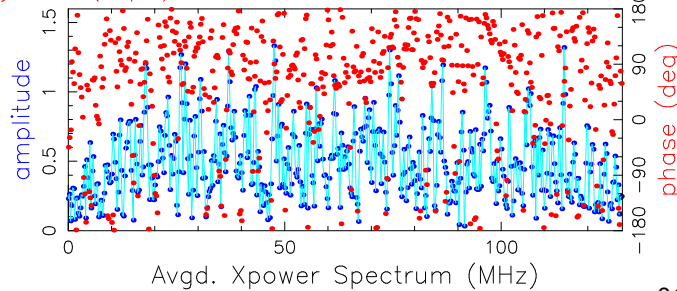
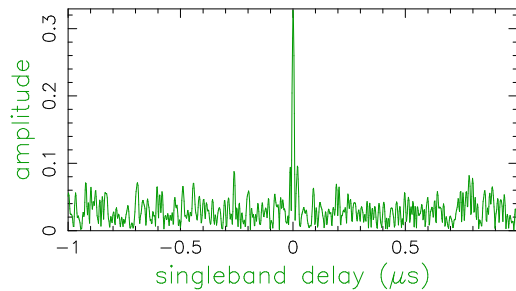
0106+013.1V25LX, No0082, bo

VLBA\_BR - VLBA\_OV, fgroup Q, pol RL



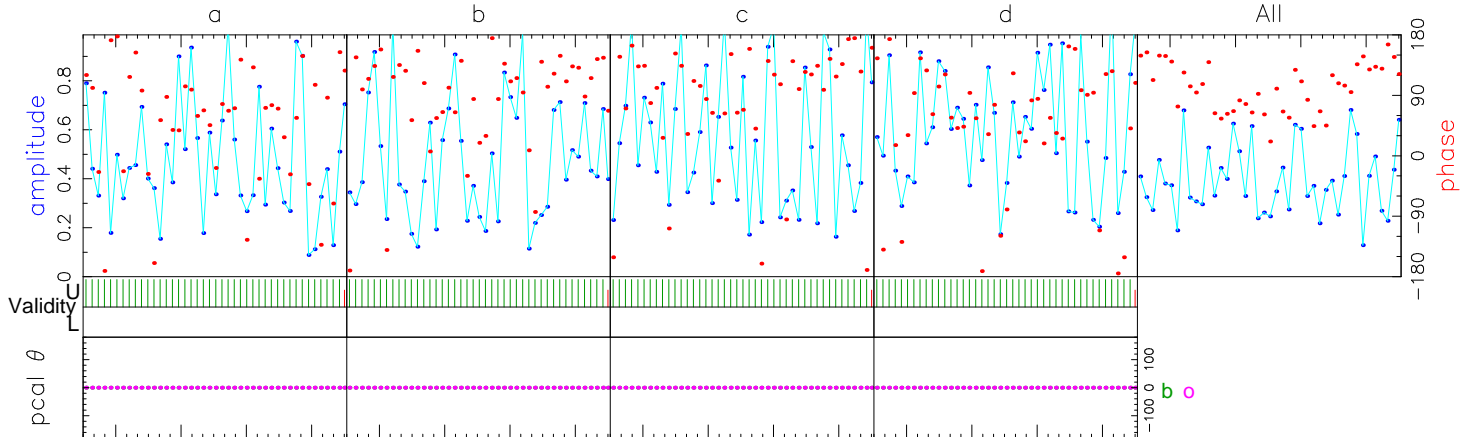
Fringe quality 9

SNR 14.0  
Int time 239.960  
Amp 0.329  
Phase 103.6  
PFD 9.1e-36  
Delays (us)  
SBD 0.000586  
MBD 0.000649  
Fringe rate (Hz) 0.000289  
Ion TEC 0.000  
Ref freq (MHz) 43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132939  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 87.1     | 114.5    | 119.6    | 86.4     | Phase      | 103.6 |
| b   | 0.3      | 0.4      | 0.4      | 0.4      | Ampl.      | 0.3   |
| o   | 513.3    | 513.3    | 512.8    | 513.8    | Sbd box    | 513.3 |
| b:0 | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| b:0 | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:0 | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| b:0 | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:0 | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| b   | 1000     | 1000     | 1000     | 1000     |            |       |
| b   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |  |                       |                   |                            |
|-------------------------|--------------------|--------------------------|--------------------|--|-----------------------|-------------------|----------------------------|
| Group delay (usec)(sbd) | -2.54203635303E+03 | Apriori delay (usec)     | -2.54203700188E+03 | Resid mbdelay (usec)                   | 6.48844E-04           | +/-               | 8.0E-05                    |
| Sband delay (usec)      | -2.54203641563E+03 | Apriori clock (usec)     | -6.6066227E+00     | Resid sbdelay (usec)                   | 5.86250E-04           | +/-               | 3.1E-04                    |
| Phase delay (usec)      | -2.54203699519E+03 | Apriori clockrate (us/s) | -4.5999999E-07     | Resid phdelay (usec)                   | 6.68621E-06           | +/-               | 5.3E-07                    |
| Delay rate (us/s)       | 6.30481947336E-02  | Apriori rate (us/s)      | 6.30481880147E-02  | Resid rate (us/s)                      | 6.71897E-09           | +/-               | 3.8E-09                    |
| Total phase (deg)       | -98.3              | Apriori accel (us/s/s)   | 1.39476108518E-05  | Resid phase (deg)                      | 103.6                 | +/-               | 8.2                        |
| RMS                     | 36.2               | Theor.                   | 26.9               | Amplitude                              | 0.329 +/- 0.024       |                   |                            |
| ph/seg (deg)            | 46.9               | Search (1024X16)         | 0.322              | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)             | 21.7               | Interp.                  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg)            | 15.7               | Inc. seg. avg.           | 0.355              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)             |                    | Inc. frq. avg.           | 0.335              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
|                         |                    |                          |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

b: az 192.3 el 42.9 pa 8.1

o: az 197.5 el 53.2 pa 14.3

u,v (fr/asec) -174.889 634.081

simultaneous interpolator

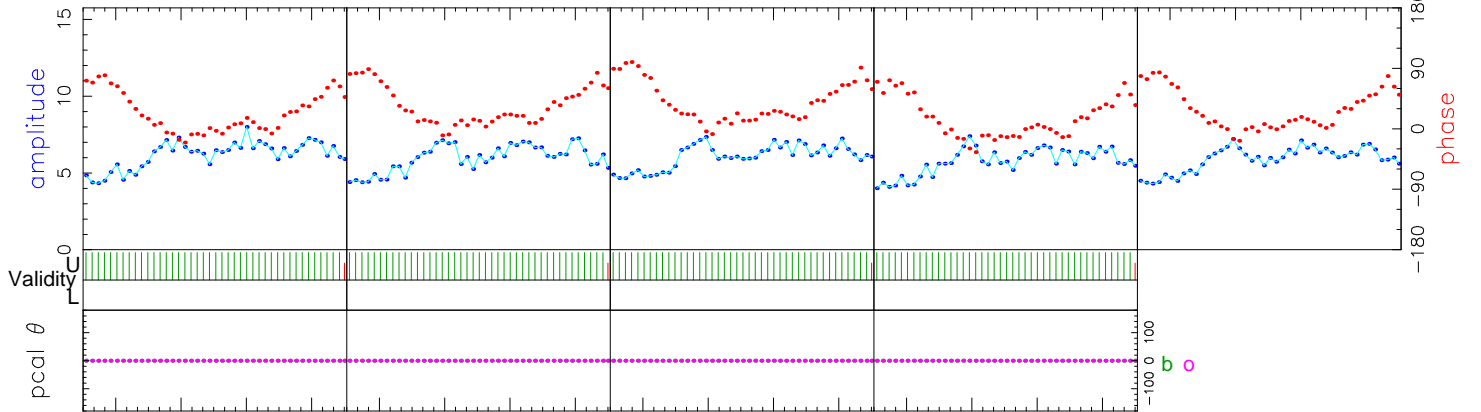
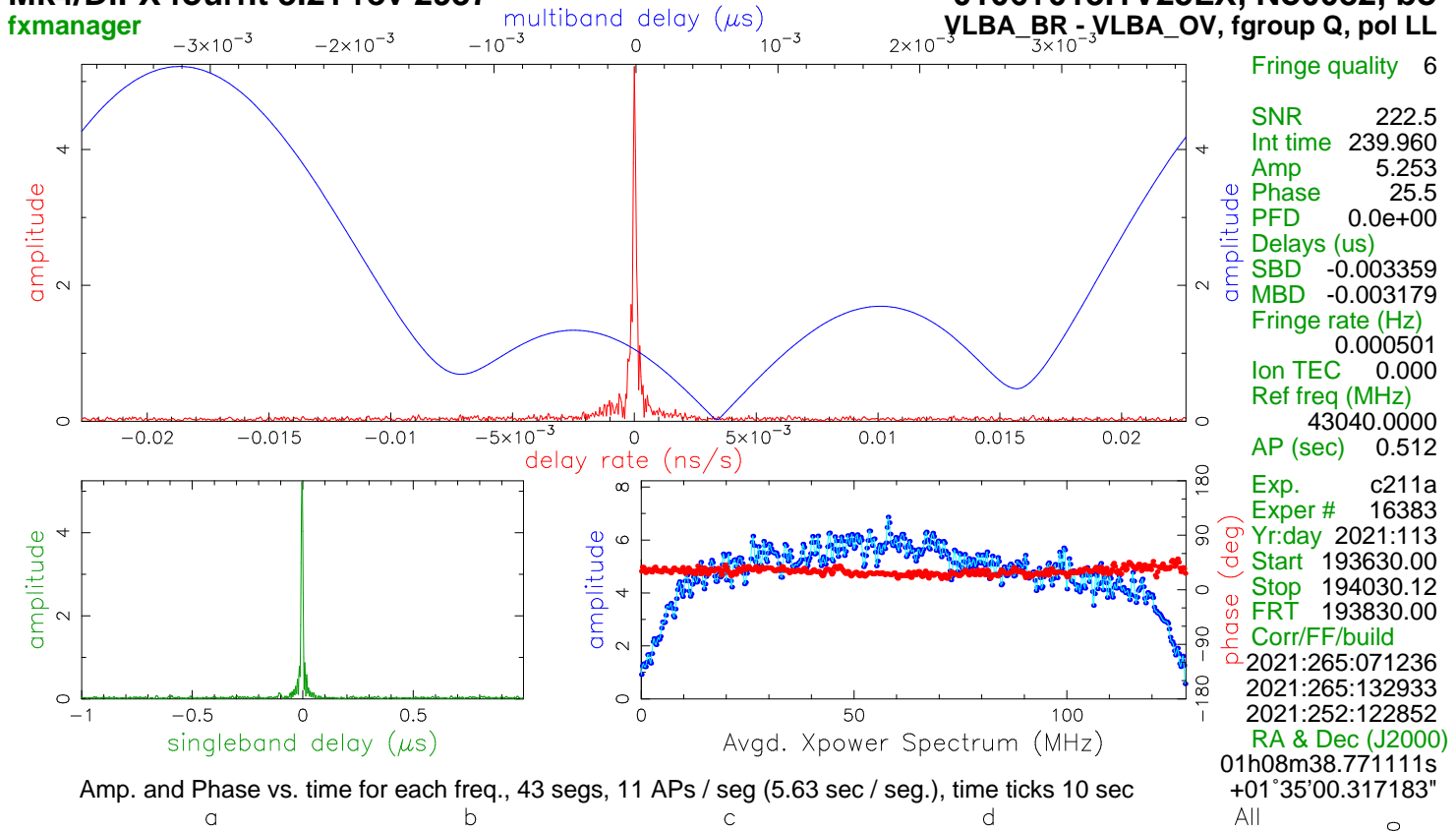
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bo.Q.60.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bo

VLBA\_BR - VLBA\_OV, fgroup Q, pol LL



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 25.5  |
| b   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 5.3   |
| o   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 511.3 |
| b:o | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| b:o | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| b   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| o   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| b   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -2.54204018116E+03 | Apriori delay (usec)     | -2.54203700188E+03 | Resid mbdelay (usec) | -3.17928E-03 | +/- | 5.0E-06 |
| Sband delay (usec)      | -2.54204036125E+03 | Apriori clock (usec)     | -6.6066227E+00     | Resid sbdelay (usec) | -3.35938E-03 | +/- | 1.9E-05 |
| Phase delay (usec)      | -2.54203700023E+03 | Apriori clockrate (us/s) | -4.5999999E-07     | Resid phdelay (usec) | 1.64673E-06  | +/- | 3.3E-08 |
| Delay rate (us/s)       | 6.30481996488E-02  | Apriori rate (us/s)      | 6.30481880147E-02  | Resid rate (us/s)    | 1.16341E-08  | +/- | 2.4E-10 |
| Total phase (deg)       | -176.4             | Apriori accel (us/s/s)   | 1.39476108518E-05  | Resid phase (deg)    | 25.5         | +/- | 0.5     |

|              |        |                  |                 |  |                       |                      |                            |
|--------------|--------|------------------|-----------------|--|-----------------------|----------------------|----------------------------|
| RMS          | Theor. | Amplitude        | 5.253 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| ph/seg (deg) | 29.5   | Search (1024X16) | 5.031           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| amp/seg (%)  | 19.5   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| ph/frq (deg) | 13.9   | Inc. seg. avg.   | 5.904           | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
| amp/frq (%)  | 2.9    | Inc. frq. avg.   | 5.295           | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

b: az 192.3 el 42.9 pa 8.1 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) -174.889 634.081 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bo.Q.6.1V25LX

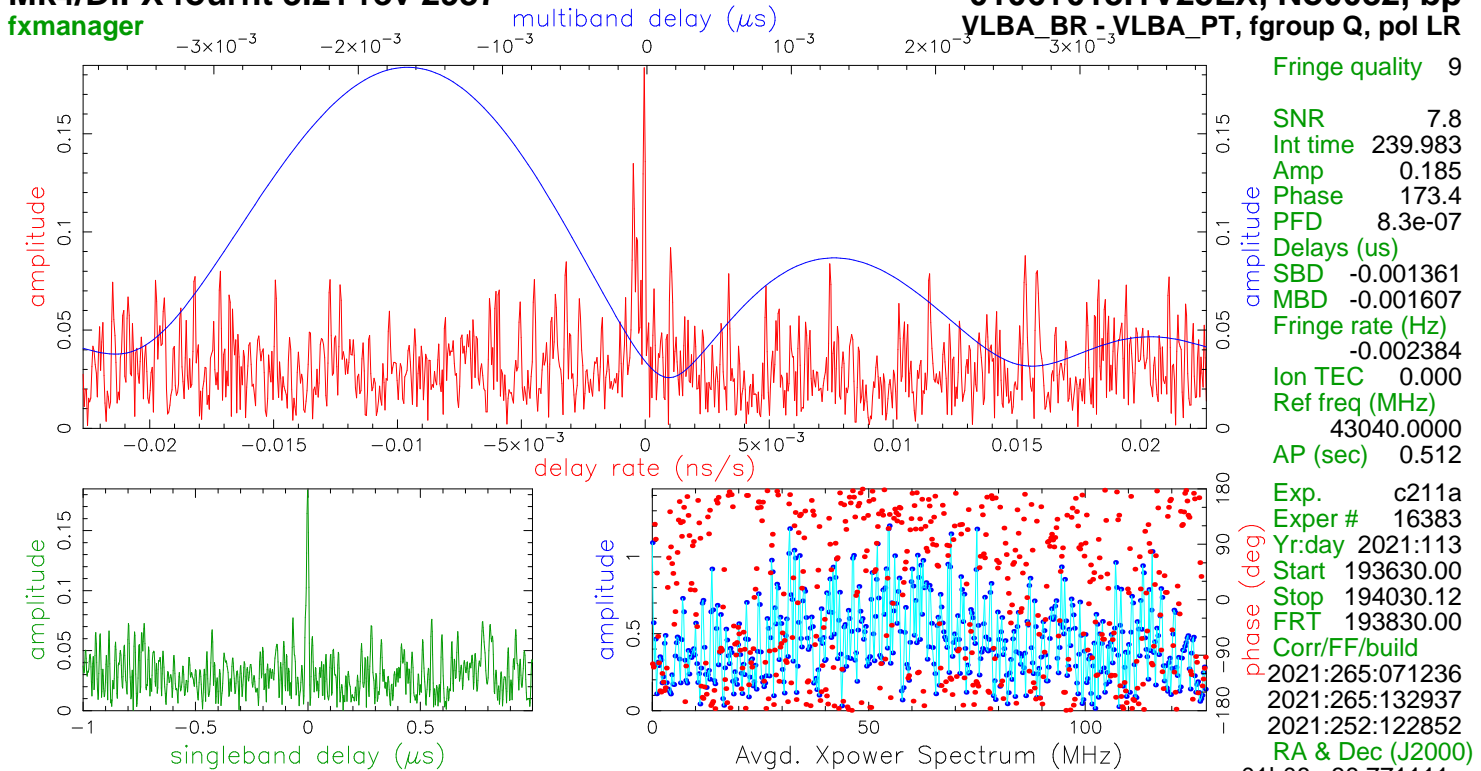


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bp

VLBA\_BR - VLBA\_PT, fgroup Q, pol LR

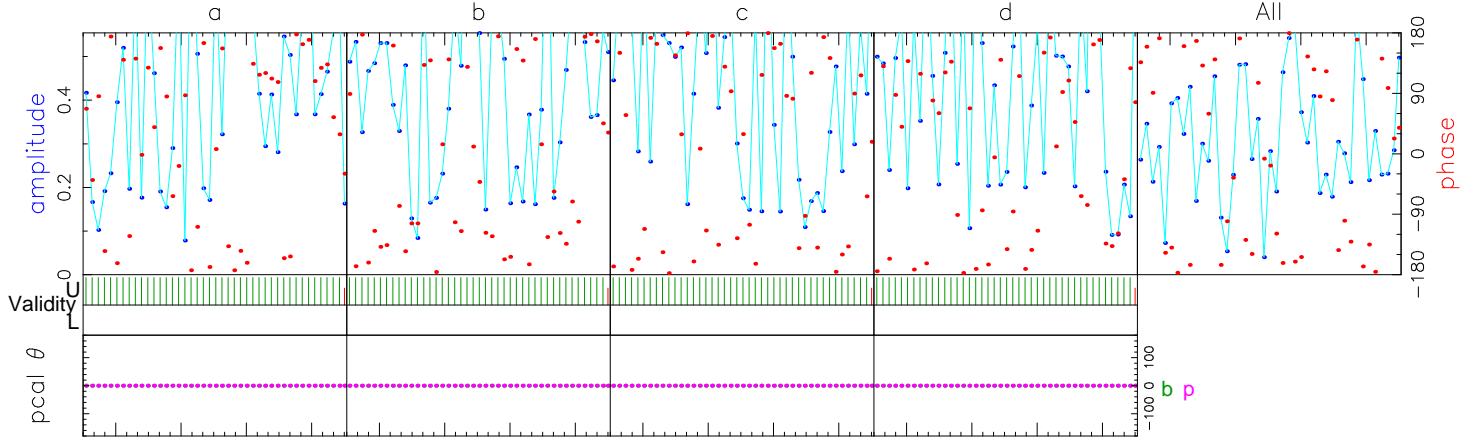


Fringe quality 9

SNR 7.8  
Int time 239.983  
Amp 0.185  
Phase 173.4  
PFD 8.3e-07  
Delays (us)  
SBD -0.001361  
MBD -0.001607  
Fringe rate (Hz)  
-0.002384  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132937  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               |  |   |                    |                           |  |                              |                  |              |
|-------------------------------|--|---|--------------------|---------------------------|--|------------------------------|------------------|--------------|
| 42912.00                      | 43040.00   | 43168.00  | 43296.00           | Freq (MHz)                | All                                    |                              |                  |              |
| 158.3                         | -151.1   | 166.3   | 162.6              | Phase                     | 173.4                                  |                              |                  |              |
| 0.2                           | 0.2  | 0.2   | 0.2                | Ampl.                     | 0.2                                    |                              |                  |              |
| 513.0                         | 512.4  | 510.1   | 989.0              | Sbd box                   | 512.3                                  |                              |                  |              |
| U/L 469/0                     | 469/0  | 469/0   | 469/0              | APs used                  |  |                              |                  |              |
| b 1000                        | 1000   | 1000  | 1000               | PC freqs                  |  |                              |                  |              |
| p 1000                        | 1000   | 1000  | 1000               | PC freqs                  |  |                              |                  |              |
| b:p 0:0                       | 0:0  | 0:0   | 0:0                | PC phase                  |  |                              |                  |              |
| b:p 0:0                       | 0:0  | 0:0   | 0:0                | Manl PC                   |  |                              |                  |              |
| b 1000                        | 1000   | 1000  | 1000               | PC amp                    |  |                              |                  |              |
| p 1000                        | 1000   | 1000  | 1000               |                           |  |                              |                  |              |
| b Q00UL                       | Q01UL  | Q02UL   | Q03UL              | Chan ids                  |  |                              |                  |              |
| p Q00UR                       | Q01UR  | Q02UR   | Q03UR              | Tracks                    |  |                              |                  |              |
|                               |  |   |                    | Chan ids                  |  |                              |                  |              |
|                               |  |   |                    | Tracks                    |  |                              |                  |              |
| Group delay (usec)(sbd)       | -2.28138050477E+03                                       | Apriori delay (usec)  | -2.28137889812E+03 | Resid mbdelay (usec)      | -1.60665E-03 +/- 1.4E-04               |                              |                  |              |
| Sband delay (usec)            | -2.28138025924E+03                                       | Apriori clock (usec)  | -8.5112324E+00     | Resid sbdelay (usec)      | -1.36113E-03 +/- 5.5E-04               |                              |                  |              |
| Phase delay (usec)            | -2.28137888692E+03                                       | Apriori clockrate (us/s)                                      | 2.0000000E-08      | Resid phdelay (usec)      | 1.11934E-05 +/- 9.4E-07                |                              |                  |              |
| Delay rate (us/s)             | 2.90172433963E-01  | Apriori rate (us/s)   | 2.90172489360E-01  | Resid rate (us/s)         | -5.53968E-08 +/- 6.8E-09               |                              |                  |              |
| Total phase (deg)             | -105.5   | Apriori accel (us/s/s)  | 1.26894403150E-05  | Resid phase (deg)         | 173.4 +/- 14.6                         |                              |                  |              |
| RMS                           | Theor.   | Amplitude   | 0.185 +/- 0.024    | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5                  |                              |                  |              |
| ph/seg (deg)                  | 71.0   | 48.0  | Search (1024X16)   | 0.179                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000        |
| amp/seg (%)                   | 98.3   | 83.8  | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg)                  | 28.7   | 14.6  | Inc. seg. avg.     | 0.228                     | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)                   | 8.5  | 25.6  | Inc. frq. avg.     | 0.189                     | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |
| b: az 192.3 el 42.9 pa 8.1    | p: az 214.8 el 52.2 pa 28.7                              | u,v (fr/asec)   | -825.675 815.558   | simultaneous interpolator |  |                              |                  |              |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/bp..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/bp.Q.44.1V25LX |                    |                           |  |                              |                  |              |

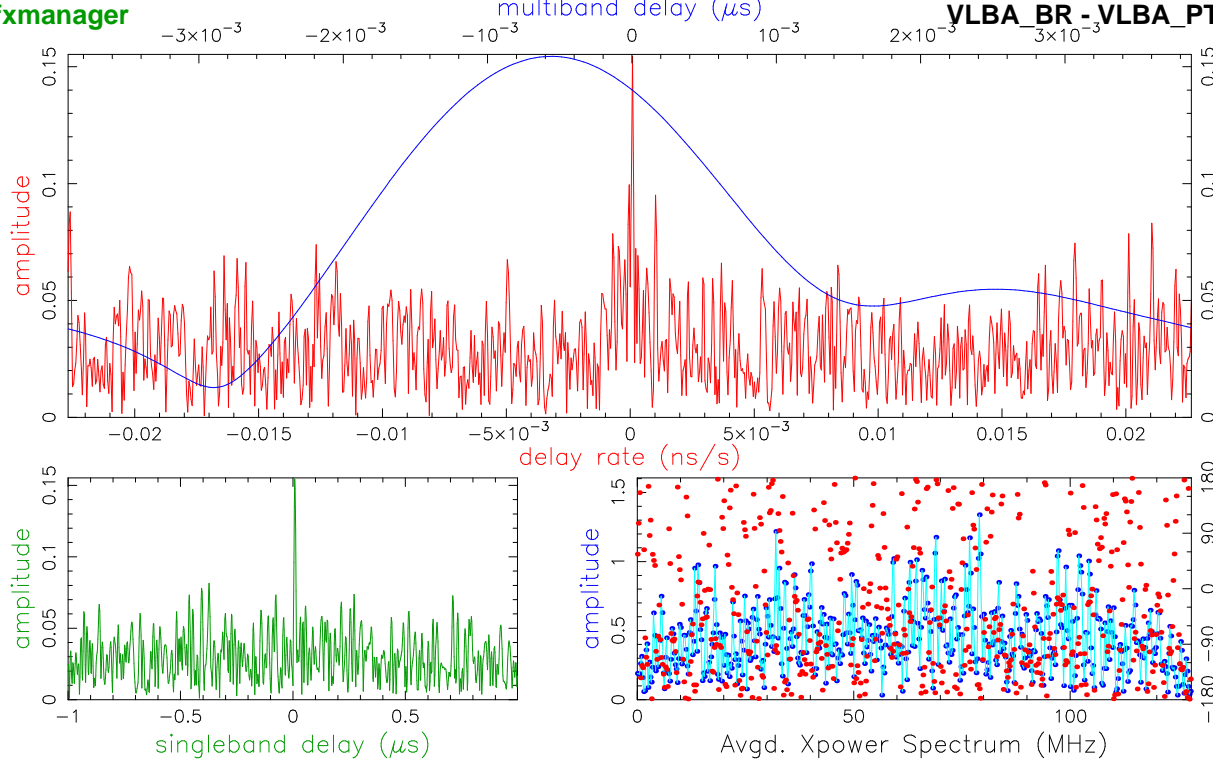


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, bp

VLBA\_BR - VLBA\_PT, fgroup Q, pol RL



Fringe quality 0

SNR 6.6

Int time 239.983

Amp 0.155

Phase 86.4

PFD 6.8e-03

Delays (us)

SBD 0.008308

MBD -0.000545

Fringe rate (Hz)

0.004725

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132940

2021:252:122852

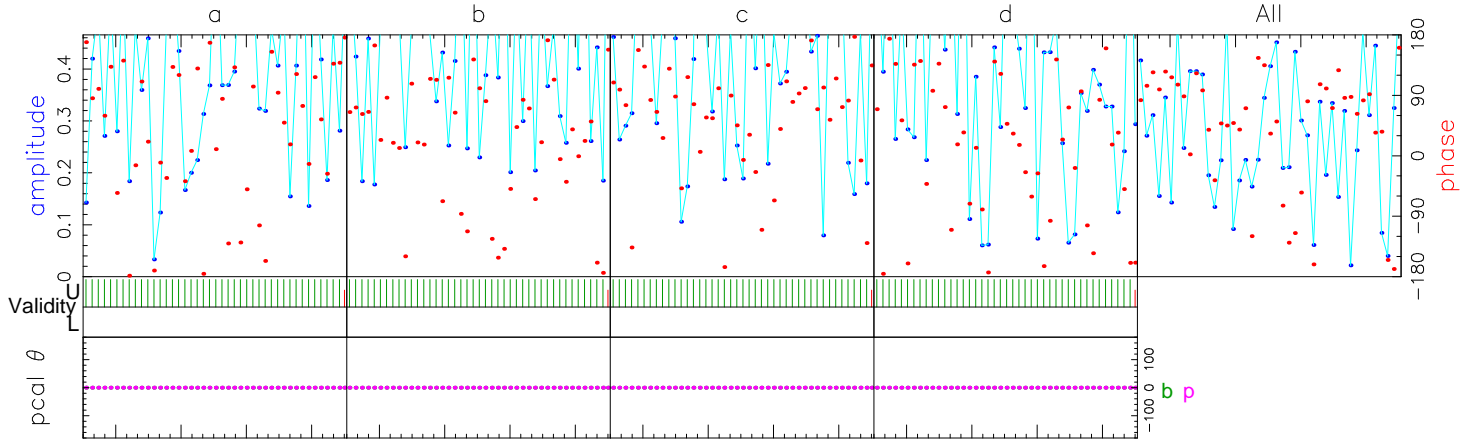
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                         | 42912.00           | 43040.00                 | 43168.00           | 43296.00             | Freq (MHz)   | All         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| U/L                     | 105.8              | 61.9                     | 84.5               | 104.1                | Phase        | 86.4        |
| b                       | 0.1                | 0.2                      | 0.3                | 0.1                  | Ampl.        | 0.2         |
| p                       | 673.0              | 517.1                    | 516.4              | 591.8                | Sbd box      | 517.3       |
| b:p                     | 469/0              | 469/0                    | 469/0              | 469/0                | APs used     |             |
| b:p                     | 1000               | 1000                     | 1000               | 1000                 | PC freqs     |             |
| b:p                     | 1000               | 1000                     | 1000               | 1000                 | PC phase     |             |
| b                       | 1000               | 1000                     | 1000               | 1000                 | Manl PC      |             |
| b                       | 1000               | 1000                     | 1000               | 1000                 | PC amp       |             |
| b                       | Q00UR              | Q01UR                    | Q02UR              | Q03UR                | Chan ids     |             |
| p                       | Q00UL              | Q01UL                    | Q02UL              | Q03UL                | Tracks       |             |
|                         |                    |                          |                    |                      | Chan ids     |             |
|                         |                    |                          |                    |                      | Tracks       |             |
| Group delay (usec)(sbd) | -2.28137163050E+03 | Apriori delay (usec)     | -2.28137889812E+03 | Resid mbdelay (usec) | -5.44887E-04 | +/- 1.7E-04 |
| Sband delay (usec)      | -2.28137058974E+03 | Apriori clock (usec)     | -8.5112324E+00     | Resid sbdelay (usec) | 8.30838E-03  | +/- 6.5E-04 |
| Phase delay (usec)      | -2.28137889254E+03 | Apriori clockrate (us/s) | 2.0000000E-08      | Resid phdelay (usec) | 5.57495E-06  | +/- 1.1E-06 |
| Delay rate (us/s)       | 2.90172599144E-01  | Apriori rate (us/s)      | 2.90172489360E-01  | Resid rate (us/s)    | 1.09784E-07  | +/- 8.1E-09 |
| Total phase (deg)       | -192.6             | Apriori accel (us/s/s)   | 1.26894403150E-05  | Resid phase (deg)    | 86.4         | +/- 17.4    |

|              | RMS   | Theor. | Amplitude        | 0.155 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
|--------------|-------|--------|------------------|-----------------|--|---|
| ph/seg (deg) | 70.6  | 57.1   | Search (1024X16) | 0.138           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)  | 114.7 | 99.7   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg) | 25.4  | 17.4   | Inc. seg. avg.   | 0.185           | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)  | 38.6  | 30.4   | Inc. frq. avg.   | 0.154           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

b: az 192.3 el 42.9 pa 8.1

p: az 214.8 el 52.2 pa 28.7

u,v (fr/asec) -825.675 815.558

simultaneous interpolator

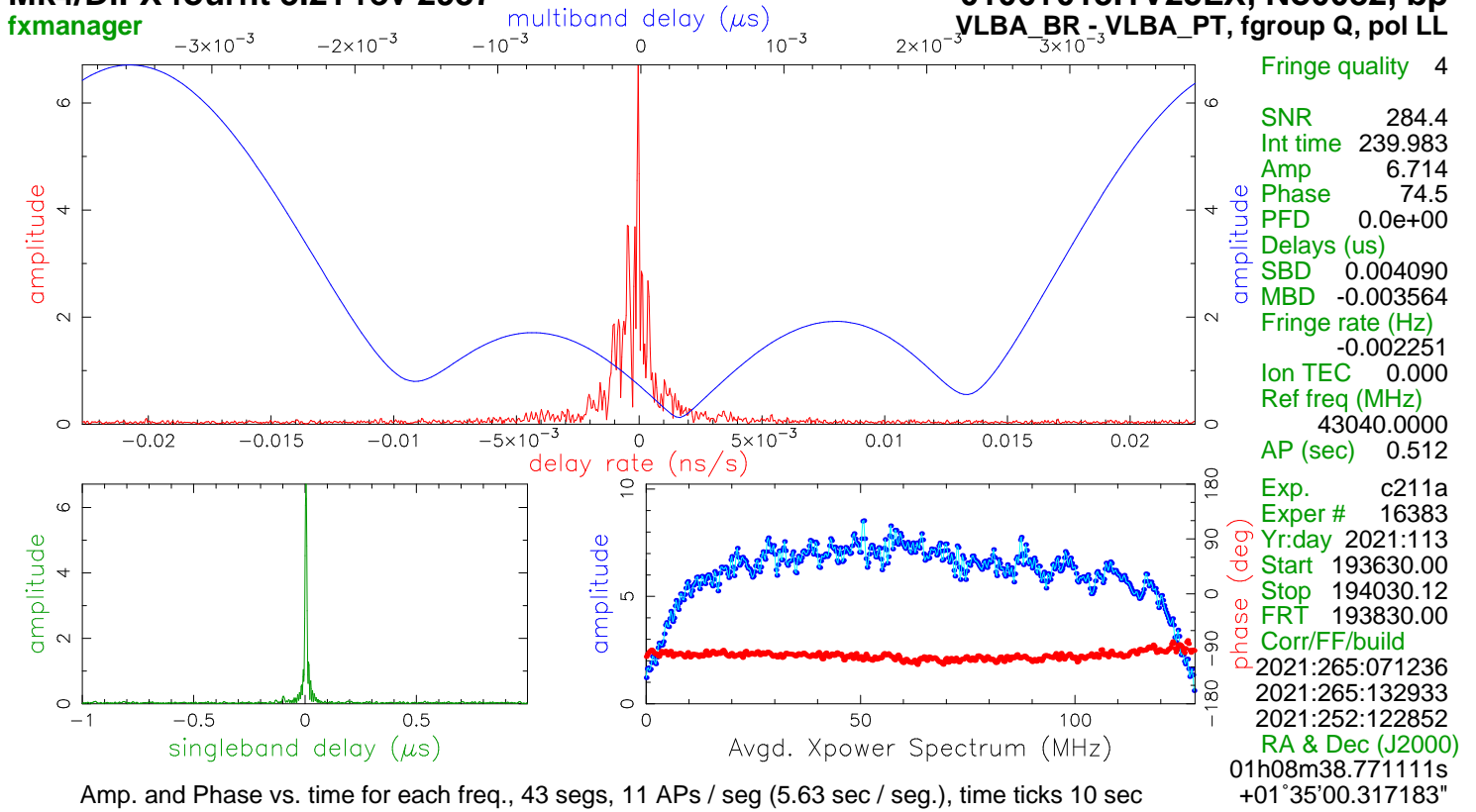
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bp.Q.71.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

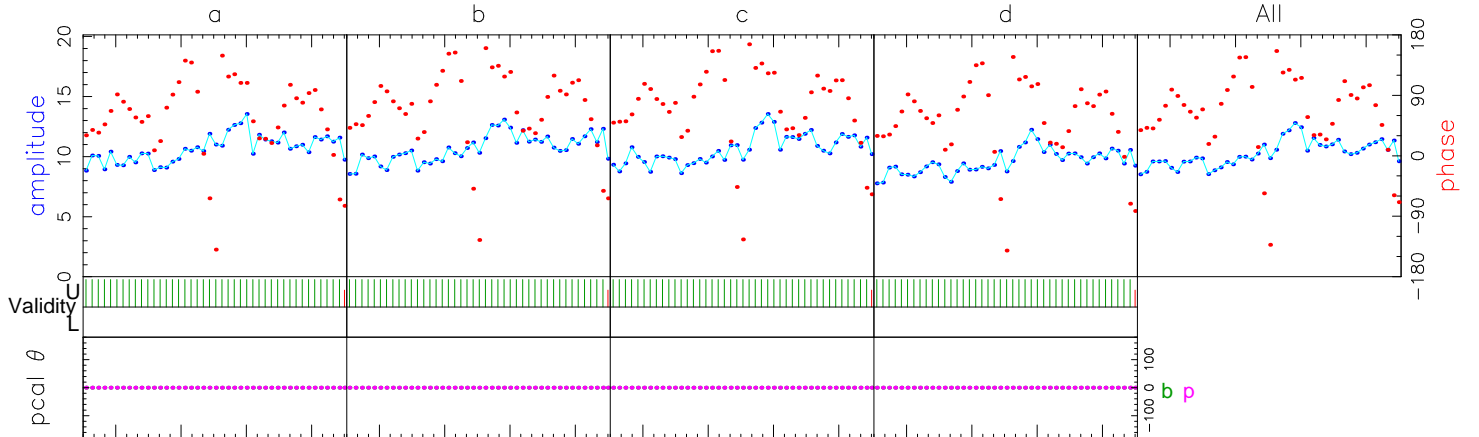
fxmanager

0106+013.1V25LX, No0082, bp

VLBA\_BR - VLBA\_PT, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|           |          |          |          |            |       |
|-----------|----------|----------|----------|------------|-------|
| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
| 67.9      | 80.9     | 83.6     | 64.4     | Phase      | 74.5  |
| 6.9       | 7.0      | 7.0      | 6.3      | Ampl.      | 6.8   |
| 515.5     | 515.3    | 514.9    | 514.4    | Sbd box    | 515.1 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| b 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| p 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| b:p 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| b:p 0:0   | 0:0      | 0:0      | 0:0      | ManI PC    |       |
| b 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| p 1000    | 1000     | 1000     | 1000     |            |       |
| b Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| p Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -2.28137464914E+03 | Apriori delay (usec)     | -2.28137889812E+03 | Resid mbdelay (usec) | -3.56353E-03 | +/- | 3.9E-06 |
| Sband delay (usec)      | -2.28137480849E+03 | Apriori clock (usec)     | -8.5112324E+00     | Resid sbdelay (usec) | 4.08963E-03  | +/- | 1.5E-05 |
| Phase delay (usec)      | -2.28137889331E+03 | Apriori clockrate (us/s) | 2.0000000E-08      | Resid phdelay (usec) | 4.80614E-06  | +/- | 2.6E-08 |
| Delay rate (us/s)       | 2.90172437049E-01  | Apriori rate (us/s)      | 2.90172489360E-01  | Resid rate (us/s)    | -5.23110E-08 | +/- | 1.9E-10 |
| Total phase (deg)       | -204.5             | Apriori accel (us/s/s)   | 1.26894403150E-05  | Resid phase (deg)    | 74.5         | +/- | 0.4     |

|              |      |                  |        |                |                 |  |                       |
|--------------|------|------------------|--------|----------------|-----------------|--|-----------------------|
| ph/seg (deg) | 55.2 | Theor.           | 1.3    | Amplitude      | 6.714 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 55.5 | Search (1024X16) | 6.570  | Interp.        | 0.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 11.6 | Inc. seg. avg.   | 10.287 | Inc. seg. avg. | 10.287          | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 4.6  | Inc. frq. avg.   | 6.778  | Inc. frq. avg. | 6.778           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |                  |        |                |                 | Data rate(Mb/s): 2048                  | ion window (TEC)      |
|              |      |                  |        |                |                 | nlags: 512                             | t_cohere infinite     |

b: az 192.3 el 42.9 pa 8.1 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) -825.675 815.558 simultaneous interpolator

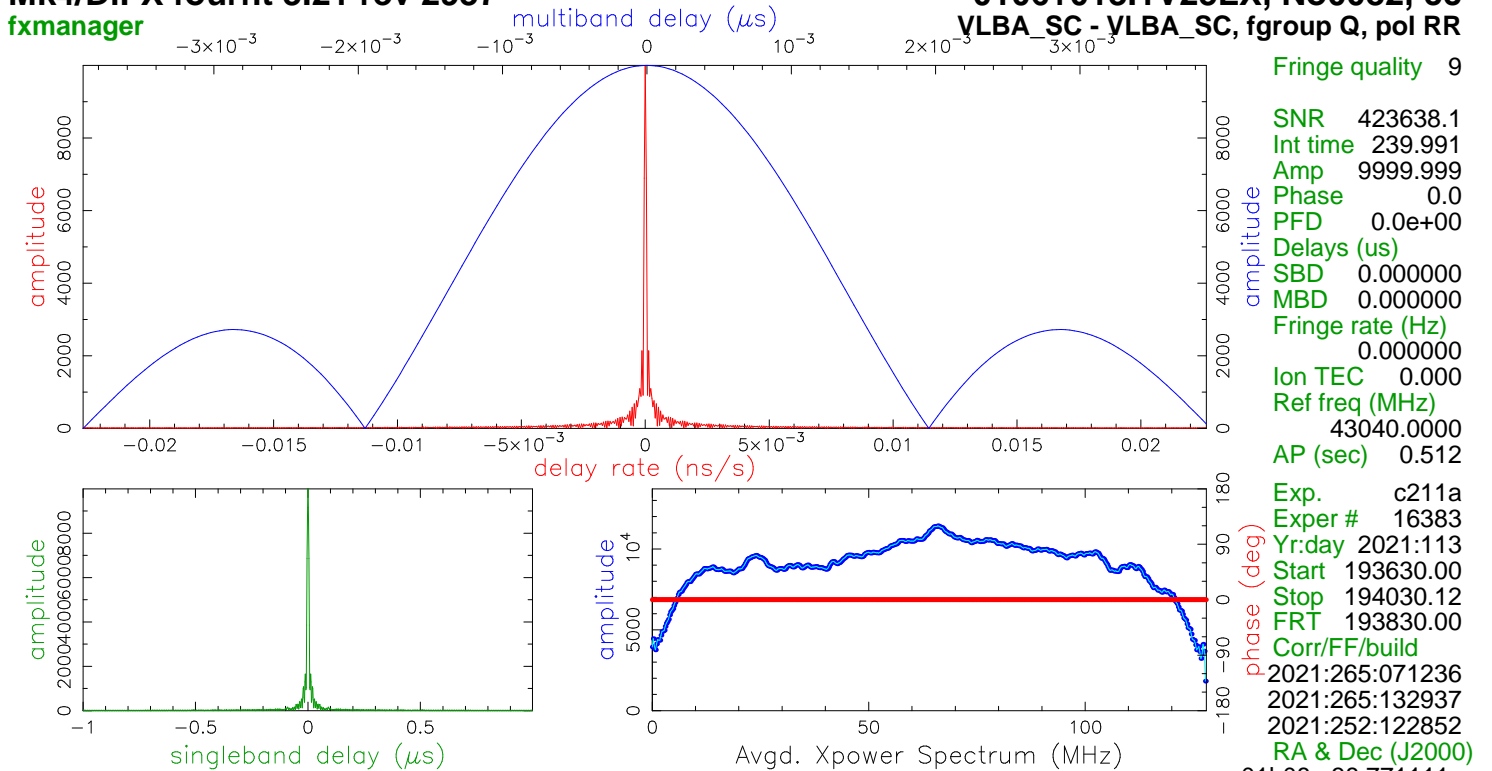
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/bp.Q.7.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, cc

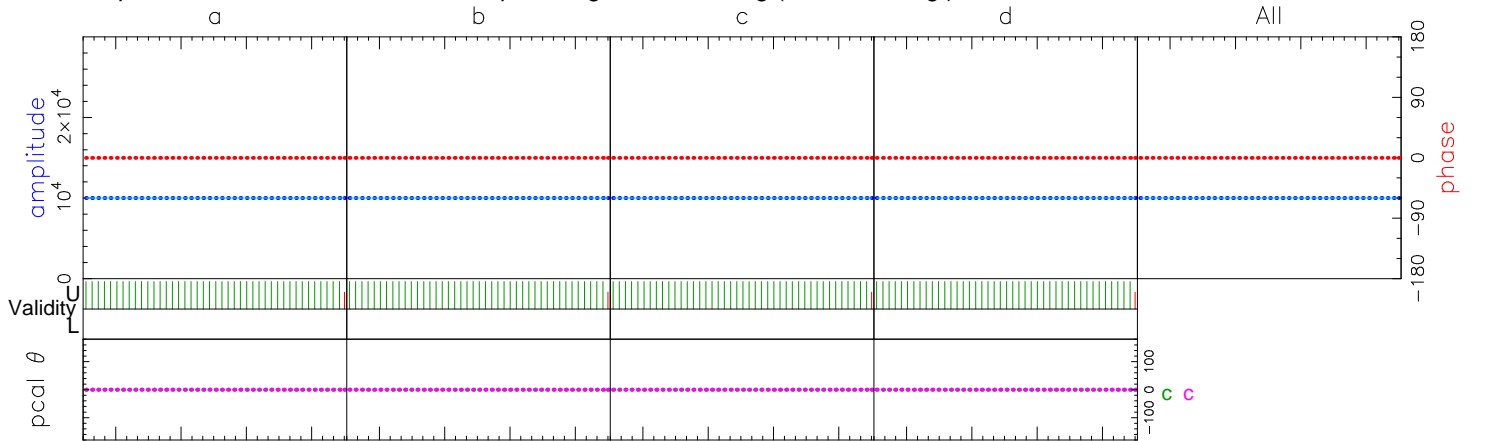
VLBA\_SC - VLBA\_SC, fgroup Q, pol RR



Fringe quality 9

SNR 423638.1  
Int time 239.991  
Amp 9999.999  
Phase 0.0  
PFD 0.0e+00  
Delays (us)  
SBD 0.000000  
MBD 0.000000  
Fringe rate (Hz)  
0.000000  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512  
Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132937  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All     |
|-----------|----------|----------|----------|------------|---------|
| 0.0       | 0.0      | 0.0      | 0.0      | Phase      | 0.0     |
| 10000.0   | 10000.0  | 10000.0  | 10000.0  | Ampl.      | 10000.0 |
| 513.0     | 513.0    | 513.0    | 513.0    | Sbd box    | 513.0   |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |         |
| c 1000    | 1000     | 1000     | 1000     | PC freqs   |         |
| c 1000    | 1000     | 1000     | 1000     | PC freqs   |         |
| c:c 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |         |
| c:c 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |         |
| c 1000    | 1000     | 1000     | 1000     | PC amp     |         |
| c 1000    | 1000     | 1000     | 1000     |            |         |
| c Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |         |
| c Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |         |
|           |          |          |          | Chan ids   |         |
|           |          |          |          | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |     |                  |                    |  |                       |
|--------------|-----|--------|-----|------------------|--------------------|--|-----------------------|
| ph/seg (deg) | 0.0 | Theor. | 0.0 | Amplitude        | 9999.999 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 0.0 | 0.0    | 0.0 | Search (1024X16) | 10000.000          | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 0.0 | 0.0    | 0.0 | Interp.          | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  |
| amp/frq (%)  | 0.0 | 0.0    | 0.0 | Inc. seg. avg.   | 10000.000          | Sample rate(MSamp/s): 256              | mb window (us)        |
|              |     |        |     | Inc. frq. avg.   | 10000.000          | Data rate(Mb/s): 2048                  | dr window (ns/s)      |
|              |     |        |     |                  |                    | nlags: 512                             | t_cohere infinite     |
|              |     |        |     |                  |                    |  | ion window (TEC)      |

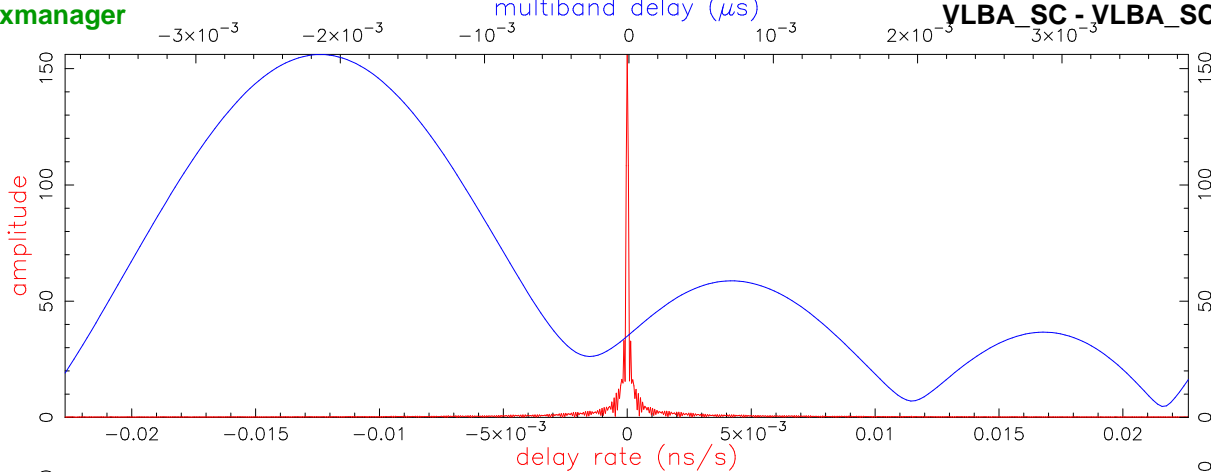
c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/cc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/cc.Q.39.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

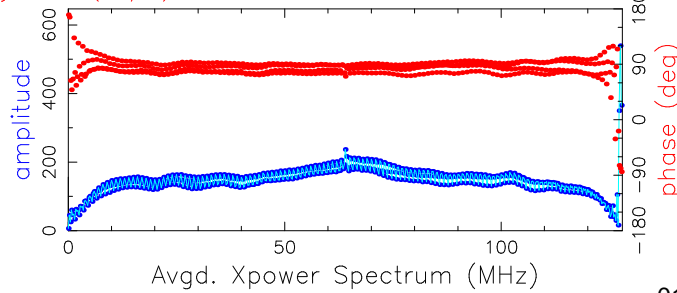
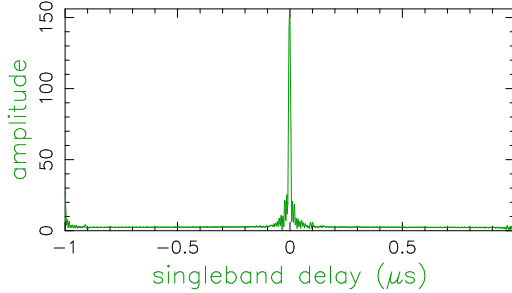
0106+013.1V25LX, No0082, cc

VLBA\_SC - VLBA\_SC, fgroup Q, pol LR



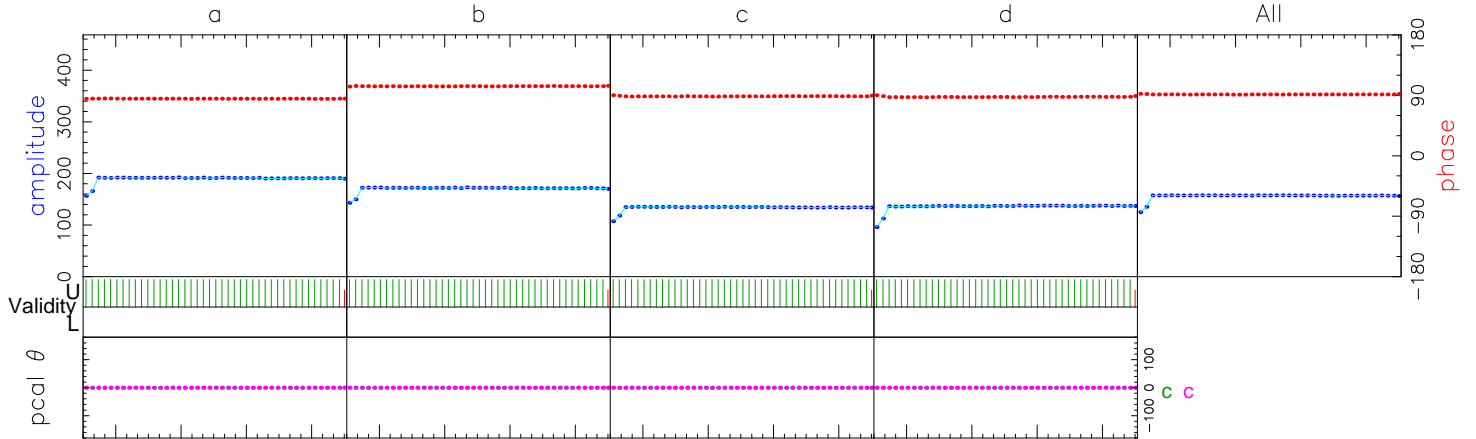
Fringe quality 9

SNR 6615.2  
Int time 239.991  
Amp 156.152  
Phase 91.3  
PFD 0.0e+00  
Delays (us)  
SBD -0.001821  
MBD -0.002134  
Fringe rate (Hz)  
-0.000002  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132939  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |     |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |     |
| c:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |     |
| c:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |     |
| c   | 1000     | 1000     | 1000     | 1000     | PC amp     |     |
| c   | 1000     | 1000     | 1000     | 1000     |            |     |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |     |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |     |
| c   |          |          |          |          | Chan ids   |     |
| c   |          |          |          |          | Tracks     |     |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -2.13440625000E-03 | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | -2.13441E-03 | +/- | 1.7E-07 |
| Sband delay (usec)      | -1.82137500000E-03 | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | -1.82137E-03 | +/- | 6.5E-07 |
| Phase delay (usec)      | 5.89156736229E-06  | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | 5.89157E-06  | +/- | 1.1E-09 |
| Delay rate (us/s)       | -5.10517081932E-11 | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | -5.10517E-11 | +/- | 8.1E-12 |
| Total phase (deg)       | 91.3               | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | 91.3         | +/- | 0.0     |

|              |      |        |     |                  |                   |  |                       |
|--------------|------|--------|-----|------------------|-------------------|--|-----------------------|
| ph/seg (deg) | 0.2  | Theor. | 0.1 | Amplitude        | 156.152 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 3.7  |        | 0.1 | Search (1024X16) | 153.897           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 10.2 |        | 0.0 | Interp.          | 0.000             | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 15.3 |        | 0.0 | Inc. seg. avg.   | 156.097           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |        |     | Inc. frq. avg.   | 157.457           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

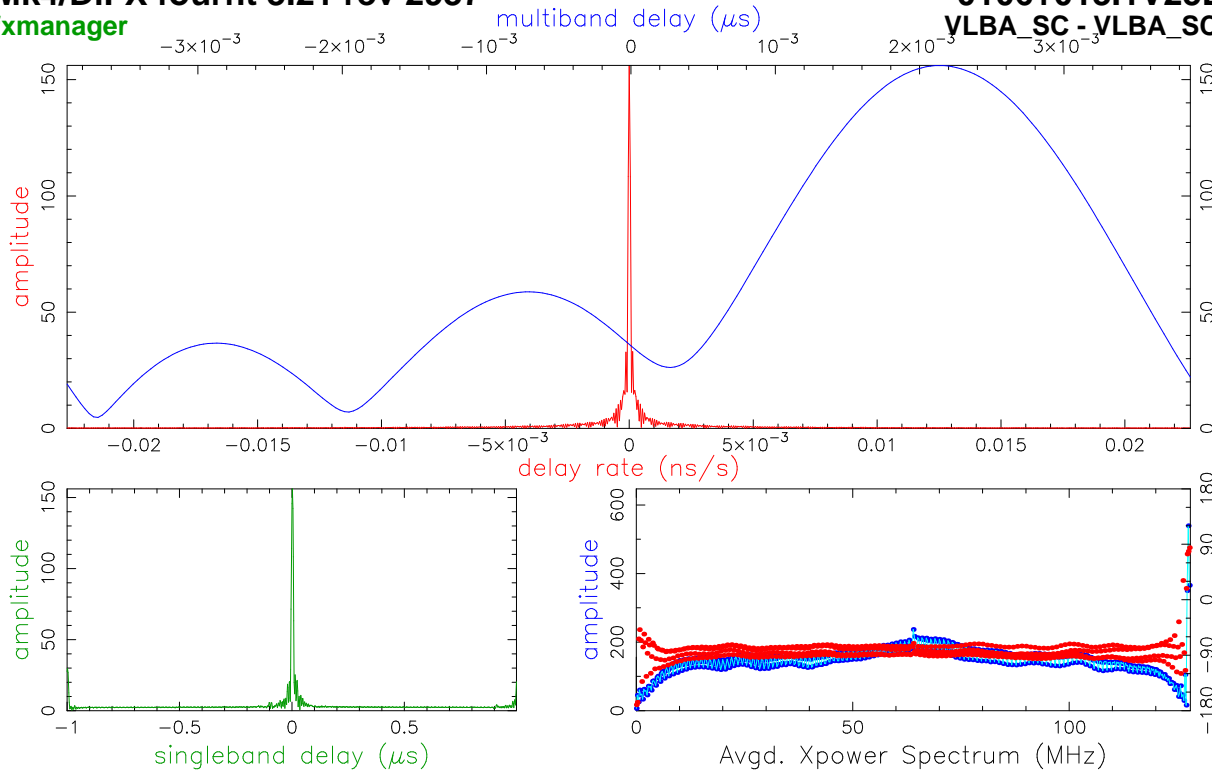
c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/cc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/cc.Q.63.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, cc

VLBA\_SC - VLBA\_SC, fgroup Q, pol RL



Fringe quality 9

SNR 6615.2

Int time 239.991

Amp 156.152

Phase -91.3

PFD 0.0e+00

Delays (us)

SBD 0.001821

MBD 0.002134

Fringe rate (Hz)

0.000002

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132941

2021:252:122852

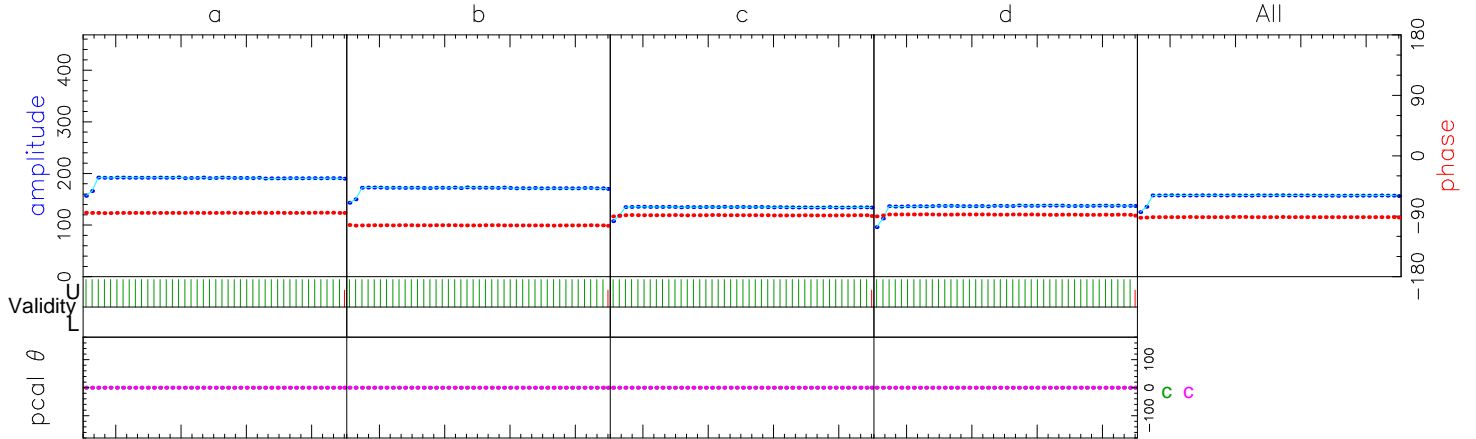
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -85.0    | -103.5   | -88.6    | -87.6    | Phase      | -91.3 |
|     | 189.9    | 170.7    | 133.7    | 135.5    | Ampl.      | 157.5 |
|     | 513.6    | 513.9    | 514.7    | 513.6    | Sbd box    | 513.9 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| c:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| c:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
| c   |          |          |          |          | Chan ids   |       |
| c   |          |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 2.13440625000E-03  | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | 2.13441E-03  | +/- | 1.7E-07 |
| Sband delay (usec)      | 1.82137500000E-03  | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | 1.82137E-03  | +/- | 6.5E-07 |
| Phase delay (usec)      | -5.89156736217E-06 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | -5.89157E-06 | +/- | 1.1E-09 |
| Delay rate (us/s)       | 5.10517081932E-11  | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | 5.10517E-11  | +/- | 8.1E-12 |
| Total phase (deg)       | -91.3              | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | -91.3        | +/- | 0.0     |

|              |      |        |                  |                   |  |                              |                  |        |       |
|--------------|------|--------|------------------|-------------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 156.152 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 0.2  | 0.1    | Search (1024X16) | 153.897           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 3.7  | 0.1    | Interp.          | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 10.2 | 0.0    | Inc. seg. avg.   | 156.097           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 15.3 | 0.0    | Inc. frq. avg.   | 157.457           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/cc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/cc.Q.78.1V25LX

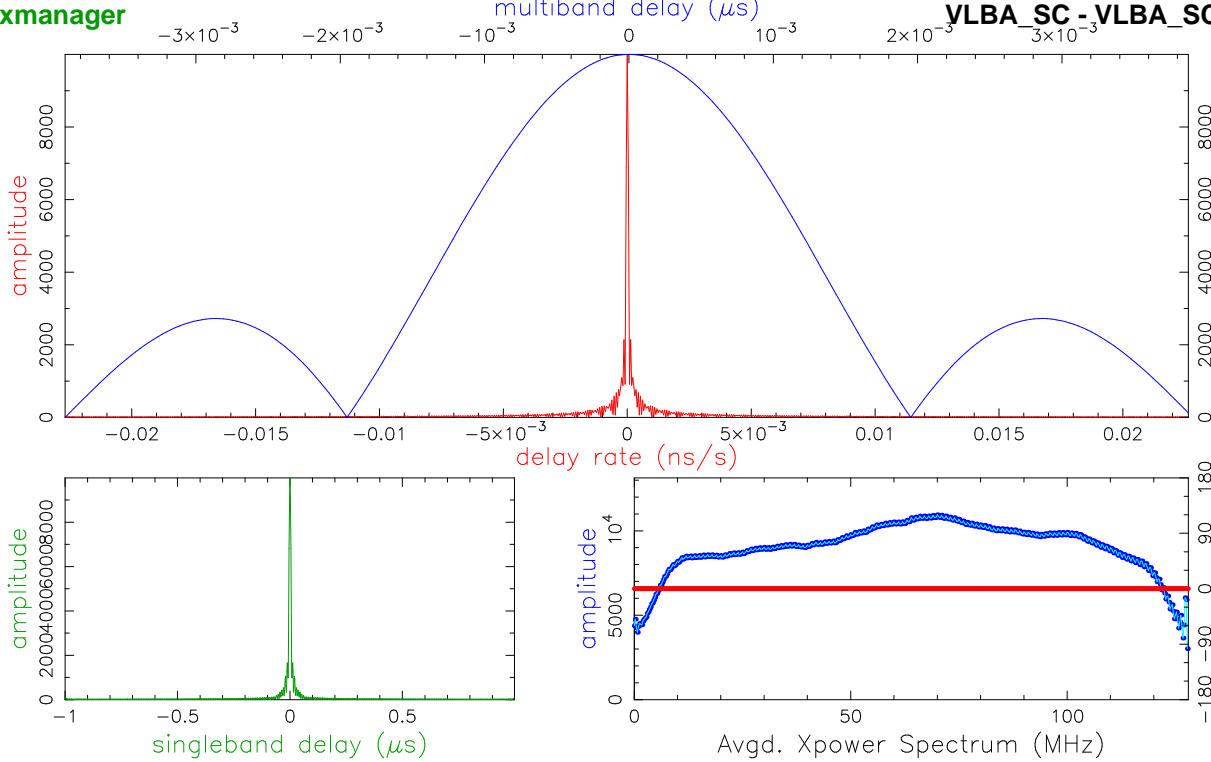


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, cc

VLBA\_SC - VLBA\_SC, fgroup Q, pol LL



Fringe quality 9

SNR 423638.1

Int time 239.991

Amp 9999.999

Phase 0.0

PFD 0.0e+00

Delays (us)

SBD 0.000000

MBD 0.000000

Fringe rate (Hz)

0.000000

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132933

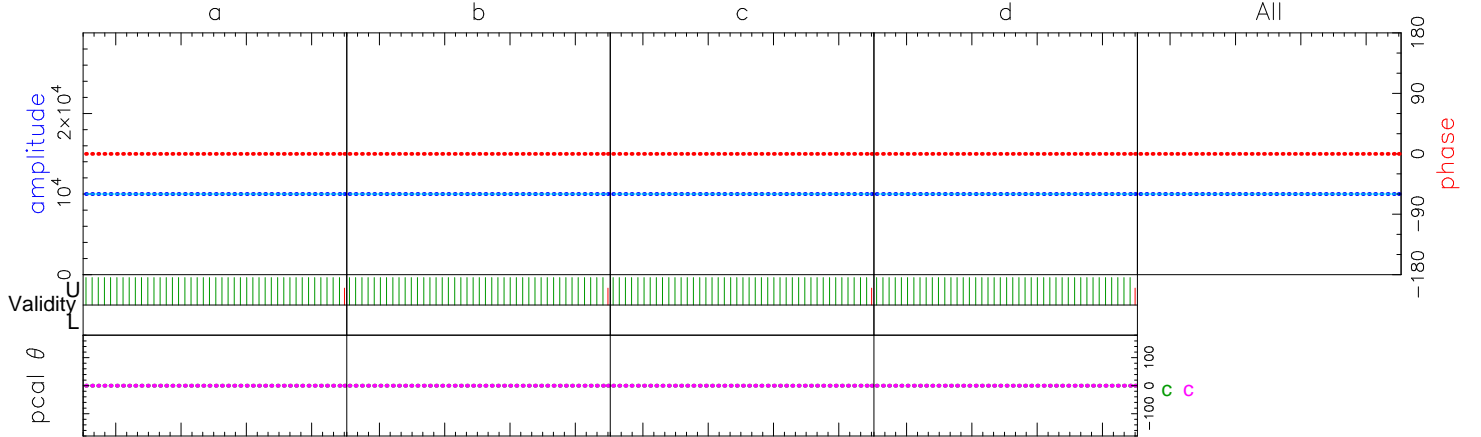
2021:252:122852

RA & Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
|-----------|-----------|-----------|-----------|------------|---------|
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 469/0 | U/L 469/0 | U/L 469/0 | U/L 469/0 | APs used   |         |
| c 1000    | c 1000    | c 1000    | c 1000    | PC freqs   |         |
| c 1000    | c 1000    | c 1000    | c 1000    | PC freqs   |         |
| c:c 0:0   | c:c 0:0   | c:c 0:0   | c:c 0:0   | PC phase   |         |
| c:c 0:0   | c:c 0:0   | c:c 0:0   | c:c 0:0   | Manl PC    |         |
| c 1000    | c 1000    | c 1000    | c 1000    | PC amp     |         |
| c 1000    | c 1000    | c 1000    | c 1000    |            |         |
| c Q00UL   | c Q01UL   | c Q02UL   | c Q03UL   | Chan ids   |         |
| c Q00UL   | c Q01UL   | c Q02UL   | c Q03UL   | Tracks     |         |
| c Q00UL   | c Q01UL   | c Q02UL   | c Q03UL   | Chan ids   |         |
| c Q00UL   | c Q01UL   | c Q02UL   | c Q03UL   | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                    |  |                              |                  |        |       |
|--------------|-----|--------|------------------|--------------------|--|------------------------------|------------------|--------|-------|
|              | RMS | Theor. | Amplitude        | 9999.999 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 0.0 | 0.0    | Search (1024X16) | 10000.000          | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 0.0 | 0.0    | Interp.          | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000          | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 0.0 | 0.0    | Inc. frq. avg.   | 10000.000          | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

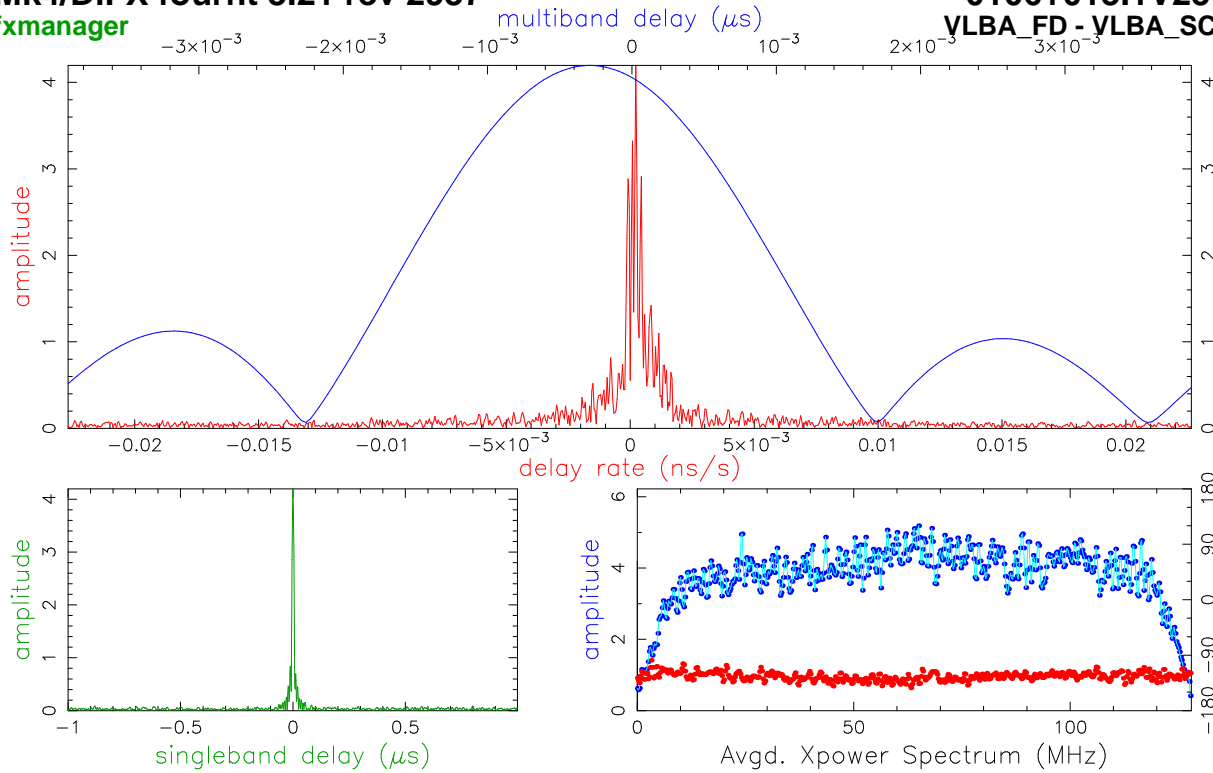
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/cc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/cc.Q.9.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fc

VLBA\_FD - VLBA\_SC, fgroup Q, pol RR



Fringe quality 5

SNR 175.2

Int time 233.174

Amp 4.197

Phase -117.3

PFD 0.0e+00

Delays (us)

SBD 0.000030

MBD -0.000291

Fringe rate (Hz)

0.009709

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132936

2021:252:122852

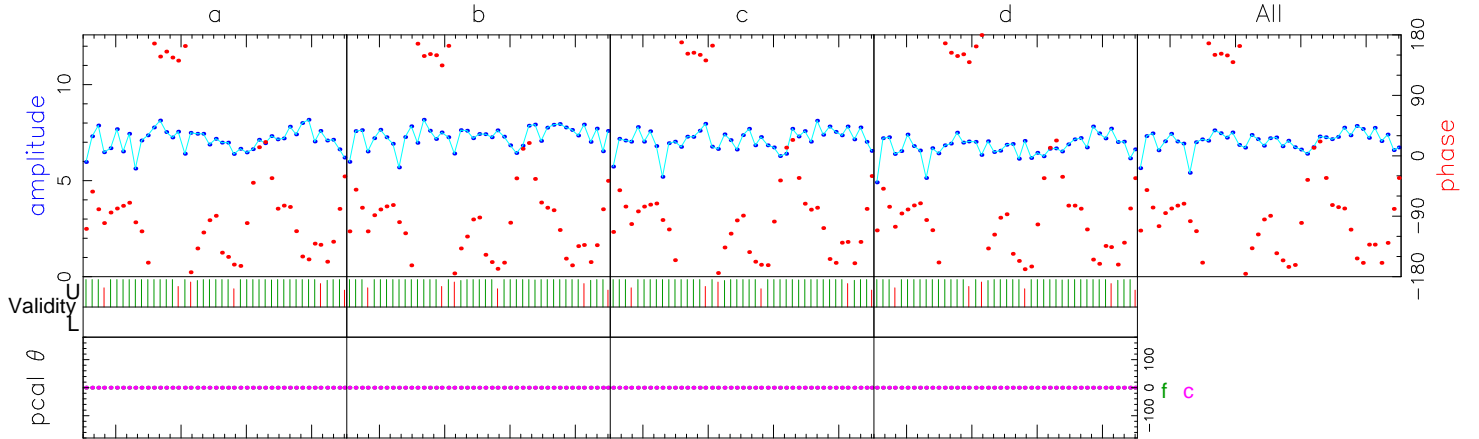
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -116.9   | -118.4   | -116.1   | -117.9   | Phase      | -117.3 |
|     | 4.3      | 4.3      | 4.3      | 3.9      | Ampl.      | 4.2    |
|     | 513.4    | 512.8    | 513.0    | 512.9    | Sbd box    | 513.0  |
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |        |
| f   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| f:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| f:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| c   | 1000     | 1000     | 1000     | 1000     |            |        |
| f   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 8.02022241717E+03 | Apriori delay (usec)     | 8.02022270832E+03  | Resid mbdelay (usec) | -2.91155E-04 | +/- | 6.3E-06 |
| Sband delay (usec)      | 8.02022273832E+03 | Apriori clock (usec)     | -1.9478073E+00     | Resid sbdelay (usec) | 3.00000E-05  | +/- | 2.5E-05 |
| Phase delay (usec)      | 8.02022270075E+03 | Apriori clockrate (us/s) | -2.5600000E-07     | Resid phdelay (usec) | -7.57168E-06 | +/- | 4.2E-08 |
| Delay rate (us/s)       | 7.64158998528E-01 | Apriori rate (us/s)      | 7.64158772947E-01  | Resid rate (us/s)    | 2.25580E-07  | +/- | 3.1E-10 |
| Total phase (deg)       | 14.5              | Apriori accel (us/s/s)   | -4.19759279666E-05 | Resid phase (deg)    | -117.3       | +/- | 0.7     |

|              |      |     |                  |                 |  |                       |
|--------------|------|-----|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | 57.5 | 2.1 | Amplitude        | 4.197 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 69.6 | 3.7 | Search (1024X16) | 4.114           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 1.2  | 0.7 | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 3.6  | 1.1 | Inc. seg. avg.   | 7.070           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |     | Inc. frq. avg.   | 4.197           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

f: az 223.7 el 52.8 pa 36.8 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2205.844 854.511 simultaneous interpolator

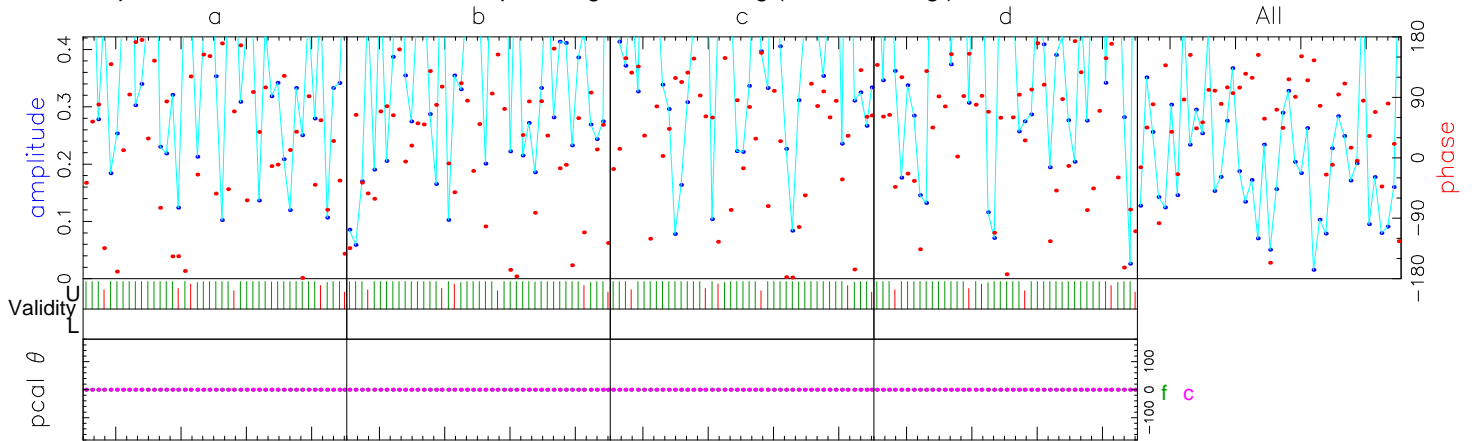
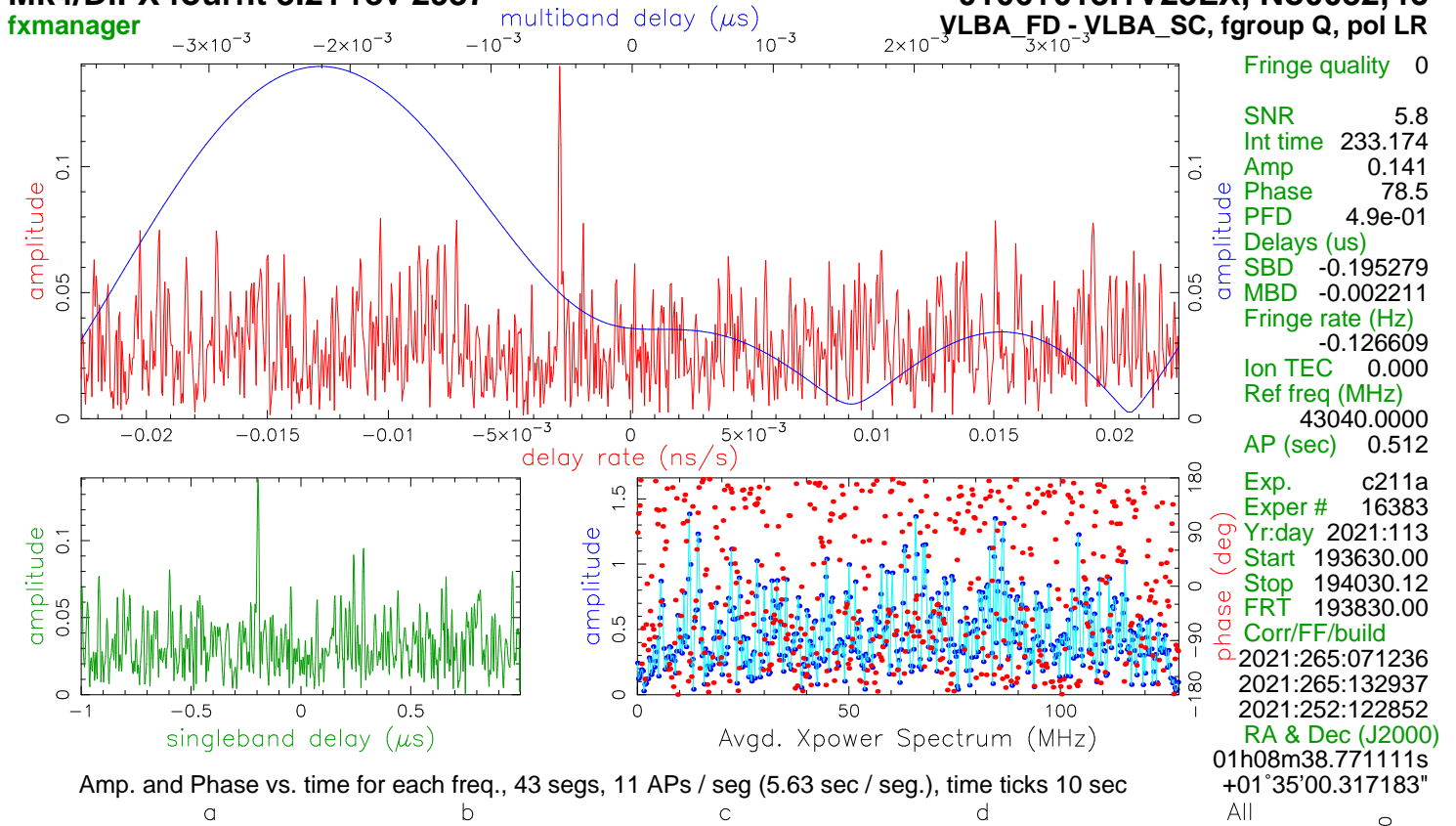
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fc.Q.30.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fc

VLBA\_FD - VLBA\_SC, fgroup Q, pol LR



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | Phase      | 78.5  |
| f   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.1   |
| c   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 413.0 |
| f:c | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| f:c | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Manl PC    |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 8.02002518506E+03 | Apriori delay (usec)     | 8.02022270832E+03  | Resid mbdelay (usec) | -2.21076E-03 | +/- | 1.9E-04 |
| Sband delay (usec)      | 8.02002742945E+03 | Apriori clock (usec)     | -1.9478073E+00     | Resid sbdelay (usec) | -1.95279E-01 | +/- | 7.4E-04 |
| Phase delay (usec)      | 8.02022271339E+03 | Apriori clockrate (us/s) | -2.5600000E-07     | Resid phdelay (usec) | 5.06550E-06  | +/- | 1.3E-06 |
| Delay rate (us/s)       | 7.64155831283E-01 | Apriori rate (us/s)      | 7.64158772947E-01  | Resid rate (us/s)    | -2.94166E-06 | +/- | 9.3E-09 |
| Total phase (deg)       | 210.3             | Apriori accel (us/s/s)   | -4.19759279666E-05 | Resid phase (deg)    | 78.5         | +/- | 19.6    |

|                             |       |                             |       |                |                   |  |                       |
|-----------------------------|-------|-----------------------------|-------|----------------|-------------------|--|-----------------------|
| ph/seg (deg)                | 62.4  | Theor.                      | 64.0  | Amplitude      | 0.141 +/- 0.024   | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)                 | 100.6 | Search (1024X16)            | 0.133 | Interp.        | 0.000             | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg)                | 15.9  | Inc. seg. avg.              | 0.133 | Inc. seg. avg. | 0.133             | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)                 | 23.7  | Inc. frq. avg.              | 0.135 | Inc. frq. avg. | 0.135             | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
| f: az 223.7 el 52.8 pa 36.8 |       | c: az 263.3 el 25.2 pa 71.1 |       | u,v (fr/asec)  | -2205.844 854.511 | Data rate(Mb/s): 2048                  | ion window (TEC)      |

simultaneous interpolator

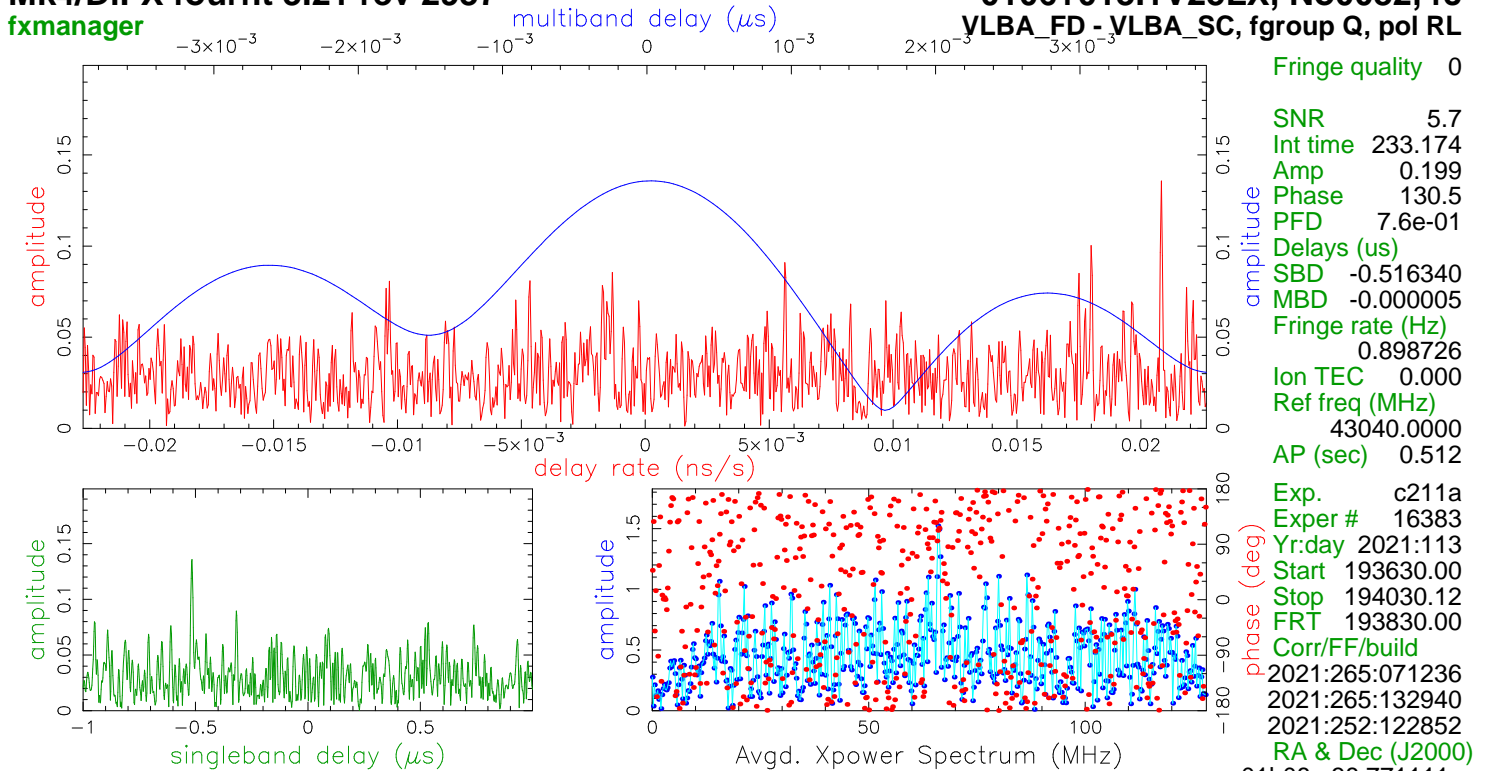
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fc.Q.45.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

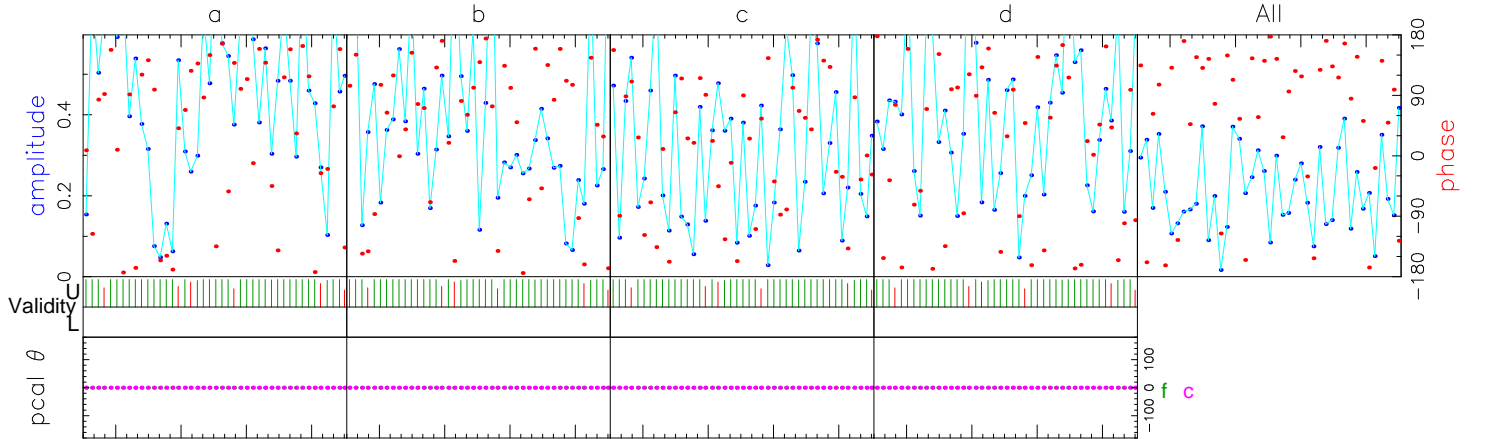
fxmanager

0106+013.1V25LX, No0082, fc

VLBA\_FD - VLBA\_SC, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 138.2    | 120.5    | 56.2     | 146.1    | Phase      | 130.5 |
| f   | 0.3      | 0.2      | 0.1      | 0.2      | Ampl.      | 0.2   |
| c   | 248.1    | 247.3    | 890.0    | 170.1    | Sbd box    | 248.6 |
| f:c | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |       |
| f:c | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| f:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| f:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |

|                         |                   |                          |                    |                      |              |             |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 8.01970707808E+03 | Apriori delay (usec)     | 8.0202270832E+03   | Resid mbdelay (usec) | -5.24398E-06 | +/- 1.9E-04 |
| Sband delay (usec)      | 8.01970636820E+03 | Apriori clock (usec)     | -1.9478073E+00     | Resid sbdelay (usec) | -5.16340E-01 | +/- 7.5E-04 |
| Phase delay (usec)      | 8.0202271675E+03  | Apriori clockrate (us/s) | -2.5600000E-07     | Resid phdelay (usec) | 8.42524E-06  | +/- 1.3E-06 |
| Delay rate (us/s)       | 7.64179654117E-01 | Apriori rate (us/s)      | 7.64158772947E-01  | Resid rate (us/s)    | 2.08812E-05  | +/- 9.5E-09 |
| Total phase (deg)       | 262.4             | Apriori accel (us/s/s)   | -4.19759279666E-05 | Resid phase (deg)    | 130.5        | +/- 20.1    |

|              |          |             |                           |  |                               |
|--------------|----------|-------------|---------------------------|--|-------------------------------|
| ph/seg (deg) | RMS 62.5 | Theor. 65.4 | Amplitude 0.199 +/- 0.035 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 62.5     | 65.4        | Search (1024X16) 0.133    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 91.7     | 114.1       | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled          |
| amp/frq (%)  | 54.4     | 20.1        | Inc. seg. avg. 0.188      | Sample rate(MSamp/s): 256              | mb window (us) -0.004 0.004   |
|              | 44.6     | 35.0        | Inc. frq. avg. 0.201      | Data rate(Mb/s): 2048                  | dr window (ns/s) -0.023 0.023 |
|              |          |             |                           | nlags: 512                             | t_coherence infinite          |
|              |          |             |                           |  | ion window (TEC) 0.00 0.00    |

f: az 223.7 el 52.8 pa 36.8 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2205.844 854.511 simultaneous interpolator

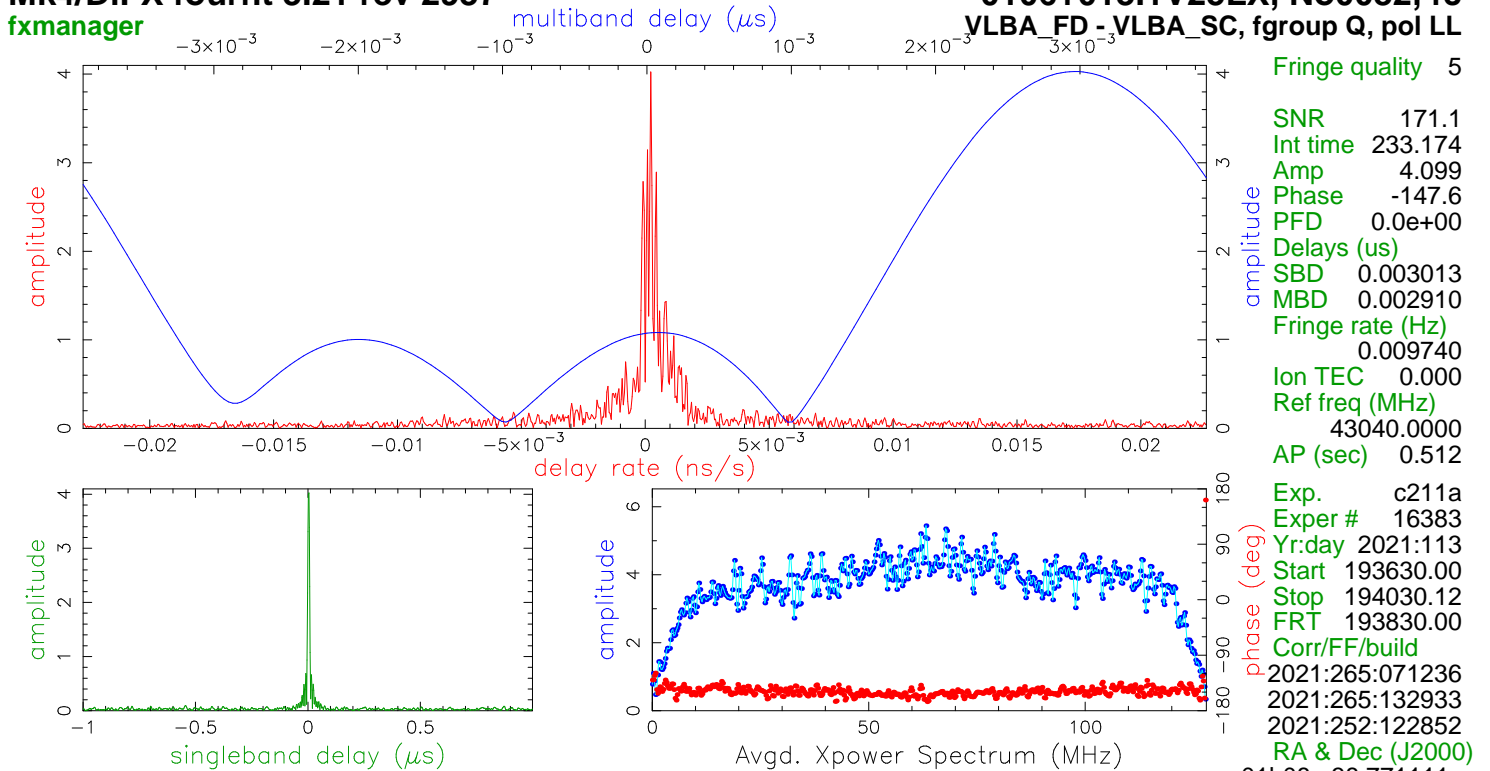
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fc.Q.72.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fc

VLBA\_FD - VLBA\_SC, fgroup Q, pol LL



Fringe quality 5

SNR 171.1

Int time 233.174

Amp 4.099

Phase -147.6

PFD 0.0e+00

Delays (us)

SBD 0.003013

MBD 0.002910

Fringe rate (Hz)

0.009740

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132933

2021:252:122852

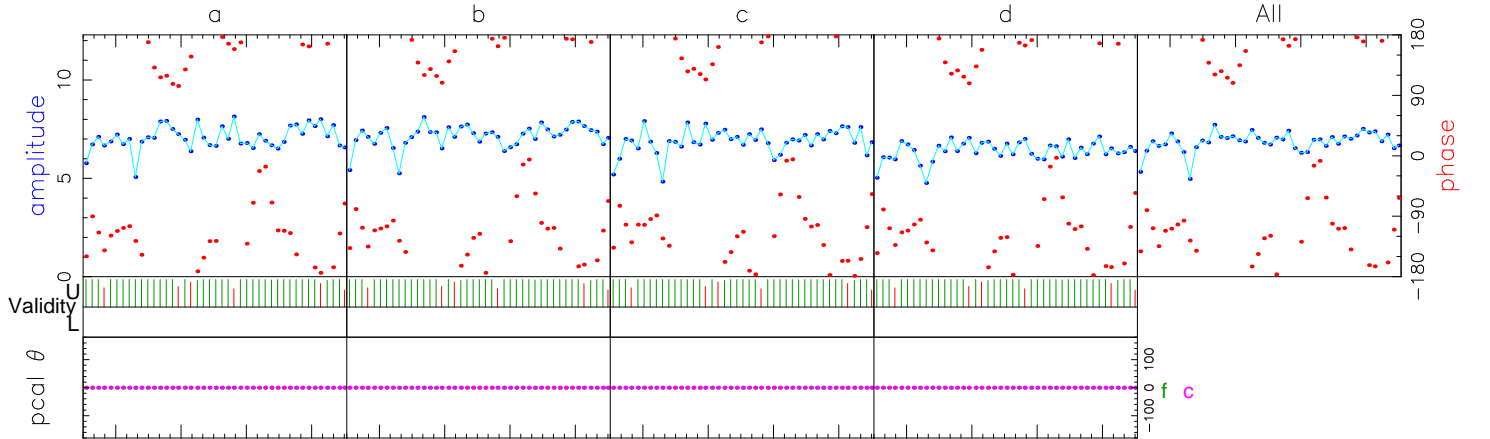
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -154.2   | -146.5   | -141.7   | -147.9   | Phase      | -147.6 |
|     | 4.2      | 4.2      | 4.1      | 3.7      | Ampl.      | 4.0    |
|     | 514.7    | 514.6    | 514.4    | 514.4    | Sbd box    | 514.5  |
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |        |
| f   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| f:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| f:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| c   | 1000     | 1000     | 1000     | 1000     |            |        |
| f   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 8.02022561860E+03 | Apriori delay (usec)     | 8.02022270832E+03  | Resid mbdelay (usec) | 2.91028E-03  | +/- | 6.5E-06 |
| Sband delay (usec)      | 8.02022572082E+03 | Apriori clock (usec)     | -1.9478073E+00     | Resid sbdelay (usec) | 3.01250E-03  | +/- | 2.5E-05 |
| Phase delay (usec)      | 8.0202269880E+03  | Apriori clockrate (us/s) | -2.5600000E-07     | Resid phdelay (usec) | -9.52638E-06 | +/- | 4.3E-08 |
| Delay rate (us/s)       | 7.64158999251E-01 | Apriori rate (us/s)      | 7.64158772947E-01  | Resid rate (us/s)    | 2.26304E-07  | +/- | 3.2E-10 |
| Total phase (deg)       | -15.8             | Apriori accel (us/s/s)   | -4.19759279666E-05 | Resid phase (deg)    | -147.6       | +/- | 0.7     |

|              |      |     |                  |                 |  |                       |
|--------------|------|-----|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | 57.9 | 2.2 | Amplitude        | 4.099 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 68.2 | 3.8 | Search (1024X16) | 3.991           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 6.3  | 0.7 | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 5.1  | 1.2 | Inc. seg. avg.   | 6.842           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |     | Inc. frq. avg.   | 4.037           | Data rate(Mb/s): 2048                  | ion window (TEC)      |
|              |      |     |                  |                 | nlags: 512                             | t_cohere infinite     |

f: az 223.7 el 52.8 pa 36.8 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2205.844 854.511 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fc.Q.8.1V25LX

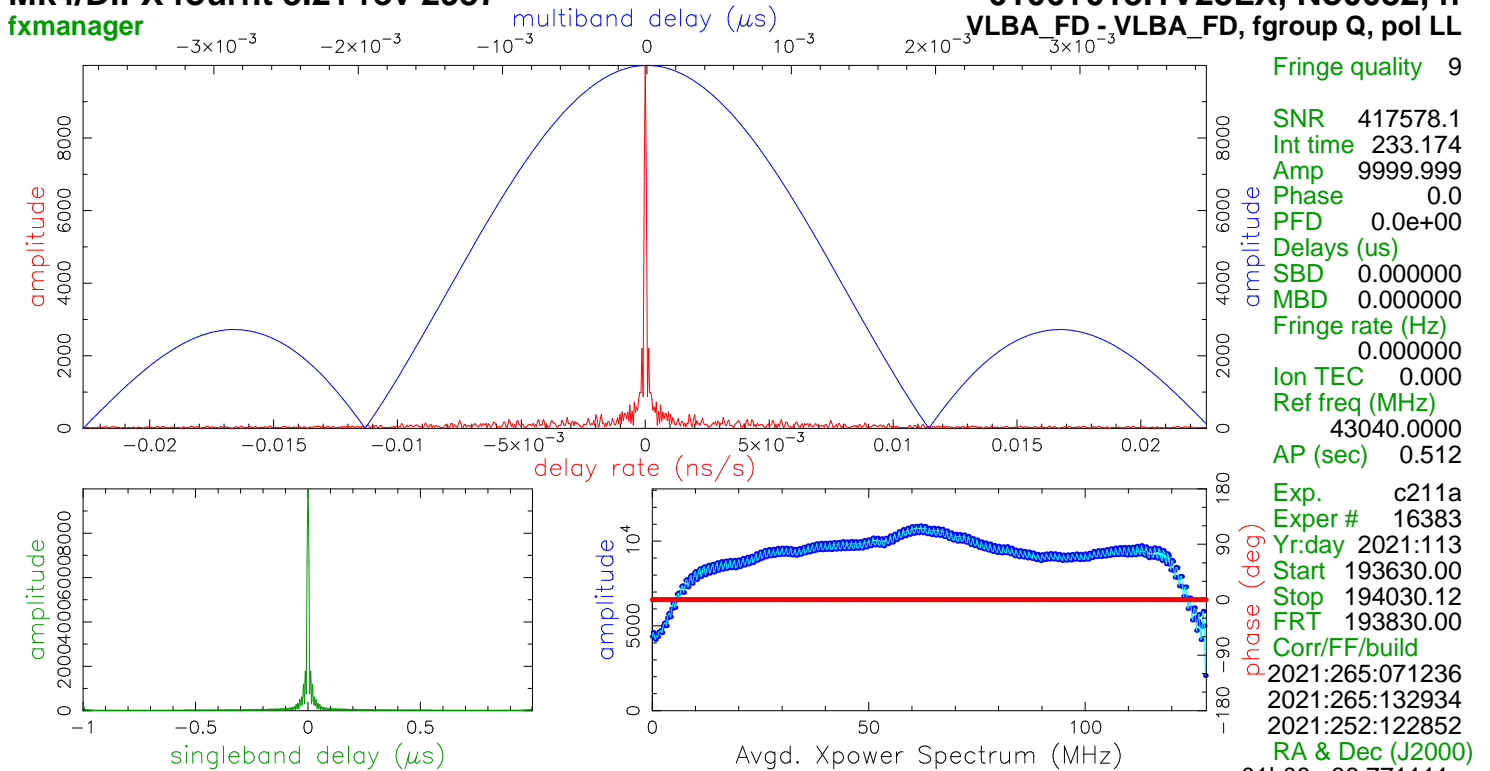


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, ff

VLBA\_FD - VLBA\_FD, fgroup Q, pol LL



Fringe quality 9

SNR 417578.1

Int time 233.174

Amp 9999.999

Phase 0.0

PFD 0.0e+00

Delays (us)

SBD 0.000000

MBD 0.000000

Fringe rate (Hz)

0.000000

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132934

2021:252:122852

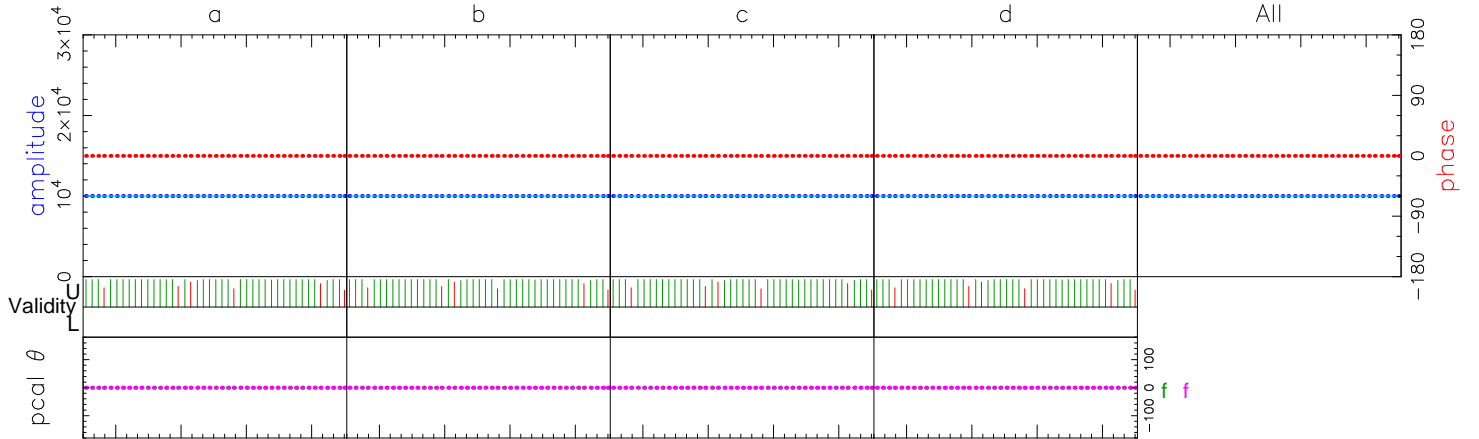
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
|-----------|-----------|-----------|-----------|------------|---------|
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 463/0 | U/L 463/0 | U/L 463/0 | U/L 463/0 | APs used   |         |
| f 1000    | f 1000    | f 1000    | f 1000    | PC freqs   |         |
| f 1000    | f 1000    | f 1000    | f 1000    | PC freqs   |         |
| f:f 0:0   | f:f 0:0   | f:f 0:0   | f:f 0:0   | PC phase   |         |
| f:f 0:0   | f:f 0:0   | f:f 0:0   | f:f 0:0   | Manl PC    |         |
| f 1000    | f 1000    | f 1000    | f 1000    | PC amp     |         |
| f 1000    | f 1000    | f 1000    | f 1000    |            |         |
| f Q00UL   | f Q01UL   | f Q02UL   | f Q03UL   | Chan ids   |         |
| f Q00UL   | f Q01UL   | f Q02UL   | f Q03UL   | Tracks     |         |
|           |           |           |           | Chan ids   |         |
|           |           |           |           | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.7E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.8E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                    |  |                              |                  |        |       |
|--------------|-----|--------|------------------|--------------------|--|------------------------------|------------------|--------|-------|
|              | RMS | Theor. | Amplitude        | 9999.999 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 0.0 | 0.0    | Search (1024X16) | 10000.000          | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 0.0 | 0.0    | Interp.          | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000          | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 0.0 | 0.0    | Inc. frq. avg.   | 10000.000          | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

f: az 223.7 el 52.8 pa 36.8 f: az 223.7 el 52.8 pa 36.8 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

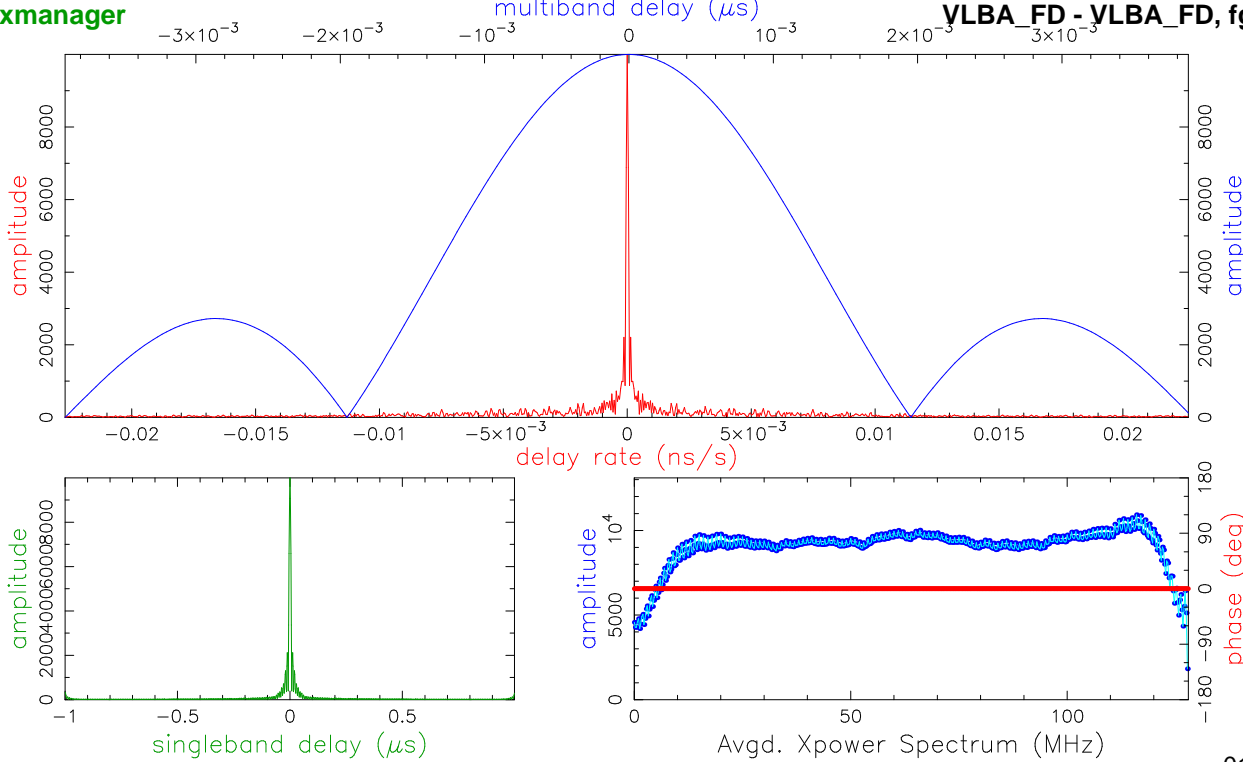
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ff..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ff.Q.14.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, ff

VLBA\_FD - VLBA\_FD, fgroup Q, pol RR



Fringe quality 9

SNR 417578.2

Int time 233.174

Amp 9999.998

Phase 0.0

PFD 0.0e+00

Delays (us)

SBD 0.000000

MBD 0.000000

Fringe rate (Hz)

0.000000

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132937

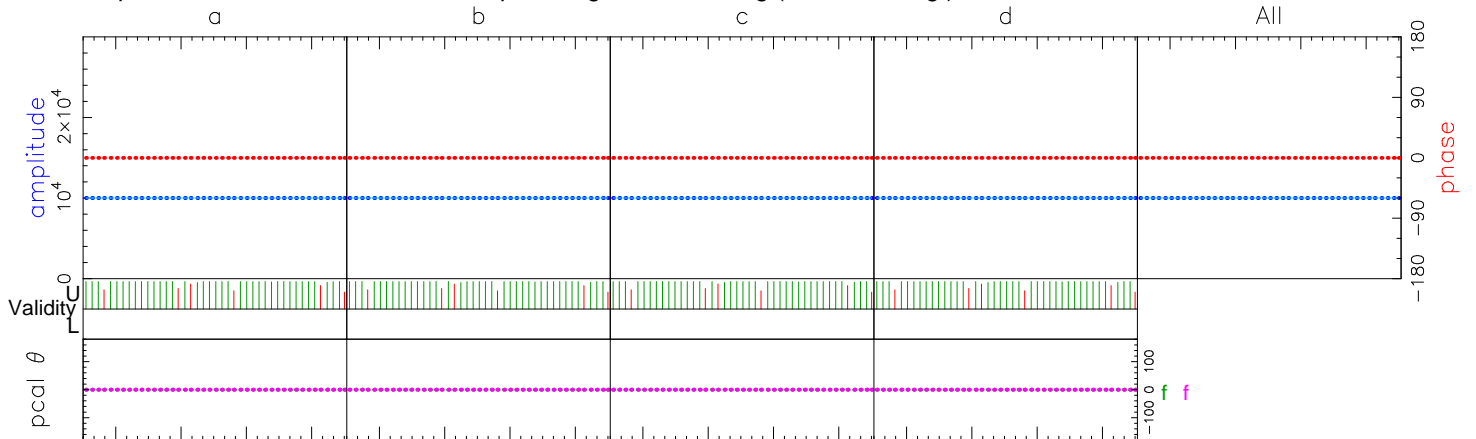
2021:252:122852

RA & Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



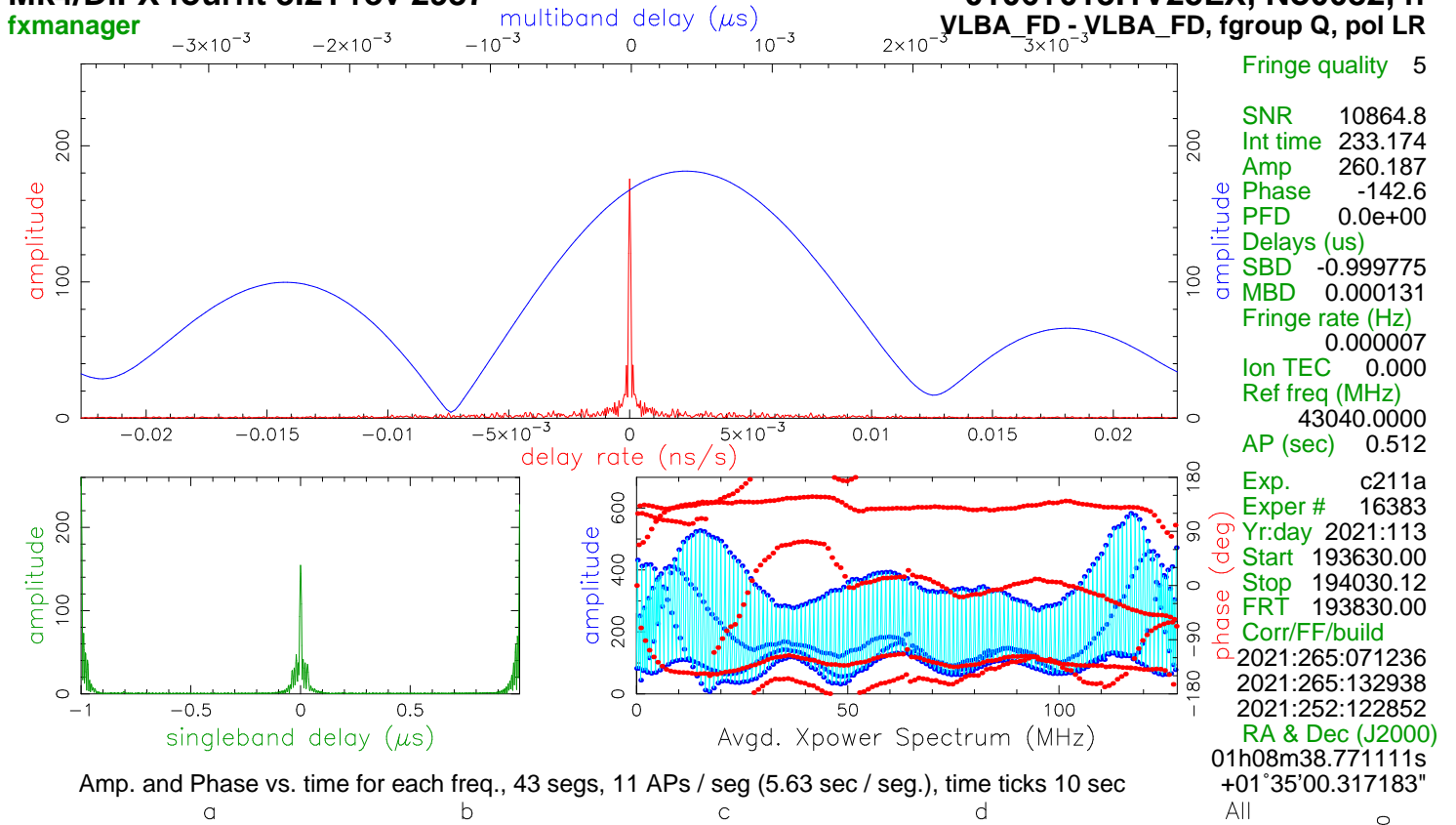
| 42912.00                      | 43040.00   | 43168.00  | 43296.00           | Freq (MHz)                             | All   |
|-------------------------------|--|---|--------------------|--|---|
| 0.0                           | 0.0  | 0.0   | 0.0                | Phase                                  | 0.0   |
| 10000.0                       | 10000.0  | 10000.0   | 10000.0            | Ampl.                                  | 10000.0   |
| 513.0                         | 513.0  | 513.0   | 513.0              | Sbd box                                | 513.0   |
| U/L 463/0                     | 463/0  | 463/0   | 463/0              | APs used                               |   |
| f 1000                        | 1000   | 1000  | 1000               | PC freqs                               |   |
| f 1000                        | 1000   | 1000  | 1000               | PC freqs                               |   |
| f:f 0:0                       | 0:0  | 0:0   | 0:0                | PC phase                               |   |
| f:f 0:0                       | 0:0  | 0:0   | 0:0                | Manl PC                                |   |
| f 1000                        | 1000   | 1000  | 1000               | PC amp                                 |   |
| f 1000                        | 1000   | 1000  | 1000               |  |   |
| f Q00UR                       | Q01UR  | Q02UR   | Q03UR              | Chan ids                               |   |
| f Q00UR                       | Q01UR  | Q02UR   | Q03UR              | Tracks                                 |   |
|                               |  |   |                    | Chan ids                               |   |
|                               |  |   |                    | Tracks                                 |   |
| Group delay (usec)(sbd)       | 0.000000000000E+00                                       | Apriori delay (usec)  | 0.000000000000E+00 | Resid mbdelay (usec)                   | 0.000000E+00 +/- 2.7E-09                                |
| Sband delay (usec)            | 0.000000000000E+00                                       | Apriori clock (usec)  | 0.00000000E+00     | Resid sbdelay (usec)                   | 0.000000E+00 +/- 1.0E-08                                |
| Phase delay (usec)            | 0.000000000000E+00                                       | Apriori clockrate (us/s)                                      | 0.00000000E+00     | Resid phdelay (usec)                   | 0.000000E+00 +/- 1.8E-11                                |
| Delay rate (us/s)             | 0.000000000000E+00                                       | Apriori rate (us/s)   | 0.000000000000E+00 | Resid rate (us/s)                      | 0.000000E+00 +/- 1.3E-13                                |
| Total phase (deg)             | 0.0  | Apriori accel (us/s/s)  | 0.000000000000E+00 | Resid phase (deg)                      | 0.0 +/- 0.0   |
| RMS                           | Theor.   | Amplitude   | 9999.998 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 0.0  | Search (1024X16)  | 9999.998           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 0.0  | Interp.   | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 0.0  | Inc. seg. avg.  | 10000.000          | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 0.0  | Inc. frq. avg.  | 9999.998           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| f: az 223.7 el 52.8 pa 36.8   | f: az 223.7 el 52.8 pa 36.8                              | u,v (fr/asec) 0.000 0.000                                     |                    |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/ff..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/ff.Q.40.1V25LX |                    |  |   |

## Mk4/DiFX fourfit 3.21 rev 2937

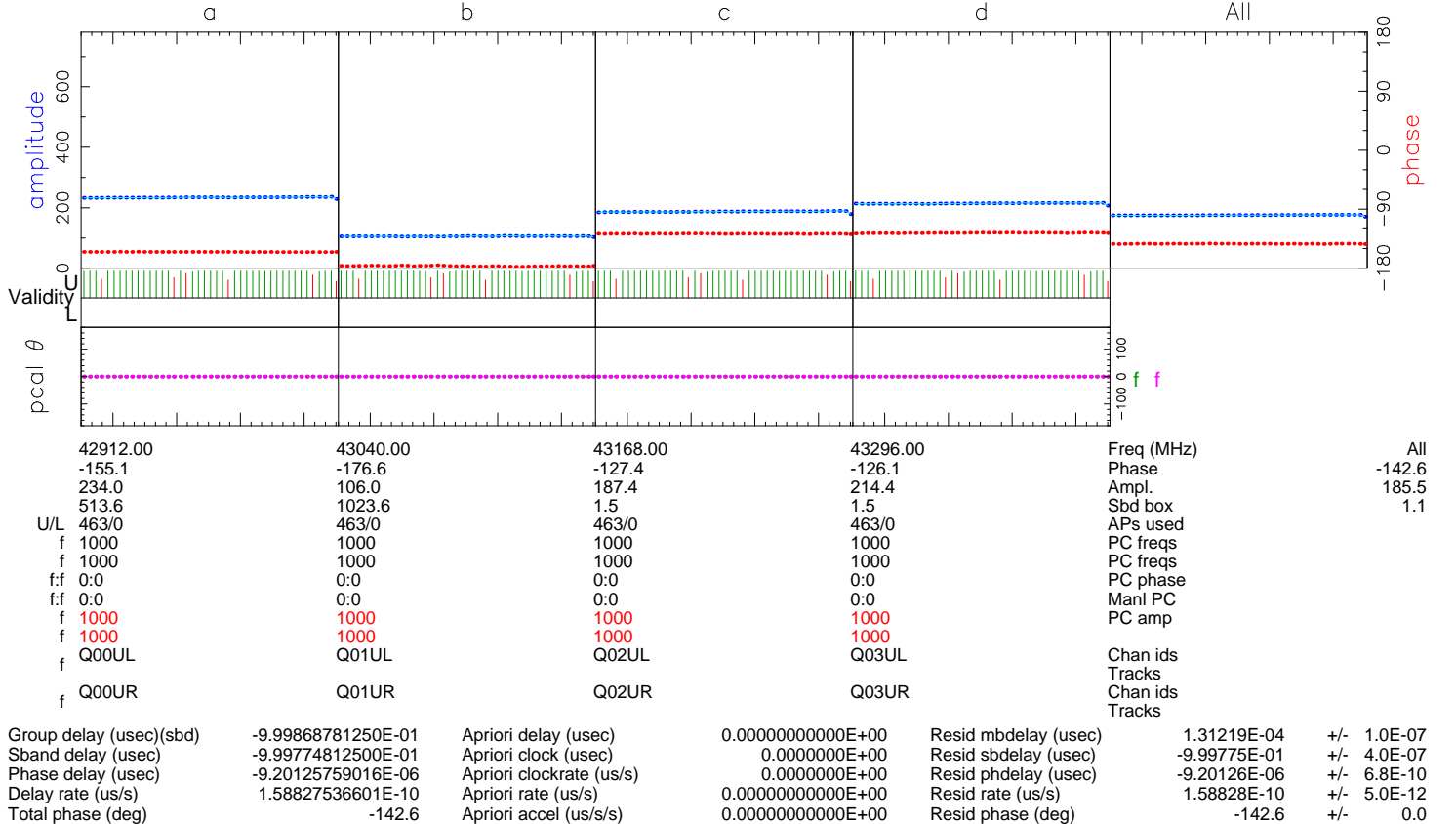
fxmanager

0106+013.1V25LX, No0082, ff

VLBA\_FD - VLBA\_FD, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



ph/seg (deg) 0.2 0.0 Theor. Amplitude 260.187 +/- 0.024 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5

amp/seg (%) 32.5 0.1 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000

ph/frq (deg) 30.1 0.0 Inc. seg. avg. 175.687 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.004 0.004

amp/frq (%) 34.3 0.0 Inc. frq. avg. 185.453 Sample rate(MSamp/s): 256 dr window (ns/s) -0.023 0.023

f: az 223.7 el 52.8 pa 36.8 f: az 223.7 el 52.8 pa 36.8 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

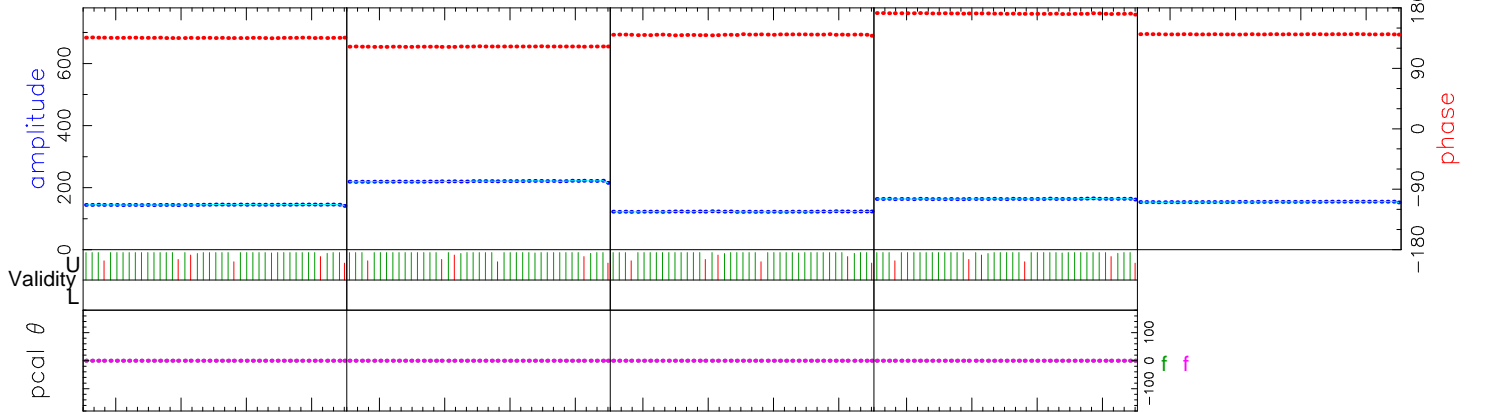
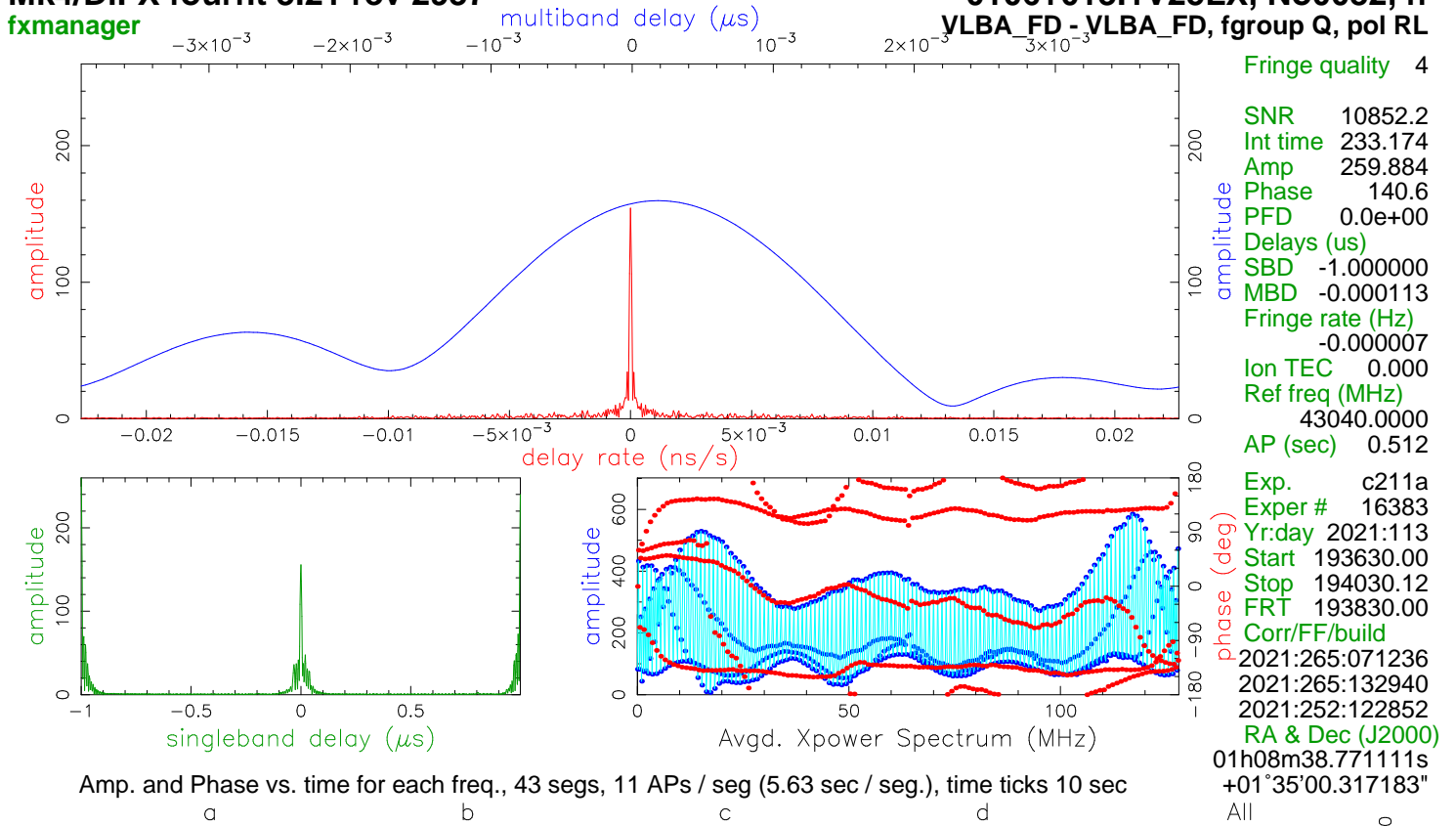
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ff..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ff.Q.54.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, ff

VLBA\_FD - VLBA\_FD, fgroup Q, pol RL



|                               | 42912.00           | 43040.00   | 43168.00                  | 43296.00             | Freq (MHz)        | All   |
|-------------------------------|--------------------|--|---------------------------|----------------------|-------------------|---|
| U/L                           | 463/0              | 463/0  | 463/0                     | 463/0                | Phase             | 140.6   |
| f                             | 1000               | 1000   | 1000                      | 1000                 | Ampl.             | 163.0   |
| f:f                           | 0:0                | 0:0  | 0:0                       | 0:0                  | Sbd box           | 1.0   |
| f:f                           | 0:0                | 0:0  | 0:0                       | 0:0                  | APs used          |   |
| f                             | 1000               | 1000   | 1000                      | 1000                 | PC freqs          |   |
| f                             | 1000               | 1000   | 1000                      | 1000                 | PC freqs          |   |
| f                             | Q00UR              | Q01UR  | Q02UR                     | Q03UR                | PC phase          |   |
| f                             | Q00UL              | Q01UL  | Q02UL                     | Q03UL                | Manl PC           |   |
|                               |                    |  |                           |                      | PC amp            |   |
|                               |                    |  |                           |                      | Chan ids          |   |
|                               |                    |  |                           |                      | Tracks            |   |
|                               |                    |  |                           |                      | Chan ids          |   |
|                               |                    |  |                           |                      | Tracks            |   |
| Group delay (usec)(sbd)       | -1.00011290625E+00 | Apriori delay (usec)                                     | 0.00000000000E+00         | Resid mbdelay (usec) | -1.12906E-04      | +/- 1.0E-07   |
| Sband delay (usec)            | -1.00000000000E+00 | Apriori clock (usec)                                     | 0.0000000E+00             | Resid sbdelay (usec) | -1.00000E+00      | +/- 4.0E-07   |
| Phase delay (usec)            | 9.07143824744E-06  | Apriori clockrate (us/s)                                 | 0.0000000E+00             | Resid phdelay (usec) | 9.07144E-06       | +/- 6.8E-10   |
| Delay rate (us/s)             | -1.58827536601E-10 | Apriori rate (us/s)                                      | 0.00000000000E+00         | Resid rate (us/s)    | -1.58828E-10      | +/- 5.0E-12   |
| Total phase (deg)             | 140.6              | Apriori accel (us/s/s)                                   | 0.00000000000E+00         | Resid phase (deg)    | 140.6             | +/- 0.0   |
| RMS                           | 0.2                | Theor.   | 0.0                       | Amplitude            | 259.884 +/- 0.024 |   |
| ph/seg (deg)                  | 40.6               | 0.1  | Interp.                   | 0.000                |                   |   |
| amp/seg (%)                   | 25.6               | 0.0  | Inc. seg. avg.            | 154.277              |                   |   |
| ph/frq (deg)                  | 39.8               | 0.0  | Inc. frq. avg.            | 163.000              |                   |   |
| amp/frq (%)                   |                    |  |                           |                      |                   |   |
| f: az 223.7 el 52.8 pa 36.8   |                    | f: az 223.7 el 52.8 pa 36.8                              | u,v (fr/asec) 0.000 0.000 |                      |                   | simultaneous interpolator                                     |
| Control file: cf_1234_gmva7mm |                    | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/ff..1V25LX |                           |                      |                   | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/ff.Q.70.1V25LX |



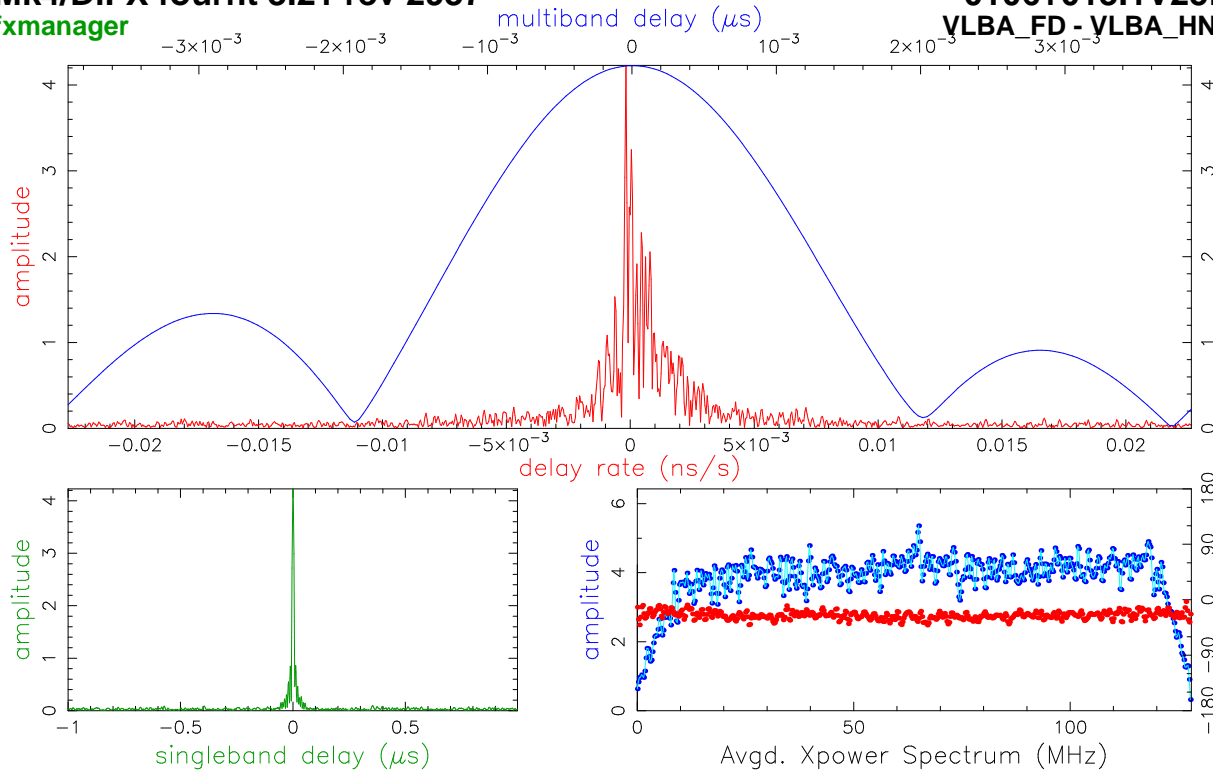


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fh

VLBA\_FD - VLBA\_HN, fgroup Q, pol RR



Fringe quality 5

SNR 176.4

Int time 232.811

Amp 4.229

Phase -20.9

PFD 0.0e+00

Delays (us)

SBD 0.000213

MBD 0.000018

Fringe rate (Hz)

-0.006999

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132935

2021:252:122852

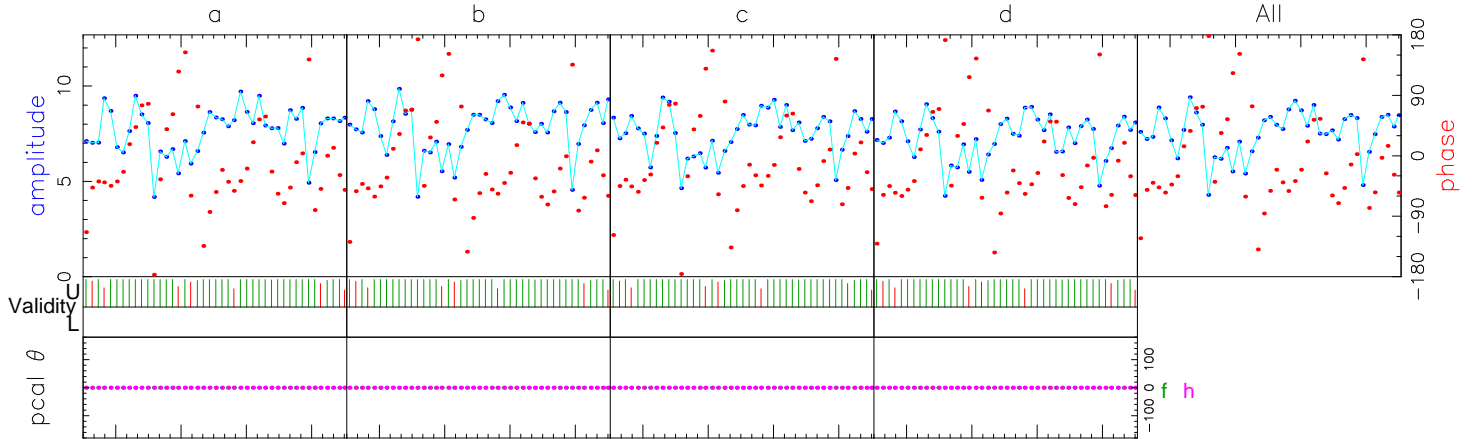
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -18.6    | -25.5    | -14.8    | -24.3    | Phase      | -20.9 |
|     | 4.3      | 4.4      | 4.1      | 4.1      | Ampl.      | 4.2   |
|     | 513.3    | 513.1    | 513.1    | 512.9    | Sbd box    | 513.1 |
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| f:h | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| f:h | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| h   | 1000     | 1000     | 1000     | 1000     |            |       |
| f   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 8.02844686475E+03 | Apriori delay (usec)     | 8.02844684666E+03  | Resid mbdelay (usec) | 1.80863E-05  | +/- | 6.3E-06 |
| Sband delay (usec)      | 8.02844706016E+03 | Apriori clock (usec)     | 7.4483185E+00      | Resid sbdelay (usec) | 2.13500E-04  | +/- | 2.4E-05 |
| Phase delay (usec)      | 8.02844684532E+03 | Apriori clockrate (us/s) | -7.0000002E-08     | Resid phdelay (usec) | -1.34620E-06 | +/- | 4.2E-08 |
| Delay rate (us/s)       | 3.85465696274E-01 | Apriori rate (us/s)      | 3.85465858890E-01  | Resid rate (us/s)    | -1.62617E-07 | +/- | 3.1E-10 |
| Total phase (deg)       | 80.1              | Apriori accel (us/s/s)   | -4.32225397358E-05 | Resid phase (deg)    | -20.9        | +/- | 0.6     |

|              |      |     |                  |                 |  |                               |
|--------------|------|-----|------------------|-----------------|--|-------------------------------|
| ph/seg (deg) | 69.2 | 2.1 | Amplitude        | 4.229 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 82.8 | 3.7 | Search (1024X16) | 4.034           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 6.2  | 0.6 | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 3.4  | 1.1 | Inc. seg. avg.   | 7.536           | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023 |
|              |      |     | Inc. frq. avg.   | 4.237           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

f: az 223.7 el 52.8 pa 36.8 h: az 247.1 el 25.0 pa 42.6 u,v (fr/asec) -1121.390 -809.078 simultaneous interpolator

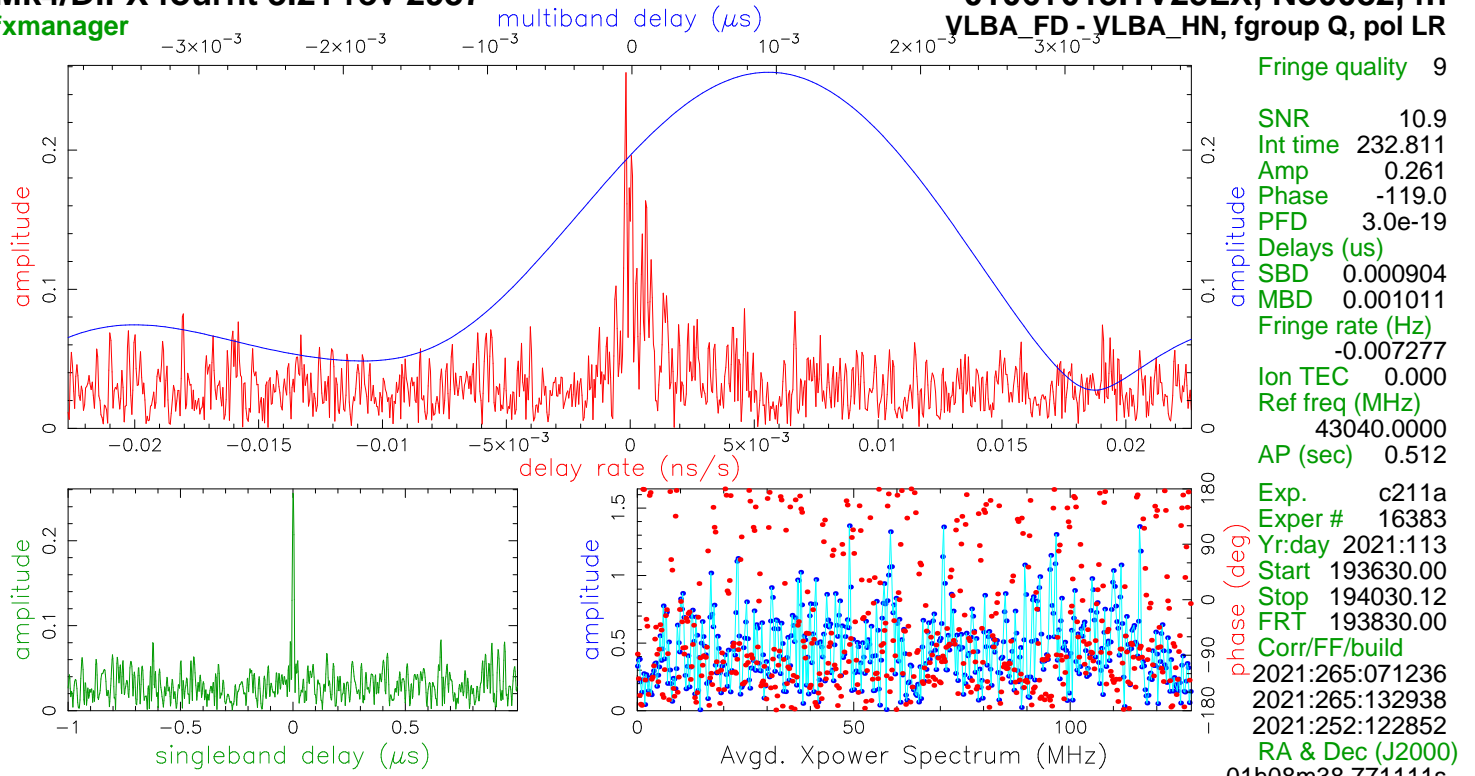
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fh..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fh.Q.26.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

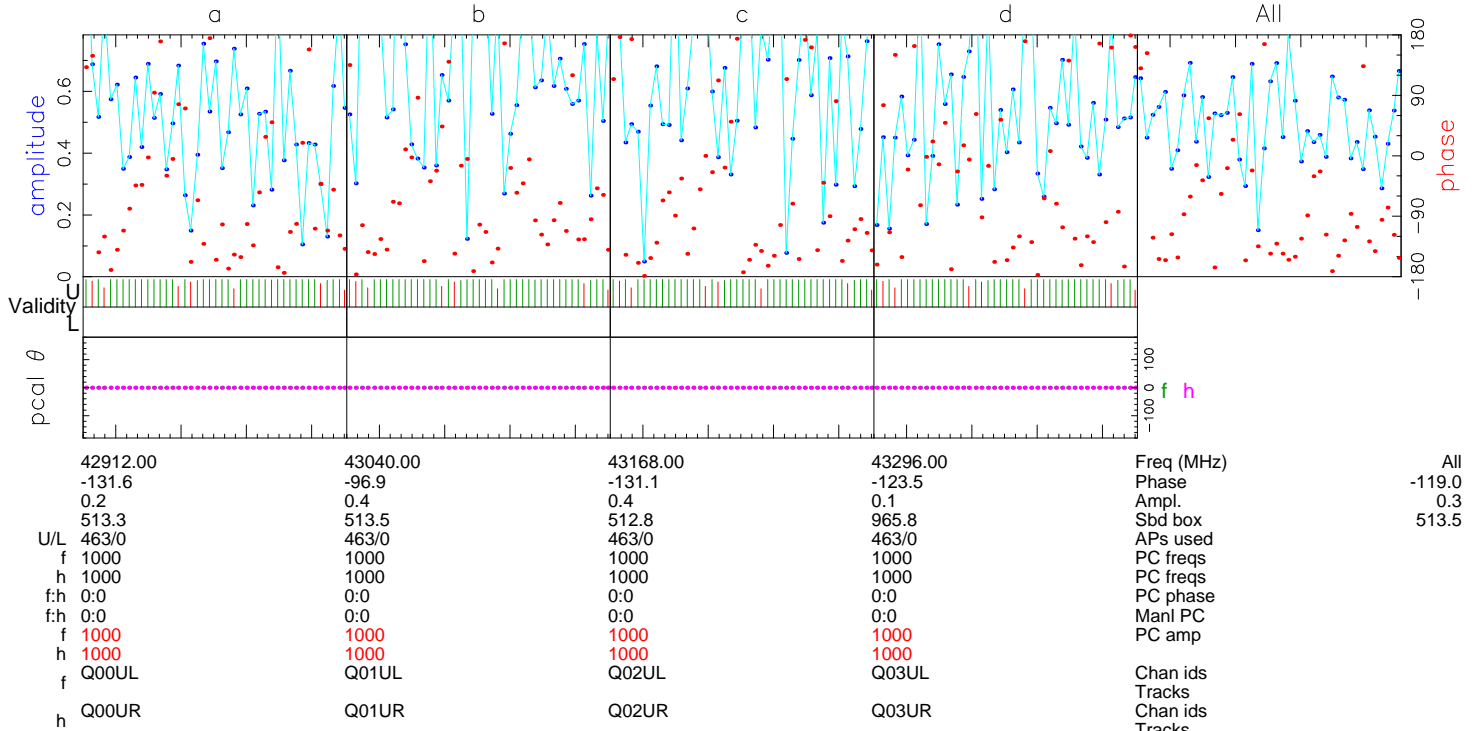
fxmanager

0106+013.1V25LX, No0082, fh

VLBA\_FD - VLBA\_HN, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| Group delay (usec)(sbd) | 8.02844785753E+03 | Apriori delay (usec)     | 8.02844684666E+03  | Resid mbdelay (usec) | 1.01087E-03  | +/- | 1.0E-04 |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Sband delay (usec)      | 8.02844775104E+03 | Apriori clock (usec)     | 7.4483185E+00      | Resid sbdelay (usec) | 9.04375E-04  | +/- | 4.0E-04 |
| Phase delay (usec)      | 8.02844683898E+03 | Apriori clockrate (us/s) | -7.0000002E-08     | Resid phdelay (usec) | -7.67856E-06 | +/- | 6.8E-07 |
| Delay rate (us/s)       | 3.85465689824E-01 | Apriori rate (us/s)      | 3.85465858890E-01  | Resid rate (us/s)    | -1.69066E-07 | +/- | 5.0E-09 |
| Total phase (deg)       | -18.1             | Apriori accel (us/s/s)   | -4.32225397358E-05 | Resid phase (deg)    | -119.0       | +/- | 10.5    |

| RMS          | Theor. | Amplitude        | 0.261 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
|--------------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|------|
| ph/seg (deg) | 68.9   | Search (1024X16) | 0.252           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 102.0  | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 20.2   | Inc. seg. avg.   | 0.418           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 36.5   | Inc. frq. avg.   | 0.261           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

f: az 223.7 el 52.8 pa 36.8 h: az 247.1 el 25.0 pa 42.6 u,v (fr/asec) -1121.390 -809.078 simultaneous interpolator

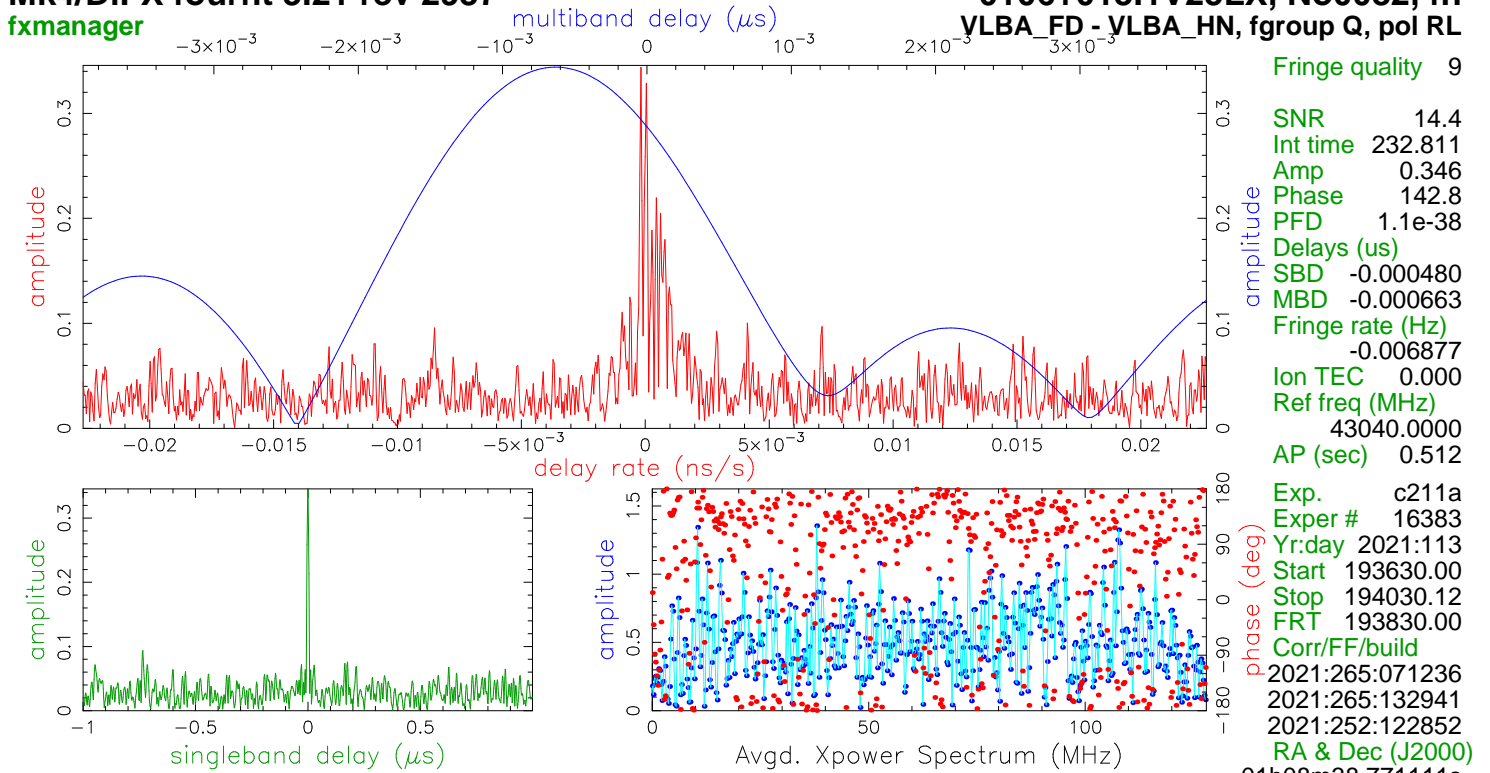
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fh..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fh.Q.49.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fh

VLBA\_FD - VLBA\_HN, fgroup Q, pol RL

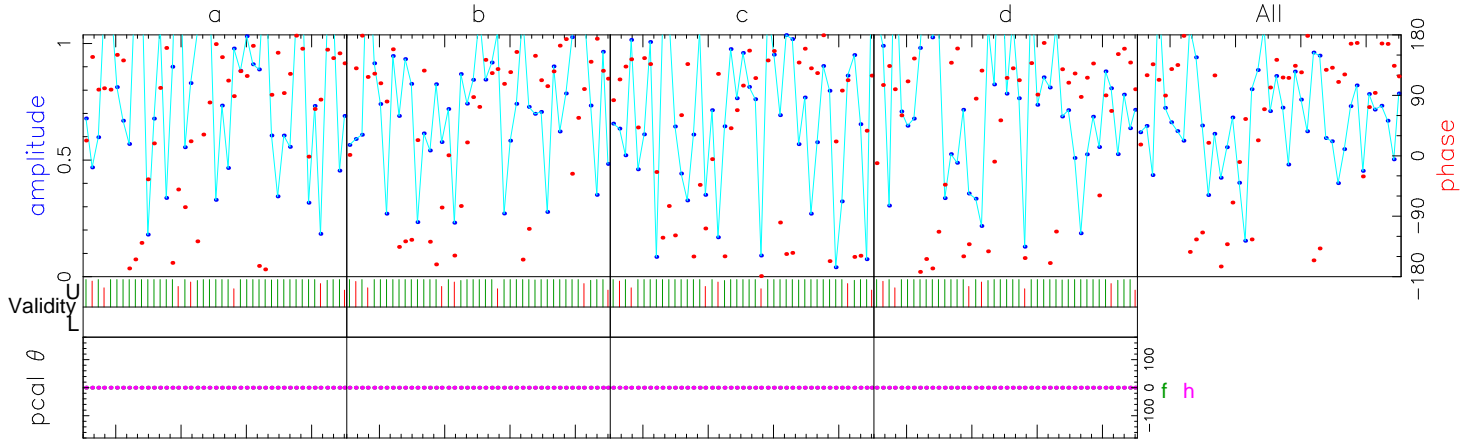


Fringe quality 9

SNR 14.4  
Int time 232.811  
Amp 0.346  
Phase 142.8  
PFD  $1.1 \times 10^{-38}$   
Delays (us)  
SBD -0.000480  
MBD -0.000663  
Fringe rate (Hz)  
-0.006877  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132941  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| 139.7     | 137.2    | 159.2    | 138.1    | Phase      | 142.8 |
| 0.4       | 0.3      | 0.3      | 0.4      | Ampl.      | 0.3   |
| 513.2     | 512.7    | 512.9    | 512.2    | Sbd box    | 512.8 |
| U/L 463/0 | 463/0    | 463/0    | 463/0    | APs used   |       |
| f 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| h 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| f:h 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| f:h 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| h 1000    | 1000     | 1000     | 1000     |            |       |
| f Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| h Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

Group delay (usec)(sbd) 8.02844618359E+03 Apriori delay (usec) 8.02844684666E+03 Resid mbdelay (usec) -6.63070E-04 +/- 7.7E-05  
 Sband delay (usec) 8.02844636641E+03 Apriori clock (usec) 7.4483185E+00 Resid sbdelay (usec) -4.80250E-04 +/- 3.0E-04  
 Phase delay (usec) 8.02844685588E+03 Apriori clockrate (us/s) -7.0000002E-08 Resid phdelay (usec) 9.21512E-06 +/- 5.1E-07  
 Delay rate (us/s) 3.85465699099E-01 Apriori rate (us/s) 3.85465858890E-01 Resid rate (us/s) -1.59792E-07 +/- 3.7E-09  
 Total phase (deg) 243.7 Apriori accel (us/s/s) -4.32225397358E-05 Resid phase (deg) 142.8 +/- 7.9

RMS Theor. Amplitude 0.346 +/- 0.024 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 70.1 25.9 Search (1024X16) 0.322 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 113.9 45.2 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.004 0.004  
 ph/frq (deg) 12.9 7.9 Inc. seg. avg. 0.618 Sample rate(MSamp/s): 256 dr window (ns/s) -0.023 0.023  
 amp/frq (%) 10.5 13.9 Inc. frq. avg. 0.344 Data rate(Mb/s): 2048 nlags: 512 t\_coherence infinite ion window (TEC) 0.00 0.00

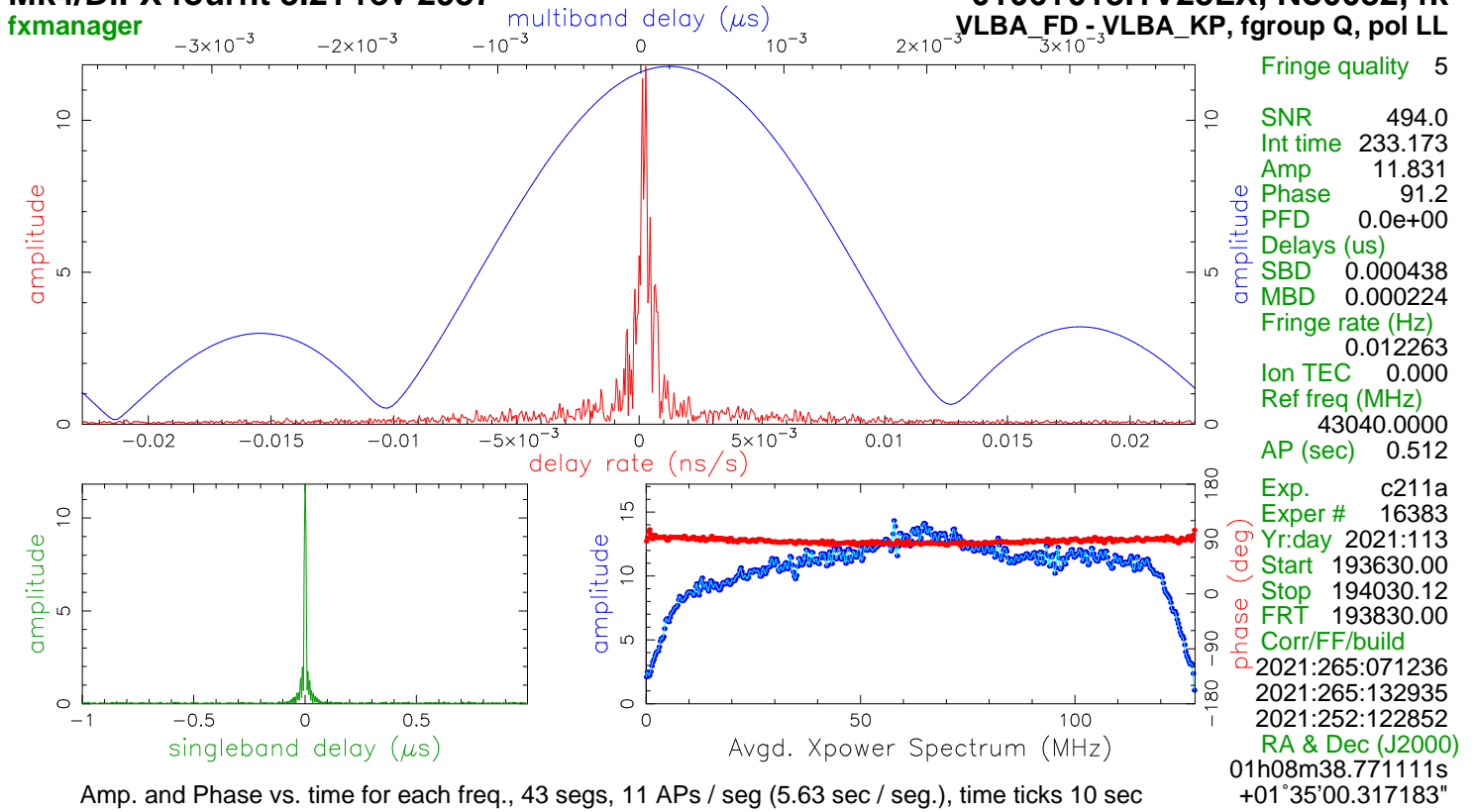
f: az 223.7 el 52.8 pa 36.8 h: az 247.1 el 25.0 pa 42.6 u,v (fr/asec) -1121.390 -809.078 simultaneous interpolator  
 Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fh..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fh.Q.76.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

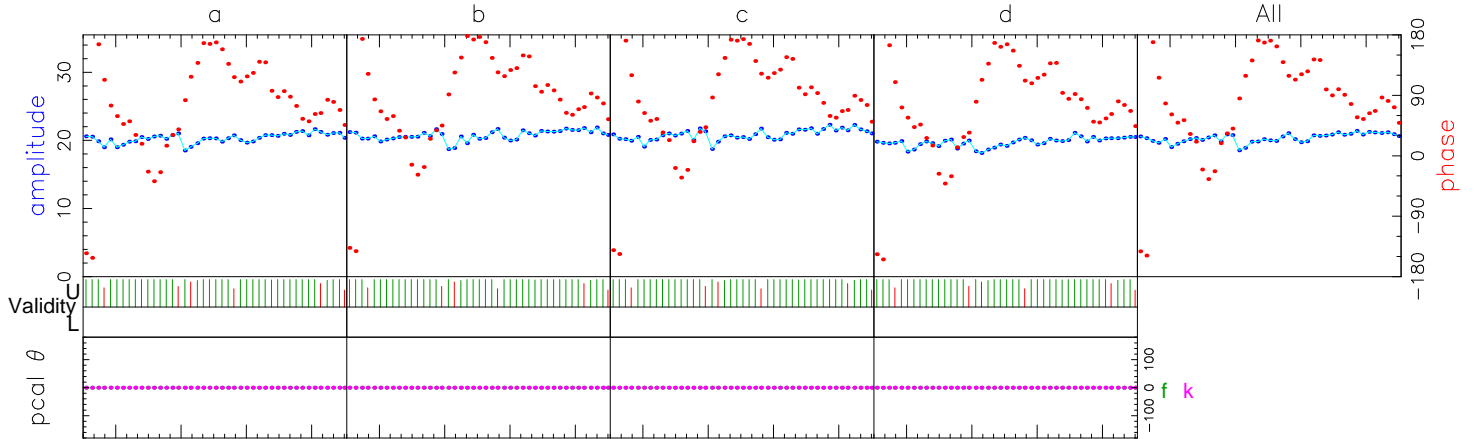
fxmanager

0106+013.1V25LX, No0082, fk

VLBA\_FD - VLBA\_KP, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



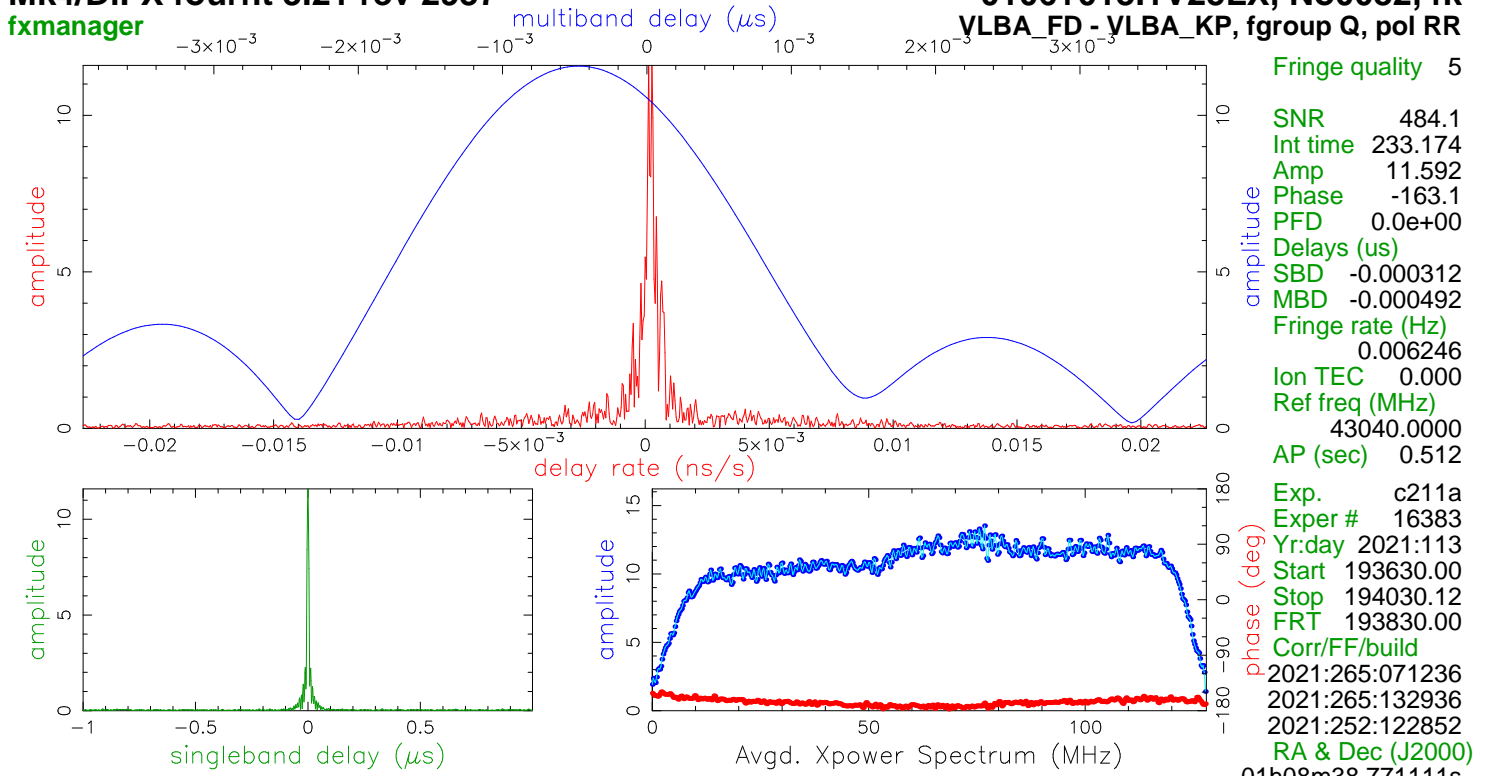
|                         |                    |                          |                    |                      |             |             |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|-------------|-------------|
| 42912.00                | 43040.00           | 43168.00                 | 43296.00           | Freq (MHz)           | All         |             |
| 88.5                    | 96.8               | 93.4                     | 85.7               | Phase                | 91.2        |             |
| 11.8                    | 12.0               | 12.0                     | 11.4               | Ampl.                | 11.8        |             |
| 513.4                   | 513.2              | 513.0                    | 513.2              | Sbd box              | 513.2       |             |
| U/L 463/0               | 463/0              | 463/0                    | 463/0              | APs used             |             |             |
| f 1000                  | 1000               | 1000                     | 1000               | PC freqs             |             |             |
| k 1000                  | 1000               | 1000                     | 1000               | PC freqs             |             |             |
| f:k 0:0                 | 0:0                | 0:0                      | 0:0                | PC phase             |             |             |
| f:k 0:0                 | 0:0                | 0:0                      | 0:0                | Manl PC              |             |             |
| f 1000                  | 1000               | 1000                     | 1000               | PC amp               |             |             |
| k 1000                  | 1000               | 1000                     | 1000               |                      |             |             |
| f Q00UL                 | Q01UL              | Q02UL                    | Q03UL              | Chan ids             |             |             |
| k Q00UL                 | Q01UL              | Q02UL                    | Q03UL              | Tracks               |             |             |
|                         |                    |                          |                    | Chan ids             |             |             |
|                         |                    |                          |                    | Tracks               |             |             |
| Group delay (usec)(sbd) | -6.58521272779E+02 | Apriori delay (usec)     | -6.58521496900E+02 | Resid mbdelay (usec) | 2.24120E-04 | +/- 2.3E-06 |
| Sband delay (usec)      | -6.58521059025E+02 | Apriori clock (usec)     | 9.9072990E+00      | Resid sbdelay (usec) | 4.37875E-04 | +/- 8.7E-06 |
| Phase delay (usec)      | -6.58521491014E+02 | Apriori clockrate (us/s) | 5.9999999E-08      | Resid phdelay (usec) | 5.88592E-06 | +/- 1.5E-08 |
| Delay rate (us/s)       | -1.71811607309E-01 | Apriori rate (us/s)      | -1.71811892225E-01 | Resid rate (us/s)    | 2.84917E-07 | +/- 1.1E-10 |
| Total phase (deg)       | 9.6                | Apriori accel (us/s/s)   | 3.48859474502E-06  | Resid phase (deg)    | 91.2        | +/- 0.2     |
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Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fk

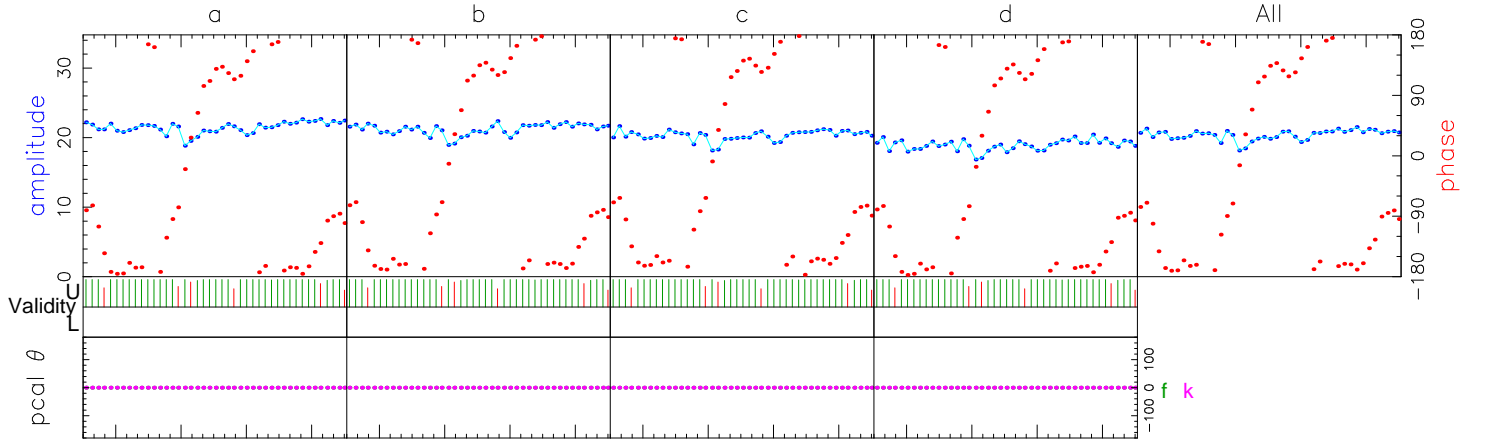
VLBA\_FD - VLBA\_KP, fgroup Q, pol RR



Fringe quality 5

SNR 484.1  
 Int time 233.174  
 Amp 11.592  
 Phase -163.1  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.000312  
 MBD -0.000492  
 Fringe rate (Hz) 0.006246  
 Ion TEC 0.000  
 Ref freq (MHz) 43040.0000  
 AP (sec) 0.512  
 Exp. c211a  
 Exper # 16383  
 Yr:day 2021:113  
 Start 193630.00  
 Stop 194030.12  
 FRT 193830.00  
 Corr/FF/build  
 2021:265:071236  
 2021:265:132936  
 2021:252:122852  
 RA & Dec (J2000)  
 01h08m38.771111s  
 +01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                         | 42912.00           | 43040.00                 | 43168.00           | 43296.00             | Freq (MHz)   | All         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| U/L                     | 463/0              | 463/0                    | 463/0              | 463/0                | Phase        | -163.1      |
| f                       | 1000               | 1000                     | 1000               | 1000                 | Ampl.        | 11.6        |
| k                       | 1000               | 1000                     | 1000               | 1000                 | Sbd box      | 512.8       |
| f:k                     | 0:0                | 0:0                      | 0:0                | 0:0                  | APs used     |             |
| f:k                     | 0:0                | 0:0                      | 0:0                | 0:0                  | PC freqs     |             |
| f                       | 1000               | 1000                     | 1000               | 1000                 | PC phase     |             |
| k                       | 1000               | 1000                     | 1000               | 1000                 | Manl PC      |             |
| f                       | Q00UR              | Q01UR                    | Q02UR              | Q03UR                | PC amp       |             |
| k                       | Q00UR              | Q01UR                    | Q02UR              | Q03UR                | Chan ids     |             |
|                         |                    |                          |                    |                      | Tracks       |             |
|                         |                    |                          |                    |                      | Chan ids     |             |
|                         |                    |                          |                    |                      | Tracks       |             |
| Group delay (usec)(sbd) | -6.58521988667E+02 | Apriori delay (usec)     | -6.58521496900E+02 | Resid mbdelay (usec) | -4.91768E-04 | +/- 2.3E-06 |
| Sband delay (usec)      | -6.58521808525E+02 | Apriori clock (usec)     | 9.9072990E+00      | Resid sbdelay (usec) | -3.11625E-04 | +/- 8.9E-06 |
| Phase delay (usec)      | -6.58521507426E+02 | Apriori clockrate (us/s) | 5.9999999E-08      | Resid phdelay (usec) | -1.05263E-05 | +/- 1.5E-08 |
| Delay rate (us/s)       | -1.71811747099E-01 | Apriori rate (us/s)      | -1.71811892225E-01 | Resid rate (us/s)    | 1.45126E-07  | +/- 1.1E-10 |
| Total phase (deg)       | -244.7             | Apriori accel (us/s/s)   | 3.48859474502E-06  | Resid phase (deg)    | -163.1       | +/- 0.2     |

|              |      |     |                  |                  |  |                               |
|--------------|------|-----|------------------|------------------|--|-------------------------------|
| ph/seg (deg) | 62.7 | 0.8 | Amplitude        | 11.592 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 76.3 | 1.3 | Search (1024X16) | 11.209           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 6.7  | 0.2 | Interp.          | 0.000            | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 4.7  | 0.4 | Inc. seg. avg.   | 20.402           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |      |     | Inc. frq. avg.   | 11.607           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

f: az 223.7 el 52.8 pa 36.8 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) 493.352 -83.032 simultaneous interpolator  
 Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fk.Q.33.1V25LX

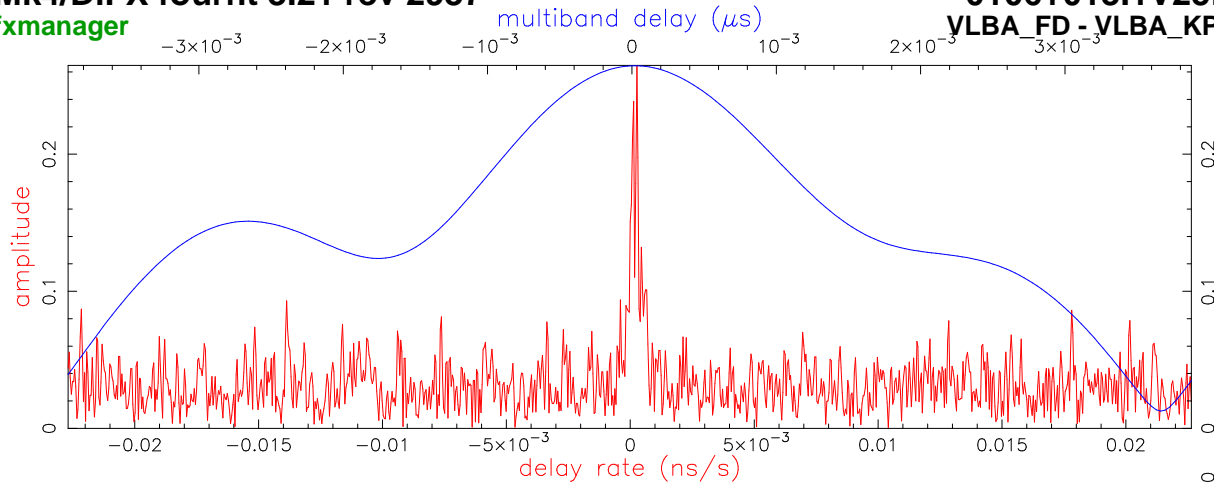


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

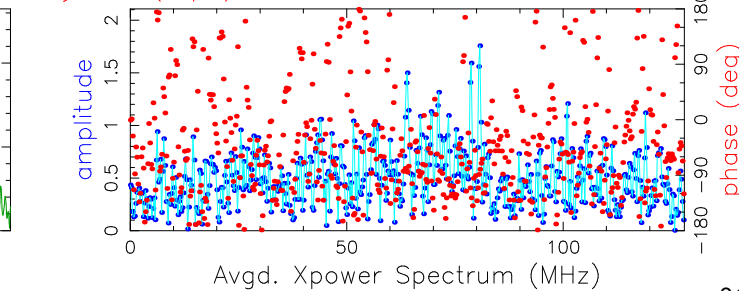
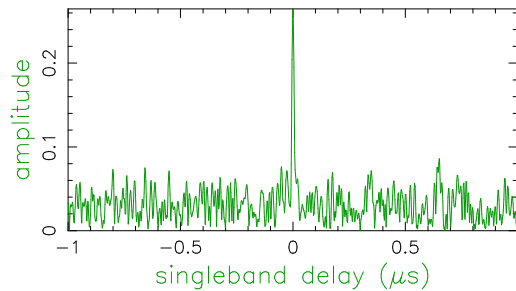
0106+013.1V25LX, No0082, fk

VLBA\_FD - VLBA\_KP, fgroup Q, pol LR

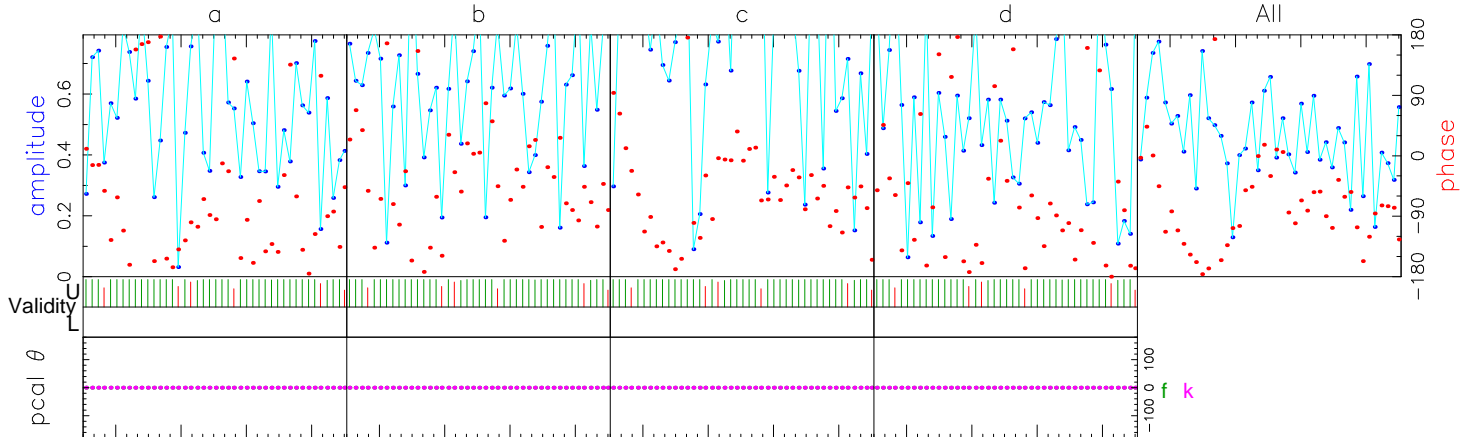


Fringe quality 8

SNR 11.1  
Int time 233.173  
Amp 0.265  
Phase -80.6  
PFD 4.7e-20  
Delays (us)  
SBD -0.000192  
MBD 0.000005  
Fringe rate (Hz)  
0.012275  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512  
Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132938  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -115.5   | -49.8    | -53.4    | -125.6   | Phase      | -80.6 |
|     | 0.3      | 0.3      | 0.4      | 0.2      | Ampl.      | 0.3   |
|     | 513.4    | 513.6    | 512.0    | 512.9    | Sbd box    | 512.9 |
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| f:k | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| f:k | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| k   | 1000     | 1000     | 1000     | 1000     |            |       |
| f   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| k   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

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|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -6.58521491529E+02 | Apriori delay (usec)     | -6.58521496900E+02 | Resid mbdelay (usec) | 5.37050E-06  | +/- | 1.0E-04 |
| Sband delay (usec)      | -6.58521688900E+02 | Apriori clock (usec)     | 9.9072990E+00      | Resid sbdelay (usec) | -1.92000E-04 | +/- | 3.9E-04 |
| Phase delay (usec)      | -6.58521502100E+02 | Apriori clockrate (us/s) | 5.9999999E-08      | Resid phdelay (usec) | -5.20005E-06 | +/- | 6.7E-07 |
| Delay rate (us/s)       | -1.71811607033E-01 | Apriori rate (us/s)      | -1.71811892225E-01 | Resid rate (us/s)    | 2.85192E-07  | +/- | 4.9E-09 |
| Total phase (deg)       | -162.1             | Apriori accel (us/s/s)   | 3.48859474502E-06  | Resid phase (deg)    | -80.6        | +/- | 10.4    |

|              |          |             |                           |  |                       |                      |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 56.5 | Theor. 33.8 | Amplitude 0.265 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 56.5     | 33.8        | Search (1024X16) 0.246    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 94.5     | 58.9        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 49.7     | 10.4        | Inc. seg. avg. 0.398      | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
|              | 29.4     | 18.1        | Inc. frq. avg. 0.314      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

f: az 223.7 el 52.8 pa 36.8 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) 493.352 -83.032 simultaneous interpolator

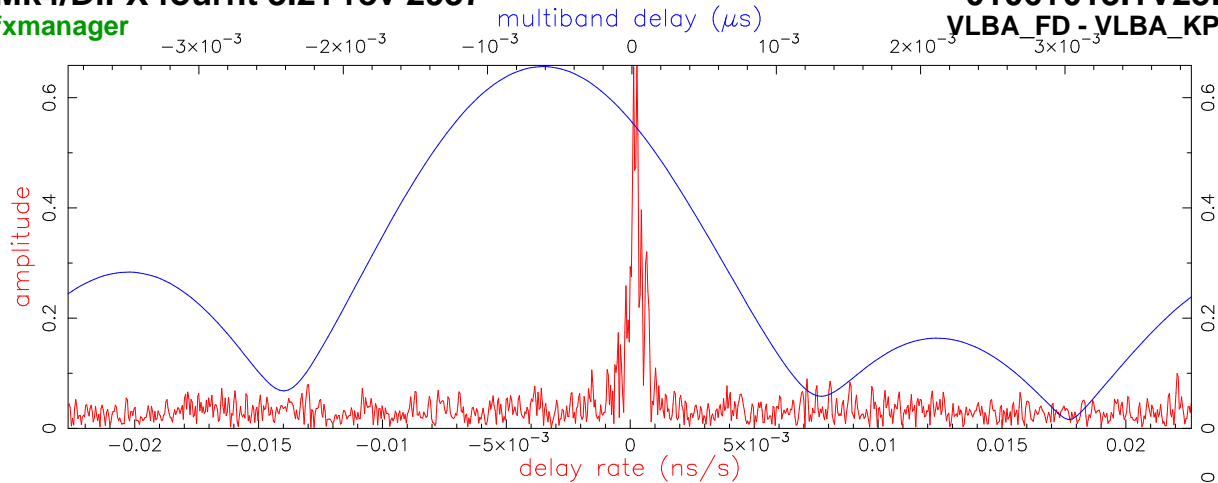
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fk.Q.50.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

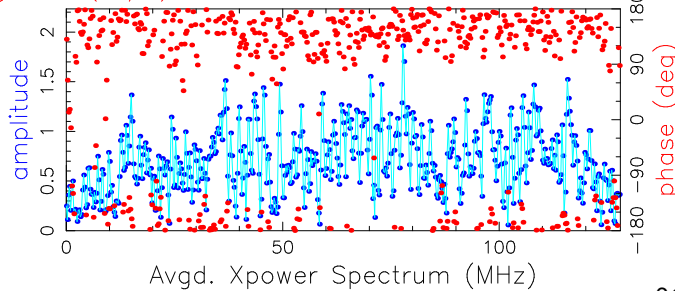
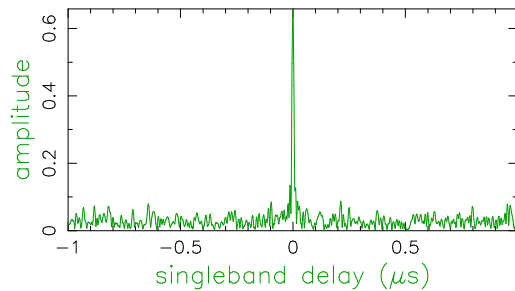
0106+013.1V25LX, No0082, fk

VLBA\_FD - VLBA\_KP, fgroup Q, pol RL



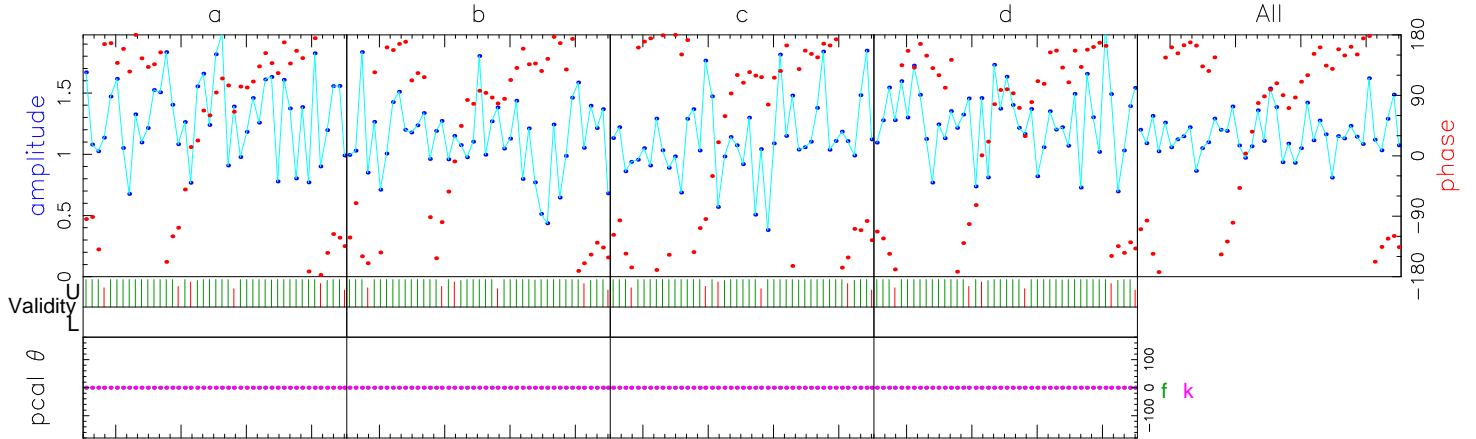
Fringe quality 8

SNR 27.5  
Int time 233.174  
Amp 0.658  
Phase 159.5  
PFD 0.0e+00  
Delays (us)  
SBD -0.000405  
MBD -0.000635  
Fringe rate (Hz)  
0.006414  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132940  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 153.9    | 155.9    | 179.2    | 150.2    | Phase      | 159.5 |
| f   | 0.7      | 0.6      | 0.7      | 0.7      | Ampl.      | 0.7   |
| k   | 513.1    | 512.7    | 513.0    | 512.2    | Sbd box    | 512.8 |
| f:k | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |       |
| f:k | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| f:k | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| f:k | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| k   | 1000     | 1000     | 1000     | 1000     |            |       |
| f   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

Group delay (usec)(sbd) -6.58522132167E+02 Apriori delay (usec) -6.58521496900E+02 Resid mbdelay (usec) -6.35268E-04 +/- 4.0E-05  
Sband delay (usec) -6.58521902150E+02 Apriori clock (usec) 9.9072990E+00 Resid sbdelay (usec) -4.05250E-04 +/- 1.6E-04  
Phase delay (usec) -6.58521486607E+02 Apriori clockrate (us/s) 5.9999999E-08 Resid phdelay (usec) 1.02924E-05 +/- 2.7E-07  
Delay rate (us/s) -1.71811743203E-01 Apriori rate (us/s) -1.71811892225E-01 Resid rate (us/s) 1.49023E-07 +/- 2.0E-09  
Total phase (deg) 77.9 Apriori accel (us/s/s) 3.48859474502E-06 Resid phase (deg) 159.5 +/- 4.2

RMS Theor. Amplitude 0.658 +/- 0.024 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
ph/seg (deg) 62.5 13.6 Search (1024X16) 0.617 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
amp/seg (%) 81.7 23.7 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.004 0.004  
ph/frq (deg) 16.1 4.2 Inc. seg. avg. 1.136 Sample rate(MISamp/s): 256 dr window (ns/s) -0.023 0.023  
amp/frq (%) 7.7 7.3 Inc. frq. avg. 0.668 Data rate(Mb/s): 2048 nlags: 512 t\_cohere infinite ion window (TEC) 0.00 0.00

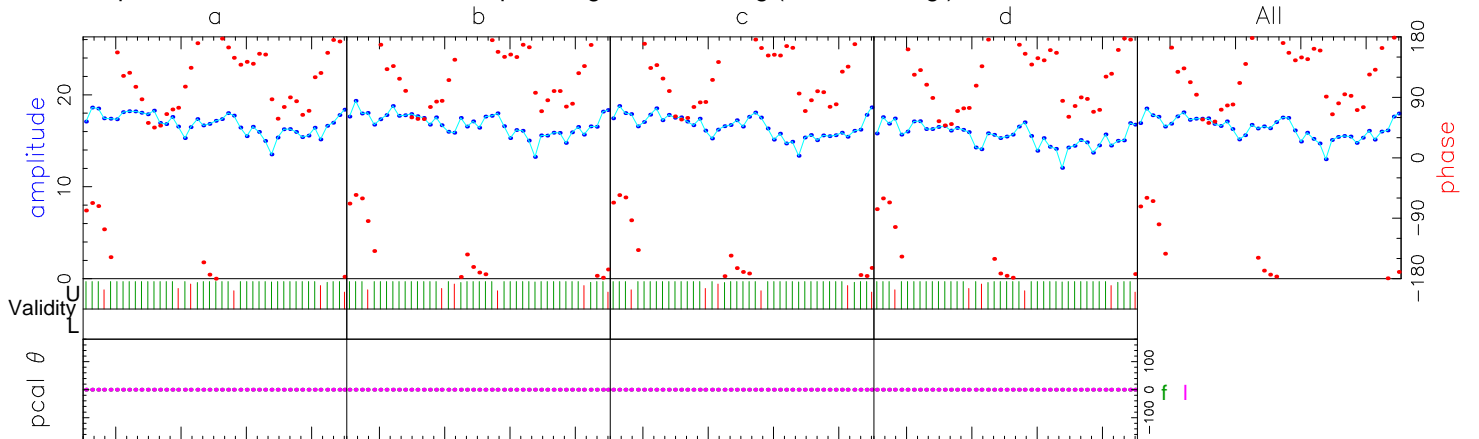
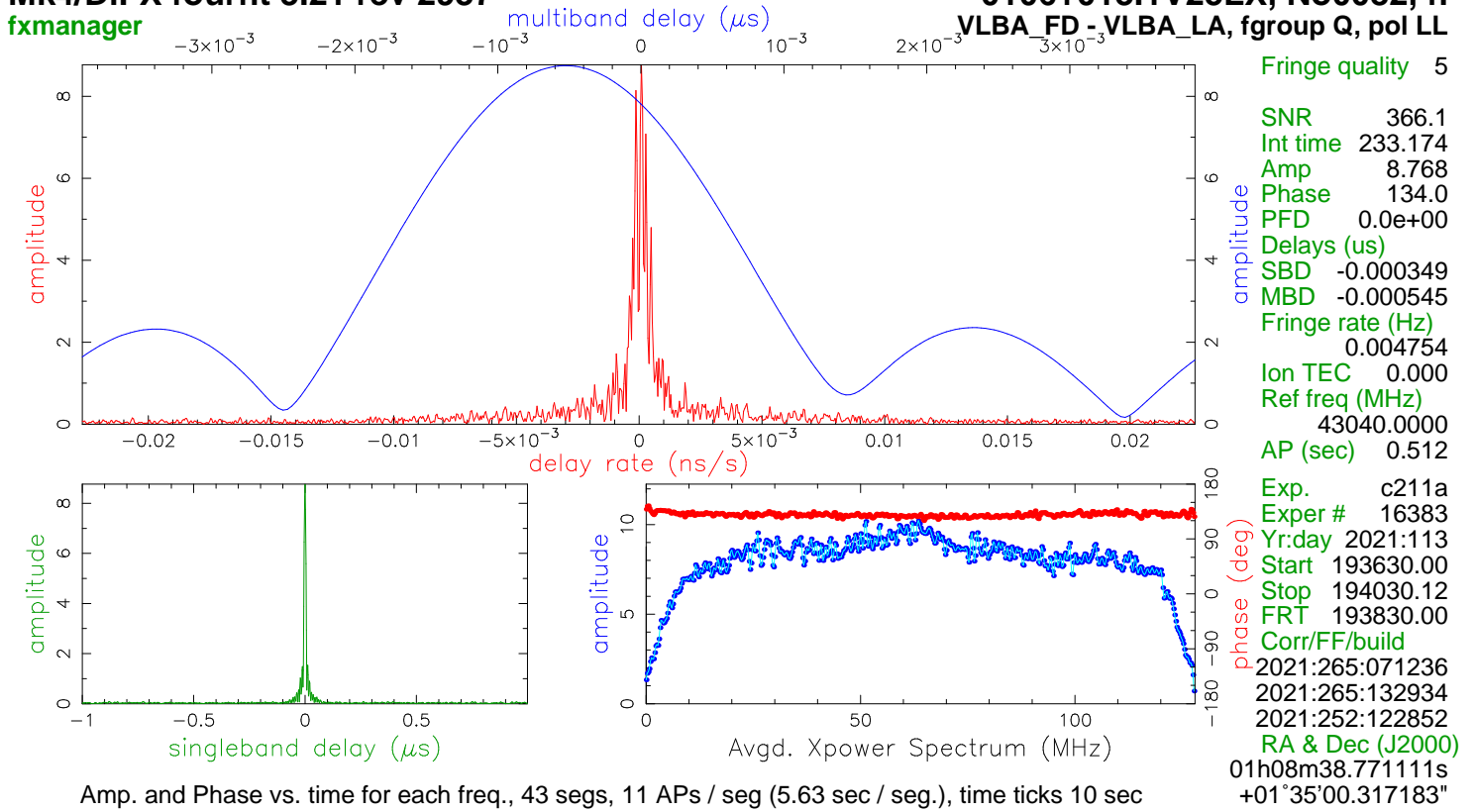
f: az 223.7 el 52.8 pa 36.8 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) 493.352 -83.032 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fk.Q.75.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fl

VLBA\_FD - VLBA\_LA, fgroup Q, pol LL



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | Phase      | 134.0 |
| f   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 8.8   |
| l   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.8 |
| f:l | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| f:l | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| l   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| f   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| l   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

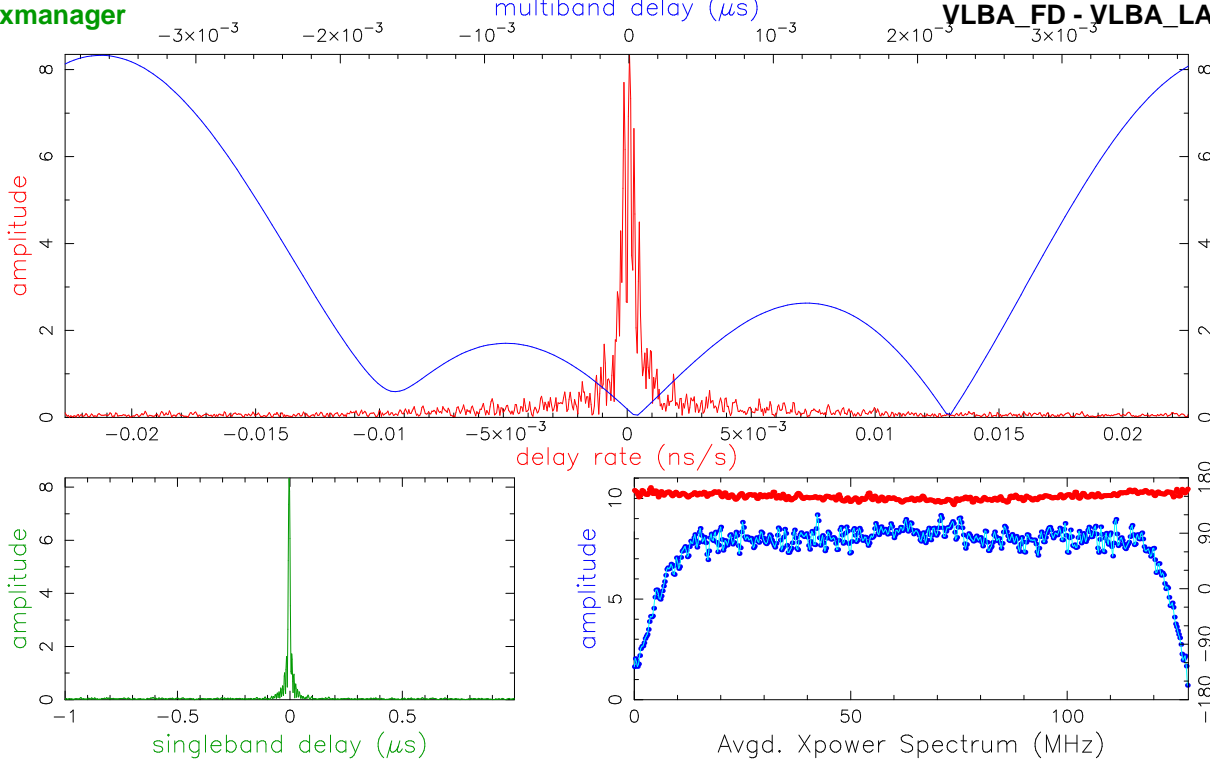
|                               |                    |                          |                    |  |  |                       |                   |   |           |                           |
|-------------------------------|--------------------|--------------------------|--------------------|--|--|-----------------------|-------------------|---|-----------|---------------------------|
| Group delay (usec)(sbd)       | 6.21759840674E+02  | Apriori delay (usec)     | 6.21760385379E+02  | Resid mbdelay (usec)                                     | -5.44705E-04                           | +/-                   | 3.0E-06           |   |           |                           |
| Sband delay (usec)            | 6.21760036129E+02  | Apriori clock (usec)     | 1.2806255E+01      | Resid sbdelay (usec)                                     | -3.49250E-04                           | +/-                   | 1.2E-05           |   |           |                           |
| Phase delay (usec)            | 6.21760394026E+02  | Apriori clockrate (us/s) | 3.4600000E-07      | Resid phdelay (usec)                                     | 8.64664E-06                            | +/-                   | 2.0E-08           |   |           |                           |
| Delay rate (us/s)             | -7.85842541872E-02 | Apriori rate (us/s)      | -7.85843646432E-02 | Resid rate (us/s)  | 1.10456E-07                            | +/-                   | 1.5E-10           |   |           |                           |
| Total phase (deg)             | 129.2              | Apriori accel (us/s/s)   | -3.48821667883E-06 | Resid phase (deg)  | 134.0                                  | +/-                   | 0.3               |   |           |                           |
|                               | RMS                | Theor.                   | Amplitude          | 8.768 +/- 0.024  | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |   |           |                           |
| ph/seg (deg)                  | 65.0               | 1.0                      | Search (1024X16)   | 8.436  | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |   |           |                           |
| amp/seg (%)                   | 87.8               | 1.8                      | Interp.            | 0.000  | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004  |           |                           |
| ph/frq (deg)                  | 6.9                | 0.3                      | Inc. seg. avg.     | 16.380   | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023  |           |                           |
| amp/frq (%)                   | 3.9                | 0.5                      | Inc. frq. avg.     | 8.777  | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC)  | 0.00 0.00 |                           |
| f: az 223.7 el 52.8 pa 36.8   |                    |                          |                    | l: az 216.4 el 50.1 pa 29.3                              |  |                       |                   | u,v (fr/asec) 223.656 -335.956                                |           | simultaneous interpolator |
| Control file: cf_1234_gmva7mm |                    |                          |                    | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/fl..1V25LX |  |                       |                   | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/fl.Q.12.1V25LX |           |                           |

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fl

VLBA\_FD - VLBA\_LA, fgroup Q, pol RR



Fringe quality 5

SNR 348.7

Int time 233.174

Amp 8.351

Phase 151.0

PFD 0.0e+00

Delays (us)

SBD -0.003567

MBD -0.003639

Fringe rate (Hz)

0.004745

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132936

2021:252:122852

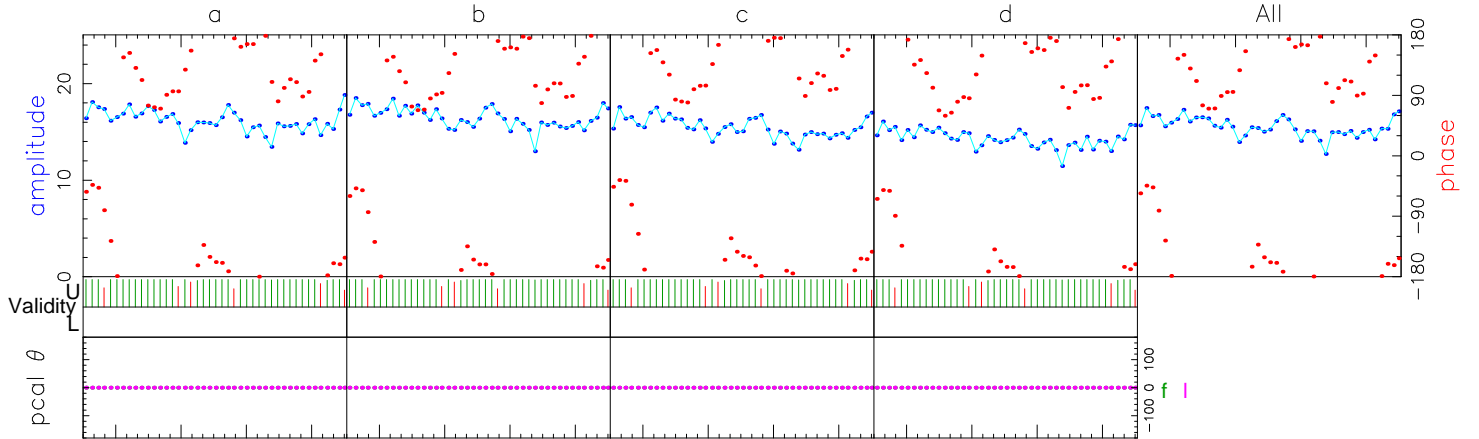
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | Phase      | 151.0 |
| f   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 8.4   |
| l   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 511.2 |
| f:l | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| f:l | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| l   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| f   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 6.21756746517E+02  | Apriori delay (usec)     | 6.21760385379E+02  | Resid mbdelay (usec) | -3.63886E-03 | +/- | 3.2E-06 |
| Sband delay (usec)      | 6.21756818754E+02  | Apriori clock (usec)     | 1.2806255E+01      | Resid sbdelay (usec) | -3.56663E-03 | +/- | 1.2E-05 |
| Phase delay (usec)      | 6.21760395126E+02  | Apriori clockrate (us/s) | 3.4600000E-07      | Resid phdelay (usec) | 9.74665E-06  | +/- | 2.1E-08 |
| Delay rate (us/s)       | -7.85842543857E-02 | Apriori rate (us/s)      | -7.85843646432E-02 | Resid rate (us/s)    | 1.10258E-07  | +/- | 1.5E-10 |
| Total phase (deg)       | 146.2              | Apriori accel (us/s/s)   | -3.48821667883E-06 | Resid phase (deg)    | 151.0        | +/- | 0.3     |

|              |      |     |                  |                 |  |                               |
|--------------|------|-----|------------------|-----------------|--|-------------------------------|
| ph/seg (deg) | 64.8 | 1.1 | Amplitude        | 8.351 +/- 0.024 | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 86.7 | 1.9 | Search (1024X16) | 7.871           | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 8.2  | 0.3 | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 5.6  | 0.6 | Inc. seg. avg.   | 15.522          | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023 |
|              |      |     | Inc. frq. avg.   | 8.371           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

f: az 223.7 el 52.8 pa 36.8 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 223.656 -335.956 simultaneous interpolator

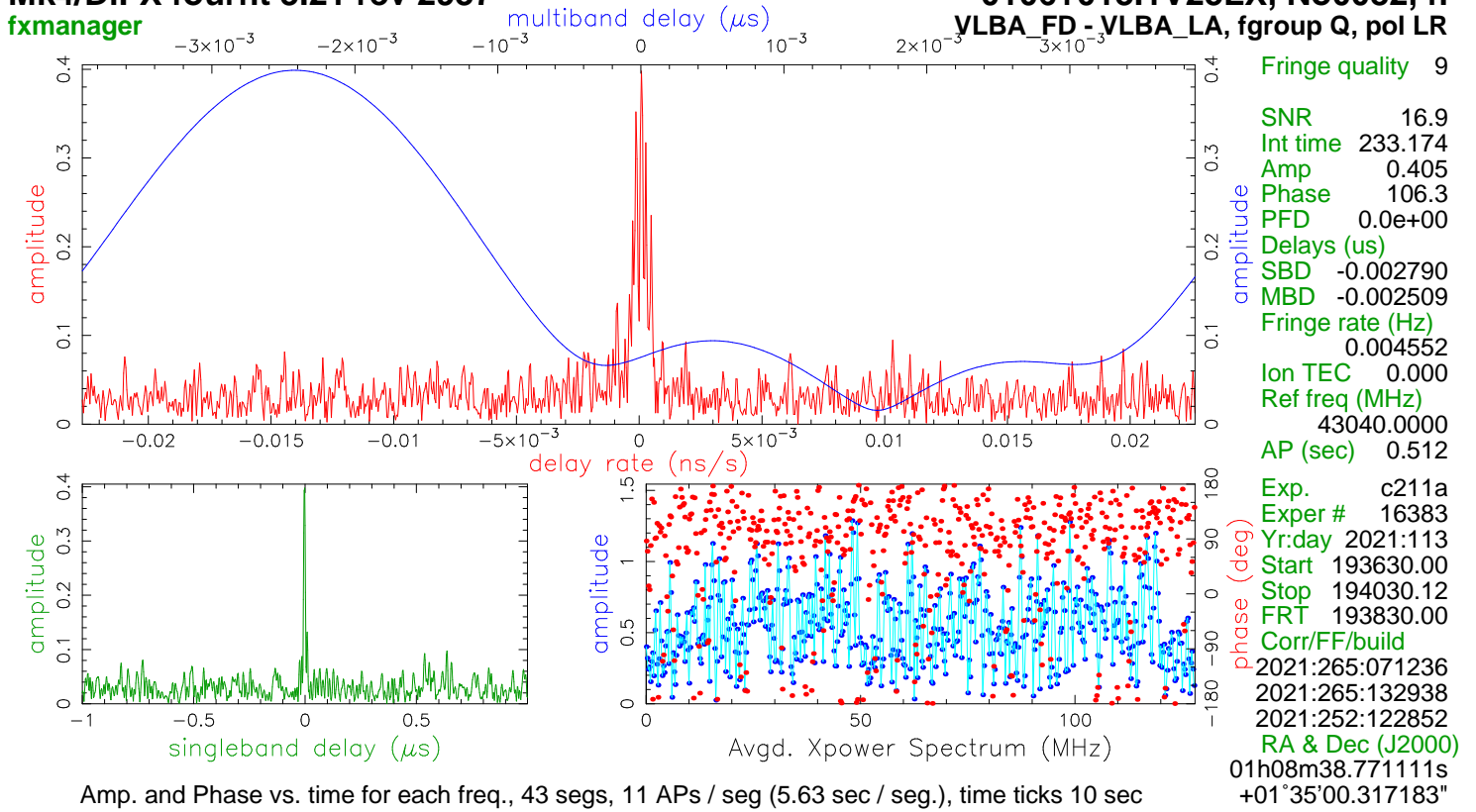
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fl.Q.34.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

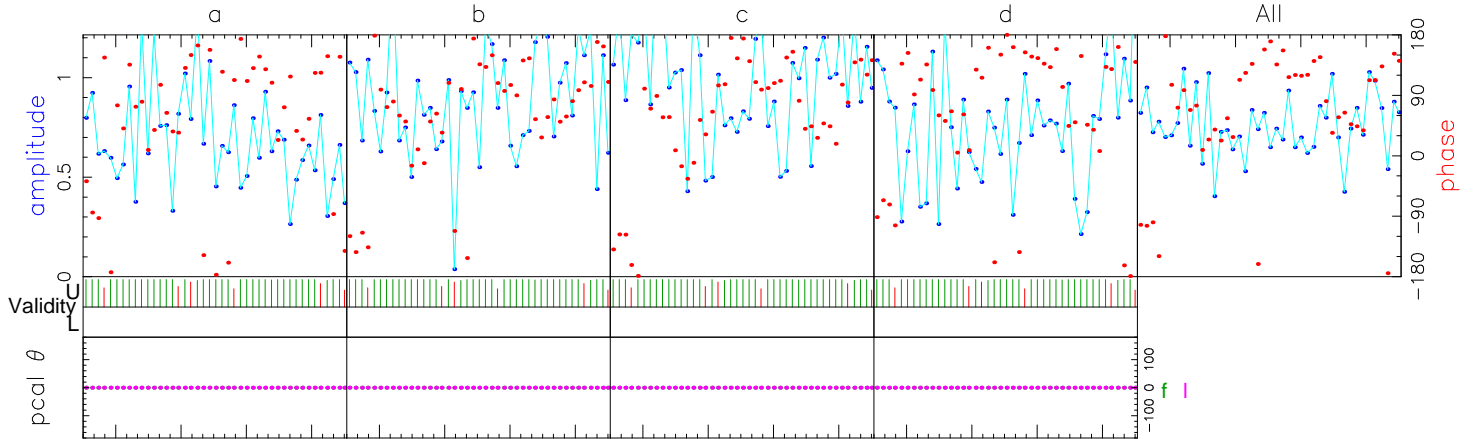
fxmanager

0106+013.1V25LX, No0082, fl

VLBA\_FD - VLBA\_LA, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 113.3    | 98.2     | 93.9     | 130.0    | Phase      | 106.3 |
| f   | 0.3      | 0.5      | 0.5      | 0.3      | Ampl.      | 0.4   |
| l   | 512.6    | 511.0    | 511.5    | 511.3    | Sbd box    | 511.6 |
| f:l | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |       |
| f:l | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| f:l | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| f   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| f   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                             |                             |                          |                    |  |                       |                   |                            |
|-----------------------------|-----------------------------|--------------------------|--------------------|--|-----------------------|-------------------|----------------------------|
| Group delay (usec)(sbd)     | 6.21757876117E+02           | Apriori delay (usec)     | 6.21760385379E+02  | Resid mbdelay (usec)                   | -2.50926E-03          | +/-               | 6.6E-05                    |
| Sband delay (usec)          | 6.21757595379E+02           | Apriori clock (usec)     | 1.2806255E+01      | Resid sbdelay (usec)                   | -2.79000E-03          | +/-               | 2.5E-04                    |
| Phase delay (usec)          | 6.21760392241E+02           | Apriori clockrate (us/s) | 3.4600000E-07      | Resid phdelay (usec)                   | 6.86217E-06           | +/-               | 4.4E-07                    |
| Delay rate (us/s)           | -7.85842588839E-02          | Apriori rate (us/s)      | -7.85843646432E-02 | Resid rate (us/s)                      | 1.05759E-07           | +/-               | 3.2E-09                    |
| Total phase (deg)           | 101.5                       | Apriori accel (us/s/s)   | -3.48821667883E-06 | Resid phase (deg)                      | 106.3                 | +/-               | 6.8                        |
| RMS                         | 65.2                        | Amplitude                | 0.405 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| Theor.                      | 22.1                        | Search (1024X16)         | 0.387              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| Amplitude                   | 38.5                        | Interp.                  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| ph/seg (deg)                | 20.4                        | Inc. seg. avg.           | 0.706              | Sample rate(MSamp/s): 256              | dr window (ns/s)      | -0.023            | 0.023                      |
| amp/seg (%)                 | 19.5                        | Inc. frq. avg.           | 0.407              | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |
| f: az 223.7 el 52.8 pa 36.8 | l: az 216.4 el 50.1 pa 29.3 | u,v (fr/asec)            | 223.656 -335.956   |  |                       |                   | simultaneous interpolator  |

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fl.Q.55.1V25LX

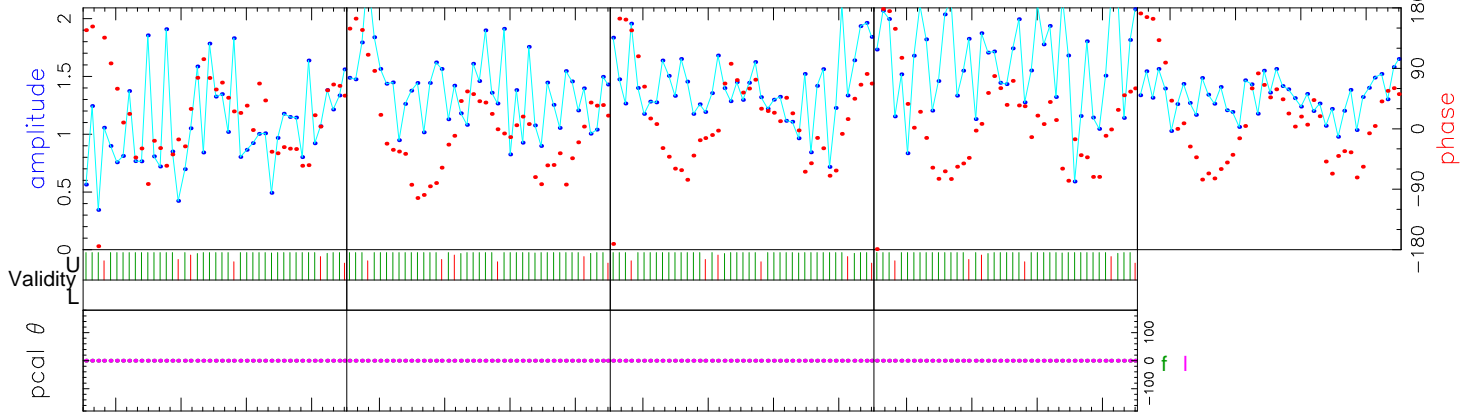
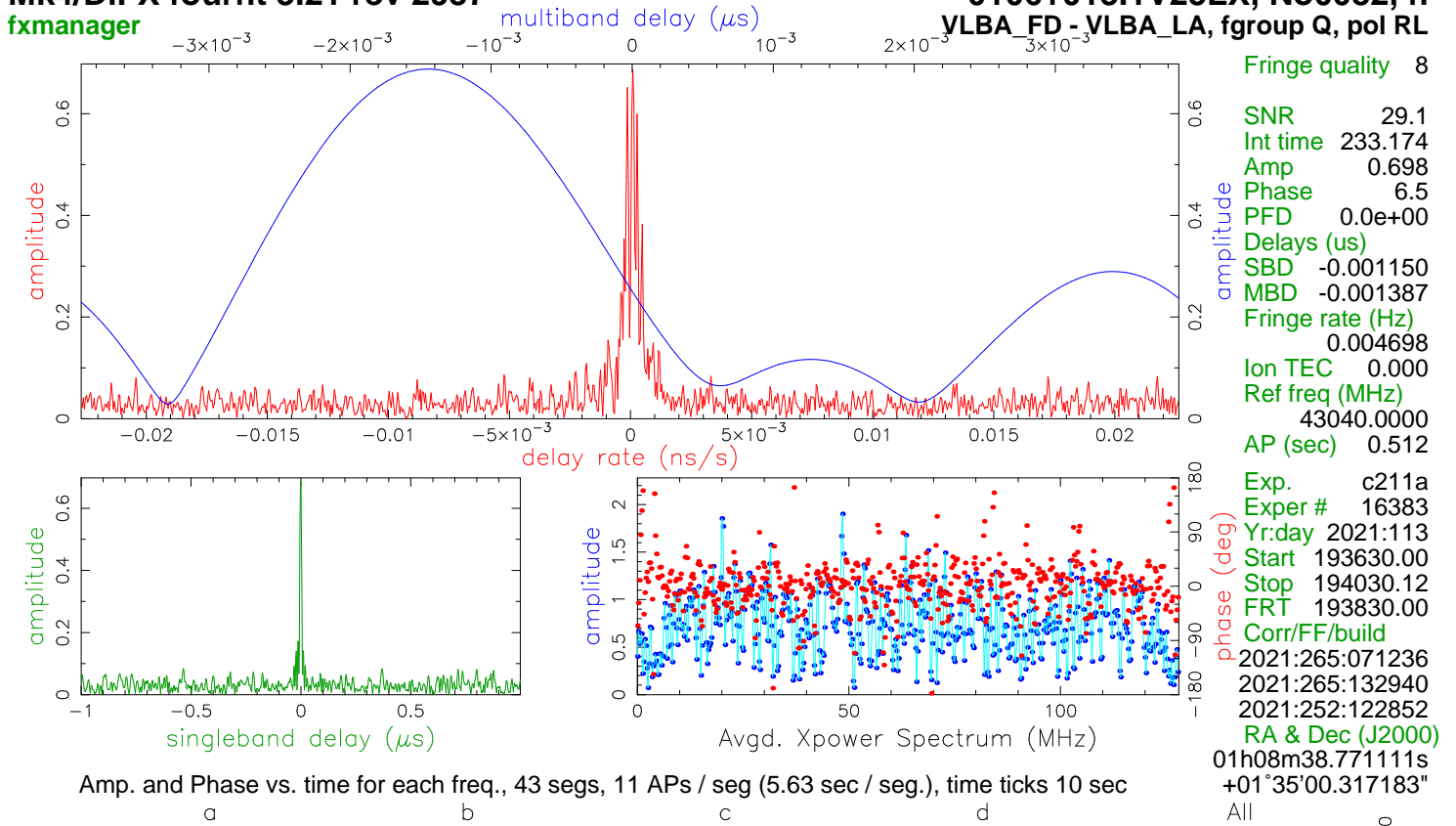


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fl

VLBA\_FD - VLBA\_LA, fgroup Q, pol RL



|           |          |          |          |            |       |
|-----------|----------|----------|----------|------------|-------|
| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
| 19.7      | -9.0     | 17.0     | 1.1      | Phase      | 6.5   |
| 0.6       | 0.7      | 0.7      | 0.8      | Ampl.      | 0.7   |
| 512.3     | 512.1    | 513.1    | 511.8    | Sbd box    | 512.4 |
| U/L 463/0 | 463/0    | 463/0    | 463/0    | APs used   |       |
| f 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| l 1000    | 1000     | 1000     | 1000     | PC phase   |       |
| f:l 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f:l 0:0   | 0:0      | 0:0      | 0:0      | PC amp     |       |
| f 1000    | 1000     | 1000     | 1000     |            |       |
| l 1000    | 1000     | 1000     | 1000     |            |       |
| f Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| l Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 6.21758998611E+02  | Apriori delay (usec)     | 6.21760385379E+02  | Resid mbdelay (usec) | -1.38677E-03 | +/- | 3.8E-05 |
| Sband delay (usec)      | 6.21759235004E+02  | Apriori clock (usec)     | 1.2806255E+01      | Resid sbdelay (usec) | -1.15037E-03 | +/- | 1.5E-04 |
| Phase delay (usec)      | 6.21760385801E+02  | Apriori clockrate (us/s) | 3.4600000E-07      | Resid phdelay (usec) | 4.22434E-07  | +/- | 2.5E-07 |
| Delay rate (us/s)       | -7.85842554918E-02 | Apriori rate (us/s)      | -7.85843646432E-02 | Resid rate (us/s)    | 1.09151E-07  | +/- | 1.9E-09 |
| Total phase (deg)       | 1.8                | Apriori accel (us/s/s)   | -3.48821667883E-06 | Resid phase (deg)    | 6.5          | +/- | 3.9     |

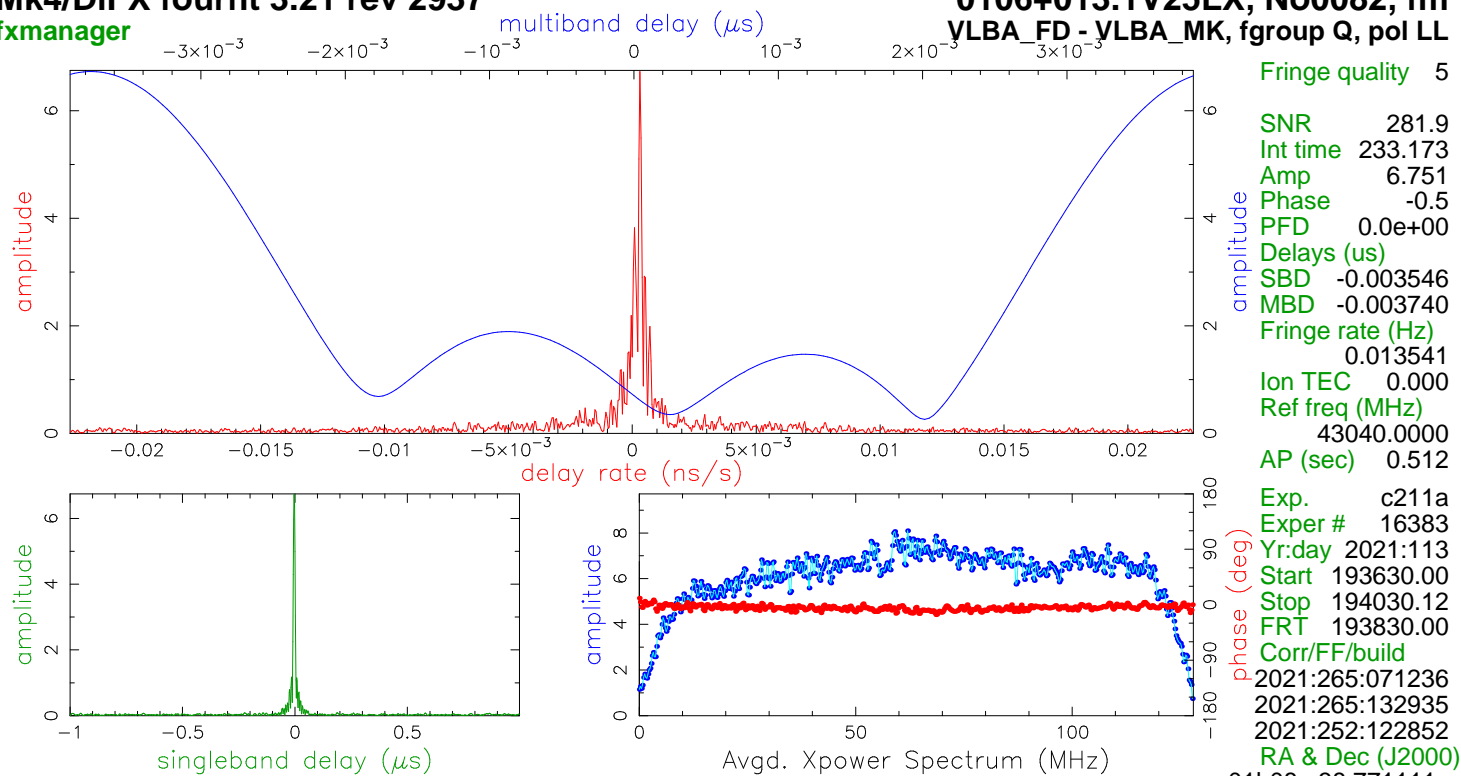
|              |      |        |                  |                 |  |                       |                   |                  |       |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|
|              | RMS  | Theor. | Amplitude        | 0.698 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |
| ph/seg (deg) | 66.2 | 12.8   | Search (1024X16) | 0.669           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |
| amp/seg (%)  | 92.6 | 22.4   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |
| ph/frq (deg) | 16.6 | 3.9    | Inc. seg. avg.   | 1.291           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |
| amp/frq (%)  | 11.4 | 6.9    | Inc. frq. avg.   | 0.699           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  |
|              |      |        |                  |                 |  |                       |                   |                  | 0.00  |

f: az 223.7 el 52.8 pa 36.8 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 223.656 -335.956 simultaneous interpolator

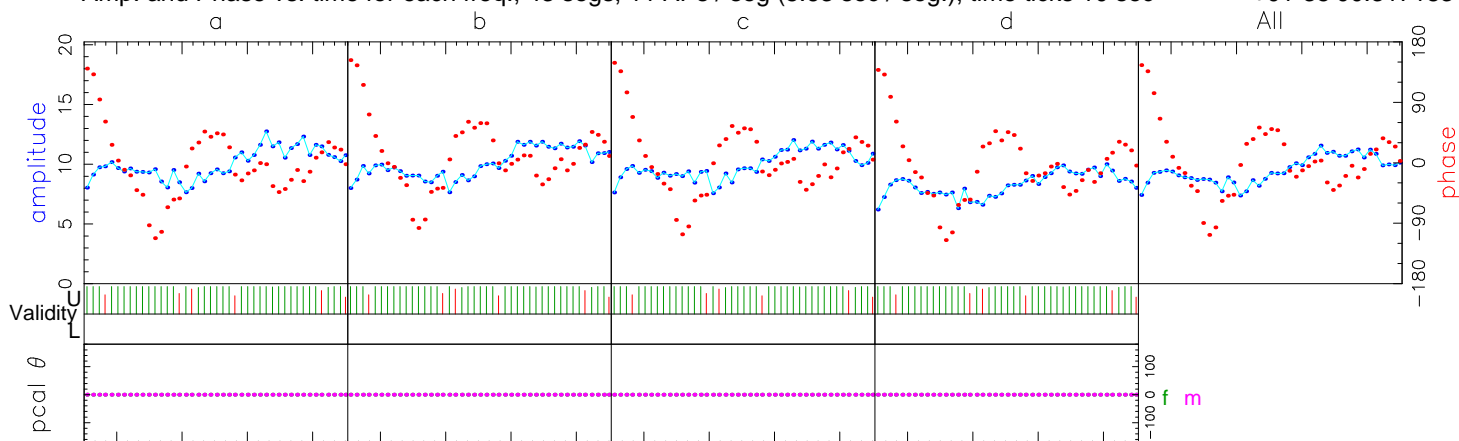
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fl.Q.74.1V25LX

## fxmanager

VLBA FD - VLBA MK, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



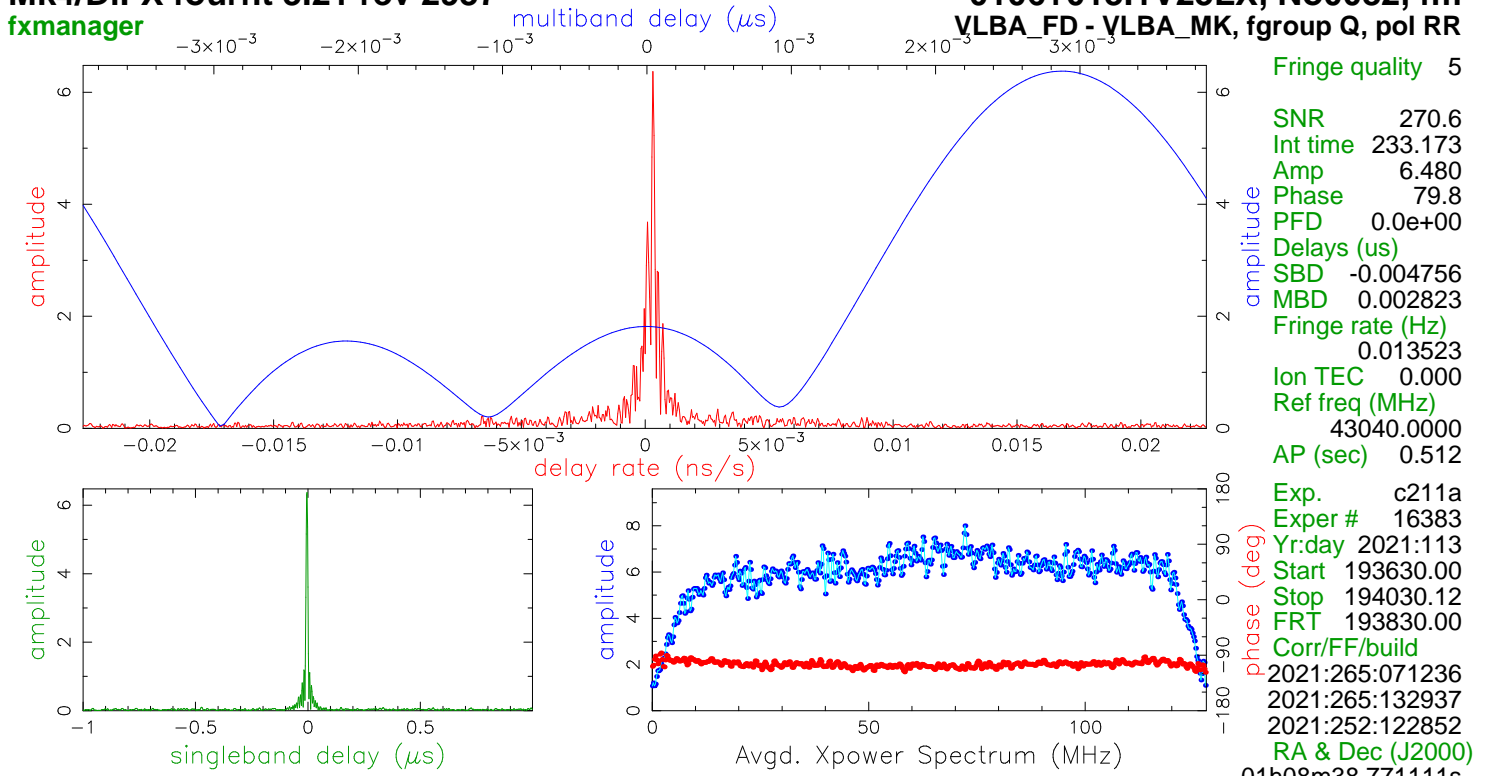
|                               |  |                          |   |                      |  |                              |                  |                           |
|-------------------------------|--|--------------------------|---|----------------------|--|------------------------------|------------------|---------------------------|
| 42912.00                      | 43040.00   | 43168.00                 | 43296.00  | Freq (MHz)           | All                                    |                              |                  |                           |
| -5.6                          | 8.8  | 0.4                      | -6.7  | Phase                | -0.5                                   |                              |                  |                           |
| 7.1                           | 7.2  | 7.0                      | 5.8   | Ampl.                | 6.8                                    |                              |                  |                           |
| 511.4                         | 511.2  | 511.0                    | 511.1   | Sbd box              | 511.2                                  |                              |                  |                           |
| U/L 463/0                     | 463/0  | 463/0                    | 463/0   | APs used             |  |                              |                  |                           |
| f 1000                        | 1000   | 1000                     | 1000  | PC freqs             |  |                              |                  |                           |
| m 1000                        | 1000   | 1000                     | 1000  | PC freqs             |  |                              |                  |                           |
| f:m 0:0                       | 0:0  | 0:0                      | 0:0   | PC phase             |  |                              |                  |                           |
| f:m 0:0                       | 0:0  | 0:0                      | 0:0   | ManI PC              |  |                              |                  |                           |
| f 1000                        | 1000   | 1000                     | 1000  | PC amp               |  |                              |                  |                           |
| m 1000                        | 1000   | 1000                     | 1000  |                      |  |                              |                  |                           |
| f Q00UL                       | Q01UL  | Q02UL                    | Q03UL   | Chan ids             |  |                              |                  |                           |
|                               |  |                          |   | Tracks               |  |                              |                  |                           |
| m Q00UL                       | Q01UL  | Q02UL                    | Q03UL   | Chan ids             |  |                              |                  |                           |
|                               |  |                          |   | Tracks               |  |                              |                  |                           |
| Group delay (usec)(sbd)       | -1.31083439453E+03                                       | Apriori delay (usec)     | -1.31083065492E+03  | Resid mbdelay (usec) | -3.73960E-03                           | +/-                          | 3.9E-06          |                           |
| Sband delay (usec)            | -1.31083420092E+03                                       | Apriori clock (usec)     | -5.4158821E+00  | Resid sbdelay (usec) | -3.54600E-03                           | +/-                          | 1.5E-05          |                           |
| Phase delay (usec)            | -1.31083065496E+03                                       | Apriori clockrate (us/s) | -2.5800000E-07  | Resid phdelay (usec) | -3.22523E-08                           | +/-                          | 2.6E-08          |                           |
| Delay rate (us/s)             | -1.21587969170E+00                                       | Apriori rate (us/s)      | -1.21588000632E+00  | Resid rate (us/s)    | 3.14620E-07                            | +/-                          | 1.9E-10          |                           |
| Total phase (deg)             | -140.1   | Apriori accel (us/s/s)   | 7.50912205899E-06   | Resid phase (deg)    | -0.5                                   | +/-                          | 0.4              |                           |
|                               |  |                          |   |                      |  |                              |                  |                           |
|                               |  |                          |   |                      |  |                              |                  |                           |
| ph/seg (deg)                  | 52.6   | 1.3                      | Search (1024X16)  | 6.631                | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |                           |
| amp/seg (%)                   | 44.3   | 2.3                      | Interp.   | 0.000                | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000 1.000     |                           |
| ph/frq (deg)                  | 8.8  | 0.4                      | Inc. seg. avg.  | 9.527                | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004              |
| amp/frq (%)                   | 8.2  | 0.7                      | Inc. frq. avg.  | 6.769                | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023              |
|                               |  |                          |   |                      | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| f: az 223.7 el 52.8 pa 36.8   | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec)            | 3483.215 763.565  |                      |  |                              |                  | simultaneous interpolator |
| Control file: cf_1234_qmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/fm..1V25LX |                          | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/fm.Q.28.1V25LX |                      |  |                              |                  |                           |

Mk4/DiFX fourfit 3.21 rev 2937

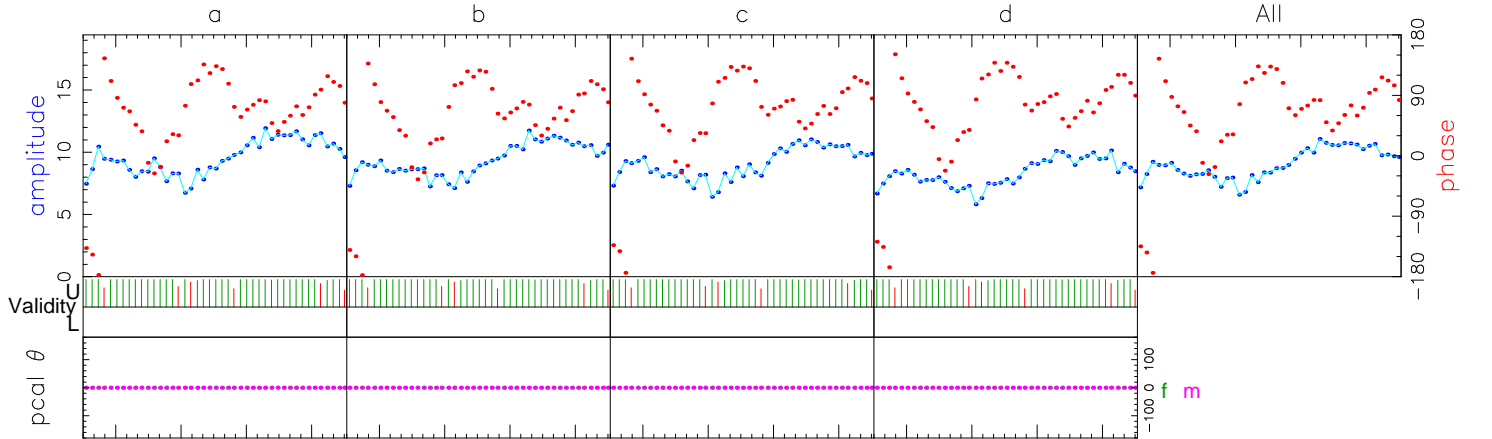
fxmanager

0106+013.1V25LX, No0082, fm

VLBA\_FD - VLBA\_MK, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



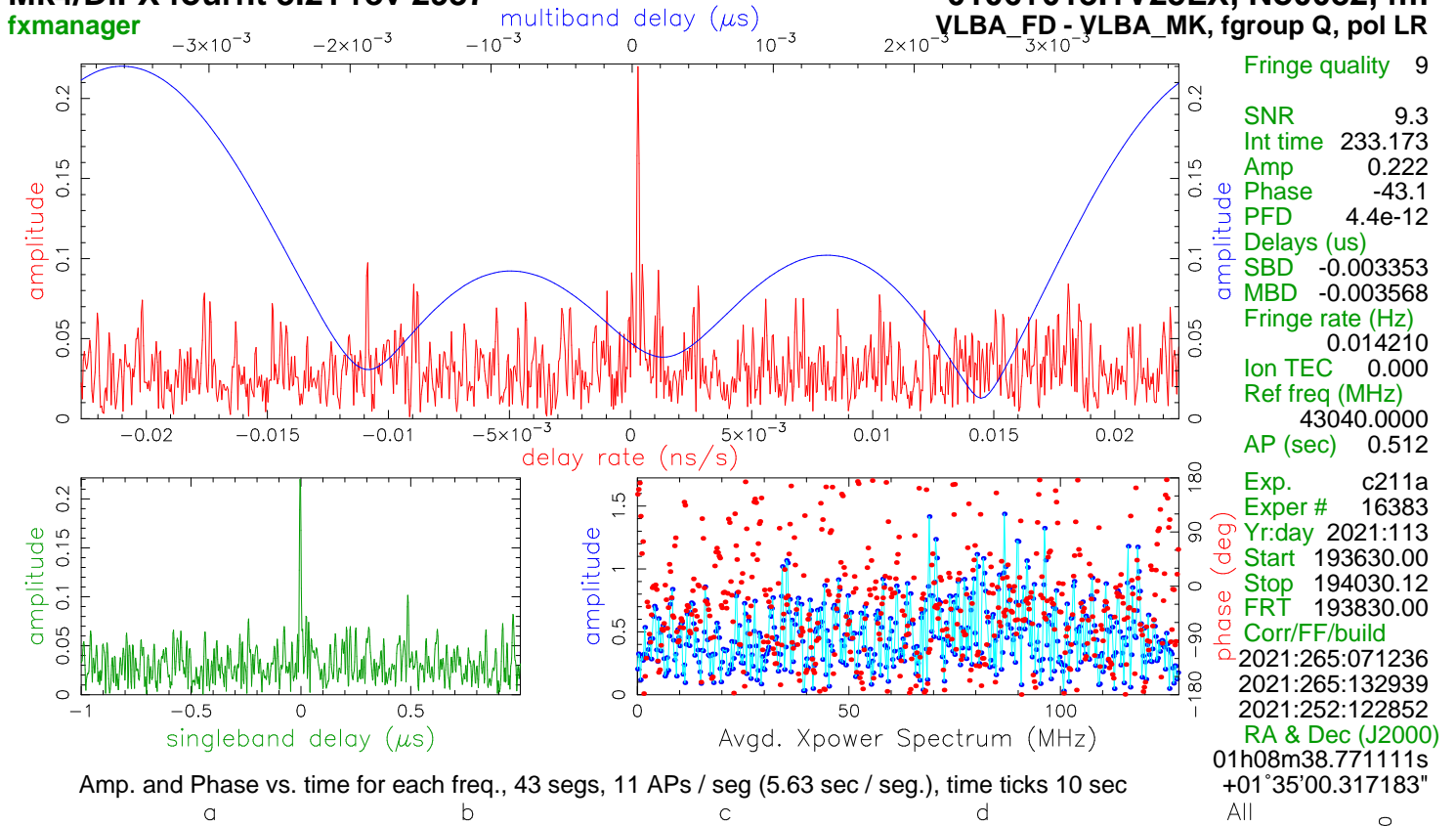
|                               | 42912.00   | 43040.00  | 43168.00           | 43296.00                               | Freq (MHz)            | All                       |
|-------------------------------|--|---|--------------------|--|-----------------------|---------------------------|
| U/L                           | 463/0  | 463/0   | 463/0              | 463/0                                  | APs used              |                           |
| f                             | 1000   | 1000  | 1000               | 1000                                   | PC freqs              |                           |
| m                             | 1000   | 1000  | 1000               | 1000                                   | PC freqs              |                           |
| f:m                           | 0:0  | 0:0   | 0:0                | 0:0                                    | PC phase              |                           |
| f:m                           | 0:0  | 0:0   | 0:0                | 0:0                                    | Manl PC               |                           |
| f                             | 1000   | 1000  | 1000               | 1000                                   | PC amp                |                           |
| m                             | 1000   | 1000  | 1000               | 1000                                   |                       |                           |
| f                             | Q00UR  | Q01UR   | Q02UR              | Q03UR                                  | Chan ids              |                           |
| m                             | Q00UR  | Q01UR   | Q02UR              | Q03UR                                  | Tracks                |                           |
|                               |  |   |                    |  | Chan ids              |                           |
|                               |  |   |                    |  | Tracks                |                           |
| Group delay (usec)(sbd)       | -1.31083564403E+03                                       | Apriori delay (usec)  | -1.31083065492E+03 | Resid mbdelay (usec)                   | 2.82340E-03           | +/- 4.1E-06               |
| Sband delay (usec)            | -1.31083541067E+03                                       | Apriori clock (usec)  | -5.4158821E+00     | Resid sbdelay (usec)                   | -4.75575E-03          | +/- 1.6E-05               |
| Phase delay (usec)            | -1.31083064977E+03                                       | Apriori clockrate (us/s)                                      | -2.5800000E-07     | Resid phdelay (usec)                   | 5.15244E-06           | +/- 2.7E-08               |
| Delay rate (us/s)             | -1.21587969212E+00                                       | Apriori rate (us/s)   | -1.21588000632E+00 | Resid rate (us/s)                      | 3.14195E-07           | +/- 2.0E-10               |
| Total phase (deg)             | -59.8  | Apriori accel (us/s/s)  | 7.50912205899E-06  | Resid phase (deg)                      | 79.8                  | +/- 0.4                   |
| RMS                           | 52.9   | Theor.  | 6.294              | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                           |
| ph/seg (deg)                  | 44.2   | Amplitude   | 6.480 +/- 0.024    | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000              |
| amp/seg (%)                   | 5.7  | Search (1024X16)  | 0.000              | Bits/sample: 2x2                       | mb window (us)        | -0.004 0.004              |
| ph/frq (deg)                  | 5.4  | Interp.   | 0.000              | Sample rate(MISamp/s): 256             | dr window (ns/s)      | -0.023 0.023              |
| amp/frq (%)                   | 5.4  | Inc. seg. avg.  | 9.080              | Data rate(Mb/s): 2048                  | ion window (TEC)      | 0.00 0.00                 |
|                               |  | Inc. frq. avg.  | 6.387              | nlags: 512                             | t_cohere infinite     |                           |
| f: az 223.7 el 52.8 pa 36.8   | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec)   | 3483.215 763.565   |  |                       | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/fm..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/fm.Q.43.1V25LX |                    |  |                       |                           |

Mk4/DiFX fourfit 3.21 rev 2937

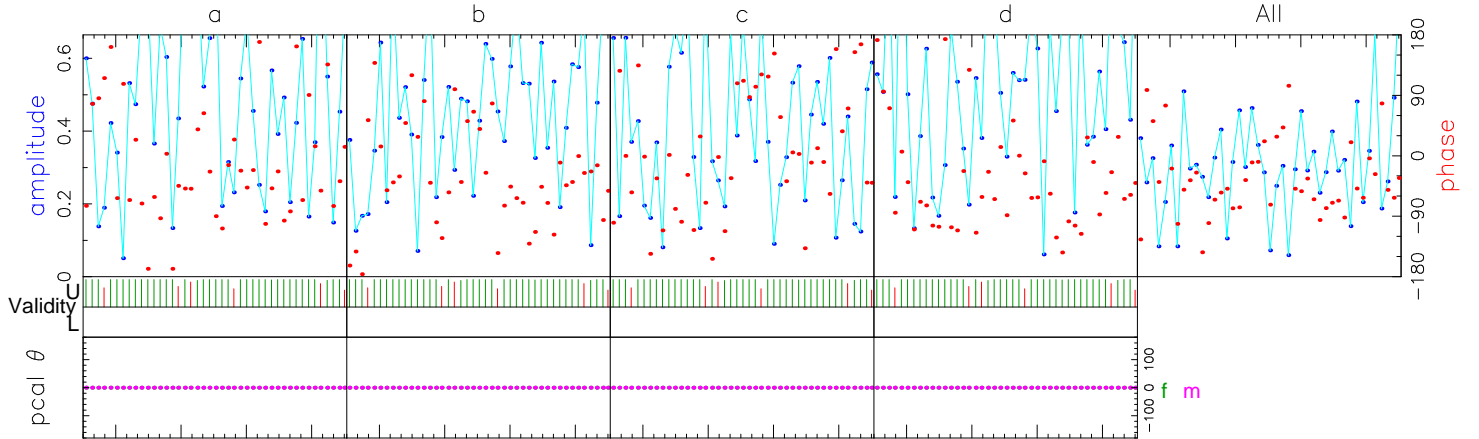
fxmanager

0106+013.1V25LX, No0082, fm

VLBA\_FD - VLBA\_MK, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -45.8    | -39.8    | -18.9    | -54.8    | Phase      | -43.1 |
|     | 0.2      | 0.2      | 0.1      | 0.3      | Ampl.      | 0.2   |
|     | 511.5    | 512.7    | 762.7    | 510.8    | Sbd box    | 511.3 |
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| f:m | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| f:m | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| m   | 1000     | 1000     | 1000     | 1000     |            |       |
| f   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| m   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.31083422337E+03 | Apriori delay (usec)     | -1.31083065492E+03 | Resid mbdelay (usec) | -3.56845E-03 | +/- | 1.2E-04 |
| Sband delay (usec)      | -1.31083400767E+03 | Apriori clock (usec)     | -5.4158821E+00     | Resid sbdelay (usec) | -3.35275E-03 | +/- | 4.7E-04 |
| Phase delay (usec)      | -1.31083065770E+03 | Apriori clockrate (us/s) | -2.5800000E-07     | Resid phdelay (usec) | -2.78001E-06 | +/- | 8.0E-07 |
| Delay rate (us/s)       | -1.21587967617E+00 | Apriori rate (us/s)      | -1.21588000632E+00 | Resid rate (us/s)    | 3.30151E-07  | +/- | 5.8E-09 |
| Total phase (deg)       | -182.7             | Apriori accel (us/s/s)   | 7.50912205899E-06  | Resid phase (deg)    | -43.1        | +/- | 12.4    |

|              |          |             |                           |  |                       |                   |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|-------------------|----------------------------|
| ph/seg (deg) | RMS 56.7 | Theor. 40.4 | Amplitude 0.222 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)  | 73.2     | 70.4        | Search (1024X16) 0.202    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg) | 19.2     | 12.4        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)  | 24.4     | 21.6        | Inc. seg. avg. 0.249      | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)  | -0.023 0.023               |
|              |          |             | Inc. frq. avg. 0.219      | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

f: az 223.7 el 52.8 pa 36.8 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 3483.215 763.565 simultaneous interpolator

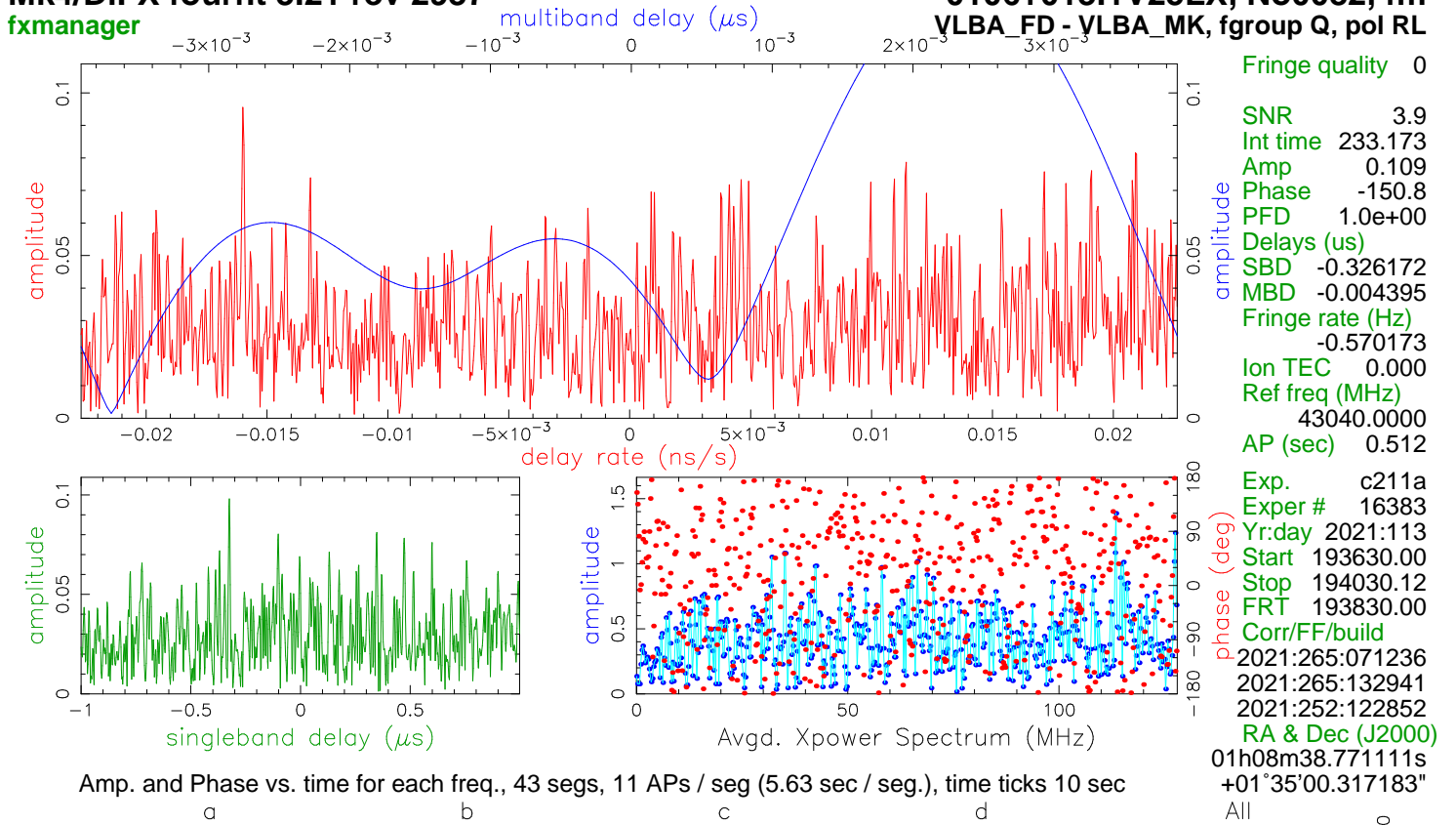
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fm.Q.62.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

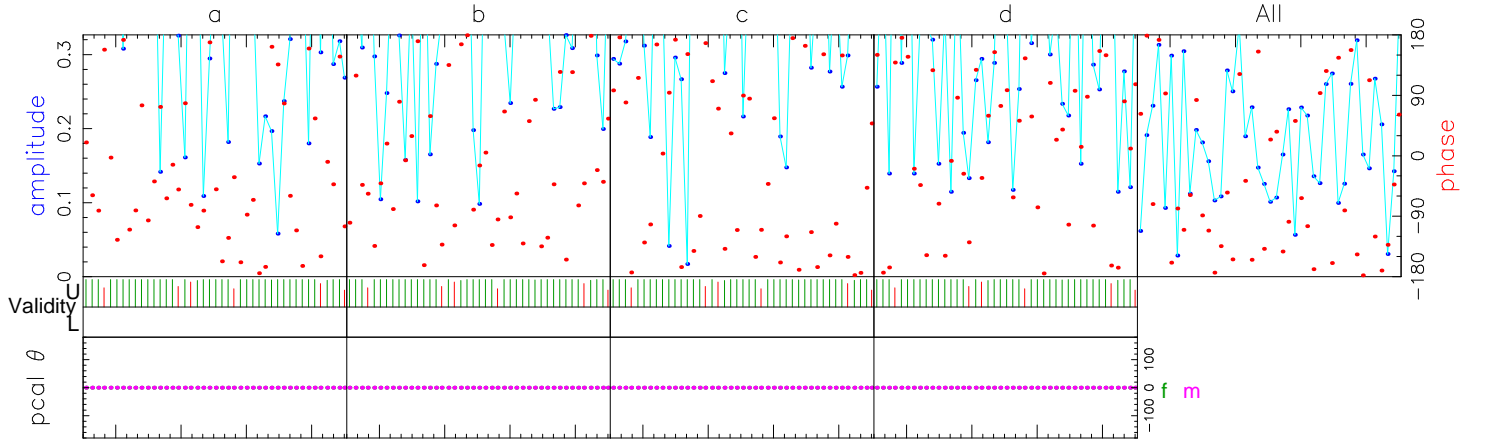
fxmanager

0106+013.1V25LX, No0082, fm

VLBA\_FD - VLBA\_MK, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
| U/L | -83.0    | -112.8   | -179.8   | 130.2    | Phase      | -150.8 |
| f   | 0.2      | 0.1      | 0.2      | 0.1      | Ampl.      | 0.1    |
| m   | 776.2    | 979.3    | 494.9    | 418.8    | Sbd box    | 346.0  |
| f:m | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |        |
| f:m | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| f:m | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| f:m | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| m   | 1000     | 1000     | 1000     | 1000     |            |        |
| f   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| m   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.31115536195E+03 | Apriori delay (usec)     | -1.31083065492E+03 | Resid mbdelay (usec) | -4.39453E-03 | +/- | 2.8E-04 |
| Sband delay (usec)      | -1.31115682680E+03 | Apriori clock (usec)     | -5.4158821E+00     | Resid sbdelay (usec) | -3.26172E-01 | +/- | 1.1E-03 |
| Phase delay (usec)      | -1.31083066466E+03 | Apriori clockrate (us/s) | -2.5800000E-07     | Resid phdelay (usec) | -9.73172E-06 | +/- | 1.9E-06 |
| Delay rate (us/s)       | -1.21589325384E+00 | Apriori rate (us/s)      | -1.21588000632E+00 | Resid rate (us/s)    | -1.32475E-05 | +/- | 1.4E-08 |
| Total phase (deg)       | -290.4             | Apriori accel (us/s/s)   | 7.50912205899E-06  | Resid phase (deg)    | -150.8       | +/- | 29.1    |

|              |       |        |                  |                 |  |  |                       |              |
|--------------|-------|--------|------------------|-----------------|--|--|-----------------------|--------------|
|              | RMS   | Theor. | Amplitude        | 0.109 +/- 0.028 | Pcal mode: MANUAL, MANUAL                                    |  | PC period (AP's) 5, 5 |              |
| ph/seg (deg) | 82.0  | 94.8   | Search (1024X16) | 0.135           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                       |  | sb window (us)        | -1.000 1.000 |
| amp/seg (%)  | 127.9 | 165.5  | Interp.          | 0.000           | Bits/sample: 2x2      SampCntNorm: enabled                   |  | mb window (us)        | -0.004 0.004 |
| ph/frq (deg) | 81.0  | 29.1   | Inc. seg. avg.   | 0.088           | Sample rate(MSamp/s): 256                                    |  | dr window (ns/s)      | -0.023 0.023 |
| amp/frq (%)  | 65.6  | 50.8   | Inc. frq. avg.   | 0.140           | Data rate(Mb/s): 2048      nlags: 512      t_cohere infinite |  | ion window (TEC)      | 0.00 0.00    |

f: az 223.7 el 52.8 pa 36.8 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 3483.215 763.565 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fm.Q.77.1V25LX

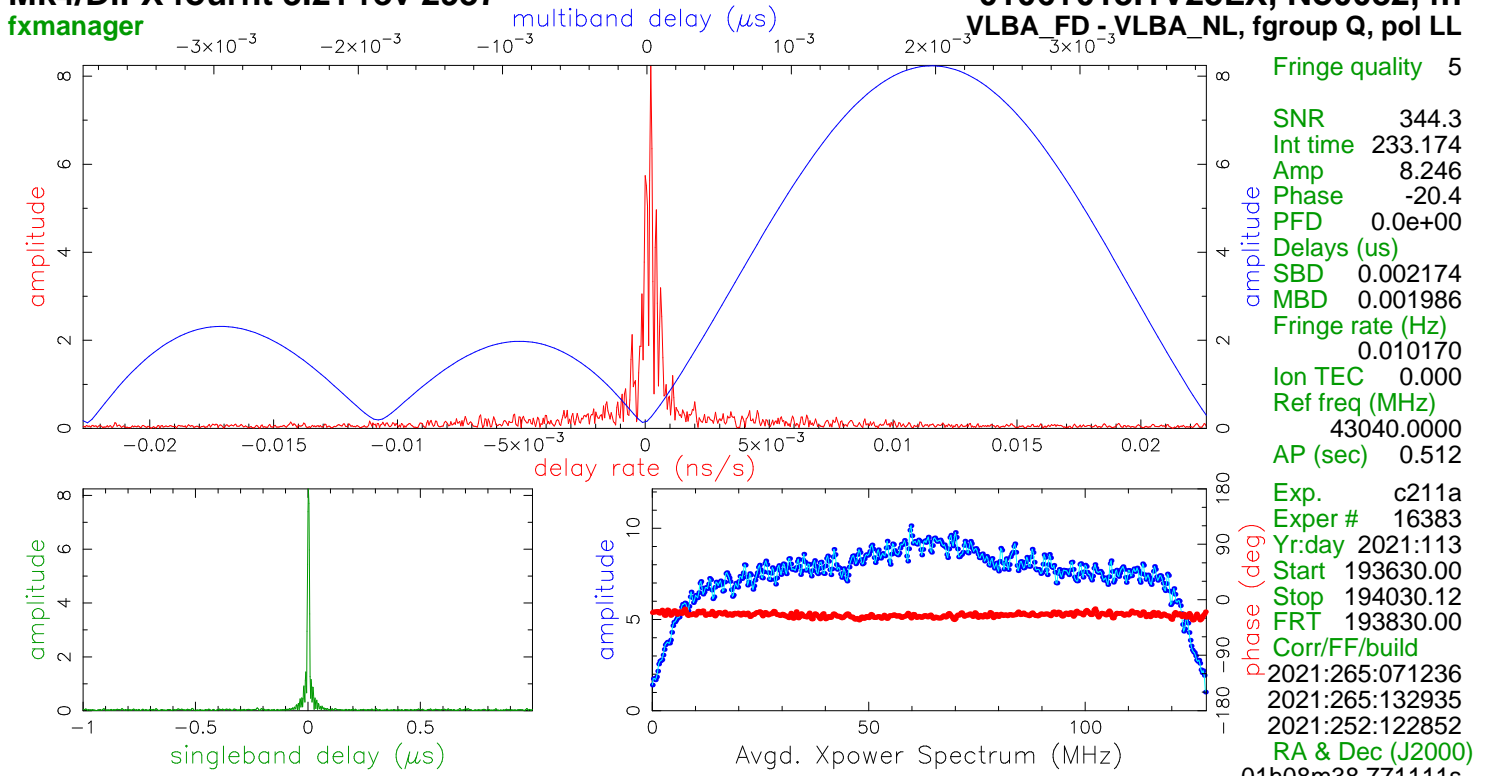


Mk4/DiFX fourfit 3.21 rev 2937

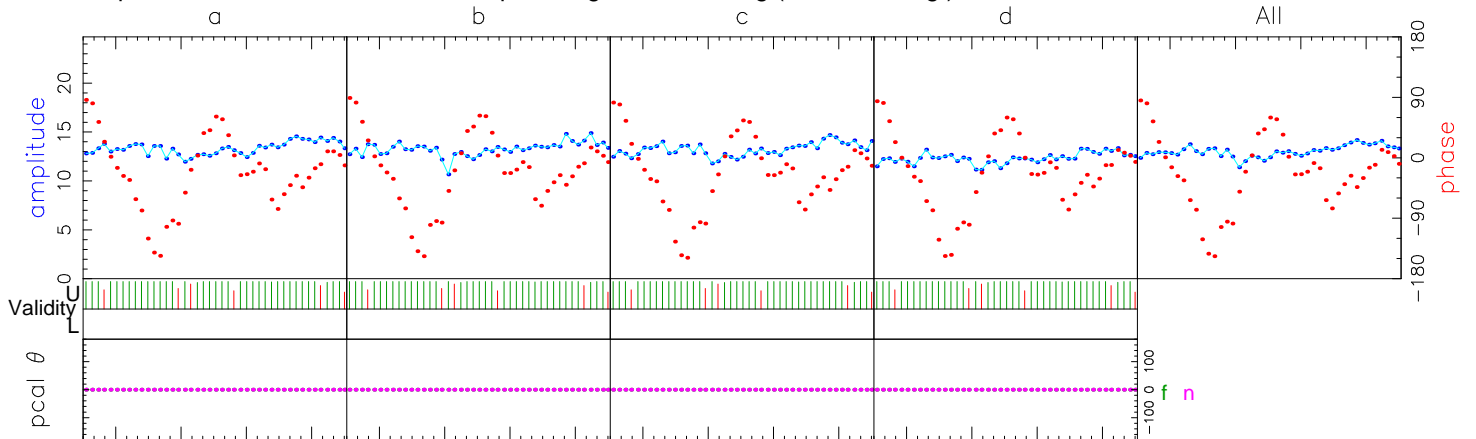
fxmanager

0106+013.1V25LX, No0082, fn

VLBA\_FD - VLBA\_NL, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



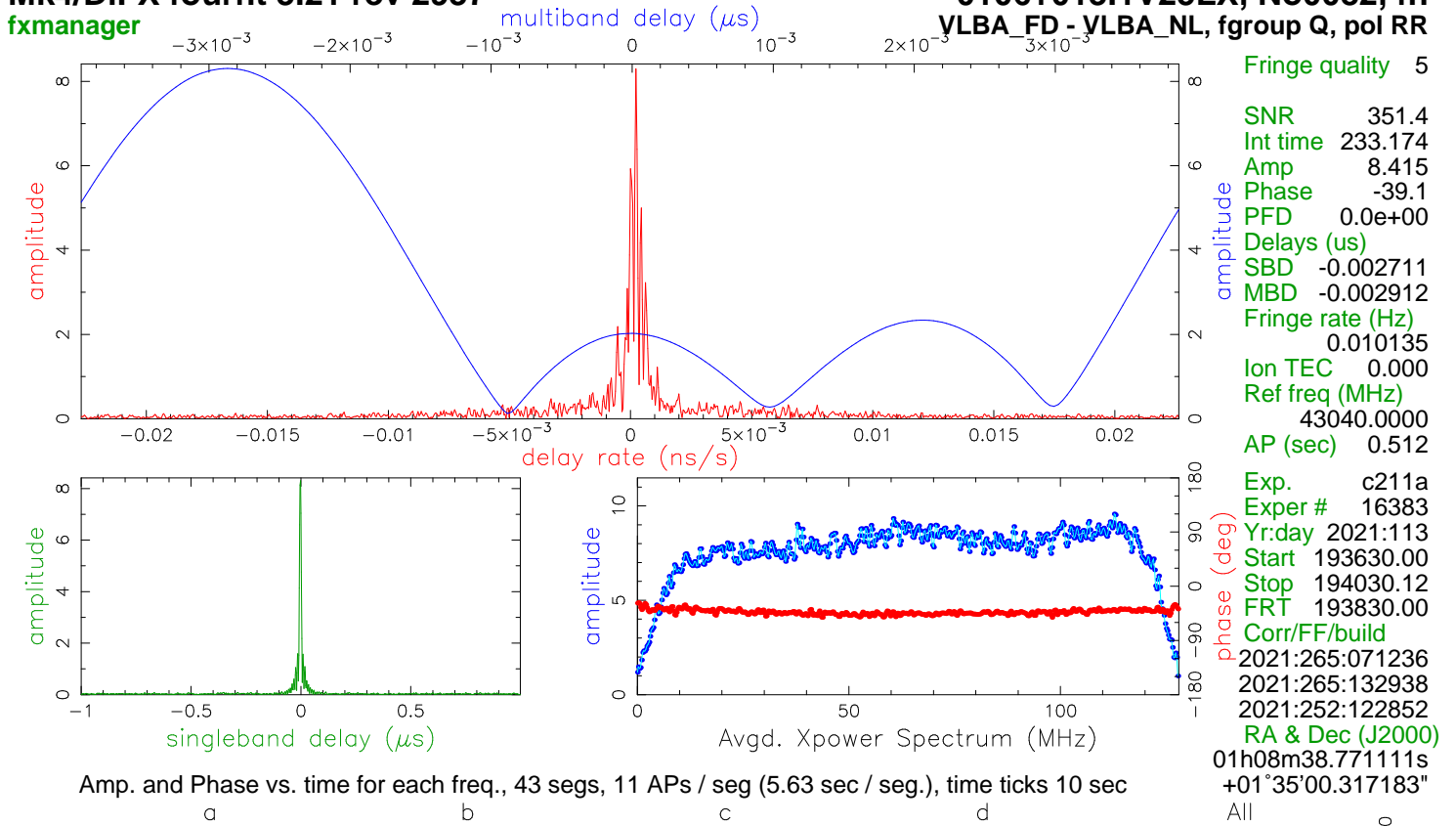
| 42912.00                      | 43040.00   | 43168.00  | 43296.00           | Freq (MHz)                             | All  |
|-------------------------------|--|---|--------------------|--|--|
| -20.2                         | -17.9  | -23.1   | -20.4              | Phase                                  | -20.4  |
| 8.5                           | 8.4  | 8.4   | 7.7                | Ampl.                                  | 8.2  |
| 514.2                         | 514.1  | 514.0   | 514.1              | Sbd box                                | 514.1  |
| U/L 463/0                     | 463/0  | 463/0   | 463/0              | APs used                               |  |
| f 1000                        | 1000   | 1000  | 1000               | PC freqs                               |  |
| n 1000                        | 1000   | 1000  | 1000               | PC freqs                               |  |
| f:n 0:0                       | 0:0  | 0:0   | 0:0                | PC phase                               |  |
| f:n 0:0                       | 0:0  | 0:0   | 0:0                | Manl PC                                |  |
| f 1000                        | 1000   | 1000  | 1000               | PC amp                                 |  |
| f 1000                        | 1000   | 1000  | 1000               |  |  |
| f Q00UL                       | Q01UL  | Q02UL   | Q03UL              | Chan ids                               |  |
| n Q00UL                       | Q01UL  | Q02UL   | Q03UL              | Tracks                                 |  |
|                               |  |   |                    | Chan ids                               |  |
|                               |  |   |                    | Tracks                                 |  |
| Group delay (usec)(sbd)       | 3.89552832734E+03  | Apriori delay (usec)  | 3.89552634143E+03  | Resid mbdelay (usec)                   | 1.98591E-03 +/- 3.2E-06                                    |
| Sband delay (usec)            | 3.89552851531E+03  | Apriori clock (usec)  | 4.8268051E+00      | Resid sbdelay (usec)                   | 2.17387E-03 +/- 1.3E-05                                    |
| Phase delay (usec)            | 3.89552634012E+03  | Apriori clockrate (us/s)                                      | -2.4000000E-07     | Resid phdelay (usec)                   | -1.31707E-06 +/- 2.1E-08                                   |
| Delay rate (us/s)             | 1.36922262168E-01  | Apriori rate (us/s)   | 1.36922025883E-01  | Resid rate (us/s)                      | 2.36284E-07 +/- 1.6E-10                                    |
| Total phase (deg)             | 244.3  | Apriori accel (us/s/s)  | -2.12100729920E-05 | Resid phase (deg)                      | -20.4 +/- 0.3  |
| RMS                           | Theor.   | Amplitude   | 8.246 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                      |
| ph/seg (deg)                  | 55.2   | Search (1024X16)  | 7.895              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                                |
| amp/seg (%)                   | 58.6   | Interp.   | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004           |
| ph/frq (deg)                  | 2.6  | Inc. seg. avg.  | 13.040             | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023                              |
| amp/frq (%)                   | 3.6  | Inc. frq. avg.  | 8.239              | Data rate(Mb/s): 2048                  | nlags: 512 t_coherence infinite ion window (TEC) 0.00 0.00 |
| f: az 223.7 el 52.8 pa 36.8   | n: az 229.8 el 37.9 pa 34.8                              | u,v (fr/asec)   | -400.582 -716.900  |  | simultaneous interpolator                                  |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/fn..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/fn.Q.24.1V25LX |                    |  |  |

Mk4/DiFX fourfit 3.21 rev 2937

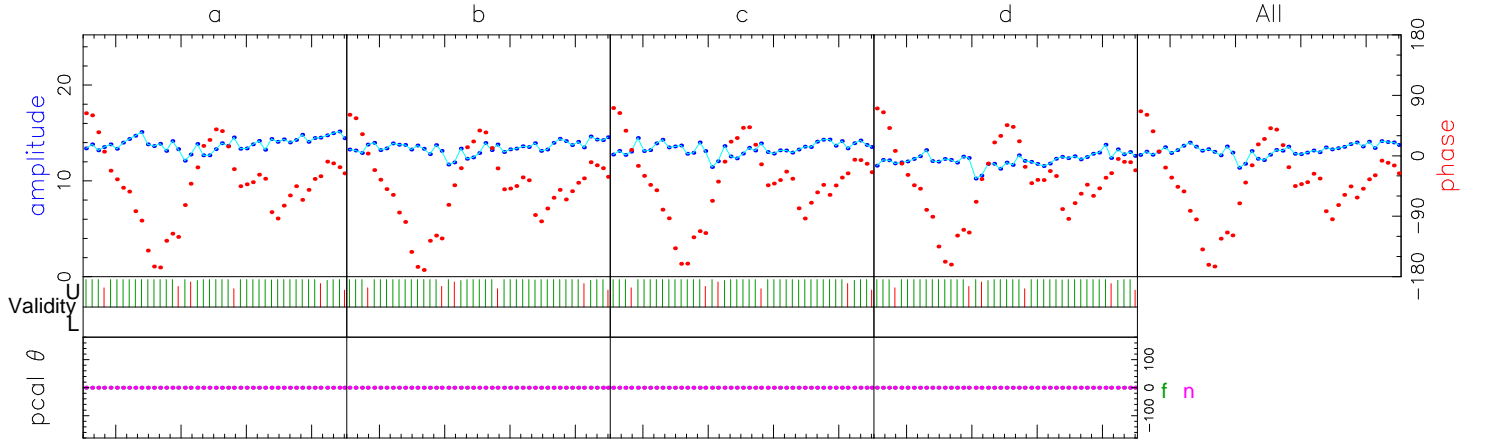
fxmanager

0106+013.1V25LX, No0082, fn

VLBA\_FD - VLBA\_NL, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -40.5     | -42.9    | -36.6    | -35.9    | Phase      | -39.1 |
| 8.8       | 8.5      | 8.4      | 7.6      | Ampl.      | 8.3   |
| 511.9     | 511.5    | 511.7    | 511.2    | Sbd box    | 511.6 |
| U/L 463/0 | 463/0    | 463/0    | 463/0    | APs used   |       |
| f 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| f:n 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| f:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| f 1000    | 1000     | 1000     | 1000     |            |       |
| f Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| n Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 3.89552342956E+03 | Apriori delay (usec)     | 3.89552634143E+03  | Resid mbdelay (usec) | -2.91187E-03 | +/- | 3.2E-06 |
| Sband delay (usec)      | 3.89552363043E+03 | Apriori clock (usec)     | 4.8268051E+00      | Resid sbdelay (usec) | -2.71100E-03 | +/- | 1.2E-05 |
| Phase delay (usec)      | 3.89552633891E+03 | Apriori clockrate (us/s) | -2.4000000E-07     | Resid phdelay (usec) | -2.52097E-06 | +/- | 2.1E-08 |
| Delay rate (us/s)       | 1.36922261362E-01 | Apriori rate (us/s)      | 1.36922025883E-01  | Resid rate (us/s)    | 2.35479E-07  | +/- | 1.5E-10 |
| Total phase (deg)       | 225.7             | Apriori accel (us/s/s)   | -2.12100729920E-05 | Resid phase (deg)    | -39.1        | +/- | 0.3     |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 8.415 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 55.4 | 1.1    | Search (1024X16) | 7.987           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 57.4 | 1.9    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 4.1  | 0.3    | Inc. seg. avg.   | 13.205          | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 5.2  | 0.6    | Inc. frq. avg.   | 8.311           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

f: az 223.7 el 52.8 pa 36.8 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -400.582 -716.900 simultaneous interpolator

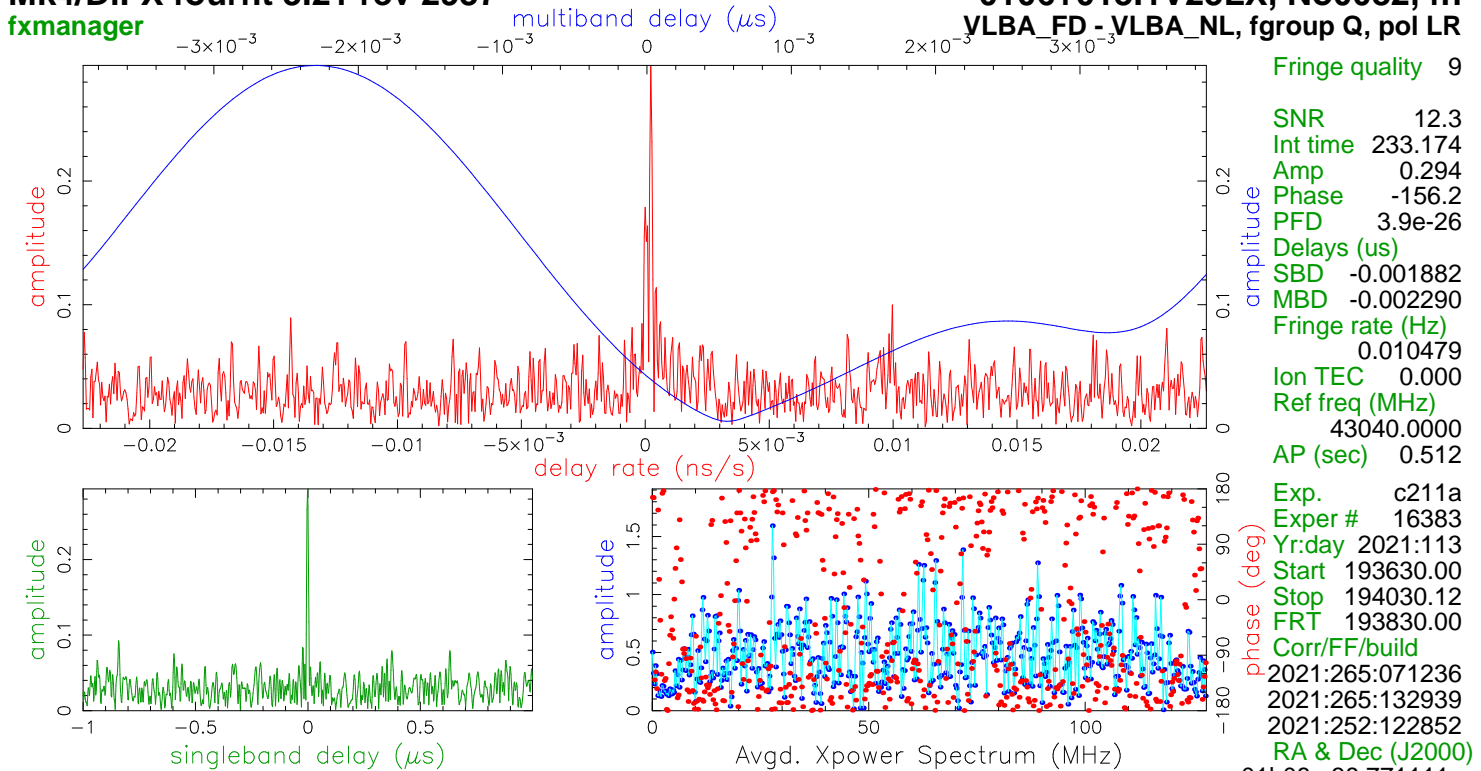
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fn.Q.52.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fn

VLBA\_FD - VLBA\_NL, fgroup Q, pol LR

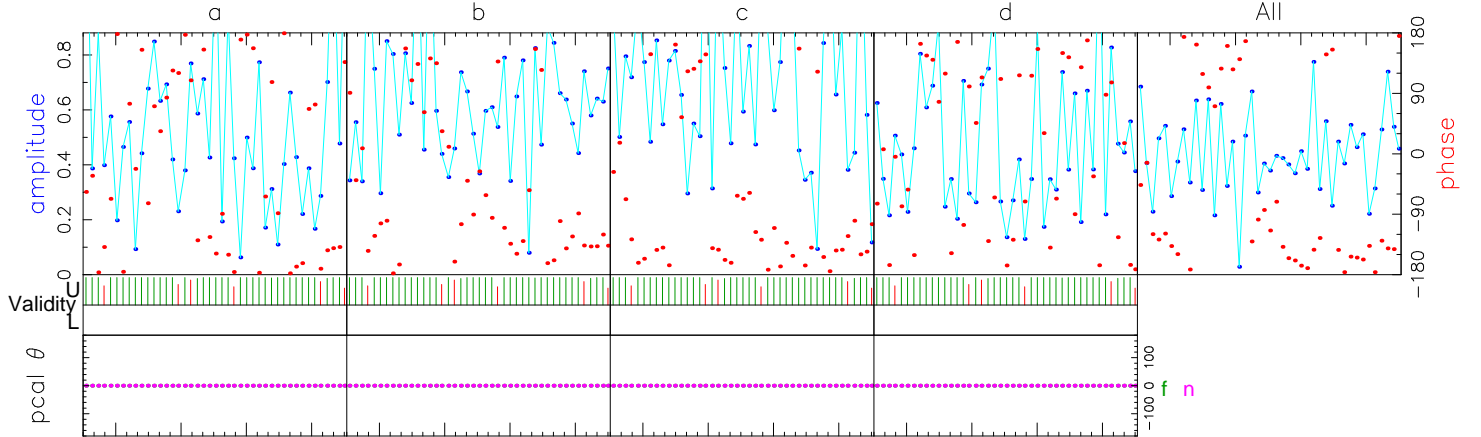


Fringe quality 9

SNR 12.3  
Int time 233.174  
Amp 0.294  
Phase -156.2  
PFD 3.9e-26  
Delays (us)  
SBD -0.001882  
MBD -0.002290  
Fringe rate (Hz) 0.010479  
Ion TEC 0.000  
Ref freq (MHz) 43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132939  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -170.5   | -146.7   | -147.4   | 179.5    | Phase      | -156.2 |
|     | 0.2      | 0.3      | 0.5      | 0.2      | Ampl.      | 0.3    |
|     | 511.8    | 512.6    | 511.5    | 196.2    | Sbd box    | 512.0  |
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |        |
| f   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| n   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| f:n | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| f:n | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| f   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| n   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| n   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 3.89552405190E+03 | Apriori delay (usec)     | 3.89552634143E+03  | Resid mbdelay (usec) | -2.28954E-03 | +/- | 9.1E-05 |
| Sband delay (usec)      | 3.89552445906E+03 | Apriori clock (usec)     | 4.8268051E+00      | Resid sbdelay (usec) | -1.88237E-03 | +/- | 3.5E-04 |
| Phase delay (usec)      | 3.89552633135E+03 | Apriori clockrate (us/s) | -2.4000000E-07     | Resid phdelay (usec) | -1.00836E-05 | +/- | 6.0E-07 |
| Delay rate (us/s)       | 1.36922269355E-01 | Apriori rate (us/s)      | 1.36922025883E-01  | Resid rate (us/s)    | 2.43471E-07  | +/- | 4.4E-09 |
| Total phase (deg)       | 108.5             | Apriori accel (us/s/s)   | -2.12100729920E-05 | Resid phase (deg)    | -156.2       | +/- | 9.3     |

|              |      |                  |       |                |                 |  |                       |
|--------------|------|------------------|-------|----------------|-----------------|--|-----------------------|
| ph/seg (deg) | 54.1 | Theor.           | 30.5  | Amplitude      | 0.294 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 72.7 | Search (1024X16) | 0.271 | Search         | 0.271           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 21.9 | Interp.          | 0.000 | Interp.        | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 39.5 | Inc. seg. avg.   | 0.386 | Inc. seg. avg. | 0.386           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      | Inc. frq. avg.   | 0.298 | Inc. frq. avg. | 0.298           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

f: az 223.7 el 52.8 pa 36.8 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -400.582 -716.900 simultaneous interpolator

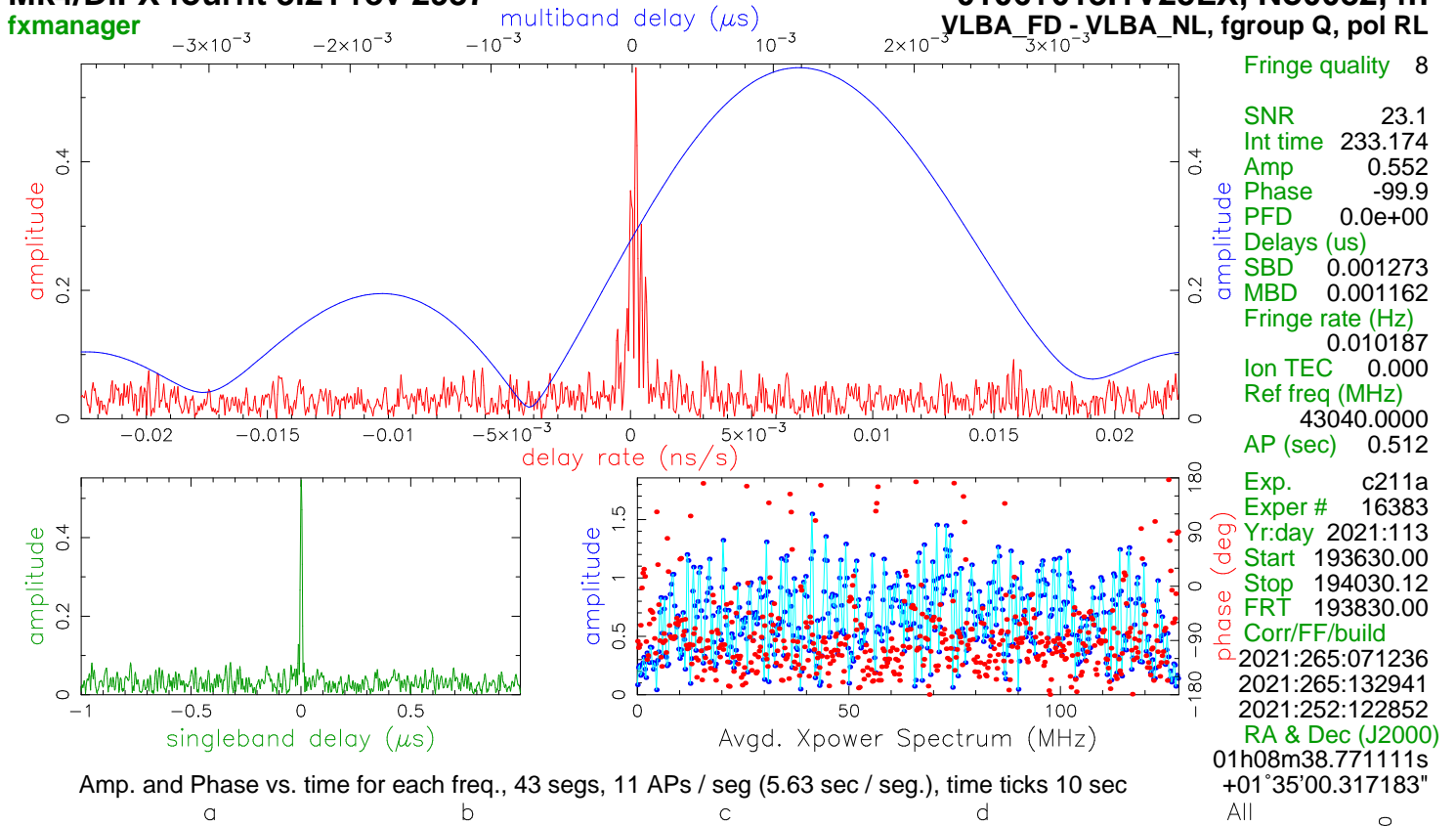
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fn.Q.66.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fn

VLBA\_FD - VLBA\_NL, fgroup Q, pol RL



Fringe quality 8

SNR 23.1

Int time 233.174

Amp 0.552

Phase -99.9

PFD 0.0e+00

Delays (us)

SBD 0.001273

MBD 0.001162

Fringe rate (Hz)

0.010187

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132941

2021:252:122852

RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

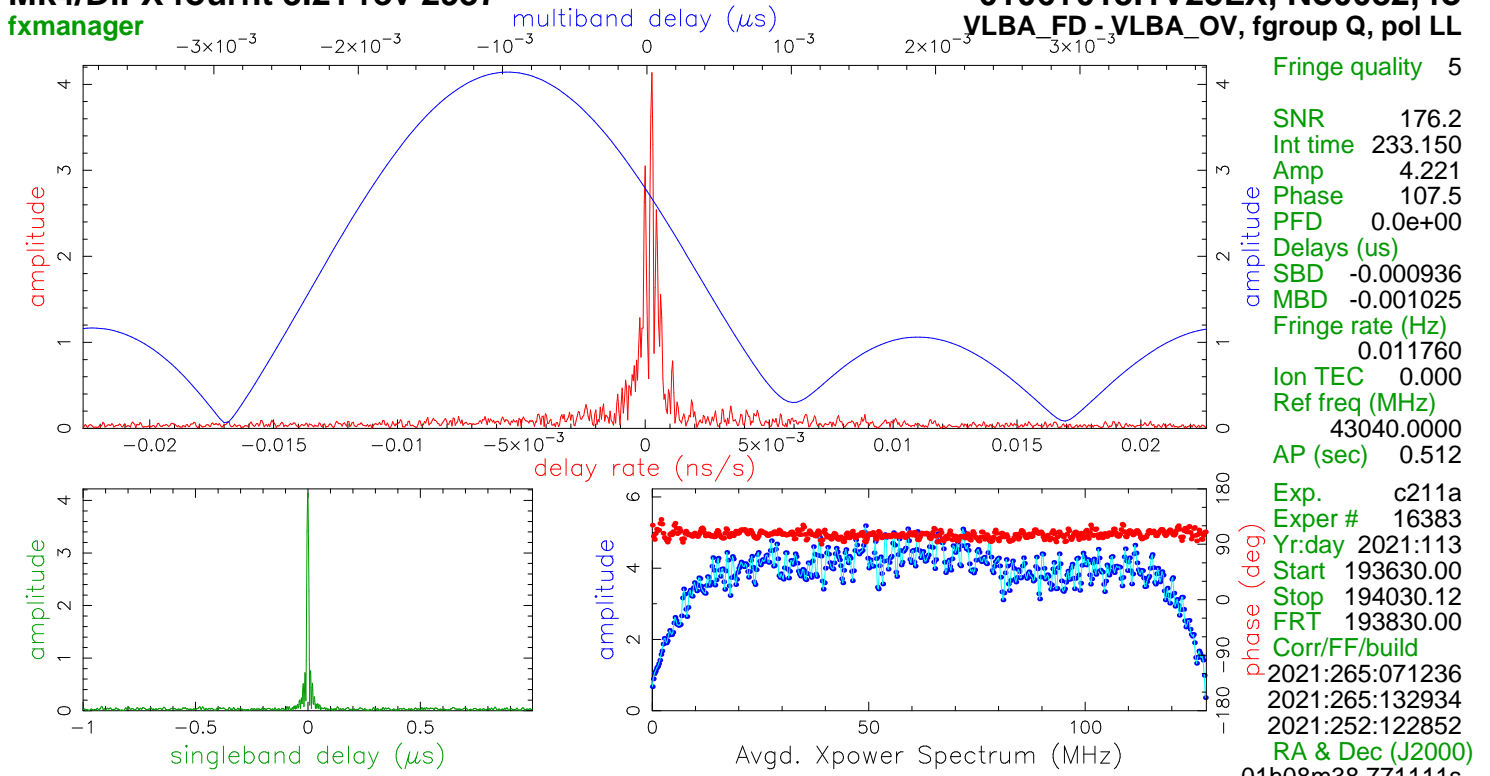
All

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fo

VLBA\_FD - VLBA\_OV, fgroup Q, pol LL



Fringe quality 5

SNR 176.2

Int time 233.150

Amp 4.221

Phase 107.5

PFD 0.0e+00

Delays (us)

SBD -0.000936

MBD -0.001025

Fringe rate (Hz)

0.011760

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132934

2021:252:122852

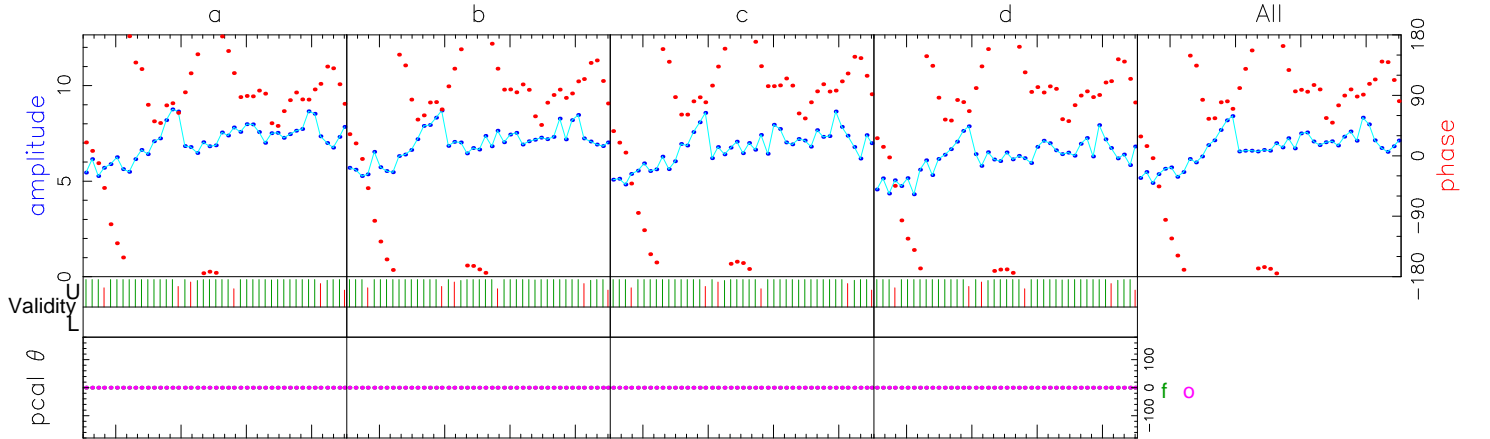
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | Phase      | 107.5 |
| f   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 4.2   |
| o   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.5 |
| f:o | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| f:o | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| f   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| f   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.39310104073E+02 | Apriori delay (usec)     | -1.39309079069E+02 | Resid mbdelay (usec) | -1.02500E-03 | +/- | 6.3E-06 |
| Sband delay (usec)      | -1.39310015444E+02 | Apriori clock (usec)     | 6.5885067E+00      | Resid sbdelay (usec) | -9.36375E-04 | +/- | 2.4E-05 |
| Phase delay (usec)      | -1.39309072132E+02 | Apriori clockrate (us/s) | -3.0000002E-07     | Resid phdelay (usec) | 6.93735E-06  | +/- | 4.2E-08 |
| Delay rate (us/s)       | -3.35621513693E-01 | Apriori rate (us/s)      | -3.35621786935E-01 | Resid rate (us/s)    | 2.73243E-07  | +/- | 3.1E-10 |
| Total phase (deg)       | -167.2             | Apriori accel (us/s/s)   | 4.57757544956E-07  | Resid phase (deg)    | 107.5        | +/- | 0.7     |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 4.221 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 62.0 | 2.1    | Search (1024X16) | 4.092           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 62.6 | 3.7    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 6.8  | 0.7    | Inc. seg. avg.   | 6.726           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 4.9  | 1.1    | Inc. frq. avg.   | 4.151           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

f: az 223.7 el 52.8 pa 36.8 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 961.160 -421.263 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fo.Q.13.1V25LX

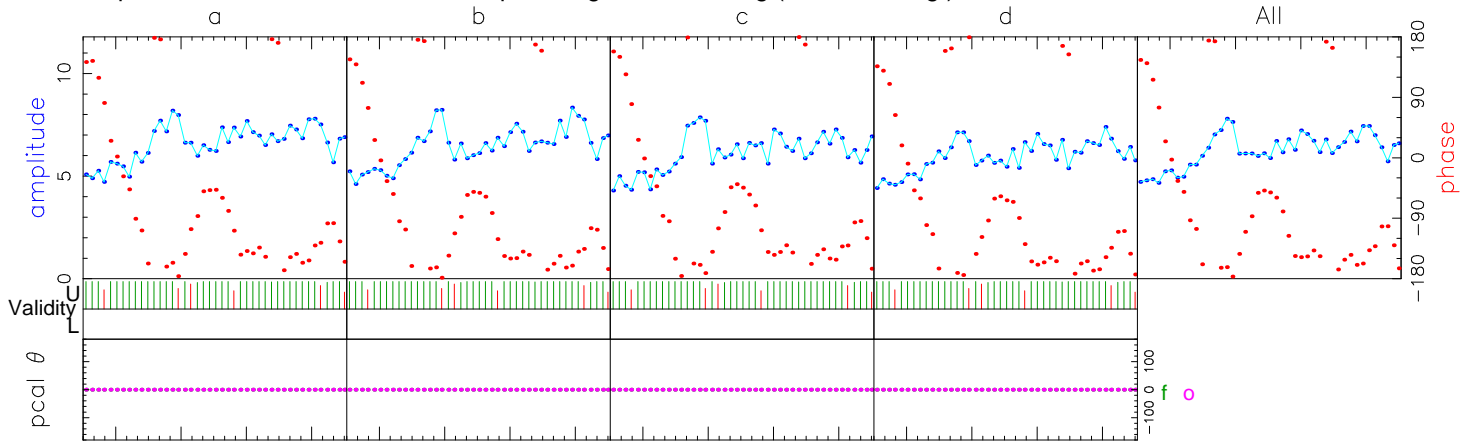
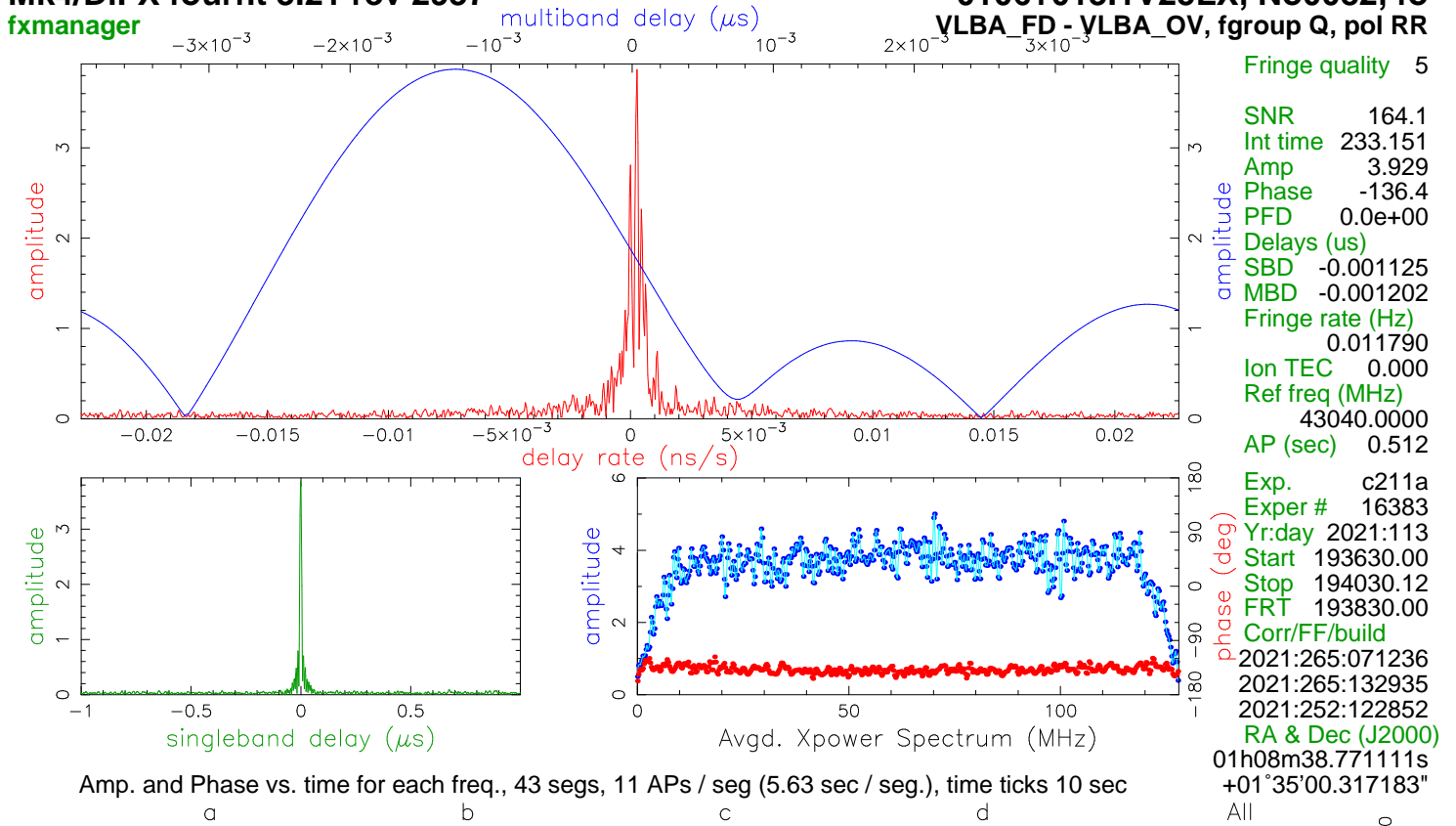


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fo

VLBA\_FD - VLBA\_OV, fgroup Q, pol RR



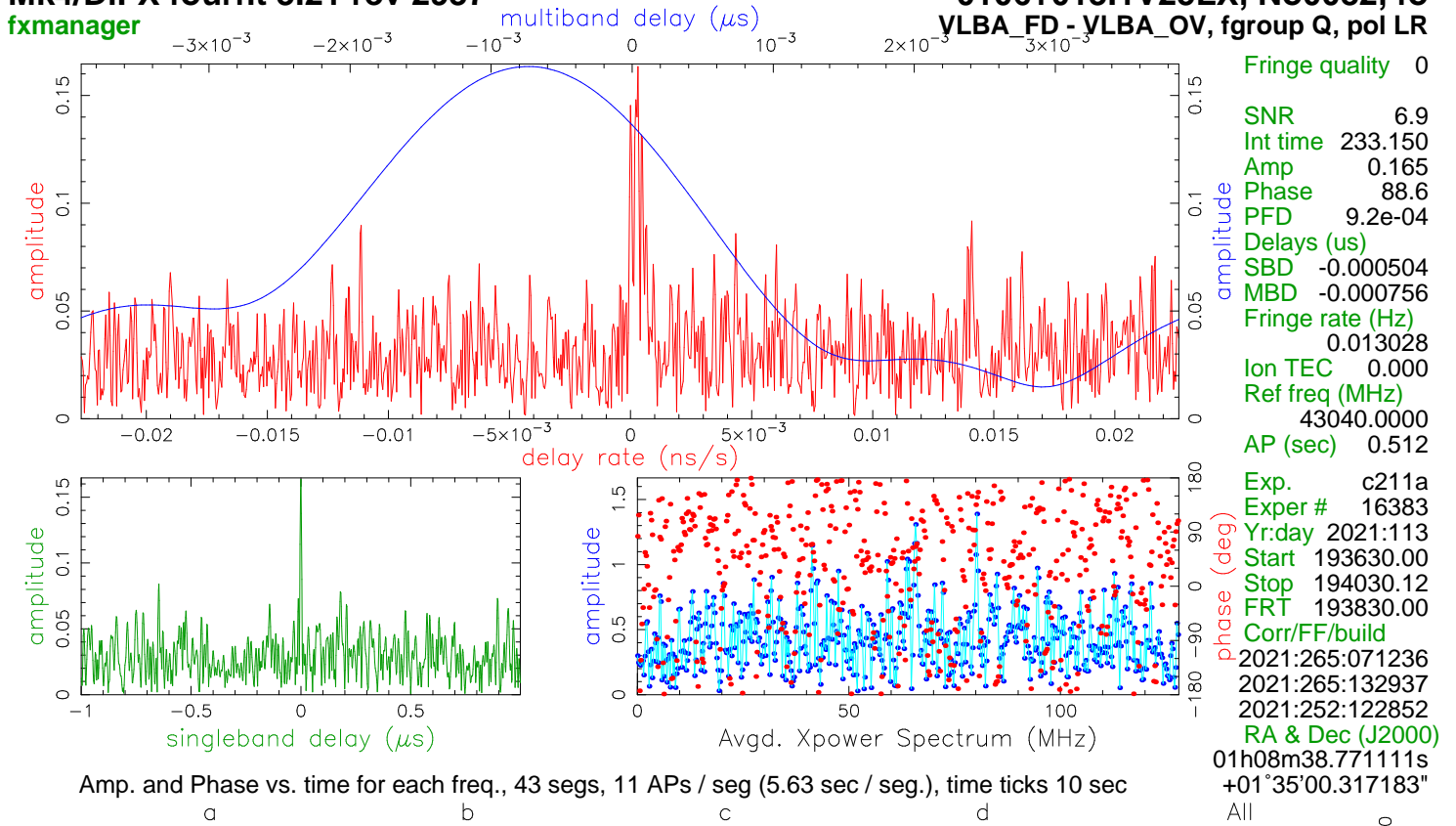
|                               |          |  |                          |   |  |                           |                       |                   |                  |           |
|-------------------------------|----------|--|--------------------------|---|--|---------------------------|-----------------------|-------------------|------------------|-----------|
| U/L                           | 42912.00 | 43040.00   | 43168.00                 | 43296.00  | Freq (MHz)                             | All                       |                       |                   |                  |           |
|                               | -133.0   | -139.3   | -129.5                   | -144.3  | Phase                                  | -136.4                    |                       |                   |                  |           |
|                               | 4.1      | 4.0  | 3.8                      | 3.7   | Ampl.                                  | 3.9                       |                       |                   |                  |           |
|                               | 512.6    | 512.5  | 512.5                    | 511.9   | Sbd box                                | 512.4                     |                       |                   |                  |           |
|                               | 463/0    | 463/0  | 463/0                    | 463/0   | APs used                               |                           |                       |                   |                  |           |
|                               | f 1000   | 1000   | 1000                     | 1000  | PC freqs                               |                           |                       |                   |                  |           |
|                               | o 1000   | 1000   | 1000                     | 1000  | PC freqs                               |                           |                       |                   |                  |           |
|                               | f:o 0:0  | 0:0  | 0:0                      | 0:0   | PC phase                               |                           |                       |                   |                  |           |
|                               | f:o 0:0  | 0:0  | 0:0                      | 0:0   | Manl PC                                |                           |                       |                   |                  |           |
|                               | f 1000   | 1000   | 1000                     | 1000  | PC amp                                 |                           |                       |                   |                  |           |
| o 1000                        | 1000     | 1000   | 1000                     |   |  |                           |                       |                   |                  |           |
| f                             | Q00UR    | Q01UR  | Q02UR                    | Q03UR   | Chan ids                               |                           |                       |                   |                  |           |
| o                             | Q00UR    | Q01UR  | Q02UR                    | Q03UR   | Tracks                                 |                           |                       |                   |                  |           |
|                               |          |  |                          |   | Chan ids                               |                           |                       |                   |                  |           |
|                               |          |  |                          |   | Tracks                                 |                           |                       |                   |                  |           |
| Group delay (usec)(sbd)       |          | -1.39310281073E+02                                       | Apriori delay (usec)     | -1.39309079069E+02  | Resid mbdelay (usec)                   | -1.20200E-03              | +/-                   | 6.8E-06           |                  |           |
| Sband delay (usec)            |          | -1.39310203694E+02                                       | Apriori clock (usec)     | 6.5885067E+00   | Resid sbdelay (usec)                   | -1.12462E-03              | +/-                   | 2.6E-05           |                  |           |
| Phase delay (usec)            |          | -1.39309087875E+02                                       | Apriori clockrate (us/s) | -3.0000002E-07  | Resid phdelay (usec)                   | -8.80590E-06              | +/-                   | 4.5E-08           |                  |           |
| Delay rate (us/s)             |          | -3.35621513015E-01                                       | Apriori rate (us/s)      | -3.35621786935E-01  | Resid rate (us/s)                      | 2.73921E-07               | +/-                   | 3.3E-10           |                  |           |
| Total phase (deg)             |          | -51.2  | Apriori accel (us/s/s)   | 4.57757544956E-07   | Resid phase (deg)                      | -136.4                    | +/-                   | 0.7               |                  |           |
| RMS                           |          | Theor.   | Amplitude                | 3.929 +/- 0.024   | Pcal mode: MANUAL, MANUAL              |                           | PC period (AP's) 5, 5 |                   |                  |           |
| ph/seg (deg)                  |          | 61.8   | Search (1024X16)         | 3.769   | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                           | sb window (us)        | -1.000 1.000      |                  |           |
| amp/seg (%)                   |          | 62.6   | Interp.                  | 0.000   | Bits/sample: 2x2                       |                           | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |           |
| ph/frq (deg)                  |          | 8.1  | Inc. seg. avg.           | 6.244   | Sample rate(MSamp/s): 256              |                           |                       | dr window (ns/s)  | -0.023 0.023     |           |
| amp/frq (%)                   |          | 4.3  | Inc. frq. avg.           | 3.885   | Data rate(Mb/s): 2048                  |                           | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00 |
| f: az 223.7 el 52.8 pa 36.8   |          | o: az 197.5 el 53.2 pa 14.3                              |                          | u,v (fr/asec) 961.160 -421.263                                |  | simultaneous interpolator |                       |                   |                  |           |
| Control file: cf_1234_gmva7mm |          | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/fo..1V25LX |                          | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/fo.Q.27.1V25LX |  |                           |                       |                   |                  |           |

Mk4/DiFX fourfit 3.21 rev 2937

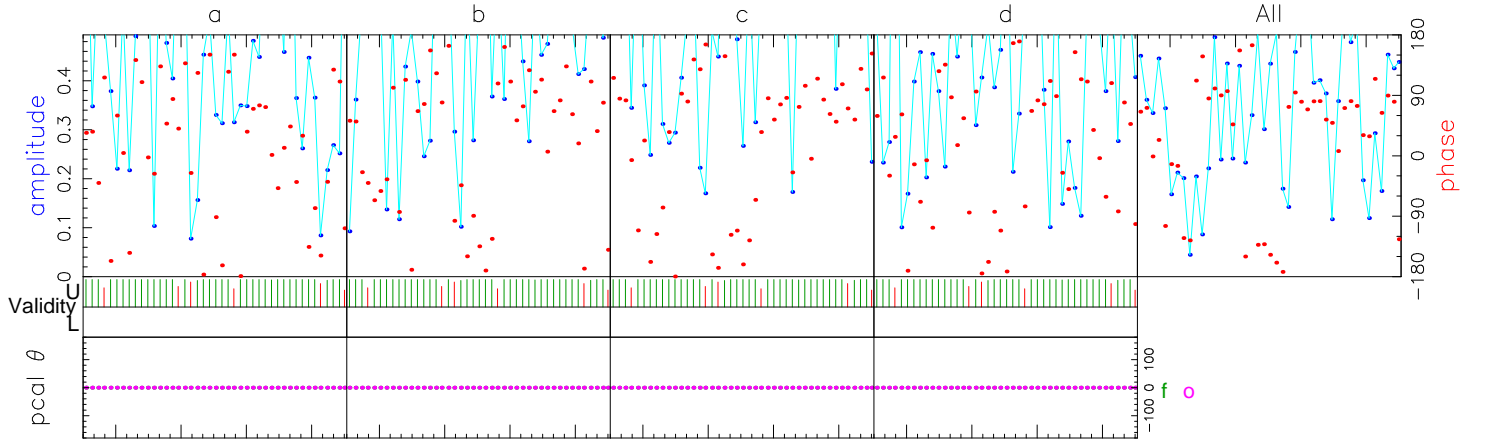
fxmanager

0106+013.1V25LX, No0082, fo

VLBA\_FD - VLBA\_OV, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                         |                    |                          |                    |                      |              |             |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| 42912.00                | 43040.00           | 43168.00                 | 43296.00           | Freq (MHz)           | All          |             |
| 65.0                    | 106.3              | 99.8                     | 67.2               | Phase                | 88.6         |             |
| 0.1                     | 0.2                | 0.2                      | 0.1                | Ampl.                | 0.2          |             |
| 7.3                     | 620.0              | 512.3                    | 59.9               | Sbd box              | 512.7        |             |
| U/L 463/0               | 463/0              | 463/0                    | 463/0              | APs used             |              |             |
| f 1000                  | 1000               | 1000                     | 1000               | PC freqs             |              |             |
| o 1000                  | 1000               | 1000                     | 1000               | PC freqs             |              |             |
| f:o 0:0                 | 0:0                | 0:0                      | 0:0                | PC phase             |              |             |
| f:o 0:0                 | 0:0                | 0:0                      | 0:0                | Manl PC              |              |             |
| f 1000                  | 1000               | 1000                     | 1000               | PC amp               |              |             |
| o 1000                  | 1000               | 1000                     | 1000               |                      |              |             |
| f Q00UL                 | Q01UL              | Q02UL                    | Q03UL              | Chan ids             |              |             |
| o Q00UR                 | Q01UR              | Q02UR                    | Q03UR              | Tracks               |              |             |
|                         |                    |                          |                    | Chan ids             |              |             |
|                         |                    |                          |                    | Tracks               |              |             |
| Group delay (usec)(sbd) | -1.39309835548E+02 | Apriori delay (usec)     | -1.39309079069E+02 | Resid mbdelay (usec) | -7.56479E-04 | +/- 1.6E-04 |
| Sband delay (usec)      | -1.39309582819E+02 | Apriori clock (usec)     | 6.5885067E+00      | Resid sbdelay (usec) | -5.03750E-04 | +/- 6.3E-04 |
| Phase delay (usec)      | -1.39309073352E+02 | Apriori clockrate (us/s) | -3.0000002E-07     | Resid phdelay (usec) | 5.71728E-06  | +/- 1.1E-06 |
| Delay rate (us/s)       | -3.35621484241E-01 | Apriori rate (us/s)      | -3.35621786935E-01 | Resid rate (us/s)    | 3.02694E-07  | +/- 7.9E-09 |
| Total phase (deg)       | -186.1             | Apriori accel (us/s/s)   | 4.57757544956E-07  | Resid phase (deg)    | 88.6         | +/- 16.7    |
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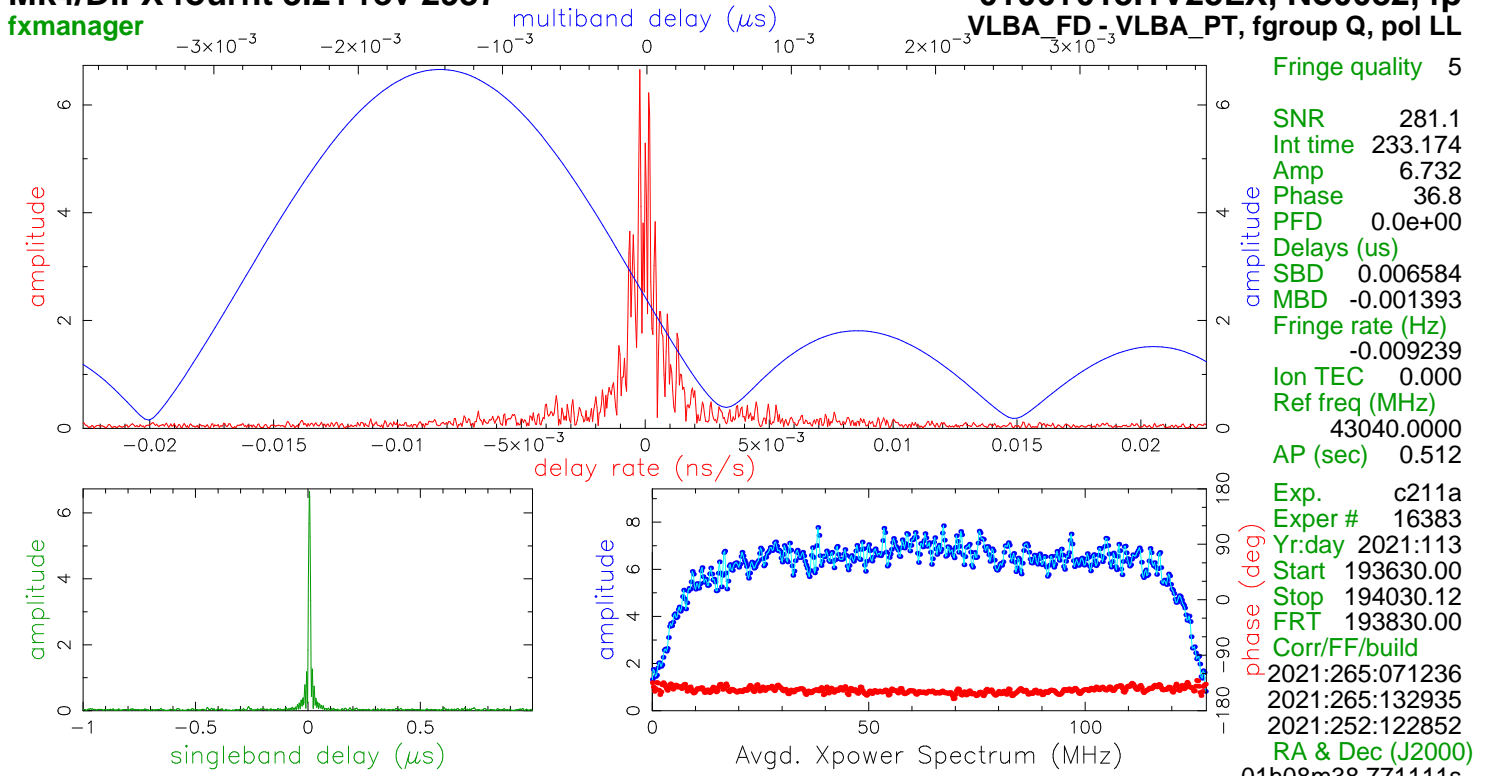


Mk4/DiFX fourfit 3.21 rev 2937

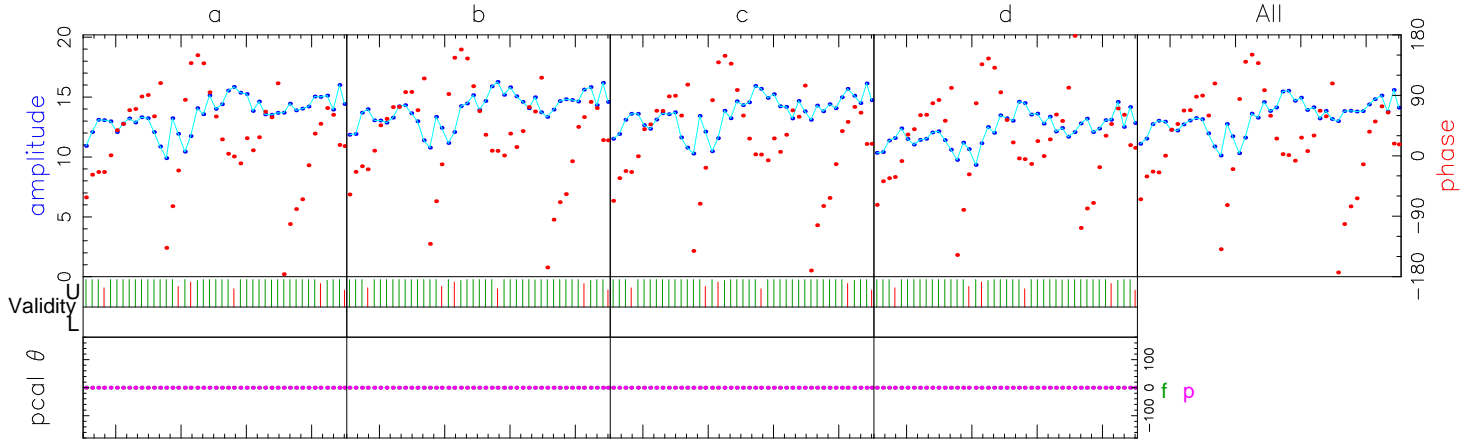
fxmanager

0106+013.1V25LX, No0082, fp

VLBA\_FD - VLBA\_PT, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               | 42912.00   | 43040.00  | 43168.00           | 43296.00                  | Freq (MHz)                             | All   |
|-------------------------------|--|---|--------------------|---------------------------|--|---|
| U/L                           | 463/0  | 463/0   | 463/0              | 463/0                     | Phase                                  | 36.8  |
| f                             | 1000   | 1000  | 1000               | 1000                      | Ampl.                                  | 6.7   |
| p                             | 1000   | 1000  | 1000               | 1000                      | Sbd box                                | 516.4   |
| f:p                           | 0:0  | 0:0   | 0:0                | 0:0                       | APs used                               |   |
| f:p                           | 0:0  | 0:0   | 0:0                | 0:0                       | PC freqs                               |   |
| f                             | 1000   | 1000  | 1000               | 1000                      | PC phase                               |   |
| p                             | 1000   | 1000  | 1000               | 1000                      | Manl PC                                |   |
| f                             | Q00UL  | Q01UL   | Q02UL              | Q03UL                     | PC amp                                 |   |
| p                             | Q00UL  | Q01UL   | Q02UL              | Q03UL                     | Chan ids                               |   |
|                               |  |   |                    |                           | Tracks                                 |   |
|                               |  |   |                    |                           | Chan ids                               |   |
|                               |  |   |                    |                           | Tracks                                 |   |
| Group delay (usec)(sbd)       | 1.21355443752E+02  | Apriori delay (usec)  | 1.21349024691E+02  | Resid mbdelay (usec)      | -1.39344E-03                           | +/- 4.0E-06   |
| Sband delay (usec)            | 1.21355608441E+02  | Apriori clock (usec)  | 4.6838970E+00      | Resid sbdelay (usec)      | 6.58375E-03                            | +/- 1.5E-05   |
| Phase delay (usec)            | 1.21349027068E+02  | Apriori clockrate (us/s)                                      | 1.8000000E-07      | Resid phdelay (usec)      | 2.37673E-06                            | +/- 2.6E-08   |
| Delay rate (us/s)             | -1.08497700252E-01                                       | Apriori rate (us/s)   | -1.08497485590E-01 | Resid rate (us/s)         | -2.14661E-07                           | +/- 1.9E-10   |
| Total phase (deg)             | 45.0   | Apriori accel (us/s/s)  | -8.00412991886E-07 | Resid phase (deg)         | 36.8                                   | +/- 0.4   |
| RMS                           | 69.6   | Theor.  | 6.732 +/- 0.024    | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5                  |   |
| ph/seg (deg)                  | 69.6   | 1.3   | Search (1024X16)   | 6.553                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 99.2   | 2.3   | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 6.0  | 0.4   | Inc. seg. avg.     | 13.277                    | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 5.3  | 0.7   | Inc. frq. avg.     | 6.672                     | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| f: az 223.7 el 52.8 pa 36.8   | p: az 214.8 el 52.2 pa 28.7                              | u,v (fr/asec) 310.374 -239.786                                |                    |                           |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/fp..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/fp.Q.23.1V25LX |                    |                           |  |   |



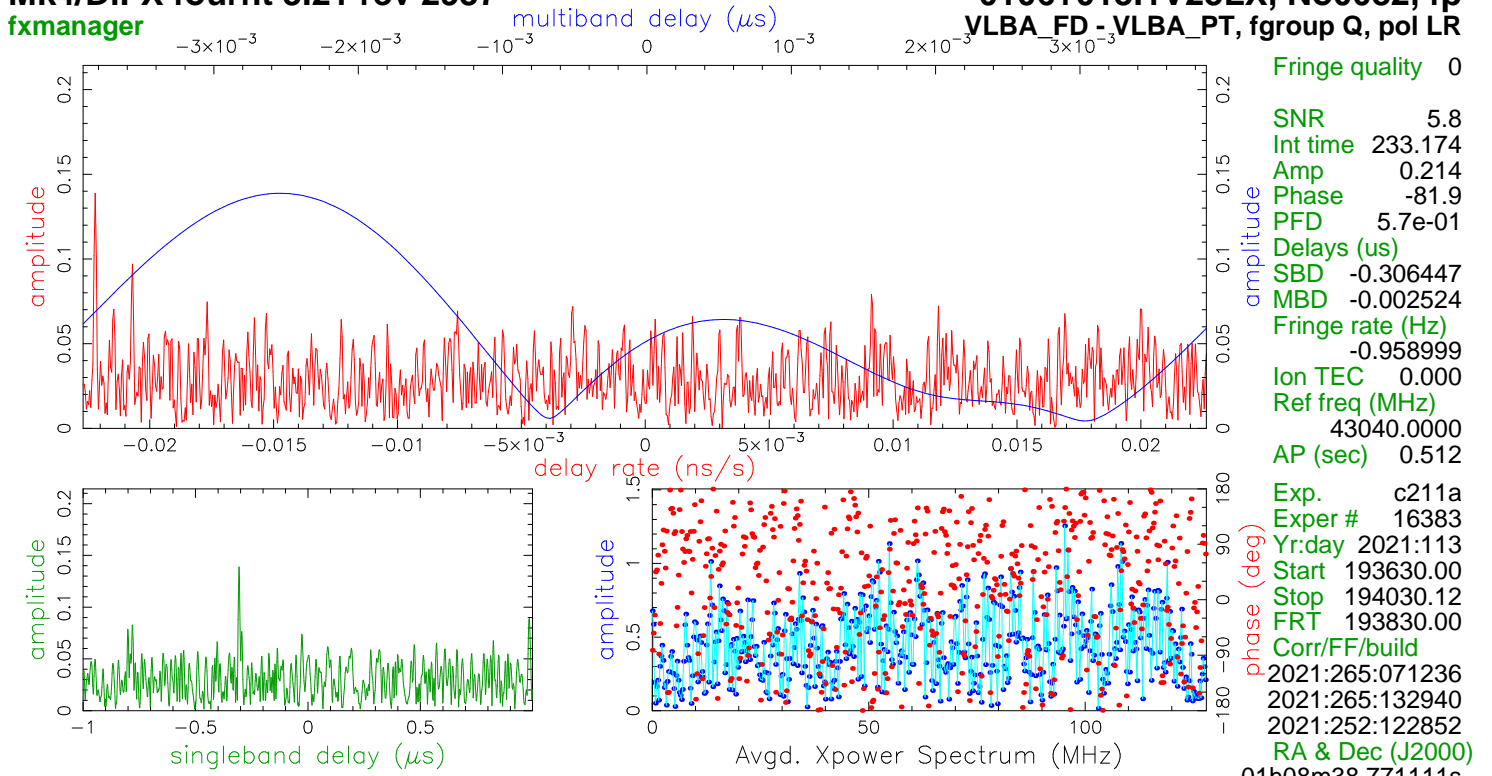


Mk4/DiFX fourfit 3.21 rev 2937

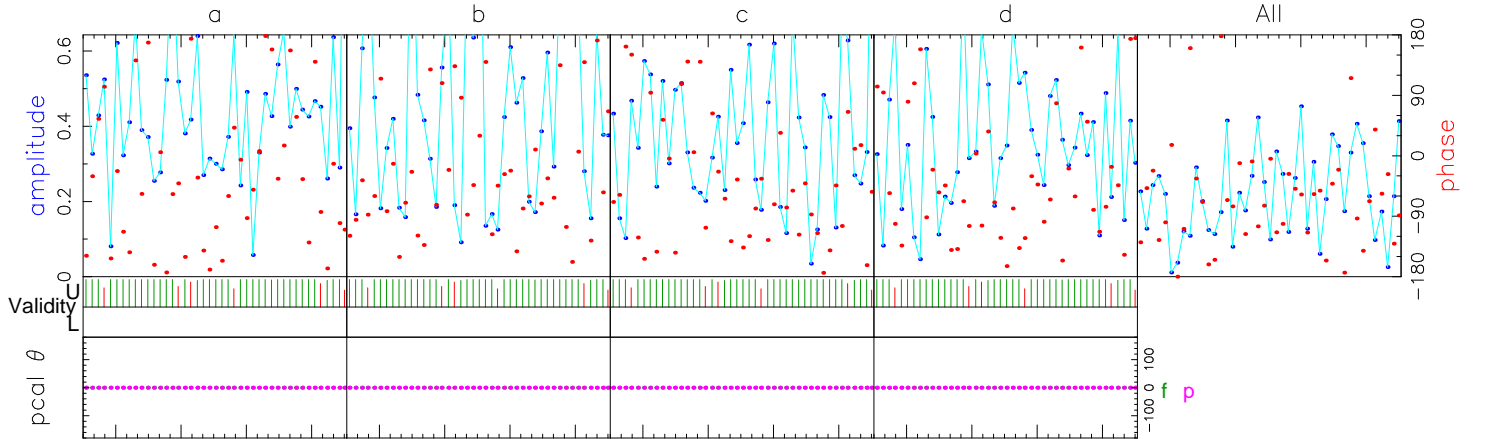
fxmanager

0106+013.1V25LX, No0082, fp

VLBA\_FD - VLBA\_PT, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



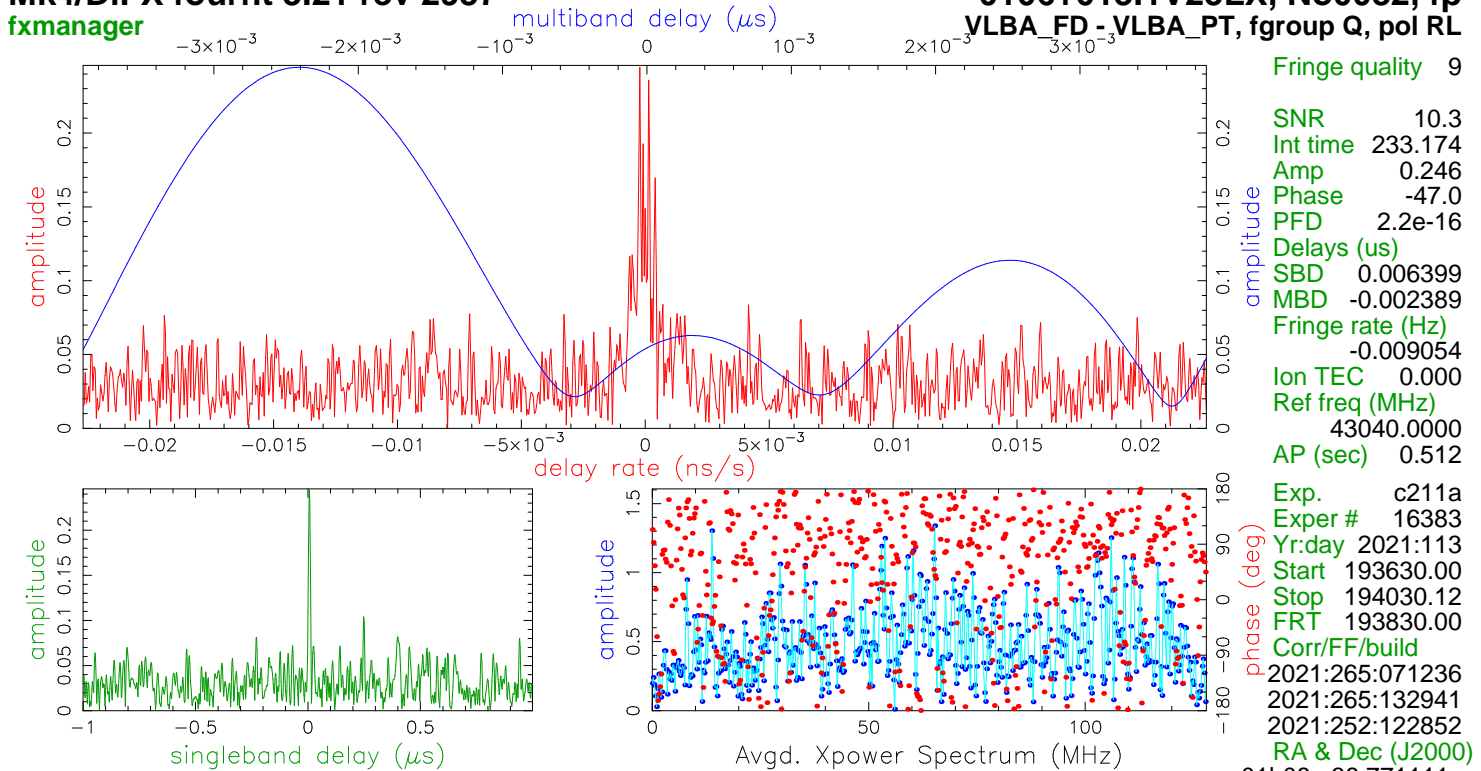
|                               |  |   |                    |                           |  |                              |                  |        |                           |
|-------------------------------|--|---|--------------------|---------------------------|--|------------------------------|------------------|--------|---------------------------|
| 42912.00                      | 43040.00   | 43168.00  | 43296.00           | Freq (MHz)                | All                                    |                              |                  |        |                           |
| -94.6                         | -63.5  | -98.1   | -81.8              | Phase                     | -81.9                                  |                              |                  |        |                           |
| 0.2                           | 0.3  | 0.2   | 0.3                | Ampl.                     | 0.2                                    |                              |                  |        |                           |
| 557.1                         | 355.3  | 191.1   | 332.2              | Sbd box                   | 356.1                                  |                              |                  |        |                           |
| U/L 463/0                     | 463/0  | 463/0   | 463/0              | APs used                  |  |                              |                  |        |                           |
| f 1000                        | 1000   | 1000  | 1000               | PC freqs                  |  |                              |                  |        |                           |
| p 1000                        | 1000   | 1000  | 1000               | PC freqs                  |  |                              |                  |        |                           |
| f:p 0:0                       | 0:0  | 0:0   | 0:0                | PC phase                  |  |                              |                  |        |                           |
| f:p 0:0                       | 0:0  | 0:0   | 0:0                | Manl PC                   |  |                              |                  |        |                           |
| f 1000                        | 1000   | 1000  | 1000               | PC amp                    |  |                              |                  |        |                           |
| p 1000                        | 1000   | 1000  | 1000               |                           |  |                              |                  |        |                           |
| f Q00UL                       | Q01UL  | Q02UL   | Q03UL              | Chan ids                  |  |                              |                  |        |                           |
|                               |  |   |                    | Tracks                    |  |                              |                  |        |                           |
| p Q00UR                       | Q01UR  | Q02UR   | Q03UR              | Chan ids                  |  |                              |                  |        |                           |
|                               |  |   |                    | Tracks                    |  |                              |                  |        |                           |
| Group delay (usec)(sbd)       | 1.21041813219E+02  | Apriori delay (usec)  | 1.21349024691E+02  | Resid mbdelay (usec)      | -2.52397E-03                           | +/- 1.9E-04                  |                  |        |                           |
| Sband delay (usec)            | 1.21042577316E+02  | Apriori clock (usec)  | 4.6838970E+00      | Resid sbdelay (usec)      | -3.06447E-01                           | +/- 7.4E-04                  |                  |        |                           |
| Phase delay (usec)            | 1.21349019407E+02  | Apriori clockrate (us/s)                                      | 1.8000000E-07      | Resid phdelay (usec)      | -5.28415E-06                           | +/- 1.3E-06                  |                  |        |                           |
| Delay rate (us/s)             | -1.08519767177E-01                                       | Apriori rate (us/s)   | -1.08497485590E-01 | Resid rate (us/s)         | -2.22816E-05                           | +/- 9.3E-09                  |                  |        |                           |
| Total phase (deg)             | -73.7  | Apriori accel (us/s/s)  | -8.00412991886E-07 | Resid phase (deg)         | -81.9                                  | +/- 19.8                     |                  |        |                           |
|                               |  |   |                    |                           |  |                              |                  |        |                           |
| RMS                           | Theor.   | Amplitude   | 0.214 +/- 0.037    | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5                  |                              |                  |        |                           |
| ph/seg (deg)                  | 62.2   | 64.4  | Search (1024X16)   | 0.136                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |                           |
| amp/seg (%)                   | 102.0  | 112.3   | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004                     |
| ph/frq (deg)                  | 19.6   | 19.8  | Inc. seg. avg.     | 0.207                     | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023                     |
| amp/frq (%)                   | 22.0   | 34.5  | Inc. frq. avg.     | 0.208                     | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00                      |
| f: az 223.7 el 52.8 pa 36.8   | p: az 214.8 el 52.2 pa 28.7                              | u,v (fr/asec)   | 310.374 -239.786   |                           |  |                              |                  |        |                           |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/fp..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/fp.Q.68.1V25LX |                    |                           |  |                              |                  |        |                           |
|                               |  |   |                    |                           |  |                              |                  |        | simultaneous interpolator |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, fp

VLBA\_FD - VLBA\_PT, fgroup Q, pol RL

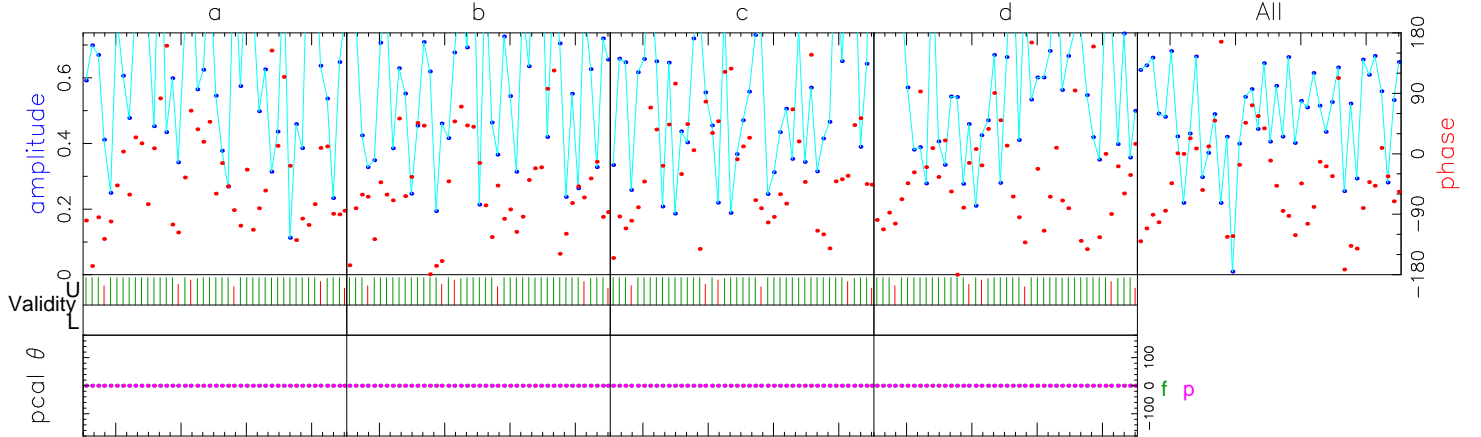


Fringe quality 9

SNR 10.3  
Int time 233.174  
Amp 0.246  
Phase -47.0  
PFD 2.2e-16  
Delays (us)  
SBD 0.006399  
MBD -0.002389  
Fringe rate (Hz)  
-0.009054  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132941  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -47.3    | -54.4    | -24.2    | -57.5    | Phase      | -47.0 |
|     | 0.3      | 0.2      | 0.2      | 0.3      | Ampl.      | 0.2   |
|     | 515.7    | 517.1    | 516.3    | 516.3    | Sbd box    | 516.3 |
| U/L | 463/0    | 463/0    | 463/0    | 463/0    | APs used   |       |
| f   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| p   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| f:p | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| f:p | 0:0      | 0:0      | 0:0      | 0:0      | PC amp     |       |
| f   | 1000     | 1000     | 1000     | 1000     |            |       |
| p   | 1000     | 1000     | 1000     | 1000     |            |       |
| f   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| p   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 1.2135447783E+02   | Apriori delay (usec)     | 1.21349024691E+02  | Resid mbdelay (usec) | -2.38941E-03 | +/- | 1.1E-04 |
| Sband delay (usec)      | 1.21355423316E+02  | Apriori clock (usec)     | 4.6838970E+00      | Resid sbdelay (usec) | 6.39863E-03  | +/- | 4.2E-04 |
| Phase delay (usec)      | 1.21349021656E+02  | Apriori clockrate (us/s) | 1.8000000E-07      | Resid phdelay (usec) | -3.03548E-06 | +/- | 7.2E-07 |
| Delay rate (us/s)       | -1.08497695963E-01 | Apriori rate (us/s)      | -1.08497485590E-01 | Resid rate (us/s)    | -2.10373E-07 | +/- | 5.3E-09 |
| Total phase (deg)       | -38.9              | Apriori accel (us/s/s)   | -8.00412991886E-07 | Resid phase (deg)    | -47.0        | +/- | 11.2    |

|              |       |        |                  |                 |  |                       |                   |                  |       |      |
|--------------|-------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|------|
|              | RMS   | Theor. | Amplitude        | 0.246 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
| ph/seg (deg) | 68.2  | 36.4   | Search (1024X16) | 0.237           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 114.6 | 63.5   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 18.5  | 11.2   | Inc. seg. avg.   | 0.404           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 10.4  | 19.5   | Inc. frq. avg.   | 0.246           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

f: az 223.7 el 52.8 pa 36.8 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 310.374 -239.786 simultaneous interpolator

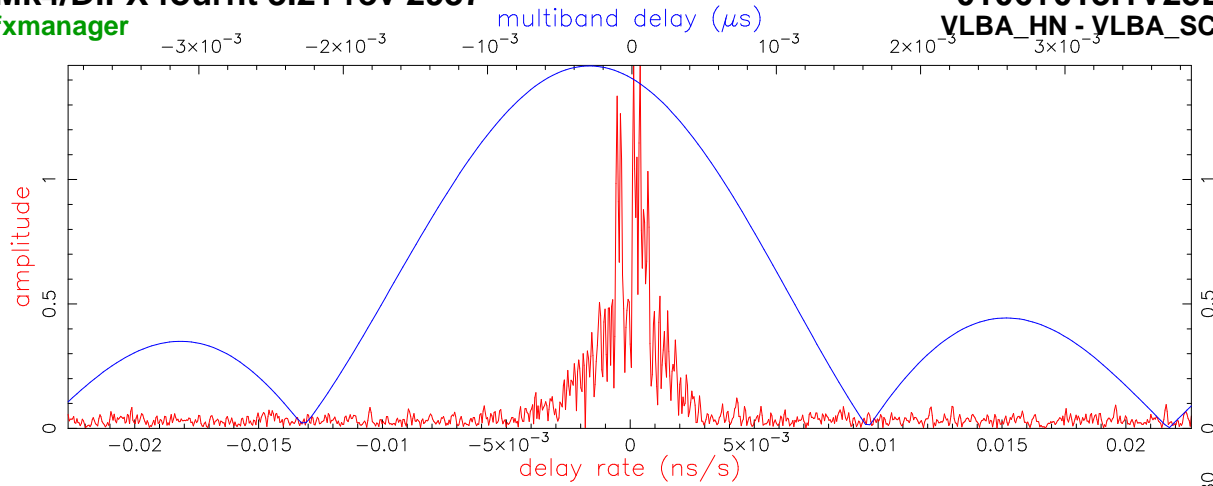
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/fp.Q.80.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

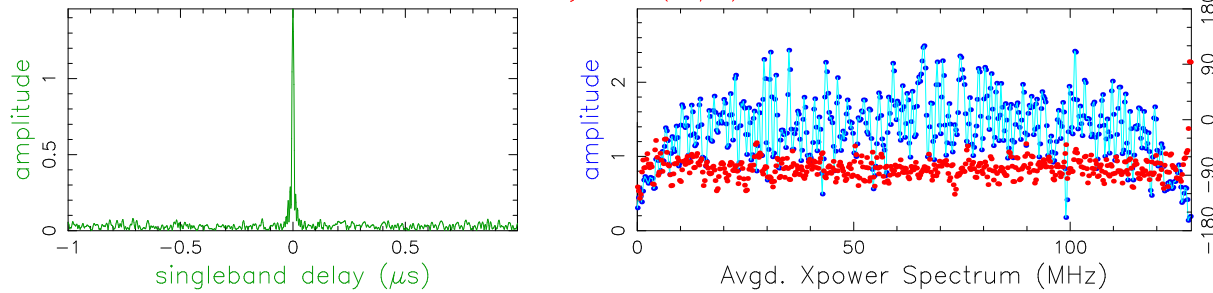
0106+013.1V25LX, No0082, hc

VLBA\_HN - VLBA\_SC, fgroup Q, pol RR



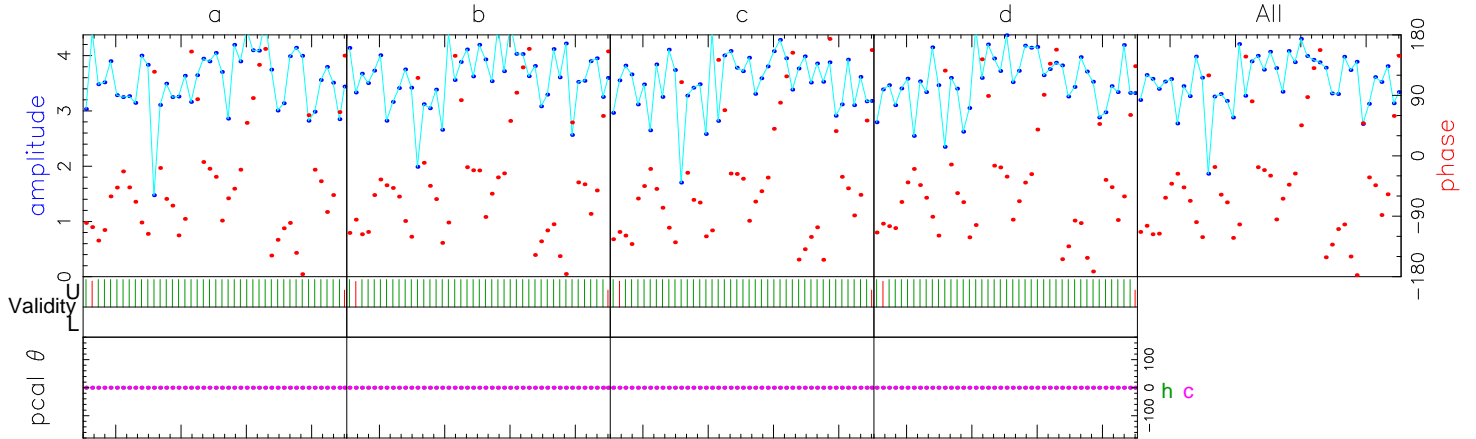
Fringe quality 7

SNR 61.8  
Int time 239.627  
Amp 1.459  
Phase -77.5  
PFD 0.0e+00  
Delays (us)  
SBD -0.000214  
MBD -0.000301  
Fringe rate (Hz)  
0.005210  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132945  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -78.5    | -74.8    | -81.7    | -75.1    | Phase      | -77.5 |
|     | 1.5      | 1.5      | 1.5      | 1.4      | Ampl.      | 1.5   |
|     | 513.2    | 512.7    | 512.8    | 513.0    | Sbd box    | 512.9 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| h:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| h:c | 0:0      | 0:0      | 0:0      | 0:0      | ManI PC    |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -8.22443935817E+00 | Apriori delay (usec)     | -8.22413834030E+00 | Resid mbdelay (usec) | -3.01018E-04 | +/- | 1.8E-05 |
| Sband delay (usec)      | -8.22435221530E+00 | Apriori clock (usec)     | -9.3961258E+00     | Resid sbdelay (usec) | -2.13875E-04 | +/- | 7.0E-05 |
| Phase delay (usec)      | -8.22414334290E+00 | Apriori clockrate (us/s) | -1.8599999E-07     | Resid phdelay (usec) | -5.00261E-06 | +/- | 1.2E-07 |
| Delay rate (us/s)       | 3.78693035109E-01  | Apriori rate (us/s)      | 3.78692914057E-01  | Resid rate (us/s)    | 1.21052E-07  | +/- | 8.6E-10 |
| Total phase (deg)       | -46.6              | Apriori accel (us/s/s)   | 1.24661176912E-06  | Resid phase (deg)    | -77.5        | +/- | 1.9     |

|              |          |            |                           |  |                       |                   |                            |
|--------------|----------|------------|---------------------------|--|-----------------------|-------------------|----------------------------|
| ph/seg (deg) | RMS 77.9 | Theor. 6.1 | Amplitude 1.459 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)  | 146.1    | 10.6       | Search (1024X16) 1.403    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg) | 4.0      | 1.9        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)  | 0.5      | 3.2        | Inc. seg. avg. 3.522      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
|              |          |            | Inc. frq. avg. 1.458      | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

h: az 247.1 el 25.0 pa 42.6 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -1084.454 1663.589 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hc.Q.104.1V25LX

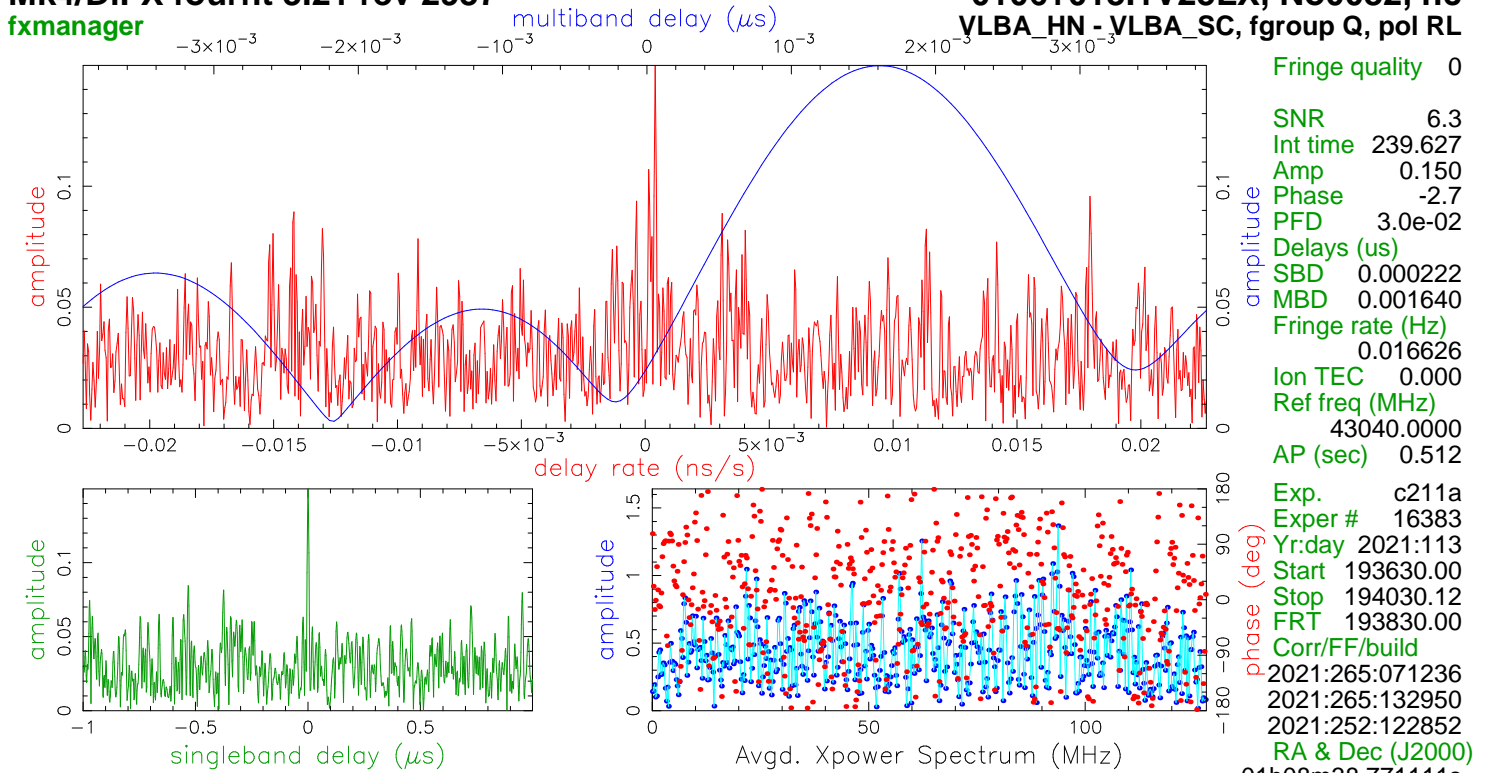


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hc

VLBA\_HN - VLBA\_SC, fgroup Q, pol RL



Fringe quality 0

SNR 6.3

Int time 239.627

Amp 0.150

Phase -2.7

PFD 3.0e-02

Delays (us)

SBD 0.000222

MBD 0.001640

Fringe rate (Hz)

0.016626

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132950

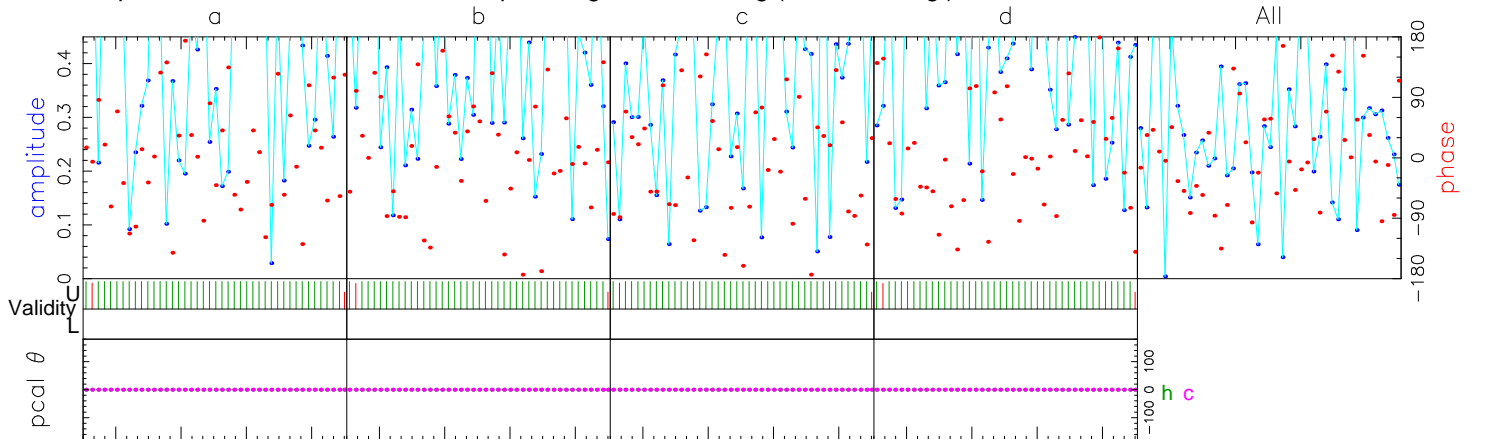
2021:252:122852

RA & Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -2.7  |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.1   |
| c   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 513.1 |
| h:c | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:c | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| c   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -8.22249876892E+00 | Apriori delay (usec)     | -8.22413834030E+00 | Resid mbdelay (usec) | 1.63957E-03  | +/- | 1.8E-04 |
| Sband delay (usec)      | -8.22391609030E+00 | Apriori clock (usec)     | -9.3961258E+00     | Resid sbdelay (usec) | 2.22250E-04  | +/- | 6.8E-04 |
| Phase delay (usec)      | -8.22413851375E+00 | Apriori clockrate (us/s) | -1.8599999E-07     | Resid phdelay (usec) | -1.73452E-07 | +/- | 1.2E-06 |
| Delay rate (us/s)       | 3.78693300354E-01  | Apriori rate (us/s)      | 3.78692914057E-01  | Resid rate (us/s)    | 3.86297E-07  | +/- | 8.4E-09 |
| Total phase (deg)       | -331.8             | Apriori accel (us/s/s)   | 1.24661176912E-06  | Resid phase (deg)    | -2.7         | +/- | 18.1    |

|              |       |                  |       |                |                 |  |                       |
|--------------|-------|------------------|-------|----------------|-----------------|--|-----------------------|
| ph/seg (deg) | 74.4  | Theor.           | 59.2  | Amplitude      | 0.150 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 133.0 | Search (1024X16) | 0.144 | Search         | 0.144           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 7.7   | Interp.          | 0.000 | Interp.        | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 21.5  | Inc. seg. avg.   | 0.186 | Inc. seg. avg. | 0.186           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |       | Inc. frq. avg.   | 0.143 | Inc. frq. avg. | 0.143           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

h: az 247.1 el 25.0 pa 42.6 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -1084.454 1663.589 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hc.Q.145.1V25LX

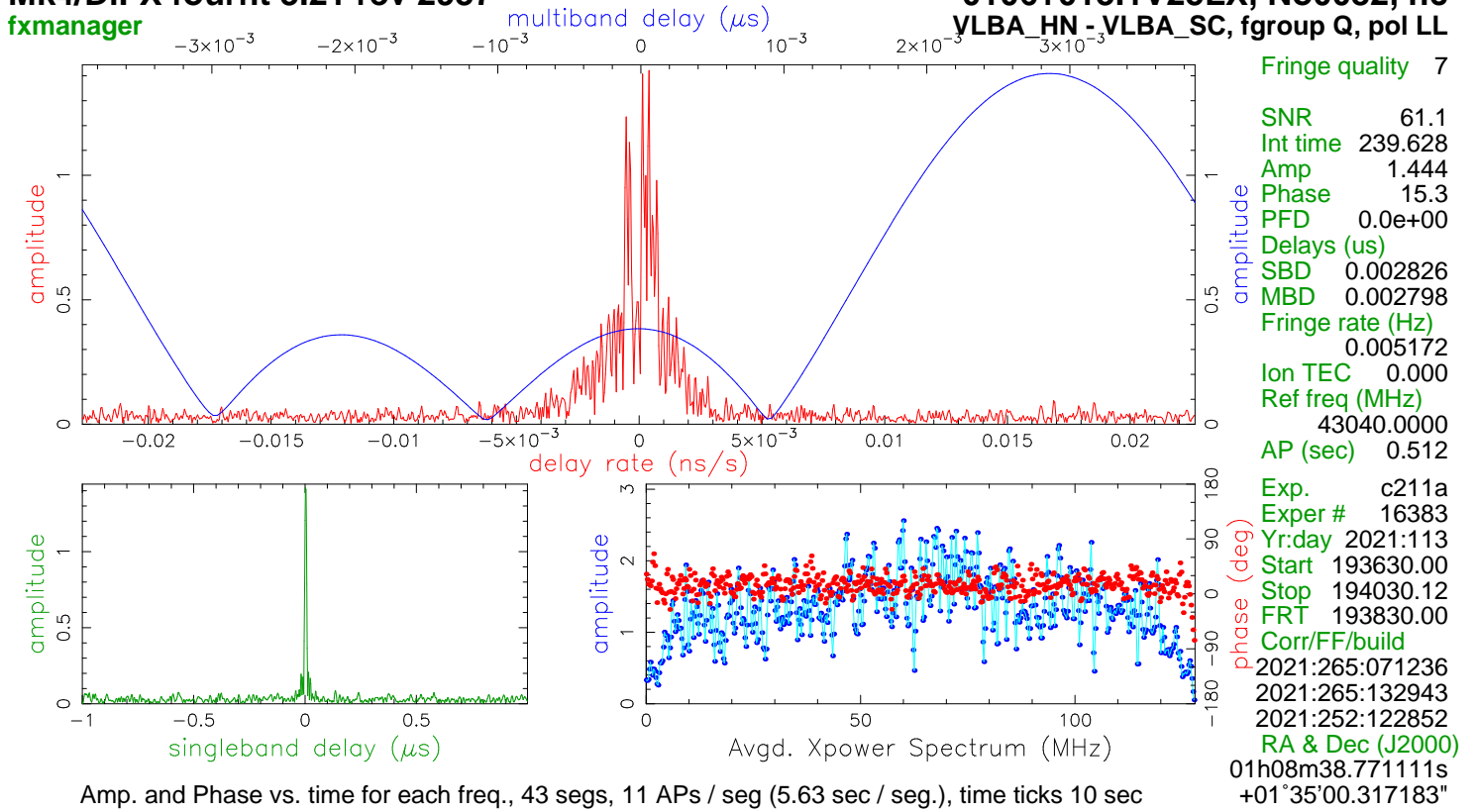


Mk4/DiFX fourfit 3.21 rev 2937

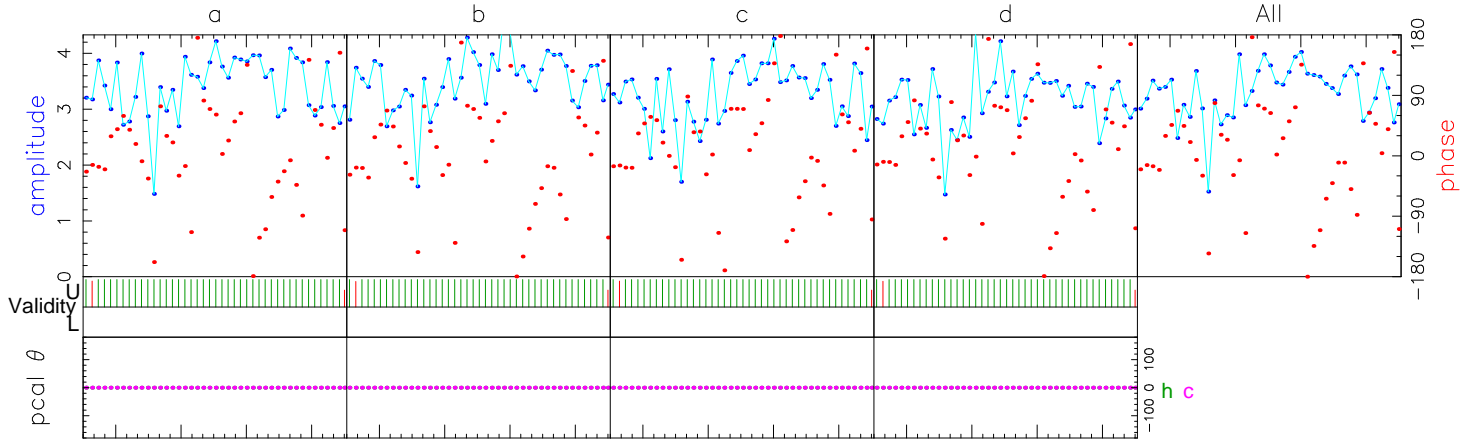
fxmanager

0106+013.1V25LX, No0082, hc

VLBA\_HN - VLBA\_SC, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



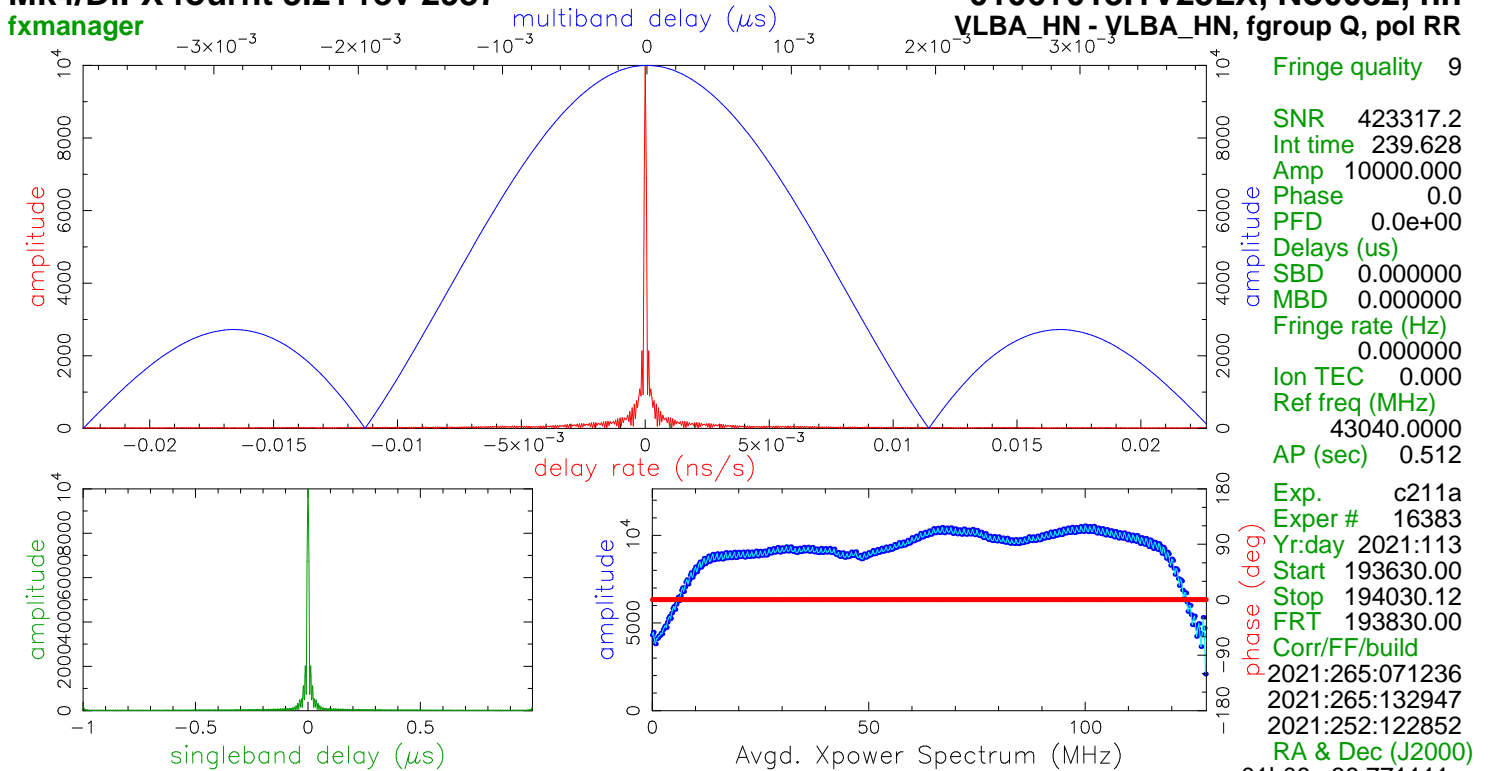
|                               |  |   |                    |                           |  |   |
|-------------------------------|--|---|--------------------|---------------------------|--|---|
|                               | 42912.00   | 43040.00  | 43168.00           | 43296.00                  | Freq (MHz)                             | All   |
|                               | 11.1   | 13.5  | 18.2               | 18.7                      | Phase                                  | 15.3  |
|                               | 1.4  | 1.4   | 1.4                | 1.3                       | Ampl.                                  | 1.4   |
|                               | 514.1  | 514.6   | 514.6              | 514.5                     | Sbd box                                | 514.4   |
| U/L                           | 469/0  | 469/0   | 469/0              | 469/0                     | APs used                               |   |
| h                             | 1000   | 1000  | 1000               | 1000                      | PC freqs                               |   |
| c                             | 1000   | 1000  | 1000               | 1000                      | PC freqs                               |   |
| h:c                           | 0:0  | 0:0   | 0:0                | 0:0                       | PC phase                               |   |
| h:c                           | 0:0  | 0:0   | 0:0                | 0:0                       | Manl PC                                |   |
| h                             | 1000   | 1000  | 1000               | 1000                      | PC amp                                 |   |
| c                             | 1000   | 1000  | 1000               | 1000                      |  |   |
| h                             | Q00UL  | Q01UL   | Q02UL              | Q03UL                     | Chan ids                               |   |
|                               |  |   |                    |                           | Tracks                                 |   |
| c                             | Q00UL  | Q01UL   | Q02UL              | Q03UL                     | Chan ids                               |   |
|                               |  |   |                    |                           | Tracks                                 |   |
| Group delay (usec)(sbd)       | -8.22134048317E+00                                       | Apriori delay (usec)  | -8.22413834030E+00 | Resid mbdelay (usec)      | 2.79786E-03                            | +/- 1.8E-05   |
| Sband delay (usec)            | -8.22131184030E+00                                       | Apriori clock (usec)  | -9.3961258E+00     | Resid sbdelay (usec)      | 2.82650E-03                            | +/- 7.0E-05   |
| Phase delay (usec)            | -8.22413735395E+00                                       | Apriori clockrate (us/s)                                      | -1.8599999E-07     | Resid phdelay (usec)      | 9.86340E-07                            | +/- 1.2E-07   |
| Delay rate (us/s)             | 3.78693034219E-01  | Apriori rate (us/s)   | 3.78692914057E-01  | Resid rate (us/s)         | 1.20162E-07                            | +/- 8.7E-10   |
| Total phase (deg)             | -313.8   | Apriori accel (us/s/s)  | 1.24661176912E-06  | Resid phase (deg)         | 15.3                                   | +/- 1.9   |
|                               | RMS  | Theor.  | Amplitude          | 1.444 +/- 0.024           | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 77.3   | 6.1   | Search (1024X16)   | 1.365                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 133.6  | 10.7  | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 4.5  | 1.9   | Inc. seg. avg.     | 3.298                     | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 4.0  | 3.3   | Inc. frq. avg.     | 1.409                     | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| h: az 247.1 el 25.0 pa 42.6   | c: az 263.3 el 25.2 pa 71.1                              | u,v (fr/asec)   | -1084.454 1663.589 | simultaneous interpolator |  |   |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hc..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hc.Q.85.1V25LX |                    |                           |  |   |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hh

VLBA\_HN - VLBA\_HN, fgroup Q, pol RR



Fringe quality 9

SNR 423317.2

Int time 239.628

Amp 10000.000

Phase 0.0

PFD 0.0e+00

Delays (us)

SBD 0.000000

MBD 0.000000

Fringe rate (Hz)

0.000000

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132947

2021:252:122852

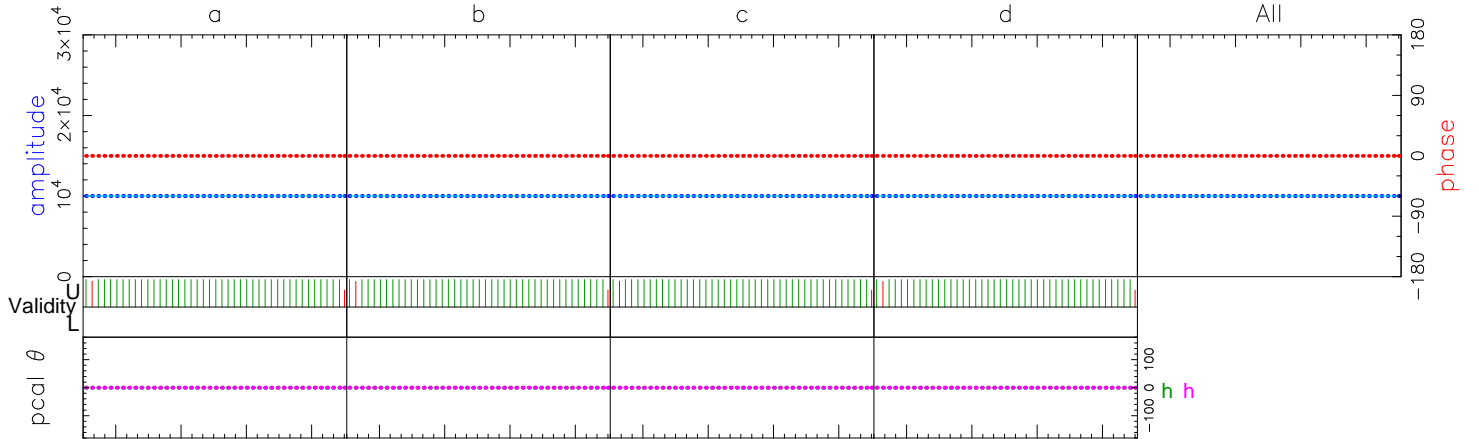
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
|-----------|-----------|-----------|-----------|------------|---------|
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 469/0 | U/L 469/0 | U/L 469/0 | U/L 469/0 | APs used   |         |
| h 1000    | h 1000    | h 1000    | h 1000    | PC freqs   |         |
| h 1000    | h 1000    | h 1000    | h 1000    | PC freqs   |         |
| h:h 0:0   | h:h 0:0   | h:h 0:0   | h:h 0:0   | PC phase   |         |
| h:h 0:0   | h:h 0:0   | h:h 0:0   | h:h 0:0   | Manl PC    |         |
| h 1000    | h 1000    | h 1000    | h 1000    | PC amp     |         |
| h 1000    | h 1000    | h 1000    | h 1000    |            |         |
| h Q00UR   | h Q01UR   | h Q02UR   | h Q03UR   | Chan ids   |         |
| h Q00UR   | h Q01UR   | h Q02UR   | h Q03UR   | Tracks     |         |
| h Q00UR   | h Q01UR   | h Q02UR   | h Q03UR   | Chan ids   |         |
| h Q00UR   | h Q01UR   | h Q02UR   | h Q03UR   | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                       |
|--------------|-----|--------|------------------|---------------------|--|-----------------------|
| ph/seg (deg) | 0.0 | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |     |        | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

h: az 247.1 el 25.0 pa 42.6 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

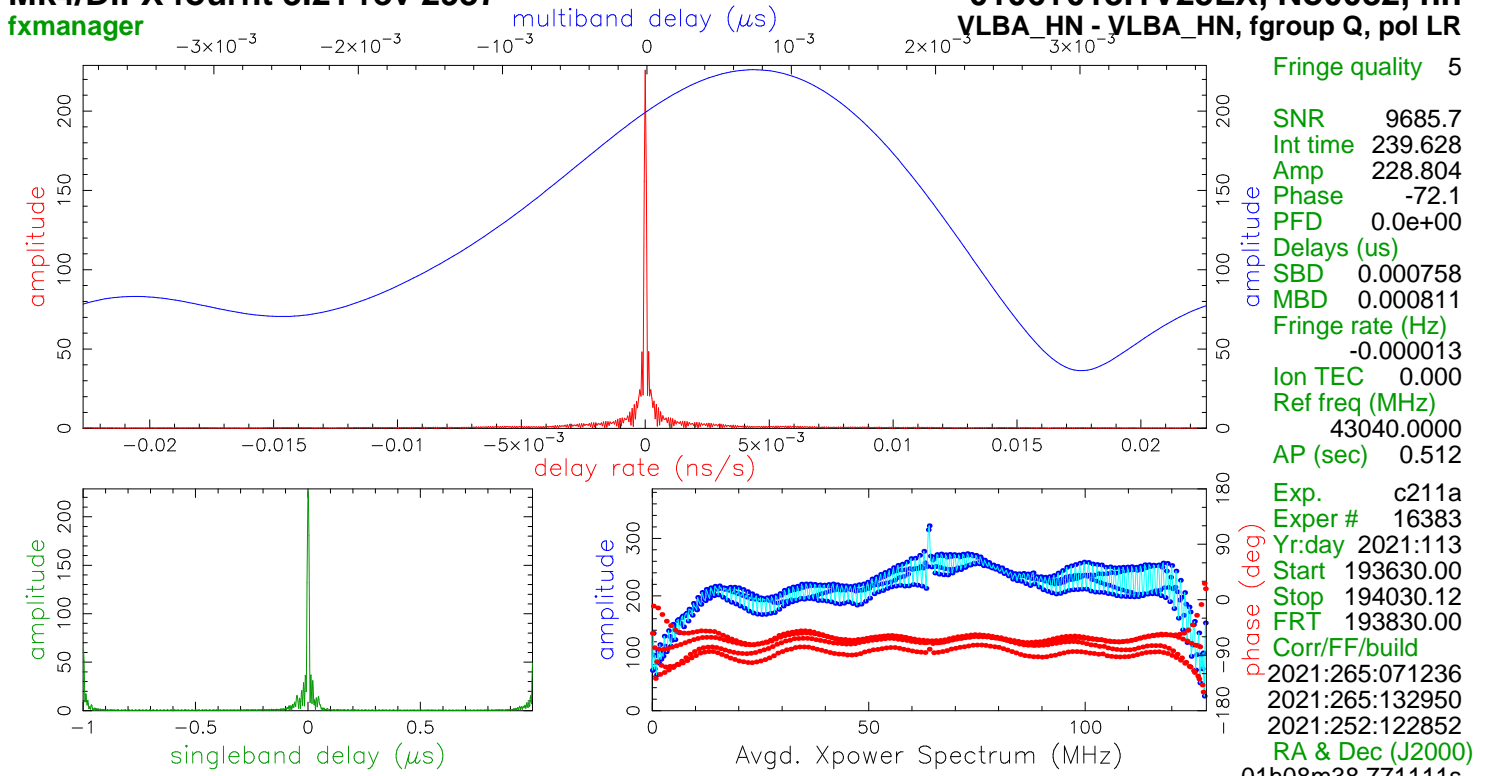
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hh..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hh.Q.120.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

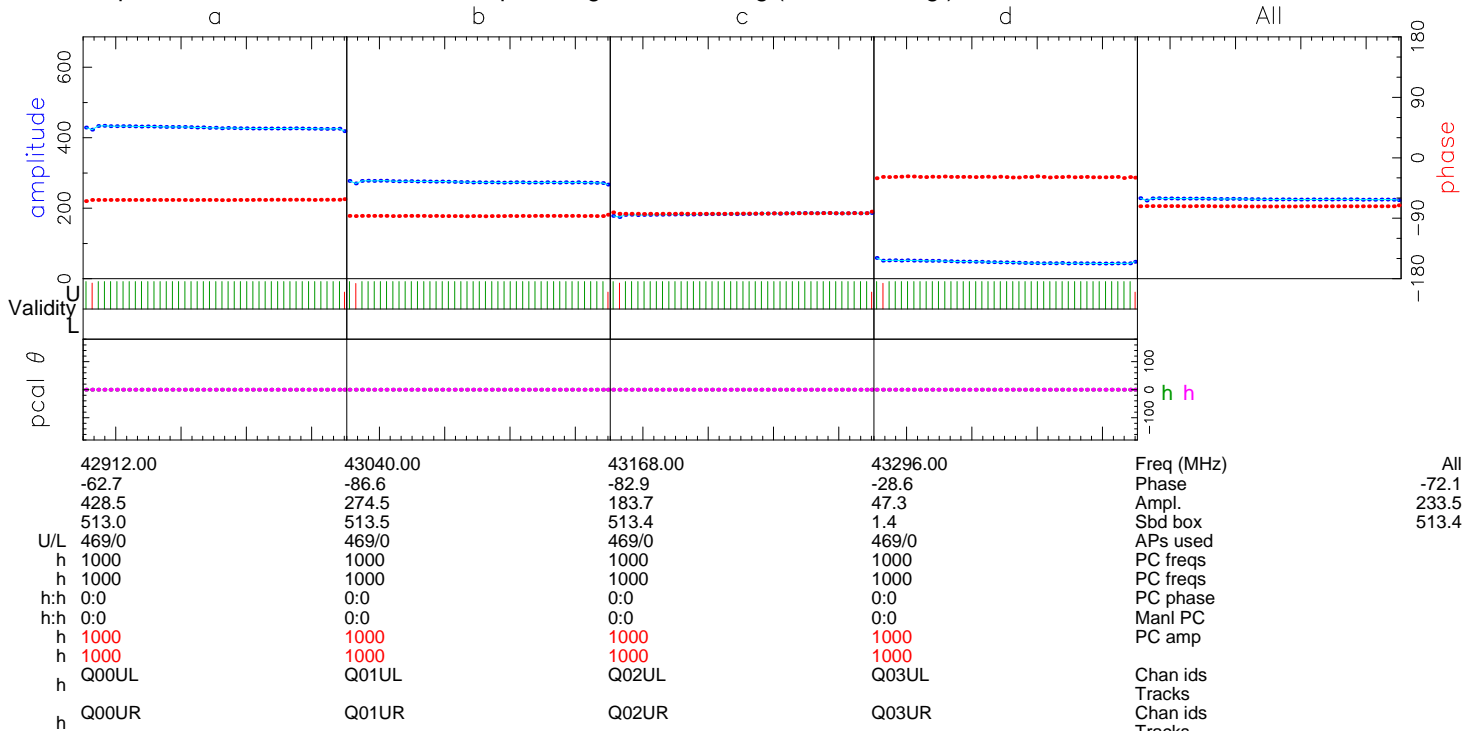
fxmanager

0106+013.1V25LX, No0082, hh

VLBA\_HN - VLBA\_HN, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



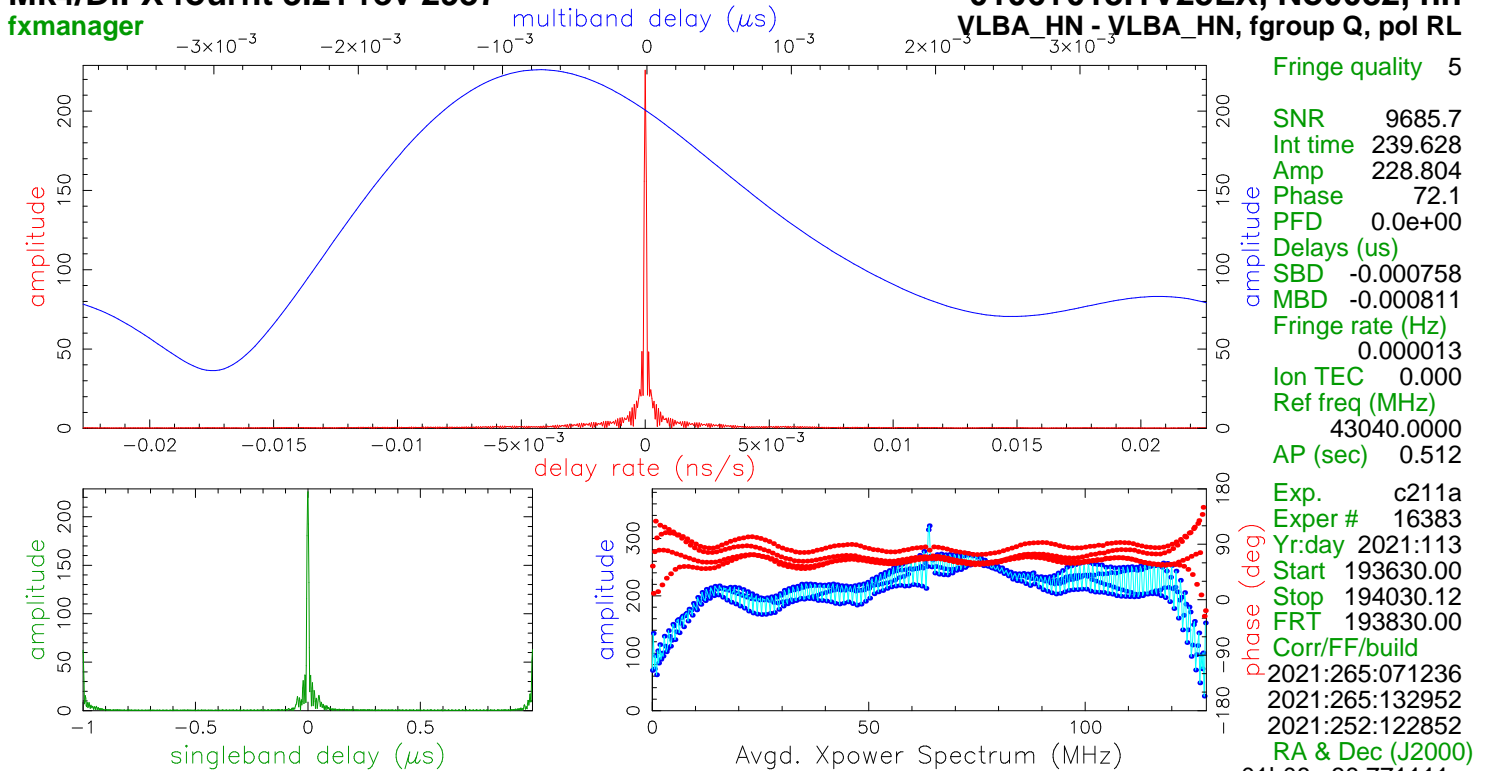
| Group delay (usec)(sbd)       | 8.11062500000E-04  | Apriori delay (usec)                                     | 0.00000000000E+00 | Resid mbdelay (usec)   | 8.11063E-04           | +/-               | 1.1E-07                    |
|-------------------------------|--------------------|--|-------------------|--|-----------------------|-------------------|----------------------------|
| Sband delay (usec)            | 7.58125000000E-04  | Apriori clock (usec)                                     | 0.0000000E+00     | Resid sbdelay (usec)   | 7.58125E-04           | +/-               | 4.4E-07                    |
| Phase delay (usec)            | -4.65478133594E-06 | Apriori clockrate (us/s)                                 | 0.0000000E+00     | Resid phdelay (usec)   | -4.65478E-06          | +/-               | 7.6E-10                    |
| Delay rate (us/s)             | -3.00637837138E-10 | Apriori rate (us/s)                                      | 0.00000000000E+00 | Resid rate (us/s)  | -3.00638E-10          | +/-               | 5.5E-12                    |
| Total phase (deg)             | -72.1              | Apriori accel (us/s/s)                                   | 0.00000000000E+00 | Resid phase (deg)  | -72.1                 | +/-               | 0.0                        |
| RMS                           | 0.2                | Theor.   | 0.0               | Amplitude  | 228.804 +/- 0.024     |                   |                            |
| ph/seg (deg)                  | 0.2                | Search (1024X16)   | 222.918           | PCal mode: MANUAL, MANUAL                                      | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)                   | 1.4                | Interp.  | 0.000             | PCal rate: 0.000E+00, 0.000E+00 (us/s)                         | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg)                  | 33.9               | Inc. seg. avg.   | 225.820           | Bits/sample: 2x2   | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)                   | 60.6               | Inc. frq. avg.   | 233.484           | Sample rate(MSamp/s): 256                                      |                       | dr window (ns/s)  | -0.023 0.023               |
| h: az 247.1 el 25.0 pa 42.6   |                    | h: az 247.1 el 25.0 pa 42.6                              |                   | Data rate(Mb/s): 2048  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |
| Control file: cf_1234_gmva7mm |                    | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hh..1V25LX |                   | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hh.Q.148.1V25LX |                       |                   | simultaneous interpolator  |

Mk4/DiFX fourfit 3.21 rev 2937

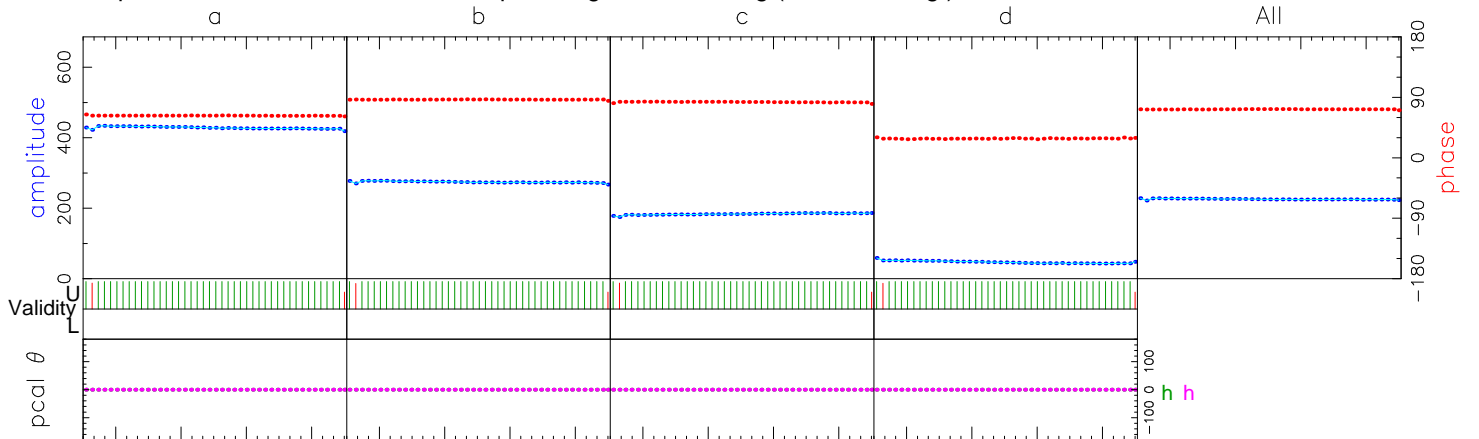
fxmanager

0106+013.1V25LX, No0082, hh

VLBA\_HN - VLBA\_HN, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |     |
| h   | 1000     | 1000     | 1000     | 1000     | PC freqs   |     |
| h   | 1000     | 1000     | 1000     | 1000     | PC freqs   |     |
| h:h | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |     |
| h:h | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |     |
| h   | 1000     | 1000     | 1000     | 1000     | PC amp     |     |
| h   | 1000     | 1000     | 1000     | 1000     |            |     |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |     |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |     |
| h   |          |          |          |          | Chan ids   |     |
| h   |          |          |          |          | Tracks     |     |

|                         |                     |                          |                    |                      |              |     |         |
|-------------------------|---------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -8.110625000000E-04 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | -8.11063E-04 | +/- | 1.1E-07 |
| Sband delay (usec)      | -7.581250000000E-04 | Apriori clock (usec)     | 0.000000000000E+00 | Resid sbdelay (usec) | -7.58125E-04 | +/- | 4.4E-07 |
| Phase delay (usec)      | 4.65478133619E-06   | Apriori clockrate (us/s) | 0.000000000000E+00 | Resid phdelay (usec) | 4.65478E-06  | +/- | 7.6E-10 |
| Delay rate (us/s)       | 3.00637837138E-10   | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 3.00638E-10  | +/- | 5.5E-12 |
| Total phase (deg)       | 72.1                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 72.1         | +/- | 0.0     |

|              |      |        |                  |                   |  |                       |                  |              |
|--------------|------|--------|------------------|-------------------|--|-----------------------|------------------|--------------|
|              | RMS  | Theor. | Amplitude        | 228.804 +/- 0.024 | Pcal mode: MANUAL, MANUAL                                    | PC period (AP's) 5, 5 |                  |              |
| ph/seg (deg) | 0.2  | 0.0    | Search (1024X16) | 222.918           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                       |                       | sb window (us)   | -1.000 1.000 |
| amp/seg (%)  | 1.4  | 0.1    | Interp.          | 0.000             | Bits/sample: 2x2      SampCntNorm: enabled                   |                       | mb window (us)   | -0.004 0.004 |
| ph/frq (deg) | 33.9 | 0.0    | Inc. seg. avg.   | 225.820           | Sample rate(MSamp/s): 256                                    |                       | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)  | 60.6 | 0.0    | Inc. frq. avg.   | 233.484           | Data rate(Mb/s): 2048      nlags: 512      t_cohere infinite |                       | ion window (TEC) | 0.00 0.00    |

simultaneous interpolator

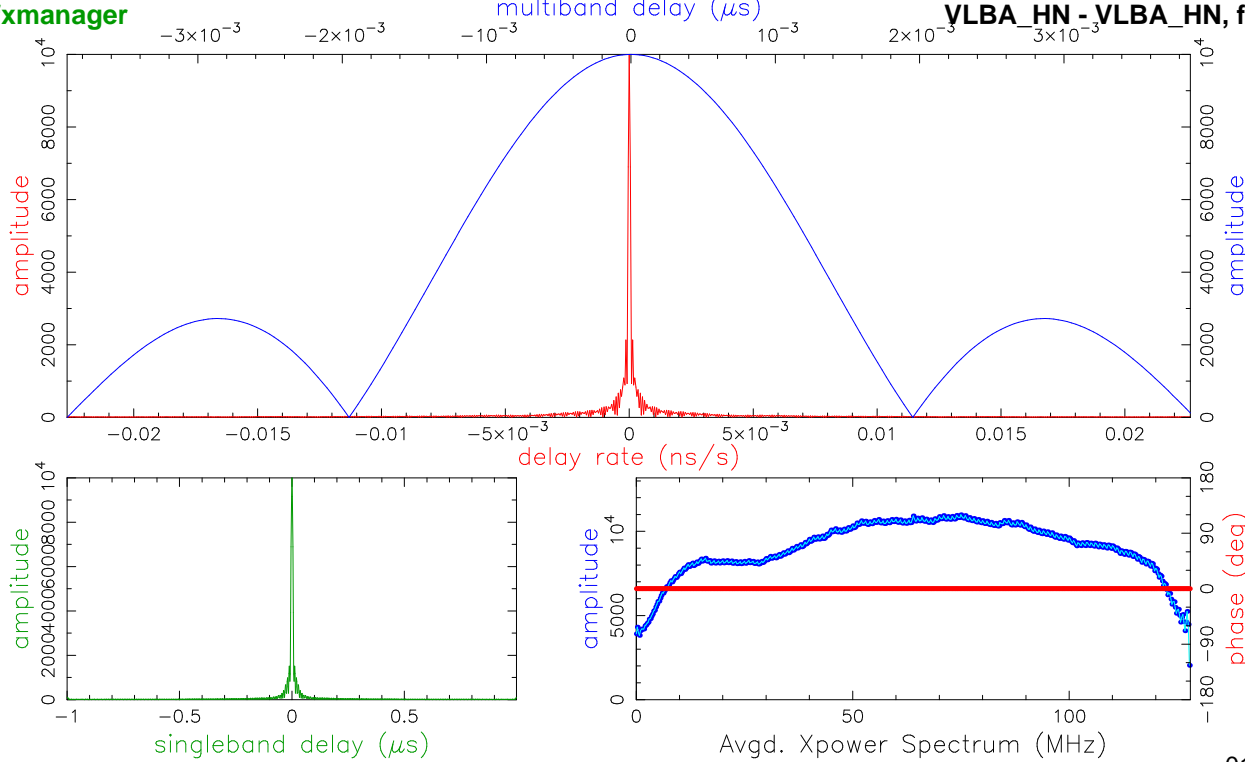
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hh..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hh.Q.160.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hh

VLBA\_HN - VLBA\_HN, fgroup Q, pol LL



Fringe quality 9

SNR 423317.3

Int time 239.628

Amp 10000.000

Phase 0.0

PFD 0.0e+00

Delays (us)

SBD 0.000000

MBD 0.000000

Fringe rate (Hz)

0.000000

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132945

2021:252:122852

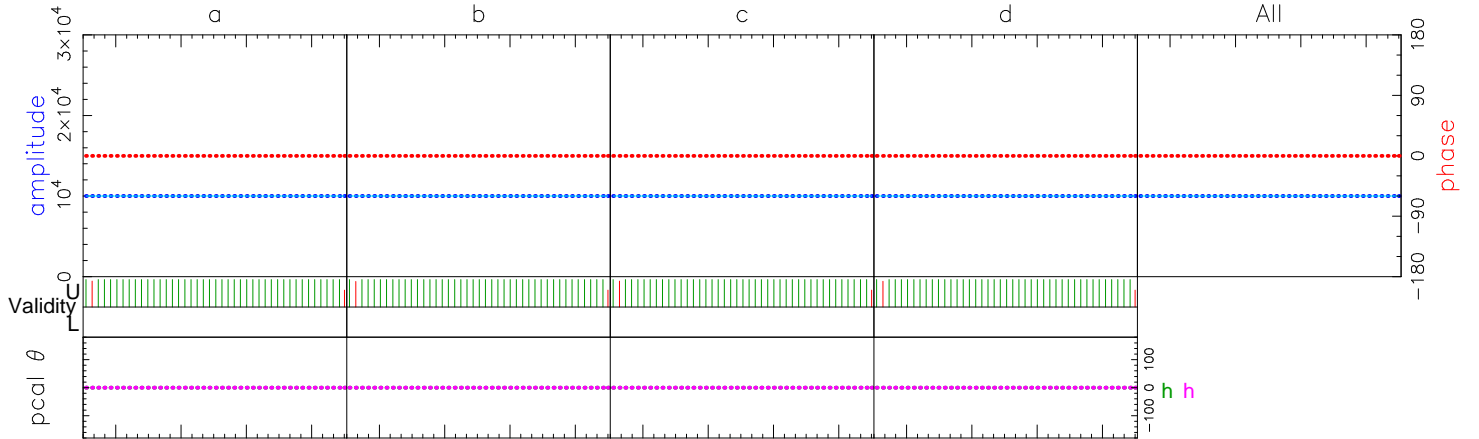
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
|-----------|-----------|-----------|-----------|------------|---------|
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 469/0 | U/L 469/0 | U/L 469/0 | U/L 469/0 | APs used   |         |
| h 1000    | h 1000    | h 1000    | h 1000    | PC freqs   |         |
| h 1000    | h 1000    | h 1000    | h 1000    | PC freqs   |         |
| h:h 0:0   | h:h 0:0   | h:h 0:0   | h:h 0:0   | PC phase   |         |
| h:h 0:0   | h:h 0:0   | h:h 0:0   | h:h 0:0   | Manl PC    |         |
| h 1000    | h 1000    | h 1000    | h 1000    | PC amp     |         |
| h 1000    | h 1000    | h 1000    | h 1000    |            |         |
| h Q00UL   | h Q01UL   | h Q02UL   | h Q03UL   | Chan ids   |         |
| h Q00UL   | h Q01UL   | h Q02UL   | h Q03UL   | Tracks     |         |
|           |           |           |           | Chan ids   |         |
|           |           |           |           | Tracks     |         |

|                         |                  |                          |                  |                      |              |     |         |
|-------------------------|------------------|--------------------------|------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.0000000000E+00 | Apriori delay (usec)     | 0.0000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.0000000000E+00 | Apriori clock (usec)     | 0.0000000E+00    | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.0000000000E+00 | Apriori clockrate (us/s) | 0.0000000E+00    | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.0000000000E+00 | Apriori rate (us/s)      | 0.0000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0              | Apriori accel (us/s/s)   | 0.0000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                       |
|--------------|-----|--------|------------------|---------------------|--|-----------------------|
| ph/seg (deg) | 0.0 | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |     |        | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

h: az 247.1 el 25.0 pa 42.6 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hh..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hh.Q.99.1V25LX

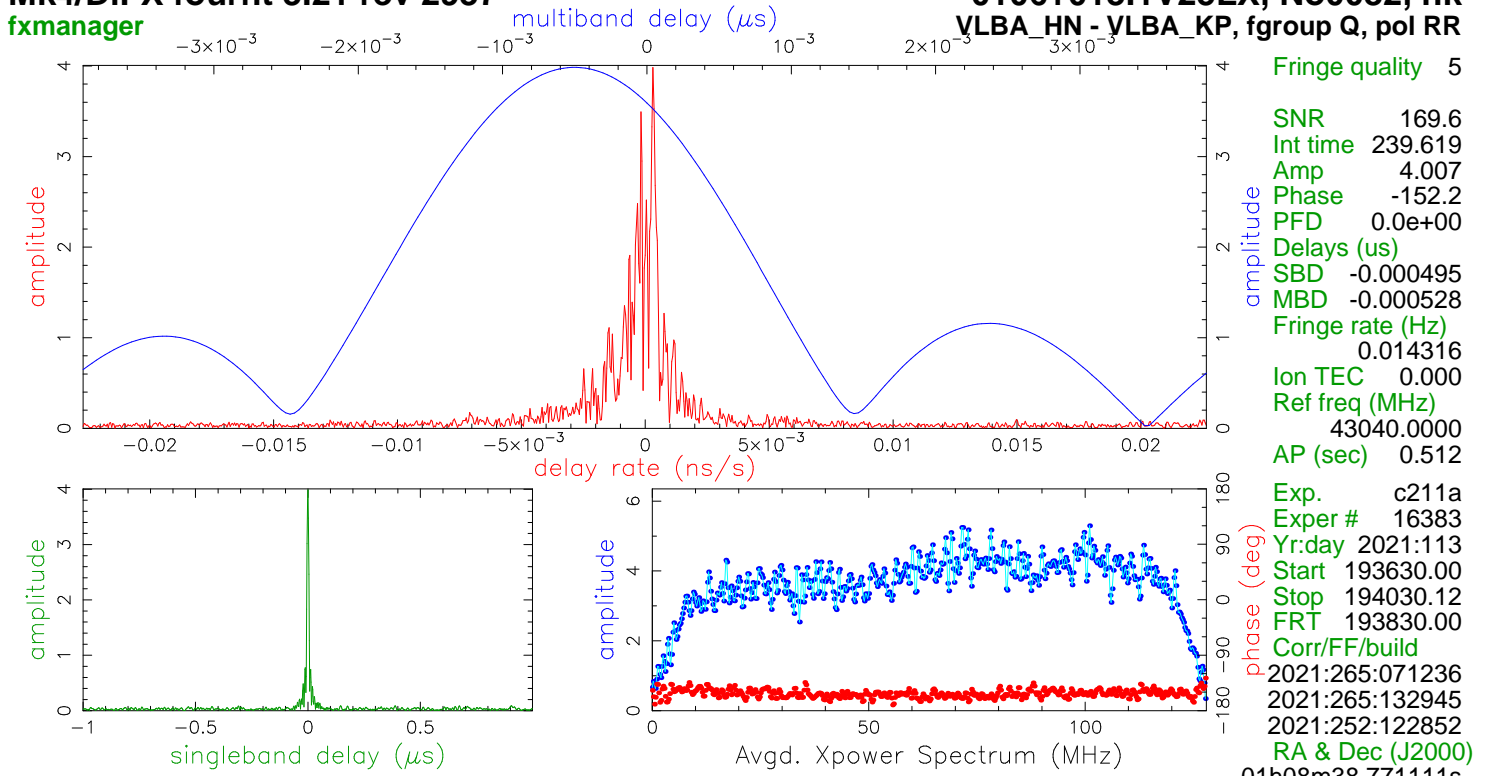


Mk4/DiFX fourfit 3.21 rev 2937

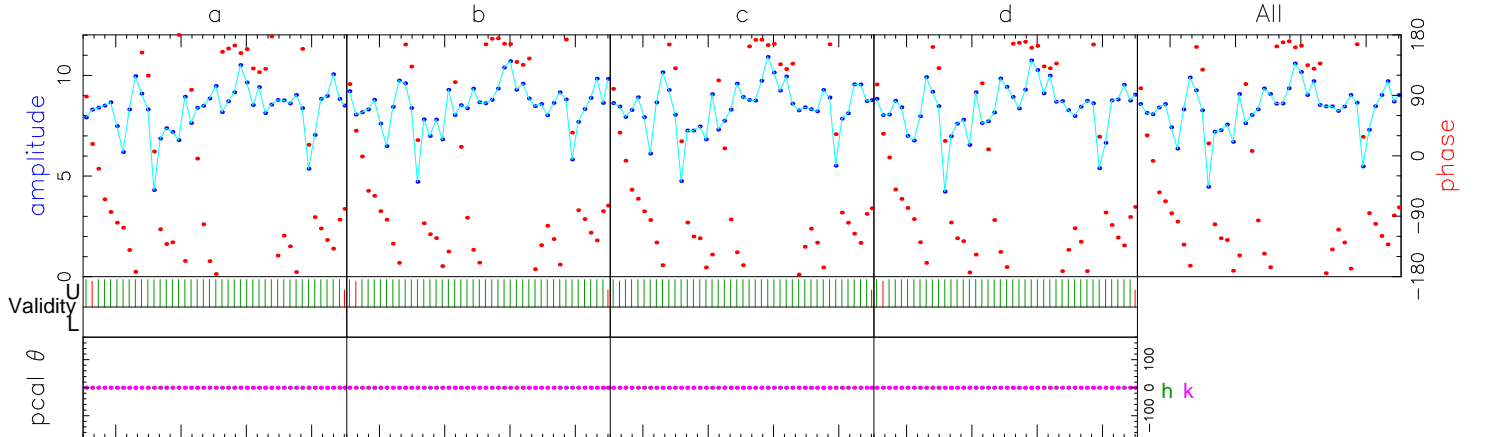
fxmanager

0106+013.1V25LX, No0082, hk

VLBA\_HN - VLBA\_KP, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



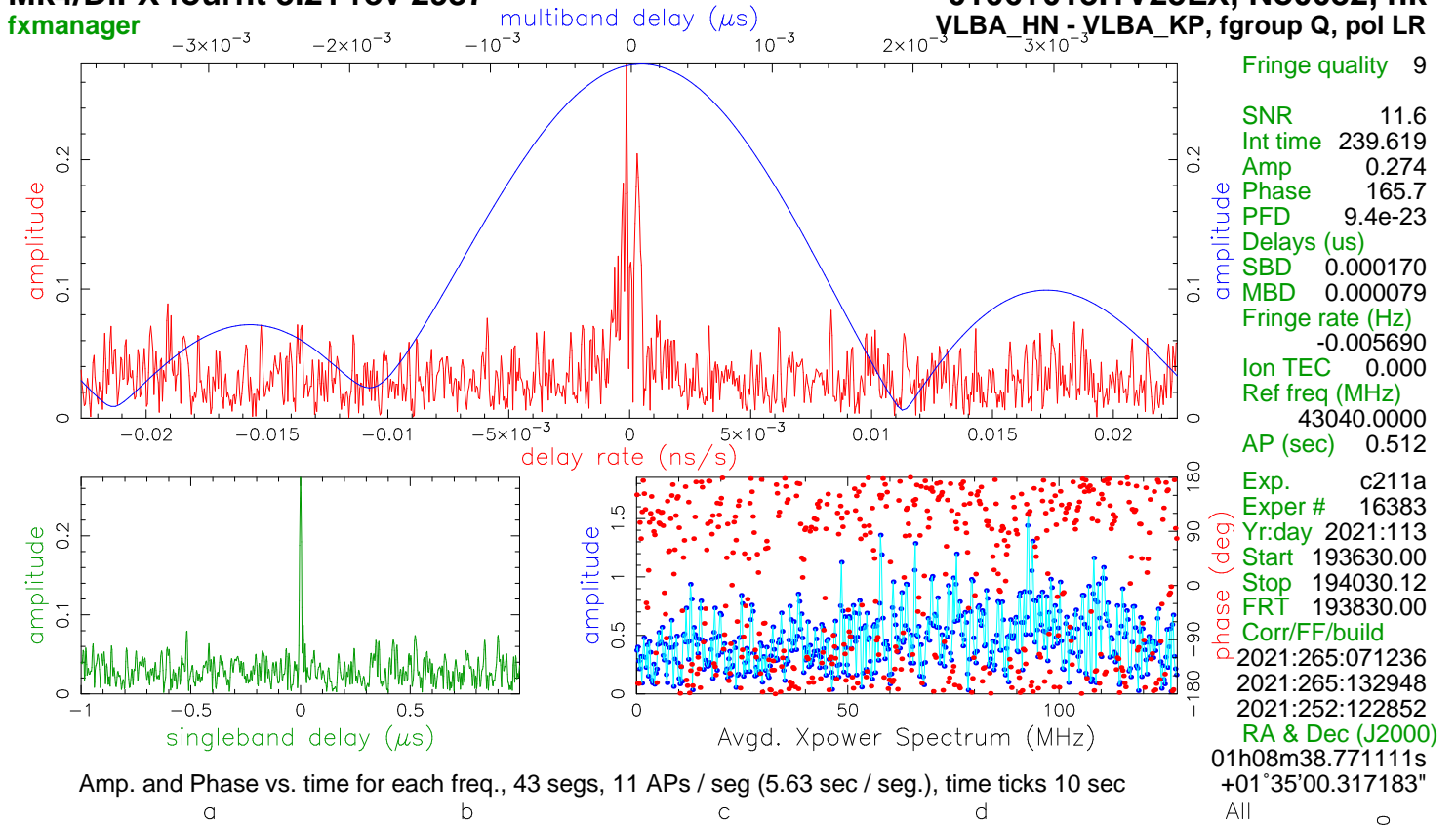
|                               |  |  |                    |  |   |
|-------------------------------|--|--|--------------------|--|---|
| 42912.00                      | 43040.00   | 43168.00   | 43296.00           | Freq (MHz)                             | All   |
| -158.0                        | -147.6   | -150.4   | -153.0             | Phase                                  | -152.2  |
| 4.0                           | 4.0  | 4.0  | 4.0                | Ampl.                                  | 4.0   |
| 512.7                         | 512.8  | 512.8  | 512.5              | Sbd box                                | 512.7   |
| U/L 469/0                     | 469/0  | 469/0  | 469/0              | APs used                               |   |
| h 1000                        | 1000   | 1000   | 1000               | PC freqs                               |   |
| k 1000                        | 1000   | 1000   | 1000               | PC phase                               |   |
| h:k 0:0                       | 0:0  | 0:0  | 0:0                | Manl PC                                |   |
| h 1000                        | 1000   | 1000   | 1000               | PC amp                                 |   |
| k 1000                        | 1000   | 1000   | 1000               |  |   |
| h Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Chan ids                               |   |
| k Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Tracks                                 |   |
|                               |  |  |                    | Chan ids                               |   |
|                               |  |  |                    | Tracks                                 |   |
| Group delay (usec)(sbd)       | -8.68696887133E+03                                       | Apriori delay (usec)   | -8.68696834356E+03 | Resid mbdelay (usec)                   | -5.27766E-04 +/- 6.6E-06                                |
| Sband delay (usec)            | -8.68696883869E+03                                       | Apriori clock (usec)   | 2.4589806E+00      | Resid sbdelay (usec)                   | -4.95125E-04 +/- 2.5E-05                                |
| Phase delay (usec)            | -8.68696835339E+03                                       | Apriori clockrate (us/s)                                       | 1.3000000E-07      | Resid phdelay (usec)                   | -9.82561E-06 +/- 4.4E-08                                |
| Delay rate (us/s)             | -5.57277418500E-01                                       | Apriori rate (us/s)  | -5.57277751116E-01 | Resid rate (us/s)                      | 3.32616E-07 +/- 3.1E-10                                 |
| Total phase (deg)             | -334.7   | Apriori accel (us/s/s)   | 4.67111344808E-05  | Resid phase (deg)                      | -152.2 +/- 0.7  |
| RMS                           | Theor.   | Amplitude  | 4.007 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 76.1   | Search (1024X16)   | 3.813              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 112.4  | Interp.  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 5.4  | Inc. seg. avg.   | 8.354              | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 0.5  | Inc. frq. avg.   | 3.993              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| h: az 247.1 el 25.0 pa 42.6   | k: az 211.3 el 55.7 pa 26.6                              | u,v (fr/asec)  | 1614.742 726.047   |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hk..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hk.Q.105.1V25LX |                    |  |   |

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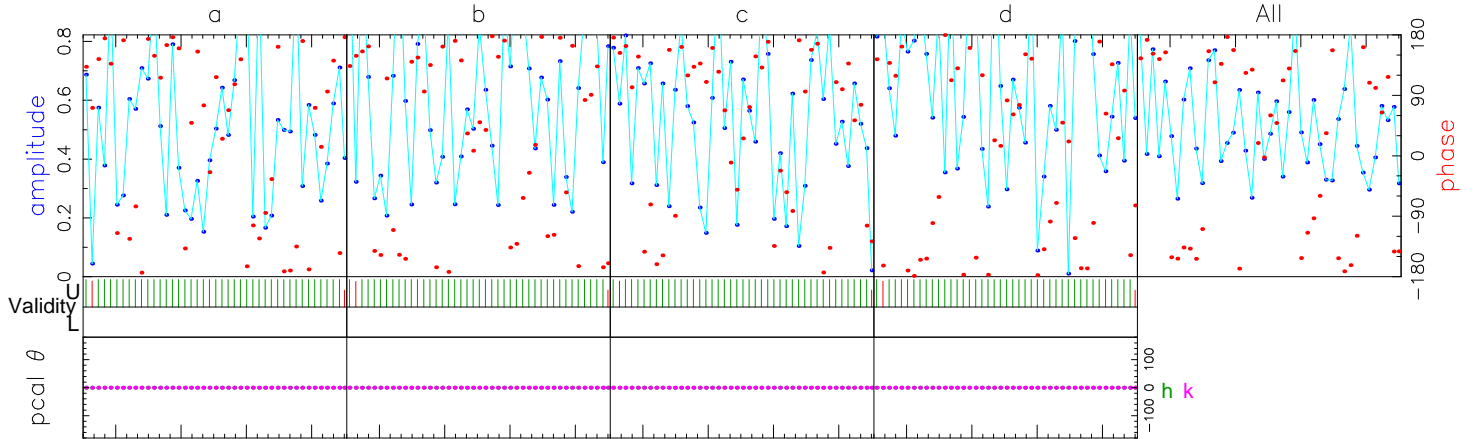
fxmanager

0106+013.1V25LX, No0082, hk

VLBA\_HN - VLBA\_KP, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



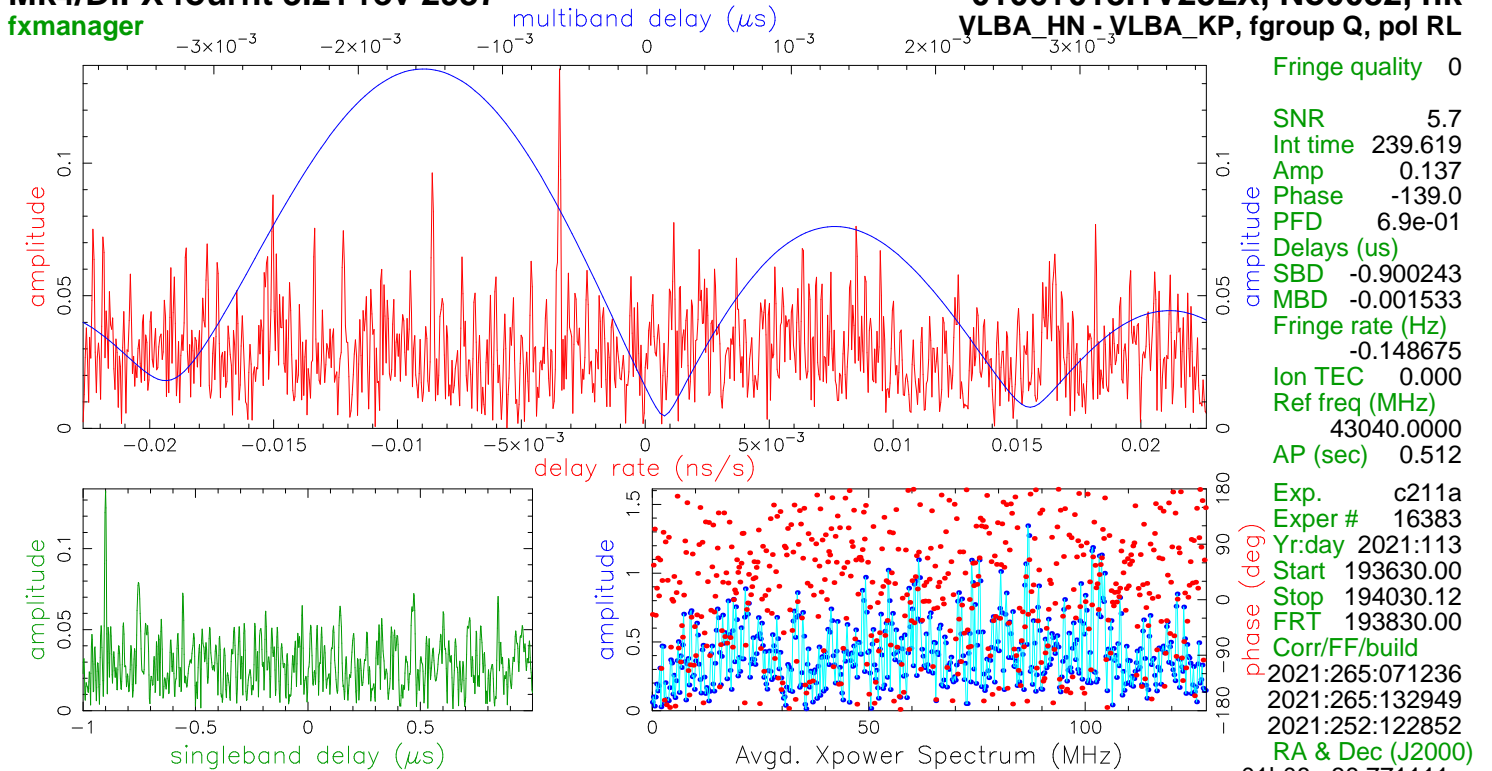
|                               |  |  |                    |  |                       |                   |                  |           |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|------------------|-----------|
| 42912.00                      | 43040.00   | 43168.00   | 43296.00           | Freq (MHz)                             | All                   |                   |                  |           |
| 168.4                         | 167.6  | 153.5  | 171.6              | Phase                                  | 165.7                 |                   |                  |           |
| 0.3                           | 0.3  | 0.2  | 0.3                | Ampl.                                  | 0.3                   |                   |                  |           |
| 513.3                         | 512.8  | 512.7  | 513.5              | Sbd box                                | 513.1                 |                   |                  |           |
| U/L 469/0                     | 469/0  | 469/0  | 469/0              | APs used                               |                       |                   |                  |           |
| h 1000                        | 1000   | 1000   | 1000               | PC freqs                               |                       |                   |                  |           |
| k 1000                        | 1000   | 1000   | 1000               | PC freqs                               |                       |                   |                  |           |
| h:k 0:0                       | 0:0  | 0:0  | 0:0                | PC phase                               |                       |                   |                  |           |
| h:k 0:0                       | 0:0  | 0:0  | 0:0                | Manl PC                                |                       |                   |                  |           |
| h 1000                        | 1000   | 1000   | 1000               | PC amp                                 |                       |                   |                  |           |
| k 1000                        | 1000   | 1000   | 1000               |  |                       |                   |                  |           |
| h Q00UL                       | Q01UL  | Q02UL  | Q03UL              | Chan ids                               |                       |                   |                  |           |
| k Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Tracks                                 |                       |                   |                  |           |
|                               |  |  |                    | Chan ids                               |                       |                   |                  |           |
|                               |  |  |                    | Tracks                                 |                       |                   |                  |           |
| Group delay (usec)(sbd)       | -8.68696826454E+03                                       | Apriori delay (usec)   | -8.68696834356E+03 | Resid mbdelay (usec)                   | 7.90179E-05           | +/- 9.6E-05       |                  |           |
| Sband delay (usec)            | -8.68696817369E+03                                       | Apriori clock (usec)   | 2.4589806E+00      | Resid sbdelay (usec)                   | 1.69875E-04           | +/- 3.7E-04       |                  |           |
| Phase delay (usec)            | -8.68696833287E+03                                       | Apriori clockrate (us/s)                                       | 1.3000000E-07      | Resid phdelay (usec)                   | 1.06920E-05           | +/- 6.4E-07       |                  |           |
| Delay rate (us/s)             | -5.57277883314E-01                                       | Apriori rate (us/s)  | -5.57277751116E-01 | Resid rate (us/s)                      | -1.32198E-07          | +/- 4.6E-09       |                  |           |
| Total phase (deg)             | -16.8  | Apriori accel (us/s/s)   | 4.67111344808E-05  | Resid phase (deg)                      | 165.7                 | +/- 9.9           |                  |           |
| RMS                           | Theor.   | Amplitude  | 0.274 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |           |
| ph/seg (deg)                  | 67.7   | Search (1024X16)   | 0.273              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |           |
| amp/seg (%)                   | 106.9  | Interp.  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |           |
| ph/frq (deg)                  | 9.8  | Inc. seg. avg.   | 0.445              | Sample rate(MSamp/s): 256              | dr window (ns/s)      | -0.023 0.023      |                  |           |
| amp/frq (%)                   | 6.2  | Inc. frq. avg.   | 0.272              | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00 |
| h: az 247.1 el 25.0 pa 42.6   | k: az 211.3 el 55.7 pa 26.6                              | u,v (fr/asec)  | 1614.742 726.047   | simultaneous interpolator              |                       |                   |                  |           |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hk..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hk.Q.125.1V25LX |                    |  |                       |                   |                  |           |

Mk4/DiFX fourfit 3.21 rev 2937

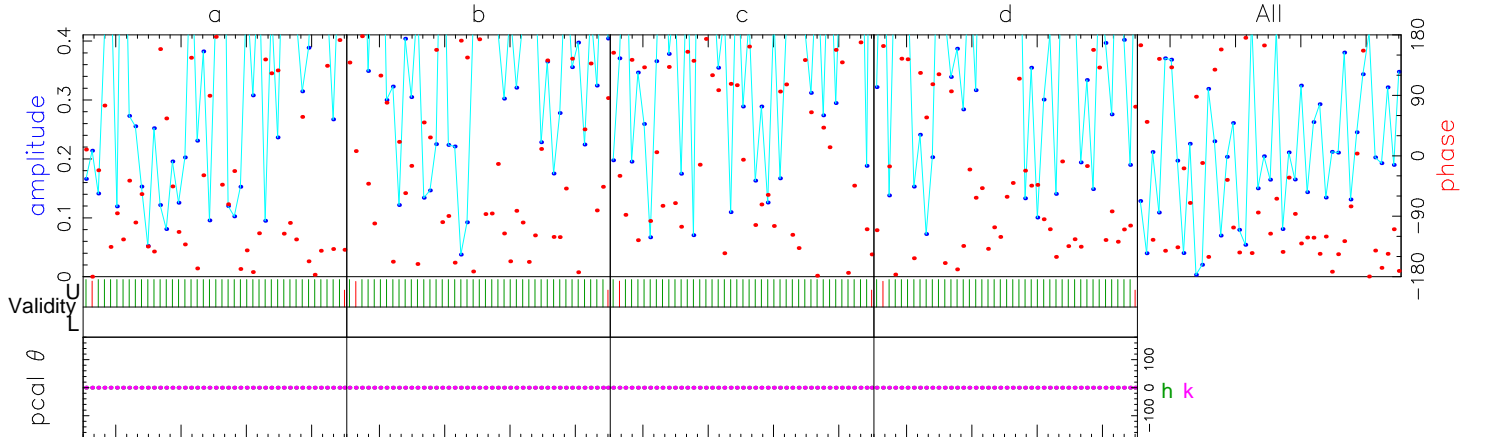
fxmanager

0106+013.1V25LX, No0082, hk

VLBA\_HN - VLBA\_KP, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -138.4   | -127.0   | -168.5   | -131.9   | Phase      | -139.0 |
|     | 0.2      | 0.1      | 0.1      | 0.2      | Ampl.      | 0.1    |
|     | 128.5    | 147.4    | 267.3    | 50.3     | Sbd box    | 52.1   |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| h   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| k   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| h:k | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| h:k | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| h   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| k   | 1000     | 1000     | 1000     | 1000     |            |        |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -8.68786831394E+03 | Apriori delay (usec)     | -8.68696834356E+03 | Resid mbdelay (usec) | -1.53288E-03 | +/- | 1.9E-04 |
| Sband delay (usec)      | -8.68786858606E+03 | Apriori clock (usec)     | 2.4589806E+00      | Resid sbdelay (usec) | -9.00243E-01 | +/- | 7.5E-04 |
| Phase delay (usec)      | -8.68696835253E+03 | Apriori clockrate (us/s) | 1.3000000E-07      | Resid phdelay (usec) | -8.96917E-06 | +/- | 1.3E-06 |
| Delay rate (us/s)       | -5.57281205464E-01 | Apriori rate (us/s)      | -5.57277751116E-01 | Resid rate (us/s)    | -3.45435E-06 | +/- | 9.3E-09 |
| Total phase (deg)       | -321.5             | Apriori accel (us/s/s)   | 4.67111344808E-05  | Resid phase (deg)    | -139.0       | +/- | 20.0    |

|              |       |                  |       |                |                 |  |                       |
|--------------|-------|------------------|-------|----------------|-----------------|--|-----------------------|
| ph/seg (deg) | 66.1  | Theor.           | 65.5  | Amplitude      | 0.137 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 100.7 | Search (1024X16) | 0.133 | Interp.        | 0.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 23.1  | Inc. seg. avg.   | 0.129 | Inc. seg. avg. | 0.129           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 22.5  | Inc. frq. avg.   | 0.133 | Inc. frq. avg. | 0.133           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |       |                  |       |                |                 | Data rate(Mb/s): 2048                  | ion window (TEC)      |
|              |       |                  |       |                |                 | nlags: 512                             | t_cohere infinite     |

h: az 247.1 el 25.0 pa 42.6 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) 1614.742 726.047 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hk.Q.140.1V25LX

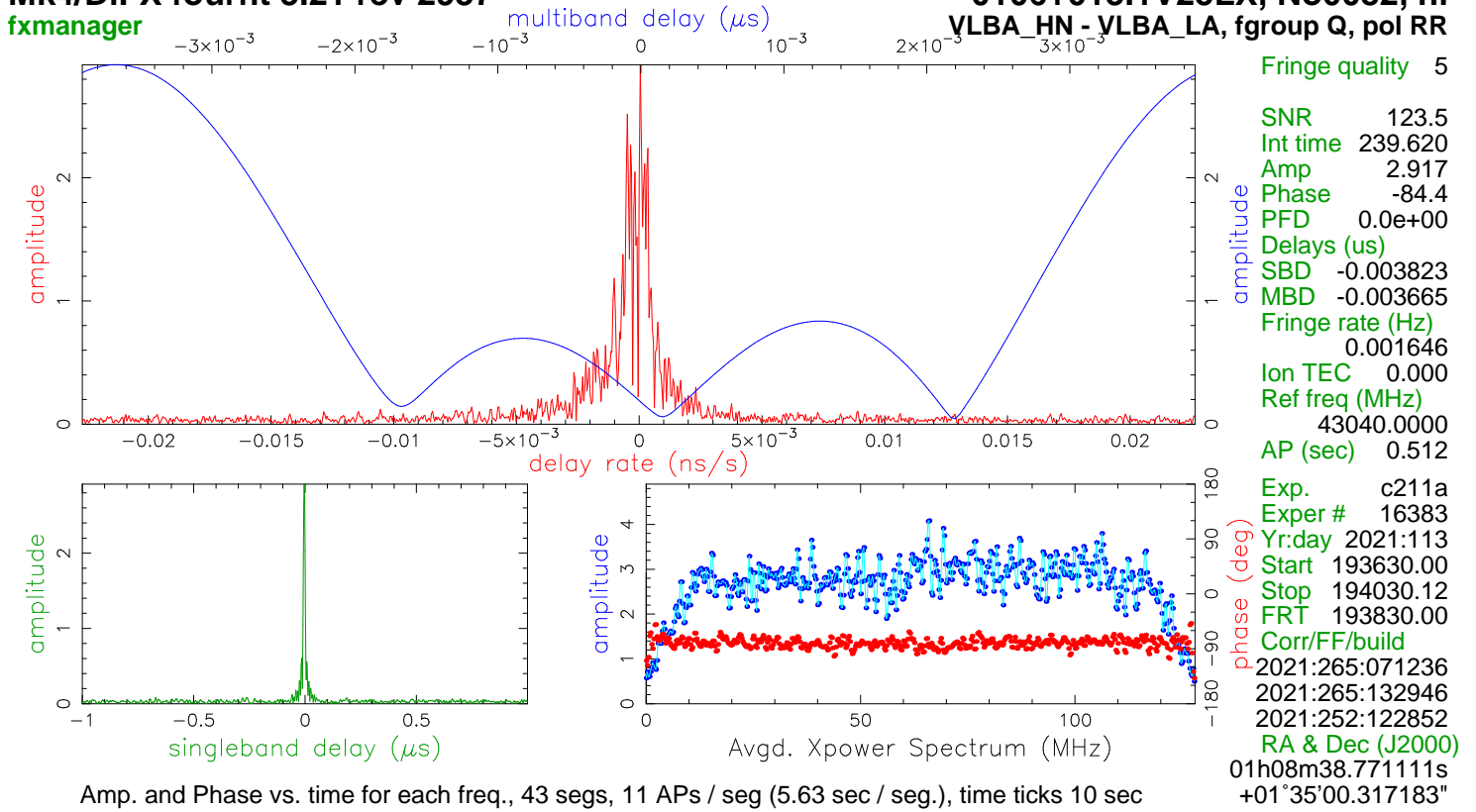


Mk4/DiFX fourfit 3.21 rev 2937

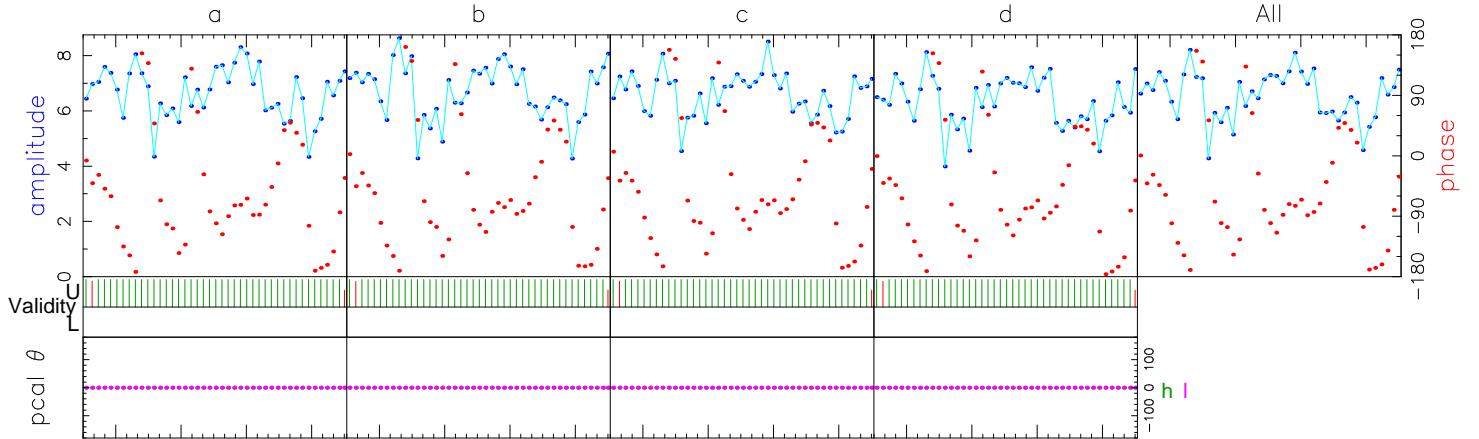
fxmanager

0106+013.1V25LX, No0082, hl

VLBA\_HN - VLBA\_LA, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               | 42912.00           | 43040.00   | 43168.00           | 43296.00   | Freq (MHz)       | All         |
|-------------------------------|--------------------|--|--------------------|--|------------------|-------------|
| U/L                           | 469/0              | 469/0  | 469/0              | 469/0  | Phase            | -84.4       |
| h                             | 1000               | 1000   | 1000               | 1000   | Ampl.            | 2.9         |
| l                             | 1000               | 1000   | 1000               | 1000   | Sbd box          | 511.0       |
| h:l                           | 0:0                | 0:0  | 0:0                | 0:0  | APs used         |             |
| h:l                           | 0:0                | 0:0  | 0:0                | 0:0  | PC freqs         |             |
| h                             | 1000               | 1000   | 1000               | 1000   | PC phase         |             |
| l                             | 1000               | 1000   | 1000               | 1000   | Manl PC          |             |
| h                             | Q00UR              | Q01UR  | Q02UR              | Q03UR  | PC amp           |             |
| l                             | Q00UR              | Q01UR  | Q02UR              | Q03UR  | Chan ids         |             |
|                               |                    |  |                    |  | Tracks           |             |
|                               |                    |  |                    |  | Chan ids         |             |
|                               |                    |  |                    |  | Tracks           |             |
| Group delay (usec)(sbd)       | -7.40669012660E+03 | Apriori delay (usec)                                     | -7.40668646128E+03 | Resid mbdelay (usec)   | -3.66532E-03     | +/- 9.0E-06 |
| Sband delay (usec)            | -7.40669028478E+03 | Apriori clock (usec)                                     | 5.3579369E+00      | Resid sbdelay (usec)   | -3.82350E-03     | +/- 3.5E-05 |
| Phase delay (usec)            | -7.40668646673E+03 | Apriori clockrate (us/s)                                 | 4.1600003E-07      | Resid phdelay (usec)   | -5.44806E-06     | +/- 6.0E-08 |
| Delay rate (us/s)             | -4.64050185290E-01 | Apriori rate (us/s)                                      | -4.64050223534E-01 | Resid rate (us/s)  | 3.82434E-08      | +/- 4.3E-10 |
| Total phase (deg)             | -190.1             | Apriori accel (us/s/s)                                   | 3.97343230569E-05  | Resid phase (deg)  | -84.4            | +/- 0.9     |
| RMS                           | 72.9               | Theor.   | 3.0                | Amplitude  | 2.917 +/- 0.024  |             |
| ph/seg (deg)                  | 128.3              | Search (1024X16)   | 2.835              | Interp.  | 0.000            |             |
| amp/seg (%)                   | 4.6                | Inc. seg. avg.   | 6.551              | Inc. frq. avg.   | 2.921            |             |
| ph/frq (deg)                  | 3.8                | Inc. frq. avg.   | 2.921              |  |                  |             |
| amp/frq (%)                   |                    |  |                    |  |                  |             |
| h: az 247.1 el 25.0 pa 42.6   |                    | l: az 216.4 el 50.1 pa 29.3                              |                    | u,v (fr/asec)  | 1345.046 473.122 |             |
| Control file: cf_1234_gmva7mm |                    | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hl..1V25LX |                    | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hl.Q.106.1V25LX |                  |             |



Mk4/DiFX fourfit 3.21 rev 2937

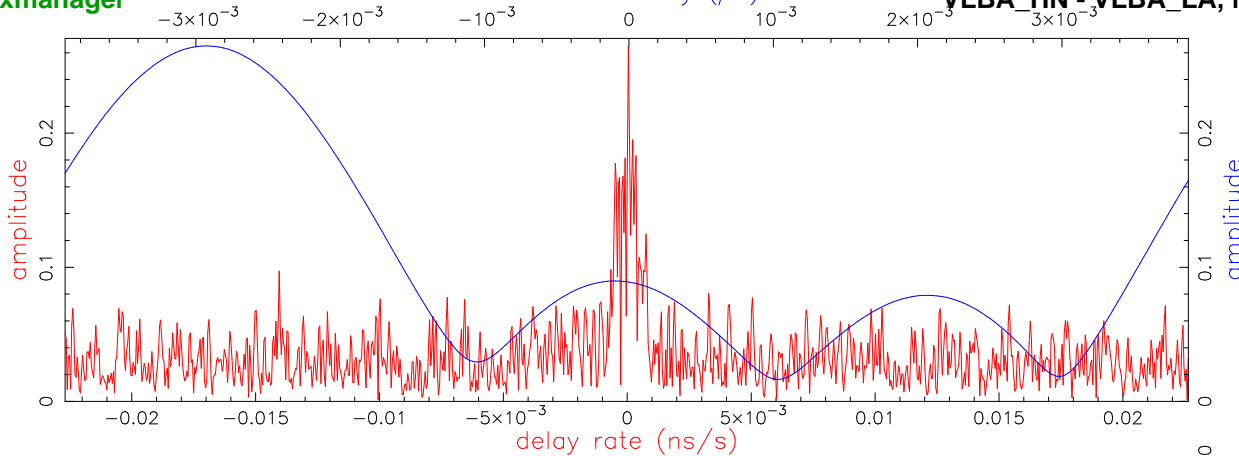
fxmanager

0106+013.1V25LX, No0082, hl

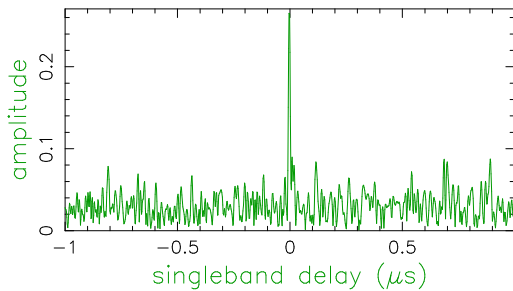
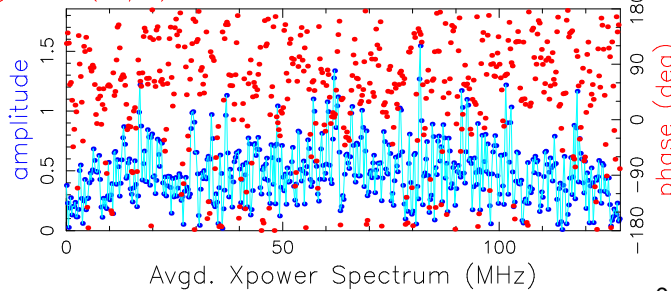
VLBA\_HN - VLBA\_LA, fgroup Q, pol LR

multiband delay ( $\mu$ s)

Fringe quality 9

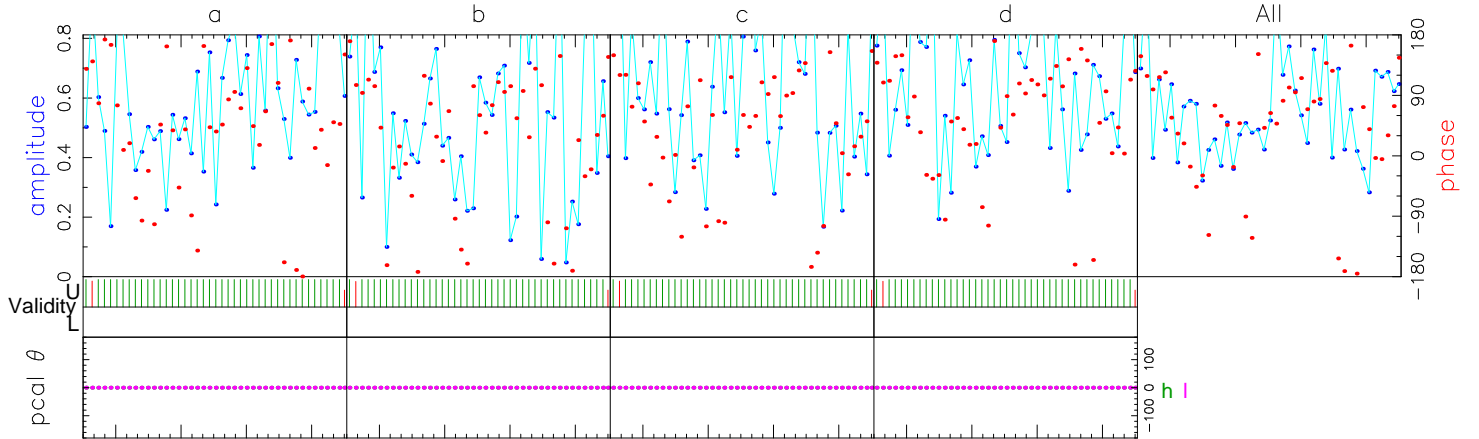


SNR 11.5  
Int time 239.620  
Amp 0.271  
Phase 81.4  
PFD 5.2e-22  
Delays (us)  
SBD -0.002970  
MBD -0.003014  
Fringe rate (Hz)  
0.001404  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

singleband delay ( $\mu$ s)

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132948  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    |            |     |
| h   | 1000     | 1000     | 1000     | 1000     |            |     |
| l   | 1000     | 1000     | 1000     | 1000     |            |     |
| h:l | 0:0      | 0:0      | 0:0      | 0:0      |            |     |
| h:l | 0:0      | 0:0      | 0:0      | 0:0      |            |     |
| h   | 1000     | 1000     | 1000     | 1000     |            |     |
| l   | 1000     | 1000     | 1000     | 1000     |            |     |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    |            |     |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    |            |     |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -7.40668947520E+03 | Apriori delay (usec)     | -7.40668646128E+03 | Resid mbdelay (usec) | -3.01391E-03 | +/- | 9.7E-05 |
| Sband delay (usec)      | -7.40668943178E+03 | Apriori clock (usec)     | 5.3579369E+00      | Resid sbdelay (usec) | -2.97050E-03 | +/- | 3.8E-04 |
| Phase delay (usec)      | -7.40668645603E+03 | Apriori clockrate (us/s) | 4.1600003E-07      | Resid phdelay (usec) | 5.25296E-06  | +/- | 6.5E-07 |
| Delay rate (us/s)       | -4.64050190912E-01 | Apriori rate (us/s)      | -4.64050223534E-01 | Resid rate (us/s)    | 3.26220E-08  | +/- | 4.7E-09 |
| Total phase (deg)       | -24.3              | Apriori accel (us/s/s)   | 3.97343230569E-05  | Resid phase (deg)    | 81.4         | +/- | 10.0    |

|              |       |        |                  |                 |  |                       |        |       |  |  |
|--------------|-------|--------|------------------|-----------------|--|-----------------------|--------|-------|--|--|
|              | RMS   | Theor. | Amplitude        | 0.271 +/- 0.024 | Pcal mode: MANUAL, MANUAL                                    | PC period (AP's) 5, 5 |        |       |  |  |
| ph/seg (deg) | 73.2  | 32.8   | Search (1024X16) | 0.259           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                       | sb window (us)        | -1.000 | 1.000 |  |  |
| amp/seg (%)  | 122.9 | 57.2   | Interp.          | 0.000           | Bits/sample: 2x2      SampCntNorm: enabled                   | mb window (us)        | -0.004 | 0.004 |  |  |
| ph/frq (deg) | 6.9   | 10.0   | Inc. seg. avg.   | 0.482           | Sample rate(MSamp/s): 256                                    | dr window (ns/s)      | -0.023 | 0.023 |  |  |
| amp/frq (%)  | 14.9  | 17.5   | Inc. frq. avg.   | 0.261           | Data rate(Mb/s): 2048      nlags: 512      t_cohere infinite | ion window (TEC)      | 0.00   | 0.00  |  |  |

h: az 247.1 el 25.0 pa 42.6 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 1345.046 473.122 simultaneous interpolator

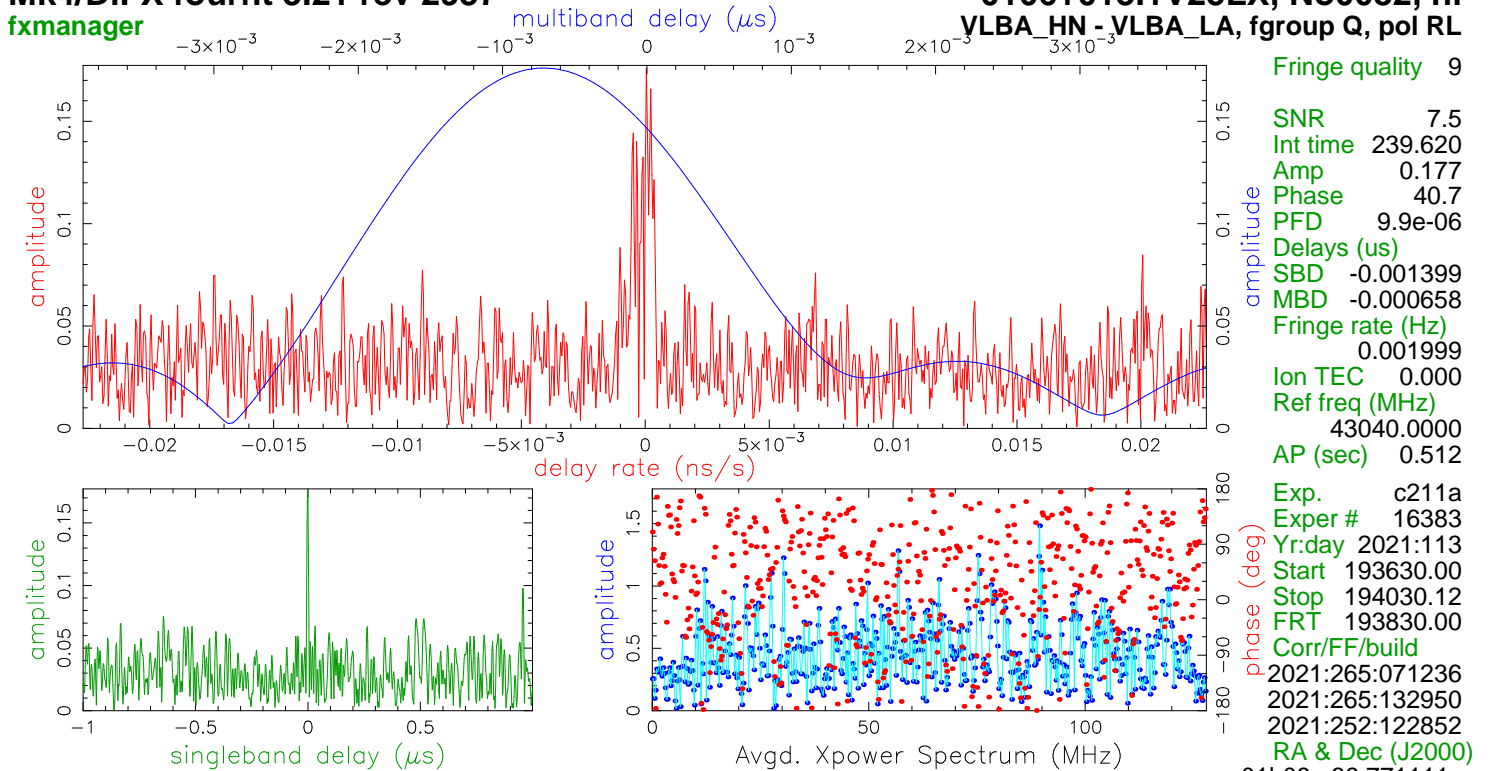
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hl.Q.130.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

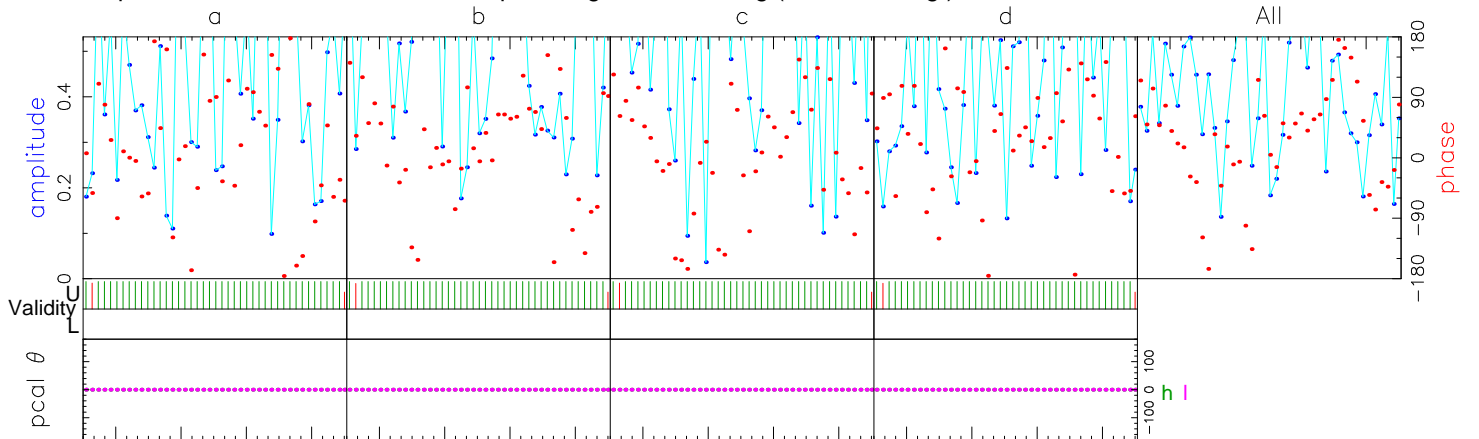
fxmanager

0106+013.1V25LX, No0082, hl

VLBA\_HN - VLBA\_LA, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   | 512.3 |
| h   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| h:l | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| l   | 1000     | 1000     | 1000     | 1000     |            |       |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| l   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -7.40668711976E+03 | Apriori delay (usec)     | -7.40668646128E+03 | Resid mbdelay (usec) | -6.58475E-04 | +/- | 1.5E-04 |
| Sband delay (usec)      | -7.40668786053E+03 | Apriori clock (usec)     | 5.3579369E+00      | Resid sbdelay (usec) | -1.39925E-03 | +/- | 5.7E-04 |
| Phase delay (usec)      | -7.40668645866E+03 | Apriori clockrate (us/s) | 4.1600003E-07      | Resid phdelay (usec) | 2.62479E-06  | +/- | 9.9E-07 |
| Delay rate (us/s)       | -4.64050177082E-01 | Apriori rate (us/s)      | -4.64050223534E-01 | Resid rate (us/s)    | 4.64514E-08  | +/- | 7.1E-09 |
| Total phase (deg)       | -65.0              | Apriori accel (us/s/s)   | 3.97343230569E-05  | Resid phase (deg)    | 40.7         | +/- | 15.3    |

|              |       |                  |       |                |                 |  |                               |
|--------------|-------|------------------|-------|----------------|-----------------|--|-------------------------------|
| ph/seg (deg) | 76.0  | Theor.           | 50.1  | Amplitude      | 0.177 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 149.5 | Search (1024X16) | 0.173 | Interp.        | 0.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 9.1   | Inc. seg. avg.   | 0.294 | Inc. frq. avg. | 0.171           | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 19.8  | Inc. frq. avg.   | 0.171 |                |                 | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |       |                  |       |                |                 | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

h: az 247.1 el 25.0 pa 42.6 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 1345.046 473.122 simultaneous interpolator

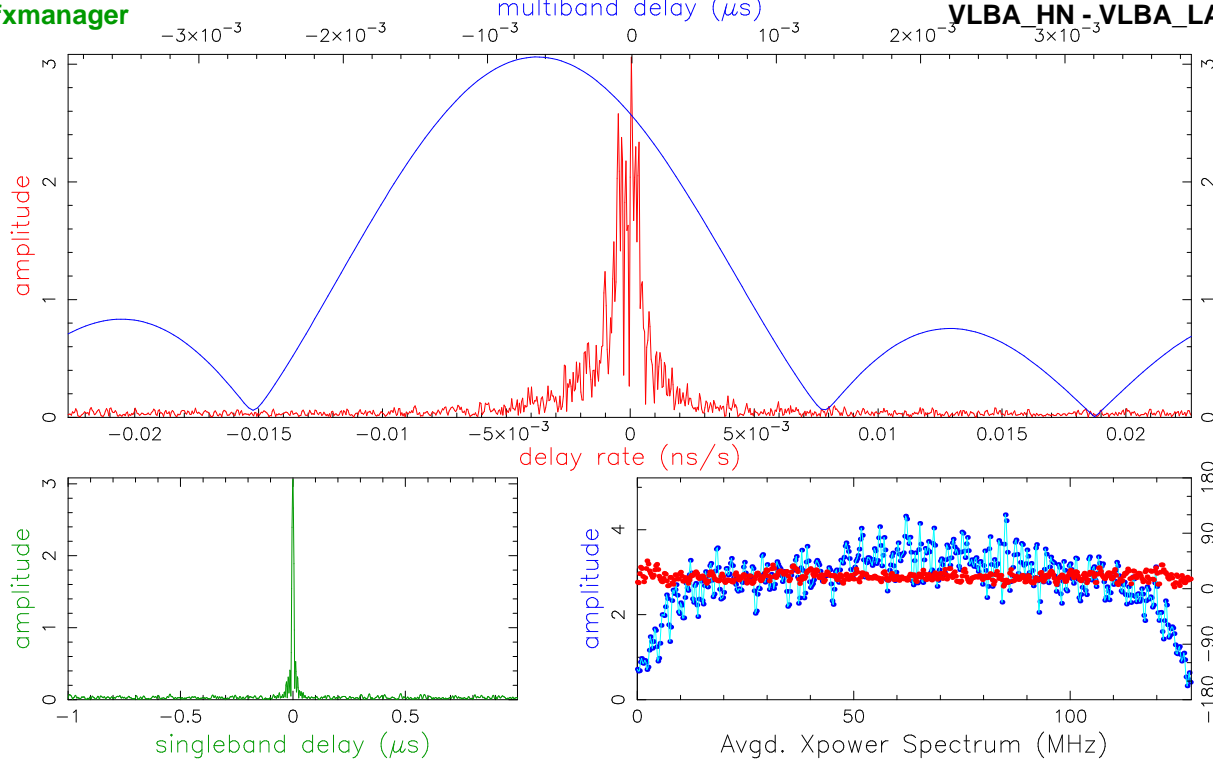
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hl.Q.150.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hl

VLBA\_HN - VLBA\_LA, fgroup Q, pol LL



Fringe quality 5

SNR 130.5

Int time 239.620

Amp 3.082

Phase 21.9

PFD 0.0e+00

Delays (us)

SBD -0.000590

MBD -0.000683

Fringe rate (Hz)

0.001580

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132943

2021:252:122852

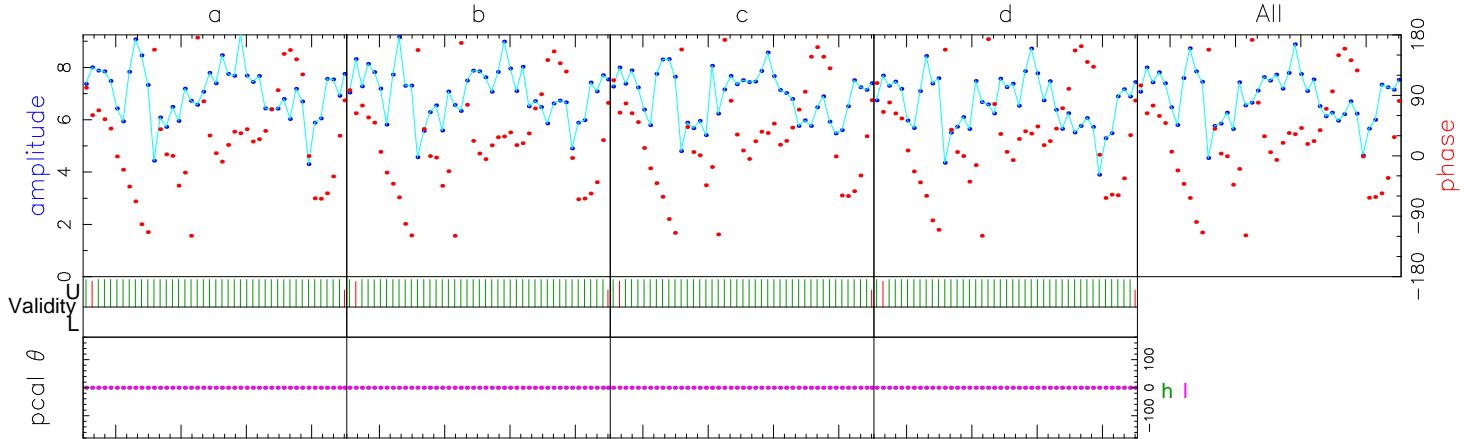
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 21.9  |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 3.1   |
| l   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.7 |
| h:l | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:l | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| l   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| l   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -7.40668714463E+03 | Apriori delay (usec)     | -7.40668646128E+03 | Resid mbdelay (usec) | -6.83350E-04 | +/- | 8.5E-06 |
| Sband delay (usec)      | -7.40668705128E+03 | Apriori clock (usec)     | 5.3579369E+00      | Resid sbdelay (usec) | -5.90000E-04 | +/- | 3.3E-05 |
| Phase delay (usec)      | -7.40668645987E+03 | Apriori clockrate (us/s) | 4.1600003E-07      | Resid phdelay (usec) | 1.41154E-06  | +/- | 5.7E-08 |
| Delay rate (us/s)       | -4.64050186822E-01 | Apriori rate (us/s)      | -4.64050223534E-01 | Resid rate (us/s)    | 3.67118E-08  | +/- | 4.1E-10 |
| Total phase (deg)       | -83.8              | Apriori accel (us/s/s)   | 3.97343230569E-05  | Resid phase (deg)    | 21.9         | +/- | 0.9     |

|              |       |        |                  |                 |  |                              |                  |        |       |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS   | Theor. | Amplitude        | 3.082 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 73.1  | 2.9    | Search (1024X16) | 2.993           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 127.0 | 5.0    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 2.4   | 0.9    | Inc. seg. avg.   | 6.872           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 3.5   | 1.5    | Inc. frq. avg.   | 3.061           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

h: az 247.1 el 25.0 pa 42.6 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 1345.046 473.122 simultaneous interpolator

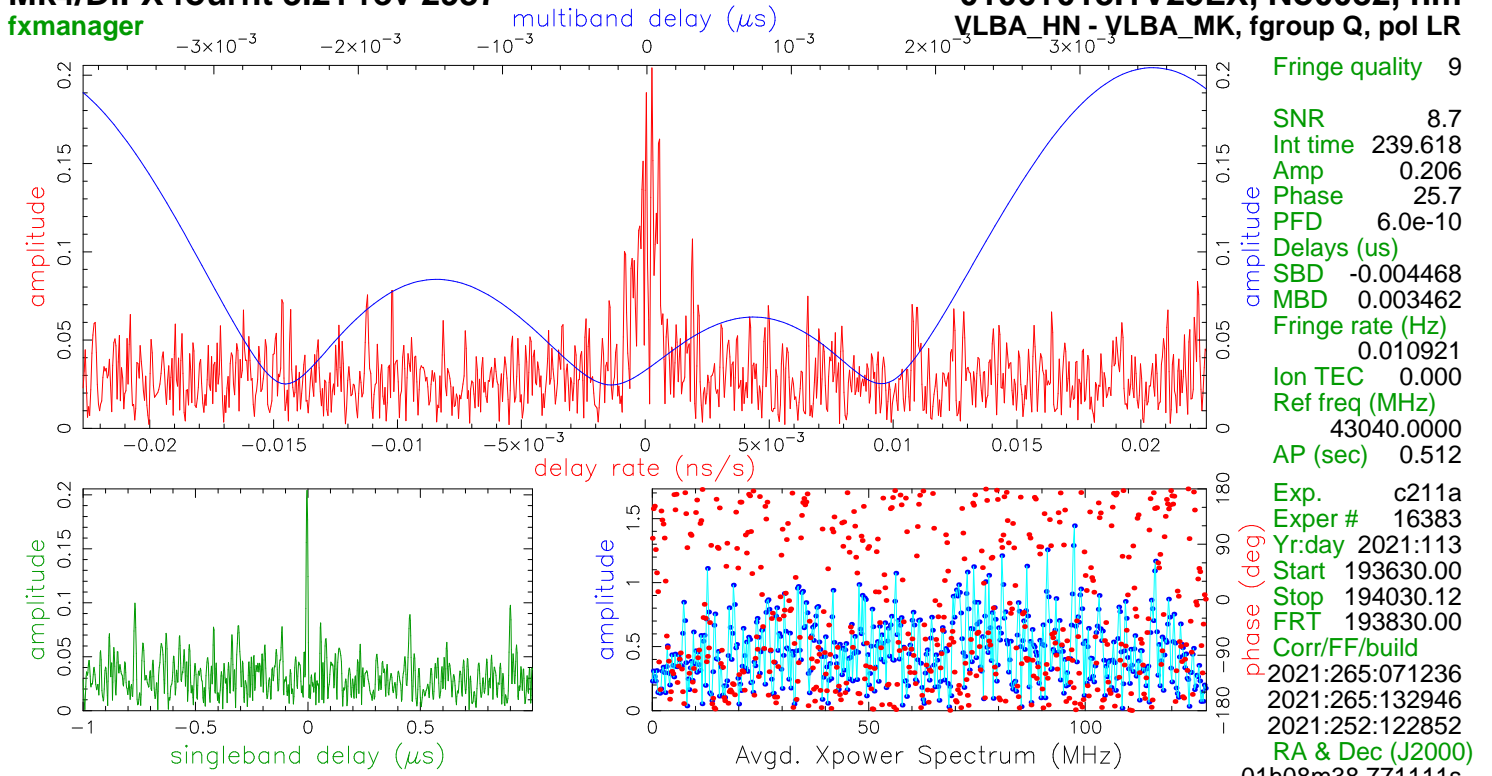
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hl.Q.81.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hm

VLBA\_HN - VLBA\_MK, fgroup Q, pol LR



Fringe quality 9

SNR 8.7

Int time 239.618

Amp 0.206

Phase 25.7

PFD 6.0e-10

Delays (us)

SBD -0.004468

MBD 0.003462

Fringe rate (Hz)

0.010921

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132946

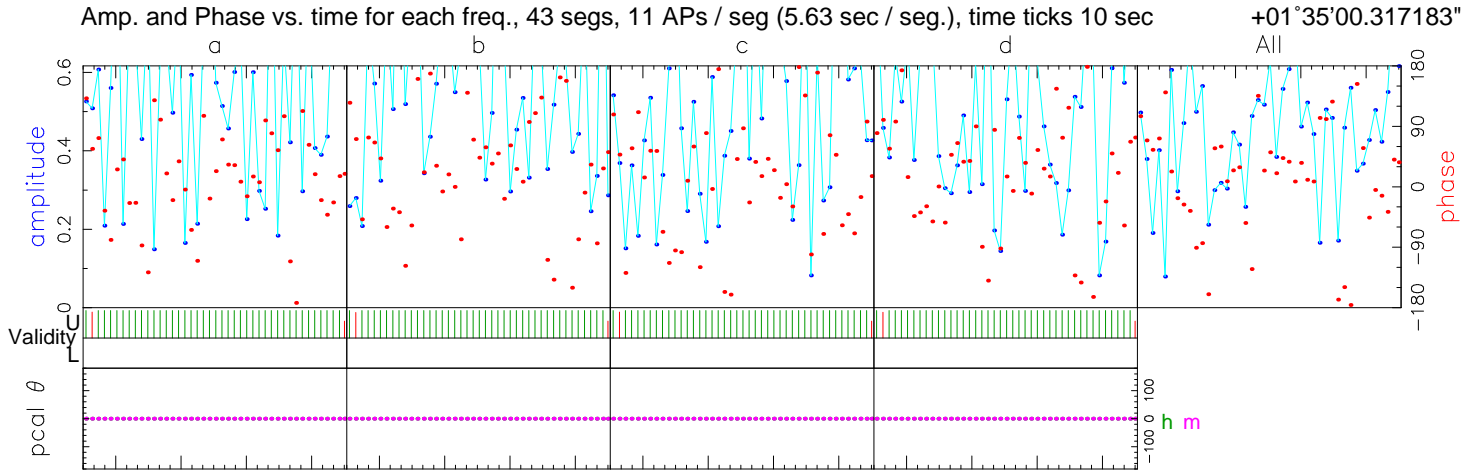
2021:252:122852

RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 25.7  |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.2   |
| m   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 510.7 |
| h:m | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:m | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| m   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| m   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -9.33928185165E+03 | Apriori delay (usec)     | -9.33927750159E+03 | Resid mbdelay (usec) | 3.46243E-03  | +/- | 1.3E-04 |
| Sband delay (usec)      | -9.33928196959E+03 | Apriori clock (usec)     | -1.2864201E+01     | Resid sbdelay (usec) | -4.46800E-03 | +/- | 4.9E-04 |
| Phase delay (usec)      | -9.33927749993E+03 | Apriori clockrate (us/s) | -1.8799999E-07     | Resid phdelay (usec) | 1.66040E-06  | +/- | 8.5E-07 |
| Delay rate (us/s)       | -1.60134561146E+00 | Apriori rate (us/s)      | -1.60134586521E+00 | Resid rate (us/s)    | 2.53747E-07  | +/- | 6.1E-09 |
| Total phase (deg)       | -214.8             | Apriori accel (us/s/s)   | 5.07316617948E-05  | Resid phase (deg)    | 25.7         | +/- | 13.2    |

|              |          |             |                           |  |                       |                      |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 79.3 | Theor. 43.2 | Amplitude 0.206 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 79.3     | 43.2        | Search (1024X16) 0.198    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 137.9    | 75.4        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 7.7      | 13.2        | Inc. seg. avg. 0.346      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)     | -0.023 0.023               |
|              | 23.2     | 23.0        | Inc. frq. avg. 0.200      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

h: az 247.1 el 25.0 pa 42.6 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 4604.605 1572.644 simultaneous interpolator

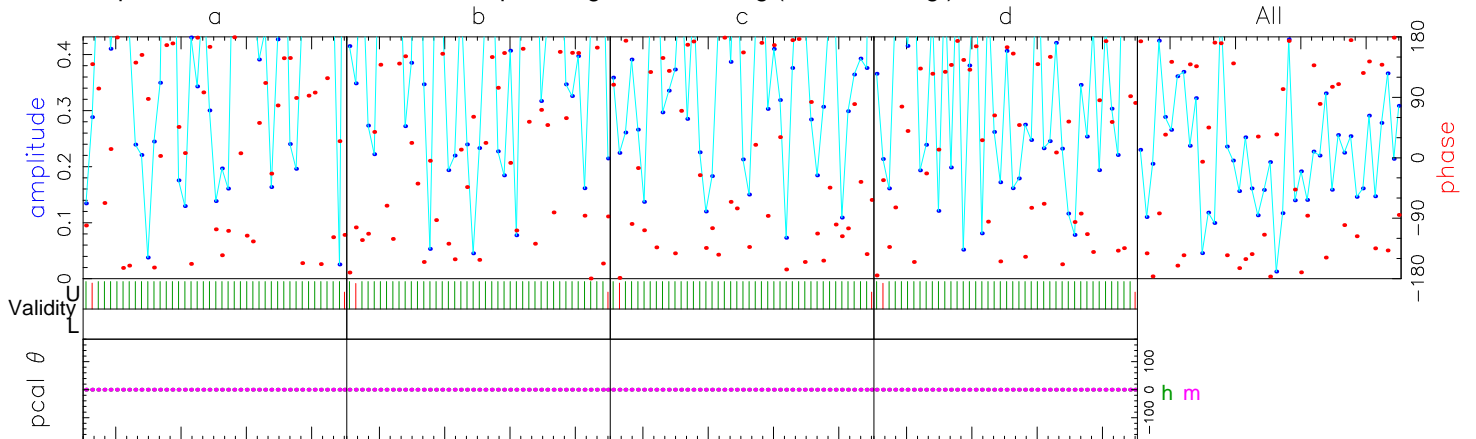
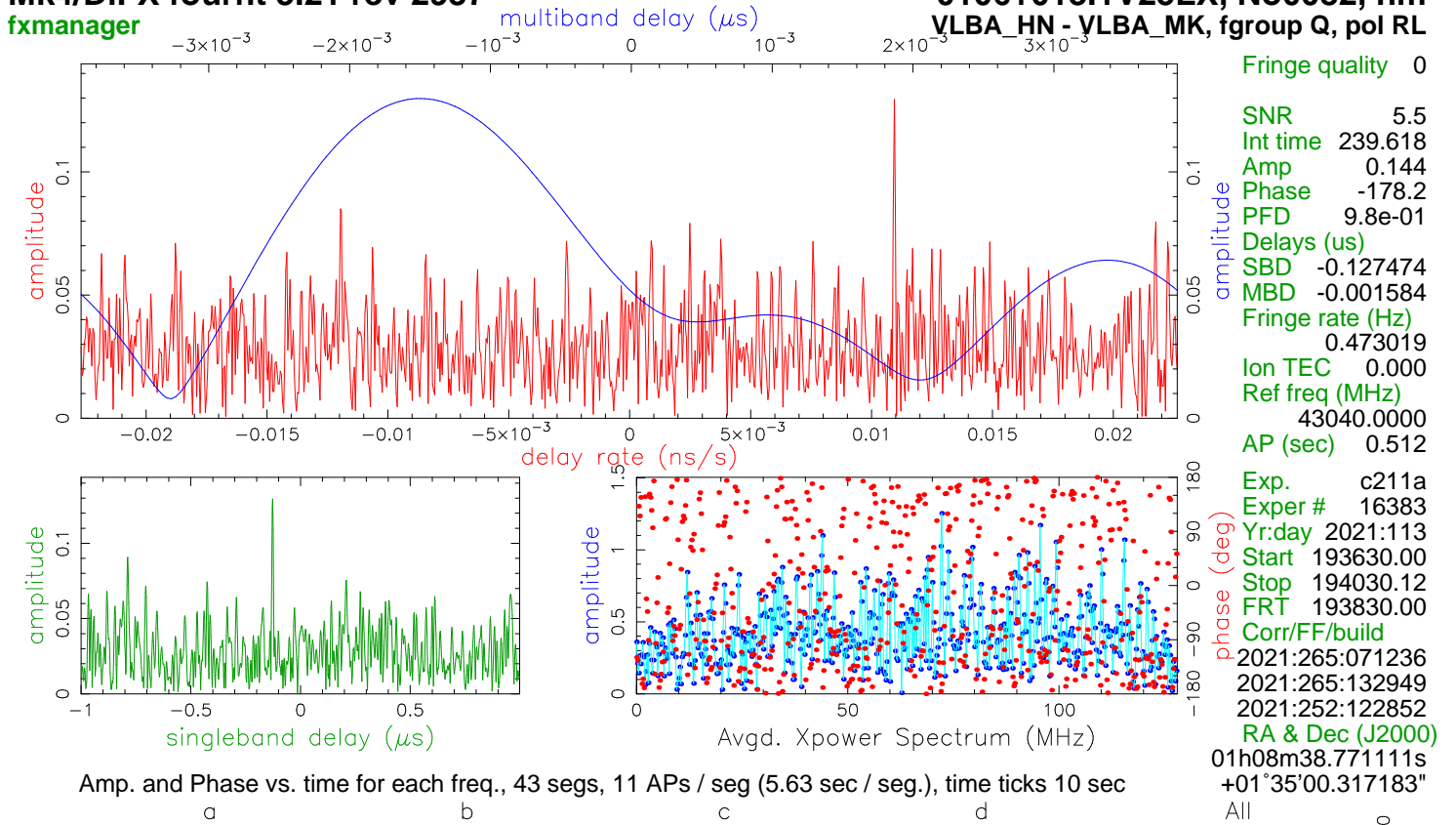
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hm.Q.112.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hm

VLBA\_HN - VLBA\_MK, fgroup Q, pol RL



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
| U/L | 167.7    | -170.5   | -150.9   | 165.1    | Phase      | -178.2 |
| h   | 0.2      | 0.1      | 0.2      | 0.1      | Ampl.      | 0.1    |
| m   | 109.8    | 619.1    | 363.6    | 353.9    | Sbd box    | 447.7  |
| h   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| m   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| h:m | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| h:m | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| h   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| h   | 1000     | 1000     | 1000     | 1000     |            |        |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| m   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -9.33940408591E+03 | Apriori delay (usec)     | -9.33927750159E+03 | Resid mbdelay (usec) | -1.58432E-03 | +/- | 2.0E-04 |
| Sband delay (usec)      | -9.33940497521E+03 | Apriori clock (usec)     | -1.2864201E+01     | Resid sbdelay (usec) | -1.27474E-01 | +/- | 7.8E-04 |
| Phase delay (usec)      | -9.33927751308E+03 | Apriori clockrate (us/s) | -1.8799999E-07     | Resid phdelay (usec) | -1.14978E-05 | +/- | 1.3E-06 |
| Delay rate (us/s)       | -1.60133487500E+00 | Apriori rate (us/s)      | -1.60134586521E+00 | Resid rate (us/s)    | 1.09902E-05  | +/- | 9.7E-09 |
| Total phase (deg)       | -58.7              | Apriori accel (us/s/s)   | 5.07316617948E-05  | Resid phase (deg)    | -178.2       | +/- | 20.8    |

|              |          |             |                           |  |                       |                      |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 72.3 | Theor. 68.1 | Amplitude 0.144 +/- 0.026 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 72.3     | 68.1        | Search (1024X16) 0.129    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 106.3    | 118.8       | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 25.3     | 20.8        | Inc. seg. avg. 0.145      | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
|              | 24.9     | 36.2        | Inc. frq. avg. 0.141      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

h: az 247.1 el 25.0 pa 42.6 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 4604.605 1572.644 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hm.Q.138.1V25LX

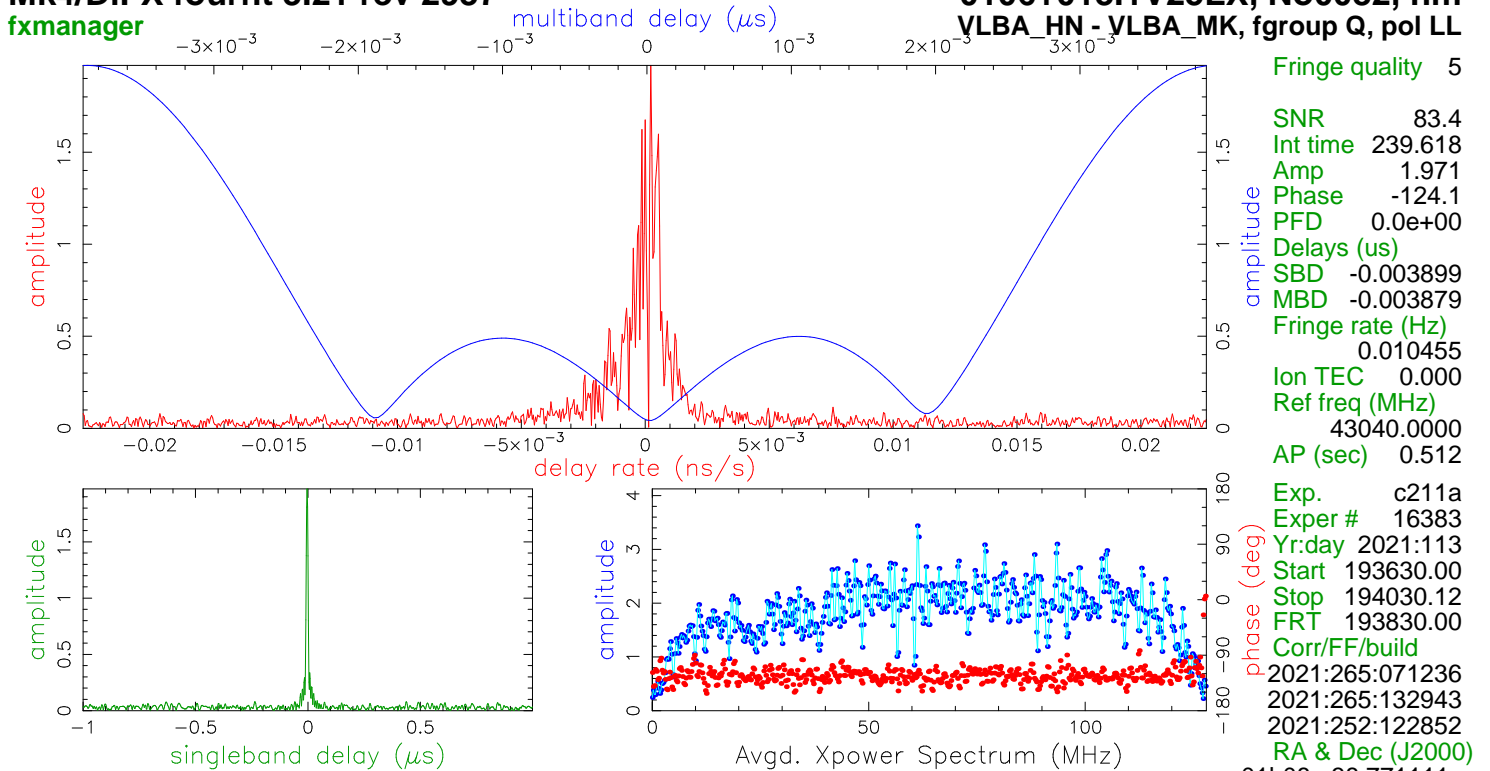


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hm

VLBA\_HN - VLBA\_MK, fgroup Q, pol LL



Fringe quality 5

SNR 83.4

Int time 239.618

Amp 1.971

Phase -124.1

PFD 0.0e+00

Delays (us)

SBD -0.003899

MBD -0.003879

Fringe rate (Hz)

0.010455

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132943

2021:252:122852

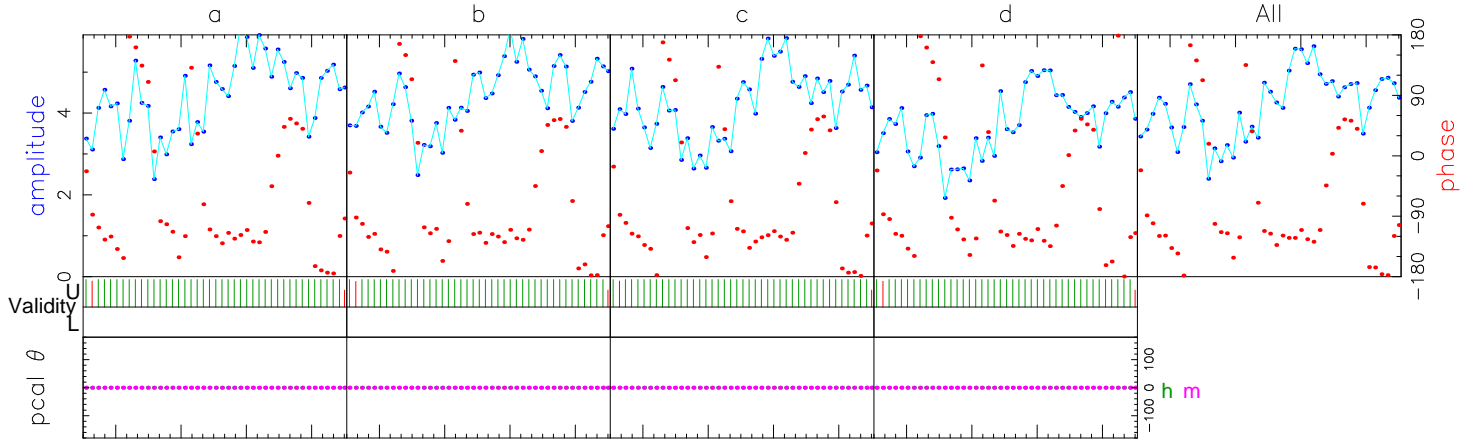
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----------|----------|----------|----------|------------|--------|
| -123.5    | -124.8   | -124.3   | -123.7   | Phase      | -124.1 |
| 2.0       | 2.1      | 2.0      | 1.8      | Ampl.      | 2.0    |
| 511.0     | 511.1    | 510.9    | 511.1    | Sbd box    | 511.0  |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |        |
| h 1000    | 1000     | 1000     | 1000     | PC freqs   |        |
| m 1000    | 1000     | 1000     | 1000     | PC freqs   |        |
| h:m 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |        |
| h:m 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| h 1000    | 1000     | 1000     | 1000     | PC amp     |        |
| h 1000    | 1000     | 1000     | 1000     |            |        |
| h Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| m Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|           |          |          |          | Chan ids   |        |
|           |          |          |          | Tracks     |        |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -9.33928138033E+03 | Apriori delay (usec)     | -9.33927750159E+03 | Resid mbdelay (usec) | -3.87875E-03 | +/- | 1.3E-05 |
| Sband delay (usec)      | -9.33928140021E+03 | Apriori clock (usec)     | -1.2864201E+01     | Resid sbdelay (usec) | -3.89863E-03 | +/- | 5.2E-05 |
| Phase delay (usec)      | -9.33927750960E+03 | Apriori clockrate (us/s) | -1.8799999E-07     | Resid phdelay (usec) | -8.00978E-06 | +/- | 8.9E-08 |
| Delay rate (us/s)       | -1.60134562230E+00 | Apriori rate (us/s)      | -1.60134586521E+00 | Resid rate (us/s)    | 2.42904E-07  | +/- | 6.4E-10 |
| Total phase (deg)       | -4.7               | Apriori accel (us/s/s)   | 5.07316617948E-05  | Resid phase (deg)    | -124.1       | +/- | 1.4     |

|              |       |        |                  |                 |  |                              |                  |        |       |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS   | Theor. | Amplitude        | 1.971 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 77.9  | 4.5    | Search (1024X16) | 1.807           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 119.2 | 7.9    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 0.7   | 1.4    | Inc. seg. avg.   | 4.176           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 6.3   | 2.4    | Inc. frq. avg.   | 1.971           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

h: az 247.1 el 25.0 pa 42.6 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 4604.605 1572.644 simultaneous interpolator

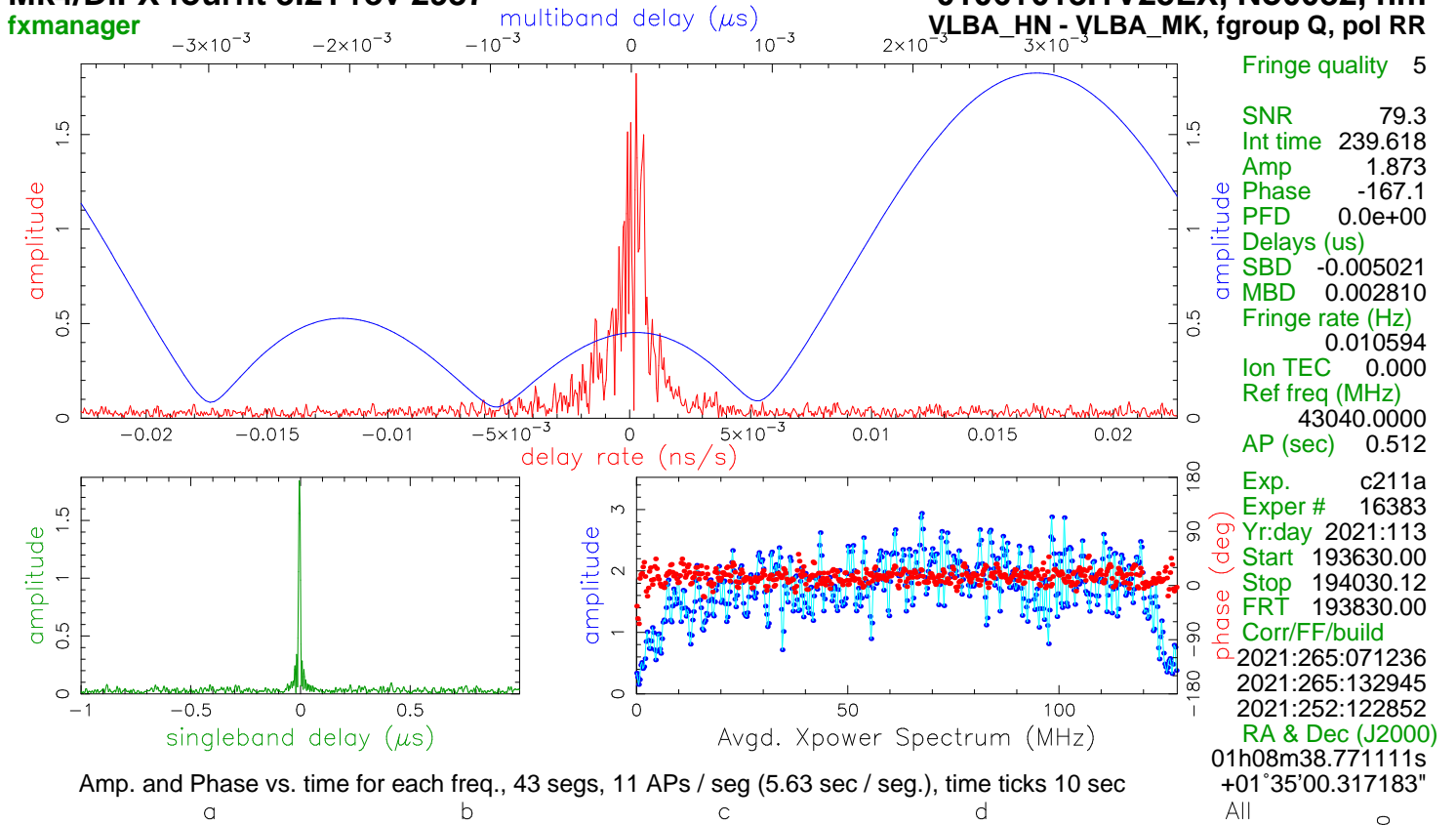
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Mk4/DiFX fourfit 3.21 rev 2937

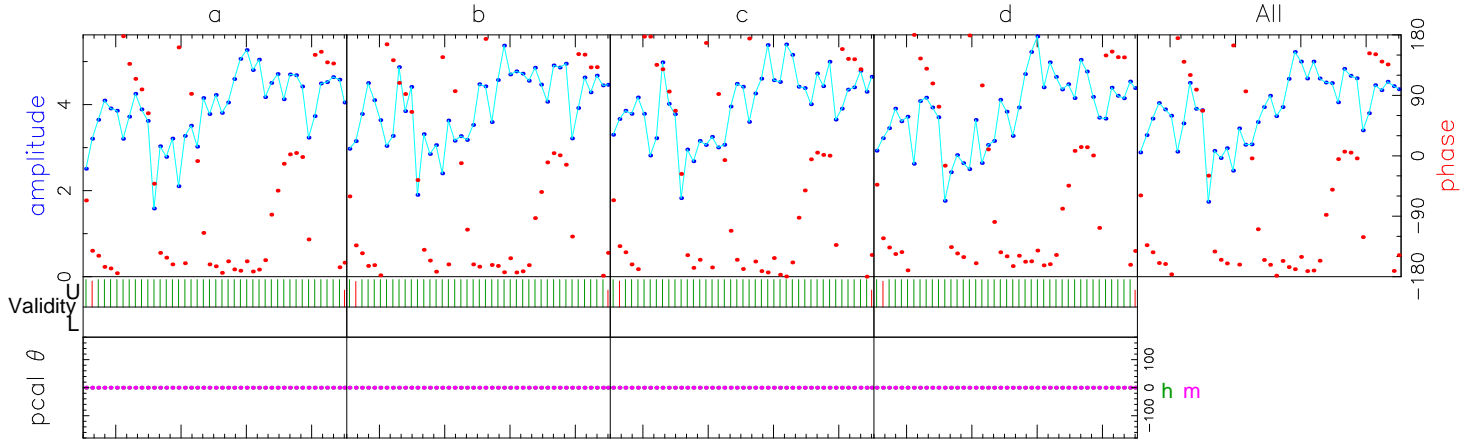
fxmanager

0106+013.1V25LX, No0082, hm

VLBA\_HN - VLBA\_MK, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



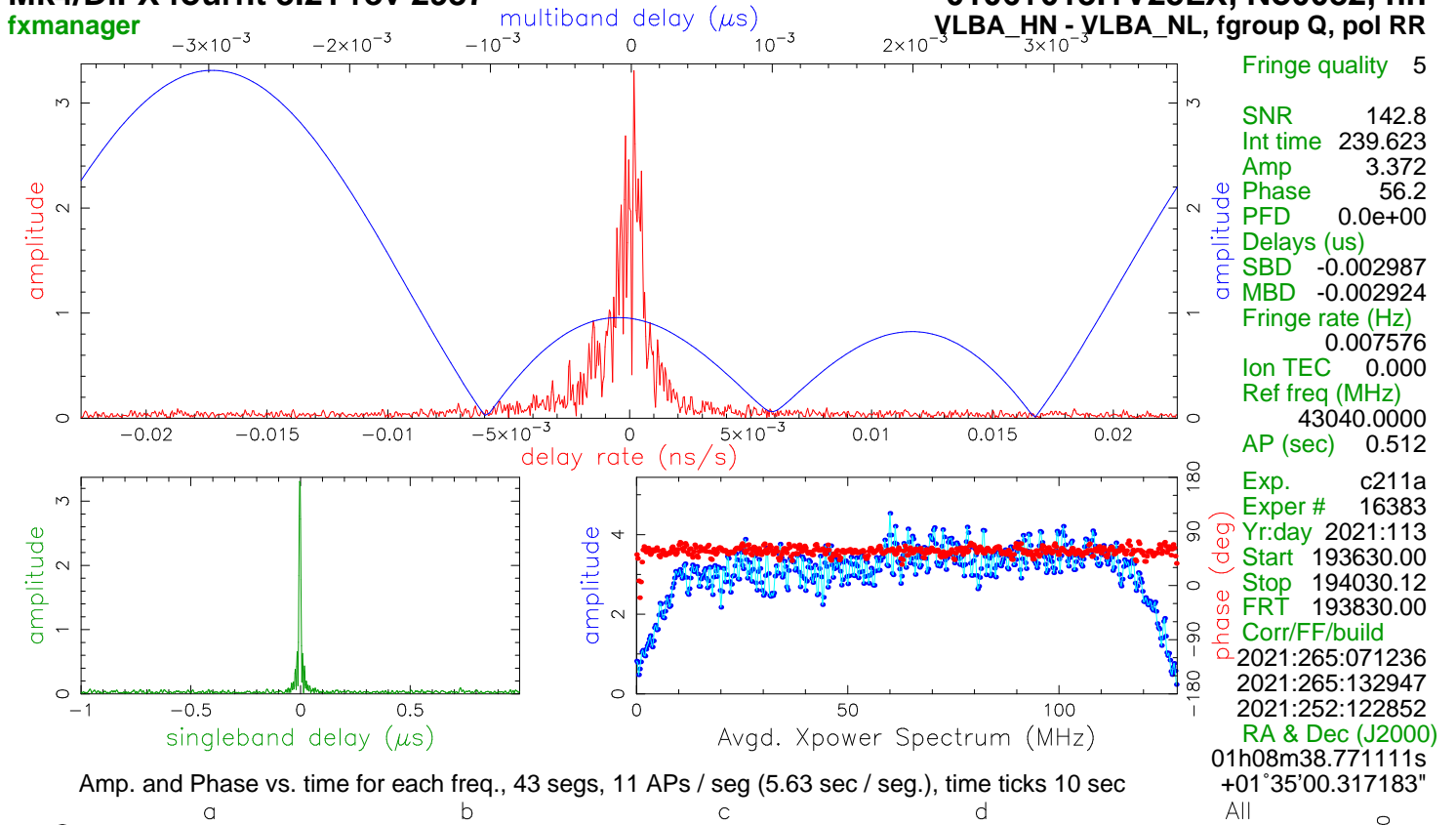
|                               |  |   |                    |  |                              |                  |              |
|-------------------------------|--|---|--------------------|--|------------------------------|------------------|--------------|
| 42912.00                      | 43040.00   | 43168.00  | 43296.00           | Freq (MHz)                             | All                          |                  |              |
| -168.6                        | -170.6   | -171.0  | -157.5             | Phase                                  | -167.1                       |                  |              |
| 1.9                           | 1.8  | 1.9   | 1.7                | Ampl.                                  | 1.8                          |                  |              |
| 510.3                         | 510.4  | 510.6   | 510.4              | Sbd box                                | 510.4                        |                  |              |
| U/L 469/0                     | 469/0  | 469/0   | 469/0              | APs used                               |                              |                  |              |
| h 1000                        | 1000   | 1000  | 1000               | PC freqs                               |                              |                  |              |
| m 1000                        | 1000   | 1000  | 1000               | PC freqs                               |                              |                  |              |
| h:m 0:0                       | 0:0  | 0:0   | 0:0                | PC phase                               |                              |                  |              |
| h:m 0:0                       | 0:0  | 0:0   | 0:0                | Manl PC                                |                              |                  |              |
| h 1000                        | 1000   | 1000  | 1000               | PC amp                                 |                              |                  |              |
| m 1000                        | 1000   | 1000  | 1000               |  |                              |                  |              |
| h Q00UR                       | Q01UR  | Q02UR   | Q03UR              | Chan ids                               |                              |                  |              |
| m Q00UR                       | Q01UR  | Q02UR   | Q03UR              | Tracks                                 |                              |                  |              |
|                               |  |   |                    | Chan ids                               |                              |                  |              |
|                               |  |   |                    | Tracks                                 |                              |                  |              |
| Group delay (usec)(sbd)       | -9.33928250375E+03                                       | Apriori delay (usec)  | -9.33927750159E+03 | Resid mbdelay (usec)                   | 2.81034E-03                  | +/- 1.4E-05      |              |
| Sband delay (usec)            | -9.33928252271E+03                                       | Apriori clock (usec)  | -1.2864201E+01     | Resid sbdelay (usec)                   | -5.02113E-03                 | +/- 5.4E-05      |              |
| Phase delay (usec)            | -9.33927751237E+03                                       | Apriori clockrate (us/s)                                      | -1.8799999E-07     | Resid phdelay (usec)                   | -1.07856E-05                 | +/- 9.3E-08      |              |
| Delay rate (us/s)             | -1.60134561906E+00                                       | Apriori rate (us/s)   | -1.60134586521E+00 | Resid rate (us/s)                      | 2.46151E-07                  | +/- 6.7E-10      |              |
| Total phase (deg)             | -47.7  | Apriori accel (us/s/s)  | 5.07316617948E-05  | Resid phase (deg)                      | -167.1                       | +/- 1.4          |              |
| RMS                           | Theor.   | Amplitude   | 1.873 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |              |
| ph/seg (deg)                  | 76.9   | Search (1024X16)  | 1.705              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000 1.000     |              |
| amp/seg (%)                   | 115.3  | Interp.   | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg)                  | 7.8  | Inc. seg. avg.  | 3.882              | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)                   | 4.4  | Inc. frq. avg.  | 1.829              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |
| h: az 247.1 el 25.0 pa 42.6   | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec)   | 4604.605 1572.644  | simultaneous interpolator              |                              |                  |              |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hm..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hm.Q.97.1V25LX |                    |  |                              |                  |              |

Mk4/DiFX fourfit 3.21 rev 2937

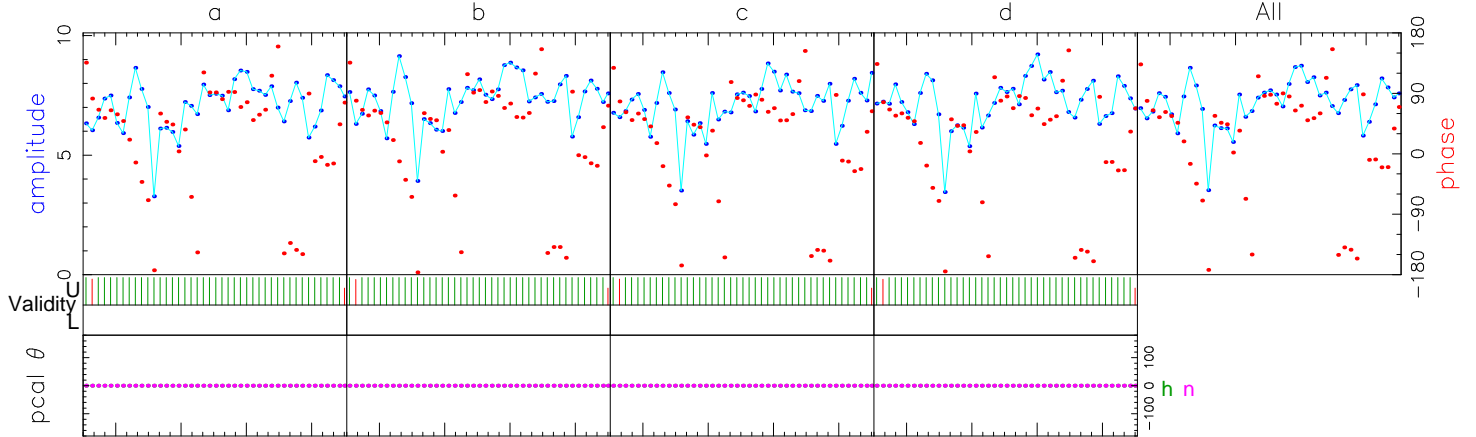
fxmanager

0106+013.1V25LX, No0082, hn

VLBA\_HN - VLBA\_NL, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



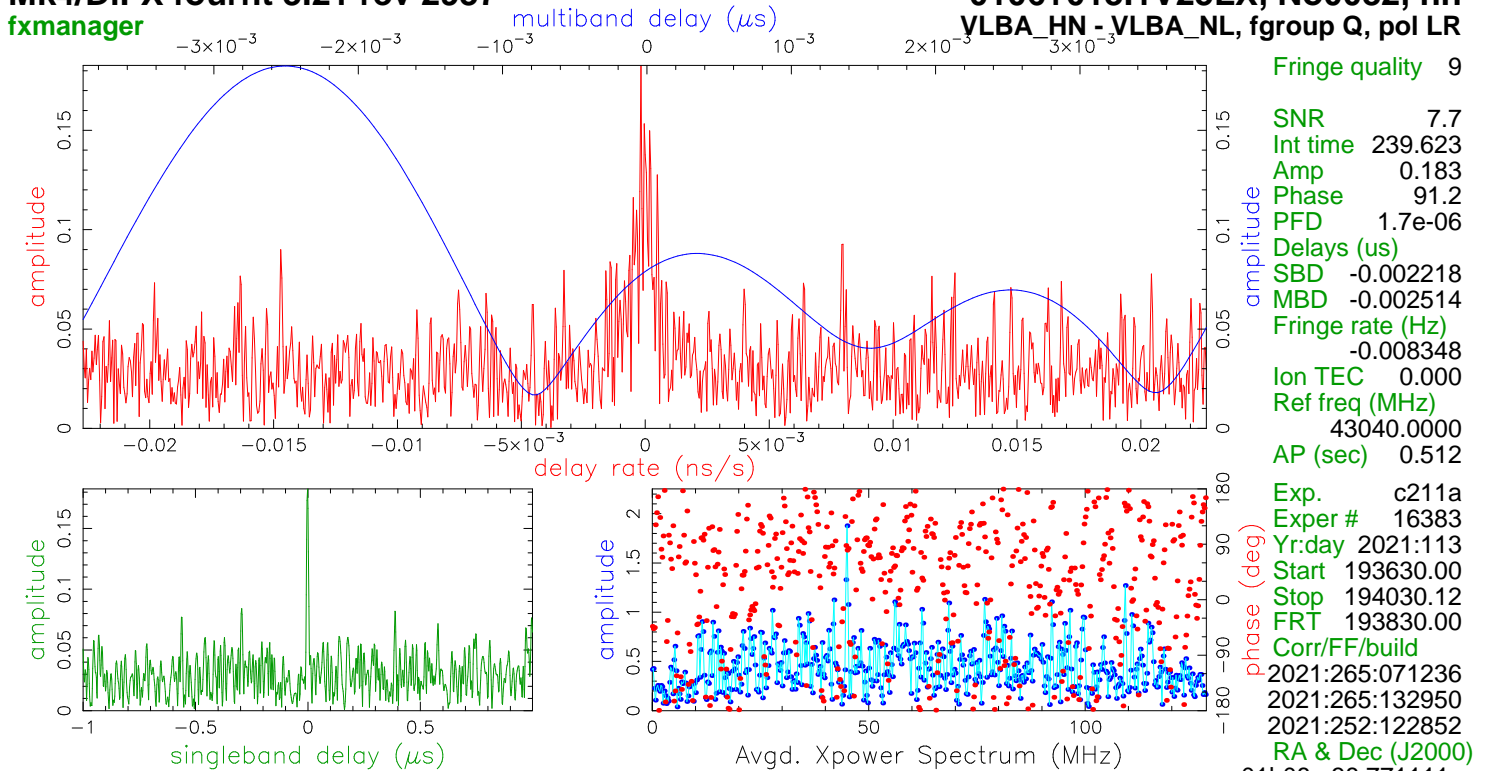
| 42912.00                      | 43040.00   | 43168.00   | 43296.00           | Freq (MHz)                             | All   |
|-------------------------------|--|--|--------------------|--|---|
| 59.1                          | 59.4   | 52.6   | 53.8               | Phase                                  | 56.2  |
| 3.2                           | 3.4  | 3.3  | 3.4                | Ampl.                                  | 3.3   |
| 511.5                         | 511.5  | 511.6  | 511.3              | Sbd box                                | 511.5   |
| U/L 469/0                     | 469/0  | 469/0  | 469/0              | APs used                               |   |
| h 1000                        | 1000   | 1000   | 1000               | PC freqs                               |   |
| n 1000                        | 1000   | 1000   | 1000               | PC freqs                               |   |
| h:n 0:0                       | 0:0  | 0:0  | 0:0                | PC phase                               |   |
| h:n 0:0                       | 0:0  | 0:0  | 0:0                | Manl PC                                |   |
| h 1000                        | 1000   | 1000   | 1000               | PC amp                                 |   |
| h 1000                        | 1000   | 1000   | 1000               |  |   |
| h Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Chan ids                               |   |
| n Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Tracks                                 |   |
|                               |  |  |                    | Chan ids                               |   |
|                               |  |  |                    | Tracks                                 |   |
| Group delay (usec)(sbd)       | -4.13292342900E+03                                       | Apriori delay (usec)   | -4.13292050523E+03 | Resid mbdelay (usec)                   | -2.92377E-03 +/- 7.8E-06                                |
| Sband delay (usec)            | -4.13292349185E+03                                       | Apriori clock (usec)   | -2.6215134E+00     | Resid sbdelay (usec)                   | -2.98663E-03 +/- 3.0E-05                                |
| Phase delay (usec)            | -4.13292050160E+03                                       | Apriori clockrate (us/s)                                       | -1.6999999E-07     | Resid phdelay (usec)                   | 3.62803E-06 +/- 5.2E-08                                 |
| Delay rate (us/s)             | -2.48543656981E-01                                       | Apriori rate (us/s)  | -2.48543833007E-01 | Resid rate (us/s)                      | 1.76026E-07 +/- 3.7E-10                                 |
| Total phase (deg)             | -140.0   | Apriori accel (us/s/s)   | 2.20124667438E-05  | Resid phase (deg)                      | 56.2 +/- 0.8  |
| RMS                           | Theor.   | Amplitude  | 3.372 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 75.1 2.6   | Search (1024X16)   | 3.295              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 116.4 4.6  | Interp.  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 4.3 0.8  | Inc. seg. avg.   | 7.172              | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 2.7 1.4  | Inc. frq. avg.   | 3.312              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| h: az 247.1 el 25.0 pa 42.6   | n: az 229.8 el 37.9 pa 34.8                              | u,v (fr/asec)  | 720.807 92.179     |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hn..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hn.Q.119.1V25LX |                    |  |   |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hn

VLBA\_HN - VLBA\_NL, fgroup Q, pol LR



Fringe quality 9

SNR 7.7

Int time 239.623

Amp 0.183

Phase 91.2

PFD 1.7e-06

Delays (us)

SBD -0.002218

MBD -0.002514

Fringe rate (Hz)

-0.008348

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132950

2021:252:122852

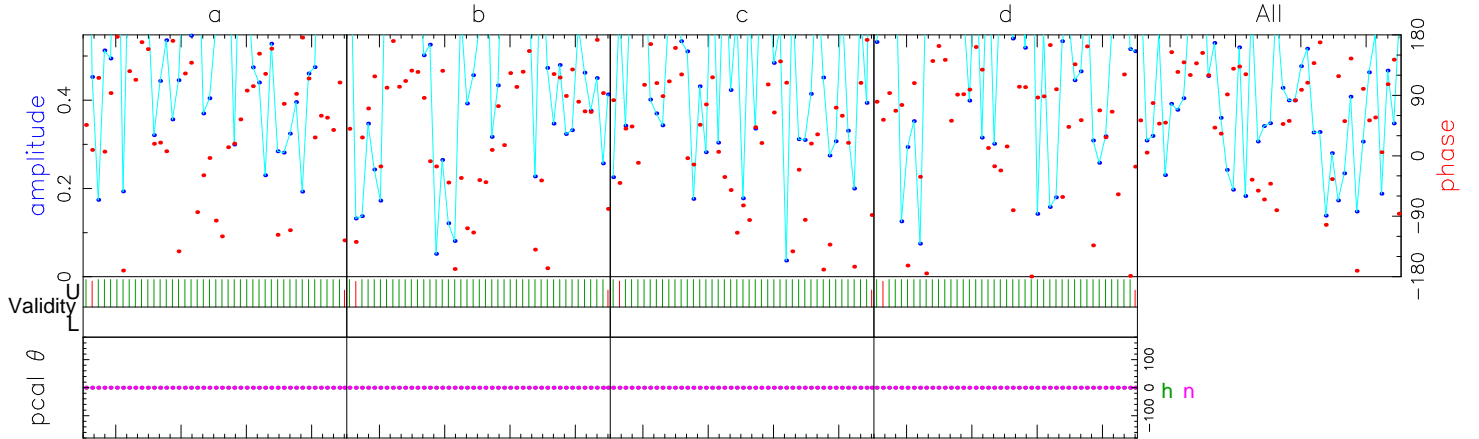
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 91.2  |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.2   |
| n   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 511.9 |
| h:n | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:n | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| h   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| n   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -4.13292301958E+03 | Apriori delay (usec)     | -4.13292050523E+03 | Resid mbdelay (usec) | -2.51435E-03 | +/- | 1.4E-04 |
| Sband delay (usec)      | -4.13292272298E+03 | Apriori clock (usec)     | -2.6215134E+00     | Resid sbdelay (usec) | -2.21775E-03 | +/- | 5.6E-04 |
| Phase delay (usec)      | -4.13292049934E+03 | Apriori clockrate (us/s) | -1.6999999E-07     | Resid phdelay (usec) | 5.88427E-06  | +/- | 9.6E-07 |
| Delay rate (us/s)       | -2.48544026958E-01 | Apriori rate (us/s)      | -2.48543833007E-01 | Resid rate (us/s)    | -1.93951E-07 | +/- | 6.9E-09 |
| Total phase (deg)       | -105.0             | Apriori accel (us/s/s)   | 2.20124667438E-05  | Resid phase (deg)    | 91.2         | +/- | 14.8    |

|              |          |             |                           |  |                       |                   |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|-------------------|----------------------------|
| ph/seg (deg) | RMS 76.3 | Theor. 48.6 | Amplitude 0.183 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)  | 76.3     | 48.6        | Search (1024X16) 0.171    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg) | 149.1    | 84.8        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)  | 21.1     | 14.8        | Inc. seg. avg. 0.295      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
|              | 24.6     | 25.9        | Inc. frq. avg. 0.181      | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

h: az 247.1 el 25.0 pa 42.6 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) 720.807 92.179 simultaneous interpolator

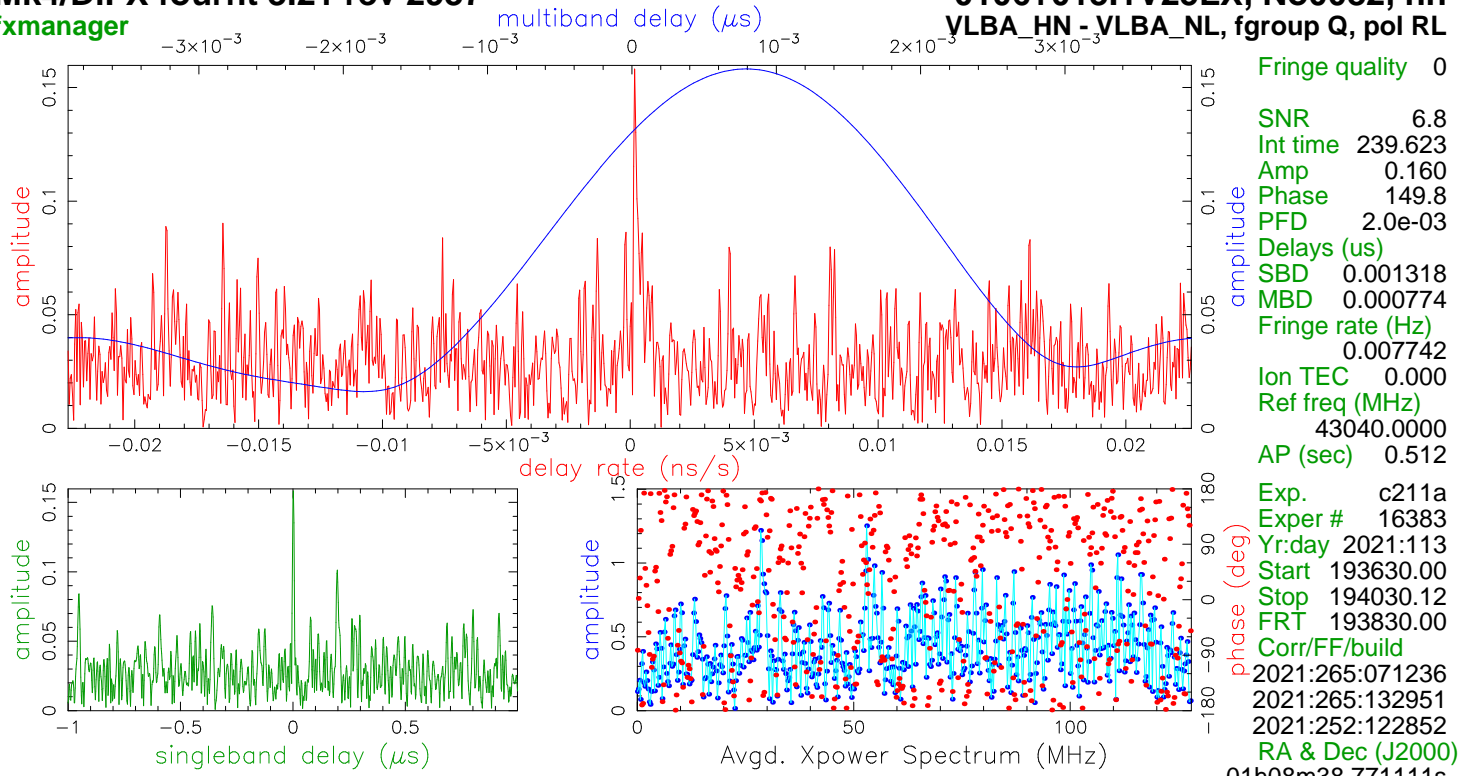
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hn.Q.144.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

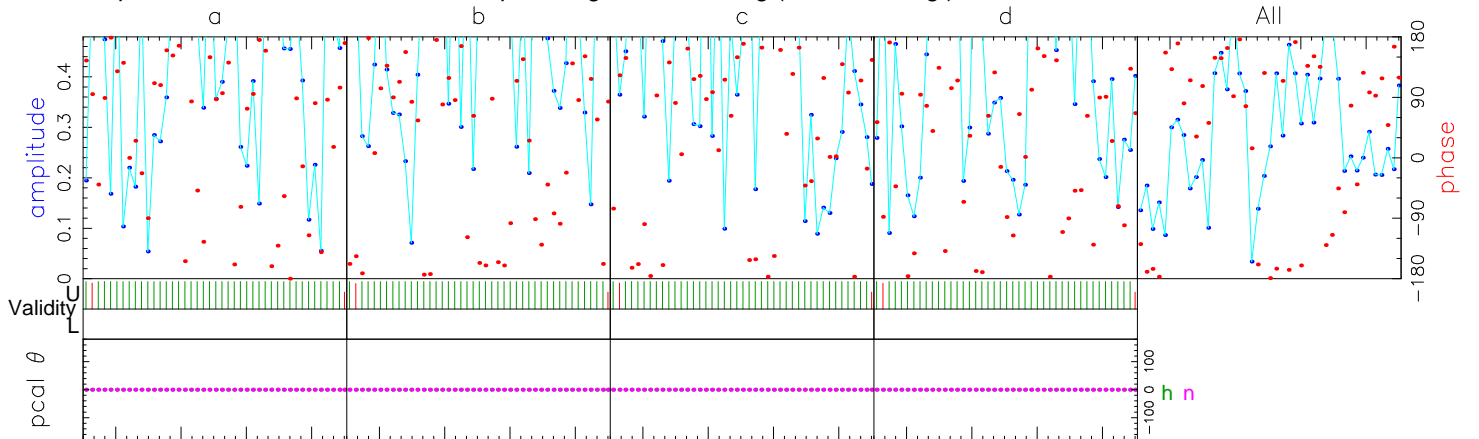
fxmanager

0106+013.1V25LX, No0082, hn

VLBA\_HN - VLBA\_NL, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 149.8 |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.2   |
| n   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 513.7 |
| h:n | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:n | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| h   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| n   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |             |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|-------------|-----|---------|
| Group delay (usec)(sbd) | -4.13291973150E+03 | Apriori delay (usec)     | -4.13292050523E+03 | Resid mbdelay (usec) | 7.73726E-04 | +/- | 1.6E-04 |
| Sband delay (usec)      | -4.13291918773E+03 | Apriori clock (usec)     | -2.6215134E+00     | Resid sbdelay (usec) | 1.31750E-03 | +/- | 6.4E-04 |
| Phase delay (usec)      | -4.13292049556E+03 | Apriori clockrate (us/s) | -1.6999999E-07     | Resid phdelay (usec) | 9.66578E-06 | +/- | 1.1E-06 |
| Delay rate (us/s)       | -2.48543653126E-01 | Apriori rate (us/s)      | -2.48543833007E-01 | Resid rate (us/s)    | 1.79881E-07 | +/- | 7.9E-09 |
| Total phase (deg)       | -46.4              | Apriori accel (us/s/s)   | 2.20124667438E-05  | Resid phase (deg)    | 149.8       | +/- | 16.9    |

|              |       |        |                  |                 |  |                              |                  |        |       |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS   | Theor. | Amplitude        | 0.160 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 68.0  | 55.6   | Search (1024X16) | 0.156           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 111.0 | 97.0   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 16.0  | 16.9   | Inc. seg. avg.   | 0.195           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 33.1  | 29.6   | Inc. frq. avg.   | 0.155           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

h: az 247.1 el 25.0 pa 42.6 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) 720.807 92.179 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hn.Q.159.1V25LX

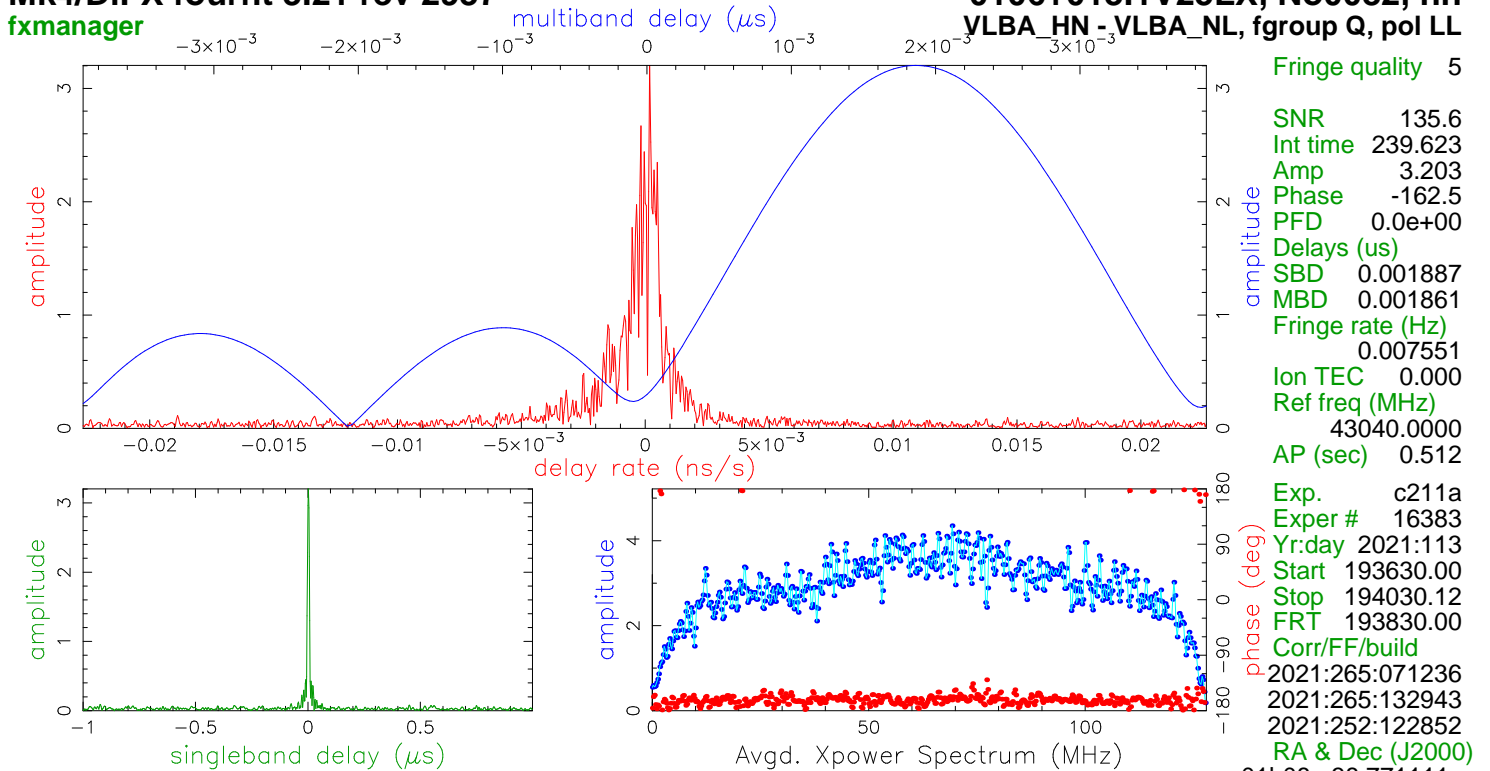


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, hn

VLBA\_HN - VLBA\_NL, fgroup Q, pol LL



Fringe quality 5

SNR 135.6

Int time 239.623

Amp 3.203

Phase -162.5

PFD 0.0e+00

Delays (us)

SBD 0.001887

MBD 0.001861

Fringe rate (Hz)

0.007551

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132943

2021:252:122852

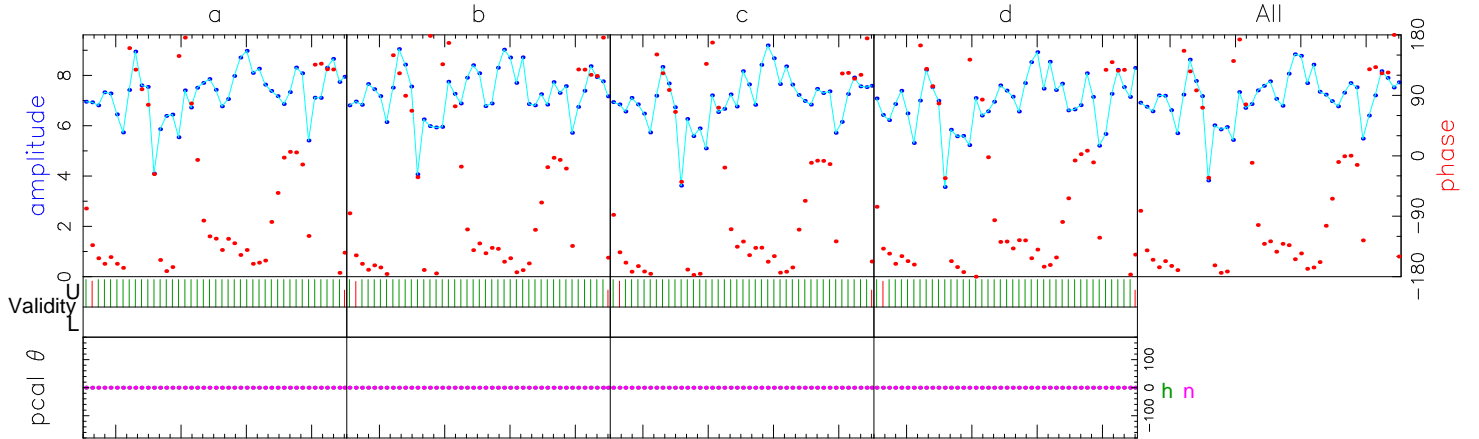
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -157.1   | -168.3   | -167.0   | -157.1   | Phase      | -162.5 |
|     | 3.2      | 3.3      | 3.2      | 3.1      | Ampl.      | 3.2    |
|     | 513.6    | 514.0    | 514.0    | 514.2    | Sbd box    | 514.0  |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| h   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| n   | 1000     | 1000     | 1000     | 1000     | PC phase   |        |
| h:n | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| h:n | 0:0      | 0:0      | 0:0      | 0:0      | PC amp     |        |
| h   | 1000     | 1000     | 1000     | 1000     |            |        |
| h   | 1000     | 1000     | 1000     | 1000     |            |        |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    |            |        |
| n   | Q00UL    | Q01UL    | Q02UL    | Q03UL    |            |        |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -4.13291864385E+03 | Apriori delay (usec)     | -4.13292050523E+03 | Resid mbdelay (usec) | 1.86138E-03  | +/- | 8.2E-06 |
| Sband delay (usec)      | -4.13291861823E+03 | Apriori clock (usec)     | -2.6215134E+00     | Resid sbdelay (usec) | 1.88700E-03  | +/- | 3.2E-05 |
| Phase delay (usec)      | -4.13292051571E+03 | Apriori clockrate (us/s) | -1.6999999E-07     | Resid phdelay (usec) | -1.04845E-05 | +/- | 5.5E-08 |
| Delay rate (us/s)       | -2.48543657557E-01 | Apriori rate (us/s)      | -2.48543833007E-01 | Resid rate (us/s)    | 1.75451E-07  | +/- | 3.9E-10 |
| Total phase (deg)       | -358.7             | Apriori accel (us/s/s)   | 2.20124667438E-05  | Resid phase (deg)    | -162.5       | +/- | 0.8     |

|              |       |     |                  |                 |  |  |
|--------------|-------|-----|------------------|-----------------|--|--|
| ph/seg (deg) | 75.1  | 2.8 | Amplitude        | 3.203 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                      |
| amp/seg (%)  | 125.2 | 4.8 | Search (1024X16) | 3.177           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                                |
| ph/frq (deg) | 7.5   | 0.8 | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004           |
| amp/frq (%)  | 2.2   | 1.5 | Inc. seg. avg.   | 7.088           | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023                              |
|              |       |     | Inc. frq. avg.   | 3.217           | Data rate(Mb/s): 2048                  | nlags: 512 t_coherence infinite ion window (TEC) 0.00 0.00 |

h: az 247.1 el 25.0 pa 42.6 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) 720.807 92.179 simultaneous interpolator

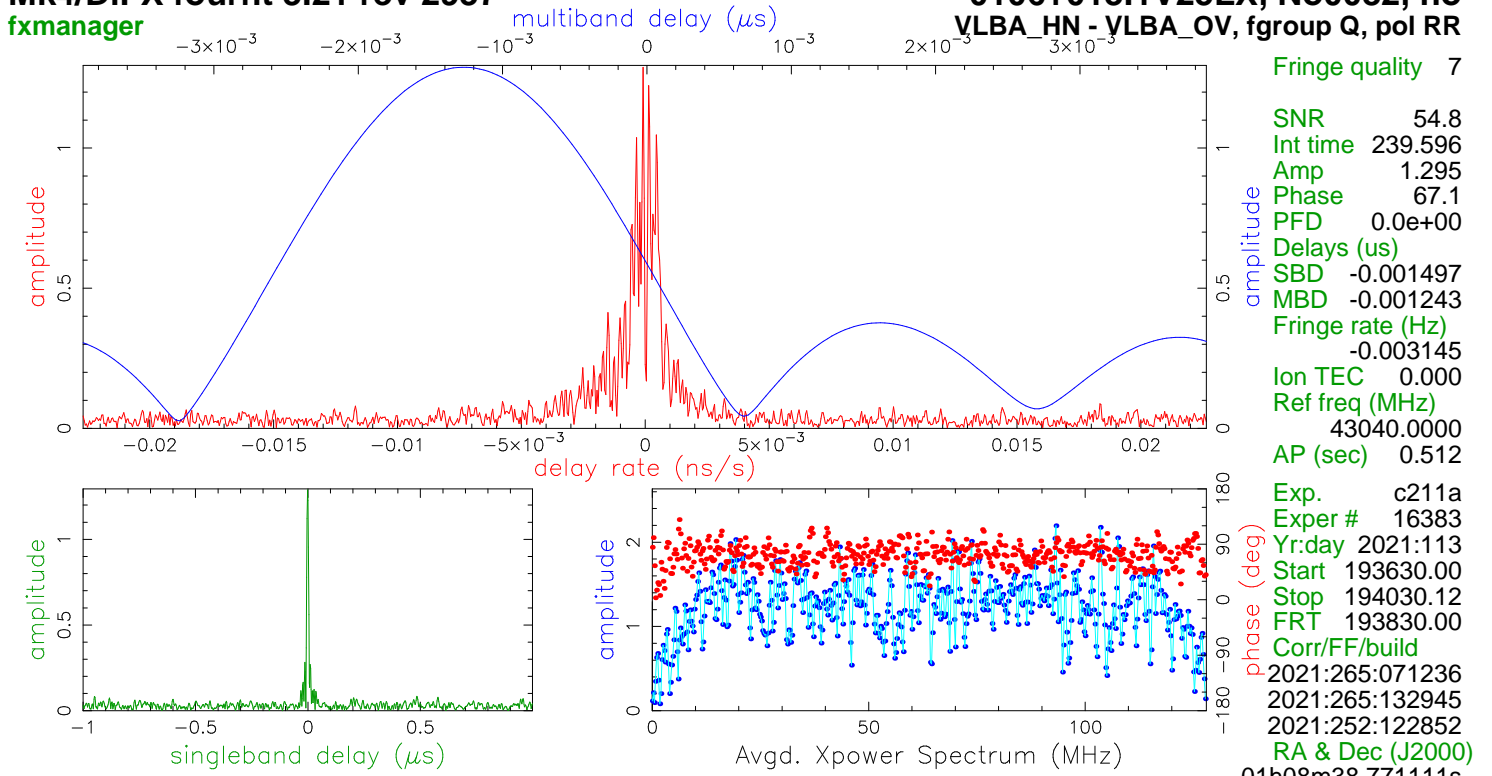
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hn.Q.84.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, ho

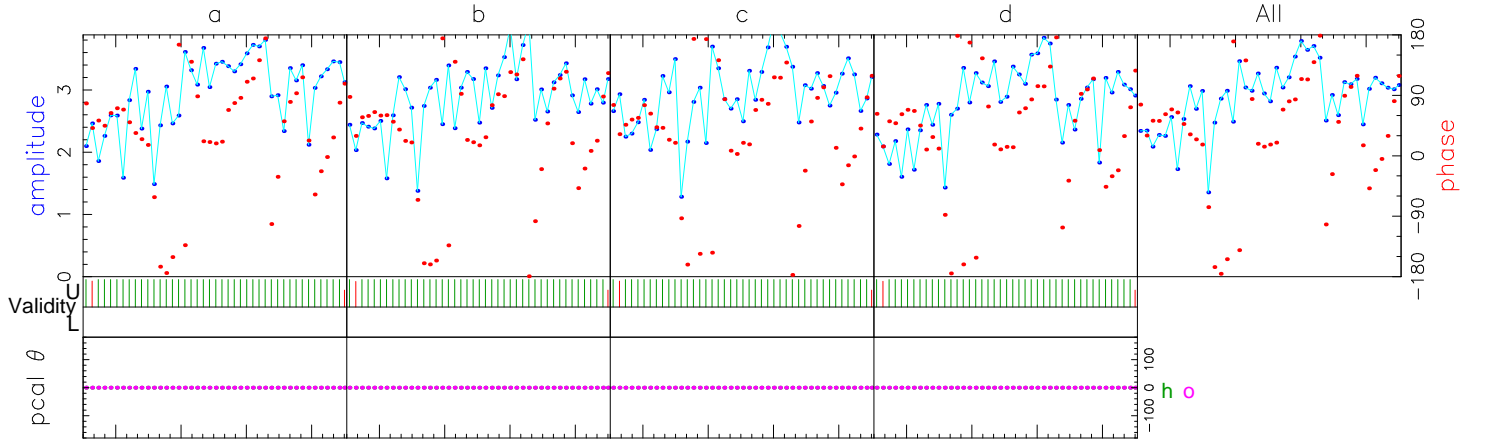
VLBA\_HN - VLBA\_OV, fgroup Q, pol RR



Fringe quality 7

SNR 54.8  
 Int time 239.596  
 Amp 1.295  
 Phase 67.1  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.001497  
 MBD -0.001243  
 Fringe rate (Hz)  
 -0.003145  
 Ion TEC 0.000  
 Ref freq (MHz)  
 43040.0000  
 AP (sec) 0.512  
 Exp. c211a  
 Exper # 16383  
 Yr:day 2021:113  
 Start 193630.00  
 Stop 194030.12  
 FRT 193830.00  
 Corr/FF/build  
 2021:265:071236  
 2021:265:132945  
 2021:252:122852  
 RA & Dec (J2000)  
 01h08m38.771111s  
 +01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 67.1  |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 1.3   |
| o   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.2 |
| h:o | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:o | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| o   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -8.16775716856E+03 | Apriori delay (usec)     | -8.16775592573E+03 | Resid mbdelay (usec) | -1.24283E-03 | +/- | 2.0E-05 |
| Sband delay (usec)      | -8.16775742261E+03 | Apriori clock (usec)     | -8.5981178E-01     | Resid sbdelay (usec) | -1.49687E-03 | +/- | 7.9E-05 |
| Phase delay (usec)      | -8.16775592140E+03 | Apriori clockrate (us/s) | -2.2999999E-07     | Resid phdelay (usec) | 4.32902E-06  | +/- | 1.3E-07 |
| Delay rate (us/s)       | -7.21087718906E-01 | Apriori rate (us/s)      | -7.21087645826E-01 | Resid rate (us/s)    | -7.30805E-08 | +/- | 9.7E-10 |
| Total phase (deg)       | 51.4               | Apriori accel (us/s/s)   | 4.36802972807E-05  | Resid phase (deg)    | 67.1         | +/- | 2.1     |

|              |       |        |                  |                 |  |                              |                  |        |       |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS   | Theor. | Amplitude        | 1.295 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 72.7  | 6.9    | Search (1024X16) | 1.198           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 128.0 | 12.0   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 4.6   | 2.1    | Inc. seg. avg.   | 2.854           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 5.2   | 3.6    | Inc. frq. avg.   | 1.289           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

h: az 247.1 el 25.0 pa 42.6 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 2082.550 387.815 simultaneous interpolator

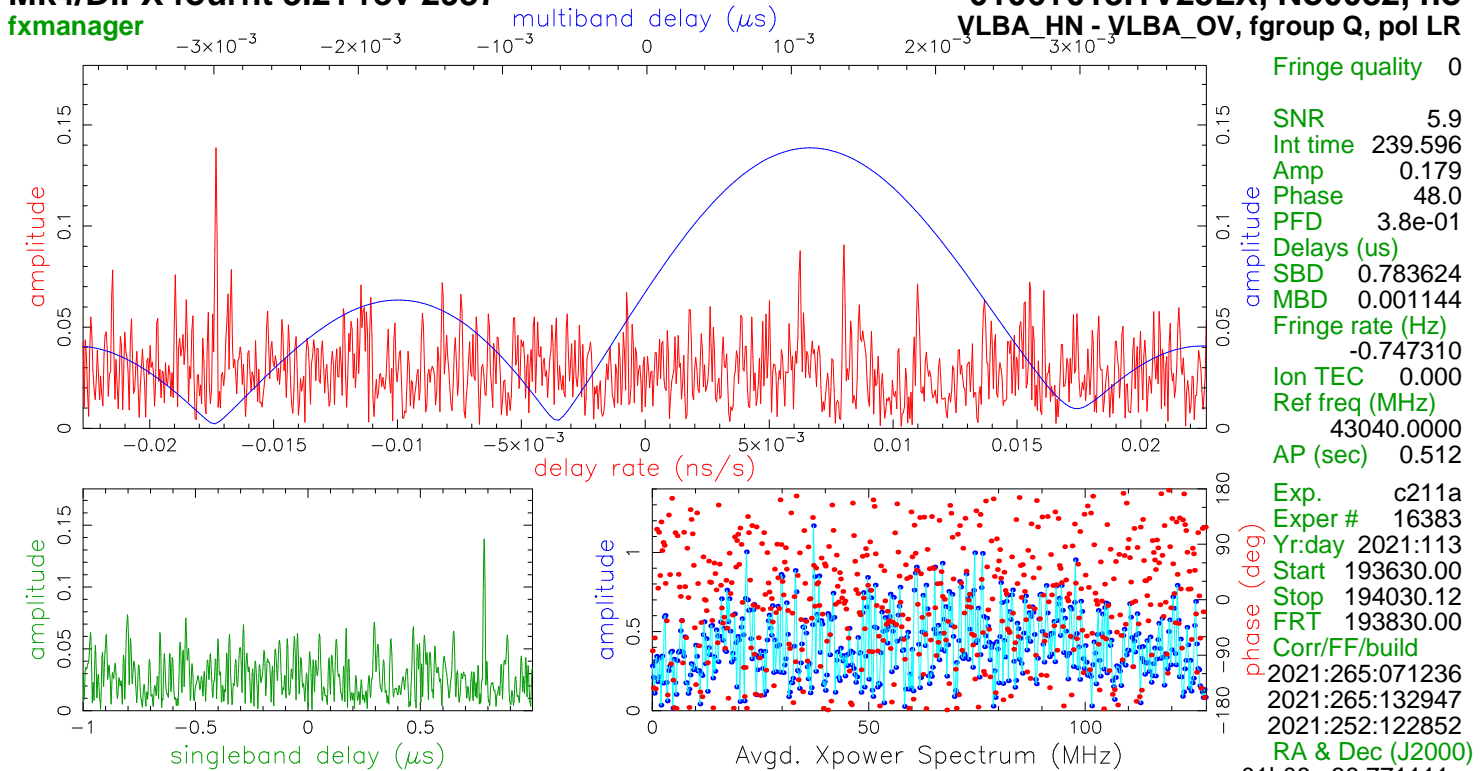
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ho..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ho.Q.103.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

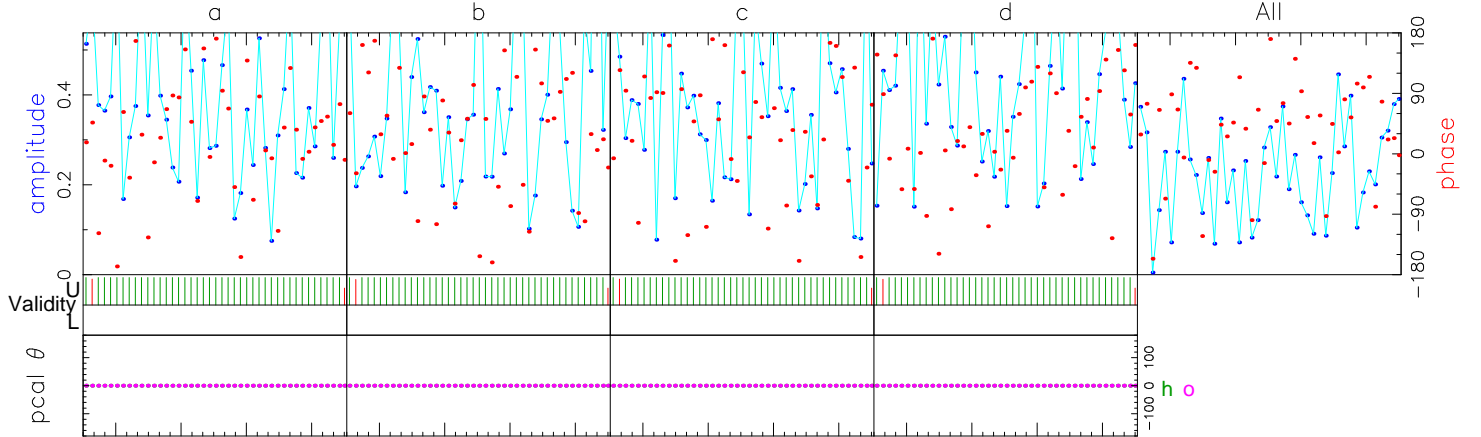
fxmanager

0106+013.1V25LX, No0082, ho

VLBA\_HN - VLBA\_OV, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 48.0  |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.2   |
| o   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 914.2 |
| h:o | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:o | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| o   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -8.16697353202E+03 | Apriori delay (usec)     | -8.16775592573E+03 | Resid mbdelay (usec) | 1.14371E-03  | +/- | 1.9E-04 |
| Sband delay (usec)      | -8.16697230123E+03 | Apriori clock (usec)     | -8.5981178E-01     | Resid sbdelay (usec) | 7.83624E-01  | +/- | 7.3E-04 |
| Phase delay (usec)      | -8.16775592263E+03 | Apriori clockrate (us/s) | -2.2999999E-07     | Resid phdelay (usec) | 3.09670E-06  | +/- | 1.3E-06 |
| Delay rate (us/s)       | -7.21105008986E-01 | Apriori rate (us/s)      | -7.21087645826E-01 | Resid rate (us/s)    | -1.73632E-05 | +/- | 9.1E-09 |
| Total phase (deg)       | 32.3               | Apriori accel (us/s/s)   | 4.36802972807E-05  | Resid phase (deg)    | 48.0         | +/- | 19.4    |

|              |       |        |                  |                 |  |                              |                  |        |       |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS   | Theor. | Amplitude        | 0.179 +/- 0.030 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 69.7  | 63.8   | Search (1024X16) | 0.131           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 102.4 | 111.3  | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 12.9  | 19.4   | Inc. seg. avg.   | 0.183           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 13.9  | 33.9   | Inc. frq. avg.   | 0.171           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

h: az 247.1 el 25.0 pa 42.6 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 2082.550 387.815 simultaneous interpolator

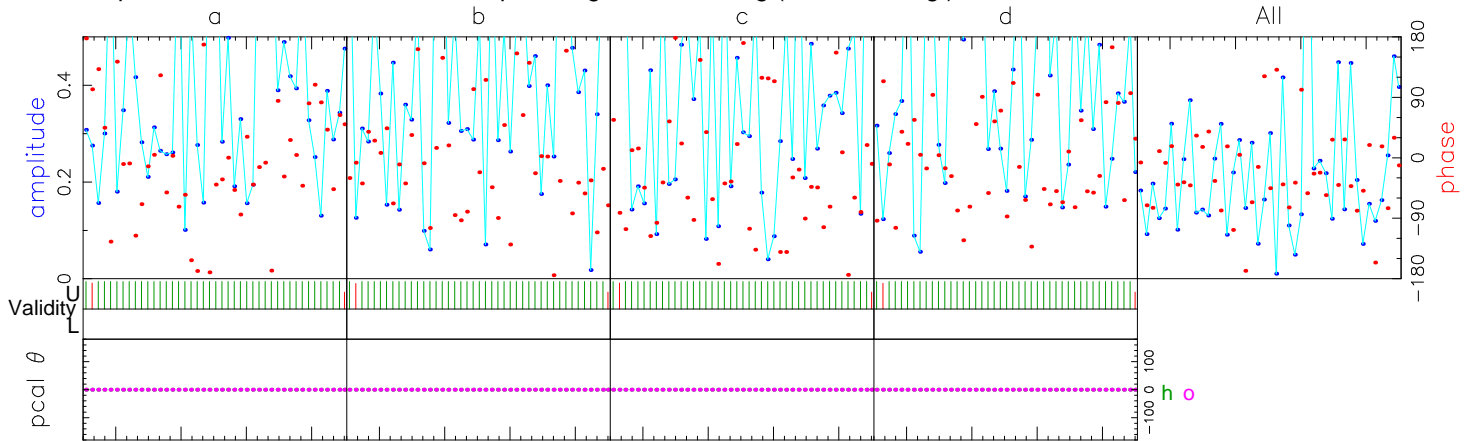
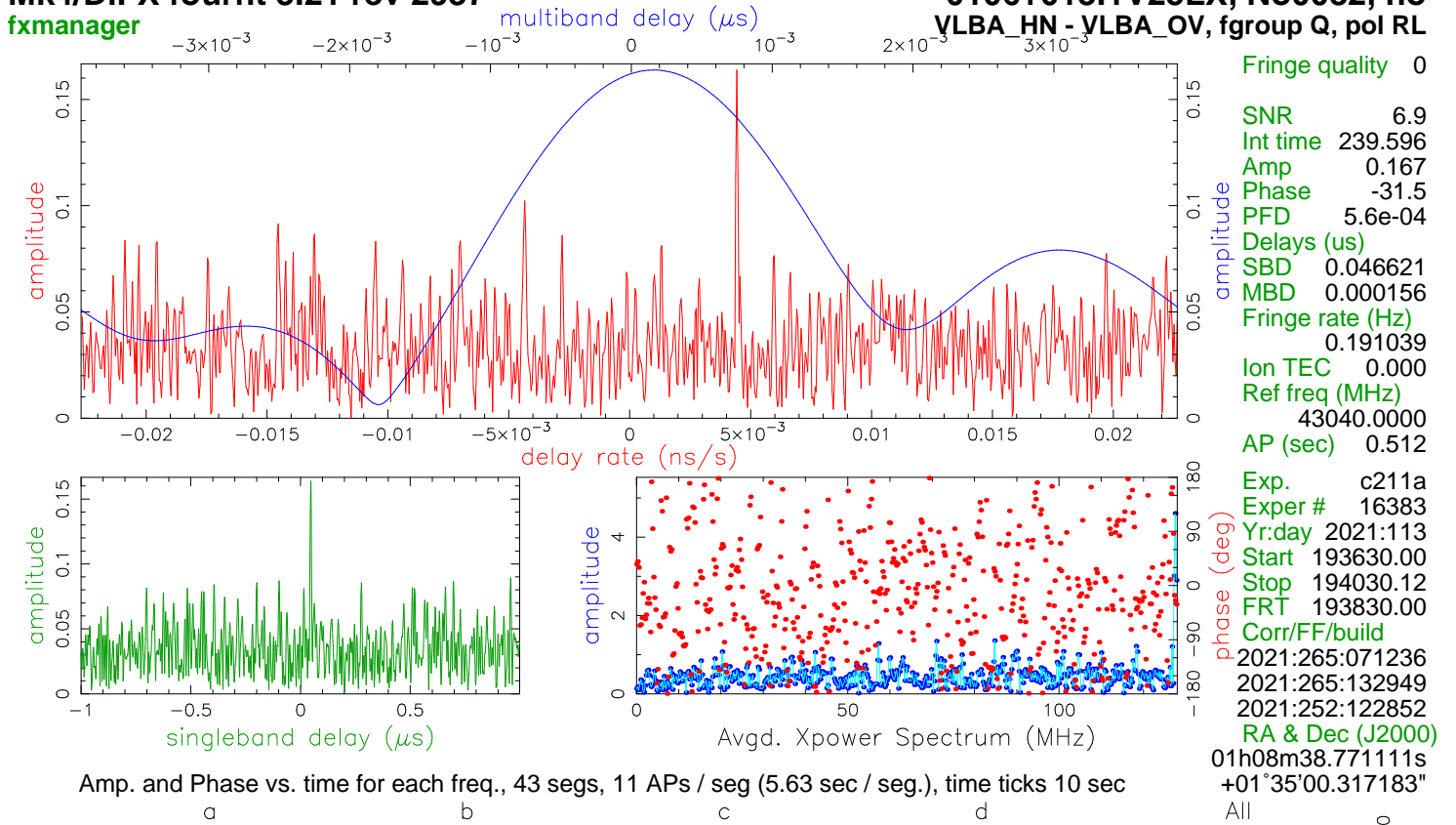
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ho..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ho.Q.123.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, ho

VLBA\_HN - VLBA\_OV, fgroup Q, pol RL



|   |                    |                          |                    |                           |  |                      |                   |                  |       |      |
|---|--------------------|--------------------------|--------------------|---------------------------|--|----------------------|-------------------|------------------|-------|------|
| 42912.00  | 43040.00           | 43168.00                 | 43296.00           | Freq (MHz)                | All                                    |                      |                   |                  |       |      |
| -27.6   | -23.7              | -56.4                    | -22.6              | Phase                     | -31.5                                  |                      |                   |                  |       |      |
| 0.1   | 0.2                | 0.2                      | 0.3                | Ampl.                     | 0.2                                    |                      |                   |                  |       |      |
| 612.6   | 1004.0             | 537.2                    | 536.9              | Sbd box                   | 536.9                                  |                      |                   |                  |       |      |
| U/L 469/0   | 469/0              | 469/0                    | 469/0              | APs used                  |  |                      |                   |                  |       |      |
| h 1000  | 1000               | 1000                     | 1000               | PC freqs                  |  |                      |                   |                  |       |      |
| o 1000  | 1000               | 1000                     | 1000               | PC freqs                  |  |                      |                   |                  |       |      |
| h:o 0:0   | 0:0                | 0:0                      | 0:0                | PC phase                  |  |                      |                   |                  |       |      |
| h:o 0:0   | 0:0                | 0:0                      | 0:0                | Manl PC                   |  |                      |                   |                  |       |      |
| h 1000  | 1000               | 1000                     | 1000               | PC amp                    |  |                      |                   |                  |       |      |
| o 1000  | 1000               | 1000                     | 1000               |                           |  |                      |                   |                  |       |      |
| h Q00UR   | Q01UR              | Q02UR                    | Q03UR              | Chan ids                  |  |                      |                   |                  |       |      |
|   |                    |                          |                    | Tracks                    |  |                      |                   |                  |       |      |
| o Q00UL   | Q01UL              | Q02UL                    | Q03UL              | Chan ids                  |  |                      |                   |                  |       |      |
|   |                    |                          |                    | Tracks                    |  |                      |                   |                  |       |      |
| Group delay (usec)(sbd)   | -8.16770889508E+03 | Apriori delay (usec)     | -8.16775592573E+03 | Resid mbdelay (usec)      | 1.55654E-04                            | +/- 1.6E-04          |                   |                  |       |      |
| Sband delay (usec)  | -8.16770930511E+03 | Apriori clock (usec)     | -8.5981178E-01     | Resid sbdelay (usec)      | 4.66206E-02                            | +/- 6.2E-04          |                   |                  |       |      |
| Phase delay (usec)  | -8.16775592777E+03 | Apriori clockrate (us/s) | -2.2999999E-07     | Resid phdelay (usec)      | -2.03479E-06                           | +/- 1.1E-06          |                   |                  |       |      |
| Delay rate (us/s)   | -7.21083207186E-01 | Apriori rate (us/s)      | -7.21087645826E-01 | Resid rate (us/s)         | 4.43864E-06                            | +/- 7.7E-09          |                   |                  |       |      |
| Total phase (deg)   | -47.2              | Apriori accel (us/s/s)   | 4.36802972807E-05  | Resid phase (deg)         | -31.5                                  | +/- 16.5             |                   |                  |       |      |
| RMS   | Theor.             | Amplitude                | 0.167 +/- 0.024    | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5                  |                      |                   |                  |       |      |
| ph/seg (deg)  | 61.0               | 54.1                     | Search (1024X16)   | 0.159                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)       | -1.000            | 1.000            |       |      |
| amp/seg (%)   | 110.5              | 94.4                     | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg)  | 19.7               | 16.5                     | Inc. seg. avg.     | 0.159                     | Sample rate(MSamp/s): 256              |                      | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)   | 29.9               | 28.8                     | Inc. frq. avg.     | 0.165                     | Data rate(Mb/s): 2048                  | nlags: 512           | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |
| h: az 247.1 el 25.0 pa 42.6 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 2082.550 387.815 simultaneous interpolator                                      |                    |                          |                    |                           |  |                      |                   |                  |       |      |
| Control file: cf_1234_gmva7mm Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/ho..1V25LX Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/ho.Q.142.1V25LX |                    |                          |                    |                           |  |                      |                   |                  |       |      |

Mk4/DiFX fourfit 3.21 rev 2937

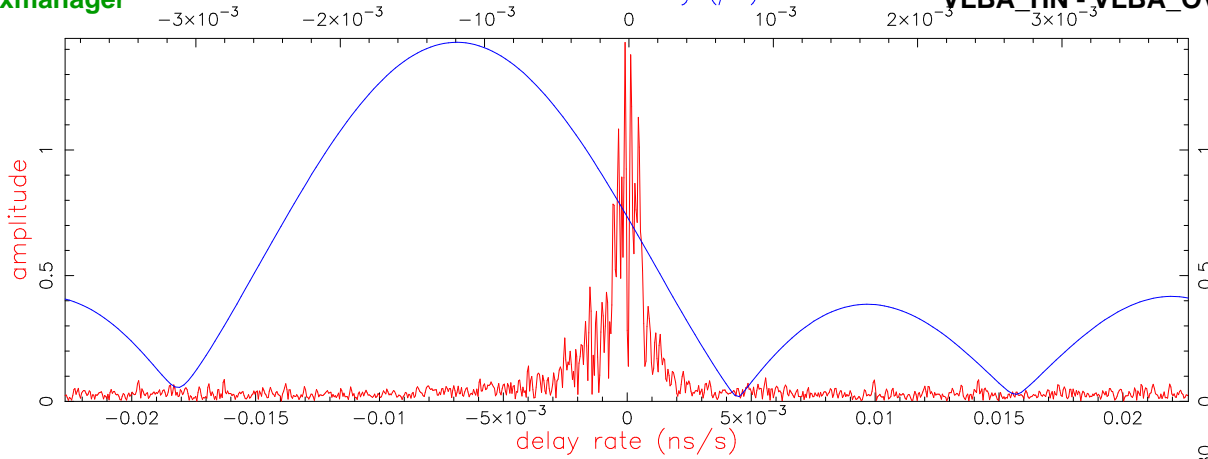
fxmanager

0106+013.1V25LX, No0082, ho

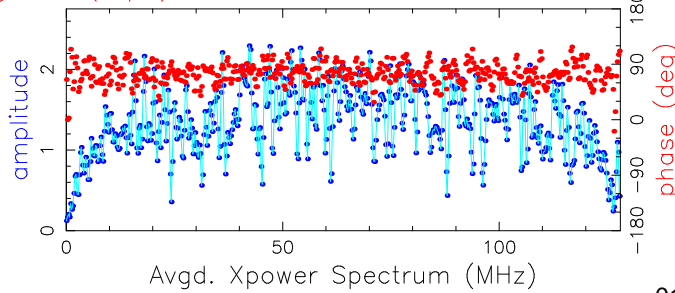
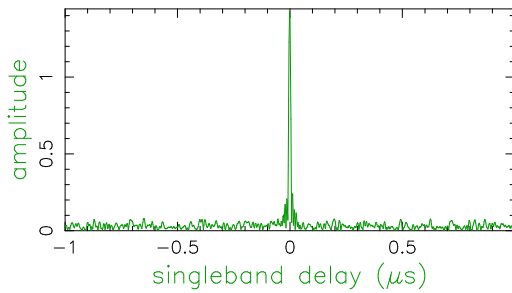
VLBA\_HN - VLBA\_OV, fgroup Q, pol LL

multiband delay ( $\mu$ s)

Fringe quality 7

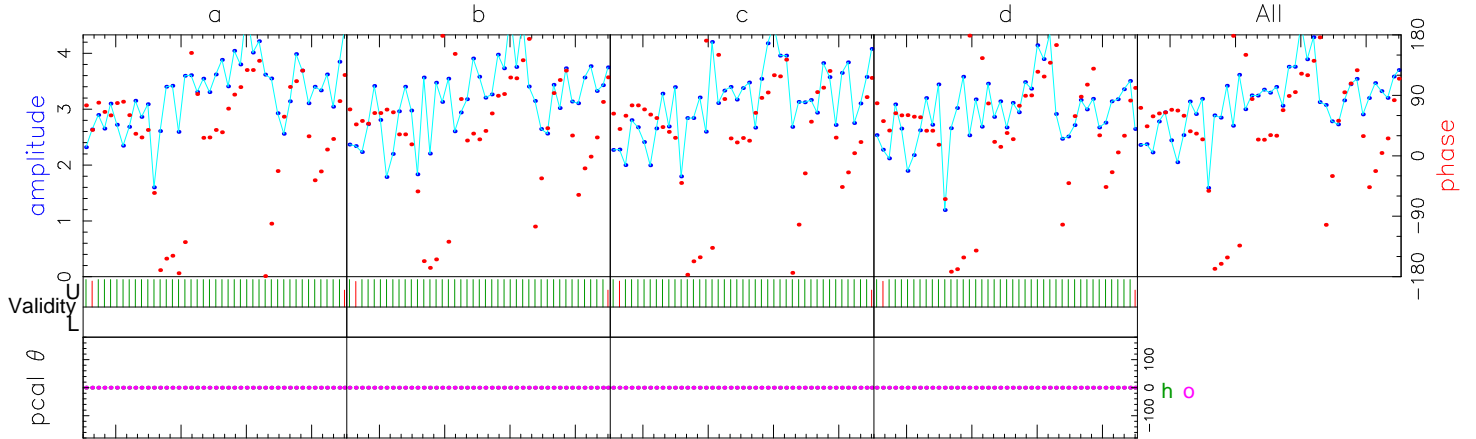


SNR 61.1  
Int time 239.596  
Amp 1.444  
Phase 73.4  
PFD 0.0e+00  
Delays (us)  
SBD -0.001255  
MBD -0.001159  
Fringe rate (Hz)  
-0.003074  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132943  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 73.4  |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 1.4   |
| o   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.4 |
| h:o | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:o | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| o   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -8.16775708438E+03 | Apriori delay (usec)     | -8.16775592573E+03 | Resid mbdelay (usec) | -1.15864E-03 | +/- | 1.8E-05 |
| Sband delay (usec)      | -8.16775718086E+03 | Apriori clock (usec)     | -8.5981178E-01     | Resid sbdelay (usec) | -1.25513E-03 | +/- | 7.0E-05 |
| Phase delay (usec)      | -8.16775592099E+03 | Apriori clockrate (us/s) | -2.2999999E-07     | Resid phdelay (usec) | 4.73654E-06  | +/- | 1.2E-07 |
| Delay rate (us/s)       | -7.21087717259E-01 | Apriori rate (us/s)      | -7.21087645826E-01 | Resid rate (us/s)    | -7.14327E-08 | +/- | 8.7E-10 |
| Total phase (deg)       | 57.7               | Apriori accel (us/s/s)   | 4.36802972807E-05  | Resid phase (deg)    | 73.4         | +/- | 1.9     |

|              |          |            |                           |  |                       |                   |                            |
|--------------|----------|------------|---------------------------|--|-----------------------|-------------------|----------------------------|
| ph/seg (deg) | RMS 72.0 | Theor. 6.1 | Amplitude 1.444 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)  | 121.9    | 10.7       | Search (1024X16) 1.309    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg) | 4.0      | 1.9        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)  | 3.0      | 3.3        | Inc. seg. avg. 3.096      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
|              |          |            | Inc. frq. avg. 1.429      | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

h: az 247.1 el 25.0 pa 42.6 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 2082.550 387.815 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ho..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ho.Q.86.1V25LX



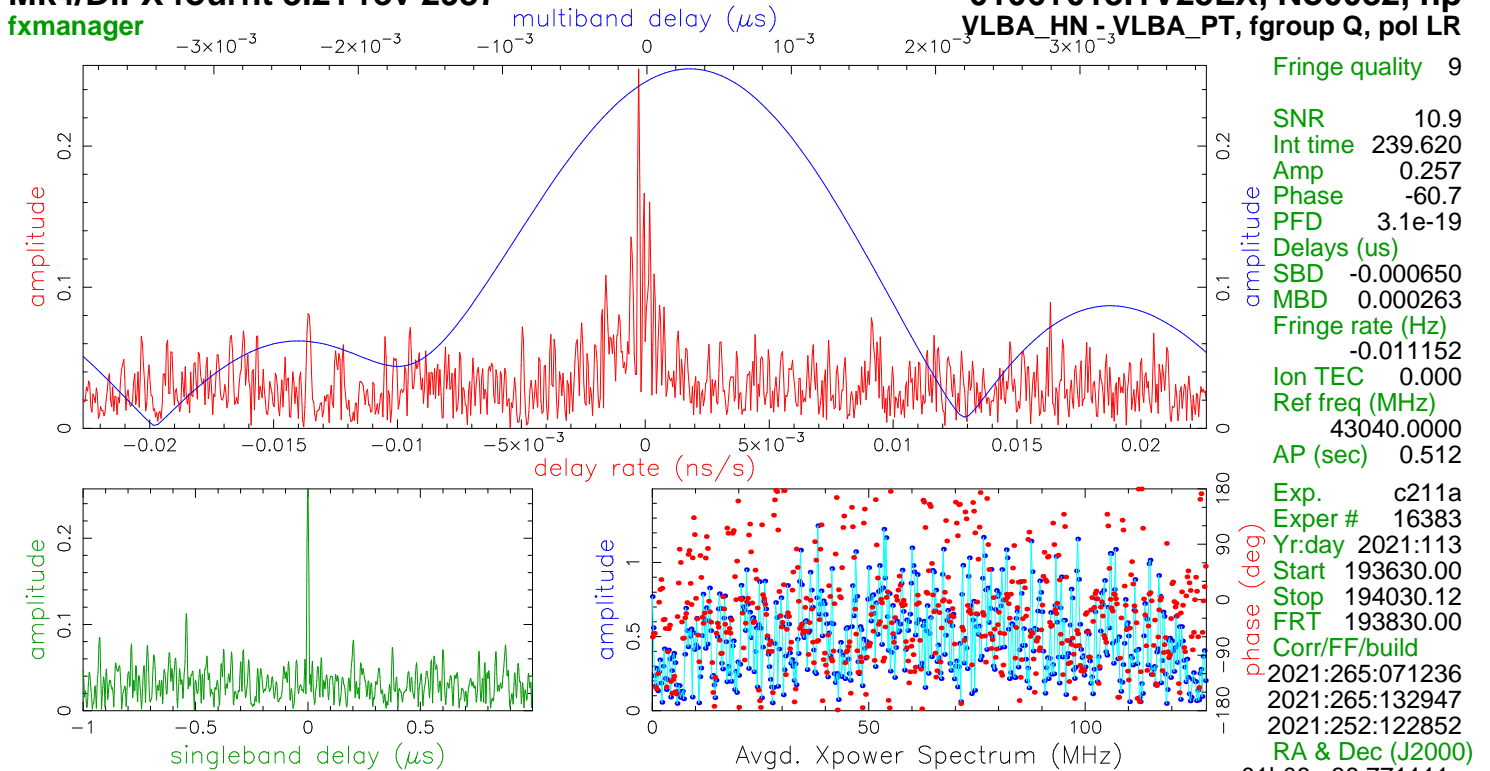


Mk4/DiFX fourfit 3.21 rev 2937

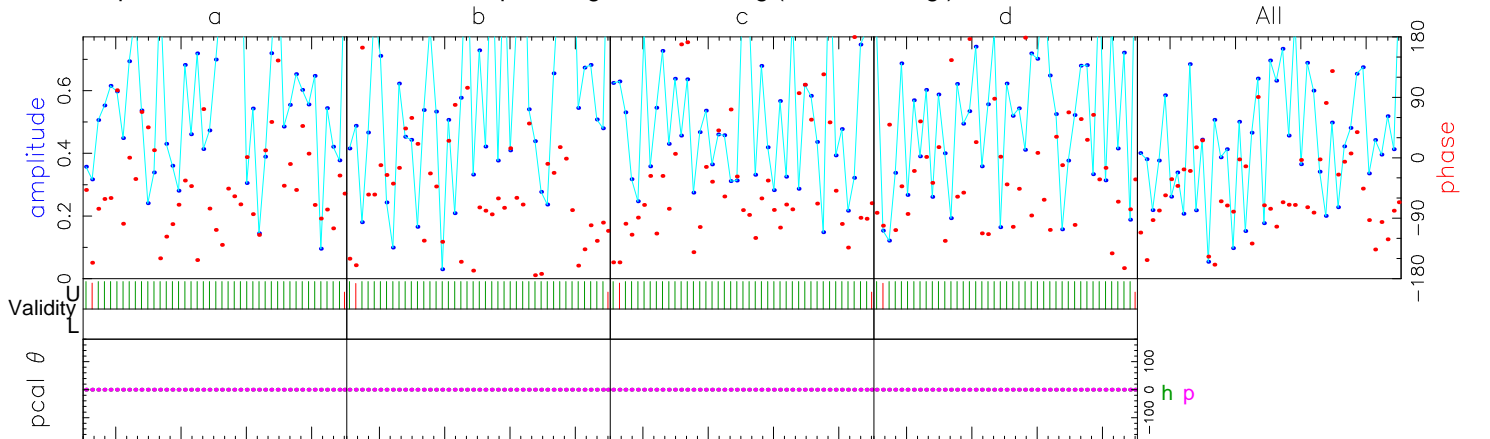
fxmanager

0106+013.1V25LX, No0082, hp

VLBA\_HN - VLBA\_PT, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -60.7 |
| h   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.3   |
| p   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.7 |
| h:p | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| h:p | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| h   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| p   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| h   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| p   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -7.90709755859E+03 | Apriori delay (usec)     | -7.90709782197E+03 | Resid mbdelay (usec) | 2.63380E-04  | +/- | 1.0E-04 |
| Sband delay (usec)      | -7.90709847222E+03 | Apriori clock (usec)     | -2.7644215E+00     | Resid sbdelay (usec) | -6.50250E-04 | +/- | 4.0E-04 |
| Phase delay (usec)      | -7.90709782589E+03 | Apriori clockrate (us/s) | 2.5000000E-07      | Resid phdelay (usec) | -3.91837E-06 | +/- | 6.8E-07 |
| Delay rate (us/s)       | -4.93963603588E-01 | Apriori rate (us/s)      | -4.93963344481E-01 | Resid rate (us/s)    | -2.59107E-07 | +/- | 4.9E-09 |
| Total phase (deg)       | -153.5             | Apriori accel (us/s/s)   | 4.24221267439E-05  | Resid phase (deg)    | -60.7        | +/- | 10.5    |

|              |       |        |                  |                 |  |                              |                  |        |       |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS   | Theor. | Amplitude        | 0.257 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 63.2  | 34.5   | Search (1024X16) | 0.248           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 102.5 | 60.2   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 14.9  | 10.5   | Inc. seg. avg.   | 0.371           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 9.3   | 18.4   | Inc. frq. avg.   | 0.254           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

h: az 247.1 el 25.0 pa 42.6 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 1431.764 569.292 simultaneous interpolator

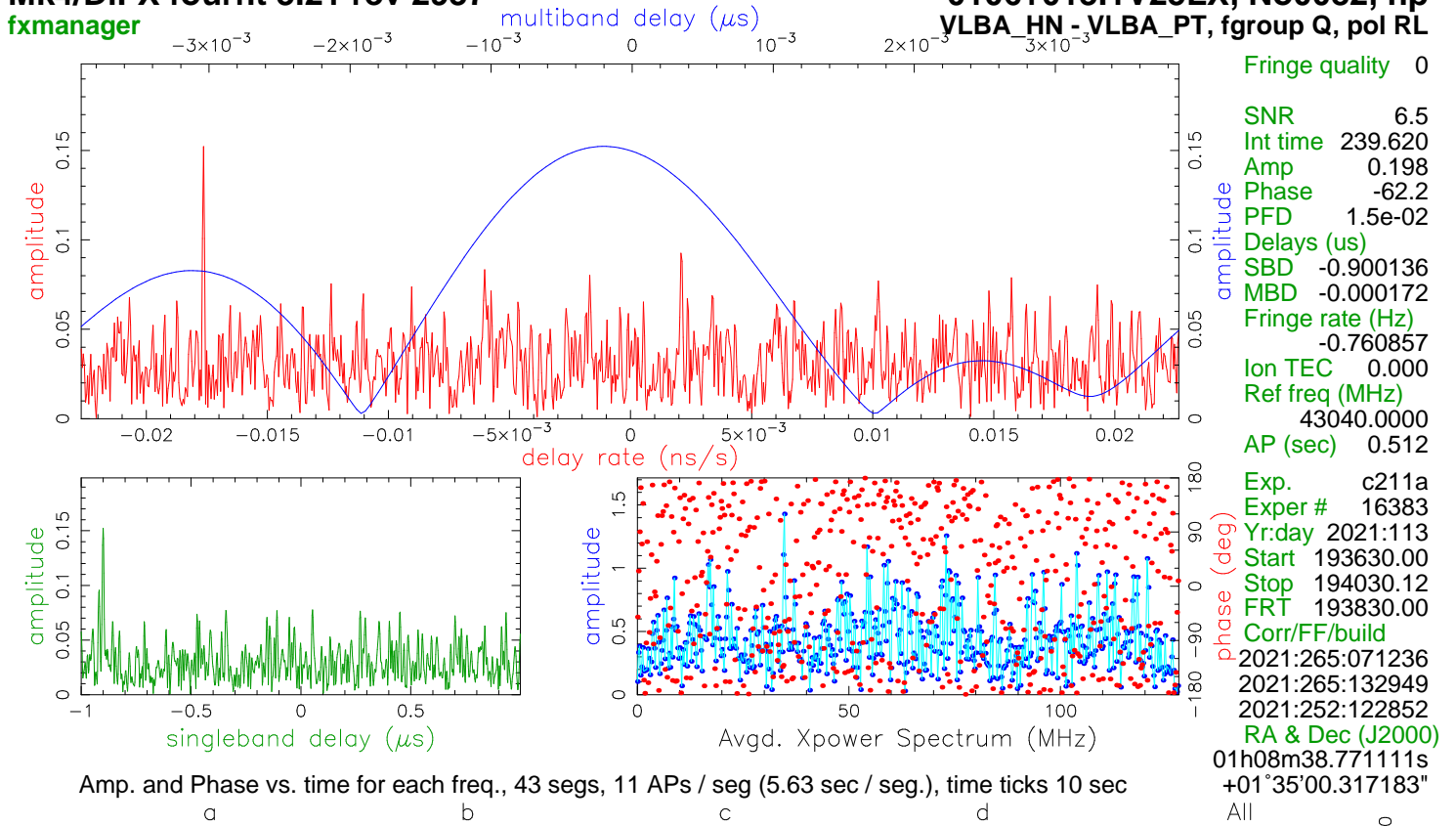
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/hp.Q.124.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

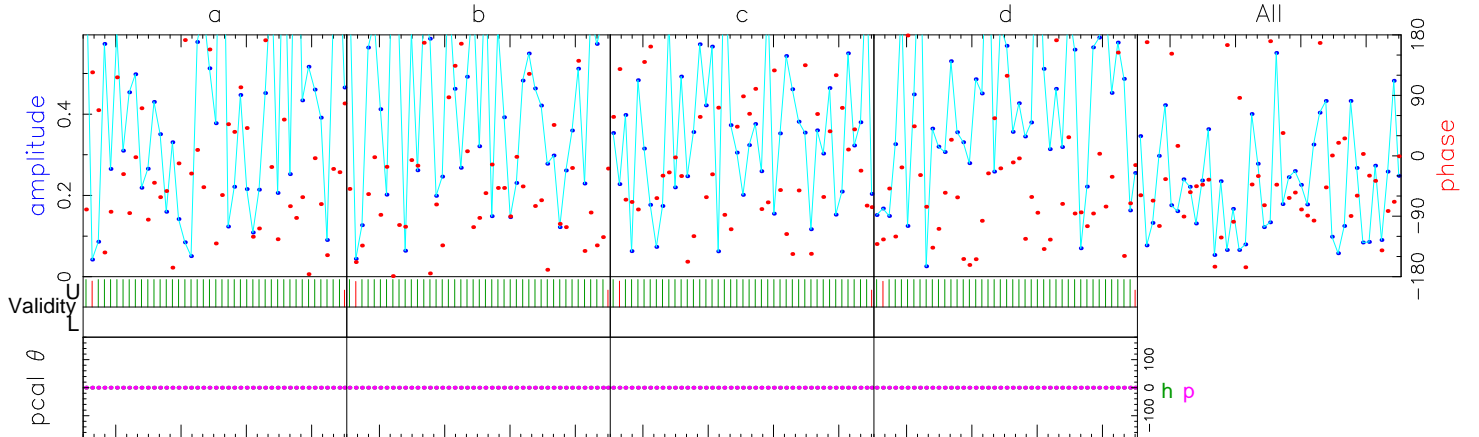
fxmanager

0106+013.1V25LX, No0082, hp

VLBA\_HN - VLBA\_PT, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



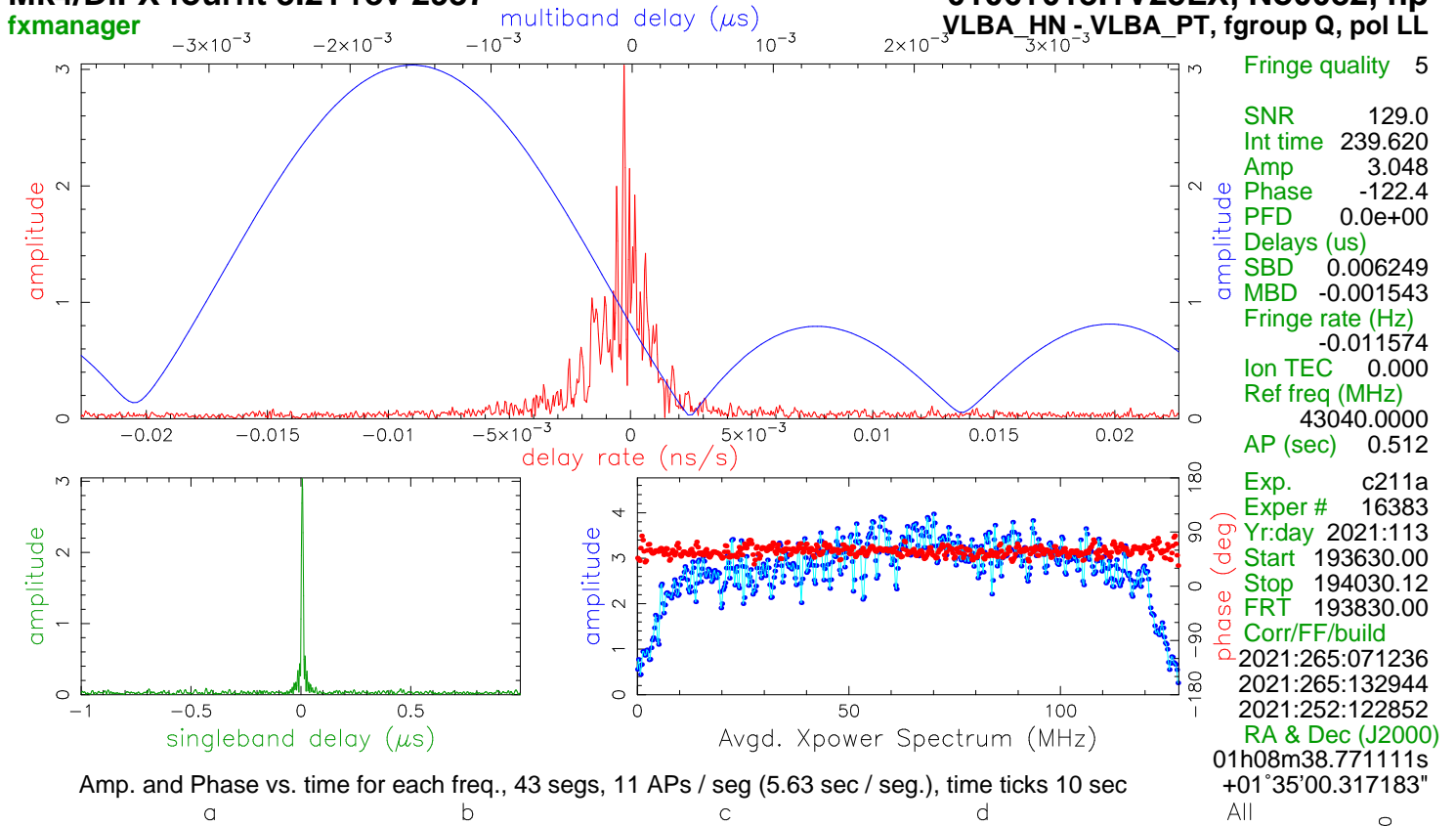
|   |                    |                          |                    |  |                       |                   |                  |           |
|---|--------------------|--------------------------|--------------------|--|-----------------------|-------------------|------------------|-----------|
| 42912.00  | 43040.00           | 43168.00                 | 43296.00           | Freq (MHz)                             | All                   |                   |                  |           |
| -52.2   | -82.2              | -41.2                    | -67.5              | Phase                                  | -62.2                 |                   |                  |           |
| 0.2   | 0.2                | 0.2                      | 0.2                | Ampl.                                  | 0.2                   |                   |                  |           |
| 53.0  | 384.8              | 331.0                    | 52.4               | Sbd box                                | 52.1                  |                   |                  |           |
| U/L 469/0   | 469/0              | 469/0                    | 469/0              | APs used                               |                       |                   |                  |           |
| h 1000  | 1000               | 1000                     | 1000               | PC freqs                               |                       |                   |                  |           |
| p 1000  | 1000               | 1000                     | 1000               | PC freqs                               |                       |                   |                  |           |
| h:p 0:0   | 0:0                | 0:0                      | 0:0                | PC phase                               |                       |                   |                  |           |
| h:p 0:0   | 0:0                | 0:0                      | 0:0                | Manl PC                                |                       |                   |                  |           |
| h 1000  | 1000               | 1000                     | 1000               | PC amp                                 |                       |                   |                  |           |
| p 1000  | 1000               | 1000                     | 1000               |  |                       |                   |                  |           |
| h Q00UR   | Q01UR              | Q02UR                    | Q03UR              | Chan ids                               |                       |                   |                  |           |
| p Q00UL   | Q01UL              | Q02UL                    | Q03UL              | Tracks                                 |                       |                   |                  |           |
|   |                    |                          |                    | Chan ids                               |                       |                   |                  |           |
|   |                    |                          |                    | Tracks                                 |                       |                   |                  |           |
| Group delay (usec)(sbd)   | -7.90799643197E+03 | Apriori delay (usec)     | -7.90709782197E+03 | Resid mbdelay (usec)                   | -1.72498E-04          | +/- 1.7E-04       |                  |           |
| Sband delay (usec)  | -7.90799795760E+03 | Apriori clock (usec)     | -2.7644215E+00     | Resid sbdelay (usec)                   | -9.00136E-01          | +/- 6.7E-04       |                  |           |
| Phase delay (usec)  | -7.90709782598E+03 | Apriori clockrate (us/s) | 2.5000000E-07      | Resid phdelay (usec)                   | -4.01303E-06          | +/- 1.1E-06       |                  |           |
| Delay rate (us/s)   | -4.93981022377E-01 | Apriori rate (us/s)      | -4.93963344481E-01 | Resid rate (us/s)                      | -1.76779E-05          | +/- 8.3E-09       |                  |           |
| Total phase (deg)   | -154.9             | Apriori accel (us/s/s)   | 4.24221267439E-05  | Resid phase (deg)                      | -62.2                 | +/- 17.8          |                  |           |
| RMS   | Theor.             | Amplitude                | 0.198 +/- 0.031    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |           |
| ph/seg (deg)  | 67.5               | Search (1024X16)         | 0.149              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |           |
| amp/seg (%)   | 97.0               | Interp.                  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |           |
| ph/frq (deg)  | 22.0               | Inc. seg. avg.           | 0.194              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023     |           |
| amp/frq (%)   | 15.5               | Inc. frq. avg.           | 0.196              | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00 |
| h: az 247.1 el 25.0 pa 42.6 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 1431.764 569.292 simultaneous interpolator                                      |                    |                          |                    |  |                       |                   |                  |           |
| Control file: cf_1234_gmva7mm Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hp..1V25LX Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hp.Q.139.1V25LX |                    |                          |                    |  |                       |                   |                  |           |

Mk4/DiFX fourfit 3.21 rev 2937

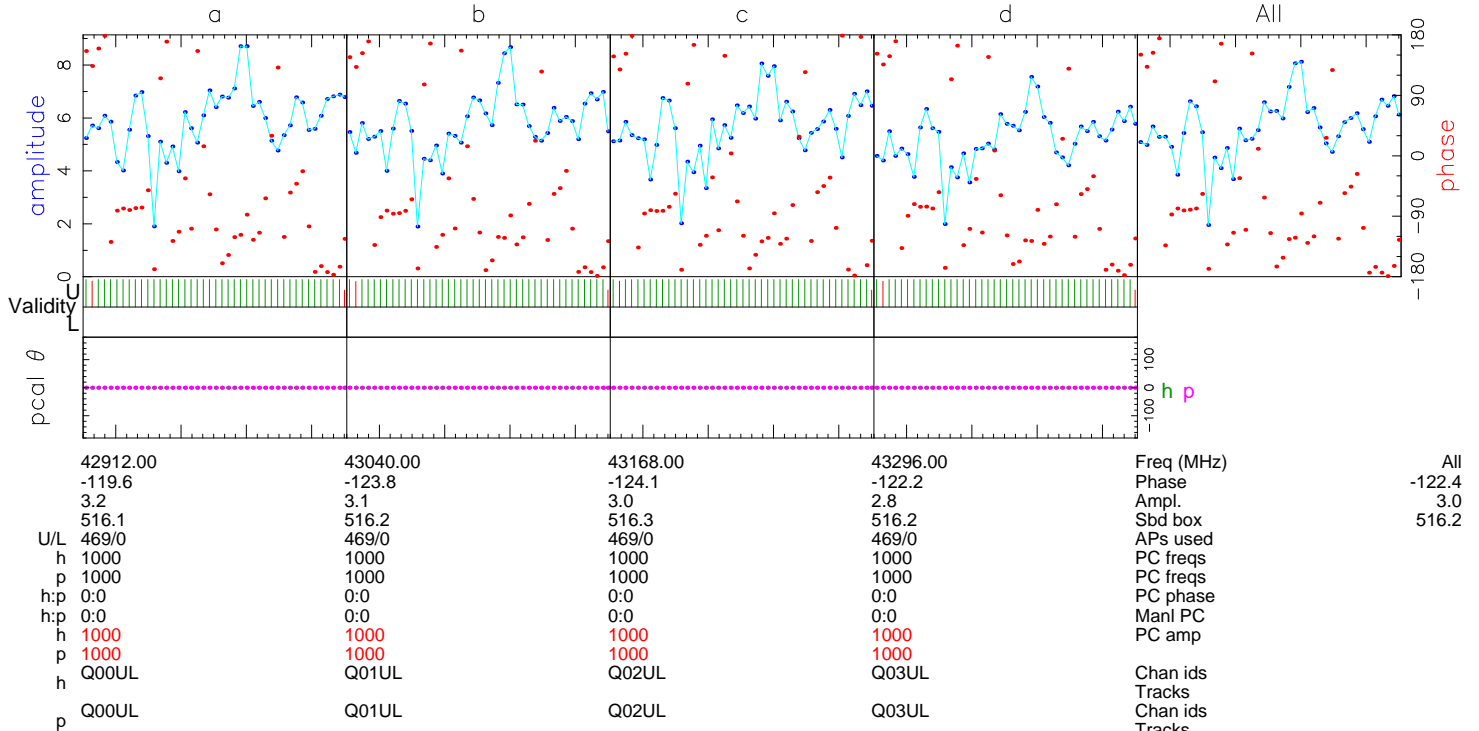
fxmanager

0106+013.1V25LX, No0082, hp

VLBA\_HN - VLBA\_PT, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



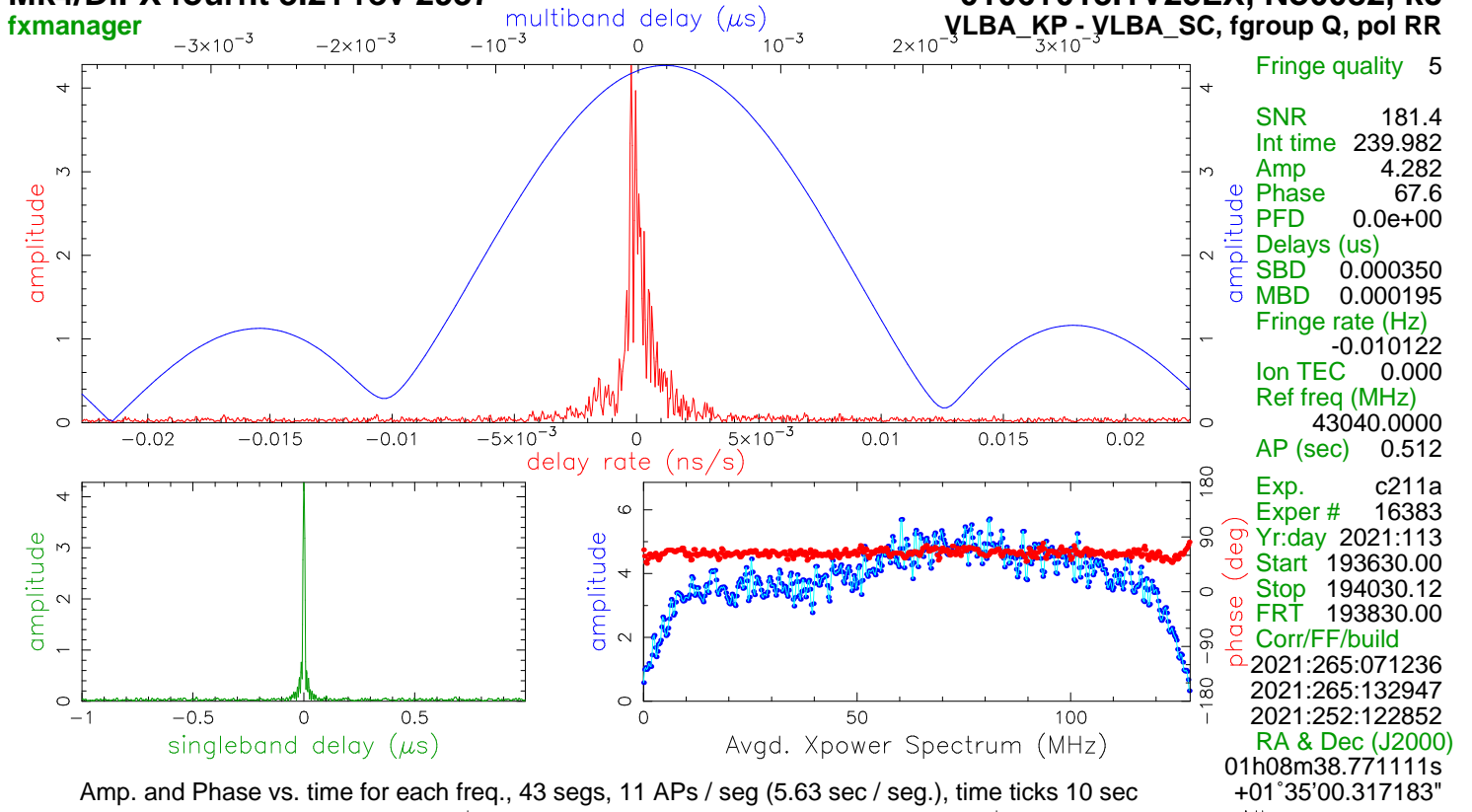
|                               |                    |  |                    |   |                       |                   |                            |
|-------------------------------|--------------------|--|--------------------|---|-----------------------|-------------------|----------------------------|
| Group delay (usec)(sbd)       | -7.90709155225E+03 | Apriori delay (usec)                                     | -7.90709782197E+03 | Resid mbdelay (usec)  | -1.54278E-03          | +/-               | 8.6E-06                    |
| Sband delay (usec)            | -7.90709157247E+03 | Apriori clock (usec)                                     | -2.7644215E+00     | Resid sbdelay (usec)  | 6.24950E-03           | +/-               | 3.3E-05                    |
| Phase delay (usec)            | -7.90709782987E+03 | Apriori clockrate (us/s)                                 | 2.5000000E-07      | Resid phdelay (usec)  | -7.90079E-06          | +/-               | 5.7E-08                    |
| Delay rate (us/s)             | -4.93963613399E-01 | Apriori rate (us/s)                                      | -4.93963344481E-01 | Resid rate (us/s)   | -2.68918E-07          | +/-               | 4.1E-10                    |
| Total phase (deg)             | -215.2             | Apriori accel (us/s/s)                                   | 4.24221267439E-05  | Resid phase (deg)   | -122.4                | +/-               | 0.9                        |
| RMS                           | 64.1               | Theor.   | 2.9                | Amplitude   | 3.048 +/- 0.024       |                   |                            |
| ph/seg (deg)                  | 64.1               | Search (1024X16)   | 3.009              | Pcal mode: MANUAL, MANUAL                                     | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)                   | 92.1               | Interp.  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                        | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg)                  | 2.5                | Inc. seg. avg.   | 5.624              | Bits/sample: 2x2  | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)                   | 4.3                | Inc. frq. avg.   | 3.038              | Sample rate(MISamp/s): 256                                    |                       | dr window (ns/s)  | -0.023 0.023               |
| h: az 247.1 el 25.0 pa 42.6   |                    | p: az 214.8 el 52.2 pa 28.7                              |                    | Data rate(Mb/s): 2048   | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |
| Control file: cf_1234_gmva7mm |                    | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/hp..1V25LX |                    | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/hp.Q.87.1V25LX |                       |                   | simultaneous interpolator  |

Mk4/DiFX fourfit 3.21 rev 2937

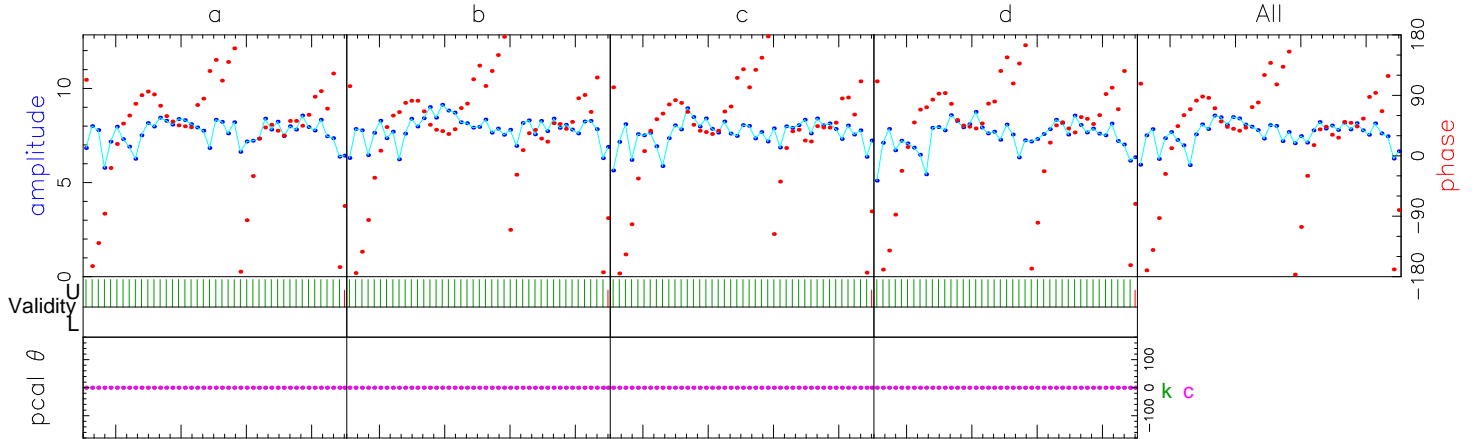
fxmanager

0106+013.1V25LX, No0082, kc

VLBA\_KP - VLBA\_SC, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               | 42912.00          | 43040.00   | 43168.00           | 43296.00   | Freq (MHz)        | All         |
|-------------------------------|-------------------|--|--------------------|--|-------------------|-------------|
| U/L                           | 469/0             | 469/0  | 469/0              | 469/0  | Phase             | 67.6        |
| k                             | 1000              | 1000   | 1000               | 1000   | Ampl.             | 4.3         |
| c                             | 1000              | 1000   | 1000               | 1000   | Sbd box           | 513.2       |
| k:c                           | 0:0               | 0:0  | 0:0                | 0:0  | APs used          |             |
| k:c                           | 0:0               | 0:0  | 0:0                | 0:0  | PC freqs          |             |
| k                             | 1000              | 1000   | 1000               | 1000   | PC phase          |             |
| c                             | 1000              | 1000   | 1000               | 1000   | Manl PC           |             |
| k                             | Q00UR             | Q01UR  | Q02UR              | Q03UR  | PC amp            |             |
| c                             | Q00UR             | Q01UR  | Q02UR              | Q03UR  | Chan ids          |             |
|                               |                   |  |                    |  | Tracks            |             |
|                               |                   |  |                    |  | Chan ids          |             |
|                               |                   |  |                    |  | Tracks            |             |
| Group delay (usec)(sbd)       | 8.67874440066E+03 | Apriori delay (usec)                                     | 8.67874420522E+03  | Resid mbdelay (usec)   | 1.95436E-04       | +/- 6.1E-06 |
| Sband delay (usec)            | 8.67874455547E+03 | Apriori clock (usec)                                     | -1.1855106E+01     | Resid sbdelay (usec)   | 3.50250E-04       | +/- 2.4E-05 |
| Phase delay (usec)            | 8.67874420958E+03 | Apriori clockrate (us/s)                                 | -3.1599999E-07     | Resid phdelay (usec)   | 4.36341E-06       | +/- 4.1E-08 |
| Delay rate (us/s)             | 9.35970429992E-01 | Apriori rate (us/s)                                      | 9.35970665173E-01  | Resid rate (us/s)  | -2.35181E-07      | +/- 2.9E-10 |
| Total phase (deg)             | 281.0             | Apriori accel (us/s/s)                                   | -4.54645227117E-05 | Resid phase (deg)  | 67.6              | +/- 0.6     |
| RMS                           | 68.0              | Theor.   | 2.1                | Amplitude  | 4.282 +/- 0.024   |             |
| ph/seg (deg)                  | 79.4              | Search (1024X16)   | 4.083              | Interp.  | 0.000             |             |
| amp/seg (%)                   | 79.4              | Inc. seg. avg.   | 7.616              | Inc. frq. avg.   | 4.283             |             |
| ph/frq (deg)                  | 6.2               | 0.6  |                    |  |                   |             |
| amp/frq (%)                   | 2.3               | 1.1  |                    |  |                   |             |
| k: az 211.3 el 55.7 pa 26.6   |                   | c: az 263.3 el 25.2 pa 71.1                              |                    | u,v (fr/asec)  | -2699.196 937.543 |             |
| Control file: cf_1234_gmva7mm |                   | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/kc..1V25LX |                    | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/kc.Q.116.1V25LX |                   |             |

simultaneous interpolator

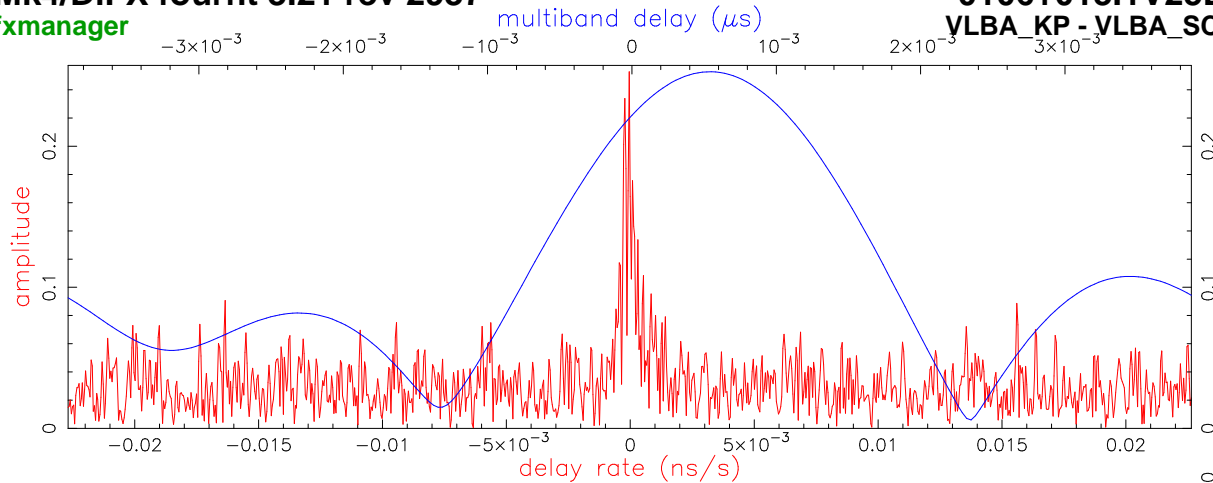


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

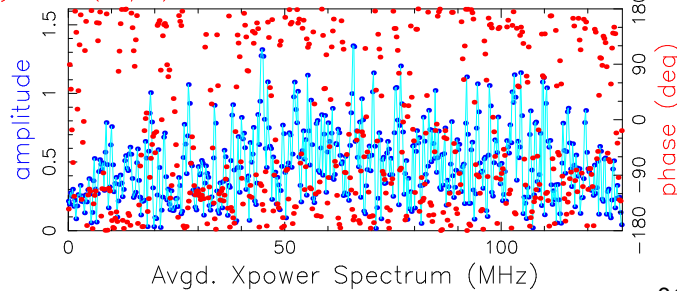
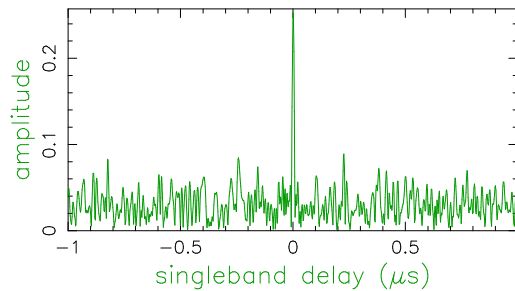
0106+013.1V25LX, No0082, kc

VLBA\_KP - VLBA\_SC, fgroup Q, pol LR



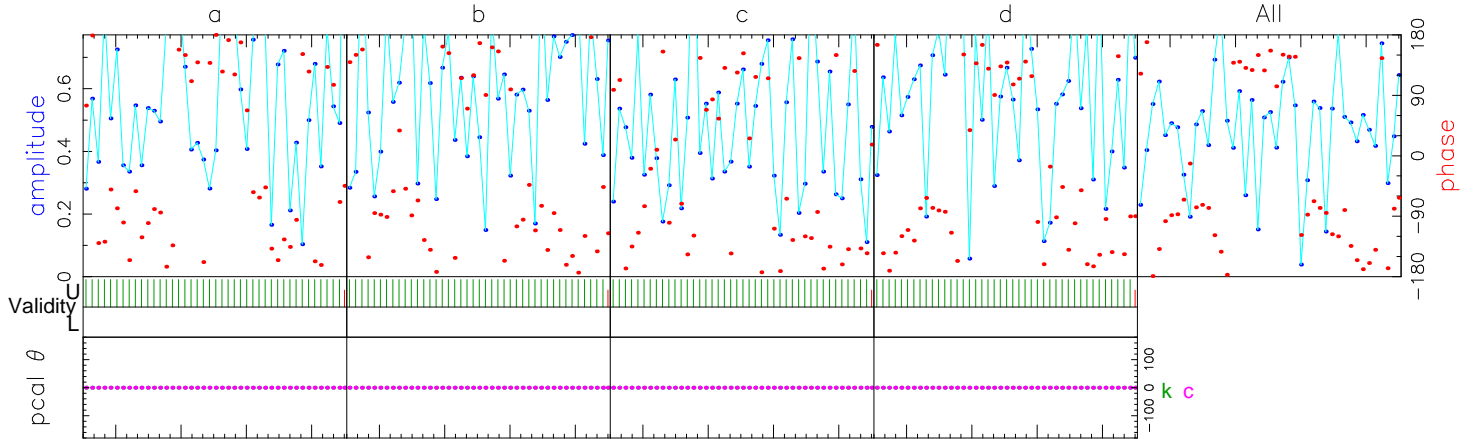
Fringe quality 9

SNR 10.9  
Int time 239.982  
Amp 0.257  
Phase -147.7  
PFD 2.6e-19  
Delays (us)  
SBD 0.000885  
MBD 0.000559  
Fringe rate (Hz)  
-0.002300  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132949  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -147.7 |
| k   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.3    |
| c   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 513.5  |
| k:c | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |        |
| k:c | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |        |
| k   | 1000     | 1000     | 1000     | 1000     | PC phase   |        |
| c   | 1000     | 1000     | 1000     | 1000     | Manl PC    |        |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |        |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 8.67874476457E+03 | Apriori delay (usec)     | 8.67874420522E+03  | Resid mbdelay (usec) | 5.59350E-04  | +/- | 1.0E-04 |
| Sband delay (usec)      | 8.67874508997E+03 | Apriori clock (usec)     | -1.1855106E+01     | Resid sbdelay (usec) | 8.84750E-04  | +/- | 4.0E-04 |
| Phase delay (usec)      | 8.67874419569E+03 | Apriori clockrate (us/s) | -3.1599999E-07     | Resid phdelay (usec) | -9.53067E-06 | +/- | 6.8E-07 |
| Delay rate (us/s)       | 9.35970611741E-01 | Apriori rate (us/s)      | 9.35970665173E-01  | Resid rate (us/s)    | -5.34313E-08 | +/- | 4.9E-09 |
| Total phase (deg)       | 65.7              | Apriori accel (us/s/s)   | -4.54645227117E-05 | Resid phase (deg)    | -147.7       | +/- | 10.5    |

|              |       |        |      |                  |                 |  |                       |
|--------------|-------|--------|------|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | 62.7  | Theor. | 34.5 | Amplitude        | 0.257 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 106.5 |        | 60.1 | Search (1024X16) | 0.248           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 10.5  |        | 10.5 | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  |
| amp/frq (%)  | 24.0  |        | 18.3 | Inc. seg. avg.   | 0.400           | Sample rate(MSamp/s): 256              | mb window (us)        |
|              |       |        |      | Inc. frq. avg.   | 0.250           | Data rate(Mb/s): 2048                  | dr window (ns/s)      |
|              |       |        |      |                  |                 | nlags: 512                             | t_cohere infinite     |
|              |       |        |      |                  |                 |  | ion window (TEC)      |

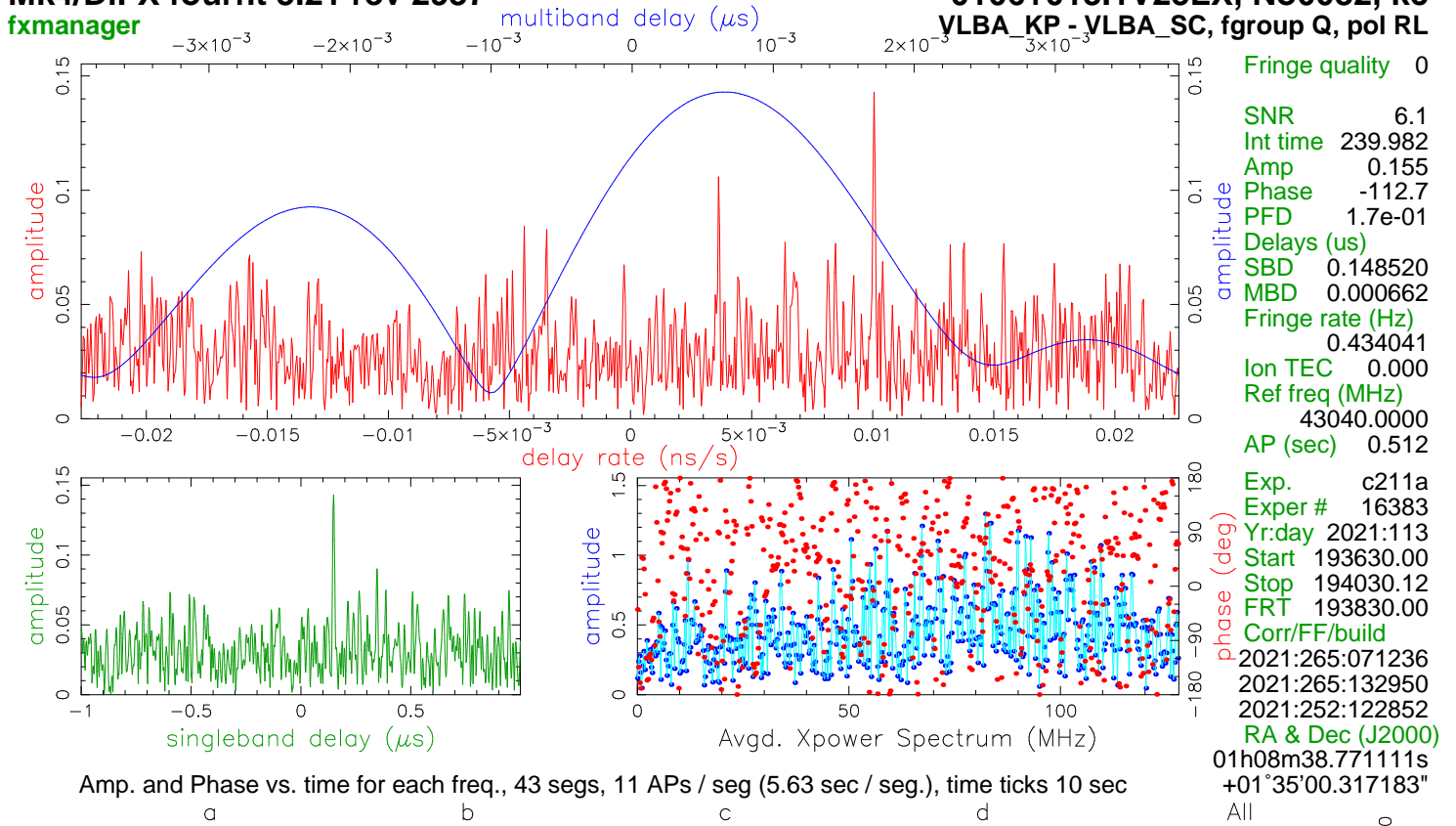
k: az 211.3 el 55.7 pa 26.6 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2699.196 937.543 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kc.Q.135.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

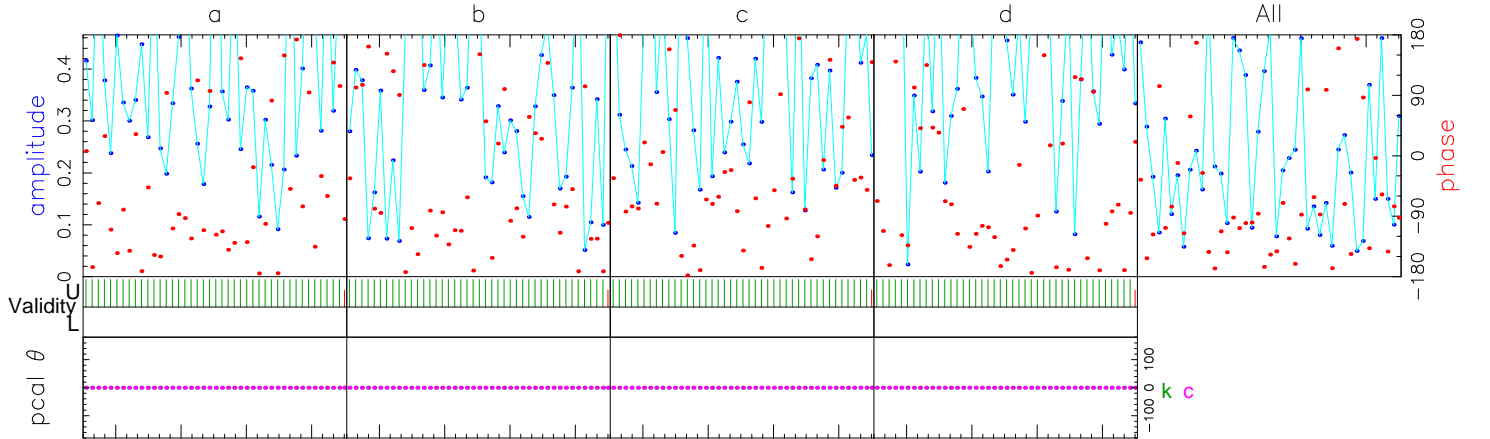
fxmanager

0106+013.1V25LX, No0082, kc

VLBA\_KP - VLBA\_SC, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -113.1   | -131.3   | -70.0    | -129.9   | Phase      | -112.7 |
|     | 0.2      | 0.2      | 0.2      | 0.2      | Ampl.      | 0.2    |
|     | 589.1    | 899.5    | 263.2    | 899.4    | Sbd box    | 589.0  |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| k   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| k:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| k:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| k   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| c   | 1000     | 1000     | 1000     | 1000     |            |        |
| k   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 8.67889330477E+03 | Apriori delay (usec)     | 8.67874420522E+03  | Resid mbdelay (usec) | 6.62048E-04  | +/- | 1.8E-04 |
| Sband delay (usec)      | 8.67889272485E+03 | Apriori clock (usec)     | -1.1855106E+01     | Resid sbdelay (usec) | 1.48520E-01  | +/- | 7.1E-04 |
| Phase delay (usec)      | 8.67874419795E+03 | Apriori clockrate (us/s) | -3.1599999E-07     | Resid phdelay (usec) | -7.27419E-06 | +/- | 1.2E-06 |
| Delay rate (us/s)       | 9.35980749768E-01 | Apriori rate (us/s)      | 9.35970665173E-01  | Resid rate (us/s)    | 1.00846E-05  | +/- | 8.8E-09 |
| Total phase (deg)       | 100.7             | Apriori accel (us/s/s)   | -4.54645227117E-05 | Resid phase (deg)    | -112.7       | +/- | 18.9    |

|              |       |        |                  |                 |  |                               |
|--------------|-------|--------|------------------|-----------------|--|-------------------------------|
| ph/seg (deg) | RMS   | Theor. | Amplitude        | 0.155 +/- 0.026 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 70.1  | 62.0   | Search (1024X16) | 0.133           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 114.5 | 108.3  | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 35.1  | 18.9   | Inc. seg. avg.   | 0.159           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              | 14.0  | 33.0   | Inc. frq. avg.   | 0.161           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

k: az 211.3 el 55.7 pa 26.6 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2699.196 937.543 simultaneous interpolator

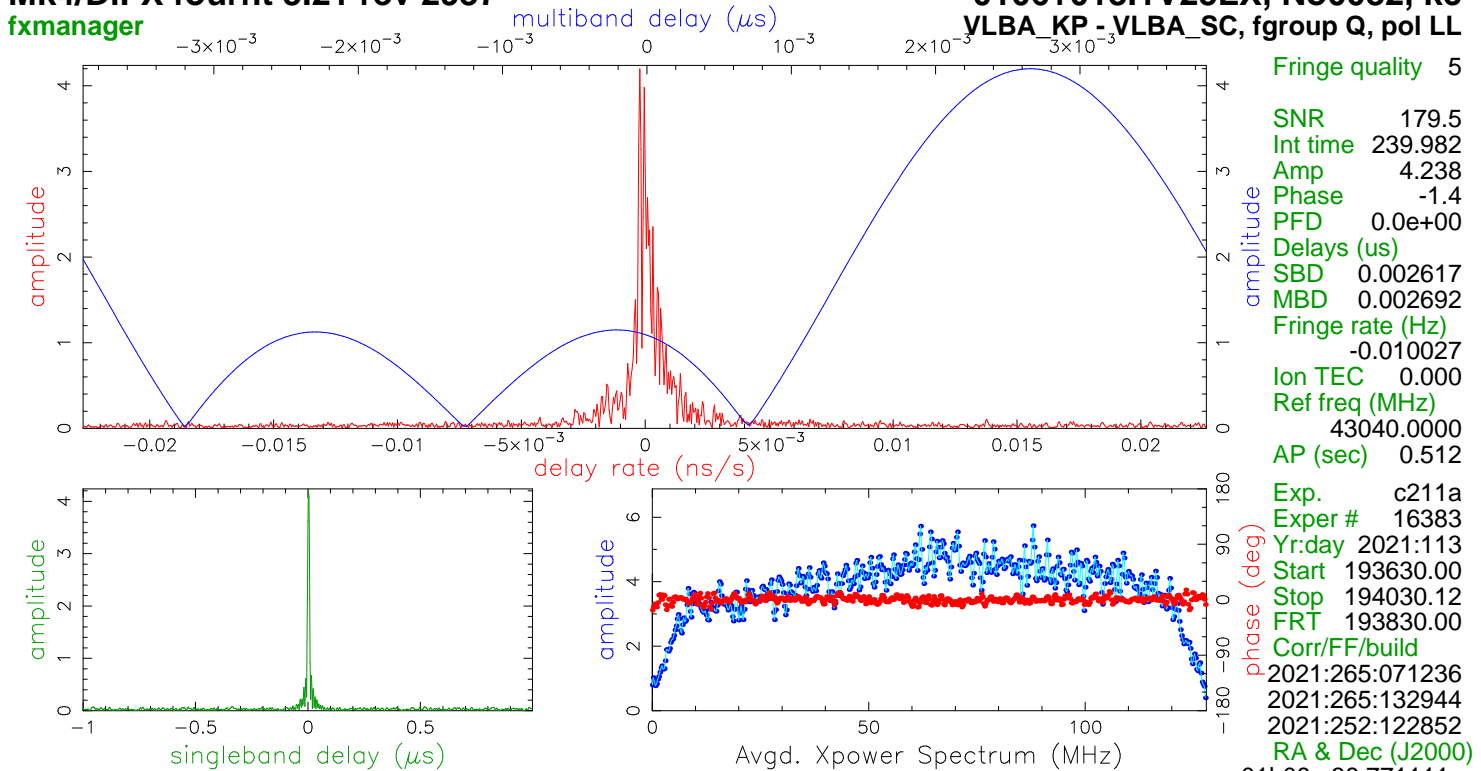
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kc.Q.153.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

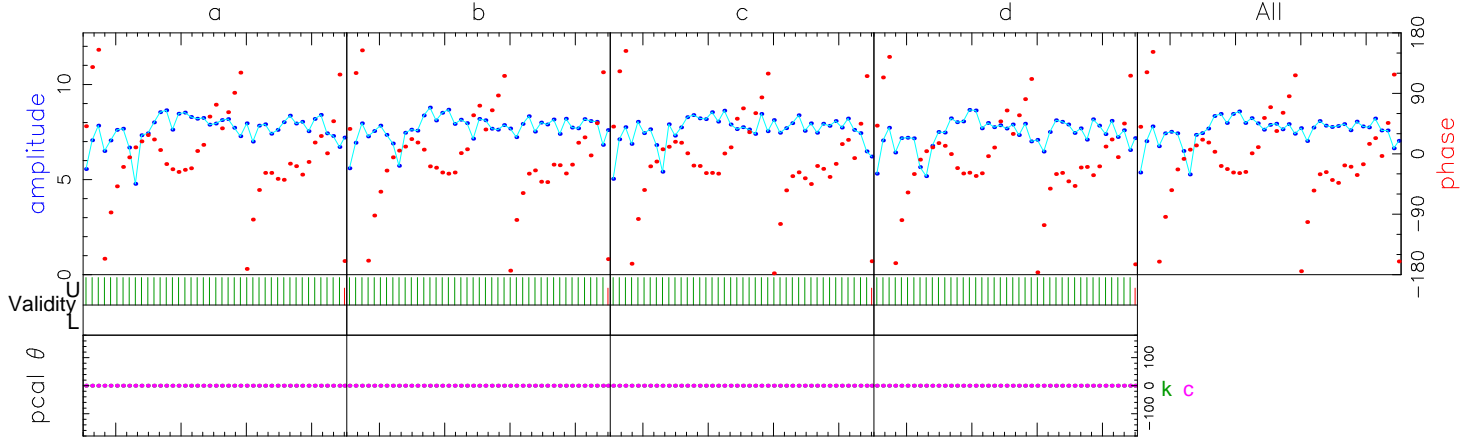
fxmanager

0106+013.1V25LX, No0082, kc

VLBA\_KP - VLBA\_SC, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| 1.8       | -1.4     | -2.4     | -3.5     | Phase      | -1.4  |
| 4.2       | 4.2      | 4.2      | 4.2      | Ampl.      | 4.2   |
| 514.3     | 514.4    | 514.4    | 514.1    | Sbd box    | 514.3 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| k 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| c 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| k:c 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| k:c 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| k 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| c 1000    | 1000     | 1000     | 1000     |            |       |
| k Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| c Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 8.67874689678E+03 | Apriori delay (usec)     | 8.67874420522E+03  | Resid mbdelay (usec) | 2.69156E-03  | +/- | 6.2E-06 |
| Sband delay (usec)      | 8.67874682210E+03 | Apriori clock (usec)     | -1.1855106E+01     | Resid sbdelay (usec) | 2.61688E-03  | +/- | 2.4E-05 |
| Phase delay (usec)      | 8.67874420513E+03 | Apriori clockrate (us/s) | -3.1599999E-07     | Resid phdelay (usec) | -8.76720E-08 | +/- | 4.1E-08 |
| Delay rate (us/s)       | 9.35970432207E-01 | Apriori rate (us/s)      | 9.35970665173E-01  | Resid rate (us/s)    | -2.32966E-07 | +/- | 3.0E-10 |
| Total phase (deg)       | 212.0             | Apriori accel (us/s/s)   | -4.54645227117E-05 | Resid phase (deg)    | -1.4         | +/- | 0.6     |

|              |      |        |                  |                 |  |                       |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|-----------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 4.238 +/- 0.024 | Pcal mode: MANUAL, MANUAL                                    | PC period (AP's) 5, 5 |                  |        |       |
| ph/seg (deg) | 68.2 | 2.1    | Search (1024X16) | 4.022           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                       |                       | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 80.6 | 3.7    | Interp.          | 0.000           | Bits/sample: 2x2      SampCntNorm: enabled                   |                       | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 2.8  | 0.6    | Inc. seg. avg.   | 7.584           | Sample rate(MSamp/s): 256                                    |                       | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 1.1  | 1.1    | Inc. frq. avg.   | 4.200           | Data rate(Mb/s): 2048      nlags: 512      t_cohere infinite |                       | ion window (TEC) | 0.00   | 0.00  |

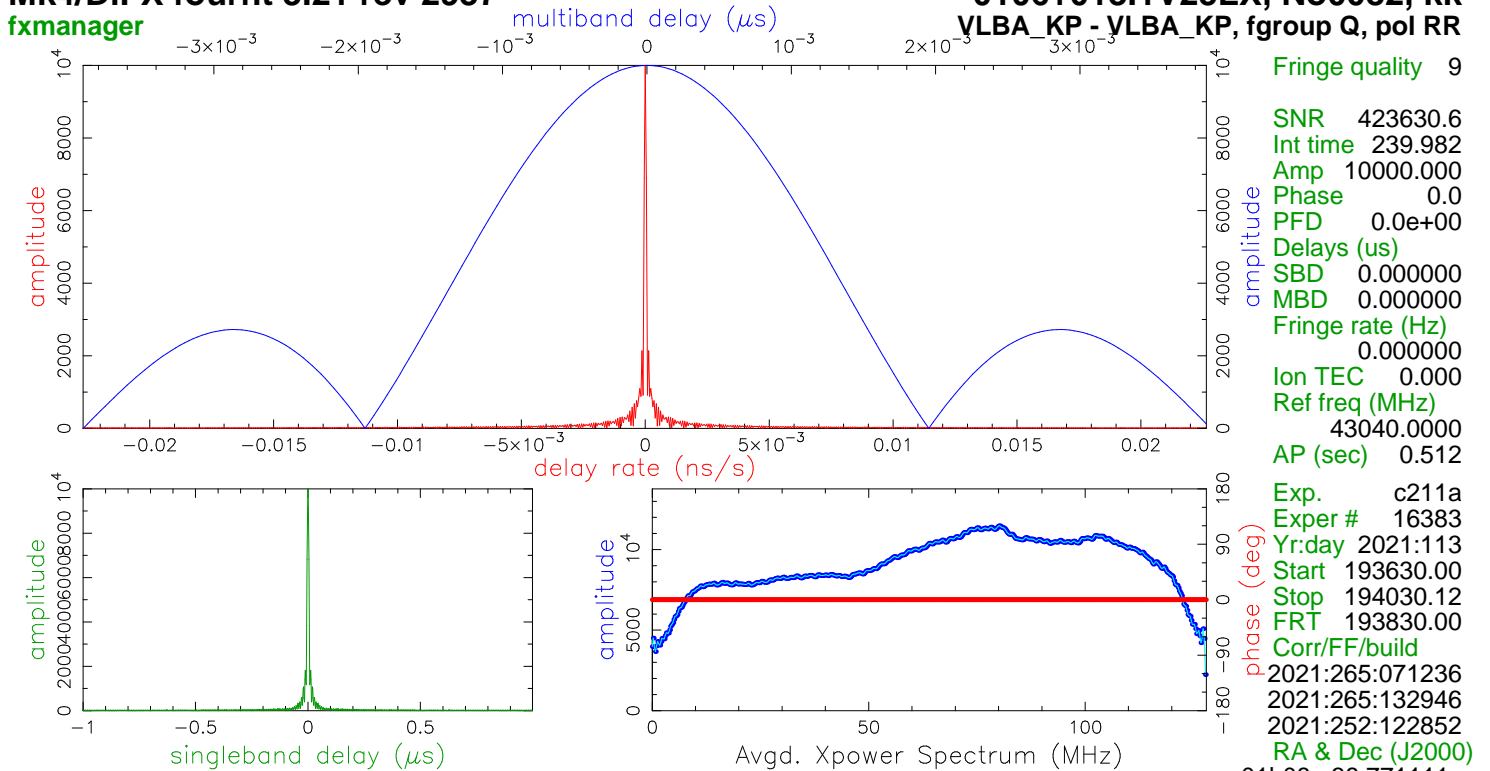
k: az 211.3 el 55.7 pa 26.6 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2699.196 937.543 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kc.Q2.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, kk

VLBA\_KP - VLBA\_KP, fgroup Q, pol RR



Fringe quality 9

SNR 423630.6

Int time 239.982

Amp 10000.000

Phase 0.0

PFD 0.0e+00

Delays (us)

SBD 0.000000

MBD 0.000000

Fringe rate (Hz)

0.000000

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132946

2021:252:122852

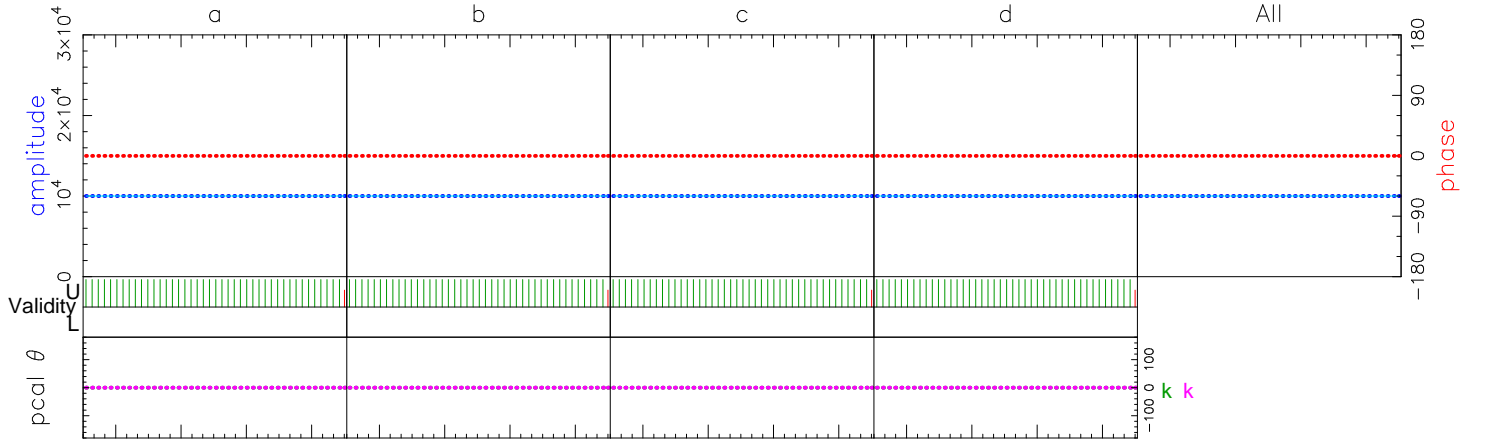
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
|-----------|-----------|-----------|-----------|------------|---------|
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 469/0 | U/L 469/0 | U/L 469/0 | U/L 469/0 | APs used   |         |
| k 1000    | k 1000    | k 1000    | k 1000    | PC freqs   |         |
| k:k 0:0   | k:k 0:0   | k:k 0:0   | k:k 0:0   | PC phase   |         |
| k:k 0:0   | k:k 0:0   | k:k 0:0   | k:k 0:0   | Manl PC    |         |
| k 1000    | k 1000    | k 1000    | k 1000    | PC amp     |         |
| k 1000    | k 1000    | k 1000    | k 1000    |            |         |
| k Q00UR   | k Q01UR   | k Q02UR   | k Q03UR   | Chan ids   |         |
| k Q00UR   | k Q01UR   | k Q02UR   | k Q03UR   | Tracks     |         |
|           |           |           |           | Chan ids   |         |
|           |           |           |           | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                       |
|--------------|-----|--------|------------------|---------------------|--|-----------------------|
| ph/seg (deg) | 0.0 | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |     |        | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

k: az 211.3 el 55.7 pa 26.6 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

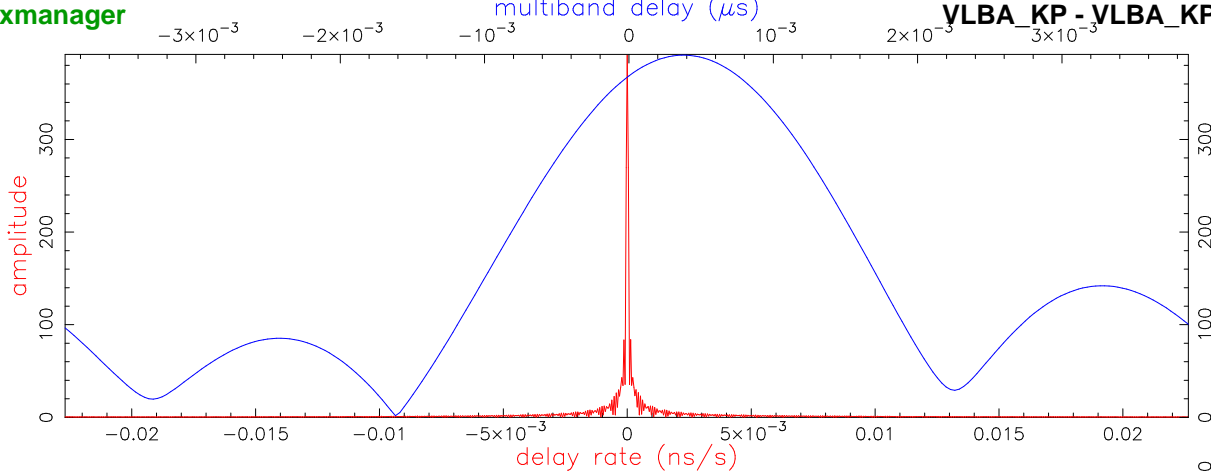
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kk.Q.113.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

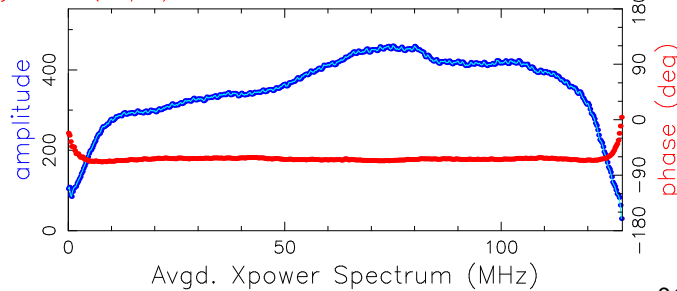
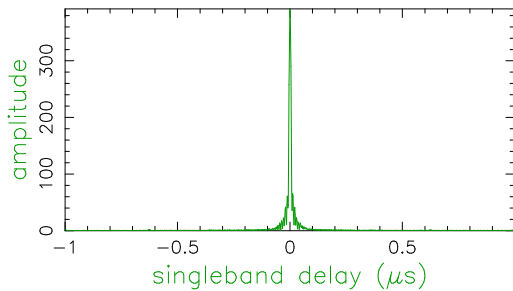
0106+013.1V25LX, No0082, kk

VLBA\_KP - VLBA\_KP, fgroup Q, pol LR



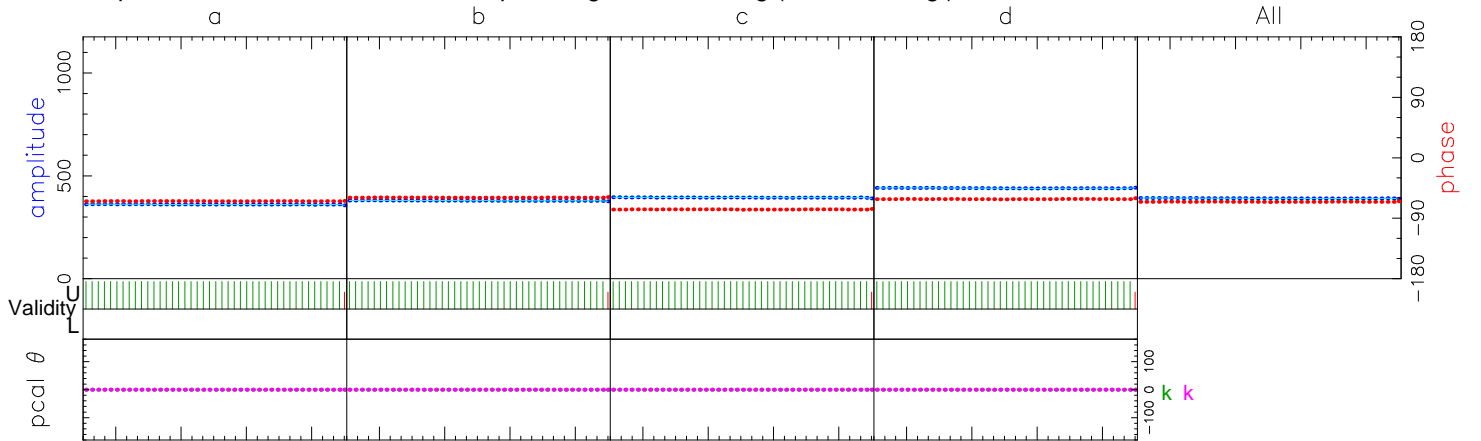
Fringe quality 9

SNR 16600.0  
Int time 239.982  
Amp 391.850  
Phase -65.5  
PFD 0.0e+00  
Delays (us)  
SBD 0.000307  
MBD 0.000392  
Fringe rate (Hz)  
-0.000001  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Yr:day 16383  
Start 2021:113  
Stop 2021:113  
FRT 193630.00  
Corr/FF/build  
2021:265:071236  
2021:265:132948  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -64.6     | -59.2    | -76.8    | -61.4    | Phase      | -65.5 |
| 361.1     | 379.5    | 394.4    | 440.3    | Ampl.      | 393.8 |
| 513.2     | 513.2    | 512.9    | 513.3    | Sbd box    | 513.2 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| k 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| k 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| k:k 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| k:k 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| k 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| k 1000    | 1000     | 1000     | 1000     |            |       |
| k Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| k Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 3.91781250000E-04  | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | 3.91781E-04  | +/- | 6.7E-08 |
| Sband delay (usec)      | 3.06625000000E-04  | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | 3.06625E-04  | +/- | 2.6E-07 |
| Phase delay (usec)      | -4.22509812352E-06 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | -4.22510E-06 | +/- | 4.5E-10 |
| Delay rate (us/s)       | -1.70172360644E-11 | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | -1.70172E-11 | +/- | 3.2E-12 |
| Total phase (deg)       | -65.5              | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | -65.5        | +/- | 0.0     |

|              |     |        |                  |                   |  |                       |                   |                  |       |      |
|--------------|-----|--------|------------------|-------------------|--|-----------------------|-------------------|------------------|-------|------|
|              | RMS | Theor. | Amplitude        | 391.850 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
| ph/seg (deg) | 0.1 | 0.0    | Search (1024X16) | 389.129           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 0.3 | 0.0    | Interp.          | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 9.6 | 0.0    | Inc. seg. avg.   | 391.045           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 7.5 | 0.0    | Inc. frq. avg.   | 393.828           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

k: az 211.3 el 55.7 pa 26.6 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kk.Q.129.1V25LX

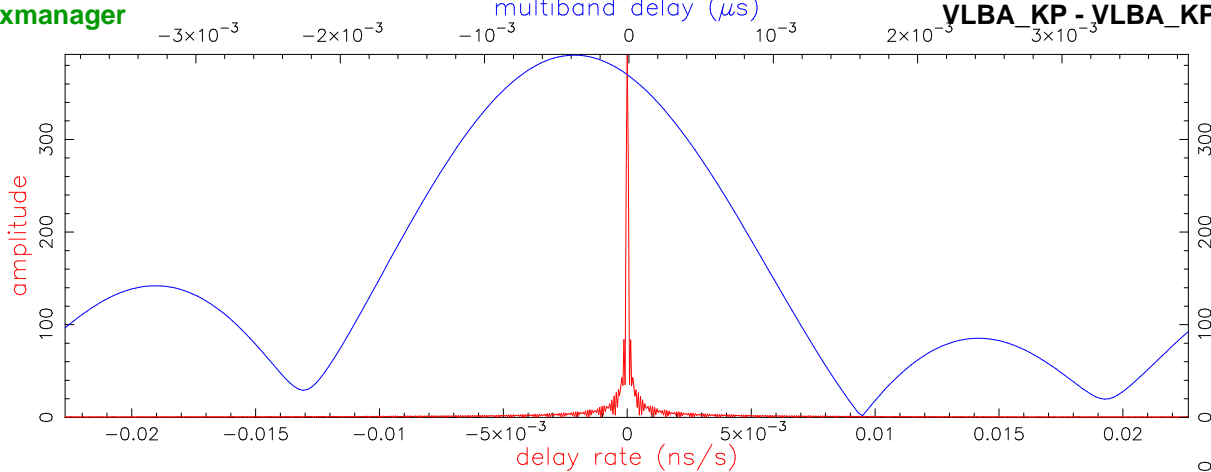


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

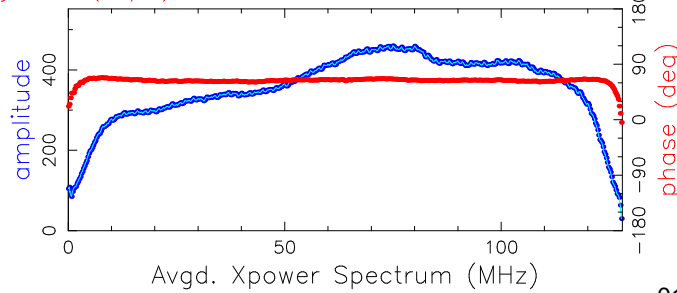
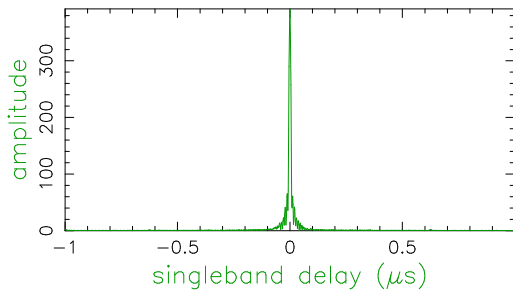
0106+013.1V25LX, No0082, kk

VLBA\_KP - VLBA\_KP, fgroup Q, pol RL



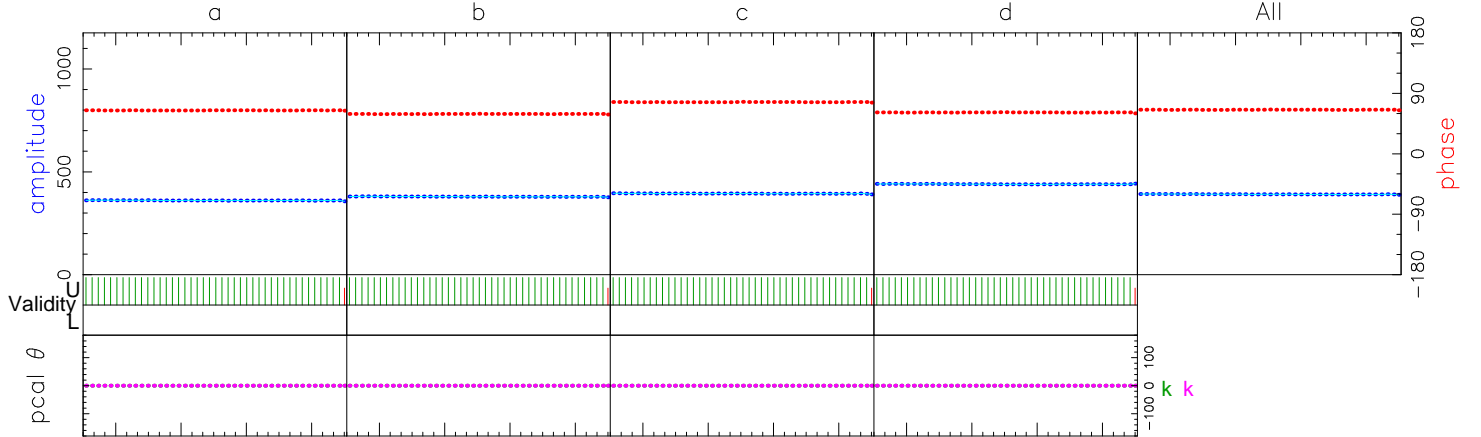
Fringe quality 9

SNR 16600.0  
Int time 239.982  
Amp 391.850  
Phase 65.5  
PFD 0.0e+00  
Delays (us)  
SBD -0.000307  
MBD -0.000392  
Fringe rate (Hz)  
0.000001  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132950  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | 64.6     | 59.2     | 76.8     | 61.4     | Phase      | 65.5  |
|     | 361.1    | 379.5    | 394.4    | 440.3    | Ampl.      | 393.8 |
|     | 512.8    | 512.8    | 513.1    | 512.7    | Sbd box    | 512.8 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| k:k | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| k:k | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| k   | 1000     | 1000     | 1000     | 1000     |            |       |
| k   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -3.91781250000E-04 | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | -3.91781E-04 | +/- | 6.7E-08 |
| Sband delay (usec)      | -3.06625000000E-04 | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | -3.06625E-04 | +/- | 2.6E-07 |
| Phase delay (usec)      | 4.22509812355E-06  | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | 4.22510E-06  | +/- | 4.5E-10 |
| Delay rate (us/s)       | 1.70172360644E-11  | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | 1.70172E-11  | +/- | 3.2E-12 |
| Total phase (deg)       | 65.5               | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | 65.5         | +/- | 0.0     |

|              |        |                  |                   |  |                       |                   |                            |
|--------------|--------|------------------|-------------------|--|-----------------------|-------------------|----------------------------|
| RMS          | Theor. | Amplitude        | 391.850 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| ph/seg (deg) | 0.1    | Search (1024X16) | 389.129           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| amp/seg (%)  | 0.3    | Interp.          | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| ph/frq (deg) | 9.6    | Inc. seg. avg.   | 391.045           | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)  | -0.023 0.023               |
| amp/frq (%)  | 7.5    | Inc. frq. avg.   | 393.828           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

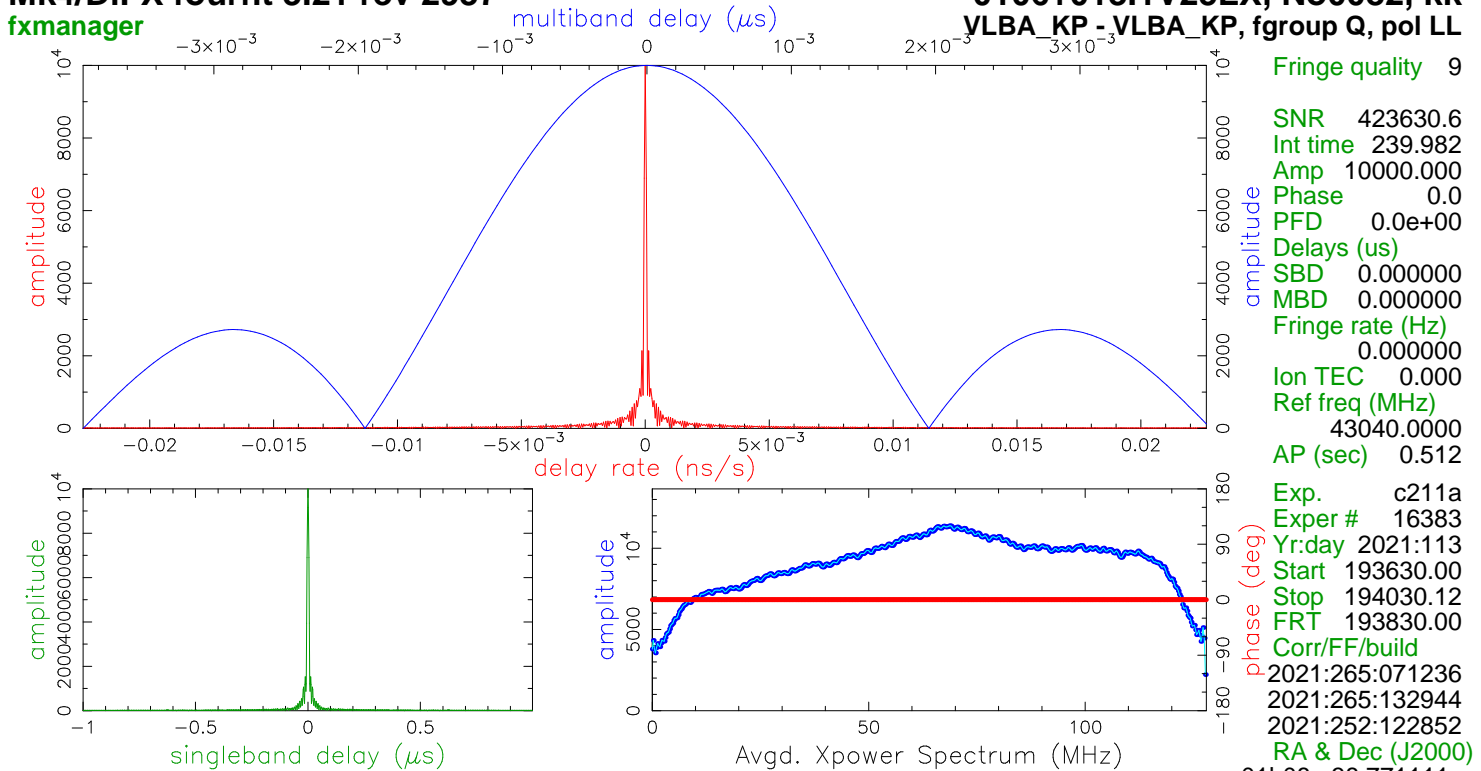
k: az 211.3 el 55.7 pa 26.6 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kk.Q.147.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

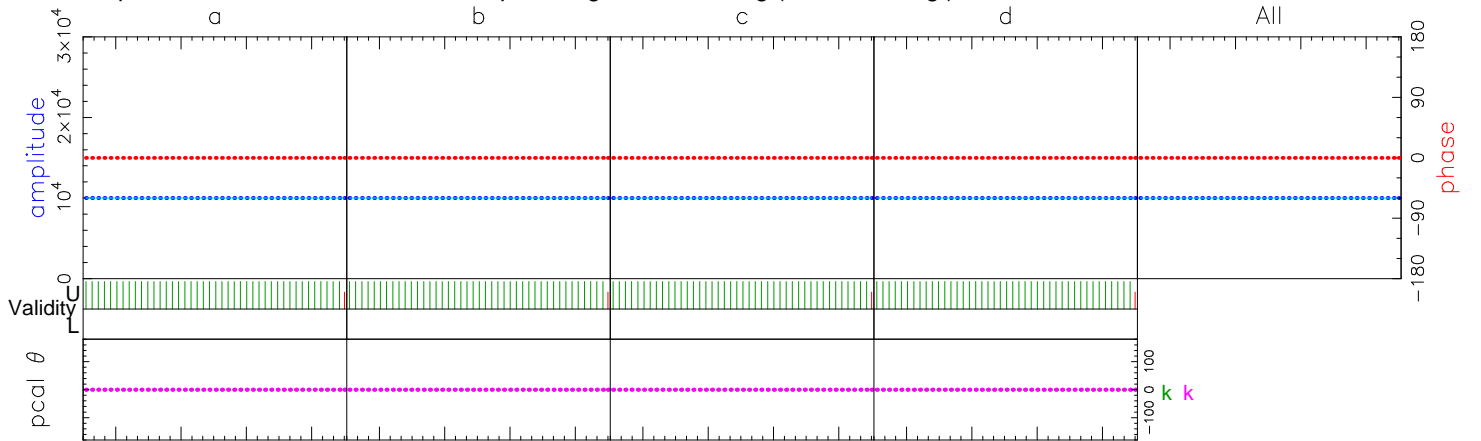
fxmanager

0106+013.1V25LX, No0082, kk

VLBA\_KP - VLBA\_KP, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
|-----------|-----------|-----------|-----------|------------|---------|
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 469/0 | U/L 469/0 | U/L 469/0 | U/L 469/0 | APs used   |         |
| k 1000    | k 1000    | k 1000    | k 1000    | PC freqs   |         |
| k:k 0:0   | k:k 0:0   | k:k 0:0   | k:k 0:0   | PC phase   |         |
| k:k 0:0   | k:k 0:0   | k:k 0:0   | k:k 0:0   | Manl PC    |         |
| k 1000    | k 1000    | k 1000    | k 1000    | PC amp     |         |
| k 1000    | k 1000    | k 1000    | k 1000    |            |         |
| k Q00UL   | k Q01UL   | k Q02UL   | k Q03UL   | Chan ids   |         |
| k Q00UL   | k Q01UL   | k Q02UL   | k Q03UL   | Tracks     |         |
|           |           |           |           | Chan ids   |         |
|           |           |           |           | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                              |                  |        |       |  |
|--------------|-----|--------|------------------|---------------------|--|------------------------------|------------------|--------|-------|--|
|              | RMS | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |  |
| ph/seg (deg) | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |  |
| amp/seg (%)  | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |  |
| ph/frq (deg) | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |  |
| amp/frq (%)  | 0.0 | 0.0    | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |  |

k: az 211.3 el 55.7 pa 26.6 k: az 211.3 el 55.7 pa 26.6 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

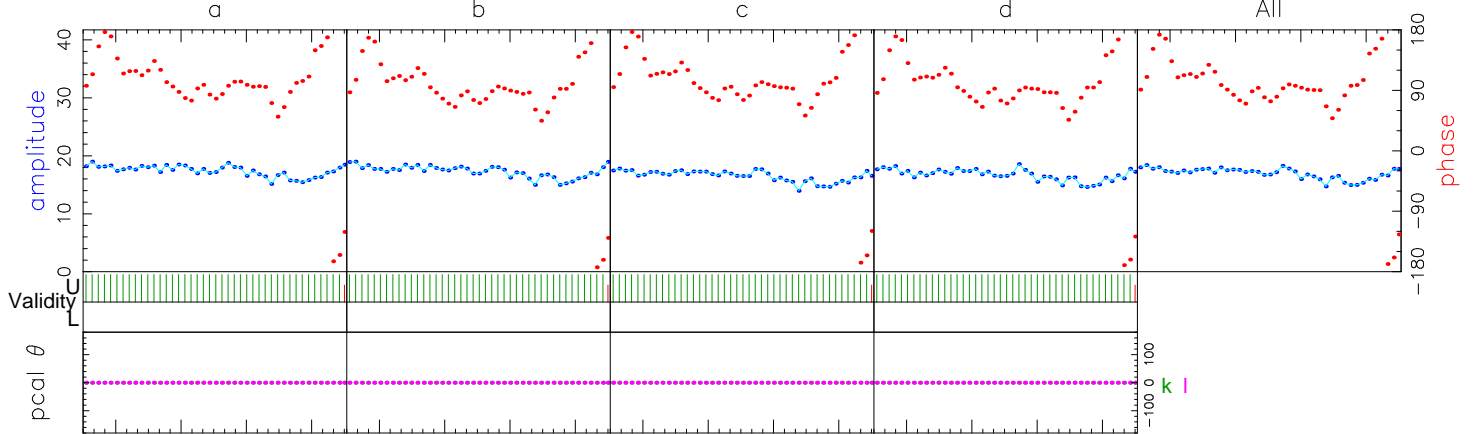
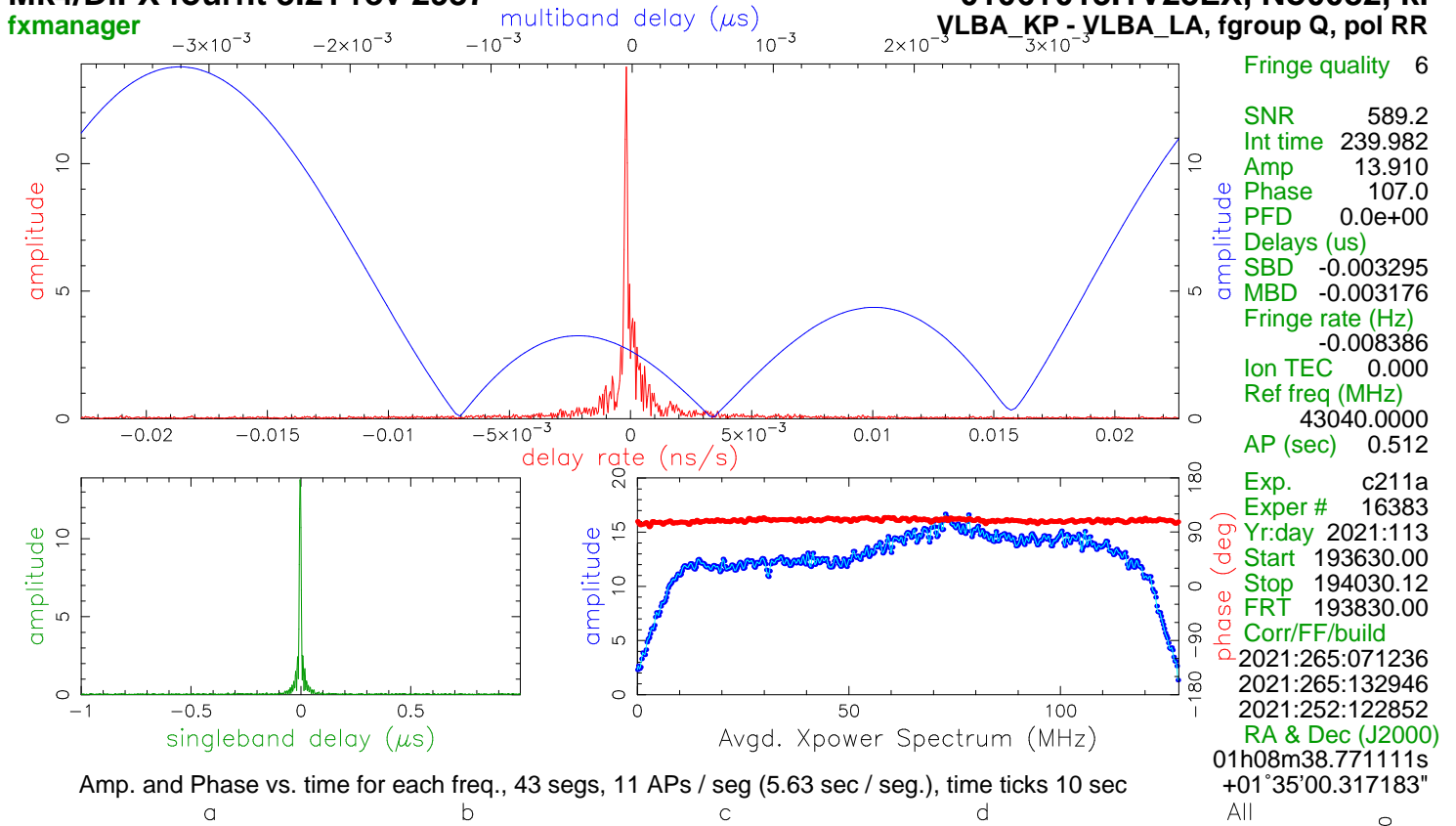
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kk..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kk.Q.91.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, kl

VLBA\_KP - VLBA\_LA, fgroup Q, pol RR



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 107.0 |
| k   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 13.8  |
| l   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 511.3 |
| k:l | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| k:l | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| l   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| k   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 1.28027870636E+03 | Apriori delay (usec)     | 1.28028188228E+03  | Resid mbdelay (usec) | -3.17591E-03 | +/- | 1.9E-06 |
| Sband delay (usec)      | 1.28027858690E+03 | Apriori clock (usec)     | 2.8989563E+00      | Resid sbdelay (usec) | -3.29538E-03 | +/- | 7.3E-06 |
| Phase delay (usec)      | 1.28028188918E+03 | Apriori clockrate (us/s) | 2.8600001E-07      | Resid phdelay (usec) | 6.90492E-06  | +/- | 1.3E-08 |
| Delay rate (us/s)       | 9.32273327432E-02 | Apriori rate (us/s)      | 9.32275275821E-02  | Resid rate (us/s)    | -1.94839E-07 | +/- | 9.1E-11 |
| Total phase (deg)       | 183.8             | Apriori accel (us/s/s)   | -6.97681142385E-06 | Resid phase (deg)    | 107.0        | +/- | 0.2     |

|              |          |            |                            |  |                       |                      |                            |
|--------------|----------|------------|----------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 37.7 | Theor. 0.6 | Amplitude 13.910 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 22.9     | 1.1        | Search (1024X16) 12.856    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 5.4      | 0.2        | Interp. 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 2.3      | 0.3        | Inc. seg. avg. 16.951      | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
|              |          |            | Inc. frq. avg. 13.822      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

k: az 211.3 el 55.7 pa 26.6 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) -269.696 -252.924 simultaneous interpolator

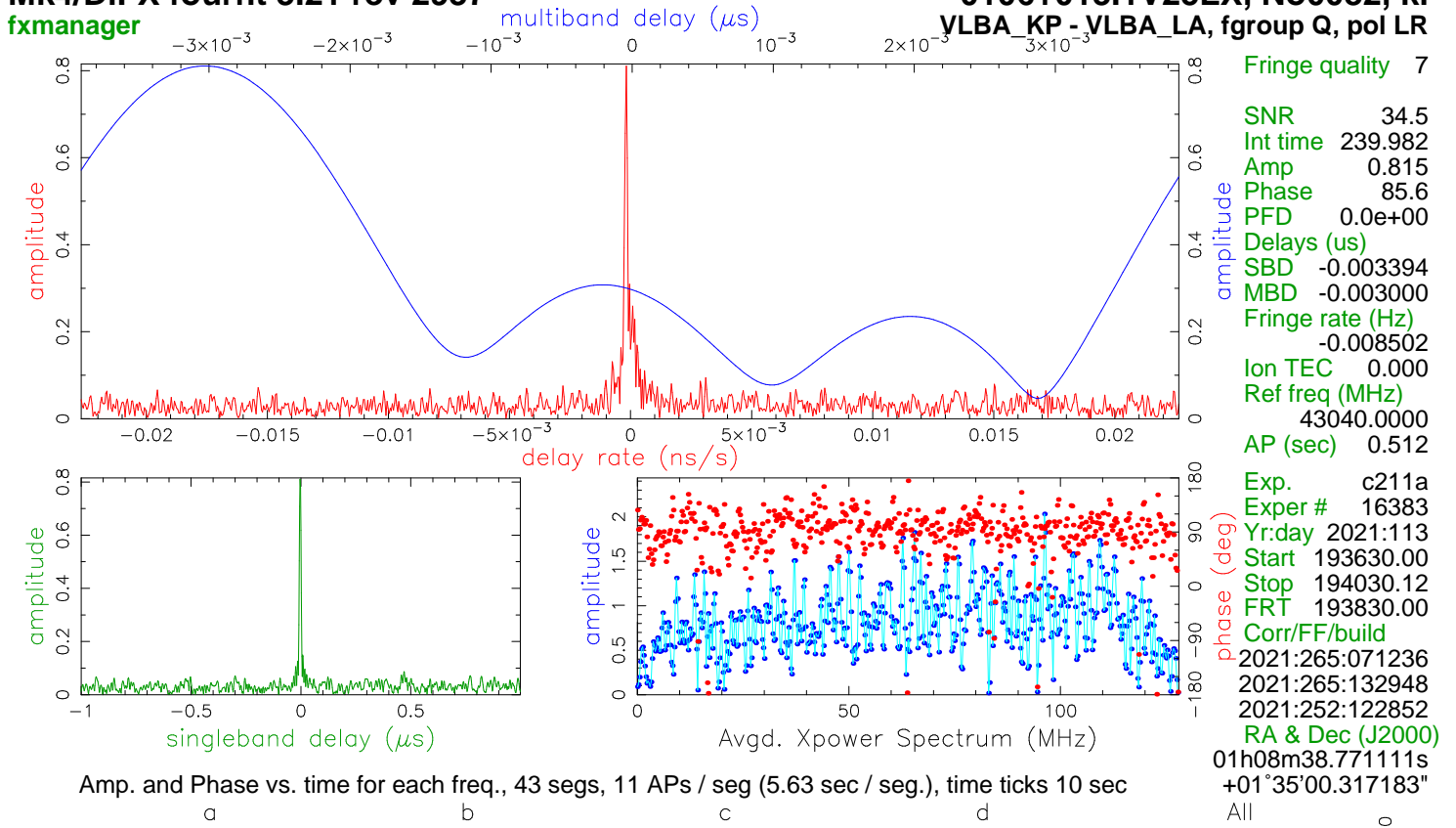
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kl.Q.110.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

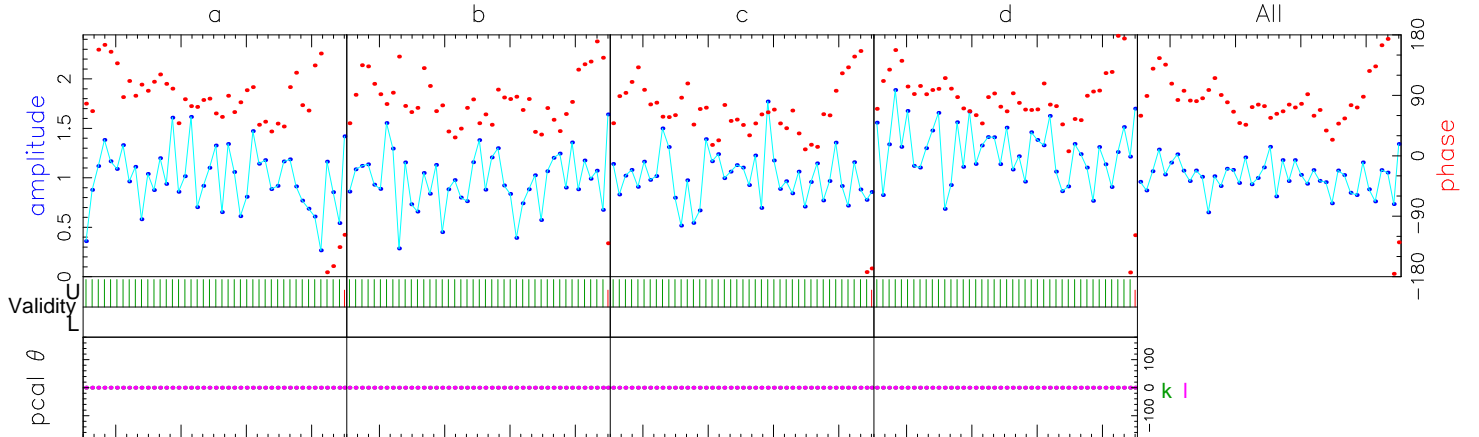
fxmanager

0106+013.1V25LX, No0082, kl

VLBA\_KP - VLBA\_LA, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



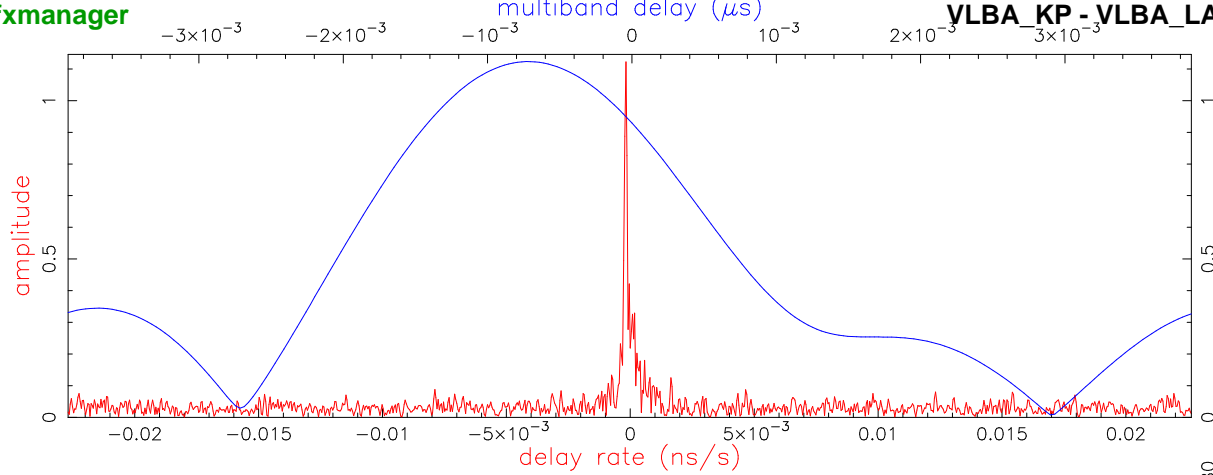
|                               | 42912.00   | 43040.00   | 43168.00          | 43296.00          | Freq (MHz)                             | All                      |
|-------------------------------|--|--|-------------------|-------------------|--|--------------------------|
| U/L                           | 469/0  | 469/0  | 469/0             | 469/0             | APs used                               |                          |
| k                             | 1000   | 1000   | 1000              | 1000              | PC freqs                               |                          |
| l                             | 1000   | 1000   | 1000              | 1000              | PC phase                               |                          |
| k:l                           | 0:0  | 0:0  | 0:0               | 0:0               | Manl PC                                |                          |
| k:l                           | 0:0  | 0:0  | 0:0               | 0:0               | PC amp                                 |                          |
| k                             | 1000   | 1000   | 1000              | 1000              | Chan ids                               |                          |
| l                             | 1000   | 1000   | 1000              | 1000              | Tracks                                 |                          |
| k                             | Q00UL  | Q01UL  | Q02UL             | Q03UL             | Chan ids                               |                          |
| l                             | Q00UR  | Q01UR  | Q02UR             | Q03UR             | Tracks                                 |                          |
| Group delay (usec)(sbd)       | 1.28027888268E+03  | 1.28027888268E+03  | 1.28027888268E+03 | 1.28027888268E+03 | Resid mbdelay (usec)                   | -2.99960E-03 +/- 3.2E-05 |
| Sband delay (usec)            | 1.28027848865E+03  | 1.28027848865E+03  | 1.28027848865E+03 | 1.28027848865E+03 | Resid sbdelay (usec)                   | -3.39362E-03 +/- 1.2E-04 |
| Phase delay (usec)            | 1.28028188780E+03  | 1.28028188780E+03  | 1.28028188780E+03 | 1.28028188780E+03 | Resid phdelay (usec)                   | 5.52500E-06 +/- 2.1E-07  |
| Delay rate (us/s)             | 9.32273300517E-02  | 9.32273300517E-02  | 9.32273300517E-02 | 9.32273300517E-02 | Resid rate (us/s)                      | -1.97530E-07 +/- 1.5E-09 |
| Total phase (deg)             | 162.4  | 162.4  | 162.4             | 162.4             | Resid phase (deg)                      | 85.6 +/- 3.3             |
| RMS                           | 39.6   | 39.6   | 39.6              | 39.6              | PCal mode: MANUAL, MANUAL              |                          |
| Theor.                        | 10.9   | 10.9   | 10.9              | 10.9              | PCal rate: 0.000E+00, 0.000E+00 (us/s) |                          |
| Amplitude                     | 0.815 +/- 0.024  | 0.815 +/- 0.024  | 0.815 +/- 0.024   | 0.815 +/- 0.024   | PC period (AP's) 5, 5                  |                          |
| Search (1024X16)              | 0.761  | 0.761  | 0.761             | 0.761             | sb window (us)                         | -1.000 1.000             |
| Interp.                       | 0.000  | 0.000  | 0.000             | 0.000             | mb window (us)                         | -0.004 0.004             |
| Inc. seg. avg.                | 0.994  | 0.994  | 0.994             | 0.994             | dr window (ns/s)                       | -0.023 0.023             |
| Inc. frq. avg.                | 0.823  | 0.823  | 0.823             | 0.823             | ion window (TEC)                       | 0.00 0.00                |
| ph/seg (deg)                  | 39.6   | 39.6   | 39.6              | 39.6              | simultaneous interpolator              |                          |
| amp/seg (%)                   | 30.4   | 30.4   | 30.4              | 30.4              |  |                          |
| ph/frq (deg)                  | 15.1   | 15.1   | 15.1              | 15.1              |  |                          |
| amp/frq (%)                   | 12.7   | 12.7   | 12.7              | 12.7              |  |                          |
| k: az 211.3 el 55.7 pa 26.6   | l: az 216.4 el 50.1 pa 29.3                              | u, v (fr/asec) -269.696 -252.924                               |                   |                   |  |                          |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/kl..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/kl.Q.126.1V25LX |                   |                   |  |                          |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, kl

VLBA\_KP - VLBA\_LA, fgroup Q, pol RL



Fringe quality 7

SNR 48.5

Int time 239.982

Amp 1.146

Phase -59.8

PFD 0.0e+00

Delays (us)

SBD -0.000955

MBD -0.000762

Fringe rate (Hz)

-0.008501

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132950

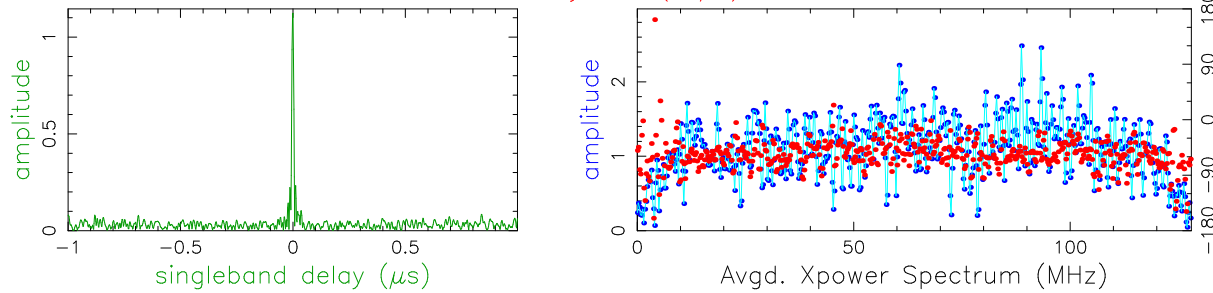
2021:252:122852

RA &amp; Dec (J2000)

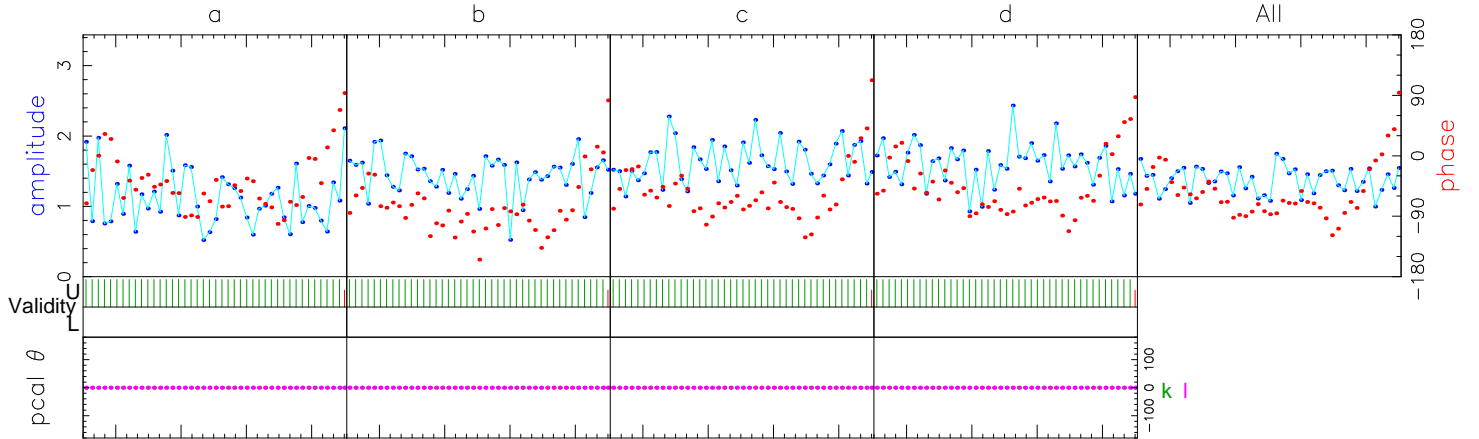
01h08m38.771111s

+01°35'00.317183"

All



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -45.4     | -79.5    | -61.1    | -50.1    | Phase      | -59.8 |
| 0.8       | 1.2      | 1.3      | 1.3      | Ampl.      | 1.1   |
| 512.6     | 512.2    | 512.9    | 512.4    | Sbd box    | 512.5 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| k 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| l 1000    | 1000     | 1000     | 1000     | PC phase   |       |
| k:l 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| k:l 0:0   | 0:0      | 0:0      | 0:0      | PC amp     |       |
| k 1000    | 1000     | 1000     | 1000     |            |       |
| l 1000    | 1000     | 1000     | 1000     |            |       |
| k Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| l Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |             |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 1.28028112071E+03 | Apriori delay (usec)     | 1.28028188228E+03  | Resid mbdelay (usec) | -7.61570E-04 | +/- 2.3E-05 |
| Sband delay (usec)      | 1.28028092753E+03 | Apriori clock (usec)     | 2.8989563E+00      | Resid sbdelay (usec) | -9.54750E-04 | +/- 8.9E-05 |
| Phase delay (usec)      | 1.28028187842E+03 | Apriori clockrate (us/s) | 2.8600001E-07      | Resid phdelay (usec) | -3.85627E-06 | +/- 1.5E-07 |
| Delay rate (us/s)       | 9.32273300715E-02 | Apriori rate (us/s)      | 9.32275275821E-02  | Resid rate (us/s)    | -1.97511E-07 | +/- 1.1E-09 |
| Total phase (deg)       | 17.0              | Apriori accel (us/s/s)   | -6.97681142385E-06 | Resid phase (deg)    | -59.8        | +/- 2.4     |

|              |      |        |                  |                 |  |                       |                   |                  |       |      |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|------|
|              | RMS  | Theor. | Amplitude        | 1.146 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
| ph/seg (deg) | 38.9 | 7.7    | Search (1024X16) | 1.038           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 25.6 | 13.5   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 18.6 | 2.4    | Inc. seg. avg.   | 1.362           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 16.5 | 4.1    | Inc. frq. avg.   | 1.150           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

k: az 211.3 el 55.7 pa 26.6 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) -269.696 -252.924 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kl..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kl.Q.146.1V25LX

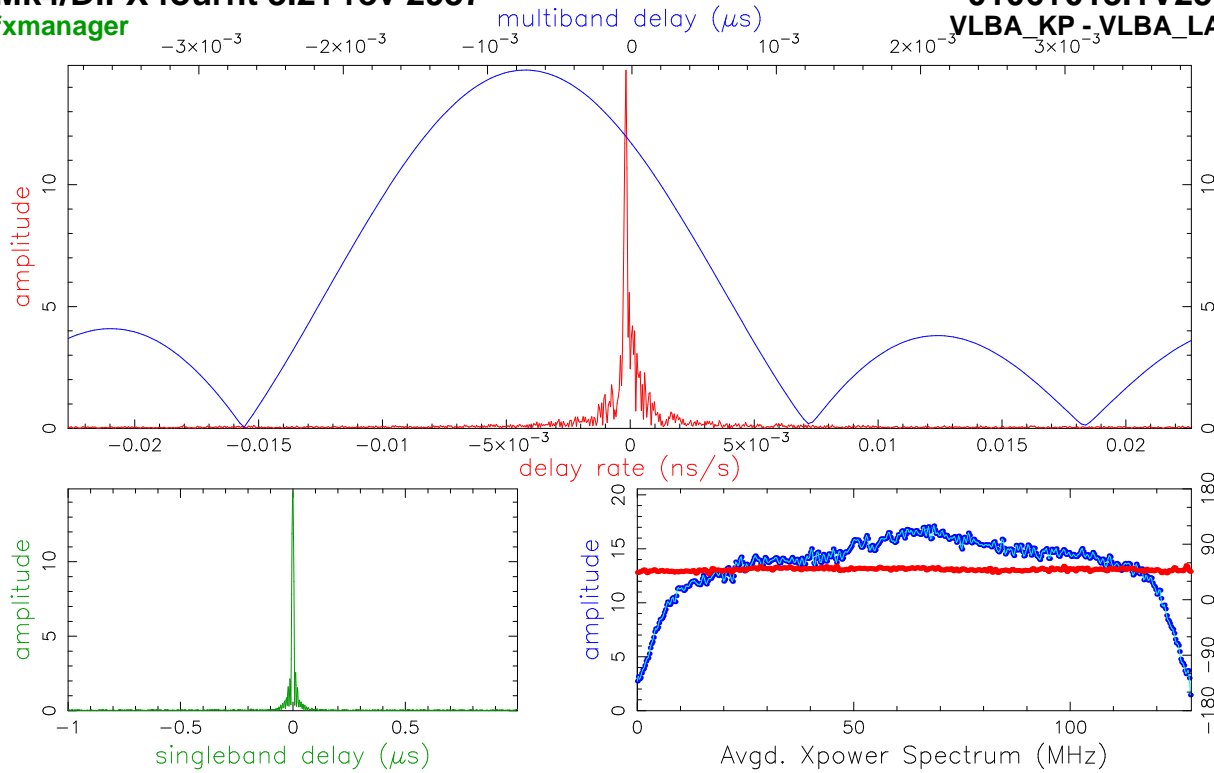


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, kl

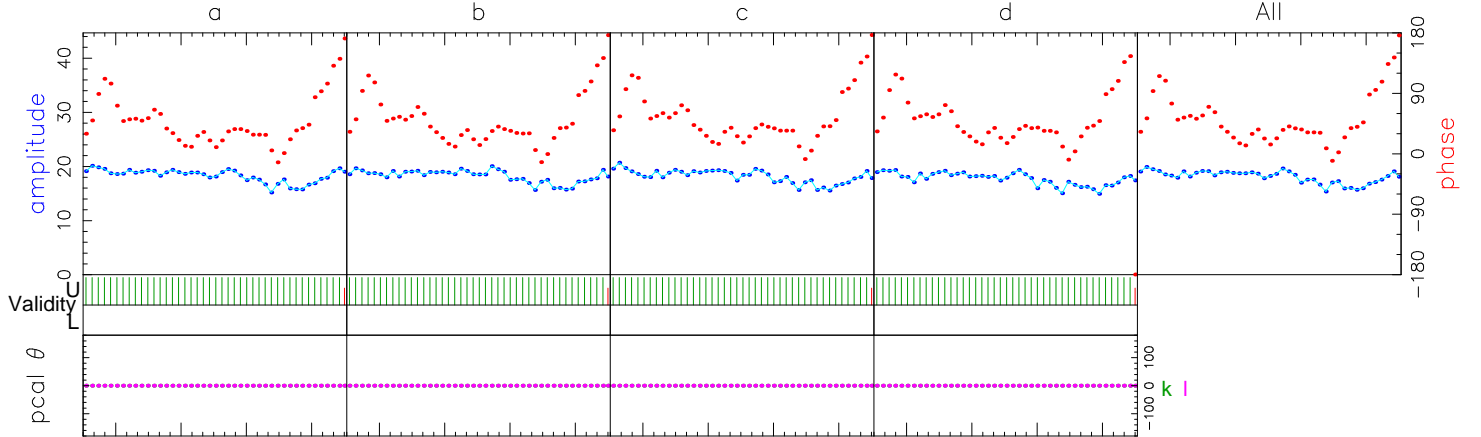
VLBA\_KP - VLBA\_LA, fgroup Q, pol LL



Fringe quality 6

SNR 631.1  
Int time 239.982  
Amp 14.898  
Phase 49.0  
PFD 0.0e+00  
Delays (us)  
SBD -0.000775  
MBD -0.000775  
Fringe rate (Hz)  
-0.008381  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512  
Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132944  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



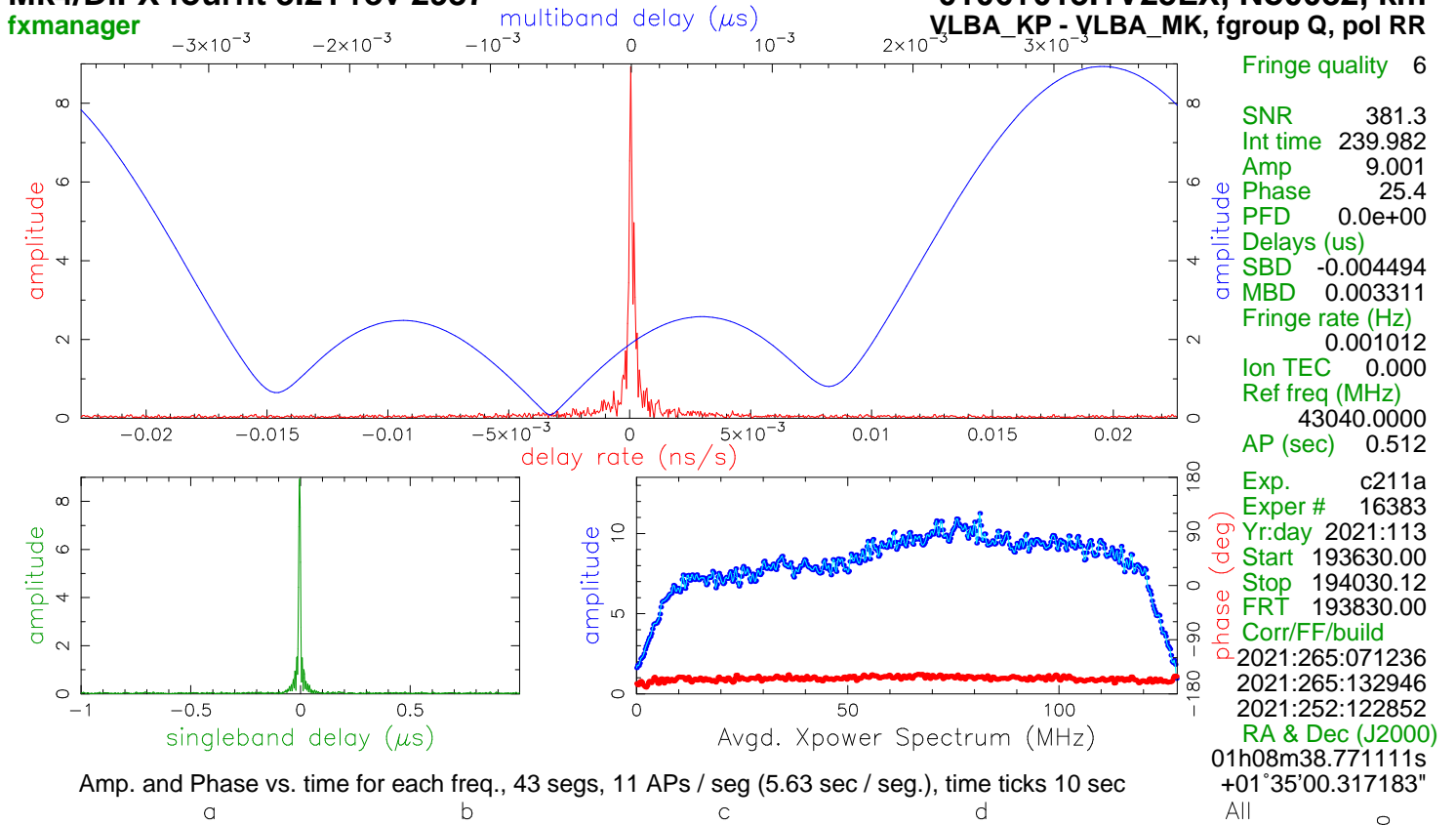
|                               |  |  |  | Freq (MHz)  |  | All                      |
|-------------------------------|--|--|--|---|--|--------------------------|
| 42912.00                      |  |  |  | 43040.00  |  |                          |
| 46.2                          |  |  |  | 47.7  |  |                          |
| 14.9                          |  |  |  | 14.8  |  |                          |
| 512.8                         |  |  |  | 512.6   |  |                          |
| U/L 469/0                     |  |  |  | 469/0   |  |                          |
| k 1000                        |  |  |  | 1000  |  |                          |
| l 1000                        |  |  |  | 1000  |  |                          |
| k:l 0:0                       |  |  |  | 0:0   |  |                          |
| k:l 0:0                       |  |  |  | 0:0   |  |                          |
| k 1000                        |  |  |  | 1000  |  |                          |
| l 1000                        |  |  |  | 1000  |  |                          |
| k Q00UL                       |  |  |  | Q01UL   |  |                          |
| l Q00UL                       |  |  |  | Q02UL   |  |                          |
|                               |  |  |  | Q03UL   |  |                          |
| Group delay (usec)(sbd)       |  |  |  | 1.28028110699E+03   |  | Apriori delay (usec)     |
| Sband delay (usec)            |  |  |  | 1.28028110728E+03   |  | Apriori clock (usec)     |
| Phase delay (usec)            |  |  |  | 1.28028188544E+03   |  | Apriori clockrate (us/s) |
| Delay rate (us/s)             |  |  |  | 9.32273328454E-02   |  | Apriori rate (us/s)      |
| Total phase (deg)             |  |  |  | 125.7   |  | Apriori accel (us/s/s)   |
|                               |  |  |  | 14.898 +/- 0.024  |  |                          |
| RMS                           |  |  |  | Theor.  |  |                          |
| 37.8                          |  |  |  | 0.6   |  |                          |
| amp/seg (%)                   |  |  |  | 22.8  |  |                          |
| ph/frq (deg)                  |  |  |  | 3.0   |  |                          |
| amp/frq (%)                   |  |  |  | 1.8   |  |                          |
| k: az 211.3 el 55.7 pa 26.6   |  |  |  | l: az 216.4 el 50.1 pa 29.3                                   |  |                          |
| Control file: cf_1234_gmva7mm |  |  |  | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/kl..1V25LX      |  |                          |
|                               |  |  |  | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/kl.Q.89.1V25LX |  |                          |

## Mk4/DiFX fourfit 3.21 rev 2937

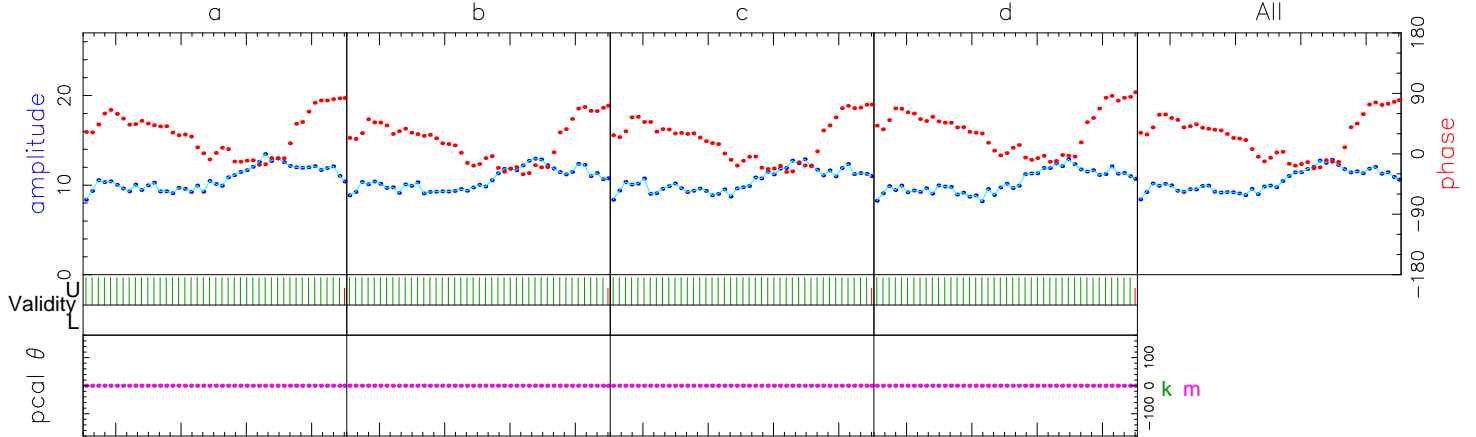
fxmanager

0106+013.1V25LX, No0082, km

VLBA\_KP - VLBA\_MK, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



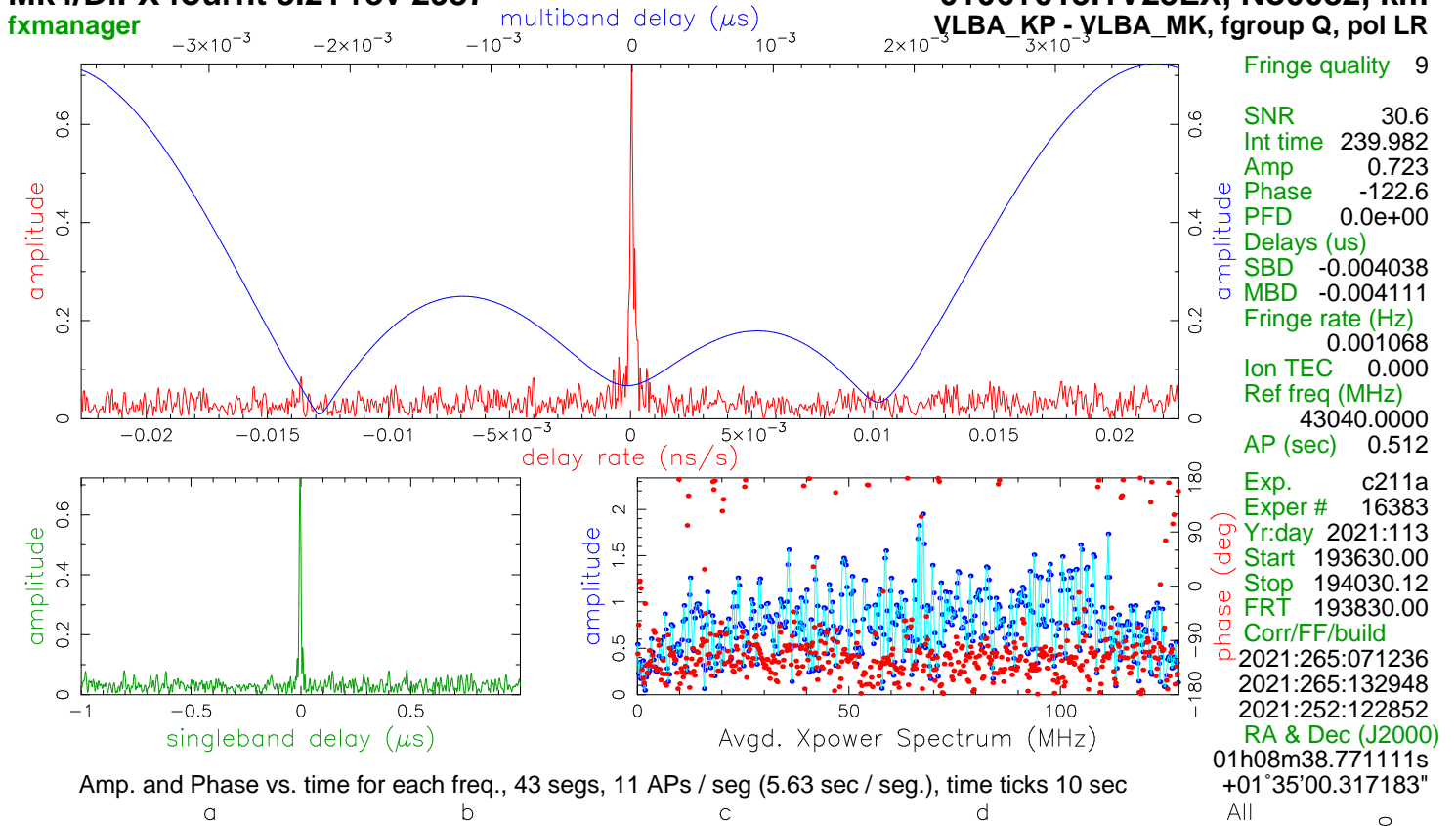
|                               |  |  |                    |                           |  |   |
|-------------------------------|--|--|--------------------|---------------------------|--|---|
|                               | 42912.00   | 43040.00   | 43168.00           | 43296.00                  | Freq (MHz)                             | All   |
|                               | 29.8   | 17.5   | 20.3               | 34.2                      | Phase                                  | 25.4  |
|                               | 9.2  | 9.1  | 8.9                | 8.8                       | Ampl.                                  | 9.0   |
|                               | 510.4  | 510.6  | 510.8              | 510.9                     | Sbd box                                | 510.7   |
| U/L                           | 469/0  | 469/0  | 469/0              | 469/0                     | APs used                               |   |
| k                             | 1000   | 1000   | 1000               | 1000                      | PC freqs                               |   |
| m                             | 1000   | 1000   | 1000               | 1000                      | PC freqs                               |   |
| k:m                           | 0:0  | 0:0  | 0:0                | 0:0                       | PC phase                               |   |
| k:m                           | 0:0  | 0:0  | 0:0                | 0:0                       | ManI PC                                |   |
| k                             | 1000   | 1000   | 1000               | 1000                      | PC amp                                 |   |
| m                             | 1000   | 1000   | 1000               | 1000                      |  |   |
| k                             | Q00UR  | Q01UR  | Q02UR              | Q03UR                     | Chan ids                               |   |
| m                             | Q00UR  | Q01UR  | Q02UR              | Q03UR                     | Tracks                                 |   |
|                               |  |  |                    |                           | Chan ids                               |   |
|                               |  |  |                    |                           | Tracks                                 |   |
| Group delay (usec)(sbd)       | -6.52313659405E+02                                       | Apriori delay (usec)   | -6.52309158024E+02 | Resid mbdelay (usec)      | 3.31112E-03                            | +/- 2.9E-06   |
| Sband delay (usec)            | -6.52313651524E+02                                       | Apriori clock (usec)   | -1.5323181E+01     | Resid sbdelay (usec)      | -4.49350E-03                           | +/- 1.1E-05   |
| Phase delay (usec)            | -6.52309156383E+02                                       | Apriori clockrate (us/s)                                       | -3.1799999E-07     | Resid phdelay (usec)      | 1.64119E-06                            | +/- 1.9E-08   |
| Delay rate (us/s)             | -1.04406809057E+00                                       | Apriori rate (us/s)  | -1.04406811409E+00 | Resid rate (us/s)         | 2.35207E-08                            | +/- 1.4E-10   |
| Total phase (deg)             | -32.7  | Apriori accel (us/s/s)   | 4.02052731397E-06  | Resid phase (deg)         | 25.4                                   | +/- 0.3   |
|                               | RMS  | Theor.   | Amplitude          | 9.001 +/- 0.024           | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 30.9   | 1.0  | Search (1024X16)   | 8.234                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 21.2   | 1.7  | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 9.6  | 0.3  | Inc. seg. avg.     | 10.488                    | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 1.5  | 0.5  | Inc. frq. avg.     | 8.995                     | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| k: az 211.3 el 55.7 pa 26.6   | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec)  | 2989.864 846.597   | simultaneous interpolator |  |   |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/km..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/km.Q.107.1V25LX |                    |                           |  |   |

## Mk4/DiFX fourfit 3.21 rev 2937

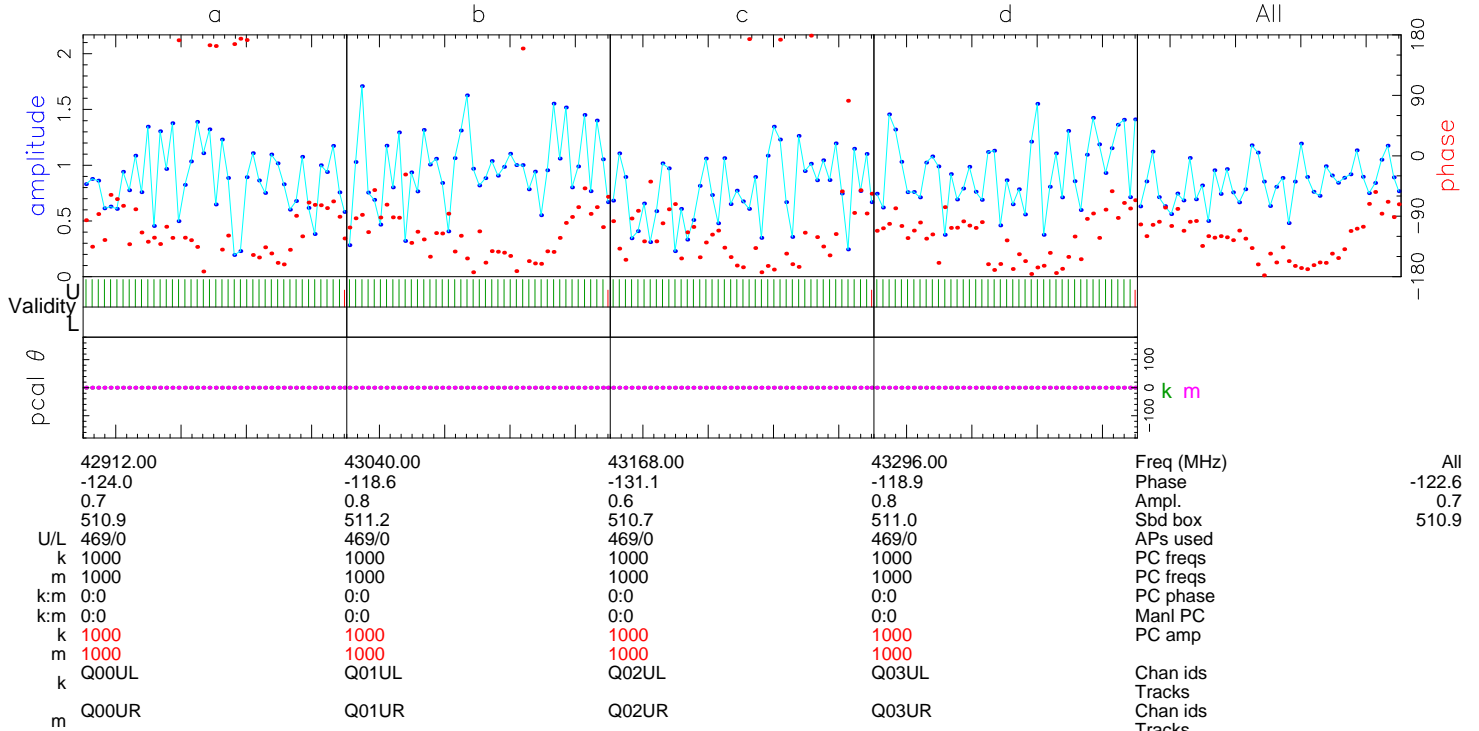
fxmanager

0106+013.1V25LX, No0082, km

VLBA\_KP - VLBA\_MK, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| Group delay (usec)(sbd) | -6.52313269499E+02 | Apriori delay (usec)     | -6.52309158024E+02 | Resid mbdelay (usec) | -4.11147E-03 | +/- | 3.6E-05 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Sband delay (usec)      | -6.52313195899E+02 | Apriori clock (usec)     | -1.5323181E+01     | Resid sbdelay (usec) | -4.03788E-03 | +/- | 1.4E-04 |
| Phase delay (usec)      | -6.52309165938E+02 | Apriori clockrate (us/s) | -3.1799999E-07     | Resid phdelay (usec) | -7.91412E-06 | +/- | 2.4E-07 |
| Delay rate (us/s)       | -1.04406808927E+00 | Apriori rate (us/s)      | -1.04406811409E+00 | Resid rate (us/s)    | 2.48196E-08  | +/- | 1.7E-09 |
| Total phase (deg)       | -180.7             | Apriori accel (us/s/s)   | 4.02052731397E-06  | Resid phase (deg)    | -122.6       | +/- | 3.7     |

| RMS          | Theor. | Amplitude        | 0.723 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5           |                  |              |
|--------------|--------|------------------|-----------------|--|---------------------------------|------------------|--------------|
| ph/seg (deg) | 31.3   | Search (1024X16) | 0.663           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)                  | -1.000 1.000     |              |
| amp/seg (%)  | 30.0   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled            | mb window (us)   | -0.004 0.004 |
| ph/frq (deg) | 7.2    | Inc. seg. avg.   | 0.827           | Sample rate(MISamp/s): 256             |                                 | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)  | 9.9    | Inc. frq. avg.   | 0.724           | Data rate(Mb/s): 2048                  | nlags: 512 t_coherence infinite | ion window (TEC) | 0.00 0.00    |

k: az 211.3 el 55.7 pa 26.6 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 2989.864 846.597 simultaneous interpolator

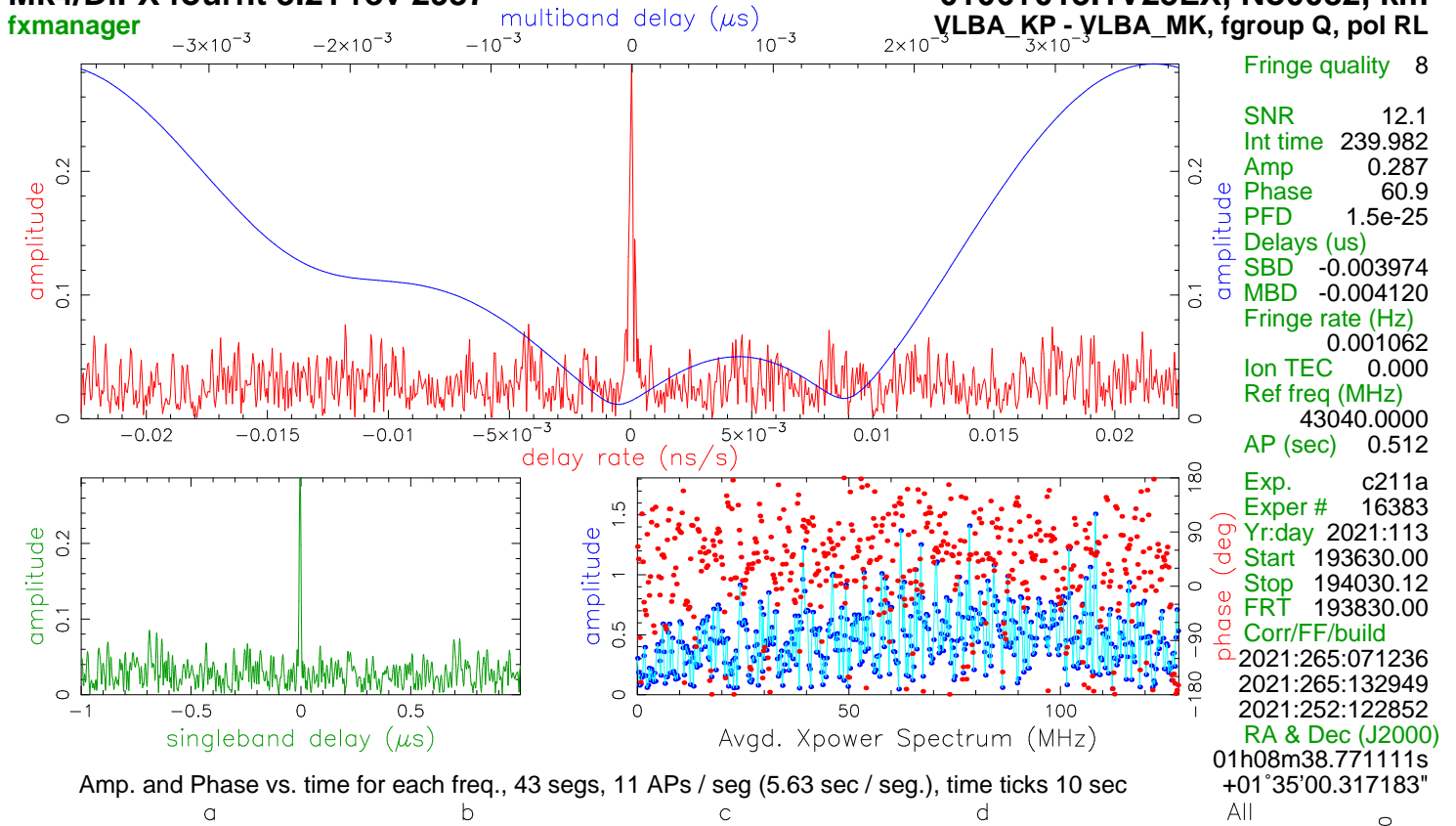
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/km..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/km.Q.128.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

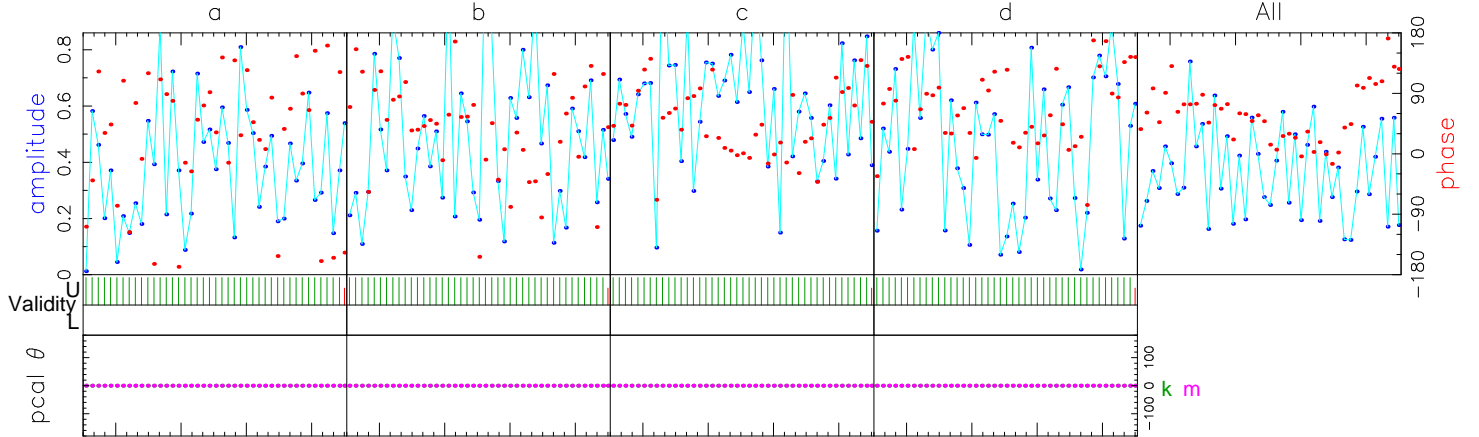
fxmanager

0106+013.1V25LX, No0082, km

VLBA\_KP - VLBA\_MK, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 60.9  |
| k   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.3   |
| m   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 511.0 |
| k:m | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| k:m | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| k   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| k   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| m   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -6.52313277561E+02 | Apriori delay (usec)     | -6.52309158024E+02 | Resid mbdelay (usec) | -4.11954E-03 | +/- | 9.2E-05 |
| Sband delay (usec)      | -6.52313131774E+02 | Apriori clock (usec)     | -1.5323181E+01     | Resid sbdelay (usec) | -3.97375E-03 | +/- | 3.5E-04 |
| Phase delay (usec)      | -6.52309154092E+02 | Apriori clockrate (us/s) | -3.1799999E-07     | Resid phdelay (usec) | 3.93179E-06  | +/- | 6.1E-07 |
| Delay rate (us/s)       | -1.04406808941E+00 | Apriori rate (us/s)      | -1.04406811409E+00 | Resid rate (us/s)    | 2.46807E-08  | +/- | 4.4E-09 |
| Total phase (deg)       | 2.8                | Apriori accel (us/s/s)   | 4.02052731397E-06  | Resid phase (deg)    | 60.9         | +/- | 9.4     |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 0.287 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 41.6 | 30.9   | Search (1024X16) | 0.265           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 61.1 | 54.0   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 26.4 | 9.4    | Inc. seg. avg.   | 0.321           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 31.0 | 16.5   | Inc. frq. avg.   | 0.296           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

k: az 211.3 el 55.7 pa 26.6 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 2989.864 846.597 simultaneous interpolator

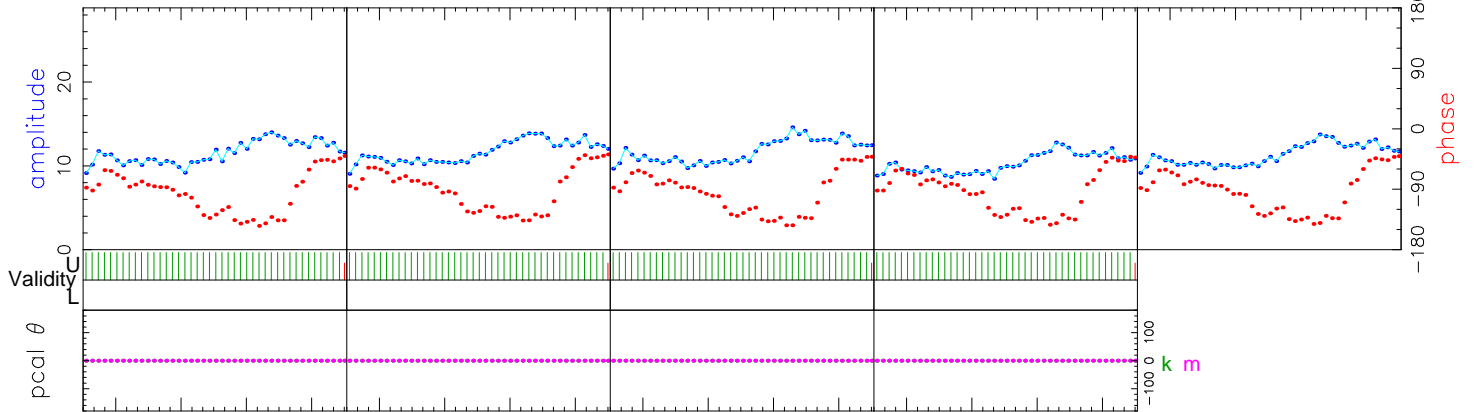
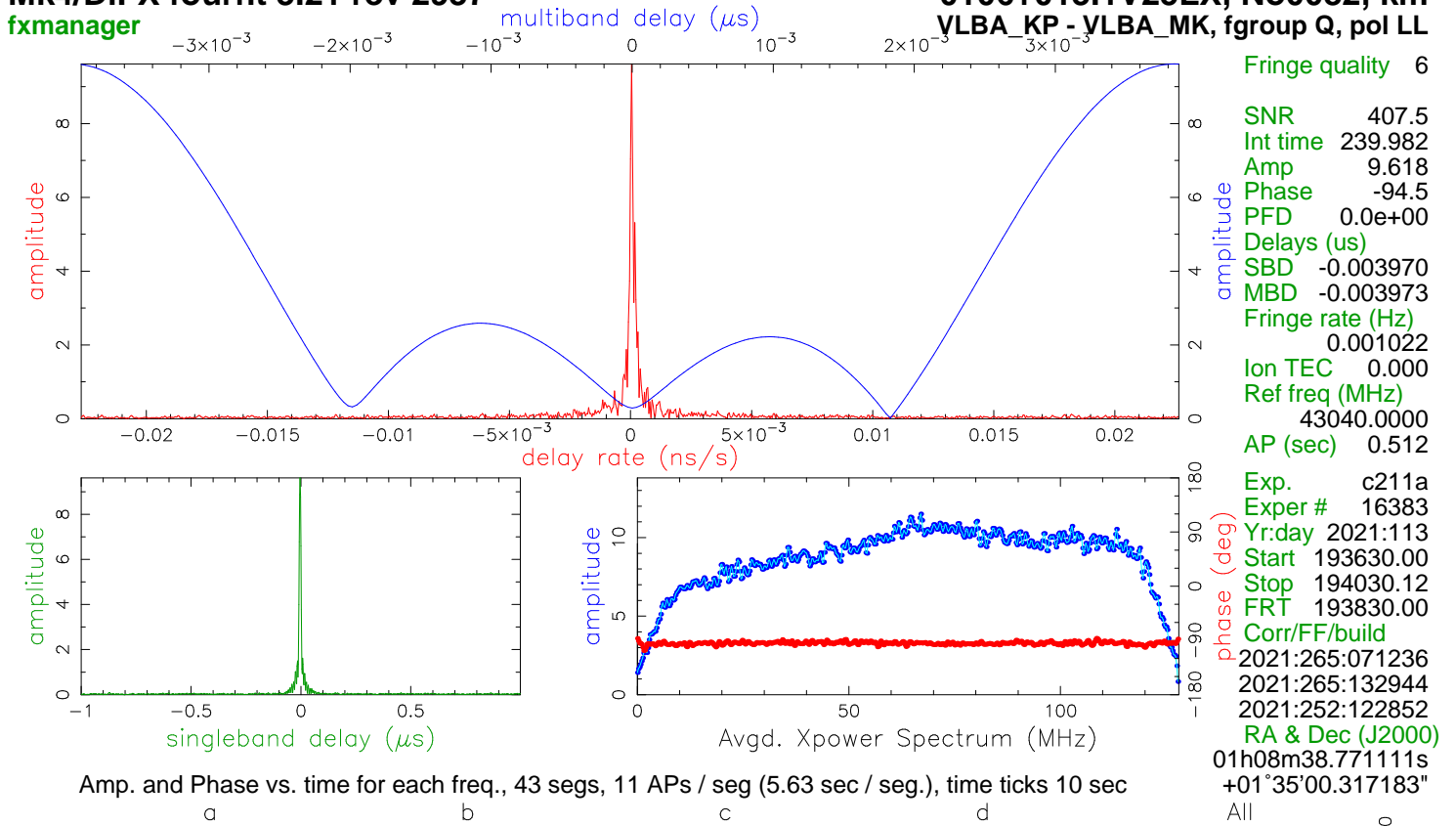
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/km..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/km.Q.143.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, km

VLBA\_KP - VLBA\_MK, fgroup Q, pol LL



| 42912.00                      | 43040.00   | 43168.00  | 43296.00           | Freq (MHz)                             | All  |
|-------------------------------|--|---|--------------------|--|--|
| -96.6                         | -91.2  | -95.4   | -94.8              | Phase                                  | -94.5  |
| 9.8                           | 9.9  | 10.0  | 8.8                | Ampl.                                  | 9.6  |
| 511.0                         | 511.0  | 510.9   | 510.9              | Sbd box                                | 511.0  |
| U/L 469/0                     | 469/0  | 469/0   | 469/0              | APs used                               |  |
| k 1000                        | 1000   | 1000  | 1000               | PC freqs                               |  |
| m 1000                        | 1000   | 1000  | 1000               | PC freqs                               |  |
| k:m 0:0                       | 0:0  | 0:0   | 0:0                | PC phase                               |  |
| k:m 0:0                       | 0:0  | 0:0   | 0:0                | Manl PC                                |  |
| k 1000                        | 1000   | 1000  | 1000               | PC amp                                 |  |
| m 1000                        | 1000   | 1000  | 1000               |  |  |
| k Q00UL                       | Q01UL  | Q02UL   | Q03UL              | Chan ids                               |  |
| m Q00UL                       | Q01UL  | Q02UL   | Q03UL              | Tracks                                 |  |
|                               |  |   |                    | Chan ids                               |  |
|                               |  |   |                    | Tracks                                 |  |
| Group delay (usec)(sbd)       | -6.52313130624E+02                                       | Apriori delay (usec)  | -6.52309158024E+02 | Resid mbdelay (usec)                   | -3.97260E-03 +/- 2.7E-06                                   |
| Sband delay (usec)            | -6.52313127649E+02                                       | Apriori clock (usec)  | -1.5323181E+01     | Resid sbdelay (usec)                   | -3.96963E-03 +/- 1.1E-05                                   |
| Phase delay (usec)            | -6.52309164122E+02                                       | Apriori clockrate (us/s)                                      | -3.1799999E-07     | Resid phdelay (usec)                   | -6.09846E-06 +/- 1.8E-08                                   |
| Delay rate (us/s)             | -1.04406809035E+00                                       | Apriori rate (us/s)   | -1.04406811409E+00 | Resid rate (us/s)                      | 2.37390E-08 +/- 1.3E-10                                    |
| Total phase (deg)             | -152.6   | Apriori accel (us/s/s)  | 4.02052731397E-06  | Resid phase (deg)                      | -94.5 +/- 0.3  |
| RMS                           | Theor.   | Amplitude   | 9.618 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                      |
| ph/seg (deg)                  | 31.0   | Search (1024X16)  | 8.883              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                                |
| amp/seg (%)                   | 21.9   | Interp.   | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004           |
| ph/frq (deg)                  | 2.8  | Inc. seg. avg.  | 11.311             | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023                              |
| amp/frq (%)                   | 5.2  | Inc. frq. avg.  | 9.623              | Data rate(Mb/s): 2048                  | nlags: 512 t_coherence infinite ion window (TEC) 0.00 0.00 |
| k: az 211.3 el 55.7 pa 26.6   | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec)   | 2989.864 846.597   |  | simultaneous interpolator                                  |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/km..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/km.Q.88.1V25LX |                    |  |  |



Mk4/DiFX fourfit 3.21 rev 2937

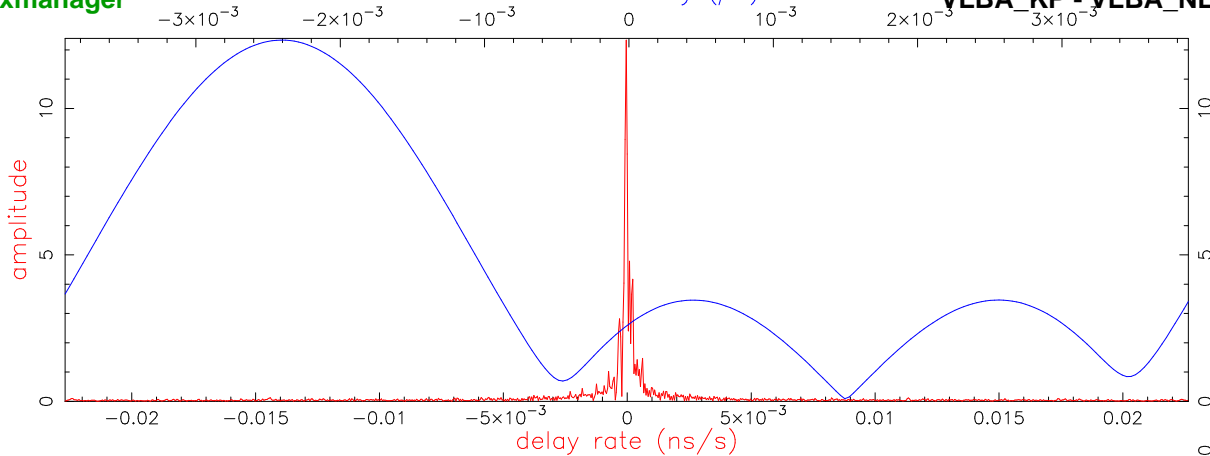
fxmanager

0106+013.1V25LX, No0082, kn

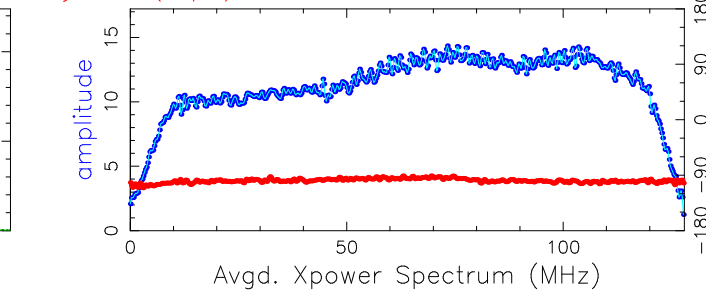
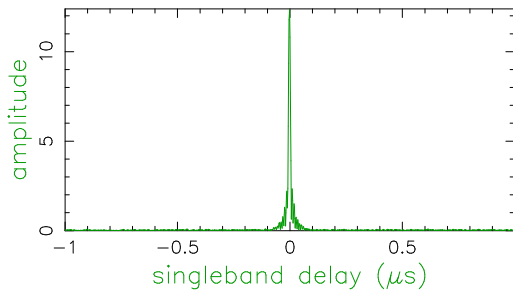
VLBA\_KP - VLBA\_NL, fgroup Q, pol RR

multiband delay ( $\mu$ s)

Fringe quality 7

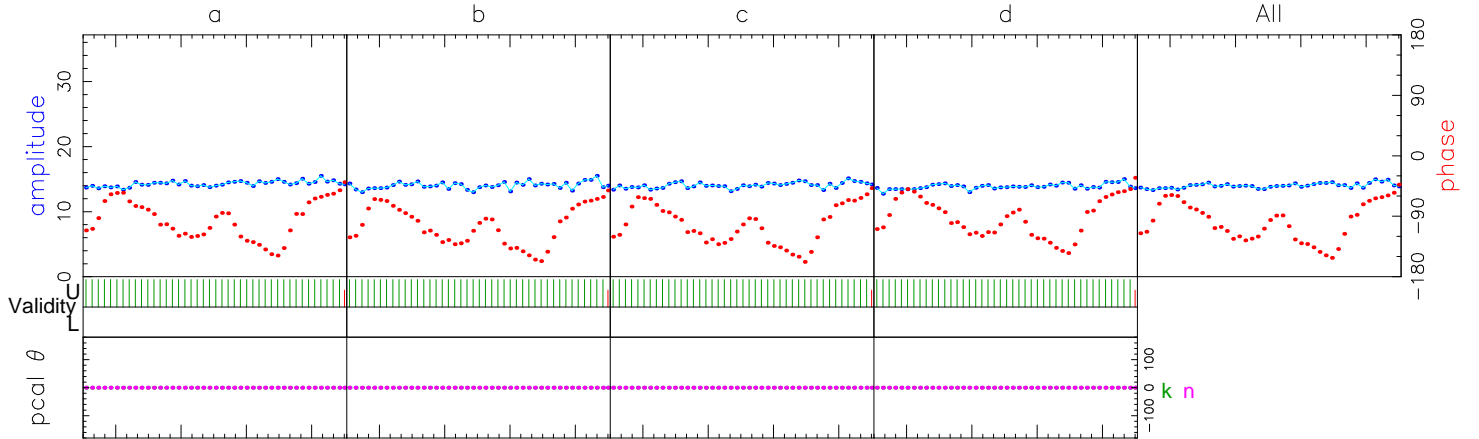


SNR 525.0  
Int time 239.982  
Amp 12.393  
Phase -98.6  
PFD 0.0e+00  
Delays (us)  
SBD -0.002416  
MBD -0.002429  
Fringe rate (Hz)  
-0.002052  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132946  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -95.3     | -104.3   | -103.1   | -91.9    | Phase      | -98.6 |
| 12.6      | 12.4     | 12.3     | 12.2     | Ampl.      | 12.4  |
| 511.8     | 511.6    | 511.8    | 511.8    | Sbd box    | 511.8 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| k 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| k:n 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| k:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| k 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| n 1000    | 1000     | 1000     | 1000     |            |       |
| k Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| n Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 4.55404540887E+03 | Apriori delay (usec)     | 4.55404783833E+03  | Resid mbdelay (usec) | -2.42946E-03 | +/- | 2.1E-06 |
| Sband delay (usec)      | 4.55404542221E+03 | Apriori clock (usec)     | -5.0804939E+00     | Resid sbdelay (usec) | -2.41613E-03 | +/- | 8.2E-06 |
| Phase delay (usec)      | 4.55404783197E+03 | Apriori clockrate (us/s) | -2.9999999E-07     | Resid phdelay (usec) | -6.36681E-06 | +/- | 1.4E-08 |
| Delay rate (us/s)       | 3.08733870429E-01 | Apriori rate (us/s)      | 3.08733918109E-01  | Resid rate (us/s)    | -4.76795E-08 | +/- | 1.0E-10 |
| Total phase (deg)       | 247.6             | Apriori accel (us/s/s)   | -2.46986677370E-05 | Resid phase (deg)    | -98.6        | +/- | 0.2     |

|              |      |     |                  |                  |  |                               |
|--------------|------|-----|------------------|------------------|--|-------------------------------|
| ph/seg (deg) | 28.5 | 0.7 | Amplitude        | 12.393 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 13.4 | 1.2 | Search (1024X16) | 12.292           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 7.4  | 0.2 | Interp.          | 0.000            | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 1.1  | 0.4 | Inc. seg. avg.   | 14.011           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |      |     | Inc. frq. avg.   | 12.383           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

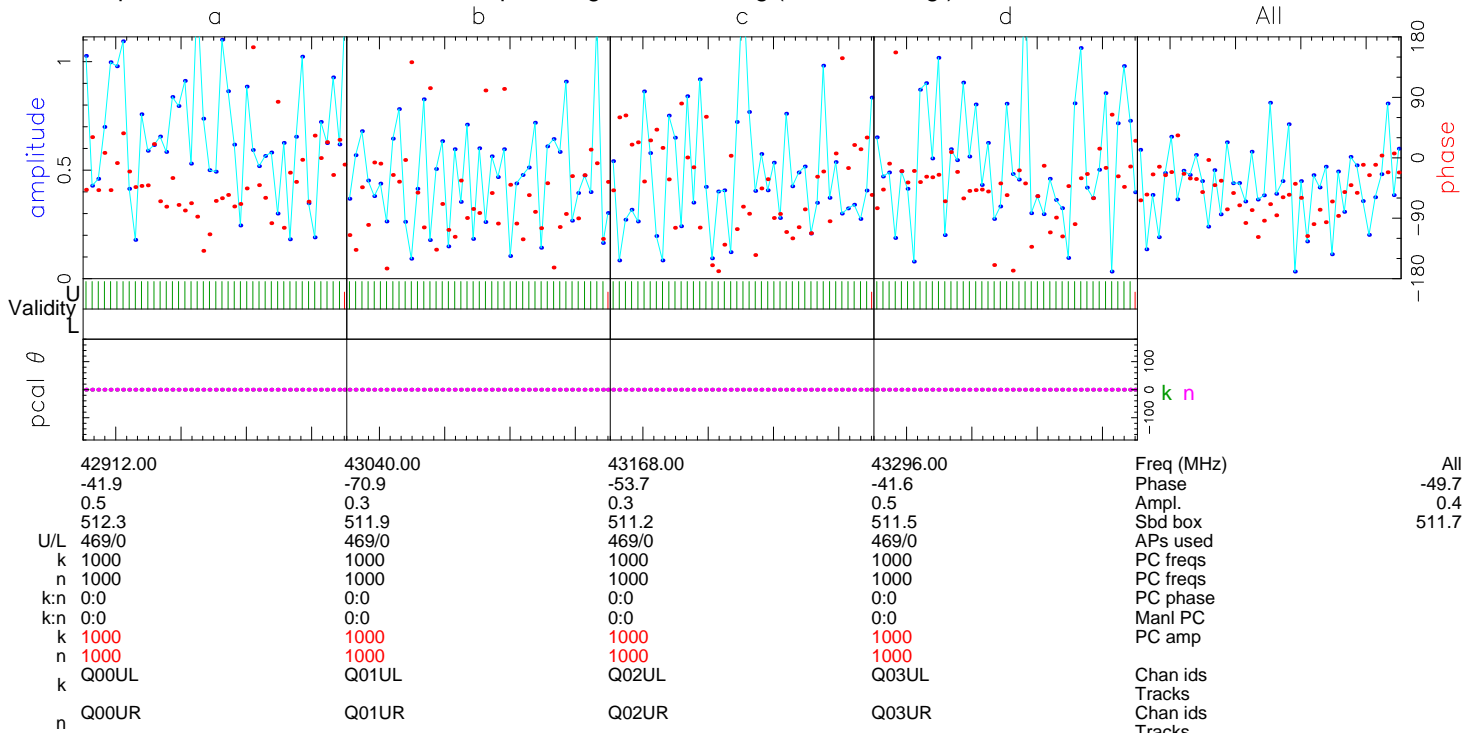
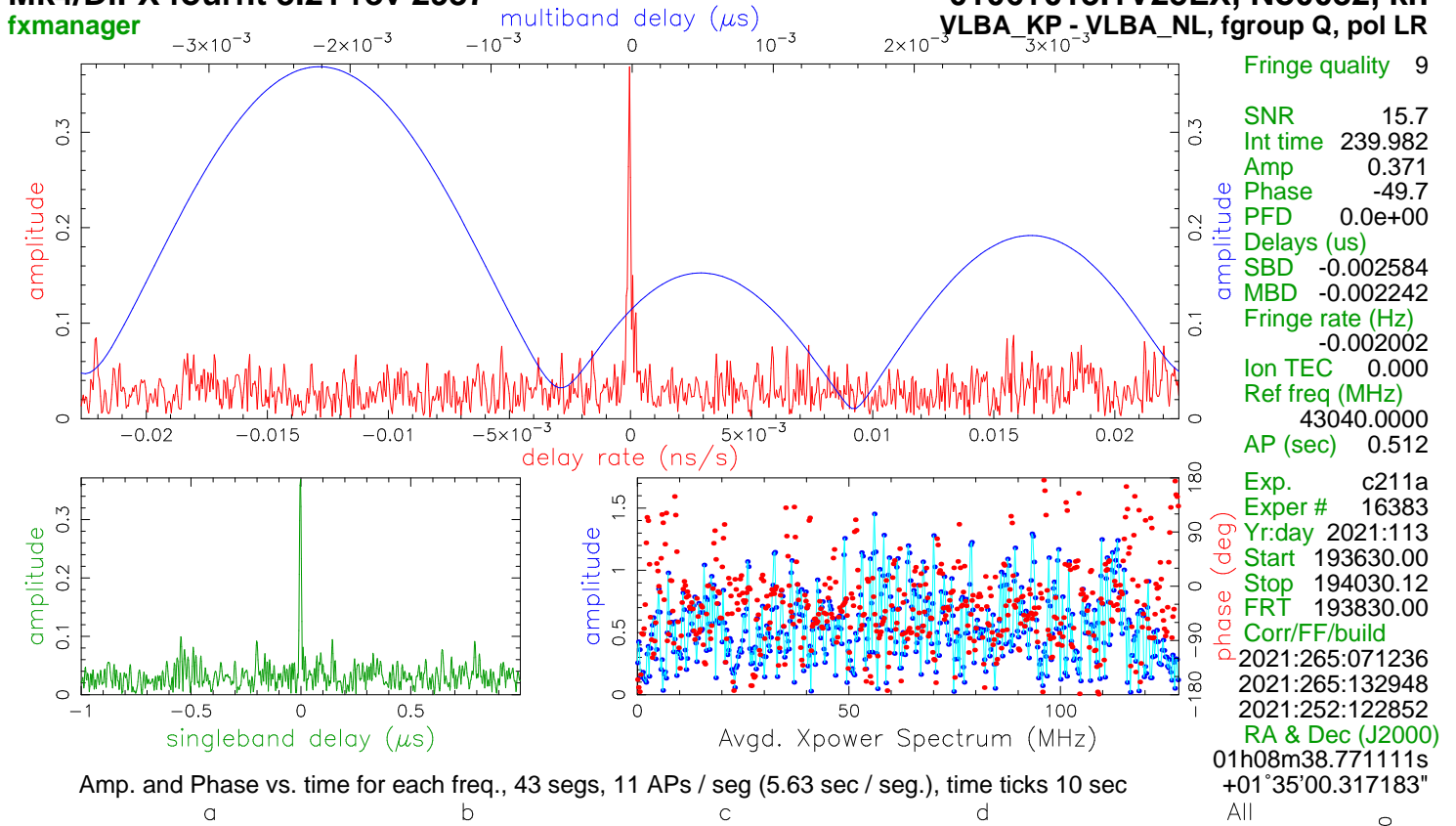
k: az 211.3 el 55.7 pa 26.6 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -893.934 -633.868 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kn.Q.114.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, kn

VLBA\_KP - VLBA\_NL, fgroup Q, pol LR



| Group delay (usec)(sbd) | 4.55404559587E+03 | Apriori delay (usec)     | 4.55404783833E+03  | Resid mbdelay (usec) | -2.24246E-03 | +/- | 7.1E-05 |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Sband delay (usec)      | 4.55404525446E+03 | Apriori clock (usec)     | -5.0804939E+00     | Resid sbdelay (usec) | -2.58388E-03 | +/- | 2.7E-04 |
| Phase delay (usec)      | 4.55404783513E+03 | Apriori clockrate (us/s) | -2.9999999E-07     | Resid phdelay (usec) | -3.20572E-06 | +/- | 4.7E-07 |
| Delay rate (us/s)       | 3.08733871598E-01 | Apriori rate (us/s)      | 3.08733918109E-01  | Resid rate (us/s)    | -4.65109E-08 | +/- | 3.4E-09 |
| Total phase (deg)       | 296.6             | Apriori accel (us/s/s)   | -2.46986677370E-05 | Resid phase (deg)    | -49.7        | +/- | 7.3     |

RMS Theor. Amplitude 0.371 +/- 0.024

ph/seg (deg) 34.0 23.9 Search (1024X16) 0.359

amp/seg (%) 48.5 41.7 Interp. 0.000

ph/frq (deg) 17.2 7.3 Inc. seg. avg. 0.398

amp/frq (%) 24.8 12.7 Inc. frq. avg. 0.373

PCal mode: MANUAL, MANUAL PC period (AP's) 5, 5

PCal rate: 0.000E+00, 0.000E+00 (us/s)

Bits/sample: 2x2 SampCntNorm: enabled

Sample rate(MSamp/s): 256

Data rate(Mb/s): 2048 nlags: 512 t\_cohere infinite

sb window (us) -1.000 1.000

mb window (us) -0.004 0.004

dr window (ns/s) -0.023 0.023

ion window (TEC) 0.00 0.00

k: az 211.3 el 55.7 pa 26.6 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -893.934 -633.868 simultaneous interpolator

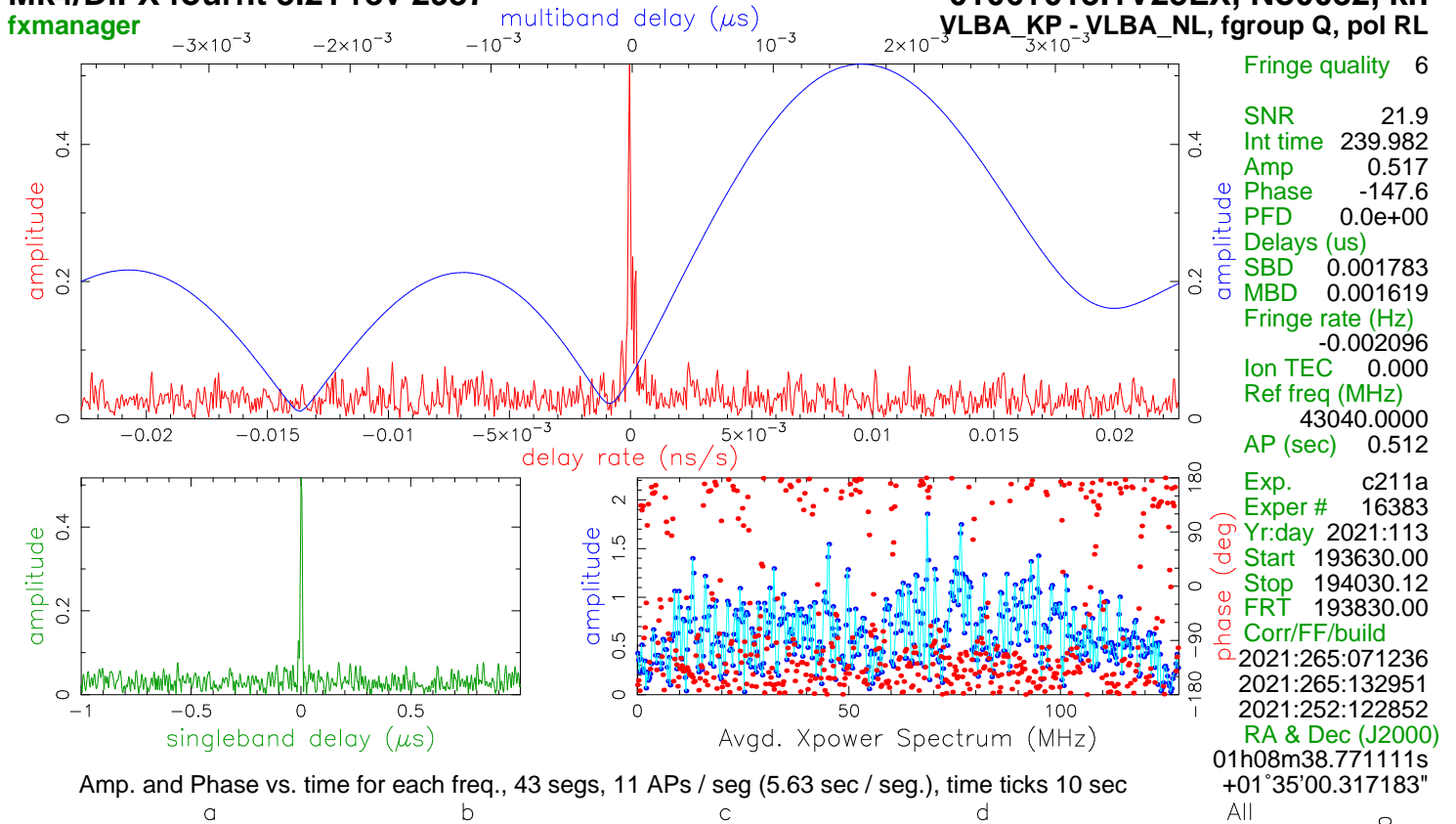
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kn.Q.134.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

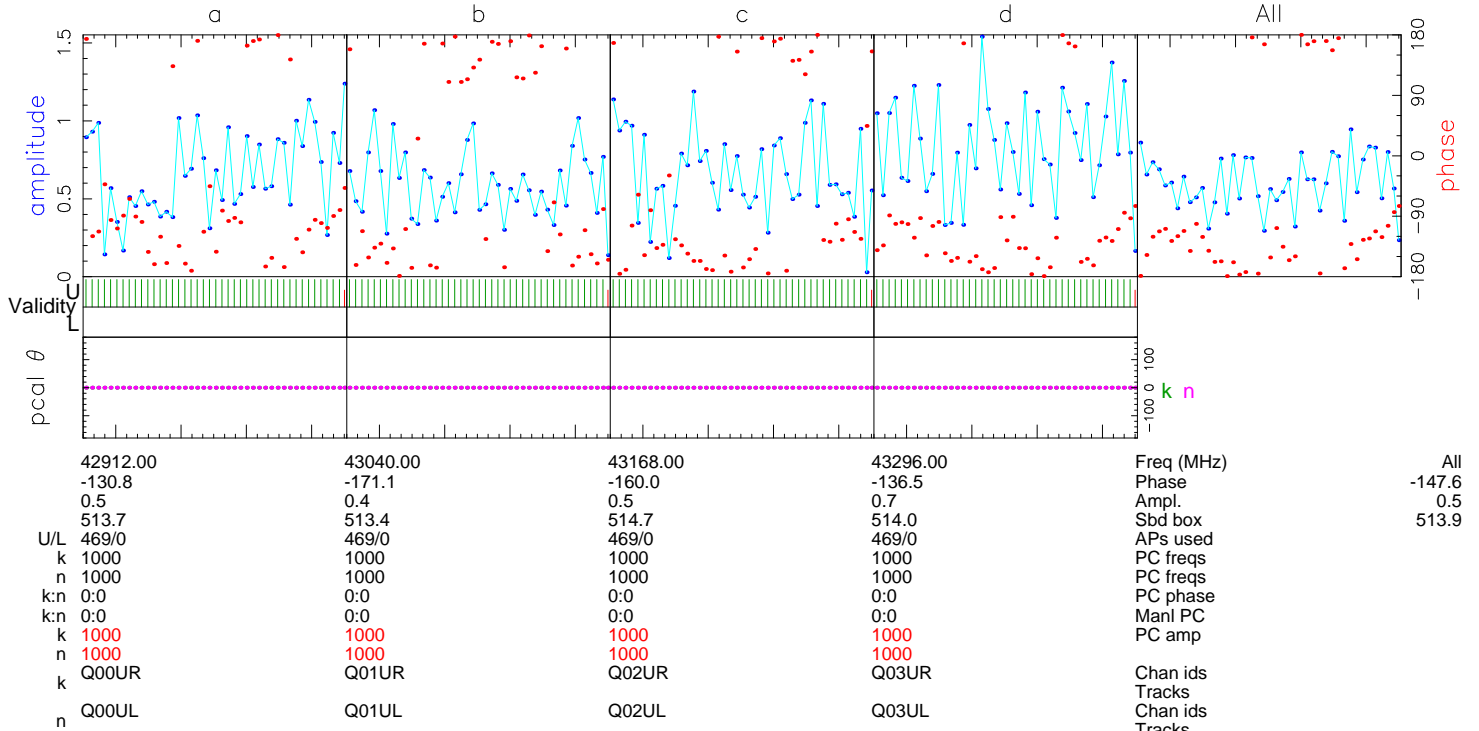
fxmanager

0106+013.1V25LX, No0082, kn

VLBA\_KP - VLBA\_NL, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               |  |  |                    |  |                       |                   |                           |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|---------------------------|
| Group delay (usec)(sbd)       | 4.55404945771E+03  | Apriori delay (usec)   | 4.55404783833E+03  | Resid mbdelay (usec)                   | 1.61938E-03           | +/-               | 5.1E-05                   |
| Sband delay (usec)            | 4.55404962108E+03  | Apriori clock (usec)   | -5.0804939E+00     | Resid sbdelay (usec)                   | 1.78275E-03           | +/-               | 2.0E-04                   |
| Phase delay (usec)            | 4.55404782881E+03  | Apriori clockrate (us/s)                                       | -2.9999999E-07     | Resid phdelay (usec)                   | -9.52368E-06          | +/-               | 3.4E-07                   |
| Delay rate (us/s)             | 3.08733869414E-01  | Apriori rate (us/s)  | 3.08733918109E-01  | Resid rate (us/s)                      | -4.86948E-08          | +/-               | 2.4E-09                   |
| Total phase (deg)             | 198.7  | Apriori accel (us/s/s)   | -2.46986677370E-05 | Resid phase (deg)                      | -147.6                | +/-               | 5.2                       |
| RMS                           | 32.0   | Theor.   | 17.1               | Amplitude                              | 0.517 +/- 0.024       |                   |                           |
| ph/seg (deg)                  | 32.0   | Search (1024X16)   | 0.508              | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                           |
| amp/seg (%)                   | 36.5   | Interp.  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                     |
| ph/frq (deg)                  | 23.6   | Inc. seg. avg.   | 0.580              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004              |
| amp/frq (%)                   | 21.0   | Inc. frq. avg.   | 0.535              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023              |
|                               |  |  |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion TEC (TEC) 0.00 0.00   |
| k: az 211.3 el 55.7 pa 26.6   | n: az 229.8 el 37.9 pa 34.8                              | u,v (fr/asec)  | -893.934 -633.868  |  |                       |                   | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/kn..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/kn.Q.155.1V25LX |                    |  |                       |                   |                           |

Mk4/DiFX fourfit 3.21 rev 2937

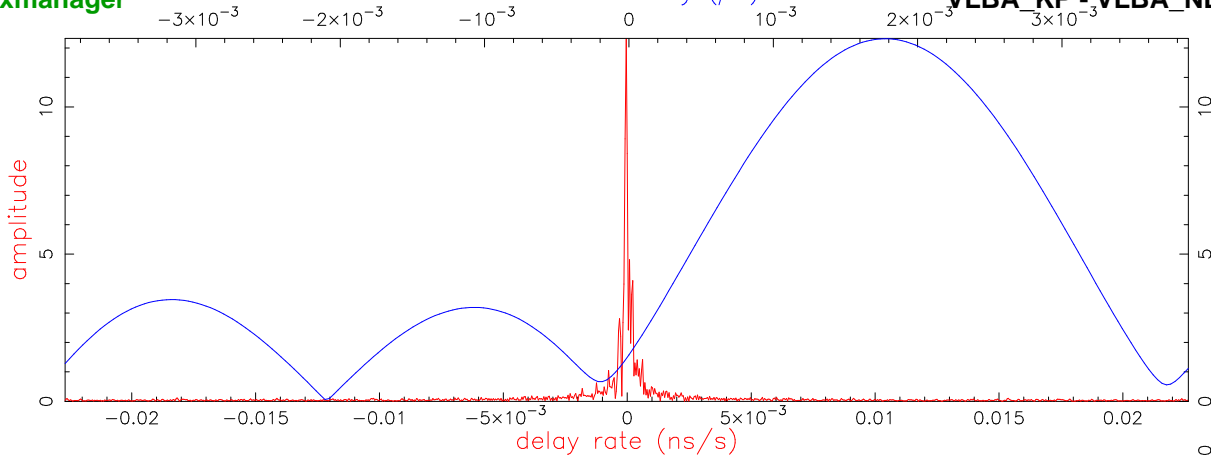
fxmanager

0106+013.1V25LX, No0082, kn

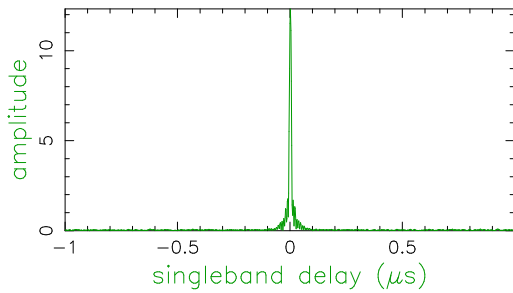
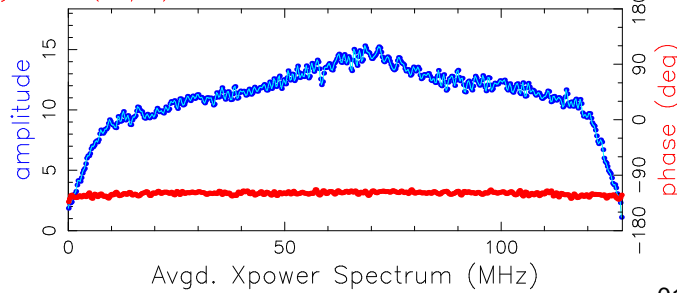
VLBA\_KP - VLBA\_NL, fgroup Q, pol LL

multiband delay ( $\mu$ s)

Fringe quality 7



SNR 522.2  
Int time 239.982  
Amp 12.327  
Phase -119.8  
PFD 0.0e+00  
Delays (us)  
SBD 0.001746  
MBD 0.001765  
Fringe rate (Hz)  
-0.002030  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

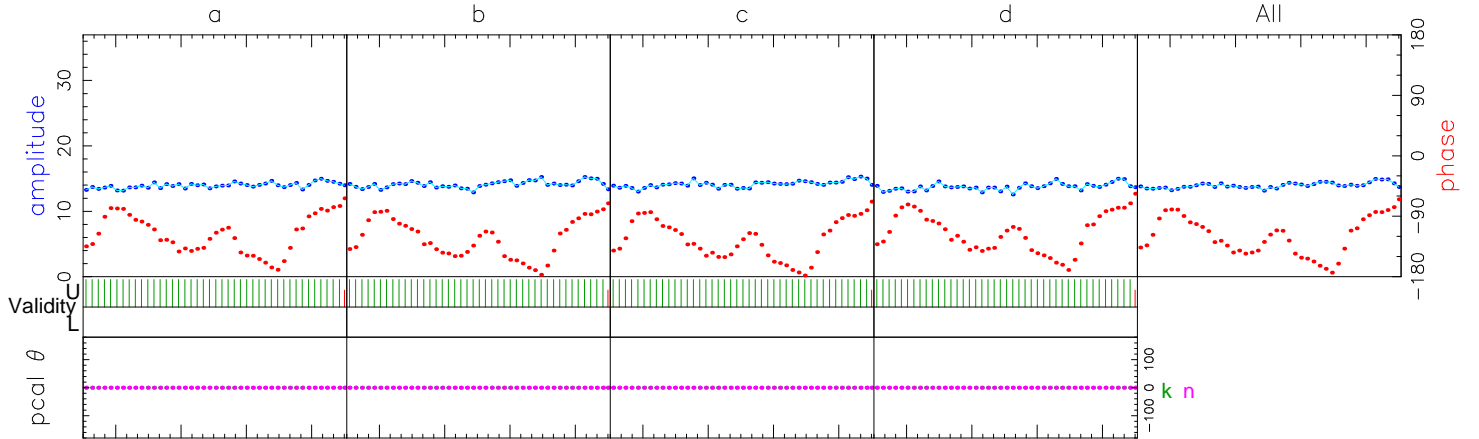
singleband delay ( $\mu$ s)

Avgd. Xpower Spectrum (MHz)

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132944  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----------|----------|----------|----------|------------|--------|
| -116.9    | -122.8   | -124.7   | -114.6   | Phase      | -119.8 |
| 12.3      | 12.5     | 12.5     | 12.1     | Ampl.      | 12.3   |
| 513.8     | 513.9    | 514.0    | 513.9    | Sbd box    | 513.9  |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |        |
| k 1000    | 1000     | 1000     | 1000     | PC freqs   |        |
| n 1000    | 1000     | 1000     | 1000     | PC phase   |        |
| k:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| k:n 0:0   | 0:0      | 0:0      | 0:0      | PC amp     |        |
| k 1000    | 1000     | 1000     | 1000     |            |        |
| n 1000    | 1000     | 1000     | 1000     |            |        |
| k Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| n Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|           |          |          |          | Chan ids   |        |
|           |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 4.55404960331E+03 | Apriori delay (usec)     | 4.55404783833E+03  | Resid mbdelay (usec) | 1.76497E-03  | +/- | 2.1E-06 |
| Sband delay (usec)      | 4.55404958458E+03 | Apriori clock (usec)     | -5.0804939E+00     | Resid sbdelay (usec) | 1.74625E-03  | +/- | 8.2E-06 |
| Phase delay (usec)      | 4.55404783060E+03 | Apriori clockrate (us/s) | -2.9999999E-07     | Resid phdelay (usec) | -7.73223E-06 | +/- | 1.4E-08 |
| Delay rate (us/s)       | 3.08733870934E-01 | Apriori rate (us/s)      | 3.08733918109E-01  | Resid rate (us/s)    | -4.71746E-08 | +/- | 1.0E-10 |
| Total phase (deg)       | 226.5             | Apriori accel (us/s/s)   | -2.46986677370E-05 | Resid phase (deg)    | -119.8       | +/- | 0.2     |

|              |      |        |                  |                  |  |                       |
|--------------|------|--------|------------------|------------------|--|-----------------------|
| ph/seg (deg) | 28.3 | Theor. | Amplitude        | 12.327 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 13.7 | 0.7    | Search (1024X16) | 12.141           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 5.9  | 0.2    | Interp.          | 0.000            | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 1.2  | 0.4    | Inc. seg. avg.   | 13.967           | SampCntNorm: enabled                   | dr window (ns/s)      |
|              |      |        | Inc. frq. avg.   | 12.348           | Sample rate(MSamp/s): 256              | ion window (TEC)      |
|              |      |        |                  |                  | Data rate(Mb/s): 2048                  |                       |
|              |      |        |                  |                  | nlags: 512                             | t_cohere infinite     |

k: az 211.3 el 55.7 pa 26.6 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -893.934 -633.868 simultaneous interpolator

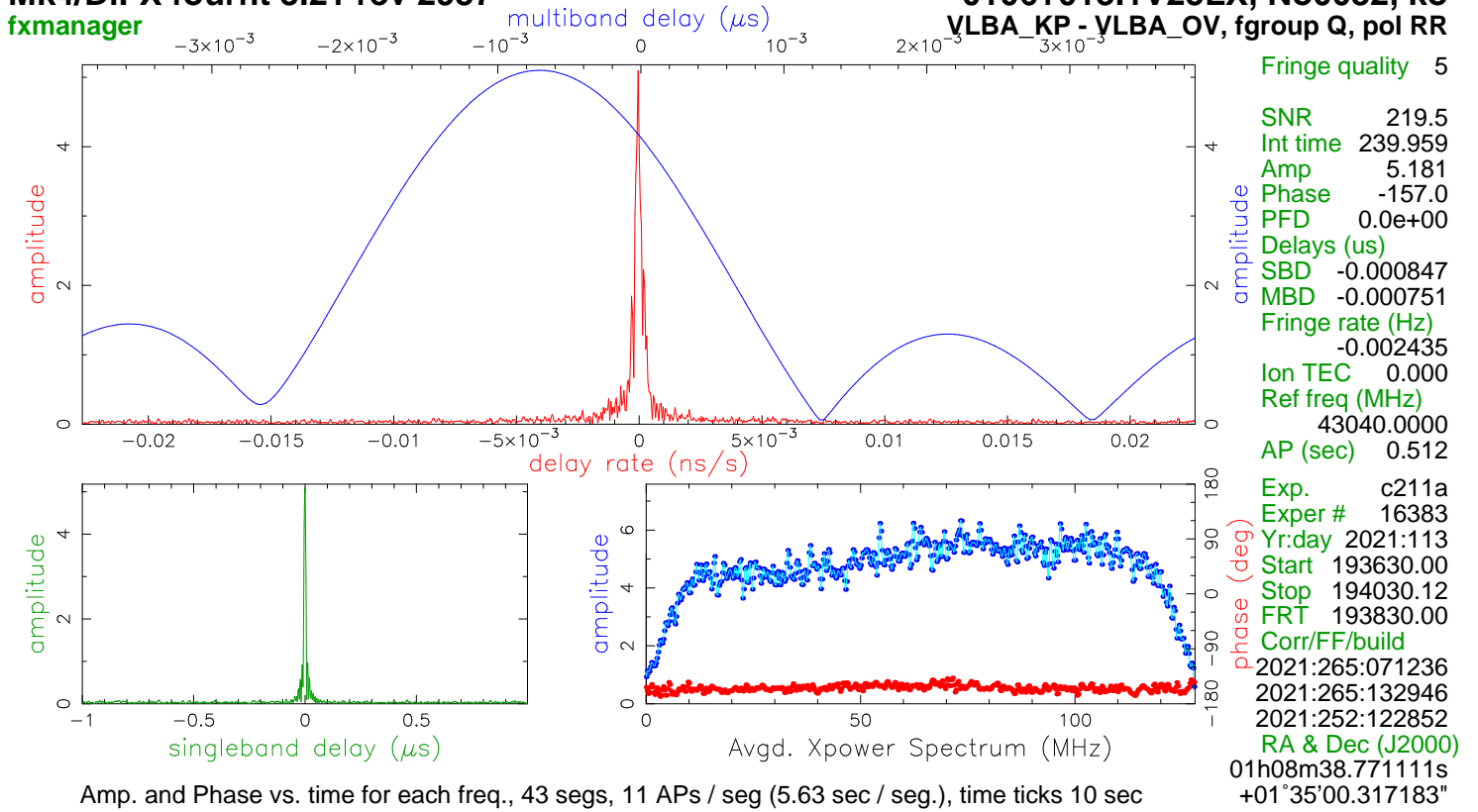
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kn.Q.94.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

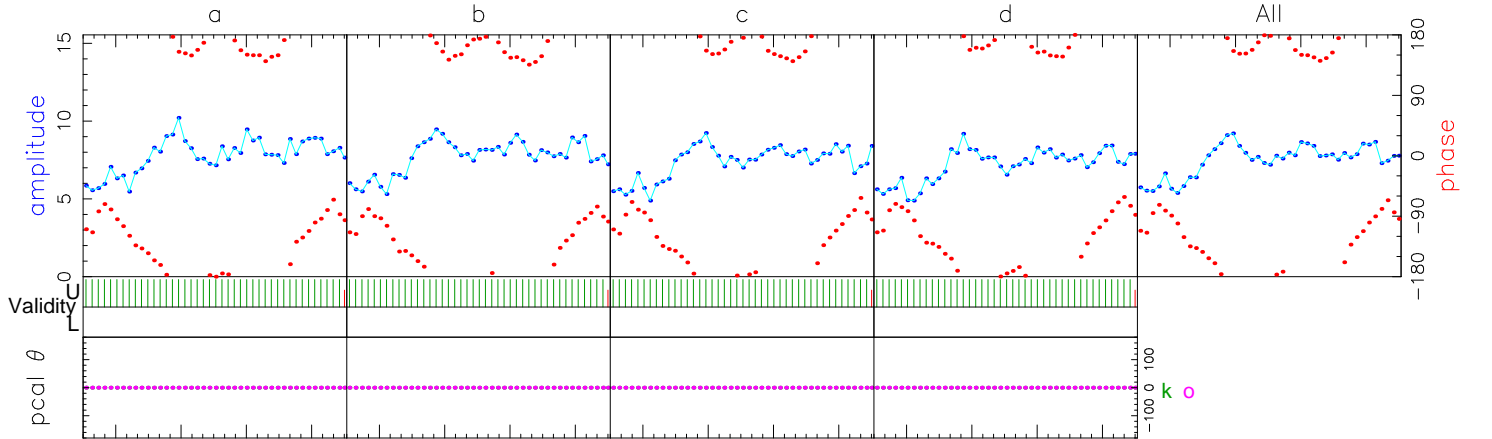
fxmanager

0106+013.1V25LX, No0082, ko

VLBA\_KP - VLBA\_OV, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               |   |                          |                    |                           |  |   |
|-------------------------------|---|--------------------------|--------------------|---------------------------|--|---|
|                               | 42912.00  | 43040.00                 | 43168.00           | 43296.00                  | Freq (MHz)                             | All   |
|                               | -156.8  | -161.9                   | -156.9             | -151.8                    | Phase                                  | -157.0  |
|                               | 5.3   | 5.3                      | 5.0                | 4.8                       | Ampl.                                  | 5.1   |
|                               | 512.5   | 512.6                    | 512.6              | 512.6                     | Sbd box                                | 512.6   |
| U/L                           | 469/0   | 469/0                    | 469/0              | 469/0                     | APs used                               |   |
| k                             | 1000  | 1000                     | 1000               | 1000                      | PC freqs                               |   |
| o                             | 1000  | 1000                     | 1000               | 1000                      | PC freqs                               |   |
| k:o                           | 0:0   | 0:0                      | 0:0                | 0:0                       | PC phase                               |   |
| k:o                           | 0:0   | 0:0                      | 0:0                | 0:0                       | Manl PC                                |   |
| k                             | 1000  | 1000                     | 1000               | 1000                      | PC amp                                 |   |
| o                             | 1000  | 1000                     | 1000               | 1000                      |  |   |
| k                             | Q00UR   | Q01UR                    | Q02UR              | Q03UR                     | Chan ids                               |   |
|                               |   |                          |                    |                           | Tracks                                 |   |
| o                             | Q00UR   | Q01UR                    | Q02UR              | Q03UR                     | Chan ids                               |   |
|                               |   |                          |                    |                           | Tracks                                 |   |
| Group delay (usec)(sbd)       | 5.19211666805E+02   | Apriori delay (usec)     | 5.19212417831E+02  | Resid mbdelay (usec)      | -7.51025E-04                           | +/- 5.1E-06   |
| Sband delay (usec)            | 5.19211570831E+02   | Apriori clock (usec)     | -3.3187923E+00     | Resid sbdelay (usec)      | -8.47000E-04                           | +/- 2.0E-05   |
| Phase delay (usec)            | 5.19212407701E+02   | Apriori clockrate (us/s) | -3.6000001E-07     | Resid phdelay (usec)      | -1.01301E-05                           | +/- 3.4E-08   |
| Delay rate (us/s)             | -1.63809951284E-01  | Apriori rate (us/s)      | -1.63809894710E-01 | Resid rate (us/s)         | -5.65738E-08                           | +/- 2.4E-10   |
| Total phase (deg)             | 9.9   | Apriori accel (us/s/s)   | -3.03083720006E-06 | Resid phase (deg)         | -157.0                                 | +/- 0.5   |
|                               | RMS   | Theor.                   | Amplitude          | 5.181 +/- 0.024           | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 48.8  | 1.7                      | Search (1024X16)   | 4.904                     | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 48.7  | 3.0                      | Interp.            | 0.000                     | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 5.1   | 0.5                      | Inc. seg. avg.     | 7.488                     | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 3.8   | 0.9                      | Inc. frq. avg.     | 5.106                     | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| k: az 211.3 el 55.7 pa 26.6   | o: az 197.5 el 53.2 pa 14.3   | u,v (fr/asec)            | 467.809 -338.231   | simultaneous interpolator |  |   |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/ko..1V25LX Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/ko.Q.108.1V25LX |                          |                    |                           |  |   |

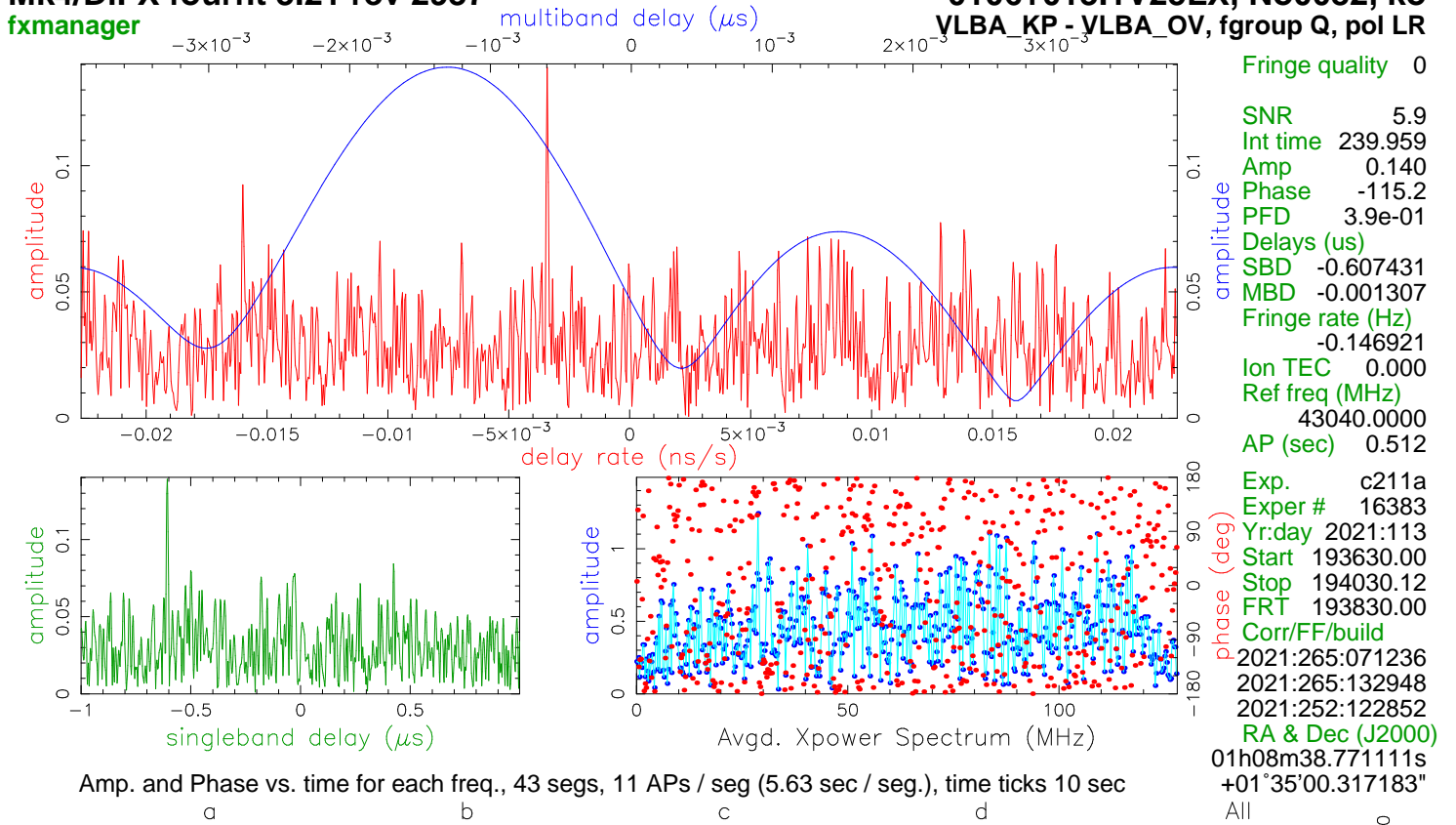


## Mk4/DiFX fourfit 3.21 rev 2937

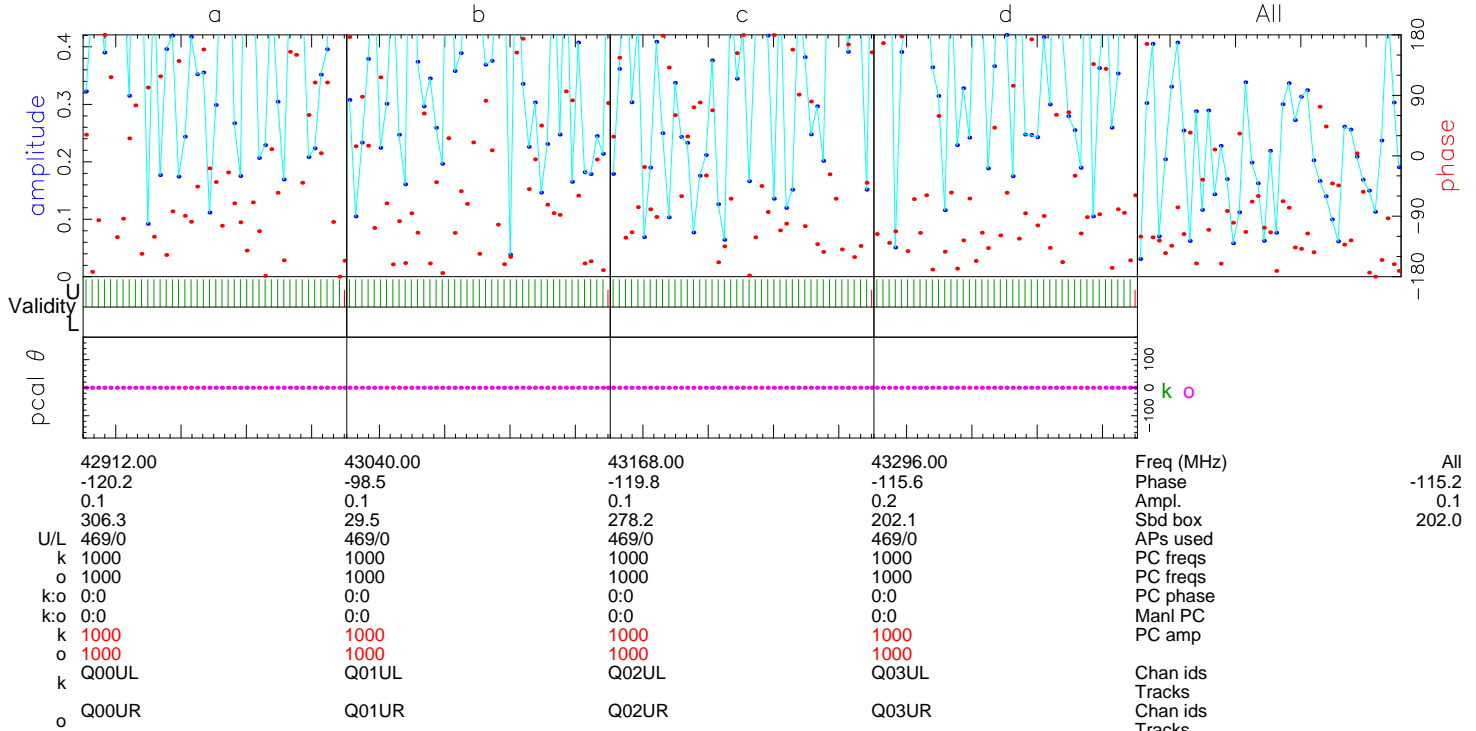
fxmanager

0106+013.1V25LX, No0082, ko

VLBA\_KP - VLBA\_OV, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



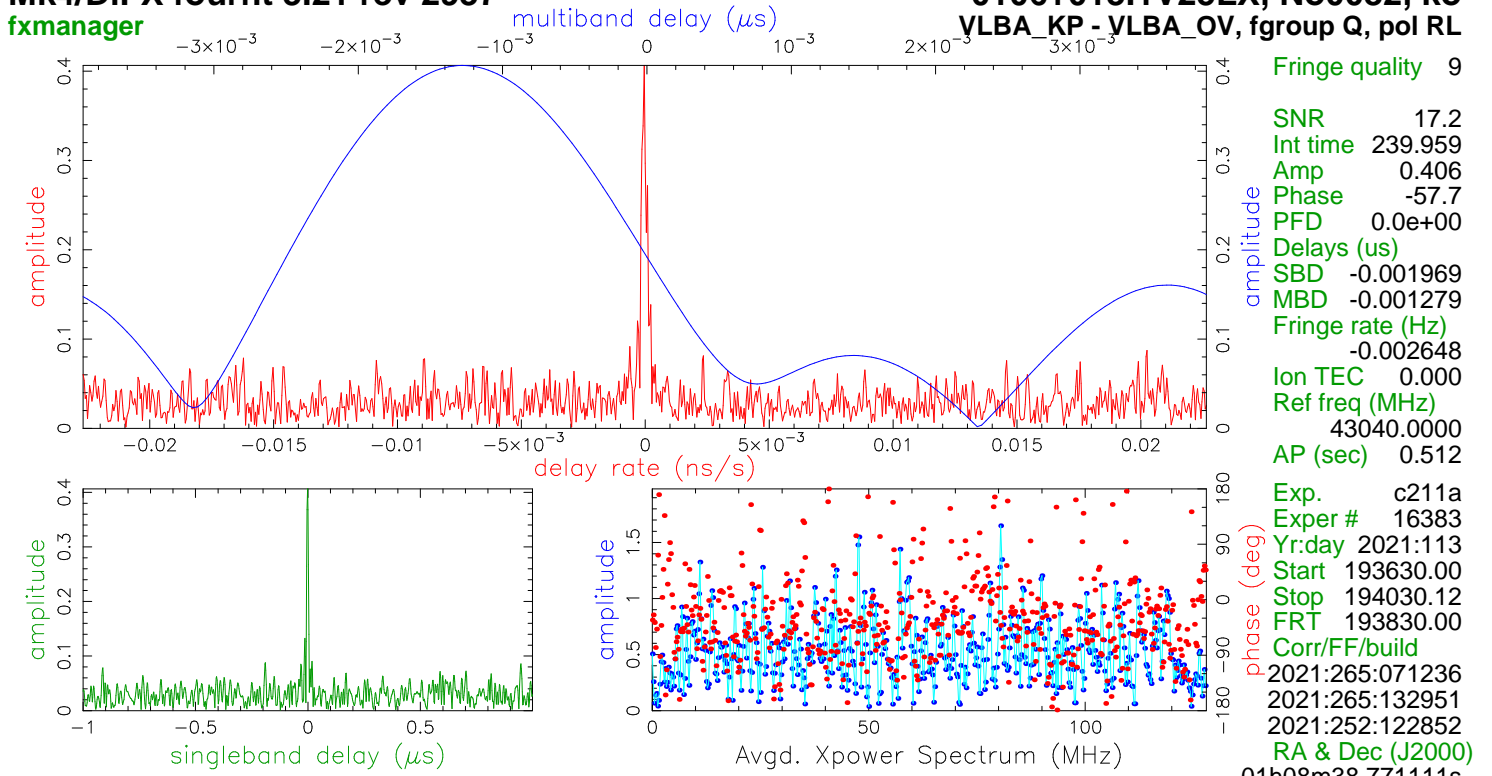
| Group delay (usec)(sbd)       | 5.18601735446E+02  | Apriori delay (usec)   | 5.19212417831E+02  | Resid mbdelay (usec)                   | -1.30738E-03          | +/-               | 1.9E-04                    |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|----------------------------|
| Sband delay (usec)            | 5.18604987331E+02  | Apriori clock (usec)   | -3.3187923E+00     | Resid sbdelay (usec)                   | -6.07431E-01          | +/-               | 7.3E-04                    |
| Phase delay (usec)            | 5.19212410393E+02  | Apriori clockrate (us/s)                                       | -3.6000001E-07     | Resid phdelay (usec)                   | -7.43748E-06          | +/-               | 1.3E-06                    |
| Delay rate (us/s)             | -1.63813308291E-01                                       | Apriori rate (us/s)  | -1.63809894710E-01 | Resid rate (us/s)                      | -3.41358E-06          | +/-               | 9.1E-09                    |
| Total phase (deg)             | 51.6   | Apriori accel (us/s/s)   | -3.03083720006E-06 | Resid phase (deg)                      | -115.2                | +/-               | 19.5                       |
| RMS                           | 67.1   | Theor.   | 63.8               | Amplitude                              | 0.140 +/- 0.024       |                   |                            |
| ph/seg (deg)                  | 67.1   | Search (1024X16)   | 0.137              | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)                   | 92.9   | Interp.  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg)                  | 12.8   | Inc. seg. avg.   | 0.132              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)                   | 35.6   | Inc. frq. avg.   | 0.134              | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)  | -0.023 0.023               |
|                               |  |  |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |
| k: az 211.3 el 55.7 pa 26.6   | o: az 197.5 el 53.2 pa 14.3                              | u,v (fr/asec)  | 467.809 -338.231   |  |                       |                   | simultaneous interpolator  |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/ko..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/ko.Q.133.1V25LX |                    |  |                       |                   |                            |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, ko

VLBA\_KP - VLBA\_OV, fgroup Q, pol RL



Fringe quality 9

SNR 17.2

Int time 239.959

Amp 0.406

Phase -57.7

PFD 0.0e+00

Delays (us)

SBD -0.001969

MBD -0.001279

Fringe rate (Hz)

-0.002648

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132951

2021:252:122852

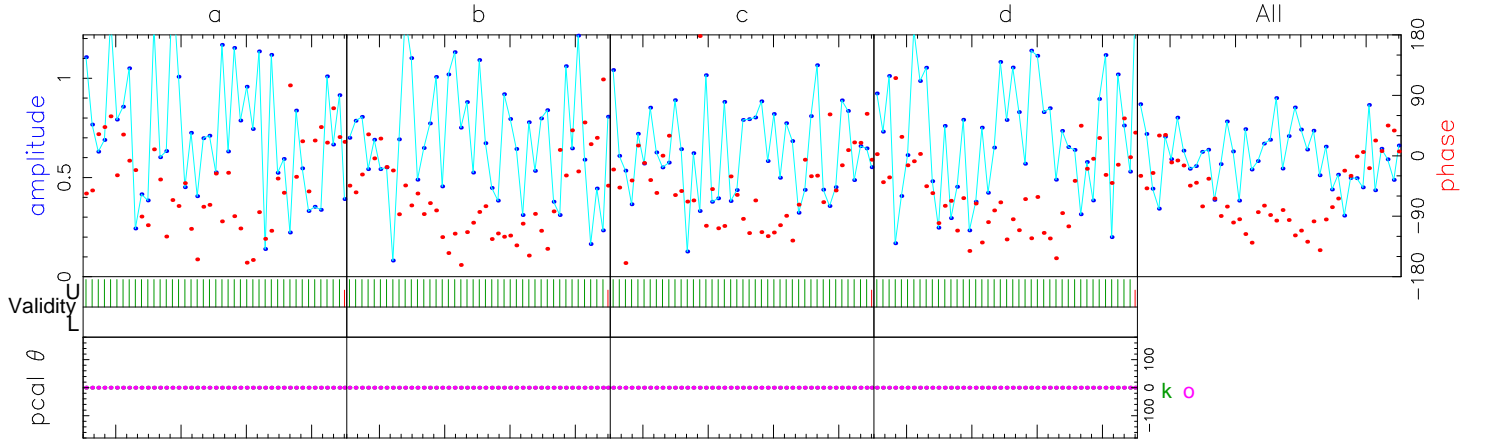
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   | 512.0 |
| k   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| k:o | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| k:o | 0:0      | 0:0      | 0:0      | 0:0      | PC amp     |       |
| k   | 1000     | 1000     | 1000     | 1000     | Chan ids   |       |
| o   | 1000     | 1000     | 1000     | 1000     | Tracks     |       |
| k   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.19211139305E+02  | Apriori delay (usec)     | 5.19212417831E+02  | Resid mbdelay (usec) | -1.27853E-03 | +/- | 6.5E-05 |
| Sband delay (usec)      | 5.19210448956E+02  | Apriori clock (usec)     | -3.3187923E+00     | Resid sbdelay (usec) | -1.96888E-03 | +/- | 2.5E-04 |
| Phase delay (usec)      | 5.19212414104E+02  | Apriori clockrate (us/s) | -3.6000001E-07     | Resid phdelay (usec) | -3.72627E-06 | +/- | 4.3E-07 |
| Delay rate (us/s)       | -1.63809956245E-01 | Apriori rate (us/s)      | -1.63809894710E-01 | Resid rate (us/s)    | -6.15343E-08 | +/- | 3.1E-09 |
| Total phase (deg)       | 109.1              | Apriori accel (us/s/s)   | -3.03083720006E-06 | Resid phase (deg)    | -57.7        | +/- | 6.7     |

|              |      |                  |       |                |                 |  |                       |
|--------------|------|------------------|-------|----------------|-----------------|--|-----------------------|
| ph/seg (deg) | 50.6 | Theor.           | 21.8  | Amplitude      | 0.406 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 61.1 | Search (1024X16) | 0.383 | Interp.        | 0.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 16.0 | Inc. seg. avg.   | 0.567 | Inc. frq. avg. | 0.412           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 5.7  | Inc. frq. avg.   | 0.412 |                |                 | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |                  |       |                |                 | Data rate(Mb/s): 2048                  | ion window (TEC)      |

k: az 211.3 el 55.7 pa 26.6 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 467.809 -338.231 simultaneous interpolator

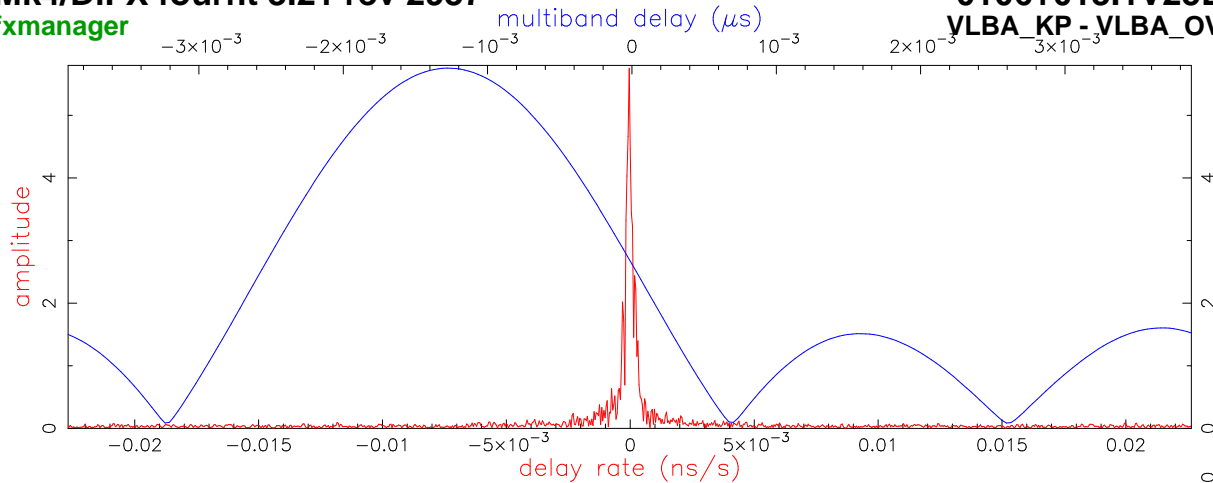
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ko..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ko.Q.154.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

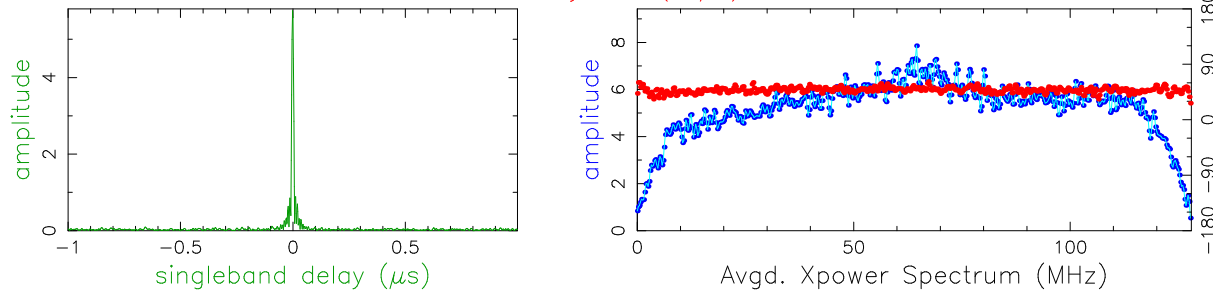
0106+013.1V25LX, No0082, ko

VLBA\_KP - VLBA\_OV, fgroup Q, pol LL



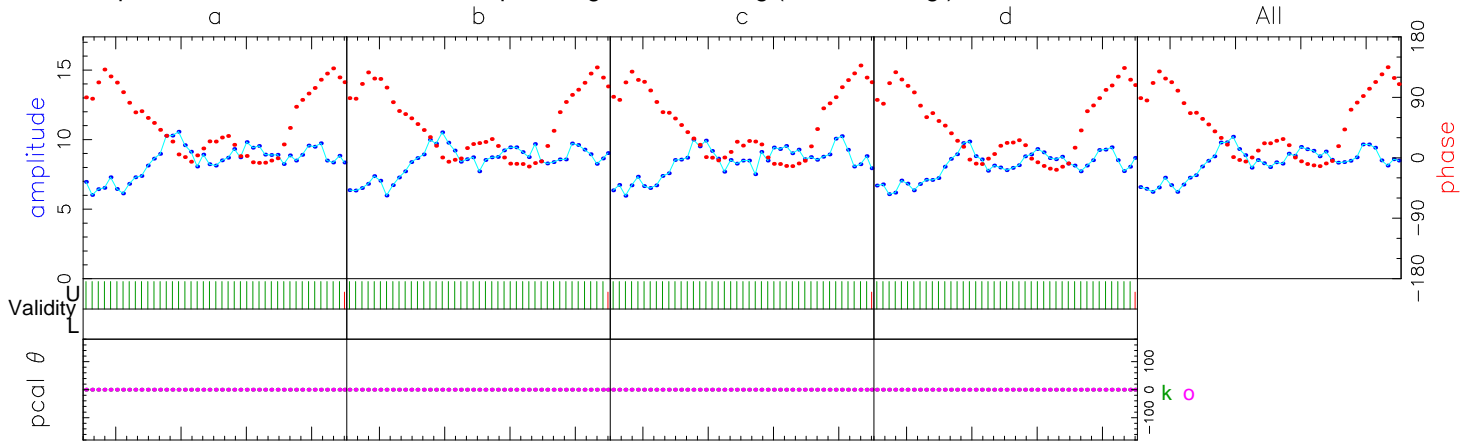
Fringe quality 5

SNR 245.5  
Int time 239.959  
Amp 5.796  
Phase 46.1  
PFD 0.0e+00  
Delays (us)  
SBD -0.001354  
MBD -0.001241  
Fringe rate (Hz)  
-0.002432  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132944  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 46.1  |
| k   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 5.8   |
| o   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.3 |
| k:o | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| k:o | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| o   | 1000     | 1000     | 1000     | 1000     | ManI PC    |       |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.19211176868E+02  | Apriori delay (usec)     | 5.19212417831E+02  | Resid mbdelay (usec) | -1.24096E-03 | +/- | 4.5E-06 |
| Sband delay (usec)      | 5.19211064081E+02  | Apriori clock (usec)     | -3.3187923E+00     | Resid sbdelay (usec) | -1.35375E-03 | +/- | 1.8E-05 |
| Phase delay (usec)      | 5.19212420805E+02  | Apriori clockrate (us/s) | -3.6000001E-07     | Resid phdelay (usec) | 2.97406E-06  | +/- | 3.0E-08 |
| Delay rate (us/s)       | -1.63809951213E-01 | Apriori rate (us/s)      | -1.63809894710E-01 | Resid rate (us/s)    | -5.65029E-08 | +/- | 2.2E-10 |
| Total phase (deg)       | 212.9              | Apriori accel (us/s/s)   | -3.03083720006E-06 | Resid phase (deg)    | 46.1         | +/- | 0.5     |

|              |      |        |                  |                 |  |                              |                  |        |       |  |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|--|
|              | RMS  | Theor. | Amplitude        | 5.796 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |  |
| ph/seg (deg) | 47.9 | 1.5    | Search (1024X16) | 5.544           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |  |
| amp/seg (%)  | 47.5 | 2.7    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |  |
| ph/frq (deg) | 2.5  | 0.5    | Inc. seg. avg.   | 8.346           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |  |
| amp/frq (%)  | 2.5  | 0.8    | Inc. frq. avg.   | 5.753           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |  |

k: az 211.3 el 55.7 pa 26.6 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 467.809 -338.231 simultaneous interpolator

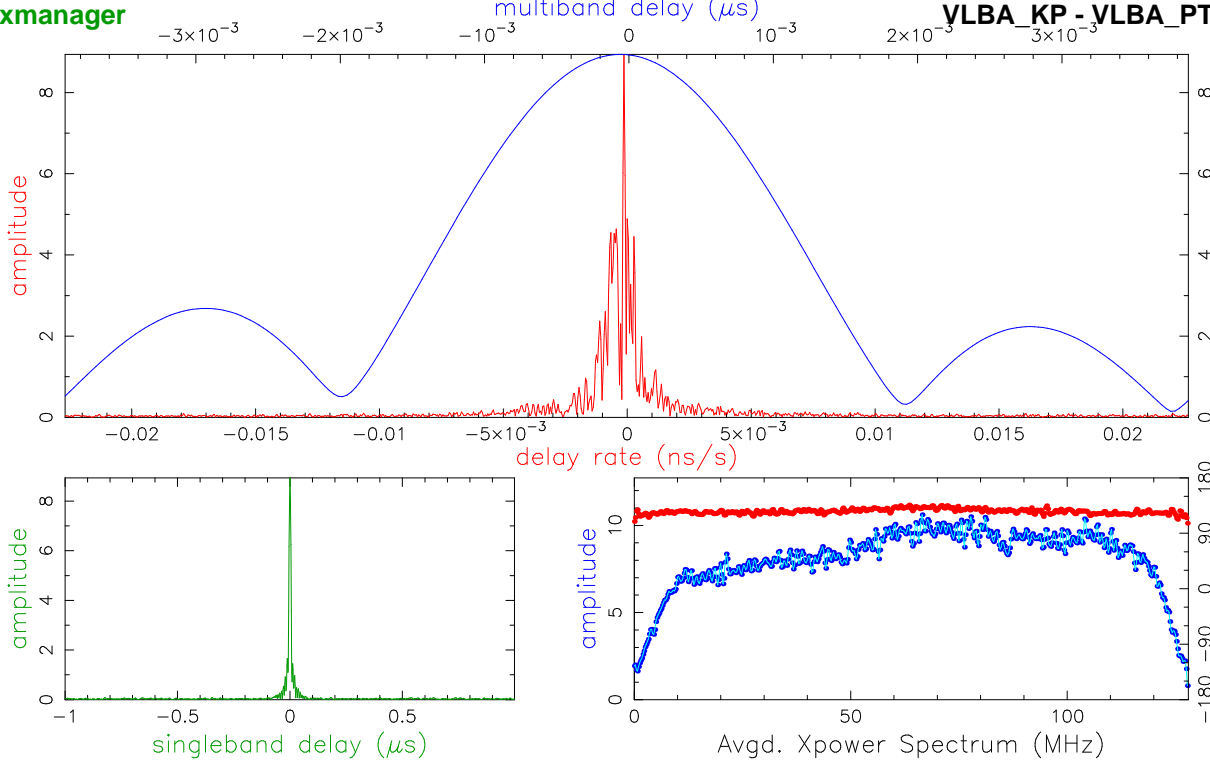
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ko..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/ko.Q.90.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, kp

VLBA\_KP - VLBA\_PT, fgroup Q, pol RR



Fringe quality 5

SNR 378.7

Int time 239.982

Amp 8.939

Phase 128.2

PFD 0.0e+00

Delays (us)

SBD 0.000033

MBD -0.000058

Fringe rate (Hz)

-0.005316

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132946

2021:252:122852

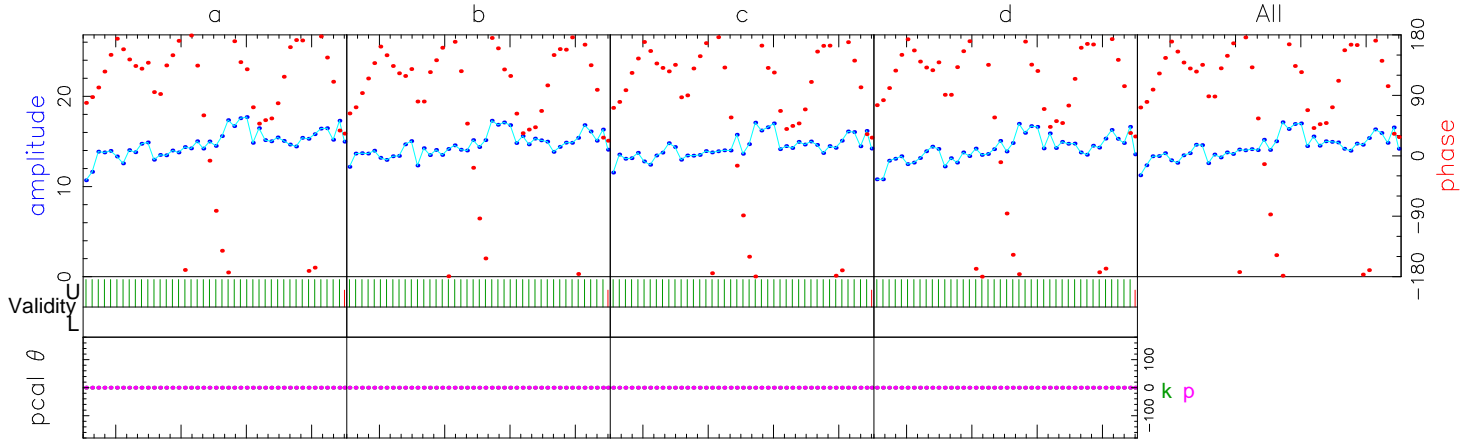
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 128.2 |
| k   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 9.0   |
| p   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 513.0 |
| k:p | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| k:p | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| k   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| k   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| k   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| p   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 7.79870463890E+02 | Apriori delay (usec)     | 7.79870521591E+02  | Resid mbdelay (usec) | -5.77009E-05 | +/- | 2.9E-06 |
| Sband delay (usec)      | 7.79870554591E+02 | Apriori clock (usec)     | -5.2234020E+00     | Resid sbdelay (usec) | 3.30000E-05  | +/- | 1.1E-05 |
| Phase delay (usec)      | 7.79870529863E+02 | Apriori clockrate (us/s) | 1.2000000E-07      | Resid phdelay (usec) | 8.27217E-06  | +/- | 2.0E-08 |
| Delay rate (us/s)       | 6.33142831181E-02 | Apriori rate (us/s)      | 6.33144066348E-02  | Resid rate (us/s)    | -1.23517E-07 | +/- | 1.4E-10 |
| Total phase (deg)       | 217.9             | Apriori accel (us/s/s)   | -4.28900773690E-06 | Resid phase (deg)    | 128.2        | +/- | 0.3     |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 8.939 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 55.9 | 1.0    | Search (1024X16) | 8.763           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 63.2 | 1.7    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 6.0  | 0.3    | Inc. seg. avg.   | 14.438          | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 2.1  | 0.5    | Inc. frq. avg.   | 8.965           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

k: az 211.3 el 55.7 pa 26.6 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) -182.978 -156.754 simultaneous interpolator

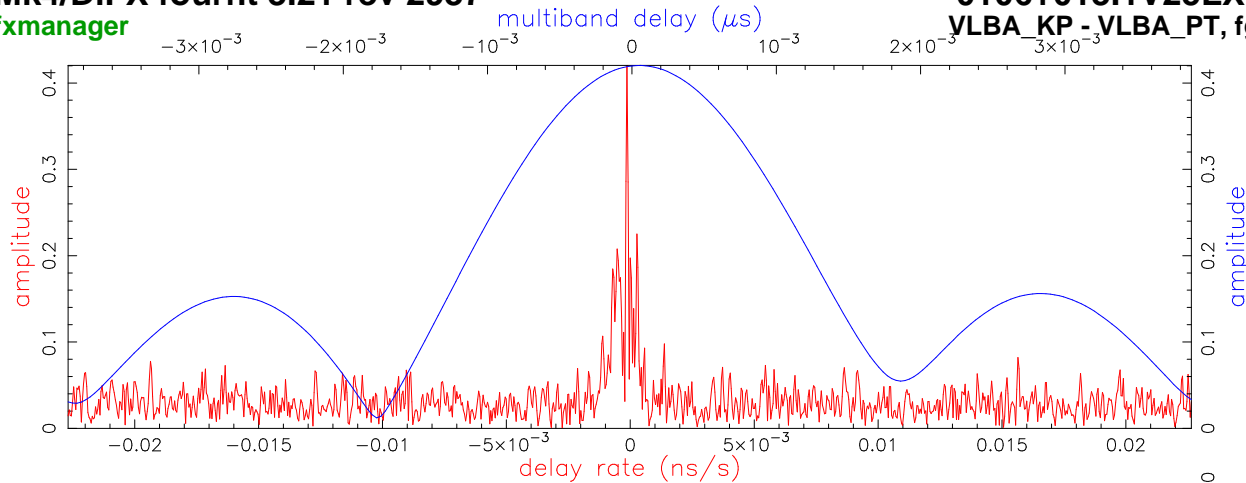
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kp.Q.111.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

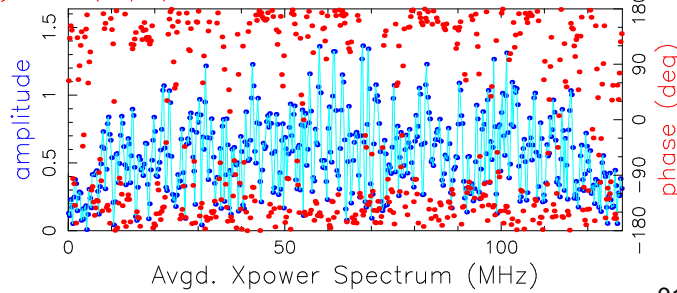
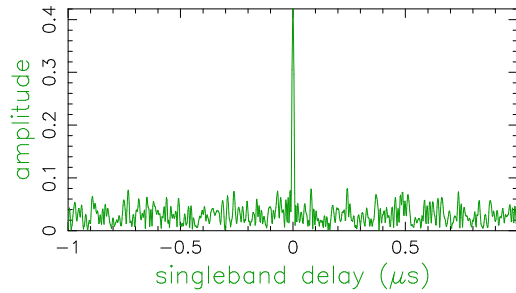
0106+013.1V25LX, No0082, kp

VLBA\_KP - VLBA\_PT, fgroup Q, pol LR



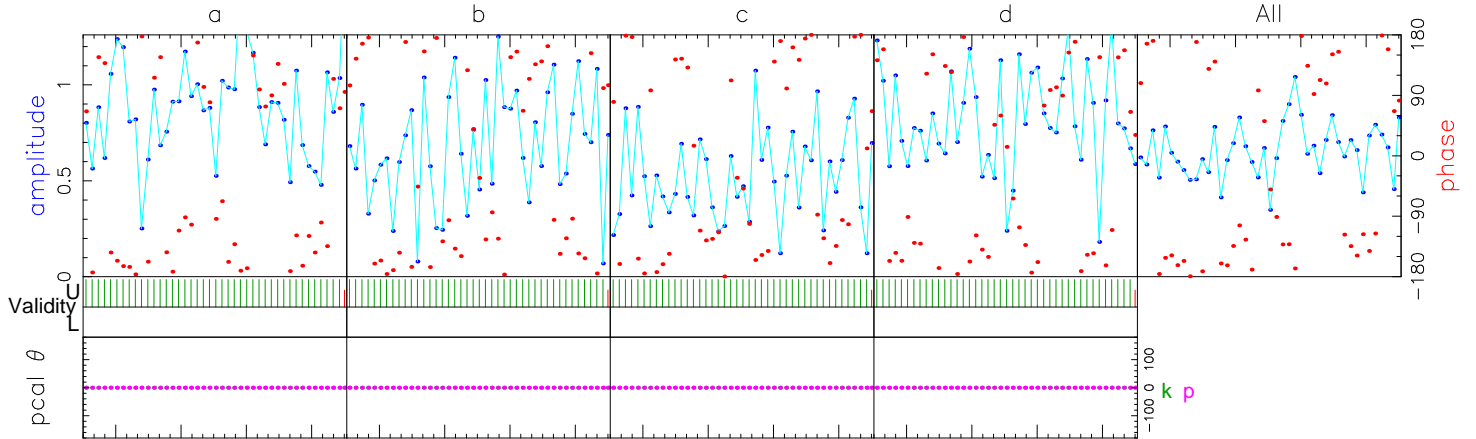
Fringe quality 9

SNR 17.8  
Int time 239.982  
Amp 0.420  
Phase -174.4  
PFD 0.0e+00  
Delays (us)  
SBD -0.000118  
MBD 0.000047  
Fringe rate (Hz)  
-0.005298  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132949  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
| U/L | 179.6    | -169.1   | -163.4   | 179.4    | Phase      | -174.4 |
| k   | 0.5      | 0.4      | 0.3      | 0.5      | Ampl.      | 0.4    |
| p   | 513.4    | 513.3    | 512.0    | 513.1    | Sbd box    | 512.9  |
| k:p | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| k:p | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| k:p | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| k   | 1000     | 1000     | 1000     | 1000     | Manl PC    |        |
| k   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| p   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 7.79870568171E+02 | Apriori delay (usec)     | 7.79870521591E+02  | Resid mbdelay (usec) | 4.65804E-05  | +/- | 6.2E-05 |
| Sband delay (usec)      | 7.79870403216E+02 | Apriori clock (usec)     | -5.2234020E+00     | Resid sbdelay (usec) | -1.18375E-04 | +/- | 2.4E-04 |
| Phase delay (usec)      | 7.79870510336E+02 | Apriori clockrate (us/s) | 1.2000000E-07      | Resid phdelay (usec) | -1.12547E-05 | +/- | 4.2E-07 |
| Delay rate (us/s)       | 6.33142835407E-02 | Apriori rate (us/s)      | 6.33144066348E-02  | Resid rate (us/s)    | -1.23094E-07 | +/- | 3.0E-09 |
| Total phase (deg)       | -84.7             | Apriori accel (us/s/s)   | -4.28900773690E-06 | Resid phase (deg)    | -174.4       | +/- | 6.4     |

|              |          |             |                           |  |                       |                   |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|-------------------|----------------------------|
| ph/seg (deg) | RMS 56.3 | Theor. 21.1 | Amplitude 0.420 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)  | 56.3     | 21.1        | Search (1024X16) 0.411    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg) | 65.6     | 36.8        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)  | 10.6     | 6.4         | Inc. seg. avg. 0.617      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
|              | 15.0     | 11.2        | Inc. frq. avg. 0.421      | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

k: az 211.3 el 55.7 pa 26.6 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) -182.978 -156.754 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kp.Q.137.1V25LX

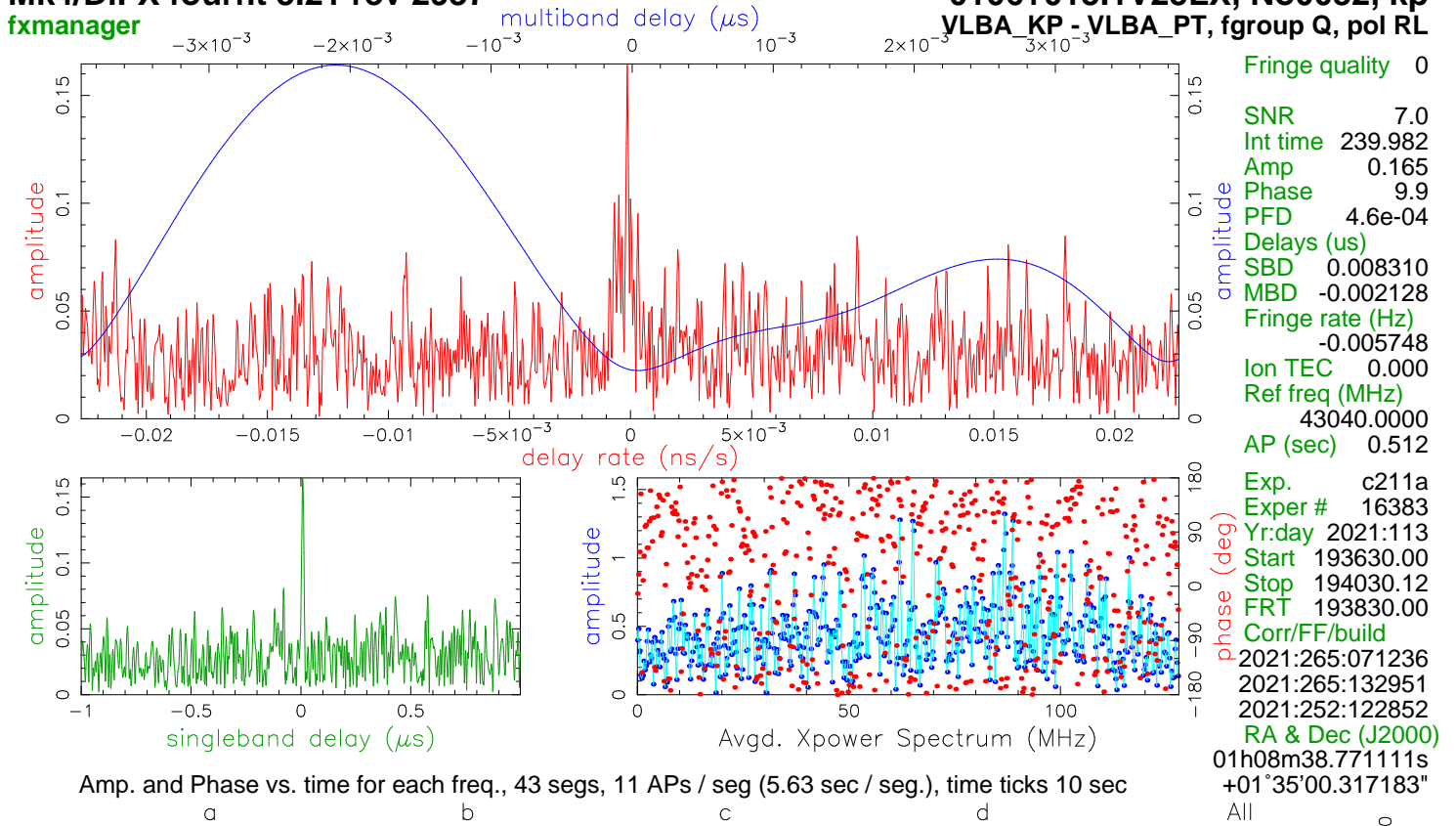


## Mk4/DiFX fourfit 3.21 rev 2937

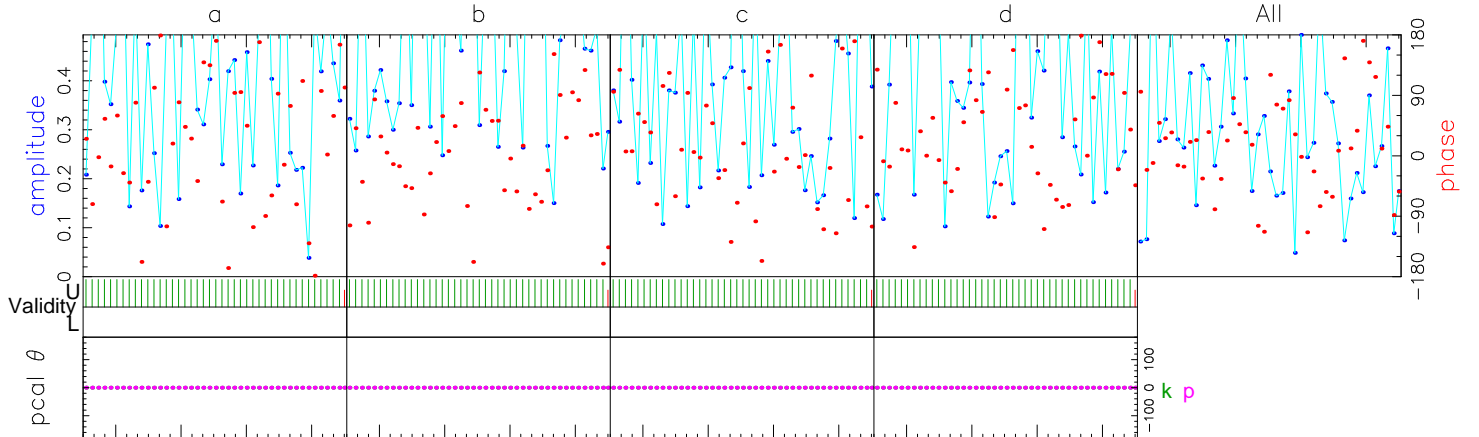
fxmanager

0106+013.1V25LX, No0082, kp

VLBA\_KP - VLBA\_PT, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



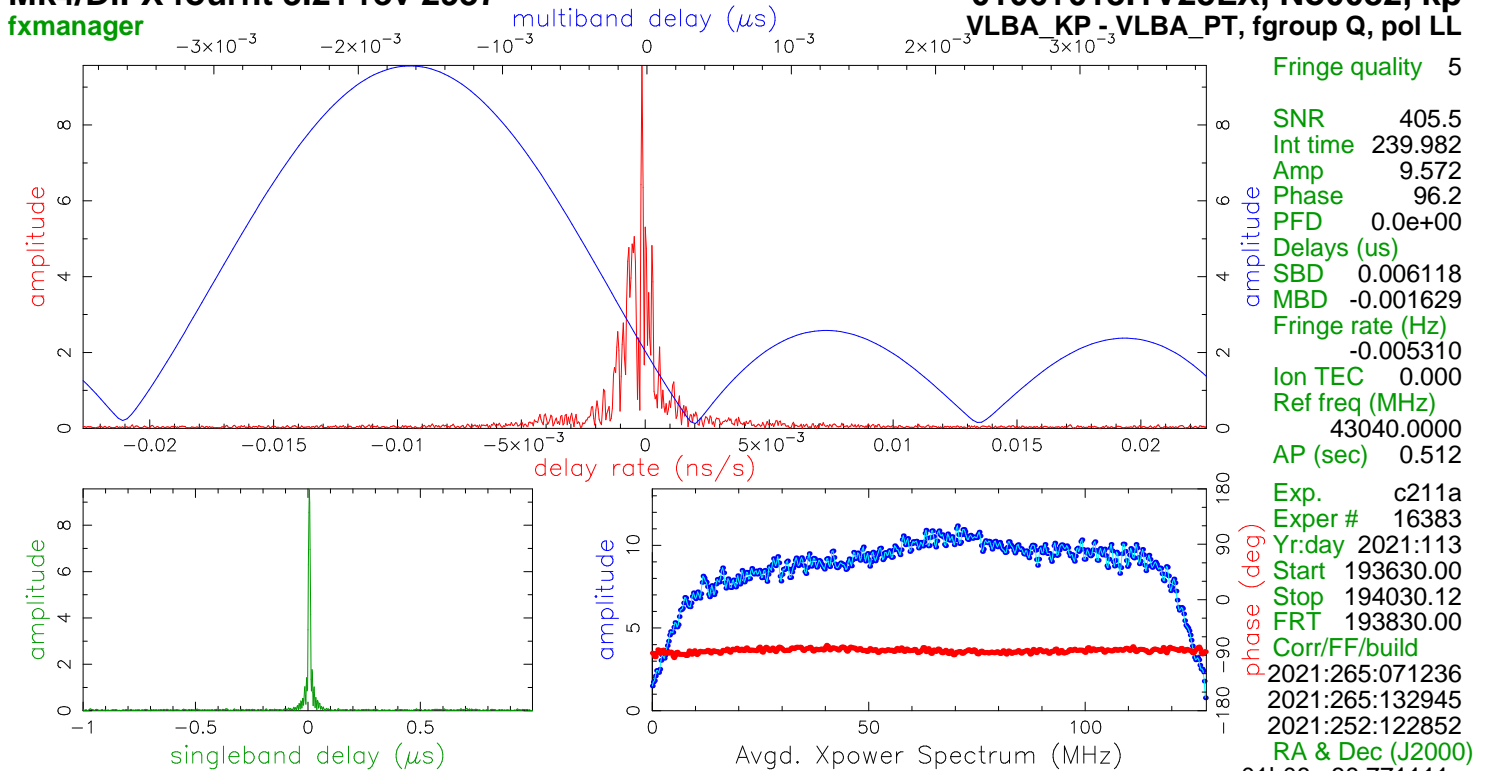
|                               |  |  |                    |  |   |
|-------------------------------|--|--|--------------------|--|---|
| 42912.00                      | 43040.00   | 43168.00   | 43296.00           | Freq (MHz)                             | All   |
| 28.7                          | -0.1   | -6.7   | 21.4               | Phase                                  | 9.9   |
| 0.1                           | 0.2  | 0.1  | 0.2                | Ampl.                                  | 0.2   |
| 699.1                         | 518.0  | 609.9  | 517.5              | Sbd box                                | 517.3   |
| U/L 469/0                     | 469/0  | 469/0  | 469/0              | APs used                               |   |
| k 1000                        | 1000   | 1000   | 1000               | PC freqs                               |   |
| p 1000                        | 1000   | 1000   | 1000               | PC phase                               |   |
| k:p 0:0                       | 0:0  | 0:0  | 0:0                | Manl PC                                |   |
| k:p 0:0                       | 0:0  | 0:0  | 0:0                | PC amp                                 |   |
| k 1000                        | 1000   | 1000   | 1000               |  |   |
| k 1000                        | 1000   | 1000   | 1000               |  |   |
| k Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Chan ids                               |   |
| p Q00UL                       | Q01UL  | Q02UL  | Q03UL              | Tracks                                 |   |
|                               |  |  |                    | Chan ids                               |   |
|                               |  |  |                    | Tracks                                 |   |
| Group delay (usec)(sbd)       | 7.79876206171E+02  | Apriori delay (usec)   | 7.79870521591E+02  | Resid mbdelay (usec)                   | -2.12792E-03 +/- 1.6E-04                                |
| Sband delay (usec)            | 7.79878831341E+02  | Apriori clock (usec)   | -5.2234020E+00     | Resid sbdelay (usec)                   | 8.30975E-03 +/- 6.2E-04                                 |
| Phase delay (usec)            | 7.79870522231E+02  | Apriori clockrate (us/s)                                       | 1.2000000E-07      | Resid phdelay (usec)                   | 6.40440E-07 +/- 1.1E-06                                 |
| Delay rate (us/s)             | 6.33142730751E-02  | Apriori rate (us/s)  | 6.33144066348E-02  | Resid rate (us/s)                      | -1.33560E-07 +/- 7.6E-09                                |
| Total phase (deg)             | 99.7   | Apriori accel (us/s/s)   | -4.28900773690E-06 | Resid phase (deg)                      | 9.9 +/- 16.4  |
| RMS                           | Theor.   | Amplitude  | 0.165 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 69.6   | Search (1024X16)   | 0.163              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 127.3  | Interp.  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 20.7   | Inc. seg. avg.   | 0.210              | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 34.6   | Inc. frq. avg.   | 0.162              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| k: az 211.3 el 55.7 pa 26.6   | p: az 214.8 el 52.2 pa 28.7                              | u,v (fr/asec)  | -182.978 -156.754  |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/kp..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/kp.Q.156.1V25LX |                    |  |   |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, kp

VLBA\_KP - VLBA\_PT, fgroup Q, pol LL



Fringe quality 5

SNR 405.5

Int time 239.982

Amp 9.572

Phase 96.2

PFD 0.0e+00

Delays (us)

SBD 0.006118

MBD -0.001629

Fringe rate (Hz)

-0.005310

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132945

2021:252:122852

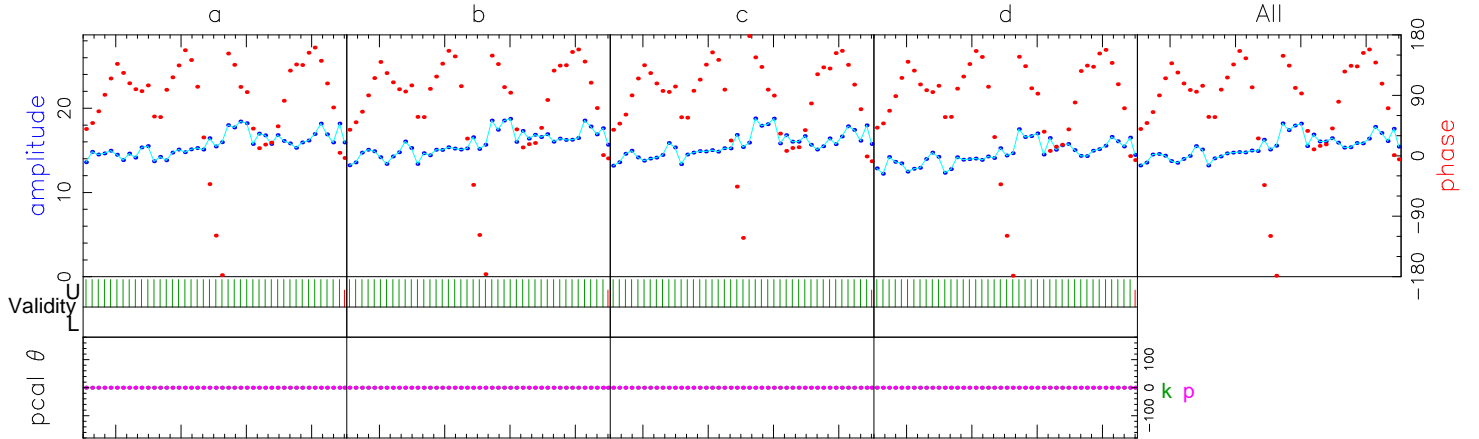
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | 96.1       | 96.2  |
| k   | 1000     | 1000     | 1000     | 1000     | 9.0        | 9.6   |
| p   | 1000     | 1000     | 1000     | 1000     | 516.0      | 516.1 |
| k:p | 0:0      | 0:0      | 0:0      | 0:0      |            |       |
| k:p | 0:0      | 0:0      | 0:0      | 0:0      |            |       |
| k   | 1000     | 1000     | 1000     | 1000     |            |       |
| p   | 1000     | 1000     | 1000     | 1000     |            |       |
| k   | Q00UL    | Q01UL    | Q02UL    | Q03UL    |            |       |
| p   | Q00UL    | Q01UL    | Q02UL    | Q03UL    |            |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 7.79876705546E+02 | Apriori delay (usec)     | 7.79870521591E+02  | Resid mbdelay (usec) | -1.62854E-03 | +/- | 2.7E-06 |
| Sband delay (usec)      | 7.79876639591E+02 | Apriori clock (usec)     | -5.2234020E+00     | Resid sbdelay (usec) | 6.11800E-03  | +/- | 1.1E-05 |
| Phase delay (usec)      | 7.79870527797E+02 | Apriori clockrate (us/s) | 1.2000000E-07      | Resid phdelay (usec) | 6.20640E-06  | +/- | 1.8E-08 |
| Delay rate (us/s)       | 6.33142832514E-02 | Apriori rate (us/s)      | 6.33144066348E-02  | Resid rate (us/s)    | -1.23383E-07 | +/- | 1.3E-10 |
| Total phase (deg)       | 185.9             | Apriori accel (us/s/s)   | -4.28900773690E-06 | Resid phase (deg)    | 96.2         | +/- | 0.3     |

|              |      |        |                  |                 |  |                       |
|--------------|------|--------|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | 55.9 | Theor. | Amplitude        | 9.572 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 63.1 | 0.9    | Search (1024X16) | 9.276           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 1.6  | 0.3    | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 3.5  | 0.5    | Inc. seg. avg.   | 15.462          | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |        | Inc. frq. avg.   | 9.560           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

k: az 211.3 el 55.7 pa 26.6 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) -182.978 -156.754 simultaneous interpolator

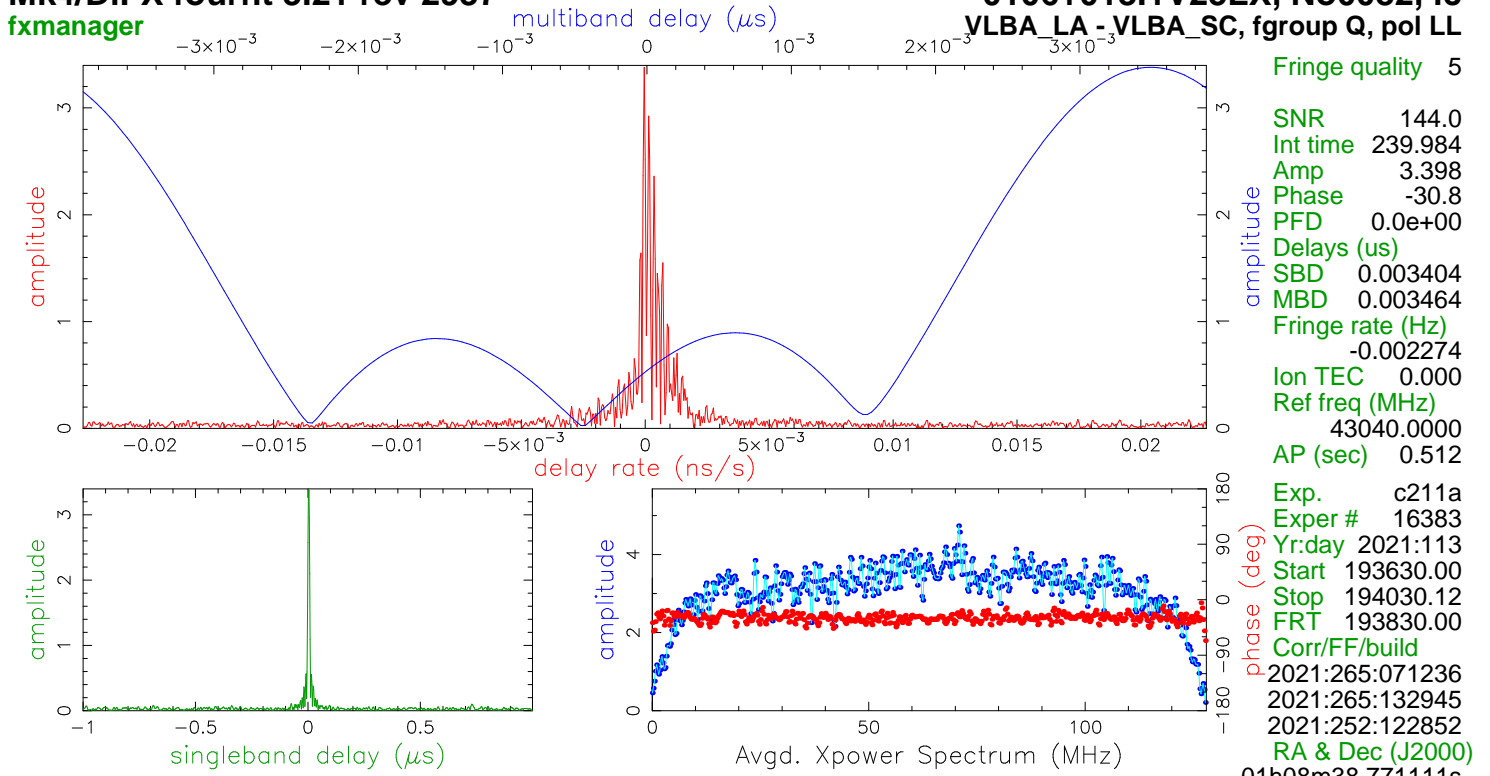
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/kp.Q.96.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

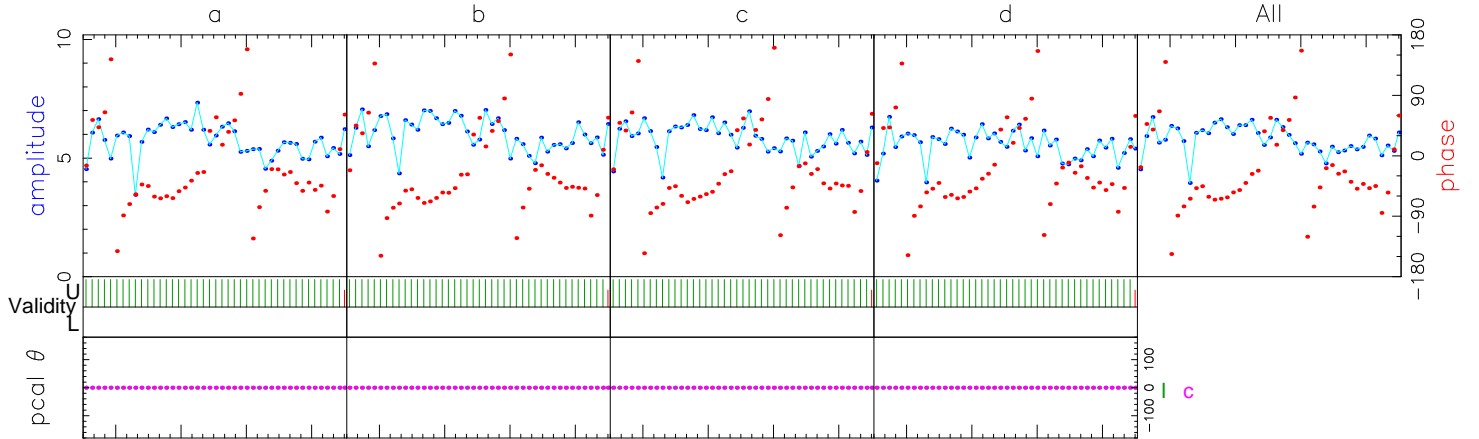
fxmanager

0106+013.1V25LX, No0082, lc

VLBA LA - VLBA\_SC, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



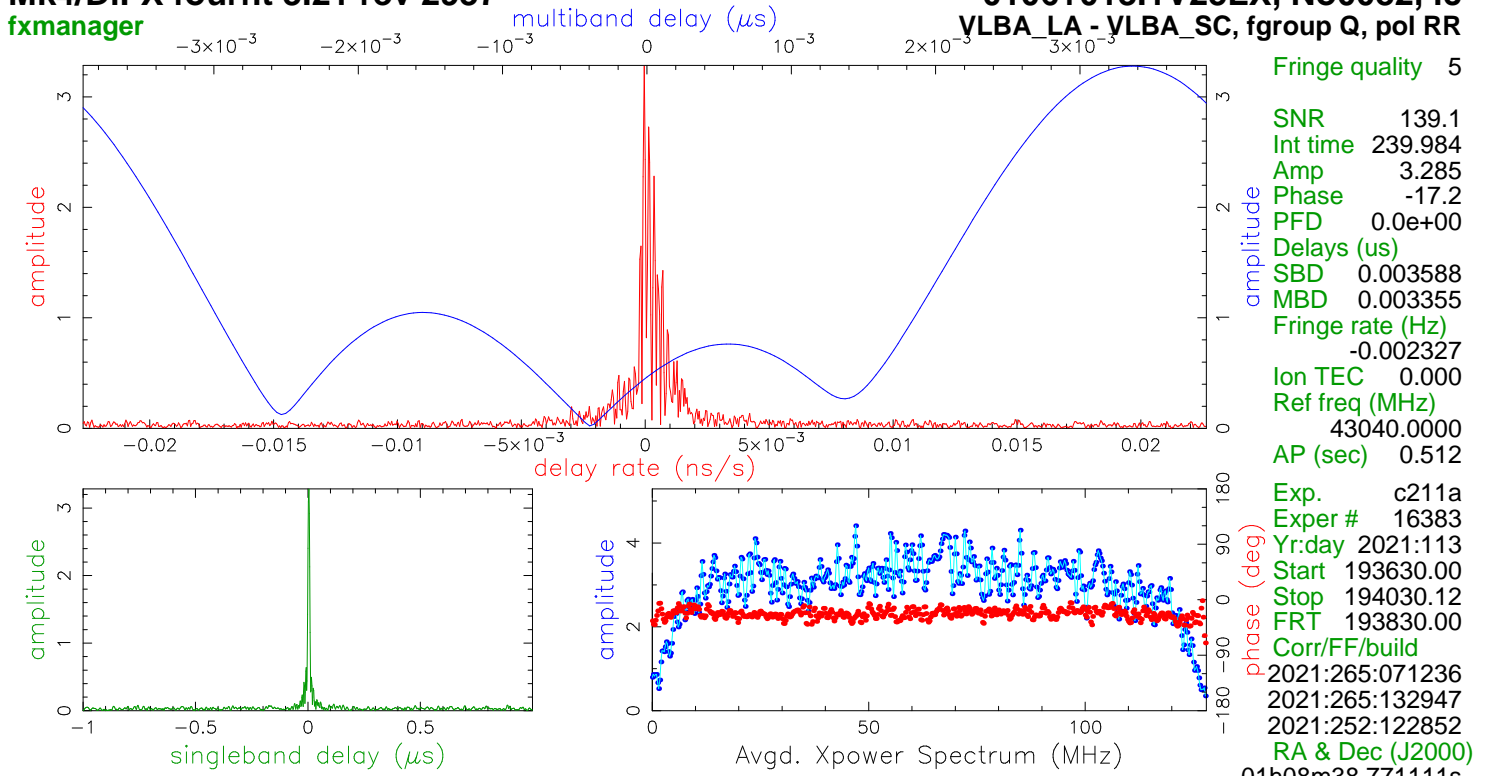
|                               |  |  |                    |  |   |
|-------------------------------|--|--|--------------------|--|---|
| 42912.00                      | 43040.00   | 43168.00   | 43296.00           | Freq (MHz)                             | All   |
| -30.2                         | -34.2  | -31.3  | -27.2              | Phase                                  | -30.8   |
| 3.4                           | 3.5  | 3.4  | 3.2                | Amp                                    | 3.4   |
| 514.5                         | 514.9  | 514.8  | 514.7              | Sbd box                                | 514.7   |
| U/L 469/0                     | 469/0  | 469/0  | 469/0              | APs used                               |   |
| l 1000                        | 1000   | 1000   | 1000               | PC freqs                               |   |
| c 1000                        | 1000   | 1000   | 1000               | PC freqs                               |   |
| l:c 0:0                       | 0:0  | 0:0  | 0:0                | PC phase                               |   |
| l:c 0:0                       | 0:0  | 0:0  | 0:0                | Manl PC                                |   |
| l 1000                        | 1000   | 1000   | 1000               | PC amp                                 |   |
| l 1000                        | 1000   | 1000   | 1000               |  |   |
| l Q00UL                       | Q01UL  | Q02UL  | Q03UL              | Chan ids                               |   |
| c Q00UL                       | Q01UL  | Q02UL  | Q03UL              | Tracks                                 |   |
|                               |  |  |                    | Chan ids                               |   |
|                               |  |  |                    | Tracks                                 |   |
| Group delay (usec)(sbd)       | 7.39846578654E+03  | Apriori delay (usec)   | 7.39846232294E+03  | Resid mbdelay (usec)                   | 3.46360E-03 +/- 7.7E-06                                 |
| Sband delay (usec)            | 7.39846572682E+03  | Apriori clock (usec)   | -1.4754063E+01     | Resid sbdelay (usec)                   | 3.40388E-03 +/- 3.0E-05                                 |
| Phase delay (usec)            | 7.39846232095E+03  | Apriori clockrate (us/s)                                       | -6.0200000E-07     | Resid phdelay (usec)                   | -1.98908E-06 +/- 5.1E-08                                |
| Delay rate (us/s)             | 8.42743084752E-01  | Apriori rate (us/s)  | 8.42743137591E-01  | Resid rate (us/s)                      | -5.28385E-08 +/- 3.7E-10                                |
| Total phase (deg)             | 105.8  | Apriori accel (us/s/s)   | -3.84877112878E-05 | Resid phase (deg)                      | -30.8 +/- 0.8   |
| RMS                           | Theor.   | Amplitude  | 3.398 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 62.6   | Search (1024X16)   | 3.332              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 72.2   | Interp.  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 3.5  | Inc. seg. avg.   | 5.775              | Sample rate(MISamp/s): 256             | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 3.1  | Inc. frq. avg.   | 3.383              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| l: az 216.4 el 50.1 pa 29.3   | c: az 263.3 el 25.2 pa 71.1                              | u,v (fr/asec)  | -2429.500 1190.467 |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/lc..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/lc.Q.100.1V25LX |                    |  |   |

Mk4/DiFX fourfit 3.21 rev 2937

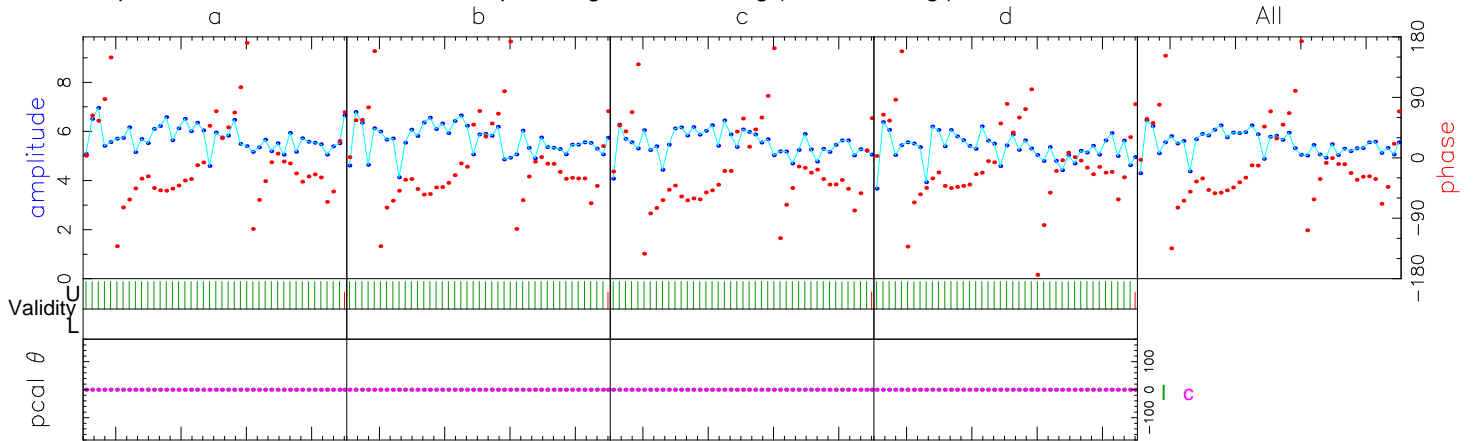
fxmanager

0106+013.1V25LX, No0082, lc

VLBA\_LA - VLBA\_SC, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -17.2 |
| l   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 3.3   |
| c   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 514.8 |
| l:c | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| l:c | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| l   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |  |                       |                      |                            |
|-------------------------|-------------------|--------------------------|--------------------|--|-----------------------|----------------------|----------------------------|
| Group delay (usec)(sbd) | 7.39846567823E+03 | Apriori delay (usec)     | 7.39846232294E+03  | Resid mbdelay (usec)                   | 3.35529E-03           | +/-                  | 8.0E-06                    |
| Sband delay (usec)      | 7.39846591082E+03 | Apriori clock (usec)     | -1.4754063E+01     | Resid sbdelay (usec)                   | 3.58788E-03           | +/-                  | 3.1E-05                    |
| Phase delay (usec)      | 7.39846232183E+03 | Apriori clockrate (us/s) | -6.0200000E-07     | Resid phdelay (usec)                   | -1.11186E-06          | +/-                  | 5.3E-08                    |
| Delay rate (us/s)       | 8.42743083524E-01 | Apriori rate (us/s)      | 8.42743137591E-01  | Resid rate (us/s)                      | -5.40666E-08          | +/-                  | 3.8E-10                    |
| Total phase (deg)       | 119.4             | Apriori accel (us/s/s)   | -3.84877112878E-05 | Resid phase (deg)                      | -17.2                 | +/-                  | 0.8                        |
| RMS                     | Theor.            | Amplitude                | 3.285 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| ph/seg (deg)            | 61.9              | Search (1024X16)         | 3.224              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| amp/seg (%)             | 69.4              | Interp.                  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| ph/frq (deg)            | 9.0               | Inc. seg. avg.           | 5.510              | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
| amp/frq (%)             | 2.6               | Inc. frq. avg.           | 3.297              | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

l: az 216.4 el 50.1 pa 29.3 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2429.500 1190.467 simultaneous interpolator

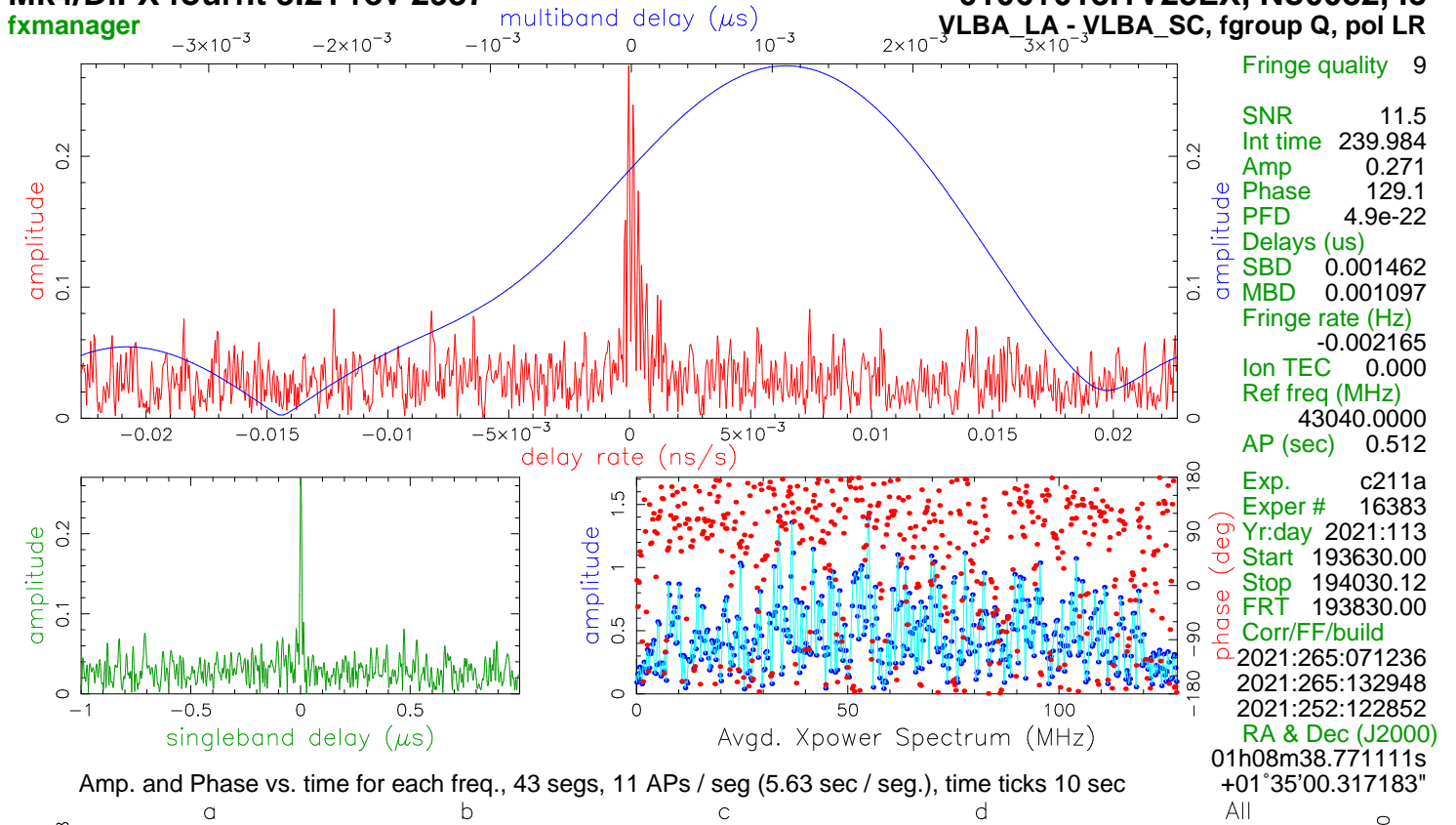
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lc.Q.118.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

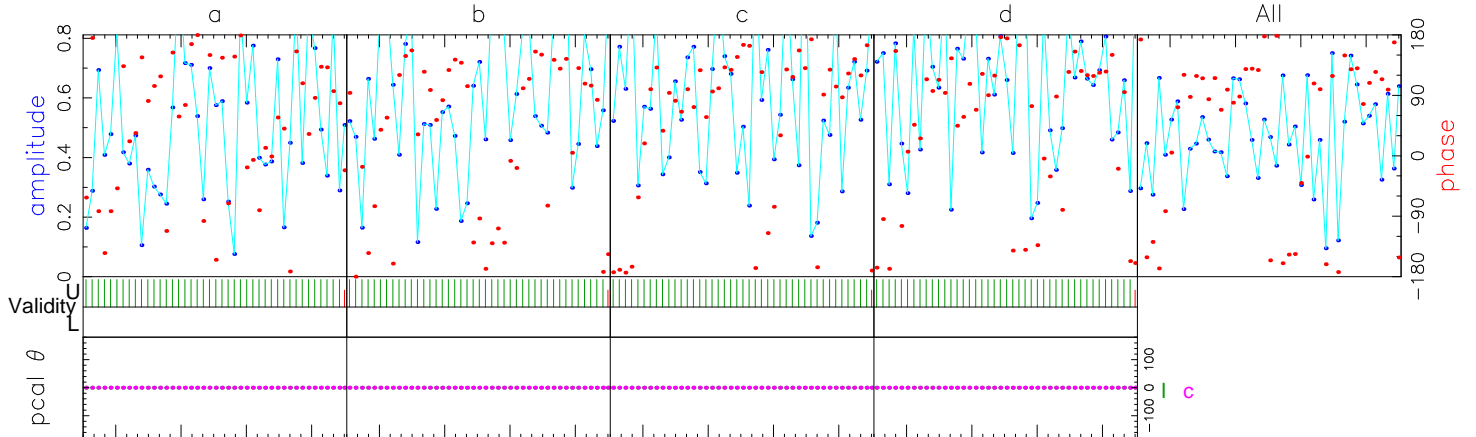
fxmanager

0106+013.1V25LX, No0082, lc

VLBA\_LA - VLBA\_SC, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|   |                   |                          |                    |  |                              |                  |              |
|---|-------------------|--------------------------|--------------------|--|------------------------------|------------------|--------------|
| U/L   | 42912.00          | 43040.00                 | 43168.00           | 43296.00                               | Freq (MHz)                   | All              |              |
|   | 106.2             | 144.3                    | 130.0              | 124.1                                  | Phase                        | 129.1            |              |
|   | 0.1               | 0.3                      | 0.4                | 0.3                                    | Ampl.                        | 0.3              |              |
|   | 873.0             | 513.6                    | 513.4              | 514.3                                  | Sbd box                      | 513.7            |              |
|   | 469/0             | 469/0                    | 469/0              | 469/0                                  | APs used                     |                  |              |
|   | l 1000            | 1000                     | 1000               | 1000                                   | PC freqs                     |                  |              |
|   | c 1000            | 1000                     | 1000               | 1000                                   | PC freqs                     |                  |              |
|   | l:c 0:0           | 0:0                      | 0:0                | 0:0                                    | PC phase                     |                  |              |
|   | l:c 0:0           | 0:0                      | 0:0                | 0:0                                    | Manl PC                      |                  |              |
|   | l 1000            | 1000                     | 1000               | 1000                                   | PC amp                       |                  |              |
| c 1000  | 1000              | 1000                     | 1000               |  |                              |                  |              |
| l Q00UL   | Q01UL             | Q02UL                    | Q03UL              | Chan ids                               |                              |                  |              |
| c Q00UR   | Q01UR             | Q02UR                    | Q03UR              | Tracks                                 |                              |                  |              |
|   |                   |                          |                    | Chan ids                               |                              |                  |              |
|   |                   |                          |                    | Tracks                                 |                              |                  |              |
| Group delay (usec)(sbd)   | 7.39846342042E+03 | Apriori delay (usec)     | 7.39846232294E+03  | Resid mbdelay (usec)                   | 1.09747E-03                  | +/- 9.7E-05      |              |
| Sband delay (usec)  | 7.39846378544E+03 | Apriori clock (usec)     | -1.4754063E+01     | Resid sbdelay (usec)                   | 1.46250E-03                  | +/- 3.8E-04      |              |
| Phase delay (usec)  | 7.39846233127E+03 | Apriori clockrate (us/s) | -6.0200000E-07     | Resid phdelay (usec)                   | 8.33115E-06                  | +/- 6.5E-07      |              |
| Delay rate (us/s)   | 8.42743087299E-01 | Apriori rate (us/s)      | 8.42743137591E-01  | Resid rate (us/s)                      | -5.02916E-08                 | +/- 4.7E-09      |              |
| Total phase (deg)   | 265.7             | Apriori accel (us/s/s)   | -3.84877112878E-05 | Resid phase (deg)                      | 129.1                        | +/- 10.0         |              |
| RMS   | Theor.            | Amplitude                | 0.271 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |              |
| ph/seg (deg)  | 63.5              | Search (1024X16)         | 0.265              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000 1.000     |              |
| amp/seg (%)   | 93.8              | Interp.                  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg)  | 19.8              | Inc. seg. avg.           | 0.405              | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)   | 37.3              | Inc. frq. avg.           | 0.270              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |
| l: az 216.4 el 50.1 pa 29.3 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2429.500 1190.467 simultaneous interpolator                                    |                   |                          |                    |  |                              |                  |              |
| Control file: cf_1234_gmva7mm Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/lc..1V25LX Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/lc.Q.132.1V25LX |                   |                          |                    |  |                              |                  |              |

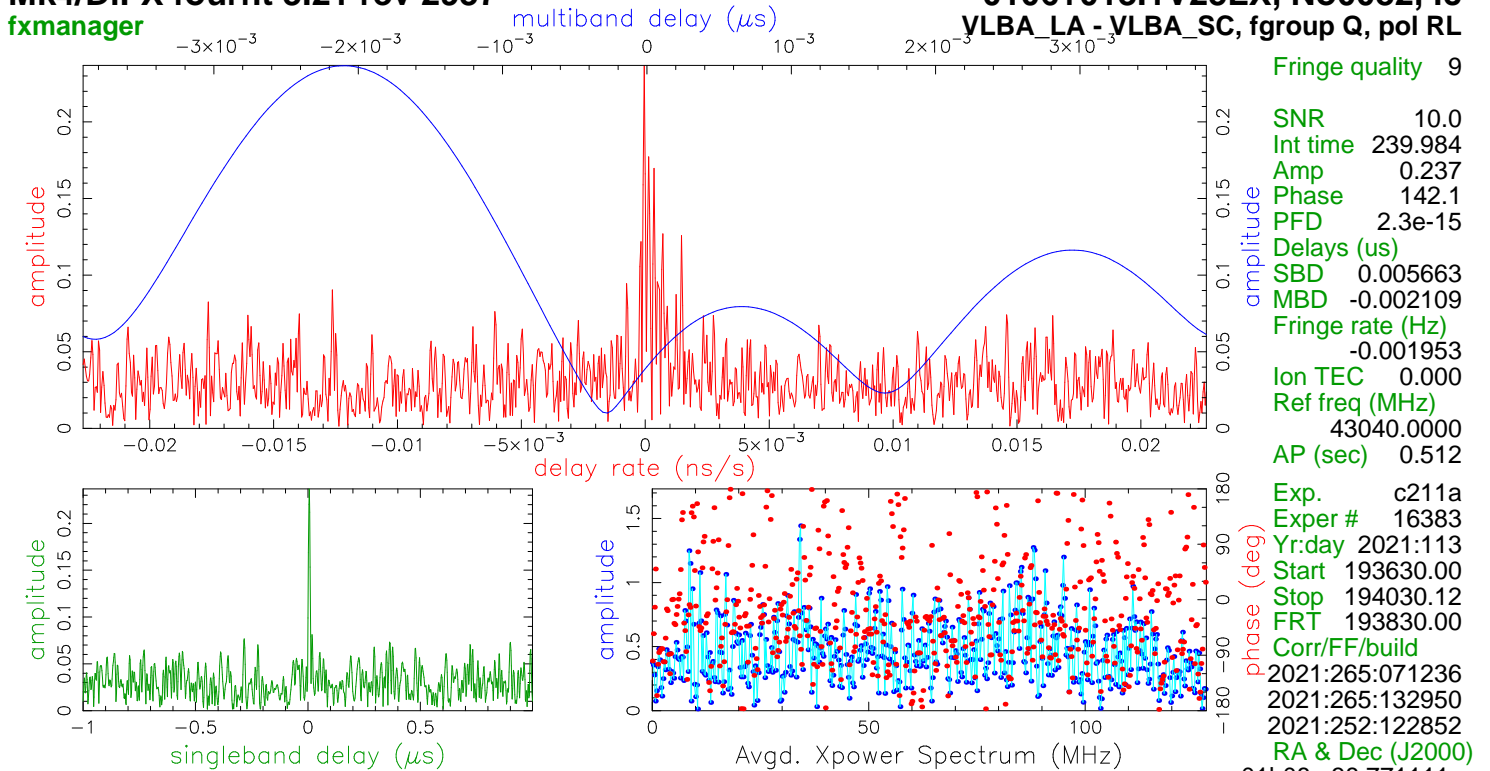


Mk4/DiFX fourfit 3.21 rev 2937

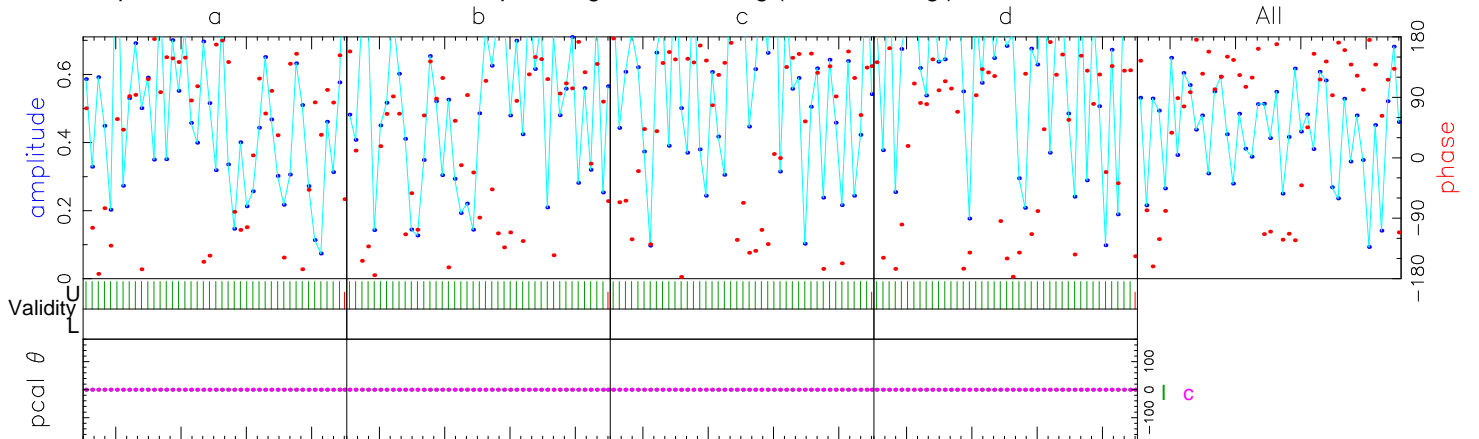
fxmanager

0106+013.1V25LX, No0082, lc

VLBA\_LA - VLBA\_SC, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 142.1 |
| l   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.2   |
| c   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 515.9 |
| l:c | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| l:c | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| l   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 7.39846802642E+03 | Apriori delay (usec)     | 7.39846232294E+03  | Resid mbdelay (usec) | -2.10903E-03 | +/- | 1.1E-04 |
| Sband delay (usec)      | 7.39846798619E+03 | Apriori clock (usec)     | -1.4754063E+01     | Resid sbdelay (usec) | 5.66325E-03  | +/- | 4.3E-04 |
| Phase delay (usec)      | 7.39846233211E+03 | Apriori clockrate (us/s) | -6.0200000E-07     | Resid phdelay (usec) | 9.16897E-06  | +/- | 7.4E-07 |
| Delay rate (us/s)       | 8.42743092226E-01 | Apriori rate (us/s)      | 8.42743137591E-01  | Resid rate (us/s)    | -4.53651E-08 | +/- | 5.3E-09 |
| Total phase (deg)       | 278.7             | Apriori accel (us/s/s)   | -3.84877112878E-05 | Resid phase (deg)    | 142.1        | +/- | 11.4    |

|              |       |        |                  |                 |  |                              |                  |        |       |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS   | Theor. | Amplitude        | 0.237 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 67.3  | 37.4   | Search (1024X16) | 0.234           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 102.7 | 65.3   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 15.1  | 11.4   | Inc. seg. avg.   | 0.361           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 27.4  | 19.9   | Inc. frq. avg.   | 0.236           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

simultaneous interpolator

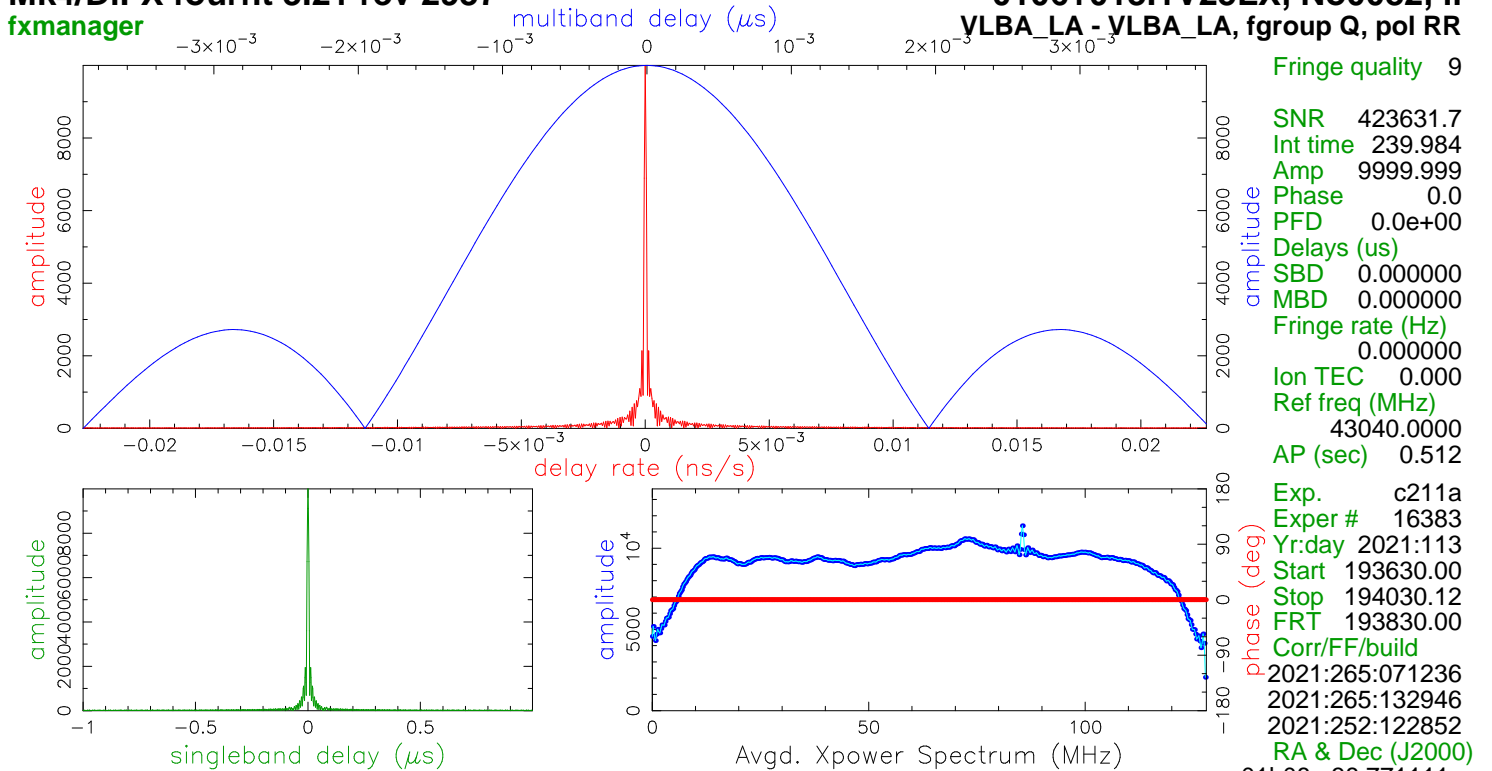
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lc.Q.152.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, II

VLBA LA - VLBA LA, fgroup Q, pol RR

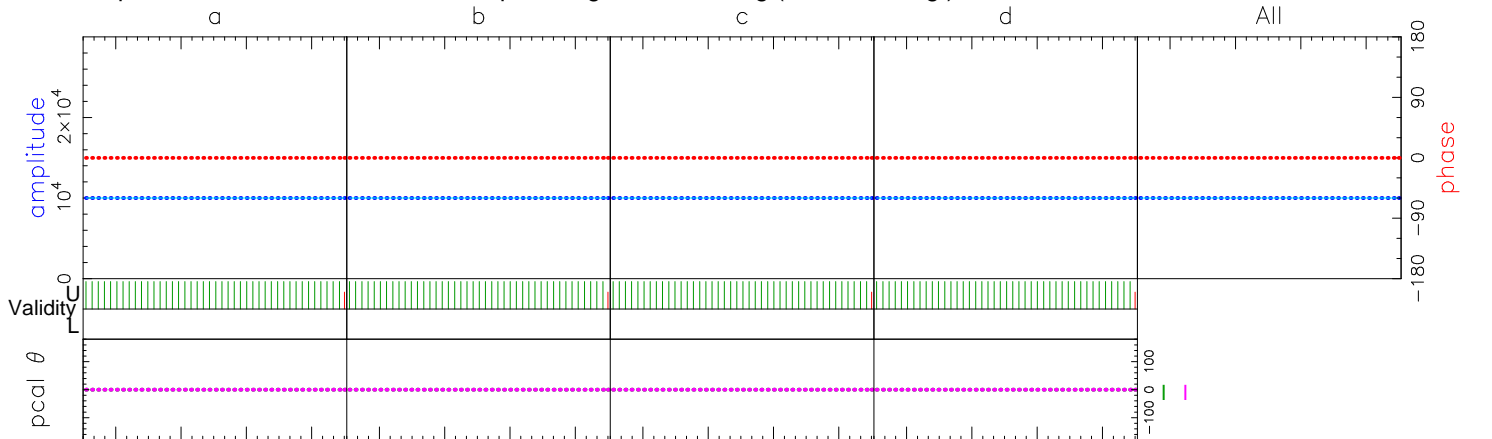


Fringe quality 9

SNR 423631.7  
Int time 239.984  
Amp 9999.999  
Phase 0.0  
PFD 0.0e+00  
Delays (us)  
SBD 0.000000  
MBD 0.000000  
Fringe rate (Hz)  
0.000000  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132946  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
|-----------|-----------|-----------|-----------|------------|---------|
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 469/0 | U/L 469/0 | U/L 469/0 | U/L 469/0 | APs used   |         |
| I 1000    | I 1000    | I 1000    | I 1000    | PC freqs   |         |
| I 1000    | I 1000    | I 1000    | I 1000    | PC freqs   |         |
| I:I 0:0   | I:I 0:0   | I:I 0:0   | I:I 0:0   | PC phase   |         |
| I:I 0:0   | I:I 0:0   | I:I 0:0   | I:I 0:0   | ManI PC    |         |
| I 1000    | I 1000    | I 1000    | I 1000    | PC amp     |         |
| I 1000    | I 1000    | I 1000    | I 1000    |            |         |
| I Q00UR   | I Q01UR   | I Q02UR   | I Q03UR   | Chan ids   |         |
| I Q00UR   | I Q01UR   | I Q02UR   | I Q03UR   | Tracks     |         |
|           |           |           |           | Chan ids   |         |
|           |           |           |           | Tracks     |         |

|                         |                  |                          |                  |                      |             |     |         |
|-------------------------|------------------|--------------------------|------------------|----------------------|-------------|-----|---------|
| Group delay (usec)(sbd) | 0.0000000000E+00 | Apriori delay (usec)     | 0.0000000000E+00 | Resid mbdelay (usec) | 0.00000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.0000000000E+00 | Apriori clock (usec)     | 0.0000000E+00    | Resid sbdelay (usec) | 0.00000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.0000000000E+00 | Apriori clockrate (us/s) | 0.0000000E+00    | Resid phdelay (usec) | 0.00000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.0000000000E+00 | Apriori rate (us/s)      | 0.0000000000E+00 | Resid rate (us/s)    | 0.00000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0              | Apriori accel (us/s/s)   | 0.0000000000E+00 | Resid phase (deg)    | 0.0         | +/- | 0.0     |

|              |     |        |                  |                    |  |                              |                  |              |
|--------------|-----|--------|------------------|--------------------|--|------------------------------|------------------|--------------|
|              | RMS | Theor. | Amplitude        | 9999.999 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |              |
| ph/seg (deg) | 0.0 | 0.0    | Search (1024X16) | 10000.000          | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000        |
| amp/seg (%)  | 0.0 | 0.0    | Interp.          | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg) | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000          | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)  | 0.0 | 0.0    | Inc. frq. avg.   | 10000.000          | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |

I: az 216.4 el 50.1 pa 29.3 I: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/II..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/II.Q.109.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

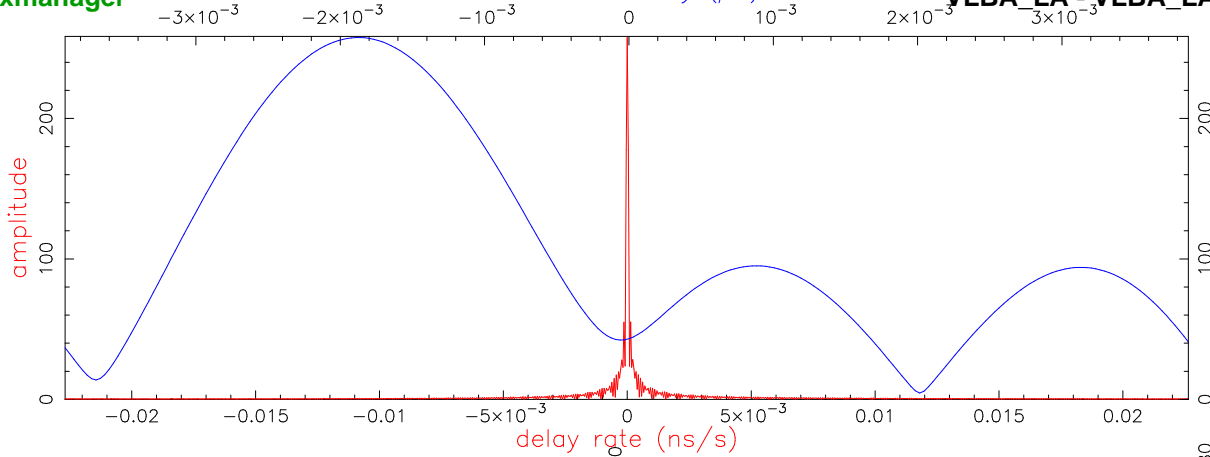
fxmanager

0106+013.1V25LX, No0082, II

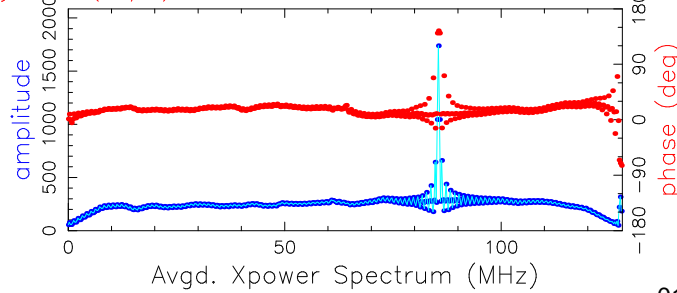
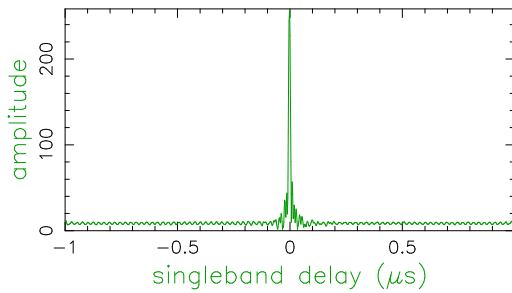
VLBA LA - VLBA LA, fgroup Q, pol LR

multiband delay ( $\mu$ s)

Fringe quality 9

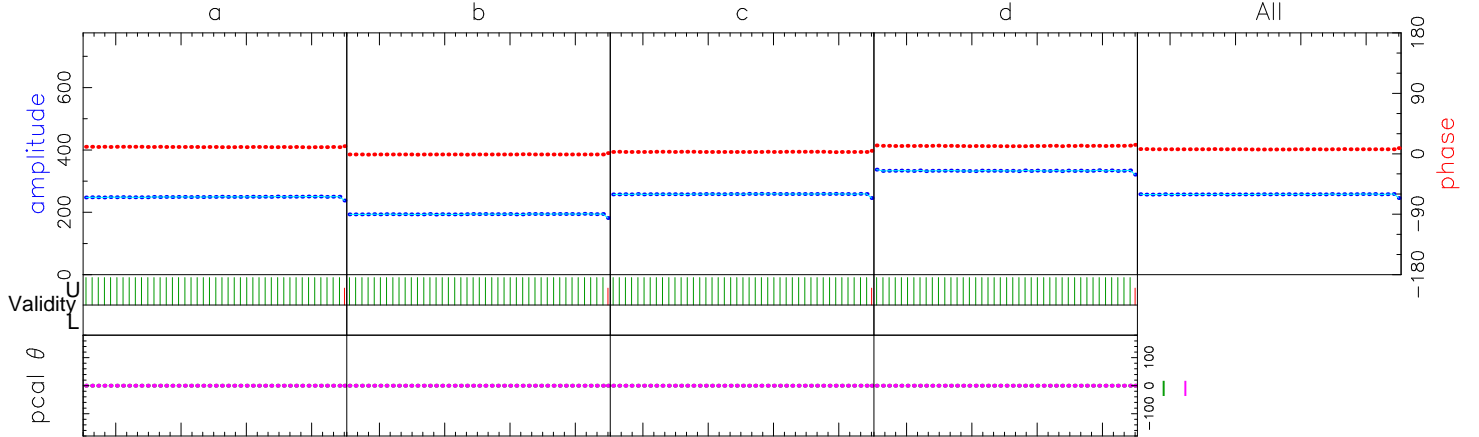


SNR 10949.5  
Int time 239.984  
Amp 258.467  
Phase 6.7  
PFD 0.0e+00  
Delays (us)  
SBD -0.002328  
MBD -0.001897  
Fringe rate (Hz)  
0.000005  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Yr:day 16383  
Start 2021:113  
Stop 2021:113  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132948  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| 10.1      | -1.0     | 2.8      | 11.7     | Phase      | 6.7   |
| 249.2     | 193.9    | 258.3    | 333.1    | Ampl.      | 258.6 |
| 512.0     | 511.5    | 512.2    | 511.6    | Sbd box    | 511.8 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| I 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| I 1000    | 1000     | 1000     | 1000     | PC phase   |       |
| I 0:0     | 0:0      | 0:0      | 0:0      | ManI PC    |       |
| I 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| I 1000    | 1000     | 1000     | 1000     |            |       |
| I Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| I Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.89700000000E-03 | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | -1.89700E-03 | +/- | 1.0E-07 |
| Sband delay (usec)      | -2.32850000000E-03 | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | -2.32850E-03 | +/- | 3.9E-07 |
| Phase delay (usec)      | 4.33905087004E-07  | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | 4.33905E-07  | +/- | 6.8E-10 |
| Delay rate (us/s)       | 1.13448240429E-10  | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | 1.13448E-10  | +/- | 4.9E-12 |
| Total phase (deg)       | 6.7                | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | 6.7          | +/- | 0.0     |

|              |      |        |     |                  |                   |  |                       |
|--------------|------|--------|-----|------------------|-------------------|--|-----------------------|
| ph/seg (deg) | 0.2  | Theor. | 0.0 | Amplitude        | 258.467 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 0.7  | 0.0    | 0.0 | Search (1024X16) | 256.979           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 7.4  | 0.0    | 0.0 | Interp.          | 0.000             | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 19.2 | 0.0    | 0.0 | Inc. seg. avg.   | 257.624           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |        |     | Inc. frq. avg.   | 258.630           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

l: az 216.4 el 50.1 pa 29.3 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/II..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/II.Q.127.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

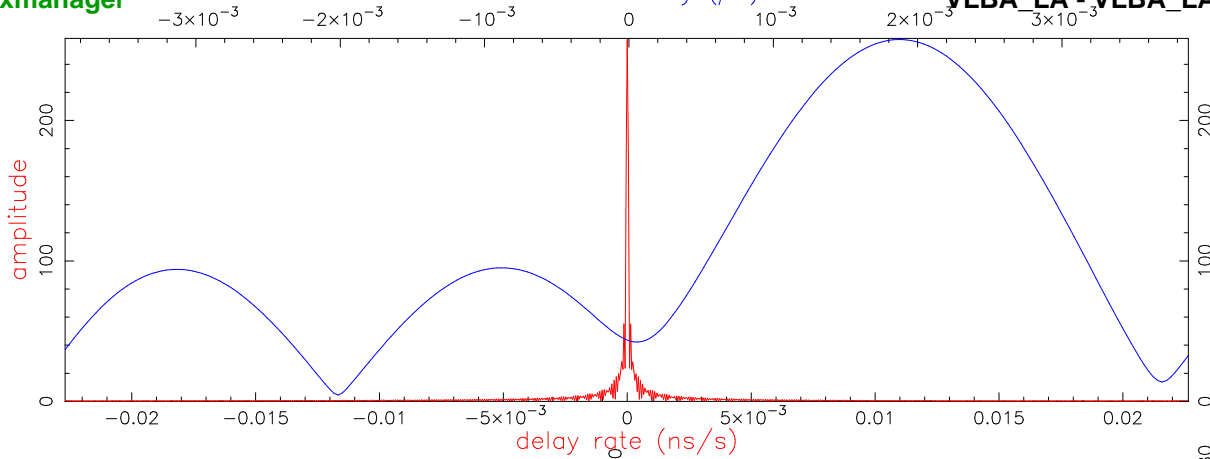
fxmanager

0106+013.1V25LX, No0082, II

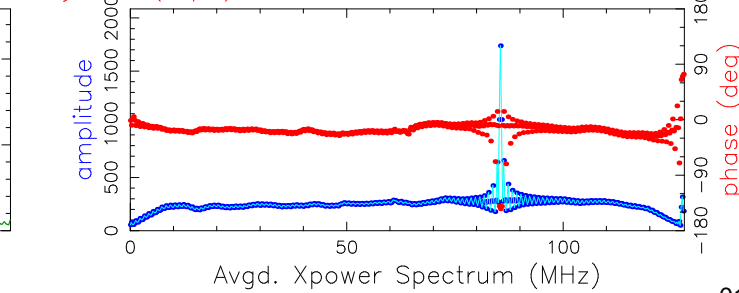
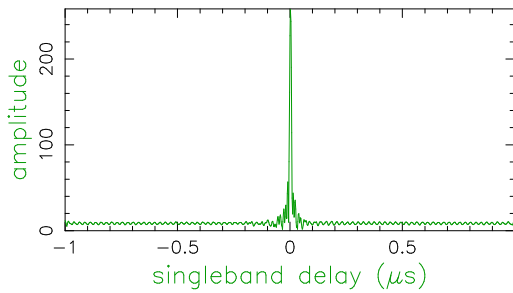
VLBA LA - VLBA LA, fgroup Q, pol RL

multiband delay ( $\mu$ s)

Fringe quality 9

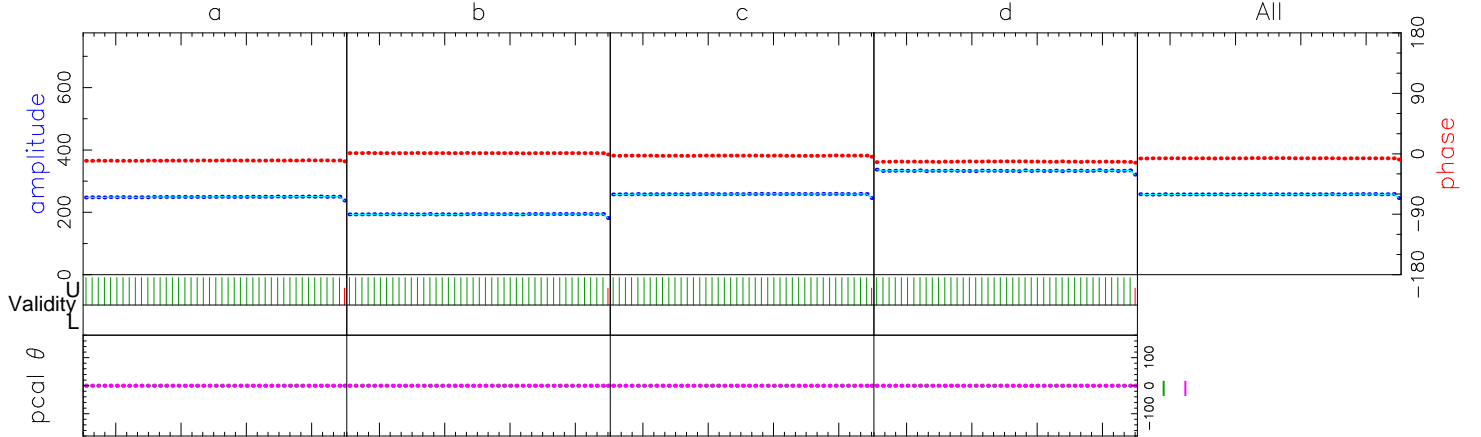


SNR 10949.5  
Int time 239.984  
Amp 258.467  
Phase -6.7  
PFD 0.0e+00  
Delays (us)  
SBD 0.002328  
MBD 0.001897  
Fringe rate (Hz)  
-0.000005  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132950  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -6.7  |
| I   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 258.6 |
| I:I | 0:0      | 0:0      | 0:0      | 0:0      | Sbd box    | 514.2 |
| I:I | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| I   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| I   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| I   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | ManI PC    |       |
| I   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 1.89700000000E-03  | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | 1.89700E-03  | +/- | 1.0E-07 |
| Sband delay (usec)      | 2.32850000000E-03  | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | 2.32850E-03  | +/- | 3.9E-07 |
| Phase delay (usec)      | -4.33905087012E-07 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | -4.33905E-07 | +/- | 6.8E-10 |
| Delay rate (us/s)       | -1.13448240429E-10 | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | -1.13448E-10 | +/- | 4.9E-12 |
| Total phase (deg)       | -6.7               | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | -6.7         | +/- | 0.0     |

|              |      |        |     |                  |                   |  |                       |
|--------------|------|--------|-----|------------------|-------------------|--|-----------------------|
| ph/seg (deg) | 0.2  | Theor. | 0.0 | Amplitude        | 258.467 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 0.7  |        | 0.0 | Search (1024X16) | 256.979           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 7.4  |        | 0.0 | Interp.          | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  |
| amp/frq (%)  | 19.2 |        | 0.0 | Inc. seg. avg.   | 257.624           | Sample rate(MSamp/s): 256              | mb window (us)        |
|              |      |        |     | Inc. frq. avg.   | 258.630           | Data rate(Mb/s): 2048                  | dr window (ns/s)      |
|              |      |        |     |                  |                   | nlags: 512                             | t_cohere infinite     |
|              |      |        |     |                  |                   |  | ion window (TEC)      |

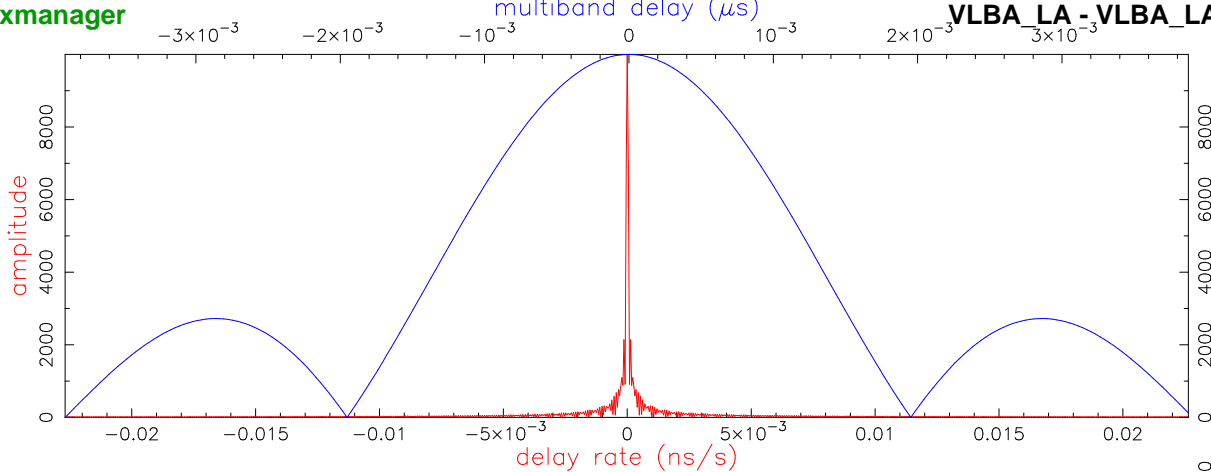
l: az 216.4 el 50.1 pa 29.3 l: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/II..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/II.Q.149.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, II

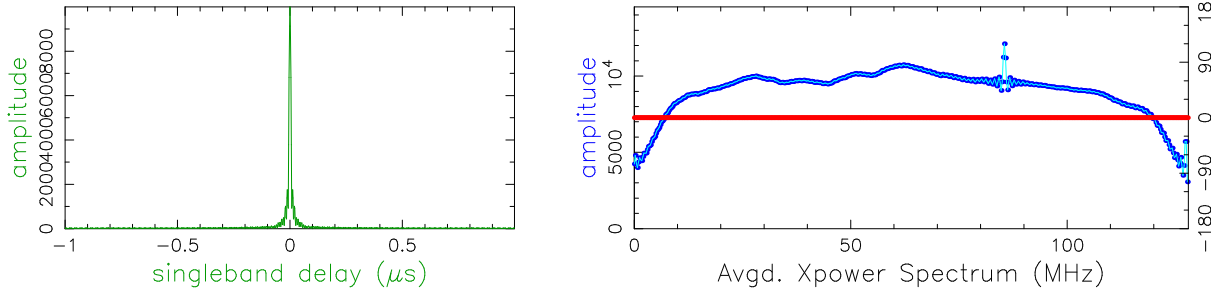
VLBA LA - VLBA LA, fgroup Q, pol LL



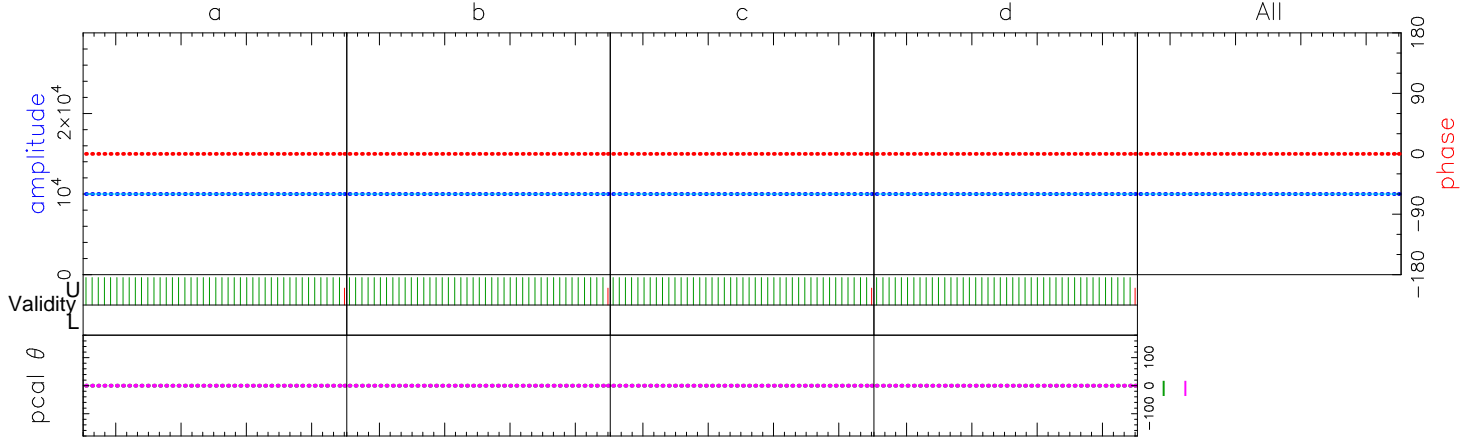
Fringe quality 9

SNR 423631.7  
Int time 239.984  
Amp 9999.999  
Phase 0.0  
PFD 0.0e+00  
Delays (us)  
SBD 0.000000  
MBD 0.000000  
Fringe rate (Hz)  
0.000000  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132944  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     |          |          |          |          |            |         |
|-----|----------|----------|----------|----------|------------|---------|
|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All     |
|     | 0.0      | 0.0      | 0.0      | 0.0      | Phase      | 0.0     |
|     | 10000.0  | 10000.0  | 10000.0  | 10000.0  | Ampl.      | 10000.0 |
|     | 513.0    | 513.0    | 513.0    | 513.0    | Sbd box    | 513.0   |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |         |
| I   | 1000     | 1000     | 1000     | 1000     | PC freqs   |         |
| I   | 1000     | 1000     | 1000     | 1000     | PC freqs   |         |
| I:I | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |         |
| I:I | 0:0      | 0:0      | 0:0      | 0:0      | ManI PC    |         |
| I   | 1000     | 1000     | 1000     | 1000     | PC amp     |         |
| I   | 1000     | 1000     | 1000     | 1000     |            |         |
| I   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |         |
|     |          |          |          |          | Tracks     |         |
| I   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |     |                  |                    |  |                       |
|--------------|-----|--------|-----|------------------|--------------------|--|-----------------------|
| ph/seg (deg) | 0.0 | Theor. | 0.0 | Amplitude        | 9999.999 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 0.0 | 0.0    | 0.0 | Search (1024X16) | 10000.000          | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 0.0 | 0.0    | 0.0 | Interp.          | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  |
| amp/frq (%)  | 0.0 | 0.0    | 0.0 | Inc. seg. avg.   | 10000.000          | Sample rate(MSamp/s): 256              | mb window (us)        |
|              |     |        |     | Inc. frq. avg.   | 10000.000          | Data rate(Mb/s): 2048                  | dr window (ns/s)      |
|              |     |        |     |                  |                    | nlags: 512                             | t_cohere infinite     |
|              |     |        |     |                  |                    |  | ion window (TEC)      |

I: az 216.4 el 50.1 pa 29.3 I: az 216.4 el 50.1 pa 29.3 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/II..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/II.Q.95.1V25LX

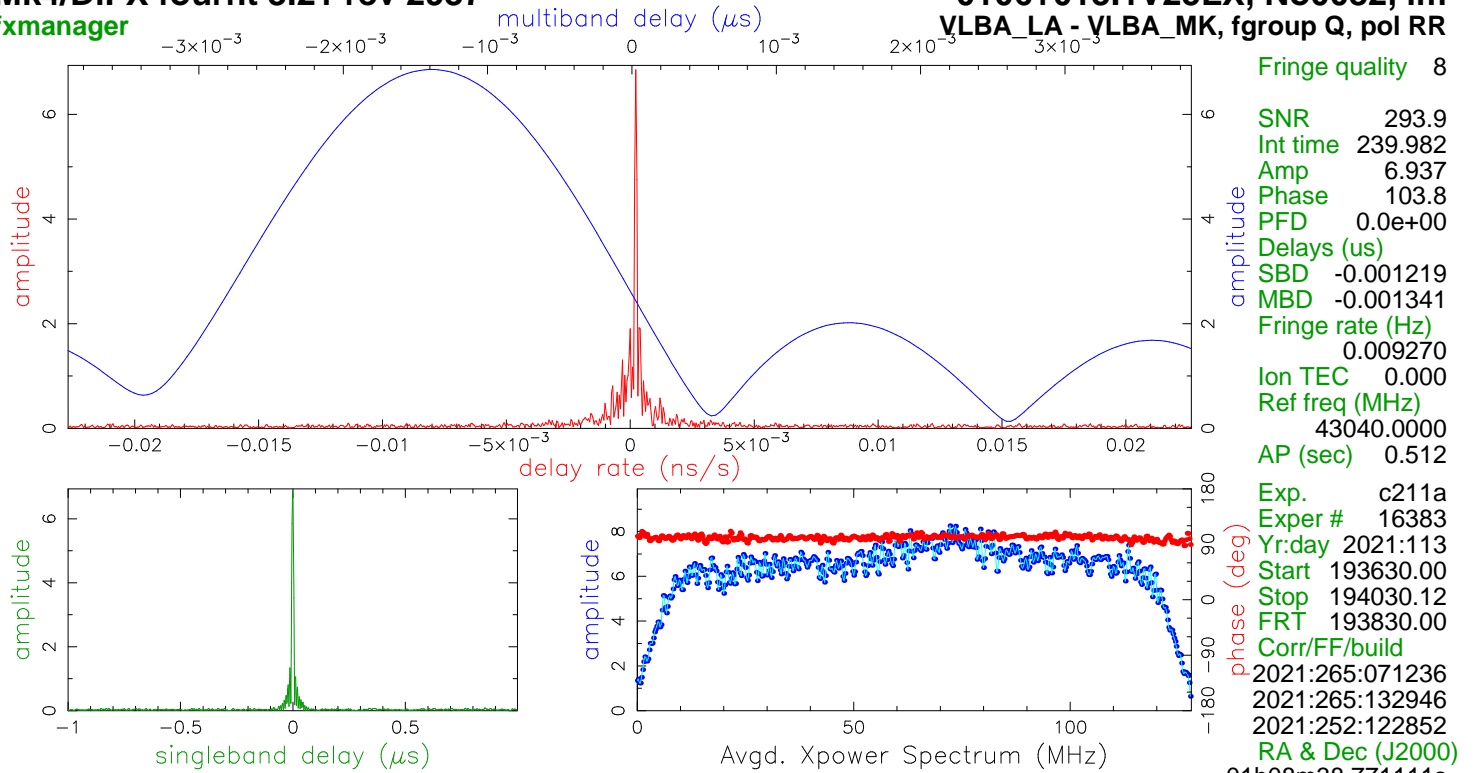


## Mk4/DiFX fourfit 3.21 rev 2937

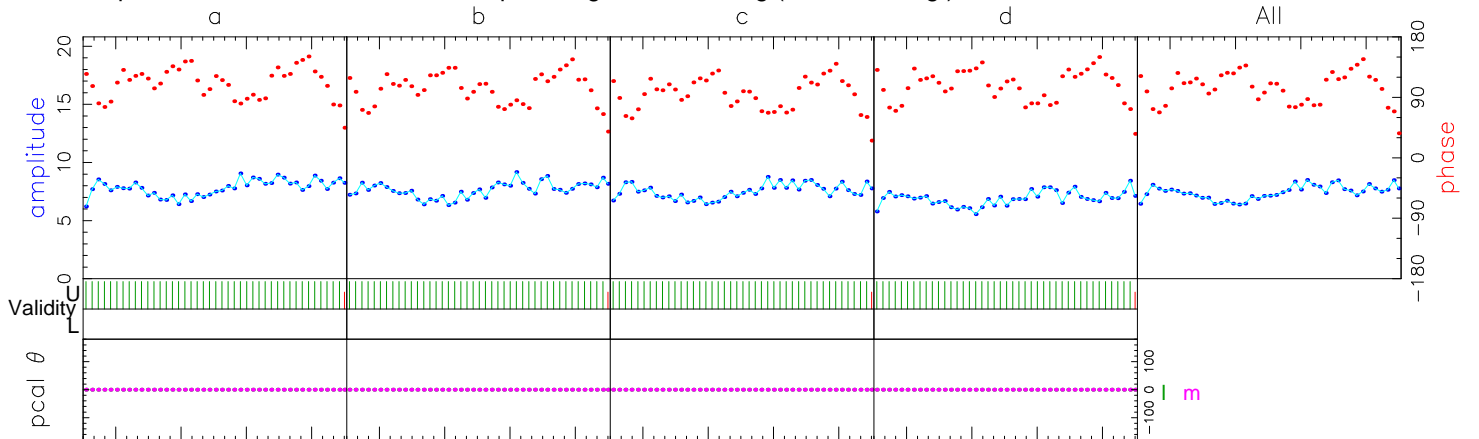
fxmanager

0106+013.1V25LX, No0082, Im

VLBA\_LA - VLBA\_MK, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               |  |  |                    |  |                       |                   |                  |                           |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|------------------|---------------------------|
|                               | 42912.00   | 43040.00   | 43168.00           | 43296.00                               | Freq (MHz)            | All               |                  |                           |
|                               | 111.1  | 102.5  | 94.7               | 107.0                                  | Phase                 | 103.8             |                  |                           |
|                               | 7.2  | 7.1  | 6.9                | 6.3                                    | Ampl.                 | 6.9               |                  |                           |
|                               | 512.0  | 512.3  | 512.3              | 512.9                                  | Sbd box               | 512.4             |                  |                           |
| U/L                           | 469/0  | 469/0  | 469/0              | 469/0                                  | APs used              |                   |                  |                           |
| l                             | 1000   | 1000   | 1000               | 1000                                   | PC freqs              |                   |                  |                           |
| m                             | 1000   | 1000   | 1000               | 1000                                   | PC freqs              |                   |                  |                           |
| l:m                           | 0:0  | 0:0  | 0:0                | 0:0                                    | PC phase              |                   |                  |                           |
| l:m                           | 0:0  | 0:0  | 0:0                | 0:0                                    | Manl PC               |                   |                  |                           |
| l                             | 1000   | 1000   | 1000               | 1000                                   | PC amp                |                   |                  |                           |
| m                             | 1000   | 1000   | 1000               | 1000                                   |                       |                   |                  |                           |
| l                             | Q00UR  | Q01UR  | Q02UR              | Q03UR                                  | Chan ids              |                   |                  |                           |
| m                             | Q00UR  | Q01UR  | Q02UR              | Q03UR                                  | Tracks                |                   |                  |                           |
|                               |  |  |                    |  | Chan ids              |                   |                  |                           |
|                               |  |  |                    |  | Tracks                |                   |                  |                           |
| Group delay (usec)(sbd)       | -1.93259238086E+03                                       | Apriori delay (usec)   | -1.93259104030E+03 | Resid mbdelay (usec)                   | -1.34056E-03          | +/- 3.8E-06       |                  |                           |
| Sband delay (usec)            | -1.93259225968E+03                                       | Apriori clock (usec)   | -1.8222137E+01     | Resid sbdelay (usec)                   | -1.21937E-03          | +/- 1.5E-05       |                  |                           |
| Phase delay (usec)            | -1.93259103360E+03                                       | Apriori clockrate (us/s)                                       | -6.0400003E-07     | Resid phdelay (usec)                   | 6.70191E-06           | +/- 2.5E-08       |                  |                           |
| Delay rate (us/s)             | -1.13729542630E+00                                       | Apriori rate (us/s)  | -1.13729564168E+00 | Resid rate (us/s)                      | 2.15373E-07           | +/- 1.8E-10       |                  |                           |
| Total phase (deg)             | -31.0  | Apriori accel (us/s/s)   | 1.09973387378E-05  | Resid phase (deg)                      | 103.8                 | +/- 0.4           |                  |                           |
| RMS                           | 22.8   | Theor.   | 1.3                | Amplitude                              | 6.937 +/- 0.024       |                   |                  |                           |
| ph/seg (deg)                  | 11.1   | Search (1024X16)   | 6.776              | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |                           |
| amp/seg (%)                   | 11.1   | Interp.  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |                           |
| ph/frq (deg)                  | 8.6  | Inc. seg. avg.   | 7.429              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |                           |
| amp/frq (%)                   | 4.8  | Inc. frq. avg.   | 6.891              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023     |                           |
|                               |  |  |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| l: az 216.4 el 50.1 pa 29.3   | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec)  | 3259.560 1099.521  |  |                       |                   |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/Im..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/Im.Q.115.1V25LX |                    |  |                       |                   |                  |                           |



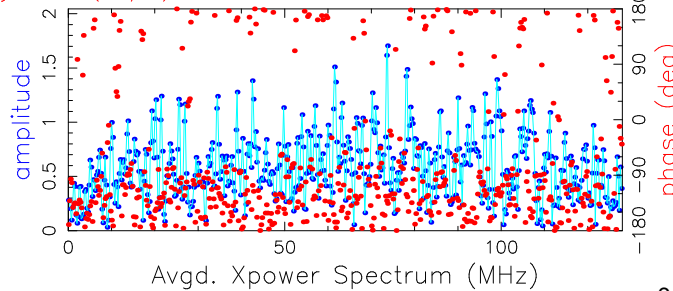
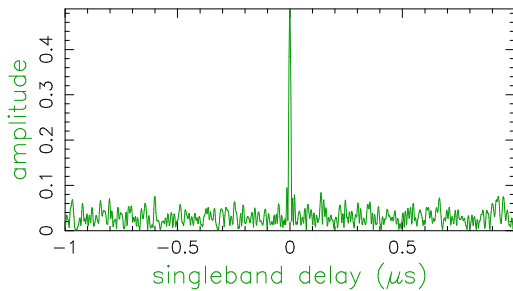
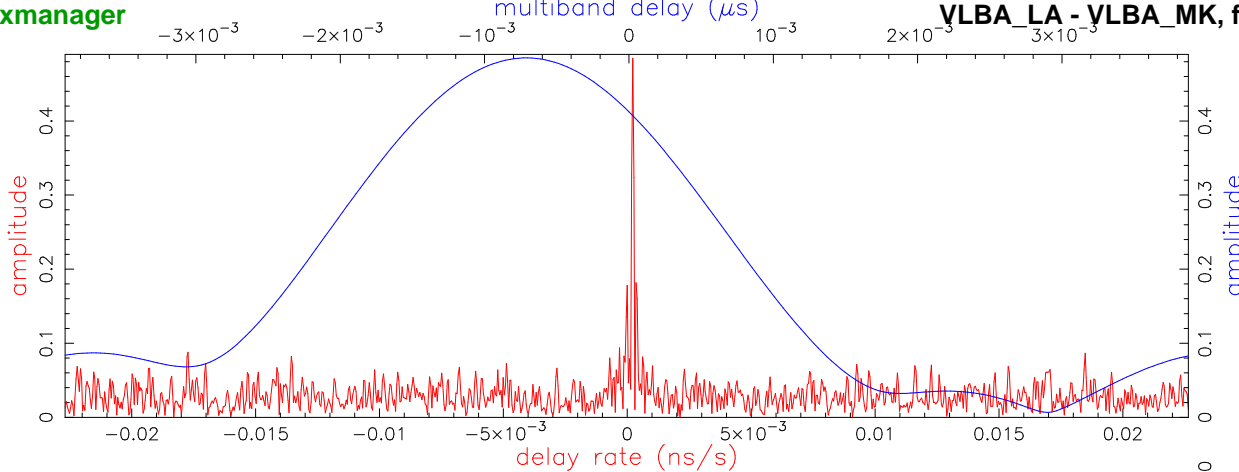
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, Im

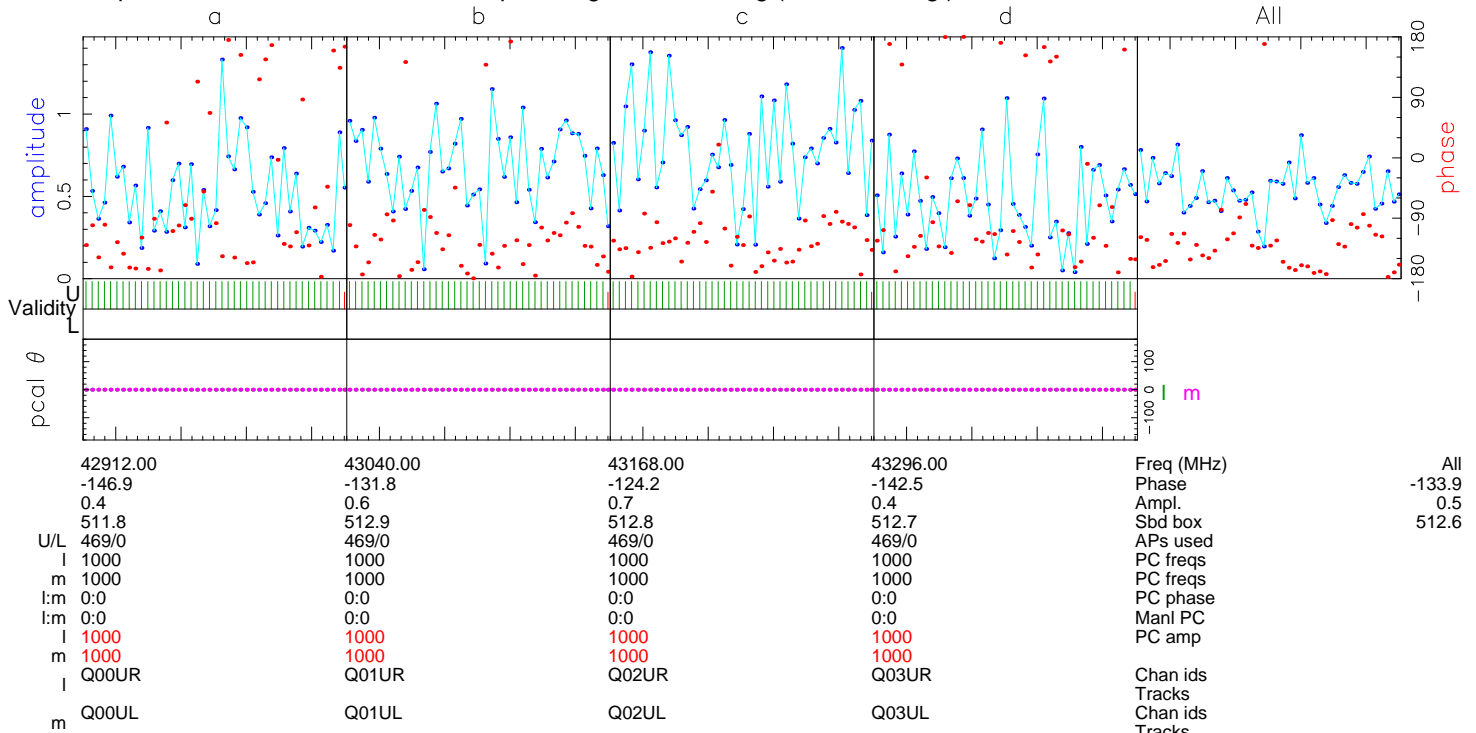
VLBA\_LA - VLBA\_MK, fgroup Q, pol RL

Fringe quality 7



SNR 20.7  
Int time 239.982  
Amp 0.490  
Phase -133.9  
PFD 0.0e+00  
Delays (us)  
SBD -0.000693  
MBD -0.000767  
Fringe rate (Hz) 0.009130  
Ion TEC 0.000  
Ref freq (MHz) 43040.0000  
AP (sec) 0.512  
Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132950  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



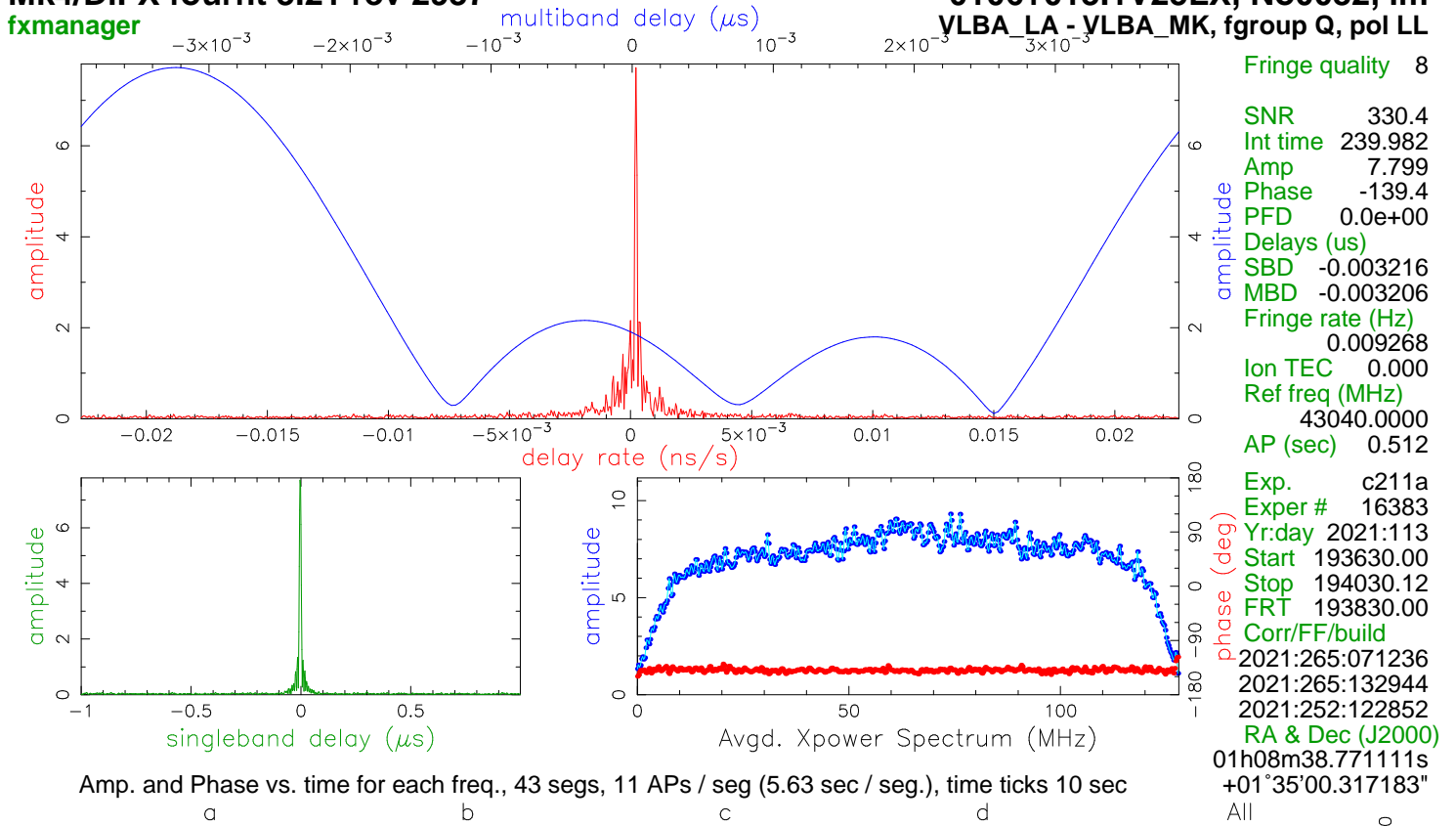
| Group delay (usec)(sbd)       | -1.93259180764E+03                                       | Apriori delay (usec)   | -1.93259104030E+03 | Resid mbdelay (usec)                   | -7.67342E-04          | +/-               | 5.4E-05                   |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|---------------------------|
| Sband delay (usec)            | -1.93259173355E+03                                       | Apriori clock (usec)   | -1.8222137E+01     | Resid sbdelay (usec)                   | -6.93250E-04          | +/-               | 2.1E-04                   |
| Phase delay (usec)            | -1.93259104894E+03                                       | Apriori clockrate (us/s)                                       | -6.0400003E-07     | Resid phdelay (usec)                   | -8.64106E-06          | +/-               | 3.6E-07                   |
| Delay rate (us/s)             | -1.13729542955E+00                                       | Apriori rate (us/s)  | -1.13729564168E+00 | Resid rate (us/s)                      | 2.12123E-07           | +/-               | 2.6E-09                   |
| Total phase (deg)             | -268.7   | Apriori accel (us/s/s)   | 1.09973387378E-05  | Resid phase (deg)                      | -133.9                | +/-               | 5.5                       |
| RMS                           | 29.5   | Theor.   | 18.1               | Amplitude                              | 0.490 +/- 0.024       |                   |                           |
| ph/seg (deg)                  | 30.0   | Search (1024X16)   | 0.468              | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                           |
| amp/seg (%)                   | 13.1   | Interp.  | 0.000              | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                     |
| ph/frq (deg)                  | 28.2   | Inc. seg. avg.   | 0.523              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004              |
| amp/frq (%)                   |  | Inc. frq. avg.   | 0.488              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023              |
|                               |  |  |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion TEC (TEC) 0.00 0.00   |
| l: az 216.4 el 50.1 pa 29.3   | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec)  | 3259.560 1099.521  |  |                       |                   | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/Im..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/Im.Q.151.1V25LX |                    |  |                       |                   |                           |

## Mk4/DiFX fourfit 3.21 rev 2937

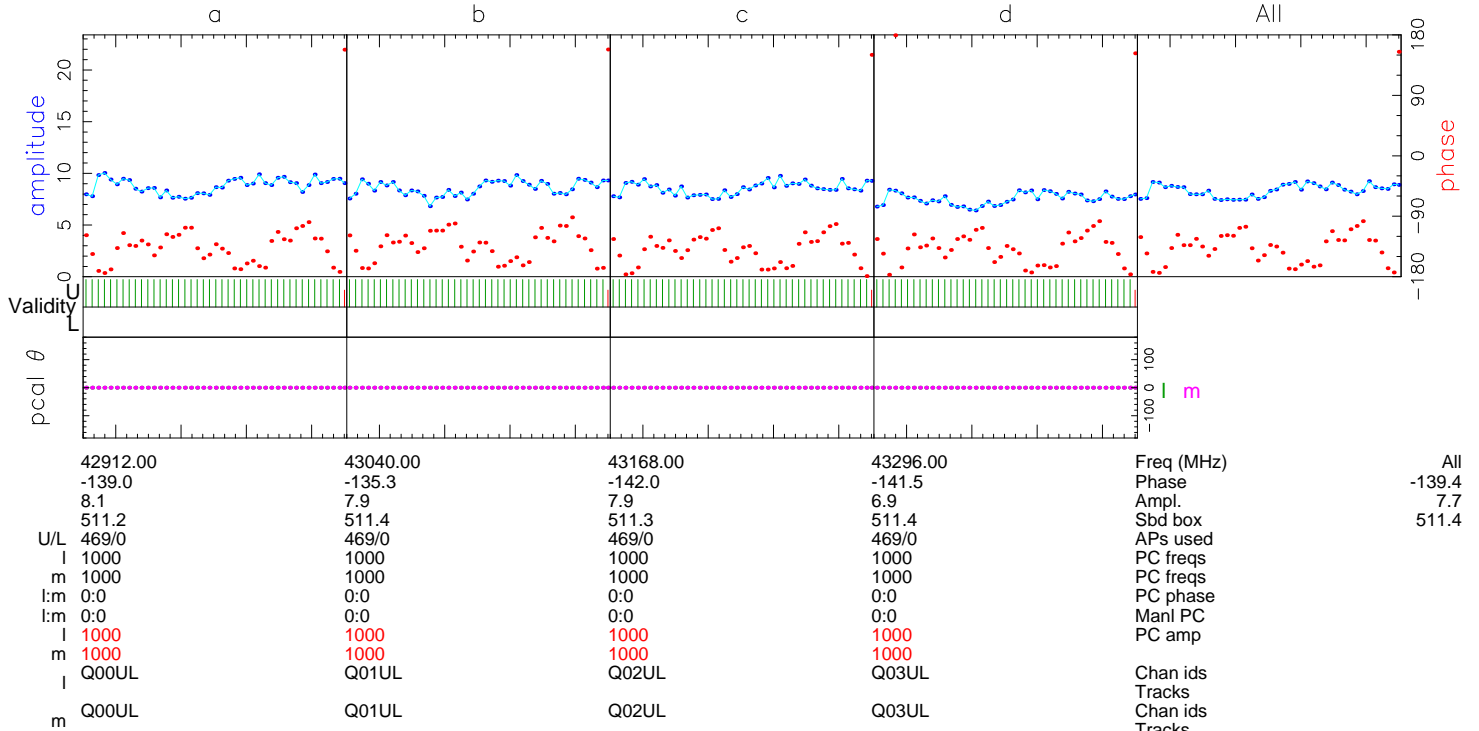
fxmanager

0106+013.1V25LX, No0082, Im

VLBA LA - VLBA\_MK, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



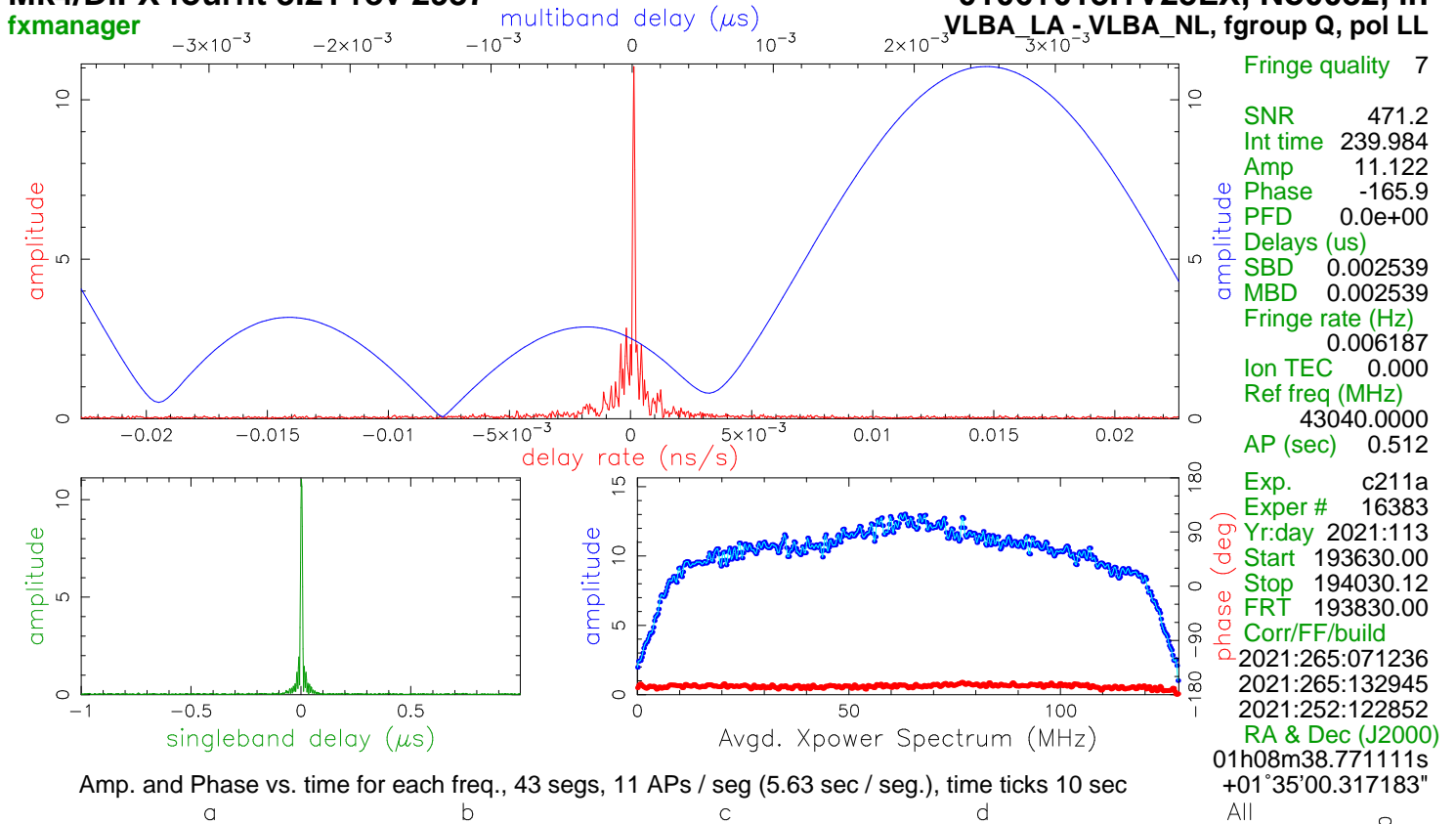
|                               |  |   |                    |  |                       |                      |                            |
|-------------------------------|--|---|--------------------|--|-----------------------|----------------------|----------------------------|
| Group delay (usec)(sbd)       | -1.93259424677E+03                                       | Apriori delay (usec)  | -1.93259104030E+03 | Resid mbdelay (usec)                   | -3.20647E-03          | +/-                  | 3.4E-06                    |
| Sband delay (usec)            | -1.93259425605E+03                                       | Apriori clock (usec)  | -1.8222137E+01     | Resid sbdelay (usec)                   | -3.21575E-03          | +/-                  | 1.3E-05                    |
| Phase delay (usec)            | -1.93259104930E+03                                       | Apriori clockrate (us/s)                                      | -6.0400003E-07     | Resid phdelay (usec)                   | -8.99651E-06          | +/-                  | 2.2E-08                    |
| Delay rate (us/s)             | -1.13729542634E+00                                       | Apriori rate (us/s)   | -1.13729564168E+00 | Resid rate (us/s)                      | 2.15330E-07           | +/-                  | 1.6E-10                    |
| Total phase (deg)             | -274.3   | Apriori accel (us/s/s)  | 1.09973387378E-05  | Resid phase (deg)                      | -139.4                | +/-                  | 0.3                        |
| RMS                           | 22.7   | Theor.  | 1.1                | Amplitude                              | 7.799 +/- 0.024       |                      |                            |
| ph/seg (deg)                  | 10.4   | Search (1024X16)  | 7.561              | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)                   | 3.7  | Interp.   | 0.000              | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg)                  | 6.1  | Inc. seg. avg.  | 8.363              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)                   | 0.6  | Inc. frq. avg.  | 7.725              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)     | -0.023 0.023               |
|                               |  |   |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |
| l: az 216.4 el 50.1 pa 29.3   | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec)   | 3259.560 1099.521  |  |                       |                      | simultaneous interpolator  |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/Im..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/Im.Q.93.1V25LX |                    |  |                       |                      |                            |

Mk4/DiFX fourfit 3.21 rev 2937

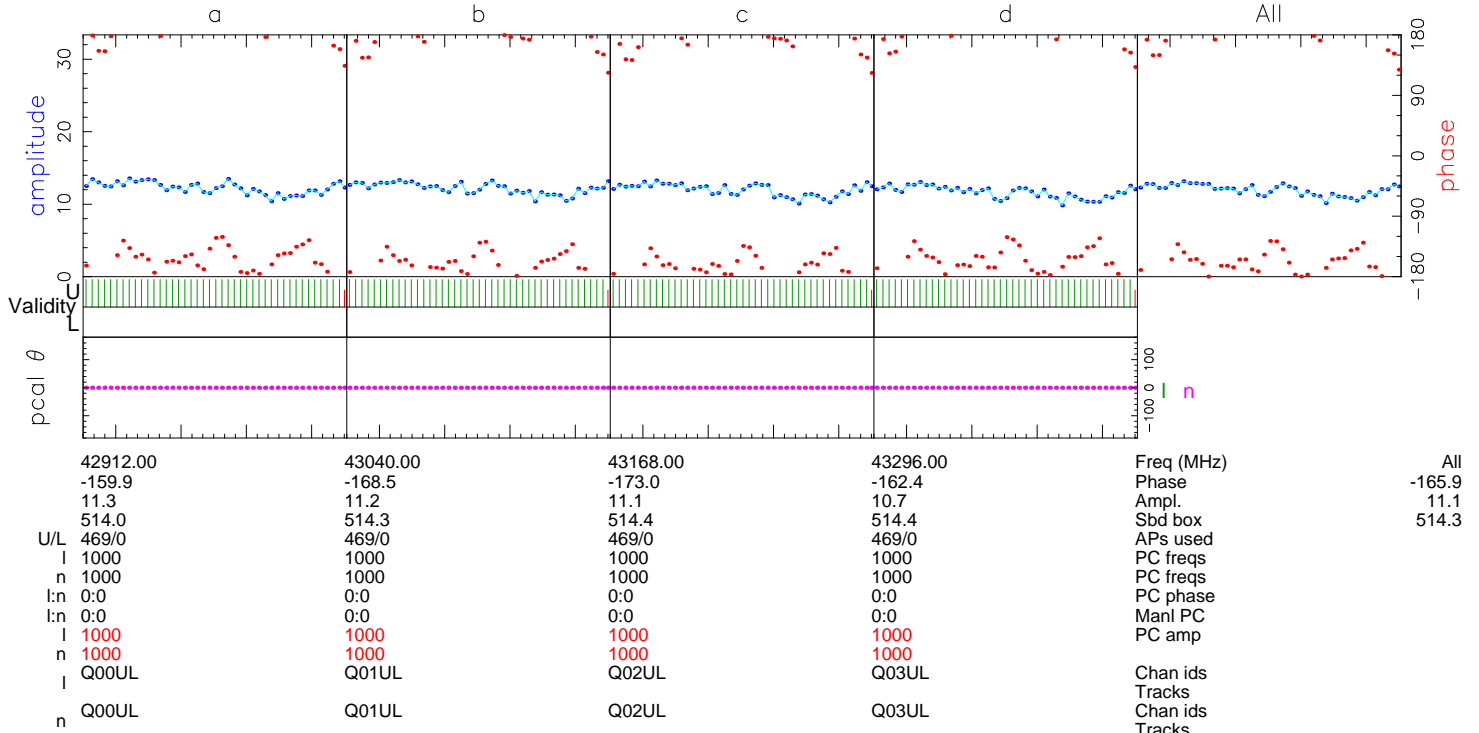
fxmanager

0106+013.1V25LX, No0082, In

VLBA LA - VLBA\_NL, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| Group delay (usec)(sbd)  | 3.27376849469E+03 | Apriori delay (usec)     | 3.27376595605E+03  | Resid mbdelay (usec)                   | 2.53864E-03           | +/-              | 2.4E-06      |
|--|-------------------|--------------------------|--------------------|--|-----------------------|------------------|--------------|
| Sband delay (usec)   | 3.27376849530E+03 | Apriori clock (usec)     | -7.9794502E+00     | Resid sbdelay (usec)                   | 2.53925E-03           | +/-              | 9.1E-06      |
| Phase delay (usec)   | 3.27376594535E+03 | Apriori clockrate (us/s) | -5.8600000E-07     | Resid phdelay (usec)                   | -1.07091E-05          | +/-              | 1.6E-08      |
| Delay rate (us/s)  | 2.15506534271E-01 | Apriori rate (us/s)      | 2.15506390527E-01  | Resid rate (us/s)                      | 1.43745E-07           | +/-              | 1.1E-10      |
| Total phase (deg)  | 103.6             | Apriori accel (us/s/s)   | -1.77218563132E-05 | Resid phase (deg)                      | -165.9                | +/-              | 0.2          |
| RMS  | 23.0              | Theor.                   | 11.122 +/- 0.024   | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                  |              |
| ph/seg (deg)   | 23.0              | Amplitude                | 11.122 +/- 0.024   | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000           | 1.000        |
| amp/seg (%)  | 10.2              | Search (1024X16)         | 10.783             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)   | -0.004 0.004 |
| ph/frq (deg)   | 7.3               | Interp.                  | 0.000              | Sample rate(MISamp/s): 256             |                       | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)  | 2.0               | Inc. seg. avg.           | 11.978             | Data rate(Mb/s): 2048                  | nlags: 512            | ion window (TEC) | 0.00 0.00    |
| l: az 216.4 el 50.1 pa 29.3                                    |                   | Inc. frq. avg.           | 11.083             |  |                       |                  |              |
| n: az 229.8 el 37.9 pa 34.8                                    |                   |                          |                    |  |                       |                  |              |
| u,v (fr/asec)  |                   |                          | -624.238 -380.943  |  |                       |                  |              |
| Control file: cf_1234_gmva7mm                                  |                   |                          |                    |  |                       |                  |              |
| Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/In..1V25LX       |                   |                          |                    |  |                       |                  |              |
| Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/In.Q.101.1V25LX |                   |                          |                    |  |                       |                  |              |

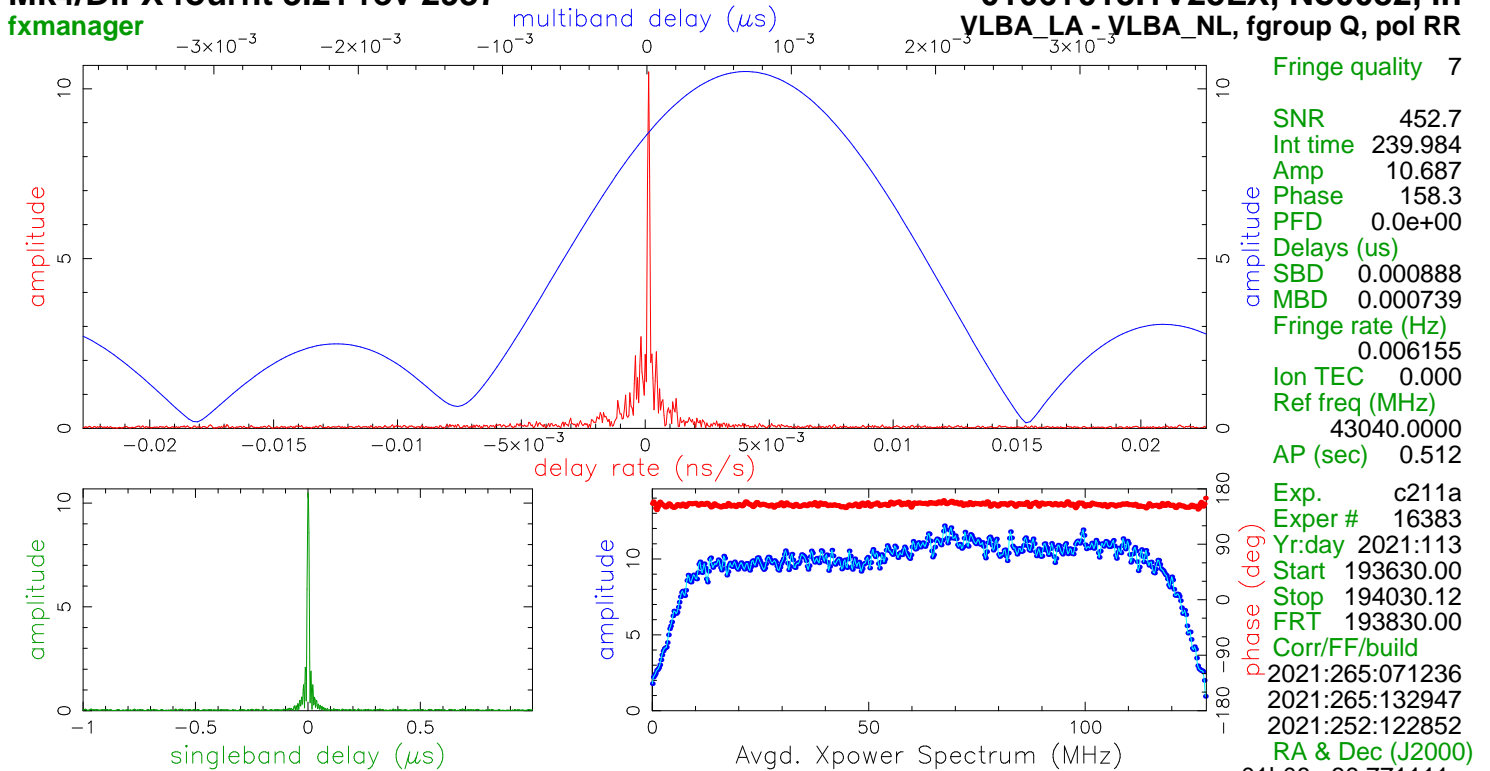


Mk4/DiFX fourfit 3.21 rev 2937

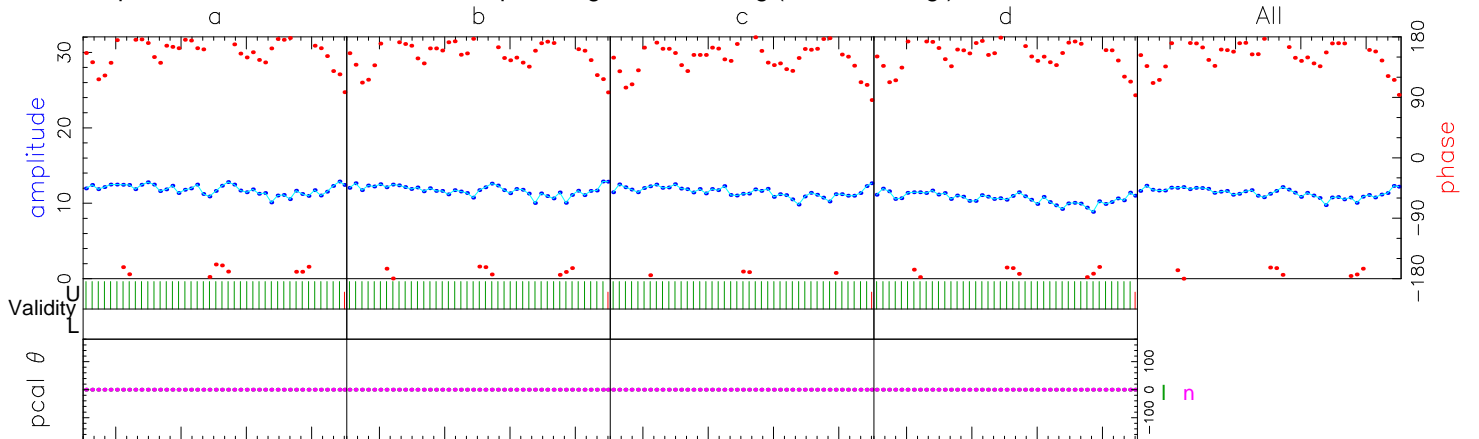
fxmanager

0106+013.1V25LX, No0082, In

VLBA\_LA - VLBA\_NL, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



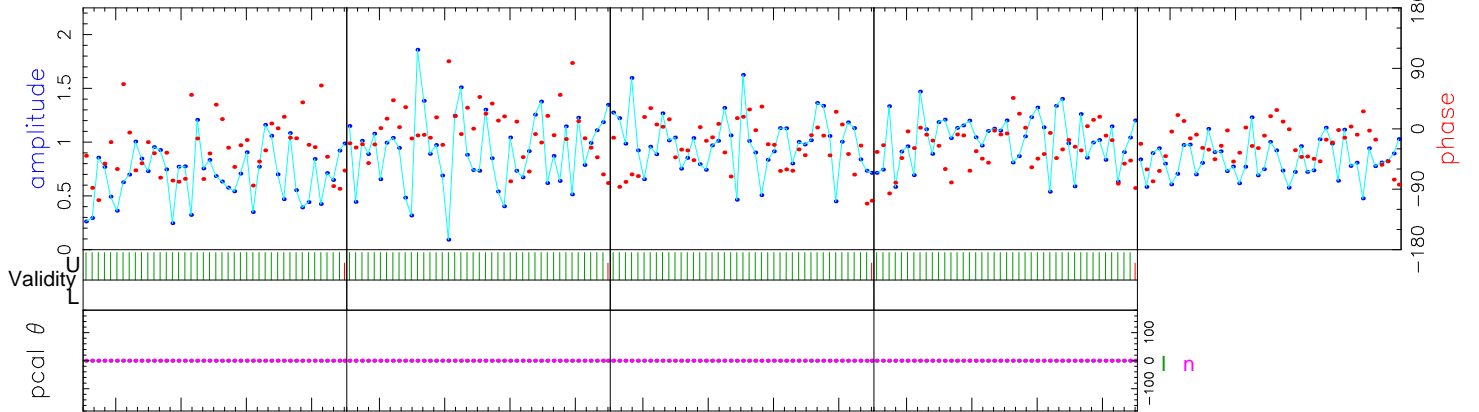
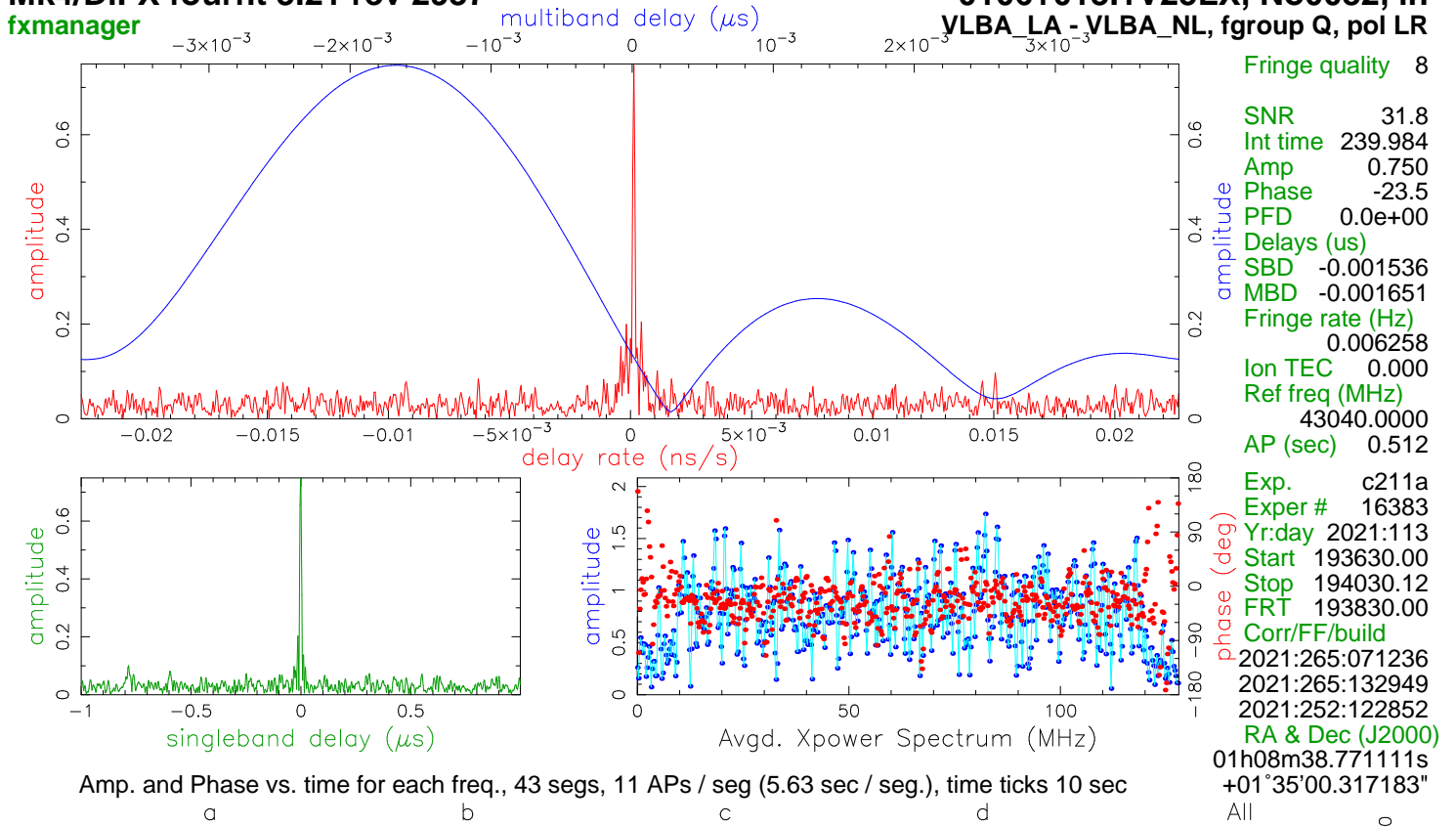
|                               |  |  |                    |  |                       |                   |                  |                           |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|------------------|---------------------------|
| 42912.00                      | 43040.00   | 43168.00   | 43296.00           | Freq (MHz)                             | All                   |                   |                  |                           |
| 163.9                         | 159.3  | 150.8  | 158.8              | Phase                                  | 158.3                 |                   |                  |                           |
| 10.9                          | 10.8   | 10.6   | 9.8                | Ampl.                                  | 10.5                  |                   |                  |                           |
| 513.4                         | 513.3  | 513.3  | 513.9              | Sbd box                                | 513.5                 |                   |                  |                           |
| U/L 469/0                     | 469/0  | 469/0  | 469/0              | APs used                               |                       |                   |                  |                           |
| l 1000                        | 1000   | 1000   | 1000               | PC freqs                               |                       |                   |                  |                           |
| n 1000                        | 1000   | 1000   | 1000               | PC freqs                               |                       |                   |                  |                           |
| l:n 0:0                       | 0:0  | 0:0  | 0:0                | PC phase                               |                       |                   |                  |                           |
| l:n 0:0                       | 0:0  | 0:0  | 0:0                | Manl PC                                |                       |                   |                  |                           |
| l 1000                        | 1000   | 1000   | 1000               | PC amp                                 |                       |                   |                  |                           |
| n 1000                        | 1000   | 1000   | 1000               |  |                       |                   |                  |                           |
| l Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Chan ids                               |                       |                   |                  |                           |
| n Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Tracks                                 |                       |                   |                  |                           |
|                               |  |  |                    | Chan ids                               |                       |                   |                  |                           |
|                               |  |  |                    | Tracks                                 |                       |                   |                  |                           |
| Group delay (usec)(sbd)       | 3.27376669469E+03  | Apriori delay (usec)   | 3.27376595605E+03  | Resid mbdelay (usec)                   | 7.38638E-04           | +/- 2.5E-06       |                  |                           |
| Sband delay (usec)            | 3.27376684405E+03  | Apriori clock (usec)   | -7.9794502E+00     | Resid sbdelay (usec)                   | 8.88000E-04           | +/- 9.5E-06       |                  |                           |
| Phase delay (usec)            | 3.27376596627E+03  | Apriori clockrate (us/s)                                       | -5.8600000E-07     | Resid phdelay (usec)                   | 1.02140E-05           | +/- 1.6E-08       |                  |                           |
| Delay rate (us/s)             | 2.15506533528E-01  | Apriori rate (us/s)  | 2.15506390527E-01  | Resid rate (us/s)                      | 1.43002E-07           | +/- 1.2E-10       |                  |                           |
| Total phase (deg)             | 67.8   | Apriori accel (us/s/s)   | -1.77218563132E-05 | Resid phase (deg)                      | 158.3                 | +/- 0.3           |                  |                           |
| RMS                           | Theor.   | Amplitude  | 10.687 +/- 0.024   | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |                           |
| ph/seg (deg)                  | 23.0   | Search (1024X16)   | 10.168             | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |                           |
| amp/seg (%)                   | 8.6  | Interp.  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |                           |
| ph/frq (deg)                  | 6.6  | Inc. seg. avg.   | 11.390             | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023     |                           |
| amp/frq (%)                   | 4.4  | Inc. frq. avg.   | 10.530             | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| l: az 216.4 el 50.1 pa 29.3   | n: az 229.8 el 37.9 pa 34.8                              | u,v (fr/asec)  | -624.238 -380.943  |  |                       |                   |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/In..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/In.Q.122.1V25LX |                    |  |                       |                   |                  |                           |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, In

VLBA\_LA - VLBA\_NL, fgroup Q, pol LR



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -23.5 |
| l   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.8   |
| n   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.2 |
| l:n | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| l:n | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| l   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| l   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| n   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 3.27376430472E+03 | Apriori delay (usec)     | 3.27376595605E+03  | Resid mbdelay (usec) | -1.65133E-03 | +/- | 3.5E-05 |
| Sband delay (usec)      | 3.27376442005E+03 | Apriori clock (usec)     | -7.9794502E+00     | Resid sbdelay (usec) | -1.53600E-03 | +/- | 1.4E-04 |
| Phase delay (usec)      | 3.27376595454E+03 | Apriori clockrate (us/s) | -5.8600000E-07     | Resid phdelay (usec) | -1.51804E-06 | +/- | 2.3E-07 |
| Delay rate (us/s)       | 2.15506535922E-01 | Apriori rate (us/s)      | 2.15506390527E-01  | Resid rate (us/s)    | 1.45395E-07  | +/- | 1.7E-09 |
| Total phase (deg)       | 246.0             | Apriori accel (us/s/s)   | -1.77218563132E-05 | Resid phase (deg)    | -23.5        | +/- | 3.6     |

|              |      |                  |       |                |                             |  |                       |
|--------------|------|------------------|-------|----------------|-----------------------------|--|-----------------------|
| ph/seg (deg) | 27.2 | Theor.           | 11.8  | Amplitude      | 0.750 +/- 0.024             | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 24.8 | Search (1024X16) | 0.712 | Search         | 0.000E+00, 0.000E+00 (us/s) | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 14.3 | Interp.          | 0.000 | Interp.        | 0.000                       | Bits/sample: 2x2                       | SampCntNorm: enabled  |
| amp/frq (%)  | 16.8 | Inc. seg. avg.   | 0.818 | Inc. seg. avg. | 0.818                       | Sample rate(MSamp/s): 256              | mb window (us)        |
|              |      | Inc. frq. avg.   | 0.756 | Inc. frq. avg. | 0.756                       | Data rate(Mb/s): 2048                  | dr window (ns/s)      |
|              |      |                  |       |                |                             | nlags: 512                             | t_cohere infinite     |
|              |      |                  |       |                |                             |  | ion window (TEC)      |

l: az 216.4 el 50.1 pa 29.3 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -624.238 -380.943 simultaneous interpolator

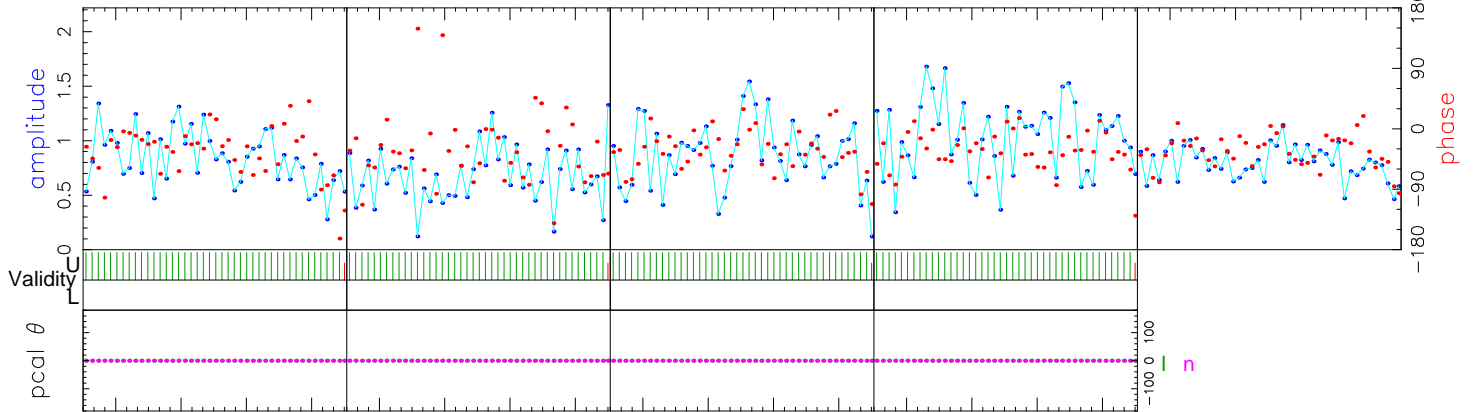
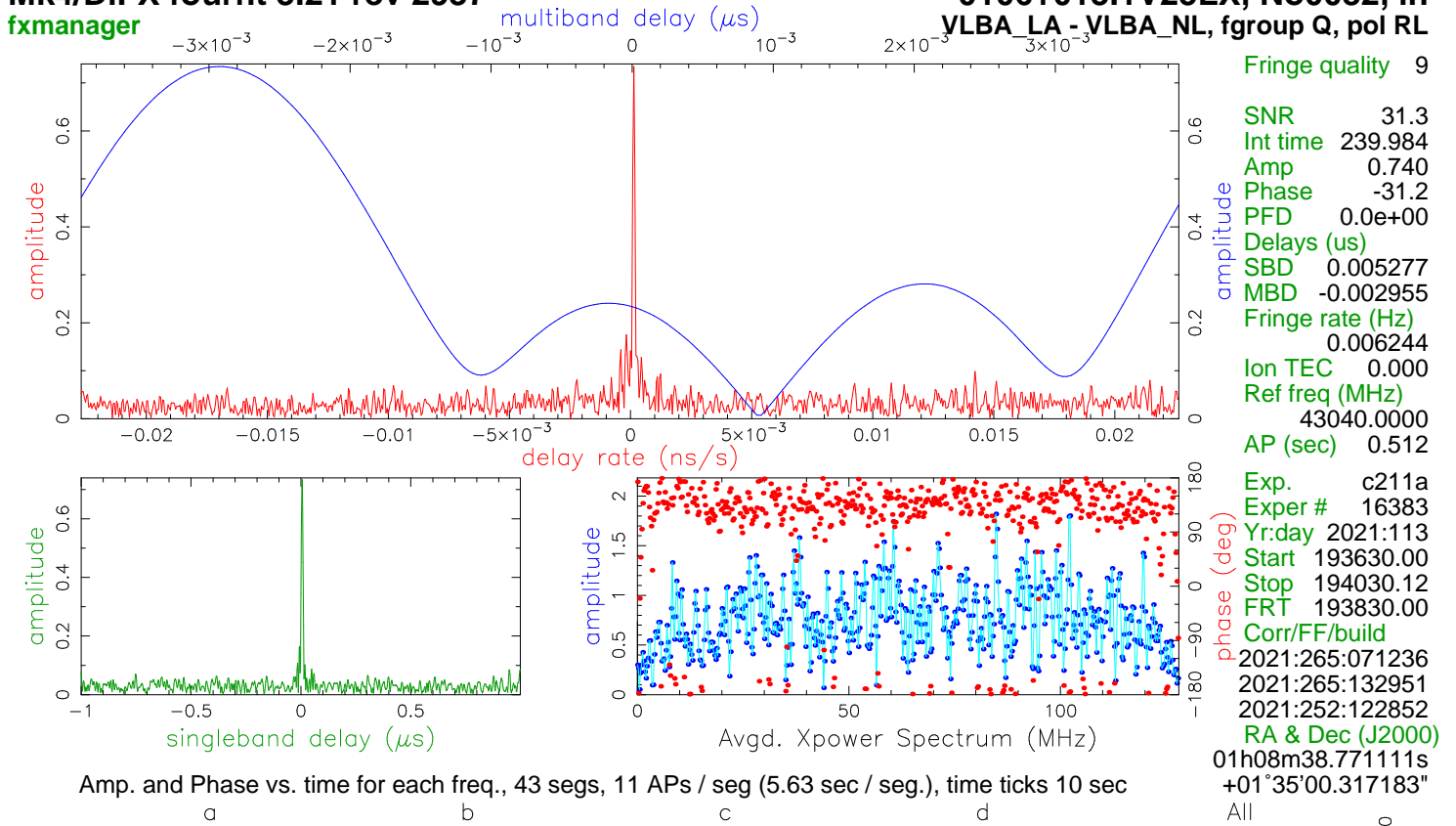
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/In..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/In.Q.136.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, In

VLBA LA - VLBA\_NL, fgroup Q, pol RL



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -31.8     | -37.0    | -27.9    | -30.2    | Phase      | -31.2 |
| 0.7       | 0.5      | 0.8      | 0.9      | Ampl.      | 0.7   |
| 515.8     | 515.6    | 515.5    | 515.9    | Sbd box    | 515.7 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| l 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| l:n 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| l:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| l 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| l 1000    | 1000     | 1000     | 1000     |            |       |
| l Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| n Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 3.27377081404E+03 | Apriori delay (usec)     | 3.27376595605E+03  | Resid mbdelay (usec) | -2.95452E-03 | +/- | 3.5E-05 |
| Sband delay (usec)      | 3.27377123318E+03 | Apriori clock (usec)     | -7.9794502E+00     | Resid sbdelay (usec) | 5.27713E-03  | +/- | 1.4E-04 |
| Phase delay (usec)      | 3.27376595404E+03 | Apriori clockrate (us/s) | -5.8600000E-07     | Resid phdelay (usec) | -2.01430E-06 | +/- | 2.4E-07 |
| Delay rate (us/s)       | 2.15506535607E-01 | Apriori rate (us/s)      | 2.15506390527E-01  | Resid rate (us/s)    | 1.45080E-07  | +/- | 1.7E-09 |
| Total phase (deg)       | 238.3             | Apriori accel (us/s/s)   | -1.77218563132E-05 | Resid phase (deg)    | -31.2        | +/- | 3.7     |

|              |      |        |                  |                 |  |                       |                   |                  |       |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|
|              | RMS  | Theor. | Amplitude        | 0.740 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |
| ph/seg (deg) | 24.9 | 12.0   | Search (1024X16) | 0.715           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |
| amp/seg (%)  | 21.9 | 20.9   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |
| ph/frq (deg) | 4.8  | 3.7    | Inc. seg. avg.   | 0.784           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |
| amp/frq (%)  | 19.8 | 6.4    | Inc. frq. avg.   | 0.734           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  |
|              |      |        |                  |                 |  |                       |                   |                  | 0.00  |

l: az 216.4 el 50.1 pa 29.3 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -624.238 -380.943 simultaneous interpolator

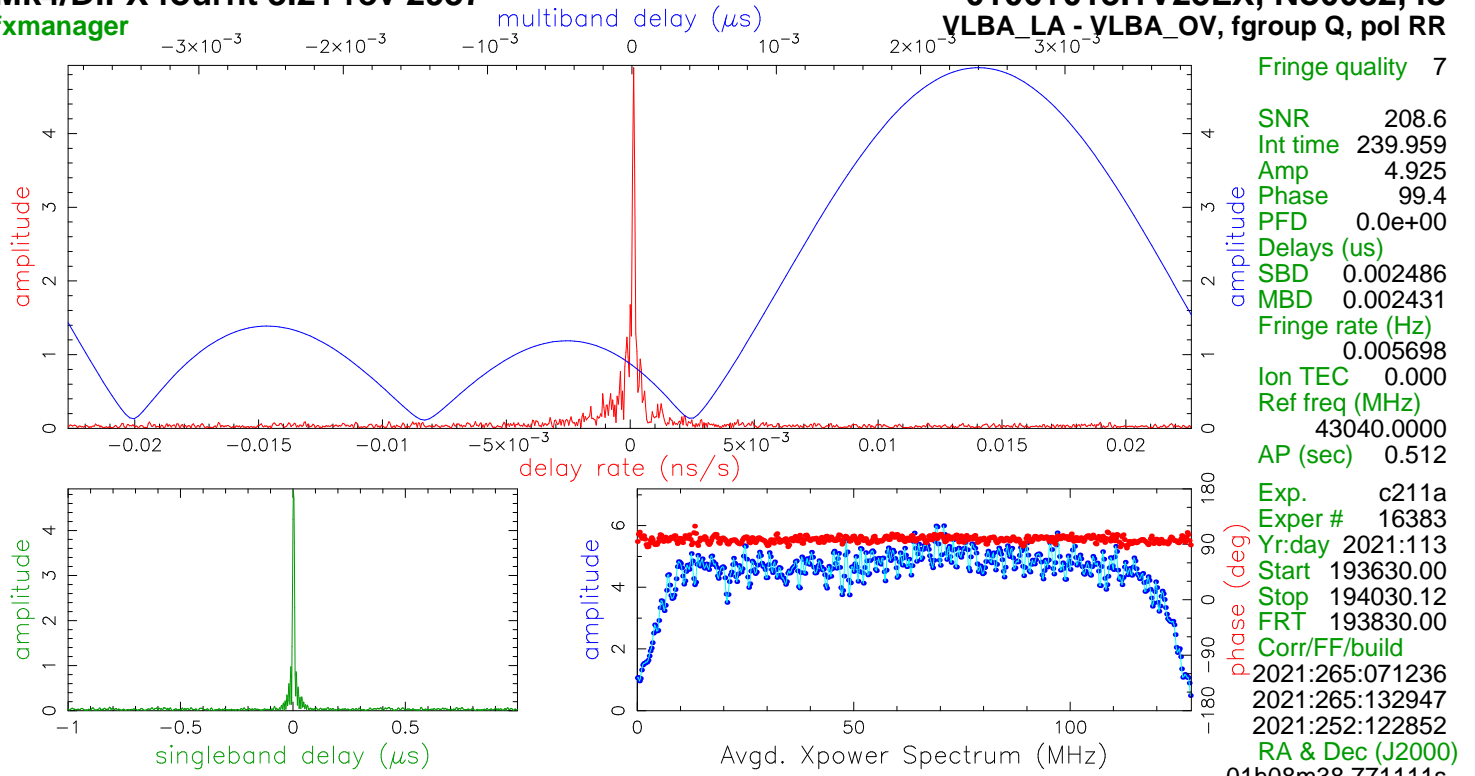
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/In..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/In.Q.157.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

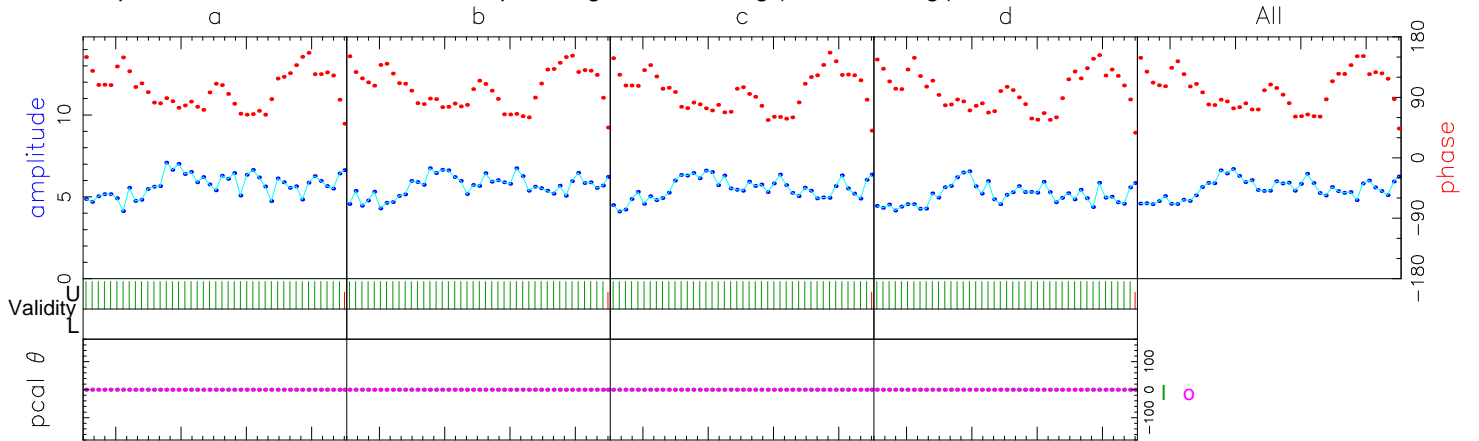
fxmanager

0106+013.1V25LX, No0082, lo

VLBA\_LA - VLBA\_OV, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 100.8    | 102.2    | 96.3     | 98.1     | Phase      | 99.4  |
| l   | 5.1      | 5.0      | 4.9      | 4.5      | Ampl.      | 4.9   |
| o   | 514.1    | 514.3    | 514.1    | 514.7    | Sbd box    | 514.3 |
| l   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| l   | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| o   | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| o   | 1000     | 1000     | 1000     | 1000     |            |       |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |             |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|-------------|-----|---------|
| Group delay (usec)(sbd) | -7.61067033747E+02 | Apriori delay (usec)     | -7.61069464448E+02 | Resid mbdelay (usec) | 2.43070E-03 | +/- | 5.3E-06 |
| Sband delay (usec)      | -7.61066977948E+02 | Apriori clock (usec)     | -6.2177486E+00     | Resid sbdelay (usec) | 2.48650E-03 | +/- | 2.1E-05 |
| Phase delay (usec)      | -7.61069458031E+02 | Apriori clockrate (us/s) | -6.4600002E-07     | Resid phdelay (usec) | 6.41640E-06 | +/- | 3.5E-08 |
| Delay rate (us/s)       | -2.57037289907E-01 | Apriori rate (us/s)      | -2.57037422292E-01 | Resid rate (us/s)    | 1.32386E-07 | +/- | 2.6E-10 |
| Total phase (deg)       | -170.5             | Apriori accel (us/s/s)   | 3.94597422379E-06  | Resid phase (deg)    | 99.4        | +/- | 0.5     |

|              |      |        |                  |                 |  |                       |
|--------------|------|--------|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | RMS  | Theor. | Amplitude        | 4.925 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 27.5 | 1.8    | Search (1024X16) | 4.874           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 16.5 | 3.1    | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 3.3  | 0.5    | Inc. seg. avg.   | 5.491           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              | 4.7  | 1.0    | Inc. frq. avg.   | 4.896           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

l: az 216.4 el 50.1 pa 29.3 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 737.505 -85.307 simultaneous interpolator

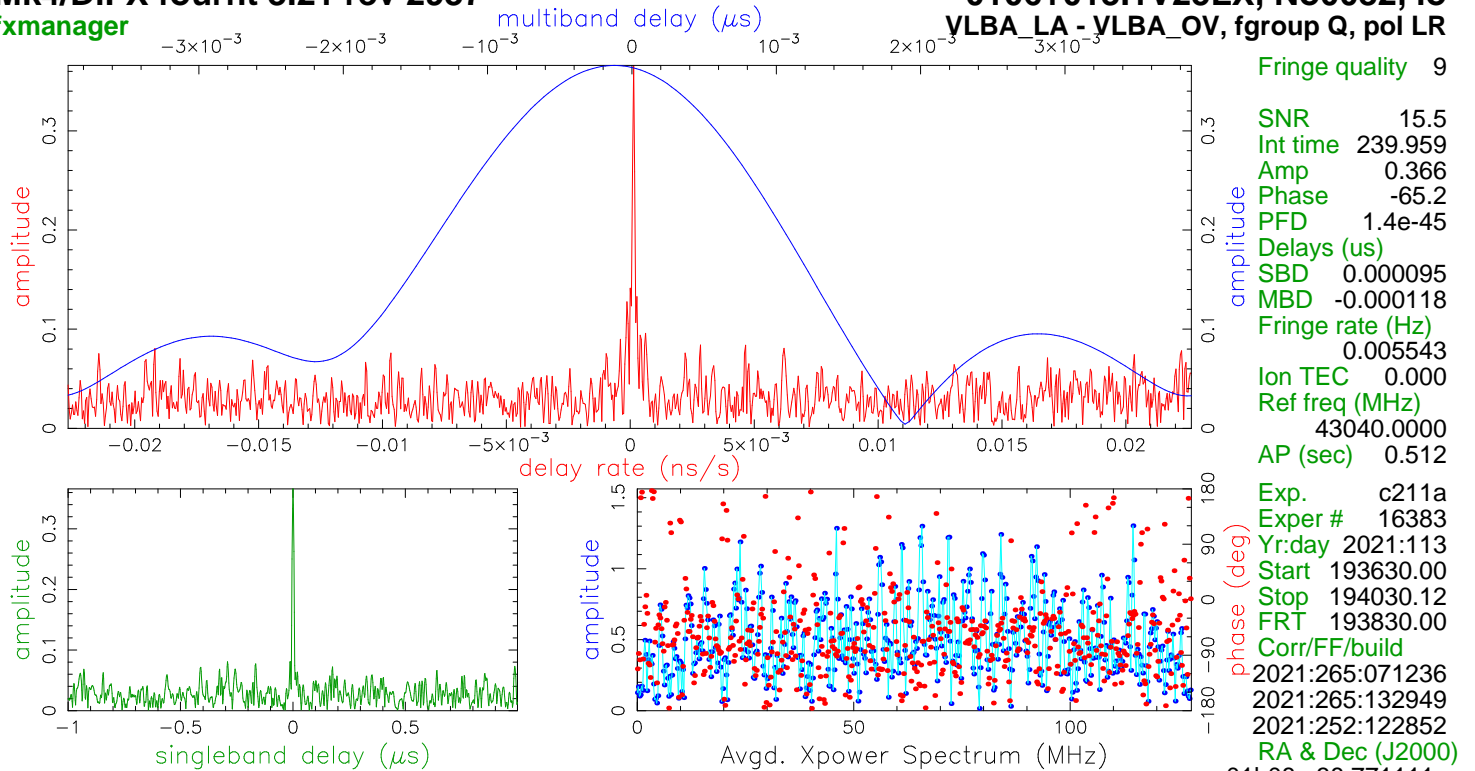
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lo.Q.117.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

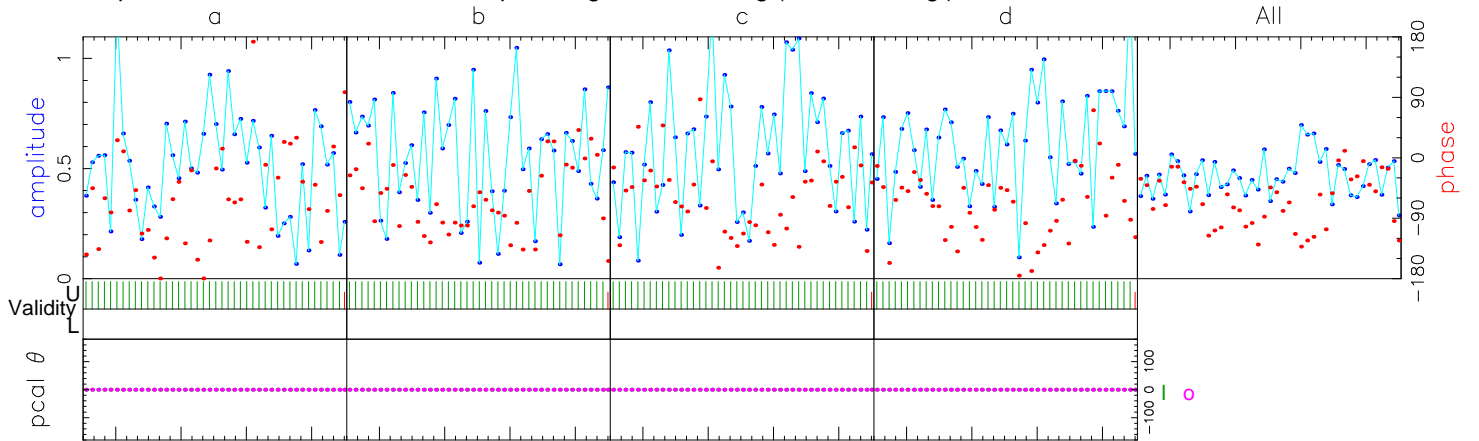
fxmanager

0106+013.1V25LX, No0082, lo

VLBA\_LA - VLBA\_OV, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -74.4    | -58.2    | -59.0    | -71.2    | Phase      | -65.2 |
|     | 0.3      | 0.4      | 0.4      | 0.4      | Ampl.      | 0.4   |
|     | 513.4    | 513.4    | 512.3    | 513.3    | Sbd box    | 513.0 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| l:o | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| l:o | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| l   | 1000     | 1000     | 1000     | 1000     |            |       |
| l   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -7.61069582653E+02 | Apriori delay (usec)     | -7.61069464448E+02 | Resid mbdelay (usec) | -1.18205E-04 | +/- | 7.2E-05 |
| Sband delay (usec)      | -7.61069369073E+02 | Apriori clock (usec)     | -6.2177486E+00     | Resid sbdelay (usec) | 9.53750E-05  | +/- | 2.8E-04 |
| Phase delay (usec)      | -7.61069468656E+02 | Apriori clockrate (us/s) | -6.4600002E-07     | Resid phdelay (usec) | -4.20861E-06 | +/- | 4.8E-07 |
| Delay rate (us/s)       | -2.57037293497E-01 | Apriori rate (us/s)      | -2.57037422292E-01 | Resid rate (us/s)    | 1.28795E-07  | +/- | 3.4E-09 |
| Total phase (deg)       | -335.1             | Apriori accel (us/s/s)   | 3.94597422379E-06  | Resid phase (deg)    | -65.2        | +/- | 7.4     |

|              |          |             |                           |  |                       |                      |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 38.5 | Theor. 24.2 | Amplitude 0.366 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 37.6     | 42.3        | Search (1024X16) 0.361    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 10.2     | 7.4         | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 17.9     | 12.9        | Inc. seg. avg. 0.431      | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
|              |          |             | Inc. frq. avg. 0.366      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

l: az 216.4 el 50.1 pa 29.3 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 737.505 -85.307 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lo.Q.141.1V25LX

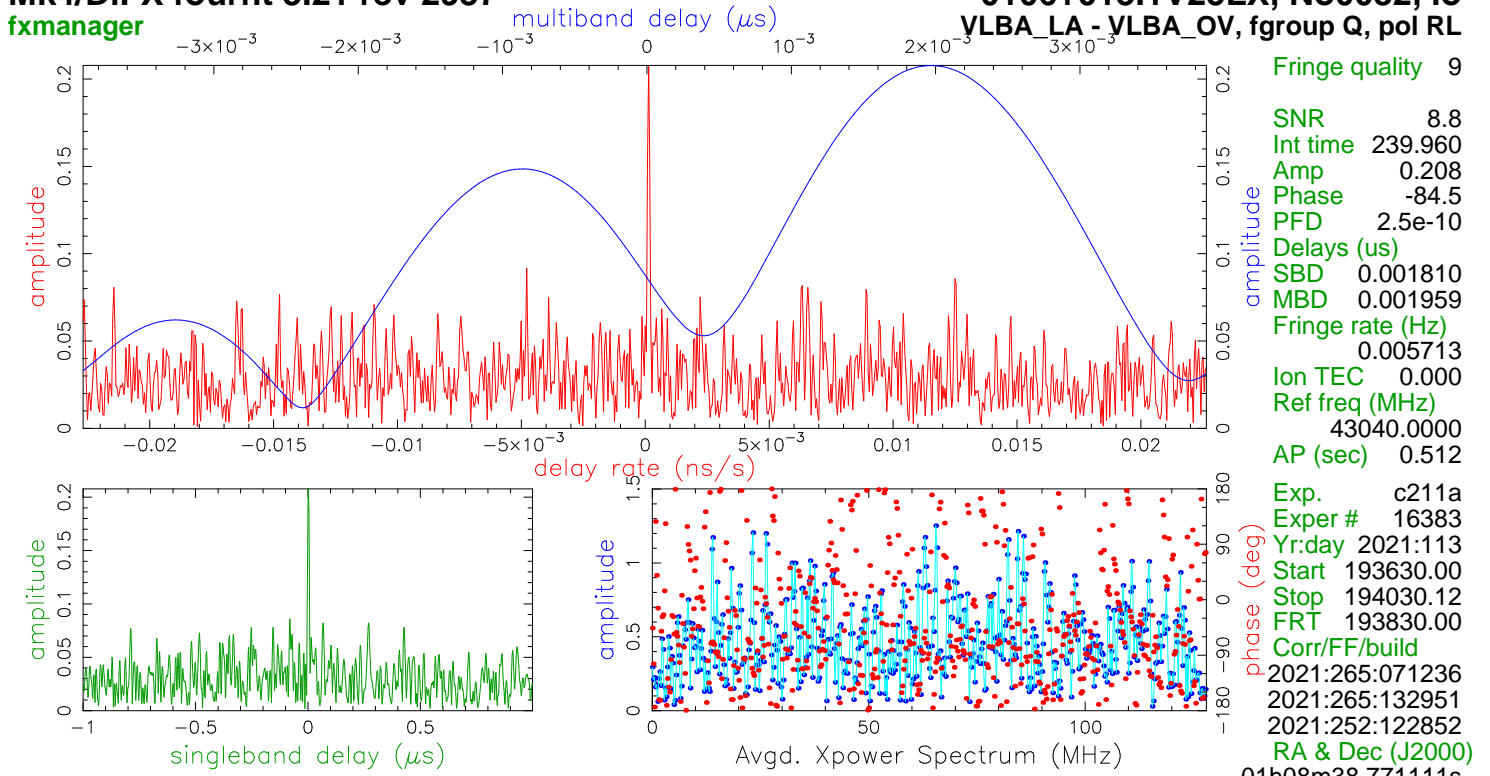


## Mk4/DiFX fourfit 3.21 rev 2937

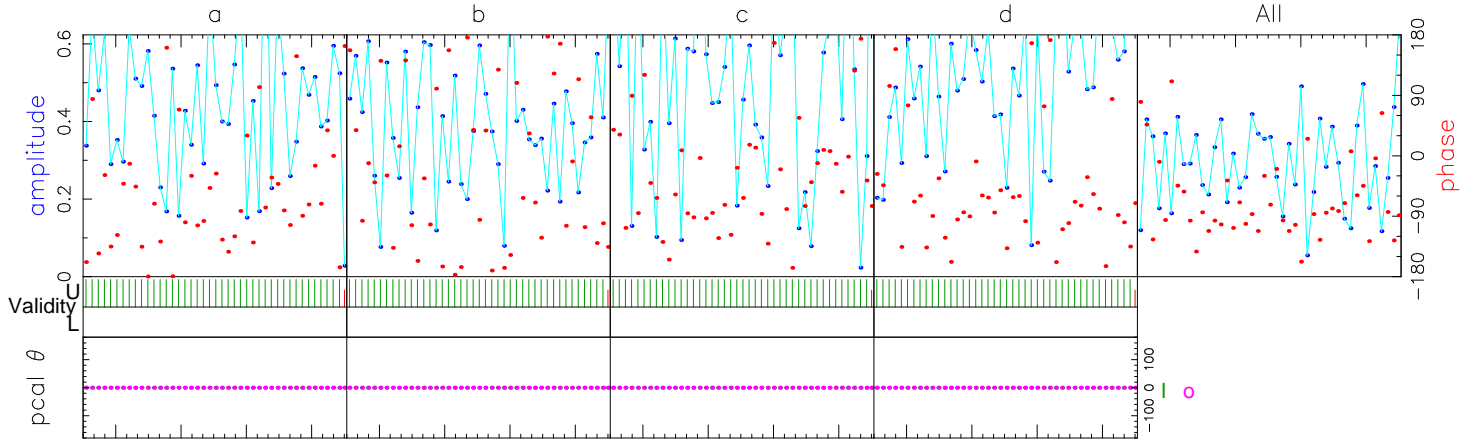
fxmanager

0106+013.1V25LX, No0082, lo

VLBA\_LA - VLBA\_OV, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | -83.3    | -127.1   | -58.2    | -93.2    | Phase      | -84.5 |
| l   | 0.2      | 0.1      | 0.2      | 0.3      | Ampl.      | 0.2   |
| o   | 514.8    | 988.6    | 513.0    | 514.2    | Sbd box    | 513.9 |
| l:0 | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| l:0 | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| l:0 | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| l:0 | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| l:0 | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| l:0 | 1000     | 1000     | 1000     | 1000     |            |       |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -7.61067505934E+02 | Apriori delay (usec)     | -7.61069464448E+02 | Resid mbdelay (usec) | 1.95851E-03  | +/- | 1.3E-04 |
| Sband delay (usec)      | -7.61067654448E+02 | Apriori clock (usec)     | -6.2177486E+00     | Resid sbdelay (usec) | 1.81000E-03  | +/- | 4.9E-04 |
| Phase delay (usec)      | -7.61069469904E+02 | Apriori clockrate (us/s) | -6.4600002E-07     | Resid phdelay (usec) | -5.45605E-06 | +/- | 8.4E-07 |
| Delay rate (us/s)       | -2.57037289558E-01 | Apriori rate (us/s)      | -2.57037422292E-01 | Resid rate (us/s)    | 1.32734E-07  | +/- | 6.1E-09 |
| Total phase (deg)       | -354.5             | Apriori accel (us/s/s)   | 3.94597422379E-06  | Resid phase (deg)    | -84.5        | +/- | 13.0    |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 0.208 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 61.4 | 42.7   | Search (1024X16) | 0.207           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 69.6 | 74.5   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 35.9 | 13.0   | Inc. seg. avg.   | 0.231           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 38.0 | 22.7   | Inc. frq. avg.   | 0.216           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lo.Q.158.1V25LX

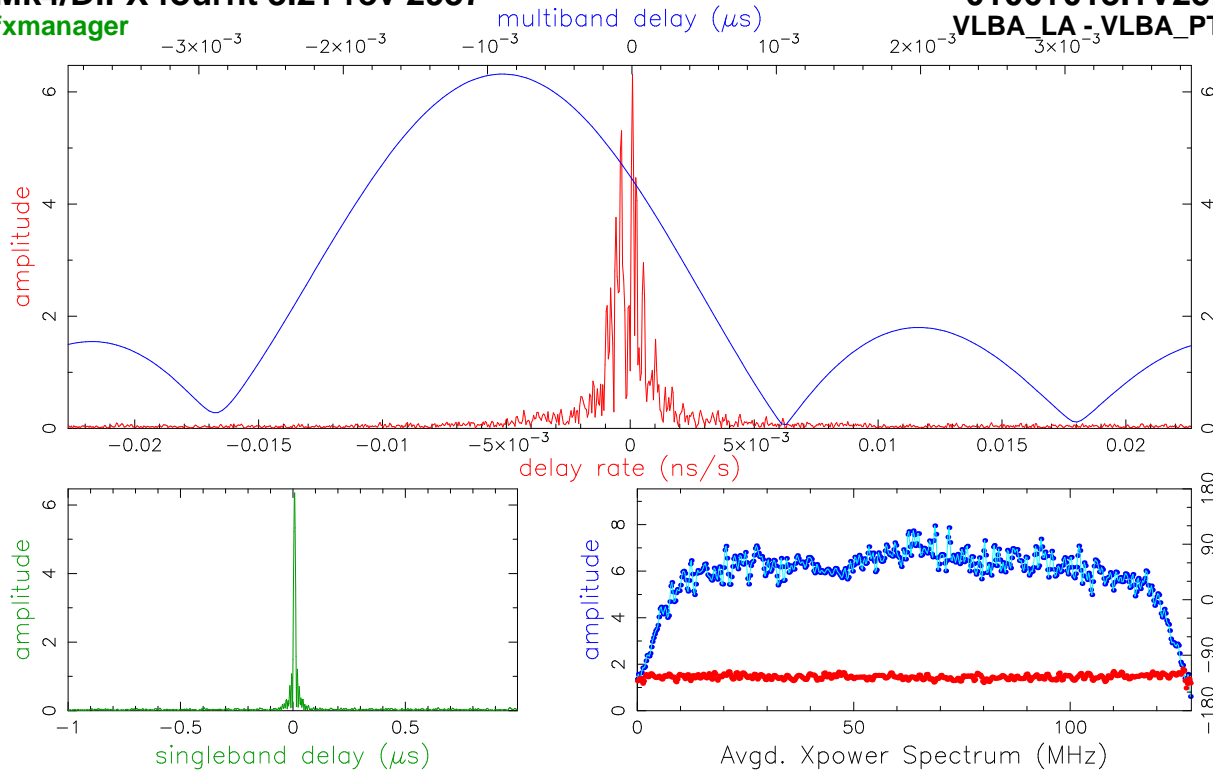


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, lp

VLBA\_LA - VLBA\_PT, fgroup Q, pol LL



Fringe quality 5

SNR 274.2

Int time 239.983

Amp 6.472

Phase 53.4

PFD 0.0e+00

Delays (us)

SBD 0.006910

MBD -0.000852

Fringe rate (Hz)

0.003859

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132953

2021:252:122852

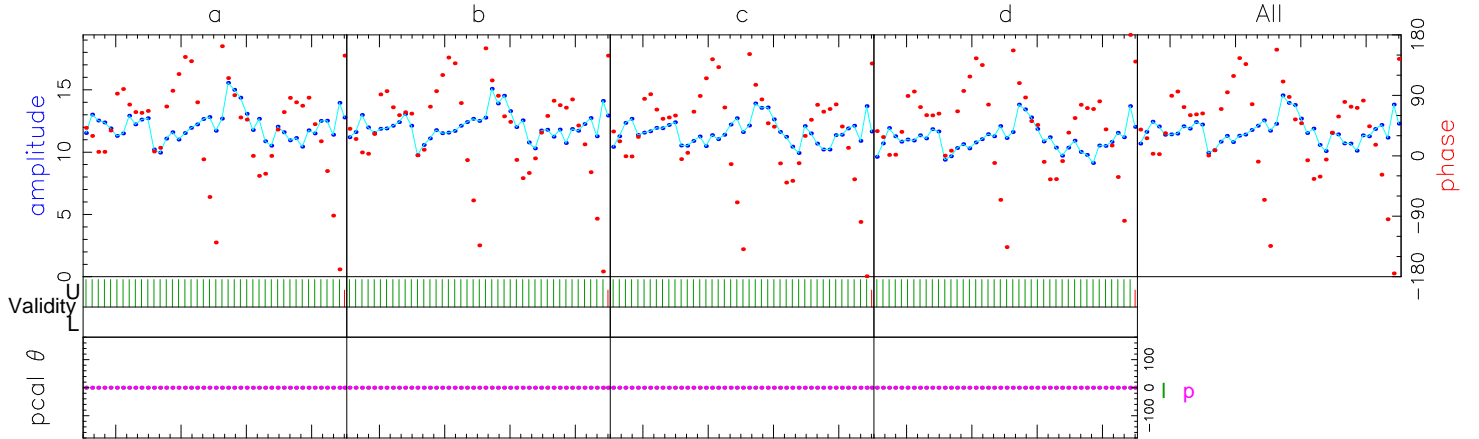
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 53.4  |
| l   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 6.3   |
| p   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 516.5 |
| l:p | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| l:p | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| p   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| l   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| p   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -5.00404400481E+02 | Apriori delay (usec)     | -5.00411360688E+02 | Resid mbdelay (usec) | -8.52293E-04 | +/- | 4.1E-06 |
| Sband delay (usec)      | -5.00404450813E+02 | Apriori clock (usec)     | -8.1223583E+00     | Resid sbdelay (usec) | 6.90988E-03  | +/- | 1.6E-05 |
| Phase delay (usec)      | -5.00411357239E+02 | Apriori clockrate (us/s) | -1.6600001E-07     | Resid phdelay (usec) | 3.44834E-06  | +/- | 2.7E-08 |
| Delay rate (us/s)       | -2.99130312834E-02 | Apriori rate (us/s)      | -2.99131209473E-02 | Resid rate (us/s)    | 8.96638E-08  | +/- | 1.9E-10 |
| Total phase (deg)       | -293.6             | Apriori accel (us/s/s)   | 2.68780368694E-06  | Resid phase (deg)    | 53.4         | +/- | 0.4     |

|              |      |        |                  |                 |  |                       |        |       |  |
|--------------|------|--------|------------------|-----------------|--|-----------------------|--------|-------|--|
|              | RMS  | Theor. | Amplitude        | 6.472 +/- 0.024 | Pcal mode: MANUAL, MANUAL                                    | PC period (AP's) 5, 5 |        |       |  |
| ph/seg (deg) | 64.5 | 1.4    | Search (1024X16) | 6.295           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                       | sb window (us)        | -1.000 | 1.000 |  |
| amp/seg (%)  | 82.3 | 2.4    | Interp.          | 0.000           | Bits/sample: 2x2      SampCntNorm: enabled                   | mb window (us)        | -0.004 | 0.004 |  |
| ph/frq (deg) | 4.6  | 0.4    | Inc. seg. avg.   | 11.699          | Sample rate(MSamp/s): 256                                    | dr window (ns/s)      | -0.023 | 0.023 |  |
| amp/frq (%)  | 4.7  | 0.7    | Inc. frq. avg.   | 6.322           | Data rate(Mb/s): 2048      nlags: 512      t_cohere infinite | ion window (TEC)      | 0.00   | 0.00  |  |

l: az 216.4 el 50.1 pa 29.3 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 86.718 96.170 simultaneous interpolator

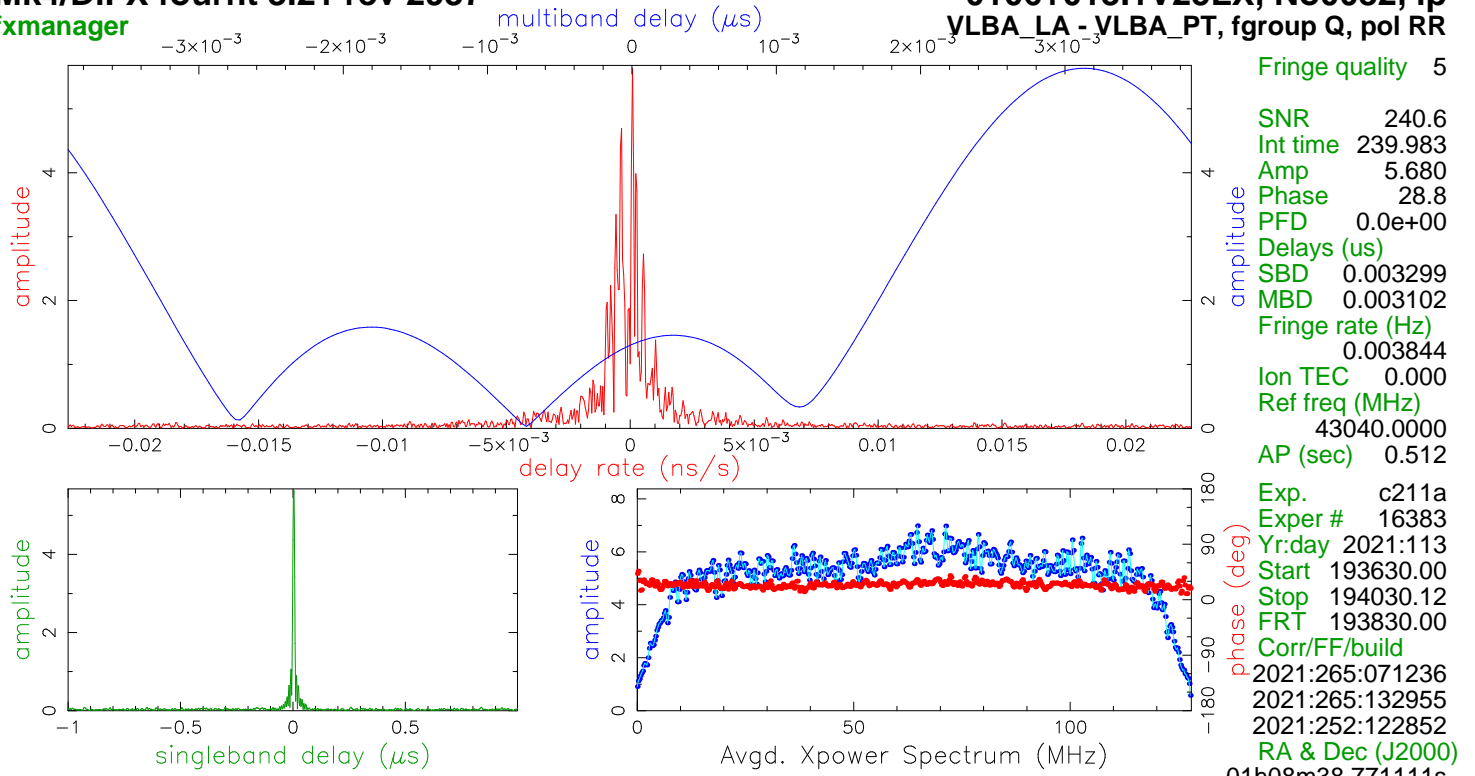
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lp.Q.161.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

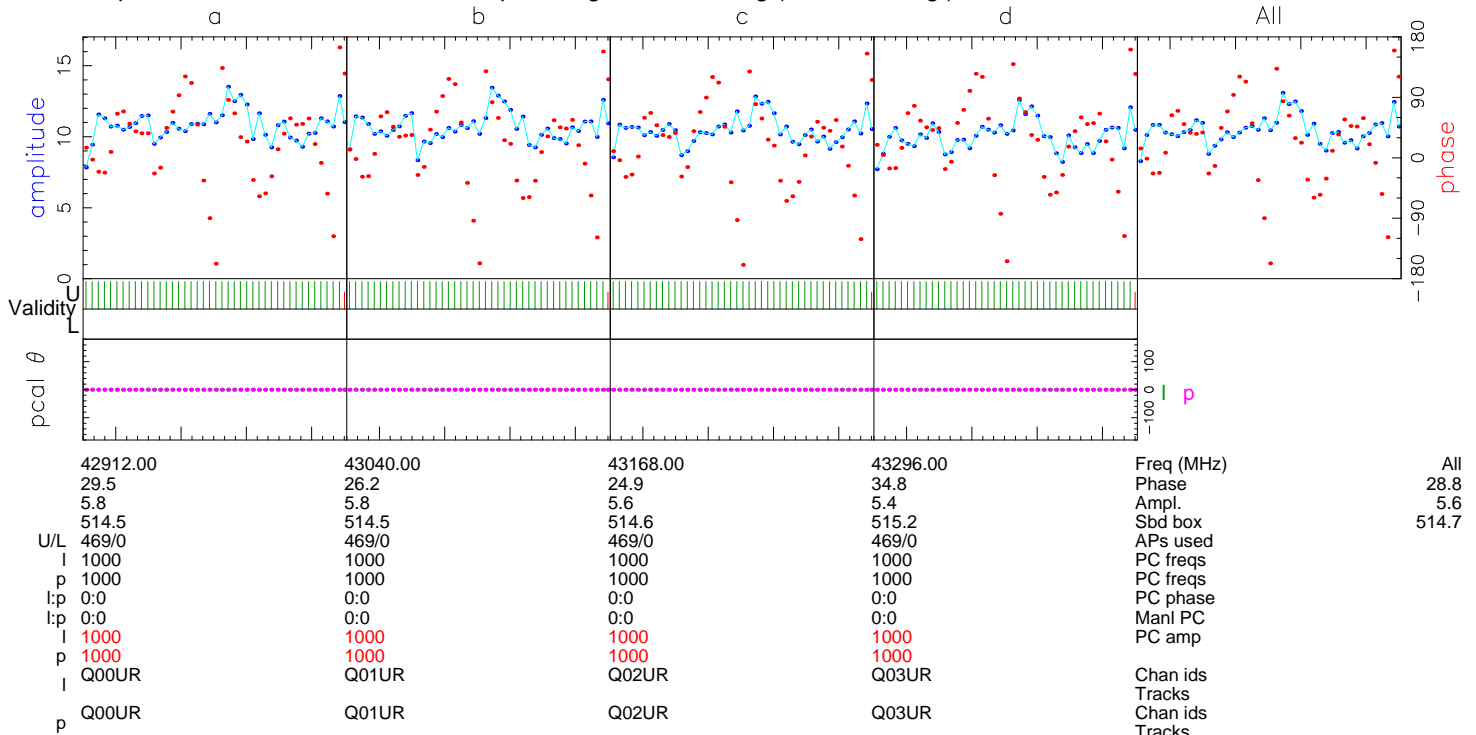
fxmanager

0106+013.1V25LX, No0082, lp

VLBA\_LA - VLBA\_PT, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| Group delay (usec)(sbd) | -5.00408259012E+02 | Apriori delay (usec)     | -5.00411360688E+02 | Resid mbdelay (usec) | 3.10168E-03 | +/- | 4.6E-06 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|-------------|-----|---------|
| Sband delay (usec)      | -5.00408061688E+02 | Apriori clock (usec)     | -8.1223583E+00     | Resid sbdelay (usec) | 3.29900E-03 | +/- | 1.8E-05 |
| Phase delay (usec)      | -5.00411358830E+02 | Apriori clockrate (us/s) | -1.6600001E-07     | Resid phdelay (usec) | 1.85755E-06 | +/- | 3.1E-08 |
| Delay rate (us/s)       | -2.99130316380E-02 | Apriori rate (us/s)      | -2.99131209473E-02 | Resid rate (us/s)    | 8.93093E-08 | +/- | 2.2E-10 |
| Total phase (deg)       | -318.3             | Apriori accel (us/s/s)   | 2.68780368694E-06  | Resid phase (deg)    | 28.8        | +/- | 0.5     |

| RMS          | Theor. | Amplitude        | 5.680 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
|--------------|--------|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | 64.5   | Search (1024X16) | 5.544           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| amp/seg (%)  | 86.1   | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| ph/frq (deg) | 5.4    | Inc. seg. avg.   | 10.470          | Sample rate(MISamp/s): 256             | dr window (ns/s)      |
| amp/frq (%)  | 2.8    | Inc. frq. avg.   | 5.645           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

l: az 216.4 el 50.1 pa 29.3 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 86.718 96.170 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lp.Q.174.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

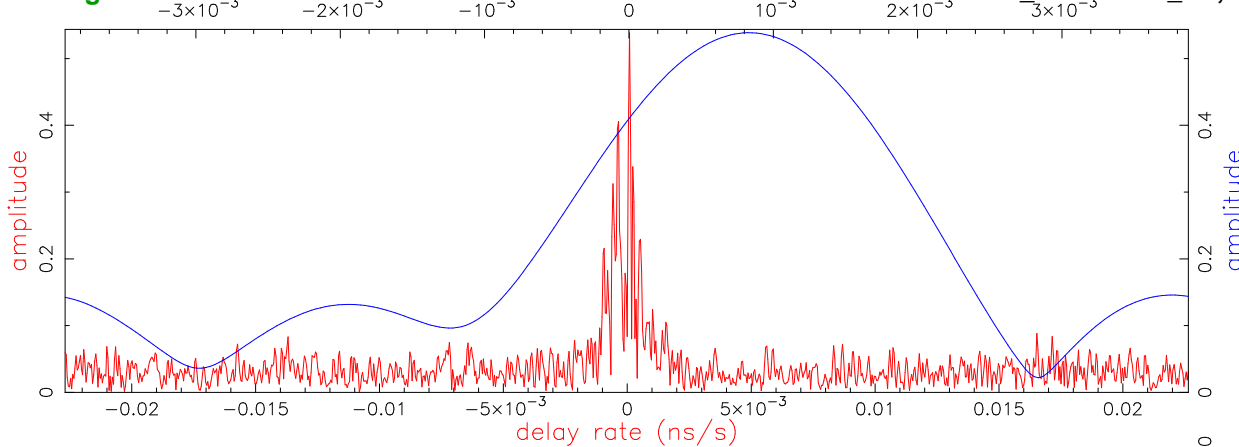
fxmanager

0106+013.1V25LX, No0082, lp

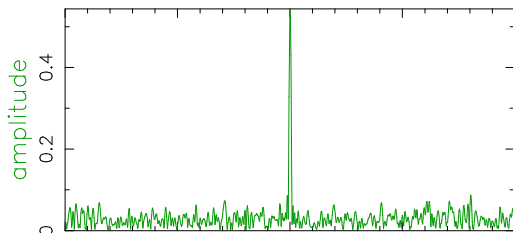
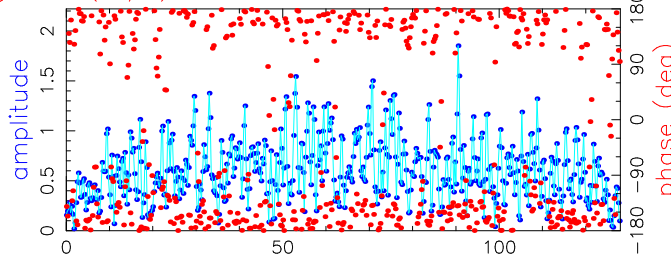
VLBA\_LA - VLBA\_PT, fgroup Q, pol LR

multiband delay ( $\mu$ s)

Fringe quality 8



SNR 23.0  
Int time 239.983  
Amp 0.544  
Phase -177.9  
PFD 0.0e+00  
Delays (us)  
SBD 0.000670  
MBD 0.000866  
Fringe rate (Hz)  
0.003969  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

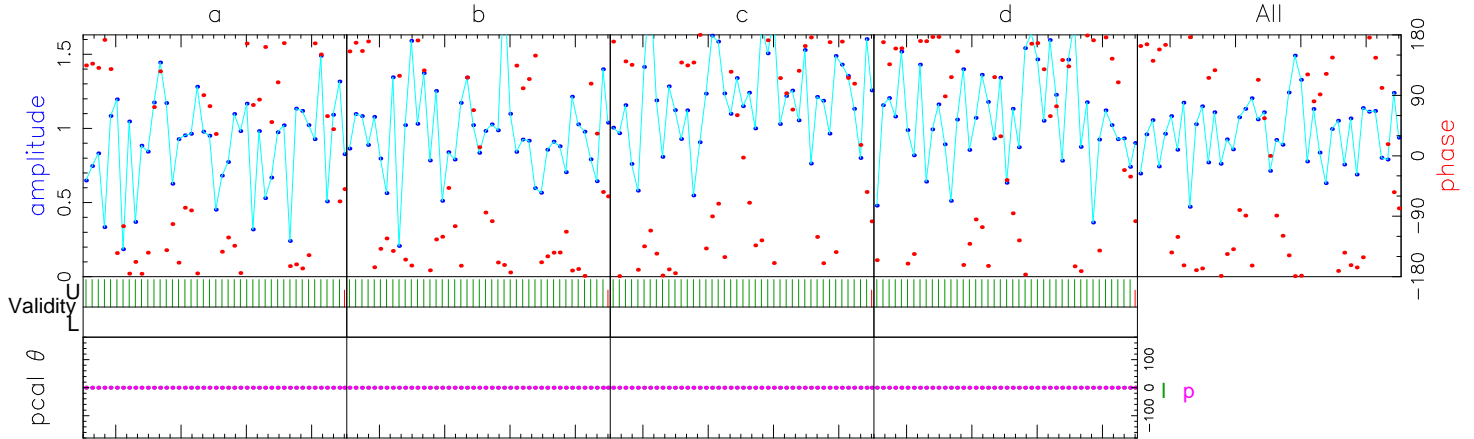
singleband delay ( $\mu$ s)

Avgd. Xpower Spectrum (MHz)

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132956  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
| U/L | 172.9    | -167.6   | -171.3   | 172.5    | Phase      | -177.9 |
| l   | 0.4      | 0.6      | 0.6      | 0.6      | Ampl.      | 0.5    |
| p   | 512.9    | 513.5    | 513.2    | 513.6    | Sbd box    | 513.3  |
| l   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| p   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| l:p | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |        |
| l:p | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| l   | 1000     | 1000     | 1000     | 1000     | Manl PC    |        |
| p   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| l   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| p   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -5.00410495012E+02 | Apriori delay (usec)     | -5.00411360688E+02 | Resid mbdelay (usec) | 8.65676E-04  | +/- | 4.8E-05 |
| Sband delay (usec)      | -5.00410690938E+02 | Apriori clock (usec)     | -8.1223583E+00     | Resid sbdelay (usec) | 6.69750E-04  | +/- | 1.9E-04 |
| Phase delay (usec)      | -5.00411372171E+02 | Apriori clockrate (us/s) | -1.6600001E-07     | Resid phdelay (usec) | -1.14834E-05 | +/- | 3.2E-07 |
| Delay rate (us/s)       | -2.99130287394E-02 | Apriori rate (us/s)      | -2.99131209473E-02 | Resid rate (us/s)    | 9.22079E-08  | +/- | 2.3E-09 |
| Total phase (deg)       | -165.0             | Apriori accel (us/s/s)   | 2.68780368694E-06  | Resid phase (deg)    | -177.9       | +/- | 5.0     |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 0.544 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 66.1 | 16.3   | Search (1024X16) | 0.532           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 87.7 | 28.5   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 12.8 | 5.0    | Inc. seg. avg.   | 0.936           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 13.7 | 8.7    | Inc. frq. avg.   | 0.543           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

l: az 216.4 el 50.1 pa 29.3 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 86.718 96.170

simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lp.Q.188.1V25LX

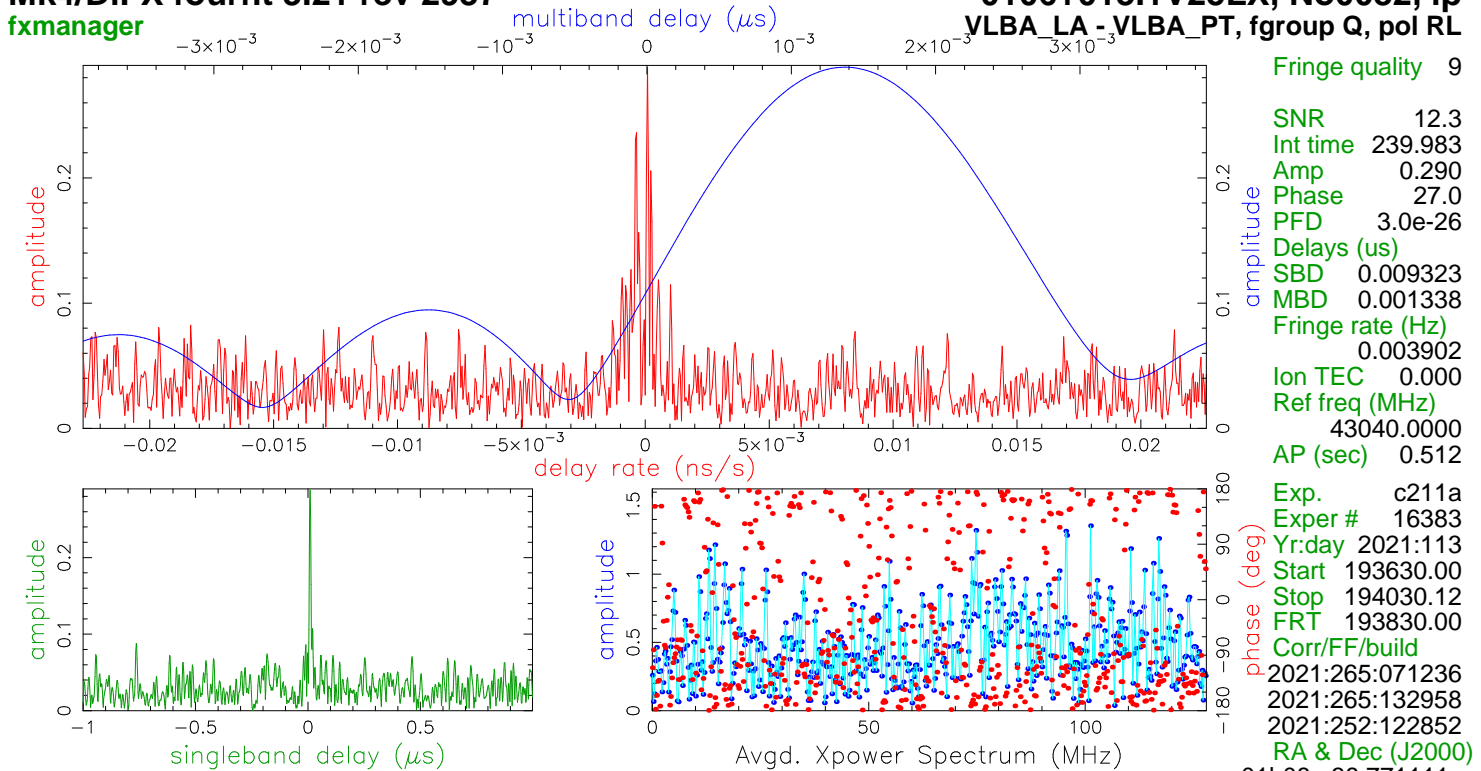


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, lp

VLBA\_LA - VLBA\_PT, fgroup Q, pol RL

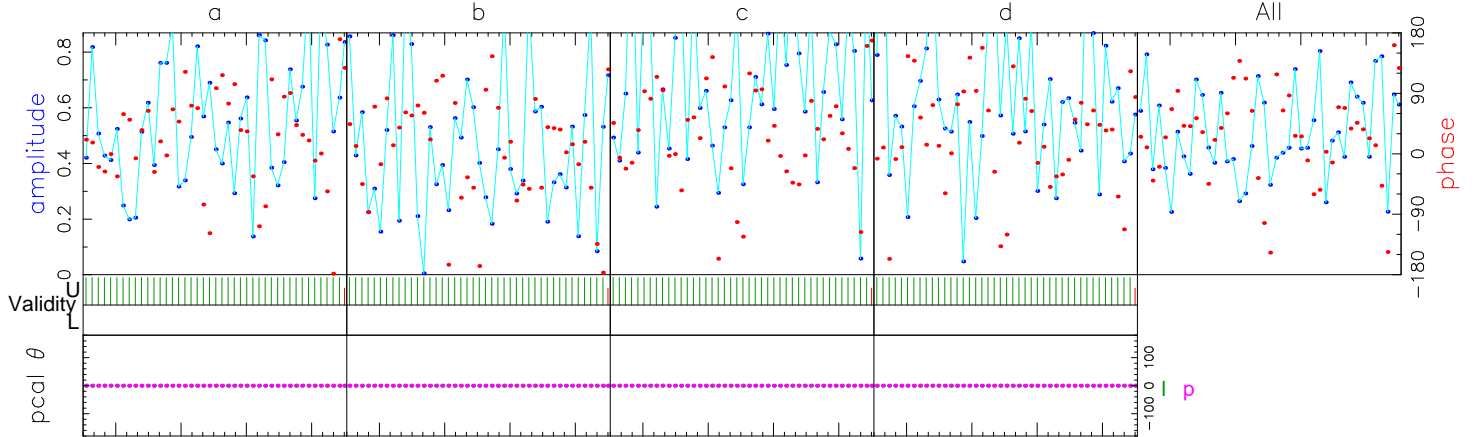


Fringe quality 9

SNR 12.3  
Int time 239.983  
Amp 0.290  
Phase 27.0  
PFD 3.0e-26  
Delays (us)  
SBD 0.009323  
MBD 0.001338  
Fringe rate (Hz)  
0.003902  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132958  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 27.0  |
| l   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 0.3   |
| p   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 517.8 |
| l:p | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| l:p | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| l   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| p   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| l   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| p   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |             |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|-------------|-----|---------|
| Group delay (usec)(sbd) | -5.00402210418E+02 | Apriori delay (usec)     | -5.00411360688E+02 | Resid mbdelay (usec) | 1.33777E-03 | +/- | 9.1E-05 |
| Sband delay (usec)      | -5.00402037563E+02 | Apriori clock (usec)     | -8.1223583E+00     | Resid sbdelay (usec) | 9.32312E-03 | +/- | 3.5E-04 |
| Phase delay (usec)      | -5.00411358948E+02 | Apriori clockrate (us/s) | -1.6600001E-07     | Resid phdelay (usec) | 1.74026E-06 | +/- | 6.0E-07 |
| Delay rate (us/s)       | -2.99130302794E-02 | Apriori rate (us/s)      | -2.99131209473E-02 | Resid rate (us/s)    | 9.06678E-08 | +/- | 4.3E-09 |
| Total phase (deg)       | -320.1             | Apriori accel (us/s/s)   | 2.68780368694E-06  | Resid phase (deg)    | 27.0        | +/- | 9.3     |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 0.290 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 67.6 | 30.6   | Search (1024X16) | 0.287           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 94.5 | 53.4   | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 7.8  | 9.3    | Inc. seg. avg.   | 0.448           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 15.6 | 16.3   | Inc. frq. avg.   | 0.286           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

l: az 216.4 el 50.1 pa 29.3 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 86.718 96.170 simultaneous interpolator

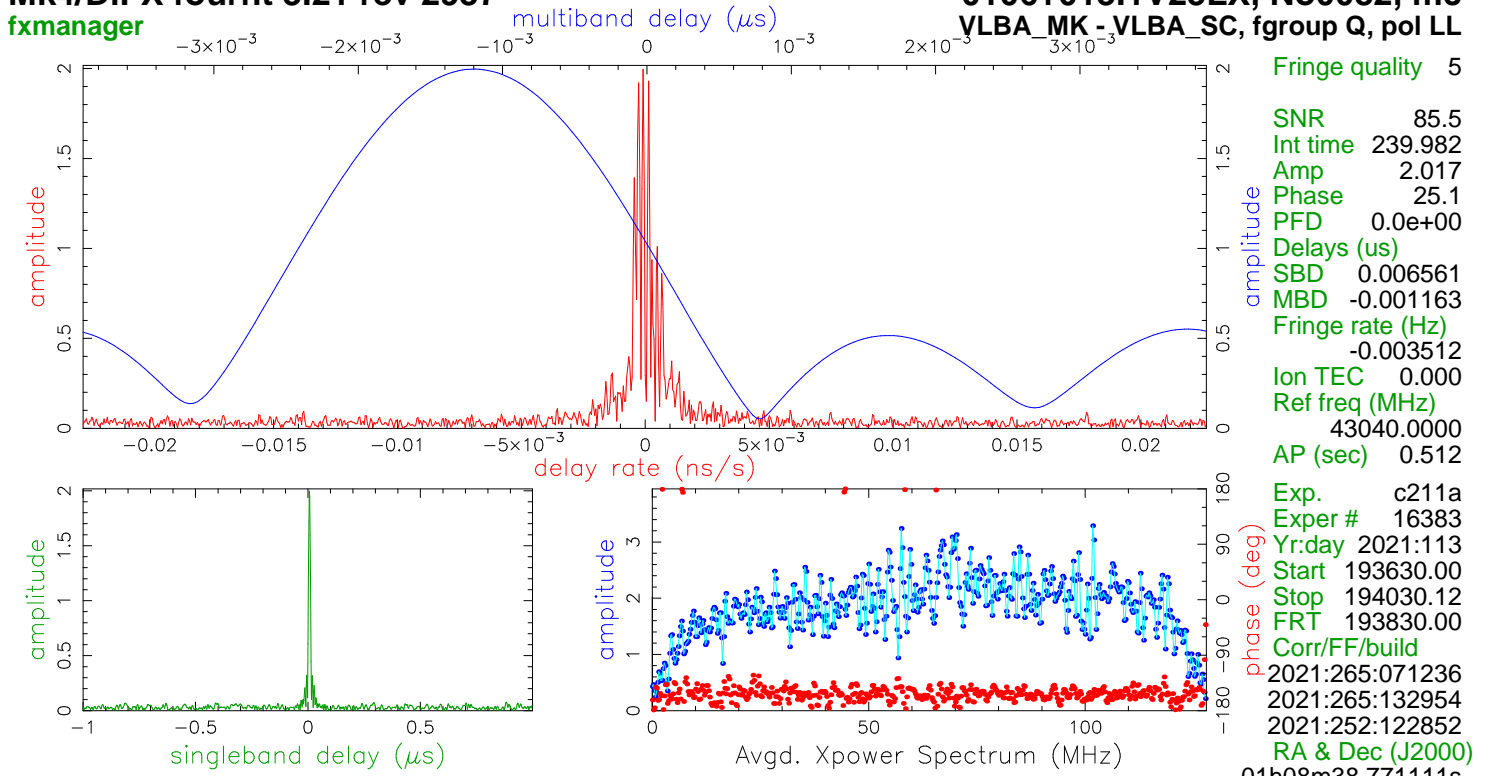
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/lp.Q.202.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mc

VLBA\_MK - VLBA\_SC, fgroup Q, pol LL



Fringe quality 5

SNR 85.5

Int time 239.982

Amp 2.017

Phase 25.1

PFD 0.0e+00

Delays (us)

SBD 0.006561

MBD -0.001163

Fringe rate (Hz)

-0.003512

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132954

2021:252:122852

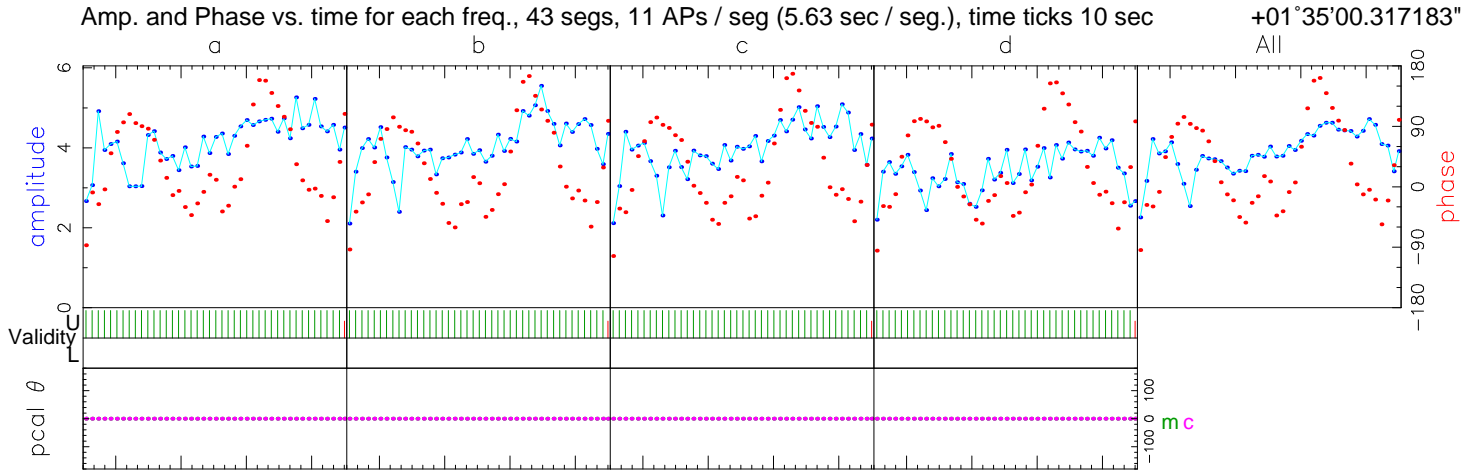
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

All



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | 29.2     | 23.0     | 23.5     | 24.0     | Phase      | 25.1  |
|     | 2.2      | 2.0      | 2.0      | 1.7      | Ampl.      | 2.0   |
|     | 516.2    | 516.5    | 516.4    | 516.3    | Sbd box    | 516.4 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| m:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| m:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| m   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 9.33106001294E+03 | Apriori delay (usec)     | 9.33105336325E+03  | Resid mbdelay (usec) | -1.16280E-03 | +/- | 1.3E-05 |
| Sband delay (usec)      | 9.33105992400E+03 | Apriori clock (usec)     | 3.4680748E+00      | Resid sbdelay (usec) | 6.56075E-03  | +/- | 5.0E-05 |
| Phase delay (usec)      | 9.33105336486E+03 | Apriori clockrate (us/s) | 2.0000006E-09      | Resid phdelay (usec) | 1.61893E-06  | +/- | 8.7E-08 |
| Delay rate (us/s)       | 1.98003869767E+00 | Apriori rate (us/s)      | 1.98003877927E+00  | Resid rate (us/s)    | -8.16005E-08 | +/- | 6.2E-10 |
| Total phase (deg)       | 296.6             | Apriori accel (us/s/s)   | -4.94850500256E-05 | Resid phase (deg)    | 25.1         | +/- | 1.3     |

|              |          |            |                           |  |                       |                      |                            |
|--------------|----------|------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 63.3 | Theor. 4.4 | Amplitude 2.017 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 63.3     | 4.4        | Search (1024X16) 1.940    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 96.5     | 7.7        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 3.5      | 1.3        | Inc. seg. avg. 3.880      | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
|              | 8.8      | 2.3        | Inc. frq. avg. 1.997      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

m: az 121.3 el 58.1 pa -53.4 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -5689.060 90.946 simultaneous interpolator

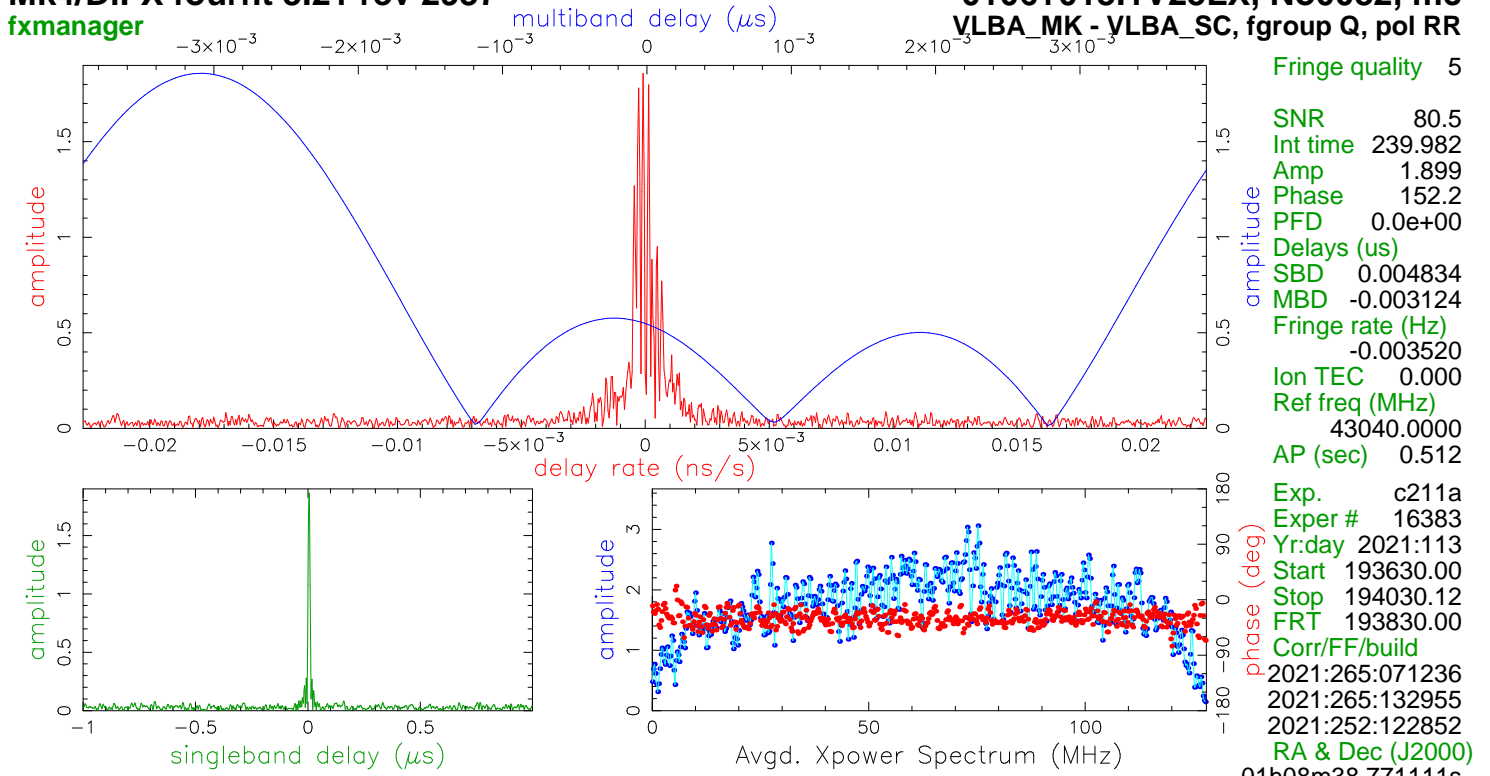
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mc.Q.166.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

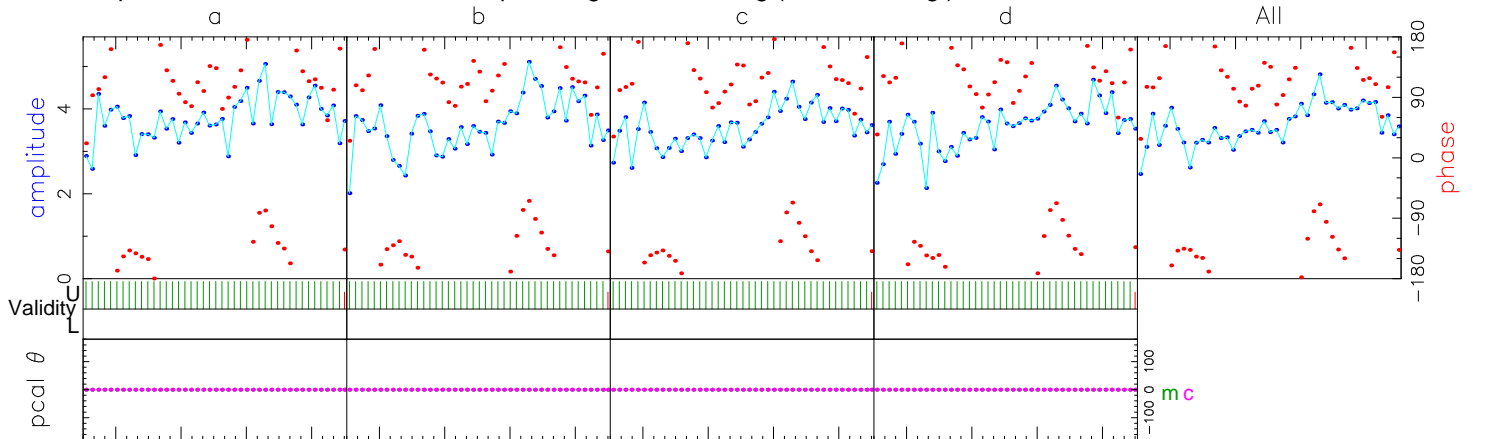
fxmanager

0106+013.1V25LX, No0082, mc

VLBA\_MK - VLBA\_SC, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | 148.8    | 153.9    | 150.9    | 155.2    | Phase      | 152.2 |
|     | 2.0      | 1.8      | 1.8      | 1.9      | Ampl.      | 1.9   |
|     | 515.9    | 515.4    | 515.2    | 515.5    | Sbd box    | 515.5 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| m:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| m:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| m   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 9.33105805132E+03 | Apriori delay (usec)     | 9.33105336325E+03  | Resid mbdelay (usec) | -3.12443E-03 | +/- | 1.4E-05 |
| Sband delay (usec)      | 9.33105819762E+03 | Apriori clock (usec)     | 3.4680748E+00      | Resid sbdelay (usec) | 4.83437E-03  | +/- | 5.4E-05 |
| Phase delay (usec)      | 9.33105337307E+03 | Apriori clockrate (us/s) | 2.0000006E-09      | Resid phdelay (usec) | 9.82004E-06  | +/- | 9.2E-08 |
| Delay rate (us/s)       | 1.98003869749E+00 | Apriori rate (us/s)      | 1.98003877927E+00  | Resid rate (us/s)    | -8.17763E-08 | +/- | 6.6E-10 |
| Total phase (deg)       | 63.6              | Apriori accel (us/s/s)   | -4.94850500256E-05 | Resid phase (deg)    | 152.2        | +/- | 1.4     |

|              |          |            |                           |  |                       |                      |                            |
|--------------|----------|------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 62.9 | Theor. 4.7 | Amplitude 1.899 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 62.9     | 4.7        | Search (1024X16) 1.822    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 94.3     | 8.1        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 3.6      | 1.4        | Inc. seg. avg. 3.618      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)     | -0.023 0.023               |
|              | 3.8      | 2.5        | Inc. frq. avg. 1.858      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

m: az 121.3 el 58.1 pa -53.4 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -5689.060 90.946 simultaneous interpolator

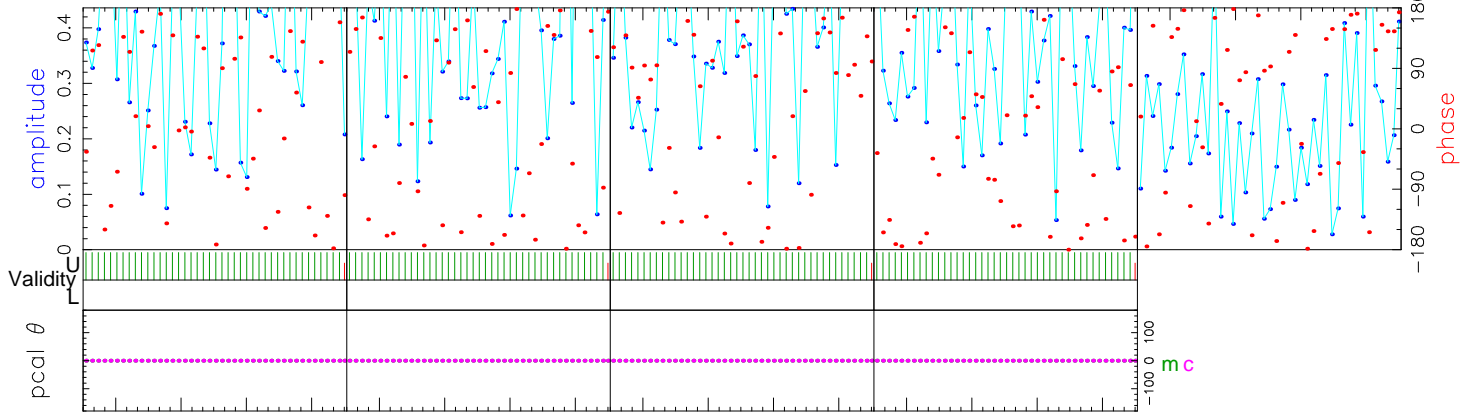
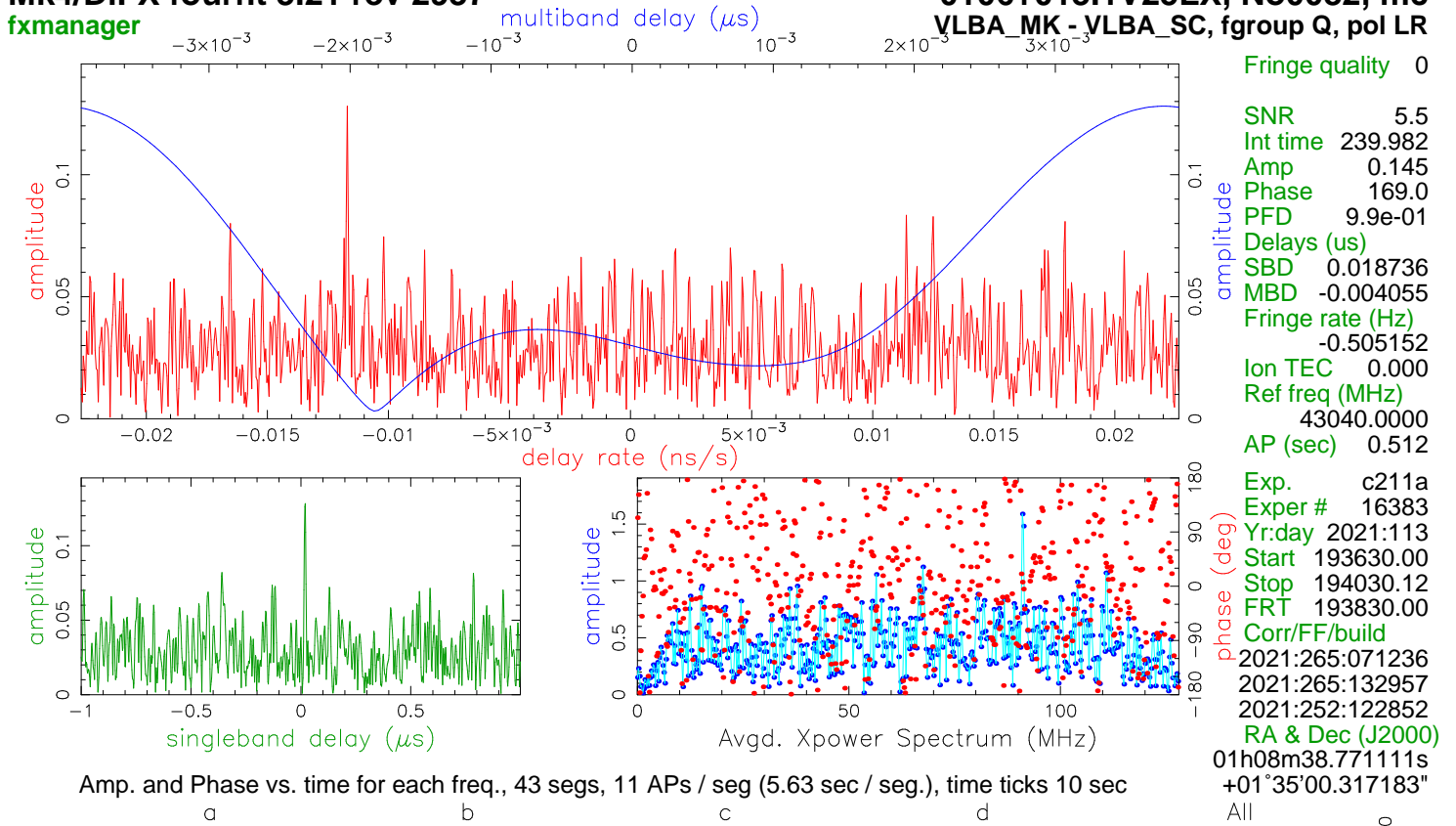
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mc.Q.180.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mc

VLBA\_MK - VLBA\_SC, fgroup Q, pol LR



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 163.0    | 179.5    | 150.4    | -177.5   | Phase      | 169.0 |
| m   | 0.1      | 0.2      | 0.2      | 0.1      | Ampl.      | 0.1   |
| c   | 52.7     | 523.4    | 578.9    | 279.7    | Sbd box    | 522.6 |
| m:c | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| m:c | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| m:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| m:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| m   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 9.33107274532E+03 | Apriori delay (usec)     | 9.33105336325E+03  | Resid mbdelay (usec) | -4.05542E-03 | +/- | 2.0E-04 |
| Sband delay (usec)      | 9.33107209937E+03 | Apriori clock (usec)     | 3.4680748E+00      | Resid sbdelay (usec) | 1.87361E-02  | +/- | 7.8E-04 |
| Phase delay (usec)      | 9.33105337415E+03 | Apriori clockrate (us/s) | 2.0000006E-09      | Resid phdelay (usec) | 1.09096E-05  | +/- | 1.3E-06 |
| Delay rate (us/s)       | 1.98002704246E+00 | Apriori rate (us/s)      | 1.98003877927E+00  | Resid rate (us/s)    | -1.17368E-05 | +/- | 9.7E-09 |
| Total phase (deg)       | 80.5              | Apriori accel (us/s/s)   | -4.94850500256E-05 | Resid phase (deg)    | 169.0        | +/- | 20.8    |

|              |          |             |                           |  |                       |                      |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 77.1 | Theor. 68.3 | Amplitude 0.145 +/- 0.026 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 124.7    | 119.1       | Search (1024X16) 0.124    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 18.4     | 20.8        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 35.2     | 36.3        | Inc. seg. avg. 0.145      | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
|              |          |             | Inc. frq. avg. 0.138      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

m: az 121.3 el 58.1 pa -53.4 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -5689.060 90.946 simultaneous interpolator

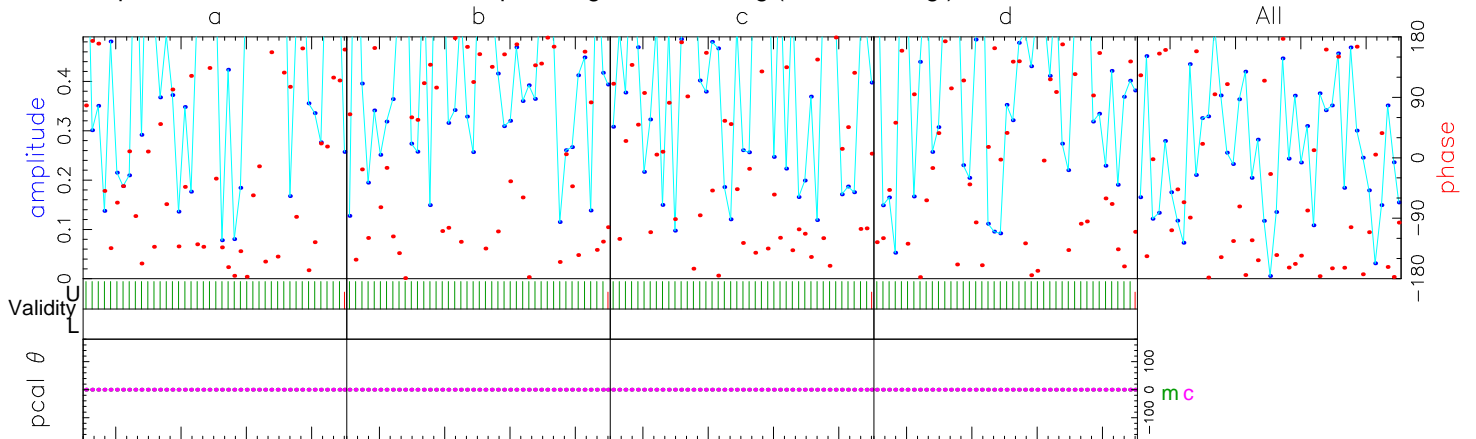
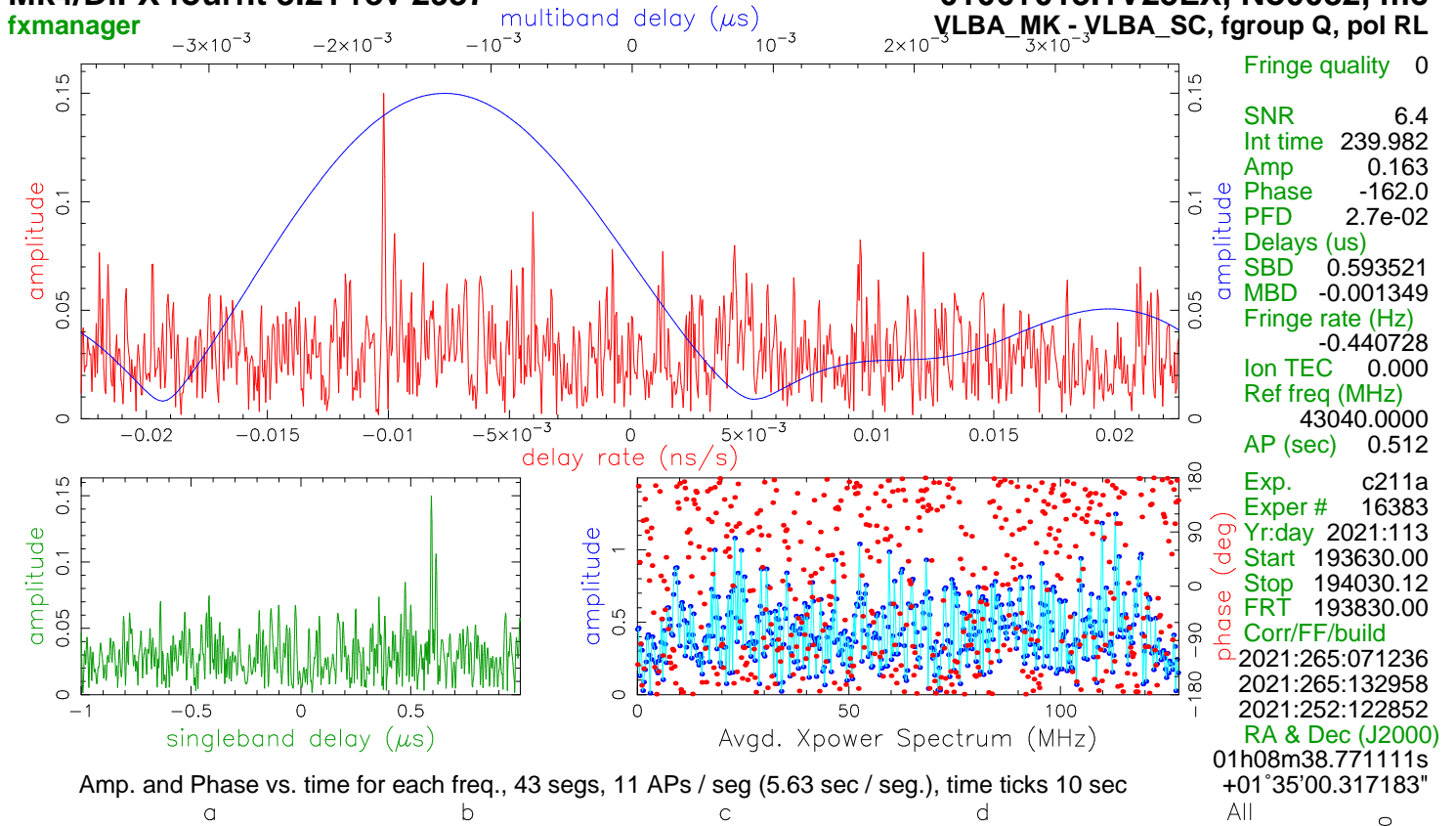
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mc.Q.194.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mc

VLBA\_MK - VLBA\_SC, fgroup Q, pol RL



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -157.9   | -170.4   | -150.4   | -163.5   | Phase      | -162.0 |
|     | 0.1      | 0.2      | 0.1      | 0.2      | Ampl.      | 0.2    |
|     | 707.0    | 816.8    | 828.3    | 462.2    | Sbd box    | 816.9  |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| m   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| m:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| m:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| m   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| c   | 1000     | 1000     | 1000     | 1000     |            |        |
| m   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 9.33164576456E+03 | Apriori delay (usec)     | 9.33105336325E+03  | Resid mbdelay (usec) | -1.34869E-03 | +/- | 1.7E-04 |
| Sband delay (usec)      | 9.33164688375E+03 | Apriori clock (usec)     | 3.4680748E+00      | Resid sbdelay (usec) | 5.93521E-01  | +/- | 6.8E-04 |
| Phase delay (usec)      | 9.33105335279E+03 | Apriori clockrate (us/s) | 2.0000006E-09      | Resid phdelay (usec) | -1.04553E-05 | +/- | 1.2E-06 |
| Delay rate (us/s)       | 1.98002853931E+00 | Apriori rate (us/s)      | 1.98003877927E+00  | Resid rate (us/s)    | -1.02400E-05 | +/- | 8.4E-09 |
| Total phase (deg)       | 109.5             | Apriori accel (us/s/s)   | -4.94850500256E-05 | Resid phase (deg)    | -162.0       | +/- | 18.0    |

|              |          |             |                           |  |                       |                      |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 78.2 | Theor. 59.1 | Amplitude 0.163 +/- 0.026 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 112.9    | 103.1       | Search (1024X16)          | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 10.6     | 18.0        | Interp.                   | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 23.9     | 31.4        | Inc. seg. avg.            | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
|              |          |             | Inc. frq. avg.            | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

m: az 121.3 el 58.1 pa -53.4 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -5689.060 90.946 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mc.Q.207.1V25LX

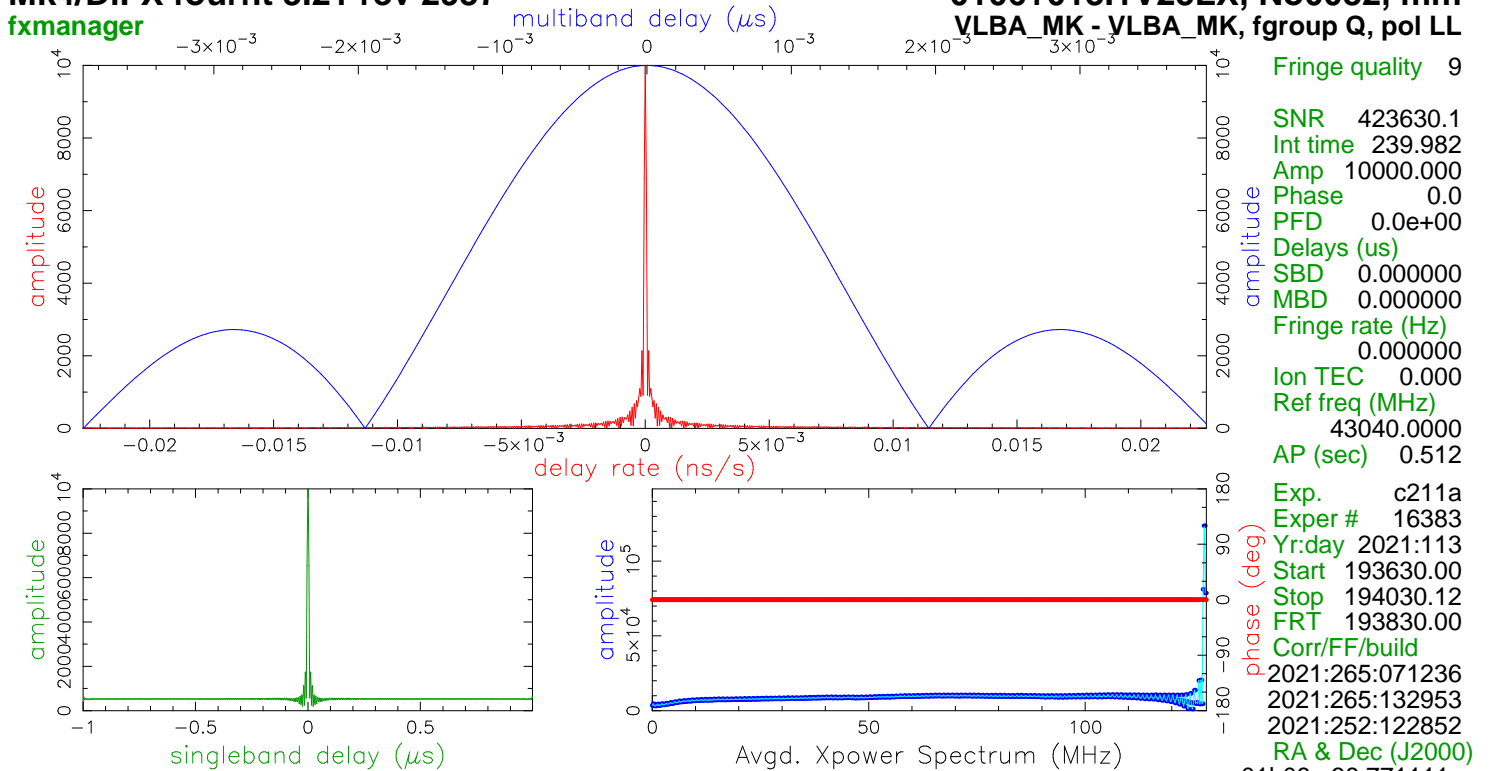


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mm

VLBA\_MK - VLBA\_MK, fgroup Q, pol LL



Fringe quality 9

SNR 423630.1

Int time 239.982

Amp 10000.000

Phase 0.0

PFD 0.0e+00

Delays (us)

SBD 0.000000

MBD 0.000000

Fringe rate (Hz)

0.000000

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132953

2021:252:122852

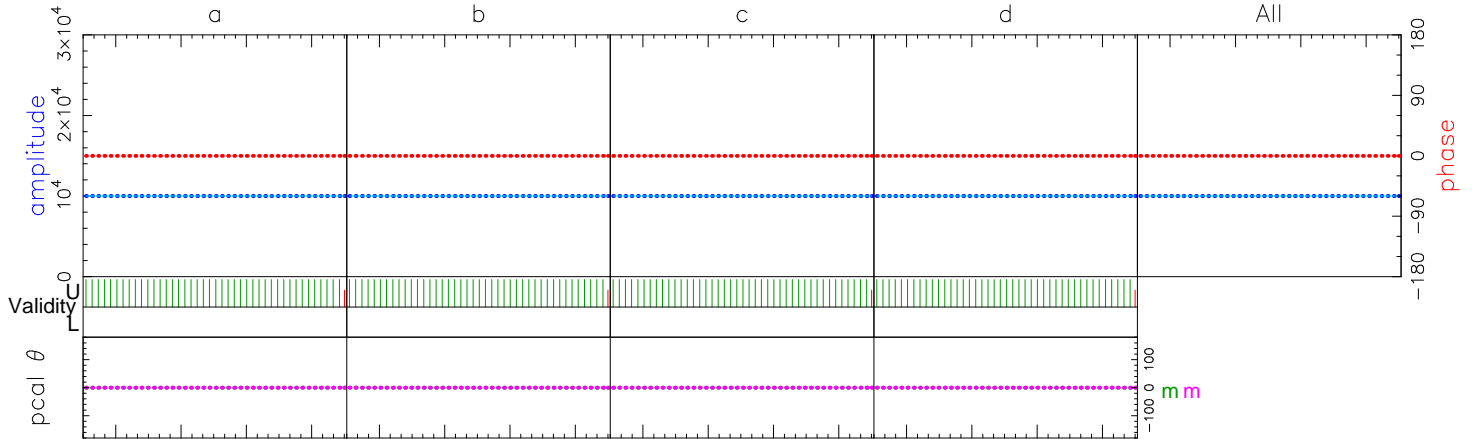
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
|-----------|-----------|-----------|-----------|------------|---------|
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 469/0 | U/L 469/0 | U/L 469/0 | U/L 469/0 | APs used   |         |
| m 1000    | m 1000    | m 1000    | m 1000    | PC freqs   |         |
| m 1000    | m 1000    | m 1000    | m 1000    | PC freqs   |         |
| m:m 0:0   | m:m 0:0   | m:m 0:0   | m:m 0:0   | PC phase   |         |
| m:m 0:0   | m:m 0:0   | m:m 0:0   | m:m 0:0   | Manl PC    |         |
| m 1000    | m 1000    | m 1000    | m 1000    | PC amp     |         |
| m 1000    | m 1000    | m 1000    | m 1000    |            |         |
| m Q00UL   | m Q01UL   | m Q02UL   | m Q03UL   | Chan ids   |         |
| m Q00UL   | m Q01UL   | m Q02UL   | m Q03UL   | Tracks     |         |
|           |           |           |           | Chan ids   |         |
|           |           |           |           | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                               |
|--------------|-----|--------|------------------|---------------------|--|-------------------------------|
| ph/seg (deg) | 0.0 | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |     |        | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

m: az 121.3 el 58.1 pa -53.4 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

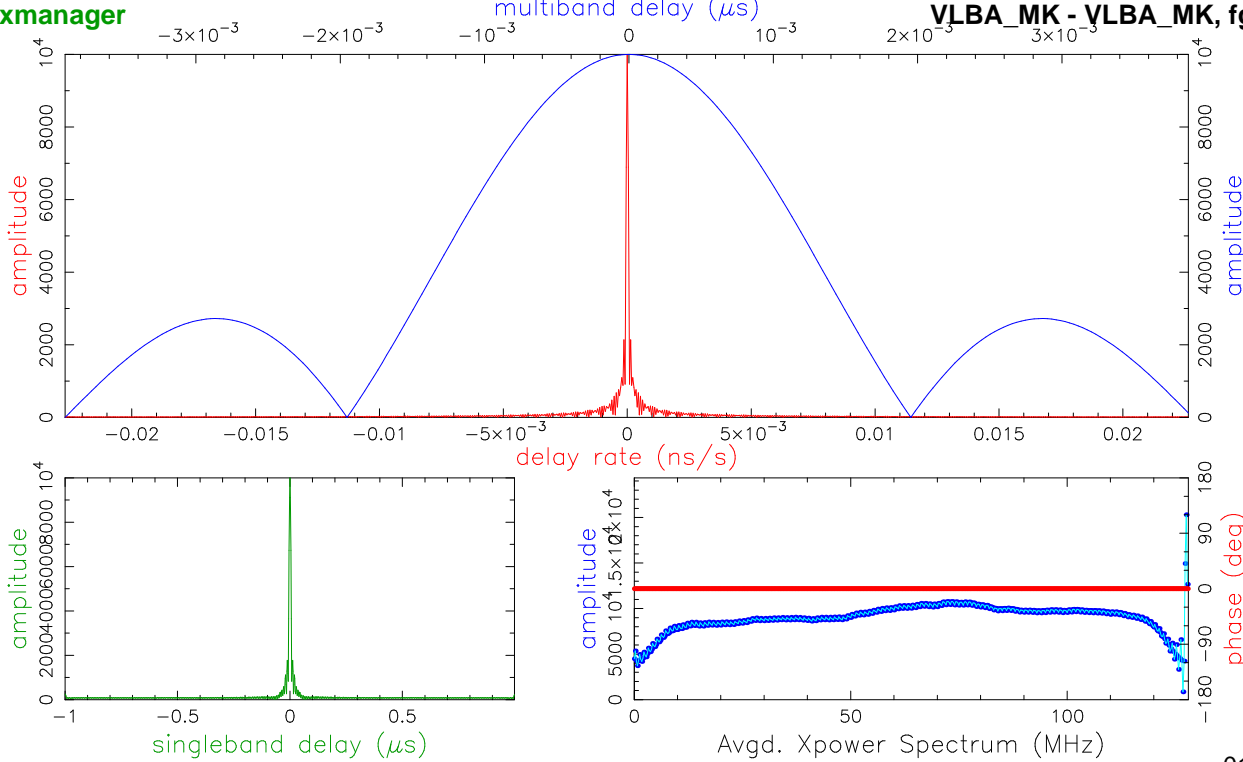
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mm.Q.163.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mm

VLBA\_MK - VLBA\_MK, fgroup Q, pol RR



Fringe quality 9

SNR 423630.1

Int time 239.982

Amp 10000.000

Phase 0.0

PFD 0.0e+00

Delays (us)

SBD 0.000000

MBD 0.000000

Fringe rate (Hz)

0.000000

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132955

2021:252:122852

RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amplitude

Phase

Validity

pca θ

m m

42912.00

43040.00

43168.00

43296.00

Freq (MHz)

0.0

10000.0

513.0

U/L 469/0

m 1000

m 1000

m:m 0:0

m:m 0:0

m 1000

m 1000

m Q00UR

m Q01UR

m Q02UR

m Q03UR

Chan ids

Tracks

Chan ids

Tracks

| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

| ph/seg (deg) | 0.0 | Theor. | 0.0 | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
|--------------|-----|--------|-----|------------------|---------------------|--|-------------------------------|
| amp/seg (%)  | 0.0 | 0.0    | 0.0 | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 0.0 | 0.0    | 0.0 | Interp.          | 0.000               | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 0.0 | 0.0    | 0.0 | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |     |        |     | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

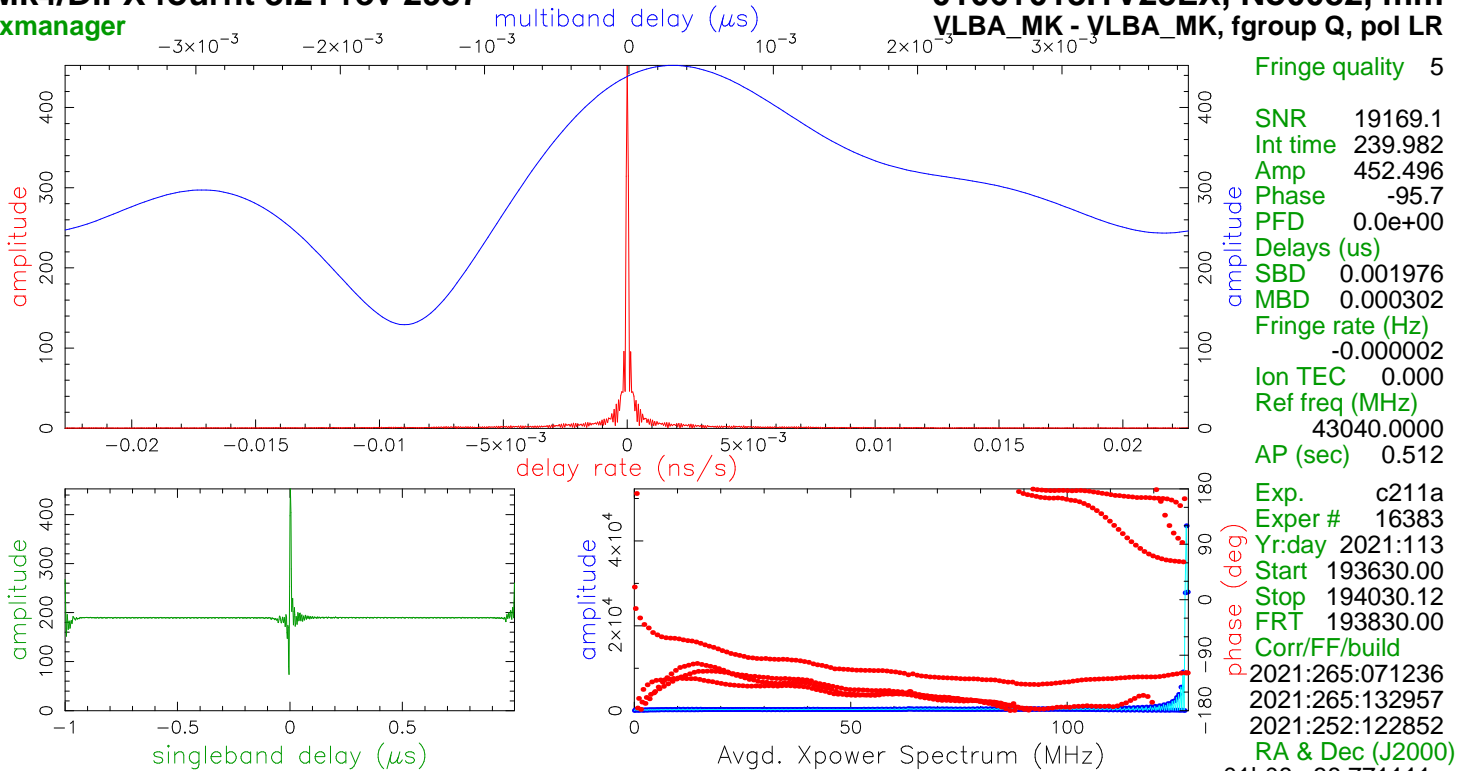
| m: az 121.3 el 58.1 pa -53.4  | m: az 121.3 el 58.1 pa -53.4                             | u,v (fr/asec) 0.000 0.000                                      | simultaneous interpolator |
|-------------------------------|--|--|---------------------------|
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mm..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mm.Q.177.1V25LX |                           |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mm

VLBA\_MK - VLBA\_MK, fgroup Q, pol LR



Fringe quality 5

SNR 19169.1

Int time 239.982

Amp 452.496

Phase -95.7

PFD 0.0e+00

Delays (us)

SBD 0.001976

MBD 0.000302

Fringe rate (Hz)

-0.000002

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132957

2021:252:122852

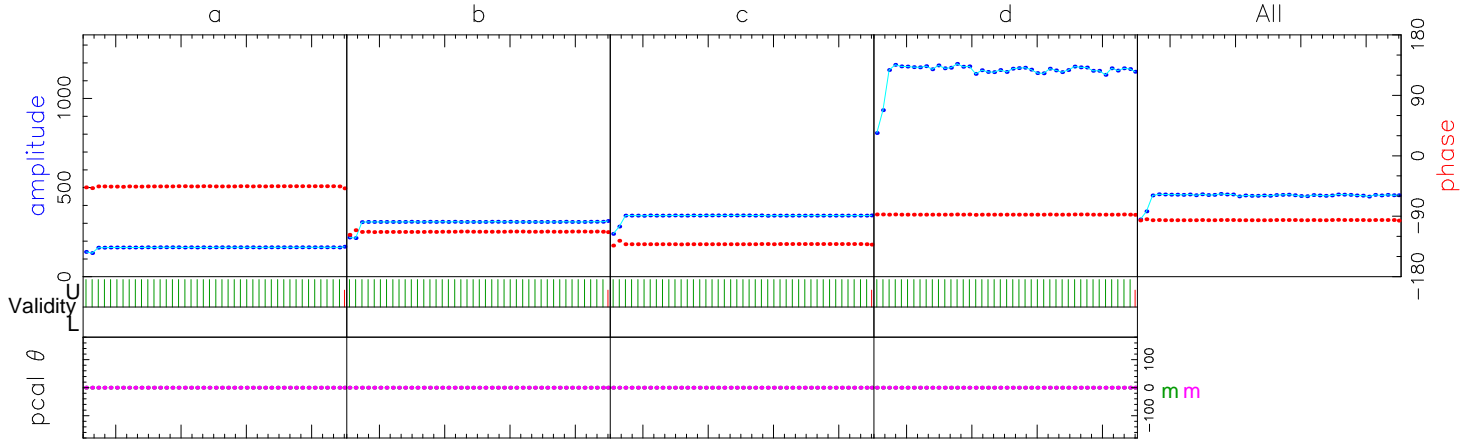
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -45.6     | -113.1   | -131.4   | -87.5    | Phase      | -95.7 |
| 163.6     | 303.7    | 339.5    | 1151.2   | Ampl.      | 489.5 |
| 1.4       | 512.8    | 513.1    | 514.1    | Sbd box    | 514.0 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| m 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| m 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| m:m 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| m:m 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| m 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| m 1000    | 1000     | 1000     | 1000     |            |       |
| m Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| m Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 3.01968750000E-04  | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | 3.01969E-04  | +/- | 5.8E-08 |
| Sband delay (usec)      | 1.97575000000E-03  | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | 1.97575E-03  | +/- | 2.2E-07 |
| Phase delay (usec)      | -6.17675200743E-06 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | -6.17675E-06 | +/- | 3.9E-10 |
| Delay rate (us/s)       | -4.82155021825E-11 | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | -4.82155E-11 | +/- | 2.8E-12 |
| Total phase (deg)       | -95.7              | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | -95.7        | +/- | 0.0     |

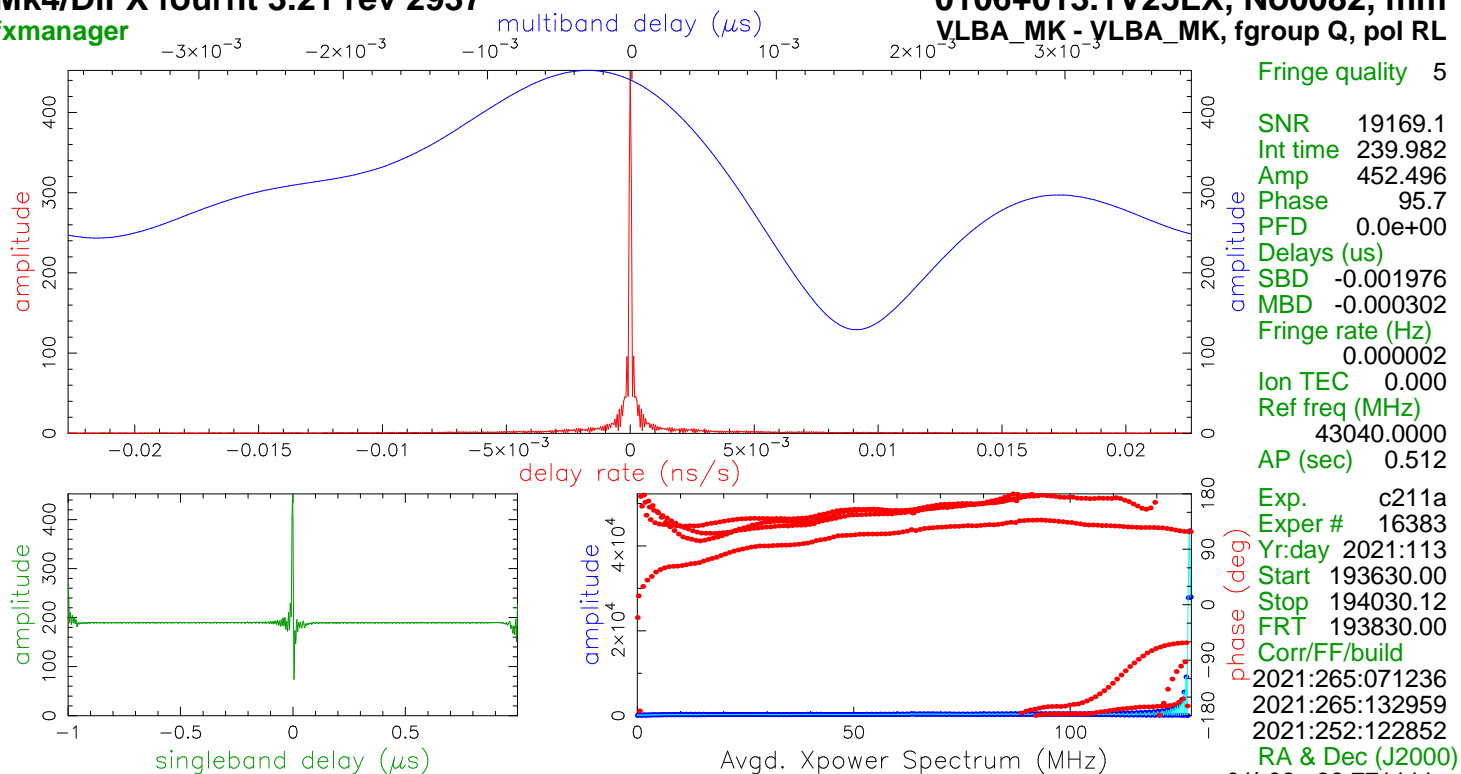
|              |      |        |                  |                   |  |                               |
|--------------|------|--------|------------------|-------------------|--|-------------------------------|
| ph/seg (deg) | 0.3  | Theor. | Amplitude        | 452.496 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 5.5  | 0.0    | Search (1024X16) | 448.274           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 45.6 | 0.0    | Interp.          | 0.000             | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 86.1 | 0.0    | Inc. seg. avg.   | 452.496           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |      |        | Inc. frq. avg.   | 489.510           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

m: az 121.3 el 58.1 pa -53.4 m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

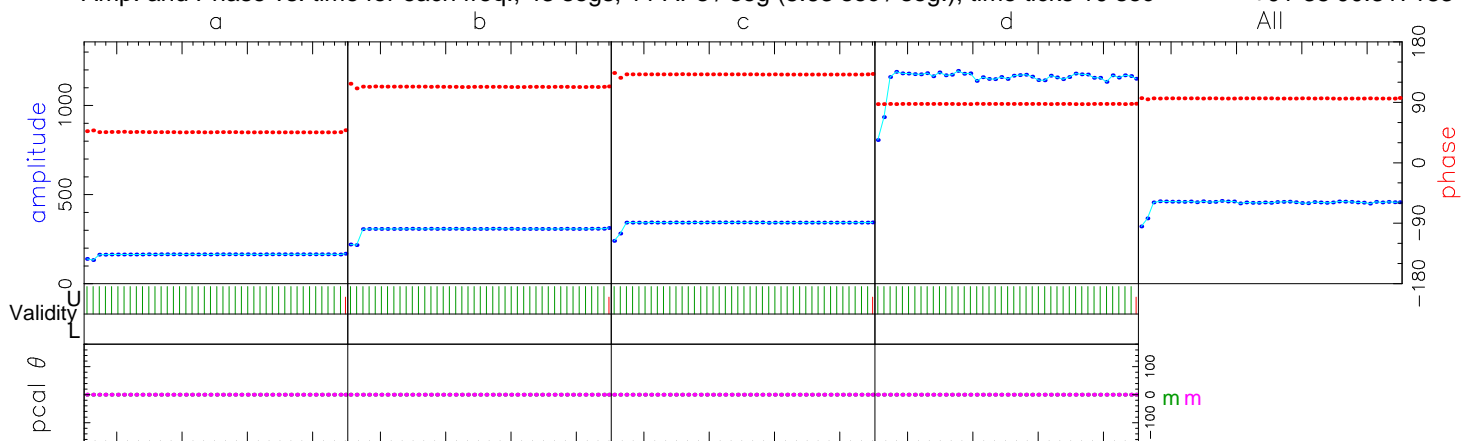
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mm..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mm.Q.192.1V25LX

## fxmanager

VLBA MK - VLBA MK, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



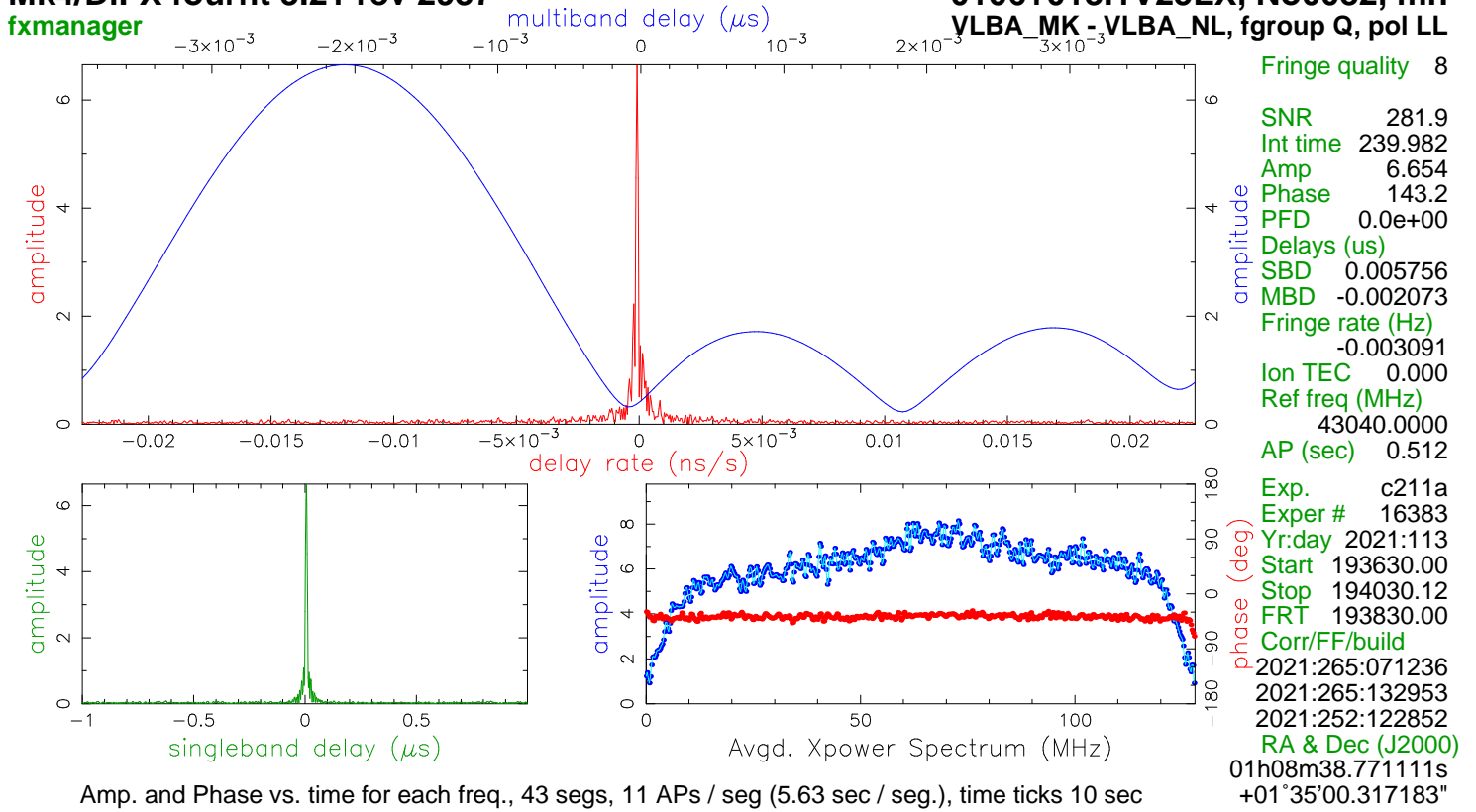
|   |                     |                          |                    |                      |  |                       |              |
|---|---------------------|--------------------------|--------------------|----------------------|--|-----------------------|--------------|
| 42912.00  | 43040.00            | 43168.00                 | 43296.00           | Freq (MHz)           | All                                    |                       |              |
| 45.6  | 113.1               | 131.4                    | 87.5               | Phase                | 95.7                                   |                       |              |
| 163.6   | 303.7               | 339.5                    | 1151.2             | Ampl.                | 489.5                                  |                       |              |
| 1.5   | 513.2               | 512.9                    | 511.9              | Sbd box              | 512.0                                  |                       |              |
| U/L 469/0   | 469/0               | 469/0                    | 469/0              | APs used             |  |                       |              |
| m 1000  | 1000                | 1000                     | 1000               | PC freqs             |  |                       |              |
| m 1000  | 1000                | 1000                     | 1000               | PC freqs             |  |                       |              |
| m:m 0:0   | 0:0                 | 0:0                      | 0:0                | PC phase             |  |                       |              |
| m:m 0:0   | 0:0                 | 0:0                      | 0:0                | ManI PC              |  |                       |              |
| m 1000  | 1000                | 1000                     | 1000               | PC amp               |  |                       |              |
| m 1000  | 1000                | 1000                     | 1000               |                      |  |                       |              |
| m Q00UR   | Q01UR               | Q02UR                    | Q03UR              | Chan ids             |  |                       |              |
|   |                     |                          |                    | Tracks               |  |                       |              |
| m Q00UL   | Q01UL               | Q02UL                    | Q03UL              | Chan ids             |  |                       |              |
|   |                     |                          |                    | Tracks               |  |                       |              |
| Group delay (usec)(sbd)   | -3.019687500000E-04 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | -3.01969E-04                           | +/-                   | 5.8E-08      |
| Sband delay (usec)  | -1.975750000000E-03 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | -1.97575E-03                           | +/-                   | 2.2E-07      |
| Phase delay (usec)  | 6.17675200729E-06   | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 6.17675E-06                            | +/-                   | 3.9E-10      |
| Delay rate (us/s)   | 4.82155021825E-11   | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 4.82155E-11                            | +/-                   | 2.8E-12      |
| Total phase (deg)   | 95.7                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 95.7                                   | +/-                   | 0.0          |
|   | RMS                 | Theor.                   | Amplitude          | 452.496 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |              |
| ph/seg (deg)  | 0.3                 | 0.0                      | Search (1024X16)   | 448.274              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000 |
| amp/seg (%)   | 5.5                 | 0.0                      | Interp.            | 0.000                | Bits/sample: 2x2                       | mb window (us)        | -0.004 0.004 |
| ph/frq (deg)  | 45.6                | 0.0                      | Inc. seg. avg.     | 452.496              | Sample rate(MSamp/s): 256              | dr window (ns/s)      | -0.023 0.023 |
| amp/frq (%)   | 86.1                | 0.0                      | Inc. frq. avg.     | 489.510              | Data rate(Mb/s): 2048                  | ion window (TEC)      | 0.00 0.00    |
| m: az 121.3 el 58.1 pa -53.4 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  |                     |                          |                    |                      |  |                       |              |
| Control file: cf_1234_qmva7mm Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mm..1V25LX Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mm.Q.209.1V25LX |                     |                          |                    |                      |  |                       |              |

## Mk4/DiFX fourfit 3.21 rev 2937

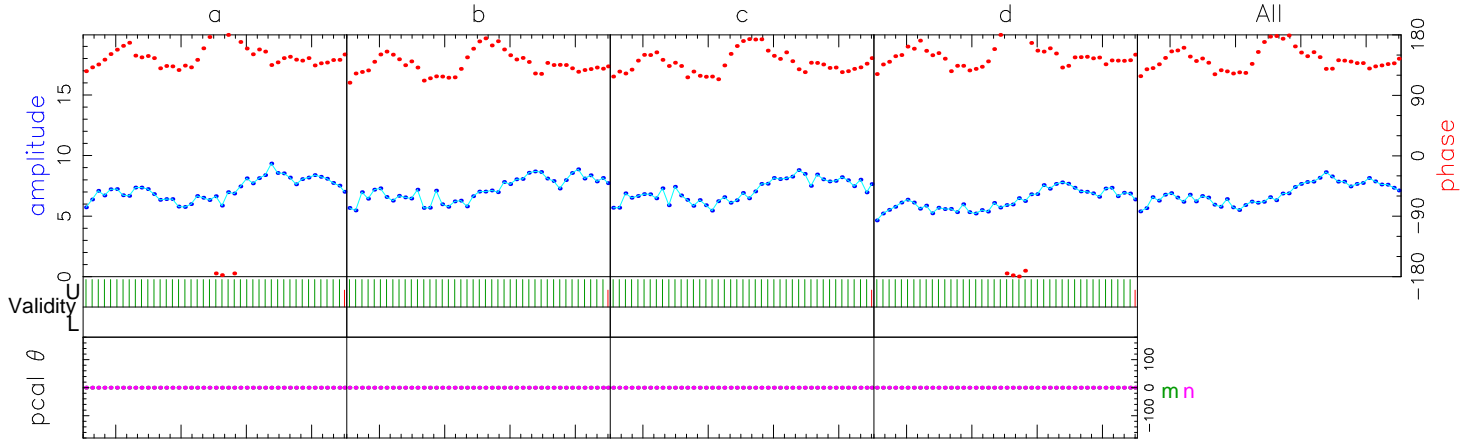
fxmanager

0106+013.1V25LX, No0082, mn

VLBA\_MK - VLBA\_NL, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| 148.7     | 136.7    | 138.6    | 149.6    | Phase      | 143.2 |
| 7.0       | 6.9      | 6.8      | 6.0      | Ampl.      | 6.7   |
| 515.8     | 515.9    | 516.1    | 516.1    | Sbd box    | 515.9 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| m 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| m:n 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| m:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| m 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| n 1000    | 1000     | 1000     | 1000     |            |       |
| m Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| n Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.20636273574E+03 | Apriori delay (usec)     | 5.20635699636E+03  | Resid mbdelay (usec) | -2.07311E-03 | +/- | 3.9E-06 |
| Sband delay (usec)      | 5.20636275198E+03 | Apriori clock (usec)     | 1.0242687E+01      | Resid sbdelay (usec) | 5.75563E-03  | +/- | 1.5E-05 |
| Phase delay (usec)      | 5.20635700560E+03 | Apriori clockrate (us/s) | 1.8000006E-08      | Resid phdelay (usec) | 9.24212E-06  | +/- | 2.6E-08 |
| Delay rate (us/s)       | 1.35280196038E+00 | Apriori rate (us/s)      | 1.35280203220E+00  | Resid rate (us/s)    | -7.18241E-08 | +/- | 1.9E-10 |
| Total phase (deg)       | 187.6             | Apriori accel (us/s/s)   | -2.87191950510E-05 | Resid phase (deg)    | 143.2        | +/- | 0.4     |

|              |      |        |                  |                 |  |                       |                   |                  |       |      |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|------|
|              | RMS  | Theor. | Amplitude        | 6.654 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
| ph/seg (deg) | 16.0 | 1.3    | Search (1024X16) | 6.284           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 13.3 | 2.3    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 8.2  | 0.4    | Inc. seg. avg.   | 6.902           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 5.6  | 0.7    | Inc. frq. avg.   | 6.687           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

m: az 121.3 el 58.1 pa -53.4 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) -3883.798 -1480.465 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mn.Q.162.1V25LX

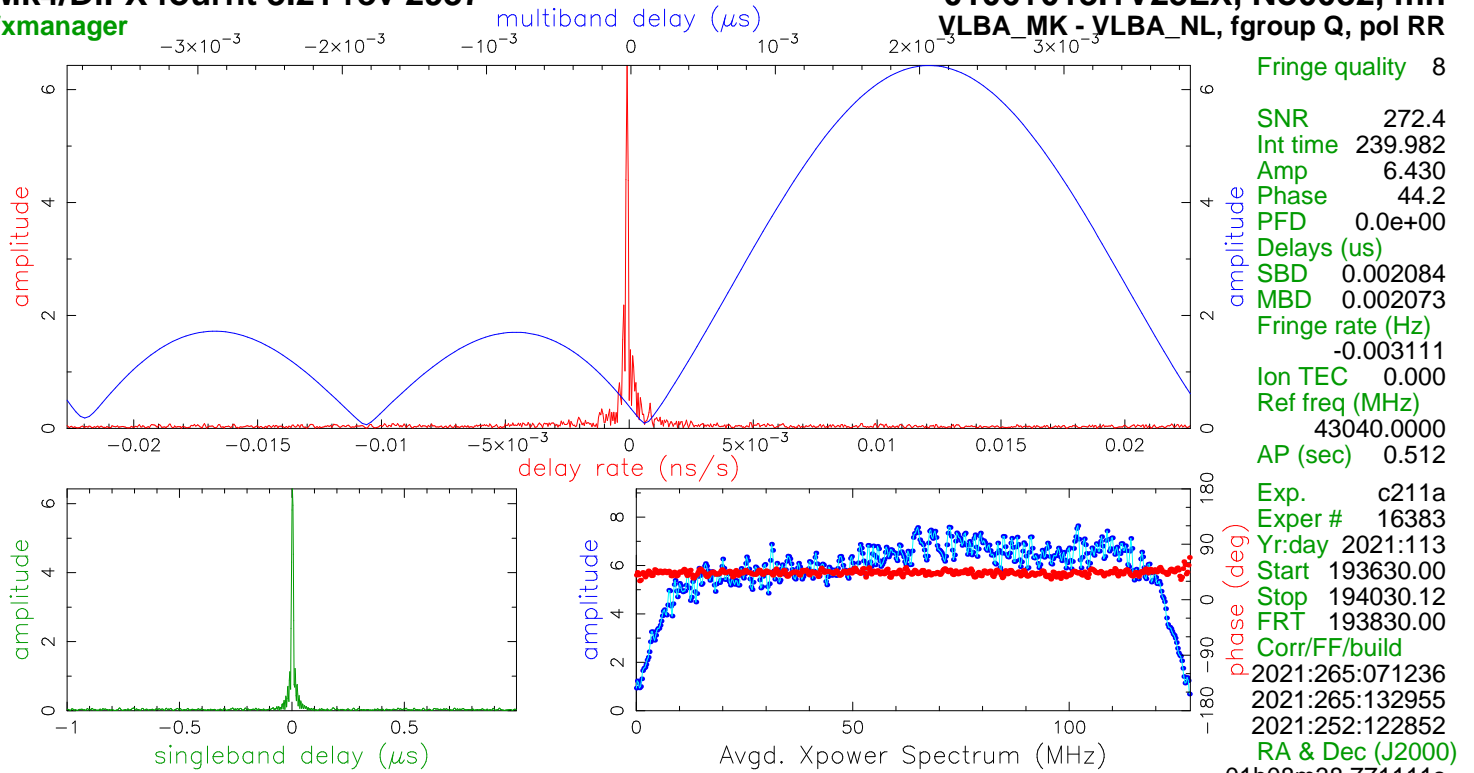


## Mk4/DiFX fourfit 3.21 rev 2937

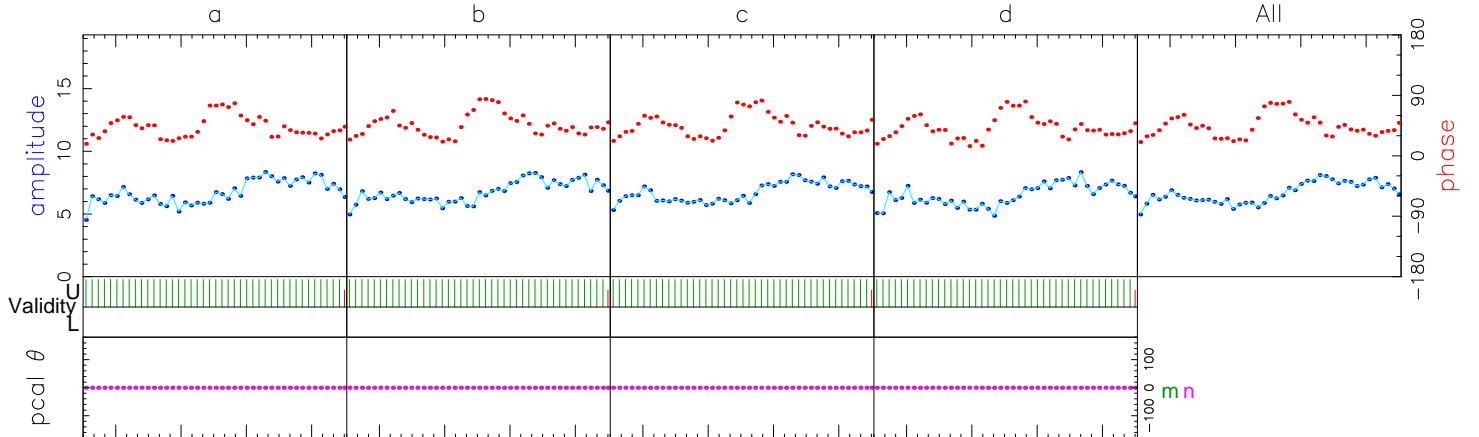
fxmanager

0106+013.1V25LX, No0082, mn

VLBA\_MK - VLBA\_NL, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



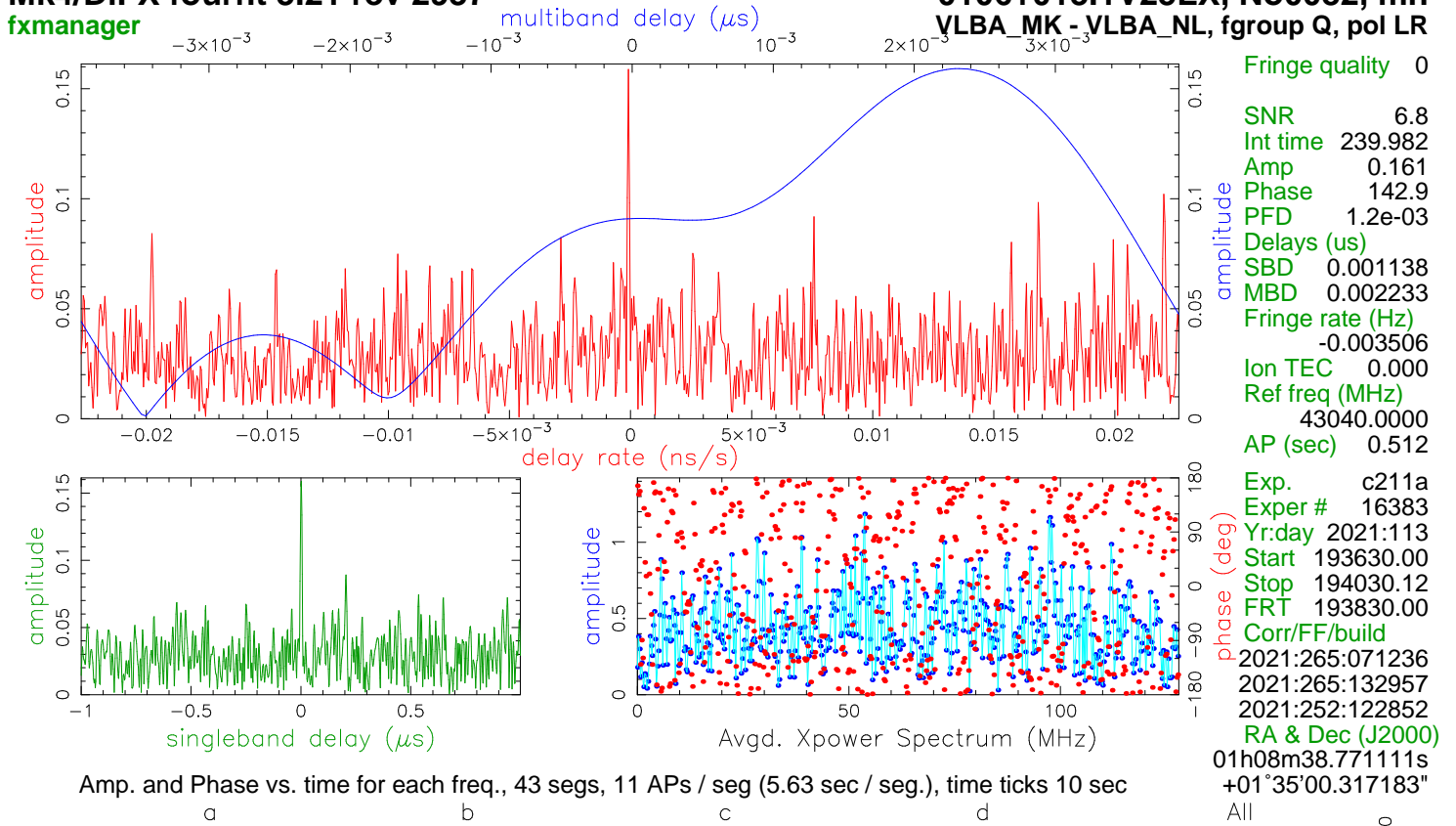
|                               |  |  |                     |  |                       |                   |                  |                           |
|-------------------------------|--|--|---------------------|--|-----------------------|-------------------|------------------|---------------------------|
|                               | 42912.00   | 43040.00   | 43168.00            | 43296.00                               | Freq (MHz)            | All               |                  |                           |
|                               | 43.0   | 46.2   | 45.5                | 42.0                                   | Phase                 | 44.2              |                  |                           |
|                               | 6.5  | 6.5  | 6.5                 | 6.2                                    | Ampl.                 | 6.4               |                  |                           |
|                               | 514.3  | 514.0  | 514.0               | 514.0                                  | Sbd box               | 514.1             |                  |                           |
| U/L                           | 469/0  | 469/0  | 469/0               | 469/0                                  | APs used              |                   |                  |                           |
| m                             | 1000   | 1000   | 1000                | 1000                                   | PC freqs              |                   |                  |                           |
| n                             | 1000   | 1000   | 1000                | 1000                                   | PC freqs              |                   |                  |                           |
| m:n                           | 0:0  | 0:0  | 0:0                 | 0:0                                    | PC phase              |                   |                  |                           |
| m:n                           | 0:0  | 0:0  | 0:0                 | 0:0                                    | ManI PC               |                   |                  |                           |
| m                             | 1000   | 1000   | 1000                | 1000                                   | PC amp                |                   |                  |                           |
| n                             | 1000   | 1000   | 1000                | 1000                                   |                       |                   |                  |                           |
| m                             | Q00UR  | Q01UR  | Q02UR               | Q03UR                                  | Chan ids              |                   |                  |                           |
| n                             | Q00UR  | Q01UR  | Q02UR               | Q03UR                                  | Tracks                |                   |                  |                           |
|                               |  |  |                     |  | Chan ids              |                   |                  |                           |
|                               |  |  |                     |  | Tracks                |                   |                  |                           |
| Group delay (usec)(sbd)       | 5.20635906912E+03  | Apriori delay (usec)   | 5.20635699636E+03   | Resid mbdelay (usec)                   | 2.07276E-03           | +/- 4.1E-06       |                  |                           |
| Sband delay (usec)            | 5.20635907998E+03  | Apriori clock (usec)   | 1.0242687E+01       | Resid sbdelay (usec)                   | 2.08362E-03           | +/- 1.6E-05       |                  |                           |
| Phase delay (usec)            | 5.20635699921E+03  | Apriori clockrate (us/s)                                       | 1.8000006E-08       | Resid phdelay (usec)                   | 2.85020E-06           | +/- 2.7E-08       |                  |                           |
| Delay rate (us/s)             | 1.35280195992E+00  | Apriori rate (us/s)  | 1.35280203220E+00   | Resid rate (us/s)                      | -7.22864E-08          | +/- 2.0E-10       |                  |                           |
| Total phase (deg)             | 88.5   | Apriori accel (us/s/s)   | -2.87191950510E-05  | Resid phase (deg)                      | 44.2                  | +/- 0.4           |                  |                           |
| RMS                           | Theor.   | Amplitude  | 6.430 +/- 0.024     | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |                           |
| ph/seg (deg)                  | 16.3   | Search (1024X16)   | 6.077               | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |                           |
| amp/seg (%)                   | 13.0   | Interp.  | 0.000               | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |                           |
| ph/frq (deg)                  | 2.5  | Inc. seg. avg.   | 6.682               | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023     |                           |
| amp/frq (%)                   | 1.7  | Inc. frq. avg.   | 6.431               | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| m: az 121.3 el 58.1 pa -53.4  | n: az 229.8 el 37.9 pa 34.8                              | u,v (fr/asec)  | -3883.798 -1480.465 |  |                       |                   |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mn..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mn.Q.178.1V25LX |                     |  |                       |                   |                  |                           |

## Mk4/DiFX fourfit 3.21 rev 2937

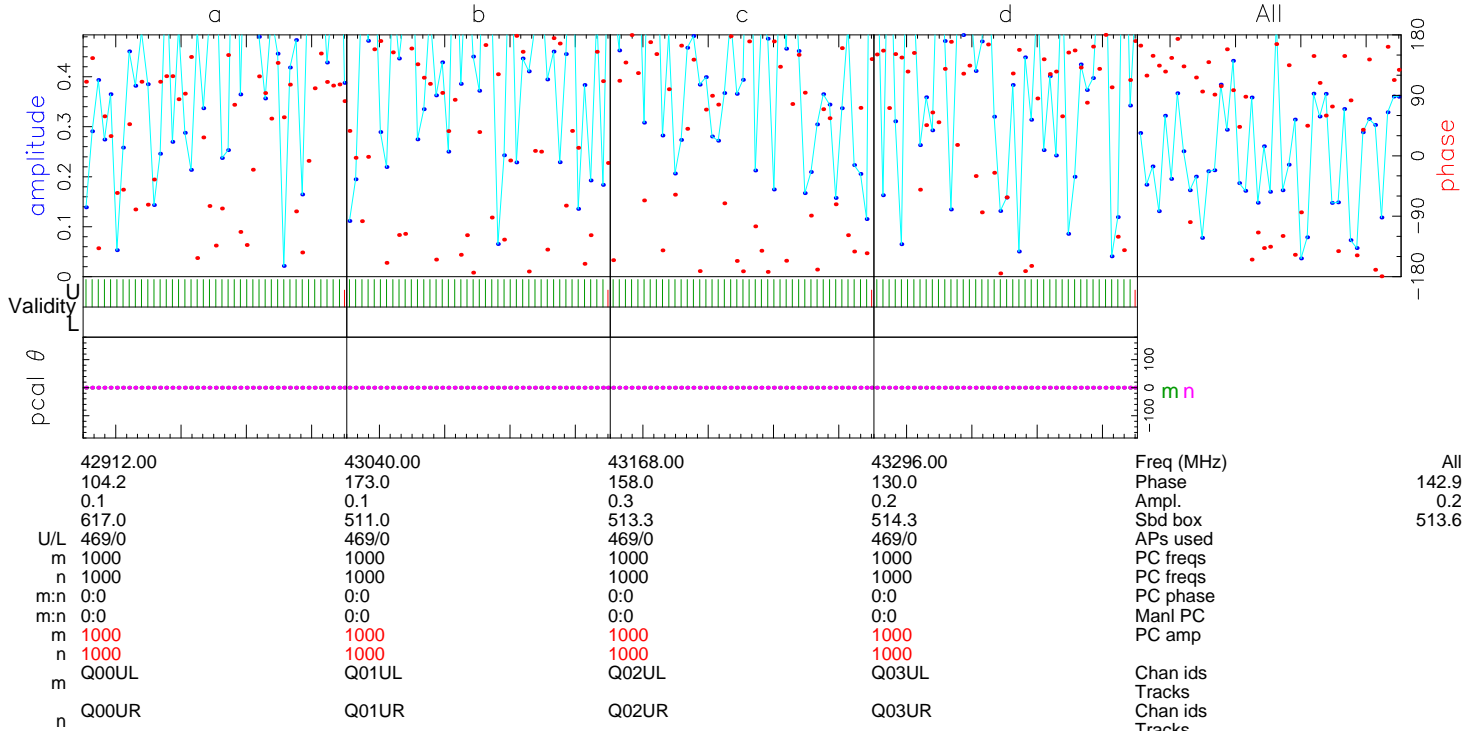
fxmanager

0106+013.1V25LX, No0082, mn

VLBA\_MK - VLBA\_NL, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



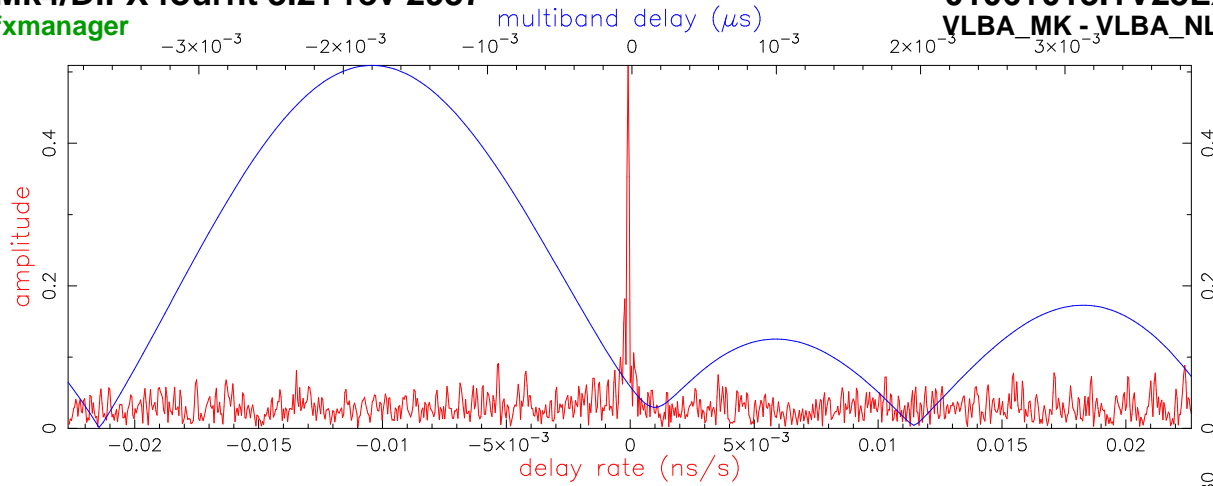
|                               |                   |  |                    |  |                       |                      |                            |
|-------------------------------|-------------------|--|--------------------|--|-----------------------|----------------------|----------------------------|
| Group delay (usec)(sbd)       | 5.20635922937E+03 | Apriori delay (usec)                                     | 5.20635699636E+03  | Resid mbdelay (usec)   | 2.23301E-03           | +/-                  | 1.6E-04                    |
| Sband delay (usec)            | 5.20635813448E+03 | Apriori clock (usec)                                     | 1.0242687E+01      | Resid sbdelay (usec)   | 1.13812E-03           | +/-                  | 6.3E-04                    |
| Phase delay (usec)            | 5.20635700558E+03 | Apriori clockrate (us/s)                                 | 1.8000006E-08      | Resid phdelay (usec)   | 9.22107E-06           | +/-                  | 1.1E-06                    |
| Delay rate (us/s)             | 1.35280195074E+00 | Apriori rate (us/s)                                      | 1.35280203220E+00  | Resid rate (us/s)  | -8.14587E-08          | +/-                  | 7.8E-09                    |
| Total phase (deg)             | 187.2             | Apriori accel (us/s/s)                                   | -2.87191950510E-05 | Resid phase (deg)  | 142.9                 | +/-                  | 16.8                       |
| RMS                           | 59.7              | Theor.   | 55.0               | Amplitude  | 0.161 +/- 0.024       |                      |                            |
| ph/seg (deg)                  | 84.3              | Search (1024X16)   | 0.156              | Pcal mode: MANUAL, MANUAL                                      | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)                   | 84.3              | Interp.  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                         | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg)                  | 37.4              | Inc. seg. avg.   | 0.166              | Bits/sample: 2x2   | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)                   | 40.3              | Inc. frq. avg.   | 0.165              | Sample rate(MSamp/s): 256                                      |                       | dr window (ns/s)     | -0.023 0.023               |
| m: az 121.3 el 58.1 pa -53.4  |                   | n: az 229.8 el 37.9 pa 34.8                              |                    | Data rate(Mb/s): 2048  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |
| Control file: cf_1234_gmva7mm |                   | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mn..1V25LX |                    | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mn.Q.191.1V25LX |                       |                      |                            |

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

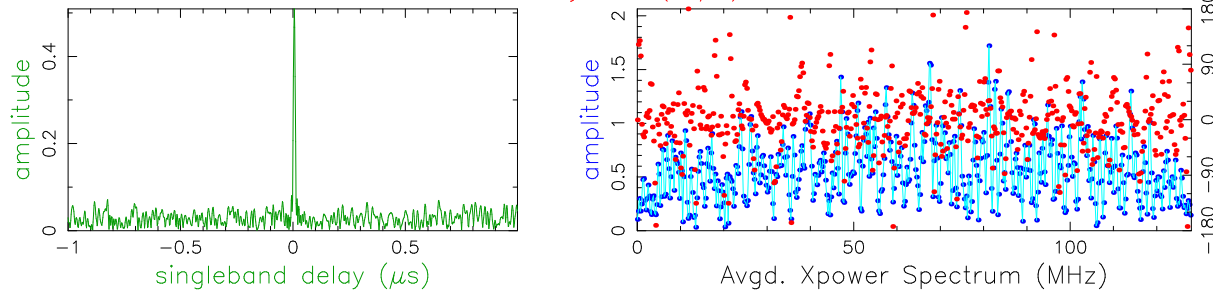
0106+013.1V25LX, No0082, mn

VLBA\_MK - VLBA\_NL, fgroup Q, pol RL



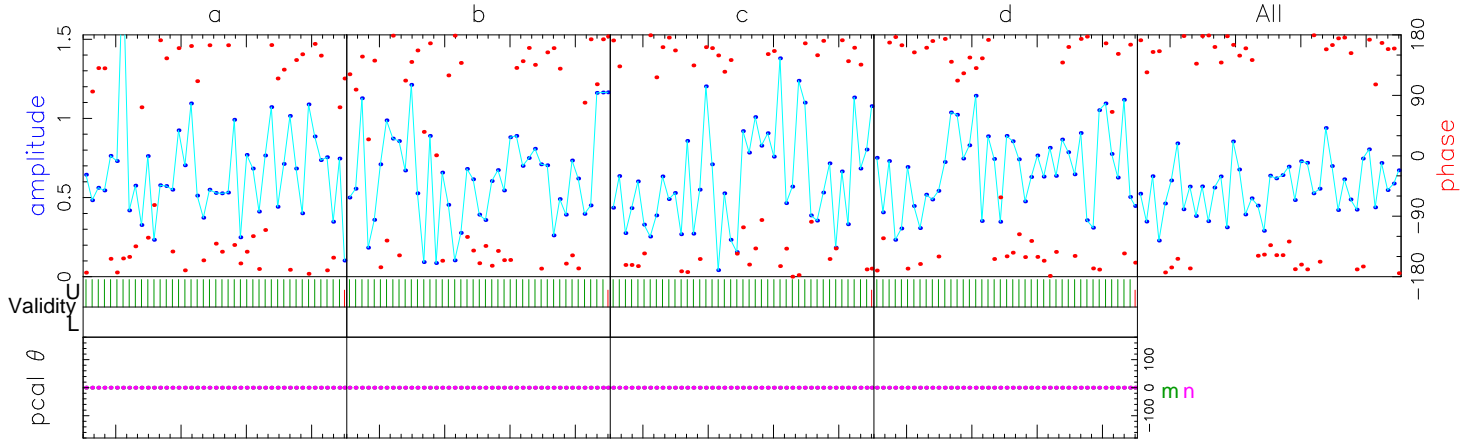
Fringe quality 9

SNR 21.6  
Int time 239.982  
Amp 0.509  
Phase 177.9  
PFD 0.0e+00  
Delays (us)  
SBD 0.005853  
MBD -0.001802  
Fringe rate (Hz)  
-0.003040  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132958  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | -177.9   | 169.5    | -179.0   | 178.4    | Phase      | 177.9 |
|     | 0.5      | 0.5      | 0.5      | 0.5      | Ampl.      | 0.5   |
|     | 516.1    | 515.3    | 516.4    | 516.1    | Sbd box    | 516.0 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| n   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| m:n | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| m:n | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| m   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| n   | 1000     | 1000     | 1000     | 1000     |            |       |
| m   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| n   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

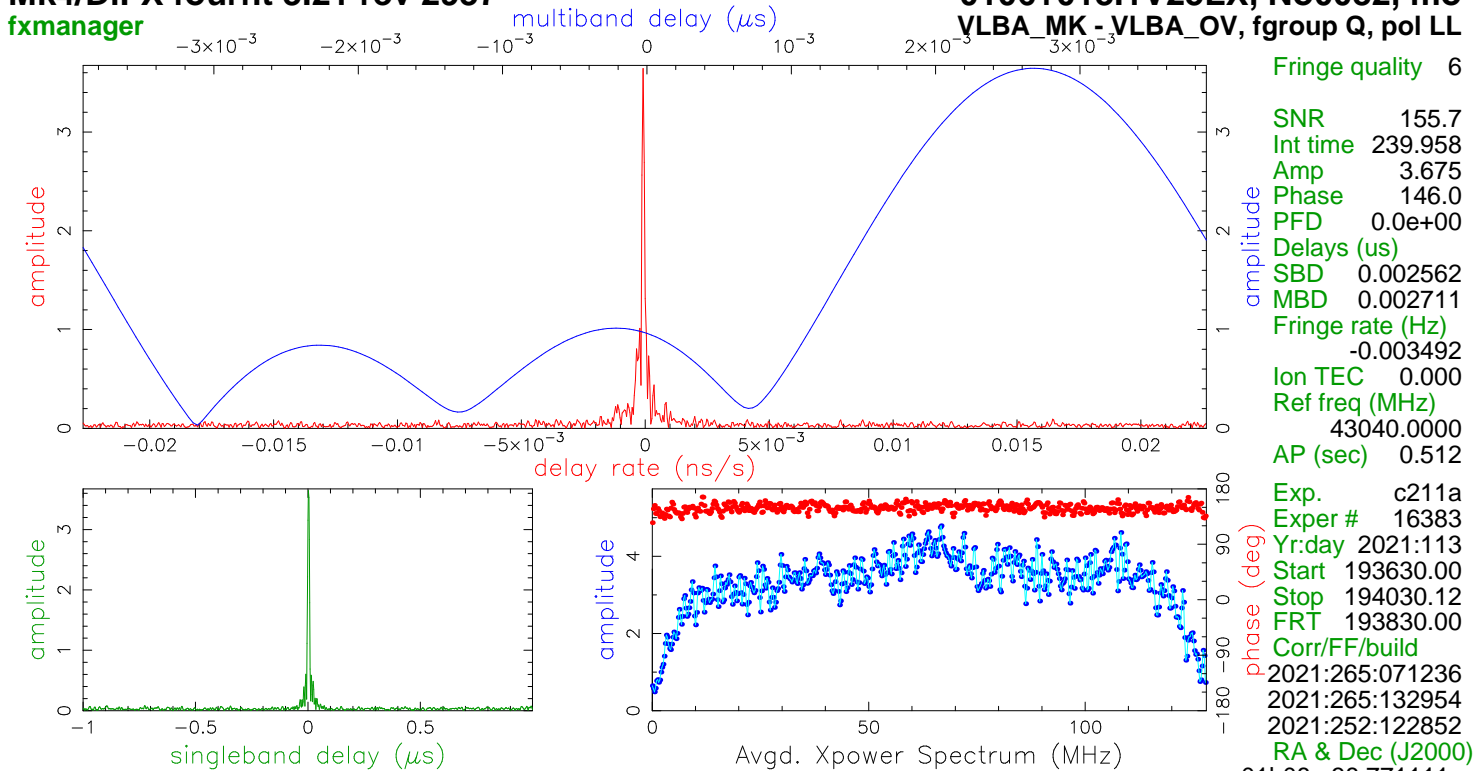
|                               |  |  |                     |  |                                 |                  |                           |
|-------------------------------|--|--|---------------------|--|---------------------------------|------------------|---------------------------|
| Group delay (usec)(sbd)       | 5.20636300678E+03  | Apriori delay (usec)   | 5.20635699636E+03   | Resid mbdelay (usec)                   | -1.80208E-03                    | +/-              | 5.2E-05                   |
| Sband delay (usec)            | 5.20636284936E+03  | Apriori clock (usec)   | 1.0242687E+01       | Resid sbdelay (usec)                   | 5.85300E-03                     | +/-              | 2.0E-04                   |
| Phase delay (usec)            | 5.20635700784E+03  | Apriori clockrate (us/s)                                       | 1.8000006E-08       | Resid phdelay (usec)                   | 1.14817E-05                     | +/-              | 3.4E-07                   |
| Delay rate (us/s)             | 1.35280196156E+00  | Apriori rate (us/s)  | 1.35280203220E+00   | Resid rate (us/s)                      | -7.06385E-08                    | +/-              | 2.5E-09                   |
| Total phase (deg)             | 222.3  | Apriori accel (us/s/s)   | -2.87191950510E-05  | Resid phase (deg)                      | 177.9                           | +/-              | 5.3                       |
|                               |  |  |                     |  |                                 |                  |                           |
| ph/seg (deg)                  | RMS 26.8 Theor. 17.4                                     | Amplitude  | 0.509 +/- 0.024     | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5           |                  |                           |
| amp/seg (%)                   | 33.1 30.4  | Search (1024X16)   | 0.474               | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)                  | -1.000           | 1.000                     |
| ph/frq (deg)                  | 7.0 5.3  | Interp.  | 0.000               | Bits/sample: 2x2                       | SampCntNorm: enabled            | mb window (us)   | -0.004 0.004              |
| amp/frq (%)                   | 4.4 9.3  | Inc. seg. avg.   | 0.540               | Sample rate(MISamp/s): 256             |                                 | dr window (ns/s) | -0.023 0.023              |
|                               |  | Inc. frq. avg.   | 0.509               | Data rate(Mb/s): 2048                  | nlags: 512 t_coherence infinite | ion window (TEC) | 0.00 0.00                 |
| m: az 121.3 el 58.1 pa -53.4  | n: az 229.8 el 37.9 pa 34.8                              | u,v (fr/asec)  | -3883.798 -1480.465 |  |                                 |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mn..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mn.Q.205.1V25LX |                     |  |                                 |                  |                           |

Mk4/DiFX fourfit 3.21 rev 2937

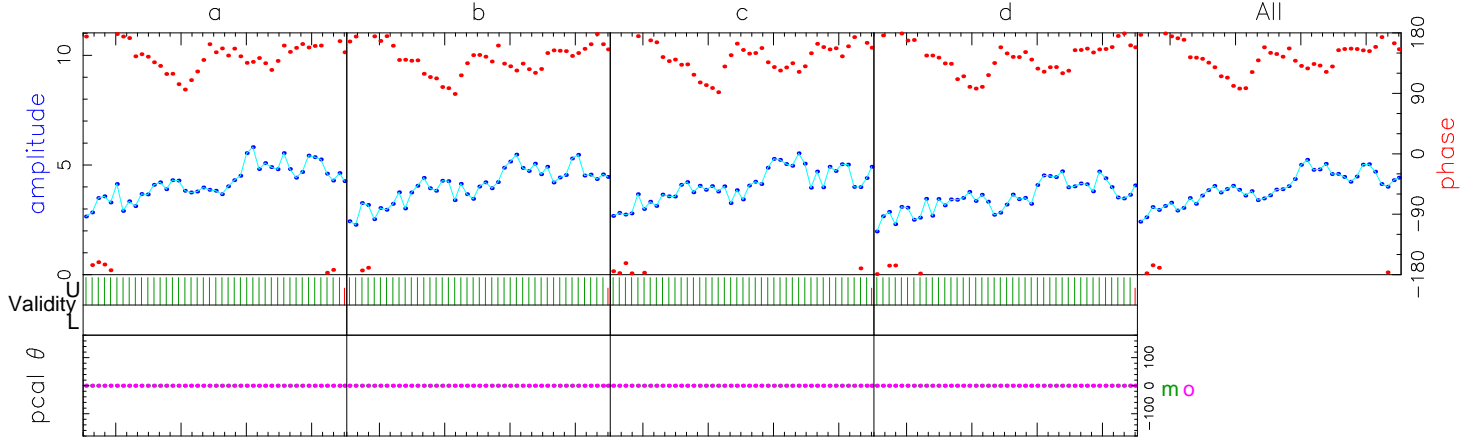
fxmanager

0106+013.1V25LX, No0082, mo

VLBA\_MK - VLBA\_OV, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 150.6    | 142.2    | 146.2    | 144.8    | Phase      | 146.0 |
| m   | 3.9      | 3.8      | 3.7      | 3.2      | Ampl.      | 3.6   |
| o   | 514.3    | 514.3    | 514.4    | 514.3    | Sbd box    | 514.3 |
| m:o | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| m:o | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| m:o | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| m   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| m   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 1.17152428702E+03 | Apriori delay (usec)     | 1.17152157585E+03  | Resid mbdelay (usec) | 2.71117E-03  | +/- | 7.1E-06 |
| Sband delay (usec)      | 1.17152413748E+03 | Apriori clock (usec)     | 1.2004389E+01      | Resid sbdelay (usec) | 2.56163E-03  | +/- | 2.8E-05 |
| Phase delay (usec)      | 1.17152158528E+03 | Apriori clockrate (us/s) | -4.2000013E-08     | Resid phdelay (usec) | 9.42339E-06  | +/- | 4.8E-08 |
| Delay rate (us/s)       | 8.80258138253E-01 | Apriori rate (us/s)      | 8.80258219383E-01  | Resid rate (us/s)    | -8.11297E-08 | +/- | 3.4E-10 |
| Total phase (deg)       | 10.9              | Apriori accel (us/s/s)   | -7.05136451403E-06 | Resid phase (deg)    | 146.0        | +/- | 0.7     |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 3.675 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 24.2 | 2.4    | Search (1024X16) | 3.524           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 20.5 | 4.2    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 4.3  | 0.7    | Inc. seg. avg.   | 3.951           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 7.0  | 1.3    | Inc. frq. avg.   | 3.649           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

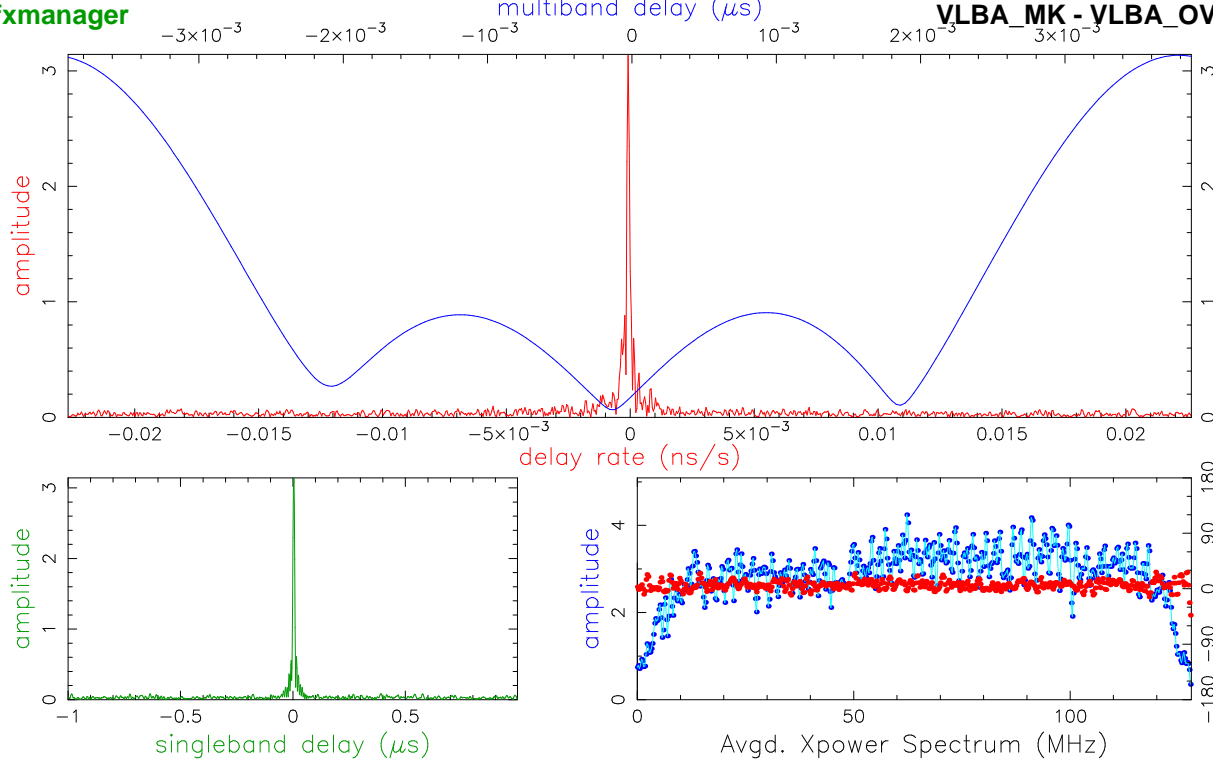
m: az 121.3 el 58.1 pa -53.4 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) -2522.055 -1184.828 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mo.Q.165.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mo

VLBA\_MK - VLBA\_OV, fgroup Q, pol RR



Fringe quality 6

SNR 133.1

Int time 239.958

Amp 3.143

Phase -178.8

PFD 0.0e+00

Delays (us)

SBD 0.003572

MBD -0.004045

Fringe rate (Hz)

-0.003478

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132955

2021:252:122852

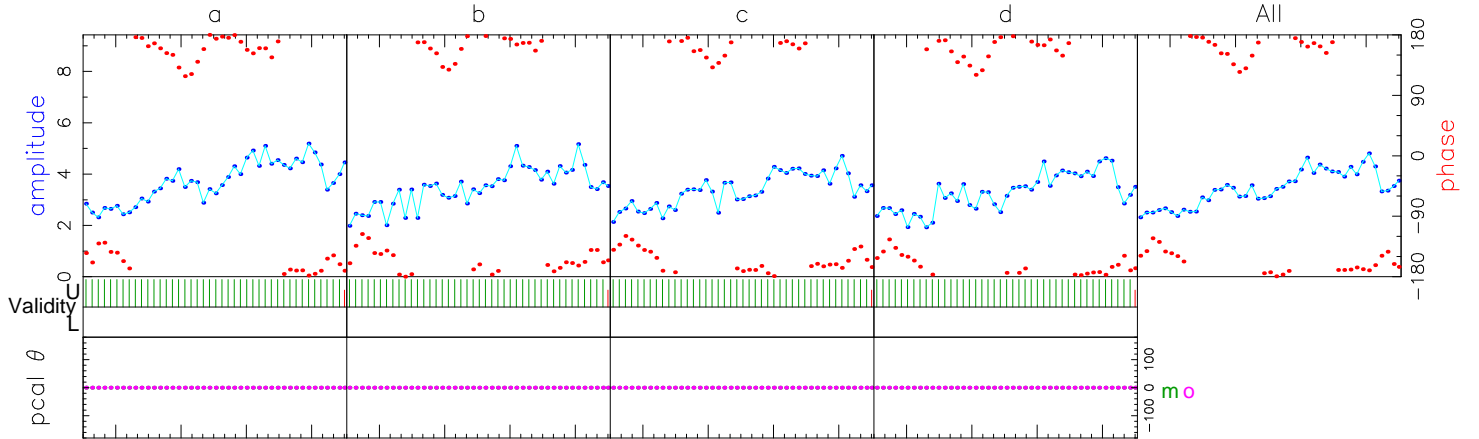
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
| U/L | 175.4    | -174.7   | -172.9   | 177.6    | Phase      | -178.8 |
| m   | 3.4      | 3.2      | 3.1      | 3.0      | Ampl.      | 3.1    |
| o   | 515.0    | 514.9    | 514.7    | 514.6    | Sbd box    | 514.8  |
| m   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| o   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| m   | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| o   | 1000     | 1000     | 1000     | 1000     | Manl PC    |        |
| m   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| m   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| m   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 1.17152534292E+03 | Apriori delay (usec)     | 1.17152157585E+03  | Resid mbdelay (usec) | -4.04544E-03 | +/- | 8.4E-06 |
| Sband delay (usec)      | 1.17152514823E+03 | Apriori clock (usec)     | 1.2004389E+01      | Resid sbdelay (usec) | 3.57238E-03  | +/- | 3.2E-05 |
| Phase delay (usec)      | 1.17152156432E+03 | Apriori clockrate (us/s) | -4.2000013E-08     | Resid phdelay (usec) | -1.15371E-05 | +/- | 5.6E-08 |
| Delay rate (us/s)       | 8.80258138565E-01 | Apriori rate (us/s)      | 8.80258219383E-01  | Resid rate (us/s)    | -8.08177E-08 | +/- | 4.0E-10 |
| Total phase (deg)       | 46.2              | Apriori accel (us/s/s)   | -7.05136451403E-06 | Resid phase (deg)    | -178.8       | +/- | 0.9     |

|              |      |        |                  |                 |  |                       |                   |                  |       |      |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|------|
|              | RMS  | Theor. | Amplitude        | 3.143 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
| ph/seg (deg) | 25.9 | 2.8    | Search (1024X16) | 3.083           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 23.4 | 4.9    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 7.0  | 0.9    | Inc. seg. avg.   | 3.432           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 4.4  | 1.5    | Inc. frq. avg.   | 3.146           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

m: az 121.3 el 58.1 pa -53.4 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) -2522.055 -1184.828 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mo.Q.181.1V25LX

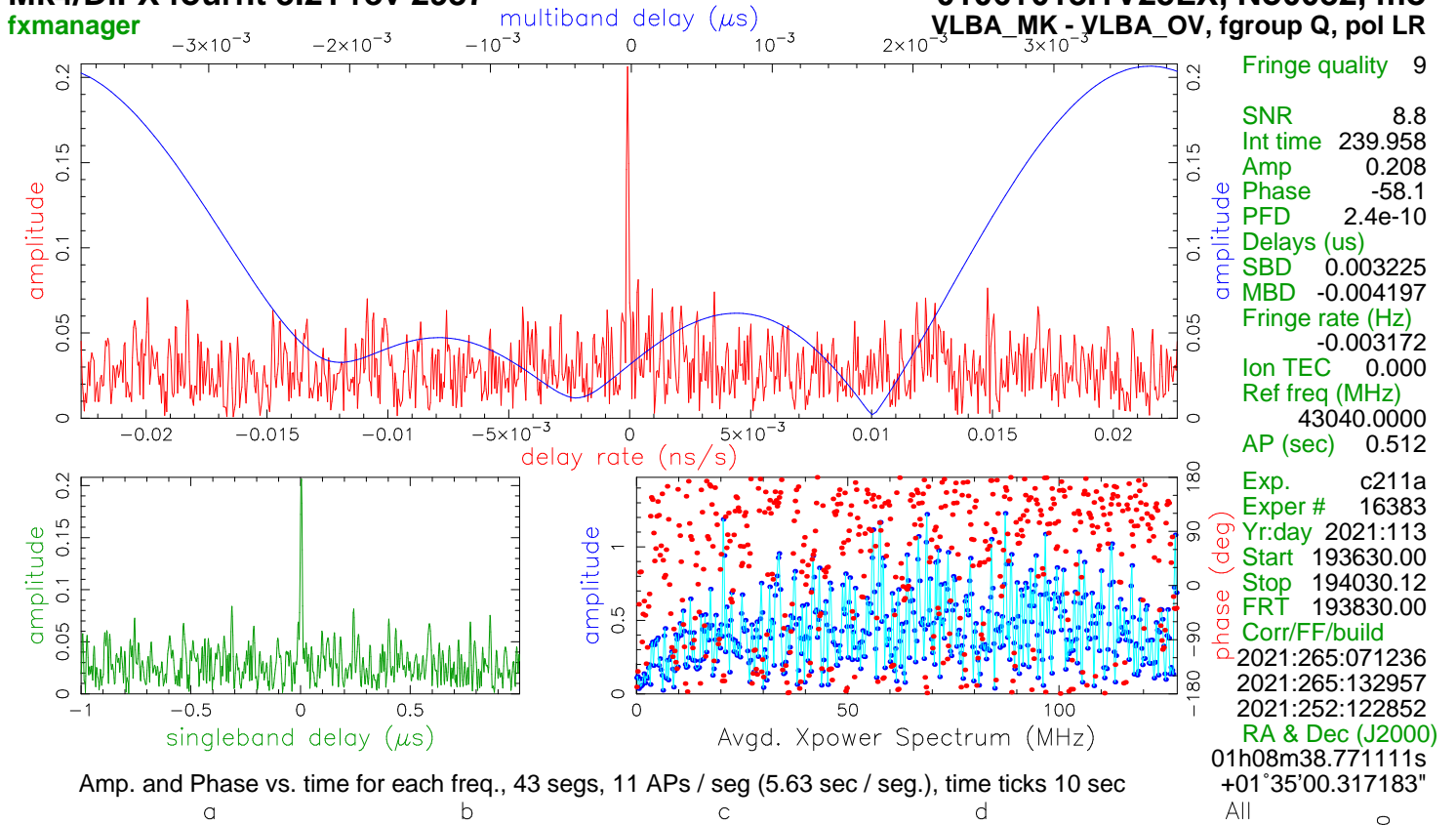


## Mk4/DiFX fourfit 3.21 rev 2937

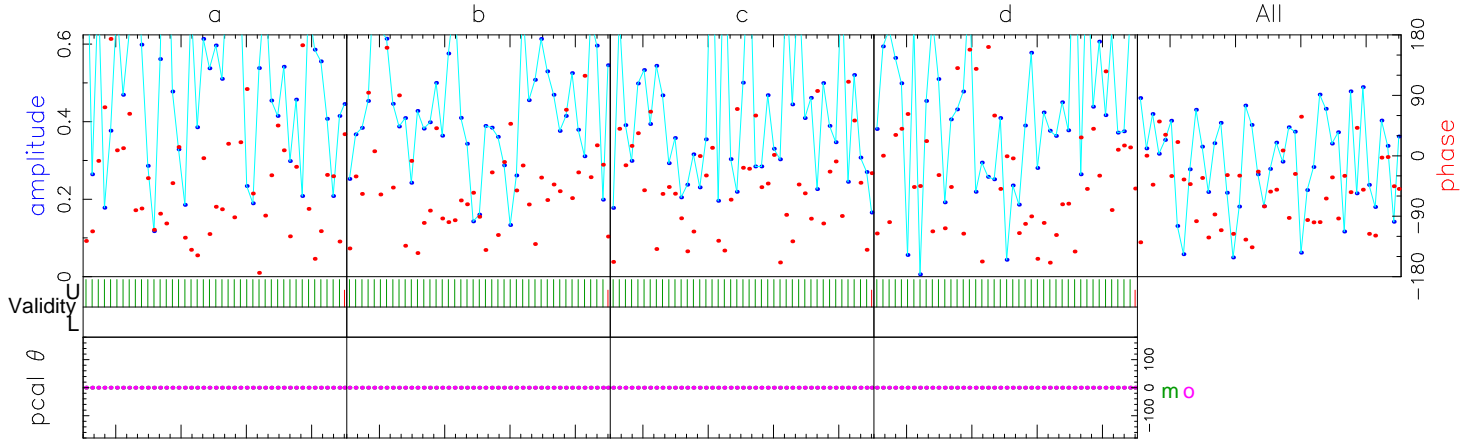
fxmanager

0106+013.1V25LX, No0082, mo

VLBA\_MK - VLBA\_OV, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



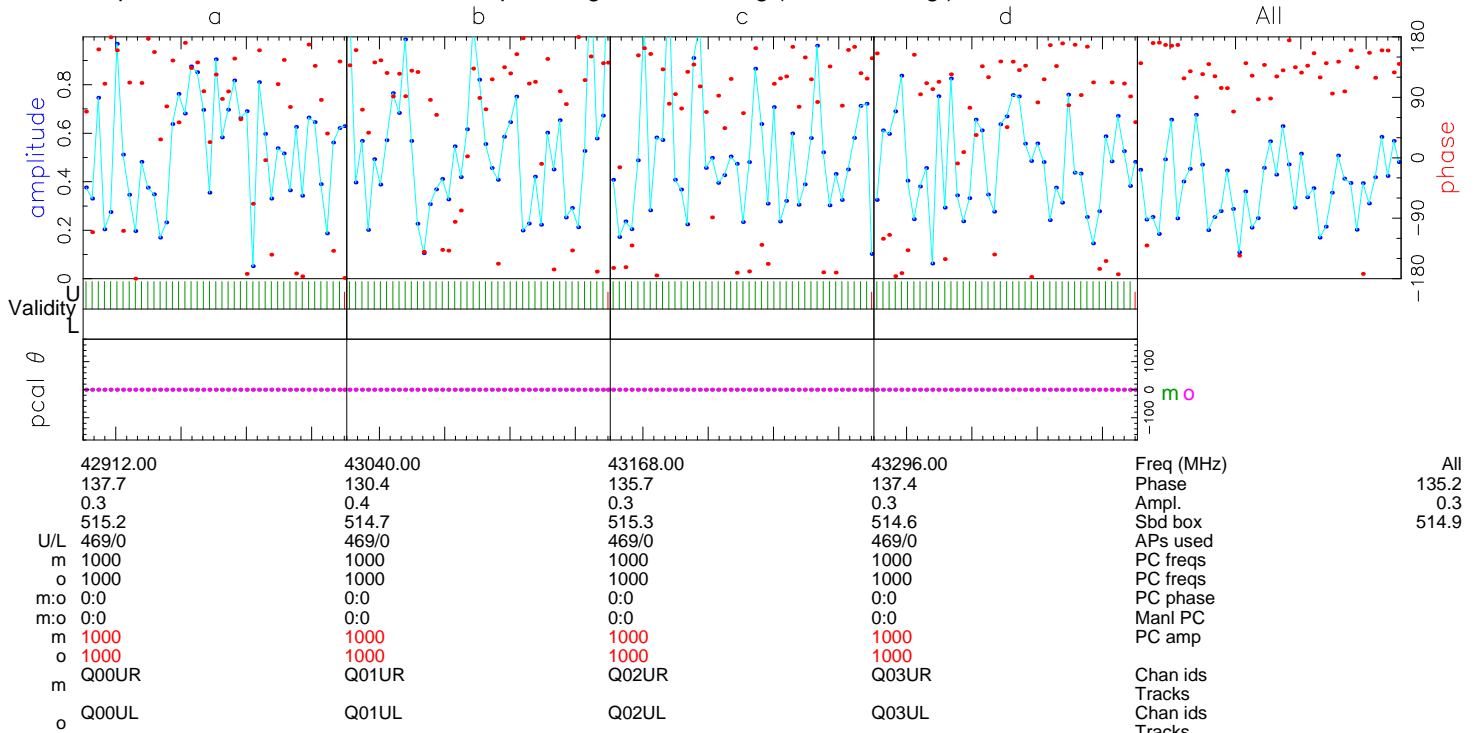
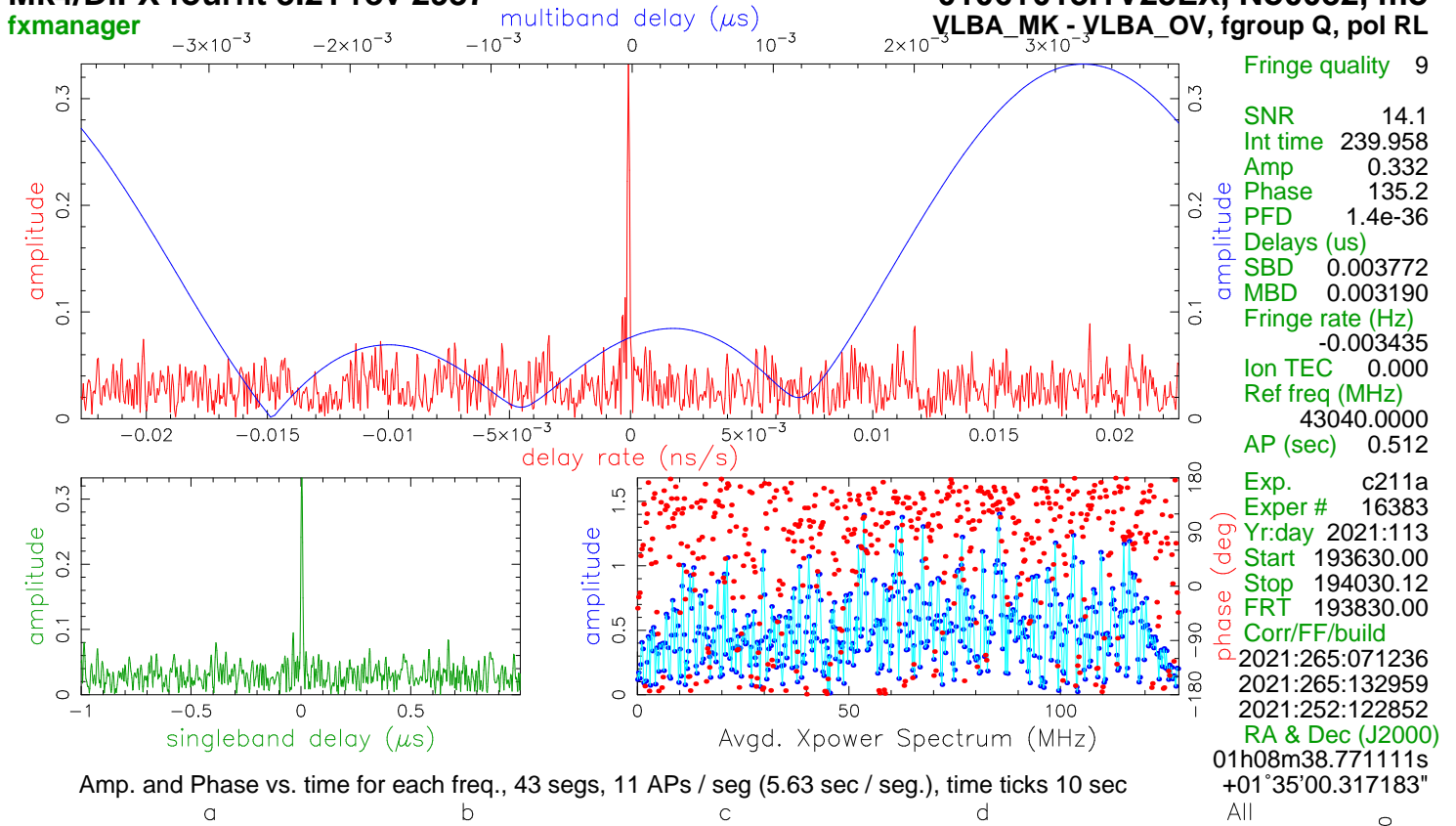
|                               |  |  |  | 42912.00   |  |  |  | 43040.00   |  |  |  | 43168.00           |  |  |  | 43296.00                               |  |  |  | Freq (MHz)                      |  | All          |
|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|--------------------|--|--|--|--|--|--|--|---------------------------------|--|--------------|
|                               |  |  |  | -67.0  |  |  |  | -56.2  |  |  |  | -45.6              |  |  |  | -63.6                                  |  |  |  | Phase                           |  | -58.1        |
|                               |  |  |  | 0.2  |  |  |  | 0.2  |  |  |  | 0.2                |  |  |  | 0.2                                    |  |  |  | Ampl.                           |  | 0.2          |
|                               |  |  |  | 514.5  |  |  |  | 516.7  |  |  |  | 513.8              |  |  |  | 544.0                                  |  |  |  | Sbd box                         |  | 514.7        |
| U/L                           |  |  |  | 469/0  |  |  |  | 469/0  |  |  |  | 469/0              |  |  |  | 469/0                                  |  |  |  | APs used                        |  |              |
| m                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000               |  |  |  | 1000                                   |  |  |  | PC freqs                        |  |              |
| o                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000               |  |  |  | 1000                                   |  |  |  | PC freqs                        |  |              |
| m:o                           |  |  |  | 0:0  |  |  |  | 0:0  |  |  |  | 0:0                |  |  |  | 0:0                                    |  |  |  | PC phase                        |  |              |
| m:o                           |  |  |  | 0:0  |  |  |  | 0:0  |  |  |  | 0:0                |  |  |  | 0:0                                    |  |  |  | Manl PC                         |  |              |
| m                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000               |  |  |  | 1000                                   |  |  |  | PC amp                          |  |              |
| o                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000               |  |  |  | 1000                                   |  |  |  | Chan ids                        |  |              |
| m                             |  |  |  | Q00UL  |  |  |  | Q01UL  |  |  |  | Q02UL              |  |  |  | Q03UL                                  |  |  |  | Tracks                          |  |              |
| o                             |  |  |  | Q00UR  |  |  |  | Q01UR  |  |  |  | Q02UR              |  |  |  | Q03UR                                  |  |  |  | Chan ids                        |  |              |
|                               |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  | Tracks                          |  |              |
| Group delay (usec)(sbd)       |  |  |  | 1.17152519154E+03  |  |  |  | Apriori delay (usec)   |  |  |  | 1.17152157585E+03  |  |  |  | Resid mbdelay (usec)                   |  |  |  | -4.19681E-03                    |  | +/- 1.3E-04  |
| Sband delay (usec)            |  |  |  | 1.17152480085E+03  |  |  |  | Apriori clock (usec)   |  |  |  | 1.2004389E+01      |  |  |  | Resid sbdelay (usec)                   |  |  |  | 3.22500E-03                     |  | +/- 4.9E-04  |
| Phase delay (usec)            |  |  |  | 1.17152157210E+03  |  |  |  | Apriori clockrate (us/s)                                       |  |  |  | -4.2000013E-08     |  |  |  | Resid phdelay (usec)                   |  |  |  | -3.75040E-06                    |  | +/- 8.4E-07  |
| Delay rate (us/s)             |  |  |  | 8.80258145676E-01  |  |  |  | Apriori rate (us/s)  |  |  |  | 8.80258219383E-01  |  |  |  | Resid rate (us/s)                      |  |  |  | -7.37073E-08                    |  | +/- 6.1E-09  |
| Total phase (deg)             |  |  |  | 166.8  |  |  |  | Apriori accel (us/s/s)   |  |  |  | -7.05136451403E-06 |  |  |  | Resid phase (deg)                      |  |  |  | -58.1                           |  | +/- 13.0     |
| RMS                           |  |  |  | Theor.   |  |  |  | Amplitude  |  |  |  | 0.208 +/- 0.024    |  |  |  | Pcal mode: MANUAL, MANUAL              |  |  |  | PC period (AP's) 5, 5           |  |              |
| ph/seg (deg)                  |  |  |  | 51.8   |  |  |  | Search (1024X16)   |  |  |  | 0.196              |  |  |  | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |  |  |  | sb window (us)                  |  | -1.000 1.000 |
| amp/seg (%)                   |  |  |  | 73.1   |  |  |  | Interp.  |  |  |  | 0.000              |  |  |  | Bits/sample: 2x2                       |  |  |  | SampCntNorm: enabled            |  | -0.004 0.004 |
| ph/frq (deg)                  |  |  |  | 11.6   |  |  |  | Inc. seg. avg.   |  |  |  | 0.237              |  |  |  | Sample rate(MSamp/s): 256              |  |  |  | dr window (ns/s)                |  | -0.023 0.023 |
| amp/frq (%)                   |  |  |  | 13.1   |  |  |  | Inc. frq. avg.   |  |  |  | 0.203              |  |  |  | Data rate(Mb/s): 2048                  |  |  |  | nlags: 512 t_coherence infinite |  | 0.00 0.00    |
| m: az 121.3 el 58.1 pa -53.4  |  |  |  | o: az 197.5 el 53.2 pa 14.3                              |  |  |  | u,v (fr/asec) -2522.055 -1184.828                              |  |  |  |                    |  |  |  |  |  |  |  | simultaneous interpolator       |  |              |
| Control file: cf_1234_gmva7mm |  |  |  | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mo..1V25LX |  |  |  | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mo.Q.196.1V25LX |  |  |  |                    |  |  |  |  |  |  |  |                                 |  |              |

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mo

VLBA\_MK - VLBA\_OV, fgroup Q, pol RL



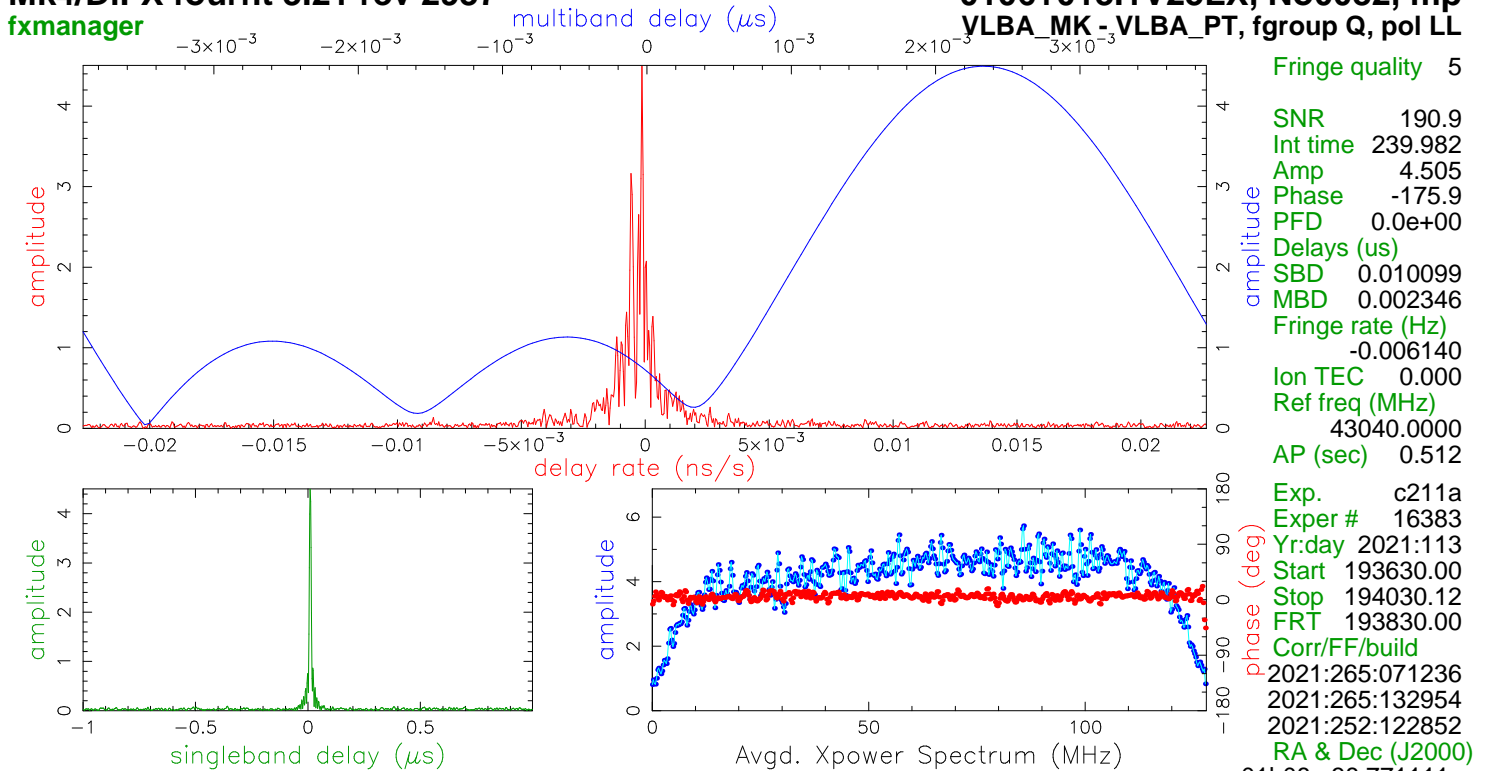
|                               |  |  |                     |  |                       |                      |                            |
|-------------------------------|--|--|---------------------|--|-----------------------|----------------------|----------------------------|
| Group delay (usec)(sbd)       | 1.17152476537E+03  | Apriori delay (usec)   | 1.17152157585E+03   | Resid mbdelay (usec)                   | 3.18951E-03           | +/-                  | 7.9E-05                    |
| Sband delay (usec)            | 1.17152534760E+03  | Apriori clock (usec)   | 1.2004389E+01       | Resid sbdelay (usec)                   | 3.77175E-03           | +/-                  | 3.1E-04                    |
| Phase delay (usec)            | 1.17152158458E+03  | Apriori clockrate (us/s)                                       | -4.2000013E-08      | Resid phdelay (usec)                   | 8.72255E-06           | +/-                  | 5.3E-07                    |
| Delay rate (us/s)             | 8.80258139572E-01  | Apriori rate (us/s)  | 8.80258219383E-01   | Resid rate (us/s)                      | -7.98108E-08          | +/-                  | 3.8E-09                    |
| Total phase (deg)             | 0.1  | Apriori accel (us/s/s)   | -7.05136451403E-06  | Resid phase (deg)                      | 135.2                 | +/-                  | 8.1                        |
| RMS                           | 32.7   | Theor.   | 26.7                | Amplitude                              | 0.332 +/- 0.024       |                      |                            |
| ph/seg (deg)                  | 44.5   | Search (1024X16)   | 0.322               | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)                   | 4.1  | Inc. seg. avg.   | 0.344               | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg)                  | 8.4  | Inc. frq. avg.   | 0.329               | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)                   | 8.1  |  |                     | Sample rate(MISamp/s): 256             |                       | dr window (ns/s)     | -0.023 0.023               |
|                               |  |  |                     | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |
| m: az 121.3 el 58.1 pa -53.4  | o: az 197.5 el 53.2 pa 14.3                              | u,v (fr/asec)  | -2522.055 -1184.828 |  |                       |                      | simultaneous interpolator  |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mo..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mo.Q.210.1V25LX |                     |  |                       |                      |                            |

Mk4/DiFX fourfit 3.21 rev 2937

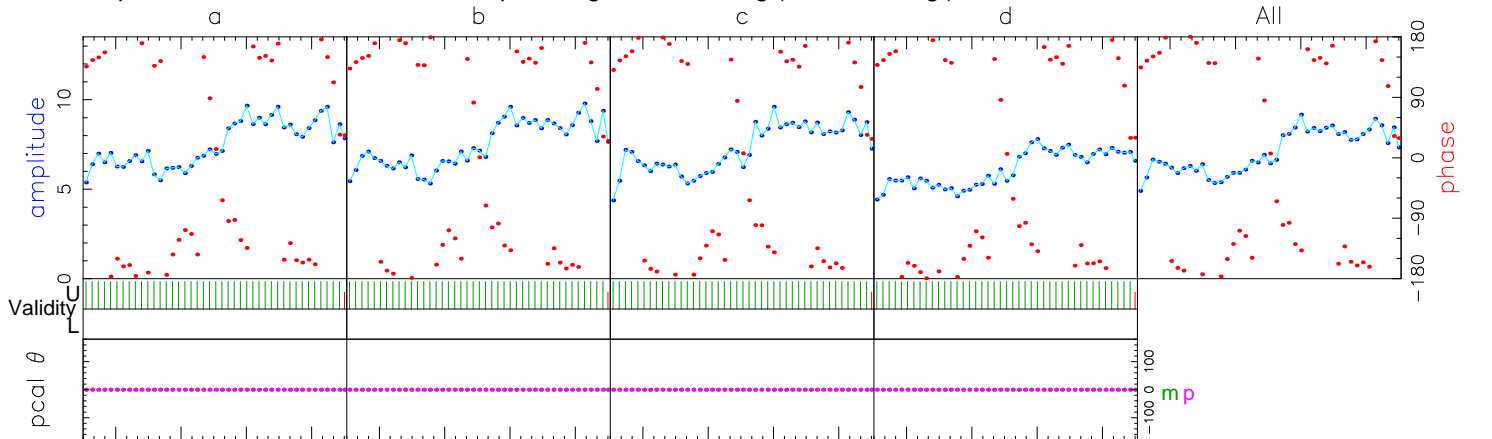
fxmanager

0106+013.1V25LX, No0082, mp

VLBA\_MK - VLBA\_PT, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



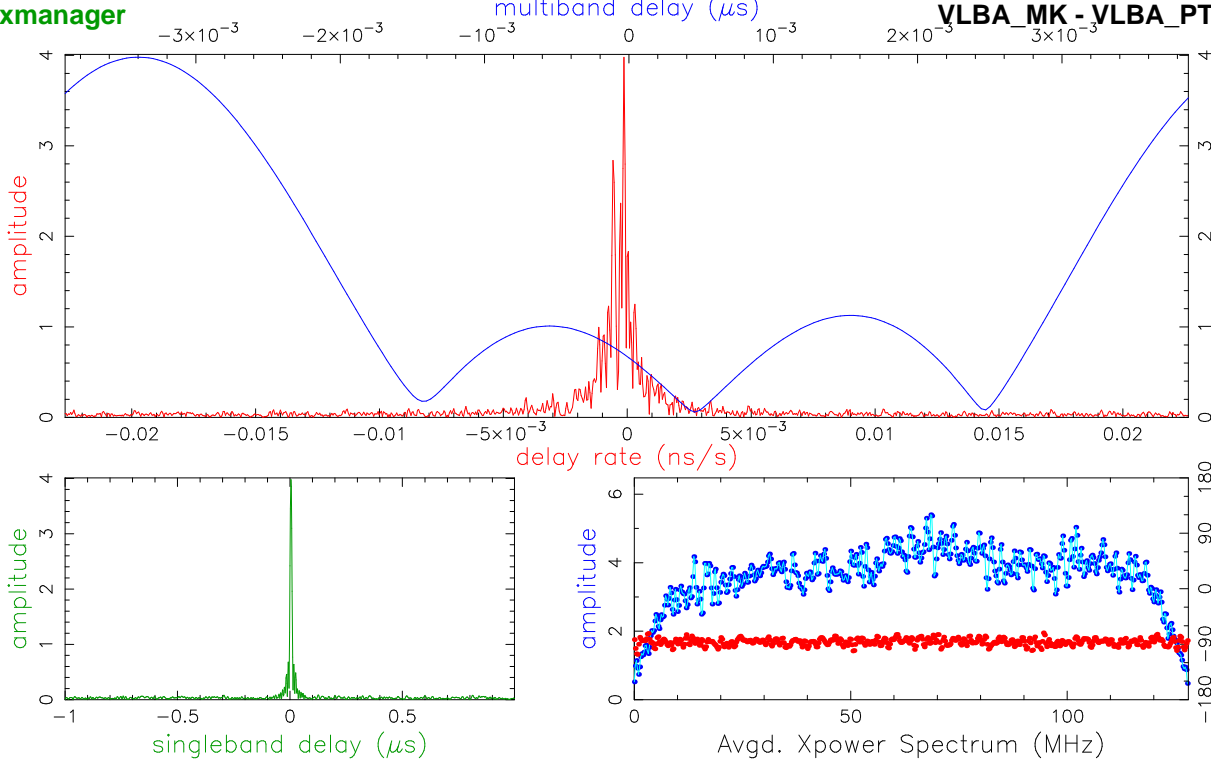
|                               |                   |  |                    |  |                       |                   |                  |                           |
|-------------------------------|-------------------|--|--------------------|--|-----------------------|-------------------|------------------|---------------------------|
|                               | 42912.00          | 43040.00   | 43168.00           | 43296.00   | Freq (MHz)            | All               |                  |                           |
|                               | -172.8            | -178.2   | -177.5             | -175.1   | Phase                 | -175.9            |                  |                           |
|                               | 4.7               | 4.7  | 4.6                | 3.9  | Ampl.                 | 4.5               |                  |                           |
|                               | 518.2             | 518.1  | 518.3              | 518.1  | Sbd box               | 518.2             |                  |                           |
| U/L                           | 469/0             | 469/0  | 469/0              | 469/0  | APs used              |                   |                  |                           |
| m                             | 1000              | 1000   | 1000               | 1000   | PC freqs              |                   |                  |                           |
| p                             | 1000              | 1000   | 1000               | 1000   | PC freqs              |                   |                  |                           |
| m:p                           | 0:0               | 0:0  | 0:0                | 0:0  | PC phase              |                   |                  |                           |
| m:p                           | 0:0               | 0:0  | 0:0                | 0:0  | Manl PC               |                   |                  |                           |
| m                             | 1000              | 1000   | 1000               | 1000   | PC amp                |                   |                  |                           |
| p                             | 1000              | 1000   | 1000               | 1000   |                       |                   |                  |                           |
| m                             | Q00UL             | Q01UL  | Q02UL              | Q03UL  | Chan ids              |                   |                  |                           |
| p                             | Q00UL             | Q01UL  | Q02UL              | Q03UL  | Tracks                |                   |                  |                           |
|                               |                   |  |                    |  | Chan ids              |                   |                  |                           |
|                               |                   |  |                    |  | Tracks                |                   |                  |                           |
| Group delay (usec)(sbd)       | 1.43218983835E+03 | Apriori delay (usec)                                     | 1.43217967961E+03  | Resid mbdelay (usec)   | 2.34624E-03           | +/- 5.8E-06       |                  |                           |
| Sband delay (usec)            | 1.43218977886E+03 | Apriori clock (usec)                                     | 1.0099779E+01      | Resid sbdelay (usec)   | 1.00992E-02           | +/- 2.3E-05       |                  |                           |
| Phase delay (usec)            | 1.43217966826E+03 | Apriori clockrate (us/s)                                 | 4.3800001E-07      | Resid phdelay (usec)   | -1.13519E-05          | +/- 3.9E-08       |                  |                           |
| Delay rate (us/s)             | 1.10738237808E+00 | Apriori rate (us/s)                                      | 1.10738252073E+00  | Resid rate (us/s)  | -1.42647E-07          | +/- 2.8E-10       |                  |                           |
| Total phase (deg)             | -28.1             | Apriori accel (us/s/s)                                   | -8.30953505087E-06 | Resid phase (deg)  | -175.9                | +/- 0.6           |                  |                           |
| RMS                           | 58.8              | Theor.   | 2.0                | Amplitude  | 4.505 +/- 0.024       |                   |                  |                           |
| ph/seg (deg)                  | 58.8              | Search (1024X16)   | 4.397              | Pcal mode: MANUAL, MANUAL                                      | PC period (AP's) 5, 5 |                   |                  |                           |
| amp/seg (%)                   | 63.0              | Interp.  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                         | sb window (us)        | -1.000 1.000      |                  |                           |
| ph/frq (deg)                  | 3.0               | Inc. seg. avg.   | 7.086              | Bits/sample: 2x2   | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |                           |
| amp/frq (%)                   | 7.6               | Inc. frq. avg.   | 4.498              | Sample rate(MSamp/s): 256                                      |                       | dr window (ns/s)  | -0.023 0.023     |                           |
|                               |                   |  |                    | Data rate(Mb/s): 2048  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| m: az 121.3 el 58.1 pa -53.4  |                   | p: az 214.8 el 52.2 pa 28.7                              |                    | u,v (fr/asec) -3172.842 -1003.351                              |                       |                   |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm |                   | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mp..1V25LX |                    | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mp.Q.164.1V25LX |                       |                   |                  |                           |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mp

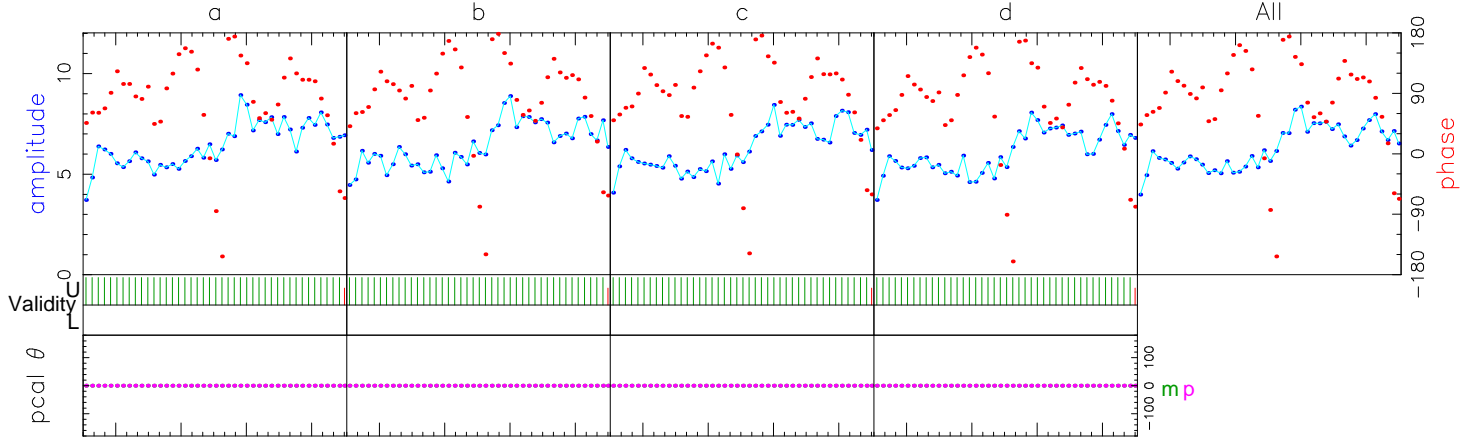
VLBA\_MK - VLBA\_PT, fgroup Q, pol RR



Fringe quality 5

SNR 169.9  
Int time 239.982  
Amp 4.010  
Phase 95.5  
PFD 0.0e+00  
Delays (us)  
SBD 0.004512  
MBD -0.003366  
Fringe rate (Hz)  
-0.006087  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512  
Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132955  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



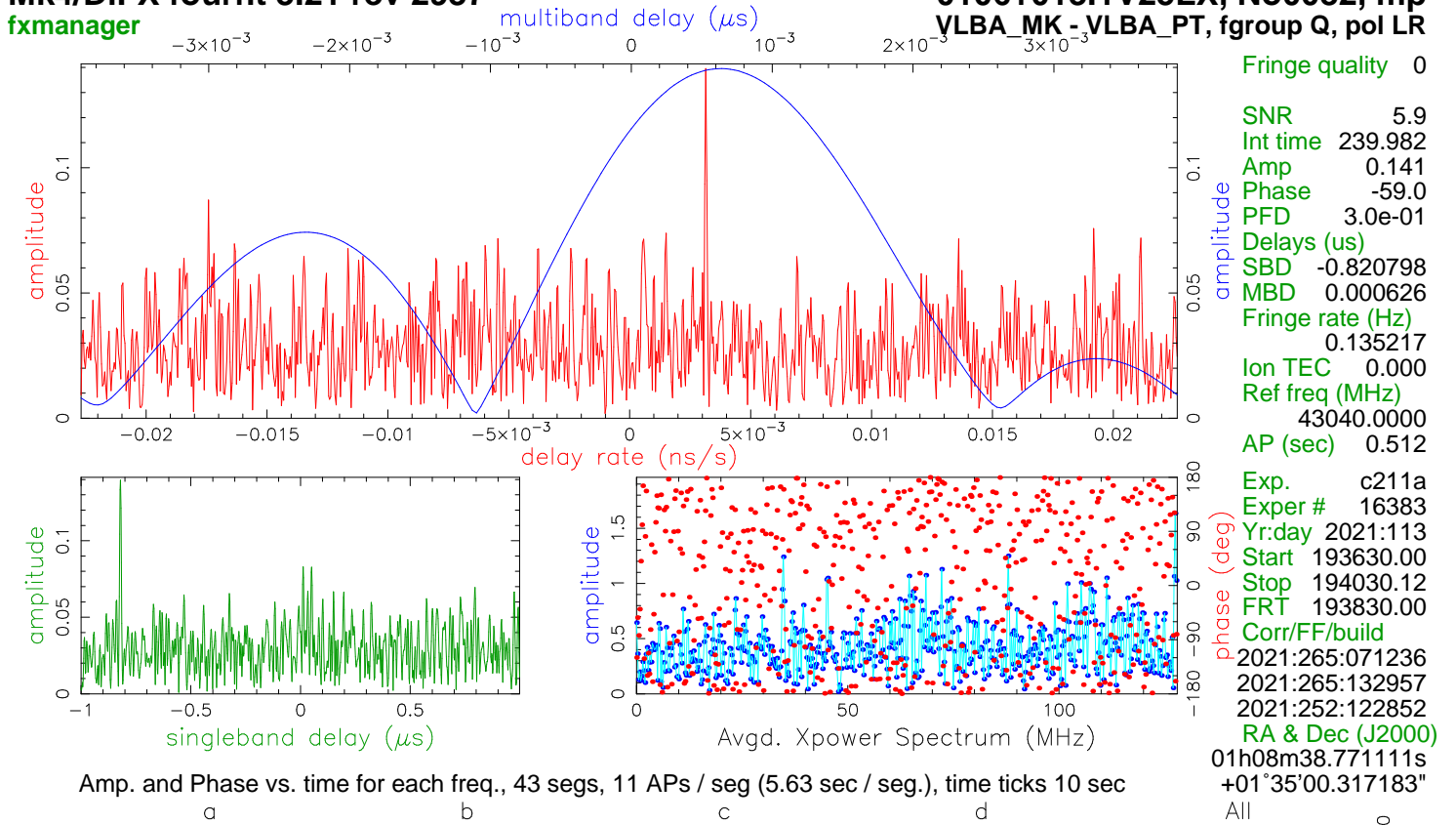
|                         |       |       |       | Freq (MHz)   |       |       |       | All   |
|-------------------------|-------|-------|-------|--|-------|-------|-------|-------|
| 42912.00                |       |       |       | 43040.00   |       |       |       |       |
| 95.7                    |       |       |       | 97.2   |       |       |       | 95.5  |
| 4.1                     |       |       |       | 4.0  |       |       |       | 4.0   |
| 515.4                   |       |       |       | 515.2  |       |       |       | 515.3 |
| U/L                     | 469/0 | 469/0 | 469/0 | 469/0  | 469/0 | 469/0 | 469/0 |       |
| m                       | 1000  | 1000  | 1000  | 1000   | 1000  | 1000  | 1000  |       |
| p                       | 1000  | 1000  | 1000  | 1000   | 1000  | 1000  | 1000  |       |
| m:p                     | 0:0   | 0:0   | 0:0   | 0:0  | 0:0   | 0:0   | 0:0   |       |
| m:p                     | 0:0   | 0:0   | 0:0   | 0:0  | 0:0   | 0:0   | 0:0   |       |
| m                       | 1000  | 1000  | 1000  | 1000   | 1000  | 1000  | 1000  |       |
| p                       | 1000  | 1000  | 1000  | 1000   | 1000  | 1000  | 1000  |       |
| m                       | Q00UR | Q01UR | Q02UR | Q03UR  | Q00UR | Q01UR | Q02UR |       |
| p                       | Q00UR | Q01UR | Q02UR | Q03UR  | Q00UR | Q01UR | Q02UR |       |
| Group delay (usec)(sbd) |       |       |       | 1.43218412610E+03  |       |       |       |       |
| Sband delay (usec)      |       |       |       | 1.43218419124E+03  |       |       |       |       |
| Phase delay (usec)      |       |       |       | 1.43217968578E+03  |       |       |       |       |
| Delay rate (us/s)       |       |       |       | 1.10738237930E+00  |       |       |       |       |
| Total phase (deg)       |       |       |       | 243.4  |       |       |       |       |
|                         |       |       |       | Apriori delay (usec)   |       |       |       |       |
|                         |       |       |       | Apriori clock (usec)   |       |       |       |       |
|                         |       |       |       | Apriori clockrate (us/s)                                       |       |       |       |       |
|                         |       |       |       | Apriori rate (us/s)  |       |       |       |       |
|                         |       |       |       | Apriori accel (us/s/s)   |       |       |       |       |
|                         |       |       |       | 1.43217967961E+03  |       |       |       |       |
|                         |       |       |       | 1.0099779E+01  |       |       |       |       |
|                         |       |       |       | 4.3800001E-07  |       |       |       |       |
|                         |       |       |       | 1.10738252073E+00  |       |       |       |       |
|                         |       |       |       | -8.30953505087E-06   |       |       |       |       |
|                         |       |       |       | Resid mbdelay (usec)   |       |       |       |       |
|                         |       |       |       | Resid sbdelay (usec)   |       |       |       |       |
|                         |       |       |       | Resid phdelay (usec)   |       |       |       |       |
|                         |       |       |       | Resid rate (us/s)  |       |       |       |       |
|                         |       |       |       | Resid phase (deg)  |       |       |       |       |
|                         |       |       |       | -3.36601E-03   |       |       |       |       |
|                         |       |       |       | 4.51163E-03  |       |       |       |       |
|                         |       |       |       | 6.16609E-06  |       |       |       |       |
|                         |       |       |       | -1.41427E-07   |       |       |       |       |
|                         |       |       |       | 95.5   |       |       |       |       |
|                         |       |       |       | +/-  |       |       |       |       |
|                         |       |       |       | 6.5E-06  |       |       |       |       |
|                         |       |       |       | 2.5E-05  |       |       |       |       |
|                         |       |       |       | 4.4E-08  |       |       |       |       |
|                         |       |       |       | 3.1E-10  |       |       |       |       |
|                         |       |       |       | 0.7  |       |       |       |       |
|                         |       |       |       | Pcal mode: MANUAL, MANUAL                                      |       |       |       |       |
|                         |       |       |       | PC period (AP's) 5, 5  |       |       |       |       |
|                         |       |       |       | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                         |       |       |       |       |
|                         |       |       |       | SampCntNorm: enabled   |       |       |       |       |
|                         |       |       |       | Sample rate(MSamp/s): 256                                      |       |       |       |       |
|                         |       |       |       | Data rate(Mb/s): 2048  |       |       |       |       |
|                         |       |       |       | nlags: 512   |       |       |       |       |
|                         |       |       |       | t_coherence infinite   |       |       |       |       |
|                         |       |       |       | simultaneous interpolator                                      |       |       |       |       |
|                         |       |       |       | m: az 121.3 el 58.1 pa -53.4                                   |       |       |       |       |
|                         |       |       |       | p: az 214.8 el 52.2 pa 28.7                                    |       |       |       |       |
|                         |       |       |       | u,v (fr/asec) -3172.842 -1003.351                              |       |       |       |       |
|                         |       |       |       | Control file: cf_1234_gmva7mm                                  |       |       |       |       |
|                         |       |       |       | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/mp..1V25LX       |       |       |       |       |
|                         |       |       |       | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/mp.Q.179.1V25LX |       |       |       |       |

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mp

VLBA\_MK - VLBA\_PT, fgroup Q, pol LR



Fringe quality 0

SNR 5.9

Int time 239.982

Amp 0.141

Phase -59.0

PFD 3.0e-01

Delays (us)

SBD -0.820798

MBD 0.000626

Fringe rate (Hz)

0.135217

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132957

2021:252:122852

RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

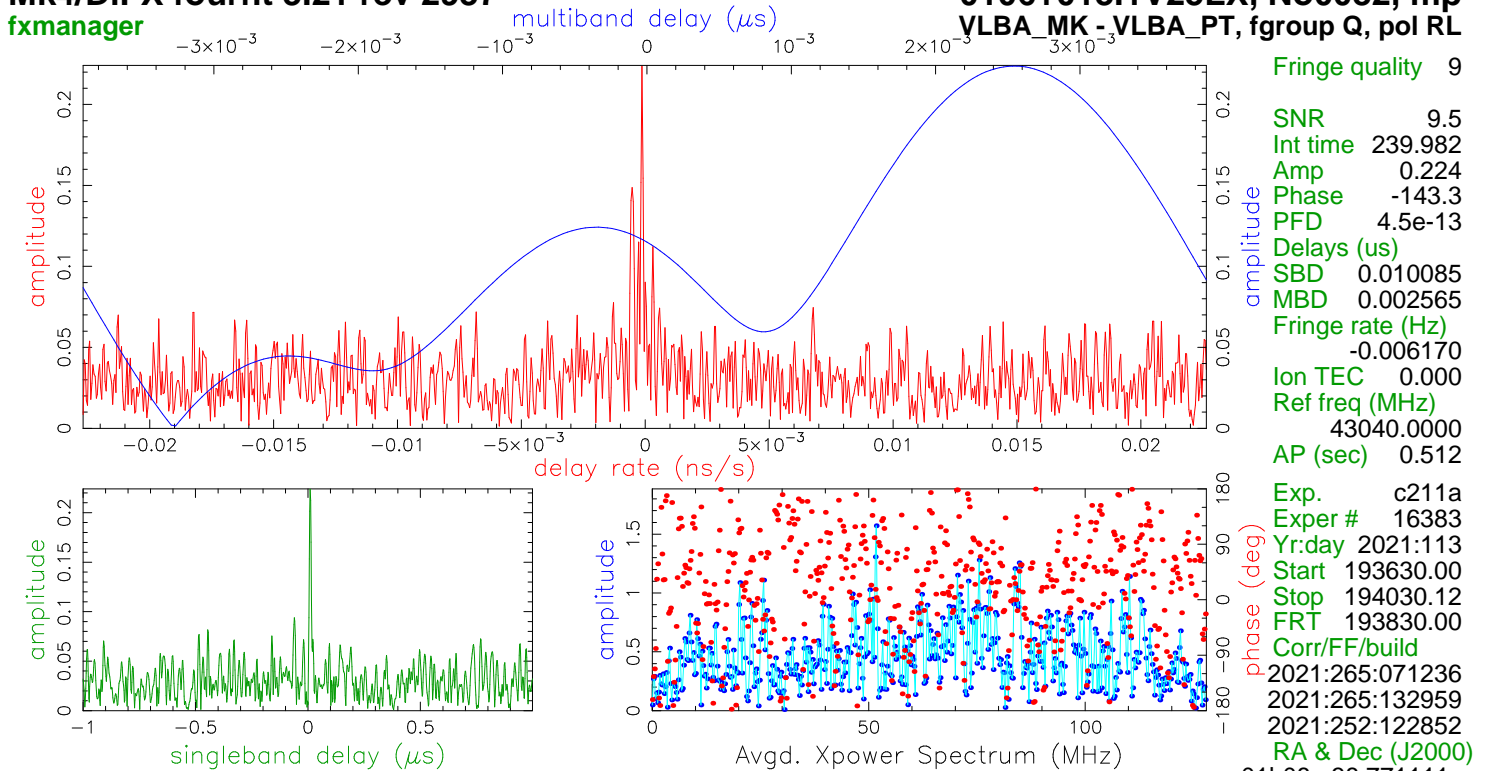


## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, mp

VLBA\_MK - VLBA\_PT, fgroup Q, pol RL



Fringe quality 9

SNR 9.5

Int time 239.982

Amp 0.224

Phase -143.3

PFD 4.5e-13

Delays (us)

SBD 0.010085

MBD 0.002565

Fringe rate (Hz)

-0.006170

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132959

2021:252:122852

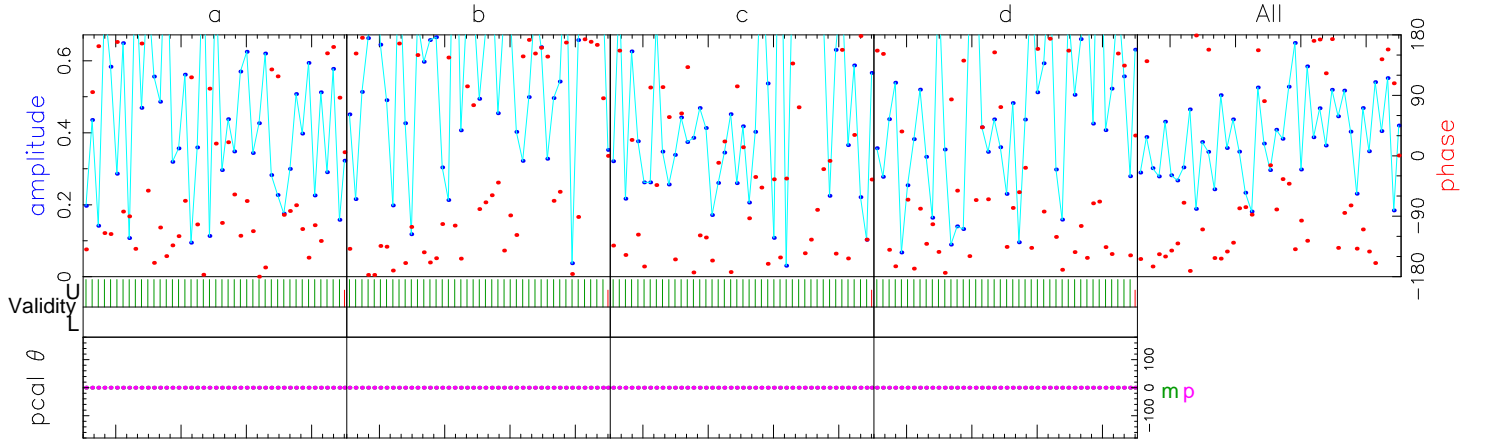
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -126.3   | -160.8   | -139.6   | -138.2   | Phase      | -143.3 |
|     | 0.2      | 0.3      | 0.1      | 0.2      | Ampl.      | 0.2    |
|     | 518.1    | 518.3    | 313.1    | 517.7    | Sbd box    | 518.2  |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| m   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| p   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| m:p | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| m:p | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| m   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| p   | 1000     | 1000     | 1000     | 1000     |            |        |
| m   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| p   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 1.43219005701E+03 | Apriori delay (usec)     | 1.43217967961E+03  | Resid mbdelay (usec) | 2.56489E-03  | +/- | 1.2E-04 |
| Sband delay (usec)      | 1.43218976461E+03 | Apriori clock (usec)     | 1.0099779E+01      | Resid sbdelay (usec) | 1.00850E-02  | +/- | 4.5E-04 |
| Phase delay (usec)      | 1.43217967037E+03 | Apriori clockrate (us/s) | 4.3800001E-07      | Resid phdelay (usec) | -9.24595E-06 | +/- | 7.8E-07 |
| Delay rate (us/s)       | 1.10738237738E+00 | Apriori rate (us/s)      | 1.10738252073E+00  | Resid rate (us/s)    | -1.43345E-07 | +/- | 5.6E-09 |
| Total phase (deg)       | 4.6               | Apriori accel (us/s/s)   | -8.30953505087E-06 | Resid phase (deg)    | -143.3       | +/- | 12.1    |

|              |          |             |                           |  |                       |                      |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|----------------------|----------------------------|
| ph/seg (deg) | RMS 60.5 | Theor. 39.6 | Amplitude 0.224 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                      |                            |
| amp/seg (%)  | 87.5     | 69.1        | Search (1024X16) 0.218    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000               | 1.000                      |
| ph/frq (deg) | 17.8     | 12.1        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)       | -0.004 0.004               |
| amp/frq (%)  | 34.3     | 21.1        | Inc. seg. avg. 0.310      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)     | -0.023 0.023               |
|              |          |             | Inc. frq. avg. 0.225      | Data rate(Mb/s): 2048                  | nlags: 512            | t_coherence infinite | ion window (TEC) 0.00 0.00 |

m: az 121.3 el 58.1 pa -53.4 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) -3172.842 -1003.351 simultaneous interpolator

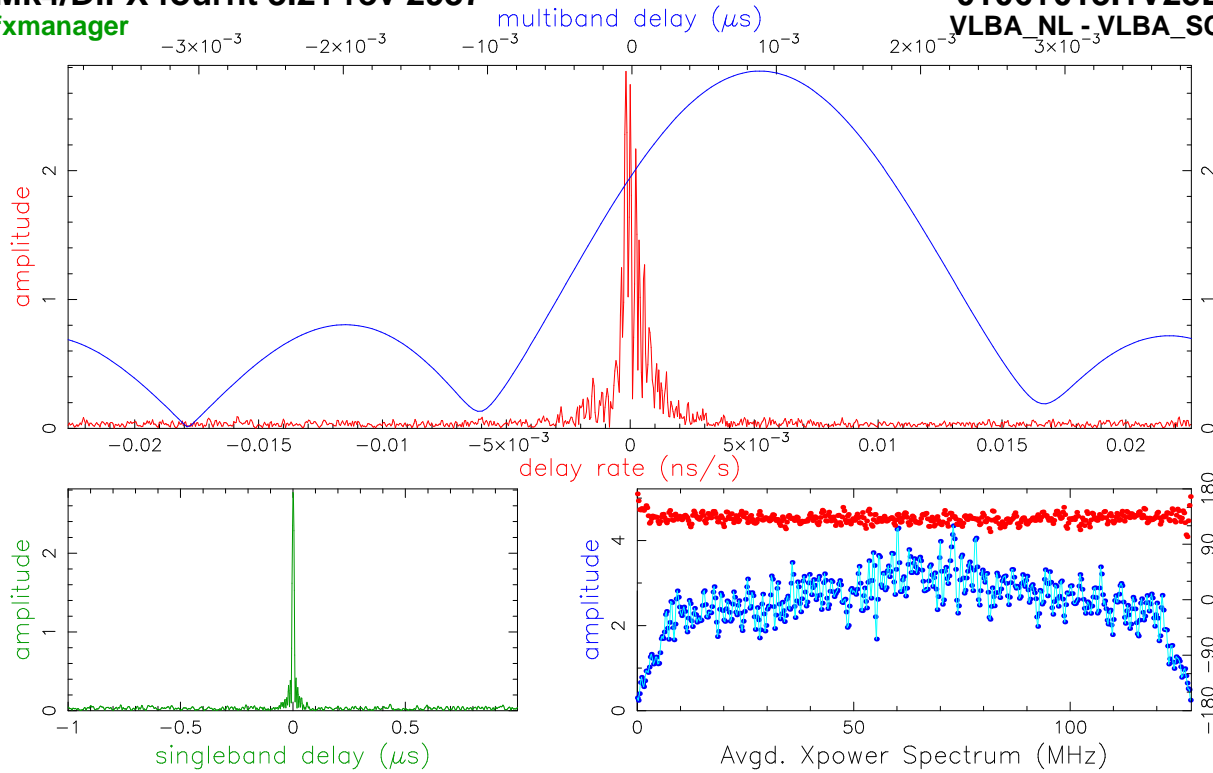
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/mp.Q.211.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, nc

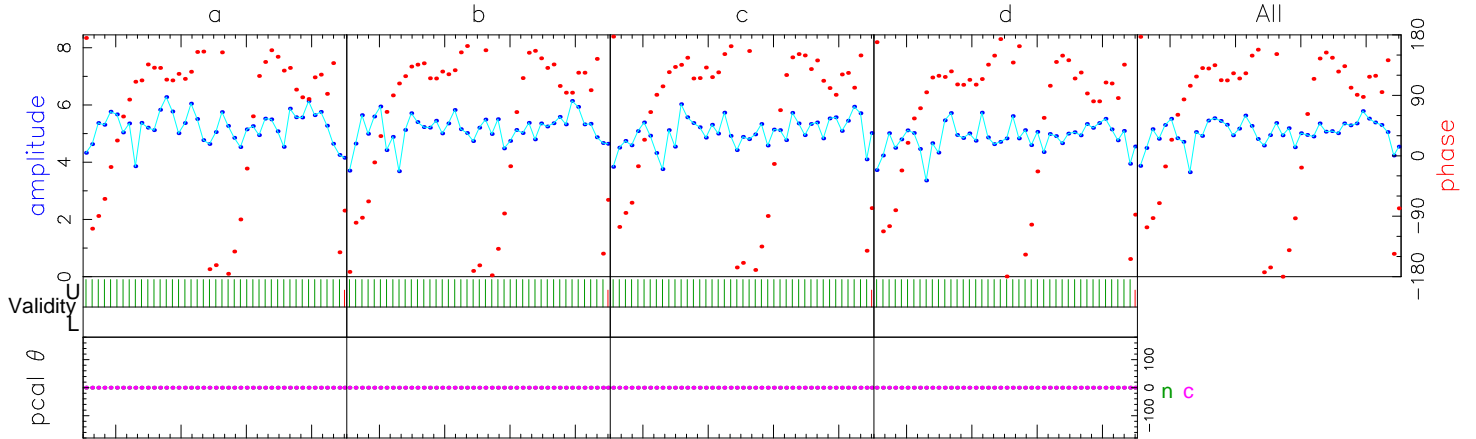
VLBA\_NL - VLBA\_SC, fgroup Q, pol LL



Fringe quality 5

SNR 119.3  
 Int time 239.987  
 Amp 2.816  
 Phase 130.6  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.000870  
 MBD 0.000932  
 Fringe rate (Hz)  
 -0.008200  
 Ion TEC 0.000  
 Ref freq (MHz)  
 43040.0000  
 AP (sec) 0.512  
 Exp. c211a  
 Exper # 16383  
 Yr:day 2021:113  
 Start 193630.00  
 Stop 194030.12  
 FRT 193830.00  
 Corr/FF/build  
 2021:265:071236  
 2021:265:132954  
 2021:252:122852  
 RA & Dec (J2000)  
 01h08m38.771111s  
 +01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 130.6 |
| n   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 2.8   |
| c   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 513.4 |
| n:c | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| n:c | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| n   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| c   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| n   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 4.12469729841E+03 | Apriori delay (usec)     | 4.12469636689E+03  | Resid mbdelay (usec) | 9.31524E-04  | +/- | 9.3E-06 |
| Sband delay (usec)      | 4.12469723714E+03 | Apriori clock (usec)     | -6.7746124E+00     | Resid sbdelay (usec) | 8.70250E-04  | +/- | 3.6E-05 |
| Phase delay (usec)      | 4.12469637532E+03 | Apriori clockrate (us/s) | -1.6000005E-08     | Resid phdelay (usec) | 8.43039E-06  | +/- | 6.2E-08 |
| Delay rate (us/s)       | 6.2723655653E-01  | Apriori rate (us/s)      | 6.27236747064E-01  | Resid rate (us/s)    | -1.90511E-07 | +/- | 4.5E-10 |
| Total phase (deg)       | 357.7             | Apriori accel (us/s/s)   | -2.07658549747E-05 | Resid phase (deg)    | 130.6        | +/- | 1.0     |

|              |      |        |                  |                 |  |                       |        |       |  |  |
|--------------|------|--------|------------------|-----------------|--|-----------------------|--------|-------|--|--|
|              | RMS  | Theor. | Amplitude        | 2.816 +/- 0.024 | Pcal mode: MANUAL, MANUAL                                    | PC period (AP's) 5, 5 |        |       |  |  |
| ph/seg (deg) | 67.7 | 3.1    | Search (1024X16) | 2.711           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                       | sb window (us)        | -1.000 | 1.000 |  |  |
| amp/seg (%)  | 80.5 | 5.5    | Interp.          | 0.000           | Bits/sample: 2x2      SampCntNorm: enabled                   | mb window (us)        | -0.004 | 0.004 |  |  |
| ph/frq (deg) | 7.7  | 1.0    | Inc. seg. avg.   | 5.035           | Sample rate(MSamp/s): 256                                    | dr window (ns/s)      | -0.023 | 0.023 |  |  |
| amp/frq (%)  | 2.0  | 1.7    | Inc. frq. avg.   | 2.782           | Data rate(Mb/s): 2048      nlags: 512      t_cohere infinite | ion window (TEC)      | 0.00   | 0.00  |  |  |

n: az 229.8 el 37.9 pa 34.8 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -1805.262 1571.411 simultaneous interpolator

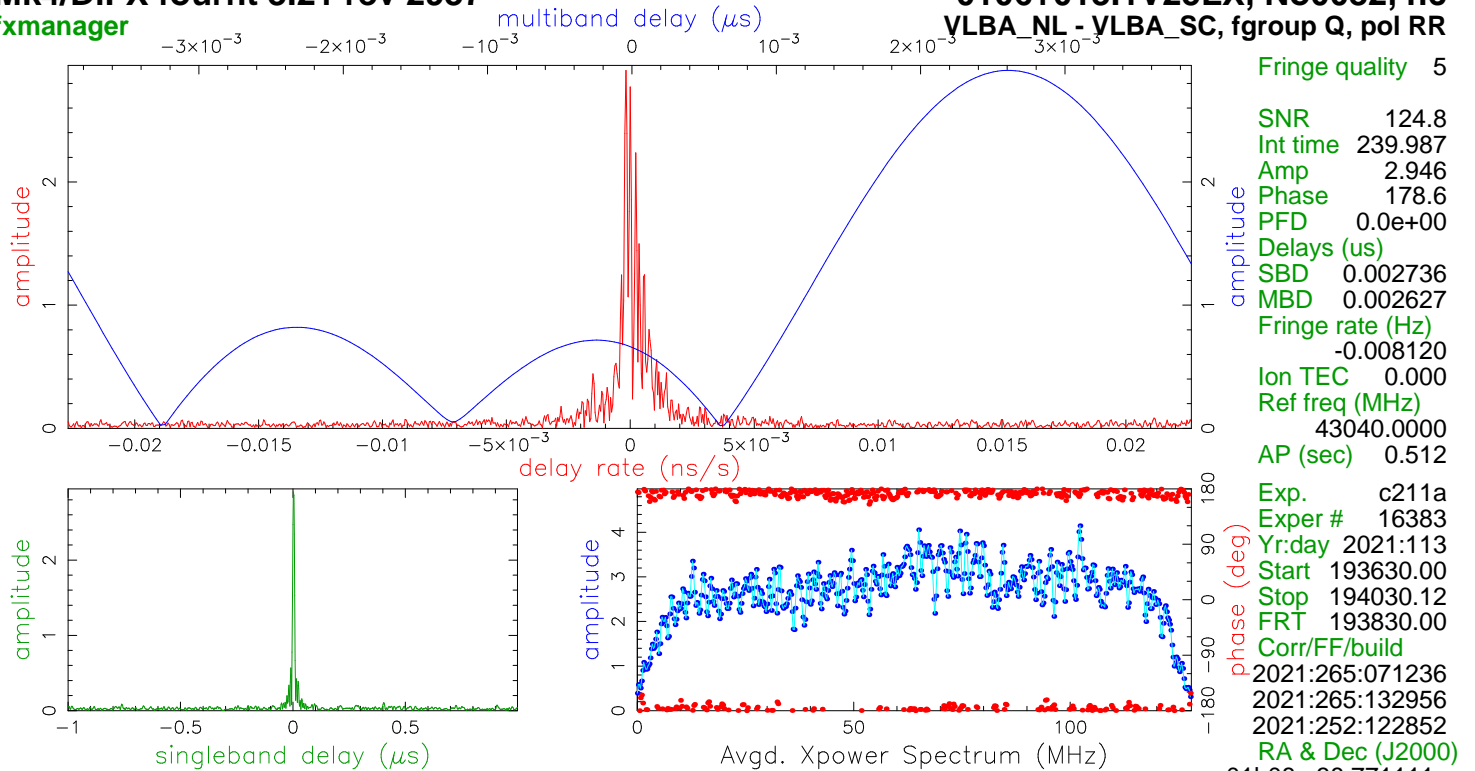
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nc.Q.168.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, nc

VLBA\_NL - VLBA\_SC, fgroup Q, pol RR



Fringe quality 5

SNR 124.8

Int time 239.987

Amp 2.946

Phase 178.6

PFD 0.0e+00

Delays (us)

SBD 0.002736

MBD 0.002627

Fringe rate (Hz)

-0.008120

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132956

2021:252:122852

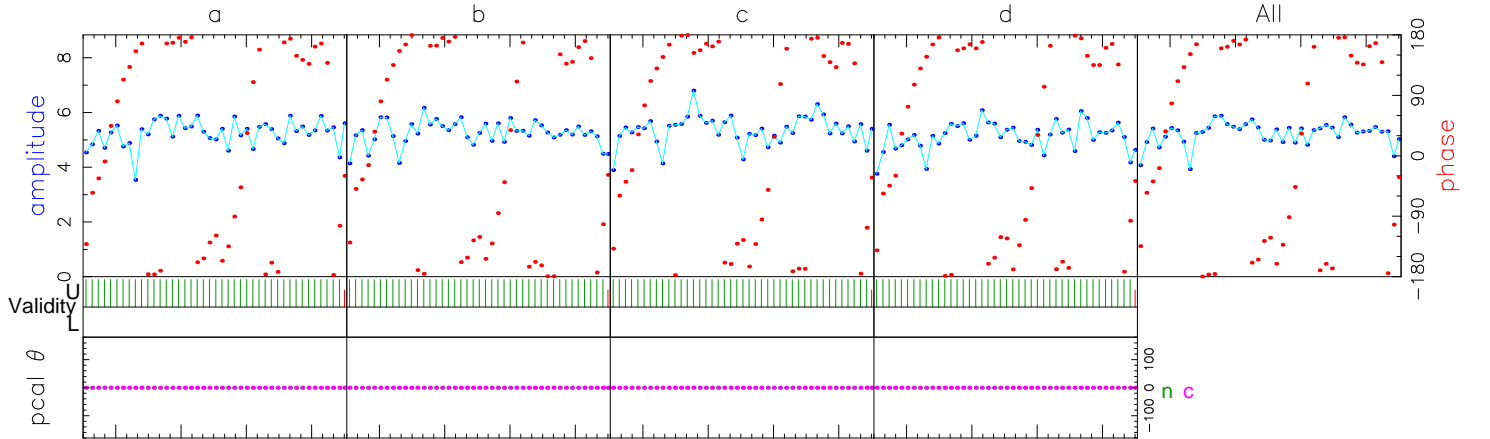
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 179.4    | -179.1   | 176.0    | 178.0    | Phase      | 178.6 |
| n   | 2.9      | 2.9      | 3.0      | 2.8      | Ampl.      | 2.9   |
| c   | 514.4    | 514.3    | 514.3    | 514.7    | Sbd box    | 514.4 |
| n   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| n:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| n:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| n   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| n   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 4.12469899435E+03 | Apriori delay (usec)     | 4.12469636689E+03  | Resid mbdelay (usec) | 2.62746E-03  | +/- | 8.9E-06 |
| Sband delay (usec)      | 4.12469910339E+03 | Apriori clock (usec)     | -6.7746124E+00     | Resid sbdelay (usec) | 2.73650E-03  | +/- | 3.5E-05 |
| Phase delay (usec)      | 4.12469637841E+03 | Apriori clockrate (us/s) | -1.6000005E-08     | Resid phdelay (usec) | 1.15240E-05  | +/- | 5.9E-08 |
| Delay rate (us/s)       | 6.27236558394E-01 | Apriori rate (us/s)      | 6.27236747064E-01  | Resid rate (us/s)    | -1.88670E-07 | +/- | 4.3E-10 |
| Total phase (deg)       | 45.7              | Apriori accel (us/s/s)   | -2.07658549747E-05 | Resid phase (deg)    | 178.6        | +/- | 0.9     |

|              |      |        |                  |                 |  |                              |                  |        |       |
|--------------|------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 2.946 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 67.6 | 3.0    | Search (1024X16) | 2.820           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |                              | sb window (us)   | -1.000 | 1.000 |
| amp/seg (%)  | 79.2 | 5.3    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 2.5  | 0.9    | Inc. seg. avg.   | 5.237           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 2.5  | 1.6    | Inc. frq. avg.   | 2.907           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

n: az 229.8 el 37.9 pa 34.8 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -1805.262 1571.411 simultaneous interpolator

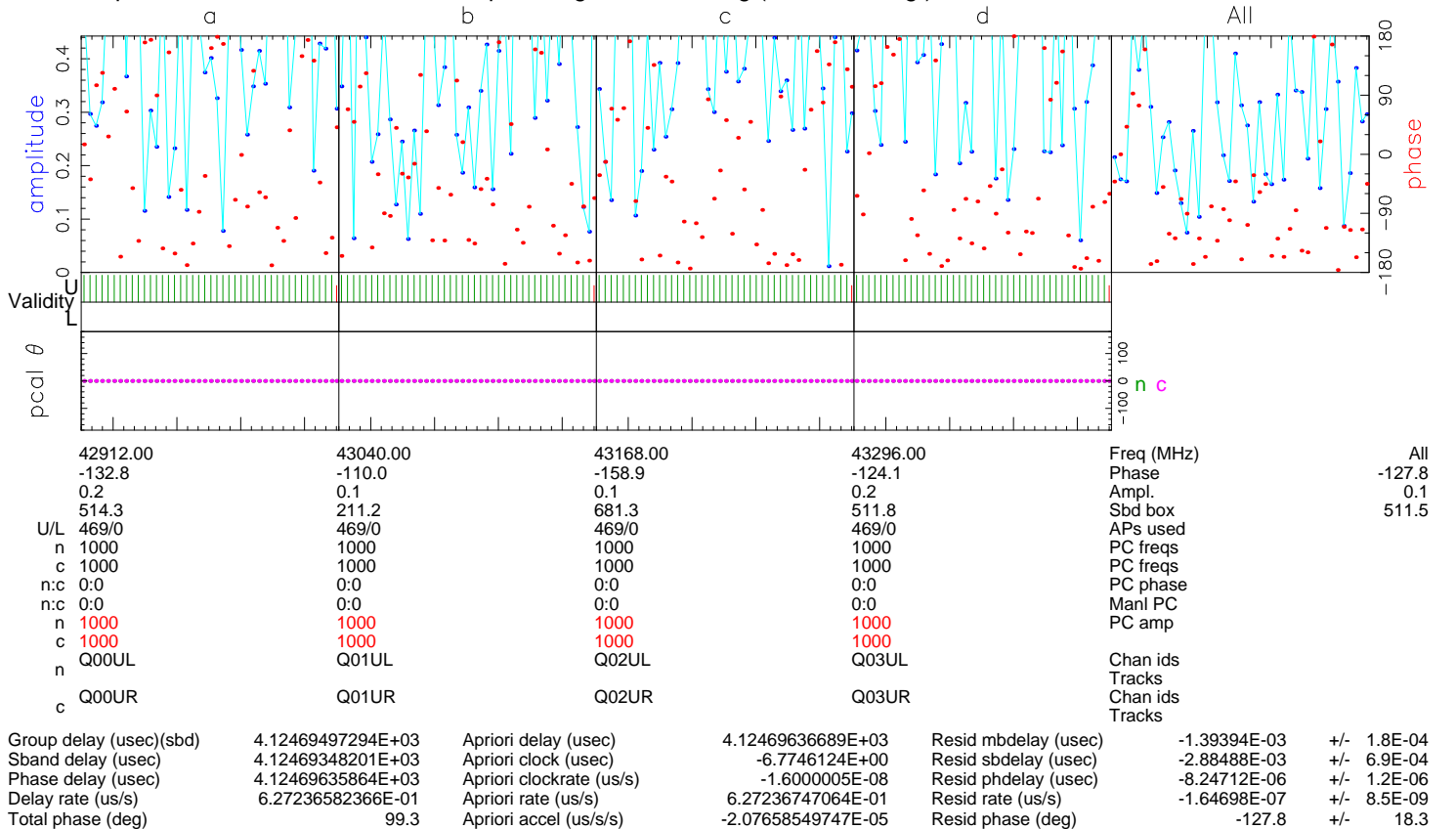
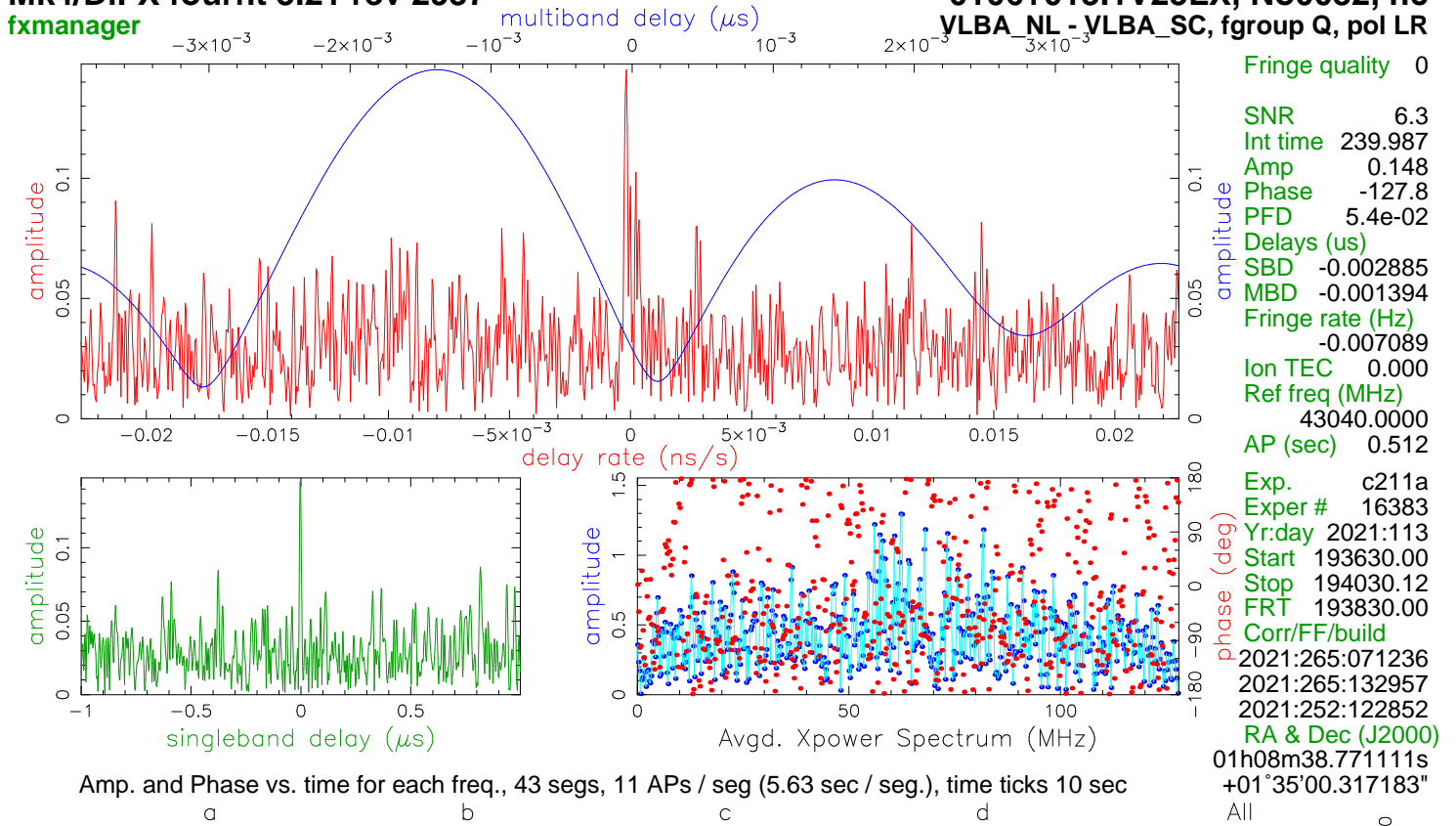
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nc.Q.182.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, nc

VLBA\_NL - VLBA\_SC, fgroup Q, pol LR



RMS Theor. Amplitude 0.148 +/- 0.024 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5

ph/seg (deg) 67.6 60.1 Search (1024X16) 0.144 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000

amp/seg (%) 122.0 104.9 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.004 0.004

ph/frq (deg) 25.7 18.3 Inc. seg. avg. 0.181 Sample rate(MSamp/s): 256 dr window (ns/s) -0.023 0.023

amp/frq (%) 43.9 32.0 Inc. frq. avg. 0.142 Data rate(Mb/s): 2048 nlags: 512 t\_cohere infinite ion TEC (TEC) 0.00 0.00

n: az 229.8 el 37.9 pa 34.8 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -1805.262 1571.411 simultaneous interpolator

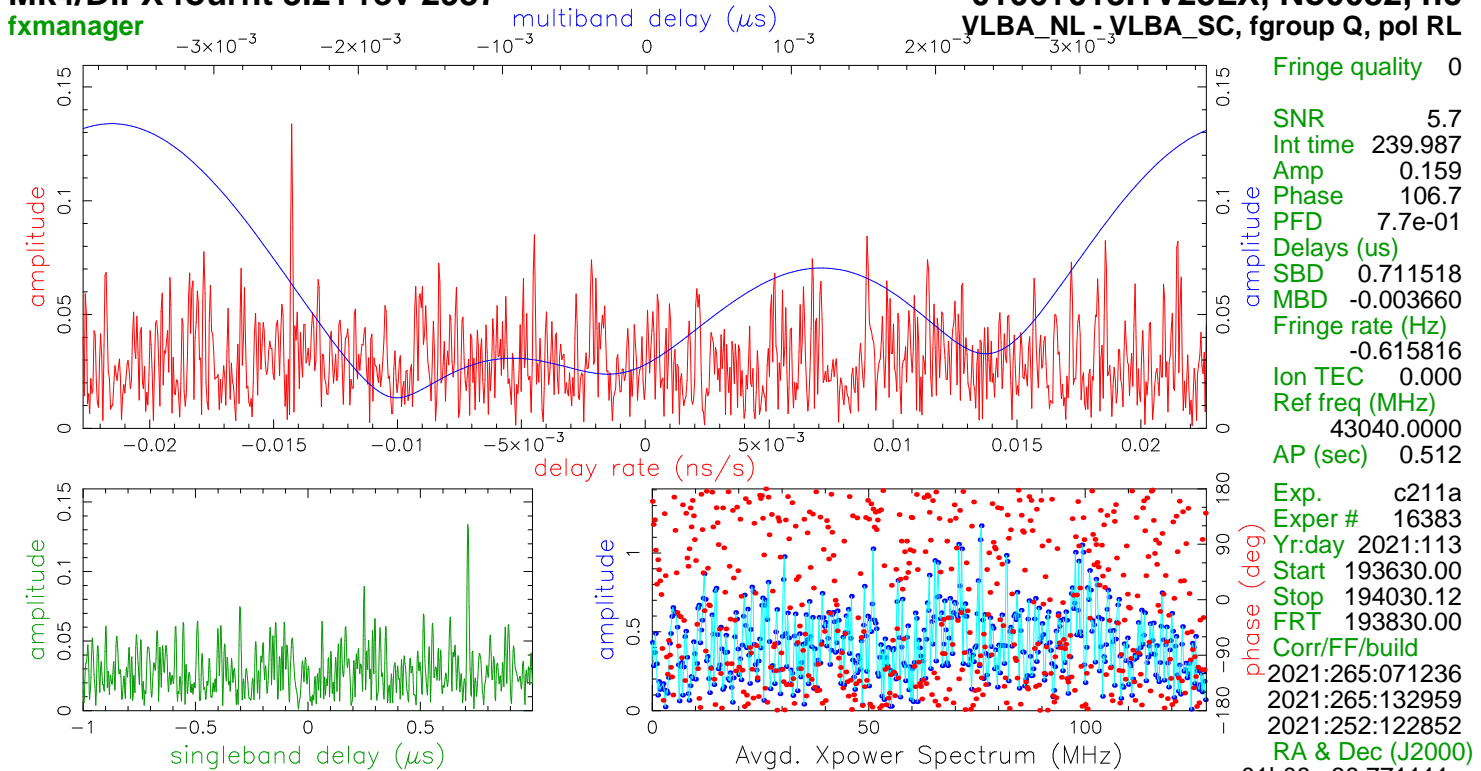
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nc.Q.197.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

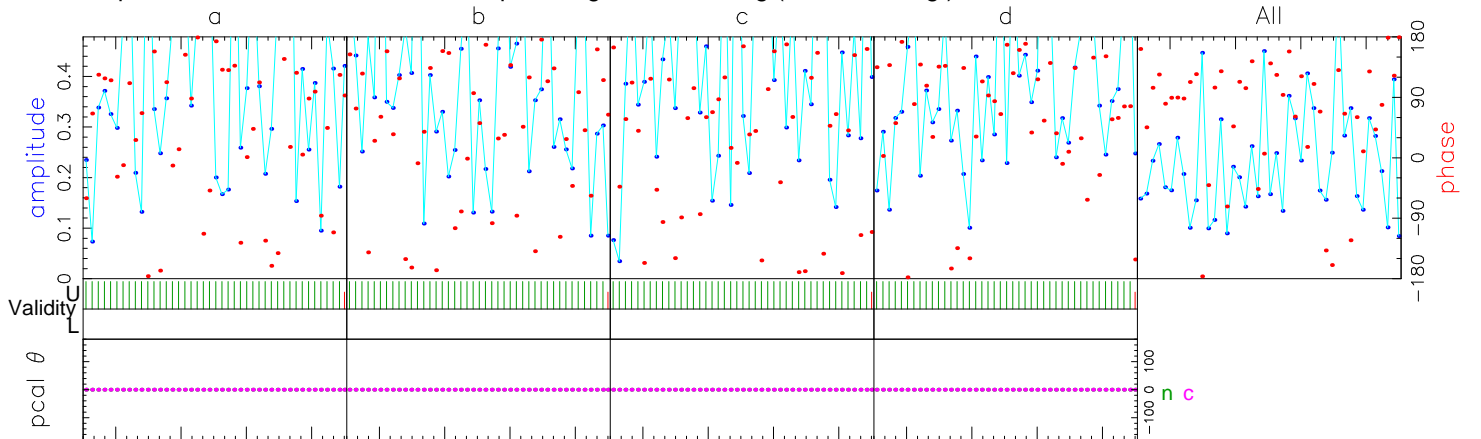
fxmanager

0106+013.1V25LX, No0082, nc

VLBA\_NL - VLBA\_SC, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| 112.0     | 92.8     | 130.0    | 96.9     | Phase      | 106.7 |
| 0.1       | 0.1      | 0.2      | 0.2      | Ampl.      | 0.2   |
| 439.0     | 923.9    | 497.9    | 877.2    | Sbd box    | 877.3 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| c 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| n:c 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| n:c 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| n 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| c 1000    | 1000     | 1000     | 1000     |            |       |
| n Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |             |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 4.12541145734E+03 | Apriori delay (usec)     | 4.12469636689E+03  | Resid mbdelay (usec) | -3.65954E-03 | +/- 1.9E-04 |
| Sband delay (usec)      | 4.12540788439E+03 | Apriori clock (usec)     | -6.7746124E+00     | Resid sbdelay (usec) | 7.11518E-01  | +/- 7.6E-04 |
| Phase delay (usec)      | 4.12469637377E+03 | Apriori clockrate (us/s) | -1.6000005E-08     | Resid phdelay (usec) | 6.88364E-06  | +/- 1.3E-06 |
| Delay rate (us/s)       | 6.27222439077E-01 | Apriori rate (us/s)      | 6.27236747064E-01  | Resid rate (us/s)    | -1.43080E-05 | +/- 9.4E-09 |
| Total phase (deg)       | 333.8             | Apriori accel (us/s/s)   | -2.07658549747E-05 | Resid phase (deg)    | 106.7        | +/- 20.1    |

|              |       |                  |       |                |                 |  |                               |
|--------------|-------|------------------|-------|----------------|-----------------|--|-------------------------------|
| ph/seg (deg) | 67.0  | Theor.           | 65.9  | Amplitude      | 0.159 +/- 0.028 | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 111.7 | Search (1024X16) | 0.131 | Interp.        | 0.000           | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 20.7  | Inc. seg. avg.   | 0.169 | Inc. seg. avg. | 0.169           | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 31.3  | Inc. frq. avg.   | 0.154 | Inc. frq. avg. | 0.154           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |

n: az 229.8 el 37.9 pa 34.8 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -1805.262 1571.411 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nc.Q.212.1V25LX

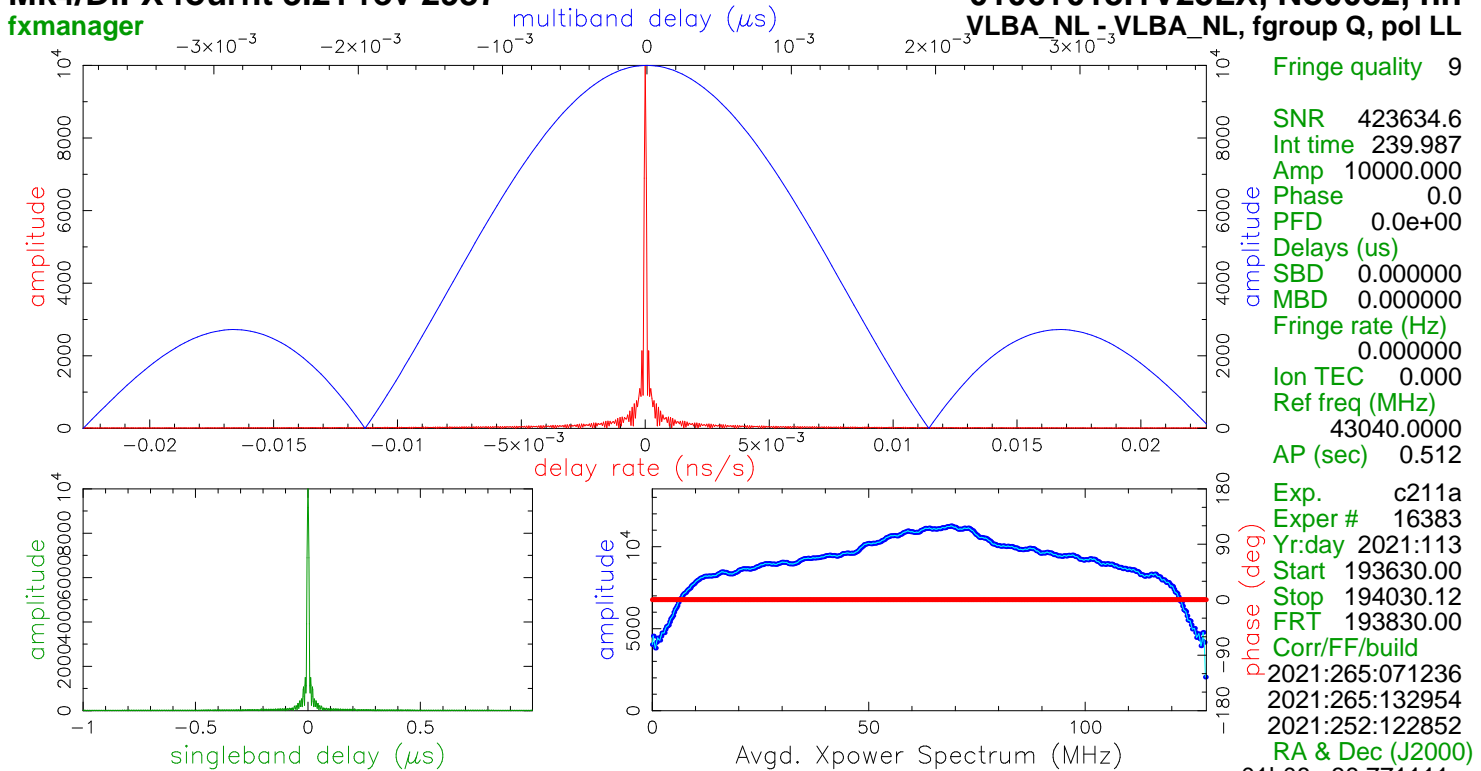


Mk4/DiFX fourfit 3.21 rev 2937

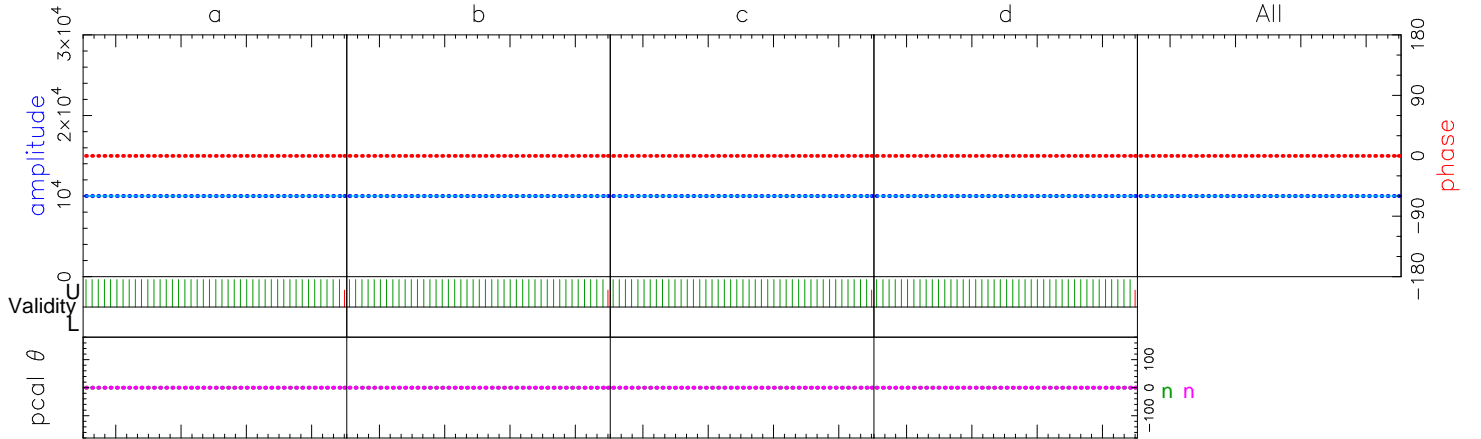
fxmanager

0106+013.1V25LX, No0082, nn

VLBA\_NL - VLBA\_NL, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All     |
|-----------|----------|----------|----------|------------|---------|
| 0.0       | 0.0      | 0.0      | 0.0      | Phase      | 0.0     |
| 10000.0   | 10000.0  | 10000.0  | 10000.0  | Ampl.      | 10000.0 |
| 513.0     | 513.0    | 513.0    | 513.0    | Sbd box    | 513.0   |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |         |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |         |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |         |
| n:n 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |         |
| n:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |         |
| n 1000    | 1000     | 1000     | 1000     | PC amp     |         |
| n 1000    | 1000     | 1000     | 1000     |            |         |
| n Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |         |
| n Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |         |
|           |          |          |          | Chan ids   |         |
|           |          |          |          | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                              |                  |        |       |
|--------------|-----|--------|------------------|---------------------|--|------------------------------|------------------|--------|-------|
|              | RMS | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 0.0 | 0.0    | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

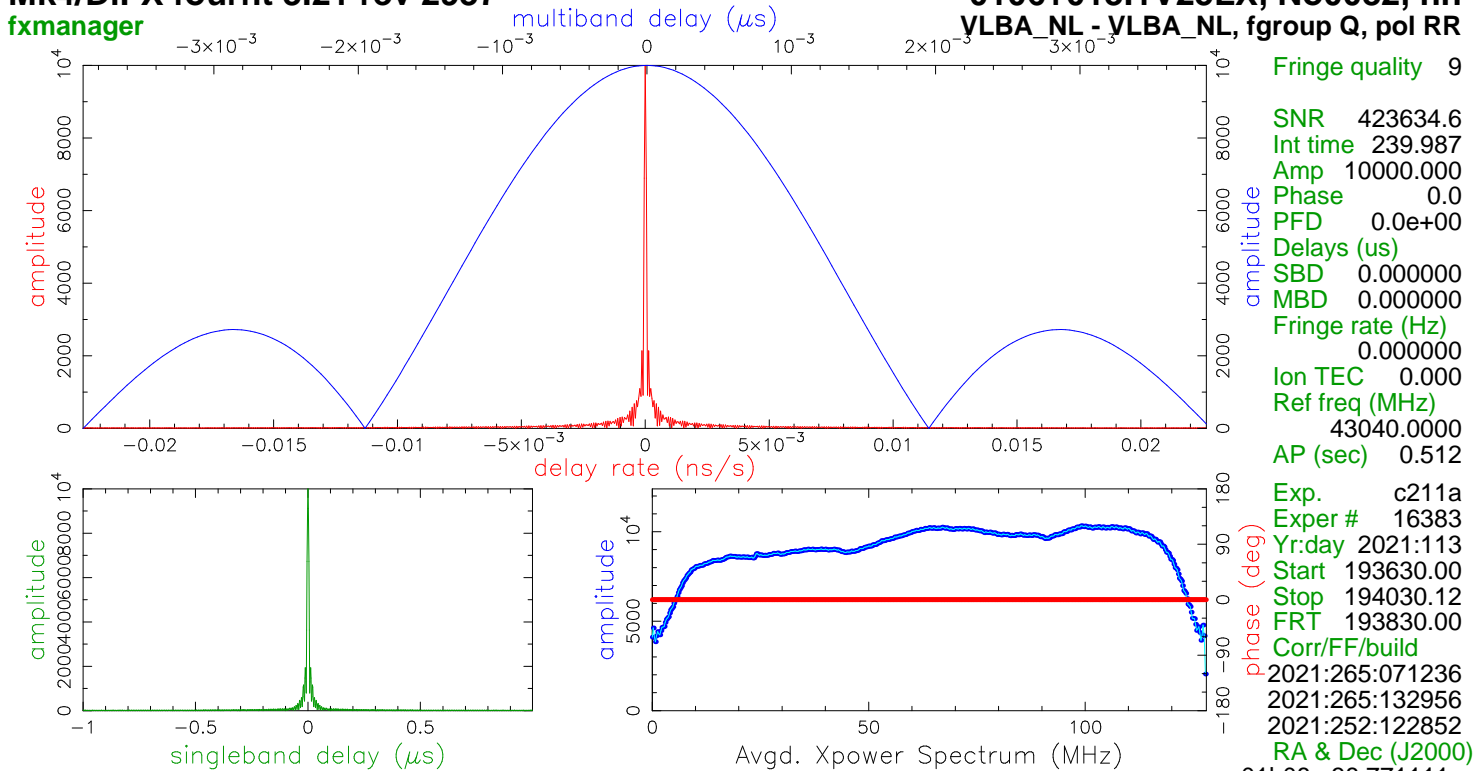
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nn.Q.172.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

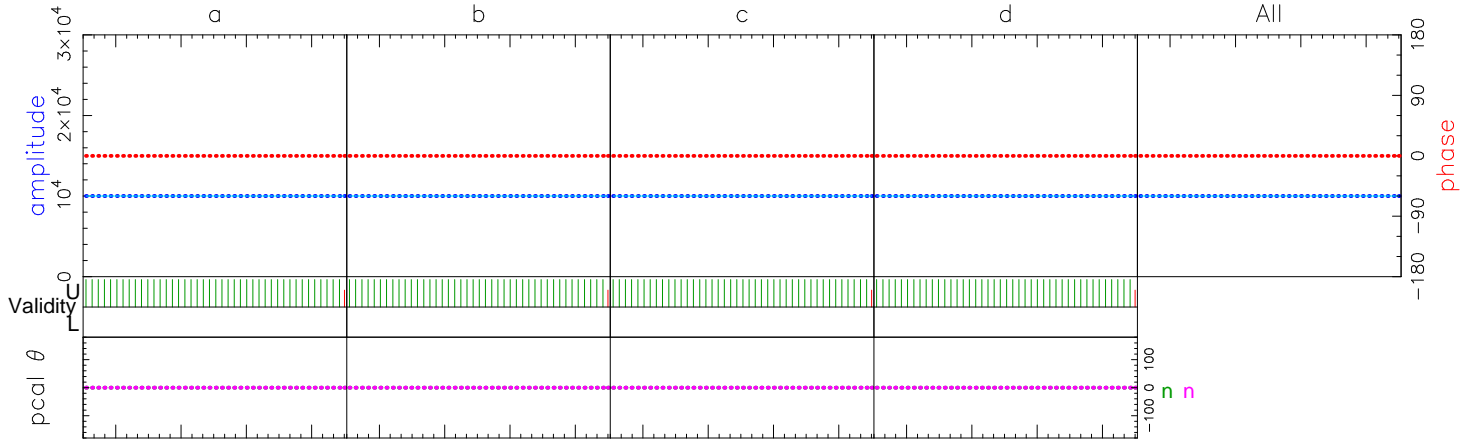
fxmanager

0106+013.1V25LX, No0082, nn

VLBA\_NL - VLBA\_NL, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All     |
|-----------|----------|----------|----------|------------|---------|
| 0.0       | 0.0      | 0.0      | 0.0      | Phase      | 0.0     |
| 10000.0   | 10000.0  | 10000.0  | 10000.0  | Ampl.      | 10000.0 |
| 513.0     | 513.0    | 513.0    | 513.0    | Sbd box    | 513.0   |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |         |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |         |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |         |
| n:n 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |         |
| n:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |         |
| n 1000    | 1000     | 1000     | 1000     | PC amp     |         |
| n 1000    | 1000     | 1000     | 1000     |            |         |
| n Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |         |
| n Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |         |
|           |          |          |          | Chan ids   |         |
|           |          |          |          | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                              |                  |        |       |  |
|--------------|-----|--------|------------------|---------------------|--|------------------------------|------------------|--------|-------|--|
|              | RMS | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |  |
| ph/seg (deg) | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |  |
| amp/seg (%)  | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |  |
| ph/frq (deg) | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |  |
| amp/frq (%)  | 0.0 | 0.0    | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |  |

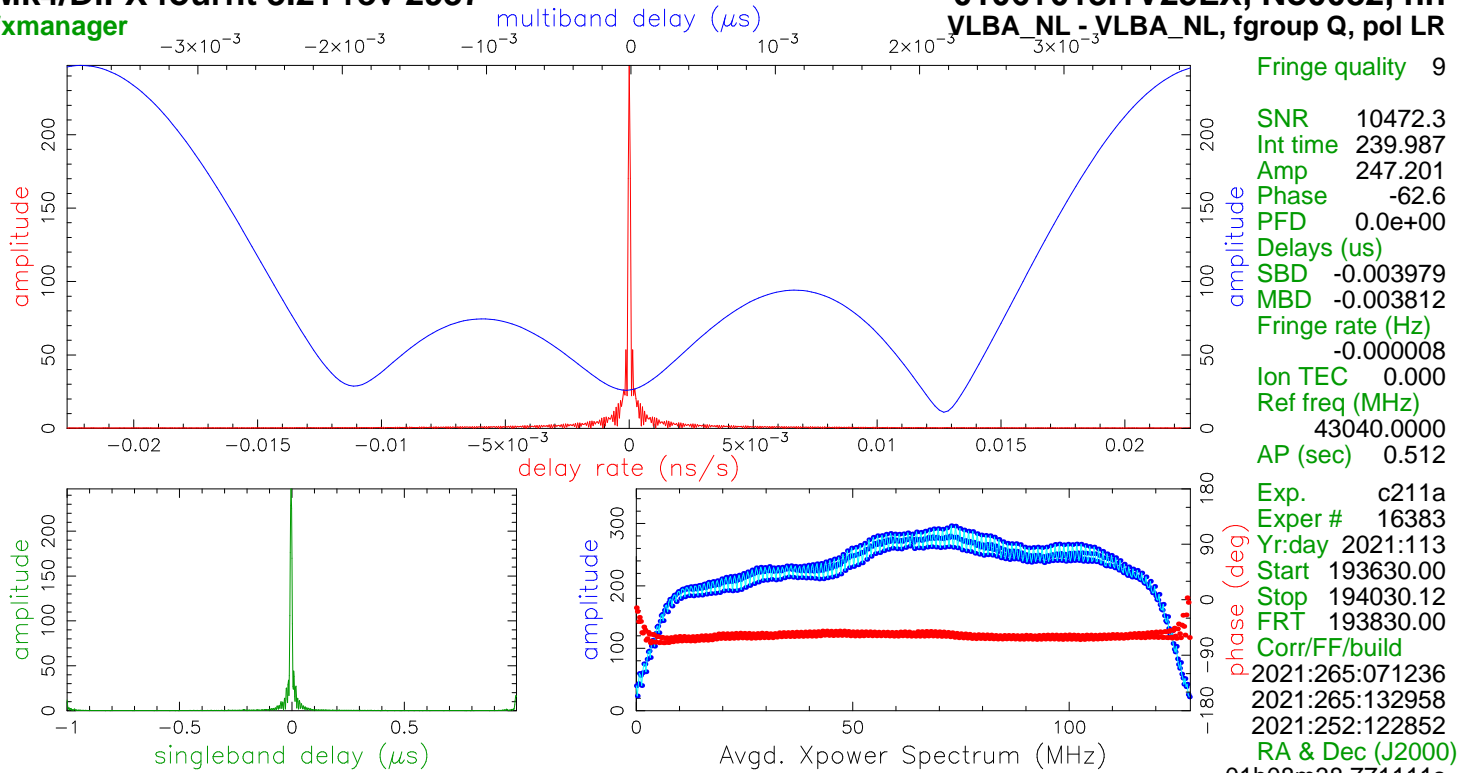
n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nn.Q.185.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

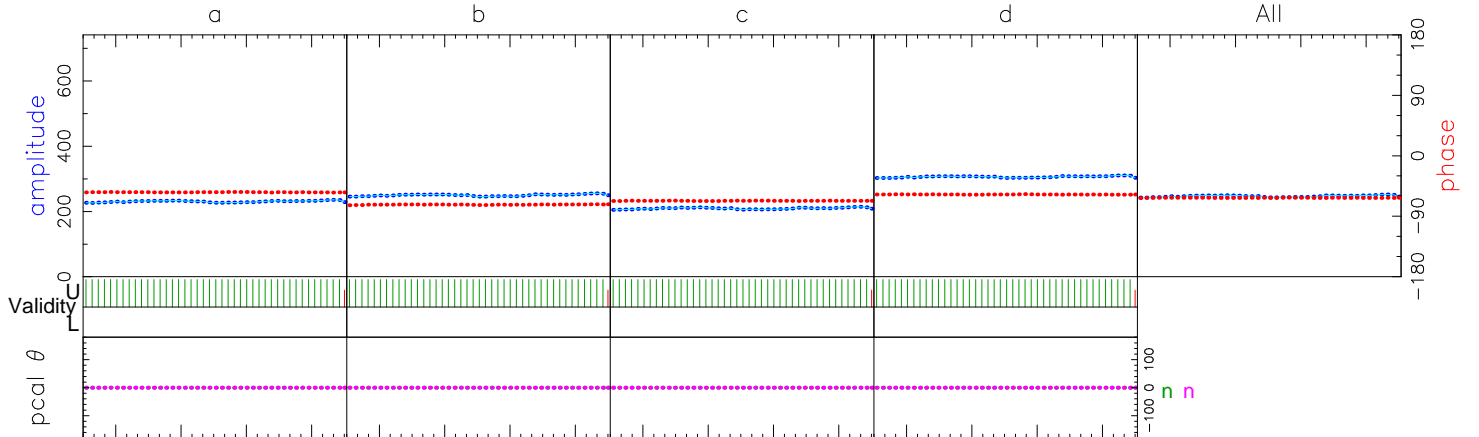
fxmanager

0106+013.1V25LX, No0082, nn

VLBA\_NL - VLBA\_NL, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



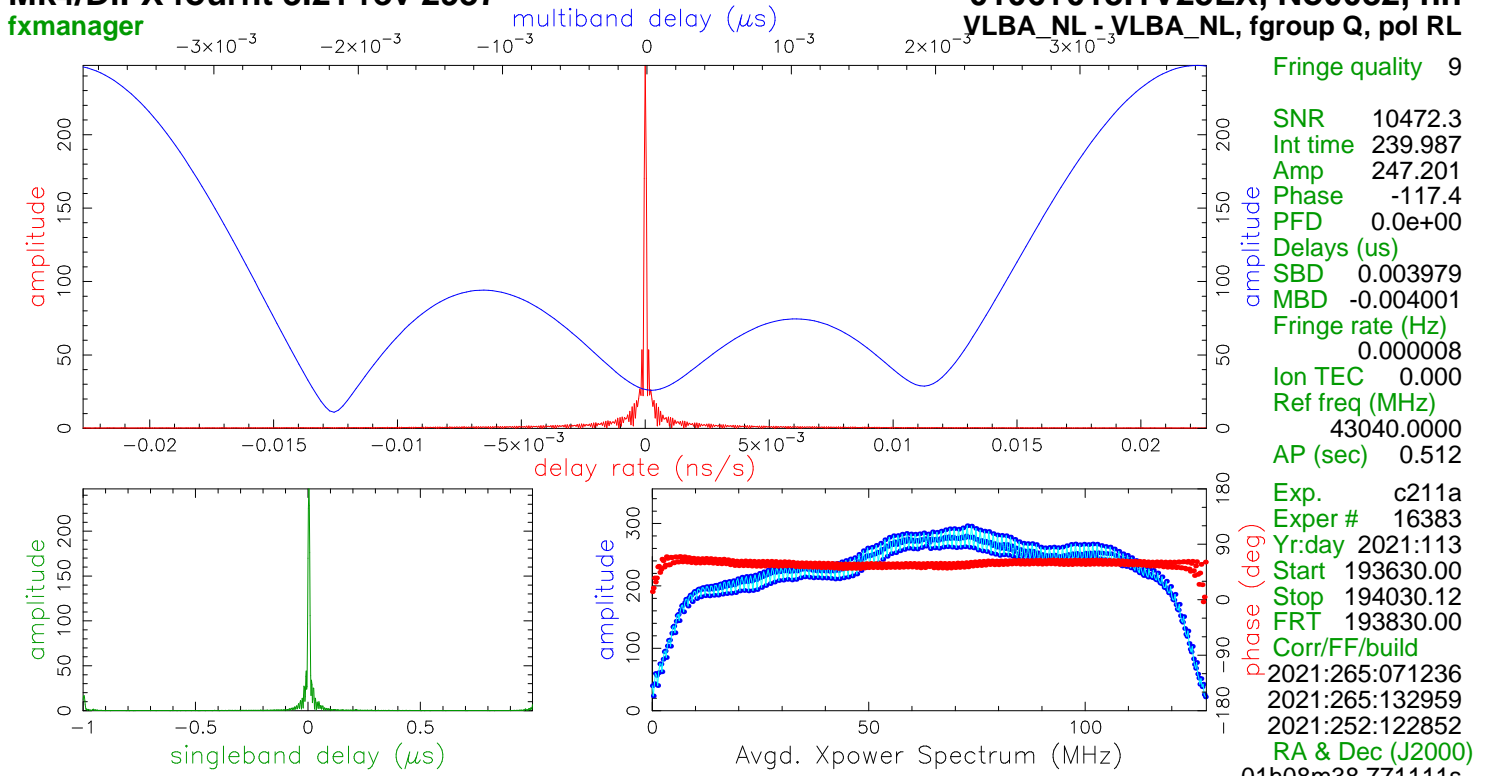
| 42912.00                      | 43040.00   | 43168.00   | 43296.00          | Freq (MHz)                             | All   |
|-------------------------------|--|--|-------------------|--|---|
| -54.3                         | -72.7  | -67.0  | -57.6             | Phase                                  | -62.6   |
| 230.8                         | 250.1  | 209.5  | 306.3             | Ampl.                                  | 249.2   |
| 510.8                         | 511.1  | 510.9  | 511.0             | Sbd box                                | 511.0   |
| U/L 469/0                     | 469/0  | 469/0  | 469/0             | APs used                               |   |
| n 1000                        | 1000   | 1000   | 1000              | PC freqs                               |   |
| n 1000                        | 1000   | 1000   | 1000              | PC freqs                               |   |
| n:n 0:0                       | 0:0  | 0:0  | 0:0               | PC phase                               |   |
| n:n 0:0                       | 0:0  | 0:0  | 0:0               | Manl PC                                |   |
| n 1000                        | 1000   | 1000   | 1000              | PC amp                                 |   |
| n 1000                        | 1000   | 1000   | 1000              |  |   |
| n Q00UL                       | Q01UL  | Q02UL  | Q03UL             | Chan ids                               |   |
| n Q00UR                       | Q01UR  | Q02UR  | Q03UR             | Tracks                                 |   |
|                               |  |  |                   | Chan ids                               |   |
|                               |  |  |                   | Tracks                                 |   |
| Group delay (usec)(sbd)       | -3.81159375000E-03                                       | Apriori delay (usec)   | 0.00000000000E+00 | Resid mbdelay (usec)                   | -3.81159E-03 +/- 1.1E-07                                |
| Sband delay (usec)            | -3.97850000000E-03                                       | Apriori clock (usec)   | 0.0000000E+00     | Resid sbdelay (usec)                   | -3.97850E-03 +/- 4.1E-07                                |
| Phase delay (usec)            | -4.03880032705E-06                                       | Apriori clockrate (us/s)                                       | 0.0000000E+00     | Resid phdelay (usec)                   | -4.03880E-06 +/- 7.1E-10                                |
| Delay rate (us/s)             | -1.90025802719E-10                                       | Apriori rate (us/s)  | 0.00000000000E+00 | Resid rate (us/s)                      | -1.90026E-10 +/- 5.1E-12                                |
| Total phase (deg)             | -62.6  | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)                      | -62.6 +/- 0.0   |
| RMS                           | Theor.   | Amplitude  | 247.201 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| ph/seg (deg)                  | 0.1  | Search (1024X16)   | 246.159           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 1.0  | Interp.  | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 10.4   | Inc. seg. avg.   | 247.174           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 14.6   | Inc. frq. avg.   | 249.191           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| n: az 229.8 el 37.9 pa 34.8   | n: az 229.8 el 37.9 pa 34.8                              | u,v (fr/asec) 0.000 0.000                                      |                   |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/nn..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/nn.Q.201.1V25LX |                   |  |   |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, nn

VLBA\_NL - VLBA\_NL, fgroup Q, pol RL



Fringe quality 9

SNR 10472.3

Int time 239.987

Amp 247.201

Phase -117.4

PFD 0.0e+00

Delays (us)

SBD 0.003979

MBD -0.004001

Fringe rate (Hz)

0.000008

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132959

2021:252:122852

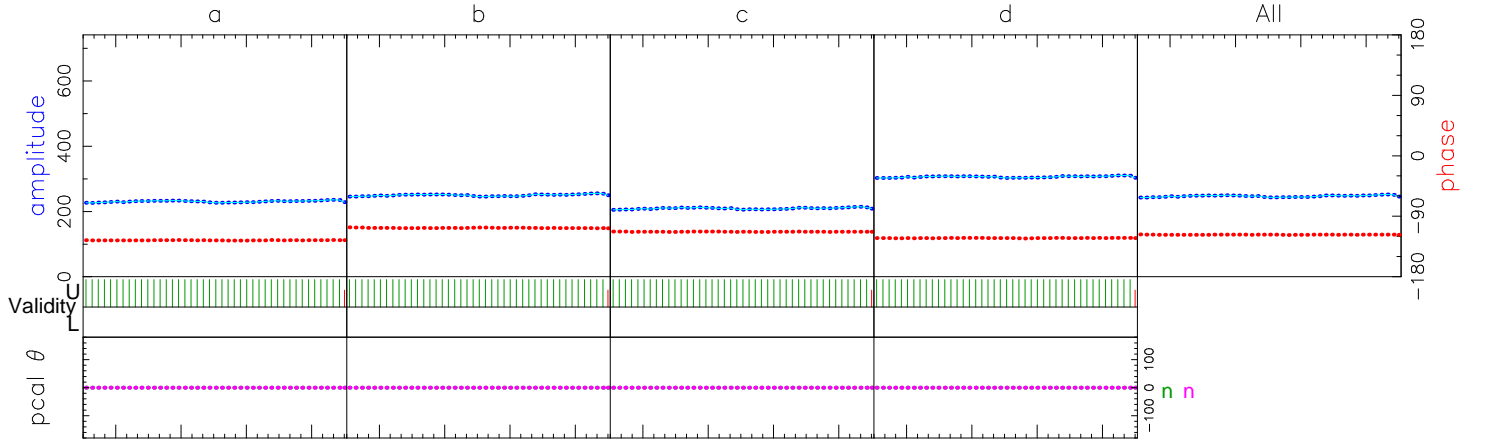
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----------|----------|----------|----------|------------|--------|
| -125.7    | -107.3   | -113.0   | -122.4   | Phase      | -117.4 |
| 230.8     | 250.1    | 209.5    | 306.3    | Ampl.      | 249.2  |
| 515.2     | 514.9    | 515.1    | 515.0    | Sbd box    | 515.0  |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |        |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |        |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |        |
| n:n 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |        |
| n:n 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| n 1000    | 1000     | 1000     | 1000     | PC amp     |        |
| n 1000    | 1000     | 1000     | 1000     |            |        |
| n Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |        |
| n Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |        |
|           |          |          |          | Chan ids   |        |
|           |          |          |          | Tracks     |        |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 3.81159375000E-03  | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | -4.00091E-03 | +/- | 1.1E-07 |
| Sband delay (usec)      | 3.97850000000E-03  | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | 3.97850E-03  | +/- | 4.1E-07 |
| Phase delay (usec)      | -7.57830004468E-06 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | -7.57830E-06 | +/- | 7.1E-10 |
| Delay rate (us/s)       | 1.90025802719E-10  | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | 1.90026E-10  | +/- | 5.1E-12 |
| Total phase (deg)       | -117.4             | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | -117.4       | +/- | 0.0     |

|              |      |        |     |                  |                   |  |                       |
|--------------|------|--------|-----|------------------|-------------------|--|-----------------------|
| ph/seg (deg) | 0.1  | Theor. | 0.0 | Amplitude        | 247.201 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 1.0  | 0.0    | 0.0 | Search (1024X16) | 246.159           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 10.4 | 0.0    | 0.0 | Interp.          | 0.000             | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 14.6 | 0.0    | 0.0 | Inc. seg. avg.   | 247.174           | SampCntNorm: enabled                   | dr window (ns/s)      |
|              |      |        |     | Inc. frq. avg.   | 249.191           | Sample rate(MSamp/s): 256              | ion window (TEC)      |
|              |      |        |     |                  |                   | Data rate(Mb/s): 2048                  |                       |

n: az 229.8 el 37.9 pa 34.8 n: az 229.8 el 37.9 pa 34.8 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

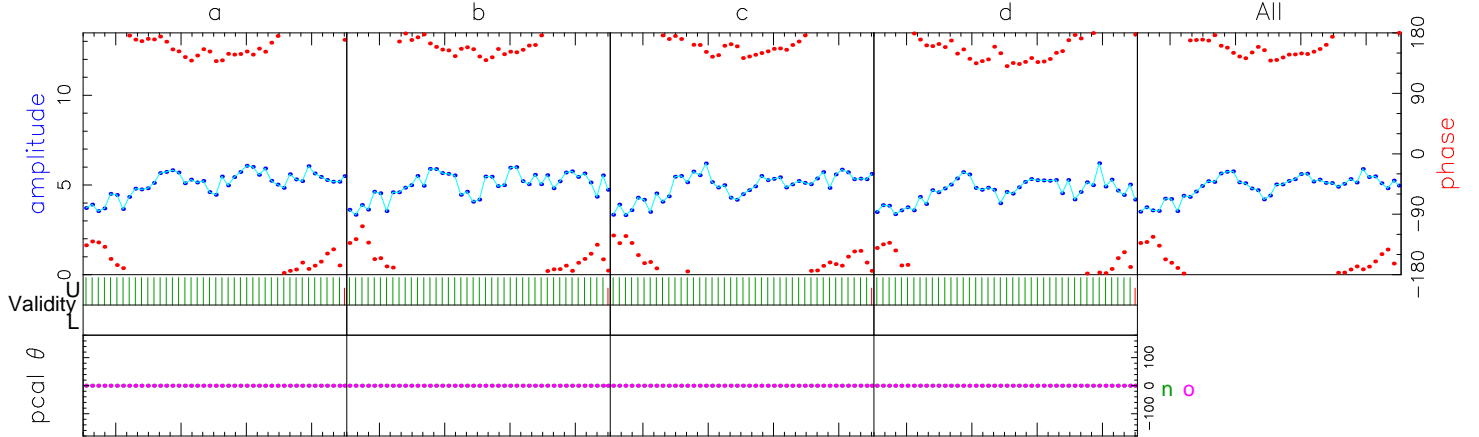
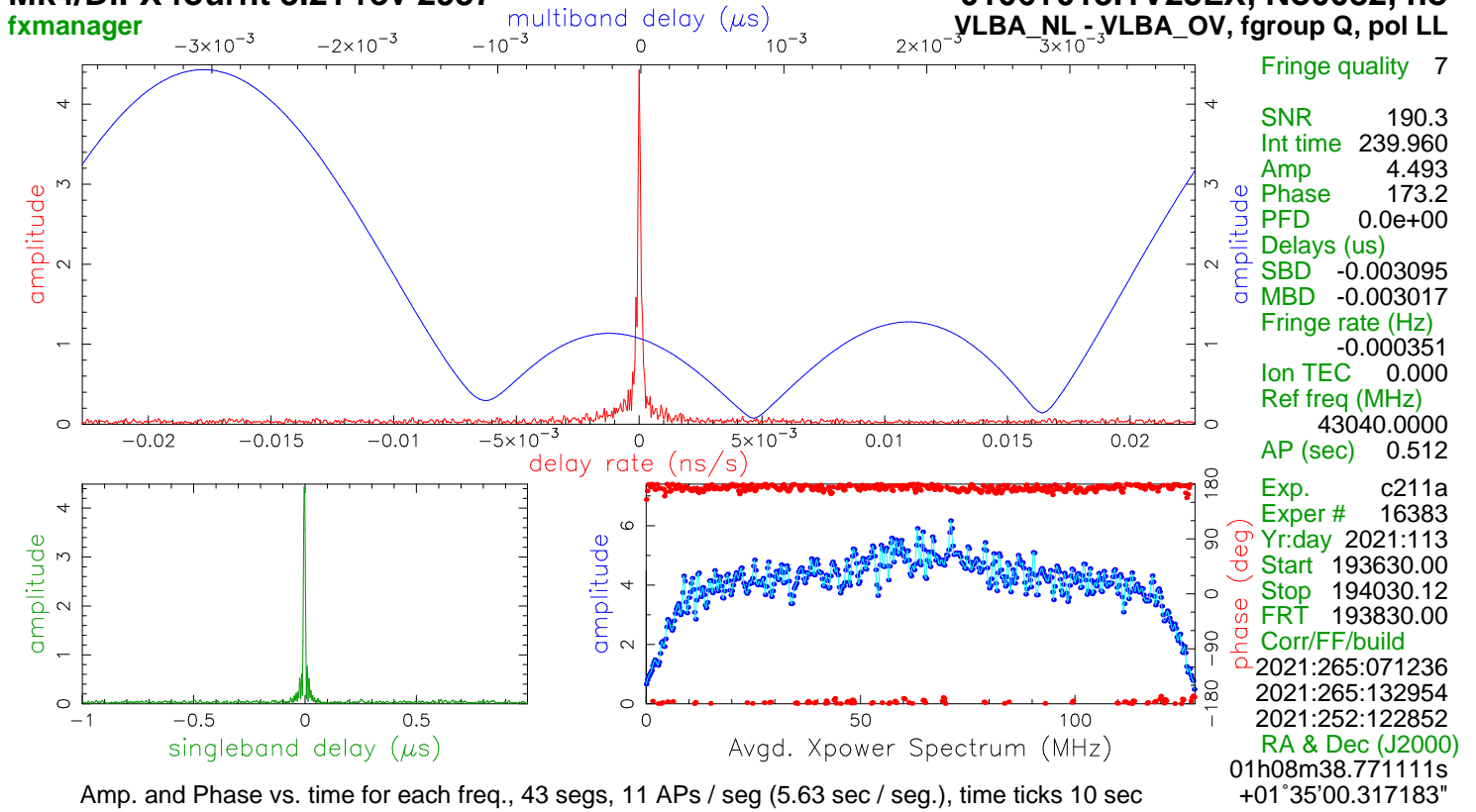
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nn..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/nn.Q.215.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, no

VLBA\_NL - VLBA\_OV, fgroup Q, pol LL



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 172.9    | 176.3    | 177.9    | 165.3    | Phase      | 173.2 |
| n   | 4.6      | 4.5      | 4.5      | 4.2      | Ampl.      | 4.4   |
| o   | 511.5    | 511.5    | 511.4    | 511.2    | Sbd box    | 511.4 |
| n   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| n   | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| o   | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| n   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| o   | 1000     | 1000     | 1000     | 1000     |            |       |
| n   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -4.03483843710E+03 | Apriori delay (usec)     | -4.03483542050E+03 | Resid mbdelay (usec) | -3.01659E-03 | +/- | 5.8E-06 |
| Sband delay (usec)      | -4.03483851513E+03 | Apriori clock (usec)     | 1.7617016E+00      | Resid sbdelay (usec) | -3.09462E-03 | +/- | 2.3E-05 |
| Phase delay (usec)      | -4.03483540932E+03 | Apriori clockrate (us/s) | -6.0000019E-08     | Resid phdelay (usec) | 1.11789E-05  | +/- | 3.9E-08 |
| Delay rate (us/s)       | -4.72543820973E-01 | Apriori rate (us/s)      | -4.72543812819E-01 | Resid rate (us/s)    | -8.15409E-09 | +/- | 2.8E-10 |
| Total phase (deg)       | -6.2               | Apriori accel (us/s/s)   | 2.16678305369E-05  | Resid phase (deg)    | 173.2        | +/- | 0.6     |

|              |      |        |                  |                 |  |                       |
|--------------|------|--------|------------------|-----------------|--|-----------------------|
| ph/seg (deg) | RMS  | Theor. | Amplitude        | 4.493 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 26.9 | 2.0    | Search (1024X16) | 4.356           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 16.7 | 3.4    | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 6.8  | 0.6    | Inc. seg. avg.   | 4.895           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              | 3.3  | 1.1    | Inc. frq. avg.   | 4.443           | Data rate(Mb/s): 2048                  | ion window (TEC)      |
|              |      |        |                  |                 | nlags: 512                             | t_cohere infinite     |

n: az 229.8 el 37.9 pa 34.8 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 1361.743 295.637 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/no..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/no.Q.169.1V25LX

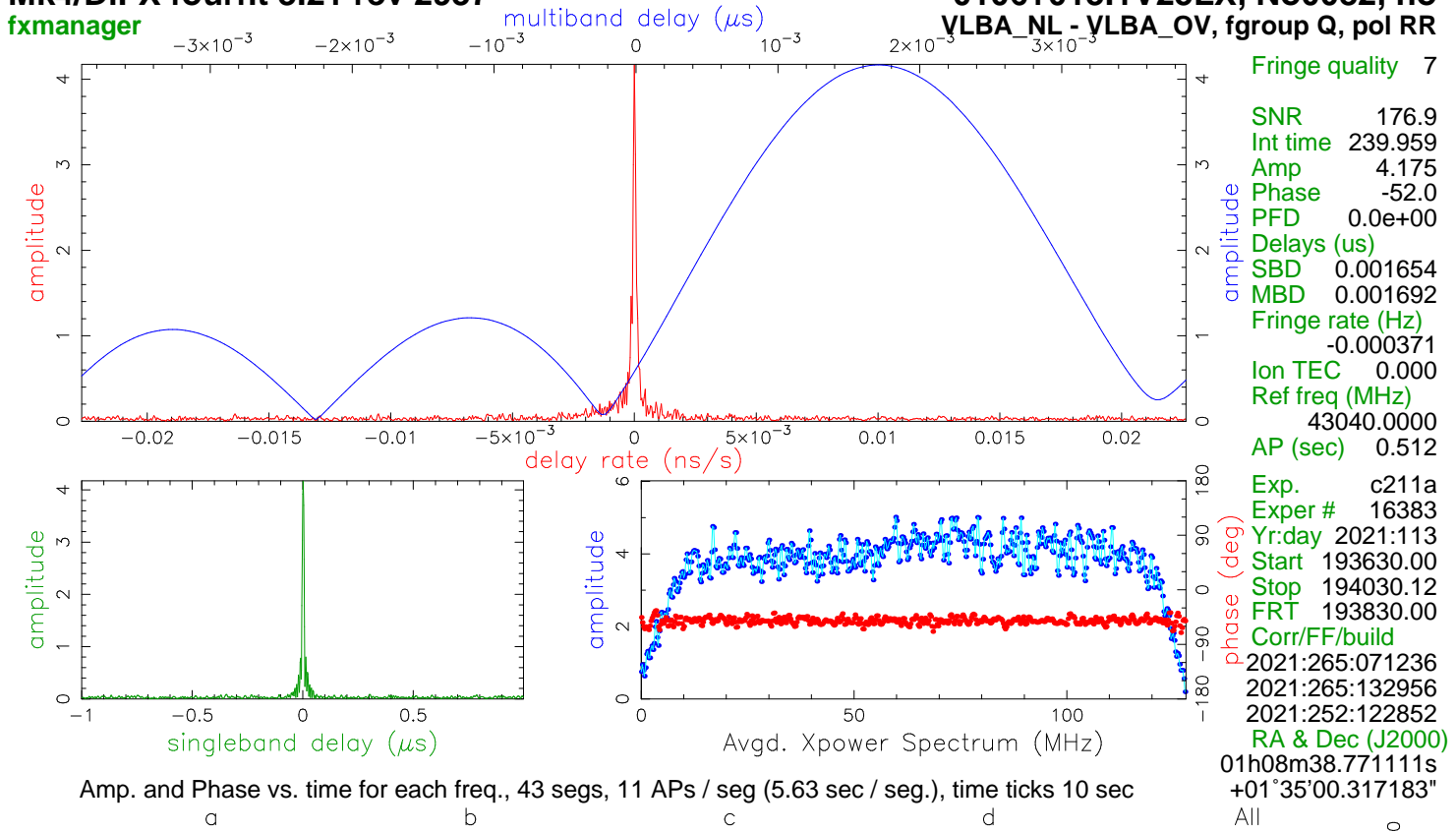


Mk4/DiFX fourfit 3.21 rev 2937

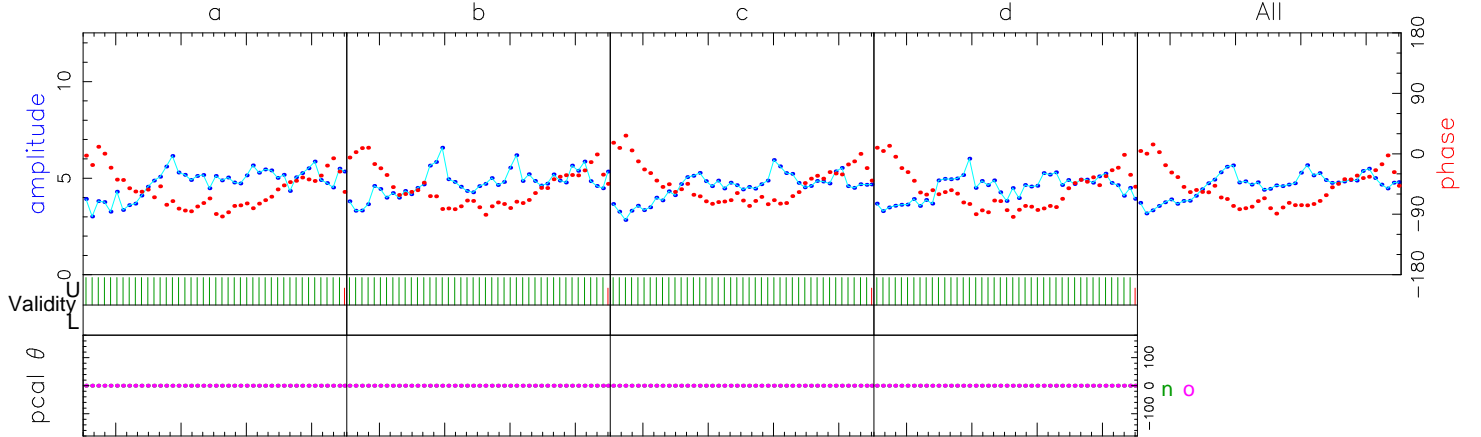
fxmanager

0106+013.1V25LX, No0082, no

VLBA\_NL - VLBA\_OV, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| -55.5     | -51.2    | -46.4    | -54.8    | Phase      | -52.0 |
| 4.3       | 4.3      | 4.1      | 4.0      | Ampl.      | 4.2   |
| 513.8     | 514.0    | 513.8    | 513.8    | Sbd box    | 513.8 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| n 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| o 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| n:0 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| n:0 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| n 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| n 1000    | 1000     | 1000     | 1000     |            |       |
| n Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| o Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -4.03483372894E+03 | Apriori delay (usec)     | -4.03483542050E+03 | Resid mbdelay (usec) | 1.69156E-03  | +/- | 6.3E-06 |
| Sband delay (usec)      | -4.03483376625E+03 | Apriori clock (usec)     | 1.7617016E+00      | Resid sbdelay (usec) | 1.65425E-03  | +/- | 2.4E-05 |
| Phase delay (usec)      | -4.03483542386E+03 | Apriori clockrate (us/s) | -6.0000019E-08     | Resid phdelay (usec) | -3.35584E-06 | +/- | 4.2E-08 |
| Delay rate (us/s)       | -4.72543821438E-01 | Apriori rate (us/s)      | -4.72543812819E-01 | Resid rate (us/s)    | -8.61923E-09 | +/- | 3.0E-10 |
| Total phase (deg)       | -231.4             | Apriori accel (us/s/s)   | 2.16678305369E-05  | Resid phase (deg)    | -52.0        | +/- | 0.6     |

|              |      |        |                  |                 |  |                       |                   |                  |       |      |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-------|------|
|              | RMS  | Theor. | Amplitude        | 4.175 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |       |      |
| ph/seg (deg) | 27.5 | 2.1    | Search (1024X16) | 4.023           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000            |       |      |
| amp/seg (%)  | 18.3 | 3.7    | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004           | 0.004 |      |
| ph/frq (deg) | 5.1  | 0.6    | Inc. seg. avg.   | 4.625           | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023           | 0.023 |      |
| amp/frq (%)  | 3.0  | 1.1    | Inc. frq. avg.   | 4.175           | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00  | 0.00 |

n: az 229.8 el 37.9 pa 34.8 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 1361.743 295.637 simultaneous interpolator

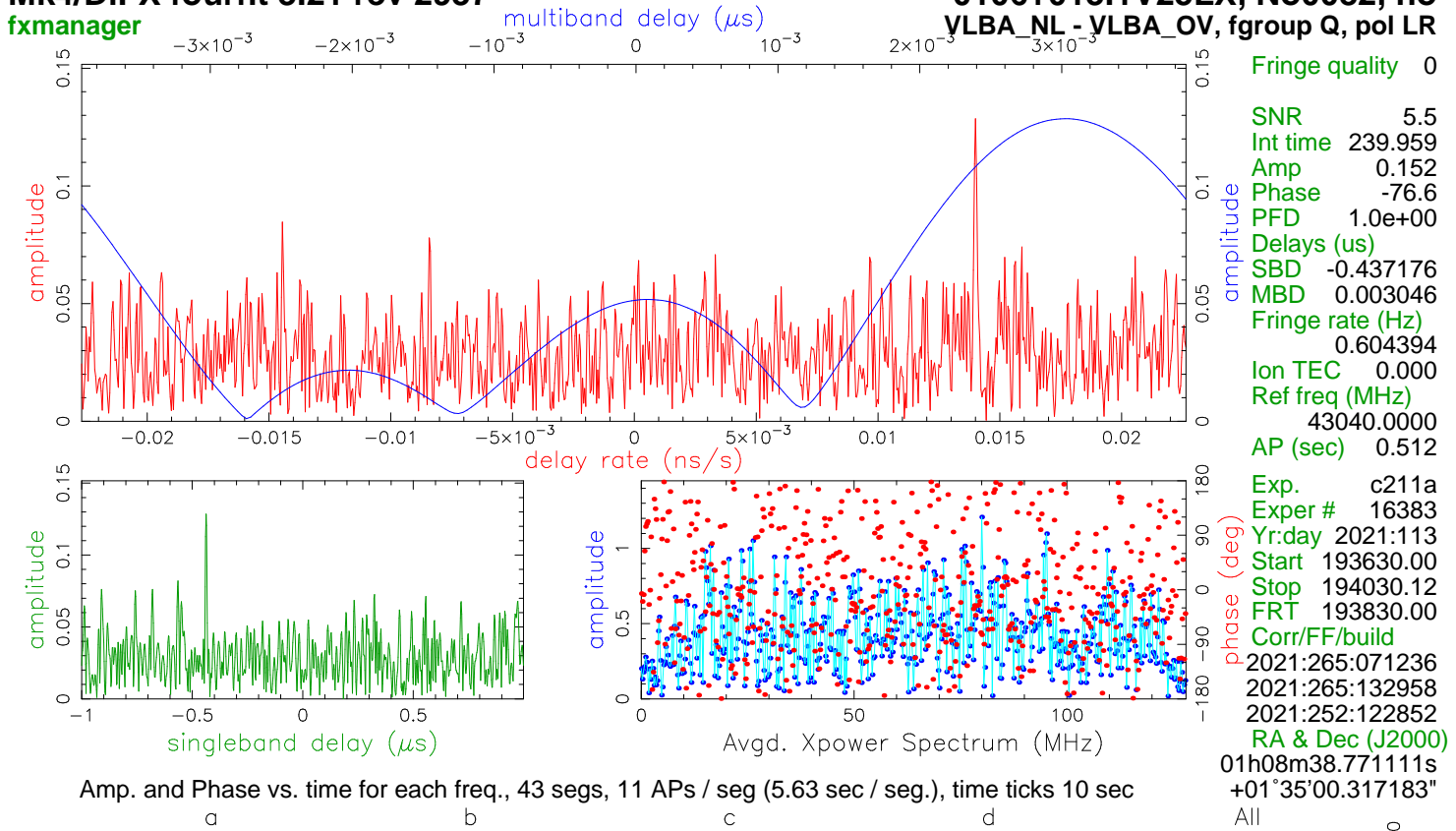
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/no..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/no.Q.186.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

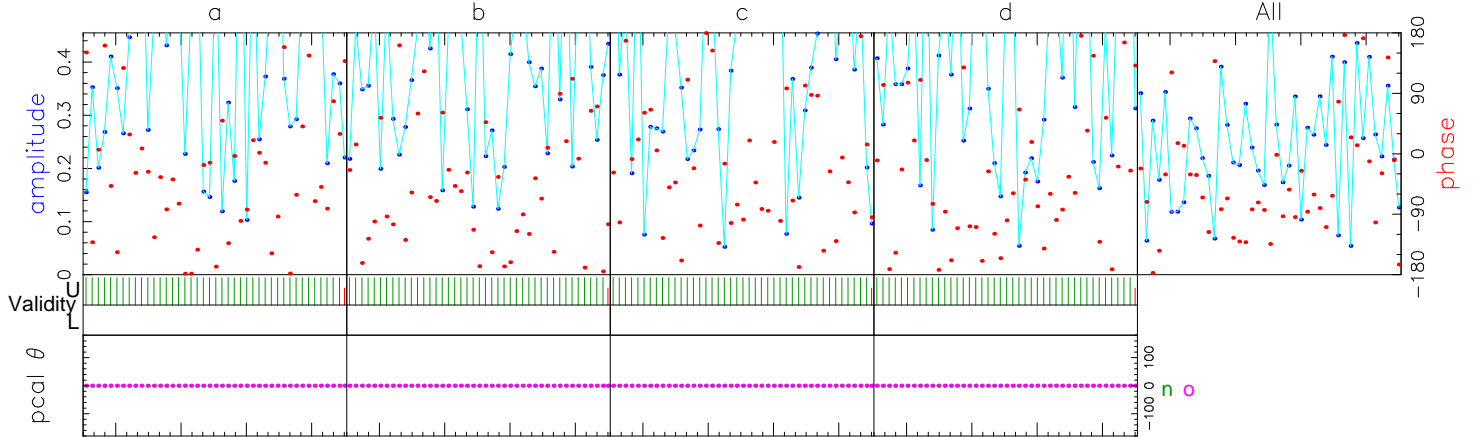
fxmanager

0106+013.1V25LX, No0082, no

VLBA\_NL - VLBA\_OV, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



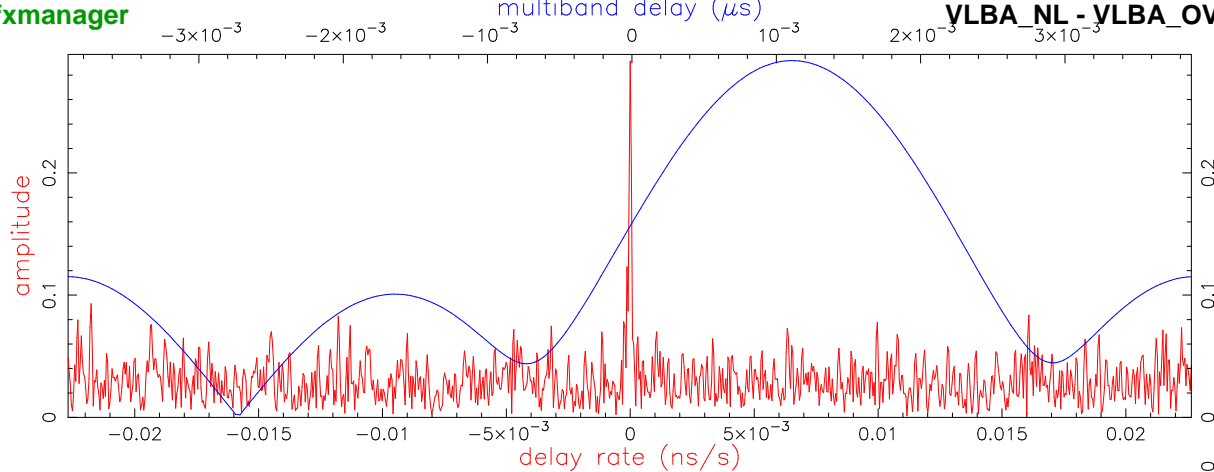
|                               |          |  |                          |  |  |                              |                  |              |
|-------------------------------|----------|--|--------------------------|--|--|------------------------------|------------------|--------------|
| U/L                           | 42912.00 | 43040.00   | 43168.00                 | 43296.00   | Freq (MHz)                             | All                          |                  |              |
|                               | -73.2    | -87.7  | -62.9                    | -84.6  | Phase                                  | -76.6                        |                  |              |
|                               | 0.2      | 0.1  | 0.2                      | 0.2  | Ampl.                                  | 0.1                          |                  |              |
|                               | 177.1    | 958.4  | 736.6                    | 976.0  | Sbd box                                | 289.2                        |                  |              |
|                               | 469/0    | 469/0  | 469/0                    | 469/0  | APs used                               |                              |                  |              |
|                               | n 1000   | 1000   | 1000                     | 1000   | PC freqs                               |                              |                  |              |
|                               | o 1000   | 1000   | 1000                     | 1000   | PC freqs                               |                              |                  |              |
|                               | n:o 0:0  | 0:0  | 0:0                      | 0:0  | PC phase                               |                              |                  |              |
|                               | n:o 0:0  | 0:0  | 0:0                      | 0:0  | Manl PC                                |                              |                  |              |
|                               | n 1000   | 1000   | 1000                     | 1000   | PC amp                                 |                              |                  |              |
| o 1000                        | 1000     | 1000   | 1000                     |  |  |                              |                  |              |
| n                             | Q00UL    | Q01UL  | Q02UL                    | Q03UL  | Chan ids                               |                              |                  |              |
| o                             | Q00UR    | Q01UR  | Q02UR                    | Q03UR  | Tracks                                 |                              |                  |              |
|                               |          |  |                          |  | Chan ids                               |                              |                  |              |
|                               |          |  |                          |  | Tracks                                 |                              |                  |              |
| Group delay (usec)(sbd)       |          | -4.03526987489E+03                                       | Apriori delay (usec)     | -4.03483542050E+03   | Resid mbdelay (usec)                   | 3.04561E-03                  | +/-              | 2.0E-04      |
| Sband delay (usec)            |          | -4.03527259650E+03                                       | Apriori clock (usec)     | 1.7617016E+00  | Resid sbdelay (usec)                   | -4.37176E-01                 | +/-              | 7.9E-04      |
| Phase delay (usec)            |          | -4.03483542545E+03                                       | Apriori clockrate (us/s) | -6.0000019E-08   | Resid phdelay (usec)                   | -4.94636E-06                 | +/-              | 1.4E-06      |
| Delay rate (us/s)             |          | -4.72529770207E-01                                       | Apriori rate (us/s)      | -4.72543812819E-01   | Resid rate (us/s)                      | 1.40426E-05                  | +/-              | 9.8E-09      |
| Total phase (deg)             |          | -256.1   | Apriori accel (us/s/s)   | 2.16678305369E-05  | Resid phase (deg)                      | -76.6                        | +/-              | 21.0         |
|                               | RMS      | Theor.   | Amplitude                | 0.152 +/- 0.028  | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |              |
| ph/seg (deg)                  | 70.9     | 68.8   | Search (1024X16)         | 0.125  | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000        |
| amp/seg (%)                   | 126.2    | 120.1  | Interp.                  | 0.000  | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg)                  | 13.9     | 21.0   | Inc. seg. avg.           | 0.170  | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)                   | 5.3      | 36.6   | Inc. frq. avg.           | 0.144  | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |
| n: az 229.8 el 37.9 pa 34.8   |          | o: az 197.5 el 53.2 pa 14.3                              |                          | u,v (fr/asec) 1361.743 295.637                                 |  | simultaneous interpolator    |                  |              |
| Control file: cf_1234_gmva7mm |          | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/no..1V25LX |                          | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/no.Q.199.1V25LX |  |                              |                  |              |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

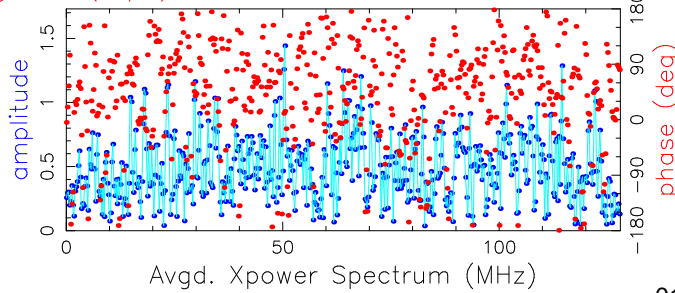
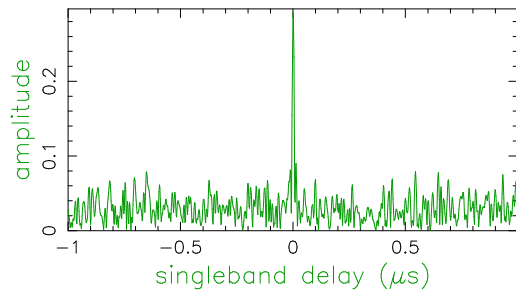
0106+013.1V25LX, No0082, no

VLBA\_NL - VLBA\_OV, fgroup Q, pol RL



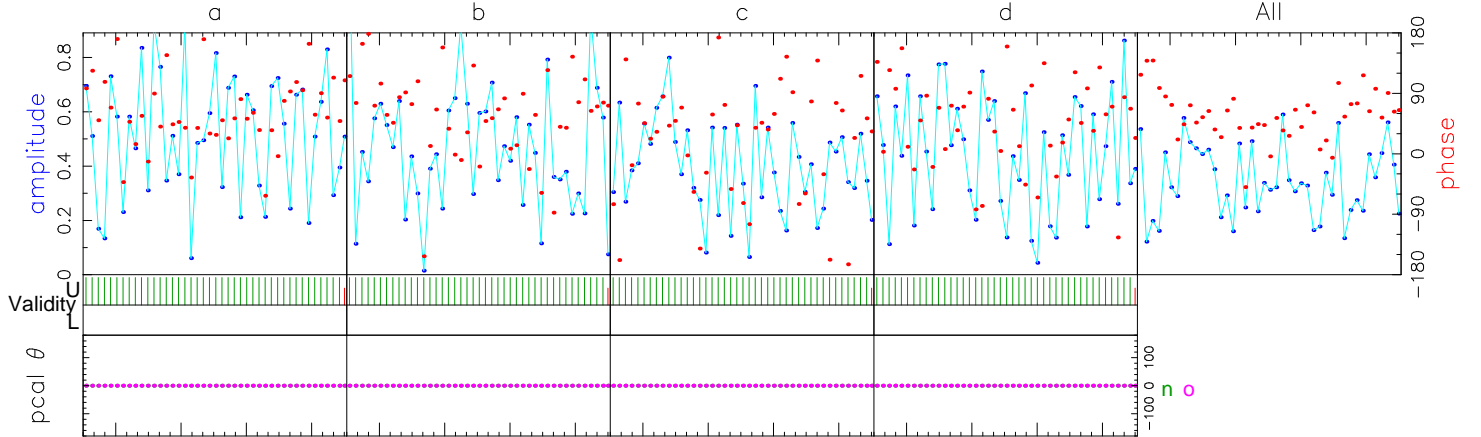
Fringe quality 9

SNR 12.6  
Int time 239.960  
Amp 0.297  
Phase 58.2  
PFD 7.2e-28  
Delays (us)  
SBD 0.000868  
MBD 0.001164  
Fringe rate (Hz)  
-0.000356  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132959  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 60.7     | 61.8     | 52.1     | 54.9     | Phase      | 58.2  |
| n   | 0.4      | 0.3      | 0.2      | 0.3      | Ampl.      | 0.3   |
| o   | 513.4    | 512.7    | 514.1    | 513.5    | Sbd box    | 513.4 |
| n   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| n   | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| o   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| n   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| n   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
| o   |          |          |          |          | Chan ids   |       |
| n   |          |          |          |          | Tracks     |       |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -4.03483425682E+03 | Apriori delay (usec)     | -4.03483542050E+03 | Resid mbdelay (usec) | 1.16369E-03  | +/- | 8.8E-05 |
| Sband delay (usec)      | -4.03483455238E+03 | Apriori clock (usec)     | 1.7617016E+00      | Resid sbdelay (usec) | 8.68125E-04  | +/- | 3.4E-04 |
| Phase delay (usec)      | -4.03483541675E+03 | Apriori clockrate (us/s) | -6.0000019E-08     | Resid phdelay (usec) | 3.75579E-06  | +/- | 5.9E-07 |
| Delay rate (us/s)       | -4.72543821101E-01 | Apriori rate (us/s)      | -4.72543812819E-01 | Resid rate (us/s)    | -8.28172E-09 | +/- | 4.2E-09 |
| Total phase (deg)       | -121.2             | Apriori accel (us/s/s)   | 2.16678305369E-05  | Resid phase (deg)    | 58.2         | +/- | 9.1     |

|              |          |             |                           |  |                       |                   |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|-------------------|----------------------------|
| ph/seg (deg) | RMS 37.2 | Theor. 29.9 | Amplitude 0.297 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)  | 46.5     | 52.1        | Search (1024X16) 0.286    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg) | 5.8      | 9.1         | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)  | 23.9     | 15.9        | Inc. seg. avg. 0.304      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
|              |          |             | Inc. frq. avg. 0.288      | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

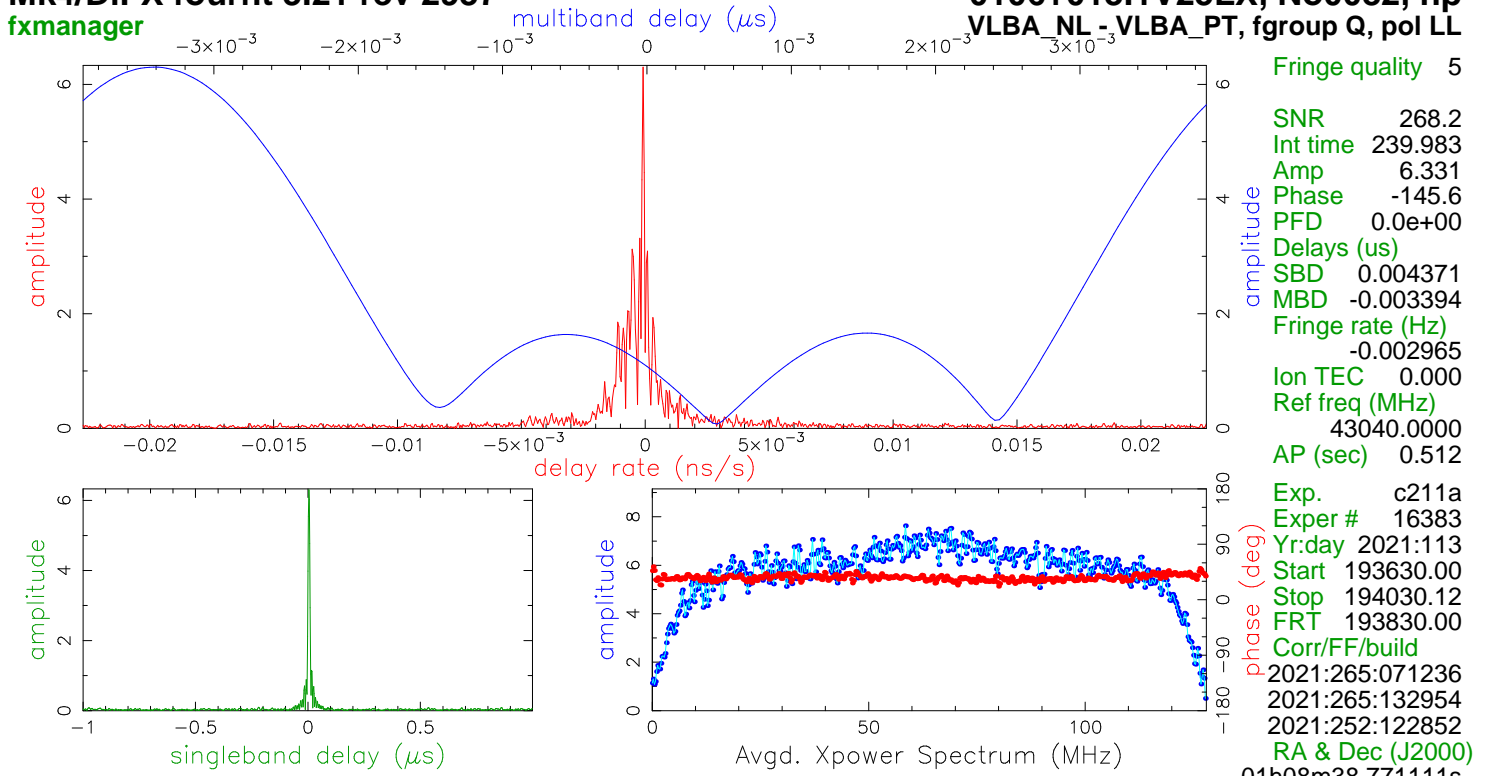
n: az 229.8 el 37.9 pa 34.8 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 1361.743 295.637 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/no..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/no.Q.214.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

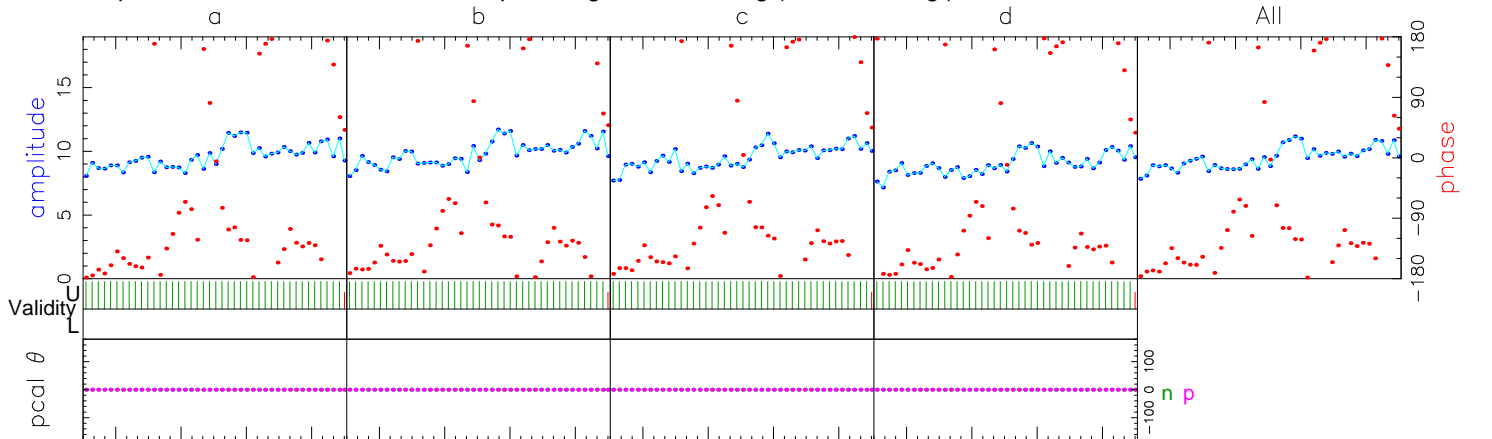
fxmanager

0106+013.1V25LX, No0082, np

VLBA\_NL - VLBA\_PT, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



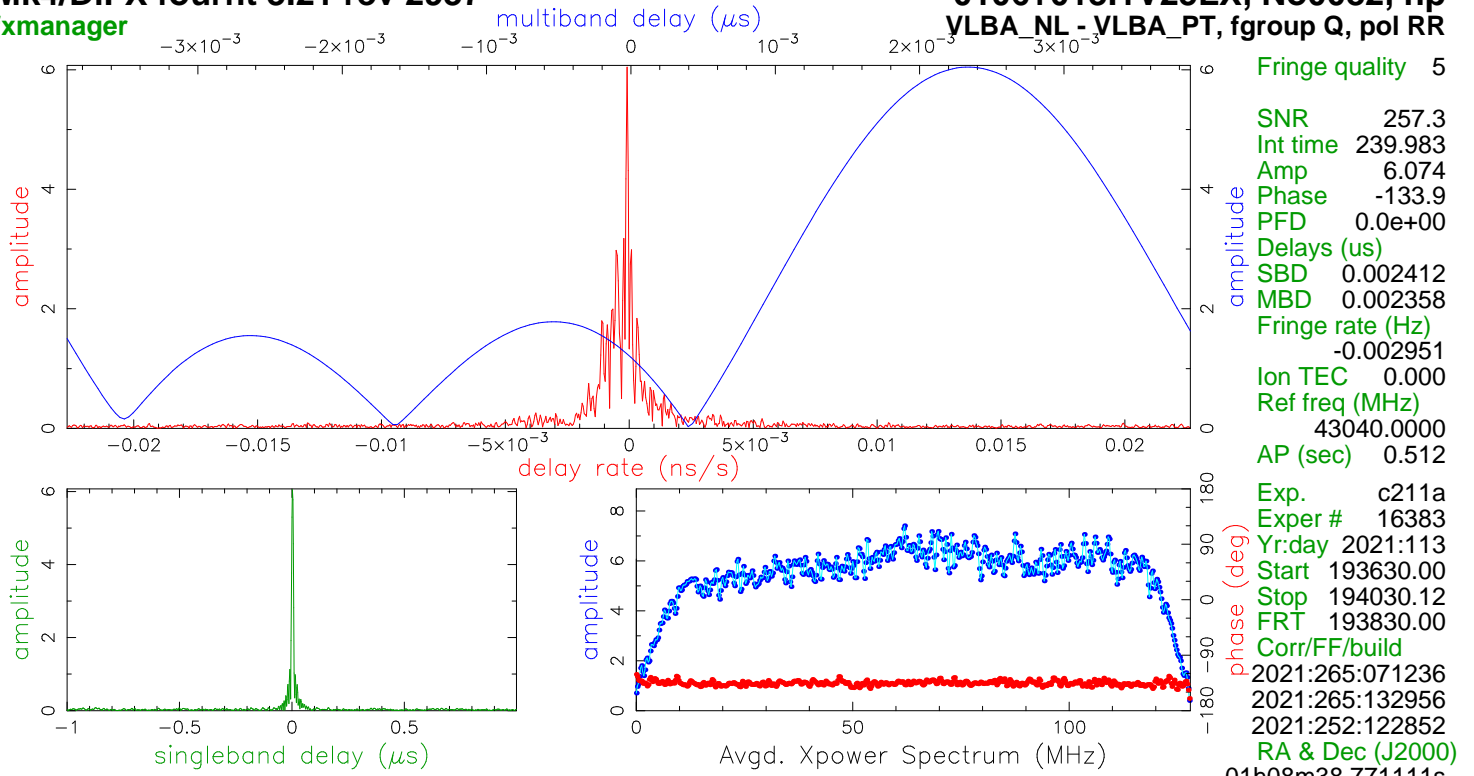
|                               |  |  |                    |  |                       |                   |                  |                           |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|------------------|---------------------------|
| 42912.00                      | 43040.00   | 43168.00   | 43296.00           | Freq (MHz)                             | All                   |                   |                  |                           |
| -147.1                        | -142.3   | -142.8   | -150.6             | Phase                                  | -145.6                |                   |                  |                           |
| 6.4                           | 6.5  | 6.3  | 5.9                | Ampl.                                  | 6.3                   |                   |                  |                           |
| 515.4                         | 515.3  | 515.2  | 515.0              | Sbd box                                | 515.2                 |                   |                  |                           |
| U/L 469/0                     | 469/0  | 469/0  | 469/0              | APs used                               |                       |                   |                  |                           |
| n 1000                        | 1000   | 1000   | 1000               | PC freqs                               |                       |                   |                  |                           |
| p 1000                        | 1000   | 1000   | 1000               | PC freqs                               |                       |                   |                  |                           |
| n:p 0:0                       | 0:0  | 0:0  | 0:0                | PC phase                               |                       |                   |                  |                           |
| n:p 0:0                       | 0:0  | 0:0  | 0:0                | Manl PC                                |                       |                   |                  |                           |
| n 1000                        | 1000   | 1000   | 1000               | PC amp                                 |                       |                   |                  |                           |
| p 1000                        | 1000   | 1000   | 1000               |  |                       |                   |                  |                           |
| n Q00UL                       | Q01UL  | Q02UL  | Q03UL              | Chan ids                               |                       |                   |                  |                           |
| p Q00UL                       | Q01UL  | Q02UL  | Q03UL              | Tracks                                 |                       |                   |                  |                           |
|                               |  |  |                    | Chan ids                               |                       |                   |                  |                           |
|                               |  |  |                    | Tracks                                 |                       |                   |                  |                           |
| Group delay (usec)(sbd)       | -3.77417289817E+03                                       | Apriori delay (usec)   | -3.77417731674E+03 | Resid mbdelay (usec)                   | -3.39393E-03          | +/- 4.1E-06       |                  |                           |
| Sband delay (usec)            | -3.77417294599E+03                                       | Apriori clock (usec)   | -1.4290810E-01     | Resid sbdelay (usec)                   | 4.37075E-03           | +/- 1.6E-05       |                  |                           |
| Phase delay (usec)            | -3.77417732614E+03                                       | Apriori clockrate (us/s)                                       | 4.1999997E-07      | Resid phdelay (usec)                   | -9.39652E-06          | +/- 2.8E-08       |                  |                           |
| Delay rate (us/s)             | -2.45419580371E-01                                       | Apriori rate (us/s)  | -2.45419511474E-01 | Resid rate (us/s)                      | -6.88971E-08          | +/- 2.0E-10       |                  |                           |
| Total phase (deg)             | -42.1  | Apriori accel (us/s/s)   | 2.04096600001E-05  | Resid phase (deg)                      | -145.6                | +/- 0.4           |                  |                           |
| RMS                           | Theor.   | Amplitude  | 6.331 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |                           |
| ph/seg (deg)                  | 56.1   | Search (1024X16)   | 5.872              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |                           |
| amp/seg (%)                   | 51.6   | Interp.  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |                           |
| ph/frq (deg)                  | 4.8  | Inc. seg. avg.   | 9.482              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023     |                           |
| amp/frq (%)                   | 3.4  | Inc. frq. avg.   | 6.311              | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| n: az 229.8 el 37.9 pa 34.8   | p: az 214.8 el 52.2 pa 28.7                              | u,v (fr/asec)  | 710.956 477.114    |  |                       |                   |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/np..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/np.Q.167.1V25LX |                    |  |                       |                   |                  |                           |

## Mk4/DiFX fourfit 3.21 rev 2937

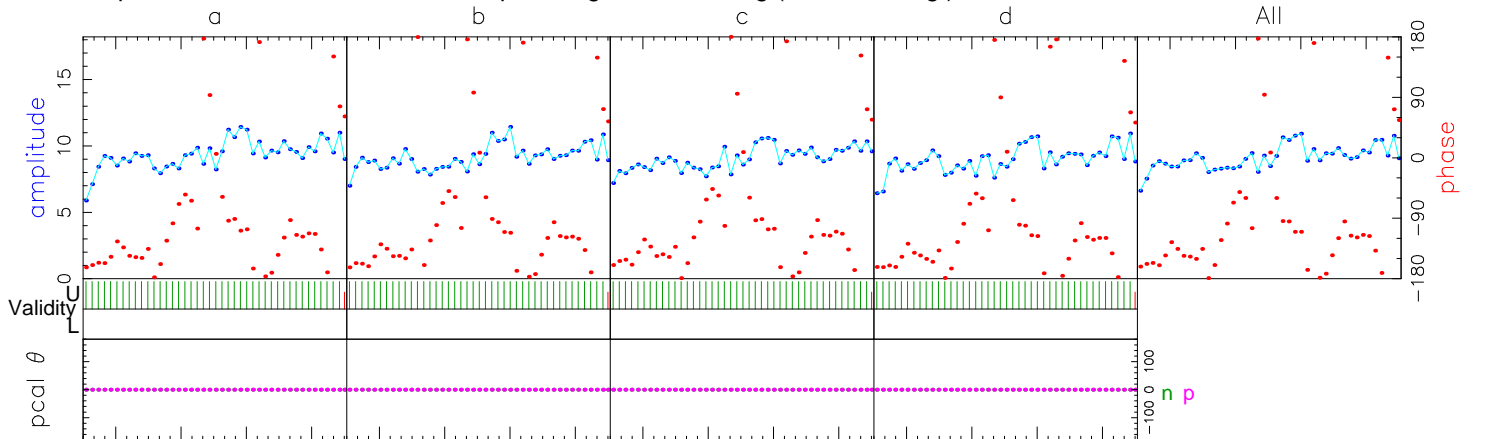
fxmanager

0106+013.1V25LX, No0082, np

VLBA\_NL - VLBA\_PT, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|                               |  |  |                    |  |                       |                   |                  |                           |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|------------------|---------------------------|
|                               | 42912.00   | 43040.00   | 43168.00           | 43296.00                               | Freq (MHz)            | All               |                  |                           |
|                               | -132.8   | -134.5   | -131.1             | -137.2                                 | Phase                 | -133.9            |                  |                           |
|                               | 6.2  | 6.1  | 6.0                | 5.9                                    | Ampl.                 | 6.0               |                  |                           |
|                               | 514.1  | 514.2  | 514.3              | 514.3                                  | Sbd box               | 514.2             |                  |                           |
| U/L                           | 469/0  | 469/0  | 469/0              | 469/0                                  | APs used              |                   |                  |                           |
| n                             | 1000   | 1000   | 1000               | 1000                                   | PC freqs              |                   |                  |                           |
| p                             | 1000   | 1000   | 1000               | 1000                                   | PC freqs              |                   |                  |                           |
| n:p                           | 0:0  | 0:0  | 0:0                | 0:0                                    | PC phase              |                   |                  |                           |
| n:p                           | 0:0  | 0:0  | 0:0                | 0:0                                    | Manl PC               |                   |                  |                           |
| n                             | 1000   | 1000   | 1000               | 1000                                   | PC amp                |                   |                  |                           |
| p                             | 1000   | 1000   | 1000               | 1000                                   |                       |                   |                  |                           |
| n                             | Q00UR  | Q01UR  | Q02UR              | Q03UR                                  | Chan ids              |                   |                  |                           |
| p                             | Q00UR  | Q01UR  | Q02UR              | Q03UR                                  | Tracks                |                   |                  |                           |
|                               |  |  |                    |  | Chan ids              |                   |                  |                           |
|                               |  |  |                    |  | Tracks                |                   |                  |                           |
| Group delay (usec)(sbd)       | -3.77417495873E+03                                       | Apriori delay (usec)   | -3.77417731674E+03 | Resid mbdelay (usec)                   | 2.35801E-03           | +/- 4.3E-06       |                  |                           |
| Sband delay (usec)            | -3.77417490487E+03                                       | Apriori clock (usec)   | -1.4290810E-01     | Resid sbdelay (usec)                   | 2.41187E-03           | +/- 1.7E-05       |                  |                           |
| Phase delay (usec)            | -3.77417732538E+03                                       | Apriori clockrate (us/s)                                       | 4.1999997E-07      | Resid phdelay (usec)                   | -8.64148E-06          | +/- 2.9E-08       |                  |                           |
| Delay rate (us/s)             | -2.45419580036E-01                                       | Apriori rate (us/s)  | -2.45419511474E-01 | Resid rate (us/s)                      | -6.85624E-08          | +/- 2.1E-10       |                  |                           |
| Total phase (deg)             | -30.4  | Apriori accel (us/s/s)   | 2.04096600001E-05  | Resid phase (deg)                      | -133.9                | +/- 0.4           |                  |                           |
| RMS                           | 56.2   | Theor.   | 1.5                | Amplitude                              | 6.074 +/- 0.024       |                   |                  |                           |
| ph/seg (deg)                  | 56.2   | Search (1024X16)   | 5.602              | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |                           |
| amp/seg (%)                   | 52.5   | Interp.  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |                           |
| ph/frq (deg)                  | 3.2  | Inc. seg. avg.   | 9.128              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |                           |
| amp/frq (%)                   | 2.1  | Inc. frq. avg.   | 6.049              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023     |                           |
|                               |  |  |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| n: az 229.8 el 37.9 pa 34.8   | p: az 214.8 el 52.2 pa 28.7                              | u,v (fr/asec) 710.956 477.114                                  |                    |  |                       |                   |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/np..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/np.Q.183.1V25LX |                    |  |                       |                   |                  |                           |

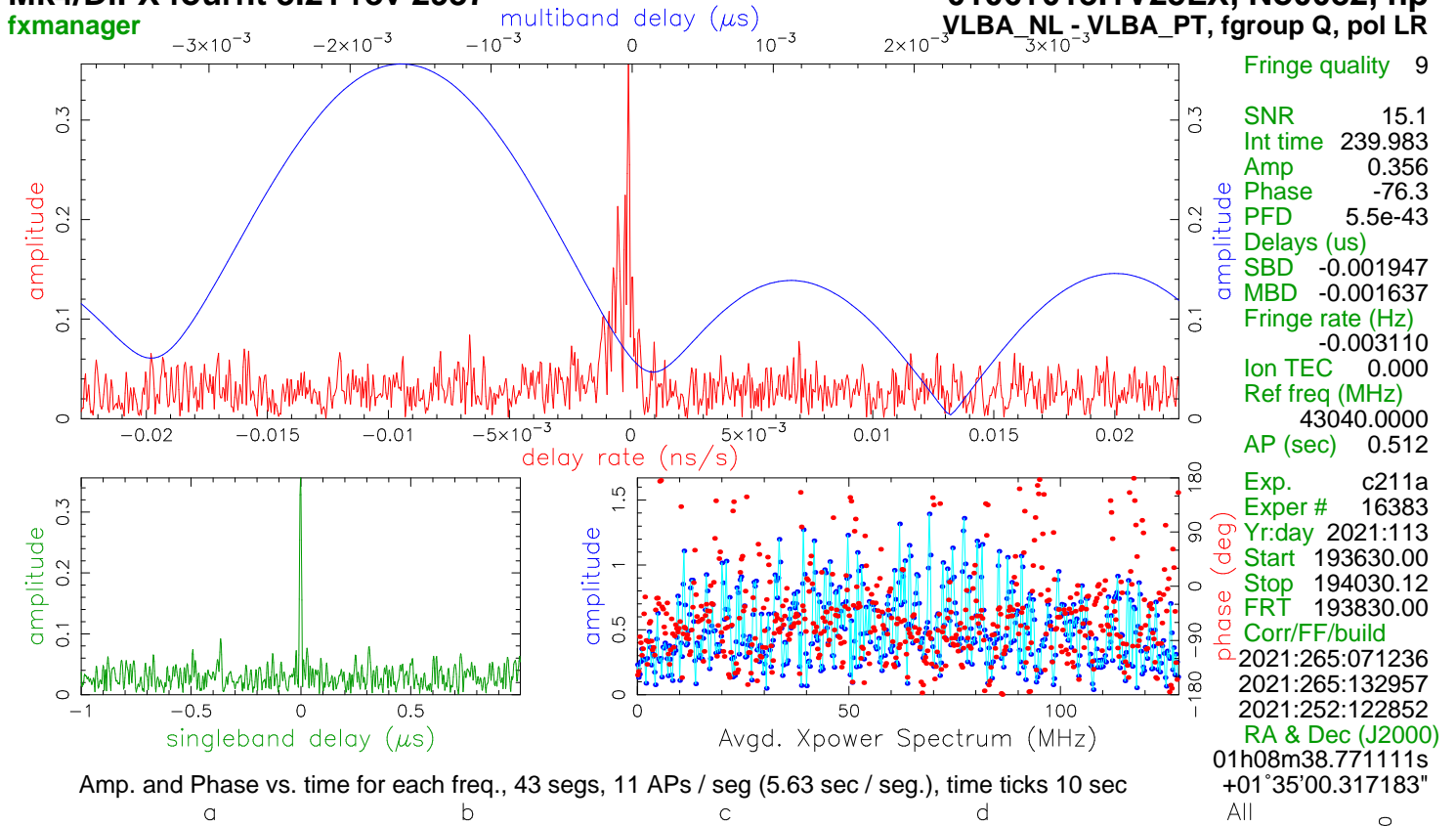


Mk4/DiFX fourfit 3.21 rev 2937

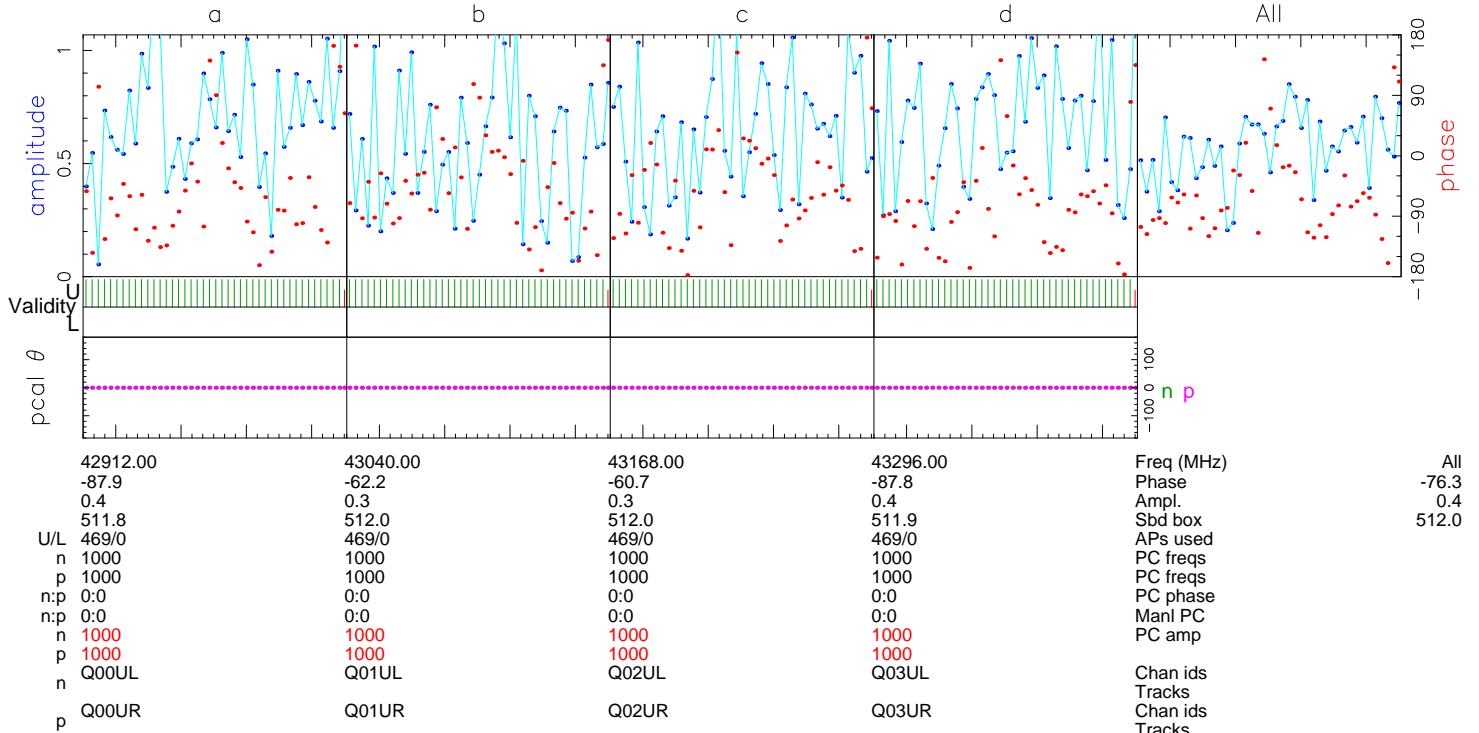
fxmanager

0106+013.1V25LX, No0082, np

VLBA\_NL - VLBA\_PT, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| Group delay (usec)(sbd) | -3.77417895348E+03 | Apriori delay (usec)     | -3.77417731674E+03 | Resid mbdelay (usec) | -1.63674E-03 | +/- | 7.4E-05 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Sband delay (usec)      | -3.77417926337E+03 | Apriori clock (usec)     | -1.4290810E-01     | Resid sbdelay (usec) | -1.94662E-03 | +/- | 2.9E-04 |
| Phase delay (usec)      | -3.77417732167E+03 | Apriori clockrate (us/s) | 4.1999997E-07      | Resid phdelay (usec) | -4.92635E-06 | +/- | 4.9E-07 |
| Delay rate (us/s)       | -2.45419583729E-01 | Apriori rate (us/s)      | -2.45419511474E-01 | Resid rate (us/s)    | -7.22552E-08 | +/- | 3.5E-09 |
| Total phase (deg)       | -332.9             | Apriori accel (us/s/s)   | 2.04096600001E-05  | Resid phase (deg)    | -76.3        | +/- | 7.6     |

| ph/seg (deg) | 58.4 | Theor. | 24.9 | Amplitude        | 0.356 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
|--------------|------|--------|------|------------------|-----------------|--|-----------------------|
| amp/seg (%)  | 73.6 |        | 43.4 | Search (1024X16) | 0.337           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 18.8 |        | 7.6  | Interp.          | 0.000           | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 13.6 |        | 13.2 | Inc. seg. avg.   | 0.521           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |        |      | Inc. frq. avg.   | 0.363           | Data rate(Mb/s): 2048                  | ion window (TEC)      |
|              |      |        |      |                  |                 | nlags: 512                             | t_cohere infinite     |

n: az 229.8 el 37.9 pa 34.8 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 710.956 477.114 simultaneous interpolator

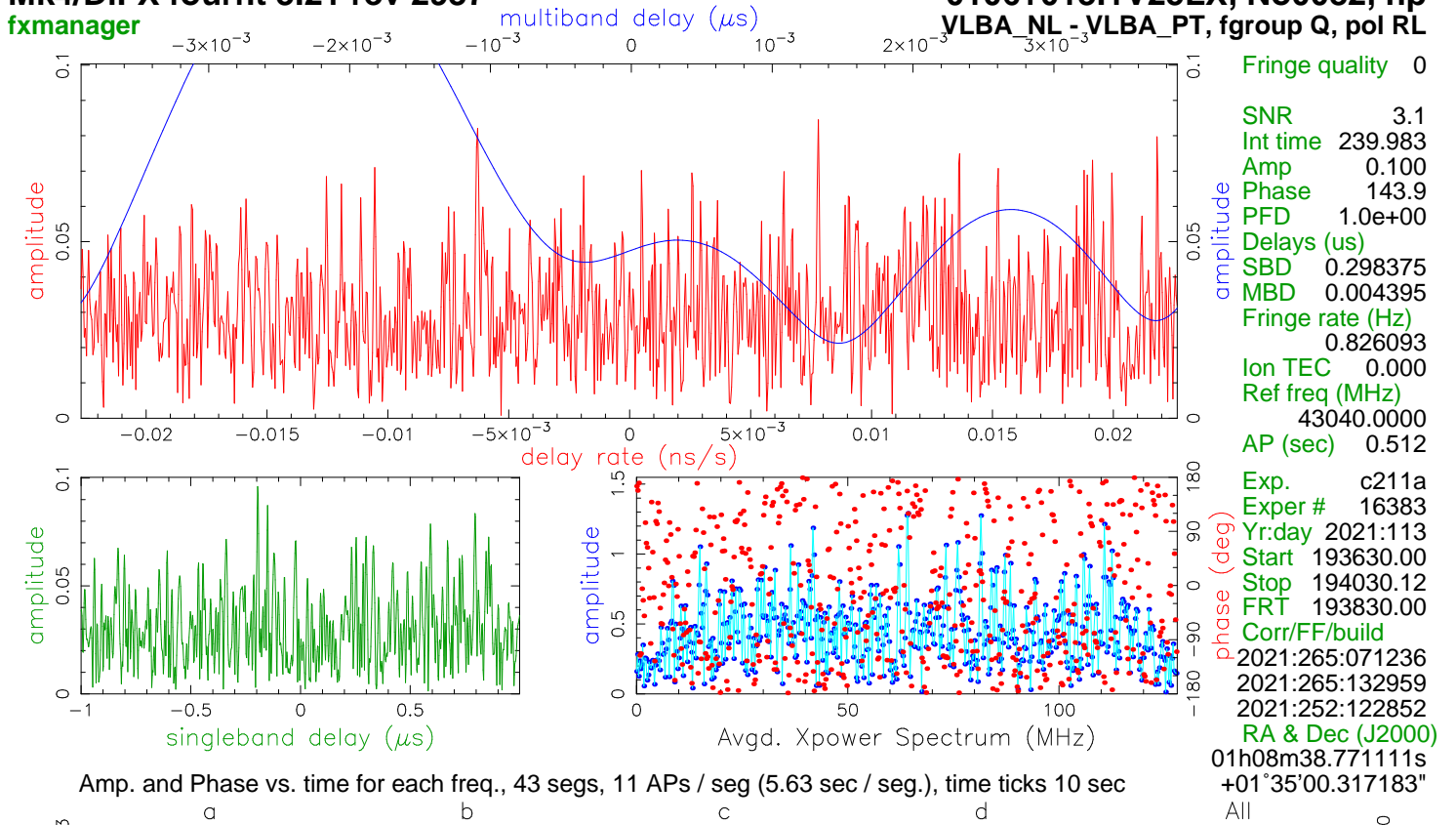
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/np..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/np.Q.198.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

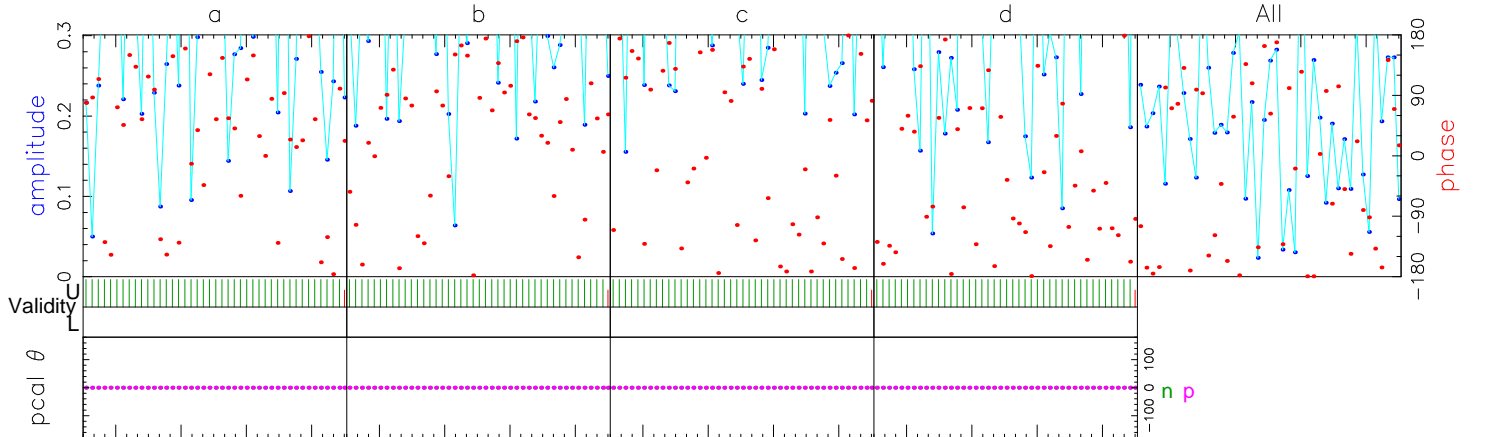
fxmanager

0106+013.1V25LX, No0082, np

VLBA\_NL - VLBA\_PT, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



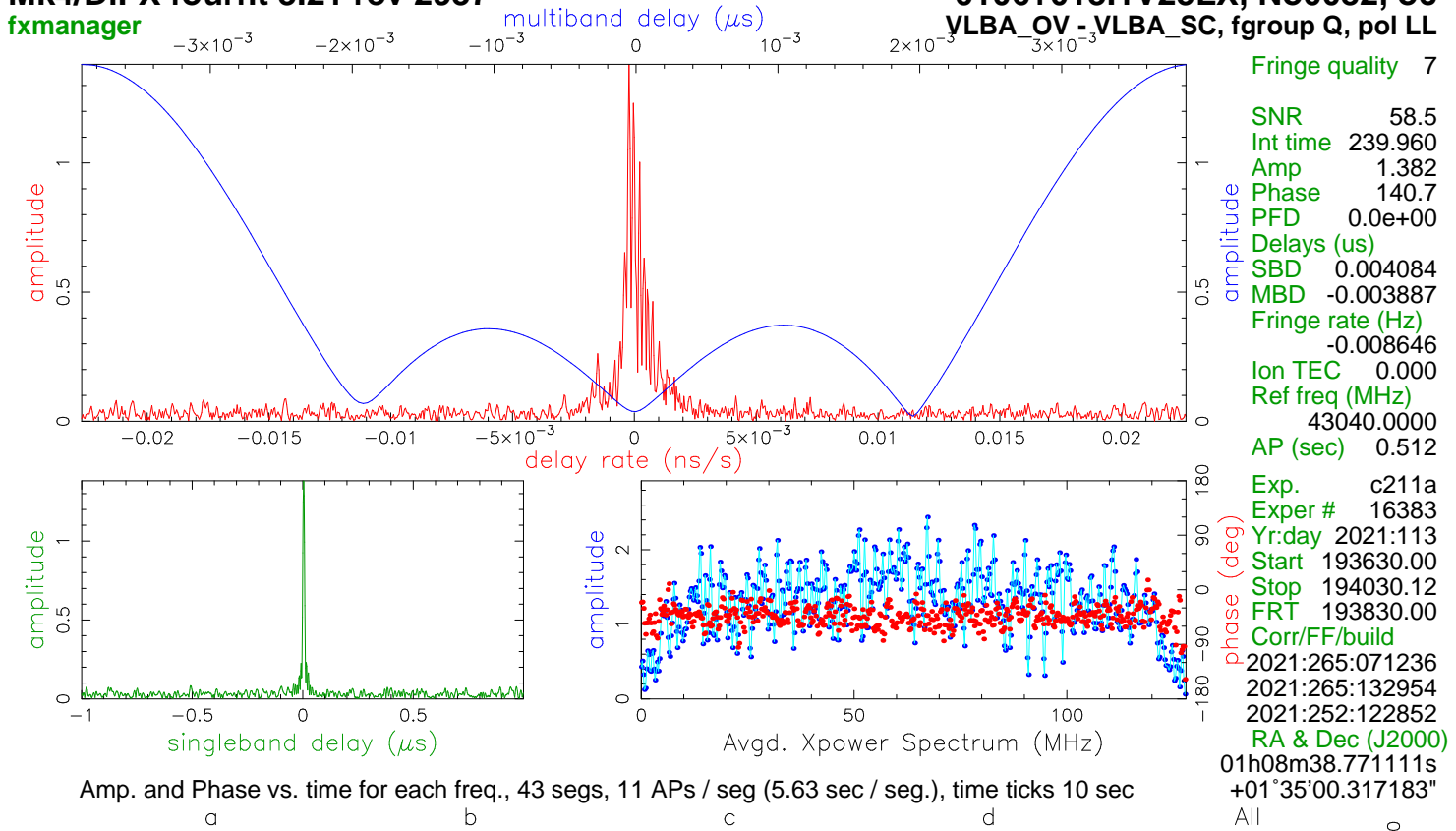
|                               |  |  |                    |  |                       |                   |                  |                           |
|-------------------------------|--|--|--------------------|--|-----------------------|-------------------|------------------|---------------------------|
|                               | 42912.00   | 43040.00   | 43168.00           | 43296.00                               | Freq (MHz)            | All               |                  |                           |
|                               | 99.0   | 92.9   | 175.4              | -108.5                                 | Phase                 | 143.9             |                  |                           |
|                               | 0.2  | 0.2  | 0.2                | 0.2                                    | Ampl.                 | 0.2               |                  |                           |
|                               | 666.7  | 435.9  | 39.9               | 250.6                                  | Sbd box               | 665.8             |                  |                           |
| U/L                           | 469/0  | 469/0  | 469/0              | 469/0                                  | APs used              |                   |                  |                           |
| n                             | 1000   | 1000   | 1000               | 1000                                   | PC freqs              |                   |                  |                           |
| p                             | 1000   | 1000   | 1000               | 1000                                   | PC freqs              |                   |                  |                           |
| n:p                           | 0:0  | 0:0  | 0:0                | 0:0                                    | PC phase              |                   |                  |                           |
| n:p                           | 0:0  | 0:0  | 0:0                | 0:0                                    | Manl PC               |                   |                  |                           |
| n                             | 1000   | 1000   | 1000               | 1000                                   | PC amp                |                   |                  |                           |
| p                             | 1000   | 1000   | 1000               | 1000                                   |                       |                   |                  |                           |
| n                             | Q00UR  | Q01UR  | Q02UR              | Q03UR                                  | Chan ids              |                   |                  |                           |
| p                             | Q00UL  | Q01UL  | Q02UL              | Q03UL                                  | Tracks                |                   |                  |                           |
|                               |  |  |                    |  | Chan ids              |                   |                  |                           |
|                               |  |  |                    |  | Tracks                |                   |                  |                           |
| Group delay (usec)(sbd)       | -3.77387604721E+03                                       | Apriori delay (usec)   | -3.77417731674E+03 | Resid mbdelay (usec)                   | 4.39453E-03           | +/- 3.6E-04       |                  |                           |
| Sband delay (usec)            | -3.77387894149E+03                                       | Apriori clock (usec)   | -1.4290810E-01     | Resid sbdelay (usec)                   | 2.98375E-01           | +/- 1.4E-03       |                  |                           |
| Phase delay (usec)            | -3.77417730745E+03                                       | Apriori clockrate (us/s)                                       | 4.1999997E-07      | Resid phdelay (usec)                   | 9.28905E-06           | +/- 2.4E-06       |                  |                           |
| Delay rate (us/s)             | -2.45400317861E-01                                       | Apriori rate (us/s)  | -2.45419511474E-01 | Resid rate (us/s)                      | 1.91936E-05           | +/- 1.7E-08       |                  |                           |
| Total phase (deg)             | -112.6   | Apriori accel (us/s/s)   | 2.04096600001E-05  | Resid phase (deg)                      | 143.9                 | +/- 36.9          |                  |                           |
| RMS                           | 83.7   | Theor.   | 120.9              | Amplitude                              | 0.100 +/- 0.032       |                   |                  |                           |
| ph/seg (deg)                  | 226.5  | Search (1024X16)   | 0.135              | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                  |                           |
| amp/seg (%)                   | 226.5  | Interp.  | 0.000              | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000 1.000      |                  |                           |
| ph/frq (deg)                  | 92.7   | Inc. seg. avg.   | 0.086              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004     |                           |
| amp/frq (%)                   | 104.7  | Inc. frq. avg.   | 0.170              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023     |                           |
|                               |  |  |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) | 0.00 0.00                 |
| n: az 229.8 el 37.9 pa 34.8   | p: az 214.8 el 52.2 pa 28.7                              | u,v (fr/asec)  | 710.956 477.114    |  |                       |                   |                  | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/np..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/np.Q.213.1V25LX |                    |  |                       |                   |                  |                           |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, oc

VLBA\_OV - VLBA\_SC, fgroup Q, pol LL





Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



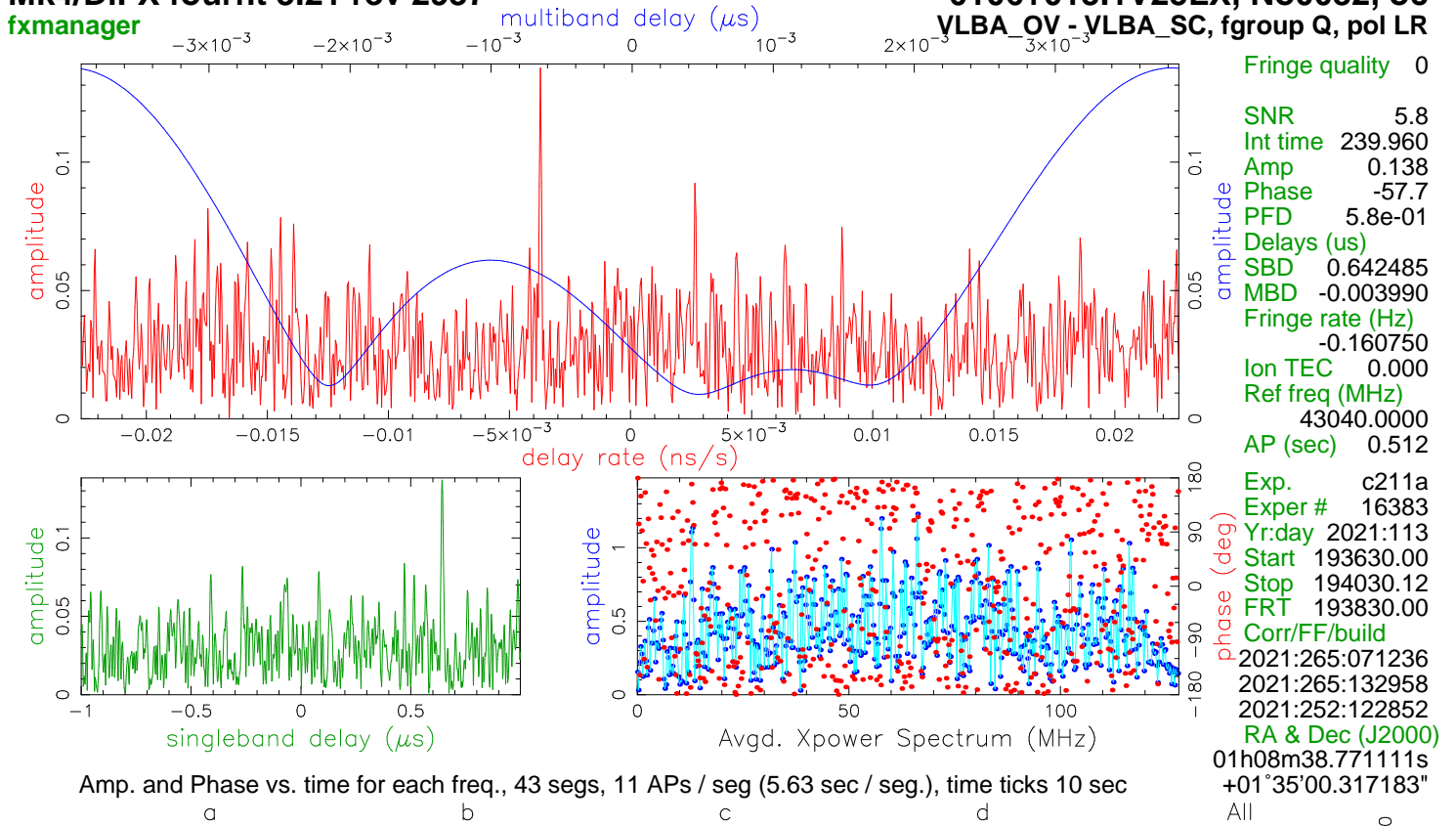
|                               |                   |        |  |                    |  |  |                              |                  |            |                           |
|-------------------------------|-------------------|--------|--|--------------------|--|--|------------------------------|------------------|------------|---------------------------|
|                               | 42912.00          |        | 43040.00   |                    | 43168.00   |  | 43296.00                     |                  | Freq (MHz) | All                       |
|                               | -128.6            |        | -127.2   |                    | -135.6   |  | -122.7                       |                  | Phase      | -128.5                    |
|                               | 1.3               |        | 1.2  |                    | 1.3  |  | 1.3                          |                  | Ampl.      | 1.3                       |
|                               | 513.6             |        | 513.3  |                    | 513.5  |  | 513.9                        |                  | Sbd box    | 513.6                     |
| U/L                           | 469/0             |        | 469/0  |                    | 469/0  |  | 469/0                        |                  | APs used   |                           |
| o                             | 1000              |        | 1000   |                    | 1000   |  | 1000                         |                  | PC freqs   |                           |
| c                             | 1000              |        | 1000   |                    | 1000   |  | 1000                         |                  | PC freqs   |                           |
| o:c                           | 0:0               |        | 0:0  |                    | 0:0  |  | 0:0                          |                  | PC phase   |                           |
| o:c                           | 0:0               |        | 0:0  |                    | 0:0  |  | 0:0                          |                  | ManI PC    |                           |
| o                             | 1000              |        | 1000   |                    | 1000   |  | 1000                         |                  | PC amp     |                           |
| c                             | 1000              |        | 1000   |                    | 1000   |  | 1000                         |                  |            |                           |
| o                             | Q00UR             |        | Q01UR  |                    | Q02UR  |  | Q03UR                        |                  | Chan ids   |                           |
|                               |                   |        |  |                    |  |  |                              |                  | Tracks     |                           |
| c                             | Q00UR             |        | Q01UR  |                    | Q02UR  |  | Q03UR                        |                  | Chan ids   |                           |
|                               |                   |        |  |                    |  |  |                              |                  | Tracks     |                           |
| Group delay (usec)(sbd)       | 8.15953275623E+03 |        | Apriori delay (usec)                                     | 8.15953178739E+03  |  | Resid mbdelay (usec)                   | 9.68842E-04                  | +/-              | 2.0E-05    |                           |
| Sband delay (usec)            | 8.15953289377E+03 |        | Apriori clock (usec)                                     | -8.5363140E+00     |  | Resid sbdelay (usec)                   | 1.10638E-03                  | +/-              | 7.7E-05    |                           |
| Phase delay (usec)            | 8.15953177910E+03 |        | Apriori clockrate (us/s)                                 | 4.4000014E-08      |  | Resid phdelay (usec)                   | -8.29118E-06                 | +/-              | 1.3E-07    |                           |
| Delay rate (us/s)             | 1.09978036043E+00 |        | Apriori rate (us/s)                                      | 1.09978055988E+00  |  | Resid rate (us/s)                      | -1.99453E-07                 | +/-              | 9.6E-10    |                           |
| Total phase (deg)             | -81.9             |        | Apriori accel (us/s/s)                                   | -4.24336855116E-05 |  | Resid phase (deg)                      | -128.5                       | +/-              | 2.1        |                           |
|                               | RMS               | Theor. | Amplitude  | 1.314 +/- 0.024    |  | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |            |                           |
| ph/seg (deg)                  | 68.8              | 6.7    | Search (1024X16)   | 1.204              |  | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000      |                           |
| amp/seg (%)                   | 79.5              | 11.8   | Interp.  | 0.000              |  | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004     | 0.004                     |
| ph/frq (deg)                  | 6.5               | 2.1    | Inc. seg. avg.   | 2.266              |  | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023     | 0.023                     |
| amp/frq (%)                   | 3.1               | 3.6    | Inc. frq. avg.   | 1.297              |  | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00       | 0.00                      |
| o: az 197.5 el 53.2 pa 14.3   |                   |        | c: az 263.3 el 25.2 pa 71.1                              |                    | u,v (fr/asec) -3167.005 1275.774                               |  |                              |                  |            | simultaneous interpolator |
| Control file: cf_1234_qmva7mm |                   |        | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/oc..1V25LX |                    | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/oc.Q.190.1V25LX |  |                              |                  |            |                           |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, oc

VLBA\_OV - VLBA\_SC, fgroup Q, pol LR



Fringe quality 0

SNR 5.8

Int time 239.960

Amp 0.138

Phase -57.7

PFD 5.8e-01

Delays (us)

SBD 0.642485

MBD -0.003990

Fringe rate (Hz)

-0.160750

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132958

2021:252:122852

RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

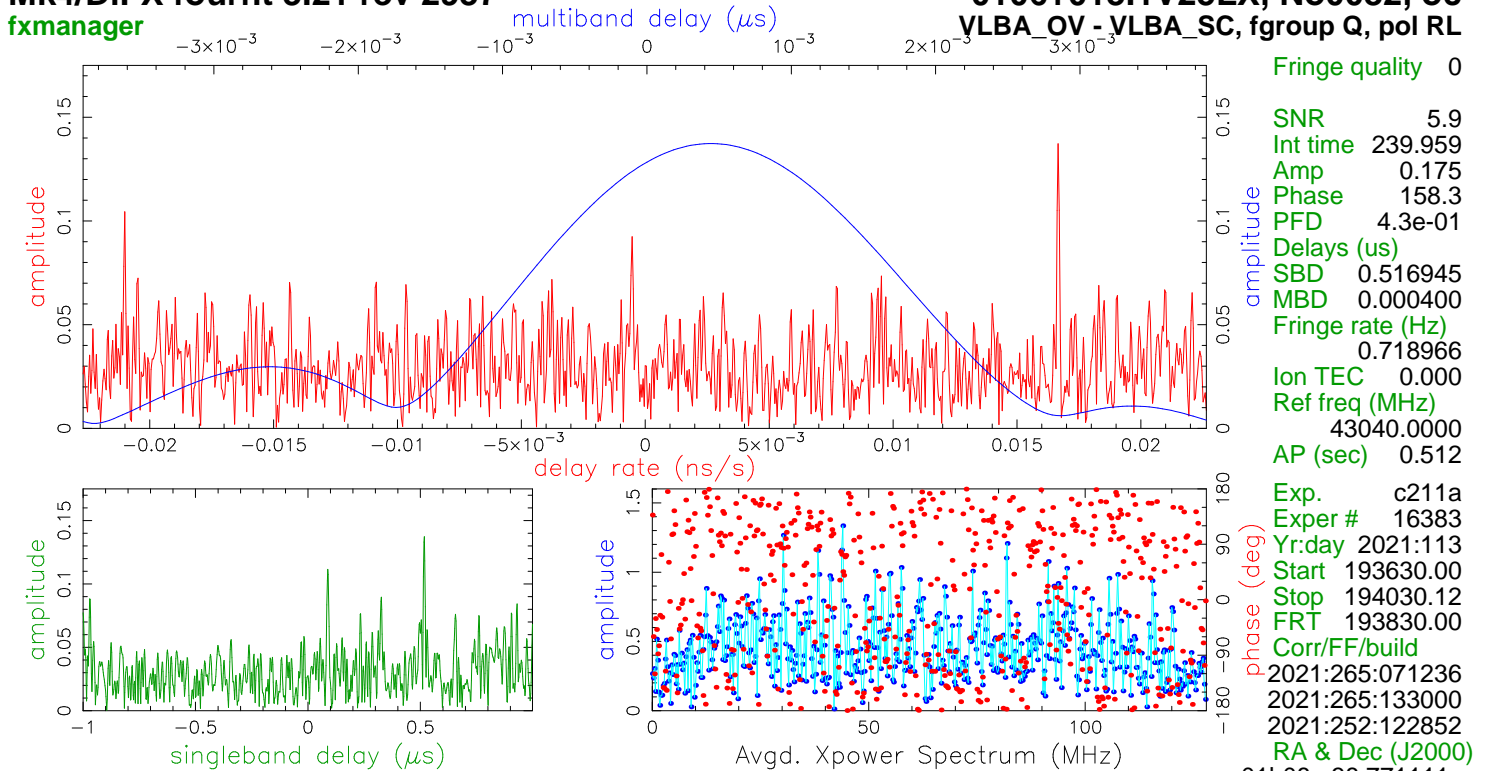


Mk4/DiFX fourfit 3.21 rev 2937

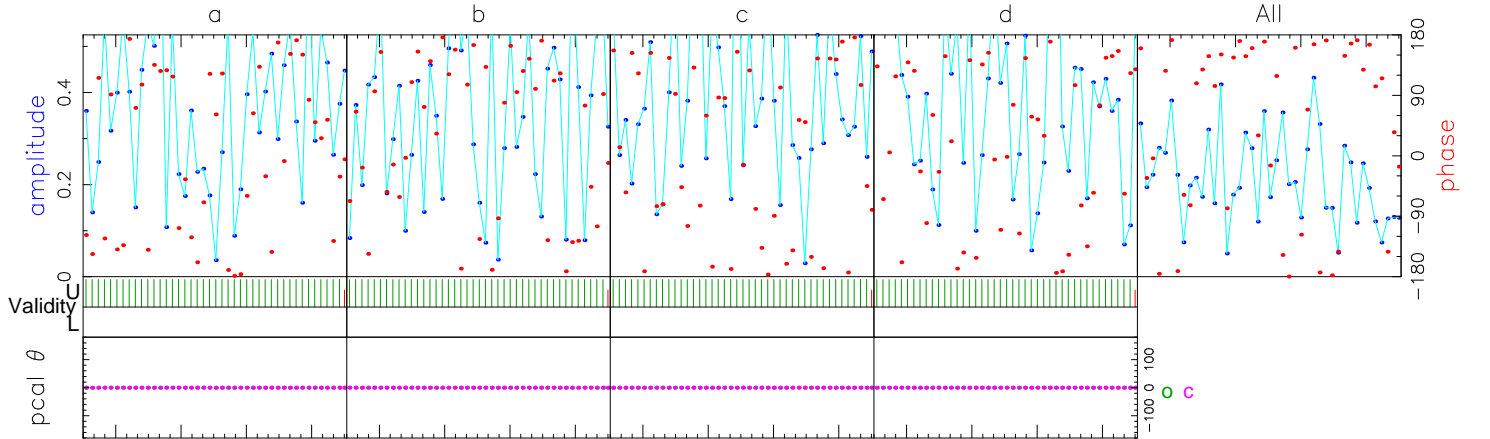
fxmanager

0106+013.1V25LX, No0082, oc

VLBA\_OV - VLBA\_SC, fgroup Q, pol RL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| 157.4     | 151.2    | 165.3    | 157.4    | Phase      | 158.3 |
| 0.1       | 0.2      | 0.2      | 0.2      | Ampl.      | 0.2   |
| 798.0     | 142.1    | 558.3    | 801.8    | Sbd box    | 777.7 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| o 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| c 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| o:c 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| o:c 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| o 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| c 1000    | 1000     | 1000     | 1000     |            |       |
| o Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |             |             |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|-------------|-------------|
| Group delay (usec)(sbd) | 8.16004781236E+03 | Apriori delay (usec)     | 8.15953178739E+03  | Resid mbdelay (usec) | 3.99972E-04 | +/- 1.9E-04 |
| Sband delay (usec)      | 8.16004873214E+03 | Apriori clock (usec)     | -8.5363140E+00     | Resid sbdelay (usec) | 5.16945E-01 | +/- 7.3E-04 |
| Phase delay (usec)      | 8.15953179761E+03 | Apriori clockrate (us/s) | 4.4000014E-08      | Resid phdelay (usec) | 1.02170E-05 | +/- 1.3E-06 |
| Delay rate (us/s)       | 1.09979726448E+00 | Apriori rate (us/s)      | 1.09978055988E+00  | Resid rate (us/s)    | 1.67046E-05 | +/- 9.1E-09 |
| Total phase (deg)       | 204.9             | Apriori accel (us/s/s)   | -4.24336855116E-05 | Resid phase (deg)    | 158.3       | +/- 19.5    |

|              |      |                  |       |                |                 |  |                               |
|--------------|------|------------------|-------|----------------|-----------------|--|-------------------------------|
| ph/seg (deg) | 73.8 | Theor.           | 64.0  | Amplitude      | 0.175 +/- 0.030 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 89.9 | Search (1024X16) | 0.135 | Interp.        | 0.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 7.1  | Inc. seg. avg.   | 0.169 | Inc. seg. avg. | 0.169           | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 22.3 | Inc. frq. avg.   | 0.165 | Inc. frq. avg. | 0.165           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |      |                  |       |                |                 | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

o: az 197.5 el 53.2 pa 14.3 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -3167.005 1275.774 simultaneous interpolator

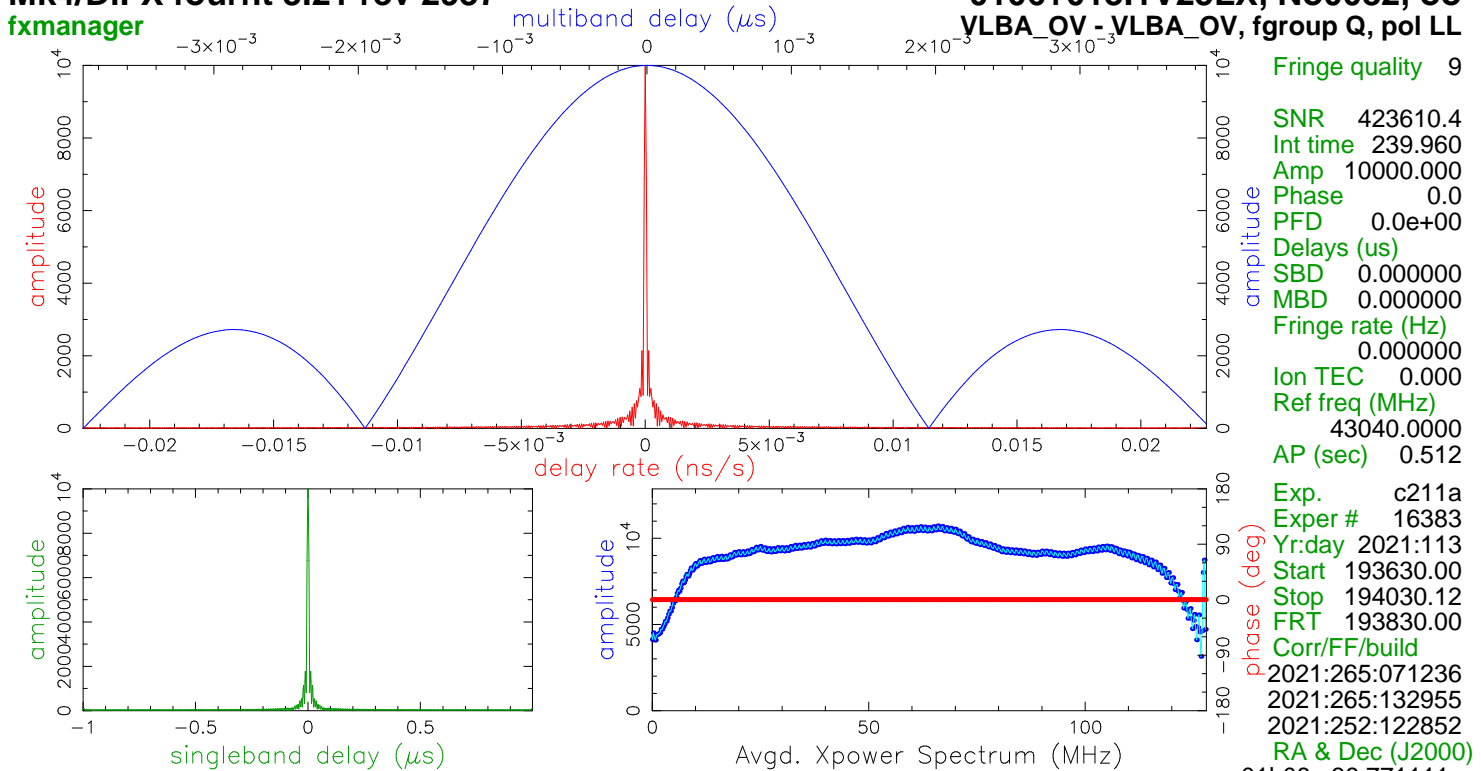
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oc.Q.218.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

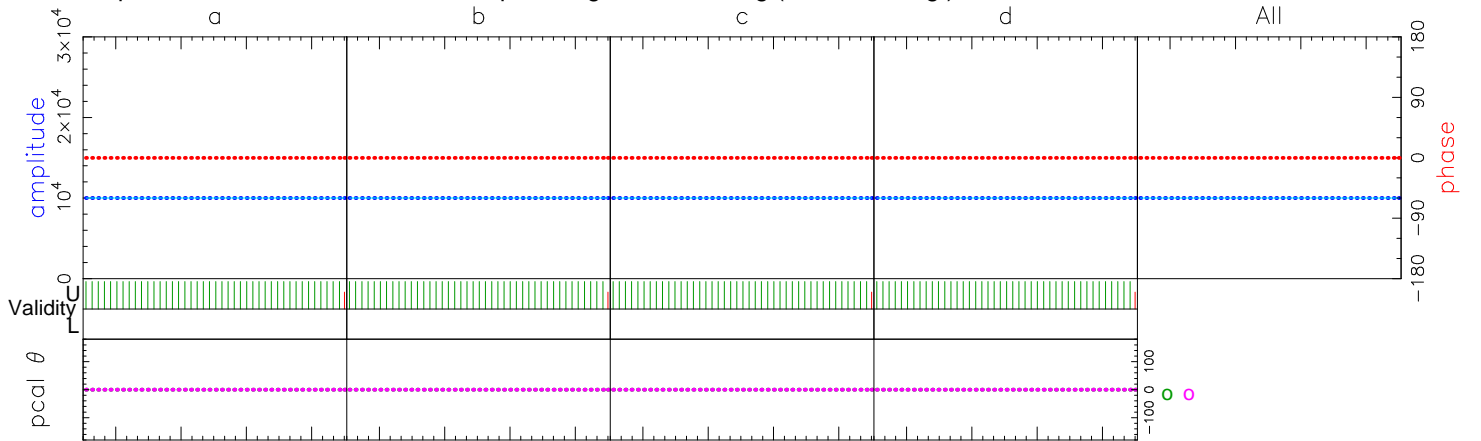
fxmanager

0106+013.1V25LX, No0082, oo

VLBA\_OV - VLBA\_OV, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|           |           |           |           |            |         |
|-----------|-----------|-----------|-----------|------------|---------|
| 42912.00  | 43040.00  | 43168.00  | 43296.00  | Freq (MHz) | All     |
| 0.0       | 0.0       | 0.0       | 0.0       | Phase      | 0.0     |
| 10000.0   | 10000.0   | 10000.0   | 10000.0   | Ampl.      | 10000.0 |
| 513.0     | 513.0     | 513.0     | 513.0     | Sbd box    | 513.0   |
| U/L 469/0 | U/L 469/0 | U/L 469/0 | U/L 469/0 | APs used   |         |
| o 1000    | o 1000    | o 1000    | o 1000    | PC freqs   |         |
| o 1000    | o 1000    | o 1000    | o 1000    | PC phase   |         |
| o 0:0     | o 0:0     | o 0:0     | o 0:0     | Manl PC    |         |
| o 0:0     | o 0:0     | o 0:0     | o 0:0     | PC amp     |         |
| o 1000    | o 1000    | o 1000    | o 1000    |            |         |
| o 1000    | o 1000    | o 1000    | o 1000    |            |         |
| o Q00UL   | o Q01UL   | o Q02UL   | o Q03UL   | Chan ids   |         |
| o Q00UL   | o Q01UL   | o Q02UL   | o Q03UL   | Tracks     |         |
|           |           |           |           | Chan ids   |         |
|           |           |           |           | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                              |                  |              |
|--------------|-----|--------|------------------|---------------------|--|------------------------------|------------------|--------------|
|              | RMS | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |              |
| ph/seg (deg) | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000        |
| amp/seg (%)  | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg) | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)  | 0.0 | 0.0    | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |

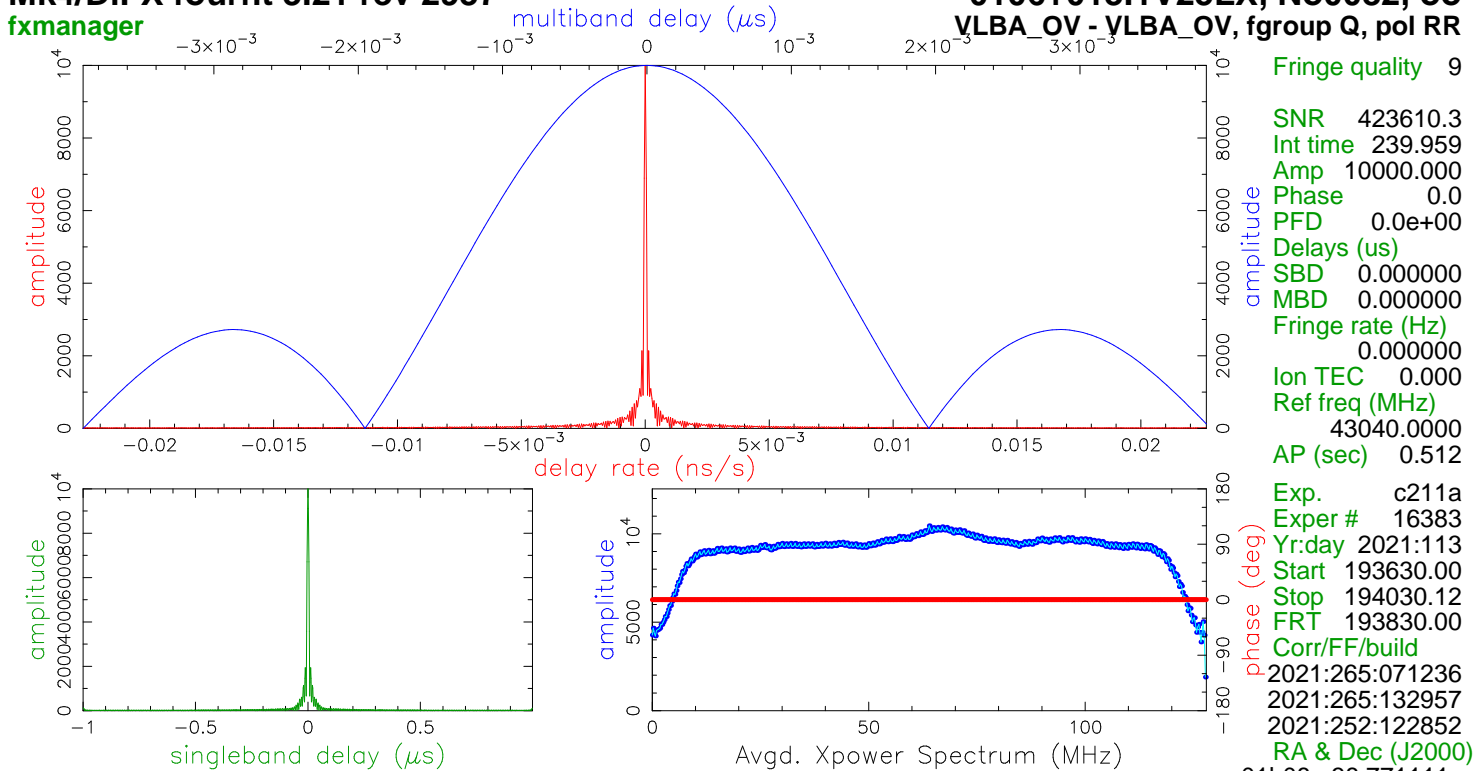
o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oo.Q.176.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

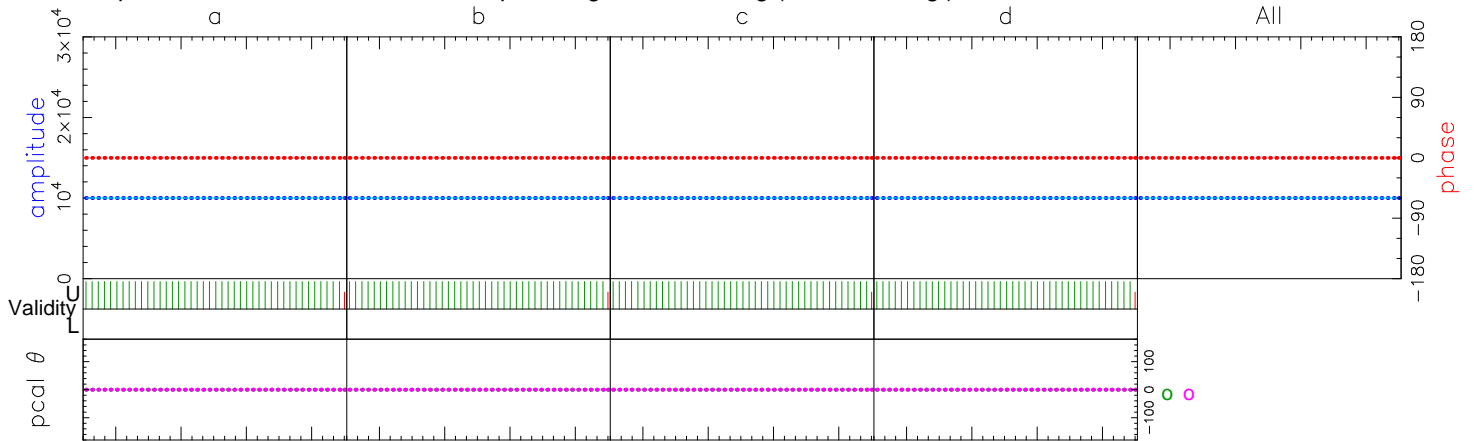
fxmanager

0106+013.1V25LX, No0082, oo

VLBA\_OV - VLBA\_OV, fgroup Q, pol RR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All     |
|-----------|----------|----------|----------|------------|---------|
| 0.0       | 0.0      | 0.0      | 0.0      | Phase      | 0.0     |
| 10000.0   | 10000.0  | 10000.0  | 10000.0  | Ampl.      | 10000.0 |
| 513.0     | 513.0    | 513.0    | 513.0    | Sbd box    | 513.0   |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |         |
| o 1000    | 1000     | 1000     | 1000     | PC freqs   |         |
| o 1000    | 1000     | 1000     | 1000     | PC freqs   |         |
| o:0 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |         |
| o:0 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |         |
| o 1000    | 1000     | 1000     | 1000     | PC amp     |         |
| o 1000    | 1000     | 1000     | 1000     |            |         |
| o Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |         |
| o Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |         |
|           |          |          |          | Chan ids   |         |
|           |          |          |          | Tracks     |         |

|                         |                    |                          |                    |                      |              |     |         |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- | 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- | 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- | 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- | 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- | 0.0     |

|              |     |        |                  |                     |  |                       |                  |        |       |  |
|--------------|-----|--------|------------------|---------------------|--|-----------------------|------------------|--------|-------|--|
|              | RMS | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL                                    | PC period (AP's) 5, 5 |                  |        |       |  |
| ph/seg (deg) | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                       |                       | sb window (us)   | -1.000 | 1.000 |  |
| amp/seg (%)  | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2      SampCntNorm: enabled                   |                       | mb window (us)   | -0.004 | 0.004 |  |
| ph/frq (deg) | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256                                    |                       | dr window (ns/s) | -0.023 | 0.023 |  |
| amp/frq (%)  | 0.0 | 0.0    | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048      nlags: 512      t_cohere infinite |                       | ion window (TEC) | 0.00   | 0.00  |  |

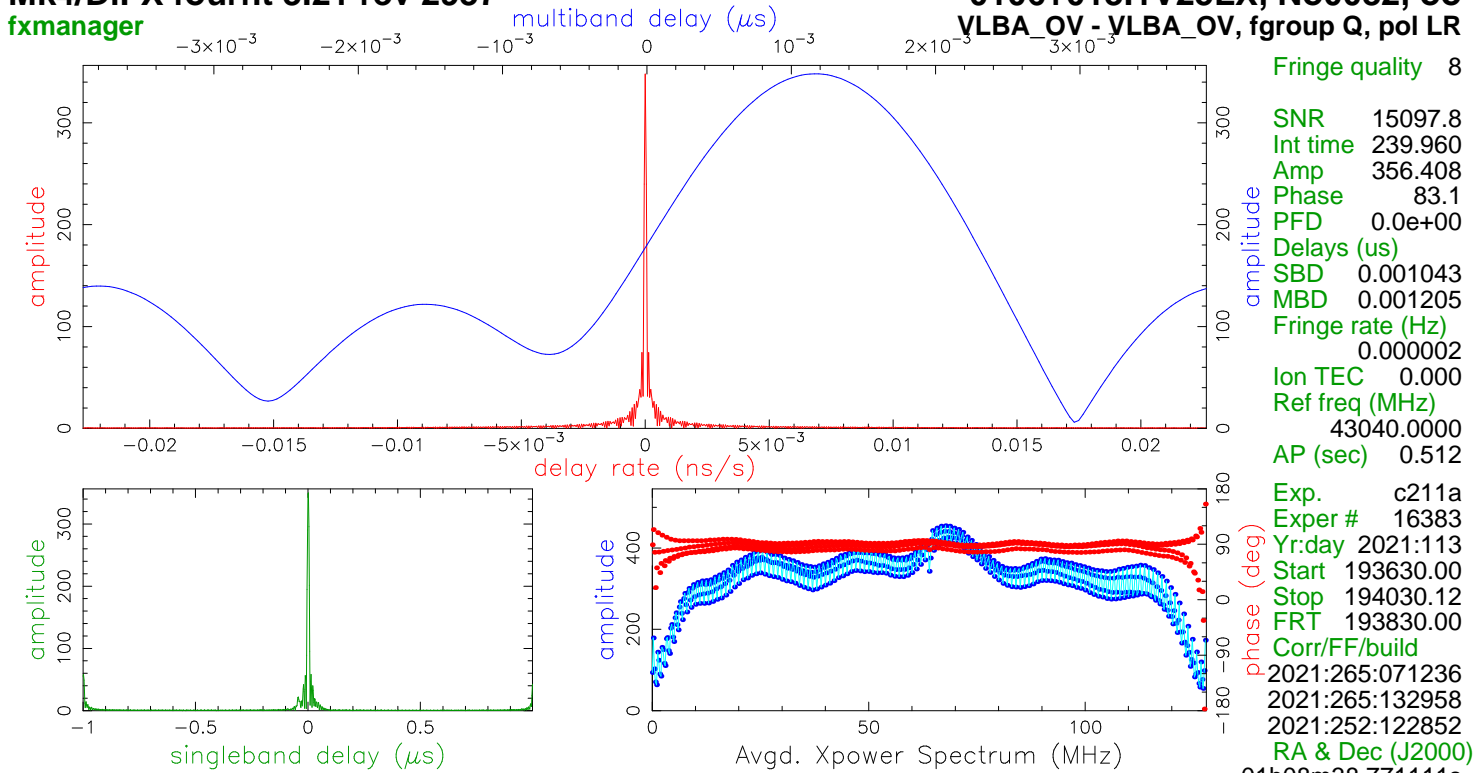
o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oo.Q.193.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, oo

VLBA\_OV - VLBA\_OV, fgroup Q, pol LR



Fringe quality 8

SNR 15097.8

Int time 239.960

Amp 356.408

Phase 83.1

PFD 0.0e+00

Delays (us)

SBD 0.001043

MBD 0.001205

Fringe rate (Hz)

0.000002

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 16383

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132958

2021:252:122852

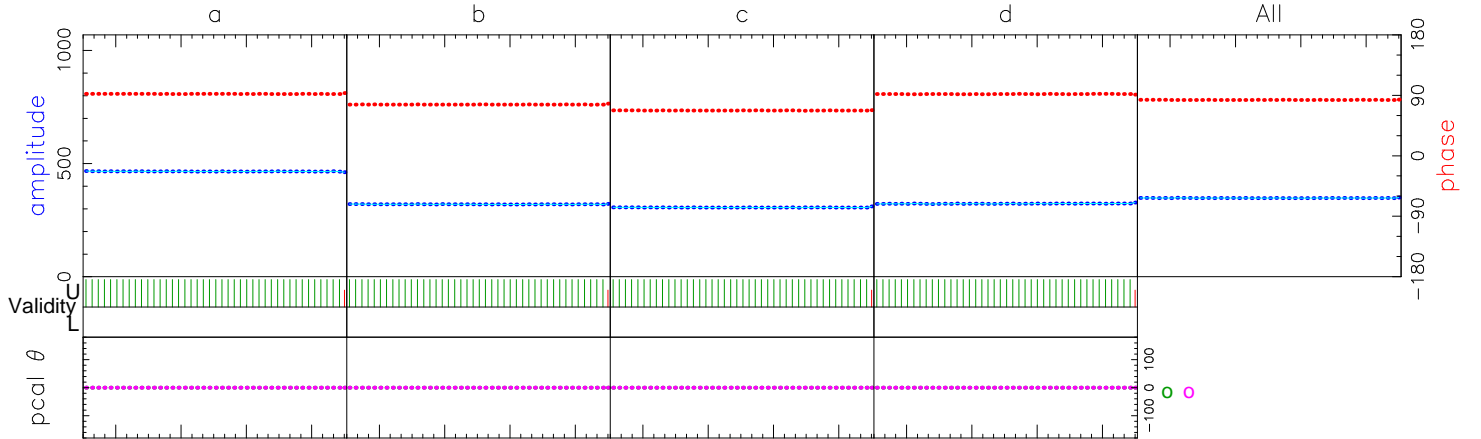
RA & Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| 92.0      | 76.2     | 67.4     | 91.8     | Phase      | 83.1  |
| 465.6     | 320.2    | 306.3    | 323.0    | Ampl.      | 353.8 |
| 513.5     | 513.6    | 513.3    | 513.7    | Sbd box    | 513.5 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| o 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| o 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| o:0 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| o:0 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| o 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| o 1000    | 1000     | 1000     | 1000     |            |       |
| o Q00UL   | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| o Q00UR   | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                   |                          |                   |                      |             |     |         |
|-------------------------|-------------------|--------------------------|-------------------|----------------------|-------------|-----|---------|
| Group delay (usec)(sbd) | 1.20471875000E-03 | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | 1.20472E-03 | +/- | 7.4E-08 |
| Sband delay (usec)      | 1.04287500000E-03 | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | 1.04287E-03 | +/- | 2.9E-07 |
| Phase delay (usec)      | 5.36330824379E-06 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | 5.36331E-06 | +/- | 4.9E-10 |
| Delay rate (us/s)       | 3.68706781395E-11 | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | 3.68707E-11 | +/- | 3.5E-12 |
| Total phase (deg)       | 83.1              | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | 83.1        | +/- | 0.0     |

|              |      |        |                  |                   |  |                              |                  |        |       |  |
|--------------|------|--------|------------------|-------------------|--|------------------------------|------------------|--------|-------|--|
|              | RMS  | Theor. | Amplitude        | 356.408 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |  |
| ph/seg (deg) | 0.1  | 0.0    | Search (1024X16) | 342.785           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |  |
| amp/seg (%)  | 2.4  | 0.0    | Interp.          | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |  |
| ph/frq (deg) | 15.0 | 0.0    | Inc. seg. avg.   | 347.973           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |  |
| amp/frq (%)  | 18.2 | 0.0    | Inc. frq. avg.   | 353.764           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |  |

o: az 197.5 el 53.2 pa 14.3 o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

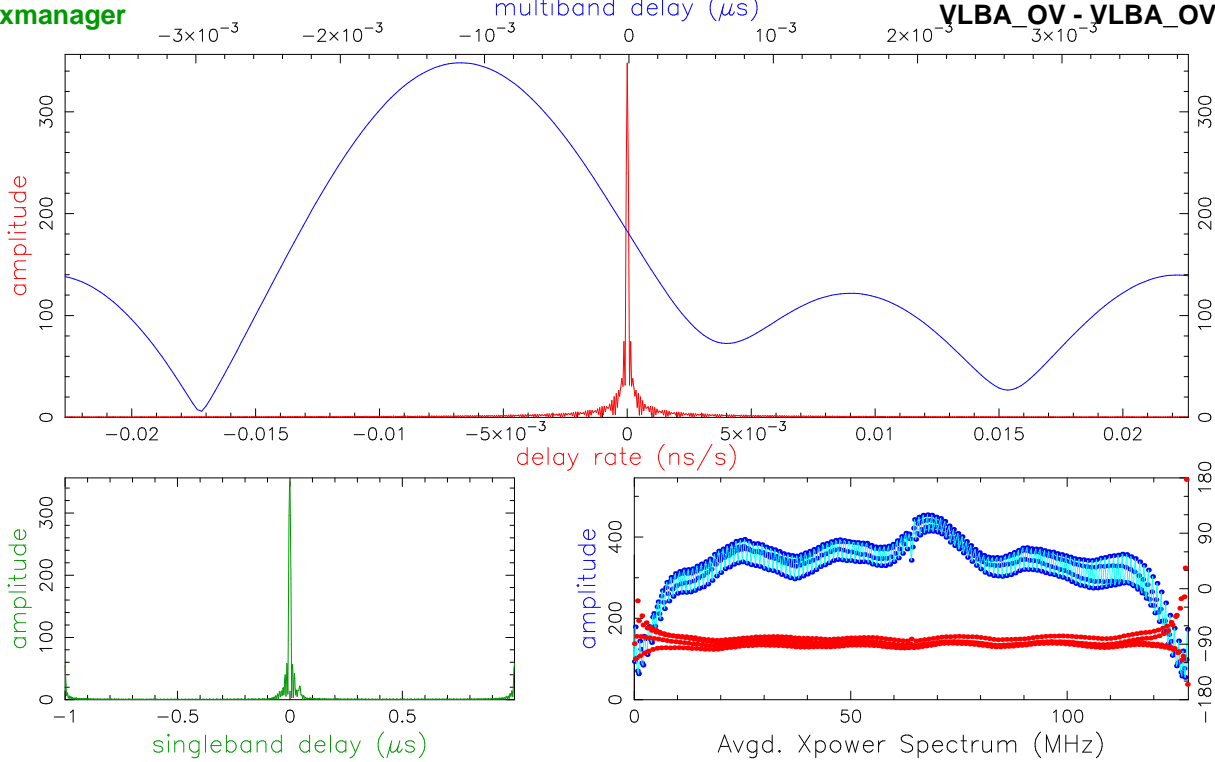
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oo.Q.206.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, oo

VLBA\_OV - VLBA\_OV, fgroup Q, pol RL



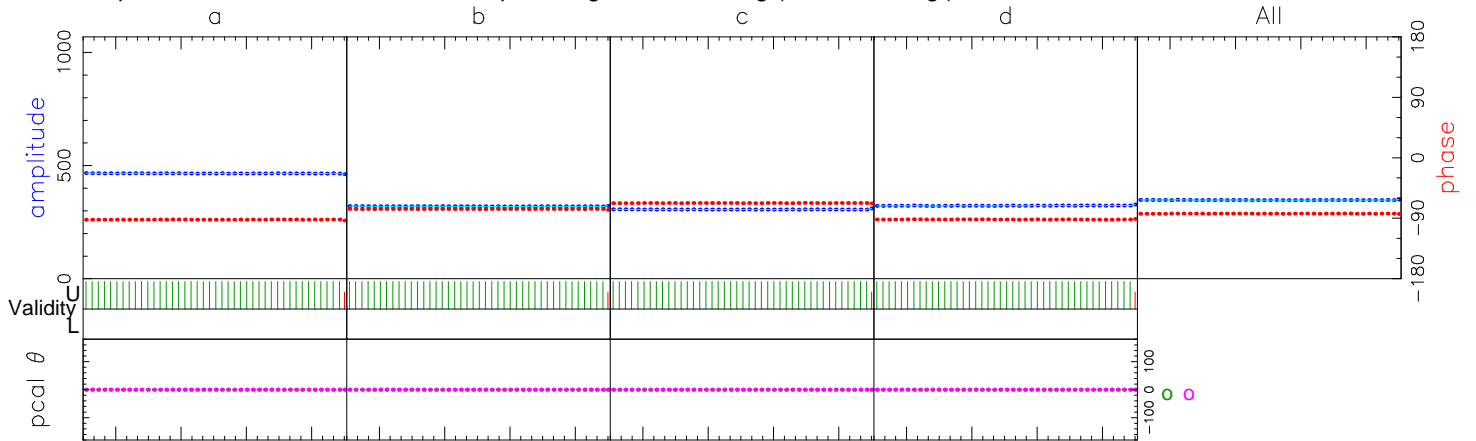
Fringe quality 8

SNR 15097.8  
 Int time 239.959  
 Amp 356.408  
 Phase -83.1  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.001043  
 MBD -0.001205  
 Fringe rate (Hz)  
 -0.000002  
 Ion TEC 0.000  
 Ref freq (MHz)  
 43040.0000  
 AP (sec) 0.512

Exp. c211a  
 Exper # 16383  
 Yr:day 2021:113  
 Start 193630.00  
 Stop 194030.12  
 FRT 193830.00  
 Corr/FF/build  
 2021:265:071236  
 2021:265:133000  
 2021:252:122852  
 RA & Dec (J2000)  
 01h08m38.771111s  
 +01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | -83.1 |
| o   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 353.8 |
| o   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 512.5 |
| o:0 | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| o:0 | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| o   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| o   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | PC amp     |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.20471875000E-03 | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | -1.20472E-03 | +/- | 7.4E-08 |
| Sband delay (usec)      | -1.04287500000E-03 | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | -1.04287E-03 | +/- | 2.9E-07 |
| Phase delay (usec)      | -5.36330824401E-06 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | -5.36331E-06 | +/- | 4.9E-10 |
| Delay rate (us/s)       | -3.68706781395E-11 | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | -3.68707E-11 | +/- | 3.5E-12 |
| Total phase (deg)       | -83.1              | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | -83.1        | +/- | 0.0     |

|              |      |        |     |                  |                   |  |                       |
|--------------|------|--------|-----|------------------|-------------------|--|-----------------------|
| ph/seg (deg) | 0.1  | Theor. | 0.0 | Amplitude        | 356.408 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 2.4  | 0.0    | 0.0 | Search (1024X16) | 342.785           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 15.0 | 0.0    | 0.0 | Interp.          | 0.000             | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 18.2 | 0.0    | 0.0 | Inc. seg. avg.   | 347.973           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |        |     | Inc. frq. avg.   | 353.764           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

o: az 197.5 el 53.2 pa 14.3 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oo..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/oo.Q.219.1V25LX

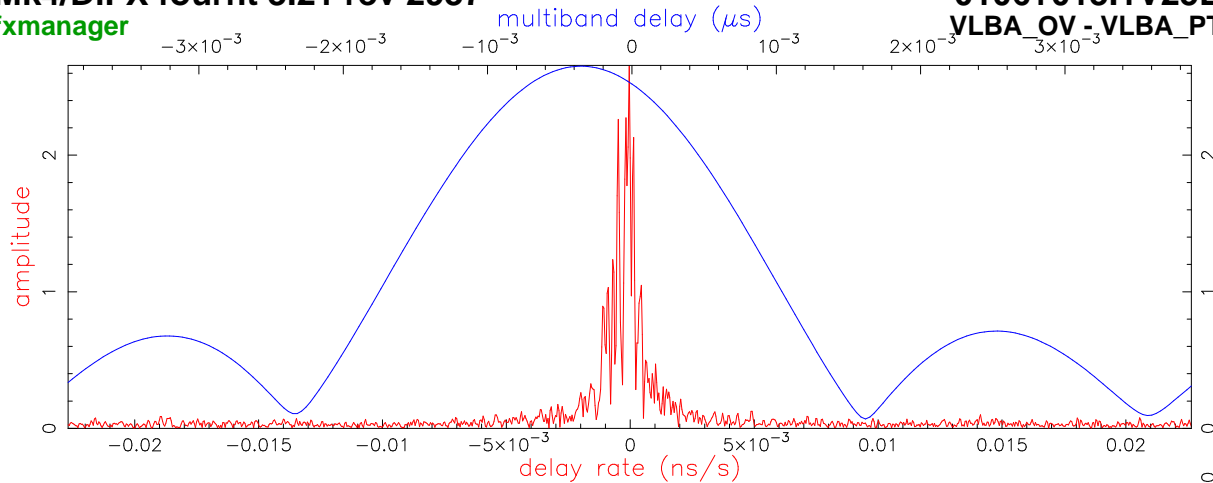


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

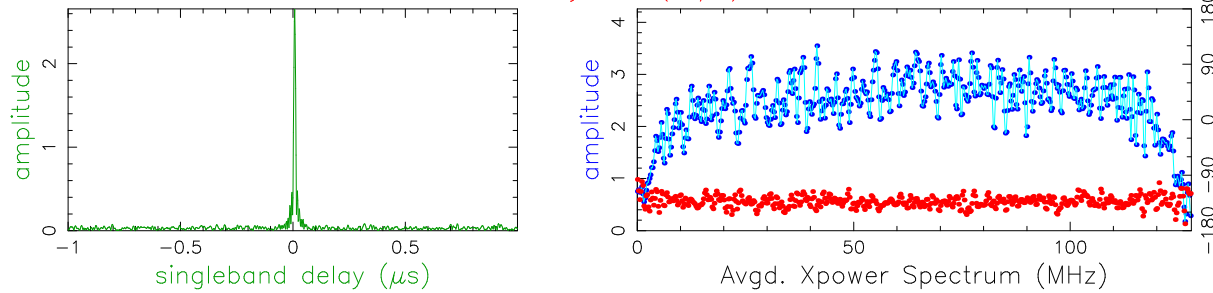
0106+013.1V25LX, No0082, op

VLBA\_OV - VLBA\_PT, fgroup Q, pol LL



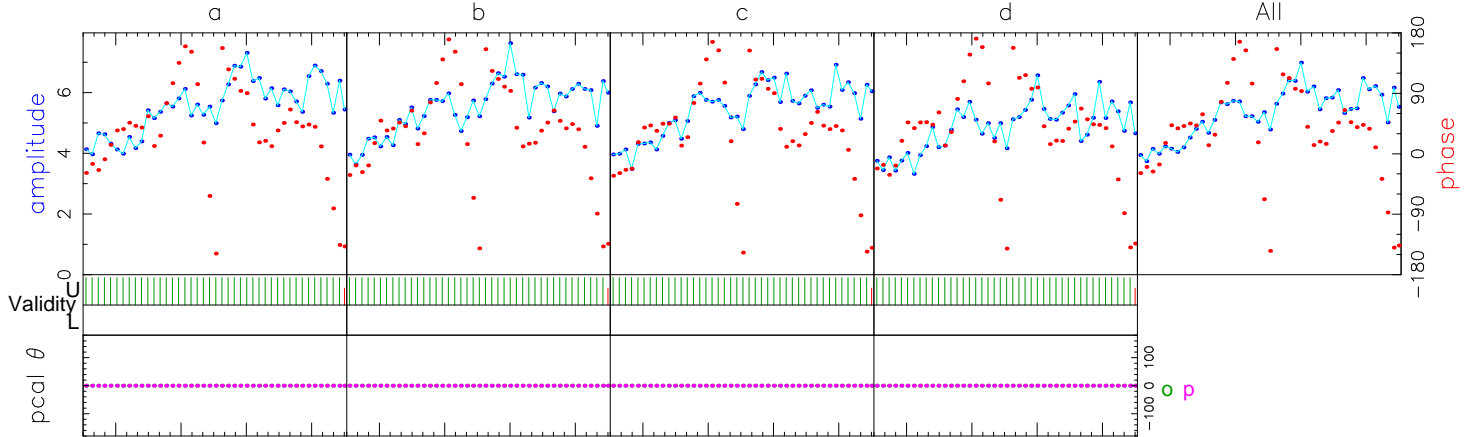
Fringe quality 5

SNR 112.6  
Int time 239.960  
Amp 2.657  
Phase 47.9  
PFD 0.0e+00  
Delays (us)  
SBD 0.007475  
MBD -0.000370  
Fringe rate (Hz)  
-0.002336  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132955  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | Phase      | 47.9  |
| o   | 1000     | 1000     | 1000     | 1000     | Ampl.      | 2.7   |
| p   | 1000     | 1000     | 1000     | 1000     | Sbd box    | 516.8 |
| o:p | 0:0      | 0:0      | 0:0      | 0:0      | APs used   |       |
| o:p | 0:0      | 0:0      | 0:0      | 0:0      | PC freqs   |       |
| o   | 1000     | 1000     | 1000     | 1000     | PC phase   |       |
| p   | 1000     | 1000     | 1000     | 1000     | Manl PC    |       |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | PC amp     |       |
| p   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |  |                       |                   |                            |
|-------------------------|-------------------|--------------------------|--------------------|--|-----------------------|-------------------|----------------------------|
| Group delay (usec)(sbd) | 2.60665545797E+02 | Apriori delay (usec)     | 2.60658103760E+02  | Resid mbdelay (usec)                   | -3.70463E-04          | +/-               | 9.9E-06                    |
| Sband delay (usec)      | 2.60665578760E+02 | Apriori clock (usec)     | -1.9046097E+00     | Resid sbdelay (usec)                   | 7.47500E-03           | +/-               | 3.8E-05                    |
| Phase delay (usec)      | 2.60658106849E+02 | Apriori clockrate (us/s) | 4.7999999E-07      | Resid phdelay (usec)                   | 3.08921E-06           | +/-               | 6.6E-08                    |
| Delay rate (us/s)       | 2.27124247066E-01 | Apriori rate (us/s)      | 2.27124301345E-01  | Resid rate (us/s)                      | -5.42793E-08          | +/-               | 4.7E-10                    |
| Total phase (deg)       | 330.8             | Apriori accel (us/s/s)   | -1.25817053684E-06 | Resid phase (deg)                      | 47.9                  | +/-               | 1.0                        |
| RMS                     | 70.5              | Search (1024X16)         | 2.591              | PCal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| ph/seg (deg)            | 105.2             | Interp.                  | 0.000              | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| amp/seg (%)             | 1.7               | Inc. seg. avg.           | 5.327              | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| ph/frq (deg)            | 6.1               | Inc. frq. avg.           | 2.651              | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
| amp/frq (%)             |                   |                          |                    | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

o: az 197.5 el 53.2 pa 14.3

p: az 214.8 el 52.2 pa 28.7

u,v (fr/asec) -650.787 181.477

simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/op..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/op.Q.173.1V25LX

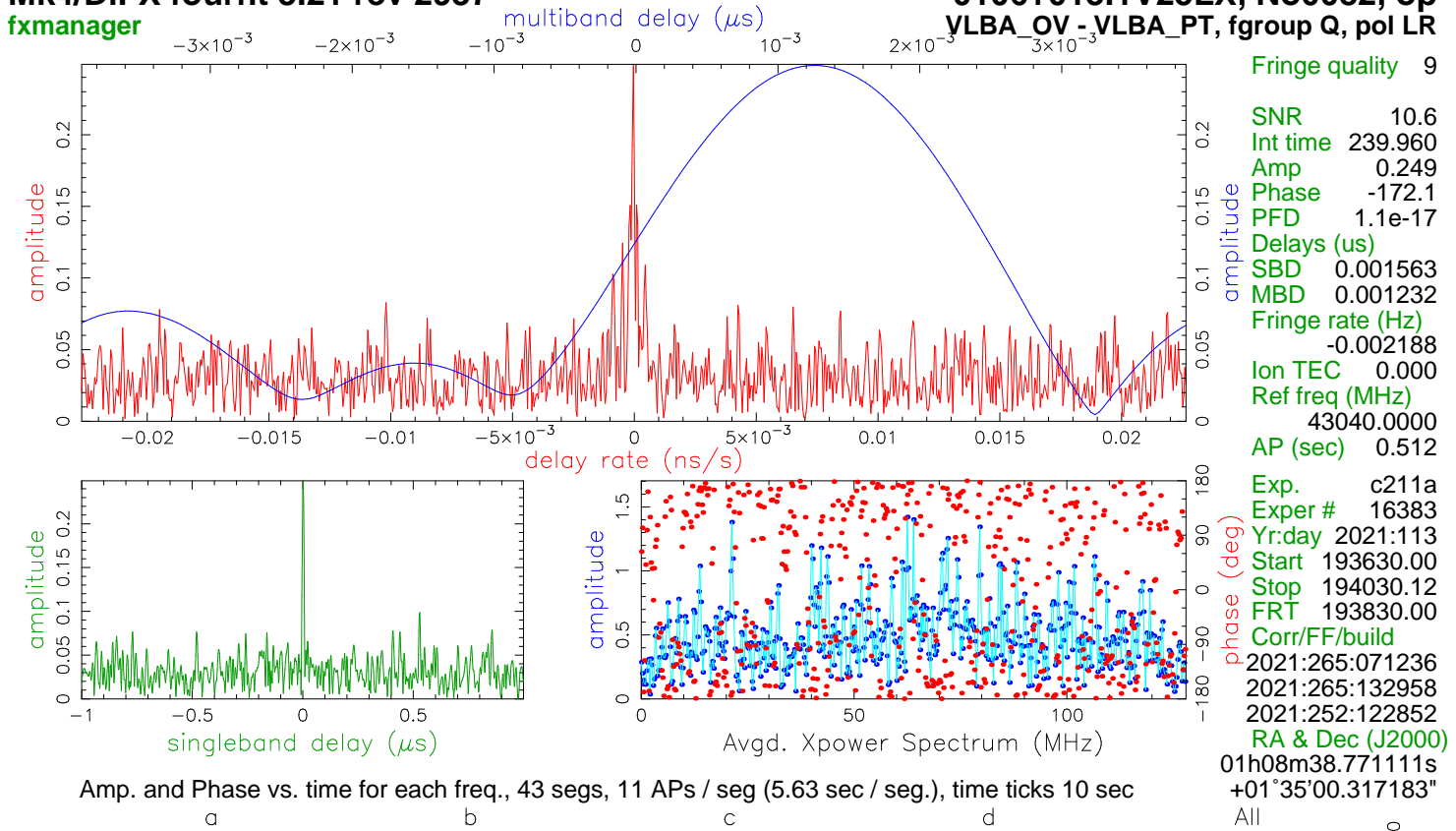


Mk4/DiFX fourfit 3.21 rev 2937

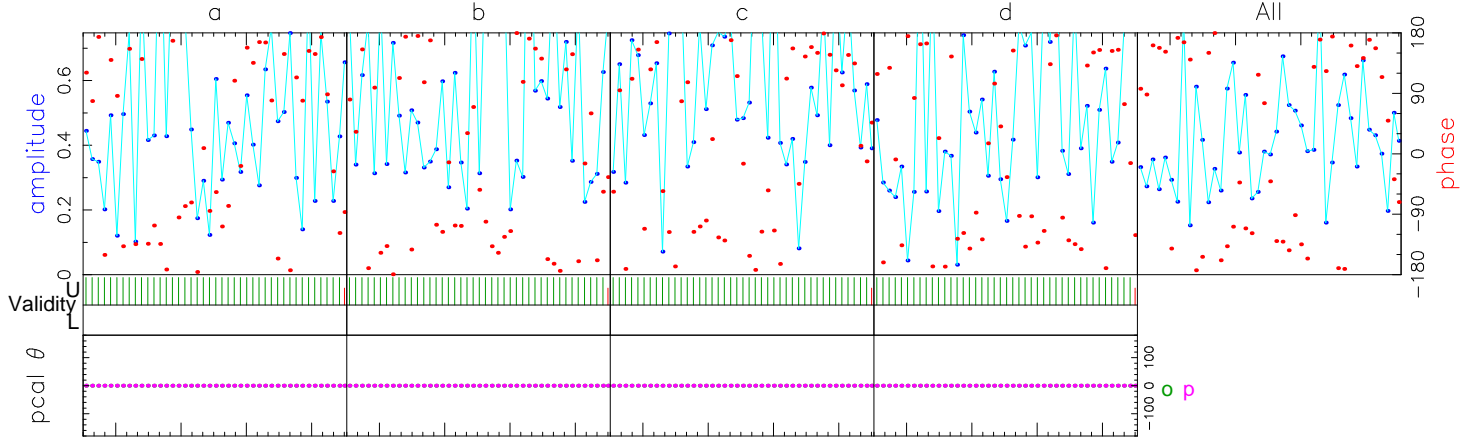
fxmanager

0106+013.1V25LX, No0082, op

VLBA\_OV - VLBA\_PT, fgroup Q, pol LR



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -173.5   | -167.7   | 175.8    | -163.3   | Phase      | -172.1 |
|     | 0.2      | 0.3      | 0.3      | 0.2      | Ampl.      | 0.2    |
|     | 513.7    | 514.4    | 513.8    | 512.8    | Sbd box    | 513.8  |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| o   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| p   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| o:p | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| o:p | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| o   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| p   | 1000     | 1000     | 1000     | 1000     |            |        |
| o   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| p   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 2.60659336078E+02 | Apriori delay (usec)     | 2.60658103760E+02  | Resid mbdelay (usec) | 1.23232E-03  | +/- | 1.1E-04 |
| Sband delay (usec)      | 2.60659666760E+02 | Apriori clock (usec)     | -1.9046097E+00     | Resid sbdelay (usec) | 1.56300E-03  | +/- | 4.1E-04 |
| Phase delay (usec)      | 2.60658092652E+02 | Apriori clockrate (us/s) | 4.7999999E-07      | Resid phdelay (usec) | -1.11075E-05 | +/- | 7.0E-07 |
| Delay rate (us/s)       | 2.27124250500E-01 | Apriori rate (us/s)      | 2.27124301345E-01  | Resid rate (us/s)    | -5.08447E-08 | +/- | 5.1E-09 |
| Total phase (deg)       | 110.8             | Apriori accel (us/s/s)   | -1.25817053684E-06 | Resid phase (deg)    | -172.1       | +/- | 10.9    |

|              |          |             |                           |  |                       |                   |                            |
|--------------|----------|-------------|---------------------------|--|-----------------------|-------------------|----------------------------|
| ph/seg (deg) | RMS 62.7 | Theor. 35.6 | Amplitude 0.249 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)  | 62.7     | 62.1        | Search (1024X16) 0.243    | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg) | 94.8     | 62.1        | Interp. 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)  | 11.1     | 10.9        | Inc. seg. avg. 0.351      | Sample rate(MSamp/s): 256              |                       | dr window (ns/s)  | -0.023 0.023               |
|              | 9.3      | 18.9        | Inc. frq. avg. 0.246      | Data rate(Mb/s): 2048                  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |

o: az 197.5 el 53.2 pa 14.3 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) -650.787 181.477 simultaneous interpolator

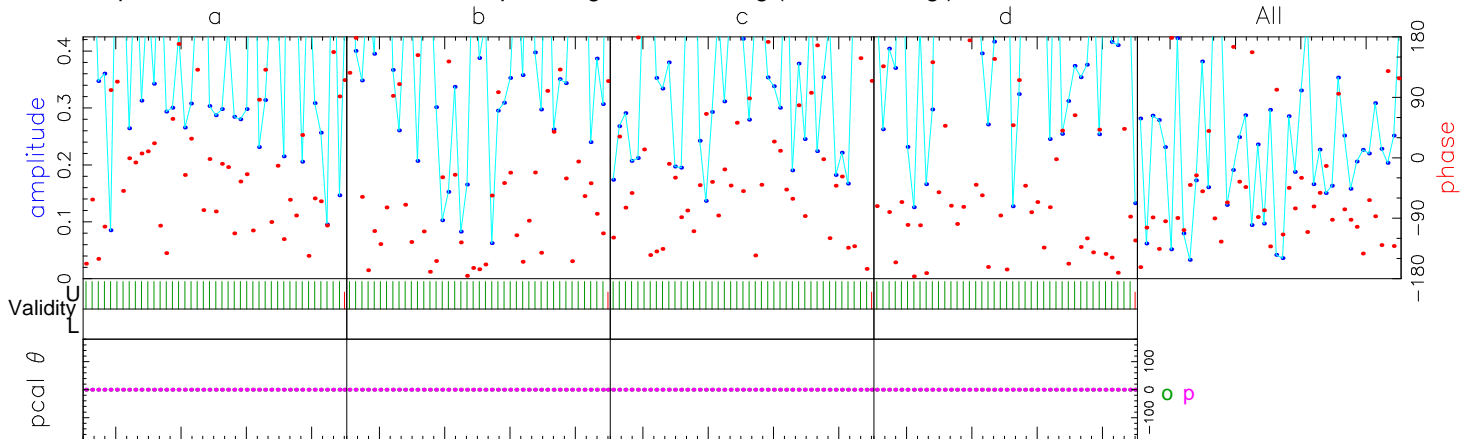
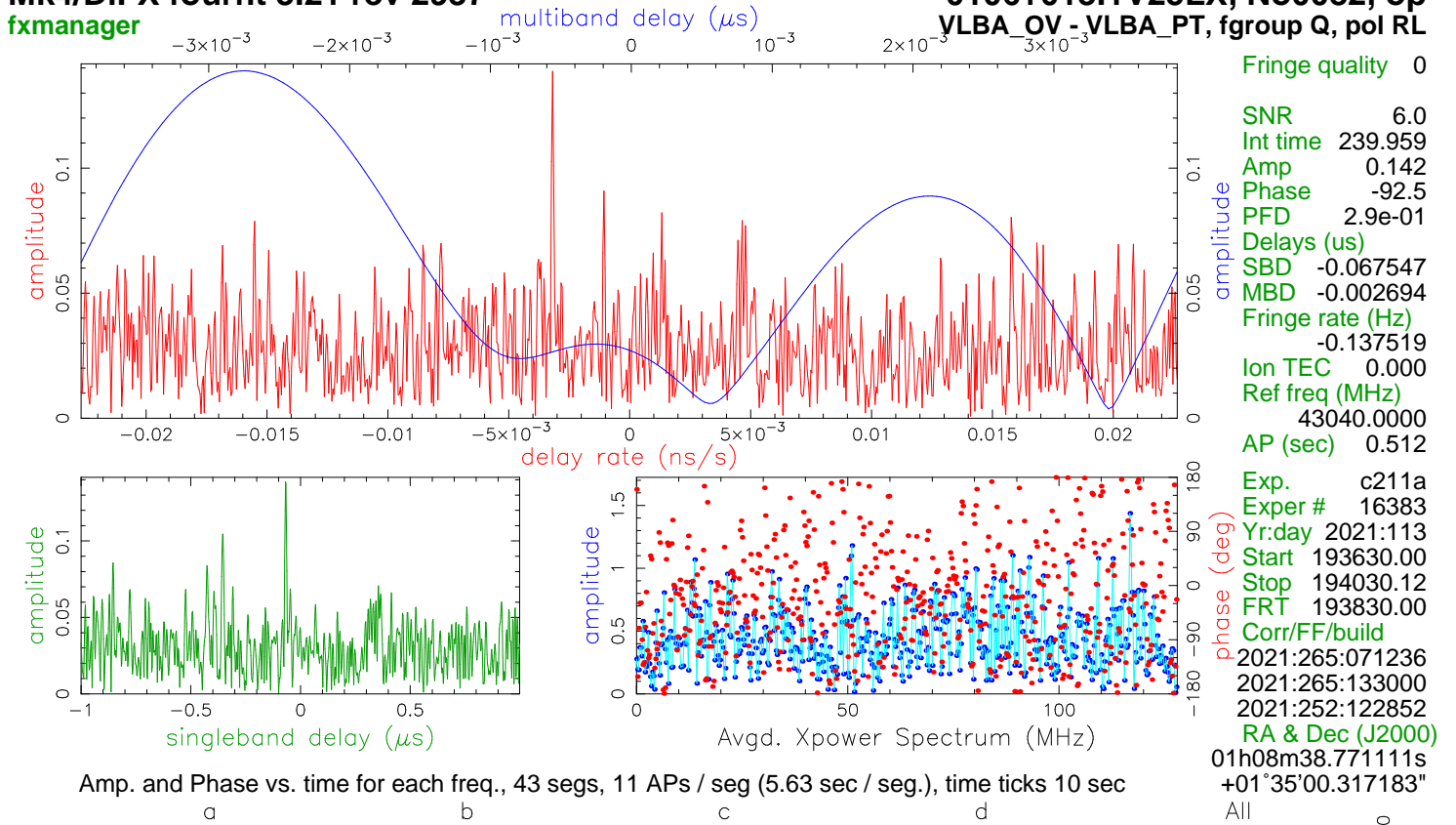
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/op..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/op.Q.200.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, op

VLBA\_OV - VLBA\_PT, fgroup Q, pol RL



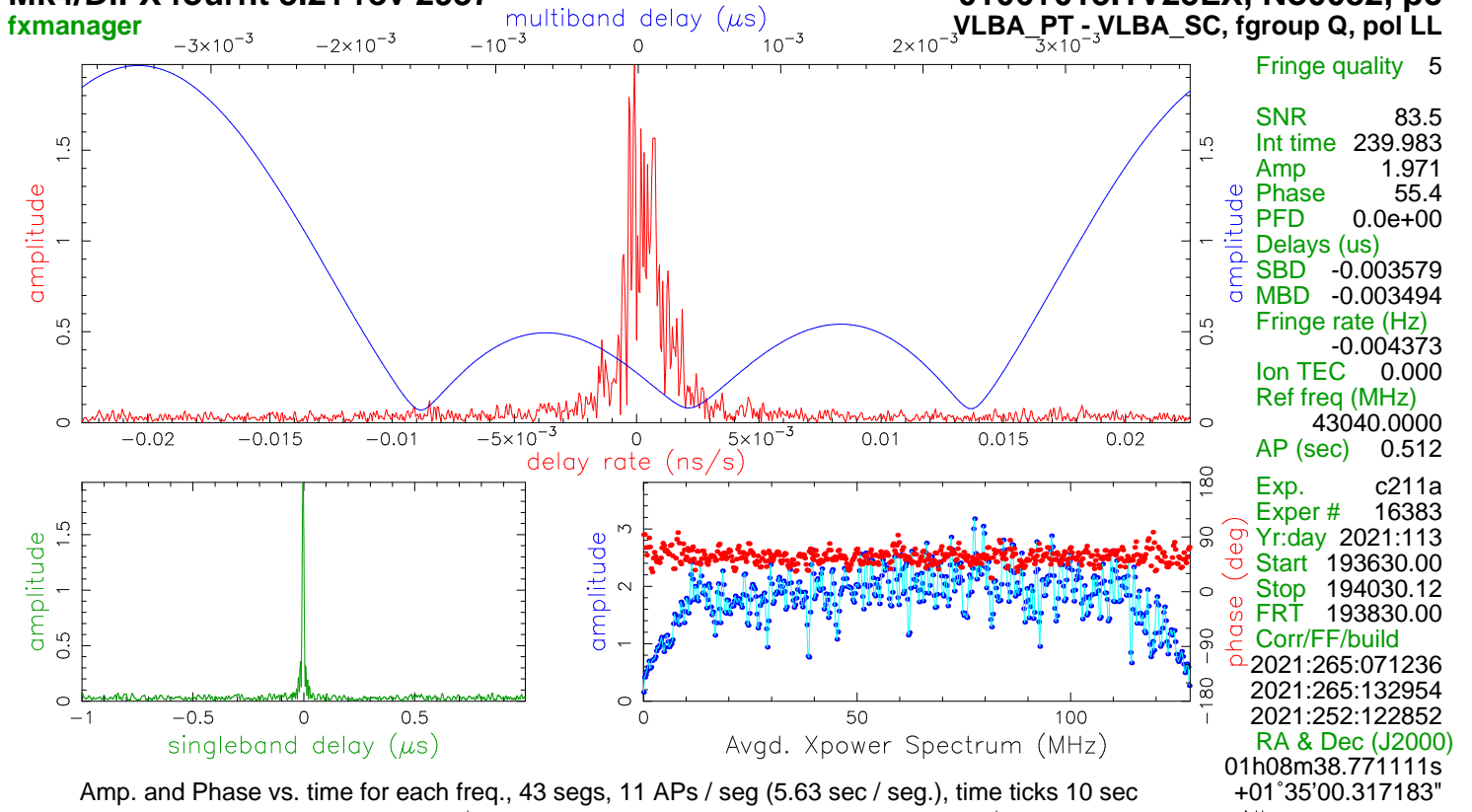
| 42912.00                      | 43040.00   | 43168.00   | 43296.00           | Freq (MHz)                             | All   |
|-------------------------------|--|--|--------------------|--|---|
| -70.0                         | -124.9   | -73.8  | -95.1              | Phase                                  | -92.5   |
| 0.1                           | 0.2  | 0.1  | 0.2                | Ampl.                                  | 0.1   |
| 1012.1                        | 587.2  | 86.9   | 478.9              | Sbd box                                | 478.4   |
| U/L 469/0                     | 469/0  | 469/0  | 469/0              | APs used                               |   |
| o 1000                        | 1000   | 1000   | 1000               | PC freqs                               |   |
| p 1000                        | 1000   | 1000   | 1000               | PC freqs                               |   |
| o:p 0:0                       | 0:0  | 0:0  | 0:0                | PC phase                               |   |
| o:p 0:0                       | 0:0  | 0:0  | 0:0                | Manl PC                                |   |
| o 1000                        | 1000   | 1000   | 1000               | PC amp                                 |   |
| p 1000                        | 1000   | 1000   | 1000               |  |   |
| o Q00UR                       | Q01UR  | Q02UR  | Q03UR              | Chan ids                               |   |
| p Q00UL                       | Q01UL  | Q02UL  | Q03UL              | Tracks                                 |   |
|                               |  |  |                    | Chan ids                               |   |
|                               |  |  |                    | Tracks                                 |   |
| Group delay (usec)(sbd)       | 2.60592910158E+02  | Apriori delay (usec)   | 2.60658103760E+02  | Resid mbdelay (usec)                   | -2.69360E-03 +/- 1.9E-04                                |
| Sband delay (usec)            | 2.60590556385E+02  | Apriori clock (usec)   | -1.9046097E+00     | Resid sbdelay (usec)                   | -6.75474E-02 +/- 7.2E-04                                |
| Phase delay (usec)            | 2.60658097791E+02  | Apriori clockrate (us/s)                                       | 4.7999999E-07      | Resid phdelay (usec)                   | -5.96872E-06 +/- 1.2E-06                                |
| Delay rate (us/s)             | 2.27121106206E-01  | Apriori rate (us/s)  | 2.27124301345E-01  | Resid rate (us/s)                      | -3.19514E-06 +/- 9.0E-09                                |
| Total phase (deg)             | 190.4  | Apriori accel (us/s/s)   | -1.25817053684E-06 | Resid phase (deg)                      | -92.5 +/- 19.3  |
| RMS                           | Theor.   | Amplitude  | 0.142 +/- 0.024    | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5                                   |
| 66.1                          | 63.1   | Search (1024X16)   | 0.136              | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000                             |
| amp/seg (%)                   | 108.6  | Interp.  | 0.000              | Bits/sample: 2x2                       | SampCntNorm: enabled mb window (us) -0.004 0.004        |
| ph/frq (deg)                  | 31.0   | Inc. seg. avg.   | 0.145              | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023                           |
| amp/frq (%)                   | 21.2   | Inc. frq. avg.   | 0.142              | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| o: az 197.5 el 53.2 pa 14.3   | p: az 214.8 el 52.2 pa 28.7                              | u,v (fr/asec)  | -650.787 181.477   |  | simultaneous interpolator                               |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/op..1V25LX | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/op.Q.216.1V25LX |                    |  |   |

Mk4/DiFX fourfit 3.21 rev 2937

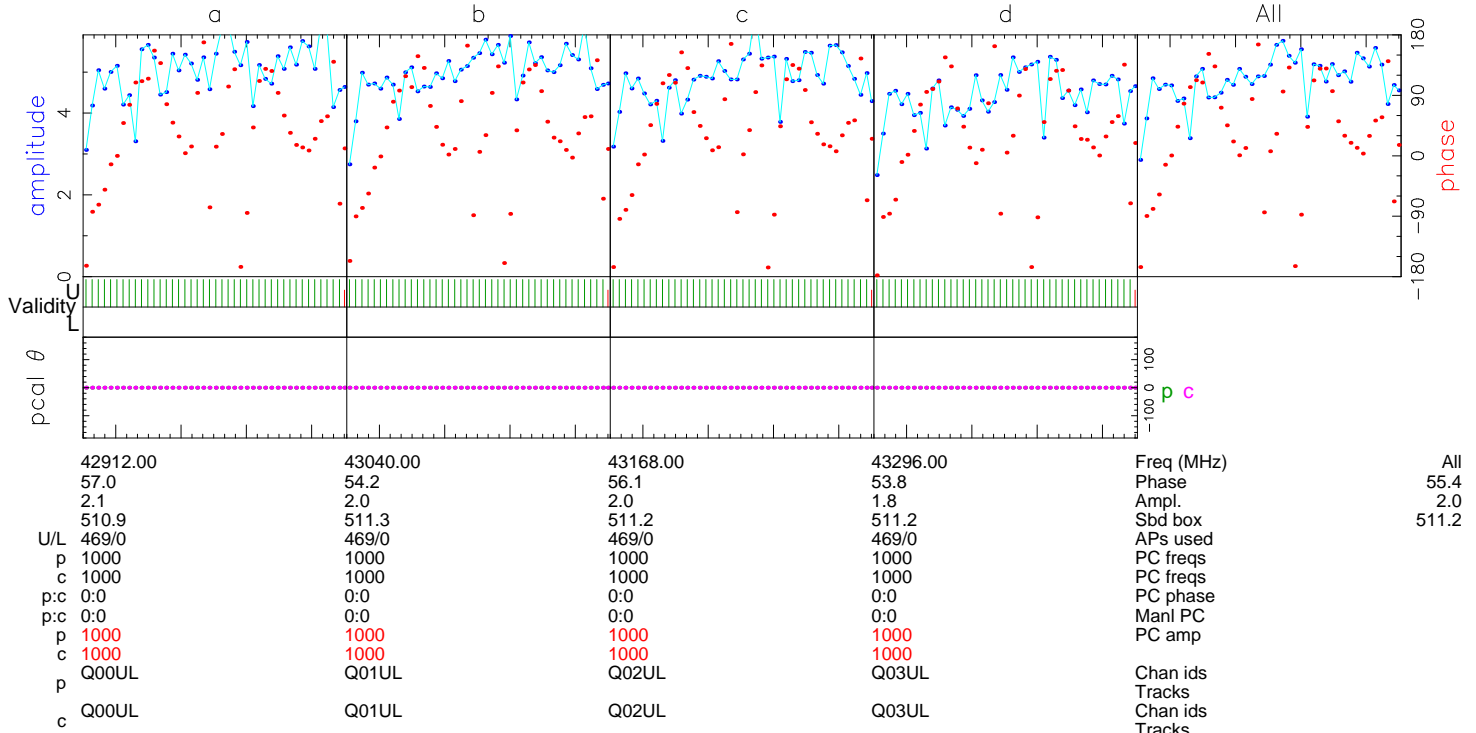
fxmanager

0106+013.1V25LX, No0082, pc

VLBA\_PT - VLBA\_SC, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| Group delay (usec)(sbd)       | 7.89887018927E+03 | Apriori delay (usec)                                     | 7.89887368363E+03  | Resid mbdelay (usec)   | -3.49436E-03          | +/-               | 1.3E-05                    |
|-------------------------------|-------------------|--|--------------------|--|-----------------------|-------------------|----------------------------|
| Sband delay (usec)            | 7.89887010451E+03 | Apriori clock (usec)                                     | -6.6317043E+00     | Resid sbdelay (usec)   | -3.57913E-03          | +/-               | 5.2E-05                    |
| Phase delay (usec)            | 7.89887368720E+03 | Apriori clockrate (us/s)                                 | -4.3599998E-07     | Resid phdelay (usec)   | 3.57239E-06           | +/-               | 8.9E-08                    |
| Delay rate (us/s)             | 8.72656156939E-01 | Apriori rate (us/s)                                      | 8.72656258538E-01  | Resid rate (us/s)  | -1.01599E-07          | +/-               | 6.4E-10                    |
| Total phase (deg)             | 179.0             | Apriori accel (us/s/s)                                   | -4.11755149748E-05 | Resid phase (deg)  | 55.4                  | +/-               | 1.4                        |
| RMS                           | 74.9              | Theor.   | 4.5                | Amplitude  | 1.971 +/- 0.024       |                   |                            |
| ph/seg (deg)                  | 74.9              | Search (1024X16)   | 1.919              | Pcal mode: MANUAL, MANUAL                                      | PC period (AP's) 5, 5 |                   |                            |
| amp/seg (%)                   | 147.0             | Interp.  | 0.000              | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                         | sb window (us)        | -1.000            | 1.000                      |
| ph/frq (deg)                  | 1.9               | Inc. seg. avg.   | 4.796              | Bits/sample: 2x2   | SampCntNorm: enabled  | mb window (us)    | -0.004 0.004               |
| amp/frq (%)                   | 6.8               | Inc. frq. avg.   | 1.966              | Sample rate(MSamp/s): 256                                      |                       | dr window (ns/s)  | -0.023 0.023               |
| p: az 214.8 el 52.2 pa 28.7   |                   | c: az 263.3 el 25.2 pa 71.1                              |                    | Data rate(Mb/s): 2048  | nlags: 512            | t_cohere infinite | ion window (TEC) 0.00 0.00 |
| Control file: cf_1234_gmva7mm |                   | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/pc..1V25LX |                    | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/pc.Q.170.1V25LX |                       |                   | simultaneous interpolator  |

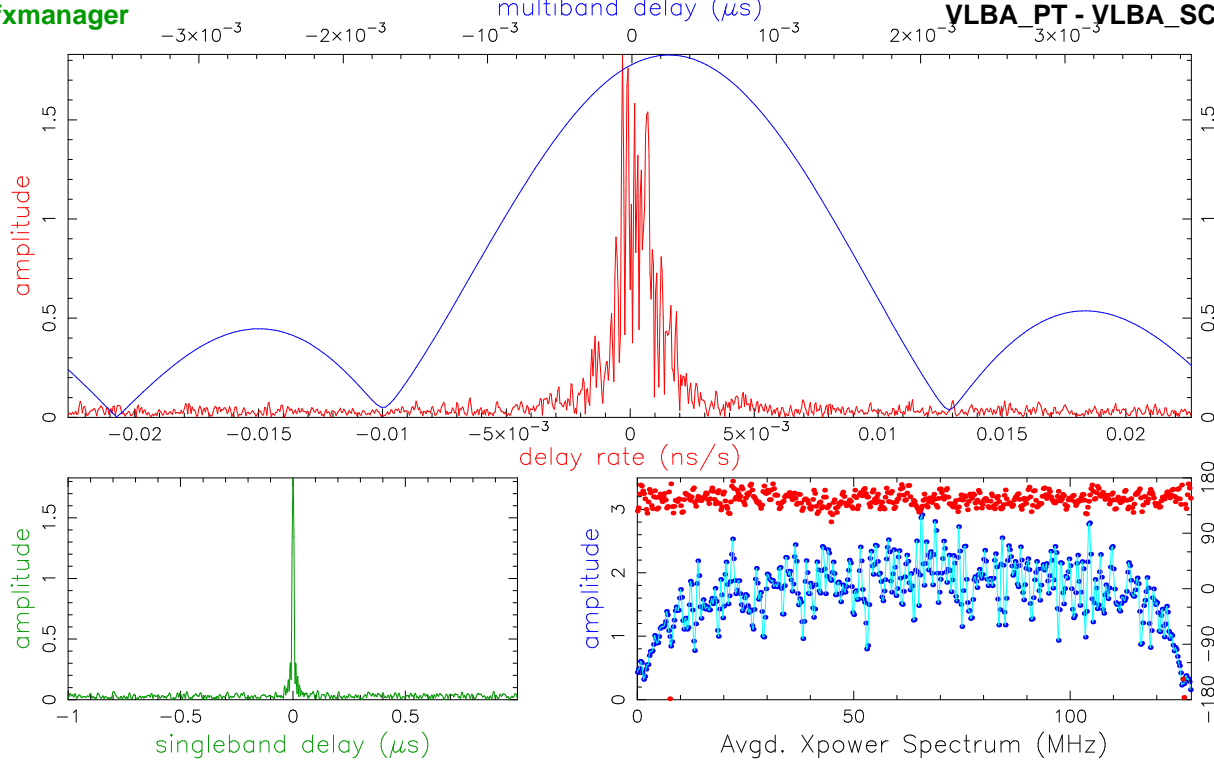


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, pc

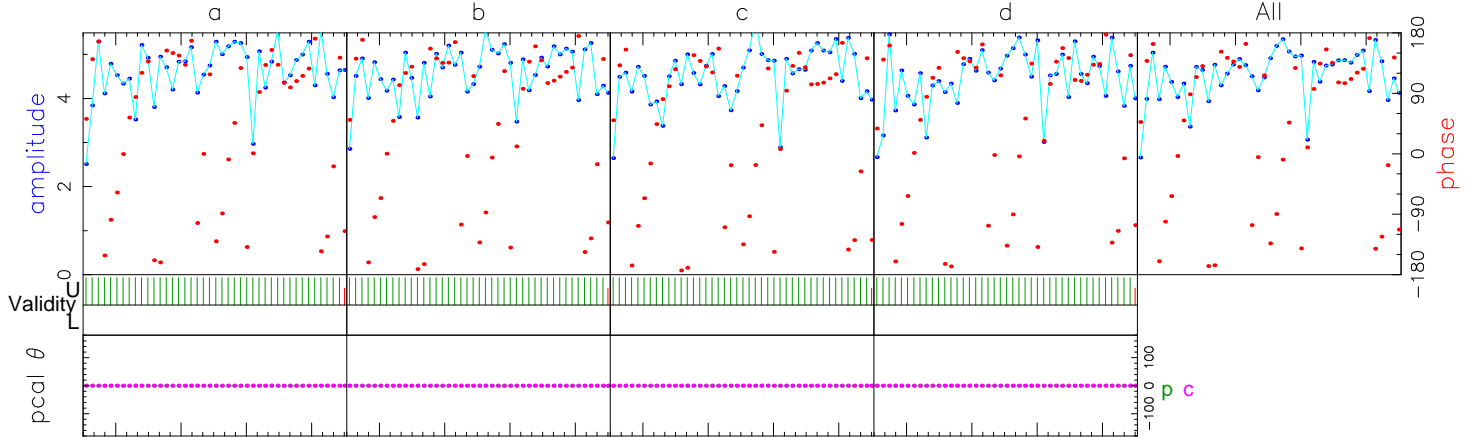
VLBA\_PT - VLBA\_SC, fgroup Q, pol RR



Fringe quality 5

SNR 77.5  
Int time 239.983  
Amp 1.830  
Phase 145.5  
PFD 0.0e+00  
Delays (us)  
SBD 0.000285  
MBD 0.000262  
Fringe rate (Hz)  
-0.013181  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512  
Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132956  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 146.8    | 146.5    | 140.7    | 148.1    | Phase      | 145.5 |
| p   | 1.8      | 1.8      | 1.8      | 1.8      | Ampl.      | 1.8   |
| c   | 513.4    | 513.1    | 513.0    | 513.2    | Sbd box    | 513.1 |
| p   | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| p   | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| c   | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| p   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| p   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 7.89887394524E+03 | Apriori delay (usec)     | 7.89887368363E+03  | Resid mbdelay (usec) | 2.61604E-04  | +/- | 1.4E-05 |
| Sband delay (usec)      | 7.89887396813E+03 | Apriori clock (usec)     | -6.6317043E+00     | Resid sbdelay (usec) | 2.84500E-04  | +/- | 5.6E-05 |
| Phase delay (usec)      | 7.89887369302E+03 | Apriori clockrate (us/s) | -4.3599998E-07     | Resid phdelay (usec) | 9.39210E-06  | +/- | 9.5E-08 |
| Delay rate (us/s)       | 8.72655952282E-01 | Apriori rate (us/s)      | 8.72656258538E-01  | Resid rate (us/s)    | -3.06256E-07 | +/- | 6.9E-10 |
| Total phase (deg)       | 269.2             | Apriori accel (us/s/s)   | -4.11755149748E-05 | Resid phase (deg)    | 145.5        | +/- | 1.5     |

|              |       |        |                  |                 |  |                       |        |       |  |  |
|--------------|-------|--------|------------------|-----------------|--|-----------------------|--------|-------|--|--|
|              | RMS   | Theor. | Amplitude        | 1.830 +/- 0.024 | Pcal mode: MANUAL, MANUAL                                  | PC period (AP's) 5, 5 |        |       |  |  |
| ph/seg (deg) | 78.2  | 4.8    | Search (1024X16) | 1.782           | Pcal rate: 0.000E+00, 0.000E+00 (us/s)                     | sb window (us)        | -1.000 | 1.000 |  |  |
| amp/seg (%)  | 150.8 | 8.5    | Interp.          | 0.000           | Bits/sample: 2x2      SampCntNorm: enabled                 | mb window (us)        | -0.004 | 0.004 |  |  |
| ph/frq (deg) | 4.0   | 1.5    | Inc. seg. avg.   | 4.517           | Sample rate(MSamp/s): 256                                  | dr window (ns/s)      | -0.023 | 0.023 |  |  |
| amp/frq (%)  | 0.7   | 2.6    | Inc. frq. avg.   | 1.829           | Data rate(Mb/s): 2048      nlags: 512    t_cohere infinite | ion window (TEC)      | 0.00   | 0.00  |  |  |

p: az 214.8 el 52.2 pa 28.7 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2516.218 1094.297 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pc.Q.184.1V25LX

## Mk4/DiFX fourfit 3.21 rev 2937

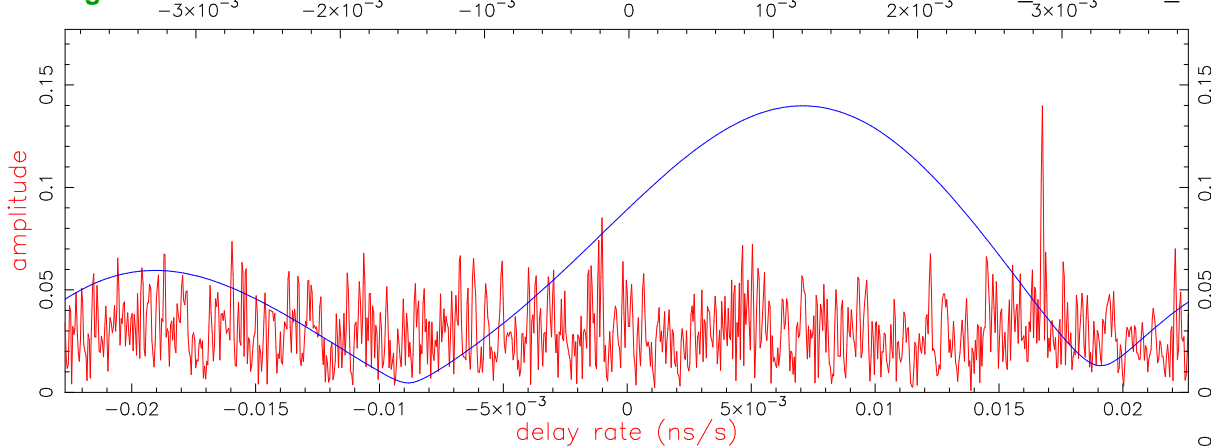
fxmanager

0106+013.1V25LX, No0082, pc

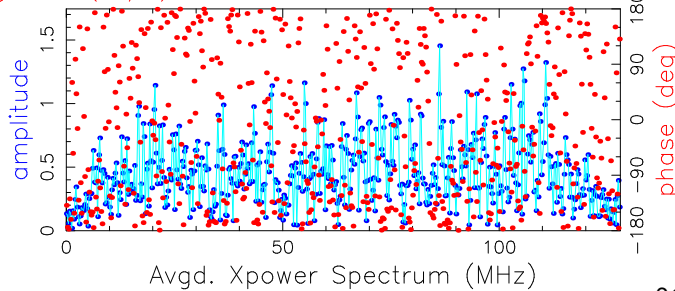
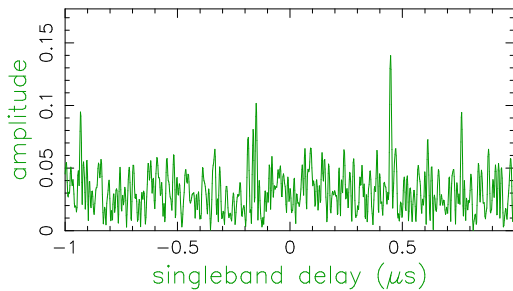
VLBA\_PT - VLBA\_SC, fgroup Q, pol LR

multiband delay ( $\mu$ s)

Fringe quality 0

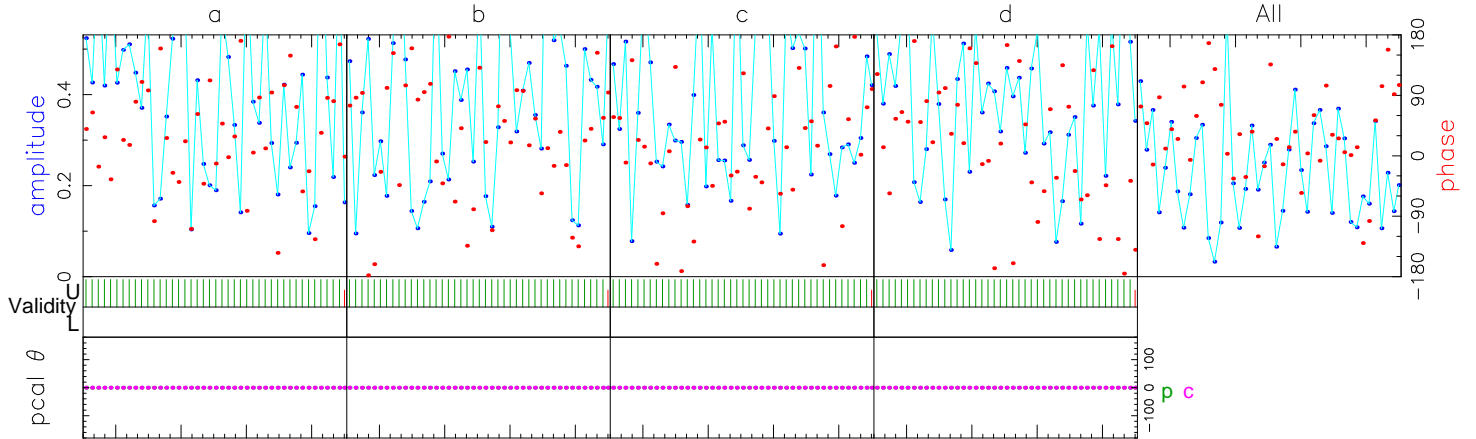


SNR 5.9  
Int time 239.983  
Amp 0.177  
Phase 32.8  
PFD 3.3e-01  
Delays (us)  
SBD 0.447221  
MBD 0.001200  
Fringe rate (Hz)  
0.722764  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512



Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132958  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
|     | 32.3     | 43.4     | 14.9     | 63.6     | Phase      | 32.8  |
|     | 0.3      | 0.2      | 0.2      | 0.1      | Ampl.      | 0.2   |
|     | 742.7    | 436.5    | 742.2    | 74.3     | Sbd box    | 742.0 |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| p   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| c   | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| p:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| p:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| p   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| c   | 1000     | 1000     | 1000     | 1000     |            |       |
| p   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |       |
| c   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |             |             |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|-------------|-------------|
| Group delay (usec)(sbd) | 7.89932019581E+03 | Apriori delay (usec)     | 7.89887368363E+03  | Resid mbdelay (usec) | 1.19968E-03 | +/- 1.9E-04 |
| Sband delay (usec)      | 7.89932090463E+03 | Apriori clock (usec)     | -6.6317043E+00     | Resid sbdelay (usec) | 4.47221E-01 | +/- 7.3E-04 |
| Phase delay (usec)      | 7.89887368575E+03 | Apriori clockrate (us/s) | -4.3599998E-07     | Resid phdelay (usec) | 2.11960E-06 | +/- 1.2E-06 |
| Delay rate (us/s)       | 8.72673051390E-01 | Apriori rate (us/s)      | 8.72656258538E-01  | Resid rate (us/s)    | 1.67929E-05 | +/- 9.0E-09 |
| Total phase (deg)       | 156.5             | Apriori accel (us/s/s)   | -4.11755149748E-05 | Resid phase (deg)    | 32.8        | +/- 19.3    |

|              |       |        |                  |                 |  |                              |                  |              |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------------|
|              | RMS   | Theor. | Amplitude        | 0.177 +/- 0.030 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |              |
| ph/seg (deg) | 66.3  | 63.4   | Search (1024X16) | 0.136           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000        |
| amp/seg (%)  | 105.2 | 110.7  | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 0.004 |
| ph/frq (deg) | 26.2  | 19.3   | Inc. seg. avg.   | 0.182           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 0.023 |
| amp/frq (%)  | 39.8  | 33.8   | Inc. frq. avg.   | 0.173           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00 0.00    |

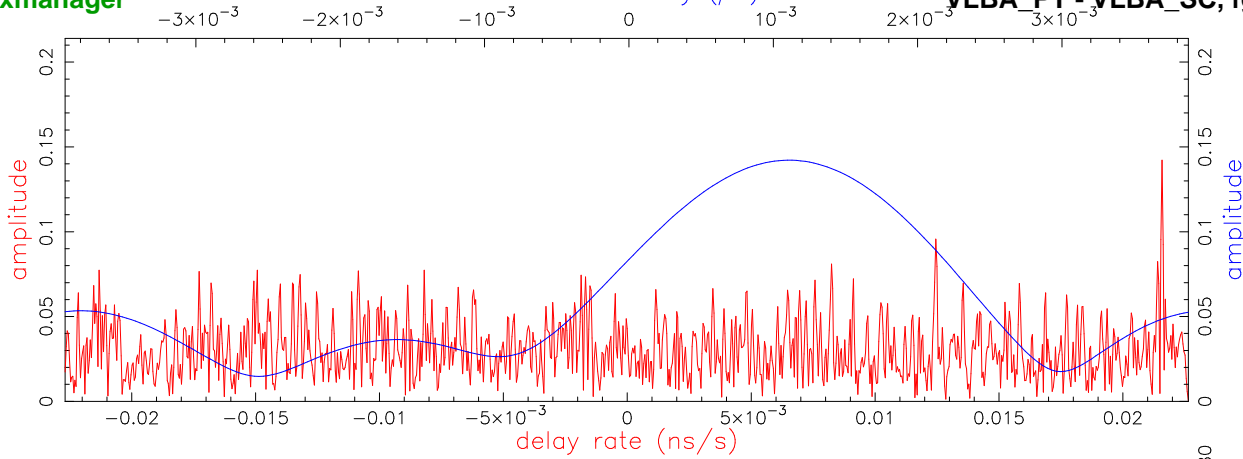
p: az 214.8 el 52.2 pa 28.7 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2516.218 1094.297 simultaneous interpolator  
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pc.Q.203.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, pc

VLBA\_PT - VLBA\_SC, fgroup Q, pol RL

multiband delay ( $\mu$ s)

Fringe quality 0

SNR 6.0

Int time 239.983

Amp 0.214

Phase 173.8

PFD 1.8e-01

Delays (us)

SBD -0.271865

MBD 0.001091

Fringe rate (Hz)

0.930830

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:133000

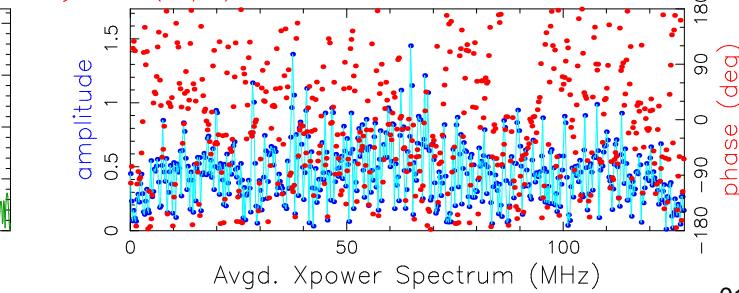
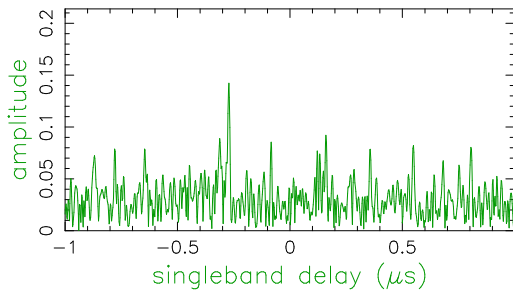
2021:252:122852

RA &amp; Dec (J2000)

01h08m38.771111s

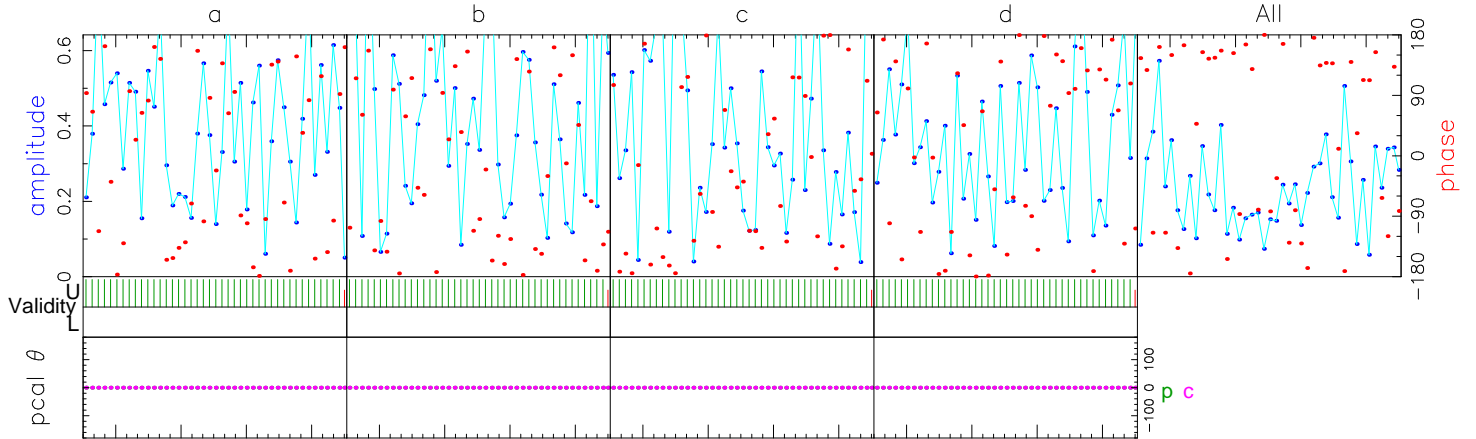
+01°35'00.317183"

All



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 155.8    | -172.1   | -175.9   | 165.1    | Phase      | 173.8 |
| p   | 0.2      | 0.2      | 0.2      | 0.3      | Ampl.      | 0.2   |
| c   | 311.9    | 373.4    | 369.0    | 373.2    | Sbd box    | 373.8 |
| p:c | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |       |
| p:c | 1000     | 1000     | 1000     | 1000     | PC freqs   |       |
| p:c | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |       |
| p:c | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| p   | 1000     | 1000     | 1000     | 1000     | PC amp     |       |
| p   | 1000     | 1000     | 1000     | 1000     |            |       |
| p   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| c   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|     |          |          |          |          | Chan ids   |       |
|     |          |          |          |          | Tracks     |       |

|                         |                   |                          |                    |                      |              |     |         |
|-------------------------|-------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 7.89860133707E+03 | Apriori delay (usec)     | 7.89887368363E+03  | Resid mbdelay (usec) | 1.09094E-03  | +/- | 1.8E-04 |
| Sband delay (usec)      | 7.89860181876E+03 | Apriori clock (usec)     | -6.6317043E+00     | Resid sbdelay (usec) | -2.71865E-01 | +/- | 7.1E-04 |
| Phase delay (usec)      | 7.89887369485E+03 | Apriori clockrate (us/s) | -4.3599998E-07     | Resid phdelay (usec) | 1.12169E-05  | +/- | 1.2E-06 |
| Delay rate (us/s)       | 8.72677885633E-01 | Apriori rate (us/s)      | 8.72656258538E-01  | Resid rate (us/s)    | 2.16271E-05  | +/- | 8.8E-09 |
| Total phase (deg)       | 297.4             | Apriori accel (us/s/s)   | -4.11755149748E-05 | Resid phase (deg)    | 173.8        | +/- | 19.0    |

|              |       |        |                  |                 |  |                              |                  |        |       |  |
|--------------|-------|--------|------------------|-----------------|--|------------------------------|------------------|--------|-------|--|
|              | RMS   | Theor. | Amplitude        | 0.214 +/- 0.035 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |  |
| ph/seg (deg) | 68.4  | 62.2   | Search (1024X16) | 0.141           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |  |
| amp/seg (%)  | 104.3 | 108.6  | Interp.          | 0.000           | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |  |
| ph/frq (deg) | 18.8  | 19.0   | Inc. seg. avg.   | 0.223           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |  |
| amp/frq (%)  | 14.2  | 33.1   | Inc. frq. avg.   | 0.208           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |  |

p: az 214.8 el 52.2 pa 28.7 c: az 263.3 el 25.2 pa 71.1 u,v (fr/asec) -2516.218 1094.297 simultaneous interpolator

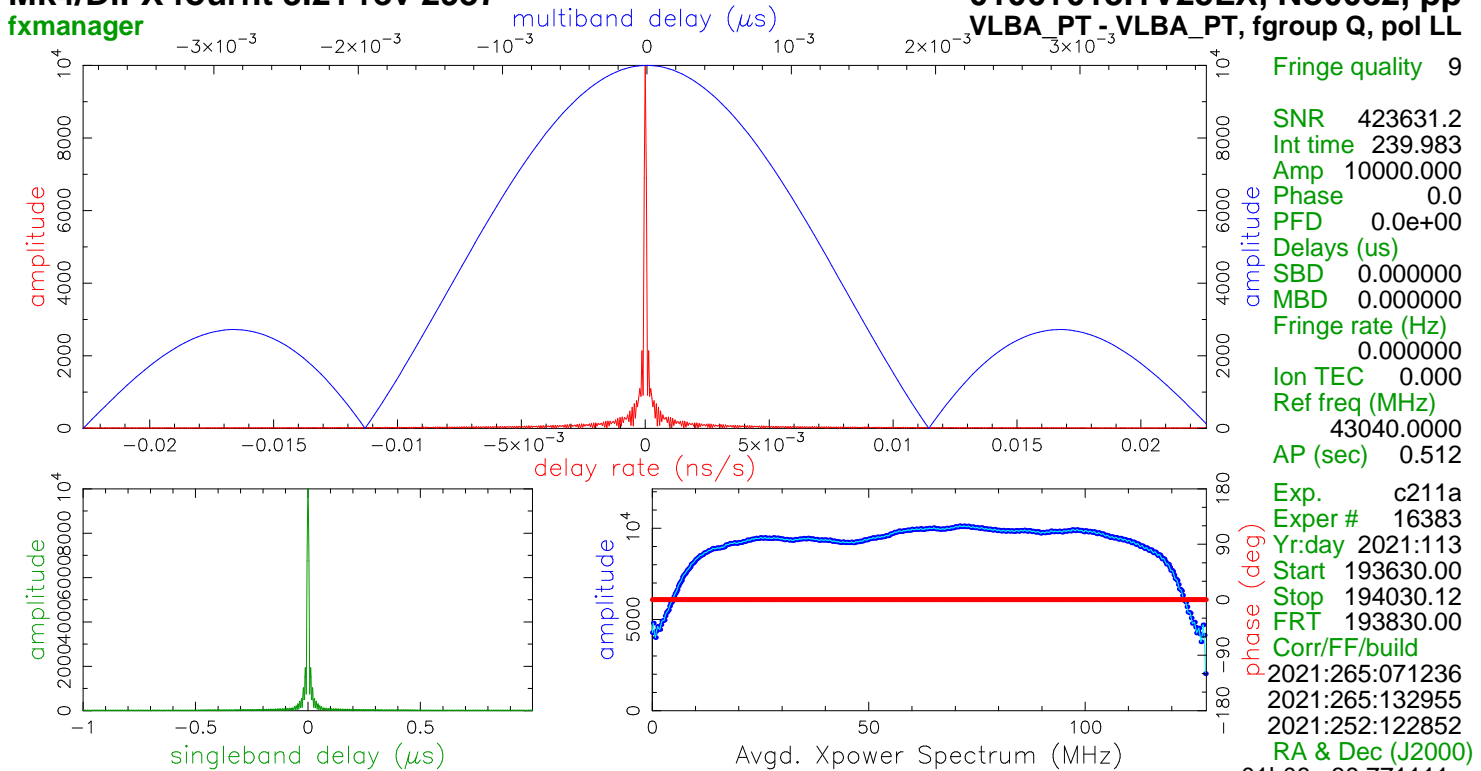
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pc..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pc.Q.217.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

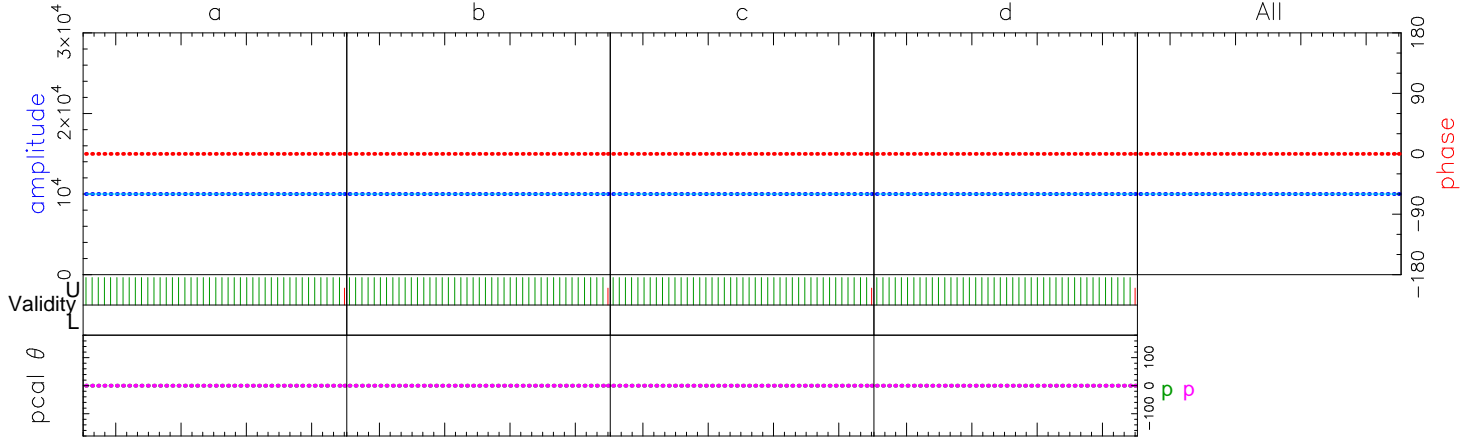
fxmanager

0106+013.1V25LX, No0082, pp

VLBA\_PT - VLBA\_PT, fgroup Q, pol LL



Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



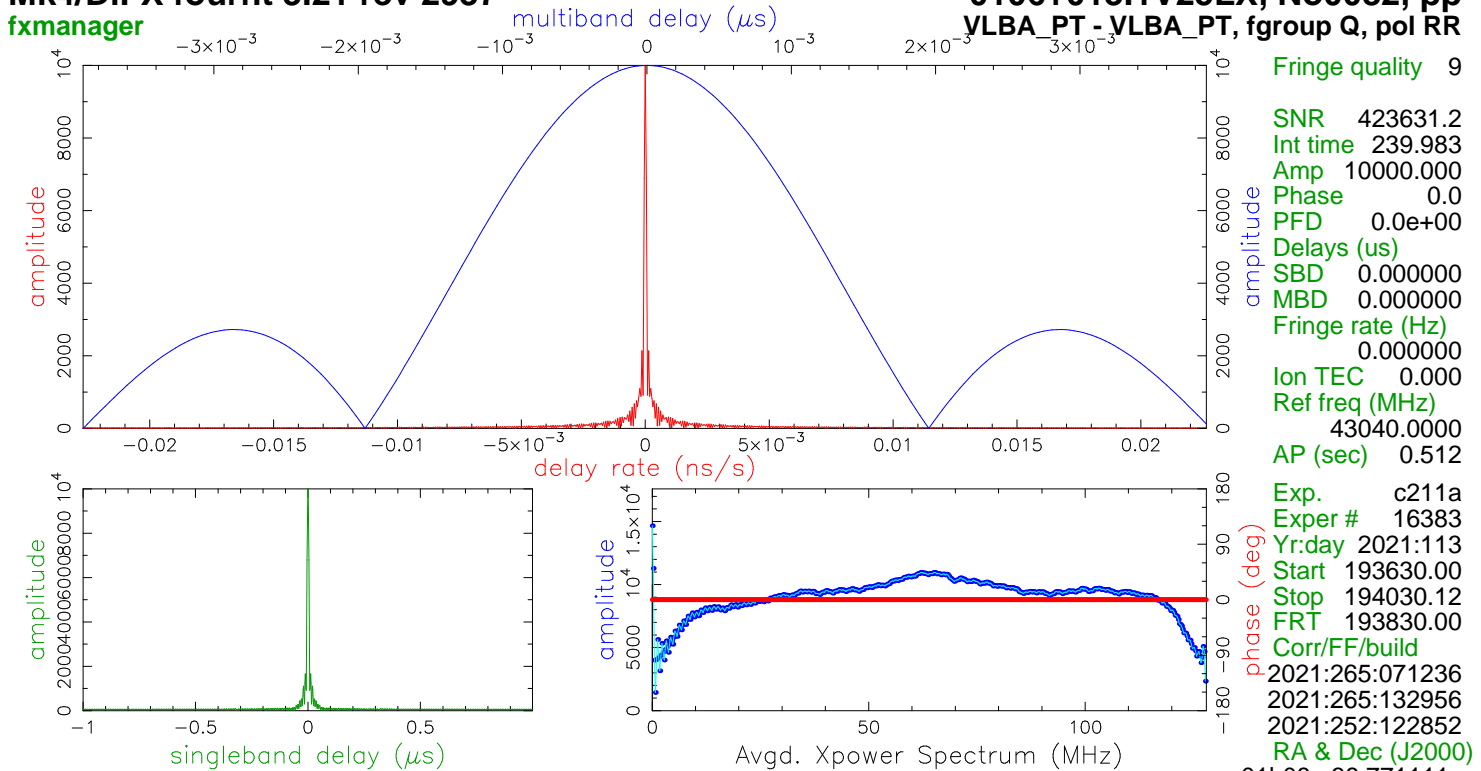
|                               |  |  |  | 42912.00   |  |  |  | 43040.00   |  |  |  | 43168.00            |  |  |  | 43296.00                               |  |  |  | Freq (MHz)                   |  | All                         |
|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|---------------------|--|--|--|--|--|--|--|------------------------------|--|-----------------------------|
|                               |  |  |  | 0.0  |  |  |  | 0.0  |  |  |  | 0.0                 |  |  |  | 0.0                                    |  |  |  | Phase                        |  | 0.0                         |
|                               |  |  |  | 10000.0  |  |  |  | 10000.0  |  |  |  | 10000.0             |  |  |  | 10000.0                                |  |  |  | Ampl.                        |  | 10000.0                     |
|                               |  |  |  | 513.0  |  |  |  | 513.0  |  |  |  | 513.0               |  |  |  | 513.0                                  |  |  |  | Sbd box                      |  | 513.0                       |
| U/L                           |  |  |  | 469/0  |  |  |  | 469/0  |  |  |  | 469/0               |  |  |  | 469/0                                  |  |  |  | APs used                     |  |                             |
| p                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000                |  |  |  | 1000                                   |  |  |  | PC freqs                     |  |                             |
| p                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000                |  |  |  | 1000                                   |  |  |  | PC freqs                     |  |                             |
| p:p                           |  |  |  | 0:0  |  |  |  | 0:0  |  |  |  | 0:0                 |  |  |  | 0:0                                    |  |  |  | PC phase                     |  |                             |
| p:p                           |  |  |  | 0:0  |  |  |  | 0:0  |  |  |  | 0:0                 |  |  |  | 0:0                                    |  |  |  | Manl PC                      |  |                             |
| p                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000                |  |  |  | 1000                                   |  |  |  | PC amp                       |  |                             |
| p                             |  |  |  | 1000   |  |  |  | 1000   |  |  |  | 1000                |  |  |  | 1000                                   |  |  |  | Chan ids                     |  |                             |
| p                             |  |  |  | Q00UL  |  |  |  | Q01UL  |  |  |  | Q02UL               |  |  |  | Q03UL                                  |  |  |  | Tracks                       |  |                             |
| p                             |  |  |  | Q00UL  |  |  |  | Q01UL  |  |  |  | Q02UL               |  |  |  | Q03UL                                  |  |  |  | Chan ids                     |  |                             |
|                               |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |  |  |  |  | Tracks                       |  |                             |
| Group delay (usec)(sbd)       |  |  |  | 0.00000000000E+00  |  |  |  | Apriori delay (usec)   |  |  |  | 0.00000000000E+00   |  |  |  | Resid mbdelay (usec)                   |  |  |  | 0.00000E+00                  |  | +/- 2.6E-09                 |
| Sband delay (usec)            |  |  |  | 0.00000000000E+00  |  |  |  | Apriori clock (usec)   |  |  |  | 0.0000000E+00       |  |  |  | Resid sbdelay (usec)                   |  |  |  | 0.00000E+00                  |  | +/- 1.0E-08                 |
| Phase delay (usec)            |  |  |  | 0.00000000000E+00  |  |  |  | Apriori clockrate (us/s)                                       |  |  |  | 0.0000000E+00       |  |  |  | Resid phdelay (usec)                   |  |  |  | 0.00000E+00                  |  | +/- 1.7E-11                 |
| Delay rate (us/s)             |  |  |  | 0.00000000000E+00  |  |  |  | Apriori rate (us/s)  |  |  |  | 0.00000000000E+00   |  |  |  | Resid rate (us/s)                      |  |  |  | 0.00000E+00                  |  | +/- 1.3E-13                 |
| Total phase (deg)             |  |  |  | 0.0  |  |  |  | Apriori accel (us/s/s)   |  |  |  | 0.00000000000E+00   |  |  |  | Resid phase (deg)                      |  |  |  | 0.0                          |  | +/- 0.0                     |
| RMS                           |  |  |  | Theor.   |  |  |  | Amplitude  |  |  |  | 10000.000 +/- 0.024 |  |  |  | Pcal mode: MANUAL, MANUAL              |  |  |  | PC period (AP's) 5, 5        |  |                             |
| ph/seg (deg)                  |  |  |  | 0.0  |  |  |  | Search (1024X16)   |  |  |  | 10000.000           |  |  |  | Pcal rate: 0.000E+00, 0.000E+00 (us/s) |  |  |  | sb window (us)               |  | -1.000 1.000                |
| amp/seg (%)                   |  |  |  | 0.0  |  |  |  | Interp.  |  |  |  | 0.000               |  |  |  | Bits/sample: 2x2                       |  |  |  | SampCntNorm: enabled         |  | mb window (us) -0.004 0.004 |
| ph/frq (deg)                  |  |  |  | 0.0  |  |  |  | Inc. seg. avg.   |  |  |  | 10000.000           |  |  |  | Sample rate(MSamp/s): 256              |  |  |  | dr window (ns/s)             |  | -0.023 0.023                |
| amp/frq (%)                   |  |  |  | 0.0  |  |  |  | Inc. frq. avg.   |  |  |  | 10000.000           |  |  |  | Data rate(Mb/s): 2048                  |  |  |  | nlags: 512 t_cohere infinite |  | ion window (TEC) 0.00 0.00  |
| p: az 214.8 el 52.2 pa 28.7   |  |  |  | p: az 214.8 el 52.2 pa 28.7                              |  |  |  | u,v (fr/asec) 0.000 0.000                                      |  |  |  |                     |  |  |  |  |  |  |  | simultaneous interpolator    |  |                             |
| Control file: cf_1234_gmva7mm |  |  |  | Input file: /Exps/c211a/v1/v1_7mm/1234/No0082/pp..1V25LX |  |  |  | Output file: /Exps/c211a/v1/v1_7mm/1234/No0082/pp.Q.175.1V25LX |  |  |  |                     |  |  |  |  |  |  |  |                              |  |                             |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, pp

VLBA\_PT - VLBA\_PT, fgroup Q, pol RR

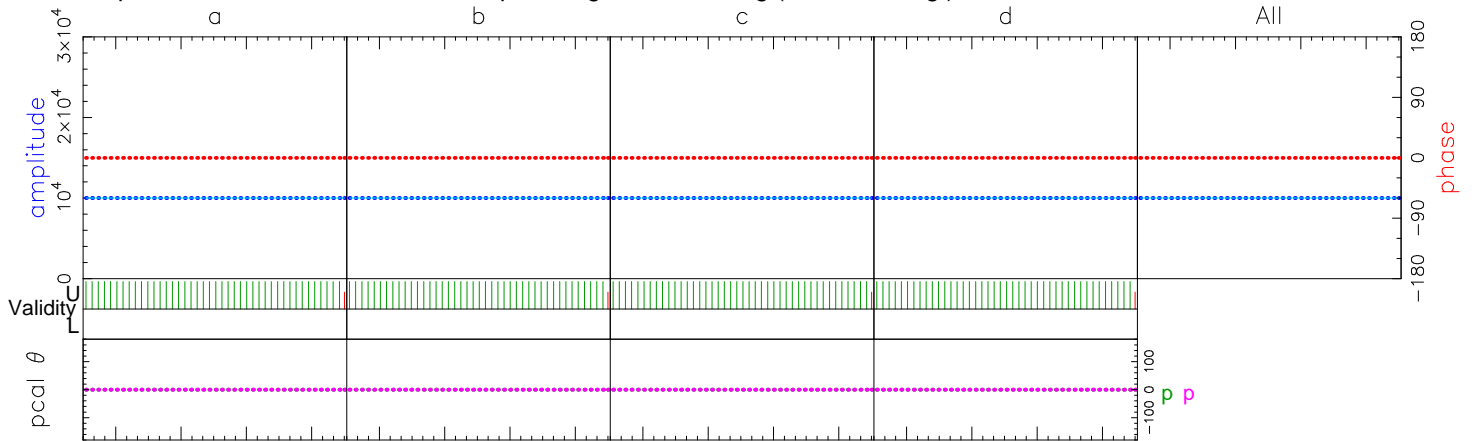


Fringe quality 9

SNR 423631.2  
Int time 239.983  
Amp 10000.000  
Phase 0.0  
PFD 0.0e+00  
Delays (us)  
SBD 0.000000  
MBD 0.000000  
Fringe rate (Hz)  
0.000000  
Ion TEC 0.000  
Ref freq (MHz)  
43040.0000  
AP (sec) 0.512

Exp. c211a  
Exper # 16383  
Yr:day 2021:113  
Start 193630.00  
Stop 194030.12  
FRT 193830.00  
Corr/FF/build  
2021:265:071236  
2021:265:132956  
2021:252:122852  
RA & Dec (J2000)  
01h08m38.771111s  
+01°35'00.317183"

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|           |  |  |  | Freq (MHz) |  | All       |
|-----------|--|--|--|------------|--|-----------|
| 42912.00  |  |  |  | 43040.00   |  | 43168.00  |
| 0.0       |  |  |  | 0.0        |  | 0.0       |
| 10000.0   |  |  |  | 10000.0    |  | 10000.0   |
| 513.0     |  |  |  | 513.0      |  | 513.0     |
| U/L 469/0 |  |  |  | U/L 469/0  |  | U/L 469/0 |
| p 1000    |  |  |  | p 1000     |  | p 1000    |
| p:p 0:0   |  |  |  | p:p 0:0    |  | p:p 0:0   |
| p:p 0:0   |  |  |  | p:p 0:0    |  | p:p 0:0   |
| p 1000    |  |  |  | p 1000     |  | p 1000    |
| p 1000    |  |  |  | p 1000     |  | p 1000    |
| p Q00UR   |  |  |  | p Q01UR    |  | p Q02UR   |
| p Q00UR   |  |  |  | p Q01UR    |  | p Q02UR   |
|           |  |  |  |            |  | p Q03UR   |
|           |  |  |  |            |  | p Q03UR   |

|                         |                    |                          |                    |                      |              |             |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 0.000000000000E+00 | Apriori delay (usec)     | 0.000000000000E+00 | Resid mbdelay (usec) | 0.000000E+00 | +/- 2.6E-09 |
| Sband delay (usec)      | 0.000000000000E+00 | Apriori clock (usec)     | 0.00000000E+00     | Resid sbdelay (usec) | 0.000000E+00 | +/- 1.0E-08 |
| Phase delay (usec)      | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.00000000E+00     | Resid phdelay (usec) | 0.000000E+00 | +/- 1.7E-11 |
| Delay rate (us/s)       | 0.000000000000E+00 | Apriori rate (us/s)      | 0.000000000000E+00 | Resid rate (us/s)    | 0.000000E+00 | +/- 1.3E-13 |
| Total phase (deg)       | 0.0                | Apriori accel (us/s/s)   | 0.000000000000E+00 | Resid phase (deg)    | 0.0          | +/- 0.0     |

|              |     |        |                  |                     |  |                               |
|--------------|-----|--------|------------------|---------------------|--|-------------------------------|
| ph/seg (deg) | 0.0 | Theor. | Amplitude        | 10000.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5         |
| amp/seg (%)  | 0.0 | 0.0    | Search (1024X16) | 10000.000           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000   |
| ph/frq (deg) | 0.0 | 0.0    | Interp.          | 0.000               | Bits/sample: 2x2                       | mb window (us) -0.004 0.004   |
| amp/frq (%)  | 0.0 | 0.0    | Inc. seg. avg.   | 10000.000           | Sample rate(MSamp/s): 256              | dr window (ns/s) -0.023 0.023 |
|              |     |        | Inc. frq. avg.   | 10000.000           | Data rate(Mb/s): 2048                  | ion window (TEC) 0.00 0.00    |

p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pp.Q.189.1V25LX

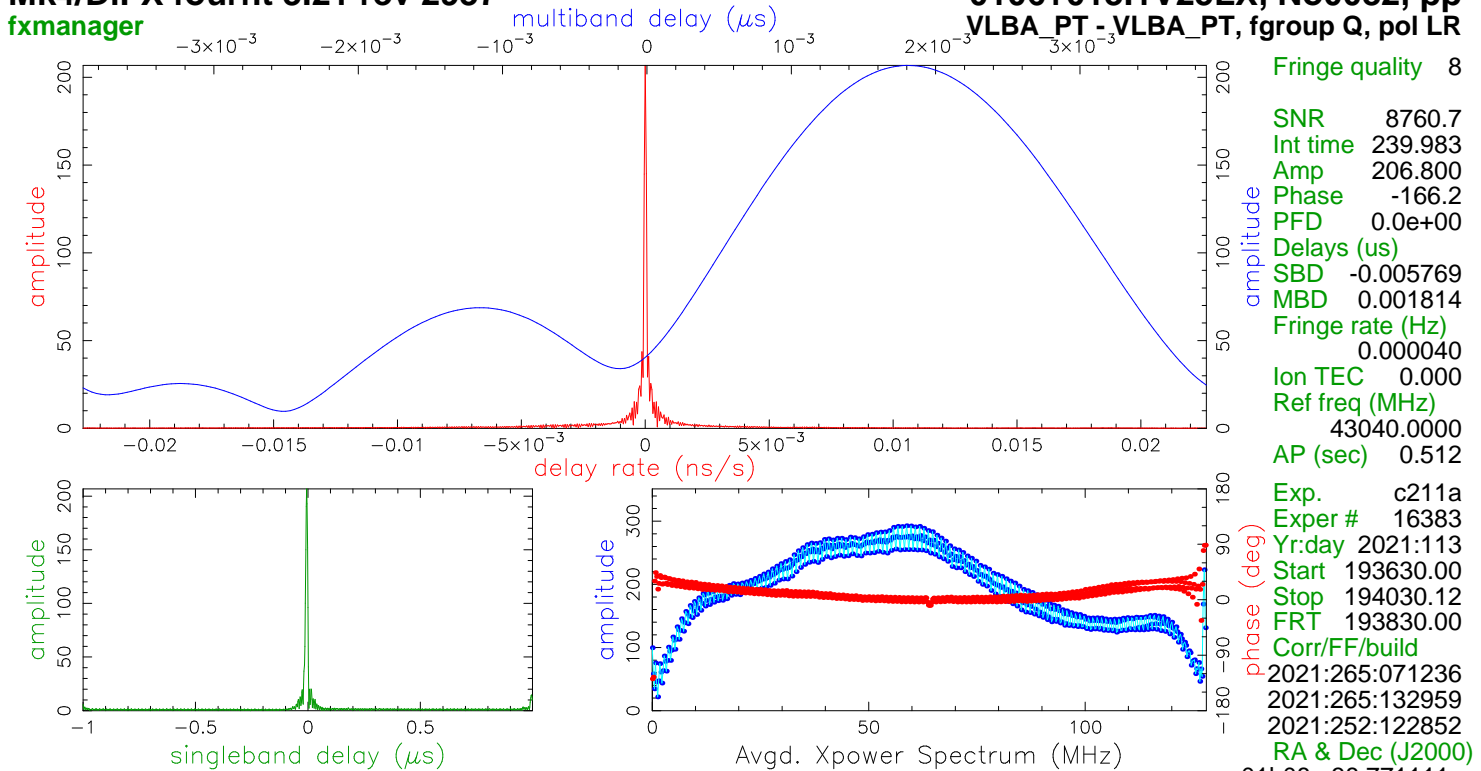


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, pp

VLBA\_PT - VLBA\_PT, fgroup Q, pol LR



Fringe quality 8

SNR 8760.7

Int time 239.983

Amp 206.800

Phase -166.2

PFD 0.0e+00

Delays (us)

SBD -0.005769

MBD 0.001814

Fringe rate (Hz)

0.000040

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Exper # 16383

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:132959

2021:252:122852

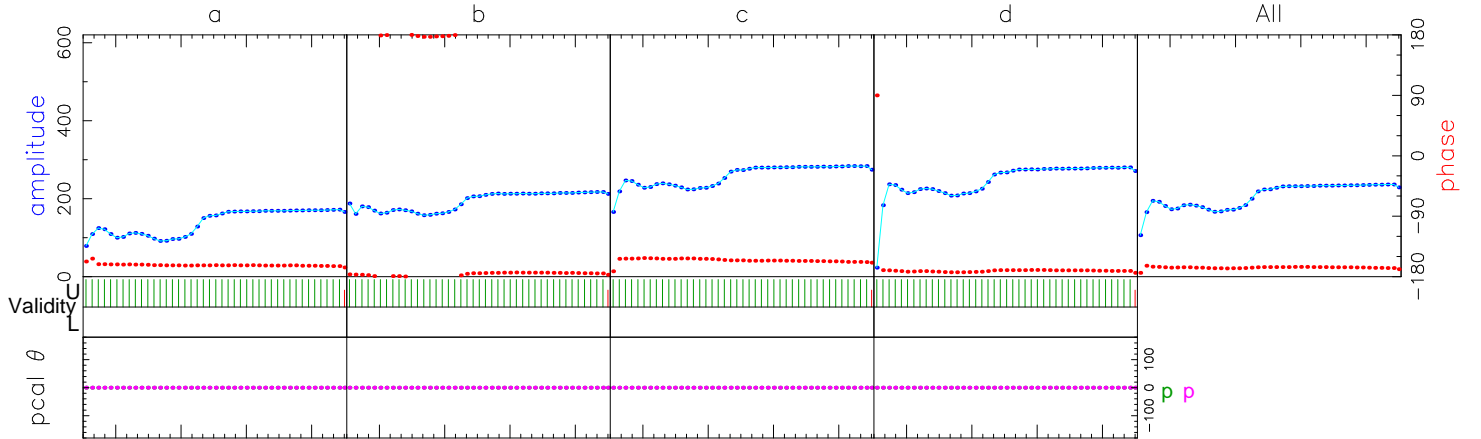
RA & Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



|     | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All    |
|-----|----------|----------|----------|----------|------------|--------|
|     | -162.8   | -176.5   | -155.5   | -171.3   | Phase      | -166.2 |
|     | 139.5    | 193.2    | 257.7    | 245.4    | Ampl.      | 209.0  |
|     | 510.5    | 509.8    | 509.8    | 510.3    | Sbd box    | 510.0  |
| U/L | 469/0    | 469/0    | 469/0    | 469/0    | APs used   |        |
| p   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| p   | 1000     | 1000     | 1000     | 1000     | PC freqs   |        |
| p:p | 0:0      | 0:0      | 0:0      | 0:0      | PC phase   |        |
| p:p | 0:0      | 0:0      | 0:0      | 0:0      | Manl PC    |        |
| p   | 1000     | 1000     | 1000     | 1000     | PC amp     |        |
| p   | 1000     | 1000     | 1000     | 1000     |            |        |
| p   | Q00UL    | Q01UL    | Q02UL    | Q03UL    | Chan ids   |        |
| p   | Q00UR    | Q01UR    | Q02UR    | Q03UR    | Tracks     |        |
|     |          |          |          |          | Chan ids   |        |
|     |          |          |          |          | Tracks     |        |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -5.99834375000E-03 | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | 1.81416E-03  | +/- | 1.3E-07 |
| Sband delay (usec)      | -5.76900000000E-03 | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | -5.76900E-03 | +/- | 4.9E-07 |
| Phase delay (usec)      | -1.07276828840E-05 | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | -1.07277E-05 | +/- | 8.4E-10 |
| Delay rate (us/s)       | 9.33111777531E-10  | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | 9.33112E-10  | +/- | 6.1E-12 |
| Total phase (deg)       | -166.2             | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | -166.2       | +/- | 0.0     |

|              |      |        |                  |                   |  |                              |                  |        |       |
|--------------|------|--------|------------------|-------------------|--|------------------------------|------------------|--------|-------|
|              | RMS  | Theor. | Amplitude        | 206.800 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5        |                  |        |       |
| ph/seg (deg) | 1.5  | 0.0    | Search (1024X16) | 205.172           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)               | -1.000           | 1.000  |       |
| amp/seg (%)  | 15.0 | 0.1    | Interp.          | 0.000             | Bits/sample: 2x2                       | SampCntNorm: enabled         | mb window (us)   | -0.004 | 0.004 |
| ph/frq (deg) | 11.3 | 0.0    | Inc. seg. avg.   | 206.813           | Sample rate(MSamp/s): 256              |                              | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%)  | 22.7 | 0.0    | Inc. frq. avg.   | 208.960           | Data rate(Mb/s): 2048                  | nlags: 512 t_cohere infinite | ion window (TEC) | 0.00   | 0.00  |

p: az 214.8 el 52.2 pa 28.7 p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

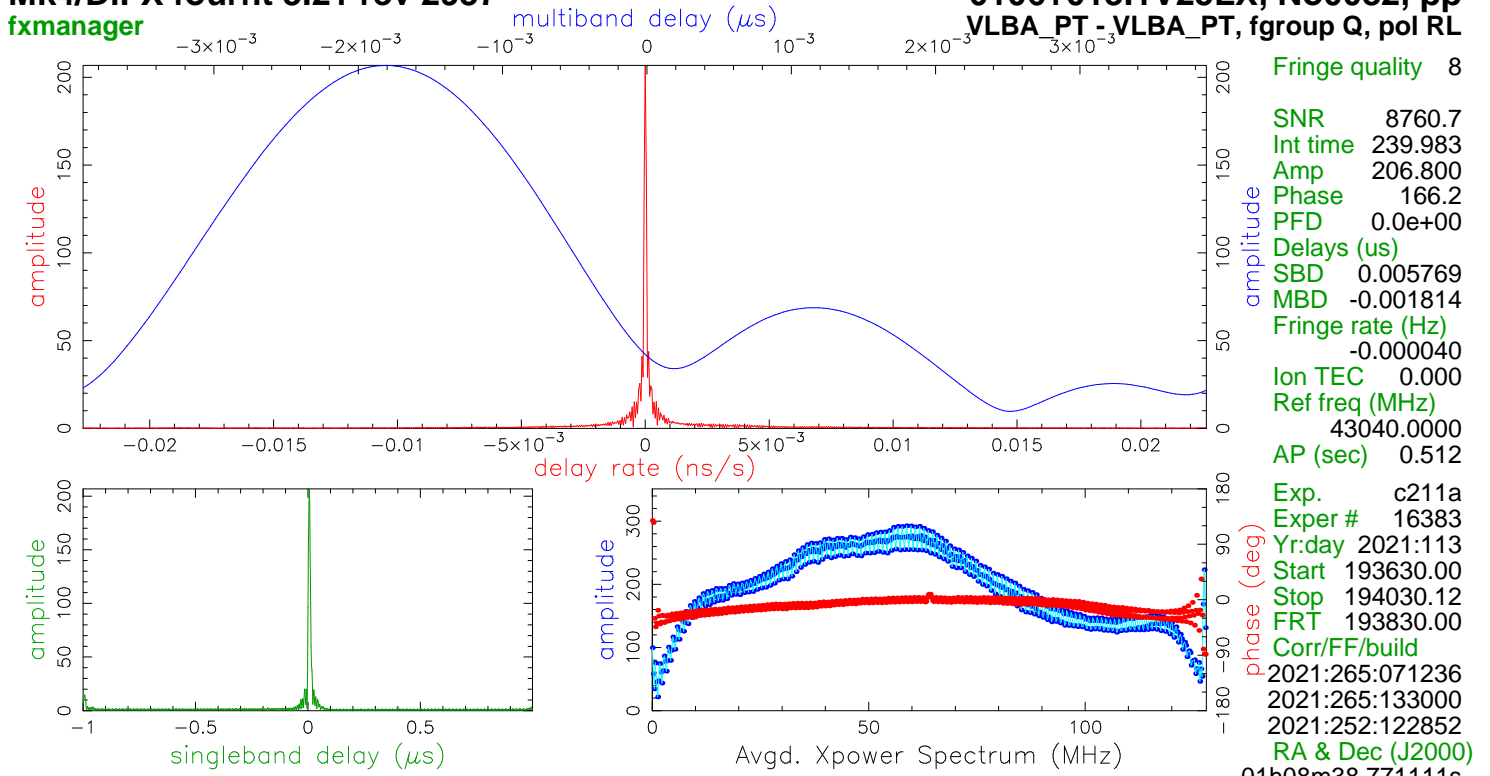
Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pp.Q.208.1V25LX

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0106+013.1V25LX, No0082, pp

VLBA\_PT - VLBA\_PT, fgroup Q, pol RL



Fringe quality 8

SNR 8760.7

Int time 239.983

Amp 206.800

Phase 166.2

PFD 0.0e+00

Delays (us)

SBD 0.005769

MBD -0.001814

Fringe rate (Hz)

-0.000040

Ion TEC 0.000

Ref freq (MHz)

43040.0000

AP (sec) 0.512

Exp. c211a

Yr:day 2021:113

Start 193630.00

Stop 194030.12

FRT 193830.00

Corr/FF/build

2021:265:071236

2021:265:133000

2021:252:122852

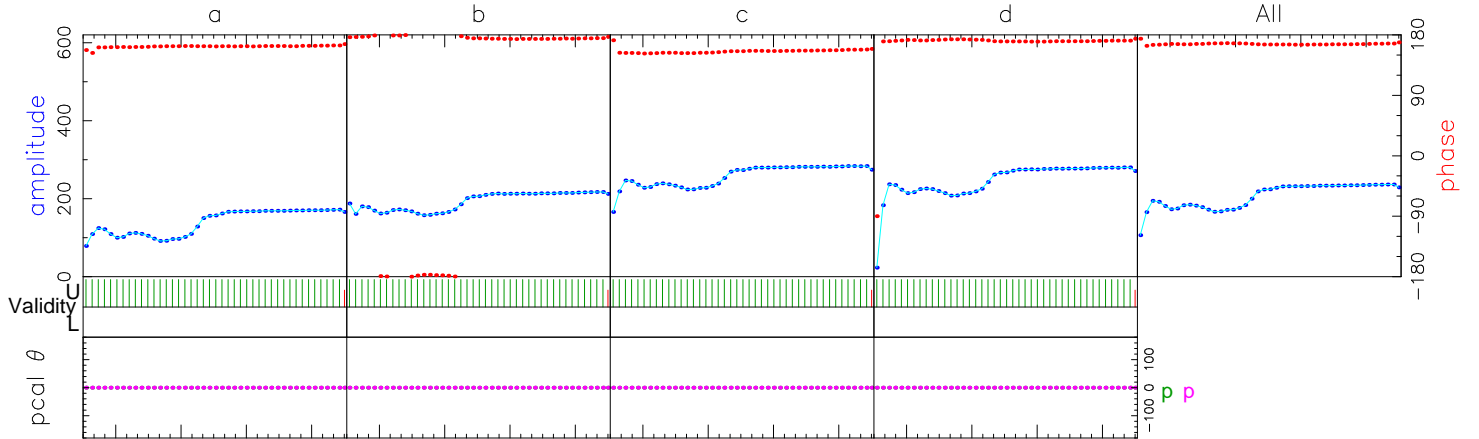
RA &amp; Dec (J2000)

01h08m38.771111s

+01°35'00.317183"

All

Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| 42912.00  | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All   |
|-----------|----------|----------|----------|------------|-------|
| 162.8     | 176.5    | 155.5    | 171.3    | Phase      | 166.2 |
| 139.5     | 193.2    | 257.7    | 245.4    | Ampl.      | 209.0 |
| 515.5     | 516.2    | 516.2    | 515.7    | Sbd box    | 516.0 |
| U/L 469/0 | 469/0    | 469/0    | 469/0    | APs used   |       |
| p 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| p 1000    | 1000     | 1000     | 1000     | PC freqs   |       |
| p:p 0:0   | 0:0      | 0:0      | 0:0      | PC phase   |       |
| p:p 0:0   | 0:0      | 0:0      | 0:0      | Manl PC    |       |
| p 1000    | 1000     | 1000     | 1000     | PC amp     |       |
| p 1000    | 1000     | 1000     | 1000     |            |       |
| p Q00UR   | Q01UR    | Q02UR    | Q03UR    | Chan ids   |       |
| p Q00UL   | Q01UL    | Q02UL    | Q03UL    | Tracks     |       |
|           |          |          |          | Chan ids   |       |
|           |          |          |          | Tracks     |       |

|                         |                    |                          |                   |                      |              |     |         |
|-------------------------|--------------------|--------------------------|-------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 5.99834375000E-03  | Apriori delay (usec)     | 0.00000000000E+00 | Resid mbdelay (usec) | -1.81416E-03 | +/- | 1.3E-07 |
| Sband delay (usec)      | 5.76900000000E-03  | Apriori clock (usec)     | 0.0000000E+00     | Resid sbdelay (usec) | 5.76900E-03  | +/- | 4.9E-07 |
| Phase delay (usec)      | 1.07276828843E-05  | Apriori clockrate (us/s) | 0.0000000E+00     | Resid phdelay (usec) | 1.07277E-05  | +/- | 8.4E-10 |
| Delay rate (us/s)       | -9.33111777531E-10 | Apriori rate (us/s)      | 0.00000000000E+00 | Resid rate (us/s)    | -9.33112E-10 | +/- | 6.1E-12 |
| Total phase (deg)       | 166.2              | Apriori accel (us/s/s)   | 0.00000000000E+00 | Resid phase (deg)    | 166.2        | +/- | 0.0     |

|              |      |        |                  |                   |  |                       |
|--------------|------|--------|------------------|-------------------|--|-----------------------|
| ph/seg (deg) | 1.5  | Theor. | Amplitude        | 206.800 +/- 0.024 | Pcal mode: MANUAL, MANUAL              | PC period (AP's) 5, 5 |
| amp/seg (%)  | 15.0 | 0.0    | Search (1024X16) | 205.172           | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us)        |
| ph/frq (deg) | 11.3 | 0.0    | Interp.          | 0.000             | Bits/sample: 2x2                       | mb window (us)        |
| amp/frq (%)  | 22.7 | 0.0    | Inc. seg. avg.   | 206.813           | Sample rate(MSamp/s): 256              | dr window (ns/s)      |
|              |      |        | Inc. frq. avg.   | 208.960           | Data rate(Mb/s): 2048                  | ion window (TEC)      |

p: az 214.8 el 52.2 pa 28.7 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf\_1234\_gmva7mm Input file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pp..1V25LX Output file: /Exps/c211a/v1/v1\_7mm/1234/No0082/pp.Q.220.1V25LX