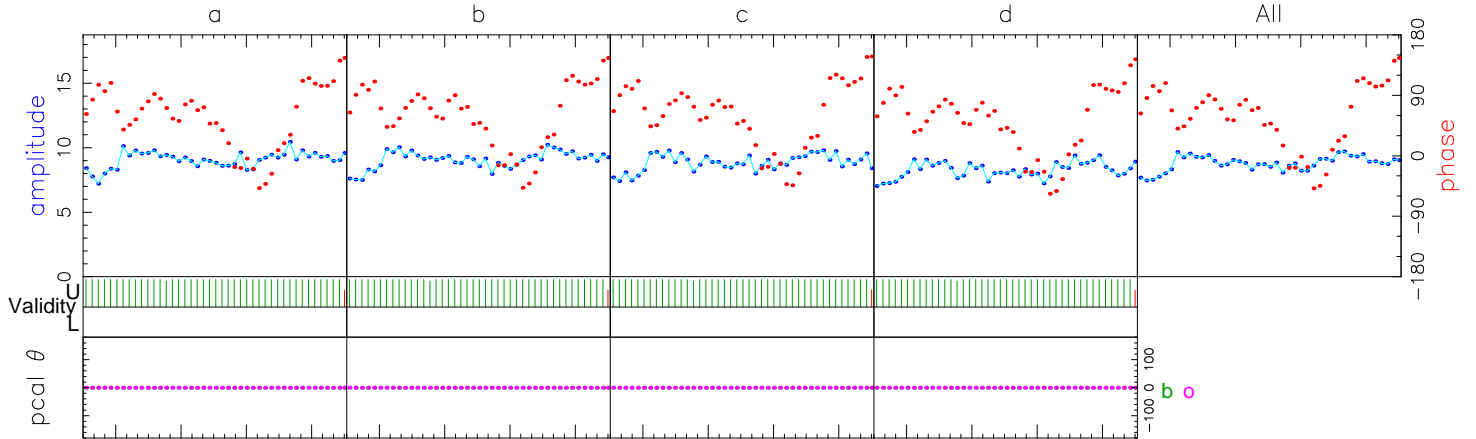


Fringe quality 5
SNR 264.7
Int time 239.713
Amp 6.251
Phase 60.8
PFD 0.0e+00
Delays (us)
SBD 0.000581
MBD 0.000581
Fringe rate (Hz)
-0.000645
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512
Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211438
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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 |
|-----------|----------|----------|----------|------------|-------|
| 60.9 | 63.3 | 63.3 | 55.3 | Phase | 60.8 |
| 6.4 | 6.4 | 6.2 | 5.8 | Ampl. | 6.2 |
| 513.2 | 513.4 | 513.1 | 513.4 | Sbd box | 513.3 |
| 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) | -1.84321587742E+03 | Apriori delay (usec) | -1.84321645836E+03 | Resid mbdelay (usec) | 5.80937E-04 | +/- | 4.2E-06 |
| Sband delay (usec) | -1.84321587698E+03 | Apriori clock (usec) | -2.3106297E+01 | Resid sbdelay (usec) | 5.81375E-04 | +/- | 1.6E-05 |
| Phase delay (usec) | -1.84321645443E+03 | Apriori clockrate (us/s) | 9.9999998E-08 | Resid phdelay (usec) | 3.92438E-06 | +/- | 2.8E-08 |
| Delay rate (us/s) | -9.87688978597E-02 | Apriori rate (us/s) | -9.87688828703E-02 | Resid rate (us/s) | -1.49893E-08 | +/- | 2.0E-10 |
| Total phase (deg) | -71.6 | Apriori accel (us/s/s) | 1.25270988141E-05 | Resid phase (deg) | 60.8 | +/- | 0.4 |

| | | | | | | | | | | |
|--------------|------|-----|------------------|-------|--|----------------------------|-------------------|------------------|-------|------|
| ph/seg (deg) | 47.5 | 1.4 | Search (1024X16) | 5.956 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 | |
| amp/seg (%) | 41.7 | 2.5 | Interp. | 0.000 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 | |
| ph/frq (deg) | 4.6 | 0.4 | Inc. seg. avg. | 8.795 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 | |
| amp/frq (%) | 3.9 | 0.8 | Inc. frq. avg. | 6.212 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 | 0.00 |

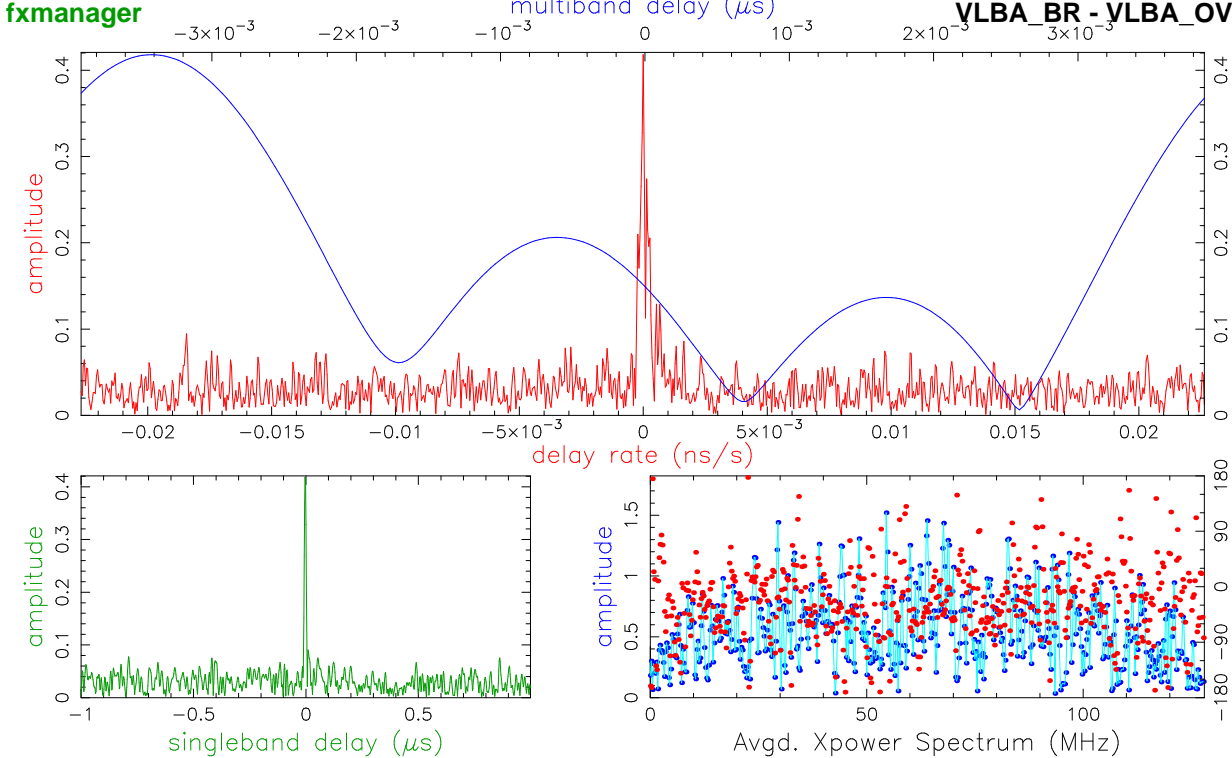
b: az 125.7 el 40.0 pa -33.5 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 293.822 697.434 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/bo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/bo.Q.26.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, bo

VLBA_BR - VLBA_OV, fgroup Q, pol LR

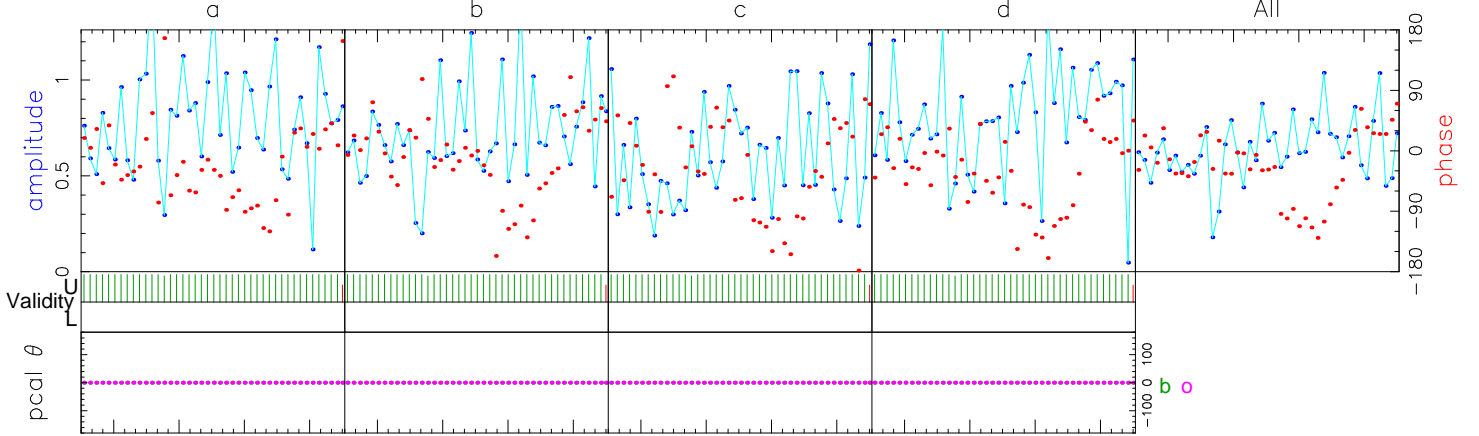


Fringe quality 9

SNR 17.8
 Int time 239.713
 Amp 0.421
 Phase -23.1
 PFD 0.0e+00
 Delays (us)
 SBD -0.003350
 MBD -0.003394
 Fringe rate (Hz)
 -0.000777
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211441
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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



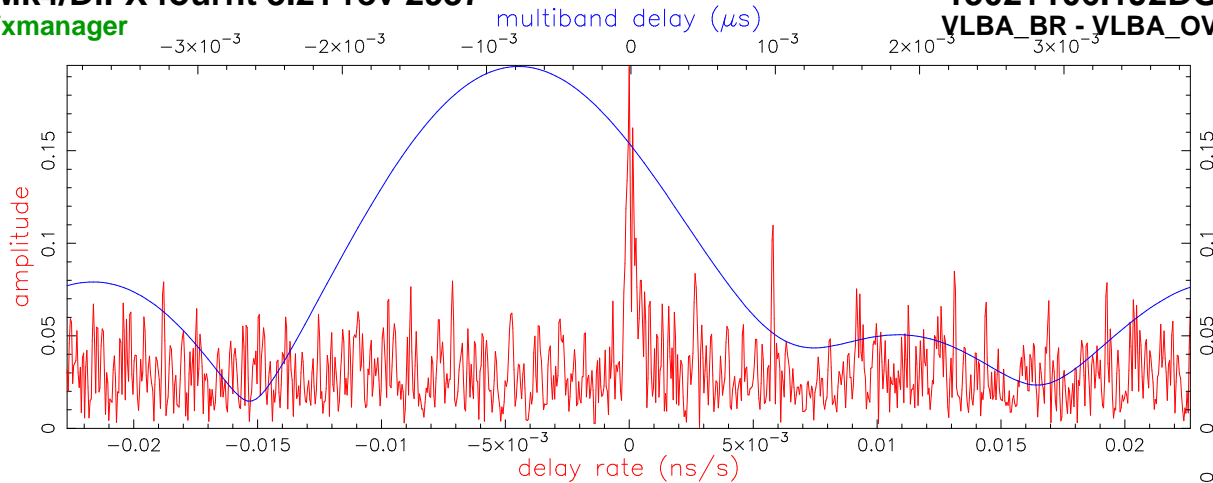
| 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----------|----------|----------|----------|------------|-------|
| -28.7 | -8.3 | -28.1 | -27.4 | Phase | -23.1 |
| 0.5 | 0.4 | 0.3 | 0.5 | Ampl. | 0.4 |
| 511.6 | 511.4 | 510.6 | 511.1 | Sbd box | 511.3 |
| U/L 469/0 | 469/0 | 469/0 | 469/0 | APs used | |
| b 1000 | 1000 | 1000 | 1000 | PC freqs | |
| o 1000 | 1000 | 1000 | 1000 | PC freqs | |
| b: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 | |
| o 1000 | 1000 | 1000 | 1000 | | |
| b Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.84321985286E+03 | Apriori delay (usec) | -1.84321645836E+03 | Resid mbdelay (usec) | -3.39450E-03 | +/- | 6.2E-05 |
| Sband delay (usec) | -1.84321980798E+03 | Apriori clock (usec) | -2.3106297E+01 | Resid sbdelay (usec) | -3.34963E-03 | +/- | 2.4E-04 |
| Phase delay (usec) | -1.84321645985E+03 | Apriori clockrate (us/s) | 9.9999998E-08 | Resid phdelay (usec) | -1.49347E-06 | +/- | 4.2E-07 |
| Delay rate (us/s) | -9.87689009200E-02 | Apriori rate (us/s) | -9.87688828703E-02 | Resid rate (us/s) | -1.80496E-08 | +/- | 3.0E-09 |
| Total phase (deg) | -155.5 | Apriori accel (us/s/s) | 1.25270988141E-05 | Resid phase (deg) | -23.1 | +/- | 6.4 |

| | | | | | | | | | | |
|--------------|------|------------------|-------|----------------|-----------------|--|-----------------------|-------------------|------------------|--------------|
| ph/seg (deg) | 49.8 | Theor. | 21.1 | Amplitude | 0.421 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | | | |
| amp/seg (%) | 64.9 | Search (1024X16) | 0.394 | Search | 0.394 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) | -1.000 1.000 | | |
| ph/frq (deg) | 12.1 | Inc. seg. avg. | 0.599 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled | mb window (us) | -0.004 0.004 | |
| amp/frq (%) | 22.3 | Inc. frq. avg. | 0.420 | Inc. seg. avg. | 0.599 | Sample rate(MISamp/s): 256 | nlags: 512 | t_cohere infinite | dr window (ns/s) | -0.023 0.023 |
| | | | | Inc. frq. avg. | 0.420 | Data rate(Mb/s): 2048 | ion window (TEC) | 0.00 0.00 | | |

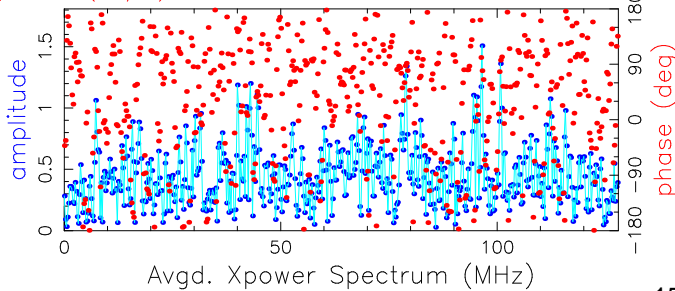
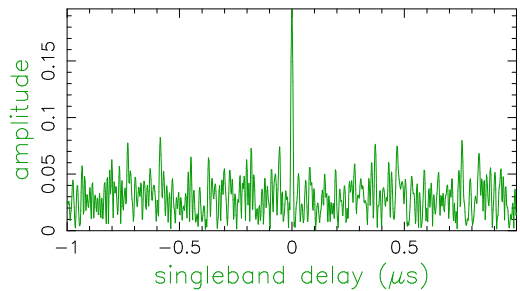
b: az 125.7 el 40.0 pa -33.5 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 293.822 697.434 simultaneous interpolator

Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/bo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/bo.Q.52.1J2DGP



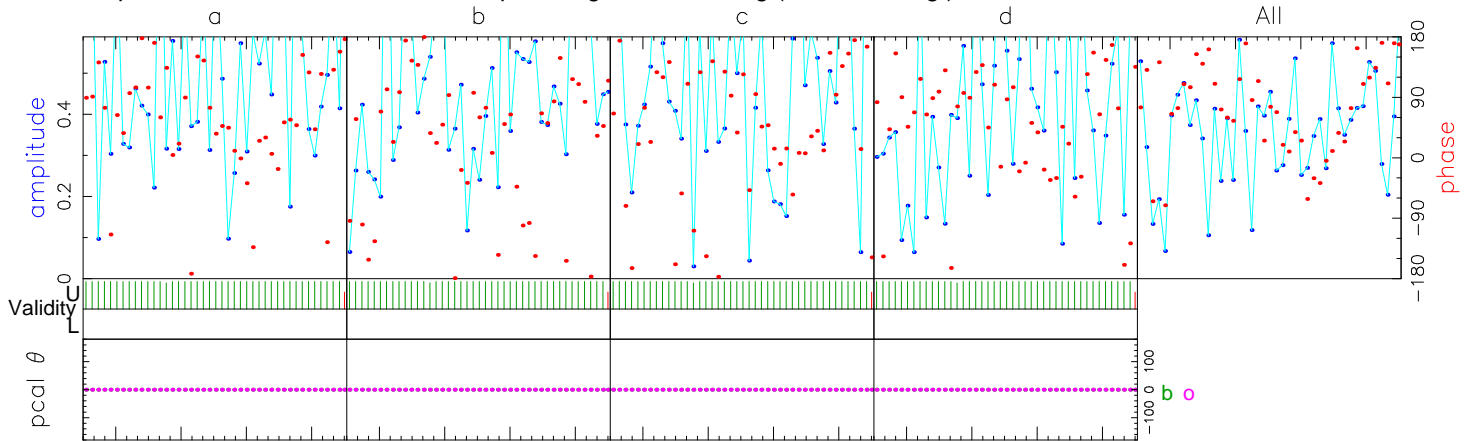
Fringe quality 9

SNR 8.3
Int time 239.713
Amp 0.196
Phase 86.2
PFD 1.8e-08
Delays (us)
SBD -0.000386
MBD -0.000798
Fringe rate (Hz)
-0.000339
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512



Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211443
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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 |
|-----------|----------|----------|----------|------------|-------|
| 76.7 | 93.6 | 103.8 | 69.0 | Phase | 86.2 |
| 0.3 | 0.2 | 0.2 | 0.2 | Ampl. | 0.2 |
| 512.9 | 513.1 | 511.8 | 834.7 | Sbd box | 512.8 |
| 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 Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |

| | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | -1.84321725601E+03 | Apriori delay (usec) | -1.84321645836E+03 | Resid mbdelay (usec) | -7.97656E-04 | +/- 1.3E-04 |
| Sband delay (usec) | -1.84321684461E+03 | Apriori clock (usec) | -2.3106297E+01 | Resid sbdelay (usec) | -3.86250E-04 | +/- 5.2E-04 |
| Phase delay (usec) | -1.84321645279E+03 | Apriori clockrate (us/s) | 9.9999998E-08 | Resid phdelay (usec) | 5.56622E-06 | +/- 8.9E-07 |
| Delay rate (us/s) | -9.87688907550E-02 | Apriori rate (us/s) | -9.87688828703E-02 | Resid rate (us/s) | -7.88465E-09 | +/- 6.4E-09 |
| Total phase (deg) | -46.1 | Apriori accel (us/s/s) | 1.25270988141E-05 | Resid phase (deg) | 86.2 | +/- 13.8 |

| | | | | | | | | | | |
|--------------|-------|--------|------|------------------|-----------------|--|-----------------------|-------------------|--------|-------|
| ph/seg (deg) | 68.4 | Theor. | 45.2 | Amplitude | 0.196 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 |
| amp/seg (%) | 105.4 | | 79.0 | Search (1024X16) | 0.190 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | | mb window (us) | -0.004 | 0.004 |
| ph/frq (deg) | 19.4 | | 13.8 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%) | 19.0 | | 24.1 | Inc. seg. avg. | 0.273 | Sample rate(MISamp/s): 256 | | ion window (TEC) | 0.00 | 0.00 |
| | | | | Inc. frq. avg. | 0.195 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | | |

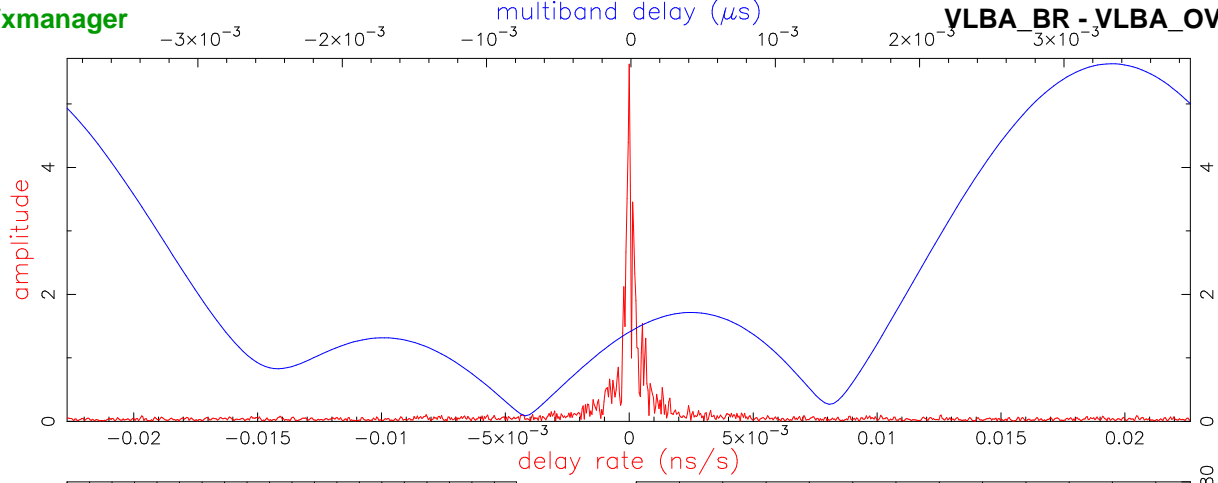
b: az 125.7 el 40.0 pa -33.5 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 293.822 697.434 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/bo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/bo.Q.69.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

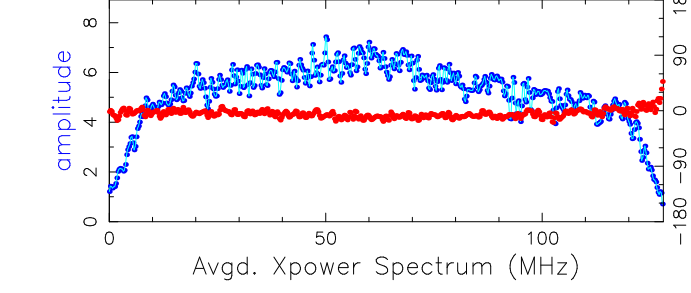
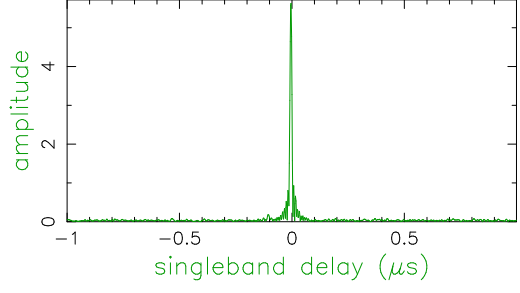
fxmanager

1502+106.1J2DGP, No0154, bo

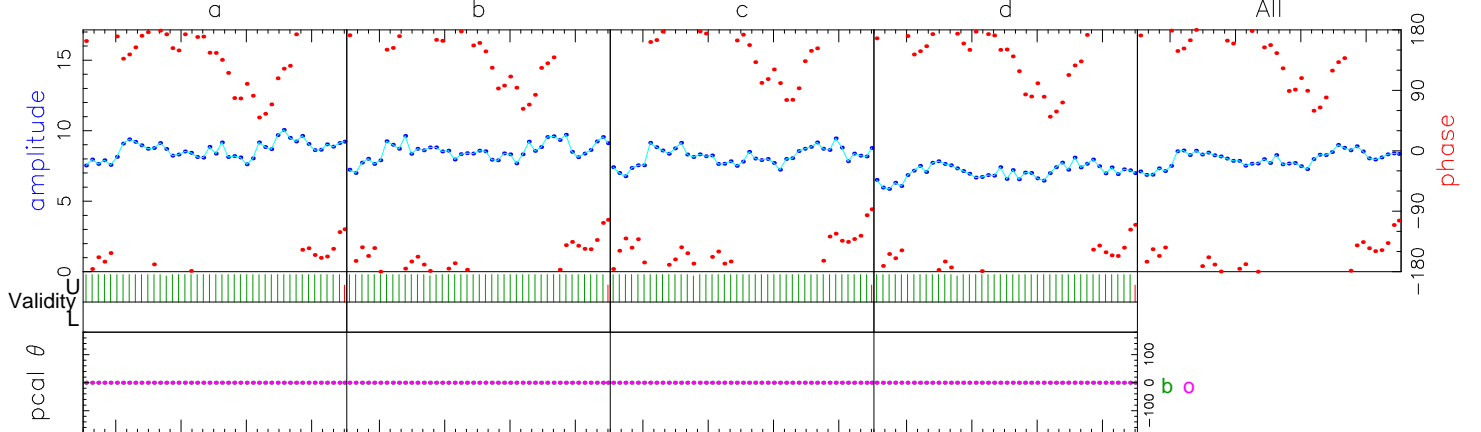
VLBA_BR - VLBA_OV, fgroup Q, pol LL



Fringe quality 4
 SNR 242.1
 Int time 239.713
 Amp 5.718
 Phase 169.7
 PFD 0.0e+00
 Delays (us)
 SBD -0.004766
 MBD 0.003270
 Fringe rate (Hz)
 -0.000649
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512
 Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211436
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"



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

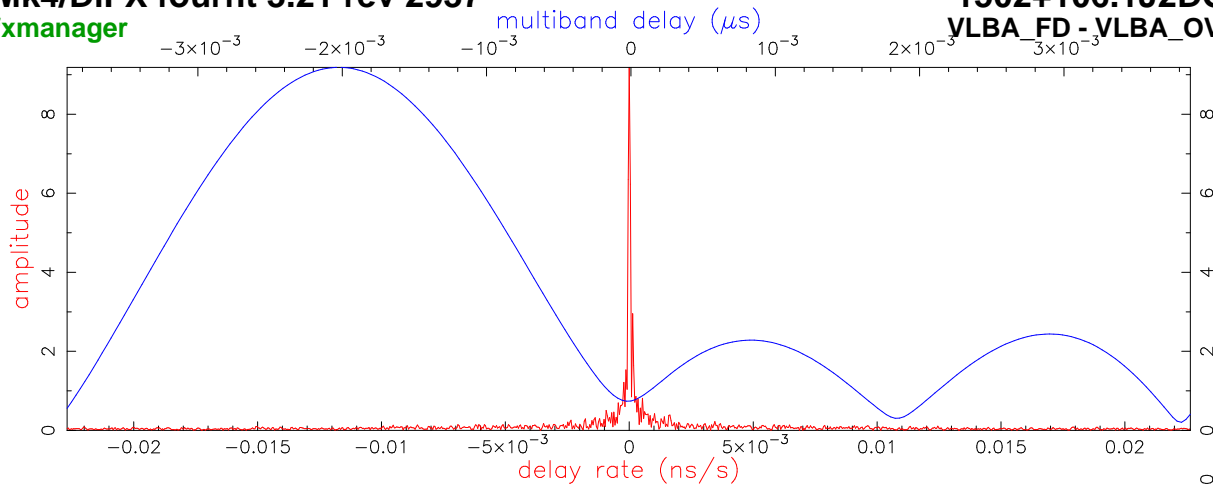


| 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----------|----------|----------|----------|------------|-------|
| 159.9 | 171.7 | -176.5 | 163.2 | Phase | 169.7 |
| 6.1 | 6.0 | 5.7 | 5.0 | Ampl. | 5.7 |
| 510.9 | 510.9 | 510.3 | 509.9 | Sbd box | 510.6 |
| U/L 469/0 | 469/0 | 469/0 | 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 Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |

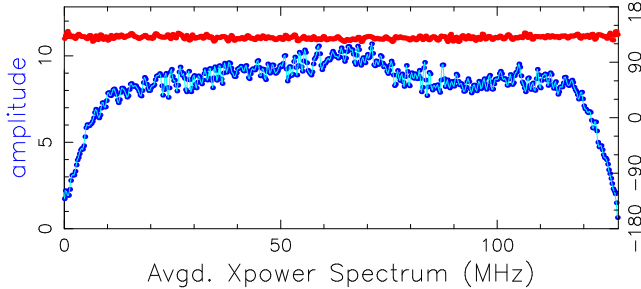
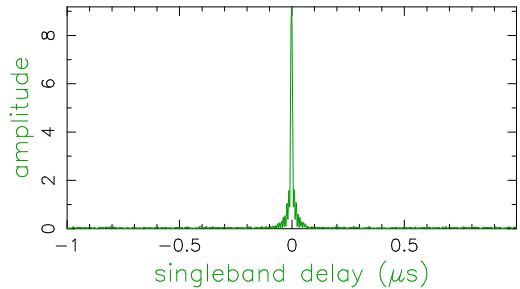
| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.84322100048E+03 | Apriori delay (usec) | -1.84321645836E+03 | Resid mbdelay (usec) | 3.27038E-03 | +/- | 4.6E-06 |
| Sband delay (usec) | -1.84322122411E+03 | Apriori clock (usec) | -2.3106297E+01 | Resid sbdelay (usec) | -4.76575E-03 | +/- | 1.8E-05 |
| Phase delay (usec) | -1.84321644741E+03 | Apriori clockrate (us/s) | 9.9999998E-08 | Resid phdelay (usec) | 1.09495E-05 | +/- | 3.1E-08 |
| Delay rate (us/s) | -9.87688979533E-02 | Apriori rate (us/s) | -9.87688828703E-02 | Resid rate (us/s) | -1.50829E-08 | +/- | 2.2E-10 |
| Total phase (deg) | | Apriori accel (us/s/s) | 1.25270988141E-05 | Resid phase (deg) | 169.7 | +/- | 0.5 |

| | | | | | | | | | |
|--------------|------|-----|------------------|-----------------|--|----------------------------|------------------|--------|-------|
| ph/seg (deg) | 47.8 | 1.6 | Amplitude | 5.718 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 |
| amp/seg (%) | 41.1 | 2.7 | Search (1024X16) | 5.393 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 |
| ph/frq (deg) | 12.9 | 0.5 | Inc. seg. avg. | 8.004 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%) | 7.9 | 0.8 | Inc. frq. avg. | 5.698 | Data rate(Mb/s): 2048 | nlags: 512 | ion window (TEC) | 0.00 | 0.00 |

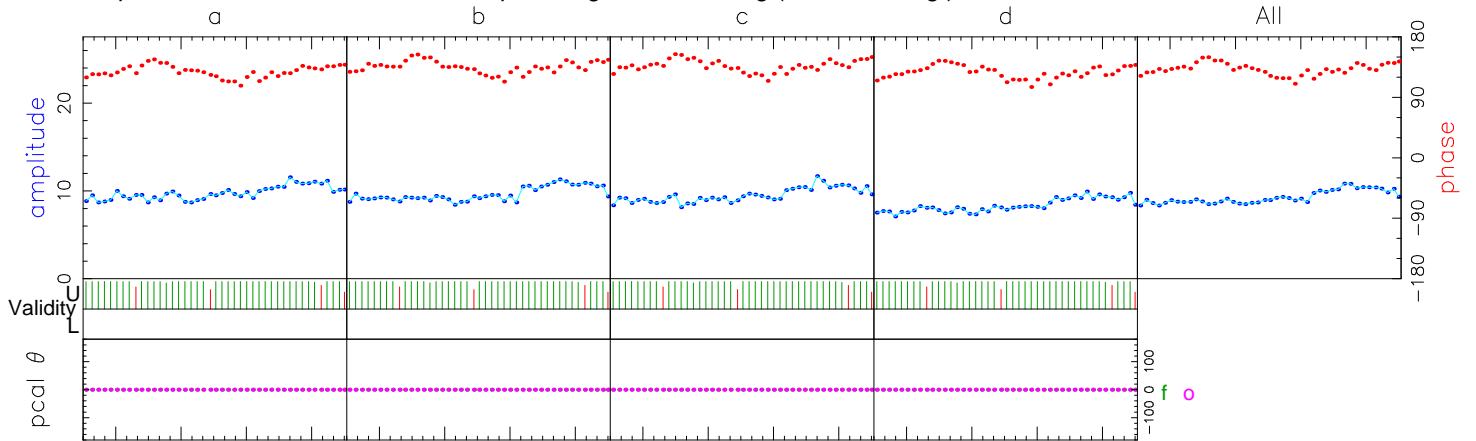
b: az 125.7 el 40.0 pa -33.5 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 293.822 697.434 simultaneous interpolator
 Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/bo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/bo.Q.8.1J2DGP



Fringe quality 9
SNR 385.8
Int time 235.961
Amp 9.185
Phase 131.9
PFD 0.0e+00
Delays (us)
SBD -0.001948
MBD -0.002023
Fringe rate (Hz) 0.000615
Ion TEC 0.000
Ref freq (MHz) 43040.0000
AP (sec) 0.512
Exp. c202b
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211438
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"



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

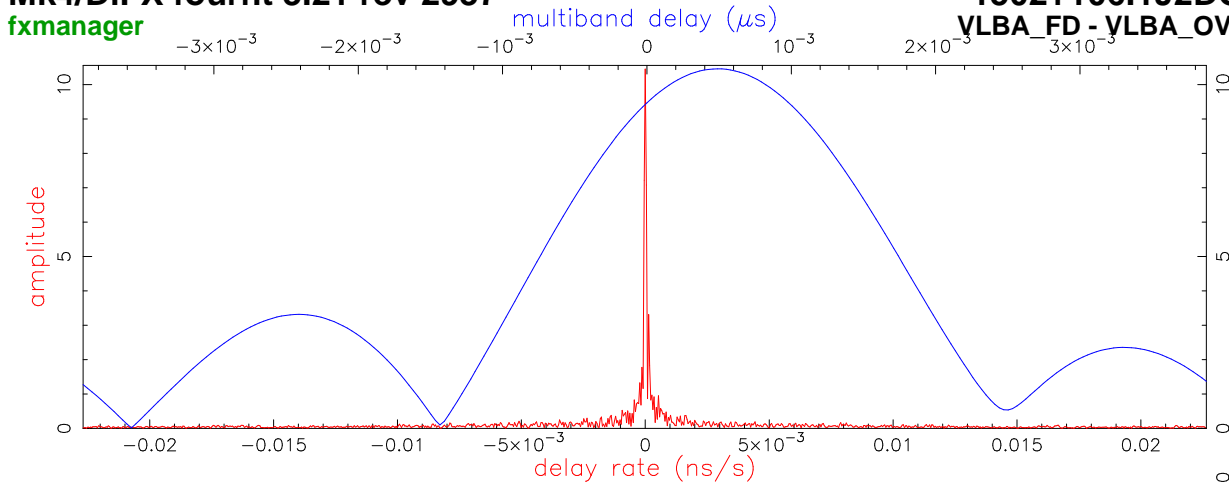


| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-------|
| U/L | 465/0 | 465/0 | 465/0 | 465/0 | APs used | 131.9 |
| f | 1000 | 1000 | 1000 | 1000 | Ampl. | 9.2 |
| o | 1000 | 1000 | 1000 | 1000 | Sbd box | 512.0 |
| f:0 | 0:0 | 0:0 | 0:0 | 0:0 | PC freqs | |
| f:0 | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | |
| f | 1000 | 1000 | 1000 | 1000 | ManI PC | |
| o | 1000 | 1000 | 1000 | 1000 | PC amp | |
| f | Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | 2.93686630344E+03 | Apriori delay (usec) | 2.93686832688E+03 | Resid mbdelay (usec) | -2.02344E-03 | +/- 2.9E-06 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 2.93686637913E+03 | Apriori clock (usec) | -1.3513485E+01 | Resid sbdelay (usec) | -1.94775E-03 | +/- 1.1E-05 |
| Sband delay (usec) | 2.93686833539E+03 | Apriori clockrate (us/s) | 5.0000000E-07 | Resid phdelay (usec) | 8.51182E-06 | +/- 1.9E-08 |
| Phase delay (usec) | -2.24968185958E-01 | Apriori rate (us/s) | -2.24968200239E-01 | Resid rate (us/s) | 1.42803E-08 | +/- 1.4E-10 |
| Delay rate (us/s) | 55.9 | Apriori accel (us/s/s) | -1.76343418897E-05 | Resid phase (deg) | 131.9 | +/- 0.3 |
| Total phase (deg) | | | | | | |

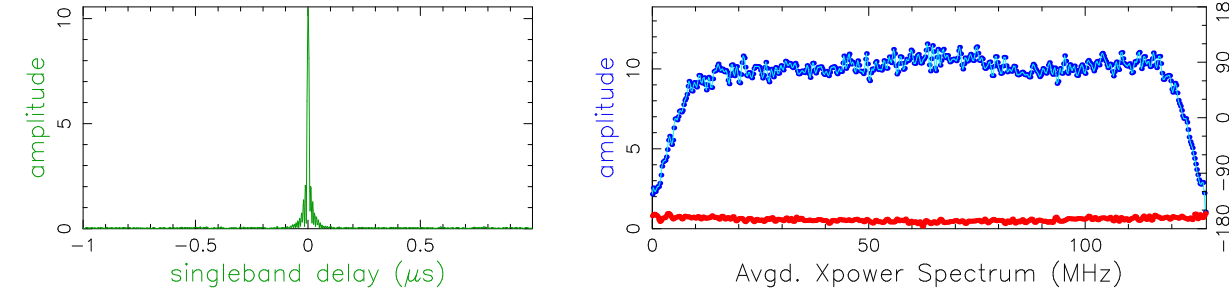
| | RMS | Theor. | Amplitude | 9.185 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
|--------------|-----|--------|------------------|-----------------|--|---|
| ph/seg (deg) | 8.8 | 1.0 | Search (1024X16) | 8.842 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| amp/seg (%) | 8.1 | 1.7 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| ph/frq (deg) | 5.9 | 0.3 | Inc. seg. avg. | 9.292 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| amp/frq (%) | 6.2 | 0.5 | Inc. frq. avg. | 9.211 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

f: az 127.9 el 60.3 pa -43.4 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 646.061 -544.796 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/fo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/fo.Q.20.1J2DGP



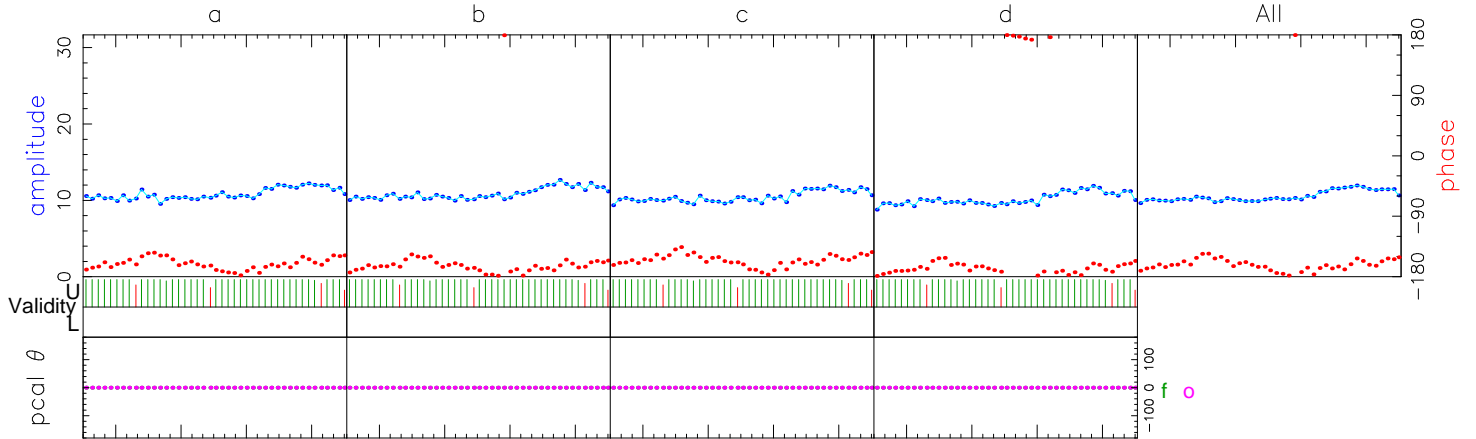
Fringe quality 9

SNR 443.5
Int time 235.961
Amp 10.559
Phase -162.6
PFD 0.0e+00
Delays (us)
SBD 0.000658
MBD 0.000530
Fringe rate (Hz)
0.000597
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512



Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211439
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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



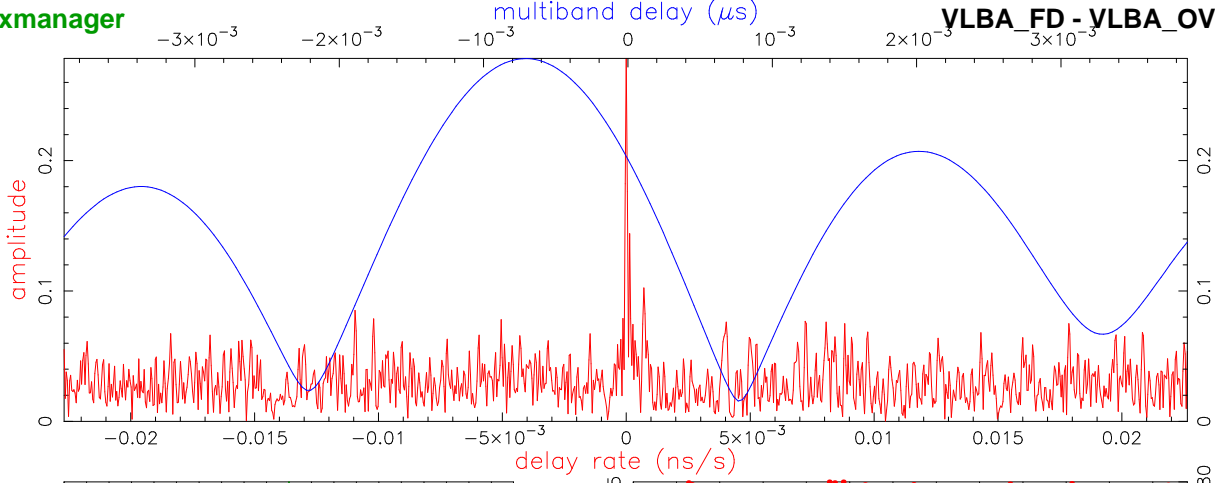
| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 465/0 | 465/0 | 465/0 | 465/0 | | |
| f | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| f:0 | 0:0 | 0:0 | 0:0 | 0:0 | | |
| f:0 | 0:0 | 0:0 | 0:0 | 0:0 | | |
| f | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| f | Q00UR | Q01UR | Q02UR | Q03UR | | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | | |

| Group delay (usec)(sbd) | 2.93686885638E+03 | Apriori delay (usec) | 2.93686832688E+03 | Resid mbdelay (usec) | 5.29500E-04 | +/- | 2.5E-06 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Sband delay (usec) | 2.93686898463E+03 | Apriori clock (usec) | -1.3513485E+01 | Resid sbdelay (usec) | 6.57750E-04 | +/- | 9.7E-06 |
| Phase delay (usec) | 2.93686831639E+03 | Apriori clockrate (us/s) | 5.0000000E-07 | Resid phdelay (usec) | -1.04913E-05 | +/- | 1.7E-08 |
| Delay rate (us/s) | -2.24968186364E-01 | Apriori rate (us/s) | -2.24968200239E-01 | Resid rate (us/s) | 1.38747E-08 | +/- | 1.2E-10 |
| Total phase (deg) | 121.4 | Apriori accel (us/s/s) | -1.76343418897E-05 | Resid phase (deg) | -162.6 | +/- | 0.3 |

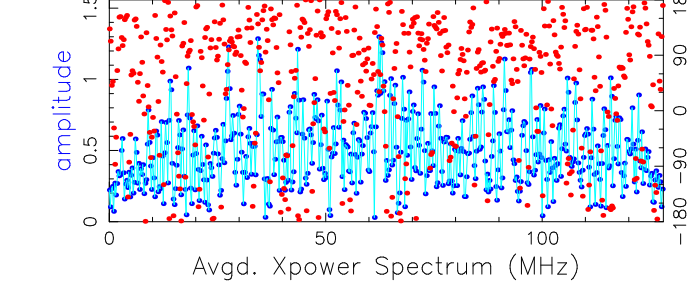
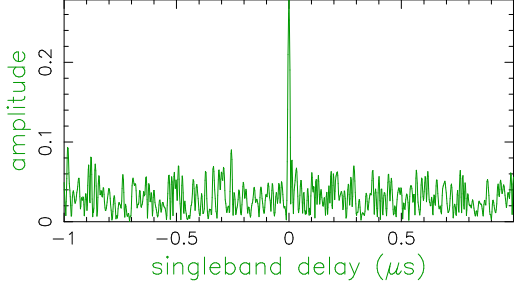
| ph/seg (deg) | 8.3 | Theor. | 0.8 | Amplitude | 10.559 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | | | |
|--------------|-----|--------|-----|------------------|------------------|--|-----------------------|-------------------|------------------|-----------|
| amp/seg (%) | 6.5 | | 1.5 | Search (1024X16) | 10.107 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) | -1.000 1.000 | | |
| ph/frq (deg) | 7.3 | | 0.3 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled | mb window (us) | -0.004 0.004 | |
| amp/frq (%) | 2.8 | | 0.5 | Inc. seg. avg. | 10.561 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 0.023 | | |
| | | | | Inc. frq. avg. | 10.494 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 0.00 |

f: az 127.9 el 60.3 pa -43.4 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 646.061 -544.796 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/fo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/fo.Q.35.1J2DGP

Fringe quality 7

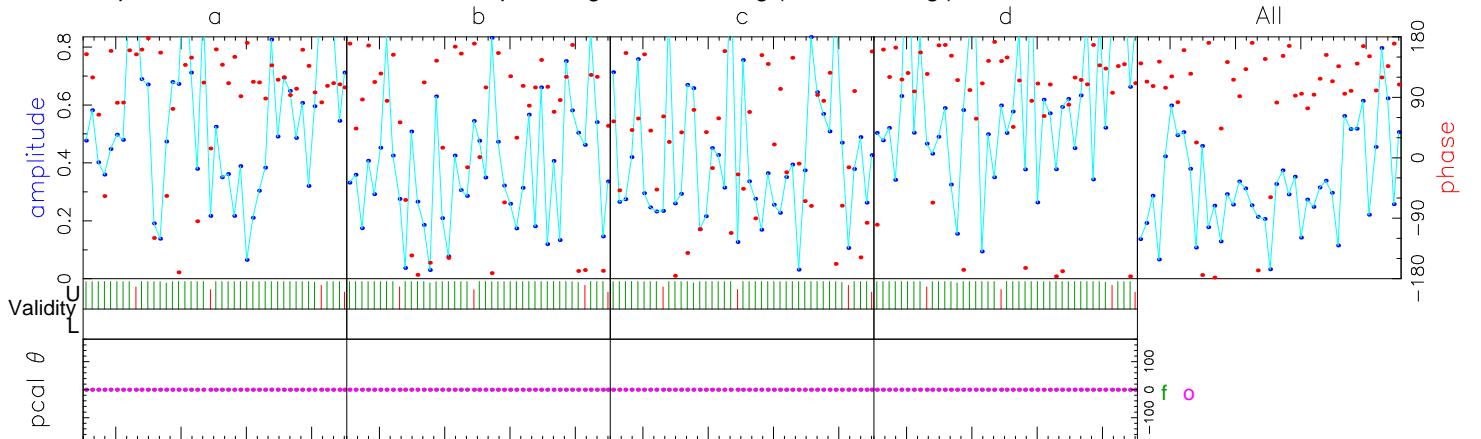


SNR 11.7
Int time 235.961
Amp 0.278
Phase 126.3
PFD 3.3e-23
Delays (us)
SBD -0.000168
MBD -0.000710
Fringe rate (Hz)
0.000824
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512



Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211441
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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

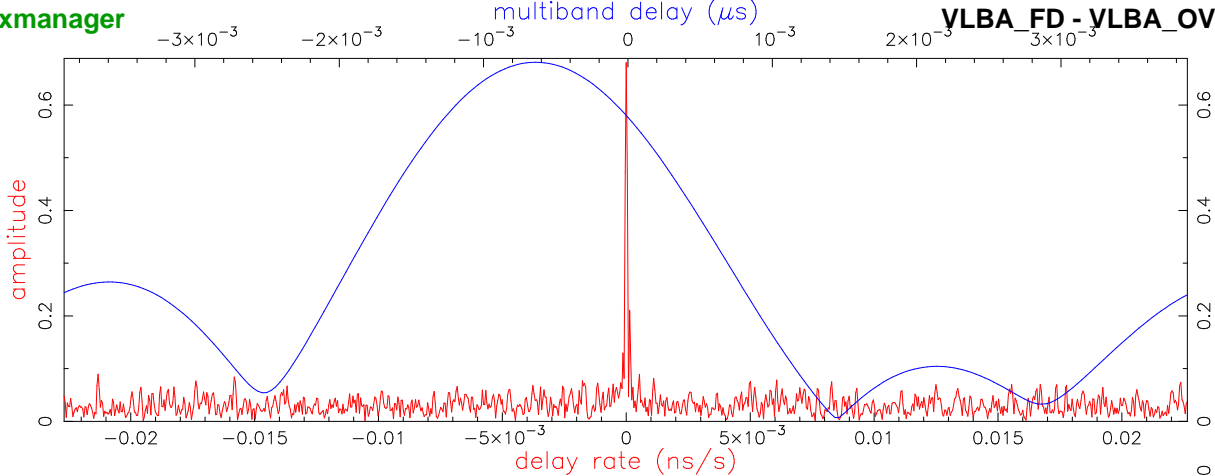


| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 465/0 | 465/0 | 465/0 | 465/0 | | |
| f | 1000 | 1000 | 1000 | 1000 | APs used | |
| o | 1000 | 1000 | 1000 | 1000 | PC freqs | |
| f:o | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | |
| f:o | 0:0 | 0:0 | 0:0 | 0:0 | ManI 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 | |

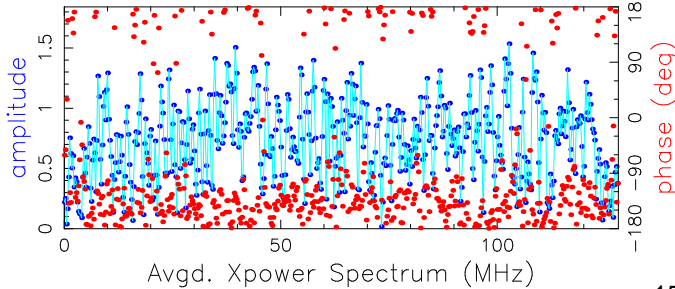
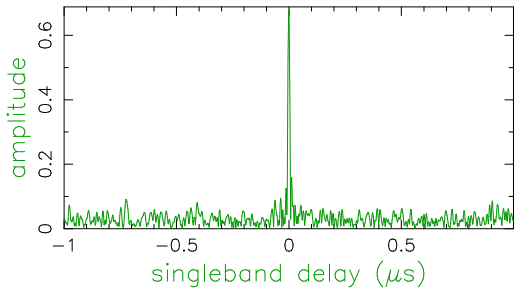
| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 2.93686761732E+03 | Apriori delay (usec) | 2.93686832688E+03 | Resid mbdelay (usec) | -7.09563E-04 | +/- | 9.5E-05 |
| Sband delay (usec) | 2.93686815850E+03 | Apriori clock (usec) | -1.3513485E+01 | Resid sbdelay (usec) | -1.68375E-04 | +/- | 3.7E-04 |
| Phase delay (usec) | 2.93686833503E+03 | Apriori clockrate (us/s) | 5.0000000E-07 | Resid phdelay (usec) | 8.15402E-06 | +/- | 6.3E-07 |
| Delay rate (us/s) | -2.24968181100E-01 | Apriori rate (us/s) | -2.24968200239E-01 | Resid rate (us/s) | 1.91387E-08 | +/- | 4.6E-09 |
| Total phase (deg) | 50.3 | Apriori accel (us/s/s) | -1.76343418897E-05 | Resid phase (deg) | 126.3 | +/- | 9.8 |

| | | | | | | | | | | |
|------------------------------|------|------------------------------|-------|----------------|------------------|--|----------------------|-------------------|------------------|--------------|
| ph/seg (deg) | 45.7 | Theor. | 32.0 | Amplitude | 0.278 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) | 5, 5 | | |
| amp/seg (%) | 63.1 | Search (1024X16) | 0.250 | Search | 0.250 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) | -1.000 1.000 | | |
| ph/frq (deg) | 50.6 | Inc. seg. avg. | 0.286 | Inc. seg. avg. | 0.286 | Bits/sample: 2x2 | SampCntNorm: enabled | mb window (us) | -0.004 0.004 | |
| amp/frq (%) | 58.8 | Inc. frq. avg. | 0.282 | Inc. frq. avg. | 0.282 | Sample rate(MISamp/s): 256 | nlags: 512 | t_cohere infinite | dr window (ns/s) | -0.023 0.023 |
| f: az 127.9 el 60.3 pa -43.4 | | o: az 118.4 el 46.7 pa -45.1 | | u, v (fr/asec) | 646.061 -544.796 | Data rate(Mb/s): 2048 | ion window (TEC) | 0.00 0.00 | | |

Fringe quality 8

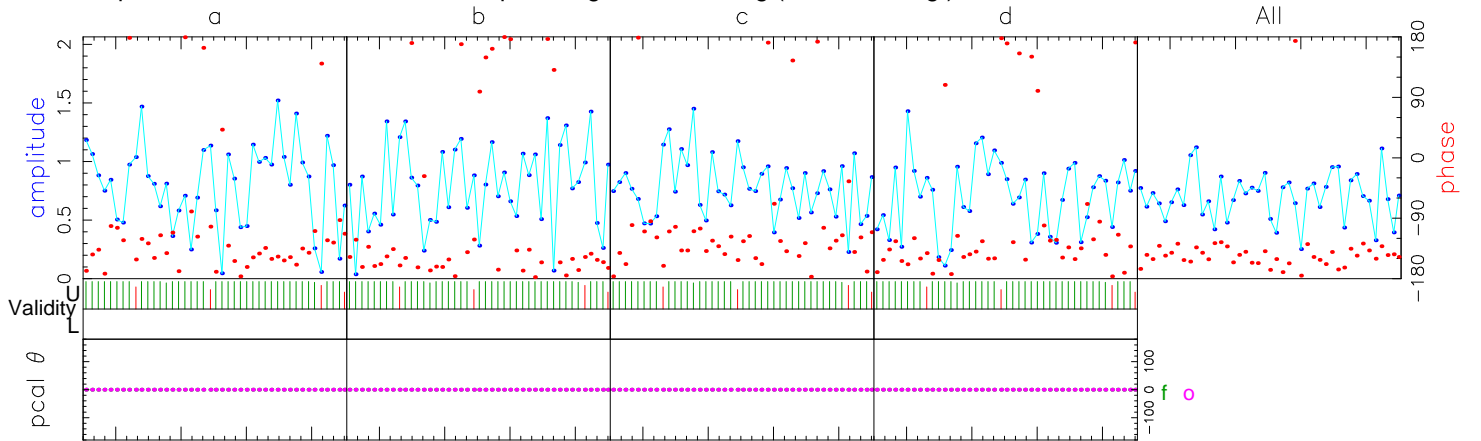


SNR 28.9
Int time 235.961
Amp 0.688
Phase -146.6
PFD 0.0e+00
Delays (us)
SBD -0.000702
MBD -0.000690
Fringe rate (Hz) 0.000630
Ion TEC 0.000
Ref freq (MHz) 43040.0000
AP (sec) 0.512



Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211443
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

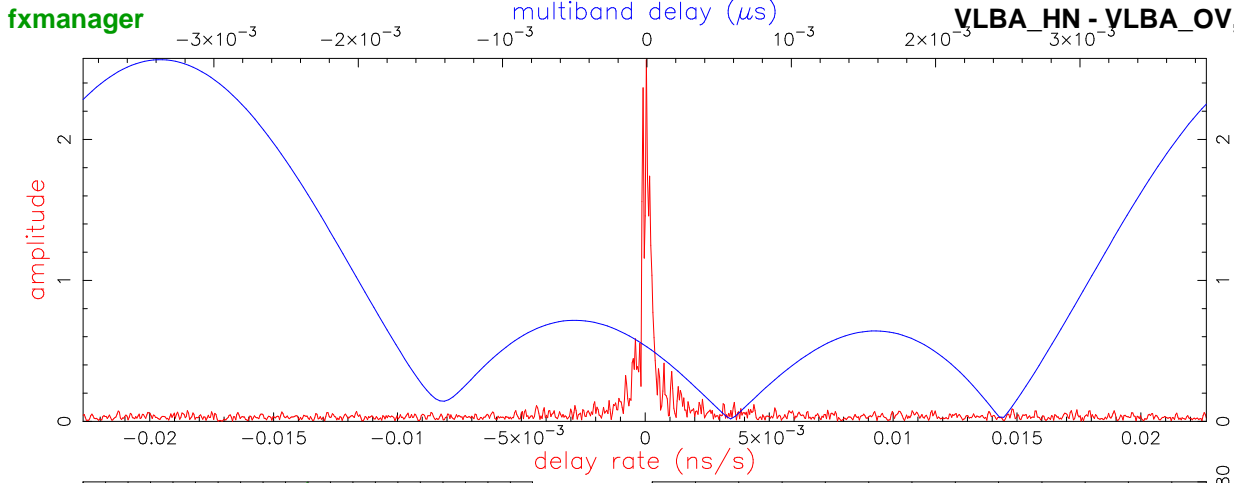
Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



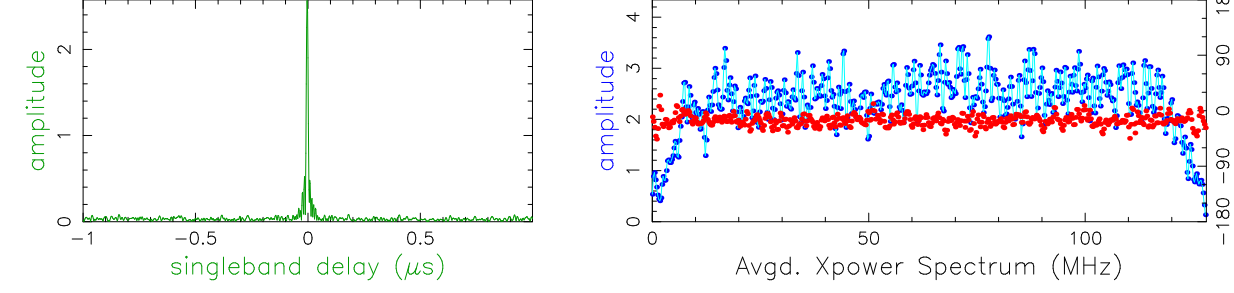
| 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----------|----------|----------|----------|------------|--------|
| -142.8 | -163.4 | -135.0 | -144.4 | Phase | -146.6 |
| 0.7 | 0.7 | 0.7 | 0.6 | Ampl. | 0.7 |
| 512.7 | 512.4 | 513.2 | 512.1 | Sbd box | 512.6 |
| U/L 465/0 | 465/0 | 465/0 | 465/0 | 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 | ManI PC | |
| f 1000 | 1000 | 1000 | 1000 | PC amp | |
| o 1000 | 1000 | 1000 | 1000 | | |
| f Q00UR | Q01UR | Q02UR | Q03UR | Chan ids | |
| o Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |

| | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 2.93686763738E+03 | Apriori delay (usec) | 2.93686832688E+03 | Resid mbdelay (usec) | -6.89500E-04 | +/- 3.8E-05 |
| Sband delay (usec) | 2.93686762463E+03 | Apriori clock (usec) | -1.3513485E+01 | Resid sbdelay (usec) | -7.02250E-04 | +/- 1.5E-04 |
| Phase delay (usec) | 2.93686831741E+03 | Apriori clockrate (us/s) | 5.0000000E-07 | Resid phdelay (usec) | -9.46353E-06 | +/- 2.6E-07 |
| Delay rate (us/s) | -2.24968185610E-01 | Apriori rate (us/s) | -2.24968200239E-01 | Resid rate (us/s) | 1.46292E-08 | +/- 1.9E-09 |
| Total phase (deg) | 137.3 | Apriori accel (us/s/s) | -1.76343418897E-05 | Resid phase (deg) | -146.6 | +/- 4.0 |

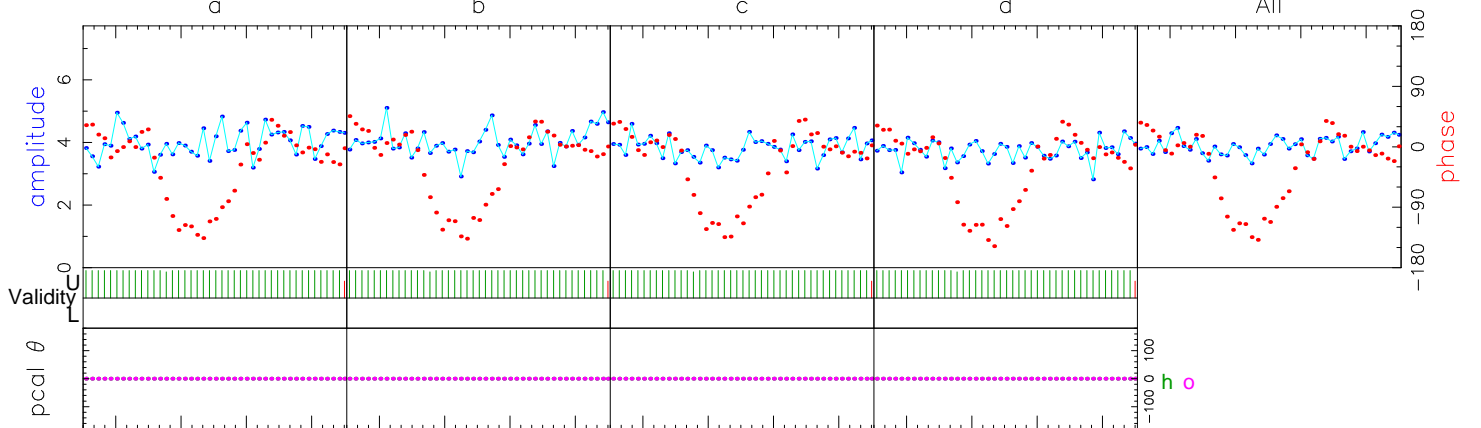
| | | | | | | | | | | | |
|--------------|----------|-------------|----------------------------|-----------------|-------|--|----------------------------|-------------------|------------------|-------|------|
| ph/seg (deg) | RMS 13.9 | Theor. 12.9 | Amplitude Search (1024X16) | 0.688 +/- 0.024 | 0.650 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 | |
| amp/seg (%) | 28.6 | 22.6 | Interp. | 0.000 | 0.682 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 | |
| ph/frq (deg) | 14.8 | 4.0 | Inc. seg. avg. | 0.682 | 0.691 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 | |
| amp/frq (%) | 7.3 | 6.9 | Inc. frq. avg. | 0.682 | 0.691 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 | 0.00 |



Fringe quality 5
SNR 109.0
Int time 239.711
Amp 2.575
Phase -19.3
PFD 0.0e+00
Delays (us)
SBD -0.003507
MBD -0.003350
Fringe rate (Hz) 0.001618
Ion TEC 0.000
Ref freq (MHz) 43040.0000
AP (sec) 0.512
Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211449
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"



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 | APs used | 1000 |
| o | 1000 | 1000 | 1000 | 1000 | PC freqs | 1000 |
| h:o | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | 0:0 |
| h | 1000 | 1000 | 1000 | 1000 | Manl PC | 1000 |
| o | 1000 | 1000 | 1000 | 1000 | PC amp | 1000 |
| h | Q00UR | Q01UR | Q02UR | Q03UR | Chan ids | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 2.12382475183E+03 | Apriori delay (usec) | 2.12382810174E+03 | Resid mbdelay (usec) | -3.34991E-03 | +/- | 1.0E-05 |
| Sband delay (usec) | 2.12382459437E+03 | Apriori clock (usec) | -2.0835579E+01 | Resid sbdelay (usec) | -3.50738E-03 | +/- | 4.0E-05 |
| Phase delay (usec) | 2.12382810049E+03 | Apriori clockrate (us/s) | 3.3000000E-07 | Resid phdelay (usec) | -1.24680E-06 | +/- | 6.8E-08 |
| Delay rate (us/s) | -9.12431917617E-01 | Apriori rate (us/s) | -9.12431955220E-01 | Resid rate (us/s) | 3.76024E-08 | +/- | 4.9E-10 |
| Total phase (deg) | 160.3 | Apriori accel (us/s/s) | -9.85300242695E-06 | Resid phase (deg) | -19.3 | +/- | 1.1 |

ph/seg (deg) 52.9 3.4 Search (1024X16) 2.535 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5
amp/seg (%) 52.3 6.0 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000
ph/frq (deg) 4.2 1.1 Inc. seg. avg. 3.887 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.004 0.004
amp/frq (%) 3.8 1.8 Inc. frq. avg. 2.568 Sample rate(MISamp/s): 256 Data rate (MB/s): 2048 nlags: 512 t_cohere infinite dr window (ns/s) -0.023 0.023
h: az 195.3 el 56.6 pa 11.8 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 2650.704 250.880 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/ho..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/ho.Q.103.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

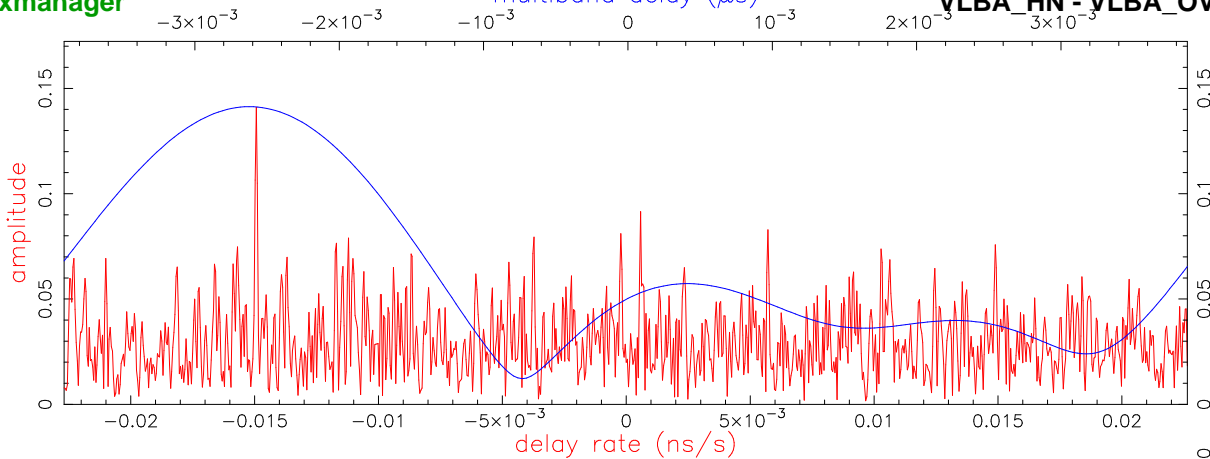
fxmanager

1502+106.1J2DGP, No0154, ho

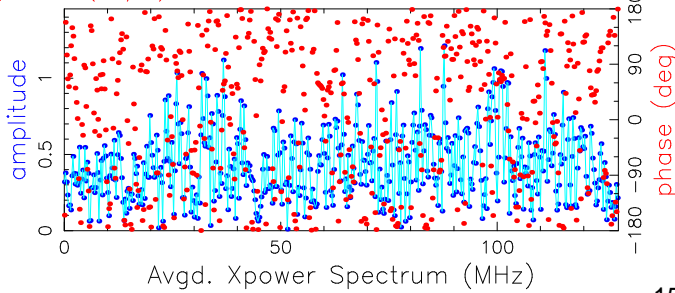
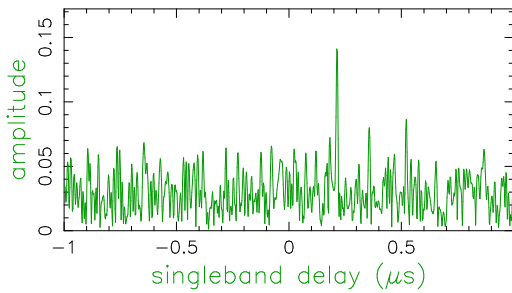
VLBA_HN - VLBA_OV, fgroup Q, pol LR

multiband delay (μ s)

Fringe quality 0

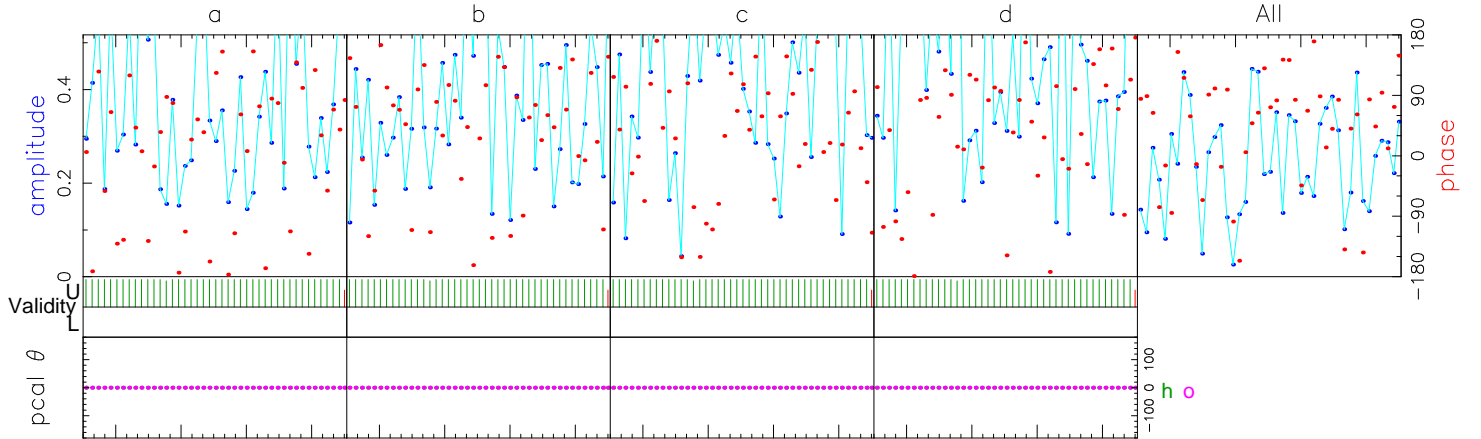


SNR 6.1
 Int time 239.711
 Amp 0.172
 Phase 71.3
 PFD 1.7e-01
 Delays (us)
 SBD 0.213693
 MBD -0.002552
 Fringe rate (Hz)
 -0.644621
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512



Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211450
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 |
|-----|----------|----------|----------|----------|------------|-------|
| | 81.4 | 78.1 | 39.7 | 79.3 | Phase | 71.3 |
| | 0.1 | 0.2 | 0.2 | 0.2 | Ampl. | 0.2 |
| | 778.4 | 695.9 | 983.9 | 621.6 | Sbd box | 622.4 |
| 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 | Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 2.12404429988E+03 | Apriori delay (usec) | 2.12382810174E+03 | Resid mbdelay (usec) | -2.55186E-03 | +/- | 1.8E-04 |
| Sband delay (usec) | 2.12404179524E+03 | Apriori clock (usec) | -2.0835579E+01 | Resid sbdelay (usec) | 2.13693E-01 | +/- | 7.1E-04 |
| Phase delay (usec) | 2.12382810634E+03 | Apriori clockrate (us/s) | 3.3000000E-07 | Resid phdelay (usec) | 4.59857E-06 | +/- | 1.2E-06 |
| Delay rate (us/s) | -9.12446932478E-01 | Apriori rate (us/s) | -9.12431955220E-01 | Resid rate (us/s) | -1.49773E-05 | +/- | 8.8E-09 |
| Total phase (deg) | 250.9 | Apriori accel (us/s/s) | -9.85300242695E-06 | Resid phase (deg) | 71.3 | +/- | 18.9 |

| | | | | | | | | | | | |
|-----------------------------|------------------------------|-------------|--------------------------------|-----------------|---------------------------|--|----------------------------|-------------------|------------------|-------|------|
| ph/seg (deg) | RMS 75.8 | Theor. 62.0 | Amplitude Search (1024X16) | 0.172 +/- 0.028 | 0.140 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 | |
| amp/seg (%) | 105.6 | 108.3 | Interp. | 0.000 | 0.000 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 | |
| ph/frq (deg) | 24.6 | 18.9 | Inc. seg. avg. | 0.187 | 0.168 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 | |
| amp/frq (%) | 19.7 | 33.0 | Inc. frq. avg. | 0.168 | 0.168 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 | 0.00 |
| h: az 195.3 el 56.6 pa 11.8 | o: az 118.4 el 46.7 pa -45.1 | | u,v (fr/asec) 2650.704 250.880 | | simultaneous interpolator | | | | | | |

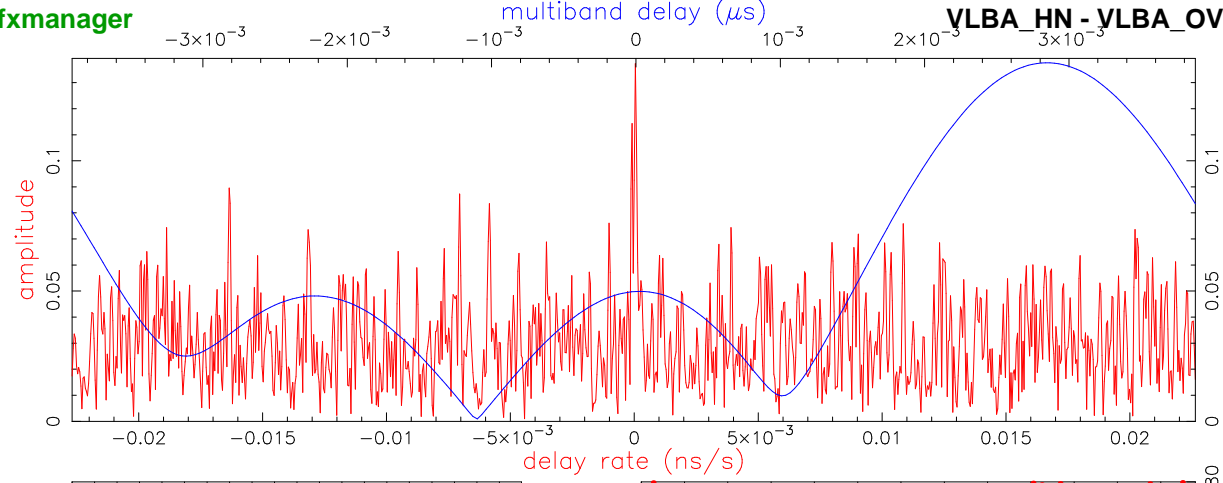
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/ho..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/ho.Q.118.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

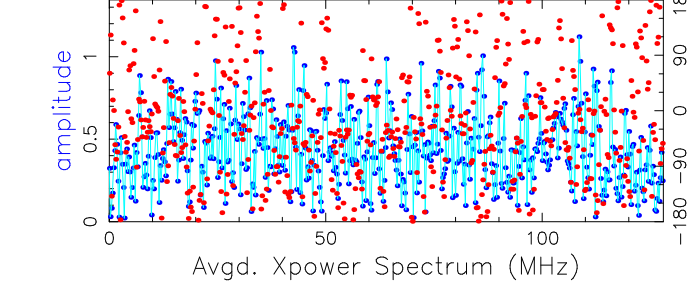
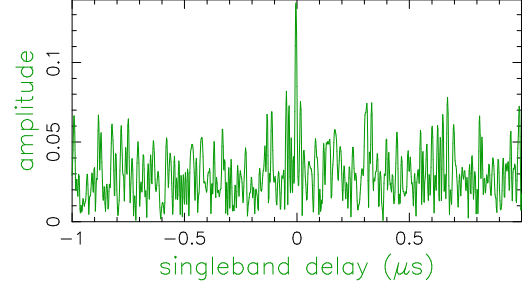
fxmanager

1502+106.1J2DGP, No0154, ho

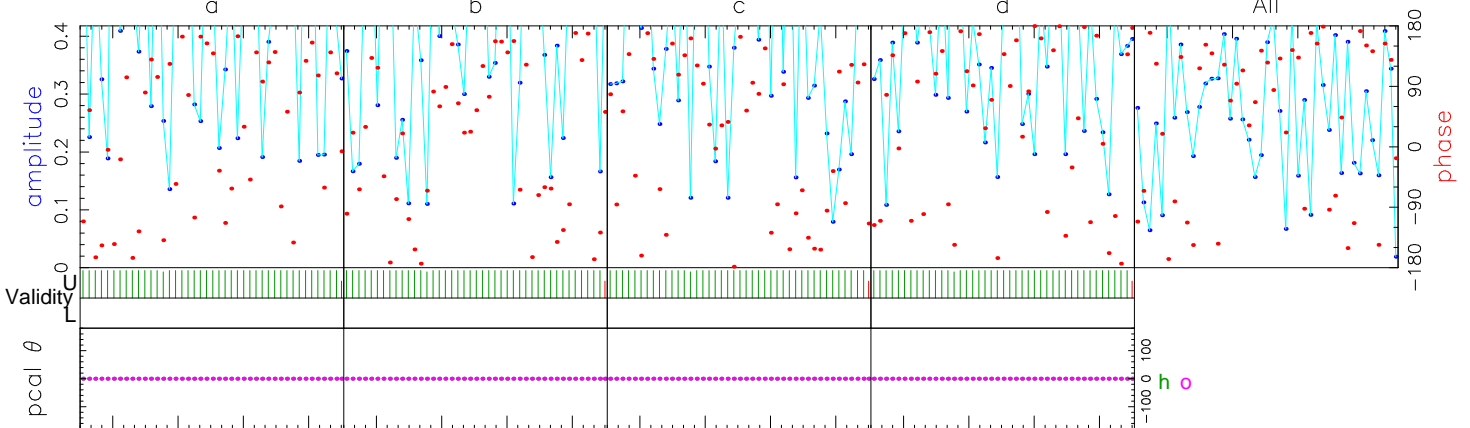
VLBA_HN - VLBA_OV, fgroup Q, pol RL



Fringe quality 0
 SNR 5.9
 Int time 239.711
 Amp 0.139
 Phase 154.2
 PFD 3.7e-01
 Delays (us)
 SBD -0.004714
 MBD 0.002770
 Fringe rate (Hz) 0.002286
 Ion TEC 0.000
 Ref freq (MHz) 43040.0000
 AP (sec) 0.512
 Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211453
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"



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 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| h:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| h:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| h | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| h | Q00UR | Q01UR | Q02UR | Q03UR | | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | | |
| | | | | | Chan ids | |
| | | | | | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

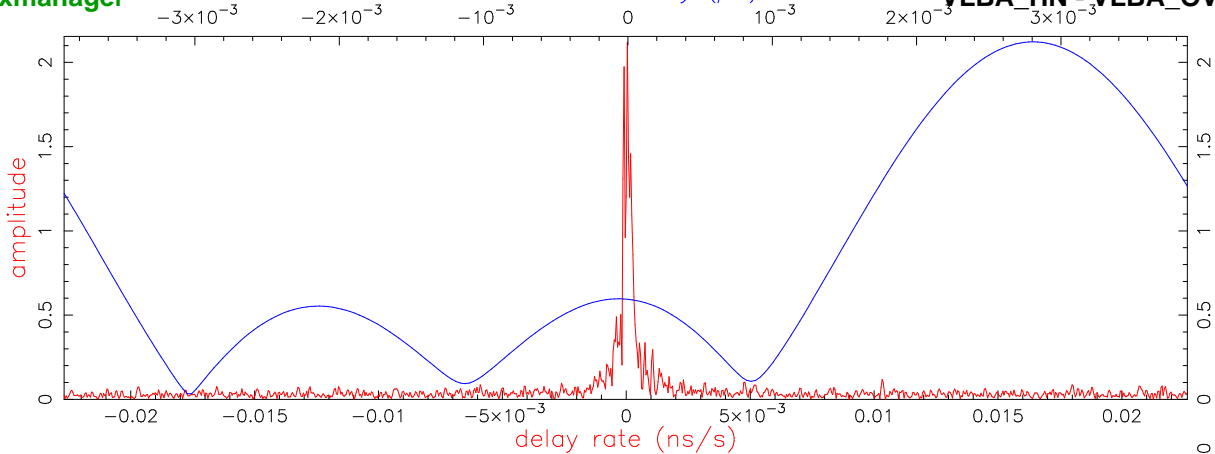
| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 2.12382305917E+03 | Apriori delay (usec) | 2.12382810174E+03 | Resid mbdelay (usec) | 2.76993E-03 | +/- | 1.9E-04 |
| Sband delay (usec) | 2.12382338737E+03 | Apriori clock (usec) | -2.0835579E+01 | Resid sbdelay (usec) | -4.71437E-03 | +/- | 7.3E-04 |
| Phase delay (usec) | 2.12382811170E+03 | Apriori clockrate (us/s) | 3.3000000E-07 | Resid phdelay (usec) | 9.95473E-06 | +/- | 1.3E-06 |
| Delay rate (us/s) | -9.12431902103E-01 | Apriori rate (us/s) | -9.12431955220E-01 | Resid rate (us/s) | 5.31165E-08 | +/- | 9.0E-09 |
| Total phase (deg) | 333.9 | Apriori accel (us/s/s) | -9.85300242695E-06 | Resid phase (deg) | 154.2 | +/- | 19.4 |

| | | | | | | | | | | | |
|--------------|----------|-------------|----------------------------|-----------------|-------|--|----------------------------|-------------------|------------------|-------|------|
| ph/seg (deg) | RMS 74.2 | Theor. 63.7 | Amplitude Search (1024X16) | 0.139 +/- 0.024 | 0.134 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 | |
| amp/seg (%) | 123.5 | 111.2 | Interp. | 0.000 | 0.134 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 | |
| ph/frq (deg) | 16.5 | 19.4 | Inc. seg. avg. | 0.165 | 0.133 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 | |
| amp/frq (%) | 10.7 | 33.9 | Inc. frq. avg. | 0.133 | 0.133 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 | 0.00 |

h: az 195.3 el 56.6 pa 11.8 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 2650.704 250.880 simultaneous interpolator

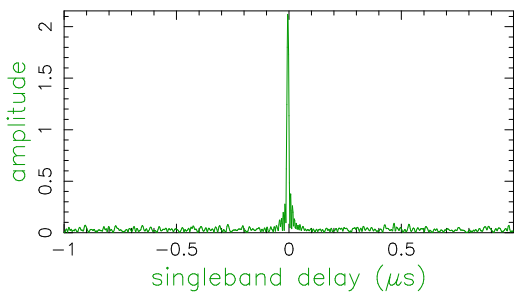
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/ho..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/ho.Q.140.1J2DGP

multiband delay (μ s)

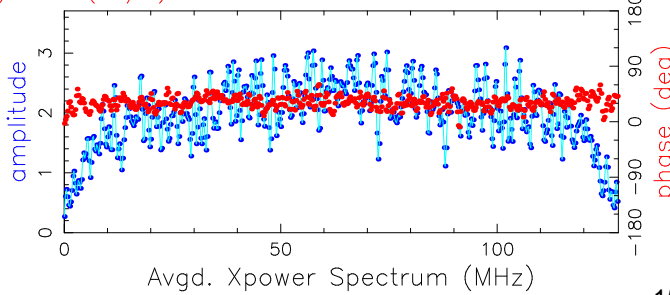


Fringe quality 5

SNR 91.2
Int time 239.711
Amp 2.154
Phase -149.9
PFD 0.0e+00
Delays (us)
SBD -0.005013
MBD 0.002851
Fringe rate (Hz)
0.001584
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512



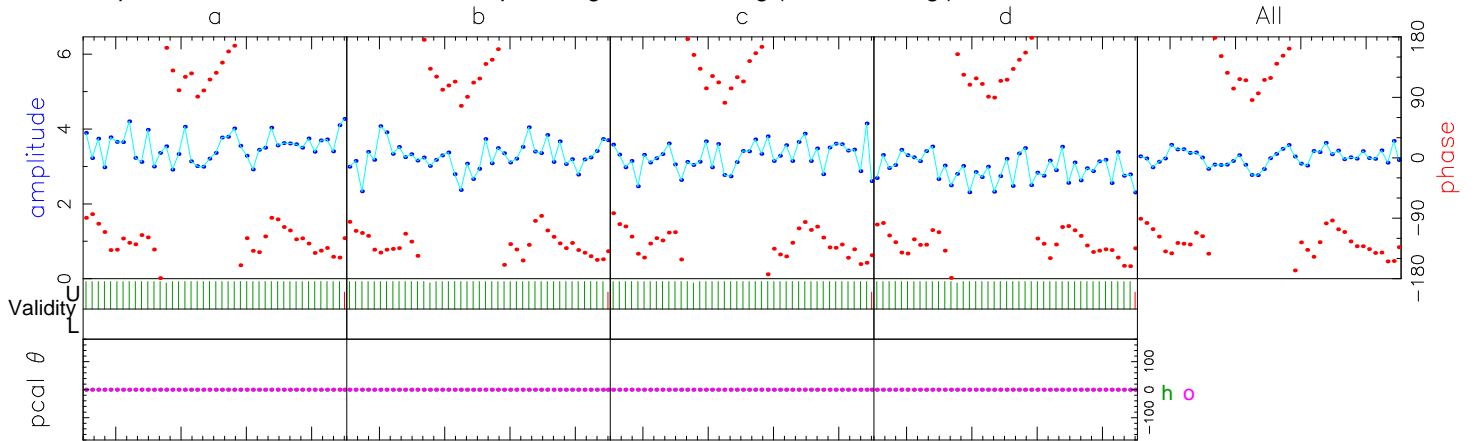
singleband delay (μ s)



Avgd. Xpower Spectrum (MHz)

Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211446
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| h:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| h:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| h | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| h | Q00UL | Q01UL | Q02UL | Q03UL | | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | | |
| | | | | | Chan ids | |
| | | | | | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 2.12382314008E+03 | Apriori delay (usec) | 2.12382810174E+03 | Resid mbdelay (usec) | 2.85084E-03 | +/- | 1.2E-05 |
| Sband delay (usec) | 2.12382308912E+03 | Apriori clock (usec) | -2.0835579E+01 | Resid sbdelay (usec) | -5.01262E-03 | +/- | 4.7E-05 |
| Phase delay (usec) | 2.12382809207E+03 | Apriori clockrate (us/s) | 3.3000000E-07 | Resid phdelay (usec) | -9.67413E-06 | +/- | 8.1E-08 |
| Delay rate (us/s) | -9.12431918423E-01 | Apriori rate (us/s) | -9.12431955220E-01 | Resid rate (us/s) | 3.67969E-08 | +/- | 5.8E-10 |
| Total phase (deg) | 29.7 | Apriori accel (us/s/s) | -9.85300242695E-06 | Resid phase (deg) | -149.9 | +/- | 1.3 |

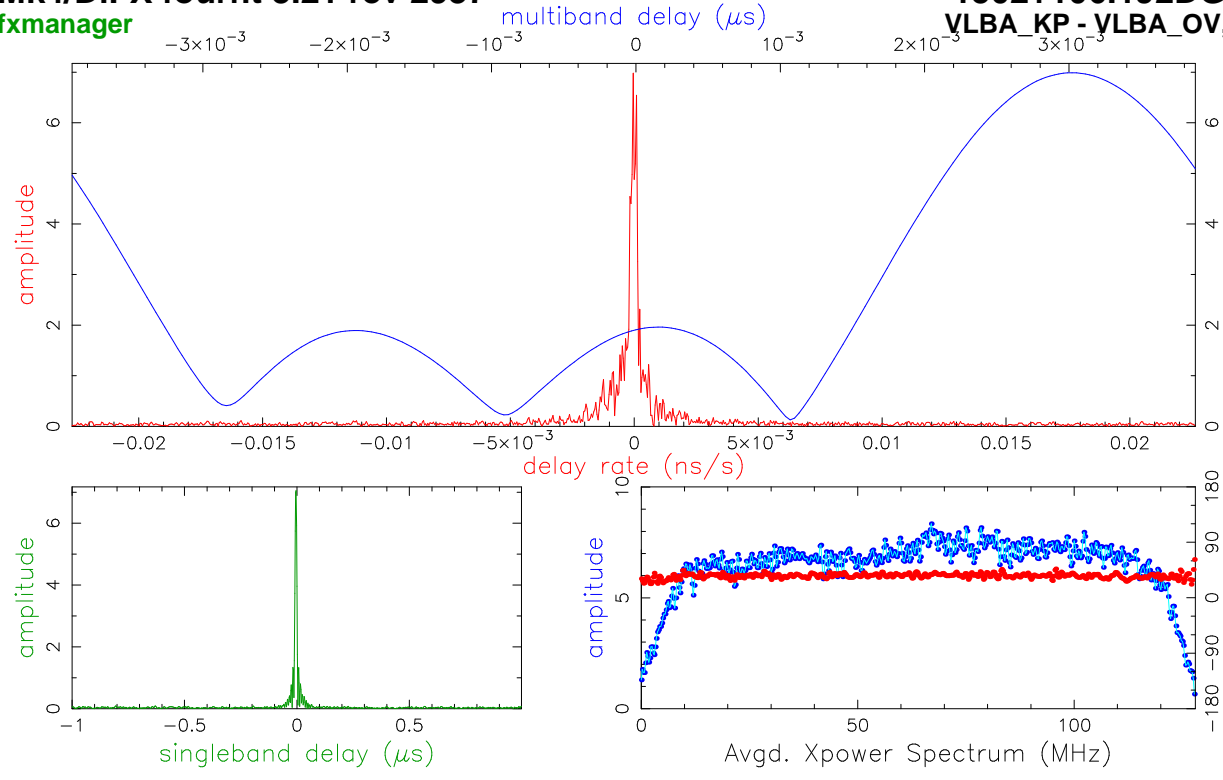
| | | | | | | | | | | | | | | | | |
|--------------|------|-----------------------------|-------|------------------------------|-------|------------------------|-----------------------------|-------------------|----------------|------------------|---------|----------------|----------|---------------------------|------|------|
| ph/seg (deg) | 53.8 | RMS | 4.1 | Theor. | 4.1 | Amplitude | 2.154 +/- 0.024 | Pcal mode: | MANUAL, MANUAL | PC period (AP's) | 5, 5 | sb window (us) | -1.000 | 1.000 | | |
| amp/seg (%) | 51.4 | Search (1024X16) | 2.080 | Interp. | 0.000 | Pcal rate: | 0.000E+00, 0.000E+00 (us/s) | Bits/sample: | 2x2 | SampCntNorm: | enabled | mb window (us) | -0.004 | 0.004 | | |
| ph/frq (deg) | 3.9 | Inc. seg. avg. | 3.232 | Inc. frq. avg. | 2.122 | Sample rate (MSamp/s): | 256 | Data rate (Mb/s): | 2048 | nlags: | 512 | t_coherence | infinite | ion window (TEC) | 0.00 | 0.00 |
| amp/frq (%) | 6.4 | h: az 195.3 el 56.6 pa 11.8 | | o: az 118.4 el 46.7 pa -45.1 | | u,v (fr/asec) | 2650.704 250.880 | | | | | | | simultaneous interpolator | | |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, ko

VLBA_KP - VLBA_OV, fgroup Q, pol RR

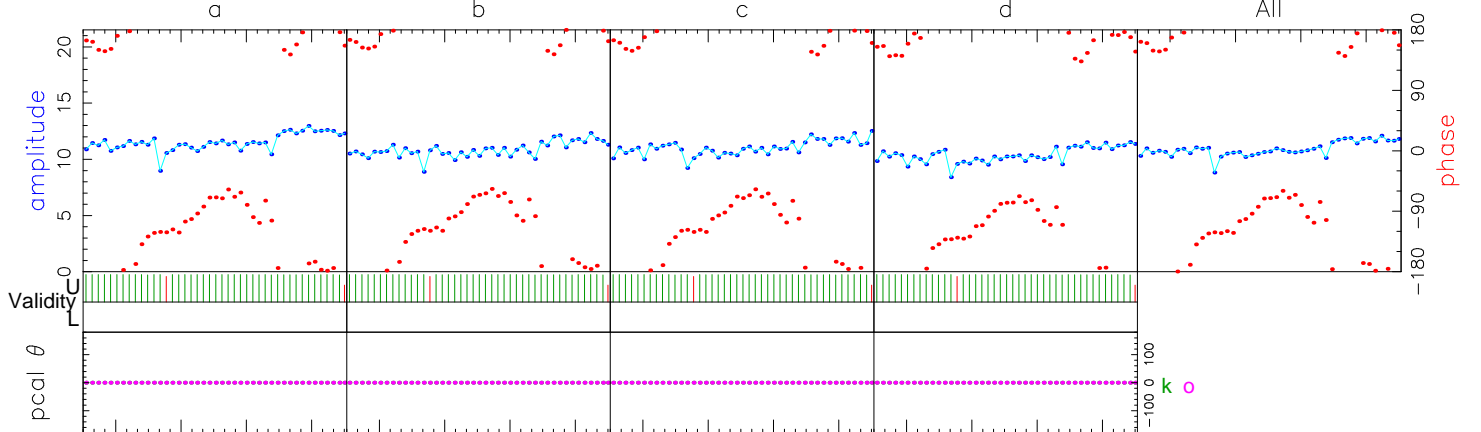


Fringe quality 5

SNR 303.1
 Int time 238.804
 Amp 7.173
 Phase -145.0
 PFD 0.0e+00
 Delays (us)
 SBD -0.004777
 MBD 0.003078
 Fringe rate (Hz)
 -0.002317
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211449
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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



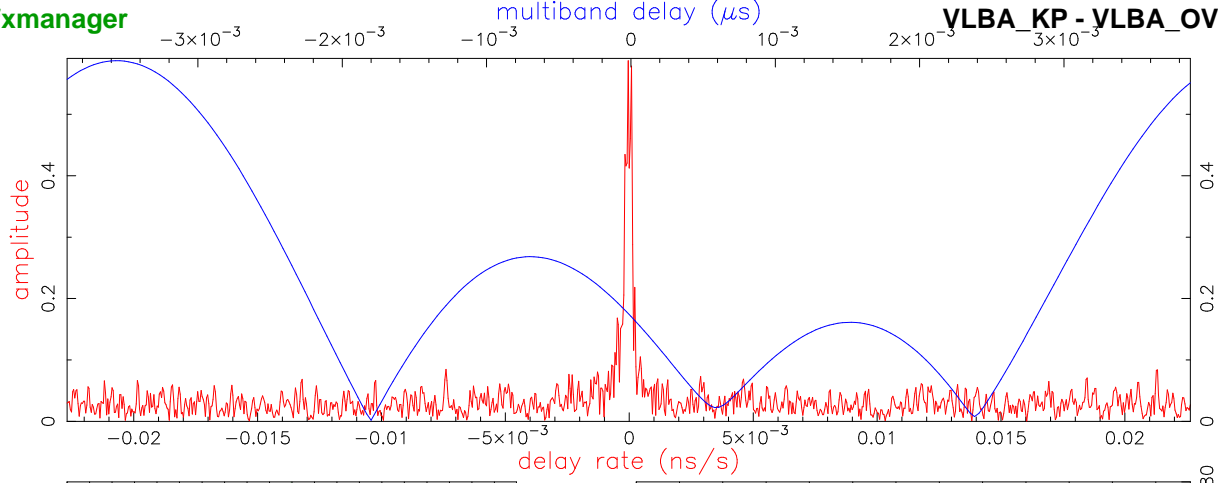
| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 469/0 | 469/0 | 469/0 | 469/0 | | |
| k | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| k:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| k:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| k | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| k | Q00UR | Q01UR | Q02UR | Q03UR | | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | | |
| | | | | | Chan ids | |
| | | | | | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | 1.70908658857E+03 | Apriori delay (usec) | 1.70909132307E+03 | Resid mbdelay (usec) | 3.07801E-03 | +/- 3.7E-06 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 1.70908654607E+03 | Apriori clock (usec) | -2.1055595E+01 | Resid sbdelay (usec) | -4.77700E-03 | +/- 1.4E-05 |
| Sband delay (usec) | 1.70909131371E+03 | Apriori clockrate (us/s) | 1.9999998E-07 | Resid phdelay (usec) | -9.35716E-06 | +/- 2.4E-08 |
| Phase delay (usec) | -7.70985143282E-02 | Apriori rate (us/s) | -7.70984604942E-02 | Resid rate (us/s) | -5.38340E-08 | +/- 1.8E-10 |
| Delay rate (us/s) | | Apriori accel (us/s/s) | -1.07436600575E-05 | Resid phase (deg) | -145.0 | +/- 0.4 |
| Total phase (deg) | 51.2 | | | | | |

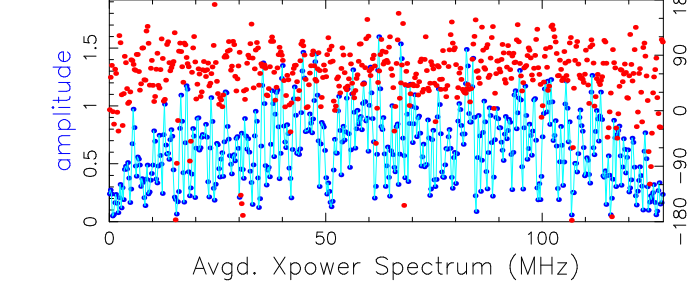
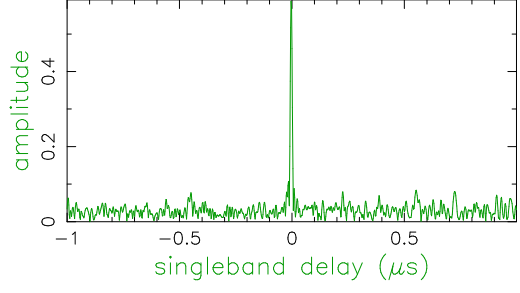
| | RMS | Theor. | Amplitude | 7.173 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
|--------------|------|--------|------------------|-----------------|--|---|
| ph/seg (deg) | 51.3 | 1.2 | Search (1024X16) | 6.834 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| amp/seg (%) | 53.0 | 2.2 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| ph/frq (deg) | 6.2 | 0.4 | Inc. seg. avg. | 10.920 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| amp/frq (%) | 4.9 | 0.7 | Inc. frq. avg. | 6.999 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

k: az 119.9 el 54.1 pa -48.3 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 219.044 -407.772 simultaneous interpolator

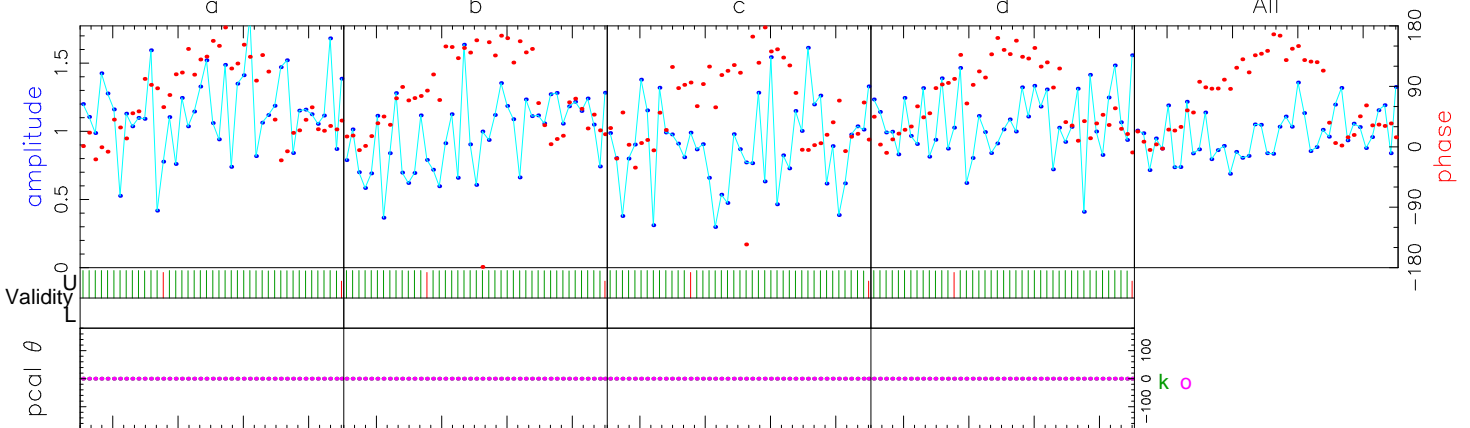
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/ko..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/ko.Q.102.1J2DGP



Fringe quality 8
SNR 25.0
Int time 238.804
Amp 0.591
Phase 70.1
PFD 0.0e+00
Delays (us)
SBD -0.003375
MBD -0.003539
Fringe rate (Hz)
-0.002466
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512
Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211451
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"



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 | | |
| k | 1000 | 1000 | 1000 | 1000 | APs used | 1000 |
| o | 1000 | 1000 | 1000 | 1000 | PC freqs | 1000 |
| k:o | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | 0:0 |
| k:o | 0:0 | 0:0 | 0:0 | 0:0 | Manl PC | 0:0 |
| k | 1000 | 1000 | 1000 | 1000 | PC amp | 1000 |
| o | 1000 | 1000 | 1000 | 1000 | | 1000 |
| k | Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 1.70908778373E+03 | Apriori delay (usec) | 1.70909132307E+03 | Resid mbdelay (usec) | -3.53934E-03 | +/- | 4.5E-05 |
| Sband delay (usec) | 1.70908794757E+03 | Apriori clock (usec) | -2.1055595E+01 | Resid sbdelay (usec) | -3.37550E-03 | +/- | 1.7E-04 |
| Phase delay (usec) | 1.70909132759E+03 | Apriori clockrate (us/s) | 1.9999998E-07 | Resid phdelay (usec) | 4.52640E-06 | +/- | 3.0E-07 |
| Delay rate (us/s) | -7.70985177799E-02 | Apriori rate (us/s) | -7.70984604942E-02 | Resid rate (us/s) | -5.72857E-08 | +/- | 2.1E-09 |
| Total phase (deg) | 266.3 | Apriori accel (us/s/s) | -1.07436600575E-05 | Resid phase (deg) | 70.1 | +/- | 4.6 |

| | RMS | Theor. | Amplitude | 0.591 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 |
|--------------|------|--------|------------------|-----------------|--|-----------------------|------------------|--------|-------|
| ph/seg (deg) | 53.6 | 15.0 | Search (1024X16) | 0.564 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 |
| amp/seg (%) | 70.6 | 26.3 | Interp. | 0.000 | Sample rate(MISamp/s): 256 | nlags: 512 | dr window (ns/s) | -0.023 | 0.023 |
| ph/frq (deg) | 12.9 | 4.6 | Inc. seg. avg. | 0.941 | Data rate(Mb/s): 2048 | t_cohere infinite | ion window (TEC) | 0.00 | 0.00 |
| amp/frq (%) | 12.7 | 8.0 | Inc. frq. avg. | 0.592 | | | | | |

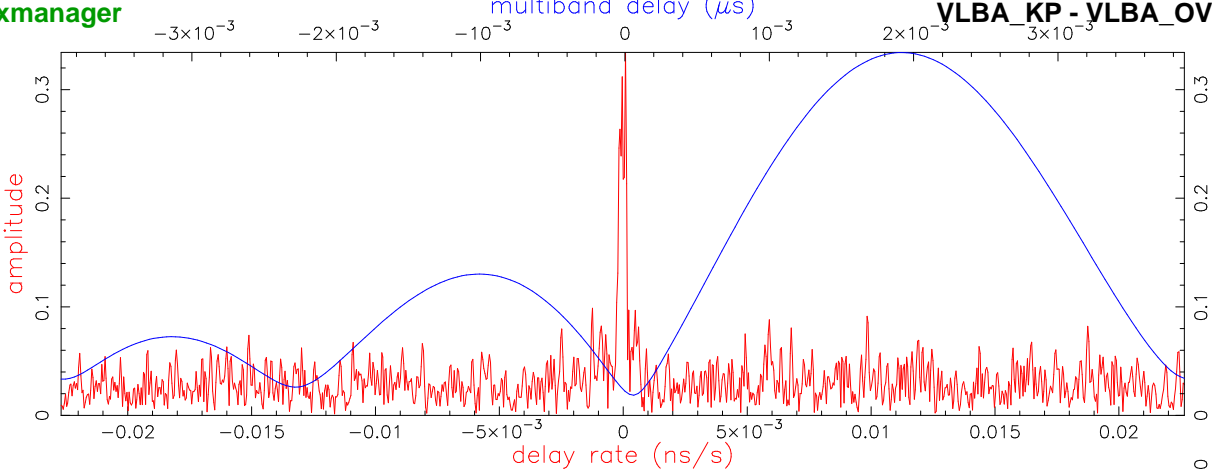
k: az 119.9 el 54.1 pa -48.3 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 219.044 -407.772 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/ko..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/ko.Q.120.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

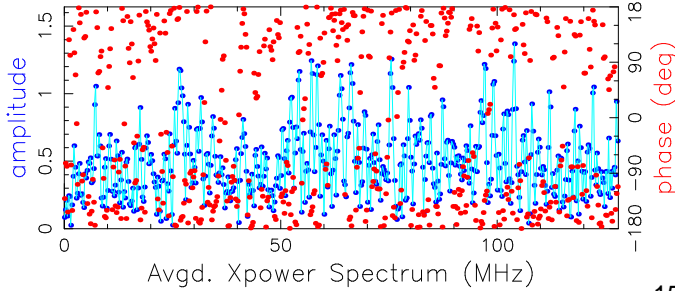
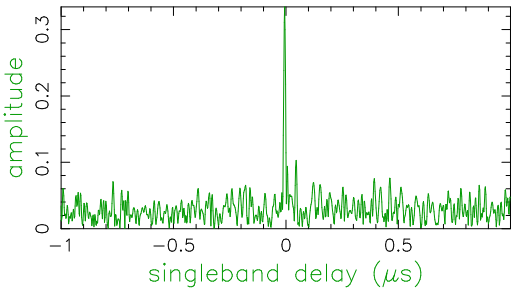
1502+106.1J2DGP, No0154, ko

VLBA_KP - VLBA_OV, fgroup Q, pol RL



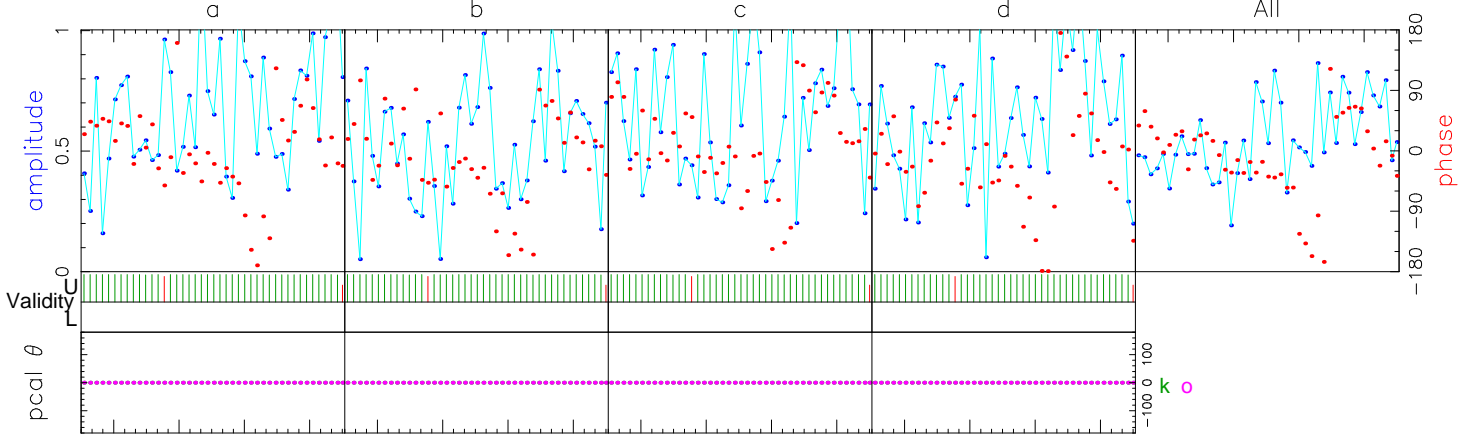
Fringe quality 9

SNR 14.1
Int time 238.804
Amp 0.334
Phase 0.6
PFD 7.3e-37
Delays (us)
SBD -0.006045
MBD 0.001904
Fringe rate (Hz) 0.003022
Ion TEC 0.000
Ref freq (MHz) 43040.0000
AP (sec) 0.512



Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211453
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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 | | |
| k | 1000 | 1000 | 1000 | 1000 | APs used | 509.9 |
| 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 | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | 1.70908541493E+03 | Apriori delay (usec) | 1.70909132307E+03 | Resid mbdelay (usec) | 1.90436E-03 | +/- 7.9E-05 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 1.70908527757E+03 | Apriori clock (usec) | -2.1055595E+01 | Resid sbdelay (usec) | -6.04550E-03 | +/- 3.0E-04 |
| Sband delay (usec) | 1.70909132311E+03 | Apriori clockrate (us/s) | 1.9999998E-07 | Resid phdelay (usec) | 3.81063E-08 | +/- 5.2E-07 |
| Phase delay (usec) | -7.70983902811E-02 | Apriori rate (us/s) | -7.70984604942E-02 | Resid rate (us/s) | 7.02131E-08 | +/- 3.8E-09 |
| Delay rate (us/s) | | Apriori accel (us/s/s) | -1.07436600575E-05 | Resid phase (deg) | 0.6 | +/- 8.1 |
| Total phase (deg) | 196.7 | | | | | |

| | RMS | Theor. | Amplitude | 0.334 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
|--------------|------|--------|------------------|-----------------|--|---|
| ph/seg (deg) | 60.7 | 26.6 | Search (1024X16) | 0.310 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| amp/seg (%) | 81.0 | 46.4 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| ph/frq (deg) | 12.8 | 8.1 | Inc. seg. avg. | 0.500 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| amp/frq (%) | 11.4 | 14.2 | Inc. frq. avg. | 0.335 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

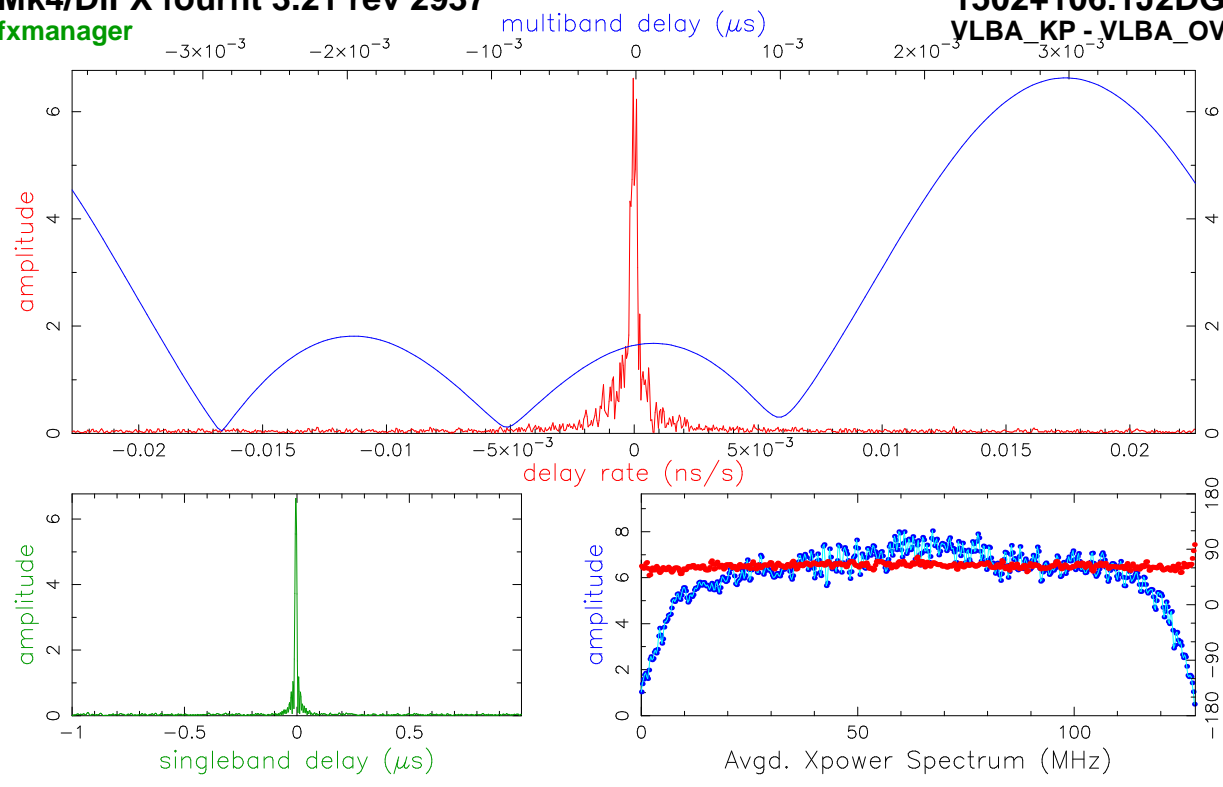
k: az 119.9 el 54.1 pa -48.3 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 219.044 -407.772 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/ko..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/ko.Q.138.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, ko

VLBA_KP - VLBA_OV, fgroup Q, pol LL

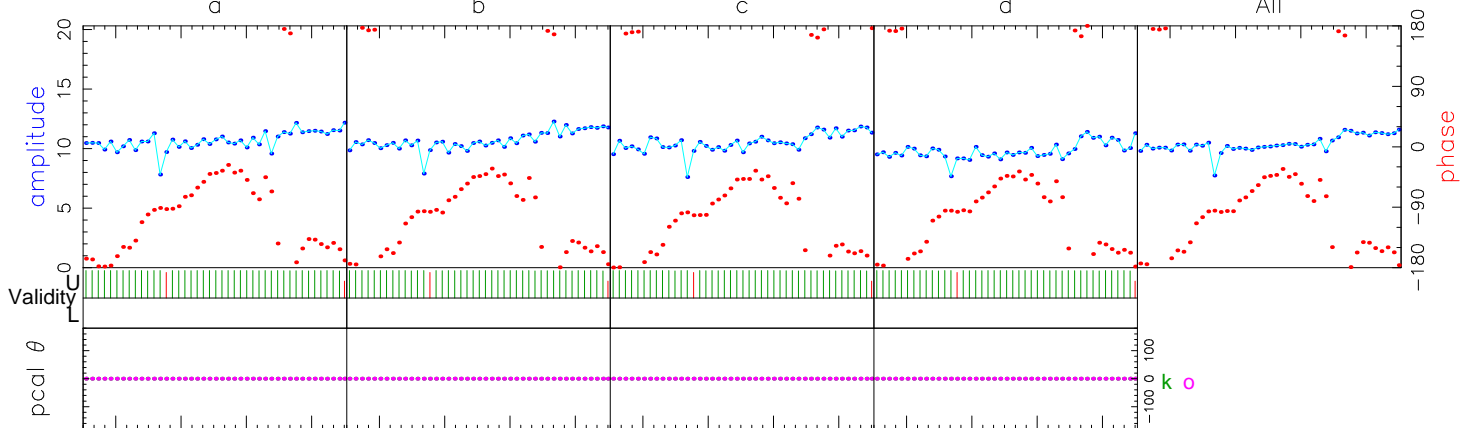


Fringe quality 5

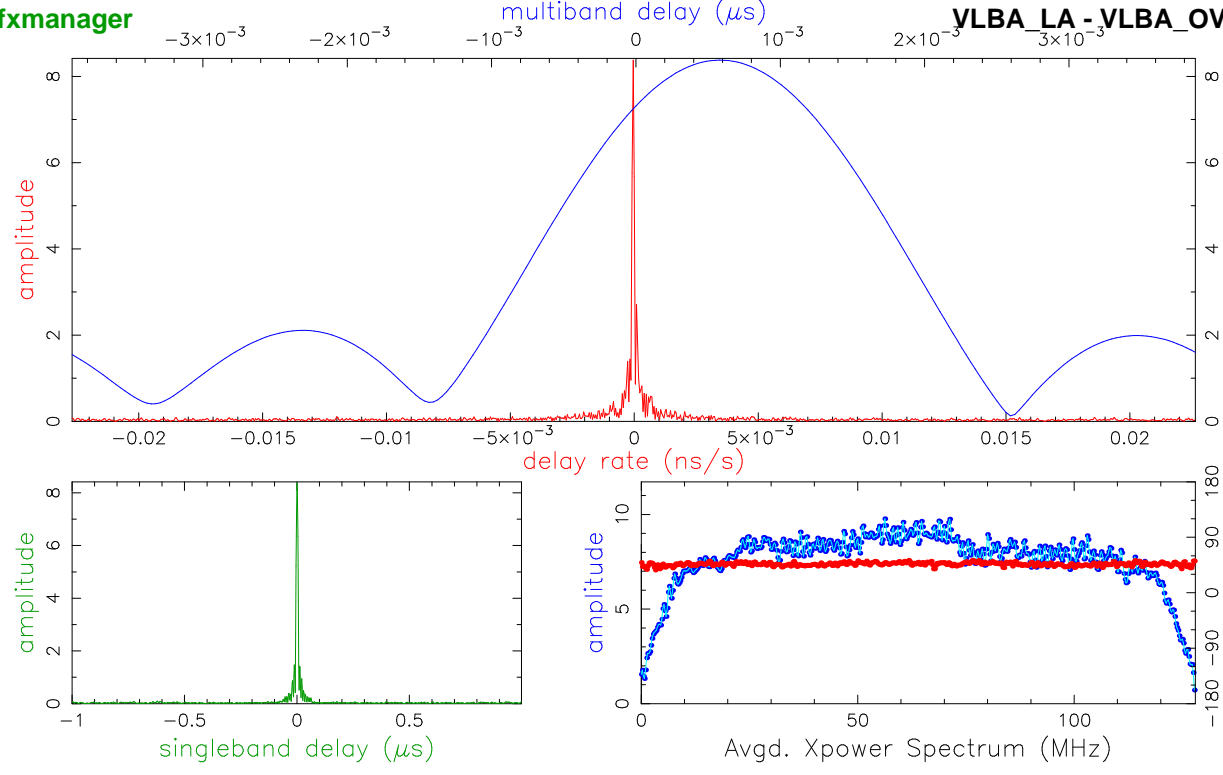
SNR 286.1
 Int time 238.804
 Amp 6.770
 Phase -118.8
 PFD 0.0e+00
 Delays (us)
 SBD -0.004877
 MBD 0.003029
 Fringe rate (Hz)
 -0.002326
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211447
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 |
|-------------------------------|--|---|--------------------|--|---|
| -113.5 | -118.5 | -123.3 | -120.0 | Phase | -118.8 |
| 6.8 | 6.8 | 6.7 | 6.2 | Ampl. | 6.6 |
| 510.5 | 510.5 | 510.6 | 510.5 | Sbd box | 510.5 |
| 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 Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |
| Group delay (usec)(sbd) | 1.70908653985E+03 | Apriori delay (usec) | 1.70909132307E+03 | Resid mbdelay (usec) | 3.02929E-03 +/- 3.9E-06 |
| Sband delay (usec) | 1.70908644632E+03 | Apriori clock (usec) | -2.1055595E+01 | Resid sbdelay (usec) | -4.87675E-03 +/- 1.5E-05 |
| Phase delay (usec) | 1.70909131540E+03 | Apriori clockrate (us/s) | 1.9999998E-07 | Resid phdelay (usec) | -7.66425E-06 +/- 2.6E-08 |
| Delay rate (us/s) | -7.70985145353E-02 | Apriori rate (us/s) | -7.70984604942E-02 | Resid rate (us/s) | -5.40411E-08 +/- 1.9E-10 |
| Total phase (deg) | 77.4 | Apriori accel (us/s/s) | -1.07436600575E-05 | Resid phase (deg) | -118.8 +/- 0.4 |
| RMS | Theor. | Amplitude | 6.770 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| 51.4 | 1.3 | Search (1024X16) | 6.497 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| 54.6 | 2.3 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| 5.0 | 0.4 | Inc. seg. avg. | 10.398 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| 4.0 | 0.7 | Inc. frq. avg. | 6.635 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| k: az 119.9 el 54.1 pa -48.3 | o: az 118.4 el 46.7 pa -45.1 | u,v (fr/asec) | 219.044 -407.772 | | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/ko..1J2DGP | Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/ko.Q.86.1J2DGP | | | |

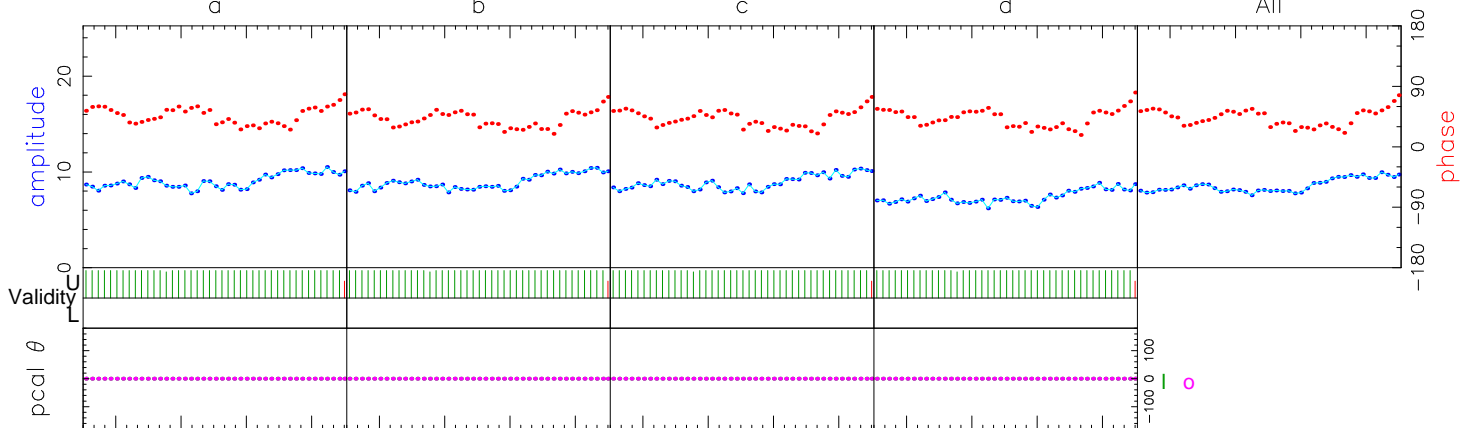


Fringe quality 8

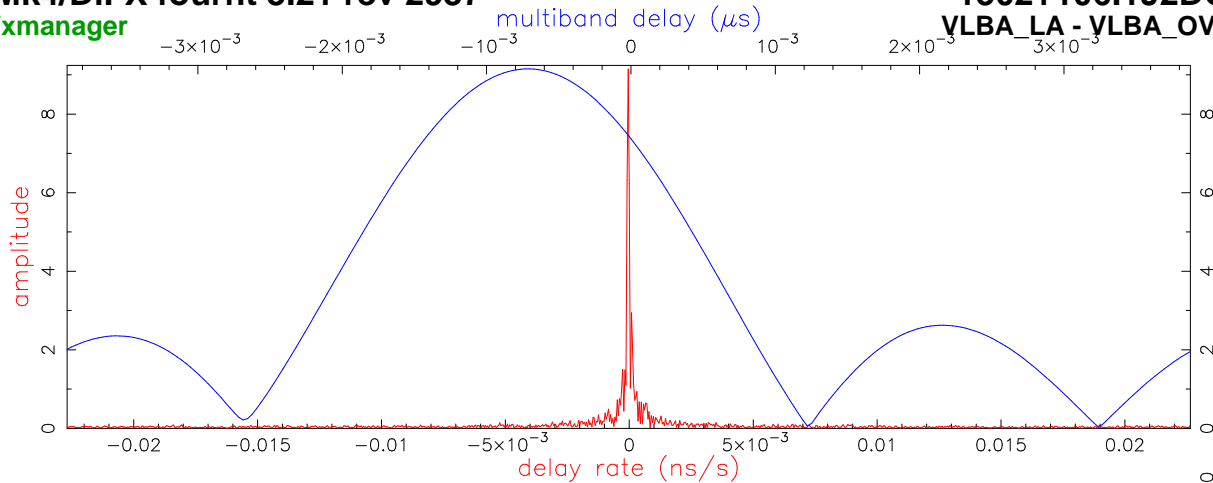
SNR 356.4
Int time 239.711
Amp 8.418
Phase 43.4
PFD 0.0e+00
Delays (us)
SBD 0.000473
MBD 0.000607
Fringe rate (Hz)
-0.001718
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512

Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211456
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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



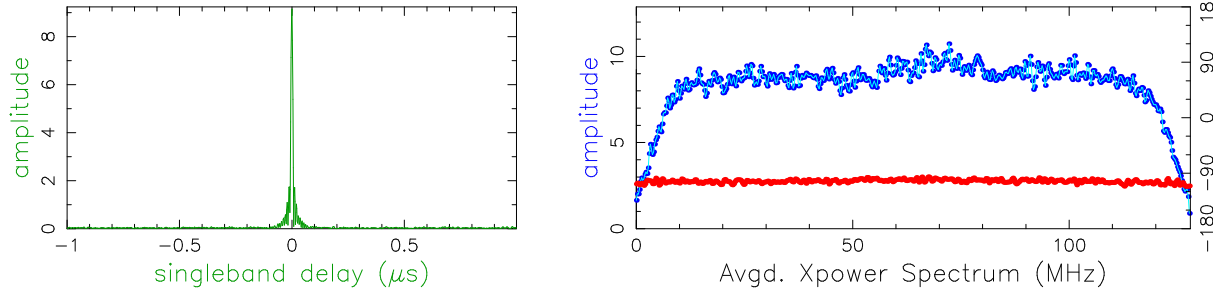
| 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-------------------------------|--|--|--------------------|--|---|
| 46.7 | 41.6 | 42.2 | 42.9 | Phase | 43.4 |
| 8.9 | 8.8 | 8.7 | 7.2 | Ampl. | 8.4 |
| 513.0 | 513.4 | 513.3 | 513.2 | Sbd box | 513.2 |
| U/L 469/0 | 469/0 | 469/0 | 469/0 | 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 | |
| o 1000 | 1000 | 1000 | 1000 | | |
| l Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |
| Group delay (usec)(sbd) | 1.99593630181E+03 | Apriori delay (usec) | 1.99593569443E+03 | Resid mbdelay (usec) | 6.07381E-04 +/- 3.1E-06 |
| Sband delay (usec) | 1.99593616706E+03 | Apriori clock (usec) | -2.1800999E+01 | Resid sbdelay (usec) | 4.72625E-04 +/- 1.2E-05 |
| Phase delay (usec) | 1.99593569723E+03 | Apriori clockrate (us/s) | 0.0000000E+00 | Resid phdelay (usec) | 2.80035E-06 +/- 2.1E-08 |
| Delay rate (us/s) | -2.08424946939E-01 | Apriori rate (us/s) | -2.08424907016E-01 | Resid rate (us/s) | -3.99224E-08 +/- 1.5E-10 |
| Total phase (deg) | 147.2 | Apriori accel (us/s/s) | -1.11445982855E-05 | Resid phase (deg) | 43.4 +/- 0.3 |
| RMS | Theor. | Amplitude | 8.418 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| 12.2 | 1.1 | Search (1024X16) | 8.309 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| 8.3 | 1.8 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| 2.8 | 0.3 | Inc. seg. avg. | 8.573 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| 8.2 | 0.6 | Inc. frq. avg. | 8.381 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| l: az 131.0 el 55.5 pa -38.1 | o: az 118.4 el 46.7 pa -45.1 | u, v (fr/asec) | 601.296 -171.152 | | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/lo..1J2DGP | Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/lo.Q.154.1J2DGP | | | |



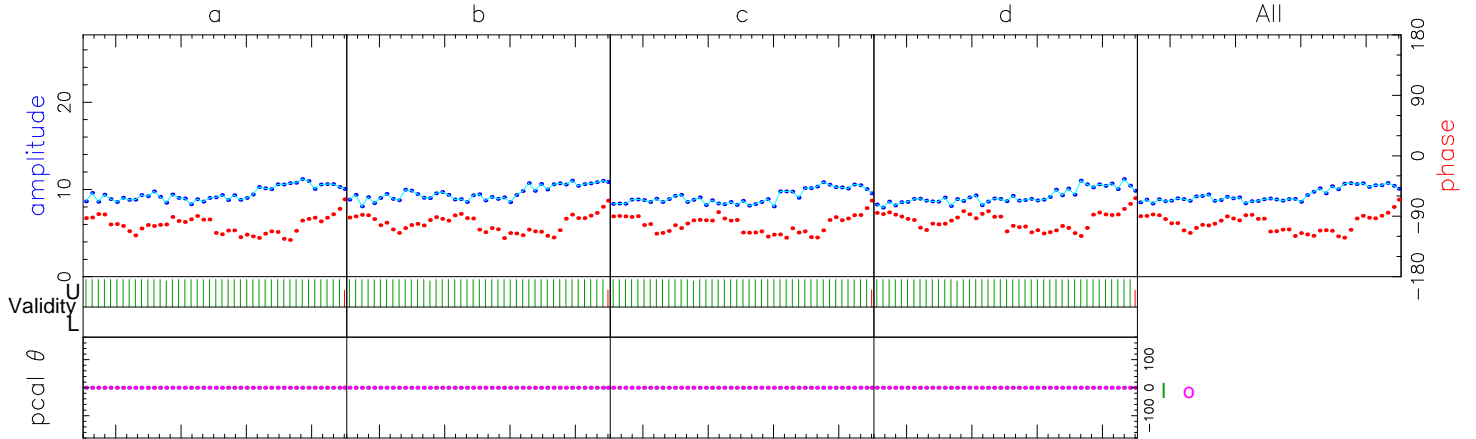
Fringe quality 8

SNR 391.3
Int time 239.711
Amp 9.242
Phase -100.6
PFD 0.0e+00
Delays (us)
SBD -0.000659
MBD -0.000752
Fringe rate (Hz)
-0.001724
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512

Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211458
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"



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



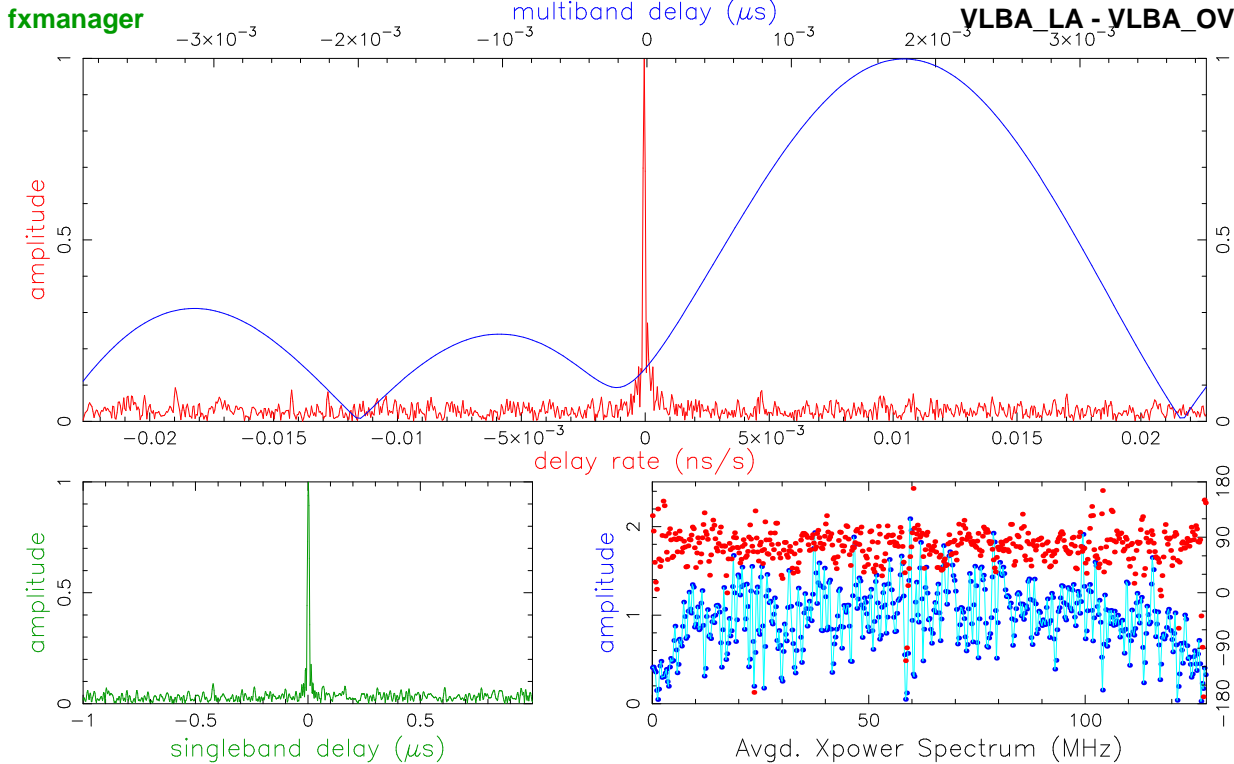
| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|--------|
| | -103.1 | -100.5 | -102.2 | -96.5 | Phase | -100.6 |
| | 9.3 | 9.4 | 9.0 | 9.0 | Ampl. | 9.2 |
| | 512.4 | 512.7 | 512.5 | 513.1 | Sbd box | 512.7 |
| U/L | 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 | |
| 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) | 1.99593494194E+03 | Apriori delay (usec) | 1.99593569443E+03 | Resid mbdelay (usec) | -7.52494E-04 | +/- 2.8E-06 |
| Sband delay (usec) | 1.99593503543E+03 | Apriori clock (usec) | -2.1800999E+01 | Resid sbdelay (usec) | -6.59000E-04 | +/- 1.1E-05 |
| Phase delay (usec) | 1.99593568794E+03 | Apriori clockrate (us/s) | 0.0000000E+00 | Resid phdelay (usec) | -6.49317E-06 | +/- 1.9E-08 |
| Delay rate (us/s) | -2.08424947078E-01 | Apriori rate (us/s) | -2.08424907016E-01 | Resid rate (us/s) | -4.00614E-08 | +/- 1.4E-10 |
| Total phase (deg) | 3.2 | Apriori accel (us/s/s) | -1.11445982855E-05 | Resid phase (deg) | -100.6 | +/- 0.3 |

| | RMS | Theor. | Amplitude | 9.242 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|--------|-------|
| ph/seg (deg) | 12.4 | 1.0 | Search (1024X16) | 8.940 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | | mb window (us) | -0.004 | 0.004 |
| amp/seg (%) | 8.4 | 1.7 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled | dr window (ns/s) | -0.023 | 0.023 |
| ph/frq (deg) | 3.6 | 0.3 | Inc. seg. avg. | 9.370 | Sample rate(MISamp/s): 256 | | ion window (TEC) | 0.00 | 0.00 |
| amp/frq (%) | 2.2 | 0.5 | Inc. frq. avg. | 9.158 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | | |

l: az 131.0 el 55.5 pa -38.1 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 601.296 -171.152 simultaneous interpolator

Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/lo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/lo.Q.173.1J2DGP

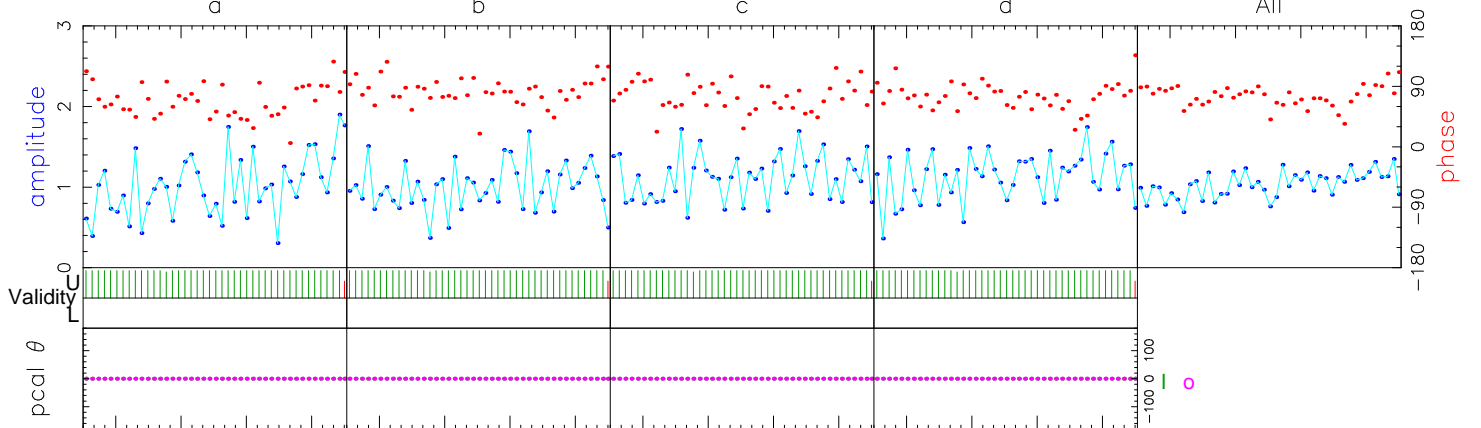


Fringe quality 9

SNR 42.3
Int time 239.711
Amp 1.000
Phase 75.2
PFD 0.0e+00
Delays (us)
SBD 0.001687
MBD 0.001770
Fringe rate (Hz)
-0.001794
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512

Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211500
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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



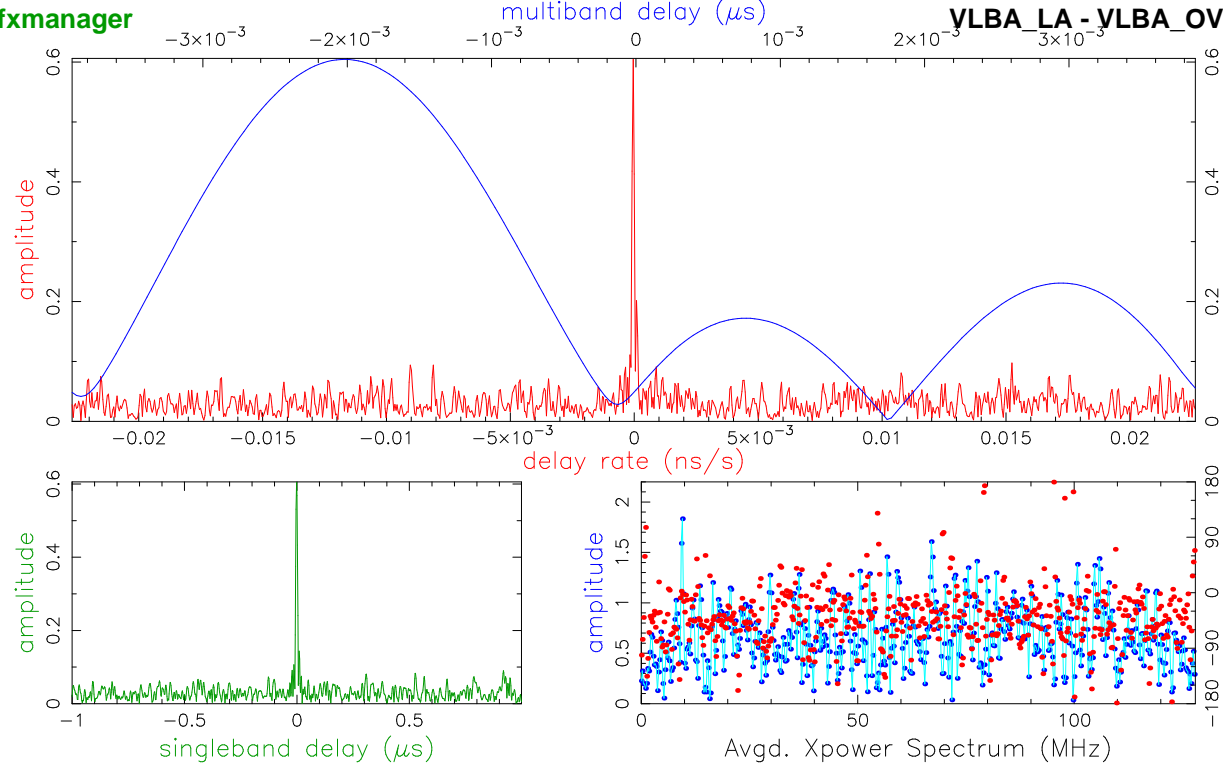
| 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-------------------------------|--|--|--------------------|--|---|
| 68.6 | 83.3 | 74.9 | 73.8 | Phase | 75.2 |
| 0.9 | 1.0 | 1.1 | 1.1 | Ampl. | 1.0 |
| 513.8 | 514.2 | 513.5 | 514.0 | Sbd box | 513.9 |
| U/L 469/0 | 469/0 | 469/0 | 469/0 | 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 | |
| o 1000 | 1000 | 1000 | 1000 | | |
| l Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |
| Group delay (usec)(sbd) | 1.99593746459E+03 | Apriori delay (usec) | 1.99593569443E+03 | Resid mbdelay (usec) | 1.77016E-03 +/- 2.6E-05 |
| Sband delay (usec) | 1.99593738106E+03 | Apriori clock (usec) | -2.1800999E+01 | Resid sbdelay (usec) | 1.68662E-03 +/- 1.0E-04 |
| Phase delay (usec) | 1.99593569928E+03 | Apriori clockrate (us/s) | 0.0000000E+00 | Resid phdelay (usec) | 4.85087E-06 +/- 1.7E-07 |
| Delay rate (us/s) | -2.08424948706E-01 | Apriori rate (us/s) | -2.08424907016E-01 | Resid rate (us/s) | -4.16894E-08 +/- 1.3E-09 |
| Total phase (deg) | 178.9 | Apriori accel (us/s/s) | -1.11445982855E-05 | Resid phase (deg) | 75.2 +/- 2.7 |
| RMS | Theor. | Amplitude | 1.000 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| 15.3 | 8.9 | Search (1024X16) | 0.985 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| 16.2 | 15.5 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| 7.4 | 2.7 | Inc. seg. avg. | 1.022 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| 6.5 | 4.7 | Inc. frq. avg. | 1.001 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| l: az 131.0 el 55.5 pa -38.1 | o: az 118.4 el 46.7 pa -45.1 | u, v (fr/asec) | 601.296 -171.152 | | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/lo..1J2DGP | Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/lo.Q.190.1J2DGP | | | |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, lo

VLBA_LA - VLBA_OV, fgroup Q, pol RL

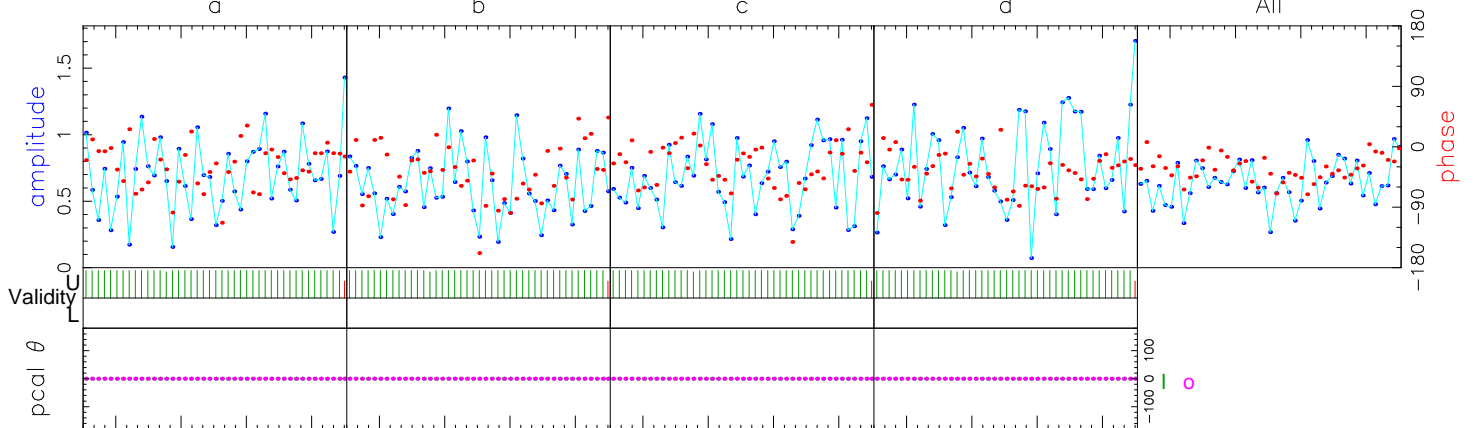


Fringe quality 9

SNR 25.7
 Int time 239.711
 Amp 0.606
 Phase -32.1
 PFD 0.0e+00
 Delays (us)
 SBD -0.001608
 MBD -0.001997
 Fringe rate (Hz)
 -0.001808
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211502
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 | | |
| l | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| l:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| l:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| l | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| l | Q00UR | Q01UR | Q02UR | Q03UR | | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | | |

| | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 1.99593369787E+03 | Apriori delay (usec) | 1.99593569443E+03 | Resid mbdelay (usec) | -1.99656E-03 | +/- 4.3E-05 |
| Sband delay (usec) | 1.99593408618E+03 | Apriori clock (usec) | -2.1800999E+01 | Resid sbdelay (usec) | -1.60825E-03 | +/- 1.7E-04 |
| Phase delay (usec) | 1.99593569236E+03 | Apriori clockrate (us/s) | 0.0000000E+00 | Resid phdelay (usec) | -2.07077E-06 | +/- 2.9E-07 |
| Delay rate (us/s) | -2.08424949029E-01 | Apriori rate (us/s) | -2.08424907016E-01 | Resid rate (us/s) | -4.20127E-08 | +/- 2.1E-09 |
| Total phase (deg) | 71.7 | Apriori accel (us/s/s) | -1.11445982855E-05 | Resid phase (deg) | -32.1 | +/- 4.5 |

| | | | | | | | |
|--------------|------|------------------|-------|----------------|-----------------|--|-------------------------------|
| ph/seg (deg) | 18.8 | Theor. | 14.6 | Amplitude | 0.606 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| amp/seg (%) | 26.6 | Search (1024X16) | 0.602 | Search | 0.602 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| ph/frq (deg) | 6.4 | Interp. | 0.000 | Inc. seg. avg. | 0.619 | Bits/sample: 2x2 | SampCntNorm: enabled |
| amp/frq (%) | 11.6 | Inc. frq. avg. | 0.604 | Inc. frq. avg. | 0.604 | 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 |

l: az 131.0 el 55.5 pa -38.1 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 601.296 -171.152 simultaneous interpolator

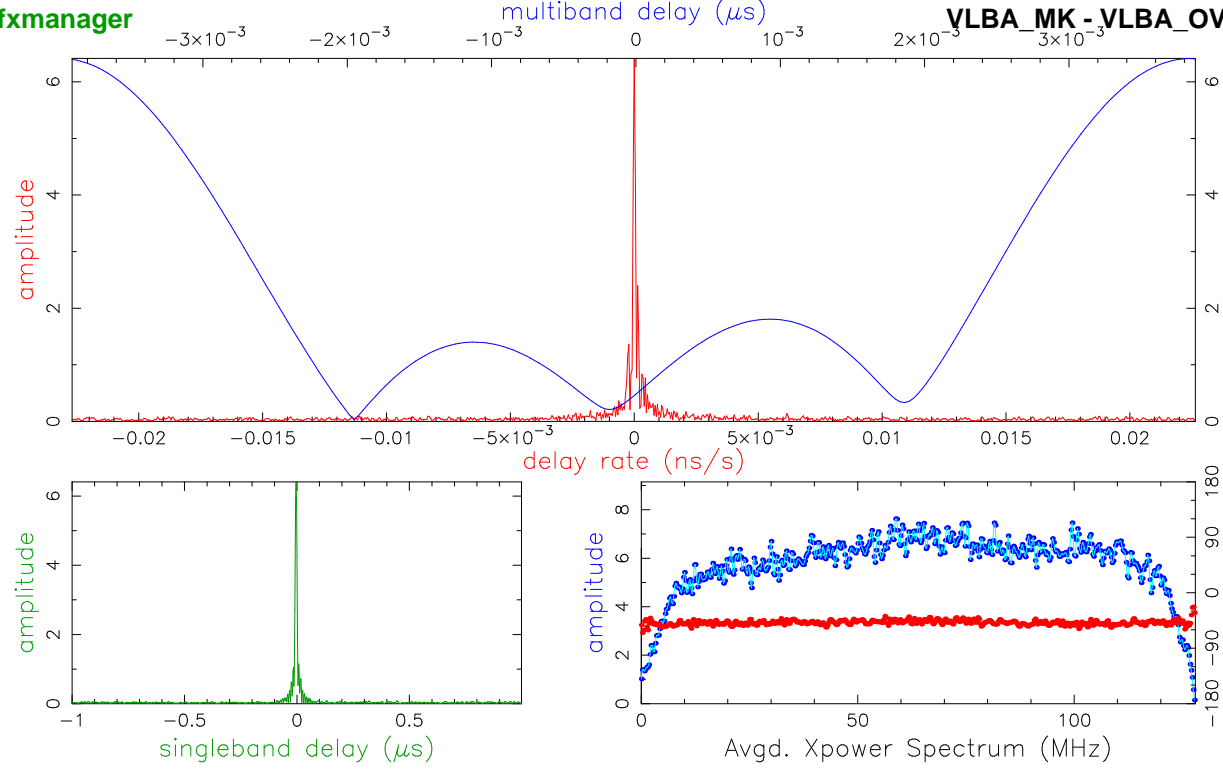
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/lo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/lo.Q.207.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, mo

VLBA_MK - VLBA_OV, fgroup Q, pol LL

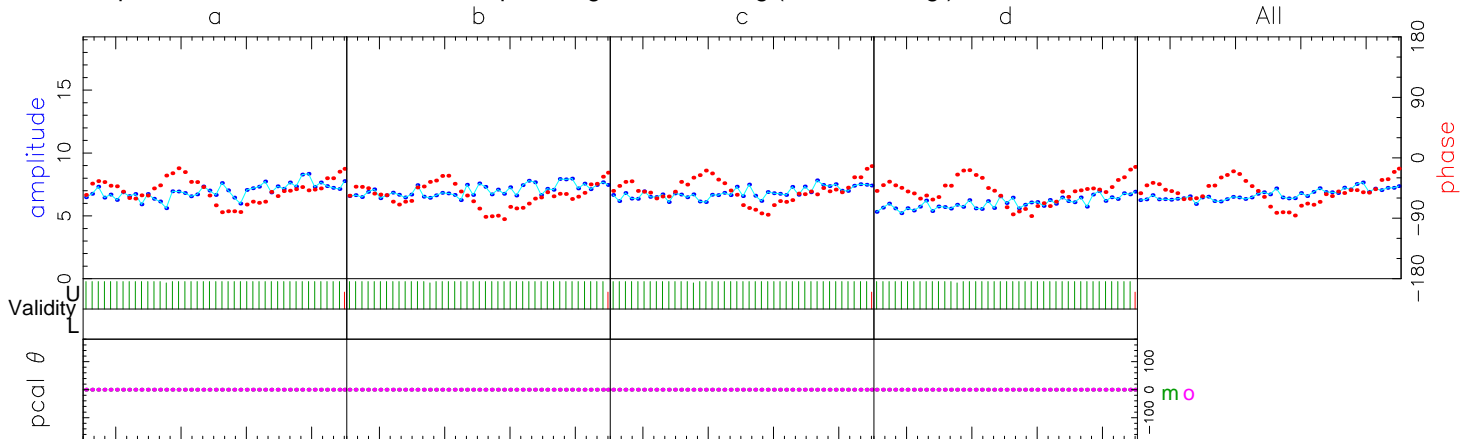


Fringe quality 8

SNR 271.6
 Int time 239.713
 Amp 6.414
 Phase -50.7
 PFD 0.0e+00
 Delays (us)
 SBD -0.004087
 MBD -0.003990
 Fringe rate (Hz)
 -0.000370
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211456
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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



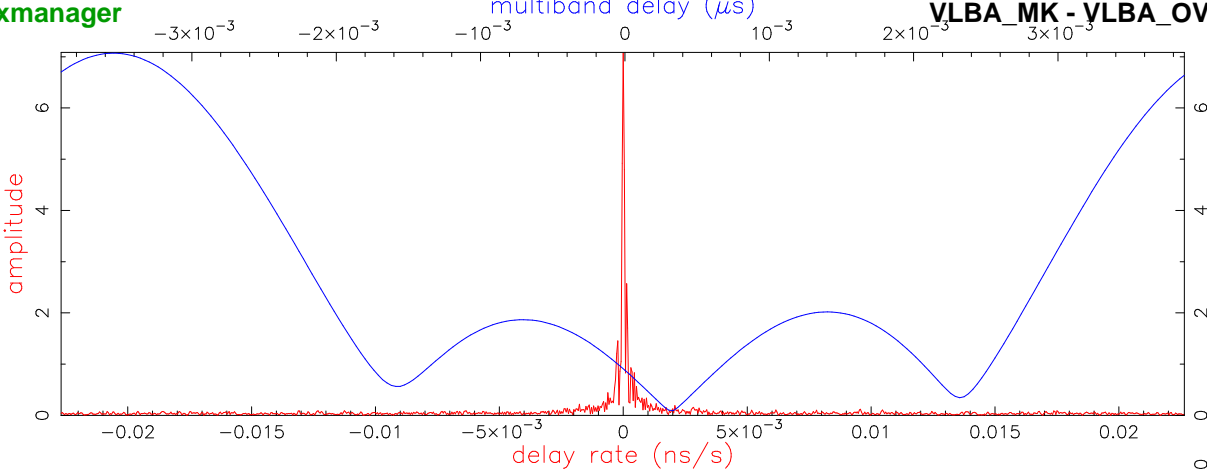
| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-------------------------------|--|--|------------------|--------------------|--|-------------------------------|
| U/L | 469/0 | 469/0 | 469/0 | 469/0 | | |
| m | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| m:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| m:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| m | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| m | Q00UL | Q01UL | Q02UL | Q03UL | | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | | |
| Group delay (usec)(sbd) | -9.00303492513E+03 | | | -9.00303093522E+03 | Resid mbdelay (usec) | -3.98991E-03 +/- 4.1E-06 |
| Sband delay (usec) | -9.00303502247E+03 | | | -8.0255947E+00 | Resid sbdelay (usec) | -4.08725E-03 +/- 1.6E-05 |
| Phase delay (usec) | -9.00303093849E+03 | | | 1.9999998E-07 | Resid phdelay (usec) | -3.26924E-06 +/- 2.7E-08 |
| Delay rate (us/s) | 6.48840700208E-01 | | | 6.48840708810E-01 | Resid rate (us/s) | -8.60221E-09 +/- 2.0E-10 |
| Total phase (deg) | | -213.3 | | 4.24080921297E-05 | Resid phase (deg) | -50.7 +/- 0.4 |
| ph/seg (deg) | 17.0 | 1.4 | 6.414 +/- 0.024 | 6.311 | PCal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| amp/seg (%) | 7.7 | 2.4 | Search (1024X16) | 0.000 | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| ph/frq (deg) | 4.4 | 0.4 | Interp. | 6.697 | Bits/sample: 2x2 | SampCntNorm: enabled |
| amp/frq (%) | 6.4 | 0.7 | Inc. seg. avg. | 6.697 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| | | | Inc. frq. avg. | 6.420 | Data rate(Mb/s): 2048 | ion window (TEC) 0.00 0.00 |
| m: az 85.0 el 17.5 pa -72.4 | o: az 118.4 el 46.7 pa -45.1 | u,v (fr/asec) -1870.536 -844.623 | | | | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/mo..1J2DGP | Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/mo.Q.156.1J2DGP | | | | |

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

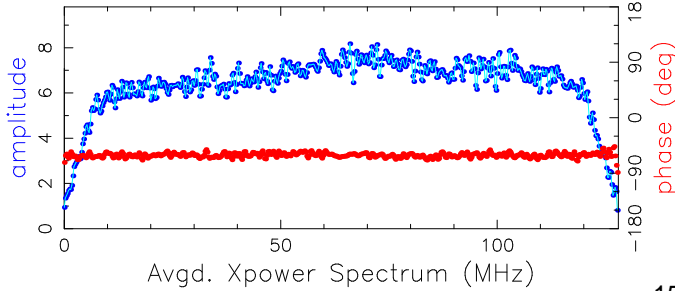
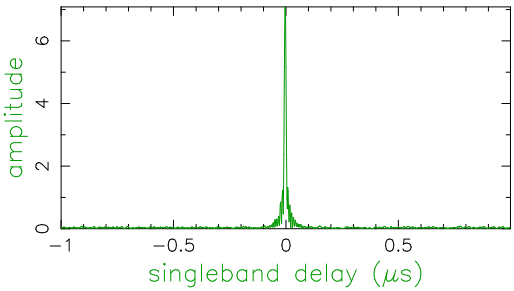
1502+106.1J2DGP, No0154, mo

VLBA_MK - VLBA_OV, fgroup Q, pol RR



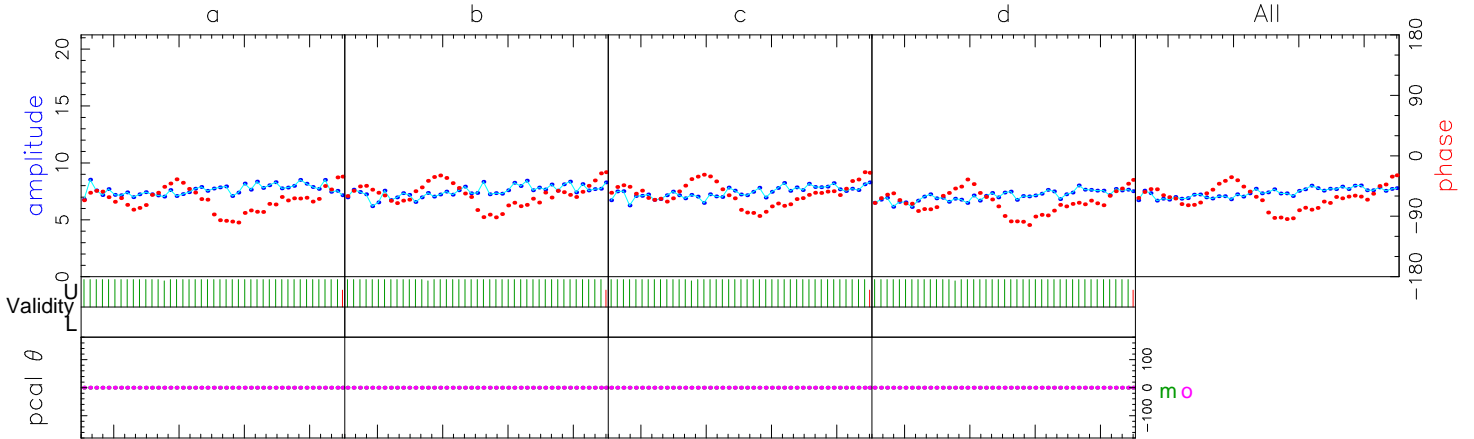
Fringe quality 8

SNR 300.0
 Int time 239.713
 Amp 7.085
 Phase -62.1
 PFD 0.0e+00
 Delays (us)
 SBD -0.003590
 MBD -0.003524
 Fringe rate (Hz)
 -0.000346
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512



Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211458
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 |
|-----|----------|----------|----------|----------|------------|-------|
| | -65.4 | -57.8 | -56.2 | -69.3 | Phase | -62.1 |
| | 7.3 | 7.2 | 7.1 | 6.8 | Ampl. | 7.1 |
| | 511.4 | 511.2 | 511.1 | 511.0 | Sbd box | 511.2 |
| 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 | | |
| m | Q00UR | Q01UR | Q02UR | Q03UR | Chan ids | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -9.00303445941E+03 | Apriori delay (usec) | -9.00303093522E+03 | Resid mbdelay (usec) | -3.52419E-03 | +/- | 3.7E-06 |
| Sband delay (usec) | -9.00303452485E+03 | Apriori clock (usec) | -8.0255947E+00 | Resid sbdelay (usec) | -3.58963E-03 | +/- | 1.4E-05 |
| Phase delay (usec) | -9.00303093923E+03 | Apriori clockrate (us/s) | 1.9999998E-07 | Resid phdelay (usec) | -4.00938E-06 | +/- | 2.5E-08 |
| Delay rate (us/s) | 6.48840700778E-01 | Apriori rate (us/s) | 6.48840708810E-01 | Resid rate (us/s) | -8.03214E-09 | +/- | 1.8E-10 |
| Total phase (deg) | -224.8 | Apriori accel (us/s/s) | 4.24080921297E-05 | Resid phase (deg) | -62.1 | +/- | 0.4 |

| | | | | | | | | |
|--------------|----------|------------|---------------------------|--|----------------------------|------------------|--------|-------|
| ph/seg (deg) | RMS 16.7 | Theor. 1.3 | Amplitude 7.085 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 |
| amp/seg (%) | 6.8 | 2.2 | Search (1024X16) 6.943 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 |
| ph/frq (deg) | 7.6 | 0.4 | Interp. 0.000 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%) | 2.6 | 0.7 | Inc. seg. avg. 7.373 | Data rate(Mb/s): 2048 | nlags: 512 | ion window (TEC) | 0.00 | 0.00 |
| | | | Inc. frq. avg. 7.100 | | | | | |

m: az 85.0 el 17.5 pa -72.4 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) -1870.536 -844.623 simultaneous interpolator

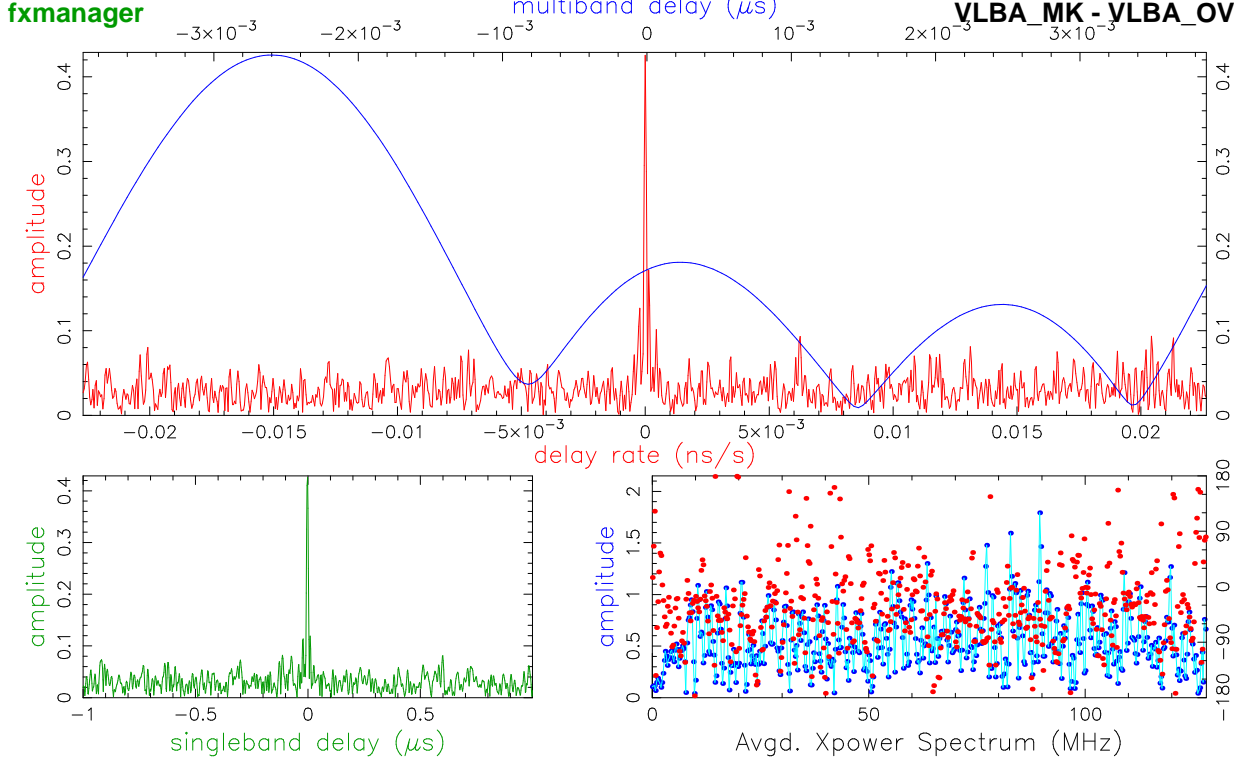
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/mo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/mo.Q.176.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, mo

VLBA_MK - VLBA_OV, fgroup Q, pol LR

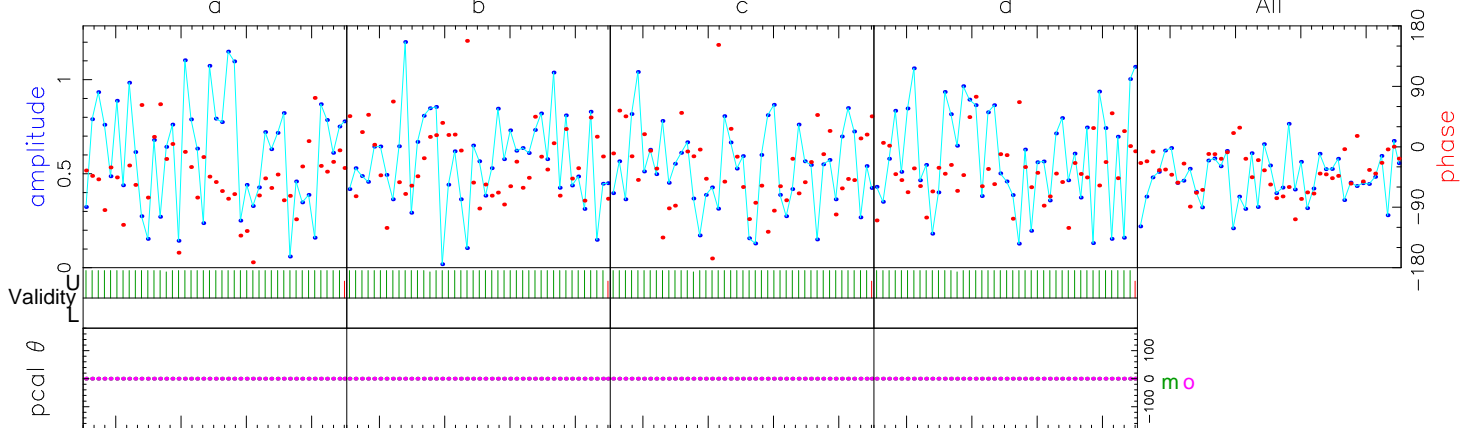


Fringe quality 9

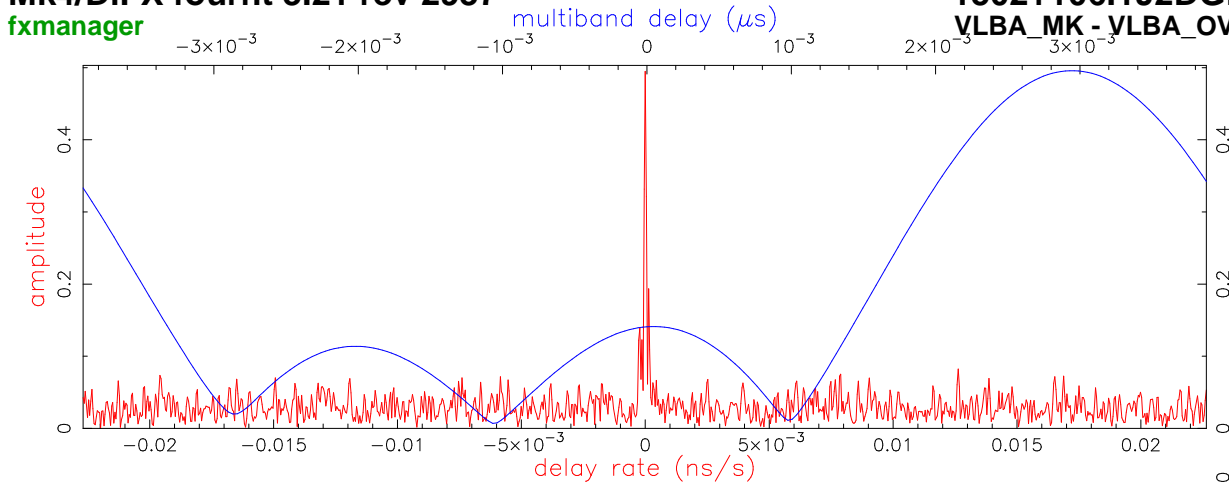
SNR 18.2
 Int time 239.713
 Amp 0.429
 Phase -37.1
 PFD 0.0e+00
 Delays (us)
 SBD -0.002527
 MBD -0.002631
 Fringe rate (Hz)
 -0.000333
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211500
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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

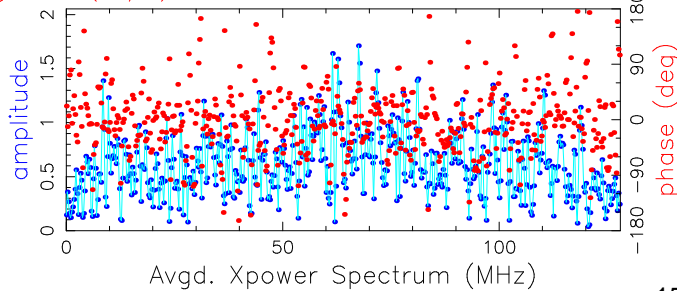
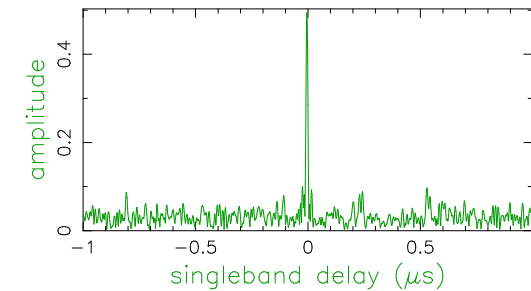


| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-------------------------------|--------------------|----------|--|--|--|---|
| | -45.6 | -26.1 | -38.0 | -37.3 | Phase | -37.1 |
| | 0.5 | 0.4 | 0.3 | 0.5 | Ampl. | 0.4 |
| | 511.4 | 512.2 | 511.3 | 511.8 | Sbd box | 511.7 |
| U/L | 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 | | |
| m | Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |
| Group delay (usec)(sbd) | -9.00303356672E+03 | | Apriori delay (usec) | -9.00303093522E+03 | Resid mbdelay (usec) | -2.63150E-03 +/- 6.1E-05 |
| Sband delay (usec) | -9.00303346210E+03 | | Apriori clock (usec) | -8.0255947E+00 | Resid sbdelay (usec) | -2.52687E-03 +/- 2.4E-04 |
| Phase delay (usec) | -9.00303093762E+03 | | Apriori clockrate (us/s) | 1.9999998E-07 | Resid phdelay (usec) | -2.39548E-06 +/- 4.1E-07 |
| Delay rate (us/s) | 6.48840701062E-01 | | Apriori rate (us/s) | 6.48840708810E-01 | Resid rate (us/s) | -7.74851E-09 +/- 2.9E-09 |
| Total phase (deg) | | -199.8 | Apriori accel (us/s/s) | 4.24080921297E-05 | Resid phase (deg) | -37.1 +/- 6.3 |
| | RMS | Theor. | Amplitude | 0.429 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| ph/seg (deg) | 29.5 | 20.7 | Search (1024X16) | 0.417 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| amp/seg (%) | 31.4 | 36.1 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| ph/frq (deg) | 9.8 | 6.3 | Inc. seg. avg. | 0.450 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| amp/frq (%) | 13.7 | 11.0 | Inc. frq. avg. | 0.426 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| m: az 85.0 el 17.5 pa -72.4 | | | o: az 118.4 el 46.7 pa -45.1 | u,v (fr/asec) -1870.536 -844.623 | | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | | | Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/mo..1J2DGP | Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/mo.Q.192.1J2DGP | | |



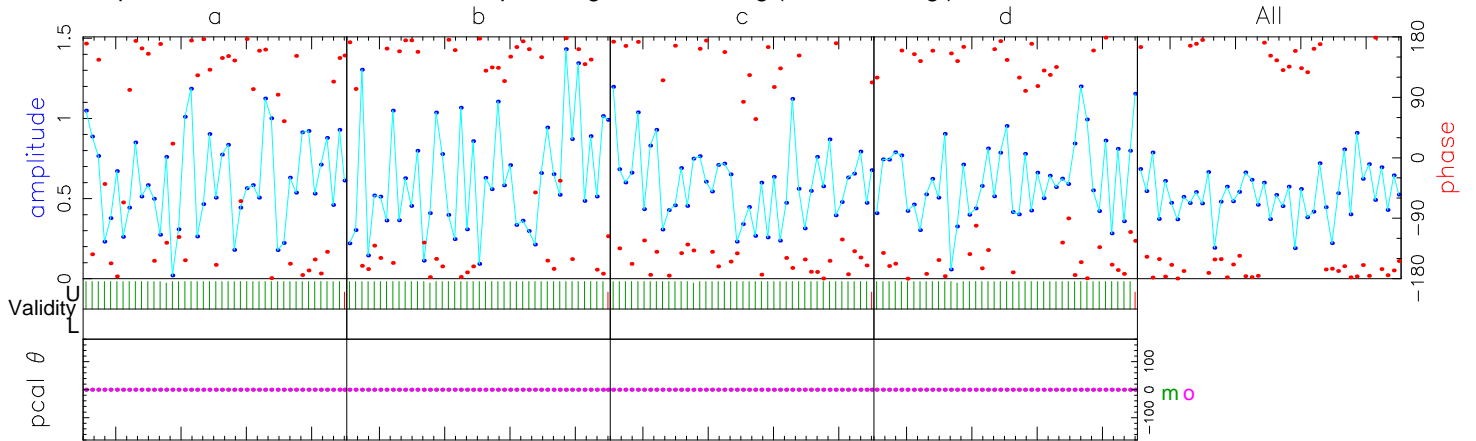
Fringe quality 9

SNR 21.3
Int time 239.713
Amp 0.503
Phase -178.9
PFD 0.0e+00
Delays (us)
SBD -0.004752
MBD 0.002880
Fringe rate (Hz)
-0.000581
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512



Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211502
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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

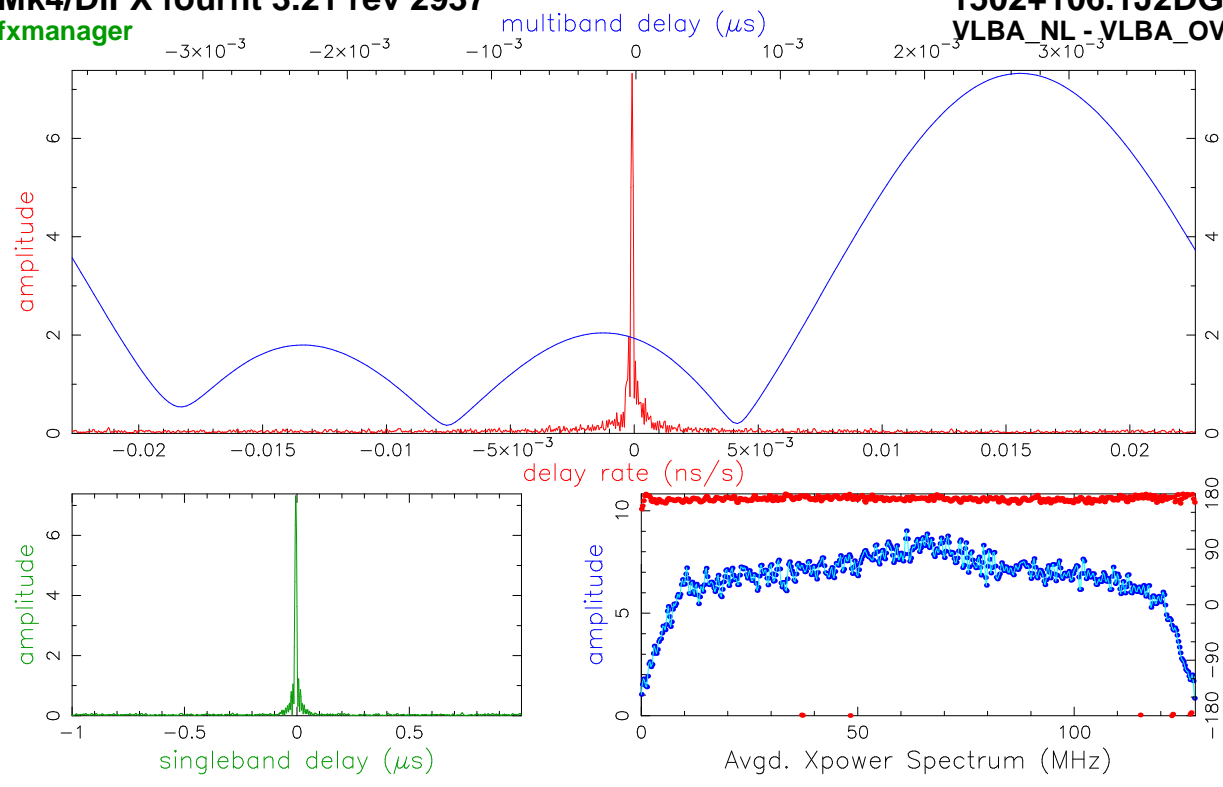


| 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----------|----------|----------|----------|------------|--------|
| 175.2 | 178.9 | -171.7 | -178.0 | Phase | -178.9 |
| 0.5 | 0.5 | 0.5 | 0.5 | Ampl. | 0.5 |
| 510.9 | 510.2 | 510.8 | 510.5 | Sbd box | 510.6 |
| U/L 469/0 | 469/0 | 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 | | |
| m Q00UR | Q01UR | Q02UR | Q03UR | Chan ids | |
| o Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |

| | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | -9.00303586775E+03 | Apriori delay (usec) | -9.00303093522E+03 | Resid mbdelay (usec) | 2.87997E-03 | +/- 5.2E-05 |
| Sband delay (usec) | -9.00303568760E+03 | Apriori clock (usec) | -8.0255947E+00 | Resid sbdelay (usec) | -4.75238E-03 | +/- 2.0E-04 |
| Phase delay (usec) | -9.00303094677E+03 | Apriori clockrate (us/s) | 1.9999998E-07 | Resid phdelay (usec) | -1.15455E-05 | +/- 3.5E-07 |
| Delay rate (us/s) | 6.48840695307E-01 | Apriori rate (us/s) | 6.48840708810E-01 | Resid rate (us/s) | -1.35032E-08 | +/- 2.5E-09 |
| Total phase (deg) | -341.6 | Apriori accel (us/s/s) | 4.24080921297E-05 | Resid phase (deg) | -178.9 | +/- 5.4 |

| | RMS | Theor. | Amplitude | 0.503 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|--------|-------|
| ph/seg (deg) | 22.2 | 17.6 | Search (1024X16) | 0.478 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | | mb window (us) | -0.004 | 0.004 |
| amp/seg (%) | 30.7 | 30.8 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled | dr window (ns/s) | -0.023 | 0.023 |
| ph/frq (deg) | 6.8 | 5.4 | Inc. seg. avg. | 0.506 | Sample rate(MISamp/s): 256 | | ion window (TEC) | 0.00 | 0.00 |
| amp/frq (%) | 3.2 | 9.4 | Inc. frq. avg. | 0.495 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | | |

m: az 85.0 el 17.5 pa -72.4 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) -1870.536 -844.623 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/mo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/mo.Q.208.1J2DGP

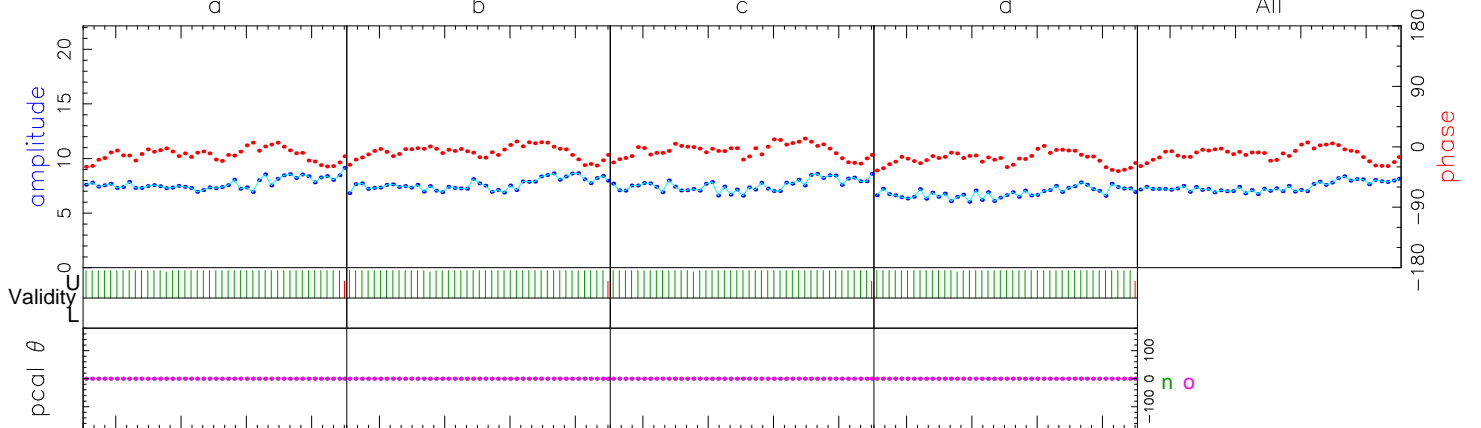


Fringe quality 9

SNR 312.7
Int time 239.711
Amp 7.386
Phase -10.7
PFD 0.0e+00
Delays (us)
SBD -0.005232
MBD 0.002696
Fringe rate (Hz)
-0.004341
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512

Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211457
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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 |
|-------------------------|--------------------|--------------------------|------------------------|----------------------|-------------------|---------------|
| | -11.8 | -7.9 | -5.8 | -18.2 | Phase | -10.7 |
| | 7.6 | 7.5 | 7.5 | 6.8 | Ampl. | 7.3 |
| | 510.4 | 510.4 | 510.3 | 510.1 | Sbd box | 510.3 |
| 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: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 | Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |
| Group delay (usec)(sbd) | 2.28625051241E+03 | Apriori delay (usec) | 2.28625562893E+03 | Resid mbdelay (usec) | 2.69598E-03 | +/- 3.6E-06 |
| Sband delay (usec) | 2.28625039693E+03 | Apriori clock (usec) | -2.1210781E+01 | Resid sbdelay (usec) | -5.23200E-03 | +/- 1.4E-05 |
| Phase delay (usec) | 2.28625562824E+03 | Apriori clockrate (us/s) | 6.0000003E-07 | Resid phdelay (usec) | -6.92730E-07 | +/- 2.4E-08 |
| Delay rate (us/s) | -5.28021827778E-01 | Apriori rate (us/s) | -5.28021726909E-01 | Resid rate (us/s) | -1.00870E-07 | +/- 1.7E-10 |
| Total phase (deg) | | 86.2 | Apriori accel (us/s/s) | -1.10247708693E-05 | Resid phase (deg) | -10.7 +/- 0.4 |

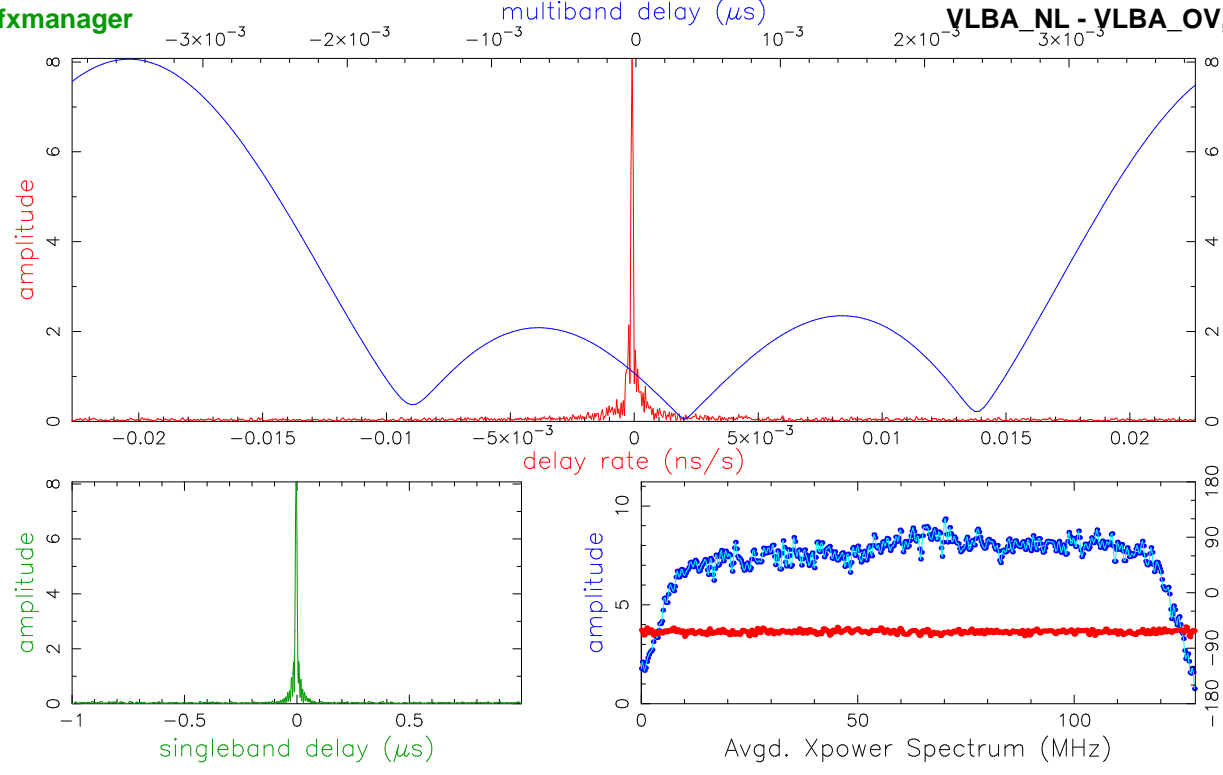
ph/seg (deg) 9.4 1.2 Amplitude 7.386 +/- 0.024 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5
amp/seg (%) 5.8 2.1 Search (1024X16) 6.966 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000
ph/frq (deg) 6.7 0.4 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.004 0.004
amp/frq (%) 4.6 0.6 Inc. seg. avg. 7.421 Sample rate(MISamp/s): 256 Data rate(Mb/s): 2048 nlags: 512 t_cohere infinite dr window (ns/s) -0.023 0.023
n: az 159.6 el 57.2 pa -15.1 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 1531.696 180.930 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/no..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/no.Q.159.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, no

VLBA_NL - VLBA_OV, fgroup Q, pol RR

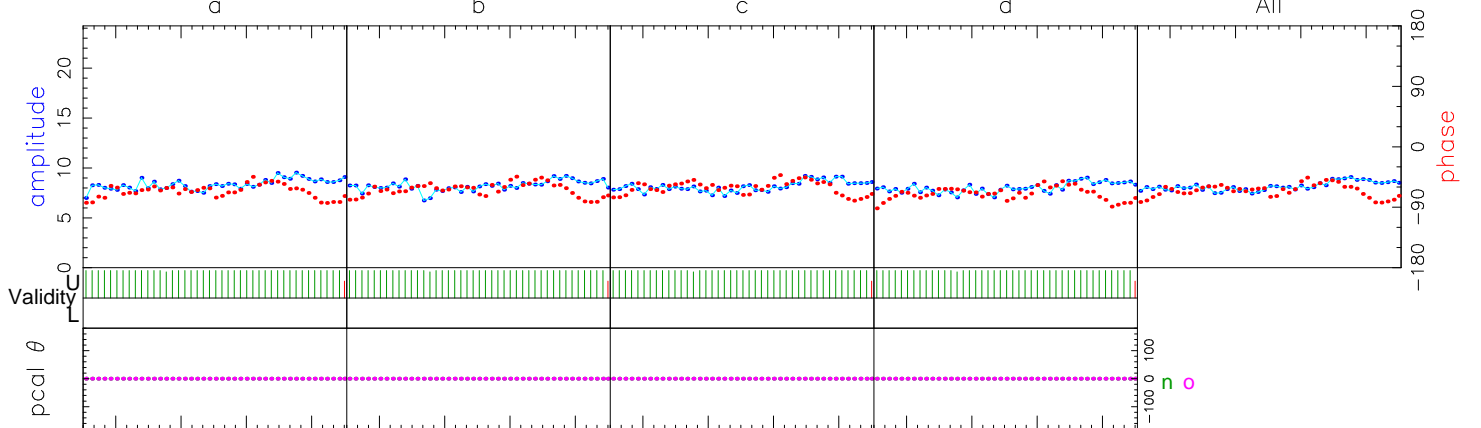


Fringe quality 9

SNR 342.1
 Int time 239.711
 Amp 8.080
 Phase -65.2
 PFD 0.0e+00
 Delays (us)
 SBD -0.003582
 MBD -0.003495
 Fringe rate (Hz)
 -0.004351
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211459
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 | | |
| n | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| n:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| n | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| n | Q00UR | Q01UR | Q02UR | Q03UR | | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | | |
| | | | | | Chan ids | |
| | | | | | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | 2.28625213388E+03 | Apriori delay (usec) | 2.28625562893E+03 | Resid mbdelay (usec) | -3.49505E-03 | +/- | 3.3E-06 |
| Sband delay (usec) | 2.28625204693E+03 | Apriori clock (usec) | -2.1210781E+01 | Resid sbdelay (usec) | -3.58200E-03 | +/- | 1.3E-05 |
| Phase delay (usec) | 2.28625562472E+03 | Apriori clockrate (us/s) | 6.0000003E-07 | Resid phdelay (usec) | -4.21100E-06 | +/- | 2.2E-08 |
| Delay rate (us/s) | -5.28021827997E-01 | Apriori rate (us/s) | -5.28021726909E-01 | Resid rate (us/s) | -1.01088E-07 | +/- | 1.6E-10 |
| Total phase (deg) | 31.7 | Apriori accel (us/s/s) | -1.10247708693E-05 | Resid phase (deg) | -65.2 | +/- | 0.3 |

| | | | | | | | | | | | |
|--------------|-----|------------------|-------|----------------|-----------------|------------------------|-----------------------------|----------------------|-------------------|------------------|-----------|
| ph/seg (deg) | 9.5 | Theor. | 1.1 | Amplitude | 8.080 +/- 0.024 | Pcal mode: | MANUAL, MANUAL | PC period (AP's) | 5, 5 | | |
| amp/seg (%) | 5.5 | Search (1024X16) | 7.805 | Search | 7.805 | Pcal rate: | 0.000E+00, 0.000E+00 (us/s) | sb window (us) | -1.000 1.000 | | |
| ph/frq (deg) | 4.8 | Inc. seg. avg. | 8.173 | Interp. | 0.000 | Bits/sample: | 2x2 | SampCntNorm: enabled | mb window (us) | -0.004 0.004 | |
| amp/frq (%) | 1.5 | Inc. frq. avg. | 8.075 | Inc. seg. avg. | 8.173 | Sample rate (MSamp/s): | 256 | dr window (ns/s) | -0.023 0.023 | | |
| | | | | Inc. frq. avg. | 8.075 | Data rate (Mb/s): | 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 0.00 |

n: az 159.6 el 57.2 pa -15.1 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 1531.696 180.930 simultaneous interpolator

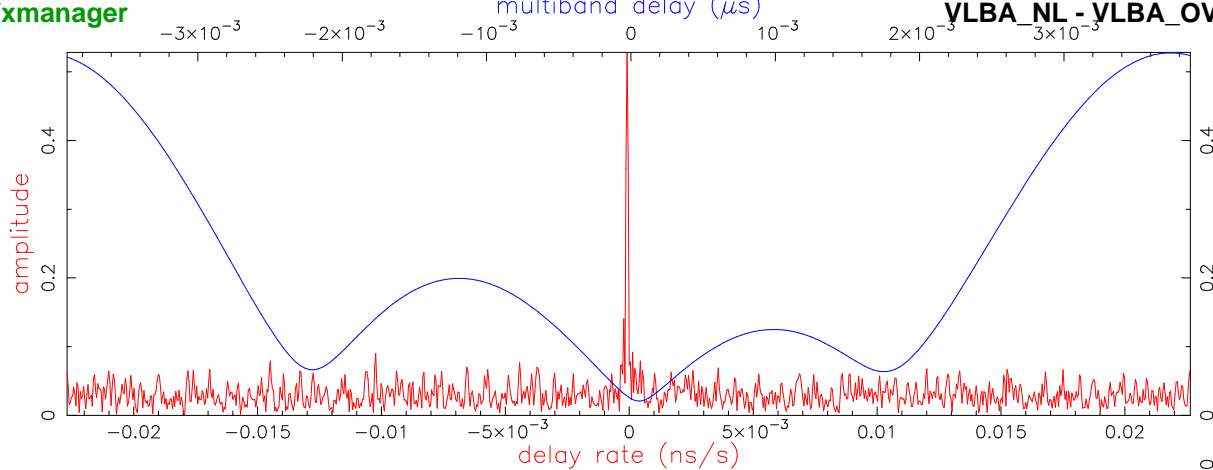
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/no..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/no.Q.177.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

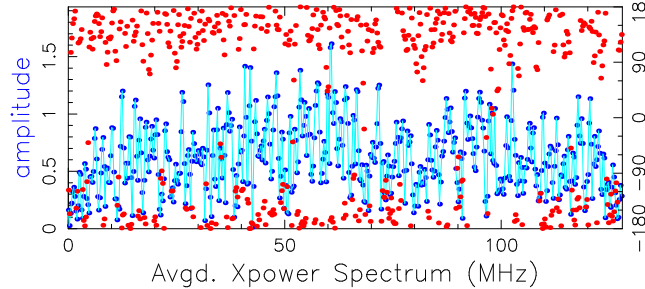
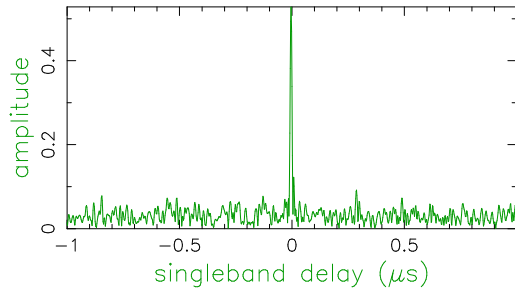
1502+106.1J2DGP, No0154, no

VLBA_NL - VLBA_OV, fgroup Q, pol LR



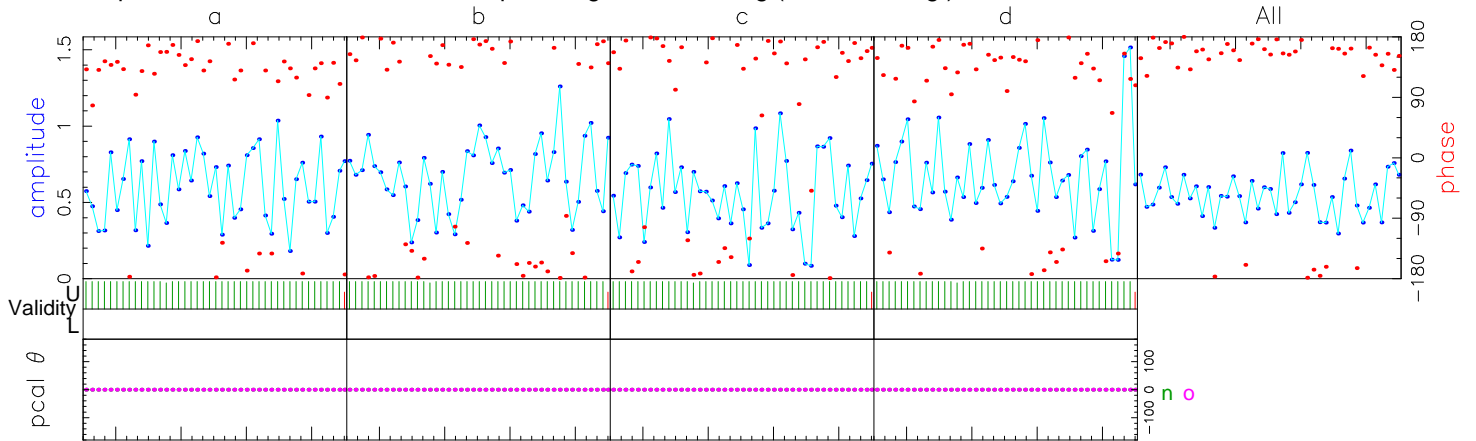
Fringe quality 8

SNR 22.4
 Int time 239.711
 Amp 0.528
 Phase 161.7
 PFD 0.0e+00
 Delays (us)
 SBD -0.004165
 MBD -0.004087
 Fringe rate (Hz)
 -0.004341
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512



Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211501
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 |
|-----------|----------|----------|----------|------------|-------|
| 147.9 | 176.8 | 165.8 | 155.2 | Phase | 161.7 |
| 0.5 | 0.6 | 0.5 | 0.6 | Ampl. | 0.5 |
| 511.0 | 511.0 | 510.5 | 510.8 | Sbd box | 510.9 |
| 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: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) | 2.28625154221E+03 | Apriori delay (usec) | 2.28625562893E+03 | Resid mbdelay (usec) | -4.08672E-03 | +/- 5.0E-05 |
| Sband delay (usec) | 2.28625146406E+03 | Apriori clock (usec) | -2.1210781E+01 | Resid sbdelay (usec) | -4.16488E-03 | +/- 1.9E-04 |
| Phase delay (usec) | 2.28625563937E+03 | Apriori clockrate (us/s) | 6.0000003E-07 | Resid phdelay (usec) | 1.04353E-05 | +/- 3.3E-07 |
| Delay rate (us/s) | -5.28021827761E-01 | Apriori rate (us/s) | -5.28021726909E-01 | Resid rate (us/s) | -1.00853E-07 | +/- 2.4E-09 |
| Total phase (deg) | 258.6 | Apriori accel (us/s/s) | -1.10247708693E-05 | Resid phase (deg) | 161.7 | +/- 5.1 |

| | | | | | | | | | | | |
|--------------|----------|-------------|----------------------------|-----------------|-------|--|----------------------------|-------------------|------------------|-------|------|
| ph/seg (deg) | RMS 19.1 | Theor. 16.8 | Amplitude Search (1024X16) | 0.528 +/- 0.024 | 0.507 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 | |
| amp/seg (%) | 26.6 | 29.3 | Interp. | 0.000 | 0.000 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 | |
| ph/frq (deg) | 15.5 | 5.1 | Inc. seg. avg. | 0.531 | 0.531 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 | |
| amp/frq (%) | 8.1 | 8.9 | Inc. frq. avg. | 0.536 | 0.536 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 | 0.00 |

n: az 159.6 el 57.2 pa -15.1 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 1531.696 180.930 simultaneous interpolator

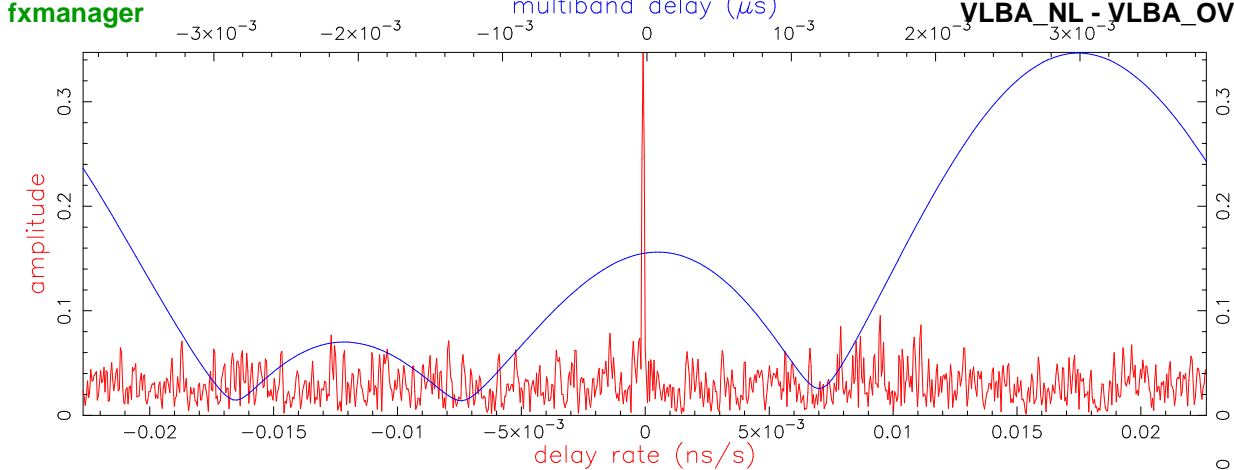
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/no..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/no.Q.195.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

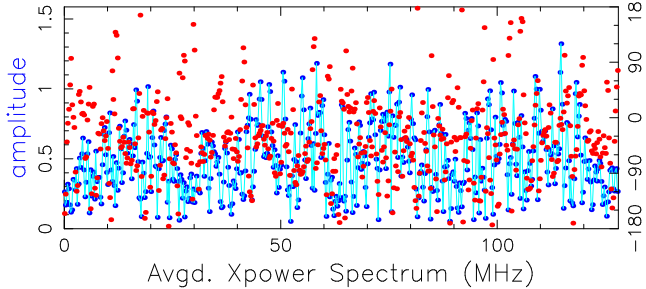
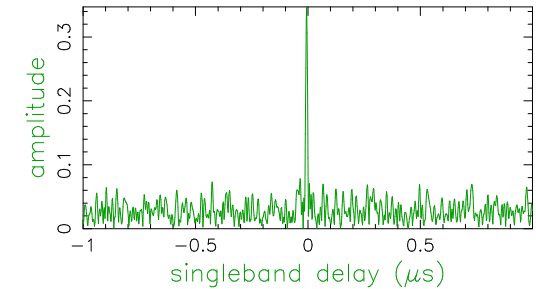
1502+106.1J2DGP, No0154, no

VLBA_NL - VLBA_OV, fgroup Q, pol RL



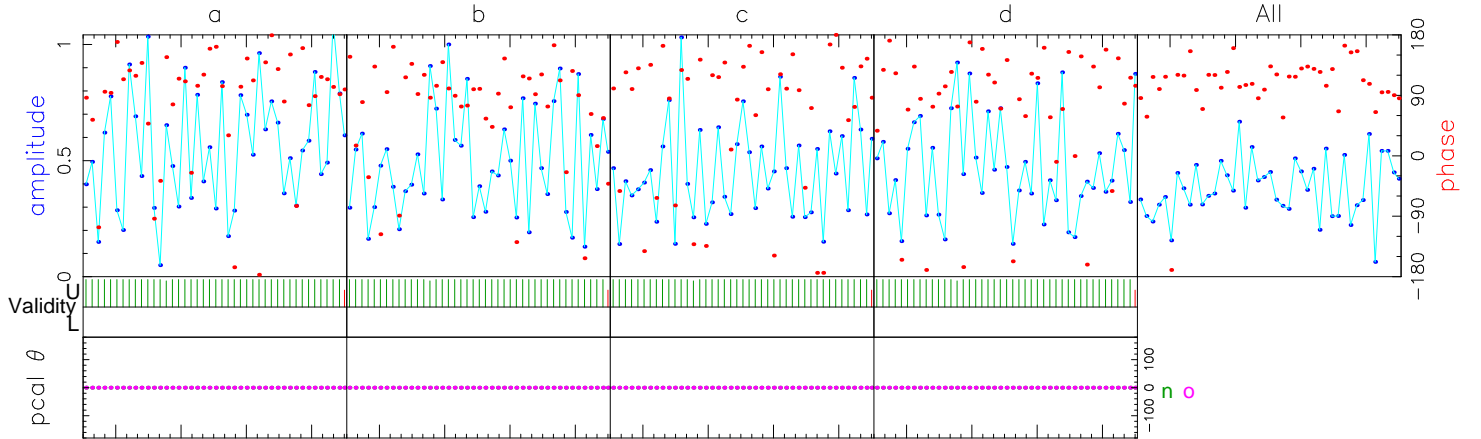
Fringe quality 9

SNR 14.7
 Int time 239.711
 Amp 0.347
 Phase 112.3
 PFD 2.0e-40
 Delays (us)
 SBD -0.006162
 MBD 0.002967
 Fringe rate (Hz)
 -0.004459
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512



Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211502
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 | | |
| n | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| n:o | 0:0 | 0:0 | 0:0 | 0:0 | | |
| n | 1000 | 1000 | 1000 | 1000 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| n | Q00UR | Q01UR | Q02UR | Q03UR | | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | | |

| | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | 2.28625078385E+03 | Apriori delay (usec) | 2.28625562893E+03 | Resid mbdelay (usec) | 2.96742E-03 | +/- 7.6E-05 |
| Sband delay (usec) | 2.28624946706E+03 | Apriori clock (usec) | -2.1210781E+01 | Resid sbdelay (usec) | -6.16188E-03 | +/- 2.9E-04 |
| Phase delay (usec) | 2.28625563618E+03 | Apriori clockrate (us/s) | 6.0000003E-07 | Resid phdelay (usec) | 7.24564E-06 | +/- 5.0E-07 |
| Delay rate (us/s) | -5.28021830507E-01 | Apriori rate (us/s) | -5.28021726909E-01 | Resid rate (us/s) | -1.03598E-07 | +/- 3.6E-09 |
| Total phase (deg) | 209.2 | Apriori accel (us/s/s) | -1.10247708693E-05 | Resid phase (deg) | 112.3 | +/- 7.8 |

| | RMS | Theor. | Amplitude | 0.347 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
|--------------|------|--------|------------------|-----------------|--|---|
| ph/seg (deg) | 28.7 | 25.6 | Search (1024X16) | 0.333 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| amp/seg (%) | 37.4 | 44.6 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| ph/frq (deg) | 15.9 | 7.8 | Inc. seg. avg. | 0.347 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| amp/frq (%) | 10.9 | 13.6 | Inc. frq. avg. | 0.350 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

n: az 159.6 el 57.2 pa -15.1 o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 1531.696 180.930 simultaneous interpolator

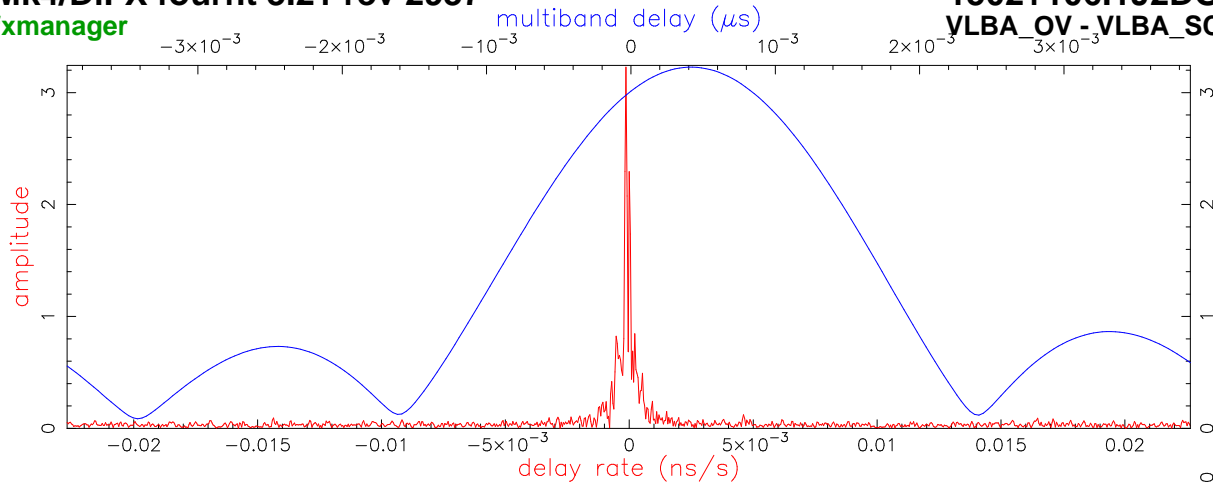
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/no..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/no.Q.211.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

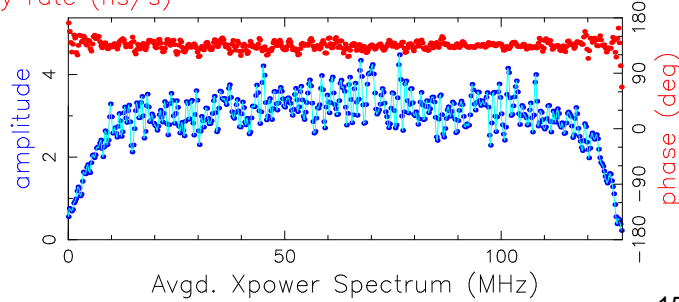
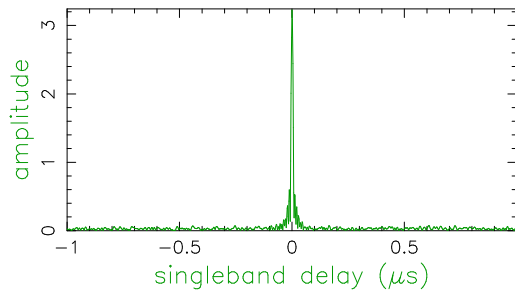
1502+106.1J2DGP, No0154, oc

VLBA_OV - VLBA_SC, fgroup Q, pol LL



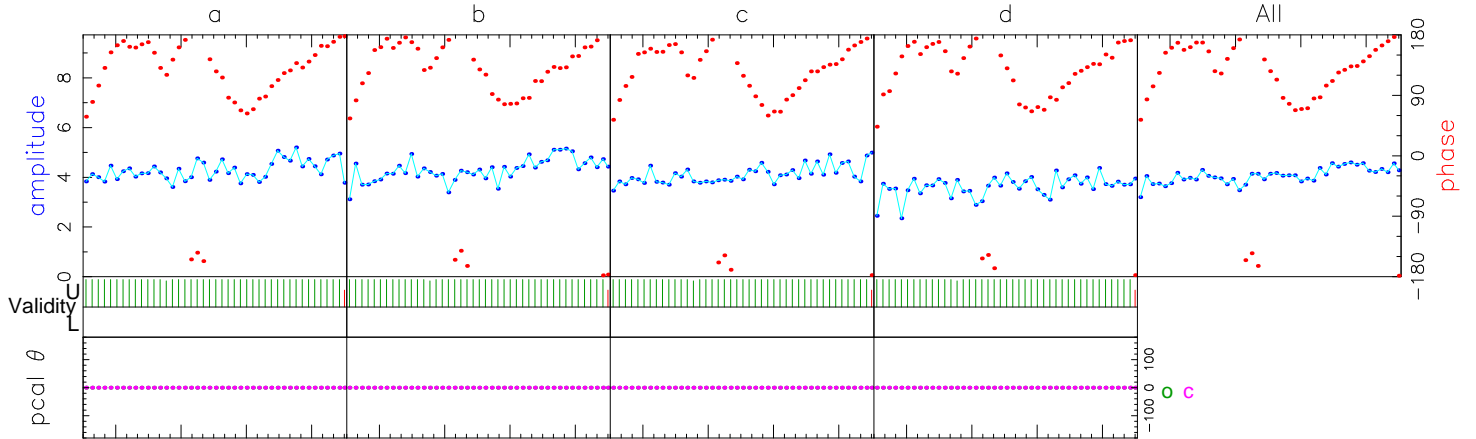
Fringe quality 6

SNR 137.3
 Int time 239.704
 Amp 3.244
 Phase 135.5
 PFD 0.0e+00
 Delays (us)
 SBD 0.000466
 MBD 0.000445
 Fringe rate (Hz)
 -0.006338
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512



Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211458
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 | | |
| o | 1000 | 1000 | 1000 | 1000 | APs used | |
| c | 1000 | 1000 | 1000 | 1000 | PC freqs | |
| o:c | 0:0 | 0:0 | 0:0 | 0:0 | PC freqs | |
| o:c | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | |
| o | 1000 | 1000 | 1000 | 1000 | Manl PC | |
| c | 1000 | 1000 | 1000 | 1000 | PC amp | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| c | Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |

| | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | -4.65001551815E+03 | Apriori delay (usec) | -4.65001596354E+03 | Resid mbdelay (usec) | 4.45393E-04 | +/- 8.1E-06 |
| Sband delay (usec) | -4.65001549779E+03 | Apriori clock (usec) | 1.2877782E+01 | Resid sbdelay (usec) | 4.65750E-04 | +/- 3.1E-05 |
| Phase delay (usec) | -4.65001595480E+03 | Apriori clockrate (us/s) | -6.0000003E-07 | Resid phdelay (usec) | 8.74425E-06 | +/- 5.4E-08 |
| Delay rate (us/s) | 1.14855559067E+00 | Apriori rate (us/s) | 1.14855573794E+00 | Resid rate (us/s) | -1.47264E-07 | +/- 3.9E-10 |
| Total phase (deg) | 109.9 | Apriori accel (us/s/s) | 3.09079315136E-05 | Resid phase (deg) | 135.5 | +/- 0.8 |

| | RMS | Theor. | Amplitude | 3.244 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
|--------------|------|--------|------------------|-----------------|--|---|
| ph/seg (deg) | 39.2 | 2.7 | Search (1024X16) | 3.092 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| amp/seg (%) | 27.3 | 4.8 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| ph/frq (deg) | 3.1 | 0.8 | Inc. seg. avg. | 4.069 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| amp/frq (%) | 7.1 | 1.5 | Inc. frq. avg. | 3.229 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

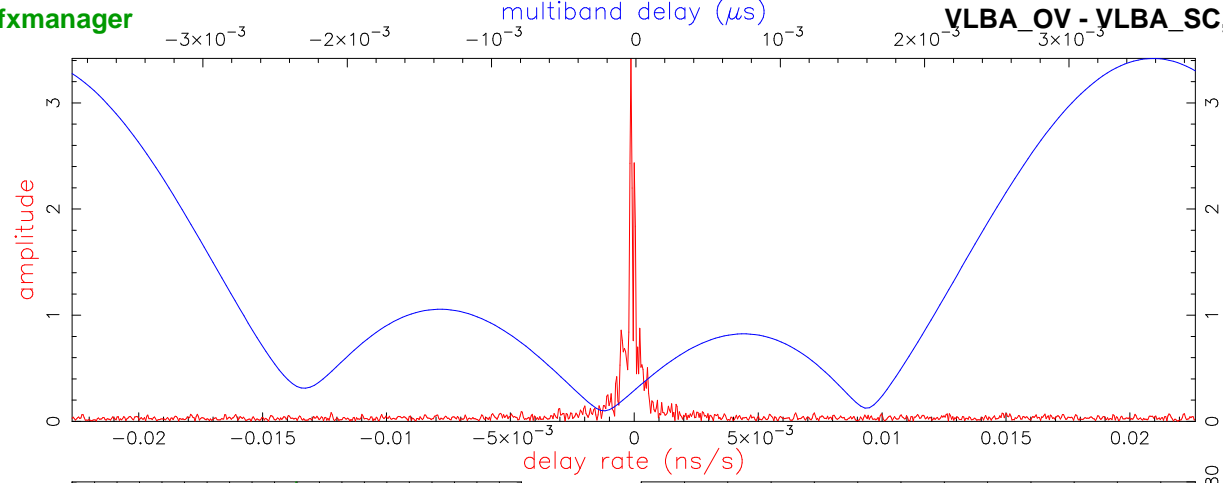
o: az 118.4 el 46.7 pa -45.1 c: az 246.7 el 72.9 pa 62.7 u,v (fr/asec) -3325.909 1539.236 simultaneous interpolator
 Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/oc..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/oc.Q.171.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, oc

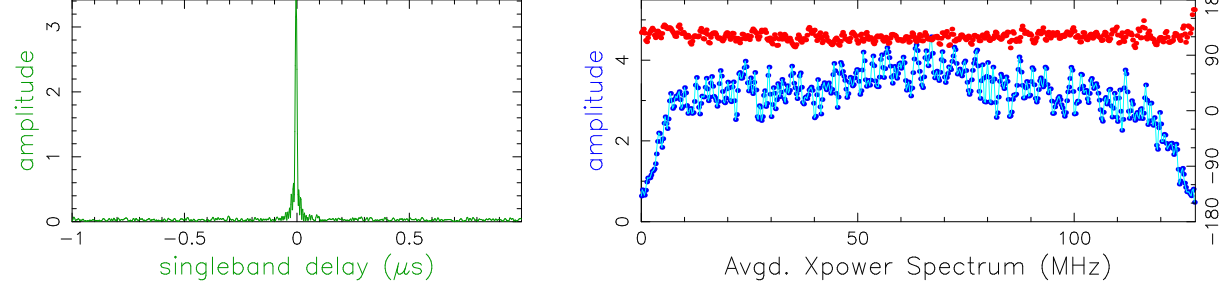
VLBA_OV - VLBA_SC, fgroup Q, pol RR



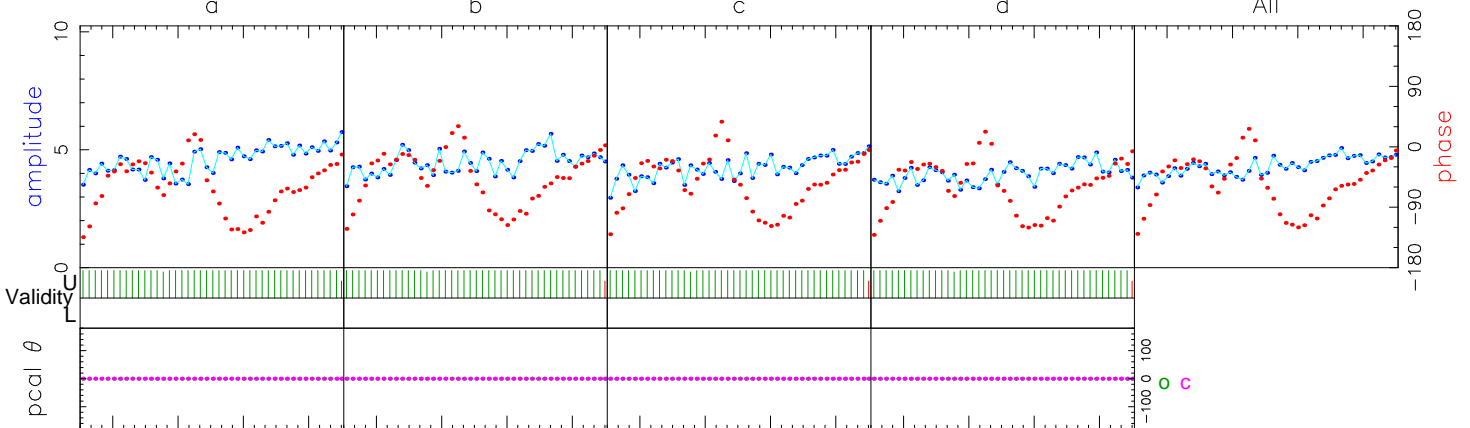
Fringe quality 6

SNR 144.8
 Int time 239.704
 Amp 3.419
 Phase -53.9
 PFD 0.0e+00
 Delays (us)
 SBD -0.003974
 MBD 0.003581
 Fringe rate (Hz)
 -0.006304
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211500
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"



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 | | |
| o | 1000 | 1000 | 1000 | 1000 | APs used | |
| 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 | Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |

| | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | -4.65002019550E+03 | Apriori delay (usec) | -4.65001596354E+03 | Resid mbdelay (usec) | 3.58055E-03 | +/- 7.7E-06 |
| Sband delay (usec) | -4.65001993742E+03 | Apriori clock (usec) | 1.2877782E+01 | Resid sbdelay (usec) | -3.97388E-03 | +/- 3.0E-05 |
| Phase delay (usec) | -4.65001596702E+03 | Apriori clockrate (us/s) | -6.0000003E-07 | Resid phdelay (usec) | -3.47851E-06 | +/- 5.1E-08 |
| Delay rate (us/s) | 1.1485559146E+00 | Apriori rate (us/s) | 1.14855573794E+00 | Resid rate (us/s) | -1.46476E-07 | +/- 3.7E-10 |
| Total phase (deg) | -79.4 | Apriori accel (us/s/s) | 3.09079315136E-05 | Resid phase (deg) | -53.9 | +/- 0.8 |

| | | | | | | | |
|--------------|------|--------|-----|------------------|-----------------|--|-------------------------------|
| ph/seg (deg) | 38.8 | Theor. | 2.6 | Amplitude | 3.419 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| amp/seg (%) | 28.1 | | 4.5 | Search (1024X16) | 3.247 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| ph/frq (deg) | 8.1 | | 0.8 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled |
| amp/frq (%) | 4.9 | | 1.4 | Inc. seg. avg. | 4.297 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| | | | | Inc. frq. avg. | 3.436 | Data rate(Mb/s): 2048 | ion window (TEC) 0.00 0.00 |

o: az 118.4 el 46.7 pa -45.1 c: az 246.7 el 72.9 pa 62.7 u,v (fr/asec) -3325.909 1539.236 simultaneous interpolator

Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/oc..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/oc.Q.188.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

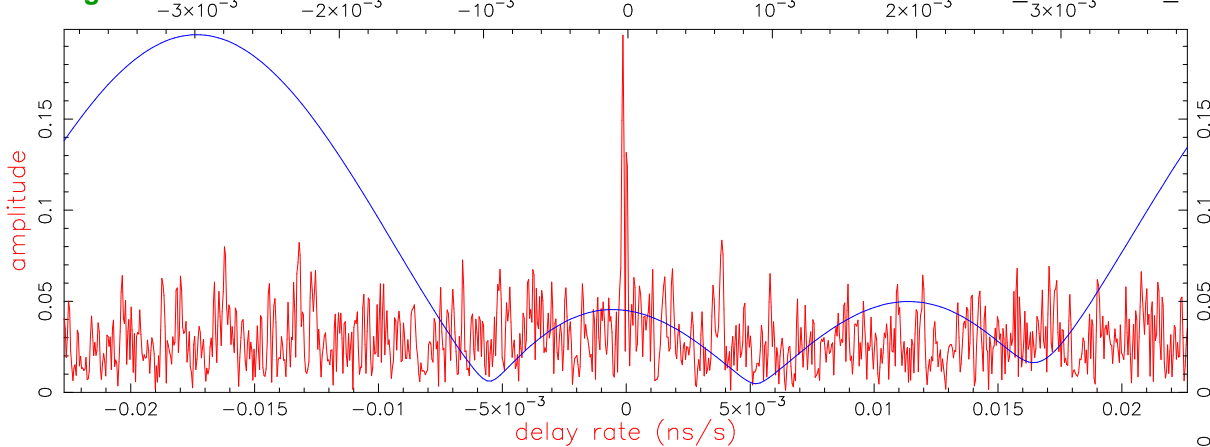
fxmanager

1502+106.1J2DGP, No0154, oc

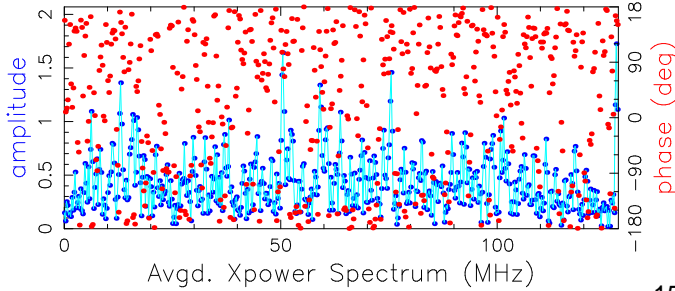
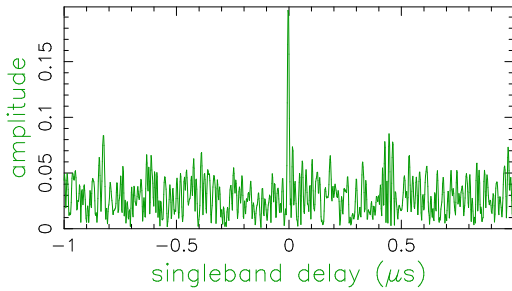
VLBA_OV - VLBA_SC, fgroup Q, pol LR

multiband delay (μ s)

Fringe quality 9

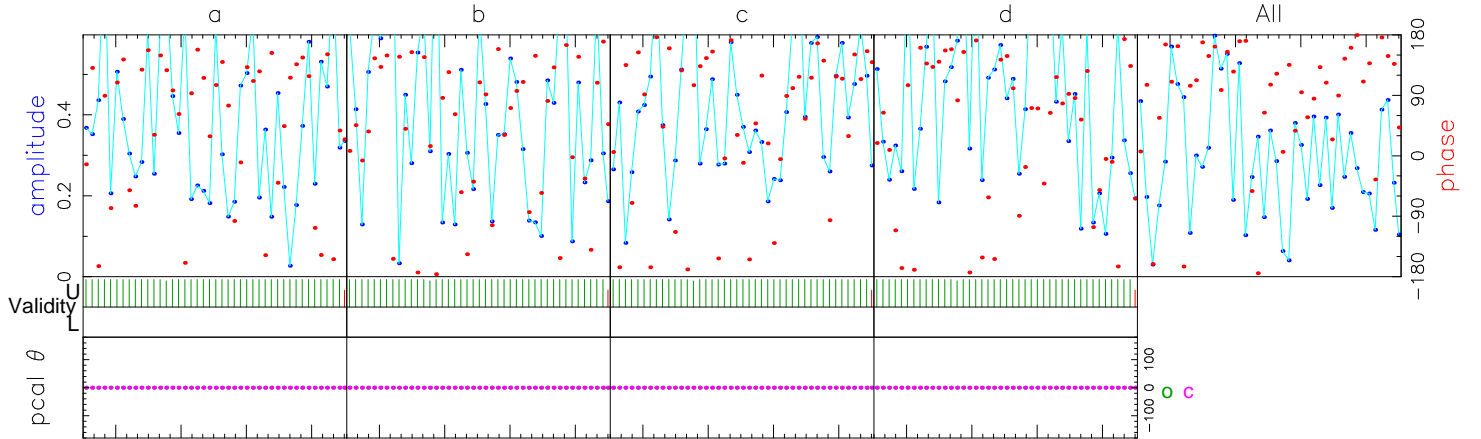


SNR 8.4
 Int time 239.704
 Amp 0.199
 Phase 129.8
 PFD 5.9e-09
 Delays (us)
 SBD -0.003083
 MBD -0.002930
 Fringe rate (Hz)
 -0.006626
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512



Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211502
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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

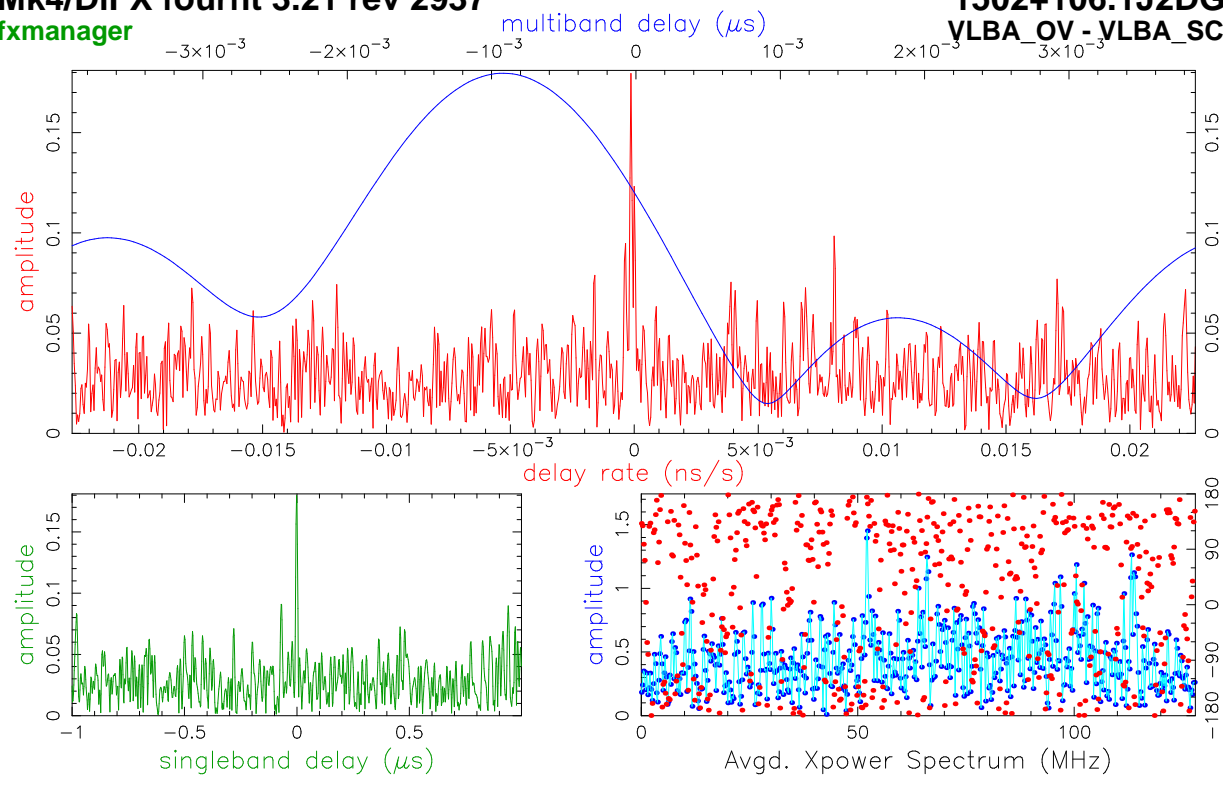


| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 469/0 | 469/0 | 469/0 | 469/0 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| c | 1000 | 1000 | 1000 | 1000 | | |
| o:c | 0:0 | 0:0 | 0:0 | 0:0 | | |
| o:c |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

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -4.65001889386E+03 | Apriori delay (usec) | -4.65001596354E+03 | Resid mbdelay (usec) | -2.93032E-03 | +/- | 1.3E-04 |
| Sband delay (usec) | -4.65001904692E+03 | Apriori clock (usec) | 1.2877782E+01 | Resid sbdelay (usec) | -3.08338E-03 | +/- | 5.1E-04 |
| Phase delay (usec) | -4.65001595516E+03 | Apriori clockrate (us/s) | -6.0000003E-07 | Resid phdelay (usec) | 8.37947E-06 | +/- | 8.8E-07 |
| Delay rate (us/s) | 1.1485558400E+00 | Apriori rate (us/s) | 1.14855573794E+00 | Resid rate (us/s) | -1.53941E-07 | +/- | 6.3E-09 |
| Total phase (deg) | 104.3 | Apriori accel (us/s/s) | 3.09079315136E-05 | Resid phase (deg) | 129.8 | +/- | 13.6 |

| | | | | | | | | | | |
|--------------|----------|-------------|----------------------------|-----------------|--|----------------------------|-------------------|------------------|-------|------|
| ph/seg (deg) | RMS 62.4 | Theor. 44.5 | Amplitude Search (1024X16) | 0.199 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 | |
| amp/seg (%) | 88.1 | 77.7 | Interp. | 0.000 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 | |
| ph/frq (deg) | 5.1 | 13.6 | Inc. seg. avg. | 0.227 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 | |
| amp/frq (%) | 9.8 | 23.7 | Inc. frq. avg. | 0.191 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 | 0.00 |

o: az 118.4 el 46.7 pa -45.1 c: az 246.7 el 72.9 pa 62.7 u,v (fr/asec) -3325.909 1539.236 simultaneous interpolator
 Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/oc..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/oc.Q.205.1J2DGP

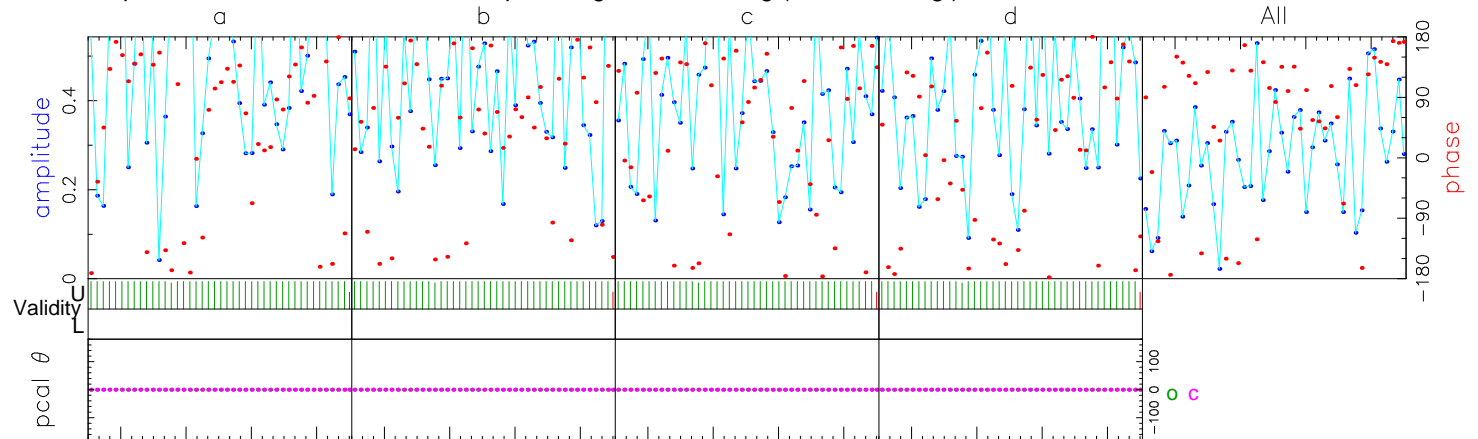


Fringe quality 9

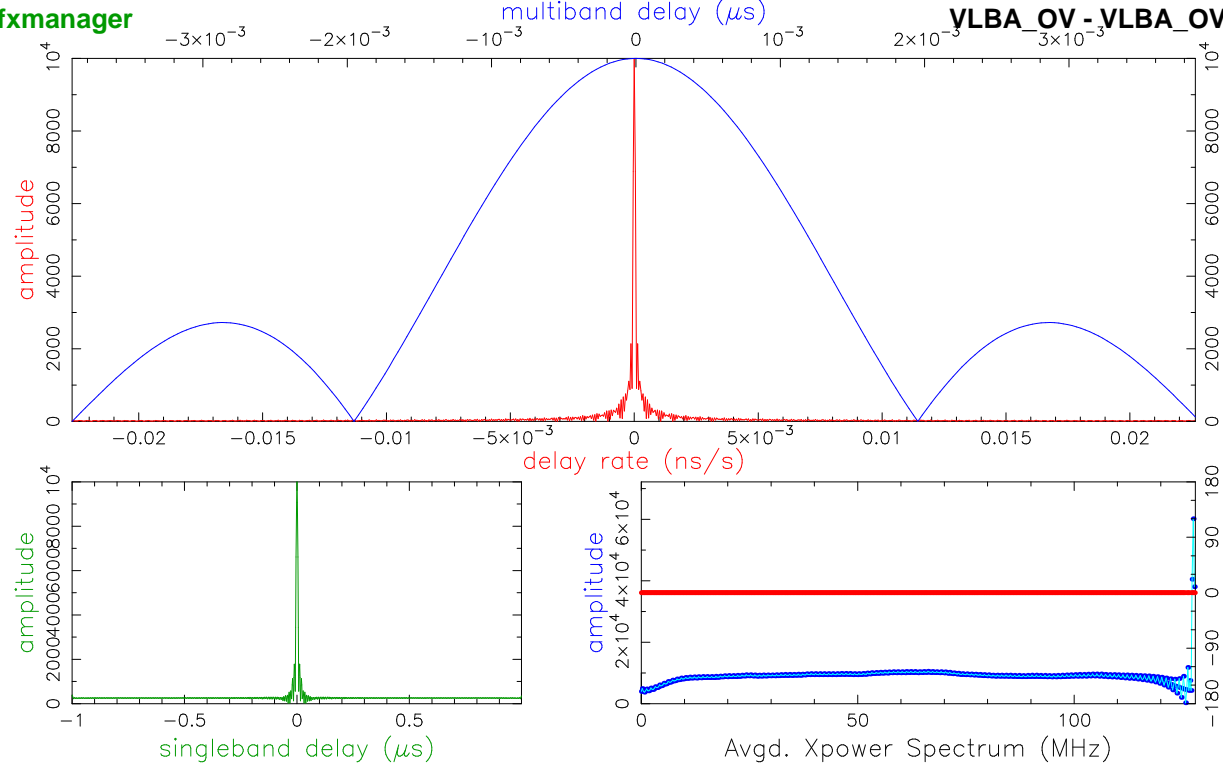
SNR 7.7
Int time 239.704
Amp 0.181
Phase 130.7
PFD 2.9e-06
Delays (us)
SBD -0.001343
MBD -0.000883
Fringe rate (Hz)
-0.006428
Ion TEC 0.000
Ref freq (MHz)
43040.0000
AP (sec) 0.512

Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211503
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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

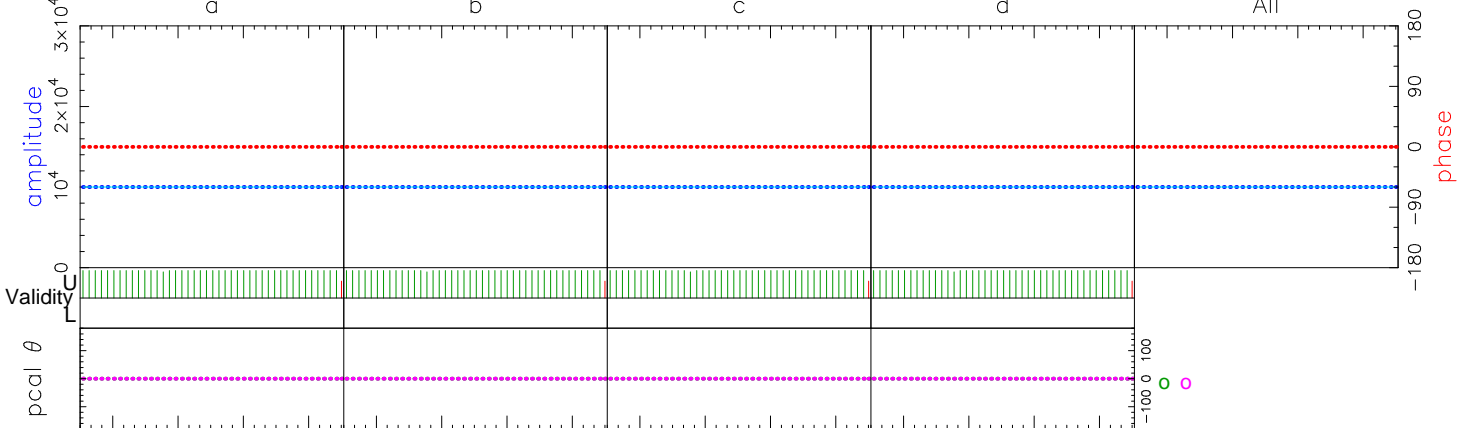


| 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-------------------------------|--|--|--------------------|--|---|
| 142.0 | 109.8 | 131.8 | 134.9 | Phase | 130.7 |
| 0.3 | 0.2 | 0.1 | 0.2 | Ampl. | 0.2 |
| 512.3 | 758.8 | 476.5 | 511.9 | Sbd box | 512.3 |
| U/L 469/0 | 469/0 | 469/0 | 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 | |
| c Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | Chan ids | |
| | | | | Tracks | |
| Group delay (usec)(sbd) | -4.65001684631E+03 | Apriori delay (usec) | -4.65001596354E+03 | Resid mbdelay (usec) | -8.82763E-04 +/- 1.5E-04 |
| Sband delay (usec) | -4.65001730629E+03 | Apriori clock (usec) | 1.2877782E+01 | Resid sbdelay (usec) | -1.34275E-03 +/- 5.6E-04 |
| Phase delay (usec) | -4.65001595511E+03 | Apriori clockrate (us/s) | -6.0000003E-07 | Resid phdelay (usec) | 8.43489E-06 +/- 9.6E-07 |
| Delay rate (us/s) | 1.1485558858E+00 | Apriori rate (us/s) | 1.14855573794E+00 | Resid rate (us/s) | -1.49355E-07 +/- 7.0E-09 |
| Total phase (deg) | 105.2 | Apriori accel (us/s/s) | 3.09079315136E-05 | Resid phase (deg) | 130.7 +/- 14.9 |
| RMS | Theor. | Amplitude | 0.181 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| 62.0 | 49.0 | Search (1024X16) | 0.170 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| 86.5 | 85.5 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| 17.1 | 14.9 | Inc. seg. avg. | 0.206 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| 34.6 | 26.1 | Inc. frq. avg. | 0.178 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |
| o: az 118.4 el 46.7 pa -45.1 | c: az 246.7 el 72.9 pa 62.7 | u,v (fr/asec) | -3325.909 1539.236 | | simultaneous interpolator |
| Control file: cf_1234_gmva7mm | Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/oc..1J2DGP | Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/oc.Q.219.1J2DGP | | | |



Fringe quality 9
SNR 423392.7
Int time 239.713
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. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211457
2020:247:085004
RA & Dec (J2000) 15h04m24.979782s +10°29'39.198559"

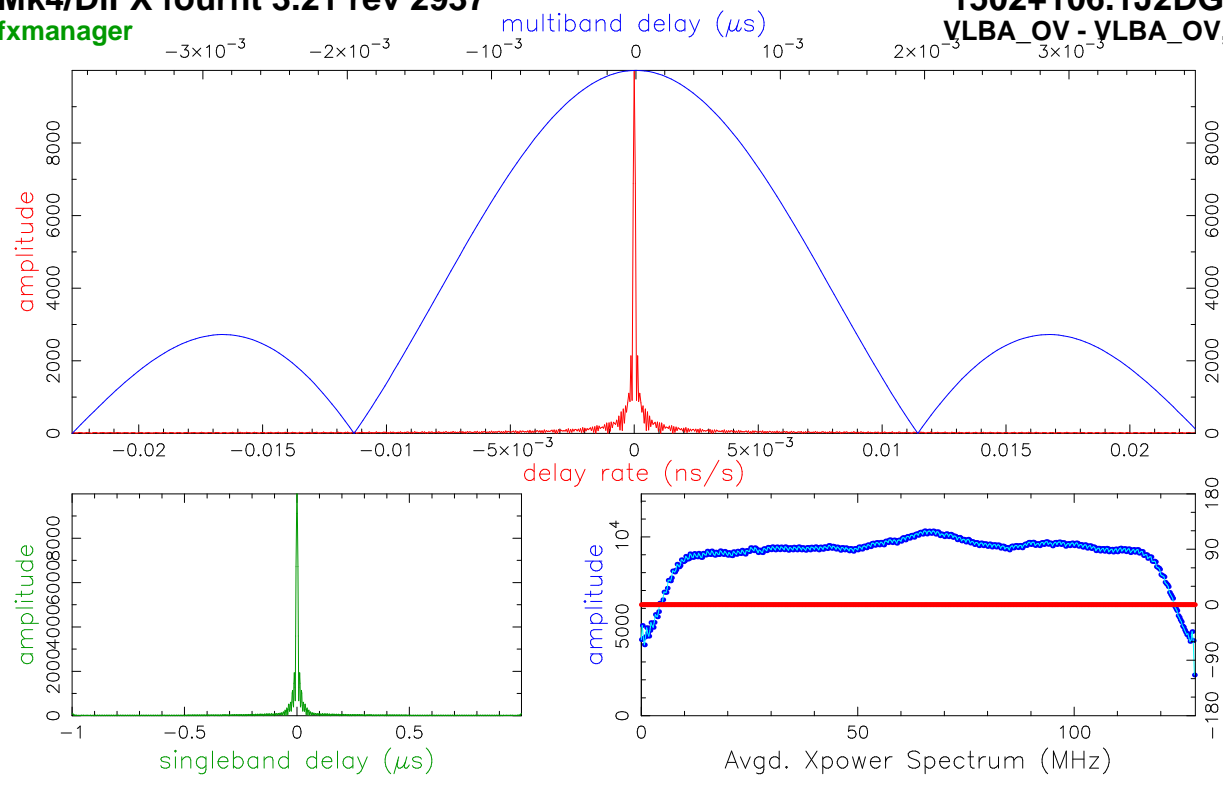
Amp. and Phase vs. time for each freq., 43 segs, 11 APs / seg (5.63 sec / seg.), time ticks 10 sec



| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 469/0 | 469/0 | 469/0 | 469/0 | | |
| o | 1000 | 1000 | 1000 | 1000 | APs used | |
| o:0 | 0:0 | 0:0 | 0:0 | 0:0 | PC freqs | |
| o:0 | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | |
| o | 1000 | 1000 | 1000 | 1000 | Manl PC | |
| o | 1000 | 1000 | 1000 | 1000 | PC amp | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | Chan ids | |
| o | Q00UL | Q01UL | Q02UL | 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) | 0.0000000E+00 | Resid sbdelay (usec) | 0.000000E+00 | +/- 1.0E-08 |
| Phase delay (usec) | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.0000000E+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(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| amp/frq (%) | 0.0 | 0.0 | Inc. frq. avg. | 10000.001 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

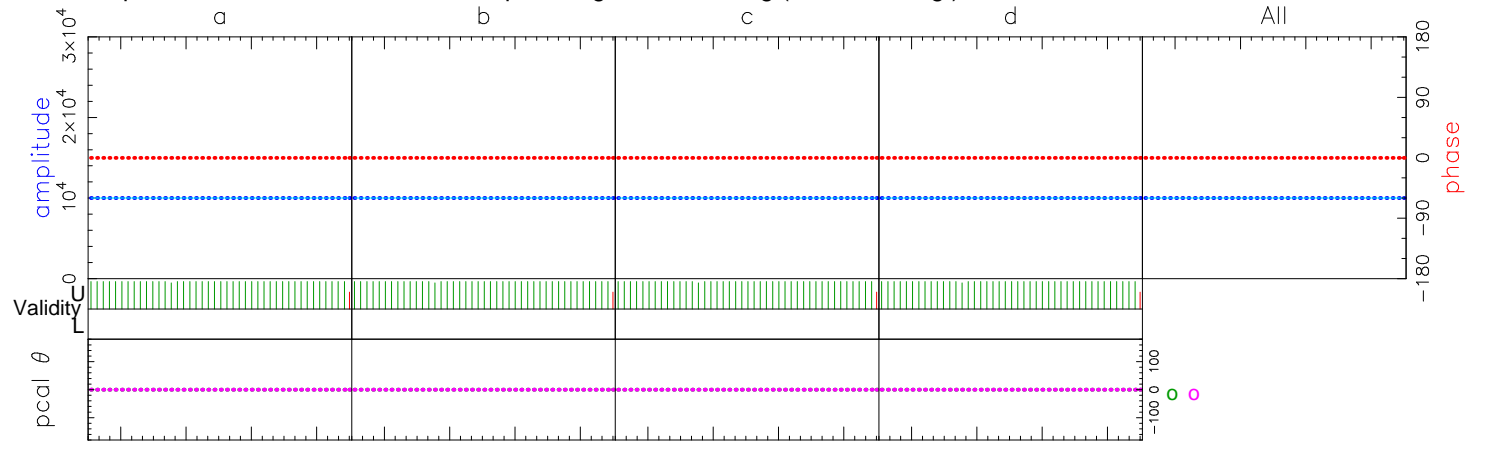


Fringe quality 9

SNR 423392.8
Int time 239.713
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. c202b
Yr:day 16383
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211459
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"

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 | | |
| o | 1000 | 1000 | 1000 | 1000 | APs used | |
| o:0 | 0:0 | 0:0 | 0:0 | 0:0 | PC freqs | |
| o:0 | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | |
| o | 1000 | 1000 | 1000 | 1000 | ManI PC | |
| o | 1000 | 1000 | 1000 | 1000 | PC amp | |
| o | Q00UR | Q01UR | Q02UR | Q03UR | Chan ids | |
| o | Q00UR | Q01UR | Q02UR | 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) | 0.0000000E+00 | Resid sbdelay (usec) | 0.000000E+00 | +/- 1.0E-08 |
| Phase delay (usec) | 0.000000000000E+00 | Apriori clockrate (us/s) | 0.0000000E+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 |

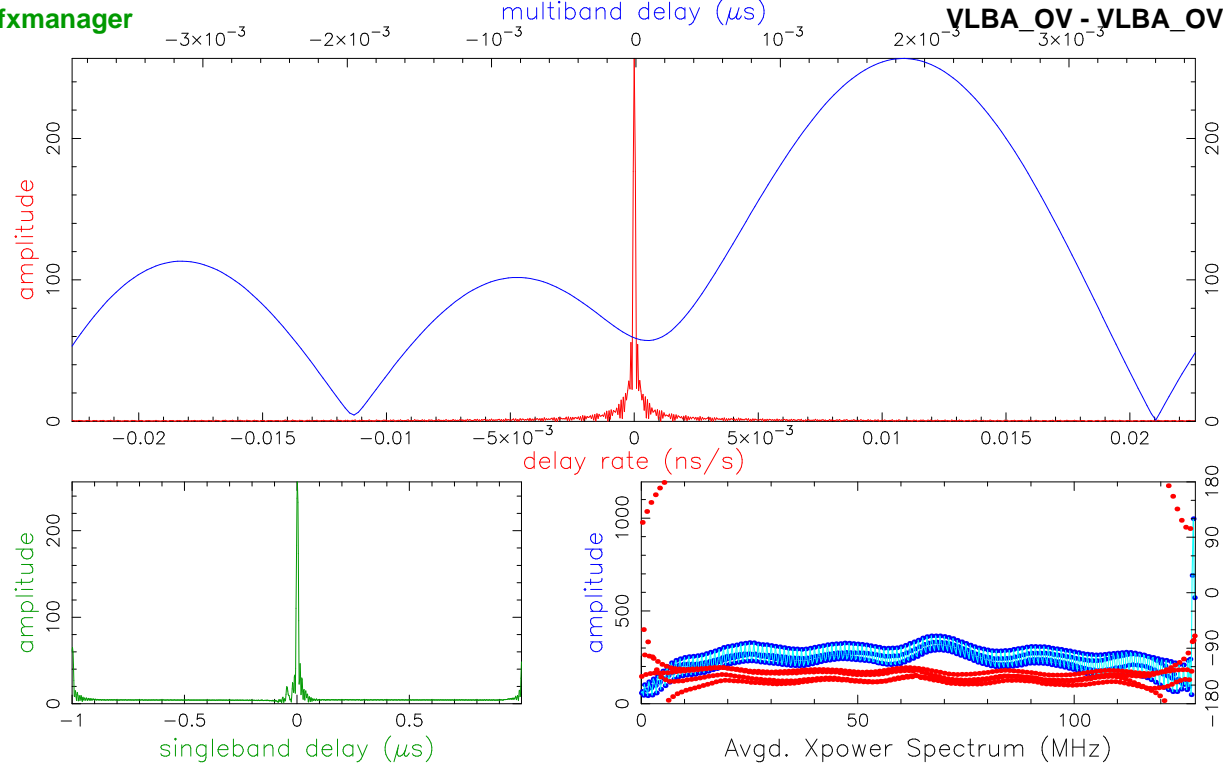
ph/seg (deg) 0.0 0.0 Search (1024X16) 10000.000 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5
amp/seg (%) 0.0 0.0 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000
ph/frq (deg) 0.0 0.0 Inc. seg. avg. 10000.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.004 0.004
amp/frq (%) 0.0 0.0 Inc. frq. avg. 10000.000 Data rate(Mb/s): 2048 nlags: 512 t_cohere infinite dr window (ns/s) -0.023 0.023
o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/oo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/oo.Q.182.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, oo

VLBA_OV - VLBA_OV, fgroup Q, pol LR

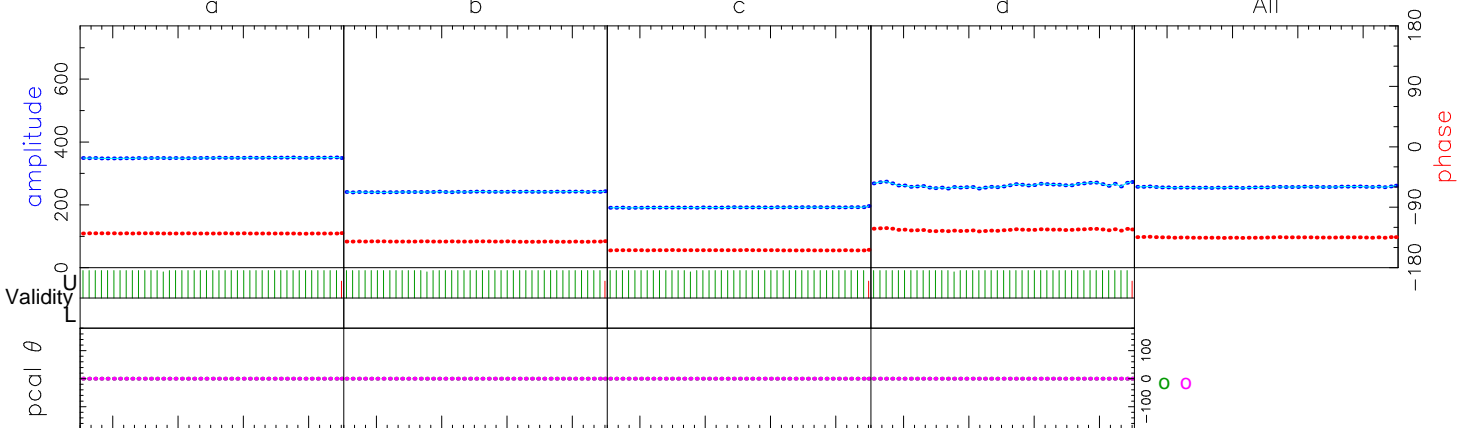


Fringe quality 7

SNR 10864.1
 Int time 239.713
 Amp 256.597
 Phase -134.9
 PFD 0.0e+00
 Delays (us)
 SBD 0.001852
 MBD 0.001849
 Fringe rate (Hz) 0.000008
 Ion TEC 0.000
 Ref freq (MHz) 43040.0000
 AP (sec) 0.512

Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211501
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 |
|-----|----------|----------|----------|----------|------------|--------|
| | -128.9 | -141.0 | -154.0 | -123.6 | Phase | -134.9 |
| | 349.4 | 241.4 | 192.0 | 262.2 | Ampl. | 261.2 |
| | 513.8 | 513.9 | 513.6 | 514.2 | Sbd box | 513.9 |
| 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:o | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | |
| o:o | 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) | 1.84881250000E-03 | Apriori delay (usec) | 0.00000000000E+00 | Resid mbdelay (usec) | 1.84881E-03 | +/- | 1.0E-07 |
| Sband delay (usec) | 1.85212500000E-03 | Apriori clock (usec) | 0.0000000E+00 | Resid sbdelay (usec) | 1.85213E-03 | +/- | 4.0E-07 |
| Phase delay (usec) | -8.70863128105E-06 | Apriori clockrate (us/s) | 0.0000000E+00 | Resid phdelay (usec) | -8.70863E-06 | +/- | 6.8E-10 |
| Delay rate (us/s) | 1.92862008730E-10 | Apriori rate (us/s) | 0.00000000000E+00 | Resid rate (us/s) | 1.92862E-10 | +/- | 4.9E-12 |
| Total phase (deg) | -134.9 | Apriori accel (us/s/s) | 0.00000000000E+00 | Resid phase (deg) | -134.9 | +/- | 0.0 |

| | | | | | | | |
|--------------|------|--------|-----|------------------|-------------------|--|-------------------------------|
| ph/seg (deg) | 0.4 | Theor. | 0.0 | Amplitude | 256.597 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| amp/seg (%) | 0.6 | | 0.1 | Search (1024X16) | 255.348 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| ph/frq (deg) | 16.8 | | 0.0 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled |
| amp/frq (%) | 22.3 | | 0.0 | Inc. seg. avg. | 256.544 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| | | | | Inc. frq. avg. | 261.249 | Data rate(Mb/s): 2048 | ion window (TEC) 0.00 0.00 |

o: az 118.4 el 46.7 pa -45.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

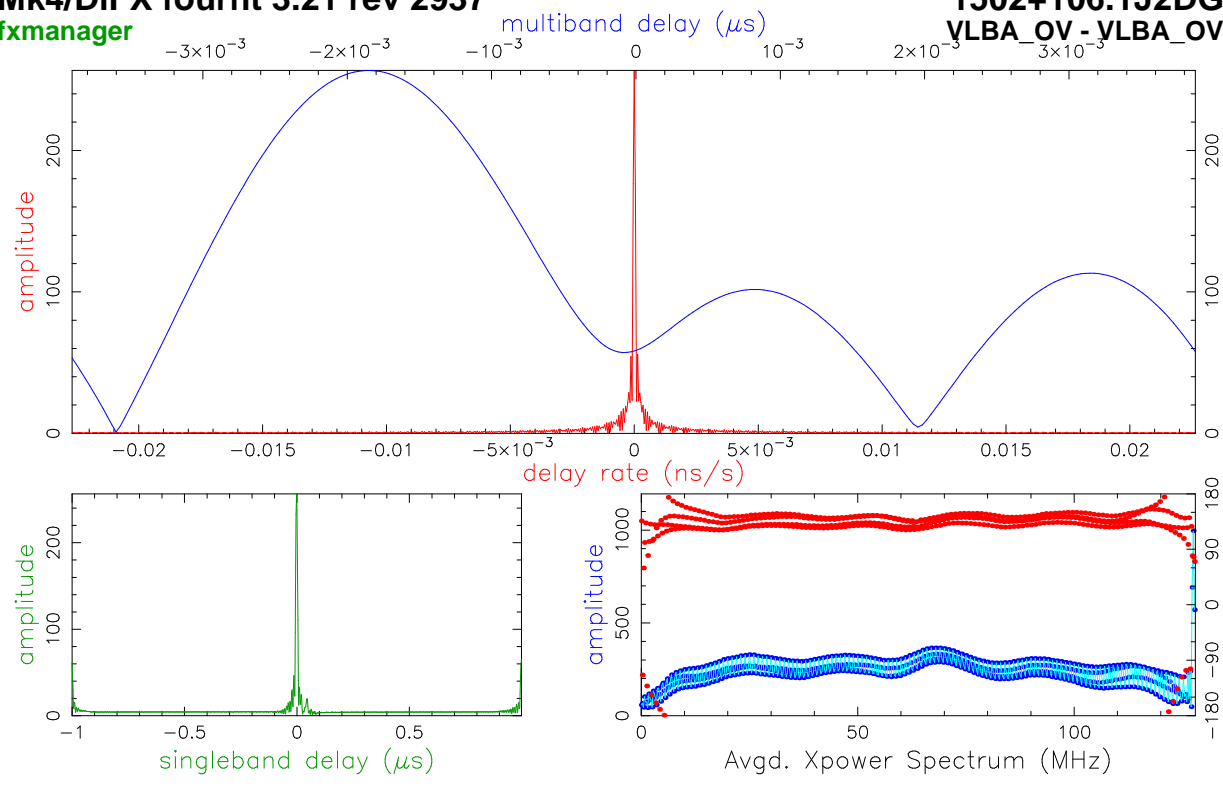
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/oo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/oo.Q.201.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

1502+106.1J2DGP, No0154, oo

VLBA_OV - VLBA_OV, fgroup Q, pol RL

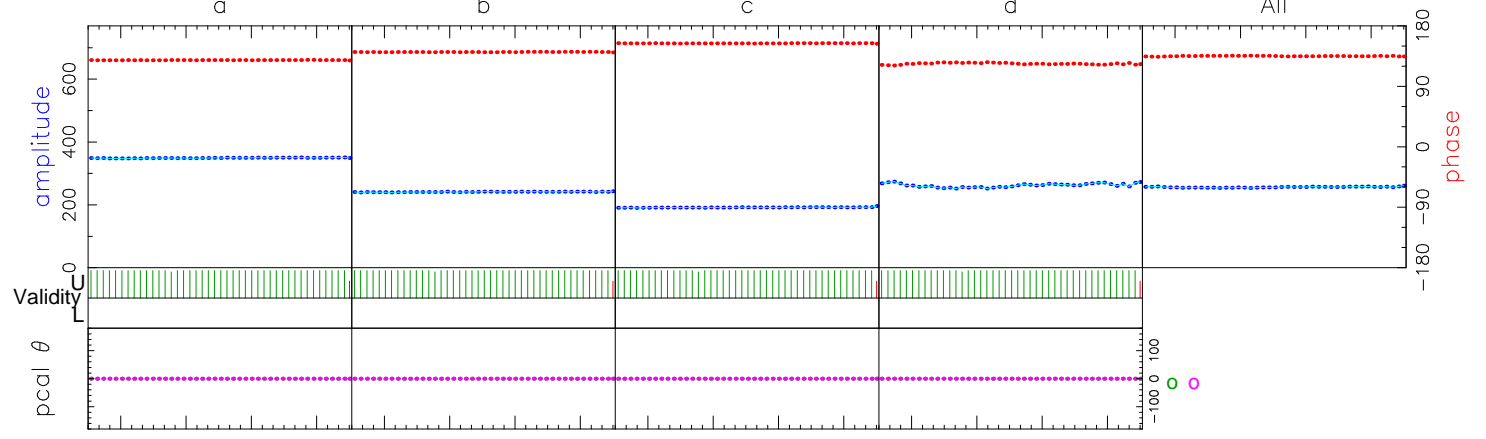


Fringe quality 7

SNR 10864.1
 Int time 239.713
 Amp 256.597
 Phase 134.9
 PFD 0.0e+00
 Delays (us)
 SBD -0.001852
 MBD -0.001849
 Fringe rate (Hz)
 -0.000008
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512

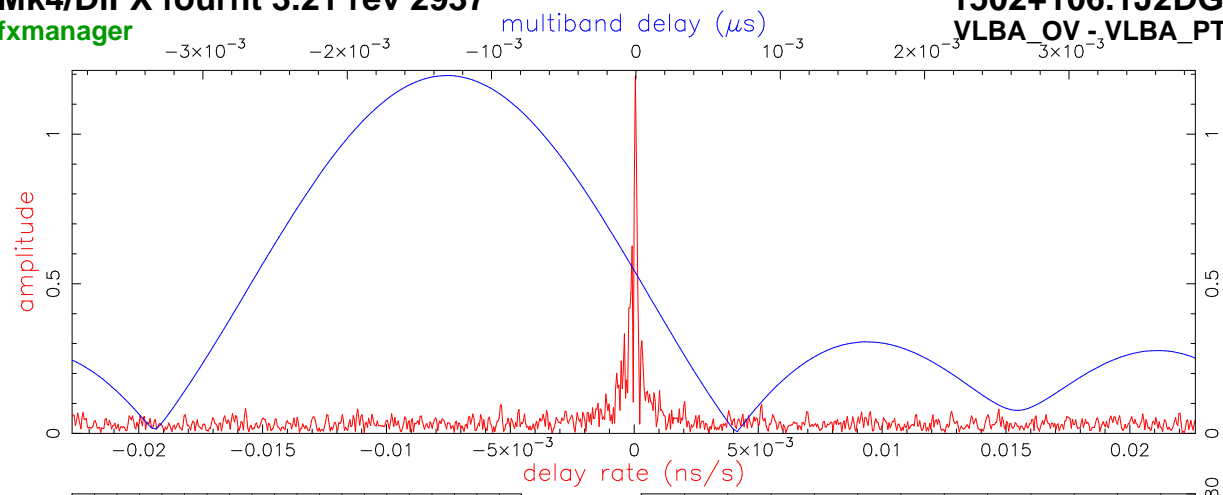
Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211503
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 |
|------------------------------|------------------------------|---------------------------|----------|----------|--|---|
| | 128.9 | 141.0 | 154.0 | 123.6 | Phase | 134.9 |
| | 349.4 | 241.4 | 192.0 | 262.2 | Ampl. | 261.2 |
| | 512.2 | 512.1 | 512.4 | 511.8 | Sbd box | 512.1 |
| 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:o | 0:0 | 0:0 | 0:0 | 0:0 | PC phase | |
| o:o | 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 | Q00UL | Q01UL | Q02UL | Q03UL | Tracks | |
| | | | | | Chan ids | |
| | | | | | Tracks | |
| Group delay (usec)(sbd) | -1.84881250000E-03 | | | | Resid mbdelay (usec) | -1.84881E-03 +/- 1.0E-07 |
| Sband delay (usec) | -1.85212500000E-03 | | | | Resid sbdelay (usec) | -1.85213E-03 +/- 4.0E-07 |
| Phase delay (usec) | 8.70863128110E-06 | | | | Resid phdelay (usec) | 8.70863E-06 +/- 6.8E-10 |
| Delay rate (us/s) | -1.92862008730E-10 | | | | Resid rate (us/s) | -1.92862E-10 +/- 4.9E-12 |
| Total phase (deg) | | 134.9 | | | Resid phase (deg) | 134.9 +/- 0.0 |
| | | | | | Apriori delay (usec) | 0.00000000000E+00 |
| | | | | | Apriori clock (usec) | 0.0000000E+00 |
| | | | | | Apriori clockrate (us/s) | 0.0000000E+00 |
| | | | | | Apriori rate (us/s) | 0.00000000000E+00 |
| | | | | | Apriori accel (us/s/s) | 0.00000000000E+00 |
| | | | | | Resid mbdelay (usec) | -1.84881E-03 +/- 1.0E-07 |
| | | | | | Resid sbdelay (usec) | -1.85213E-03 +/- 4.0E-07 |
| | | | | | Resid phdelay (usec) | 8.70863E-06 +/- 6.8E-10 |
| | | | | | Resid rate (us/s) | -1.92862E-10 +/- 4.9E-12 |
| | | | | | Resid phase (deg) | 134.9 +/- 0.0 |
| | | | | | PCal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
| | | | | | PCal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| | | | | | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| | | | | | 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 |
| o: az 118.4 el 46.7 pa -45.1 | o: az 118.4 el 46.7 pa -45.1 | u,v (fr/asec) 0.000 0.000 | | | | simultaneous interpolator |

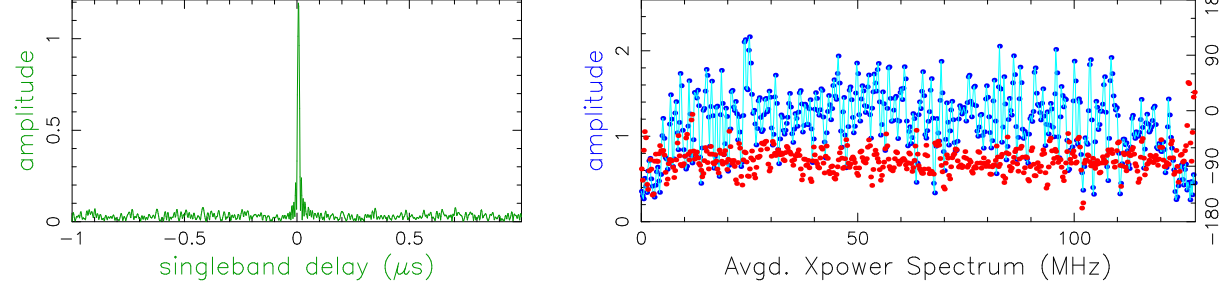
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/oo..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/oo.Q.216.1J2DGP



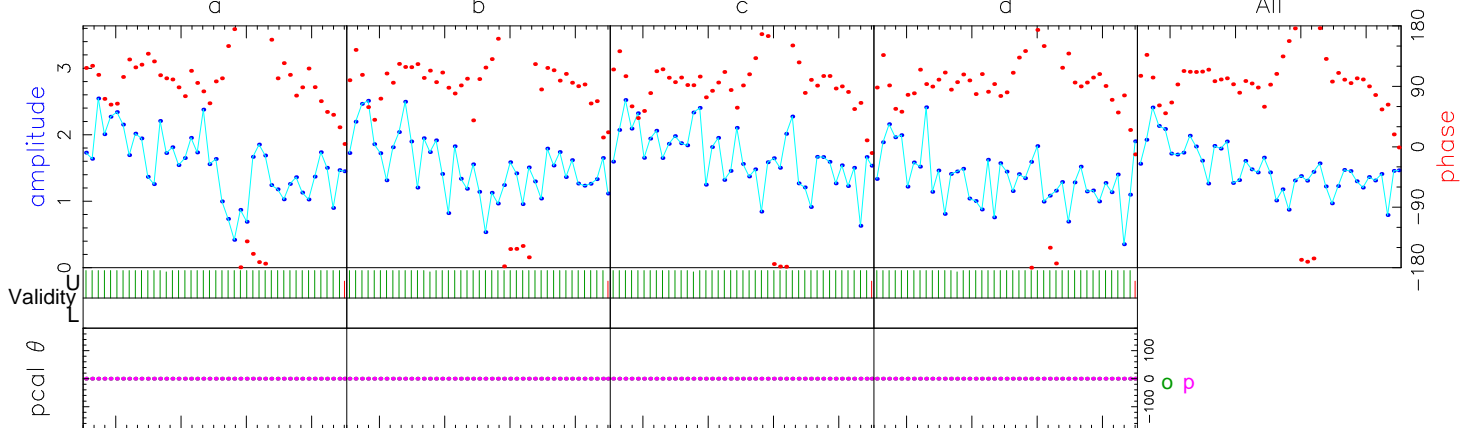
Fringe quality 8

SNR 51.4
Int time 239.711
Amp 1.213
Phase 101.5
PFD 0.0e+00
Delays (us)
SBD 0.006673
MBD -0.001271
Fringe rate (Hz) 0.001747
Ion TEC 0.000
Ref freq (MHz) 43040.0000
AP (sec) 0.512

Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211457
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"



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

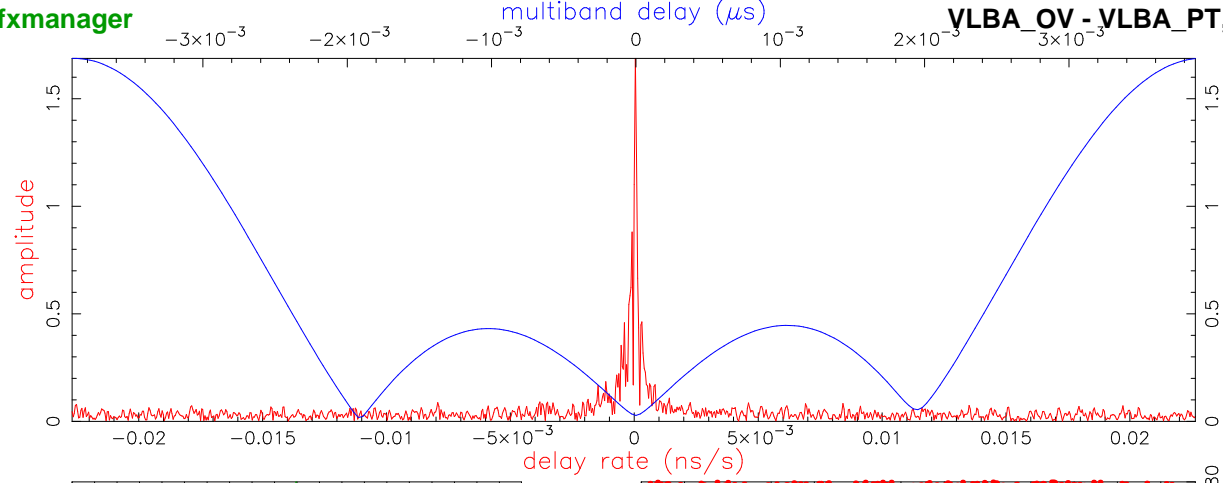


| | 42912.00 | 43040.00 | 43168.00 | 43296.00 | Freq (MHz) | All |
|-----|----------|----------|----------|----------|------------|-----|
| U/L | 469/0 | 469/0 | 469/0 | 469/0 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| p | 1000 | 1000 | 1000 | 1000 | | |
| o:p | 0:0 | 0:0 | 0:0 | 0:0 | | |
| o:p | 0:0 | 0:0 | 0:0 | 0:0 | | |
| o | 1000 | 1000 | 1000 | 1000 | | |
| p | 1000 | 1000 | 1000 | 1000 | | |
| o | Q00UL | Q01UL | Q02UL | Q03UL | | |
| p | Q00UL | Q01UL | Q02UL | Q03UL | | |

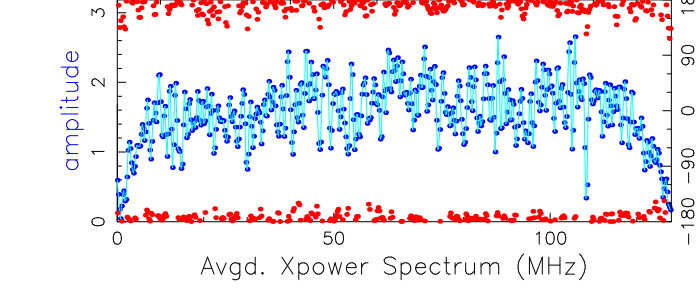
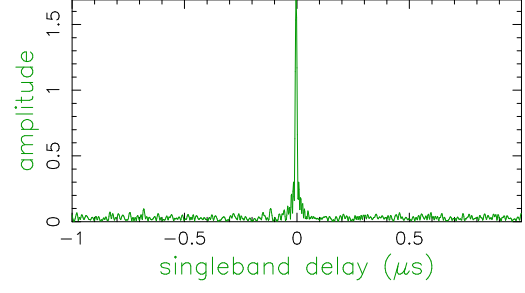
| Group delay (usec)(sbd) | -1.94705450017E+03 | Apriori delay (usec) | -1.94706104210E+03 | Resid mbdelay (usec) | -1.27057E-03 | +/- | 2.2E-05 |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Sband delay (usec) | -1.94705436935E+03 | Apriori clock (usec) | 2.1302486E+01 | Resid sbdelay (usec) | 6.67275E-03 | +/- | 8.4E-05 |
| Phase delay (usec) | -1.94706103555E+03 | Apriori clockrate (us/s) | -5.0000000E-07 | Resid phdelay (usec) | 6.55275E-06 | +/- | 1.4E-07 |
| Delay rate (us/s) | 1.61772588482E-01 | Apriori rate (us/s) | 1.61772547882E-01 | Resid rate (us/s) | 4.06003E-08 | +/- | 1.0E-09 |
| Total phase (deg) | 10.8 | Apriori accel (us/s/s) | 1.13109071940E-05 | Resid phase (deg) | 101.5 | +/- | 2.2 |

| ph/seg (deg) | RMS | Theor. | Amplitude | 1.213 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
|--------------|------|--------|------------------|-----------------|--|---|
| amp/seg (%) | 40.1 | 7.3 | Search (1024X16) | 1.181 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| ph/frq (deg) | 36.2 | 12.8 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| amp/frq (%) | 3.3 | 2.2 | Inc. seg. avg. | 1.486 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| | 8.0 | 3.9 | Inc. frq. avg. | 1.195 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

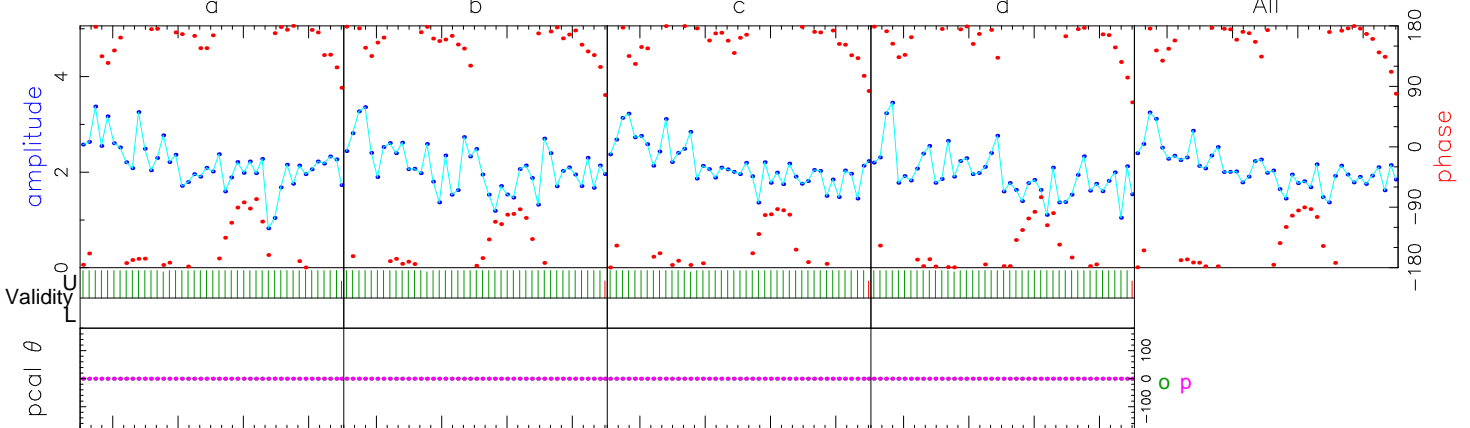
o: az 118.4 el 46.7 pa -45.1 p: az 126.8 el 55.3 pa -41.9 u,v (fr/asec) -465.360 263.420 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/op..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/op.Q.163.1J2DGP



Fringe quality 6
SNR 71.5
Int time 239.711
Amp 1.688
Phase 178.0
PFD 0.0e+00
Delays (us)
SBD -0.003846
MBD -0.003890
Fringe rate (Hz) 0.001684
Ion TEC 0.000
Ref freq (MHz) 43040.0000
AP (sec) 0.512
Exp. c202b
Exper # 16383
Yr:day 2020:284
Start 190830.00
Stop 191230.12
FRT 191030.00
Corr/FF/build
2021:032:031903
2021:032:211459
2020:247:085004
RA & Dec (J2000)
15h04m24.979782s
+10°29'39.198559"



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 | | |
| o | 1000 | 1000 | 1000 | 1000 | APs used | |
| 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 | Q00UR | Q01UR | Q02UR | Q03UR | Tracks | |

| | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-------------|
| Group delay (usec)(sbd) | -1.94706493186E+03 | Apriori delay (usec) | -1.94706104210E+03 | Resid mbdelay (usec) | -3.88976E-03 | +/- 1.6E-05 |
| Sband delay (usec) | -1.94706488798E+03 | Apriori clock (usec) | 2.1302486E+01 | Resid sbdelay (usec) | -3.84587E-03 | +/- 6.0E-05 |
| Phase delay (usec) | -1.94706103062E+03 | Apriori clockrate (us/s) | -5.0000000E-07 | Resid phdelay (usec) | 1.14852E-05 | +/- 1.0E-07 |
| Delay rate (us/s) | 1.61772587002E-01 | Apriori rate (us/s) | 1.61772547882E-01 | Resid rate (us/s) | 3.91198E-08 | +/- 7.5E-10 |
| Total phase (deg) | 87.2 | Apriori accel (us/s/s) | 1.13109071940E-05 | Resid phase (deg) | 178.0 | +/- 1.6 |

| | RMS | Theor. | Amplitude | 1.688 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 |
|--------------|------|--------|------------------|-----------------|--|---|
| ph/seg (deg) | 39.6 | 5.3 | Search (1024X16) | 1.678 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) -1.000 1.000 |
| amp/seg (%) | 33.2 | 9.2 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled mb window (us) -0.004 0.004 |
| ph/frq (deg) | 2.3 | 1.6 | Inc. seg. avg. | 2.078 | Sample rate(MISamp/s): 256 | dr window (ns/s) -0.023 0.023 |
| amp/frq (%) | 3.0 | 2.8 | Inc. frq. avg. | 1.688 | Data rate(Mb/s): 2048 | nlags: 512 t_cohere infinite ion window (TEC) 0.00 0.00 |

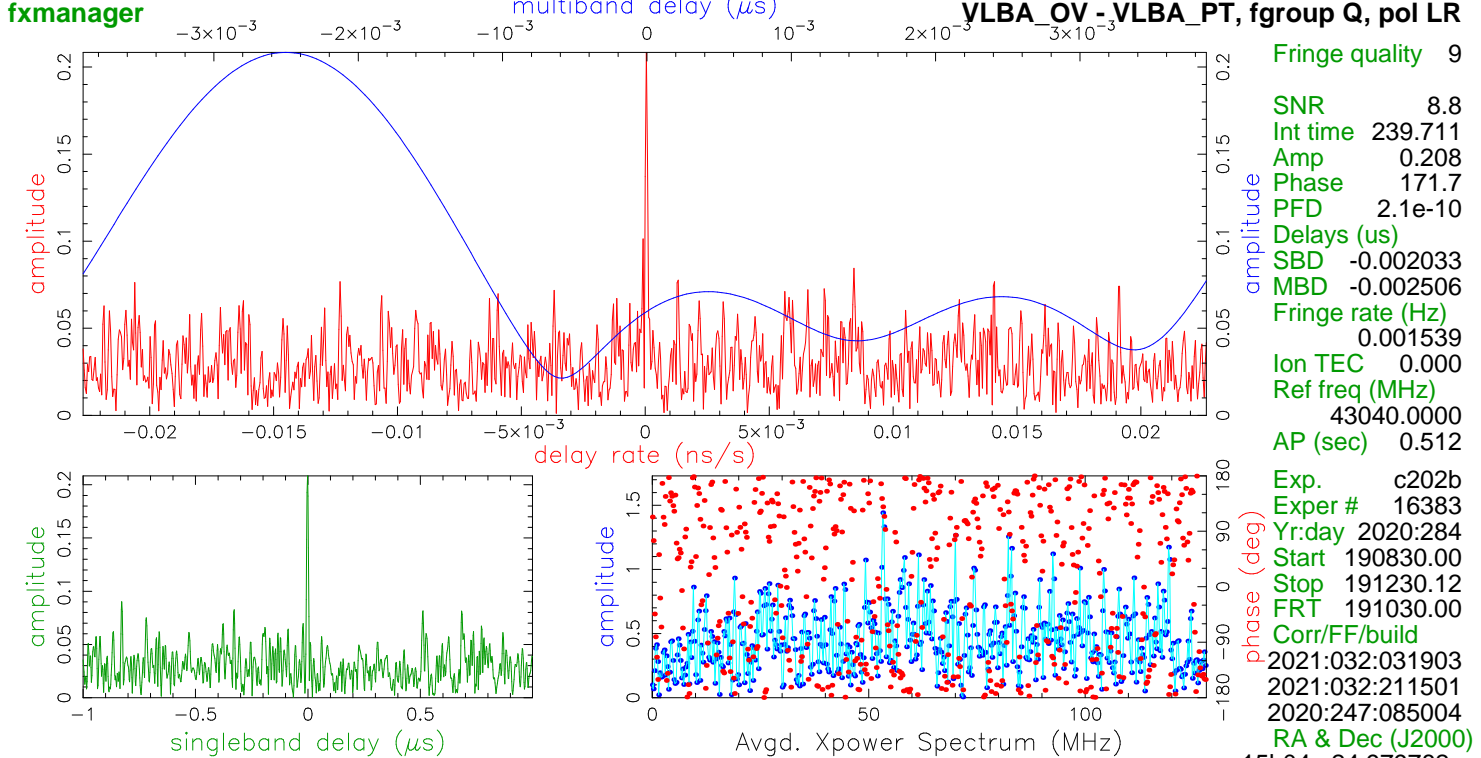
o: az 118.4 el 46.7 pa -45.1 p: az 126.8 el 55.3 pa -41.9 u,v (fr/asec) -465.360 263.420 simultaneous interpolator
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/op..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/op.Q.178.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

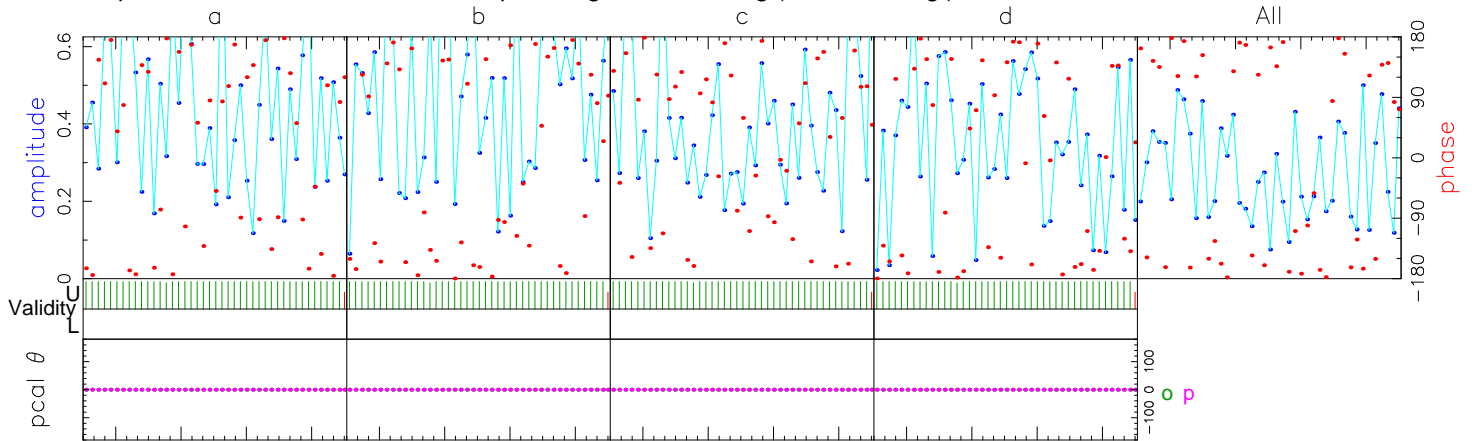
fxmanager

1502+106.1J2DGP, No0154, 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 |
|-----|----------|----------|----------|----------|------------|-------|
| | 173.3 | 172.0 | 160.6 | 176.3 | Phase | 171.7 |
| | 0.2 | 0.3 | 0.1 | 0.2 | Ampl. | 0.2 |
| | 557.4 | 511.7 | 416.8 | 512.6 | Sbd box | 512.0 |
| 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 | |
| | | | | | Chan ids | |
| | | | | | Tracks | |

| | | | | | | | |
|-------------------------|--------------------|--------------------------|--------------------|----------------------|--------------|-----|---------|
| Group delay (usec)(sbd) | -1.94706354811E+03 | Apriori delay (usec) | -1.94706104210E+03 | Resid mbdelay (usec) | -2.50601E-03 | +/- | 1.3E-04 |
| Sband delay (usec) | -1.94706307510E+03 | Apriori clock (usec) | 2.1302486E+01 | Resid sbdelay (usec) | -2.03300E-03 | +/- | 4.9E-04 |
| Phase delay (usec) | -1.94706103102E+03 | Apriori clockrate (us/s) | -5.0000000E-07 | Resid phdelay (usec) | 1.10828E-05 | +/- | 8.4E-07 |
| Delay rate (us/s) | 1.61772583647E-01 | Apriori rate (us/s) | 1.61772547882E-01 | Resid rate (us/s) | 3.57646E-08 | +/- | 6.0E-09 |
| Total phase (deg) | | Apriori accel (us/s/s) | 1.13109071940E-05 | Resid phase (deg) | 171.7 | +/- | 13.0 |

| | RMS | Theor. | Amplitude | 0.208 +/- 0.024 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | | | |
|--------------|------|--------|------------------|-----------------|--|-----------------------|-------------------|------------------|-----------|
| ph/seg (deg) | 46.6 | 42.6 | Search (1024X16) | 0.205 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | sb window (us) | -1.000 | 1.000 | |
| amp/seg (%) | 67.6 | 74.3 | Interp. | 0.000 | Bits/sample: 2x2 | SampCntNorm: enabled | mb window (us) | -0.004 0.004 | |
| ph/frq (deg) | 8.6 | 13.0 | Inc. seg. avg. | 0.218 | Sample rate(MISamp/s): 256 | | dr window (ns/s) | -0.023 0.023 | |
| amp/frq (%) | 28.1 | 22.7 | Inc. frq. avg. | 0.204 | Data rate(Mb/s): 2048 | nlags: 512 | t_cohere infinite | ion window (TEC) | 0.00 0.00 |

o: az 118.4 el 46.7 pa -45.1 p: az 126.8 el 55.3 pa -41.9 u,v (fr/asec) -465.360 263.420 simultaneous interpolator

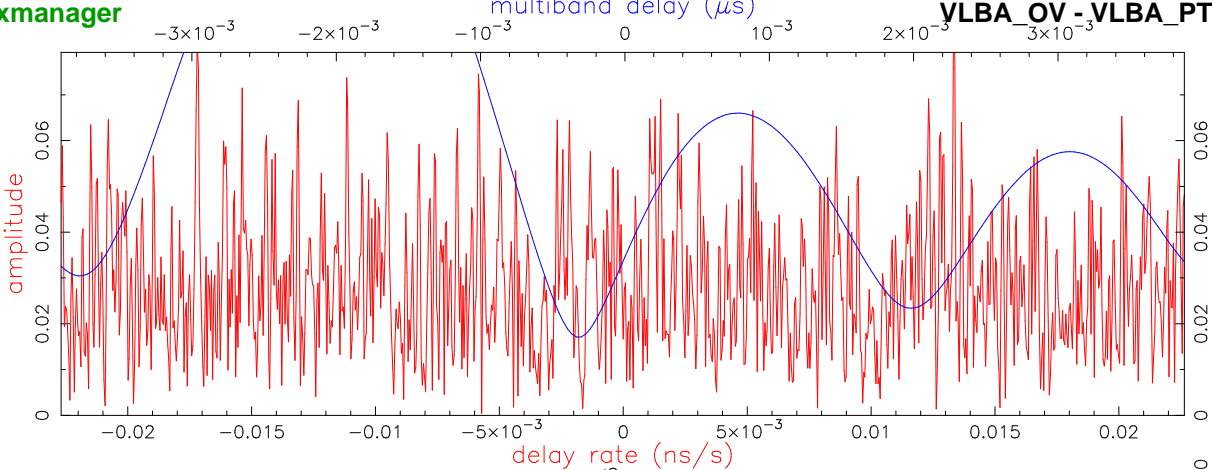
Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/op..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/op.Q.194.1J2DGP

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

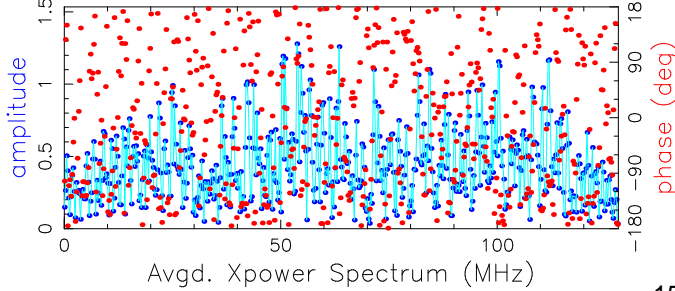
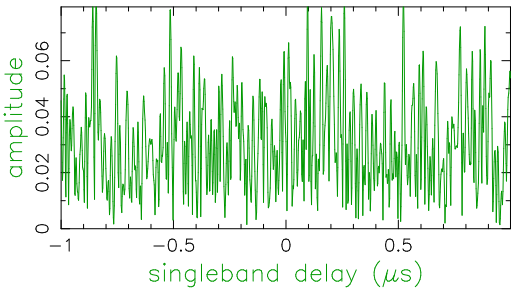
1502+106.1J2DGP, No0154, op

VLBA_OV - VLBA_PT, fgroup Q, pol RL



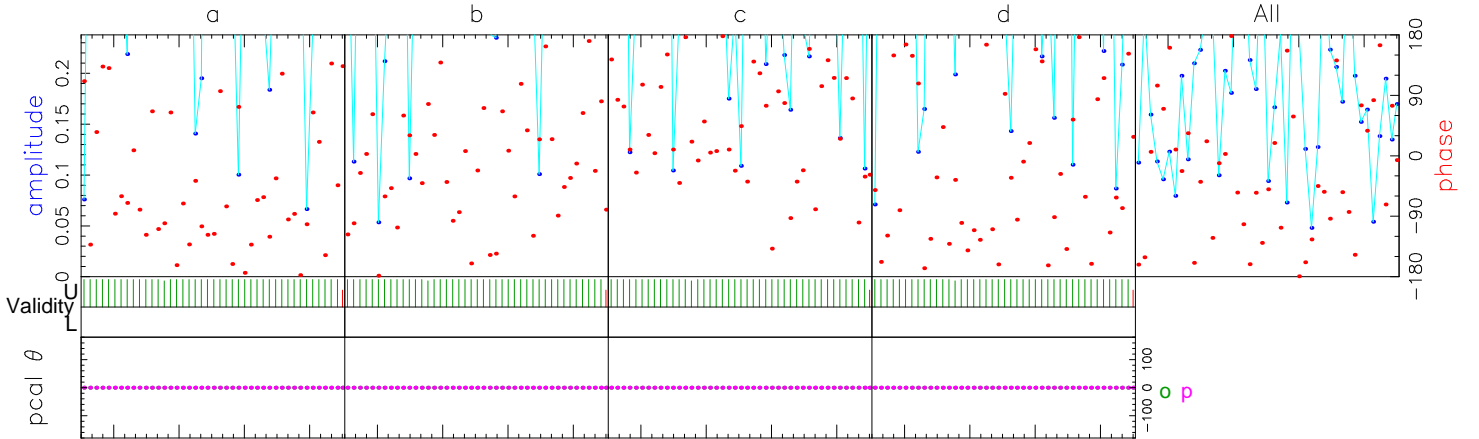
Fringe quality 0

SNR 2.3
 Int time 239.711
 Amp 0.079
 Phase -82.7
 PFD 1.0e+00
 Delays (us)
 SBD -0.196293
 MBD 0.003418
 Fringe rate (Hz)
 0.917185
 Ion TEC 0.000
 Ref freq (MHz)
 43040.0000
 AP (sec) 0.512



Exp. c202b
 Exper # 16383
 Yr:day 2020:284
 Start 190830.00
 Stop 191230.12
 FRT 191030.00
 Corr/FF/build
 2021:032:031903
 2021:032:211503
 2020:247:085004
 RA & Dec (J2000)
 15h04m24.979782s
 +10°29'39.198559"

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 |
|-----|----------|----------|----------|----------|------------|-------|
| | -104.0 | -10.9 | 65.9 | -133.1 | Phase | -82.7 |
| | 0.2 | 0.2 | 0.2 | 0.3 | Ampl. | 0.2 |
| | 81.0 | 510.3 | 113.5 | 567.9 | Sbd box | 412.5 |
| 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 | ManI 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) | -1.94726074913E+03 | Apriori delay (usec) | -1.94706104210E+03 | Resid mbdelay (usec) | 3.41797E-03 | +/- | 4.9E-04 |
| Sband delay (usec) | -1.94725733485E+03 | Apriori clock (usec) | 2.1302486E+01 | Resid sbdelay (usec) | -1.96293E-01 | +/- | 1.9E-03 |
| Phase delay (usec) | -1.94706104744E+03 | Apriori clockrate (us/s) | -5.0000000E-07 | Resid phdelay (usec) | -5.33810E-06 | +/- | 3.3E-06 |
| Delay rate (us/s) | 1.61793857934E-01 | Apriori rate (us/s) | 1.61772547882E-01 | Resid rate (us/s) | 2.13101E-05 | +/- | 2.4E-08 |
| Total phase (deg) | -173.4 | Apriori accel (us/s/s) | 1.13109071940E-05 | Resid phase (deg) | -82.7 | +/- | 50.6 |

| | | | | | | | | | | |
|--------------|----------|--------------|----------------------------|-------|-----------------|--|----------------------------|------------------|--------|-------|
| ph/seg (deg) | RMS 92.0 | Theor. 165.9 | Amplitude Search (1024X16) | 0.132 | 0.079 +/- 0.035 | Pcal mode: MANUAL, MANUAL | PC period (AP's) 5, 5 | sb window (us) | -1.000 | 1.000 |
| amp/seg (%) | 300.3 | 289.6 | Interp. | 0.000 | 0.132 | Pcal rate: 0.000E+00, 0.000E+00 (us/s) | SampCntNorm: enabled | mb window (us) | -0.004 | 0.004 |
| ph/frq (deg) | 123.0 | 50.6 | Inc. seg. avg. | 0.054 | 0.132 | Bits/sample: 2x2 | Sample rate(MISamp/s): 256 | dr window (ns/s) | -0.023 | 0.023 |
| amp/frq (%) | 172.5 | 88.3 | Inc. frq. avg. | 0.152 | 0.152 | Data rate(Mb/s): 2048 | nlags: 512 | ion window (TEC) | 0.00 | 0.00 |

o: az 118.4 el 46.7 pa -45.1 p: az 126.8 el 55.3 pa -41.9 u,v (fr/asec) -465.360 263.420 simultaneous interpolator

Control file: cf_1234_gmva7mm Input file: /Exps/c202b/v1/v1_7mm/1234/No0154/op..1J2DGP Output file: /Exps/c202b/v1/v1_7mm/1234/No0154/op.Q.213.1J2DGP