

Summary

Prior to the regular fringe test of session c191 a test for recording at 4 Gbps will be executed.

Schedule: [f191a](#) (UT 12:00 - 13:00) Rev 5 with R Cas and V1111 Oph masers

Participating stations: VLBA, Pv, On, Ys, Mh, Ef, Noema

Sky frequency band: 86012 - 86524 MHz (512 MHz)

Setup

VLBA

RDBE DDC mode with 4x128 MHz bands, dual-pol

sky start	sky stop	bandwidth	Sideband
86012	86140	128	USB
86140	86268	128	USB
86268	86396	128	USB
86396	86524	128	USB

DBBC2 stations (Pv, On, Ys, Mh, Ef)

All DBBC2 stations should use:

- DDC mode (firmware 107 beta3)
- 8x64 MHz bands, dual-pol.
- IF setup: identical to standard GMVA 2Gbps mode using 2 core boards
- Use 2nd Nyquist zone: 512 -1024 MHz
- dbbcform=astro (Pv,On,Ef)
- dbbcform=astro2 (Ys,Mh)

bbc freq	sideband	bandwidth	sky start	sky stop
960	USB	64	86460	86524
	LSB	64	86460	86396
832	USB	64	86332	86396
	LSB	64	86332	86268
704	USB	64	86204	86268
	LSB	64	86204	86140
576	USB	64	86076	86140
	LSB	64	86076	86012

DBBC3 stations (Pico Veleta P3)

Pico Veleta will do simultaneous processing on the DBBC2 and DBBC3 backends.

- DDC_V mode (firmware V124)
- 16x32 MHz bands, dual-pol.
- 1st LO=92100 (dictated by the DBBC2 IF requirements)
- 2nd LO= 9048 (DBBC3 GComo)
 - Use E90LI IFs (4-9GHz LSB)
 - Baseband: 0-4 GHz USB => 83052 - 87052 sky freq
- Bitstream order: BBC1-USB, BBC1-LSB, BBC2-USB, BBC2-LSB,

bbc freq	net sideband	bandwidth	sky start	sky stop
2992	LSB	32	86012	86044
	USB	32	86044	86076
3056	LSB	32	86076	86108
	USB	32	86108	86140
3120	LSB	32	86140	86172
	USB	32	86172	86204
3184	LSB	32	86204	86236
	USB	32	86236	86268
3248	LSB	32	86268	86300
	USB	32	86300	86332
3312	LSB	32	86332	86364
	USB	32	86364	86396
3376	LSB	32	86396	86428
	USB	32	86428	86460
3440	LSB	32	86460	86492
	USB	32	86492	86524

R2DBE stations (NOEMA)

- Will use EHT mode: 1 x 2048 MHz dual-pol
- Manual setup not based on vex-file
- Tuning/IF selection based on the [document](#) supplied by Olivier.
- Sideband: net LSB

- Receiver : LSB, 1st LO synth 1910.50 MHz
- Mixing stages: IF1 cover 4-8 GHz x 9 GHz LO2-A (LSB); filtered IF2 cover ~2-4 GHz x 4 GHz LO3 (LSB)
- Net sideband: $RX\ LSB * (mix\ LSB)^2 = net\ LSB$
- Sky freq 86780.0 -- 84732.0 MHz LSB
- Sideband orientation confirmed by bandpass shape
- Antenna #4 on pad N05 which according to M. Bremer and Dave's 2010 scripts has position XYZ : 4523970.486 468039.210 4460342.195 fringes f191b with the above position
- Alternate coordinates (2) Google maps N 44.634283 E 5.906658 (assumed satellite pic of pad N05, not quite sure) LLH2ECEF 4523912 468032 4460317 : delta 64 meters
- Maser rate +4.52e-15 over 30 past days
- Clock offset ~12 nanosec
- Additional details of the NOEMA VLBI setup including local testing are on [NOEMA April 2019](#)
- Weather
 - 03.04.2019 telescopes are stowed, snowfall and snowstorm
 - 04.04.2019 bad weather in the morning until 6am but looks much better after, good chance of observing
 - 04.04.2019 12 UT weather 3-4mm PWV variable and relatively fine so f191a observation was triggered (2013+370 only, no 3C454.3 because it fell into sun avoidance)

sky start	sky stop	bandwidth	sideband
85756	87804	2048	net LSB