

P170mm - ultra broad-band prime focus receiver (1300-6000 MHz)

This is an ultra broad band (UBB) 2-channel system covering a range from 1300 to 6000 MHz.

Overview

RX Name	Band	Frequency range [GHz]	Polarisation	Nr. of Horns	Horn position relativ to center of focus cabin
P170mm	L/S/C	1.3-6.0	dual-linear	1	Az: 0 arcsec, Elv: 0 arcsec

Calibration Information

Frequency [GHz]	Channel	Polarisation	Tcal [K]	Tsys [K]	Sensitivity [K/Jy]	SEFD [Jy]	Aperture Eff. [%]	TMB/S [K/Jy]	Main Beam Eff. [%]	FWHM [arcsec]	Last update
1.41	A+B	2x lin	5.7	19.8	1.3	15.2	46	1.90	68	569	first observations
1.665	A+B	2x lin	6.7	20.6	1.3	15.8	46	1.78	73	497	first observations
2.35	A+B	2x lin	8.8	16.1	1.3	12.4	46	1.68	77	363	first observations
3.35	A+B	2x lin	11.0	16.5	1.3	12.7	46	1.66	78	256	first observations
4.85	A+B	2x lin	12.5	18.8	1.3	14.5	46	1.71	76	174	first observations
5.54	A+B	2x lin	11.6	19.0	1.3	14.6	46	1.64	79	156	first observations

normalized Gain curve ($G = A0 + A1 \cdot Elv + A2 \cdot Elv^2$) Observed in confirmed

A0 = 1.0

A1 = 0.0

A2 = 0.0

Comments:

- The system delivers two basebands, 1.3-2.6 GHz and 3.0-6.0 GHz. Currently, it is only possible to record both bands in parallel for pulsar observations (timing and search mode), but not yet for continuum or spectroscopic observations.
- Usable / useful continuum bands are in the lower baseband e.g. 1.405-1.415 GHz (protected band), 1.66-1.67 GHz (protected band), 2.3-2.4 GHz, 2.5-2.6 GHz, 2.69-2.70 GHz (protected band), 2.89-2.92 GHz.
- Usable / useful continuum bands are in the upper baseband e.g. 3.33-3.36 GHz, 4.7-5.0 GHz, 5.3-5.6 GHz.

Available receiver versions (for OBSINP)

Version	Description	Details
EDDPOL	spectro-polarimeter backend for continuum observations in the lower band	with 64k channels

Version	Description	Details
EDDPOL3G	spectro-polarimeter backend for continuum observations in the upper band	with 64k channels
EDD_PULSAR_TIMING	pulsar folding mode observations	coherent dedispersion, configurable channels and subints
EDD_PULSAR_SEARCH	pulsar search mode observations	coherent filterbank, configurable channels and time samples (down to 32 μ s)

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