

1.9-cm primary focus receiver (13500-18700 MHz)

This is a 1-channel broad-band system used for spectroscopy. It has a linearly polarized feed. So far, only few test observations could be made to measure the variation of its parameters with frequency.

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
13.75	B	linear	1.5	35	1.1	32	39	1.8	61	60.3	Mar 2001
15.42	B	linear	1.7	37	1.2	32	41	1.8	64	53.5	Apr 2003
18.00	B	linear	1.2	46	0.90	51	32	1.7	53	46.5	Mar 2001
normalized Gain curve ($G = A0 + A1 \cdot Elv + A2 \cdot Elv^2$)							Observed in	confirmed			
A0=0.95912		A1= 2.5000E-3		A2=-3.8149E-5		Apr 2003					

Comments:

- The values at 15.4 GHz could be derived from cross-scans during spectroscopic observations. Thanks to N. Nagar!
- Values at 18 GHz are a bit uncertain.

Version description for OBSINP

RX Name	Wavelength [cm]	Frequency (center) [GHz]	Nr. of Horns
P19mm 4-Box (13.5-18.7 GHz)	2.2-1.6	13.5-18.7	1
Version:	Comment		
1. Cont./Line: 13,3-16,75 GHz (BW: 500 MHz)	VLBA IF Continuum and spectroscopy version, 1st freq. range		
2. Cont./Line: 16,55-18,5 GHz (BW: 500 MHz)	VLBA IF Continuum and spectroscopy version, 2nd freq. range		
3. Cont./Line: 13,5-16,95 GHz (BW: 100 MHz)	narrow band IF Continuum and spectroscopy version, 1st freq. range		
4. Cont./Line: 16,3-18,5 GHz (BW: 100 MHz)	narrow band IF Continuum and spectroscopy version, 2nd freq. range		
Horn offsets [arcsec]	-904.0, 1077.4		

Channel assignment in the MBFITS data files

Note that the narrow line and VLBA IF channels are usually only available when the specific line version of the receiver was selected. In addition for most receivers with narrow line channels the

cables at the patch board need to be connected by the receiver group.

To select different channel numbers in OBSINP, the online plot, or the toolbox the numbers have to be specified like c(1)+c(2) to add channel 1 and 2. E.g. channel 1 and 2 contain the LCP and RCP broadband channels, then "OnlPlot pen='c(1)+c(2)'" or "toolbox use='c(1)+c(2)'" will select these channels. In OBSINP the pen can be directly specified in the receiver selection menu.

Abbreviations:

SB: narrow band channel (Schmalband-Kanal), 100 MHz band width

BB: digital broad band channel (Breitband-Kanal), band width varies for different receivers

VLBA: VLBA IF, 500 MHz band width

optical: optical fibre with 4 GHz of band width

BW: band width

TP: total power

1.9cm PFK (Multi-RX-Box I)			
Channel	IF	Pol.	Comment
1	SB	linear	TP A
2	BB	linear	TP A
3	VLBA	linear	TP A

Tcal and Tsys measurements

TODO

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Last update: 2013/09/30 12:09