

50cm prime focus receiver (300-900 MHz)

This is a wide band 2-channel system covering a range from 300 to 900 MHz. The system can be used for continuum, pulsar and VLBI observations.

Be aware that there is also a lot of RFI in this band. Therefore, some frequency ranges have been blanked out by filters. Available frequencies are 300 - 505 MHz, 608 - 685 MHz, and 790 - 915 MHz.

Overview

RX Name	Band	Frequency range [GHz]	Polarisation	Nr. of Horns	Horn position relativ to center of focus cabin
P500mm	UHF	0.3-0.9	dual-circular	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
0.611	A	LCP	12.8	495	1.1	450	39	1.5	72	1482	Sep 2021
normalized Gain curve ($G = A0 + A1 \cdot Elv + A2 \cdot Elv2$)							Observed in confirmed				
A0 = 1.0		A1 = 0.0		A2 = 0.0		May 2011					

Comments: There is a lot of RFI in this band. Narrow bandwidths should be used for observations. Please contact staff, if interested.

Below: Information is currently being updated.

Version description for OBSINP

RX Name	Wavelength [cm]	Frequency (center) [GHz]	Nr. of Horns
P500mm (300-900 MHz)	92.0-32.0	0.3-0.9 (0.6)	1
Version:	Comment		
1. Continuum (BW: 80 MHz)	Narrow Band Continuum		
2. Pulsar (BW: 600 MHz)	Pulsar 600 MHz BW Version		
Horn offsets [arcsec]	0.0, 0.0		

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
 - BW: band width
 - TP: total power

50cm PFK (300-900MHz)			
Channel	IF	Pol.	Comment
1	SB	LCP	TP A
2	SB	RCP	TP B

Tcal and Tsys measurements

TODO

From:
<https://eff100mwiki.mpifr-bonn.mpg.de/> - Effelsberg 100m Teleskop

Permanent link:
https://eff100mwiki.mpifr-bonn.mpg.de/doku.php?id=information_for_astronomers:rx:p500mm&rev=1719918375

Last update: 2024/07/02 13:06

