

1.0cm primary focus receiver (26500-36700 MHz)

This receiver was build for spectroscopic observations. It has a linearly polarized feed.

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
27.0	A	linear	7.2	68	0.94	71	34	1.8	54	30.5	Mar 2010
30.0	A	linear	8.0	70	0.85	82	31	1.6	53	29.0	Mar 2010
34.0	A	linear	12.0	75	0.86	86	30	1.5	61	25.0	Mar 2010
36.3	A	linear	12.5	79	0.85	93	30	1.8	48	23.0	Aug 2007
normalized Gain curve ($G = A0 + A1 \cdot Elv + A2 \cdot Elv^2$)							Observed in		confirmed		
A0=0.81500		A1=1.0624E-2		A2=-1.5237E-4		Aug 2007					

Comments:

- Typical zenith opacities range from 0.05 to 0.2 depending on the sky frequency and weather conditions.

Version description for OBSINP

RX Name	Wavelength [cm]	Frequency (center) [GHz]	Nr. of Horns
P10mm 4-Box (26,5-36,7 GHz)	1.0	26.5-36.7	1
Version:	Comment		
1. Cont./Line: 26,5-29,1 GHz (BW: 500 MHz)	Continuum and spectroscopy 1st freq. range		
2. Cont./Line: 28,52-32,7 GHz (BW: 500 MHz)	Continuum and spectroscopy 2nd freq. range		
3. Cont./Line: 32,3-36,7 GHz (BW: 500 MHz)	Continuum and spectroscopy 3rd freq. range		
4. Pulsar (BW: 500 MHz)	Pulsar version 1st freq. range (26.5-29.1 GHz)		
Horn offsets [arcsec]	-972.8, 1086.6		

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

1.0cm PFK (Multi-RX-Box I)			
Channel	IF	Pol.	Comment
1	BB	linear	TP A
2	VLBA	linear	TP A

Spectroscopy modes and resolution

BW	nchan	nu	Df	Dv	dv
MHz		MHz	kHz	km/s	km/s
100	32768	27000	3.1	0.034	0.039
100	32768	29000	3.1	0.032	0.037
100	32768	31000	3.1	0.030	0.034
100	32768	33000	3.1	0.028	0.032
100	32768	35000	3.1	0.026	0.030
100	32768	37000	3.1	0.025	0.029
500	32768	27000	15.3	0.169	0.197
500	32768	29000	15.3	0.158	0.183
500	32768	31000	15.3	0.148	0.171
500	32768	33000	15.3	0.139	0.161
500	32768	35000	15.3	0.131	0.152
500	32768	37000	15.3	0.124	0.143

BW ... band width

nchan ... number of spectral channels

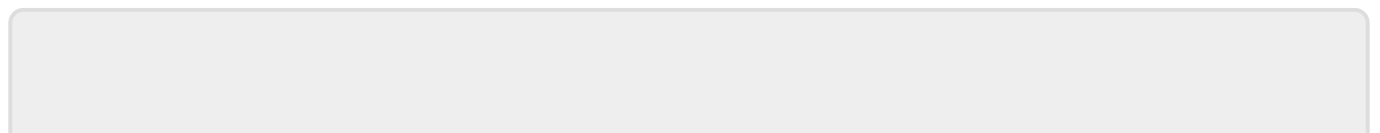
nu ... center frequency

Df ... Channel separation (in frequency)

Dv ... Channel separation (in velocity)

dv ... Velocity resolution ($dv=1.16 \cdot Dv$)

Tcal and Tsys measurements



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