30cm primary focus receiver (800-1300 MHz)

This broad-band system is mainly used for VLBI observations. Be aware, that this band may be influenced by RFI (especially below 1 GHz). In 2011 a new satellite was lunched by NASA, Aquarius, that uses a radar from 1220 MHz to 1280 MHz to measure the roughness of the oceans surface. During its 10-15 min passage over Effelsberg every 7 days the receiver will be most likely saturated. More information about the satellite and when it actually passes Effelsberg can be found on the following page: Aqurius Mission page by NASA and Visible passes over Effelsberg.

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
1.285	A	LCP	14.0	97	1.5	65	53	2.1	71	628	Sep 2008
1.285	B	RCP	13.0	100	1.5	67	53	2.1	71	644	Sep 2008

normalized Gain curve (G = A0 + A1·Elv + A2·Elv2)	Observed in	confirmed
A0 = 1.0 A1 = 0.0 A2 = 0.0	Sep 2008	Nov 2012

Comments:

- Beware of strong RFI throughout the whole band!
- The individual values may vary with frequency (800-1300 MHz). If you need additional information, please contact Alex Kraus (akraus_at_mpifr-bonn.mpg.de) or Uwe Bach (ubach_at_mpifr-bonn.mpg.de).

Version description for OBSINP

RX Name	Wavelength [cm]	Frequency (center) [GHz]	Nr. of Horns
P300mm 4-box	30	0.8-1.3 (1.05)	1
Version:	**Comment**		
1. Cont/Line (BW: 100 MHz)	Narrow band Continuum		
2. Pulsar (BW: 100 MHz)	Narrow band Continuum pulsar setup		
Horn offsets [arcsec]	-988.7, 999.7		

The Horn offset result from the offset position in the prime focus multi-receiver-box II.

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

30cm PFK (Multi-RX-Box II)			
Channel	**IF**	**Pol.**	**Comment**
1	SB	LCP	TP A
2	SB	RCP	TP B

Spectroscopy modes and resolution

BW	**nchan**	**nu**	**Df**	**Dv**	**dv**
MHz		**MHz**	**kHz**	**km/s**	**km/s**
100	32768	800	3.1	1.144	1.327
100	32768	900	3.1	1.017	1.179
100	32768	1000	3.1	0.915	1.061
100	32768	1100	3.1	0.832	0.965
100	32768	1200	3.1	0.762	0.884
100	32768	1300	3.1	0.704	0.816

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*Dv)