9-cm primary focus receiver (2860-3140 and 3290-3600 MHz)

This system is mainly used for spectroscopy observations. It has a feed with one linear polarization.

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
2.900	A	linear	6.8	38	1.55	25	57	2.1	76	266	Sep 2009
3.000	A	linear	6.7	37	1.55	24	56	2.1	74	256	Sep 2009
3.100	A	linear	6.3	33	1.55	21	57	2.0	76	251	Sep 2009
3.350	A	linear	5.7	34	1.55	22	56	2.1	74	227	Sep 2009
3.450	A	linear	5.5	34	1.55	22	56	2.1	74	221	Sep 2009
3.550	A	linear	5.2	30	1.55	19	57	2.1	75	217	Sep 2009

normalized Gain curve (G = A0 + A1·Elv + A2·Elv2)			Observed in	confirmed
A0=1.0	A1=0.0	A2=0.0	Sep 2009	

Comments:

- RFI-situation (in summer 2011): There are several radar systems operating in the frequency range 3000-3400 MHz. Especially between 3200-3400 MHz very strong RFI is to be expected, however, all these systems operate mainly during daytime. Usually there are very few interferences during nighttime and weekends. The range 3400-3600 MHz currently seems to be free of RFI.

Version description for OBSINP

RX Name	Wavelength [cm]	Frequency (center) [GHz]	Nr. of Horns
P90mm (2,86-3,6 GHz)	9.0	2.9-3.6	1
Version:	**Comment**		
1. Cont./Line(USB): 2,86-3,14 GHz (BW: 100 MHz)	Continuum and spectroscopy 1st freq. range		
2. Cont./Line(LSB): 3,29-3,6 GHz (BW: 100 MHz)	Continuum and spectroscopy 2nd freq. range		
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

9.0cm PFK			
Channel	**IF**	**Pol.**	**Comment**
1	SB	linear	TP A

Spectroscopy modes and resolution

BW	**nchan**	**nu**	**Df**	**Dv**	**dv**
MHz		**MHz**	**kHz**	**km/s**	**km/s**
100	32768	2900	3.1	0.315	0.366
100	32768	3000	3.1	0.305	0.354
100	32768	3100	3.1	0.295	0.342
100	32768	3200	3.1	0.286	0.332
100	32768	3300	3.1	0.277	0.322
100	32768	3400	3.1	0.269	0.312
100	32768	3500	3.1	0.261	0.303
100	32768	3600	3.1	0.254	0.295

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)

Tcal and Tsys measurements

August 2015

Tcal and Tsys

Opacity and T0

Antenna model

December 2012