6-cm secondary focus receiver (4600-5100 MHz)

This is a 4-channel 2-horn system for sensitive continuum, polarimetry, VLBI, and pulsar observations.

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
4.850	A / B	LCP / RCP	1.8	27	1.55	18	53	2.4	63	146	June 2008

normalized Gain curve (G = A0 + A1·Elv + A2·Elv2)			Observed in	confirmed
A0 = 0.9769	A1 = 1.253E-3	A2 = -1.701E-5	Aug 2019	2022

Comments:

- The values for LCP and RCP do not differ significantly.
- The opacity is usually very small. Typical zenith tau values are < 0.01.

Version description for OBSINP

RX Name	Wavelength [cm]	Frequency (center) [GHz]	Nr. of Horns
S60mm Double Beam	6	4.6-5.1 (4.85)	2
Version:	**Comment**		
1. Continuum (BW: 500 MHz)	Broad Band Continuum + Polarimeter		
2. Pulsar (BW: 500 MHz)	Pulsar 500 MHz Version		
3. Line (BW: 100 MHz)	Spectroscopy/Continuum using narrow band IF + VLBI IF Polarimeter		
4. Line (BW: 500 MHz)	Spectroscopy/Continuum using VLBA IF + VLBA IF Polarimeter		
5. Pulsar+8dB(BW: 500 MHz)	Pulsar with attenuation		
Horn offsets [arcsec]	Horn 1: 236.6,-1336.0, Horn 2: -248.4,-1336.0		

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

6cm SFK multi horn receiver with polarimeter, 2 horns			
Channel	**IF**	**Pol.**	**Comment**
1	SB	LCP	Horn 1, TP A
2	SB	RCP	Horn 1, TP B
3	SB	cross	Horn 1, cos AB
4	SB	cross	Horn 1, sin AB
5	BB	LCP	Horn 1, TP A
6	BB	RCP	Horn 1, TP B
7	BB	cross	Horn 1, cos AB
8	BB	cross	Horn 1, sin AB
9	BB	LCP	Horn 2, TP A
10	BB	RCP	Horn 2, TP B
11	BB	cross	Horn 2, cos AB
12	BB	cross	Horn 2, sin AB
13	VLBA	LCP	Horn 1, TP A
14	VLBA	RCP	Horn 1, TP B
15	VLBA	cross	Horn 1, cos AB
16	VLBA	cross	Horn 1, sin AB

Spectroscopy modes and resolution

BW	nchan	nu	Df	Dv	dv
MHz		MHz	kHz	km/s	km/s
100	32768	4600	3.1	0.199	0.231
100	32768	4700	3.1	0.195	0.226
100	32768	4800	3.1	0.191	0.221
100	32768	4900	3.1	0.187	0.217
100	32768	5000	3.1	0.183	0.212
100	32768	5100	3.1	0.179	0.208
500	32768	4600	15.3	0.994	1.154
500	32768	4700	15.3	0.973	1.129
500	32768	4800	15.3	0.953	1.105
500	32768	4900	15.3	0.934	1.083
500	32768	5000	15.3	0.915	1.061
500	32768	5100	15.3	0.897	1.040

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