

2.8cm secondary focus receiver

(10300-10600 MHz)

This is a 4-horn system for sensitive continuum measurement, 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
10.45	A (BB)	LCP	7.5	51	1.35	38	47	2.4	56	68	Jul 2008
10.45	B (BB)	RCP	7.5	53	1.35	40	46	2.4	57	68	Jul 2008
normalized Gain curve ($G = A0 + A1 \cdot \text{Elv} + A2 \cdot \text{Elv}^2$)							Observed in	confirmed			
A0 = 0.99000		A1 = 8.2490e-04		A2 = -1.7433e-05		Feb 2007		Dec 2012			

Comments:

- The new gain curve (Feb 2007) was corrected for opacity.
- If no other information about the opacity is available a typical zenith tau value of about 0.02 should do a good job.

Version description for OBSINP

RX Name	Wavelength [cm]	Frequency (center) [GHz]	Nr. of Horns
S28mm 4-beam	2.8	10.3-10.6 (10.45)	4
Version:	Comment		
1. Continuum/Line (BW: 300 MHz)	Continuum/Spectroscopy + Polarimeter		
2. Pulsar (BW: 100 MHz)	Pulsar narrow band		
Horn offsets [arcsec]	Horn 1: 0.0,-450.0, 2: 186.0,-450.0, 3: -825.0,-450.0, 4: -535.0,-450.0		

Channel assignment in the MBFITS data files

2.8cm SFK multi horn receiver with polarimeter, 4 horns			
Module 1 (2 horns) and Module 2 (2 horns)			
Channel	IF	Pol.	Comment
1	BB	LCP	M1, Horn 1, TP A
2	BB	RCP	M1, Horn 1, TP B
3	BB	cross	M1, Horn 1, cos AB
4	BB	cross	M1, Horn 1, sin AB
5	BB	LCP	M1, Horn 2, TP A
6	BB	RCP	M1, Horn 2, TP B
7	BB	cross	M1, Horn 2, cos AB

2.8cm SFK multi horn receiver with polarimeter, 4 horns			
Module 1 (2 horns) and Module 2 (2 horns)			
Channel	IF	Pol.	Comment
8	BB	cross	M1, Horn 2, sin AB
9	BB	LCP	M2, Horn 3, TP A
10	BB	RCP	M2, Horn 3, TP B
11	BB	cross	M2, Horn 3, cos AB
12	BB	cross	M2, Horn 3, sin AB
13	BB	LCP	M2, Horn 4, TP A
14	BB	RCP	M2, Horn 4, TP B
15	BB	cross	M2, Horn 4, cos AB
16	BB	cross	M2, Horn 4, sin AB

Spectroscopy modes and resolution

BW	nchan	nu	Df	Dv	dv
MHz		MHz	kHz	km/s	km/s
100	32768	10300	3.1	0.089	0.103
100	32768	10400	3.1	0.088	0.102
100	32768	10500	3.1	0.087	0.101
100	32768	10600	3.1	0.086	0.100

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

TODO

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