2.8cm secondary focus receiver (10300-10600 MHz)

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

Overview

RX Name	Band	Frequency range [GHz]	Polarisation	Nr. of Horns	Horn position relativ to center of focus cabin
S28mm	X	10.3-10.6	dual-circular	1	Horn 1: Az: -535.0 arcsec, Elv: -450.0 arcsec, Horn 2: Az: -825.0 arcsec, Elv: -450.0 arcsec

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	6.4	47	1.34	37	49	2.3	59	69	Jan 2014
10.45	B (BB)	RCP	6.3	53	1.35	38	50	2.3	59	69	Jan 2014

normalized Gain curve (G = A0 + A1·Elv + A2·Elv2)			Observed in	confirmed
A0 = 0.9768	A1 = 1.280E-3	A2 = -1.763E-5	Aug 2023	

Comments:

Available receiver versions (for OBSINP)

Version	Description	Details
continuum	standard continuum backend with internal polarimeter	bandwidth 300 MHz
spectroscopy_100mhz	spectroscopy version with the XFFT-spectrometer	

Below here: Information is currently updated.

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)	2
Version:	**Comment**		
1. Continuum/Line (BW: 300 MHz)	Continuum/Spectroscopy + Polarimeter		
2. Pulsar (BW: 100 MHz)	Pulsar narrow band		
Horn offsets [arcsec]	Horn 1: -535.0,-450.0, 2: -825.0,-450.0		

Channel assignment in the MBFITS data files

2.8cm SFK multi horn receiver with polarimeter, 1 horns			
Channel	**IF**	**Pol.**	**Comment**
1	BB	LCP	Horn 2, TP A
2	BB	RCP	Horn 2, TP B
3	BB	cross	Horn 2, cos AB
4	BB	cross	Horn 2, 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

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*Dv)

Tcal and Tsys measurements

TODO