S110mm - 11cm secondary focus receiver (2.5-3.0 GHz)

This system is mainly used for sensitive continuum and pulsar observations. Be aware, that this band may be influenced by RFI.

Overview

RX Name	Band	Frequency (center) [GHz]	Polarisation	Nr. of Horns	Horn position relativ to center of focus cabin
S110mm	S	2.5-3.0	dual-circular	1	Az: 19.0 arcsec, Elv: 1593.0 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
2.6395	A/B	LCP/RCP	2.5	17	1.5	11	53	2.3	81	275	Jan 2014

normalized Gain curve (G = A0 + A1·Elv + A2·Elv2)			Observed in	confirmed
A0 = 1.0	A1 = 0.0	A2 = 0.0	Feb 2007	Nov 2012

Comments:

- The values for LCP and RCP do not differ significantly.
- A typical value for the zenith opacity is 0.010.

Available receiver versions (for OBSINP)

Version	Description	Usage
EDDPOL	spectro-polarimeter backend	continuum observations
EDD_GSPEC	gated spectrometer with xx channels	spectroscopy
EDD_GSPEC_128k	gated spectrometer with 128k channels	spectroscopy
EDD_GSPEC_512k	gated spectrometer with 512k channels	spectroscopy
EDD_PULSAR	pulsar backend	pulsars / transients

Below here: Information is currently updated.

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

11cm SFK single horn receiver (multi channel polarimeter 2.595-2.675GHz)			
Channel	**IF**	**Pol.**	**Comment**
1	SB	LCP	center=2.595 GHz, BW=10 MHz, TP A
2	SB	RCP	center=2.595 GHz, BW=10 MHz, TP B
3	SB	cross	center=2.595 GHz, BW=10 MHz, cos AB
4	SB	cross	center=2.595 GHz, BW=10 MHz, sin AB
5	SB	LCP	center=2.605 GHz, BW=10 MHz, TP A
6	SB	RCP	center=2.605 GHz, BW=10 MHz, TP B
7	SB	cross	center=2.605 GHz, BW=10 MHz, cos AB
8	SB	cross	center=2.605 GHz, BW=10 MHz, sin AB
9–28	...	...	continues in 10 MHz steps until
29	SB	LCP	center=2.675 GHz, BW=10 MHz, TP A
30	SB	RCP	center=2.675 GHz, BW=10 MHz, TP B
31	SB	cross	center=2.675 GHz, BW=10 MHz, cos AB
32	SB	cross	center=2.675 GHz, BW=10 MHz, sin AB
			the last 4 channels contain the total IF 2.595-2.675 GHz
33	SB	LCP	center=2.635 GHz, BW=80 MHz, TP A
34	SB	RCP	center=2.635 GHz, BW=80 MHz, TP B
35	SB	cross	center=2.635 GHz, BW=80 MHz, cos AB
36	SB	cross	center=2.635 GHz, BW=80 MHz, sin AB

Spectroscopy modes and resolution

BW	**nchan**	**nu**	**Df**	**Dv**	**dv**
MHz		**MHz**	**kHz**	**km/s**	**km/s**
100	32768	2600	3.1	0.352	0.408

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