

# 9mm secondary focus receiver (30000-34000 MHz)

This is a 7-beam system with linear and circular polarized feeds. It is usable for continuum observations and - in a limited way - for 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
32.00	1	linear	7.6	63	0.75	84	32	1.9	38	24.5	Apr 2009
32.00	2	linear	5.5	57	0.75	76	32	1.9	38	24.5	Apr 2009
32.00	9	LCP	8.8	66	0.75	88	32	1.9	38	24.5	Apr 2009
32.00	12	LCP	5.3	62	0.75	83	32	1.9	38	24.5	Apr 2009
<b>normalized Gain curve (<math>G = A0 + A1 \cdot Elv + A2 \cdot Elv^2</math>)</b>							<b>Observed in</b>	<b>confirmed</b>			
A0 = 0.91612			A1 = 4.9463e-03		A2 = -7.1292e-05		Feb 2007	Aug 2014			

## Comments:

- The gain curve was corrected for opacity.
- If no other information about the opacity is available a typical zenith tau value of about 0.05 for good weather conditions can be assumed.

## Version description for OBSINP

RX Name	Wavelength [cm]	Frequency (center) [GHz]	Nr. of Horns
<b>S9mm 7-beam</b>	0.9	30.0-34.0 (32.0)	7
<b>Version:</b>	<b>Comment</b>		
1. Continuum 4Ch (BW: 4 GHz)	Broad Band Continuum using the central 3 horns (1,6,7)		
1. Continuum 12Ch (BW: 4 GHz)	using the internal 9mm backend with all 7 horns		
<b>Horn offsets [arcsec]</b>	Horn 1: (2.4,65.4), 2:(-37.9,25.2), 3:(42.6,25.2), 4:(-37.9,105.7), 5:(42.6,105.7), 6:(-77.7,65.4), 7:(83.9,65.4)		

## 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

9mm SFK multi horn receiver, 4 Channel version, 7 horns			
Channel	IF	Pol.	Comment
1	BB	linear	Horn 1, horizontal pol.
2	BB	linear	Horn 1, vertical pol.
3	BB	LCP	Horn 6, TP A
4	BB	LCP	Horn 7, TP B

## Tcal and Tsys measurements

TODO

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[https://eff100mwiki.mpifr-bonn.mpg.de/doku.php?id=information\\_for\\_astronomers:rx:s9mm](https://eff100mwiki.mpifr-bonn.mpg.de/doku.php?id=information_for_astronomers:rx:s9mm)

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