

Procurement specification

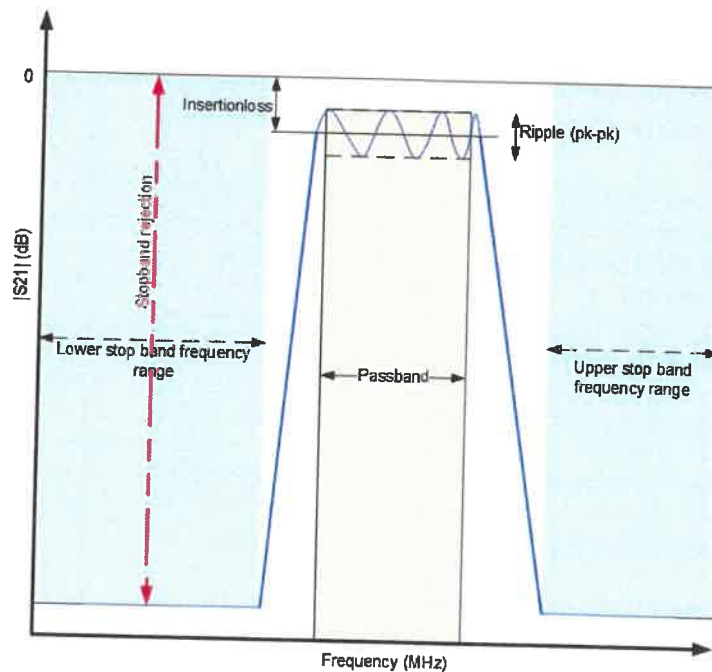
Item	Receiver bandpass filters
Description	C-band bandpass filters to be integrated with SARAO radio astronomy receiver system. The Receiver accepts two channels in C-band with centre frequency of 4981 MHz and 6750 MHz respectively. The specifications of the bandpass filters for each channel is presented in this document.

Technical lead contact

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Filter response

The S21 frequency response of the filters shall be as shown in the figure below. The specifications for each of the parameters shown in this figure are given in the detailed specification table of this document.



Detailed specification

Req Number	Parameter	Value	Units
4981 MHz bandpass filter specifications			
Req.1	Passband frequency NB: <i>This is not 3 dB points.</i>	4917 to 5045 [0-6] [0+6] [tolerance]	MHz [MHz]
Req.2	Insertion Loss over passband	≤ 2	dB
Req.3	Passband ripple	≤ 0.5	dB
Req.4	Lower stopband frequency	100 to 4750	MHz
Req.5	Upper stopband frequency	5200 to 10000	MHz
Req.6	Stopband rejection	≥ 60	dB
Req.7	Return Loss over passband	≥ 15	dB
Req.8	Quantity	6	each
6750 MHz bandpass filter specifications			
Req.9	Passband frequency NB: <i>This is not 3 dB points.</i>	6550 to 6950 [0-6] [0+6] [tolerance]	MHz [MHz]
Req.10	Insertion Loss over passband	≤ 2	dB
Req.11	Passband ripple	≤ 0.5	dB
Req.12	Lower stopband frequency	100 to 6300	MHz
Req.13	Upper stopband frequency	7200 to 10000	MHz
Req.14	Stopband rejection	≥ 60	dB
Req.15	Return Loss over passband	≥ 15	dB

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Req.16	Quantity	6	each
General specifications (applicable to both filters)			
Req.17	Characteristic impedance	50	Ω
Req.18	Filter topology	Manufacturer to determine	
Req.19	Filter order	Minimum order to achieve required response	
Req.20	Connectors	SMA female	
Req.21	Maximum power handling	20	dBm
Req.22	Operating temperature	0 to 70	Degree Celsius
Req.23	Maximum dimensions	100 x 60 x 25	mm
Req.24	Documentation to be submitted	<p>Quotation phase</p> <ul style="list-style-type: none"> • Comprehensive datasheet • Simulated frequency response (S-parameter file) • Detailed quote <p>Once order has been placed</p> <ul style="list-style-type: none"> • Mechanical step file of each filter • Test report for each filter • Measured S-parameter file for each filter 	
Req.25	Delivery	<p>Deliver to:</p> <p>SARAO 2 Fir Street, Black River Park, Observatory (North Gate entrance), 7925, South Africa</p>	












GhanaRx_BPF

Final Audit Report

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