

**GOVERNMENT OF INDIA**  
**(Ministry of Home Affairs)**  
**DIRECTORATE GENERAL**  
**CENTRAL RESERVE POLICE FORCE**  
**EAST BLOCK-7, SEC-1, R.K. PURAM, NEW DELHI-110066**  
**(Tele/Fax No-011-26107493, Email-Id: [comncell@crpf.gov.in](mailto:comncell@crpf.gov.in))**

No. B.V-7-C/2022-23-C (WCR)

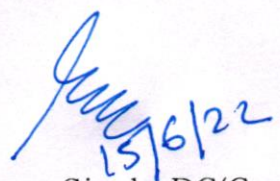
Dated, the June'2022

**Subject:- REQUEST FOR COMMENTS OF STAKEHOLDERS/OEM/FIRMS ON QRs (QUALITY REQUIREMENT) & TDs of "WIDEBAND COMMUNICATION RECEIVER".**

1. The revised QRs/TDs "Wideband Communication Receiver" is attached as **Appendix 'A'**. The OEMs/Vendors are requested to forward information of the product, which they can offer and also forward correct specifications of their system against each parameter. Only complied or not complied remarks will not be accepted. The firms are also requested to furnish the following details:-
  - Whether you are OEM/Vendor?
  - If vendor details of OEM.
  - Authorization certificate from OEM.
2. The required information/details may please be forwarded at the following addresses by **1<sup>st</sup> July'2022**.

Directorate General CRPF  
East Block-7, Sec-1, R.K. Puram, New Delhi-110066  
Email: [comncell@crpf.gov.in](mailto:comncell@crpf.gov.in)

3. An early response is requested.

  
{Sunil Kumar Singh, DC(Comn)}  
**For DIG (Equipment)**  
**Directorate General, C R P F**

**Draft QRs/TDs of 'Wideband Communication Receiver'**

<b>S.N.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Trial Directives</b>
1	Salient features:- a) Wideband Communication Receiver with panorama scan for high-speed scanning. b) Quick channel scan for automatic signal search. c) Detailed IF spectrum display at high bandwidths. d) Fast spectrum monitoring. e) Demodulation of wideband signals. f) Automatic detection, classification, demodulation and decoding of multiple signals. g) Continuous I/Q data streaming. h) Comprehensive and user friendly GUI. i) Precise monitoring with outstanding real time bandwidth and high scan speed. j) Good number of antenna elements to get reliable results with coherent signal integration. k) Easy integration in mobile platform. l) The Antennas should have high sensitivity and dynamic range.		BOO will check practically.
2	Frequency range	8 KHz to 8 GHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
3	100% POI	1.5 micro second Span = 40 MHz RBW = 1 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
4	Inbuilt display	Minimum 6" color display	BOO will check practically
5	Real time bandwidth	40 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
6	Demodulation bandwidth	40 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
7	Inbuilt demodulation modes in receiver	Standard inbuilt features AM, FM, PM, Pulse, I/Q, LSB, USB, CW, ISB	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
8	Scan speed	40 GHz/s @ 100 KHz RBW	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
9	Inbuilt attenuator, automatic attenuation	Attenuation setting up to 40dB and automatically kicks in the presence of strong signals	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.

<b>S.N.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Trial Directives</b>
10.	In built battery backup (Standby mode)	5 Hrs or better	BOO will check practically.
11.	BITE facility	provides an indication if the device is operating properly or not with built-in-test	Firm will submit OEM certificate.
12.	History mode	Minimum 30 days log	Firm will submit OEM certificate.
13.	Inbuilt recording	The system should have the capability of internal signal recording. Trace recording of spectra and waterfall data and replay of recorded data on the receiver display. Minimum 256 GB recording facility available in the receiver with SD card facility.	Firm will submit OEM certificate.
14	DANL	$\leq -159$ dB 10 MHz $\leq f \leq 35$ MHz $\leq -161$ dB 44 MHz $< f \leq 3$ GHz $\leq -159$ dB 3 GHz $< f \leq 6$ GHz $\leq -154$ dB 6 GHz $< f \leq 8$ GHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
15.	LAN interface I/Q Streaming	Standard feature	Firm will submit OEM certificate.
16.	A/D converter (ADC) resolution	14 bit or better	Firm will submit OEM certificate.
17.	Tuning resolution	1 Hz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
18.	Protection class	IP54 or better	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
19.	Electromagnetic compatibility	ETSI EN 301489-1/22 ETSI EN 300220/300330/300440 (antenna port only), ETSI EN 303413 (GNSS antenna port) EN 55032, class B	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.

<b>S.N.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Trial Directives</b>
20.	Image rejection 8 KHz $\leq$ f 35 MHz 35 MHz $\leq$ f $\leq$ 3300 MHz 3.3 GHz $<$ f $\leq$ 8 GHz	Direct reception (up to 35 MHz) $\geq$ 75 dB $\geq$ 75 dB	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
21.	IF rejection 8 KHz $\leq$ f 35 MHz 35 MHz $\leq$ f $\leq$ 3300 MHz 3.3 GHz $<$ f $\leq$ 8 GHz	Direct reception (up to 35 MHz) $\geq$ 75 dB $\geq$ 75 dB	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
22.	IP3	1 MHz $\leq$ f $\leq$ 10 MHz : $\geq$ 30 dBm 10 MHz $<$ f $\leq$ 35 GHz : $\geq$ 30 dBm 44 MHz $<$ f $\leq$ 3 GHz : $\geq$ 5 dBm 3 GHz $<$ f $\leq$ 5.3 GHz : $\geq$ -3 dBm 5.3 GHz $<$ f $\leq$ 8 GHz : $\geq$ -3 dBm	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
23	Inbuilt prescaler	Yes	Firm will submit OEM certificate.
24	DF functionality (interferometer)	Required(optional)	BOO will check practically.
25	Automatic gain control and Manual Gain control AGC & MGC	Required	BOO will check practically.
26	IF panorama span	IF panorama span 1/2/5/10/20/50/100/200/500 KHz, 1/2/5/10/20/40 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
27	RBW (Scan spectrum)	RF spectrum with user scalable start/stop frequency and step width; 100/125/200/250/500/625 Hz, 1/1.25/2/2.5/3.125/5/6.25/8.333/10/12.5/20/25/50/100/200/500 KHz, 1MHz, 2 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.

<b>S.N.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Trial Directives</b>
28	RF Input	1 xN, 3 x SMA	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
29	Reference input signal	10 MHz 1 PPS	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
30.	IQ streaming interface	1 GB LAN interface	Firm will submit OEM certificate.
31	Streaming format	VITA 49	Firm will submit OEM certificate.
32	Remote control	SCPI commands	Firm will submit OEM certificate.
33	Weight with battery	Maximum 4 Kg	BOO will check practically.

### Specification for Antenna

#### HF Antenna :-

<b>S.N.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Trial directives</b>
1	Frequency range	2.0 MHz to 30 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
2	Polarisation	Linear/vertical/horizontal	
3	Impedance	50 Ohm	
4	VSWR	<2.5 typ, 2.0	
5	Directivity	10 – 12 dBi	
6	Efficiency	>90%	
7	MTBF	>= 100,000 Hrs	
8	Operating temperature range	-40 to +70 Deg Cel	
9	Max wind speed (survival)	225 Km/H	

#### VHF/UHF/MW Antenna :-

<b>S.N.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Trial directives</b>
1	Frequency range	30 MHz to 8 GHz or better	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
2.	VSWR	<2	
3	Protection class	IP55	
4	Operating temperature	-40 to +65 Deg Cel	
5	Max wind speed	225 Km/H	
6	MTBF	>100,000 Hr	
7	Gain	10 dB or better	
8	Impedance	50 Ohm	

**Draft QRs/TDs of 'Wideband Communication Receiver'**

<b>S.N.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Trial Directives</b>
1	Salient features:- a) Wideband Communication Receiver with panorama scan for high-speed scanning. b) Quick channel scan for automatic signal search. c) Detailed IF spectrum display at high bandwidths. d) Fast spectrum monitoring. e) Demodulation of wideband signals. f) Automatic detection, classification, demodulation and decoding of multiple signals. g) Continuous I/Q data streaming. h) Comprehensive and user friendly GUI. i) Precise monitoring with outstanding real time bandwidth and high scan speed. j) Good number of antenna elements to get reliable results with coherent signal integration. k) Easy integration in mobile platform. l) The Antennas should have high sensitivity and dynamic range.		BOO will check practically.
2	Frequency range	8 KHz to 8 GHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
3	100% POI	1.5 micro second Span = 40 MHz RBW = 1 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
4	Inbuilt display	Minimum 6" color display	BOO will check practically
5	Real time bandwidth	40 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
6	Demodulation bandwidth	40 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
7	Inbuilt demodulation modes in receiver	Standard inbuilt features AM, FM, PM, Pulse, I/Q, LSB, USB, CW, ISB	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
8	Scan speed	40 GHz/s @ 100 KHz RBW	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
9	Inbuilt attenuator, automatic attenuation	Attenuation setting up to 40dB and automatically kicks in the presence of strong signals	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.

<b>S.N.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Trial Directives</b>
10.	In built battery backup (Standby mode)	5 Hrs or better	BOO will check practically.
11.	BITE facility	provides an indication if the device is operating properly or not with built-in-test	Firm will submit OEM certificate.
12.	History mode	Minimum 30 days log	Firm will submit OEM certificate.
13.	Inbuilt recording	The system should have the capability of internal signal recording. Trace recording of spectra and waterfall data and replay of recorded data on the receiver display. Minimum 256 GB recording facility available in the receiver with SD card facility.	Firm will submit OEM certificate.
14	DANL	$\leq -159$ dB 10 MHz $\leq f \leq 35$ MHz $\leq -161$ dB 44 MHz $< f \leq 3$ GHz $\leq -159$ dB 3 GHz $< f \leq 6$ GHz $\leq -154$ dB 6 GHz $< f \leq 8$ GHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
15.	LAN interface I/Q Streaming	Standard feature	Firm will submit OEM certificate.
16.	A/D converter (ADC) resolution	14 bit or better	Firm will submit OEM certificate.
17.	Tuning resolution	1 Hz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
18.	Protection class	IP54 or better	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
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20.	Image rejection 8 KHz $\leq$ f 35 MHz 35 MHz $\leq$ f $\leq$ 3300 MHz 3.3 GHz $<$ f $\leq$ 8 GHz	Direct reception (up to 35 MHz) $\geq$ 75 dB $\geq$ 75 dB	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
21.	IF rejection 8 KHz $\leq$ f 35 MHz 35 MHz $\leq$ f $\leq$ 3300 MHz 3.3 GHz $<$ f $\leq$ 8 GHz	Direct reception (up to 35 MHz) $\geq$ 75 dB $\geq$ 75 dB	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
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23	Inbuilt prescaler	Yes	Firm will submit OEM certificate.
24	DF functionality (interferometer)	Required(optional)	BOO will check practically.
25	Automatic gain control and Manual Gain control AGC & MGC	Required	BOO will check practically.
26	IF panorama span	IF panorama span 1/2/5/10/20/50/100/200/500 KHz, 1/2/5/10/20/40 MHz	Firm will submit certificate of Govt. Lab. or NABL/ILAC accredited laboratory.
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2.	VSWR	<2	
3	Protection class	IP55	
4	Operating temperature	-40 to +65 Deg Cel	
5	Max wind speed	225 Km/H	
6	MTBF	>100,000 Hr	
7	Gain	10 dB or better	
8	Impedance	50 Ohm	