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No. B.V-7-C/2025-26-C(HF)-QR CELL

Dated, the 21 July'2025

Subject: - REQUEST FOR COMMENTS OF STAKEHOLDERS /OEM/FIRMS ON DRAFT QRS & TDS OF "HF MANPACK" REGARDING.

The Draft QRs/TDs of "HF Manpack" 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 15 August'2025.

Communication Directorate, CRPF
East Block-7, Sec-1, R.K. Puram, New Delhi-110066
Email: comncell@crpf.gov.in

3. An early response is requested.

{Ujjwal Kumar Singh, AC (QR)}
For DIG (Equipment)
Communication & IT Branch
Directorate General, CRPF

QRS/TDs OF HF MANPACK TRANSCEIVER

1.1 General Specification

S. N	Parameters	/Specifications	Trial Procedure
1	Frequency Range	2.0 MHz to 29.9999 MHz channel spacing 10 Hz.	BOO will check practically
2	Modes	SSB(J3E) USB, LSB, AM, CW/MCW	BOO will check Modulation practically and firm will produce OEM Certificate.
3	Preset	500 Channels or more	BOO will check it practically.
4	Frequency Stability	±0.5 PPM or better	BOO will check parameter practically.
5	Built-in-test	Front panel testing.	BOO will check practically.
6	Input Power	+12 V DC Nominal (10.8V to 14.4V)	BOO will check practically
7	Battery Type	10 Ah or more Li-Ion or better	The firm will produce certificate of Govt. Lab. or NABL/ILAC accredited laboratory and BOO will check practically.
8	Battery life (Duty Cycle:5 /5 /90)	20 Hrs or more	BOO will check practically
9	EMI / EMC	MIL-STD- 461/462C or ETSI or CISPR 32 or IEC 61000-4 Series (TEC/EMI/TEL-001/01 FEB-09) or latest standard	The firm will produce certificate of Govt Lab or NABL/ILAC accredited laboratory.
10	Weight	Less than 6Kg with battery	BOO will measure weight with help weighing machine
11	Antenna Impedance	50 Ω Unbalanced	BOO will check practically.
12	Protection	(i) Reverse Polarity protection (ii) Protection against high VSWR.	BOO will check practically and firm will produce OEM certificate.
13	Roles	Manpack	BOO will check practically.
14	Headphone Impedance	up to 600Ω	BOO will check practically and firm will produce OEM Certificate.
15	Cooling	Convection from case	BOO will check Physically.
16	VSWR	Better than 1.5	BOO will check practically.
17	Visual display	Front panel LCD/LED display or latest technology	BOO will check practically.
18	Interface	RS-232/ USB/ Ethernet/ WiFi/ Blue tooth (as per user requirement)	BOO will check practically.
19	Programming	PC programming software and front panel Programming.	BOO will check practically by software and front panel programming.

1.2 Transmitter Specification			
1	RF Power	5W to 25W PEP (Low, Medium, High) (user programmable)	BOO will check practically.
2	Spurious Emission	≤ 46 dB below PEP	BOO will check practically.
3	Side Band Suppression	≥ 50dB or better	BOO will check practically.
4	Carrier Suppression	≥ 40db or better	BOO will check practically.
5	Inter modulation distortion	30db minimum below PEP	BOO will check practically.
6	Audio Response	Within ±6db from 350Hz to 2700Hz.	BOO will check practically.
7	Side Tone Level	Better than 0.1 mW into 150Ω load for 5mV of audio input at 1 KHz.	BOO will check practically.
8	Modulation Sensitivity	1 to 10 mV at 1 KHz for full power under SSB mode.	BOO will check practically.
1.3 Receiver Specification			
1	Receiver Sensitivity	-115 dBm for 10dB SINAD or better	BOO will check practically.
2	Image Rejection	≥70 dB or better	BOO will check practically.
3	IF Rejection	≥70 dB or better	BOO will check practically.
4	In band Inter Modulation Distortion	35dB minimum below PEP	Firm will produce OEM Certificate.
5	Audio Response	Within ±6dB from 350Hz to 2700Hz	BOO will check practically.
6	Audio Output	1W or more across loudspeaker	BOO will check practically.
7	Audio Frequency Harmonics Distortion.	≤ 25 dB or better	BOO will check practically.
1.4 Environmental Parameters: -			
1	Operating Temperature	-30°C to +55° C	The firm will produce certificate of Govt. Lab. Or NABL/ILAC accredited laboratory.
2	Storage Temperature	-30°C to +60°C	
3	Humidity	95% non-condensing @ 40°C	
4	Dust	MIL-STD-810F or better or JSS-55555 (As laid down in Class L3 of JSS-55555, revision No.2) or better	
5	Vibration		
6	Shock		
7	Water Intrusion		
8	Altitude		
1.5 Features: -			
1	Selective calling	Digital FSK coding	Firm will produce OEM Certificate.
2	Scanning	5 channels per second or better	
3	Flash messages	Minimum 60 characters	BOO will check practically.

4	Vocoder	MELP/CELP (1200 / 2400 bps) or better	Firm will produce OEM Certificate.
5	RS-232 control	The Radio set should have capability to operate at 4800 baud rate or better.	BOO will check practically.
6	Inbuilt Data Modem	MIL-STD-188 -110A/B/C single tone ≥ 4800 bps or better	Firm will produce OEM Certificate
7	Data Communication	Provision for Data Communication and compatible with previous model of same brand	BOO will check practically.
8	Tunable receiver	Continuous tunable.	BOO will check practically.
9	Radio kill/un-kill	Should have kill/un-kill function.	BOO will check practically.
10	Audio input sockets	Mic and external socket.	BOO will check practically.
11	Squelch	Voice /Digital squelch	BOO will check practically.
12	Push to talk.	Suitable Microphone to be provided.	BOO will check practically.
13	Audio Socket	Suitable headgear should be provided.	BOO will check practically.
1.6 Optional Features (As per user requirement)			
1	Communication Security	AES 256 bit or better/ SAG approved encryption (as per user requirement)	Firm will produce OEM Certificate
2	ALE 2G/3G/4G (As per user requirement)	ALE 2G as per Appendix “A”, ALE 3G as per Appendix “C” and ALE 4G as per Appendix “G” of MIL-STD-188-141B	Firm will produce OEM Certificate
3	Frequency Hopping	Hop Rate: ≥6 hops per second	Firm will produce OEM Certificate
4	GPS Interface	Inbuilt GPS with polling facility	BOO will check practically.
5	Voice Message	Ability to send and receive voice message	BOO will check practically