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

Dated, the 25 May'2026

Subject: - REQUEST FOR COMMENTS OF STAKEHOLDERS /OEM/FIRMS ON DRAFT QRs & TDs OF "SINGLE FREQUENCY REPEATER (SFR)" REGARDING.

The Draft QRs/TDs of "**Single Frequency Repeater (SFR)**" are 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 product 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 required.
- Authorization certificate from OEM.

2. The required information/details may please be forwarded at the following addresses by 29 **June'2026**.

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.

(Megh Raj)
DIG (Equipment)
Communication & IT Branch
Directorate General, CRPF

DRAFT QRs/TDs OF SINGLE FREQUENCY REPEATER SET

S. N	Parameters	Specification	Trial directives
1	General		
	i) Frequency Range	136-174 MHz (For VHF) 410-470 MHz (For UHF) (Full Band)	BOO will check practically
	ii) Repeater Mode	Single frequency TDD	BOO will check practically
	iii) Channel Capacity	16 or more	BOO will check practically
	iv) TDMA	2 Slot	BOO will check practically and Firm will submit certificate of Govt. Lab/ NABL/ILAC Accredited Lab
	v) Channel Spacing	12.5 KHz	BOO will check practically
	vi) Frequency Stability	± 1 PPM or better	BOO will check practically and Firm will submit certificate of Govt. Lab/ NABL/ILAC Accredited Lab
	vii) Type of Emission	Digital: 7K60FXE, 7K60FXD, 7K60FXW	Firm will submit certificate of Govt. Lab/ NABL/ILAC Accredited Lab
	viii) Weight	Less than 10 Kg	BOO will check practically
	ix) Power Source	i) DC 12V/24V/48V ii) AC: 180V-260V	BOO will check practically
	x) Protection	i) Reverse polarity protection ii) Protection against high VSWR	BOO will check practically
	xi) EMI/EMC	As per ETSI EN 301 489-1 and ETSI 301 489-5 /TEC/SD/DD/EMC-221/05 /OCT-16 or equivalent.	Firm will submit certificate of Govt. Lab/ NABL/ILAC Accredited Lab
	xii) Duty cycle	Should be 100 % duty cycle at full power in both AC and DC operation	OEM will submit certificate
2	Transmitter		
	i) R.F Power output	40 Watt or more	BOO will check practically and Firm will submit certificate of Govt. Lab/ NABL/ILAC Accredited Lab
	ii) FM Hum /Noise	-40 dB or better	
	iii) Modulation Limiting	± 2.5 KHz @ 12.5 KHz	
	iv) Adjacent Chanel power	-60 dB or better	
	v) Audio Distortion	Less than 3%	

3	Receiver		
	i) Sensitivity	Digital: 0.25 μ V at 5% BER or better	BOO will check practically and Firm will submit certificate of Govt. Lab/ NABL/ILAC Accredited Lab.
	ii) Selectivity	60 dB or better.	
	iii) Inter Modulation	70 dB or better	
	vi) Audio Response	+1, -3 dB	
v) Rated Audio Distortion	Less than 3%		
4	Environmental Specification		
	i) Operating Temperature	-30°C to + 60 °C	Firm will submit certificate of Govt. Lab/NABL/ ILAC Accredited Lab.
	ii) Storage Temperature	-40°C to + 70 °C	
iii) Humidity	Max. 90% @ +40°C non- condensing		
5	Networking	a) Ad-hoc networking without any IP backbone b) IP based networking for interconnectivity (as per user requirement)	Firm will show networking and interfaces related function of repeater practically
6	Interfaces	Ethernet port RJ-45 to provide Remote monitoring and status check	
7	Features		
	i) Dual Channel Voice Transmit (Optional)	Should be Available and Capable to Communicate through Both Channel at Same Time	BOO will check practically
	ii) Location Report	Should be available	BOO will check practically
	iii) Visualized Network Management	Should provide information about Status of Linked Repeaters, their location data, Frequency details, TX Power, Received signal Strength, SWR etc.	BOO will check practically
iv) Node auto-connected Networking feature	Should be capable to connect up to 16 or more single frequency repeater in network in multiple topology. a) without IP & Microwave link connectivity b) with IP Connectivity (as per user requirement)	BOO will check practically	

	v) Provision for interoperability	DMR Radio sets of different makes should be communicated through repeater or chain of repeaters and also support data communication through Radio sets	BOO will check practically
8	Accessories		
	i) Battery cable & Mounting fixtures	Should be supplied with Repeater	BOO will check practically by connecting battery cable & mounting fixtures with repeater.
	ii) Antenna	6dB or high gain Omni Directional antenna with 45-meter RF (LDF ½"/RG-217 as per user requirement)	Firm will submit Certificate of Govt. Lab/ ILAC/NABL Accredited Lab
	iii) Programming kit	All necessary programming software including Unlock Password, Firmware and hardware required for the set will be provided. (As per user requirement)	BOO will check it practically that all necessary programming software and hardware are available as per user requirement.
	iv) Literature	i) User's manual with each radio sets should be provided free of cost in soft as well as hard copy. ii) Technical repairing manual with complete block diagram, circuit layout etc should be provided in soft as well as hard copy. (As per user requirement)	BOO will check it physically that User and Technical manual are available as per user requirement.
9	Service and support	Minimum 8 years	Firm will submit OEM Certificate
10	MTCTE Certification	Proposed Model of the Product should have valid certification issued by TEC	Firm will submit MTCTE Certificate