

No. IV-21011/37/2009-Prov-I
Government of India
Ministry of Home Affairs

26, Man Singh Road, Jaisalmer House,
New Delhi, 11.9.2009

To

The DGs: Assam Rifles/BSF/CISF/CRPF/ITBP/NSG/SSB/BPR&D

Subject:- QRs/Technical Specifications for the Communication equipments-regarding

The QRs/Technical Specifications for the following Communication equipments have been accepted and approved by the Competent Authority in MHA.

- (i) Digital UHF Transceiver Hand Held Transceiver- Appendix-A
- (ii) Digital UHF Mobile Transceiver-Appendix-B
- (iii) Digital UHF 25 W Repeater-Appendix-C

2. Henceforth, all the CPMFs should procure the above items required by them strictly as per the laid down Technical Specifications/QRs.

(R.S.Sharma)
Director (Prov)

Copy to:-

DD(Procurement),MHA

Copy for information to:-

PS to JS(PM),MHA

QRs / SPECIFICATION OF UHF DIGITAL HAND HELD TRANS RECEIVER

Sl No.	Parameters	Specification
1.	<u>General</u>	
	Frequency Range	403-470 MHz
	No. of channel	256 or higher
	Channel Spacing	12.5 KHz or better
	Frequency Stability	± 1.0 PPM or better
	Protocol	Digital TDM / FDM Technology
	Type of Emission	Analog ; 11K0F3E Digital ; 4 FSK or equivalent Modulation technique complying to Open Standard/ non propriety Digital Protocol as defined by an international standards body like ETSI / FCC etc
	Type of Operation	Simplex press to talk
	Type of Antenna	Helical Antenna
	Weight	Less than 400 grams without battery.
	Power Source	Ni-Mh or Li-ion rechargeable battery with belt clips to meet the operating time of 8 Hours with 5:5:90 duty cycle at peak conditions
2.	<u>Transmitter</u>	
	R.F Power output	Programmable / switchable up to 4 watt or more
	FM Hum / Noise	12.5 KHz : 40 dB or better
	Frequency Deviation	± 2.5 KHz in 12.5 KHz spacing
	Modulation Sensitivity	2 to 10 mV
	Modulation Distortion	Less than 3% @1 KHz
	Modulation Fidelity	+1,-3 dB of 6 dB
	Audio distortion	Less than 3% @ 1 KHz
3.	<u>Receiver</u>	
	Sensitivity	i) Analog: 0.35µV for 12 dB SINAD or better ii) Digital: 0.30µV at 5% BER or better
	Selectivity (Adjacent channel)	60 dB @12.5 KHz or better
	Inter Modulation	60 dB or better as per ETSI standard or better
	Audio Output	500 mW or higher
	Audio Response	+1, - 3dB of 6 dB
4.	<u>Environmental Specification</u>	
	Operating Temperature	-30°C to + 60 °C
	Storage Temperature	-40°C to + 70 °C
	Humidity	90% at 50°C (as per MIL810E)
	Environmental standard	MIL 810 C,D,E,F
	Water Proof Protection	IP 54,IP55 or better

5.	Features	
	Support GPS	Should be supplied with GPS with accuracy less than 15m, to enable being tracked from Remote Control Station.
	Support GIS	Radio should have Application protocol interface along with software applications to provide locations and messaging on PC / Console.
	Text Messaging	Should be capable of sending short messages from keypad and pre defined messages.
	Front panel LCD Display	Digital handheld Radio with Keypad and display
	Transmitter Time Out Timer (TOT)	The time can be programmed to best suit the application.
	Emergency Button	Allows a user to obtain help in critical situations.
	Scan with priority facility	Should be available
	Mode of calls	Selective Call, Group Call, Inter and Intra Group call facility
	Contact list	Contact list of more than 100 users for SMS and selective calling
	Remote Radio Killing /Stun /Revive facility	Should be available
	Caller ID Display	Should be available
	Networking	IP based for feature like automatic roaming
	Secrecy	Should provide inherent protection against casual eavesdropping
6.	Accessories	
	Battery Charger	Single unit rapid charger (100% of number of sets) Four way or more charger (25% of number of sets)
	Hands free Kit (VOX unit with PTT)	The vendor should provide minimum of two variants for trials
	Programming kit	All necessary software and hardware required for programming of the set
	Literature	i) Users manual with each radio sets ii) Technical repairing manual with complete block diagram, circuit layout etc at a scale of 10% of equipments being procured. iii) Firm would train teams of four operator and mechanics in handling, operating and repairing of radio receiver free of cost after procurement.

7.	<p>Description:</p> <ul style="list-style-type: none">i) The radio set should be light weight and compact operating in conventional system in single location and automatic roaming in other areas of operation using IP based repeater network without manual intervention. The microprocessor control of key circuits should provide automatic operation of most internal function, which allows for consistent performance and reliability. The radio should have battery cable and mounting fixtures.ii) Firm should train team of four operators and technicians in handling, operating and repairing of sets free of cost after procurement.iii) Vender to indicate the service centers across India for repairing of equipments after sale warranty support.iv) Should provide after sales support, supply of spares for at least 6 years after warranty period.v) The firm should enclose DOT/WPC license for supplying radio equipment in India.vi) 3 radio sets for 30 days to be provided for field trial on “no cost no commitments” basis to ascertain the users satisfaction before the proposal is accepted.vii) All the technical features will be shown during the trials.
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