

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

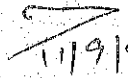
The DGs: Assam Rifles/BSF/CISF/CRPF/ITBP/NSG/SSB/BPR&D

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.

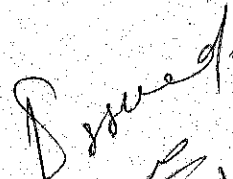
  
11/9/09  
(R.S.Sharma)  
Director (Prov)

Copy to:-

DD(Procurement),MHA


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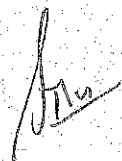
PS to JS(PM),MHA

  
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## QRs / SPECIFICATION OF DIGITAL UHF 25W REPEATER

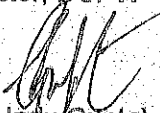
S No	Parameters	Specification
1.	<b>General</b>	
	Frequency Range	403-470 MHz ( In split band or full band)
	No of channels	Two or more
	Channel Spacing	12.5 KHz or better
	Frequency Stability	$\pm 1.0$ PPM or better
	Protocol	Digital TDM / FDM Technology
	Type of Emission	Analog ; 11K0F3E Digital ; 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	Repeater mode at 100% duty cycle
	Weight without External battery & Antenna	Less than 18 kgs.
	Power Source	Integrated power source with : (i) Operating supply voltage:230 V AC $\pm 10\%$ ,50 Hz $\pm 2\%$ (ii) 12V/24V DC +10% (negative ground) (iii) Automatic change over to battery in case of mains failure
2.	<b>Transmitter</b>	
	R.F Power output	25 watts or more at 100% duty cycle
	FM Hum / Noise	12.5 KHz : 40 dB or better
	Frequency Deviation	$\pm 2.5$ 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.	<b>Receiver</b>	
	Sensitivity	i) Analog: 0.30 $\mu$ V for 12 dB SINAD or better ii) Digital: 0.30 $\mu$ V at 5% BER or better
	Selectivity (Adjacent channel)	60 dB @12.5 KHz or better
	Inter Modulation	60 dB or better as per ETSI stds.or better
	Audio Response	+1, - 3dB of 6 dB
4.	<b>Environmental Specification</b>	
	Operating Temperature	-30 $^{\circ}$ C to + 60 $^{\circ}$ C
	Storage Temperature	-40 $^{\circ}$ C to + 70 $^{\circ}$ C
	Humidity	- 90% at 50 $^{\circ}$ C
5.	<b>Features</b>	
	Networking	IP based with capability to network up to 12 or more repeater stations to enable Wide-area network of user Radio sets operating in the network from one site to another without manual Intervention
	Interfaces	Ethernet port RJ 45 to provide following : (i). Wide area IP connectivity for voice and data up to 12 Nos repeaters (ii). Remote monitoring and status check


  
 MAJ B KASHYAP




6.	Accessories	
	Carrying case	Repeater carrying case with lock and key for easy portability. (To be outsourced if not available with the OEM)
	Antenna	6 dB gain Omni directional antenna with 30 meter flexible feeder cables with connector. Antennas should be supplied with clamping mast and supporting mast of 3M height
	Literature	i) Users manual with each repeater sets ii) Technical repairing manual with complete block diagram, circuit layout etc at a scale of 50% of equipments being procured.
7.	Description:-	
	<p>i) The Repeater station should be lightweight, Compact with state-of-the-art synthesized Radios to electronically generate the Radio frequencies. The Repeater should be continuous full duty cycle at rated power, AC-DC Operation. The Repeater should be capable of operating in unattended mode with remote diagnostics and maintenance features. The Repeater should be capable of automatic switch over in case of mains failure. The repeater should support all features of HHRS &amp; Mobile Radios with two simultaneous communications for Voice &amp; Data.</p> <p>ii) Firm should train team of four operators and technicians in handling, operating and repairing of sets free of cost after procurement.</p> <p>iii) Vender to indicate the service centers across India for repairing of equipments after sale warranty support.</p> <p>iv) Should provide after sales support, supply of spares for at least 6 years after warranty period.</p> <p>v) The firm should enclose DOT/WPC license for supplying radio equipment in India.</p> <p>vi) 3 repeater 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.</p> <p>vii) All the technical features will be shown during the trials.</p>	

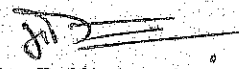
  
(Dr. M.S. Rao)  
Director, DCPW

  
(Dr. Indu Gupta)  
Scientist 'F' DRDO

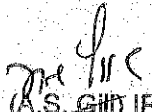
  
(K. M Venk Kumar)  
Dy. Dir. (W/Shop), DCPW

  
(Brig. V. Jai Kumar)  
DIG( Comn), NSG

  
(B.B Lal)  
DIG(Tech), IB Hq

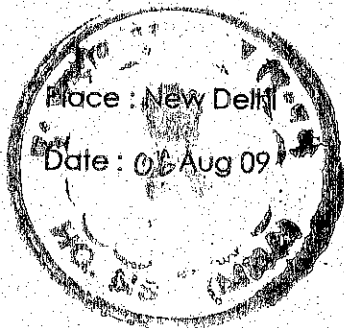
  
(Major B. Kashyap)  
SC ( Eqpt), NSG


  
Approved / Not Approved

  
A.S. Ghil IPS  
DG, CRPF

UTILITY AND VENDOR AVAILABILITY CERTIFICATE

1. This is to certify that the following items authorised to the National Security Guards under Mod Plan is an inescapable requirement and is required to equip the task forces with the latest digital sets to give them an edge during the anti terrorist operations. The features in these sets shall also help in maintenance of security, dynamic grouping, providing flexibility and better speech quality along with various other value added features and services etc.
2. This is to certify that there are at least three vendors in India who comply with the Qualitative requirements for UHF digital sets (Hand held, mobile and repeater sets) as submitted vide HQ NSG, Provisioning dte letter no P/604/2006(483)/NSG-3760P dt 03 Aug 09.



  
Maj B KASHYAP  
सैन्याध्यक्ष (संपर्कण)  
SQN CDR (FQPT)  
संचार विभाग, गी. सं. ५१२  
COMN DTE, HQ NSG  
नई दिल्ली/New Delhi.