

No.IV-17017/48/02-Prov.I  
 Ministry of Home Affairs  
 Prov.I

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New Delhi the 6<sup>TH</sup> Oct.,2004

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 26 SEP 2004

To

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

**Subject: Finalization of QRs/Specifications Communication and other Security Equipments.**

The Sub-Group constituted by MHA vide Memorandum No. IV.IV.17017/18/2001-Prov.I dated 5-7-2002 for laying down QRs/specifications of various items/equipments has since submitted its recommendations in respect of following communication and security equipments:

- (i) Fax Encrypter 62-66
- (ii) Frequency hopping HF/VHF sets 67-69
- (iii) Digital hand held mobile/static VHF/UHF Radio 70-76
- (iv) Wideband surveillance receiver (VHF/UHF Analog) 77-78
- (v) Wideband surveillance receiver (HF Analog) 79-80
- (vi) Wideband surveillance recover (HF/VHF/UHF Analog and digital) 81-83
- (vii) Light Vehicle based Direction finder 84-94
- (viii) Portable Direction finder 95
- (ix) Discone, Parabolic Dish Antenna 96-99
- (x) High altitude Parachute Penetration System(HAPPS) 100-107
- (xi) Bomb Data Centre Equipment 108-109
  - i. IED Response Vehicle 110
  - ii. Explosive Test Kit 111
  - iii. PBI Kit 112-113
- (xii) Telescopic Manipulator 114
- (xiii) Waterman ship Equipment 115-123
- (xiv) Deep search Mine/Metal Detector. - 124-125
- (xv) Digital HF Transceiver 100-101
- (xvi) Satellite Phone (Hand Held) 102-104

महानिदेशक सचि. डायरी संख्या  
 DG's Sectt. Diary No. 1556 (MHA)  
 महानिदेशक / Director General  
 अ. महानिदेशक / Director General  
 तिथि / Date 08 OCT 2004  
 म.नि.(का./मु.) / (परि./प्रशि.) / (सं./नि.)  
 वि.स. / निदे.(चि.)  
 IG(Pers & HQ) / (Ops & Trg) / (P&W)  
 FA / Director (Medical)

व्यपक महानिदेशक/वि.स./का.सं.  
 PS/Dy. No. 433  
 तिथि/Date 11/10/04  
 11/10/04

2. These recommendations have been accepted by MHA. The QRs finalized by the Sub-Group and accepted by MHA in respect of the equipments are enclosed herewith

3. Henceforth, all the CPMFs should procure the above items required by them to meet their operational needs strictly as per the laid down QRs/specifications.

Dig(e) Recd 12/10  
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सं. नि. (सं)/D.D. (C)  
 सं. नि. (सं)/A.D. (C)  
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6140  
 08 OCT 2004  
 13/10

Yours faithfully,  
 (Alok Mukhopadhyay )  
 Under Secretary(Prov.I)

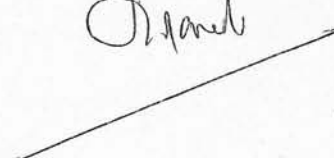
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QR FOR FREQUENCY HOPPING VHF -REPEATER

S/N	Particular	Specification
0.		
1.	Frequency Range	30-108 MHZ or 136-174 MHZ
2.	Frequency Steps	12.5 KHZ
3.	Receiver sensitivity	Better than 0.35 micro Volt for 12 dB SINAD at the Antenna port of the duplexer
4.	RF Output	Better than 25/50 Watt
5..	Type of emission	11 K OF3
6.	No. of Hops per Second	Not less than 100
7..	Hopping Freq. Tuning Range	30-108 MHZ or 136-174 MHZ
8	No. of Store Frequency	Upto128
9	Type of Antenna	Suitable GP Antenna
10.	Power Consumption	Max 10Amp
11	Supply input Voltage	Main/12 Volt DC Nominal
12	Temperature	-10°C to + 55°C
13	Humidity	90% at 40°C
14	Weight	Less than 15 Kg for 25 Watt and less than 20 Kg for 50 Watt
15	General	i) Cryptographic data protection technique- (Optional) ii) Scanning reception by priority channel frequency iii) Automatic adaptive conn. iv) Operation with noise canceller and pulse interface canceller v) Adjustable emission power vi) System should be self-contained with all connector/cable and accessories.

Signed



QRs FOR FREQUENCY HOPPING VHF TRANSCEIVER – HAND HELD

S/No.	Particular	Specification
1.	Frequency Range	30-108 MHZ or 136-174 MHZ
2.	Frequency Steps	12.5 KHZ
3.	Receiver sensitivity	Better than 0.3 micro Volt for 12 dB SINAD
4.	RF Output	1 Watt/ 5 Watt Switchable
5.	Type of emission	11 K OF3
6.	No. of Hops per Second	Not less than 100
7.	Hopping Freq. Tuning Range	30-108 MHZ or 136-174 MHZ
8.	No. of Store Frequency	Upto 128
9.	Type of Antenna	Helical
10.	Power Consumption	Max 1Amp
11.	Supply input Voltage	Nominal Voltage of the rechargeable Battery pack supplied with the set
12.	Temperature	-10°C TO + 55°C
13.	Humidity	90% at 40°C
14.	Weight	Less than 1 Kg
15.	General	<ul style="list-style-type: none"> <li>i) Cryptographic data protection technique- (Optional)</li> <li>ii) Scanning reception by priority channel frequency</li> <li>iii) Automatic adaptive comm.</li> <li>iv) Operation with noise canceller and pulse interface canceller</li> <li>v) Adjustable emission power</li> <li>vi) System should be self-contained with all connector/ cable and accessories.</li> </ul>

*Hand*

QR FOR FREQUENCY HOPPING VHF - BASE/MOBILE

S. No.	Particular	Specification
1.	Frequency Range	30-108 MHZ or 136-174 MHZ
2.	Frequency Steps	12.5 KHZ
3.	Receiver sensitivity	Better than 0.3 micro Volt for 12 dB SINAD
4.	RF Output	Better than 25Watt
5.	Type of emission	11 K OF3
6.	No. of Hops per Second	Not less than 100
7.	Hopping Freq. Tuning Range	30-108 MHZ or 136-174 MHZ
8.	No. of Store Frequency	Upto 128
9.	Type of Antenna	Suitable GP Antenna for Mobile and GP Antenna for static Operation
10.	Power Consumption	Max 7Amp
11.	Supply input Voltage	12 Volt DC Nominal
12.	Temperature	-10°C TO + 55°C
13.	Humidity	90% at 40°C
14.	Weight	Less than 3 Kg
15.	General	<ul style="list-style-type: none"> <li>i) Cryptographic data protection technique- (Optional)</li> <li>ii) Scanning reception by priority channel frequency</li> <li>iii) Automatic adaptive communication</li> <li>iv) Operation with noise canceller and pulse interface canceller</li> <li>v) Adjustable emission power</li> <li>vi) System should be self-contained with all connector/cable and accessories.</li> </ul>

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QR/SPECIFICATION FOR FREQUENCY HOPPING HF TRANSCEIVER

SL/NO	PARTICULARS	SPECIFICATION
01	Frequency Range	1.5 -29.999 MHz
02	Mode	Clear/COMSEC
03	Modulation	USB, LSB, AM
04	Preset Channel	180 auto call group, 10 COMSEC key, 10 ECCM setable
05	Frequency Stability	+/- 1 ppm
06	Built in test	On line and operator initiated
07	Input Power	12V DC
08	Operating Temp Range	-10°C to +55°C
09	RF power out put	5/10/20 watt adjustable
10	Microphone	5 mv nominal across 150 ohm
11	Power consumption - TX	< 8 amps approx
12	Antenna	9 ft whip and dipole with VSWR 2:1
13	Harmonic suppression	>= 45 dB w.r.t single tone
14	Unwanted sideband	>= 45 dB w.r.t single tone
15	Non harmonic spurious	>= 50 dB w.r.t single tone
16	Inter-modulation distortion	31 dB min below PEP
17	Receiver sensitivity	SINAD >= 10 dB for - 113dBm RF input level
18	Image and IF rejection	80 dB min
19	Audio Output	>10mw across 600 ohm, >250 mw across 50 ohm
20	Squelch	Active, Digitally coded
21	Audio distortion	< 5 %
22	In band inter-mod distortion	38 dB min below PEP
23	ECCM Freq hopping technique	Full band and sub band hopping technique
24	Communication type	Voice, Data, Flash, Digital/CW
25	Hope rate	More than 15 hop/sec
26	Hop rate length	Up to 150 frequencies
27	Synchronization	Fast and automatic
28	COMSEC Communication security for voice	Scrambler, time , phase & frequency domain
29	For data, Flash and CW	Digital encryption
30	GENERAL	<ul style="list-style-type: none"> <li>i) Auto Link establishment -Optional</li> <li>ii) Weight should not be more than 5 Kg</li> <li>iii) User/Technical Manual</li> <li>iv) After sale service</li> <li>v) EMC/EMI- military standard</li> <li>vi) Selective calling facility</li> </ul>

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QRs FOR FREQUENCY HOPPING RADIO SET

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(R.N. Kulkarni)  
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(H.R. Sharma) 24/3/04  
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