

No.IV-17017/13/06-Prov.I
Ministry of Home Affairs

New Delhi , Dated 03.04. 2006

To

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

Subject: Finalization of QRs/Specifications for Weaponry/Security Equipments

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

- (a) SYNTHESIZED SIGNAL GENERATORS
- (b) SPECTRUM ANALYSER
- (c) MODULATION METER
- (d) INSULATION TESTER
- (e) BROAD BAND WIRELESS SOLUTION

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

Yours faithfully,

Awn

(Alok Mukhopadhyay)
Under Secretary(Prov.I)

Copy to : DD(Procurement), MHA

*1. M/F
2. copy to sig Bns.*

Copy for information to:

- 1. PS to JS(PM), MHA
- 2. Dir(Prov), MHA

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QRs/SPECIFICATIONS FOR SYNTHESIZED SIGNAL GENERATOR

<u>Frequency (Carrier)</u>	
Range	10 KHz to 1 GHz
Resolution	10 Hz or better
Accuracy	1 PPM or better
Ageing Rate	< ± 1 PPM/Year
Switching speed	< 100 ms
 <u>RF Output</u>	
Level Range	-127 to + 10 dBm (typical) into 50 ohm load
Level Resolution	0.1 dB or better
Level Accuracy	±1.5 dB of set output level or better
Output Impedance	50 ohms (nominal)
Output connector	Type N female
VSWR	Less than 1.5
<u>Spectral Purity</u>	
Harmonics	< - 30 dBc
Sidelobes	< - 50 dBc
Residual FM	< 30 Hz
Phase noise	< - 100 dBc/Hz at 20 KHz offset
 <u>Modulation Modes</u>	
	AM, FM, Phase Modulation EXT AM/INTFM & EXTFM/INTAM
 <u>Amplitude Modulation</u>	
Range (Modulation Factor)	0 to 99.5% (min.)
Resolution	0.1% or better
Accuracy	± (1% + 5% of depth setting) or better at 1 KHz modulating freq.
Distortion (at 1 KHz rate)	< 3% upto 80% modulation for $f_c \leq 40$ MHz
 <u>Frequency Modulation</u>	
Deviation	Upto 1 MHz peak at 1 GHz
Resolution	100 KHz or better for deviation < 100 KHz
Deviation Accuracy (at 1 KHz rate)	± 5% of FM deviation or better
Distortion (at 1 KHz rate)	< 2%
 <u>Phase Modulation</u>	
Deviation	0 to 10 radian (Max)
Resolution	0.01 radian
Deviation Accuracy (at 1 KHz rate)	± 4% of indicated deviation
Distortion (at 1 KHz rate)	< 3%
Internal Ref. Osc. Output freq.	10 MHz
Connector	BNC

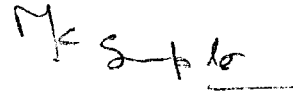
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General Features

Operating Temp.	0 to 55°C
Humidity	95% (max) at 40°C
Power Supply	230V± 10, 50 Hz AC.
Weight	<10 Kg.
Display	LCD / Colour display.
Accessories	Required accessories including Power cord, RF Cable, N(m) to BNC(m) operating & Service Manual to be provided. Spare parts for 5 years trouble free operation.
Warranty:	2 Years warranty from date of receipt of store in good condition



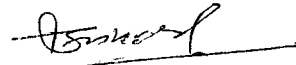
(Kamallesh Deka)
Inspector General(Comm), RSI



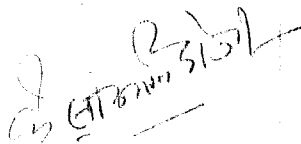
(Brig. M.K. Gupta)
Dy. Inspector General(Comm), NSG



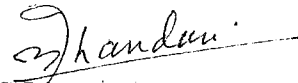
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