

PART III

Specification and Fault Finding

0 TEST SPECIFICATION

1.1 Introduction

The test figures given below are true values and the degree of accuracy and influence of the measuring instruments employed shall therefore be taken into account when verifying the performance of the equipment under test.

Specification figures mentioned hereunder shall hold good for the following conditions unless otherwise stated:

- (a) Input voltage .. 12.0V \pm 0.1VDC.
- (b) Stabilisation time for the set in its case .. 5 minutes.
- (c) Temperature .. 25 \pm 5°C.
- (d) For all receiver measurements use a signal generator of 50 ohms output impedance.
- (e) All transmitter measurements are done using a RF dummy load of 50 ohms.
- (f) All signal levels indicated are open circuit voltages (e.m.f.).

1.2 General Characteristics

Communication range

- Ground-wave propagation .. Whip Aerial—about 25 KM.
- Sky-wave propagation .. Suitable Aerial System—about 250 KM.

Frequency Characteristics

- Frequency range .. 2 to 30 MHz.
- Frequency control .. Crystal Controlled.
- Frequency stability .. Within \pm .005% over the temperature range.
- No. of channels .. Ten.

Standard Channel allocation

- Channels 1 to 6 .. 2 to 8 MHz.
- Channels 7, 8 & 9 .. 8 to 18 MHz.
- Channel 10 .. 18 to 30 MHz.

NOTE: Any other channel allocation can be provided, if required by the customer.

External Channel

- (a) Frequency of operation .. 2 to 30 MHz.
- (b) Input level required
 - for 2-5 MHz .. 500 mV.
 - for 5-30 MHz. .. 400 mV.
- (c) Source impedance .. Low impedance—50-100 ohms.
- (d) Input frequency to be used .. Traffic frequency +1.6 MHz.
- Type of operation .. Simplex.

MODES OF OPERATION

- Voice { SSB .. A3j.
- { AM .. A3.
- CW .. SSB Keyed tone—A2j.

Antenna Requirements

- Input impedance of Antenna System .. 50 ohms balanced with a max. VSWR of 2 to 1.

TYPES OF AERIALS PROPOSED

- Manpack Whip Antenna System.
- Vehicular Whip Antenna System.
- Dipole Antenna System.
- Inverted L/Slant Wire Antenna System.

Power Supply Requirements

- Supply voltage .. 12V (—ve grounding).
- Power consumption on Rx .. About 1.2W (> 100 mA).
- Power consumption on Tx (CW) .. About 60W (> 5 A).
- Power consumption on Tx. (A3j) under } About 30W (> 2.5A).
- normal speech condition
- Permissible supply voltage variation .. 10.8 to 13.5 Volts.

1.3 Electrical Characteristics

Receiver

SENSITIVITY SSB & CW

- .. 1.5 microvolt for 20 dB $\frac{S+N}{N}$ ratio.

A.M.

- .. 3 microvolts modulated. 50% at 1000 Hz
for 15dB $\frac{S+N}{N}$ ratio.

SELECTIVITY (Determined by the filter characteristics)

SSB & CW

- .. For 6 dB — 3.5 ± 0.5 KHz.
- For 60 dB — 4.0 ± 0.5 KHz.