

107-A TEST SET AND FIELD INTENSITY METER


DESCRIPTION

The 107-A Test Set and Field Intensity Meter combines in one portable unit a radio receiver of laboratory quality with metered output and an accurately calibrated signal generator. These instruments, which can be used separately for a variety of test purposes, cover a frequency range of 54 to 240 megacycles without band changing. When used with the associated antenna assembly they form a highly accurate field intensity meter. Extreme sensitivity and high selectivity make the assembly suitable for the measurement of practically all types of radio-frequency emission even in congested bands. It is useful on AM, FM, Television, Aeronautical and Commercial service with assigned frequencies within its wide frequency range. Either average or peak of TV sync values of signal intensity may be read. Field intensity measurements are made with high accuracy by substituting a known r-f voltage from the signal generator for the received signal voltage. Field intensity can then be ob-



tained by applying a multiplying factor for the effective length of the antenna and coupling device. An alternate method is to calibrate the receiver by means of the signal generator to give a direct indication of field intensity. The receiver operates in effect as a linear voltmeter having a 100 db range in 20 db steps. The output meter has a logarithmic (approximate) scale calibrated between 1 and 10. A receiver IF gain control and the 20 db step attenuator allow the microvolt meter to be set at any desired full scale voltage from 10 microvolts to 0.1 volt. The range can be extended to 10 volts full scale by using the 40 db coaxial pad supplied with the equipment. The built-in power supply for the 107-A may be energized from either a 6v D.C. source or 115v 50 to 400 cycle a-c power lines.



NEMS  CLARKE, INC.

ENGINEERING • DEVELOPMENT • MANUFACTURING
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JUNIPER 8-4300



SPECIFICATIONS
107-A FIELD INTENSITY METER

RECEIVER

Frequency Range	54-250 MC
Input Impedance	51 ohms
I.F. Frequency	21.4 MC
I.F. Bandwidth	300 KC
Sensitivity at input terminals as a voltmeter	1.0 uv
Field Strength at 54 MC	1.6 uv/m
Field Strength at 240 MC	6.5 uv/m
Maximum input using external pad supplied	10.0 V
Field Strength at 54 MC	16.0 V/M
Field Strength at 240 MC	65.0 V/M
Output Indicator	Panel meter (approx. Logarithmic scale)
Output	1. To operate at 1.0 milliamperere recorder 2. Audio for headphones

SIGNAL GENERATOR

Frequency Range	54-240 MC
Output	1.0 uv to 0.1 V
Output Impedance	51 ohms

POWER REQUIREMENTS

117 volt a-c, 50-400 cycle	60 watts
or	
6 volt, d-c	8 amperes

MECHANICAL CHARACTERISTICS

(1) Field Intensity Meter	20" W, 11 3/4" D, 15 1/4" H
Weight	56 lbs.
(2) Antenna Case	28" W, 7" D, 6 1/2" H
Weight	16 lbs.
Antenna — Maximum supported height	9 1/2 feet
Antenna — Minimum supported height	4 1/2 feet
High frequency elements adjustable from 11 to 26 inches	
Low frequency elements adjustable from 25 to 67 inches	

PRICE* \$2,250

INCLUDING ANTENNA AND ACCESSORY CASE