

INSTRUCTION SHEET

FOR

MODEL 4127

RF TEST SET

FOR AN/PRC-70 RADIO

INTRODUCTION

The Model 4127 THRULINE® HF/VHF RF Wattmeter is a small, rugged, accurate, yet self-contained tactical test set for testing the output power of RF transmitters. It will measure RF power in two frequency ranges from 2 to 30MHz and 30 to 76MHz, each having two power ranges 5 and 40 watts full scale. A four position rotary switch on the front of the unit is provided to select the frequency and power range desired.

The Model 4127 Wattmeter may be used as either an insertion (THRULINE®) type wattmeter for signal testing into an antenna for effective radiated power or a termination type wattmeter for nonradiating (security) conditions.

This unit requires no batteries or external power source for operation other than the RF line connection. The RF power is indicated by the meter pointer and read directly in watts.

SPECIFICATIONS FOR MODEL 4127

Impedance.....	50 ohms nominal
Insertion Loss.....	0.2dB maximum
VSWR	
Load (dc-1000MHz).....	1.1:1 maximum
Insertion.....	1.1:1 maximum
Directivity	
2-4MHz.....	21dB minimum
4-76MHz.....	24dB minimum
Connectors.....	Female BNC small quick change "SQC" type normally supplied

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Power Range (forward or reflected).....	0-5W/40W
Frequency Ranges.....	2-30MHz 30-76MHz
Accuracy	
+25°C 2-4MHz.....	±10% of FS
4-76MHz.....	±5% of FS
-10°C to +50°C 2-4MHz.....	±20% of FS
4-76MHz.....	±15% of FS
Integral Load.....	15W continuous or 40W intermittent (2 min. on, 10 min. off)
Dimensions (wattmeter).....	2"W x 4-13/16"L x 3"H (51 x 122 x 76mm)
Weight (including cable).....	17 oz. (482gr)

BASIC OPERATING INSTRUCTIONS

The following is a step by step operating procedure for the type of operation desired. Before applying power to the Model 4127, set the selector switch to the 40W frequency range desired. Make initial power measurements in the 40W range. If less than five watts is indicated on the 40W range and greater accuracy is desired, hold the selector switch in the five watt position; the selector switch will automatically return to the 40W position when released. This is a safeguard against over-powering the five watt range.

When operating the Model 4127 in a nonradiating (secure) condition, do not apply power of more than 15W continuously (see Specifications, Page 1). At power from 15 to 40W the unit must be operated intermittently with a two minutes on and ten minutes off duty cycle.

When using the wattmeter to check reflected power, it may be helpful to use the lower power ranges for better resolution even though forward power of up to 40W is being radiated.

NONRADIATING OPERATION

1. Connect the RF output of the PRC-70 to the input, bottom, jack of the Model 4127 Test Set.
2. Using the short RF cable supplied, connect the test set output to the RF load attached to the side. In this condition limit continuous operation to 15W maximum.

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RADIATING CONDITION - Forward Power

1. Connect the RF output of the PRC-70 to the input, bottom, jack of the Model 4127 Test Set.
2. With a suitable coaxial cable equipped with a BNC type connector, connect the output, top, connection to the antenna.
3. Select the proper frequency range with the selector switch and apply power. Read the scale directly in watts.

RADIATING CONDITION - Reflected Power

1. Connect the RF output of the PRC-70 to the output, top, jack of the Model 4127 Test Set.
2. Using a suitable coaxial cable equipped with a BNC type connector, connect the input, bottom, connection to the antenna.
3. Turn the selector switch to a five watt setting of the proper frequency range and apply power. Read reflected watts indicated on the meter scale. For true radiated power subtract reflected power reading from forward power reading.