

ELECTRONIC RESEARCH COMPANY

OPERATING INSTRUCTIONS FOR MODEL 130 REFERENCE OSCILLATOR  
WITH OPTION 1 (AC VOLTAGE SELECTION)

1. INTRODUCTION.

1.1 The MODEL 130. The MODEL 130 REFERENCE OSCILLATOR is a compact, rugged, light-weight unit that incorporates a rubidium-resonance-controlled quartz crystal oscillator to provide an extremely stable 10 MHz sinusoidal reference signal. The MODEL 130 is designed for portability and simplicity of operation, and is intended for application in high-performance systems located in controlled environments.

1.2 OPTION 1. The addition of OPTION 1 increases the versatility of the MODEL 130 by allowing it to operate on AC line voltages of 100, 120, 220, or 240 Volts. OPTION 1 is an AC power entry module mounted on the rear panel. The AC voltage can be selected to match the local AC supply by positioning a small printed circuit board inside the power entry module. The AC voltage was preset to customer specifications prior to shipment, and an appropriately rated fuse and AC line cord were provided with the unit. IF A DIFFERENT LINE VOLTAGE IS SELECTED, A NEW FUSE AND LINE CORD WITH DIFFERENT RATINGS MAY BE REQUIRED.



2. OPTION 1 VOLTAGE SETTING. MODEL 130, serial number \_\_\_\_\_ has been factory preset for a line voltage of \_\_\_\_\_ VAC.

3. SPECIFICATIONS.

3.1 Electrical:

Input	100/120/220/240 VAC
Output Waveform	Sinewave
Output Level	1 VRMS/50 Ohms
Output Frequency	10.000 000 MHz
Long-term Aging	5E-11/Mo, 5E-10/Yr
24-Hour Aging	4E-11
Warm-up Characteristics	
Time to Lock	4 Minutes max.
Time to Within 1E-9	6 Minutes max.
Retrace (Warm-up Accuracy)	+/- 2E-11 After 1 Hour

### 3.2 Environmental:

Operating Temperature Range	-5 to +55 Deg. C
Storage Temperature Range	-55 to + 85 Deg. C

4. RECEIVING AND UNPACKING. The MODEL 130 is packaged and shipped in a foam-packed custom SHIPPING/CARRYING CASE. In addition to this INSTRUCTION MANUAL, the carrying case should contain the following items:

1. The MODEL 130 REFERENCE OSCILLATOR
2. An AC LINE CORD
3. A Plastic FRONT-PANEL COVER (mounted on the MODEL 130).

Upon receipt of the MODEL 130, a thorough inspection should be made to verify arrival of all items, and to ensure that no damage has occurred during shipment.

### 5. INSTALLATION AND OPERATION.

#### 5.1 AC Power Connection

The MODEL 130, OPTION 1 operates on AC supply voltages of 100, 120, 220, and 240 Volts. The voltage setting can be read through the small window directly beneath the AC line fuse to the right of the AC receptacle on the rear panel of the unit.

#### **-CAUTION-**

**BEFORE PLUGGING THE AC LINE CORD INTO AN OUTLET, MAKE SURE THE MODEL 130 VOLTAGE SETTING, FUSE, AND AC LINE CORD ARE APPROPRIATE FOR THE LOCAL SUPPLY**

#### 5.2 Line Voltage Selection (See Figure 1)

To change the line voltage setting:

1. Unplug the AC line cord from the supply outlet.
2. Unplug the AC line cord from the AC receptacle on the rear panel of the MODEL 130.
3. Slide the clear plastic cover to the left to open the compartment containing the AC line fuse and voltage selection card.
4. Carefully remove the fuse by rotating the fuse pull lever to the left.