



**Rockwell  
International**

**instructions**

# AC-8012 Oven Standard Kit (622-3460-001)

Collins Telecommunications Products Division

523-0768671-001211

1 June 1978

Printed in USA

## 1. DESCRIPTION

AC-8012 Oven Standard Kit 622-3460-001 contains an rf oscillator, an external phase-lock card, and all the cables and hardware necessary to install them in the units listed in table 1. When installed, the oven standard provides a high-stability crystal oscillator mounted inside a proportionally controlled oven.

Table 1. AC-8012 Oven Standard Kit, Equipment Used On.

EQUIPMENT	COLLINS PART NUMBER
HF-8010 Exciter	622-3389-( )
HF-8010A Exciter	622-3395-( )
HF-8050 Receiver	622-3385-( )
HF-8050A Receiver	622-3393-( )
HF-8070 Receiver-Exciter	622-3387-( )
HF-8070A Receiver-Exciter	622-3394-( )
851S-1 Receiver	622-4272-( )

**Note**

This kit is factory installed on some configurations of these units.

The AC-8012 rf oscillator provides a 1-MHz sine-wave frequency output at a level of 0.40 volt rms into 50 ohms. Accuracy of the rf oscillator exceeds that of the txco built into the used-on equipments and uses a proportionally controlled oven instead of the temperature-compensating network to improve accuracy over the controlled temperature range, -20 to +70 °C (-4 to +158 °F).

The AC-8012 rf oscillator has two frequency adjustments: a coarse adjustment (FREQ ADJ - COARSE) to adjust the output frequency to  $\pm 1.5 \times 10^{-6}$  of the nominal frequency with  $\pm 5 \times 10^{-9}$  or better resolution, and a fine adjustment (FREQ ADJ - FINE) to adjust the output frequency to  $2.0 \times 10^{-8}$  minimum to  $4.0 \times 10^{-8}$  maximum with minimum resolution of  $\pm 2 \times 10^{-10}$ .

The AC-8012 rf oscillator requires +18.0  $\pm$  0.9 V dc, 8.0 watts maximum during warmup; 2.5 watts nominal after warmup; and +5.0  $\pm$  0.25 V dc, 20 mA maximum.

## 2. INSTALLATION (Refer to figure 1.)

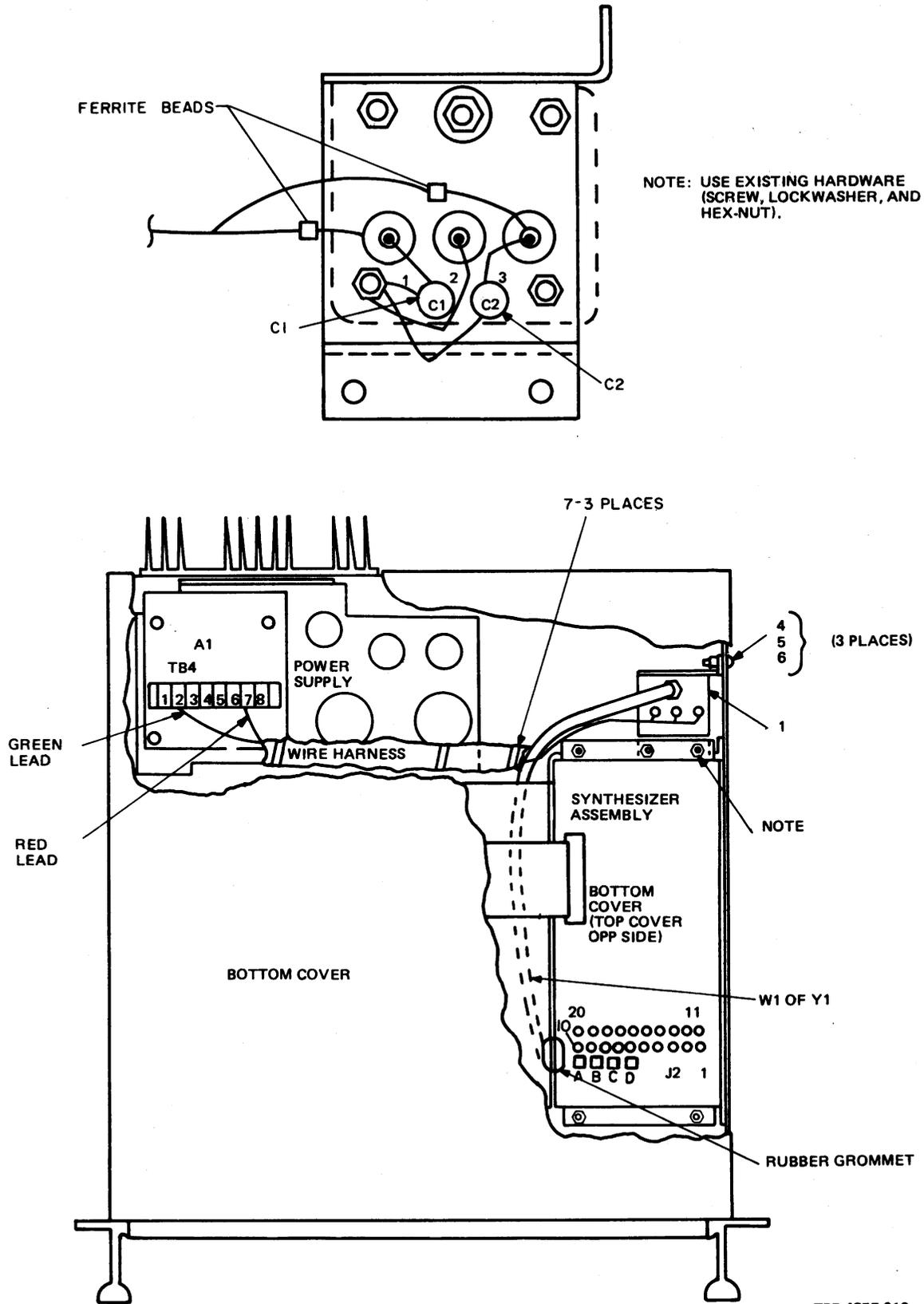
Installation of AC-8012 Oven Standard Kit (622-3460-001) consists of installation of external phase-lock on the synthesizer reference (REF STD) and installation of oscillator assembly Y1 (637-9135-001).

**Note**

Refer to maintenance section of this instruction book for planar card component replacement procedures.

### 2.1 External Phase-Lock (635-0655-001) Installation

- a. Remove top cover from unit.
- b. Remove top cover from synthesizer assembly.
- c. Remove REF STD from synthesizer assembly.
- d. Remove cover from left side rf compartment on REF STD, and move jumper clip from INT to EXT position (strap for external operation).



AC-8012 Oven Standard Kit Installation  
Figure 1

TP5-4257-013

- e. Reinstall left side rf compartment cover on REF STD.
- f. Mount external phase-lock (table 2, item 2) to REF STD with two lockscrews (table 2, item 3).
- g. Set jumper clip on external phase-lock to 1-MHz position.
- h. Insert REF STD in its original position in synthesizer assembly.
- i. Reinstall synthesizer assembly top cover.
- j. Reinstall unit top cover.

**Note**

Some configurations of the synthesizer assembly do not contain a rubber grommet. In configurations not having a rubber grommet, place W1 in one of the cutouts for wiring, using care not to pinch wires when reinstalling synthesizer assembly bottom cover.

**Note**

Some configurations of the synthesizer sideboard contain posts on the J2 pad and some only contain solder holes. In the configurations containing solder holes, do not insert leads more than 0.508 cm (0.20 in) into sideboard when soldering.

**2.2 Oscillator Assembly (637-9135-001)  
Installation**

- a. Remove bottom cover from unit.
- b. Remove attaching hardware referred to in note on figure 1.
- c. Install oscillator assembly (table 2, item 1) to chassis using three screws (table 2, item 4), three lockwashers (table 2, item 5), three hexnuts (table 2, item 6), and attaching hardware removed in step b above.
- d. Install the two wires from oscillator assembly (table 2, item 1) to power supply A1 (green wire to A1TB4-2 and red wire to A1TB4-7).
- e. Using three cable ties (table 2, item 7), tie the two wires that connect the oscillator assembly to power supply A1.
- f. Remove bottom cover of synthesizer assembly and install oscillator assembly cable W1 (table 2, P/O item 1) to synthesizer sideboard as follows:
  - 1. Thread cable W1 through rubber grommet as shown in figure 1.

- 2. Solder center conductor of W1 (insulated) to J2-A post or pad of synthesizer sideboard.
- 3. Solder shield top of W1 (uninsulated) to J2-B post or pad of synthesizer sideboard.
- g. Reinstall synthesizer assembly bottom cover.
- h. Reinstall unit bottom cover.

**3. REPAIR**

Repair of the AC-8012 Oven Standard Kit is accomplished using standard maintenance and planar card repair procedures. Refer to the maintenance section of this instruction book for planar card repair procedures.

Table 2. AC-8012 Oven Standard Kit Parts List.

ITEM	DESCRIPTION	COLLINS PART NUMBER	QUANTITY
1	Oscillator assembly	637-9135-001	1
	Radio frequency oscillator	277-0472-010	1
	Capacitor, 0.1 $\mu$ F	913-3681-000	2
	Ferrite bead	288-0915-030	2
2	External phase-lock	635-0655-001	1
3	Lockscrew - 0.112 x 40 x 0.187	330-1716-130	2
4	Machined screw - 0.138 x 32 x 0.375	343-0169-000	3
5	Lockwasher - 0.138	310-0096-000	3
6	Hexnut - 0.138 x 32	313-0045-000	3
7	Cable tie	435-1169-200	3
8	Drawing envelope	520-8360-132	1
	Installation kit, oven oscillator -- AC-8012	622-3460-001	1

#### **4. PARTS LIST/DIAGRAMS**

This paragraph assists in identification, requisition, and issuance of parts, and in installation/maintenance of the equipment. The Collins part number and description of each nonstandard replacement part are listed in table 2.

Radio Frequency Oscillator 277-0472-010 is a non-repairable assembly and should be returned to factory if defective.

External Phase-Lock 635-0655-001 is repairable and is covered in Synthesizer Reference (623-2085-001) instructions (Collins part number 523-0767970) included in this instruction book.