

Assembly and Operation of the



# 6-METER CONVERTER

MODEL 5BA-300-3





# SPECIFICATIONS

Sensitivity . . . . . (Signal plus noise-to-noise in db)	AM: Less than 0.1 microvolt for 6 db at 3750 cps bandwidth, SSB: Less than 0.1 microvolt for 10 db at 2100 cps bandwidth, CW: Less than 0.1 microvolt for 15 db at 400 cps bandwidth, (Using Heathkit SB-300 Receiver.)
Noise Figure . . . . .	3 db or less at 3750 cps bandwidth.
Frequency . . . . .	Input 48 to 54 megacycles (50 to 58 megacycles with crystal supplied), Output 28 to 30 megacycles.
Bandpass . . . . .	Essentially flat over any 2 megacycle segment from 48 to 54 megacycles.
Image Rejection . . . . .	50 db or better at 6 megacycles.
IF Rejection . . . . .	40 db or better at 28 megacycles.
Crystal . . . . .	22 megacycles $\pm 0.002\%$ 3rd overtone.
Tube Complement . . . . .	6DJ8 cascade RF amplifier, 6EA8 oscillator-mixer.
Power Requirements . . . . .	130 volts DC at 12.5 milliamperes, 6.3 volts AC at 515 milliamperes.
Dimensions . . . . .	Overall 2-5, 3" wide x 0-3 1/4" long x 2-3/4" high.

Net Weight . . . . . 10-1/2 oz.

Test Equipment Used in Preparing Specifications, Measurements, And Alignment Instructions. . . . . Measurements Corporation Model 80 Standard Signal Generator (with 50 ohm pad), Heathkit Model IM-13 Variable Tube Voltmeter.



The Converter is now ready to put into operation. Instrument alignment should not be required, as the preset adjustments of the coils and capacitors should provide converter operation equal to or better than the Specifications. Information on using other crystal frequencies to cover different band segments is provided in the following section of the manual.

### CRYSTAL INFORMATION

The 22 megacycle crystal supplied with the Converter provides reception from 50 to 52 megacycles. Other crystal frequencies can be used to cover different 2-megacycle segments between 48 and 54 megacycles. The following chart lists some of the crystal frequencies that can be used. In each case, the output frequency of the Converter is between 28 and 30 mc, which corresponds to 10 meter reception with the 8B-300 Receiver.

**CRYSTAL CHART**  
(Frequencies in megacycles)

CONVERTER CRYSTAL	COVERAGE
20	48 to 50
21	49 to 51
22	50 to 52
23	51 to 53
24	52 to 54

When purchasing a crystal for use with this Converter, you should specify the frequency and the following crystal characteristics. Crystals that do not have these characteristics will not provide optimum performance.

Holder BC-5/U	Pin diameter .050" Pin spacing 488'
Load capacitance (C <sub>1</sub> )	12.8 $\mu$ f.
Internal capacity (C <sub>0</sub> )	0 $\mu$ f, maximum
Series resistance (R <sub>s</sub> )	30 $\Omega$ , maximum
Drive level	8 milliwatts.

Also, if you install a crystal other than the 22 megacycle crystal supplied, it will be necessary to readjust oscillator coil L6 as directed in the Test And Adjustment section of the manual.