DESCRIPTION

The model VHF-50 Filter-King is a 50 to 54 Mc. broad band crystal controlled converter. It also may be used as a six meter pre-amplifier merely by removing or switching out the crystal. The tube compliment consists of three type 6BS8 tubes, two performing the function of cascode RF amplifiers, and one combining the functions of mixer and third overtone oscillator.

SPECIFICATIONS

Cross-Modulation - None at 100 DB above 1 uV.
Noise Figure - Less than 4 DB.
Image Response - 100 DB down with a 14 or 28 Mc. IF range.
Feed-Thru - 100 DB down with a 14 or 28 Mc. IF range.
Over-All Gain - Approximately 20 DB.
Input Impedance - 50 to 75 ohms nominal.
Output Impedance - 50 to 150 ohms nominal.
Radiation - This design has been certified as complying with FCC rules, part 15, as of date of manufacture.

ALIGNMENT

All units are aligned and tested with a sweep generator and oscilloscope before leaving the factory. The slug tuned coils are adjusted as follows: L11 is peaked for maximum output, and then detuned 1 turn on the high frequency side. L4 and L7 are tuned to approx. 50 Mc. L5 and L8 are tuned to approx. 52 Mc. L6 and L9 are tuned to approx 54 Mc. L3 is tuned for best noise figure, which is approx. 49 Mc.

INSTALLATION INSTRUCTIONS

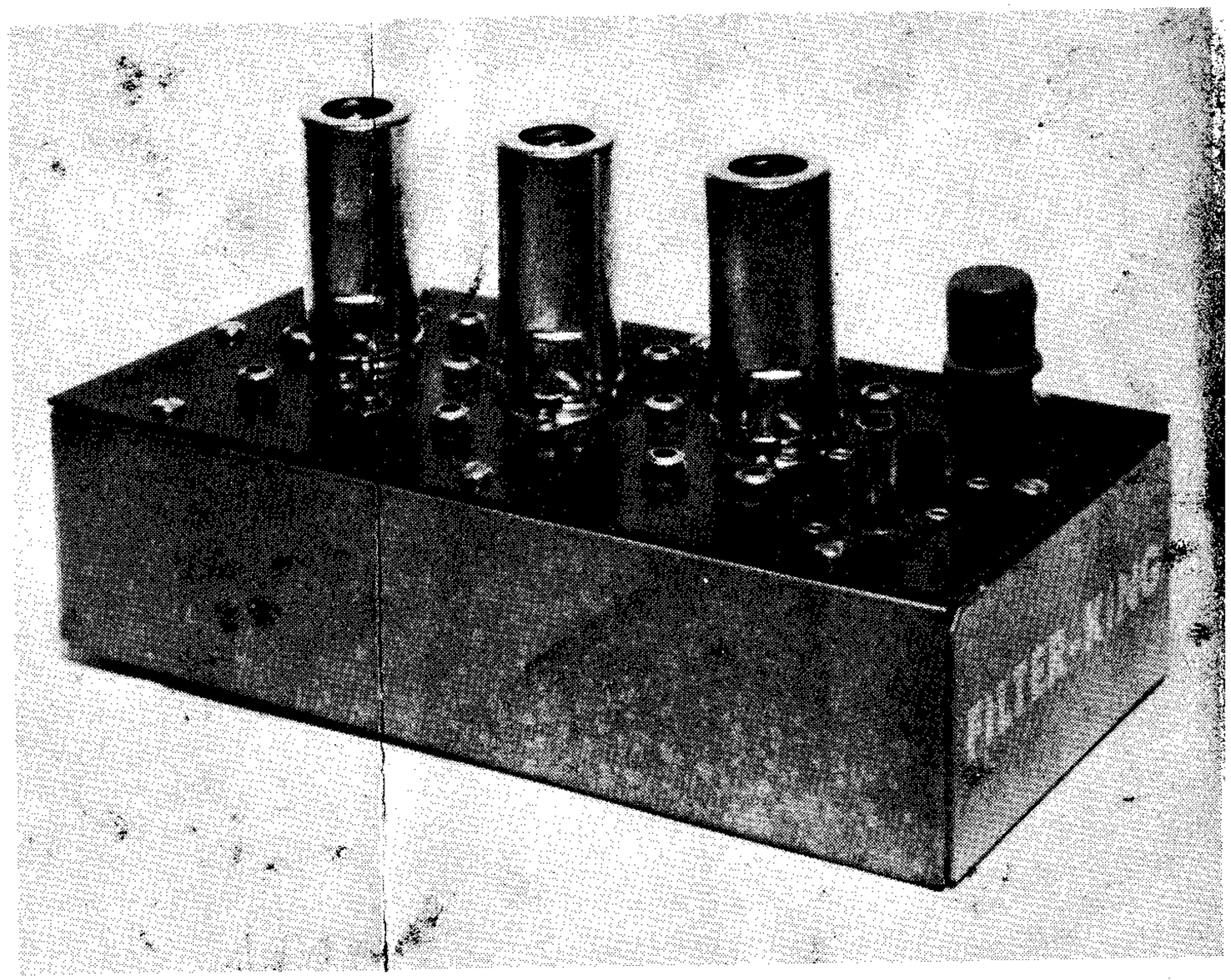
A power supply capable of supplying 6.3 volts at 1.2 Amperes and 120 to 150 volts d.c. at 20 milliamperes is required. The Model PWR-2 Filter-King supply is available for this purpose. The power supply voltages should be connected to the power socket, which is supplied with short leads. Proper pin connections are indicated on the circuit diagram. A good ground is also advisable.

To minimize any undesired pickup by the receiver used as a tunable IF for the converter, the output lead from the converter to the receiver should terminate at the receiver in a coaxial type fitting.

To install the converter input and output connectors, proceed as follows:
1. Cut the outer sheath of the coaxial cable (RG58U) two inches from the end and slide off.
2. Cut the shield and insulation 1 inch from the end and remove.
3. Cut one inch from piece of sheath removed from the cable and insert under the braid. Form braid around the sheath and tin the braid.
4. Insert center conductor into the plug as far as it will go and solder.
5. Form plug body around tinned braid and solder at rear end.

FILTER-KING P.O. BOX 181 TIBURON, CALIFORNIA

FILTER-KING
6 METER CONVERTER



INSTRUCTION BOOK

MODEL VHF-50

PARTS LIST

All Cond. in uufd.

C1 - 10	C18 - 10	
C2 - 47	C19 - 1	
C3 - 10	C20 - 3	
C4 - 47	C21 - 22	
C5 - 1000	C22 - 1000	
C6 - 1000	C23 - 1000	
C7 - 3	C24 - 1(note 2)	
C8 - 1	C25 - 3	
C9 - 1000	C26 - 1000	
C10 - 10	C27 - 1000	
C11 - 1	C28 - 1000	
C12 - 3	C29 - 1000	
C13 - 1000	C30 - 1000	
C14 - 1000	C31 - 1000	
C15 - 3	C32 - 1000	
C16 - 1	C33 - 22(note 3)	
C17 - 1000		

All Res. 1/2 watt

R1 - 220K	
R2 - 150	
R3 - 220K	
R4 - 1000	
R5 - 1000	
R6 - 5K	
R7 - 220K	
R8 - 1000	
R9 - 2.2K	
R10 - 1000	
R11 - 560	
R12 - 2.2K	
R13 - 1000	
R14 - 10K	

Note 1: For normal operation only the 150 volt, 6.3 volt, and the ground connections need be made to the power supply. When the converter is used with the Filter-King Model PWR-2 voltage regulated power supply, the 105 volt regulated connection is wired to pin 4 on the converter power plug to provide for greater oscillator stability.

Note 2: The value of C24 is changed to 2 uufd. for IF ranges above 18 Mc.

Note 3: The listed value of C33 is the average value. The value is selected to resonate the coil at the oscillator frequency. This condenser is normally not used with IF ranges below 14 Mc.