

THEORY OF OPERATION

INTRODUCTION

The following discussion of the theory of operation for the HA-460 Transceiver is divided into four parts. The first part discusses the theory of operation for the receiver portion of the transceiver. The second part discusses the theory of operation for the transmitter portion of the transceiver. The third part discusses the power supply. The fourth part discusses the S-Meter/Relative power indicator.

RECEIVER

Refer to the receiver block diagram, Figure 4, while reading the following discussion. If greater detail is desired at any point, refer to the schematic diagram.

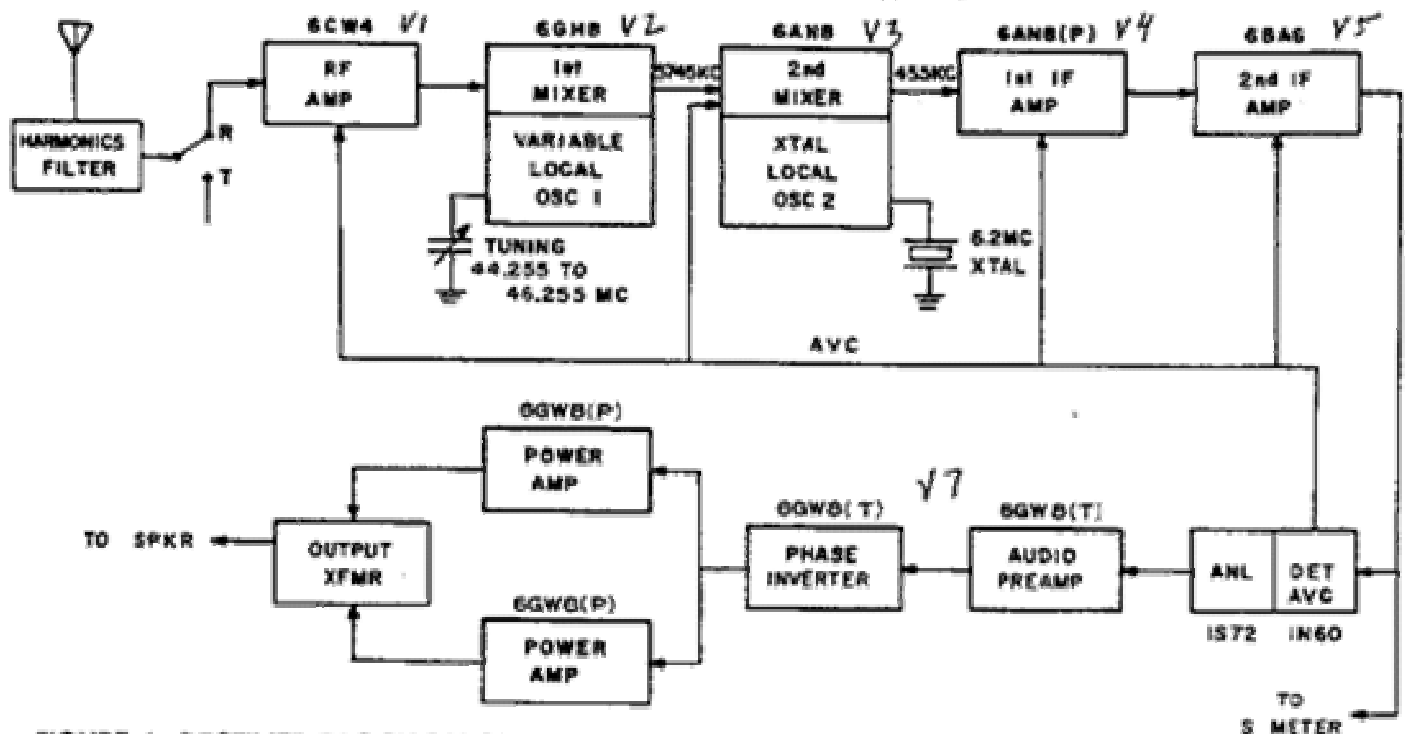


FIGURE 4—RECEIVER BLOCK DIAGRAM

NOTE: (P)=PENTODE SECTION
(T)=TRIODE SECTION

When an RF signal is applied to the antenna of the transceiver, it is fed through the harmonics filter and the change over relay K1 to the input of the 6CW4 RF amplifier. The 6CW4 RF amplifier is a low-noise Nuvistor stage.

After amplification by the 6CW4 RF amplifier stage the RF Signal is fed to the grid of the 6GH8 1st Mixer stage. The 6GH8 1st Mixer stage is the pentode portion of the 6GH8 tube. The triode section of this tube is variable local oscillator 1. The frequency of the local oscillator is determined by the setting of the TUNING control and it can be varied from 44.255 to 46.255 Mc. The output of local oscillator 1 is fed to the grid of the pentode portion of the 6GH8 tube where it mixes with the incoming RF Signal. The output of the 1st mixer stage is tuned to the first intermediate frequency which is the frequency difference between the two signals applied to its input.