The B+ voltage at the relay is used to switch VFO offset diode D11 to provide offset during transmit and also to switch the mute transistor Q14 on. This effectively connects the input of the audio preamplifier stage to ground, thus muting the receiver during transmit.

When the key is released, the emitter and collector voltages of Q12 try to increase toward B+. However, at this time, capacitor C92 is discharging through delay control R68, which keeps the relay energized. After capacitor C92 has discharged and the voltage on the collector of Q13 returns to normal, the relay opens. The amount of time required for capacitor C92 to discharge is adjustable through delay control R68.

RECEIVER CIRCUITS

The signals received by the antenna are coupled through RF Gain control R302 and through the appropriate front panel pushbutton switch (for example we will say the 3.5 MHz band switch). From here, the signal is coupled through coil L1 and diode D1 to RF amplifier Q1. Coil L1 and capacitors C1, C3, and C301A form a resonant circuit. Diode D1 provides the electrical switching to connect the signal to FET Q1 when the 3.5 MHz switch is depressed.

The signal is amplified by FET Q1 and is filtered by one of the coil-capacitor networks. (Each network serves as a filter for one of the four bands.) This filtered signal is then coupled through capacitor C25 to pin 1 of IC1, the balanced product detector. IC1 mixes the premixed VFO signal with the received signal to produce an audio signal. This signal is present at pin 9 of IC1 and is coupled through capacitors C33, C35, and resistor R19 to pin 3 of IC2A.

IC2A and IC2B are active audio filters. The audio signal passes through these two stages of audio filtering, which removes any RF signal and produces an audio signal that has good audio bandwidth and excellent skirt selectivity. There are two stages of audio selectivity which are selected by Selectivity switch SW302 on the front panel.

From the Selectivity switch, the signal is coupled through capacitor C38 to IC2C. IC2C is an audio preamplifier which amplifies the signal and then couples it through resistor R202 and capacitor C201 to transistor Q201. Transistor Q201 further amplifies the signal and then it is coupled through capacitor C204 to headphone jack J301.