

The transceiver is designed with computer type plug-in modules. These modules are: High frequency unit, High frequency IF unit, Low frequency IF unit, Audio unit, Modulator unit, Noise blanker unit and Power regulator unit. The VFO unit, Crystal oscillator unit and Rectifier unit are built into the main chassis.

(1) HF UNIT (PB1181B)

This module contains the receiver RF amplifier, receiver 1st mixer, transmitter 2nd mixer and heterodyne oscillator circuit. The signal from the antenna coil is fed to the gate of Q1 (field effect transistor **3SK40M**) through terminal 8 of the module.

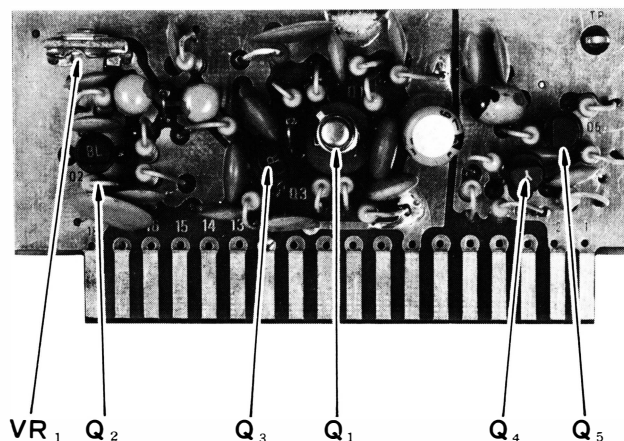
The AGC (automatic gain control) voltage which is obtained from the low frequency IF unit, is applied to the gate circuit of Q1 from pin 9 to control the gain of this stage. A manual RF gain control on the front panel is connected to the source of Q1 through pin 10.

Signal output from the Q1 is then coupled to the receiver 1st mixer Q2, **2SK19GR** where the incoming signal is mixed with a signal from the heterodyne oscillator Q4, **2SC372Y** through the buffer stage Q5, **2SC373**. The product of the first mixer is applied through pin 17 to the high frequency IF unit.

Transmitter signal is fed to the base of transmitter 2nd mixer Q3, **2SC784R** from pin 13. The signal from the heterodyne oscillator is applied to the emitter of the mixer Q3, through the buffer stage Q4, **2SC372Y**. This converts the high frequency IF signal to the desired transmitting frequency. This transmitting signal is fed to T102 through pin 11. The gate circuit of the receiver mixer Q2 is disconnected in transmit by diode switch to avoid the lowering the Q2 of the circuit. Crystal sockets and all coils are mounted on the main chassis.

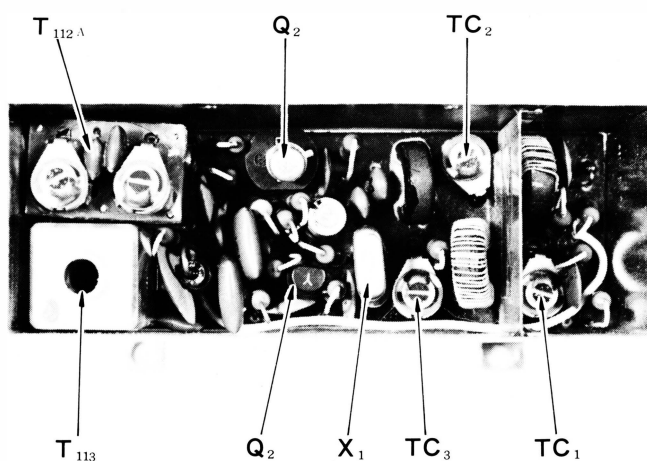
(2) HIGH FREQUENCY IF UNIT (PB1180B)

The module contains the transmitter first mixer Q1, **2SC372Y**, the receiver second mixer Q2, **3SK40M**, and the 5520 to 6020 KHz bandpass network. The signal from the receiver 1st mixer is fed to the gate

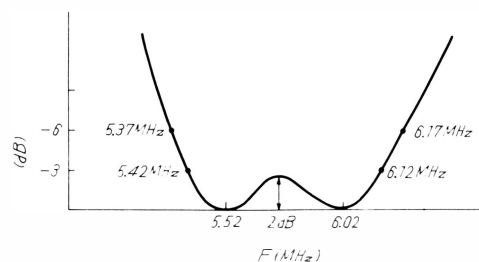


High Frequency Module (PB-1181)

of the mixer through the bandpass network L1, L2, and L3, from pin 15. VFO voltage is also applied to the 2nd gate of Q2 from pin 11. The signal is converted to 3180 KHz low frequency IF and fed to the following stage through pin 3 an output transformer T112A. On transmit, the 3180 KHz signal is fed to the base of the mixer, from pin 5. A 14 MHz trap coil T113 is connected to the base circuit of Q1. The VFO signal is fed to the emitter of the Q1 which produces the 5520 to 6020 KHz high frequency IF signal. This signal is fed to the following stage from pin 16 through the bandpass network.



High Frequency IF Module (PB-1180)



BANDPASS NETWORK CHARACTERISTICS