

The 6150RF-3 is constructed on a single PCB.

The PCB contains microcontrollers U2 and U9, LED indicators CR10 and CR11, sounder, keypad switches, RF transmitter Q3/Y2 etc., The receiver LNA, L0,IF, are all part of U5. The transmitter is a SAW resonator Colpitts oscillator, Q3, Y2 etc. The transmitter is on-off keyed (AM) modulated by a control signal from the microcontroller which turns PA Q4 on or off via Q5/Q6/Q7, thus modulating the output signal. The antenna ANT1/ANT2 is PCB mounted and is coupled to the transmitter output via cap C1.

The receiver is a superhet with a single intermediate frequency at 10.7MHz. Q8 etc. is the low noise amplifier which is connected to the PCB mounted antennas. Diodes CR4/CR6 under the control of a microcontroller are periodically switched to provide system antenna diversity. The IC U5 includes a balanced mixer which converts the incoming signal down from 345MHz to 10.7MHz. This IC also includes the required IF gain and detected output. FL1 and FL2 are ceramic IF filters. IC U4 performs video filtering and processing and provides a data signal. The local oscillator's FDE is YL2 (334.3 Mhz) the PLL L0 is contained within U5.