



TECHNICAL DESCRIPTION

MODEL 45138 REPEATER

DESCRIPTION

The radio transceiver is assembled in a case enclosure and act as a remote control to receive the signal from the transmitter. It responds when properly encoded signal modulated on a radio frequency of 318MHz. The transmitter portion is a low-power communication device operating at frequency 318MHz by SAW resonator, The signal is a digital coding modulated transmission, which transmitted data to a receiver. This digital coding provides different patterns by proprietary integrated circuit (U6).

FUNCTION

The received signal is feed into an antenna and is amplified by front stage transistor (Q1). The transistor (Q2) and its associated components act the superregenerative detector. T1 is used to align the receiver frequency of 318MHz. The detected audio signal is RF decoupled by the low-pass filter, R11 and C18 and amplified by an integrated circuit (U2A-B).

The decoded signal is then wave shaping by (U2A-A) and then feed to the proprietary integrated circuit (U6) for decoding. The LED (DS1) indicates the status of the encoded signal from its associated transmitter.

The digital modulator is employed in the proprietary integrated circuit (U6), which sends encoded digital data. The capacitor (C11 and C19) and ceramic resonator (X1) established the clock rate of 4MHz.

The output data from the proprietary integrated circuit (U6) drives an oscillator that the transistor (Q3) and associated components (C32, C33) controls the frequency of oscillation. Frequency of oscillation is controlled by a high-Q SAW resonator (Y1) of frequency 318MHz.

The inductive load is configured on the PCB as the principle radiating element which similar to an elementary dipole. Resistor (R33) in conjunction with the base bias circuit (R36) regulates the power output of the transmitter.

The power supply is designed to operate at 120V AC. The supply is stepped down to low unregulated voltage through capacitor (C16). The unregulated voltage is regulated by rectifier (D1- D4) and filtered and regulated by (C13, ZD1, ZD3) and (U5) and D6 to provide +6V dc and ZD3 provides +3.6V dc for using in by all internal circuitry.