

Operational Description

The product, R-5000, is a transceiver using Car Alarm System.

It is powered by 1.5Vdc battery (Alkaline) and operated at 433.92MHz for both Tx and Rx. RF signal was transmitted when any button on it was pressed.

It transmits activation codes to the transceiver (A-5000) in vehicles in order to lock/unlock the car door & trunk release & vibration and others function.

The CPU (IC101) of R-5000 will encode the activation code for each key and modulated RF signal when any key was pressed.

When transceiver (A-5000) in vehicles receive the signal from the remote transceiver (R-5000) will return a RF signal to indicate the status.

See the block diagram and Circuit diagram.

The encoded data from the Micro Controller (IC101) is applied to the stage of the oscillation modulation (X5) and modulated to FSK signal which frequency is 48.213 MHz, and converted to the triple frequency of 144.64 MHz in the Frequency Tripler Multiplier (Q8), and fed to the final Frequency Tripler Multiplier (Q7). The final frequency is converted to 433.92 MHz and amplified by the Power Amplifier (Q6). The signal is fed to the isolator and this signal is radiated from the spring antenna.

The FSK modulated RF signal induced from the antenna is fed to Low Noise Amplifier (Q1, Q4). The signal is fed to Image Reject Filter (SAW1) and this signal is mixed by Mixer (Q2) and converted to IF frequency (21.4 MHz) by the Channel Select Filter (x6). The signal is fed to IF Detector IC (IC1) and converted to the digital data (Rx data).