

Circuit Description of the Main Control Unit

RECEIVER

The signal received by the antenna (ANT1) passes through the conversion circuit (D1,D2,R45,R2) and BAND PASS FILTER LC (C2, T1, C3) and is amplified at RF AMPLIFIER.(Q1). The amplified signal is filtered by BAND PASS FILTER (C8,T2) to eliminate unwanted signal before passing through THE FIRST MIXER(Q2).

The voltage of transfiguration diode is controlled by the pin25 of MCU . The signal supplied by RF AMPLIFIER mixed with the first local oscillator signal supplied by Crystal Frequency Multiple circuit (Q5) at THE FIRST MIXTER and generate THE FIRST IF SIGNAL of 21.4MHz. The FIRST IF SIGNAL passes through the crystal filter (FL1) to eliminate the spurious signals of adjacent channel.

After being amplified by Q3, the 1ST IF signal enters into FM processing chip (U1). The signal remixed with the second local oscillator signal (20.945MHz) in the FM procession chip (U1), which generates the second IF Signal of 455Khz. The Second Local Oscillator Signal will pass through ceramic filter (FL2) for clearing the useless spurious signals before it is amplified and demodulated.

The audio signal, discriminated by (TC/C32), is filtered by low past filter (C19, R15,R16,C20) and then shaped by FM processing chip(U1) to turn into FSK signal. Afterwards the FSK signal passes a pull-up resistor (R2) and goes to the pin12 of MCU for decoding.

The MCU decodes the received FSK signal and takes the corresponding actions controlled by the Remote Control such as arming, disarming, checking, trunk releasing, starting ...etc by output high level driving signal to activate relays with a specified timing sequence.

TRANSMITTER

There are several detections from the signal of the vehicle as inputs to MCU. These signals include door, ignition, oil sensor, brake pedal, parking brake and shock sensor. The signal triggered by these detections or the ACK signal are from pin23 of MCU and pass through a low pass filter(R24,C36,R27,C35) and removes the portion higher than 3khz. The signal directly enters into the transfiguration diode (D5) of the Crystal Frequency Multiple circuit (Q5) to generate the FSK signal. Then the signal is buffered and amplified by Q6 following with a low pass filter and then is amplified with 14dbm power output by Q7.

Before its arrival at the end of antenna, TX AMPLIFIER output signal passes through a Low Pass Filter network (C48,L9) and a RX/RX conversion circuit which consists of D2, R2 , D1 and L8. D1 is open under the mode of transmitting and close under the mode of receiving.