

Operational Description

1. Organization and summary

- 1) Included : a. Transmitter
b. Receiver

2) Summary

This products is for keyless entry for vehicle and use 433.92MHz.

Main function is including remote engine start, automatic/manual door lock/unlock, door open/shock detect, panic siren, trunk open, engine start kill, arm/disarm.

2. Circuit

1) Transmitter

When Pin 24 of IC03 provides "High" signal and "Low" signal comes out from Pin 25, Base Bias is supplied to Q14, and X02 is oscillated and transmitting frequency(433.92MHz) is generated by Q14 and the surrounding elements.

At this moment, when Pin 24 of IC03 is converted to "Low" signal, transmitting frequency is OFF. Again, when Pin 24 of IC03 is converted to "High" signal, transmitting frequency is ON. By using this method, it generates "A1A" frequency and transmit the data.

Transmitting frequency(433.92 MHz) oscillated by Q14 and X02 comes out through C20, and then the transmitter power goes through R32 and Forward Bias is filtered by D11 and then the current flow to L04.

Due to short status of inside of D11, the transmitting frequency came through C14 passes by D11, and goes through C27 and then come to be discharged through Antenna.

2) Receiver

When Pin 25 of IC03 provides "Low" signal, Receiving signal caused from Antenna comes into through C27 and Forward Bias is filtered at D11 by the power supplied to Pin 25 of IC03 at R33 and current flows to L04.

Receiving signal comes into C31 through D11, only the required substitute receiving frequency goes through by tuning circuit of L05, C32 and then entered to Pin 9 of IC05 through C33.

The receiving signal entered to Pin 9 of IC05 is amplified by the internal amplification circuit and come out to Pin 7, and then, it is filtered by the tuning circuit of L06 and C35, and go into Pin 6 through C36.

At this moment, receiving frequency(F_R) generates $F_L + F_R$ and $F_L - F_R$ through Local frequency (F_L) and Mixer, and only $F_L - F_R$ (1.8 MHz) goes through internal IF Filter, and output to Pin 4.

And Local Frequency(F_L) is Phase locked loop(PLL) method and Local Crystal is made by F_R -

$0.27\text{MHz} \div 64$.

The receiving signal came out from Pin 4 goes into Pin 3 through C45 and then converted to Audio Signal through internal AMP and Filter and then comes out to Pin 11 through internal Comparator of IC.

Again, it is entered to Pin 21 of IC03 through R40 and analyze.