

Operation Principle of RX

1. Oscillator

X101 form a crystal oscillator. It provides a local frequency input to 1st mixer and 2nd mixer the receiver. The RX channel is setting by selecting the channel switch SW202

2. Receiver

The RF signal is received from the antenna and pass through a LC circuit for rejecting the unwanted signal. Q201, L204 turning coils as LNA amplifier with filter. It amplifies the incoming RF signal and then inputs to the 1st mixer circuit, Q and L205 as mix amplifier, to amplify the mixer 1st IF(intermediate frequency) signal and then inputs to the 2nd IF---receiver IC. U201 is a lower power narrowband FM receiver. Its low voltage design provides low power drain, excellent sensitivity and good image rejection in narrowband voice and data link applications. This part combines a mixer, an IF limiter with a logarithmic response signal strength indicate a quadrature detector, an active filter and a squelch trigger circuit. The 2nd mixer amplifier converts an RF input signal to a 455 KHz IF signal. Passing through an external CF201, the IF signal is fed into a limiting amplifier and detection circuit where the audio signal is recovered. A conventional quadrature detector L210 is used.

3. Q207~Q213 is a led meter driver. It drives a group of LEDs which indicate the sound level.

Vibration Function: SW1 is vibration switch, if SW1 set to ON, the device will turn on the motor by enough sound level.

4. Speaker amplifier

U202 YD8602 is low voltage audio power amplifier. It amplifies the audio signal and drives the speaker, Can select the volume level high or low by adjusting the volume VR.

5. Power supply

The parent unit is powered by 4.5V battery or an adaptor with 6VDC.

6. Launching antenna is external antenna (Length=8cm, Gain=1dBi), It's good for receive and launch RF signal.