

## **Circuit Description**

### **1. The Circuit structure**

The receiver utilizes single conversion. The IF is 4.5MHz, The local oscillator signal both for TX and RX are supplied from the crystal oscillator circuit.

### **2. Receiver System.**

#### **1). RF AMP.**

The RF signal coming from the antenna passes through harmonic filter (LPF) consisting of U4 to filter out the unwanted signals, the antenna switching circuit (U5), and is amplified by RF low-noise-Amplifier Q3, and goes to the mixer.

#### **2) Mixer**

The signal from the front end is mixed with the local oscillator signal generated in the crystal oscillator by U2 to produce IF of frequency of 4.5MHz.

### **3. Local oscillator**

Transmitter: RF modules 18MHz (C31, C32, Y1) and SN93500 IC of the 12MHz (C69, C671, X1) component.

### **4. Launchers system**

#### **1). Transmit audio**

TX wheat drive through the first to voice signals into electrical signals through IC2 (LM4890) to enlarge an operational amplifier and then after the second class, Composed of high-frequency extraction filter bandwidth of 20-30kHz of the electrical signal and then to ADC (in SN93500) converted to PCM DATA, through the SPI port module output to RF7121 sent.

#### **2) Video transmission**

Transmitter through the U8 (OV7670) to obtain images, compressed by SN93500 IC output through the SPI port to RF7121 module.

#### **3) Modulation and RF amplifier**

Basically, audio and video packets in the A7121 through the RF modulator, PA after U3 (AP1110) after amplification (U4) BF2520 launch out.

#### **4) ANT switch and LPF**

Mainly by the antenna switch U5 (HWS314) processing, the signal input and output filter by U4 (BF2520) to deal with.

### **5. The composition of power**

The input 6V power or 3.7V battery power, by a 3.3V voltage regulator U3 to RF module, U5 from 3.3V voltage regulator power supply to SN93500 and amplifier IC2.