

Working Theory

1、 Working Theory of the Remote Controller:

The remote controller is composed of two parts:

Part I: Control Circuit.

Part II: High Frequency Transmit Circuit.

CPU or IC defines different buttons to release different functions. For example, when a certain button is pressed, the CPU or IC will sent out relevant data which will control Q1 through R3; when the data is high level, Q1 will be connected, and the transmit polar of Q2 will be connected to ground through Q1, R2 will provide base electrode bias, then the Q2 is in amplified status, the saw starts surging. Since the saw is a sensibility component, it contracts the frequency of the saw to its central frequency through capacitor C3 and C4, in this way, the data signal will modulate the carrier circuit (which is composed of Q2, C3, C4, saw and the printed circuit inductance) through the modulator Q1, and then transmits.

2、 Working Theory of the Main Unit

The main unit is composed of receiving circuit, CPU and driving circuit.

Receiving circuit(RF229 receiver): This part pick up the data signal from the remote controller. Then it will select the needed frequency through L1 and L2 of the receiving circuit. Q1 and the high frequency circuit composed peripherally will amplify the weak signal, then superregeneration surging circuit modulates the data signal and output the signal to CPU after

amplifying and adjusting the signal through LM358. CPU will identify and make judgement.

CPU (CF775 and relevant peripheral circuit): CPU is the core of the whole system. It judges and reacts to the signals from the remote controller, and takes relevant measure to process illegal signals.

Driving circuit (ULN2004 and Relay1-6): All the load of the system is the large current load, so the loading capacity of the CPU is far from the requirement of the controlling system. In this sense, we need to realize the control on the load with a driving circuit. With the driving circuit's help, the CPU controls the load according to the remote controller's indication or the relevant reaction results from the abnormality of peripheral inspection circuit, for example, it controls the direction lights or the siren.

EXAMPLE: CPU receives the "arm" signal from the remote controller, the system will be in armed status, the CPU will instruct the direction light to flash once and the siren sound once. The whole procedure is like this: the "arm" signal is modulated by the receiver, and transmitted to RA2 port of the CPU, then the CPU will make judgment on this signal, if the instruction is "arm" instruction, RC3 and RC2 ports of the CPU will output a high level(0.5second) to foot 4 and foot 5 of ULN2003. ULN2003 is a invert driver, when foot 4 and foot 5 have an input high level, its foot 13 and foot 12 will be turned to low level. Relay 3-5's controlling coil will have current

and it will turn from Normally Closed to Normally Open for 0.5second. Thus the direction lights and the siren will have 0.5second's power supply and the lights will be on and the siren will sound for 0.5 second. In arm status, if there is illegal signal input in RB4 port(shock signal), RB5-7(key, door, brake pedal signal), the CPU will instruct the direction lights and the siren in accordingly.