

Operational Description

1. The circuit function and device operates

1.1 The transmission unit being made up of 4 sections: the chargeable battery +3.6v, the micro controller digital encoder, 433.92 MHz SAW resonator and RF transmission circuit (Refer to attached transmission block drawing) .

The code being modulated to 433.92 MHz frequency point, using ASK modulation type (details please refer to the code description), the frequency band width is 1 MHz. The Duty cycle of code is 1:3. The bit rate is 1100bps.

1.2 The receiver unit being made up of 5 sections: the chargeable battery +3.6v, +3v power regulator, RF receiver demodulation, micro controller digital decoder and alarm circuit (Refer to attached receiver block drawing).

The 433.92 MHz high frequency signal being mixed with the LOF, and output 1.8 MHz IF signal, then input to micro controller to decode, and drive the speaker by output.

1.3 When Using, power on the receiver unit at first, the LED of receiver unit will glow long time, and the receiver unit will send out long sound “BE” at first, then short sound “BE”(interval time is 1.6s or so), then power on the transmission unit, the receiver unit will send out long sound “ BE”, which means that the study code of receiver and transmission unit is successful, at the same time the LED of receiver and transmission unit will twinkle. The receiver unit will not send out sound until the distance between the receiver and transmission unit is out of the specification. When the strength of alarm sound is too small or the receive distance is too short, which means to the transmission and receiver units need to charge. Put them to the charger, LED sends out red light, after about 2.5 hours, LED sends out yellow light, which means to the charge is full enough.(Still have small current to go on charging, but which will not damage the chargeable battery and charger.)

2. Attached statement

2.1 The transmission unit being put to the travel bag or box, receiver unit being kept with you, put it to your pocket or hang up at your waist.

2.2 The same frequency band and metal object will make the receiver distance shorten.

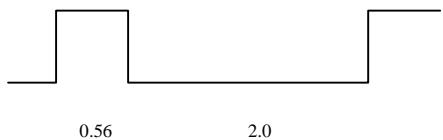
2.3 When charging, power off the receiver and transmission units.

2.4 To make the transmission and receiver unit operate normally, please keep the distance of them farer than 20cm.

3. The code description

3.1 Define:

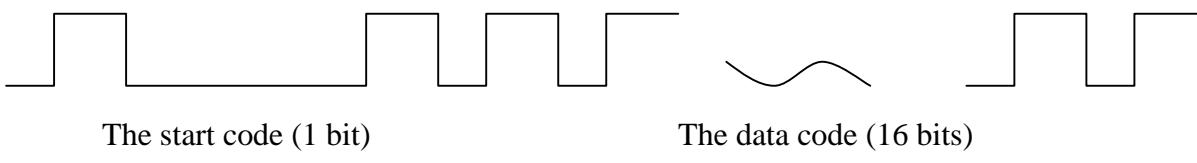
a. The start code: Occupy 1 bit code width. Being made up of the high level(0.56ms) and the low level(2ms). The wave type as below:



b. The data code: Occupy 16 bits code width. "1" means that high level is 0.56ms and low level is 0.28ms. "0" means that high level is 0.28ms and low level is 0.56ms. The wave type as below:

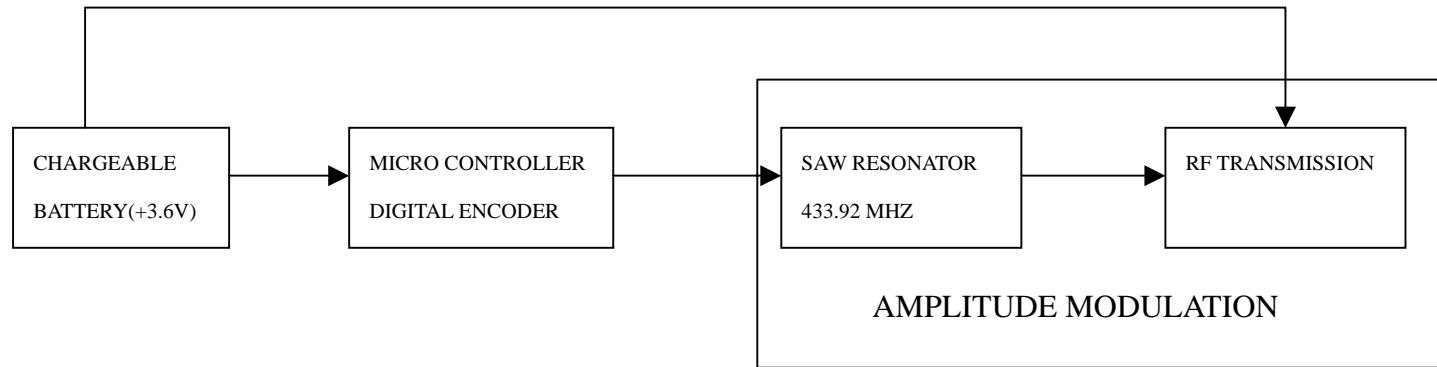


c. The frame: Occupy 17 bits, being made up of 1 bit start code and 16 bits data code.

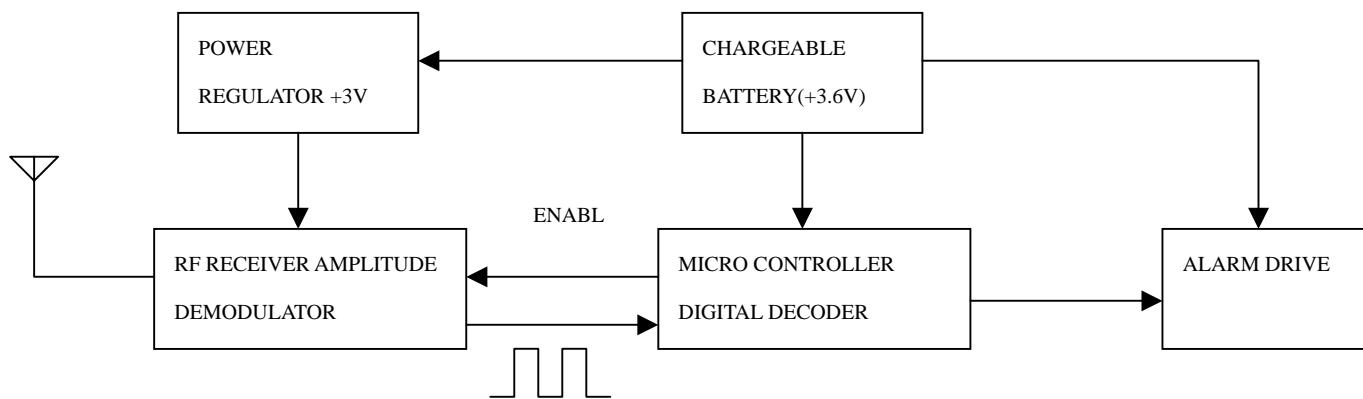


3.2 Code transmit:

The TX unit transmits 3 frames every time, and the interval time of transmission between the first time and the next time is 800ms.



DX-147 TRANSMISSION BLOCK



DX-147 RECEIVER BLOCK