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Hardware Description

The XHc product is half-duplex RF communication control system; The system have include TX (Hand Held Unit / Service Man Unit) & Rx (Base Unit).

Main Structure of TX unit

The TX Unit (Hand Held Unit / Service Man Unit), the mainly RF communication channel is 315MHz, the structure of the TX unit include 8 bit MCU, 16k EEPROM, low battery detector, 315MHz RF transmission board, LCD display, keypad input & 4pins marry communication channel with base unit. The power supply is 6V by the 4 AA battery.

RF Board

On Transmission RF board, the fundamental oscillator frequency is 78.75MHz and the data transfer channel frequency is 315MHz \pm 5KHz. Reference to the RF Tx circuit, X1 function is the fundamental oscillator 78.75MHz, the RF signal has modulation mixed Q1 "2SC3585" by the signal Q3 "2SA812" & the 78.75MHz.

The function of the transistor "2SC3585" is RF amplification for the transmission signal.

MCU

The 8 bit MCU (HE89A22) is main control in the TX unit, This is control the RF board data transmission or not, External Memory (16K EEPROM) & LCD display. The main duty of MCU is represent the state from input ports (Key Pad or Low battery detected) and display the program states on the LCD display. The MCU can store the program data in to the EEPROM.

The function of the C1, C2, C3, C4 & C5 is LCD Charge Pump setting,

IC3 16K EEPROM function is the external memory in the circuit

OSC1 is 4MHz for Fast Clock of internal interrupt Program.

OSC2 is 32768Hz for slow Clock & Real Time Clock of Program.

This is the External memory for automatic store the program data, when change the dial key position. IC4 7245 is the voltage detector of Low Battery Detected.

Marry Operation

When let TX Unit & Base Unit has connected together, the 4 pins connection pins have created the communication channel for transfer the "date / time / Base number / Security Code" from Base Unit to TX Unit.