3.1 The Circuit Description

The system has five parts: the power supply; the TX module; the battery detector; the position detector; the micro-controller and the LED & buzzer indication circuit.

The Power circuit

The unit uses two button cell batteries CR2032 that 6V DC power. The voltage of 6V directly supply the TX module for transmitting the radio-frequency. The other circuits all use the 3V DC power from the regulator U2(HT7130A). The other components are C1-4.

The TX Module

This module works in ASK mode at center frequency 433.92MHz. It has two functions of modulating and transmitting.

The Battery Detect Circuit

The unit can detect the voltage of battery and send signal to MCU when battery be low. This circuit includes R1-3, Q1-2,D1.

The MCU and Keyboard

The core of unit is the micro-controller EM78P153 can processes all signals from any peripherals and executes all control functions. The keyboard is input-set for user.

The indication

All states of working will be indicated by BUZ1, LED1 that controlled by micro-controller.

The position detect

The system can use reed-switch (S7) to detect the position of the unit. The unit is in the wall mountable socket if S7 is switch-on, V.V. . The other components of this part

are R5, R6, Q4, S8.