1. Functional Description Of KPC Tag, Model KT901

1.1 Power Supply

The power supply consists of a single 3.6 volt AA lithium battery.

1.2 433 MHz Receiver

The signal sent into the antenna undergoes the conversion of both transmission and reception that is essential to TDD(Time division duplex) method. During this reception period, the signal is sent to a transceiver IC. At this time, transmission is blocked.

A transceiver IC receives the signal from antenna switch, separates the I signal and Q signal of 307.2 KHz through LNA(Low noise amplifier) and mixer, filters and amplifies both of them, generates the baseband digital signal via both ADC (analog to digital converter) and FSK demodulator, and sends it to the MCU of a main board.

1.3 433 MHz Transmitter

The digital data in the MCU of a main board is modulated into FSK in the Transceiver IC, and then converted into the reference signal of VCO. The RF signal of 433.92 MHz transmitted from VCO is converted into the single ended signal via a phase shifter and MUX. It is also sent to antenna switch via power AMP and LPF. Antenna switch sends the RF signal to the antenna for a certain time. At this time, reception is blocked. The RF signal inputted into the antenna is also transmitted from the antenna.

1.4 CPU

A NEC uPD78F0515 with a clock frequency of 8 MHz. ??

1.5 EEPROM

512Kbytes serial EEPROM for the tagID configuration data and user data.