

## 4. Specification

### 4.1 CPU

Type	uPD789860 (8bit) Manufacturer: NEC Corporation
ROM	4K bytes
RAM	128 bytes
EEPROM	16 bytes
Clock frequency	5MHz
Clock frequency generation	Ceramic resonator
Package	20pin SOP

### 4.2 RF block

Carrier frequency	315MHz
Frequency generation	Crystal resonator
Modulation	ASK
Bit transmission rate	1000bps or 500bps
Duty cycle	0.5
RF output power (field strength)	6000 $\mu$ V/m (QP detect mode)

### 4.3 Others

Dimension	53.5mm $\times$ 30.0mm $\times$ 12.0mm
Weight	18.0g
Battery	Lithium cell (CR2032) Manufacturer: Maxell or Panasonic
Operation Voltage	DC 3V, 220mAh
Operation temperature	-20 ~ +60

## 5. Features

### 5.1 Transmission frame

The transmission begins immediately in case of LOCK or UNLOCK button is pressed.

The transmission frame consists of the six data frame.

The transmission data frame consists of 63 bits length. The first 8 bits comprise the Synchronous region. The second 50 bits are the vehicle identification region. The third 4 bits are for each buttonfunction. The last 1 bit make up the ending region.

16 million different identification codes are available. The security code is always changed in case of any of the buttons is pressed. The transmission time is typically 600 milliseconds.

### 5.2 Battery saving

To prevent the battery exhaustion, the microcomputer of the transmitter is usually inactive. When the button will be pressed, the microcomputer wakes up immediately and judges which button is pressing. Then the microcomputer constructs the transmission frame and radiates it from the antenna. After transmitting, the microcomputer switches stand-by mode by itself.