

3-4. System Description

Transmitter contains of 4 buttons.

- Door Lock button
- Door Unlock button
- Trunk button
- Panic Alarm button

There is no difference among LOCK, UNLOCK TRUNK and PANIC conditions regarding the electrical and mechanical function of a transmitter. Also there is no difference on each condition regarding the frequency of radiated emissions. The only difference is a transmission code.

Transmitter operation with a lithium battery (: CR2025)

Radio frequency Oscillator: Carrier: 313.85 MHz
Frequency Modulation: ±40 kHz

Action principle of Transmitter of Keyless Entry System is written below:

Transmitter can transmit signals by button operation, when all circuits are in stop condition, inclusive of microcomputer.

(: Stop condition means the condition of waiting for button switch input.)

Even if Transmitter is in stop condition, as soon as one of two buttons is pressed, microcomputer starts to operate.

Microcomputer reads ID code, which was memorized before, from the EEPROM. EEPROM set up with in microcomputer. When the read is over, data is transmitted according to transmission format for each button switch. The transmission time is 314.0millisecond.

Microcomputer communicates with oscillator. When output of microcomputer is “HIGH”, oscillator frequency is shifted HIGH side, and when output of microcomputer is “LOW”, oscillator frequency is shifted LOW side.

When transmission of all data is over, oscillator stops and microcomputer returns to be in stop condition (; waits for button switch input again).

AS concerns Transmitter for test sample, the software program is modified to continue to transmit data “0” after a battery is set in.

3-5. Data Format

【 Data Format 】

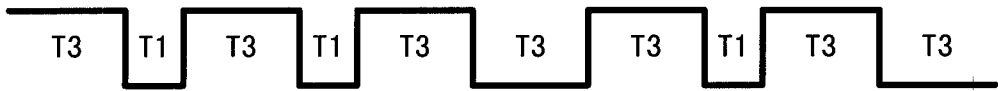
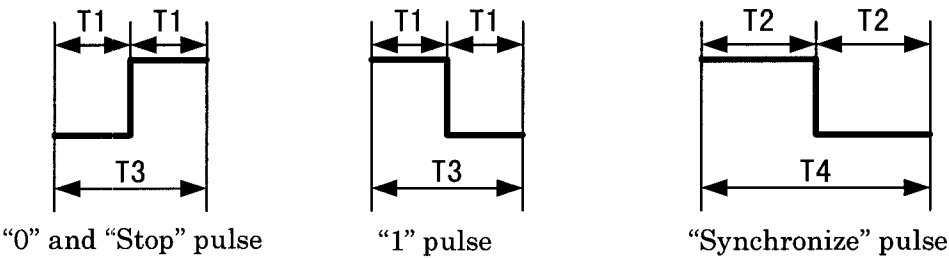
Pri.header	Frame1	Frame2	Stop
180 bit	71 bit	71 bit	1 bit

*Frame2 is the same code of Frame1.

Header	Synch ronize	Function	ID code	Synch ronize	Counter	CRC data
5 bit	1 bit	8 bit	24 bit	1 bit	16 bit	16 bit

- ※ Pri.hedder : Tuner wake up pulse
- ※ Header : Head sign of the each frame
- ※ Synchronize : For synchronize bit
- ※ Function code : Information of operated switch
- ※ ID code : When the receiver's ID code and the transmitter's ID code (received ID code) is same, receiver operate the function, and the code is not same, receiver not operate.
- ※ Counter : Rolling code
- ※ CRC data : CRC calculation data by ID code and Counter.
- ※ Stop : End sign, the final bit of frame2 counter

【 Data Type 】



"Header" pulse

	Period (milliseconds)
T1	0.5
T2	0.75
T3	1.0
T4	1.5