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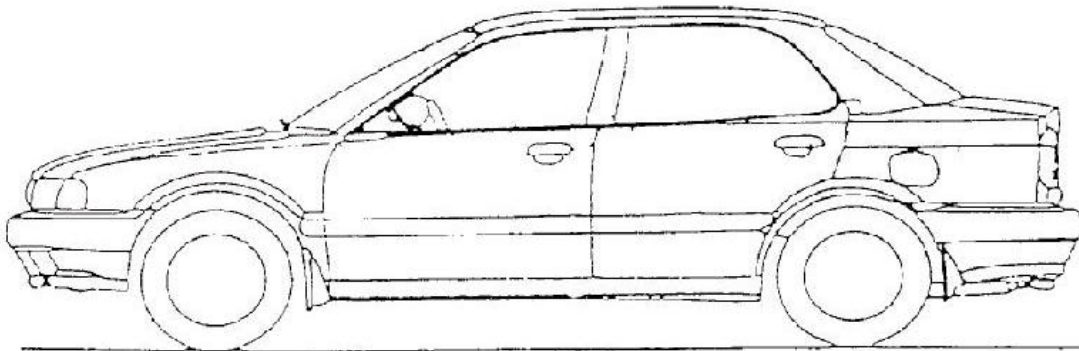
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.

**NOTE:** THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

## 1. Constitution of the Radio Frequency Keyless Entry System for vehicle

The radio frequency keyless entry is a system that it controllers locking and unlocking the door by wireless remote controller. This system consists of three components. The TRANSMITTER is a device that transmits the signal when the button is pressed. The transmission signal consists of several synchronous codes, unique identification code, security code and function code. The RECEIVER is fixed inside the vehicle. It works intermittently to prevent the battery exhaustion. When the receiver detects the synchronous code, it runs continuously to receive the signals completely. After receiving the signal, the receiver decides which operation will be performed. The user can select the following operations by pressing the button of the remote transmitter.

OPERATION	ACTION
<b>LOCK</b>	lock the door
<b>UNLOCK</b>	unlock the door
<b>PANIC</b>	alarm the siren

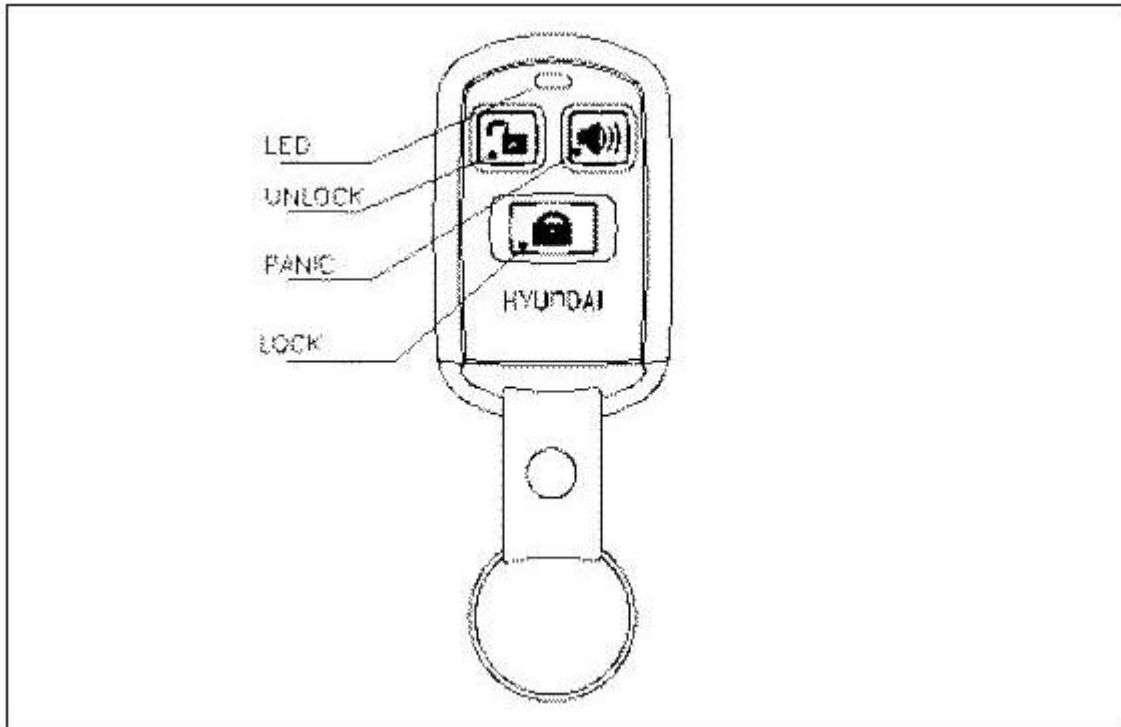


Transmitter  
 $f = 307.9\text{MHz}$



## 2. User's manual (provisionally)

### REMOTE TRANSMITTER



You can lock and unlock your vehicle with the remote transmitter.

#### LOCK

When you push the LOCK button, all the doors will lock.

You cannot lock any of the doors with the remote transmitter if any door is open or the key is in the ignition switch.

#### UNLOCK

When you push the UNLOCK button, all the doors will unlock.

You cannot unlock any of the doors with the remote transmitter if any door is open or the key is in the ignition switch.

#### PANIC

When you push the PANIC button, Siren will alarm.

### 3. Block diagram

This is the block diagram concerning to the receiver.

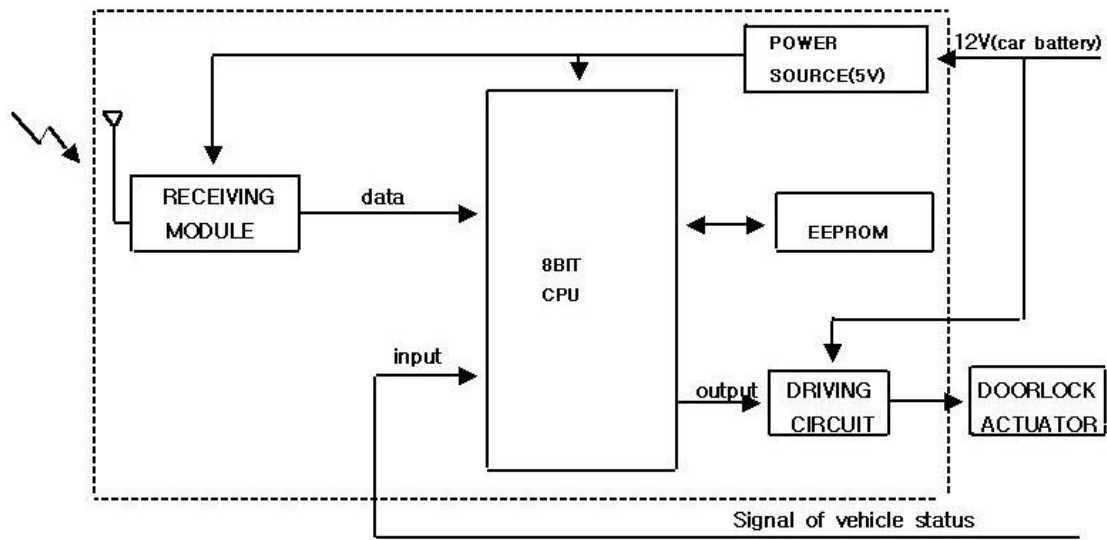


Figure 3.1. block diagram of the transmitter

## 4. Specification

### 4.1 CPU

Type	MB89636 (8bit) Manufacturer: FUJITSU
ROM	32K × 8bit
RAM	1K × 8bit
Clock frequency	10MHz
Clock frequency generation	Crystal resonator
Package	64pin QFP

### 4.2 EEPROM

Type	S-93C46XXX Manufacturer: Seiko. Elec.
Memory	1Kbit
Package	8pin SOP

### 4.3 RF Receiver Module

Type	WMF-R13 Manufacturer: Mitsumi Elec.
Local clock frequency	318.6MHz
Frequency generation	Crystal resonator
Modulation Scheme	FM (Single Superheterodyne)
Bandwidth	±200kHz
Carrier Detect Sensitivity	11dBuVemf

### 4.4 Others

Dimension	113mm×99.4mm×30mm
Weigh	184g
Battery	CAR Battery (DC 12V)
Operation Voltage, Current	DC12V, 50mA (4mA on standby)
Operation Temperature	-30 °C~+80 °C

## **5. Features**

### **5.1 Door lock control**

The LOCK relay in the receiver drives the door lock actuators to "LOCK"-side when LOCK button of transmitter was pressed. The UNLOCK relay in the receiver drives the door lock actuators to "UNLOCK"-side when UNLOCK button of transmitter was pressed. These facility doesn't work if the key is inserted the key cylinder or the door is open.

### **5.2 Battery saving**

Because of the power source of the receiver is car Battery, it is very important problem to minimize power consumption. The receiver's CPU works intermittently to prevent the battery exhaustion.

## **6. Derivatives**

OKA-601R is an integrated controller for a car body control, includes the keyless entry receiver.

The integrated controller consists of the multiple control functions as follows, centralized door lock, turn-signal lamp, room-lamp, intermitted wiper, power window timer, ignition key illumination, warning buzzer and so on.