

OMRON
AUTOMOTIVE
ELECTRONICS
KOREA

OKA - 351R

RECEIVER, RF Keyless Entry System

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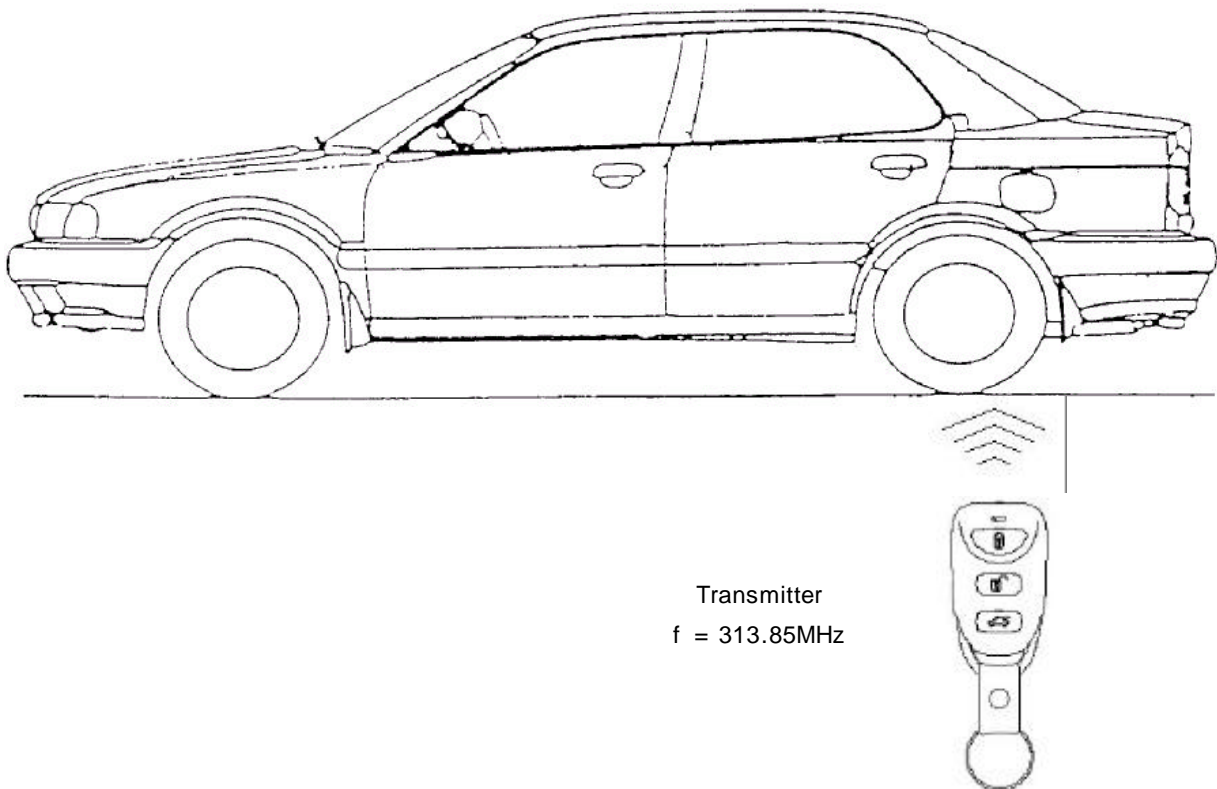
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Caution: Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.

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

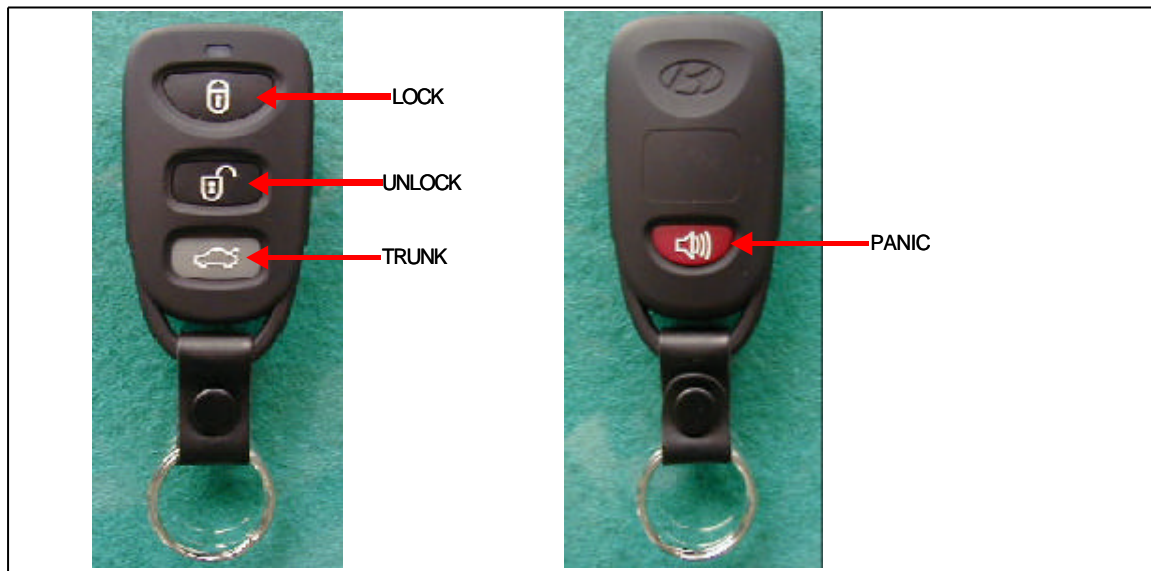
The radio frequency keyless entry is a system that it controllers locking and unlocking the door by wireless remote controller. This system consists of three components. The TRANSMITTER is a device that transmits the signal when the button is pressed. The transmission signal consists of several synchronous 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
LOCK	lock the door
UNLOCK	unlock the door
TRUNK	open the trunk
PANIC	alarm the siren



2. General Operation

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.

TRUNK

When you push continuously the TRUNK button during 0.5s, TRUNK will open.

PANIC

When you push the PANIC button, Siren will alarm.

3. Block diagram

This is the block diagram concerning to the receiver.

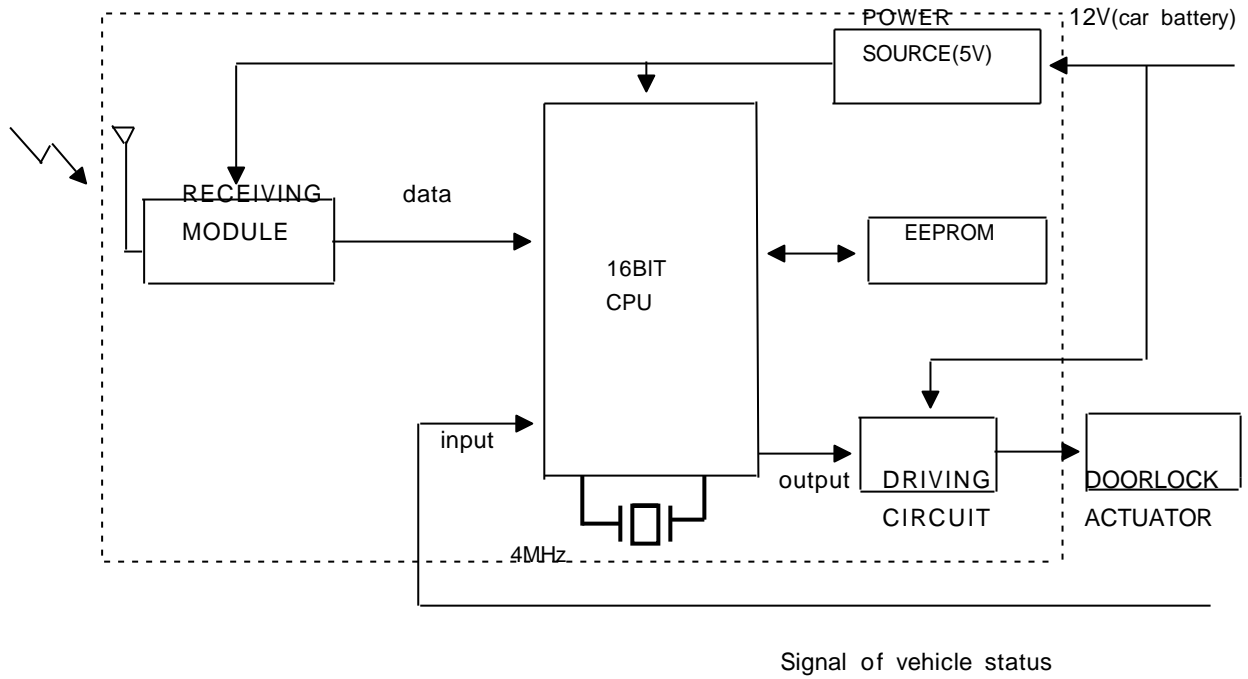


figure 3.1 block diagram of the transmitter

4. Specification

4.1 CPU

Type	MB90F867(16bit)
ROM	Manufacturer : FUJITSU 128KByte
RAM	6KByte
Clock frequency	4MHz
Clock frequency generation	Crystal resonator
Package	100pin QFP

4.2 EEPROM

Type	S-93C56XXX
Memory	Manufacturer: Seiko. Elec 2Kbit
Package	8pin SOP

4.3 RF Receiver Module

Type	WMF-R31
Local clock frequency	Manufacturer: MITSUMI Electronics 313.85MHz
Frequency generation	Crystal resonator
Modulation Scheme	FM (Single Superheterodyne)
Bandwidth	±200KHz
Carrier Detect Sensitivity	11dBuVemf

4.4 Others

Dimension	150mm × 100mm × 34mm
Weigh	262g (Antenna included)
Battery	CAR Battery(DC 12V)
Operation Voltage,Current	DC12V,60mA(4mA on standby)
Operation Temperature	-30 ~ +80

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 a power consumption. The receiver's CPU works intermittently to prevent the battery exhaustion.

6. Derivatives

OKA-351R 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.