



G8D-584M-B1

Receiver, RF Keyless Entry System

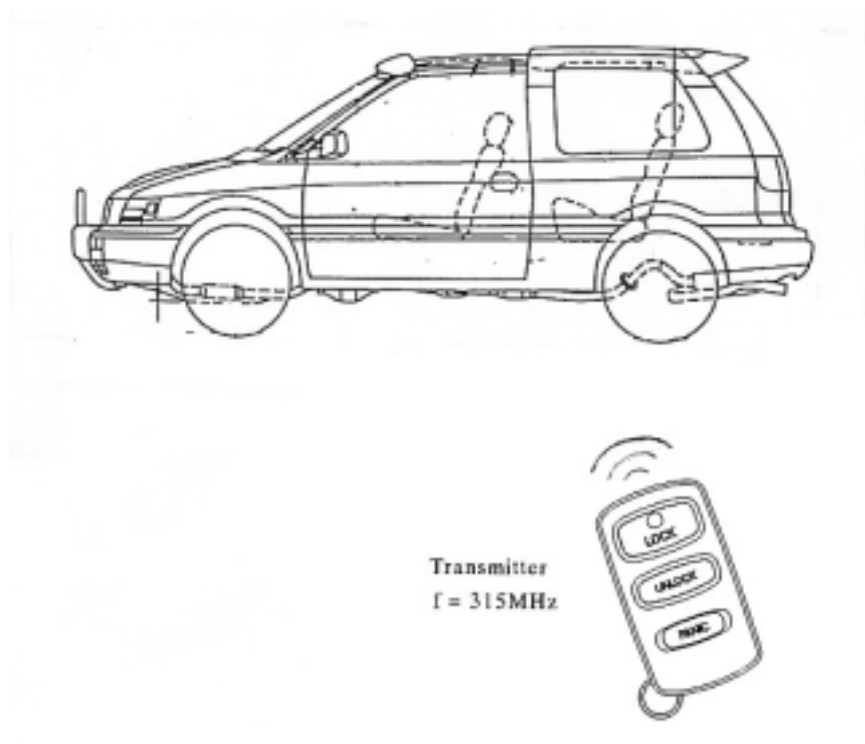
1. Constitution of the Radio Frequency Keyless Entry System for Vehicle

The radio frequency keyless entry is a system that it controls locking and unlocking the vehicle door and anti-theft protection using wireless remote controller. This system consists of two 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	Vehicle is disarming will be start sounding the horn and flushing the hazard lamp intermittently



2. User's manual (provisionally)

REMOTE TRANSMITTER



You can lock and unlock and anti-theft protection 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.

If you unlock the doors with the remote transmitter, but do not open any of the doors within 30 seconds, the doors will automatically relock.

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 the TRUNK buttons, open the trunk.

PANIC (anti-theft protection)

When you push the PANIC button, when the vehicle disarming. Then start sounding the horn and flashing the hazard lamp intermittently. It continues 3 minutes unless pressing any remote control switch.

△ CAUTION

The remote control switch is a precision electronic device. Therefore pay attention to the following:

- Do not impose shock on the remote control switch.

- Keep the remote control switch dry.

- Do not disassemble the remote control switch.

When the remote control switch is opened, keep water, dust, etc, off its inside. In addition,

- do not touch the precision electronic device.

3. Block diagram

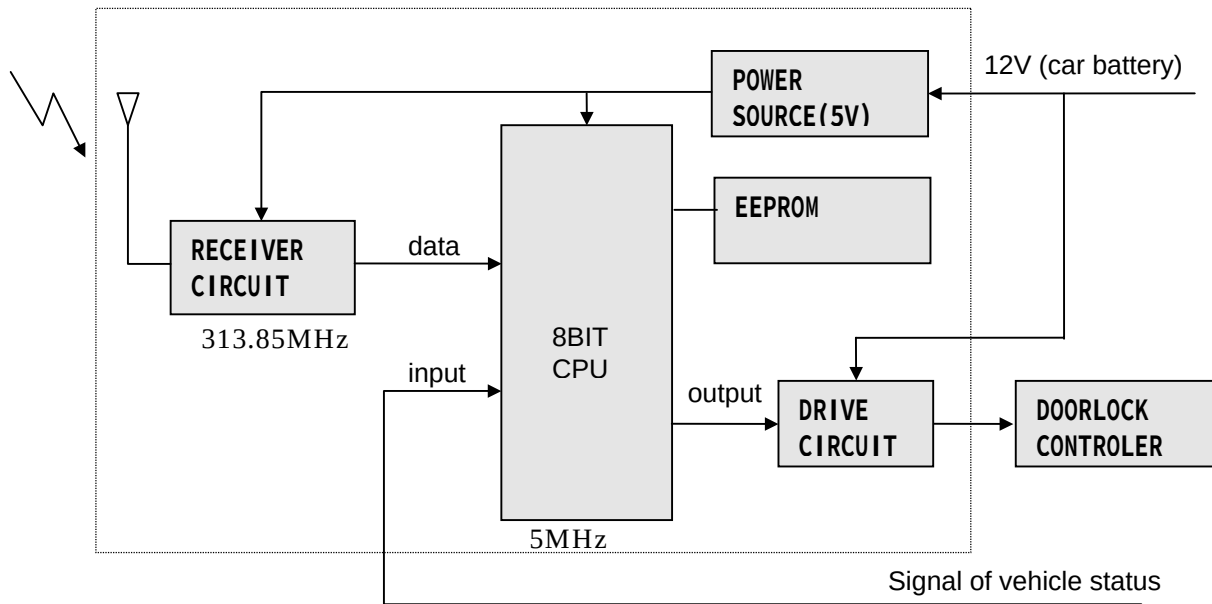


figure 3.1 block diagram of the receiver

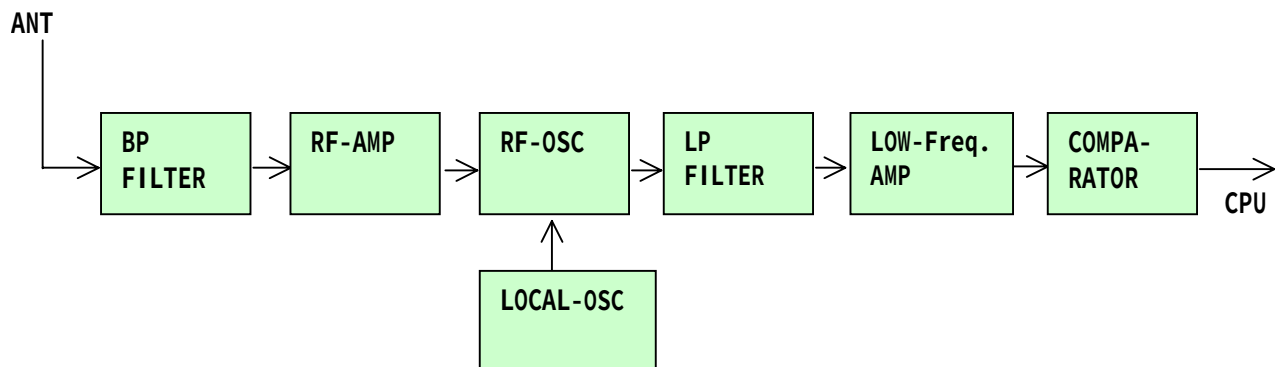


figure 3.2 block diagram (receiver Circuit)

4. Specification

4.1 CPU

Type	μ PD789104(8bit) Manufacturer: NEC Corporation
ROM	8192 $\times$ 8 bit
RAM	256 $\times$ 4 bit
Clock frequency	5MHz
Clock frequency generation	Crystal resonator
Package	30pinSSOP

4.2 EEPROM

Type	S-93C46ADFJ Manufacturer : Seiko Elec.
Memory	1kbit
Package	8pin SOP

4.3 RF Receiver Module

Type	G8D-21RX Manufacturer : IAM Elec.
Local clock frequency	313.85MHz
Frequency generation	Crystal resonator
Modulation Scheme	FM
Carrier Detect Sensitivity	5 dBuVemf

4.3 Others

Dimension	60mm $\times$ 62mm $\times$ 25mm
Weight	45g
Battery	Car Battery (DC 12V)
Operation Voltage , Current	DC 12V, 10mA
Operation temperature	-30°C ~ +80°C

5. Features

5.1 Door lock control

The receiver sends “LOCK” signal to door-lock controller when LOCK button of transmitter was pressed. The receiver also sends “UNLOCK” signal to door-lock controller 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 Automatic locking

The receiver sends “LOCK” signal to door-lock controller if the door has not opened within 30 seconds after UNLOCK button of transmitter was pressed. This facility helps accidental pressing the UNLOCK button such as the transmitter is a pocket.

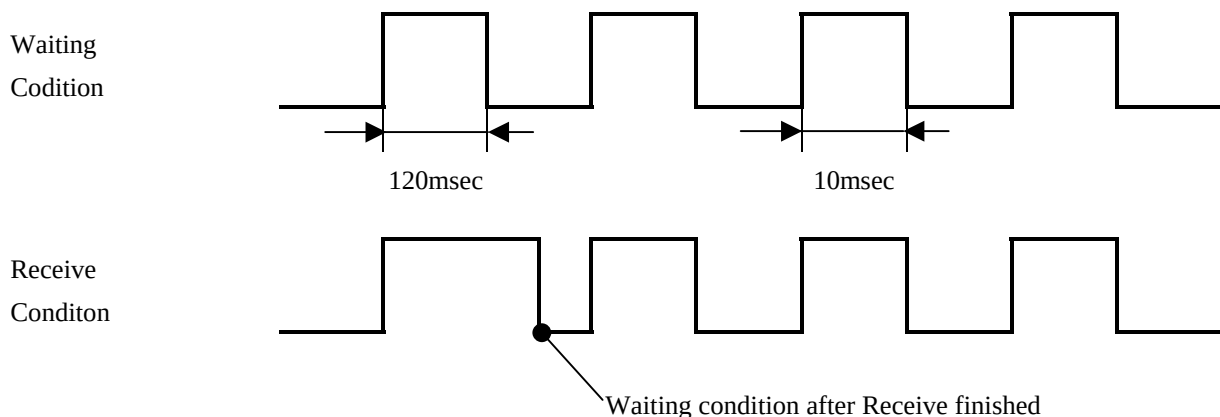
5.3 Battery saving

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.

5.4 Receiver exercise software

The normal transmission operation of the receiver is conducted by a battery which is installed within a vehicle. For the measurements purpose a regulated DC power supply is used instead the battery of the vehicle. The reception of the receiver was conducted by operating intermittently a transmitter with the lock condition. There is no difference between the lock and unlock condition regarding the electrical and mechanical functions of a receiver. Also there is no deference between both conditions regarding the frequency of radiated emission. The only difference is the reception time. The following is no explain the difference:

- A receiver received the transmission code from a transmitter when the receiver is the “ON” condition.
- The “ON” condition of the receiver continues until the reception of the transmission code shall complete.
- After the reception of the transmission code shall complete, a door lock actuator shall operate.





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- Keep the remote control switch dry.
- Do not disassemble the remote control switch.

Your keyless entry system operates on a radio frequency subject to Federal Communications Commission (FCC) rules and Industry Canada rules.

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 operation of the device.

“Complies with RSS-210 of Industry Canada.”

NOTICE

This equipment has been tested and found to comply with the limits for a Class B device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING

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