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# G8D-390H-B

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Receiver, RF Keyless Entry System

# 1. Constitution of the Radio Frequency Keyless Entry System with Door Lock Controller for vehicle

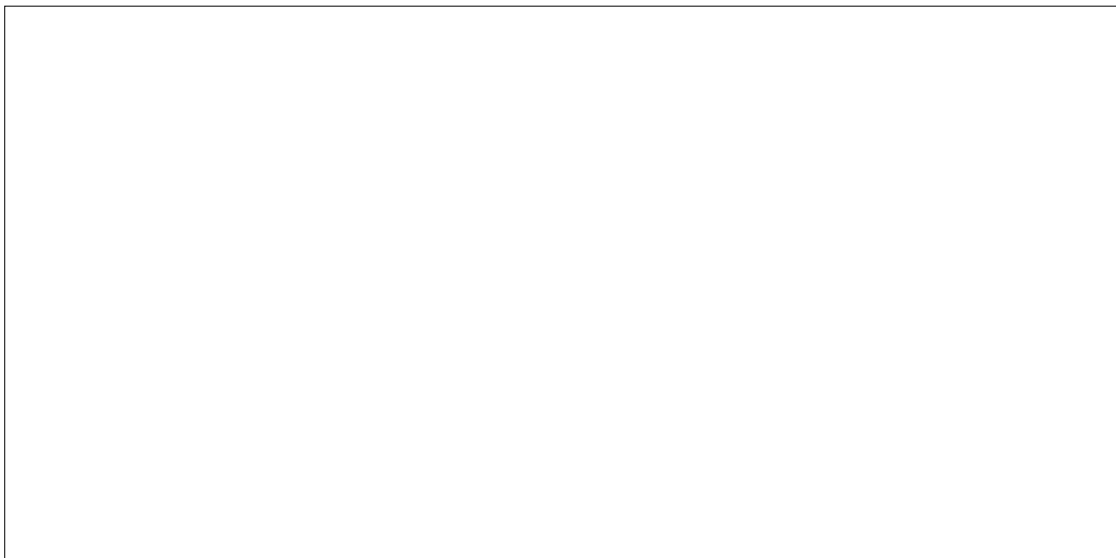
The radio frequency keyless entry is a system that it controls locking and unlocking the door by wireless remote controller. This system consists of two components. The TRANSMITTER is a device that transmits the signal when the button is pressed. The transmission signal consists of several synchronous 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 receiveing 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 and flash the hazard lamp
<b>UNLOCK</b>	Unlock the door and flash the hazard lamp
<b>BOOT RELEASE</b>	Release the boot
<b>PANIC</b>	Beep the horn and flush the small light. (it continues 30 seconds)

Transmitter  
f = 313.85MHz

## 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. And hazard warning lamp will flash three times.

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 once, all the doors will unlock. And hazard warning lamp will flash.

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

#### **BOOT RELEASE**

To open the boot, push the BOOT RELEASE button for approximately one second.

The boot will not open if the key is in the ignition switch.

#### **PANIC MODE**

Panic mode allows you to remotely sound your vehicle's horn to attract attention. To activate this mode, press and hold the PANIC button for about one second. Your vehicle's horn will beep for about 30 seconds.

To cancel panic mode before 30 seconds, press any button on the remote transmitter. You can also turn the ignition switch to ON.

Panic mode will not activate if the ignition switch is in ON.

### 3. Block diagram

This is the block diagram concerning to the receiver.

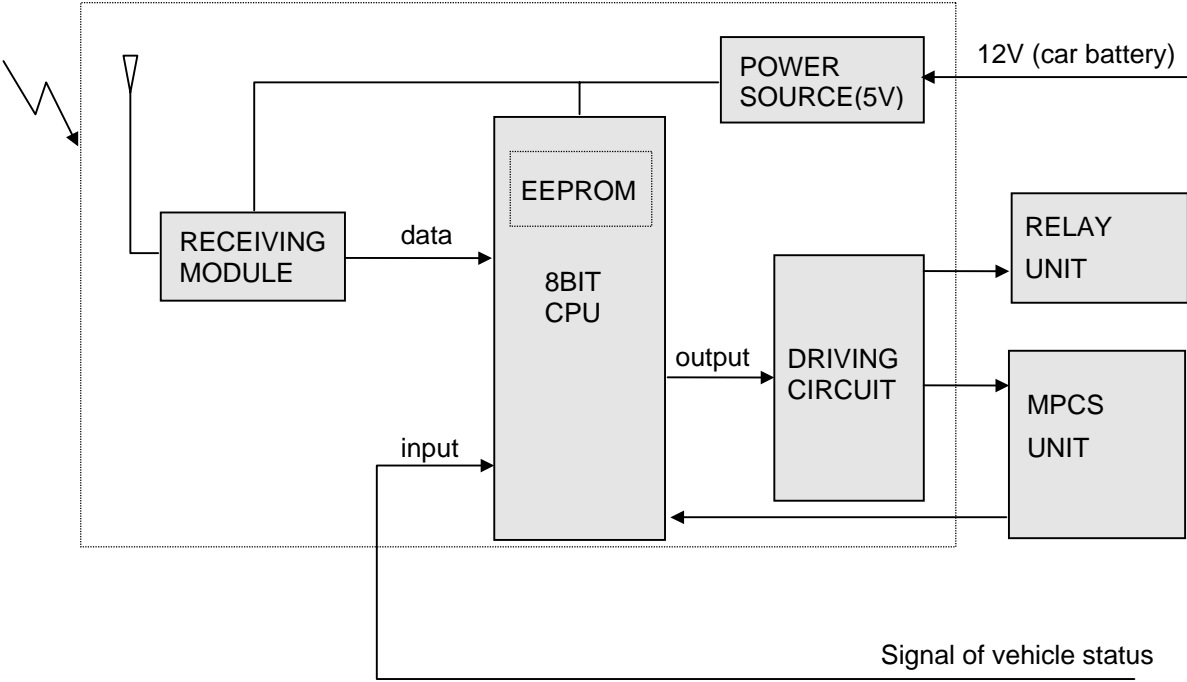


Figure 3.1 block diagram of the receiver

## 4. Specification

### 4.1 CPU

Type	uPD 789104A(8bit) Manufacturer: NEC
ROM	8K bytes
RAM	256bytes
Clock frequency	5.00MHz
Clock frequency generation	CERAMIC resonator
Package	30pin SSOP

### 4.2 RF block

Local clock frequency	324.55MHz
Frequency generation	Crystal resonator
Modulation	Single Superheterodyne
Bandwidth	$\pm 200\text{KHz}$
Carrier Detect Sensitivity	39 dBuV

### 4.3 Others

Dimension	50 mm $\times$ 40 mm $\times$ 25 mm
Weight	25 g
Battery	Car Battery (DC 12V)
Operation Voltage	DC 12V, 10mA
Operation temperature	-30 ~ +80

## 5. Features

### 5.1 Integrated controller

The controller works both wireless and wired operation.

You can use it remotely as the receiver of the keyless entry system. You can operate the door lock remotely using the remote transmitter. It is also available to release the boot.

When you turn the door lock switch, the controller works as the door lock controller. The controller monitors the switch related to the door lock. In case of the status of the switch changed, the controller will detect and output the signal to the door lock actuator.

### 5.2 Battery saving

The receiver works intermittently to reduce the battery consumption. The microcomputer mounted on the receiver controls the power supply for the RF circuit. In case of the microcomputer detects the wake-up signal during the power supplied, the microcomputer continues supplying the power until the data frame will be received.

6.2 Parts layout

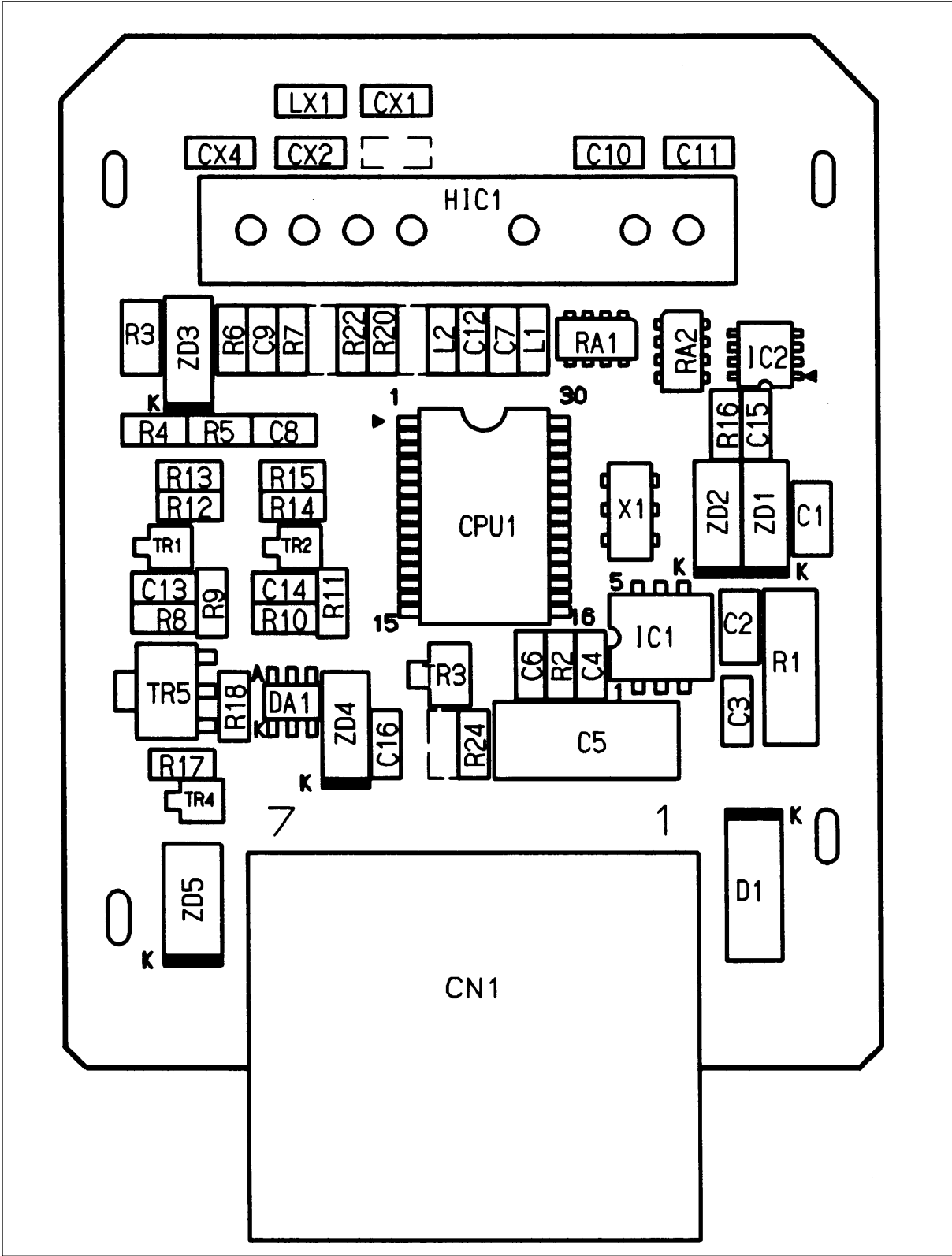


Figure 6.2 Parts layout (front)

6.3 Pattern layout

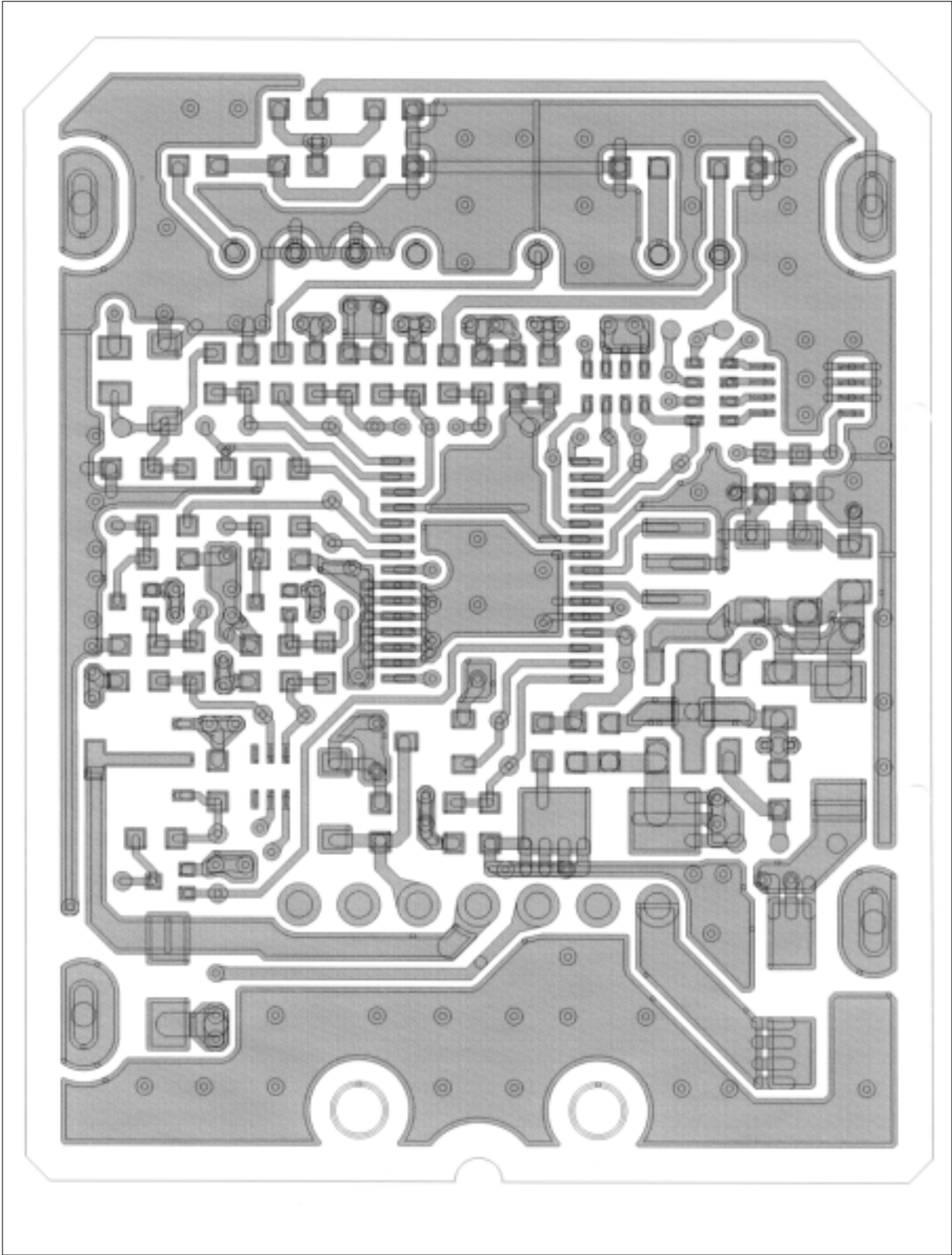
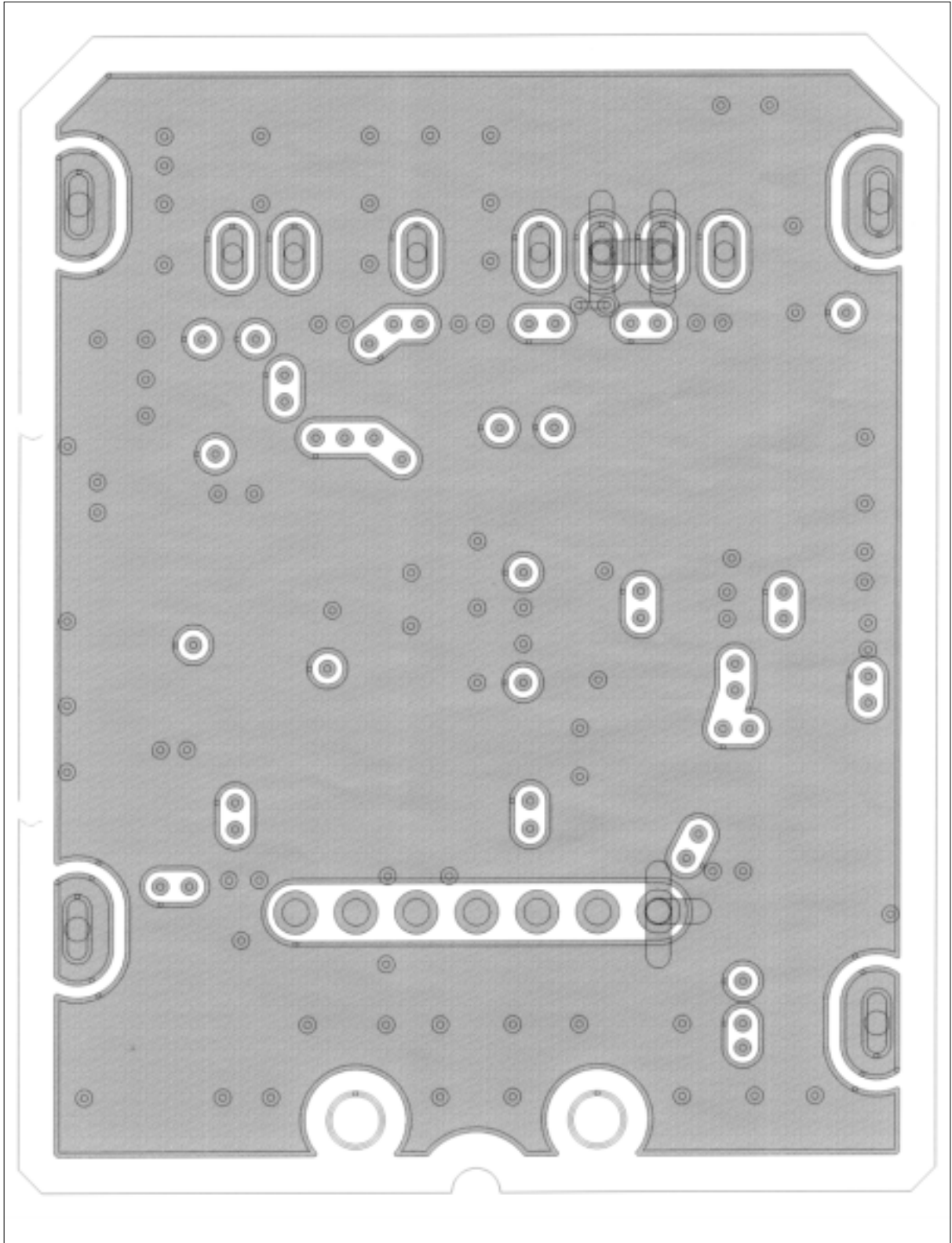


Figure 6.3 Pattern layout (front)





**Figure 6.3** pattern layout (back)

## 7. Connector

This is the pin assignment of the connector.

No.	I/O	Assignment	Memorandum
1	INPUT	Battery	12V
2	INPUT	K/L set in	Active low
3	INPUT	Ignition switch	Active high
4	OUTPUT	Hazard	Active high
5	OUTPUT	Serial output	Active high
6	INPUT	K/L unset in	Active low
7	-	GND	