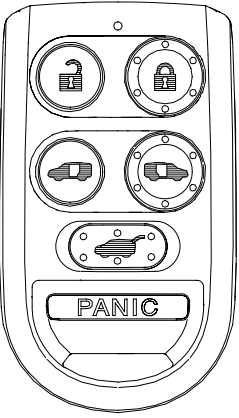
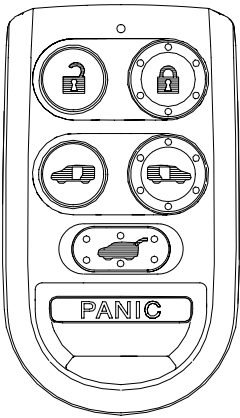
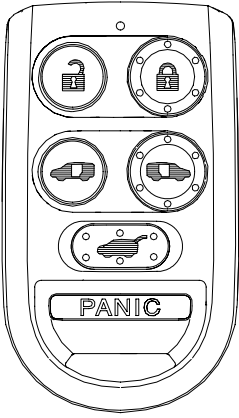
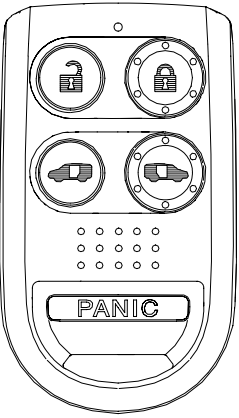
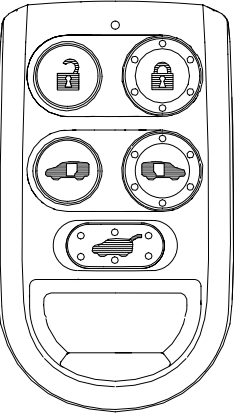
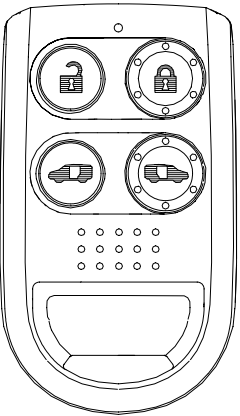

G8D-399H-A

Transmitter, RF Keyless Entry System

< As for the undermentioned product,the amount of SW is different by the same circuit >

【Product No.】	【Function of SW】	【Amount of SW】
G8D-399H-A-1	LOCK,UNLOCK, SLIDE DOOR RIGHT SLIDE DOOR LEFT,TAIL GATE,PANIC	6SW
G8D-399H-A-2	LOCK,UNLOCK, SLIDE DOOR RIGHT SLIDE DOOR LEFT,TAIL GATE,PANIC	6SW
G8D-399H-A-NTG	LOCK,UNLOCK, SLIDE DOOR RIGHT SLIDE DOOR LEFT,PANIC	5SW
G8D-399H-A-NP	LOCK,UNLOCK, SLIDE DOOR RIGHT SLIDE DOOR LEFT,TAIL GATE	5SW
G8D-399H-A-NGP	LOCK,UNLOCK, SLIDE DOOR RIGHT SLIDE DOOR	4SW

Rough sketch

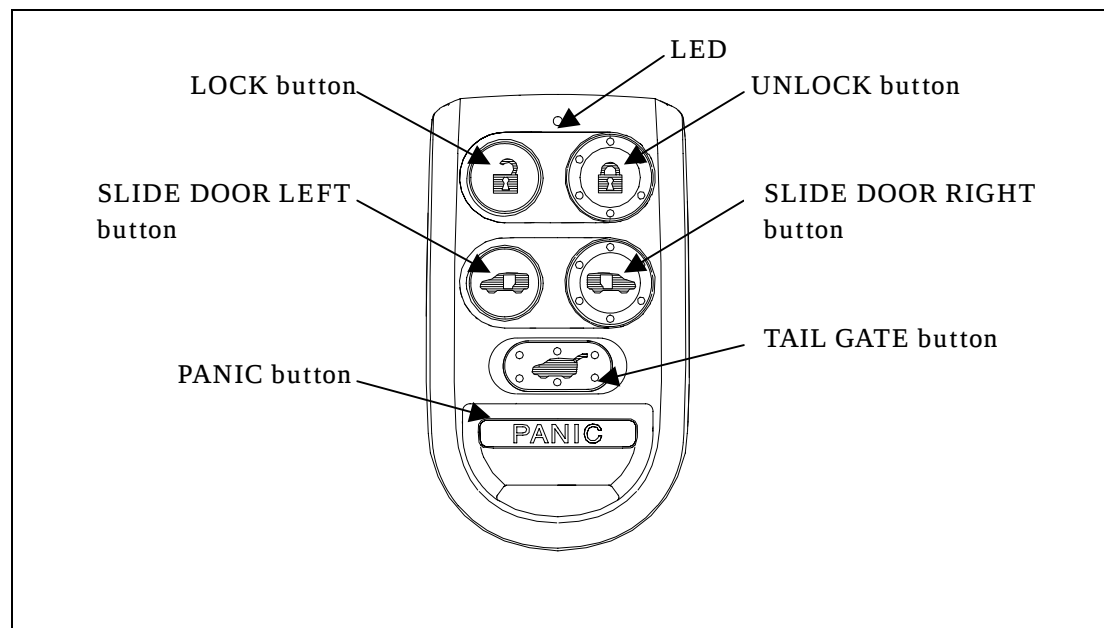
G8D-399H-A	G8D-399H-A-1	G8D-380H-A-2	G8D-380H-A-NTG
			
G8D-399H-A-NP	G8D-399H-A-NGP		
			

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, and security code and function code. The RECEIVER is fixed inside the vehicle. It works intermittently to reduce 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 (Open the window)
SLIDE DOOR RIGHT	Open or Close the slide door right
SLIDE DOOR LEFT	Open or Close the slide door left
TAILGATE	Open or Close the tail gate
PANIC MODE	Beep the horn and flash the small light. (it continues 30 seconds)

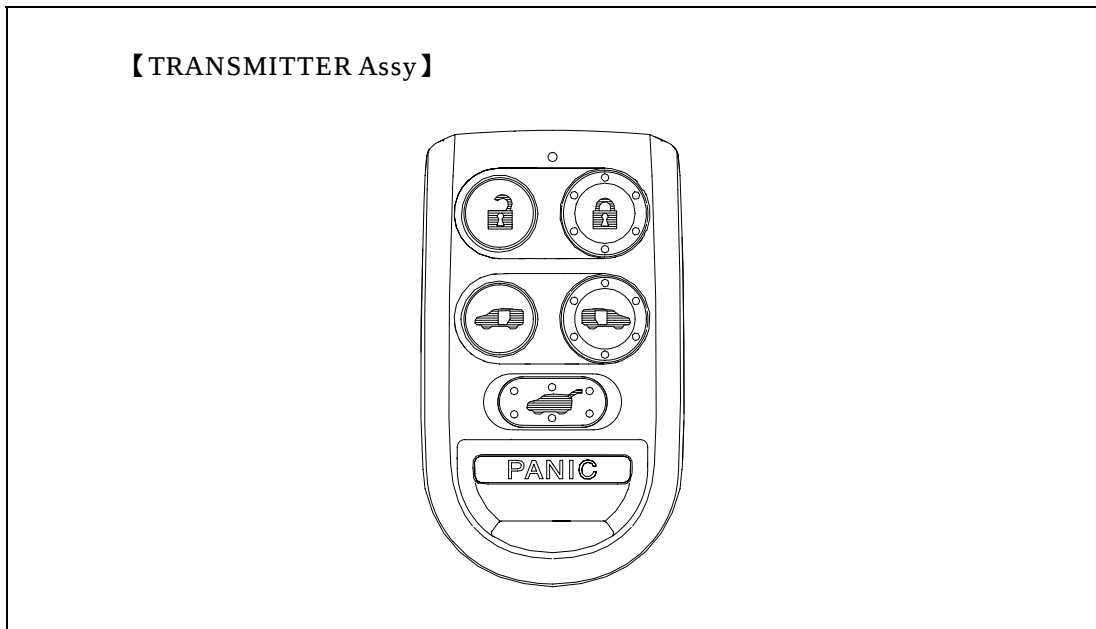
This receiver also controls wired operation. When the key is in the driver's side key cylinder, all doors will Unlock if the key is turned to UNLOCK and hold more than one second. In case of the operation time is shorter , the only driver's side door is mechanically unlocked. It is also available to control the door lock status by using the remote door control switch(both driver's and passenger's side)



Transmitter
 $f = 313.85\text{MHz}$

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 the key is in the ignition switch.

When you push the UNLOCK button more than about 1.0 second, the window will open.

SLIDE DOOR RIGHT

To open or close the slide door right, push the SLIDE DOOR RIGHT button for approximately 0.5 second. The right slide door will not operate if the key is in the ignition switch.

SLIDE DOOR LEFT

To open or close the slide door left, push the SLIDE DOOR LEFT button for approximately 0.5 second. The left slide door will not operate if the key is in the ignition switch.

TAILGATE

To open or close the tailgate, push the TAILGATE button for approximately 0.5 second.

The tailgate will not operate 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 is in ON.

3. Specification

3.1 CPU

Type	UPD789860 (8bit)
ROM	Manufacturer: NEC Corporation
RAM	4K bytes
EEPROM	128 bytes
Clock frequency	32 bytes
Clock frequency generation	5MHz
Package	Ceramic resonator
	20pin SSOP

3.2 RF block

Carrier frequency	313.8 ~ 313.9MHz
Frequency generation	Crystal resonator
Modulation	FSK
Bit transmission rate	1000bps or 2000bps
Bandwidth	120KHz
RF output power (field strength)	6000 μ V/m

3.3 Others

Dimension	62.1mm $\times$ 35mm $\times$ 13mm
Weight	21g
Battery	Lithium cell (CR2025)
Operation Voltage	DC 3V, 20mA
Operation temperature	-20 ~ +60

4. Features

4.1 Transmission frame

The transmission begins immediately in case of any button is pressed.

The transmission frame consists of the synchronous frame and the data frame. The synchronous frame has 324 bit codes that it will be used for the receiver to wake up. The data frame consists of 24-bit length identification code, 16-bit security code, 4-bit function code and 8-bit quality check code.(sometimes). 16000000 different identification codes are available. The security code is always changed in case of any of the buttons is pressed. The transmission time is typically 220 milliseconds.

4.2 Battery saving

To prevent the battery exhaustion, the microcomputer of the transmitter is usually inactive. When the button will be pressed, the microcomputer wakes up immediately and judges which button is pressing. Then the microcomputer constructs the transmission frame and radiates it from the antenna. After transmitting, the microcomputer switches stand-by mode by itself.

! 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.

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.