Functional Description / User Manual

SIEMENS Automotive Systems Corp.

Radio frequency remote control system

for

TG/EN/BH of HMC

FCC Compliance Statement.

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.

Do Not.

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.

FUNCTIONAL DESCRIPTION

1 System Components

This is a remote keyless entry (RKE) system of a vehicle for TG/EN/BH of HMC. It consists of the Stand alone- type receicer(SRx) which is corresponding the RKE transmitter. SRx has implemented on board with RF generic receiver device

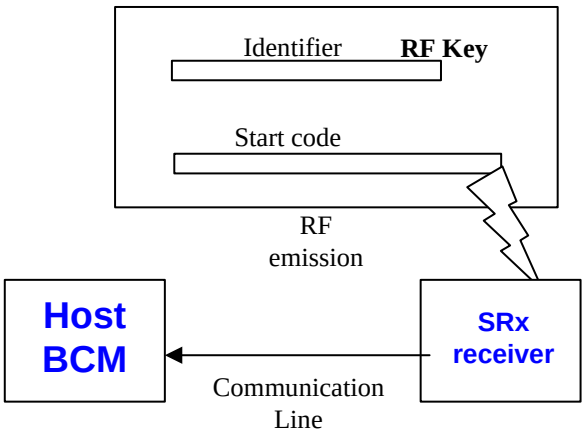
The described system is a radio-frequency remote controler for central doors locking / unlocking, trunk release and panic activities. This system will be a part of the equipment of the HMC TG/EN/BH vehicles.

The system is composed of the following ones:

- transmitter with 3/4 buttons (doors locking, door unlocking, trunk release and panic)
  *Panic is applied just for 4buttons variant.

System Operation:

To serve a remote keyless entry system remote keyless entry function is provided by the RF system of the SRx and the RKE transmitter. The functions are operated as below.



Remote keyless Entry:

The RKE transmitter transmits at 433.92 MHz for Europe (or 315MHz for NA, CHN) an FSK modulated data signal to the SRx. The RF system of SRx receives this encrypted RF signal. The SRx send the signal to corresponding the host Body control module through single wired K-line bus then the host module broadcasts the requested remote commands to the appropriate control modules in the vehicle through CAN –communication line . In general the following functions are provided:

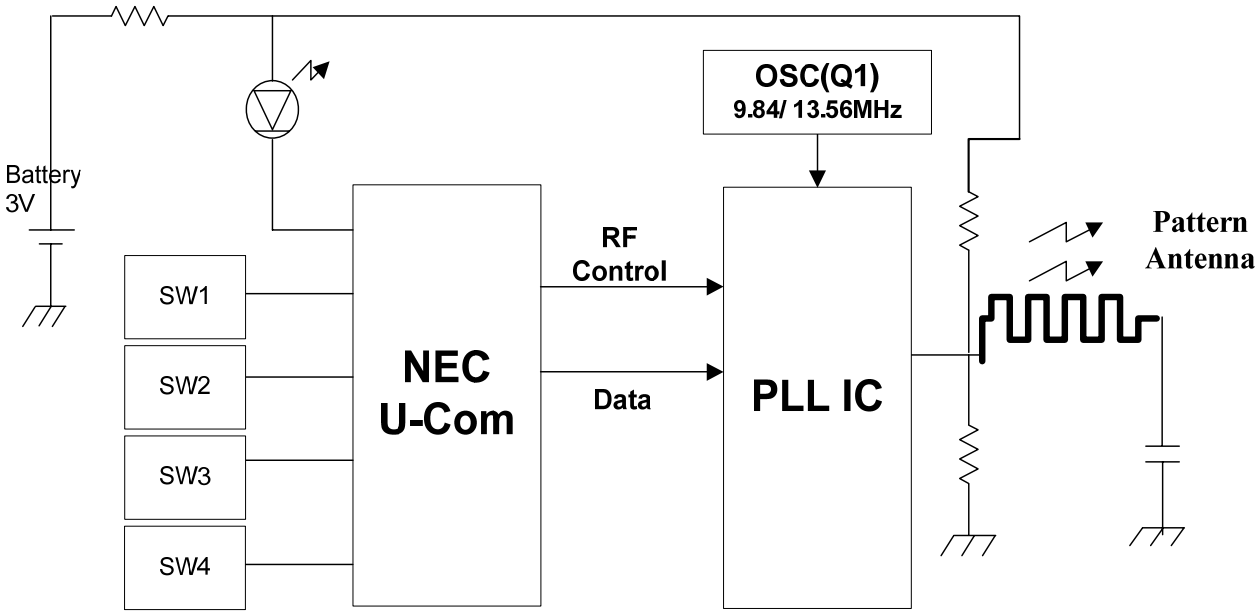
- Lock the doors
- Unlock the doors
- Release the trunk
- Panic Alam (applying just for 4button)

2 Variants:

Freq.	*Button*	*Country*	*Model No.*
315MHz	4	NA	***SVI-2NDFNA04***
		CHN	***SVI-2NDFCH04***
433MHz		EU	***SVI-2NDFEU04***
315MHz	3	CHN	***SVI-2NDFCH03***
433MHz		EU	***SVI-2NDFEU03***

3 Block diagram

3.1 Block diagram RKE transmitter(for 315/433.92MHz):



4 Technical Data transmitter

Carrier frequency:	315.00MHz± 150kHz / 433.92MHz ± 150kHz
Output power:	< 10mW (EU, CHN) < 75.6dBuV/m (NA)
Modulation:	FSK
Frequency Generation:	PLL device
Number of channels:	1
Supply voltage:	3 V
Battery type:	Lithium, CR 2032
Range:	> 10m

8. Typical usage pattern RKE transmitter

30 lock / unlock operations in 24 hours with a typical transmission duration of 270 milliseconds → 1.25 lock / unlock operations / hour

Transmitter ON 0.3375 seconds / hour

Transmitter OFF 3,599.6625 seconds / hour

Duty Cycle: T_{ON} / $T_{(ON+OFF)}$ x 100% = 0.3375 / 3,600 x 100 % = 0,009 %