

2. User's manual (provisionally)

2.1 NORMAL AUTHENTICATION

When IGN On, the EMS executes the key authentication after immobilizer authentication. The Engine can be started in case authentication between immobilizer and Ignition key (Transponder) succeeds. Normal authentication can be confirmed through the vehicle cluster immobilizer LED ON.

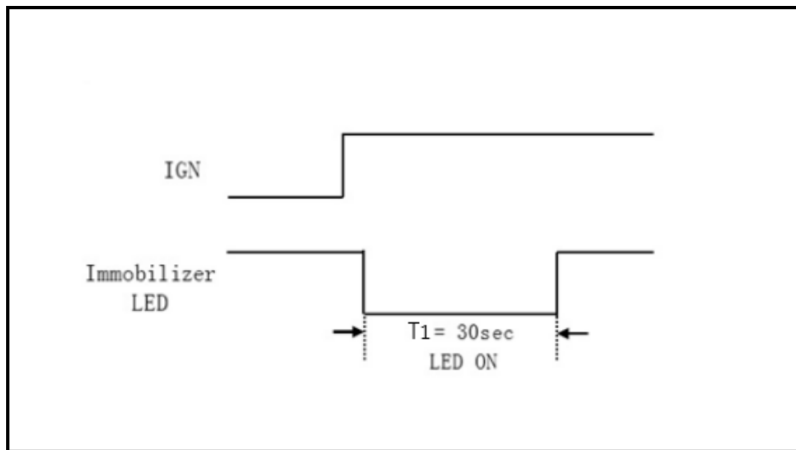


Figure 2.1.1 Normal Authentication

2.2 AUTHENTICATION FAIL

Using invalid key to IGN on, Immobilizer LED blinks for 4.5 seconds as authentication fails.

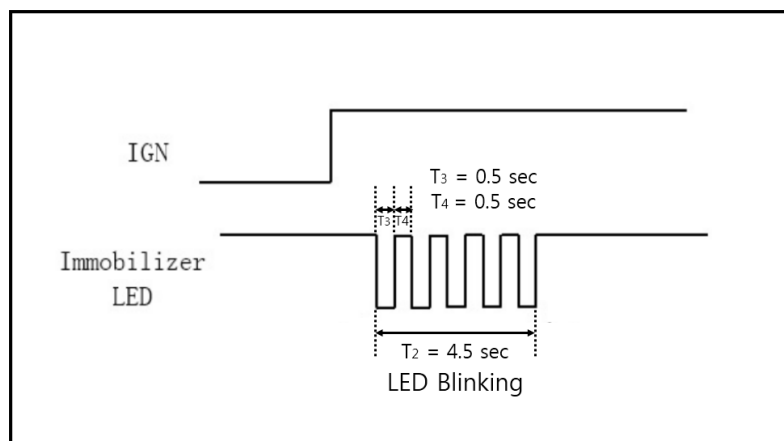


Figure 2.2.1 Authentication Fail

4. Specification

4.1 CPU

Type	R5F1096CJSP Manufacturer : Renesas
ROM	32kB
RAM	2kB
Clock frequency	32MHz
Clock frequency generation	On-chip oscillator
Package	20pin SSOP-B20

4.2 Others

Dimension	73.9mm x 38mm x 24mm
Weight	43g
Battery	CAR Battery (DC 12V)
Operation Voltage, Current	DC 12V, 6.4mA (80uA on sleep mode)
Operation Temperature	-30°C ~ +75°C

5. Features

- 5.1 Unique electronic coded key
- 5.2 Embedded radio frequency (RF) transponder
- 5.3 Communicates with immobilizer via 125kHz carrier frequency
- 5.4 Stores secret key and performs other critical functions
(User programmable 96-bit secret key)
- 5.5 Optional system communication via K-Line
- 5.6 Antenna rupture and short circuit detection

6. Derivatives

Vehicle anti-theft systems. Using a transponder and an encrypted key code, the system authenticates users to enable or disable vehicle startup.

FCC Part 15.19

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.

FCC Part 15.21

Any changes or modifications (including the antennas) to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.