

# PEPS User Manual

Product name: PEPS (Passive Entry Passive Start Control Unit)

Type: SGMW CN202S

The Passive-Entry-Passive-Start (PEPS) controller is the core of an immobilizer system. It provides wired and wireless communications, control and logic functions between the PEPS and EMS. The whole immobilization system can be divided into three parts: in-front authentication, in-middle steering unlock and in-end immobilization.

1) In-front authentication: When the user triggers the micro-switch on driver door or on co-driver door, the PEPS system will search the valid key fob nearby the car. The searching procedure can be done with sending LF challenges (step①, 125 KHz) and receiving the responses (step②, 433.87MHz). If a valid key fob is nearby the car, the user can open the door and prepare to start the car.

2) In-middle steering unlock procedure: The steering column of the vehicle is blocked by electronic steering column lock (ESCL). When the system passes the in-front authentication process and the car user presses the start-stop-button (SSB), a ciphered communication between PEPS and ESCL will be performed. HITAGII standard is utilized to guarantee the encryption strength of the system.

3) In-end immobilization: When the user presses the start-stop button and the brake pedal, the PEPS system will search the valid key fob in car. The procedure is the same as the in-front authentication. Only if the key fob has no enough power supply, a backup strategy will be used, i.e. the immobilizer with base station integrated in PEPS system can authenticate with the transponder in the key fob. The user can put the key fob nearby the coil and then press the start-stop button to ignition on. When ignition ON, the in-end immobilization process will be executed by PEPS instructing EMS to start the engine over a secure communications link.

From above, the PEPS system is able to inhibit engine starting when an unauthorized starting attempt is made either through mechanical force or bypassing of the ignition circuit, thus greatly improving the prevention of unauthorized use. Furthermore, diagnostic services are provided with fault code storage and reporting to reduce workshop troubleshooting time.

Description: see below

Specifications: N/A

Power supply mode: DC 12V

Caution for fire and water!

Working temperature: -40℃~85℃

Storage temperature: -40℃~95℃

Manufacturer: Shanghai NAEN Automotive Technology Co.,Ltd

Importer: SGMW

RF: 433.87MHz (Receiver) N/A

LF: 125 KHz (Transmitter) 69dBuA/m

## FCC statement

This equipment has been tested and found to comply with the limits for a Class B digital 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 instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a 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.

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.

CAUTION: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

## RF exposure warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located

or operating in conjunction with any other antenna or transmitter.