

PEPS System

Contents



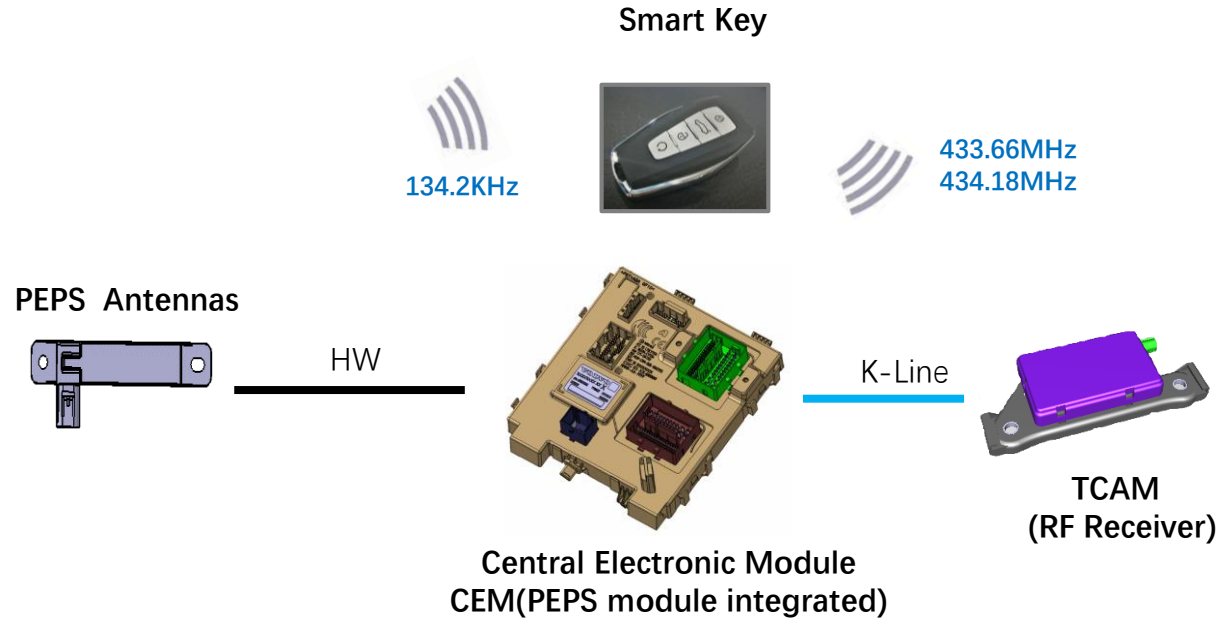
► Overview of PEPS System

Service of PEPS System

Components of PEPS System



1. PEPS module is integrated in the CEM;
2. The system is composed of CEM, PEPS antennas, smart key and TCAM (telematics and connectivity antenna module);
3. CEM controls PEPS antennas to send out LF through hardware;
4. Smart key receives (LF-low frequency) signals from PEPS antennas and sends out (RF-radio frequency) signals to TCAM;
5. CEM communicates with TCAM through K-line (a LIN line).



Note:

TCAM is not available in overseas market now, only RF receiver (RFR).
If TCAM is available, RFR will be integrated in TCAM.

Components of PEPS System



CEM(PEPS):

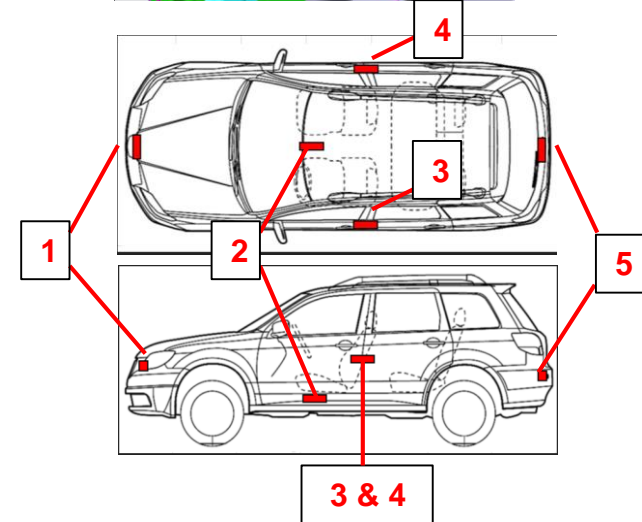
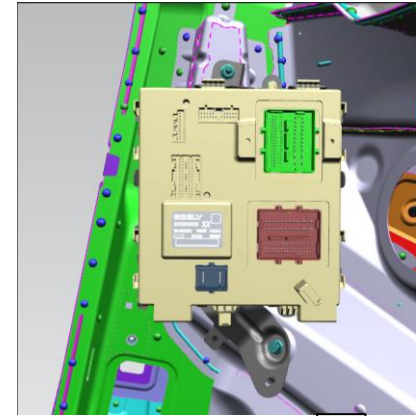
- Drive the antennas to send LF searching smart key, and receive signals from RFR;
- Carry out vehicle locking and unlocking, complete the power on and start of vehicle; (entry and start)
- Anti-theft alarm function;

PEPS antennas:

There are 5 antennas (low frequency, 134k Hz), using for passive start.

- 1-Front antenna, on the front grill;
- 2-Console antenna, under the gear shift penal; (IMMO)
- 3-Left antenna, on the trim under left B pillar;
- 4-Right antenna, on the trim under right B pillar;
- 5-Rear antenna, on the rear penal.

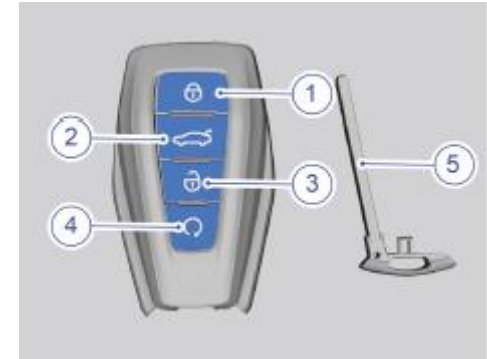
There are 2 PE sensors inside left and right door handle, using for passive entry.





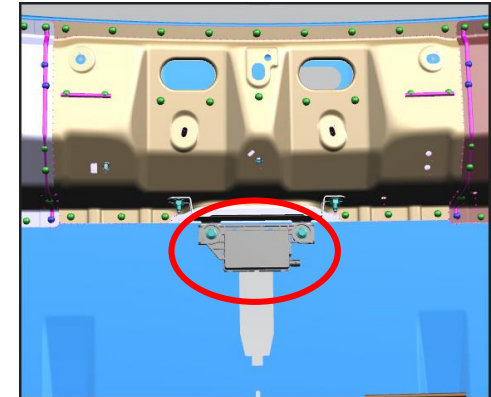
Smart Key:

- 1- Lock/Search car
- 2- Open/Close tailgate
- 3- Unlock
- 4- Remote start
- 5- Mechanical key



RF receiver:

Radio frequency receiver is integrated in TACM, installed on the top rear cross member.





Normal Start:

1. Depress brake pedal, press the SSB switch, then CEM will drive the LF antennas to search the smart key;
2. Smart key receives LF signal from antennas, then send out RF signal to the RF Receiver;
3. The RFR communicates with CEM(PEPS) through K_LIN to certify;
4. If smart key be found and certified, CEM will communicate with ECM to certify;
5. CEM(PEPS module) finish vehicle start.



Start when smart key low power:

1. When the smart key battery is low, it may not send out RF normally and vehicle can not start;
2. At this time, put the smart key onto the storage box, the IMMO under the storage box will help to start.

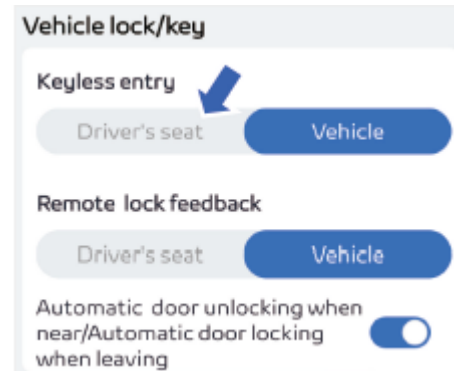




PE-Passive Entry

Click on the multimedia display screen in turn: Vehicle Settings → Vehicle Setting Item → Vehicle Lock/Key, and then select the front doors or the whole vehicle of PE function.

- Front doors: Either the driver's door or the front passenger's door can be unlocked through PE function, upon which, the other doors will remain unlocked, but the back door will be unlocked synchronously.
- Whole Vehicle: After this function is activated, all the doors will be unlocked through PE function automatically.



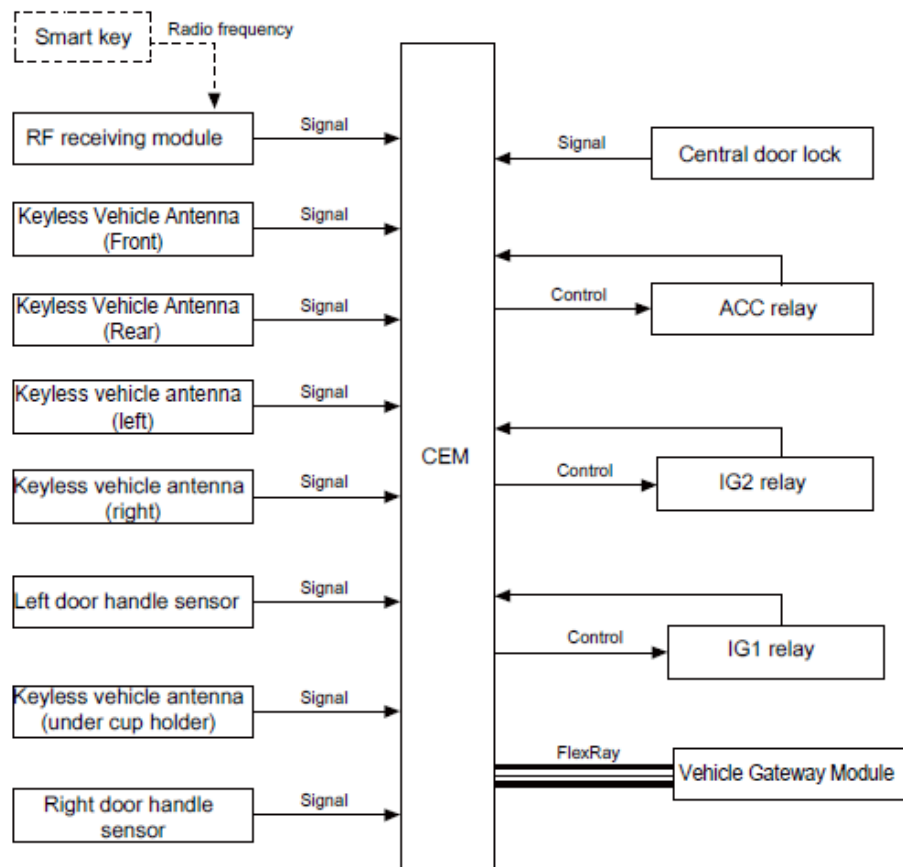
Contents



Overview of PEPS System

► **Maintenance and diagnosis**

Electrical schematic diagram



Add/Remove Keys



- Download software “Add/remove key” (operations are the same with other software upgrades and reload);
- Run the software program and a new interface will be opened, we can choose “add key” or “remove all keys”;

Notes:

- All the keys will be removed when we choose “remove all keys”, unable to select the number of keys to remove;
- When adding keys, only one key can be added at one time, put the key to be added on the storage box, and it's not allowed to add multiple keys at the same time;
- 12 Keys can be learnt in maximum.

The screenshot displays the Geely Diagnostic System interface. The main window shows a vehicle model 'KK11, 2021 X' and a 'Software' section with 'Download Software' and 'Download Queue' tabs. A table lists 'Selected Parts' with one entry: '8892871953 Add/remove key'. A 'Programming keys' dialog box is open, displaying the following text:

Programming keys

This function is used to add a new key or remove a non-functioning or lost key.
To erase one key, all the other keys for that specific vehicle must be present.

Select one of the following options:

- Add key
- Remove all keys
- Close

A text box contains the text: CEM - Number of keys
2

Buttons at the bottom of the dialog are: Add key, Remove all keys, and Close.



Guidance for replacing CEM :

1. Before replace CEM, remove all keys with the original CEM;
2. Replace new CEM;
3. Reload CEM software (check steps on the CEM training course) ;
4. Match CEM (SET IMMO);
5. Add old keys to the new CEM.

The screenshot shows the GAC diagnostic software interface. At the top, there are navigation tabs for 'Home', 'KX11, 2021', 'Diagnostics', and 'Software'. The main area displays vehicle information: VIN: LB37852D2MS006189, Model/Year/Chassis: KX11, 2021, 006189, Connection: Virtual #1, 12.1 V, and Active status. Below this, there are buttons for 'Purchase Software', 'Download Software', and 'Advanced Test'. The 'Find/Add Software' section is active, showing a table of software items:

Part Number	Description	Comments	Size (...)	Download Time (min)
<input type="checkbox"/>	8892871953	Add/remove key	126	1
<input type="checkbox"/>	8894791373	MAINTENANCE MODE	126	1
<input type="checkbox"/>	8893171475	POT CAL	126	1
<input checked="" type="checkbox"/>	8892872259	SET IMMO	126	1

Below the table, there is a 'Selected Software' section with a table:

Part Number	Description	Comments	Size (kB)	Download Ti...
<input checked="" type="checkbox"/>	8892872259	SET IMMO	126	1

An 'Enter Order Reference' dialog box is open, showing 'Order Reference: 1' and 'OK'/'Cancel' buttons. A red arrow points from the 'Set IMMO' software entry in the table to the 'Enter Order Reference' dialog box.

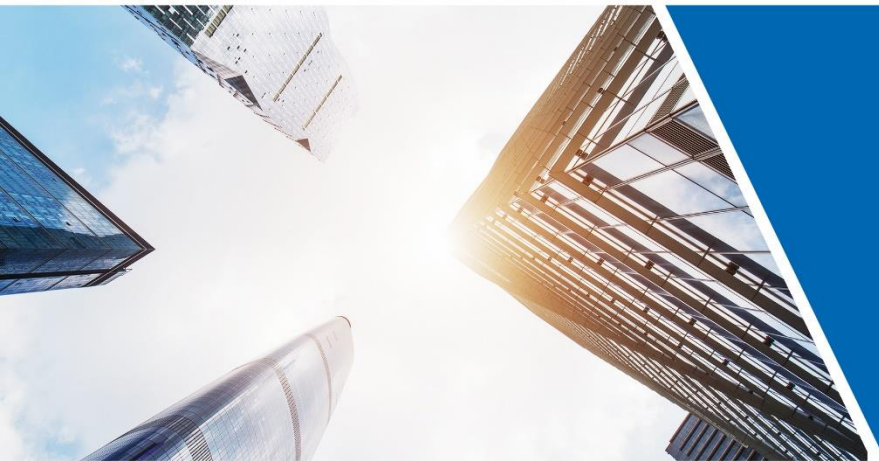
The screenshot shows a software matching interface with the following elements:

- A button labeled '防盗码状态检测' (Anti-theft code status detection).
- A button labeled 'TCAM防盗码写入' (TCAM anti-theft code write) next to a radio button.
- A button labeled 'ECM防盗码写入' (ECM anti-theft code write) next to a radio button.
- A button labeled 'CEM防盗码写入' (CEM anti-theft code write) next to a radio button.
- A 'Close' button at the bottom right.

A red arrow points from the 'Set IMMO' software entry in the previous screenshot to the 'CEM防盗码写入' button.

Note:

After replace CEM/ECM, match them through GLDS "Set IMMO" sequence, no need to apply and write ESK code manually.



Happy Life, Geely Drive

1760, Jiangling Road, Binjiang District, Hangzhou,
Zhejiang Province, P, R.China, 310051

www.geely.com

**No.918, Binhai 4th Rd. Hangzhou Bay New District,
Ningbo, Zhejiang, P. R. China, 315336**

Making Refined Cars for Everyone