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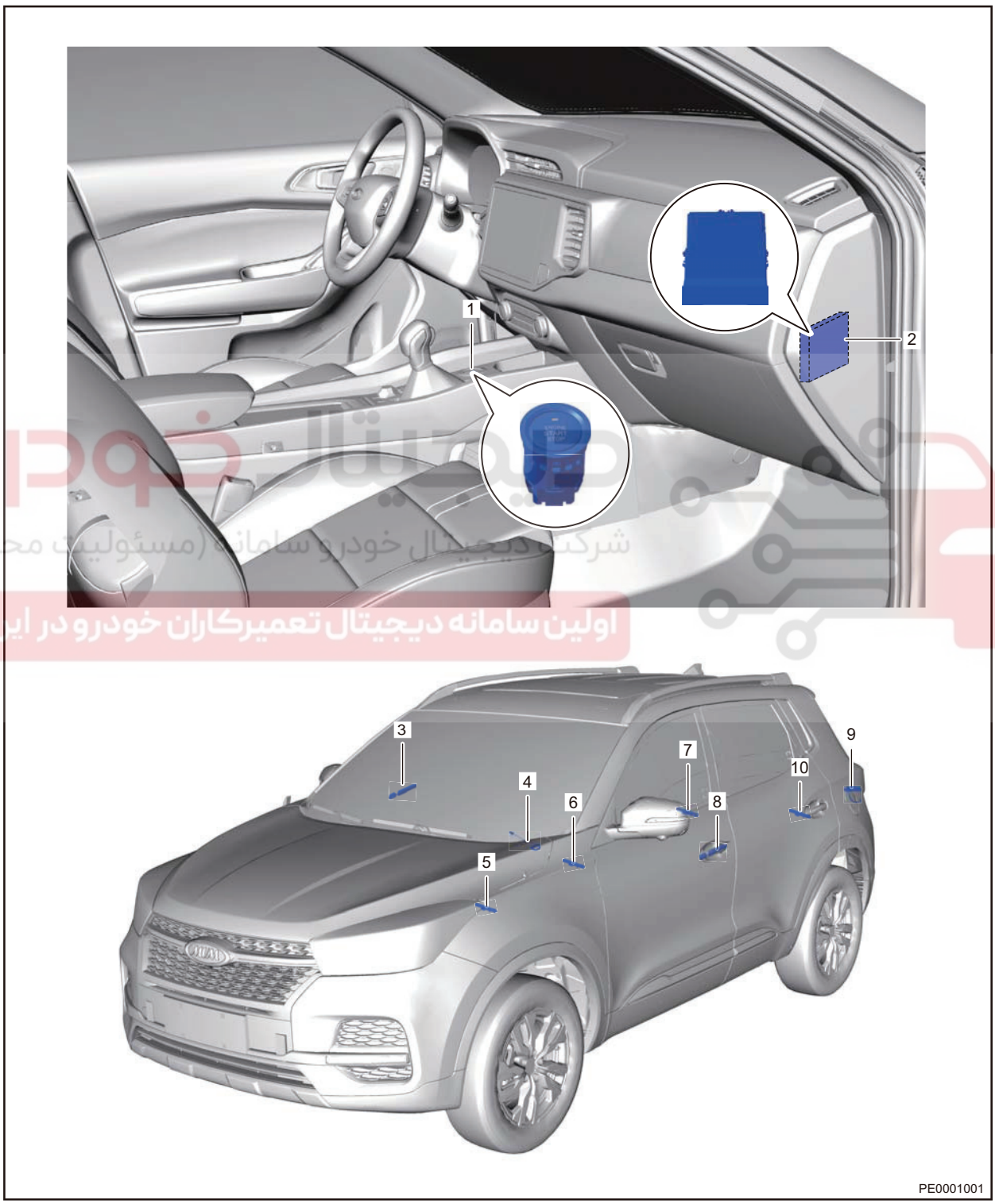
GENERAL INFORMATION

General Information

Description

E4T15B+DCT



1 - ENGINE START STOP Switch	2 - PEPS Module
3 - Front Right Door Handle Sensor	4 - Immobilizer Coil
5 - Front Internal Low Frequency Antenna	6 - Center Internal Low Frequency Antenna
7 - Rear Low Frequency Antenna	8 - Front Left Door Handle Sensor
9 - Back Door Release Switch	10 - Rear Low Frequency Antenna (on Rear Bumper Crossmember)

PEPS system consists of PEPS controller, ENGINE START STOP switch, built-in low frequency antenna (3 antennas are equipped in vehicle to detect key position), immobilizer coil for back up starting, front left door handle sensor, luggage compartment door microswitch and remote controller (also called smart key).

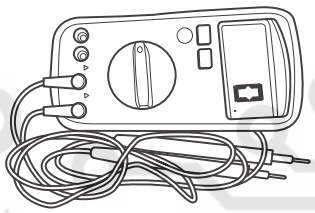
Specifications

Torque Specifications

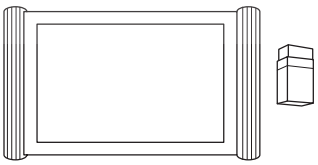
Description	Torque (N·m)
Hexagon Flange Nut	7 ± 1

Tools

General Tool

Digital Multimeter	 002

Special Tool

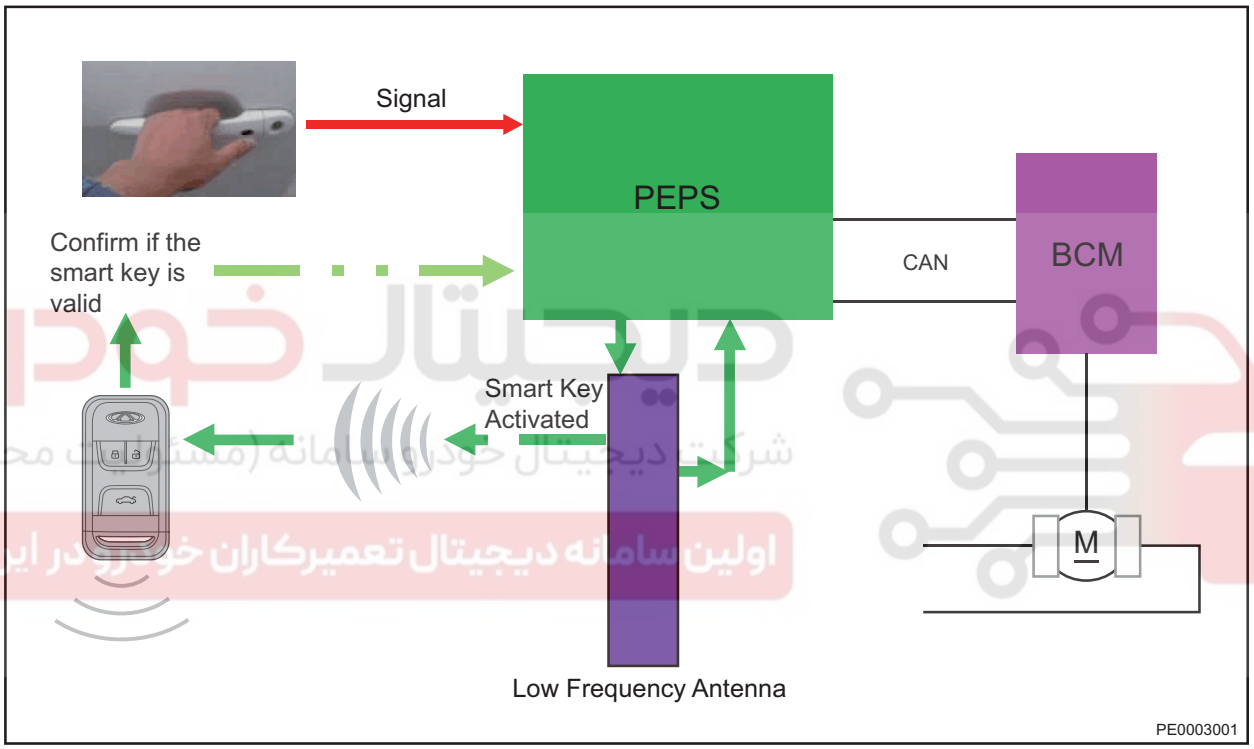
X-431PAD Diagnostic Tester	 001

Function Description

PEPS Function Description

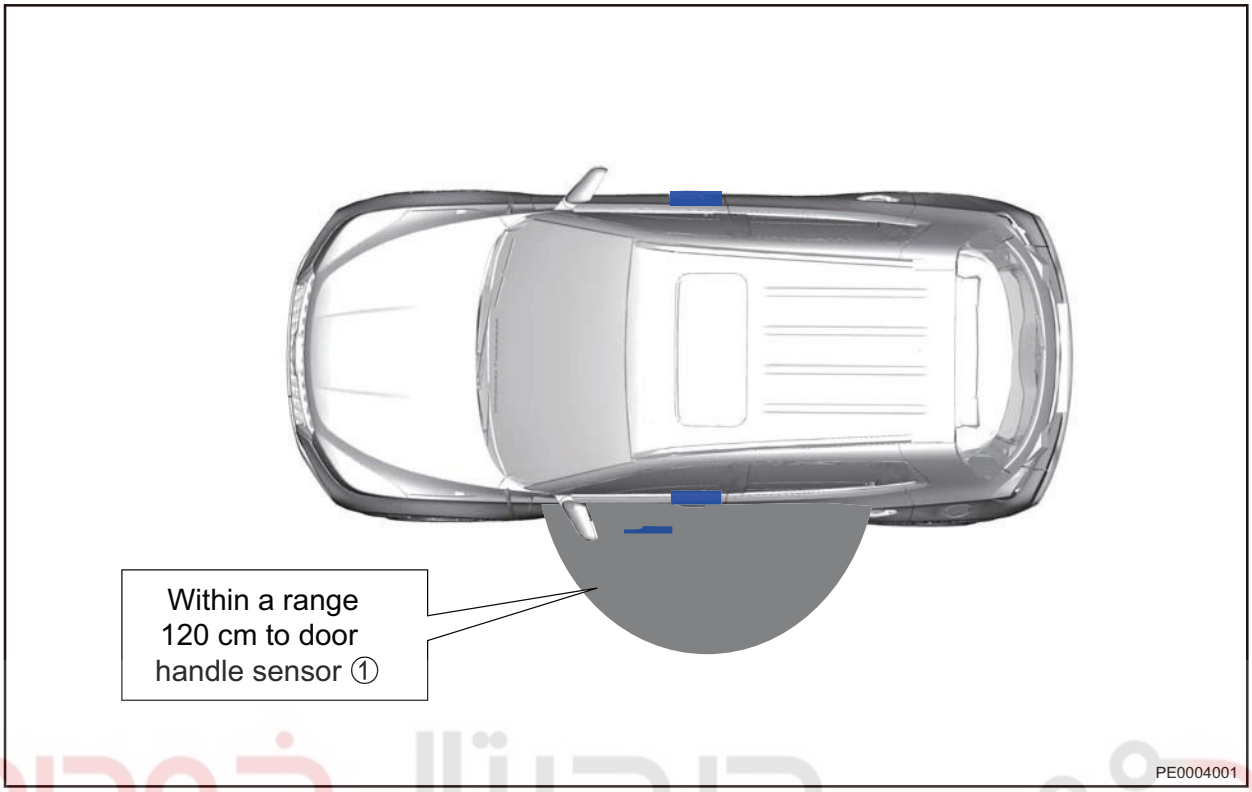
Function	
1 - Smart Entry Function	2 - Keyless Entry Function
3 - Mechanical Entry Function	4 - One-button Start Function
5 - One-button Stop Function	6 - Emergency Stop Function
7 - Back Up Start Function	8 - Emergency Start Function
9 - Starting Number Limit Function	10 - Prompt Function
11 - Engine Immobilizer Function	

Smart Entry Function



Smart Door Unlock (Keyless Fortifying Deactivation)

1. When bringing a smart key close to vehicle and pressing door handle switch with doors locked, vehicle will be unlocked.
   Hint:
   Only front left door is equipped with switches.
2. No matter where the smart key is (put in pocket, hang in the belt or put in bag), as long as the key is within approximately 1.2 m of door handle sensor, if pressing door handle sensor, vehicle will enter fortifying deactivation mode (turn signal lights will flash twice and four doors will be unlocked).
3. If any of following operations is not performed within 30 seconds after pressing door handle sensor (fortifying deactivation) under fortifying mode, all doors will be locked automatically.
   (a) Open any door.
   (b) Press the ENGINE START STOP switch.
   (c) ENGINE START STOP switch is in ACC or ON position.



Smart Door Lock (Keyless Fortifying)

1. When exiting vehicle with smart key and pressing door handle switch with doors unlocked, vehicle will be locked.

   Hint:

   If any door is not closed properly, it will be unlocked automatically after locking to avoid leaving key inside vehicle.

   (a) When 4 doors, engine hood and engine compartment are completely closed, and ENGINE START STOP switch is in OFF position.

   (b) Press door handle sensor when the smart key is outside the vehicle and within a 1.2 m semicircle area around the front left door handle.

   (c) Vehicle enters fortifying mode (turn signal lights will flash once, horn sounds once and all doors will be locked).

2. Operation range

   (a) Only distance between smart key and door handle sensor (1) is within specified operation range, smart key function can be used.

   (b) When smart key battery is discharged or there is strong radio wave in operation position, smart key system also will do not operate normally.

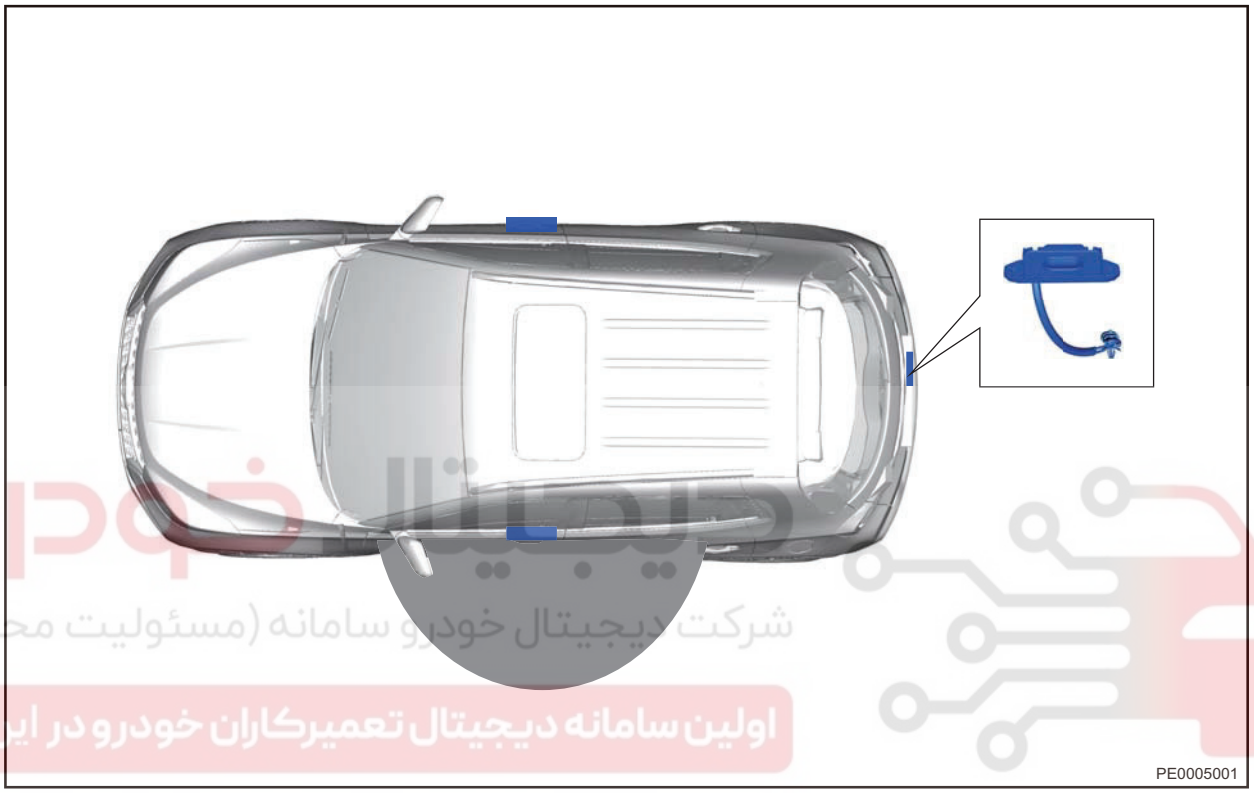
   (c) It is recommended that do not place smart key together with mobile phone and other radio equipment.

   (d) Operation range is within 120 cm of each door handle sensor (1).

   (e) If smart key is too close to door glass, handle or rear bumper, door handle sensor may not be used.

   (f) When smart key is within operation range, any one even without carrying smart key can press door handle sensor on corresponding side to lock/unlock door.

3. When using smart key system, door handle sensor will invalid in following conditions.
   (a) When ENGINE START STOP switch is in following positions (ACC or ON position).
   (b) Smart key is left in cab or luggage compartment (at this time, alarm will sound, turn signal lights will flash and "Smart Key inside Vehicle" will be prompted on instrument cluster if pressing door handle sensor.)
   (c) When smart key is not within exterior operation range.
   (d) When any door is opened or not closed properly.
   (e) When the smart key battery is discharged.

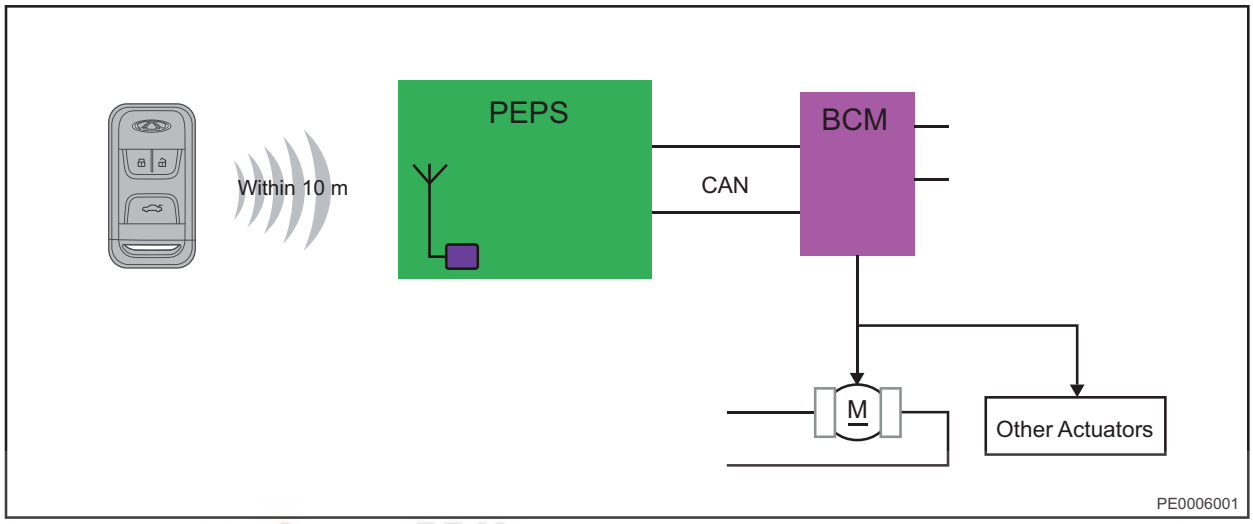


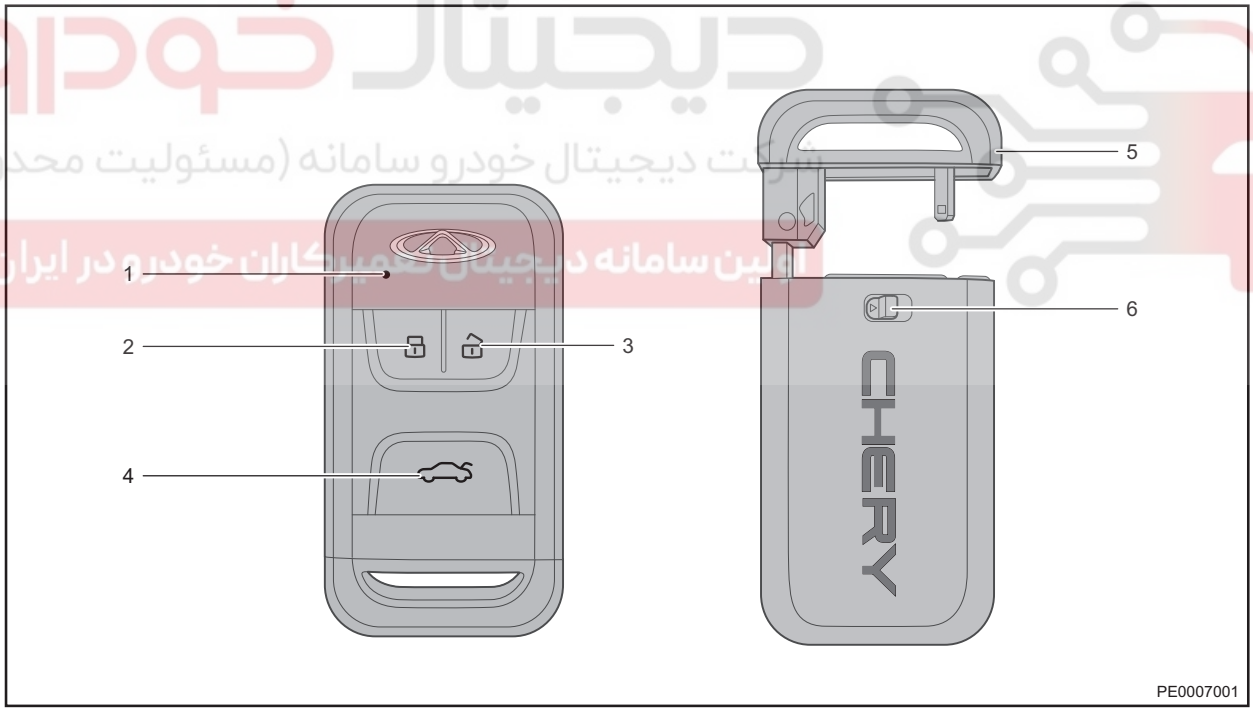
Smart Keyless Luggage Compartment Open

1. If all doors are unlocked, the luggage compartment external electronic switch is activated. At this time, press the switch to open luggage compartment without necessity of carrying smart key.
2. If door is under central lock state, luggage compartment external electronic switch will be disabled. At this time, it is necessary to bring smart key close to rear of vehicle and press electronic switch to open luggage compartment.
3. Precautions for smart entry function
   (a) For safety, when remote control/central control or mechanical control is used to lock vehicle, if there is a smart key inside vehicle, system will disable door handle switch while remote control still can be used.
   (b) In order to successfully perform door handle switch operation, do not rapidly operate door handle switch in succession within 0.5 second. and also do not rapidly operate luggage compartment external electronic switch.
   (c) Smart keyless unlock and lock are only valid when power supply is shut off and four doors are closed properly, or system will not operate.
   (d) Smart keyless unlock and lock are only valid when power supply is shut off and four doors are closed properly, or system will not operate.
   (e) For power saving purpose, after vehicle is parked for 15 days, smart entry for front right door handle will be invalid, only smart entry for front left door handle can be used (it will return to normal if performing remote control unlock once or front left door HSU (door handle sensor)

(f) In some particular situations, such as smart key is too close to door, system may determine the key is inside vehicle, causing door handle sensor to be disabled. In this case, keyless entry function will not operate normally. At this time, it is necessary to use remote control to lock and unlock vehicle.

Remote Entry Function





1 - LED Indicator	2 - Lock Button
3 - Unlock Button	4 - Luggage Compartment Door Release Button
5 - Mechanical Key	6 - Mechanical Key Release Slider

Remote Lock (Fortifying) Function

1. Press lock button on smart key with power supply OFF, door will be locked, turn signal lights will flash (once), horn will sound (once) and vehicle will enter fortifying mode.
   (a) Press lock button with four doors, hood and luggage compartment door closed properly, door will be locked, body anti-theft system will be turned on and vehicle will enter fortifying mode.
   (b) If any door is not closed properly, lock system will not operate.
   (c) If power supply is in ACC or ON position, remote lock function will not operate to avoid misoperation.
   (d) If doors are closed properly while hood or luggage compartment door is not closed properly, lock system will lock doors, but body anti-theft system cannot be turned on and vehicle will not enter fortifying mode.

Remote Lock (Fortifying Deactivation) Function

1. Press the remote control unlock button, 4 door locks are unlocked, and turn signal light flashes twice, the vehicle enters the fortifying deactivation state.

   Hint:

   If any of following operations is not performed within 30 seconds after pressing remote unlock button (fortifying deactivation) under fortifying mode, all doors will be locked automatically.
   (a) Open any door.
   (b) Press the ENGINE START STOP switch.
   (c) ENGINE START STOP switch is in ACC or ON position.

   Hint:

   • Description

   Press unlock button, so that door will be unlocked and luggage compartment door external switch will be activated (at this time, press luggage compartment external switch to open luggage compartment even if user does not bring valid key).
   Under fortifying or anti-theft alarm mode, press unlock button to cancel body anti-theft alarm system.

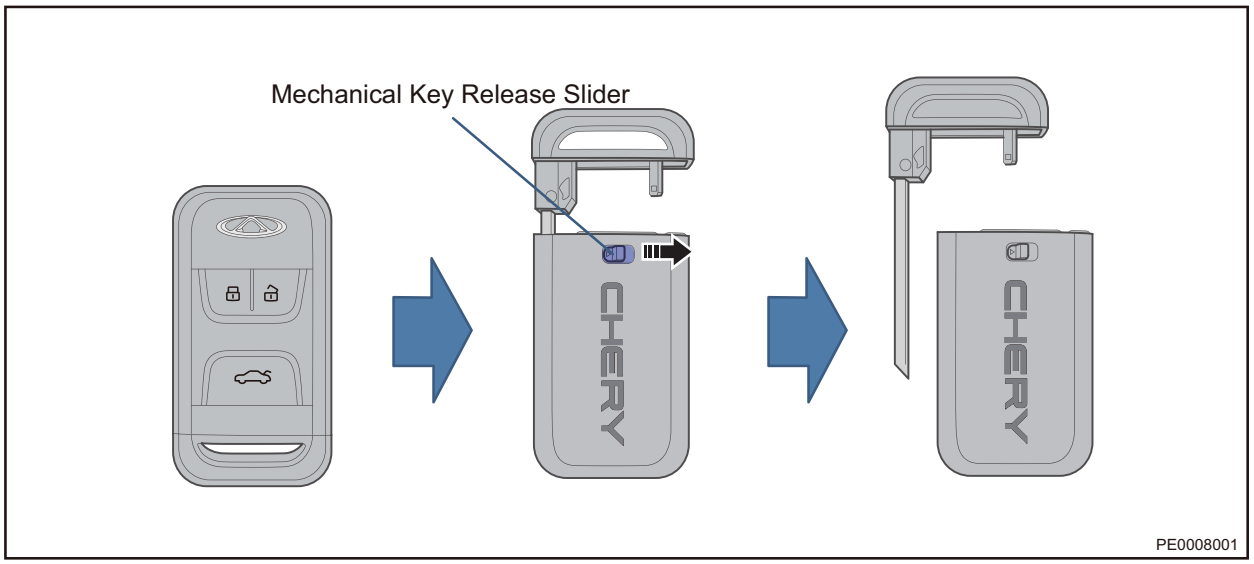
Remote Luggage Compartment Function

1. Long press remote luggage compartment button (about 1.5 seconds), luggage compartment door will be unlocked, at this time, it is still necessary to press back door release switch to open back door.

   Hint:

   Open luggage compartment remotely cannot cancel vehicle fortifying.

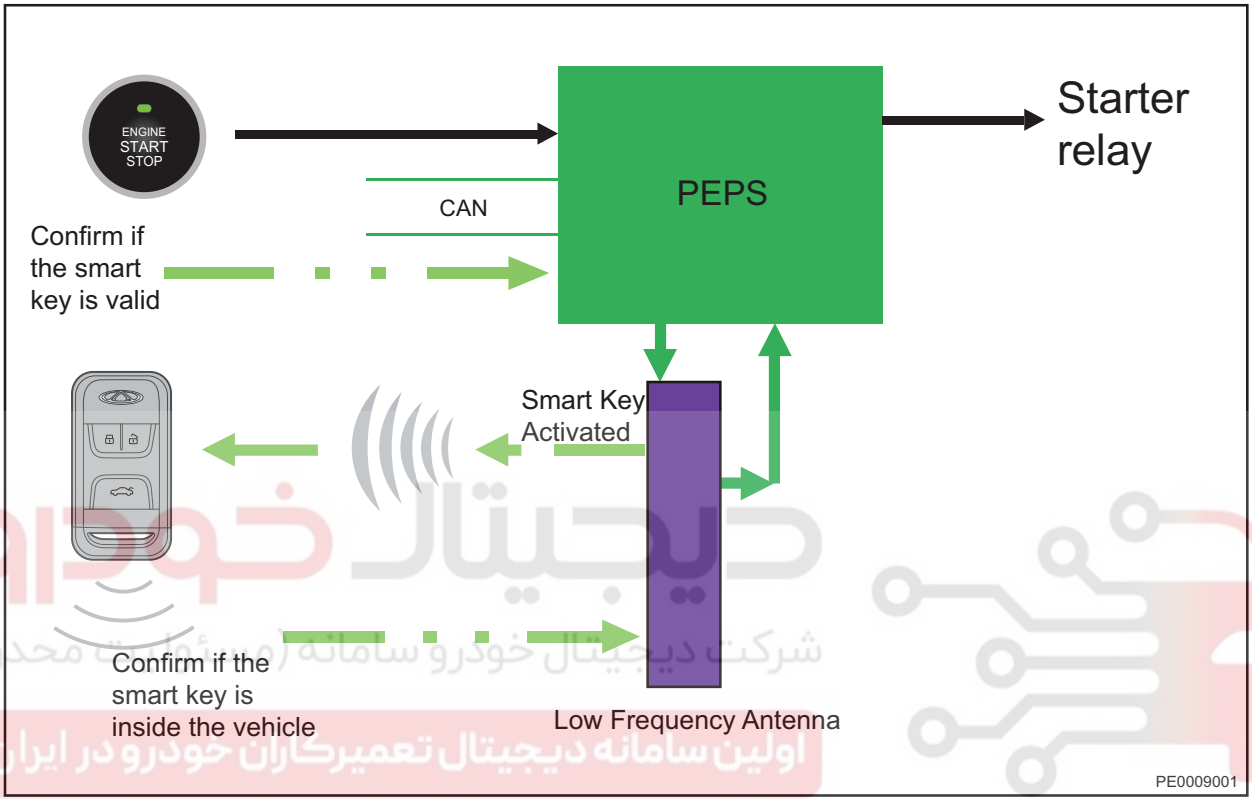
Mechanical Key Entry Function



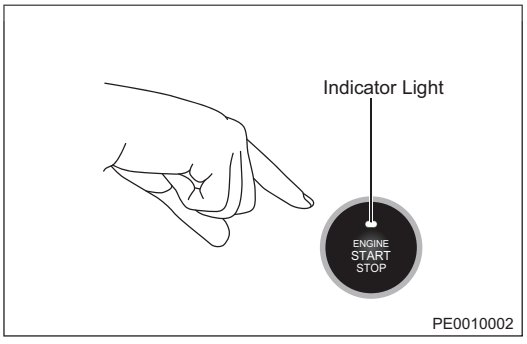
1. When key battery is weak or remote control function cannot operate normally caused by radio interference, it is possible to use mechanical key to lock and unlock vehicle.

2. Slide mechanical key release slider on back side of key and pull out mechanical key, then insert the key into front left door key cylinder and turn it clockwise or counterclockwise to lock or unlock vehicle.
Hint:
When vehicle fortifying is successful, mechanical key can be used to unlock, but it is illegal entry, and alarm will sound and turn signal lights will flash at that time.

One-button Start Function



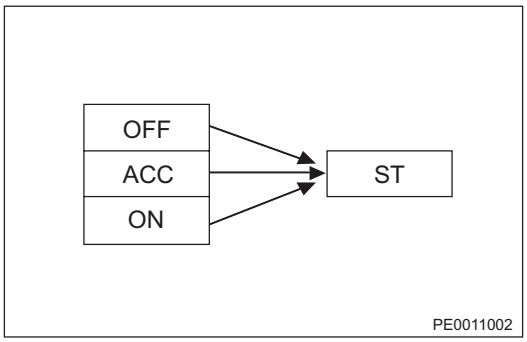
1. Indicator does not come on
   (a) Power supply is OFF and brake pedal (for DCT models) is not depressed, or engine has been started.



2. Amber
   (a) Power supply state: ACC or ON, brake pedal (for DCT models) is not depressed.
3. Green
   (a) Brake pedal (for DCT models) is depressed, and engine will start once the button is pressed.

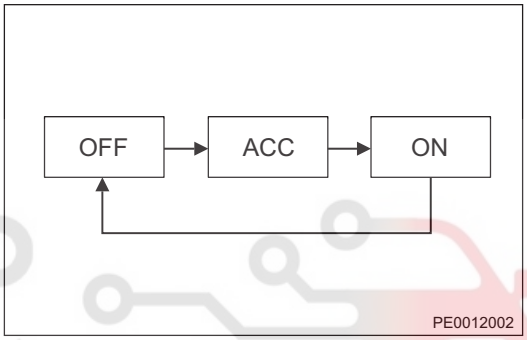
4. One-button start function: It is activated at any power supply state (OFF, ACC, IGN) with legal smart key inside vehicle. Depress brake pedal (for DCT models), press ENGINE START STOP switch to start engine.

   (a) Switching power supply state.



5. There are four positions for vehicle power supply: OFF, ACC, ON, ST (ignition). With brake pedal (for DCT models) not depressed, press ENGINE START STOP switch:

   (a) Switching power supply state.



6. Precautions for one-button start function
   (a) For DCT models, if it is not in P or N position, system will not perform starting operation.
   (b) During start, if brake pedal (for DCT models) is released halfway, system will suspend starting.
   (c) Press ENGINE START STOP switch and then release it when starting, system will judge if starting is successful and stop starting properly.
   (d) For AT models, if it is not in P position, vehicle power supply state (ACC, IGN) will not return to OFF state.

One-button Stop Function

1. For common engine stop mode, 4 km/h of vehicle speed must be met.

   Hint:

   - For DCT models, if it not in P position, vehicle power supply state will not return to OFF, you must shift to P position before leaving vehicle after stopping. And check if power supply state is in OFF. Make sure that vehicle power supply is in OFF state and then leave vehicle. Otherwise, door cannot be locked.
   - Simple method for distinguishing power supply in ACC or OFF:
     (a) Judged by color of indicator on ignition switch.
     (b) Under ACC state, instrument cluster will illuminate center display edge of LCD.
     (c) Operate buttons on remote controller, if lock operation is failed and unlock operation is successful, it indicates that vehicle power supply is not in OFF position.

Emergency Stop Function

1. In order to stop engine in emergency, this system has emergency stop mode.

   Hint:

   - When vehicle speed is more than 4 km/h, press ENGINE START STOP switch for more than 3 seconds in succession.
   - If pressing ENGINE START STOP switch for 3 times within 2 seconds with vehicle speed more than 4 km/h, engine will stop and power supply will return to ACC.

   Caution:

   - If this condition is not met, engine will not shut down and ignition switch is kept in ON.
   - During driving, emergency stop will seriously affect normal driving. Do not use this function unless in emergency.

Back Up Start Function

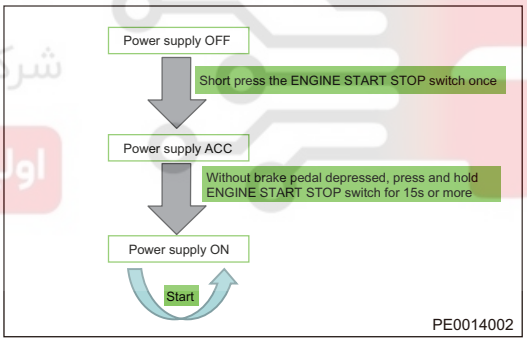
1. If key can not be recognized by system due to weak battery or interference, PEPS system will not operate normally. At this time, system provides a method to back up start engine, following method can be used to start engine or turn on power supply.
   (a) Lay key on bottom of rear cup holder with face up, and do not depress brake pedal (for DCT models).
   (b) Press the ENGINE START STOP switch once. Power supply state will switch to ON, and "Verification is Successful, it is Possible to Start" is displayed on instrument cluster.
   (c) Depress brake pedal (for DCT models) fully, press ENGINE START STOP switch to start engine.

Emergency Start Function

1. This system is provided with emergency start mode, to prevent failure in signal detecting brake pedal position (for DCT models), which may cause engine not to be started.

   Caution:

   - Please contact service station for inspection and repair as soon as possible.



Starting Times Limit Function

1. When serious damage occurs in system, in order to ensure driving safety and prevent steering system locking incorrectly, system will not allow user to start engine limitlessly and engine only can be started for 10 time. And each time engine starts successfully and travel, rest times will reduce one. Please contact Chery service station for repair as soon as possible.

   Caution:

   Only MT models have this function.

   Hint:

   - This system malfunction may be caused by any or several of the following reasons:
     (a) Speed signal malfunction of front right wheel
     (b) Speed signal malfunction of other three wheels

2. Precautions for starting times limit function
   (a) Keyless entry and PEPS system obtains wheel speed signal from brake controller (ABS/ESP), if any wheel speed signal is malfunctioning, ABS/ESP system warning light in instrument cluster will come on.

(b) If malfunction does not be repaired and maximum start times is reached, it is not allowed to start vehicle. Please contact Chery service station for repair immediately and reset "rest start times" with diagnostic tester. Otherwise, if same malfunction occurs next time, start times offered by system will be less than 10 times. (Specific value depends on residual times last time malfunction occurs.)

Prompt Function

To reduce misunderstanding of PEPS features from users and to facilitate the daily diagnosis of simple problems, system will prompt corresponding message to users through instrument cluster display, buzzer and external horn. Regardless of power supply state (OFF, ACC or ON), once PEPS sends information, instrument cluster will handle and display it.

Text Message Prompt	Buzzer	External Horn	Possible Cause
Smart key is not detected	Sound	\	There is no key in vehicle
Smart key is not detected	Sound	\	If you are in vehicle, find smart key and place it in vehicle, or check if passenger brings the key outside
System malfunction, it is allowed to start X times	Sound	\	Please contact Chery Repair Shop for repair immediately.
Please check and repair PEPS system	Sound	\	Please Contact Chery Service Station for Repair Immediately
Please shift to P or N to start	Sound	\	If you want to start engine, shift to P or N
Please depress clutch pedal to start/depress brake pedal to start	Sound	\	If you want to start engine, depress brake pedal (for DCT models) or clutch pedal (for MT models)
Please turn steering wheel to unlock steering column	Sound	\	Turn power supply on while shaking steering wheel to help steering column unlock successfully
Please press ENGINE START STOP switch to turn power supply on again	Sound	\	Turn power supply on while shaking steering wheel to help steering column unlock successfully
Please shift to P	Sound	\	Please shift to P and press ENGINE START STOP switch to turn off power supply.
Please pay attention that smart key is in vehicle	Sound	Sound 6 times	Be sure to carry smart key on person when leaving vehicle. Caution: Door handle switch will be disabled by system temporarily, please use remote controller to lock and unlock
Verification is successful and it is possible to start	Sound	\	It is displayed only when performing back up start and verification passed, and key battery is fully discharged usually
Please turn off power supply	Sound	\	User may leave vehicle with shift position not in P and power supply not in OFF
Smart key battery is low	Sound	\	Key battery still can be used, but it comes to failure due to low voltage, it is necessary to replace battery

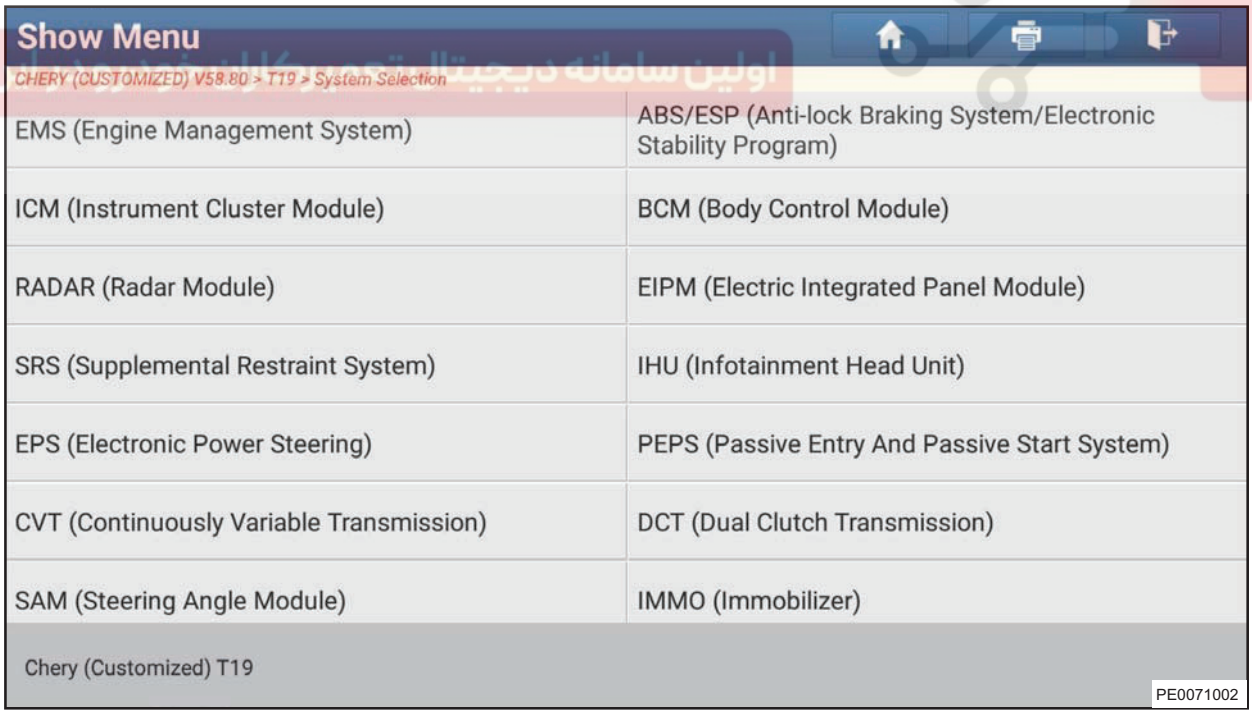
Engine and Vehicle Anti-theft Function

1. Anti-theft for models with PEPS can be divided into two types.
2. For DCT models, anti-theft can be divided into two separate parts - "PEPS and ECU encryption engine immobilizer".
3. For MT models, anti-theft can be divided into two separate parts - "PEPS and ECU encryption engine immobilizer" and "PEPS and ESCL encryption steering column lock anti-theft".
4. For DCT models
   (a) After power supply is turned to ON, ECM will send one frame of validation data to PEPS via CAN bus to verify. Then PEPS will feedback one frame of validation data as response and send to ECM. If response from PEPS is correct, ECM will determine anti-theft can be canceled. Otherwise, ECM will not inject fuel and ignite.
5. For MT models
   (a) After power supply is turned to ACC, PEPS will perform encrypted anti-theft validation with ESCL via special LIN line. If validation passes, ESCL will unlock, or ESCL keeps locking and steering wheel cannot be turned. And power supply cannot be turned to ON.
   (b) After power supply is turned to ON, ECM will send one frame of validation data to PEPS via CAN bus to verify. Then PEPS will feedback one frame of validation data as response and send to ECM. If response from PEPS is correct, ECM will determine anti-theft can be canceled. Otherwise, ECM will not inject fuel and ignite.

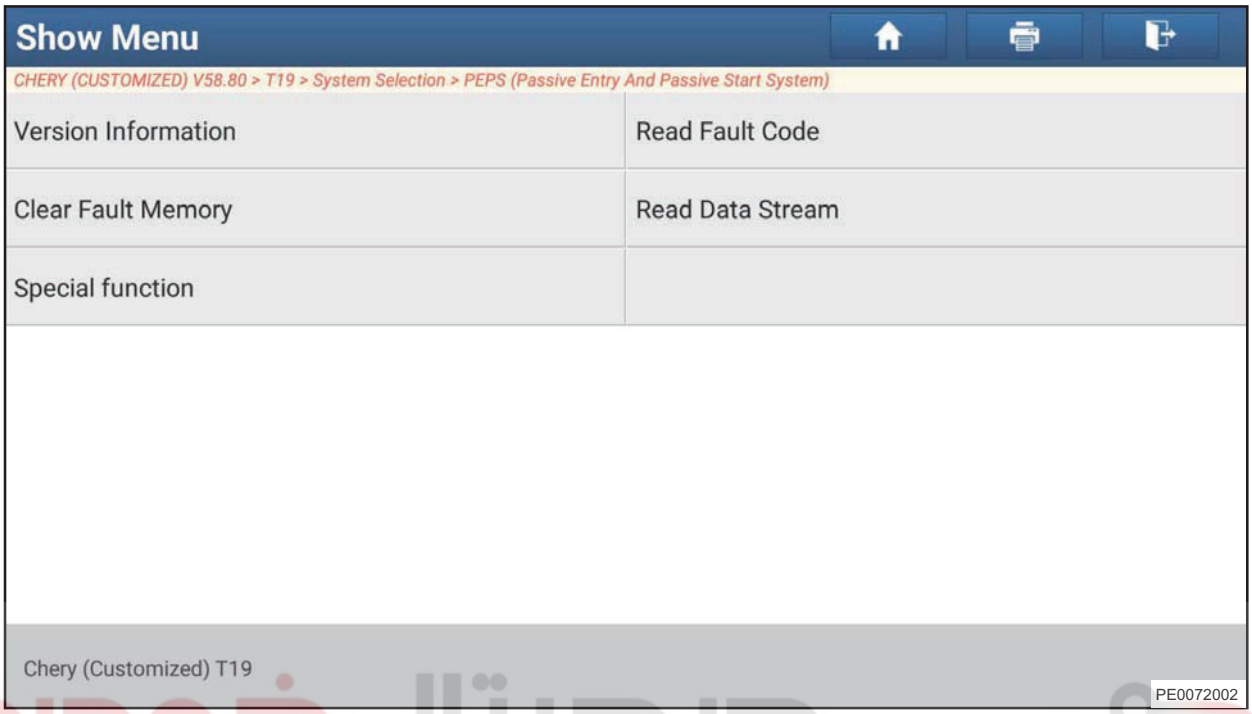
Diagnostic Tester Menu Function and Data Stream

PEPS System

1. Click "T19" to enter "Show Menu".

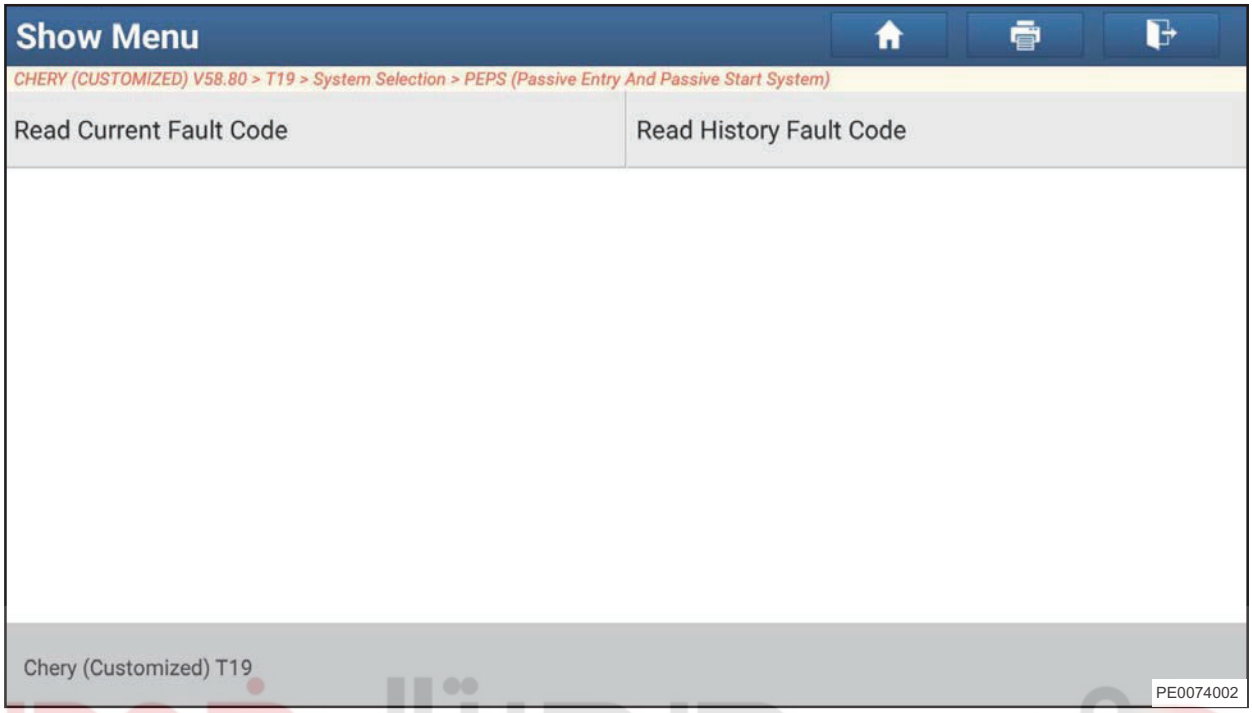


2. Click "PEPS (Passive Entry And Passive Start System)" to enter PEPS system.



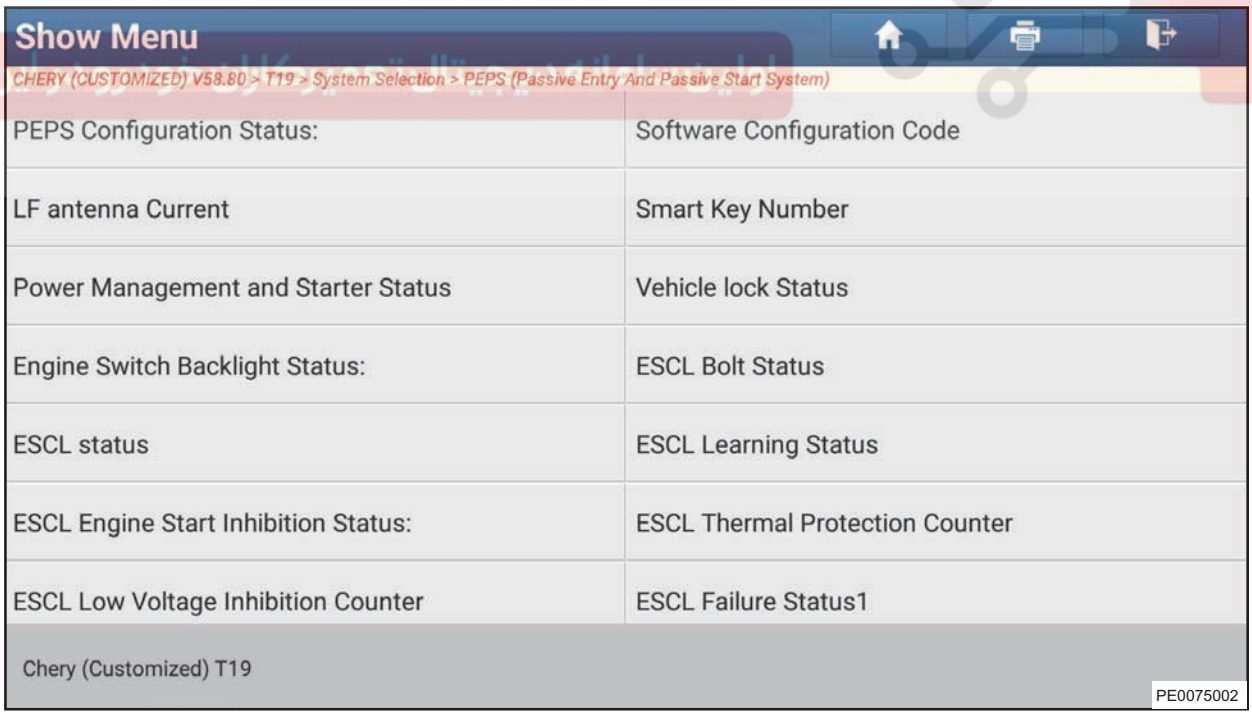
3. Display the PEPS system diagnostic list.

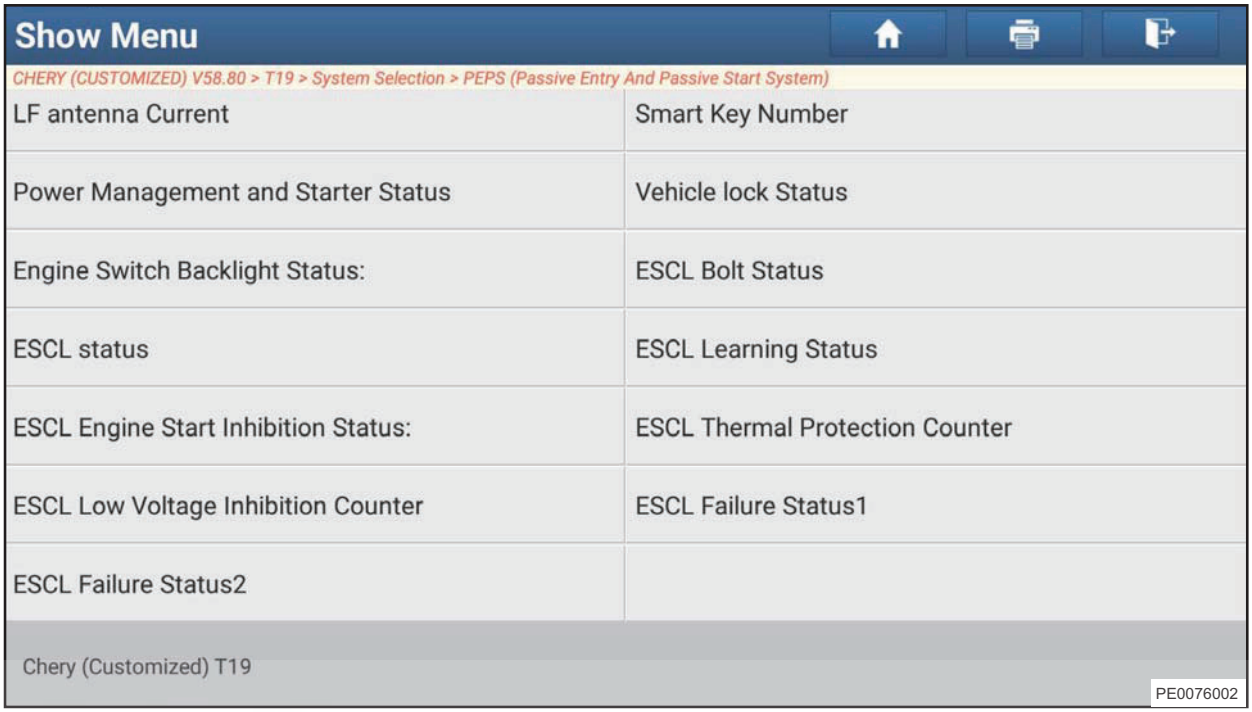
(a) Click "Version Information".



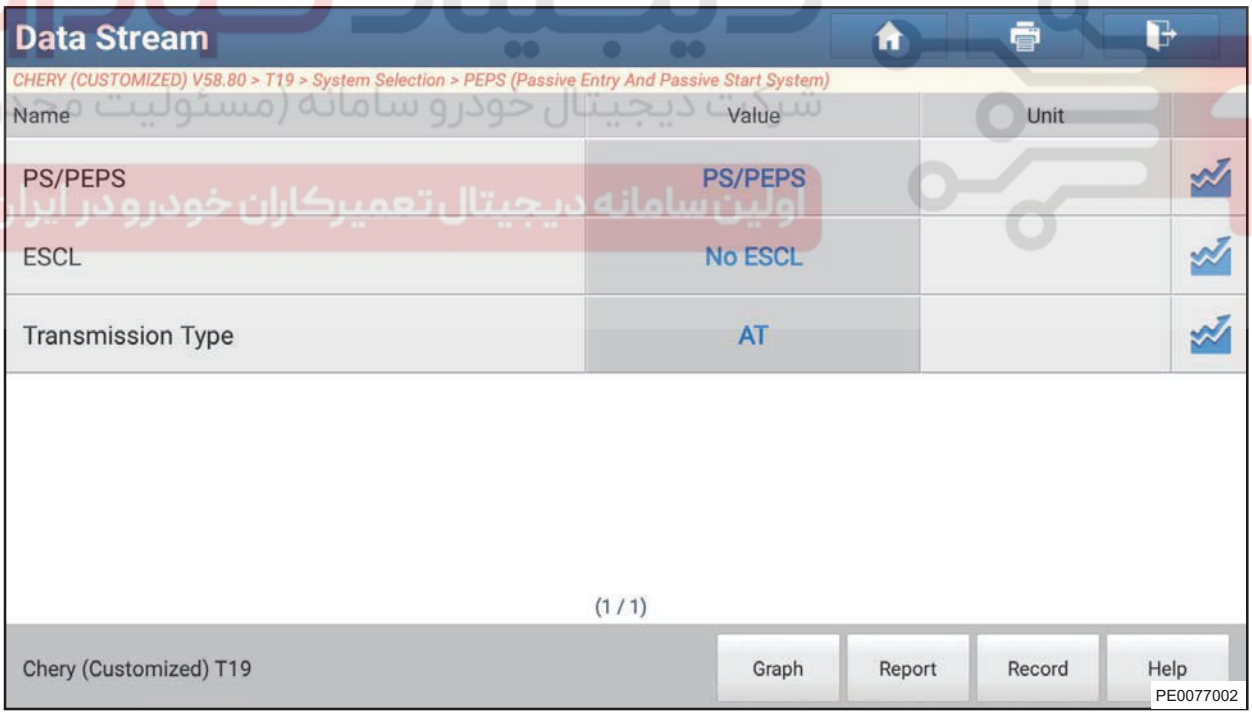
(b) Click "Read Fault Code" to display "Read Current Fault Code" and "Read History Fault Code".

(1) Read Current Fault Code: Read stored fault code of current malfunction.
(2) Read History Fault Code: Fault codes of previous malfunction have not been cleared, and these codes can be read using diagnostic tester.





(c) Click "Read Data Stream".

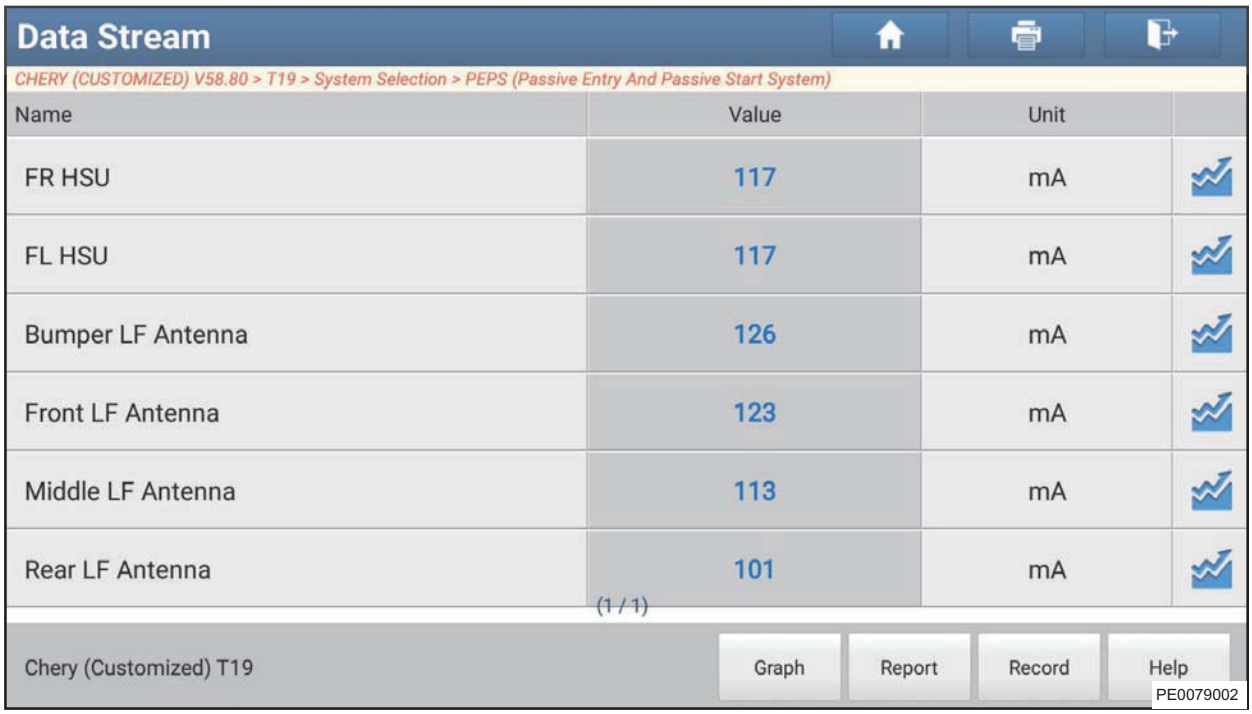


(1) Vehicle configuration status of PEPS system

- Vehicle configuration information (PEPS, MT model with electronic steering column lock, AT or MT model)

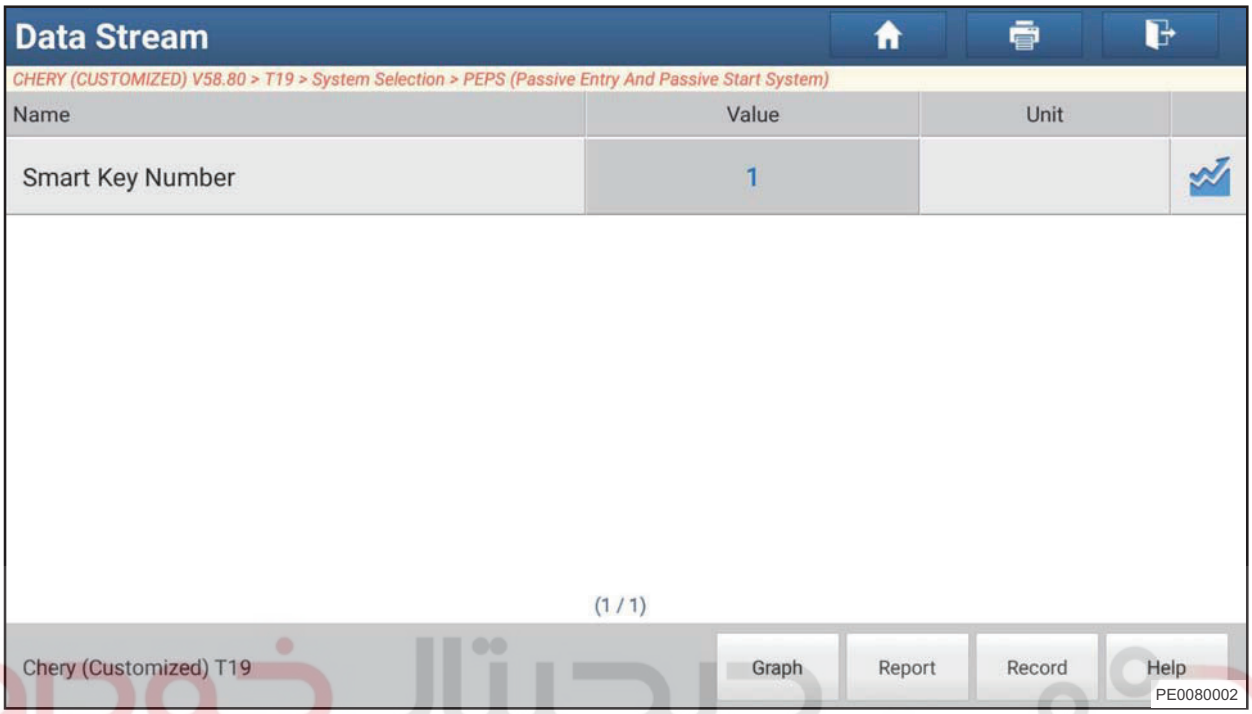
(2) Software configuration code

- Software Configuration Code 1: Number of interior low frequency antennas (such as "07" refers to 3, "03" refers to 2).
- Software Configuration Code 2: After-sales personnel do not need to write configuration, for reference only.



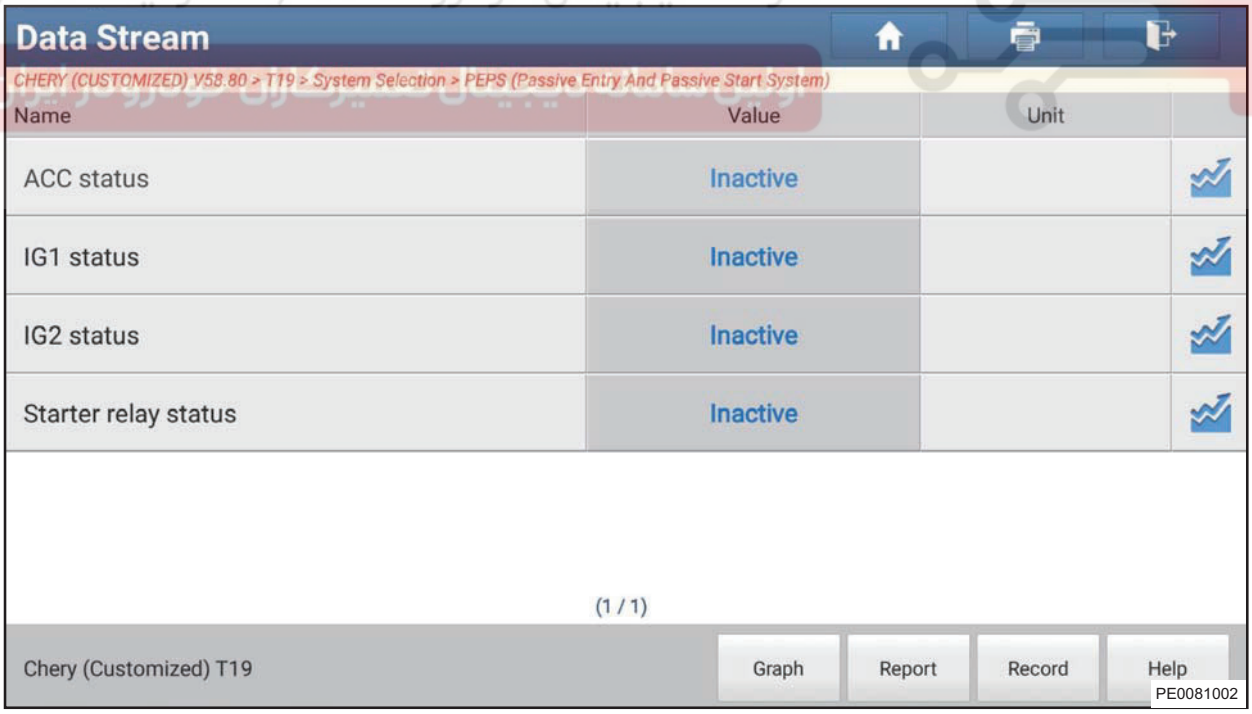
(3) Low frequency antenna current

- After-sales personnel do not need to pay attention to this menu.



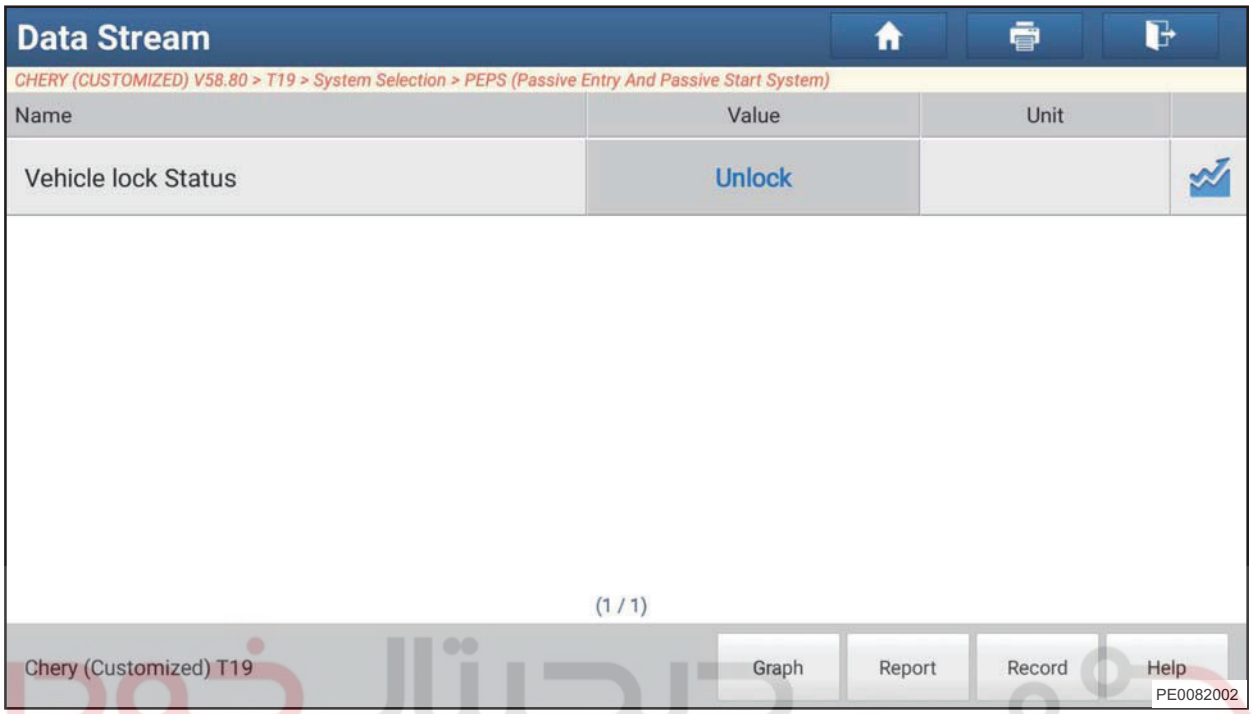
(4) Smart key number

- Smart key number learned by PEPS module.



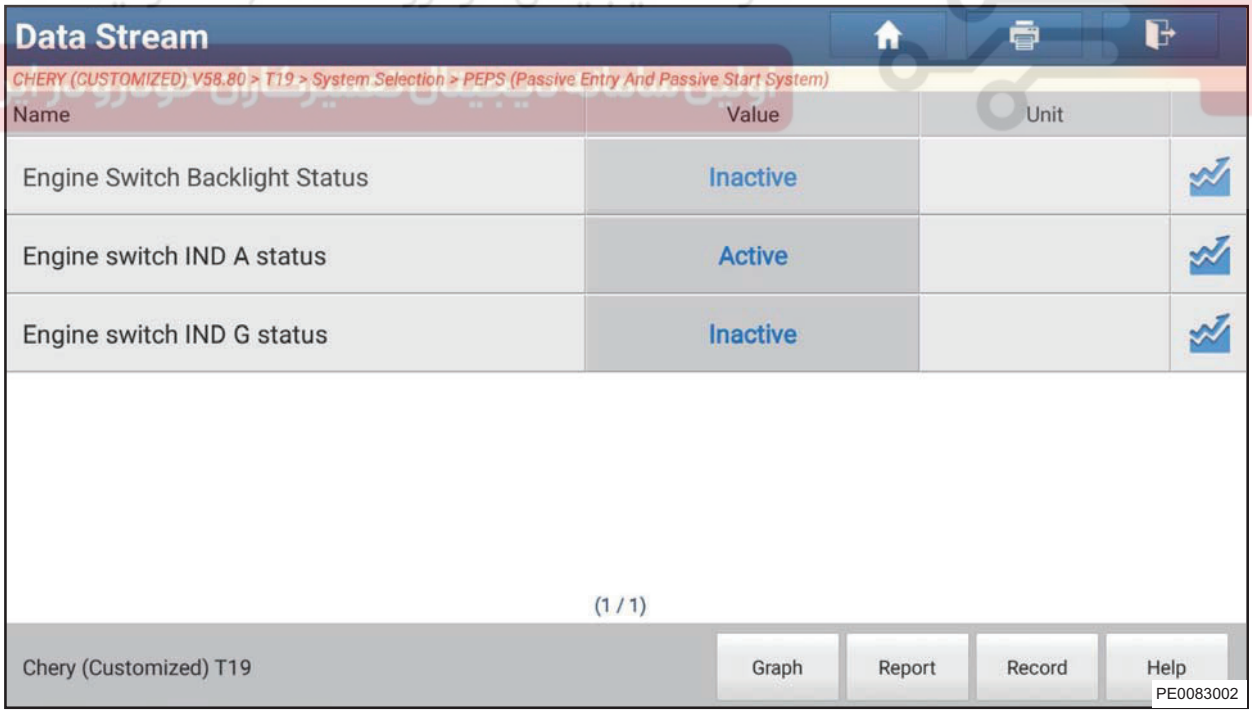
(5) Power management and start status

- Activated status of vehicle power.



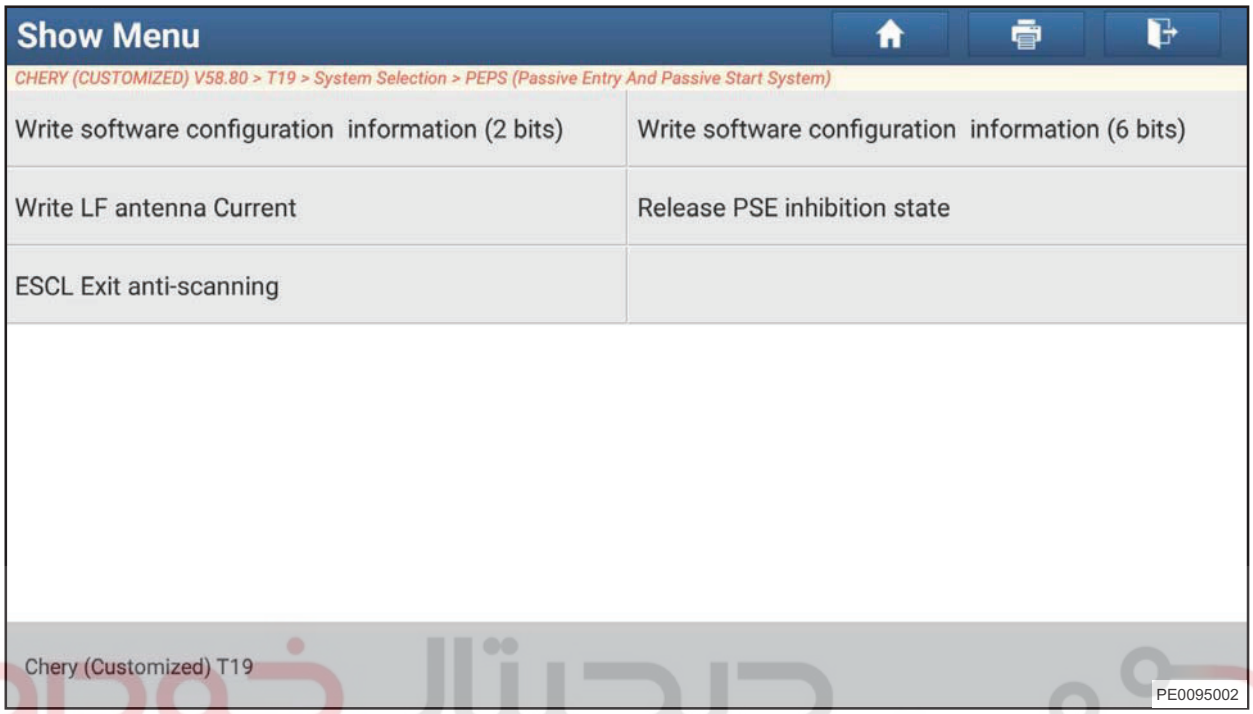
(6) Vehicle lock status

- Vehicle lock and unlock status.



(7) Engine switch backlight status

- Switching status of indicator light when pressing the ENGINE START STOP switch.



(d) Special operation

(1) Write software configuration information (2 bits)

- After-sales does not need to input

(2) Write software configuration information (6 bits)

- After-sales does not need to input

(3) Write LF antenna current

Caution:

- After-sales are not allowed to set current

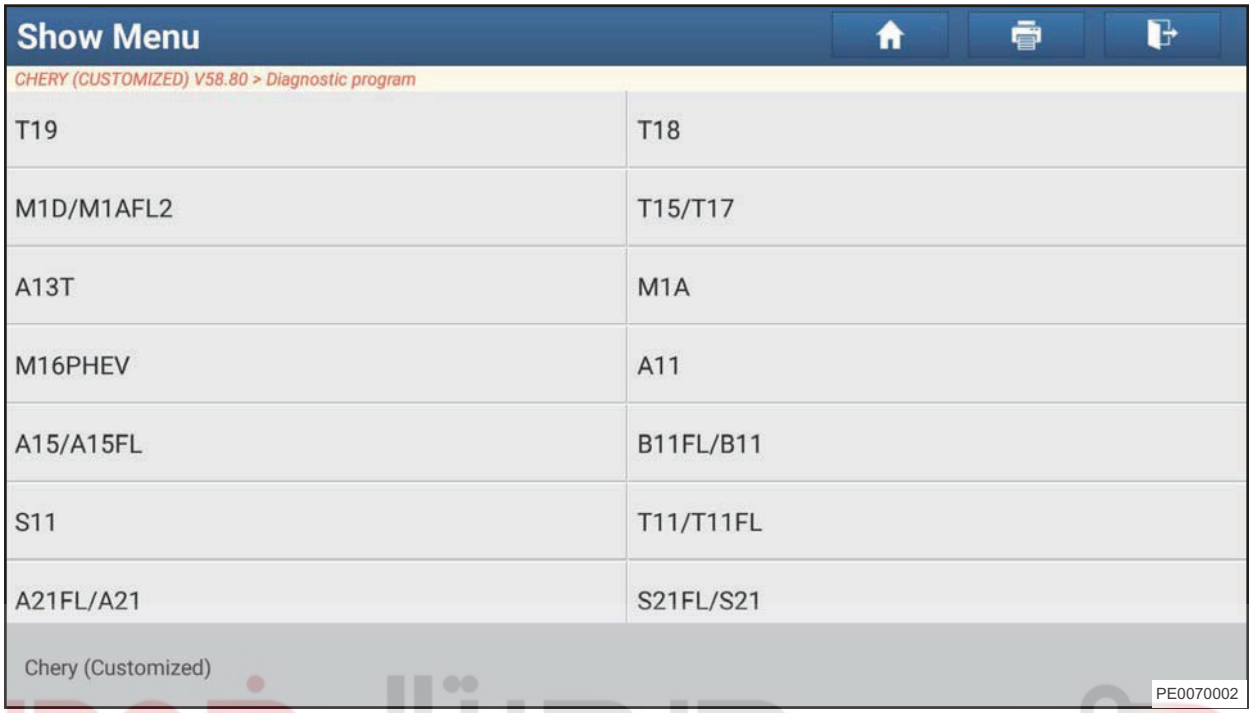
(4) Release PSE inhibition state

- When the system fails, the system will reserve 10 start times after the PSE inhibition is triggered. Once the number of times is exhausted, the function needs to be executed to resume the start times.

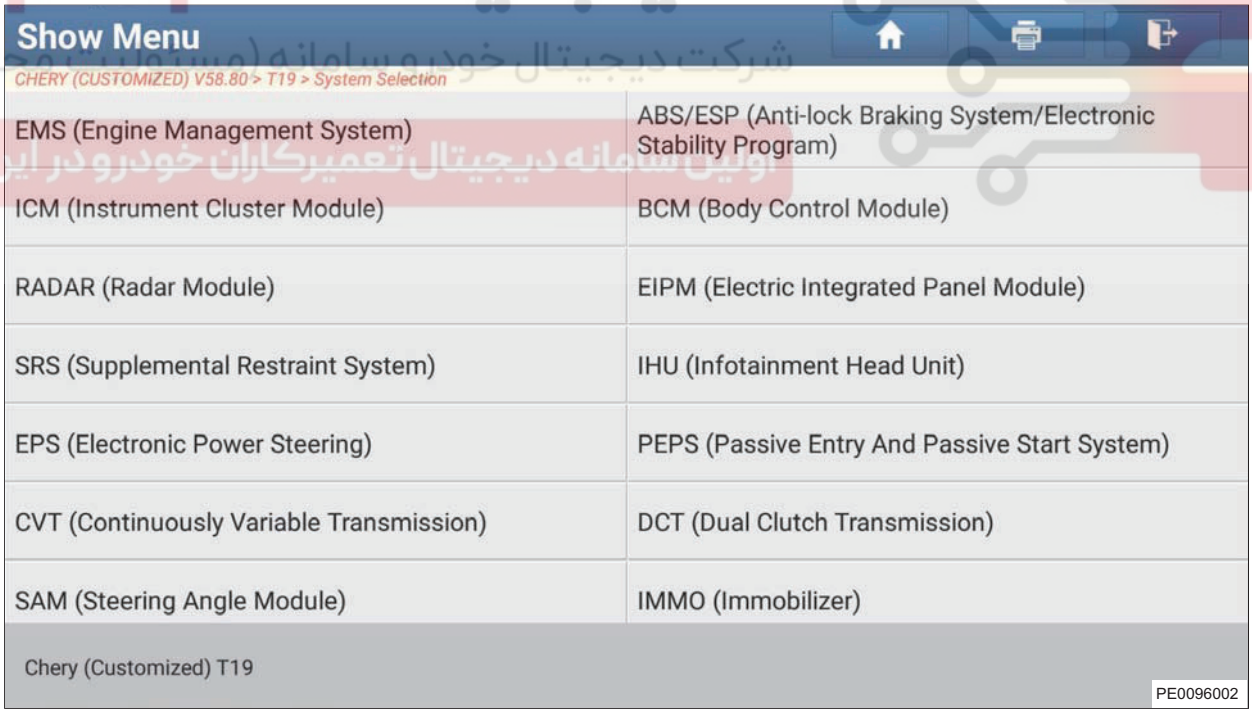
(5) ESCL exit anti-scanning

- When the ESCL enters anti-scan state, this function can be used to exit anti-scan state.

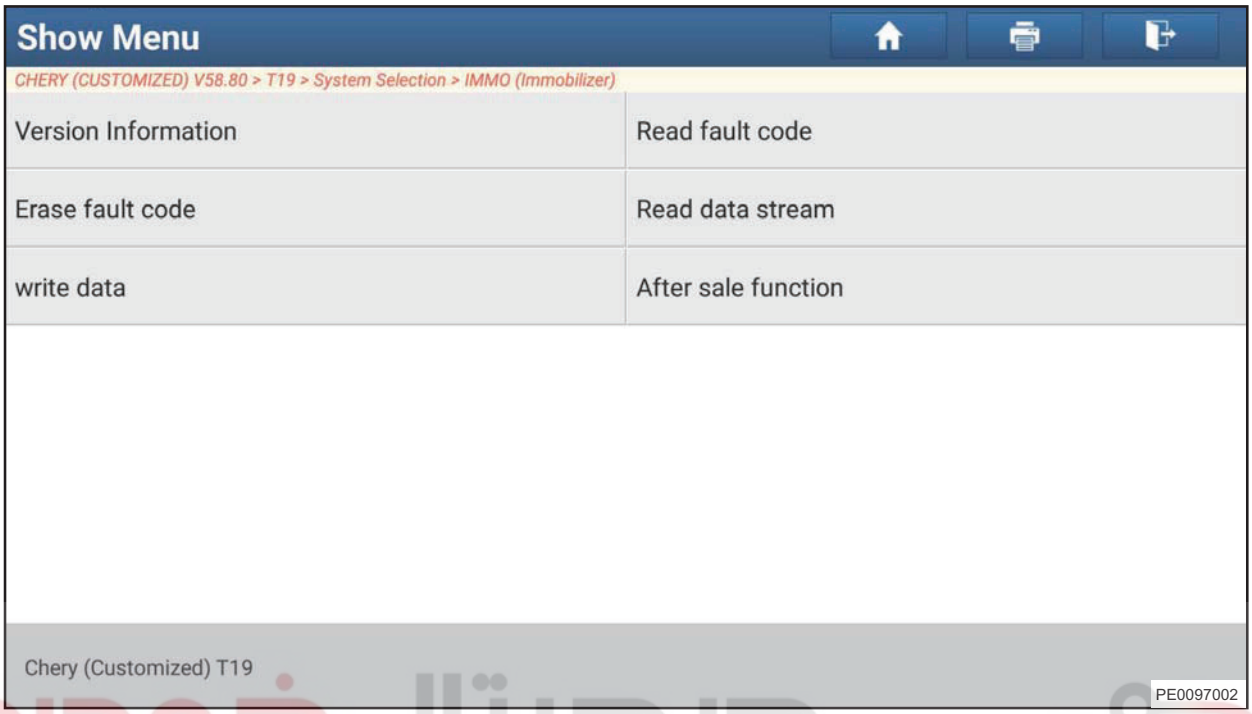
IMMO System



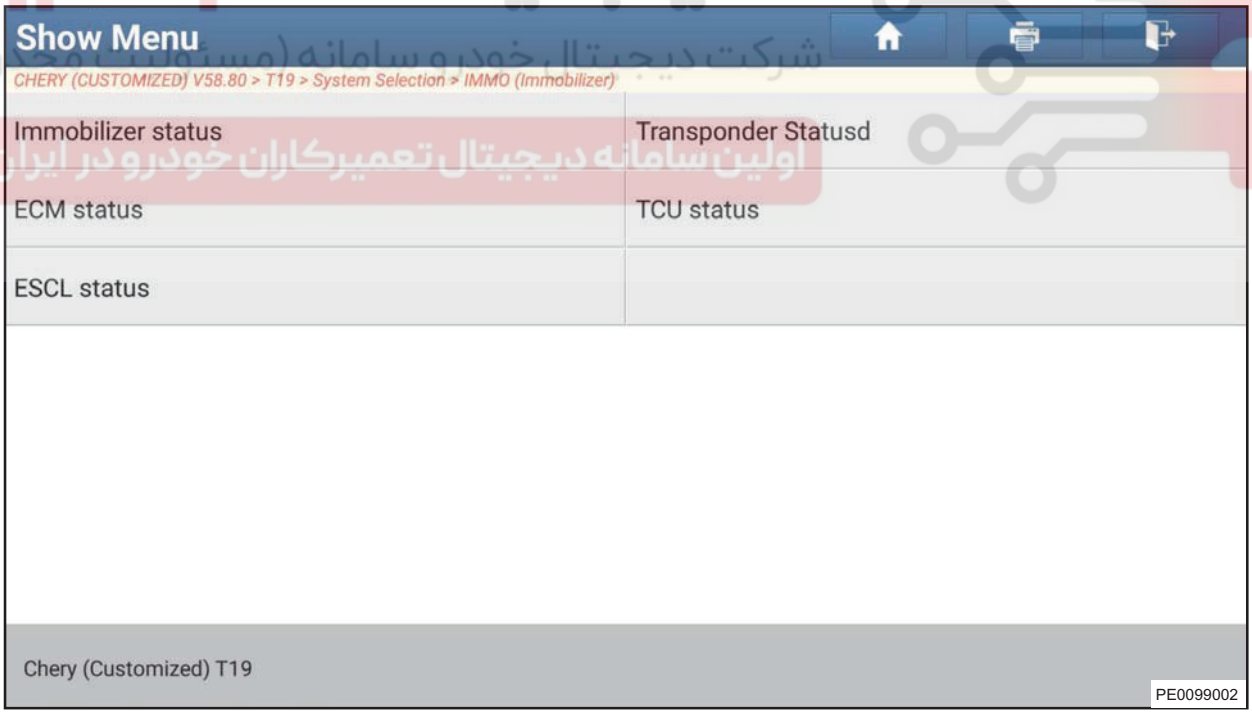
1. Click "T19" to enter "Show Menu".



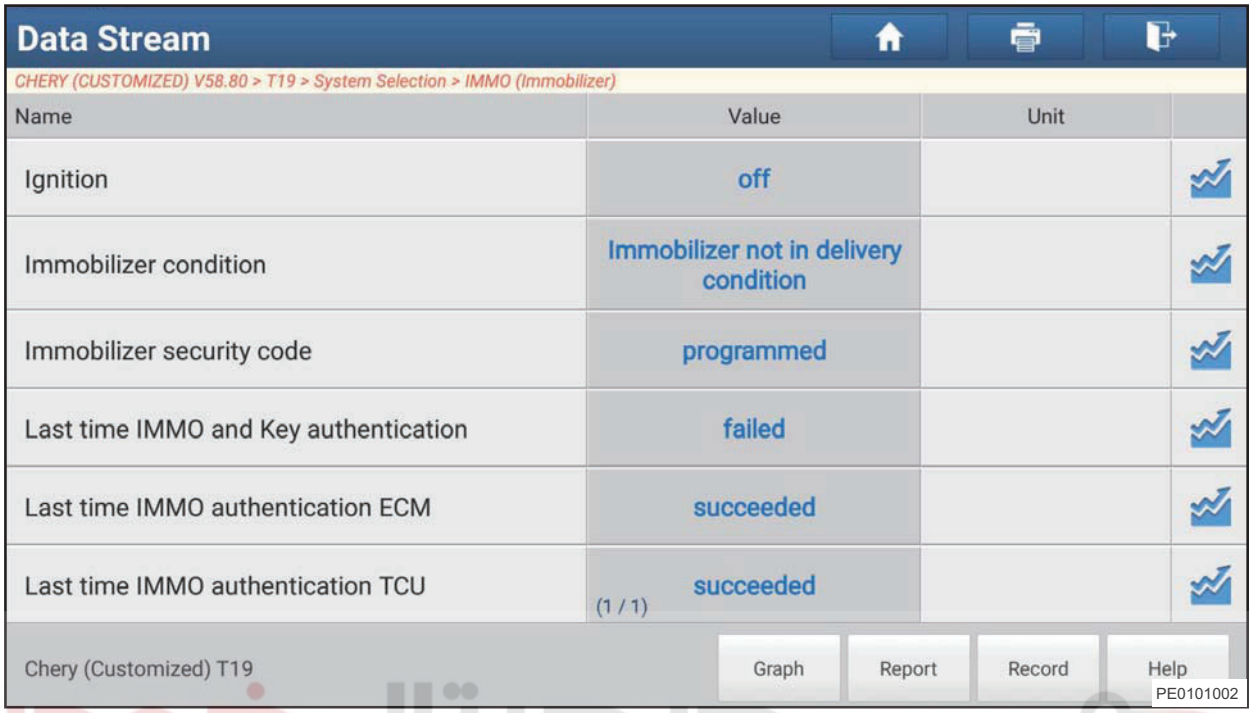
2. Click "IMMO (Immobilizer)" to enter IMMO system.

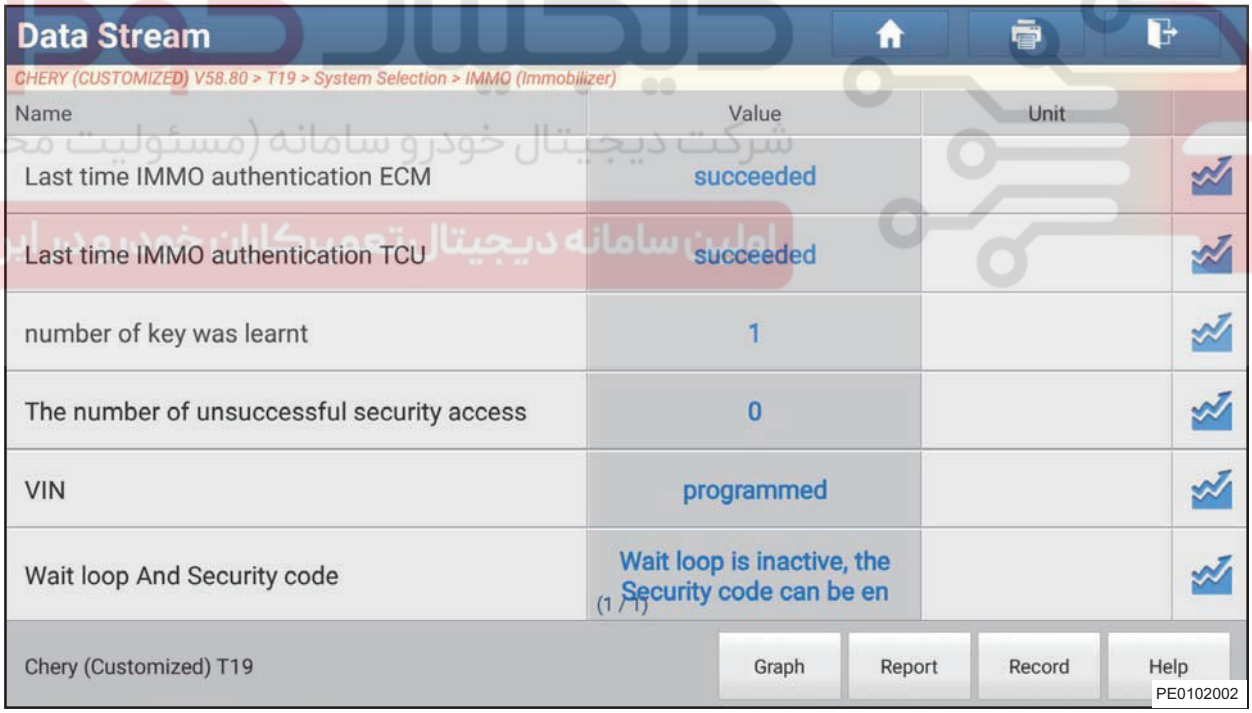


3. Displays IMMO system diagnostic list.



(a) Read data stream





- Immobilizer status
  - ENGINE START STOP switch status
  - IMMO status (whether it has been matched)
  - Vehicle identification number, anti-theft security code (whether it has been programmed)
  - Number of key learning
  - Whether IMMO and key, ECU certification is successful (TCU certification applies to CVT models)

- When the authorization code (PIN code) is incorrectly entered multiple times, the security access will be delayed and the authorization code cannot be entered. Wait for the specified time before you can enter again.
- The number of times security access has failed

Data Stream

CHERY (CUSTOMIZED) V58.80 > T19 > System Selection > IMMO (Immobilizer)

Name	Value	Unit
Last received transponder Id at at a transponder position	programmed	
Last received transponder Id at at a transponder position 1	not programmed	
Last received transponder Id at at a transponder position 2	programmed	
Last received transponder Id at at a transponder position 3	not programmed	
Last received transponder Id at at a transponder position 4	not programmed	
Last received transponder Id at at a transponder position 5	not programmed	

(1 / 2)

Chery (Customized) T19 | Graph | Report | Record | Help

PE0103002

Data Stream

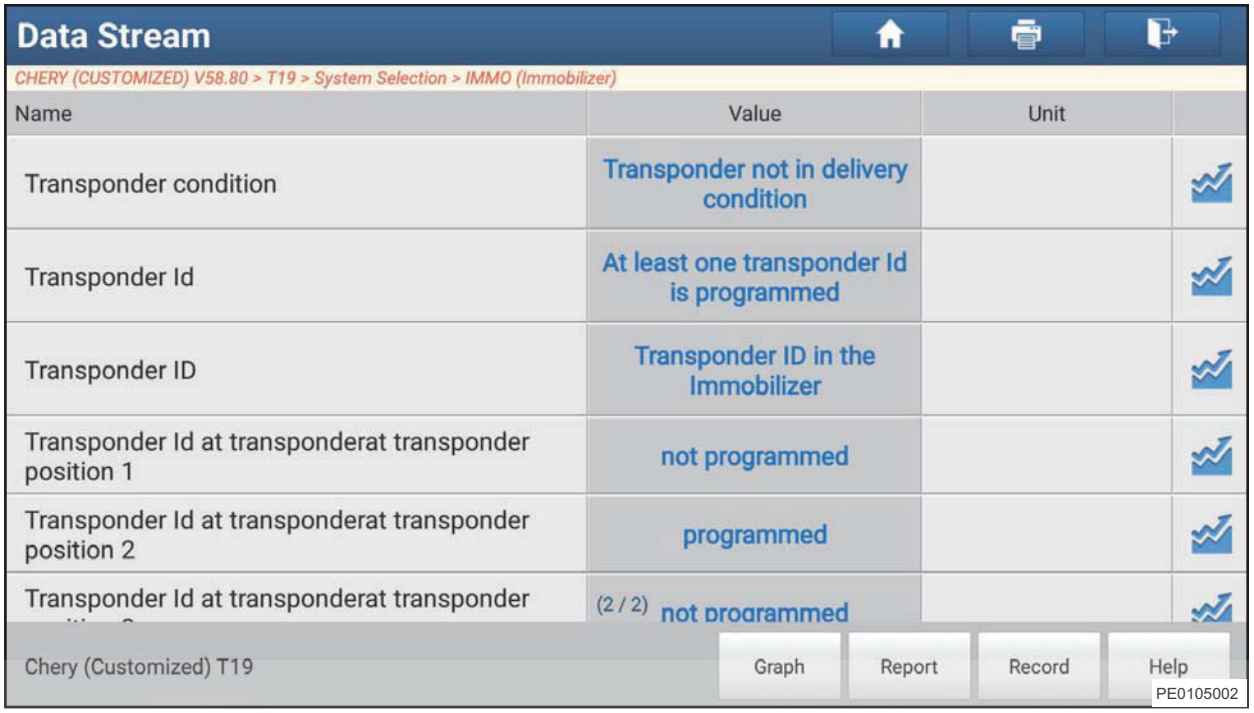
CHERY (CUSTOMIZED) V58.80 > T19 > System Selection > IMMO (Immobilizer)

Name	Value	Unit
Last received transponder Id at at a transponder position 4	not programmed	
Last received transponder Id at at a transponder position 5	not programmed	
Legal Transponder	Legal Transponder detected	
Ring antenna	succeeded	
SK	correct	
Transponder	Transponder detected	

(1 / 2)

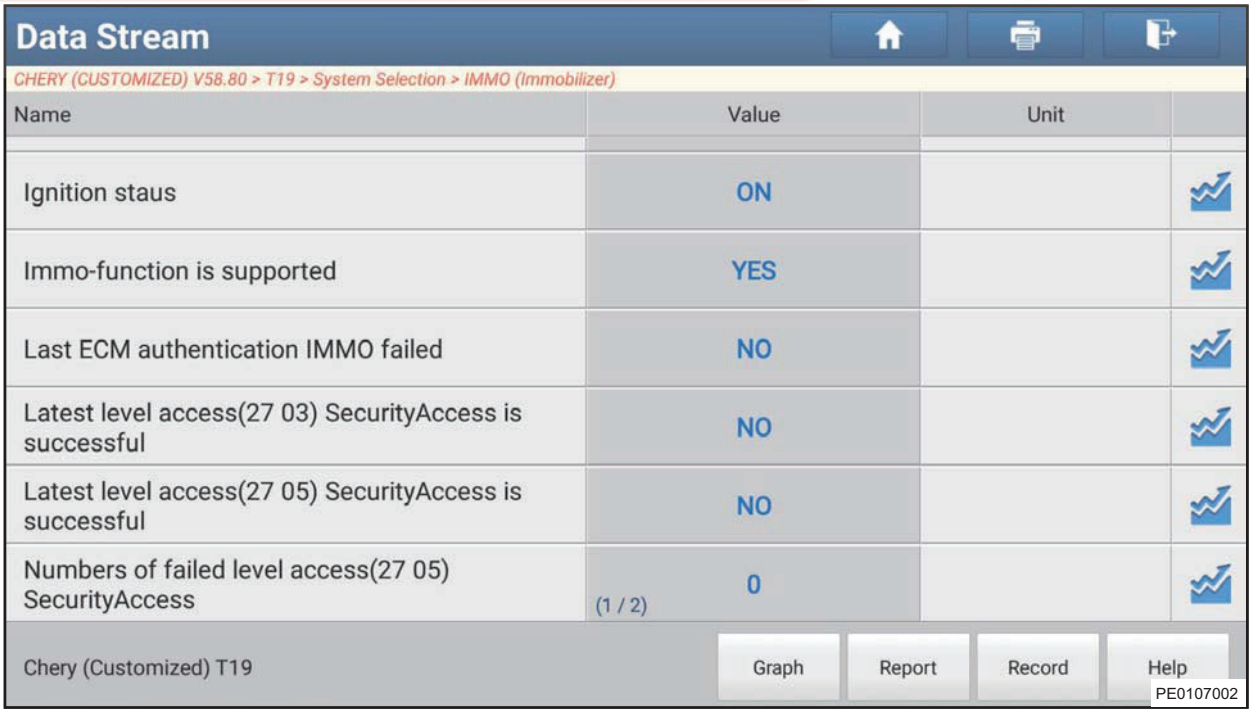
Chery (Customized) T19 | Graph | Report | Record | Help

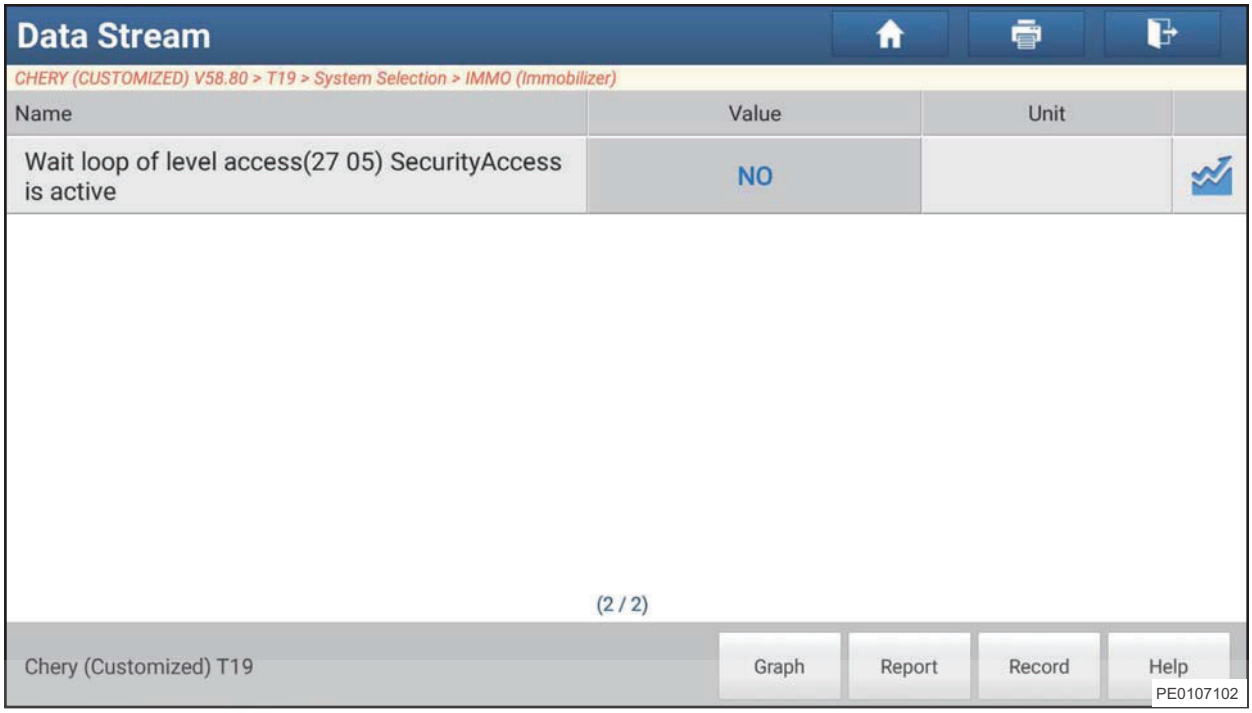
PE0104002



- Key status
  - Antenna: Whether the coil works properly
  - Transponder: Whether the transponder is detected
  - Transponder condition: Whether the transponder is in the factory state, displays "Transponder not in delivery condition" after matching
  - SK: Whether the SK written in the transponder is correct
  - Transponder ID: Whether the Transponder ID information has been written to IMMO
  - Last received transponder Id at a transponder position ID: Whether the last authenticated transponder (current transponder) ID is in the IMMO. "programmed" indicates "in the IMMO".

- Last received transponder Id at a transponder position 1 - 5: Which location of IMMO is the last authenticated transponder (current transponder) ID stored, that is, which key is the current transponder. If position 1 of the figure shows "programmed", that is, the current transponder is position 1. If the customer loses one of the keys, as long as the customer takes the remaining key, it can be determined which key is lost, erase the ID of lost key transponder, and the lost key (transponder) cannot be used to start the vehicle.
- Transponder ID, Transponder ID at transponder position 1 - 5: These refer to the storage status of keys in BCM or PEPS, indicating that how many keys (transponders) have been matched, and three "not programmed" mean that three transponders can be added. If "Delete key" is executed, the data stream will show "not programmed".

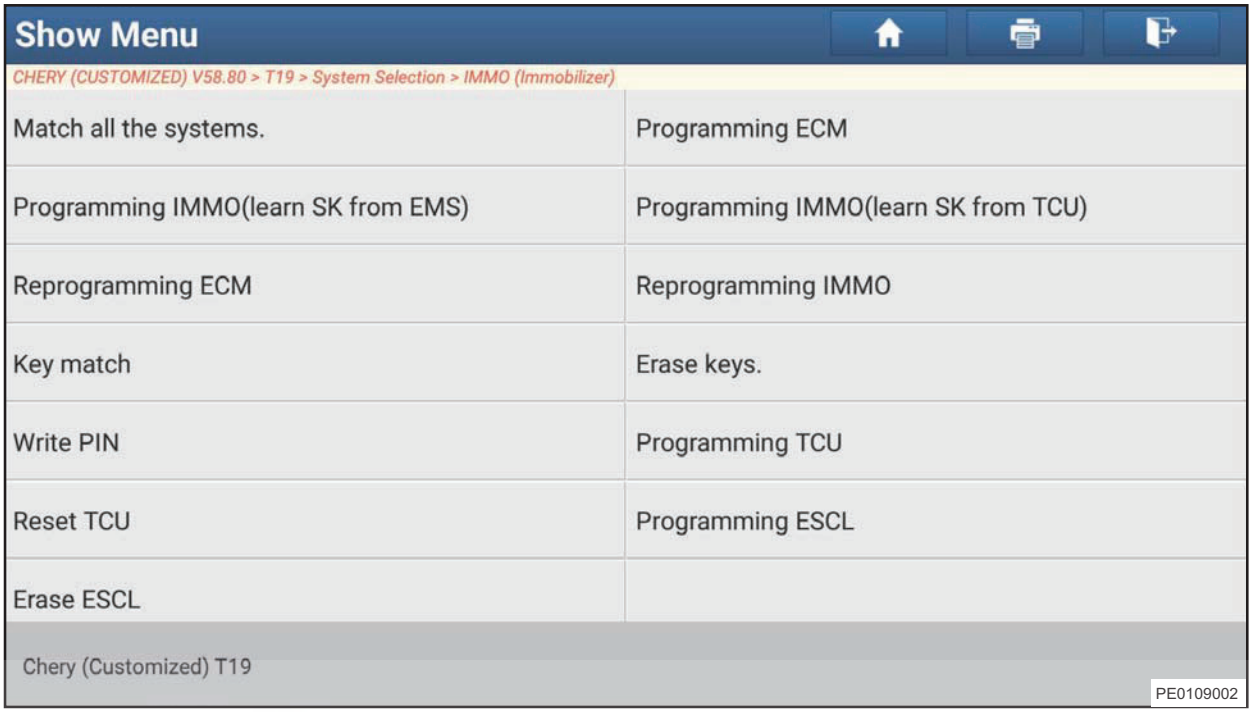




- ECM status
  - Latest level access(27 05) SecurityAccess is successful: When PIN code is entered, if the result calculated by ECU with its own PIN code is inconsistent with the result calculated by diagnostic tester with PIN code, it is unsuccessful, "NO" will be displayed, indicating that the entered PIN code is inconsistent with the PIN code of ECU.
  - Latest level access(27 03) SecurityAccess is successful: When writing VIN or PIN to ECU, the diagnostic tester and ECU will perform an algorithm calculation. If it is not successful, it will prompt "NO".
  - Is ESCL programmed.

(b) Write data

- The "Write data" menu can also be used in the following two conditions (preconditions is that no new SK is learned in IMMO)
  - Misoperation (IMMO and ECM are reset at the same time);
  - The extreme situation of missing PIN code and VIN code caused by other unknown circumstances



(c) Immobilizer match

(1) "Programming IMMO(learn SK from TCU), Programming TCU, Reset TCU" are applied to DCT models.

Anti-theft Match

Smart Key Replacement After Vehicle Sold

1. Description
   (a) There are two match methods between smart key and system: "Replace with new key" and "Add old key".
      (1) "Add new key" refers to match blank key (never match with any system) with system. It usually happens when user would have additional new key on the basis of the old ones.
      (2) "Add old key" refers to rematch learned key with system (it is must be previous system).

   Caution:

   • If user lost a smart key with one key left, when replacing with a new smart key, perform as follows to replace with a new one: Learn the new key by "Add new key" service, delete all smart keys by "Delete all keys" service, then learn the remain two smart keys in order by "Add old key" service. If user finds the lost key, it can be reactivated by "Add old key" service on diagnostic tester. If not, even if the lost one is found, it cannot be used normally.
2. Match Operation
   (a) Anti-theft match description for "Add new key" is as follows:
      (1) Technician reads VIN in EMS of user's vehicle with diagnostic tester, then obtain PIN through VIN.
      (2) Place the smart key to be matched on the key mark in cup holder, enter anti-theft control system program on diagnostic tester, select "Add new key" menu, input PIN, diagnostic tester will perform "Add new key" program automatically.
      (3) After that, press unlock button and check if left and right turn signal light indicators on instrument cluster blink. If the indicators blink, new key is matched successfully, otherwise, new key is not matched successfully.
   (b) Anti-theft match description for "Add old key" is as follows:
      (1) Technician reads VIN in EMS of user's vehicle with diagnostic tester, then obtain PIN through VIN.
      (2) Enter anti-theft control system program on diagnostic tester, select "Delete all keys" menu.
      (3) Place the smart key to be matched on the key mark in cup holder, enter anti-theft control system program on diagnostic tester, select "Add old key" menu, input PIN, diagnostic tester will perform "Add old key" program automatically.
      (4) After that, press unlock button and check if left and right turn signal light indicators on instrument cluster blink. If the indicators blink, new key is matched successfully, otherwise, new key is not matched successfully.

      Caution:

      • When performing "Add old key", it is necessary to carry previous matched smart key and perform match operation one by one according to match procedures, or previous matched key will be disabled.
      • Regardless of "Add new key" or "Add old key", only one smart key can be kept in vehicle and keep key on key mark in cup holder. Make sure that there is no other key in vehicle. If there is other key, bring it to a position 2 m away from vehicle.

PEPS Module Replacement After Vehicle Sold

1. Technician reads VIN in EMS with diagnostic tester, then obtains PIN through VIN.
2. If vehicle is equipped with ESCL, make sure that ESCL is unlocked. After new PEPS is assembled successfully, press ignition switch (IG) to turn on power supply.
3. Enter anti-theft control system program on diagnostic tester, select "Program IMMO" menu; input PIN according to prompt on diagnostic tester, after "Program IMMO" is performed successfully, it will display "Program IMMO is successful".
4. Then match previous keys one by one according to instructions of "Add old key".
5. If vehicle is equipped with ESCL, enter anti-theft control system program on diagnostic tester and complete "Add old key", then keep power supply in OFF position, check state of ESCL with diagnostic tester, if ESCL is not in Anti-scanning state, replacement is completed, if ESCL is in Anti-scanning state, select "Delete ESCL", input PIN according to prompt on diagnostic tester, ESCL will be deleted successfully after about 10 minutes, then match ESCL according to description for ESCL replacement.

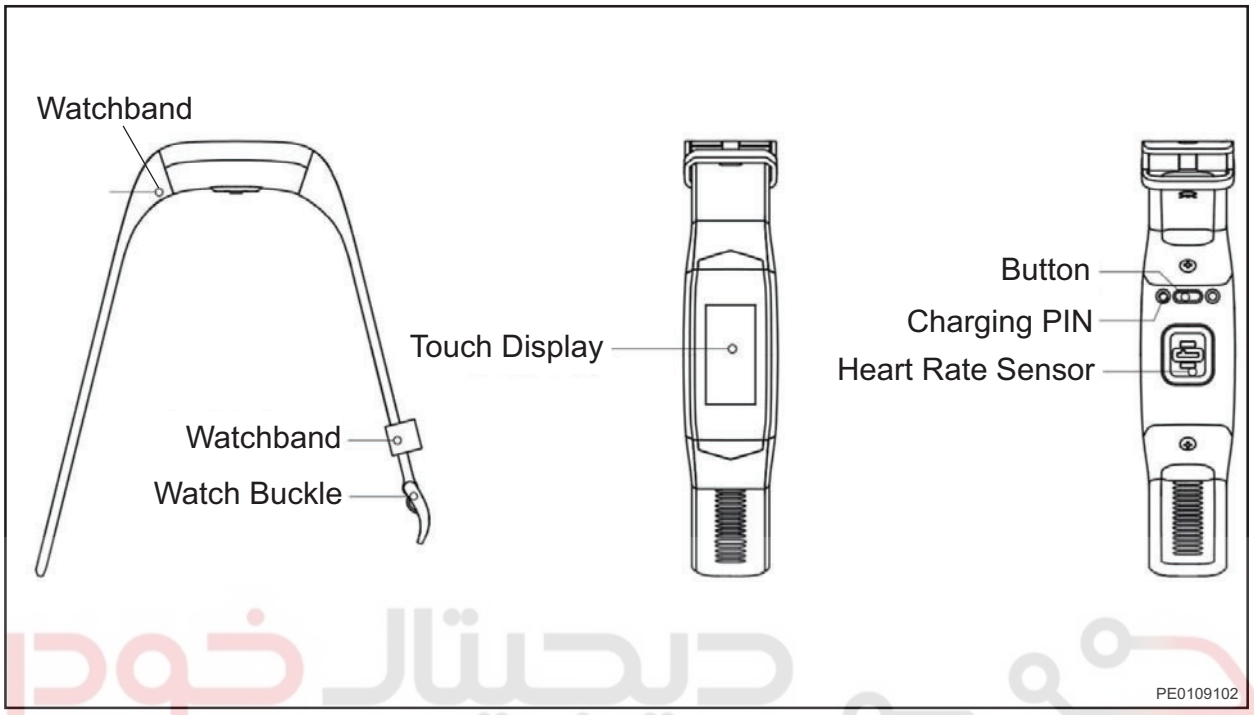
   Caution:
   - Please contact Chery service station to obtain PIN.
   - Unmatched smart keyless entry and PEPS can switch power supply from IGN OFF to IGN ON for 50 times. Once it exceeds 50 times, PEPS cannot be used. So, do not turn on and off power supply at will with PEPS unmatched.
   - If ESCL accidentally enters "Anti-scanning" protection mode , it is necessary to perform "Erase ESCL".

EMS Replacement After Vehicle Sold

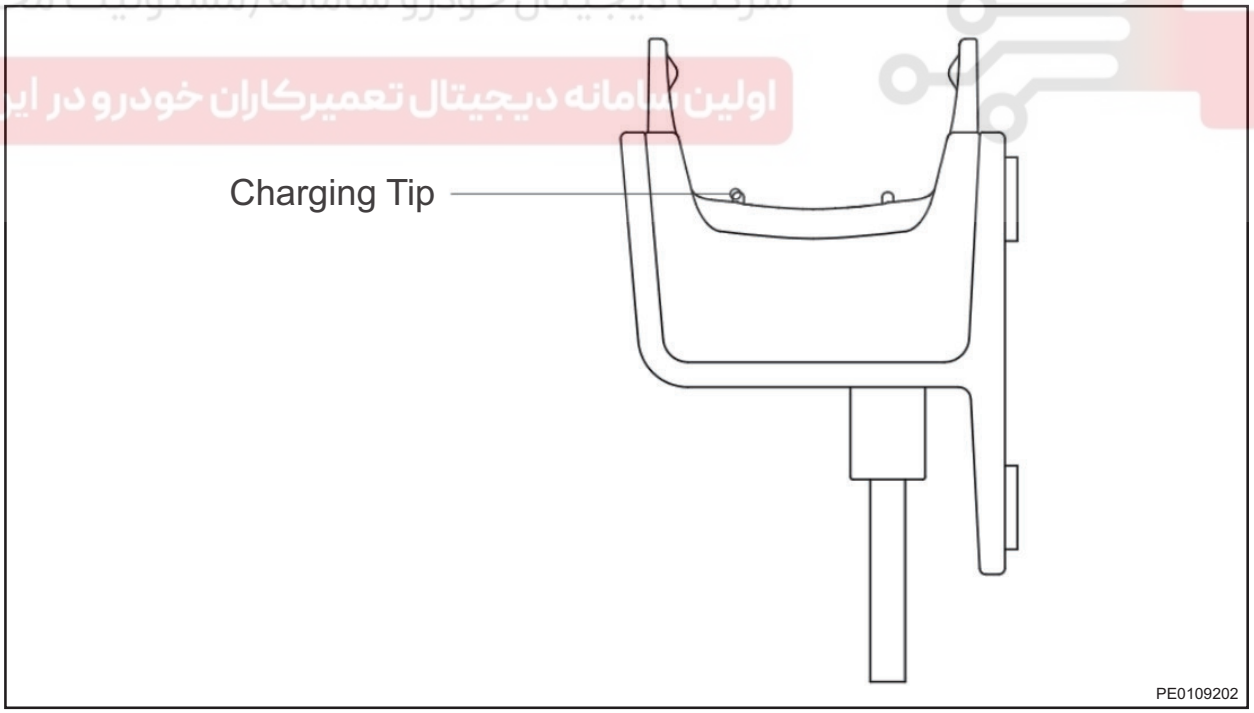
1. Technician reads VIN in old EMS or smart keyless entry and PEPS unit with diagnostic tester, then obtains PIN through VIN.
2. After new EMS is assembled successfully, press ignition switch (IG) to turn on power supply.
3. Enter anti-theft control system program on diagnostic tester, select "Program EMS" menu; input VIN and PIN according to prompts on diagnostic tester. After "Program EMS" is performed successfully, it will display "Match EMS is successful".
4. Depress brake pedal (for DCT models)/clutch pedal (for MT models), press ignition switch once to check if vehicle can be started successful. If vehicle can be started successful, EMS replacement is completed, if vehicle cannot be started successful, EMS replacement is not completed.

Smart Bracelet Key

Product Description



1. Smart Bracelet Key



2. Smart Bracelet Key Charging Base

APP Download and Binding

1. APP Download

   (a) Scan the QR code on right side to download the phone APP "MVM Wearing".


PE0109302

2. Bracelet and Phone Binding

   (a) Open APP "MVM Wearing", register/login account to switch to (device) list and select MyMVM to match and bind with bracelet.

   Hint:

   Make sure that Bluetooth of phone is in ON status. During connection process, hold the bracelet close to the phone. A MVM smart bracelet key can only be connected to a phone.

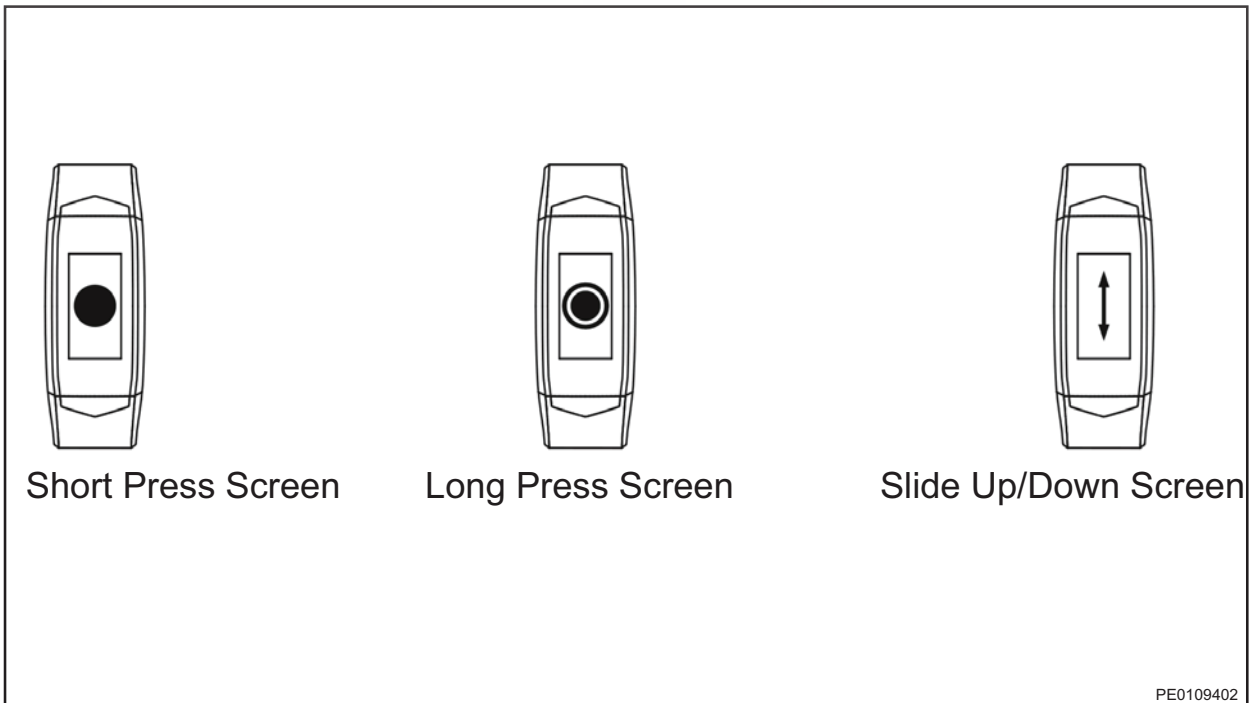
3. APP Settings

   (a) To ensure the stable connection between bracelet and phone Bluetooth and the stable reception of message from phone to bracelet, please open the notification permission of APP "MVM Wearing" message.

   (b) Detail setting methods: Enter APP "Personal" list, select "Use help" menu and select "Phone setting methods" to find the setting method available for your phone, then set your phone according to the setting procedures.

Usage

1. After bracelet is bound successfully, you can check time, sport data records, step numbers, calorie consumption, sleep monitoring, heart rate monitoring and message notification, etc.



PE0109402

2. MVM smart bracelet key supports multiple operating ways: Turn the wrist to light screen, slide screen up and down to switch the classification section, short touch the screen to switch and check, long touch the screen to perform select operation, or operate the bottom button.

3. In addition, you can quickly learn how to use the other functions of bracelet using the "MVM smart bracelet key" in APP "MVM Wearing".

Bracelet Main Function

Function	Description	Function	Description
Smart Key	Keyless entry vehicle	Sports and Health	Automatic step recording
	One-button start engine		Movement mileage recording
	Remote lock vehicle		calorie consumption recording
	Wireless unlock vehicle		Sleep monitoring
	Wireless opening luggage compartment		Heart rate monitoring (static, dynamic)
	Wireless opening window		Sedentary reminding
			Movement target setting/target realized reminding
Message Reminding	Incoming call display reminding/ ignoring/rejecting	Others	Date and time display
	Message display reminding (short message/WeChat, etc.)		Turning wrist to light screen
	Vibration clock		Do not disturb mode
	Schedule reminding		Phone locating
	Low battery reminding		3ATM waterproof
			OTA upgrade
Low Battery Mode	When bracelet power is lower than 10%, the general functions of bracelet will be turned off with PEPS function being kept, please charge the battery as soon as possible.		
Physical button	If the bracelet is crashed, long press the physical button for 7 seconds to restart the device.		

Low Battery Mode

1. Low battery reminding occurs when battery power is lower than 20%, and "Please charge the bracelet " is displayed on the screen. When battery power of bracelet drops to 10%, it will enter low battery mode, in this case, only the PEPS function is reserved for the bracelet.

   Caution:

   - After entering low battery mode, please charge the bracelet battery in time, to prevent the battery from being depleting, causing vehicle unable to unlock.

Charging

1. Insert the charging base into power supply to charge (charging voltage is 5 V ± 0.25 V, current is 500 mA or less). Align the charging PIN on bracelet with the charging thimble on charging base to charge.

   Caution:

   - When low bracelet battery is prompted, please charge in time.

Precautions

1. During daily use, avoid wearing the bracelet too tight, keep the contact areas of bracelet dry, and clean the band regularly with clean water. If allergy symptom occurs on contact area, remove the bracelet in time and then consult a doctor.
2. When using heart rate measuring function of bracelet, please keep the wrist stationary during measurement.
3. After exercise, if your wrist sweats, clean and dry your wrist and bracelet and wear them again.
4. Keep the heart rate monitoring viewport and charging interface clean as much as possible.

5. Never expose the bracelet at excessively high or low temperature for a long time.

Waterproof Description

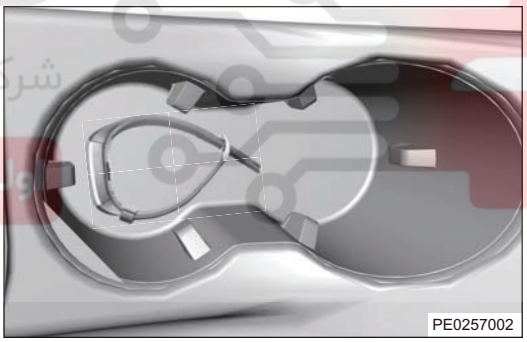
MVM smart bracelet key has 3ATM waterproof level. In everyday situations such as swimming, surfing, diving, snorkeling, etc., you can wear it with confidence.

1. In the following conditions, the waterproof performance of bracelet may be affected, avoid these conditions during use:
   (a) Wear the device in a place with high temperature, high humidity and high pressure, such as taking a sauna, taking a bath in hot spring or professional diving.
   (b) When using the bracelet on beach, avoid the screen contacting with sand directly, clean the main body of product with fresh water in time to prevent the screen from being scratched.
   (c) The touch screen of bracelet does not support water operation. When the bracelet becomes wet, please wiper it with a soft cloth before operating.
   (d) Avoid dropping of the bracelet or other impacts.

Matching Procedure

The smart bracelet key does not match with vehicle at the factory. Match the bracelet with vehicle before delivering the vehicle to user. Matching procedure has the similar method with adding new smart key. The operating method is as follows:

1. Obtain the Vehicle Identification Number (VIN), so as to use it to obtain the corresponding Personal Identification Number (PIN).
2. Take out the smart bracelet key (regardless of the ON/OFF status of bracelet), and place the bracelet into the cup holder with key mark or onto the storage box.
   (a) For DCT models



3. On diagnostic tester, enter "IMMO (Immobilizer)" - Key match - Add new key - input PIN, and diagnostic tester will perform "Add new key" program automatically.
4. After a successful matching, long press the button on back side of smart bracelet key for 3 s to turn on the smart bracelet (if the bracelet cannot be turned on due to low battery, please charge it before use).
5. Enter the smart bracelet "Vehicle key" menu, select "unlock" function, and short press the "unlock icon" once to establish RF connection between smart bracelet key and PEPS controller, at this time, the smart bracelet key is matched successfully.
6. To ensure the intact function of smart bracelet key, please check the "Vehicle key" remote control function, keyless entry function and one-button start function of smart bracelet.
7. For vehicle with remote start configuration, you can set the "start engine function" of bracelet to ON using the APP "MVM wearing" in phone. After the function is turned on, you can start engine using bracelet within a remote control range of 20 m.
8. Generally, the fully charged smart bracelet key can be used for about 2 weeks. When battery power drops to 10% or less, the bracelet will enter low battery mode. In this mode, the screen and conventional functions of bracelet will be turned off with the remote control (short pressing the button on back side can unlock vehicle) and PEPS function being kept. The low battery mode can be used

DIAGNOSIS & TESTING

Diagnosis & Testing

Problem Symptoms Table

Hint:

Use symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair, replace or adjust faulty components as necessary.

Symptom	Suspected Area
Remote controller fails	Remote controller battery is weak
	There is remote control signal interference
	Remote controller enters failure mode (it is necessary to exit)
	Code is lost (add old key)
	PEPS malfunction
	Wireless key malfunction
	BCM malfunction
Vehicle cannot enter fortifying mode	Four doors, hood or luggage compartment door is abnormal
	Power supply is not in OFF state
	Door lock malfunction
	PEPS malfunction
	BCM malfunction
Vehicle cannot be unlocked	Door lock malfunction
	PEPS malfunction
	BCM malfunction
Microswitch cannot enter fortifying mode and be unlocked	Smart key is not within range
	Open or sticking in microswitch
	Power supply is not in OFF state
	Four doors, hood or luggage compartment door is abnormal
	Smart key in vehicle
	Smart key battery is low
Luggage compartment cannot be opened	Luggage compartment door switch fails (open, water leakage or sticking)
	Luggage Compartment door lock malfunction
	PEPS malfunction
	Short or open in wire harness
	BCM malfunction
Vehicle cannot be started (PEPS) (starter runs)	Anti-theft verification does not pass
Vehicle cannot be started (PEPS) (starter does not run)	Gear position is not in P/N (for DCT models)
	Clutch (for MT models)/brake switch (for DCT models) is abnormal
	ENGINE START STOP switch malfunction
	Circuit or starter relay is abnormal
	Starter malfunction
	Start times limit is activated
ESCL cannot be locked or unlocked	Vehicle is parked on slope (lock pin is stuck)
	Door signal is abnormal
	ENGINE START STOP switch cannot be turned on or off
	Short or open in wire harness
	Anti-theft verification fails
	Network communication malfunction

Diagnosis Procedure

Hint

Use following procedures to troubleshoot the PEPS system.

1	Vehicle brought to workshop

Result

Proceed to
NEXT

NEXT

2	Check battery voltage

Check if battery voltage is normal.

OK

Standard voltage: Not less than 12 V

Result

Proceed to
OK
NG

NG → Replace battery

OK

3	Customer problem analysis

Result

Proceed to
NEXT

NEXT

4	Read DTCs

Result

Proceed to
No DTC
Current DTC
History DTC

History DTC

5	Problem Repair (No DTC)

Result

Proceed to
NEXT

NEXT → Go to step 6

6	Troubleshoot according to Diagnostic Trouble Code (DTC) chart

Result

Proceed to
NEXT

NEXT → Go to step 7

7	Troubleshoot according to Problem Symptoms Table

Result

Proceed to
NEXT

NEXT

8	Conduct test and confirm malfunction has been repaired

Result

Proceed to
NEXT

NEXT → End

Problem Repair (No DTC)

If PEPS system has problems, but no DTC is stored in PEPS system, this problem is called a problem without DTC. Problems without DTC for PEPS system are divided into following types:

1. Indicator in instrument cluster does not come on or illuminates constantly (incorrect wire harness connection or indicator is damaged).
2. Troubleshooting recommendation: Check corresponding components according to problem symptom, and troubleshoot following the vehicle repair manual.

DTC Confirmation Procedure

Confirm that battery voltage is normal before performing following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect diagnostic tester (the latest software) to diagnostic interface.
- Turn ENGINE START STOP switch to ON.
- Using diagnostic tester, record and clear DTCs stored in PEPS control module assembly.
- Turn ENGINE START STOP switch to OFF and wait several seconds.
- Use diagnostic tester to read DTCs.
- If DTC is detected, malfunction indicated by DTC is current. Go to DTC chart, and perform troubleshooting.
- If no DTC is detected, malfunction indicated by DTC is intermittent Please refer to Intermittent DTC Troubleshooting.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

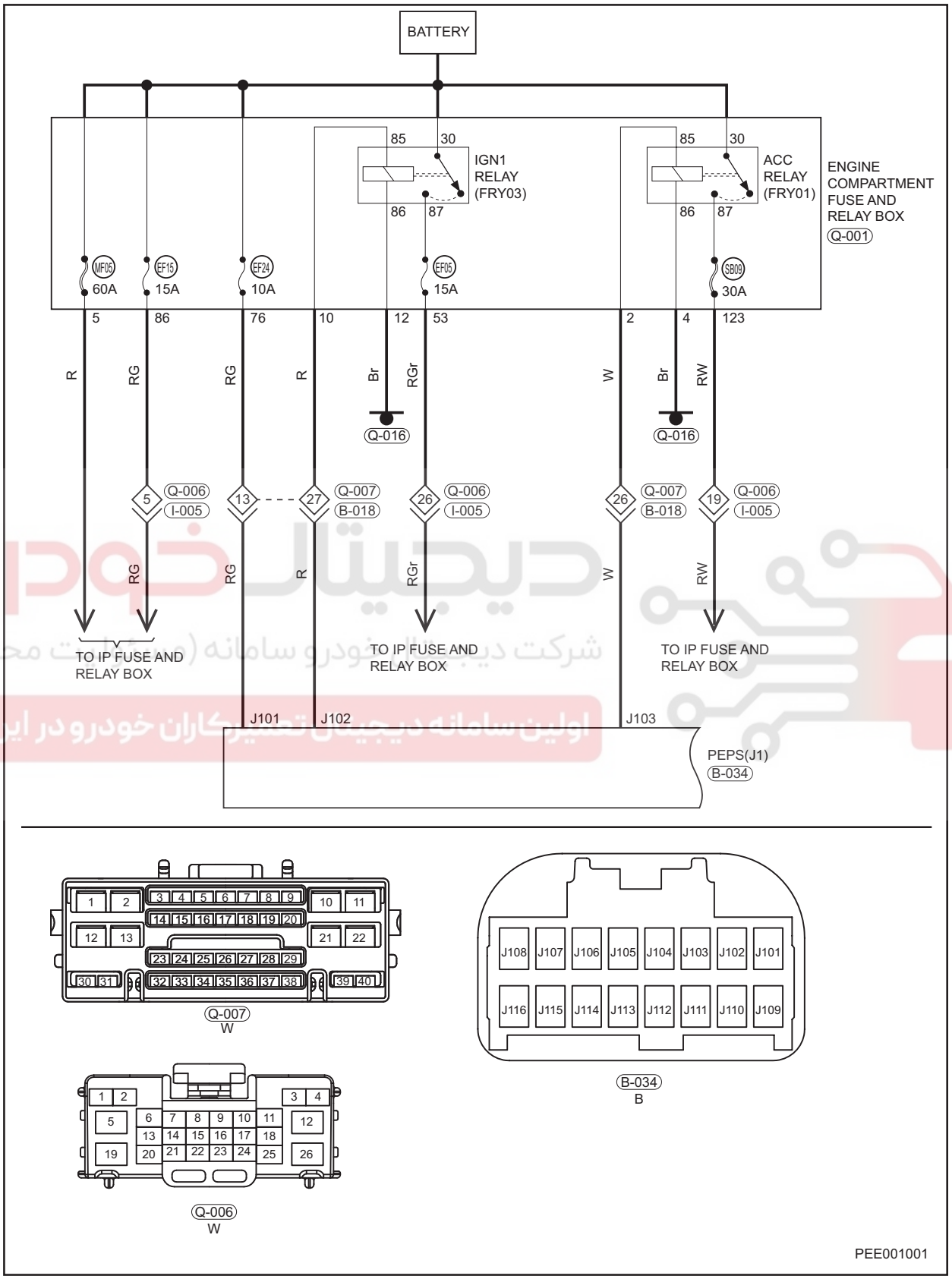
- Check if connector is loose.
- Check if wire harness is worn, pierced, pinched or partially broken.
- Wiggle related wire harness and connector and observe if signal in related circuit is interrupted.
- If possible, try to duplicate conditions under which DTC was set.
- Look for data that has changed or DTC to reset during wiggle test.
- Check for broken, bent, protruded or corroded terminals.
- Check and clean all wire harness connectors and body ground parts related to DTC.
- If multiple trouble codes were set, refer to circuit diagrams to look for any common body ground circuit or power supply circuit applied to DTC.
- Refer to any Technical Bulletin that may apply to this malfunction.

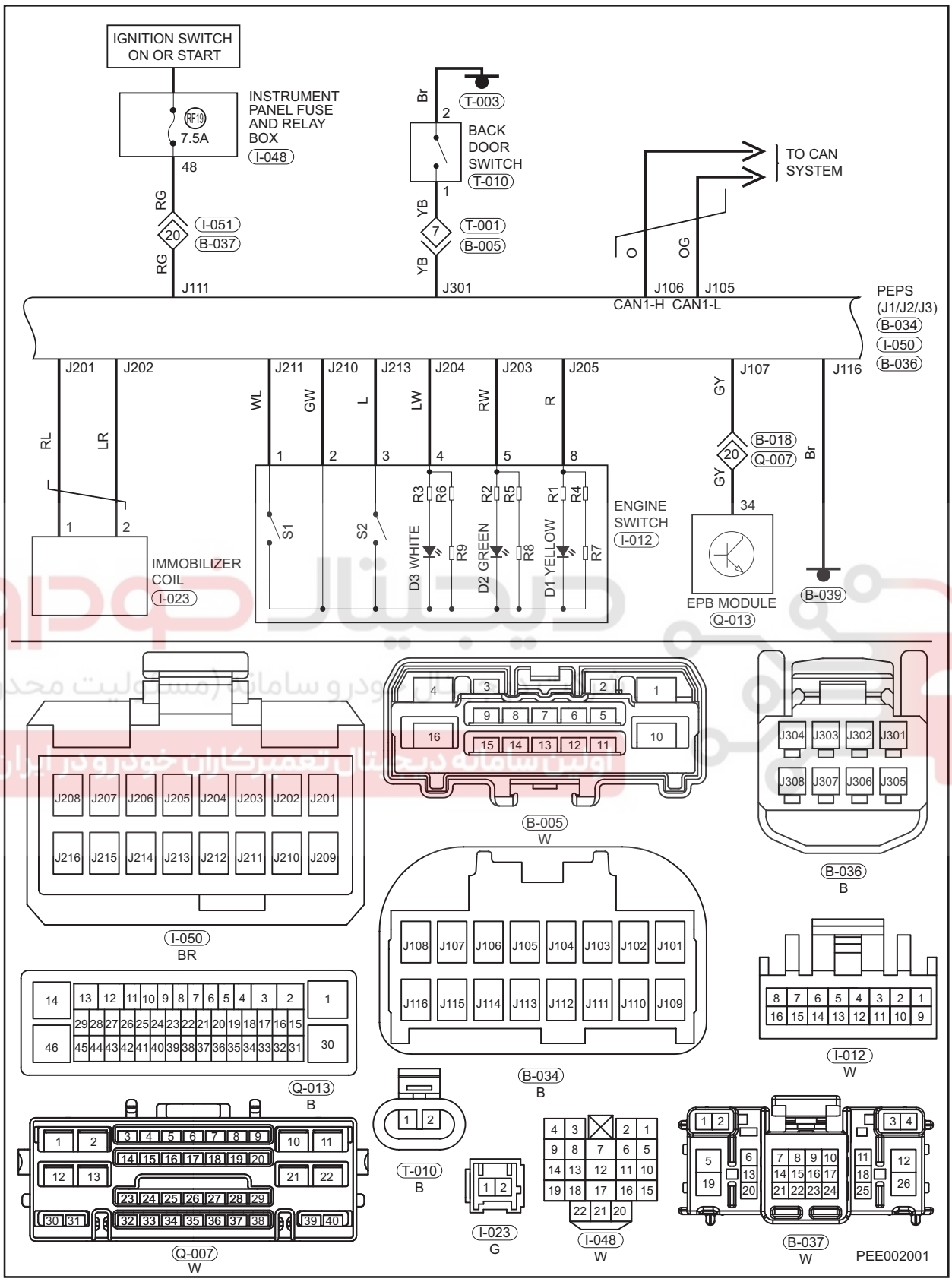
Body Ground Inspection

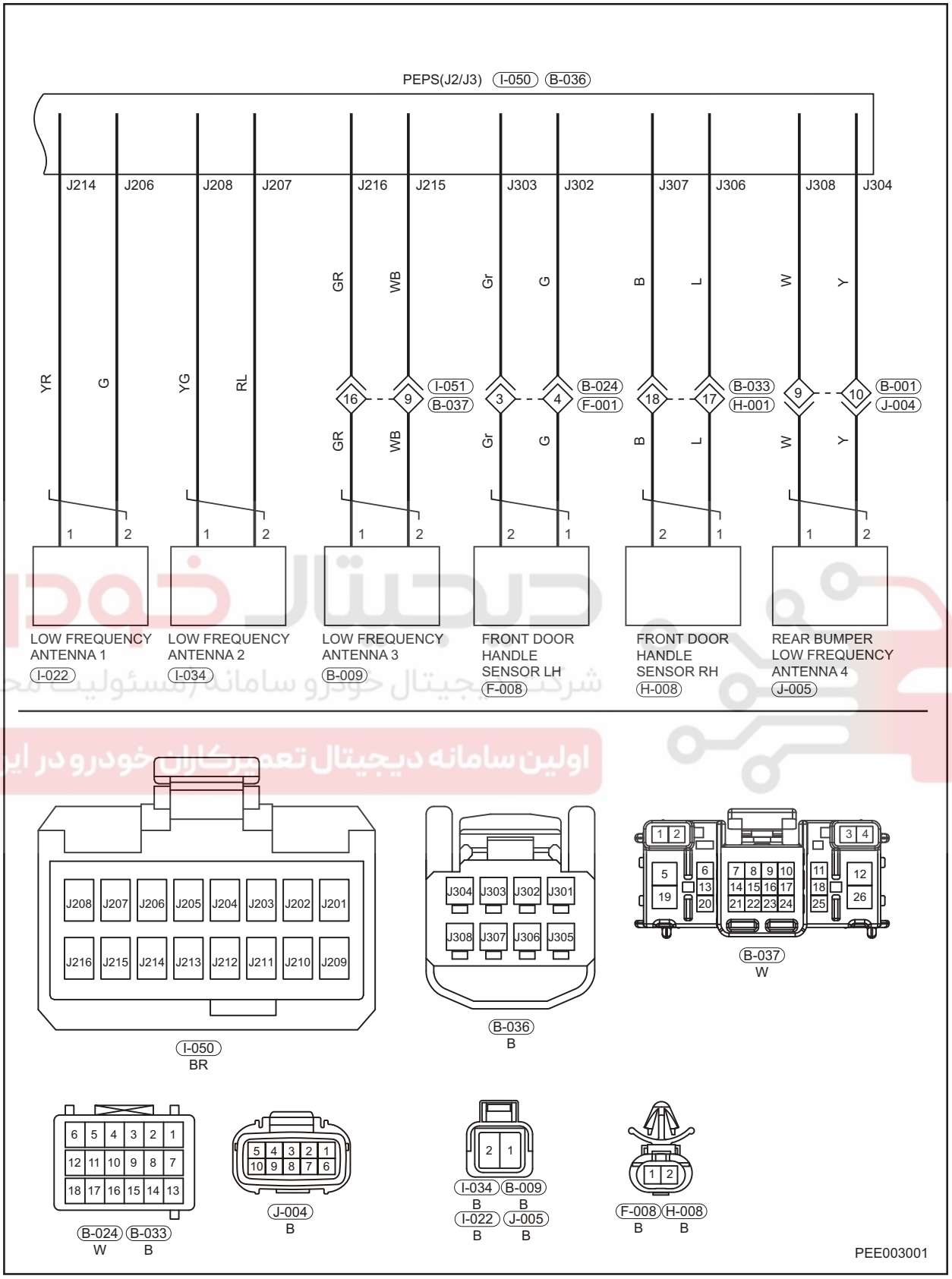
Body ground points are very important to the proper operation of circuits. Body ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) may increase load resistance. This situation may change the way in which a circuit works. Circuits are very sensitive to proper body grounding. A loose or corroded body ground can affect the control circuit. Check the body ground points as follows:

1. Remove body ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contact is in good condition.
4. Reinstall body ground bolt or nut securely.
5. Check if there are add-on accessories that interfere with body ground circuit.
6. If several wire harnesses are crimped into one body ground terminal, check for proper crimps. Make sure all wire harnesses are clean, securely fastened with providing a good body ground path.

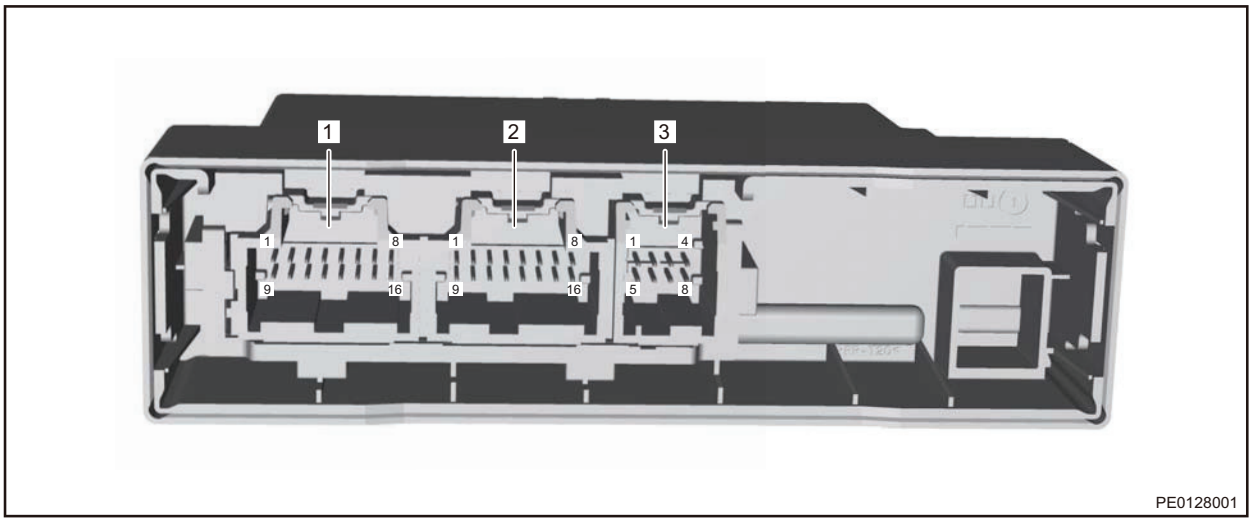
PEPS Circuit Diagram







PEPS Control Module Assembly Terminal List



Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J101	Battery	J109	Clutch Switch Signal
J102	IG1 Relay Drive (High)	J110	Start Relay Detection
J103	ACC Relay Drive (High)	J111	Ignition Signal
J104	IG2 Relay Drive (High)	J112	-
J105	High Speed CAN Low	J113	Starter Relay (High)
J106	High Speed CAN High	J114	-
J107	Hard Wire Wheel Speed Signal (Front Right Wheel)	J115	-
J108	-	J116	Ground

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J201	Spare Antenna Positive End	J209	-
J202	Spare Antenna Negative End	J210	Analog Ground
J203	ENGINE START STOP Switch Indicator Output (Green)	J211	ENGINE START STOP switch 1
J204	ENGINE START STOP Switch Backlight Output (White)	J212	-
J205	ENGINE START STOP Switch Indicator Output (Amber)	J213	ENGINE START STOP Switch 2
J206	Low Frequency Antenna 1 Negative	J214	Low Frequency Antenna 1 Positive
J207	Low Frequency Antenna 2 Negative	J215	Low Frequency Antenna 3 Negative
J208	Low Frequency Antenna 2 Positive	J216	Low Frequency Antenna 3 Negative

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J301	Luggage Compartment Unlock Switch	J305	-
J302	Left Door Handle Sensor Negative	J306	Right Door Handle Sensor Negative
J303	Left Door Handle Sensor Positive	J307	Right Door Handle Sensor Negative
J304	Luggage Compartment Low Frequency Antenna Negative	J308	Luggage Compartment Low Frequency Antenna Positive

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
J401	Electronic Steering Column Lock Module Control Ground	J406	Electronic Steering Column Lock Power Supply
J402	-	J407	-
J403	Electronic Steering Column Lock Ground	J408	Ground
J404	Electric Steering Column Lock Control Ground	J409	-
J405	-	J410	IG1 Power Supply

Diagnostic Trouble Code (DTC) Chart

DTC	DTC Definition
B1300	Internal Control Module EEPROM Error
B1301	Immobilizer and ECM Authentication Failed
B1302	VIN Not Programmed
B1303	The Antenna Communication is Disturbed
B1304	None Transponder was Detected
B1305	Immobilizer Has None Key was Storage
B1306	Security Code was not Programmed
B1500	Driver Door Outside LF Antenna
B1501	Passenger Door Outside LF Antenna
B1502	Front Internal LF Antenna
B1503	Middle Internal LF Antenna
B1504	Rear Internal LF Antenna
B1505	Bumper LF Antenna
B1506	Abnormality on Switches of Engine Switch
B1508	Abnormality in ACC Circuit
B1509	Abnormality in Brake Signal
B150A	Abnormality in Vehicle Speed Signal
B150C	Clutch Switch Signal Error
B150F	ESCL Anti Scanning
B1510	Abnormality on Wheel Speed Signal
B1515	ROM Checksum Failure
B1516	HSU Overload
B1517	HSU Switch Continuously Pressed
U0073	CAN Bus Off
U0100	Lost of Communication with Engine Control System Module
U0101	Lost of Communication with Transmission Control Unit
U0129	Lost Communication with Brake System Module
U0140	Lost Communication with Body Control Module
U0329	Lost Communication with Electronic Steering Column Lock
U1300	Software Configuration Error
B1518	Trunk/Back Door Unlock Switch Stuck Failure
B1519	Back Door Lock Switch Continuously Pressed

DTC	B1300	Internal Control Module EEPROM Error

Description

DTC	DTC Definition
B1300	Internal Control Module EEPROM Error

Procedure

1	Check for DTCs

(a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTC occurs again.

Result

Proceed to
OK
NG

OK → System is normal

NG

2	Check if vehicle PEPS control is normal

Result

Proceed to
OK
NG

OK → Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC again

NG → Replace PEPS module

DTC	B1301	Immobilizer and ECM Authentication Failed

Description

DTC	DTC Definition
B1301	Immobilizer and ECM Authentication Failed

Procedure

1	Check for DTCs

(a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTCs occur again.

Result

Proceed to
OK
NG

OK → System is normal

NG

2	Check if engine can be started normally

Result

Proceed to
OK
NG

OK → Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC again

NG → Perform anti-theft match for PEPS and ECU module again

DTC	B1302	VIN Not Programmed

Description

DTC	DTC Definition
B1302	VIN Not Programmed

Procedure

1	Check for DTCs

(a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTCs occur again.

Result

Proceed to
OK
NG

OK → System is normal

NG

2	Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC

Result

Proceed to
OK
NG

OK → System is normal

NG → Input VIN into PEPS again

DTC	B1303	The Antenna Communication is Disturbed

Description

DTC	DTC Definition
B1303	The Antenna Communication is Disturbed

Procedure

1	Check for DTCs

(a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTCs occur again.

Result

Proceed to
OK
NG

OK	System is normal
NG	Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC

DTC	B1304	None Transponder was Detected

Description

DTC	DTC Definition
B1304	None Transponder was Detected

Procedure

1	Check for DTCs

(a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTCs occur again.

Result

Proceed to
OK
NG

OK → System is normal

NG

2	Check remote controller

(a) Press remote controller and check if red LED indicator blinks normally

Result

Proceed to
OK
NG

NG → Go to step 4

OK

3	Check if smart key type is correct

(a) Check if smart key is original key.

Result

Proceed to
OK
NG

NG → Replace with original smart key and perform test

OK

4	Remove smart key and check remote controller

(a) Check if remote controller battery voltage is less than 3 V.
(b) Check remote controller chip for water corrosion or burn.

Result

Proceed to
OK
NG

NG → Replace smart key

OK →

5	Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC

Result

Proceed to
OK
NG

OK → System is normal

NG → Replace smart key

DTC	B1305	Immobilizer Has None Key was Storage

Description

DTC	DTC Definition
B1305	Immobilizer Has None Key was Storage

Procedure

1	Check for DTCs

(a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTCs occur again.

Result

Proceed to
OK
NG

NG → Enter anti-theft system and add key

OK

2	Reconfirm DTCs

(a) Use diagnostic tester to clear DTCs.
(b) Check if the same DTCs are still output.

Result

Proceed to
OK
NG

OK → System operates normally

NG → Replace PEPS control module assembly

DTC	B1306	Security Code was not Programmed

Description

DTC	DTC Definition
B1306	Security Code was not Programmed

Procedure

1	Check for DTCs

(a) Using diagnostic tester, clear DTC and read IMMO control module assembly DTC.
(b) Check if DTCs occur again.

Result

Proceed to
OK
NG

NG → **Rematch PEPS module**

OK

2	Reconfirm DTCs

(a) Use diagnostic tester to clear DTCs.
(b) Check if the same DTCs are still output.

Result

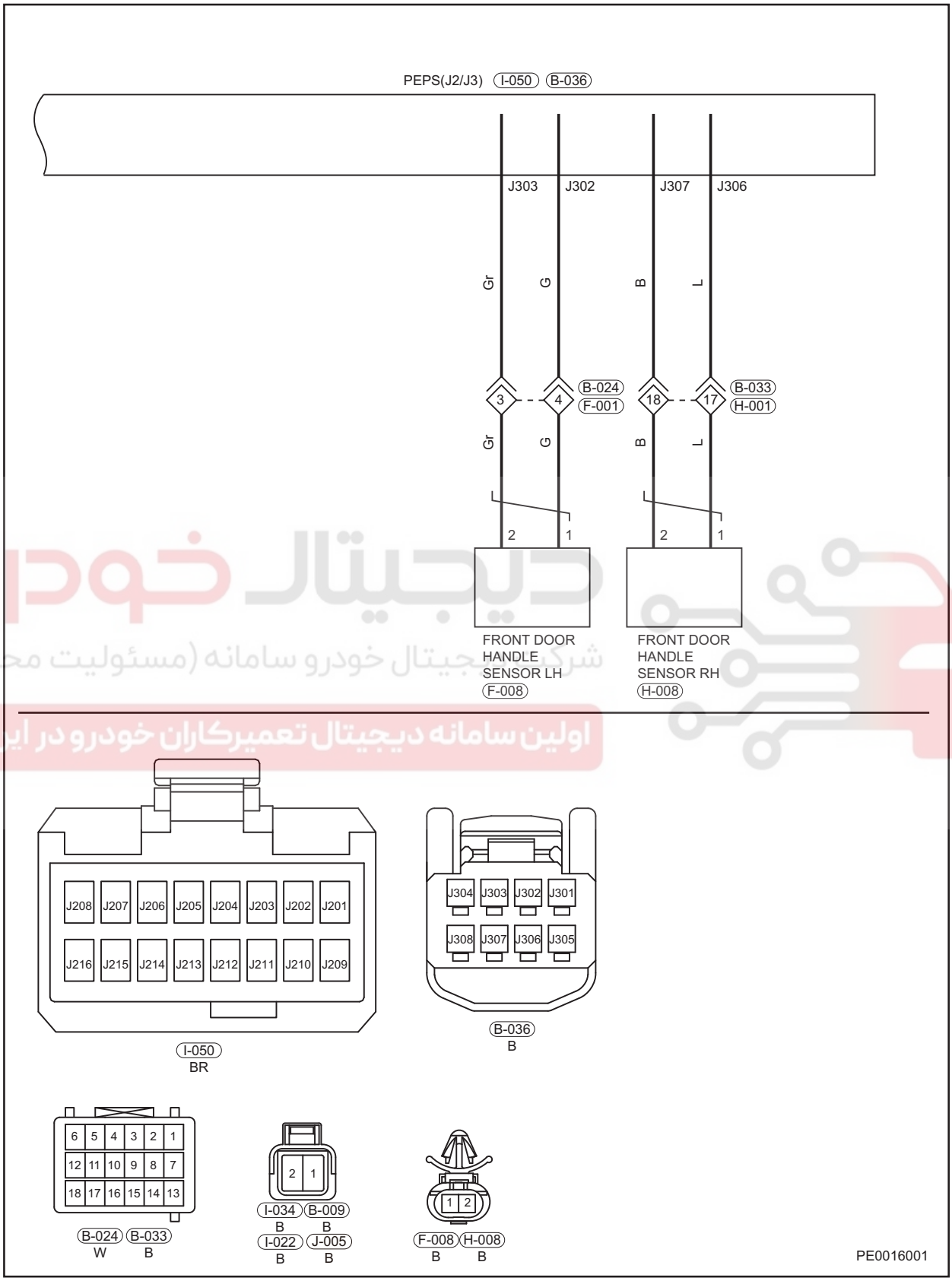
Proceed to
OK
NG

OK → **System operates normally**

NG → **Replace PEPS control module assembly**

DTC	B1500	Driver Door Outside LF Antenna
DTC	B1501	Passenger Door Outside LF Antenna
DTC	B1516	HSU Overload
DTC	B1517	HSU Switch Continuously Pressed

Circuit Diagram



Description

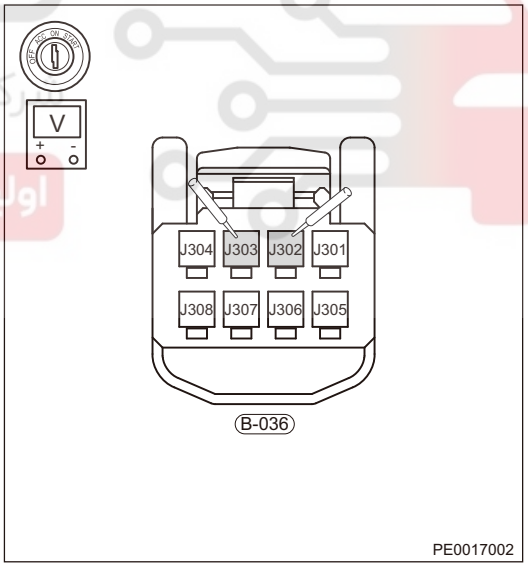
DTC	DTC Definition
B1500	Driver Door Outside LF Antenna
B1501	Passenger Door Outside LF Antenna
B1516	HSU Overload
B1517	HSU Switch Continuously Pressed

Caution:
Take driver side low frequency antenna as an example to explain troubleshooting procedures for reference.
When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure

1	Check if PEPS module output voltage is normal.

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the PEPS module connector J3.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.
(g) Connect the negative battery cable, turn ENGINE START STOP Switch to ON, use DC voltage band of digital multimeter to measure if voltage between output terminals J3-03 and J3-02 of PEPS module is normal.



OK

Multimeter Connection	Condition	Specified Condition
J3-03 - J3-02	Always	12 V

Result

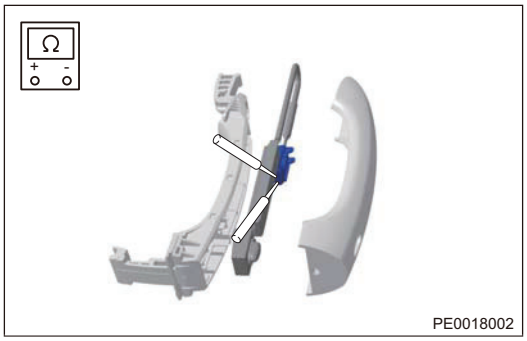
Proceed to
OK
NG

NG → **Replace PEPS control module assembly**

OK

2	Measure resistance of door handle sensor

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the front left door sensor connector F-008.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.
(g) Using ohm band of digital multimeter, measure if resistance of front left door handle sensor is normal.



OK

Multimeter Connection	Condition	Specified Condition
Front left door handle sensor terminal 1 - 2	Microswitch not pressed	∞
Front left door handle sensor terminal 1 - 2	Microswitch pressed	≈ 1 KΩ

Result

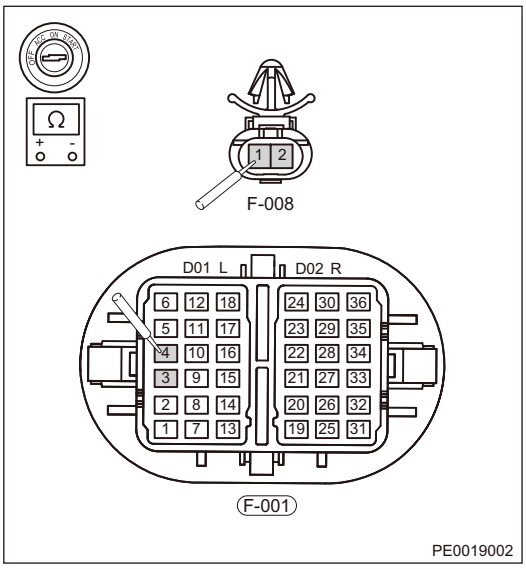
Proceed to
OK
NG

NG → **Replace left door handle sensor**

OK →

3	Check front left door wire harness for open or short

(a) Disconnect the front left door wire harness connector F-001.
(b) Check if wire harnesses are worn, pierced, pinched or partially broken.
(c) Check for broken, bent, protruded or corroded terminals.
(d) Check if related connector pins are in good condition.
(e) Using ohm band of digital multimeter, measure resistance between terminals 1, 2 of connector F-008 and terminals 4, 3 of connector F-001 to check front left door wire harness for open.



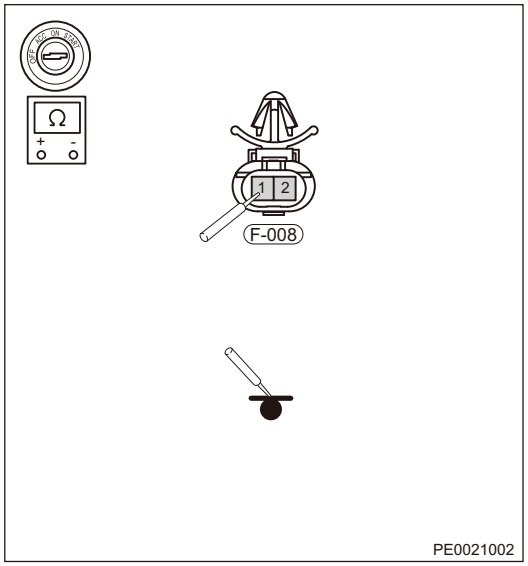
OK

Multimeter Connection	Condition	Specified Condition
F-008-1 - F-001-4	Always	⩽ 1 Ω
F-008-2 - F-001-3	Always	⩽ 1 Ω

(f) Using ohm band of digital multimeter, measure resistance between terminals 1, 2 of front left door wire harness connector F-008 and body ground to check front left door wire harness for short to body ground.

OK

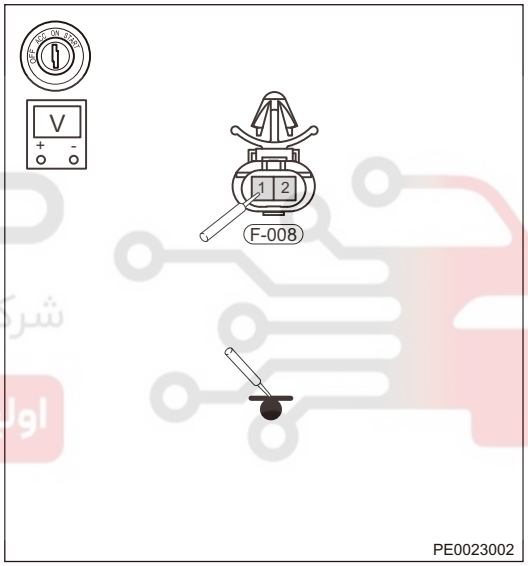
Multimeter Connection	Condition	Specified Condition
F-008-1 - Body ground	Always	∞
F-008-2 - Body ground	Always	∞



(g) Connect the negative battery cable, turn ENGINE START STOP switch to ON, (confirm that connectors F-001 and B-024 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminals 1, 2 of front left door wire harness connector F-008 and body ground to check front left door wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
F-008-1 - Body ground	Always	0 V
F-008-2 - Body ground	Always	0 V



Result

Proceed to
OK
NG

NG → **Replace front left door wire harness**

OK →

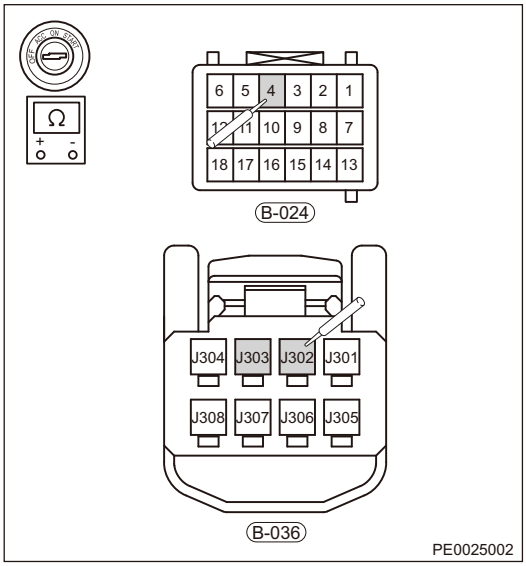
4	Check interior wire harness for open or short

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.

(c) Using ohm band of digital multimeter, measure resistance between terminals 4, 3 of connector B-024 and terminals 2, 3 of connector J3 to check interior wire harness for open.

OK

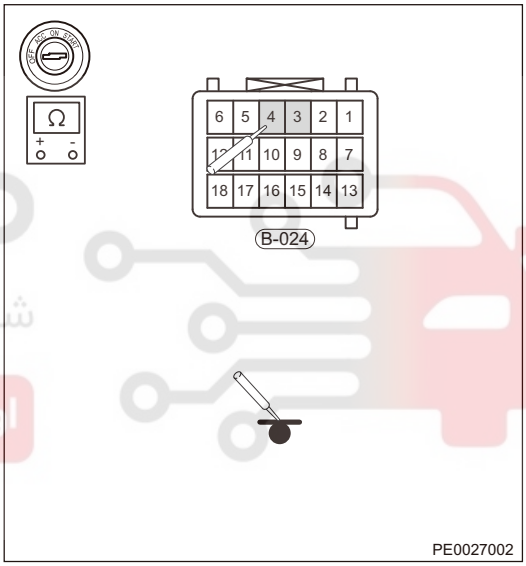
Multimeter Connection	Condition	Specified Condition
B-024-4 - J3-02	Always	⩽ 1 Ω
B-024-4 - J3-03	Always	⩽ 1 Ω



(d) Using ohm band of digital multimeter, measure resistance between terminals 4, 3 of interior wire harness connector B-024 and body ground to check interior wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
B-024-4 - Body ground	Always	∞
B-024-3 - Body ground	Always	∞



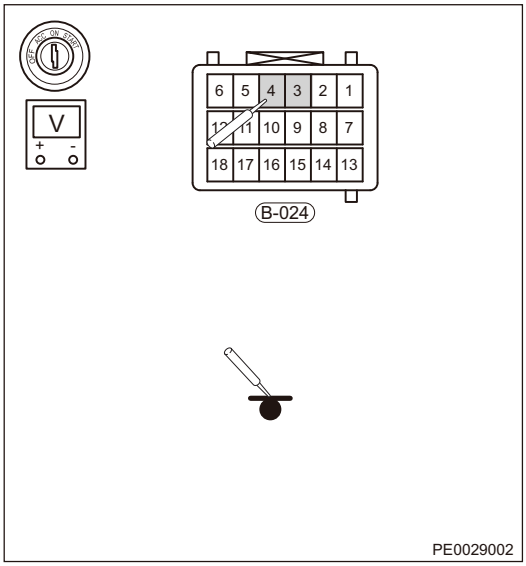
(e) Connect the negative battery cable, turn ENGINE START STOP switch to ON, (confirm that PEPS module and connector J3 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminals 4, 3 of interior wire harness connector B-024 and body ground to check interior wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
B-024-4 - Body ground	Always	0 V
B-024-3 - Body ground	Always	0 V

Result

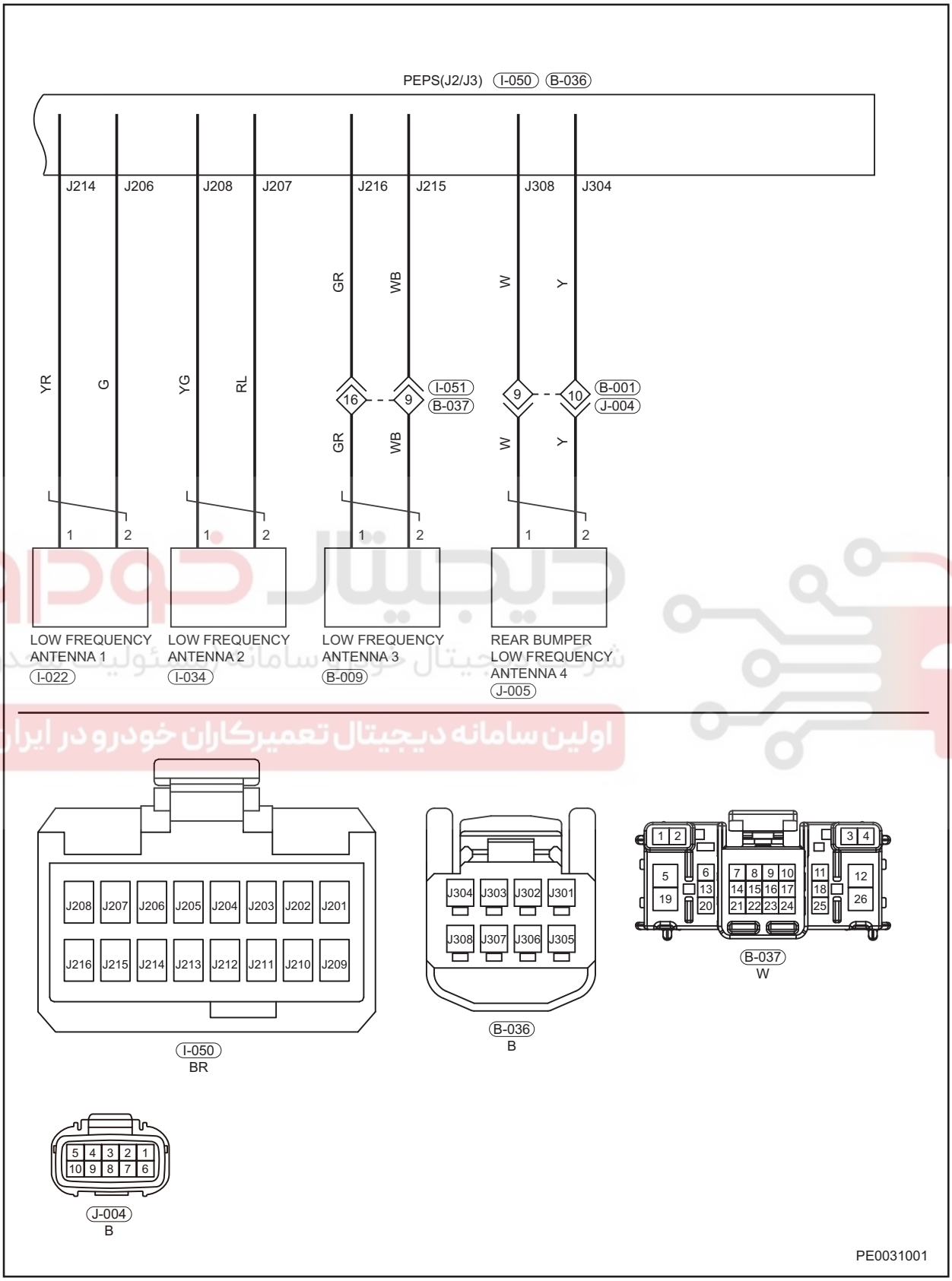
Proceed to
OK
NG



OK	Replace PEPS module
NG	Replace interior wire harness

DTC	B1502	Front Internal LF Antenna
DTC	B1503	Middle Internal LF Antenna
DTC	B1504	Rear Internal LF Antenna
DTC	B1505	Bumper LF Antenna

Circuit Diagram



Description

DTC	DTC Definition
B1502	Front Internal LF Antenna
B1503	Middle Internal LF Antenna
B1504	Rear Internal LF Antenna
B1505	Bumper LF Antenna

Hint:
For above DTC troubleshooting, take "B1503 - Middle Internal LF Antenna Circuit Open" as an example.
Caution:
When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure

1	Check if PEPS module software configuration code is correct.

(a) Using diagnostic tester, enter PEPS system.
(b) Read software configuration code and check if it is "07".

Result

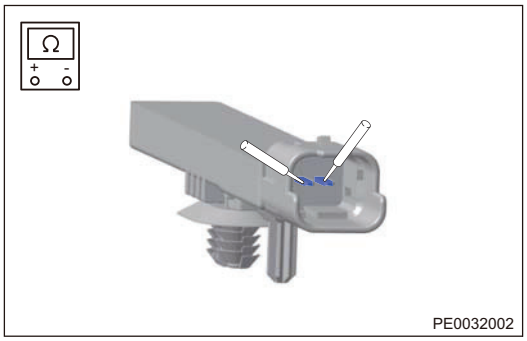
Proceed to
OK
NG

NG → Input configuration code "07" again and clear DTC

OK

2	Measure resistance of low frequency antenna

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the interior middle low frequency antenna (2) connector I-034.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.
(g) Using ohm band of digital multimeter, measure if resistance of interior middle low frequency antenna (2) is normal.



PE0032002

OK

Multimeter Connection	Condition	Specified Condition
Low frequency antenna (2)	Always	≈ 10 KΩ

Result

Proceed to
OK
NG

NG → **Replace low frequency antenna**

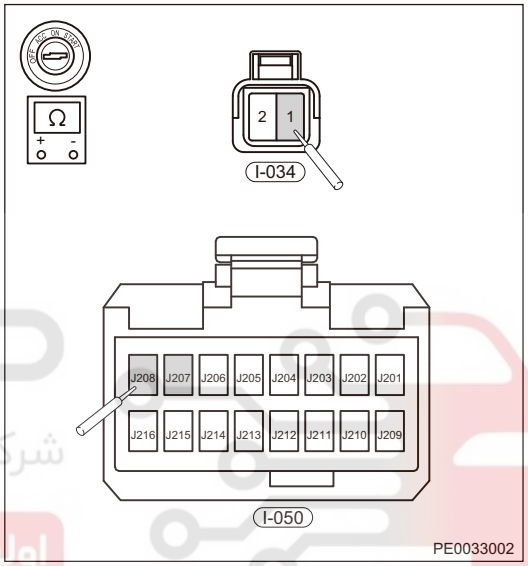
OK

3	Check interior wire harness for open or short

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect low frequency antenna (2) connector I-034 and PEPS module connector J2.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.
(g) Using ohm band of digital multimeter, measure resistance between terminal 1 of connector I-034 and terminal 8 of connector J2, between terminal 2 of connector I-034 and terminal 7 of connector J2 to check instrument panel wire harness for open.

OK

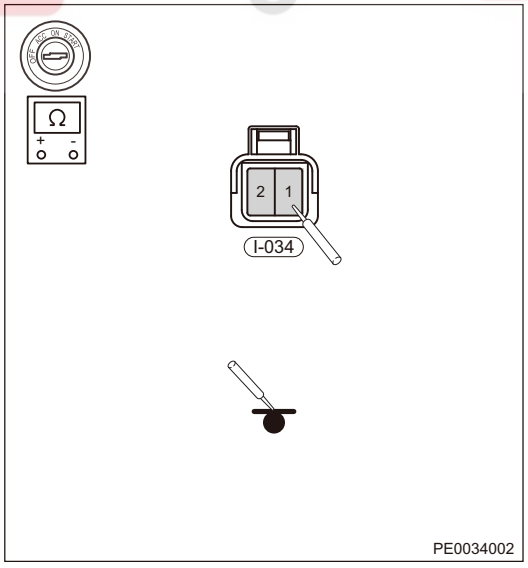
Multimeter Connection	Condition	Specified Condition
I-034-1 - J2-8	Always	⩽ 1 Ω
I-034-1 - J2-7	Always	⩽ 1 Ω



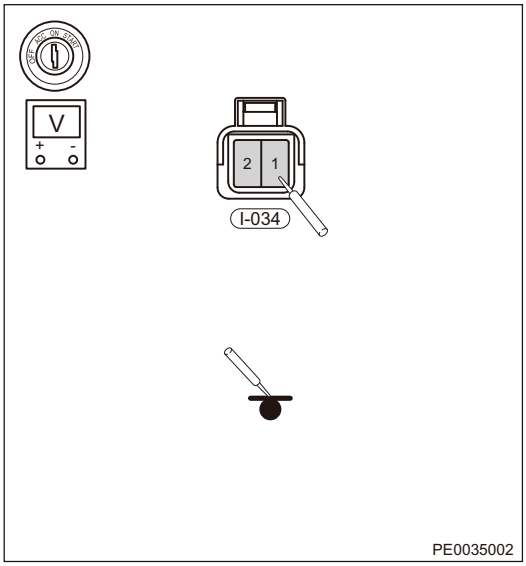
(h) Using ohm band of digital multimeter, measure resistance between terminals 1, 2 of connector I-034 and body ground separately to check instrument panel wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
I-034-1 - Body ground	Always	∞
I-034-2 - Body ground	Always	∞



(i) Connect the negative battery cable (confirm that connectors I-034 and J2 are disconnected). Bridge joint ACC relay and IGN1 relay (connector J2 is disconnected, so ENGINE START STOP switch input is open). Using DC voltage band of digital multimeter, measure voltage between terminals 1, 2 of connector I-034 and body ground to check instrument panel wire harness for short to power supply.



OK

Multimeter Connection	Condition	Specified Condition
I-034-1 - Body ground	Always	0 V
I-034-2 - Body ground	Always	0 V

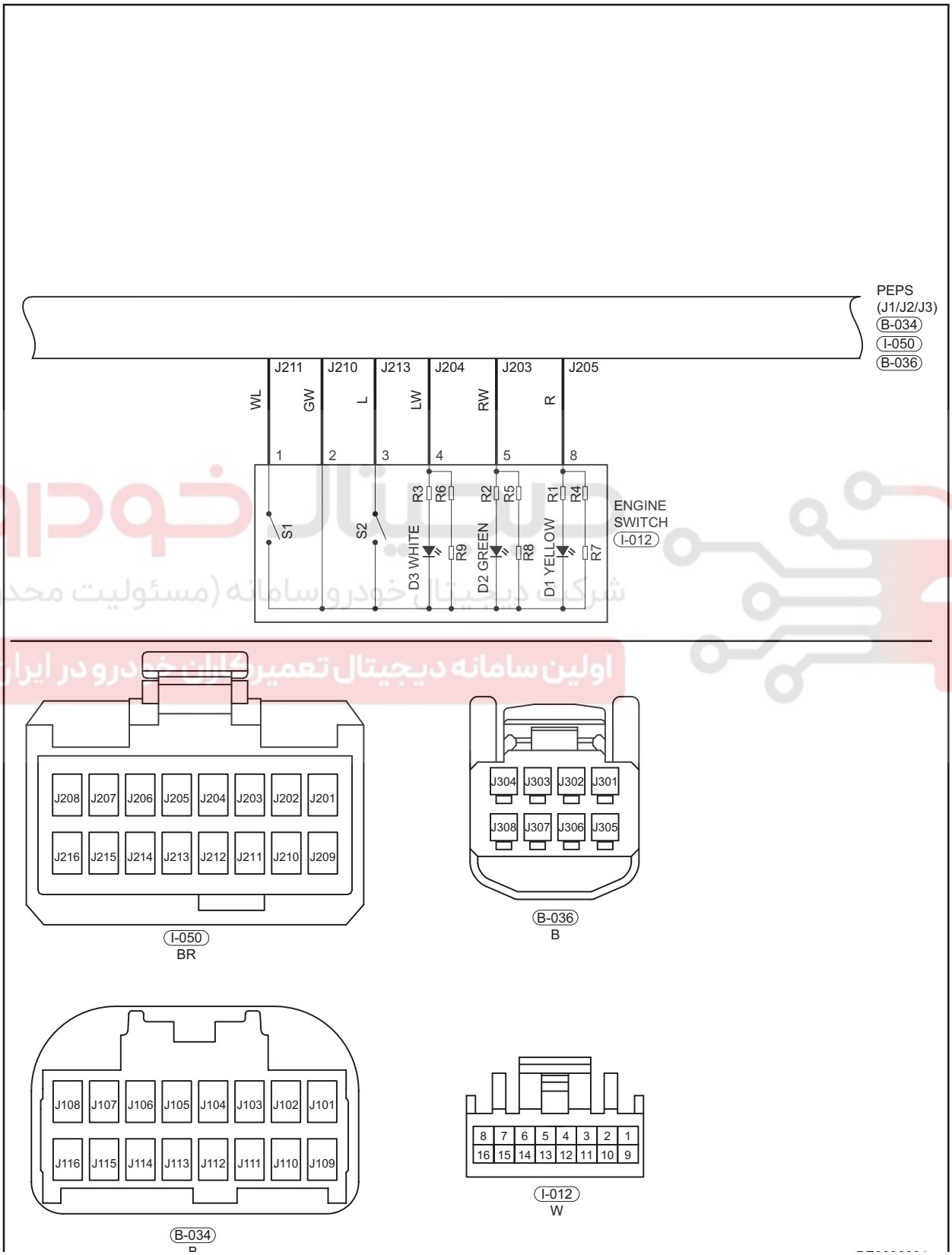
Result

Proceed to
OK
NG

OK	Replace PEPS module
NG	Replace instrument panel wire harness

DTC	B1506	Abnormality on Switches of Engine Switch

Circuit Diagram



Description

DTC	DTC Definition
B1506	Abnormality on Switches of Engine Switch

Caution:
When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure

1 Enter PEPS system and read related datastream

(a) Read datastream "Power Supply Management and Starting State" and "Engine Switch Backlight State".
(b) Press ENGINE START STOP switch, check datastream conversion activation state and backlight illumination state, to check if ENGINE START STOP switch input is normal.

Result

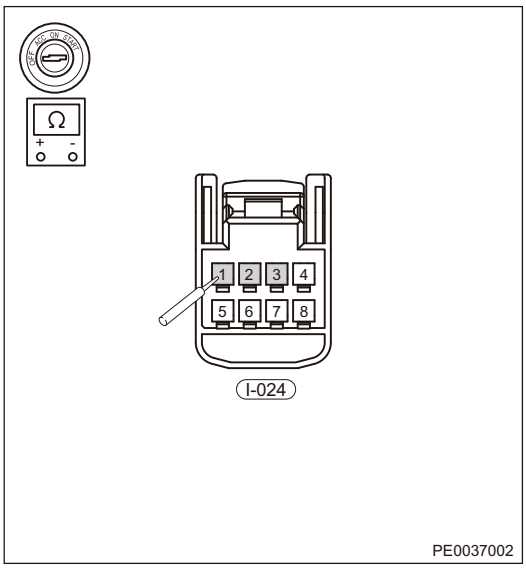
Proceed to
OK
NG

OK → **Turn off vehicle power supply (disconnect the negative battery cable), then clear DTC again**

NG

2 Check the ENGINE START STOP switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the ENGINE START STOP switch connector I-024.
(d) Using ohm band of digital multimeter, measure resistance of ENGINE START STOP switch to check if ENGINE START STOP switch is normal.



OK

Multimeter Connection	Condition	Specified Condition
ENGINE START STOP switch terminal 2 - 1	Not pressed	∞
ENGINE START STOP switch terminal 2 - 1	Pushed	⩽ 1 Ω
ENGINE START STOP switch terminal 2 - 3	Not pressed	∞
ENGINE START STOP switch terminal 2 - 3	Pushed	⩽ 1 Ω
ENGINE START STOP switch terminal 1 - 3	Not pressed	∞
ENGINE START STOP switch terminal 1 - 3	Pushed	⩽ 1 Ω
ENGINE START STOP switch terminal 4 - 2	Not pressed	≈ 6.33 KΩ

Multimeter Connection	Condition	Specified Condition
ENGINE START STOP switch terminal 5 - 2	Not pressed	≈ 6.21 KΩ
ENGINE START STOP switch terminal 8 - 2	Not pressed	≈ 5.84 KΩ

Result

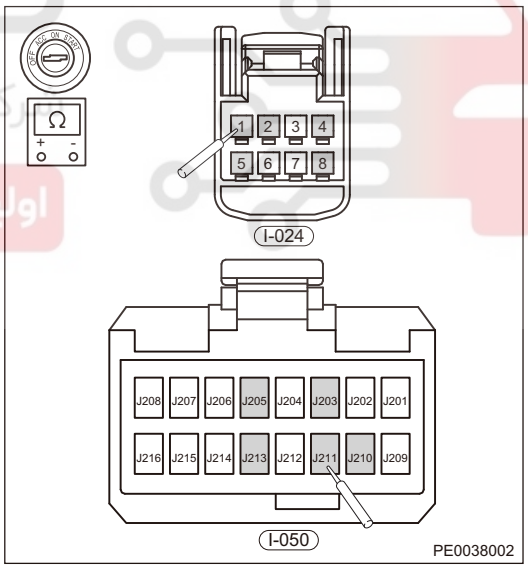
Proceed to
OK
NG

NG → **Replace ENGINE START STOP switch**

OK

3 Check instrument panel wire harness for open or short

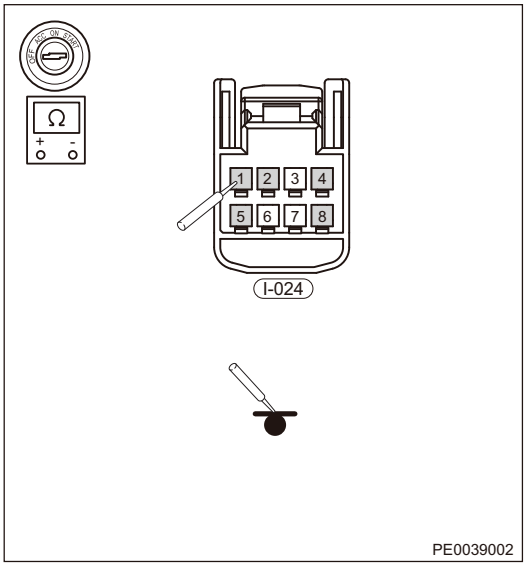
(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect ENGINE START STOP switch connector I-024 and PEPS module connector J2.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.
(g) Using ohm band of digital multimeter, measure resistance between terminal 1 of connector I-024 and terminal 11 of connector J2, between terminal 2 of connector I-024 and terminal 10 of connector J2, between terminal 3 of connector I-024 and terminal 13 of connector J2, between terminal 4 of connector I-024 and terminal 4 of connector J2, between terminal 5 of connector I-024 and terminal 3 of connector J2, between terminal 8 of connector I-024 and terminal 5 of connector J2 to check instrument panel wire harness for open.



OK

Multimeter Connection	Condition	Specified Condition
I-024-1 - J2-11	Always	⩽ 1 Ω
I-024-2 - J2-10	Always	⩽ 1 Ω
I-024-3 - J2-13	Always	⩽ 1 Ω
I-024-4 - J2-04	Always	⩽ 1 Ω
I-024-5 - J2-03	Always	⩽ 1 Ω
I-024-8 - J2-05	Always	⩽ 1 Ω

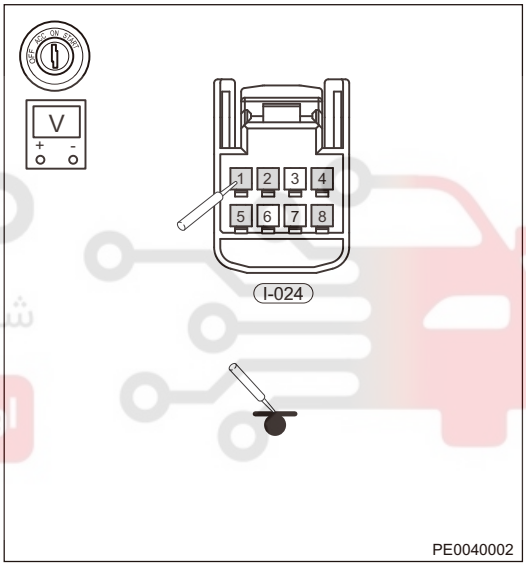
(h) Using ohm band of digital multimeter, measure resistance between terminals 1, 2, 3, 4, 5, 8 of connector I-024 and body ground separately to check instrument panel wire harness for short to body ground.



OK

Multimeter Connection	Condition	Specified Condition
I-024-1 - Body ground	Always	∞
I-024-2 - Body ground	Always	∞
I-024-3 - Body ground	Always	∞
I-024-4 - Body ground	Always	∞
I-024-5 - Body ground	Always	∞
I-024-8 - Body ground	Always	∞

(i) Connect the negative battery cable (confirm that connectors I-024 and J2 are disconnected). Bridge joint ACC relay and IGN1 relay (ENGINE START STOP switch is disabled). Using DC voltage band of digital multimeter, measure voltage between terminals 1, 2, 3, 4, 5, 8 of connector I-024 and body ground to check instrument panel wire harness for short to power supply.



OK

Multimeter Connection	Condition	Specified Condition
I-024-1 - Body ground	Always	0 V
I-024-2 - Body ground	Always	0 V
I-024-3 - Body ground	Always	0 V
I-024-4 - Body ground	Always	0 V
I-024-5 - Body ground	Always	0 V
I-024-8 - Body ground	Always	0 V

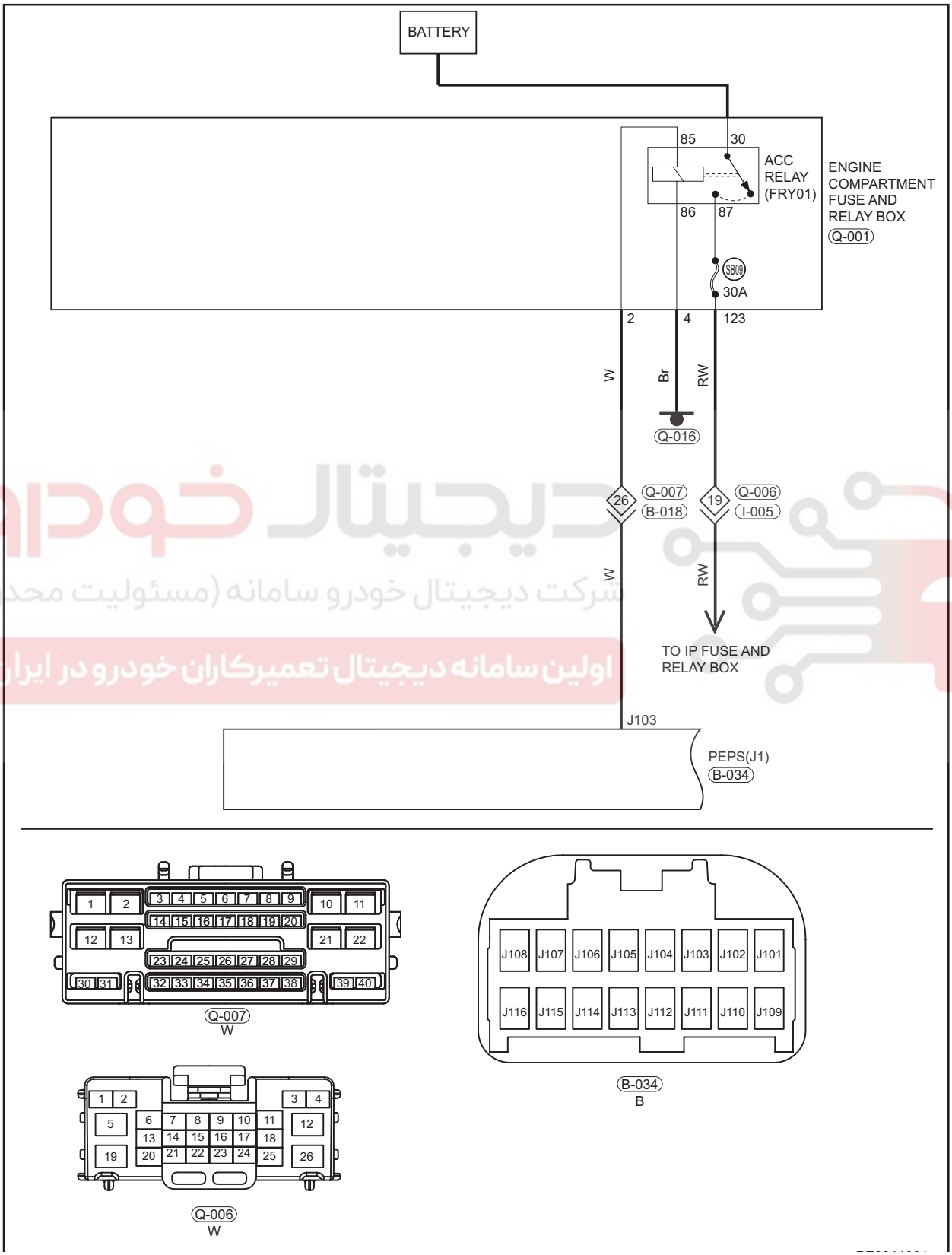
Result

Proceed to
OK
NG

OK	**Replace PEPS module**
NG	**Replace instrument panel wire harness**

DTC	B1508	Abnormality in ACC Circuit

Circuit Diagram



Q-007
W

B-034
B

Q-006
W

Description

DTC	DTC Definition
B1508	Abnormality in ACC Circuit

Caution:
When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure

1	Check fuse

(a) Measure fuse SB09-30A in engine compartment fuse and relay box with 21 W test light to check if test light comes on.

Result

Proceed to
OK
NG

OK → **Turn off vehicle power supply (disconnect the negative battery cable), then turn on power supply again and clear DTC.**

NG

2	Check if fuse base jack is abnormal

(a) Remove fuse SB09-30A in engine compartment fuse and relay box and check fuse base jack for excessive clearance.

Result

Proceed to
OK
NG

NG → **Adjust fuse base jack**

OK

3	Adjust ACC relay

Result

Proceed to
OK
NG

OK → **Replace ACC relay**

NG

4	Check if relay switch power supply is normal

(a) Unplug FRY01-ACC relay in engine compartment fuse and relay box.
(b) Using 21 W test light or digital multimeter, measure if power supply of ACC relay base No.30 jack is normal.

OK

Multimeter Connection	Condition	Specified Condition
ACC relay base 30 - Body ground (digital multimeter)	Always	Not less than 12 V
ACC relay base 30 - Body ground (21 W test light)	Always	ON

Result

Proceed to
OK
NG

NG → **Replace front bumper wire harness**

OK ↓

5	Short connect the ACC relay base jack control switch

(a) Use a wire to bridge joint jacks 30 and 87 of ER01-ACC relay base in engine compartment fuse and relay box, and check engine compartment fuse and relay box for open.

Result

Proceed to
OK
NG

NG → **Replace front bumper wire harness**

OK ↓

6	Check ACC relay control body ground

(a) Using ohm band of digital multimeter, measure resistance between jack 86 of ACC relay base and terminal 4 of engine compartment fuse and relay box to check engine compartment fuse and relay box for open.

OK

Multimeter Connection	Condition	Specified Condition
ACC relay base 86 - Engine compartment fuse and relay box 4	Always	⩽ 1 Ω

(b) Using ohm band of digital multimeter, measure resistance between terminal 4 of engine compartment fuse and relay box and body ground to check if ground circuit is normal.

OK

Multimeter Connection	Condition	Specified Condition
Engine compartment fuse and relay box 4 - Body ground	Always	⩽ 1 Ω

Result

Proceed to
OK
NG

NG → **Adjust GQ-016 ground position or replace front pumper wire harness.**

OK

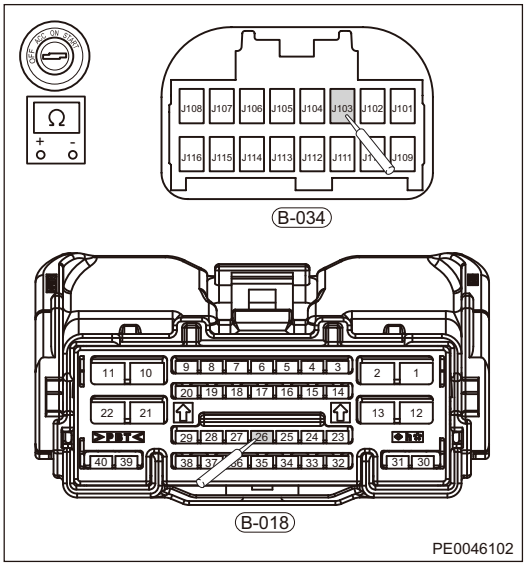
7 Check ACC relay control power supply side

(a) Disconnect the negative battery cable.
(b) Disconnect engine compartment fuse and relay box connectors Q-007 and B-018.
(c) Check if wire harnesses are worn, pierced, pinched or partially broken.
(d) Check for broken, bent, protruded or corroded terminals.
(e) Check if related connector pins are in good condition.
(f) Disconnect engine compartment fuse and relay box connector Q-007 and interior connector B-018, using ohm band of digital multimeter, measure resistance between jack 85 of ACC relay base and terminal 26 of engine compartment fuse and relay box connector Q-007.

OK

Multimeter Connection	Condition	Specified Condition
ACC relay base 85 - Q-007-26	Always	⩽ 1 Ω

(g) Disconnect the PEPS module connector J1.
(h) Check if wire harnesses are worn, pierced, pinched or partially broken.
(i) Check for broken, bent, protruded or corroded terminals.
(j) Check if related connector pins are in good condition.
(k) Using ohm band of digital multimeter, measure resistance between terminal 26 of connector B-018 and terminal 3 of connector J1.



OK

Multimeter Connection	Condition	Specified Condition
B-018-26 - J1-03	Always	⩽ 1 Ω

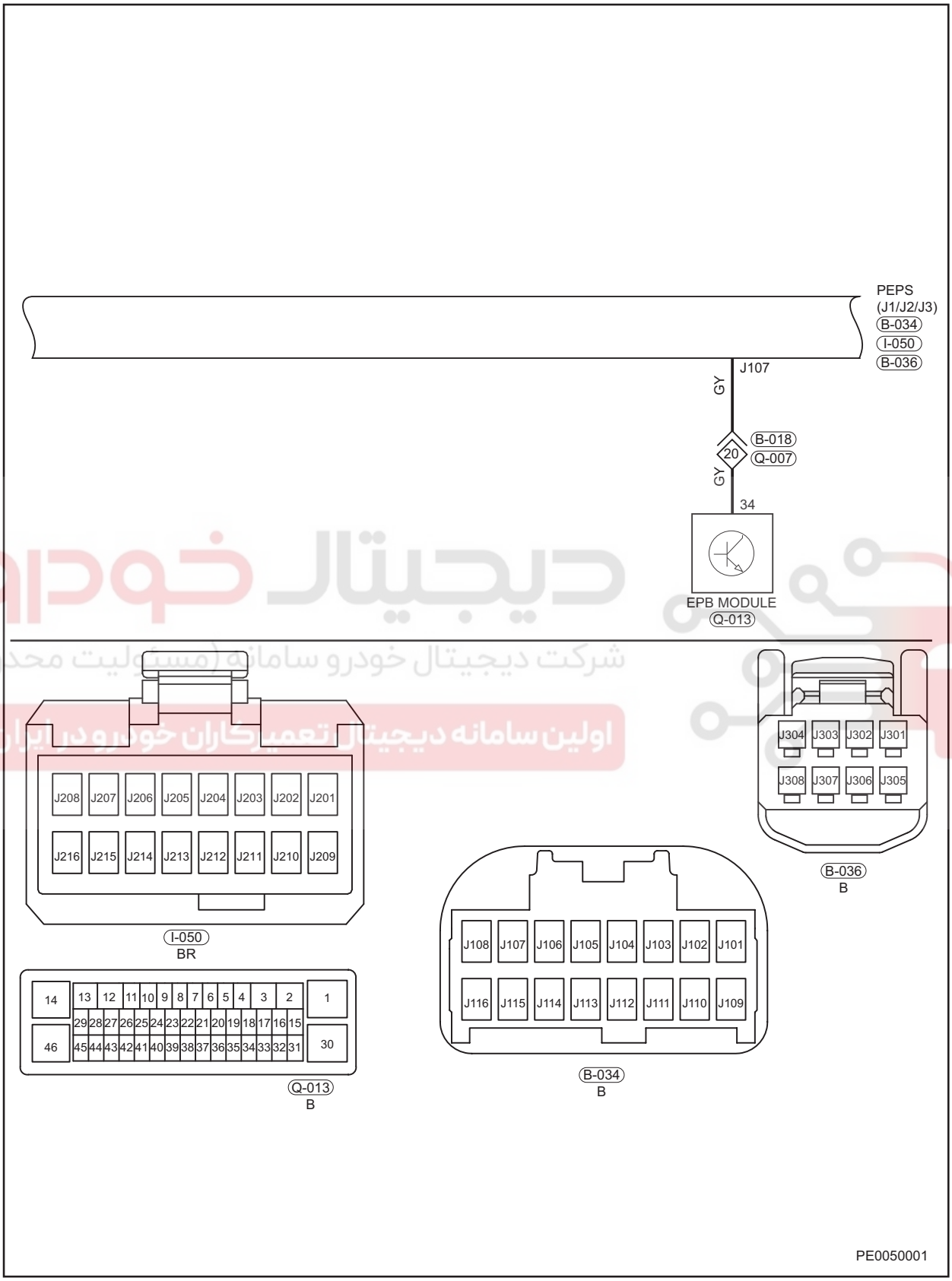
Result

Proceed to
OK
NG

OK	Replace PEPS module
NG	Replace front bumper wire harness or interior wire harness

DTC	B150A	Abnormality in Vehicle Speed Signal
DTC	B1510	Abnormality on Wheel Speed Signal

Circuit Diagram



Description

DTC	DTC Definition
B150A	Abnormality in Vehicle Speed Signal
B1510	Abnormality on Wheel Speed Signal

Caution:
For above DTCs, refer to brake control system troubleshooting. If brake control system is normal, perform following diagnosis procedures.

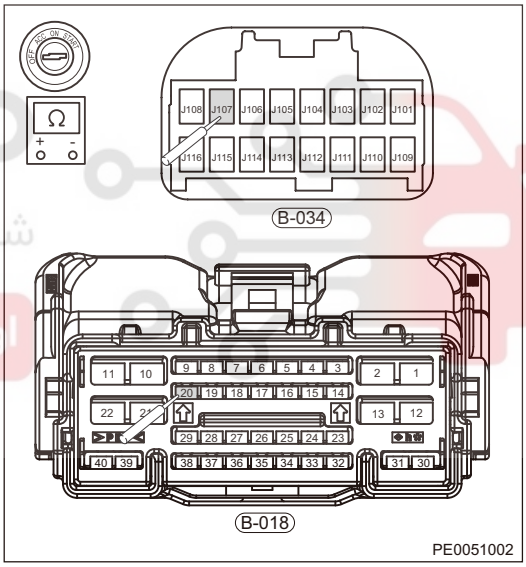
Procedure

1	Check interior wire harness for open or short

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the PEPS module connector J1 and connectors B-018 and Q-007.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.
(g) Using ohm band of digital multimeter, measure resistance between terminal 7 of connector J1 and terminals 20 of connector B-018 to check interior wire harness for open.

OK

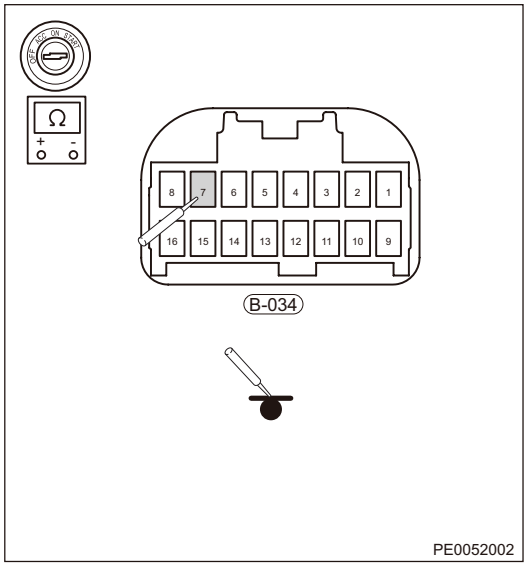
Multimeter Connection	Condition	Specified Condition
J1-07 - B-018-20	Always	⩽ 1 Ω



(h) Using ohm band of digital multimeter, measure resistance between terminal 7 of connector J1 and body ground to check interior wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
B-034 -7 - Body ground	Always	∞



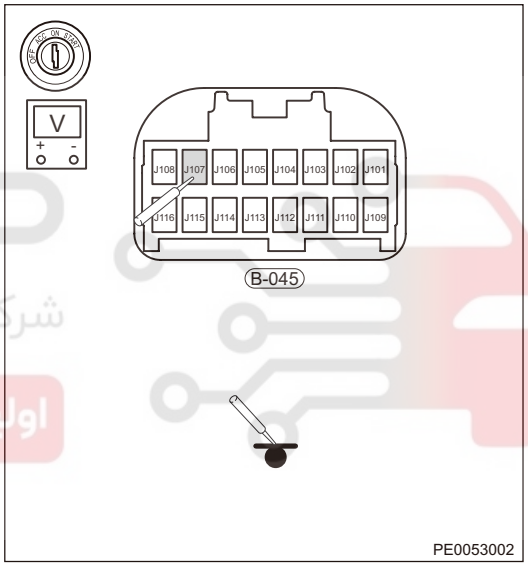
(i) Connect the negative battery cable, turn ENGINE START STOP switch to ON, (confirm that connectors B-018 and Q-007 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminal 7 of connector J1 and body ground to check interior wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
J1-07 - Body ground	Always	0 V

Result

Proceed to
OK
NG



NG → **Replace interior wire harness**

OK

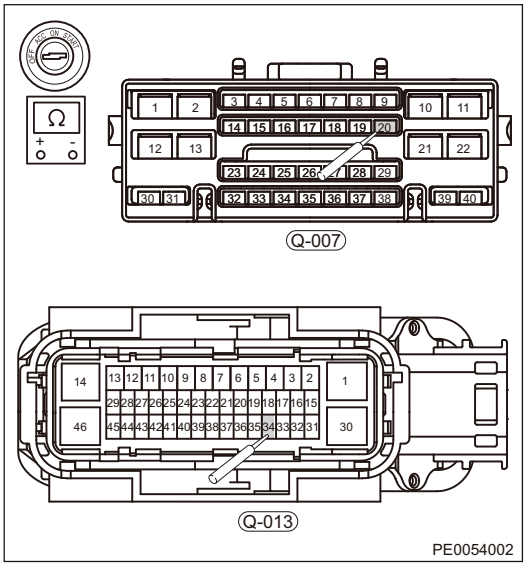
2	Check front bumper wire harness for open or short

(a) Turn ignition switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the ESP controller connector Q-014.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.

(g) Using ohm band of digital multimeter, measure resistance between terminal 34 of connector Q-013 and terminal 20 of connector Q-007 to check front bumper wire harness for open.

OK

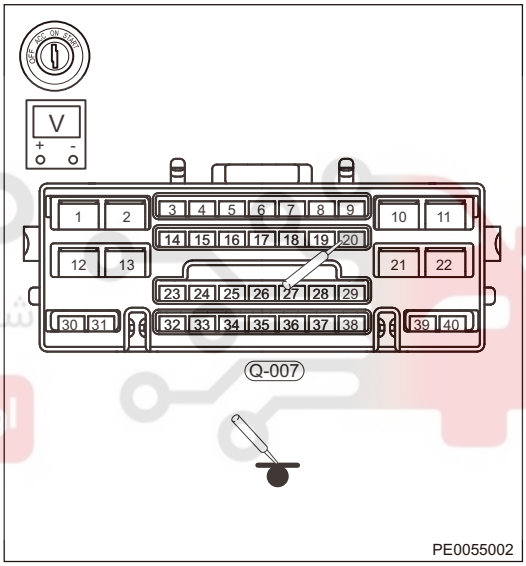
Multimeter Connection	Condition	Specified Condition
Q-013-34 - Q-007-20	Always	⩽ 1 Ω



(h) Using ohm band of digital multimeter, measure resistance between terminal 20 of connector Q-007 and body ground to check front bumper wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
Q-007-20 - Body ground	Always	∞



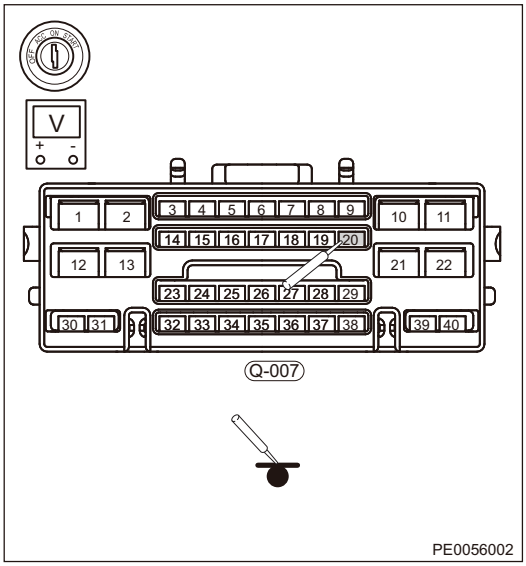
(i) Connect the negative battery cable, turn ignition switch to ON, (confirm that connectors Q-007 and B-018 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminal 20 of connector Q-007 and body ground to check front bumper wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
Q-007-20 - Body ground	Always	0 V

Result

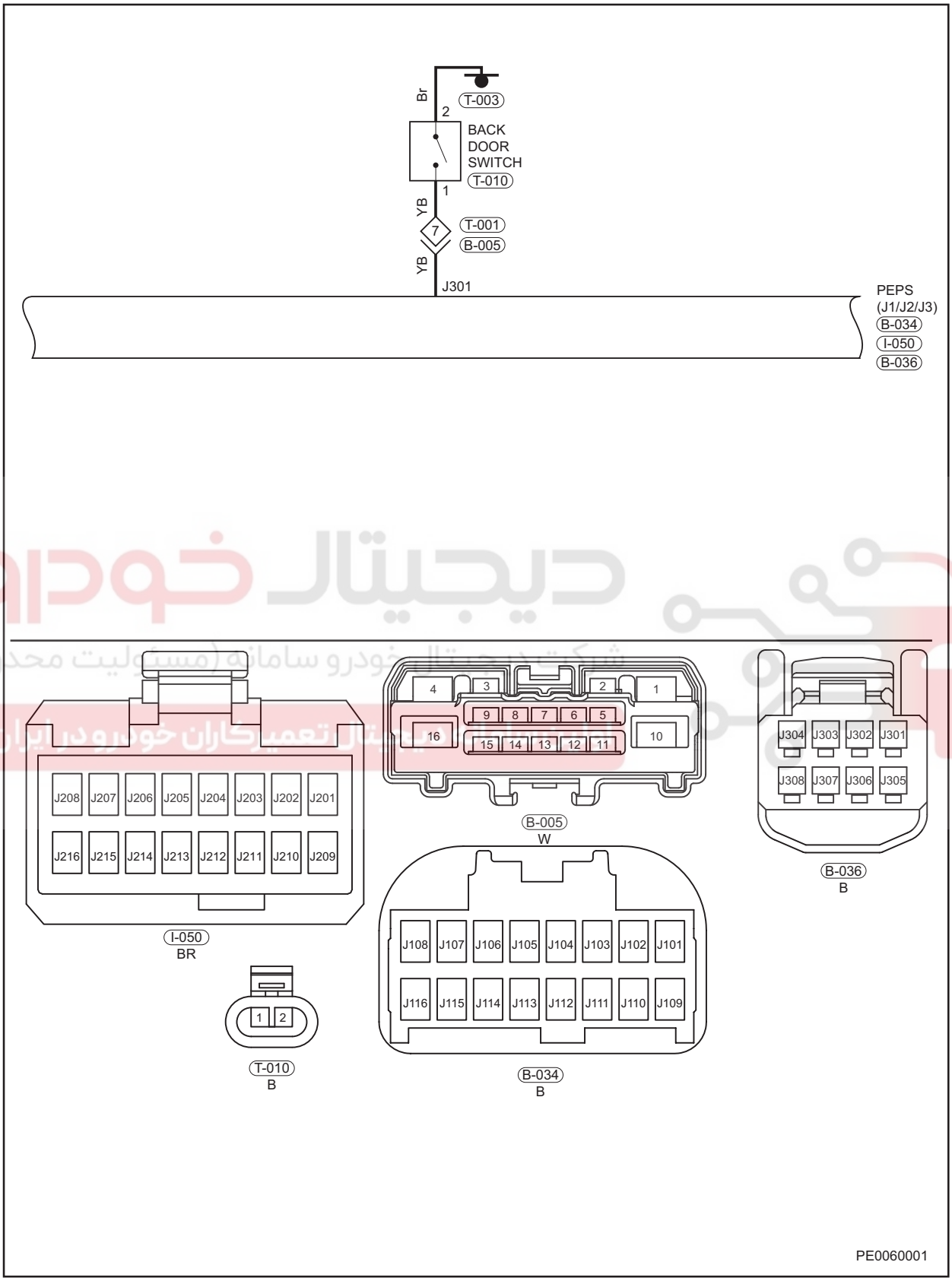
Proceed to
OK
NG



OK	Replace PEPS module
NG	Replace front bumper wire harness

DTC	B1518	Trunk/Back Door Unlock Switch Stuck Failure
DTC	B1519	Back Door Lock Switch Continuously Pressed

Circuit Diagram



Description

DTC	DTC Definition
B1518	Trunk/Back Door Unlock Switch Stuck Failure
B1519	Back Door Lock Switch Continuously Pressed

Caution:
When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Procedure

1	Check vehicle malfunction condition

(a) Press luggage compartment door release switch to check if luggage compartment door is open.

Result

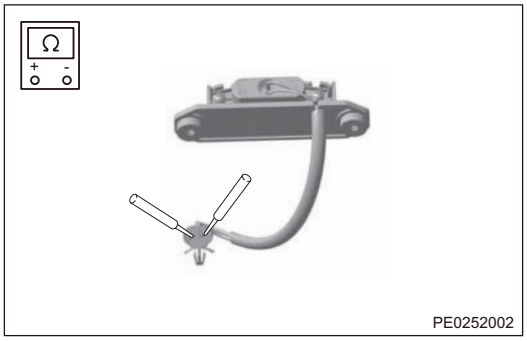
Proceed to
OK
NG

OK → **Turn off vehicle power supply (disconnect the negative battery cable), then turn on power supply again and clear DTC.**

NG

2	Check luggage compartment door release switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the luggage compartment door release switch connector T-010.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.
(g) Using ohm band of digital multimeter, measure resistance of luggage compartment door release switch to check if luggage compartment door release switch is damaged.



PE0252002

OK

Multimeter Connection	Condition	Specified Condition
Luggage compartment door release switch 1 - 2	Not pressed	∞
Luggage compartment door release switch 1 - 2	Pushed	⩽ 1 Ω

Result

Proceed to
OK
NG

NG → **Replace luggage compartment door release switch**

OK

3	Check luggage compartment door release switch ground side

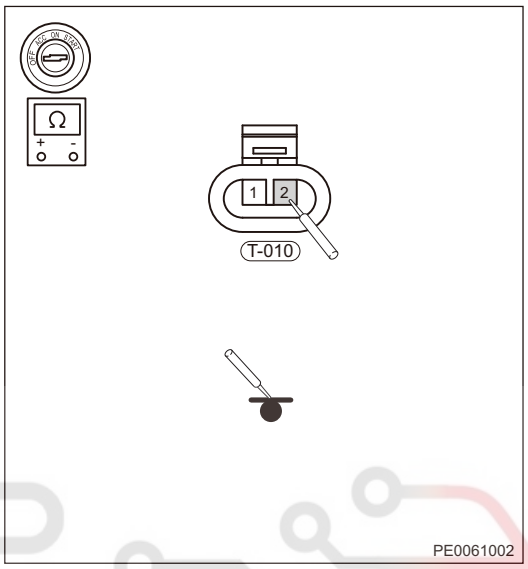
(a) Using ohm band of digital multimeter, measure resistance between terminal 2 of connector T-010 and body ground. to check ground side for normal.

OK

Multimeter Connection	Condition	Specified Condition
T-010-2 - Body ground	Always	⩽ 1 Ω

Result

Proceed to
OK
NG



NG → **Handle T-002 ground wire harness**

OK

4	Check back door release switch circuit signal voltage

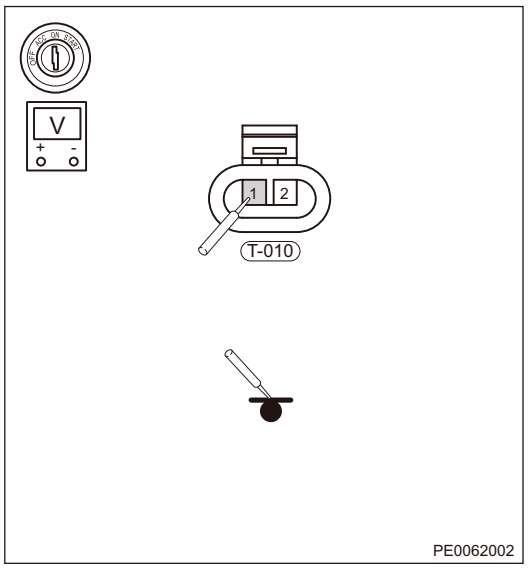
(a) Connect the negative battery cable.
(b) Turn ENGINE START STOP switch to ON.
(c) Using DC voltage band of digital multimeter, measure if signal voltage at terminal 1 of connector T-010 is normal.

OK

Multimeter Connection	Condition	Specified Condition
T-010-1 - Body ground	ON state	Not less than 12 V

Result

Proceed to
OK
NG



OK → Handle poor connector contact

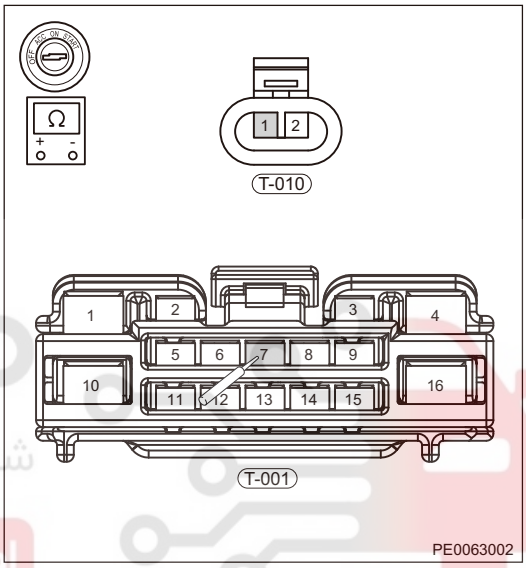
NG

5	Check luggage compartment door wire harness for open or short

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect connectors T-001 and B-005.
(d) Check if wire harnesses are worn, pierced, pinched or partially broken.
(e) Check for broken, bent, protruded or corroded terminals.
(f) Check if related connector pins are in good condition.
(g) Using ohm band of digital multimeter, measure resistance between terminal 1 of connector T-010 and terminal 7 of connector T-001 to check luggage compartment door wire harness for open.

OK

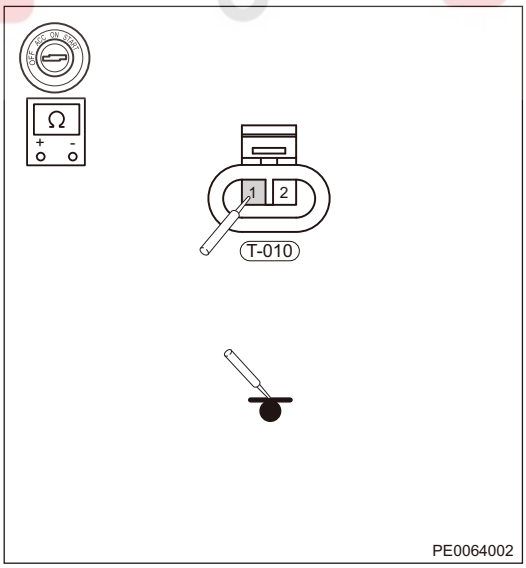
Multimeter Connection	Condition	Specified Condition
T-010-01 - T-001-07	Always	⩽ 1 Ω



(h) Using ohm band of digital multimeter, measure resistance between terminal 1 of connector T-010 and body ground to check luggage compartment door wire harness for short to body ground.

OK

Multimeter Connection	Condition	Specified Condition
T-010-01 - Body ground	Always	∞



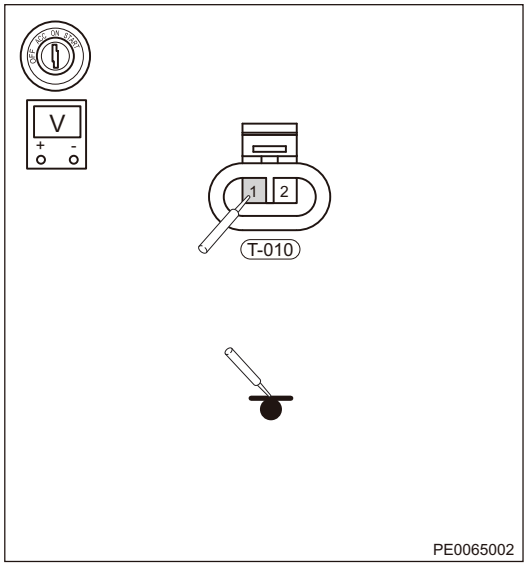
(i) Connect the negative battery cable, turn ignition switch to ON, (confirm that connectors T-010 and T-001 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminal 1 of connector T-010 and body ground to check luggage compartment door wire harness for short to power supply.

OK

Multimeter Connection	Condition	Specified Condition
T-010-01 - Body ground	Always	0 V

Result

Proceed to
OK
NG



NG → **Replace back door wire harness**

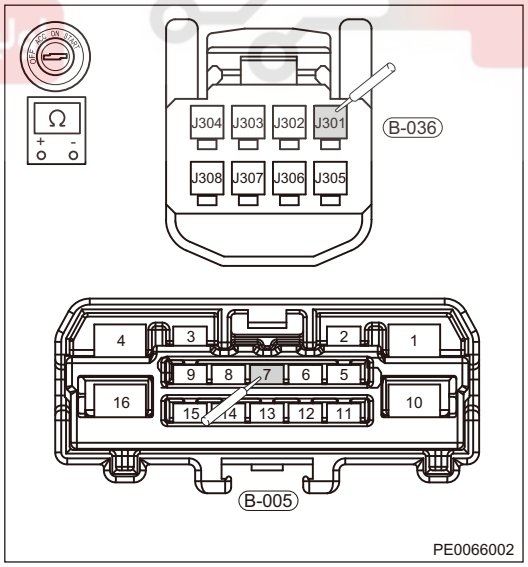
OK

6 Check interior wire harness for open or short

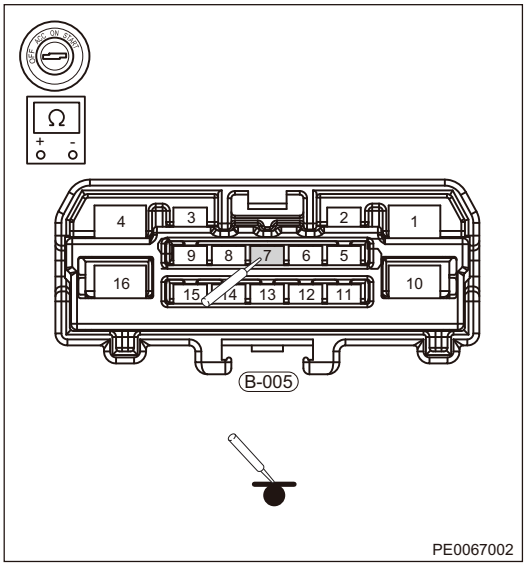
(a) Disconnect the PEPS module connector J3.
(b) Check if wire harnesses are worn, pierced, pinched or partially broken.
(c) Check for broken, bent, protruded or corroded terminals.
(d) Check if related connector pins are in good condition.
(e) Using ohm band of digital multimeter, measure resistance between terminal 7 of connector B-005 and terminals 1 of connector J3 to check interior wire harness for open.

OK

Multimeter Connection	Condition	Specified Condition
B-005-07 - J3-01	Always	⩽ 1 Ω



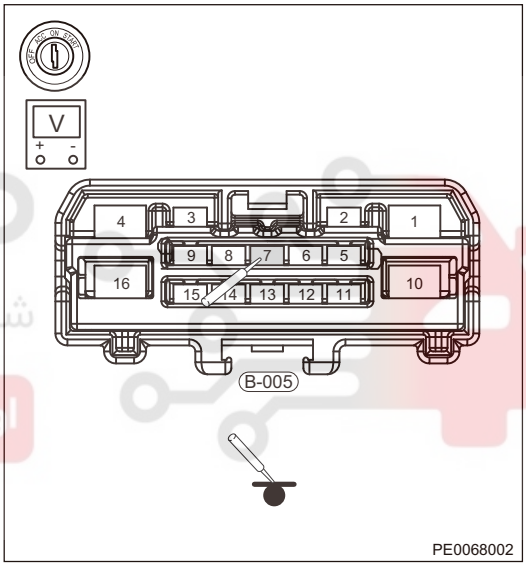
(f) Using ohm band of digital multimeter, measure resistance between terminal 7 of connector B-005 and body ground to check interior wire harness for short to body ground.



OK

Multimeter Connection	Condition	Specified Condition
B-005-07 - Body ground	Always	∞

(g) Connect the negative battery cable, turn ENGINE START STOP switch to ON, (confirm that connectors B-005 and J3 are disconnected). Using DC voltage band of digital multimeter, measure voltage between terminal 7 of connector B-005 and body ground to check interior wire harness for short to power supply.



OK

Multimeter Connection	Condition	Specified Condition
B-005-07 - Body ground	Always	0 V

Result

Proceed to
OK
NG

OK	**Replace PEPS module**
NG	**Replace interior wire harness**

DTC	U0100	Lost of Communication with Engine Control System Module
DTC	U0129	Lost Communication with Brake System Module
DTC	U0140	Lost Communication with Body Control Module
DTC	U0329	Lost Communication with Electronic Steering Column Lock

Description

DTC	DTC Definition
U0100	Lost of Communication with Engine Control System Module
U0129	Lost Communication with Brake System Module
U0140	Lost Communication with Body Control Module
U0329	Lost Communication with Electronic Steering Column Lock

Procedure

1	Refer to "CAN COMMUNICATION" for troubleshooting

ON-VEHICLE SERVICE

PEPS Control Module Assembly

Removal

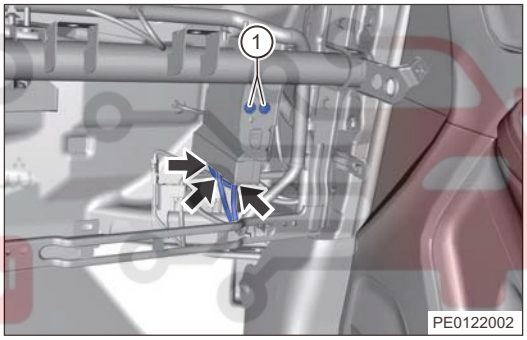
Warning/Caution/Hint

Caution:

- DO NOT separate PEPS controller and fixing bracket at will, or clamping structure of controller will be damaged, unless controller malfunction is confirmed by troubleshooting result, it can be removed and cannot be reused.
- DO NOT replace PCB board of PEPS controller at will, or it cannot be traced back and may be make abnormal sound.
- After replacing PEPS controller assembly, before performing key learning and anti-theft matching, do not press ENGINE START STOP switch at will if nor necessary (it is set that keyless start can be performed for 50 times), to prevent PEPS controller from being locked and causing vehicle power supply not to be turned on.

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the glove box assembly (See page 45-11).
4. Remove the PEPS module.

   (a) Disconnect the PEPS module connectors (arrow).



   (b) Remove 2 coupling bolts (1) between PEPS module mounting bracket and instrument panel crossmember.

   Tightening torque

   7 ± 1 N·m

   (c) Unplug module from PEPS controller bracket in reverse direction of mounting.

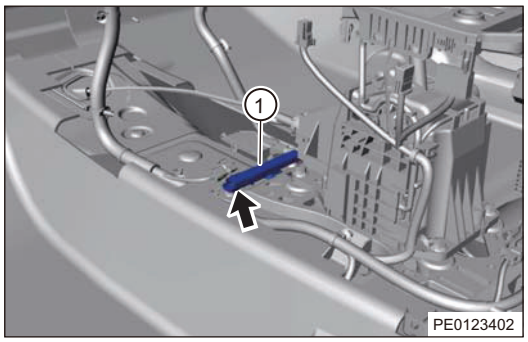
Installation

1. Installation is in the reverse order of removal.

Front Low Frequency Antenna (for DCT Models)

Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the auxiliary fascia console assembly (See page 45-7).
4. Remove the front low frequency antenna.
   (a) Disconnect the connector (arrow) from front low frequency antenna.



   (b) Using a tool, detach low frequency antenna fixing clip (1) from automatic shift mechanism transition bracket.
   Caution:
   - DO NOT repeatedly remove and install it, and dispose it if it becomes loosen.

Installation

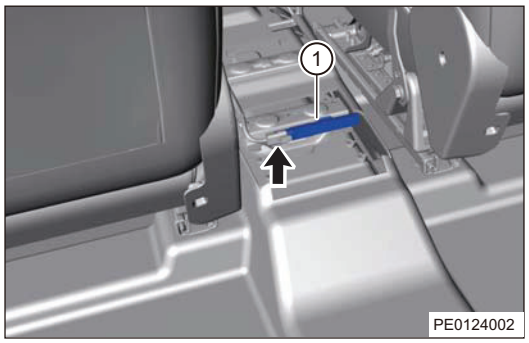
1. Installation is in the reverse order of removal.

Center Low Frequency Antenna

Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the auxiliary fascia console assembly (See page 45-7).
4. Remove the center low frequency antenna

   (a) Disconnect the connector (arrow) from center low frequency antenna.



   (b) Using a tool, detach low frequency antenna fixing clip (1) from parking brake rear mounting bracket.
   Caution:
   - DO NOT repeatedly remove and install it, and dispose it if it becomes loosen.

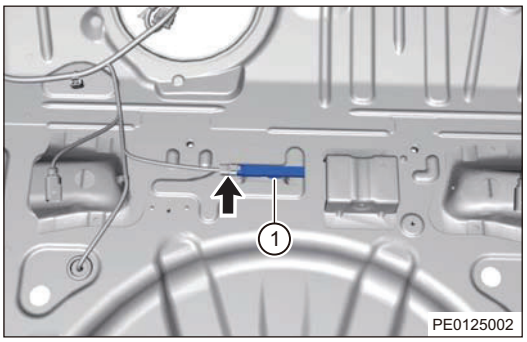
Installation

1. Installation is in the reverse order of removal.

Remove the rear low frequency antenna

Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the luggage compartment carpet assembly.
4. Remove the rear low frequency antenna assembly.
   (a) Disconnect the connector (arrow) from rear low frequency antenna.



   (b) Using a tool, detach low frequency antenna fixing clip (1) from mounting hole.
   Caution:
   - DO NOT repeatedly remove and install it, and dispose it if it becomes loosen.

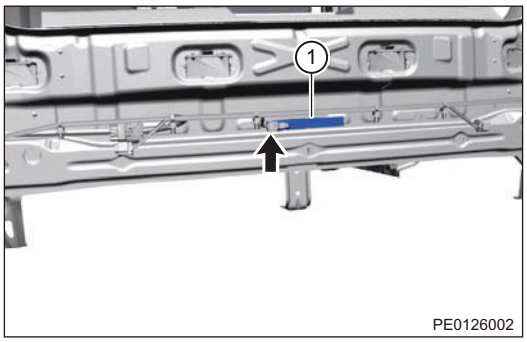
Installation

1. Installation is in the reverse order of removal.

Rear Bumper Low Frequency Antenna

Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the rear bumper assembly (See page 48-25).
4. Remove the rear low frequency antenna assembly.
   (a) Disconnect the connector (arrow) from rear bumper low frequency antenna.



   (b) Using a tool, detach low frequency antenna fixing clip (1) from rear bumper crossmember.
   Caution:
   - DO NOT repeatedly remove and install it, and dispose it if it becomes loosen.

Installation

1. Installation is in the reverse order of removal.

Anti-theft Coil (for DCT Models)

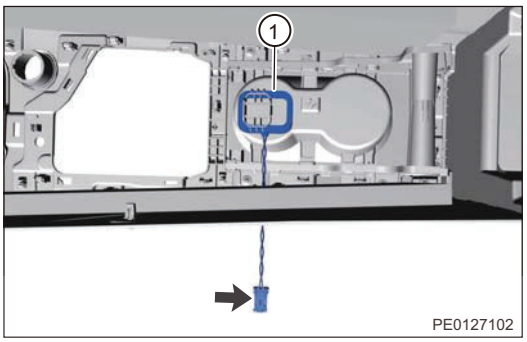
Removal

1. Turn ENGINE START STOP switch to OFF.
2. Disconnect the negative battery cable.
3. Remove the auxiliary fascia console assembly (See page 45-7).

   Hint:

   Disconnect anti-theft coil connector (arrow) while removing auxiliary fascia console. Prevent wire harness from breaking.
4. Remove the anti-theft coil.

   (a) Press two clips with left hand while hold coil (1) with right hand, and unplug it in opposite direction of installation direction with large force.



Installation

1. Installation is in the reverse order of removal.

   Caution:

   - The anti-theft coil must be installed with a smooth surface against the mounting surface, and ensure it is installed in place, otherwise it may fall off from the bracket, thus failing to carry out normal key learning and anti-theft matching.