

Various PCM Central Computer Fault Corrections: Re-Program PCM Central Computer and Head-up Display Control Unit if Necessary (77/22)

Model Line: **Cayenne (9YA/9YB)**

Model Year: **As of 2019 up to 2021**

Concerns: **Porsche Communication Management (PCM) and control unit for head-up display (HUD)**

Situation: Optimized software for the PCM central computer is available to correct the following problems:

- Independent restart of the PCM central computer
- Black/red/blue screen in the PCM central computer
- Automatic deactivation of PCM central computer
- Usability and system stability of PCM central computer
- No sound
- Various personalization functions
- Discrepancies regarding the control panels on the PCM screen
- Stability and logic of navigation functions
- Stability of Bluetooth connection

Please note that for vehicles with head-up display (M No. KS1) from model year "K" (2019), a software update may also be required for the head-up display after programming.

Action Required: Re-program PCM central computer and head-up display if necessary.

Software: **Overview of the software versions affected**

Control unit	Software version (new version)	Vehicle allocation
Central computer	2870	ER3 / ER4 / ER5 / ER6 / ER7 / ER8
Head-up display*	1846	ER1 / ER2 / ER3 / ER4 / ER5 / ER6 / ER7 / ER8

* Only relevant for model year "K" (2019) vehicles.

Required tools and parts

Parts Info:



Information

Programming is performed using the specific storage medium.

The storage medium for ECU programming must be reused as part of the workshop equipment and remains in the Porsche Center. The storage medium must therefore not remain in the vehicle and must not be handed over to the customer.

Part Nos.	Vehicle allocation	Software
9Y0909400D	M No. ER3 (NAR (+B34))	2870



Information

The storage medium can be created itself.

To do this, **download** the software using the storage unit **PiUS** (Porsche integrated Update Service) and **install** it on a blank storage medium.

Pay particular **attention** to the following:

- For the application of the software tool, **an** empty or free writable storage medium is required for **each** software.
- The software available in PiUS must **only** be used in accordance with the instructions provided in the Technical Information (TI) published for this purpose.

You will find further information on how to install and use the PiUS software tool in the PPN portal under "**PiUS (Porsche integrated Update Service) goes live**".

Tools:



Information

The Cayenne is equipped as standard with a **lithium starter battery**, which must only be charged using suitable battery chargers.

For further information about the battery chargers to be used, see the corresponding Workshop Manual. ⇒ *Workshop Manual '2706IN Load general information on the 12-volt lithium-ion battery'* and ⇒ *Workshop Manual '270689 battery, vehicle electrical system'*

- **Battery charger** with a current rating of **at least 90 A**, e.g. **VAS 5908 battery charger 90A**.
- **P90999 - P90999 - PIWIS Tester 4** with PIWIS Tester test software version **41.100.010** (or higher) installed
- **Storage medium** with the right software installed. The storage medium is only required for programming the PCM central computer.

Preliminary work

NOTICE

Fault entry in the fault memory and control unit programming aborted due to low voltage.

- Increased current draw during diagnostics or control unit programming can cause a drop in voltage, which can result in one or more fault entries and the abnormal termination of the programming process.
- ⇒ Before getting started, connect a suitable battery charger with a current rating of at least 90 A to the jump-start terminals.

NOTICE

Control unit programming will be aborted if the Wi-Fi connection is unstable.

- An unstable Wi-Fi connection can interrupt communication between PIWIS Tester and the vehicle communication module (VCI). As a result, programming may be aborted.
- ⇒ During control unit programming, always connect the PIWIS Tester to the vehicle communication module (VCI) using the USB cable.

NOTICE

Control unit programming will be aborted if the driver's key is not detected

- If the driver's key is not detected in the vehicle, programming cannot be started or will be interrupted.
- ⇒ Place the driver's key with the back facing down in front of the lock opening for the center console cover to guarantee a permanent radio link between the vehicle and driver's key.

Work Procedure: 1 Carry out general preliminary work for control unit programming as described in ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming - section on "Preliminary work"*.

Re-programming PCM main computer

Work Procedure: 1 Re-programming PCM main computer. ⇒ *Workshop Manual '915225 Programming central computer data update'*

Programming code required for programming: **Z8R8G**



Information

If the software update is interrupted or if **error messages** are displayed (e.g. as a result of read errors), the programming must be **repeated**.

Check software version of the head-up display control unit and re-programming head-up display control unit where necessary

Work Procedure: 1 Check software version of the head-up display control unit and re-program control unit for head-up display where necessary:

**Information**

The following test is only relevant for vehicles from model year "K" (2019). To make the new software of the PCM central computer compatible with the head-up display, a software update of the head-up display may be required.

- 1.1 Select '**Head-up display**' control unit.
- 1.2 Select the '**Extended identifications**' menu.
- 1.3 Check software version of control unit for '**head-up display**'.

**Information**

Only the software version from '**1846**' is compatible with the software version '**2870**' of the PCM central computer.

- 1.3.1 If the software version is '1846', no further action is required. Continue with ⇒ *Technical Information '915225 Subsequent work'*.
- 1.3.2 If the software version is '1828', re-program the head-up display control unit. The basic procedure for programming a control unit is described in the Workshop Manual ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Programming"*.

**Information**

The procedure described here is based on the PIWIS Tester 4 software version **41.100.010**.

The PIWIS Tester instructions take precedence and in the event of a discrepancy, these are the instructions that must be followed.

Deviations may occur with later software versions, for example.

Specific information on control unit programming in the context of this Technical Information:

Required PIWIS Tester test software version:	41.100.010 (or higher)
Type of control unit programming:	Control unit programming using the 'Campaign' function in the Additional menu on the PIWIS Tester by entering a programming code.
Programming code:	S3H5B
Programming sequence:	<p>Read and follow the information and instructions on the PIWIS Tester during the guided programming sequence. During the programming sequence, the control unit for the head-up display is re-programmed and then automatically re-coded.</p> <p>Do not interrupt programming and coding.</p> <p>Backup documentation of the new software versions is then performed.</p>
Programming time (approx.):	10 minutes
Software version programmed during programming:	<p>1846</p> <p>Following control unit programming, the software version can be selected from the relevant control unit in the ⇒ 'Extended identifications' menu using the PIWIS Tester.</p> <p>The software version information in the programmed data record is based on the specified PIWIS Tester test software version. Please note that this may be different in a higher version.</p>
Procedure in the event of a termination in the control unit programming:	<ul style="list-style-type: none"> ▪ Switch ignition off and then on again. ▪ Select and erase fault memories. ⇒ <i>Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Rework"</i> ▪ Repeat control unit programming by restarting programming.
Procedure in the event of error messages appearing during the programming sequence:	⇒ <i>Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Fault finding"</i> .

Concluding work

Work Procedure: 1 Carry out general rework for control unit programming as described in ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Rework"*.

Invoicing

For documentation and invoicing in the event of a warranty, state the work items required depending on the scope of work required and the specified PCSS encryption in the warranty claim:

APOS	Labor operation	I No.
91522553	Programming central computer	
90860103	Checking windshield projection control unit	
90862553	Programming windshield projection control unit	

PCSS encryption:

Location (FES5)	91520	Central computer
Damage type (SA4)	1614	Function not as specified

References: ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming'*

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