ARC5 – Re-Coding Main Control Unit for Body Electronics (HCP4) and Control Unit for Headlights (Recall Campaign)

Important: **CRITICAL WARNING** -This campaign includes steps where control unit(s) in the vehicle will be programmed with the PIWIS Tester. The vehicle voltage must be maintained between 13.5 volts and 14.5 volts during this programming. Failure to maintain this voltage could result in damaged control unit(s). Damage caused by inadequate voltage during programming is not a warrantable defect. The technician must verify the actual vehicle voltage in the PIWIS Tester before starting the campaign and also document the actual voltage on the repair order.

Model Year: **As of 2024 up to 2025**

Model Line: **Macan Electric (XAB)**

Country / Market: USA / Canada / Puerto Rico

Concerns: **Main control unit for body electronics (HCP4) and headlight control units (MX1, MX2, MX14, MX15)**

Cause: **Due to faulty coding of the main control unit for body electronics (HCP4) and the control units for headlights or auxiliary headlights, the headlights are activated with too high a current when the high beam is used.**
As a result, the statutory limit of 120 lux for high beam brightness in the USA, Canada and Puerto Rico markets is exceeded.

Action: Re-code main control unit for body electronics (HCP4).
For vehicles with country-specific equipment C36 Canada, the control units for headlights (MX14, MX15) and the control units for auxiliary headlights (MX1, sMX2) must also be re-coded.

Information
The minimum programming requirement is PIWIS Tester software release **43.000.040** (or higher).

Information
The prerequisite for this action is the **successful implementation** of the campaign **WRM0 – Update to software network VR28.11**.
If software network 28.11 has not yet been installed on the respective vehicle, this must be done before carrying out the present action here.

Affected vehicles: Only vehicles assigned to the campaign (see also PCSS Vehicle Information).

Required tools

Tools:

- **P90999 - PIWIS Tester 4**
- Battery charger with a current rating of **at least 90 A**, e.g., **VAS 5908 - 90-A battery charger**. For further information about the battery chargers to be used, see the corresponding Workshop Manual. ⇒ *Workshop Manual '270689 Charging vehicle electrical system battery'*

Re-coding main control unit for body electronics (HCP4) and, if necessary, the control units for headlights (MX1, MX2, MX14, MX15)

NOTICE

Sitting inside the vehicle during the update

- **Abort update by automatically activating the ignition**

⇒ **Avoid sitting inside the vehicle during the update.**

NOTICE

The specified update process was not followed

- **Update cancelled**
- **Destruction of control units**

⇒ **Observe and follow the process displayed for the update and instructions for the PIWIS Tester**

⇒ **Do not replace ignition without instructions from PIWIS Tester**

⇒ **Do not repeat the update procedure unless a failed update is displayed on the PIWIS Tester**

Information

Vehicle update – general information

The entire vehicle network will be checked for a necessary update or computed to ensure fault-free functioning of the vehicle. The following preparations must be made:

- Latest release on PIWIS Tester 4 and PiUS available
- Vehicle is fully constructed
- VCI and PIWIS Tester 4 must be connected to each other via workshop WiFi
- The user must be logged in to the PIWIS Tester 4 in the PPN
- Vehicle must be supported by an external charger
- Seat heating and seat ventilation must not be active
- Place the original hand-held transmitter in the emergency start tray (see Workshop Manual)

The vehicle performs the update independently. The current status can be retrieved on the diagnostic tester or on the front display and control unit (R238) under Messages (RPC+).

Information

During the update process, all displays in the vehicle (instrument cluster, central display and passenger display) are occasionally switched off. The update process nevertheless continues. **The ignition sequence must not be changed**.

If WiFi coverage is insufficient, the connection between the PIWIS Tester and VCI may be interrupted (battery charge indicator inactive on the Tester display at the top right). The vehicle will nevertheless continue the update **independently**. In the meantime, no entry must be made on the PIWIS Tester, and the programming or coding must not be restarted. In such a case, the progress of the update can still be followed inside the vehicle via the central display by activating the **"Messages"** tile.

Update progress on central display

Work Procedure: 1 Observe preconditions for control unit programming and coding.
⇒ *Technical Information '9X10IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*

Information

An **active** Internet connection with the PIWIS Tester must be maintained.

The technician **must** log in to PPN with the PIWIS tester.

The PIWIS Tester must not be charged using the cigarette lighter!

Information

Before starting the diagnosis, it is essential for an ignition change to be performed on the vehicle.
After starting the diagnosis, the VCI is automatically initialized and the control unit data is loaded.

For additional information on the programming procedure and if the process is interrupted, see ⇒ *Technical Information '9X10IN FAQs on control unit programming'*

2 Prepare coding of the main control unit for body electronics (HCP4) and, if necessary, the control units for headlights (MX1, MX2, MX14, MX15).

2.1 Start new logging via •P2 " .

2.2 As soon as the control unit overview is displayed, open the additional menu by pressing •F7 “ .
An overview of all campaigns to be carried out for the respective vehicle is then displayed automatically.

2.3 Confirm the campaigns to be carried out for the respective vehicle by pressing •F12 “ , but do not start for the time being.

2.4 During the **automatic integration test** on the PIWIS Tester, press •F11 “ to **cancel** it.

2.5 If necessary, deactivate Transport mode.

Information
For this update procedure, the respective vehicle no longer needs to be in transport mode.
To do this, deactivate Transport mode as follows.
On vehicles without active Transport mode, steps 2.6.1 to 2.6.3 can be skipped.

2.5.1 Press •F7 “ to call up the additional menu.

2.5.2 In the displayed additional menu, select and confirm the **“Vehicle handover”** menu item.

2.5.3 Select **“Deactivate Transport mode”** and confirm by pressing •F8 “ .
Then select **‘No’** when the query as to whether it is a new vehicle appears and end the vehicle handover using the PIWIS Tester.

3 End readiness for operation (ignition off) and restore it after waiting approx. 30 seconds (ignition on).

4 Re-code the main control unit for body electronics (HCP4) and, if necessary, the control units for headlights (MX1, MX2, MX14, MX15).

4.1 Press •F7 “ to call up the additional menu.

4.2 In the displayed additional menu, select and confirm the **“Control unit programming and coding (campaign)”** menu item.
The main control unit for body electronics (HCP4) and, if necessary, the control units for headlights (MX1, MX2, MX14, MX15) are then re-coded with menu guidance.

After coding is completed, a corresponding confirmation is displayed on the PIWIS Tester.

Information
The entire **update process** for this action takes **approx. 16 minutes**.
However, the download speed of the update package depends on the performance of the local network and can vary accordingly.

5 After coding is completed, perform a vehicle bus idle.

5.1 Go back to the control unit overview by pressing •F11 “ .

5.2 End the vehicle's readiness for operation (ignition off).

5.3 Wait **5 minutes** with the driver's door open.

5.4 Establish readiness for operation (ignition on).

6 Check readiness for driving the vehicle.

6.1 Operate the footbrake and keep it pressed.

6.2 Use the selector lever to engage driving gears D and R one after the other. The selected gear must be displayed in the gear indicator on the instrument cluster.

6.3 Activate the parking lock via button P.

7 End readiness for operation (ignition off) and restore it after waiting approx. 30 seconds (ignition on).

8 Read out and delete fault memories.

Information

If control units are found to have faults that are **not** caused by control unit coding, they must first be **found** and **corrected**. This work **cannot** be invoiced under the workshop campaign number.

Information

Due to the vehicle diagnosis and coding, fault memory entries that do not indicate an actual fault in the vehicle can be stored.
These fault memory entries can be deleted for the most part after repeated starting and a test drive.

The following fault memory entry is always stored as part of a vehicle diagnosis with the PIWIS Tester and does not represent an actual fault:

Control unit	Fault code	Description
"various" control units	B184C00	Protection of vehicle diagnostics, actuation active

8.1 If necessary, restore communication of the PIWIS Tester with the vehicle.

8.2 Press •F7 " to call up the additional menu on the PIWIS Tester.

8.3 Select and confirm the **"Read / delete all fault memories"** menu item.

8.4 Press •F8 " to delete the displayed fault memory entries.

9 If necessary, perform the vehicle handover according to the menu guidance using the PIWIS Tester.

Warranty processing

Information

The specified labor times were determined specifically for carrying out this campaign and include all necessary preliminary and subsequent rework. The labor times may differ from those published in the Labor Operation List in the PCSS.

Scope 1: **Re-code main control unit for body electronics (HCP4)**

Labor time:

Re-code main control unit for body electronics (HCP4) — Labor time: **74 TU**

Includes:
- Connecting and disconnecting battery charger
- Connect and disconnect PIWIS Tester
- Deactivate vehicle transport mode (if required)
- Reading out and deleting fault memories

⇒ **Damage number ARC5 099 000 1**

Scope 2: **Re-coding main control unit for body electronics (HCP4) and control units for headlights (MX1, MX2, MX14, MX15)**

Labor time:

Re-coding main control unit for body electronics (HCP4) and control units for headlights (MX1, MX2, MX14, MX15) — Labor time: **74 TU**

Includes:
- Connecting and disconnecting battery charger
- Connect and disconnect PIWIS Tester
- Deactivate vehicle transport mode (if required)
- Reading out and deleting fault memories

⇒ **Damage number ARC5 099 000 1**

FAQs on control unit programming and coding

Information

If individual programming or rework procedures could not be carried out correctly, please refer to the Workshop Manual for the basic procedure for control unit programming with the PIWIS tester. ⇒ *Technical Information '9X10IN Basic information and procedure for control unit programming with the PIWIS tester. Information'*:

In the event of a fault, **always** create a log with the PIWIS tester during programming with • P2 “ .

Work procedure:

General:

Fault indication	Cause	Source of fault	Remedial action
Control unit programming	The affected control unit did not respond or did not respond completely when the vehicle information was read out.	Vehicle	• Cancel procedure • Close diagnosis • Terminal 15 Change • Restart procedure

Before the update:

Fault indication	Cause	Source of fault	Remedial action
Diagnostic application crashes (JAVA error message)		Diagnostic application	• Restarting diagnostic application
The VCI connection has been aborted (the diagnosis has no information on battery voltage – see the battery symbol at the top right on the Tester display).		VCI has poor WiFi connection	• Restart tester, reinsert VCI and try again • Ensure that WiFi connection is stable, moving vehicle to a suitable position in workshop if necessary
USB memory stick not detected or no change on central display after plugging it in.		Infotainment main control unit (HCP3)	• Pull fuse for Infotainment main control unit (HCP3) and wait around 1 minute (30-amp fuse is located on passenger side below A-pillar) • Reinsert fuse for Infotainment main control unit (HCP3)

During the update:

Fault indication	Cause	Source of fault	Remedial action
Diagnostic application crashes (JAVA error message)		Diagnostic application	• Checking update progress in vehicle is mandatory • **No ignition change during the update** • Do not restart the tester until **the update** has been completed in the vehicle (“Messages” tile --> installation “successful”) • When the update has finished in the vehicle, verify that the update is complete. To do this, restart the **integration test** using the PIWIS Tester.
The following fault occurs at the step **“Attempting to connect to SOD”**: **“The release versions of Tester and PIUS do not match.”**	PIWIS Tester 4 did not receive the required release update. Since the PIUS installs the updates automatically, the release versions no longer match.	PIWIS Tester and PiUS	• Install current release on PIWIS Tester 4 • Check availability of current release on PiUS workshop server
PIWIS Tester 4 cannot establish communication with diagnostic tester; error message on first attempt to establish communication	Date/time in the vehicle is incorrect after disconnecting/re-connecting the 12-V battery (terminal 30)	Vehicle	Correct date/time in the vehicle: • Open **“Control unit overview”** • Access **“Gateway HCP5”** main control unit • Open **“Service / Maintenance”** menu • Select and execute **“Set time”** menu item

When the update calculation result is displayed, the following fault occurs in all control units to be programmed/coded: **"Fault in determining the target state for coding/programming"**	Fault while calculating in backend system	Backend system	• Lock vehicle and wait for bus rest • Repeat update
On PIWIS Tester 4, the progress of the vehicle update is **not shown until approx. 27%** has been completed.	Diagnostic service (RPC+) will not forward the progress of the update to the Tester until it is approx. 27% complete.	Vehicle	• Wait until progress is displayed
Charging communication 1 (J1245) **or** charging communication 2 (J1246) in **update attempt not OK --> communication error**.		Vehicle, GOBW	• Final integration test reports a communication error • Pull fuse from affected control unit • Remove fuse • Wait 30 seconds • Re-insert fuse • Re-attempted update
Programming or coding aborts at approx. 30%.	Cleaning of the systems in the background prevents the programming or coding from being completed.	Backend system	• Repeat routine

After the update:

Fault indication	Cause	Source of fault	Remedial action
Delete the fault from the fault memory.		Vehicle	• Fault can be ignored

The VCI connection has been aborted (the diagnosis has no information on battery voltage – see the battery symbol at the top right on the Tester display).		VCI has poor WiFi connection	• Restart tester, reinsert VCI and try again • Ensure that WiFi connection is stable, moving vehicle to a suitable position in workshop if necessary
Diagnostic application crashes (JAVA error message)		Diagnostic application	• Restarting diagnostic application
Passive fault memories from high-voltage control units cannot be erased.			• Switch ignition off and on • Re-reading and deleting fault memory