A·B·R·I·T·E·S
automotive solutions

ABRITES DIAGNOSTICS FOR VAG ONLINE

User manual
version 1.4

Important notes

The Abrites software and hardware products are developed, designed and manufactured by Abrites Ltd. During the production process we comply to all safety and quality regulations and standards, aiming at highest production quality. The Abrites hardware and software products are designed to build a coherent ecosystem, which effectively solves a wide range of vehicle-related tasks, such as:

- Diagnostic scanning
- Key programming
- Service Intervals
- Configuration and coding
- DSG Mileage Calibration
- MMI Functions

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Each warranty claim is inspected individually by our team and the decision is based upon thorough case consideration.

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Abrites assumes no responsibility for any damage resulting from the use, misuse, or negligent use of the hardware or any software application.

Safety information

The Abrites products are to be used by trained and experienced users in diagnostics and reprogramming of vehicles and equipment. The user is assumed to have a good understanding of vehicle electronic systems, as well as potential hazards while working around vehicles. There are numerous safety situations that cannot be foreseen, thus we recommend that the user read and follow all safety messages in the available manual, on all equipment they use, including vehicle manuals, as well as internal shop documents and operating procedures.

Some important points:
Block all wheels of the vehicle when testing. Be cautious when working around electricity.
Do not ignore the risk of shock from vehicle and building-level voltages.
Do not smoke, or allow sparks/flame near any part of the vehicle fuel system or batteries.
Always work in an adequately ventilated area, vehicle exhaust fumes should be directed towards the exit of the shop.
Do not use this product where fuel, fuel vapours, or other combustibles could ignite.

In case any technical difficulties occur, please contact the
Abrites Support Team by email at support@abrites.com.

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List of revisions

Date	Chapter	Description	Revision
29.04.2022	ALL	Document created.	1.0
12.08.2022	3	Basic settings, Adaptations	1.1
12.08.2022	3	Long coding	1.1
12.08.2022	4	MMI functions	1.1
12.08.2022	4	Wireless Carplay/Andr. auto	1.1
12.08.2022	4	Video in motion	1.1
12.08.2022	5	Key learing	1.1
27.01.2023	4.4	Unlock BCM2	1.1
16.06.2023	4.4	VAG Immo V adaptation	1.1
12.07.2023	ALL	PCR2.1, Simos8.x, General revision	1.2
29.11.2023	4	Special Functions Update	1.3
23.05.2025	5	MQB 5C Key learning	1.4

1. Introduction

“ABRITES Diagnostics for VAG ONLINE” is one of the latest Abrites developments in terms of VAG diagnostics. With the help of this tool you can perform reading and clearing of diagnostic trouble codes as well as operations unsupported by other diagnostic tools with the electronic modules inside the vehicle such as replacement and coding of control units, programming keys, as well as mileage calibration.

The functionality of your software depends on the purchased licenses for your interface. Please check the “License Viewer” installed on your computer for your unique interface ID number.

2. Installation

The “ABRITES Diagnostics for VAG ONLINE” is installed together with the rest of the Abrites diagnostic software applications when the installation files are received.

You could easily identify and access it by entering the Audi, Volkswagen or Skoda buttons with the Internet connectivity symbol as shown below:

3. Using the Abrites diagnostics for VAG Online

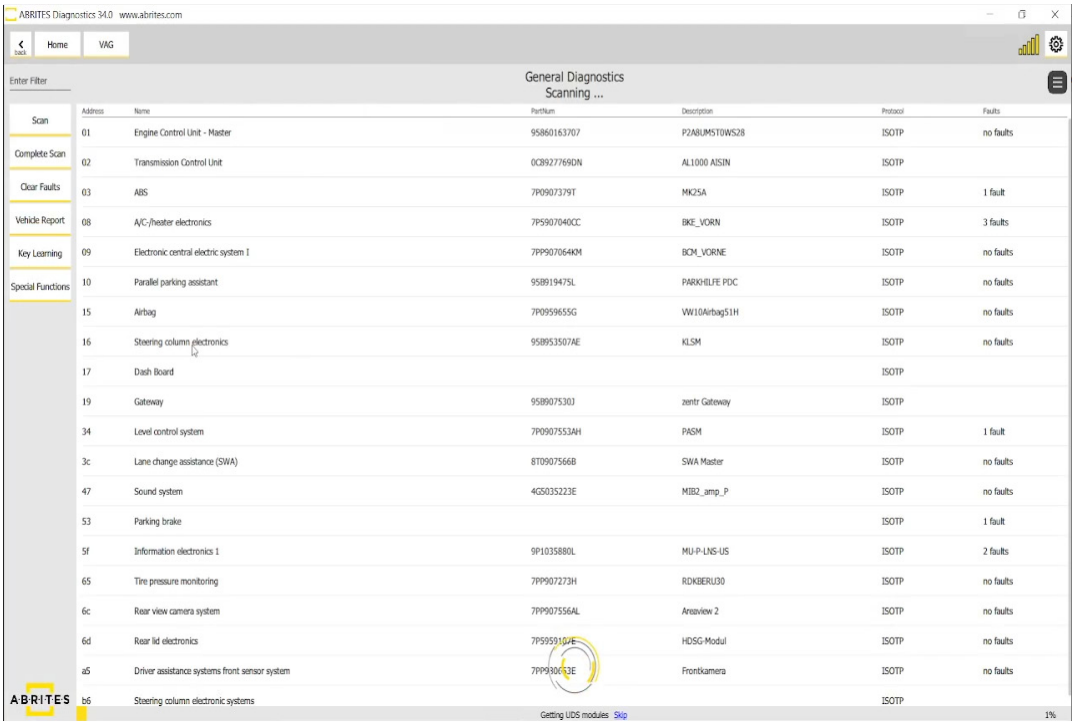
When starting the software it is recommended to have the vehicle connected to an external power source in order to be sure that the vehicle does not lose power during the time spent working on it. When the software is started the vehicle will be automatically detected and General Diagnostics screen will be displayed and the scanning of the modules will automatically start.

Using the Abrites Diagnostics for VAG Online we have access to a multitude of functionality related to the MMI (Multi Media System), Basic settings, adaptations, and long coding. It is very important to know that Abrites Diagnostics for VAG is able to save a backup of everything you can change to a file on your computer which you can later use to restore the module or whole vehicle to the state in which you started. It is very important to save backups using the “save to file” option in order to be safe.

Please keep in mind that all of the functionality described below may require hardware changes or coding of multiple modules within the VAG vehicles in order to ensure full functionality. Research about each particular case must be conducted before performing any of the procedures.

3.1 General Diagnostics

The screenshot below shows the main diagnostics screen. The software will go through all available protocols and will identify all available modules in the vehicle you are working on. You could then enter each module and you will see all available options for it - identification, live/measured values, long coding, adaptations, basic settings and others.



3.2 Basic settings

In order to enter the basic settings features you need to enter the module of interest from the main diagnostic menu, from there you will be able to see the basic settings button. Once you press it you will see all the basic settings available for the module in question.

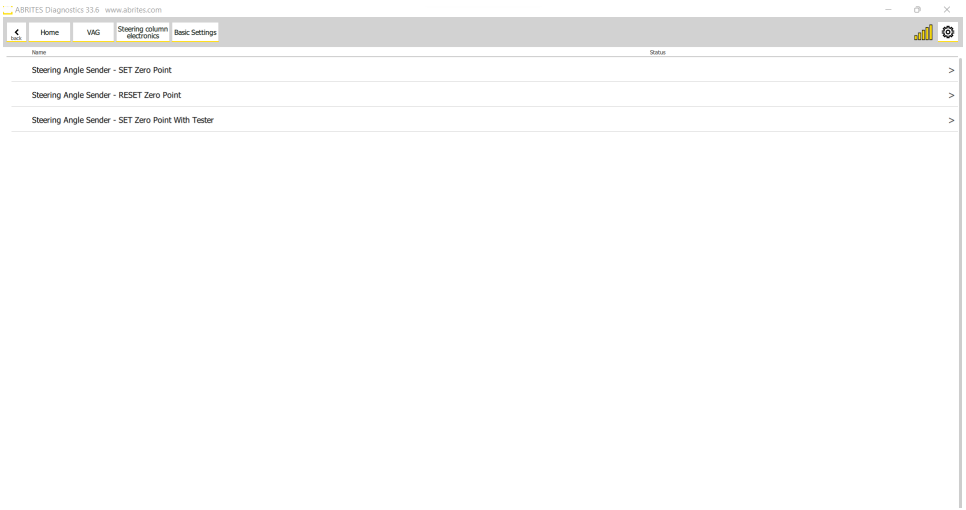
This option is designed to return the settings to the factory preset settings for the specific vehicle.

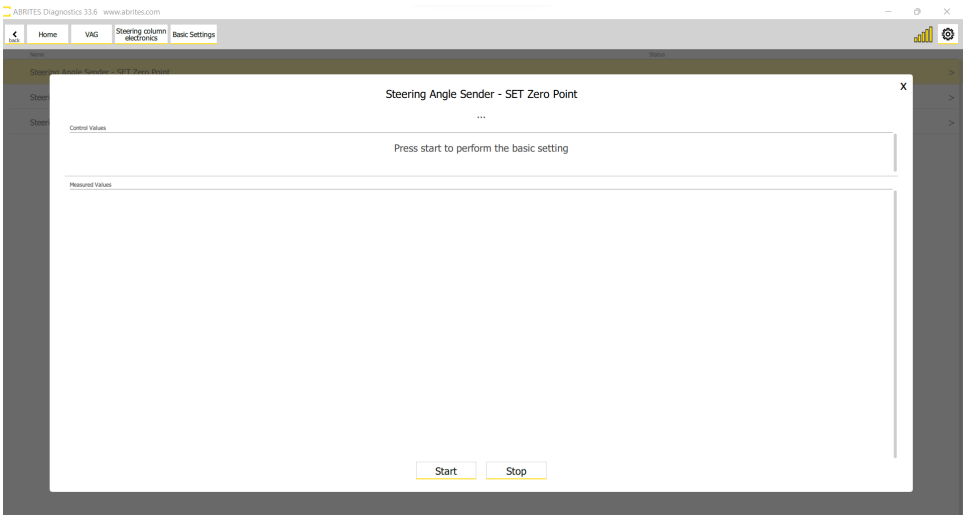
The basic setting include features which are mostly used by service repair shops to setup a new module or re-calibrate an existing module, these functions are used for calibration of electronic components and setting them in such way to operate in the vehicle.

Example: Dirty throttle body has been cleaned and needs to be returned to its factory settings because it is no longer full of dirt.

For example basic settings are used for throttle body setup after cleaning, clutch calibration in DSG vehicles, even infotainment systems where you can renew the HDD and setup a multitude of other features and functionality within the car or steering angle position sensor calibration.

Here is an example where we are setting the values of the steering angle position sensor to zero:





3.3 Adaptations

The adaptations menu is designed to allow you to make changes which are related to the specific needs of the customer.

The example with the rear (boot or trunk) door is very clear because you can have a customer with a lower garage ceiling who needs to have their door open lower because it will hit the ceiling.

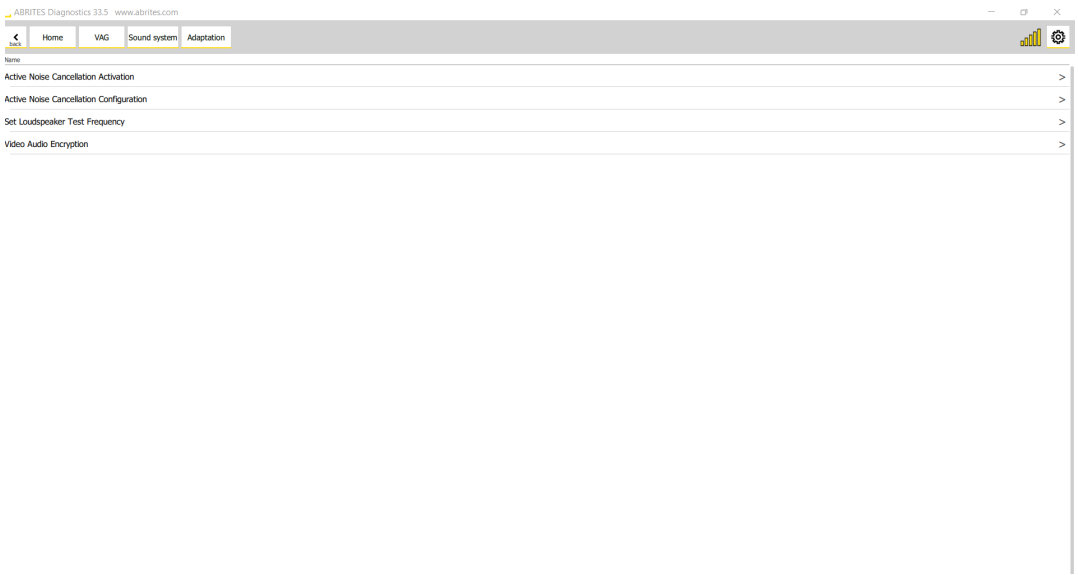
There are many examples of what can be done, including service intervals.

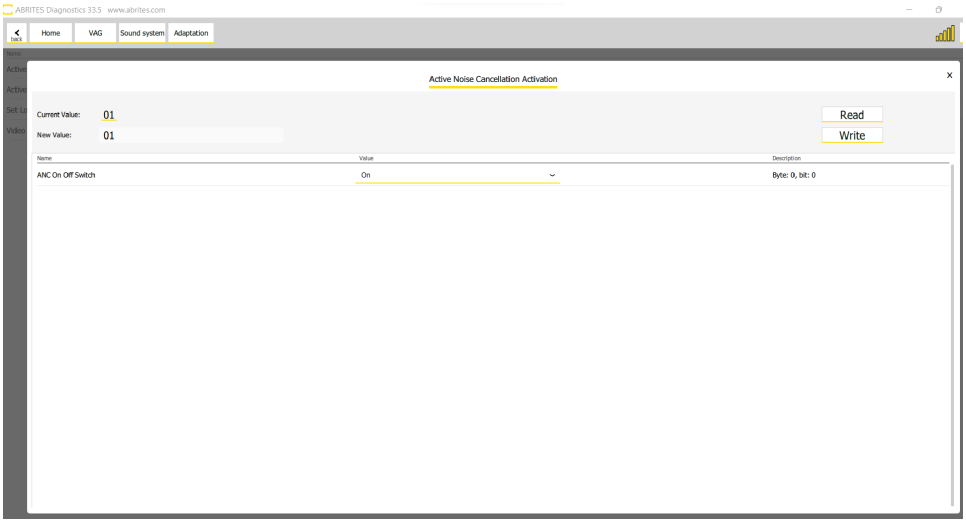
In the example below you can see a few adaptations, one of them relates to the enabling or disabling of active noise cancellation, setting desired values for the audio output of the sound system, etc.

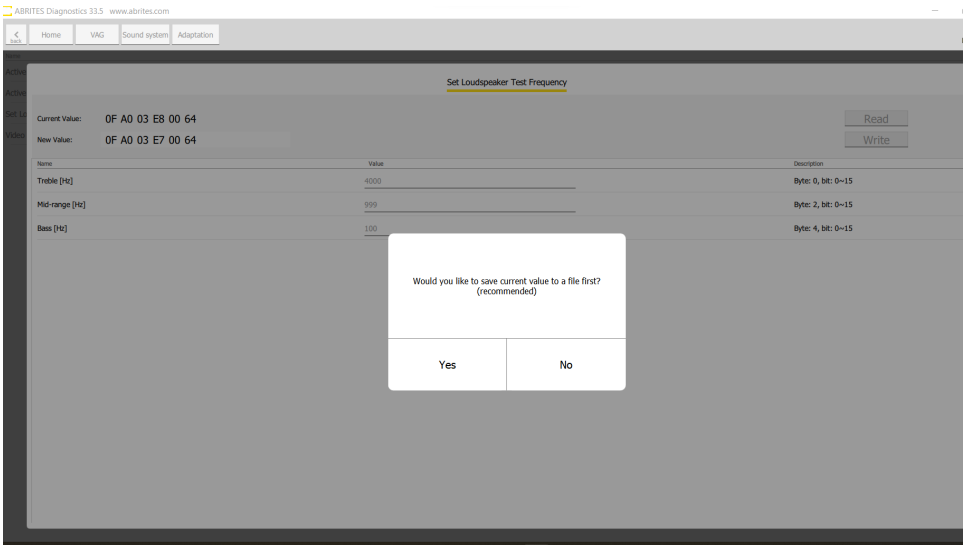
You can also see that Abrites Diagnostics for VAG Online provides you with notifications in order to advise you to save the values before modifying them in order to have the option to return the module to the previous state.

Once the values have been changed you can simply press the “Write” button which will allow the software to make the changes you have set.

In order to enter the adaptations you have to enter the desired module from the diagnostic menu and press the “Adaptations” button.

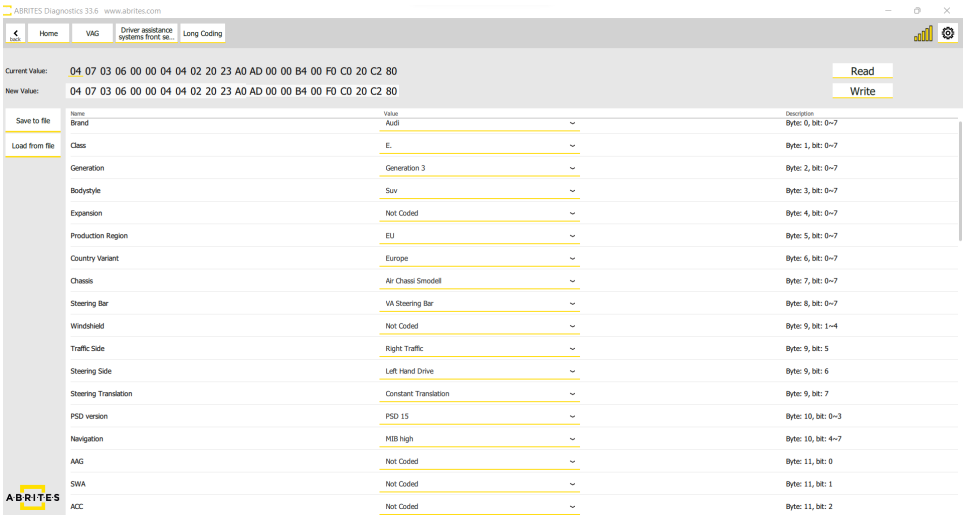


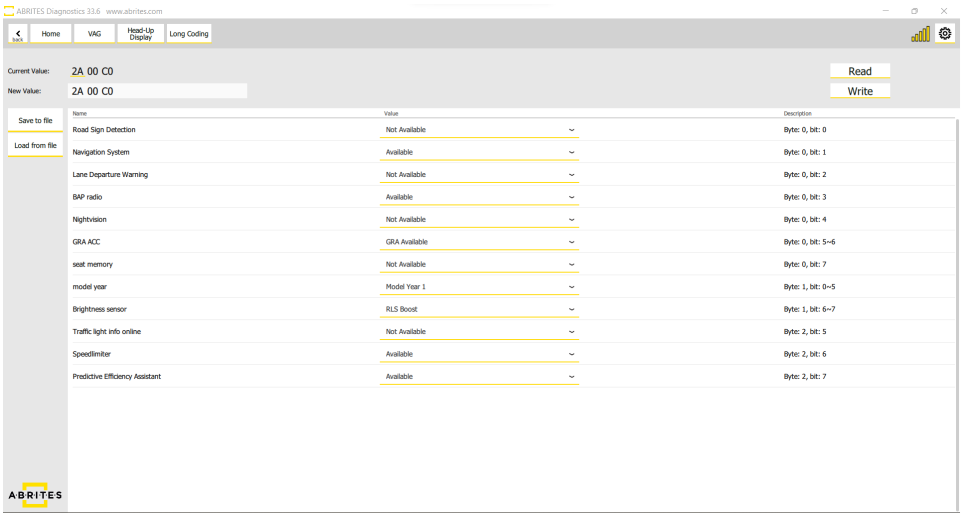

ABRITES Diagnostics 33.5 www.abrites.com
Home
VAG
Sound system
Adaptation
Active Noise Cancellation Activation
Current Value:
01
New Value:
01
Read
Write
Name
Value
Description
ANC On Off Switch
On
Byte: 0, bit: 0


ABRITES Diagnostics 33.5 www.abrites.com
Home
VAG
Sound system
Adaptation
Set Loudspeaker Test Frequency
Current Value:
0F A0 03 E8 00 64
New Value:
0F A0 03 E7 00 64
Read
Write
Name
Value
Description
Treble [Hz]
4000
Byte: 0, bit: 0~15
Mid-range [Hz]
999
Byte: 2, bit: 0~15
Bass [Hz]
100
Byte: 4, bit: 0~15
Would you like to save current value to a file first? (recommended)
Yes
No

3.4 Long coding

Long coding allows you to change parameters pre-set within the modules, but not enabled.
For example you can change the configuration of modules from US specification to EU and vice versa, you can enable lap timer on the instrument cluster, change the start-up animation in the dashboard and many other configurations which your customers may require.
Long coding essentially changes the byte string but it also allows you to see the values in plain text and select the needed changes via a drop down menu. Once you are satisfied with the desired configuration you can press the “Write” button and the Abrites diagnostics for VAG will apply the changes you want to the module.

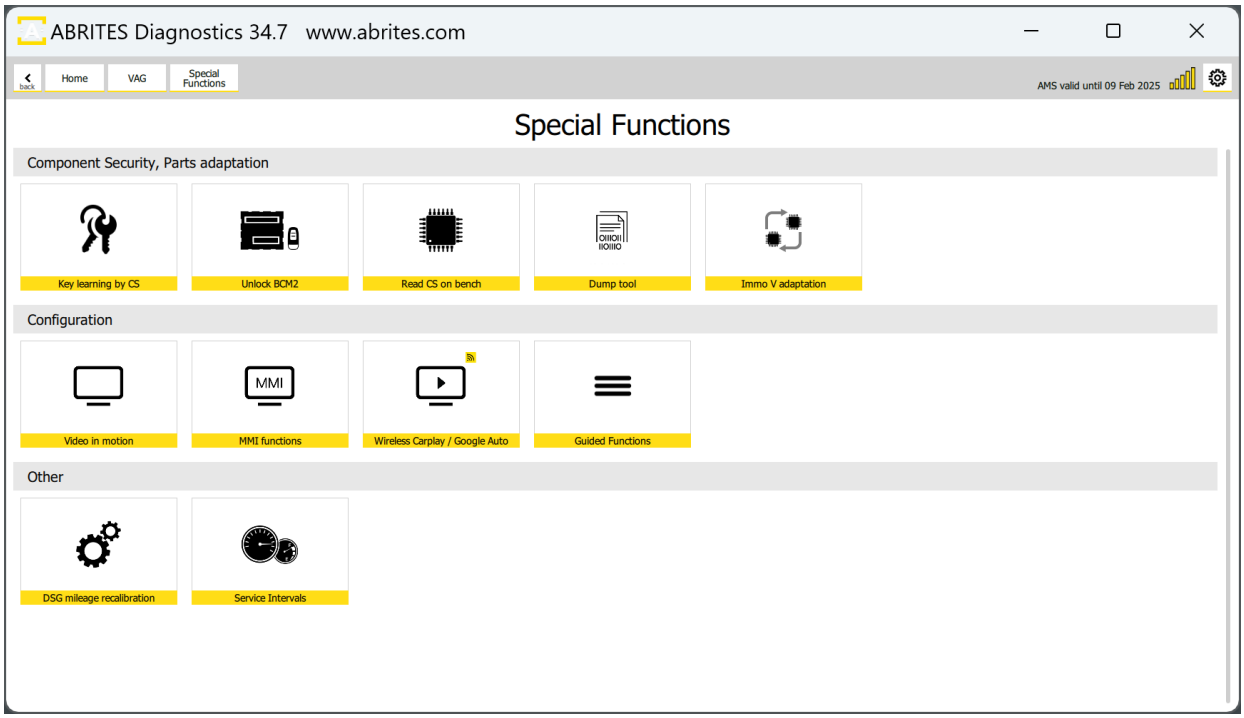




4. Special Functions

The Special Functions section in the Abrites Diagnostics for VAG ONLINE offers 3 main categories with the corresponding functionalities:

1. Component Security, Parts Adaptation (Key Learning by CS, Unlock BCM2, Read CS on Bench, Dump Tool, Immo V adaptation.)
2. Configuration (Video in motion, MMI Functions, Wireless Carplay/Google Auto, Guided Functions)
3. Other (DSG Mileage recalibration, Service Intervals)

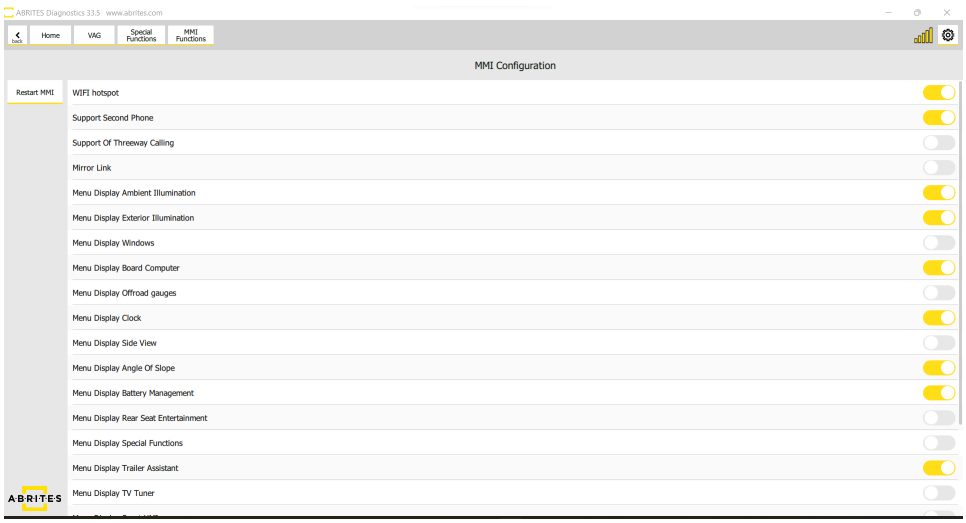


4.1 Special function “MMI functions”

In the MMI functions menu we have the ability to enable and disable features in the MMI system. This is done using toggle switches on the right hand side of the screen. On the left side is the feature itself and on the right side you can enable and disable a chosen feature. Examples of what can be enabled and disabled can be:

Wi- Fi Hotspot;
Offroad Menu;
Displaying of various modes (clock, etc.)
Trailer camera features;
Mirror Linking;
Three way calling;
Various other options

The button “Restart MMI” provides you with the option to test all the features you have modified almost immediately. It resets the MMI and you can check the modified features.

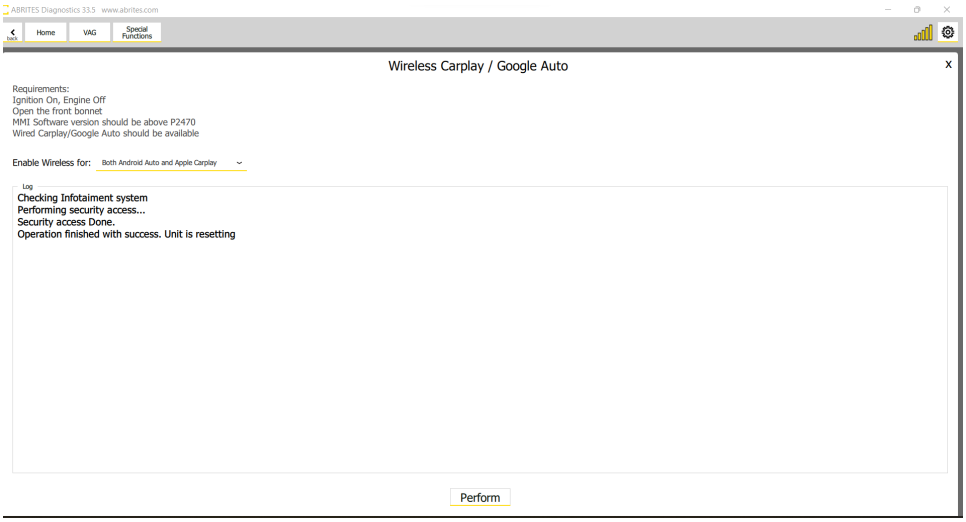


4.2 Special function “Wireless Carplay / Google Auto”

Wireless Carplay and Android Auto can only be activated if the car already has Carplay or Android Auto enabled via cable.

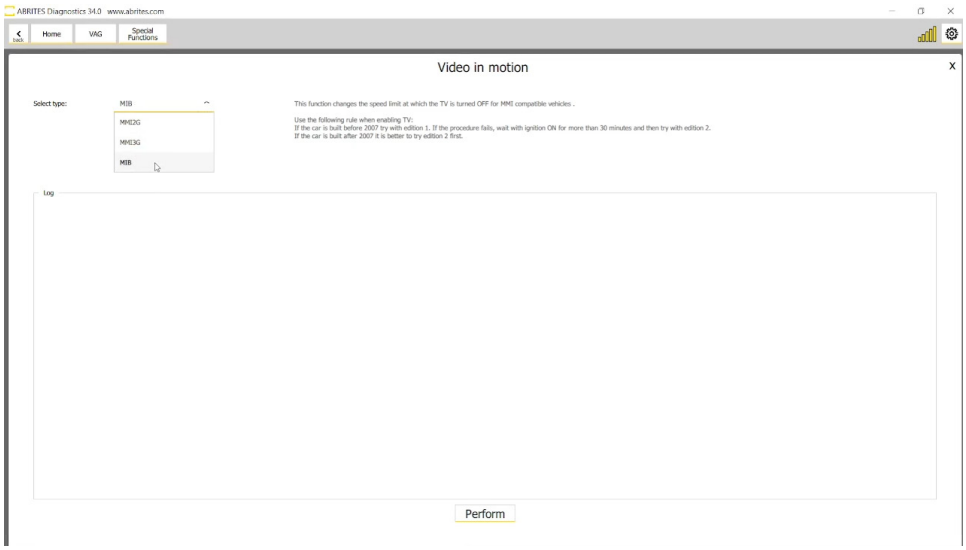
Once you enter the “Special functions” section of the Abrites Diagnostics for VAG Online you can see that the Wireless Carplay and Android Auto is available as a separate special function.

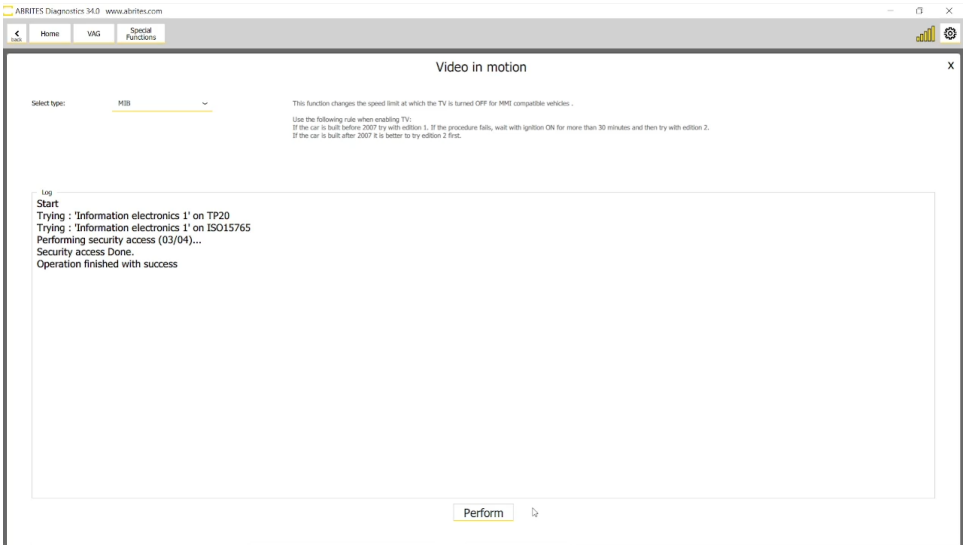
The requirements for activation are displayed and you have a choice for the type of MMI and also the ability to choose if you want to have Apple Carplay, Android Auto or both activated for both.



4.3 Video in motion

Video in motion allows you to activate the ability to use the video features of your MMI/MIB system while the vehicle is in motion. This means that you are able to view videos, TV, etc. while the car is moving. This is a very sought after function by the end customers and is available for MMI 2G/3G with both edition 1 and 2, as well as MIB. In order to enter the function you need to select “Special functions” from the diagnostics menu, followed by “Video in motion”



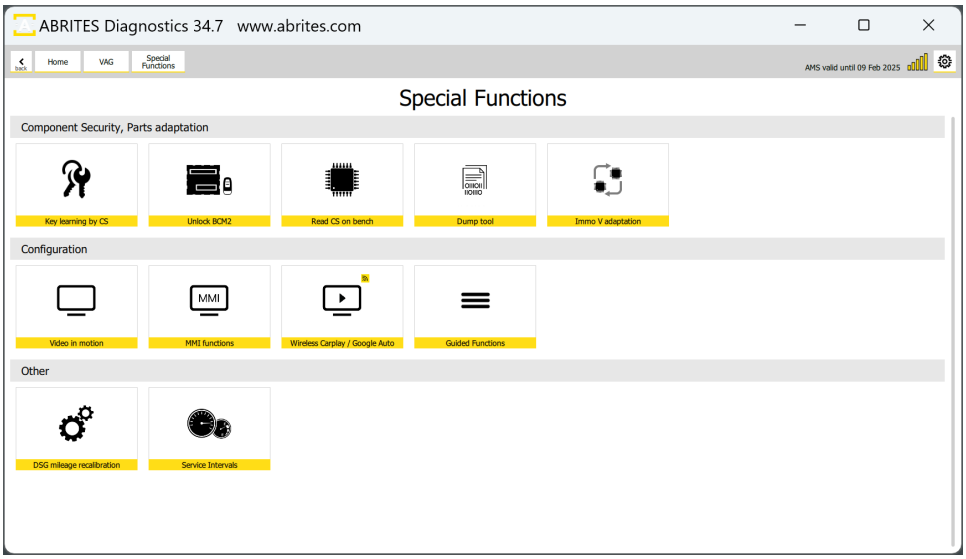


4.4 Special function “Unlock BCM2”

The “Unlock BCM2” functionality is found in the “Special Functions” menu and by selecting “Unlock BCM2“. It is available with VN020 license and included in VN003 license.
This special function has the following capabilities:

Read the component security (CS) bytes from **locked BCM2** modules 2013-2018
For both A4/A5/Q5 and A6/A7/A8/Touareg platforms
Use the CS bytes for key programming
A4/A5/Q5 vehicles 2008-2016 - all keys lost
A6/A7/A8/Touareg vehicles 2010-2018 - adding spare key (and all key lost programming, if CS of ECU/TCU can be read)

There are two methods that you can use, in order to complete this task:
1. Using the new ZN080 set - a very convenient and fast method
2. Using the CB016 set - requires soldering (outdated)

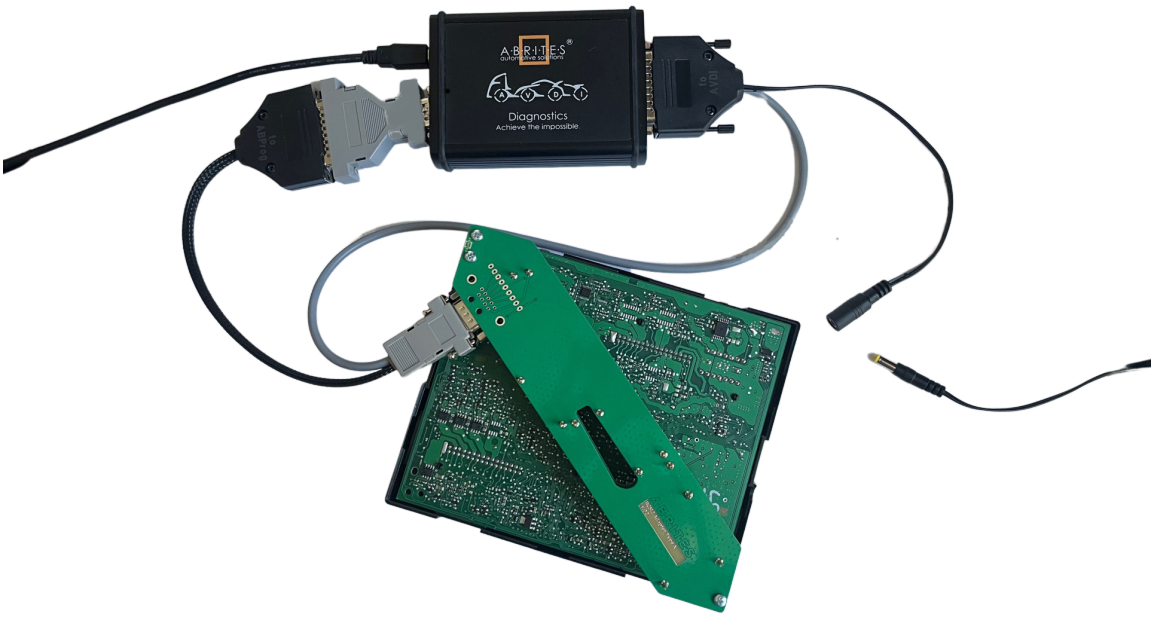


4.4.1 Using the ZN080 set

The new development of our company ZN080 set, lets you work with locked BCM2, without the need of soldering, thus, making the proces much faster and with no mistakes on the points of connection. So far our team has identified 3 types of units (so 3 different connection types) and the ZN080 set contains of 3 different tools to connect to each type of unit:

- Adapter **Type A** is used to connect to BCM2 units for **8K models** - A4/A5/Q5
- Adapter **Type B** is used to connect to BCM2 units for **4H models** - A6/A7/A8/Touareg with **software version above 800** (can be found on the label)
- Adapter **Type C** is used to connect to BCM2 units for **4H models** - A6/A7/A8/Touareg with **software version below 800** (can be found on the label)

Connection:
The ZN080 set consists of a few adapters with instructions. A DB25 with an Abprog programmer connects to the AVDI DB15 slot. The DB09 connects to the desired adapter type (A, B, or C). The other DB025 is connected to the DB25 connector of the AVDI. Power supply needs to be provided to the dedicated connector of the set as well. (The ZN063 12V/1A DC Power adapter can also be used as power supply; any other power adapter with the proper connector is also applicable) The way the adapter is fitted to the BCM2 unit is very simple, you just need to screw it to the diagonal sides of the PCB of the BCM. Once this is ready, you can continue with the procedure, without the need of soldering, as the needles are designed to connect to the correct spots. After job is done, you just unscrew the adapter and the BCM2 units is ready to be put together and fitted into the vehicle. This is how the set-up looks like:



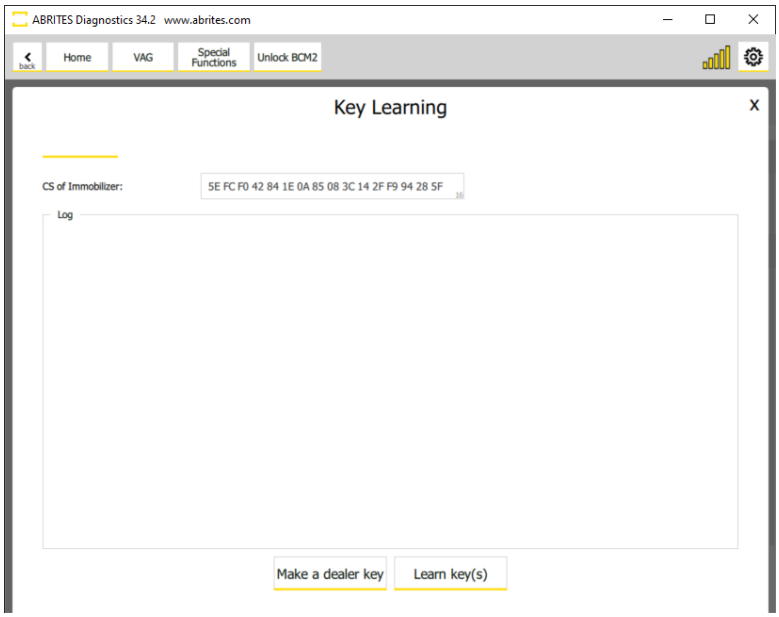
Procedure:

The procedure for unlocking the BCM2 unit and programming keys consists of the following steps:

1. Once you have connected the cables to your AVDI and the BCM2 unit and have supplied power, open the software, open the “Special Functions” menu and select the “Unlock BCM2” button
2. Click “Read Data”
3. You will be prompted to make sure you have connected the ABPROG (provided in the ZN080 set) where you will have to confirm with “OK”
4. The software will unlock the BCM2 unit, the process takes about 5 minutes.
5. You will see a message that the BCM2 unit has been successfully read and the BCM2 **installed in the car.**
6. If you wish to program a key, you need to connect a PROTAG programmer and click the “OK” button to proceed.

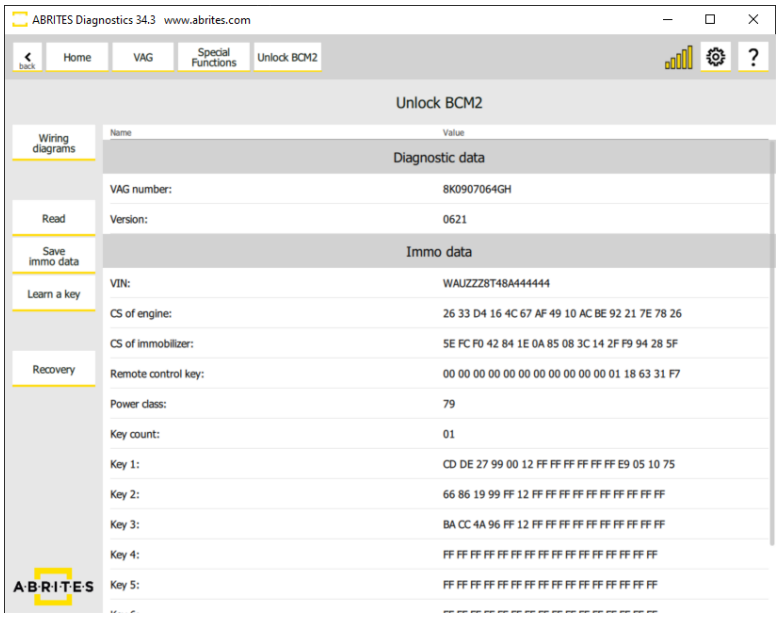
Note:
All keys lost on Audi A4/A5/Q5 can be done by making a dealer key by pressing the “Make a dealer key” button, followed by “Learn key(s).

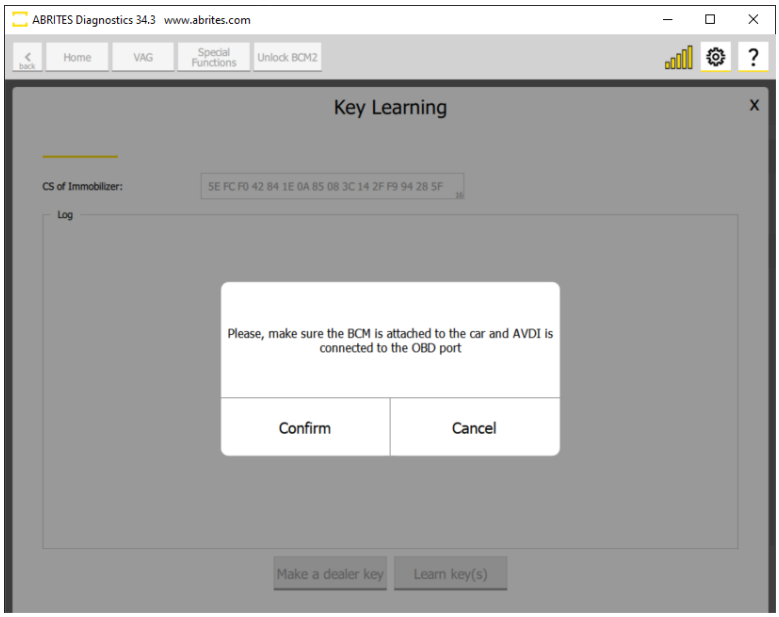
All keys lost on Audi A6/A7/A8/Touareg is possible if the CS of the ECU/TCU could be read.



Once the BCM2 unit is unlocked, you will be able to save the data to a file, and proceed to key learning from this screen. The procedure is guided, so you just need to follow the instructions.

N.B. BCM2 units should be installed in the vehicle for key learning procedure





4.4.2 Using the CB016 - outdated and replaced by ZN080

CB016 cable set is an outdated product.

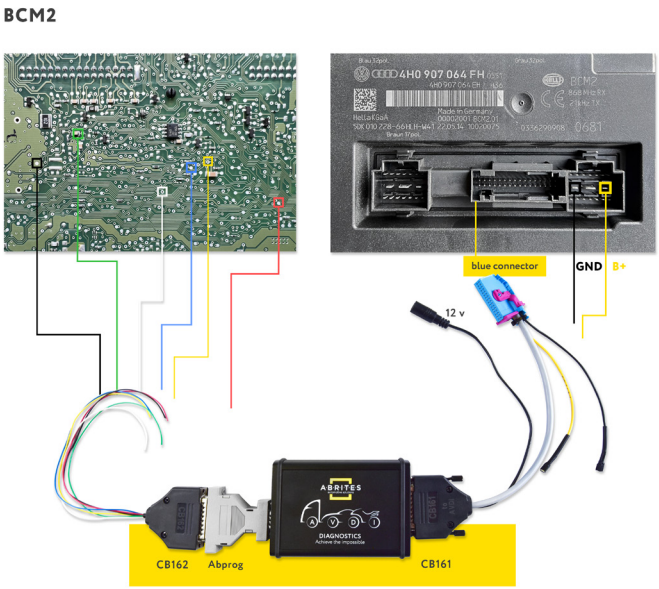
For optimal performance, please use the ZN080 - BCM2 Solder-Free Connection Set

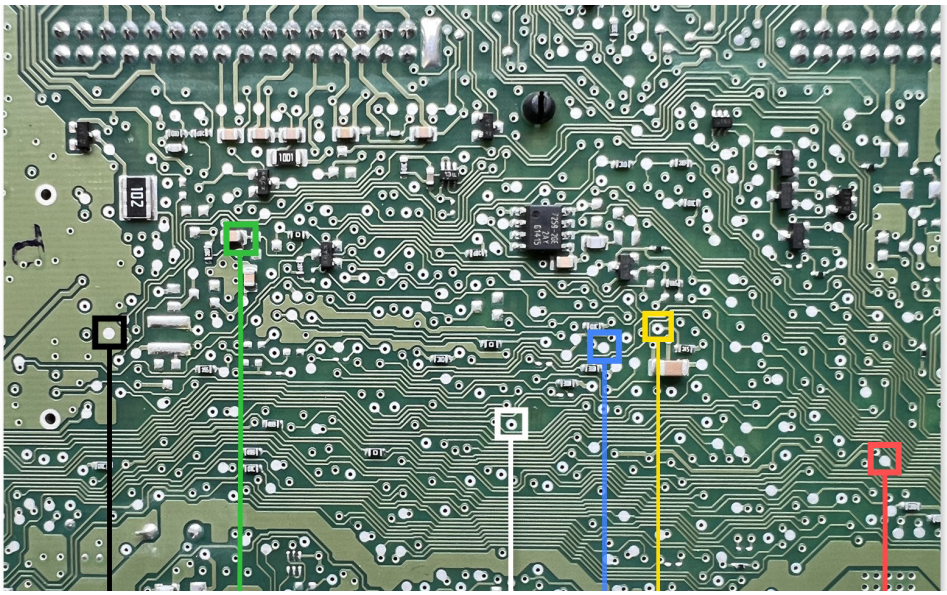
The functionality requires the user to use the ABPROG, CB162 together with the CB161 cables. CB161 requires a power adapter to be used in order to supply the BCM2 unit with +12V. The ZN063 12V/1A DC Power adapter can also be used as power supply (any other power adapter with the proper connector is also applicable).

The procedure requires the BCM2 unit to be disconnected from the car.

On the next pages you may find the connection diagrams for the different types of BCM2 units.

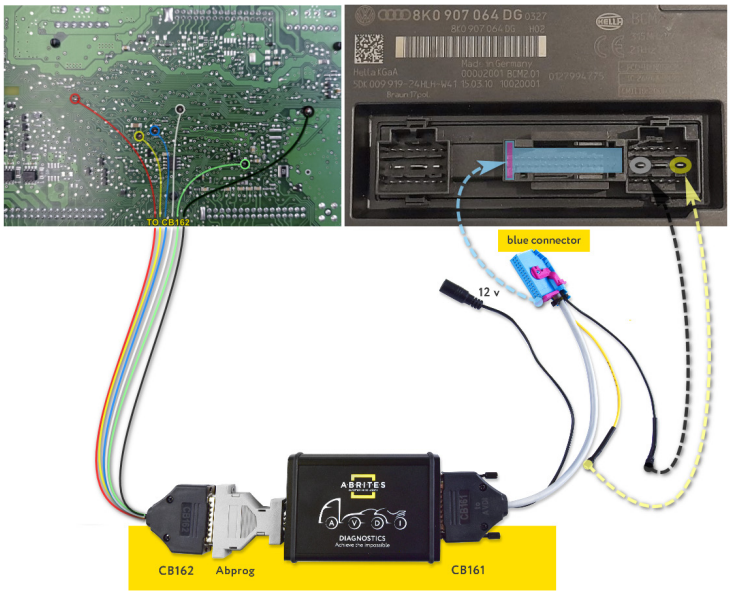
Below is an example of 4H BCM2 unit connected with the outdated CB016

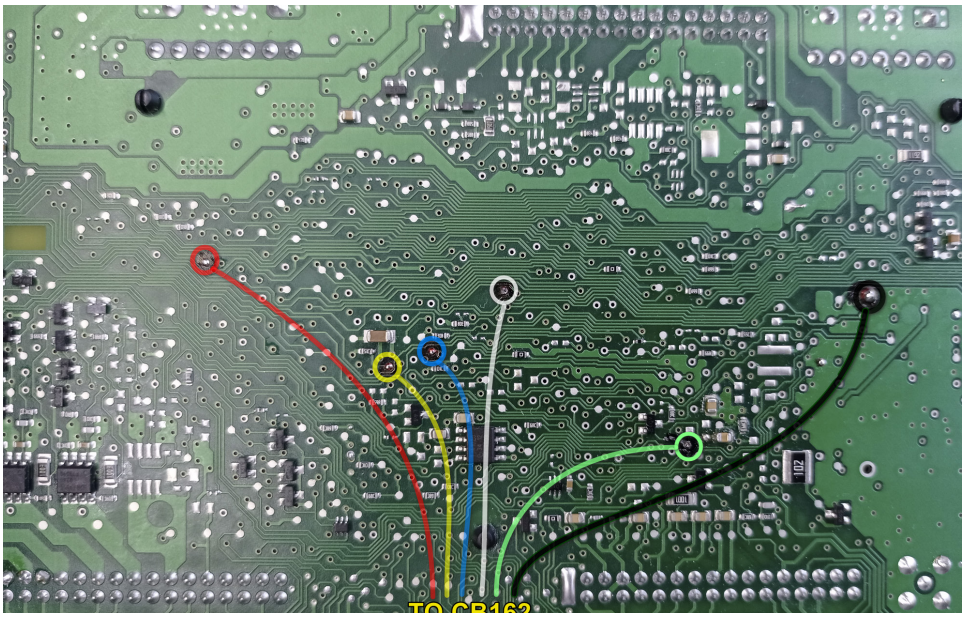




*Depending on the software version of the unit, there might be very little differeces in the connection points' positions. For this reason we encourage you to use the ZN080 set.

Below you may find an example of connection to a 8K BCM2 unit





The procedure for unlocking the BCM2 unit and programming keys consists of the following steps:

1. Once you have connected the cables required to your AVDI and the BCM2 unit and have supplied power, click the “Unlock BCM2” button from the Special Functions menu
2. Click “Read Data”
3. You will be prompted to make sure you have connected the ABPROG where you will have to confirm with “OK”
4. The software will unlock the BCM2 unit, the process takes about 5 minutes.
5. You will see a message that the BCM2 unit has been successfully read and that the ABPROG wiring can be removed and the BCM2 installed in the car.
6. If you wish to program a key, you need to connect a PROTAG programmer and click the “OK” button to proceed.

Note:
All keys lost on Audi A4/A5/Q5 can be done by making a dealer key by pressing the “Make a dealer key” button, followed by “Learn key(s).

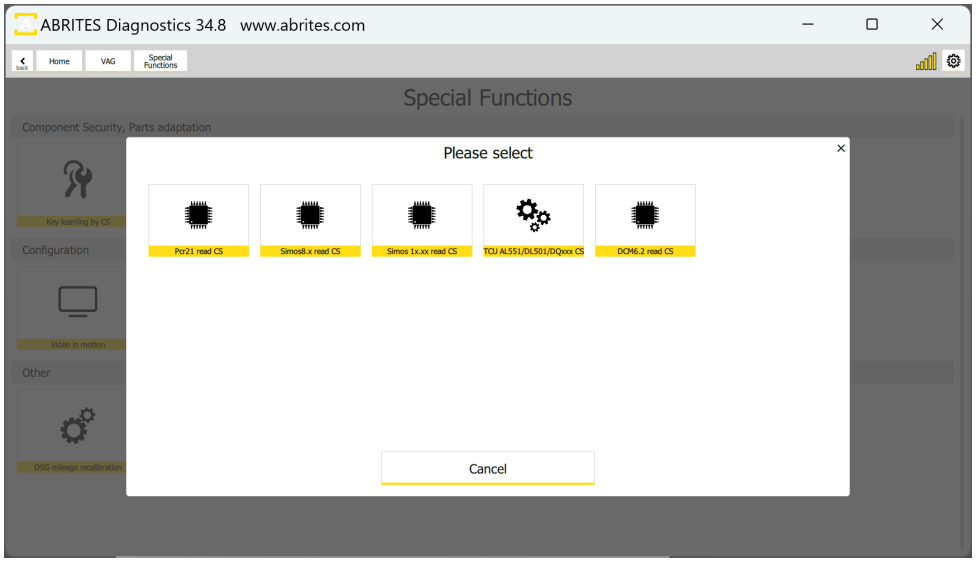
All keys lost on Audi A6/A7/A8/Touareg is possible if the CS of the ECU/TCU could be read.

4.5 Special Function “Read CS on bench”

This special function lets you read Component Security CS Bytes on bench for ECUs and TCU, more precisely, the following types of units:

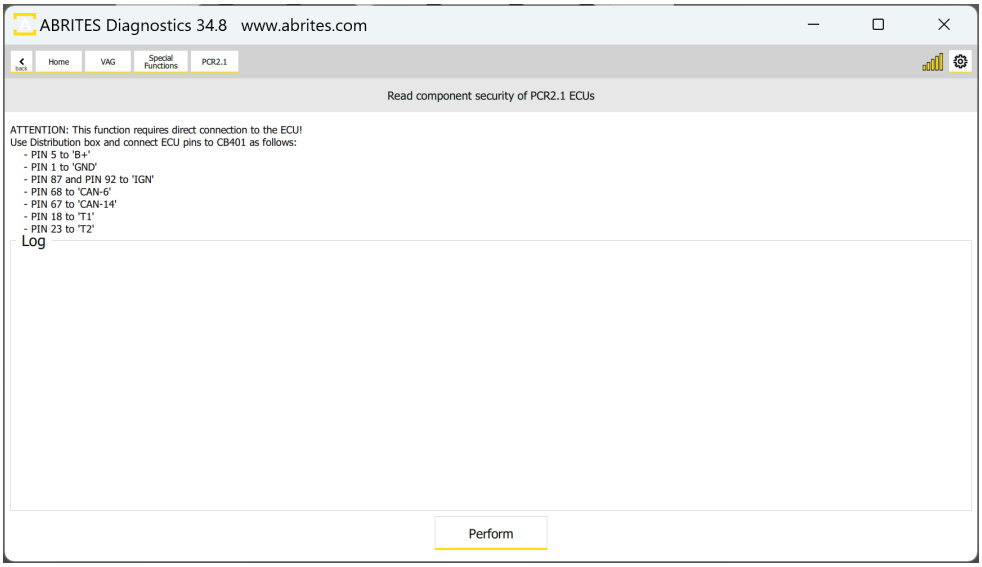
- PCR 2.1 ECUs,
- Simos 8.x ECUs,
- Simos 1x.xx ECUs,
- DCM 6.2 ECUs,
- AL551 TCUs,
- DL501 TCUs,
- DQxxx TCUs (Immo V Generation)

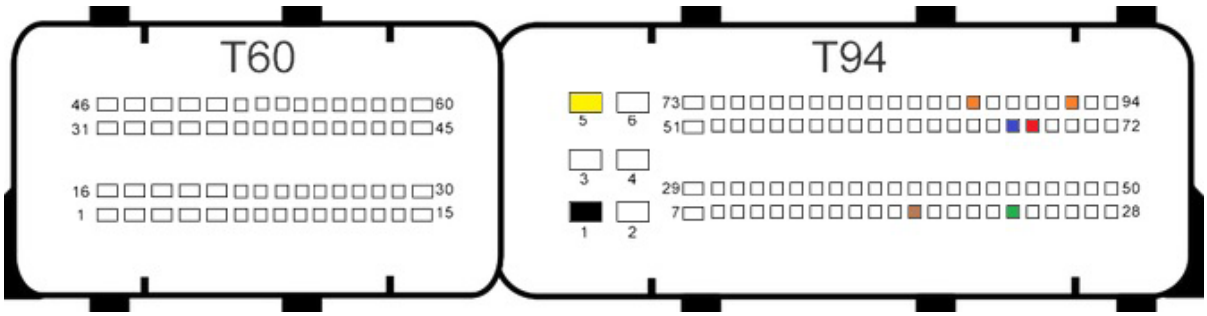
Each section of this special function is guided, having all required details, connection methods, anything you may need in order to execute the required procedure.



4.5.1 PCR 2.1 read CS

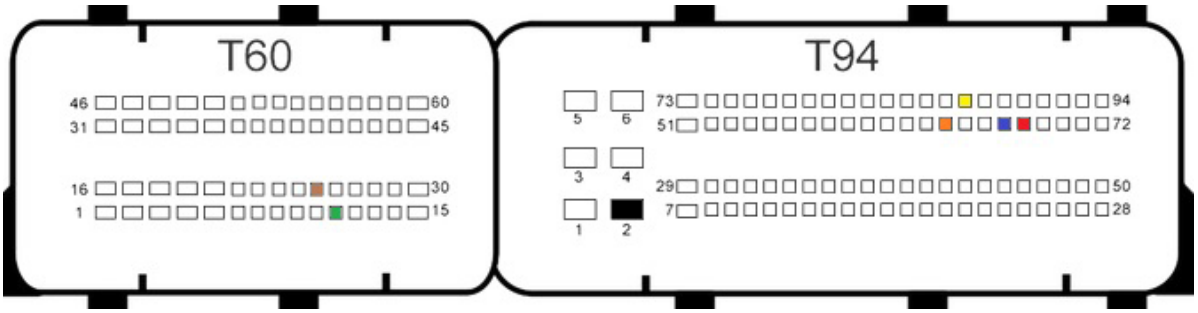
Below you may find the screen you see in the PCR 2.1 read CS special function. It fives you all connection details (PIN OUT), and you cal also see the connection diagram as well.

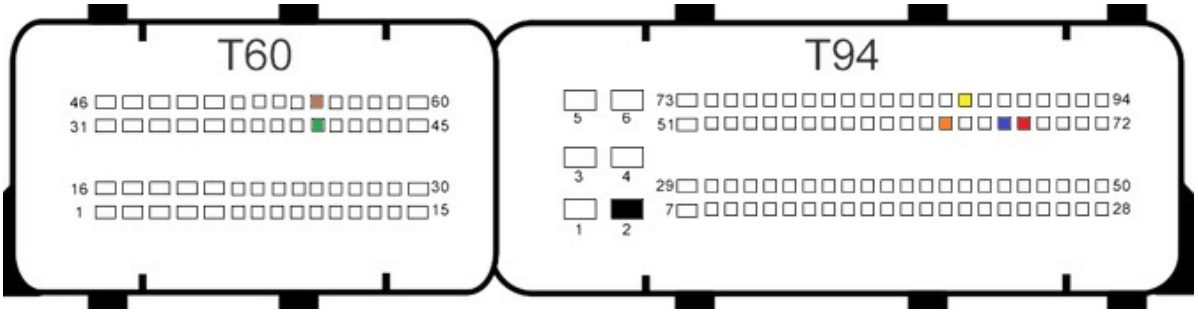




4.5.2 Simos 8.x read CS

Below you may find 2 versions of PIN outs (connections) for the Simos 8.x ECU for bench connection. You need to make this connection in order to be able to read the unit's Component Security.



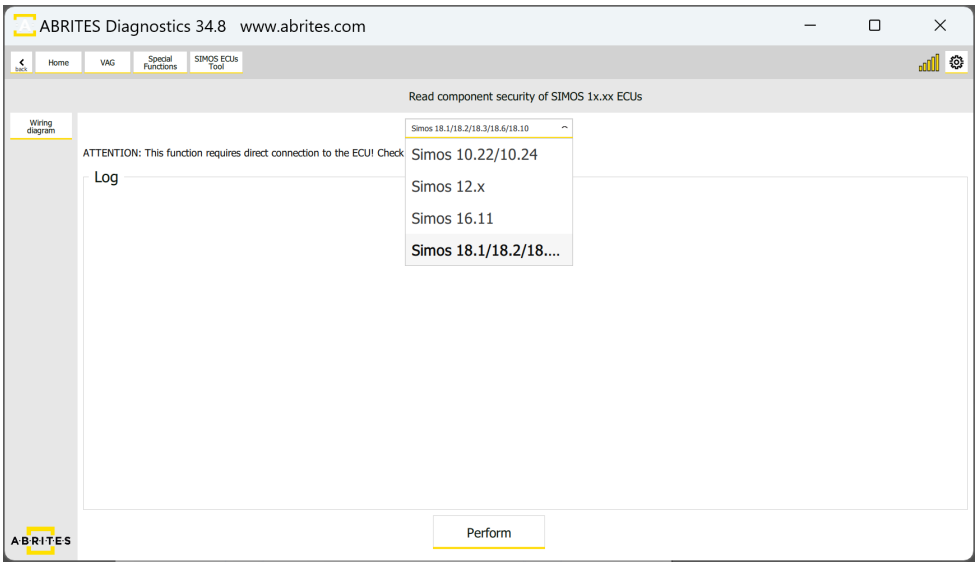


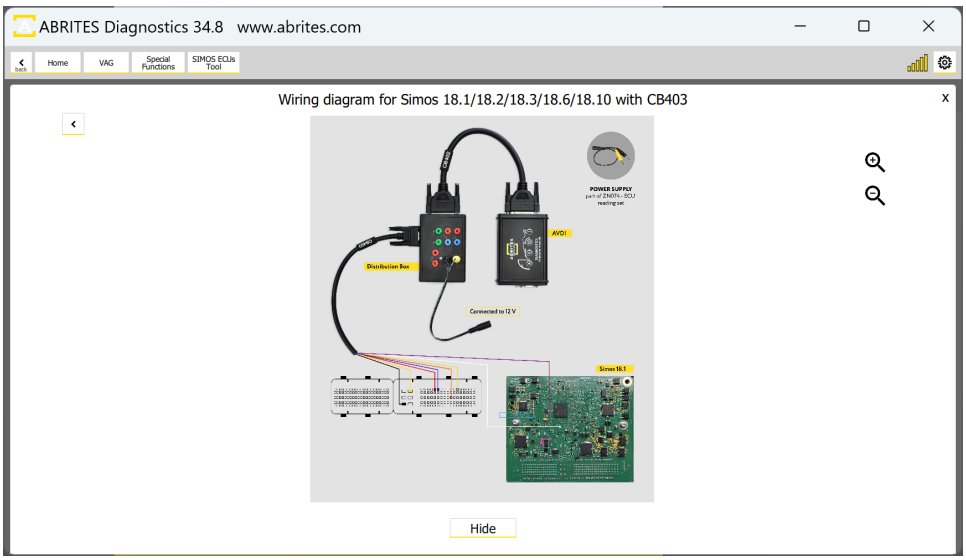
4.5.3 Simos 1x.xx read CS

This special function lets you read the CS bytes of Simos ECUs of the following types:

- Simos 10.22,
- Simos 10.24,
- Simos 12.x,
- Simos 16.11,
- Simos 18.1/18.2/18.3/18.6/18.10

You will see a drop down menu, where you have to select the type of unit you are working with. On the left hand side you will see a "Wiring diagram" button, which will open the connection methods and diagrams for the selected unit, in the example we are using the Simos 18.1 with the use of CB403





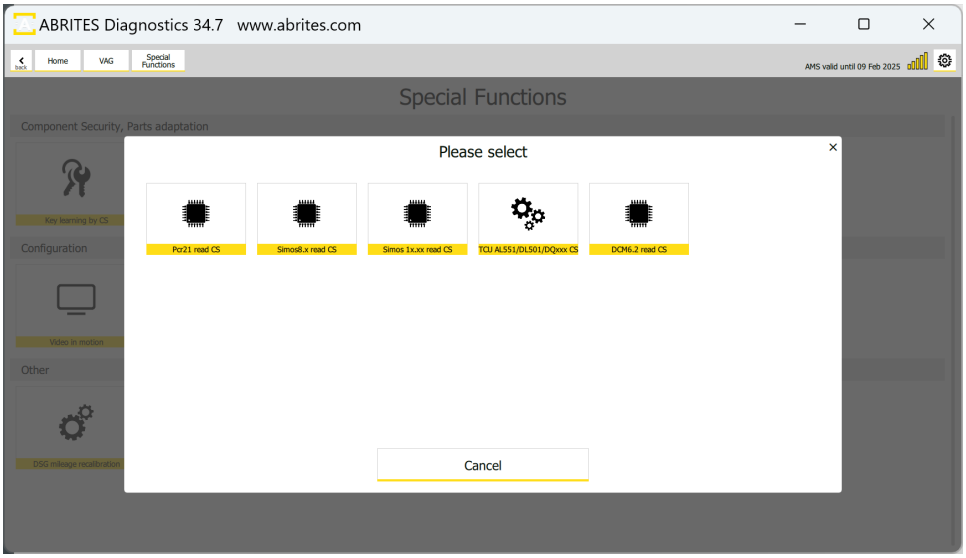
4.5.4 DCM6.2 read CS

This special function allows reading of CS (Component Security) from DCM6.2 on bench.

Obtaining the Component Security bytes will help you in the following situations:

- **Engine Control Unit replacement**
- **Key Programming (All Keys Lost situation)**

Most of the vehicles equipped with DCM6.2 engine control units use a manual transmission and blade keys. Considering this, obtaining of the Component Security (CS) and reading the Instrument cluster by using the ZN085 may help in All Keys Lost situation. The procedure is executed through the VAG On-line > “Special Functions” > “Read CS on bench” menu and click on “DCM6.2 Read CS”.



Connections

Below you may find the required connections for reading the DCM6.2 ECU
Important:
ZN051 DS Box should be version 2.4! Versions 2.2 and 2.3 would not working for this procedure.

There are 3 ways you can perform the connection.

1. Connection using CB401 cable and ZN051 DS Box:

The white wire coming from the CB401 cable should be bridged as there are 2 boot pins and only one boot wire at this cable set.

Connector T60:
PIN 52 – Boot (White Wire)
PIN 41 – Boot (White Wire)

Connector T94:
PIN 2 – GND (Black Wire)
PIN 6 – 12V+ (Yellow Wire)
PIN 67 – CAN L (Blue Wire)
PIN 68 – CAN H (Red Wire)
PIN 75 – T1 (Brown Wire)
PIN 87 – IGN (Orange Wire)

2. Connection using CB403 cable and ZN051 DS Box:

Connector T60:
52pin – Boot (white wire)
41pin – Boot (white wire)

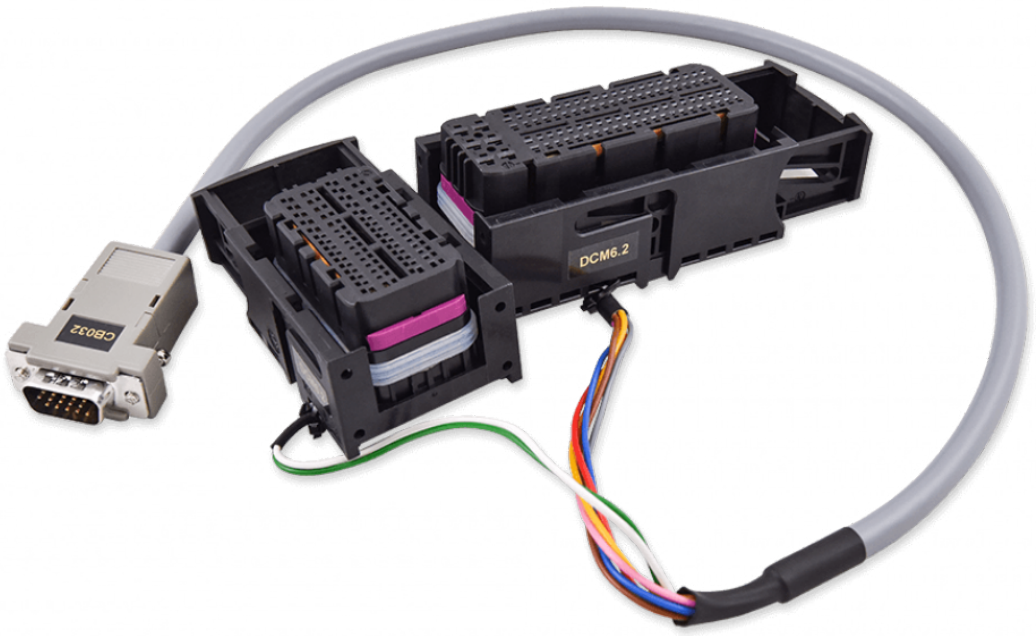
Connector T94:
6pin – B+ (Yellow)
2pin – GND (black)
87pin – IGN (orange)
68pin – CAN H (red)
67pin – CAN L (blue)
75pin – T1 (brown)

3. CB032 - DCM6.2 Connection Cable

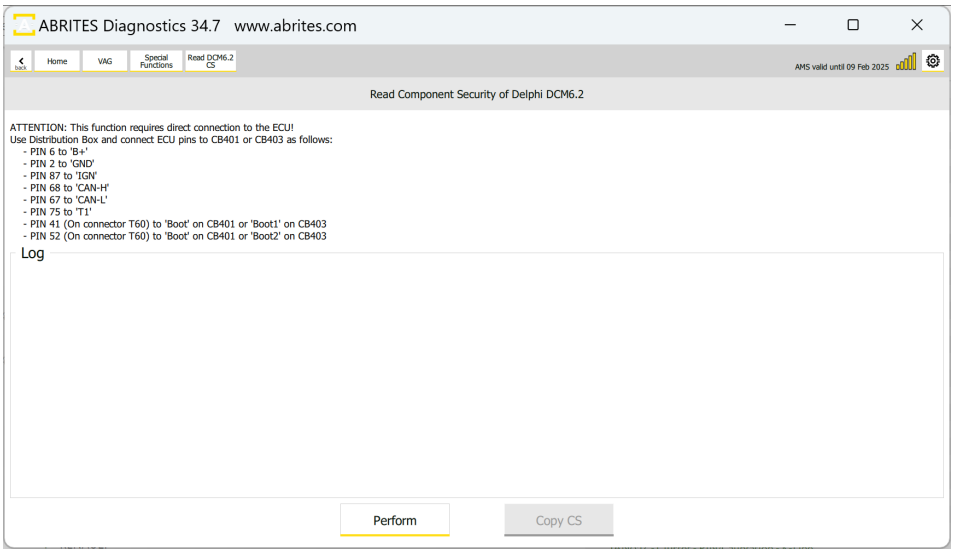
CB032 - DCM6.2 Connection Cable - This cable is used for connection with DCM6.2 Engine Control Units in VAG vehicles. CB032 connects the ZN051 ABRITES Distribution Box when reading Component Security Data (CS) on Bench for VAG ECU DELPHI DCM6.2.

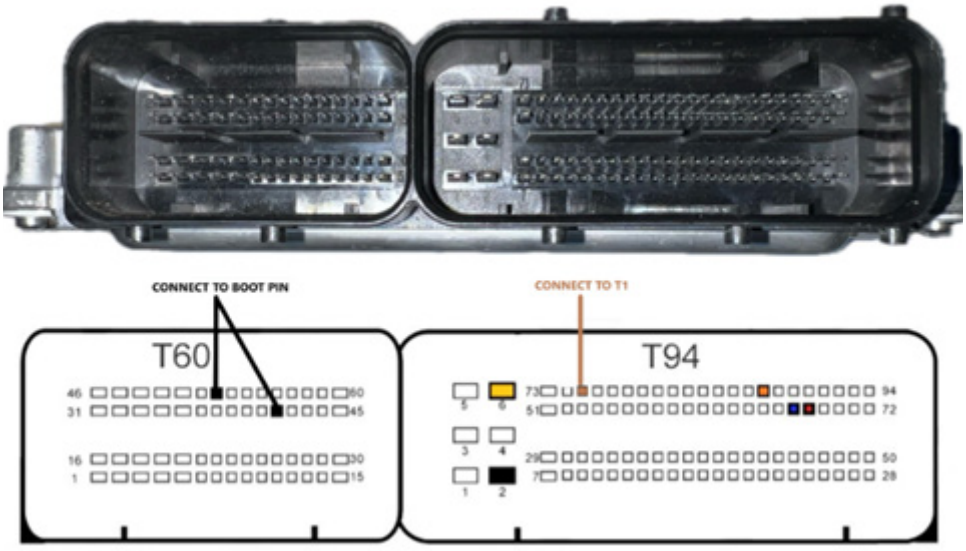
The DB15 connector of the CB032 is connected to the corresponding slot of the ZN051.
On the other side of the CN032 there are 2 dedicated connectors that go into the ECU's connectors.

HD15 pinout
1 - pink - IGN T94 pin 87
2 - yellow - B+ T94 pin 6
5 - white and green - BOOT 1 T60 pin 52
7 - brown - T1 T94 pin 75
8 - red - CAN H T94 pin 68
11 - grey - GND T94 pin 2
14 - blue - CAN L T94 pin67



Below you may find picture from the software, with guidelines for the connection and the PIN OUT connection diagram of the DCM6.2. Once all connections are made, please press the “Perform” button to execute the procedure, it may take up to 5 minutes, once done the CS will be displayed.





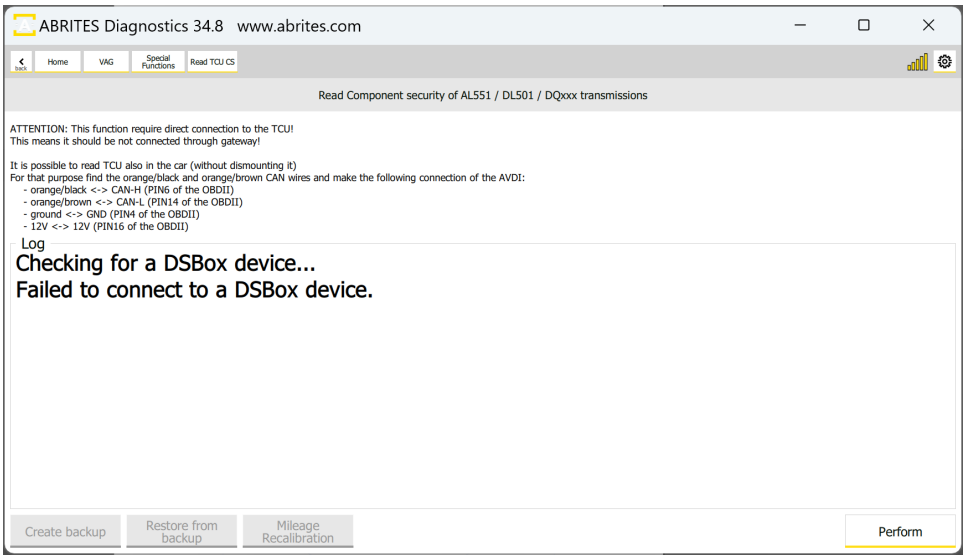
4.5.5 Read CS of AL551, DL501, DQxxx

This special function has the following functionalities for VAG Immo V Transmission Control Units:

- Create backup
- Restore from backup
- Mileage Calibration

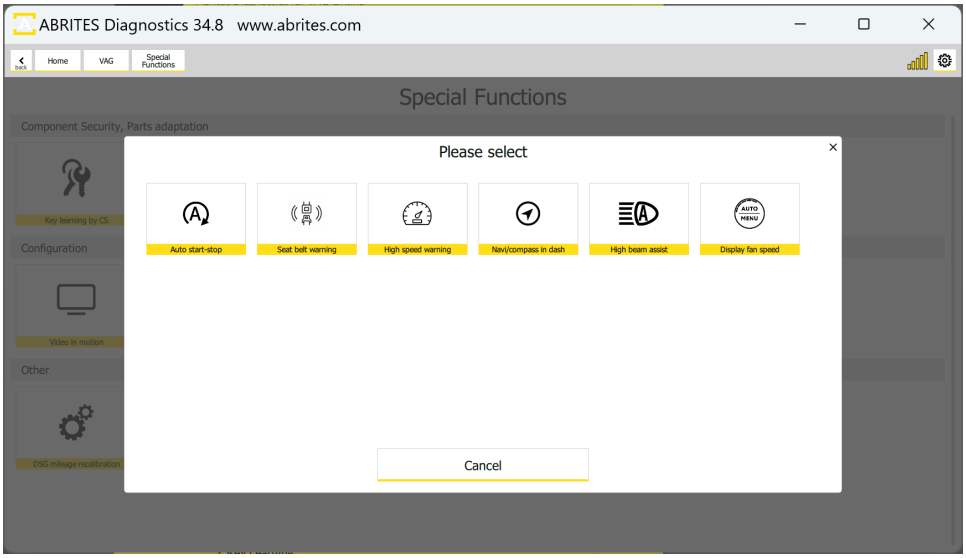
You have to work on bench, using the ZN051 DS box, in order to perform mileage calibration procedure.

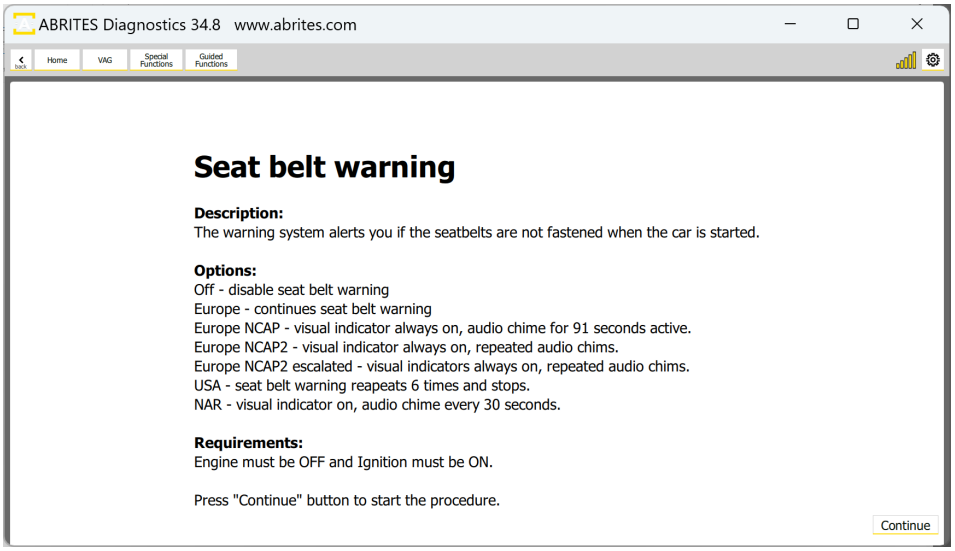
In order to perform any operations with TCU, you need to press “Perform” button first. Once this procedure is executed, the other buttons will no longer be grayed out. It is advisable to first save a back up, before performing further actions.



4.6 Guided Functions

This special function presents a list of guided functions, available for many different vehicle models. Once you select the guided function you wish yo execute, you will see the prerequisites, and the supported models list.



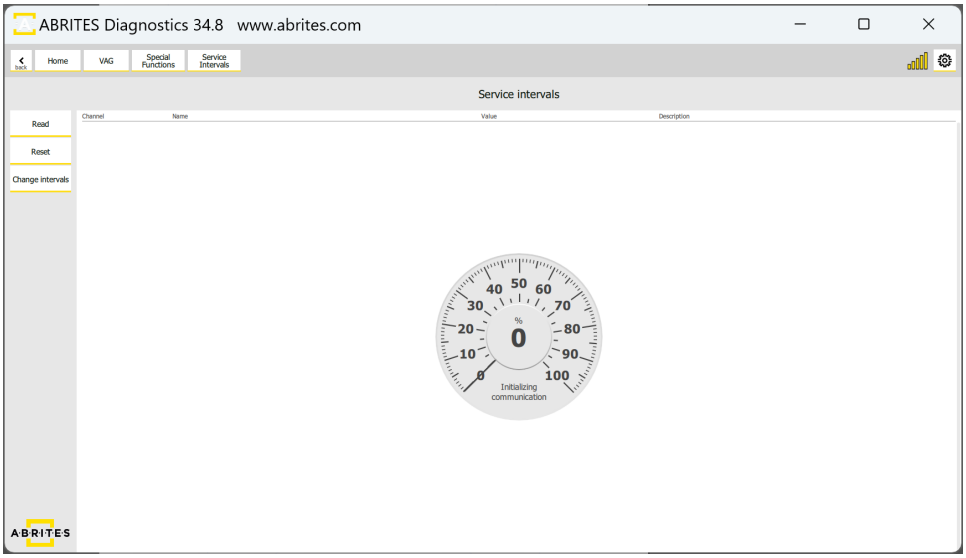


4.7 DSG Mileage Recalibration

This special function will let you read mileage information in the DSG TCU, however, it has limited functionality. For proper mileage calibration, **please use Special Functions > Read CS on Bench > TCU AL551/DL501/DQxxx,** and refer to the corresponding section in this user manual for guidelines.

4.8 Service Intervals

This special function will let you read the update the service intervals of VAG vehicles.



4.9 Programing

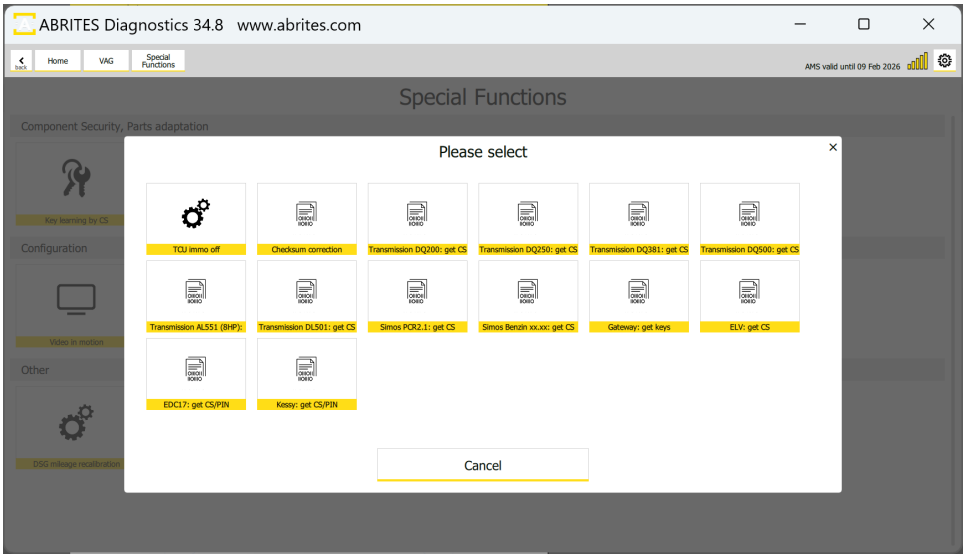
This special function lets you flash electronic control units with the use of .frf files.

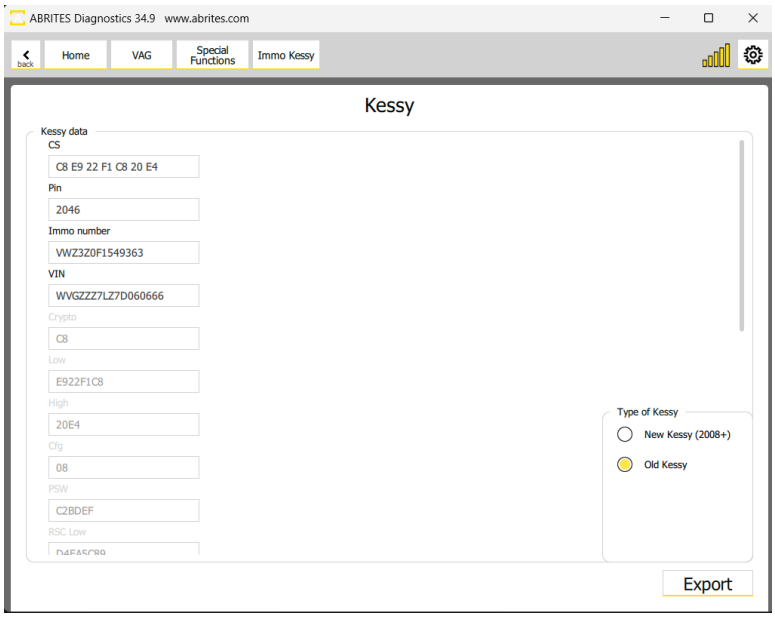
4.10 Special Function “Dump Tool”

This special function lets you upload a dump file and extract immo data from various modules.

Functionalities:

- TCU Immo Off
- Checksum correction
- Get CS: DQ200/DQ250/DQ381/DQ500/AL551 (8HP)/DL501/Simos PCR2.1/Simos xx.xx/ELV
- Get CS/PIN: EDC17/Kessy





5. Key Learning

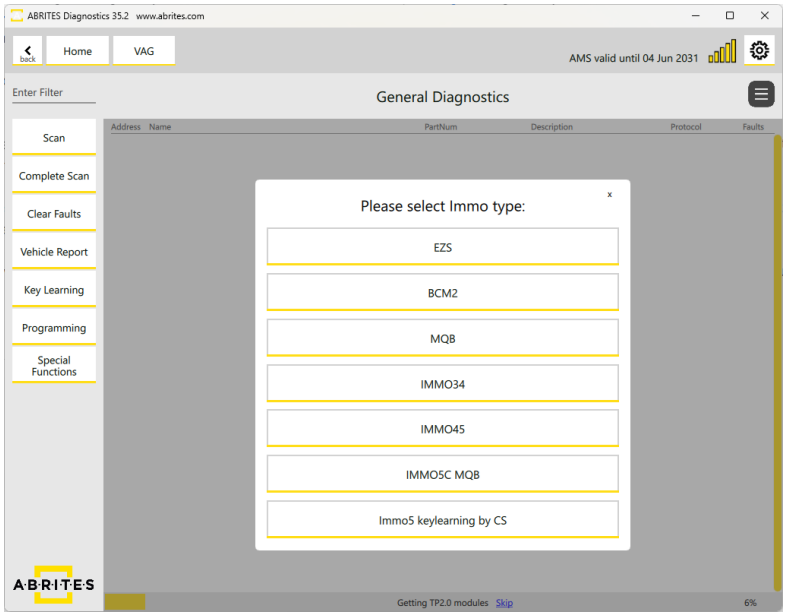
The “Key learning” functionality is available with VN003 license.

With the Abrites Diagnostics for VAG Online you can program keys to the following car/platforms:

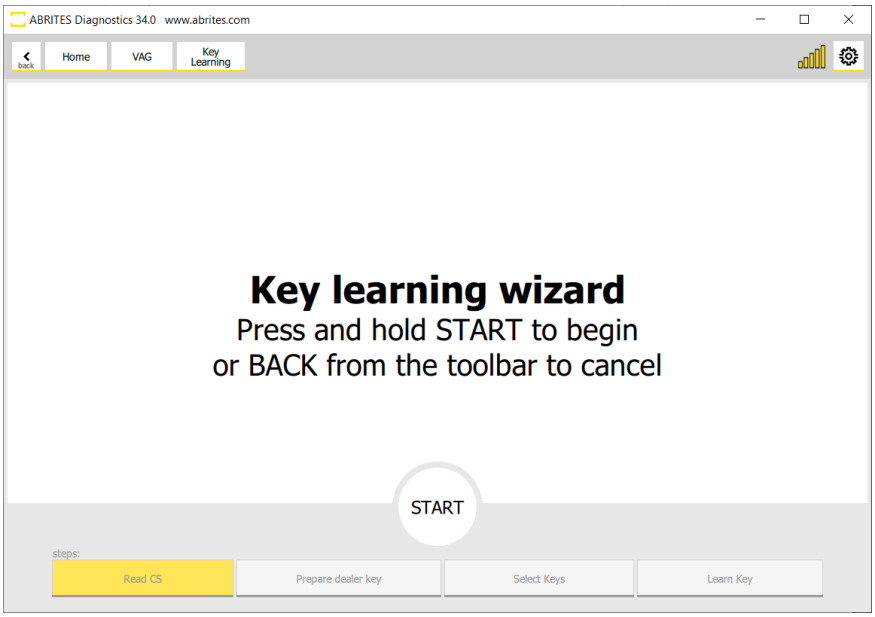
EZS-Kessy (e.g Audi A6 4F)
BCM2 (e.g. Audi A4/A5/Q5/ 2008+)
MQB (spare key programming for VDO MQB immobilizer (dashboard)
Immo 3/4 vehicles
Immo 4/5
Immo 5C MQB
Immo V key learning by CS

In order to program keys, a ZN003 (or ZN002) PROTAG will be required.
All Keys Lost situations, additional cables produced by Abrites might be required (please check https://abrites.com/shop)

To start the procedure, click the “Key Learning” button in the main diagnostics menu:



All procedures are “guided” for all available cars/platforms and you just need to follow the on-screen instructions:



5.1 VDO Immo 5C Key Learning Procedure for MQB Platform

Requirements:

- AVDI interface
- ProTag Programmer
- Spare key(s)
- RH850/V850 Programmer
- CB501 cable
- Proper wiring diagram for dashboard connection
- The procedure consists of a few steps described below, please make sure you strictly follow the instructions.

Step 1: Reading the Dashboard module and Preparing the Spare Key(s)

- 1. Connect the AVDI to the vehicle's OBDII port and turn the ignition "ON".
- 2. Open the VAG Online and select Key Learning > "IMMO5C MQB"
- 3. The dashboard type will be identified. The one supported is - VDO Immo 5C with Hitag Pro key type.
- 4. The software will prompt you to select the number of working keys. It will also display the number of already programmed keys.
- 5. Then place the available working keys on the Emergency slot/Antena of the vehicle one by one.

Note: If the software is closed after successfully completing Step 1, you can resume directly from Step 2. Navigate to RH850/V850 > RH850 > Dashboard/MCU type according to your module, and proceed with the reading process.

Step 2: Reading "On Bench" with ZN085

- 1. Dismantle the dashboard from the vehicle and connect the CB501 cable as per the appropriate wiring diagram.
- 2. Select the correct instrument cluster in the software and check carefully the wiring diagram.
- 3. Read the instrument cluster data. Upon successful reading, the software will notify you that the Immo data is stored in the crypto core.
- 4. Click the "Write MCU" button, then confirm by selecting "Yes" to proceed with the spare key programming.
- 5. Once the writing process is finished, return the capacitors and unsolder the CB501 cable. The "Key Learning" button at the bottom right will become active. Click the button to proceed to Step 3 - via OBDII.

Note: If the software is closed after successfully completing Step 2, you can resume directly from Step 3. Navigate to VAG Online and select Key Learning > VAG Immo 5C proceed to key programming via OBDII

Step 3: Key Learning by OBDII

- 1. The software will remind you to return all the capacitors and unsolder the CB501 wires, then install the dashboard back into the vehicle.
- 2. Start the Key Learning procedure by following the instructions.
- 3. Ensure the ProTag is still connected to the laptop.
- 4. The software will first prompt you to connect to the OBDII, insert a working key. At this point you can just read the Slave CS codes or continue forward with the Key Learning procedure.
- 5. You will be asked how many new keys you need to program and then you should insert the new key(s) in the Protag one by one, in order to be prepared.
- 6. On the next step, you should select the total number of keys to be programmed, including the new and the already existing keys and press Next.
- 7. Turn Ignition ON with each key within 2 minutes (follow on-screen instructions). In case the car is keyless, touch the emergency antenna with the key and wait for the process to finish.
- 8. At the end all the programmed keys for this session will be saved in the vehicle's immobilizer.

Note: If the new keys start the engine via transponder (emergency slot) but the Remote and Keyless functions are not working, please disconnect the vehicle's battery for one minute. Then, repeat Step 3: Key Learning by OBDII, without preparing the new keys again—simply select the option to relearn the existing keys, (as the new ones have already been prepared).

6. VAG Immo V adaptation

6.1 Supported modules

BCM2 4H0, 8K0 (Audi A4/A5/Q5 2008-2017, Audi A6/A7/A8 2010-2018, Touareg 2010-2018);
MQB Dashboard
ECU
TCU
ELV

Normally it is possible to adapt all the modules if you know the Component Security (CS) bytes of the original and the replacement module. The only exception is the Bosch ECUs after 2015 since they have crypto-kernel inside the MCU.

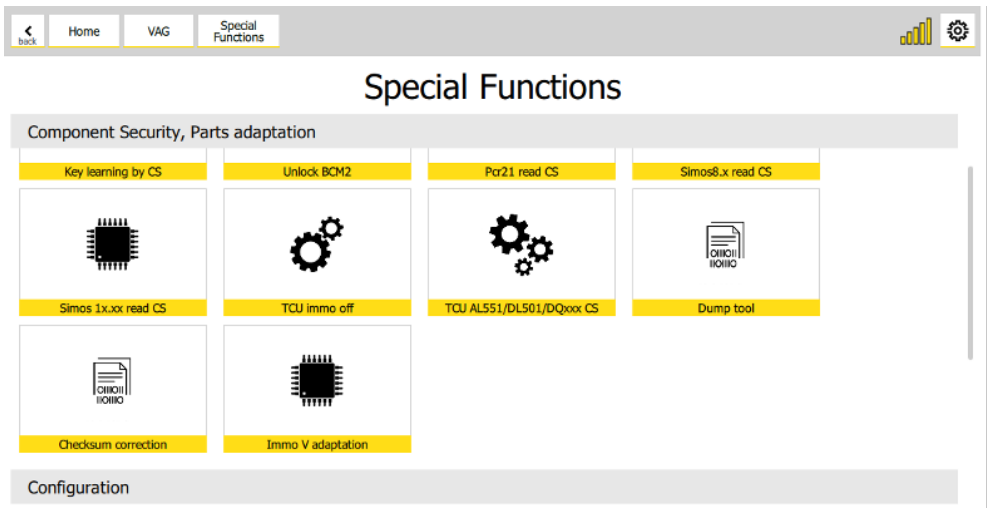
For the Immobilizers (BCM2 or dashboard) you will need also the Component Protection (CP) of the original and the replacement module. For adapting the Immobilizer you need to know also the power class of the car. All the information (CS and CP) you can get in different ways:

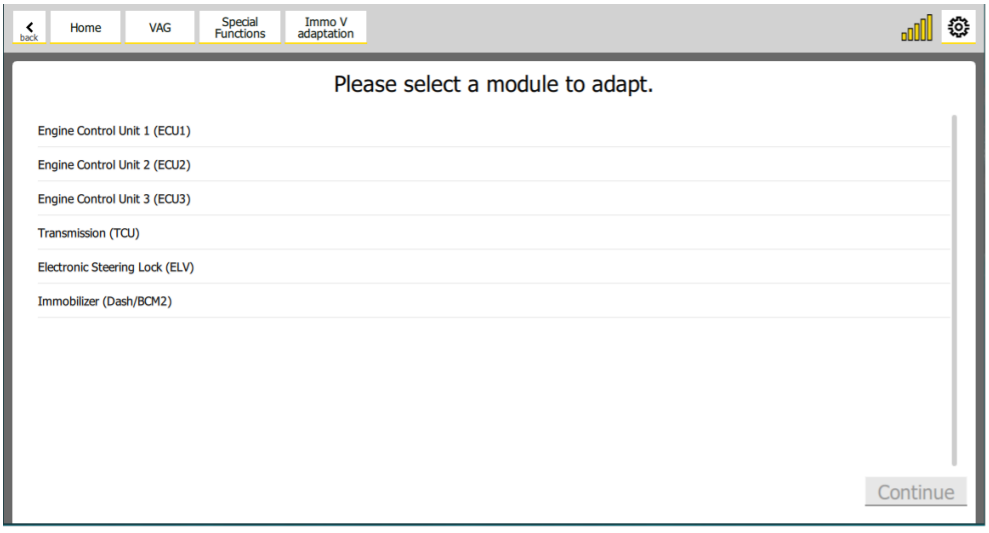
for MQB dashboards you can get the data by OBDII (if you have a working key for the dash), or with the RH850 programmer.
for BCM2 you can get the data bye OBDII or using VN020
for ECUs you can read the info in some cases on bench (e.g. Simos ECUs)
for TCUs you can read the data on bench.
for ELV for BCM2 cars you can extract the data from the MCU dump.

If you don't have the CS of both replacement and original module, the procedure cannot be performed.

6.2 Immo V adaptation of ECU/TCU/ELV

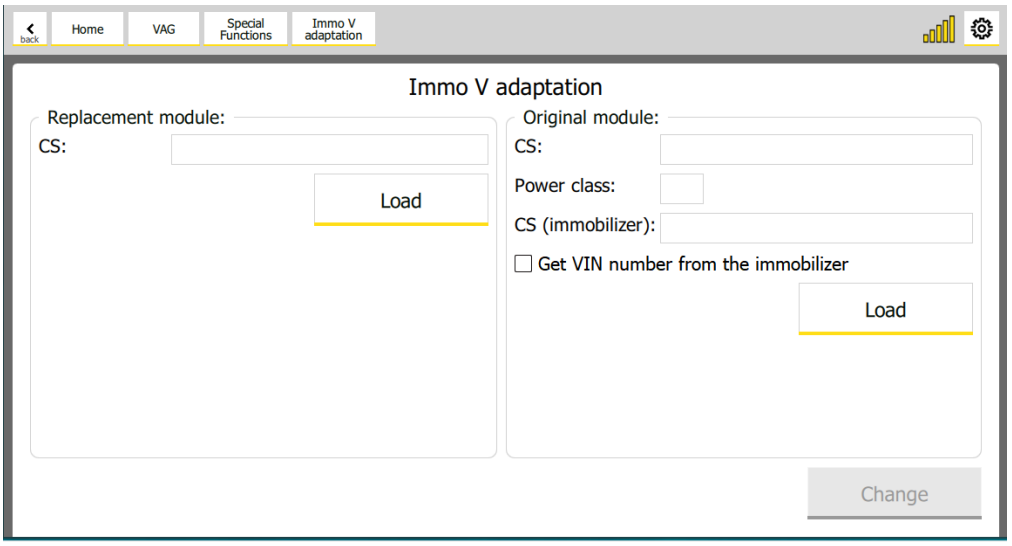
1. Open VAG->Special Functions and click on “Immo V adaptation”
2. Select a module to adapt.





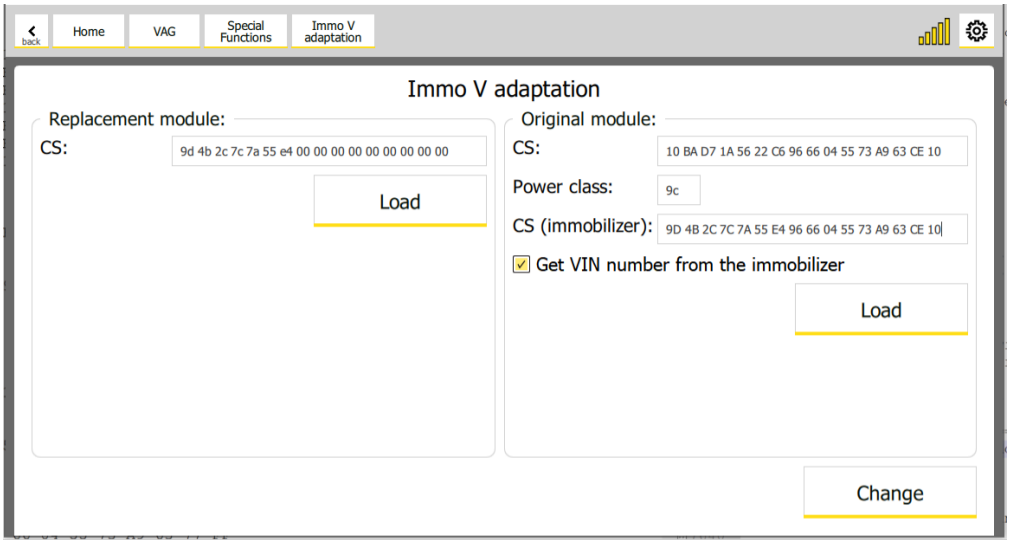
IMPORTANT: In case you are working on an ECU - Please make sure you save the coding before begining the procedure explained in this section. The coding could be lost during the procedure, and you need to have a back-up in order to avoid risks.

3. Set the following data:
   CS (Component Security) of the replacement module
   CS (Component Security) of the original module
   Power class of the original module
   CS (Component Security) of the immobilizer



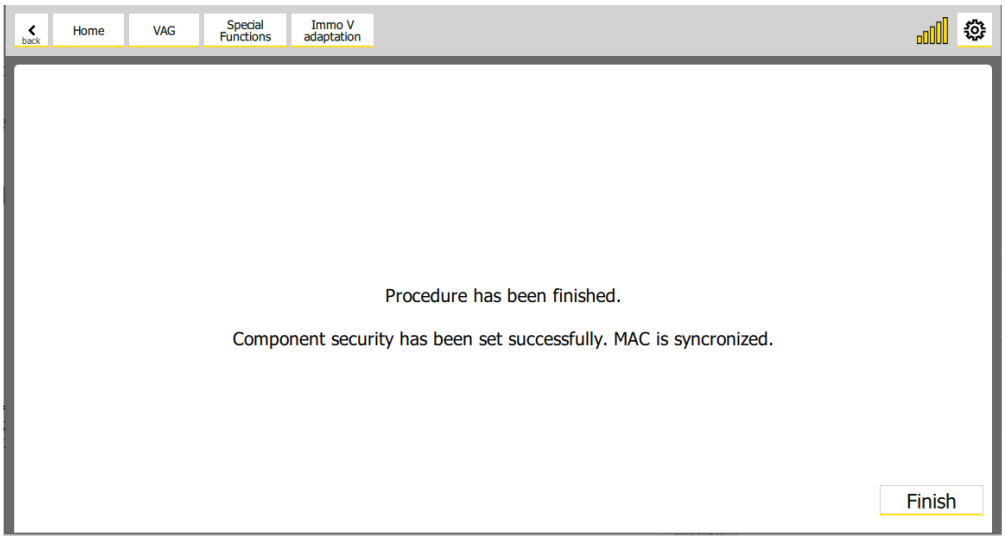
If you want to get the VIN (Vehicle Identification Number) from immobilizer, then check “Get VIN number from the immobilizer”. If not checked, the module will remain with its original VIN.

You can load replacement and original modules data (json file format generated by RH850 programmer) with the “Load” buttons.



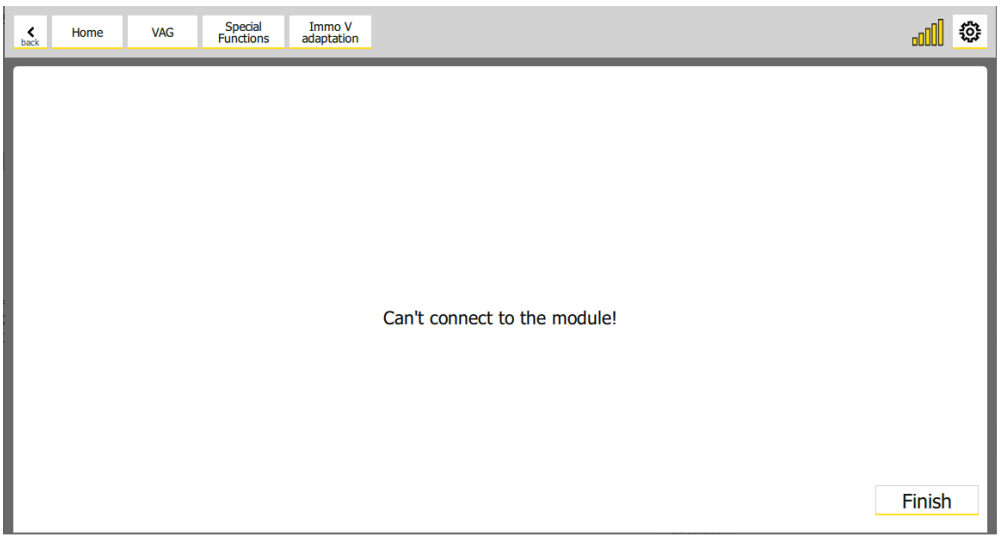
4. Click on “Change” button to adapt the module.

If procedure finished successfully, then the following screen will appear:



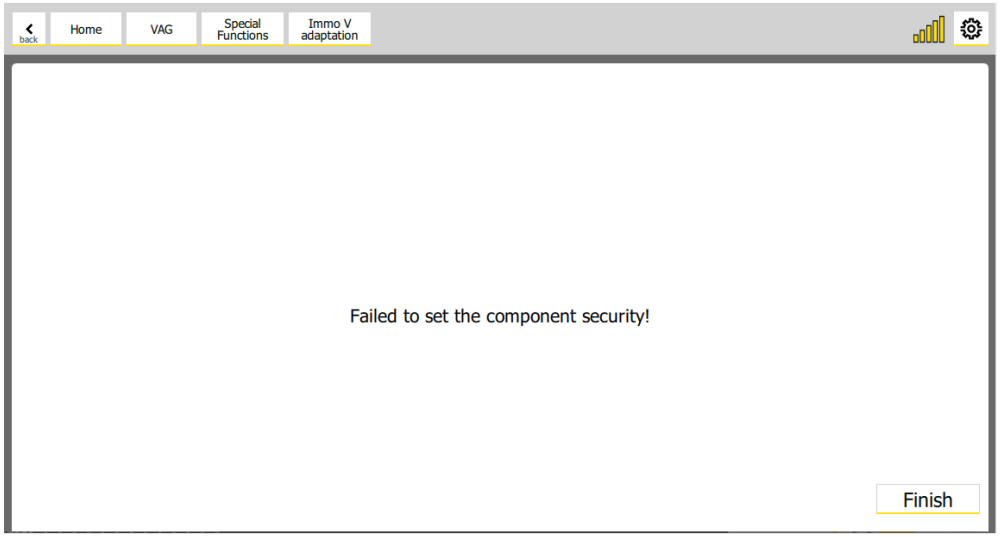
6.2.1 Troubleshooting

1. “Can’t connect to the module.”



Make sure you have a connection to the module that you want to adapt. It should appear as a result of “Scan all” function.

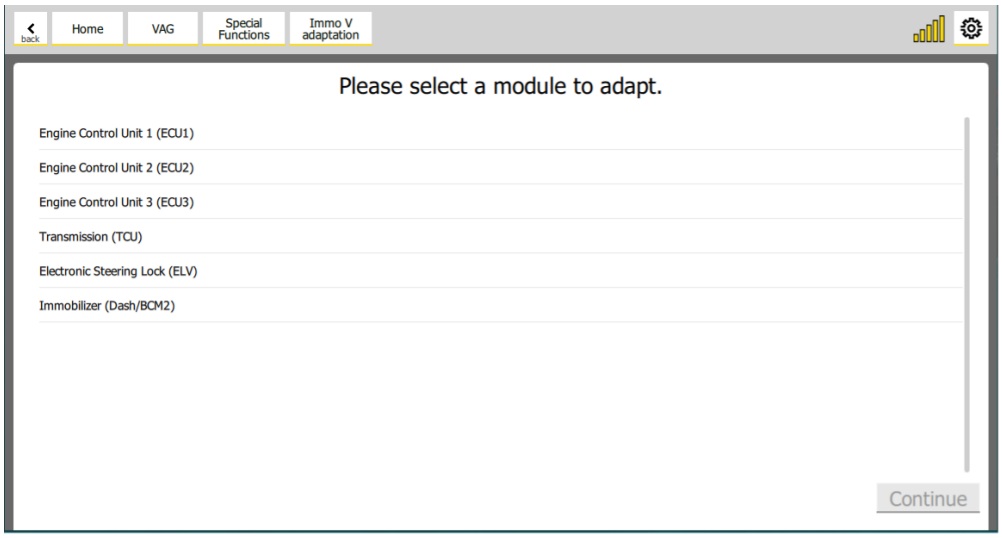
2. “Failed to set the component security!”



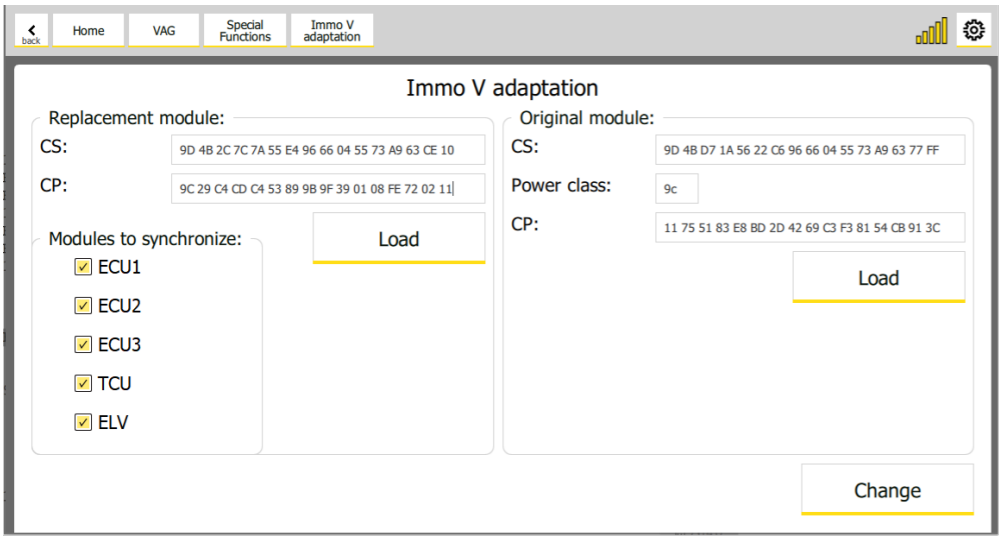
Double check the CS (Component Security) of the replacement module. It usually happens when the CS of the replacement module is not correct.

6.3 Immo V adaptation of an immobilizer module (Dashboard/BCM2)

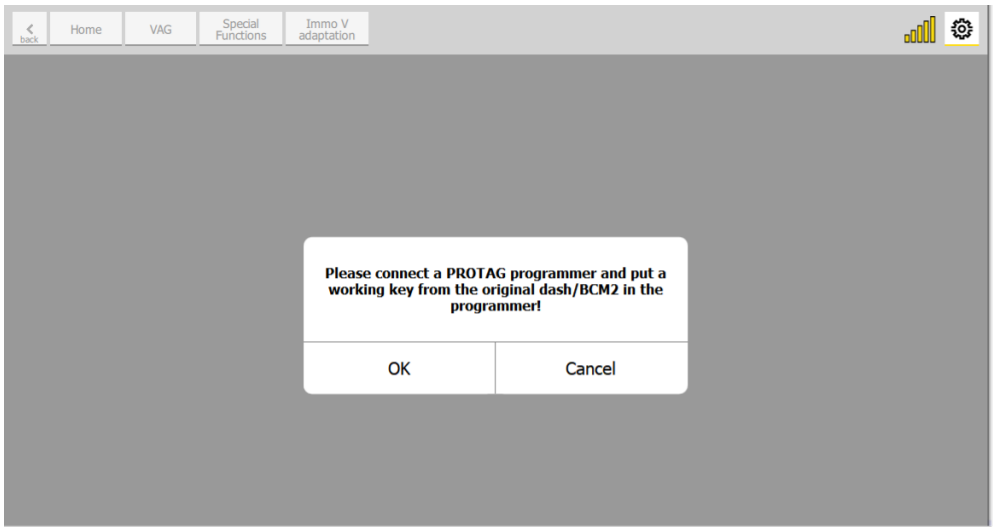
1. Navigate to “Immo V adaptation” special function.
2. Select “Immobilizer (Dash/BCM2)” option.



3. Set the following data:
   CS (Component Security) of the replacement module
   CP (Component Protection) of the replacement module
   CS (Component Security) of the original module
   Power Class of the original module
   CP (Component Protection) of the original module
   Check the modules that are available in the car. Typically there is always a ECU1. TCU is available for automatic transmissions cars, and ELV is available if the car is keyless (typically for MQB, but for BCM2 cars – later BCM2 cars don’t have ELV even cars are keyless). ECU2 is available for some high performance cars (like S8 for example, while ECUs is typically available in the e-cars (like Audi E-Tron or E-Golf). It’s important to check all available modules to synchronize with the immobilizer for successful adaptation. If this synchronization is not made, the respective module won’t work.

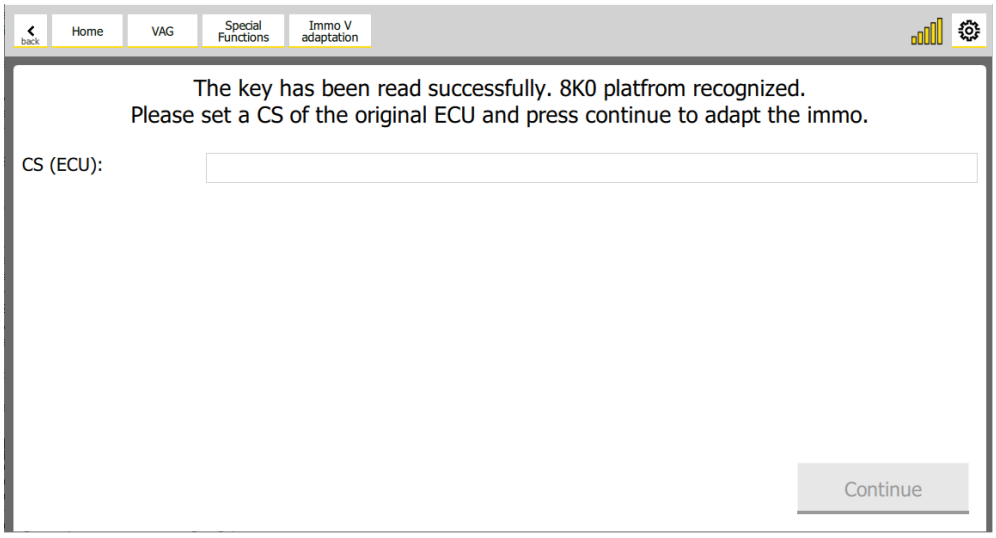


4. When you are ready click on “Change” button.
5. You must connect a PROTAG programmer and put a working key in it. Click “OK” when you are ready.



6. It will start to read the key.

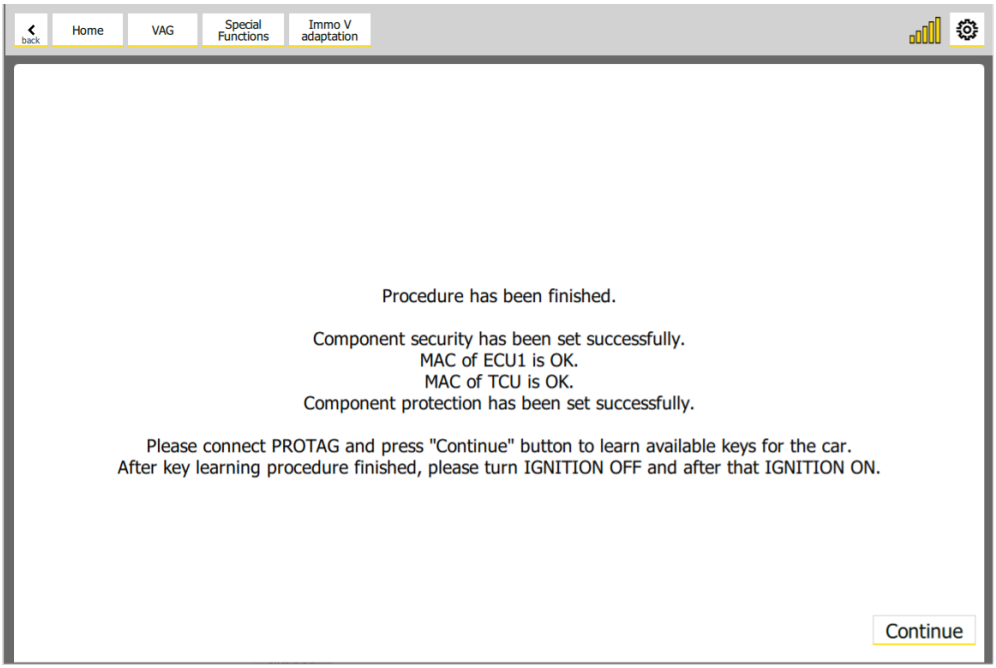
6.1 If the car is A4/A5/Q5 (8K0 platform), then it will appear the following screen:



Please set the CS (Component Security) of the original ECU and click on “Continue” button.

7. Adaptation will start.

8. If the adaptation is successful, then a similar screen will appear:



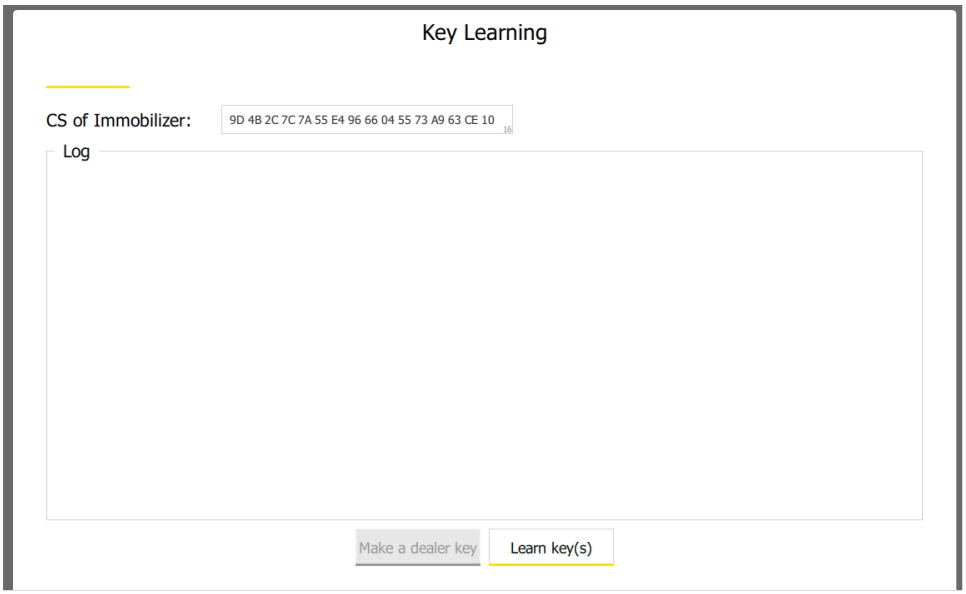
IMPORTANT: When you've message that the "Component security" or "Component protection" are set successfully, the new values are accepted. So if you want by some reason the repeat the procedure (e.g. to repeat the MAC synchronization or the Key-Learning), now the replacement module CS (respectively CP) is like in the original module.

You have to learn a key with the new dash or BCM2.

If the module is BCM2, then connect a PROTAG device and put the key in the PROTAG device.

If the module is MQB dash, then put the key in the ignition lock (no keyless) or hold the key to the reader coil (keyless).

9. Click on “Continue” button to learn a key. The following screen will appear:

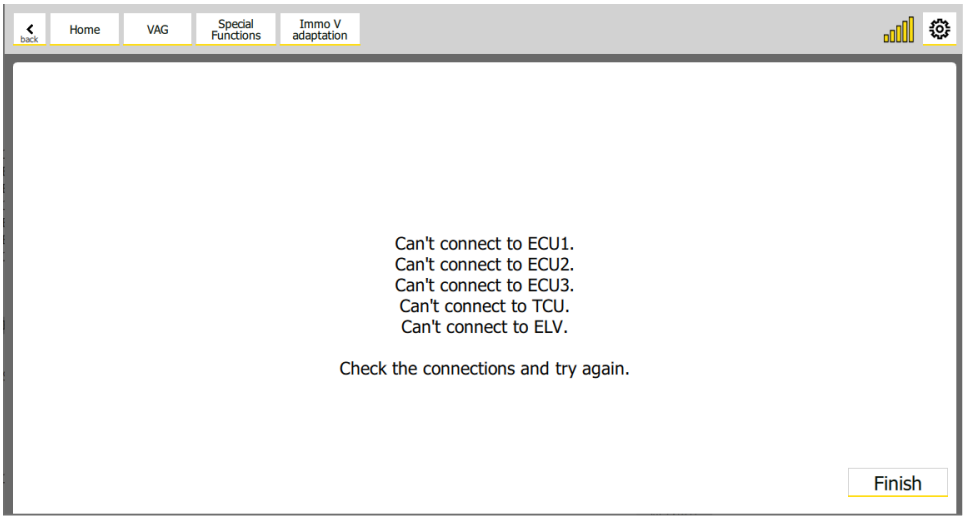


Click on “Learn key(s)” button to learn a key.

10. After the key learning procedure is finished, turn the ignition off and after that turn the ignition on.

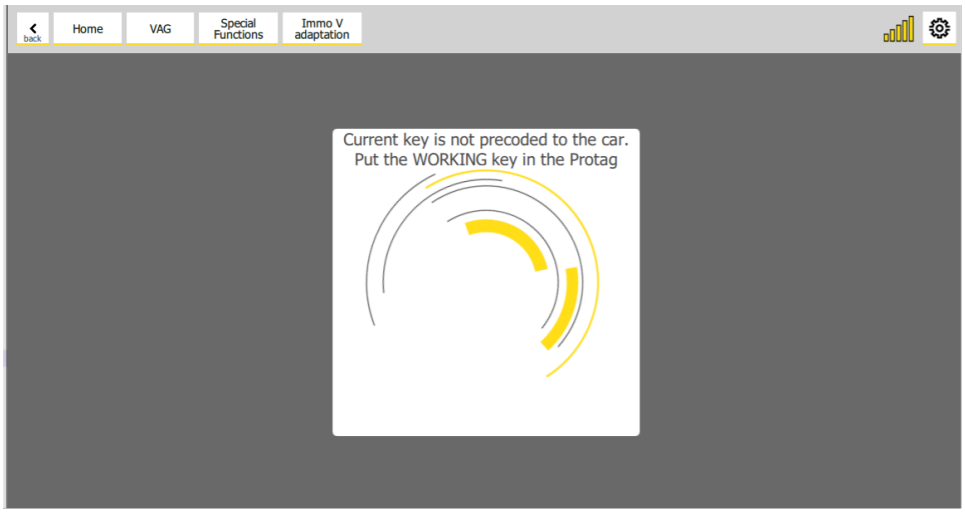
6.3.1 Troubleshooting

1. Can't connect to module(s) that should be synchronized with the immobilizer.



Double check the connection with the modules. They should appear as a result of "Scan all" function.

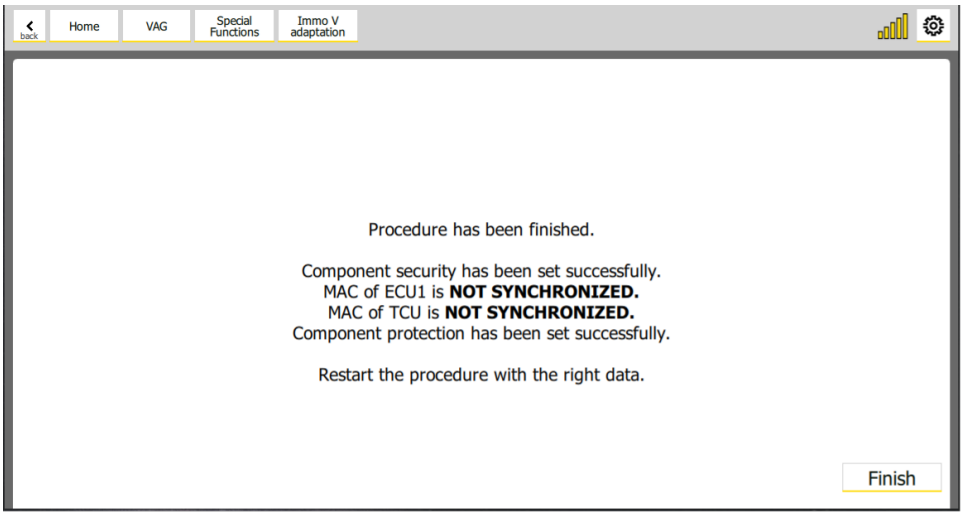
2. "Current key is not precoded to the car. Put the WORKING key in the Protag"



This message can appear when PROTAG is trying to read a working key (step 6 of the procedure).
Possible reasons for this message are:

The CS (Component Security) of the original module is not correct. Please double check the CS of the original module.
The key is not a working key. Please put a working key in the PROTAG device.

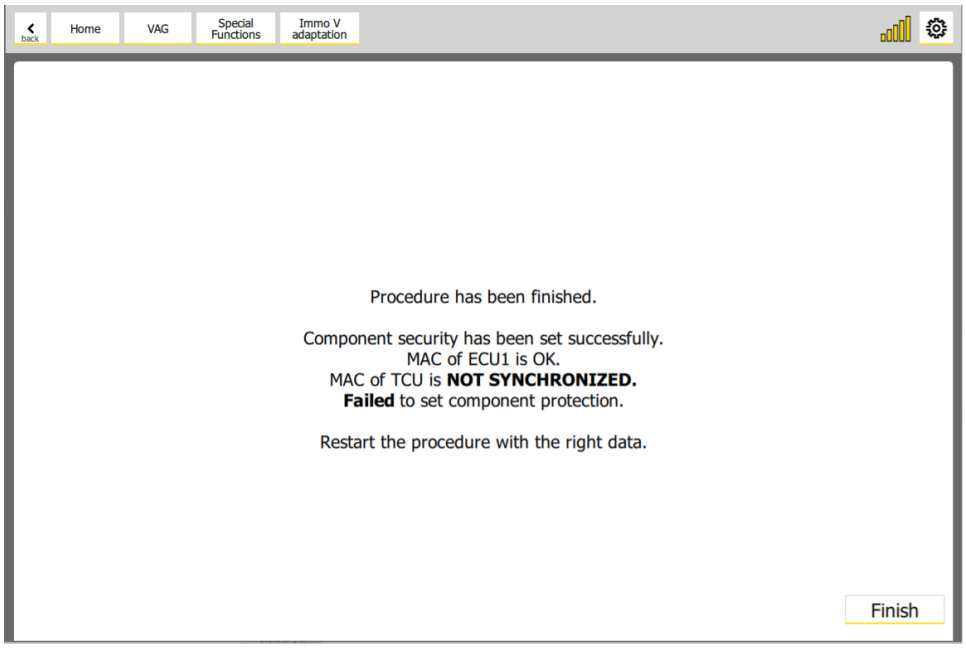
3. MAC of some of the checked “Modules to synchronize” (step 3 of the procedure) are not synchronized with the immobilizer.



This usually appears when CS of the original ECU (step 6.1 of the procedure) is not correct. Please double check the CS of the ECU.

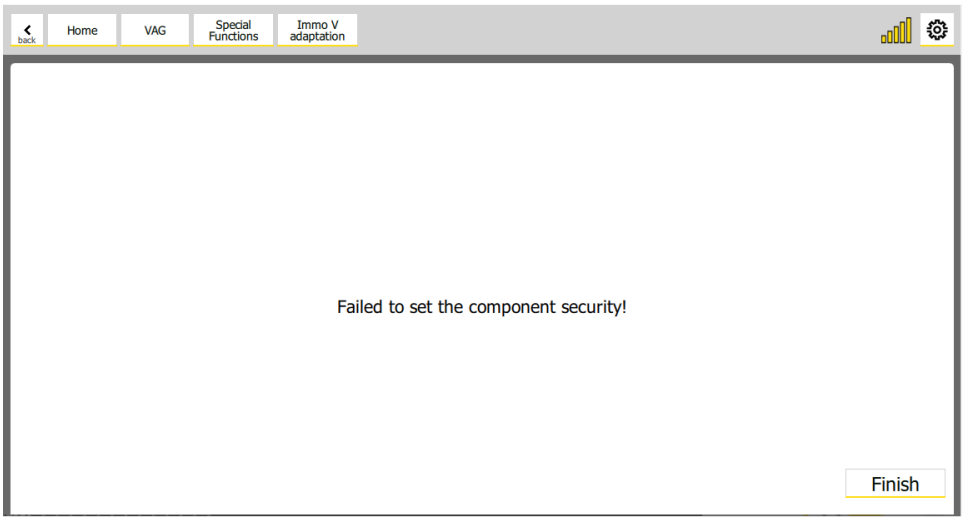
Other reason might be that some module are already in sleep mode, so you’ve to wake up them and repeat the procedure.

4. “Failed to set component protection.”



This message usually appears when the CP (Component Protection) of the original module (step 3 of the procedure) is not correct. Please double check the CP (Component Protection) of the original module.

5. “Failed to set the component security!”



Double check the CS (Component Protection) of the replacement module (step 3 of the procedure). It usually happens when the CS of the replacement module is not correct.

6. It is possible that by some reason the key-learning procedure is not completed successfully – e.g. because the key was not placed on the reader coil, or the is a mechanical problem with the reader coil) – in such case you’ve to repeat the key-learning procedure.

7. Appendixes

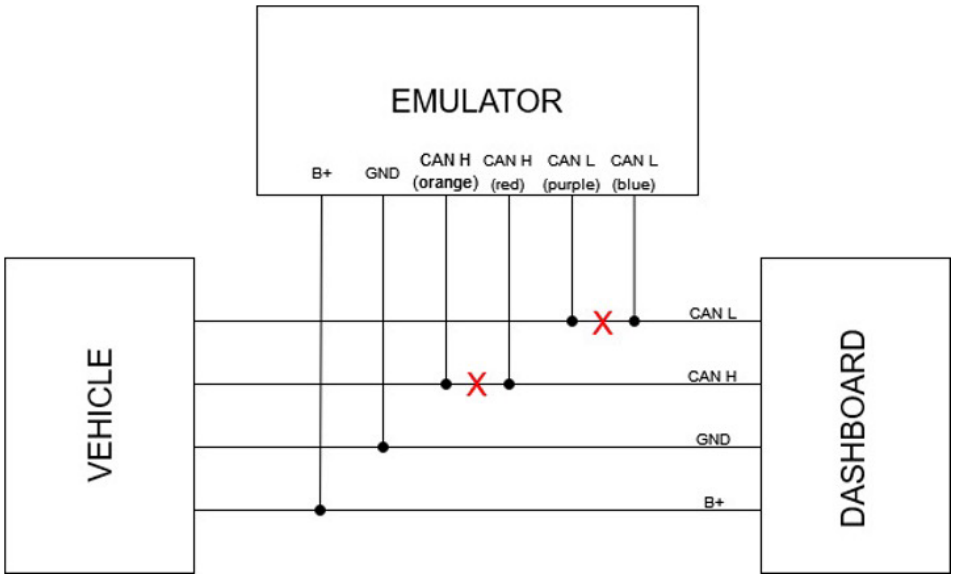
7.1 MQB/MLB CAN blocker

Our new development has the main task of filtering the communication between your vehicle and its dashboard, and is dedicated to vehicles from the MQB and MLB platforms. To elaborate on that, the car sends data to the dashboard and the filter modifies the data that reaches the dashboard unit, thus the dashboard unit displays the modified data.

The filter can pass the data through with coefficient of 20%, 30%, 40% or 50%, so if the true data value is 100 units, the filtered data that would reach the dashboard unit is correspondingly 20, 30, 40, or 50 units.

It is installed behind the dashboard with the following guidelines:
Blue – CAN L to Dashboard
Red – CAH H to Dashboard
Purple – CAN L to Vehicle
Orange – CAN H to Vehicle
Black – GND
Yellow – 12v+

Below you can see the way it needs to be connected and on the next page you can read the details about the installation and colors of wires in the vehicle that you are looking for.



Below you may read about the different types of connectors you will find in the vehicles the emulator works for. PIN connections and wires' colors are described:

MQB 18 PIN Connector
PIN 1 - 12V (+) or "terminal 30 " - black and yellow wire
PIN 10 - GND (-) or "terminal 31" - brown wire
PIN 17 - CAN L - orange and brown wire
PIN 18 - CAN H - orange and green wire

Only on Audi Q3 you can find a difference, here are the details:
32 PIN Connector
PIN 16 - GND (-) or "terminal 31" - brown wire
PIN 28 - CAN H - orange and blue wire
PIN 29 - CAN L - orange and brown wire
PIN 32 - 12V (+) or "terminal 30" - red and black wire

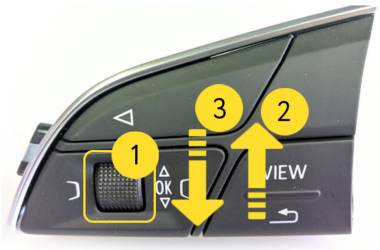
MLB: 32 PIN Connector
PIN 3 - CAN L - orange and brown wire
PIN 4 - CAN H - orange and blue wire
PIN 30 - GND (-) or "terminal 31" - brown wire
PIN 31 - 12v (+) or "terminal 30" - yellow and red wire

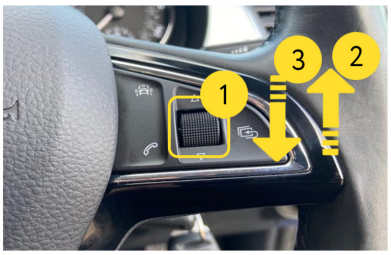
Setting the device – you can set the reducing coefficient of the device trough the buttons of the steering wheel of your vehicle. We advise that you do the setting when the engine is turned off, and you have the Ignition ON.

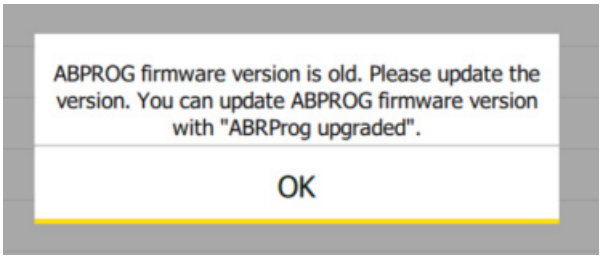
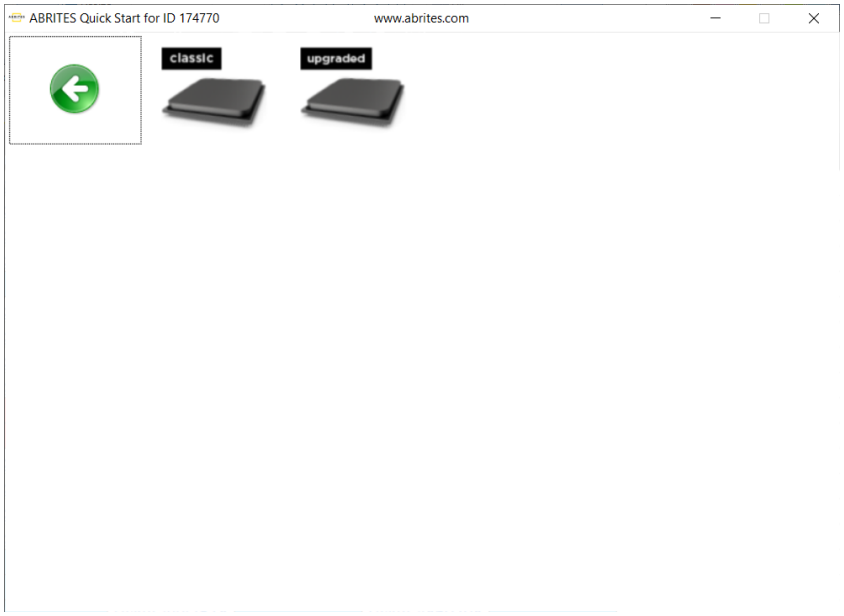
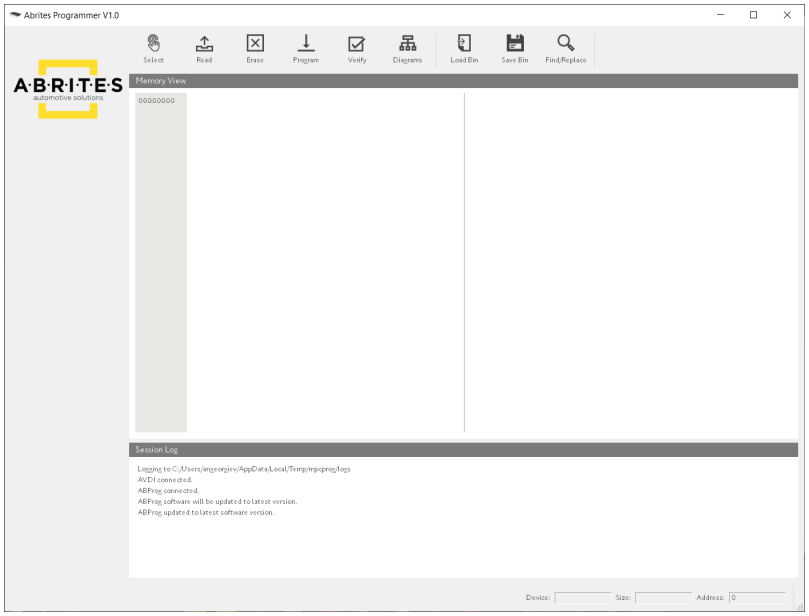
There are 3 types of steering wheels and button sets, so check the picture to figure out which buttons you need to work with.
"Button 1" – press and hold for 6 sec. to enter settings mode. Once in this mode, your signal (hazard) lights will start blinking, and this will continue until you exit the setting mode.
"Button 2" and "Button 3" (or scroll up and scroll down) change the percentage setting that you want to be displayed on the dashboard. Ex. 2000 rpm = 20%, 5000 rpm = 50%. If the dashboard points to Ready (for cars with Start/Stop system) or off - it mean that the filter is turned off.

To exit the settings mode, you need to press "Button 1" or leave it for 3 sec. or more and it will exit automatically. Upon exit, the last stored percentage setting will be saved. Setting is not lost if the car is left with not battery.

N.B. The calculated fuel consumption will be affected from the filter's setting, accordingly.





7.2 Update ABprog ZN080 set BCM2 unlock

Any time you need to use the ZN080 set to unlock a BCM device, you might need to update the ABProg's firmware version. In order to do that, you just need to have it connected to the AVDI and open the AB-Prog Upgrade software, the update will happen automatically, and you can than close the software and continue with the BCM2 unlock procedure.