



# Achieve the impossible

# Abrites Diagnostics for Mercedes/Maybach/Smart User Manual

Version: 4.0

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| Date                | Chapter                 | Description   | Revision |
|---------------------|-------------------------|---|----------|
| November.30<br>2015 | ALL                     | Total update of the manual  | 2.1      |
| February.02.2016    | DAS manager             | Total update of the chapter+ corrected                              | 2.2      |
|                     |                         | pinouts   |          |
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| Feb.04.2019         | DAS manager             | W220/W215<br>password extraction<br>(using DSBox)                   | 3.7      |
| Feb.18.2019         | DAS manager             | EM004, EM005,<br>EM006 and EM007                                    | 3.8      |
| April.17.2019       | DAS manager             | W202/W208/W210<br>password reading<br>from a working key<br>hazards | 3.9      |

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| Jan.09.2020 | DAS manager | Added more EZS<br>diagrams for<br>password reading<br>on bench | 4.0 |
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### 1. Introduction

The Abrites diagnostics for Mercedes/Maybach/Smart is a professional software for diagnostic of Mercedes-Benz, Maybach and Smart vehicles. It allows you to perform complete diagnostics of all 1995-present Mercedes-Benz models. It provides some unique functions, which are not supported by any other diagnostic tool.

Diagnostics is performed via the OBD-II connector or via the Mercedes-Benz proprietary 38-pin connector (only older cars, pre-2001). Since version 4.5 has beed added support for vehicles with a 14-Pin diagnostic link connector (these vehicles are accessible when for "Chassis Type" is selected "Trucks/Buses"). Our PC USB diagnostic interface supports over 26 multiplexed K-Lines and Mercedes-Benz diagnostics CAN-BUS interface (also known as CAN-D).

#### Standard diagnostic functions:

Read identification: Software Part Number, Hardware Part Number, Supplier and so on.

- Read extended identification: VIN, Software Version, Bootloader Version, CAN Driver version and so on.
- Read fault codes.
- Clear fault codes.
- Device scan search for all available control units in the car.
- Display of Actual Values (Live Data).
- Actuator Tests.
- Reset of control unit (Hardware Reset).
- Control unit adaptations Date and Clock adjustment, read/write ID, read/write SCN and so on.

#### **Special functions:**

Mileage Recalibration in Instrument Clusters and other control units (see the online manuals for comprehensive mileage recalibration).

- Read/Write Configuration (K-Line and CAN through the OBDII port and CAN through the plug of the dash).
- Airbag read/write Configuration, clear crash data, lock/unlock the Airbag units to a car.
- Dump Tool calculate mileage in dashboard, EZS (EIS), EDC-16, ESP; reset mileage values; make engine control modules virgin, clear crash data and so on.
- ECU Read/Write Flash, Read/Write Configuration of Engine Control Units, Remove DPF/FAP.
- Transponder Generation program transponders with the help of Abrites Transponder programmer.
- DAS 2 (FBS 2) Key generation generation of key dumps by dump from IFZ.
- DAS 2A Programming of transponder keys programming of transponder keys by Configuration dump from the WSP (Immobox).
- Immobilizer (DAS 2b) Key Learning for Mercedes ML W163; Read/Write Full Configuration of AAM/EAM control modules; Learn radio code of transmitter keys; Deactivate/Reactivate keys.
- Program Smart Keys (DAS 3). The Mercedes Diagnostics software is capable of generating files for programming into the Configuration of infrared smart keys.
- Sprinter/Vito Start Error repair generation of files for the WSP and ECU units to repair "Start Error".
- Renew of 7-Gearbox (722.9) and Intelligent Servo Module (ISM) control units.
- TV/AUX activation/deactivation.
- Seatbelt warning activation/deactivation.
- Adaptations for SMART Key Teach-in, Softouch activation/deactivation. Air Conditioning activation/deactivation, Reflash of some units and so on.
- CGW Explorer: Read/Write the Configuration of Central Gateway (CGW) under CAN. From here you can also view/change ASSYST service history records.
- ASSYST PLUS Change service maintenance records history.
- Reverse warning activation/deactivation.
- Activation/deactivation of Speed warning for Gulf States.

#### Advanced functions:

- Custom memory read/write
- Custom requests. With this advanced function the user can send requests to the electronic device.

**Note:** Depending on the version that you have purchased some of these functions may not be available in your software.

### 2. Getting started

When you run ABRITES diagnostics for Mercedes/Maybach/Smart it will automatically try to detect the appropriate hardware interface and will connect to it. If the interface is recognized and the software is ready for normal operations, you will have to select the appropriate cable type. After startup on the main screen of the ABRITES diagnostics for Mercedes/Maybach/Smart a list of all possible units is displayed. The user is able to connect to the listed devices by double-clicking on the desired device. Pressing the "Scan all" button will attempt to connect to each device currently displayed in the list. Depending on the configuration options, only the selected protocols will be used when scanning for the device.

| #  | Unit name  | Prot    | DTC |          |
|----|--|---------|-----|----------|
| 01 | Engine: Motor Electronics / Hot Film Sequential Fuel Injection /   | K-Line  |     |          |
| 02 | Gasoline Motor Electronics Left                                    | K-Line  |     |          |
| 03 | Benzin Engine: Motor Electronics - Sequential Fuel Injection (2.8) | K-Line  |     | Previous |
| 04 | Motor Electronics  | CAN     |     |          |
| 05 | Common Rail Diesel Injection - 1                                   | K-Line  |     |          |
| 06 | Common Rail Diesel Injection (2/3/4/5)                             | K-Line  |     |          |
| 07 | Turbo Diesel engine  | K-Line  |     |          |
| 08 | Anti-Lock Braking System / Acceleration Slip Regulation / Electro  | K / CAN |     |          |
| 09 | Airbag   | K / CAN |     |          |
| 10 | Airbag in SMART vehicles   | K / CAN |     | Open     |
| 11 | Brake Assist System  | K / CAN |     |          |
| 12 | Instrument Cluster   | K / CAN |     |          |
| 13 | Instrument Cluster with maintenance interval display               | CAN     |     |          |
| 14 | Instrument Cluster in SMART vehicles                               | K-Line  |     |          |
| 15 | Automatic Air Conditioning   | K / CAN |     |          |
| 16 | Pneumatic System Equipment   | K / CAN |     |          |
| 17 | Vacuum Pump Brake Booster 1  | K-Line  |     | Next     |
| 18 | Vacuum Pump Brake Booster 2  | K-Line  |     |          |
| 19 | All Activity Module  | K-Line  |     |          |
| 20 | Extended Activity Module   | K-Line  |     |          |
| 21 | Drive Authorization System   | K-Line  |     |          |
| 22 | Security Module (Up to model year 1999)                            | K-Line  |     |          |
| 23 | Door Control Module Front Left                                     | K / CAN |     |          |
| 24 | Door Control Module Front Right                                    | K / CAN |     |          |
| 25 | Door Control Module Rear Left                                      | K / CBM |     |          |
| *  | Vehicle Selection Special Functions                                | Options |     |          |

As soon as the software has detected the USB interface it will ask you to specify the type of the diagnostic connector. There are 3 options:

- 38-pin diagnostic link connector
- OBDII plug with 16 pins



#### 14-pin diagnostic link connector



following screen appears – this is the main screen of the Abrites Diagnostics for Mercedes application. You can open a standard diagnostic with any device that is listed in the main screen. The "Protocol" column contains the communication protocols that the specified device may use. For vehicles up to 2002 the communication is usually established via K-Line. After 2002 the control modules in the vehicles start using CAN. Vehicles produced after 2004 usually do not use K-Line for diagnostics any more.

| #     | Unit name  | Prot    | DTC |         |             |
|-------|--|---------|-----|---------|-------------|
| 01    | Common Rail Diesel Injection (2/3/4/5)                             | Кыр2000 |     |         |             |
| 02    | Engine: Motor Electronics / Hot Film Sequential Fuel Injection /   | Кыр2000 |     |         |             |
| 03    | Benzin Engine: Motor Electronics - Sequential Fuel Injection (2.8) | Кыр2000 |     |         | Previous    |
| 04    | Electronic Transmission Control                                    | Кыр2000 |     |         | L           |
| 05    | Electronic Gear Selector Module                                    | Кыр2000 |     |         |             |
| 06    | Drive Authorization System   | Кыр2000 |     |         |             |
| 07    | Airbag   | Кыр2000 |     |         |             |
| 08    | All Activity Module  | Kwp2000 |     |         | TIN         |
| 09    | Extended Activity Module   | Кыр2000 |     |         |             |
| 10    | Transfer Case  | Кыр2000 |     |         | Open        |
| 11    | Anti-Lock Braking System / Acceleration Slip Regulation / Electro  | Кыр2000 |     |         |             |
| 12    | Brake Assist System  | Кыр2000 |     |         |             |
| 13    | Vacuum Pump Brake Booster  | Кыр2000 |     |         |             |
| 14    | Lower Control Panel  | Кыр2000 |     |         |             |
| 15    | Headlamp Range Adjustment  | Кыр2000 |     |         |             |
| 16    | Security Module (Up to model year 1999)                            | Кыр2000 |     |         |             |
| 17    | Garage Door Opener   | Кыр2000 |     |         | Next        |
| 118   | Instrument Cluster   | Кыр2000 |     |         |             |
| *     | Vehicle Selection 🛛 🖓 Special Functions 🖾 Options                  |         | Г   |         | ~ ]         |
| Chas  | sis: M-Class   |         | ş   | ican f  | or Units    |
| Mode  | ± ₩163 (1998-2005)   |         | Γ   | 6       | <b>&gt;</b> |
| Engir | e: Diesel  |         | 0   | Clear a | all DTCs    |
| Read  |  |         |     |         |             |

### **3.Configuration**

The "ABRITES Mercedes Diagnostics" can be configured by pressing the "Options" button from the main screen. The following dialogue is displayed:

| #  | Unit name  |  | Prot    | DTC |          |      |  |  |  |  |  |  |
|----|--|--|---------|-----|----------|------|--|--|--|--|--|--|
| 01 | Engine: Motor Electronics /  | K-Line                                 |         |     |          |      |  |  |  |  |  |  |
| 02 | Gasoline Motor Electronics I   | K-Line                                 |         |     |          |      |  |  |  |  |  |  |
| 03 | Benzin Engine: Motor Electro   | K-Line                                 |         |     | Previous |      |  |  |  |  |  |  |
| 04 | Motor Electronics  | CAN                                    |         |     |          |      |  |  |  |  |  |  |
| 05 | Common Rail Diesel Injection   | K-Line                                 |         |     |          |      |  |  |  |  |  |  |
| 06 | Common Rail Diesel Injection   | n (2/3/4/5)                            | K-Line  |     |          |      |  |  |  |  |  |  |
| 07 | Turbo Diesel engine  |  | K-Line  |     |          |      |  |  |  |  |  |  |
| 08 | Anti-Lock Braking System / A   | Acceleration Slip Regulation / Electro | K / CAN |     |          |      |  |  |  |  |  |  |
| 09 | Airbag   |  | K / CAN |     |          |      |  |  |  |  |  |  |
| 10 | Airbag in SMART vehicles   |  | K / CAN |     |          | Open |  |  |  |  |  |  |
| 11 | Brake Assist System  |  | K / CAN |     |          |      |  |  |  |  |  |  |
| 12 | Instrument Cluster   |  | K / CAN |     |          |      |  |  |  |  |  |  |
| 13 | Instrument Cluster with main   | ntenance interval display              | CAN     |     |          |      |  |  |  |  |  |  |
| 14 | Instrument Cluster in SMART  | vehicles                               | K-Line  |     |          |      |  |  |  |  |  |  |
| 15 | Automatic Air Conditioning   |  | K / CAN |     |          |      |  |  |  |  |  |  |
| 16 | Pneumatic System Equipment   |  | K / CAN |     |          |      |  |  |  |  |  |  |
| 17 | Vacuum Pump Brake Booster 1  |  | K-Line  |     |          | Next |  |  |  |  |  |  |
| 18 | Vacuum Pump Brake Booster 2  |  | K-Line  |     |          |      |  |  |  |  |  |  |
| -  | Vehicle Selection 🛛 🚹 Special Functions 🧯                            | Options                                |         |     |          |      |  |  |  |  |  |  |
| F  | Protocol K-Lir   | ne Baud Rates CAN Resistor             |         |     | son      |      |  |  |  |  |  |  |
| E  | 🗹 CAN UDS  |  |         |     | 2º       |      |  |  |  |  |  |  |
| E  | ☑ CAN KWP2000         ☑ 10472\9600         120 Ohm ▼         Advance |  |         |     |          |      |  |  |  |  |  |  |
| E  | ☑ K-Line KWP2000   |  |         |     |          |      |  |  |  |  |  |  |
| E  | ✓ K-Line Slow Init   |  |         | ł   | Apply    | У    |  |  |  |  |  |  |
|    |  |  |         |     |          |      |  |  |  |  |  |  |

#### Protocol

There are 4 options here:

- CAN UDS if it is checked, the software will attempt to connect to the specified control unit using "UDS protocol with baud 500KB/s". The UDS protocol is used in control modules in newer vehicles for example the Instrument Cluster of C-Class C204 uses this diagnostic protocol
- CAN if it is checked, the software will attempt to connect to the specified control unit using "KWP2000 protocol with baud 500KB/s"
- K-Line KWP2000 when trying to connect to the electronic control device the Diagnostics will try to connect to it using "KWP2000 over K-Line"

 K-Line Slow Init – when trying to connect to the electronic control device the Diagnostics will try to connect to it using "Slow Init". Slow Init means the software attempts to initialize the specified control unit using a baud rate of 5 bits per second. Disabling this option will significantly decrease the time it needs to find the available control modules in a complete vehicle when the button "Scan All" is pressed.

It is recommended that you leave all options checked. But, if for example you wish to scan for all available devices in the vehicle you can uncheck one of them. This will make the scan process faster. Usually cars after year 2003 have some units that use the CAN protocol. However, even today there are vehicles in which some units work on the K-Line. Generally it is recommended to unchecked "K-Line KWP2000" and "K-Line Slow Init" when diagnosing vehicles produced after 2004.

#### K-Line baud rate settings

When trying to connect to the device over K-Line the Diagnostics will try to connect to it using one baud rate and if it doesn't succeed it will switch to another baud rate and try again. There are two baud rate values currently used: 10427 and 9600. Using the "10472 \ 9600" and "9600 \ 10247" radio-buttons within the options dialogue one can set the order in which these two baud rate values will be used. If "10472 \ 9600" is selected, then first the Diagnostics will try to connect to the device over K-Line using baud rate 10472 and if it doesn't succeed, it will switch to 9600 and try again with it. If "9600 \ 10472" is selected, then first the Diagnostics will try to connect to the device using baud rate 9600 and if it doesn't succeed it will switch to 10472 and try again with it.

## **Advanced Options**

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| Options<br>Language<br>English                    |   |  | A · B · R · I · T · E · S<br>automotive solutions | ×  |
|---|---|--|---|----|
|   | Apply   |  | <b>X</b><br>Cancel                                |    |
| Clicking on the "Advand<br>he language of the use | ced" button will present y<br>r interface of the Merced | ou with the follov<br>les Diagnostics: | ving screen and from here you can selec           | :t |

## 4. Diagnostics

The following diagnostic functions are supported:

| SCR   |   |                               |                    |                    | ×                    |
|---|---|-------------------------------|--------------------|--------------------|----------------------|
|   |   |                               |                    |                    |                      |
| Establishing a<br>Diagnostic cha  | a diagnostic ses<br>annel is open.  | ssion with the sele           | ected unit         |                    |                      |
| electro   | onic control uni  | it identification -           |                    |                    |                      |
| Mercedes-Benz<br>Supplier<br>Hardware Versi<br>Software Versi<br>Diagnosis Vers | No. : 61 11 53<br>: Bosch<br>ion : 14 / 06<br>ion : 15 / 06<br>sion : 17 / 17 | 3 37 79                       |                    |                    | Clear log            |
| Date of Manufa  | acture: 07.08.11  | d.                            |                    |                    |                      |
|   |   |                               |                    |                    | /Vrite log           |
|   |   |                               |                    |                    |                      |
|   |   |                               |                    |                    | <b>_</b>             |
|   |   | Clear Crach                   |                    | Verient            | ABDITES              |
| Identification  | Read DTCs   | Data                          | Adaptation         | Coding             | automotive solutions |
|   |   |                               |                    |                    |                      |
| Extended  | Clear DTCs  | Security                      | Reset              | v\rite ID          |                      |
|   |   |                               |                    |                    |                      |
| Actual Values   | Actuator<br>Tests   | Custom Memory<br>Read / Write | Custom<br>Requests | Initial<br>Startup |                      |
|   |   |                               |                    |                    | Exit                 |

### **Read identification**

Displays the complete identification of the control unit - part number, software/hardware version, manufacturer.

#### **Extended identification**

Displays extended identification of the control unit - stored original VIN number, stored current VIN number, programming date, tester serial number, boot loader information and others.

#### Actuator test

Actuator tests command the ECU to activate components and systems, such as injectors, the throttle valve, adaptive strategy, or the fuel pump, horn activation, moving electrical mirrors, switching lamps ON/OFF etc. For many components, you can conduct an auditory test — a relay clicks or a pump vibrates. Be aware that actuators can be mounted anywhere in the vehicle, such as under the dashboard, hood, or trunk.

#### **Read DTCs**

Displays all stored and pending diagnostic trouble codes with their complete description (e.g. "9101 Fault in CAN communication with control unit ESP."). The software supports saving the information to a file.

#### **Clear DTCs**

This function clears all stored diagnostic trouble codes. The software will show a text as soon as it gets a confirmation from the tested control module that the errors have been erased. To verify that the errors have actually been erased the user may click on "Read DTCs".

#### Scan All

Detects all Mercedes-Benz ECUs (electronic control units) installed in the car and reads all diagnostic trouble codes.

#### **Actual Values**

The ABRITES Mercedes Diagnostics displays live data like Oil Temperature, Fuel Level, Engine Speed, Battery voltage, etc. Please, note that the actual values may differ between different vehicle models and in order to see the correct list you need to select the correct vehicle context from the main screen - for example E-Class, Diesel, 2007. If for some reason the actual values that the program displays are still not correct, please email us the corresponding log file, together with a screen shot of the displayed actual values.

#### Reset

This functions performs a hardware reset of the control device that is being tested. Please, note that not all devices support this function. You can check whether the reset has been successful or not in the diagnostic log.

#### Make Virgin

This button is available only for Electronic Transmission Control (722.9) units and Intelligent Servo Module units. It should be used to renew these control units when they have accidentally locked to a vehicle.

### 5. Special Functions

The Abrites Diagnostics for Mercedes has some unique diagnostic functions, which are not supported by the official diagnostic testers. These functions are accessible from the "Special Functions" tab on the main screen. Please, note that depending on the version you have purchased some of these functions may not be available in your configuration. In this case a message will inform you that you need to acquire an additional license. For more information, or to obtain a license, please contact us.

| A AB  | RITES Diagnostics for Me              | rcedes/Maybach/Sma          | rt 7.2               |                           | www.ab                 | rites.com               | -                   |        |   |          |
|-------|---------------------------------------|-----------------------------|----------------------|---------------------------|------------------------|-------------------------|---------------------|--------|---|----------|
| #     | Unit name                             |                             |                      |                           |                        | P                       | rot                 | DTC    |   |          |
| 01    | Engine: Motor El                      | n / K                       | -Line                |                           |                        | Previous                |                     |        |   |          |
| 02    | Gasoline Motor E                      | ĸ                           | -Line                |                           |                        |                         |                     |        |   |          |
| 03    | Benzin Engine: M                      | (2.8) K                     | -Line                |                           |                        |                         |                     |        |   |          |
| 04    | Motor Electronic                      | :5                          |                      |                           |                        | C.                      | AN                  |        |   | Connect  |
| 05    | Common Rail Dies                      | el Injection -              | 1                    |                           |                        | ĸ                       | -Line               |        |   |          |
| 06    | Common Rail Dies                      | el Injection (              | 2/3/4/5/6)           |                           |                        | ĸ                       | -Line               |        |   |          |
| 07    | Turbo Diesel eng                      | jine                        |                      |                           |                        | ĸ                       | -Line               |        |   | Next     |
| 08    | Anti-Lock Brakin                      | ng System / Acc             | eleration Sl         | ip Regulat:               | ion / Elec             | ctro K                  | / CAN               |        |   |          |
| 09    | Airbag                                |                             |                      |                           |                        | ĸ                       | / CAN               |        |   | $\sim$   |
| 10    | Airbag in SMART                       | vehicles                    |                      |                           |                        | ĸ                       | / CAN               |        | Ŧ | Exit     |
| -<br> | /ehicle Selection                     | cial Functions   👸 Op       | tions                |                           |                        |                         |                     |        |   |          |
|       | <b>*</b>                              |                             |                      |                           |                        | Carel                   | 010110 110011 10000 |        |   |          |
| DAS   | Manager Program Smart<br>Keys (DAS 3) | DAS 2b DAS 2<br>(W163) (W16 | 2a DAS 2<br>8)       | Transponder<br>Generation | Cluster<br>Calibration | Read/Update<br>ConfData | Dump To             | ool =  |   | <b>b</b> |
|       |                                       | 👷 📧                         |                      | 0                         |                        | 9                       |                     | ) –    |   | Open     |
|       | ECU Sprinter/Vito<br>Start Error      | Airbag TV/Al                | JX Seatbelt<br>sound | Adaptations<br>for SMART  | CGW (ZGW)<br>Explorer  | ASSYST PLUS             | SBC Rep             | oair 👻 |   |          |
|       |                                       |                             |                      |                           |                        |                         |                     |        |   |          |

The following special diagnostic functions are supported:

#### Instrument cluster/odometer correction

Changes the odometer, which is stored in the Instrument Cluster.

#### Configuration read/write

By using this function you can read/write Configuration memory in some electronic control unit. You can use this application for many different purposes - investigations, read/program flash memories (for example you can program by this dialog Configuration of VDO Instrument Clusters of all Mercedes vehicles between 1998-2003).

#### Airbag

Airbag sensors store all error memory and crash data information in the internal processor Configuration. With this special function one can:

- Read/Write Configuration memory of an airbag module
- Clear the crash data of an airbag module

#### Dump Tool

By using this special function you can calculate odometer values, reset odometer values, renew Engine Control Units and so on.

#### **Engine Control Units**

Read/Write flash memory of engine control units. For some ECUs read/write of the Configuration is also supported.

#### **Transponder Generation and Programming**

With this function you can program immobilizers with the use of the TANGO programmer and directly use them in the vehicle. The transponder that you wish to program should be **PCF 7935**. Attention: For all supported vehicles it is enough just to program the transponder. However, for Mercedes ML (W163) you need to learn the transponder after you have programmed it. You can do this by using the "Immobilizer" special function.

#### DAS 2

With this special function you can generate keys for vehicles, which use DAS 2 Immobilizer system. These are the vehicles, produced between 1995-1998: C-Class(W202), E-Class (W210), G-Class (W461).

#### Immobilizer (DAS 2b)

With this special function you can read/write AAM and EAM Configuration data. Using this application you can also learn a transponder to the DAS 2b immobilizer system. Simply specify the key number (it must be between 1 and 8) and press the button "Learn ML Transponder".

#### **DAS Manager**

Using this special function the DAS system components (EZS/EIS; ESL/ ELV) can be read, updated, locked, virginized etc.

#### Program Smart Keys (DAS 3)

This special function allows you to make keys for vehicles with DAS 3 immobilizer system – W202, W203, W210, W211, W219, W220, W215, W208, W209, W463.

#### **Sprinter and Vito Repair**

With this function you can repair message, which is very common in old Vito and Sprinter vehicles.

#### TV/AUX activation/deactivation

By using this special function you can have the TV/AUX screen in the head unit enabled even when you are driving. You can also disable TV/AUX screen display during driving, if it is currently enabled, but you do not want it.

#### Seatbelt sound

This special function allows you to completely disable the seatbelt warning: both the visual indication via a tell-tale in the instrument cluster and the sound, which you can hear when the car is moving and you haven't put your seatbelt on. You can also enable these warnings, if for some reason they have been deactivated.

#### Adaptations for SMART

This special function allows you to perform adaptations on control units in SMART vehicles. You can program keys, enable/disable SOFTOUCH and so on.

#### ASSYST PLUS

Models 164, 169, 171, 204, 211, 216, 219, 221, 245 and 251 are equipped with this control module. It automatically assigns to the next service the time and wear dependent maintenance items as well as the special equipment that should be maintained.

#### **Central Gateway Explorer**

With the help of this special function it is possible to read/write COMPLETELY the Configuration of the Central gateway (CGW, or ZGW) control unit.

#### **Reverse Warning**

This special function allows you to completely disable the reverse driving warning.

#### Deactivation of speed warning for Gulf States

This special function allows you to completely disable the speed driving warning for Gulf States countries.

#### **Increment Odometer on CAN**

This special function allows you to increment the odometer on CAN vehicles.

#### 5.1 Mileage calibration

This function works on clusters, which use K-Line as databus as well as on almost all clusters, which use CAN. In the vehicles, which use K-Line the mileage is stored only inside the Instrument Cluster, so changing its value is enough. This is not the case with newer vehicles, where the mileage may be stored in several places like EZS and ECU. A complete separate manual is available on this topic.

### 5.2 Custom Memory Download/ Upload

By using this application you can read/program memory in some electronic control units. You can use this application for many different purposes - investigations, read/program flash memories. When you access this screen from the 'Special functions' list you will be able to program the Configuration of Instrument Cluster of all Mercedes vehicles between 1998-2003, which are equipped with a VDO cluster.

Attention: Note: Since version 3.9 for C-Class W203 and G-Class W463 it is possible to read/write the Configuration via the OBDII plug! It is no longer necessary to connect to the dashboard directly.



| Custor | n Men   | noŋ      | / Do | wnl   | oad  | / U  | oloa     | d    |        |          |      |     |          |      |          |      |      |            |       |            | ×              |
|--------|---------|----------|------|-------|------|------|----------|------|--------|----------|------|-----|----------|------|----------|------|------|------------|-------|------------|----------------|
| Type:  | ESP     | (E       | lec  | tro   | nic  | : St | abi      | lit  | уI     | rog      | ran  | ı); | SMA      | RT ; | 20       | 004  | - 2  | 008        | •     | 1 [        |                |
| 0000   | 1       |          | FF   | FF    | FF   | FF   | EE       | FF   | FF     | FF       | EE   | EE  | FF       | FF   | FF       | EE   | FF   |            | <br>- | - 1        | Read           |
| 00000  | 0000    | 0.0      | 05   | EC.   | 77   | 00   | 05       | FC   | 77     |          | 11   |     | 11       | 11   |          |      | 11   |            | 1     |            |                |
| 00000  | 0010    | 00       | 60   | 9F    | AB   | 00   | 60       | QF   | AB     | 00       | 02   | FC  | AB       | 00   | 02       | FC   | AB   | · · · ·    |       |            |                |
| 00000  | 0030    | FF       | FF   | FF    | FF   | 00   | 00       | 00   | 00     | 46       | 43   | 44  | 41       | 46   | 5A       | 37   | 32   | FCDAF772   |       |            | Update         |
| 0000   | 0040    | 30       | 39   | 57    | 4A   | FF   | FF       | FF   | FF     | FF       | FF   | FF  | FF       | FF   | FF       | FF   | FF   | 09DA       |       |            |                |
| 0000   | 0050    | FF       | FF   | FF    | FF   | FF   | FF       | FF   | FF     | FF       | 00   | FF  | FF       | FF   | FF       | FF   | FF   |            |       |            |                |
| 0000   | 0060    | 00       | 01   | FF    | 01   | 00   | 00       | 00   | 00     | 00       | 00   | 00  | 00       | 00   | 00       | 02   | 6E   | n          |       |            |                |
| 0000   | 0070    | OD       | 05   | 00    | 00   | 69   | AB       | 05   | AO     | 01       | 01   | 00  | 00       | 00   | B3       | 00   | 00   | i          | =     |            |                |
| 0000   | 0800    | 00       | 4E   | 00    | 00   | 00   | 66       | 0D   | 05     | 00       | 00   | CC  | AB       | 16   | 4D       | FF   | 01   | .NfM       |       |            | Save to file   |
| 0000   | 0090    | 00       | 00   | 00    | 00   | 00   | 00       | 00   | 08     | 00       | 00   | 00  | 96       | 0D   | 05       | 00   | 00   |            |       | L [        | <u> </u>       |
| 0000   | 0A00    | D9       | AB   | 1D    | 80   | FF   | 01       | 00   | 00     | 00       | 00   | 00  | 00       | 00   | 0C       | 00   | 00   |            |       |            |                |
| 0000   | 00B0    | 02       | 6A   | OD    | 05   | 00   | 00       | C5   | AB     | 24       | 85   | FF  | 01       | 00   | 00       | 00   | 00   | .j\$       |       |            | Load from file |
| 0000   | 0000    | 00       | 00   | 00    | 80   | 00   | 00       | 02   | 6A     | OD       | 05   | 00  | 00       | BD   | AB       | 24   | 8D   | \$.        |       |            |                |
| 00000  | DODO    | FF       | 01   | 00    | 00   | 00   | 00       | 00   | 00     | 00       | 06   | 00  | 00       | 02   | 6A       | 0D   | 05   | j          |       | Connecti   | on             |
| 0000   | DOEO    | 00       | 00   | B7    | AB   | 01   | 31       | 05   | 00     | 00       | 00   | 00  | 00       | 00   | 00       | 00   | 00   | 1          |       | St. Addres | s O            |
| 0000   | DOFO    | BD       | AB   | FF    | FF   | FF   | FF       | FF   | FF     | FF       | FF   | FF  | F0       | 00   | 00       | 85   | 00   |            |       |            |                |
| 0000   | 0100    | 55       | AA   | AB    | 01   | 05   | 00       | 43   | FF     | 00       | 16   | 410 | EF       | FF   | FF       | FF   | 01   | UCM        |       |            |                |
| 00000  | 0110    | 00       | 00   | 00    | 48   | AB   | 01       | 05   | 00     | 12       | FF   | 00  | 06       | B1   | F.F.     | E.E. | F.F. | ····#····· |       |            | 1000           |
| 00000  | 0120    | rr<br>TT | 6D   | 00    | 00   | 00   | Ba       | AB   | 01     | 105      | 00   | 21  | rr<br>oo | 00   | 09       | B1   | FF   | .m!        |       | Total Size | 2000           |
| 00000  | 0130    | 77       |      | EE    | 60   | 00   | 00       | 00   | AI     | AB       | 01   | 05  | 00       | 68   | rr<br>00 | 12   | 29   | mn)        |       |            |                |
| 00000  | 0150    | 10       | 07   | D1    | 22   |      | OD<br>EE |      | 00     | 00       | 01   | AD  | DI       | 100  | 00       | 1/   | 2.2  | pm         |       |            |                |
| 00000  | 0150    | 10       | 55   | DI    | 22   | 51   | 2.5      | 22   | 00     | 55       | 20   | 00  | DA       | AD   | DD       | 70   | 00   |            |       | Step       | 20             |
|        | 0170    | 05       | 00   | 50    | 55   | DD1  | 14       | 18   |        |          | - UC | 100 | 67       | 00   | 00       | 00   | FD   | ······     |       |            |                |
| 00000  | 1180    | AB       | 01   | F3    | 00   | 10   | 01       | 00   | 05     | 20       | 11   | 11  | FF       | FF   | 01       | 00   | 00   |            |       |            |                |
| 00000  | 0190    | 00       | 49   | AB    | 01   | 05   | 00       | 37   | 77     | 00       | 13   | 86  | FF       | FF   | TT       | FF   | 01   | т 7        |       | O Downi    | oad / Upload   |
| 00000  | 0120    | 00       | 00   | 00    | 1E   | AB   | 01       | 05   | 00     | 38       | FF   | 00  | 10       | DD   | FF       | FF   | FF   |            |       |            |                |
| 10000  | 01B0    | FF       | 01   | 00    | 00   | 00   | BD       | AB   | FF     | FF       | FF   | FF  | FF       | FF   | FF       | FF   | FF   |            |       | Read       | / Write Memory |
| 0000   | 01C0    | FF       | FF   | FF    | FF   | FF   | FF       | FF   | FF     | FF       | FF   | FF  | FF       | FF   | FF       | FF   | FF   |            |       | C Reau     | / white memory |
| 0000   | 01D0    | FF       | FF   | FF    | FF   | FF   | FF       | FF   | FF     | FF       | FF   | FF  | FF       | FF   | FF       | FF   | FF   |            |       | -          |                |
|        |         |          |      |       |      |      |          |      |        |          |      |     |          |      |          |      |      |            | P.    | Г          |                |
|        |         |          |      |       |      |      |          |      |        |          |      |     |          |      |          |      |      |            |       |            | X              |
| The e  | ntire E | EPR      | OM I | nas t | been | rea  | d sud    | cces | sfully | <i>.</i> |      |     |          |      |          |      |      |            |       |            | Trail.         |
|        |         |          |      |       |      |      |          |      |        |          |      |     |          |      |          |      |      |            |       |            | Exit           |

### 5.3 Airbag

For some airbag models it is not enough to clear the trouble codes (using "Clear DTCs" diagnostic request), but the crash data stored into device's Configuration should also be cleared. For some models (see "Covered units:" below) crash data can be automatically cleared (using "Clear crash data" function) from device's Configuration, but for some models the user has to do this by hand (read Configuration memory (using "Read Configuration" function), find where crash data is stored, change data, write Configuration memory back(using "Write Configuration" function).

| Airbag  | X                                     |
|---|---------------------------------------|
| Choose Airbag Type:   | Read EEPROM                           |
| Bosch Up to 1997<br>00000000 0 00 00 00 00 Bosch 1997 - 1998<br>00000020 00 00 00 00 Bosch 1998 - 2003<br>00000020 00 00 00 00 Bosch 2004 - 2008<br>00000040 00 00 00 00 Temic Up to 1994<br>00000050 00 00 00 00 Temic 1995 - 1997<br>00000050 00 00 00 00 Temic 1997 - 1999<br>00000050 00 00 00 00 Temic 1999 - 2002<br>00000050 00 00 00 00 Temic 2003 - 2008<br>00000090 00 00 00 00 TEMIC 2005 - 2010   | Write EEPROM                          |
| 00000040       00 | Load from file<br>Clear Crash<br>Data |
|   | ×<br>Exit                             |

### 5.4 Dump tool

This application needs the Configuration dump, which has been saved as a file, from the corresponding unit. After the dump file is loaded, some modifications will be made and you need to store the dump as a new file, which you can program with a special programmer into the device that the dump is from.

The dump tool receives as input a dump file from the corresponding unit (input dump is loaded with the "Load dump" button). The dump file can be read either via OBDII but also with a programmer



(especially for units where reading via OBDII is not possible). As output the dump tool displays some data extracted from the input file and/or makes some modifications to the input data. If modification were made (for some sub-functions there are no modifications made, only data are visualized) the user has to write the modified dump to desired file (with the "Save dump" button), and then this modified dump should be saved back to the device via OBDII or with a programmer. If data are read/written with a programmer the user must make sure that the proper byte order is used. Because most of the programmers are reading the data on 16bit words, the byte order in the dump depends on the used programmer - some programmers produce dumps starting with the least significant byte, and some produce dumps starting with the most significant byte. This means that for the same unit two different programmers can produce different dumps. For that purpose a button "Swap bytes" is provided. This buttons changes alternatively the byte order into the dump. So, if after loading the dump file into the dump tool data cannot be extracted or modified, please try to swap the bytes to get a correct result.

| Dump Tool  | ×     |
|--|-------|
| Type:  |       |
|  | •     |
| Engine 2,2 CDI, ST95P08, Second Variant - Make Virgin                        |       |
| Engine Sprinter SP08C3 v1 - Make Virgin                                      |       |
| Engine Compressor, 29F400, 29F800, FLASH - Make Virgin                       |       |
| Engine A668 CDI (24C02) - Make Virgin  |       |
| Engine A613 CDI (95080) - Make Virgin  |       |
| Engine A646 CDI (95160) - Make Virgin  |       |
| Engine ME 2.0 (HC11E9), MR1 (HC11E9) - Make Virgin                           |       |
| Airbag: 0 285 001 105 Bosch ARS2 000 446 02 42 Sprinter HC11E9 - Clear Crash |       |
| Airbag: 0 285 001 105 Vito HC11E20 - Clear Crash                             |       |
| Airbag: 0 285 001 165 Bosch MRSZ2 001 820 08 26 SLK HC11K4 - Clear Crash     |       |
| Airbag: 0 285 001 165 C classe HC11K4 - Clear Crash                          |       |
| Airbag: 0 285 001 215 68HC912B32 - Clear Crash Data                          |       |
| Airbag: 0 285 001 222 68HC11K4 - Clear Crash Data                            |       |
| Airbag: 0 285 001 222 Bosch 001 820 31 261 A classe HC11K4 - Clear Crash     |       |
| Airbag: 0 285 001 373 Bosch 001 820 97 26 HC12B32 - Clear Crash              |       |
| Aitbag: 0 285 001 441 Bosch E220 CDI CR16MCT9 - Clear Crash                  |       |
| Airbag: 0 285 001 477 HC11E20 (Vito, Sprinter) - Clear Crash                 |       |
| Airbag: 0 285 001 546 Bosch W220 CR16MCS9 - Clear Crash Data                 |       |
| Airbag: 0 285 001 548 C classe CR16MCT9V - Clear Crash Data                  |       |
| Airbag: 0 285 001 813 C-Class (W203) CR16MCT9V - Clear Crash Data            |       |
| Airbag: 163 542 13 18 68HC912BE32 - Clear Crash Data                         |       |
| Airbag: 163 542 22 18 68HC912BE32 - Clear Crash Data                         |       |
| Airbag: 169 820 67 26 270 518 301 705 TRW Mercedes & class, B-Class 95320    |       |
| Airbag: 002 820 21 26(81) Temic HC912B32 - Clear Crash                       |       |
| Airbag: 001 820 00 26(01) Temic E classe HC11KA4 - Clear Crash               |       |
| Airbag: 001 820 21 26(04) Temic C280 HC11KA4 - Clear Crash                   |       |
| Airbag: 001 820 00 26(11) Temic E220 HC11KA4 - Clear Crash                   |       |
| Airbag: 002 820 32 26(97) Temic Mercedes E classe HC912B32 - Clear Crash     |       |
| Car Radio Alpine: MF2199 AUDIO 10  |       |
| Car Radio Alpine: MF2910 AUDIO 10  |       |
| Car Radio Alpine: RA4110 - RGB navigation                                    |       |
| Car Radio Alpine: RA4910 - RGB navigation                                    | -     |
|  | Close |

### **5.5 Engine Control Units**

By using this special function it is possible to read/write the flash memory of some engine control units. For some engine modules it is also possible to read/write the Configuration memory. It is important to note that if when you start to re flash the Flash memory of an Engine Control unit for some reason the process does not finish successfully - you can always restart the flashing process. Always make sure that there is a good power supply connected to the battery of the car!

Otherwise, the fan of the Engine moves very fast during reading/writing and it may drain the battery very fast

| Engine Control Unit - Special Functions   | ×               |
|---|-----------------|
| ECU Bosch EDC 15C5 (CDI-1)  | Read<br>EEPROM  |
| Bosch EDC 15C6 (CDI-2)           00000001         Bosch EDC 16CP31           0000002         Bosch EDC 16C2-4           0000003         Bosch EDC 16C2-7  | Write to EEPROM |
| 0000004 Bosch EDC 16+ C32<br>0000005 Bosch ME 2.0 / 2.1 28F200 BXB<br>0000007 Siemens SIM 4LE<br>0000008 Siemens SIM 4LKE                                 | Read Flash      |
| 0000009 VDO combined Air Mass and ECU (A-Class 1997-2004<br>00000004 SMART ME-SFI (451)<br>00000000 SMART Bosch EDG 15C5 DIESEL<br>00000000 SMART MEG 450 | Write Flash     |
| 0000000E SMART ForFour Diesel EDC16C31<br>000000F0 00 00 00 00 00 00 00 00 00 00 0  | Save to File    |
| 00000120 00 00 00 00 00 00 00 00 00 00 00 00 0  | Load from File  |
| 00000170 00 00 00 00 00 00 00 00 00 00 00 00 0  | Change ID       |
|   | ×<br>Exit       |

### 5.6 Immobilizer

The Drive Authorization System (DAS) is the name for the Mercedes Immobilizer system combining vehicle access and drive authorization. Prior to 1996, DAS was separated from the engine control module, and ignition switch operation was based solely on a mechanical key. An early version of DAS was first introduced in approximately 1993 when Mercedes started networking DAS, the engine, transmission, ABS, and traction control systems on a common data

bus called CAN.

The Mercedes pneumatic control door lock system has been in existence since the early 1980s, and although now it is much more advanced, it is still in use today. It steadily became more sophisticated, adding features like central locking, starter lock-out, and steering lockout.

| 1.1 Year/Model                    | 1.2 1998<br>170/129/140/<br>163        | 1.3 1998<br>210/208/202/220/<br>215/203  |
|-----------------------------------|--|--|
| 1.4 DAS system                    | 1.5 DAS 2b                             | 1.6 DAS 3  |
| 1.7 Triggered by                  | 1.8 Transponde<br>r in key             | 1.9 Micro-processor<br>in key  |
| 1.10 Signal type                  | 1.11 Inductively<br>coupled RF         | 1.12 IR  |
| 1.13 Authorization checked by     | 1.14 RFL (N54/3)<br>AAM/DAS<br>(163)   | 1.15 EIS (N73)   |
| 1.16 Unauthorized<br>start result | 1.17 No fuel –<br>may crank<br>briefly | 1.18 No fuel –<br>ignition switch<br>locked, steering<br>or shifter locked<br>(chassis<br>dependent) |

DAS 3 is the most sophisticated and advanced generation of DAS. DAS 3 was introduced on the C, E and CLK class in 1997 and the S class in 1998 (210/208/202), increasing each year with more models phased in. This system has all the same features of DAS 2b except that the ignition switch is now fully electronic (the mechanical key is used only for vehicle access). This means that with DAS 3, both access and drive authorization are fully electronic.

Access authorization using the remote key uses both infra-red and radio transmission, but the electronic key drive authorization only uses infra-red. The electronic key transfers a radio wave code to the electronic ignition and starter switch (EIS).

With this special function you can read/write AAM and DAS Configuration data. For Mercedes ML you can program a transponder using the "Transponder Generation" function.



After this you can learn the already programmed transponder to the immobilizer system. Simply specify the key number (it must be between 1 and 8) and press the button "Learn ML Transponder".

#### Note the following when working on DAS 3 systems:

- The electronic key is completely separate from the remote key access system and does not require the transmitter battery of the remote control. Instead, it is powered by the EIS, which means that the electronic key can be used to start the vehicle even if the remote control battery is dead.

- The side of the electronic key also contains a slide out emergency mechanical key which allows access to the vehicle if the remote battery is dead. It also can be used to lock the glove compartment and the trunk.

From this screen you can access the "DAS Adaptations" screen. It allows to revocably, or irrevocably deactivate/reactivate keys. This function would be useful if, for example, you have lost one of your keys - then you can irrevocably deactivate it.

Also from this screen you can access the "Learn Radio Code of a new Transmitter Key" screen. It allows to teach a new remote control transmitter key.

### 5.7 Transponder generation and programming

With this function you can program immobilizers with the use of the Transponder programming device from Abrites and directly use them in the vehicle.

Attention: For all vehicle models, except SMART the transponder should be **PCF 7935**. For SMART vehicles the transponder must be **PCF7936 and it should be configured to be in Cipher mode**. This change can be done by changing the first byte in the Config page of the Hitag transponder to **0E** (in Password mode this byte is set to **06**).

For Mercedes ML (W163) you need to learn the transponder after you have programmed it. You can do this by using the "Immobilizer" special function. Also, for SMART vehicles you should learn the key by using the "SMART Key Teach-In" Special Function.

For C, E and G Class the transponders are self-learning. This means they can be used in the car right after they have been programmed.

### 5.8 TV/AUX Activation/Deactivation

By using this special function you can have the TV/AUX screen in the head unit enabled even when you are driving. You can also disable TV/AUX screen display during driving, if it is currently enabled, but you do not want it.

### 5.9 Seatbelt Warning

This special function allows you to completely disable the seatbelt warning: both the visual indication via a tell tale in the instrument cluster and the sound, which you can hear when the car is

moving and you haven't put your seatbelt on. You can also enable these warnings, if for some reason they have been deactivated.

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| Choose W202, W208, W210<br>W203, W209, W211, W219<br>Pessword W202, W208, W210<br>Pessword C<br>Claculate Password C<br>Calculate Password<br>Calculate Password<br>Calculate Password<br>Calculate Password<br>Calculate Password<br>Calculate Password<br>Calculate Password<br>Select Database<br>Forder | Electrical Steering Lo | ck   |  | ×                     |
|---|------------------------|--|--|-----------------------|
| Password: W202, W208, W210  | Choose                 | W202, W208, W210<br>W203, W209, W211, W219 | Read<br>EEPBOM                         |                       |
| Erase EEPROM<br>Calculate Password<br>Calculate Password<br>Calculate Password<br>Unlock ESL<br>Load Dump<br>Load Dump<br>Save Dump<br>Save Dump  | Password:              | W202, W208, W210                           | Write EEPROM                           | Program Virgin<br>ESL |
| Load Dump<br>Load Dump<br>Save Dump   |                        |  | Erase EEPROM                           | Calculate Password    |
| Save Dump   |                        |  | Load Dump                              |                       |
| - 51001   |                        |  | Save Dump<br>Select Database<br>Folder | ×                     |

For some vehicles it is possible to replace the NEC ESL with a Motorola ESL. Such vehicles are Vito 639 and Mercedes Sprinter 906.

### 5.10 Sprinter and Vito "Start error" repair

This special function guides you through the process of repairing "Start Error" problem, which is very common for Sprinter and Vito (638) vehicles.

### Sprinter/Vito WSP Immobilizer

| WSP Immobilizer type:   | Read EEPROM<br>(Partially) |
|---|----------------------------|
| 00000000 5A 00 98 Imm willie to TOW . TOWES   |                            |
| 00000010 59 BB 3d Immobilizer HC08 + 24c04  |                            |
| 00000020 11 CF De Tmmobilizer HC05 + $24c04$  |                            |
| 00000030 53 B2 DD 2F 40 DF D8 D9 AF B4 61 F2 00 48 99 85 5 74                                     | Save to file               |
| 00000040 JF C3 2C 25 2E 4F 51 1C C1 07 36 9E 4D CE DE FE, \$.006.M                                |                            |
| 00000050 4F E4 46 0F 3F 29 C5 50 7D 6D 51 AF E0 9B E5 67 0.F.?).P)mQg                             |                            |
| 00000060 6E D6 BE 71 BA D6 5A 53 F1 AC E4 9C 90 98 B6 BD nqZS                                     | <u>[</u> ]                 |
| 00000070 4E B7 01 E4 2F 1F 93 9A 50 2F 01 E4 2F 1F 93 9A N/P//                                    | Load from file             |
| 00000080 50 2F DB F3 AF 9B FE 1E 4B F0 BE OF A8 0D 7E EA P/K~.                                    |                            |
| 00000090 FE 5E 4E 27 16 7F 44 7D 67 C7 87 92 B1 80 80 94 .^N'D}g                                  |                            |
| 000000A0 D6 44 86 FD A6 33 97 2A B4 BD D8 65 2D 64 FF 7E .D3.*e-d.~                               |                            |
| 000000B0 3F E3 24 BE 2A 90 C4 86 C2 93 A3 47 20 99 FF FF 2.\$.*G                                  | Halp                       |
| 000000C0 FF FF 3C 3D 16 15 04 05 06 07 3B 41 3C 43 E5 24<=;A <c.\$< td=""><td>Teih  </td></c.\$<> | Teih                       |
| 000000D0 FF 91 3C 0D 76 01 D4 D0 5C FF FB 39 91 09 78 78<.v\9xx                                   |                            |
| 000000E0 D4 C7 EA DD A8 ED 5D 6A 75 70 36 LC C2 26 19 E1]jup6e                                    |                            |
| 000000F0 89 90 AE 57 0B 5C D5 B9 E1 EE 96 4F 91 51 71 82W.\0.Qq.                                  |                            |
| 00000100 04 F3 0F BD C7 B4 A0 B0 2F AC AA E1 49 40 00 01  | <u>R</u> epair ∎ump        |
|   |                            |
| 00000120 00 00 84 0F 61 DC 00 00 5A C0 39 3C DF FF FF FFa2.9<                                     |                            |
|   |                            |
|   | Learn Additional           |
|   | Transponder Key            |
| 00000100 DF 0B 01 00 11 10 03 /3 00 24 31 /1 F3 AU 3E 72  | J                          |
| 000001/0 0A 9B E3 65 4/ 61 DC 02 65 45 1/ 52 00 00 21 40 EG E 'g                                  |                            |
| 00000100 35 13 35 00 04 75 32 10 35 34 A0 04 31 35 34 A0  | Encrypted random number    |
|   |                            |
|   | U                          |
|   |                            |
| 00000110 30 C4 31 33 34 A0 C4 33 34 A0 C4 31 33 34 A0 C4  |                            |
| • • • • • • • • • • • • • • • • • • •   |                            |
|   |                            |
|   | E <u>x</u> it              |
|   |                            |
|   |                            |

×

| EZS (CAN vehicles)                                       |                                      | ×   |
|--|--------------------------------------|---|
| -Initial startup   |                                      |   |
| Initial startup of control unit EZS     Initial startup  |                                      | ID Write ID   |
| C Initial startup of control unit ESL                    | Activate EZS                         |   |
| Key / Key Track Information                              |                                      |   |
| Key er key track last used                               |                                      | Remote deer unlecking   |
| Second last key or key track used                        | Activate ESL                         | Perferm Ceding  |
| EZS status   |                                      |   |
| Key er key track 1                                       |                                      | Central Locking Configuration                                   |
| Key er key track 2                                       | Persenalize EZS                      | Central Locking Komfort   |
| Key er key track 3                                       |                                      | Central Locking Remote Door Unlocking                           |
| Key er key track 4                                       | Personalize ESL                      | Keyless Ge Central Lecking pest-running                         |
| Key er key track 5                                       |                                      | Saue  |
| Key er key track 6                                       | EZS - Detach<br>Transpert Protection | Cenfiguratien   |
| Key er key track 7                                       |                                      |   |
| Key er key track 8                                       | ESL - Detach                         | ⊂ Speed at which the doors will automatically lock (1-30 [km/h] |
| Get Key Info Set Key Info Program<br>Replacement<br>Keys | I ransport Frotection                | Set Lock Speed  |

### 5.11 Increment Odometer (CAN)

This special function allows you to increment the odometer on CAN vehicles.

| crease Odometer                         | × |
|---|---|
| - Select Vehicle                        |   |
|   |   |
| C R-Class                               |   |
| C M-Class                               |   |
| C G-Class                               |   |
| C GL-Class                              |   |
| C SLK-Class                             |   |
| C E-Class                               |   |
| C S-Class (BR221)                       |   |
| C Maybach                               |   |
| C CL-Class                              |   |
| C CLS-Class                             |   |
|   |   |
| Increase Odometer in Instrument Cluster |   |

### 5.12 Assyst Plus

Models 164, 169, 171, 204, 211, 216, 219, 221, 245 and 251 are equipped with this control module. It automatically assigns to the next service the time and wear dependent maintenance items as well as the special equipment that should be maintained.

With the help of this special function you can view/modify the maintenance history that has been saved inside the ASSYST Plus control unit.

Service 2: Every 30 000 km/2 years. Vehicle front, vehicle rear. Check condition and operation of trailer hitch.

Service 3: Every 60 000 km/2 years. Engine compartment.

- Check visible area of poly-V belt for wear

- Replace compressor poly-V belt

- Replace air-cleaner insert

- Turn air filter element by 180 degrees around the longitudinal axis - once when performing service 3 for the first time

Service 4: Every 60 000 km/2 years. Engine compartment. - Replace combination filter

Service 5: Every 60 000 km/2 years. Engine compartment

- Replace dust filter

- Replace combination filter

- Passenger compartment - replace activated charcoal filter

Service 6: Every 2 years

- Check bodywork for paintwork damage

- Underside of vehicle - check for damage and corrosion chassis and load-bearing body components.

Service 7: Every 5 years. Passenger compartment - Tilting/sliding roof: clean slide rails and slide shoes

Service 8: Every 3 years. Passenger compartment - Panoramic sliding roof - clean and lubricate guide mechanism

Service 9: Every 80 000 km/4 years. Engine compartment

- Replace air-cleaner insert
- Replace fuel filter

- Replace spark plugs

Service 10: Every 100 000 km/4 years. Engine compartment - Replace spark plugs

Service 11: Every 120 000 km/4 years. Engine compartment - Replace air-cleaner insert

Service 12: Every 250 000 km/15 years. Engine compartment - Passenger compartment: Replace fuel filter

- Engine compartment: Replace coolant. Pay attention to coolant composition.

Service 13: At each service. Engine compartment - Engine oil and filter change.

Service 20: Once at 60 000 km. Underside of vehicle.

- Transfer case - oil change.

- Automatic transmission - oil and filter change

| ASSYST PLUS Special      | Functions (works for CAN vehicles) |   | × |
|--------------------------|------------------------------------|---|---|
| Erase Service Memory     | Internal ASSYST PLUS data          | General Servicing                                   | 1 |
| C All memory             | Main Odometer (Km) 0               | C Confirm Overall Maintenance                       |   |
| C External Flash         | Operating time (days)              | C Reset Mistakenly Confirmed Overall Maintenance    |   |
| C EEPROM                 |                                    | C Individual maintenance items performed Service 10 | • |
| • Entry (149) 0          | Number of oil changes 0            | C Write all active warning numbers Service 10       |   |
| E                        |                                    | Service 12  |   |
| Erase                    | Get Lurrent Set Data               | Service 16<br>Service 20                            |   |
|                          |                                    | US Service 12                                       |   |
| Special Equipment        |                                    | US Service 1  |   |
| Vehicle Prod. Date       |                                    | US Service 9  |   |
| 101101011100.0040        | As of 09/2005                      | US Service 3  |   |
|                          |                                    | US Service 4  |   |
| Climate Control          | Automatic air conditionin          | u US Service 6                                      |   |
| L                        |                                    | US Service 2  |   |
|                          |                                    | US Service 5  |   |
| Roof Version             | Panoramic sliding roof             | Set US Service 10                                   |   |
|                          |                                    | US Service 11                                       |   |
| Engine Ture              | Diegol                             | US Service 7  |   |
| crigine i ype            | Diesei                             | US Service 8  |   |
|                          |                                    | US Service 15                                       |   |
| Automatic Transmission   | Present                            | ▼ US Service 20                                     |   |
| 1                        |                                    | US Service 16                                       | - |
| Special maintenance prog | gram variants                      | Automatic switchover to major service scope         |   |
| C Maintenance program    | variant for TAXI                   | Perform ASSYST Plus                                 |   |
| O Maintenance program    | variant for Iran                   | Activated Coding Service Memory                     |   |

#### How to view and change service history, stored in ASSYST PLUS:

1. Press the "Get Current" button. The currently stored information in the ASSYST PLUS should be displayed.

2. Set the information, which you want to be stored in the ASSYST PLUS device in the "Main Odometer (Km)", "Operating time (days)" and "Number of Oil changes" fields.
3. Press the "Set Data" button. If the number of oil changes that you have specified is more than 0, the

following screen will appear:

| SSYST PLUS Entry             |            |            |   | L |
|------------------------------|------------|------------|---|---|
| Current Date                 | 13.09.2015 | 1997 S     | - |   |
| Vehicle Age (in Days)        | 750        |            |   |   |
| Date of Service Maintena     | nce        | 13.09.2015 |   | • |
| Reading of main odomete      | r          | 30542      |   |   |
| Mileage of basic maintena    | ice item   | 30542      |   |   |
| Workshop Code                |            | <b></b>    |   |   |
| Tester Identification (4-byt | es Hex)    |            |   |   |
| Γ                            | Continue   | Cancel     |   |   |
|                              |            |            |   |   |

- 4. Set the data for all individiual service maintenance items and press "Continue".
- 5. If everything is OK, you should see a text message "Operation finished successfully".

### 5.13 Central Gateway Configuration read/ update

CGW is the primary gateway between CAN C and CAN B. CGW contains service maintenance programs. With the help of this special function it is possible to read/write the Configuration of the Central gateway (CGW) control unit COMPLETELY.

| Vehicle Model         A-Class (W169)<br>B-Class (W245)<br>C-Class (W204)<br>E-Class (W219)<br>Maybach (W240)<br>SLK (R171)<br>SLK (R171)<br>SLK (R179)<br>OCCOUND 00<br>GL (X164)<br>COCCUSS (W215)<br>Machael (W221)<br>CCLS (W219)<br>Machael (W216)<br>SLK (R171)<br>SLK (R199)<br>COCCUSS (W221)<br>COCCUSS (W221)<br>CCW Explorer<br>Assyst<br>CCW Explorer<br>CCW Explo | Central Gateway                         | (CAN)  | ×              |
|---|---|--|----------------|
| A-Class (W169)         B-Class (W245)         C-Class (W219)         Maybach (W240)         SLK (R171)         SLK (R171)         SLK (R171)         SLK (R199)         00000000 00         G-Class (W2210)         SLK (R171)         SLK (R199)         00000000 00         B-Class (W251)         00000000 00         C-Class (W221)         C-Class (W221)         00000000 00         00000000 00         C-Class (W221)         00000000 00         00000000 00         S-Class (W221)         00000000 00         00000000 00       00 00 00 00 00 00 00 00 00 00 00 00 00   | Vehicle Model                           | •  | <b></b>        |
| B-Class (W245)         C-Class (W204)         E-Class (W211)         CLS (W219)         Maybach (W240)         SLK (R171)         SLK (R171)         SLR (R199)         00000020 00         GL (x164)         00000020 01         M-Class (W164)         00000000 01         SMART         00000000 01         CL (x26)         00000000 01         SMART         00000000 01         CL (w216)         00000000 01         00000000 01         00000000 01       00 00 00 00 00 00 00 00 00 00 00 00 00  |   | A-Class (W169)                                   | Bead           |
| C-Class (W204)         E-Class (W211)         CLS (W219)         Maybach (W240)         SLK (R171)         SMART         00000010 00         CL (W216)         SMART         00000020 00 00 00 00 00 00 00 00 00 00 0  |   | B-Class (W245)                                   | EEPROM         |
| Collass (W201)         E-Class (W211)         CLS (W219)         Maybach (W240)         SLR (R171)         SLR (R199)         00000010 00         M-Class (W251)         SIR (R199)         00000000 00         GL (X164)         00000000 00         M-Class (W251)         SMART         00000000 00         CL (W216)         00000000 00         CL (W216)         00000000 00         CL (W216)         00000000 00         00000000 00         CL (W216)         00000000 00         00000000 00         CL (W216)         00000000 00         00000000 00       00 00 00 00 00 00 00 00 00 00 00 00 00   |   | C-Class (W204)                                   |                |
| CLS (W219)         Maybach (W240)         SLK (R171)         SLR (R199)         0000000 00         GL (X164)         Molocold 00         Maybach (W221)         SMART         00000000 00         SMART         00000000 00         SMART         00000000 00         SMART         00000000 00         CL (W216)         SMART         00000000 00         CL (W216)         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00         00000000 00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00   |   | $E_{Class}$ (W204)<br>E_Class (W211)             | 12             |
| CLS (w219)       Wike EEPROM         Maybach (w240)       SLK (R171)         SLR (R199)       GL (x164)         M-Class (w164)       M-Class (w251)         00000000 00       S-Class (w251)         00000000 00       S-Class (w221)         00000000 00       S-Class (w221)         00000000 00       S-Class (w221)         00000000 00       S-Class (w221)         00000000 00       CL (w216)         00000000 00       00 00 00 00 00 00 00 00 00 00 00 00 00   |   |  |                |
| marginal (w240)         SLR (R171)         SLR (R199)         00000000 0         M-Class (W164)         00000000 0         M-Class (W251)         SMART         00000000 0         S-Class (W221)         Class (W221)         Class (W216)         00000000 0         S-Class (W221)         Class (W216)         0000000 0         Class (W216)         0000000 0         Class (W216)         Class (W   |   | CLS (W219)                                       | Write EEPROM   |
| SLK (R171)         SLK (R171)         SLK (R171)         SLK (R199)         00000000 00         GL (X164)         M-Class (W251)         SMART         00000000 00         SMART         00000000 00         CL (W216)         00000000 00 00 00 00 00 00 00 00 00 00   |   | Maybach (W240)                                   | 140            |
| SLR (R199)         00000000 0       0       GL (X164)         00000010 00       M-Class (W164)         00000010 00       R-Class (W251)         00000000 00       SMART         00000000 00       CL (W216)         Change [D         Change [D         CGW Explorer         00000000 00       CGW Explore  |   | SLK (R1/1)                                       |                |
| 000000010       00       GL (x164)       Save         M-Class (w164)       R-Class (w251)       SMART         00000050 00       S-Class (w221)       Ca (w226)         00000050 00       Ca (w226)       Ca (w226)         00000020 00       Ca (w226)       Ca (w226)         00000050 00       Ca (w226)       Ca (w226)         00000050 00       Ca (w226)       Ca (w226)         00000050 00       Ca (w226)       Ca (w26)         00000050 00       Ca (w226)       Ca (w26)         00000050 00       Ca (w26)       Ca (w26)         00000  |   | SLR (R199)                                       |                |
| M-Class (W164)         00000020 00         R-Class (W251)         SMART         S-Class (W221)         CL (W216)         00000020 00         00000020 00         00000020 00         CL (W216)         00000020 00         00000020 00         00000020 00         00000020 00         CL (W216)         00000020 00  |   | GL (X164)  | Save           |
| B-Class (W251)         SMART         S-Class (W221)         CL (W216)         00000030 00         00000040 00         00000030 00         CL (W216)         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000030 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000040 00         00000100 00         00000100 00         00000100 00         00000110 00   | 00000010 00                             | M-Class (W164)                                   |                |
| SMART         00000040 00         S-Class (W221)         CL (W216)         00000080 00         0000080 00         0000080 00         0000080 00         0000080 00         0000080 00         0000080 00         0000080 00         000   | 00000020 00                             | R-Class (W251)                                   | ~              |
| 00000050 00<br>00000060 00<br>00000080 00<br>00<br>00000080 00<br>00<br>00<br>0000080 00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00<br>00   | 00000040 00                             | SMART  | <u>/</u>       |
| 00000060 00       CL (W216)       Classical contraction       Contracti   | 00000050 00                             | S-Class (W221)                                   | Load from file |
| 00000070       00   | 00000060 00                             | CL (W216)  | Load nomine    |
| 00000080       00   | 00000070 00                             | <u>bo ou ou</u> |                |
| 00000090       00   | 00000080 00                             | 00 00 00 00 00 00 00 00 00 00 00 00 00           |                |
| 000000A0       00   | 00000090 00                             | 00 00 00 00 00 00 00 00 00 00 00 00 00           | Change ID      |
| 000000000 00 00 00 00 00 00 00 00 00 00   | 00 0A00000                              |  |                |
| 00000000 0 00 00 00 00 00 00 00 00 00 0   | 00000080 00                             |  |                |
| CGW Explorer<br>CGW Ex  |   |  |                |
| 0000000F0       00  | 000000000000000000000000000000000000000 |  | CGW Explorer   |
| 00000100 00 00 00 00 00 00 00 00 00 00 0  | 000000F0 00                             |  |                |
| 00000110 00 00 00 00 00 00 00 00 00 00 0  | 00000100 00                             | 00 00 00 00 00 00 00 00 00 00 00 00 00           |                |
| 00000120       00   | 00000110 00                             | 00 00 00 00 00 00 00 00 00 00 00 00 00           |                |
| 00000130 00 00 00 00 00 00 00 00 00 00 00 00 0  | 00000120 00                             | 00 00 00 00 00 00 00 00 00 00 00 00 00           | Assust         |
| 00000140 00 00 00 00 00 00 00 00 00 00 00 00 0  | 00000130 00                             | 00 00 00 00 00 00 00 00 00 00 00 00 00           | 5-Q.           |
|   | 00000140 00                             | 00 00 00 00 00 00 00 00 00 00 00 00 00           |                |
|   | 00000150 00                             | 00 00 00 00 00 00 00 00 00 00 00 00 00           |                |
|   | 1                                       |  | X              |
|   |   |  |                |
| Exit  |   |  | Exit           |

From this screen you can view/modify the service history records that are stored inside the ASSYST. There are up to 5 records in the ASSYST. The ASSYST device also keeps history of up to 16 times when oil has been added. All these records hold the main odometer at which the event happened. With the help of this special application it is possible to modify this history.

| Assyst                       | (CAN)                       |        |          |              |         |          |              |         |            |             |            | ×        |
|------------------------------|-----------------------------|--------|----------|--------------|---------|----------|--------------|---------|------------|-------------|------------|----------|
| Numbe                        | er of service r             | ecords | E        | ]            |         |          |              |         |            |             |            |          |
| Log<br>1<br>2<br>3<br>4<br>5 | Odometer<br>er of replenish | (Km)   | Remainin | g Distance   | (Km) 7  | Fime (Da | ·γs) 1       | Product | of quality | factors     | Added Oil  | (Liters) |
|                              | refilling                   | numbe  | er ( C   | ldometer re  | ading ( | Km)      |              |         | Detected   | added oi.   | l quantity | (Liters) |
| -                            |                             |        | Get      | Ç<br>Current |         | Sav      | 🍠<br>ve Char | ges     |            | X<br>Cancel |            |          |

It is also possible to view/modify all service history related information, which is stored in the Configuration of Central Gateway. You can access this screen, by pressing the "CGW Explorer" button. From this screen you can change the history in both ASSYST and ASSYST PLUS devices. **Important:** You can always verify the results from the changes you have made, by opening a standard diagnostic session with both ASSYST and ASSYST PLUS from the main screen and observing their "Actual Values".

| ntral Gateway (CC     | iW) Dump            | Tool                   |                       |          |                           |             |
|-----------------------|---------------------|------------------------|-----------------------|----------|---------------------------|-------------|
| SSYST                 |                     |                        |                       |          |                           |             |
| Odenet                | er (Km)             | Remaining distance (Km | ) Days since previous | service  | Product of qual           | ity facters |
| Log 2                 |                     |                        |                       |          |                           |             |
| Leg 3                 |                     |                        |                       |          |                           |             |
| Leg 4                 |                     |                        |                       |          |                           |             |
| Log 5                 |                     |                        |                       |          |                           |             |
| Number of maint       | enance rec <b>e</b> | ords in ASSYST: 0      |                       |          |                           |             |
| SYST PLUS             |                     |                        | , l                   | Repleni  | shments (added eil) milea | iges        |
| st service mileage (I | (m) 0               | # Odoneter read:       | ing (Km) Days 🔺       | Nr 0     | doneter reading           | (Km) Liters |
|                       | -                   |                        |                       |          |                           |             |
| erating time (days)   | 0                   |                        |                       |          |                           |             |
|                       | 6                   |                        |                       |          |                           |             |
| umber of oil changes  | . U                 |                        |                       |          |                           |             |
|                       |                     |                        |                       |          |                           |             |
|                       |                     |                        |                       |          |                           |             |
|                       |                     |                        |                       |          |                           |             |
|                       |                     |                        |                       |          |                           |             |
|                       |                     |                        |                       | Numb     | er of replenishments:     | 0           |
|                       |                     |                        |                       |          |                           |             |
|                       |                     | -                      |                       | e Dump T | UDe                       |             |
|                       |                     |                        |                       | Car      | 2                         |             |
|                       |                     |                        |                       | 0.31     | 2                         |             |
|                       |                     |                        |                       | C 95     | i12 - Variant 1           |             |
| ~                     | 6                   |                        | ]                     | Ć 99     | 12 - Variant 2            | D           |
|                       |                     |                        |                       |          |                           |             |
| Lead File             | Save C              | Changes Cancel         |                       | S 95     | i12 - Variant 3           | Help        |



### 5.14 Electronic transmission Control (722.9) and Intelligent Servo Module (ISM) control units

With the help of this special function it is possible to renew 722.9 and ISM control units when they have already been adapted to a car.

Important: When you receive update from your supplier you should also receive a link to download the latest version of the renew database files!

### 5.14.1. Renew of Electronic Transmission Control Units (722.9)

The 7-Gear control units (722.9) may be renewed either in or out of a car. In order to renew a specific 7-Gear control unit out of the car it is necessary only to connect the CAN pins of the 7-Gear unit, as well as the GND and +12V pins. The wiring of the 7-Gear units is the following:

Pin1: CAN-H Pin2: CAN-L Pin4: +12V Pin5: GND

1.1. Select vehicle and connect to the Electronic Transmission Control unit.

| #   | Unit name   | Prot    | DTC 🔺 |          |  |  |  |
|---|---|---------|-------|----------|--|--|--|
| 01  | Motor Electronics                                     | CAN/UDS |       |          |  |  |  |
| 02  | Electronic Transmission Control                       | CAN     |       |          |  |  |  |
| 03  | Transfer Case   | CAN     |       | Previous |  |  |  |
| 04  | Interwheel differential lock at rear axle             | CAN     |       |          |  |  |  |
| 05  | Intelligent Servo Module                              | CAN     |       |          |  |  |  |
| 06  | Fuel Pump   | CAN     |       |          |  |  |  |
| 07  | Distronic   | CAN     |       |          |  |  |  |
| 08  | Outer right rear intelligent radar sensor system      | UDS     |       |          |  |  |  |
| 09  | Outer left rear intelligent radar sensor system       | UDS     |       |          |  |  |  |
| 10  | Selective Catalytic Reduction                         | UDS     |       | Open     |  |  |  |
| 11  | AIRmatic / Suspension (Active Body Control)           | CAN     |       |          |  |  |  |
| 12  | Electronic Stability Program                          | CAN     |       |          |  |  |  |
| 13  | Tire Pressure Monitor                                 | CAN     |       |          |  |  |  |
| 14  | Airbag  | CAN     |       |          |  |  |  |
| 15  | Weight Sensing System                                 | CAN     |       |          |  |  |  |
| 16  | Left Front Reversible Emergency Tensioning Retractor  | CAN     |       |          |  |  |  |
| 17  | Right Front Reversible Emergency Tensioning Retractor | CAN     |       | Next     |  |  |  |
| 18  | Electronic Ignition Switch (EZS)                      | CAN     | •     |          |  |  |  |
| 🌤 Vehicle Selection 🛛 🏠 Special Functions 🤯 Options |   |         |       |          |  |  |  |
| Chas:   | ssis: M-Class   |         |       |          |  |  |  |
| Mode  | t: W164 (2006- ) Scan for Units                       |         | Clear | all DTCs |  |  |  |
| Engin   | e Gasoline 🗨  |         |       |          |  |  |  |
|   |   |         |       |          |  |  |  |

1.2 The Mercedes Diagnostics will show the identification of the control unit.

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Abrites Diagnostics for Mercedes/Maybach/Smart User Manual

| A Electronic Transm  | ission Control            |                               |                    |             | X   |  |  |  |
|--|---------------------------|-------------------------------|--------------------|-------------|---|--|--|--|
|  |                           |                               |                    |             | CANISO  |  |  |  |
| Establishing a diagnostic session with the selected unit<br>Diagnostic channel is open.                              |                           |                               |                    |             |   |  |  |  |
| electronic control unit identification   |                           |                               |                    |             |   |  |  |  |
| Mercedes-Benz No. : 03 35 45 73 32<br>Supplier : Siemens<br>Hardware Version : 09 / 04<br>Software Version : 50 / 06 |                           |                               |                    |             |   |  |  |  |
| Diagnosis Versio   | Diagnosis Version : 1 / 1 |                               |                    |             |   |  |  |  |
|  |                           |                               |                    |             |   |  |  |  |
|  |                           |                               |                    |             |   |  |  |  |
| र  |                           |                               |                    |             | Next  |  |  |  |
| Identification   | Read DTCs                 | Clear Crash<br>Data           | Adaptation         | Reflash     | A · B · R · I · T · E · S<br>automptive solutions |  |  |  |
| Extended<br>Identification   | Clear DTCs                | Security<br>Access            | Reset              | Write ID    |   |  |  |  |
| Actual Values  | Actuator<br>Tests         | Custom Memory<br>Read / Write | Custom<br>Requests | MAKE VIRGIN | Exit  |  |  |  |

1.3. Pressing the button "Adaptation" will show the available adaptations including the SCN coding string. You may save the SCN coding string from a damaged control unit and then you can save this saved SCN coding in the donor 722.9 control unit:

| Read and change coding                                    |  |  |  |  |  |
|---|--|--|--|--|--|
| Parameter   | Coding   |  |  |  |  |
| Original VIN  | *****  |  |  |  |  |
| Current VIN   | ******   |  |  |  |  |
| SCN Coding  | 78666E75080000040003031717170001010  |  |  |  |  |
| Detach the transport protection, personalize and activate | Yes 🔽  |  |  |  |  |
|   |  |  |  |  |  |
|   |  |  |  |  |  |
|   |  |  |  |  |  |
|   |  |  |  |  |  |
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|   |  |  |  |  |  |
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|   |  |  |  |  |  |
|   |  |  |  |  |  |
|   |  |  |  |  |  |
|   |  |  |  |  |  |
|   |  |  |  |  |  |
| •   | F  |  |  |  |  |
| Get Coding Set Coding                                     | Image: Non-State State |  |  |  |  |
| Ready   |  |  |  |  |  |

1.4. Pressing the button "Make Virgin" will show you the following screen


Follow these recommendations:

- Connect a battery charger to the battery of the car.

- Plug the diagnostic connector and make sure it is correctly seated in the diagnostic socket.

- If you are using a laptop - connect it to constant power supply. It is also recommended to stop any screen savers, anti virus and other programs, which may affect the performance of the system.

1.5. The first time that you use this function, the software will ask you for the location of the database files for 7-Gear renew. Please, browse to the folder where you have extracted these files and select it.



1.6. A progress bar will appear showing you the time and the completed percentage. Please, wait until the procedure is complete.

1.7. When the procedure is complete you may check the "Actual Values" and verify that the Electronic Transmission Control unit reports that it is renewed.

1.8. Now, you should put the 722.9 unit in the car in which you wish to adapt it and once again connect to it and press the button "Adaptations". Press the button "Get Coding". Then for the option "Detach the transport protection, personalize and activate the control unit" select "Yes" and press the button "Set Coding". Go back

and check the actual values. If everything is OK the 7G unit should report that now it is personalized and you should be able to see the hashes of the keys.

1 9. If you have the old control unit available you may read the SCN coding and then write this SCN coding in the do not control unit.

# 5.14.2. Renew of Intelligent Servo Modules (ISM)

The ISM control units can be renewed inside the car using internal CAN connection or Outside connected to on a bench. The procedure is the same as described above, except for the following:

2.1 When the renew procedure is complete, the MB Diagnostics will ask you to unplug the AVDI cable from the OBD diagnostic port of the car and to lock the car for 2 minutes.

Please, follow the instructions carefully. The car should go to sleep – do not touch anything after you lock the car.

2.2 After the 2 minutes have passed you can unlock the car and then you can adapt the ISM unit.

# 5.15 SBC repair

The SBC repair special function is very useful when repairing the problematic Sensotronic Brake Control system. It is also included in the custom memory download and upload. There it gives you the ability to read the Configuration of this unit, save it to a file, load it and update it to the unit. It also

| Custom Memory Download / Upload  | X                       |
|--|-------------------------|
| Type: SBC (Sensotronic Brake Control); E-Class W211; SL W230; CLS W219   | Read                    |
| 00000000 00 62 01 97 3C 80 B8 FE 00 66 01 97 3C 91 09 FE .b <f<<br>00000010 00 6A 01 95 3C A1 40 FE 00 6E 01 92 3C B1 2B FE .j&lt;.@n&lt;.+.</f<<br>               |                         |
| 00000020 16 AE 25 94 3C C2 62 FE 6C B4 25 94 25 D3 87 FE   | Update                  |
| 00000040 00 54 31 78 12 07 04 48 05 03 00 10 00 05 07 11 .T1xH<br>00000050 97 02 65 96 00 26 23 92 A5 CE 01 30 A5 C7 08 30e  |                         |
| 00000060 27 05 FF 08 98 CB FF FF FF FF 05 48 75 AB FF 31 'Hu1<br>00000070 FF FF FF FF FF FF FF FF FF 0A B6 F7 C9 14 F0 FF  | Save to file            |
| 00000080 A5 39 63 63 .9cc.9cc.9cc.9cc<br>00000090 A5 39 63 63 A5 39 63 63 A5 39 63 63 A5 39 63 63 .9cc.9cc.9cc.9cc |                         |
| 00000000 A5 FF 00 00 A5 FF 00 00 A5 FF 00 00 A5 FF 00 00   | Load from file          |
| 00000000 AS EF 00 00 AS FF 00 00 AS FF 00 00 AS FF 00 00   | Connection              |
| 000000F0 A5 FF 00 00 A5 FC 03 00 A5 FC 03 00 A5 FC 03 00   | St. Address             |
| NO.  | Total Size 1000         |
|  |                         |
|  | Step 20                 |
|  | O Download / Upload     |
|  | Read / Write Memory     |
|  | Conceasing white memory |
|  | X                       |
| The entire EEPROM has been read successfully.  | Exit                    |

The special function for SBC repair has the ability to repair the SBC unit's software directly by OBD:

| A AB | RITES Diagnostics for Mercedes/Maybach/Smart www.abrites.com  |                        |            |   | • 🛛      |
|------|---|------------------------|------------|---|----------|
| #    | Unit name   | Prot                   | DTC        |   |          |
| 01   | Motor Electronics   | CAN KWP                | 20         |   | Previous |
| 02   | Central Gateway   | CAN KWP                | 1          |   |          |
| 03   | Electronic Ignition Switch (EZS)  | CAN KWP                | 9          |   |          |
| 04   | Signal Acquisition and Actuation Module   | CAN KWP                | N/A        |   | Connect  |
| 05   | System Diagnosis  | CAN KWP                | N/A        |   |          |
|      | Repair SBC  |                        |            |   | Next     |
|      | ABRITES Diagnostics for Mercedes/Maybach/Sm   |                        |            |   | Exit     |
| Ca   | Cluster Read/Update Airbag<br>libration ConfData Operation completed successfully<br>VAS 2a<br>W168)  | DAS<br>(W16            | 2b<br>i3)  |   |          |
| Stee | ering Lock Ignition Switch Program Smart optimizery two received for SMART (EIS) - K-line Keys (DAS 3) Start Error sound for SMART (EIS) - CA | itch CGW (2<br>N Explo | GW)<br>rer |   | Open     |
|      |   |                        |            | - |          |

# 5.16 DAS 3 Smart key learning



Using this special function you can perform key learning for vehicles using the DAS 3 system. When selecting the DAS 3 special function you will see the following screen:

| A AB     | 3RITES Diagnostics for Mercedes/Maybach/Smart 7.2 Days until HW synchronization: 27   | 23  |
|----------|---|-----|
| #        | A ABRITES Commander for Mercedes/Maybach/Smart  |     |
| 02       | Programming keys for DAS 3 system   | us  |
| 03<br>04 | To prepare a key, you need from the dump of EZS (EIS). You can read<br>EZS/EIS dump by diagnostic/infra-red adapter or by mcu-programmer. If      | ect |
| 05       | you read the EZS/EIS module by diagnostic or by infra-red adapter it will be<br>without special number named PASSWORD. Password you shold provide |     |
| 06       | additionaly in the next steps. Password can be reached by some of existing keys of the vehicle or by some dump (EZS/KEY).                         | r   |
| 08       | er e  | Ę   |
| 09       |   |     |
| 10       | C Prepare key using EZS (EIS) dump  |     |
|          | Prepare key by reading EZS (EIS) by Diagnostic Link or Infra-red adapter  |     |
| UA       |   |     |
|          | <back next=""> Exit</back>  |     |
|          |   |     |

The first screen provides a description on the possibilities of key learning that you have. The first item you will need is the EZS (EIS) dump. You can obtain this dump using one of three manners:

- You can read the dump using an EEPROM programmer.
- The dump can be read by OBD (using the Abrites diagnostics for Mercedes/ Maybach/ Smart.

The dump is read without the password.

- It can also be obtained using the Abrites Infra-Red (IR) adapter.

The dump is read without the password.

If at this point you have read the EZS (EIS) dump you can select the corresponding option.

A window will open to prompt you to select the dump that has previously been saved on your computer and load it in order to continue.

If you have not yet read the dump you can proceed with reading it either by diagnostics or using the IR adapter.

| ABRITES Diagnostics f | or Mercedes/Maybach/Smart 7.2                   | Days until HW  | synchronization: 28 |      |
|-----------------------|---|--|---------------------|------|
| 1 ABRITES Com         | mander for Mercedes/Maybach/Smart               | and the local design of the local division o |                     |      |
| AVDI show             | uld be connected to the diagno<br>by diagnostic | stic connector of the  | vehicle to          |      |
| Infra-Red             | adapter cable of the ABPROG                     | should be connected t  | to AVDI to          | ne   |
| 5                     |   |  |                     |      |
| 5                     |   |  |                     | 1    |
| Rea                   | EZS (EIS)                                       |  |                     |      |
|                       | Gainb   |  |                     |      |
|                       |   |  |                     | -    |
|                       |   |  |                     | K    |
|                       |   |  |                     |      |
| -                     |   |  |                     |      |
|                       |   |  |                     |      |
| A                     |   |  |                     |      |
| J                     |   |  |                     |      |
| PI                    |   | < Back   | Next >              | Exit |
|                       |   |  |                     |      |

At this point the software will explain what needs to be done in order to read the EZS (EIS) dump either by OBD or by the IR adapter.

When you have selected one of the two methods and completed the requirements the "read EZS (EIS)" button needs to be pressed and the reading begins:

| ABRITES Diagnostics for Mercedes/Maybach/Smart 7.2 | www.abrites.com               |      |
|--|-------------------------------|------|
| ABRITES Commander for Mercedes/Maybach/Smart       | T                             |      |
| AVDI should be connected to the diagnosti          | c connector of the vehicle to | 10   |
| read EZS by diagnostic                             |                               |      |
| Infra-Red adapter cable of the ABPROG sho          | ould be connected to AVDI to  | pe   |
| loud Leo by Inite Iou.                             |                               |      |
|  |                               | l l  |
| Read EZS (EIS) Save EZS (EIS) dump                 |                               | ×    |
| Reading EZS by OBDIL OK                            |                               |      |
|  |                               |      |
|  |                               | -    |
| 1  |                               |      |
| All  |                               | t    |
|  |                               |      |
| ip)  | < Back Next >                 | Exit |
|  |                               |      |

The EZS (EIS) Configuration data reading completes with success and you can now save the dump using the "Save EZS (EIS)" button. Once you have the EZS (EIS) dump you can proceed to the next step. This is where the password for key learning needs to be extracted. This is done in the following manners:

| ABF      | JTES Diagnostics for Mercedes/Maybach/Smart 7.2 www.abrites.com   |
|----------|---|
| 01       | A BRITES Commander for Mercedes/Maybach/Smart   |
| 02<br>03 | The password can be extracted in 3 ways:<br>1. Using ABPROG and a working key. Solder the NEC microcontroller of the<br>working key to the PCB V4 and press "Extract password from the key by |
| 04       | ABPROG" button.   |
| 05       | a dump containing password" button.   |
| 06       | 3. If the password is known simply type it in the password field.   |
| 07<br>08 | Password: Extract password<br>from the key by<br>NEC programmer<br>Containing password BZS (EIS) dump   |
| 9        |   |
| LO       |   |
| -        |   |
| DA:      |   |
| Spi      | Kext>   |
|          |   |



1. You can use Abprog programmer and solder the NEC MCU of a working to it in order to read the password from it. (explained in details in the message on the screen)

- 2. If you have a dump which contains the password in itself.
- 3. If you know the password you can type it in the password field.

| AB                         | TTES Diagnostics for Mercedes/Maybach/Smart 7.2 www.abrites.com   | 23   |
|----------------------------|---|------|
| #<br>01                    | ABRITES Commander for Mercedes/Maybach/Smart  |      |
| 02<br>03<br>04<br>05<br>06 | The password can be extracted in 3 ways:<br>1. Using ABPROG and a working key. Solder the NEC microcontroller of the<br>working key to the PCB V4 and press "Extract password from the key by<br>ABPROG" button.<br>2. If the password is contained in a dump from EZS or KEY press the "Load<br>a dump containing password" button.<br>3. If the password is known simply type it in the password field. | hect |
| 07<br>08                   | Password: D81BC8614ADC2016 Extract password<br>from the key by<br>NEC programmer Containig password   | xt   |
| 09<br>10<br>()<br>DA       | Dump load OK.   | dit  |
| Spi                        | < Back Next > Exit  |      |
|                            |   |      |

If the EZS (EIS) dump has been read by a programmer – please select the option and load the dump:





The Abrites diagnostics for Mercedes/ Maybach/ Smart confirms the conditions needed and shows you that you can proceed:



At this point you can press "OK".

Either way you obtain the EZS (EIS) dump and password the software will inform you that there are two ways in which the required information can be obtained.

The first method is by using the PROTAG programmer, connected to your AVDI – by doing that you will need to manually select the position where the new key dump needs to be generated.

Alternatively you can opt to perform the calculation online. This process takes about 10 minutes to complete. It will generate dumps for ALL key positions.

| 1                     | ABRITES Commander for                                    | Mercedes/Maybach/Smart  | 7 |
|-----------------------|--|---|---|
| 2                     |  | Programming keys for DAS 3 system   |   |
| 3                     | To prepare   | neration  |   |
| 5<br>6<br>7<br>9<br>0 | you read th<br>without spe<br>additionaly<br>keys of the | <ul> <li>The required information for the key can be calculated in two ways:         <ul> <li>by using a PROTAG programmer connected to the AVDI - by selecting this option, the user has to select the position for which to generate the key dump</li> <li>Online (requires about 10 minutes) - by selecting this option, dumps for all available positions are generated</li> </ul> </li> <li>To proceed with the PROTAG programmer, press "Yes" To proceed online, press "No".</li> </ul> |   |
| A                     | ⊂ Prepare  | Yes No Cancel   |   |
| Spi                   |  | < Back. Next > Exit   |   |

If you choose to perform the generation of the dump using a PROTAG programmer you will have the option to choose a position:

| 02<br>03                               | То                          | Programmin   | g keys for DAS 3 system  |              |
|--|-----------------------------|--|--|--------------|
| )4<br>)5<br>)6<br>)7<br>)8<br>)9<br>10 | EZ<br>yo<br>wii<br>ad<br>ke | <ul> <li>Position 0: Used</li> <li>Position 1: Used</li> <li>Position 2: Not used</li> <li>Position 3: Not used</li> <li>Position 4: Not used</li> <li>Position 5: Not used</li> <li>Position 6: Not used</li> </ul> | Type of the key for which to generate dump<br>C .x11<br>C .x21<br>C .x41<br>G .x51 | 0K<br>Cancel |
| DA:                                    | -                           | C Position 7: Not used   | < Back   | Next> Exit   |



If the online method is selected the choice is made by the software:

At this point the online calculation begins:



The procedure completes successfully and the following screen appears:

|   | 7                                 |        |
|---|-----------------------------------|--------|
| ABRITES Commander for Mercedes/Maybach/Smart  | at the second second second       |        |
| Preparing dumps required for the calculation<br>Generating data ( may take till 10min )     | n OK<br>OK                        |        |
| Dump for the key at the specified position is<br>You can proceed with the programming of th | generated.<br>ne dump in the key. | 0      |
|   |                                   | i i    |
|   |                                   | ×      |
|   |                                   |        |
|   |                                   | a      |
|   |                                   |        |
| Elapsed time: 205 sec   |                                   |        |
|   |                                   |        |
|   | (Back Next)                       | Exit I |

If the PROTAG programmer method is selected the generation of the dump will start:





In usually about 70 seconds the new dump is generated:

| A AB                        | RITES Diagnostics for Mercedes/Maybach/Smart 7.2 Days until HW synchronization: 28  |
|-----------------------------|---|
| #                           | ABRITES Commander for Mercedes/Maybach/Smart  |
| 01<br>02<br>03<br>04<br>05  | Preparing dumps required for the calculation OK<br>Checking for ABRITES PROTAG programmer with IR Key OK<br>Generating key dump for key in the selected position OK<br>Calculating key data OK<br>Generate dump from the calculated data OK |
| 06<br>07<br>08              | Dump for the key at the specified position is generated.<br>You can proceed with the programming of the dump in the key.  |
| 09<br>10<br><b>%</b><br>DA: | Elapsed time: 68 sec  |
| Spi                         | < Back Next > Exit  |

Once the generated dump is prepared it needs to be written to the key. There are 2 ways this can be performed.

| A AB     | 3RITES Diagnostics for Mercedes/Maybach/Smart 7.2 www.abrites.com                   | 3   |
|----------|---|-----|
| #        | A ABRITES Commander for Mercedes/Maybach/Smart                                      |     |
| 01       | Now the generated key dump should be written to the key. This can be done with:     | JIS |
| 03       | 1 PROTRAC programmer in this case place the IR key in the PROTAC programmer IR elet |     |
| 04       | 2. ABPROG with PCB V4 to which the NEC microcontroller of the key is soldered.      | .ct |
| 05       |   |     |
| 06       | Erase key Check key Write key   | -   |
| 07       |   |     |
| 09       |   |     |
| 10       |   |     |
| -        |   |     |
|          |   |     |
| DA       |   | ור  |
|          |   |     |
| Spi<br>∢ | <pre></pre>   |     |
|          |   |     |

1. Using the PROTAG programmer's IR port. An IR key needs to be placed in the IR key slot of the programmer.

2. Using ABPROG V4 (ZN033) to which you have soldered he NEC MCU of the key.

The software will recognize the procedure you have selected automatically and will continue with the writing after your confirmation.



Once you

confirm the writing will be performed:

| A AB     | 3RITES Diagnostics for Mercedes/Maybach/Smart 7.2 Days until HW synchronization: 28                         | • X  |
|----------|---|------|
| #<br>01  | ABRITES Commander for Mercedes/Maybach/Smart  |      |
| 02       | Now the generated key dump should be written to the key. This can be done with:                             |      |
| 03       | 1. PROTRAG programmer. In this case place the IR-key in the PROTAG programmer IR s                          | lot. |
| 04       | 2. ABPROG with PCB V4 to which the NEC microcontroller of the key is soldered.                              | nect |
| 05       |   |      |
| 06       | Erase key Check key Write key   |      |
| 07       |   | set  |
| 08       |   |      |
| 09       |   | 5    |
| 10       |   | dit  |
| DAI      | Checking for ABRITES PROTAG programmer with IR Key OK<br>Communicating with the IR Key OK<br>Writing key OK |      |
| Spi<br>∢ | < Back Next > Exit  |      |
|          |   |      |

N.B. Key dumps are generated in C:\Users\user name\Documents\ABRITES software for ID XXXXXX where "XXXXXX" is your AVDI ID\Mercedes.

# 5.17 DAS Manager

The DAS manager special function is designed to combine the special functions previously used when working with EZS/ EIS and ESL/ ELV both by CAN and K-line protocols

Using these functions you can perform reading, activation, key enabling, adaptations, virginizations and others with the Drive Authorization System (DAS) related electronic modules.

Once the EZS (EIS) is read the software will open the following window where the actions available for the module are shown:

| Drive Authorization  | System Component Ma   | nager   |                 |  | ×               |
|--|---|---|-----------------|--|-----------------|
| • EZS / EIS  | C EZS / EIS CPU-2   | C Engine Control Unit   | C ISM           | C AAM/EAM W163   | C IFZ/Immo DA52 |
| C ESL/ELV  | C ESL / ELV CPU-2   | C Transmission Control Unit   | C Infra Red Key | C WSP/Immo W168  |                 |
| OOOO D3 FF FF         OO10 OF FE 78         OO20 FF FF FF         OO30 OO 07 2F         OO40 FF FF FF         OO50 B1 00 07         OO60 FF FF FF         OO70 A1 E5 00         OO80 2A B7 20            Reading EZS data         EZS initialized.         EZS personalized.         EZS activated.         Key 1 enabled used         Key 3 enabled used         Key 6 enabled used         Key 7 enabled used         Key 8 enabled not u         Service: 3C48EB8A3         Done. | FF FF FF FF FF FF FF<br>21 D9 AA F5 1D 0C<br>FF 43 00 0F 30 5D<br>1F 7C FF FF FF FF FF<br>FF FF FF FF FF FF FF<br>FF FF FF FF FF FF FF<br>78 45 1D 50 B6 00<br><br>. Remaining ignition cycles<br>. Remaining | Control Unit<br>FF FF FF FF FF FF FF FF<br>95 03 5B EF 4F 6E C5<br>FF 7A 00 07 3F FF FF<br>1F 7C FF FF FF FF FF<br>FF FF 84 00 07 FF FF<br>3C 48 EB 8A 5E 0D 57<br>FF FF FF B8 00 0F BE<br>07 2F 1F 77 FF FF FF<br>(ife) 196492<br>(ife) 196599<br>(ife) 196604<br>(ife) 196604<br>(ife) 196604 | Service Passwol | rd :<br>rd :<br>Load dump<br>Save dump<br>Read<br>Virgin<br>ESL Adaptation | Activation      |
| <u> </u>   |   |   |                 | Ŧ  | Close           |

The required component of the system needs to be selected.



### In the window below the ESL/ ELV Configuration data options are shown:

Using the options from the list you can perform all needed adaptations to the ESL/ELV.

With this option you can also reset, unlock the electronic steering lock, make it virgin, extract the service password and many other functions.

# 5.17.1 EZS (EIS) Password Extraction by IR Connector, DAS manager, Abrites cable set.

The DAS manager can also be used to extract the EZS (EIS) password. You can do this by using the ZN036 IR adaptor.





Depending on the situation you can use different methods of password extraction. If you have a working key you can use your working key with your PROTAG programmer in order to easily extract the password. When you use this method you need to put the key in the EZS and in the PROTAG in a sequence. The software will give you the needed instructions.

In the cases where you need to work on a car where all keys are lost the best way to do this is to follow the table in the appendix of the manual (DAS Manager Table 1\*) in order to better understand how to go about with the different models of Mercedes – Benz vehicles.

Abrites has developed a system of cables to work together with the DAS Manager software to help you with your work with the vehicles. As easy as we have tried to make the system work it requires your attention and patience.

| Drive Authoriz   | zation Sy   | stem Co                    | mpon                 | ent Ma                  | nager                   |                      |                         |                |                  |                  |      |                 | -               | x  |
|--|---|----------------------------|----------------------|-------------------------|-------------------------|----------------------|-------------------------|----------------|------------------|------------------|------|-----------------|-----------------|----|
| € EZS / E  | IS  | C ezs                      | / EIS C              | PU-2                    | C Er                    | igine C              | iontrol (               | Jnit           |                  | $\mathbf{C}$ ISM | C Ar | AM/EAM W163     | C IFZ/Immo DA52 |    |
| C ESL / EL   | V   | O ESL                      | / ELV C              | PU-2                    | O Tr                    | ansmis               | sion Co                 | introl         | Unit             | C Infra Red Key  | OW   | SP/Immo W168    |                 |    |
| 0000 D3 F<br>0010 OF C<br>0020 FF F  | TFFFF<br>TB9DC<br>TFFFFF                                  | F FF F<br>D 92 B<br>F 43 O | F FF<br>A 3F<br>D OF | FF FF<br>21 7E<br>E6 74 | FF FF<br>1F 00<br>78 A1 | F FF<br>0 03<br>7 E4 | FF FF<br>FF FF<br>61 3C | FF<br>FF<br>33 | FF A<br>FF<br>C5 | Service Password | 1:   |                 |                 |    |
| 0030 00 0<br>0040 FF F<br>0050 B1 0  | 17 FF F<br>TF FF F<br>10 07 F                             | F FF F<br>F FF 1<br>F FF F | F FF<br>0 00<br>F FF | FF FF<br>07 FF<br>FF FF | FF 72<br>FF FI<br>FF FI | A 00<br>F FF<br>F 84 | 07 FF<br>FF FF<br>00 07 | FF<br>FF<br>FF | FF<br>FF<br>FF   | Key Password :   |      | Read            | Save Data       |    |
| Reading EZS<br>EZS SSID: E8<br>EZS initialized                               | data<br>8 83 77 5/<br>d.                                  | 4                          |                      |                         |                         |                      |                         |                |                  |                  | *    | Personalization | Activate        |    |
| EZS transpor<br>EZS persona<br>EZS activate<br>Key 1 enable<br>Key 2 enable  | rt mode is<br>ilized.<br>ed.<br>ed used<br>ed used        | release                    | 1.                   |                         |                         |                      |                         |                |                  |                  |      | Virgin          | Disable Ke      | y  |
| Key 3 enable<br>Key 4 enable<br>Key 5 enable<br>Key 6 enable<br>Key 7 enable | ed used<br>ed used<br>ed not use<br>ed used<br>ed not use | ed<br>ed                   |                      |                         |                         |                      |                         |                |                  |                  |      | Read Coding     | Write Codin     | ng |
| Service: FD7<br>Done.  | ed not use<br>76AC71A1                                    | ed<br>IDD 1AA0             |                      |                         |                         |                      |                         |                |                  |                  |      | Program Key     | Get EZS Par     | 55 |
|  |   |                            |                      |                         |                         |                      |                         |                |                  |                  | Ŧ    |                 | Close           |    |

Go to the DAS manager special function and read the EZS:

After reading the EZS you can go ahead and take the IR key out of the slot, then reinsert it and press "GET EZS Pass".

| 🖲 EZS / EIS 💦 C E   | ZS / EIS CPU-2                            | C Engine Control Unit   | $\mathbf{C}$ ISM | C AAM/EAM W163  | C IFZ/Immo DAS2 |
|---|---|---|------------------|-----------------|-----------------|
| C ESL / ELV C E   | ESL / ELV CPU-2                           | C Transmission Control Unit   | C Infra Red Key  | C WSP/Immo W168 |                 |
| 000 D3 FF FF FF FF<br>010 OF CB 9D CD 92<br>020 FF FF FF FF 43  | FF FF FF FF<br>BA 3F 21 7E<br>00 0F E6 74 | FF FF FF FF FF FF FF FF<br>1F 00 03 FF FF FF FF<br>78 A7 E4 61 3C 33 C5 | Service Password | :               |                 |
| 030 00 07 FF FF FF<br>040 FF FF FF FF FF<br>050 B1 00 07 FF   | FF FF FF FF FF                            | FF 7A 00 07 FF FF FF  | No. Page and     |                 |                 |
|   | Please re                                 | insert IR adapter fro   | om EZS/EIS.      |                 | Save Data       |
| eading EZS data   |   |   |                  |                 | V               |
| ZS SSID: E8 83 77 5A<br>ZS initialized.   |   |   |                  |                 | Activate        |
| ZS transport mode is re<br>ZS personalized.<br>ZS activated.<br>ey 1 enabled used                         |   |   |                  |                 | Disable Key     |
| ey 2 enabled used<br>ey 3 enabled used<br>ey 4 enabled used<br>ey 5 enabled not used<br>ey 6 enabled used |   |   |                  | X Cancel        | Write Coding    |
| ey 8 enabled not used<br>envice: ED764C7141DD14   | 40  |   |                  |                 |                 |
| one.  |   |   |                  | Program Key     | Get EZS Pass    |
|   |   |   |                  |                 | X               |
|   |   |   |                  |                 |                 |

| ezs/eis C  | EZS / EIS CPU-2   | C Engine Control Unit   | C ISM            | C AAM/EAM W163  | C IFZ/Immo DAS2             |
|--|---|---|------------------|-----------------|-----------------------------|
| C ESL/ELV  | ESL / ELV CPU-2   | C Transmission Control Unit   | 🖒 Infra Red Key  | C WSP/Immo W168 |                             |
| 00 D3 FF FF FF F1<br>10 0F CB 9D CD 92<br>20 FF FF FF FF 43<br>30 00 07 FF FF F1<br>40 FF FF FF FF<br>50 B1 00 07 FF   | F FF FF FF FF<br>2 BA 3F 21 7E<br>3 00 0F E6 74<br>F FF FF FF FF<br>EIS Password Extr | FF FF FF FF FF FF FF F<br>1F 00 03 FF FF FF FF<br>78 A7 E4 61 3C 33 C5<br>FF 7A 00 07 FF FF FF<br>actor | Service Password | :               |                             |
| ading EZS data<br>S SSID: E8 83 77 5A<br>S initialized.<br>S transport mode is re<br>S personalized.<br>S activated.   | Working   |   |                  |                 | Activate                    |
| y 1 enabled used<br>y 2 enabled used<br>y 3 enabled used<br>y 4 enabled used<br>y 5 enabled not used<br>y 6 enabled not used<br>y 7 enabled not used<br>y 8 enabled not used | 440   |   | [                | X Cancel        | Disable Key<br>Write Coding |
| ne.  | AAU   |   |                  | Program Key     | Get EZS Pass                |
|  |   |   |                  |                 | X                           |

#### Then the procedure for reading the password will start working:

### Please

wait for the reading to finish:



#### NOTE:

When doing all key lost situations we suggest that you forbid your PC to sleep as this will slow down the password extraction, have constant power to both it and the car you are working on. When ALL keys are lost the software will ask you to connect to the LIN of the EZS (connect it to PIN7 of the OBD). This is done because it speeds up the calculation. Please note that the easiest way is to disconnect the ESL's connector and connect the LIN to it on one end and the other to PIN7 of the OBD. Note that there is a Pinout for the DB25 connector on the AVDI in the common user manual.

Attention: When reading password for W639, you may need to connect the K-Line 1 of the Distribution box to CAN HI 3 of the EZS.



The password is now extracted and is already filled in the "Key password" field.

The procedure can also be performed with the ZN036 attached to the AVDI via the ZN030 and your Protag programmer attached to your computer. Please note that you will need to have internet connection to the laptop computer. You can read the password from the existing key (BGA type as well).

- The first step is to read the EZS (EIS)

| ive Authorization System Component Manager   |  |           |
|--|--|-----------|
| C EZS / EIS         C EZS / EIS CPU-2         C Engine Control Unit           C ESL / ELV         C ESL / ELV CPU-2         C Transmission Control Unit           000         S FF   | C ISM/DSM/ESM C AAM/EAM W163 C IFZ/Immo D<br>C Infra Red Key C WSP/Immo W168<br>Service Password :   | JA52      |
| 110 OF ED 86 1C BO 92 08 F6 AB 1F 00 03 FF FF FF FF<br>120 FF FF FF FF 43 00 0F 12 14 D6 DF 81 CC C2 42 C5<br>130 00 07 2F 1F 78 FF FF FF FF FF 7A 00 07 FF FF FF<br>140 FF FF FF FF FF 10 00 07 2F 1F 71 FF FF FF FF FF<br>150 B1 00 07 2F 1E 70 FF FF FF FF FF 84 00 07 2F 1F<br>3   | Key Password :   | we Data   |
| Pading EZS data<br>25 SSID: C0 9F 72 2A<br>25 Initialized.<br>25 transport mode 1s released.<br>25 gersonalized.<br>25 activated.<br>25 activated.<br>29 1-ED061CB09208F6AB-9168014AB17A0EC5. Remaining ignit  | Personalization Au<br>Virgin Disa  | ctivate   |
| y: 2-CAREDO4DA65B11F7-F840D4A302AB3B5D. Remaining ignit<br>ys 3-1214D6DF81CCC242-00C6E15023A3B9B7. Remaining ignit<br>y 4-9C70ED93CB38C961-361600DBA9ECE278. Remaining ignit<br>ys 5-8AB23B42565260AE. Still not used<br>yg 6-5665B87054792F6C-91A4AAD3B230A126. Remaining ignit<br>yr 7-00ED01E570131152-EA880A39936DC023. Remaining ignit<br>yr 8-A497A418A3420DD5-91F94B99C2BE372B. Remaining ignit<br>yrtice: hCF9343DP040FF3A | tions 196255<br>tions 196255<br>tions 196593<br>tions 196464<br>tions 196588<br>ProofEmulate Key Get | te Coding |
| sne.   | EZS Dump<br>Utility  | Close     |

- In step two you can select a method of password extraction:

| Annates New York States Annatas   | and the second sec | ××            |
|---|--|---------------|
| © EZS / EIS         C EZS / EIS CPU-2         C Engine Control Unit           © ESL / ELV         © ESL / ELV CPU-2         C Transmission Control Unit   | C ISM/DSM/ESM C AAM/EAM W163 C IFZ/Immo DASZ<br>C Infra Red Key C WSP/Immo W168  | 2             |
| 0000 D3 FF  | Service Password : Mica  | ige i         |
| 0030 00 07 2F 1F 7F FF FF FF FF 7A 00 07 FF FF FF<br>0040 FF FF FF FF FF 10 00 07 2F 1F 62 FF FF FF FF FF<br>0050 B1<br>Password Extraction   | You Demonstry  | )<br>afa      |
| Reading - with the help of your IR-adapter usually useful when not<br>22S SSII - with the help of your ProTag programmer and some of e<br>EZS has - with the help of ABProg and MCU from some existing ke<br>- with the help of your IR-adapter usually useful when not<br>EZS trained extraction.<br>EZS pers<br>EZS actioned to the set of the set o  | available any key.<br>xisting keys.<br>y if it is v57.<br>available any key and additional relay for fast password   | ate<br>Enable |
| Key 1-35<br>Key 2-39<br>Key 2-39<br>Key 3-27<br>Key 3-27<br>Key 3-27<br>Key 3-27<br>Key 3-27<br>Key 3-27<br>Key 3-27<br>Key 3-27<br>Key 1-35<br>Key | y MCU IR-adapter and Fuse-Relay Cancel   | oding         |
| <pre>Key 4-CA7B24B4C370B64-0ABD097F6F9942F3 Key 5-E70C7DEC1B7D9C20. Still not used Key 6-CCDD86C03BF13D27-31BA576F624EA2C2. Remaining igni Key 7-E8665410527ADD94. Still not used Key 8-1D3275549D6B2D2E. Still not used Service: 40E6983083534388</pre>  | Itions 196578  | Pass          |
| EZS/EIS password extraction.  | Utility Clos   | ie .          |

When you select the IR adapter or Protag option the software will connect to them:

| Drive Authorization System Compon  | ient Manager   |   | ×               |
|--|--|---|-----------------|
| © E25/EI5 C E25/EI5 C<br>C ESL/ELV C ESL/ELV C   | PU-2 C Engine Control Unit<br>PU-2 C Transmission Control Unit   | C ISM/DSM/ESM C AAM/EAM W163<br>C Infra Red Key C WSP/Immo W168   | C IFZ/Immo DAS2 |
| 0000 D3 FF FF FF FF FF FF<br>0010 0F ED 86 1C B0 92 08<br>0020 FF FF FF FF 43 00 0F<br>0030 00 07 2F 1F 78 FF FF           | FF         FF< | Service Password :  |                 |
| 0040 FF FF FF FF FF F<br>0050 B1 00 07 2F 1 Please Wa  | it   |   | X L             |
| Conn<br>Reading EZS data<br>EZS SSID: C8 9F 77<br>EZS initialized.<br>EZS personalized.<br>EZS personalized.               | necting to your infrared a   | dapter  | Activate        |
| Key 1-20801050920<br>Key 2-CA8B004DA65<br>Key 3-1214D6DF81C<br>Key 4-9C70FD95CB3<br>Key 5-8AB23B42565                      |  | × Cancel  | Write Coding    |
| Key 6-5685B87054792F6C-91<br>Key 7-006D01E570131152-EA3<br>Key 8-A497A418A3420DD5-91<br>Service: ACE9334DD940FE3A<br>Done. | A4AAD3B230A126. Remaining ign<br>380A99936DC023. Remaining ign<br>F94B99C2BE372B. Remaining ign  | itions 196593<br>itions 196464<br>itions 196588<br>Prog/Emulate R | Get EZS Pass    |
| EZS/EIS password extraction  | on.  | EZS Du<br>Utilty  | np 🗡            |

-It will then read the EZS (EIS).

| Drive Authorization System  | n Component Manager  | × |
|---|--|---|
| © EZ5/EI5 C<br>C ESL/ELV C<br>0000 D3 FF FF FF F<br>0010 0F ED 86 1C B<br>0020 FF FF FF FF 4  | EZS / ELS CPU-2 C Engine Control Unit C ISM/DSM/ESM C AAM/EAM W163 C IFZ/Immo DAS2<br>ESL / ELV CPU-2 C Transmission Control Unit C Infra Red Key C WSP/Immo W168<br>F FF FF<br>3 00 00 F1 2 14 06 DF 81 CC C2 42 CS<br>FF FF FF FF FF FF FF F7 G 0 07 FF FF FF |   |
| 0040 FF FF FF FF F<br>0050 B1 00 07 2F 1<br>c<br>Reading EZS data<br>EZS SSID: C8 9F 72   | EZS/EIS Password Extractor X<br>Reading EZS data.  |   |
| EZS initialized.<br>EZS transport mode<br>EZS personalized.<br>EZS activated.<br>Key 1-ED661CB09200<br>Key 2-CAEBD04DA655<br>Key 3-1214D6DF81C0<br>Key 4-9C70FD95CB33<br>Kev 5-6Ba23B425655 | Please wait X Cancel   | / |
| Key 6-5685B8705475<br>Key 7-9F5CB70BB764<br>Key 8-A497A188342<br>Service: ACE9334DT<br>Done.<br>E25/EIS password (  | 2F6C-91A4AAD3E230A126. Remaining ignitions 196593<br>915A-67851426E2EAF56A. Remaining ignitions 195579<br>940FE3A<br>xtraction.  | 8 |



-It may ask you to take the key out of the EZS and insert it into the Protag or back in the EZS a few times. Follow the instructions closely:

| Drive Authorization System Component Manager  |  |
|---|--|
| ← EZS / EIS ← EZS / EIS CPU-2 ← Engine Control Unit   | C ISM/DSM/ESM C AAM/EAM W163 C IFZ/Immo DAS2                     |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit   | C Infra Red Key C WSP/Immo W168                                  |
| 0000 D3 FF  | Service Password :   |
| 0040 FF FF FF FF FE EZS/EIS Password Extractor  | × .  |
| Reading EZS data<br>EZS SSID: C2 9F 7;<br>EZS initialized.<br>EZS scruted.<br>Key 1-ED601CB09200<br>Key 3-1214D6DF81C<br>Key 4-SC70F05CB3<br>Key 5-BA22B42565   | Activate<br>Activate<br>Disable Key<br>Write Coding              |
| Key 6-565587054792F6C-91A4AD3B320A126. Remaining ign<br>Key 7-9FSCEP08P56915A-67B514262EAP56A. Remaining ign<br>Key 8-A497A418A3420DD5-91F94B99C2BE372B. Remaining ign<br>Service: ACE9394DD940FE3A<br>Done.<br><u>FZ5/E15 password extraction.</u> | tiona 196593<br>tiona 196588<br>Prog/Emulate Key<br>UBty<br>UBty |

- If by now you have not attached an external power supply please make sure to do so at this point. The password extraction may take up to an hour.

|  |  | and the second sec |   | 10   |
|--|--|--|---|--|
|  |  |  |   | ×  |
| igine Control Unit   | C ISM/DSM/ESM  | C AAM/EAM W163   | C IFZ/Immo DAS2   |  |
| F FF FF FF FF FF FF<br>0 03 FF FF FF FF FF<br>F 81 CC C2 42 C5<br>A 00 07 FF FF FF | Service Password   | :  |   | _  |
| tor  |  |  | X   |  |
| in your ProTag   | programmer   |  | Activate<br>Disable Key   |  |
| should be charg  | ed!  | X Cancel   | Write Coding  |  |
| 126. Remaining igni<br>56A. Remaining igni<br>72B. Remaining igni                  | tions 196593<br>tions 195979<br>tions 196588   | Prog/Emulate   | Key Get EZS Pass  |  |
|  |  | EZS Du<br>Utilit   | y Close   |  |
|  | gine Control Unit<br>snamission Control Unit<br>FF FF FF FF FF<br>2 B1 CC C2 42 C5<br>100 07 FF FF FF<br>in your ProTag<br>should be charg<br>126. Remaining igni<br>56A. Remaining igni | gine Control Unit<br>ansmission Control Unit<br>FF FF FF FF FF FF<br>10 3 FF FF FF FF<br>11 CC C2 42 CS<br>10 00 7F FF FF<br>tor<br>in your ProTag programmer<br>should be charged!<br>126. Remaining ignitions 196593<br>56A. Remaining ignitions 196593  | gne Control Unit C ISM/DSM/ESM C AAM/EAM W163<br>arsmission Control Unit C Infra Red Key. C WSP/Inmo W168<br>FF FF FF FF FF<br>03 FF FF FF FF<br>14 CC C2 42 CS<br>100 07 FF FF FF<br>tor<br>in your ProTag programmer<br>should be charged!<br>126. Remaining ignitions 196593<br>56A. Remaining ignitions 196593<br>128. Remaining ignitions 196588 | gine Control Unit<br>gine Control Unit<br>FF FF FF FF FF<br>00 07 FF FF FF<br>tor<br>tor<br>tor<br>tor<br>tor<br>tor<br>tor<br>tor |



- Make sure to watch for instructions by the software.



#### Follow the steps it gives you:

| Drive Authorization   | System Component Ma   | inager  |   |                  |                  |
|---|---|---|---|------------------|------------------|
| C EZS/EIS   | C EZS / EIS CPU-2   | C Engine Control Unit   | C ISM/DSM/ESM                                   | C AAM/EAM W163   | C IFZ/Immo DA52  |
| C ESL/ELV   | C ESL/ELV CPU-2   | C Transmission Control Unit   | C Infra Red Key                                 | C WSP/Immo W168  |                  |
| 00000 D3 FF FF<br>0010 0F ED 86<br>0020 FF FF FF<br>0030 00 07 2F                 | FF FF FF FF FF FF<br>1C B0 92 08 F6 AB<br>FF 43 00 0F 12 14<br>1F 78 FF FF FF FF  | FF FF FF FF FF FF FF FF<br>1F 00 03 FF FF FF FF<br>D6 DF 81 CC C2 42 C5<br>FF 7A 00 07 FF FF FF | Service Passwor                                 | d:               |                  |
| 0040 FF FF FF<br>0050 B1 00 07  | FF F<br>2F 1 EZS/EIS Password   | Extractor   |   | 1                | × Save Data      |
| Reading EZS d   | Insert the  | key in ignition   |   |                  | Activate         |
| EZS initializ<br>EZS transport<br>EZS personali<br>EZS activated<br>Key 1-ED861CE | ted.<br>: mode<br>ized.<br>i.<br>:09208   |   |   |                  | Disable Key      |
| Key 2-CA8BD04<br>Key 3-1214D6D<br>Key 4-9C70FD9<br>Key 5-8AB23B4                  | IDA655<br>0F81C(<br>05CB3(<br>125652  |   |   | 🗙 Cancel         | Write Coding     |
| Key 6-5685B87<br>Key 7-9F5CBF0<br>Key 8-A497A41<br>Service: ACE9<br>Done.         | 054792F6C-91A4AAD3<br>08BF64915A-67B51426<br>18A3420DD5-91F94B99<br>0334DD940FE3A | B230A126. Remaining ign<br>E2BAF56A. Remaining ign<br>C2BE372B. Remaining ign                   | itions 196593<br>itions 195979<br>itions 196588 | Prog/Emulate     | Key Get EZS Pass |
| EZS/EIS passw   | ord extraction.   |   |   | EZS Du<br>Utilit | mp<br>V Close    |



-Once the software manages to extract the password you will be able to see it, it will also be populated in the password field of the DAS manager main screen.

| Drive Authorization   | System Component Ma   | inager  |   |                   |                 |
|---|---|---|---|-------------------|-----------------|
| C EZS/EIS   | C EZS / EIS CPU-2   | C Engine Control Unit   | C ISM/DSM/ESM                                   | C AAM/EAM W163    | C IFZ/Immo DA52 |
| C ESL/ELV   | C ESL/ELV CPU-2   | C Transmission Control Unit   | C Infra Red Key                                 | C WSP/Immo W168   |                 |
| 0000 D3 FF FF<br>0010 OF ED 86  | FF FF FF FF FF FF<br>1C B0 92 08 F6 AB  | FF FF FF FF FF FF FF FF   | Service Password                                | f:                |                 |
| 0020 FF FF FF<br>0030 00 07 2F<br>0040 FF FF FF<br>0050 B1 00 07                  | FF 43 00 0F 12 14<br>1F 78 FF FF FF FF<br>FF E<br>2F 1 EZS/EIS Password         | D6 DF 81 CC C2 42 C5<br>FF 7A 00 07 FF FF FF<br>d Extractor                   |   | ala               | ×               |
| Reading EZS of<br>EZS SSID: C8  | Password  | d extracted: 53AXXX   | (XXXXXXXX)                                      | xx                | Save Data       |
| EZS initializ<br>EZS transport<br>EZS personali<br>EZS activated<br>Key 1-ED861CE | ed.<br>: mode<br>.zed.<br>1.<br>09201   |   |   |                   | Disable Key     |
| Key 2-CA8BD04<br>Key 3-1214D6<br>Key 4-9C70FD9<br>Key 5-8AB23B4                   | DA651<br>DF81C0 Done.   |   |   | X Done            | Write Coding    |
| Key 6-5685B87<br>Key 7-9F5CBF0<br>Key 8-A497A41<br>Service: ACE9                  | 054792F6C-91A4AAD3<br>BBF64915A-67B51426<br>8A3420DD5-91F94B99<br>9334DD940FE3A | B230A126. Remaining ign<br>E2BAF56A. Remaining ign<br>C2BE372B. Remaining ign | itions 196593<br>itions 195979<br>itions 196588 | Prog/Emulate I    | ey Get EZS Pass |
| EZS/EIS passy   | word extraction.  |   |   | EZS Du<br>Utility | mp 🕺            |



When you select the method with the Abrites IR adapter and fuse relay you will need to connect the fuse relay to the ignition fuse. *Please check the appendix for the Abrites cables we can provide in order to assist with your work.* The example below is with the W204 Mercedes C-class as it provides a clear way of understanding the way the procedure works:



When working on a W204 car for all keys lost for example you can open the front SAM module on the driver side and see fuse number "27" - disconnect it, connect your ABRITES FUSE RELAY CONNECTOR and plug your relay and proceed to start the All keys lost procedure. Make sure that the ZN036 is in the EZS and that it is in the ignition "ON" position. The ignition fuse is different for the different models so a wiring diagram may be useful.

W204 Fuse "27" (ignition fuse).

Once the Abrites fuse connector is placed you can connect the Abrites fuse relay. The procedure of extracting the password will be up to 10 times faster than usual.

| € EZS/EIS  | C EZS / ELS CPU-2  | C Engine Control Unit  | C ISM/DSM/ESM    | C AAM/EAM W163  | C IF2/Immo DAS2  |
|--|--|--|------------------|-----------------|--|
| C ESL/ELV  | C ESL / ELV CPU-2  | C Transmission Control Unit  | C Infra Red Key  | C WSP/Immo W168 |  |
| 0000 D3 FF FF  | FF FF FF FF FF FF FF<br>24 18 E0 B3 1A 9   | IF FF FF FF FF FF FF FF A  | Service Password | 1               | Miesge   |
| 0020 FF FF FF<br>0030 00 07 FF   | FF 43 00 OF 4E 83  | FF 7A 00 07 FF FF FF   | 1                | -               |  |
| 040 FF FF FF   | EZS/EIS Passwo   | d Extractor  |                  |                 | ×  |
|  |  |  |                  |                 | Save Data  |
|  | ESI la as  | meater should be w   | have a           |                 |  |
| Reading EZS da   | ta OBDII pi  | n 7 should be conne  | cted to the E    | LV/ESL's LIN    | Activate   |
| Reading EZS da<br>EZS SSID: 18 E<br>EZS has been n<br>EZS initialize<br>EZS transport  | ESLSCC<br>DBDII pi<br>euti<br>and  | n 7 should be conne  | ected to the E   | ELV/ESL's LIN   | Activate   |
| Reading EZS da<br>ZZS SSID: 18 E<br>ZZS has been n<br>ZZS initialize<br>ZZS transport<br>ZZS activated.<br>dileage RM: 0<br>Key 1-FBA02418<br>Key 2-91A48B27<br>Key 3-4FE276E1   | ESESCO<br>ECC OBDII pi<br>ed.<br>mode<br>red.<br>FOB: Progress   | 5182 of up to 8192   | incred to the E  | ELV/ESL's LIN   | Activate   |
| Reading EZS da<br>ZZS SSID: 18 E<br>ZZS has been n<br>ZZS initialize<br>ZZS transport<br>ZZS activated.<br>fileage KM: 0<br>Key 1-FBA02418<br>Key 2-91A48827<br>Key 4-D9F75285   | ESE SCC<br>DE C OBDII pi<br>leuti<br>dd.<br>modt<br>eed.<br>Progress<br>SF81<br>D641E166. Still  | s 5182 of up to 8192   | incred to the E  | ELV/ESL's LIN   | Activate   |
| Reading EZS da<br>ZZS SSID: 18 E<br>ZZS has been n<br>ZZS initialize<br>ZZS transport<br>ZZS personaliz<br>ZZS activated.<br>dileage RM: 0<br>dey 1-FBA02418<br>dey 2-91A48B27<br>dey 3-4E8276E1<br>dey 4-097752B5<br>dey 5-47C73E9C<br>dey 5-47C73E9C   | EOB: Progress<br>De41E166. Still<br>187062, Still<br>1870620, Still<br>1870620, Still<br>1870620, Still  | s 5182 of up to 8192   | incred to the E  | Cancel          | Activate   |
| Reading EZS da<br>ZZS SRID: 18 E<br>ZZS has been n<br>ZZS initialize<br>ZZS transport<br>ZZS activated.<br>Iilaage RM: 0<br>Key 1-FBA02418<br>Key 2-91A48327<br>Key 3-4E5276E1<br>Key 4-D9775285<br>Key 5-2FC7DEC<br>Key 7-E6685410  | A Constant of the second secon | s 5182 of up to 8192   | cted to the E    | Cancel          | Activate   |
| Reading EZS da<br>EZS SSID: 18 E<br>EZS SSID: 18 E<br>EZS intialize<br>EZS intialize<br>EZS transport<br>EZS personaliz<br>EZS personaliz<br>EZS personaliz<br>EZS personalize<br>Mey 2-914/827<br>Key 3-4E5276E1<br>Key 3-4E5276E1<br>Key 3-4E77AE6<br>Key 5-E70C7DEC<br>Key 7-E865410<br>Key 8-10327554  | EDE: CO<br>ECC: OBDII pi<br>seuti<br>ted.<br>ECOS: Progress<br>SF61<br>D641E166. Still<br>13F09620. Still<br>13F09620. Still<br>13F09620. Still<br>19D8822E. Still   | s 5182 of up to 8192<br>not used<br>not used<br>not used<br>not used | cted to the E    | Cancel          | Activate Activate Activate Cisable/Enable Usable/Enable Get EZS Pass |
| Reading EZS da<br>ZZS SSID: 18 E<br>ZZS SsID: 18 E<br>ZZS has been n<br>ZZS initalize<br>ZZS transport<br>ZZS personaliz<br>ZZS atrivated.<br>dileage MM: 0<br>Key 2-91A4827<br>Key 3-4E27621<br>Key 3-4E27621<br>Key 3-4E27752<br>Key 5-2707020<br>Key 5-2707020<br>Key 5-2707022<br>Key 5-270702<br>Key 5-27070 | EOBL SCCC<br>DEC C<br>EC C<br>EC C<br>EC C<br>EC C<br>EC C<br>EC C   | s 5182 of up to 8192<br>not used<br>not used<br>not used<br>not used | cted to the E    | Cancel          | Activate   |

We suggest you use the ABRITES FUSE RELAY in ALL KEY LOST situations when possible because this method saves a lot of time

## 5.17.1.1 W164/W221 before the facelift password extraction when all keys are lost

Extracting an EZS EIS password from the W221, W216, W164, W251 before facelift via DAS manager and the IR adapter when all keys are lost.

In order to complete this operation you will be required to do the following:

1. Connect the ZN051 distribution box to your AVDI and make sure you have your purple cable set connected

to CAN H and CAN L (3-11). Connect the OBD cable to the ZN051. Connect your IR adapter to the AVDI and leave it aside.

2. Locate the internal power train CAN (Green/ White – CAN H; Solid Green – CAN L) and connect the purple connection cables to the internal power train CAN using the supplied pinch needle connectors.(fig.2)

3. Start the password extraction process as you would do for any other car – Read the in DAS manager, press "Cet F7S page". Select ID edenter and PROTAC

"Get EZS pass", Select IR adapter and PROTAG.

4. The procedure will start and will suggest that you remove the ISM/DSM. It is always easier to just take the fuse out. Locate and remove the fuse. For W221– passenger side No.83, 30A.(fig.4). For W164- Remove ECU fuse if prompted in engine compartment, right front (Petrol- fuses 103,105, Diesel- fuses 101,103,105) Fig.4.1. W164 EZS fuse can be found on socket 14 in the passenger side fuse box. You need to connect the fuse adapter to the fuse socket and connect the adapter to the DS-Box Relay- Fig. 4.2 The W221 EZS fuse can be found in the front SAM, fuse 37(7.5A). This fuse is responsible for the backup power of the ISM/DSM. - Fig. 4.3 and its socket is connected to the DS-Box Relay via the Fuse Adapter. 5. You will be required to wait for around 5 minutes until the ISM/ DSM is discharged without a fuse.

6. The process for password extraction will be started and you will start seeing the extracts in the bottom of the window.

7. You will require active AMS and internet connection and as always, once the password is extracted, you can



program a key to the car via PROTAG.

Fig. 4.3





4.1 (Petrol- fuses 103,105, Diesel- fuses 101,103,105)

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4.2 - W164 passenger fuse box. EZS fuse is socket 14



## 5.17.1.2 W220/W215/R230 password extraction using ZN051 DS-Box

To read the password from the W220/W215/R230 models you need to use the DAS Manager as with any other Mercedes that uses Infra-Red EZS. The option that needs to be selected is the Relay method once prompted. You can work both in the car or on bench. Below you can see the bench connections of the EZS.



The EZS can be easily connected on bench with 3 methods, using the ZN051 DS-Box or the ZN041 Relay cables with a DB-25 connector or an OBD cable.

## Method 1:

Connecting the EZS directly to a ZN051 DS-Box. You need to prepare a couple of cables used to connect:

- GND of the EZS goes to **GND** of the DS-Box. **GND** from the power supply is also connected to the **GND** socket

- CH and CL of the EZS go to CAN 3-11 on the DS-Box
- K-Line goes to K1 of the DS-Box
- +12V from the EZS goes to the 2nd relay socket (right).

- Additionally, you need to power-up the DS-Box and the EZS with +12V using the **B+** socket and the **1st Relay socket (left)**.

## Method 2:

Connecting the EZS to the DS-Box Relay and a DB25 connector:

- GND of the EZS goes to DB25 pin5 and pin6
- CH and CL of the EZS go to DB25 pin4(CH) and pin12(CL)
- K-Line of the EZS goes to DB25 pin2
- +12V of the EZS goes to DS-Box 2nd relay socket (right)
- The DS-Box itself needs to be powered using the **B+** and **GND** sockets
- Pin17 of the DB25 goes to the 1st Relay socket (left) on the DS-Box

## Method 3:

Connecting the EZS to the DS-Box Relay and an OBDII cable connector:

- GND of the EZS goes to OBD pin4 and pin5
- CH and CL of the EZS go to OBD pin3(CH) and PIN11(CL)
- K-Line of the EZS goes to OBD pin1
- +12V of the EZS goes to OBD 2nd relay socket (right)
- The DS-Box itself needs to be powered using the **B+** and **GND** sockets
- Pin 16 of the OBD connector goes to the 1st Relay socket (left) on the DS-Box

\*Note: All of the above mentioned methods require a switch to be connected(the switch is used to turn on IGN when prompted by the software).

\*Note if using the ZN041 Relay Cable set, make sure to connect K1 of the Relay to K7 of the DB25 cable.

### 5.17.1.3 W202/W208/W210 password reading from a working key hazards

For the the older Mercedes models such as W202, W208 and W210 it is advisable to use the IR-Adapter to read the password from the EZS. Reading the password from a working key in these models poses a threat for the working key, the EZS and the ESL. The processors in these units and keys may stop functioning due to their low capability of calculating the complexity of data that is needed to read the password. If a working key is used to read the password and the process does not complete or gets stuck in one place, this means the key or the EZS have stopped functioning. The car battery can be disconnected for 4-5 minutes and then reconnected. This will usually reset the EZS but the working key may stop functioning. If this happens, the IR-Adapter should be used to read the password.

# 5.17. 2 Module Exchange, Virginizing, Personalization and Activation using DAS Manager

The DAS Manager special function allows many modifications to the different units within the vehicles. Using this function the ECU, TCU, ISM, ELV and EZS can be returned to a virgin state, adapted to a vehicle, personalized, activated and coded. This function is extremely useful when using the DAS Manager to exchange used electronic modules in Mercedes – Benz vehicles.

In most cases these procedures are done by both OBD and internal CAN connection and generally speaking require you to bring the electronic unit to a virgin state, personalize it to the car, code it, and activate it. In order to better understand the meaning of this procedure we need to understand what the different terms used above mean.

1. Virgin – This is the state of the module when it is initially produced by the manufacturer and is ready to install in the vehicle.

2. Personalize – This is the state, when the electronic unit is adapted to the vehicle but this adaptation is not permanent (In this state the unit can be coded with previously read information).

This can be used in order to test if a used module is working with the vehicle but not committing to its installation in that vehicle.

3. Activation – When the "Activate" option is used the module adaptation to the vehicle is complete.

When the Activation is done the coding cannot be written to the module.

Using this option we commit to the personalization and coding we have made.

As an example we can use the functions of the DAS Manager in order to exchange multiple electronic control units in the Mercedes-Benz vehicles. When reading the ECU using the DAS Manager special function the reading process is always done via OBD. For other operations related to DAS manager you may need to use the internal CAN or LIN connection.

A good example of an internal CAN cluster is behind the ML 164's passenger foot well plastic guard:



# I. ECU



#### After

the internal CAN we can retry the reading process. The following will appear:

| Prive Authorization System Component Ma   | nager   |                  |                 | X               |
|---|---|------------------|-----------------|-----------------|
| O EZS / EIS CPU-2   | Engine Control Unit   | C ISM            | C AAM/EAM W163  | C IFZ/Immo DAS2 |
| C ESL/ELV CPU-2   | C Transmission Control Unit   | C Infra Red Key  | C WSP/Immo W168 |                 |
| 0000 D3 FF FF FF FF FF FF FF FF<br>0010 0F 36 82 DB 6A 93 ED D3 68<br>0020 FF FF FF FF FF 43 00 0F A9 A9<br>0030 00 07 FF FF FF FF FF FF<br>0040 FF FF FF FF FF FF FF FF<br>0050 B1 00 07 FF FF FF FF FF FF | FF FF FF FF FF FF FF FF<br>1F 00 03 FF FF FF FF<br>E0 21 16 FD F0 68 C5<br>FF 7A 00 77 FF FF<br>FF FF FF FF FF FF FF<br>FF FF FF 84 00 07 FF FF<br><br>connection with the unit<br>s mandatory direct connection<br><br>released. | Service Password | Read            | Save Data       |
| Control Unit activated.<br>Key #1 - 3682DB6A93EDD368<br>key #2 - D888D6872DD04A9<br>key #3 - A9A9E02116FDF068<br>key #4 - E9F54CA6484B87C<br>key #5 - 2CF6F4FC6321808E                                      |   |                  | Read Coding     | Write Coding    |
| key #6 - 6245F71357361A23<br>key #7 - 68D8413ECD61784<br>key #8 - B4BFC194300EA39B<br>Service: CSF77FBE302E3C64<br>Done.  |   |                  | E               | Close           |

This means that the reading is done. After this you can read the existing coding of the unit and save it (this is not an obligatory step):

| Drive Authorization System Component Manager  |                                    | X               |
|---|------------------------------------|-----------------|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit   | C ISM C AAM/EAM W163               | C IFZ/Immo DA52 |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit   | C Infra Red Key C WSP/Immo W168    |                 |
| 0000 3 FF F  | Service Password :                 |                 |
| ▼   | Read                               | Save Data       |
| In some cases to read data it is mandatory direct conn<br>  | ection to the CA A Personalization | Activate        |
| key #1 - 3682DB6A93EDD368<br>key #2 - DB88D6872DD04A9<br>key #3 - A9A9E02116FDF068<br>key #4 - E9F54CA66484B87C<br>key #5 - 2CF6F4FC6321808E<br>key #5 - 2CF6F4FC6321808E<br>key #6 - 6245F71357361A23<br>key #7 - 66BD8413FCD61784 | Read Coding                        | Write Coding    |
| key #0 - B4BFC194300EA39B<br>Service: C5F77FBE302E3C64<br>Done.<br>FBS data saved.<br>Reading coding<br>Done.   | E                                  | Close           |

When the coding is saved you can make the ECU virgin. For this operation you will require internet connection:

| rive Authorization System Component Manager   |  | 1.5                               | X II Z          |
|---|--|-----------------------------------|-----------------|
| In some cases to       Reading control Unit trait   | C ISM<br>Infra Red Key<br>Service Password | C AAM/EAM W163<br>C W5P/Immo W168 | C IFZ/Immo DAS2 |
| Control Unit act:<br>key #1 - 3682DB6<br>key #2 - D888DB6<br>key #3 - A9A9E02<br>key #4 - E9F54CA<br>key #6 - 6245F71357361A23<br>key #6 - 68D84136CD61764<br>key #8 - B4BFC194200EA39B<br>Service: CSF77FBE302E3C64<br>Done.<br>FBS data saved.<br>Reading coding<br>Done. |  | E V                               | Write Coding    |



The virginization process is complete:



You can now proceed towards personalization of the unit. Please make sure to turn the ignition OFF and ON again. Personalize gets the data from the EZS and writes it to the ECU:

| Drive Authorization System Component M  | anager  |                          |  | X               |
|---|---|--------------------------|--|-----------------|
| C EZS / EIS C EZS / EIS CPU-2<br>C ESL / ELV C ESL / ELV CPU-2  | <ul> <li>Engine Control Unit</li> <li>Transmission Control Unit</li> </ul>  | C ISM<br>C Infra Red Key | C AAM/EAM W163<br>C WSP/Immo W168                            | C IFZ/Immo DAS2 |
| 0000 D3 FF FF FF FF FF FF FF FF F1<br>010 0F 36 82 DB 6A 93 ED D3 60<br>020 FF FF FF FF 43 00 0F A9 A<br>0030 00 07 FF FF FF FF FF FF<br>040 FF FF FF FF FF FF FF FF<br>040 FF FF FF FF FF FF FF FF<br>050 B1 00 07 FF FF FF FF FF FF<br>0000 D1 00 07 FF FF FF FF FF FF<br>0000 D1 00 00 FF FF FF FF FF FF<br>0000 D1 00 00 00 FF FF FF FF FF FF<br>0000 D1 00 00 00 FF FF FF FF FF FF<br>0000 D1 00 00 00 FF FF FF FF FF FF FF<br>0000 D1 00 00 FF FF FF FF FF FF FF FF<br>0000 D1 00 00 FF FF FF FF FF FF FF FF<br>0000 D1 00 00 FF FF FF FF FF FF FF FF FF<br>0000 D1 00 00 FF FF FF FF FF FF FF FF FF FF<br>0000 D1 00 00 FF | T FF FF FF FF FF FF FF FF<br>3 IF 00 03 FF FF FF FF<br>9 E0 21 16 FD F0 68 C5<br>7 FF 7A 00 07 FF FF FF<br>7 FF FF FF FF FF FF FF FF<br>8 ault settings.<br><br>released. | Service Password         | CE<br>CE<br>Read<br>Personalization<br>Virgin<br>Kead Coding | Save Data       |
| <pre>Key #6 - BABYC194300EA39B<br/>Service: C5F77FBE302E3C64<br/>Done.<br/>Personalization : Data transfe<br/>Personalization : Done.</pre>   | r from EZS  |                          |  | Close           |

After this step you may need to turn the ignition OFF and ON again. Then you can activate the unit:

| ADDITEC D' I' C MA I MA I LIC IZE                      |                      | 1.5      |                 |                 |  |
|--|----------------------|----------|-----------------|-----------------|--|
| Drive Authorization System Component Manager           |                      |          |                 |                 |  |
|  |                      |          |                 |                 |  |
| O EZS / EIS O EZS / EIS CPU-2 O Engine Control Unit    | C ISM                | О ААМ    | /EAM W163       | C IFZ/Immo DAS2 |  |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control I | Unit 🔿 Infra Red Key | C WSP    | /Immo W168      |                 |  |
|  | <b>DD</b>            |          |                 |                 |  |
| 0000 03 FF         | Service Passwor      | d :      |                 |                 |  |
| 0020 FF FF FF FF FF 43 00 0F A9 A9 E0 21 16 FD F0 68   | C5 E40C55102EADD(    | 5CE      |                 |                 |  |
| 0030 00 07 FF FF FF FF FF FF FF FF 7A 00 07 FF FF      | FF                   | r        | <u>~~~</u>      |                 |  |
| 0040 FF FF FF FF FF 10 00 07 FF FF FF FF FF FF FF FF   | FF                   |          | 35              |                 |  |
| 0050 B1 00 07 FF FF FF FF FF FF FF FF 84 00 07 FF      | FF +                 |          | Bead            | Save Data       |  |
| 4  | 1 F                  | L        | Redu            | Jave Data       |  |
|  |                      | [        |                 |                 |  |
| Personalization : Data transfer from EZS               |                      | <b>^</b> | 1               | 🗸               |  |
| Personalization : Done.                                |                      |          | Personalization | Activate        |  |
| Reading control unit FBS data                          |                      |          |                 |                 |  |
| Control Unit initialized.                              |                      |          | <i>i</i>        |                 |  |
| Control Unit transport mode is released.               |                      |          |                 |                 |  |
| Control Unit personalized.                             |                      | L        | Virgin          |                 |  |
| $kev \pm 1 = 3682DB6A93EDD368$                         |                      | Г        |                 |                 |  |
| key #2 - CA457504748FCD8C                              |                      |          | - <u>*</u>      |                 |  |
| key #3 - A9A9E02116FDF068                              |                      |          | Read Coding     | Write Coding    |  |
| key #4 - E9F54CA66484B87C                              |                      | L        | record county   |                 |  |
| key #5 - 20F6F4F06321808E                              |                      |          |                 |                 |  |
| kev #7 - 68BD8413ECD61784                              |                      |          |                 |                 |  |
| key #8 - 5DC880C22275B84F                              |                      |          |                 |                 |  |
| Service: C5F77FBE302E3C64                              |                      |          |                 |                 |  |
| Done.  |                      | Ξ        |                 | ×               |  |
| Control Unit Activation                                |                      |          |                 |                 |  |
| DORC.  |                      | Ŧ        |                 | Close           |  |
|  |                      |          |                 |                 |  |
|  |                      |          |                 |                 |  |

As you can see from the software's information window every step it takes is recorded and displayed so that you can see what step is done.

The software also tells you what steps you have to proceed with.

When a used ECU needs to be installed in the vehicle you can connect the ECU to the car and perform the following steps in order to adapt it to the car so that it replaces a broken unit:



1. Read the used ECU (as in the above case the ECU may need to be read by internal CAN)



2. The used ECU is in a virgin state. You can turn the ignition OFF and ON again. Then press personalization:

| Drive Authorization System Component Manager   |                                 | ×               |
|--|---------------------------------|-----------------|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit  | C ISM C AAM/EAM W163            | C IFZ/Immo DA52 |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit  | C Infra Red Key C WSP/Immo W168 |                 |
| 0000 D3 FF   | Service Password :              | Save Data       |
| Service: C5F77FBE302E3C64<br>Done.<br>Preparing ECU virgin<br>Done. Unit resetted to its default settings.<br>   | Personalization                 | Activate        |
| Control Unit NOT personalized.<br>Control Unit NOT activated.<br>key #1 - 00000000000000<br>key #2 - 000000000000000<br>key #3 - 00000000000000<br>key #4 - 00000000000000<br>key #5 - 00000000000000<br>key #6 - 00000000000000 | Read Coding                     | Write Coding    |
| key #7 - 000000000000000<br>key #8 - 000000000000000<br>Service: 000000000000000<br>Done.  |                                 | Close           |
3. The unit is personalized and ready to be activated. Press "Activate":



4. The activated ECU is ready to work in the vehicle.

NOTE: Please make sure to always turn the ignition OFF and ON again before Personalization of an Engine Control Unit.

# II. EZS

The Adaptation of used EZS modules goes through the same general steps. You need to select the EZS from the selection menu in the top of the DAS manager and read it:



In this step we can GET the EZS password as per the methods described in 5.17.1. Now we can proceed to make the EZS virgin. You will need an IR adapter:



After confirming you can proceed to the next step. Do NOT forget to have your IR connector connected to the AVDI and ready to be plugged into the EZS when the software asks for it:



The restore to virgin state is completed.

| 14  | anager   |  |                  |
|---|--|--|------------------|
| 🕫 EZS / EIS 💦 🌔 EZS / EIS CPU-2   | C Engine Control Unit  | C ISM C AAM/EAM W163   | C IFZ/Immo DAS2  |
| C ESL / ELV CPU-2   | C Transmission Control Unit  | C Infra Red Key C WSP/Immo W168  |                  |
| 000 D3 FF FF FF FF FF FF FF FF<br>010 0F 36 82 DB 6A 93 ED D3 68<br>020 FF FF FF FF 43 00 0F A9 A9<br>030 00 07 2F 1F 75 FF FF FF FF  | FF FF FF FF FF FF FF +<br>1F 00 03 FF FF FF FF<br>E0 21 16 FD F0 68 C5<br>FF 7A 00 07 2F 1F 7C         | Service Password :<br>E40C55102FADD6CE   |                  |
| 040 FF FF FF FF EZS/EIS reset   |  | the Person of Concession of Co |                  |
| EZS/EIS<br>eading EZS data<br>rror: Can not be<br>eading EZS data<br>ZS SSID: 80 4C (<br>ZS initialized.<br>ZS personalized   | reset to its defau   | ult data.  | Activate         |
| 79 activated  |  |  |                  |
| ley 1-3682DB6A931<br>ley 2-CA457504741<br>ley 3-A9A9E021161   |  | ∧ Done   | Write Coding     |
| La BULVBLE           21 - 362/2016A931           ey 2 - CA45750474           ey 3 - A394021161           ey 4 - 459754CA6448487C-30921031           ey 5 - 2576747C6321060E-51074697           ey 6 - 6245771337361223.           ey 7 - 668D64136CD617944.           ey 8 - 70466B201C066225-5020260 | 42488806. Remaining ign<br>9F3850C1. Remaining ign<br>lot used<br>lot used<br>28F0BF584. Remaining ign | Itions 196599<br>Itions 196604<br>Itions 196539  | Key Get EZS Pass |

#### Now we can

proceed to the personalization of the EZS unit. First make sure to read the EZS and make sure that it is in a virgin state:

| Drive Authorization System Component Manager              | 1000 AP 100 - 100  | ×   |
|---|--|---|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit       | C ISM C AAM/EAM W163 (                                       | C IFZ/Immo DA52   |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit | C Infra Red Key C WSP/Immo W168                              |   |
| 0000 D3 FF            | Service Password :<br>Key Password :                         |   |
|   | 77824373C459D1E6 Read  | Save Data   |
| Service: C5F77FBE302E3C64<br>Done.<br>FBS data saved.<br> | Personalization<br>Virgin<br>Read Coding<br>Prog/Emulate Key | Activate<br>Disable Key<br>Write Coding<br>Get EZS Pass |
| Done.   |  | Close   |
|   |  |   |

Then turn the ignition OFF and ON again. Press personalize:



If you do not have the service key the software will allow you to load previously saved data to this EZS and use it with the new (second hand) EZS. Alternatively you can record the Abrites default data. If you choose to do that – all previous keys will be lost and new ones need to be learned. This is the **FBS\_Data\_Abrites.bin** file. It is located in the following folder: C:\Program Files (x86) \ABRITES\Common\Mercedes in case you need to use it.

DAS manager can also calibrate the mileage counter in the EZS for the W(X)164 and W251 cars

# Personalizing an EZS (EIS) using the FBS data from an ECU.

With the help of the Abrites diagnostics for Mercedes and DAS manager you can personalize an EZS using the data from the ECU. This is very helpful when the original EZS from the car is missing or broken. In order to perform this procedure you need to have the following:

- Replacement EZS (EIS)
- Key password
- FBS data from an ECU.

- SSID (Engine Control Units) do not contain the SSID inside them but the SSID is vital to the operation of the EZS. For this reason you need to have an SSID.

The steps you need to take are the following:

- 1. Read the key password.
- 2. Read the FBS data from the ECU
- 3. Make the EZS virgin
- 4. personalize the EZS with the data from the ECU.
- 5. Write the Key password
- 6. Write the SSID
- 7. In some cases you will be required to program the keys back to the car but this is not a problem because you already have the key password.

When you personalize the EZS you input the password in the field and select the "Update FBS Data file" radio button:

| Drive Authorization   | System Component M  | anager                             | 10400                    | 1175-1000-1007-1-2003 | ×                          |
|---|---|------------------------------------|--------------------------|-----------------------|----------------------------|
| C EZS / EIS   | C EZS / EIS CPU-2   | C Engine Control Unit              | C ISM/DSM/ESM            | C AAM/EAM W163        | C IFZ/Immo DAS2            |
| 🕻 ESL / ELV   | CESL/ELV CPU-2  | C Transmission Control Unit        | € Infra Red Key          | C WSP/Immo W168       |                            |
| 0000 D3 FF FF<br>0010 OF D5 C1<br>0020 FF FF FF<br>0030 00 07 FF<br>0040 FF FF FF<br>0050 B1 00 07<br>«                   | FF FF F<br>FF 43 6<br>FF FF 1<br>FF FF 1<br>FF FF 1<br>FF FF 1<br>FF FF 5<br>FF FF 5<br>FF FF 5<br>FF FF 5<br>FF FF 5<br>FF | ssing EZS/Key<br>S data file. Plea | password<br>ase enter it | ×<br>in your<br>t:    | Mileage                    |
| Reading EZS da<br>EZS SSID: 18 E<br>EZS has been r<br>EZS initialize<br>EZS transport<br>EZS personaliz                   | ata<br>IE C3 B<br>heutral:<br>ed.<br>mode i.<br>red.  | □ Update FB                        | S Data File              | e                     | Activate<br>Disable/Enable |
| EZS NOT activa<br>Mileage KM: 0<br>Key 1-D5C1EB7E<br>Key 2-D3BDF9D3<br>Key 3-5B84B9EI<br>Key 4-D9F752B5<br>Key 5-E70C7DEC | Ated.<br>3436BDB<br>305DD51<br>04393BE<br>50641E1<br>C1B7D9C<br>7560089   | ок                                 | Ca                       | ncel                  | Write Coding               |
| Key 7-9DF4E110<br>Key 8-13F96762<br>Service: D73C6<br>Done:   | 285416F<br>EFE5F337. Never<br>521BDD5B6109  | used and disabled.                 |                          | V Utility             | np K Close                 |



In this window you will see that the EZS is already personalized with the SSID:

| · EZS  | EIS   |   | CE   | ZS / E  | IS C                    | PU-2                                 | 2               | C              | Engir                                 | ne Co                | ontro                | Unit                  |                | 9 | C ISM/DSM/ESM C A   | AM/EAM W163 (                                      | IFZ/Immo DAS2  |
|--|---|---|--|---|-------------------------|--------------------------------------|-----------------|----------------|---------------------------------------|----------------------|----------------------|-----------------------|----------------|---|---------------------|--|--|
| C ESL /  | ELV   |   | CE   | 5L / E  | IVC                     | PU-2                                 | 2               | C              | Tran                                  | smiss                | sion C               | Control               | Unit           |   | C Infra Red Key C 🖗 | /5P/Immo W168                                      |  |
| 0000 33  | FF I<br>FB J  | FF F<br>AO 2<br>FF F  | F FF<br>4 18<br>F 43   | FF<br>E0  | FF<br>B3<br>OF          | FF<br>1A<br>D0                       | FF<br>97<br>AA  | FF<br>1F<br>56 | FF<br>00<br>77                        | FF 1<br>03 1<br>8C 1 | FF E<br>FF E<br>7F 7 | TE FE                 | FF A           | • | Service Password :  |  | Mileage  |
| 030 00<br>040 FF<br>050 B1   | 07 1<br>FF 1<br>00 1  | FF F<br>FF F<br>07 F  | F FF<br>F FF<br>F FF   | FF<br>10<br>FF  | FF<br>00<br>FF          | FF<br>07<br>FF                       | FF<br>FF<br>FF  | FF<br>FF<br>FF | 7A<br>FF<br>FF                        | 00  <br>FF  <br>84   | 07 F<br>FF F<br>00 0 | F FF<br>FF FF<br>7 FF | FF<br>FF<br>FF |   | Key Password :      | Â  |  |
| <  |   |   |  |   |                         |                                      |                 |                |                                       |                      |                      |                       | 2              | 2 | 67358EDB624F0B06    | Read   | Save Data  |
|  |   |   |  |   |                         |                                      |                 |                |                                       |                      |                      |                       |                |   | ^                   |  |  |
| Reading<br>225 SSI<br>225 has<br>225 ini<br>225 tra  | EZS<br>D: 1<br>bee<br>tial<br>nspo  | dat<br>8 EH<br>izec<br>izec   | a<br>C3<br>Putra<br>1.<br>node   | B8<br>lize<br>is 1  | Sed.                    | ease                                 | <b>5</b><br>ed. |                | D                                     | i                    | S                    | n                     | 0              | V | v writt             | Personalization<br>CON<br>Virgin                   | Activate<br>Disable/Enable                                 |
| Reading<br>225 SSI<br>225 has<br>225 ini<br>225 tra<br>225 per<br>225 NOI<br>4ileage   | EZS<br>D: 1<br>bee<br>tial<br>inspo<br>sona<br>act<br>KM:                                 | dat<br>8 EF<br>izec<br>rt r<br>lize<br>ivat   | C3<br>L C3<br>L C3<br>L C3<br>L C3<br>L C3<br>L C3<br>L C3<br>L  | B8<br>lize  | Sed.                    | ease                                 | <b>5</b><br>ed. |                | D                                     | i                    | S                    | n                     | 0              | V | v writt             | Personalization<br>Personalization<br>Virgin       | Activate   |
| Reading<br>IZS SSI<br>IZS has<br>IZS ini<br>IZS tra<br>IZS per<br>IZS NOT<br>(ileage<br>Tey 1-F<br>Tey 2-9<br>Tey 3-T                          | EZS<br>D: 1<br>bee<br>tial<br>sona<br>act<br>BA02<br>1A48                                 | dat<br>8 EF<br>izeo<br>rt r<br>lize<br>ivat<br>0<br>418F<br>B270<br>6779                        | 2<br>2 C3<br>2 utra<br>1.<br>node<br>ed.<br>:ed.<br>20B31<br>270A5   | B8<br>lize<br>is 1<br>A97.<br>DD1.                              | sed.<br>rele            | ase<br>ill                           | S ad.           | ot u           |                                       | I                    | S                    | n                     | 0              | V | v writt             | Personalization<br>Virgin                          | Activate<br>Disable/Enable                                 |
| eading<br>ZS SSI<br>ZS has<br>ZS ini<br>ZS tra<br>ZS per<br>ZS NOT<br>ileage<br>key 1-F<br>key 2-9<br>key 3-E<br>key 4-E<br>key 5-E<br>key 5-E | EZS<br>D: 1<br>bee<br>tial<br>sona<br>act<br>BA02<br>1A48<br>0AA5<br>9F75<br>70C7<br>FC7A | dat<br>8 EH<br>ized<br>rt r<br>lize<br>ivat<br>0<br>418H<br>B270<br>6778<br>2B5H<br>DECI<br>F9C | 2 C3<br>utra<br>i.<br>node<br>d.<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>color<br>colo | B8<br>lize<br>is 1<br>A97.<br>DD1<br>60E.<br>166<br>C20.<br>854 | st. St. St. St. St. St. | cill<br>cill<br>cill<br>cill<br>cill | sed.            |                | D<br>lised<br>lised<br>lised<br>lised | I                    | S                    | n                     | 0              | V | v writt             | Personalization<br>Virgin<br>Virgin<br>Read Coding | Activate<br>Disable/Enable<br>Write Coding<br>Get EZS Pass |

At this point the procedure is finished and the EZS is personalized with the data from the ECU. The car starts and is back on the road.

## III. ISM

The Intelligent Servo Module can also be exchanged. It follows a similar procedure as the other control modules. You can select the ISM button and a press read:



In the details window you can see the details in regards to the current state of the ISM.

You can proceed with resetting the ISM to a virgin state in case you would like to exchange it. If the password cannot be calculated you will see this error:

| Drive Authorization System Componen  | t Manager  |                      |                        | X               |
|--|--|----------------------|------------------------|-----------------|
| O EZS / EIS O EZS / EIS CPU  | -2 C Engine Control Unit   | C ISM                | C AAM/EAM W163         | C IFZ/Immo DA52 |
| C ESL / ELV C ESL / ELV CPU  | -2 C Transmission Control Unit   | C Infra Red Key      | C WSP/Immo W168        |                 |
| 0000 D3 FF FF FF FF FF FF FF<br>010 0F 1E 5D 34 46 B9 A1 EF<br>0220 FF FF FF FF 43 00 0F 40<br>0030 00 07 FF FF FF FF FF FF<br>0040 FF FF FF FF FF FF FF FF<br>0050 B1 00 07 FF FF FF FF FF                    | FF         FF< | Service Password     | i:<br>A<br>Read        | Save Data       |
| •  | ABRITES Diagnostics for Mercede  | s/Maybach/Smart      |                        |                 |
| Reading control unit FBS dat<br>Error: Can not be estabilis<br>In some cases to read data :<br>Reading control unit FBS dat  | You should enter pass  | sword to begin the p | process!               | Activate        |
| Control Unit initialized.<br>Control Unit transport mode<br>Control Unit personalized.<br>Control Unit activated.<br>key #1 - 1E5D3446B9A1EFB7<br>key #2 - CAFFEF857D23BBCB                                    |  |                      | OK rgin<br>Read Coding | Write Coding    |
| key #3 - 40047759072652DE<br>key #4 - DA64FDF7EFC58A1<br>key #5 - 7E3B15BECEF7B407<br>key #6 - 5C07029DB3162FBB<br>key #7 - 1B0695E2125E4B9<br>key #8 - 2B35AC1AE6096EAE<br>Service: 6AD517317A607895<br>Done. |  |                      | <u>.</u>               | Close           |

Once the service password is calculated the ISM can become virgin. This needs to happen inside the car via internal Can or outside connected on a bench rig. Also once the password is saved to your computer – you can use it indefinitely:

| Drive Authorization System Component Manager   |   |                        | x               |
|--|---|------------------------|-----------------|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Cont  | trol Unit 📀 ISM   | C AAM/EAM W163         | C IFZ/Immo DAS2 |
| O ESL / ELV O ESL / ELV CPU-2 O Transmission   | n Control Unit 💿 C Infra R                                    | ed Key C WSP/Immo W168 |                 |
| 0000 3 FF FF<br>010 0F SC 9B 87 E0 B7 68 9F D3 1F 00 03 FF<br>020 FF FF FF FF 43 00 0F 7A 42 CF D0 22 F4<br>0300 00 07 FF FF FF FF FF FF FF FF 7A 00 07<br>0040 FF FF<br>0050 B1 00 07 FF FF FF FF FF FF FF FF 84 00 | FF FF FF<br>FF FF FF<br>FF FF FF<br>FF FF FF<br>07 FF FF<br>• | Password :             | Save Data       |
| Service: FF77B1039DF4C613<br>Done.<br>Preparing ECU virgin<br>Done. Unit resetted to its default settings<br>Reading control unit FES data<br>Control Unit initialized.  |   | Personalizat           | ion Activate    |
| Control Unit NOT personalized.<br>Control Unit NOT activated.<br>key #1 - 5C98F2E057689FD3<br>key #2 - 9AA83976ED5ED2B1<br>key #3 - 7A42CFD0D2F42F55<br>key #4 - A17F98C78256A9AB<br>key #5 - 6C16A946E91953EF   |   | Read Codin             | ng Write Coding |
| <pre>key #6 - ACC21F3BDFE345CE<br/>key #7 - 36974A31D27BD80<br/>key #8 - 504070BE87C7EEEB<br/>Service: DC34A727E2B56A80<br/>Done.</pre>  |   | H +                    | Close           |



In order to personalize an ISM unit you have to either turn the ignition ON or reset the module. Now you can proceed. It is best to put the ignition ON:

| Drive Authorization System Component Ma  | nager  | _                |                 | x               |
|--|--|------------------|-----------------|-----------------|
| C EZS / EIS CPU-2  | C Engine Control Unit  | ISM              | C AAM/EAM W163  | C IFZ/Immo DAS2 |
| O ESL/ELV O ESL/ELV CPU-2  | C Transmission Control Unit  | C Infra Red Key  | C WSP/Immo W168 |                 |
| 0000 3 FF FF FF FF FF FF FF FF FF<br>0010 0F SC 98 87 E0 87 68 9F D3<br>0020 FF FF FF FF 43 00 0F 7A 42<br>0030 00 07 FF FF FF FF FF FF FF<br>0040 FF FF FF FF FF FF 10 00 07 FF<br>0050 B1 00 07 FF FF FF FF FF FF FF | FF FF FF FF FF FF FF FF<br>1F 00 03 FF FF FF FF<br>CF D0 D2 F4 2F 55 C5<br>FF 7A 00 07 FF FF FF<br>FF FF FF FF FF FF FF<br>FF FF 84 00 07 FF FF<br>FF FF | Service Password | :<br>Read       | Save Data       |
| Service: FF77B1039DF4C613<br>Done.<br>Preparing ECU virgin<br>Done. Unit resetted to its defa  | ult settings.  |                  | Personalization | Activate        |
| Reading control unit FBS data .<br>Control Unit initialized.<br>Control Unit transport mode is<br>Control Unit NOT personalized.   | released.  |                  | Virgin          |                 |
| Control Unit NOT activated.<br>key #1 - 5C9B87E0B7689FD3<br>key #2 - 9AA83976ED5ED2B1<br>key #3 - 7A42CFD0D2F42F55<br>kev #4 - A17F98C78256A9AB  |  |                  | Read Coding     | Write Coding    |
| key #5 - 6C16A948E91953EF<br>key #6 - ACC21F3BDFE345CE<br>key #7 - 36974A371D27BD80<br>key #8 - 504070BE87C7EEEB   |  |                  |                 | ×               |
| Service: DC34A727E2B56A80<br>Done.   |  |                  | *               | Close           |

Then proceed to personalize automatically using the personalization button:

| Prive Authorization System Component Manag   | ger   |  |                 | ×               |
|--|---|--|-----------------|-----------------|
| O EZS / EIS CPU-2 O  | Engine Control Unit   | G ISM     C ≠                              | AAM/EAM W163    | C IFZ/Immo DAS2 |
| C ESL/ELV C ESL/ELV CPU-2 C  | Transmission Control Unit   | $\mathbf{C}$ Infra Red Key $-\mathbf{C}$ V | ∀SP/Immo ₩168   |                 |
| 0000 D3 FF FF FF FF FF FF FF FF FF<br>0010 OF 36 82 DB 6A 93 ED D3 68 11<br>0020 FF FF FF FF 43 00 0F A9 A9 EC<br>0030 00 07 FF FF FF FF FF FF FF FF<br>0040 FF FF FF FF FF FF FF FF FF<br>0050 B1 00 07 FF FF FF FF FF FF FF<br>4 | E FF FF FF FF FF FF FF<br>0 0 0 3 FF FF FF FF<br>0 21 16 FD F0 68 C5<br>7 A 00 07 FF FF FF<br>F FF FF FF FF FF FF FF<br>F FF 84 00 07 FF FF<br>F FF 84 00 07 FF FF<br>F | Service Password :<br>E40C55102FADD6CE     | Read            | Save Data       |
| Service: DC34A727E2B56A80<br>Done.<br>Personalization : Data transfer f:<br>Personalization : Done.<br>  | 'rom EZS  | •  | Personalization | Activate        |
| Control Unit personalized.<br>Control Unit personalized.<br>Control Unit NOT activated.<br>key #1 - 3682DB6A93EDD368<br>key #2 - CA457504748FCD8C<br>key #3 - A9A9E02116DFD68<br>key #4 - E9F54CA66484B87C                         | leased.   |  | Read Coding     | Write Coding    |
| key #5 - 200074205378082<br>key #5 - 6245F7135736123<br>key #7 - 68BD8413ECD61784<br>key #8 - 2321D60A9540C6B8<br>Service: C5F77FBE302E3C64<br>Done.   |   |  |                 | Close           |

From this step on you can activate the unit:

| Drive Authorization System Component Manager   | X  |
|--|--|
| C EZS / EIS CPU-2 C Engine Control Unit  | G ISM C AAM/EAM W163 C IFZ/Immo DA52     ■ |
| C ESL / ELV CPU-2 C Transmission Control Unit  | C Infra Red Key C WSP/Immo W168  |
| 0000 3 FF F   | Service Password :<br>E40C55102FADD6CE   |
| Service: C5F77FBE302E3C64<br>Done.<br>Control Unit Activation<br>Done.<br>Reading control unit FBS data<br>Control Unit initialized.<br>Control Unit transport mode is released.   | Personalization Activate   |
| Control Unit personalized.<br>Control Unit activated.<br>key #1 = 3622DE343ED3568<br>key #2 = CA457504748FCD8C<br>key #3 = A9A9E02116FDF068<br>key #4 = E9F54CA64644B87C<br>key #5 = 2CF64FC5321808E<br>key #5 = 6245F13756123 | Read Coding Write Coding   |
| key #7 - 68BD0413ECD61704<br>key #8 - 2321D60A954CC6B8<br>Service: C5F77FBE302E3C64<br>Done.   | Close  |

The Activation is now finished and the ISM is ready to be used:

| Drive Authorization System Component Manager  | 100.00  | ×               |
|---|---|-----------------|
| O EZS / EIS C EZS / EIS CPU-2 O Engine Control Unit   | ISM C AAM/EAM W163  | C IFZ/Immo DAS2 |
| C ESL/ELV       C ESL/ELV CPU-2       C Transmission Control Unit         0000 D3 FF  | C Infra Red Key C WSP/Immo W168<br>Service Password :<br>E40C55102FADD6CE<br>Read | Save Data       |
| Control Unit initialized.<br>Control Unit transport mode is released.<br>Control Unit personalized.<br>Control Unit NOT activated.<br>key #1 - 3682DB6A93EDD368<br>key #2 - CA457504748FCDBC6<br>key #3 - A9A9E02116FDF068<br>key #4 - E9F54CA66484B87C<br>key #5 - 2CF6FFC6321808E | Virgin<br>Kead Coding   | Write Coding    |
| <pre>key #6 - 6245F71357361A23 key #7 - 68BD8413ECD61784 key #8 - 2321D60A954CC6B8 Service: C5F77FBE302E3C64 Done. Control Unit Activation Done.</pre>  |   | Close           |

# IV. TCU

Transmission Control Units can also be adapted via the DAS Manager special function. The Process requires the Transmission control unit to be made virgin. Here is a used unit that is going to be adapted to the vehicle:

| Drive Authorization System Component Manager   | ×   |
|--|---|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit<br>C ESL / ELV C ESL / ELV CPU-2 Transmission Control Unit   | C ISM C AAM/EAM W163 C IFZ/Immo DAS2<br>C Infra Red Key C WSP/Immo W168 |
| 0000 D3 FF   | Service Password :<br>E40C55102FADD6CE                                  |
| Reading control unit FBS data<br>Control Unit initialized.<br>Control Unit transport mode is released.<br>Control Unit personalized.<br>Control Unit activated.<br>key #1 - 3662DB6392DD368<br>key #2 - CA457504748FCD8C | Personalization Activate  |
| key #3 - A9A9E02116FDF068<br>key #4 - E9F54CA66494B87C<br>key #5 - 2CF6F4FC6321808E<br>key #6 - 6245F71357361A23<br>key #7 - 68B084138CD61784<br>key #8 - C1FD78609D9CD878<br>Service: C5F77FBE302E3C64                  | Read Coding Write Coding  |
|  | -   |

In some cases the TCU cannot be read by OBD and requires internal CAN connection:

| Drive Authorization System Component Manager   |   | 23             |
|--|---|----------------|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit  | C ISM C AAM/EAM W163 C  | IFZ/Immo DA52  |
| C         ESL / ELV         C         ESL / ELV CPU-2         Transmission Control Unit           0000         D3         FF         F | C Infra Red Key C WSP/Immo W168 Service Password : E40CS5102FADD6CE |                |
| 0040 FF FF FF FF FF 10 00 07 FF FF FF FF FF FF FF FF FF<br>0050 B1 00 07 FF FF FF FF FF FF FF FF 84 00 07 FF FF<br>4 ABRITES Diagnostics for Mercedes/May  | bach/Smart  | 1<br>Save Data |
| Control Unit initialize<br>Control Unit transport<br>Control Unit personaliz<br>Control Unit activated<br>key #1 - 3682DB6A93EDD3  | ection with the unit!   | Activate       |
| key #2 - CA35304740FC<br>key #2 - A9A9202116TDF<br>key #4 - E9F54CA6648488<br>key #5 - 2CF6F4FC6321808E<br>key #6 - 6245F71357361A23<br>key #6 - 6285P41357361A23  | OK<br>Read Coding   | Write Coding   |
| ky #8 - CIED78609D8CD878<br>Service: CSF77FBE302E3C64<br>Done.<br>Preparing ECU virgin   |   |                |
| Error: Can not be estabilished connection with the uni<br>It is mandatory direct connection to the CAN bus of th   | t!<br>e unit!   | Close          |

Then the TCU can be made virgin. Please note that for this step you will require internet connection:

| Drive Authorization System Component Manager  |                                  |                     | ×            |
|---|----------------------------------|---------------------|--------------|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control L  | it C ISM                         | C AAM/EAM W163 C IF | Z/Immo DA52  |
| C ESL / ELV C ESL / ELV CPU-2  • Transmission Co  | trol Unit 💦 🔿 Infra Red Key      | C WSP/Immo W168     |              |
| 0000 3 FF F  | FF FF FF<br>FF FF FF<br>FF FF FF | d :<br>Read         | Save Data    |
| <pre>Reading control unit FBS data<br/>Control Unit initialized.<br/>Control Unit transport mode is released.<br/>Control Unit personalized.<br/>Control Unit activated.<br/>key #1 = D0C3599263C568F<br/>key #2 = 91A46B27C70A5DD1<br/>key #3 = 4E8276E15F839BEA<br/>key #4 = D9F752B5D641E166</pre> |                                  | Personalization     | Activate     |
| <pre>key #5 = E70C7DEC1B7D8C20 key #6 = 4FC7AE2GSC08854 key #7 = 1D7F875134C9138F key #8 = 1D3275549062D2E Service: 40E6983083534388 Done. Reading coding Done.</pre>   |                                  | Read Coding         | Write Coding |

From here on you can proceed to personalize and activate the unit. Please make sure that the Coding is read and saved before making the TCU virgin. You can use it later.

| C EZS / EIS CPU-2   | C Engine Control Unit  | $\mathbf{C}$ ISM | C AAM/EAM W163  | C IFZ/Immo DAS2 |
|---|--|------------------|-----------------|-----------------|
| C ESL / ELV CPU-2   | 🕫 Transmission Control Unit  | C Infra Red Key  | C WSP/Immo W168 |                 |
| 000 D3 FF FF FF FF FF FF FF FF<br>010 0F 2D 9A D1 B3 5F DC F2 8<br>020 FF FF FF FF 43 00 0F 95 0<br>030 00 07 FF FF FF FF FF FF FF FF<br>040 FF | F FF FF FF FF FF FF FF<br>E 1F 00 03 FF FF FF FF<br>4 7F E0 32 54 67 1E C5<br>F FF 7A 00 07 FF FF FF | Service Passwor  | d :             | ×               |
| Process<br>ey #7 - A81E5141<br>ey #8 - 7D77ABF<br>ervice: 49061E8   | ing data over interne  | t                |                 | Save Data       |
| eading control t<br>ontrol Unit init  |  |                  |                 |                 |
| ontrol Unit per:<br>ontrol Unit act:<br>ey #1 - 2D9AD1B1<br>ey #2 - E6FCBDB1  |  |                  |                 | Write Coding    |
| ey #3 - 95047FE03254671E  |  |                  | 1               |                 |
| ey #4 - 636LA/5CB5535254<br>ey #5 - C28CD561F01514BA<br>ey #6 - 73B03EF2B00C45EA<br>ey #7 - A81E514EABCD9787  |  |                  | E.              |                 |
| ev #8 - 7D77ABF70496F573  |  |                  |                 | X               |

The personalization is the next step you need to take and after that you can write the coding you saved in the previous step.

| Drive Authorization System Component Manager   | ×                                      |
|--|--|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit  | C ISM C AAM/EAM W163 C IFZ/Immo DAS2   |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit  | C Infra Red Key C WSP/Immo W168        |
| 0000 3 FF F   | Service Password :                     |
| Preparing ECU virgin   |  |
| Done. Unit resetted to its default settings.<br>   | Personalization Activate               |
| Control Unit NOT personalized.<br>Control Unit NOT activated.<br>key #1 - 4823005048TD251<br>key #2 - 91A46B27C70A5DD1<br>key #3 - 4E8276E15R39BEA<br>key #4 - D9F752B5D641E166<br>key #5 - E70C7DEC1B7D9C20<br>key #6 - 4FC7AE9C36C08E54<br>key #7 - 1D7F875134C9138F<br>key #7 - 1D27F875406B2D2E  | Virgin                                 |
| Service: 01D99370C76349B7<br>Done.<br>Personalization : Data transfer from EZS<br>Personalization : Done.  | E Close                                |
|  |  |
| Drive Authorization System Component Manager   | X                                      |
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit  | C ISM C AAM/EAM W163 C IFZ/Immo DAS2   |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit  | C Infra Red Key C WSP/Immo W168        |
| 0000 03 FF   | Service Password :<br>01D99370C7634987 |
| 0050 B1 00 07 FF FF FF FF FF FF FF 84 00 07 FF FF  | Read Save Data                         |
|  |  |
| Reading control unit FBS data<br>Control Unit initialized.<br>Control Unit transport mode is released.<br>Control Unit personalized.<br>Control Unit NOT activated.<br>key #1 - 009FD15867DCA270   | Personalization Activate               |
| Reading control unit FBS data<br>Control Unit initialized.<br>Control Unit transport mode is released.<br>Control Unit personalized.<br>Control Unit NOT activated.<br>key #1 - 009FD15867DCA270<br>key #2 - 91A48E27C70A5DD1<br>key #3 - 4E8276E15R839BEA<br>key #4 - DSF752B5D641E166<br>key #5 - E70C7DEC1B7D9C20<br>key #6 - 4EC7AESC36C08854<br>key #7 - E8665410527ADD94<br>key #7 - E8665410527ADD94<br>key #8 - 1D32755496E2D2E<br>Service: 40E6983083534388 | Personalization Activate               |

You will need to enter the VIN in this step so please go ahead and do that this point:



| rive Authorization System Component Manager  |                     |                  |                | 23              |
|--|---------------------|------------------|----------------|-----------------|
| C EZS / EIS C EZS / EIS CPU-2 C Engine   | Control Unit        | C ISM            | C AAM/EAM W163 | C IFZ/Immo DA52 |
| 0000 D3 FF FF FF FF FF FF FF FF FF FF<br>0010 0F 00 9F D1 58 67 DC A2 70 1F 00 03<br>0020 FF FF FF FF 43 00<br>0030 00 07 FF FF FF 45 00<br>0040 FF FF FF FF FF 10<br>0040 FF FF FF FF FF 10               | FF FF FF FF FF      | Service Password | ::             |                 |
| Done.<br>Personalization : Date<br>Personalization : Done<br>Reading control unit H  | Enter \<br>C1640221 | /IN<br>IA000000  |                | Save Data       |
| Control Unit initializ<br>Control Unit transport<br>Control Unit personali<br>Control Unit NOT activ<br>key #1 - 009FD15867DC2<br>key #3 - 4E8276E15F33<br>key #4 - D9752E5D641E<br>key #5 - E70C7DECLB7D3 | jram                | Car              | ncel           | Write Coding    |
| <pre>key #6 - 4FC7AE9C36C08baa<br/>key #7 - E8685410527ADD94<br/>key #8 - ID32755490682D2E<br/>Service: 40E6983083534388<br/>Done.<br/>Programming coding</pre>  |                     |                  | H              | Close           |

After that you can perform the latest step which is the activation. After that the TCU is ready to work in the car:

| Drive Authorization System Component Ma  | nager   | _                                      |                  | x             |
|--|---|--|------------------|---------------|
| C EZS / EIS CPU-2  | C Engine Control Unit   | C ISM                                  | C AAM/EAM W163 C | IFZ/Immo DAS2 |
| O ESL/ELV O ESL/ELV CPU-2  | • Transmission Control Unit   | C Infra Red Key                        | C WSP/Immo W168  |               |
| 0000 B3 FF FF FF FF FF FF FF FF<br>010 0F 06 03 D3 8B 91 6D C0 5F<br>0200 FF FF FF F4 30 00 0F 4E 82<br>0030 00 07 FF FF FF FF FF FF FF<br>0040 FF FF FF FF FF FF FF FF FF<br>0050 B1 00 07 FF FF FF FF FF FF FF | FF FF FF FF FF FF FF<br>1F 00 03 FF FF FF FF<br>76 E1 5F 83 9B EA C5<br>FF 7A 00 07 FF FF<br>FF FF FF FF FF FF<br>FF FF 84 00 07 FF FF<br>FF FF 84 00 07 FF FF<br>FF FF FF 84 00 07 FF FF | Service Password :<br>01D99370C76349B7 | Read             | Save Data     |
| Service: 40E6983083534388<br>Done.<br>Control Unit Activation<br>Done.   |   |  | Personalization  | Activate      |
| Reading control unit FBS data .<br>Control Unit initialized.<br>Control Unit transport mode is<br>Control Unit personalized.   | <br>released.   |  | Virgin           |               |
| key #1 - 0603D38B916DC05F<br>key #2 - 91A48B27C70A5DD1<br>key #3 - 4E8276E15F839BEA<br>key #4 - D9F752B5D641E166   |   |  | Read Coding      | Write Coding  |
| <pre>key #5 = E70C7DEC1B7D9C20 key #6 = 4FC7AE9C36C08854 key #7 = E8685410527ADD94 key #8 = 1D3275549D6B2D2E Service: 40E6983083534388</pre>   |   | [                                      | E                | X             |
| Done.  |   |  | •                | Close         |

## V. Key programming via DAS Manager.

In order to program keys to a Mercedes-Benz vehicle via DAS Manager you will need to read the Electronic Ignition Switch:

| Drive Authorization System Component Ma  | inager   |                                | 1.000            | ×             |
|--|--|--------------------------------|------------------|---------------|
| • EZS / EIS CPU-2  | C Engine Control Unit  | C ISM                          | C AAM/EAM W163 C | IFZ/Immo DAS2 |
| C ESL/ELV C ESL/ELV CPU-2  | C Transmission Control Unit  | ${f C}$ Infra Red Key          | C WSP/Immo W168  |               |
| 0000 D3 FF FF FF FF FF FF FF FF FF<br>0010 0F 36 82 DB 6A 93 ED D3 68<br>0020 FF FF FF FF 43 00 0F A9 A9 | FF         FF         FF         FF         FF         FF         A           1F         00         03         FF         FF         FF         FF         FF           20         21         16         FD         F0         68         C5 | Service Password               | :                |               |
| 0030 00 07 2F 1F 75 FF FF FF FF<br>0040 FF FF FF FF FF 10 00 07 FF<br>0050 B1 00 07 FF FF FF FF FF FF FF | FF 7A 00 07 FF FF FF<br>FF FF FF FF FF FF FF<br>FF FF 84 00 07 2F 1F   | Key Password :                 | Read             | Save Data     |
| 4  | 4  | 1                              |                  |               |
| Reading EZS data<br>EZS SSID: 80 4C C4 43  |  |                                | Personalization  | Activate      |
| EZS initialized.<br>EZS transport mode is released.<br>EZS personalized.<br>EZS activated.               |  |                                | Virgin           | Disable Key   |
| Key 1-3682DB6A93EDD368-FF1204B3<br>Key 2-CA457504748FCD8C-F5ED4B3E<br>Key 3-A9A9E02116FDF068. Still r    | 4CC680F4. Remaining ign<br>2A533A2A. Remaining ign<br>not used   | itions 196592<br>itions 196592 |                  |               |
| Key 4-E9F54CA66484B87C-30521034<br>Key 5-CF0EF5FD01A6478B. Still r                                       | 424BABC6. Remaining ign<br>of used   | itions 196597                  | Read Coding      | Write Coding  |
| Key 8-68B8413ECD61784. Still r<br>Key 8-A7A935f1E510D728-4A35138E<br>Service: C5F77FBE302E3C64           | ot used<br>869F211FA. Remaining ign:   | itions 196571                  | Prog/Emulate Key | Get EZS Pass  |
| Done.  |  |                                |                  | ×             |
|  |  |                                | Ŧ                | Close         |

The next step is to add the key password. You can paste it.

| Drive Authorization Sy   | stem Component Ma  | nager  | _  |  | ×   |
|--|--|--|--|--|---|
| EZS / EIS  | C EZS / EIS CPU-2  | C Engine Control Unit  | C ISM  | C AAM/EAM W163 C I   | FZ/Immo DAS2  |
| C ESL / ELV  | C ESL / ELV CPU-2  | C Transmission Control Unit  | C Infra Red Key  | C WSP/Immo W168  |   |
| 0000 D3 FF FF F<br>0010 0F 36 82 D<br>0020 FF FF FF FF   | F FF FF FF FF FF<br>B 6A 93 ED D3 68<br>F 43 00 0F A9 A9   | FF         FF< | Service Password   | 1:   |   |
| 0030 00 07 2F 1<br>0040 FF FF FF FF<br>0050 B1 00 07 F   | F 75 FF FF FF FF<br>F FF 10 00 07 FF<br>F FF FF FF FF FF FF  | FF 7A 00 07 FF FF FF<br>FF FF FF FF FF FF FF<br>FF FF 84 00 07 2F 1F   | Key Password :<br>77824373C459D18                                  | E6 Read  | Save Data   |
| <pre>Reading EZS dat<br/>EZS SSID: 80 4C<br/>EZS initialized<br/>EZS transport m<br/>EZS personalize<br/>EZS activated.<br/>Key 1-3682DB6A9<br/>Key 2-CA4575047<br/>Key 3-A9A920211<br/>Key 4-E9F54CA66<br/>Key 5-CF0EF5FD0<br/>Key 6-6245F7155<br/>Key 7-68DB413E<br/>Key 8-A7A935F1E<br/>Service: CSF77F<br/>Done.</pre> | <pre>Xa<br/>C 4 43<br/>i.<br/>Mode is released.<br/>dd.<br/>M3EDD368-FF1204BA<br/>44FCD8C-F5ED4B8E<br/>66FDF068. Still n<br/>M4648FCC-30521034<br/>M1646478B. Still n<br/>CD61784. Still n<br/>CD61784. Still n<br/>CD61784. Still n<br/>S510D728-4A35138B<br/>TBE302E3C64</pre> | 4CC680F4. Remaining ign<br>2A533A2A. Remaining ign<br>0c used<br>424BABC6. Remaining ign<br>0c used<br>0c used<br>0c used<br>0c used<br>69F211FA. Remaining ign  | 17024373C459D18<br>1tions 196592<br>1tions 196597<br>1tions 196571 | coj Keau<br>Personalization<br>Virgin<br>Kead Coding<br>Prog/Emulate Key | Activate<br>Disable Key<br>Write Coding<br>Get EZS Pass |

When the key password is added you can Program an Abrites key with PROTAG or Emulate a key with your IR adapter:

| Drive Authorization System Component Manager  |               | 23 |
|---|---------------|----|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit C ISM C AAM/EAM W163 C I  | IFZ/Immo DAS2 |    |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit C Infra Red Key C WSP/Immo W168   |               |    |
| 0000 D3 FF  |               |    |
| 0030 00 07 2F 1F 75 FF FF FF FF FF 7A 00 07 FF FF FF<br>0040 FF FF FF FF FF FF 10 00 07 FF FF FF FF FF FF FF FF<br>0050 B1 00 07 FF   | Save Data     |    |
| Key Emulation/Programming   | ×             | _  |
| Reading         EZS SSII         You can quickly Program key with PROTAG programmer (abrites key) or Emulate key with your Infra red adries to the second sec | apter.        |    |
| Key 3-A9A9E02116FDF068. Still not used<br>Key 4-E9F54CA66484B87C-30521034424BABC6. Remaining ignitions 196597<br>Key 5-CF0EF5FD01A6478B. Still not used   | Write Coding  |    |
| Key 7-68D8413ECD61784. Still not used<br>Key 8-A7A933F1E510D728-4A35138B69F211FA. Remaining ignitions 196571<br>Service: C5F77FBE302E3C64<br>Prog/Emulate Key   | Get EZS Pass  |    |
|   | Close         |    |
|   |               |    |

Next, you can choose the key position:

| Drive Authorization System Component Man  | ager                | X                            |
|---|---------------------|------------------------------|
| ● EZS / EIS O EZS / EIS CPU-2   | Select Key Position | M W163 C IFZ/Immo DA52       |
| O ESL / ELV O ESL / ELV CPU-2   |                     | mo W168                      |
| 0000 D3 FF FF FF FF FF FF FF FF<br>0010 0F 36 82 DB 6A 93 ED D3 68<br>0020 FF FF FF FF 43 00 0F A9 A9                                   | С Кеу 1             |                              |
| 0030 00 07 2F 1F 75 FF FF FF FF<br>0040 FF FF FF FF FF 10 00 07 FF<br>0050 B1 00 07 FF FF FF FF FF FF FF                                | C Key 2             | A B                          |
| 4   | Key 3 NOT used      | Read Save Data               |
| Reading EZS data<br>EZS SSID: 80 4C C4 43   | С Кеу 4             | rsonalization Activate       |
| EZS initialized.<br>EZS transport mode is released<br>EZS personalized.   | C Key 5 NOT used    | <ul> <li><b>A</b></li> </ul> |
| EZS activated.<br>Key 1-3682DB6A93EDD368-FF1204BJ   | Key 6 NOT used      | Virgin Disable Key           |
| Key 3-A9A9E02116FDF068. Still 1<br>Key 4-E9F54CA66484B87C-3052103   | C Key 7 NOT used    | Read Coding Write Coding     |
| Key 5-CF0EF5FD01A6478B. 5till 1<br>Key 6-6245F71357361A23. Still 1<br>Key 7-68BD8413ECD61784. Still 1<br>Key 8-A7A933F1E510D728-4A35138 | С Кеу 8             |                              |
| Service: C5F77FBE302E3C64<br>Done.  | OK Cancel           | g/Emulate Key Get EZS Pass   |
|   |                     | Close                        |
|   |                     |                              |

If you receive this message retry the procedure until you succeed.



The Key dump is generated and can be written:

| Drive Authorization System Component Manager  | X   |
|---|---|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit C ISM C AAM/EAM W163  | C IFZ/Immo DA52                                       |
| C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit C Infra Red Key C WSP/Immo W16  | 8   |
| 0000 3 FF F  |   |
| 0030 00 07 2F 1F 75 FF FF FF FF FF 7A 00 07 FF FF FF<br>0040 FF FF FF FF FF 10 00 07 FF FF FF FF FF FF FF FF FF FF<br>0050 B1 00 07 FF FF FF FF FF FF FF FF 84 00 07 2F 1F<br>77824373C459D1E6  | Save Data   |
| EZS personalized.         EZS activated.         Key 1-3682DB6A93EDD368-FF1204BA4CC680F4. Remaining ignitions 196592         Key 2-CA45750474BFCD8C-F5ED4B3EZA533A2A. Remaining ignitions 196592         Key 3-A9A502116FDF068. Still not used         Key 4-E9F54CA66484B87C-30521034424BABC6. Remaining ignitions 196597         Key 5-CF0EF5FD01A6478B. Still not used         Key 7-68BD8413ECD61784. Still not used         Key 8-A7933F1E510D728-435138B69F211FA. Remaining ignitions 196571         Service: C5F77FBE302E3C64         Done.         *** Starting key programming         Searching programmer         Programmer found.         Calculating key data | ation Activate Activate Disable Key ding Get EZS Pass |
| Key data calculated.<br>Generating key dump from the calculated data<br>Key dump generated.<br>Programming key  | Close   |
|   |   |

Then the Programming is completed:



### VI. ESL/ ELV

The Electronic Steering Lock is perhaps the most complicated module to work with within the Mercedes-Benz vehicles electronic modules. What needs to be done in order to replace the ESL/ELV is to read it first. Please be informed that to perform this adaptation you will need to bring the **EZS** to a virgin state:



After that you make it virgin. You need internet connection for this part:

| * E20/E10 *   | EZS / EIS CPU-2   | C Engine Control Unit  | C ISM                        | C AAM/EAM W163  | C IFZ/Immo DA52 |
|---|---|--|------------------------------|-----------------|-----------------|
| € ESL/ELV   | ESL / ELV CPU-2   | C Transmission Control Unit  | $oldsymbol{c}$ Infra Red Key | C WSP/Immo W168 |                 |
| 0000         F8         F5         32         AE           0010         E4         5E         CE         DE           0020         D4         E7         E6         EB           0030         AD         7F         C7         62           0040         0E         E3         EB         7A           0050         0E         E3         EB         7A | 8B 05 4A E2 F7<br>C7 2D 96 46 08<br>60 86 A3 BF 7F<br>76 F9 8F 07 20<br>Please Wait | 12 EB B8 04 90 38 73 -<br>17 92 95 1B 6E F0 0F<br>7E D5 B3 61 BD E6 29<br>22 83 40 FF 8B 21 6D | Service Password             | d:              |                 |
| Operation staus:<br>ESL initialized.<br>ESL transport models<br>ESL personalized<br>ESL activated.<br>ESL activated.<br>ESL antivated.<br>Froduction number<br>production date:<br>UNN: 204   | Processi  | ng data over interne   | ət                           |                 | Activate        |
| VIN: 204<br>Key 1-F8F532AE8B<br>Key 2-D4E7E6EB60<br>Key 3-0EE3EB7A50F<br>Key 4-ABABB673B0I  | 300A38-UEE3EB /   | 50866A38<br>B0D4EBDB   |                              |                 | Unlock          |
| Key 5-7D9A26E65F6   | 5071ED-7D9A26E6<br>405D8A-FBB05220  | 5F6071ED<br>3E405D8A   |                              |                 |                 |

| Drive Authorization System Component Manager  | X           |
|---|-------------|
| Drive Authorization System Component Manager          C EZS / EIS       C EZS / EIS CPU-2       C Engine Control Unit       C ISM       C AAM/EAM W163       C IFZ/In         • ESL / ELV       C ESL / ELV CPU-2       C Transmission Control Unit       C Infra Red Key       C WSP/Immo W168         0000       B F5 32 AE 8B 05 4A E2 F7 12 EB 88 04 90 38 73       •       Service Password :         0010 E4 5E CE DE C7 2D 96 46 08 17 92 95 1B 6E F0 0F       •       Service Password :         0020 D4 F7 E6 EB 60 66 A3 8F 77 E0 E5 85 61 BD E6 23       •       Service Password :         0030 AD 7F C7 62 76 F9 8F 07 20 22 83 40 FF 8B 21 6D       •       •         0040 0E E3 EB 7A 50 B6 6A 38 0E E3 EB 7A 50 B6 6A 38       •       •         0050 0E E3 EB 7A 50 B6 6A 38 0E E3 EB 7A 50 B6 6A 38       •       •         00peration staus: moving       •       •       •         ESL Initialized.       •       •       •         ESL NOT activated.       •       •       •       •  | mmo DA52    |
| Display="1">Display="1"/"         Display="block">Display=Dis | Disable Key |

Once the process finishes you will see that making the ESL/ELV virgin is complete:

The next step is to read the EZS/ EIS.

| EZS / EIS  | C EZS / EIS CPU-2  | C Engine Control Unit   | C ISM C                                | AAM/EAM W163 C I      | FZ/Immo DA52 |
|--|--|---|--|-----------------------|--------------|
| C ESL/ELV  | m C ESL / ELV CPU-2  | C Transmission Control Unit   | C Infra Red Key C                      | WSP/Immo W168         |              |
| 0000 D3 FF FF<br>0010 OF 8D 1C<br>0020 FF FF FF  | FF FF FF FF FF FF<br>91 F9 B4 5F BE 8E<br>FF 43 00 0F 4E 82<br>FF FF FF FF FF FF FF                              | F FF FF FF FF FF FF FF<br>1 F 00 03 FF FF FF FF<br>2 76 E1 5F 83 9B EA C5<br>FF 74 00 07 FF FF FF | Service Password :<br>01D99370C76349B7 |                       |              |
| 0040 FF FF FF<br>0050 B1 00 07   | FF FF 10 00 07 FF<br>FF FF FF FF FF FF   | FFF FF FF FF FF FF FF<br>FF FF FF 84 00 07 FF FF  | Key Password :<br>67358EDB624F0B06     | Read                  | Save Data    |
| Reading EZS d<br>Error: Can no<br>Reading EZS d  | data<br>pt be estabilished<br>data   | connection with the un  | .tt!                                   | Personalization       | Activate     |
| EZS initializ<br>EZS transport<br>EZS personali<br>EZS activated<br>Key 1-8D1C91E<br>Key 2-9134882 | zed.<br>zed.<br>zed.<br>i.<br>79B45FBE8E-41B1F3DZ<br>72C70A5DD1 Still r  | A58E2A0FE. Remaining ign  | nitions 196601                         | Virgin<br>Read Coding | Disable Key  |
| Key 3-4E8276E<br>Key 4-D9F752E<br>Key 5-E70C7DE<br>Key 6-4FC7AE9<br>Key 7-E868541                  | 1155839BEA. Still r<br>155641E166. Still r<br>12187D9C20. Still r<br>1236C08854. Still r<br>1.0527ADD94. Still r | not used<br>not used<br>not used<br>not used<br>not used  | E                                      | Prog/Emulate Key      | Get EZS Pass |
| Key 8-1D32755<br>Service: 40E6   | 49D6B2D2E. Still r<br>983083534388   | not used  |  |                       | ×            |



#### The EZS/EIS needs to be made virgin:

| 💽 EZS / EIS                  | C EZS / EIS CPU-2                      | C Engine Control Unit        | C ISM            | C AAM/EAM W163   | C IFZ/Immo DA52 |
|------------------------------|--|------------------------------|------------------|------------------|-----------------|
| C ESL/ELV                    | C ESL / ELV CPU-2                      | C Transmission Control Unit  | 🕻 Infra Red Key  | C WSP/Immo W168  |                 |
| 000 D3 FF FF<br>010 0F 8D 1C | FF FF FF FF FF FF<br>91 F9 B4 5F BE 8F | FF FF FF FF FF FF FF         | Service Password | 1:               |                 |
| 020 FF FF FF                 | FF 43 00 OF 4E 82                      | 76 E1 5F 83 9B EA C5         | 01D99370C76349   | 37               |                 |
| 030 00 07 FF                 | FF FF FF FF FF FF                      | FF 7A 00 07 FF FF FF         |                  |                  |                 |
| 040 FF FF FF                 | FF FTC /FTC manak                      |                              | And Personnel 1  |                  | X               |
| 050 B1 00 07                 | FF EZS/EIS reset                       | ALC: NO 10, NO 10, NO 10, NO |                  |                  |                 |
| 1                            |  |                              |                  |                  | Save Data       |
|                              | EZS/EIS                                | reset to its default         | data.            |                  |                 |
|                              |  |                              |                  |                  |                 |
| Reading EZS d                | lata                                   |                              |                  |                  |                 |
| Error: Can no                | tbe                                    |                              |                  |                  | Activate        |
|                              |  |                              |                  |                  |                 |
| Reading EZS d                | lata                                   |                              |                  |                  |                 |
| ZZS SSID: 18                 | EE (                                   |                              |                  |                  | 100             |
| ZS initializ                 | ed.                                    |                              |                  |                  | Disable Key     |
| 25 transport                 | mod                                    |                              |                  |                  | _               |
| 225 personali                | zea                                    |                              |                  |                  |                 |
| Las accivated                | Done.                                  |                              |                  | ∧ Done           |                 |
| (ev 2-91248B2                | 7071                                   |                              |                  |                  | Write Coding    |
| (ev 3-4E8276E                | 15F839BEA. Still 1                     | not used                     |                  |                  |                 |
| (ey 4-D9F752E                | 5D641E166. Still 1                     | not used                     |                  |                  |                 |
| (ey 5-E70C7DE                | C1B7D9C20. Still 1                     | not used                     |                  |                  |                 |
| (ey 6-4FC7AE9                | C36C08854. Still 1                     | not used                     |                  | E Prog/Emulate K | Get EZS Pass    |
| (ey 7-E868541                | 0527ADD94. Still 1                     | not used                     |                  |                  |                 |
| (ey 8-1D32755                | 49D6B2D2E. Still 1                     | not used                     |                  |                  | *               |
|                              | 983083534388                           |                              |                  |                  |                 |
| Service: 40E6                |  |                              |                  |                  |                 |

Personalize EZS with the Abrites data:

|  | C EZS/   | EIS CPU-2   | С                                    | ingine Ca   | ontrol Uni                           | it                        | C ISM           | C AAM/EAM W163  | C IFZ/Immo DAS2                         |
|--|--|---|--------------------------------------|---|--------------------------------------|---------------------------|-----------------|-----------------|---|
| C ESL / ELV  | C ESL/   | ELV CPU-2   | C                                    | ransmiss  | ion Cont                             | rol Unit                  | C Infra Red Key | C WSP/Immo W168 |   |
| 0000 D3 FF FF<br>0010 OF 8D 1C<br>0020 FF FF FF  | FF FF FF<br>91 F9 B4<br>FF 43 00   | FF FF F<br>5F BE 8<br>0F 4E 8                       | F FF<br>E 1F<br>2 76                 | FF FF F<br>00 03 F<br>21 5F 8                       | FF FF F<br>FF FF F<br>B3 9B F        | FF FF A<br>FF FF<br>EA C5 | Service Passwor | d :             |   |
| 0030 00 07 FF<br>0040 FF FF FF<br>0050 B1 00 07  | FF FF FF FF FF Gray\   | FF FF F   | 'F FF<br>inge Ke                     | 7A 00 0<br>y Emulat                                 | 07 FF E                              | FF FF                     | No. Testanti    |                 |   |
| 4  | E  | ZS is p   | erso                                 | nalize  | ed.                                  |                           |                 |                 | Save Data                               |
| Key 8-1D327554   | 9D(  |   |                                      |   |                                      |                           |                 |                 |   |
| Service: 01D99<br>Done.  | 370  |   |                                      |   |                                      |                           |                 |                 | Activate                                |
| Service: 01D99<br>Done.<br>Reading EZS da<br>EZS SSID: 18 E  | 937(<br>1114<br>121 (  |   |                                      |   |                                      |                           |                 |                 | Activate                                |
| Service: 01D99<br>Done.<br>Reading EZS da<br>EZS SSID: 18 E<br>EZS initialize<br>EZS transport<br>EZS personaliz<br>EZS NOT activa   | 937(<br>ata<br>EE (<br>ed.<br>motionalistics)  |   |                                      |   |                                      |                           |                 | Done            | Activate<br>B<br>Disable Key            |
| Service: 01D99<br>Done.<br>Reading EZS da<br>EZS SSID: 18 E<br>EZS initialize<br>EZS transport<br>EZS personaliz<br>EZS NOT activa<br>Key 1-8D1C91F9<br>Key 2-91A4827  | 937(<br>   |   |                                      |   |                                      |                           |                 | X Done          | Activate<br>Disable Key<br>Write Coding |
| Service: 01D99<br>Done.<br>Reading EZS da<br>EZS SSID: 18 E<br>EZS Initialize<br>EZS transport<br>EZS personaliz<br>EZS NOT activa<br>Key 1-8D1C91F9<br>Key 3-4E8276E1<br>Key 3-4E8276E1<br>Key 4-D9F752B8<br>Key 5-E70C7DEC                                   | 937(<br>tta<br>EE (<br>ed.<br>mod<br>sed<br>b542<br>576398EA<br>50641E166<br>50641E166<br>18709C20   | . Never<br>. Never                                  | used<br>used                         | and di.<br>and di.                                  | sabled                               | -                         |                 | Done            | Activate<br>Disable Key<br>Write Coding |
| Service: 01D99<br>Done.<br>Reading EZS de<br>EZS SSID: 18 E<br>EZS Initialize<br>EZS transport<br>EZS presonaliz<br>EZS NOT activa<br>Key 1-8D1091F5<br>Key 2-91A48B27<br>Key 3-4E276E1<br>Key 4-D9752B3<br>Key 5-E70C7DEC<br>Key 6-4FC7AB90<br>Key 7-E8685410 | 937(<br>ita<br>iE (<br>id.<br>mod<br>ied<br>ited<br>056398EA<br>05641E166<br>0187D9C20<br>05727ADD94 | . Never<br>. Never<br>. Never<br>. Never<br>. Never | used<br>used<br>used<br>used<br>used | and di:<br>and di:<br>and di:<br>and di:<br>and di: | sabled<br>sabled<br>sabled<br>sabled |                           |                 | Done            | ey                                      |

#### Then read the ESL before personalizing it:

| Drive Authorization System Component Manager   | ×   |
|--|---|
| C EZS / EIS CPU-2 C Engine Control Unit  | C ISM C AAM/EAM W163 C IFZ/Immo DAS2  |
|  | C Infra Red Key C WSP/Immo W168   |
| 0000         FE         55         32         AE         8B         05         4A         AE         7F         12         EB         BE         04         00         3E         73            0010         E4         5E         CE         DE         C7         2D         96         46         08         17         92         95         1B         6E         F0         0F           0020         D4         E7         6E         60         86         AS         F7         FD         5D         56         61         BD         62         29           0030         AD         F7         6E         26         68         AS         F7         FD         5D         56         53         66         AS         07         70         22         33         40         FF         82         16         0         60         00         00         22         34         40         FF         82         16         0         64         38         00         00         00         16         18         00         16         18         00         18         17         18         18         16 | Service Password :  |
| 4 4  |   |
| Operation staus: moving<br>ESL initialized.<br>ESL transport mode NOT released.<br>ESL NOT personalized.<br>ESL NOT cotivated.<br>ESL enabled.<br>production number: 0000758500421101<br>part name: EEW2 programming 14/06<br>production date: 18-06-2007<br>VIN: 204 xxxxxxxxxxxxxx<br>Key 1-F8F532AE88054AE2. Disabled.<br>Key 3-0EE3EB7A50866A38. Disabled.<br>Key 4-ABAB56738D04EBDB. Disabled.<br>Key 4-ABAB56738D04EBDB. Disabled.   | Personalization     Activate     Activate     Disable Key     Lock     Unlock |
| <pre>Key 6-FBB052203E405DBA. Disabled.<br/>Key 7-05DB5092CBB418. Disabled.<br/>Key 8-C0A3C1F9F5942E3C. Disabled.<br/>Service: 22B8F40B163EA9ED<br/>Done.</pre>   | F Program ID Cose   |

After that you can personalize the ESL/ELV:

| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit  | ISM C               | AAM/EAM W163 C IFZ                | /Immo DAS2 |
|--|---------------------|-----------------------------------|------------|
| ← ESL / ELV CPU-2 C Transmission Control Unit C  | 🗅 Infra Red Key 👘 🔿 | WSP/Immo W168                     |            |
| 000 <b>B</b> D 1C 91 F9 B4 5F BE 8E 6D 1C 91 F9 B4 5F BE 8E<br>010 8D 1C 91 F9 B4 5F BE 8E 8D 1C 91 F9 B4 5F BE 8E<br>020 91 A4 8B 27 C7 0A 5D D1 91 A4 8B 27 C7 0A 5D D1<br>030 91 A4 8B 27 C7 0A 5D D1 91 A4 8B 27 C7 0A 5D D1<br>040 4E 82 76 E1 5F 83 9B EA 4E 82 76 E1 5F 83 9B EA<br>050 4E 82 76 E1 5F 83 9B EA 4E 82 76 E1 5F 83 9B EA<br>050 4E 82 76 E1 5F 83 9B EA 4E 82 76 E1 5F 83 9B EA  | Service Password :  | Read                              | Save Data  |
| Deration staus: moving<br>SL initialized.<br>SL transport mode released.<br>SL personalized.<br>SL NOT activated.<br>SL NOT activated.<br>SL nabled.<br>bart name: EEW2 programming 14/06<br>production number: 0000758500421101<br>bart name: EEW2 programming 14/06<br>production date: 18-06-2007<br>TN: 204 XXXXXXXXXXXXXXXX<br>Key 1-8D1C91F9845FBE8E. Disabled.<br>Key 3-4E8276C19A5D1. Disabled.<br>Key 4-D9F752B5D641E1.66. Disabled.<br>Key 4-D9F752B5D641E1.66. Disabled.<br>Key 6-4F752C9C00064 Disabled. | *                   | Personalization<br>Virgin<br>Lock | Activate   |
| <pre>{ey 7-E8685410527ADD94. Disabled.</pre>   | E                   | Program ID                        | ×          |

Then you will need to program a key using the PROTAG programmer as per the steps above.

After a key is programmed you can Activate the ELV by setting the ignition to the "ON" position:

| Drive Authorization System Component Manager  |                  |                                     | ×               |
|---|------------------|-------------------------------------|-----------------|
| C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit   | C ISM            | C AAM/EAM W163                      | C IFZ/Immo DAS2 |
| ESL / ELV     C ESL / ELV CPU-2     Transmission Control Unit   | 🖸 Infra Red Key  | C WSP/Immo W168                     |                 |
| 0000 F8 F5 32 AE 8B 05 4A E2 F7 12 EB B8 04 90 38 73<br>0010 E4 5E CE DE C7 2D 96 46 08 17 92 95 1B 6E F0 0F<br>0020 D4 E7 E6 EB 60 86 A3 BF 7F 7E D5 B3 61 BD E6 29<br>0030 AD 7F C7 62 76 F9 8F 07 20 22 83 40 FF 8B 21 6D<br>0040 0E E3 EB 7A 50 B6 6A 38 0E E3 EB 7A 50 B6 6A 38<br>0050 0E E3 EB 7A 50 B6 6A 38 0E E3 EB 7A 50 B6 6A 38  | Service Password | :<br>Read                           | Save Data       |
| Operation staus: moving<br>ESL initialized.<br>ESL transport mode released.<br>ESL personalized.<br>ESL activated.<br>ESL activated.<br>production number: 0000758500421101<br>part name: EEW2 programming 14/06<br>production date: 18-06-2007<br>VIN: 204 XXXXXXXXXXX<br>Key 1-F8F532AE8D54AE2-F712EB8804903873<br>Key 2-D4E7E6EB6086A3BF-7F7ED5B361BDE629<br>Key 3-DEE3EB7A50B66A38-0EE3EB7A50B66A38<br>Key 4-BBABE673B0D4FBDB |                  | Personalization     Virgin     Lock | Activate        |
| <pre>Key 4-ADABB6/3B042BJB-ABABB6/3B044EBJB<br/>Key 5-7D9A26E65F6071ED-7D9A26E65F6071ED<br/>Key 6-FBB0522C3E405D8A-FBB0522C3E405D8A<br/>Key 7-0BDBF3082CBB9A18. Disabled.<br/>Key 8-C0A3C1F9F5942E3C. Disabled.<br/>Service: 3BD8F1914901D026<br/>Done.</pre>   |                  | E<br>Program ID                     | Close           |

## 5.17. 3 Abrites ESL Emulator

Mercedes - Benz vehicles are well known for issues concerning the electronic steering lock.

The replacement price and effort creates the need for there to be an emulator, which resolves the issue with the ESL. For this reason we created an emulator to solve the issue.

The Abrites ESL Emulator is a simple to use solution which looks in the following way:



In the bottom left of the emulator you can see the switch board which is used to select the model you are working with.

To determine which switch applies to which model you will need to follow the switch table below.

As you can see in the picture you have toggle switches `"1" to "4" and the different combinations between the switches allows you to set the ESL emulator for the different Mercedes- Benz vehicles.

Please follow the pictures closely and pay attention to the models you are working with.

Also please make sure that the switches are toggled and selected outside the car's network and disconnected from the power supply.





Once

you have determined the model that the ESL emulator will apply to you need to make sure that you are connecting it to the ESL pins of the car in a correct manner. Below you will see some examples of the connection pinouts for the different Mercedes models:

#### \*W176/ W246/ W117 are supported via version 24 + of EM001.

\*W906 Sprinter and W639 Vito are supported and configured as W203,W208, etc.

# 5.17.4 ZN051 Distribution Box



The ZN051 Distribution Box is mainly used together with the MN026 Special function for Abrites Diagnostics For Mercedes. The main purpose is to export the password from the EZS 10 times faster than without the DS Box. It has a hidden relay, which cuts the ignition when needed and re-connects it once again automatically. The DS Box allows us to connect it clean between the AVDI and the OBD. In addition to the Fuse Relay that is now built into the Abrites Distribution Box, it's work can also be monitored by the built-in LED.

Using the ZN051 we also open the door for many new features. It allows us to work easily with boot mode on EDC17/ MED17 boot mode for the Abrites diagnostics for VAG and others as well.

The distribution box now also includes the option to be updated so all new future functions and features will be available immediately.

The ZN051 set contains 9 pieces, which are as follows:





Needle Connectors

K-Line Cable



Distribution Box



CAN HI and CAN LOW long cables



DB15 Boot Mode Connector Cable



Fuse Adapter Cable and Crocks Cable



Pin Connectors (Used for EM001 update)



Distribution Box connection ports:

1st two ports (Red and Blue) are for CAN HI and CAN LOW 6-14, the 2nd ports below them are for CAN HI and CAN LOW 3-11. These ports are mainly used when virginizing and adapting Mercedes TCUs and ECUs when using MN026. Both Green ports K1 and K7 are used for the K-Line connection (K7 has to be used when exporting a password from Mercedes EZS whn using the Relay method). B+ and GND ports are used when updating EM001 Emulator.

The Relay Ports are both in red and this is where the Fuse Adapter.

# 5.17.5 EM004, EM005, EM006 and EM007

1. EM004 emulator – Video in Motion CAN Filter 125k (W167 W292)

With the help of the Abrites EM004 you will be able to allow the video in motion to operate even when the vehicle's coding does not allow this to happen.

If the video in motion cannot be performed via coding you will need to install this emulator in order to allow the VIM to function. This Emulator can be used for the cars where the video in motion CAN is at 125k speed.

EM005 emulator – Video in Motion CAN Filter 500k (W216 W221)

With the help of the Abrites EM004 you will be able to allow the video in motion to operate even when the vehicle's coding does not allow this to happen.

If the video in motion cannot be performed via coding you will need to install this emulator in order to allow the VIM to function. This Emulator can be used for the cars where the video in motion CAN is at 500k speed.

EM006 emulator – Odometer calibration emulator (W204, W212)

The Abrites EM006 Emulator is designed to assist the calibration of vehicles when this cannot be achieved diagnostically.

4. EM007 emulator – Odometer correction emulator with cable set (W204, W212)

The Abrites EM007 Emulator is designed to assist the calibration of vehicles when this cannot be achieved diagnostically. It comes equipped with a cable set which is used to connect to the cluster.

\*Note - All of the emulators use the connection diagram for EM004 except for EM007(it is equipped with a cable set)



out. The cables for the comfort CAN are Yellow/ White for CAN H and Solid Yellow for CAN









Please pay attention to the digits next to each pin



ESL connector pinout.

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For most models it will be a direct plug in, but in the case of the W204, W207 and W212 for example you need to follow a procedure to perform the ESL emulator adaptation once you have the Key password. The EZS needs to **be read, then press SAVE DATA (this is the FBS/DAS data), save the data,** then make sure to save the coding and know where they are on your computer



#### \*It is only after you have done this that you can move on to the ESL

#### 4. The ESL (EMULATOR) needs to be read

| Drive Authorization System Component Manager  |   |  |  |  |  |  |
|---|---|--|--|--|--|--|
| C EZS / EIS         C EZS / EIS CPU-2         C Engine Control Unit                • ESL / ELV               C ESL / ELV CPU-2               C Transmission Control Unit                 0000             00  | C ISM/DSM/ESM C AAM/EAM W163 C IFZ/Immo DA52<br>C Infra Red Key C WSP/Immo W168<br>Service Password :   |  |  |  |  |  |
| <pre> Operation staus: locked ESL initialized. ESL transport mode released. ESL personalized. ESL personalized. ESL enabled. production number: 000000000000018 part name: EMUL_ programming 90/20 production date: 05-02-2016 VIN: &lt;&lt;&lt;<abrites>&gt;&gt; Key 1-0000000000001-0000000000001 Key 3-000000000001-0000000000001 </abrites></pre> | Personalization          Image: Constraint of the second |  |  |  |  |  |
| Key 4-000000000000000000000000000000000000  | Program ID Close  |  |  |  |  |  |

After that the software will ask you to connect the LIN to the ESL and you will have the option to personalize the ESL with the FBS/ DAS data that you saved from the EZS.

# Note that the ESL of the car MUST be disconnected when adapting an Abrites emulator!

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5. Then the ESL emulator needs to be personalized to the EZS using its data. Please make sure that there is no key in the EZS and that the EZS does not fall asleep during this. A good way to ensure that is to turn the key in the EZS before starting the procedure and then take it out. In almost all cases turning the lights on the car to the "ON" position will allow you to work with the car without the EZS falling asleep.

| Drive Authorization System Componer  | nt Manager  |                  | Sector.            | ×            |
|--|---|------------------|--------------------|--------------|
| C EZS / EIS CPU  | J-2 C Engine Control Unit   | C ISM/DSM/ESM    | C AAM/EAM W163 C I | FZ/Immo DAS2 |
| ● ESL / ELV CPL  | J-2 O Transmission Control Unit   | C Infra Red Key  | C WSP/Immo W168    |              |
| 0000 00 00 00 00 00 00 00 00 00<br>0010 33 C3 0D AD 7F E9 D6 AI<br>0020 00 00 00 00 00 00 00 00<br>0030 00 00 00 00 00 00 00 00<br>0040 00 00 00 00 00 00 00 00<br>0050 00 00 00 00 00 00 00 00<br>0050 00 00 00 00 00 00 00 00  | L 00 00 00 00 00 00 00 00 01<br>0 00 00 00 00 00 00 00 00 1<br>L 00 00 00 00 00 00 00 00 01<br>L 00 00 00 00 00 00 00 00 1<br>L 00 00 00 00 00 00 00 01<br>L 00 00 00 00 00 00 00 01<br>V | Service Password | :<br>Read          | Save Data    |
| Operation staus: locked<br>ESL initialized.<br>ESL transport mode released<br>ESL personalized.<br>ESL NOT activated.<br>ESL enabled.<br>production number: 00000000<br>part name: EMUL_ programmin<br>production date: 05-02-2016<br>VIN: <<< <abrites>&gt;&gt;<br/>Key 1-00000000000001-0000<br/>Key 2-00000000000001-0000<br/>Key 4-00000000000001-0000</abrites> | 00000018<br>g 90/20<br>00000000001<br>00000000001<br>00000000001<br>000000  |                  | Personalization    | Activate     |
| Key S-0000000000000000000000<br>Key 6-000000000000000000000<br>Key 8-00000000000000000000<br>Service: 00000000000000000000<br>Done.  | 000000000000000000000000000000000000000   |                  | E Program ID       | Close        |

\* When you are done and the procedure for adaptation is completed the ESL emulator will beep longer when the ignition is being turned on and shorter when it is being turned off.

\* If it is needed the Emulator can be updated. This is done by connecting the positive, negative and K-line of the emulator is connected to the AVDI and selecting the EMULATOR update function from the special function in the Abrites diagnostic software. Connect, select the function and wait for the EMULATOR to be updated.



## **VII. Connecting via Internal CAN**

In order to work with various components within the Mercedes-Benz vehicle range you will sometimes need access to the internal CAN and LIN network of the vehicles.

In the cases of the ELV units you need direct connection in order to bring the unit to a virgin state. Everything else is done via OBD.

We can recommend the usage of the following cable when connecting to the internal CAN network. The cable itself uses a DB25 connection and connects directly to the AVDI's DB 25 port.



On the DB 25 connector you need to follow this principal:

- PINs 5 and 6 Ground
- Pin 7 CAN H

- PIN 15 - CAN L

This is the connection that is required.

A good rule of thumb in the Mercedes-Benz vehicles is that in most cases the different CANs have similar colouring. For example with CAN C – usually the green wire is the LOW can and the green with white is the HIGH.

With CAN B - LOW is normally brown and HIGH is normally brown with red.

N.B. Whenever you are connecting modules on a bench you need to be mindful of the resistors described below and where to place them, Always make sure to work with a constant power supply of at least 12V and ALWAYS put your safety first. Make sure that the correct pinouts are used and that the exact connection is followed

Here are some common pinouts for various modules:





General 7G connection



2



2-




















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W117/W176/ W246 Double Clutch gearbox TCM







## SIM4LE

| 5-1,2,24 | +12v   |  |
|----------|--------|--|
| 5-4      | GND    |  |
| 4-28     | K-LINE |  |
| 4-1      | CAN-H  |  |
| 4-2      | CAN-L  |  |

1

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# SIM271KE2.0







EIS/ EZS connection pinouts for bench connection.

\*Only work outside the car when there is no other way. The margin for error is too high and the Abrites team cannot guarantee that the software will work correctly if you have different wiring. We always prefer to work in the car.

- W210 / W208 / W202. For these cars there are three separate connectors on the back side of the EIS/ EZS – A, B and C:

\* Connector A:

| pin 1: CAN H                                |   |                       |
|---|---|-----------------------|
| pin 2: CAN L                                |   |                       |
| * Connector B:                              |   |                       |
| pin 3: GND                                  |   |                       |
| pin 4: ESL 1                                |   |                       |
| pin 5: ESL 2                                |   |                       |
| pin 7: +12V                                 |   |                       |
| pin 14: K-Line                              |   |                       |
| * Connector C:                              |   |                       |
| pin 2: <b>+12V</b>                          |   |                       |
| pin 4: <b>+12V</b>                          |   |                       |
| pin 5: <b>ELV B+</b>                        |   |                       |
| pin 6: <b>+12V</b>                          |   |                       |
| - W203 / VITO W639. These cars have middle: | e 4 connectors but the ones you nee           | ed are the two in the |
| * Connector A:                              |   |                       |
| pin 7: ESL 2                                | OCAN L  | ()+12V                |
| pin 9: +12V                                 | +12VOO  | O O ESL pin 1         |
| pin 10: ESL 1                               |   | ESL pin 2             |
|   |   | A CONTRACTOR OF       |
| * Connector B:<br>pin 2: GND                |   |                       |
| pin 3: +12V                                 | Antipation ( service service service service) | Contraction of the    |
| pin 4: K-Line                               | Connector B                                   | Connector A           |

-W220 / W215. Here the connectors are two A and B:

pin 5: CAN L pin 6: CAN H pin 7: CAN L pin 8: CAN H

\* Connector A: pin 1: +12V pin 3: +12V \*Connector B: pin 1: +12V pin 2: K-Line

pin 3: CAN L

pin 4: CAN H

pin 5: GND

pin 7: CAN H

pin 8: CAN L

-W211 / W219 / W209. Three connectors, when they are at the bottom – the middle one is C, the one to the right is A and the one to the left is B. You need C and B

#### \* Connector B:

pin 1: ESL 1

pin 2: GND

- pin 3: +12V
- pin 5: CAN L

pin 6: CAN H

pin 7: CAN L

pin 8: CAN H

#### \* Connector C:

pin 1: +12V

pin 2: +12V

#### pin 4: ESL 2

- W164 / R251 / W221 / W216. When the connectors are on top – the one on the left is A and the one on the right is B

#### \* Connector A:

pin 5: GND

pin 6: +12V

#### \* Connector B:

pin 3: CAN L 164 pin 4: CAN H 164

pin 5: CAN H pin

6: CAN L

\*Note: W164 needs to have a ZGW connected to allow communication with the EIS/EZS.

- W204 / W207 / W212. In this case there is only one **connector – A**. Please make sure it is on top:

pin 1: CAN L







pin 2: CAN H pin 7: +12V pin 10: GND

Connect pin 5 of the left connector to pin 3 of the ESL/ ELV and pin 2 of the right connector to pin 4 of the ESL/ ELV.

- W164 W221 EZS MERCEDES version 1:





- W164 W221 EZS MERCEDES version 2:

### W164 W221 DIAG OBDII PASSWORD IR- PROTAG VERSION 2



- W166 W246 EZS MERCEDES:



- W215 W220 R230 EZS MERCEDES:

## W215 W220 R230

### **DIAG OBDII**

**PASSWORD IR-RELAIS** 



- W906 EZS MERCEDES:



- MERCEDES W202 W208 W210 EZS:

### W202 W208 W210 DIAG 38 PIN PASSWORD IR-RELAIS



- MERCEDES W203 W463 W639 EZS:



- MERCEDES W204 W207 W212 EZS:



- MERCEDES W209 W211 W219 W169 W245 EZS:



- W212 246 166 VERS1 EZS:



#### **ESL/ ELV connection pinouts**

-W203. For the W203 there a different ELV/ ESL types – please note the type you have. **\* 5 pin:** 

pin 1: K-Line pin 3: GND pin 4: +12V pin 5: N/C \* 3 pin: pin 1: +12V pin 2: GND pin 3: K-Line \* 4 pin: pin 1: K-Line pin 2: pin 3: GND pin 4: +12V -W210 / W208 / W202. Make sure to have the clips of the ESL/ ELV facing down. pin 1: +12V pin 2: GND pin 3: K-Line pin 4: K-Line - W211 / W219 / W209 pin 1: K-Line pin 2: pin 3: GND pin 4: +12V - W212 / W207 / W204 / W906

pin 1: GND pin 2: +12V pin 3: ESL LINE / K-LINE pin 4: +12V

Please refer to the pinouts above.

\*\*\*These pinouts may be different from year to year so ALWAYS work in a car.\*\*\* Please make sure to watch the videos our team has made for your assistance.

#### 6. Appendix

Here you can find the various cable solutions we provide in order to assist with your work on Mercedes – Benz vehicles:

1. The Abrites Mercedes Main Cable – Connects to the DB25 on the AVDI and allows you to connect to the rest of the cables provided as a part of our solution system.



2. Abrites Switch Relay Cable. It allows the password extraction speed to be increased drastically when all keys are lost. It is used together with the Abrites Fuse Plug.





**NB:** DO NOT FORGET TO SUPPLY THE SWITCH RELAY WITH +12V AND GND IN ORDER TO OPERATE.

3. Abrites Fuse Plug. It is used to connect to the ignition fuse if one is available in the car.



4. Abrites CAN H (High), CAN L (Low) Connectors. Made to connect to the Abrites Mercedes Main Cable to perform virginization and module adaptation for ECUs,ISMs, etc.



5. Abrites LIN Connector. To be used together with the main cable to connect the K- line to PIN 7 of the OBD as per the DAS manager instructions.



Abrites DAS Manager Table 1 – please follow the link below. The table is located under: EIS/ EZS Coverage (FBS2/FBS3)

http://abrites.com/products/abrites-diagnostics/for-mercedes-maybach-smart