



# Achieve the impossible

# Abrites Diagnostics for Mercedes/Maybach/Smart User Manual

Version: 3.5

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Date	Chapter	Description	Revision
November.30 2015	ALL	Total update of the manual	2.1
February.02.2016	DAS manager	Total update of the chapter+ corrected pinouts	2.2
February.02.2016	DAS manager	Total update of the chapter+ corrected pinouts	2.3
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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

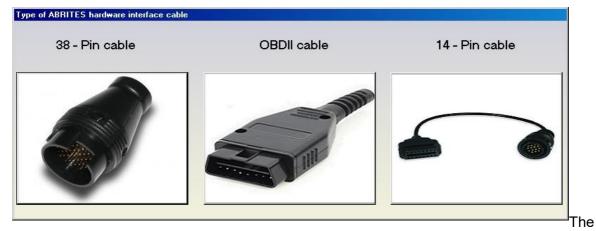
When you run ABRITES diagnostics for Mercedes/Maybach/Smart it will automatically try to detect the appropriate hardware interface and will connect to it. If the interface is recognized and the software is ready for normal operations, you will have to select the appropriate cable type. After startup 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			T
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			
70	Turbo Diesel engine	K-Line			
38	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 / CAN		-	
-	Vehicle Selection	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 /	Kwp2000			1 P
03	Benzin Engine: Motor Electronics - Sequential Fuel Injection (2.8)	Kwp2000			Previou
04	Electronic Transmission Control	Кыр2000			
05	Electronic Gear Selector Module	Кыр2000			
06	Drive Authorization System	Кыр2000			
07	Airbag	Кыр2000			
08	All Activity Module	Кыр2000			THE R
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
18	Instrument Cluster	Кып2000		-	
*	Vehicle Selection 🛛 🔐 Special Functions 🗍 🥸 Options 🔪				
Chas	sia: M-Class		5	Can f	Sor Units
Mode	* 🛙 🗤 🗤 🐨 🗤 🐨 🗸 🗸 🗸 🗸			Carri	51 01113
Engi	ne: Diesel			0	
				lear a	II DTCs
ead					

# **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 / Hot Film Sequential Fuel Injectio	n /	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			<u> </u>
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 / Ele	ctro	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		-	
-	Vehicle Selection 🛛 🙀 Special Functions 🤹 Options					
FF	Protocol CAN Resistor CAN Resistor	_			~~	
E	🗹 CAN UDS	-			50	2
E	☑ CAN KWP2000			Ac	lvan	ced
E	☑ K-Line KWP2000 O 9600 \ 10472				1	
E	☑ K-Line Slow Init				Appl	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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ptions Language English	
Apply	Cancel
cking on the "Advanced" button will present you with th	

the language of the user interface of the Mercedes Diagnostics:

# 4. Diagnostics

The following diagnostic functions are supported:

SCR	a diagnostic ses	sion with the sel	ected unit		
Diagnostic ch	annel is open.				
Mercedes-Benz Supplier Hardware Vers Software Vers Diagnosis Ver	150 000 000 100				Clear log
					Write Io
Identification	Read DTCs	Clear Crash Data	Adaptation	Variant Coding	A · B · R · I · T · E · : automotive solution
Extended Identification	Clear DTCs	Security Access	Reset	Write ID	
	Actuator	Custom Memory	Custom	Initial	

# **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.

#	Unit 1	name						Pr	ot DI	C 🔺	
01	Engine	e: Motor El	ectronic.	s / Hot Fi	ilm Seque	ntial Fuel	Injection	n / K-	Line		Previou
02	Gasoli	ine Motor E	lectroni	.cs Left				K-	Line		
03	Benzin	n Engine: M	lotor Ele	ctronics -	- Sequent:	ial Fuel In	njection	(2.8) K-	Line		
04	Motor	Electronic	:5					CA	N		Connec
05	Common	n Rail Dies	el Injec	tion - 1				K-	Line		
06	Common	n Rail Dies	el Injec	tion (2/3)	(4/5/6)			K-	Line		J
07	Turbo	Diesel eng	jine					K-	Line		Next
08	Anti-1	Lock Brakin	ig System	1 / Acceler	ration Sl:	ip Regulat:	ion / Elec	ctro K	/ CAN		
09	Airbag	3						ĸ	/ CAN		$\mathbf{\mathbf{x}}$
10	Airbag	g in SMART	vehicles					ĸ	/ CAN	Ŧ	Exit
<b>6</b>	Vehicle Sele	ection 👔 Spe	cial Functions	Coptions	]						
	*	<b></b>						Carpert	010110 110011 101000 0001	^	
DAS	6 Manager	Program Smart Keys (DAS 3)	DAS 2b (W 163)	DAS 2a (W168)	DAS 2	Transponder Generation	Cluster Calibration	Read/Update ConfData	Dump Tool	=	<b>b</b>
	Ċ		2		Ä	0			(1)		Open
	ECU	Sprinter/Vito Start Error	Airbag	TV/AUX	Seatbelt sound	Adaptations for SMART	CGW (ZGW) Explorer	ASSYST PLUS	SBC Repair	-	

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.

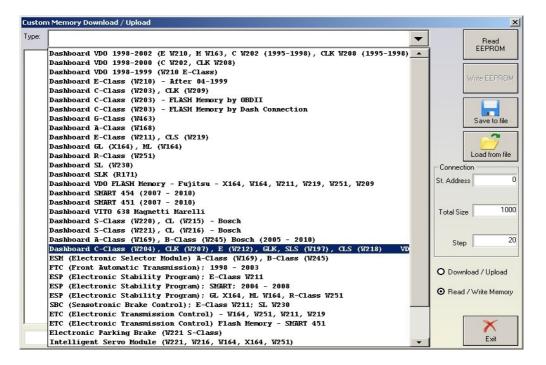
#### 5.1 Mileage calibration

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.



00000000 00 00 00 00 00 00 00 00 26A 00 05 00 00 BD AB 24 20jjj.       Connection         0000000D FF 01 00 00 00 00 00 00 00 00 00 00 00 00	gram); SMART; 2004 - 2008
00000020       00       60       9E       AB       00       02       FC       AB       00       02       FF	F FF FF FF FF FF FF FF
D0000030       FF	
00000040       30       39       57       4A       FF	0 02 FC AB 00 02 FC AB
0000050       PF       FF	43 44 41 40 5A 57 52FCDAF272
0000060       00       01       07       00	F FF FF FF FF FF FF FF 09DA
0000070       0D       0S       00       0G       0A	
0000080       00       4E       00	
0000090       00	
0000000 09 AB 1D 80 FF 01 00 00 00 00 00 00 00 00 00 00 00	0 00 CC AB 16 4D FE 01 .NEM
00000B0       02       6A       0D       05       00       0C       Connection         00000B0       02       6A       0D       0S       0C       0C       Connection         00000D0       00       0C       0C       0C       0C       0C       Connection         00000D0       0C       0C       0C       0C       0C       0C       Connection         00000D0       0C       0C       0C       0C       0C       0C       Connection         00000D0       0D       0C       0C       0C       0C       0C       Connection         0000010       0D       0C       0C       0C       0C       Connection       St. Address         0000100       0D       0C       0C       0C       0C       Connection       St. Address         0000110       0D       0C       0C       0C       0C       Connection       St. Address         0000120       FF       FF       FF       FF       FF       Connection       St. Address         0000120       FF       FF       FF       FF       FF       FF       FF       FF       Total Size         0000100	
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00000E0       00	
0000000 BD AB FF	
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0000110       00       00       04       AB       01       05       00       12       FF       00       06       B1       FF       FF       FF	
0000120 FF 6D 00 00 00 B9 AB 01 05 00 21 FF 00 09 B1 FF .m	
0000130       FF FF FF 6D 00 00 00 A7 AB 01 05 00 68 FF 00 29mh)       000140 70 FF FF FF 6D 00 00 00 81 AB 01 05 00 17 FF pmh)         0000140       70 FF FF FF FF 6D 00 00 00 81 AB 01 05 00 17 FF pmh)       000150 00 07 B1 FF FF FF FF FF FF 50 00 00 00 BA AB 01 05 00f.         0000150       00 70 B1 FF FF FF FF FF FF 50 00 00 00 DA AB 01 05 00f.       000160 CF F0 00 8 B1 FF FF FF FF FF 50 00 00 00 DA B0 01j.         0000170       05 00 55 FF 00 14 18 FF FF FF FF FF 6A 00 00 00 FDj.       0000180 AB 01 F3 00 10 01 00 05 A0 FF FFF FF FF 01 00 00	
0000140         70         FF         FF         FF         FF         FF         FF         60         00         00         81         AB         01         05         00         17         FF         pm	
0000150         00 <t< td=""><td></td></t<>	
0000160         1C         FF         000         0 <td< td=""><td></td></td<>	
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0000180 AB 01 F3 00 10 01 00 05 A0 FF FF FF FF 01 00 00 0000190 00 49 AB 01 05 00 37 FF 00 13 86 FF FF FF FF 01 .I7 00001A0 00 00 01 E AB 01 05 00 38 FF 00 1C DD FF FF FF8	
0000190 00 49 AB 01 05 00 37 FF 00 13 86 FF FF FF FF 01 .I7	
00001A0 00 00 01 E AB 01 05 00 38 FF 00 1C DD FF FF FF8	
00001C0 FF	O Redu / Mile Heile
00001D0 FF	

# 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).

irbag	<u>×</u>
Choose Airbag Type:	Read EEPROM
Bosch Up to 1997	
00000000 00 00 00 00 00 Bosch 1997 - 1998	
00000010 00 00 00 00 00 Bosch 1998 - 2003	CC.
00000020 00 00 00 00 0 <b>Bosch 2004 - 2008</b>	
00000030 00 00 00 00 0 Temic Up to 1994	Write EEPROM
Temic op to 1994	
Tem TC 1993 = 1997	
00000060 00 00 00 00 dTemic 1997 - 1999	
00000070 00 00 00 00 dTemic 1999 - 2002	
00000080 00 00 00 0 0 0 0 0 0 0 0 0 0 0	Save to file
00000090 00 00 00 00 0 TRW (2005 - 2010)	
D00000B0 00 00 00 00 00 00 00 00 00 00 00	
00000000 00 00 00 00 00 00 00 00 00 00	
	Load from file
000000E0 00 00 00 00 00 00 00 00 00 00 0	
000000F0 00 00 00 00 00 00 00 00 00 00 0	
00000100 00 00 00 00 00 00 00 00 00 00 0	Clear Crash
00000110 00 00 00 00 00 00 00 00 00 00 0	Data
00000120 00 00 00 00 00 00 00 00 00 00 00 00 0	
D0000160 00 00 00 00 00 00 00 00 00 00 00 00 0	
	~
	~
	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

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(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	2
Туре:	
	•
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 A 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	

# 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

ngine Control Unit - Special Functions		
W Bosch EDC 15C5 (CDI-1)		Read
CU Bosch EDC 15C5 (CDI-1)	E Cil base hele	EEPROM
Bosch EDC 15C5 (CDI-1)	ECU type help	
Bosch EDC 15C6 (CDI-2)		
000001 Bosch EDC 16CP31	-	
000002 Bosch EDC 16C2-4		Write to EEPRON
000003 Bosch EDC 16C2-7		
000004(Bosch EDC 16+ C32		-
000005 Bosch ME 2.0 / 2.1 28F200 BXB		
000006(Selemens SIM 4LE		Read Flash
0000009 VDO combined Air Mass and ECU (A-Class 1997-2004		
00000A SMART ME-SFI (451)		Ver var versver
		Write Flash
000000C SMART Bosch EDG 15C5 DIESEL		
000000 SMART MEG 450		-
00000E SMART ForFour Diesel EDC16C31		
00000F0 00 00 00 00 00 00 00 00 00 00 00		
0000100 00 00 00 00 00 00 00 00 00 00 00		Save to File
0000110 00 00 00 00 00 00 00 00 00 00 00		
0000150 00 00 00 00 00 00 00 00 00 00 00 00 0		Load from File
0000160 00 00 00 00 00 00 00 00 00 00 00 00 0		
0000170 00 00 00 00 00 00 00 00 00 00 00 00 0		
0000180 00 00 00 00 00 00 00 00 00 00 00 00 0		Change ID
0000190 00 00 00 00 00 00 00 00 00 00 00 00 0		Changent
00001A0 00 00 00 00 00 00 00 00 00 00 00 00 0		
	-	
	<u>}</u>	~
		$\sim$
		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	
1.1 Year/Model	1.2 1998 170/129/140/ 163	1.3 1998 210/208/202/220/ 215/203
1.4 DAS system	1.5 DAS 2b	1.6 DAS 3
1.7 Triggered by	1.8 Transponde r in key	1.9 Micro-processor in key
1.10 Signal type	1.11 Inductively coupled RF	1.12 IR
1.13 Authorization checked by	1.14 RFL (N54/3) AAM/DAS (163)	1.15 EIS (N73)
1.16 Unauthorized start result	1.17 No fuel – may crank briefly	1.18 No fuel – ignition switch locked, steering or shifter locked (chassis 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.

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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.

Seatbelt Warning Sound	×
Choose Vehicle	
O A Class W168	O Sprinter, Vito, Viano (after 2006)
O A Class W169	O SMART ForFour (454)
O B Class W245	O GL Class (X164), ML (W164), R (W251)
O C Class (W203 - old; K-Line)	O ML Class (W163)
O C Class (W203 - new; CAN)	O SLK
O C Class (W204)	O S Class W221
O CLK (W209)	O S Class W 220
O CLS W219 Version 1	
O CLS W219 Version 2	
O E Class Version 1 (W211)	
O E Class Version 2 (W211)	
Activate Deactivate	Cancel



Electrical Steering Lo	pek		×
Choose	w202, w208, w210	Read EEPBOM	
Password:	W202, W208, W210		
	<u></u>	Vrite EEPROM	Program Virgin ESL
		Crase EEPROM	Calculate Password
		Unlock ESL	
		Load Dump	
		Save Dump	
		Select Database Folder	Cancel

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

VSP Immobilizer	type:																-	Read EEPROM (Partially)
	00	98-	1.111	n.7.	122	- 1		m	-	2			v					
0000010 59	BB	30	Emr	nok	)i]	Liz	er	H	C0	8	+	24	c0.	4				
00000020 11																		
0000030 53	B2		28	40	DF	<u>n8</u>	ng	40	84	61	F2	00	24	aa	46	g //d	100	<u>Save to file</u>
00000040 IE	C3	20	25	2E	4F	51	1C	Ĉ1	07	36	9Ē	4D	ĈĒ	DE	FE	S/@·····ª··J·· ,≒.OQ6.M		
00000050 4F	E4	46	OF	ЗF	29	С5	50	7D	6D	51	AF	ΕO	9B	E5	67	0.F.?).P}mQg		
0000060 6E	D6	ΒE	71	BA	D6	5A	53	Fl	AC	E4	9C	90	98	B6	BD	nqZS		r
0000070 4E	Β7	01	Ε4	2F	1F	93	9A	50	2F	01	E4	2F	1F	93	9A	N/P//		Load from file
0000080 50	2F	DB	F3	AF	9B	FE	1E	4B	FO	BE	OF	<b>A</b> 8	0D	7E	EA	P/K~.		
																.^N'D}g		L
																.D3.*e-d.~		<u>r</u>
																2.\$.*G		Help
																<=;A <c.\$< td=""><td></td><td><u>n</u>eih</td></c.\$<>		<u>n</u> eih
																<.v\9xx		
																]jup6		
																W.\0.Qq.		
																I@		<u>R</u> epair Dump
																aZ.9<		-
0000130 FF																		r
0000140 FF																		Learn Additional
																fZ.9<		Transponder Key
																s.\$Qq>.		
																eGeE.2'@		
																sRTQ.T.		Encrypted random number
																TQ.TTQ.		
																TTQ.TT Q.TTQ.TT		0
																Q.TTQ.T		
0000100 AD	32	CE.	93 D5	34 B2	A0	28	93 6F	26	AO SO	21	31	93	- 34 - 72	1.2	C4	=2,q~n&Y!C		
	34	or	50	52	11	15	OF	20	39	41	A/	Cr	40	10	63	-2q~n&Υ!C	<b>X</b>	
<u> </u>																		
																	-	E <u>x</u> it

×

EZS (CAN vehicles)		×
Initial startup		
Initial startup of control unit EZS     Initial startup     Initial startup of control unit ESL		ID Write ID
- Key / Key Track Information	Activate EZS	
Key er key track last used		Remote deer unlecking
Second last key or key track used	Activate ESL	Perform Coding
EZS status		
Key er key track 1		Central Locking Configuration
Key er key track 2	Personalize EZS	Central Locking Komfort
Key er key track 3		Central Locking Remote Door Unlocking
Key or key track 4	Personalize ESL	Keyless Ge Central Lecking pest-running
Key or key track 5		Save
Key or key track 6	EZS - Detach Transport Protection	Cenfiguratien
Key er key track 7		
Key or key track 8	ESL - Detach Transport Protection	┌ Speed at which the deers will automatically lock (1-30 [km/h]
Get Key Info Set Key Info Replacement Keys		Set Lock Speed

# **5.11 Increment Odometer (CAN)**

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

crease Odometer	×
Select Vehicle	1
C C-Class	
C R-Class	
C M-Class	
C G-Class	
O 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	0

# 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
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
Erase	Get Current Set Data	Service 11 Service 12 Service 16
		Service 20
Special Equipment		US Service 12 US Service 1
		US Service 9
Vehicle Prod. Date	As of 09/2005	VS Service 3
	×.	US Service 4
Climate Control	Automatic air conditioni	US Service 6
Ľ		US Service 2
i		US Service 5
Roof Version	Panoramic sliding roof	SetCUS Service 10
		US Service 11
Engine Type	Diesel	US Service 7
		US Service 8
Г		US Service 15
Automatic Transmission	Present	▼ US Service 20 —
		US Service 16 -
Special maintenance prog	ram variants	Automatic switchover to major service scope
C Maintenance program	variant for TAXI Set Program	Perform ASSYST Plus Service
C Maintenance program		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)", **"Operatin**g 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:

ASSYST PLUS Entry			
Current Date	13.09.2015	622323	•
Vehicle Age (in Days)	750		
Date of Service Maintenand	ce	13.09.2015	•
Reading of main odometer		30542	
Mileage of basic maintenact	e item	30542	
Workshop Code		<b></b>	
Tester Identification (4-bytes	s Hex)	[	
	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.

ntral Gatewa	y (CAN)	
ehicle Model		¥.
	A-Class (W169)	Read
	B-Class (W245)	EEPROM
	C-Class (W204)	12
	E-Class (W211)	1
	CLS (W219)	
		Write EEPROM
	Maybach (W240)	
	SLK (R171)	
	SLR (R199)	
0000000 00	GL (X164)	Save
0000010 00	M-Class (W164)	
0000020 00	R-Class (W251)	9
0000030 00	SMART	
0000040 00	S-Class (W221)	
0000050 00		Load from file
	CL (W216)	
		Change <u>I</u> D
		and the first first
00000B0 00	00 00 00 00 00 00 00 00 00 00 00 00 00	
00000000 00	00 00 00 00 00 00 00 00 00 00 00 00 00	
0000000 00	00 00 00 00 00 00 00 00 00 00 00 00 00	005475
00000E0 00	00 00 00 00 00 00 00 00 00 00 00 00 00	CGW Explorer
	00 00 00 00 00 00 00 00 00 00 00 00 00	
	00 00 00 00 00 00 00 00 00 00 00 00 00	2
	00 00 00 00 00 00 00 00 00 00 00 00 00	
	00 00 00 00 00 00 00 00 00 00 00 00 00	Assyst
	00 00 00 00 00 00 00 00 00 00 00 00 00	
지금 것 같아? 요구 오늘 것	00 00 00 00 00 00 00 00 00 00 00 00 00	-
	00 00 00 00 00 00 00 00 00 00 00 00 00	
T		X

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.

g Odomete	r (Km)	Remaining	g Distance (	(Km) Ti	me (Days)	Product	of quality	factors	Added Oil	(Liters)
ber of repleni	shmanta	0	1							
l refillir		( <u> </u>	dometer rea	ding (K			Detected	in hebbe	. quantity	(Liters)
. LCLIIII			dome oct icd	ang (n	.,		Proceeded	uuucu orr	. quancies	(110010)

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												
Odonet	er (Km)	Remaining	distance	(Km)	Days s:	ince	previous	service	Product	; ●f qual	ity f	acters
Leg 2												
Leg 3												
Leg 4												
Leg 5												
Number of maint	enance rece	ords in ASSYST:	0									
SYST PLUS							, j	Repleni	shments (ad	ded eil) mile	ages	
st service mileage (H	(m) 0	# 0	dometer r	eading	f (Km) 1	ays	-	Nr (	Denneter	reading	(Km)	Liters
erating time (days)	0						_					
	0						_					
imber of oil changes	0											
							_				_	
							_					
											10	V
								Numb	er of replenis	shments:	0	
								L				
								⊨∎ump T	уре			
					-			C 91	2			
								C	512 - Variant	1		
	1	-	9									-
<b>12</b>	1		X					0 99	612 - Variant	2		2
Lead File	Save	hanges	Cance					.C. 99	312 - Variant	3		Help
	Javec	andriges										



# 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			opon
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		•	Hone
<b>*</b> *	/ehicle Selection 🛛 🙀 Special Functions 🛛 🥙 Options				
Chas	ii: M-Class	1			<u>~</u> ]
Mode	t W164 (2006- ) Scan for Units		С	ear a	II DTCs
Engir	e: Gasoline				
				_	

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

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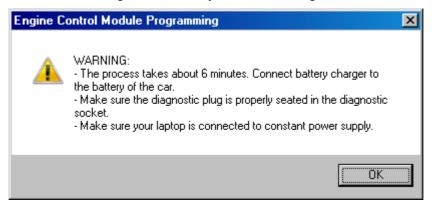
Abrites Diagnostics for Mercedes/Maybach/Smart User Manual

Electronic Trans	mission Control				×	
Establishing a Diagnostic chau		on with the select	ed unit		CAN ISO	
electronic control unit identification						
Mercedes-Benz No. : 03 35 45 73 32 Supplier : Siemens Hardware Version : 09 / 04 Software Version : 50 / 06						
Diagnosis Version : 1 / 1 Date of Manufacture: 01.02.07						
4					Next	
Identification	Read DTCs	Clear Crash Data	Adaptation	Reflash	A · B · R · I · T · E · S automptive solutions	
Extended Identification	Clear DTCs	Security Access	Reset	Write ID		
Actual Values	Actuator Tests	Custom Memory Read / Write	Custom 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 🔽				
•	Þ				
Get Coding Set Coding	Relp				
Ready					

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



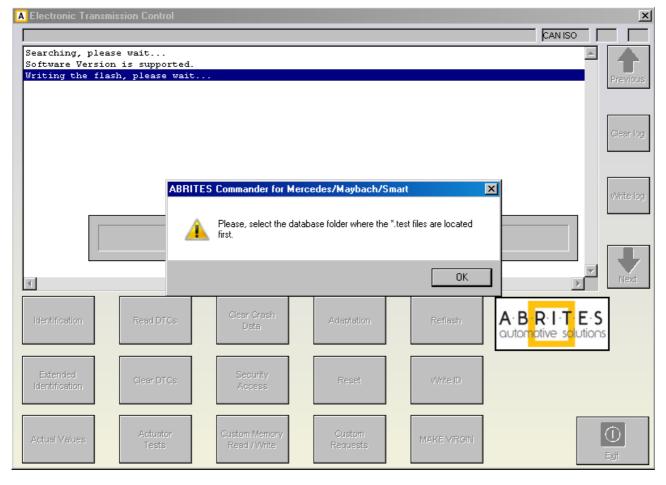
Follow these recommendations:

- 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

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 SBC (Sensotronic Brake Control) Repair	CAN KWP	N/A	Connect
05	System Diagnosis	CAN KWP	N/A	
	Repair SBC			Next
	Vehide Selection			Exit
	Cluster Read/Update Airbag		2b	
	ering Lock Ignition Switch Program Smart <del>opminiery not</del> sound for SMART (EIS) - K-line Keys (DAS 3) Start Error sound for SMART (EIS) - C/		ror	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	BRITES Diagnostics for Mercedes/Maybach/Smart 7.2 Days until HW synchronization: 27	23
# 01	A ABRITES Commander for Mercedes/Maybach/Smart	
02	Programming keys for DAS 3 system	ious
03 04 05 06	To prepare a key, you need from the dump of EZS (EIS). You can read EZS/EIS dump by diagnostic/infra-red adapter or by mcu-programmer. If you read the EZS/EIS module by diagnostic or by infra-red adapter it will be without special number named PASSWORD. Password you shold provide	nect
07 08 09 10	Reys of the vehicle of by some dump (L2.5/KET).	xt
-	○ Prepare key using EZS (EIS) dump	dit
DA	C Prepare key by reading EZS (EIS) by Diagnostic Link or Infra-red adapter	>
	< Back Next > Exit	

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.

	RITES Diagnostics for Mercedes/Maybach/Smart 7.2 Days until HW synchronization: 28 📼 🖻 🕺
# 01	A ABRITES Commander for Mercedes/Maybach/Smart
02 03	AVDI should be connected to the diagnostic connector of the vehicle to read EZS by diagnostic or
04	Infra-Red adapter cable of the ABPROG should be connected to AVDI to read EZS by infra-red.
06	
07 08	Read EZS (EIS) Save EZS (EIS) dump
09 10	
-	
DA:	-
	< Back Next > Exit
Sp ∢	

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:

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A ABF	ITES Diagnostics for Mercedes/Maybach/Smart 7.2	www.abrites.com	
# 01	A ABRITES Commander for Mercedes/Maybach/Smart		
02 03	AVDI should be connected to the diagno read EZS by diagnostic	estic connector of the vehicle to	ious
04	or Infra-Red adapter cable of the ABPROG s read EZS by infra-red.	should be connected to AVDI to	nect
06	Save EZS (EIS)		-
08	Read EZS (EIS) dump		xt
09 10	Reading EZS by OBDII OK		K dt
*			
DA			•
Spi		< 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:

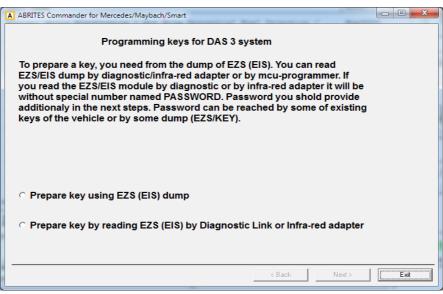
A AB	RTES Diagnostics for Mercedes/Maybach/Smart 7.2 www.abrites.com
# 01	ABRITES Commander for Mercedes/Maybach/Smart
02 03 04 05 06	The password can be extracted in 3 ways: 1. Using ABPROG and a working key. Solder the NEC microcontroller of the working key to the PCB V4 and press "Extract password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

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)

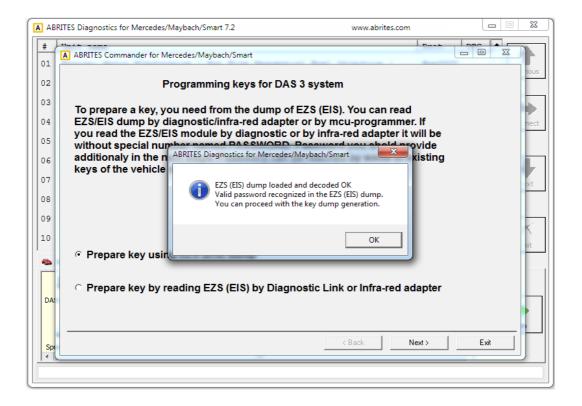
- 2. If you have a dump which contains the password in itself.
- 3. If you know the password you can type it in the password field.

A AB	RITES Diagnostics for Mercedes/Maybach/Smart 7.2 www.abrites.com	
#	ABITES Commander for Mercedes/Maybach/Smart	
02 03 04 05 06	The password can be extracted in 3 ways: 1. Using ABPROG and a working key. Solder the NEC microcontroller of the working key to the PCB V4 and press "Extract password from the key by ABPROG" button. 2. If the password is contained in a dump from EZS or KEY press the "Load a dump containing password" button. 3. If the password is known simply type it in the password field.	ibus nect
07 08	Password: D81BC8614ADC2016 Extract password from the key by NEC programmer Load a dump containig password in EZS (EIS) dump	xt
09 10 @	Dump load OK.	at
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 I			Le	
2		Programming keys for D	DAS 3 system		
3	To prepare	eration	2 E 2 0 (E 10) V	. <u> </u>	
4 5 6 7	EZS/EIS du you read th without spe additionaly keys of the	The required information for t - by using a PROTAG program this option, the user has to sel	mer connected to the AVDI -	by selecting	
9 0		key dump - Online (requires about 10 mi for all available positions are g To proceed with the PROTAG To proceed online, press "No"	programmer, press "Yes"	on, dumps	
	Prepare				
	⊖ Prepare		<u>Yes</u> <u>N</u> o	Cancel	
Spi			< Back	Next >	Exit

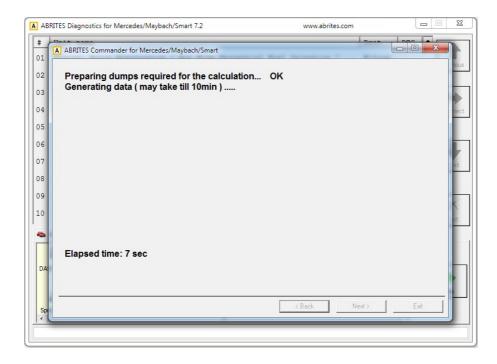
If you choose to perform the generation of the dump using a PROTAG programmer you will have the option to choose a position:

# 01 02 03	A ABRI	nostics for Mercedes/Maybach/Smart		nous
04 05 06 07 08 09 10	ic EZ yo wit ad ke ℃	Position 0: Used     Position 1: Used     Position 2: Not used     Position 3: Not used     Position 4: Not used     Position 5: Not used     Position 6: Not used     Position 7: Not used	Type of the key for which to generate dump OK C .x11 C .x21 C .x41 Cancel C .x51	ext
Spi			<beck next=""> Exit</beck>	

To EZ yo wit ad ke	Choice key type  Choice key type  Position 0: Used Position 1: Used Position 2: Not used Position 3: Not used Position 4: Not used Position 5: Not used	Type of the key for which to generate du C .x11 C .x21 C .x41 r .x51	mp	OK Cancel
	C Position 7: Not used	Каланананананананананананананананананана	ck Next>	Exit

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

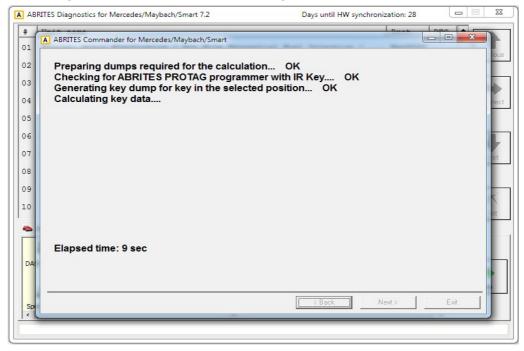
At this point the online calculation begins:



The procedure completes successfully and the following screen appears:

	ABRITES Commander for Mercedes/Maybach/Smart		
1 2 3	Preparing dumps required for the calculation. Generating data ( may take till 10min )		
1	Dump for the key at the specified position is g You can proceed with the programming of the		2
5			
			K
			0
			1
	Elapsed time: 205 sec		
4			
		<pre></pre>	Exit
P			

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	3RITES Diagnostics for Mercedes/Maybach/Smart 7.2 Days until HW synchronization: 28	23
#	ABRITES Commander for Mercedes/Maybach/Smart	ŀ
02 03 04	Preparing dumps required for the calculation OK Checking for ABRITES PROTAG programmer with IR Key OK Generating key dump for key in the selected position OK Calculating key data	nect
05 06 07	Generate dump from the calculated data OK Dump for the key at the specified position is generated. You can proceed with the programming of the dump in the key.	L
08 09 10		~
DA:	Elapsed time: 68 sec	t
Spi	< Back Next > Exit	

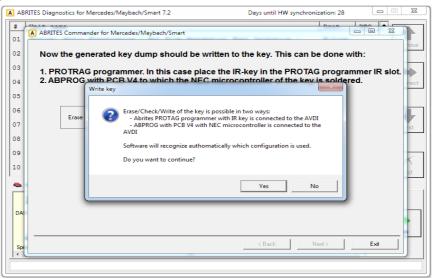
Once the generated dump is prepared it needs to be written to the key. There are 2 ways this can be performed.

A AB	3RITES Diagnostics for Mercedes/Maybach/Smart 7.2 www.abrites.com
#	
01	A Abrares 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 slot.
04	2. ABPROG with PCB V4 to which the NEC microcontroller of the key is soldered.
05	
06	Erase key Check key Write key
07	
08	L T
09	
10	
-	
DA	
	< Back Next > Exit
Sp   ∢	

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 AE	3RITES Diagnostics for Mercedes/Maybach/Smart 7.2 Days until HW synchronization: 28 🗖 🗉 🕺
#	ADDITES Commander for Marcader (Mauhach/Smart
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 slot.
04	2. ABPROG with PCB V4 to which the NEC microcontroller of the key is soldered.
05	
06	Erase key Check key Wille key
07	
08	
09	
10	
-	Checking for ABRITES PROTAG programmer with IR Key OK
	Communicating with the IR Key OK Writing key OK
DA	
Sp	< Back Next> Exit
1	

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

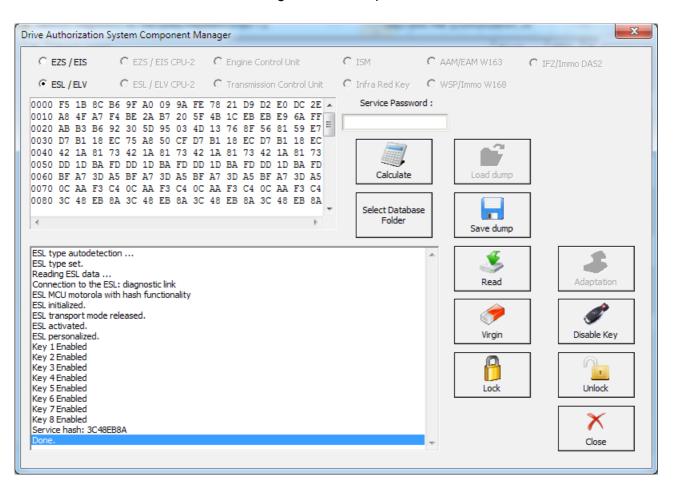
The DAS manager special function is designed to combine the special functions previously used when working with EZS/ EIS and ESL/ ELV both by CAN and K-line protocols

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:

EZS / EIS	C EZS / EIS CPU-2	C Engine Control Unit	f 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	
030 00 07 2F 040 FF FF FF 050 B1 00 07 060 FF FF FF 070 A1 E5 00	21 D9 AA F5 1D 0C FF 43 00 0F 30 5D 1F 7C FF FF FF FF FF FF 10 00 07 2F FF FF FF FF FF FF FF FF FF 61 00 0F 03 FF FF FF FF FF	1F 00 03 FF FF FF FF 95 03 5B EF 4F 6E C5 FF 7A 00 07 3F FF FF 1F 7C FF FF FF FF FF FF FF FF 84 00 07 FF FF	Service Passwo	rd : Load dump	
ey 2 enabled used ey 3 enabled used ey 4 enabled used ey 5 enabled used	: is released. I. Remaining ignition cycle I. Remaining ignition cycle I. Remaining ignition cycle I. Remaining ignition cycle I. Remaining ignition cycle J. Remaining ignition cycle J. Sed	s (life) 196492 s (life) 196599 s (life) 196604 s (life) 290943		Read	Activation
one.					Close

The required component of the system needs to be selected.



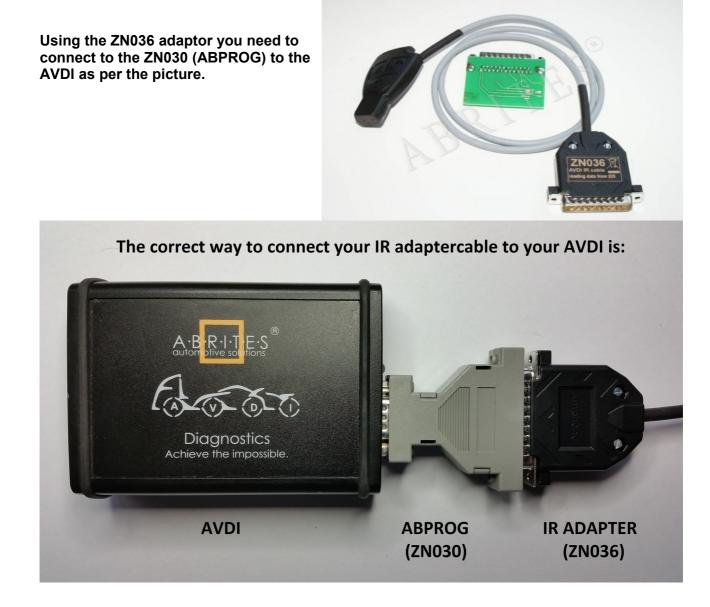
### In the window below the ESL/ ELV Configuration data options are shown:

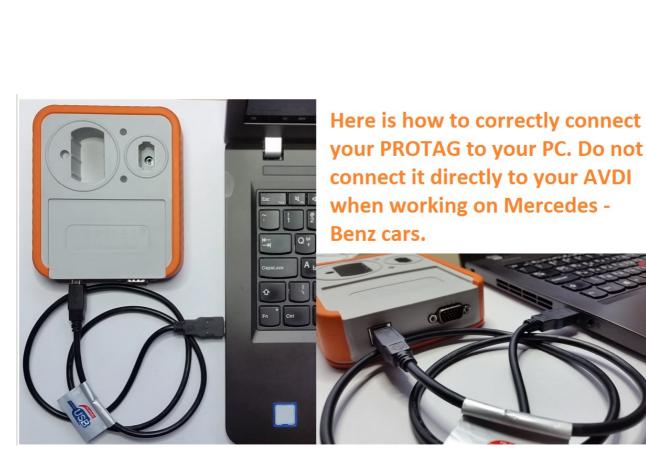
Using the options from the list you can perform all needed adaptations to the ESL/ELV.

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.

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Drive Authorization System Component Ma	nager	_		X
● EZS / EIS CPU-2	C Engine Control Unit	C ISM	C AAM/EAM W163	IFZ/Immo DAS2
O ESL/ELV O 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 0010 0F CB 9D CD 92 BA 3F 21 7E		Service Password	:	
0020 FF FF FF FF 43 00 0F E6 74 0030 00 07 FF FF FF FF FF FF FF FF				
0040 FF FF FF FF FF FF 10 00 07 FF 0050 B1 00 07 FF FF FF FF FF FF FF	FF FF FF FF FF FF FF	Key Password :		
<	+		Read	Save Data
Reading EZS data EZS SSID: E8 83 77 5A			Personalization	Activate
EZS initialized. EZS transport mode is released. EZS personalized.				
EZS personalized. EZS activated. Key 1 enabled used			Virgin	Disable Key
Key 2 enabled used Key 3 enabled used			viigii.	Disable ney
Key 4 enabled used Key 5 enabled not used			- <b>*</b>	<u>i</u>
Key 6 enabled used Key 7 enabled not used			Read Coding	Write Coding
Key 8 enabled not used Service: FD76AC71A1DD1AA0 Done.			<b>\$</b>	1
bone.			Program Key	Get EZS Pass
				×
			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".

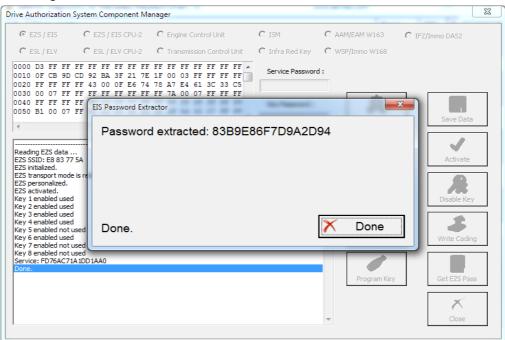
Drive Authorization System	Component Ma	nager			22
		C Engine Control Unit	C ISM	C AAM/EAM W163	C IFZ/Immo DAS2
00000 D3 FF FF FF FF 0010 0F CB 9D CD 92 0020 FF FF FF FF 43 0030 00 7F FF FF FF	FF FF FF FF BA 3F 21 7E 00 0F E6 74	C Transmission Control Unit FF FF FF FF FF FF FF 1F 00 03 FF FF FF FF 78 A7 E4 61 3C 33 C5 FF 7A 00 07 FF FF FF actor	C Infra Red Key Service Password		X Save Data
Reading EZS data EZS SSID: E8 83 77 5A EZS initilazed. EZS initilazed. EZS transport mode is re EZS personalized. EZS activated. Key 1 enabled used Key 3 enabled used Key 4 enabled used Key 4 enabled used Key 6 enabled not used Key 7 enabled not used.	Please re	insert IR adapter fro	om EZS/EIS	Cancel	Activate Disable Key Write Coding
Key 8 enabled not used Service: FD76AC71A1DD1AJ Done.	A0			Program Key	Get EZS Pass

Drive Authorization System Component Manager	23
© EZS / EIS O EZS / EIS CPU-2 O Engine Control Unit O ISM O AAM/EAM W163 O IFZ	I/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	
0050 B1 00 07 FF       It roshod Latelet         Image: Comparison of the second se	Save Data
Key 2 enabled used Key 3 enabled used Key 4 enabled used Key 5 enabled used Key 7 enabled not used Key 7 enabled not used	Write Coding
Key 8 enabled not used Service: FD76AC71A1DD1AA0 Done. Program Key	Get EZS Pass
· · · · · · · · · · · · · · · · · · ·	Close

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

## Please

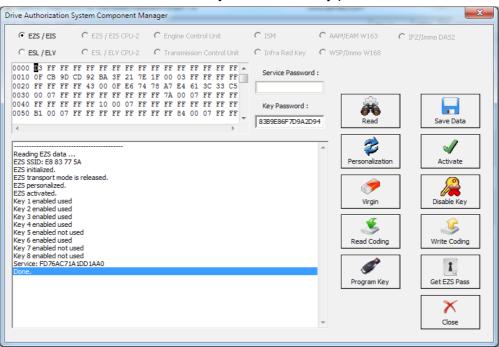
wait for the reading to finish:



#### 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).

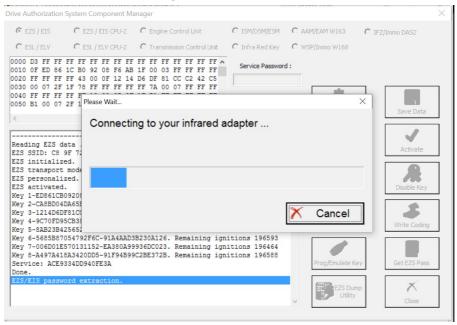
- The first step is to read the EZS (EIS)

ive Authorization		a sale (Cass sub 0.7)		construction of the second	
	n System Component M	anager			
	C EZS / EIS CPU-2	C Engine Control Unit	C ISM/DSM/ESM	С ААМ/ЕАМ W163 С	IFZ/Immo DAS2
C ESL/ELV	C ESL / ELV CPU-2	C Transmission Control Unit	C Infra Red Key	C WSP/Immo W168	
010 OF ED 86	5 1C BO 92 08 F6 AB	FF         FF         FF         FF         FF         FF         A           1F         00         03         FF         FF         FF         FF         FF           D6         DF         81         CC         C2         42         C5	Service Password :		
040 FF FF FF 050 B1 00 07	F FF FF 10 00 07 2F	FF 7A 00 07 FF FF FF 1F 71 FF FF FF FF FF FF FF 84 00 07 2F 1F	Key Password :	Read	Save Data
Reading EZS ( 225 SSID: C8	9F 72 2A	>	,	A Personalization	Activate
ZS personal: ZS activated	t mode is released. ized. d.	AB17A0EC5. Remaining ign	itions 186040	Virgin	Disable Key
ey 2-CA8BDO	4DA65B11F7-F840D4A3 DF81CCC242-00C6E150	202AB3B5D. Remaining ign 202AB3B5D. Remaining ign 223A3B9B7. Remaining ign 3A9EC8E78. Remaining ign	itions 187182 itions 196255	5	<u> </u>
ey 4-9C70FD				Read Coding	Write Coding
Key 4-9C70FD Key 5-8AB23B Key 6-5685B8 Key 7-006D011 Key 8-A497A4	42565260AE. Still r 7054792F6C-91A4AAD: E570131152-EA380A99		itions 196464	Prog/Emulate Key	Write Coding

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

~ ~ ~	Component Mana			<u> </u>	
C EZS / EIS	5 / EIS CPU-2	C 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	
0010 OF 3B 13 AB 17 8 0020 FF FF FF FF 43 0 0030 00 07 2F 1F 7F F	B3 36 EF 3F 1 D0 0F 7F 32 3 FF FF FF FF FF F	F         FF         FF </td <td>Service Password</td> <td>:</td> <td>Mileage</td>	Service Password	:	Mileage
040 FF FF FF FF FF 1 050 B1 Password Extrac		F 62 FF FF FF FF FF	Key Descuard :		× 1 Data
		password: apter usually useful when not	available any key.		
EZS SSII - with the he EZS has - with the he EZS init - with the he EZS tran extraction. EZS pers EZS acti	elp of your IR-ad elp of your ProTa elp of ABProg an		existing keys. ey if it is v57.	d additional relay for fa	ast password
EZS SSII - with the he EZS has - with the he EZS init - with the he extraction. EZS pers EZS acti Wileage Key 1-3E Key 2-39	elp of your IR-ad elp of your ProTa elp of ABProg an elp of your IR-ad IR-adapter	apter usually useful when not ig programmer and some of a d MCU from some existing ka apter usually useful when not	existing keys. ey if it is v57. available any key an ey MCU	d additional relay for fa	ast password

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



-It will then read the EZS (EIS).

Drive Authorization System Component Manager	$\times$
© EZS / EIS       C EZS / EIS CPU-2       C 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	
Reading EZS data.	
E25 activated. Key 1-ED661C809200 Key 2-CA8B004DA65 Key 3-121406DF81CC Key 4-9C70FD95CB3 Key 5-8A823842565 Key 5-8A823842565 Key 5-685587054792F6C-91A4AAD3B230A126. Remaining ignitions 196593	
Key 7-9F5CBF0BBF64915A-67B51426E2BAF56A. Remaining ignitions 195979         Key 8-A497A418A3420DD5-91F94B99C2BE372B. Remaining ignitions 196588         Service: ACE9334DD940FE3A         Done.         EZ5/EIS password extraction.	

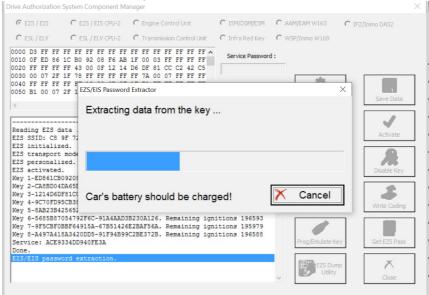
-It may ask you to take the key out of the EZS and insert it into the Protag or back in the EZS a few times. Follow the instructions closely:

Drive Authorization System Component Manager	×
C EZS / EIS CPU-2 C Engine Control Unit	C ISM/DSM/ESM 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	Service Password :
Remove key from ignition	Activate
EZS initialized. EZS transport mode EZS personalized. EZS activated. Key 1-ED641CB0920	Disable Key
Key 2-CA8BD04DA65 Key 3-1214D6DF810 Key 4-9-C70F95CB3 Key 5-8AB23B42565	Cancel
Key 6-5655B87054792F6C-91A4AD3B230A126. Remaining ign Key 7-9F5CBF0BBF64915A-67B51426E2BAF56A. Remaining ign Key 8-A497A418A3420DD5-91F94B99C2EE372B. Remaining ign Service: ACE9334DD940FE3A Done.	itions 195979
EZS/EIS password extraction.	v Ezs Dunp Utility Close

- 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.

Drive Authorization System Component Manager		×
© EZS / EIS         C EZS / EIS CPU-2         C Engine Control Unit           © ESL / ELV         C ESL / ELV CPU-2         C Transmission Control		IFZ/Immo DA52
0000 D3 FF	EF Service Password :	
Reading EZS data ZZS SSID: C8 9F 72 EZS initialized.	oTag programmer	Save Data
EZS transport mode EZS personalized. EZS activated. Kev 1-ED861CB09200		Disable Key
Key 2-CABBD04DA55 Key 3-121406DF810 Key 4-9C70FD95CB38 Key 5-8AB23B42565	charged! X Cancel	<b>B</b> Write Coding
Key 6-565587054792F6C-91A4AAD3B230A126. Remainin Key 7-9F5CBF0BBF64915A-67B514262BAF56A. Remainin Key 8-A497A418A3420D5-91F94B99C2BE372B. Remainin Service: ACE9334DD940FE3A Done.	ng ignitions 195979	Get EZS Pass
EZS/EIS password extraction.	C Utity	Close

- Make sure to watch for instructions by the software.



### Follow the steps it gives you:

Drive Authorization System Component Ma	anager			>
€ EZS / EIS CPU-2	C Engine Control Unit	C ISM/DSM/ESM	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 FF 0010 0F ED 86 1C B0 92 08 F6 AB 0020 FF FF FF F4 3 00 0F 12 14 0030 00 07 2F 1F 78 FF FF FF FF 0040 FF FF FF FF 0050 B1 00 07 2F 1 EZS/EIS Passwort	1F 00 03 FF FF FF FF D6 DF 81 CC C2 42 C5 FF 7A 00 07 FF FF FF	Service Password	d: 	X Save Data
Reading EZS data . EZS SSID: C8 9F 7: EZS initialized.	key in ignition			Activate
EZS transport mode EZS personalized. EZS activated. Key 1-ED861CB09208				Disable Key
Key 2-CA8BD04DA655 Key 3-1214D6DF81C0 Key 4-9C70FD95CB36 Key 5-8AB23B425652			X Cancel	Write Coding
Key 6-5685B87054792F6C-91A4AAD3 Key 7-9F5CBF0BBF64915A-67B51426 Key 8-A497A418A3420DD5-91F94B96 Service: ACE9334DD940FE3A Done.	E2BAF56A. Remaining ign:	itions 195979	Prog/Emulate K	Get EZS Pass
EZS/EIS password extraction.			EZS Du Utility	

Drive Authorization System	Component Ma	nager				×
€ EZS / EIS C E	ZS / EIS CPU-2	C Engine Control Unit	C ISM/DSM/ESM	C AAM/EAM W163	C IFZ/Immo DAS2	
C ESL / ELV C E	SL / ELV CPU-2	C Transmission Control Unit	C Infra Red Key	C WSP/Immo W168		
0010 OF ED 86 1C B0 0020 FF FF FF FF 43	92 08 F6 AB 00 0F 12 14 FF FF FF FF	FF FF FF FF FF FF FF FF 1F 00 03 FF FF FF FF FF D6 DF 81 CC C2 42 C5 FF 7A 00 07 FF FF FF Extractor	Service Password	d: sille	×	
Reading EZS data . EZS SSID: C8 9F 72 EZS initialized.	Leave the	key in ignition			Save Data	
EZS transport mode EZS personalized. EZS activated.					<b>R</b> Disable Key	
Key 1-ED861CB09200 Key 2-CA8BD04DA655 Key 3-1214D6DF81C0 Key 4-9C70FD95CB30 Key 5-8AB23B425652				X Cancel	Write Coding	
Key 7-9F5CBF0BBF649	15A-67B51426 DD5-91F94B99	B230A126. Remaining ign E2BAF56A. Remaining ign C2BE372B. Remaining ign	itions 195979	Prog/Emulate I	Key Get EZS Pass	
EZS/EIS password ex	traction.			EZS Du Utility		

-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 Syst	tem Component Ma	nager			
🕫 EZS / EIS 🛛 🕻	C EZS / EIS CPU-2	C Engine Control Unit	C ISM/DSM/ESM	C AAM/EAM W163	C IFZ/Immo DAS2
C ESL/ELV	🗋 ESL / ELV CPU-2	C Transmission Control Unit	C Infra Red Key	C WSP/Immo W168	
0010 OF ED 86 1C 0020 FF FF FF FF	B0 92 08 F6 AB 43 00 0F 12 14 78 FF FF FF FF	FF FF FF FF FF FF FF FF 1F 00 03 FF FF FF FF D6 DF 81 CC C2 42 C5 FF 7A 00 07 FF FF FF Extractor	Service Password	: alle	X Save Data
Reading EZS data EZS SSID: C8 9F EZS initialized. EZS transport mod		extracted: 53AXXX	(XXXXXXXX	XXX	Activate
EZS personalized EZS activated. Key 1-ED861CB092 Key 2-CA8BD04DA6 Key 3-1214D6DF81 Key 4-9C70FD95CB Key 5-8AB23B4256	53 54 55 52 52			X Done	Disable Key Use Coding
Key 7-9F5CBF0BBF	64915A-67B51426 420DD5-91F94B99	B230A126. Remaining ign E2BAF56A. Remaining ign C2BE372B. Remaining ign	itions 195979	Prog/Emulate	Key Get EZS Pass
EZS/EIS password	extraction.			EZS DU Utilit	

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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.

ADDITEC Discussion for Manades Manades (Const. 0.0.     Drive Authorization System Component Manager		×
C EZS / EIS C EZS / EIS CPU-2 C 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		٦.
0000 D3 FF	Mileage	
0040 FF FF FF FF FF 0050 B1 00 07 FF FEZS/EIS Password Extractor X		
Working	Save Data	
Reading EZS data EZS SSID: 18 EE C CZS has been neutring in 7 should be connected to the ELV/ESL's LIN!	Activate	
EZS initialized. EZS transport mode EZS personalized.	Disable/Enable	
E25 activated. Mileage Wri 0 Key 1-FBA02418E08: Key 2-91A488270F015F81 <b>Progress 5182 of up to 8192</b> <b>Key 3-4E276E15F81</b>	Write Coding	
Key 4-D975285D641E166. Still not used Key 5-E70C7DEC1B7D9C20. Still not used Key 6-4E7C7AE9C36C08854. Still not used Key 7-E8685410527ADD94. Still not used Key 8-1D27554950E3D2E. Still not used	Get EZS Pass	
Service: 40E6983083534388 Done. EZS/EIS password extraction.	Close	

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. 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.

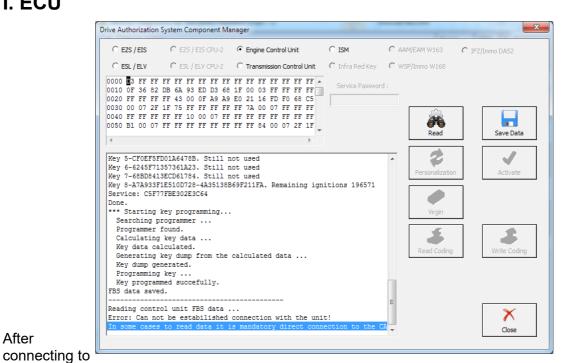
Using this option we commit to the personalization and coding we have made.

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:

Drive Authorization System Component Ma	nager			X
O EZS / EIS O EZS / EIS CPU-2	Engine Control Unit	C ISM	C AAM/EAM W163	C IFZ/Immo DA52
O ESL/ELV O 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 0010 05 36 82 DB 6A 93 ED D3 68 0020 FF FF FF FF 43 00 0F A9 A9 0030 00 07 FF FF FF FF FF FF 0040 FF FF FF FF FF FF 10 00 07 FF 0050 B1 00 07 FF FF FF FF FF FF 4	1F 00 03 FF FF FF FF E0 21 16 FD F0 68 C5 FF 7A 00 07 FF FF FF FF FF FF FF FF FF FF FF FF FF		Read	Save Data
key #8 - B4BFC194300EA39B Service: C5F77FBE302E3C64			=	$\mathbf{x}$
Done.			~	Close

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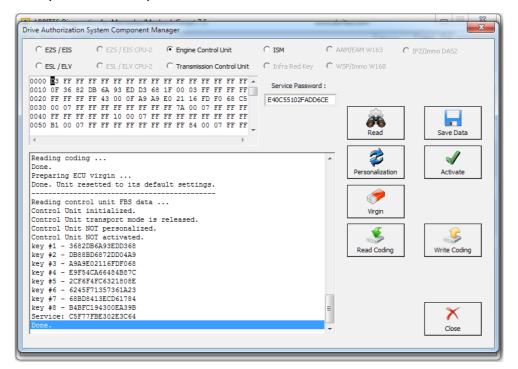
This means that the reading is done. After this you can read the existing coding of the unit and save it (this is not an obligatory step):

Drive Authorization System Component Manager	×
C EZS / EIS C EZS / EIS CPU-2 C Engine Control Unit C ISM C AAM/E C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit C Infra Red Key C WSP/I	EAM W163 C IFZ/Immo DAS2
0000 3 FF F	Read Save Data Personalization
Control Unit initialized. Control Unit transport mode is released. Control Unit personalized. Control Unit activated. key #1 - 3682DB6A93EDD368 key #2 - DB88BD6872DD04A9 key #3 - A9A9E02116FDF068 key #4 - E9F54CA66484B87C key #5 - 2CF6F4FC632180EE key #5 - 6245F71357361A23 key #7 - 68BD84138CD61784	Virgin Kead Coding Write Coding
<pre>key #8 - B4BFC194300EA39B Service: C5F77FBE302E3C64 Done. FBS data saved. Reading coding Bone.</pre>	Close

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

Drive Authorization System Component Manager	-	1.5	
C EZS / EIS CPU-2 C Engine Control Unit	C Infra Red Key Service Password	C WSP/Immo W168	C IFZ/Immo DAS2
<pre>key #8 - B4BFC194300EA39B Service: C5F77FBE302E3C64 Done. FBS data saved. Reading coding Done.</pre>		Ŧ	Close

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:

rive Authorization Syst	em Component Mar	nager	_		×
C EZS / EIS	🖱 EZS / EIS CPU-2	Engine Control Unit	C ISM (	C AAM/EAM W163 C IF.	Z/Immo DAS2
C ESL / ELV	🖱 ESL / ELV CPU-2	C Transmission Control Unit	🔿 Infra Red Key 🔰 🕻	C WSP/Immo W168	
0010 OF 36 82 DB 0020 FF FF FF FF 0030 00 07 FF FF 0040 FF FF FF FF	6A 93 ED D3 68 43 00 0F A9 A9 FF FF FF FF FF FF 10 00 07 FF	FF FF FF FF FF FF FF FF TF 00 03 FF FF FF FF FF C0 21 16 FD F0 68 C5 FF 7A 00 07 FF FF FF FF FF FF FF FF FF FF FF FF FF FF 84 00 07 FF FF FF FF FF 84 00 07 FF FF FF	Service Password : E40C55102FADD6CE	Read	Save Data
Preparing ECU vi: Done. Unit reset	ted to its defau			<ul> <li>Personalization</li> </ul>	Activate
Reading control of Control Unit init Control Unit tran Control Unit NOT Control Unit NOT	tialized. nsport mode is : personalized.			Virgin	
key #1 - 3682DB6 key #2 - DB88BD6 key #3 - A9A9E02 key #4 - E9F54CA	A93EDD368 872DD04A9 116FDF068			Read Coding	Write Coding
key #5 - 2CF6F4F0 key #6 - 6245F71 key #7 - 68BD841 key #8 - B4BFC19	357361A23 3ECD61784				
Service: C5F77FB Done. Personalization Personalization	: Data transfer	from EZS	:	E	Close
1					Ciose

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

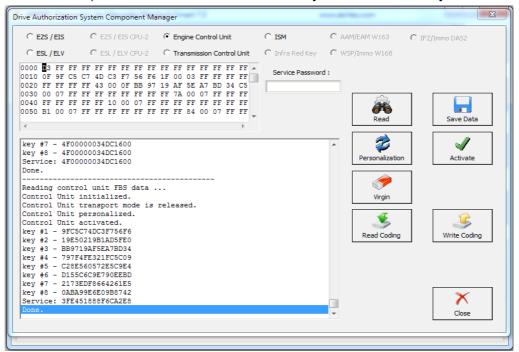
C EZS / EIS	C EZS / EIS CPU-2	Engine Control Unit	C ISM	C AAM/EAM W163	C IFZ/Immo DAS2
C ESL/ELV	C ESL / ELV CPU-2	C Transmission Control Unit	C Infra Red Key	C WSP/Immo W168	
0010 OF 36 82 0020 FF FF FF 0030 00 07 FF 0040 FF FF FF	DB 6A 93 ED D3 6 FF 43 00 0F A9 7 FF FF FF FF FF F FF FF 10 00 07 1	FF FF FF FF FF FF FF FF FF 58 1F 00 03 FF FF FF FF 49 E0 21 16 FD F0 68 C5 FF FF 7A 00 07 FF FF FF FF FF FF FF FF FF FF FF FF FF FF 84 00 07 FF FF FF	Corvice Decemore		Save Data
Personalizati  Reading contr Control Unit	ol unit FBS data initialized. transport mode i			Personalization	Activate
Control Unit key #1 - 3682 key #2 - CA45 key #3 - A9A9 key #4 - E9F5 key #5 - 2CF6 key #5 - 6245 key #7 - 68B0	7504748FCD8C E02116FDF068 4CA66484B87C F4FC6321808E F71357361A23			Read Coding	Write Coding
key #8 - 5DC8 Service: C5F7 Done.	80C22275B84F			E	×

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.

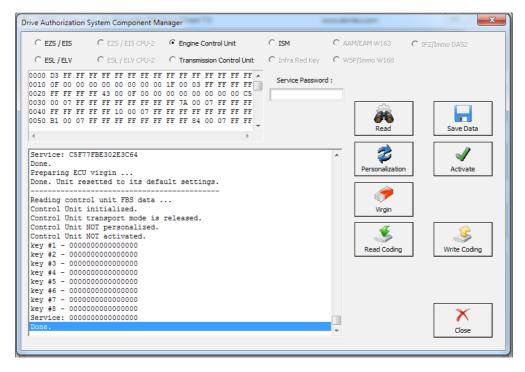
The software also tells you what steps you have to proceed with.

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:

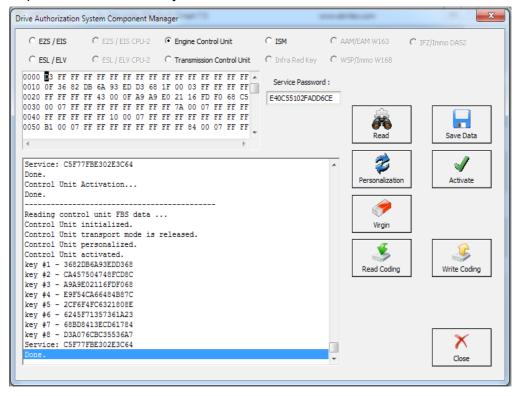
1. Read the used ECU (as in the above case the ECU may need to be read by internal CAN)



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



3. The unit is personalized and ready to be activated. Press "Activate":

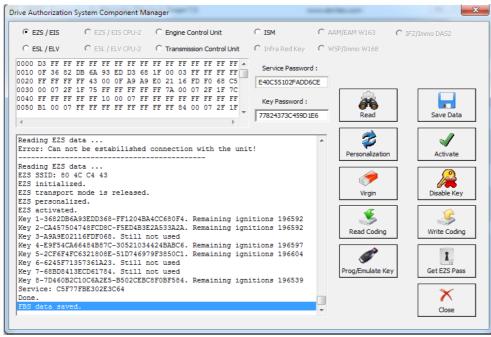


4. The activated ECU is ready to work in the vehicle.

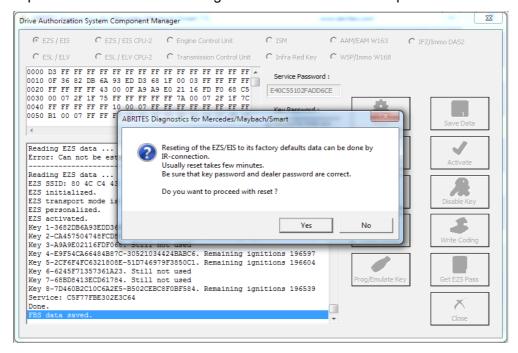
NOTE: Please make sure to always turn the ignition OFF and ON again before Personalization of an Engine Control Unit.

# II. EZS

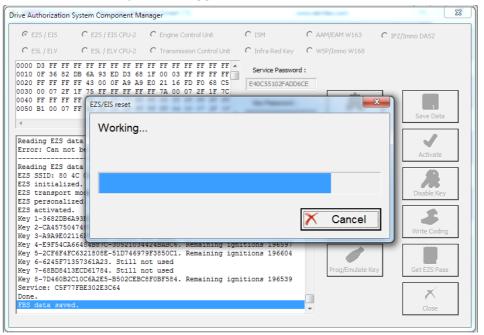
The Adaptation of used EZS modules goes through the same general steps. You need to select the EZS from the selection menu in the top of the DAS manager and read it:



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.

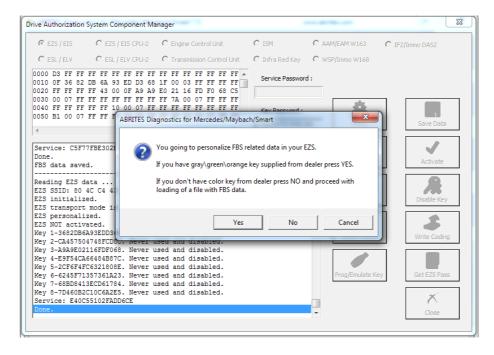
Drive Authorization System Component Mana	ager		23
€ EZS / EIS C EZS / EIS CPU-2 (	C Engine Control Unit	C ISM C AAM/EAM W163	C IFZ/Immo DA52
C ESL / ELV C ESL / ELV CPU-2	C Transmission Control Unit	C Infra Red Key C WSP/Immo W168	
0000 D3 FF FF FF FF FF FF FF FF FF 0010 0F 36 82 DB 6A 33 ED D3 68 1 0020 FF FF FF FF 43 00 0F A9 A9 E 0030 00 07 2F 1F 75 FF FF FF FF 0440 FF FF FF FF 0550 B1 00 07 FF FF FF EZS/EIS reset	F 00 03 FF FF FF FF FF	Service Password : E40C55102FADD6CE	
	eset 👘 to its defau	ılt data.	Save Data
Reading EZS data EZS SSID: 80 4C ( EZS initialized. EZS transport mod EZS personalized			Disable Key
EZS activated. Key 1-3682DB6A931 Key 2-CA457504741 Key 3-A9A9E02116		X Done	Write Coding
Key 4-E9F54CA66487B870-305210342 Key 5-2CF64FC6321808E-51D746979F Key 6-6245F71357361A23. Still not Key 8-7D460B2C10C6A2E5-B502CEBC8F Service: C5F77FBE302E3C64	F3850C1. Remaining ign: t used t used	itions 196604 Prog/Emulate K	ey Get EZS Pass
Done. FBS data saved.			Close

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:

rive Authorization System Component Manager			X
	C ISM C AA	M/EAM W163 C	IFZ/Immo DAS2
C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit	C Infra Red Key C W	5P/Immo W168	
0000 D3 FF	Service Password : Key Password : 77824373C459D 1E6	Read	Save Data
Service: C5F77FBE302E3C64 Done. FBS data saved.	•	Personalization	Activate
Reading EZS data EZS SSID: 80 4C C4 43 EZS initialized. EZS transport mode is released.		Virgin	Disable Key
EZS personalized. EZS NOT activated. Key 1-3682DB6A93EDD368. Never used and disabled. Key 2-CA457504748FCDBC. Never used and disabled.		Read Coding	Write Coding
Key 3-A9A9E02116FDF068. Never used and disabled. Key 4-E9F54CA66484B87C. Never used and disabled. Key 5-2CF6F4FC6321808E. Never used and disabled. Key 6-6245F71357361A23. Never used and disabled. Key 7-68BD8413ECD61784. Never used and disabled.		Prog/Emulate Key	Get EZS Pass
Key 8-70460B2C10C6A2ES. Never used and disabled. Service: E40C55102FADD6CE 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.

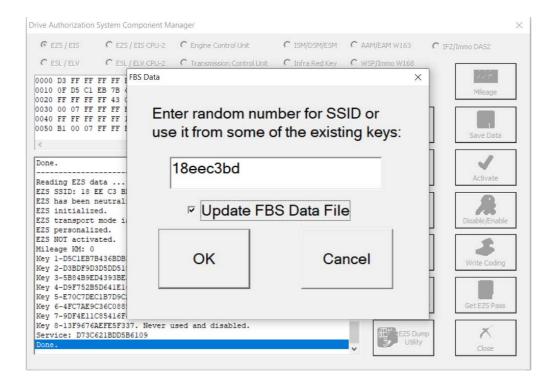
- SSID (Engine Control Units) do not contain the SSID inside them but the SSID is vital to the operation of the EZS. For this reason you need to have an SSID.

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 C	omponent Ma	inager			×
C EZS / EIS	) EIS CPU-2	C 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 Contro	ol Unit 🛛 🧿 Infra Red Key	C WSP/Immo W168	
0000 D3 FF FF FF FF F 0010 OF D5 C1 EB 7B 4 0020 FF FF FF FF FF 43 0 0030 00 07 FF FF FF F 0040 FF FF FF FF FF 5 0050 B1 00 07 FF FF FF 5		-	ey password		Mileage
Zone. Reading EZS data		67358EDB6	Please enter	IT:	Save Data
EZS SSID: 18 EE C3 B EZS has been neutral. EZS initialized. EZS transport mode i. EZS personalized.		□ Update	FBS Data Fi	le	Disable/Enable
EZS NOT activated. Mileage KM: 0 Key 1-D5C1EB7B436BDB Key 2-D3BDF9D3D5D51: Key 3-5B84B9ED4393BE Key 4-D9F752B5D641E1		ок	C	ancel	Write Coding
Key 5-E70C7DEC1B7D9C Key 6-4FC7AE9C36C088 Key 7-9DF4E11C85416F Key 8-13F9676AEFE5F3 Service: D73C621BDD5 Done.	37. Never u	sed and disabled.		V EZS Du Utility	



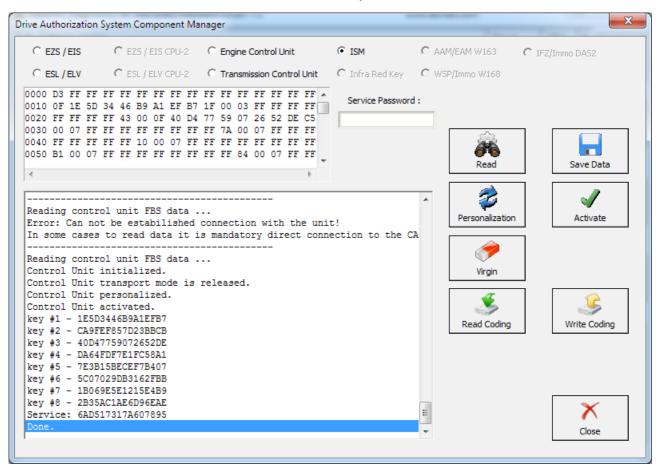
In this window you will see that the EZS is already personalized with the SSID:

← EZS / EIS CP	U-2 C Engine Control Unit	C ISM/DSM/ESM	C AAM/EAM W163	C IFZ/Immo DAS2
C ESL/ELV CP	U-2 C Transmission Control	l Unit 🛛 🦳 Infra Red Key	C WSP/Immo W168	
0000 3 FF FF FF FF FF FF F 0010 0F FB A0 24 18 E0 B3 1 0020 FF FF FF FF 43 00 0F D	A 97 1F 00 03 FF FF FF	FF FF	d :	Mileage
0020 FF FF FF FF FF FF FF FF F 0040 FF FF FF FF FF FF FF F0 00 0 0050 B1 00 07 FF FF FF FF FF FF	TF FF FF 7A 00 07 FF FF 77 FF FF FF FF FF FF FF	FF FF Key Password :	Â	
<		67358EDB624F0B	06 Read	Save Data
Peading F75 data			Personalization	Activate
EZS SSID: 18 EE C3 B8 EZS has been neutralized. EZS initialized. EZS transport mode is relea	SID is n	iow wr	Personalization <b>EXAMPLE</b> Virgin	Activate Disable/Enable
EZS has been neutralized. EZS initialized. EZS transport mode is relea EZS personalized. EZS NOT activated.		iow wr	itten	
EZS SSID: 18 EE C3 B8 EZS has been neutralized. EZS initialized. EZS transport mode is relea EZS personalized. EZS NOT activated. Mileage KM: 0 Key 1-FBA02418E0B31A97. Sti Key 2-91A48B27C70A5DD1. Sti	ased. ill not used ill not used	iow wr	itten	
EZS SSID: 18 EE C3 B8 EZS has been neutralized. EZS initialized. EZS transport mode is relea EZS personalized. EZS NOT activated. Mileage KM: 0 Key 1-FBA02418E0B31A97. Sti Key 2-91A46827C70A5DD1. Sti Key 3-D0A56778C7F60E. Sti Key 4-D9F752B5D641E166. Sti	ill not used ill not used ill not used ill not used	iow wr	itten Vrgin	Disable/Enable
EZS SSID: 18 EE C3 B8 EZS has been neutralized. EZS initialized. EZS transport mode is relea EZS personalized.	ased. ill not used ill not used ill not used ill not used ill not used ill not used ill not used	iow wr	itten Vrgin	Disable/Enable

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 Component	Manager				23
O EZS / EIS O EZS / EIS CPU-	2 C Engine Control Unit	🖸 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		
0000 D3 FF FF FF FF FF FF FF 010 0F 1E 5D 34 46 B9 A1 EF 020 FF FF FF FF 43 00 F 40 0030 00 07 FF FF FF FF FF 040 FF FF FF FF FF FF 10 00 07 0050 B1 00 07 FF FF FF FF FF	B7         1F         00         03         FF         FF         FF         FF         FF           D4         77         59         07         26         52         DE         C5           FF         FF         7A         00         07         FF         FF         FF           FF         FF         FF         FF         FF         FF         FF         FF	Service Password	i: Â Read	Save Data	
	ABRITES Diagnostics for Mercede	s/Maybach/Smart	×		-
Reading control unit FBS da Error: Can not be estabilis In some cases to read data : Reading control unit FBS dat	You should enter pass	sword to begin the p	process!	Activate	
Control Unit initialized. Control Unit transport mode Control Unit personalized. Control Unit activated. key #1 - 1E5D3446B9A1EFB7 key #2 - CA9FEF857D23BBCB kev #3 - 40047759072652DE			OK rgin Read Coding	Write Coding	
key #3 - 40047759726020E key #3 - D64FPF7ETCS8A1 key #5 - 7E3B15BECEF7B407 key #5 - SC07029D8162FBB key #7 - 1B669E5E1215E4B9 key #8 - 2B35AC1AE6D96EAE Service: 6AD517317A607895 Done.				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:

C EZS / EIS	C EZS / EIS CPU-2	2 C Engine Control Unit	ISM	C AAM/EAM W163	C IFZ/Immo DAS2
C ESL/ELV	C ESL / ELV CPU-2	2 C Transmission Control U	nit 👘 🔿 Infra Red Key	C WSP/Immo W168	
0010 OF 5C 99 0020 FF FF F9 0030 00 07 F9 0040 FF FF F9	8 87 E0 B7 68 9F 1 FFF 43 00 0F 7A FFF FF FF FF FF FF FF FF FF FF FF 75	FF FF FF FF FF FF FF FF D3 1F 00 03 FF FF FF 42 CF D0 D2 F4 2F 55 C FF FF 7A 00 07 FF FF FF FF FF FF FF FF FF FF FF FF FF	FF Service Passwor	rd :	Save Data
Done. Preparing EC Done. Unit r  Reading cont Control Unit	7B1039DF4C613 U virgin esetted to its de rol unit FBS data initialized. transport mode i	 a		Personalization	Activate
Control Unit Control Unit key #1 - 5C9 key #2 - 9AA key #3 - 7A4 key #4 - A17 key #5 - 6C1	NOT personalized NOT activated. B87E0B7689FD3 B3976ED5ED2B1 2CFD0D2F42F55 F98C78256A9AB 6A948E91953EF 21F3BDFE345CE			Read Coding	Write Coding
key #7 - 369 key #8 - 504	74A371D27BD80 070BE87C7EEEB 4A727E2B56A80			=	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 Mana	ager			X
O EZS / EIS CPU-2	C Engine Control Unit		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 FF FF FF FF FF FF FF F 010 0F 5C 9B 87 E0 B7 68 9F D3 1 020 FF FF FF FF 43 00 0F 7A 42 C 033 00 07 FF FF FF FF FF FF FF FF 040 FF FF FF FF FF FF FF FF FF FF 0450 B1 00 07 FF FF FF FF FF FF FF	LF 00 03 FF FF FF FF CF D0 D2 F4 2F 55 C5 CF 7A 00 07 FF FF FF CF FF FF FF FF FF FF	Service Password	: Read	Save Data
Service: FF77B1039DF4C613 Done. Preparing ECU virgin Done. Unit resetted to its defaul	lt settings.		Personalization	Activate
Reading control unit FBS data Control Unit initialized. Control Unit transport mode is re Control Unit NOT personalized.			Virgin	
Control Unit NOT activated. key #1 - 5C9B87E0B7689FD3 key #2 - 9AA83976ED5ED2B1 key #3 - 7A42CFD0D2F42F55 kev #4 - A17F98C78256A9AB			Read Coding	Write Coding
key #5 - 6C16A948E91953EF key #6 - ACC21F3BDFE345CE key #6 - ACC21F3BDFE345CE key #7 - 36974A371D27BD80 key #8 - 504070BE87C7EEEB				
Service: DC34A727E2B56A80 Done.			H	Close

Then proceed to personalize automatically using the personalization button:

C EZS / EIS C EZS / EIS CPU-2 C Engine C	Control Unit 📀 ISM	C AAM/EAR	M W163 C (	IFZ/Immo DAS2
C ESL/ELV C ESL/ELV CPU-2 C Transmis	ssion Control Unit 💿 🧿 Infra	Red Key 🔹 🖸 WSP/Imr	no W168	
0000 D3 FF FF 010 0 F 36 82 DB 6A 93 ED D3 68 1F 00 03 0020 FF FF FF FF 43 00 0F A9 A9 E0 21 16 030 00 07 FF FF FF FF FF FF FF FF 7A 00 0040 FF FF 0050 B1 00 07 FF FF FF FF FF FF FF FF FF F4 4	FF	e Password : 102FADD6CE	Read	Save Data
Service: DC34A727E2B56A80 Done. Personalization : Data transfer from EZS Personalization : Done. 		Pe	ersonalization	Activate
Control Unit transport mode is released. Control Unit personalized. Control Unit NOT activated. key #1 - 3682DB6A93EDD368 key #3 - A9A9E02116FDF068 key #3 - A9A9E02116FDF068 key #4 - E9F54CA66484B87C key #5 - C2F674FC6321808E		R	Lead Coding	Write Coding
key #6 - 6245F71357361A23 key #7 - 68BD8413ECD61784 key #8 - 2321D60A954CC6B8 Service: C5F77FBE302E3C64 Done.				Close

From this step on you can activate the unit:

Drive Authorization System Component Manage	er		×
O EZS / EIS O 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 C Infra	Red Key C WSP/Immo W168	
0000 B3 FF FF FF FF FF FF FF FF FF FF 0010 0F 36 82 DB 6A 93 ED D3 68 1F 0020 FF FF FF 43 00 0F A9 9E 0030 00 07 FF FF FF FF FF FF FF FF 0040 FF FF FF FF FF 10 00 07 FF FF 0050 B1 00 07 FF FF FF FF FF FF FF FF 4	00 03 FF FF FF FF 21 16 FD F0 68 C5 7A 00 07 FF FF FF FF FF FF FF FF FF	e Password : 5102FADD6CE Read	Save Data
Service: C5F77FBE302E3C64 Done. Control Unit Activation Done. Reading control unit FBS data Control Unit initialized.		Personalization	Activate
Control Unit transport mode is rel Control Unit personalized. Control Unit activated. key #1 - 3622D6A93EDD368 key #2 - CA457504748FCD8C key #3 - A9A9E02116FDF068 key #4 - E9F54CA66464B87C	eased.	Read Coding	Write Coding
<pre>key #5 - 2CF6F4FC6321808E key #6 - 6245F71357361A23 key #7 - 68BD8413ED61784 key #8 - 2321D60A954CC6B8 Service: C5F77FBE302E3C64 Done.</pre>			Close

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

Drive Authorization System Component Ma	nager		-	×
C EZS / EIS CPU-2	C Engine Control Unit	○ ISM C A	AM/EAM W163 C I	FZ/Immo DAS2
O ESL/ELV O ESL/ELV CPU-2	C Transmission Control Unit	$\mathbf{C}$ Infra Red Key $-\mathbf{C}$ W	/SP/Immo W168	
C ESL/ELV C ESL/ELV CPU-2 0000 D3 FF FF FF FF FF FF FF FF FF 0010 07 36 82 DB 6A 93 ED D3 68 0020 FF FF FF FF F4 30 00 7A 9A 9 0030 00 07 FF FF FF FF FF FF FF FF FF 0040 FF FF FF FF FF FF FF FF FF FF Personalization : Data transfer Personalization : Data tr	FF FF FF FF FF FF FF FF         1F 00 03 FF FF FF FF FF         E0 21 16 FD F0 68 C5         F7 7A 00 07 FF FF FF         FF FF FF FF FF FF FF FF         FF FF FF FF FF FF FF FF         F from EZS	C Infra Red Key C W Service Password : E40C55102FADD6CE	/SP/Immo W168 Read Personalization Virgin Kead Coding	Save Data
Done. Control Unit Activation				×
Done.		Ŧ		Close

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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		X
C EZS / EIS CPU-2 C Engine Control Unit	C 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 D3 FF	Service Password : E40C55102FADD6CE	Read Save Data
Reading control unit FBS data Control Unit initialized. Control Unit transport mode is released. Control Unit personalized. Control Unit activated. key #1 - 5622D68382DD368 key #2 - CA457504748FCD8C key #3 - A9A9E02116FDF068 key #4 - E9F54CA6484887C key #5 - 2CF6F4FC6321808E key #6 - 6245F71357361A23 key #7 - 68BD8413ECD61784 key #8 - C1ED78609D9CD878 Service: C5F77FE302E3364		Personalization Virgin Read Coding
Done.	×	Close

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

rive Authorization System Component Manager			23
O EZS / EIS O EZS / EIS CPU-2 O Engine Control Unit	C ISM	C AAM/EAM W163	C IFZ/Immo DAS2
C ESL / ELV C ESL / ELV CPU-2 © Transmission Control	Jnit 🔹 🖸 Infra Red Key	C WSP/Immo W168	
0000 D3 FF	FF Service Password C5 E40C55102FADD6 FF FF FF // Maybach/Smart		Save Data
Control Unit initialize Control Unit transport Control Unit personaliz Control Unit personaliz Control Unit activated. key #1 - 3682DB6A93EDD3 key #3 - A939E02116FDFC	d connection with the uni		Activate
key #4 - E9F54CA6484B8 key #5 - 2CF6F4FC6321808E key #6 - 6245F71357361A23 key #7 - 68B08413ECD61784 key #8 - C1FD78609D9CD878 Service: C5F7FBE302E3C64 Done.		Read Coding	Write Coding
Preparing ECU virgin Error: Can not be estabilished connection with the			*
It is mandatory direct connection to the CAN bus (	of the unit!	Ŧ	Close

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

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	C Infra Red Key	C WSP/Immo W168	
0010 OF D0 C3 0020 FF FF FF 0030 00 07 FF 0040 FF FF FF	59 89 C8 3C 56 8F FF 43 00 0F 4E 82 FF FF FF FF FF FF FF FF 10 00 07 FF	FF FF FF FF FF FF FF FF FF 1F 00 03 FF FF FF FF FF 76 E1 5F 83 9B EAC5 FF 7A 00 07 FF FF FF FF FF FF FF FF FF FF FF FF 64 00 07 FF FF FF FF FF 64 00 07 FF FF FF FF FF 64 00 07 FF FF	Service Password	d : Read	Save Data
Control Unit Control Unit Control Unit Control Unit Control Unit Key #1 - D0C3 key #2 - 91A4 key #3 - 4E82 key #4 - D9F7 key #5 - E70C key #6 - 4FC7 key #7 - 1D7F key #8 - 1027 Service: 40E6	transport mode is personalized. activated. 5989C83C568F 8227C70A5DD1 76E15F839BEA 52B5D641E166 7DEC187D9C20 AE9C36C08854 875134C9138F 75549D632D2E			Personalization	Activate
Done. Reading codin Done.	g			÷	Close

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.

Drive Authorization Syste	em Component Ma	nager			1	23
C ezs / eis	🖱 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	Transmission Control Unit	C Infra Red Key	C WSP/Immo W168		
0010 OF 2D 9A D1 0020 FF FF FF FF	B3 5F DC F2 8E 43 00 0F 95 04	FF         FF         FF         FF         FF         FF         F           1F         00         03         FF         FF         FF         FF         FF           7F         E0         32         54         67         1E         C5           FF         7A         00         07         FF         FF         FF	Service Password		×	
<pre>     key #7 - A81E514     key #8 - 7D77ABF     Service: 49061E8:     Done</pre>		ng data over interne	t		Save Data	
Reading control 1 Control Unit ini Control Unit trai Control Unit per Control Unit act: key #1 - 209AD1B key #2 - E6FCBDB key #3 - 95047FE0					<b>X</b> Write Codin	g
key #3 - 636D375 key #5 - C28CD56 key #6 - 73B03E7 key #7 - A81E514 key #8 - 7D77ABF Service: 49061E8 Done.	CB5535254 1F01514BA 2B00C45EA EABCD9787 70496F573			E	Close	

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/Imr	mo DA52
O ESL / ELV O ESL / ELV CPU-2  • Transmission Control Unit	C Infra Red Key C WSP/Immo W168	
0000 3 FF F	Service Password :	Save Data
Preparing ECU virgin Done. Unit resetted to its default settings.	Personalization	Activate
Reading control unit FBS data Control Unit initialized. Control Unit initialized. Control Unit NOT personalized. Control Unit NOT personalized. Control Unit NOT activated. key #1 - 4B239055048FD251 key #2 - 91A46B27C70A5DD1 key #3 - 4E8276E15FE39BEA key #4 - D9F752B5D641E166 key #5 - E70C7DEC1B7D9C20 key #6 - 4FC7AE9C36C08854 key #7 - 1D7F675134C9138F key #8 - D327554905ED2E	Virgin	Write Coding
Service: 01D99370C76349B7 Done. Personalization : Data transfer from EZS Personalization : Done.	Ξ	×
		Close
Drive Authorization System Component Manager		×
Drive Authorization System Component Manager	C ISM C AAM/EAM W163 C IFZ/Im	
	С ISM С ААМ/ЕАМ W163 С IFZ/Imi С Infra Red Key С WSP/Immo W168	
C EZS / EIS         C EZS / EIS CPU-2         C Engine Control Unit           C ESL / ELV         C ESL / ELV CPU-2         C Transmission Control Unit           0000         3 FF	- Al Lyann	
C         EZS / EIS         C         EZS / EIS         CPU-2         C         Engine         Control Unit           C         ESL / ELV         C         ESL / ELV         C         Transmission         Control Unit           0000         3         FF         FF <td>C Infra Red Key C WSP/Immo W168 Service Password : 01D99370C7634987</td> <td>mo DA52</td>	C Infra Red Key C WSP/Immo W168 Service Password : 01D99370C7634987	mo DA52
C EZS/EIS C EZS/EIS CPU-2 C Engine Control Unit C ESL/ELV C ESL/ELY CPU-2 Transmission Control Unit 0000 3 FF F	C Infra Red Key C WSP/Immo W168 Service Password : 01D99370C7634987	me DA52
C EZS/EIS C EZS/EIS CPU-2 C Engine Control Unit C ESL/ELV C ESL/ELV CPU-2 Transmission Control Unit 0000 3 FF FF 0010 0 F 00 9 FD 15 6 7 DC A2 70 1 F 00 03 FF FF FF FF 0020 FF FF FF FF A3 00 0F 4E 82 76 E1 5F 83 9B EA CS 0030 00 07 FF FF FF FF FF FF FF FF 7A 00 07 FF FF FF 0040 FF	C Infra Red Key C WSP/Immo W168 Service Password : 01D99370C7634987 Read	mo DAS2
C EZS/EIS C EZS/EIS CPU-2 C Engine Control Unit C ESL/ELV C ESL/ELV CPU-2 Transmission Control Unit 0000 B FF F	C Infra Red Key C WSP/Immo W168 Service Password : 01D99370C7634987 Read	mo DAS2
C EZS/EIS C EZS/EIS CPU-2 C Engine Control Unit C ESL/ELV C ESL/ELV CPU-2 Transmission Control Unit 0000 3 FF F	C Infra Red Key C WSP/Immo W168 Service Password : 01D99370C7634987 Read	mo DAS2

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



rive Authorization System Compone	ent Manager			X
C EZS / EIS C EZS / EIS CF	2U-2 C Engine Control Unit	C ISM	C AAM/EAM W163	C IFZ/Immo DA52
C ESL/ELV C ESL/ELV CF	2U-2 🕜 Transmission Control Unit	C Infra Red Key	C WSP/Immo W168	
0010 OF 00 9F D1 58 67 DC 2	FF A2 70 1F 00 03 FF FF FF FF	Service Password		
0020 00 07 FF FF FF 43 00 0030 00 07 FF FF FF FF FF 0040 FF FF FF FF FF 10 0050 B1 00 07 FF FF FF	cle Identification Number	VIN	× )	Save Data
Done. Personalization : Data Personalization : Done Reading control unit H Control Unit initializ	WDC164022			Activate
Control Unit transport Control Unit personali Control Unit NOT activ key #1 - 009FD158K7DCA key #2 - 91A48B27C70AS key #3 - 4E8276E15F33 key #4 - DB752B50641F key #5 - E70C7DEC1B7D3	Program	Car	ncel	Write Coding
<pre>key #6 - 4FC7AE9C36C0@bbm key #7 - E8685410527ADD94 key #0 - I03275549D652D2E Service: 40E6983083534388 Done. Programming coding</pre>			E	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	_	the second	X
C EZS / EIS CPU-2	C Engine Control Unit	C ISM C	C AAM/EAM W163 C IFZ	/Immo DAS2
C ESL/ELV C ESL/ELV CPU-2	Transmission Control Unit	C Infra Red Key	WSP/Immo W168	
0000 B3 FF FF FF FF FF FF FF FF 010 0F 06 03 D3 6B 91 6D C0 5F 020 FF FF FF F4 30 00 F4 48 22 0330 00 07 FF FF FF FF FF FF FF 040 FF FF FF FF FF 10 00 07 FF 0550 B1 00 07 FF FF FF FF FF FF FF	1F 00 03 FF FF FF FF 76 E1 5F 83 9B EA C5 FF 7A 00 07 FF FF FF FF FF FF FF FF FF FF	Service Password : 01D99370C7634987	Read	Save Data
Service: 40E6983083534388 Done. Control Unit Activation Done.		•	Personalization	Activate
Reading control unit FBS data . Control Unit initialized. Control Unit transport mode is Control Unit personalized.			Virgin	
Control Unit activated. key #1 - 0603D38B916DC05F key #2 - 91A48B27C70A5DD1 key #3 - 4E8276E15F839BEA kev #4 - D9F752B5D641E166			Read Coding	Write Coding
key #4 - D97/5253041E186 key #5 - 970C7DEC1B7D9C20 key #6 - 4FC7AE9C36C08854 key #7 - E8685410527ADD94 key #8 - 1D3275549D6B2D2E				
Rey #0 - 102753490682022 Service: 40E6983083534388 Done.		E	Ŧ	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:

• EZS / EIS CP - 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         O000 D3 FF	Drive Authorization System Component Manager			×
0000 D3 FF	← EZS / EIS CPU-2 C Engine Control Unit	C ISM	C AAM/EAM W163 C	IFZ/Immo DAS2
0010 0F 36 82 DB 6A 93 ED D3 68 1F 00 03 FF FF FF FF FF       Service Password:         0020 FF FF FF FF FF 43 00 0F A9 A9 E0 21 16 ED F0 68 C5       Service Password:         0040 FF FF FF FF FF FF 10 00 07 FF FF FF FF FF FF FF       Key Password:         0040 FF	C ESL / ELV C ESL / ELV CPU-2 C Transmission Control Unit	C Infra Red Key	C WSP/Immo W168	
0040 FF	0010 0F 36 82 DB 6A 93 ED D3 68 1F 00 03 FF FF FF FF 0020 FF FF FF FF 43 00 0F A9 A9 E0 21 16 FD F0 68 C5	Service Password	:	
EZS       SSID: 80 4C C4 43         EZS       initialized.         EZS       initialized.         EZS       transport mode is released.         EZS       activated.         Key 1-3622D66A93EDD368-FF1204BA4CC680F4. Remaining ignitions 196592         Key 2-CA457504748FCD8C-FSED4B3E2A533A2A. Remaining ignitions 196592         Key 2-CA457504748FCD8C-FSED4B3E2A533A2A. Remaining ignitions 196592         Key 4-E9F54CA66484B87C-30521034424BABC6. Remaining ignitions 196597         Key 5-CF0EFSFD01A6478B. Still not used         Key 7-68D8413ECD61784. Still not used         Key 7-68D8413ECD61784. Still not used         Key 8-A7A933F1E510D728-4A35138669F211FA. Remaining ignitions 196571         Service: CSF77EB502E3C64	0040 FF FF FF FF FF 10 00 07 FF FF FF FF FF FF FF FF FF	Key Password :	Read	Save Data
L25       SSID: 80 4C C4 43         L25       initialized.         L25       initialized.         L25       stillaized.         L27       stillaized.         L28       stillaized.         L29       stillaized.         L20       stillaized.			Personalization	Activate
Key 1-3682DB6A93EDD368-FF1204BA4CC680F4. Remaining ignitions 196592         Key 2-CA457504748FCD8C-F5ED483E2A533A2A. Remaining ignitions 196592         Key 3-A9A9202116FD768. Still not used         Key 6-6245F1357361A23. Still not used         Key 7-68D8413ECD61784. Still not used         Key 8-A7A933F1E510D728-4A35138E069721FA. Remaining ignitions 196571         Service: C5F7FEB302E3C64	EZS initialized. EZS transport mode is released. EZS personalized.			
Key 5-CF0EF5FD01A6478B. Still not used Key 6-6245F71357361A23. Still not used Key 7-68D8413ECD61784. Still not used Key 8-A7A933F1E5100726-4A35138B69F211FA. Remaining ignitions 196571 Service: C5F77FBE302E3C64	Key 1-3682DB6A93EDD368-FF1204BA4CC680F4. Remaining ign Key 2-CA457504748FCD8C-F5ED4B3E2A533A2A. Remaining ign Key 3-A9A9E02116FDF068. Still not used	nitions 196592	Virgin	Disable Key
Key 8-A7A933F1E510D728-4A35138B69F211FA. Remaining ignitions 196571 Service: C5F77FBE302E3C64 Prog/Emulate Key Get EZS Pass	Key 5-CF0EF5FD01A6478B. Still not used Key 6-6245F71357361A23. Still not used	nitions 196597	Read Coding	Write Coding
	Key 8-A7A933F1E510D728-4A35138B69F211FA. Remaining ign Service: C5F77FBE302E3C64	nitions 196571	Prog/Emulate Key	Get EZS Pass
▼ Close			÷	Close

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

Drive Authorization System Component Manager	×
← 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 D3 FF	
0030 00 07 2F 1F 75 FF FF FF FF 7A 00 07 FF FF FF 0040 FF FF FF FF FF FF 10 00 07 FF FF FF FF FF FF FF FF FF 0050 B1 00 07 FF FF FF FF FF FF FF FF 84 00 07 2F 1F 77824373C459D1E6	Read Save Data
<pre>//8243/3C459D1E5 //8243/3C459D1E5 Reading EZS data EZS SSID: 80 4C C4 43 EZS initialized. EZS personalized. EZS personalized. EZS activated. Key 1-3682DB6A93EDD368-FF1204BA4CC680F4. Remaining ignitions 196592 Key 2-CA457504748FCD8C-F5ED4B34ZA533A2A. Remaining ignitions 196592 Key 3-A9A98D20116FD7066. Still not used Key 4-E9F54CA66484B87C-30521034424BABC6. Remaining ignitions 196597 Key 5-CF0EF5FD01A647B8. Still not used Key 7-68BD6413ECD61784. Still not used Key 8-A7A933F1E510D728-4A35138B69F211FA. Remaining ignitions 196571 Service: C5F77FBE302E3C64 None.</pre>	Read     Save Data       Personalization     Activate       Virgin     Disable Key       Read Coding     Write Coding       Prog/Emulate Key     Get EZS Pass       Close     Close

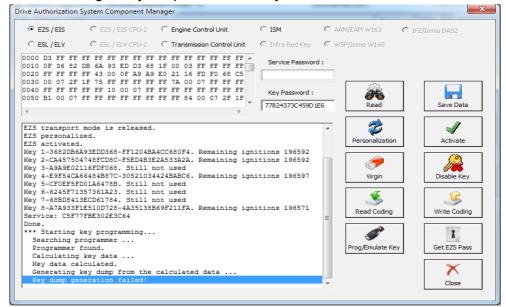
When the key password is added you can Program an Abrites key with PROTAG or Emulate a key with your IR adapter:

Drive Authorization System Component Manager		22
© 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 :	
0030 00 07 2F 1F 75 FF FF FF FF FF 7A 00 07 FF FF FF 0040 FF FF FF FF FF 10 00 07 FF FF FF FF FF FF FF FF 0050 B1 00 07 FF FF FF FF FF FF FF FF 84 00 07 2F 1F	Key Password : 77824373C459D1E6	Read Save Data
Key Emulation/Programming	7762437304350120	X
Reading EZS SSII You can quickly Program key with PROTAG programmer EZS trar EZS pers EZS act: Key 1-36 Key 2-C	(abrites key) or Emulate key with y	
Key 3-A9A9E02116FDF068. Still not used Key 4-E9F54CA66484B87C-30521034424BABC6. Remaining ign	itions 196597	
Key 5-CF0EF5FD01A6478B. Still not used Key 6-6245F71357361A23. Still not used Key 7-68B08413ECD61784. Still not used Key 8-A7A933F1E510D728-4A35138B69F211FA. Remaining ign Service: C5F77FBE302E3C64 Correct C5F77FBE302E3C64	itions 196571	d Coding Write Coding Emulate Key Get EZS Pass
Done.	Ţ	Close

Next, you can choose the key position:

Drive Authorization System Component Man	ager	X
C EZS / EIS CPU-2	Select Key Position	M W163 C IFZ/Immo DAS2
O ESL / ELV O ESL / ELV CPU-2		mo W168
0000 D3 FF FF FF FF FF FF FF FF 0010 0F 36 82 DB 6A 93 ED D3 68 0020 FF FF FF FF 43 00 0F A9 A9	ි Key 1	
0030 00 07 2F 1F 75 FF FF FF FF 0040 FF FF FF FF FF 10 00 07 FF 0050 B1 00 07 FF FF FF FF FF FF FF	C Key 2	A
4	C Key 3 NOT used	Read Save Data
Reading EZS data EZS SSID: 80 4C C4 43	С Кеу 4	ersonalization Activate
EZS initialized. EZS transport mode is released EZS personalized.	C Key 5 NOT used	<b>A</b>
EZS activated. Key 1-3682DB6A93EDD368-FF1204B Kev 2-CA457504748FCD8C-F5ED4B3	Key 6 NOT used	Virgin Disable Key
Key 3-A9A9E02116FDF068. Still 1 Key 4-E9F54CA66484B87C-30521034	C Key 7 NOT used	Read Coding Write Coding
Key 5-CF0EF5FD01A6478B. Still : Key 6-6245F71357361A23. Still : Key 7-68BD8413ECD61784. Still : Key 8-A7A933F1E510D728-4A35138:	С Кеу 8	
Service: C5F77FBE302E3C64 Done.	OK Cancel	g/Emulate Key Get EZS Pass
		Close

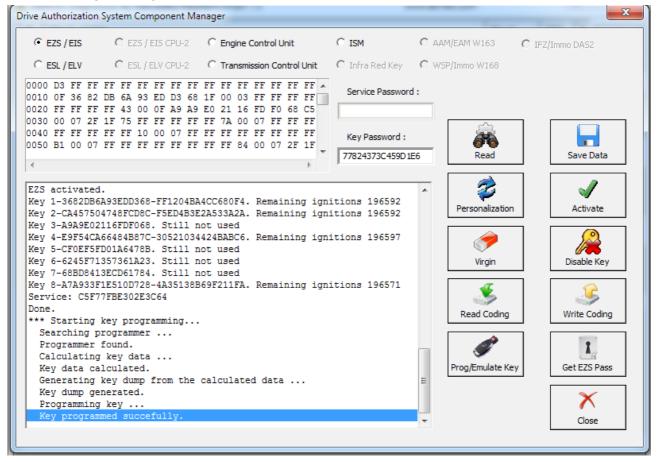
If you receive this message retry the procedure until you succeed.



The Key dump is generated and can be written:

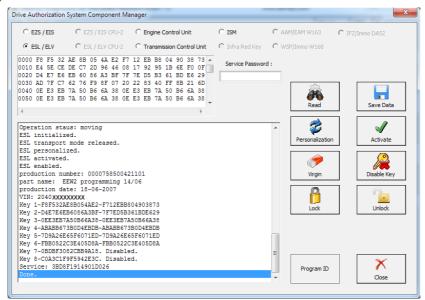
	C ISM C	AAM/EAM W163	C IFZ/Immo DAS2
O ESL / ELV O ESL / ELV CPU-2 O Transmission Control Unit	C Infra Red Key C	WSP/Immo W168	
0000 3 FF F	Service Password : Key Password : 77824373C459D1E6	Read	T Save Data
EZS personalized. EZS activated. Key 1-3682D6A93ED368-FF1204BA4CC680F4. Remaining ign Key 2-CA457504748FCD8C-F5ED4B3E2A533A2A. Remaining ign Key 3-A9A9E02116FDF068. Still not used Key 4-E9F54CA66448B7C-30521034424BABC6. Remaining ign Key 5-CF0EF5FD01A6476B. Still not used Key 7-66B9413ECD61784. Still not used Key 8-A7A933F1E510D728-4A35138B69F211FA. Remaining ign Service: C5F77FBE302E3C64 Done.	itions 196592 itions 196597	Personalization Virgin Read Coding	Activate
<pre>*** Starting key programming Searching programmer Programmer found. Calculating key data Key data calculated. Generating key dump from the calculated data Key dump generated. Programming key</pre>	E	Prog/Emulate Key	Get EZS Pass

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:

C EZS / EIS C ES	ZS / EIS CPU-2	C Engine Control Unit	C ISM	C AAM/EAM W163	C IFZ/Immo DA52
€ ESL/ELV C ES	SL / ELV CPU-2	C Transmission Control Unit	C Infra Red Key	C WSP/Immo W168	
010 E4 5E CE DE C7 020 D4 E7 E6 EB 60 030 AD 7F C7 62 76	2D 96 46 08 86 A3 BF 7F	12 EB B8 04 90 38 73 A 17 92 95 1B 6E F0 0F 7E D5 B3 61 BD E6 29 22 83 40 FF 8B 21 6D	Service Password		
Deration staus: SL initialized. SL transport mo SSL personalized SL activated. SSL activated. SSL activated. SSL enabled. production number port name: EEW2 production date: /IN: 204 key 1-F8F532AE8B	Processin	g data over interne	L		- Activate
<pre>Key 2-D4E7E6EB60 key 3-0E23E7A50Ben Key 4-ABABB673B0D4E Key 5-7D9A26E65F607 Key 6-FBB0522C3E405 Key 8-C0A3C1F9F5942 Service: 3BD8F19149 Done.</pre>	BDB-ABABB673E 1ED-7D9A26E65 D8A-FBB0522C3 A18. Disabled E3C. Disabled	30D4EBDB 5F6071ED 3E405D8A 1.		Program ID	

EZS / EIS	C EZS / E	EIS CPU-2	C Engi	ne Control	Unit	0	ISM	C AA	M/EAM W163	${f C}$ IFZ/In	nmo DAS2
ESL / ELV	C ESL/E	LV CPU-2	C Tran	smission C	ontrol Unit	0	Infra Red Key	C WS	P/Immo W168		
00 58 F5 32 10 E4 5E CE 20 D4 E7 E4 30 AD 7F C7 40 0E E3 EE 50 0E E3 EE	DE C7 2D EB 60 86 62 76 F9 7A 50 B6	96 46 08 A3 BF 7F 8F 07 20 6A 38 0E	17 92 7E D5 22 83 E3 EB	95 1B 6 B3 61 B 40 FF 8 7A 50 B	E FO OF D E6 29 B 21 6D 6 6A 38		Service Password	d :	Read		Save Data
Deration st SL initiali SL transpor SL NOT pers SL NOT acti SL enabled. coduction n Int name: roduction d IN: 204 XXXX ey 1-F8F532 ey 2-D4E7E6 ey 3-0EE3EB ey 4-ABABE6 ey 5-7D9A26	zed. t mode NOT onalized. wated. umber: 0000 EEW2 progra ate: 18-06- XXXXXXX AEBB054AE2. EB6086A3BF. 7350B66A38. 7350D64BBB.	released 075850042: amming 14, -2007 . Disable . Disable . Disable	1101 /06 1. 1. 1. 1.					•	Personalization		Activate Disable Key Unlock
ey 6-FBB052 ey 7-0BDBF3 ey 8-C0A3C1 ervice: 22B	082CBB9A18.	Disable Disable	i.					E	Program ID	] [	X

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 A	AM/EAM W163 C	IFZ/Immo DAS2
C ESL/ELV	C ESL/ELV CPU-2	C Transmission Control Unit	C Infra Red Key C W	/SP/Immo W168	
010 OF 8D 1C 9	1 F9 B4 5F BE 8E F 43 00 0F 4E 82	FF FF FF FF FF FF FF FF 1F 00 03 FF FF FF FF 76 E1 5F 83 9B EA C5 FF 7A 00 07 FF FF FF	Service Password : 01D99370C76349B7		
040 FF FF FF F	F FF 10 00 07 FF	FF FF FF FF FF FF FF FF FF 84 00 07 FF FF	Key Password : 67358EDB624F0B06	Read	Save Data
Reading EZS da EZS SSID: 18 E EZS initialize	be estabilished c 	connection with the unit	d	Personalization	Activate Disable Key
Key 2-91A48B27 Key 3-4E8276E1		t used	tions 196601	Read Coding	Write Coding
Key 5-E70C7DEC Key 6-4FC7AE9C Key 7-E8685410	187D9C20. Still no 36C08854. Still no 527ADD94. Still no 9D6B2D2E. Still no 33083534388	ot used ot used ot used	E	Prog/Emulate Key	Get EZS Pass

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

	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	
0010 OF 8D 1C 0020 FF FF FF 0030 00 07 FF	91 F9 B4 5F BE 8E FF 43 00 0F 4E 82 FF FF FF FF FF FF	FF         FF         FF         FF         FF         FF         F           1F         00         03         FF         FF         FF         FF         FF           76         E1         5F         83         9B         EA         C5           FF         7A         00         07         FF         FF         FF	Service Password : 01D99370C7634987	
0040 FF FF FF   0050 B1 00 07				
<	EZS/EIS	reset to its default	data.	Save Data
Reading EZS da Error: Can not Reading EZS da EZS SSID: 18 E EZS initialize EZS transport EZS transport	be  E ( d. mod			Activate Disable Key
	Done.		X Done	Write Coding
EZS personaliz EZS activated. Key 1-8D1C91F9 Key 2-91A48B27		hot wood		
EZS activated. Key 1-8D1C91F9 Key 2-91A48B27 Key 3-4E8276E1	SF839BEA. Still 1			
EZS activated. Key 1-8D1C91F9 Key 2-91A48B27 Key 3-4E8276E1 Key 4-D9F752B5 Key 5-E70C7DEC Key 6-4FC7AE90		not used not used not used	E Prog/Emulate	Key Get EZS Pass

Personalize EZS with the Abrites data:

💿 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	
010 OF 8D 1C 020 FF FF FF	91 F9 B4 5F BE 8E FF 43 00 0F 4E 82 FF FF FF FF FF FF FF	FF FF FF FF FF FF FF 1F 00 03 FF FF FF FF 76 E1 5F 83 9B EA C5 FF 7A 00 07 FF FF FF ge Key Emulator	Service Password		
ey 8-1D327554 ervice: 01D99 one. 2S SSID: 18 E ZS initialize ZS transport ZS personaliz ZS NOT activa ey 1-8D1C91F9 ey 2-91448827	900 3371 120 120 120 120 120 120 120 120 120 12	ersonalized.		X Done	Save Data
(ey 3-4E8276E1 (ey 4-D9F752B5 (ey 5-E70C7DEC (ey 6-4FC7AE9C (ey 7-E8685410	5783982A. Never 1 50641E166. Never 1 5187D9C20. Never 1 536C08854. Never 1 527ADD94. Never 1	used and disabled. used and disabled. used and disabled. used and disabled. used and disabled. used and disabled.		Prog/Emulate Ke	ey Get EZS Pass

### Then read the ESL before personalizing it:

C EZS / EIS	C EZS/I	EIS CPU-2	C Engine Control Unit	C ISM	C AAP	4/EAM W163 C	IFZ/Immo DAS2
ESL / ELV	C ESL/E	ELV CPU-2	C Transmission Contro	l Unit 👘 🔿 Infra Red Ke	ey – C WS	P/Immo ₩168	
0010 E4 5E CE 0020 D4 E7 E6 0030 AD 7F C7 0040 0E E3 EB	DE C7 2D EB 60 86 62 76 F9 7A 50 B6	96 46 08 A3 BF 7F 8F 07 20 6A 38 0E	12 EB B8 04 90 38 17 92 95 1B 6E F0 7E D5 B3 61 BD E6 22 83 40 FF 8B 21 E3 EB 7A 50 B6 6A E3 EB 7A 50 B6 6A	0F Service Passv 29 6D 38	word :	Read	Save Data
Operation sta ESL initializ ESL transport ESL NOT activ ESL NOT activ ESL enabled. production nu part name: E production de production de VIN: 204 XXXXX Key 1-D47266 Key 3-0E53E97 Key 4-ABABB67 Key 5-709A26E	ed. mode NOT nalized. wated. mber: 000 EW2 progr te: 18-06 xxxxxxxxx E8B054AE2 B6086A38 3B004EBDB	released 075850042 amming 14 -2007 . Disable . Disable . Disable	1101 /06 d. d. d.		•	Personalization	Activate
Key 6-FBB0522 Key 7-0BDBF30 Key 8-C0A3C1F Service: 22B8 Done.	82CBB9A18 9F5942E3C	. Disable . Disable	d.		E	Program ID	Close

After that you can personalize the ESL/ELV:

C EZS / EIS	C EZS / E	EIS CPU-2	C Engine Co	ntrol Unit	○ ISM	C AA	M/EAM W163	C IFZ/Immo DAS2
ESL / ELV	C ESL/B	ELV CPU-2	C Transmissi	on Control Unit	C Infra Red Key	O WS	5P/Immo W168	
010 8D 1C 9 020 91 A4 8 030 91 A4 8 040 4E 82 7	1 F9 B4 5F B 27 C7 0A B 27 C7 0A 6 E1 5F 83	BE 8E 8D 5D D1 91 5D D1 91 9B EA 4E	1C 91 F9 B A4 8B 27 C A4 8B 27 C 82 76 E1 5	7 0A 5D D1		d :	Read	Save Data
SL initial: SL transport SL personal SL NOT act: SL enabled iroduction i art name: iroduction ( IN: 204 XXX dey 2-91A481 dey 3-4E827) dey 4-D9F752	rt mode rele lized. .vated.	eased. 0758500422 amming 14, -2007 XX Disablec Disablec Disablec Disablec	/06 1. 1. 1.			•	Personalization Virgin	Activate
ey 6-4FC7A y 7-E8685 y 8-1D327	29C36C08854 10527ADD94 5549D6B2D2E 99370C7634	. Disabled . Disabled . Disabled	i. i.			=	Program ID	Close

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:

O EZS / EIS O EZS / EIS CPU-2 O Engine Control Unit	C ISM	C AAM/EAM W163 C ;	IFZ/Immo DAS2
	C Infra Red Key	C WSP/Immo W168	
000 F8 F5 32 AE 8B 05 4A E2 F7 12 EB B8 04 90 38 73 010 E4 5E CE DE C7 2D 96 46 08 17 92 95 1B 6E F0 0F 020 D4 E7 E6 EB 60 86 A3 BF 7F 7E D5 B3 61 BD E6 29 030 AD 7F C7 62 76 F9 8F 07 20 22 83 40 FF 8B 21 6D 040 0E E3 EB 7A 50 B6 6A 38 0E E3 EB 7A 50 B6 6A 38 050 0E E3 EB 7A 50 B6 6A 38 0E E3 EB 7A 50 B6 6A 38 •	Service Password :	Read	Save Data
Operation staus: moving ESL initialized. ESL transport mode released. ESL personalized. ESL activated.		Personalization	Activate
ESL enabled. production number: 0000758500421101 part name: EEW2 programming 14/06 production date: 18-06-2007		Virgin	Disable Key
VIN: 204 <b>XXXXXXXXXXXXXXXXX</b> Key 1-F8F532AE8B054AE2-F712EBB804903873 Key 2-D4E7E6EB6086A3BF-7F7ED5B361BDE629 Key 3-0EE3EB7A50B66A38-0EE3EB7A50B66A38 Key 4-ABABB673B0D4EBDB-ABABB673B0D4EBDB		Lock	Unlock
Key 5-7D9A26E65F6071ED-7D9A26E65F6071ED Key 6-FBB0522C3E405D8A-FBB0522C3E405D8A Key 7-0BDBF3082CBB9A18. Disabled. Key 8-C0A3C1F9F5942E3C. Disabled.		E	
Service: 3BD8F1914901D026		Program ID	$\times$

# 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:



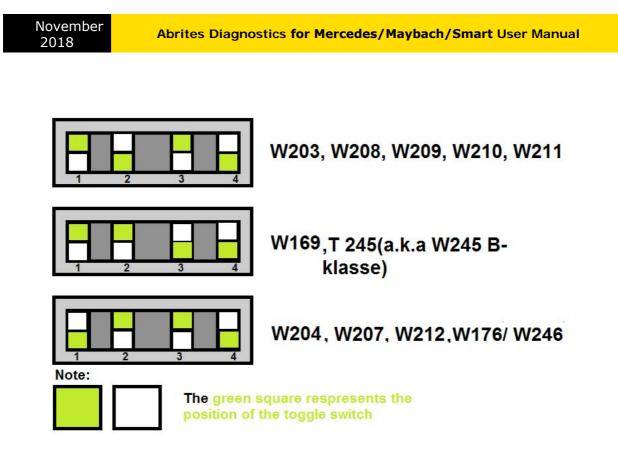
In the bottom left of the emulator you can see the switch board which is used to select the model you are working with.

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



CAN HI and CAN LOW long cables



DB15 Boot Mode Connector Cable



Fuse Adapter Cable and Crocks Cable



Pin Connectors (Used for EM001 update)

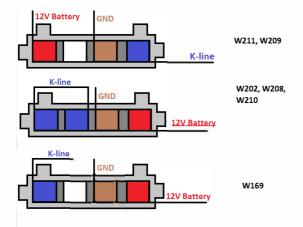


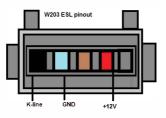
**Distribution Box** 

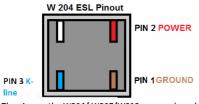
Distribution Box connection ports:

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.

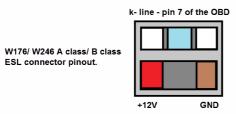
The Relay Ports are both in red and this is where the Fuse Adapter.





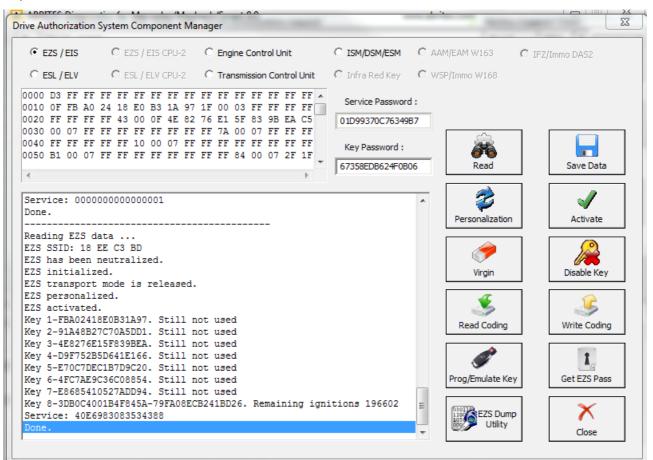


The pins on the W204/ W207/W212 are numbered. Please pay attention to the digits next to each pin



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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

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	C ESL / ELV CPU-2	C Transmission Control Unit	C Infra Red Key	C WSP/Immo W168	
0010 33 C3 01 0020 00 00 00 0030 00 00 00 0040 00 00 00	AD         7F         E9         D6         AD         00           00         00         00         00         00         01         00           00         00         00         00         00         01         00           00         00         00         00         00         01         00           00         00         00         00         00         01         00	00 00 00 00 00 00 00 01 00 00 00 00 00 00 00 01 00 00 00 00 00 00 01 •	Service Password	d : Read	Save Data
ESL personal ESL NOT active ESL enabled. production mi part name: El production di VIN: << <abr Key 1-000000 Key 2-000000 Key 3-000000 Key 4-000000</abr 	zed. t mode released. ized. vated. wmber: 000000000000000000000000000000000000	0/20 00000001 00000001 00000001 00000001		Personalization	n Activate
Key 6-000000 Key 7-000000 Key 8-000000	0000000001-0000000 0000000001-0000000 00000000	00000001 000000001		E 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.

С	EZ	s /	EIS			C	ΕZ	s /	EIS	CF	U-2	2	C	En	gine	Cor	trol	Unit	t		C	ISM/DSM/ESM	1	C A/	AM/EAM W163	O IFZ	/Immo DAS2
œ	ES	il /	ELV			C	ES	il /	ELV	CF	U-2	2	C	Tra	ansn	issio	on C	ontr	ol U	nit	C	) Infra Red Ke	/	$\bigcirc$ w	/SP/Immo W168		
001 002 003 004	0	33 00 00 00	C3 00 00 00	0D 00 00	AI 00 00	) 7 ) 0 ) 0	7F )0 )0 )0	E9 00 00 00	D( 0( 0(	5 A 0 0 0 0	)1 )1 )1	00 00 00 00	000000000000000000000000000000000000000	00 00 00						1 1		Service Passv	vord	:	Read		Save Data
ESI ESI ESI ESI pro par pro VIN Key Key Key Key	1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1	ni ra er ot na ct 0 -0 -0 -0	tia nsp sor ac ble ior c 2<br 000 000 000 000 000 000	ni EN BRJ 000 000 000 000	ed ; m ze rat [UL [00 00 00 00 00 00	d. ed s>: 000 000 000 000	e 1 • • 005- 000 000 000 000	rel	000 am -0 -0 -0	000 min 010 000 000 000	000 ng 6 000 000 000	90 000 000 000			001 001 001 001									*	Personalizati Virgin Lock		Activate Disable Key Unlock
Key Key	7 7 7 8 Vi	-0 -0 .ce		000	00	00		001 001	-0 -0		000	000	000	000(	001									•	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

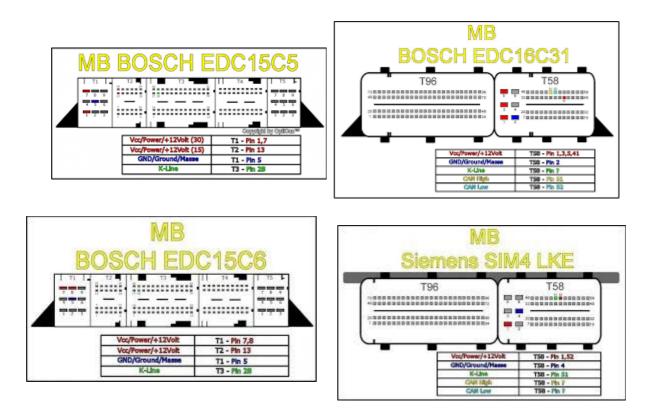
This is the connection that is required.

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.

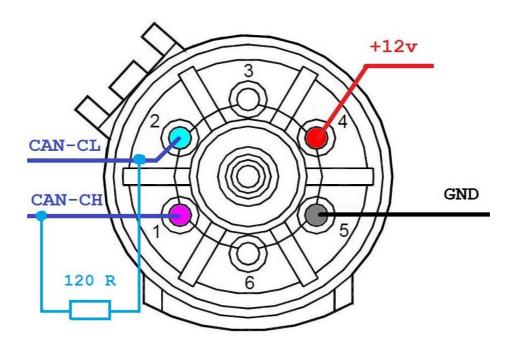
With CAN B – LOW is normally brown and HIGH is normally brown with red.

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:



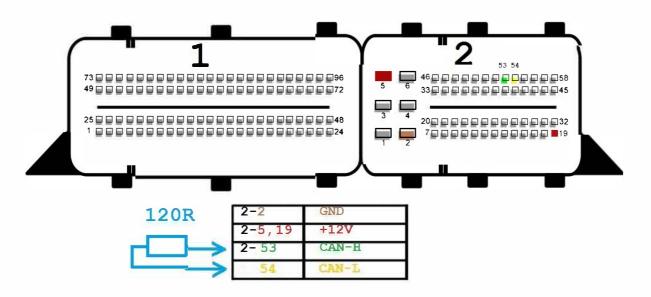
General 7G connection

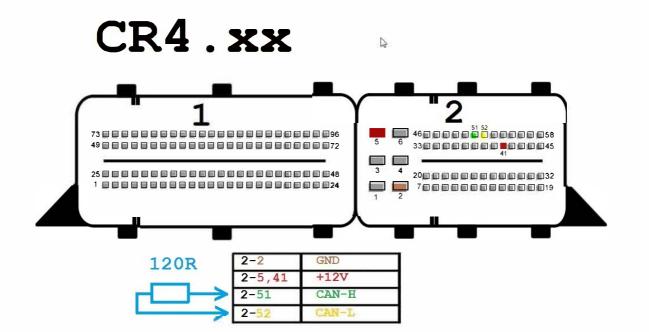


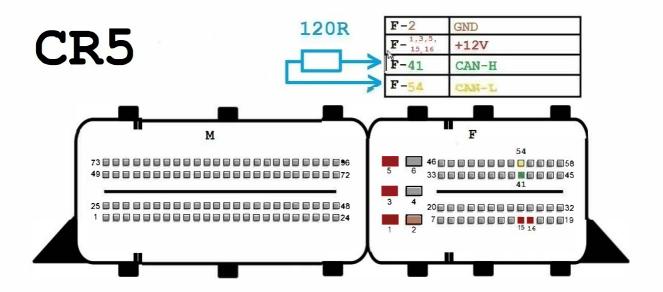
2

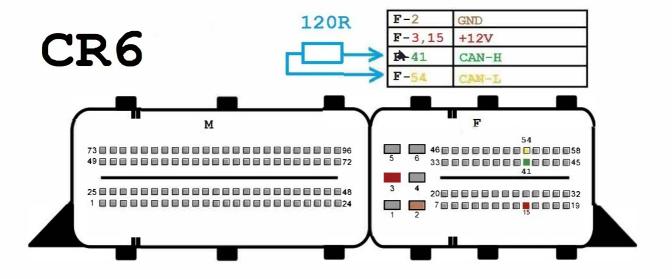


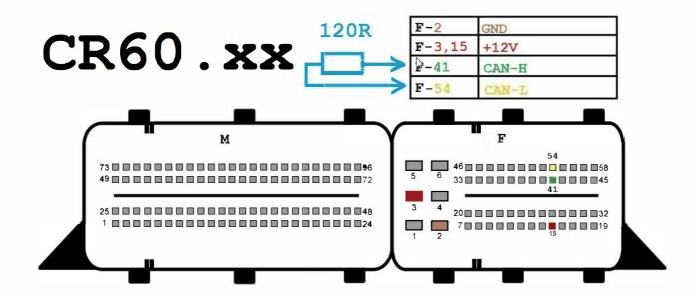
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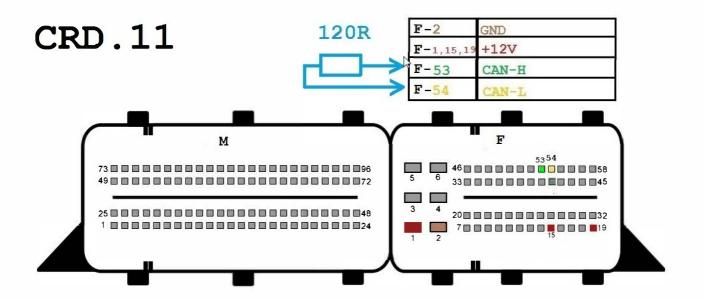






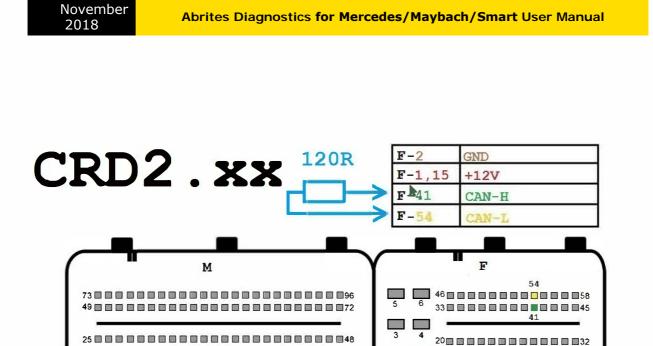


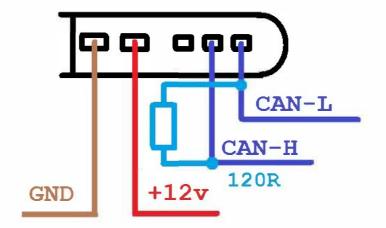




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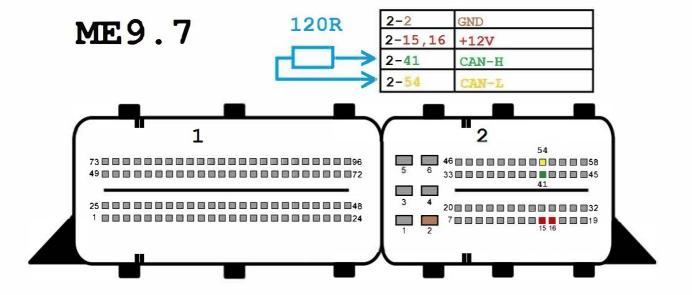


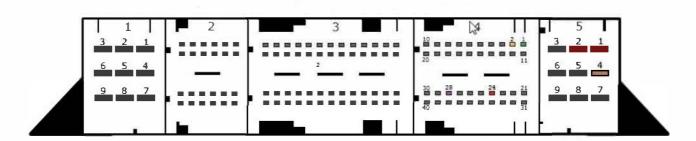




W117/W176/ W246 Double Clutch gearbox TCM

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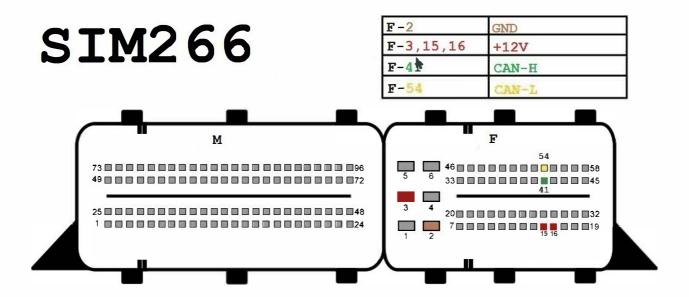


# SIM4LE

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

1



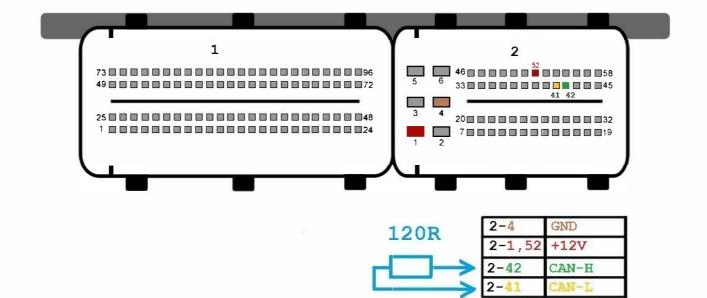


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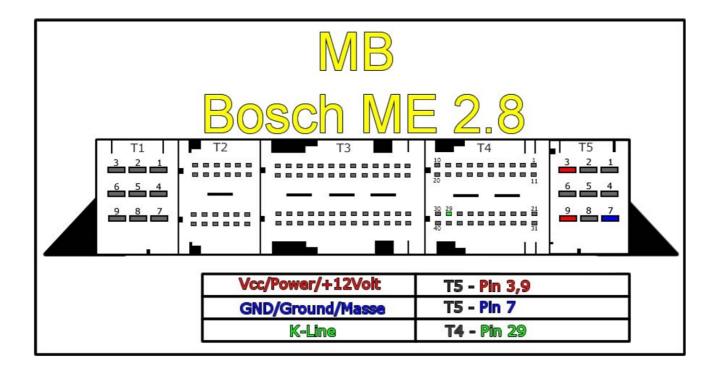
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#### November 2018

# 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:

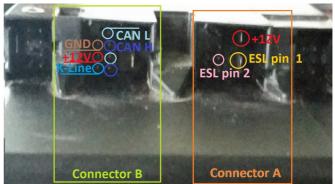
pin 1<sup>.</sup> CAN H

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 4 cor middle:	nectors but the ones you need are the two in the
* Connector A:	
pin 7: ESL 2	
pin 9: +12V	+12VCO
pin 10: ESL 1	ESL pin 2
* Connector B:	
pin 2: GND	
pin 3: +12V	PERSONAL PROPERTY AND ADDRESS OF THE PERSON
pin 4: K-Line	Connector B Connector A
pin 5: CAN L	
pin 6: CAN H	
pin 7: CAN L	
pin 8: CAN H	
-W220 / W215. Here the connectors are two	A and B:
* 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.

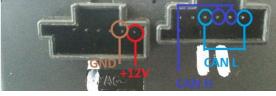
- W204 / W207 / W212. In this case there is only one **connector – A**. Please make sure it is on top:

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.

# **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.

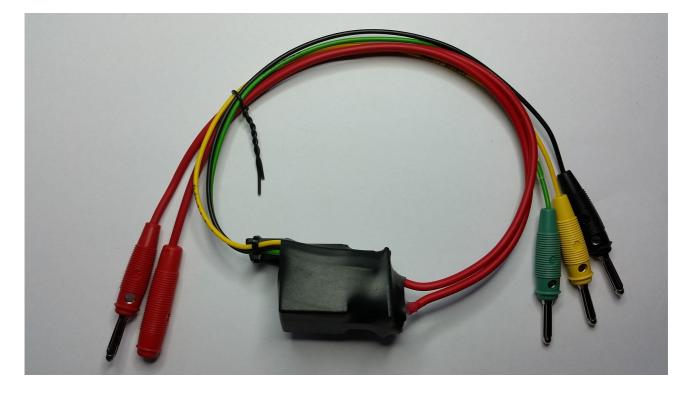
# 6. Appendix

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.

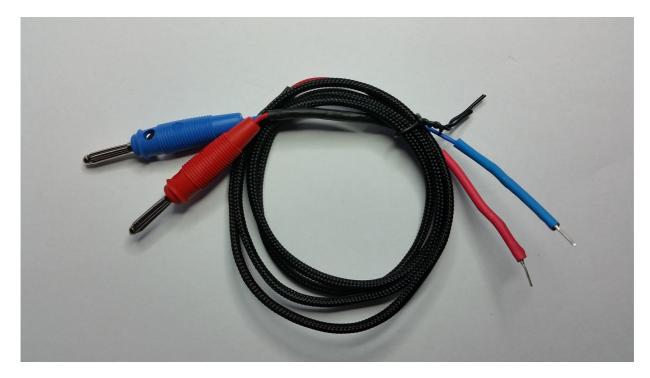


**NB:** DO NOT FORGET TO SUPPLY THE SWITCH RELAY WITH +12V AND GND IN ORDER TO OPERATE.

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