# A·B·R·I·T·E·S<sup>®</sup> automotive solutions

# Abrites Diagnostics for VAG <u>User Manual</u>

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#### **1 INTRODUCTION**

Abrites Diagnostics for VAG is a Windows based PC based diagnostic software for the vehicles from the VAG group, which are, in most cases, unsupported by the Manufacturers diagnostics tester. The "Abrites VAG Diagnostics" also provides you full diagnostic capabilities for VAG vehicles.

#### 1.1 Installing the "Abrites Diagnostics for VAG"

The "Abrites Diagnostics for VAG" is contained in the installation package, so please run the setup.

Once you have done that you are ready to start the "Abrites Diagnostics for VAG". When starting the software a splash screen appears where the connection to the hardware is examined. Should there be no problem with it a message should appear saying "CONNECTION OK".

The main screen looks like this:

#	Unit name		VAG Number		Description	1	DTC C	oding	
00									
01	Engine Control Unit-	-Master	03G906021K	H I	R4 1,9L ED0	G0005G	7	2	Dravin
02	Transmisson								FIEM
03	ABS								
04	Steering Angle								
05	EZS-Kessy/Entry And	Sta							
06	Seat memory passenge	er							
07	Control head								Conn
80	Climatronic/Auto HVA	/C							1
09	Central Electic								
AO									
0B	Air heating								_
20				Y(				120	• Nov
P	Special functions   🚘 Vehicle	e Selection	T Broadcast	🖏 Options		sale	<u></u>	×	-
	CAN	100000000000000000000000000000000000000			EDO17	Component	Immo parts	Steering lock	
	Instrument EZS-Kessy Q7/A6	BCM2 A4/A5/Q5	Instrument	Engine Control Unit	MED17 Boot	protection	adaptation	adaptation	
	Instrument EZS-Kessy Q7/A6	BCM2 A4/A5/Q5	Instrument	Engine Control Unit	MED17 and MED17 Boot	protection	adaptation	adaptation	Dper
c	Instrument EZS-Kessy Q7/A6	BCM2 A4/A5/Q5	Instrument <b>X</b> Airbag	Engine Control Unit W Crafter	DSG Calibration	Custom Read/Update	adaptation	adaptation	Oper

#### Attention:

Make sure you are running the "Abrites Diagnostics for VAG" from its folder . If you are using a shortcut to the "Abrites Diagnostics for VAG", please make sure the "working

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folder" parameter is set to the folder where the executable file is placed. If the "working folder" is not set the K-LINE may not function correctly.

#### 2 DIAGNOSTICS WITH THE "ABRITES DIAGNOSTICS FOR VAG"

The "Abrites Diagnostics for VAG" basically consists of two parts: -Standard diagnostic functions such as reading/clearing trouble codes, device identification, adaptation, measured values etc.

- Special functions such as reading log in, Reading EEPROM etc.

All devices available to the car are listed on the main screen of the "Abrites Diagnostics for VAG" with their appropriate VAS number. If you would like to connect to one of the devices just double click on it. The "Abrites Diagnostics for VAG" will try to connect to the device using the following protocols consecutively:

-KWP2000 over TP2.0 with a 5000kb/s (CAN) baud

-KWP2000 over TP1.6 with a5000kb/s (CAN) baud

-UDS over ISO transport protocol (CAN)

-KWP1281 or KWP 2000 over K-line (the protocol is recognized automatically from the wake up pattern).

You can choose which of these protocols to use when attempting to connect as described in the "Configuration" section.

#### 2.1 Configuration

The "Abrites Diagnostics for VAG" can be configured by pressing the "Options" button from the main screen. The following dialog is displayed:

Used protocol for diagnostic	K-Line baud ra	ites trying sequince 00 72		English  KLine: used OBDII PINs	Advanced
K-Line KWP2000/KWP1281     UDS	Logging     Enable CAN log     Enable K-Line log     Instant Logging	Antena factor	Test	CAN Resistor	Aorly

# NOTE: Changes regarding the interface and timing parameters made in this dialogue box will be applied after restarting the application.

#### 2.1.1 Used protocols

The meaning of the check-boxes is as follows: -CAN TP2.0 – when trying to connect to the device the Diagnostics will try to connect to it using "KWP2000 over TP2.0 with baud 500KB/s" -CAN TP1.6 – when trying to connect to the device the software will try to connect to it using "KWP2000 over TP1.6 with baud 500KB/s"

-UDS - when trying to connect to the device the software will try to connect to it using "UDS over ISO transport protocol" with baud 500KB/s

-K-Line KWP2000/KWP1281 - when trying to connect to the device the software will try to connect to it using "KWP1281 or KWP2000 over K-Line"

# NOTE: These check boxes are used only for configuring the used protocols when trying to connect to the device in order to perform standard diagnostic requests. They are not applicable when auto-scanning devices.

#### 2.1.2 Interface detection.

Normally the "Abrites Diagnostics for VAG" USB interface is recognized automatically. If not please contact **support@abritus72.com** 

#### 2.1.3 K-LINE baud rate settings

When trying to connect to the device over K-LINE the "Abrites Diagnostics for VAG" will try to connect using one baud rate and if it does not succeed it will switch to another baud rate and attempt to connect once again. There are two baud rates currently in use- the 10472 and the 9600. Using the "10472\9600" and "9600\10472" in the dialogue box you could set the order in which these two baud rates will be used.

If the "10472\9600" is selected then the software will try to connect over the K-LINE using the 10472 and if the connection is not successful it will switch to the 9600 and try to connect over it. If the "9600\10472" is selected the software will try to connect using a 9600 baud rate and if that proves unsuccessful it will switch to 10472 and make another attempt.

# ATTENTION: Some of the devices using baud 9600 cannot be woken up if they have been tried with 10472. If you cannot connect to a device through K-LINE try to change the options so that the software tries to connect through 9600 first.

#### 2.1.4 **Timing parameters**

The protocols running under K-LINE require very precise byte timing. Since Windows is not a real time operational system these times are not always respected and the connection to some devices is unsuitable or it is impossible to connect to them. In such cases you can try and change some of the timing parameters from the "Advanced" button. The timing parameters have the following meanings:

- Wake up echo delay - time after slow initialization between receiving "55 xx yy" and sending the inverted value of "yy" (according to the K-LINE wake up procedure).

- Communication echo delay – time between reception of a byte under KWP1281 and sending it back to the device in an inverted form.

- Inter byte time – time between sending two bytes under KWP2000.

- Time between messages - time delay between reception of a response from a device and

sending a new request to it.

#### 2.1.5 K-LINE PINs

Normally the K-LINE output is at the seventh pin of the OBD2 connector; However in some models (e.g. 2004 Porsche Cayenne) the K-LINE may be located on pin 3 or 15. Because of that there is an option to choose the pin where the connection is to be attempted.

ATTENTION: If you check all pins to be examined (i.e. pin3, pin7, pin15) the time for scanning all units will be significantly increased. Due to this the default pin selected is only one ( pin7).

#### 2.1.6 CAN resistance

According to the CAN specifications there should be a resistance between CAN-LOW and CAN-HIGH. Normally the gateway has this resistance however if you would like to connect to a device "on a table" (bypass connection without a gateway) then you should use a resistor between the "Abrites Diagnostics for VAG" and the separate device itself (e.g. ECU, dash, immobilizer etc.).

For that reason you have the option to choose what resistance to use (None, 75 Ohm, 100 Ohm or 10 Kilo ohm). The default value used is 120 Ohm. Normally there should not be any issues; however should an issue appears you can try changing the CAN resistance.

#### 2.2 Scanning units

After starting the application in the main screen of the "Abrites Diagnostics for VAG" you will see a list of all possible units with their appropriate VAS number.

Once you have that you are able to connect to the listed devices by double clicking on them.

You can also choose a configuration of devices corresponding to the specific car (chassis type) instead of displaying all possible units. This is done by selecting the type (e.g. "1T - VW Touran) from the "Chassis type" combo box. If you then select the "Display button" it will show all devices that can be installed into the chassis type in question.

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 devices.

For all devices found by the "Abrites Diagnostics for VAG" a detailed information is displayed in the main screen. The following information is displayed for each device:

- VAS number.

- Unit Name.

- VAG number – returned by the device in the device identification.

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- Description returned by the device in the device identification.
- Coding returned by the device in the device identification.

- Part / IMP / Supp N (Part number/ Importer number/ Supplier number) - the information is

shown separated with spaces, also returned from the device with in the device identification.

- DTC – number of Diagnostic Trouble Codes stored in the unit.

Instead of scanning all units (which can take a while) you can retrieve the list of the installed devices from the gateway by selecting the "Gateway config list" button.

Since clearing of the DTCs for all existing devices is one of the main diagnostic operations and broadcast requests for clearing of all DTCs are not accepted from all units there is a possibility to scan all devices and then if a connection to the device is possible to clear its DTCs. This is done by clicking on the "Clear all DTCs" button on the "Auto scan devices" panel. Once again, the protocols used to connect to the devices are specified in the configuration options.

#### 2.3 Broadcast requests

Broadcast requests are the requests sent to all or a group of devices simultaneously.

The "Abrites Diagnostics for VAG" is able to send broadcast requests to all devices with a request to enter a desired transport mode, to clear all DTCs in all devices or to disable/ enable the communication of all devices. You can do this by selecting the corresponding button in the "CAN Broadcast panel".

Here are the available functions:

[Transport mode]

Entering or exiting the vehicle from transport mode is used by the factory to place the cars into a "sleep" mode in order to conserve the battery charge during long periods of inactivity.

#### [Disable normal communication]

This function will disable the communication between units in the car. This can help you hold the current state of the as well as preventing disturbances in communication while performing a reflash.

[Enable normal communication] Restoring the normal message transmition.

[Clear all DTCs]

Sending requests to all units in the vehicle in order to erase their DTCs.

#### 2.4 Standard diagnostic requests

When double-clicking on a device in the "Abrites Diagnostics for VAG" window, you connect to the device in order to proceed standard diagnostic requests. The following dialog box is then opened:



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					TP2.0	) -	
tablishment ( agnostic char	diagnostic sess nnel is open.	ion with selec	ted unit			*	
G906021KH <- Version: ROGRAMMABLE	nic control un == Device N: 1 - VAG number 9245	t identificati					Clear log
oding :72 art number : a mporteur's num applier numbe: stem descrip	452326 mber:152 r:13363 tion:R41,9L	EDC G000SG					Update lo
iagnostic requests					Diagonatic session		
iagnostic requests	Read DTCs	Security Access	Basic settings	Custom download/upload	Diagnostic session		
iagnostic requests Identification SW / HW version	Read DTCs Clear DTCs	Security Access	Basic settings Actuator test	Custom download/upload Custom requests	Diagnostic session       86       Enter       Flasher (SW Update)	A B R automotiv	Freeze fram

This dialog box allows you to execute the following diagnostic requests:

#### 2.4.1 Identification

"Identification" will provide you the VAG part number and software coding.

```
--- electronic control unit identification ---

4F0910401L <- VAG number

PROGRAMMABLE

Program status 00, data status 20

Coding :11772

Part number : 0

Importeur's number :0

Supplier number : 0

System description : 3.0L V6TDI G000AG
```

#### 2.4.2 Software and hardware version of the unit

If you have the service supported by the corresponding controller you can check the SW/HW versions of the unit using the "SW/HW version". This includes all slave units of the master unit.

Hardwai	e number		1K0907951	
SW version	of module	5 :	XPQ35_V19_02	
SW version	of module	4 :	A4.7.6a	
SW version	of module	з:	M2.6.9	
SW version	of module	2 :	D2.6.9	
SW version	of module	1 :	K2.6.9	
==== SW/HW	version			

#### 2.4.3 Extended unit identification

"Extended identification / VIN" displays the programming data; flash statuses; programming attempts; flash date; VIN number.

#### 2.4.4 Read diagnostic trouble codes

"Read DTCs" will display all errors present in the master and slave units. The errors displayed can be together with the freeze frame data depending on the "Read Freeze frame" checkbox.



#### 2.4.5 Clear diagnostic trouble codes

"Clear DTCs" will clear all DTCs stored in the unit.

#### 2.4.6 Measured values

- "Non UDS" modules.

"Measured values" provides you the possibility to check measured values in different groups. You could enter the group number manually or use the "+" and "-" to increase or decrease the group number.

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Measured Values		
Injection Quantity		Channel +
Engine Speed (G28)	0 /min	
Injection Quantity	37.3 mg/str	
Injection Duration (specified)	0.0 CF	
Coolant Temperature (G62)	-5.4 °C	Oscilloscope

The "Scan all" button will generate a file with all measurement values from all groups.

#### Some important measured values:

The most commonly used value is the key recognition in the immobilizer. The key recognition is at channel 2 if the immobilizer is by CAN or at channel 23 if the immobilizer is by K-LINE. The only exception is the Audi Q7/A6/ Allroad where the recognition is at channel 23.

- "UDS" modules

The "Measured values" provides you the opportunity to check the measured values by selecting features from a list.

Parameter	Value	
Communication status of data bus 1 - Communication status of data bus 1		1
Time Out Recognition - Time Out Recognition		
🔲 Immobilizer-Challenge		
Transponder ID of the current key	f4 8e e0 f8	
Transponder ID of Key-1	0d 97 7ь f0	
✓ Transponder ID of Key-2	0d 94 37 9f	
Transponder ID of Key-3	be 12 7a do	
Transponder ID of Key-4	be 21 a3 fa	
✓ Transponder ID of Key-5	73 cd 6a f4	
✓ Transponder ID of Key-6	f4 8e e0 f8	
Transponder ID of Key-7		
Transponder ID of Key-8		
Status of the Immobilizer - live status		
Status of the Immobilizer - Mark ID		
Status of the Immobilizer - P-Klasse	6a	
Status of the Immobilizer - Actual-Keys	Ð	
Status of the Immobilizer - Set-Keys	6	
Status of the Immobilizer-Slaves - Key status - Klemme 15	ein	
Status of the Immobilizer-Slaves - Key status - S-Kontakt	no	
Status of the Immobilizer-Slaves - Key status - Key locked	yes	
Status of the Immobilizer-Slaves - Key status - Key learned	yes	
🗹 Status of the Immobilizer-Slaves - Key status - Key Authenticatable	yes	
Status of the Immobilizer-Slaves - MSG 1 - Status - MSG1-password was	va	
🗖 Status of the Immobilizer-Slaves - MSG 1 - Status - MSG1-signature was v	valid	
Status of the Immobilizer-Slaves - MSG 1 - Status - MSG1 Inquired		
Status of the Immobilizer-Slaves - MSG 1 - Status - MSG1-Password learn	ned	
۲. <u>ا</u>	п	

#### 2.4.7 Security access

	Secutiy acc Standar O User de	ess parameter d fined	s Type
Security Access(Login)		+	
Security Access(CS)	52698 Value(DEC)		cdda Value(HEX)
Security Access(System)			
Key CS OK!			

"Security access" provides you the option to perform security authorization on different levels.

#### 2.4.7.1 Standard security access

This type of security access can be:

- "Security access (log in)" - Typically used in immobilizer systems.

- "Security access ( Component Security)" - Typically used during adaptation of different units or parts.

- "Security Access (System Specific)" - Security access different from the previous two types and from the authorization for programming.

Hints:

- When the device you connect to is using a "KWP1281" diagnostic then the only applicable option is "Security Access (log in)"

- If you would like to input security access to the ECU you should use "Security access (Component Security)". This will allow you access to the adaptation channel 50.

- If you would like to input the security access to the immobilizer you should use "Security access (Component Security)". If you receive an error message saying that it is not supported you should use "Security Access (log in)".

#### 2.4.7.2 User defined security access

In order for the authorization to be performed you need to clarify the type of security access by using the "Request seed" / "Send seed" buttons.

Security Access		×
	Secutiy access paramete O Standard O User defined	rs Type 3
Request SEED Return KEY SEED: 033723e6	+ 320527021 Value(DEC) -	131adaad Value(HEX)

#### 2.4.8 Adaptition

"Adaptation" will open a separate window for you where you could check the adaptation values.

- "Non UDS" modules.

You need to enter the number of the channel where the adaptation will be performed and then press the "test" button. If the specified value is accepted by the unit press the "Save" button.

	Immobilizer (Vehicle Data learning)	- Adaptation CHANNEL -
	Personal Identification Number? (PIN)	+
	****	
	****	Enter
		Scan all
Stored value :	32000	
New value :	32000	
Testvalue :		Save
	1	

The "Scan all" button will generate a file with all channels and the adapted values.

Some important channels used for adaptation:

- Channel 50 – typically used for adaptation of new parts. Usually to get access to this channel you should do a security access with the log in of the device to which you are connected and the one you will adapt to the car. After gaining access to channel 50 you should input the log in (PIN) of the car to which you will adapt the new part.

- Channel 21 – If the immobilizer is by K-LINE then the adaptation of the keys is done in channel 21. To gain access to it you need to make a security access with the immobilizer.

- Channel 1 – If the immobilizer is by CAN then key adaptation is done in Channel 1. To gain access to it it is necessary to do a security access with the immobilizer.

- "UDS modules"

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Unit				
Unit			age version	Langua
	Ur	New	Current	ID#
	*		33 Spanish	2233
	*	no language German		
		English		
		French		
		Italian Snanish		
		Portuguese		
		without text		
	177	Lzech		
		Portuguese without text Czech		

You have to select certain items from a drop down list. When an item is selected it is automatically read and its current values are displayed in the "Current" column. The "Unit" column shows the measurement unit of the selected item. To change a current value you need to input or select a certain new value into the corresponding cell from the "New" column.

#### 2.4.9 **Coding of the unit**

"Coding" will open a separate a separate window for you where you can change the coding value of the master and all slave units. In the example below only the master unit supports coding. Slave units 1 and 2 are without coding.

N. Device	Coding type	Value	
01 5C6920850B	Long	170800	
ew coding 170B0 alue:	0		Set Coding Helper
ew coding 170B0 alue:	0 vpe manually		Set Coding Helper
ew coding 170B0 alue: Set coding to 0 12 bit co	0 ype manually ding dina		Set Coding Helper
ew coding 170B0 alue: 170B0 Set coding t 0 12 bit co 0 20 bit co 0 Long co	0 ype manually ding ding ding Bytes: 0		Set Coding Helper

Pressing the "Coding helper" button will open a new window where you can see the corresponding coding information with an opportunity to change the appropriate settings.

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Codin	g Byt	es																										
0	1	2	34	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
17 0	)P (	00		Т						Γ		Γ						<u> </u>										Γ
	-	111	1.0	- 947 - 1	WW - 25	5 - 32 	1 - 3.		9 20	200 - 68 -		W: 1	10 	998 - 1998 - 1998	<i>₩</i> ~			11	17	un - 55	811 - 25 -	s - 33	N 3		40 20	an 197		¥2
] [E	lyte	: 01,	Bit:	0]	Brak	epa	d W	/arr	ing	g act	tive	/ins	tall	ed														
] [E	lyte	: 01,	Bit:	1]	Seat	belt	Wa	arni	ng	activ	/e/i	nsta	alle	d														
][E	lyte	: 01,	Bit:	2]	Was	her	Flu	id Y	/ar	ning	j ac	:tive	/in:	stall	led													
] [E	yte	01	Bit:	3]	Mult	i-Fu	ncti	on-l	)is	play	/ ac	tive	/ins	stall	ed													
r		. 01		. 0																								
ŝ	Byte	e: 0(	), Bit	s: 0	- 3																							
\$	Byta O	e: 0( 0,Di	), Bit stan	s: O ce l	- 3 mpu	se	Nun	nbe	r 0					12112							s. 0							
\$	Byte O	e: 0( 0,Di 1,Di	), Bit stan stan	s: O ce I ce I	- 3 mpu mpu	se se	Nun	nbe	r 0 r 1	- Se	atl	biza	a (6	J) L	.eoi	n (11	P)/S	koc	la ()	Icta	via	(1Z)	_Sı	upe	rb (3	зтј∧	w	
ξ     	Byte O O	e: 0( 0,Di 1,Di 2,Di	), Bit stan stan stan	s: O ce li ce li ce li	- 3 mpu mpu mpu	se se se	Nun Nun	nbe nbe	r 0 r 1 r 2	- Se - Sk	at I oda	biza a Fa	a (6 bia,	J) L /Rod	.eoi	n (1) ster	P)/S (5J)	ikoc   Sl	la O koda	lcta a Ye	via eti (!	(1 <i>2</i> ) 5L) _	∣_Su _Ska	upei oda	rb (3 Oct	3T)∧ avia	vw a	
\$ ) ) )	Byte O O O	e: 0( 0,Di 1,Di 2,Di 3,Di	), Bit stan stan stan stan	s: O ce li ce li ce li ce li	- 3 mpu mpu mpu mpu	se se se	Nun Nun Nun	nbe nbe nbe	r 0 r 1 r 2 r 3	- Se - Sk	at I oda	biz: a Fa	a (6 bia,	J) L /Roo	.eoi	n (1) ster	P)/S (5J)	ikoc   Sl	la O koda	lcta a Ye	via eti (!	(1Z) 5L) _	∣_Su _Ska	upe oda	rb (3 Oct	3T)∧ a∨ia	vw	
\$ ) ) )	Byte 0 0 0 0	e: 0( 0,Di 1,Di 2,Di 3,Di 4,Di	), Bit stan stan stan stan stan	s: 0 ce l ce l ce l ce l	- 3 mpu mpu mpu mpu	se se se se	Nun Nun Nun Nun	nbe nbe nbe nbe	r 0 r 1 r 2 r 3 r 4	- Se - Sk - VV	ati oda v P	biza a Fa	a (6 bia, (6R)	J) L /Roi	.eoi	n (1) ster	P)/S (5J)	ikoc   SI	la O koda	lcta a Ye	via eti (!	(1 <i>2</i> ) 5L) _	∣_Su _Ska	upei oda	rb (3 Oct	3TJ∕\ a∨ia	٧W	
\$ ) ) )	Byte 0 0 0 0	e: 0( 0,Di 1,Di 2,Di 3,Di 4,Di 5,Di	), Bit stan stan stan stan stan stan	s: 0 ce li ce li ce li ce li ce li	- 3 mpu mpu mpu mpu mpu	se se se se	Nun Nun Nun Nun	nbe nbe nbe nbe nbe	r 0 r 1 r 2 r 3 r 4 r 5	- Se - Sk - VV - VV	at I oda V Pi	biza a Fa olo mar	a (6 bia, (6R ok (	J) L /Rou ) 2H)	.eoi	n (1) ster	P)/S (5J)	koc   Sl	la O kodi	lctav a Ye	via∣ eti(!	(1 <i>2</i> ) 5L)	_Sı _Ska	upe oda	rb (3 Oct	}T]∧ a∨i≀	vw	
\$ ) ) ) )	Byta 0 0 0 0 0	e: 0( 0,Di 1,Di 2,Di 3,Di 3,Di 5,Di 6,Di	), Bit stan stan stan stan stan stan stan sta	s: 0 ce l ce l ce l ce l ce l ce l	- 3 mpu mpu mpu mpu mpu mpu	se se se se se	Nun Nun Nun Nun Nun	nbe nbe nbe nbe nbe nbe	r 0 r 1 r 2 r 3 r 4 r 5 r 6	- Se - Sk - W - W	at I oda V P V Ai V Ti	biza a Fa olo mar rans	a (6. bia, (6R (6R (	J) L /Roo 2H) 1ter/	.eor oms Mul	n (1) ster	P)/S (5J)	ikoc   SI	la O kodi	lcta a Ye	via eti (!	(12) 5L) _	∣_Su _Ska	upe oda	rb (3 Octi	3T]∧ a∨ia	₩₩	
( ) ) ) )	Byte 0 0 0 0 0 0 0	e: 0( 0,Di 1,Di 2,Di 3,Di 4,Di 5,Di 6,Di 7,Di	), Bit stan stan stan stan stan stan stan sta	s: 0 ce l ce l ce l ce l ce l ce l	- 3 mpu mpu mpu mpu mpu mpu	se se se se se se	Nun Nun Nun Nun Nun	nbe nbe nbe nbe nbe	r 0 r 1 r 3 r 4 r 5 r 6 r 7	- Se - Sk - VV - VV - VV	at I oda V P V Au V Tu V Tu	biz: 1 Fa olo mar rans ns f	a (6 bia, (6R (6R ;poi	J) L /Roo ) 2H) / VV	Leon oms Mul	n (1) iter	P)/S (5J) in (i	5koc   SI 7E/1 a (5	1a C kod: 7F) 2/51	lcta a Ye	via   eti (!	(1Z) 5L) _	_St _Ska	uper oda	rb (3 Oct	31) 31	vw	
\$ ) ) ) )	Byte 0 0 0 0 0 0 0	e: 0( 0,Di 1,Di 2,Di 3,Di 4,Di 5,Di 6,Di 7,Di 8 Di	l, Bit stan stan stan stan stan stan stan sta	s: 0 ce l ce l ce l ce l ce l ce l ce l	- 3 mpu mpu mpu mpu mpu mpu mpu	se se se se se se se se	Nun Nun Nun Nun Nun Nun	nbe nbe nbe nbe nbe nbe	r 0 r 1 r 2 r 3 r 4 r 5 r 6 r 7 r 8	- Se - Sk - VY - VY - VY - VY	at I oda V P V A V T I V E	biza n Fa olo mar rans os (	a (6 bia, (6R (6R ipoi 1F)	J) L /Rod ) 2H) / tter/ / VV	Leon oms Mul	n (1) ster tivæ	P)/S (5J) an (7	ikoc   SI 7E/1 a (5	la C koda 7F) 2/51	lcta a Ye	via   eti (!	(1 <i>2</i> ) 5L) _	_Su _Ska	uper oda	rb (3 Oct	3T)/\ avi; 3)	٧W	
	Byte 0 0 0 0 0 0 0	e: 0( 0,Di 1,Di 2,Di 3,Di 4,Di 5,Di 5,Di 5,Di 8,Di 8,Di	l, Bit stan stan stan stan stan stan stan sta	s: 0 ce l ce l ce l ce l ce l ce l ce l	- 3 mpu mpu mpu mpu mpu mpu mpu	se se se se se se se se se	Nun Nun Nun Nun Nun Nun	nbe nbe nbe nbe nbe nbe	r 0 r 1 r 2 r 3 r 4 r 5 r 6 r 7 r 8	- Se - Sk - VV - VV - VV - VV	at I oda V P V A V T V T V E	biza a Fa olo mar rans os (	a (6. bia, (6R (6R (5po) 1F)	J) L /Rou ) 2H) / YY	.eor oms Mul Y G	n (1) ster ltivæ	P)/S (5J) an (7	ikoc   SI 7E/i a (5	1a O kodi 7F) 2/51	icta a Ye	via   eti (!	(1 <i>2</i> ) 5L) _	_Si _Ska Scir	uper oda	rb (3 Oct	3T)/\ avi; 3)	٧W	
	Byta 0 0 0 0 0 0 0 8yta	e: 0( 0,Di 1,Di 2,Di 3,Di 4,Di 5,Di 5,Di 6,Di 6,Di 8,Di 8,Di 9, C	l, Bit stan stan stan stan stan stan stan sta	s: 0 ce l ce l ce l ce l ce l ce l ce l ce l	- 3 mpu mpu mpu mpu mpu mpu mpu - 7	se se se se se se se se	Nun Nun Nun Nun Nun Nun	nbe nbe nbe nbe nbe nbe	r 0 r 1 r 3 r 4 r 5 r 6 r 7 r 8	- Se - Sk - VY - VY - VY - VY	at I oda V Pi V Ai V Ti V Ei	biz: Fa olo mar rans os (	a (6 bia, (6R (6R (5 poi 1F)	J) L /Roo ) 2H) rter/	.eor oms Mul ¥ G	n (1) ster tivz	P)/S (5J) an (7	ikoc   Sl 7E/i a (5	1a O kod: 7F) 2/51	icta a Ye	via   eti (!	(1 <i>Z</i> ) 5L) _	_St _Ska Scir	uper oda	rb (3 Oct	3T)/ avia 3)	vw	
×>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	Byte 0 0 0 0 0 0 0 Byte 0	e: 0( 0,Di 1,Di 2,Di 3,Di 5,Di 5,Di 5,Di 5,Di 5,Di 5,Di 5,Di 5	), Bit stan stan stan stan stan stan stan sta	s: 0 ce l ce l ce l ce l ce l ce l ce l s: 4 y: 6	- 3 mpu mpu mpu mpu mpu mpu mpu - 7	se se se se se se se se se	Nun Nun Nun Nun Nun Nun Nun	nbe nbe nbe nbe nbe nbe	r 0 r 1 r 2 r 3 r 4 r 5 r 6 r 7 r 8	- Se - Sk - VV - VV - VV - VV	at I oda Y Pi Y Ai Y Ti Y Ei	biza 1 Fa olo mar rans os (	a (6 bia, (6R (6R (5po) 1F)	J) L /Roo 2H) 7ter/	Leor oms Mul ∀ G	n (1) ster tiva	P)/S (5J) an (7 Jetta	6koc   SI 7E/1 a (5	1a () kod: 7F) 2/51	lcta a Ye K/A.I	via   eti (! 1) / V	(12) 5L) _	_St _Ska Scir	uper oda	rb (3 Oct	3T]/\ avia 3]	vw	

#### 2.4.10 Basic settings

"Basic settings" will expect you to enter a number of the group and press the "ON" or "OFF" button.

#### 2.4.11 Actuator test

There are two types of tests available: "Selective" and "Sequential".



	C Enter oupur code	 C
O Sequential test	<ul> <li>Select output</li> </ul>	Cancel test
Easing Coolast Tamaan		<b></b>
Engine Coolant Lempera	ature (ECT) Gauge	
Speedometer		
Fuel gauge		
Seat belt indicator lamp		
Gong		
Hot light		
Oil pressure indicator la	mp	
Segment test	2003 <b>-</b> 912	
Test picture in center di	splay	
Buzzer/gong	10 1153	
Brake pad wear indicato	r lamp	
Brake and Parking Brak	e Warning Light	

In the selective test mode you have the possibility to enter a test code manually or to select it from a list box. When a test is selected all you need to do is press the "Start" button.

#### 2.4.12 Reset of the unit

"Reset" will request a software reset from the unit. Not all electronic control units support this service. Please note that it is not available in all diagnostic sessions.

#### 2.4.13 Custom requests

Using this function you can manually send diagnostic requests to the corresponding unit. The next example shows a request for identification of an instrument cluster.

X



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tom rea	quest	ts																			×	3	
22	2f18	39																] [	Sen	d			
				ę	Save	e to	⊃ f:	ile			Pa	ause	•			(	Clear		UD9	3			
Trac	e l	list	; —																			1	
Tx:	22	F1	87																				
Rx:	0E	62	F1	87	35	43	36	39	32	30	38	35	30	42	20								
Tx:	22	F1	89																				
Rx:	07	62	F1	89	30	34	30	36															
																						I	
																						1	
																						1	
1																							
																		 	 			1	

#### 2.4.14 Program VIN

"Program VIN" requests the VIN stored in the device and tries to change it. Not all ECUs support this service. Please note that it is not available in all diagnostic sessions. Important point for this diagnostic service is that in most ECUs the VIN programming is exclusive to one specific session and they may need to have the ignition turned off and on, closing the current diagnostic session. An example for such a thing is the Bosch EDC 16.

#### 2.4.15 Custom download / upload

"Custom download/ upload" allows direct read from the address map of the device. This option will only be available if you have some updates in your configuration such as "Reading / writing the flash counters". Please note that in most cases there will be a security authorization required before you write or read the address map.

#### 2.4.16 **Component security**

This special unction allows managing of brand new units ,including immobilizer units, where programming of PIN ,SKC, BGW and MAC is allowed. These functions are under CAN-TP2.0.

#### 2.4.17 Active diagnostic session

Default diagnostic session established after connection to the unit is number "89". You could request entering a different diagnostic where performing of diagnostic activities in the standard session "89" is not allowed. Please take into account that in most cases different diagnostic sessions require security authorization.

Diagno	stic session —
84	Enter

#### 2.5 Special functions

Special functions are specific applications allowing you to read security access codes, read/ program EEPROM / flash content etc.

The "Special functions" are available in the main dialog window of the "Abrites Diagnostics for VAG".



The needed special function is opened by double click or by marking and clicking the "Open" button.

Note: For the purposes of some special functions (mostly key learning) there are buttons for PIN auto detection and component security. This means that they will try to gather the needed information from the ECU and also from the instrument cluster (if the cluster is supplied by VDO).

Please be informed that for VDO units manufactured after the end of 2006 some parts of the instrument cluster needs to be re-flashed. The same applies for millage reading functions. As mentioned in the license agreement you will need to perform these operations at your own risk.

2.5.1 Special functions with "Instrument CAN"

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When this function is opened the "Abrites Diagnostics for VAG" tries to establish diagnostic with the instrument cluster using KWP2000 over TP2.0 or UDS.

If the session is established successfully the software will read the module's identification and will try to automatically detect the instrument cluster type. The following types can be detected:

- VDO/MM/Visteon -2007 (CAN TP2.0)

- VDO with NEC µC 2009+ (CAN UDS)
- JCI with NEC µC and 95320 EEPROM (CAN UDS)
- Magneti Marelli with 9S12 µC (CAN UDS)
- A8(4H)/A7(4G)/A6(4G)/Touareg(7P) with 95320 EEPROM (CAN UDS)

If connection to the instrument cluster cannot be established or the instrument cluster's type cannot be detected automatically you will see the following window:

Select instrument cluster type	
VDO/MM/Visteon -2007 (CAN TP2.0)	
VDO with NEC µC 2009+ (CAN UDS)	
JCI with NEC $\mu$ C and 95320 EEPROM (CA	N UDS)
Magneti Marelli with 9S12 $\mu$ C (CAN UDS)	
A8(4H)/A7(4G)/A6(4G)/Touareg(7P) with 95	320 EEPROM (CAN UDS)
ок ОК	Cancel

In this window you can manually select the desired instrument cluster from the ones listed.

# Note: If you would like to select the instrument cluster manually you need to disconnect your AVDI from the OBDII and open the "Instrument cluster CAN" special function.

If one of the above types of instrument cluster is automatically detected the "Abrites Diagnostics for VAG" will not open the corresponding function window.

#### 2.5.1.1 Special functions with instrument cluster CAN over TP2.0

										Reset
Mileada			- Read/write ConfD	ata //mmo.d	ata				-	
Initedge			00000000 95 0	04 57 56	57 5A 5A	5A 31 4B	5A 37 50	31	Bead	
			00000010 31 3	31 31 D8	05 58 58	58 58 58 09 DA CD	58 58 58 70 F5 24	58	ConfData	Con
Read	Recalib	ate	00000030 49 F 00000040 FF 1 00000050 56 5	E7 8A 00 FF FF FF 57 5A 37	14 00 00 FF FF FF 5A 30 47	FE 58 FE FF F1 01 37 30 33	60 0B 12 06 11 01 31 31 31	3D 11 31	Load from file	Save
Mileage by flash/ConfD dumps (Micro	y Export mile ata ConfD. (Micror	age to ita as)	00000060 37 3 00000070 F0 0	33 22 BE DF FF FF	FF FF FF FF FF FF	FF FF FF FF FF FF	FF FF FF FF FF FF	FF FF	Read FLASH	Cu: Me Read/
Immo Data —			-							
ID WWZ	ZZ1KZ7P111111							Read I dat	Immo ta	Immo dat flash/Conf
Serial number	VWZ7Z0G7031111			Transpor	nder identifica	ators		Undate	Immo	dumps (Mic
Serial key(CS)	24f3c57249e78a	1		KeylD1	373322be	KeylD5	fffffff	dal	ta	Export immo
MAC	70e5123d			KeylD2	fffffff	KeylD6	fffffff			Conto ata (M
Status	0000fe58fe	Powe	er Class fe	KeylD3	fffffff	KeylD7	fffffff			Program data
Configuration	f10106110111	01	1844 -	KevID4	fffffff	KevID8	fffffff	Make o	dealer	
	and the second se	01.	- V YY	1000 - Contraction (1000)	Concession of the second secon	The second second	1	to the	1000 1	Hesto

Available functions are:

- Reading current mileage value.
- Read/ Program EEPROM of instrument cluster immobilizer.
- Reading security access code of the immobilizer.
- Read/ Write immobilizer related data.

Please note that the provided security access code from this application is immobilizer related and will not be accepted by the instrument cluster.

For Micronas dashboards it is also possible to extract the mileage value by available EEPROM and flash dumps using the "mileage by flash EEPROM dumps (Micronas)".

Reading/ Writing the immobilizer data is done from the "Read IMMO data" and "Write IMMO data".

For Micronas dashboards it is also possible to extract the immobilizer data by available EEPROM and flash dumps by using the "Immo data by flash EEPROM dumps (Micronas)".

If you would like to make a key you will need to read the immobilizer data first or to load it from flash and EEPROM dumps. After that you should have a transponder programmer connected and then you should place the transponder inside. Once that is done the new key is added to the existing keys, allowing them to still function.

# Note: It is possible to have up to 8 keys per car. If all positions are already taken when you create a key you have to substitute the 8<sup>th</sup> key position.

Note: The "Make dealer key and add it to the immo data" button programs the transponder as a dealer key and adds its transponder ID to the immobilizer data. The data however is not yet written in the micro controller. You will need to select the "Write immo data" button to do that. Alternatively you could exit without writing data ,since you already have have a dealer key. Of course you could always teach the transponder by diagnostics.

This application could be used with the following models:

VW Golf5, VW Caddy, VW Touaran, VW EOS, VW Individual, Skoda Octavia II, Skoda Scout, Seat Leon, Seat Altea, Seat Toledo, Audi A3, Audi A6, Audi A8, Audi Q7, Audi Allroad. With Audi A6, Audi A8, Audi Q7, Audi Allroad the function for reading current mileage value is not

available.

#### **ATTENTION:**

Please take into consideration that some instrument clusters of the Audi A3 and A8 have the access to the special functions blocked. The blocked access ones can be recognized by the unreal value they display when you read them. If you need to restore normal behavior to the instrument cluster you need to remove the fuse of the instrument cluster for one minute (e.g. in the Audi A8 you could remove fuse number 5). The most common reason for the blocking of the security access is the usage of low quality diagnostic tools in the past.

#### **ATTENTION:**

The "Abrites Diagnostics for VAG" is designed to calculate mileage values in metric units.

Please take this into account. Especially when using a dump tool or when the "Abrites Diagnostics for VAG" asks you about the displayed value of the instrument cluster.

#### 2.5.1.2 Special functions with "VDO NEC"

The "VDO NEC" is dedicated to the VDO instrument clusters with a NEC micro controller. Typically these instrument clusters are installed in VW/ Seat/ Škoda/ Audi cars produced after the year 2009.

After starting this function you will see the following dialog box:

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Load C	onfData	Enter 9	Service mode by	Enter	Service Mode t	y	Leave Service M	lode by		Pecet
(24C32/24	IC64) dump	(24	C32/24C64)		OBDII		OBDII			neset
Mileage		-	Read/write EEF	PROM/Immo c	data 👘					
0			00000000 0I 00000008 C3 00000010 67	) AB 33 01 8 05 9C 2C 9C 7B 04	28 4F CE 3 5B 15 4F 1 C6 1B 11 1	23.(0 .D,[ .5 g.{	0.2 / .0.		Read ConfData	Update ConfData
Read mileag	e Recalibr	ate	00000018 D2 00000020 0H 00000028 45	A5 C3 1A 40 64 7D 3E BE 0E	87 76 F2 8 8D F9 BF 3 A9 A5 85 F	18 15 .@d}. 16 E>	7 5		Load from file	Save to file.
			00000030 23	8 07 58 74 4 AA AB 16	8F 8C 7D 9 FF F5 81 7	6 #.Xt. 2 *J	.}. r ,		Read Flash	
Immo Data										
ID WWZ	ZZ5K332566733							Read	Immo ta	
ierial number		1		- Transpor	nder identificato	's		Undat		
Serial key(CS)	dba6573433d6b1	1		KeylD1	f07b970d	KeylD5	f46acd73	da	ita	
MAC	3fbb3b2c			KeyID2	9f37940d	KeyIDE	; f8e08ef4			
Status	1401006add	Powe	er Class 6a	KeylD3	dc7a12be	KeylD7	fffffff			
Configuration	210106660100	01 -	-vw 💌	KeylD4	faa321be	KeylD8		Add	ken	
PIN	7752			J [				- Add	NOF	

This special function can be used to read mileage and making keys. It is also possible to use it for exchanging parts and adapting the identification and configuration.

The key making function requires a dealer key license while the mileage function requires a separate license.

In order to perform any operations on these dashboards you will be required to enter the car into service mode. The dashboard cannot be worked on without entering service mode. Entering the car in service mode is performed in two ways:

- If the car has a working key you could put it in ignition and then press "Enter service mode by OBDII"

- reading the EEPROM (24C32 or 24C64) with a programmer, then loading it using the "Load EEPROM dump" button, then modifying it with the "Enter service mode by EEPROM dump" and finally writing the resulting file back to the EEPROM using the programmer.

This is why we recommend that you detach the dashboard from the car and work with it separately (not in the car). Another thing you could do is switch the ABS module OFF during your work with the dashboard. If you prefer to work with the dashboard in the car and the ABS

coding is losed, it is possible to calculated it with the "coding calculator" special function.

Exiting service mode.

If you have entered the service mode with a programmer you can exit it by selecting "Leave service mode". To reenter service mode you need to modify the EEPROM dump again. Pressing the "Reset" button will not exit the service mode ( in the cases where 24C32 is used).
If you have entered service mode by OBDII both the "Leave service mode" button and the "Reset" button will exit the service mode.

Once serviced mode is entered you can:

- Read/ Write the whole EEPROM
- Read the whole flash
- Read the mileage
- Read/ Write immobilizer data
- Create a key for the car

Note: Sometimes writing of the data may fail. In order not to lose the information all written data is backed up in the "Dumps" sub folder.

Note: For dashboards with a colored TFT and other late model cars display with no working key you should enter the service mode and perform all changes before exiting the it. Should you need to enter service mode once more you will need to modify the EEPROM yet again with a programmer.

Note: For the colored TFT and other late model cars display dashboards the specifics dictate that the dashboard remains dark while the service mode is active.

#### 2.5.1.3 Special functions with "Magneti Marelli" UDS 9S12

The "Magneti Marelli UDS 9S12" special function is dedicated to the Magneti Marelli instrument clusters with a 9S12 micro controller and UDS diagnostic protocol. These are typically produced after the year 2009.

After starting this function you will see the following dialog box on your screen. In the example below the data is already read.

### ABRITES Diagnostics FOR VAG USER MANUAL for software version: 20.0 number 2/20071127

otoria 3512 microcontr le immobilizer data first. key will be added to pos cey.	oller and UDS diag [hen put Megamos ition ''key_count +	nostic protocol : 48 Crypto tran 1'', i.e. if you w	ponder into th ant to erase a	ne programm all existing ke	er and press "Add key". J ys and program one new	After several seconds key, first put "O" for
Read/write	EEPROM/Immo d	ata				
					Read ConfData	Update ConfData
rate					Load from file	Save to file
					Read Flash	
					Read Immo	
	_ Transpor	nder identificato	rs ————————————————————————————————————			
	KeylD1	bcb5b9fc	KeylD5	fffffff	data	
	KeylD2	be21f3a9	KeylD6	fffffff	11	
	KeylD3	be223337	KeylD7	fffffff		
	KeylD4	73cd1bef	KeylD8	fffffff		
-					Add key	
	brate	brate  Transpor KeyID1 KeyID2 KeyID4	brate Transponder identificatio Fransponder identificatio KeyID1 bcb5b9/c KeyID2 be21f3a9 KeyID4 73cd1bef	Transponder identificators         KeylD1         brate	Transponder identificators         KeylD1       bcb5b9/c         KeylD2       bc21f3a9         KeylD3       bc223337         KeylD4       73cd1bef         KeylD4       73cd1bef         KeylD8       ffffffff	Interference       Read/write EEPROM/Immo data         Read/write EEPROM/Immo data       Read         brate       Read/write EEPROM/Immo data         Drate       Read/write EEPROM/Immo data         Bread/write EEPROM/Immo data       Read         ConfD ata       Load from file         Read Flash       Read Flash         View (D1 bcb5b9fc       KeyID5 fifffffff         KeyID1 bcb5b9fc       KeyID5 fifffffff         KeyID2 be21f3a9       KeyID6 fifffffff         KeyID3 be223337       KeyID7 fiffffff         KeyID4 73cd1bef       KeyID8 fiffffff         Add key       Add key

The special function is used for mileage reading and key making. Part exchanging and adaptation as well as identification and configuration is also possible. The mileage function requires a separate license while dealer key making requires the dealer key license.

#### 2.5.1.4 Special Functions "JCI with NEC µC and 95320 EEPROM"

The "JCI with NEC  $\mu$ C and 95320 EEPROM" special function is dedicated to the Johnson Controls instrument cluster with NEC micro controller, 95320 EEPROM and UDS diagnostic protocol.

After starting this function you will see the following dialog box on your screen. In the example below the data is already read.

dileane -		- Read/write FEP	BOM/Immo /	data .				
(i)	-	Tieddrivite EET	non mino e	10(0			Read	Update
-							ConfData	ConfData
Read mileage	Recalibra	ste					Load from file	Save to file
							Read Flash	
mmo Data								
D WWZZZ	26RZAY255555						Read Immo	
erial number			- Transpo	nder identificato	rs			
erial key(CS) e	537d3ffca6f01		KeylD1	ccfefc15	KeylD5	373322ff	data	
MAC 5	02f0000	Ĩ	KeylD2	6fa12713	KeylD6	fffffff		
Status 1	40000fedd		KeylD3	1ab48ef4	KeylD7	fffffff		
onfiguration 2	10106550100	01 - VW 🚬	KeylD4	f29c12be	KeylD8	fillitit	Add key	
PIN 1	2345						rise noy	
			100000 0000					Exit

Press the "Read mileage" button to read the current mileage value.

Press the "Read EEPROM" and "Write EEPROM" to read or write the EEPROM data.

Press the "Read Immo data" button to read the immobilizer data

After you have read the immobilizer data you can modify and write it by using the "Write Immo data" button.

After reading the immobilizer data you could add a new key. Pressing the "Add key" button will prepare a dealer key. Then add it to the immo data and write the new immo data to the immobilizer.

# 2.5.1.5 Special functions with "A8 (4H)/ A7(4G)/ A6(4G)/ Touareg(7P) UDS dashboard with 95320 EEPROM"

The "A8 (4H)/ A7(4G)/ A6(4G)/ Touareg(7P) UDS dashboard with 95320 EEPROM" special function is dedicated to the A8 (4H)/ A7(4G)/ A6(4G)/ Touareg(7P) instrument clusters with a 95320 EEPROM and UDS diagnostic protocol.

After starting this function you will see the following dialog box.

ABRITES Diagnostics FOR VAG USER MANUAL for software version: 20.0 number 2/20071127

3(4H)/A7(4G	i)/A(	5(4G	)/To	uar	eg(7	P) U	DS	dasł	nboa	ard 9	9532	20							×
00000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••		
00000010	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••		
00000020	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		De la Comp	
00000030	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		Read ConfData	Load Dump
00000040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			,
00000050	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
00000060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Modify Dump
00000070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		Hadata Carl Data	modily bump
08000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		Update ConfData	
00000090	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
0A00000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
000000B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
000000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
000000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Save Dump
000000E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		– Mileage –	
000000F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		mileage	
00000100	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Bead mileage
00000110	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		mileage	ricau illieaye
00000120	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		0	
00000130	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
00000140	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Recalibrate mileage
00000150	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••		-
00000160	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••		
•																	4		<b>X</b> Exit

Press the "Read mileage" button to read the current mileage value. Press the "Read EEPROM" button to read the EEPROM. Press the "Write EEPROM" button to write the EEPROM. The last two functions are performed with the help of an ABPROG.

### 2.5.2 **Special functions with "EZS Kessy CAN"**

When you select this function the "Abrites Diagnostics for VAG" tries to establish a diagnostic session with the "EZS-Kessy / Entry And Start Authorization" using KWP2000 over TP 2.0.

ABRITES Diagnostics FOR VAG USER MANUAL for software version: 20.0 number 2/20071127 Document

EZS-Kessy for Q7/A6/Allroad		×
Component security:		
• Get component security from Engine	Control Unit (ECU)	
Component protection bytes	ad 32 df ad a3 3d	
	Autodetect	from engine (ECU)
PIN (Login) code: 2	23242	
O Get component security from EZS-K	essy EEPROM dump	
• Get component security from EZS-Ke (Irequires to give ignition ON with wo	rking key) Load from EZS-Kessy by OBDII	Help
Learn keys		
Number of keys to learn:	s Make dealer key VIN:	Read
EZS EEPROM		
00000000 24 68 10 02 00 10 FT	) BO FF FF 01 FF 36 33 36 37 \$h6367	
00000010 31 33 30 30 32 36 30	) 30 31 31 FF FF 37 33 38 37 13002600117387	Read EEPROM
00000020 30 33 30 30 30 34 30	) 36 30 31 FF FF 31 30 30 38 03000406011008	
00000030 34 31 32 31 31 31 35	5 30 30 30 39 30 33 31 30 34 4121115000903104	
00000040 34 32 34 37 35 FF FF	7 FF 35 30 2E 31 31 2E 38 32 4247550.11.82	Write EEPROM
	5 5A 5A 5A 34 46 58 36 34 31 3201WAU2224FX641	
00000000 32 31 31 33 31 FF FF	' FF II 28 23 IU 34 46 30 39 21131(#.4809	
	20 30 32 32 30 00 01 01 00 10032 0220 2 36 28 30 32 28 30 37 88 88 0 [126 02 07	Source for file
00000000 34 46 30 39 30 35 38	3 35 32 42 20 20 20 33 31 FF 4F0905852B 31.	Save to file
000000A0 FF FF FF FF FF FF FF	F FF FF FF FF FF FF FF FF FF	
000000B0 33 30 35 32 31 30 30	39 33 31 38 31 32 31 35 30 3052100931812150	✓ Load from file
•		
		Exit

This special function is dedicated to the Q7/ A6/ Allroad models and provides the following functions:

- Key learning. In most cases it requires a pre-programmed key (one using VIN) which can normally be purchased from a VW / Audi dealership. This function can also be performed without a dealer key, however you will be required to create a dealer key. You can do that with the Abrites dealer key special function and a programmer.

- Read the EZS Kessy EEPROM (2KB)

- Write the EZS Kessy EEPROM (2KB) containing the PIN, component security and ECU synchronization.

- Change the VIN inside the EZS Kessy EEPROM.

- Program a blank key, so that it becomes a dealer key.

**IMPORTANT:** In order to perform any functions with the EZS-Kessy you need to have one of the following:

- The login (PIN) of the car and the first 6 bytes of the component security. The component security is normally 7 bytes, however the 7<sup>th</sup> byte is not required. The login

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and component security bytes can normally be read from the ECU. This applies for all cars with EDC16x/ MED9x/ ME7x/ EDC17/ MED17 ECUs. You can read the login and component security using the "Engine control unit" special function or from a decoded EEPROM dump using a programmer. It is also possible for the software to read all this information automatically when you press the "Autodetect" button.

In this case the software will connect to the ECU and read the component security and login filling the required fields automatically.

- It is possible that the component security cannot be read from the ECU. In such cases you can use the car's working key (provided you have one) and obtain the component security and PIN from it. This is done using the "Get component security from EZS-Kessy by OBDII" function.

If the car has no working key you will need to open the EZS Kessy and read its EEPROM with a programmer. Then you have to select "Get component security from EZS Kessy" and load the EZS Kessy dump. Once that is done you can learn or create a dealer key.

IMPORTANT: Provided that the car has no working key and you can not turn the ignition ON in order to get the ECU to communicate you will need to short the fuses as described in the appendix.

After obtaining the component security bytes you can restore the fuses.

IMPORTANT: If the car has no working key communication with the EZS is only possible if you press the brake pedal.

NOTE: In order to perform any functions with the EZS Kessy you will need to input the login and the component security bytes, or to load the EZS Kessy from the EEPROM dump, or to get the component security by OBDII from EZS Kessy. If that is not done any attempts to perform any actions will result in an error.

#### 2.5.2.1 Learning keys with EZS-Kessy

In order to learn a key for the EZS Kessy you need to have the login and the component security bytes (as described above) and to specify the number of keys which are to be learned. Once you have that you need to select the "Learn" button and the keys will be learned. Key learning is done with dealer keys. They can be obtained at a VW / Audi dealer or can be made if you have the respective key programmer.

#### 2.5.2.2 Reading and changing VIN

In order to read or write the EZS Kessy VIN you need to have the login and the component security component bytes (as described above). Once you have that you can use the "read"/ "write" buttons to change the VIN.

#### 2.5.2.3 Reading / Writing EEPROM

ATTENTION: It is now possible to write areas \$100 to \$15F. In order to be able to write this area you need to have a working key. This is the area, that contains the Immobilizer data. Please be very careful when performing modifications here, because modifying some areas of the immobilizer data might lead to the car not being able to start because it will not be able to recognize the key (this is very much so in the component security range between \$100 and \$123). Another thing is that if you modify this area and have the error above it will not be writable again due to the lack of a working key. Should such events occur you will have to create and learn a new key to the car in order to restore the ability to write this section again. There are a few ways you could approach this situation:

- You can learn a brand new transponder.

- You can unlock the original key, make it a dealer key and learn it again, making the area writable again.

#### 2.5.2.4 Programming a blank key so that it becomes a dealer key

First you need to input the login and the component security bytes (as described above). After that you need to press the "Make dealer key" button. At this point you should have a blank key inside the key programmer and the ABRITES Diagnostics should be connected to the car. A few seconds later you should have a dealer key ready. Then you can learn the key by selecting the "Learn" button.

#### 2.5.3 Special functions with "BCM2 A4/ A5/ Q5.

This special function is dedicated to key leaning for the vehicles equipped with the so called BCM2.

Normally these are the A4/ A5/ Q5 vehicles produced after the year 2007 and also A6/ A7/ A8 produced after 2010 and Touareg produced after 2010.

Once you start the special function you need to select the model.
ABRITES Commander for VAG	
Select car type	
⊂ Audi A4/A5/Q5	
Audi A6/A7/A8 or VW Touareg	
ATTENTION: Strongly recommend to have a working key from the car. If you don't have a working key and want to add new key, the new one will be learnt, but it is not sure that it will start the car! Please first put working key in programmer and press 'Read working key'	Read working key
< Back Next >	Exit

The models are divided in two general groups:

- Audi A4/ A5/ Q5 – for this group it is not necessary to have a working key.

- Audi A6/ A7/ A8/ VW Touareg – this group requires to have a working key (a key, purchased from a dealer is also an option). If you would like to learn a blank key it is necessary to place the working key in the programmer and press the "Read working key" option. If you plan on relearning existing keys or learn a key, purchased from a dealer (i.e. without programming blank keys) it is not necessary to press the "Read working key" option.

After the model selection is complete the procedure is identical for both groups:

Step 1: Che	ck BCM type			
Connecting to EZS-Kessy/Entry A	And Start Aut	orization OK		
Reading identification VAG I	N: 8K090706	4DP SW0327		
Key count: 1				
Key authenticated: Yes				
Key locked: Yes				
Key <mark>learned: Yes</mark>				
• Learn keys in BCM2 completel	y by OBDII			
C Learn keys in BCM2 using pro	grammer (wi	th ABPROG)		
C Alarm OFF				
C Alarm ON				
C Re-adapt BCM2 module to diffe	erent vehicle			
Change mileage in key				
		< Rook	Mouts	E.a.

The special function offers the following options:

Making keys for these vehicles requires to read the BCM2 module. In general the procedure is split into three steps:

Step 1: Check BCM type.

Step 2: Read BCM (either by OBDII or with an ABPROG)

Step 3: Key learning procedure (making dealer keys or learning keys)

# 2.5.3.1 Read BCM2 by OBDII.

This option will read the BCM2 by OBDII.

If all keys are lost you will see the message below. At that time you should disconnect the BCM2 module from the power supply for around 2-3 seconds and then reconnect it again. After doing that you should select the "OK" button. If there is a valid key and the ignition is ON you do not have to disconnect the BCM2 module from the power supply.

ABRITES Commander fo	r VAG
	Read BCM by OBDII
Connecting to im Disabling securit Entering into ser	mobilizer OK y OK vice mode OK
DISCONNECT BO FOR 2-3 SECONI	CM MODULE FROM POWER SUPPLY DS AND RECONNECT AGAIN
	BCM Reconnect
	DISCONNECT BCM MODULE FROM POWER SUPPLY FOR 2-3 SECONDS AND RECONNECT AGAIN
	ОК
	< Back Next > Exit

After the reading is finished the existing key count, power class and VIN are displayed and you can proceed to learning the key.

ABRITES Commander for VAG	
Read BCM by OBDII	
Connecting to immobilizer OK Disabling security OK	
Entering into service mode OK	
DISCONNECT BCM MODULE FROM POWER FOR 2-3 SECONDS AND RECONNECT AGAIN	SUPPLY N
Trying to reconnect to BCM OK Disabling security OK	
Transfer data OK Decoding data: OK VIN: WAUZZZ8T48A123456	
Key count: 1 Power class: 79	
BCM2 read with SUCCESS	
	< Back Next > Exit

# 2.5.3.2 Read BCM2 with ABPROG

If you select to read the BCM2 with the ABPROG programmer, you need to solder 6 wires on the module's PCB, and you should temporary remove one resistance (after reading is finished, restore the resistance). There is also a wiring diagram applied. The wiring diagram is located in the program folder too.

								Ste	p 2	: F	Rea	dE	BC	Mn	nic	roc	ontroller with A	BPI	RO	G
00000000 00000020 00000030 00000040 00000050 00000050 00000070 00000080 00000080 00000080	00 38 38 2D 32 32 32 01 40 F0 1F	00 4B 30 2D 07 20 32 4C DA	00 30 38 2E 40 02 A8 B8 C7	00 39 4B 2D 01 01 E0 CE 2A 91	00 30 30 2D 40 62 CC D7 6B	00 37 39 2E 00 00 FF 09 09 83	00 30 30 2D 78 78 FF CF F2 5B	00 36 37 2D CF FF DB FA 47	00 70 34 30 00 32 01 FF FE 67 0F	00 41 36 00 7 3A FF 64 0A 52	00 FF 45 34 00 40 0E FF F2 A5 7E	00 FF 30 41 00 01 20 FF 71 A4 4D	00 FF 31 45 00 40 20 FF D9 9A 01	00 FF 34 00 00 39 FF DE F4 66	00 FF 35 A0 FF 78 30 FF B0 14 26	00 FF 48 9E FF CF 81 FF 79 12 28				Read BCM2 (ABPROG should be connected) BCM2 connection diagram
<ul> <li>Initializir</li> <li>Communication</li> <li>Reading</li> </ul>	ng / nic	AB atii CM	PR ng	wit	) th E	OBCI	K M2		0	K OK								Þ		Load BUM2 dump
Decodin VIN: V Key co	y NA Dui	dat UZ nt:	a: ZZ 1	BK	DK 39A Po	11 we	21: r c	22 as	s: (	əc										

If the BCM2 module is read OK, you will see the VIN number, the existing key count and the power class.

# 2.5.3.3 Key-learning procedure

Once the BCM2 module is read, you can make as many dealer keys as you want. A brand new key is needed for the dealer key. Such a key can be made as a dealer key several times, but if you learn this dealer key to the car, it is locked during the key-learning procedure and cannot be used on other cars.

Once you have the required count of pre-coded dealer keys, you can learn them. Also the original keys should be learned in this step, otherwise they will no longer function.

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ABRITES Commander for VAG			
Step 3: Le	arn key		
Number of keys to learn:	2	Learn keys	Make dealer key
Key count: 1 Key authenticated: Yes Key learned: Yes Key locked: Yes			

# 2.5.3.4 Alarm OFF

This option is dedicated to a case where there are no keys for the particular car. If there is an alarm

installed, after unlocking the driver's door, the alarm will be set off in 15sec. If in the meantime you activate this function, the alarm will not start. Then you could unlock all doors by unlocking the driver's door once again. Some vehicles do not have an alarm installed and after opening the driver's door, all doors are unlocked.

# 2.5.3.5 Alarm ON

After the alarm is disabled and a new key is learned to the car, it is recommended to restore the alarm using this option.

# 2.5.4 Special functions with "instrument K-Line"

When you open this function the following window appears:

nent

hoose IPC type:	Instrument Cluster (VDO66,VDO86,Motometer)		3
0000000 00 0	Instrument Cluster ( VDO66.VDO86.Motometer )	Read	
0000010 00 0	VW LT Immobilizer		Load from file
0000020 00 0	Immobilizer box VW GOL		-
0000030 00 0	White immobilizer box Audi A4/A6/A8	10022010	
0000040 00 0	Black immobilizer box Siemens 6 PIN HC05 (Immo1)	Write	
0000050 00 0	Black immobilizer box Siemens 6 PIN HC05 - 2400 (Immo1)		Save to file
0000080 00 0	Black immobilizer box Siemens 6 PIN TMS (Immo1)	1	Ĩ.
0000080 00 0	Instrument Cluster Audi A4 B5 with Board Computer (-1997)	Bead	-
0000090 00 0	Instrument Cluster Audi AA B5 without Board Computer (-1997)	ROM/Flash	Resei ECI
0 00 CA00000	Instrument Cluster Audi A8 (-10 1996)		
0000080 00 0	Instrument Cluster Audi A8 (11 1006.)		20
0000000 00 0	Instrument Cluster Audi AC [11.1550]	Waterstein 12	
0000000 00 0	Instrument Cluster Mana Marshi Marshi Chaday 1	Vigin Hactory	
0000020 00 0	Instrument Cluster Magneti Mareli - Snadow I	(NEW)	
0000100 00 0	Instrument Cluster Magneti Mareli - Shadow 2 (Passat)		
0000110 00 0	Instrument Cluster Magneti Mareli - Shadow 3 [11]	Login	
0000120 00 0	Instrument Cluster Mangeti Mareli - Direct 1996-2000	Mileage:	
0000130 00 0	Instrument Cluster Mangeti Mareli – Direct 2000+		
0000140 00 0	Instrument Cluster Sharan/Galaxy up to year 2000	0	
0000150 00 0	Instrument Cluster Audi A4 BOSCH RB4 CRYPTO 2001+		
0000130 00 0	Instrument Cluster VW Golf4 BOSCH RB×		
0000180 00 0	Instrument Cluster Audi A4 BOSCH RBx		
0000190 00 0	VW Phaeton/Touareg.Bentley Continental, Porsche Cayenne		
00001A0 00 0	Instrument Cluster Audi A4 BOSCH RB8 CRYPTO 2004+		
0000180 00 0	Instrument Cluster Laborghini Gallardo -2005		
बा	Instrument Cluster Laborghini Gallardo 2005+		nea responses

From this dialog box you will need to choose your instrument cluster type or the immobilizer and then you could read/ write the EEPROM (read mileage, PIN etc.) Please be informed that the special function will only establish a connection via K-line (KWP1281 or KWP2000) and this does not depend on the configuration options.

# ATTENTION: All read EEPROM dumps will be stored in the "Dumps" sub folder of the Abrites Diagnostics for VAG so you could restore the EEPROM in case of any unwanted changes.

Automatic parsing of data from the EEPROM (mileage and immobilizer) is implemented for most instrument clusters.

For instrument clusters from Magneti Marelli please refer to Appendix A.

If a connection to the Motometer instrument is not successful please send the text file "motometers.txt" to the following e-mail address: <u>moto@abritus72.com</u> and the instrument will be added to the database within a three business day period. The latest Motometer database is available at <u>www.abritus72.com/mmdata.bin</u>.



NOTE: Sometimes if you try accessing the instrument cluster by selecting the wrong type of cluster from the dialog, the cluster may block or reject future diagnostic requests until it is reset by disconnecting the power supply either from the battery or the fuse. For example this is a common issue which appears always with the Bosch clusters being blocked when being accessed as "Instrument cluster (VDO66, VDO86, Motometer)"

NOTE: Please be very careful when selecting "Instrument Cluster Audi A4 BOSCH RB4 CRYPTO 2001+" and "Instrument Cluster Audi A4 BOSCH RBx" instruments. You will be able to read the EEPROM of the instrument no matter which of both types is selected, but if you've chosen the wrong type and you try to make some changes, you can damage it. You can recognize whether the right type is selected by doing the following: 1.Choose "Instrument Cluster Audi A4 BOSCH RBx"

2.Read the EEPROM

3.If the displayed mileage corresponds to the real value, and if the displayed login is accepted, then the type is "Instrument Cluster Audi A4 BOSCH RBx", otherwise it is "Instrument Cluster Audi A4 BOSCH RB4 CRYPTO 2001+"

NOTE: When reading the RB8 EEPROM the device is put into service mode and "L0 x-y" is

displayed. If by any reason the instrument leaves in this situation (e.g. if your laptop goes

off due flat battery, or you disconnect the interface from the car, or the car battery is flat), you need to read the RB8 instrument EEPROM, and change the immobilizer status to 6.

# 2.5.4.1 Transferring keys from one RB8 instrument to another

Starting with a V5.2 of the ABRITES Diagnostics for VAG onwards it is possible to transfer the keys from

one instrument to another. After reading the RB8 EEPROM there are two additional buttons: "Read keys" and "Write keys".

strument (	lus	ter/	Imn	nobi	ilize	r (K	)													
Choose IPC	type	-	nst	run	nen	t Cl	ust	er A	۱udi	Α4	BC	sc	ΗF	<b>8</b> 8	CF	ΙYΡ	TO 2004+	•	Bead	<b>7</b>
0000000	<b>C</b> 1	C7	20	2B	62	BD	A7	2B	1C	A8	0F	F2	3A	50	46	E8	+b+:PF.		noda	Load from file
00000010	00	2E	17	00	00	00	00	00	00	00	00	00	00	00	00	FF				
0000020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF				
0000030	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF				
0000040	01	01	31	E3	F3	01	5F	05	5F	3F	30	5D	42	В9	25	90	1?0]B.%.		Write	
0000050	00	01	B2	C4	50	95	71	24	FA	0D	Α4	FB	51	E3	70	00	P.q\$Q.p.			Save to file
0000060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000080	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Read	Report EC
0000090	00	00	32	00	00	00	00	00	32	00	32	00	00	32	00	00	2222		ROM/Flash	HESELLU
0A00000	00	32	00	32	32	00	32	32	32	32	32	32	00	00	00	32	.2.22.2222222			
00000B0	00	00	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	00	00				
00000D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Reset Comp.	Repair RB
00000E0	15	04	03	0D	11	00	64	03	1E	00	80	50	00	14	00	80	dP		Security	DEF
00000F0	80	01	00	00	44	7A	00	00	00	00	00	00	00	00	00	00	Dz			
0000100	5C	78	10	2B	D2	D4	CF	01	Ε4	3E	B0	64	01	44	6D	46	\x.+>.d.DmF		Login 21	551
0000110	54	C6	9D	43	72	ED	60	FO	AB	97	A9	56	28	A6	79	9A.	TCr.`V(.y.		2 21	551
0000120	00	01	B9	82	FC	01	2B	3F	2D	43	68	7E	53	5B	DO	61	+?-Ch~S[.a		Mileage:	
0000130	FB	10	9E	78	9C	3C	5F	03	A4	36	4E	01	AD	08	70	00	x.<6Np.		5000	
0000140	FD	17	00	00	00	00	00	00	00	00	00	00	00	00	00	00			5320	
0000150	57	41	55	5A	5A	5A	38	45	35	35	41	34	35	37	33	39	WAUZZZ8E55555739			
0000160	39	00	01	00	BA	00	96	00	74	00	5D	00	DA	02	6D	01	9t.]m.		Immo Status:	~
0000170	01	00	00	00	00	00	00	00	00	80	FF	7E	00	00	02	01			6	Lhange
0000180	00	4A	9B	FF	FF	14	3B	00	00	00	32	46	50	73	7B	82	.J;2FPs{.			
0000190	00	16	20	20	46	5A	00	00	00	00	00	38	FF	00	00	00	FZ8			
00001A0	00	00	00	93	63	OF.	1E	00	00	00	00	00	00	9B	E.E.	F.F.			Bead keys	Write keus
00001B0	45	04	80	9A	OF	FF	06	FF	04	OF	FF	1F	FF	30	30	87	E00.	Ţ	nedd Reys	The Rey
																		•	Skip i	neg. responses
																				×
38 Crypto d	ata r	ead.																		
																				Exit

In order to transfer the keys you already have you have to first read the EEPROM of the source instrument and then by pressing the "Read keys" button you save them into a file. Once you do that you need to go to the destination instrument, read its EEPROM and then after pressing the "Write keys" button you will be prompted to show the location where the source keys were read and saved. After selecting the file you will be asked to specify what information you would like to transfer from the source instrument to the destination one.



- "Transfer learned key IDs" - these are the fixed code identifiers. If you do not transfer them you will need to perform key learning on the new dashboard.

- "Transfer learned key count" - transfer the amount of keys learned.

- "Transfer component protection data" - this transfers the key variable code. Without this the

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keys are not recognized and cannot be learned. Please note that in order to start the engine you need to adjust the component protection data in the ECU too. - "Transfer login" - transfers the car's login.

NOTE: There are two types of RB8 instrument clusters – those that have a 7 bytes component protection and those that have a 12 bytes one. The procedure above is valid for the 12 byte component protection versions. Almost all RB8 Instrument clusters have a 12 byte component protection. Those that have a 7 byte component protection are mainly found in A4 gasoline models; however the RS4 is also a 12 byte component protection car.

#### 2.5.4.2 Exchanging RB8 Instrument

If you want to install a used RB8 instrument into a car, you have to to synchronize the ECU and the RB8 instrument. To do that you need to read the ECU component protection data and the ECU MAC. Then after reading the RB8 instrument a button "Reset Comp. Security" will be available. After pressing this button the following dialog will appear. All you have to do here is to input the component security and MAC of the ECU.

ompone	nt sec	urity d	ata					×
OId CS:	AD	41	6E	88	5A	82	OK	
New CS:	AD	41	6E	8B	54	82	Cance	:1
MA	C — Old MA	C: []	1	22 3	13 4	14		
	New M	AC: P	28	5A [3	86			

NOTE: There are two types of RB8 instrument clusters – those that have a 7 bytes component protection and those that have a 12 bytes one. The procedure above is valid for the 12 byte component protection versions. Almost all RB8 Instrument clusters have a 12 byte component protection. Those that have a 7 byte component protection are mainly found in A4 gasoline models; however the RS4 is also a 12 byte component protection car.

#### 2.5.4.3 Removing RB8/RB4 "DEF" error

When you select the ICP type of "Instrument Cluster Audi A4 BOSCH RB8 CRYPTO 2004+" or "Instrument Cluster Audi A4 BOSCH RB4 CRYPTO 2001+", a button "Repair RB8 DEF" ("Repair RB4 DEF" respectively) will appear. Pressing this button you will initiate the procedure of removing the "DEF" string from the dashboard display.

NOTE: It is recommended that you read and save the dashboards EERPOM and to make a note of the dashboard's "Login" code before starting the procedure.

Choose IPC	type:		nst	run	nen	t Cl	ust	er A	udi	A4	BC	osc	H F	<b>B</b> 8	CR	YP	TO 2004+ 📃 🔻	•	Devel	3
00000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		-	nead	Land Long B
00000010	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				Load from fil
00000020	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				[
00000030	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00000040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Write	
00000050	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				Savetotie
00000060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00000070	00	00	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	00	00			Read	Den CO
00000090	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			FIGM/Fibrit	FiesetEL
04000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00000080	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				L
00000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				-
000000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Reset Comp	Repair RB
000000E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Security	DEF
000000F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00000100	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Login In	
00000110	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Login 10	
00000120	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Mileager	
00000130	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			inite age.	
00000140	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			U.	
00000150	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00000160	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00000170	00	00	00	00	00	0.0	00	00	00	00	00	00	00	00	00	00				
00000180	00	00	00	00	00	00	00	00	0.0	00	00	00	00	00	00	00		-		
00000190	00	00	00	00	00	00	00	00	00	00	00	00	0.0	00	00	00				
000001A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
000001B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
11																		-		
																			Ц экр	neg. responses
																				X

#### - Repair RB8 DEF:

During this procedure the software will read and write the EEPROM memory to the dashboard several times. It is normal for the dashboard to display a string saying "Error" during the time the procedure is in progress.

After writing the fixed EEPROM to the dashboard the software will try to automatically adapt the dashboard to the vehicle. (i.e. performing adaptation on channel 50). In order for this to be performed there will be a requirement for you to input a security access login. The login code needed is 13861. In most cases dashboards are not ready for the security access login right away and you will need to wait a little. The software will then ask you if it is to complete the procedure automatically or if you would like to do this yourself manually.

If you select the automatic manner once the waiting time is over the software will automatically adapt the new dashboard's security code to channel 50 and will then ask you if you would like to transfer the old keys or if you would like to learn a new set using the "Key learning" special function. Depending on your choice the software will transfer the keys or not and complete the procedure.

If you choose to complete the procedure manually you will have to wait some time with the key in the "ON" position in the ignition, then connect to the instrument cluster through standard diagnostics, perform the security access (Login) with the 13861 login code and then adapt the dashboard's access code on channel 50. After doing this you need to learn new keys using the "Key learning" special function.

Repair RB4 DEF:

During this procedure the software will read, modify and write the EEPROM memory to the dashboard.

After the fixed EEPROM is written to the dashboard the software will try to automatically adapt the dashboard to the vehicle (i.e. to perform adaptation on channel 50). In order to do this,

a security access (login) is needed with a login code 13861. In most cases the dashboard will not be ready for the security access right away so it might be needed to wait some time. The software will ask you whether you would like to wait and let it finish the procedure automatically or you would like to choose to cancel the procedure and finish it manually.

If you choose the automatic manner, when the waiting finishes the dashboard will allow you to login. The software will automatically adapt the dashboard's security access code at channel 50. If you choose to finish the procedure manually you have to wait for some time with the Ignition in the ON position, then connect to the Instrument cluster through standard diagnostics, perform security access (Login) with ogin code 13861 and then perform adaptation of the dashboards security access code on channel 50.

After the procedure finishes you have to learn all keys using the "Key learning" special function.

#### 2.5.5 Special functions with "Engine Control Unit"

The "Engine Control Unit" special function provides the following options:

-Read/Write of the flash memory.

-Read/Write the flash counters.

-Read/Write EEPROM.

-Extracting security code/ PIN.

-Immobilizer Enable/Disable (EDC15/EDC16/ME7x).

The functions are available after pressing the button "ECU" from the special functions tab of the main dialog:

Document

pose ECU e:	ECU Autodetect	ECU type		
	ECU Autodetect		Read ConfData	
000000	VAG-EDC15×	00		Load from file.
000010	VAG-ME7.1.1/7.5/7.8 wakeup pattern 01	00		
000020	VAG-ME7.1.1/7.5/7.8 wakeup pattern 11	00		· · · · · · · · · · · · · · · · · · ·
000030	Porsche 5.2/7.8	00	THE SECOND	
000040	EDC16U1	00	ConfData	
0000050	EDC16U31	00		Save to file.
000070	EDC16U34	00		
000080	EDC16CP/EDC16CP34	00	Login 0	
000090	EDC16CP34 Master	00	cogin	
040000	EDC16CP34 Slave	00	Milesee	
000080	EDC16C4 Master	00	Mileage.	
0000000	EDC16C4 Slave	00	U	
0000E0	EDC16U1 Master	00		
0000F0	EDCIGUI Plane	00		<u>.</u>
000100	EDCIDUI SIAVE	00	Immo ON	Immo OFF
000110	EDUIDUSI Master	00	101.000.0000	
000120	EDUI6031 Slave	00		÷
000130	EDC17	00	Flash counter	1
000150	MED17	00	Att 0 Suc 0	Road Class
000160	MED 9.5.10	00	Elash tool ID:	neau nas
000170	MED 9.1 Master	00	riash tool iD.	
000180	MED 9.1 Slave	00		
000190	MED 9.1 Single	00		1 DEALER
0001A0	SIMOS PPD 1.1/1.5 (Siemens)	00	Read Updat	e Update Fla
OCOIDO	SIMOS 7.1 (Siemens)	•		(2)
		•		

IMPORTANT: You need to specify the type of Engine Control Unit in the car before proceeding! There is also an "Auto detect function" implemented which will detect the ECU type in almost all cases, however it is possible that it is wrong and then you need to select the type manually.

You can choose the ECU type – VAG- EDC15x, VAG – ME7.1.1/7.5/7.8, Porsche 5.2/7.8 BOSCH VAG-EDC15x, VAG-ME7.1.1, VAG-ME7.1, VAG-ME7.5, VAG-Cartronic ME7.8, EDC16U1, EDC16U3x/CP, etc. (Extracting security code, enable disable immobilizer etc.)

The example shows: 1.9 TDI – EDC16

hoose ECU /pe:	E	DC	160	31											•		ECU type help		Read ConfData	6
00000000	01 FF 18	25 FF	E5 31	AE 38	38 2D	FF 30	FF 31	31 2D	35 30	2D 37	30 08	31 10 38	2D 14 32	30 80 30	37 03 38	FF 82	.%815-01-07. 18-01-07	A		Load from file.
00000030	41	03	2F 03	2F 37	31 37	30 31	33 31	37 32	33 33	37 30	37 33	31 47	35 39	30	EF 36	CA 30	A.//1037377150 77112303G9060		Update	
)0000050 )0000060	32 37	31 37	41 31	4E 30	20 34	00 33	00 30	7F 33	E4 47	B0 39	07 30	D0 36	00 30	00 32	F9 31	4B 4B	21ANK 77 <mark>104303G906021K</mark>		ConfData	Save to file
0000070	48 20	20	52 20	34	20	31 20	2C 39	39 32	4C 34	20 35	45 03	44	43	20 48	20	20	H R4 1,9L EDC 9245H		Login 52698	-
00000090 000000000000000	00 37	00	00	30	34	33	EEPF	ROM	me	mo	oo ry da	ata	30	1A 32	F7 31	6B 4B	77104303G906021K		Mileage:	î
000000B0	20	20	20	20	20	20	39	39	4C 34	35	45	44 00	43	48 17	00	20 00	9245H		11111	Recalibrate
000000E0	24 5A	F3 30	C5 47	72 37	49	E7 33	8A 31	CD 31	DA 31	00	00	00 E5	56 70	57 1B	5A F5	37 70	\$rIVWZ7 Z0G7031111pp			1
0000100	24 5A	F3 30	C5 47	72 37	49 30	E7 33	8A 31	CD 31	DA 31	00 31	00	00 E5	56 70	57 1B	5A F5	37 70	\$rIVWZ7 Z0G7031111pp		Immo ON	Immo OFF
)0000120 )0000130	24 5A	F3 30	C5 47	72 37	49 30	E7 33	8A 31	CD 31	DA 31	00 31	00 00	00 E5	56 70	57 1B	5A F5	37 70	\$rIVWZ7 Z0G7031111pp		Flash counter	
)0000140 )0000150	07	A4 31	F1 31	9A 31	F9 31	57 31	56 73	57	5A 00	5A 01	5A B7	31	4B 00	5A 0E	37 F6	50 FE	WVWZZZ1KZ7P 111111s		Att 0 Suc 0	Read Flas
0000160	31	A4 31	11 31	9A 31	19 31	31	56 73	57 00	5A 00	5A 01	5A B7	00	4B 00	5A OE	37 F6	FE 00	WVWZZZ1KZ7P 111111s		Flash tool ID:	
0000190	01 FF	00 77	FF	FF	FF FF	FF FF	FF	FF	THE	FF	FF	FF	FF	FF	FF 7A	FF				Lindate Fla
)00001B0	00	00	FF	FF	01	61	01	5E	68	88	a.^h.	•	Read Update							
																	,			

HINTS when reading/writing EEPROM memory of ECUs:

1. The whole EEPROM could be read for EDC15/ME7/EDC16. For MED9, EDC17 and Simos engine control units only the PIN/CS/MAC is displayed.

2. To read the EDC17/MED17 PIN/CS/MAC is required to have internet connection!!!

3. If you experience problems with reading ME7.x EEPROM it is better to remove fuse 11 and fuse 15 to prevent disturbing of communication from the instrument cluster and try again.

HINTS when reading/writing flash memories of ECUs (or changing flash counters):

1. In case of EDC15 the best advice is to remove fuse 11 and fuse 15 to prevent disturbing of communication from the instrument cluster.

At a certain point during reading/writing flash memory of the EDC15 ECU, you will see "Trying gateway options..." written on the status line at the bottom of the "Engine Control Unit" window. Turn the ignition OFF and ON at this point.

2. In case of ME7.x or ECUs from Porsche you can read the flash memory as if you are reading the EEPROM – the only difference is that you need to uncheck the checkbox for automatic detection of EEPROM and put the corresponding start address and length.

If you experience problems with reading ME7.x memory it is better to remove fuse 11 and fuse

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15 to prevent disturbing of communication from the instrument cluster and try again.

When flashing the device please always read and save first the original flash!
 When using EDC16 please note that the flash which was read is saved automatically in the "Flash" subfolder and can be used in case of failure to restore the flash.

ATTENTION: FILE IS CRYPTED!!! Don't use it directly to write flash! In case of failure during the flashing the device should enter into a boot-loader mode which will allow you to flash the device (but not to read it). The flash can be then restored with the "Custom Read/Write" function.

5. Please, stop all screen savers/power saving options and unused application during the flashing! Please do not do anything else on your PC while flashing.

6. Please, take into account that the reading/writing of the flash will take a long time (especially when CAN connection is used) – as result the battery may go flat.

# 2.5.6 Special functions "Component protection"

As part of the security strategy, some parts of the modules build in the VAG vehicles, implement the so called "component protection". This is a mechanism dedicated to prevent exchange of modules between different vehicles without central authorization from the VAG online database. Such modules placed in another vehicle activates the "component protection active" DTC and have restricted functionality. This special function allows to remove this "component protection active" active" trouble code and allows the module to work with its full functionality.

The component protection is first implemented in the A8 2003+ and in the A6 2004+ vehicles. Component security is not implemented in all VAG vehicles.

There are actually two types of component protection – generation 1 and generation 2. Component protection generation 1 is implemented in the A8 2003+ vehicles, while the A6/Q7/Allroad 2004+ use component protection generation 2 for most of the modules, and very few modules use component protection generation 1.

In the beginning you have to select which generation want to use:



# 2.5.6.1 Component protection generation 1

For the "Component protection - generation 1" you have to select the module which want to adapt:

)7 - Control Head (MMI2G)	- Audi	A4/A5/	Q5 2008+	*
)E - Media Player 1 (MP3 CD Changer 2G)	- Audi	A4/A5/	Q5 2008+	
07 - Control Head (MMI2G)	- Audi	A6/Q7	2004-2009	
)9 - Central electric (ILM Fahrer)	- Audi	A6/Q7	2004-2009	
)E - Media Player 1 (MP3 CD Changer 2G)	- Audi	A6/Q7	2004-2009	
18 - Auxilary Heater	- Audi	A6/Q7	2004-2009	=
<pre>IF - ILM Front passenger ((ILM Beifahrer)</pre>	- Audi	A6/Q7	2004-2009	
)6 - Seat Memory Passenger	- Audi	A6/Q7	2004-2009	
36 - Memory module (driver's seat)	- Audi	A6/Q7	2004-2009	
17 - Instrument Cluster	- Audi	A8	2003-2006	
)8 - Climatronic / Auto HVAC	- Audi	A8	2003-2010	
)6 - Seat Memory Passenger	- Audi	<b>A</b> 8	2003-2010	
36 - Memory module (driver's seat)	- Audi	A8	2003-2010	7
			Load Dump	

Currently for most of the modules it is needed to read the internal EEPROM (for the MP3 CD Changer the internal flash) with a programmer first. If it is not necessary to read the flash, the "Load dump" to read flash or EEPROM will not be active and the user can proceed with the next step.

# A8 2003-2010 only

If a module for A8 2003-2010 vehicles is selected, there is one additional step. You have to connect 3 wires from the AVDI DB25 connector to the vehicles – CAN-H, CAN-L and Ground. There is a wiring diagram on exactly how to connect them. The user has to splice into the organge/green (CAN-H) and orange/brown (CAN-L) wires. Additionally the GND and +12V should also be connected. The easiest way is to disconnect a connector (e.g. the connector of the module under the driver's seat) and to place the two wires from the AVDI there. The ground of the AVDI can be connected to any metal part. There is also a picture with example on how to connect to these wires. After the wires are connected you need to press "Read component protection data".

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A ABRITES Commander for VAG	
Read A8 component protection data	
For A8 it is necessary to connect the AVDI to the internal CAN-Bus (not to the OBDII). Find orange-green (CAN-H) and orange-brown wires (CAN-L) and connect the AVDI as shown on the diagram. One easy way to connect	Read component protection data
is to disconnect one plug from the device under the drivers seet and there to put the wires as shown on the picture.	Wiring diagram
NOTE: After the component protection data are read, you should reconnect the AVDI to the OBDII before you continue	
Connecting to vehicle OK Reading	
< Back Next >	E <u>s</u> it

After the component protection data are read, you can continue with the adaptation.



# 2.5.6.2 Component protection generation 2

This special function currently works with:

- Audi A6/Q7/Allroad 2004-2008. In these cars the customer is able to adapt completely by OBDII. Without any restrictions the component protection for the airbag, instrument cluster, comfort module and EZS-Kessy can be adapted. For the remaining modules with a component protection (e.g. DSP, Climate Control) you can adapt the component protection only if you have the Gateway EEPROM dump from the car from which the replacement module is removed.
- Audi A4/A5/Q7 2007+. In these vehicles the customer is able to adapt the instrument cluster.

When the special function "Component protection generation 2" is started the system is examined and all modules with available component protection are displayed.

- 0 X A ABRITES Commander for VAG This functinality allows the customer to adapt used parts on other cars. In general this requires following steps: 1. Reset the module to virgin state. 2. Adapt the module to the vehicle you want. Checking modules for component protection... N Device Status 05 EZS-Kessy/Entry And St... Adapted to car Connecting to EZS-Kessy/Entry And Start Autorization ... OK 
 15 Airbag
 Adapted to car

 17 Instrument Cluster
 Adapted to car

 09 Central Electic
 Adapted to car
 Connecting to Airbag... OK Connecting to Instrument Cluster ... OK Connecting to Central Electic... OK Comp. Prot. N/A Connecting to Comfort module, vehicle el. System SG... OK 46 Comfort module, vehicl... Adapted to car Connecting to Memory module (driver's seet) ... Failed 08 Climatronic/Auto HVAC Adapted to car Connecting to Climatronic/Auto HVAC... OK Connecting to Auxilary Heater... Failed Connecting to Seat memory passenger... Failed Connecting to DSP... Failed Scan finished. Next> Exit < Back

From the displayed list of available modules, the customer has to select the module which they want to adapt. Then the procedure of adapting the component protection is performed in two steps:

- reset to virgin state
- learn module to the vehicle

# 2.5.6.2.1 Reset to virgin state

Reset to virgin state is performed in three ways:

- by reading the module by OBDII (available for instrument cluster, airbag, comfort module and EZS-Kessy),
- by loading the module EEPROM dump (available for airbag and EZS-Kessy)
- by loading the gateway EEPROM dump from the car from which the module is taken (where it was originally built in).

The customer has to select from the following dialog in which way they want to proceed:

Step 1.1: Reset to virgin state	
lease select how to reset to virgin state:	
By OBDII (available for EZS-Kessy, KOMBI, AIRBAG, Comf	ort module and Climatronic)
By module ConfData dump (available only for airbag, DSP EZS, etc.)	Load dump
By gateway ConfData dump (available for all devices, requires the GATEWAY ConfData dump from the car where module was originally equipped)	e Load dump
By gateway ConfData read by OBDII (available for all devices, requires the GATEWAY from the car where modul was originally equipped, to be connected in the car)	e

After selecting the operation manner another dialog with the status of the operation is displayed:



After the operation is completed the module is in a virgin state and can be adapted to any car.

# 2.5.6.2.2 Learn module to the vehicle

To learn the module to the vehicle it is necessary to have the Gateway EEPROM dump from the car on which you install this module.

A ABRITES Commander for VAG	
Step 2.1: Learn mod	ule to the vehicle
To learn the specified module to the vehicle module from the car where you want to bui	e, you need the EEPROM dump of the GATEWAY ild the module.
You can read the dump by OBDII, but this w EEPROM dump. Please specify how to pro	vill reflash the gateway, or you can load the ceed:
	reflash gateway if it is not already reflashed)
○ Load gateway EEPROM dump	Load dump
	Kext > Exit

You have the option to read the Gateway EEPROM dump manually with a programmer, or to read it by OBDII. Reading by OBDII normally takes about 3-4min, but requires a module reflash. If the gateway is once reflashed, further operations of the EEPROM reading do not need a reflash.

So the customer has the option to select whether they want to read the EEPROM dump by OBDII, or to read it with a programmer. If they select reading it by OBDII, then the next dialog displays the status of the operation.

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ABRITES Commander for VAG	
Reading gateway EEPROM by OBDI	
Connecting to CAN Gateway OK Checking EEPROM access OK Reading EEPROM OK	
Gateway EEPROM read with SUCCESS	
< Back	Next > Egit

Once the EEPROM data are read/loaded, the adaptation of the component protection is performed. Once this step is completed successfully, the module should be fully functional.



# 2.5.7 Special functions with "EDC17 and MED17 Boot"

This function is dedicated to reading/writing of the EEPROM and flash memories of the EDC17/MED17 engine control units. Here not only VAG engine control units can be read, but also engine control units from other manufacturers (such as BMW, Opel, etc.). You need to:

- connect the boot pin of the engine control unit to ground
- connect the CAN-H of the ECU to PIN6 of the AVDI OBDII Connector
- connect the CAN-L of the ECU to PIN14 of the AVDI OBDII Connector
- connect the ignition of the ECU to PIN7 of the AVDI OBDII Connector
- connect the power supply (12V and Ground) of the ECU to a power supply source
- check which microcontroller in used in the ECU (the Infineon TriCore type)
- connect a 5100hm resistance between power supply (12V) and PIN7 of the AVDI OBDII Connector

# Connection diagrams can be found in the appendix

	Read PIN/CS	Get PIN/CS from dump
	Read ConfData	Update ConfData
	Read Int. FLASH	Update Int. FLASH
	Read Ext. FLASH	Update Ext. FLASH
	Load from file	Save to file
Operation in progress, please wait Manufacturer ID: 0000182000008A02 OPT Protect: 0x10000 - 0x13fff OPT Protect: 0x14000 - 0x17fff Protection installed: YES Internal flash size: 2048 KB ConfData size: 128 KB External flash: not available		
Operation Enished with SUCCESS		

Then you should select the appropriate microcontroller and connect to it. Once connected the user has information about the flash/EEPROM size and protection, and has the ability to:

- read/write EEPROM (Dflash)
- read/write Flash (Pflash)
- Get PIN/CS/MAC for the engine control unit

		-		0	ONI	NEC.	r j												
00010140	56 00	57 00	5A 76	5A A3	5A 16	31 BB	4B B0	5A 03	41 00	57 00	30 00	31 00	31 B2	31 CC	35 4C	32 CC	VWZZZ1KZAW0111	Read PIN/CS	Get PIN/CS from dump
00010160	12	AB	DB	FE	68	EF	68	EF	D1	BC	73	00	00	00	00	00	h.hs		
0010170	00	00	00	00	00	00	00	00	12	08	00	00	DD	E0	EA	14		Read	Update
0010180	0A	00	1A	60	4B	80	00	00	B5	5B	D2	FF	22	93	C3	BO	1K[".	ConfData	ConfData
00010190	3D	09	05	44	OF	51	AB	47	15	AC	37	CF	EE	21	DA	00	=D.Q.G7!		
000101A0	57	56	57	5A	5A	5A	31	4B	5A	41	57	30	31	31	31	31	WVWZZZ1KZAW011	Read Int.	Update Int.
00101B0	31	20	20	20	20	20	20	20	20	20	20	20	20	20	20	57	1	FLASH	FLASH
0010100	56	57	5A	5A	5A	31	4B	5A	41	57	30	31	31	31	35	32	VWZZZ1KZAW0111		
00101D0	00	00	76	A3	16	BB	BO	03	00	00	00	00	B2	CC	4C	CC	v	Read Ext.	Update Ext.
00101E0	12	AB	DB	FE	68	EF	68	EF	D1	BC	73	00	00	00	00	00	h.hs	FLASH	FLASH
00101F0	00	00	00	00	00	00	00	00	12	80	00	00	DD	E0	EA	14		(	
00010200	OB	00	36	63	3A	00	00	00	31	33	48	30	32	2D	2D	2D	6c:13H02- +	Load from	Save to file
4 mm																	+	tile	
peratio	n i	n p	she	are ad v	ss, vitl	pi h S	UC	CE	ES	5									

If the user presses "Read PIN/CS" the PIN, component security and MAC will be displayed:

		-		0	CONI	NEC	T												
00010140	56 00	57 00	5A 76	5A A3	5A 16	31 BB	4B B0	5A 03	41 00	57 00	30 00	31 00	31 B2	31 CC	35 4C	32 CC	VWZZZ1KZAW0111	Read PIN/CS	Get PIN/CS from dump
0010160	00 0A	AB 00 00	00 1A	00 6C	00 4B	00 08	00	00	12 B5	08 5B	73 00 D2	00 FF	DD 22	E0 93	EA C3	14 B0	1K[".	Read ConfData	Update ConfData
0010190 00101A0	57 31	56 20	57 20	5A 20	5A 20	5A 20	31 20	4B 20	15 5A 20	41 20	57 20	30 20	31 20	31 20	31 20	31 57	WVWZZZ1KZAW011	Read Int. FLASH	Update Int. FLASH
0010100 00101D0 000101E0	00	00 AB	76 DB	A3 FE	16 68	BB	4D B0 68	03 EF	41 00 D1 12	00 BC	00 73	00	B2 00	CC 00	4C 00 FA	CC 00	h.h	Read Ext. FLASH	Update Ext. FLASH
0010200 <	0B	00	36	63	3A	00	00	00	31	33	48	30	32	2D	2D	2D	6c:13H02- +	Load from file	Save to file
peratio S: 36 6 IN: 509 IAC: A/ nmo st	7 4 90 A Di atu	n p F 6 9 F s: 1	0 6 8 6 Noi	gre iC i4 rma	ss, CE al (l	00 lea	rne	ed)	vai	t		0	к						
peratio	n f	inis	she	٩d	vit	h S	UC	CE	ESS	S									

The Immo status can be:

- Normal (learned) this is the normal operation mode of the engine control unit (i.e. adapted to the vehicle)
- Bypassed This engine control unit has an "Immo bypass" and can start no matter whether the immobilizer recognizes the engine
- Virgin This is a brand new engine control unit which was not build into a vehicle

The information about the PIN/CS/MAC can also be obtained if you have the EEPROM and Flash dumps from the engine control unit.

# 2.5.8 Special functions "Immo parts adaptation"

This special function is dedicated to adapting a virgin or to reuse a "second-hand" immobilizer parts (e.g. engine control units, immobilizer (Kessy), transmission gear box) from one vehicle to another. In general some Immo III parts (e.g. the earlier EDC16 and ME7 and all EDC15) allow to adapt parts using only a PIN code and adaptation on channel 50.

However for the VW/Seat/Skoda starting from 2007, and for Audi models starting from 2003/2004 this is not possible. This special function is dedicated exactly for these parts which

do not support the channel 50 adaptation. E.g. For engine control units this includes not only the Bosch EDC16/MED9, but also EDC17/MED17, and also Siemens VDO (Simos PPD and Simos 9.x/6.x/7.x) engine control units.

When the function is selected, the customer has to choice what part what to adapt. There are the following possibilities:

- engine control unit
- Audi A8, VW Touareg/Phaeton, Porsche Cayenne or Bentley continental immobilizer (Kessy)
- Passat B6/CC immobilizer (comfort module)
- Transmission gearbox for Audi A6/Q7/Allroad 2003+

#### 2.5.8.1 Adapting engine control units

To adapt an engine control unit to the car you need the following:

- if the engine control unit is virgin, you should only put the new CS (6 or 7 bytes) and new PIN code. You can read them from the immobilizer, or from the old ECU if it is present.
- If the engine control unit is used, you need the existing CS and PIN of this "secondhand" engine control unit, plus the new CS and new PIN code.

When starting this special function the following dialog is displayed:

Autodetect engl	ne control unit e	xisting LS/PIP	<u>.</u>				Read
Specity manually	y the existing CS	/PIN of the er	ngine cont	rol unit	 		0.0000000
CII CS					 7th byte required	not	
Old PIN	0						Write
lew immobilizer d	ata						
mmo number:							Exit
VIN:				-			
Power class:							
CS:			Î				
PIN:	0						
	4						

For EDC16/MED9/ME7/EDC17/MED17 and Simos PPD engine control units the customer can

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press "Read" directly and the old CS/PIN are displayed. If the engine control unit is a virgin state, this is automatically detected.

After the successful read of the existing data, they are filled automatically in the field below.

Please pay attention that the 7<sup>th</sup> byte of the CS is not required here.

Pressing the "Read button" will read the power class, existing PIN/CS, also VIN and immobilizer number.

(			u		1				Read
specily manual	ly the exist	ing Corri	a or the en	gine contro	n unit	1.14			
uid CS							7th by require	rte not ed	<u> </u>
OH PIN	0	-				100			Write
- 10 (M. 1-4) (L.	0								
ew immobilizer o	jata 👘								ř.
mmo number:									Exit
/IN:	WAUZ	ZZ4F85N	111222						
Power class:	92	1							
CS:	14	C8	5F	CA	29	90	0		
PIN:	65116				-				

Also after successful reading the fields for the CS/PIN, VIN and Immo-number will become active and the customer may specify the values they want. Please pay attention that the "power class" for the engine control unit is displayed. This is a very important value which is stored inside the engine control flash and cannot be changed. This value should be the same for the engine control unit and the immobilizer, this means that if the old (broken) engine control unit is from one power class, and the new one is from another, the car will not start, even if the adaptation procedure was completed. The meaning of the power class value is to prevent putting one engine control unit from for example a 3.0TDI to a car with a 2.0TDI.

# 2.5.8.2 Adapting Audi A8, VW Touareg immobilizer (Kessy)

This special function is dedicated to adapt "second-hand" immobilizers from one vehicle to another. In general the earlier VW Touareg/VW Phaeton/Porsche Cayenne/Bentley continental allow to adapt the immobilizer using only PIN code and adaptation on channel 50.

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But A8 and later VW models (after 2007) require to use this special function. To adapt the immobilizer to the car you need the existing PIN and CS of the "second-hand" immobilizer. You can extract it by reading the EEPROM dump of the second-hand module, or if you have the engine control unit from the car from which you have taken the replacement (second-hand) module.

Load existing F	'IN/LS from Kessy du	mp	Load Kes dump	sy	Read
Specify manua	lly the existing CS/PIN	l of the Kessy			
Old CS				7th byte not required	Update
Old PIN:	0				
					Exit
Immo number:			1		L
ID:			-		
Power class:					
CS:					
PIN:	0				

When starting this special function the following dialog is displayed:

So you need to load the EZS-Kessy EEPROM dump, or to enter the PIN and CS of the second hand module manually.

ATTENTION: You should know the power class of the engine control unit before you execute this function! After pressing the read button, the customer has to enter the power class manually. If you enter the wrong power class and this is a working vehicle (i.e. ECU and Immobilizer are adapted), the car will stop working. It will start working again only if you put the correct power class in the beginning of the procedure. This is so because the Immobilizer (Kessy) will take the power class you enter.

ATTENTION: If you put the CS manually (i.e. you put 6 bytes of the CS) and there is a

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working key for the immobilizer (Kessy), after finishing with the reading, the Kessy will no more recognize the key. To start recognizing it again, you should put the 7<sup>th</sup> byte and press "Change".

#### 2.5.8.3 Adapting comfort module on Passat B6/CC

This special function is dedicated to adapting "second-hand" immobilizers from one vehicle to another. To adapt the immobilizer to the car you need the existing PIN and CS of the "second-hand" immobilizer. You can extract it by reading the EEPROM dump of the second-hand module, or if you have the engine control unit from the car from which you have taken the replacement (second-hand) module.

When starting this special function the following dialog is displayed:

						dump		Read
Specify manual	ly the exis	ting CS/PI	N of the co	mfort				
Old CS							7th byte not required	Update
Old PIN:	0	-						
								Exit
New immobilizer c	Jata							-
Immo number:	VWZ7	Z0G7031	111					
ID:	ww	ZZZ1KZ7K	P111111					
Power class:	FE	Ť						
CS:	24	F3	C5	72	49	E7	84	
PIN:	52698		-19					
	1							

So you need to load the Comfort module EEPROM dump, or to enter manually the PIN and CS of the second hand module.

ATTENTION: You should know the power class of the engine control unit before you execute this function! Normally the power class of the comfort module is displayed

Document

automatically if you load the comfort module dump. Then you are able to change it (if the ECU has different power class). If you enter a wrong power class and this is a working vehicle (i.e. ECU and Immobilizer are adapted), the car will stop working. It will start working again only if you put the correct power class in the beginning of the procedure. This is so because the Immobilizer (Comfort module) will take the power class you enter.

ATTENTION: After the reading is finished, any working keys will stop working and should be re-learned to make them working again.

NOTE: This special function can also be used for key-learning. If you have the comfort module dump, you can load it here and all 7 bytes of CS will be displayed. Then the customer can make a dealer key using these 7 bytes.

# 2.5.8.4 Adapting Transmission gearbox on A6/Q7/Allroad

This special function is dedicated to adapting "second-hand" transmissions from one vehicle to another. To adapt the transmission gearbox you need the existing PIN and CS of the "second-hand" gearbox. You can extract it by reading the EZS-Kessy or engine control unit from the car from which you have taken the replacement (second-hand) module. When starting this special function the following dialog is displayed:

	1147 65 110	III 6204(68	ssy damp		EZ\$-	Kessy mp		Read
Specify manua	lly the exis	ting CS/PI	N of the en	gine contro	ol unit			10. 24
Old CS	7B	99	C1	02	F7	33	7th byte not required	Write
OId PIN:	15565	2						- L-
New immobilizer	data							Exit
Power class:	51	4F 36N						lard
CS:	76	78	6D	52	26	AB		EZS-Kessy dump to
PIN:	23232	2						which to adapt
CC D 1 2	87	88	76	AD	DD	12	-	-

So you need to load the EZS-Kessy EEPROM dump, or to enter manually the PIN and CS of the second hand module.

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ATTENTION: You should know the power class of the engine control unit before you execute this function! Normally the power class of the comfort module is displayed automatically if you load EZS-Kessy dump you will be able to change it (if the ECU has different power class). If you enter wrong power class and this is a working vehicle (i.e. ECU and transmission are adapted), the car will stop working. It will start working again only if you put the correct power class in the beginning of the procedure. This is so because the transmission will take the power class you enter.

Specific for this module is that the component security is not 7 bytes, but 12 bytes. The first 6 bytes are these which you read from the ECU or the EZS, but the second 6 bytes are available only in the EZS. So you should put here the values which are displayed when you read the EZS, it is easier that you load the EZS dump for the car to which you will adapt the transmission gearbox.

# 2.5.9 Special function "Steering lock adaptation"

### This function works with a NEW steering rack ONLY or if the original is out of sync.

The window "Steering lock adaptation" can be used for adaptation of steering lock control module to the VW Touareg/Phaeton/Porsche Cayenne/Bentley Continental/Audi A8. This adaptation can be by CAN TP2.0 or K-KWP2000.

To perform this adaptation you need to know the security access code of the immobilizer and working (aligned) key from the car.

YIIG ABRITES Commander for YAG	
Procedure: Replace/align Steering column	lock using PIN.
The complete system consist of the follow	ing:
- Steering column lock control element - EZS-Kessy control module - Engine management control module (mas - Up to 8 vehicle keys	ster/slave)
Only with this the procedure 'Steering colu	ımng lock control element' can be aligned
Do you want to continue?	
Press 'NEXT' to continue, or 'EXIT' to exit	to leave the operation.
	< Back Exit
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### 2.5.10 Special function "MMI-TV configuration"

Using this special function you can change speed limit of MMI compatible vehicles to change the speed at which the TV is turned OFF.

Covered vehicles are:

- •Audi A3/S3
- •Audi A6/S6 (MMI up to July 2006)
- •Audi Allroad (MMI up to July 2006)
- •Audi A8/S8 (MMI up to July 2006)
- •Audi Allroad (MMI up to July 2006)
- •Audi A6/S6 (MMI starting from August 2006)
- •Audi Allroad (MMI starting from August 2006)
- •Audi A8/S8 (MMI starting from August 2006)
- •Audi Allroad (MMI starting from August 2006)

TV Activation		×
Speed Limit: 0	km/h	OK
Edition 1	C Edition 2	Cancel

Use the following rule when enabling TV:

-if the car is built before 2007 try with edition 1. In case you do not succeed wait with ignition ON for more than 30 minutes and then try with edition 2.

If the car is built after 2007 it is better to try edition 2 first.

#### 2.5.11 Special function "Custom memory access Download/Upload/ReadMemory"

The "Custom memory access Download/Upload/ReadMemory" functionality is available from the "Special functions" list, but also it is available in the standard diagnostic dialog. The functionality is the same on both places with that difference, that in the standard diagnostic dialog the user should open the diagnostic connection, perform security access, enter into diagnostic session prior to starting the custom read/write. When this functionality is opened from the "Special functions" list, these actions are automated and performed from the "ABRITES

Diagnostics for VAG".

Using this application you can read/program memory in some electronic control unit. Requests sent from this application can be related to the currently running session of some of the electronic control units from the dialog.

You can use this application for many different purposes – investigations, read/program flash memories (for example you can program by this dialog internal flash memory of an EDC16).

In the example below we read a part of the flash of EDC16CP

Custom memory d	lownload/upload		×
Choose ECU type:	EDC16U1		<b>_</b>
	EDC16U1	Read	
	EDC16U31		Load from file
	EDC16U34		
	EDC16CP/EDC16CP34		
	EDC16C4 Master	hu (rito	
	EDC16C4 Slave	write	
	EDCI6UT Master		Save to file
	EDC16U31 Master	Connection -	
	EDC16U31 Slave	St. Address	800000
	MED9.5.10		
	MED9.1 Master	Len. of req.	ľU
	MED9.1 Slave	Total size	100000
		Step	0
		Encryption	
		Download	/Upload
		C Read/Wri	te mem
		Diag session Session 0	
			<b>X</b> Exit

In this dialog it is needed to clarify the diagnostic session which you want to be entered before starting of the read/program memory.

In the example above we use session "86".

If you want to save currently running diagnostic session simply enter session "0".

# 2.5.12 Special functions with "Airbag"

With this special function one can:
- Read/Write EEPROM memory of an airbag module
- Clear the crash data of an airbag module

Airbag		×
Choose ECU type:	- Connection type • Manual • AUDI_BOSCH_1997_2000	Read EEPROM
00000000 00 00 00000010 00 00 00000020 00 00 00000030 00 00 00000040 00 00	AUDI_BOSCH_2001_2003 00 00 AUDI_BOSCH_2003_ 00 00 VW_SIEMENS_ALL 00 00 00 00 00 00	Write EEPROM
00000050 00 00 00000060 00 00 00000070 00 00 00000080 00 00 00000090 00 00	00       00 <td< td=""><td>Save to file</td></td<>	Save to file
000000A0 00 00 000000B0 00 00 000000C0 00 00 000000D0 00 00 000000E0 00 00	00 00 00 00 00 00 00 00 00 00 00 00 00	
000000F0 00 00 00000100 00 00 00000110 00 00 00000120 00 00 00000130 00 00	00       00 <td< td=""><td>Load from file Clear crash data</td></td<>	Load from file Clear crash data
00000140 00 00 00000150 00 00 00000160 00 00 00000170 00 00 00000180 00 00	00 00 00 00 00 00 00 00 00 00 00 00 00	
•		× Exit

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

Covered units: Read/Write EEPROM: 1. All Siemens CAN Airbags 2003-2008 like 4F0959655B (Audi A6/Q7/Allroad 2003-2008), 1K0909605AB, 1K0909605C, 1K0909605AD, etc... 2. K-Line Airbags (Siemens and Bosch) - 1C0 909 605 C, 8L0 959 655 A, 1J0 909 609, 6Q0 909

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Manual 73 Version: 3.00 605 C,6Q0 909 605 A, 6Q0 909 605 B, 3B0 959 655 B, 1C0 909 605 F, 1C0 909 605 H, 1J0 909 607, 1J0 909 603, 4B0 959 655 C, 4B0 959 655 J, 4D0 959 655 C, 8L0 959 655 F,8A0 959 655 C, 8A0 959 655 K, 4D0 959 655 H, 8D0 959 655 C, 8D0 959 655 L

#### Clear crash data:

K-Line Airbags (Siemens and Bosch) - 1C0 909 605 C, 8L0 959 655 A, 1J0 909 609, 6Q0 909 605 C,6Q0 909 605 A, 6Q0 909 605 B, 3B0 959 655 B, 1C0 909 605 F, 1C0 909 605 H, 1J0 909 607, 1J0 909 603, 4B0 959 655 C, 4B0 959 655 J, 4D0 959 655 C, 8L0 959 655 F,8A0 959 655 C, 8A0 959 655 K, 8A0 959 655 K, 4D0 959 655 H, 8D0 959 655 C, 8D0 959 655 L

#### 2.5.13 Special function "VW Crafter"

This special function gives the possibility to:

- -read the engine control unit's EEPROM together with the PIN code and component security
- -read and modify mileage of the engine control unit
- -Turn the immobilizer ON/OFF
- -learn keys with prepared transponders
- -perform diagnostic on the engine control unit and the immobilizer.

NOTE: It is only possible to connect to the engine control unit and immobilizer for VW Crafter vehicles. To connect to any other device you will need the ABRITES Diagnostics for Mercedes.

Starting this special function brings the following dialog:



From these buttons it is possible to perform the following actions:

-when pressing "ECU EEPROM" the same dialog as in the "Engine control unit" is brought to the user and it is possible to read EEPROM, read mileage and bypass the immobilizer from here. You do not need to select any engine type, it is done automatically

-pressing "Key learning" will bring the "Key learning" dialog, the user is not required to select a

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model, it is selected automatically

-"Engine control unit diagnostic" will perform a standard diagnostic (reading identification, trouble codes, etc.) to the engine control unit.

-"Immobilizer diagnostic" will perform a standard diagnostic (reading identification, trouble codes, etc.) to the immobilizer.

NOTE: If the car doesn't have any working key it is not possible to turn ignition ON, respectively to get communication with the engine control unit over OBDII because the gateway (the EZS in this case) is not gating the CAN messages to the engine control unit if no valid key is recognized. So if you have a car without any valid key, you will need dismount the ECU and connect it on a table, or to connect the CAN wires of the ECU directly to the interface.

NOTE: For the key-learning it is needed to turn ignition ON with the valid key before starting the procedure. If there is no valid key, simply put the key into the ignition lock, the key-learning procedure will take about 5 minutes in this case. When the procedure is finished you will need to turn ignition ON with each key which you want to learn.

NOTE: Sometimes during communication with the immobilizer it is possible to lose communication with it, so you will need to repeat the procedure.

#### 2.5.14 Special function "Dump Tool

Using this application you can calculate security access codes, calculate mileage and others. This application needs the EEPROM dump from the corresponding unit. After the dump is loaded modifications will be made and you need to store the dump as a new file, which you can program into the device afterwards.

For more details about these functions, please refer to the appendix.

#### 2.5.15 Special function "Service Interval"

Using this application, you can reset the service reminder, reset the service interval parameters or change service interval options.

With the opening of the special function window, the software will connect to the instrument cluster and read the available information concerning the service interval function.

Depending on the vehicle model, year, etc. you will have "Service reminder reset" or/and "Service interval reset" or/and "Change service options" sections enabled.

Together with these sections in the section "Applicable adaptation channels" you will see the adaptation channels whose values will eventually change if you select one of the listed above three operations, with their current values, units and short description.

When the read information is first loaded and also when certain options within the window are changed, the column "New value" of the "Applicable adaptation channels" table will be automatically filled with the default values that should be stored into the respective adaptation channels related to the chosen options.

The applicable (and available) adaptation channels from column "New value" are also available for editing, so the user may put any values there.

#### 2.5.16 Special function "Remote control adaptation"

Using this application, you can learn remote controls.

With the opening of the special function window, the software will connect to the applicable for the vehicle control unit and read any available information related to the remote controls adaptation.

Remote control adaptation	×
Instructions:	Number of keys:
Remote Control Matching: Enter the total number of keys (including existing). Press button "Learn" and wait for the procedure to finish. Press and hold the UNLOCK button on every remote that should be learned for at least 1 sec. ATTENTION! All the keys must be adapted in one procedure. Adaptation of all keys must not exceed 15 seconds. Remote Control Erasing:	Learn Erase All
Additional settings: Chn. 03: Auto-Lock - The doors will lock automatically when the vehicle reaches a speed of 15 km/h or 10 mph.	
<ul> <li>○ 0 - off</li> <li>○ 1 - on</li> <li>○ where the service of the service of</li></ul>	
The ignition switch.         O       0 - off         Image: One off         Image: One off	
Status: Ready.	

In the "Instructions" window, within the "Remote adaptation" section" directions what should be done to learn remote controls will be available.

Additionally, there might be an "Additional settings" table, where all the applicable adaptation channels with their current values and description which are related to the remote controls function will be listed. You can select the desired settings and press button "Change" to save them.

This function is available for:

- Audi A3/S3 1997+
- Audi A4/S4/RS4 1995-2008
- Audi A6 1997 2006
- Audi TT 1999+
- Seat Exeo 2009+

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- Seat Leon 2006+
- Seat Altea 2004+,
- Seat Toledo 2005+
- Skoda Octavia I 1997+
- Skoda Octavia II 2005+
- VW Caddy 2004+
- VW Eos 2006+
- VW Jetta 1998+
- VW Golf/Bora IV 1998+
- VW Golf/Golf Plus/Bora V 2004+
- VW Golf/Golf Plus/Golf Variant 2009+
- VW Touran 2003+
- Skoda Fabia 2007+
- VW New Beetle/Cabriolet 1998 2010
- VW Fox/Spacefox/Sportvan/Suran 2005+
- VW Passat 1997 2011
- VW Transporter 1997 2009
- VW Tiguan 2007+.

For Audi A8, VW Touareg, VW Phaeton, Bentley remote controls are learned with the "key learning" special function.

#### 2.5.17 Special function "Navigation"

Using this application, you can enable/disable the "Eject" button of the "Navigation" system, eject the navigation CD/DVD holder and set "tire circumference" value applicable for the navigation controller function.

#### 2.5.18 Special function "Cruise control system"

Using this application, you can activate/deactivate the cruise control system and change the related steering wheel electronics( SWE) configuration if SWE unit is available. With the opening of the special function window, if SWE unit is available, the software will read and display it's current configuration.

After the "Activate Cruise Control" or "Deactivate Cruise Control" button is pressed this will activate/deactivate the cruise control system function and apply any changes of the SWE configuration to the SWE unit.

#### 2.5.19 Special function "Brake pads change"

Using this application, you can "Open rear parking brake for pad change", "Close rear parking brake", perform "Parking brake function test".

This function is available for the following vehicle models: Audi A8 2004+, Audi A6/allroad 2005+, Audi Q7 2009+, VW Passat B6 , VW Tiguan 2009+.

For vehicle model Audi A8, it is also possible to set the pad thickness.

#### 2.5.20 Special function "ECU Exchange – Dump Tool"

Using this application you can change the EEPROM dump of an engine control unit, so that after it is programmed into an ECU, the ECU can be adapted to a vehicle.

You need to read both the EEPROM dump of the engine control unit that is currently in the vehicle (application name: "active ECU") and the EERPOM dump of the engine control unit with which you wish to replace (referred to as "replacement ECU").

After opening the application, load both dumps (using buttons "Load active ECU dump" and "Load replacement ECU dump"). Press "Change replacement ECU dump" to do the needed modifications in the replacement ECU dump. Press "Save replacement ECU dump" to save the modified dump into a new file, which you can program into the device later on



### 2.5.21 Special function "Door unlocking"

This function is dedicated to opening car doors when the car is in SAFE mode.

To use this function you will need to connect some Pins of the DB25 interface of the AVDI with cables to the wiring of the car manually.

Document

You have to find the desired wires in the car – orange with green (CAN-H) and orange with brown (CAN-L), and you have to connect them to OBDII connector PIN6 (CAN-H) and OBDI Connector PIN14 (CAN-L). Also you have to connect OBDII Connector PIN4 (Ground) to a metal part of the car.

After you are ready you can call the "Unlock doors" special function. The following dialog will be displayed:



So for any of the desired model you will have to press the appropriate button.

#### ATTENTION: In most cases this only opens the doors. It doesn't disable the alarm! 12V Electric current should also be supplied for a later HW model.

### 2.5.22 Special function "Coding calculator"

Using this function you can calculate long code coding value of different modules. When you open the special function the following window appears:

#### **WIIG ABRITES Commander for VAG**

Select device	Select coding
Engine Control Unit	
Instrument Cluster	
Gateway	
Central Electric	
Comfort System	
Parking Assystant	
Door Control	
Audio System	
Radio/Navigation	
Steering Control	
Trailer Recognition	
	C Back Navity Fuit

By selecting a device you'll be shown a list of possible long code coding to choose:

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#### **WIIG ABRITES Commander for VAG**

Select device	Select coding
Engine Control Unit	3C8-920-xxx - 6 digits code value
Instrument Cluster	4F0-920-xxx-xxx - 22 digits code value
Gateway	4L0-920-xxx-xxx - 22 digits code value
Central Electric	5K0-920-xxx-xxx - 6 digits code value
Comfort System	8R0-920-xxx-xxx - 22 digits code value
Parking Assystant	8T0-920-xxx-xxx - 22 digits code value
Door Control	
Audio System	
Radio/Navigation	
Steering Control	
Trailer Recognition	
	<back next=""> Exit</back>

Select the appropriate coding and press "Next".

BABRITES Commander for VAG					_	
🗖 Select all	Central Electric	Seat Altea - 42	digits code	value		
Coding information						1
- Front Fog Lights installed						
-Xenon Headlights with Shutter	er installed					
Lighting system (PR-QQ4)						
Daytime Running Lights (Sca	andinavia) active					
Daytime Running Lights (Not	rth America)					
Driving lights						
Driving lights						_
- Coming-Home active						
□ - Rear Seat Recognition instal						_
- Headlight Washer Installed	PR-8X1J					
Coding information					Value	
- Headlamp washer - delay after	power on (Default:	51 ms)			4	
- Headlamp washer - time to exci	te the (default: 230	) ms)			20	
0000000000000000004140000110d000	0000000005c			Show C	oding Value	э
		< Back	Nex	t>	Exit	

In the opened window you can check/un-check the desired features (see list with check-boxes in the above picture, modify certain value (see the list with the two columns (text and value) in the above picture) or select certain value by combo-box selection.

Check "Select all" check-box to mark as checked all the check-boxes from the check-boxes list.

The coding value is represented into the edit field at the bottom of the window (next to button "Show Coding Value").

When a certain item is changed this is automatically reflected into the coding value.

If you would like to see certain coding value "meaning", you should write down the value into the edit field and press button "Show Coding Value".

#### 2.6 "Key learning"

Inside every key there is a small chip called a "transponder". In most cases this chip does not require an external power supply, it is supplied by a magnetic field, which induces an electric current. The immobilizer recognizes whether a proper key is used to start a car exactly by using the transponder. With the evolution of the VAG cars the transponder type and the records inside it have changed. In general, there are five different types of immobilizers/transponders used. They are called Immo I, Immo II, Immo III, Immo IV and Immo V. Systems from Immol up to Immo III require that a transponder from the appropriate type is located inside the key, and they are able to learn these transponders.

Starting from Immo III it is required that the transponder is from the proper type, but also has some specific records inside it. Only transponders with such correct records can be learned. According to the data inside there are the following types of transponders:

- Tp22 dedicated for use in Seat vehicles;
- Tp23 dedicated for use in Volkswagen vehicles;
- Tp24 dedicated for use in Skoda vehicles;
- Tp25 dedicated for use in Audi vehicles (especially A3 and A4);

Such transponders can be used in all cars of the specific manufacturer (e.g. Tp24 can be used for all Skoda models);

The lastest immobilizer systems Immo IV and Immo V require that the transponder is programmed with a specific code, and this code depends on the VIN number and is unique for each car. Normally, only the car manufacturer can deliver such keys and they are called "dealer keys" (because only the dealer can supply them). But the ABRITES Diagnostics for VAG is also able to pre-code the transponders/keys so they becomes the same as the ones purchased from the dealer.

#### 2.6.1 Key-learning procedures

Normally, there are several key-learning procedures which are applied depending on the car type and year of production. You can check in the appendix section which car belongs to which key-learning procedure.

All key-learning procedures are listed below:

### Procedure 1 – Normal key learning procedure – for vehicles from 1996 to 09/2006 year via K-line.

Learning of a transponder/key to the car requires only the PIN code and after the key-learning procedure (actually adaptation on channel 21) is finished, it is necessary to turn ignition ON with each key you want to learn. No preparation of the transponder/key is needed, instead a new transponder/key should be used.

You must use the following Keys or transponders – TP05, TP08

Note: some of the new vehicles need to remain with the ignition ON for five minutes before starting the key learning procedure (VW Golf5, Skoda Octavia II, VW Touaran, Seat Toledo 2004+,...). Other vehicles may need to stay more than 30 minutes with the ignition ON until programming becomes allowed (Skoda Fabia 2006+, Skoda Roomster 2006+, Skoda Superb 2007+, VW Polo 2006+, Seat Ibiza 2006+)

#### Procedure 2 – for CAN vehicles till 09/2006 year – VW, SEAT, SKODA via CAN

Learning of a transponder/key to the car requires only the PIN code and after the key-learning procedure (actually adaptation on channel 1) is finished, it is necessary to turn ignition ON with each key you want to learn. No preparation of the transponder/key is needed, instead a new transponder/key (TP22/TP23/TP24 depending on the type of the car) should be used. For SEAT you must use a Virgin key or a Transponder – TP22, For VW you must use a Virgin key or a Transponder – TP23 For SKODA you must use a Virgin key or a Transponder – TP24

#### Procedure 3 – for VW/Seat/Skoda CAN vehicles 2006+, Passat B6, Audi A3 CAN

Learning of a transponder/key to the car requires only the PIN code and after the key-learning procedure (actually adaptation on channel 11) is finished, it is necessary to turn ignition ON with each key you want to learn. Preparation of the transponder/key is needed (so called dealer key) using the component security (CS) and the car type (VW/Seat/Skoda/Audi).should be used.

#### Procedure 4 – for Audi A4 (RB8)

Audi vehicles equipped with an instrument cluster BOSCH RB8 with integrated immobilizer require a pre-coded key (using the 12 byte CS). Using this procedure the data necessary for the preparation of the transponder/key are read from the immobilizer automatically. Also the PIN code needed for the key-adaptation is read automatically.

#### Procedure 5 - For vehicles with Hitag2 Key (transponder) – VW Touareg, VW Phaeton, Bentley Continental, Porsche Cayenne, Audi A8

Learning of a transponder/key to the car requires only the PIN code and after the key-learning procedure (actually adaptation on channel 1) is finished, it is necessary to hold each key in CRANK position until the steering is unlocked.

For vehicles till 2007 you must use a virgin transponder PCF7936 or a virgin key, no need for other special preparation. If you use a Transponder – you only needed to switch it in Cipher (Crypto) mode. You can use your Key programmer for that purpose if you have one. This is done by replacing 0x06 with 0x0E in the first byte of the configuration page (Configuration page is page 3 where page 0 is the transponder ID, and pages 1 and 2 are the secret key). If this value is already 0x0E then the transponder is already in cipher mode.

For vehicles after 2007 and Audi A8 2002+ the transponder should be pre-coded using the CS.

#### Procedure 6 – for vehicles Audi A6,Q7,Allroad 2005+

For these vehicle there is a separate special function called "EZS-Kessy A6/Q7" where the keylearning procedure is performed. Megamos 8E based transponder/key is used which is precoded using 12 byte CS. The key-learning procedure starts adaptation of the this transponder/key and the user should give ignition on with each key.

#### Procedure 7 – UDS dashboards

For these vehicles there is a separate special function where the key-learning is performed. Please refer the the "Instrument CAN" special function manual.

These are typically the models produced after 2009. The immobilizer is integrated into the dashboard, and the required transponder for that cars is a Megamos 48 Crypto.

#### Procedure 8 – A4/A5/Q5 2007+ and A6/A7/A8/VW Touareg 2010+

For these vehicle there is a separate special function called "BCM2 A4/A5/Q5" where the keylearning procedure is performed. Hitag2Ext key is used which is pre-coded. The key-learning procedure starts adaptation of the this transponder/key and the user should give ignition on with each key.

#### 2.6.2 Key-learning modes

There is standard and wizard mode for the key-learning. The standard mode requires more user interaction when performing the key-learning procedure while the wizard mode tries to perform most of the operation automatically. However in some models it is not possible properly to detect the different parts, for that reason the standard mode is present in the SW to give the user better control of the dealer key preparation and key-learning procedure.

#### 2.6.2.1 Standard mode

Press "Standard Mode" to use key-learning special function as before version 15.0 of the "Abrites Diagnostics for VAG".

X Key learning Detected car type: VW,Seat,Skoda (CAN) immobilizer (year unknown) recognized. Vehicle model: VW,Seat,Skoda 2007+ (CAN) New key count: [ Autodetect Prepare dealer ALL KEYS Learn Login/Security LOST key Login/Security code: 0 code Lock timers Engine start permitted: Dealer key/transponder: No No Login acknowledge: ECU Responding: Key/transponder locked: min No No 0 Transponder type OK: Key/transponder learned: No No Transponder acknowledge: Key count: 2 0 min You can reach login code from the ECU of the vehicle - special functions 'Engine Control Unit' - read eeprom. For this vehicle "procedure 3" is used. You've to proceed with procedure 3, and after obtaining a prepared transponder then you've to put the login and number of keys to learn and to press "Learn" button. = Procedure 3: Dedicated for VW/Seat/Skoda CAN vehicles 2006+, Passat B6, Audi A3 CAN Learning of a transponder/key to the car requires only the PIN code and after the key-learning procedure (actually adaptation on channel 1) is finished, it is necessary to give ignition ON with each key you want to learn. Preparation of the transponder/key is needed (so called dealer key) using the component security (CS) and the car type (VW/Seat/Skoda/Audi).should be used. KEY-LEARNING STEPS: ~ Exit

Pressing "Standard Mode" will bring the following dialog:

The customer has to choose the vehicle model for which they want to learn a key to. In the background the system tries to determine automatically what vehicle model it is connected to. If the model recognition is successful it will be selected automatically. If the system cannot recognize the model, the user has to choose the model manually.

NOTE: It is possible that the system does not recognize the model correctly. In this case you have to select the model manually. For example it is not possible to distinguish between "VW CAN -2007" and "VW CAN (2007+)", for that reason by default "VW CAN (2007+)" is selected.

NOTE: Please pay attention that for some models the key-learning and dealer key prepration are made in separate special functions. So if the SW detects such case you will have a hint to go the respective special function where to make the key.

After the vehicle model is recognized, the system checks the key recognition and engine start conditions. They are displayed in the following fields:

-Engine start permitted: Having the value "No" means that the key or engine control unit is not properly identified by the immobilizer. A reason for that might be an invalid key or engine control unit not adapted to the car, or for some models there is a waiting time. "Yes" here means that the immobilizer recognizes the key properly and the engine is allowed to start, i.e. everything is OK.

-ECU Responding: This shows whether the immobilizer is able to communicate with the engine control unit

-Transponder type OK: This is used as an indication whether the key in the ignition has the correct transponder type. For example for Audi A3 the immobilizer expects a Megamos 48 transponder, but if you use dedicated for Audi A8 (which uses Hitag2 transponder), then the value will be "No". If there is no key into the ignition, you will have "No" once again.

-Key count: shows the currently learned keys. After completing the key-learning procedure this field should be updated to the new value if all keys were learned correctly.

–Dealer key/transponder: Shows whether the keys/transponders were successfully coded to the specific car. After making a dealer key the position should change to "Yes" when you put the prepared transponder into the ignition

-Key/transponder locked: indicates whether the transponder is writable.

-Key/transponder learned: Indicates whether the transponder ID is recognized from the immobilizer as a valid ID for starting the car. After learning the key/transponder to the car this should change to "yes"

-Lock times – login acknowledge: if an invalid login was input several times to the immobilizer, the immobilizer rejects further attempts to input the login. This timer indicates how many attemps remain until new login attempt can be accepted

-Lock timers – transponder acknowledge: If you turn ignition OFF/ON cyclically, the immobilizer stops to recognize the transponder, and even a valid transponder will not start the car. This timer shows when the immobilizer will recognize the transponders. This value is typically set when trying to make keys for Passat B6/CC

#### 2.6.2.1.1 Key-learning

To perform the key-learning you will need the Login. If pre-coding of a transponder is necessary, the button "Program dealer key" will be also available. The "Autodetect Login/security code" button is available in order to search the PIN/CS automatically.

The key-learning is performed as follows:

- Enter security access code (or autodetect it with the respective button) and the number of keys

- Turn ignition ON (new or existing key)

- Press the "Learn" button

- For some VW/Seat/Skoda vehicles it is possible to add a new key without the remaining keys being deactivated. If the software recognize that the immobilizer supports this option, you'll be promted whether you want to add key, or erase all keys and learn only the available keys. If the immobilizer is not supporting this option, this step is skipped.

- Wait until "adaptation finished" is displayed

- Remove the key and turn ignition off with all remaining keys. Normally you need only the make ignition on, but for some models with electronic ignition there might be a little difference. The software recognize such cases and will give you the respective hints. E.g. for

Touareg/Phaeton/Bentley/Cayenne/A8 it is necessary that you hold each key in CRANK position until the steering is unlocked. For Passat B6/CC/B7 it is required that you put each key only to the first position instead of putting the key to the normal ignition position.

#### 2.6.2.1.2 Preparing dealer key

If the respective procedure requires pre-coding of the key/transponder before it is learned to the car, the button "Prepare dealer key" will be available. Preparing the dealer key require the 7bytes of the CS.

The preparation of a dealer key is a little bit different for vehicles using the Megamos 48 transponder and the Hitag2 transponder.

#### a) Preparing dealer key on vehicles with Megamos 48 transponder

Pressing the button will show the following dialog:

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All 7 bytes of the component protection data (component security) are know         Program transponder from 7 bytes         Component security bytes	Prepare	
	,	Programmer over key with transponder
Find 7th byte and program transponder       Component       security bytes:       Image: Security bytes:       Image: Security bytes:	Prepare	
O Manual trying of the 7 byte (VW Passat B6/CC) Value for the autorization read by daignostic:	Find 7th byte from working key	Key with transponder in ignition, programmer over key

The 7 bytes of the component protection data are contained inside the immobilizer and sometimes inside the engine control unit. Inside the engine control unit there are always at least 6 of the component protection bytes stored, sometimes also the 7<sup>th</sup> byte is contained. There are several ways to extract the component security:

-Simply press the "Autodetect component security" (select "Autodetect component security" and press "Next" in case of "Wizard mode") and the component security bytes will be read from the ECU. This will also automatically decide whether you have the 7<sup>th</sup> byte, or you will need to search for it. Also the login will be displayed in the status bar. The autodetection is not always possible, it basically works for EDC16 and MED9x engines which are using a CAN diagnostic connection.

-The component security bytes are displayed e.g. using the special function "Engine Control Unit" - when reading the EEPROM of the engine control unit the ABRITES Diagnostics for VAG will show you the component security bytes:

otember , 2013	ABRITES Diagnostics FOR VAG USER MANUAL for software version: 20.0 number 2/20071127							Do	cumer	nt															
000001D0 000001E0 000001F0	00 00 00	00 00 00 00	00 00 00	00 00 00 00	EEP 00 00	ROM	mem	ory d	ata · ·	•	•	R	ead Fla √rite Fla	<b>sh</b> Ish											
Data read. (	Compo	nen	t sec	curity	: 1Ь	d4 (	)5 e4	37 a	в8 OI	Ь														Exit	

-For CAN TP2.0 immobilizers in most of the cases it is possible to read all 7 bytes from the instrument/immobilizer. This is possible from the Immo panel – you have to go to "Special function", then "Instrument CAN" and "Read/write immo data". After you read the immobilizer data in the field "Serial Key" the 7 bytes of the component security will appear.

#### b) Preparing a dealer key with all 7 bytes available

If the 7<sup>th</sup> byte is different from "00" then you have all the 7 bytes of the component security and you are able to prepare a transponder directly with the Key programmer. In this case you must choose "All 7 bytes of the component protection data (component security are known)", put the 7 bytes and press the "Program" button.

#### c) Preparing a dealer key by finding the 7<sup>th</sup> byte

If the 7<sup>th</sup> byte is not available you must choose "Find the 7th byte of the component security data" and you have to put the six bytes which you already have. There are three possible ways to check whether the 7<sup>th</sup> byte is correct:

- from working key if you have a key which can start the car, put it in the programmer and press "Find 7<sup>th</sup> byte from working key" - after 70-80 seconds the 7<sup>th</sup> byte should be found;
- Automatically

This mode requires that the immobilizer and the Key can simultaneously read/write the transponder. For that reason you have to turn the ignition ON and place the programmer ring over the key (when the key is in the ignition).

## NOTE: The automatic check might not be possible for some models (e.g. VW Passat B6). So it is required that the manual procedure is used in this case.

– Manual

The main difference between the automatic and manual procedure is that according to the manual procedure you should put the key into the programmer, then turn the ignition to ON with it, and then once again to the programmer and so on until the byte is found. If you use the manual procedure you will be consecutively prompted to put the transponder into the program, and then to turn it to the ignition ON position.

Normally for most models it is required that the key is in the ignition, and you only change the position of the transponder. You will be prompted to put the transponder into the programmer, then to put it near the ignition lock so it is read by the immobilizer. An exception is the Passat B6. For it it is required that you put the key with the transponder into the programmer, then the key with the transponder into the ignition lock, UP TO THE FIRST POSITION ONLY, then again into the programmer, and again into the ignition lock until the byte is found.

NOTE: If you get an "XXX" message you need to stop at the current position and wait for 10 minutes before you continue.

ATTENTION: For the Passat B6 there are some cars for which you cannot search for the 7<sup>th</sup> byte. For such cars a key can be made only by opening the comfort module and reading the comfort module EEPROM. Then after having the 6 bytes of the component security from the engine, you can extract the 7<sup>th</sup> byte from the comfort module's EEPROM using the dump tool. It is also possible to program directly the key to the car from the dump tool if you have attached a programmer. For more details please refer to the dump tool section.

ATTENTION: As mentioned above for some cars it is not possible to find the 7<sup>th</sup> byte of the components security. You can understand if this is possible for the car you are working on by performing the following procedure:

a) Connect with 25-Immobilizer and go to "Measured Vaues", Channel 2

b) Put the original key or key with a Megamos 48 transponder – in this case in the Measured values you should have a "yes" or "1" on the second position of channel 2
c) Eject the key so there is no key in the ignition lock

 $\rightarrow$  If the second position is changes to "No" or "0" you CANNOT search for the 7<sup>th</sup> byte

 $\rightarrow$  If the second position remains at "Yes" or "1" you can search for the 7th byte

After you obtain a dealer key/transponder you can proceed with normal key-learning. Simply put the number of keys to learn and the security access code and the keys will be learned.

#### d) Preparing dealer key on vehicles with Hitag2 transponder

Pressing the button will show the following dialog:

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Load dump								Prepare	Autodetect from ECU
All 7 bytes of the component Program transponder from 7	protect	ion data	(compon	ent secu	irity) are k	now			
Component security bytes:	0	0	0	0	0	0	0	Prepare	
Find the 7th byte of the comp	onent	security (	lata						1
- Find 7th byte and program tra	anspon	ider							1
Component security bytes:	ae	de	38	aa	43	89		Prepare	Find 7th byte from working
Login/:	1321		1						кеу

There are following possibilities for preparing the dealer key

- Making the key without disassembling the Kessy (completely by OBDII)

The "Autodetect from ECU" button will try automatically to read the component security bytes from the ECU, and will select for you automatically whether you need to search for the 7<sup>th</sup> byte or not.

IMPORTANT: If you do not have a working key from the car, you will need to short the fuses as described in the appendix to get communication with the ECU.

After the component security is read, if you have all 7 bytes, you can program the key directly.

If you have only 6 of the bytes, you have to choose:

a) if you have working key from the car, you can put it into the programmer, and press the "Find 7<sup>th</sup> byte from working key" button - the 7<sup>th</sup> byte will be found in several seconds;

b) if you do not have a working key, you have to search for the 7<sup>th</sup> byte manually. The procedure takes approximately 20-25 min, but can last up to 45min. You have to connect the interface to the OBDII, and the programmer should be connected too. Then after pressing the "Program" button you will receive notification when to put the key into the ignition, and when to put it into the programmer.



IMPORTANT: You only need to put the key inside, please DO NOT ROTATE THE KEY.

IMPORTANT: You may hold the programmer near the ignition lock so you can proceed faster when you remove the key. But please pay attention that the programmer is at least 15cm from the ignition lock so the reading of the key from the car is not disturbed.

NOTE: It is always better to use a plastic key or an empty transponder when you search for the 7<sup>th</sup> byte, at least when you prepare such keys for the first time. If for some reason the key becomes locked (e.g. battery goes down, computer is hangup, etc.), you can find the encryption-key with the "Find 7<sup>th</sup> byte from working key" button, and then you can restore the key with the Tag key tool.

- Making a key by disassembling the Kessy or the ECU

You can load a dump of the Kessy or ECU using the "Load component protection from Kessy/ECU dump" radio-button. After pressing the "Load dump "button you have to select the respective dump file, after that the "Program" button will be active.

NOTE: Please pay attention that in the ECU dump sometimes there are only 6 of the component security bytes. In this case you will need to search for the 7<sup>th</sup> byte as described above.

NOTE: Please pay attention that if you have the Kessy dump, you will have all the 7 bytes. But there are a lot of Kessy devices with different software versions, so it is possible that the EEPROM is incorrectly decrypted (especially for newer cars), respectively the component security bytes will be wrong. In this case the key will not work and you will need to restore the key using the Hitag2 programmer. The best way to check whether the Kessy dump is decrypted correct, is to get the PIN code from the dump tool and to try to put it in the immobilizer. If it accepted, than the decryption of the EEPROM dump is OK.

- Making a key if the CS is already known

If you have already read the component security bytes prior to that (e.g. by dissoldering the ECU EEPROM and decoding it by dump tool), then you can put the component security bytes manually and proceed as described above

After the key is prepared as a dealer key, write how many keys you need to program, write the security access and press the "Learn" button.

#### 2.6.2.2 Wizard mode

Like in the standard mode, the software tries to autodetect the vehicle model, but the customer has the ability to select the model also manually. If the vehicle model is not autodetected a respective message will appear and user have to select it manually.

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Select vehicle\immobilizer type:	Select function:
VAG vehicle - "Johnson Controls NEC" (CAN) Audi A6/Allroard 2005+ (CAN) Audi Q7 2005+ (CAN) Audi A3 (CAN) Audi A3 (CAN) VW Golf V (Micronas dash) (CAN) VW Passat 6 (CAN) VW Passat 6 (CAN) VW Passat 6 with EDC17/MED17 (CAN) VAG vehicle -2007 (CAN) VW Golf/Golf Plus/Jetta/Bora V 2004+ (CAN) Skoda Octavia II -2007 (CAN)	Add One Key Prepare Dealer Key
Skoda Octavia II 2007+ (CAN) Seat Altea/Toledo -2007 (CAN) Seat Leon -2007 (CAN)	-
Function: Adapts all keys to vehicle's immobilizer	

NOTE: Depending on the vehicle type there are 1 or more functions available. A hint for their meaning is displayed in the bottom of the dialog. Here is a more detailed description of the functions.

- Learn keys – this means that all available keys will be learned. Any already working keys that are not available will stop to work after this function.

- Add One Key – this function will add one key to existing key count. This means that also the key which are not available at the moment will continue to work.

- Prepare dealer key – for the vehicles types which accept only pre-coded key it is mandatory first to prepare the so-called "dealer key" before proceed with the "Learn keys"

### 2.6.2.2.1 Learn keys

Learning the keys requires to put the Login (PIN) code. PIN code can be automatically detected, can be retrieved from dump, or can be typed manually if it is already known to the customer.

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ABRITES	Commander for VAG	
۰ A	utodetect Login Code	
⊂ Ty	/pe Login Code manually	
∩ Lo	oad Login Code Using Dump Tool	
	Login Code: 0	
	< Back	> Exit

When the Login code is available and the "Next" button is pressed, an informational dialog is displayed, where the key recognition and engine start conditions are checked. The meaning of the fields is the same as the described in the standard key-learning mode.

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A ABRITES Commander for VAG	
Immobilizer data	
Current key count: 2	Transponder type OK: No
	Dealer key/transponder: Yes
ECU responding: No	Key/transponder locked: Yes
Engine start permited: No	Key/transponder learned: No
Login acknowledge 0 timeout:	Transponder acknowledge 0 timeout:
Press "Next" to start key learning procedure.	
	< Back Next > Exit

Pressing the "Next" button here will start the adaptation procedure and after finishing it the user should give ignition ON with all available keys.

# NOTE: Immo V A4/A5/Q5 and A6/A7/A8/VW Touareg 2010+ only – a different dialog is displayed to the customer, which is the same as described in the standard key-learning.

### 2.6.2.2.2 Add one key

This function the same as the mentioned above with the difference, that it is not required to have all keys available at the moment. The keys which are not available will continue to work.

#### 2.6.2.2.3 Prepare dealer key

For the pre-coding of the key/transponder (the so called "preparation of the dealer key") is required to have the 7bytes of the component security. Choosing the "Prepare dealer key" function you need to put the component security.

ent

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ABRITES Commander for VAG	e Steere	and the second s	181.1000	
Select an option:				
⊂ Manual Input of the Comp	oonent Security	Bytes		
Autodetect Component S	Security Bytes			
<ul> <li>Find the 7th Byte of the C</li> <li>Automatic Trying</li> </ul>	omponent Sec	urity Bytes		
Find the 7th Byte of the C -Find From Working Key	component Sec	urity Bytes		
Component Security Bytes:	0 0	0 0	0 0	0
		< Back	Next >	Exit

Possibilities for this are:

- Manual input of the component security - if it is already known you can put it manually.

- Autodetect the component security. The autodetected component security is displayed in the field in the bottom of the dialog. Please pay attention that autodetection may find only 6 of the bytes, in this case the 7th byte need to be found in the way described below

- Find 7th byte – automatic trying by OBDII – requires to make ignition ON with new transponder/key and to place the programmer over this new transponder/key. Finding the 7th bytes takes till 15min

- Find 7th byte – from working key – if a working key is available it is much faster to find the 7th byte from it – just put the working key in the programmer and in one minutes the 7th byte will be found

- Find 7th byte - automatic trying by OBDII – Passat B6/CC only – it is required to search the 7th byte manually. You will have message when to put the new key/transponder in the ignition lock to first position, and when to put it in the programmer. Procedure may takes till 30min

- Find 7th byte - automatic trying by OBDII – Passat B6/CC/B7 with EDC17/MED17 – the pocedure is the same as on the other Passat B6/CC, but it is necessary to read the comfort module dump with a programmer and to enter the Login (PIN) code.

- Get component security from Kessy dump – only for vehicles with the Hitag2 key

(Touareg/Phaethon/Cayenne/A8/Bentley Continental) - additionally to the options above there is one more option - to get the information from the Kessy EEPROM dump (93C86) if it is read with a programmer.

- Find 7th byte - automatic trying by OBDII – only for vehicles with the Hitag2 key (Touareg/Phaethon/Cayenne/A8/Bentley Continental) - for these vehicles it is necessary to enter also the PIN code, The procedure of finding the 7th byte is manual, and the user will have message when to put the new transponder/key in the programmer (only put in the ignition without rotate), and when to put it in the programmer.

- A6/Q7/Allroad with EZS-Kessy only - for the preparation of the dealer key is required the PIN and the 6 bytes of the component security, which can be typed manually, automatically detected from engine control unit, detected from EZS-Kessy EEPROM dump (if read with a programmer) or detected from EZS-Kessy EEPROM by OBDII (if working key is available)

			Programmer		Key Learnig
Model	Year	Solution	needed	Transponder/Key	procedure
Audi A2	all	OBD-K	not needed	TP08	Procedure 1
Audi A3	-2003	OBD-K	not needed	TP08	Procedure 1
			Key	Megamos 48	
Audi A3	2003+	OBD-CAN	programmer	dealer key	Procedure 3
Audi A4	-2003	OBD-K	not needed	TP08	Procedure 1
	2003-		Key	Megamos 48	
Audi A4	2008	OBD-K	programmer	dealer key	Procedure 4
			Key	Hitag2 Extended	
Audi A4	2008+	OBD-CAN	programmer	dealer key	Procedure 8
			Key	Hitag2 Extended	
Audi A5/S5/Q5	2008+	OBD-CAN	programmer	dealer key	Procedure 8
Audi A6	-2004	OBD-K	not needed	TP08	Procedure 1
			Key		
Audi A6/RS6	2004+	OBD-CAN	programmer	Megamos 8E	Procedure 6
			Key	Hitag2 Extended	
Audi A6	2010+	OBD-CAN	programmer	dealer key	Procedure 8
			Key	Hitag2 Extended	
Audi A7	2010+	OBD-CAN	programmer	dealer key	Procedure 8
Audi Allroad	-2004	OBD-K	not needed	TP08	Procedure 1
			Key		
Audi Allroad	2004+	OBD-CAN	programmer	Megamos 8E	Procedure 6
			Key		
Audi Q7	2004+	OBD-CAN	programmer	Megamos 8E	Procedure 6
Audi A8	-2002	OBD-K	not needed	TP08	Procedure 1
-	2002-		Kev		
Audi A8	2009	OBD-CAN	programmer	PCF7936 or kev	Procedure 5
			Key	Hitag2 Extended	
Audi A8	2010	OBD-CAN	programmer	dealer key	Procedure 8
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	2007-		Key		
Audi S8	2011	OBD-CAN	programmer	PCF7936 or key	Procedure 5
	0040		Key	Hitag2 Extended	
Audi S8	2012+	OBD-CAN	programmer	dealer key	Procedure 8
	2006		Key	Niegamos 48	Brooduro 2
	2000+	ODD-CAN	programmer	uealer key	Procedure 5
Audi TT	-2005	OBD-K	Not needed	TP08	Procedure 1
A 11 77	0007		Key	Megamos 48	
Audi I I	2007+	OBD-CAN	programmer	dealer key	Procedure 3
	2011	OBD-CAN	Key	Niegamos 48	Drocoduro 7
AUGLAT	2011+	005	programmer	dealer key	Procedure 7
Skoda Octavia	2003		not needed		Procedure 1
	2003-		not needed	11.00	
Skoda Octavia II	08/2006	OBD-CAN	not needed	TP24	Procedure 2
	08/2006-		Key	Megamos 48	
Skoda Octavia II	2008	OBD-CAN	programmer	dealer key	Procedure 3
		OBD-CAN	Key	Megamos 48	
Skoda Octavia II	2008+	UDS	programmer	dealer key	Procedure 7
Skoda Octavia		OBD-CAN	Key	Megamos 48	
RS	2009+	UDS	programmer	dealer key	Procedure 7
Skoda Octavia	2006-		Key	Megamos 48	
Scout	2008	OBD-CAN	programmer	dealer key	Procedure 3
Skoda Octavia		OBD-CAN	Key	Megamos 48	
Scout	2009+	UDS	programmer	dealer key	Procedure 7
Skoda Scout	-08/2006	OBD-CAN	not needed	TP24	Procedure 2
	08/2006-		Key	Megamos 48	
Skoda Scout	2008	OBD-CAN	programmer	dealer key	Procedure 3
		OBD-CAN	Key	Megamos 48	
Skoda Scout	2009+	UDS	programmer	dealer key	Procedure 7
Skoda Roomster	2007+	OBD-K	not needed	TP08	Procedure 1
	2000-	OBD IX	not noodod		
Skoda Fabia	2007	OBD-K	not needed	TP08	Procedure 1
Skoda Fabia II	2007+	OBD-K	not needed	TP08	Procedure 1
Skoda Fabia II		OBD-CAN	Kev	Megamos 48	
RS	2011+	UDS	programmer	dealer key	Procedure 7
Skoda Fabia		OBD-CAN	Key	Megamos 48	
Scout	2009+	UDS	programmer	dealer key	Procedure 7
Skoda Superb	-2008	OBD-K	not needed	TP08	Procedure 1
•		OBD-CAN	Key	Megamos 48	
Skoda Superb II	2008+	UDS	programmer	dealer key	Procedure 7
		OBD-CAN	Key	Megamos 48	
Skoda Yeti	2009+	UDS	programmer	dealer key	Procedure 7
Seat Alhambra	1997+	OBD-K	not needed	TP08	Procedure 1
Seat Altea	-08/2006	OBD-CAN	not needed	TP22	Procedure 2

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Soot Altoo	08/2006-		Key	Megamos 48	Dragodura 2
Seal Allea	2006		programmer	Magamaa 49	Procedure 3
Seat Altea	2009+	UDS	programmer	dealer key	Procedure 7
Seat Arosa	1998- 2004	OBD-K	not needed	TP08	Procedure 1
Seat Cordoba	1996- 2004	OBD-K	not needed	TP08	Procedure 1
Seat Ibiza	-2008	OBD-K	not needed	TP08	Procedure 1
Seat Ibiza	2009+	OBD-CAN UDS	Key programmer	Megamos 48 dealer key	Procedure 7
Seat Leon	-2003	OBD-K	not needed	TP08	Procedure 1
Seat Leon	-08/2006	OBD-CAN	not needed	TP22	Procedure 2
Seat Leon	08/2006- 2008	OBD-CAN	Key programmer	Megamos 48 dealer key	Procedure 3
Seat Leon	2009+	OBD-CAN UDS	Key	Megamos 48 dealer key	Procedure 7
Seat Toledo	-2003	OBD-K	not needed	TP08	Procedure 1
Seat Toledo	-08/2006	OBD-CAN	not needed	TP22	Procedure 2
Seat Toledo	08/2006- 2008	OBD-CAN	Key programmer	Megamos 48 dealer key	Procedure 3
Seat Toledo	2009+	OBD-CAN UDS	Key programmer	Megamos 48 dealer key	Procedure 7
VW Lupo	1998- 2005	OBD-K	not needed	TP08	Procedure 1
VW American Fox	2003+	OBD-CAN	Key programmer	Megamos 48 dealer key	Procedure 3
VW CrossFox	2005+	OBD-CAN	Key programmer	Megamos 48 dealer key	Procedure 3
VW Suran/SpaceFox/ SportVan/Fox Plus	2006+	OBD-CAN	Key programmer	Megamos 48 dealer key	Procedure 3
VW Fox	2005+	OBD-CAN	Key programmer	Megamos 48 dealer key	Procedure 3
VW Polo 3	1997- 2004	OBD-K	not needed	TP08	Procedure 1
VW Polo 4	2004- 2009	OBD-CAN	Key programmer	Megamos 48 dealer key	Procedure 3
VW Polo 5	2009+	OBD-CAN UDS	Key programmer	Megamos 48 dealer key	Procedure 7
VW Golf 3	1993-	OBD-K	not needed	TP08	Procedure 1
VW Golf 4	1997+	OBD-K	not needed	TP08	Procedure 1
VW Golf 4 Cabrio	1998+	OBD-K	not needed	TP08	Procedure 1

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VW Golf5	-08/2006	OBD-CAN	not needed	TP23	Procedure 2
			Key	Megamos 48	
VW Golf5	08/2006+	OBD-CAN	programmer	dealer key	Procedure 3
VAN Crosserolf	00/2000			троо	
	-08/2006	OBD-CAN	not needed	1923	Procedure 2
VW Crossgolf	2006+	OBD-CAN	not needed	TP23	Procedure 3
			Key		
VW Golf Plus	-08/2006	OBD-CAN	programmer	TP23	Procedure 2
			Key	Megamos 48	
VW Golf Plus	2006+	OBD-CAN	programmer	dealer key	Procedure 3
	0000.	OBD-CAN	Key	Megamos 48	Due ee duwe 7
VW Golf 6	2009+	UDS	programmer	dealer key	Procedure 7
VW Jetta	-08/2006	OBD-CAN	not needed	TP23	Procedure 2
	08/2006-		Key	Megamos 48	
VW Jetta	2008	OBD-CAN	programmer	dealer key	Procedure 3
		OBD-CAN	Key	Megamos 48	
VW Jetta	2009+	UDS	programmer	dealer key	Procedure 7
VW Bora	1997+	OBD-K	not needed	TP08	Procedure 1
	10011	OBD-CAN	Kev	Megamos 48	
VW Bora	2009+	UDS	programmer	dealer key	Procedure 7
	00/0000			TDOO	
VW EOS	-08/2006	OBD-CAN	not needed	IP23	Procedure 2
	08/2006-		Key	Megamos 48	Dropoduro 2
VW E03	2008	OBD-CAN	kov	Mogamos 48	Procedure 3
	2000+		ncy	dealer key	Procedure 7
	20031	000	programmer		
VW New Beetle	1998+	OBD-K	not needed	TP08	Procedure 1
	2004-				
VW Caddy VDO	09/2006	OBD-CAN	not needed	TP23	Procedure 2
			Key	Megamos 48	
VW Caddy	-2008	OBD-CAN	programmer	dealer key	Procedure 3
VW Multivan	-2007	OBD-K	not needed	TP08	Procedure 2
$\lambda \Lambda \Lambda / \pm A$	1009		not pooded		Drocoduro 1
VVV 14	2002-	ODD-N	not needed	IFUO	FIOCEDUIE I
VW T5	2002-	OBD-K	not needed	TP08	Procedure 1
	2000	OBD-CAN	Kev	Megamos 48	
VW T5	2009+	UDS	programmer	dealer key	Procedure 7
	1997-				
VW Sharan	2009	OBD-K	not needed	TP08	Procedure 1
		OBD-CAN	Key	Megamos 48	
VW Sharan	2009+	UDS	programmer	dealer key	Procedure 7
	2008-		Key	Megamos 48	
VW Scirocco	2009	OBD-CAN	programmer	dealer key	Procedure 3
	0000	OBD-CAN	Key	Megamos 48	
VVV Scirocco	2009+	UDS	programmer	dealer key	Procedure 7

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	2004				
V/W/ Touran	2004-		not needed	TP23	Procedure 2
vvv rouran	2000-		Kev	Megamos 48	
VW Touran	2008	OBD-CAN	programmer	dealer kev	Procedure 3
		OBD-CAN	Kev	Megamos 48	
VW Touran	2009+	UDS	programmer	dealer key	Procedure 7
	2008-		Key	Megamos 48	
VW Tiguan	2009	OBD-CAN	programmer	dealer key	Procedure 3
		OBD-CAN	Key	Megamos 48	
VW Tiguan	2009+	UDS	programmer	dealer key	Procedure 7
VW Passat B4	(				
Motometer	1996+	OBD-K	not needed	TP08	Procedure 1
VW Passat B4	1007		not noodod		Drocoduro 1
	1997+	UDD-K	not needed	IPUo	Procedure 1
	2001+		not needed	TPOS	Procedure 1
VW Passat B5	20011		not necded	11.00	
Motometer	2001+	OBD-K	not needed	TP08	Procedure 1
			Key	Megamos 48	
VW Passat B6	2005+	OBD-CAN	programmer	dealer key	Procedure 3
			Key	Megamos 48	
VW Passat CC	2008+	OBD-CAN	programmer	dealer key	Procedure 3
			Key	Megamos 48	
VW Passat 7	2011+	OBD-CAN	programmer	dealer key	Procedure 3
		000	HITAG-2/Key		
VW Phaeton		OBD	programmer	PCF7936 or key	Procedure 5
	2010		HITAG-2/Key	DCE7026 or kov	Brooduro 5
vvv loualeg	-2010	UDD-CAN	programmer	FCF/930 UI Key	Procedule 5
VW Touaran	-08/2006	OBD-CAN	not needed	TP23	Procedure 2
	08/2006-		Key	Megamos 48	
VW Touaran	2009	OBD-CAN	programmer	dealer key	Procedure 3
		OBD-CAN	Key	Megamos 48	
VW Touaran	2009+	UDS	programmer	dealer key	Procedure 7
Davasha Cawaraa	0040		Key		Dress dure C
Porsche Cayenne	-2010	OBD-CAN	programmer	PCF/936 OF Key	Procedure 5
Porsche Cayenne	2011+				n.a.
Bentley			Key		
Continental	-2010	OBD-CAN	programmer	PCF7936 or key	Procedure 5
Bentley					
Continental	2011+				n.a

#### 3 TROUBLESHOOTING

Below you can find a list of typical issues and how to solve them:



Problem: When starting the "ABRITES Diagnostics for VAG" on the splash screen "Interface **NOT found**" is displayed

Solution:

-Please be sure that the USB interface drivers are installed properly. You can look at the device manager, the USB interface should appear as "USB Serial Port (COMxx)" where "xx" is the number of the port

-If the interface is recognized OK, then please try to unplug and plug it again into the USB slot and restart the "ABRITES Diagnostics for VAG".

-If the interface is not recognized (the USB interface appears with a yellow exclamation mark in the device manager), then you can try to solve the issue by uninstalling and reinstalling the USB interface drivers (see sections "Installing USB interface drivers" and "Uninstalling USB interface drivers").

-If there are bluetooth devices try to disable them

Problem: When starting the "ABRITES Diagnostics for VAG" "Interface not calibrated" is displayed.

#### Solution:

Send all logs to a distributor

**Problem:** The device connects under K-Line on a random basis.

Solution:

Try to increase/decrease the "Wakeup echo delay" timing parameter.

**Problem:** The connection with the device under K-Line is unstable. Solution:

Try to increase/decrease the "Inter byte time", "Time between messages" and "Communication echo delay" parameters.

**Problem:** How to recognize whether the instrument cluster is A4 RB4 or A4 RB4 Crypto. Solution: If the instrument is not crypt (this means it is RB4) the immobilizer number (14 ASCII symbols) is found at addresses 0x00, 0x100 and 0x200. If the immobilizer number is placed there, then the instrument is not crypted.

**Problem:** After reading the A4 RB8 instrument, the instrument displays "LO x-x" instead the mileage.

**Solution:** Read the RB8 instrument EEPROM, and change the immobilizer status to 6.

**Problem:** It is not possible to connect to a device through the K-Line, since it is possible to connect to it with other diagnostic tools. **Solution:** Try to change the baud sequence to 9600/10472 from the options dialog.

Problem: Cannot read Motometer instruments. Solution: Download and replace file www.abritus72.com/mmdata.bin into the ABRITES Diagnostics for VAG folder.

Problem: Some device cannot be read or unexpected behavior was found Solution: Please enable the logging as described in chapter 3.1.5 and send to use the corresponding log-file.

#### 4 APPENDIX

Programming instrument clusters from Magneti Marelli (K-line diagnostic link)

#### Instrument cluster from Audi A3, Audi A6, Audi TT, VW New Beetle

Access to these is possible using the types "Instrument Cluster Magneti Marelli - Direct 1996-2000" and "Instrument Cluster Magneti Marelli - Direct 2000+" depending on production year of the car. So you have to select the one of the types and then try to read the EEPROM.

Please note that the threshold of the year 2000 is not absolute, some models are equipped with older instruments even if they are built after the year 2000. Choose the "Instrument Cluster Magneti Marelli - Direct 1996-2000", if not successful you need to turn the ignition OF and ON and to try with the "Instrument Cluster Magneti Marelli - Direct 2000+" type.

If the read is successful, the PIN code and mileage are automatically recognized and displayed for Magneti Marelli direct types, in case of error you can do it by yourself using the description below:

1. In the EEPROM search for the Immobilizer number (AUZ..., WAUZ...). If the immobilizer number is found, then the login is the two bytes preceding the immobilizer number.

	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	00003B10
	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	00003B20
	6F	87	FF	00003B30													
х	00	FF	FF	FF	FF	FF	00	00	FF	FF	FF	FF	FF	FF	90	78	00003B40
+AUZ	5A	55	41	2B	OD	04	01	00	FF	00	00003B50						
5ZOAXXXXXXXX;Zy	79	-5A	ЗB	1E	11	58	58	58	58	58	58	58	41	30	5A	35	00003B60
BCOB	B5	DE	42	30	FF	7F	43	9D	93	20	42	FF	FF	00	Β6	96	00003B70
WB .1	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	31	E8	20	42	57	00003B80
+AUZ5ZOAX	58	41	30	5A	35	5A	55	41	2B	OD	04	FF	FF	FF	FF	FF	00003B90
XXXXXXX;Zy	FF	FF	00	B6	96	79	5A	ЗB	1E	11	58	58	58	58	58	58	00003BA0
BCOBWB .1	31	E8	20	42	57	B5	DE	42	30	FF	7F	43	9D	93	20	42	00003BB0
	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	00003BC0
+AUZ5ZOAXXXXXX	58	58	58	58	58	58	41	30	5A	35	5A	55	41	2B	OD	04	00003BD0
X;ZyBC	43	9D	93	20	42	FF	FF	00	B6	96	79	5A	ЗB	1E	11	58	00003BE0

E.g. on the picture above the immobilizer number is AUZ5Z0AXXXXXX and the login is "0D2B" in hexadecimal or 3371 in decimal

2. If the immobilizer number is not present, then the login is located somewhere in the regionIssued by: Abritus 72 ltd.Manual104

of 0x0070-0x009F in the EEPROM. Starting from 0x0070 in the EEPROM (i.e. 0x3870 in the memory area) there should be a long sequence of 0xFF (e.g. about 7-8 bytes of 0xFF). The first two bytes which are not 0xFF should be the login.

00003800	FF	<u>.</u>															
00003810	FF																
00003820	FF	ΕA	00	01	18	1F	CC	FF	FF								
00003830	FF	ΕA	D6	01	FD	C1	1E	FF	FF	FF	1E	FF	FF	FF	1E	FF	
00003840	FF	FF	06	06	F9	FF	FF	FF	10	00	47	45	36	35	54	54	GE65TT
00003850	31	30	30	30	31	10	FF	23	10001#								
00003860	07	23	03	02	00	00	1E	00	32	20	00	00	02	00	32	FF	.#22.
00003870	FF																
00003880	FF	04	7F	00	01	OF	14	FB	00	00	02	00	FF	FF	FF	FF	
00003890	FF	FF	FF	FF	03	6D	FF	FF	FF	FF	FΕ	63	1B	FF	FΕ	63	mcc
000038A0	1B	FF	FΕ	63	cccc												

E.g. on the picture above starting from address 0x0080 of the EEPROM there are 17 bytes with 0xFF, then comes the login which is 0x047F in hexadecimal or 1151 in decimal.

The mileage consists of two blocks – usually 0x90 bytes with the inverted mileage, followed by 0x90 bytes with the real mileage, it may vary (e.g. blocks with 0x98 bytes instead 0x90, or first comes the real value and then the inverted).

#### Instrument cluster from Audi TT-K

-First try to access the instrument as one of the "Magnet Marelli direct" types (especially for year 2000+) and if successful proceed as described above -If not successful select type "Magneti Marelli - Shadow 3 (TT)" and read EEPROM. Currently for the software versions we know the login can be located as described above, and the mileage starts from address 0xAA to address 0x1C8 (marked in the picture below).

ember 2013	ABRITES Dia	gnost	ics F	OR V/	AG US	SER M	IANU nun	AL fo ober 2	r sof 2/2007	tware /1127	versi	on: 2	D.O			D	ocum	ent
2013	000000000 00000020 00000030 00000040 00000050 00000050 00000080 00000080 00000080 00000080 000000	00 00 FFF 16 59 FFF FFFFFFFFFFF FFFFFFFFFF FFFFFFFFFF	1DEFFF605FFFF55EEEEEEEE1001001001 001001001001001001	00 FFFF3FF5 FFF10 FF777777777 CC88 CC88 FFF FFF	17FFF9FFFFEFBFFFFFFFFBBBBBBBBBBBBBBBBBBBB	00FFFD6FFFF0FFFFFFFFFFFFFFFFFFFFFFFFFFF	OAFF99FFFF4FFEEEEEEE11001001 FFFF0FFFFFFFFFFFFFFFFF	Der 2         O           0         F <th>22007 0AFFF980FFFF08BFFFFFF506BFFFFF506BFFFFF506BFFFFF506BFFFFF4040404040404040404040404040404040</th> <th>1127         OFF         OFF         FF         <th< th=""><th>0FF0F55FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF</th><th>00 F5 55 FFF FFF 33 37 77 77 77 88 C8 C8 C8 C8 FFF FFF FFF FFF FFF FFF</th><th>0F78F858FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF</th><th>00 FF 00 158 58 FF FF FF</th><th>OCF 2 F 5 5 5 F F F F F F F F F F F F F F</th><th>00 FFF1FF5 FFFFF77777777778 CC885 FFFFFFFFFFF7777777777777777777777777</th><th>0FFFF55FFFFFFFFFFFFFFF54000000000000000</th><th></th></th<></th>	22007 0AFFF980FFFF08BFFFFFF506BFFFFF506BFFFFF506BFFFFF506BFFFFF4040404040404040404040404040404040	1127         OFF         OFF         FF         FF <th< th=""><th>0FF0F55FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF</th><th>00 F5 55 FFF FFF 33 37 77 77 77 88 C8 C8 C8 C8 FFF FFF FFF FFF FFF FFF</th><th>0F78F858FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF</th><th>00 FF 00 158 58 FF FF FF</th><th>OCF 2 F 5 5 5 F F F F F F F F F F F F F F</th><th>00 FFF1FF5 FFFFF77777777778 CC885 FFFFFFFFFFF7777777777777777777777777</th><th>0FFFF55FFFFFFFFFFFFFFF54000000000000000</th><th></th></th<>	0FF0F55FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	00 F5 55 FFF FFF 33 37 77 77 77 88 C8 C8 C8 C8 FFF FFF FFF FFF FFF FFF	0F78F858FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	00 FF 00 158 58 FF FF	OCF 2 F 5 5 5 F F F F F F F F F F F F F F	00 FFF1FF5 FFFFF77777777778 CC885 FFFFFFFFFFF7777777777777777777777777	0FFFF55FFFFFFFFFFFFFFF54000000000000000	

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#### VW Passat - usually these Instruments are before 1998

-First try to access the instrument as one of the "Magnet Marelli direct" types (especially for year 2000+) and if successful proceed as described above -If not select type "Magneti Marelli - Shadow 2 (Passat)" and read EEPROM. The login is displayed; mileage is displayed as "0".

#### VW New Beetle

-First try to access the instrument as one of the "Magnet Marelli direct" types (especially for year 2000+) and if successful proceed as described above

-If not select type "Magneti Marelli - Shadow 1" and read EEPROM. The login is not displayed. The mileage is displayed as "0".

### Porsche Cayenne/VW Touareg gasoline engines – ECU wakeup fuses

Porsche Cayenne – fusebox




# Audi A8 fusebox (passenger side – wakeup ECU):





# Audi Q7

To get communication with the ECU you need to short the fuses as shown in the picture below:

If you cannot communicate with the ECU then you should try as on the picture below:



If you are still not able to get communication with the ECU it is possible to make short of the external fusebox (it is found under the front cover, where the engine is). You have to short the first 5A fuse with the +12V connection as shown on the picture. Please pay attention that you have to use a bigger cable because if you use a small cable it can heat up.



## Audi A6/RS6 (except 3.2L)

To get communication with the ECU you need to short the fuses as shown on the picture below:



## Audi A6 3.2L FSI

To get communication with the ECU you need to short the fuses as shown on the picture below:

## Dump tool special function

The dump tool receives a dump file from the corresponding unit (input dump is loaded with the "Load dump" button) as an input. The dump file may have been read either via OBDII or with a programmer (especially for units where reading via OBDII is not possible). As an output the dump tool displays data extracted from the input file and/or makes modifications to the input data. If any modifications were made (for some sub-functions there are no modifications made, only data is visualized) the user has to write the modified dump to a 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 is read/write with a programmer the user must take care to ensure that the proper byte order is used. Because most of the programmers are reading the data in 16bit words, the byte order in the dump depends on the used programmer – some programmers are producing dumps starting with the least significant byte, and some are producing dumps starting the most significant byte. This means that for the same unit two different programmers can produce

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different dumps. Normally the software tries to autodetect the byte order of the dump, and if it does not succeed, then you may need to use the "Swap bytes" button. This button 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, or the extracted data is not valid (e.g. displayed PIN is not accepted from the car), please try to swap bytes to get a result. For some functions the swapping is made automatically (for example the decoding of the Kessy), but for some function the user has to do this manually.

A more detailed description of the most important functions follows below:

# -IMMO - KESSY - Audi A8, VW Touareg, VW Phaeton, Porsche Cayenne, Bentley Continental [ 93C86 ]

# Required license: AN003

This function is used to extract the security code from the Kessy module (this module is used in Audi A8, VW Touareg, VW Phaeton, Porsche Cayenne and Bentley Continental). The function also displays the learned keys and visualizes/changes the immobilizer and VIN numbers.

l ype:	IMMI	U - K	.ESS	ar e A	Audi.	A8, 1	w	loua	ireg,	vw	Pha	eton,	, Por	sche	e Cay	enn	e, Bentley Continental [ 93086	1 1
0000000	81 00	80 00	01 00	00 00	00 AB	00 AA	32 CA	00 30	00 33	00 30	00 36	7A C2	B6 30	01 30	00 30	00 31	2z	Load dump
0000020	85	32	31	2E	30	31	2E	30	33	6A	30	39	85	32	31	2E	.21.01.03j09.21.	Save dump
10000030 10000040 10000050	30 00 35	31 0F 57	2E 0E 4B	30 4B 34	33 33 37	01 44 30	00 30 32	00 39 31	01 30 DA	00 39 56	00 31 42	01 33 52	FF 35 42	01 46 34	00 20 78	01 D7 DA	01.03 K3D0909135F . 5WK47021.VBRB4x.	Swap bytes L/H
0000060	56 00	42 FF	52 05	42 02	34 00	78 02	DA FF	56 01	42 FF	52 FF	42 FF	34 FF	78 01	05 FF	04 FF	00 FF	VBRB4x.VBRB4x	Login 6767 Other Data
00000080 00000090 000000A0	rr 01 01	01 FF 70	FF 56	FF 57	FF 5A	01 33	FF 5A	FF 30	rr FF 43	FF 31	rr 01 30	01 FF 33	FF 34	FF 34	FF 39	rr 02 30	.pVWZ3ZOC1034490	Immo number VWZ3Z0C1030000 Se
000000B0 000000C0	01 01 01	00 00 00	00	00	00 01 01	00 00 00	00 00 00	00	29 01 2D	00 00 7A	23 00 A0	05 00 F0	0B 01 7B	00 00 9B	07 00 F0	03 00 72	·····).#	VIN WVGZZZ7LZ3D010000 Se
000000E0	9C 00	F0 00	83 01	A3 00	F0 00	CE E5	65 EB	90 E3	FO 7D	65 35	90 AE	F0 F0	00 C2	00 2B	00 41	00 75	ee 	1
)0000100 •[]	F6	BO	80	4B	01	00	7F	7E	01	00	99	20	60	01	00	00	K,l ¥	

Pressing the "other data" displays the learned keys and also allows changing the immobilizer status (on some models changing the immobilizer status is used to put the Kessy e.g. into delivery condition).

	×
Key 5: FFFFFFFF	
Key 6: FFFFFFF	
Key 7: FFFFFFFF	
Key 8: FFFFFFFF	
	Key 5: FFFFFFFF Key 6: FFFFFFF Key 7: FFFFFFF Key 8: FFFFFFFF Key 8: FFFFFFFF

#### -EZS-Kessy Security access code [9S12] Required license: AN003

This function is used to extract the security access code from the EZS-Kessy. The EEPROM of the EZS-Kessy is found inside the microcontroller (Motorola HC9S12 family) and is typically read with a programmer, for some older version of the EZS-Kessy (till V2.0.2 of the EZS-Kessy) is also possible to be read by OBDII.

Type:	EZS-	Kes	sy Se	ecuri	ty ac	cess	s coo	ie (9	S12]										10
0000000	24	68	10	02	00	10	FD	BO	FF	FF	00	FF	32	33	39	37	\$h2397 🔺	Load dump	
00000010	37	33	30	30	32	36	30	30	31	31	TT TT	FF	30	35	37	37	73002600110577	Save dump	
0000020	31	30	30	31	32	30	36	30	30	33	30	30	33	31	30	34	1001206003903104		
00000000	34	32	34	37	35	90 77	50	30	36	30	28	32	30	21	30	32	42475 60 20 02	Swap bytes L/	H
0000040	36	36	33	30	57	41	55	54	54	54	34	40	30	37	44	30	6630WAU7774L07D0		
0000060	30	30	30	30	30	FF	FF	FF	02	20	66	03	34	46	30	39	00000 f.4F09	A Reserved	
0000070	31	30	38	35	32	20	20	20	30	32	32	30	00	02	02	00	10852 0220	Login 851	
0000080	07	ED	2A	10	77	5F	30	38	2E	30	33	2E	30	37	FF	FF	*.w 08.03.07		
0000090	34	46	30	39	30	35	38	35	32	42	20	20	20	33	31	FF	4F0905852B 31.		
000000A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			
00000B0	33	30	35	32	34	34	37	33	32	30	30	31	32	30	36	30	3052447320012060		
00000000	30	33	33	30	31	30	31	30	33	35	33	33	30	FF	FF	FF	0330101035330		
00000D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			
00000E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			
00000F0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			
0000100	11	17	FF	D4	22	2F	A4	FD	<b>A</b> 6	E5	49	FB	11	17	FF	D4	*/ I +		
<[]																			

#### -Comfort module component protection data (Passat B6) Required license: AN009

This function is used to extract the 7bytes of the component protection data for Passat B6. This function requires a dump file from the comfort module, and the six bytes of the component

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protection bytes which are always found in the engine control unit. So you need to load the dump of the comfort module and then a dialog is displayed where you can put the six bytes of the component protection manually or you can directly load the ECU dump too. The tool accepts an ECU dump from EDC16, PPD1x, MED9x and ME7x ECUs.

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00000020	34	33	33	48	20	20	30	34	35	55	33 88	43	30	39	35	39	433	SH .	04	1533	095	9			L	oad	dum	ηp	
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00000040	rr TT	rr FF	rr FF	rr FF	rr FF	rr FF	75	rr FF	rr To	rr 7F	rr FF	rr FF	rr FF	rr FD	rr FF	rr FF	1.00	5.5		91. St		-				1	Y		
0000000000	rr 5ð	50	11	PF BE	17	1 0	17	nn	03	63	rr 00	03	FT EA	00	03	56	77					÷							
000000000	00	03	57	00	47	62	54	50	FC	B2	56	77	04	43	86	00	44. T	. o	h7		. ц С	<u>.</u>			q	ave	dur	uri	
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The function also visualizes/changes the immobilizer and VIN numbers.

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00000010	83	62	2D	2D	2E	2D	2D	2E	2D	2D 🔅	33	43	30 3	93	5 39	9.	.b		300959			1	7	
00000020	34	33	33	48	20	20	30	34	35	33 :	33	43	30 3	93	5 39	9 4	433H	0453	3C0959			Los	d dump	
00000030	34	33	33	48	20	20	20	FF	FF	FF :	FF	03	80 F	FF	F FI	F	433H	0.000				LOG	u uump	_
00000040	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF 1	FF	FF	FF F	FF	F FI	F.								ĥ
00000050	FF	FF	FF	FF	FF	FF	7F	FF	F8	7F 1	FF	FF	FF F	DF	F FI	F.								
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00000070	00	03	57	00	03	62	5A	FF	FC	B2 .	56	FF	00 4	38	6 00	Ο,	W	bZ	VC			Sav	e dump	
00000080	43	82	00	43	83	00	43	84	00	43 1	35	5A	FE 7	96	2 44	A (	сс.	.cc	.Z.ybi	ſ		0.4574		
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000000B0 000000C0 000000D0 000000E0	FF FF FF 57	FF FF FF 34	FF FF FF 32	FF FF FF 31	FF FF FF 38	F F F S		Ð	Co	трог	ient	secu	urity by	ytes	are:	D9	9 72 52	: 79 B2 E	4 A4			Swap		_
000000B0 000000C0 000000D0 000000E0 000000E0	FF FF 57 30	FF FF 34 50	FF FF 32 30	FF FF FF 31 30	FF FF 38 33	F F S S		D	Col	трог	ent	secu	urity by	ytes	are:	D9	9 72 52	: 79 B2 E	4 A4		1	Swap	Other	Data
000000B0 000000000 000000D0 000000E0 000000E0 000000E0	FF FF 57 30 FF	FF FF 34 50 FF	FF FF 32 30 FF	FF FF 31 30 FF	FF FF 38 33 FF	FFFSSF	(	0	Co	mpor	ient	secu	urity by	ytes	are:	D9	9 72 52	: 79 B2 E	4 A4		1	Swap)	Other	Data
00000080 000000000 000000000 0000000000	FF FF 57 30 FF FF	FF FF 34 50 FF FF	FF FF 32 30 FF FF	FF FF 31 30 FF FF	FF FF 38 33 FF FF	F F F C C F F	(	0	Co	mpor	ient	seci	urity by	ytes	are:	D9	9 72 52	2 79 B2 E	:4 A4 OK	1	1	Swap)	Other	Data
000000B0 000000D0 000000E0 000000E0 000000E0 00000100 00000110 00000120	FF FF 57 30 FF FF FF	FF FF 34 50 FF FF FF	FF FF 32 30 FF FF	FF FF 31 30 FF FF FF	FF FF 38 33 FF FF FF	FFSSFF	(	0	Co	mpor	ient	secu	urity b	ytes	are:	D9	9 72 52	2 79 B2 E	:4 A4 OK		Immo	Swap	Other	Data
000000B0 000000D0 000000E0 000000E0 000000E0 00000100 00000110 00000120 00000120	FF FF 57 30 FF FF FF	FF FF 34 50 FF FF FF FF	FF FF 32 30 FF FF FF FF	FF FF 31 30 FF FF FF	FF FF 38 33 FF FF FF FF	F F C C F F F F F	FF	) FF	Co FF	mpor	ent	secu	urity by	ytes F F	are: T Fl	D9	9 72 52	79 B2 E	0K		Immo	number	Other	Data
000000B0 000000C0 000000E0 000000E0 00000100 00000110 00000120 00000130 00000130	FF FF 57 30 FF FF FF FF	FF FF 34 50 FF FF FF FF FF	FF FF 32 30 FF FF FF FF	FF FF 31 30 FF FF FF FF	FF FF 38 33 FF FF FF FF FF	F F S S F F F F F F F F	FF	FF FF	Co FF FF	mpor FF . FF :	ent FF	secu FF	urity by FF F FF F	ytes F F F F	are: FFI	D9 F .	9 72 52	: 79 B2 E	4 A4 OK		Immo	number	Other	Data
000000B0 000000D0 000000D0 000000E0 000000E0 00000100 00000110 00000120 00000130 00000130	FF FF 57 30 FF FF FF FF FF	FF FF 34 50 FF FF FF FF FF	FF FF 32 30 FF FF FF FF	FF FF 31 30 FF FF FF FF FF	FF FF 38 33 FF FF FF FF FF FF	F F S F F F F F F F F F F F	FF FF FF	FF FF FF FF	Co FF FF FF	mpor FF : FF : FF :	ent FF FF	seci FF FF	urity by FF F FF F FF F	ytes F F F F F F	are: F FI F FI F FI	D9 F . F .	9 72 52	: 79 B2 E	4 A4 OK		Imme	Swap i number 2CZ0000	Other	Data
000000B0 000000D0 000000D0 000000E0 000000E0 00000100 00000120 00000120 00000120 00000120 00000120 00000150	FF FF 57 30 FF FF FF FF FF FF	FF FF 34 50 FF FF FF FF FF FF	FF FF 32 30 FF FF FF FF FF	FF FF 31 30 FF FF FF FF FF FF	FF FF 38 33 FF FF FF FF FF FF	F F S F F F F F F F F F F F F F F F	FF FF FF FF FF	FF FF FF FF	Co FF FF FF FF FF	FF . FF . FF . FF .	ent FF FF FF	Seci FF FF FF	rity by FF F FF F FF F FF F	ytes FFF FFF FFF	are: F FI F FI F FI F FI	D9 F . F . F .	9 72 52	: 79 B2 E	0K		Immo	swap i number 2020000	Other	Data
000000B0 000000D0 000000D0 000000E0 000000E0 00000100 00000120 00000120 00000130 00000130 00000150 00000150 00000170	FF FF 57 30 FF FF FF FF FF FF	FF FF 34 50 FF FF FF FF FF FF FF	FF FF 30 FF FF FF FF FF FF	FF FF 31 30 FF FF FF FF FF FF	FF FF 38 33 FF FF FF FF FF FF	F F F F F F F F F F F F F F F F F F F	FF FF FF FF FF	FF FF FF FF FF	Co FF FF FF FF FF	FF FF FF FF FF	ent FF FF FF FF FF	Seci FF FF FF FF	FF F FF F FF F FF F FF F FF F	ytes FFF FFF FFF FFF	are: FFI FFI FFI FFI FFI	D9	9 72 52	: 79 B2 E	0K		Imme VW2	swap i number 2020000	Other	Data
000000B0 000000D0 000000D0 000000D0 000000F0 00000100 00000120 00000120 00000130 00000130 00000150 00000160 00000170	FF FF 57 30 FF FF FF FF FF FF FF	FF FF 34 50 FF FF FF FF FF FF FF	FF FF 32 30 FF FF FF FF FF FF	FF FF 31 30 FF FF FF FF FF FF FF	FF FF 38 33 FF FF FF FF FF FF FF FF	F F F F F F F F F F F F F F F F F F F	FF FF FF FF FF	J FF FF FF FF FF FF	Co FF FF FF FF FF	FF : FF : FF : FF : FF :	ent FF FF FF FF FF	SECL FF FF FF FF FF	FF F FF F FF F FF F FF F FF F	ytes F F F F F F F F F F F F	are: FFI FFI FFI FFI FFI	D9 F . F . F . F .	72 52	: 79 B2 E	0K		Immo VW2 VIN	swap i number 2CZ0000	Other	Data
000000B0 000000D0 000000D0 000000D0 000000D0 00000100 00000120 00000120 00000120 00000120 00000120 00000120 00000120 00000120 00000120	FF FF 57 30 FF FF FF FF FF FF FF FF	FF FF 34 50 FF FF FF FF FF FF FF FF	FF FF 32 30 FF FF FF FF FF FF FF	FF FF 31 30 FF FF FF FF FF FF FF	FF FF 38 33 FF FF FF FF FF FF FF FF	F F F F F F F F F F F F F F F F F F F	FF FF FF FF FF FF FF	FF FF FF FF FF FF FF	Col FF FF FF FF FF FF	MPOF FF : FF : FF : FF : FF :	ent FF FF FF FF FF FF	SECL FF FF FF FF FF FF	rity b FF F FF F FF F FF F FF F FF F	ytes FFF FFF FFF FFF	are: FFI FFFI FFFI FFFI FFFI	D9 F . F . F . F .	9 72 52	2 79 B2 E	0K		Imme VW2 VIN	Swap 1 number 2CZ0000	000000	Data Set
000000B0 000000D0 000000D0 000000D0 000000D0 00000100 00000120 00000120 00000130 00000140 00000150 00000160 00000180 00000180 00000180	FF FF 57 30 FF FF FF FF FF FF FF FF FF	FF FFF 34 50 FFF FFF FF FF FF FF FF FF	FF FF 32 30 FF FF FF FF FF FF FF FF	FF FF 31 30 FF FF FF FF FF FF FF FF	FF FF 38 33 FF FF FF FF FF FF FF FF FF	F F F F F F F F F F F F F F F F F F F	FF FF FF FF FF FF FF	FF FF FF FF FF FF FF FF	Co FF FF FF FF FF FF FF	MPOF FF FF FF FF FF FF FF	ent FF FF FF FF FF FF FF	SECL FF FF FF FF FF FF FF	rity b FF F FF F FF F FF F FF F FF F FF F	ytes FFF FFF FFF FFF FFF	FFI FFI FFI FFI FFI FFI FFI	D9 FF FF FF FF	9 72 52	2 79 B2 E	4 A4		Imme VW2 VIN	Swap 1 number 2CZ0000	000000 269000082	Data Set
000000B0 000000D0 000000E0 000000E0 00000100 00000120 00000120 00000130 00000140 00000150 00000150 00000160 00000180 00000180	FF FFF 57 30 FFF FFF FFF FFF FFF FFF FFF FFFFFFFFF	FF FFF 34 50 FFF FFF FFF FFF FFF FFF FFF FFF	FF FF 32 30 FF FF FF FF FF FF FF FF FF	FF FF 31 30 FF FF FF FF FF FF FF FF	FF FF 38 33 FF FF FF FF FF FF FF FF FF FF	F F F F F F F F F F F F F F F F F F F	FF FF FF FF FF FF FF FF	FF FF FF FF FF FF FF FF FF	Co FF FF FF FF FF FF FF	MPOF FF FF FF FF FF FF FF	ent FF FF FF FF FF FF FF FF	Seci FF FF FF FF FF FF FF	rity b FF F FF F FF F FF F FF F FF F FF F F	ytes FFFF FFF FFF FFF FFF	FFI FFI FFI FFI FFI FFI FFI	D9 FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	9 72 52	279 B2 E	4 A4		Imma VW2 VIN	swap i number 2CZ0000	000000	Data Data Set

Pressing the "other data" displays the learned keys and allows several operations:

-If a programmer has been recognized, it allows to read current transponder's data, add it to the dump and if transponder's type is appropriate allows to program it as dealer key

-It allows to change the immobilizer status (on some models changing the immobilizer status is used to put the Comfort module e.g. into deliver condition).

omfort module keys	data.				<u>-</u>
frite keys to comfor 'ou can enter manu Vith pressing "OK" 'or to delete key fro 'ou can press "Proj Vith pressing "OK"	r module dump: ally a key in certain positio keys' data will be written to m certain position, write "O yram transponder" to read keys' data will be written to	n. o comfort module dump. 0000000'' in the key pos current transponder with o comfort module dump.	sition field) programmer to certain po	sition.	
hange immobilizer s ly pressing "Set" yo IOTE: Normally imm	tatus: u can set immobilizer statu obilizer status should have	is. ≥ the value '2'. It is recon	nmended to change it if it	is different.	shilaar atalua/
hange immobilizer s by pressing "Set" yo IOTE: Normally imm Write keys to Comfo Key 1: 21C2DC8F	tatus: iu can set immobilizer statu iobilizer status should have prt module dump: Program transponder	is. • the value '2'. It is recon Key 5: 00000000	nmended to change it if it Program transponder	is different. Change immo Immo status: [	obilizer status:
hange immobilizer s ty pressing "Set" yo IOTE: Normally imm Write keys to Comfo Key 1: 21C2DC8F	tatus: nu can set immobilizer statu iobilizer status should have ort module dump: Program transponder Program transponder	is. • the value '2'. It is recon Key 5: 00000000 Key 6: 00000000	nmended to change it if it Program transponder Program transponder	is different. Change immo Immo status:	obilizer status: 2Set
hange immobilizer s ly pressing "Set" yo IOTE: Normally imm Write keys to Comfo (ey 1: 21C2DC8F (ey 2: 0269B8A5 (ey 3: 00000000	tatus: u can set immobilizer statu iobilizer status should have nt module dump: Program transponder Program transponder Program transponder	is. • the value '2'. It is recon Key 5: 00000000 Key 6: 00000000 Key 7: 00000000	nmended to change it if it Program transponder Program transponder Program transponder	is different. Change immo Immo status: [	obilizer status: 2 Set

Keys with data "00000000" represent the empty positions in the dump file (position at which no key is learned). The rest are already occupied and represent the data of the learned at the respective positions keys.

By pressing the "Program transponder" button (and if a programmer is recognized) the current transponder is read and it's data is written at the corresponding (to the pressed button position) position in the dump file (for example pressing "Program transponder" button next to "Key 4:" data will write transponder's data at position 4 in the dump).

After current transponder is read, if its type is appropriate (TA3), it is also allowed to program transponder as dealer key. You will be asked whether you like to do it.

In short if you put a TA3 transponder and program it to a specified position, the car should start without making any key-learning procedure.

By pressing OK, all changes in the dumps data will be saved.

By pressing CANCEL, the loaded dump will remain unchanged.

## -ECU EDC16 Set component protection data [95320] Required license: AN009

This function allows viewing and/or changing the component protection data found in the

Document

EDC16. Into the EDC16 there are at least 6 bytes of the component protection found, or sometimes there are 7 bytes. If there are 6 bytes contained, then the 7<sup>th</sup> byte is zero.

oump Tool							-													×
Туре:	ECU	EDC	:16 9	Set c	omp	oner	nt pro	otect	ion c	lata	[953	20]								•
00000000	00 FF	5E FF 12	05 31 04	12 37 00	38 2D 43	FF 31 54	FF 32 31	31 2D 30	36 30 33	2D 34 37	31 08 33	32 10 37	2D 18 34	30 89 31	34 00 30	FF 39 36	.^816-12-04. 17-12-049 CT1037374106		Load dump Save dump	
00000030	42 00 31	03 06 31	2F 05 39	2F 00 20	31 04 20	30 2A 00	33 10 00	37 75 00	33 A6 16	37 30 90	32 32 07	36 38 D5	36 31 0A	37 30 18	F0 31 FA	E3 32 B1	B.//1037372667 *.u.0281012	Ē	Swap bytes L/H	
00000060	00 42 20	Com Ok	npor d:	nenl	: se 24	cunit F	iy d 3	ata C	5	72		49		E7	8	4	К			
0000000A0 0000000B0 0000000C0	00 42 20	Ne	ew:	ļ	0	1	)	0		0		0		0	0		Cancel A			
000000D0 000000E0 000000F0	00. 24 5A	F3 30	C5 30	72 30	49 30	E7 30	8A 30	CD 30	DA 30	00 30	00 00	00 AC	56 F6	57 02	5A F5	43 55	\$rIVWZC Z00000000U			_
00000100	24	F3	C5	72	49	E7	88	CD	DA	00	00	00	56	57	5A	43	\$rIVWZC ▶			
																			Esi	

## -ECU EDC16 Immo bypass [95320]

#### **Required license: None**

This function is used to make the so called "Immobilizer bypass". Bypassing the immobilizer means that the ECU start the engine even if the immobilizer is not allowing the engine start (e.g. due to a wrong key or wrong synchronization between the immobilizer and the ECU)

ype:	ECU	EDC	C16 I	mmo	Бур	ass (	953	20]										×.
0000000	00	5E	05	12	38	FF	FF	31	36	2D	31	32	2D	30	34	FF	.^816-12-04. 🛋	Load dump
0000010	FF	FF	31	37	2D	31	32	2D	30	34	08	10	18	89	00	39	17-12-049	Save dump
0000020	17	12	04	00	43	54	31	30	33	37	33	37	34	31	30	36		Jave dump
000030	42	03	ZF	ZF	31	30	33	37	33	37	32	36	36	37	FU	E3	B.//1037372667	Swap bytes L/H
0000040	00	06	05	00	04	ZA	10	75	A6	30	32	38	31	30	31	32	*.u.0281012 L	1.1
0000050	31	31	39	20	20	00	00	00	10	90	07	D5	DA	18	FA	BL	119	
000060	00	04	ZA	10	15	AD	30	33	47	39	30	30	30	34	31	41		Toggle Immo On/Off
000070	44	20	54	34	20	34	20	30	40	20	45	44	43	40	20	20	B R4 2,01 EDC	4 <u></u> 4
0000000	20	20	20	20	20	20	00	00	37	00	00	00	00	40	00	00	10/1	
0000090	00	00	28	10	70	20	20	22	17	20	20	26	20	09	21	OL Al	* ** 0200060218	
ODOOORO	12	20	52	24	20	22	20	30	47	20	76	30	30	20	20	20	P D4 2 01 FDC	
0000000	20	20	20	20	20	20	37	38	37	31	40	00	40	A8	00	00	7871 H	
0000000	00	00	00	00	00	00	00	00	00	00	00	00	00	040	87	6F	,0,1n	
00000000	24	F3	C5	72	49	F7	81	CD	DA	00	00	00	56	57	54	43	s rt WN7C	
ODODEO	54	30	30	30	30	30	30	30	30	30	00	10	F6	02	F5	55	700000000 11	
0000100	24	F3	C.5	72	49	E7	84	CD	DA	00	00	00	56	57	54	43	\$rTVWZC	

The "Toggle Immo On/Off" button allows to switch on/off alternatively the bypass function.

#### -ECU EDC16 Security access code / Checksum calculator [95320] Required license: None

This function displays the security access code which is contained into the EDC16 unit. It also calculates and fixes (if some of them are incorrect) the checksums of the EEPROM. Please pay attention that the checksums are calculated for the area till address 0x180 because after that area the EEPROM sections are different for each different software version of the EDC16 unit. Fortunately the most of the interesting data are found in this section.

Document

ype:	ECU	EDC	C16 S	Secu	rity a	acce	ss co	ode /	/ Che	ecks	um c	alcu	lator	[953	820]				*
0000000	00	5E	05	12	38	FF	FF	31	36	2D	31	32	2D	30	34	FF	.^816-12-04.		Load dump
0000010	FF	FF	31	37	2D	31	32	2D	30	34	08	10	18	89	00	39			Save dump
0000020	11	14	04	00	43	54	31	30	33	37	33	31	34	31	30	30	U1103/3/4106	1	ouve dump
0000030	44	03	2r or	2ľ	31	30	33	3/	33	37	34	30	30	37	21	E3	B.//103/3/266/		Swap bytes L/H
0000040	21	21	20	20	20	2A 00	10	10	16	00	07	20	01	10	DI FA	04 D1		11	
00000050	00	04	20	10	20	16	20	22	10	20	20	26	30	10	21	D1 A1	* 1030060218	1	-
00000000	42	20	52	34	20	32	20	30	47	20	30	30 AA	13	20	20	20	B D4 2 OF FDC	Login	52698
0000070	20	20	20	20	20	20	37	38	37	31	03	00	-10	48	00	00	7871 H		
0000000	00	00	00	00	00	00	00	00	00	00	00	00	00	0.0	F7	6F	,0,1n		
0000030	00	04	24	10	75	46	30	33	47	39	30	36	30	32	31	41	* 11.0369060214		
DODOODBO	42	20	52	34	20	32	20	30	40	20	45	44	43	20	20	20	B R4 2.0L EDC		
00000000	20	20	20	20	20	20	37	38	37	31	03	00	00	48	00	00	7871H		
00000000	00	00	00	00	00	00	00	00	00	00	00	00	00	09	F7	6E	n		
0000E0	24	F3	C5	72	49	E7	8A	CD	DA	00	00	00	56	57	5A	43	\$rI		
00000F0	5A	30	30	30	30	30	30	30	30	30	00	AC	F6	02	F5	55	2000000000U		
0000100	24	F3	C5	72	49	E7	8A	CD	DA	00	00	00	56	57	5A	43	\$rI		
																	•		

## -ECU MED 9.x Reset component protection data [95160] Required license: AN009

This function allows viewing and/or changing the component protection data found into the MED9x with ST95160 serial EEPROM. Into the MED9x there are at least 6 bytes of the component protection found, or sometimes there are 7 bytes. If there are 6 bytes contained, then the 7<sup>th</sup> byte is zero. Please pay attention that for some MED9.1 ECUs the data (security access code and component protection data) are encrypted and in that case they are incorrectly displayed. You can recognize whether the EEPROM data are encrypted by trying to put the visualized security access code to some detail (e.g. ECU or immobilizer)

D000000 00 97 ES 81 38 FF FF 30 35 2D 30 37 2D 32 39 00805-07-29.	Load dump
000020 29 07 05 10 37 48 31 30 33 37 33 37 37 34 33 39 )7H1037377439 000030 02 02 2F 2F 31 30 33 37 33 37 32 34 39 36 F0 AB//1037372496	Cause duran
000030 02 02 2F 2F 31 30 33 37 33 37 32 34 39 36 F0 AB//1037372496	Jave dump
	6 1 ( 1 9)
000040 01 03 A5 5A 69 96 C1 3E 00 00 00 3F 61 1B D4 05Zi>?a	Swap bytes L/H
)00050 E4 37 A8 0B 37 A6 3C 13 00 01 00 00 00 BC F7 B2 .77.<	
000060 01 03 A5 5A 69 96 C1 3E 00 00 00 3F 61 1B D4 05Zi>?a	
000070 E4 37 A8 0B 37 A6 3C 13 00 01 00 00 00 BC F7 B2 .77.<	
CZGE Component security data	
000080 010 118 D4 5 E4 37 A8 B OK 2020	
)000E0 Z6E0	
)000F0-50-57-50-53-50-11-00-00-00-00-00-00-00-01-12-ж3-07050	

#### -ECU MED 9.x Security Code / Checksum calculator [95160] Required license: AN003

This function displays the security access code which is contained into the MED9x unit with ST95160 serial EEPROM. It also calculates and fixes (if some of them are incorrect) the checksums of the EEPROM. Please pay attention that the checksums are calculated for the area till address 0x280 because after that area the EEPROM sections are different for each different software version of the MED9 unit. Fortunately most of the interesting data is found in this section. Please pay attention that for some MED9.1 ECUs the data (security access code and component protection data) are encrypted and in that case they are incorrectly displayed. You can recognize whether the EEPROM data are encrypted by trying to put the visualized security access code to some detail (e.g. ECU or immobilizer)

ype:	ECU	ME	D.9.x	Sec	curity	Cod	le / (	Chec	ksur	n cal	cula	tor [S	9516	0]					1
0000000	00	97	E5	81	38	FF	FF	30	35	2D	30	37	2D	32	39	00	805-07-29.		Load dump
0000010	FF 20	FF 07	30	35	2D 37	30	37	20	32	39	33	10	18	34	33	30	05-07-291.6 5 781037377439		Save dump
0000020	02	02	28	28	31	30	33	37	33	37	32	34	39	36	FO	AB	//1037372496	_	
00000000	01	03	AS	54	69	96	C1	3E	00	00	00	3F	61	18	D4	0.5			Swap bytes L/H
0000050	E4	37	AS	OB	37	AG	30	13	00	01	00	00	00	BC	F7	B3	.77.<	0.0	
0000060	01	03	A5	5A	69	96	C1	3E	00	00	00	3F	61	1B	D4	05	Zi>?a	1 10 10 10 10 10 10 10 10 10 10 10 10 10	20000
0000070	E4	37	<b>A</b> 8	0B	37	A6	30	13	00	01	00	00	00	вс	F7	B3	.77.<	Login	24630
0000080	02	04	00	00	10	57	56	57	5A	5A	5A	33	43	5A	36	45	WVWZZZ3CZ6E		
0000090	30	30	30	30	30	30	56	57	5A	43	5A	30	30	30	30	30	0000007WZCZ00000		
00000A0	30	30	30	30	57	56	57	5A	5A	5A	33	43	5A	36	45	30	0000WVWZZZ3CZ6E0		
00000B0	30	30	30	30	30	11	00	00	00	00	00	00	00	BF	F2	Α7	00000		
00000000	02	04	00	00	10	57	56	57	5A	5A	5A	33	43	5A	36	45	WVWZZZ3CZ6E		
00000D0	30	30	30	30	30	30	30	57	5A	43	5A	30	30	30	30	30	00000000000000		
00000E0	30	30	30	30	57	56	57	5A	5A	5A	33	43	5A	36	45	30	0000WVWZZZ3CZ6E0		
00000F0	30	30	30	30	30	11	00	00	00	00	00	00	00	BF	F2	A7	00000		
0000100	03	04	8B	C8	Al	7B	00	00	00	00	00	00	00	00	00	00	{		
e																			

## -ECU MED 9.x Reset component protection data [95080] Required license: AN009

This function allows to view and/or change the component protection data found in the MED9x with ST95080 serial EEPROM. Into the MED9x there are at least 6 bytes of the component protection found, or sometimes there are 7 bytes. If there are 6 bytes contained, then the 7<sup>th</sup> byte is zero. Please pay attention that for some MED9.1 ECUs the data (security access code and component protection data) is encrypted and in that case they are incorrectly displayed. You can recognize whether the EEPROM data are encrypted by trying to put the visualized security access code to some detail (e.g. ECU or immobilizer)

000000	00	97	E5	81	38	FF	FF	30	35	2D	30	37	2D	32	39	00	80	5-07-	-29.	Load dump	4
0000010	FF 20	FF 07	30	35	2D	30 79	37	2D	32	39	80	10	18	49	05	47	05-07-3	29	.I.G	Save dump	(
000020	02	02	2F	2F	31	30	33	37	33	37	32	34	39	36	FO	AB	//1037	37249	96		
000040	01	03	A5	5A	69	96	C1	ЗE	00	00	00	ЗF	61	1B	D4	05	Zi>	?	a	Swap bytes L	/H
000050	E4	37	<b>A</b> 8	0B	37	<b>A</b> 6	3C	13	00	01	00	00	00	BC	F7	B2	.77.<				
000060	01	03	<b>A</b> 5	5A	69	96	C1	ЗE	00	00	00	ЗF	61	1B	D4	05	Zi>	?:	a		
000070	E4	37	<b>A</b> 8	OB	37	<b>A</b> 6	3C	13	00	01	00	00	00	BC	F7	B2	.77.<.				
0000080	Con	npo	nen	t sei	curi	ty d	ata											×.	CZ6E		
000030	0	ú.	1	-	- 1.		181 <b>-</b>	-	1 			- r		I I I I		ľ		-	Z6E0		
0000B0	0	u.		18	L.	)4	5		E4		37		A8	В			OK				
000000	M.		1	-					-	- 14	-				-	[	Cancel		CZ6E		
0000D0	130	ew.		U	l	ļ	0		U		U		U	U		L		_  (	0000		
0000E0																		12	Z6E0		
0000F0	-00	~ ~	00	00		11 11	00		00	00	00	00	00					and.			

## -ECU MED 9.x Security Code / Checksum calculator [95080] Required license: AN003

This function displays the security access code which is contained into the MED9x unit with ST95080 serial EEPROM. It also calculates and fixes (if some of them are incorrect) the checksums of the EEPROM. Please pay attention that the checksums are calculated for the area till address 0x280 because after that area the EEPROM sections are different for each different software version of the MED9 unit. Fortunately the most of the interesting data are found in this section. Please pay attention that for some MED9.1 ECUs the data (security access code and component protection data) are encrypted and in that case they are incorrectly displayed. You can recognize whether the EEPROM data are encrypted by trying to put the visualized security access code to some detail (e.g. ECU or immobilizer)

ype:	ECU	ME	) 9.x	Sec	urity	Cod	le / (	Chec	ksur	n cal	cula	tor [S	9508	0]					1
0000000	00	97	E5	81	38	FF	FF	30	35	2D	30	37	2D	32	39	00	805-07-29.	T.	Load dump
0000010	FF	FF	30	35	2D	30	37	2D	32	39	08	10	18	49	05	47	05-07-29I.G	1	Cours down
0000020	29	07	05	10	37	48	31	30	33	37	33	37	37	34	33	39	)7H1037377439		save dump
0000030	02	02	2F	2F	31	30	33	37	33	37	32	34	39	36	FO	AB	//1037372496		Swap bytes L/H
0000040	01	03	A5	5A	69	96	Cl	3E	00	00	00	3F	61	1B	D4	05	Zi>?a	-	
0000050	E4	37	A8	OB	37	A6	30	13	00	01	00	00	00	BC	F7	B2	.77.<	3	
0000060	01	03	A5	5A	69	96	C1	3E	00	00	00	3F	61	18	D4	05	Z1>?a	Login	24895
10000070	E4	37	A8	OB	37	A6	30	13	00	01	00	00	00	BC	F7	BZ	.77.<		1
00000080	02	04	00	00	10	57	56	57	5A	5A	5A	33	43	5A	36	45	WVWZZZ3CZ6E		
00000090	30	30	30	30	30	30	56	57	5A	43	5A	30	30	30	30	30	0000007WZCZ00000		
UAUUUUUUU	30	30	30	30	57	56	57	5A	5A	5A	33	43	5A	36	45	30	00000000222302680		
00000080	30	30	30	30	30	11	00	00	00	00	00	00	00	BF	FZ	A5	00000		
00000000	02	04	00	00	10	57	56	57	5A	5A	5A	33	43	5A	36	45	WVWZZZ3CZ6E		
00000000	30	30	30	30	30	30	56	57	5A	43	5A	30	30	30	30	30	000000000000000000000000000000000000000		
OUUUUEU	30	30	30	30	57	50	57	SA	5A	5A	33	43	5A	36	45	30	00000000222302680		
010000000	30	30	30	30	30	10	00	00	00	00	00	00	00	Br	12	AS			
00000100	03	04	8B	18	AT	7B	00	υu	00	υu	00	00	00	00	UU	υu	••••••		
•																	<b>F</b>		

# -ECU MED 9.x Reset CRYPTED Login/Component protection

## **Required license: AN009**

The function allows changing the security access code and the component protection data into MED9.1 ECUs for which the EEPROM is encrypted. As mentioned previously for some MED9.1 ECUs the data (security access code and component protection data) are encrypted and in that case they are incorrectly displayed. You can recognize whether the EEPROM data are encrypted by trying to put the visualized security access code to some detail (e.g. ECU or immobilizer). Changing the security access code and the component protection data into the ECU requires that the original (uncrypted) data are entered. These data can be read e.g. from the Immobilizer/Instrument if possible and are entered into the "Old" fields. E.g. for Audi RS4 the MED9.1 ECUs are with encrypted EEPROM, but the login and component protection data can be taken from the RB8 instrument cluster.

Sep	tem	ber
27.	201	3

t crypted Login/C	50 r 5	r rr	50 50	20 3	10 30	20 3.	1 33 00		×1	.p	Luau uump
									_	65	Save dump
ogin	5323	84						<u> </u>		VR	Swap bytes L/H
lid (uncrypted) login:	10020	/ <b>T</b>						Cance		.: _	
lew (uncrypted) login:	2341	3						-		VR .:	
omnonent security or	otection	ı								7K	
Ild (uncrypted) CS:	12	AB	32	8A	34	F8	00		1	к8	
lew (uncrypted) CS:	12	03	34	AF	DA	80	0			 7K	
	- Contraction	М.	1	1	1 Percent	1	1			770	
crypted data can be r	ead fro	m the ir	nstrumer	nt or fro	m the N	1ED EC	U through	the OBDII	ſ		

## -ECU MED 9x Immo bypass Required license: AN012-B

This function allows you to make a immobilizer bypass for the MED9 engine control units. It works on the unencrypted engine control units, but also on the encrypted too, but on some encrypted engine control units it might not work.

ATTENTION: For the encrypted MED9.x ECUs it is necessary to make changes in the flash too! So after you will need to give also the ECU flash and EEPROM as input, and after the modifications to write back the modified flash and EEPROM to the ECU. Unencrypted MED9x require only EEPROM changes. It is automatically recognized whether the ECU is encrypted or not.

Dump Tool	X
Туре:	
ECU MED 9.× Immo Bypass	•
00000000 01 2C 4C 15 38 FF FF 30 37 2D 30 32 2D 30 38 00 .,L.807-02-08 00000010 00 00 30 37 2D 30 32 2D 30 38 08 10 13 24 01 8107-02-08 00000020 08 02 07 02 20 02 31 30 33 37 33 38 34 39 36 381037384966 0000030 02 02 2F 2F 31 30 33 37 33 38 33 37 38 35 F4 9F//1037383785 0000040 01 03 A5 5A 71 96 A5 3E 00 00 00 43 44 56 66 77Zq>CDVfw 0000050 A5 A5 14 00 C8 44 DB F0 00 01 00 00 0FF F5 16D 00000000 01 03 A5 5A 71 96 A5 3E 00 00 00 43 44 56 66 77Zq>CDVfw 00000070 $\frac{1}{4}$ 5 A5 14 00 C8 44 DB F0 00 01 00 00 0FF F5 16D 00000080 02 04 00 00 10 57 41 55 5A 5A 5A 34 4C 33 37 44WAUZZZ4L37D 00000080 02 04 00 00 10 57 41 55 5A 5A 5A 34 4C 33 37 44WAUZZZ4L37D 00000080 02 04 00 00 10 57 41 55 5A 5A 5A 34 4C 33 37 44WAUZZZ4L37D 00000000 20 20 20 20 57 41 55 5A 5A 5A 34 4C 33 37 44WAUZZZ4L37D 00000000 30 39 31 32 31 30 10 00 00 00 00 00 00 00 00 56 52 91210 HOUDOOLO 02 04 00 00 10 57 41 55 5A 5A 5A 34 4C 33 37 44 30 WAUZZZ4L37D 00000000 30 39 31 32 31 30 20 20 20 20 20 20 20 20 20 20 20 10 00000000 30 39 31 32 31 30 11 00 00 00 00 00 00 00 00 00 00 00 00	Load dump Load dump Save dump Save dump Swap bytes L/H Toggle Immo On/Off
Immo is now ON!!!	Exit

# -ECU ME 7.x Set component protection data [9P08/95080]

## **Required license: AN009**

This function allows viewing and/or changing the component protection data found into the ME7x ECUs. Into the ME7x there are at least 6 bytes of the component protection found, or sometimes there are 7 bytes. If there are 6 bytes contained, then the 7<sup>th</sup> byte is zero.

0000000	20	20	20	20	20	5A	FF	00	12	30	35	30	32	30	33	5A	Z050203Z	Load dump	
0000010	05	01	01	00	43	D8 D8	71	10	00	00	69 69	CI	00	A5	81	FC	C.qi	Save dump	
0000030	04	01	D6	AC	D8 D8	00	2D 2D	A1 A1	BO BO	18 18	5B 5B	00	00	00	A1 A0	FB FB	·····-	Swap bytes L/H	_
0000050	07 00	02 00	80 67	02 0D	E0 09	01 0E	06 00	00 00	28 18	04 03	58 00	0D 00	07 00	00 00	F1 54	FD FF			
)000070 )000080	05 05	04 04	22 22	09 09	09 09	00 00	06 06	05 05	00 00	00 00	FD FD	2D 2D	00 00	46 46	41 41	FE FE			
0000090 0000000	Con	npol	nenl	: seo	curi	ty d	ata										×		
00000B0	01	d:		DE	[	2	2	D	A1		BO		18	5	B	[	OK8.		
00000D0 00000E0 00000F0	Ne	ew:		0	0	)	0		0		0	1	0	0		[	Cancel A A 13		
1000100,	<u> </u>																3 ↓		

## -ECU ME 7.x Security Code / Checksum calculator [9P08/95080]

#### **Required license: None**

This function displays the security access code which is contained into the ME7 unit. It also calculates and fixes (if some of them are incorrect) the checksums of the EEPROM. Please pay attention that the checksums are calculated for the area only for the first 0x120 bytes because after that area the EEPROM sections are different for each different software version of the ME7x unit. Fortunately the most of the interesting data are found in this section.

Document

уре:	ECU	ME	7.x 9	iecu	rity C	Code	7 Cł	neck	sum	calci	ulato	r (9F	087	9508	0]				
0000000	20	20	20	20	20	5A	FF	00	12	30	35	30	32	30	33	5A	Z050203Z 💌		Load dump
0000010	05	01	01	00	43	D8	71	10	00	00	69	C1	00	<b>A</b> 5	81	FC	C.qi	[	Carlo dona
0000020	05	01	01	00	43	D8	71	10	00	00	69	C1	00	A5	80	FC	C.qi		Save dump
0000030	04	01	D6	AC	D8	0C	2D	Al	BO	18	5B	00	00	00	A1	FB			Swap butes 17H
0000040	04	01	D6	AC	D8	0C	2D	Al	BO	18	5B	00	00	00	AO	FB	••••••[•••••	-	
0000050	07	02	80	02	EO	01	06	00	28	04	58	OD	07	00	Fl	FD	·····	a	<u> </u>
0000060	00	00	67	OD	09	OE	00	00	18	03	00	00	00	00	54	FF	gT.	Login	44246
0000070	05	04	22	09	09	00	06	05	00	00	FD	2D	00	46	41	FE			1
0000080	05	04	22	09	09	00	06	05	00	00	FD	2D	00	46	41	FE	"FA.		
0000090	00	80	80	80	80	00	00	80	00	80	80	FF	00	00	78	FB	x.		
DOODOOAO	00	80	80	80	80	00	00	80	00	80	80	FF	00	00	78	FB	·····X.		
0000080	05	07	00	00	10	57	41	55	5A	5A	00	00	00	00	38	FE	WAUZZ8.		
00000000	05	07	00	00	10	57	41	55	5A	5A	00	00	00	00	38	FE	WAUZZ8.		
00000000	5A	34	45	38	33	415	30	30	37	35	39	35	41	00	EL	FU	24E83NUU/595A		
OCOCOEC	5A EE	54	45	50	33	412	30	30	37	35	39	35	41	00	EL	FC	24E83N00/595A		
00000000	55	50	33	SA	30	43	31	33	31	30	34	34	33	00	E4	FC	UX32UC131U443		
0000100	22	00	33	AC	30	45	.91	33	31	30	54	34	33	00	£4	ru	0X32001310443		
e																	• •		

## -ECU EDC15 Immo bypass [24C04]

## **Required license: None**

This function is used to make the so called "Immobilizer bypass". Bypassing the immobilizer means that the ECU start the engine even if the immobilizer is not allowing the engine start (e.g. due to a wrong key or wrong synchronization between the immobilizer and the ECU)

00000000	F1	FF	FF	FF	FF	16	31	35	38	36	2E	30	32	8F	00	C3	1586.02	Load dump
00000010	16	31	35	38	36	2E	30	32	E3	00	FF	FF	FF	FF	FF	FF	.1586.02	
00000020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF		Save dump						
00000030	FF	FF	2F	2F	FF	FF	FF	FF	FF	FF	FF	FF	C1	01	ΕЗ	00	//	Curren huters 1.70
0000040	66	00	E3	00	00	00	FO	D8	00	00	00	00	00	00	6E	00	fn.	Swap bytes L/H
00000050	66	00	E3	00	00	СС	35	C5	00	00	00	00	18	87	FC	85	f5	
0000060	66	00	00	00	BE	BF	BC	17	00	B3	FF	FF	00	00	Β4	B5	£	Toggle Jamo Op/Off
0000070	00	00	B8	0B	96	07	<b>E</b> 3	CE	01	00	FF	00	00	00	00	00		Toggie minio on/on
0800000	FF	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
00000090	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
0A00000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
00000B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	93	FF		
000000000	FF	1D	00	00	FF	FF	03	24	05	02								
000000D0	02	02	00	28	01	00	00	00	EA	0C	11	05	40	40	02	00	(	
000000E0	28	01	00	00	00	90	02	1B	45	02	02	00	FF	28	01	00	(E(	
00000F0	00	05	42	F4	21	05	08	08	02	00	28	01	00	00	5B	11	B.!([.	
0000100	05	46	45	08	08	00	04	28	01	00	00	05	43	<b>A</b> 6	46	08	.FE(C.F. 🛶	
4																		

Issued by: Abritus 72 ltd.

The "Toggle Immo On/Off" button allows to switch on/off alternatively the bypass function.

#### -Steering lock VW Passat 6 Security code [68HC908]

# Required license: AN003 to view security access code and AN009 to view component protection data.

This function displays the security access code contained into the steering column locks of Passat B6 which are with Motorola microcontroller (the unit can be either with ELMOS or Motorola microcontroller). The function displays also the component protection bytes by pressing the "Other data" button".

Туре:	Stee	ring l	lock	w	Pas	sat 6	Sec	urity	cod	e [68	HCS	108]							*
0000000	24	24	24	F3	F3	F3	C5	C5	C5	72	72	72	49	49	49	E7	\$\$\$rrrIII.	Lo	ad dump
00000010	E7	E7	AB 22	8A 22	AB	FE	FE 22	FE	56	56	56	57	57	57	5A	5A		Sa	ve dumo
00000020	22	22	20	22	20	20	20	30	20	20	20	20	20	20	20	20	2333000000000000	1	
000000000	20	20	55	D3	DA	CD	CD	CD	57	50	50	50	56	50	50	50		Swap	o bytes L/H
00000040	57	54	54	54	54	33	33	33	33	33	33	33	33	33	33	33	W77773333333333333		
00000050	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33333333333333333333		-
00000000	33	33	33	33	33	33	33	33	33	33	34	F6	F6	F6	AC	AC	333333333334	Login 5269	8 Other Data
00000080	AC	DA	DA	DA	CD	CD	CD	OD	OD	OD	B7	B7	B7	24	06	00			
00000090	00	00	91	07	00	00	00	80	15	00	00	31	12	13	00	00			
000000A0	00	11	07	00	00	00	10	04	00	05	91	22	01	00	47	7D	·····G}		
000000В0	31	01	00	47	7D	04	OB	16	11	00	3E	04	OB	08	FF	FF	1		
000000000	FF	FF	04	06	01	15	00	41	21	30	01	79	04	12	15	01	A!O.y		
00000000	31	41	20	FF	27	00	FF	04	0B	16	11	70	01	00	00	25	1A .'p%		
000000E0	61	Fl	FF	FF	FC	FC	FC	2E	2E	2E	A8	A8	A8	0B	OB	0B	a		
000000F0	01	01	01	FC	FC	FC	7A	7A	7A	FD	FD	FD	00	FF	CD	52	R		
00000100	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			
•																	•		

## -ECU Simos 7 - K-line - Login code [93C76] [93C86]

#### **Required license: AN006**

This function displays the security access code contained into the engine control unit from Siemens ECUs (Simos 7x generation which are accessed through K-Line) for benzine engines. Interesting for these ECUs is that the same ECU can be used through K-Line and CAN, and depending which link is used the security access code which is accepted from ECU is different.

уре:	ECU	Sim	os 7	- K-li	ne -	Logi	n co	de [9	I3C7	6] [9:	3C86	5]							4
0000000	31	31	31	53	4E	31	53	30	4C	33	30	30	00	00	00	48	111SN1SOL300H		Load dump
0000010	00	00	00	48	00	00	00	48	00	00	08	38	00	10	00	00	····H····H····8····	Î	Save dump
0000020	00	00	00	00	9B	B9	9B	B9	9B	B9	54	00	54	00	54	00	т.т.т.	-	
0000040	01	00	01	00	01	00	B3	6A	65	18	66	D4	B3	6A	65	1B	ie.fie.		Swap bytes L/H
0000050	66	D4	B3	6A	65	1B	66	D4	00	01	00	01	00	01	14	C7	fje.f	1	
0000060	14	C7	14	C7	00	00	00	00	00	00	AO	B2	AO	B2	AO	B2			6 6000
0000070	56	57	5A	43	5A	30	30	30	30	30	30	30	30	30	56	57	VWZCZ00000000VW	Log	in jaara
0000080	5A	43	5A	30	30	30	30	30	30	30	30	30	56	57	5A	43	ZCZ000000000WZC		
0000090	5A	30	30	30	30	30	30	30	30	30	57	56	57	5A	5A	5A	200000000000000000000000000000000000000		
0A00000	33	43	5A	33	33	33	33	33	33	33	33	33	33	33	33	33	3CZ3333333333333		
00000B0	33	33	33	33	33	33	33	33	33	33	33	33	57	56	57	5A	33333333333WWZ		
00000000	5A	5A	33	43	5A	33	33	33	33	33	33	33	33	00	00	00	ZZ3CZ33333333		
00000D0	7C	70	30	39	30	37	33	32	33	39	30	36	30	31	38	46	0907323 <mark>9</mark> 06018F		
00000E0	47	20	00	00	00	00	01	05	00	03	18	07	01	18	01	84	G		
DUUUUFU	01	05	00	03	18	07	10	18	UI	84	UI	05	00	03	00	00			
0000100	n	π	UT	84	В/	ZD	30	A5	30	33	47	39	30	36	30	31	=.03690601		
4.																	<b>F</b>		

# -ECU Simos 7 - CAN - Security Access Code [93C76] [93C86]

## **Required license: AN003**

This function displays the security access code contained into the engine control unit from Siemens ECUs (Simos 7x generation which are accessed through CAN) for benzine engines. Interesting for these ECUs is that the same ECU can be used through K-Line and CAN, and depending which link is used the security access code which is accepted from ECU is different.

уре:	ECU	Sim	os 7	- CA	N - 9	ecu	rity A	cce:	ss Co	ode [	93C	76] [	93C8	36]					1
0000000	31	31	31	53	4E	31	53	30	4C	33	30	30	00	00	00	48	111SN1SOL300H		Load dump
0000010	00	00	00	48	00	00	00	48	00	00	08	38	00	10	00	00	····H····H····8····		Save dump
0000030	00	00	00	00	9B	B9	9B	B9	9B	B9	54	00	54	00	54	00	T.T.T.		· · · · · · · · · · · · · · · · · · ·
0000040	01	00	01	00	01	00	вз	6A	65	1B	66	D4	вз	6A	65	1B	je.fje.		Swap bytes L/H
0000050	66	D4	B3	6A	65	1B	66	D4	00	01	00	01	00	01	14	C7	fje.f		
0000060	14	C7	14	C7	00	00	00	00	00	00	AO	B2	AO	B2	AO	B2		Login	41138
0000070	56	57	5A	43	5A	30	30	30	33	33	33	33	30	30	56	57	VWZCZOOO3333300VW	Login	
0000080	5A	43	5A	30	30	30	33	33	33	30	30	30	56	57	5A	43	ZCZ000333000VWZC		
0000090	5A	30	30	30	30	30	33	33	30	30	57	56	57	5A	5A	5A	2000003300WVWZZZ		
DACOODO	33	43	5A	38	33	33	33	33	33	33	33	57	56	57	5A	5A	3CZ83333333WVWZZ		
JUUUUUBU	5A	55	43	5A	38	50	31	33	33	33	33	33	57	55	57	SA	Z3CZ8P1333330VWZ		
0000000	5A 7C	SA 7C	33	43	SA 20	30	33	33	33	33	33	33	33	21	00	00	4436403333333		
000000000	47	20	00	00	00	00	01	05	00	03	18	07	01	18	01	84	C		
0000010	01	05	00	03	18	07	01	18	01	84	01	05	00	03	00	00			
0000100	70	70	01	84	B7	2D	3D	AS	30	33	47	39	30	36	30	31	=.03690601		
11																			
11																	<u> </u>	1	

## -ECU Simos 7 - CAN - Reset component protection data [93C76] [93C86] Required license: AN009

This function allows viewing and/or changing the component protection data found in the Siemens ECUs (Simos 7x generation which are accessed through K-Line or CAN) for benzine engines. Into the Simos 7x there are at least 6 bytes of the component protection found, or sometimes there are 7 bytes. If there are 6 bytes contained, then the 7<sup>th</sup> byte is zero.



ype:	:CO	Simo	os /	- LAI	N - F	lese	t cor	npor	ient p	orote	ctior	n dat	a (9)	3C76	1193	C86	I.	1
0000000	<b>A</b> 2	AC	<b>A</b> 2	AC	<b>A</b> 2	AC	54	00	54	00	54	00	01	00	01	00	T.T.T.	Load dump
0000010	01 E7	00 0F	00 E7	00 0F	00	00	00	00	00	00 1C	00	00	00	00	E7	OF		Save dump
0000030	00	00	00	00	2D	2D	2E	2D	2D	2E	2D	2D	00	00	00	00		Swan butes L/H
0000040	Co	mpo	oner	nt se	cur	ity (	lata	1									× …	ondp by do Erri
0000060	C	IId:		82		5	[	5C	9	ŧ	A	1	A	1	)		ОК 0000	
)000080 )000090 )0000A0	٨	lew:		0		0		0	0		0		0	1	)		Cancel 5323	
0000000	70	7F	00	00	EB	02	80	80	80	80	80	80	80	7F	7F	80	p	
0000D0	80	80	80	80	7F	80	80	80	80	80	80	80	80	80	80	80		
0000E0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80		
0000080	80	80	80	80	80	80	80	80	80	80 75	80 7F	80	80	80	80	80 75		
11	00	00	00	00	00	00	00	00	00		15	00	00	00	00	~~		

# -ECU Simos PPD1x - Reset component protection data

## **Required license: AN009**

This function allows viewing and/or changing the component protection data found into the Siemens ECUs (Simos PPD1x generation) for diesel engines. Into the PPD1x there are at least 6 bytes of the component protection found, or sometimes there are 7 bytes. If there are 6 bytes contained, then the 7<sup>th</sup> byte is zero.

ype:	ECU	Simo	os PP	D1x	( - R	eset	com	pone	ent p	rotec	tion	data	3										•
000000	31	31	31	53	4E	30	49	30	46	37	31	30	00	00	00	48	111SN0I	OF710.	н		Load	dump	
0000010	00	00 FF	00 80	48 80	00	00 80	00	48	00 96	00	08	38 80	00	10	00	00	HI	H8.	••••		Save	dump	
000030	00	FF	19	9E	59	20	59	20	59	20	94	50	94	50	94	50	Y,Y	,Υ,.Ρ.	P.P		Swap b	ytes L/H	-
000040	01 B2	00 E4	01 D9	00 72	01 52	00 79	D9 B2	72 E4	52 A4	00	В2 А4	£4	D9 A4	00	52 00	00	1 rRy	ску	rRy				
000060	5	00	00	nn ml	80 5eci	nn urib	80 7 da	nn Fa	80	nn.	33	ГД	33	ГA	33	Г4	82	3 3 X	3. 1 ww				
0000080	5.		Jointe		J.L.L				- 10		112X		192				14		ZC				
	5.	Old:		D	E	72	2	52		79		B2	E	4	A4		OK		ZZ				
0000B0 0000C0	5. 5.	Nev	₩:	0	Ň.	0		0		0		0	0	)	0		Cano	cel	WZ				
0000E0	20	20	00	00	00	00	AF	50	AF	50	AF	50	98	2 <b>A</b>	85	AA		P.P.P.	*				
0000F0 000100	76 83	5B 4F	F4 82	8A 1B	85 F4	51 80	84 DE	9B 30	80 30	3B 33	81 47	09 39	81 30	08 36	83 30	4E 31	v[Q	; 003G90	N 0601 .	a			
																			•				

## -ECU Simos PPD1x - Security Access Code

# **Required license: AN007**

This function displays the security access code contained into the engine control unit from Siemens ECUs (PPD1x generation) for diesel engines.

(ype:	ECU	Sim	os Pl	PD1:	к - Si	ecuri	ty Ac	ces	s Co	de									1
0000000	31	31	31	53	4E	30	49	30	46	37	31	30	00	00	00	48	111SN0I0F710H		Load dump
0000010	00	00	00	48	00	00	00	48	00	00	80	38	00	10	00	00	····H····H····8····	1	Save dump
0000020	00	TT	19	9F	59	20	59	20	59	20	94	50	94	50	94	50	VVV DDD	-	
00000040	01	00	01	00	01	00	D9	72	52	79	B2	E4	D9	72	52	79	rRvrRv		Swap bytes L/H
0000050	B2	E4	D9	72	52	79	B2	E4	A4	00	A4	00	A4	00	00	00	rRy	1	
0000060	00	00	00	00	80	00	80	00	80	00	33	C4	33	C4	33	C4		19.18	30000
0000070	56	57	5A	43	5A	30	30	30	30	30	30	30	30	30	56	57	VWZCZOOOOOOOOVW	Login	13434
0000080	5A	43	5A	30	30	30	30	30	30	30	30	30	56	57	5A	43	ZCZ00000000VWZC		
0000090	5A	30	30	30	30	30	30	30	30	30	57	56	57	5A	5A	5A	Z00000000WWZZZ		
00000A0	33	43	5A	36	50	31	31	31	31	31	31	57	56	57	5A	5A	3CZ6P111111WVWZZ		
00000B0	5A	33	43	5A	36	50	31	31	31	31	31	31	57	56	57	5A	Z3CZ6P111111WVWZ		
00000000	5A	5A	33	43	5A	36	50	31	31	31	31	31	31	00	00	00	ZZ3CZ6P111111		
00000D0	70	70	37	30	31	30	30	33	47	39	30	36	30	31	38	20	701003G906018		
JUUUUUEU	20	20	00	00	00	00	AF	50	AF	50	AF	50	98	ZA	85	AA	P.P.P.*		
00000000	10	5B 47	14	0A 1D	05	51	84 DF	9B	20	35	01	20	20	08	03	4E	Q 002C00€01 →		
0000100	03	41	04	ID	r4	00	DE	30	30	33	41	39	30	30	-30	21	.0003090001		
91																	<u> </u>		

#### -ECU Magneti Marelli Security Access Code [95320]

#### **Required license: AN003**

This function displays the security access code contained in the engine control unit from Magneti Marelli

Dump Tool X ECU Magneti Marelli Security Access Code [95320] Type: \* 00000000 DB 03 E8 03 ..... Load dump \* 00000010 E8 03 E8 03 E8 03 E8 03 E8 03 E8 03 E1 03 E9 22 ..... Save dump Swap bytes L/H 00000040 11 11 11 11 12 41 FF .....A...... Login 4152 00000080 00 06 46 22 19 02 4B 2B AA 00 00 00 00 00 0A F5 ..F"..K+..... 00000090 30 33 43 39 30 36 30 32 34 48 20 20 30 31 31 38 03C906024H 0118 000000B0 00 00 00 00 00 00 00 55 AA 33 CC 50 90 09 08 .....U.3.P... 000000E0 01 00 03 00 A6 55 38 10 13 73 3C 8C CC 42 00 00 .....U8..s<..B.. 000000F0 10 73 38 10 13 73 3C 8C CC 42 00 00 10 73 38 10 .s8..s<..B...s8. 00000100 13 73 3C 8C CC 42 00 00 10 73 53 45 5A 37 5A 30 .s<..B...sSEZ7Z0 🖕 • . Exit

Issued by: Abritus 72 ltd.



## - Audi A8 (-2002) - Security access code, Program transponder [24c17] Required license: AN006 to view security access code and AN009 to write transponder's data to dump.

The function visualize the security access code and also the immobilizer and VIN numbers. It also gives the opportunity to change the immobilizer and VIN numbers.

0000000	Mo.	32	63	65	00	00	00	00	00	00	00	00	00	00	00	00	200		
00000000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	11			
00000010	00	80	00	00	00	00	00	00	नन	नन	30	33	33	42	43	TT	03380		
00000030	FF	FF	44	32	30	15	48	85	54	69	AB	DF	1F	DA.	F7	FF	D20.H.Zi	Load	dump
00000040	OB	04	00	80	00	00	00	FF	00	00	00	00	CF	29	70	01			
00000050	14	8E	7A	00	OA	0A	31	2A	3F	46	4C	60	5A	78	68	8E	z1*?FL`Zxh.		
00000060	75	A4	83	B9	91	CD	9E	E1	AC	00	2D	FF	50	19	2D	37	uP7		
0000070	50	1E	23	34	53	00	2D	FF	50	00	2A	FF	64	00	25	FF	P.#45P.*.d.%.	Save	dump
00000080	64	14	10	2D	50	18	10	34	53	14	10	2D	64	50	32	05	dP4SdP2.	<u>.</u>	<u> </u>
00000090	25	39	00	00	00	00	00	00	00	00	OF	1E	01	DA	02	FF	\$9	1	
04000000	00	00	00	00	00	00	00	2D	00	4B	00	48	03	2C	01	00	K.H.,	Swap b	utes 1 /H
000000B0	00	OF	14	03	0A	ΟA	0A	0A	OA	0A	AO	0A	OA	FF	FF	FF		Smap of	yies Erri
000000000	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	F4	0E	D8	0E	03	08			
000000D0	18	00	31	00	81	05	09	06	48	07	4E	OA	46	OD	BF	10	1H.N.F	-	1
000000E0	00	00	70	00	31	07	A2	07	84	08	BA	AO	F9	00	A9	OF	p.1		
000000 <b>F</b> 0	08	18	00	31	00	81	05	09	06	48	07	4E	0A	46	OD	BF	lH.N.F	Login 3126	Other Data
00000100	10	00	00	50	00	AO	05	40	06	80	07	AO	0A	CO	OD	80	P@	1	
00000110	11	8E	4B	FF	00	04	00	00	1E	03	9F	OB	10	16	00	00	K	10000000000000000	-
00000120	B3	01	EF	07	A9	OF	60	78	00	80	80	00	80	20	04	08	····· `x	Immo number	
00000130	8D	00	BO	00	46	01	F4	01	5D	02	BA	02	DD	02	ED	02	F]	AUZ7Z0X1070	J699
00000140	EU	UZ	88	02	70	02	EU	01	50	01	BU	00	50	00	00	00		A	
00000150	ZA	08	18	00	30	00	50	00	10	00	50	01	BB	02	EU	04	*UP		Set
00000150	CD	04	22	00	10	00	34	00	50	02	CC.	04	20	03	UD 70	03	····W·4·····	and the second s	
0000170	00	03	00	00	10	00	50	00	24	00	10	00	20	02	01	02		VIN	-
00000100	CB	02	CB	02	07	06	C3	00	FO	00	AC	01	CE	01	BA	03		WAUZZZ4DZ	/N002822
10000130	3D	03	10	n4	C0	03	20	03	80	02	90	01	FO	00	06	90		I and the second	2012/03/2012/2012
100001R0	01	80	02	20	03	B8	03	14	n4	14	04	15	00	14	02	14	27.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		
	01	00	04	20	00	20	00	+-+	94	ಹತ್	ಿತ	÷4	00		94	14			Set
•																			

Pressing the "other data" button displays the learned keys and if a programmer has been recognized, allows to read current transponder's data and add it to the dump. With pressing a "Program transponder" button (and if a programmer is recognized) the current transponder is read and it's data is written at the corresponding (to the pressed button position) position in the dump file (for example pressing "Program transponder" button next to "Key 4:"

data will write transponder's data at position 4 in the dump).

You should use transponder TP08.

By pressing OK, changed data will be written into the dump.

By pressing CANCEL, the loaded dump will remain unchanged.



After you have done all the modifications you wish, you have to press "Save dump" for to save the changes in the dump.

-Audi A3/A4/A6 UKNSI 1995-1997 mileage and login code [93C56] – displays the login and calculates mileage. No license required.

-Audi A3/A4/A6 UKNSI 1997-1998 mileage and login code [93C56] – displays the login and calculates mileage. No license required.

-Audi A3/A4/A6 UKNSI Japan mileage and login code [93LC56] – displays the login and calculates mileage. No license required.

-Audi 100 VDO 1995 mileage [94C46] - calculates mileage. No license required.

-Golf 3 VDO 1995 mileage [93C46] – calculates mileage. No license required.

-Golf 3 VDO V3.9 mileage [93C46] – calculates mileage. No license required.

-Golf 3 Diesel mileage [93C46] – calculates mileage. No license required.

-Golf 3 Motometer V5.8 mileage [93C56] – calculates mileage. No license required.

-Polo Motometer mileage [93C46] – calculates mileage. No license required.

-Polo Motometer 1996 mileage [93C66] – calculates mileage. No license required.

-Passat VDO 1991 mileage [93C56] - calculates mileage. No license required.

-Passat VD202 1993 mileage [93C46] – calculates mileage. No license required.

-Passat GT mileage [93C46] - calculates mileage. No license required.

-Passat GT mileage [93C56] - calculates mileage. No license required.

-Caddy mileage [93C56] – calculates mileage. No license required.

-Corrado VDO 1993 mileage [93C46] – calculates mileage. No license required.

-Corrado MotoMeter 1991-1995 mileage [93C56] - calculates mileage. No license required.

-Corrado VDO 1991-1995 mileage [93C56] - calculates mileage. No license required.

-Jetta 1994-1996 mileage [93C46] - calculates mileage. No license required.

-T4 MotoMeter 1996-1997 mileage [93C56] – calculates mileage. No license required.

#### EDC17/MED17 Wiring diagrams for boot-mode

On the diagram below you can find how to connect the AVDI to the ECU to use the boot-mode. Please pay attention that connection 510Ohm resistance between the ECU Ignition and 12V is mandatory to get communication with the ECU boot-mode.



## ECU EDC17 CP44 TC1797



## ECU Vag EDC17 C46 TC1767





## ECU Vag EDC17 CP04 - TC1796



## ECU Vag EDC17 CP14 CP20 - TC1796 - variant 2



## ECU Vag EDC17 CP14 CP20 - TC1796 with Internal and External Flash



## ECU Vag EDC17 CP24 – TC1796 with Internal and External Flash


# ECU Vag EDC17 U01 - TC1766 with Internal Flash



## ECU Vag EDC17 U05 – TC1796 with External Flash



### ECU Vag MED 17.5.1 – TC1796 with Internal and External Flash



## ECU Vag MED 17.5.2 – TC1767 Internal Flash



#### Document

## ECU Vag MED 17.5.5 - TC1766 Internal Flash





## ECU Vag MED 17.5.20 - TC1766 Internal Flash





# ECU Vag MED17.1.1 – TC1796 Internal Flash





# For any further questions please contact support@abritus72.com.