

Achieve the impossible

Abrites Diagnostics for BMW/MINI User Manual

Version: ... 6

www.ABRITES.com

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1. Introduction

"ABRITES Diagnostics for BMW/ Mini generation 2" is a personal device and online server based diagnostic software for BMW vehicles from the "E" and "F" series as well as Mini vehicles from the R50, R53 and R56 series. It requires the user to have connection to the internet during the usage of the software.

With the help of this tool you can perform reading and clearing of diagnostic trouble codes as well as operations unsupported by other diagnostic tools with the electronic modules inside the vehicle such as replacement and coding of control units, programming vehicle order, reprogramming flash memory of the units, applications assisting tuning of your engine control unit, programming keys, coding of the vehicle as well as mileage calibration.

Functionality of your software depends on ordered functions for your interface. Please check the "license viewer" installed on your computer for your unique interface ID number.

2. Installation

The "ABRITES Diagnostics for BMW/ Mini generation 2" is installed together with the rest of the Abrites diagnostic software applications when the installation files are received.

You could easily identify it by the Internet connectivity symbol as shown here:





3. Using the Abrites diagnostics for BMW/ Mini generation 2

When starting the software the user should have the vehicle connected to an external power source in order to be sure that the vehicle does not lose power during the time spent working with it. When the software is started the user will have the option to choose a brand and a model produced by this brand. After that the protocol of the vehicle will be automatically detected and **General Diagnostics** screen will be displayed.

3.1. General Diagnostics

ABRITES Dia	gnostics 31.6	www.abrites.com		- 0 ×
< Home	BMW E90			© 116
Enter Filter			General Diagnostics	
Scan	Address	Acronym	Raine	Faults
	00	ZGM/SGM/JB8F	Central Gateway/Safety Gateway Module	1 fault
Clear Faults	01	SIM/SGM/ACSM	Safety And Information/Gateway Module/Crash Safety Module	
Program IDs	12	DME/DDE	Digital Motor/Diesel Electronic	
Central Coding Vehicle Order	17	EKP	Fuel Pump Control	
Programming	18	EGS/SMG	Electronic Gear System/Transmission Contol	
Keys & Start Synchronization	19	VGSG/VTG	DXC Gearbox/Transfer Case	
Guided Functions	20	RDC	Tire Pressure Monitoring	
Mileage	29	DSC	Dynamic Stability Control	
	36	TEL/MULF	Telephone	1 fault
	40	CAS	Car Access System	
	41	DWA	Antitheft Alarm System/ CANS63	
	50	SINE	Siren and Tilt Sensor	
	60	KOMBI	Instrument Cluster	1 fault
	62	MOSTGW/M-ASK	MOST CAN-Gateway/User Interface	
	63	CIC/MMI	Car Infontainment Computer	
	6D	FAS	Seat Module Pront	
	72	FRM/KBM	Footwell/Base Body Module	3 faults
	78	KLIMA	Climate Module	
ABRITES				

3.0.1 Reset FRM Short Circuit Counter

The Abrites Diagnostics for BMW/Mini has added an option to reset the FRM short circuit counter. The function can be accessed when opening the "Guided functions" menu:

A A	ABRITES D	iagnostics	3 <mark>1.6</mark> w	/ww.abrites.c	om	<u>10</u> 10		\times
<	Home	BMW	E70	Guided Functions			.a00	٢
					Guided Functions			
Servi	ce Intervals				DPF Regeneration			
Tran	sport Mode				DPF Register Replacement			
					Injectors Calibration			
					Reset FRM short circuit counter			
					Adjust Starting Torque			
					Smooth Running Control DDE			
					EGS Reset Adaptation 8HP			
					EGS Reset Adaptation 6HP			
					Parking brake Workshop mode			
					8HP Transmission control unit Standstill adaption			
A·B	RITES							

Once the **"Reset FRM short circuit counter"** button is clicked, a procedure will start, checking all of the modules for short circuit faults. As soon as the faults are cleared, only the ones that need to be repaired will be left.

3.1.1 Scan

When pressing the **Scan** button the user will see the electronic modules installed in the vehicle they are currently working with. The number of faults within each will also be displayed.

ABRITES D	iagnostic	s 31.6 www.abrite	es.com		×
< Home	BMW	E70		-000	٢
Enter Filter			General Diagnostics		
Scan	Address	Acronym	Name	Faults	
Clear Faults	[00]	ZGM/SGM/JBBF	Central Gateway/Safety Gateway Module		
Program IDs	[12]	DME/DDE	Digital Motor/Diesel Electronic	20 faults	
Central Coding Vehicle Order	[18]	EGS/SMG	Electronic Gear System/Transmission Contol	16 faults	
Programming	[40]	CAS	Car Access System	3 faults	
Keys & Start Synchronization	[10]			J Turns	
Guided Functions	[64]	PDC	Park Distance Control	1 fault	
Mileage					
ABRITES					

3.1.2 Clear faults

When selecting the **"Clear faults"** function all the diagnostic trouble codes will be deleted from the electronic modules available in the vehicle.

There may be fault codes that require additional user input (i.e component replacement and others) in order for the fault code to be cleared.

Please note that some fault codes may be indicative to special diagnostic procedures for the special functions of the Abrites Diagnostics for BMW/ Mini generation 2.

ABRITES Di	iagnostic	s 31.6 www.abrite	es.com		×
K Home	BMW	E70			\$105 105
Enter Filter			General Diagnostics		
Scan	Address	Acronym	Name	Faults	
Clear Faults	[00]	ZGM/SGM/JBBF	Central Gateway/Safety Gateway Module		
Program IDs	[12]	DME/DDE	Digital Motor/Diesel Electronic	17 faults	
Central Coding Vehicle Order	[18]	EGS/SMG	Electronic Gear System/Transmission Contol	1 fault	
Programming Keys & Start	[40]	CAS	Car Access System	1 fault	
Synchronization Guided Functions	[64]	PDC	Park Distance Control		
Mileage					
A·B·R·I·T·E·S					
			Please wait	1	STOP



3.1.3 Live values

Manual v

In order to display the live values of a module within a vehicle the user should select the module they would like to view the values for, open it and select "Live values".

ABRITES Di	agnostics 31.6 www.abrites.com				:	
< Home	BMW E70 DME				2	
		Unit 12				
Actuators	Data status		O_7ALJGN332A			
Live Values	Software version		1037515070			
Fault Codes	BMW part number		8517015			
Coding	Coding index		2			
Memory Manager	Production date (day, month, year)		11.03.2011			
Custom Session	Diagnosis index		16			
	Hardware number		00			
	Supplier		Robert Bosch GmbH			
	Function software		65.76.74			
	Message catalogue		8.2.48			
	Operating software		3.3.1			
	Variant index		22617			
A·B·R·I·T·E·S						

A list of all available values for the unit will be displayed.

From here the user can select the sensors needed to be observed. Once that is done the user can select whether they would observe the values in a **query form** or a **graphic form**. This can be done for multiple sensors simultaneously.

		J							
<	Home	BMW	E70	DME	Values				 Ŷ
Enter I	Filter					Valu	ies		
	Query	🖌 Adap	ptation valu	ie, zero-gea	ar sensor				
6	raphics	V Brak	e vacuum	sensor					
9	n apriics	🖌 Iden	ntification, o	clutch peda	I				
Se	elect All	🖌 Iden	ntification, o	deactivation	n, automatic eng	ine start-stop functio	n		
		V Iden	tification, e	engine runn	ling				
		Iden	ntification, I	earning win	ndow, zero-gear	sensor			
		Iden	tification, a	ero gear					
		Iden	tification, a	ero gear le	earned				
		Num	ber of MS	A starts in t	total				
		Num	ber of eng	ine starts in	n total				
		Oper	ration, clut	ch pedal					
		Oper	ration, zero	-gear sens	or				
		Volta	age, brake	vacuum-pr	essure sensor				
		Char	rge air tem	perature					
		Char	rging press	ure actuato	r, activation				
	_	Char	rging press	ure, actual					
A P	BIB	Spec	cified charg	ing pressur	e				

ABRITES Diagnostics 31.6 www.abrites.com		—	\times
Home BMW E70 DME Values Query			 \$
Values			
Status, MSA (only valid until next ignition change!)	0		
Pressure, brake vacuum sensor (BUS)	0 [hPa]		
Currently learned value, zero-gear sensor (setpoint: 50+/- 5.0 %)	0 [%]		
Actuation identifier from DDE	1		
Current engine operation	0		

In case the user selects the option to view the measured values in a graphic form they will be able to see the screen below for all of the selected sensors.

The simultaneous display of multiple values allows for easier and more detailed fault diagnostics.





The measured values can be monitored, saved to a file on the user's computer, zoomed in for more detailed view or zoomed out for a more general view using the buttons on the side of the window. The user also has the ability to load a previously saved file for direct comparison.

3.1.4 Actuator tests

Actuator testing is one of the most important functions used by automotive workshops. It provides the user with the opportunity to test various actuators within the vehicles. By performing actuator tests the user can easily determine where a fault in the vehicle lies. Some very important modifications and service procedures with vehicles require the usage of actuator tests.

A BRITES Diagnostics 31.6 www.abrites.com	_		×
Home BMW E70 DME Actuators			٢
Actuators		Live Values	
Electric fan			
Electric fan			
Delete fault memory			
Delete fault memory			

One of the features unique to the Abrites diagnostics for BMW/ Mini generation 2 is the feature to perform actuator tests while observing live data measured values from sensors related to the actuator or module being tested.

ABRITES Diagnostics 31.6 www	abrites.com	-	\times
K Home BMW E70	OME Actuators		 0
Actuat >	Back Live Values For DM		
Electric fan Electric fan	Exhaust temperature before cat.		^
Delete fault memory	Exhaust-gas pressure		
Delete fault memory	Exhaust-gas temperature before particle filter		
	Status since last regeneration		
	Status, total remaining distance		
	TOP regeneration release		
	✓ TOP regeneration request		
	TOP regeneration status		
	Air conditioning button		
	Air mass		-
	Air mass: Nominal value		~

All the user needs to do in this situation is to press the " \blacktriangleright " button.

ABRITES Diagnostics 31.6 www.a	brites.com	-	
✔ Home BMW E70 D	ME Actuators		<u>. II</u> ©
Actuat >	Add + Clear All		•
Electric fan	d73n57d0 : Exhaust-gas pressure		
Electric fan Delete fault memory	d73n57d0 : TOP regeneration request		
Delete fault memory			

ABRITES Diagnostics 31.6 www.	abrites.com	- 🗆 X
✔ Home BMW E70 I	DME Actuators	
Actuat >	Add + Clear All 🖸 Live Data	-
Electric fan	d73n57d0 : Request, regeneration	0
Electric fan	d73n57d0 · Exhaust-gas backpressure	-374 045 [mbar]
Delete fault memory		
 Delete fault memory 		

Once the Actuator test is started please make sure that you let it finish before closing the window.



3.1.5 Service intervals

When performing services on a vehicle these services need to be checked in the vehicle's history. In order to do so the customer can use the Abrites diagnostics for BMW/Mini generation 2 and the service interval option:

ABRITES Diagnostics	31.6 www.abrites.com					- ø ×
K Home BMW	E90 Guided CBS					@]h
	Available (%):	Counter	c Remaining (km):	Honth	Years	
Engine oil			22720	N/A 🛩	N/A 🛩	OK
Front brake pads	29	-3	7290	N/A ~	N/A ~	OK
Rear brake pads		8 -0	N/A	N/A 🛩	N/A ~	ОК

3.2 Specific diagnostic procedures.

Apart from the basic diagnostic functions the Abrites diagnostics for BMW/ Mini generation 2 allows the user to perform various diagnostic functions at an extremely high diagnostic level. Such functions include vehicle coding, dpf regeneration, key programming, module replacement, module reflashing, etc.

3.2.1 Program IDs (Vehicle Identification Numbers)

When checking a vehicle and replacing modules often times the user will need to be able to view the **IDs (VIN)** of the separate electronic modules within the car. This is done via the **"Program IDs"** button

ABRITES D	iagnostics	31.6 www	.abrites.	.com					_		\times
< Home	BMW	E70	VIN							.cOO	\$
Enter Filter				١	/ehicle Ic	dentificatio	on Numb	ers			
Scan Vehicle	Address	Acronym		VIN					 		
Save to File	[40]	CAS		WBAFH0100	0L466153						
Write VINs	[00]	ZGM/SGM/JB	BF	L466153							
User Info Fields	[18]	EGS/SMG		L466153							
	[64]	PDC		L561748							
	[12]	DME/DDE		L487080							
A B RITES											

*Some IDs may be programmed according to local regulations.

Observe the vehicle identification numbers (VIN) from all modules in one place. Ability to modify them which is a necessary tool for module replacement. VIN writing is also a useful instrument even for routine operations like flashing the firmware of DME (some modules require resetting the VIN at the end of the update). Observe the history of the module – the UIF (user info fields)

3.2.2 Central Coding (Vehicle Order)

Allows reading and modification of the vehicle order in many different languages. Encoding of every unit of the vehicle with data from the vehicle order. The user is also allowed to tweak custom options in different modules to unlock behavior that is not allowed by the official software (like video in motion, different light options, etc.)

Once this function is selected the software will automatically start reading the integration level of the vehicle.

ABRITES Di	agnostics 31.6 www.abrites.com	200-20	
K Home	BMW E89 Central Coding		
	Current Vehicle Order: Filter Availa	ble Options:	
Read from Vehicle	code name code	name	
Save to File	E-word	S .	~
Load from File	Afterma t fitmen	arke at	~
Writa in Vahicla	Model		~
si	Vehicle Type		~
A·B·R·I·T·E·S			
	Please wait		STOP



As soon as the reading is finished all the details about the **central coding** will be displayed.

Using the buttons on the side the user can save the coding to a file on their computer, load previously saved coding, as well as updating changes to the vehicle. It is strongly recommended to save the Current vehicle order data before applying any changes to the vehicle by using the option **"Save to File"**.

ABRITES D	Diagnostic	cs 31.6 www.abrites.co	om		<u> (a</u>		<
< Home	BMW	E89 Central Coding					ĝ;
	Curren	nt Vehicle Order:	Filter	Available Optio	ns: Filte	er	
Read from	code	name		code r	ame		
Vehicle	0712	July 2012	Rem	ove E-Words			~
Save to File	ZW41		Rem	ove Options			~
Load from File	A105		Rem	ove Aftermarke t fitment			~
Write in Vehicle	E-Word	ls		Model			~
write in vehicle	EWS4	EWS4 (immobiliser)	Rem	ove Vehicle Type			~
	E70		Rem	love			
	Options	5					
	1CB	ACEA/CO2 content	Rem	iove			
	200	Diesel particle filter	Rem	love			
	205	Automatic transmission	Rem	love			
	217	Active steering	Rem	love			
	220	Self-levelling suspension	Rem	love			
	230	EU-specific additional conte	nts Ren	love			
ABRITES	251	Run Flat Indicator	Rem	love			
	2VA	Adaptive Drive	Rem	love			

These functions are irreplaceable during modifications and tuning often asked for by the customers.

You will be able to easily remove options from the **"Current vehicle order"** the button **"remove"** and add new ones from the **"Available Options"** using the button **"Add"**. You will be able to add/remove options, retrofit different modules etc.

You will be also able to filter your search by entering the name of the desired option in the **"Filter"** field.

A ABRITES D	iagnostic	cs 31.6 www.abrites.com			- 0	\times
< Home	BMW	E89 Central Coding]00a	0
	Currer	nt Vehicle Order:		Available C	Options: Filter	
Read from	code	name		code	name	
Vehicle	0712	July 2012	Remove	E-Words		~
Save to File	ZW41		Remove	Options		^
Load from File	A105		Remove	100	Usable load increase	Add
Write in Vehicle	E-Word	ls		102	Official cars with reinforced runr gear/brake system	Add
	EWS4	EWS4 (immobiliser)	Remove	103	Four seasons tyres	Add
				106	Security	Add
	E70		Remove	108	Engine run-on circuit	Add
	Options	5		109	Security Plus	Add
	1CB	ACEA/CO2 content	Remove	112	Contrasting stripes in Fluorescer Red	Add
	200	Diesel particle filter	Remove	113	Contrasting stripes in Mint Greer light	Add
	205	Automatic transmission	Remove	114	Labelling North German Police	Add
	217	Active steering	Remove	115	Paramedic sticker NRW	Add
	220	Self-levelling suspension	Remove	116	Pennant holder left side	Add
	230	EU-specific additional contents	Remove	117	Pennant holder right side	Add
BRITES	251	Run Flat Indicator	Remove	118	Reduction of top speed	Add
	2VA	Adaptive Drive	Remove	121	Holder for stop sign	Add

3.2.3. Programming

Reflashing of the firmware of the modules with newer (or older if required) software versions. The user is presented with the firmware versions of each module and is given suggestions of what is the most proper version of each module. What distinguishes that function from what the original software tool provides is the ability to choose arbitrary flash version. The user can either accept or ignore the flash version suggestions and apply whatever operation they think is necessary to the module. This gives great flexibility and can solve problems that even the dealer tool could not tackle. For example finding the best data flash of motor computers – Abrites programming function allows experimenting to flash every data flash that the user chooses to try, instead of firmly limiting the user to one specific option.

One of the unique features is the predictive selection of the most compatible flash file as a suggestion in the second field. It is absolutely obligatory to have the vehicle connected to an external power source for programming. Alternatively the consequences may be irreversible.

A	BRITES Diagnostics	31.6 www.abrites.c	com	<u></u>		\times
<	Home BMW	E89 I-Level				٢
			I-Level			
Address	Acronym	Num				
[00]	JBBFR3	9292708				
[12]	DDE731	8517015				
[18]	GKE233	7643097				
		Unit 1	2: DDE731 reference 0089ZM0AALJB00			
	app: 8580309	data: 8581282	ref: 0089TK0			
	app: 8580309	data: 8581280	ref: 0089TK0			
	app: 8580309	data: 8581281	ref: 0089TK0			
	app: 8580309	data: 8581283	ref: 0089TK0			
				F	Program	
Databa	ase software version:	E89x-14-07-500				
Vehicle	e software version:	E70-14-11-500				
Shipm	ent software version:	E89X-12-11-502				

Once the desired flash version is selected you will see the following window appear. All you need to do is to make sure that the supplied voltage does not drop below 13.6V and press and hold the **"START"** button to begin.



3.2.4 Keys and start synchronization (Key programming)

Key learning is one of the key features of the Abrites diagnostics for BMW/ Mini generation 2.

Using it the users can perform key learning for all CAS 1, CAS 2, CAS3, CAS3+ vehicles via OBD including those with latest ISTA-P updates. If the user has working key for the car and wants to make a spare one, the key learning is a fast and easy process.

If all keys are lost and a new one has to be made then the process is more complicated, but all the necessary tools are included in the package.

To begin with the user has the ability to observe and modify the key data in the CAS module. They can enable or disable key positions etc.

A	ABRITES D	agnostics 31.6 www.abrites.com	<u></u>	×
<	Home	BMW E70 Keys		 0
		Remote control frequency 868 MHz Key 1 in ignition. BMW Remote		
C	AS Keys	Key 0 - BMW SmartKey (Keyless GO)		
Syr CA	nchronize S & DME	Key 1 - BMW Remote		
C/	AS & ELV	Key 2 - Empty Position		
IS	N codes	Key 3 - Empty Position		
Ad	NS Parts Japtation			
		Key 4 - Empty Position		
		Key 5 - Empty Position		
		Key 6 - Empty Position		
		Key 7 - Empty Position		
		Key 8 - Empty Position		
		Key 9 - Empty Position		
A·B·	RITES			



When adding keys to a vehicle the user will need to us the TAG or the PROTAG programmer. It will need to be connected to the user's AVDI if it's Tag Prog and to the PC via USB connection if it is a PROTAG.



In the cases when a key is added to the existing set the working key needs to be placed in the TAG programmer. Tag Programmer. Allows the user to observe, check and modify HiTag2 key data. The user is given hints for the key contents whether the data is consistent and options to correct it(very useful tool when the key is not an original BMW key).

From the "CAS keys" menu the user can choose to Save the data to a file on their computer and use it as a backup file, Load previously saved data, **program** a key, **clear** the current positions, clear the CAS and keys and write the CAS EEPROM/CONF DATA.

IMPORTANT: It is strongly recommended to **Save** the current key data to a file before applying any changes.

K Home	BMW E70	Keys CAS	5 Keys			.000	503
			V Sele	Vorking key 1 ected Position 0			
oad from File	Position	O E	BMW SmartKey				
Save to File	SerialNo		OF 50 A2 99	Remote Number	66 A2	1	
	CryptoHigh		97 6B	Remote CryptoHig	h 97 6B	5	
	CryptoLow		6B E2 D3 AD	Remote CryptoLow	6B E2	D3 AD	
ag Programer	Config		C8 E2 96 39	Remote Synchro	7A CA	OC FC	
Program Key	Status		02 5B 00	Remote Status	00 00	02	
Clear CAS position							
CAS	Position	4					
Write CAS EEPROM	POSICION	± 1	Smiw Remote				
	Position	2 f	ree				
	Position	3 f	ree				
	Position	4 f	ree				

In the cases where there are no keys available in order for one to be added and the car is in an all keys lost situation the Individual Serial Number (ISN) from the DME must be read. This situation will need you to keep the car awake and the bbest practice is to either shorten pins 1 and 16 on the OBD or to make e temporary transponder.

3.2.4.1 FEM key programming

FEM Key Programming is made by dump, the procedure requires around 20+ steps that need to be strictly followed. The Key programming requires you to have active AMS, PROTAG programmer and ABPROG or a 3rd party programmer. Once the software is started, please go to the "Keys And Start Synchronization Menu" and open the "EWS Parts Adaptation". You will find the "Key Programming" Menu. It is highly IMPORTANT to supply 13.6 Volts or more so that the procedures can run smoothly and finish successfully. An external power supply is a must. Below you can find all the steps and menus in screenshots that need to be followed:

	ABRITES Dia	gnostics 31.6 ww	ww.abrites.com			-	0 ×
1	< Home	8MW 123D					<u>ai</u> ©
	Date Filter				General Diagnostics		
	Scan	Allen	Arrest	Sane		Tada	
	Onar Faults	[10]	тем	FRONT ELECTRONIC MODUL (GATEWAY)		3 faulta	
	Program IDs	[40]	REM .	FRONT ELECTRONIC MODUL (800Y)		75 fauts	
	Central Coding Writicle Order	1943)	KOME	KOMBEINSTRUMENT BASIS (DCD)		20 faults	
	Programming						
	Keys & Start,	(63)	N	HEADURET HIGH (HWHANN BEDRER) HOST ANTEL		\$ fails	
	Guided Functions						
	Hisage						
	-						
	ABBITES						
	ABRITES						
_	ABRITES Dia	gnostics 31.6 ww	ww.abrites.com			-	ð ×
2	< Home	BMW 123D	Keys				۵ ال
	(25 Km)				No key in ignition		
	Systemas	Key 0 - BMV	W SmartKey (Keyless GO)				
	CAS & DHE Synchroniae	Key 1 - BMV	W SmartKey (Keyless GO)				
	CAS & R.V						
	EWS Parts	🕢 Key 2 - Emp	pty Position				
	Adaption	🕑 Key 3 - Emp	pty Position				
		💽 Key 4 - Emp	pty Position				
		🕢 Key 5 - Emp	pty Position				
		-	2712 AL 60				
		Key 6 - Emp	pty Position				
		🕢 Key 7 - Emp	pty Position				
		Ney 6 - Eng	ny Posicion				
		💽 Key 9 - Emp	pty Position				
	ABRITES						
3	ABRITES Dia	ignostics 31.6 ww	ww.abrites.com			-	0 X
•	< Home	BMW 1230	Keys Adaptation				
				EW:	S Parts Adaptation		
	8HP Egs Ews Re	set					
	CAS4 Key Learn	aming 2					
	FEM/BDC Virgini	ae					
	FEM/BDC Adapts	tion					
	FEH/BDC Mileng	e Reset					
	3						



A connection diagram is also available in case you want to read the EEPROM using the ZN057 adapter :





Important: You have to strictly follow the steps from 1 to 3!!!

ABRITE	S Diagn	ostics 3	81.6 ww	w.abrite:	LCOM					-	a	×
< Ho	ome 8	BMW	123D	Keys	EWS Parts Adaptation						al	6
							EWS Parts Adaptat	tion				
Connectio	on T	-	-	-					 	 		-
							Reading eeprom					
										40	50 60	
										30	. 70	-
										-10-2	0 -9	2
										v°	100	×
RIT	ES											

Important: You have to strictly follow the steps from 1 to 6!!!

13	🚺 ABRITES Dia	gnostics 31.6 www.abrites.com	- 0 X
10	< Home	BMW 123D Keys 2005 Parts Adaptation	@ [http://www.com/
		EWS Parts Adaptation	
	Connection Diagram		
		Uploading data	
			40 50 60
			20- 80 -00-
			0 100
	ABRITES		iptuding
	ABRITES Diad	nostics 316 www.abiltes.com	- 0 ×
14	< Home	BMW 123D Keys RevS Purts Adaptation	0 <u> _</u>
		EWS Parts Adaptation	
	Connection Diagram		
		FEM/BDC EEPROM has to be restored 1. Disconnect AVDI from OBD port. 2. Disconnect hatters and external power supply	
		3. Remove FEM/BDC EEPROM4. Plug EEPROM into ABPROG	
	-	cancel next	
	ABRITES		

Important: You have to strictly follow the steps from 1 to 3!!!

Abrites Diagnostics for BMW/Mini User Manual

15

16

17

1. Solder modified EEPROM in FEM/BDC 2. Install FEM/BDC into the Car 3. Connect Battery and AVDI to OBD port 4. Connect External Supply and press Next 5. Press Start/Stop Engine 6. Turn the light switch to parking lights

next 🖓

cancel

ABRITES

19

20

Diagram			CAS KEYS				
	Key 0. A3 5C 16 34 : status BMW SmartKey(Keyless GO) : Enabled						
	O Key 1. A4 E3 00 32 : status BMW SmartKey(Keyless GO) : Enabled						
	Key 2. FF FF FF FF : status : Enabled						
	Key 3. FF FF FF FF : status : Enabled						
	Key 4. FF FF FF FF : status : Enabled						
	Key 5. FF FF FF FF : status : Enabled						
	Key 6. FF FF FF FF : status : Enabled						
	Key 7. FF FF FF FF : status : Enabled						
	Key 8. FF FF FF FF : status : Enabled						
ABRITES		cancel	erase	write			
A ABRITES Dia	ngnostics 31.6 www.abrites.com BMW 1220 Keys Missiann Aagataon						-
A ABRITES Dia	ngnostics 31.6 www.abrites.com BMW 122D Keys Adgusso	EWS Parts A	daptation				-
ABRITES Due Comment Comment	agnostics 31.6 www.abrites.com MM 122D Keys Asspects DOE ISN : 7 CI. 46 2A 68 99 54 87 5C 22 71.39 x continue	EWS Parts A	daptation				-

*Note: If you have a working key, it can be used instead of entering the DME ISN on step 22. Its position will be announced by the software.

21

22

ABRITES	Diagnostics	31.6 ww	w.abrites.co		- a ×
Home	e BMW	123D	Keys A	farts afon	att a
				EWS Parts Adaptation	
_					
				Hold new key against the ring aeri	1
				cancel negt	

23

1/	BRITES D	agnostics	31.6 wv	rw.abrite	LCOM						-	0	2
<	Home	BMW	123D	Keys	EWS Parts Adaptation							ail	1
							E	EWS Parts Adaptatio	n				
						Sta	Hold new atus : Writing B	w key against the ri BMW EOL data(Blo	ng aerial ock 1) In The Key				
							Key ID	showd be : A3 5C	16 34				
							Key Pa	Frequency 868 MH art Number : 09 25	z 48 90				
								cancel					
								Curicer					

A A	BRITES Di	agnostics	31.6 w	vw.abrites	s.com		÷.	ø	×
۲	Home	BMW	123D	Keys	EWS Parts Adaptation			ail	٢
						EWS Parts Adaptation			
-	-	-	-	-				-	
						Hold new key against the ring aerial Status : Key learned completely			
						Key ID showd be : A3 5C 16 34			
						Frequency 868 MHz Key Part Number: 09 25 48 90			
						cancel			

25 Once the key is programmed, you will see a message, saying it is successful and the next screen with the positions will be loaded(we have previously erased all positions):

ABRITES Diagnostics 31.6 www.abrites.com		- 0 ×
Home BMW 123D Keys EWS Parts Adaptation		@ li te
	EWS Parts Adaptation	
	CAS KEYS	
Key 0. A3 5C 16 34 : status BMW SmartKey(Keyless GO) : Enabled		
Key 1. FF FF FF FF : status : Enabled		
Key 2. FF FF FF FF FF : status : Enabled		
Key 3. FF FF FF FF : status : Enabled		
Key 4, FF FF FF FF : status : Enabled		
Key 5. FF FF FF FF FF : status : Enabled		
Key 6. FF FF FF FF : status : Enabled		
Key 7. FF FF FF FF FF : status : Enabled		
Key 8. FF FF FF FF : status : Enabled		
	cancel erase write	

This is what the FEM unit looks like once it is opened. PIN 1 on the EEPROM is marked:

***Note:** If additional keys need to be added in the future, the software won't need to reflash the FEM, so the procedure will be a few steps shorter.

If you reflash/update it you will have to repeat the procedure.

*Note: Another option when working with FEM or BDC is to use the ZN057 adapter to make reading/writing of information easier with just soldering the adapter cables directly to the PCB and the eeprom chip. The photos below illustrate how this is done:

1. FEM PCB connection:

2. FEM PCB diagram:

*Note: The software has the diagrams integrated and they can be easily opened with the push of a button.

3.2.4.2 FEM/BDC Adaptation and reset

FEM Adaptation and Reset is made by dump, the procedure requires around 20+ steps that need to be strictly followed. The Key programming requires you to have active AMS, PROTAG programmer and ABPROG or a 3rd party programmer. Once the software is started, please go to the "Keys And Start Synchronization Menu" and open the "EWS Parts Adaptation". You will find the "FEM Reset" and "FEM Adaptation" Menu. It is highly IMPORTANT to supply 13.6 Volts or more so that the procedures can run smoothly and finish successfully. An external power supply is a must. Below you can find all the steps and menus in screenshots that need to be followed.

You have to start with the FEM Reset(Virginize) procedure:

۲	Home	BMW	123D	Keys	MS Parts Laptation	b.
					EWS	Parts Adaptation
SHP E	igs Ews R	eset				
FEM/B	BDC Key L	earning				
CAS4	Key Lear	ning				
FEM/B	BDC Virgin	lize	N)			
FEM/B	BDC Adap	tation				
FEM/B	BDC Milea	ge Reset				

..The other steps of procedure are exactly the same as of the Key programming procedure so please refer to chapter 3.2.4.1.

The only difference will be in the last on-screen message:

Now when the FEM/BDC is in a virgin state you have to select **FEM/BDC Adaptation** to adapt it to the car:

Important: The ISN of the DDE/DME must be known. You could read it via boot mode using the Abrites software for BMW2.

May 2019	Abrites Diagnostics for BMW/Mini User Manual	
ABRITES Diagnostics 31.6 www.abrites.com		- 0 ×
Home BMW 123D Keys EWS Parts Adaptation		@ [http://www.com/and/and/and/and/and/and/and/and/and/and
	EWS Parts Adaptation	
Foter DMF/DDF ISN 1		
OMECCE EN ENTER ISN	x	
	a.	
in the second second		
goBack continue		
ABRITES Diagnostics 31.6 www.abrites.com		- ø ×
Home BMW 123D Keys BWS Parts Adaptation		@ [[th
	EWS Parts Adaptation	
Enter FEM/BDC VIN :		
WBA1C120103087204 x		
goBack continue		
La.		
A ABRITES Diagnostics 31.6 www.abrites.com		- ø ×
Keys BMW 123D Keys Adaptation		ail ©
	EWS Parts Adaptation	
	Select FEM/BDC Frequency Type	
315 MHz LowPower		
O 315 MHz		
 868 MHz 		
433 MHz (KOREA)		
Reserved (GHZ)		
	cancel next	

IMPORTANT: All you need to do now is to program new keys using the FEM/BDC Keylearning option and select on of the positions(all of them will be empty).

As the FEM/BDC is now **unlocked** you will be able program new keys **via OBDII**. Please refer to chapter 3.2.4.1.

3.2.4.3 FEM/BDC Mileage reset

FEM/BDC Mileage reset is made by dump, the procedure requires around 20+ steps that need to be strictly followed. The Key programming requires you to have active AMS, PROTAG programmer and ABPROG or a 3rd party programmer. Once the software is started, please go to the "Keys And Start Synchronization Menu" and open the "EWS Parts Adaptation". You will find the "FEM Mileage reset" Menu. It is highly IMPORTANT to supply 13.6 Volts or more so that the procedures can run smoothly and finish successfully. An external power supply is a must. Below you can find all the steps and menus in screenshots that need to be followed:

ADRUTES Dia	agnostics 31.6 www.abrites.com	
< Home	BMW 123D Keys Keys Adaptation	
	EWS Parts Adaptation	
8HP Eqs Ews Ret	net .	
FEM/BDC Key Lo	earning	
CAS4 Key Learnin	ing	
FEM/BDC Virginia	ize	
FEM/BDC Adapta	ation	
FEM/BDC Mileage	pe Reset 🔓	
A ABRITES Dia	agnostics 31.6 www.abrites.com BMW 123D Keys DrS Parts Adaptation	- 0
A ABRITES Dia Home Connection Diagram	agnostics 31.6 www.abrites.com BMW 123D Keys Parts Adaptation EWS Parts Adaptation	- 0
ABRITES Dia C Home Connection Connection	EWS Parts Adaptation EWS Parts Adaptation FEM/BDC Mileage Reset Upon completing the FEM reset procedure the mileage from the KOMBI will be written in the FEM module automatically. Please double check the KOMB Ensure following conditions are correct : 1. Please make sure that the supplied voltage does not drop below 13.6 V. 2. External power supply is connected to the Car Variant is FEM probalbly eeprom type is ST M95128	- 0

..The other steps of procedure are exactly the same as of the Key programming procedure so please refer to chapter 3.2.4.1.

The only difference will be in the last two on-screen messages:

ABR/1	its Dag					
•	Home	BMW 123D	Keys	EWS Parts Adaptation		
					EWS Parts Adaptation	
Connec	ction am		-	-		
					Reseting Mileage	
ABRI	TES					
ABRI	TES					
A BRI	TES Diag	nostics 31.6 ww	w.abrites.co	om		- 0
ABRI ABRIT	TES Diagr	nostics 31.6 ww BMW 123D	w.abrites.ci	om EVIS Parts Idaptation		- 0
ABRI	TES Diagr	nostics 31.6 ww BMW 123D	w.abrites.c	om EWS Parts Adaptation	EWS Parts Adaptation	- 0
ABRI	TES Diagr	nostics 31.6 ww BMW 123D	w.abrites.co	om EWS Parts Adaptation	EWS Parts Adaptation	- a
ABRI	TES Diago	nostics 31.6 www BMW 123D	w.abrites.co	OM ENS Perts Adaptation	EWS Parts Adaptation	- a
A-BRI	TES Diagr	nostics 31.6 ww BMW 123D	w.abrites.co	om DAS Parts Ideptition	EWS Parts Adaptation	- a
A B RI	TES Diagr	nostics 31.6 ww BMW 123D	w.abrites.co	OM ENS Parts Adaptation	EWS Parts Adaptation	- a
ABRIT ABRIT	TES Diagr	nostici 31.6 ww BMW 123D	w.abrites.co	om MS Pers Adaptition	EWS Parts Adaptation	- a
ABRIT ABRIT	TES Diago	nostics 31.6 ww BMW 123D	w.abrites.co	OM EVIS Parts Kdaptellon	EWS Parts Adaptation	- a
ABRI ABRII Cannec Dagra	TES Diagram	nostics 31.6 ww BMW 123D	w.abrites.cc	OM RAS Parts Adaptation	EWS Parts Adaptation	- a
ABRI A ABRI Carree Days	TES Diagu	nostics 31.6 www BMW 123D	w.abrites.c	Offi ENS Parts Adaptation	EWS Parts Adaptation	- a
A BRI A ABRIT	TES Diagu	nostics 31.6 www BMW 122D	w.abrites.cc	om Des hers Augustion	EWS Parts Adaptation	- a
A BRI	TES Diagonal	nostics 31.6 www BMW 1220	w.abrites.c	om Intelligender	EWS Parts Adaptation	- a
A BRI	TES Diagu	nostics 31.6 www BMW 122D	wabrites.c	OM ENS Parts Adaptation	EWS Parts Adaptation	- a
A BRI	TES Diagu	nostics 31.6 www BMW 122D	wabrites.co	OM XNS Parts Adaptation	EWS Parts Adaptation	- a
A BRI	TES Diagram	nostics 31.6 www BMW 123D	wabrites.co	om Nes pers	EWS Parts Adaptation : Rileage reset done	- 0
A BRIT	TES Diagram	nostics 31.6 www BMW 123D	wabrites.cc	om Res Peris	EWS Parts Adaptation : Rileage reset done	- 0
A BRI A ABRI Convec	TES Diago	nostics 31.5 www BMW 123D	wabrites.cc	OM 2NS Paris	EWS Parts Adaptation	- 0
A BRI	TES Diago	nosticis 31.5 www BMW 123D	wabrites.co	OM 2NS hels	EWS Parts Adaptation Filesge reset done	- 0
A BRI	TES Diagon	nostics 31.6 www BMW 123D	wabrites.ck	OM This have a second sec	EWS Parts Adaptation	- 0

The current value of the mileage in the FEM/BDC could be verified from the "Mileage: menu:

ABRITES Di	agnostics 31.6	www.abrites.com						– Ø ×
< Home	BMW 123	10						۵ الله
Inter Filter					General Diagnos	tics		
	Address	America	Parte		ocheron oraginos		Paulta	
Scan	[10]	PEM	PRONT ELECT	RONEC MODUL (GATEWAY)			1 fault	
Clear Faults	[40]	IFM.	BOAT D ST				12 6-6	
Program IDs	[40]	ren.	PRONT ELECT	KUNEL MULLICE (BODT)			BC BUES	
Vehicle Order	[60]	KOMBI	KOMBEINSTRU	MENT BASIS (JCI)			19 faults	
Programming	[63]	ни	HEADUNIT HIS	GH (HAMANN BECKER) HOST ANTER			3 faults	
Keys & Start Synchronization								
Guided Functions								
Mileage								
HT.								
ABRITES								
ABRITES Dia	ignostics 31.6	www.abrites.com						- 0 ×
< Home	6MW 123	D Mileage						പി ©
	()				Mississ informat			
	Address Vieter			Trace	Pineage informat	ion.		
ABRITES					Reading Shado memory	100		
				Ple	ease wait 21			STOP
ABRITES Di	agnostics 31.6	www.abrites.com						- 0 X
mome	uriw 12	~ raeage						cillito
					Mileage informat	tion		
Read Vehicle	[40] FEM			Rissge 0	5omt 78032	dear		
	[60] KOMBI	C.		78034	78032	dear		
	[10] FEM			0	78032	clear		

3.2.4.4 FEM/BDC Troubleshooting + Coding

Should you receive an error message during one of the FEM/BDC procedure you should restore the FEM to its original state.

The procedure will fail only when the conditions are not met and the unit will remain in a boot loader state and the FEM/BDC will disappear from the main diagnostic menu.

It is very important to strictly follow all steps from the on-screen messages step by step and supply the car with a constant 13.6 Volts or more so that the procedures can run smoothly and finish successfully.

When the software tells you to disconnect the AVDI from the OBDII and then remove the car battery it is very important to do that in that order.

It is also very important to NOT disconnect the AVDI from the USB port of your PC during the procedure.

FEM/BDC Restore procedure:

All you need to do is reflash the FEM/BDC (Module 40 FEM Body) from the "**Programming**" menu and then write its **coding** from the diagnostics menu(Module 40 FEM) which is being saved automatically during one the FEM/BDC procedures in the following folder: C:\Users\YOURUSERNAME\Documents\ABRITES software for ID 17XXXX\BMW \VINofYourCar.ncd

ABR	ITES Dia	gnostics	31.6 w	ww.abrites.com		- o ×
۲	Home	BMW	123D			@
Enter Fil	ter				General Diagnostics	
	-	Address		Aoranym	Nore	Fada
Cear	Feults	[10]		TEM	FRONT ELECTRONIC MODUL (GATEWAY)	1 fault
Progra	am IDs	[40]		FEM	FRONT ELECTRONIC MODUL (BODY)	82 faults
Central Vehicle	l Coding e Order	[60]		KOMBI	KOMBEINSTRUMENT BASIS (ACI)	20 faults
Progra		[63]		ни	HEADUNIT HIGH (HAMANN BECKER) HOST ANTEIL	4 faults
Synchro	onization					
Guided	Functions					
MA						
	and a					
ABR	ITE'S					

1. Program/Reflash the FEM/BDC unit

Select [40] FEM FRONT ELECTRIC MODULE (BODY):

ABRITES D	agnostics 31.6 w	ww.abrites.com			-	٥	×
< Home	BMW 123D	I-Level				ail	0
				Integration Level			
Read Vehicle		[10]	Plash v. 4.9.220	FEM FRONT ELECTRONIC MODUL (GATEWAY)			
		[40] C	Filesh v. 0.3.29	FEM FRONT ELECTRONIC MODUL (BODY)			
	I-Step(current):	F020-15-07-500					
ABRITES	I-Step(last) :	F020-15-07-500					
	I-Step(shipment)	: F020-13-03-503					

There are two flashes/applications that have to be written to the unit.

The software will automatically select the correct flash/application versions for the unit + coding(if available).

It is also possible to select a different version by clicking on the second flash. Click on "Update" to start the flashing procedure:

ABRITES Dia	agnostics 31.6 www.at	brites.com			-	0 >	¢
< Home	BMW 1230 I-L	evel				ail (9
					Interation Level		
					anegisteri Level		
Read Vehicle		[10]	Flash v. 4.9.220	FEM FI	RONT ELECTRONIC MODUL (GATEWAY)		
		[40]	Plash v. 0.3.29	FEM F8	RONT ELECTRONIC MODUL (BODY)		
ABRITES							
					Details: FEM FRONT ELECTRONIC MODUL (BODY)		
Close Details		Coding		794: 004.228.010			
Update		Flash		1555-000.003.029			
9							
		riese		1000 001 001 000			
ABRITES							
I-Step(current):	F020-15-07-500						
I-Step(last) :	F020-15-07-500						
I-Step(shipment)): F020-13-03-503						
ADDUTTE		-				11	-
ABRITES Dia	ignostics a 1.6 www.ab	ntes.com				U X	1
< Home	BMW 123D 1-0	evel				aill	2
					Integration Level		
neau venue		field	Page 4, 4,9,220	- Contraction of the Contraction	uni suo nome, maata (an immi)		
		[40]	Flash v. 0.3.29	FEM FR	ONT ELECTRONIC MODUL (800H)		
ABRITES							
					Available versions:		
Done	004.103.070						î
Cancel	004.104.040						
	007.102.010						
	0						
	006.101.050						
	611.102.020						
ABRITES	012.104.010						~
I-Step(current):	F020-15-07-500						
I-Step(last) :	F020-15-07-500						
1-Step(shipment)): F020-13-03-503						
ABRITES Dia	agnostics 31.6 www.ab	orites.com			-	Ø X	
< Home	BMW 123D I-U	evel Flashing				्रती (,
land a second se						aun	
	Dwa		a sa d	hald	CTADT button to bogin		
	рге	55	anu		START BITTON to Degin		
				Please make sure that	the suppled voltage does not drop below 13.6 V for the duration of the procedure		
					OK		
					CTADT		
					START		
					START		
					START Program FEM	>	

If a coding for the unit is available it will be also written to the unit:

Now the FEM is reflashed and it will appear in the diagnostic menu. You could write its original coding from this menu or write a Default coding if you do not have the original one:

							-
< Home	BMW 123	D				ail	0
Enter Filter			General Diagnostics				
	Adven	konnen	None	fada			
Scan	1107	IFU .	EROLET DI ROTTONICI MONTE INTETNICO				
Clear Faults	[10]	ALM .	TRUTH ELECTRUME, MUDDL (URLEWAY)	2 195/03			
Program IDs	[40]	ием 🖓	PRONT ELECTRONIC MODUL (BOOY)	75 faults			
Central Coding Vehicle Order	[60]	KOMBE	KOMBERISTRUMENT BASIS (JCI)	20 faults			
Programming Keys & Start	[63]	ни	HEADUNIT HIGH (HAMANN BECKER) HOST ANTEEL	5 faults			
Synchronization Guided Functions							
Misage							
AB <mark>RIT</mark> ES							
ABRITES Dia	gnostics 31.6 w	ww.abrites.com			-	0	×
ABRITES Dia	gnostics 31.6 w BMW 123D	FEM			÷.,	് ഷി	×
ABRITES Dia	gnostics 31.6 w BMW 123D	FEM	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)		-	ail	×
ABRITES Dia	gnostics 31.6 w BMW 123D Production date (day	, month, year)	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)	22.05.13	-	add	×
ABRITES Diag	gnostics 31.6 w BMW 123D Production date (den Supplier	FEM p. month, year)	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)	22.05.33 Laar Carponition		all	×
ABRITES Diar C Home Actuators Dire Values Fault Codes	gnostics 31.6 w BMW 123D Production date (day Supplier Identifying feature,	FEM FEM c. morety, year)	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)	22.05.13 Law Corporation Sease	-	a al	×
AdRITES Diay Home Actuators Die Values Fault Codes Coding	gnostics 31.6 w BMW 123D Production date (day Suggier Identifying feature, Control unit address	FEM FEM (, more), year)	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)	22.05.13 Lear Corporation 5958-96 64	-	o M	×
AdRIITES Diay Home Actuators Live Values Fault Codes Coding Memory Manager	gnostics 31.6 w BMW 123D Production date (day Sugglier Sdenttlying feature, Control unit address Programming date	e, mordi, year) control unit vinsion	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)	22.05.13 Lear Corporation 500540 64 20.11.18	~	all	×
ABRITES Diay Abustors Actuators Live Values Fault Codes Coding C	gnostics 31.6 w BMW 123D Production date (de Supplier Identifying feature, i Control unit address Programming date Kilometre meding w	www.abrites.com FEM e. morth, year) control unit vestion	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)	22.05.13 Lear Carporation 5666-0 64 20.11.18 0		all a	×
ABRITES Dia ABRITES Dia Home Actuators Use Values Fault Codes Coding Coding Custom Session	gnostics 31.6 w BMW 1230 Production date (din Supplier Satettyleig feature, Control with address Programming date Klometre reading w Sarial number	FEM FEM c. morth, year) control with version	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)	22.05.13 Lear Corporation 5985-46 64 20.11.18 0 E30509105		add	×
ABRITES Diay Aduators Aduators Live Values Faul Codes Coding Cod	gnostics 31.6 w BMW 1230 Production dele (din Sugulier Sadethjeing feature, Control with address Programming dele Konneten reading a Sonial number	www.abrites.com FEM FEM a, morth, year) control unit vestion r Ann programming	Unit 40: FEM FRONT ELECTRONIC MODUL (BODY)	22.05.13 Law Carporton 5989-0 64 20.11.18 0 80000105			×

Please wait...

You have the option either to reset it to defaults or load if from a file: (The original first coding of the unit is saved in C:\Users \YOURUSERNAME\Documents\ABRITES software for ID 17XXXX\BMW \VINofYourCar.ncd.

Once the coding file is loaded click on "Wrire ECU":

ABRITES Dia	agnostics 31.6	www.abrite	s.com											- 1	Ø
K Home	8MW 123	D FEM	Coding												ail
							Coding								
Read BOJ	iane											where the			
	EcuHwConfigu	ration						3							
leve to File	EnergyManage							20							
ad from File	DemOtcInhibit	on						٣							
Avite ECU	ComAdapterNe	tworkDtc						~							
	Brūmux							~							
e to Defaults	TcMaster							*							
ST Coding	TcMaster30!														
	TcIntegration							Ψ.							
	TcMaster2														
	CaMaster							5							
	CaIntegration							3							
	CaIntegration	evLocation						5							
	CiMaster							~							
	Clintegration														
	Puclient							-							
	DeDriverBlock							~							
	DeDriverBlock														
	Ducktorias														
	Paradio														
	PHAppuntegra	bon													
DITER	PWDRIVER														
Marria	BMW 122	CEM	Codera												
TRATIRE	0111 123	- TER	cooling	_	_	_		_	-	-	-	_	-		au
	-						Coding								
	EcuHwConfigur	ation													
	EnergyManager														
from the	DemOtcinhibite	m.						~							
	ComAdapterNet	workDtr													
	Manag							7.4							
	Tellector							1000							
	Tables and							1000							
	TU-WEIG JUI														
	Kanagradon														
	TOMAS2672				w	ould you like to save the o	coding information to a	file first?							
	CaMatar					(recor	mmended)								
	Calintegration														
	CalintegrationK	yLocation							D						
	CiMaster				Y	es		No	20%						
	Clintegration														
	PwClient														
	PwDriverBlockd							37733							
	PwDriverBlock3							1000							
	PuMaster							3982							
	PwAppiIntograt	ion (1							
	PwDriver							1992							
DITES															

Please wait... 8

The unit is now coded:

ABRITES Dia	agnostics	31.6 wv	ww.abrite:	s.com										-	σ	×
< Home	BMW	123D	FEM	Coding												di ©
								c	oding							
Read ECU	name										rane		value			
for the line	EcuHw0	Configurati	on							÷						
Several Tree	Energyt	Manager														
Load from File	DemDto	dnhibition								v						
Write ECU	ComAd	lapterNetwo	orkDtc							÷						
	B/Imux									÷						
Neset to Denauts	TcMaste	er								×						
FAST Coding	TcMaste	er30f								÷						
	TcInteg	ration	C	>						÷						
	TcMaste	er2								-						
	CaMaste	er								÷						
	CaInteg	gration								~						
	CaInteg	grationKeyL	ocation							÷						
	CIMaste	¥.								~						
	Clinteg	ration								÷						
	PwClien	st.								v						
	PwDrive	erBlock0								÷						
	PwDrive	erBlock1								ž						
	PwMast	ter								v						
	PerAppl	Integration	1							v						
-	PwDrive	er								~						
ABRITES	Icoldant									0						

Once the unit is reflashed and coded you could repeat the FEM/BDC procedure.

*You can find simplified coding procedures in the FAST Coding menu:

ABRITES Diagnostics 31.6 www.abrites.com	- 0 >
Home BMW 123D FEM Coding FAST Coding) Inc
FAST Coding	
Close Mirrors/Windows/SunRoof from FOB or CA	
Tilt passenger mirror down when in reverse gear	
Disable headlights washers	
Start car without holding clutch/brake	
Close windows, sunroof & mirror from key tob	
Automatically unfold mirrors at low speed	
Turn off MMI when door is opened	
Turn on brake force flashing with hard breaking	
Turn off amber side-markers next to headlight	
Ambient lightning controlled independent from dimmer switch	
Illuminate exterior door handle LEDs when in reverse	
Set high-beam assistant auto-on	
Disable headlights washers	
Electronics off when door opened	
Fog lights stay on with high-beams	
Turn off front window roll-up door interrupt.	

3.2.4.5 8HP EGS Reset and Adaptation

8 HP ZF gearbox EGS can be reset to a virgin state and can be easily adapted to BMW F-Series. The procedure requires that the supplied voltage does not drop below 13.6V and that external power supply is connected to the car. The replacement EGS needs to be connected to the car and the IGN turned on. Below are the screenshots of the procedure that will allow the replacement gearbox to be made virgin and then adapted. Please make sure to follow all steps without skipping any of them as the preconditions need to be fully met:

1 Go to Keys and Start Synchronization and open the 2nd menu. 2 Make sure to have all preconditions met

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7 Turn the IGN OFF

8 The EGS is entering sleep mode

Home	BMW F26	Keys EWS Parts EWS Parts Adaptation	≡ 1
	DDE	5/DME Exchange	
		The EGS is entering sleep-mode	-20 -00 -00 -20 -00 -00 -00 -00 -00 -00 -00 -00 -00

9 Turn the IGN ON

10 The EGS is being initialized

12 The EGS is Authorized now

14 The process has successfully finished

11 Turn the IGN OFF

13 The EGS is being coded

*Note: If you want to adapt the EGS to another car or leave it in a virgin state, click "CANCEL" on step 7.

3.2.5 ISN reading

The individual serial number is a mechanism to bind the modules to one specific car and prevent reusing modules from another car. The ISN of the DME is also needed data for key learning when all keys are lost.

•ISN reading from DME. We currently support DMEs for diesel and gasoline E series vehicles as well as DMEs for gasoline F series vehicles. In case of a problem with a specific DME, our team analyzes the problem at hand from the online logs and may add support to that motor computer

dynamically on our server. The customer just has to repeat the operation without reinstalling anything. Some specific motor computers like MSV80/MSD80 are more complicated for ISN reading and require flash preprocessing to retrieve its data.

•ISN reading from CAS - supported are both the short 4B ISN (that is used by older motor computers and some automatic gear shaft) as well as the 16byte ISN that is used for authentication with most up to date motor computers.

•Recent CAS3 versions keep the ISNs encrypted in their EEPROM and decrypt it before authentication of the DME. The Abrites software for BMW generation 2 allows the user to encrypt the ISN for these CAS3 versions.

•ISN reading from EGS - reading of the ISN from the Electronic Gear Shaft allows replacement and adaptation of used EGS from one vehicle to another.

•Synchronization status - quick view of the synchronization status between DME and CAS which allows quick troubleshooting of starting problems.

In this view the user can see the details in regards to the ISN codes after the reading is completed.

ABRITES Di	iagnostic	s 31.	6 w	ww.	abrit	es.co	om													\times
< Home	BMW	E	70	к	eys		ISN												.a000	٢
									I	ndiv	idua	IS I Se	N rial	Num	bers	5				
ISN in DME	DME:	9C	09	CF	01	87	D8	C9	7B	СС	CE	81	71	44	04	9E	C1			
ISN in CAS (4B)	CAS:																			
ISN in CAS (16B)	CAS:	DD	BC	2F	40	32	38	88	CE	2C	8F	34	91	05	B1	7E	80			
ISN in EGS	EGS:																			
DME-EWS sync status	Statu	s: N,	/A																	
· · · · · · · · · · · · · · · · · · ·																				
Encrypt CAS ISNs																				
										in the second se	artur f	10 ⁵	0 60	1 million						
										durchindra boother	30 20 10 0	6	6	-80 -90	May manufant					
A·B·R·I·T·E·S												Read	ng							

Once again the software will ask you to ensure that the external power supply is connected when a DME/ DDE programming is required for the ISN reading:

 ABRITES Diagnostics 31.6
 www.abrites.com
 -

 K
 Home
 BMW
 E50
 Keys
 15N

The Start button needs to be pressed and held down as an additional safety precaution.

The other buttons in the keys menu will allow for the synchronization of the CAS, DME and other modules where it is needed during and after key learning.

3.2.5.1 ISN READING COMPATIBILITY LIST:

Depending on the vehicle models the user can read the ISN from many different DME modules.

Please make sure to check the ISN matrix compatibility on our website – abrites.com http://abrites.com/products/abrites-diagnostics/for-bmw-mini-2

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3.2.5.2 Boot mode reading

The Abrites software for BMW2 allows you to read the following DME/DDEs in boot mode:

EDC17C41, EDC17CP45-E, EDC17CP45-F, EDC17CP49, EDC17C50, EDC17C56, MEVD17.2.4, MEVD17.2.5, MEVD17.2.6, MEVD17.2.8, MEVD17.2.G, MEVD17.2.9. You have to select the "Boot mode" option from the main menu, select the DME/DDE type, connect according to the connection diagram, read the TPROT/TPROT12 password, read the DFLASH and find the ISN from the "Advanced info" option.

When the DME/DDE is selected, you could click on **"Open Image"** and a connection diagram will be displayed:

-
')
/
_

< Home	BMW BootMode																ii @
ter Filter								Boot	Mode								
Loed	EDC17C50 - boot p	assword		Rood	TPEOT Pasaword	6			1	Read DRASH					Road PFLASH		
Save				Read T	PROT12 Passwor	d			11	Write DFLASH					Write PFLASH		
Open Image	0010	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
رب Advanced Info	0020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0030	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0040	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0050	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0060	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0070	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0090	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	00A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	00C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	00D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	00E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

3

Please proceed with reading the TPROT/TPROT12 password:

ABRITES Diagnostics 31.6 www.abrites.com Ø X C Home BMW BootMode **ail ©** Enter Filter Boot Mode Load EDC17C50 - boot Save Read TPROT12 Page ford Draw Open Image 0010 FF Advanced Info 0020 FF 0030 FF 0040 FF 0050 FF 0060 FF 0070 FF 0080 FF 0090 FF 00A0 FF 0080 FF FF FF FF FF FF FF 00C0 FF 00D0 FF 00E0 ABRITES

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4

< Home	BMW BootMode																ail ©
eter Filter								Boot	Mode								
Lord	EDC17CS0 - IFIA	5 DC 78 15 x								and DFLASH					Read PFLASH		
Seve				Read TR	PROT12 Pasaword	•				Write DFLASH							
Open Snieger	0010	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
Advanced Info	0020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0030	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0040	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0050	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0060	FF	FF	F			Password : 7	Done 8 3C 93 F1 A	5 DC 78 15			FF	FF	FF	FF	FF	FF
	0070	FF	FF	F				ОК				FF	FF	FF	FF	FF	FF
	0080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0090	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	00A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	0080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	00C0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	00D0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
	00E0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

6

Once the TPROT/TPROT12 password is read you will have to read the DFLASH of the ECU:

	DI-144 BOOD-GOE																
Enter Filter								Boot	Mode								
Load	EDC17CS0 - 1F1 AS DC	711 15 ×		And	TPROT Passanors					Read OFLASH					Read PECKER		
Save				Read 7	PROT12 Passwo	4				Rinni DFLASH	3				WHE PEASH		
Open Image	0000	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
Advanced Info	0010	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0030	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0040	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0050	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0060	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0070	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0090	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	00A0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0000	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
	0000					rr.				ee.		er					
ABRITES Di	agnostics 31.6 www.abrite	s.com							196								
ABRITES	agnostics 31.6 www.abrite BMW BootMode	s.com							196							5	
ABRITES Dia ABRITES Dia ABRITES Dia Home	agnostics 31.6 www.abrite BMW BootMode	s.com						Boot	Mode							2	
ABRITES Dia ABRITES Dia C Home Enter Filter	agnostics 31.6 www.abrite BMW BootMode EDCL2/CSB ~ IM AS DC	s.com		Rint	cracht Passade			Boot	Mode	Read DFLASH					Read PFLASH		
ABRITES Di ABRITES Di Home Enter Filler Land Save	epostics 31.6 www.abrite BMW BootMode EDC17C30 ~ 177 AS DC	s.com		Read To	PROTE Passivor	d		Boot	Mode	Read DFLASH Write DFLASH					Read PFLASH WHEN FFLASH		
ABRITES Di ABRITES Di C Home Enter Filter Land Seve Open Image	egnostics 31.6 www.abrite BMW BootHode EDCL7/CS6 - 175 AS DC 0000	s.com	00	Read Ti Add	PROT Passoon NOT12 Passoon F9	d 99	OE	Boot	Mode 00	Read DFLASH Write DFLASH 00	00	00	00	00	Read PFLASH West TRUCKIN 00	00	
ABRITES Di ABRITES Di Home Enter Filler Laad Seve Open Image Advanced Info	spostics 31.6 www.abrite BHW BootKode EDC17C88 - 171 ASDC 0000 0010	s.com	00 2D	Read TI 44 30	HIGTE Passado NOTE2 Passado 199 37	d 99 2D	0E 31	Boot 00 34	Mode 00 00	Road DFLASH Write DFLASH 00 00	00	00 32	00 38	00 2D	Read PFLASH Wells PFLASH 00 30	 00 37	
A BRITES DA A ABRITES DA C Home Land Save Copen Image Advanced Drfo	spnostics 31.6 www.abrite BHW locatede EDC17C88 - 171 AS DC 0000 0010 0020	s.com	00 2D 34	Read TI 44 30 08	1960112 Passivo 1960112 Passivo 199 37 10	6 99 2D 12	0E 31 42	Boot 00 34 04	Mode 00 00 30	Read DFLASH Write DFLASH 00 00 28	00 00 07	00 32 14	00 38 14	00 2D 52	Read PFLAGH Write PFLAGH 00 30 46	 00 37 31	
ABRITES DA ABRITES DA Characteristics of the second	spnostics 31.6 www.abrite BHW locaticse EDC17C88 - 171 ASDC 0000 0010 0020 0030	s.com	00 2D 34 37	Read TI 44 30 08 35	PROT12 Parameter PROT12 Parameter P9 37 10 33	e 99 2D 12 36	0E 31 42 35	Boot 00 34 04 38	Mode (1) 00 00 30 33	Read DPLASH Write DPLASH 00 28 10	00 00 07 01	00 32 14 2F	00 38 14 2F	00 2D 52 00	Read PFLASH Week PFLASH 00 30 46 00	00 37 31 00	
A BRITES DA ABRITES DA C Home Enter Filer Sale Open Image Advanced Drife	sprostics 31.6 www.abrite BHW locaticate DECL7/CSB ~ 171 ASDC 0000 0010 0020 0030 0040	s.com	00 2D 34 37 90	Read Ti 44 30 08 35 07	1001 Passado 120112 Passado 19 37 10 33 40	e 99 2D 12 36 93	0E 31 42 35 77	Boot 00 34 04 38 00	Mode 1 00 00 30 33 00	Road OFLASH Write DFLASH 00 00 28 10 00	00 00 07 01 00	00 32 14 2F 00	00 38 14 2F 00	00 2D 52 00 00	Read PFLAGH Write PFLAGH 00 30 46 00 00	 00 37 31 00 00	
ABRITES ABRITES CHOME Edet File Gene Gene Trage Adament Trib	sprostics 31.6 www.abrite BHW locaticate 00000 0010 0020 0030 0040 0050	s.com	00 2D 34 37 90 00	Read TH 44 30 08 35 07 0	PROT12 Passaro P9 37 10 33 40	d 99 2D 12 36 93	0E 31 42 35 77 0per	Boot 00 34 04 38 00 ation Complet	Mode 00 00 30 33 00	Read DFLASH Write DFLASH 00 00 28 10 00	00 00 07 01 00	00 32 14 2F 00 00	00 38 14 2F 00 00	00 2D 52 00 00 00	Read PFLAGH 99988 PFLAGH 00 30 46 00 00 00	00 37 31 00 00 00	
A BRITES DA A BRITES DA Home Enter Filler Green Insign Advanced Drife	sprostics 31.6 www.abrite BHW locaticate DOCUMENT - 171 ASDC 0000 0010 0020 0030 0050 0050 0050	5.com 778 15 x 01 36 31 33 00 00 00	00 2D 34 37 90 00 00	Read TI 44 30 08 35 07 0 0	F9 37 10 33 40	e 99 2D 12 36 93	0E 31 42 35 77 0per	Boot 00 34 04 38 00 ation Complet OK	Mode (1 00 00 30 33 00 ved	Read DPLASH Write DPLASH 00 00 28 10 00	00 00 07 01 00	00 32 14 2F 00 00 00	00 38 14 2F 00 00 00	00 2D 52 00 00 00 00	Read PFLAGH Week PFLAGH 00 30 46 00 00 00 00	 00 37 31 00 00 00 00	
A BRITES DA A BRITES DA A BRITES DA A Home Come Trace Come Trace Advected Drife	egocstics 31.6 www.abrite BMW bootstore 00000 0010 0020 0030 0040 0050 0050 0060 0070	s.com 78 15 × 01 36 31 33 00 00 00 00	00 2D 34 37 90 00 00 00	Read 11 44 30 08 35 07 0 0 0	Pictri 2 Preserve Pig 37 10 33 40 00	e 99 2D 12 36 93	0E 31 42 35 77 0per	Boot 00 34 04 38 00 ation Complet OK 00	Mode 00 00 30 33 00 ed	Read DFLASH 00 00 28 10 00 00	00 00 07 01 00	00 32 14 2F 00 00 00 00	00 38 14 2F 00 00 00 00	00 2D 52 00 00 00 00 11	Read PFLAGH Vereit 192,200 00 30 46 00 00 00 00 00 00 00	00 37 31 00 00 00 00 00 00 00	
ABRITES DA ABRITES DA Mone Enter Filter Gen Insign Adveced Drb	BMW bootbor BMW bootbor DOCC 7558 - 171 ACC DOC0 OO10 OO20 OO30 OO40 OO50 O050 O0	5.com 7/1 15 x 01 36 31 33 00 00 00 00 00 00 00 00	00 2D 34 37 90 00 00 00 00	Read 11 44 30 08 35 07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	F9 37 10 33 40 00 83	e 99 2D 12 36 93 00 FB	0E 31 42 35 77 0per	Boot 00 34 04 38 00 ation Complet OK 00 00	Mode 1 00 00 30 33 00 ed	Read DPLASH 00 00 28 10 00 00 28 10 00	00 00 07 01 00 00	00 32 14 2F 00 00 00 00 00 00 00	00 38 14 2F 00 00 00 00 00	00 2D 52 00 00 00 00 11 04	Read FFLAGH 9998 FFLAGH 00 30 46 00 00 00 00 00 AA 00	00 37 31 00 00 00 00 00 00 00 00	
ABRITES DA ABRITES DA Mone Enter Filter Gen Insign Adveced Drb	egnostics 31.6 www.abrite BMW boottoor 0000 0010 0020 0030 0040 0050 0050 0050 0050 0050	01 36 31 33 00 00 00 00 00 2 18	00 2D 34 37 90 00 00 00 00 00 11	Read Ti 44 30 08 35 07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	F9 37 10 33 40 00 83 8A	 99 2D 12 36 93 00 FB 30 	0E 31 42 35 77 0per 00 0E 39	Boot 00 34 04 38 00 ation Complet OK 00 00 01	Mode 00 00 30 33 00 00 00 00 00	Read DPLASH Mittle DPLASH 00 00 28 10 00 28 10 00 00 00	00 00 07 01 00 00 00 00 01	00 32 14 2F 00 00 00 00 00 00 00 00 00 00 00 00 00	00 38 14 2F 00 00 00 00 00 00 00	00 2D 52 00 00 00 11 04 00	Read PFLAGH 9998 (%AG) 00 30 46 00 00 00 00 00 00 00 00 00 00	00 37 31 00 00 00 00 00 00 00 00 00 00 00 00 00	
ABRITES DA ABRITES DA Enter Filter Land Green Draget Advected Drift	grostics 31.6 www.abrite BMW 8costicate 0000 0010 0020 0030 0040 0050	01 36 31 33 00 00 00 00 00 00 21 18 30	00 2D 34 37 90 00 00 00 00 00 11 30	Read Ti Read Ti 44 30 08 35 07 0 0 00 00 00 00 00 00 00 00 00 00 00	10 10 33 40 00 83 8A 30	d 99 2D 12 36 93 6 93 6 93 93 00 6 7 8 30 30	0E 31 42 35 77 00 0E 39 30	Boot 00 34 04 38 00 ation Complet OK 00 01 30	Mode 00 00 30 33 00 kd	Read DPI-AGAI 000 288 100 000 000 000 000 000 000 000 300	00 00 07 01 00 00 00 00 01 30	00 32 14 2F 00 00 00 00 00 00 00 00 00 00 00 00 00	000 388 144 2F 000 000 000 000 000 000 000 000 000	000 2D 52 000 000 000 111 040 000 300	Read PFLAGH 9998 (1924) 00 30 46 00 00 00 00 00 00 00 00 00 00 00 00 00	00 37 31 00 00 00 00 00 00 00 00 00 00 00 00 00	
A DRITES DA ABRITES DA Home Land Save Open Image Advanced Drift		01 36 31 33 00 00 00 00 00 00 00 00 00 00 00 00	00 2D 34 37 90 00 00 00 00 00 01 11 30 00	Read Ti Read Ti 44 30 08 35 07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 10 33 40 00 83 8A 30 14	4 99 2D 12 36 93 30 78 80 93 30 30 09	0E 31 42 35 77 0per 00 0E 39 30 16	Boot 00 34 04 38 00 ation Complet OK 00 00 01 30 8D	Mode 00 00 30 33 00 00 00 00 00 00 30 00 00	8440 DPA.024 000 288 100 000 000 000 000 300 F2	00 00 07 01 00 00 00 00 01 30 01	00 32 14 2F 00 00 00 00 00 00 00 00 00 00 00 00 00	000 388 144 27F 000 000 000 000 000 000 000 000 000	000 2D 52 000 000 000 111 04 00 300 06	Read PFLAGH 900 30 46 00 00 00 00 00 00 00 00 00 00 00 30 33	200 37 31 00 00 00 00 00 00 00 00 00 00 00 00 00	
ABRITES DA ABRITES DA Mone Enter Filar Gen Insign Adveced Drb		01 36 31 33 00 00 00 00 00 00 00 00 00 00 00 00	00 2D 34 37 90 00 00 00 00 01 11 30 00 00 00	Real T Real T 44 30 08 35 07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 10 33 40 00 83 8A 30 14 0A	4 99 2D 12 36 93 6 93 93 93 93 93 93 93 90 99 99	0E 31 42 35 77 00 0E 39 30 16 01	Boot 00 34 04 38 00 ation Complet OK 00 01 30 8D 06	Mode 00 00 30 33 00 00 00 00 00 30 00 30 00 30 00 30 00 30 00 30 00 30 00 0	Read DPI-AGM 000 288 100 000 000 000 000 000 300 F2 066	00 00 07 01 00 00 00 00 01 30 01 00	00 32 14 2F 00 00 00 00 00 00 00 00 00 00 00 00 00	000 388 144 27F 000 000 000 000 000 000 000 000 000 0	000 2D 52 000 000 000 111 040 000 300 06 0A	Read PFLAGH 900 30 46 00 00 00 00 00 00 00 00 00 30 33 33 06	00 37 31 00 00 00 00 00 00 00 30 30 30 00 18	

Once the DFLASH is read you have to click on the "Advanced info" option and you will find the ISN of the DME/DDE, the ISN of the EGS and the operating hours of the DME/DDE.

You have the options to copy the ISNs, change them and reset the operating hours of the DME/ DDE(once a certain value is reached you won't be able to write any coidng to the ECU and this counter has to be reset.)

< Home	BMW BootMode																
nter Filter								Boot	Mode								
Lord	EDC17C50 ~ 1F1 A	5 DC 78 15 x		Real	IPROT Password					Read DFLASH					Read PFLASH		
Save		-		Read T	PROT12 Passwor	d				Write DFLASH					Write PFLASH		
Open Image	0000	01	00	44	F9	99	0E	00	00	00	00	00	00	00	00	00	32
Advanced Info	0010	36	2D	30	37	2D	31	34	00	00	00	32	38	2D	30	37	2D
13	0020	31	34	08	10	12	42	04	30	28	07	14	14	52	46	31	30
	0030	33	37	35	33	36	35	38	33	10	01	2F	2F	00	00	00	00
	0040	00	90	07	Time Lin 1668	nit IS126 sec	Reset				ø	00	00	00	00	00	00
	0050	00	00	00	ISN		110001					00	00	00	00	00	00
	0060	00	00	00	23 FGS 19	CF 74 26 9F SN	48 5D BC 27 1	D 3A 8D AA 0	C 49 29	SET IS	N	00	00	00	00	00	00
	0070	00	00	00	55	E8 D6 73 C0	DB 5C CC F0	54 F5 4D 03 9	E F0 C7	SET IS	N	00	00	11	AA	C9	AO
	0080	02	00	D5								04	00	04	00	00	00
	0090	18	11	06	8A	30	39	01	00	00	01	23	00	00	00	30	30
	00A0	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	01
	0080	01	00	04	14	09	16	8D	03	F2	01	00	00	06	33	00	00
	00C0	01	00	00	0A	09	01	06	02	06	00	00	0A	0A	06	18	00
	00D0	08	00	00	0A	0B	69	15	03	08	00	00	28	91	69	15	98

3.2.5.3 ECU Wiring diagrams

Some BMW ECUs need to be read on bench in boot mode which requires the units to be opened. Others do not require boot mode reading and can be easily wired on bench using the ZN051 Distribution Box. Below are displayed some of the ECU types with their wiring diagrams.

1. MSD80/MSD81

2. MSD85/MSD87

3. MSV90

Manual version: 31.8

3. MEVD 17.2.9

Working with MEVD17.2.9 requires the ECU to be wired differently when reading the TPROT password and DFlash. Reading the TPROT password can be done with connecting T1,T2, CH and CL using the diagram below:

3.2.6. Mileage Information

The ability to view the mileage data is available for viewing using the mileage function of the software. In some cases the counters can be calibrated via the Abrites diagnostics for BMW/ Mini generation 2 but only for module replacement purposes and only according to local regulations. Some BMW models may have an incremental EEPROM that won't allow the user to change the odometer values by OBD. In such cases it is needed to take out the cluster, read its EEPROM with a programmer and reset it (delete the first two rows of the EEPROM). Once the mileage in the cluster is reset, the cluster will take the odometer values from the unit that holds the highest value.

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< Home	BMW	E90	Mileage					all	۲
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Read Vehicle	[60]	KOMBI		209458]	0			
	[40]	CAS		209424	1	0			
	[72]	FRM/KB	м	100854703	write	0			
	[18]	EGS/SM	G	166400]	0			
	[29]	DSC		207368]	0			
	[29]	DSC		207368]	0			
	[29]	DSC		207368]	0			
	[12]	DME/DD	Œ	209420]	0			
	[19]	VGSG/V	rG	2800]	0			
	5								

3.2.7. FSC Codes Reading

Abrites diagnostics for BMW generation 2 provides you the ability to extract and update FSC codes and maps for both E series and F-Series vehicles.

Using this function you can update the maps on the navigational units. This includes the CIC modules as well as the so called NBT navigational units.

3.3. Best Practice Advice

3.3.1. ISN reading from DME.

Often times BMW vehicles are harder to work with than other makes. For example in the cases where the car has no working key or the DME needs to be replaced with a second hand unit the Individual Serial Number (ISN) needs to be read. This task is made harder by the vehicles because they have the tendency to "fall asleep" constantly. This causes the Abrites diagnostics for BMW to appear "stuck" in one place – seemingly nothing happens. What needs to happen is to make sure that the car does not fall asleep during our work with it. There are two ways of doing this.

The first option is to constantly turn the lights on and off, click the locking and other buttons. In most cases this, combined with having a constant feed of 14V external power supply to the vehicle should be sufficient for us to read the ISN.

The next step, in case the above does not help is to make a temporary transponder in order to keep the car awake. To do this you need to read the ISN from the CAS module and program it to a blank transponder, place this blank transponder in an empty BMW key box. When you try to start the car with this transponder – it will not start, it will only crank. This is not important because the car will be awake, as if the ignition is ON. This will allow you to read the ISN easily.

An alternative is to shorten pins 1 and 16 on the OBD II connector, but unfortunately not all cars can have this method applied to keep it awake.

Below you can see a sample of what a DIY DB25 ignition shortener looks like. It basically shortens PINs 1 and 16 on the OBD, where the DB25 shorts PINs 2 and 17.

To proceed with making the temporary transponder, you can follow these steps:

1. Read the ISN from the CAS and write it down.

2. When you enter the "Cas Keys", please save the keys in a file as a backup.

3. In "Cas Keys" on position 9 (last position), write the last byte from the config as "00" (zero zero) and write it into the CAS - (using the "Write CAS EEPROM" button)

4. Please proceed with programming a transponder on any free position and when asked for an ISN, please **enter the one from the CAS**.

5. After this is done, as soon as you **turn the IGN** on with this transponder, the car should wake up and the dash will light on.

6. Read the **ISN from the ECU** and the reflashing procedure will continue and you will be able to read the ISN - write it down somewhere.

7. Delete the temporary transponder with clicking " Clear Key and CAS", while having the transponder placed into the programmer.

8. After you obtain the ISN from the ECU, **revert the last byte of the config to position 9** (how it was before) and write the CAS (using the **"Write CAS EEPROM**" button), or it is easier to click on **"Load from File"** and choose the file you wrote earlier. Then, click on **"Write CAS EEPROM**"

9 Once this is done, you can program a new key and when asked for ISN, please **enter the one you read from the ECU**.

*Note: If the CAS has 4 bytes ISN you will need to write the last two bytes at step 4. *Note: If the PCF is either 7942 or 7944 it is not necessary to renew it before programming.

3.3.2 ISN Encrypting

Whenever you exchange a broken ECU or handle an all keys lost situation you need to read the ISN from the DME.

When you exchange the DME/DDE – you have to write this DME ISN to the CAS.

There are two CAS types :

1. CAS unit without encryption - in this case you need to read the ISN of the DME/DDE and write it in the CAS ISN field by copy-paste it followed by click on the pencil icon on the right hand side.

2. CAS unit with encryption - in this case you need to read the ISN if the DME/DDE, write it in the CAS ISN field by copy-paste it followed by click on the pencil icon on the right hand side and click on Encrypt CAS ISNs.

It is recommended to Synchronize the CAS with the DME from "Keys and start synchronization > Synchronize CAS&DME " and disconnect the car battery for 1 minute.

3.3.3 EWS Tampering DTC.

Often times during key learning the CAS receives the EWS tampering error. This error causes the car to become immobile. The way to fix this issue is to take the keys out of the car (2 meters or 6ft is a preferable). Disconnect the battery for about 20 minutes and re-connect it without bringing the keys back into the car. Try to communicate and clear the DTC. You can turn the lights on and off, lock and unlock the car, the DTC will get cleared. Then try to sync CAS EGS and then bring the car and sync again. The tampering error should disappear and the car should start. This may need to be repeated many times but this is the only way to work with the vehicles.

3.3.4 Using Abrites diagnostics for BMW 2 with PROTAG.

The Abrites PROTAG programmer can now be used together with the Abrites diagnostics for BMW generation 2.

3.3.5. Downgrading or ISN reading stops at 10%.

When you encounter this issue this means only one of two things – DME is not supported (check ISN support matrix on the **abrites.com** website) or alternatively the car is "falling asleep" in which case you should keep it awake as per one of the ways above.