

# Achieve the impossible

## Abrites Diagnostics for Opel/ Vauxhall <u>User Manual</u>

Version: 2.0

www.ABRITES.com

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Date	Chapter	Description	Revision
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#### 1. Introduction

"Abrites Diagnostics for Opel/Vauxhall" is a Windows PC based diagnostic software for Opel Vauxhall vehicles. With the help of this software you can perform complete diagnostic operations of all vehicles.

For proper operation of your diagnostic software you will need a corresponding interface for connection between your PC and vehicle named "AVDI".

AVDI is an interface produced by Abrites Ltd. intended to act as an interface between the PC and the electronic control units.

AVDI should be used with ABRITES software produced by Abrites Ltd.

ABRITES is a trade mark of Abrites Ltd.

#### 2. Using the Abrites diagnostics for Opel/ Vauxhall

The Abrites diagnostics for Opel Vauxhall is installed together with the rest of the Abrites diagnostic software applications as a part of the Abrites diagnostic suite provided to the user via email. The user can start the software by clicking on the appropriate icon from the Abrites "Quick start" menu. Once the application is started the main software screen will open:

A AB	RITES Diagnostics for OPEL/Vauxhall 6.7	AM	S valid until: 11/25/2015	
#	All Units	Protocol	VIN	<u> </u>
11	Engine Control Module	KWP		
11	Engine Control Module	CAN		Previous
18	Transmission Control Module	CAN		Trevious
18	Transmission Control Module	CAN		
18	AF 13-II/17/20/22	KWP		<b></b>
18	AR 25/35	KWP		Open
19	SLM (Shift Lever Module)	CAN		
1A	Rear Differential Clutch Control Module	CAN		
20	ABS-2E	KWP		Next
21	ABS-5.3	KWP		
21	ABS 415	KWP		
26	Engine Cooling Module	KWP		
26	Body Control Module	KWP		
26	Body Control Module	CAN		Options
•				
<	All Units >	🥽 Vehicle Sele	ction	tions



This is the main screen of the software and it shows all the navigation buttons as well as the ones for vehicle selection, scanning and general diagnostic trouble code (DTC) clearing. Once the Diagnostics is connected to the vehicle and the scanning of the available modules is performed the existing modules for the particular car will be displayed :

C	ABI	RITES Diagnostics for OPEL/Vauxhall 6.7	Days	untill HW synchronization: 24	
	#	Scanned Units	Protocol	VIN D'	TC
	11	Engine Control Module	CAN HS	W0LJC7EL9DB: 3	8
	40	Body Control Module	CAN H	W0LJC7EL9DB: 3	0 Previous
	60	Instrument Cluster	CAN LS	W0LJC7EL9DB: 2	
	99	HVAC Control Module	CAN LS	W0LJC7EL9DB: . 1	9
	вв	Parking Assist Control Module	CAN LS	W0LJC7EL9DB: 1	o 🖕
					Open
					Next
					INCAL
	<b>a</b> 1	/ehicle Selection			
	-Cur Ma	rent context ske Opel/Vauxhall ▼	P n for Units	Clear all DTCs	Options
	Mo	odel < Scan Result > ▼			Exit

This screen will display all the modules that are installed in the vehicle, as well as the protocols they use for communication, their VIN numbers and the number of diagnostic trouble codes (DTC) in each electronic module. The options here will allow you to clear all the diagnostic codes automatically for all units.



#### 2.1 Module Identification

Once a single module is selected (using a double click from the diagnostic menu) the menu for this specific module is displayed:

ingine Control Module					
Hardware Key Num System Identific Programming Date ECU Diagnostic A	uber: F sation: D set 2 uddress: 1	CI5STN#56 ELPH0100 5/2/2013 1			•
electroni	.c control unit i	dentification			
VIN: Part Number: Identifier: Software Version Hardware Key Num System Identific Programming Date ECU Diagnostic F	W 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0LJC7EL9: 5591709 806 5591708 9CISSTN#56 9ELPH0100 5/2/2013 1			E
Identification	Data Display	Change ID	Reset Security Code	Clutch Pedal Position Learn	Clear log
Read DTCs	Custom Request	Security Access	Program Security Code		Write log
Clear DTCs	Custom Query	Enter Security Code	Engine Oil Life Reset		Close

The first option from the list of buttons is the identification option. This displays all the relevant data connected to the electronic module including: VIN, part number, ID, software version, date of programming, electronic unit manufacturer and other options.

#### 2.2 Read and Clear Diagnostic Trouble Codes (DTCs)

When selecting the Read DTC button the diagnostic trouble codes from the selected electronic control module are displayed in a list in order to be viewed and analyzed.

Body Control Module				×
Symptom I Status: H	Description: Malf Present	unction		•
U1534: LIN Bus 3 Symptom I Status: H	Lost Communicat: Description: Malfr Present	ion with Device 4 unction		
U1538: LIN Bus 3 Symptom I Status: H	Lost Communicat. Description: Malf Present	ion with Device 8 unction		
U1540: LIN Bus 4 Symptom I Status: H	Lost Communicat Description: Malf Present	ion with Device 0 unction		
U1544: LIN Bus 4	Lost Communicat	ion with Device 4		
Status: P === Total: 17 DTCs f	Present			E
•				* F
Identification	Data Display	Change ID	Reset Security Code	Clear log
Read DTCs	Custom Request	Security Access	Program Security Code	Write log
Clear DTCs	Custom Query	Enter Security Code		Close
L				 

The software shows the trouble codes, their descriptions and their occurrence.

Given these details an analysis of the trouble codes can be made in order to determine the source of the issue.

When this analysis is performed the diagnostic trouble codes can be cleared.

ody Control Module				X
U1538: LIN Bus 3 Symptom I Status: H	3 Lost Communicat Description: Malf Present	ion with Device 8 unction	1	 •
U1540: LIN Bus 4 Symptom I Status: H	Lost Communicat Description: Malf Present	ion with Device ( unction		
U1544: LIN Bus 4 Symptom I Status: H	Lost Communicat. Description: Malf	ion with Device 4 unction		
===				
Total: 17 DTCs f	Found			
clear dia	amostic trouble	codes		
	ignobolo blouble	oodeb		_
DTCs cleared				=
				•
Identification	Data Display	Change ID	Reset Security Code	Clear log
				Write log
Read DTCs	Custom Request	Security Access	Program Security Code	white log
Clear DTCs	Custom Query	Enter Security Code		$\mathbf{X}$
	Contrain Query			Close

When selecting the "Clear DTCs" button you will be able to clear the diagnostic codes immediately. If a DTC is not cleared upon second reading after clearing – the issue should be revised and repaired if needed.

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#### 2.3 Live Data Display

Displaying live data from the electronic control modules in real time offers much needed assistance when analyzing the cause of an issue. It helps to determine co-relations between events for example if the there is a delay between pressing the accelerator pedal and the climbing of the RPM of the engine.

Data Display	×
Automatic Transmission Data	▼
Diagnostic Data Display Line Graph	
Parameter Name	Value
Brake Pedal Fully Released Position Learned	No
Brake Pedal Position Sensor Learned Released Position	1.65 V
Brake Pedal Position Sensor	0 %
Brake Pedal Position Sensor	0.00 V
System Voltage	12.7 V
Engine Controls Ignition Relay Feedback Signal	12.6 V
Vehicle Speed	255 km/h
Park/Neutral Position Switch	In Gear
	$\mathbf{X}$
	Close
	Close

All the data is displayed in a table. The information provided by this function can be irreplaceable for determining the cause of a fault.

Additional options for the data display are also available. There is an option to test and view many details.

Data Display
Last Engine Start Data
Cruise Control, PTO and Traction Control Data
EGR Data
Electrical and Immobilizer Data
Engine Speed Control Data
Exhaust Aftertreatment Data
Fuel System Data
Glow Plug Data
HO2S Data
Induction Data
Instrument Cluster Data
Manual Transmission Data
Engine Overspeed Data
Stop/Start System Data
Engine Start Inhibit Data
Engine Stop Inhibit Data
Close

The option to activate and deactivate features is also available.

## 2.4 Engine Oil Change Reset

Once a workshop performs a maintenance on a vehicle, a part of which an oil change may be they need to be able to "tell" the vehicle's electronic modules that the maintenance has been performed.

Once the Engine oil reset button is pressed the software will reset the vehicle's counter thus telling the vehicle that it's oil has been changed.

Engine Oil Life Reset х **Engine Control Module** Identifier: 2B06 ۰ Software Version Number: 55591708 Hardware Key Number: PCI5STN#56 System Identification: DELPH0100 Programming Date: 25/2/2013 ECU Diagnostic Address: 11 --- security access ---Operation failed - Security access is already unlocked --- engine oil life reset ---Operation completed successfully E -Clutch Pedal Position Clear log Identification Data Display Change ID Reset Security Code Learn Write log Read DTCs Custom Request Security Access Program Security Code Χ Clear DTCs Custom Query Enter Security Code Engine Oil Life Reset Close

The "Clutch pedel position learn" button allows the clutch position to be learned by on board diagnostics (OBD):

Clutch Pedal Position Learn	
Learn	

## 2.5 Security access and ID change

Every time a second hand module is adapted to a vehicle in order to adapt this unit you will need to use the security code of the vehicle and the module in order to replace it. Once this module is replaced you will also need to change the ID of the module in order to match the vehicle thus ensuring it's correct operation:

Engine Control Module

electroni	c control unit i	dentification			•
VIN: Part Number: Identifier: Software Version Hardware Key Num	W 5 2 Number: 5 ber: P	0LJC7EL9DB128561 5591709 B06 5591708 CI5STN#56			
System Identific	ation: D	ELPH0100			
Programming Date	: 2	5/2/2013			
security Operation failed	access l - Security acce	ss is already unl	.ocked		
Identification	Data Display	Change ID	Reset Security Code	Clutch Pedal Position Learn	Clear log
Read DTCs	Custom Request	Security Access	Program Security Code		Write log
Clear DTCs	Custom Query	Enter Security Code	Engine Oil Life Reset		Close

ter VIN	
Please enter a new V	ehicle Identification Number
WOLJCX	xxxxxxxxxxx
1	X
ок	Cancel

ehicle Identification Number
****
$\mathbf{x}$
Cancel

х

## 3. Special Functions

Special functions are designed to assist when performing advanced diagnostics on vehicles from the Opel and Vauxhall brands. These special functions include Engine control unit flash management, Pin code reading and key management and advanced module configuration of electronic modules.

A AB	RITES Diagnostics for OPEL/Vauxhall 6.7	AN	1S valid until: 11/25/2015	
#	All Units	Protocol	VIN	<u> </u>
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18	AR 25/35	KWP		Open
19	SLM (Shift Lever Module)	CAN		
1A	Rear Differential Clutch Control Module	CAN		
20	ABS-2E	KWP		Next
21	ABS-5.3	KWP		
•	III			•
<b>\$</b> \	/ehicle Selection			
	👌 🚯 🥋 🧼 🎦 🔤	*	6	
Rea	d Security Key Learning Calibration Read/Update ECU Flasher Radio Code ConfData	Airbag	Open	Options
Du	mp Tool Sniffer			Exit

Special functions are opened from the appropriate tab of the main diagnostic screen of the Abrites diagnostics for Opel/Vauxhall. Each of the icons in this window represent a special function.



## 3.1 PIN Code Reading and Key Management

In order to perform key learning for Opel and Vauxhall vehicle the PIN code is needed. In order to learn keys the first step is to read the PIN code.

Read Security Code	
Make	Opel/Vauxhall
Model	Mokka 🗸 🗸
Unit	< AUTO DETECT >
,	automatically recognize pin code from the vehicle
	Security Code
	✓ ×
	Read Close

Once the function is selected the model should be selected and you need to press "Read"

Make	Opel/Vauxhall	•
Madel	Mokka	
Please Wait		
Reading secu	irity code, please wait	
П		
		×
48 %		 X
48 %		Cancel
48 %		 Cancel
48 %		Cancel

ad Security Code	
Make	Opel/Vauxhall
Model	Mokka
Unit	< AUTO DETECT >
A	utomatically recognize pin code from the vehicle
	Security Code
	8570
	Read Close

The code is read by the software and when the reading is complete it is displayed:

After the code is read you can open the key learning screen you will have the PIN in the field:

Key Learning		×
Make	Opel/Vauxhall	
Model	Insignia	Connect
Immobiliser Status		
Parameter		Value
Total Keys Learne	d	2
Erase Transponde	Security Code 8570 er-Keys Program Transp and Remote I	Nonder Key Mechanical Key Number

From this window keys can be learned to the vehicle via on board diagnostics (OBD).

#### 3.2 Calibration

When replacing an electronic module within a vehicle be it a new module or a used one the calibration of this module is vital for the correct operation of this vehicle.

The first step is to connect to the vehicle, then select it and select the unit that is to be calibrated. The current value will then be displayed.

oration		
Make	Opel/Vauxhall	•
Model	Mokka	Connect
Unit	Instrument Panel + BCM	<b>~</b>
Current	6996 km	
New	1	Write
		×
		Close

You will need to input the correct value and press "Write".

Make	Opel/Vauxhall	6
lodel	Mokka 💌	Connect
Jnit	ABRITES Diagnostics for OPEL/Vauxhall	
Current	Operation complete successfully	4
lew	ОК	Write
		×

The operation then completes successfully and the new value is updated.

## 3.3 Reading and updating Configuration Data

This function allows the reading and updating of the Configuration data from the ECUs of Opel/ Vauxhall vehicles. It allows also the saving of data locally to a PC.

Init	Eng	jine	Mag	gnet	i Ma	arelli	MJ	D 6	D2 -	- Z1	3DT	гн (	Asti	ra H	, C	orsa	D)	•	·	2
00000000	0A	0A	1c	01	0в	04	2в	45	57	6в	00	00	00	00	1в	01	+EWk		*	Read ConfData
0000c10	0в	03	2B	45	57	00	00	00	00	00	1C	02	0в	04	1B	45	+EWE			
0000c20	57	6В	00	00	00	00	1C	02	0B	04	1в	45	57	7B	00	00	WkEW{			
0000c30	00	00	1в	02	0B	03	1в	45	57	00	00	00	00	00	12	03	EW			2
0000c40	05	02	6B	57	00	00	00	00	00	00	13	03	05	03	6B	7B				-Offer-
0000c50	57	00	00	00	00	00	01	05	0B	01	45	00	00	00	00	00	WE			Update ContDa
0000c60	00	00	02	05	0B	02	57	63	00	00	00	00	00	00	02	06	Wc			
0000c70	0B	02	6B	4A	00	00	00	00	00	00	02	07	0в	02	7B	4A	kJ{J			
00000080	00	00	00	00	00	00	01	05	0B	01	45	00	00	00	00	00	E			
0000C90	00	00	02	05	0B	02	57	63	00	00	00	00	00	00	02	05	Wc			Load from File.
0000CA0	0B	02	57	63	00	00	00	00	00	00	03	05	0B	03	57	63	WcWc			
0000св0	74	00	00	00	00	00	02	06	08	02	6B	4A	00	00	00	00	tkJ			
0000000	00	00	02	07	08	02	7B	4A	00	00	00	00	00	00	1C	01	{J			
0000CD0	0B	04	2B	47	5B	6B	00	00	00	00	1в	01	0в	03	2B	47	+G[k+G			Save to File.
0000CE0	5B	00	00	00	00	00	1C	02	0B	04	1в	47	5B	6B	00	00	[G[k			buve to riterr
0000CF0	00	00	1C	02	0B	04	1в	47	5B	7B	00	00	00	00	1B	02	G[{			
0000D00	0B	03	1в	47	5B	00	00	00	00	00	12	03	0B	02	6B	5B	G[k[			
0000010	00	00	00	00	00	00	13	03	0B	03	6B	7B	5B	00	00	00	k{[		-	
0000D20	00	00	01	05	0B	01	47	00	00	00	00	00	00	00	02	05	G			
0000D30	09	02	5B	65	00	00	00	00	00	00	02	06	0B	02	6B	4A	[ekJ			
0000D40	00	00	00	00	00	00	02	07	0B	02	7в	4A	00	00	00	00	{J			
0000050	00	00	01	05	0B	01	47	00	00	00	00	00	00	00	02	05	G			
00000060	0B	02	5B	65	00	00	00	00	00	00	02	05	0B	02	5B	65	[e[e		Ŧ	
(																		Þ.		X
	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	

#### 3.4 ECU Flasher

ECU flasher allows the reading, saving locally and updating of the flash data from the ECU

U Flash	er																	a Tem		
Model	As	tra	н	_	_	_	_	•	•		Engi	ne	Z18	XER	- S	iem	ens	Simtec 75	▼	200
00000	CE0	5 <mark></mark> B	00	00	00	00	00	1C	02	0B	04	1в	47	5B	6B	00	00	[G[k		Read Flash
00000	CF0	00	00	1C	02	0B	04	1в	47	5B	7B	00	00	00	00	1в	02	G[{		
0000	D00	0B	03	1в	47	5B	00	00	00	00	00	12	03	0в	02	6B	5B	G[k[		
0000	D10	00	00	00	00	00	00	13	03	0B	03	6B	7B	5B	00	00	00	k{[		
0000	D20	00	00	01	05	0B	01	47	00	00	00	00	00	00	00	02	05	G		Write Elach
0000	D30	09	02	5B	65	00	00	00	00	00	00	02	06	0B	02	6B	4A	[ekJ		write ridsh
0000	D40	00	00	00	00	00	00	02	07	0B	02	7в	4A	00	00	00	00	{J		
0000	D50	00	00	01	05	0B	01	47	00	00	00	00	00	00	00	02	05	G		
0000	D60	0B	02	5B	65	00	00	00	00	00	00	02	05	0B	02	5B	65	[e[e		
0000	D70	00	00	00	00	00	00	03	05	0B	03	5B	63	74	00	00	00	[ct		Load from File
0000	D80	00	00	02	06	08	02	6B	4A	00	00	00	00	00	00	FF	FF	kJ		
0000	D90	FF	FF	A0	A0	05	05	FF	1D	2D	11	FF	FF	FF	FF	FF	FF	•••••		
0000	DA0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••		
0000	DB0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••		Save to File
0000	DC0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••		
0000	DD0	FF	FF	FF	FF	FF	82	0F	FF	FF	02	07	08	02	7в	4A	00	{J.		
0000	DE0	00	00	00	00	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••		
0000	DF0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••		
0000	E00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••		
0000	E10	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••		
00001	E20	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••	=	
0000	E30	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	•••••		
00000	E40	E7	E1	72	FF	FF	FF	FF	BF	02	E7	E1	72	FF	FF	FF	FF	rr		$\sim$
00000	E50	BF	02	E7	E1	72	FF	FF	FF	FF	BF	02	FF	FF	FF	28	72	r(r	-	
4																			- F	Close

#### 3.5 Radio Code

This is a function dedicated to reading out the radio codes of the radio (multimedia modules) from the vehicles in order to aid adaptation or, as often the case is, to retrieve the multimedia unit to operation after loss of power.

Unit	De las CORFOR	
Unit	Radio Delco CDR500	•
	Radio Code	
	Radio Code	
	] []	
		*

## 3.6 Airbag

Special function airbag is vital to workshops carrying out damage repairs as in case the vehicle has been repaired after an accident the crash data needs to be cleared. This procedure needs to be performed even after regular maintenance of the airbag module where the gas container is replaced.

rbag	100 12	×
Unit Airbag S	AB6 - Siemens HC11	T
Erase Crash Data		×

## 3.7 Dump tool

Special function "Dump tool" will allow you to work with Configuration data dumps of different modules:

Dump Tool	d Name (Westman) (1998	×
Unit	▼	] 👩
	Airbag TEMIC Astra G, Corsa C (68HC908AZ32) GM 24417006, GM 24417007 📥	Load
	Airbag SIEMENS (68HC11E9) GM 24416701 DJ	
	Immobiliser I	
	Immobiliser II (TMS)	Save
	Engine Bosch EDC16 (95160)	Save As
	Engine Bosch EDC16 (95320)	
	Engine Bosch EDC16 (95640)	
	Engine Magneti Marelli (95320) - V1	Swap Bytes L/H
	Engine Magneti Marelli (95320) - V2	
	Engine Magneti Marelli (95320) - V3	Parameters
	Engine Magneti Marelli (95320) - V4	
	Instrument Antara (93C86)	
	Instrument Astra G Siemens VDO (93C56)	
	Instrument Astra H Siemens VDO (35080)	_  X
	Instrument Corsa D Johnson Controls (35080)	Close
CONTRACTOR OF STREET		

You will be able to load files read with a programmer, save them edit parameters on them etc.