

ABRITES DIAGNOSTICS FOR FCA





www.abrites.com

Important notes

The Abrites software and hardware products are developed, designed and manufactured by Abrites Ltd. During the production process we comply to all safety and quality regulations and standards, aiming at highest production quality. The Abrites hardware and software products are designed to build a coherent ecosystem, which effectively solves a wide range of vehicle-related tasks, such as:

Diagnostic scanning; Key programming; Module replacement, ECU programming; Configuration and coding.

All software and hardware products by Abrites Ltd. are copyrighted. Permission is granted to copy Abrites software files for your own back-up purposes only. Should you wish to copy this manual or parts of it, you are granted permission only in case it is used with Abrites products, has "Abrites Ltd." written on all copies, and is used for actions that comply to respective local law and regulations.

Warranty

You, as a purchaser of Abrites hardware products, are entitled of a two-year warranty. If the hardware product you have purchased has been properly connected, and used according to its respective instructions, it should function correctly. In case the product does not function as expected, you are able to claim warranty within the stated terms. Abrites Ltd. is entitled to require evidence of the defect or malfunction, upon which the decision to repair or substitute the product shall be made.

There are certain conditions, upon which the warranty cannot be applied. The warranty shall not apply to damages and defects caused by natural disaster, misuse, improper use, unusual use, negligence, failure to observe the instructions for use issued by Abrites, modifications of the device, repair works performed by unauthorized persons. For example, when the damage of the hardware has occurred due to incompatible electricity supply, mechanical or water damage, as well as fire, flood or thunder storm, the warranty does not apply.

Each warranty claim is inspected individually by our team and the decision is based upon thorough case consideration.

Read the full hardware warranty terms on our website.

Copyright information

Copyright:

All material herein is Copyrighted ©2005-2021 Abrites, Ltd. Abrites software, hardware, and firmware are also copyrighted Users are given permission to copy any part of this manual provided that the copy is used with Abrites products and the "Copyright © Abrites, Ltd." statement remains on all copies "Abrites" as used in this manual synonymous with "Abrites, Ltd." And all it's affiliates The "Abrites" logo is a registered trademark of Abrites, Ltd.

Notices:

The information contained in this document is subject to change without prior notice. Abrites shall not be held liable for technical/editorial errors, or omissions herein.

Warranties for Abrites products and services are set forth in the express written warranty statements accompanying the product. Nothing herein should be construed as constituting any additional warranty. Abrites assumes no responsibility for any damage resulting from the use, misuse, or negligent use of the hardware or any software application.

Safety information

The Abrites products are to be used by trained and experienced users in diagnostics and reprogramming of vehicles and equipment. The user is assumed to have a good understanding of vehicle electronic systems, as well as potential hazards while working around vehicles. There are numerous safety situations that cannot be foreseen, thus we recommend that the user read and follow all safety messages in the available manual, on all equipment they use, including vehicle manuals, as well as internal shop documents and operating procedures.

Some important points:

Block all wheels of the vehicle when testing. Be cautious when working around electricity.

Do not ignore the risk of shock from vehicle and building-level voltages.

Do not smoke, or allow sparks/flame near any part of the vehicle fuel system or batteries.

Always work in an adequately ventilated area, vehicle exhaust fumes should be directed towards the exit of the shop.

Do not use this product where fuel, fuel vapours, or other combustibles could ignite.

In case any technical difficulties occur, please contact the **Abrites Support Team by email at <u>support@abrites.com</u>.**

Table of contents

- 1. Introduction
- 2. Using the Abrites diagnostic for Fiat/Alfa/Lancia

3. Standard diagnostic functions

- 3.1 Module identifications
- 3.2 Reading and clearing of diagnostic trouble codes (DTC)
- 3.3 Data Display
- 3.4 ECU identification and configuration
- 3.5 Actuators

4.BCM, RFH and Key manager

- 4.1 Key Learning
- 4.2 Key learning 2020+ (keyless)
- 4.3 Key Learning Fiat Ducato, Fiat 500L, Iveco Daily 2020+

5. Cluster Calibration Special Function

5.1 Cluster Calibration 2 Special Function

6. Engine Control Unit Flash Manager

- 7. ECU configuration manager
- 8. Proxi alignment

List of revisions

Date	Chapter	Description	Revision
01.10.2015	ALL	Document created	1.0
24.08.2018	4.0	RFH PIN reading update	1.1
27.03.2020	4.1	Key Learning	1.2
08.10.2021	8	Proxi alignment	1.3
08.01.2022	4.2	Key learning 2020+ (keyless)	1.4
07.09.2023	5.1	Cluster Calibration 2 update, and general styling corrections	d 1.5

1. Introduction

"Abrites Diagnostics for Fiat/Alfa/Lancia/FCA" is a Windows PC based diagnostic software for Fiat/Alfa/Lancia/FCA 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.

ABRITES Diagnostics for Fiat/Lancia/Alfa/FCA is an advanced diagnostic software application designed to work together with the Abrites Vehicle Diagnostic Interface to perform basic and advanced diagnostics in Fiat, Lancia and Alfa vehicles. It provides full module identification for the Fiat Chrysler Automobiles vehicles as well, it allows diagnostic trouble code reading and clearing, also the ability to perform actuator tests in order to determine the cause of an electrical or mechanical fault. The diagnostic functions provided allow it to be on par with OEM diagnostic equipment while applying the intuitive and simplistic approach typical for the Abrites diagnostic software. Abrites diagnostics software allows the user to work with almost 100% of the vehicles by Fiat, Alfa Romeo, Lancia and models from the FCA Group (Fiat, Alfa, Chrysler, Dodge and Jeep including models built after 2013).

2. Using the Abrites diagnostic for Fiat/Alfa/Lancia

The Abrites diagnostics for Fiat/Alfa/Lancia/FCA 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 Fiat/Alfa/Lancia/FCA icon is selected the software will start and the user will see the following screen:

ŧ	PTAP	Protocol DTC	
01	Webasto Neater	KWP	
01	Airbag	CAN	E Previous
02	Automatic Transmission	KWP	
04	Body Control Module	CAN	
08	Air Conditioning	KWP	Ģ
08	Air Conditioning	CAN	Open
0ZA	Engine Control Unit (Bosch EDC15)	KWP	
0B	Engine Signals Control Unit.	CAN	1
0 D	Passenger's Door	CAN	Next
0E	Driver's Door	CAN	
10	Engine Control Unit	RWP	
10	Engine Control Unit	CAN Ex	
12	Injection Landi Renzo LCO2 Gas	KM1.	- 1
18	Automatic Transmission	CMN-Ex	Options
19	Discharge Headlamp (Left)	RWP	
-	Vehicle Selection 1 Special Functions 9 Scan for Units	🥔 Clear all DTCs	

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.

3. Standard diagnostic functions

The features of the standard diagnostic functions of the Abrites diagnostics for Fiat/Alfa/Lancia/FCA include, but are not limited to Reading and clearing of DTCs, Module identifications, Data display, ECU identification, ECU configuration, sensor monitoring, BUS inputs, LIN data, BUS outputs, Line graphs, Actuator tests and others.

3.1 Module identifications

The module identifications function can be used to determine all the details about an electronic module – the manufacturer, hardware number, software number, software version, ISO codes and others.

ABRITES Diagnostics for FIAT LANCIA	ALFA	www.abrites.com	
ngine Control Unit		Bardward (1991)	23
Establishing diagnostic Diagnostic channel is op	session with selected unit Den - CAN bus.	.6	
electronic contro	ol unit identification	$\langle \cdot \rangle$	
System: Drawing number: HW number:	Marelli Diesel Injection 8 51872452 MJ8DFHW00P	DF CF5/EOBD (EP eng. 1.3	JTD)
SW number:	9445E176		
SW version:	0076		
ISO code:	68 07 AD 07 F8	•	
Identification Data	Display		Clear log
Read DTCs Custom	Request		Write log
Clear DTCs			Close

3.2 Reading and clearing of diagnostic trouble codes (DTC)

This function allows the user to read the diagnostic trouble code, analyses it, find the cause of the issue, repair the damage and clear the DTC



This is displayed in full details throughout the range of supported vehicles.

3.3 Data Display

The Data display option shows details about the live data being read from the sensors within the vehicles. It allows monitoring of the values measured by these sensors and is an obligatory part of determining the cause of a fault with the vehicles.

ABRITES Diagnostics for FIAT LANCIA ALFA www.abrites.com											
Data Display	8										
List Graph	1										
+ Parameter	Value										
Programming date	15.4.2010 г. Е										
Engine speed	0 Rpm										
🗹 Fuel gauge	0%										
Vehicle speed	0 km/h										
Water temperature	20 Deg./C										
Operating time	68809 Min										
Time since Key-ON	720 sec.										
EGR valve opening	0 %										
Target EGR position	0 mm										
EGR measured position	0 mm										
Turbo target position	0.640889 mm										
✓ Turbo measured position	0 mm										
Resistance to flow in DPF	-0.0001 hPa/m3/h										
Num. regener. interr. by key off	1										
Km covered with DPF w.l. on	0 km										
Pilot injection start	0 Deg./Ang.										
Main injection start	Not available										
Quantity Diesel Pilot inject.	0 mm3/inject										
Select Invert Selected On Top	Close										
<u> </u>	<u>п</u> <u>п</u> /										

Sensors		_
Diagnostic Data Display Line Graph		
Parameter Name	Value	
Engine Speed	0.0 rpm	
Driven distance since DPF lamp ON	4 km	
Lambda sensor O2 voltage	1 mV	1
Inlet turbne temperature sensor (T3)	54.96 DegC	
Odometer	8518.0 km	
Intake air temperature (HFM6)	50.86 DegC	
Intake manifold air temp. (Boost pressure sensor)	51.16 DcgC	
EGR DC Motor measured position	-0.17 %	
DPF flow resistance	0.0033	
Differential Pressure Sensor	2 hPa	
Clogged DPF	Off	
Command Key Started Relay in Fault	Off	
Accelerator Pedal Position	0.00 %	
Engine Running	Off	
Engine Acceleration	∩ ⁴	

3.4 ECU identification and configuration

The ECU Identification allows the user to view the full details in regards to the Electronic Control Units within the vehicle. This includes Diagnostic variants, versions, part number (needed for finding a replacement), Software part numbers as well as serial numbers of the electronic modules.

CU Identification	
iagnostc Data Display Line Graph	
Parameter Name	Value
Active Diagnostic Variant	61
Active Diagnostic Version	00
Hardware Part Number	68103284AF
Software Part Number	72111213AF
ECU Part Number	68103284AF
ECU Serial Number	TKDKA104401129
ABK	
	Close

3.5 Actuators

Actuator testing is perhaps one of the most important steps in resolving an issue with a faulty vehicle. This function is used to test the operation of separate systems within the car. For example the user can test the oil pump actuator separately without interfering with other actuators.

X
<u>^</u>
=
16
The function of the second sec
or Start Options
100 %

This function is started by selecting the desired actuator and pressing the start button. It is important to let the actuator test end before exiting.

Actuators	×
Pre-Supply Pump	*
Fuel Filter Heating	
Glow Lamp	-
Boost Pressure Actuator	
Boost Low Pressure Actuator	
Pressure regulator valve	
Cooler Bypass Valve	
Air Condtion	ΔV
Temperature Warning lamp	
N	Actuator Start Options
Heating	Off
	×
Start	Close

The Abrites diagnostics for Fiat/Alfa/Lancia/FCA currently supports almost 100% of the actuators that can be tested within a vehicle. Here is an example of the body control module's actuators.

Auto Wipers	
Sound Horn on Remote Start	
Auto Door Lock	
Auto Door Unlock	
Headlamp Delay Time	
Enable Auto Highbeam	0
Enable/Disable DRL	2
Enable the One Press All Unlock	Feature
Illuminated Approach Time	
Headlamps on with Wipers	

4.BCM, RFH and Key manager

The Body Control Module (BCM) and key manager function is used in order to perform key programming and preparation, PIN code reading and updating, Component protection data

BCM configuration, reading and updating of the supported models by OBD.

	Diagnostics for FIAT LANCIA ALFA www.abrites ate ConfData	.com						
Jnit	•							
	Marelli IAW 8GMF	Read ConfData						
	Marelli IAW 8GSF	30						
	Marelli MJD 6JF (Kline)	Update ConfData						
	Marelli MJD 6F3 (Kline)							
	Marelli MJD 6F3 (CAN)							
	Marelli MJD 8F2 (Kline)							
	Marelli MJD 8F2 (CAN)							
	BCM Delphi (93C66) NOTE: PIN Code is required!	Save to File						
	BCM Mareli (912DG128, 3(91D)	Calibration						
	BCM Marelli (9512DG256, 1K79X)	Calibration						
	BCM Marelli (NEC 70F3237/70F3378, 95160)							
	BCM Marelli (NEC 70F3633, 95320)	Make Virgin						
	BCM Siemens (9S12DG128)							
	IPC Alfa 147, 159	~						
	IPC Lancia Ypsilon 2003	Close						
	IPC Stilo 2001 (Visteon)							

It allows the Configuration data to be saved locally to the user's computer, the loading of previously saved files is also supported.

Please check the full list at abrites.com

lead/Update	Confl	Data															Bertand		
Unit	BCM	1 Ma	areli	(91	2D(G12	8, 3	K91	D)									•	2
0000000	76	40	AC	C6	28	81	81	1D	D7	AF	13	8A	82	5B	сс	30	v@([.0		Read ConfData
00000010	05	A4	50	D5	01	82	00	00	81	03	FF	FF	00	00	00	00			
00000020	00	00	00	00	00	00	00	00	00	00	00	00			00			=	2
0000030			00									00							00000
00000040	00	00	00													00			Update ConfData
00000050	00	00					00										·····x.		
00000060	74	AC	35	1E	C4	2A	00	00	00	00	00	00	00	00	00	00	t.5*		
00000070	00 (00	00	00	00	00	00	00	00	00	00	00	00	00	FF	FF			
00000080	EA	10	E9	C4	C2	9A	A 8	48	00	18	03	OF	00	00	00	0Ő	H		Load from File
00000090	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
000000A	00	00	00												00				
00000B0	00 (00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Save to File
00000000	00 (00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Save to File
000000E0	FF	FF	38														8		Calibration
000000F0	00 (00	01	00	FF	FF	01	84	00	ED	00	C2	32	35	03	64	25.d		Combradon
00000100	25	38	4A	1D	1F	00	00	00	00	00	0E	00	36	00	58	00	%8J6.X.		
00000110	78	00	96	00	в8	00	D8	00	F0	01	10	FF	FF	C8	C8	AF	x		
00000120	96	7D	64	4B	32	1E	00	00	FA	00	15	00	33	78	3A	86	.}dK23x:.		Make Virgin
00000130	34	37	3F	7F	F2	94	3B	27	BA	AF	3F	7F	DE	74	3C	A 7	47?;'?t<.		
00000140) 6D	F2	3F														m.?~='?}.P		
00000150																	.b		
00000160	00	в4	00	FF	07	E2	00	00	07	6B	00	00	07	09	51	72	kQr	-	
4																		F	X
																			Close

Transponder maker – Preparing transponder by dump of immobilizer to be ready for key programming.

A AB	RITES Diagnostics f	or FIAT LANCIA ALFA	Days untill HW synchronization: 25
#	All Units		Protocol DTC ^
01	Transponder Mak	er	
01	Make	Fiat	
02	Model	Fiorino	Load Dump Save Dump
08	Immobiliser	BCM Delphi (93C86)	-
08 0A 0B 0D 0E 10	Original tr Allowed tr	93C86, size 2048 bytes ansponder: PCF 7946 ansponders: PCF 7936, PCF 7946 ber of keys: 8	PIN Code 59713 Programmed Keys 2 Select Key Position Key 3 < Not Used > Program Key Explore Key Delete Key
Key		Y	
	Sniffer		Exit

4.1 Key Learning

Key learning by OBD for many models produced by the FCA. Once the PIN code is obtained the user will have the ability to select the model of the vehicle and perform key learning directly via the vehicle's diagnostic port.

тат	Protocol DTC A
y Learning	
ALFA ROMEO	500
CHRYSLER	500L
CITROEN	500X
DODGE	ALBEA
FIAT	BRAVO
FIAT PROFESSIONAL	CROMA
JEEP	EGEA
LANCIA	FREEMONT
OPEL/VAUXHALL	GRANDE PUNTO
PEUGEOT	IDEA
RAM	LINEA
	PALIO
	DANIDA

1. Key Learning

2. Model selection

ŧ	FIAT	Protocol	DTC	^	
01	Webasto Heater	KWP			
01	Airbag	CAN			Previou
02	Automatic Transmission	KWP	KWP		
)4	Body Control Module	CAN			
8	Air Conditioning	KWP			9
8	Air Conditioning	CAN			Open
A(Engine Control Unit (Bosch EDC15)	KWP			
B	Engine Signals Control Unit	CAN	CAN		J
D	Passenger's Door	CAN			Next
)E	Driver's Door	CAN			
0 🗃 1	Partine Control Unit	KWP		~	
1	🛼 🕋 🐼 🧼 🖾 👺 📟	^	Ģ		5
Кеу	Learning Cluster Cluster Read/Update ECU Flasher ECU Clone Transpond Calibration Calibration 2 ConfData Maker	er 📃	Open		Option
					0
Chry	vsler Radio Dump Tool Sniffer	~			Exit

Please visit <u>abrites.com</u> for a full list of supported vehicles.

For the latest 2017/2018 models when a RFH module and a Gateway are present, the user has to connect to the Internal CAN-BUS in order to obtain the PIN code - either through the pin 6(CAN H) and pin 14(CAN L) of the AVDI Interface, or using a ZN051 Distribution box. The best option would be to connect to the CAN H and CAN L cables of the RFH's connector.

This is what the RFH module looks like:







Note: Some of the latest FCA models are equipped with the s.c. "Cyber-Security" which allows diagnostic manipulations to the models equipped with it to communicate with OEM FCA software only. The Cyber Security module is a box that is connected right after the OBDII connector. If communication to the car is not possible, this means the car is most probably equipped with this additional security by FCA. As stated above, direct CAN communication is needed and this can be done either by using the CB019 FCA Secure gateway cable, or the ZN051 Distribution Box.

2024 Abrites Diagnostics for FCA User Manual

4.2 Key learning 2020+ (keyless)

The latest FCA keyless models produced after 2020, in All Keys Lost situation, require an additional Abrites cable set (CB017), which has to be connected to the **relay socket of the ZN051 Distribution box**, and to the **Engine Control Unit fuse (KL15)**:

-the red cable with the smaller fuse should be connected to:

relay socket of ZN051 Distribution Box <-> Engine Control Unit (KL15) fuse location (see locations on next page)

-the red cable with a clip should be connected to:

relay socket of ZN051 Distribution Box <-> B+ (e.g. to the car battery (B+))



Here are some diagrams with ECU fuse location of some of the models:

		CONNECTI FUSE	ALFA ROMEO GIULIA (GA) F16 5A
	FUSES		
Fuse	Description	Amperage	
F01	MK C1 ABS MODULE	70A	
F02	GLOW PLUG CONTROL UNIT	60A	
F03	FOR BCMRELAY T38	30A	
F04	ABS MODULE FANS	40A	
F06	SPLITTE R	30A	
F07	MAIN RELAY (2.9V6 MASTER)	50A	
F08	N/A	40A	
F09	+30 ECM (2.0GME - 2.9V6 SLAVE); +30 P86 MAIN RELAY	7.5A	
F10	HORN	15A	
	ENGINE SECONDARY LOADS (2.0GME)		
F11	ENGINE PRIMARY LOADS (2.9V6 SLAVE)	15A	
F14	BLOW-BY HEATER (2.2JTDM)	15A	
	KL15 FOR ECM ATX, DCTM	5A	
F17	ECM (2.2JTDM)	15A	
F18	+30 ATX (IF EQUIPPED)	N/A	
F19	A/C COMPRESSOR	10A	
F 20	N/A	7.5A	
F22	ECMENGINE PRIMARY LOADS (SLAVE 2.9V6 AND 2.2JTDM)	20A	
F23	ADD ITIONAL E LE CTRIC WATER PUMP (2.9V6/2.2JTDM)	20A	
F24	FOR JTDMENGINE SECONDARY LOADS	15A	
F30	KL30 ATX LEVER	10A	
F82	WIND SCREE N WASHER	20A	
F83	AWD*	25A	
F84	+30 ECM 2.9 V6 MASTER	7.5A	
F87	GEARBOX OIL COO LING CIRCUIT ELECTRIC PUMP (2.9 V6)	15A	
F89	HEAD LIGHT WASHER PUMP	30A	
F90	LEFT SPLITTER ACTUATOR (SLAVE)	20A	
FXX	RIGHT SPLITTER ACTUATOR (MASTER)	20A	
	RELAYS		
Relay	Description	Amperage	
T07	MAIN RELAY (2.9V6 MASTER)	N/A	
T09	MAIN RELAY (JTD M, GME, 2.9V6 SLAVE)	N/A	
T17	HEADLIGHT WASHER PUMP	N/A	Underhood - Power Distribution Center (PDC)

			ONNECTION: FUSE F16	ALFA ROMEO STELVIO
		FUSES		
Fuse		Description	Amperage	
F01	MK C1 AB	S MODULE	70A	
F02	GLOW PL	UG CONTROL UNIT	60A	
F04	ABS MOD	DULE FANS	40A	
F05	PTC 3		40A	
F07	MAIN REL	AY (2.9V6 MASTER)	50A	
F09	KL30 ECM		7.5A	
F10	HORN		15A	
F11		ONDARY LOADS	15A	
F14A	BLOW-BY	HEATER (2.0L/2.2L)	7.5A	
F14B	BLOW-BY	HEATER (EXCEPT 2.0L/2.2L)	10A	
F15	PTC 1	1	40A	
F16	KL15 FRC	M BCM FOR ECMATC, DCTM	5A	
F17	ECM (2.2.	JTDM)	20A	
F19	A/C COM	PRESSOR	10A	
F20	KL30		7.5A	
F22	2.9V6 AND	INE PRIMARY LOADS (SLAVE 0 2.2JTDM)	20A	
F23	(2.9V6/2.2		20A	
F30	KL30 ATX	LEVER	10A	
F81A	PTC 2		60A	
F81B		ARY AIR PUMP	50A	
F82		REEN WASHER	20A	
F84		2.9V6 MASTER	7.5A	
F89		(OIL COOLING CIRCUIT C PUMP (2.9 V6)	30A	
		RELAYS		
Relay	Alternate	Description	Amperage	
T07	D820	AUTO SHUT DOWN	N/A	
T09	D907	AUTO SHUT DOWN 2	N/A	
T17	D825	HEADLAMP WASHER	N/A	1

Underhood - Power Distribution Center (PDC)



Power Distribution Center - Front (PDC)



Power Distibution Center Front (PDC)



Underhood - Power Distribution Center (PDC)

4.3 Key Learning Fiat Ducato, Fiat 500L, Iveco Daily 2020+

This is how you can program a key to Fiat Ducato, Fiat 500L, Iveco Daily 2020+:

- 1. You need to take out the BCM unit and open the plastic cover
- 2. Find the EEPROM and solder ZN057 as per the diagram on the next page
- 3. Read the SPI 95640 memory with ABProg this will give you the PIN. This procedure is executed with the ZN030 ABProg programmer, and the ABProg upgraded software
- 4. Load the file into the FCA Software > Special Functions > Transponder Maker and prepare a transponder ID46 7936 (or 7946)
- 5. Proceed to Key Learning procedure

Required tools:

ZN030 ABProg programmer

ZN057 EEPROM wire extender for ABPROG EEPROM/BCM adapter

ZN002 or ZN003 ProTag Programmer

CB019 would be required if the vehicle is equipped with a security gateway module

In case there is a security gateway, but there is a problem with the communication with CB019 - ZN051 DS box and the CAN wires with the needle pinches need to be connected to the 6-14 ports of the DS Box and the internal CAN wires close to the BCM.

Transponder Maker		×
Make Iveco Model Daily 2020 Immobiliser BCM Marelli	▼ Load Dump Save Dump	
EEPROM 95C160, size 2048 bytes EEPROM 95C640, size 8192 bytes Original transponder: PCF 7946 Allowed transponders: PCF 7936, PCF 7946 Max number of keys: 8	PIN Code 37355 Programmed Keys 2 Select Key Position Key 3 < Not Used >	-
	Program Key	key

Internal CAN connection to the BCM, which is an alternative connection method for bypassing a gateway, whenever the procedure does not go trough when using the CB019.



The picture below show you where and how you need to connect the ZN057 adapter in order to read this BCM unit.





5. Cluster Calibration Special Function

This function allows the update of Instrument Cluster working data Calibration by OBDII in cluster of CAN based vehicles. Please make sure to visit our website or web store for the full supported model list. Calibration can be used when the module has been replaced with a second hand unit in order to avoid mismatching and obstructions in the vehicle's operation. Please observe local regulations in regards to the calibration.

Select Unit		<u> </u>
Instrument	Alfa Giulietta	Connect
Current	32458	
New	35986	Write

Calibration of Engine Control Unit – BOSCH EDC16 – Tested Version for now : Fiat Croma, Alfa 159, Fiat 16, New Fiat Bravo 1.6 JTD, New Lancia Delta 1.6 JTD, Alfa GTV 1.9 JTD

5.1 Cluster Calibration 2 Special Function

The "Cluster Calibration 2" function allows the calibration of some of the newer models in the FCA group.

Note: Calibration can be used when the module has been replaced with a second hand unit in order to avoid mismatching and obstructions in the vehicle's operation. Please observe local regulations in regards to the calibration.

	FIAT							Protocol	DTC	^	
1	Webasto	Heater						KWP		[
01	Airbag							CAN			Pr
02	Automat	ic Trans	mission					KWP		l	
04	Body Co	ntrol Mc	dule					CAN		1	_
80	Air Con	ditionin	ıg					KWP			(
80	Air Con	ditionin	g					CAN		l	(
A	Engine	Control	Unit (Bos	ch EDC15)				KWP			
B	Engine	Signals	Control U	nit				CAN			
D	Passeng	er's Doc	r					CAN			1
)E	Driver'	s Door						CAN			
	Encrine Vehide Selecti		Unit. ecial Functions]				KWP		~	
1			Ð	Google	\bigcirc	0	PEFIS	^	Ģ		100
Key	Learning	Cluster Calibration	Cluster Calibration 2	Read/Update ConfData	ECU Flasher	ECU Clone	Transponder Maker		Open	_	0
	0	See .	Α								1
Chry	sler Radio	Dump Tool	Sniffer					~			

1. Cluster Calibration 2

2. Make and model selection window

Cluster Recalibration		×
ALFA ROMEO	GIULIA	
CHRYSLER	STELVIO	
DODGE		
FIAT		
JEEP		
LANCIA		
RAM		
	1	
	-> Cont	inue 🗙 Close

2024 Abrites Diagnostics for FCA User Manual

For models equipped with a security gateway module you have to use the <u>CB019</u> gateway cable.

The latest addition of the supported models all require the CB019, includes the following:

- Jeep Wrangler (JL) 2018+,
- Jeep Gladiator (JT) 2020+,
- Maserati Levante tested on 2022 hybrid face-lift,
- Jeep Grand Cherokee (WK2) 2011-2022
- Dodge RAM (DT) 2019+ odometer and motor hours calibration.

6. Engine Control Unit Flash Manager

The ECU flash manager provides reading and Updating ECU's flash memory by diagnostic. ECUs supported: Marelli IAW 4AF/4EF/59F/5AF/5NF/6JF IAW 5SF3; BOSCH ME7.3H4/ME7.3.1/ME7.2.1 (BOOT MODE) MJD 6JF - IMMO OFF

It also allows storing of the flash files locally, as well as loading them into the unit.

Unit	Mar	elli I	AW	8G	SF													-	
0000080	DD	95	00	DD	95	00	75	00	00	30	30	09	no	01	00	00	u00		Read Flash
00000090																			
																	}}}}}		1
																	.~q~`.8*3V		
																	Y.* qp.8*38.		Write Flash
																	.*3VY.* qp.8		
																	*306		
000000F0	7E	03	F9	FF	88	E4	9A	40	A0	14	в5	EF	C8	BD	D1	36	~6		
00000100	40	0A	04	A1	BD	1B	04	A1	83	1E	10	44	73	DA	42	1C	@Ds.B.		Load from File
00000110	в4	51	8E	D4	7E	40	0A	04	A1	BD	1B	04	A1	83	FF	FF	.Q~@		
00000120	FF	FF	FF	FF	FF	FF	в7	FF	FF	FF	FF	FF	06	FF	FF	FF			
00000130	FF	FF	06	FF	в7	40	14	19	78	@x									
00000140	E8	19	91	65	87	18	BF	69	1F	70	32	07	66	50	71	80	ei.p2.fPq.		Save to File
00000150	53	40	14	19	78	E8	19	91	65	87	FF	FF	00	00	00	00	S@xe		
00000160	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
00000170	00	00	00	00	00	FF		=											
00000180	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
00000190	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
000001A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			
000001В0	00	00	00	00	00	в2	22	D4	в2	22	D4	8F	15	FF	FF	FF	""		
000001c0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			
00000100																FF			
			_		_				_							_	X.		
000001F0	49	84	D6	7F	DC	72	83	58	DD	49	84	D6	7F	DC	72	83	Ir.X.Ir.	-	X
4																		•	Cose

7. ECU configuration manager

Reading and Updating ECU's configuration memory by diagnostic. Reset to factory new state option. ECUs supported: EDC15C5, EDC15C7, MJD 6JF/8F2; Marelli IAW 4AF, 4EF, 59F, 5AF, 5AM, 5NF, 5SF3, 8GMF, 8GSF; BOSCH ME7.3H4 (boot), ME7.3.1 (boot), ME7.2.1 (boot)

Read/update memory, Calibration by OBDII of Engine Control Unit - EDC15C5(EURO2), EDC15C7(EURO3). This model ECU have the following vehicles:

Alfa 145 - 1.9 JTD	Alfa 146 - 1.9 JTD	Alfa 147 - 1.9 JTD 16V; 1.9 JTD 8V	Alfa 156 - 1.9 JTD; 2.4 JTD
Alfa 166 - 2.4 JTD	Fiat Bravo - 1.9 JTD	Fiat Brava - 1.9 JTD	Fiat Doblo - 1.9 JTD
Fiat Ducato - 2.0 JTD; 2.3 JTD; 3.8 JTD	Fiat Marea - 1.9 JTD; 2.4 JTD	Fiat Marengo - 1.9 JTD	Fiat Multipla - 1.9 JTD
Fiat Punto - 1.9 JTD	Fiat Palio - 1.9 JTD	Fiat Stilo - 1.9 JTD	Fiat Siena - 1.9 JTD
Fiat Scudo - 2.0 JTD	Lancia K - 1.9 JTD	Lancia Lybra - 1.9 JTD; 2.4 JTD	Lancia Thesis - 2.4 JTD
Lancia Z - 1.9 JTD			

Read/update memory, Calibration, Make VIRGIN by OBDII of Engine Control Unit - Marelli Multijet MJD 6JF. This model ECU have the following vehicles:

Fiat new Panda - 1.3 IAW Multijet MJD 6JF	Fiat Idea - 1.3 IAW Multijet MJD 6JF	Fiat Doblo - 1.3 IAW Multijet MJD 6JF	Fiat Punto - 1.3 IAW Multijet MJD 6JF
Fiat Grande Punto -	Fiat Cinquecento - 1.3	Lancia Musa - 1.3	Lancia Ypsilon - 1.3
1.3 IAW Multijet	IAW Multijet	IAW Multijet	IAW Multijet
MJD 6JF	MJD 6JF	MJD 6JF	MJD 6JF

Unit	Marelli MJD 8F2 (CAN)		-	2
0000000	Parameters			MonfData
0000001				
0000002	Parameter	Value		and a second
0000003	Odometer	12345	km	ConfDat
0000005	Last ECU replacement on odom.	1234	km	
0000006	Number of overrevs	6		
0000007	Last overrev odometer	666	km	pm File.
8000008	Last 'Oil change' odometer	3333	km	pm rie
0000000g	Proced. num. 'Oil change'	3		
000000B	Oil change request odometer	2222	km	
000000c				o File
0000000				
000000E				ration
00000010				
0000011				
0000012		30	\sim	Virgin
0000013		Corore	\sim	
0000014	Update dump	Update ConfData	Cancel	
	20 20 20 01 01 32 30 32 30 33 20 20	<u></u>		
4			Þ	×

Reading and updating Conf data, saving to files, loading from files :

	Diagnostics for FIAT LANCIA ALFA late ConfData	www.abrites.com	
Unit		_	<u></u>
[Bosch EDC15C5 EURO2	· · · ·	Read ConfData
	Bosch EDC15C7 EURO3		.31
	Bosch ME7.3H4 (BOOT MODE)		odate ConfData
	Bosch ME7.3.1 (BOOT MODE)		
	Marelli IAW 4AF		1
	Marelli IAW 4EF		oad from File
	Marelli IAW 59F		
	Marelli IAW 59M		Save to File
	Marelli IAW 5AF		
	Marelli IAW 5NF		Calibration
	Marelli IAW 5SF3/5SF8 (Kline)		
	Marelli IAW 5SF3 (CAN)		Make Virgin
	Marelli IAW 5SF8 (CAN)		
	Marelli IAW 5SF9 (CAN)		~
	Marelli IAW 8GMF		X
	Marelli IAW 8GSF		Close

Making the ECU virgin:



This function is vital for adaptation purposes in the cases where a second hand unit is used.

8. Proxi alignment

The Abrites Diagnostics for FCA allows you to perform Proxi alignment to both passenger and commercial FCA vehicles both on bench and inside the vehicle. Proxi alignment represents the process of the general configuration of the BCM (Body Control Module) of FCA vehicles. It is used to perform seamless replacement of modules related to the BCM as well as configuration of the behavior of the vehicle, what features it has, add and remove options and modules (retrofit) and literally "Align" the configuration from said vehicle in a simple and easy manner.

It is important to know that the IPC (Instrument Panel Cluster) module also contains the configuration. Here are some of the modules related to the Proxi alignment: BCM – Body Control Module, IPC – Instrument Cluster Panel, DSM – Display Screen Module, SDM – Sliding Door Modules (left and right), CTM – Convergence Telematic Computer and many others.

NB! The fact that the IPC contains the Proxi alignment data is important because it makes it possible to replace and align a BCM module also.

AE	RITES Diagnostics for FI	at/alfa/ <mark>l</mark> an	CIA/FCA 8.4				www.abrites.o			×
#	FIAT						Protocol	DTC	^	
01	Webasto Heater						KWP			
01	Airbag						CAN			Previous
02	Automatic Trans	mission					KWP			
04	Body Control Mo	dule					CAN		1	
08	Air Conditionir	ıg					KWP			Ģ
08	Air Conditionir	g					CAN		,	Open
0A	Engine Control	Unit (Bos	sch EDC15)				KWP			
0B	Engine Signals	Control U	Jnit				CAN		Î	1
0D	Passenger's Doc	r					CAN			Next
0E	Driver's Door						CAN			
	Engine Control		1				KWP		~	
	Vehicle Selection 11 Sp	ecial Functions					^	-	-1	123.
		CAN	640	00000	1 <u></u>	Q.		Ģ		¥=
Ke)	/ Learning Proxi Alignment	Cluster Calibration	Cluster Calibration 2	Read/Update ConfData	ECU Flasher	ECU Clone		Open		Options
	PEF 15	320	Α							0
Tra	ansponder Chrysler Radio	Dump Tool	Sniffer				~			Exit

Start by opening the Proxi alignment feature in the Abrites diagnostics for FCA

Select the vehicle model from the list

FIAT	p	rotocol DEC A
Proxi Alignment		×
ALFA ROMEO	500 (312)	
FIAT	500E (332)	
JEEP	500L (330)	
OTHER MODELS	500X (334)	
RAM	DOBLO (263)	
	DUCATO (250)	
	FIORINO (225)	
	TIPO (356)	
	VIAGGIO (343)	
F		
1		
e1	1	
	-> Con	ntinue 🗙 Close

Follow the instructions for ignition ON when working inside the vehicle.



The Abrites Diagnostics for FCA will then connect to the vehicle (or BCM if you are working on a bench)



Then you will have two options BCM alignment or IPC. The BCM option is the standard way to move forward. Use the IPC option when replacing the BCM with a new one



At this time the software will read the proxi alignment configuration and display it on the screen.

A ABRITES Diagnostics for FIAT/ALFA/LANCIA/FCA 8.4 www.abrites.c	10 — 🔟 🗙	ABRITES Diagnostics for FIAT/ALFA/LANCIA/FCA 8.4	www.abrites.co — 🗆 🛛
# Prat Protocol	X X	# Print Proxi Alignment	Protocol DTC A
01 Please wait			es and make sure they are as you expect.
02	ous	02 Option	Status
04		04 CAN Configuration	
08	E	08 EPS	Removed
		DSM	Added
08	21	08 Car Configuration	En la companya de la
08		0A GearShiftIndicator	present
08		0B StopAndStart	absent
00		Op Comfort closing/opening	enable
02	et	Driver's side	left side
		Front Fog light	present
10		Rain sensor	absent
		Twilight sensor	absent
		Head light washer	absent
Kei	pns	Kej	
	× Close	1	Continue X Close
Transponder Chrysler Radio Dump Tool Sniffer	Exit	Transponder Chrysler Radio Dump Tool Sniffer	× Exit

Once the Proxi alignment configuration is displayed you can modify the Proxi alignment according to your needs. To the left of the screen you can see the option list while to right side of the screen you can see the status of the option in the current configuration. The options here may vary according to the needs of the vehicle. It can be a simple "present" or "absent" or it can provide additional configuration, for example the sliding door can be changed from the left hand side of the vehicle to the right hand side if you are using a BCM from a LHD car on a RHD car and so on, certain features can be enabled or disabled, and even modules participating in the Proxi alignment can be removed or added to a vehicle in accordance to your particular needs. Once you click on the status of the option on the right hand side you will have a drop down menu which will allow you to modify it with a mouse click

xi Alignment	
lease check added/removed me	odules and make sure they are as you expect.
Option	Status
CAN Configuration	
EPS	Removed
DSM	Added
Car Configuration	
GearShiftIndicator	present
StopAndStart	absent 🗨
Comfort closing/opening	absent
Driver's side	present
Front Fog light	present
Rain sensor	absent
Twilight sensor	absent
Head light washer	absent
📂 🛛 🔛	🗢 🔶 🔿 Continue

Once you are done with the configuration as you need it you can save the configuration to a file on your computer which you can later load using the SAVE and FILE icons in the bottom left.

You can, of course save the original file or the modified one as well.



Loading the Proxi alignment configuration file has two options which are used in two different situations:

When the BCM is on bench and you power it up it will not "see" the other modules. Thus you can perform the configuration on a bench. This, however means that the BCM will be configured but it will not know that there are other modules related to proxi alignment in the car. For this case and other testing and development purposes you can select the "Use CAN and configuration from file.

When working on the vehicle this is not an issue and as you can see the default option is to "FIX" configuration from file. As it is the default option we suggest you use this as this will assist with the alignment.



The next screen will prepare the car for programming of the Proxi alignment, make sure that the precautions on the screen are taken



The progress of the alignment is displayed on the screen, the modules currently being "aligned" are on the left side, while the status of the alignment is on the right

	PTAT. Proxi Alignment	Protocol DTC A	1
	Proxi Alignment:		
2	Module	Status	-
	BCM	ОК	
	IPC	OK	1
	DSM	OK	
	SDM	OK	-
۱	СТМ		
3			1
>			
			Î
			ł
(e)			1
		× Close	H

At the end of the procedure you can turn the ignition off and back on to test if everything went as expected

01	Proxi Alignment: Proxi Alignment procedure finish	ed. Turn IGNITION OFF.	0
02	Module	Status	-1
04	BCM	OK	
80	IPC	OK	
80	DSM	OK	e
A	SDM	OK	
ов	CTM	ОК	
DD			_ [
DE			Ē
10			-1
-			
-			5
Ken	1		-