



Achieve the impossible



Abrites Diagnostics for Fiat/Alfa/Lancia/FCA
User Manual

Version: 1.1

www.ABRITES.com

List of revisions			
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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.

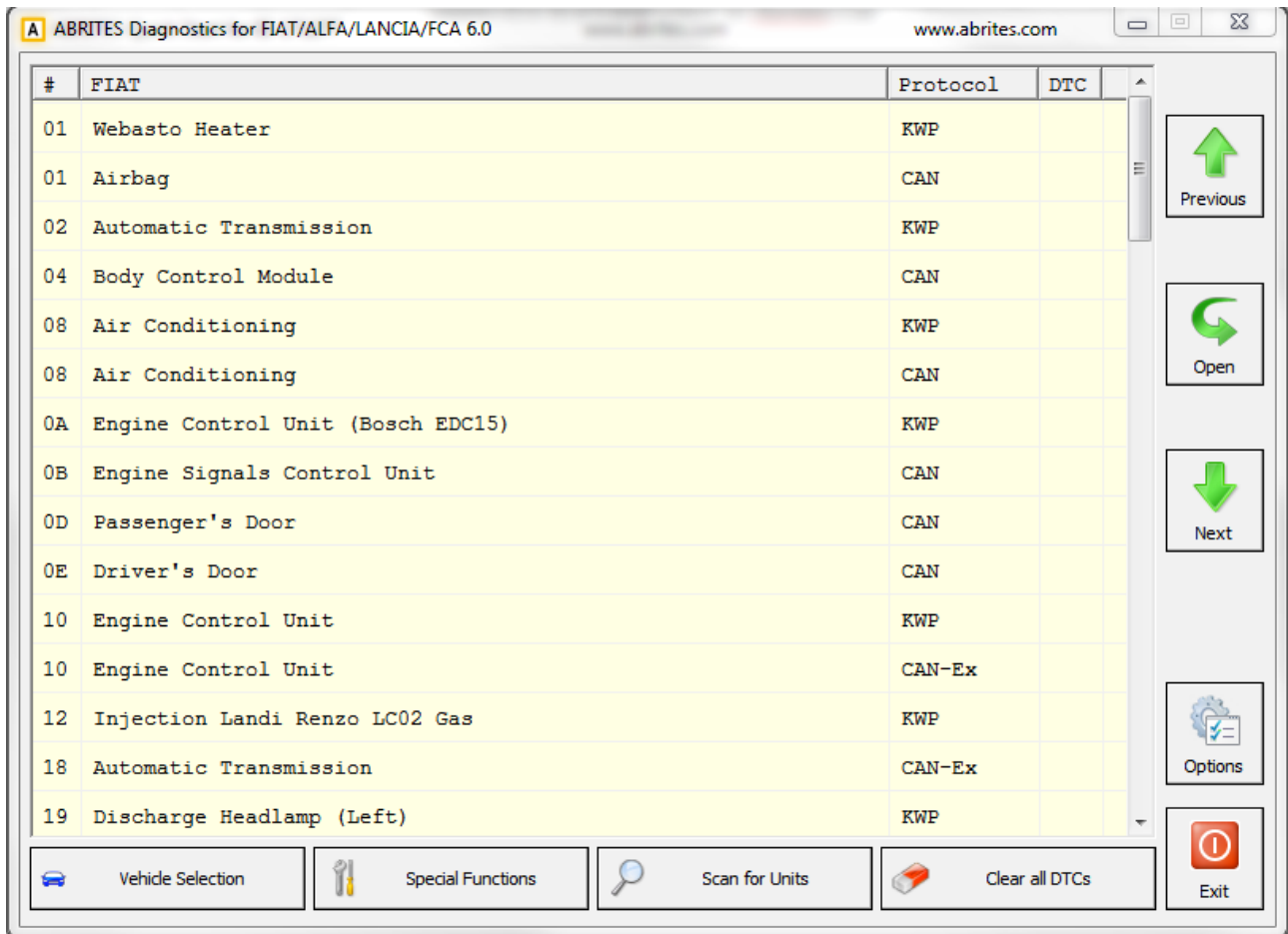
ABRITES is a trade mark of Abrites Ltd.

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/FCA

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 e-mail. 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:



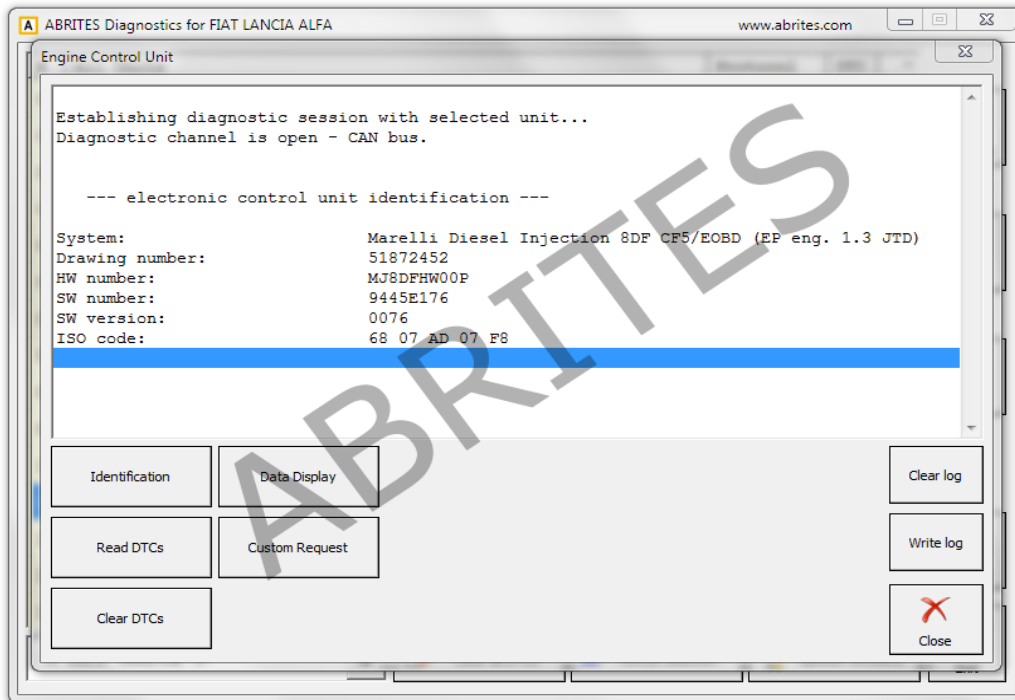
This is the main screen of the software and it shows all the navigation buttons as well as the ones for vehicle selection, scanning and general diagnostic trouble code (DTC) clearing.

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.

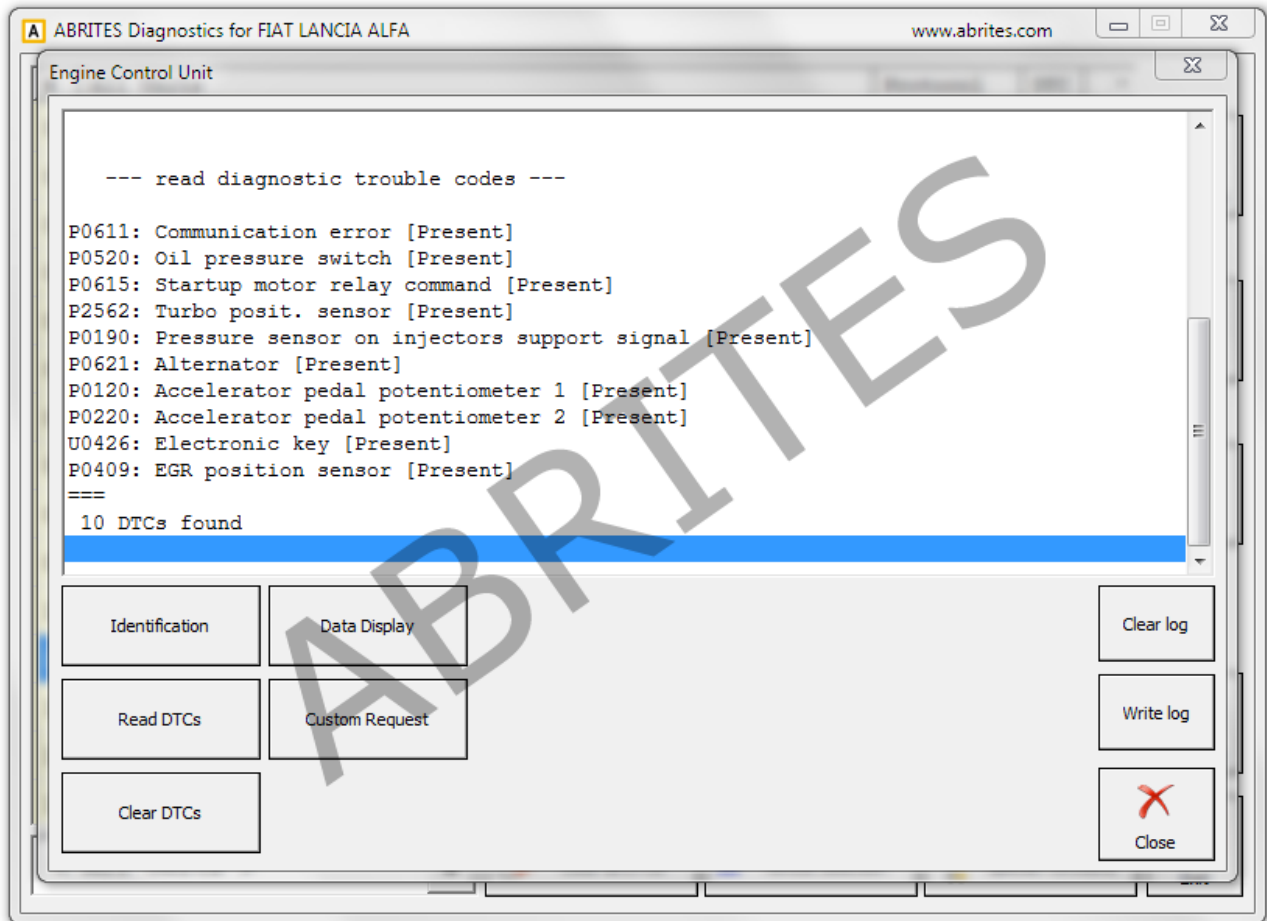
3.1 Module identifications

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



3.2 Reading and clearing of diagnostic trouble codes (DTC)

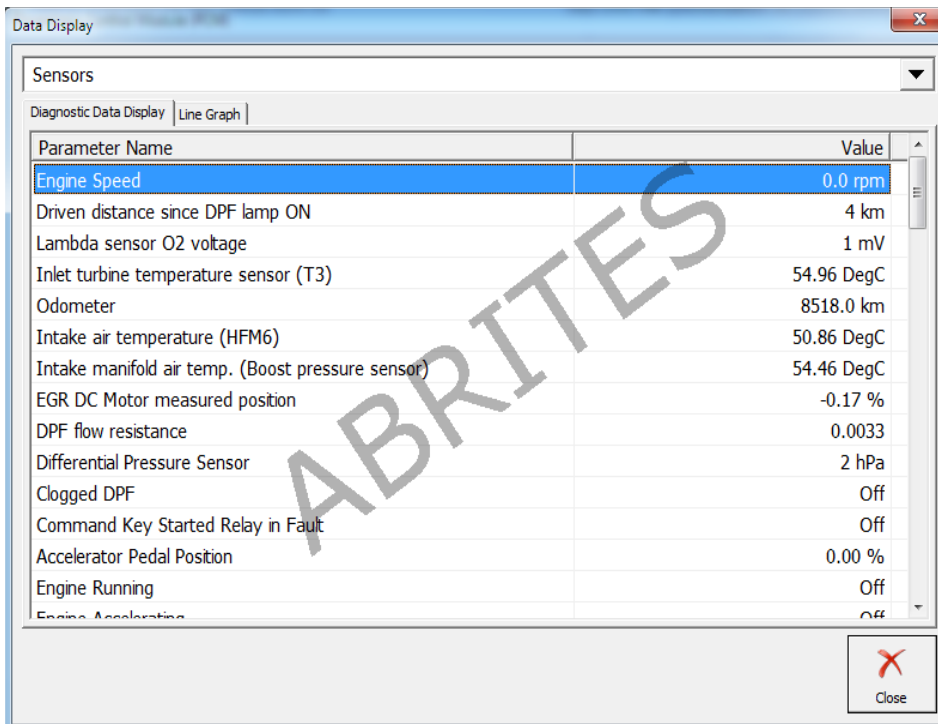
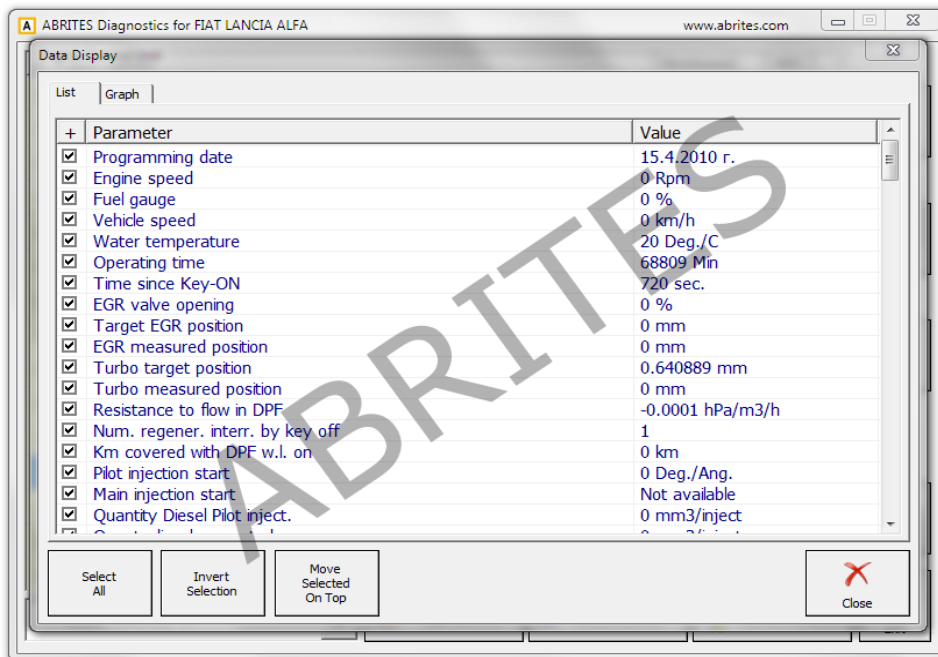
This function allows the user to read the diagnostic trouble code, analyse it, find the cause of the issue, repair the damage and clear the DTC



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.



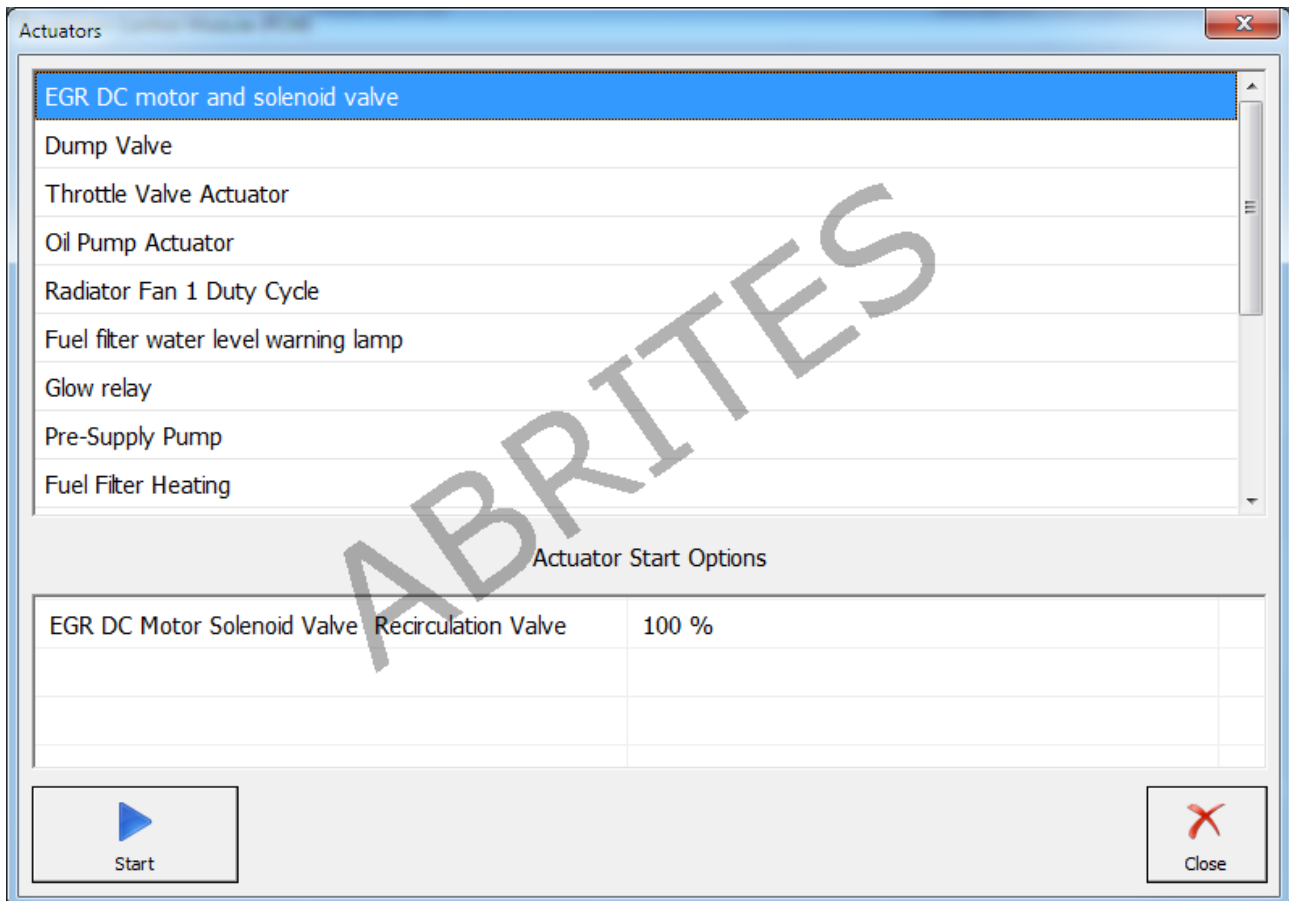
3.4 ECU identification and configuration

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.

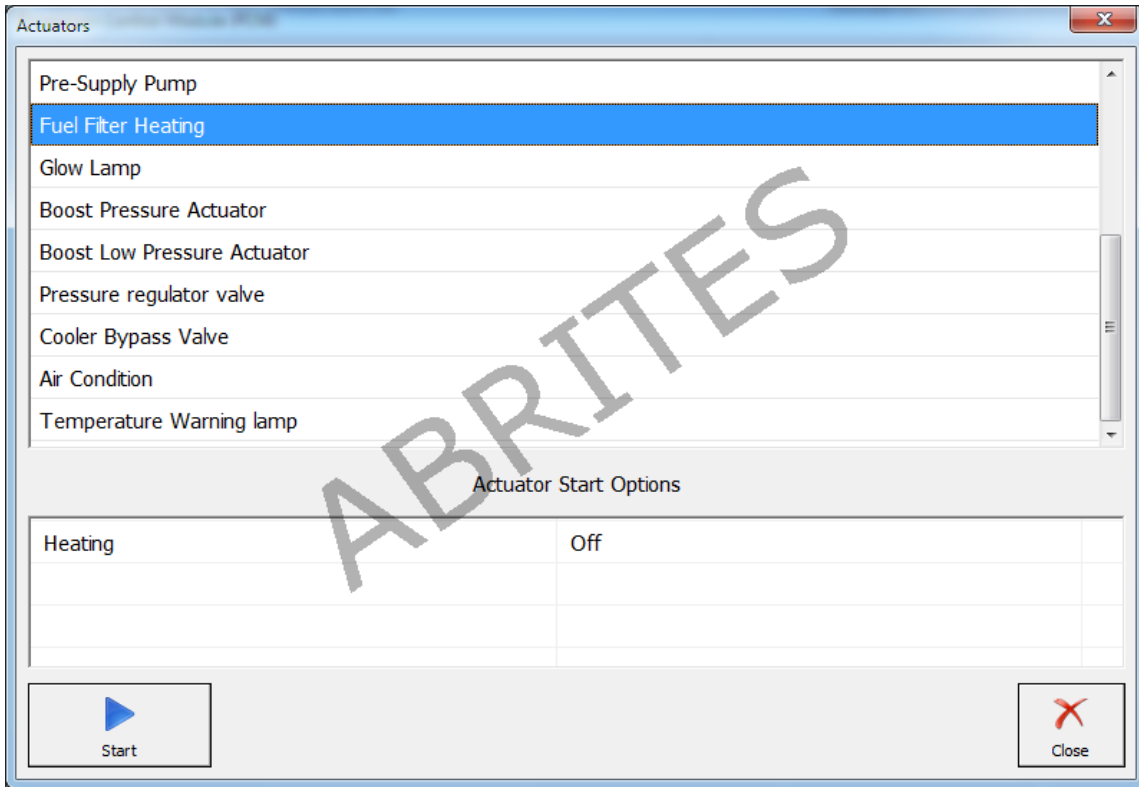
Parameter Name	Value
Active Diagnostic Variant	61
Active Diagnostic Version	00
Hardware Part Number	68103284AF
Software Part Number	72111213AF
ECU Part Number	68103284AF
ECU Serial Number	TKDKA104401129

3.5 Actuators

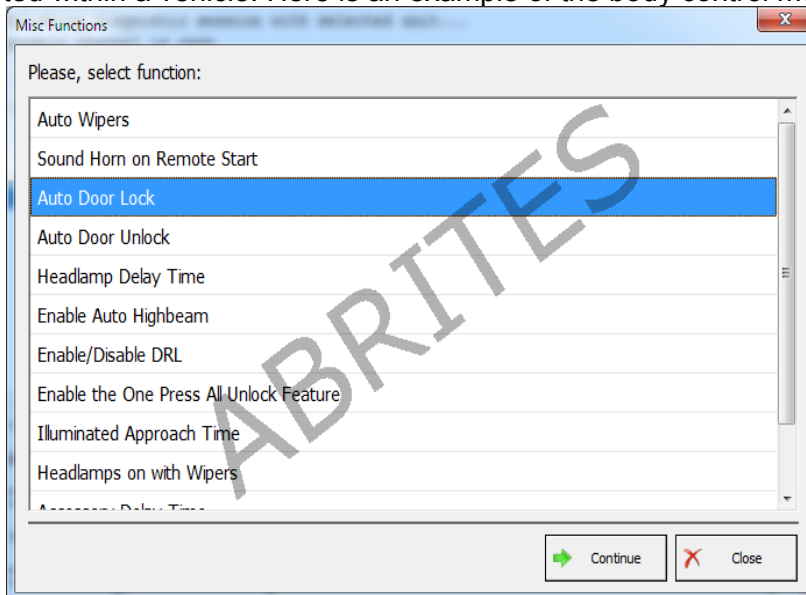
Actuator testing is perhaps one of the most important steps in resolving an issue with a faulty vehicle. This function is used to test the operation of separate systems within the car. For example the user can test the oil pump actuator separately without interfering with other actuators.



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.



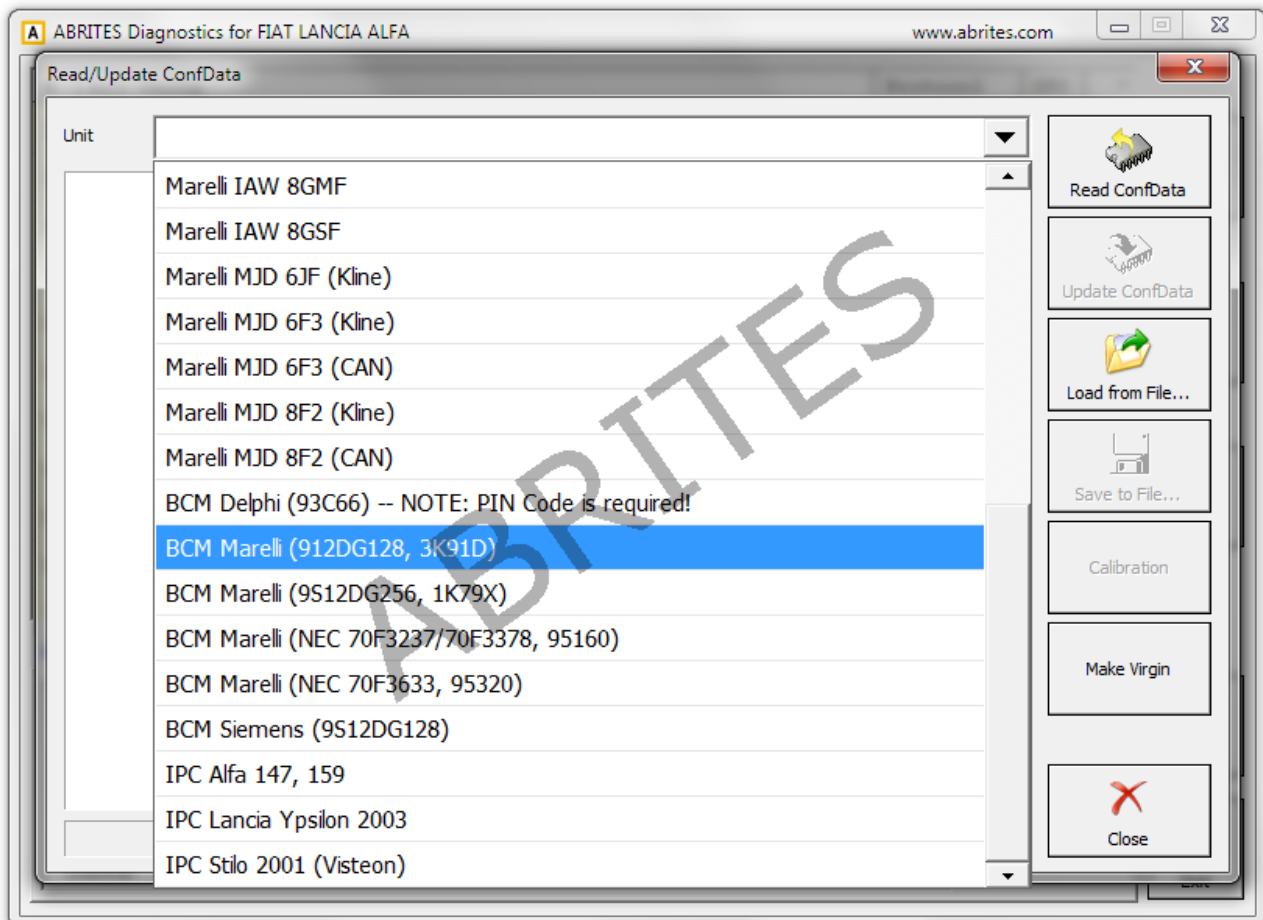
The Abrites diagnostics for Fiat/Alfa/Lancia/FCA currently supports almost 100% of the actuators that can be tested within a vehicle. Here is an example of the body control module's actuators.



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.



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

ABRITES Diagnostics for FIAT LANCIA ALFA Days until HW synchronization: 21

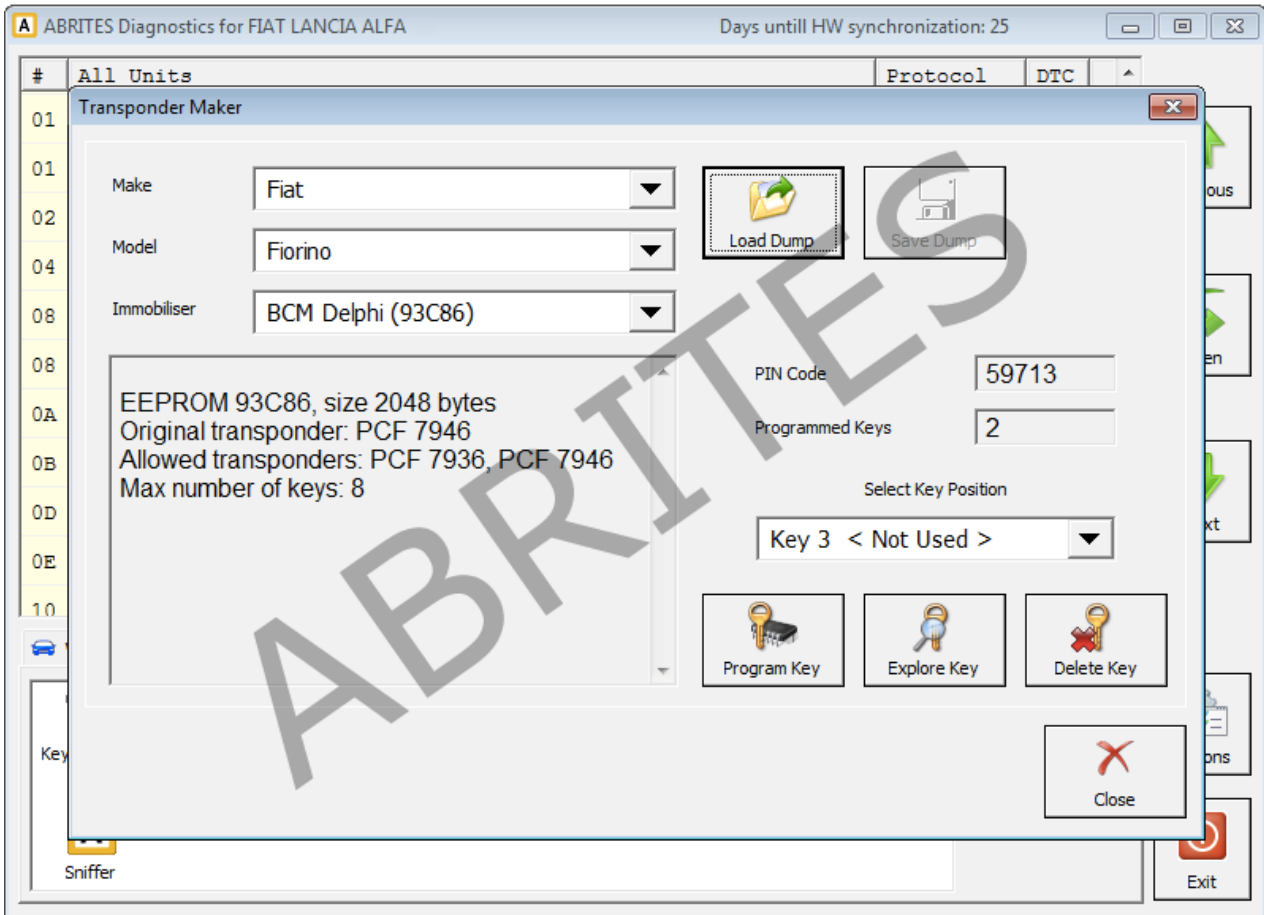
Read/Update ConfData

Unit: BCM Marelli (912DG128, 3K91D)

00000000	76	40	AC	C6	28	81	81	1D	D7	AF	13	8A	82	5B	CC	30	v@..(.....[.0
00000010	05	A4	50	D5	01	82	00	00	81	03	FF	FF	00	00	00	00	..P.....
00000020	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
00000030	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
00000040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
00000050	00	00	00	00	00	00	00	00	00	00	00	FF	FF	78	07	.....x.	
00000060	74	AC	35	1E	C4	2A	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	A8	48	00	18	03	0F	00	00	00	00	.....H.....
00000090	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
000000A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
000000B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
000000C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
000000D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
000000E0	FF	FF	38	E0	00	00	00	00	00	00	00	00	00	00	00	00	..8.....
000000F0	00	00	01	00	FF	FF	01	84	00	ED	00	C2	32	35	03	64	.....25.d
00000100	25	38	4A	1D	1F	00	00	00	00	0E	00	36	00	58	00	%8J.....6.X.	
00000110	78	00	96	00	B8	00	D8	00	F0	01	1C	FF	FF	C8	C8	AF	x.....
00000120	96	7D	64	4B	32	1E	00	00	FA	00	15	00	33	78	3A	86	.)dK2.....3x:..
00000130	34	37	3F	7F	F2	94	3B	27	BA	AF	3F	7F	DE	74	3C	A7	47?..;'.?..t<.
00000140	6D	F2	3F	7E	F4	1C	3D	27	16	B5	3F	7D	E9	50	00	F4	m.?~..='..?}.P..
00000150	02	62	04	C4	04	C4	01	2C	00	05	0E	11	14	51	32	00	.b.....,.....Q2.
00000160	00	B4	00	FF	07	E2	00	00	07	6B	00	00	07	09	51	72	.....k....Qz

Buttons: Read ConfData, Update ConfData, Load from File..., Save to File..., Calibration, Make Virgin, Close

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



- 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.

Key Learning

Make: Fiat

Model: 500

Connect

Immobiliser Status

Parameter	Value

PIN Code: 33423

Program Key

Close

Please visit abrites.com 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:



5. Instrument cluster data manager

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 – abrites.com 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.

The screenshot shows a software window titled "Cluster Recalibration". It features a "Select Unit" dropdown menu with "Instrument Alfa Giulietta" selected. To the right of the dropdown is a "Connect" button with a green circular arrow icon. Below the dropdown are two input fields: "Current" with the value "32458" and "New" with the value "35986". To the right of these fields is a "Write" button with a blue pencil icon. At the bottom right of the window is a "Close" button with a red 'X' icon.

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

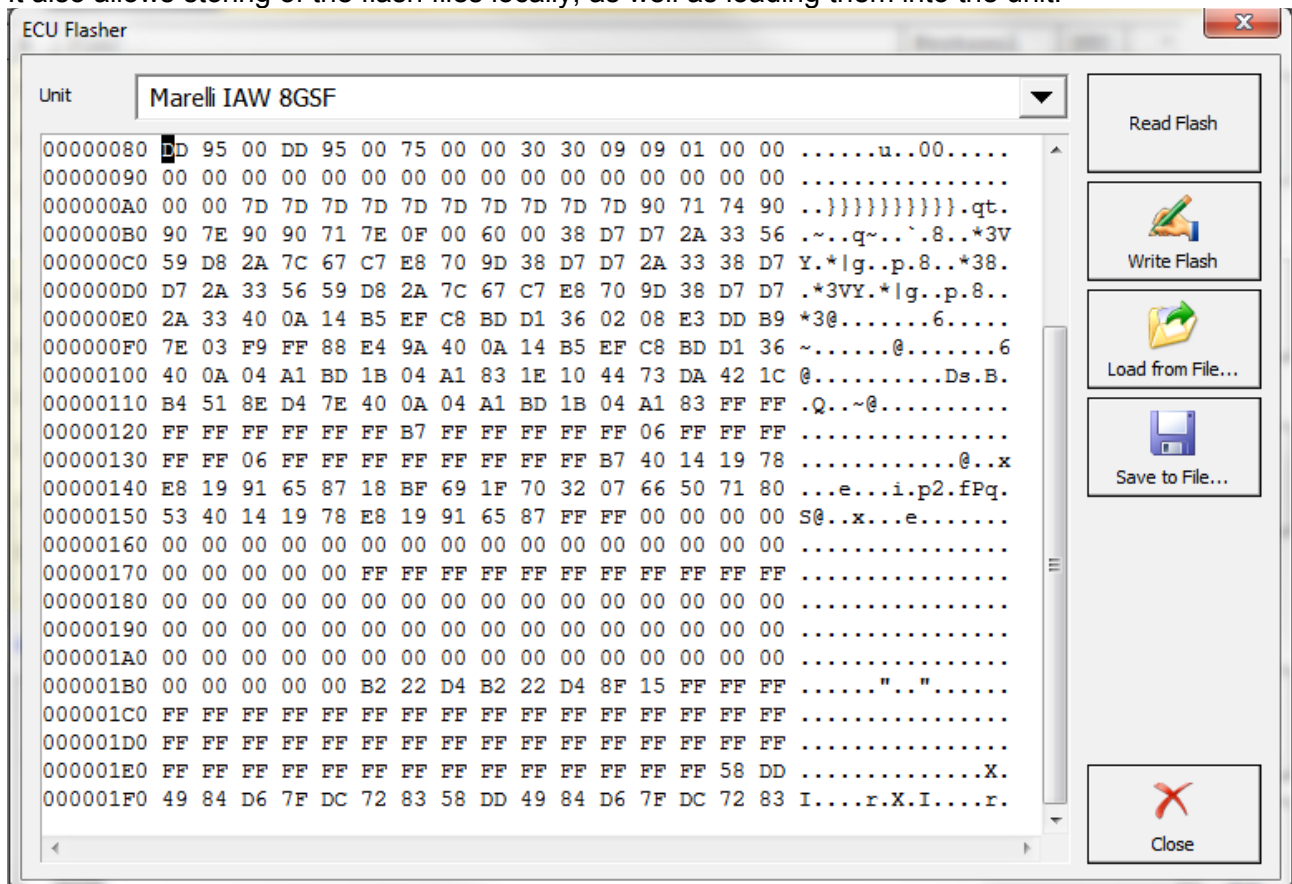
6. Engine Control Unit Flash Manager

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.



7. ECU configuration manager

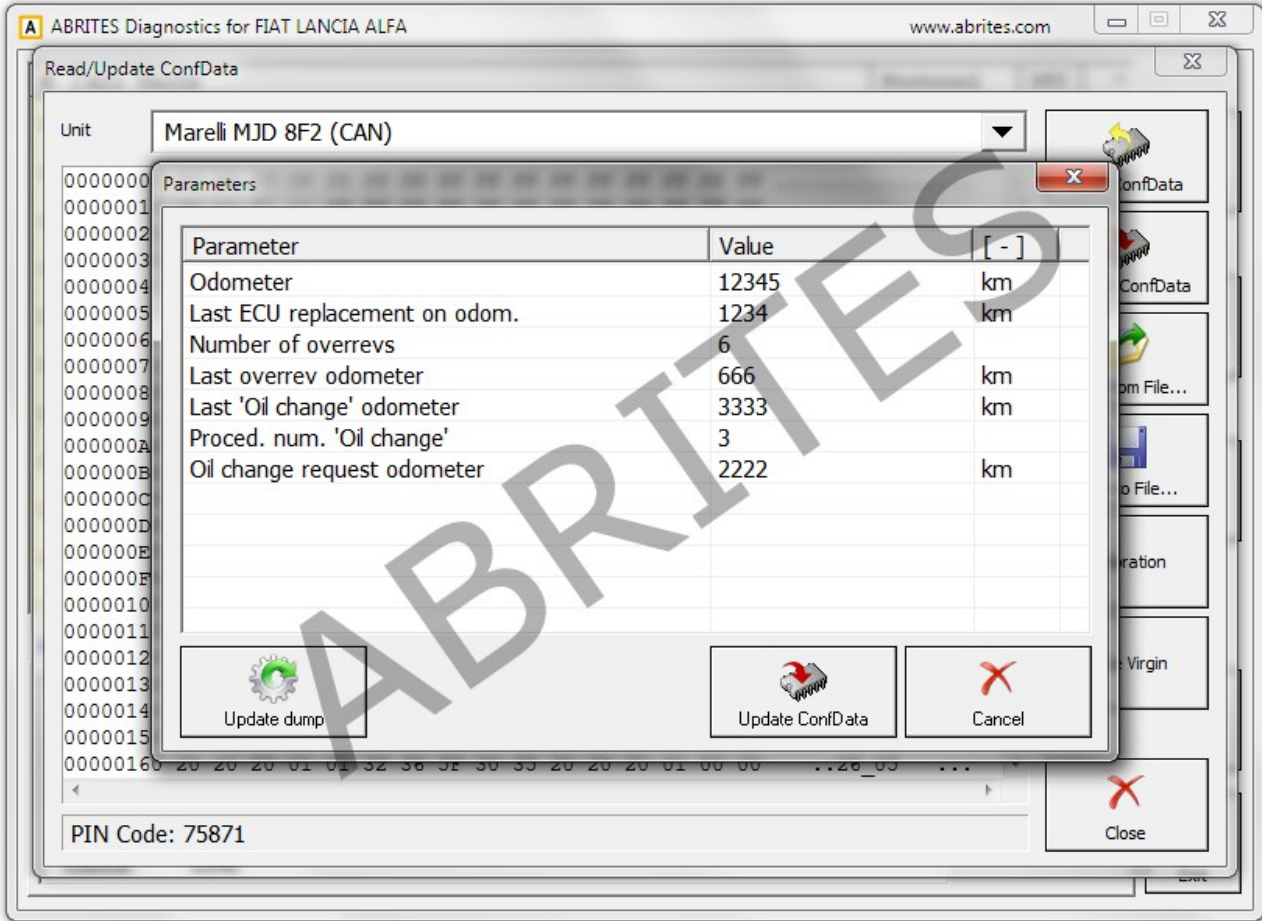
Reading and Updating ECU's configuration memory by diagnostic. Reset to factory new state option. ECUs supported: EDC15C5, EDC15C7, MJD 6JF/8F2; Marelli IAW 4AF, 4EF, 59F, 5AF, 5AM, 5NF, 5SF3, 8GMF, 8GSF; BOSCH ME7.3H4 (boot), ME7.3.1 (boot), ME7.2.1 (boot)

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

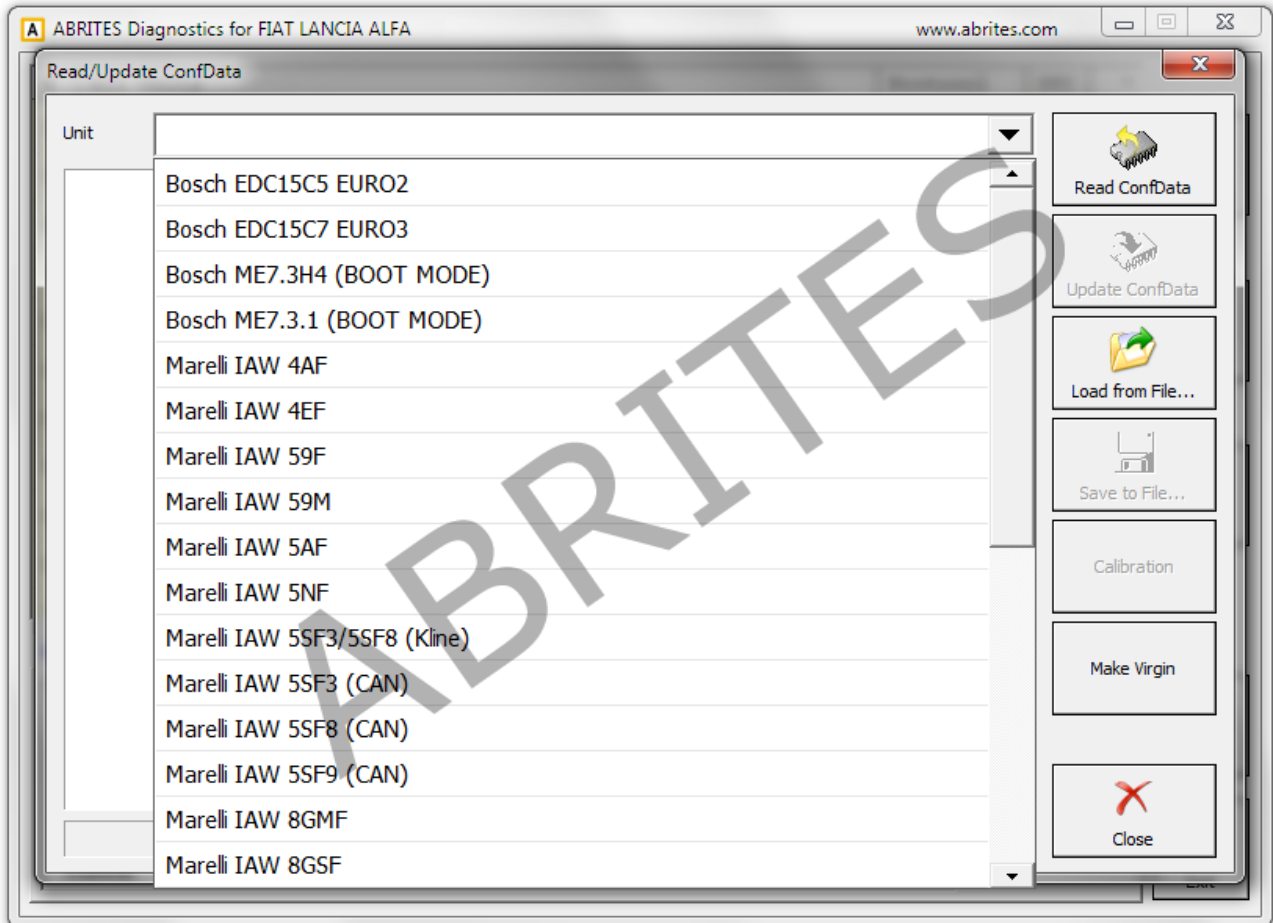
Alfa 145 - 1.9 JTD	Alfa 146 - 1.9 JTD	Alfa 147 - 1.9 JTD 16V ; 1.9 JTD 8V	Alfa 156 - 1.9 JTD ; 2.4 JTD
Alfa 166 - 2.4 JTD	Fiat Bravo - 1.9 JTD	Fiat Brava - 1.9 JTD	Fiat Doblo - 1.9 JTD
Fiat Ducato - 2.0 JTD ; 2.3 JTD ; 3.8 JTD	Fiat Marea - 1.9 JTD ; 2.4 JTD	Fiat Marengo - 1.9 JTD	Fiat Multipla - 1.9 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:

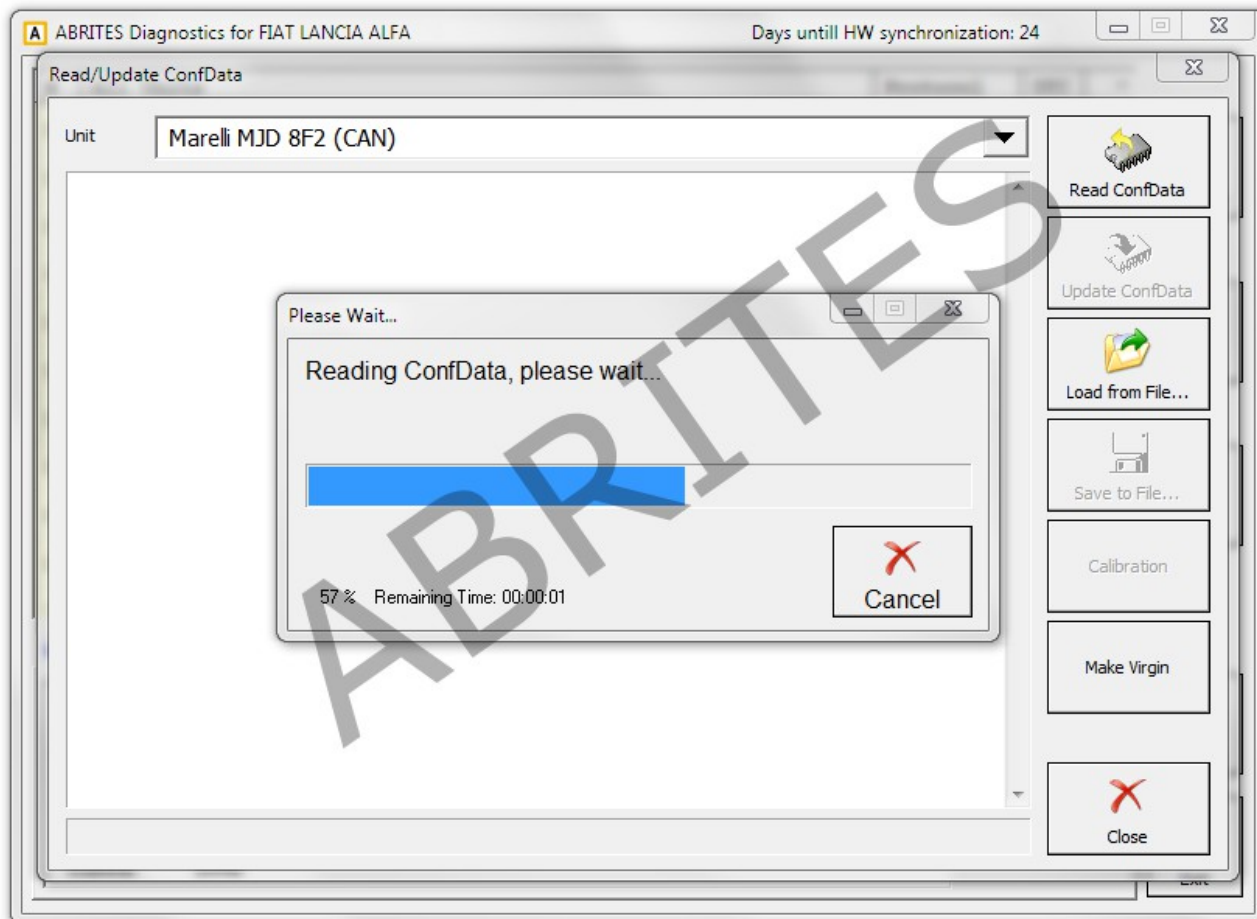
Fiat new Panda - 1.3 IAW Multijet MJD 6JF	Fiat Idea - 1.3 IAW Multijet MJD 6JF	Fiat Doblo - 1.3 IAW Multijet MJD 6JF	Fiat Punto - 1.3 IAW Multijet MJD 6JF
Fiat Grande Punto - 1.3 IAW Multijet MJD 6JF	Fiat Cinquecento - 1.3 IAW Multijet MJD 6JF	Lancia Musa - 1.3 IAW Multijet MJD 6JF	Lancia Ypsilon - 1.3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



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



Making the ECU virgin:



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