



FCA ONLINE USER MANUAL

A black, rectangular diagnostic device with a cable. The device has a yellow square logo on top with the text "A·B·R·I·T·E·S" and "DiagnosTICS" below it. The cable is black and has two connectors: a multi-pin connector on the left and a different multi-pin connector on the right. The device is shown from a slightly elevated angle, casting a soft shadow on the white background.

User manual
version 1.2

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.

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

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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 support@abrites.com.

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List of revisions

Date	Chapter	Description	Revision
15.03.2023	ALL	Document created.	1.0
14.03.2024	6	Key Learning	1.1
20.04.2024	7 & 8	Car Sync & Scan VINs	1.1
28.01.2026	6	Key Learning section updated	1.2

1. Introduction

Congratulations on choosing our wonderful product!

The “FCA Online” is an Online server based Abrites software for vehicles from the FCA Group.

In order to operate, the software requires you to have an AVDI interface, a Windows based PC with a minimum of 1024MB RAM, 64GB of free hard drive space and at least Windows 10 64bit Service Pack 1 or later version to operate. For optimal operation, it is always recommended to have the latest software version installed, active AMS, and a stable Internet connection.

With the help of this software you can perform basic and advanced software functionalities such as vehicle scan, read/clear DTCS, monitor live values, module adaptation and replacement (VIN Change), and key learning to some of the latest models of the brand.

For proper operation of your diagnostic software you will need a corresponding interface for connection between your PC and vehicle named “AVDI”. “AVDI” stands for “Abrites Vehicle Diagnostic Interface.” It is produced by Abrites Ltd. and intended to act as an interface between the PC and the electronic control units.

Please check the “license viewer” installed on your computer for your unique interface ID number.

The software is in constant development and its functionality is ever growing. The intentions for the Abrites Software are to be used by automotive specialists, but it is simultaneously designed in such a way that is accessible to enthusiasts as well.

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

ABRITES is a trade mark of Abrites Ltd

2. General Information

2.1 Scope of the manual

This document describes the usage of Abrites “FCA Online”. The document is applicable for the latest software version. In this manual we suppose that the software for your AVDI interface is already installed. Please refer to the “AVDI Common User’s Manual” in case it is not.

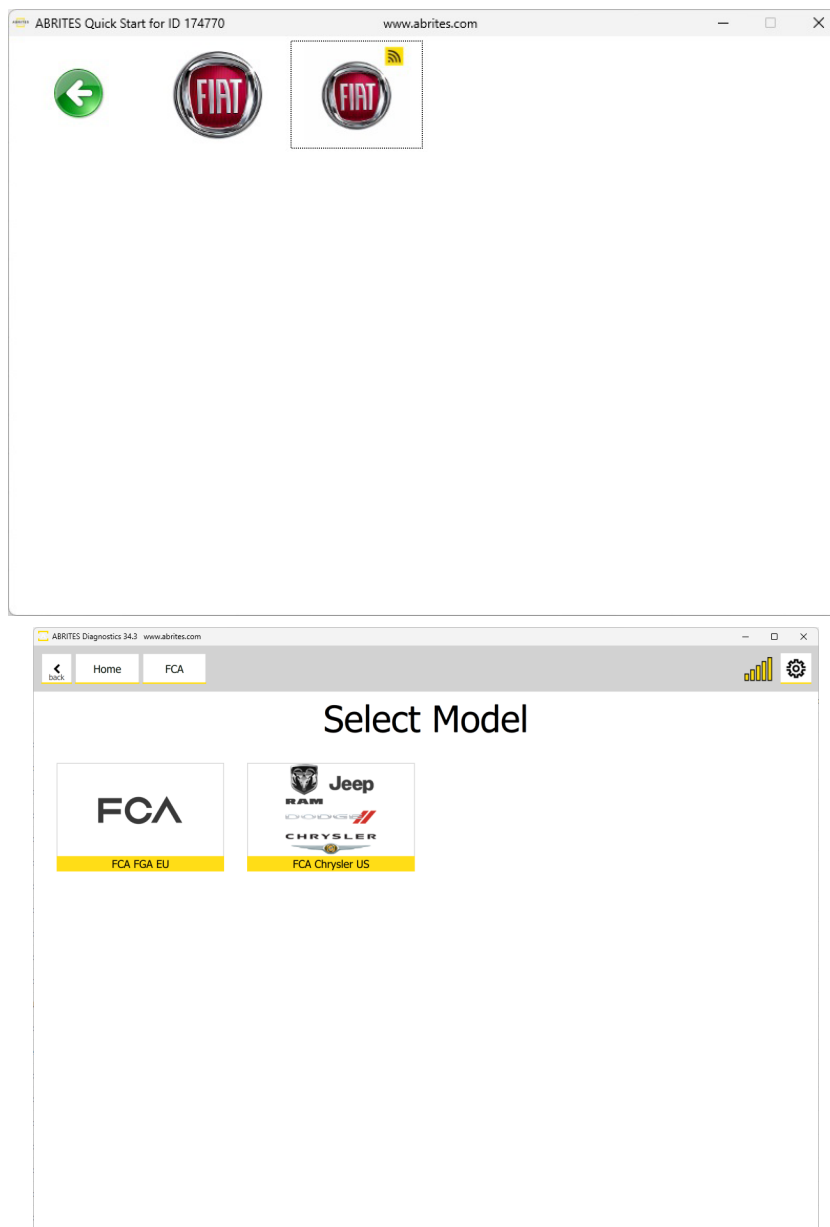
System requirements:

Minimum system requirements – Windows 10 + 4GB RAM
(recommended 4GB+)

2.2 Getting Started

You can start Abrites “FCA Online” by starting the Abrites Quick Start application and selecting any of the FCA Brands.

When the FCA application is started the main screen of the application will appear where you can select the FCA Online icon.



3. Abrites Diagnostics for FCA Online

ABRITES Diagnostics for FCA Online brings improved user experience.

When starting the software it is recommended to 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 on it. When the software is started the vehicle will be automatically detected and General Diagnostics screen will be displayed and the scanning of the modules will automatically start.

Using the Abrites Diagnostics for FCA Online we have access to basic diagnostic functionalities and special functions.

IMPORTANT: Internet connection is required!

Some of the general diagnostic functionalities are:

- Scanning for modules
- Read and Clear DTCs
- Monitoring Live Data
- and more

Apart from the basic diagnostic functions the Abrites diagnostics for FCA Online allows the user to perform various diagnostic functions at an extremely high diagnostic level. Such functions include:

- VIN change
- Module Replacement and Adaptation

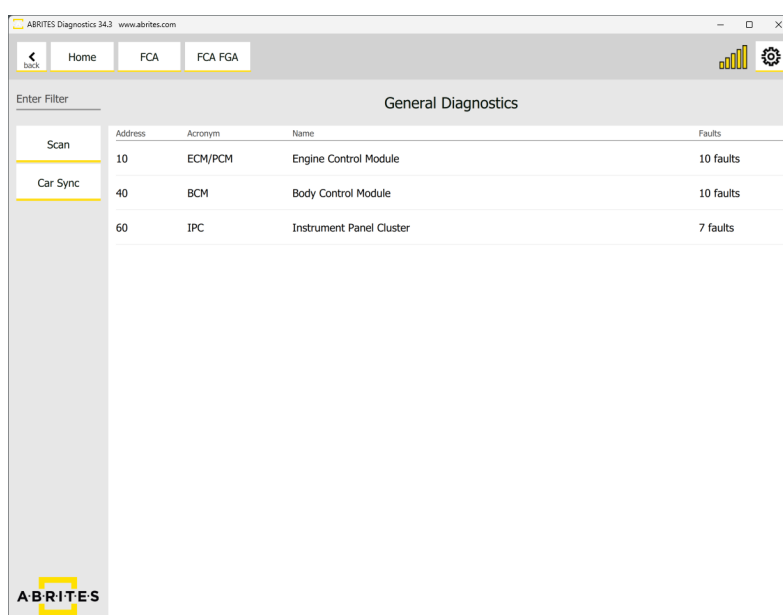
4. General Diagnostic Functionalities

Once started, the software will go through all available protocols and will identify all available modules in the vehicle you are working on. You could then enter each module and you will see all available options for it. Abrites Diagnostics for FCA Online has the following basic diagnostic functionalities:

- Vehicle Scan
- Read/Clear DTCs
- Monitor Live Values 4.2

4.1 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.

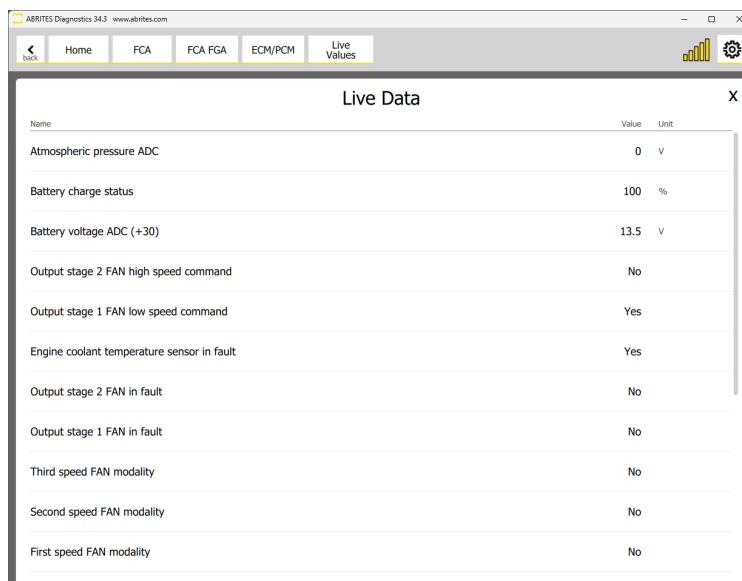
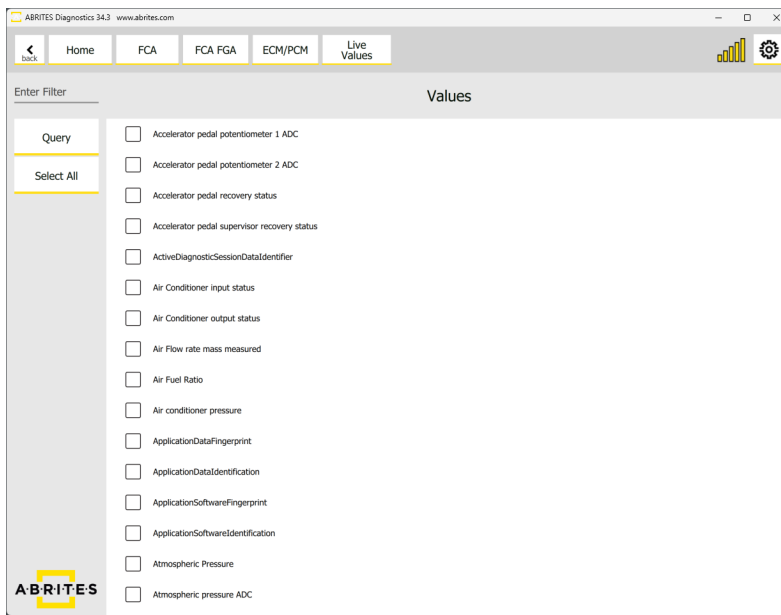


The screenshot shows the 'General Diagnostics' screen in the Abrites Diagnostics software. The interface includes a navigation bar with 'Home', 'FCA', and 'FCA FGA' tabs, and a sidebar with 'Scan' and 'Car Sync' buttons. The main area displays a table with the following data:

Address	Acronym	Name	Faults
10	ECM/PCM	Engine Control Module	10 faults
40	BCM	Body Control Module	10 faults
60	IPC	Instrument Panel Cluster	7 faults

4.2 Monitor Live Values

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 live values for, open it and select “Live values”. A list of the available parameters will be displayed, you can choose certain parameters to monitor, or select all and monitor them in a query mode.



5. Special Functions

The software provides special diagnostic functions in order to assist the user to perform advanced diagnostics on vehicle from the FCA Group. The available special functions are displayed on the left side of the main screen of the software, in a list form in the menu bar. You can open the required special function by clicking on it.

Car Sync is a special function, which lets you synchronize VIN (Vehicle identification numbers) in all modules in your vehicle, thus letting you replace and adapt modules.

Key Learning is another special function available in the Abrites software for Fiat vehicles (FCA) Online, described further in this user manual.



6. Key Learning Special Function

Key learning special function allows you to perform key learning procedures to multiple FCA platforms listed below, and allows PIN code reading and key programming, transponder preparation, and remote control programming:

- BCM Unit with RH850 mcu
- Magneti Marelli BCM (MCU Fujitsu MB91Fxxx)
- Megamos AES mechanical keys (Fiat Pandina 2025+)

6.1 BCM Unit with RH850 MCU

This special function allows you to perform key learning procedures to FCA platform vehicles, which have BCM unit with an RH850 MCU and Atmel-type keys. [Abrites TA70 - Key for FCA vehicles](#) is recommended.

Functionalities:

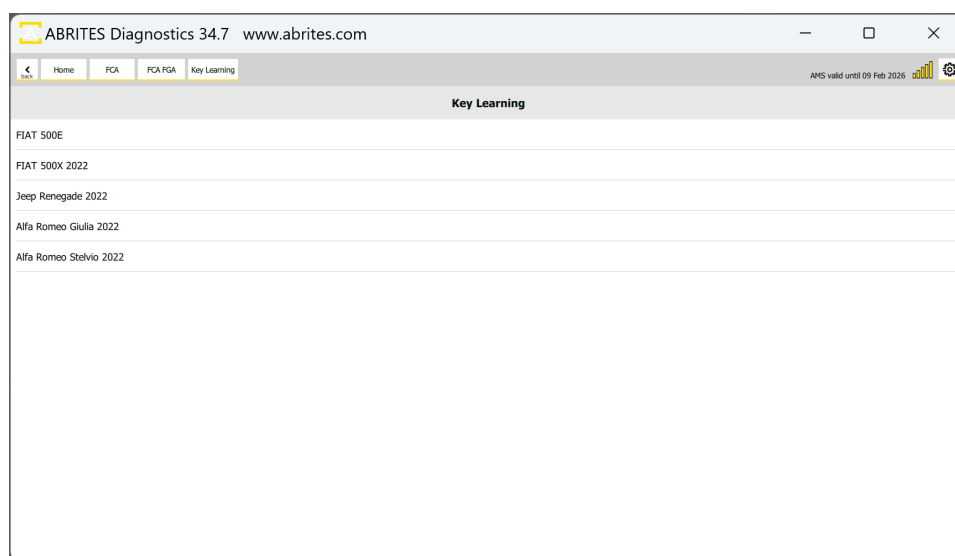
- PIN code reading and Key programming
- Transponders/Keys preparation
- Remote control programming

This special function works together with the ZN085 ABRITES RH850/V850 Programmer. The process of key programming includes reading the dump using the ZN085 Programmer and the corresponding software, then preparing the key via the ABRITES Diagnostics for FCA Online and with the help of the ZN003 PROTAG Programmer and finally, learn the key.

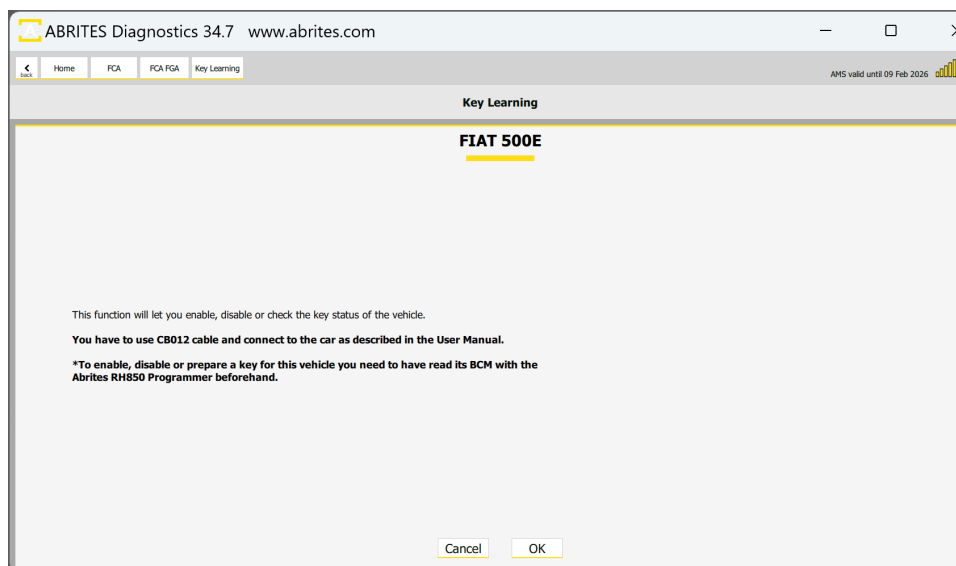
CB012 - Direct CAN-BUS Connection Cable Set is required to establish connection to the internal CAN wires, where the BCM is also connected, and execute the procedure, picture with example available on the next page.

First, you need to have the unit read with the ZN085 programmer, once this step is done, you can install the unit back in the vehicle and proceed to the FCA Online software.

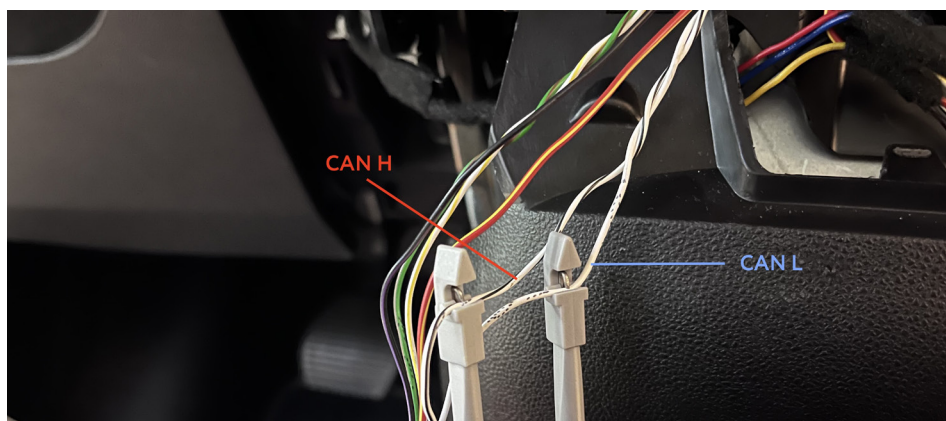
All procedures are guided and with on-screen messages, please make sure you pay attention to what the software is asking for.



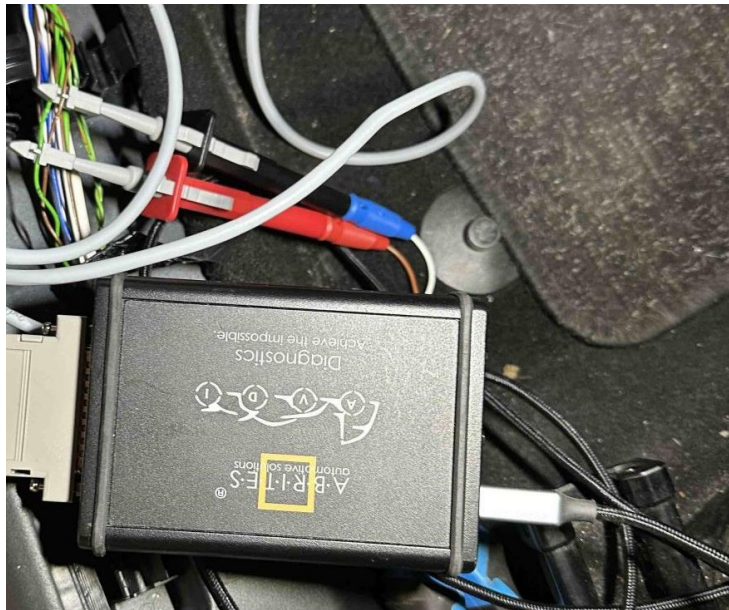
- Prepare Key Fob - prepare the transponder with the use of ZN003 ProTag programmer. If the key is order from an FCA dealer by VIN it should be prepared, so you can skip this step.
- Read Key Fob ID placed on the emergency slot of the vehicle - you can read the information from the key in the vehicle.
- Check Status of Key Fob in ProTag - check the status of the key before proceeding to key learning.
- Disable Key Fobs - Any key fob that is not used in this procedure will be disabled, you will remain only with the present keys working for the vehicle.
- Enable Key Fobs - before this step, make sure you prepare the key with the ZN003 programmer, or use a dealer's key - this step will complete the key learning procedure.



These are the wires that go to the gear selector module, example is in FIAT 500E



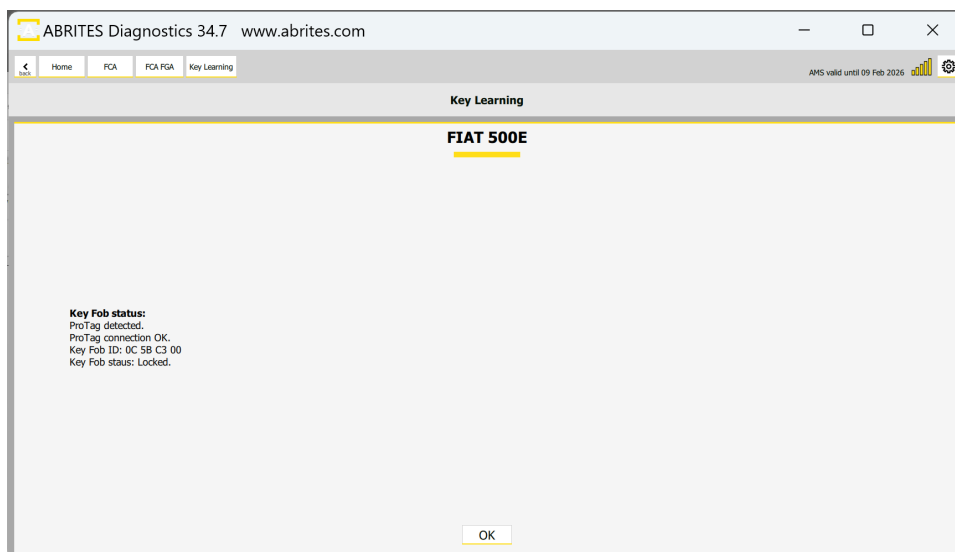
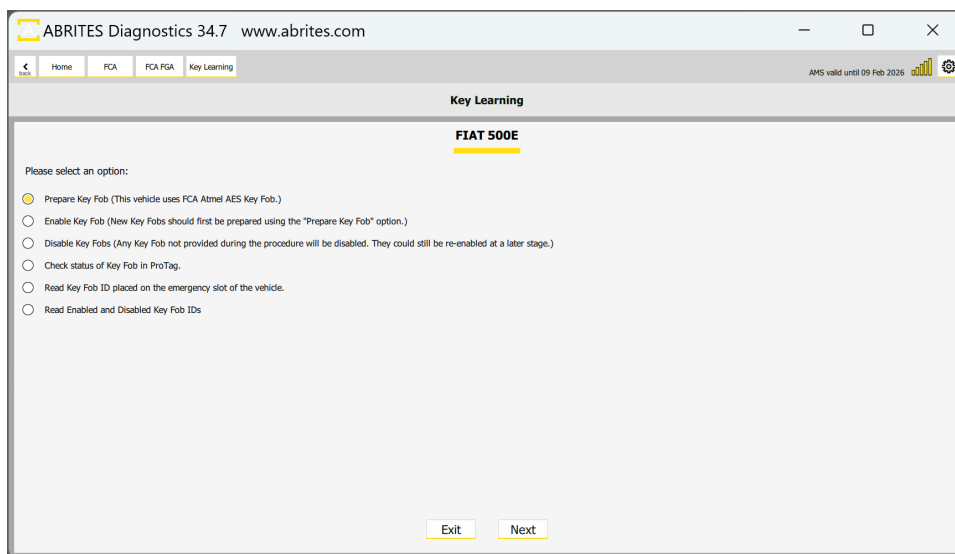
Below you may see an example of CAN connection to Fiat 500X



Alfa Romeo Tonale CAN connection example



Below you can see screenshots from the main key learning screen and the available options, as well as the status of a key in the ProTag programmer



6.2 Magneti Marelli BCM (MCU Fujitsu MB91Fxxx)

This function is intended for vehicles equipped with a Magneti Marelli BCM (MCU Fujitsu MB91Fxxx) that use HiTagAES mechanical keys, and allows you to read the immobilizer data, prepare a transponder and program keys and remote controls, and is executed by dump. For that, you would need to have the dump file read from the Fujitsu MCU ready before starting the procedure.

Connection:

Important: The vehicle may be equipped with or without a Gateway module:

- Without Gateway: the procedure can be performed directly via OBDII.
- With Gateway: CB019 or CB012 is required.

N.B. Please check next page for images



Below are images showing the Gateway location in the Fiat Ducato and all its derivatives:



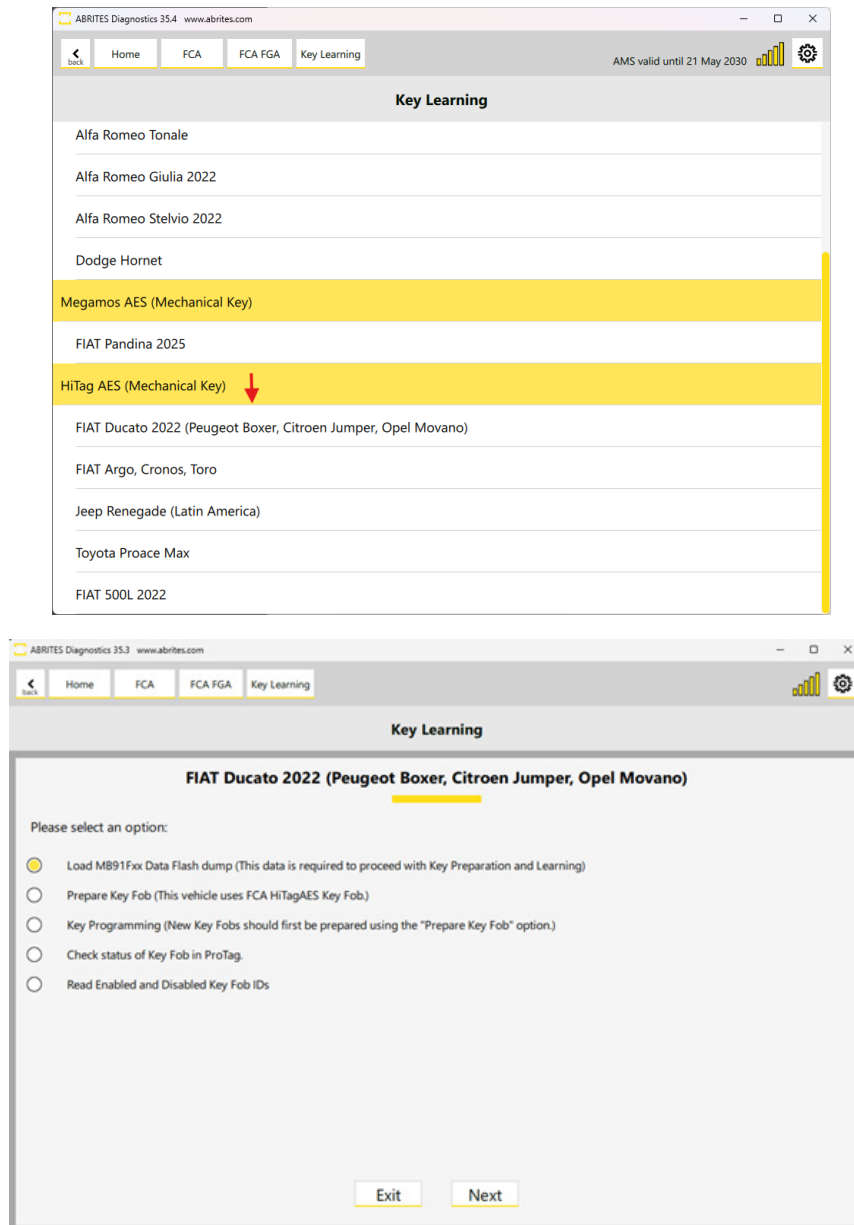
Procedure:

1. Open the FCA Online software > vehicle should be automatically detected > select Key Learning > select vehicle model
2. After connecting to the vehicle, the following steps need to be completed
3. Load Data Flash Dump – load the previously read file.

A confirmation message will appear indicating whether everything is OK and that the vehicle data has been successfully saved.

4. **Prepare Key Fob** – insert a virgin FCA HiTagAES key into the ProTag.
5. **Key Programming** – program the prepared key.

Please follow the on-screen instructions to complete the procedure

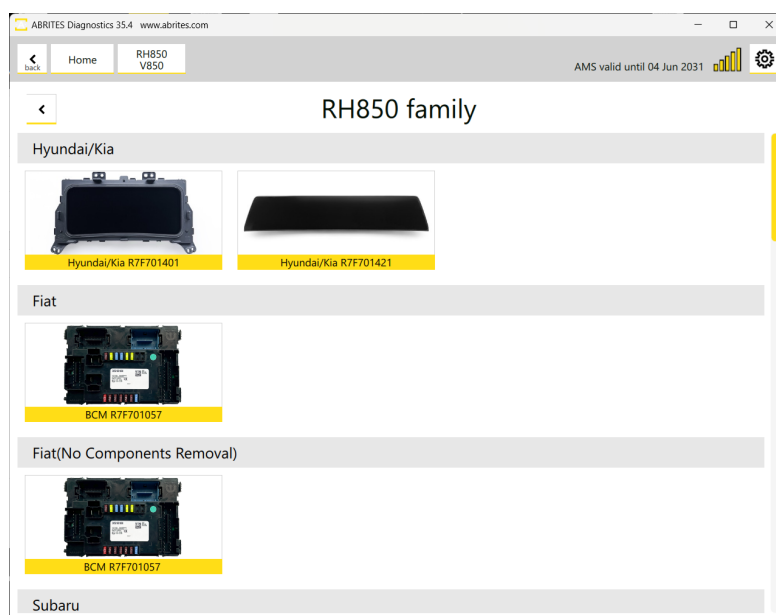


6.3 Megamos AES mechanical keys (Fiat Pandina 2025+)

This procedure requires ZN085 ABRITES RH850/V850 Programmer.

1. The process of key programming begins with reading the vehicle's BCM unit, using the ZN085 Programmer to extract the PIN > Open RH850/V850 software > Select Fiat BCM R7F701057.

Wiring diagram available in the software.



Once unit is read with ZN085 RH850 programmer, reinstall the unit back in the vehicle and proceed with the FCA Online software.

Important: CB012 - Direct CAN-BUS Connection Cable Set is required to establish connection to the internal CAN wires. You can intercept the internal CAN bus behind one of the connectors located near the BCM. The white-green wire from the vehicle's harness is CAN-H (connected to the red connector of CB012), and the brown wire is CAN-L (connected to the blue connector of CB012).

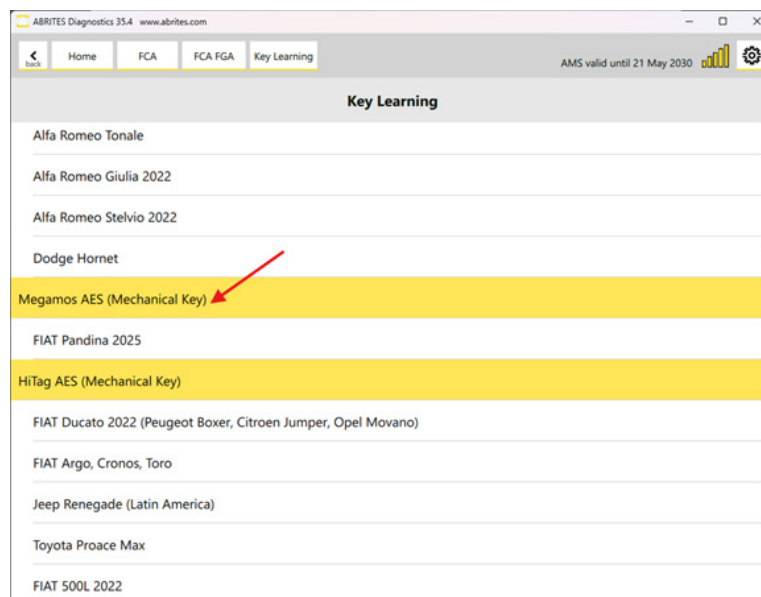


The procedure is user-friendly and fully guided.

Please follow the instructions of the software strictly.

Select the Key learning menu > select the Megamos AES option.

The FCA Online will obtain the PIN automatically from our server and all you need to do is complete the procedure using the ZN003 ProTag Programmer and a compatible virgin key.



7. Car Sync Special Function

The Module Adaptation functionality for ABRITES Diagnostics for FCA software is found under the “Car Sync” special function.

With this new functionality, you will be able to adapt modules unrelated to the immobilizer of Alfa Romeo, Fiat, Jeep, and Lancia vehicles effortlessly. These modules include:

- DISTRONIC
- ABS
- Electric power steering
- Climate control

And many more

The procedure essentially offers a vehicle identification number synchronization between the modules and the vehicle, which makes adaptation procedures of non-immobilizer related modules fast and easy.

This functionality is able to change VIN in all modules of the vehicle, however, we can say it works for module exchange or adaptation only for the non-immobilizer related modules.

*BCM, ECU, RFH modules need more than just VIN Change for adaptation.

Supported Models:

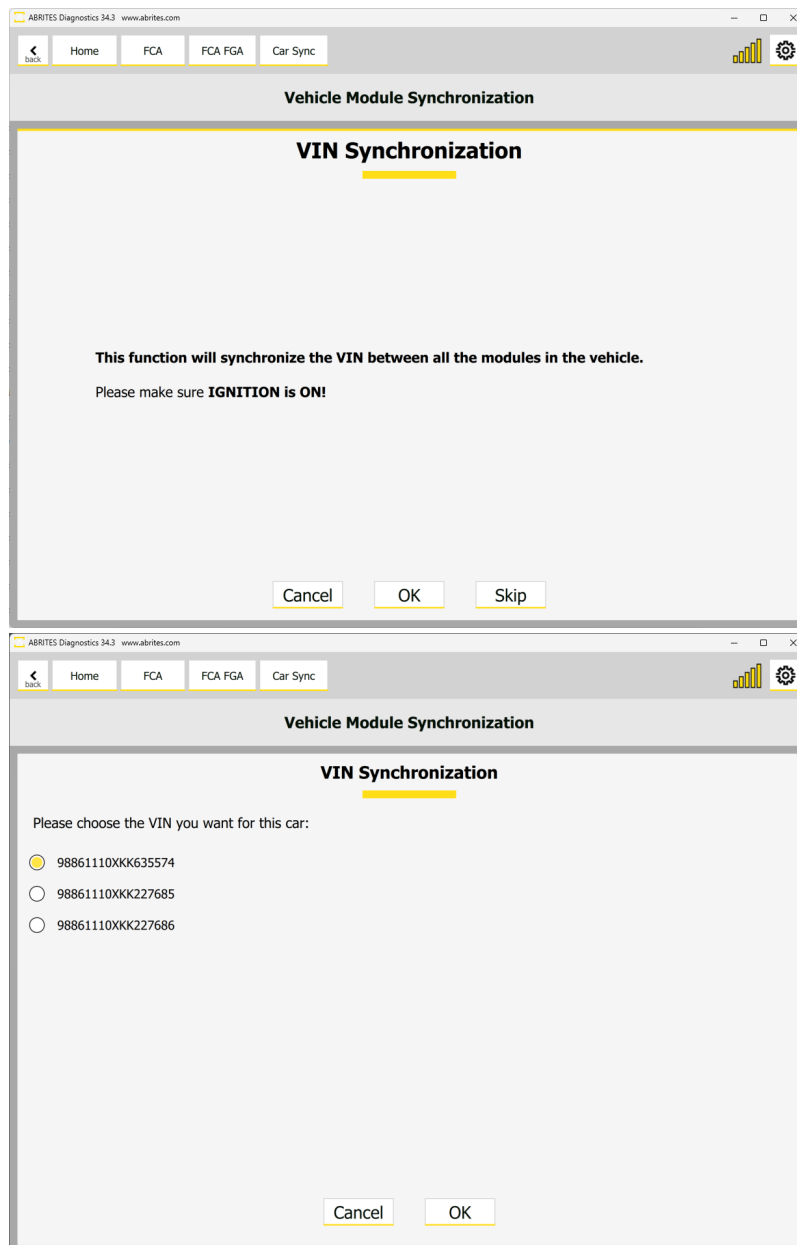
- Alfa Romeo: Giulia, Stelvio, Giulietta
- Jeep: Renegade, Compass
- Fiat: 500, 500L, 500X, Panda 319 MK4 (3rd generation), Doblo 263 (2nd generation), Fiorino/Qubo 255 (3rd generation), Ducato 250 (3rd generation)

Currently models are covered up to 2020, later models are still to be tested.

The procedure for VIN Synchronization is used when you want to adapt a non-immobilizer related module. You can start it from the main diagnostic screen > select Car Sync button on the left side.

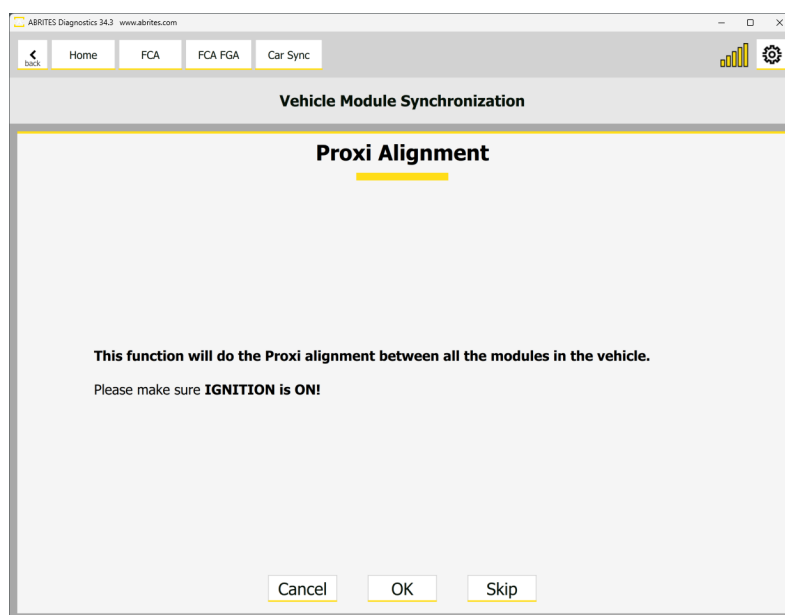
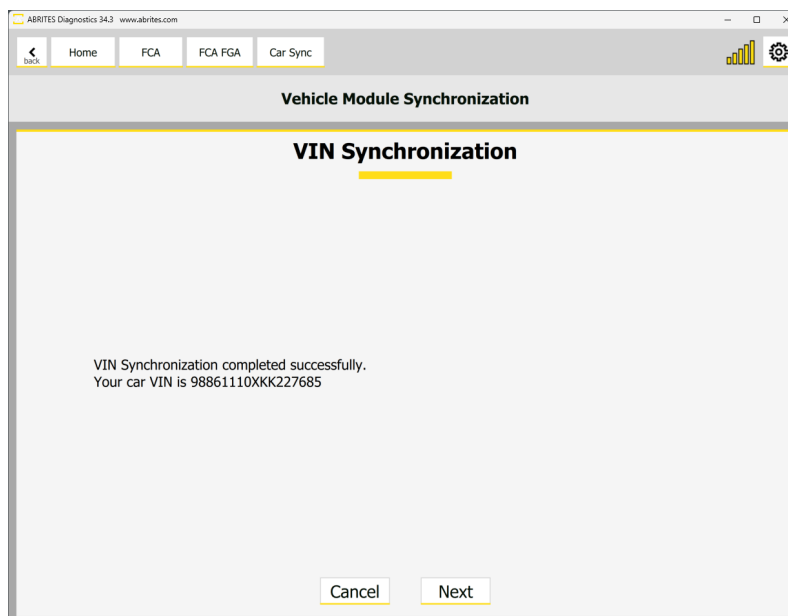
Here is how the procedure is executed:

1. Select "Car Sync" and click OK to start the procedure
2. The software will collect and show the available VINs from the modules in the vehicle
3. Select the VIN that you want to be written in all modules
4. The software will start VIN change/synchronization procedure and proxi alignment



Proxi Alignment is needed after VIN change in FCA vehicle, the procedure does it automatically.

N.B.: If you want to add/remove modules in the car, you will need to change the CAN configuration (proxi) of the vehicle from the Abrites Diagnostics for FCA (Offline). FN021 will be required.



8. Scan VINs Special Function

This special function will let you scan all the modules in the vehicle and get the VIN in each module that has such information available.

In the example below you can see the VIN in the BCM unit of a Fiat vehicle.

This functionality is only informative, for VIN exchange please see Car Sync special function.

