A·B·R·I·T·E·S
automotive solutions

ABRITES RH850/V850 PROGRAMMER

User manual
version 1.0

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.

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:

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 support@abrites.com.

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List of revisions

Date	Chapter	Description	Revision
20.04.2023	ALL	Document created.	1.0

1. Introduction

Congratulations on choosing our wonderful product!

Our new Abrites RH850/V850 programmer is a powerful tool that can read RH850 processors and read/write V850 processors, making it a versatile solution for professionals. As a professional, you know the importance of having the right tools to get the job done right.

In this user manual, we'll walk you through the process of connecting both AVDI and RH850/V850 programmer to your PC, using the software and making the right connections to the electronic units you are working on.

2. General Information

2.1 System requirements

Minimum system requirements – Windows 7 with Service Pack 2, Pentium 4 with 512 MB RAM, USB port with supply 100 mA / 5V +/- 5%

2.2 Supported units

Here is the list of the supported units for reading (electronic units equipped with RH850/V850 processors) and writing (electronic units equipped with V850 processor):

- VDO MQB Analogue Instrument Cluster V850 70F3525
6V0 920 731 A, 6V0 920 700 B
- VDO MQB Analogue Instrument Cluster V850 70F3525
6C0 920 730 B
- VDO MQB Analogue Instrument Cluster V850 70F3526
6C0 920 740 A, 6C0 920 741, 6V0 920 740 C
- VDO MQB Analogue Instrument Cluster V850 70F3526
3V0 920 740 B , 5G0 920 840 A , 5G0 920 961 A , 5G1 920 941
- VDO MQB Analogue Instrument Cluster V850 70F3526
5G0 920 860 A
- VDO MQB Virtual Cockpit V850 70F3526
- 5NA 920 791 B, 5NA 920 791 C
- VDO MQB Analogue Instrument Cluster RH850 R7F701402
- VDO MQB Virtual Cockpit RH850
- Renault HFM RH850
- Renault BCM RH850

2.3 Additional licenses required for completing the job

- Mileage calibration of VAG electronic units with V850 processor – VN007 license is required
- Key programming of VAG electronic units with V850 processor – VN009 license is required
- Key programming of VAG electronic units with RH850 processor – VN021 license is required
- Key programming (All Keys Lost) for Renault vehicles with RFH/BCM with RH850 processor – RR026 license is required.

List of supported models and part numbers:

Audi:
Q3 - 81A920940A
A3/S3/Q2 - 8V0920860E, 8V0920860G, 8V0920860N/P, 8V0920861/A/H/N, 8V0920870H, 8V0920872B, 8V0920960A, 8V0920960B, 8V0920960H, 8V0920960M, 8V0920961C
Q2L - 8V0920740B

VW:
Golf 7: 5G0920640A, 5G0920860/A, 5G0920861/A, 5G0920871A, 5G0920950, 5009209604, 5G1920640A, 5G1920640G, 5G1920641A, 5G1920656B, 5G1920730B, 5G1920731A, 5G1920740, 5G1920740A, 5G1920740B, 5G19207400, 5G1920740D, 5G1920741, 5G1920741A, 5G1920741B, 5G19207410, 5G1920741D, 5G1920750D, 5G1920751B, 5G19207510, SG1920756A, 5G19207560, 5G1920790, 5G1920790A, 5G1920790B, 5G1920791, 5G19207914, 5G1920791B, 5G1920795B, 5G1920840, 5G1920840A, 5G1920840B, 5G1920841, 5G1920856, 5G1920931, 5G1920940B, 5G1920940C, 5G1920941C, 5G1920941D, 5G1920957, 5GG920630, 5GG920630A, 5GG920630B, 5GG920630C, 5GG920640A, 5GG920640B, 5GG920640C, 5GG920640D.
Sportsvan/GTI: 51G920630, 51G9206308, 51G920630C, 516920656A
Magotan: 3G0920740A, 3G0920741A, 3G0920741B, 3G0920741C, 3G0920741D, 3G09207514, 3G0920751C, 3G0920751B, 3G0920790C, 3G0920791A, 3G0920791 B, 3G0920791C, 3G0920791D, 3G0920941B, 3G0920951A, 3G1920794C, 3GD920640/A/B/C, 3GD920640D, 3GD920650/A/B.
CC: 3GG920650, 3GG920650A
Tayron: 55G920640, 55G920650

T-Roc: 2GA920740, 2GD920640, 2GD920640A, 2GD920790A
Jetta: 31G920850A, 17A920740, 17A920840
Sagitar: 17G920640
Bora/C-Trek: 19G920640, 19G9206404, 19G920650, 19G920650A
Variants: 3G0920650A, 3G0920650B, 3G09206506, 3609206500
Polo: 6RD920860G, 6C0920730/A/B/C/F/G/, 6C09207314, 6C0920740/A, 6C0920740C, 6C0920740E, 6C0920741A, 6C0920741C, 6C0920741E, 6C0920746/B, 600920746B, 6C0920940A/E, 6C0920941A, 6C0920946C, 6RF920860Q, 6RE920861/B/C, 6RF920862B, 6RU920861
Lamando: 5GD920630, 5GD920630A, 5GD920640, 5GD920640A, 5GD920640B, 5GD920650, 5GD920730, 5GD920750, 5GD920790, 5G6920870, 5GE920870.
Teramont: 3CG920791, 3CG920791A, 3CN920850, 5NG920650, 5NG920650B, 5NG920650C/D
Tiguan L: 5NA920750A, 5NA920751, 5NA920790B, 5NA920790C, 5NA920791, 5NA920791A, 5NA920791B, 5NA920791C, 5NA920850B, 5NA920891B, 5ND920650A/B, 5ND920650C.
Touran: 5TA920740A, 5TA920740B, 5TA920741A, 5TA9207514, 5TA920751B.
Tharu: 2GG920640
Passat: 56D920861, 56D920861A, 56D920871, 56D920871A, 3GB920640/A/B/C, 3GB920790.
Lavida/ Cross Lavida/ Gran Lavida: 19D920640, 18D920850/A, 18D920860/A, 18D920870A.

Skoda
Fabia: 5JD920810E
Rapid/Rapid, Spaceback: 32D92085X, 32D92086X
Kamiq: 18A920870/A
Karoq: 56G920710, 56G920730/A/C
Kodiaq: 56G920750/A
Octavia: 5ED920850/A, 5ED920850B, 5ED920860B, 5E09207B0, 5E0920730B, 5E09207800, 5E0920730E, 5E0920731, 5E0920731B, 5E0920740, 5E0920741, 5E0920750, 5E0920756E, 5E0920780B, 5E0920780C, 5E0920780D, 5E0920780E, 5E0920780F, 5E09207818, 5E0920781C, 5E09207810, 5E0920781E, 5E0920781F, 5E0920861B/C, 5E0920871C, 5E09209610, 5E0920981E, 5JA920700, 5JA920700A, 5JA920741, 5JA9207A7E.
Superb: 3V0920710, 3V0920740A, 3V0920740B, 3V0920741B, 3VD920730, 3VD920740A, 3VD920750, 3VD920750A, 5F0920740D, 5F0920741D, 5F0920861, 5F0920862A, 5F0920862F, 6V0920700A, 6V0920710, 6V0920740, 6V0920740A, 6V0920741A, 6V0920744, 6V0920746B, 6V0920946C.

Seat:
Toledo: 6JA920730H, 6JA920740F, 6JA920740H, 6JA920741F.
Ibiza: 6P0920730B, 6P0920731A, 6P0920740, 6P0920741A, 6P0920640B.

3. Hardware

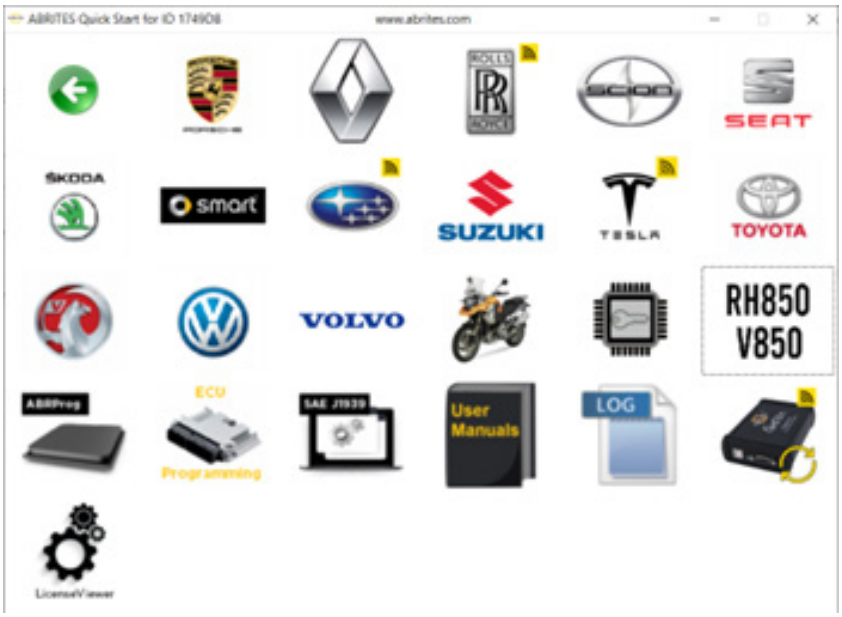
The set consists of ZN085 Abrites programmer for RH850/V850, 5V/1A power adapter, USB-C to USB-A cable and Dsub connector intended for establishing a connection with the electronic units (soldering is necessary)

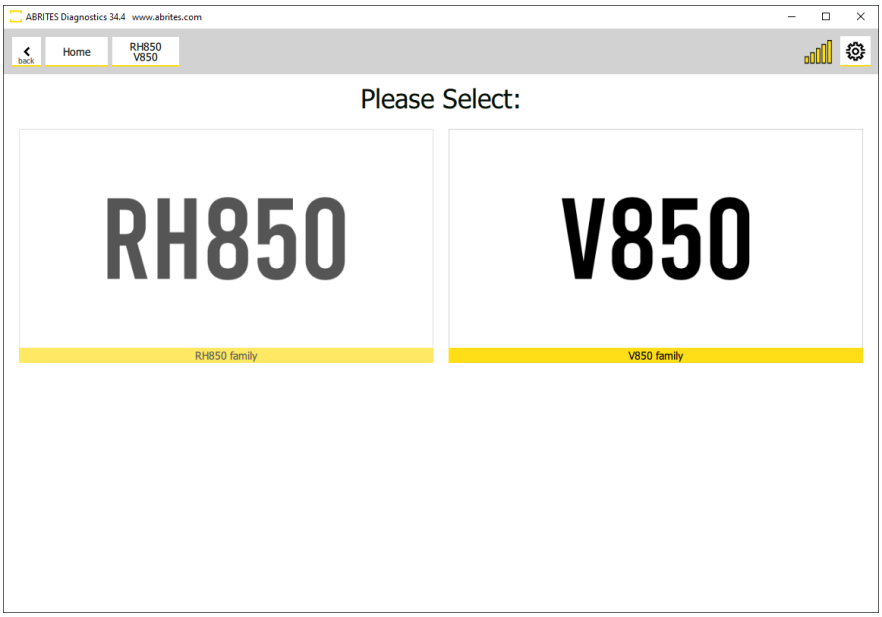
N.B: For the optimal performance of the Abrites RH850/V850 programmer we strongly recommend using the USB-C to USB-A and power adapter supplied by Abrites only. We have tested our software thoroughly with this specific cable and adapter and can guarantee its compatibility with our product.

If other cables or adapters are used, there may be unexpected behavior of the software, which could lead to errors. Therefore, we advise against using any other cables or adapters to connect our programmer to your PC.

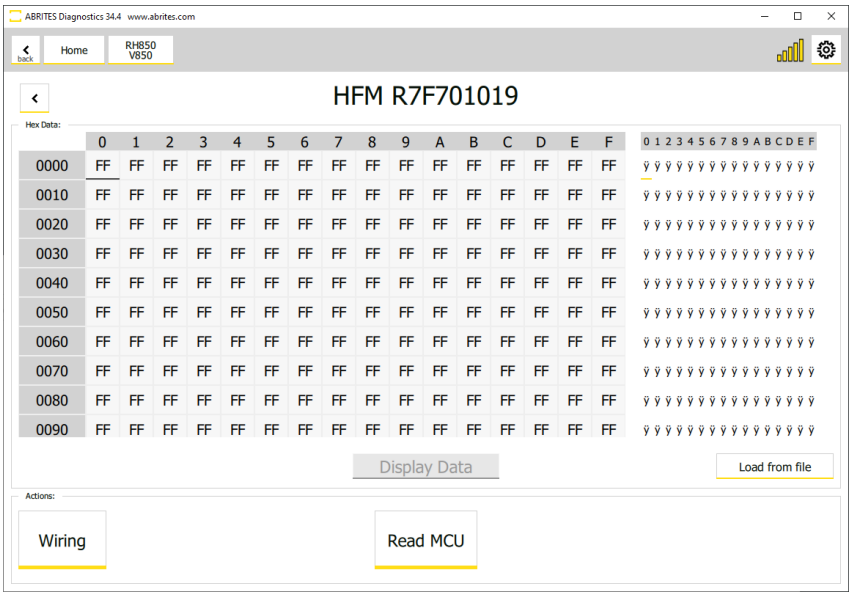
4. Using the software

After connecting both the Abrites programmer for RH850/V850 and AVDI to the PC via USB ports, launch the Abrites Quick Start Menu and click on the “RH850/V850” option. Once you open the software you will have the opiton ti choose the MCU type you are working with - RH850 or V850. Please select the icon of your choice.

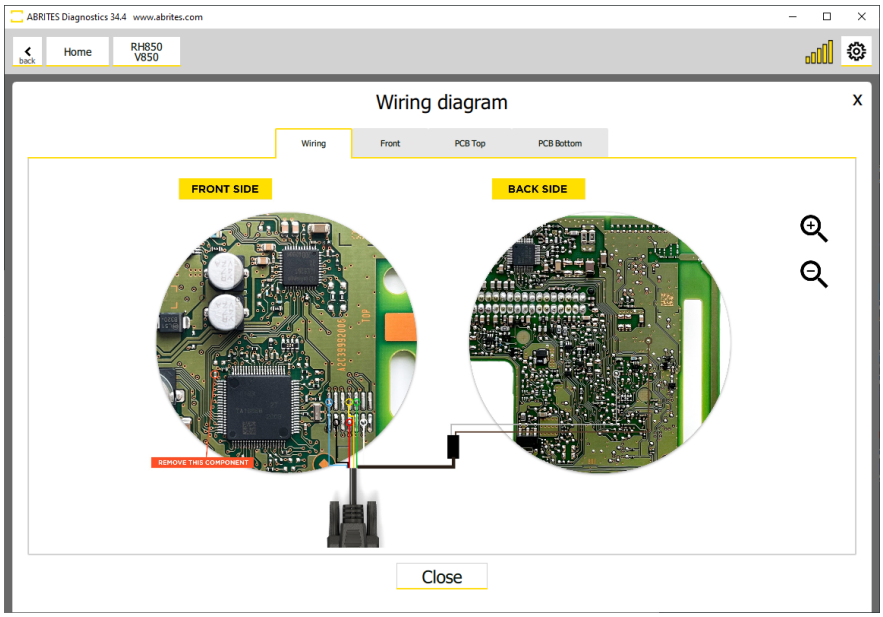




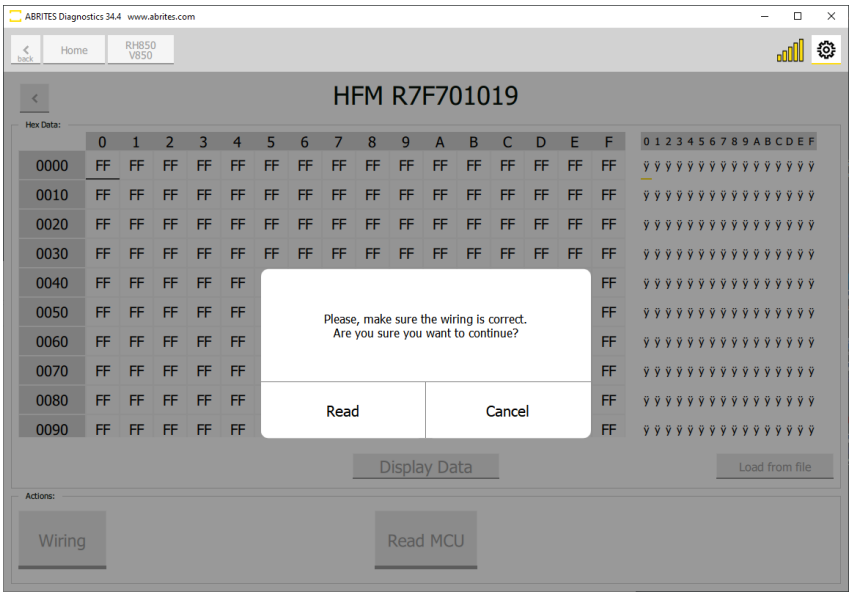
Next screen will show you the available units with the chosed MCU type, and you need to make your selection. In the example below we use Renault HFM. Once the unit is selected, you will see the main screen, which gives you the option to read to see the connection diagram, read the MCU, or load a file.

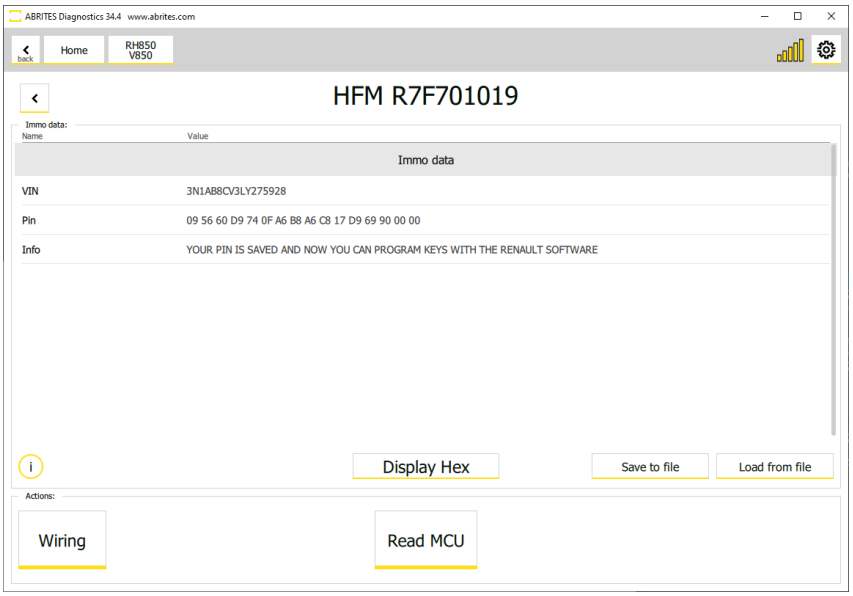


The button “Wiring” will give you everything that is needed for connection to the selected unit.



Once ready with the connections you can proceed to reading the unit by pressing the “Read MCU” button. Once the unit is read, the software will display the available information and you will see a screen like the one below (note that in this case we are using Renault HFM; VAG dashboards will display different information)

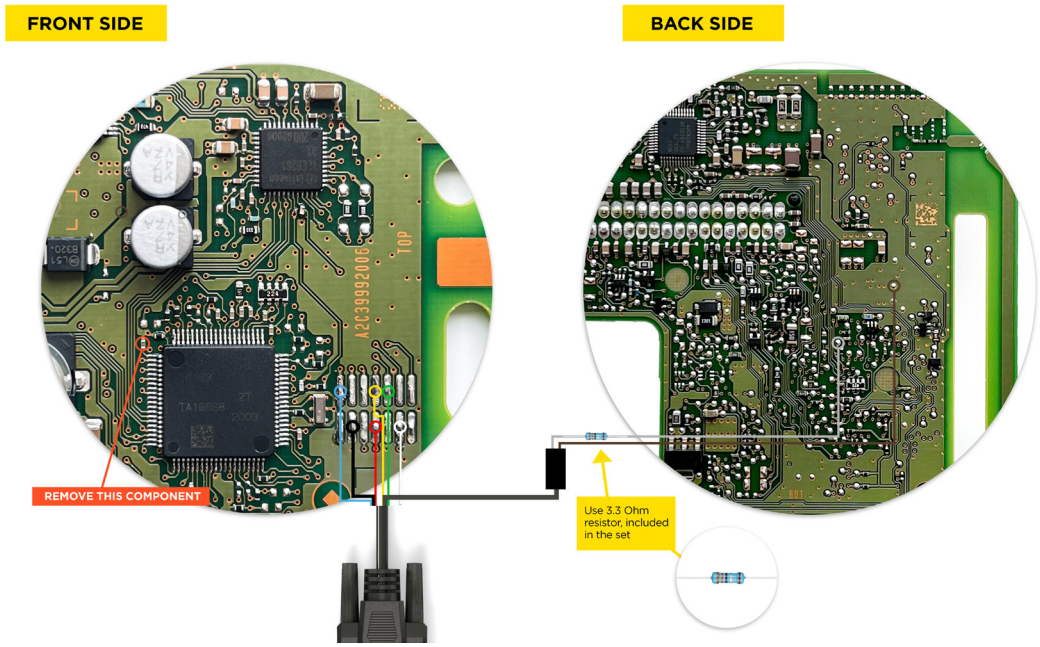




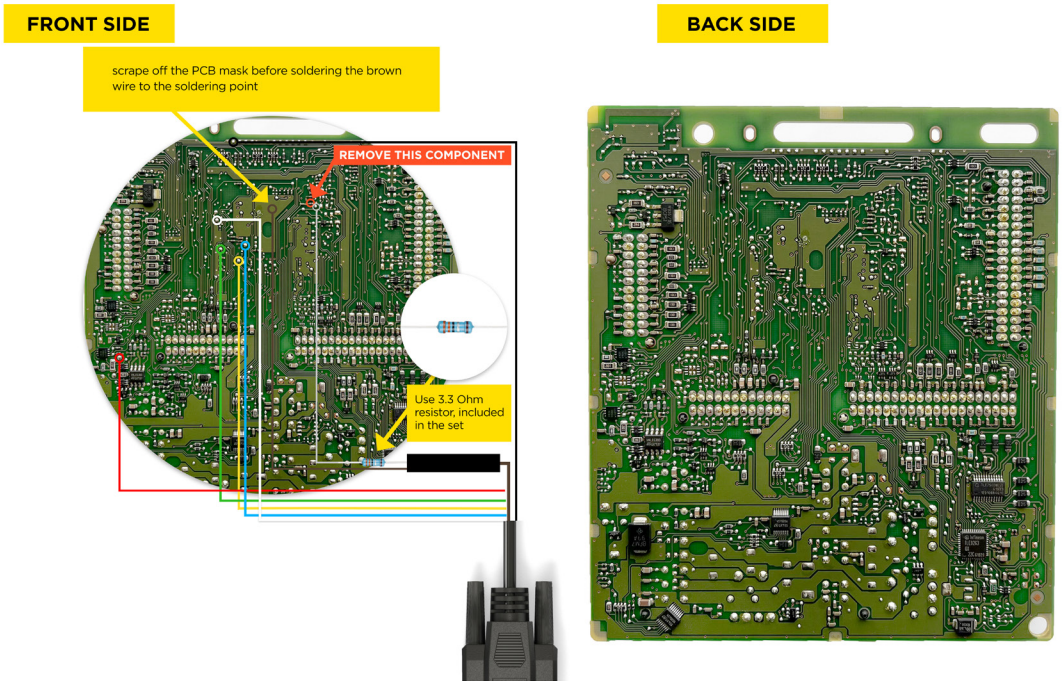
5. Connection diagrams

5.1 Connection diagrams for units with RH850 processor:

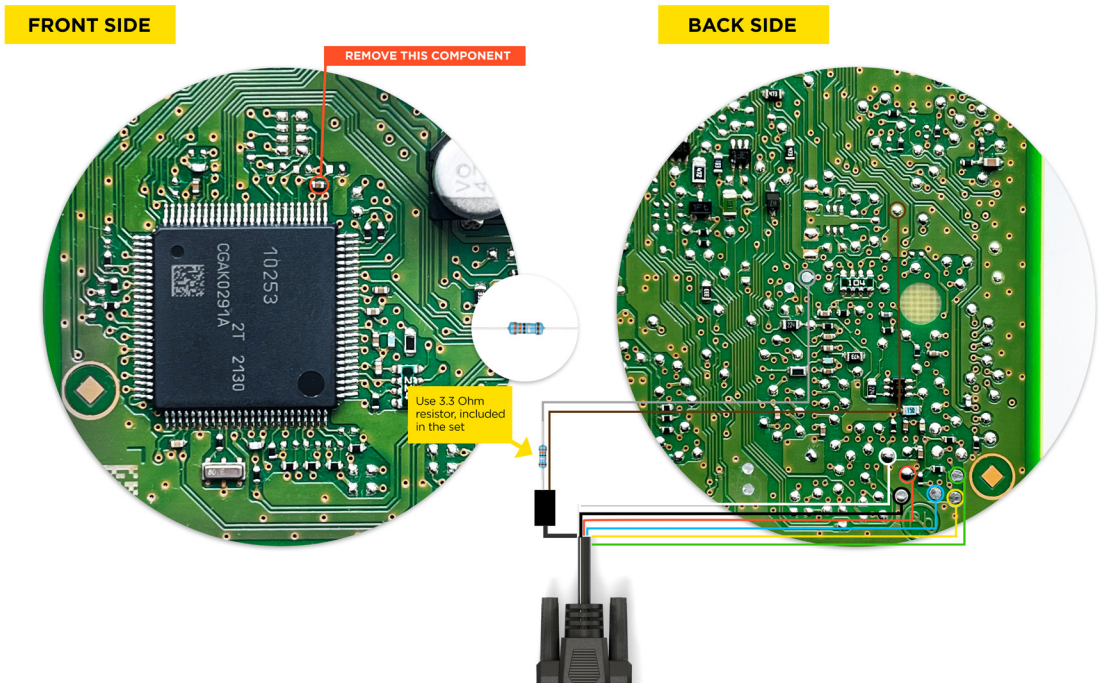
Renault old HFM RH850



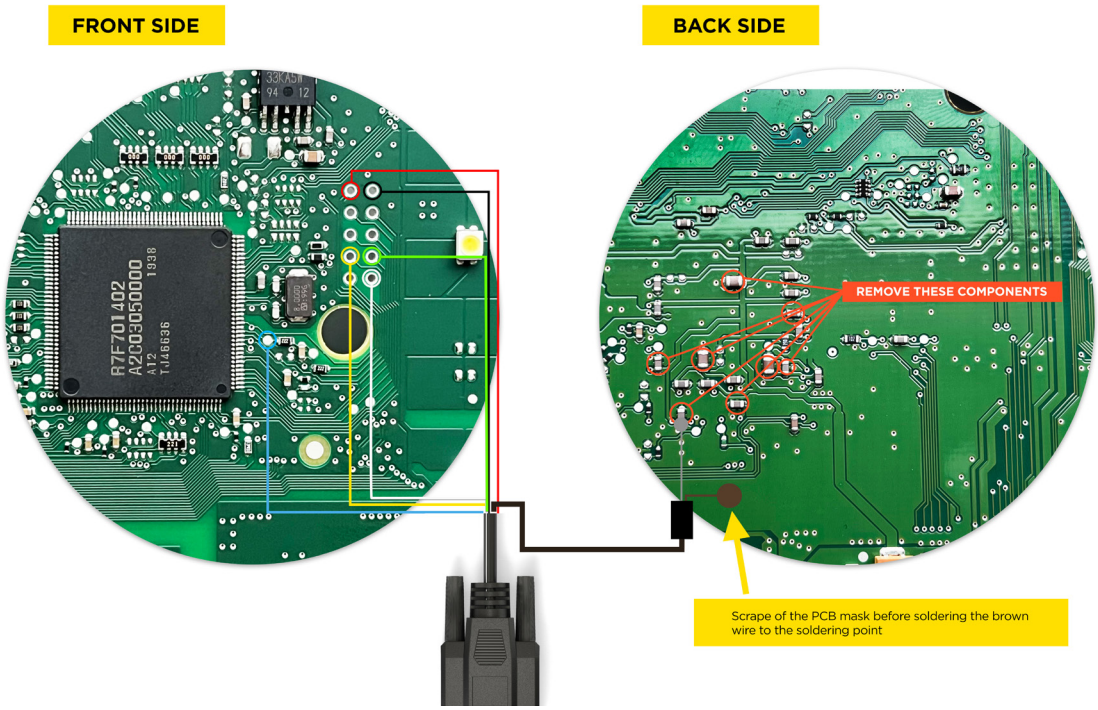
Renault BCM RH850



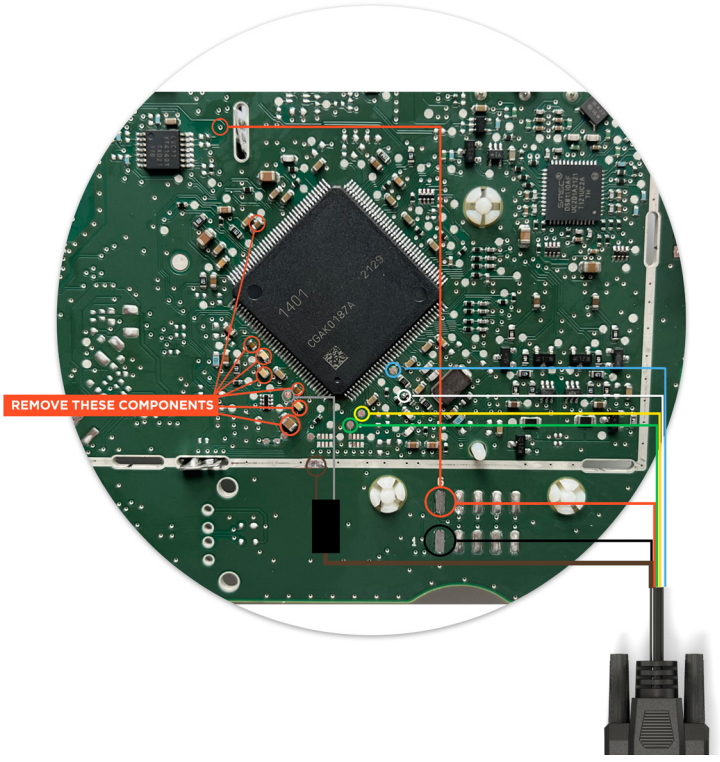
Renault HFM new (no BDM) RH850



VDO MQB Analogue Instrument Cluster RH850 R7F701402



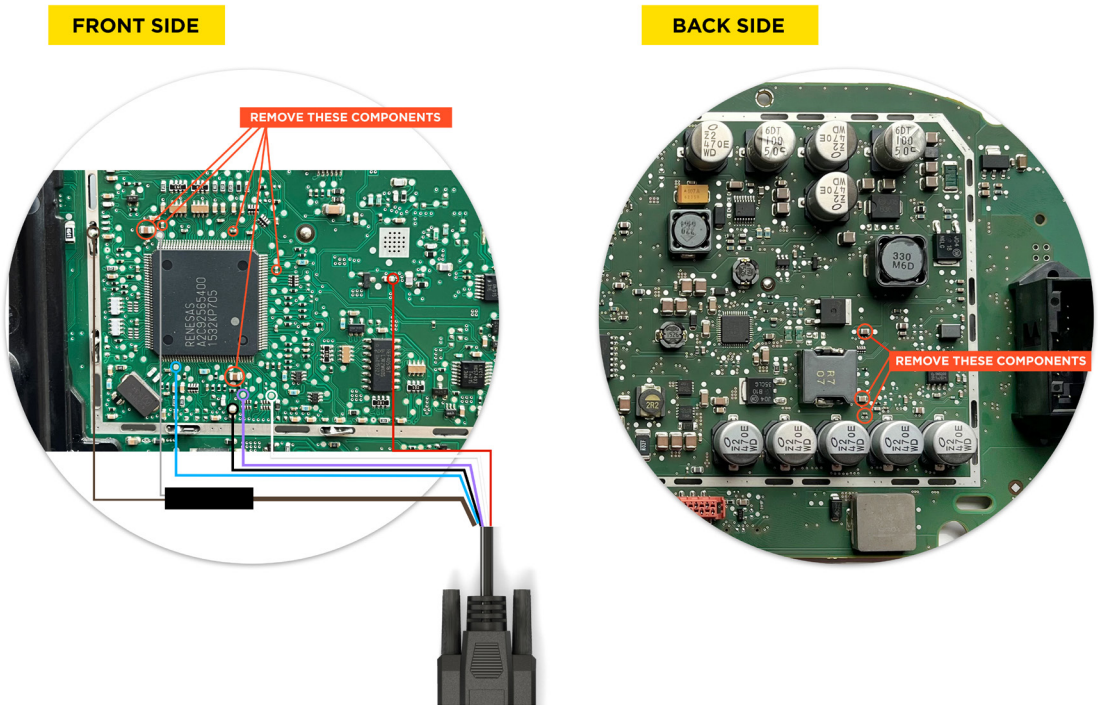
VDO MQB Virtual Cockpit RH850 1401 83A920700



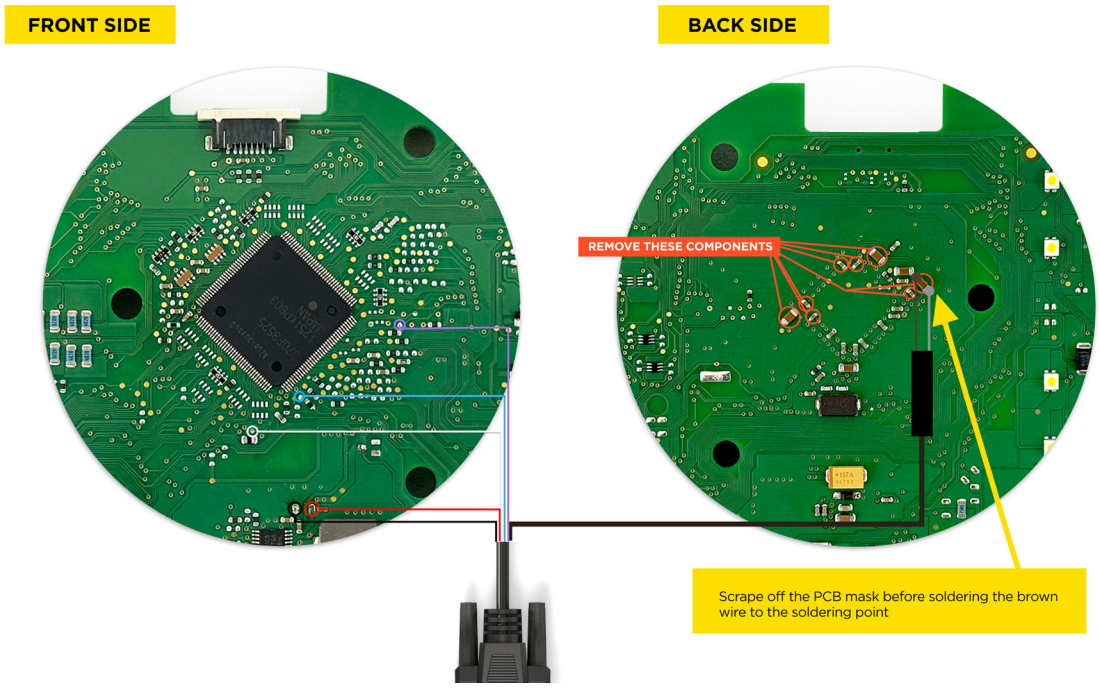
5.2 Connection diagrams for units with V850 processor:

VDO MQB Virtual Cockpit V850 70F3526

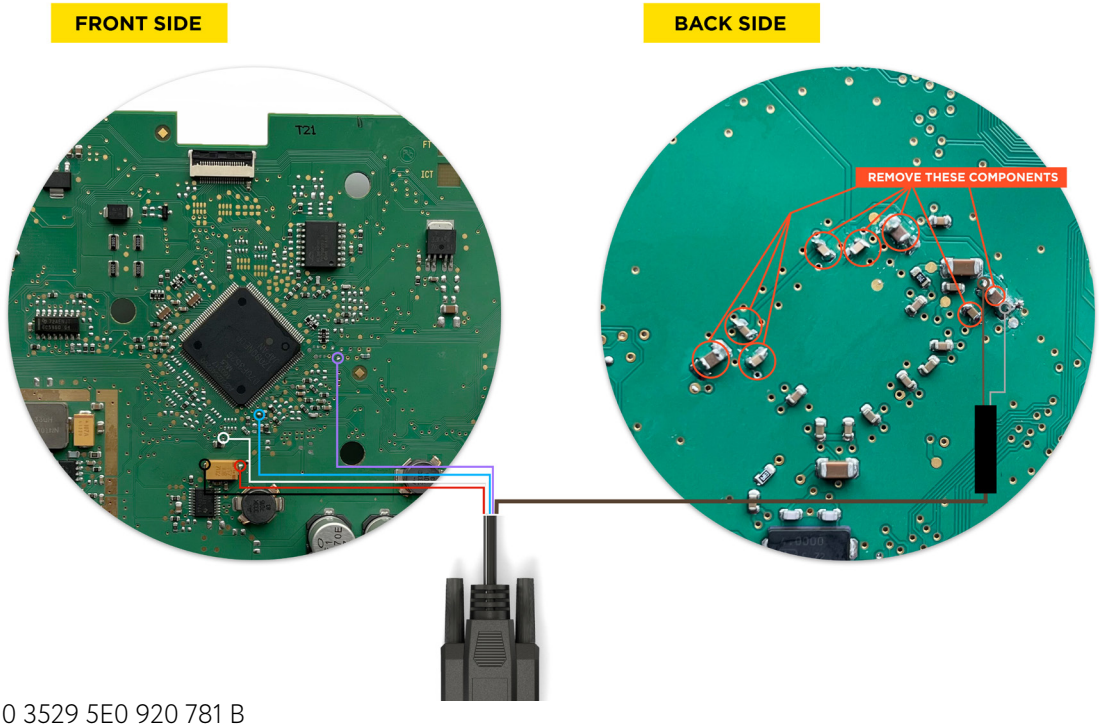
*At times, the processor identification “70F3526” may not be present, and in such cases, it may be necessary to compare the printed circuit board (PCB) with the PCB shown below



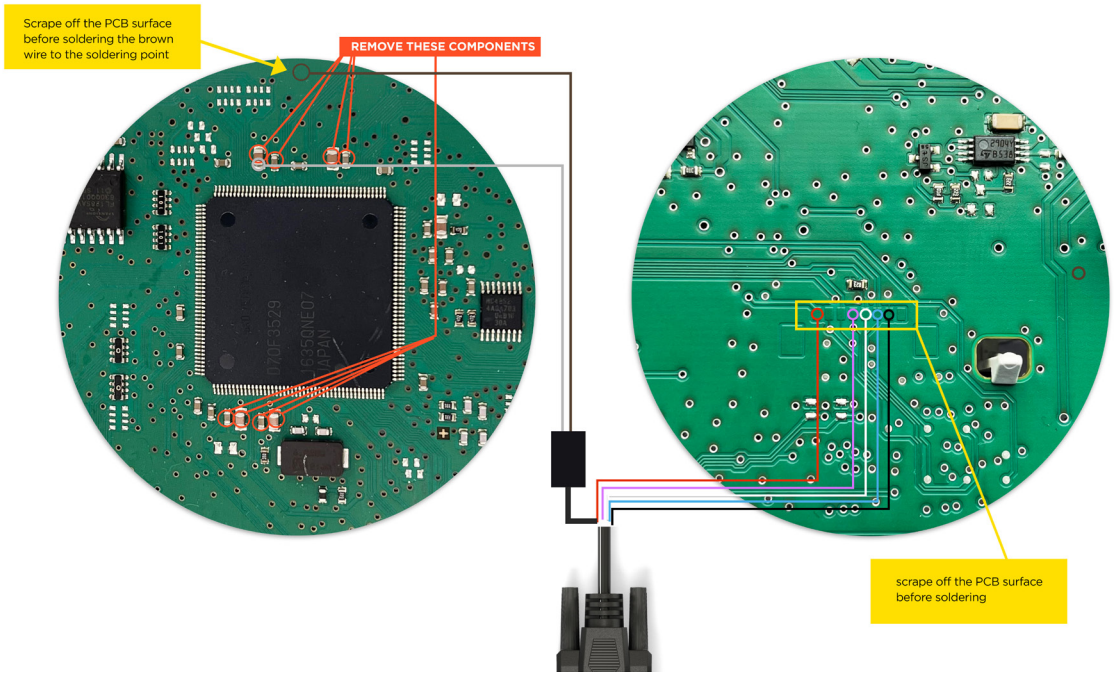
VDO MQB Analogue Instrument Cluster V850 70F3525



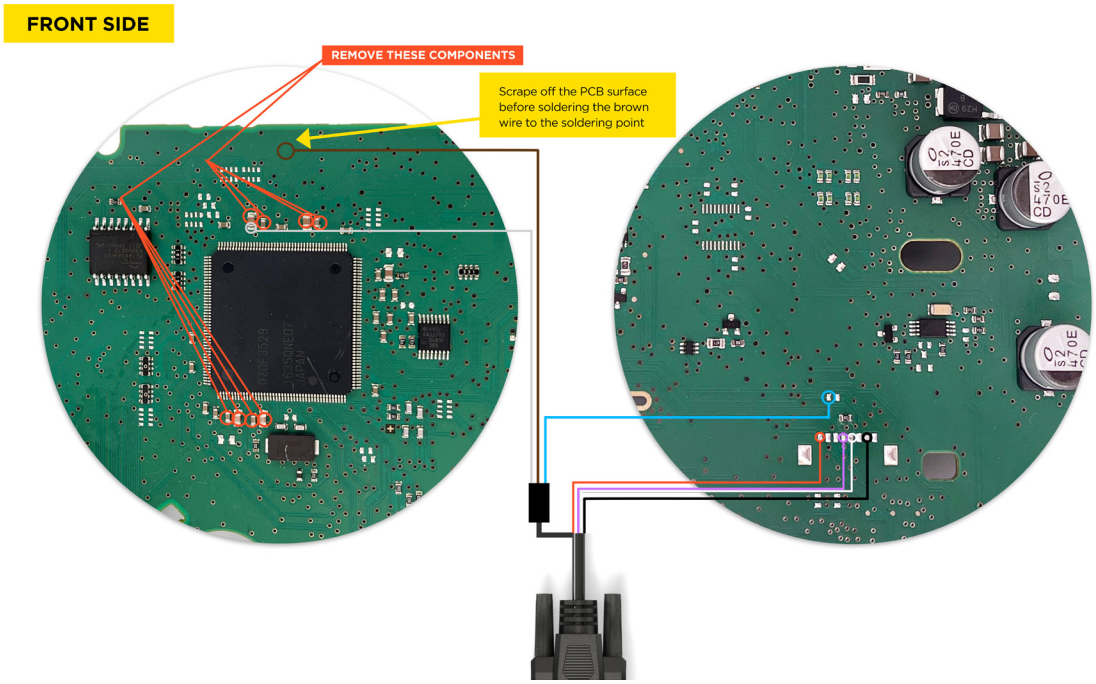
VDO MQB Analogue Instrument Cluster V850 70F3526 5G0920860A-6V0 920 740 C



V850 3529 5E0 920 781 B



VAG MQB V850 3529 - JCI (Visteon) Analogue (5G1920741)



VAG V850 3537