Achieve the impossible

Abrites Diagnostics for Hyundai/KIA
User Manual

Version: 1.2

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List of Revisions			
Date	**Chapter**	**Description**	**Revision**
27. September. 2015	ALL	First version of the document.	1.0
05. May. 2017	3.1.1	3.1.1 Reading PIN using a working key an TA31	1.1
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1. Introduction

"Abrites Diagnostics for Hyundai/ KIA" is a Windows PC based diagnostic software for Hyundai and KIA vehicles. With the help of this software you can perform complete diagnostic operations on all vehicles of the brands.

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.

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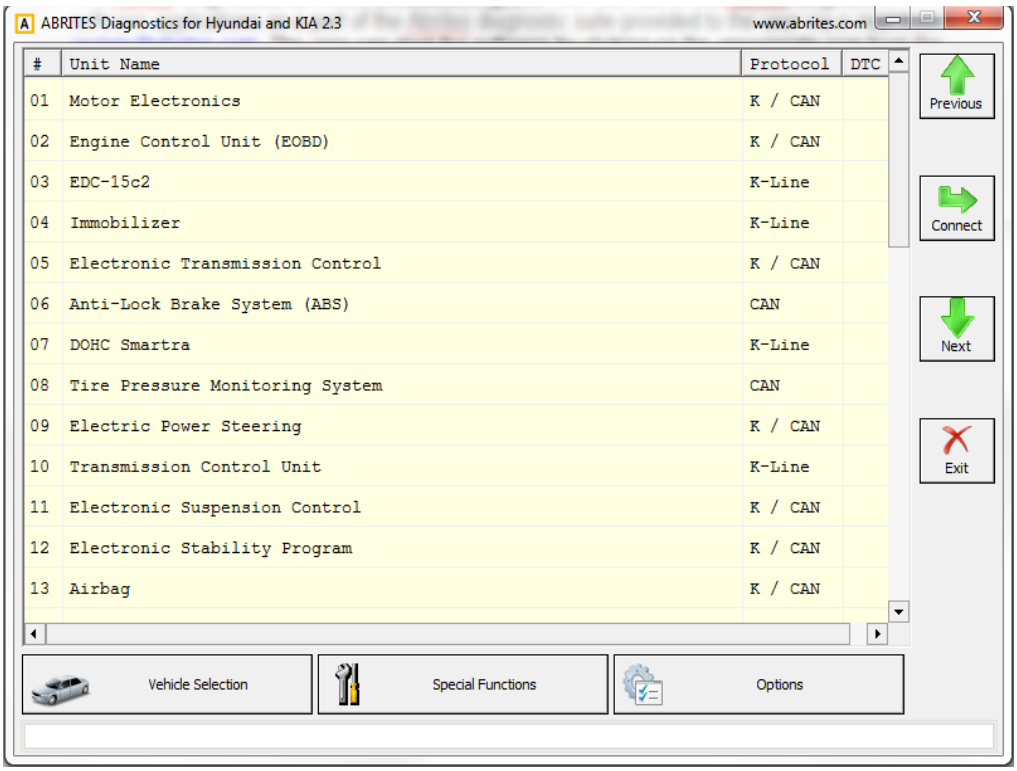
2. Using the Abrites diagnostics for Hyundai/ KIA

The Abrites diagnostics for Hyundai/ KIA 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.

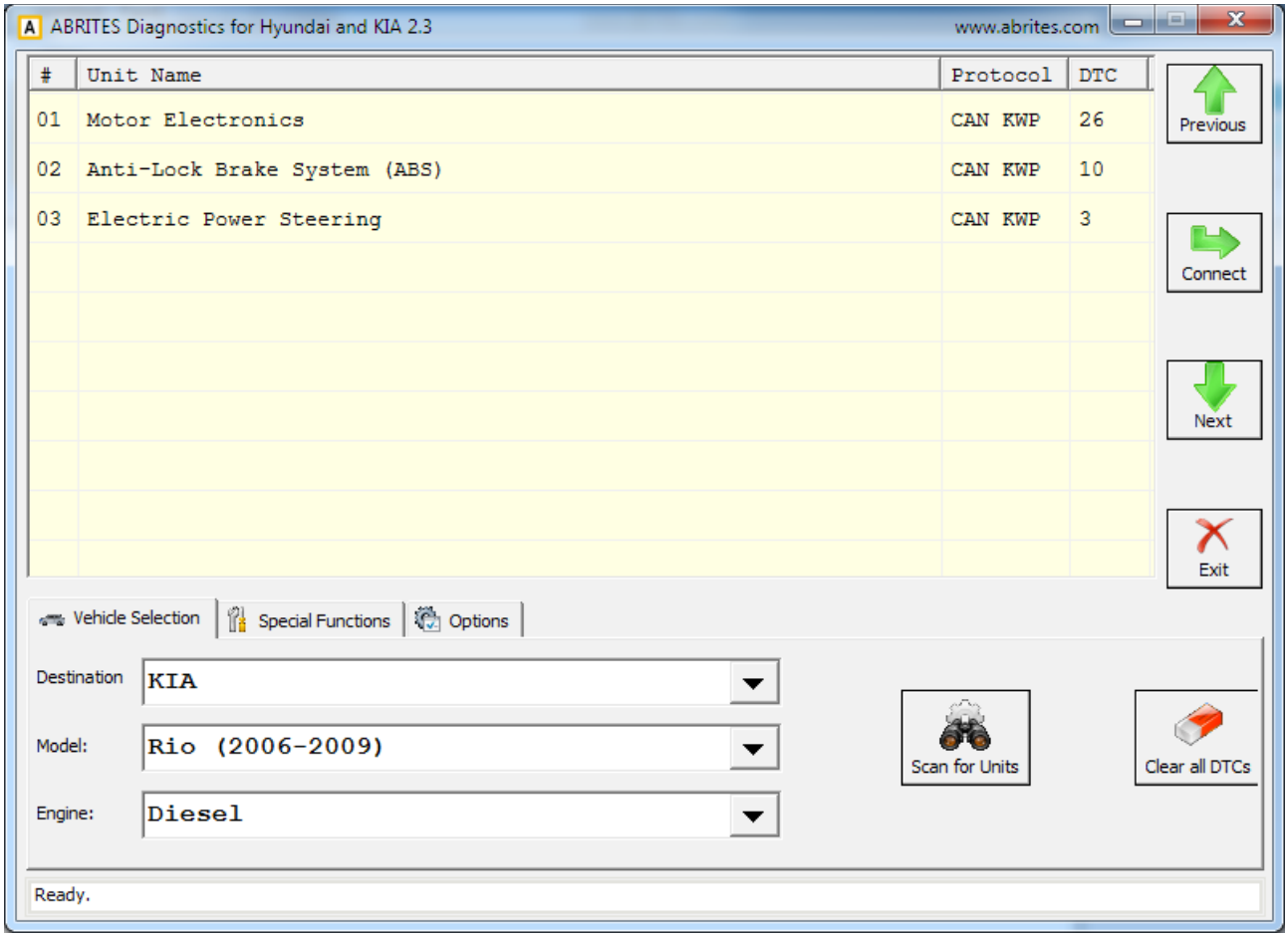
Once the software is selected the user will see the following screen:



This is the main diagnostic screen of the software. It contains the navigation buttons and provides a list of all the electronic modules that March be integrated into Hyundai and Kia vehicles.

2.1 Diagnostics

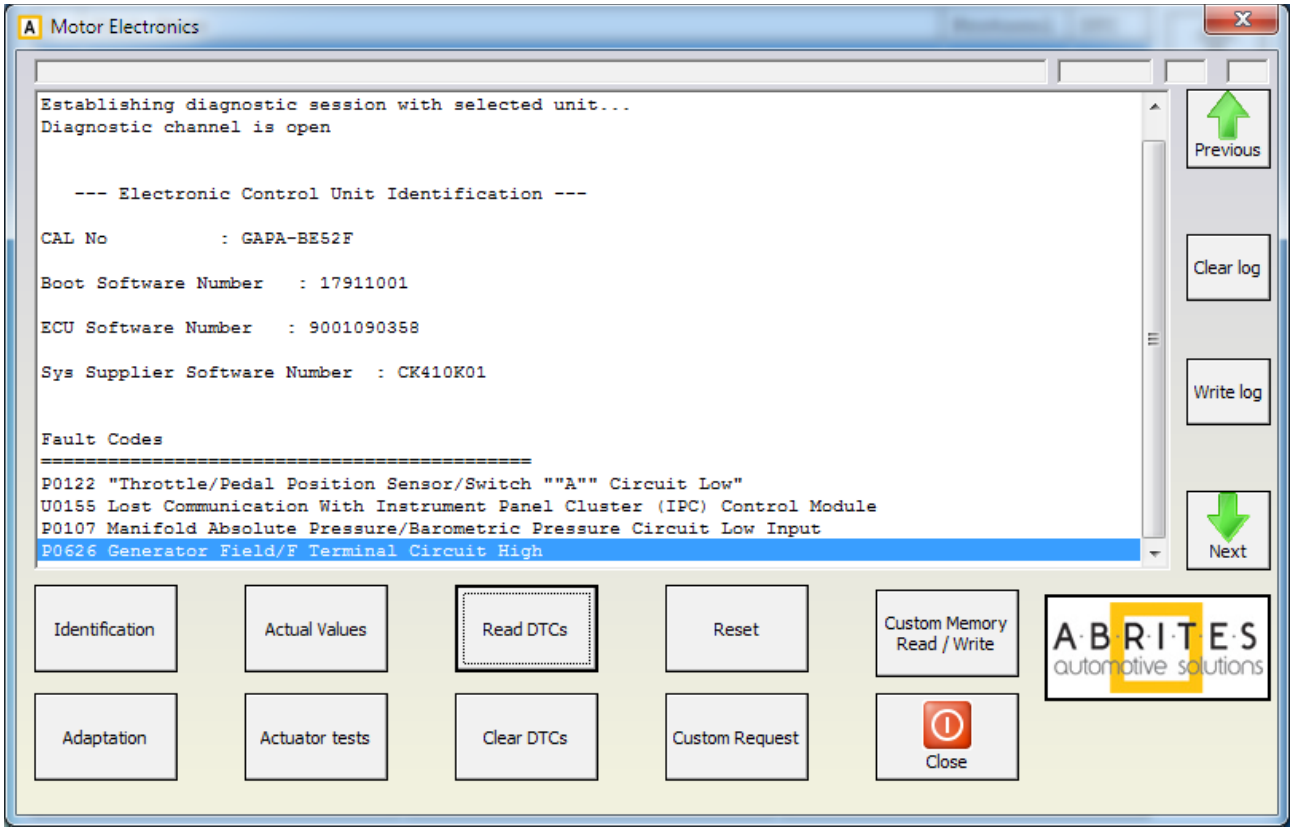
In order to perform basic diagnostic operations such as module identification, reading and clearing of diagnostic trouble codes (DTC) and live data measurement the vehicle model should be selected.



Once the vehicle is selected the Abrites diagnostics for Hyundai and Kia will display all the possible modules that may be integrated into this specific vehicle. It will display all the protocols in which these electronic components communicate.

In order to begin diagnostics the Scan for units button needs to be selected. Then the software will begin testing all the electronic modules. It will display them and the DTCs they contain.

Once the diagnostics is complete the user can choose to enter each specific electronic module within the tested vehicle.



- The Identification button will provide full module identification i.e. make, model, date of manufacturing, etc.

- The Actual values button will show the actual values of the current vehicle in real time.

- “Read DTCs” will show the current diagnostic trouble codes for the selected electronic module.

- The Adaptation button will show the options for unit adaptation.

-" Actuator tests" will allow the user to test various actuators within the selected electronic unit.

- Clear DTCs will clear the diagnostic codes present in the module.

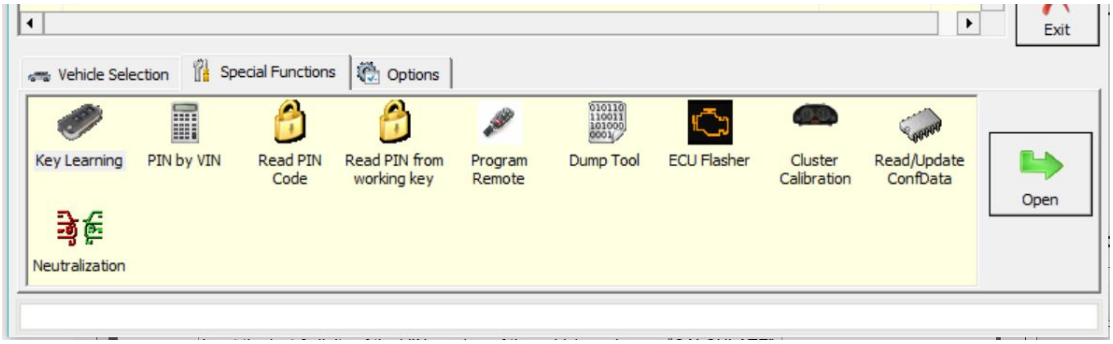
- "Custom request" allows advanced users to send binary signals to the modules.

- "Custom Memory Read/ Write" lets the user update the configuration of the unit.

- "Reset" will reset the module.

3. Special functions

The Special functions included in the Abrites diagnostics for Hyundai and Kia are designed to assist the user to perform specific operations also known as advanced diagnostics.

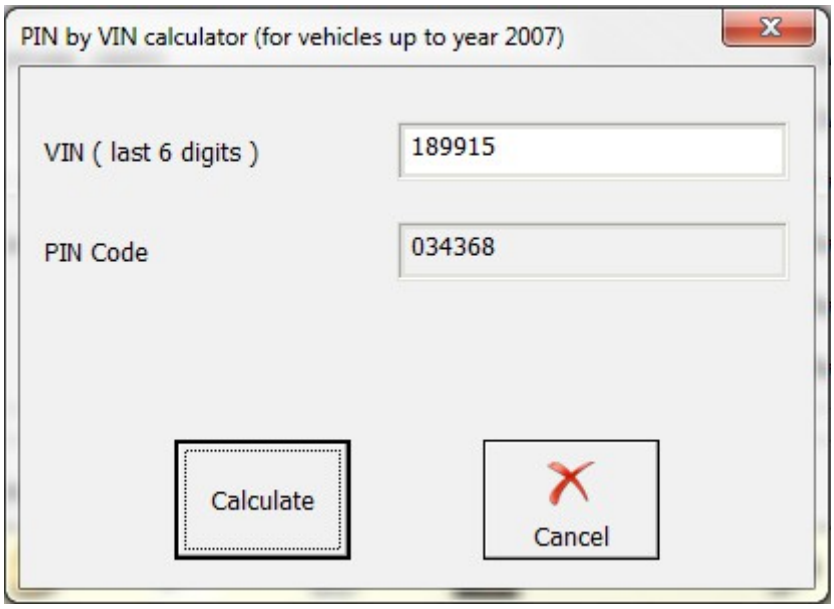


3.1 Key Learning

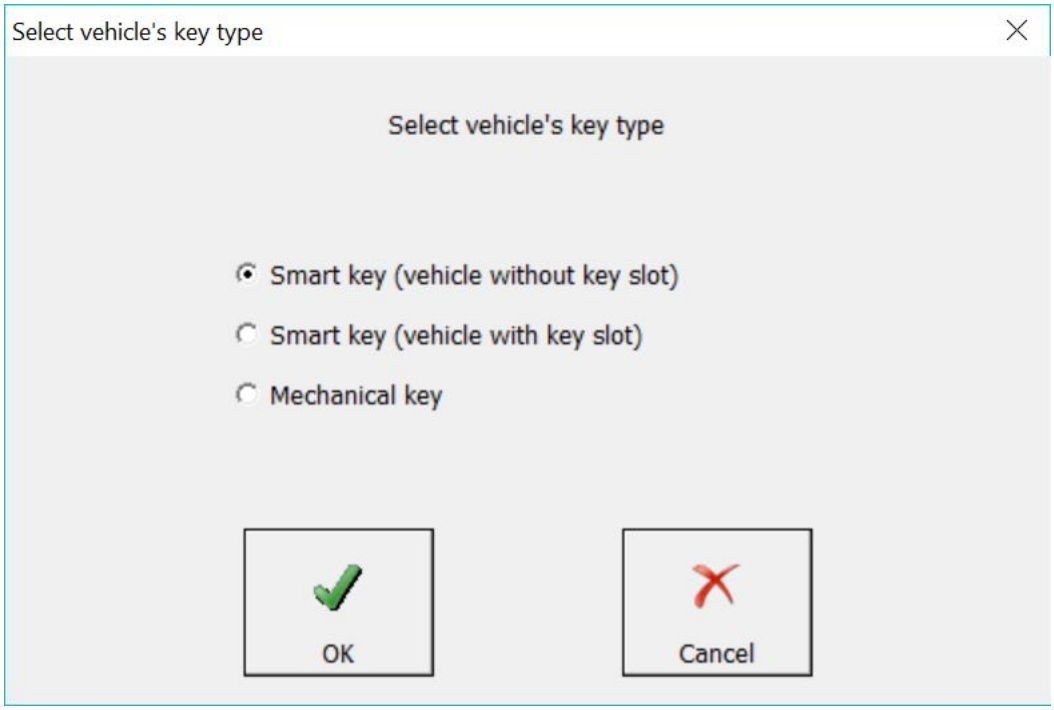
This special function allows the user to perform key programming for the vehicles from the Hyundai and KIA brands. It is used with or without the PIN by VIN function (which allows the PIN code for key learning to be calculated using the VIN number of the vehicle) or using the Read PIN code function (which extracts the PIN code from the vehicle). The functions allows key programming on cars equipped both with keyless or mechanical keys.

- PIN code extraction by VIN.

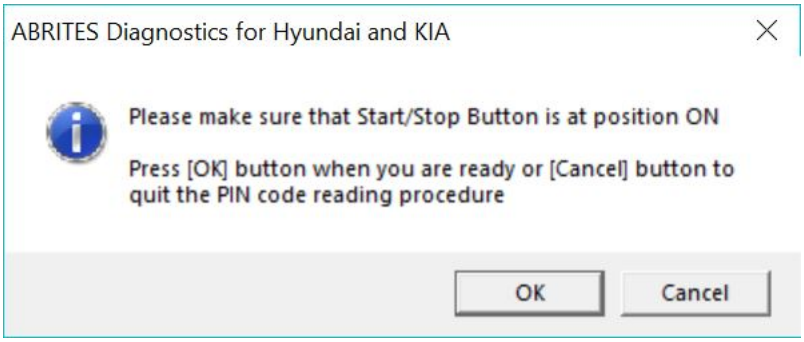
Input the last 6 digits of the VIN number of the vehicle and press "CALCULATE".



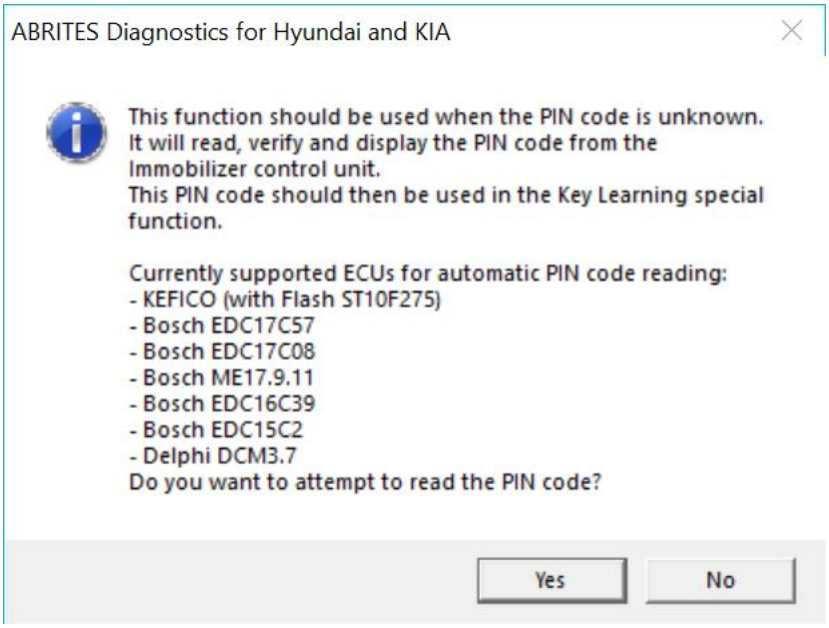
- PIN code extraction from the vehicle.
When this function is selected the user should selct the key type of the vehicle:



When tha Smart Key type is selected, you need to follow the software on-screen instructions:



If the mechanical key type is selected, ensure that the message is read and that its content corresponds to the vehicle:

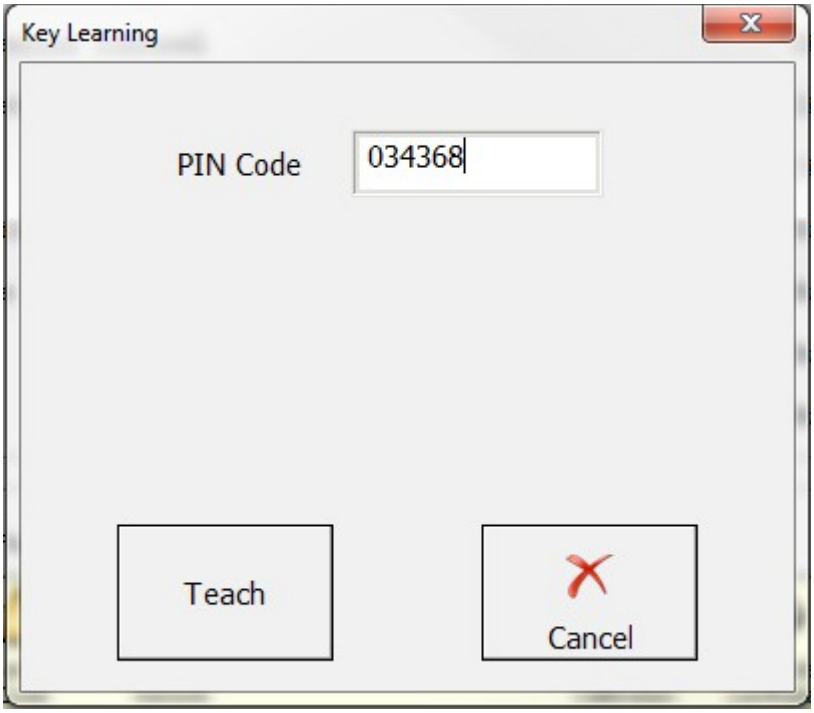


After that is done the software will calculate the PIN code and provide it to the user.

- Key learning.

Once the PIN code of the vehicle has been retrieved the user can proceed to perform key learning.

When the key programming option is opened the user should see the following screen:



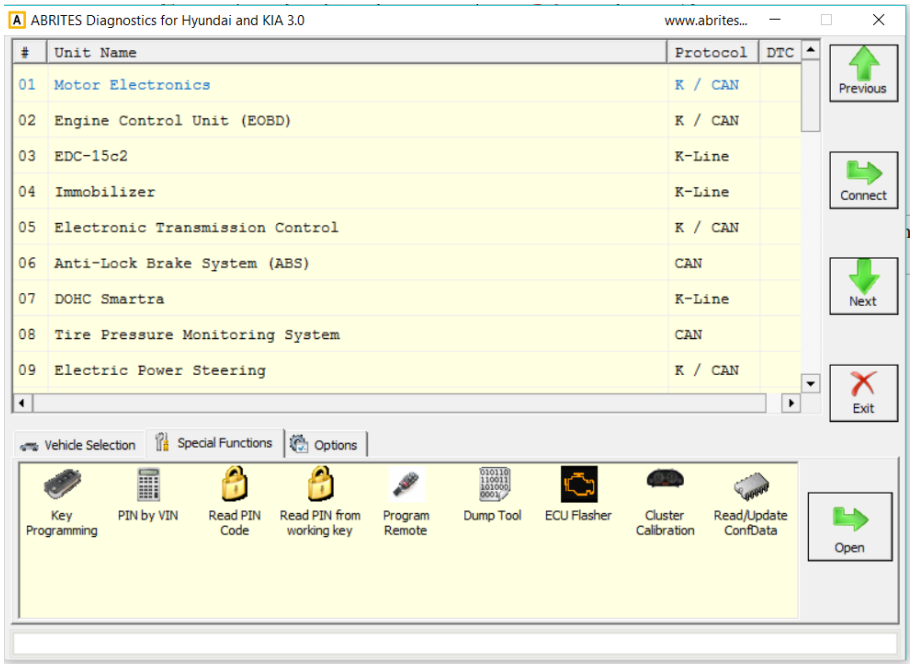
At this point the user should place the key in the ignition and press “Teach”. Once that is done the user should follow the onscreen instructions closely and read each message that comes up carefully.

3.1.1 Key programming and reading PIN using a working key, ProTag and TA31 extractor.

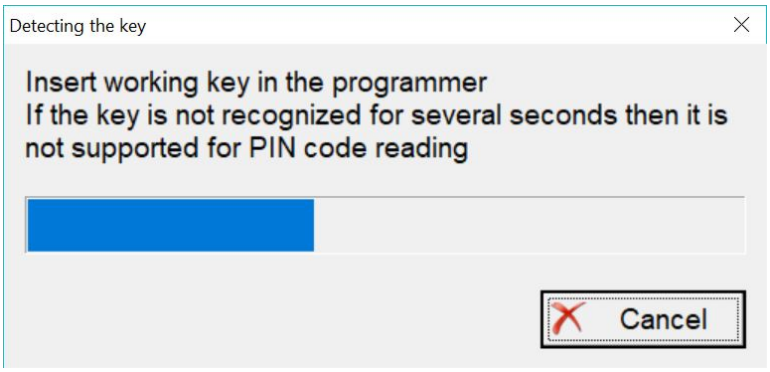
You can also read the PIN and program a key if you have a working key to the car. In this scenario, you can use the TA31 extractor together with the working key to switch IGN on and obtain the PIN.

You can follow these steps to read the PIN from a wokring key and program a new one:

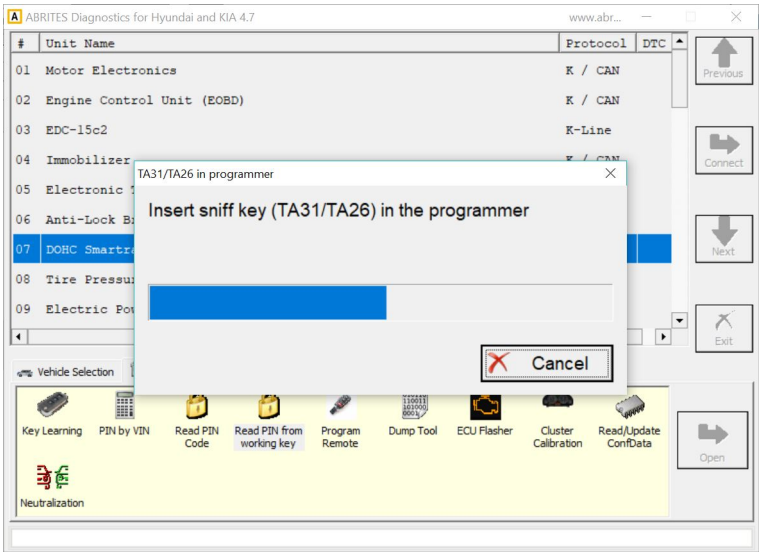
1. Open your Abrites Diagnostics For Hyundai/Kia Software:



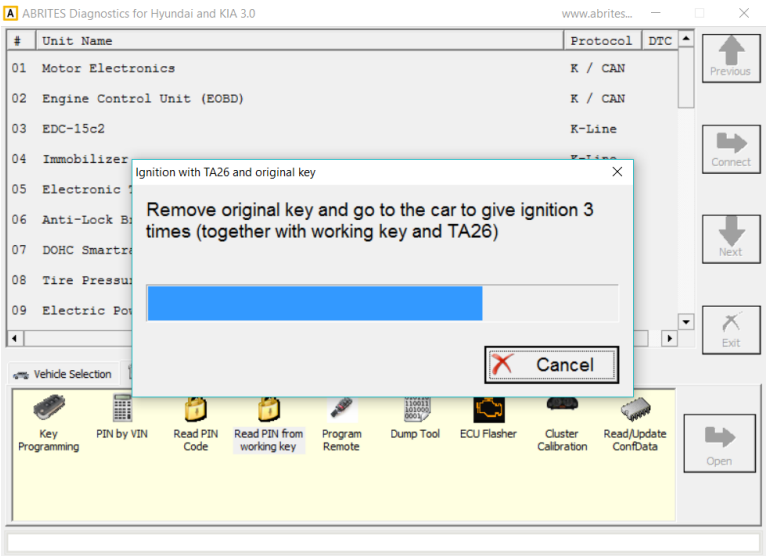
2. Insert a working key TA31 into the PROTAG programmer (must be directly connected to the PC via the USB cable). If not recognized, this means the key is not supported.



3. Remove the TA31 extractor when prompted and insert
the working key into the PROTAG programmer



4. Remove the working key and switch the IGN ON 3 times together with the working key and TA31:



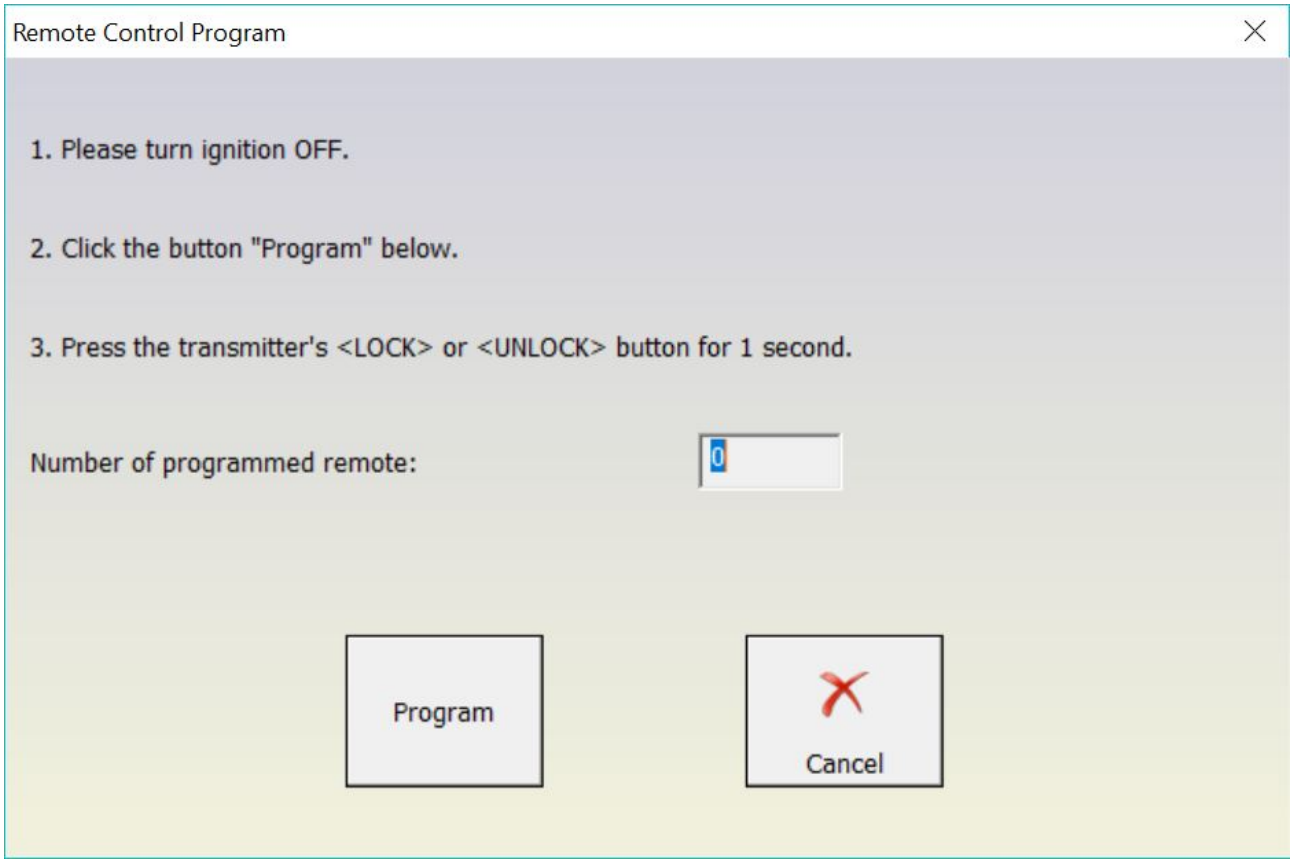
5. The TA31 extractor can be placed together with the working key as shown in the photo below:

6. The software will prompt you to insert the TA31 extractor into the PROTAG programmer once it is ready and will display you the PIN code. This will allow you to program a spare key to the car.

3.2 Remote programming

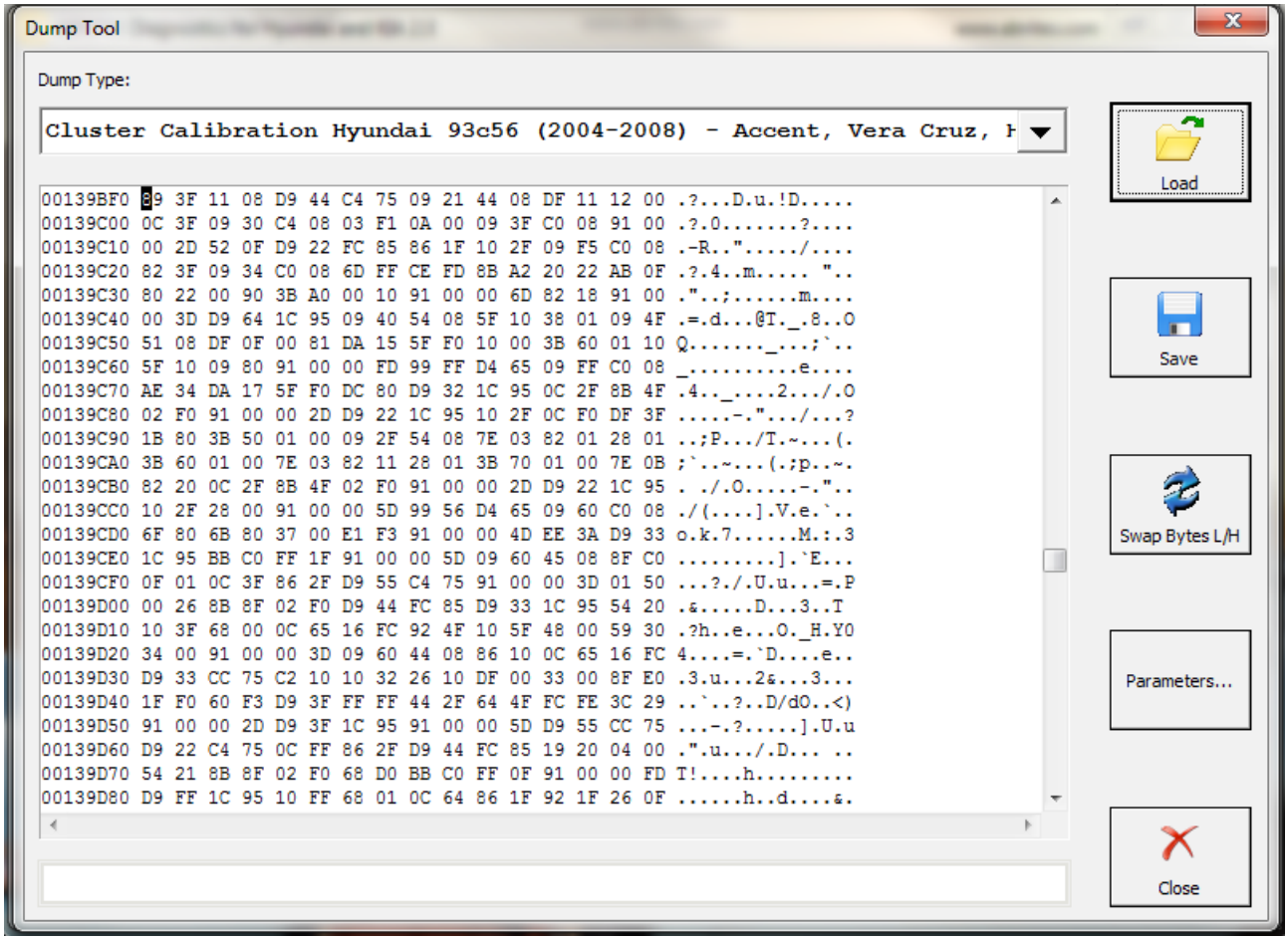
In some cases the remote control cannot be programmed with the key. It is then when the remote programming function is most helpful.

When the function is selected the user you will see the following screen. Once it comes up the user should follow the on-screen instructions closely:

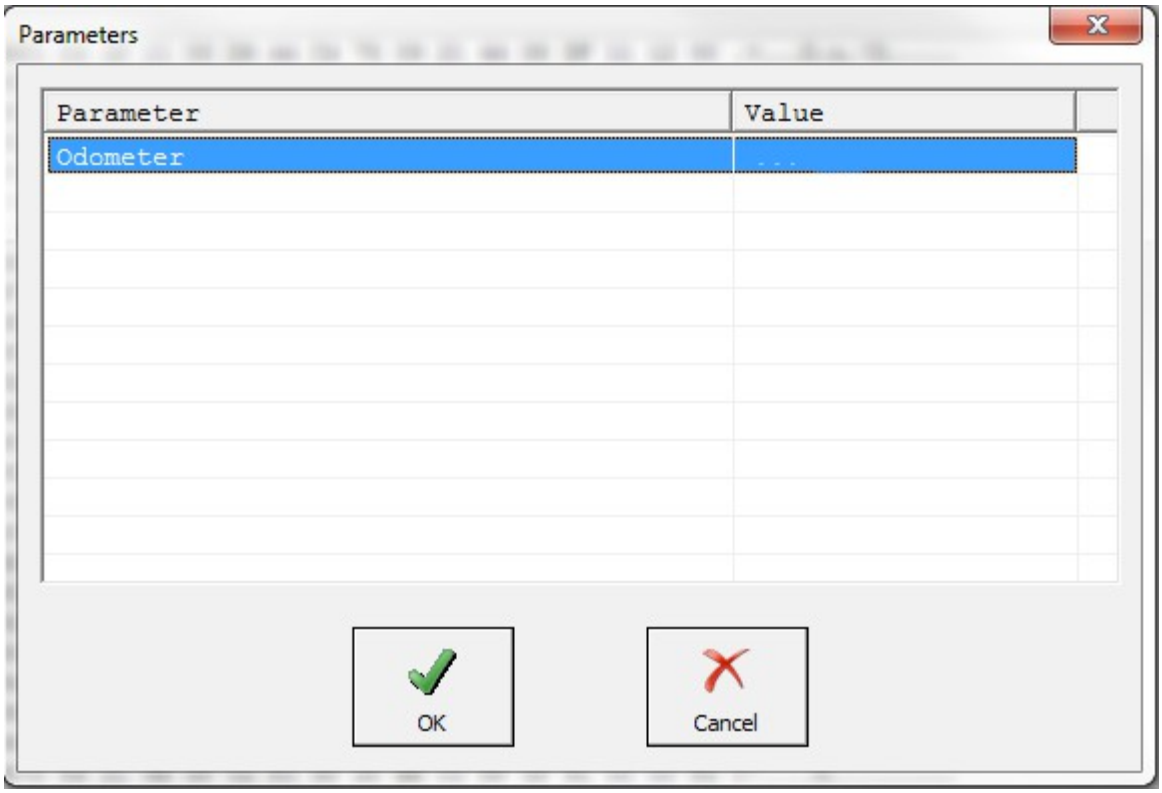


3.3 Dump tool

The Dump tool special function allows the user to read, save and modify Configuration data, read pin codes and others using a programmer to read the dumps from different units.



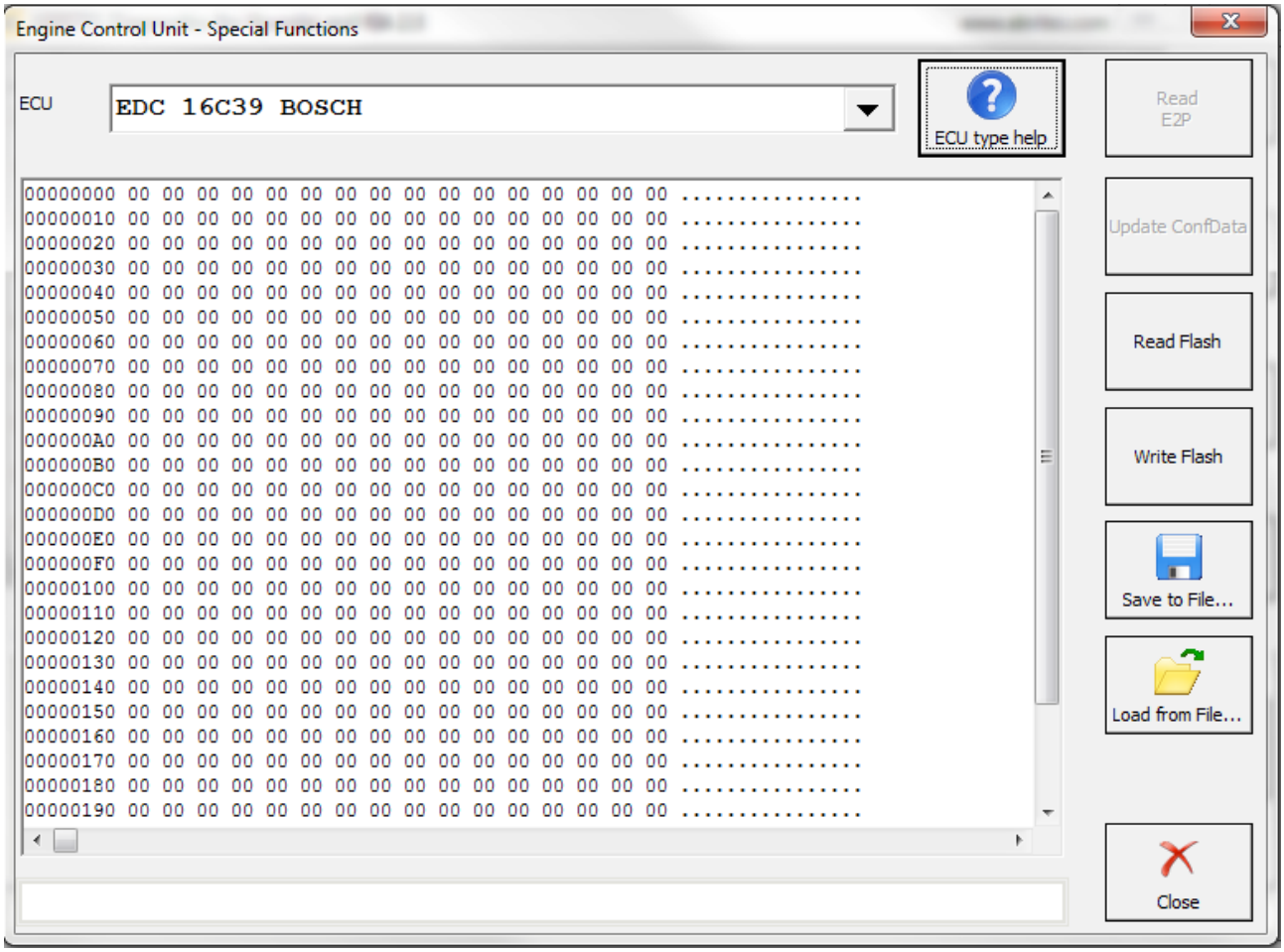
The Parameters button shows the modifications to the different parameters that can be applied.

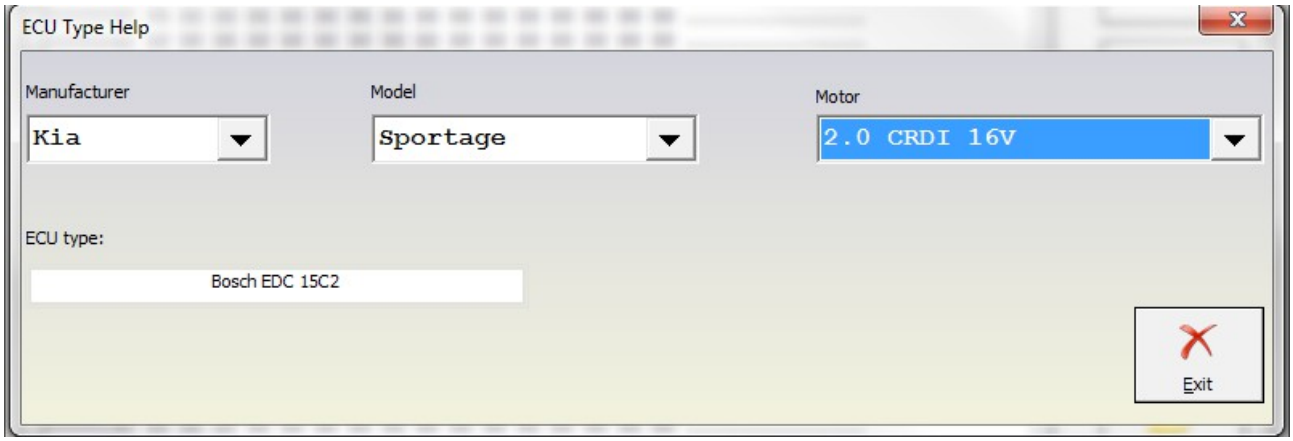


3.4 ECU Flasher

The ECU flasher lets the user read and update the Configuration Data and Flash of engine control units. It lets the . bin files read to be saved locally to the user's computer and stored for later usage.

There is also an additional Help button to provide further assistance to the user.

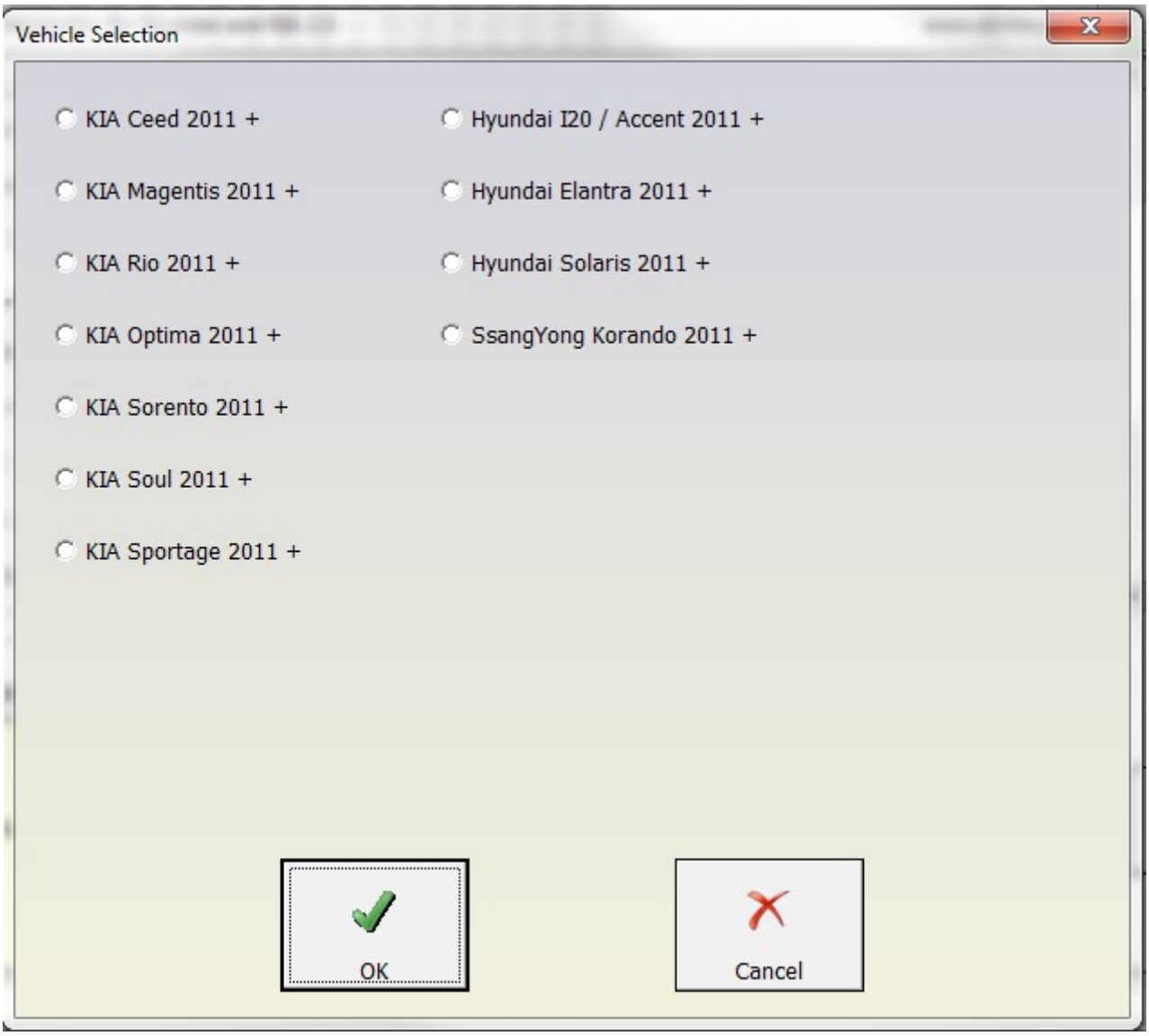




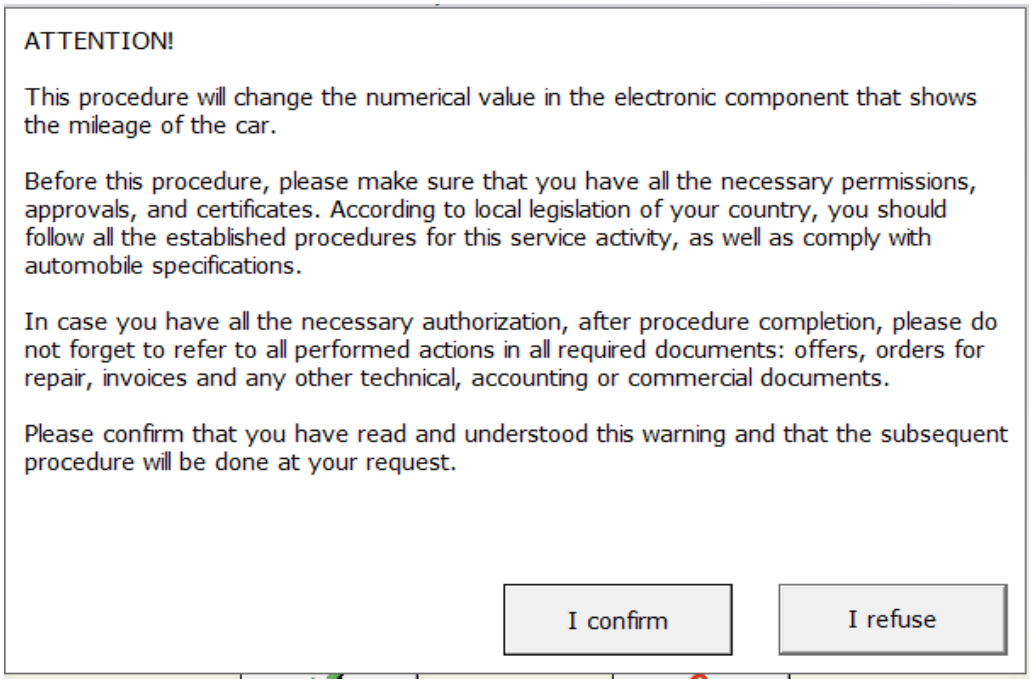
3.5 Cluster calibration

Cluster calibration is a function designed to help the proper functionality of a vehicle after replacing a module with a second hand unit. It assists the user to avoid mismatches in the values of different counters in order for the vehicles to function correctly.

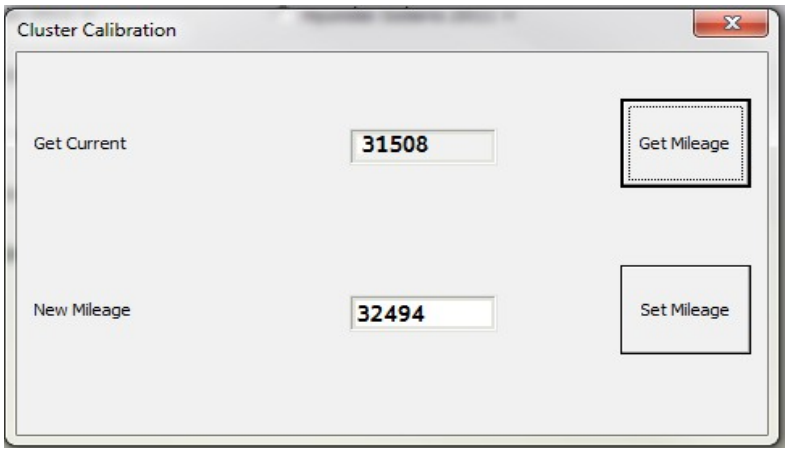
When this function is selected the user will have the option to select the model and year of the vehicle.

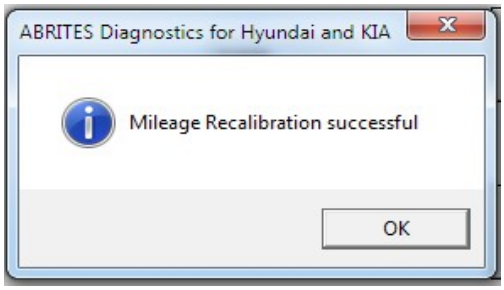


The following message is very important and selecting “I confirm” should be in coordination with local regulations.



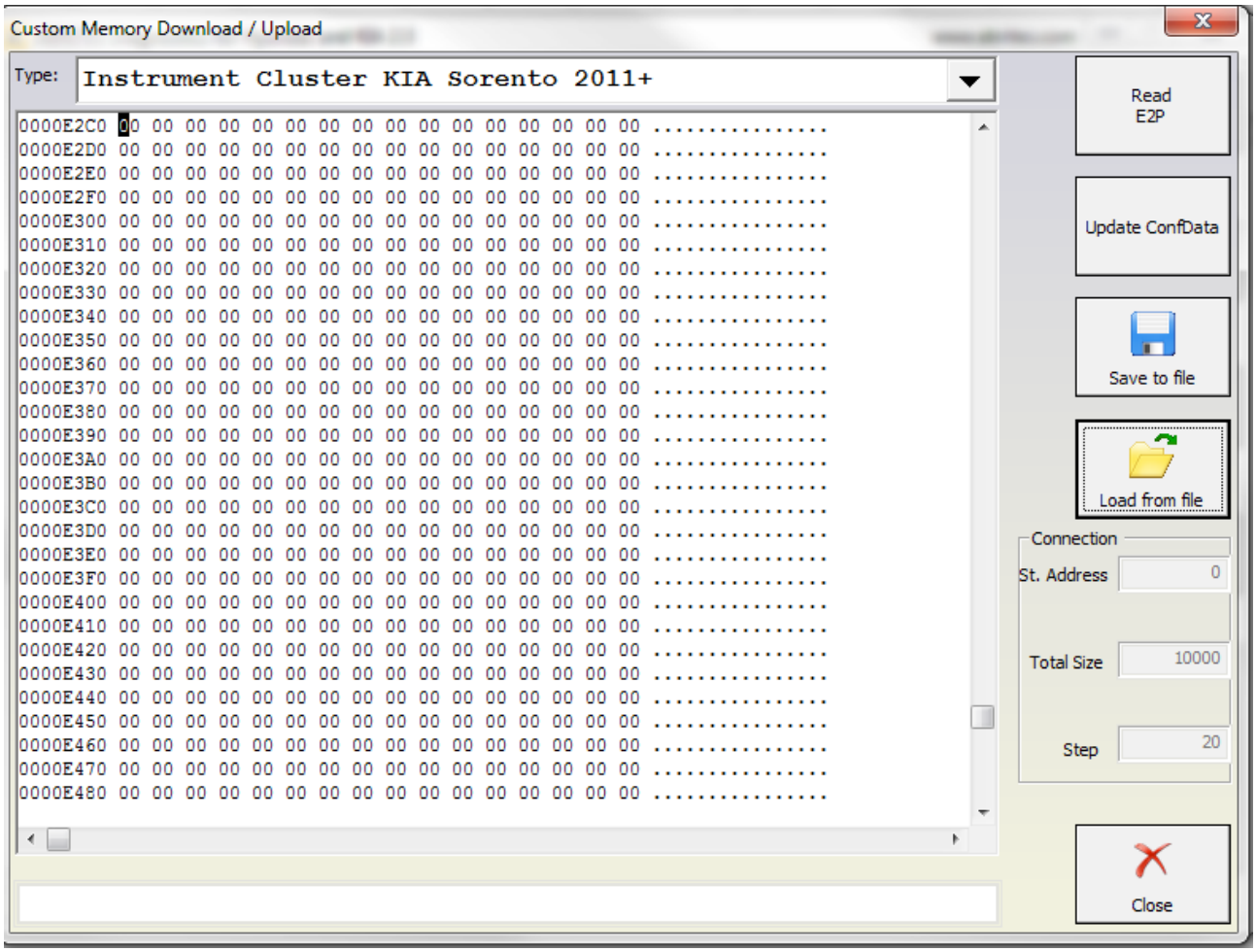
From then on the user should get the current vehicle value, place the correct new value and click the “Set” button.





3.6 Read/ Update Conf Data

This function allows the Configuration data from the vehicles to be updated via On Board Diagnostics (OBD). The files can be saved locally to the user's computer, updated, viewed and uploaded later.



NOTE:

For a full list of supported models please visit abrites.com

4.0 Neutralization

The Neutralization function allows the use of second-hand modules in Hyundai/Kia vehicles.

For vehicles with a smart key:

neutralization (allowing adaptation in other vehicles) of the smart system

neutralization (allowing adaptation in other vehicles) of the ECU

neutralization (allowing adaptation in other vehicles) of the ESCL

neutralization (allowing adaptation in other vehicles) of the PDM (for vehicles equipped with PDM)

For vehicles with a mechanical key:

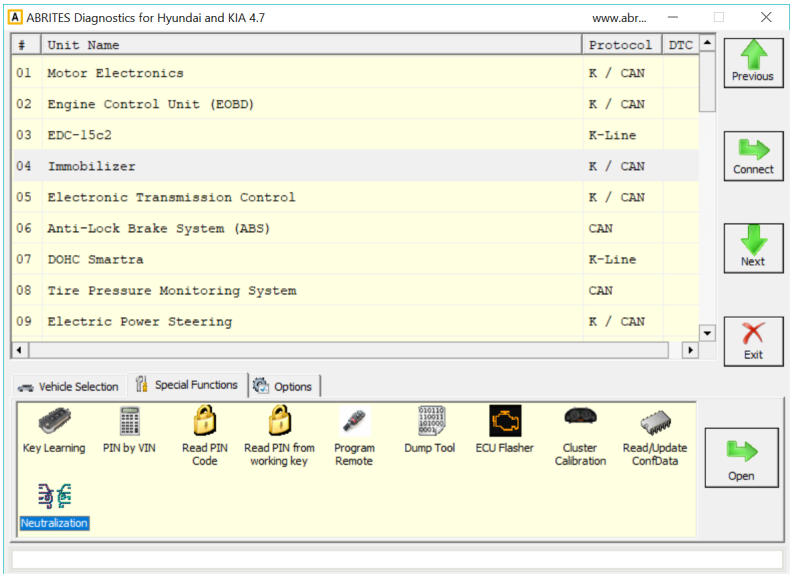
neutralization (allowing adaptation in other vehicles) of the immobiliser - this automatically neutralises the ECU as well

neutralization (allowing adaptation in other vehicles) of the Smart module (for vehicles that are equipped with one)

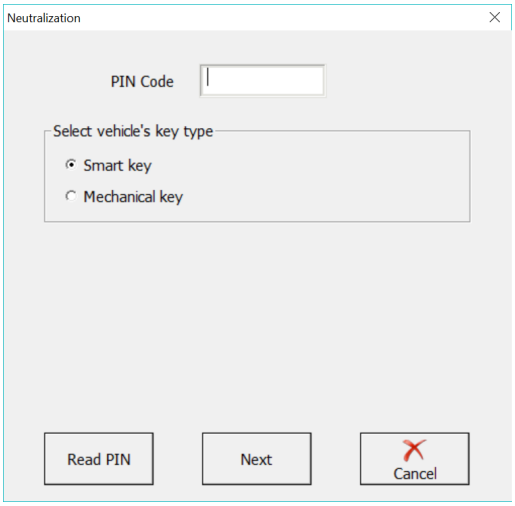
Live data demonstrating the state of the modules (neutralized/active) and the number of initialized keys is shown in the function window.

Whenever neutralization is performed, the keys have to be re-learned to the vehicle after installing a neutralized module. To access the neutralization function, you can follow these three steps:

1. Open the Hyundai/Kia software, followed by Neutralization:



2. Enter or read car's PIN:



3. Click next once the PIN is read and follow the software guidance: