



VIEZU™
REASSURINGLY POWERFUL



2018

K-TAG Instruction Manual

Viezu Technologies Limited

www.viezu.com

3/20/2018

Viezu K-TAG Tuning Guide

Using Ksuite, and Performing General Bench (KTAG) Tuning Tasks

Contents

Installation and Updating.....	3
Using K-Suite 3.0.....	9
Opening K-Suite for the first time & Accepting automatic updates.....	9
Getting to Know the System.....	11
Navigating the K-Suite Software.....	11
Vehicle List	12
Protocol List.....	14
Settings	15
Support	18
KTAG Button.....	20
Before Tuning	21
Preparing the ECU and KTAG Bench for tuning.....	21
Selecting a Vehicle	22
Accessing and using the KTAG ECU Tuning Manuals.....	24
Using Manuals to assist in Wiring Pinouts and Plugs.....	27
Selecting an Operation.....	29
ID-ing a ECU.....	30
Reading a ECU	33
Sending and a Receiving modified files to Viezu	34
Emailing the File.....	34
Receiving the File.....	34
Writing a ECU	35
Definitions (Glossary).....	39
Viezu Technical Team Contact Details	40

Installation and Updating

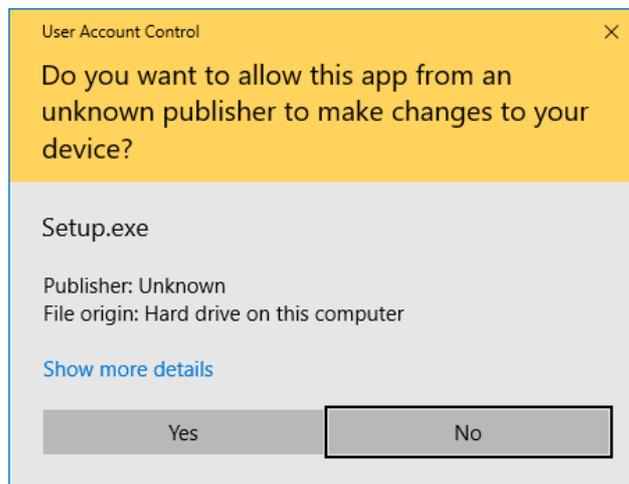
Please note if you have already installed Ksuite to use the K-Tag (Kess V2) you will not need to repeat this step again.

To install the Ksuite 3.0 software onto your PC please enter this link into your web browser:

<https://viezu.com/software>

Allow this link to download in full and then run the execution file.

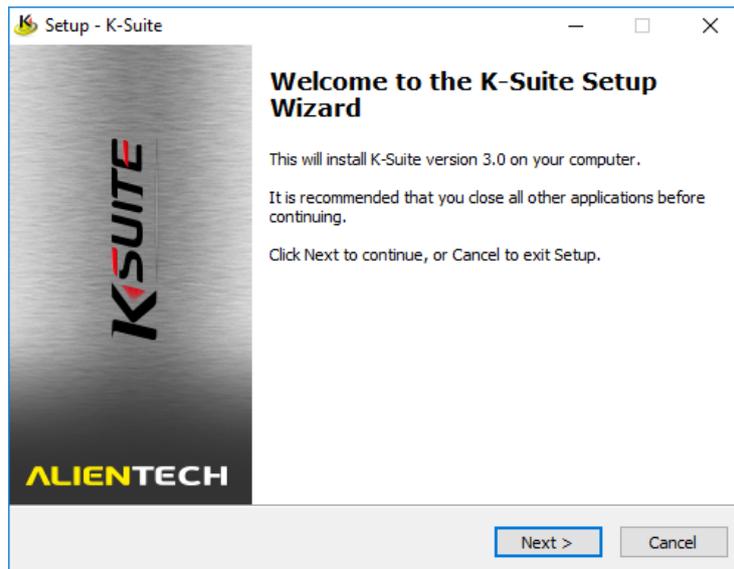
The software may ask for your permission to run (this will depend on your computers security settings)¹. Click the **Yes** button to proceed with the installation process.



Windows Security prompt, press Yes to proceed with installation

The installation will begin automatically and the installation wizard will start.

¹ The given image is from a Windows 10 system – other versions of Windows will be very similar, and will mention ‘User Account Control’.

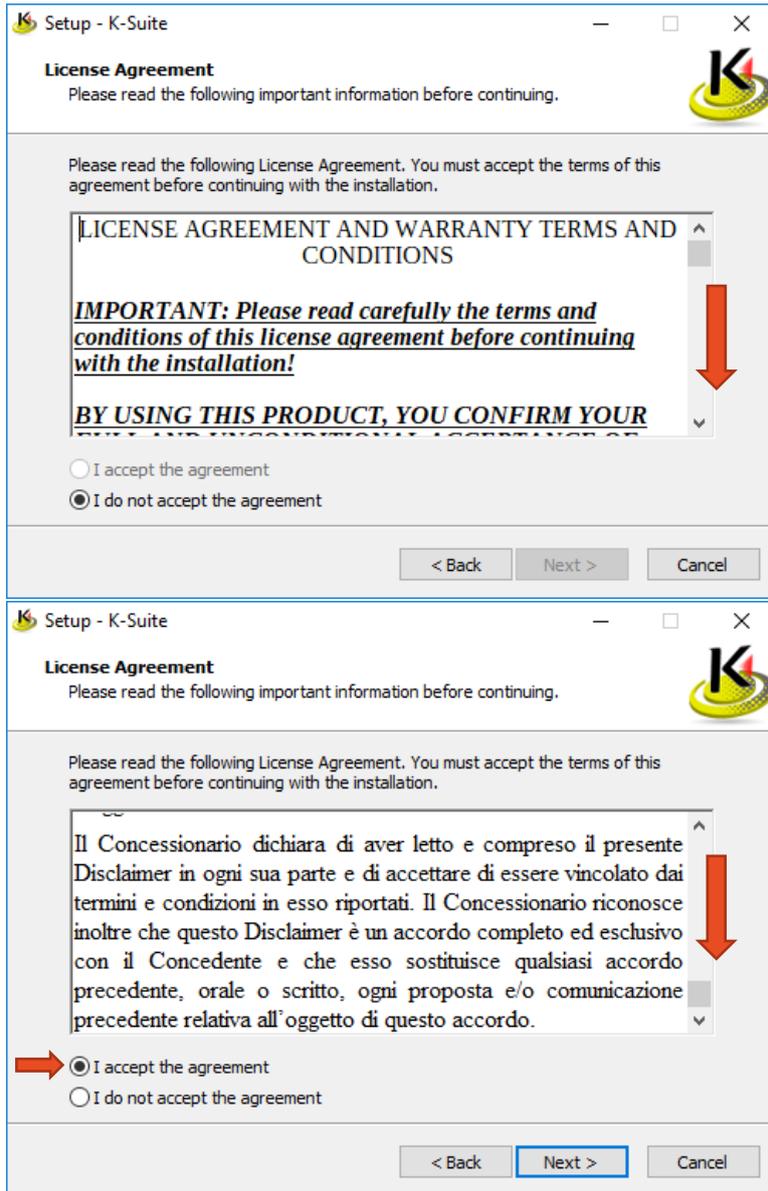


K-Suite 3.0 installation wizard, first window

The license agreement is provided first in English and then in Italian.

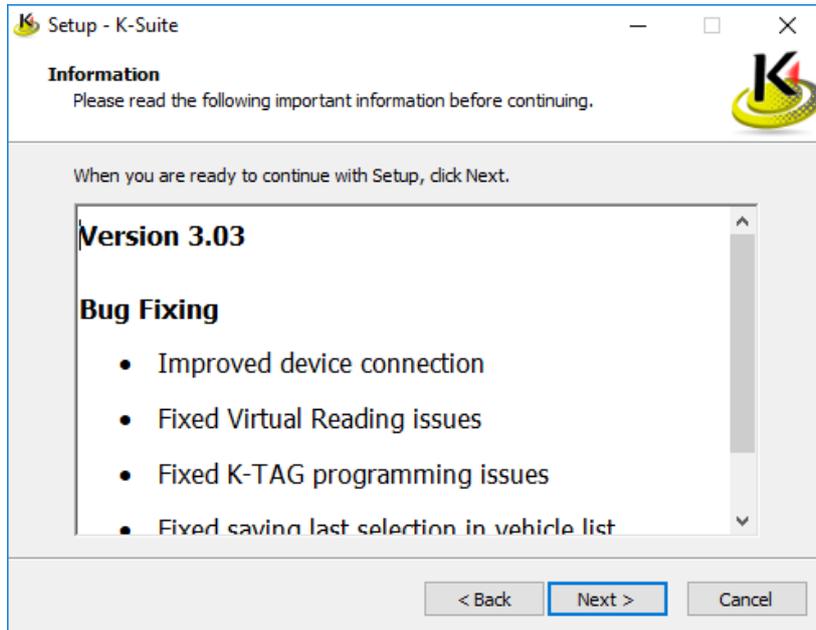
The *'I accept the agreement'* toggle button and the **Next** button will be unavailable until you have scrolled to the very bottom of the License Agreement section.

After scrolling the bottom of the license agreement, select **Next** to proceed.



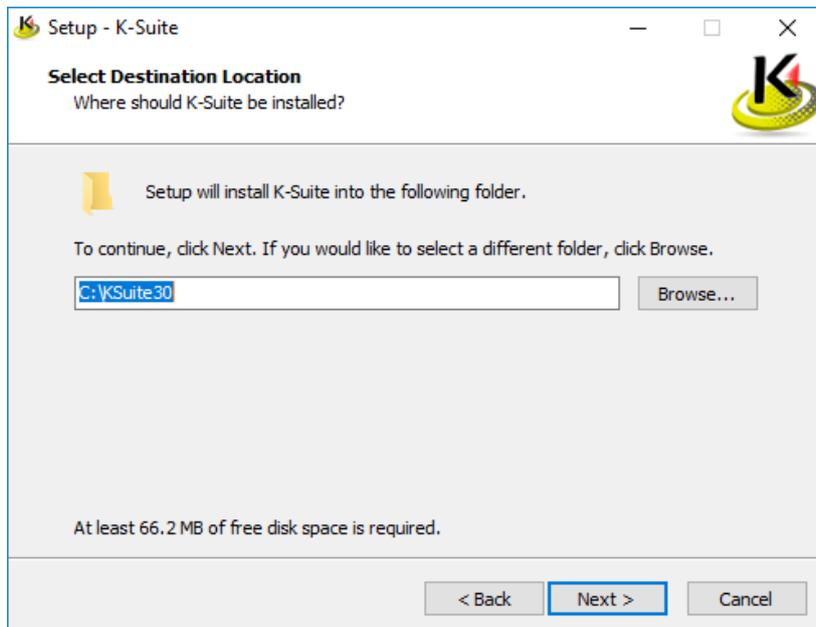
K-Suite 3.0 License Agreement window, before and after

The next window lists changes from the previous versions of K-Suite. Click **Next** to proceed.

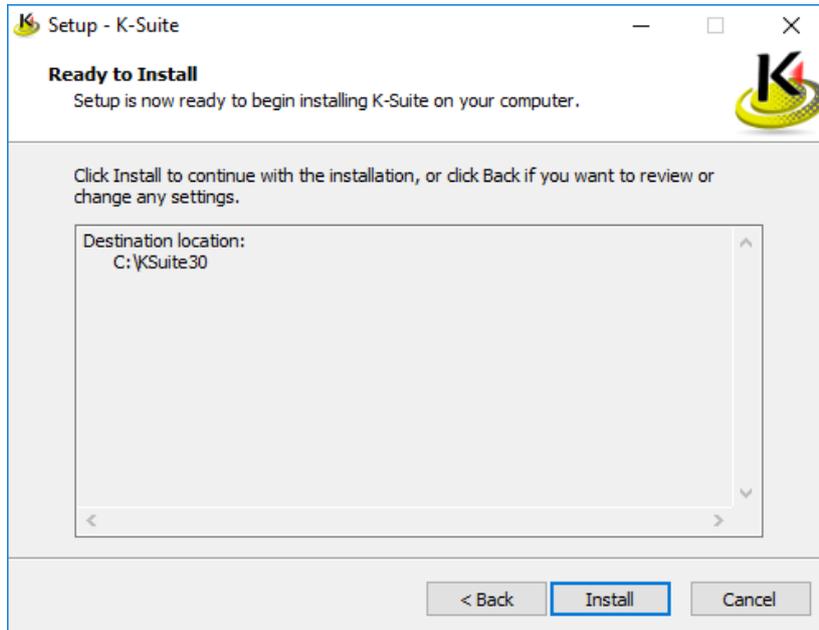


The next window lists your installation directory. Please use the default installation suggestion unless advised otherwise.

Click **Next** to proceed.

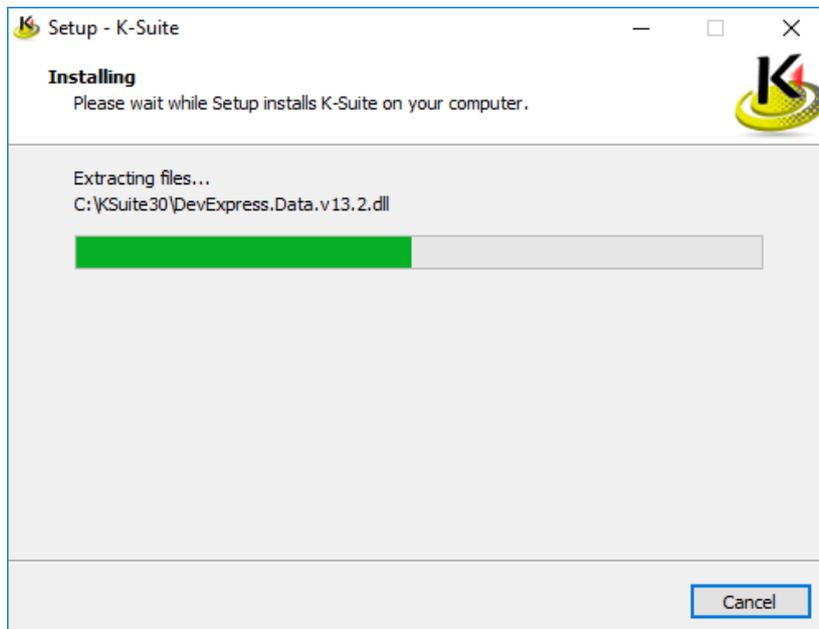


The next window is a confirmation for your install location. Select **Install** to proceed.



The installation wizard will now proceed to install the K-Suite 3.0 software onto your computer system.

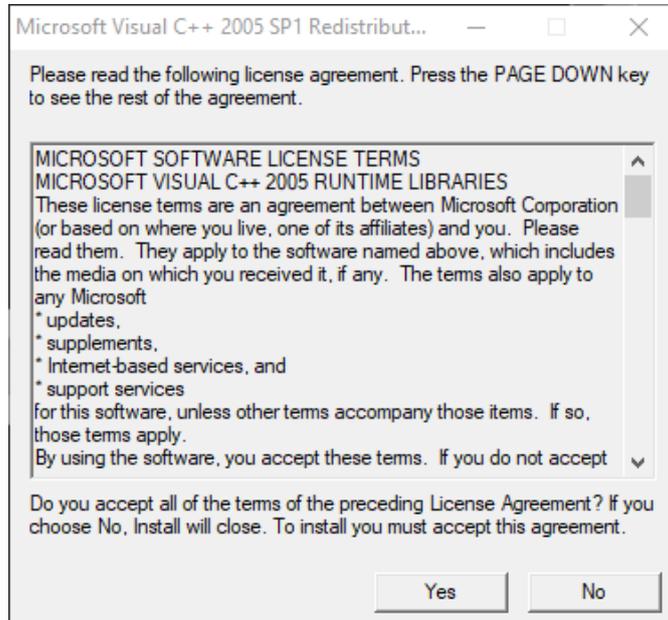
This process is expected to take less than 5 minutes but usually around 30 seconds.



The installation wizard proceeds to install K-Suite 3.0

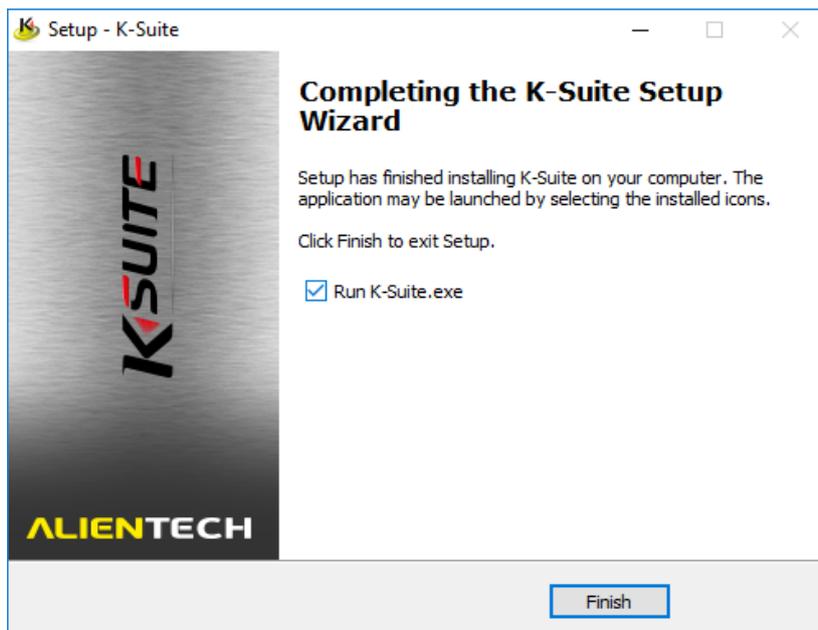
During the installation, the installer may pause and present the below window.

Select **Yes** to continue with the installation.



Once the installation process is completed, the installer will finish on the below window, confirming that the installation has completed and that K-Suite is ready to be run immediately.

Press **Finish** to complete the installation process and start the K-Suite 3.0 program



The final window of the K-Suite 3.0 installation wizard

Using K-Suite 3.0

After completing the installation, the K-Suite application may automatically begin launch as you close the installer.

! Before opening K-Suite, it is advised that you have the K-Tag plugged into your computer system.

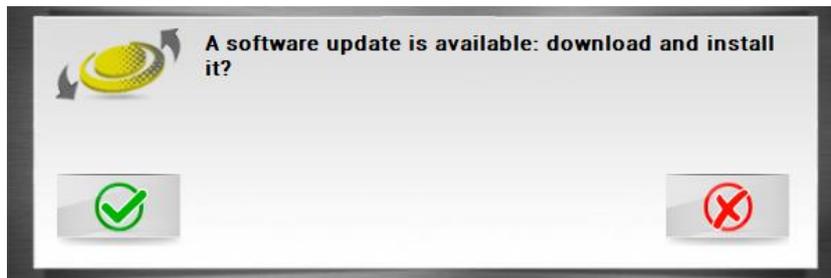
Opening K-Suite for the first time & Accepting automatic updates

If this is the first time you have opened K-Suite, or a newer version has become available, the K-Suite software will prompt you to update it shortly before it opens.

Issues during the reading and writing process can be caused by an out-of-date system and if Technical Support is required we will require an up to date system to help resolve the issue.

If you start an Online Update please allow the process to complete fully. The only time it will fail will be due to weak internet connection or a system failure. **Please check both of these before you begin.**

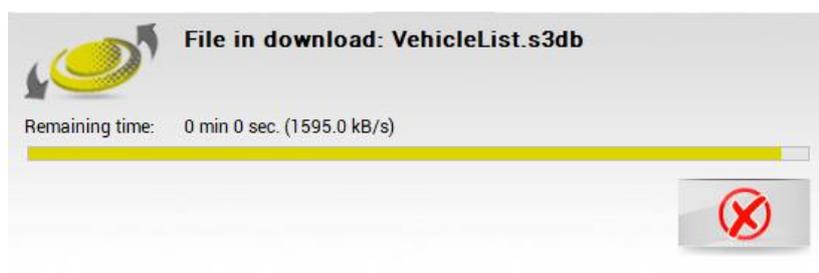
If the software asks you to update, Viezu Technologies recommends that you always select the green check to install any available updates.



The updater prompt seen as the program starts. Always keep K-Suite updated to the latest version.

Clicking the green checkmark will proceed to update your software. Allow this process to complete.

The software will download the newer and latest version available, and install it automatically.



The software will now continue to open at the latest version available and begin to start up.

The animated K-Suite splash screen will indicate that the software is now loading.



The animated K-Suite splash screen

Getting to Know the System

There are several different options areas of the system we may require you to use. This section of the pack talks you through how to use and when you may be prompted to use them.

Navigating the K-Suite Software

The Version Information to the bottom left of the screen is there for your reference. We always recommend that you keep the program up to date.



The main window of the K-Suite 3.0 software

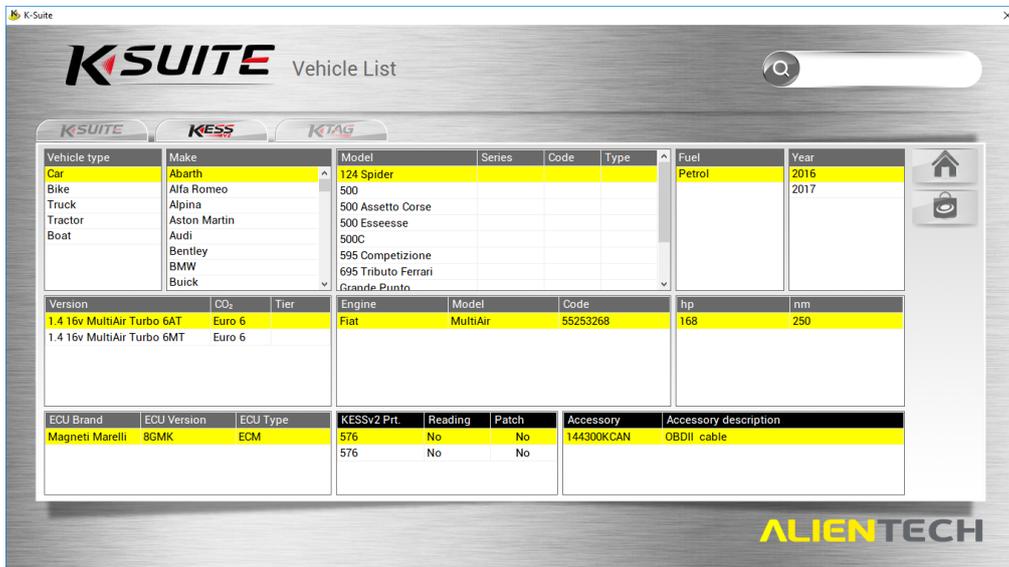
The options displayed on screen are as follows.

- **Vehicle List** will take you to a reference table for the properties and advised configuration when performing tune operations on the supported vehicles.
- **Protocol List** will take you to a reference table for information regarding the ECU present in a supported vehicle, such as the ECU brand, version, type, protocol number, and required accessories for tuning.
- **Settings** provides account management, language selection, Unit-of-measurement selection, software release and legal notes, and a manual update check feature.
- **Support** provides options for downloading logs, acquiring support, and downloading older versions of the K-Suite software.

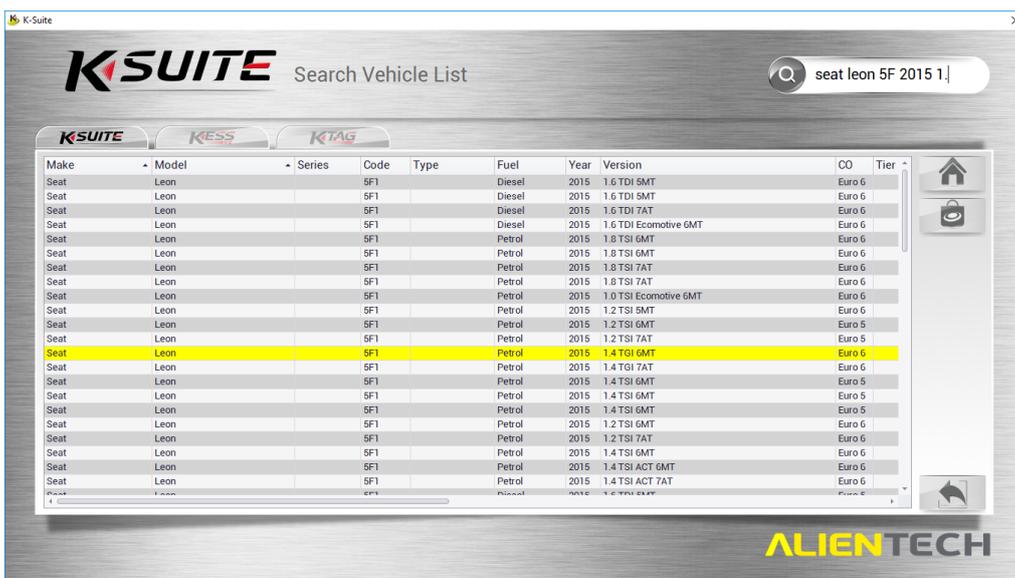
Each of the available options are described further individually in the following sections of this document.

Vehicle List

The available vehicles selection gives the client all the vehicles available on the system. If any vehicles are greyed out, it means that they are not available on the system. If you are in any doubt about any of the available vehicles please contact the Technical Team who will be more than happy to assist.



Clicking in the search field will switch to a tabbed list of the supported vehicles for KESS and K-Tag tools. Typing into the search field will search the supported vehicles and their properties, gradually filtering the output to be relevant to your search query.



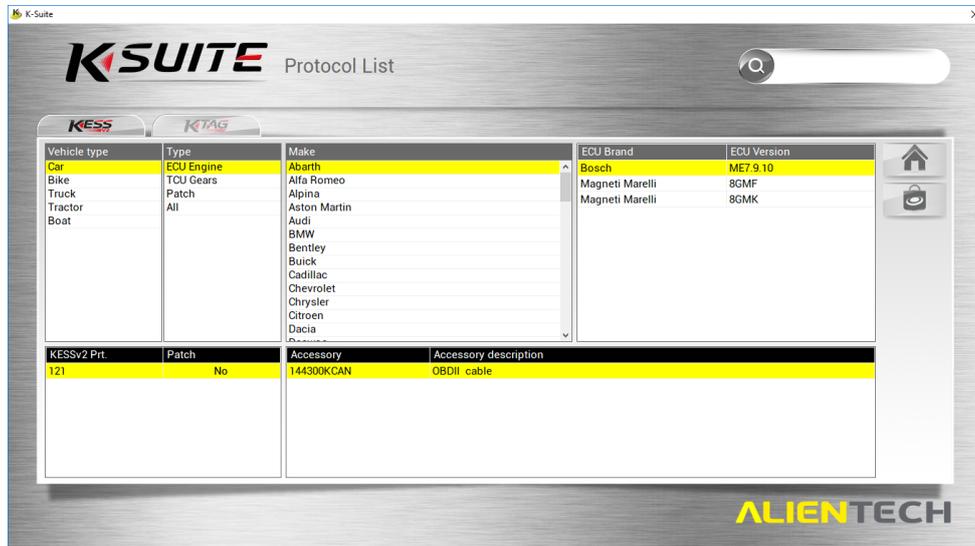
Depending on the tool you have, you can select the tab for your device to filter vehicles specific to it during your search.



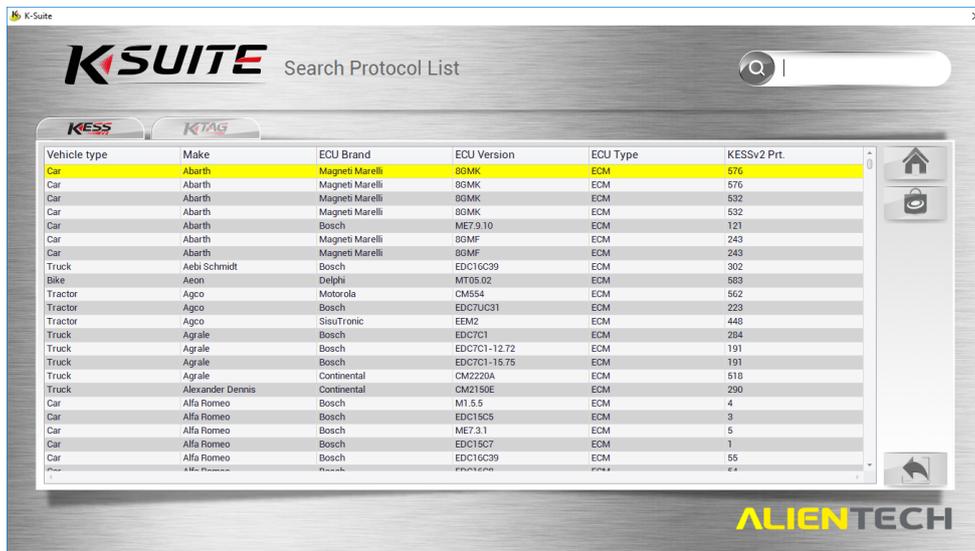
The Home button will return you to the main window

Protocol List

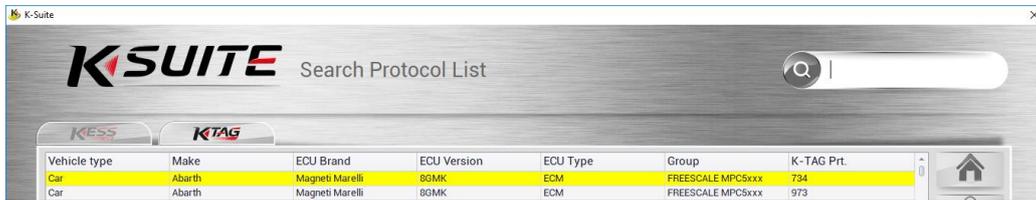
The protocol option appears as below. This lists all available vehicles via their family and ECU type.



Clicking in the search field will switch to a tabbed list of the supported vehicles for KESS and K-Tag tools. Typing into the search field will search the supported vehicles and their ECU properties (Brand, Version, type and Protocol), gradually filtering the output to be relevant to your search query (Just like the vehicle list search).



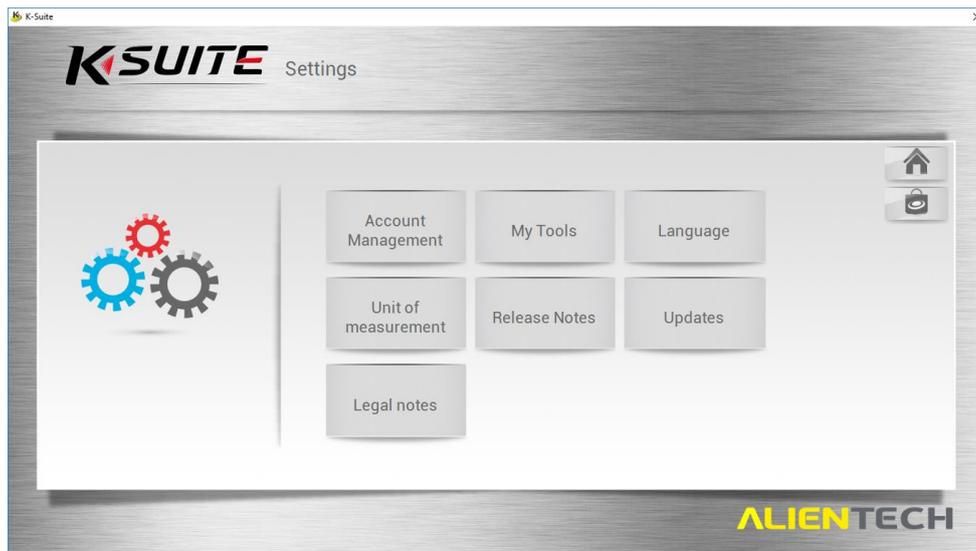
Depending on the tool you have, you can select the tab for your device to filter ECU information specific to your vehicle or tool during your search.



Settings

The Settings page allows you to view and modify aspects of the K-Suite program.

- ! **There are sections of the options window that you should avoid modifying unless under the specific instruction of Viezu Technical Support**



Account Management

The account management section lists account and subscription information.

If the account management option is greyed out, ensure that your device is connected to your computer system.

The account management page will not be required unless advised by Viezu Technical support.

My Tools

The My Tools section lists device version, serial number and customer code. It will also list a summary of the supported protocols by vehicle and a subscription status summary.

Language

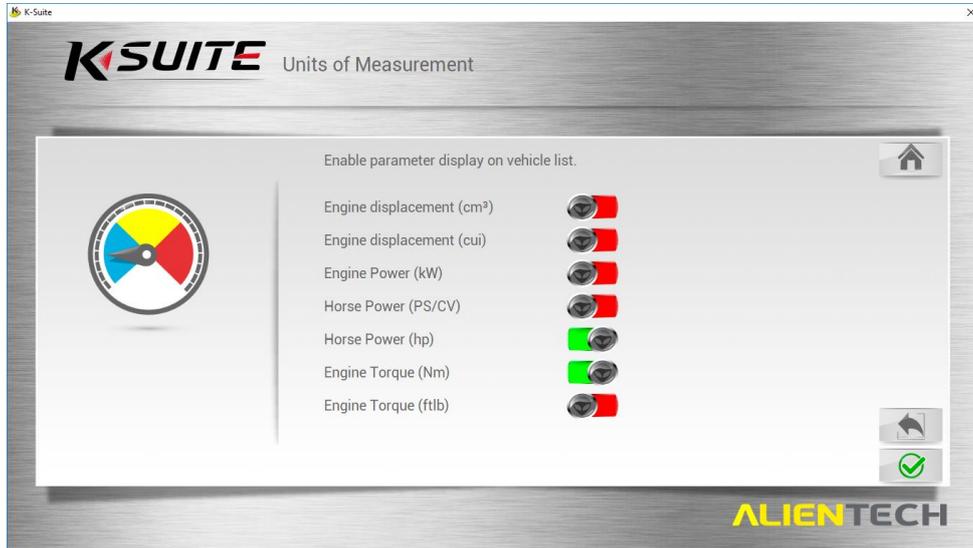
The language section provides a selection of 6 languages.



Unit of Measurement

The Unit of Measurement section provides switches for the measurement types given in the software.

The enabled units of measurement is entirely down to personal preference. You may prefer to enable and/or disable provided units relevant to your geographic location.

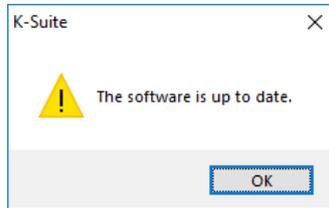


Release Notes

The Release notes page will not normally be required.

Updates

The Updates section provides a button to manually check for available updates which will attempt to update the software if an update is available.



The manual update button will return this message box if no update is available.

Viezu Technical support may advise you to ensure you are running the latest version of the K-Suite 3.0 software. The manual update feature can assist with this.

Legal Notes

The Legal notes section will provide Licence and Privacy Agreement summaries for your information.

Support

This window is particularly useful for Master dealers, but for clients you will need to contact us directly technical@viezu.zendesk.com



LOG

Accessing the logs of the KESS/KTAG device is an important part of the problem solving if there is an issue of the reading or writing of the ECU. For this reason, it is important that you know how to access the log files stored on the device.

Clicking on the LOG button in the Support window will begin the logs



The K-Suite software accesses your attached device for its logs.

- **Download Last LOG** Button - Collects the most recent log from the device and provides a save window for a .KLG log file.
- **Download All LOG** Button - Collects all available logs from the device and provides a save window for a .KLG log file².



Viezu Technologies are very likely to request log files for a recent Read/Write operation in conjunction with the ID and Read files.

This is to assist us in any support tickets that you may submit.

Support Area

The support area options are intended for master dealers primarily.

If you should require support, we ask that you contact Viezu Technologies using technical@viezu.zendesk.com or any of the methods described in the last section of the document.

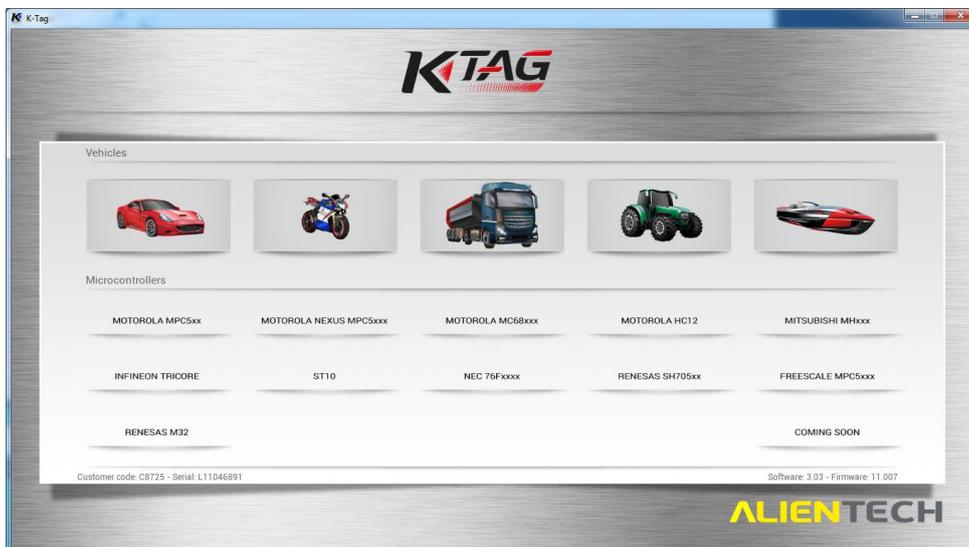
² The KESS device may not support a download of all logs.

KTAG Button

Should your KTAG device be connected properly via USB and be detected, the KTAG button on the main window will have a blue outline highlight. Click this button.



You will proceed to the Vehicle Type Selection Window. Click on your vehicle type to continue.



! No action is taken on the ECU even after your vehicle is selected.

For more information on starting the vehicle selection and tuning process, see the later section: *Before Tuning*

Before Tuning

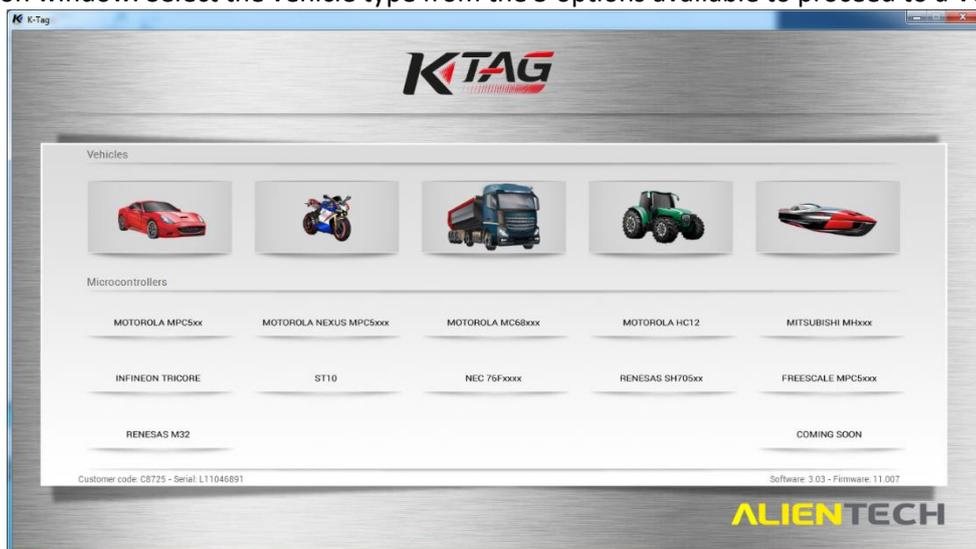
Before you begin tuning we must ensure the ECU is safely removed from the vehicle.

- Get the vehicle into a safe place because the vehicle will be unlocked with the ECU Out.
- Open the bonnet of the vehicle
- Leave the driver door ajar, this way you can still access inside the car without having to use the door handles.
- At this point remove the keys from the area, we do this for two reasons:
 1. Stops accidental touching of the keys
 2. Modern cars have automatic recognition, we don't want this activated when the ECU is removed.
- At this point allow the vehicle to power down naturally, what we mean by this is leave the vehicle around 15 to 20 minutes without touching any electrical components or disconnecting the battery.
- You can use this time to locate the ECU and remove anything non-electrical such as engine covers, screws and bolts. Don't disconnect the battery in this time frame.
- Once the vehicle has powered down naturally and the keys are well away from the vehicle in a safe place you are now safe to remove the ECU.
- Depending on the vehicle there may be a security cage around the ECU that needs removing so you can remove and disconnect the ECU.
- In most cases the ECU lid will need to be removed, you need to ensure you do this extremely careful not to damage anything while your removing the lid. To check if you do need to remove the lid of the ECU please see the KTAG manual as detailed later in this guide.

If you have any doubts then contact Viezu Technical Support, who will be able to help you further.

Preparing the ECU and KTAG Bench for tuning

To begin the tuning procedure, from the main K-suite window, click on the KTAG button to proceed to a Vehicle Selection window. Select the vehicle type from the 5 options available to proceed to a Vehicle Selection



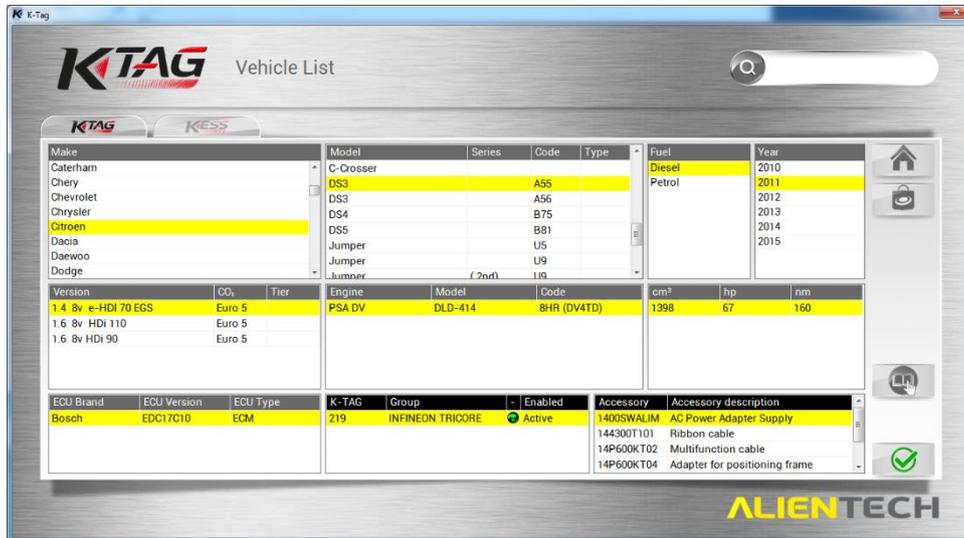
List.³

³ The KESS/KTAG button presents you with a Vehicle Selection window that looks identical to the Vehicle List window from the main form, but the windows are actually different.

Selecting a Vehicle

The vehicle selection screen operates the same way to the Vehicle List from the main window, but allows you to proceed towards tuning operations (ID, Read, Write, etc) based on a vehicle selection you make.

The Green/Red light under “Enabled” indicates the state of your K-suite license. This shows if your current license has this protocol enabled. We recommend that you keep the tool in license.

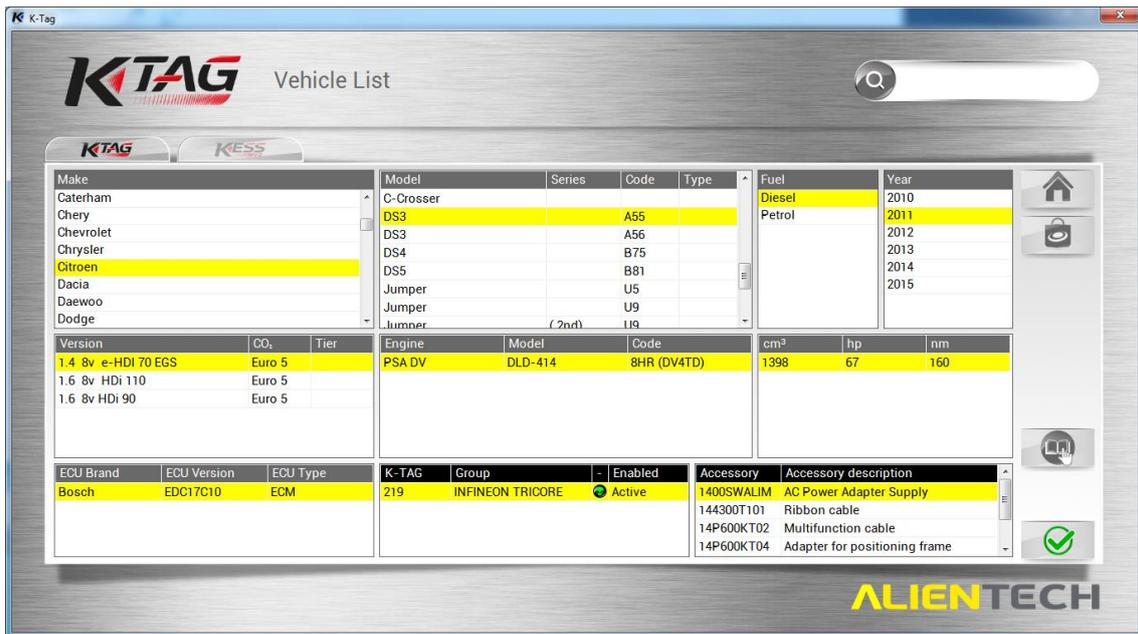


For example purposes, the ECU on which the screenshots provided are based is a Citroen.

Typically, for a selected vehicle only one ECU will be available (The lower-left selection pane). K-Suite will select the first available by default, but you may have to select another.

For the Units of Measurement, more or fewer values may be listed for you based on the settings given under the *Main Window -> Settings -> Unit of Measurement* (See a previous subsection: *Unit of Measurement* for more information)

Use the selection panes to highlight every applicable detail for your vehicle, and then press the green checkmark button in the bottom-right to begin.



No actions will be taken on the ECU at this time.

Accessing and using the KTAG ECU Tuning Manuals

Once you have selected the vehicle you wish to tune if you click on **tuning manual**, accessible by clicking on the open-book image positioned above the green checkmark on the right hand side of the screen. This will open a window containing a manual specific to the vehicle you have selected.

In the manual, special considerations will be listed, including:

- Pictures of the physical ECU (Circuit board and casing), for you to confirm it is the correct hardware.
- Pictures of the circuit board identifying the boot pinouts, which you will need to connect to during the read/write operations
- Pictures of the pins within the plugs, which will be used to connect the coloured KTAG wires to the plug pins

*

The first section of the manual has a warning message in red explaining the risks involved in opening an ECU and incorrect procedure can damage the ECU. It also strongly recommends that after opening the ECU that you reconnect it to the vehicle to ensure the vehicle still starts – it important that after you test it you allow the vehicle to power down before disconnecting the ECU again.

The manual then shows pictures taken of the physical ECU.

You will see images of the metal casing, the circuit board, the plugs, and any additionally related hardware you may require.

These pictures are to assist in confirming that the ECU you will be working on is the correct one.

! Ensure you are selecting the correct ECU model by referencing the pictures in the manual.

If you are unsure about any of the instructions please contact Viezu Technical Support before proceeding



First view upon opening a KTAG vehicle manual (Vehicle specific)

Included for further physical identification are pictures of the circuit board.

Use these images again to check that you will be working on the correct ECU for the wiring schemas provided later.

! Incorrect procedures on the wrong ECU may cause permanent damage.



2. Open the ECU, being careful not to damage the parts inside;
3. **Reconnect the ECU to the vehicle and start the engine, in order to make sure the ECU is still in working order and has not been damaged in the opening;**
4. Remove again the ECU from the vehicle;
5. **Connect to the ECU:**

The Boot pins are shown in red in the picture.
The programming pads on which to place the adapter are shown in yellow in the picture.



6. **Always** make a full backup of the ECU;
7. Proceed with **reading/writing**.

Available connection modes

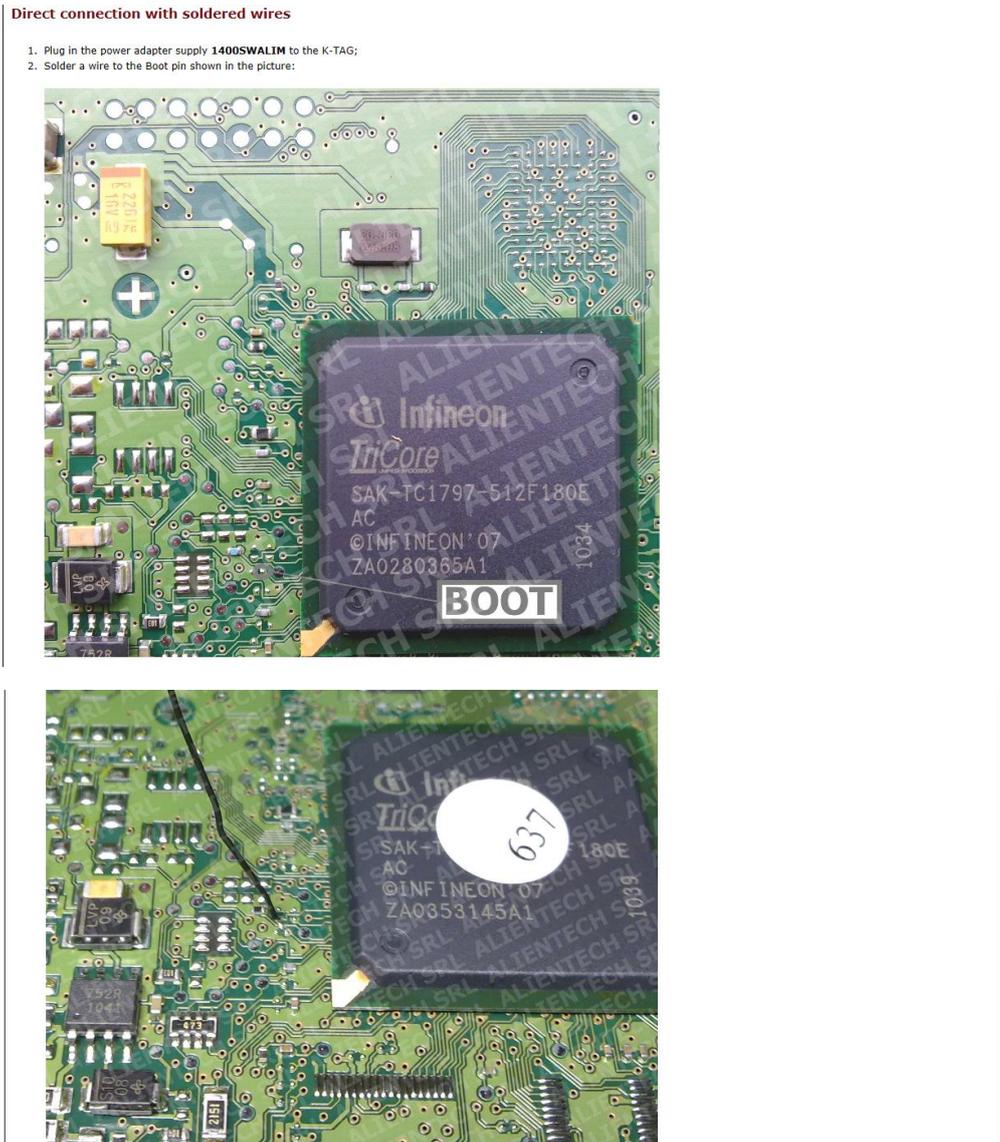
Before proceeding to wire-up the ECU using the KTAG toolkit, ensure you have a stable power-supply using the power supply provided in the KTAG kit.

! An unstable power source may cause permanent damage to the ECU.

Using Manuals to assist in Wiring Pinouts and Plugs

Further pictures of the circuit board identifying the boot pin-outs will be given. These images are to assist you in connecting pins to pinouts.

! Incorrect wiring of the pinouts may cause permanent damage to the ECU



The manual may include an image of the boot pinout already connected (Soldered in the example above).

! The boot connector wire is a GREY wire with a crocodile-clip, coming from the KTAG frayed-ribbon cable.

The plugs are the part of the ECU that the car connects to.

In the square, plastic brackets are several pins which must be wired using the coloured wires from the KTAG frayed ribbon cable.

In the example given below, 5 coloured wires must be connected to the plug pins.

! Incorrect wiring of the plug pins may cause permanent damage to the ECU

3. Connect the cable 14P600KT02 to the ECU connector, according to the pinout below:



Pin	Color	Description
Pin 2,19	Red	+12V
Pin 4	Black	Ground
Pin 40	White	CAN H
Pin 52	Green	CAN L
Wire soldered to the Boot pin	Gray with alligator clip	BOOT

4. Remove the soldered wire before reinstalling the ECU on the vehicle.

The pictures in the manual may highlight nearby-pins (Coloured light-blue above) for your convenience.

This is to assist in connecting the correct coloured wires to the correct pins within the plugs⁴.

The cables carrying power are the most important to get correctly wired. For the above example:

- The red wires connect to pins #2 and #19. The **Red** wires carry power
- The black wire connects to pin #4. The **Black** wire is the Ground.

Incorrect connections can cause ECU damage, please double check connections before continuing.

If you have any doubt or are unsure about anything, please contact Viezu Technical Support before continuing.

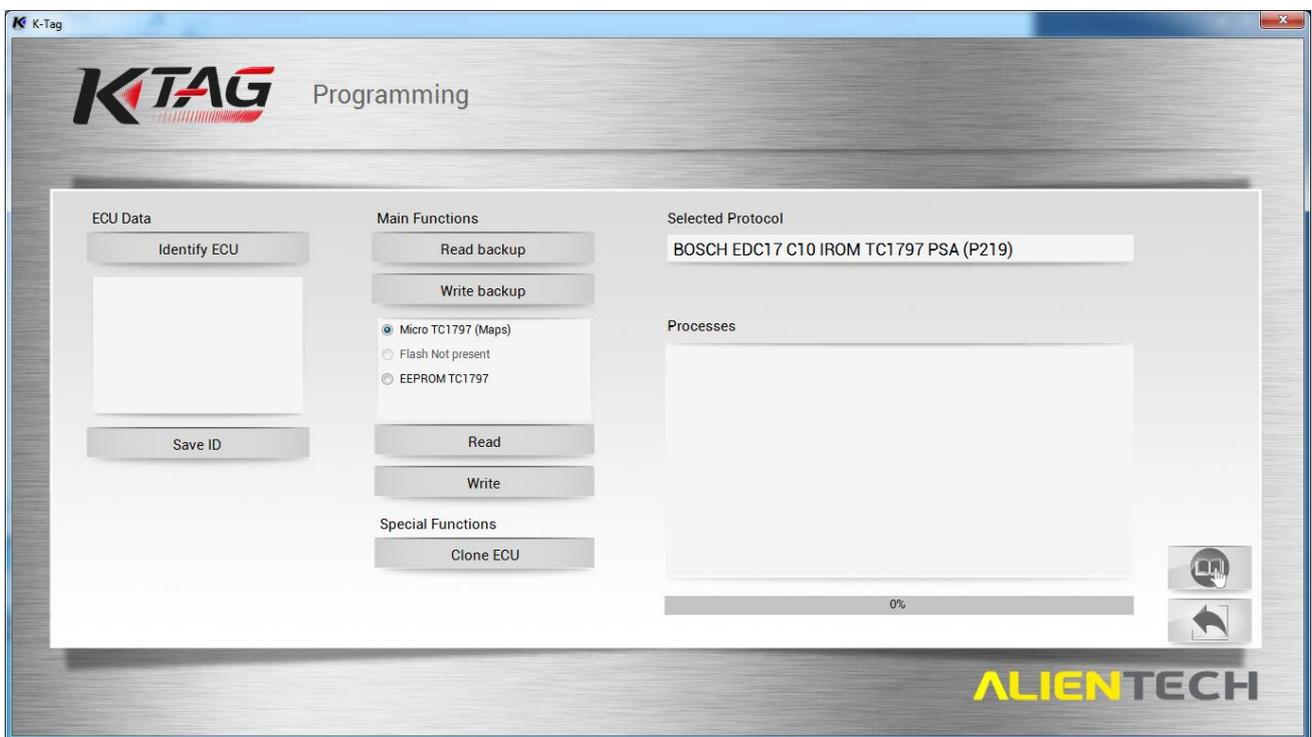
⁴ The plug pins are numbered, and the identifying number may be written inside the plug casing.

Selecting an Operation

Some of the buttons available in these screenshots may not be available on a client license of KTAG as we are using a Master KTAG.

After selecting a vehicle and confirming your selection with the green checkmark on the Vehicle List screen, you are presented with window containing various operations.

- ! **Clicking some of these buttons will interact with the ECU.**
- ! **Ensure that your power supply is stable and that your wiring is correct before clicking any of the buttons on this window.**



- **Identify ECU** – An ID operation, used to communicate and identify an ECU
- **Save ID** – Collects the information from the ID operation to a file that can be saved
- **Read Backup** – Performs a read operation for the connected ECU, yielding a READ file
- **Write Backup** – Writes a given modified or stock file to the ECU

If at any point you feel the options provided are not complete, or you are unsure which option to select, contact Viezu Technical support (See final section of this document for contact details).

- ! **A stable power source is an absolute requirement when performing any of the given operations on a vehicle.**

ID-ing a ECU

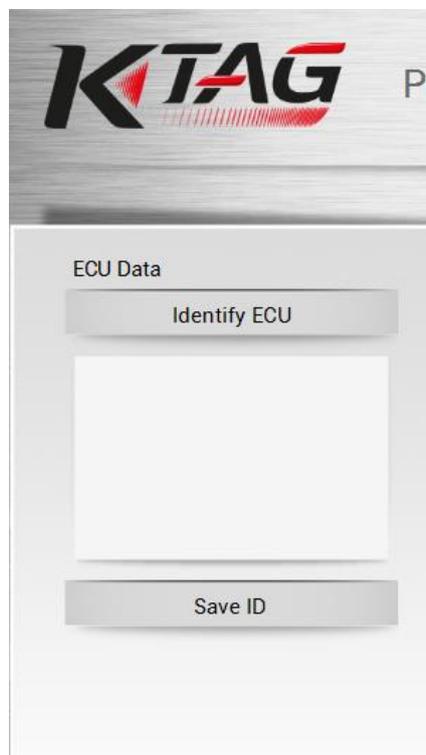
Some of the buttons available in these screenshots may not be available on a client license of KTAG

First step when tuning a vehicle is to perform an ID operation. The ID is used to identify the ECU present in the vehicle, and the properties surrounding it. All this information will be very useful in the tuning and/or mapping process, and so the K-Suite application will provide you with an ID file.

*

The KTAG operations window lists ID information to the left under 'ECU Data'. The operations available are **Identify ECU** and **Save ID**.

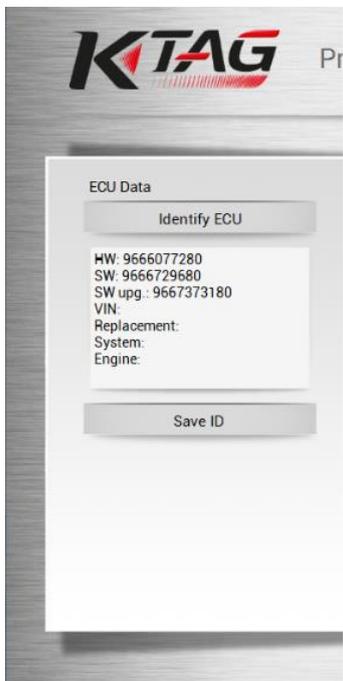
Identifying an ECU is the first step.



The Identify ECU operation will read from the ECU an ID file, and will summarise the information in the space below.



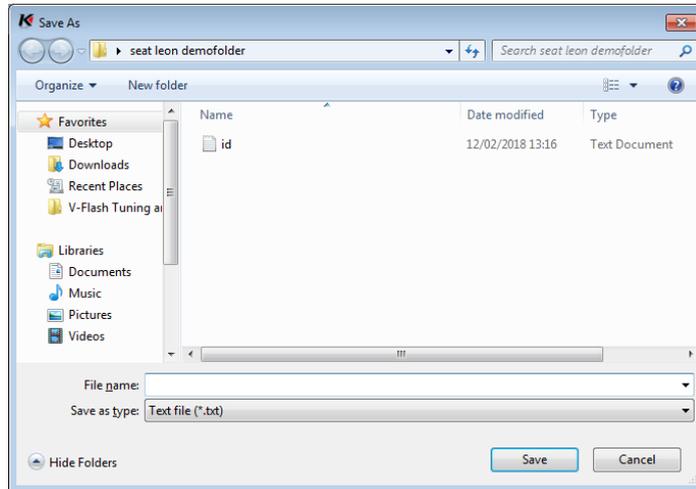
Once the read is complete, the ID file can be saved to the computer system by clicking on the **Save ID** button.



Save your ID file in a sensible place with a sensible name.

We recommend that you save the file with a name containing the licence plate number of the vehicle followed by the letters 'ID'.

Save as: **[Licence_Plate] ID**

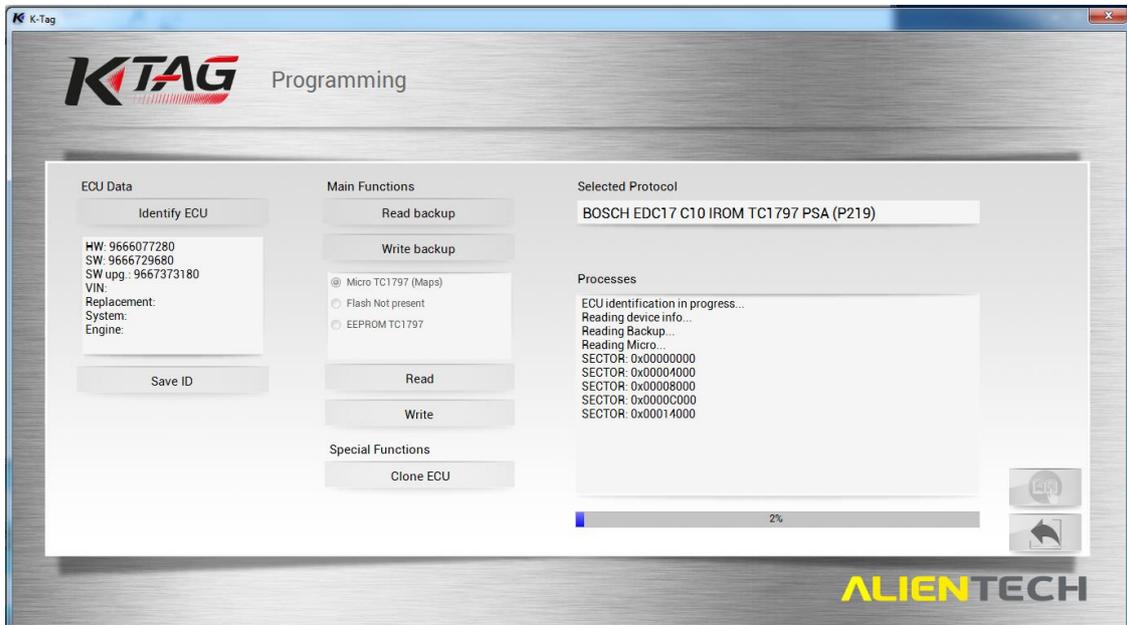


The ID procedure is now complete, and you will have saved your ID file in a sensible place.

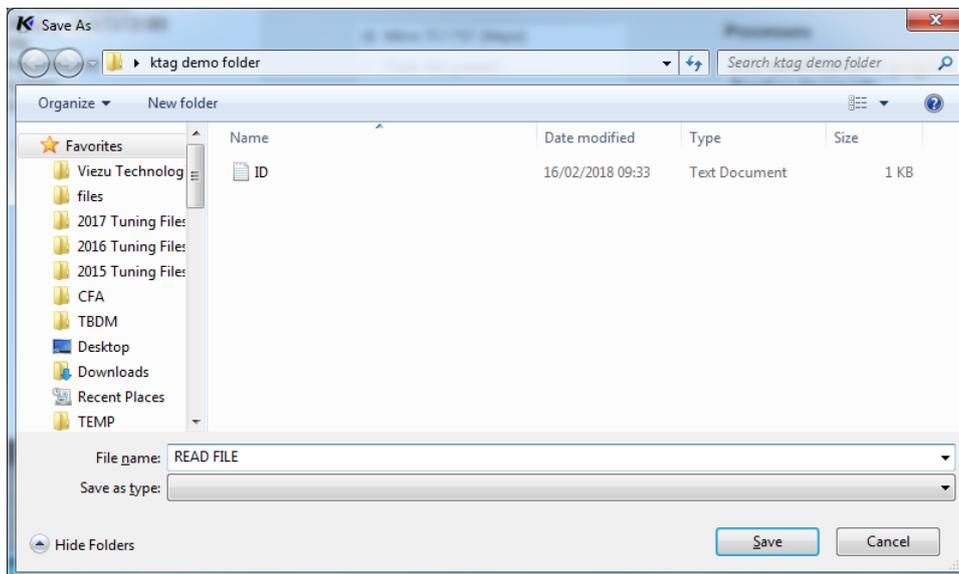
Reading a ECU

Some of the buttons available in these screenshots may not be available on a client license of KTAG

To perform a read operation, click the **Read Backup** button, and the operation will then begin.



Upon completion of the read operation, you will be prompted to save the read file.



Sending and a Receiving modified files to Viezu

There is two ways to send and receive files.

One way is to use our automated 24 hour pay as you go service at <http://www.viezu-client-files.com/>

This service allows you to submit and pay for your file online. **Please note as this is a pay as you go service you can't use any keys that you have pre-brought on your account.**

Alternatively, you can email the file to us and use credits that you have on your account.

Emailing the File

When emailing the file to us using technical@viezu.zendesk.com, keep the subject title as simple as possible, "Vehicle License Plate" is a general suggestion. Include the file submission form in your email

Without these details we will not provide the modified file for you. We take all of the above into consideration when creating the modified file. For example, an engine with a bigger/hybrid Turbo may be able to run more Boost Pressure whereas an engine with high mileage would be given less to take into account wear and tear on the engines components. In this email we also ask that you include any additional information. For example:

Vehicle is used to tow a caravan

Client wants performance and/or economy

Client has a flat spot around a certain RPM

All of this information helps us to achieve the best possible modifications for your client. Once all the relevant information has been received the modified file will be produced. The Service Level Time is 60 minutes on receiving the original read.

Receiving the File

Once the modified file has been created for your client, you will receive the file back via email. The file name will be as you saved it,

For example; "AB01 2CD VPERF" This is the modified file you will need to save to your computer, do not change the name of the file when saving.

Save the file to a location you have set aside for your Tuning Work and do not alter the File Type when saving. Once saved in the appropriate place, you have received the file and you are ready to write back to the vehicle.

Writing a ECU

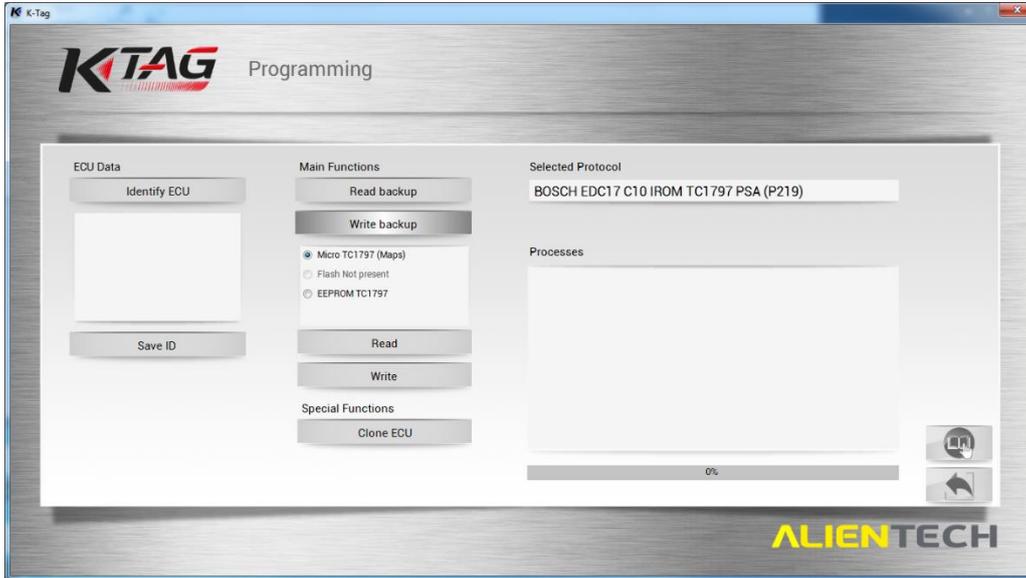
To write the modified file back to the vehicle you will need to select the vehicle in the same way that you did for reading. You will also need to remember to select the exact same vehicle and engine type that you did when you took the read. Not selecting the correct vehicle could cause an issue in the programming process.

Always re-check the KTAG manual as some ECU require different connections to reading, always refer back to the Alientech manual for further instructions.

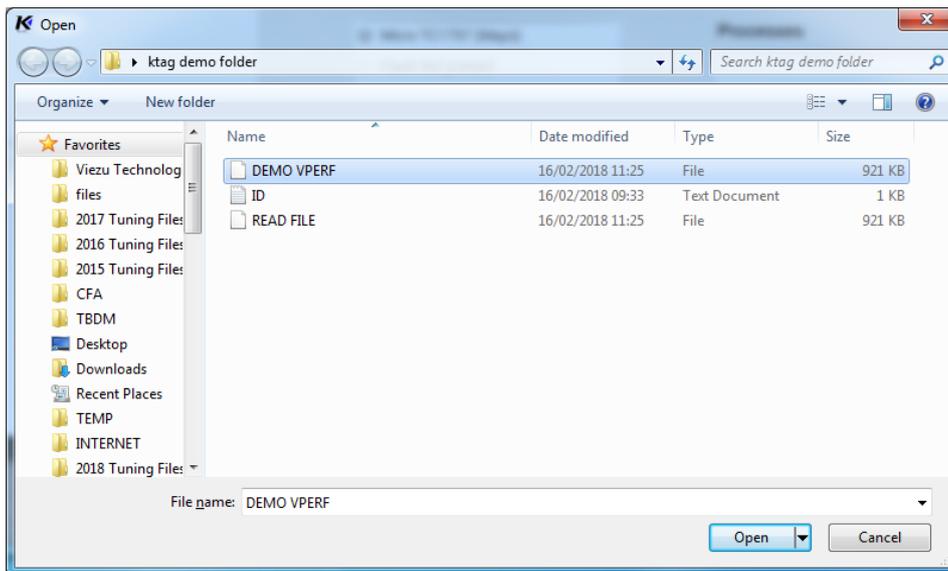
! If you are ever unsure, do not proceed and contact the Viezu Technical Team.

Some of the buttons available in these screenshots may not be available on a client license of KTAG

The **Write Backup** button will begin the writing process, starting with a file selection window.



From the file selection window, you can select your modified file to be written. In this example, a modified file with a VPERF tuning is to be written. We select this file and click **Open** to continue.



It is at this point the writing operation will begin indicated by the progress window that will appear.

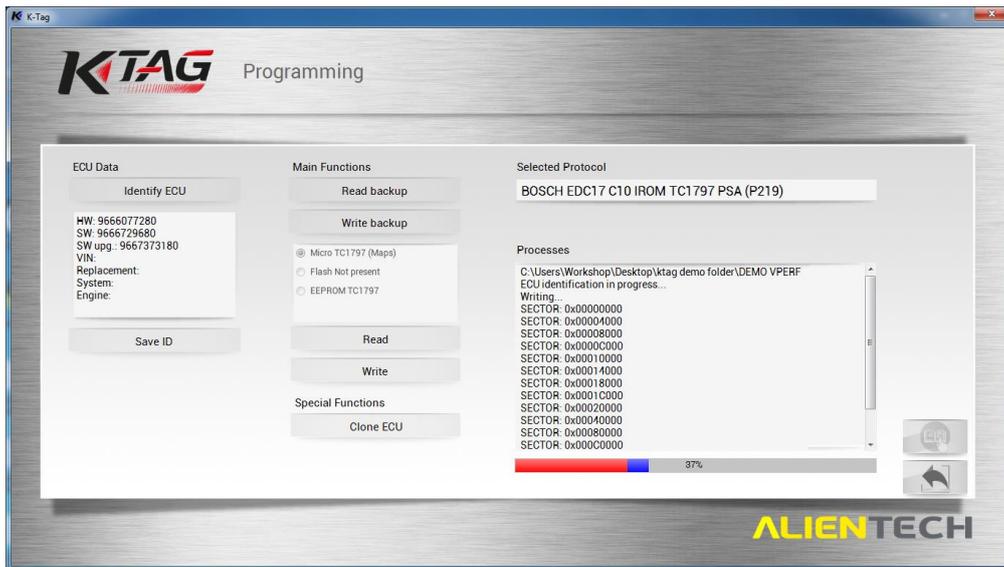
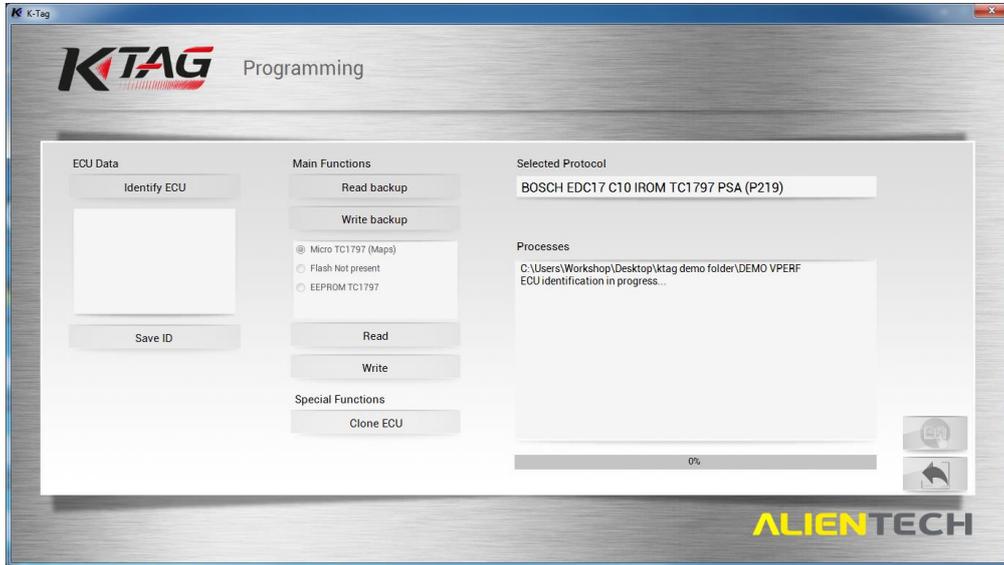


Behind the progress window on the main KTAG window, you will find an operation progress bar and an information box labelled *Processes*.

The progress of the writing operation will be indicated by:

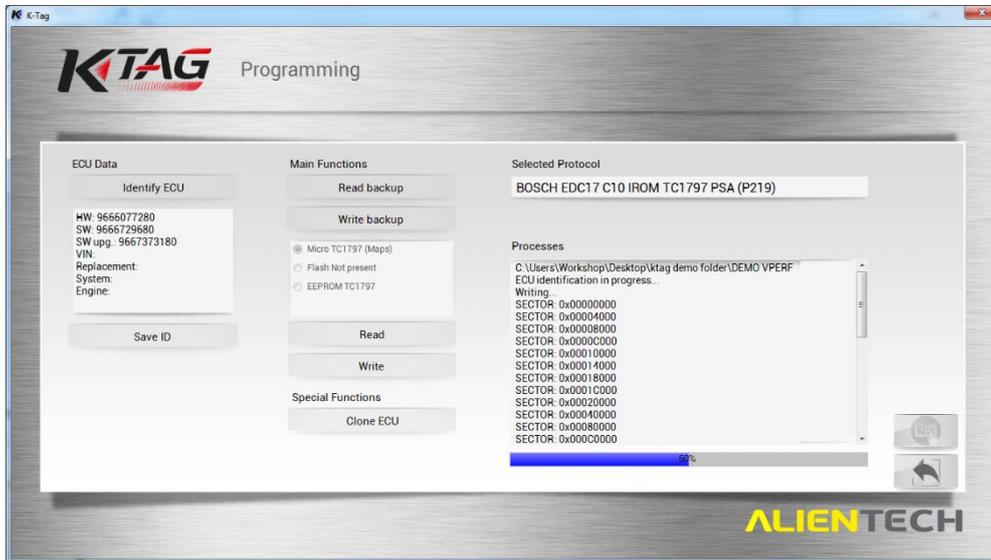
- Information updating in the Processes information box
- The two-coloured progression bar growing to completion

This process can take several minutes to an hour.



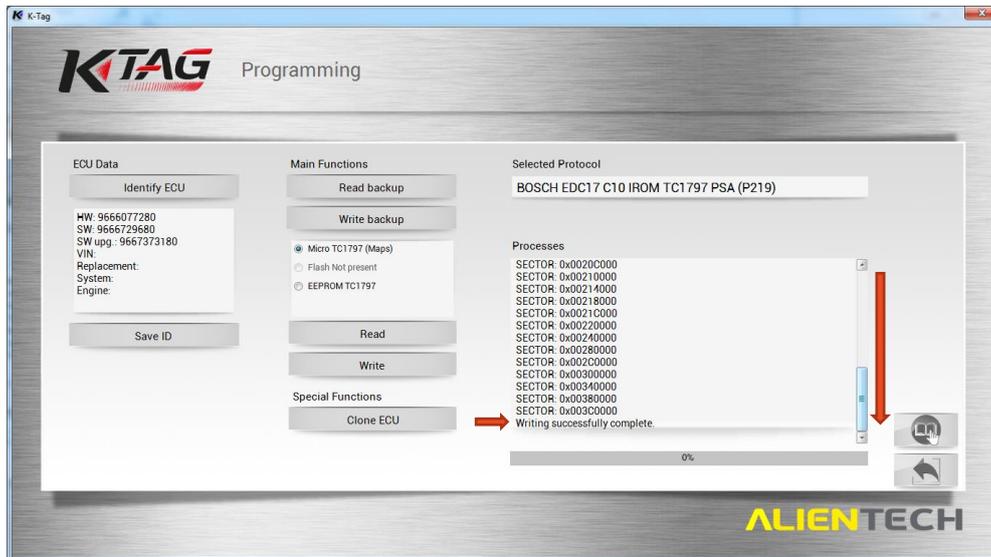
The writing operation is underway, indicated by the information box labelled "Processes" and the growing two-coloured progress bar

Depending on how many sectors the ECU has you may see additional bars progress, after the first progress bar completes. Wait for all bars to finish before doing anything further.



The writing operation is complete when the progress bars are no longer growing, wait a few minutes first to ensure it has finished.

The *Processes* information box will indicate **“Writing Successfully Complete”** (You may need to scroll down to confirm this)



Once the ECU has finished writing then, the ECU will need to be resealed we recommend replacing the silicon to ensure that the unit is fully watertight once again. Then the ECU will need to be reconnected to the vehicle, only once you are sure that the ECU is correctly connected do you bring the keys back to the vehicle.

Definitions (Glossary)

- **ECU** – It can vary from different Bosch, Siemens, to Motronic ECUs. It is not necessary for you to know this before tuning the vehicle however it is something that is worth making a note of for future reference.
- **ORI file** – An original file. An initial and unmodified read of a vehicle's ECU, sourced via the read operation of a KESS/KTAG or through Viezu technical support.
- **Protocol** – A communications protocol identifying number. Every ECU has a protocol number, and there is a large range of numbers available

Viezu Technical Team Contact Details

Emails are answered during both onsite and out of hour's operation times. Contact email addresses are:

technical@viezu.zendesk.com

When contacting a team member directly please always cc the Technical Email Address. The Technical Email Address is copied to all members of the Technical Team; this will ensure your email is also seen in out of hour's service and picked up as soon as it is received.

Our operation hours are as follows (all times are UK)

For file service:

Monday - 07.00am to 21.00pm

Tuesday - 07.00am to 21.00pm

Wednesday - 07.00am to 21.00pm

Thursday - 07.00am to 21.00pm

Friday – 07.00am to 21.00pm

Saturday - 07.00am to 18.00pm

Sunday - 07.00am to 14.00pm

During these hours our Service Level Times are **1 hour** from the receipt of the original file. The contact number for these hours is **+44 (0) 1789 774444**