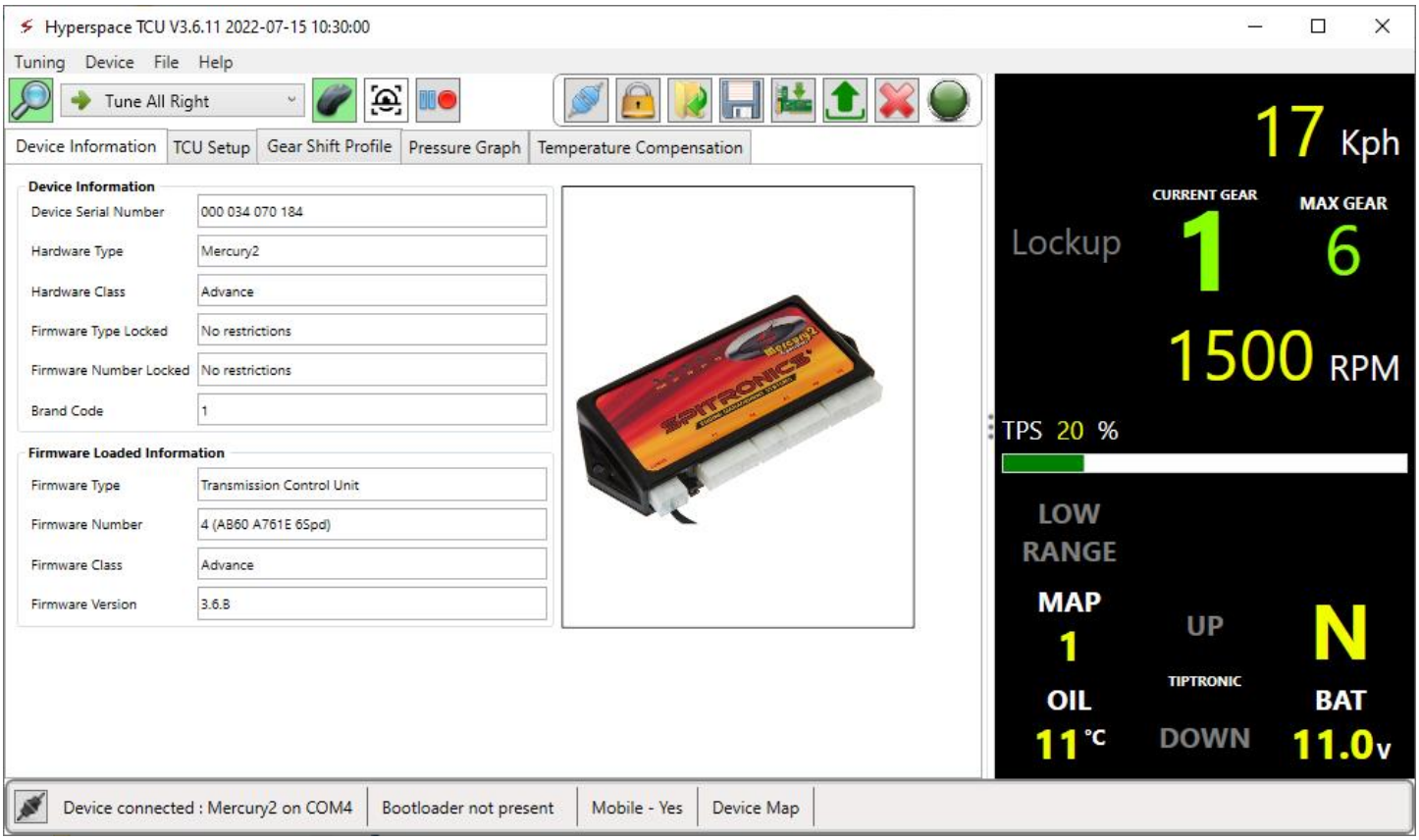
TCU Home Screen

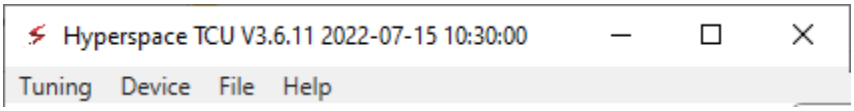
Startup Screen

If you open the software without a live device connected, you will come to the main pallet or screen which forms the framework of the Hyperspace software. It looks the same for all the devices. From here you can open map files, connect to devices and set basic settings required for the software to operate.



Once you connected to a Device you will get a screen like this.

Top Toolbar

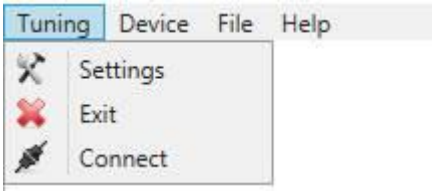


Like any Windows program you will find standard menus and buttons which relate to program settings and preferences. Offline Map files could also be selected and edited with the file button.

Notice the Version and Date in the name. this will help dealers to see if you have the latest software installed. Make sure from time to time that you have the latest version which is free from our website. Especially if you find something in the software that may function incorrectly. We fix these errors immediately and replace the version on our website.

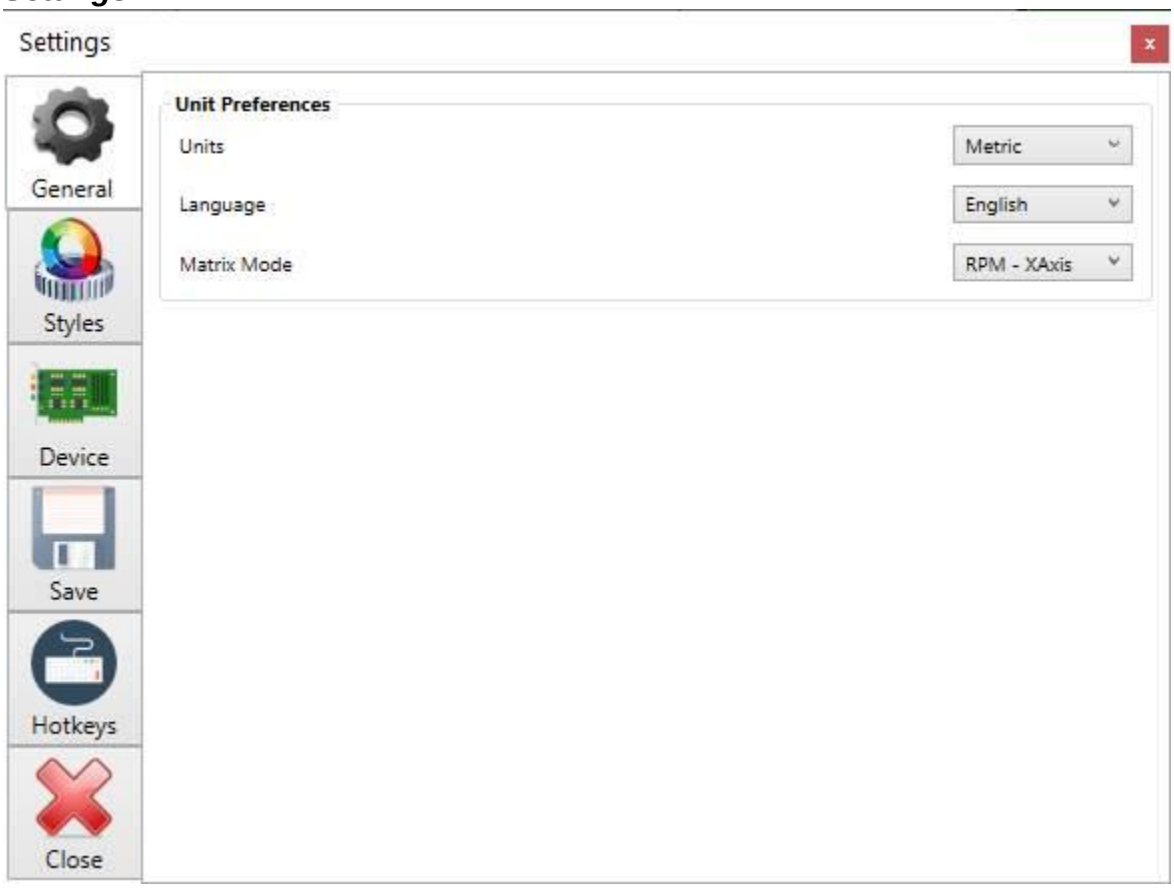
This software is Version 3.6.11 The last 11 is a sub release as fixes etc. are made.
2022-07-15 10:30:00 is the date and time this version was released. This may vary in the future.

Tuning Menu

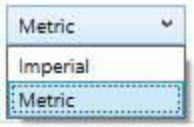


Settings is to set up units, software and device communications and auto map save settings.
Exit is to quit the software.
Connect is to connect or dis-connect to the TCU,

Settings



Unit selection

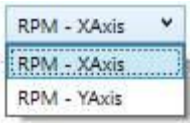


Select Metric or Imperial units.

Language

Select Language if it is available.

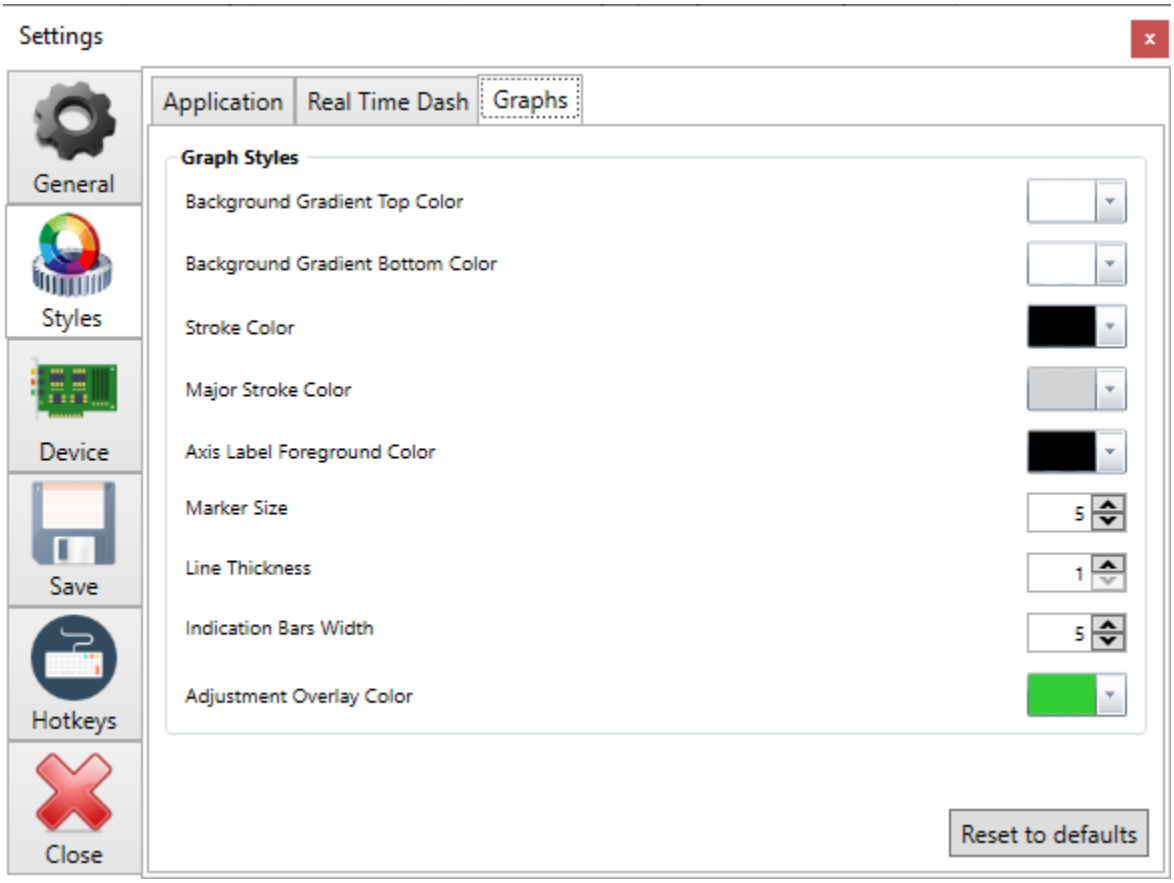
Matrix Mode



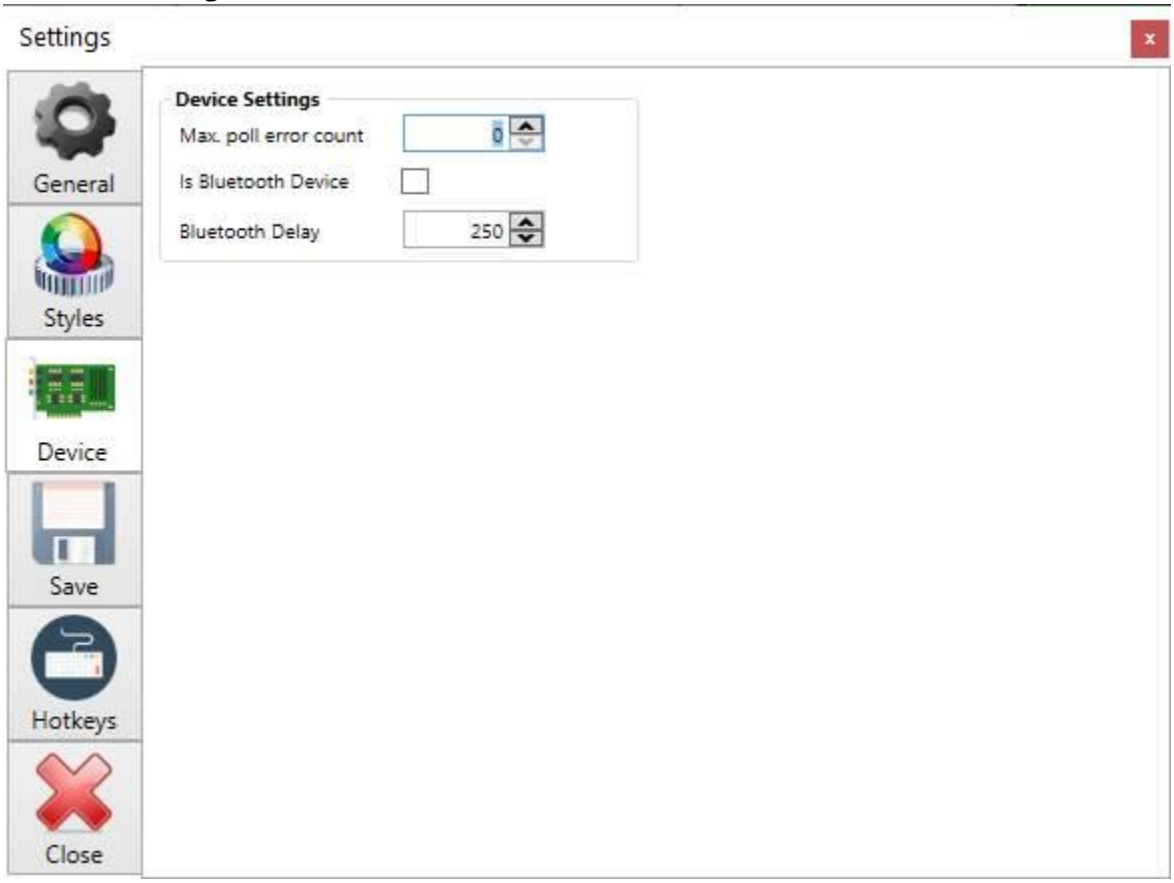
Select the RPM Axis you prefer for matrix tuning.

Styles

Custom your own tuning pallet to suit the collars and font size that works for you. Remember these settings is saved in the Config file. If you upgrade versions, then rename your Config file to carry your settings over.



Device Settings



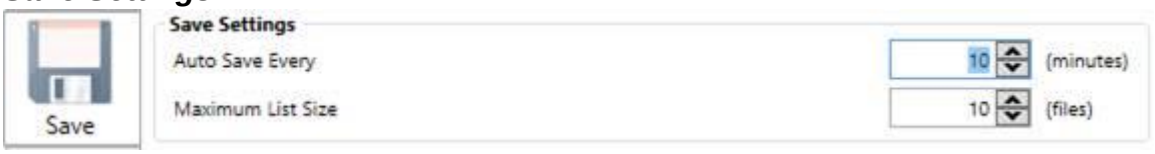
Max Poll error count:

This is the time it takes to read the real time values from the device via the Blue Tooth serial port. Blue tooth communication is not as smooth and fast as USB communication. It requires a tolerance setting to ignore short intervals of no communication. Increase this value till the flashing LED stops flashing RED. For USB cables keep this value at 0.

Blue Tooth Delay

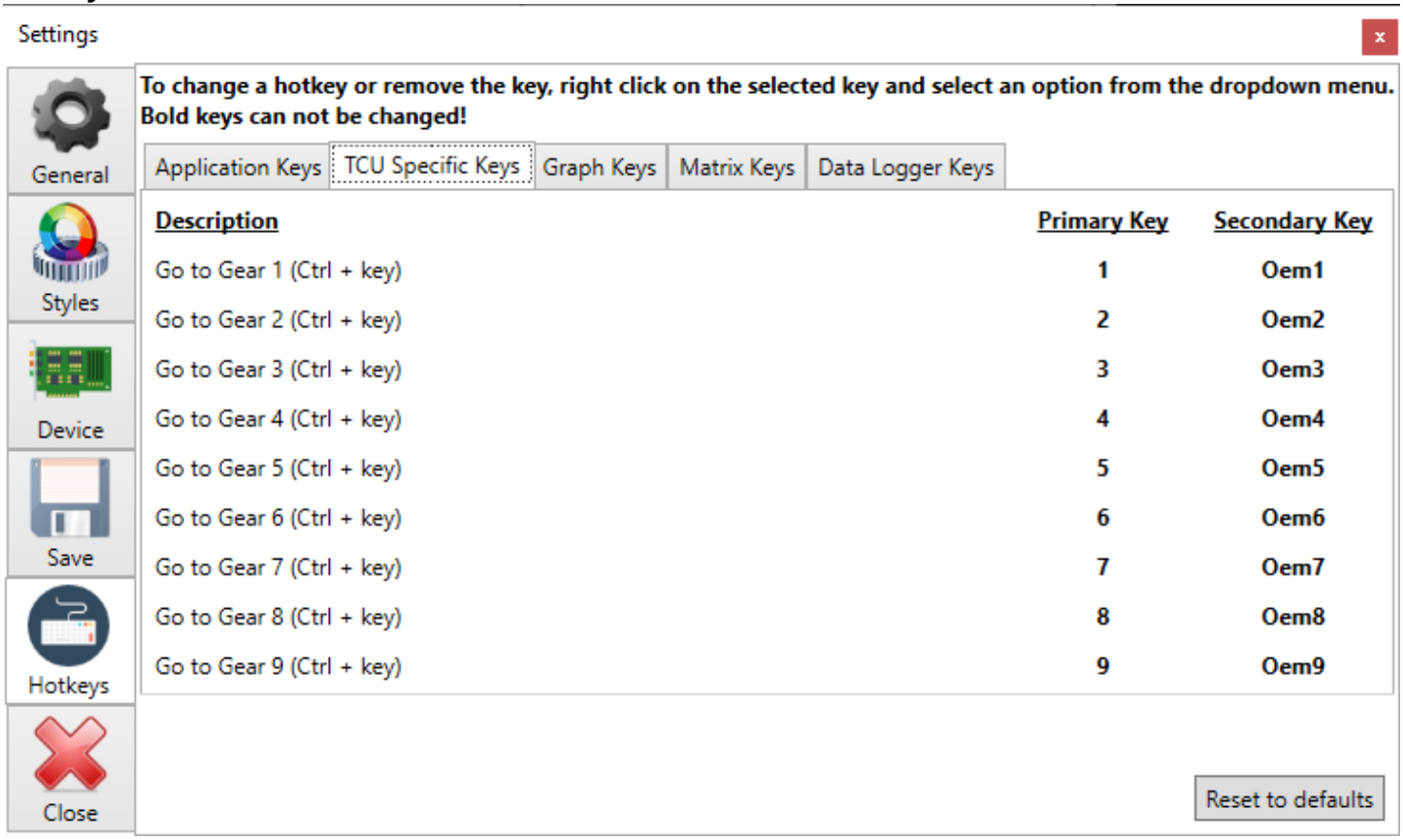
This setup will add a delay that some blue tooth modules will require to operate. Leave it at zero if not used.

Save Settings



The software will do ***Auto saves*** at time intervals. The intervals can be adjusted here. It will also have a max display list on the open file menu. Then the software will also make a backup copy of each download to TCU and it is called ***Device Saves***. File location for these maps is in the folder where the Hyperspace is saved on the hard disk.

Hotkeys

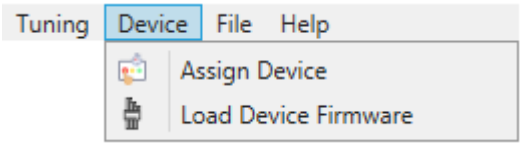


These settings let you customise quick keyboard keys to fast track moving between screens and functions. They are completely customisable. In the factory we will set up basic keys for your convenience. You may restore to default when you chose to. Remember these settings is saved in the Config file. If you upgrade versions, then rename your Config file to carry your settings over.

Close Button

Close will save your selections in the Config file and go back to the tuning pallet.

Device

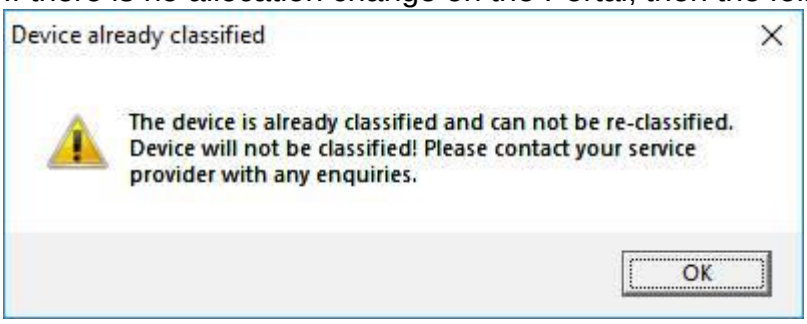


Assign Device

For your convenience Assign Device is built into the Hyperspace Tuning Software. If a system is upgraded or activated on the Portal, the customer only need to have internet connection to activate his system. When you click Assig and there is an active allocation on the Portal, this message will appear:

Click Yes and the device will be activated.

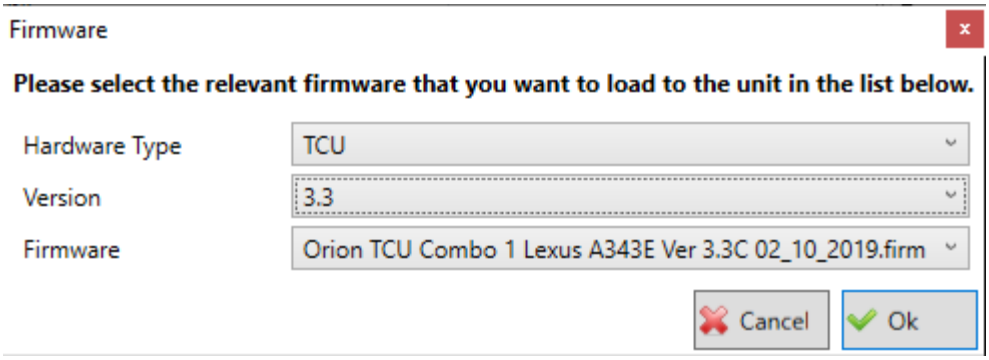
If there is no allocation change on the Portal, then the following message will appear:



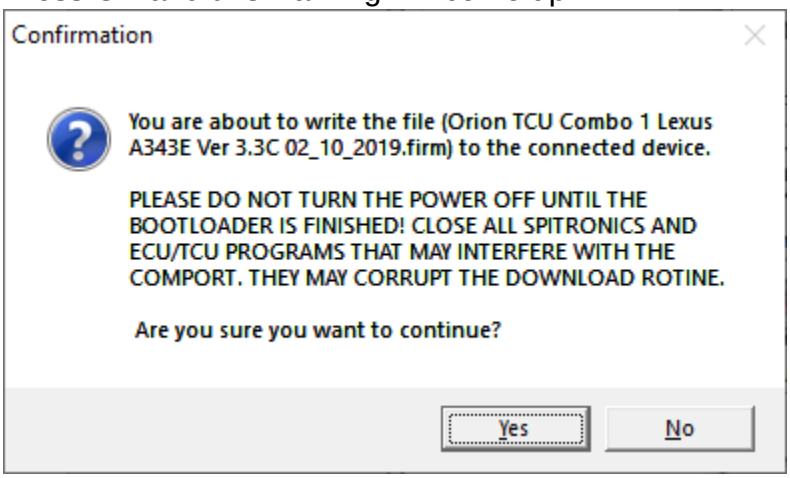
Load Device Firmware

Mercury2 still use the USB Debug Adapter to load firmware. This message will not be visible. See that section in another document.

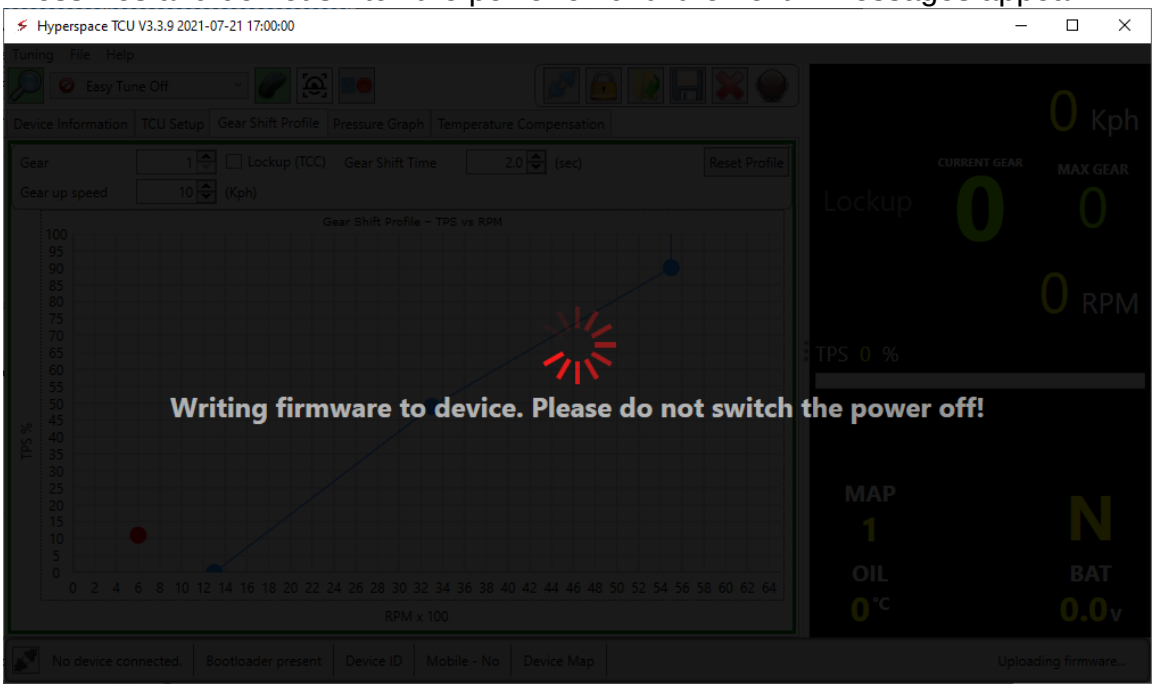
Orion2 has a built in Bootloader and you may load firmware from the Hyperspace tuning software. This firmware is only saved on the Internet so you will have to have a live internet connection. Click on Load Device Firmware and a browser will come up. Select your firmware file to load and click open. First the Type of firmware then the Version of firmware then the Firmware number that is required.

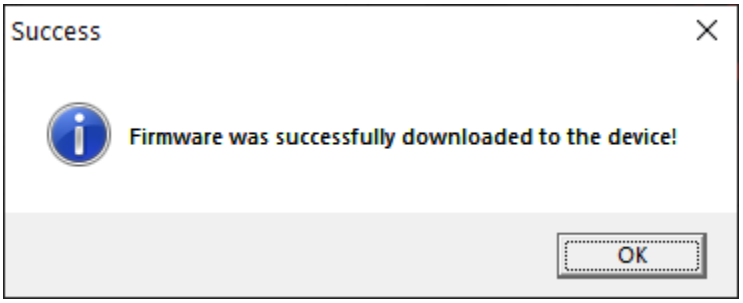


Press OK and this warning will come up.



Press Yes and do not switch the power off until the next 2 messages appear.

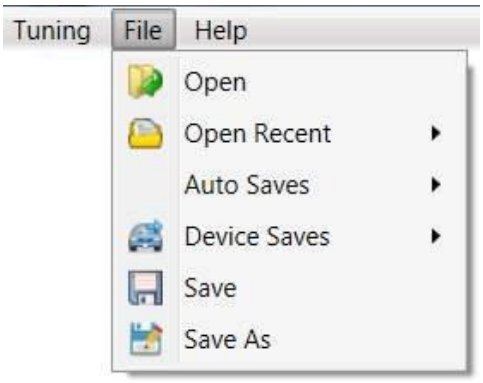




Now you have successfully loaded new firmware in the device. You can now reset all the settings according to the new engine.

Note: Should there be any bug fixes it will be loaded under the same name. So always start with the latest firmware loaded from the web and see if your issue has not been fixed already. Just load the same file in again.

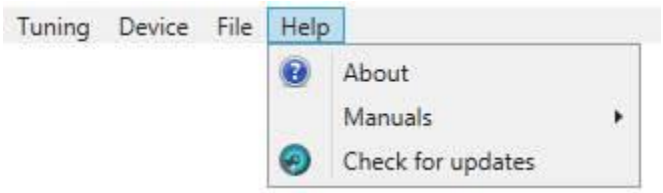
File Menu



This menu is to open the different saved maps or to save a map from a device onto the pc. The software will save periodic files in Auto Saves folder and also when you do a Device save it will make a copy in the *Device Save folder.*

Open is to open Map files offline
Open Recent is to open the last previous map files
Auto Saves is to open the last auto saved files
Device Saves is to open the last device saved files
Save is to save Map files on the PC
Save As is rename Map files on the PC

Help Menu



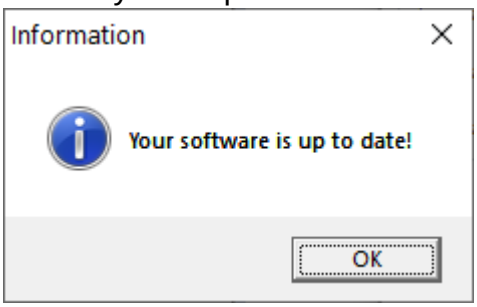
This menu holds information.

About
About will indicate all the release fixes and changes between versions released.

Manuals
It also unlocks the embedded manual and will save a copy of it in the Hyperspace folder where the software was saved initially.

Check for Updates

You may also update the software from this menu. If it up to date then this message will appear.



TCU Toolbar

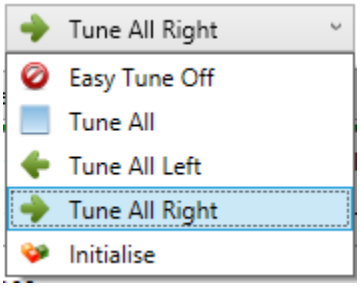
TCU Toolbar Shortcut Buttons guide you to basic operations. Some buttons have a keyboard hotkey to make it easy to activate them. The hotkey is in the title block of each button description. Green background means activated on some of them.

Hide button - H

This button is used to show all lines on a graph or hide the ones that is not selected. It is handy if graphs are on top of each other to see each one separately.

Easy tune - E

This is a very handy feature if you have to lift graph dots simultaneously. There are different algorithms. That will only move dots from the tuning bar.



Initialise will make the whole line the same value as where the green tune bar cross
When easy tune is on then SHIF-Z will initialise every dot with the same selection to the same value as the bar.

Mouse on - M

This is handy to use mouse tuning on the graphs or disable it for arrow tuning.

Real-Time tracking - R

This is a very handy tool to move the green tuning bar with the real time bar of a graph. It is used with or without Easy Tune to adjust the same value that the device use at that time.

Data Logger

This feature is used for logging signal and tuning on the road.

Connect Button

This indicates if the unit is connected. If you click on it then it will toggle to the other option.

Map Lock Option

This is handy to lock tuning maps so that the customer cannot change parameters. It is also a feature to clone the device with calibrations from another device. *See the sub folder for explanation on its operation.*

Open Map file

This is to load a Map file from the hard disk into the device.

Save Map file

This is to save a Map file from the device onto the hard disk.

Save to device

If you made changes you can save them permanently in the flash with these buttons. You can also press CTRL-S for save or click on the yellow flashing LED.

Upload device memory

This is used with the simulator and when firmware is flashed to the device. It will refresh the software with restarting it.

Quit button

Enough said

Communication LED

This indicates the status of the device.
Flashing green means the device flash memory and PC memory are the same. No save is required.
Flashing yellow means you have changed parameters in the device but you have not made them permanent by saving to the flash memory.
Flashing red means no communication to the device.

Device Information

The device information screen displays vital information regarding the Spitronics TCU that has been connected. Note: Firmware is the program that is loaded into the TCU to make the electronics operate in a specific way. This is normally Firmware file which is loaded into the product by a USB debug programmer or BootLoader. Software is the tuning interface that runs on the computer and it is used to tune the product's parameters.

Device Information

Device Serial Number
There is a unique number assigned to each product. It is saved on maps and recognized by the database on its status etc.

Hardware Type
Displays which type of device has been connected to the software. In this case an Mercury2 Transmission Control Unit.

Hardware class
Displays the Hardware class of the product that has been connected to the software. The hardware class will determine which firmware can be uploaded onto the product. This feature allows the unit to open certain or all functions of the electronics. The amount of features determines the price of the unit. This feature can be changed over on the internet to allow for remote upgrades of the unit. The hardware classes are as follows:

1. Micro
2. Basic
3. Standard
4. Intermediate
5. Advance
6. Ultimate
7. Commercial
8. Racing

Firmware Type Locked
This block will indicate which type of firmware are allowed on the unit. If it indicates ***No Restriction,*** it means that any Type of Firmware for Mercury2 can be programmed into the unit like ECU, TCU TxW etc. This feature is for sponsored units or specials which was approved by the manufacturer.

Firmware Number Locked
This block will indicate which firmware number in the firmware range are allowed on the unit. If it indicates ***No Restriction,*** it means that any firmware number for Mercury2 can be programmed into the unit. This feature is for sponsored units or specials which was approved by the manufacturer.

Brand Code
This represent a specific brand like Spitronics which is 1. Devices may also be rebranded to large distributors which means this code will change. Once a brand is changed the unit will only connect to the software of that brand. This will bring exclusivity to that brands customers.

Firmware Loaded Information

Firmware Type
This block will indicate which type of firmware are loaded on the unit like ECU, TCU TxW etc.

Firmware Number
This block will indicate which firmware number is loaded and a short description.

Firmware Class
Displays the class of the firmware that has been downloaded onto the device. Each firmware program supplied will have a certain class according to the features used. You may load any firmware for a specific product into the unit as long as the firmware class does not outrank the hardware class of the device. The firmware classes are as follows:

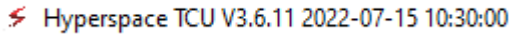
1. Micro
2. Basic
3. Standard
4. Intermediate

5. Advance
6. Ultimate
7. Commercial
8. Racing

Firmware Version

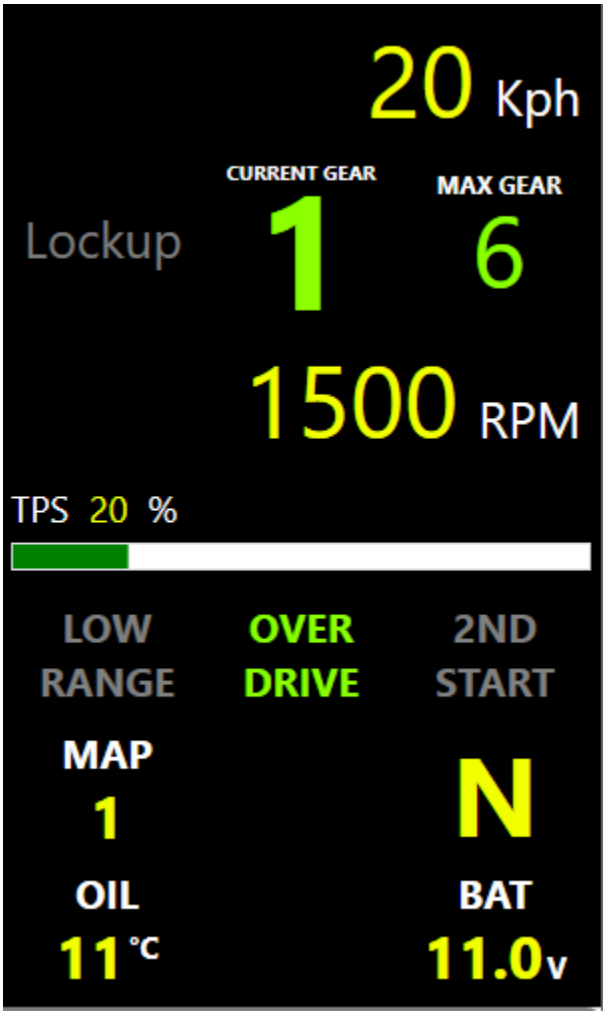
This block displays the software version as well as the firmware version that is loaded into the device. In the example 3.6 is the software version which is required to communicate with the device and B is the firmware version.
The firmware version no effect on the software version. Always use the latest versions available.

Hyperspace Software Version



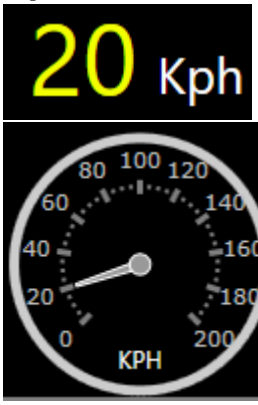
On the top bar you will find the product software version. Note that version 3.6 will be standard with the Firmware version 3.6.
The first 3 is version 3 PC Software.
The second 6 is the protocol version between the PC software and the firmware. When new features are programmed into the unit, this protocol version will change in the PC software and in the Firmware.
The .11 at the end is a sub version and has no effect on the firmware. This version will indicate corrective or improved PC software. Always use the latest version available.

Real-Time Display



This block displays all the analogue sensor values as they change in the TCU. You may change the appearance of some of the signals as well as the colours in the settings tab. Double click on certain fields will toggle between 2 types of views. Below is a description of the meaning of each signal.

Speedometer



This is the Speedometer value displayed in Kph. For Mph change it at the Settings tab.

Lockup

This value displays lockup status. Green for engaged and grey for released.

Current Gear

This value displays gear which is currently engaged by the TCU.

MAX Gear

This value displays the maximum gear allowed by the TCU. This is a driver setting in Tiptronic modes.

RPM

This value indicates engine revolutions per minute.

Throttle Position Sensor

This value displays the amount of throttle pedal which is applied by the driver.

Low Range

This displays the status of the low range lever. Green is engaged and grey is disengaged.

Overdrive Switch

This displays the status of the overdrive selection switch. Green is engaged and grey is disengaged.

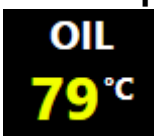
2nd Start Switch

This displays the status of the 2nd Start selection switch. Green is engaged and grey is disengaged.

Map or Tune indicator

This displays the current map that is selected. The TCU can hold up to 4 maps.

Oil Temperature Sensor



This value displays the current TCU oil temperature if the box has a sensor.

Tiptronic Buttons Up and Down

This value displays the status of the tiptronic push buttons. Green is pressed and grey when released.

Shifter Lever Sensor

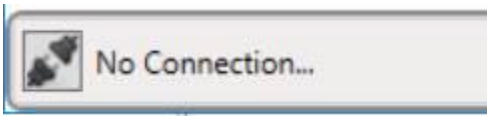
This value displays the current shifter lever position like PRND21 etc.

Battery Voltage

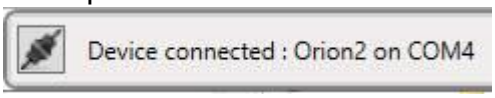
This value displays battery voltage that is connected to the TCU.

Status Bar Display

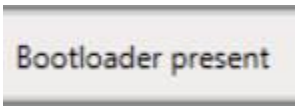
This block at the bottom of the software displays all kinds of status, information and fault codes. Below is a description on types of messages.



When no device is connected, the connection button may be open and an indication that no device is recognized. If you use a different USB cable, you may need to click on the connect button to tell the software to search other Comms ports as well. Once a port is found with a recognized device the software will lock onto that port to minimise start up times. It will then display the device type and COM port as below.

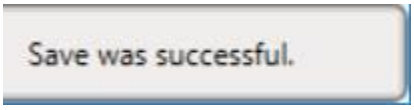


At bottom right corner is connection information. This will indicate which Comms Port is being polled for a device. If you have changed the USB cable to another one, then this Comms Port may not be the Port number that the software remembered. Click on the Connect button then the software will look on all the available Ports for a device. Once a device is found, this will be saved in the Config file to cut down on start time for the next connection.

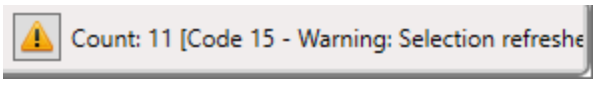


Orion2 has a BootLoader to load firmware. This indication will show if it is active on that device.

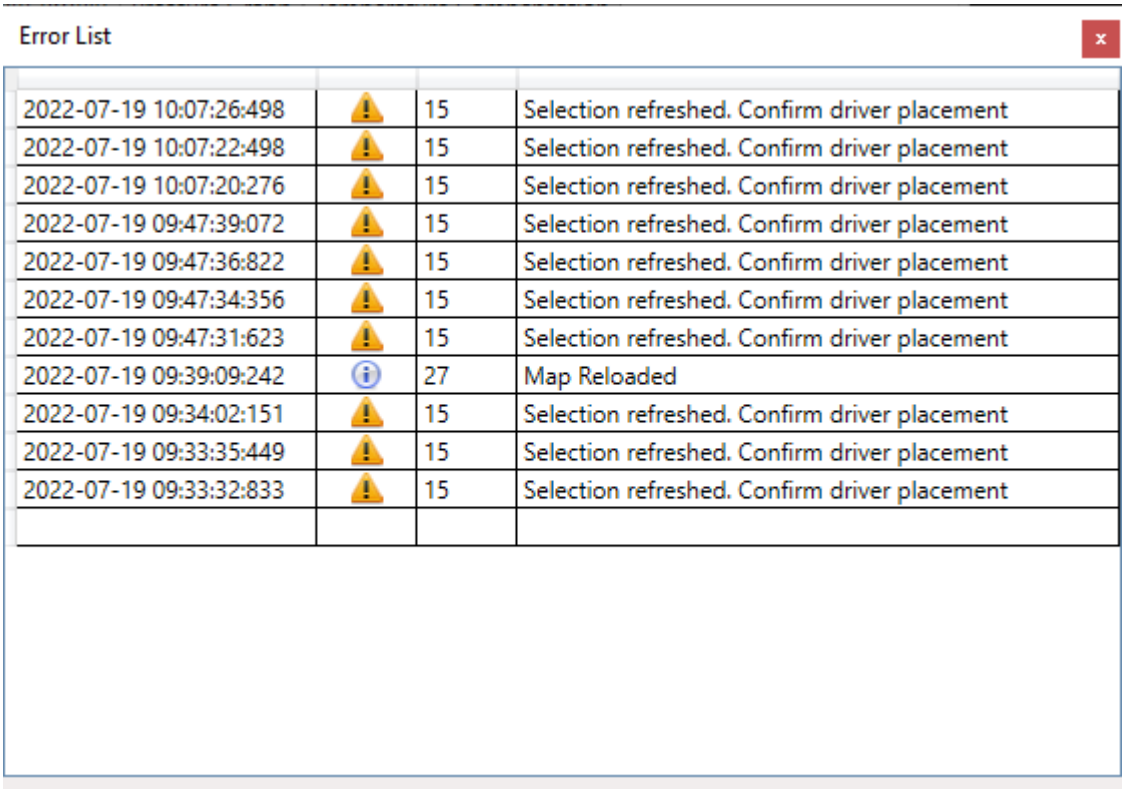
This message indicates if the unit is mobile software capable or not. Some mobile applications will run only if this is set. Contact your supplier for activation.



The software will also give occasional indications on tasks like if the map was saved successful or not.



This message will indicate Errors, Warnings and Information. This is helpful to the user to find errors in the setting up of the device. If you click on the  button left of the error, a list of the errors will appear with the last one on top. If you go out of the error list it will be cleared. See the list of errors in the sub folders.



See the sub folders for the different error messages displayed on the Status bar:

Error Codes

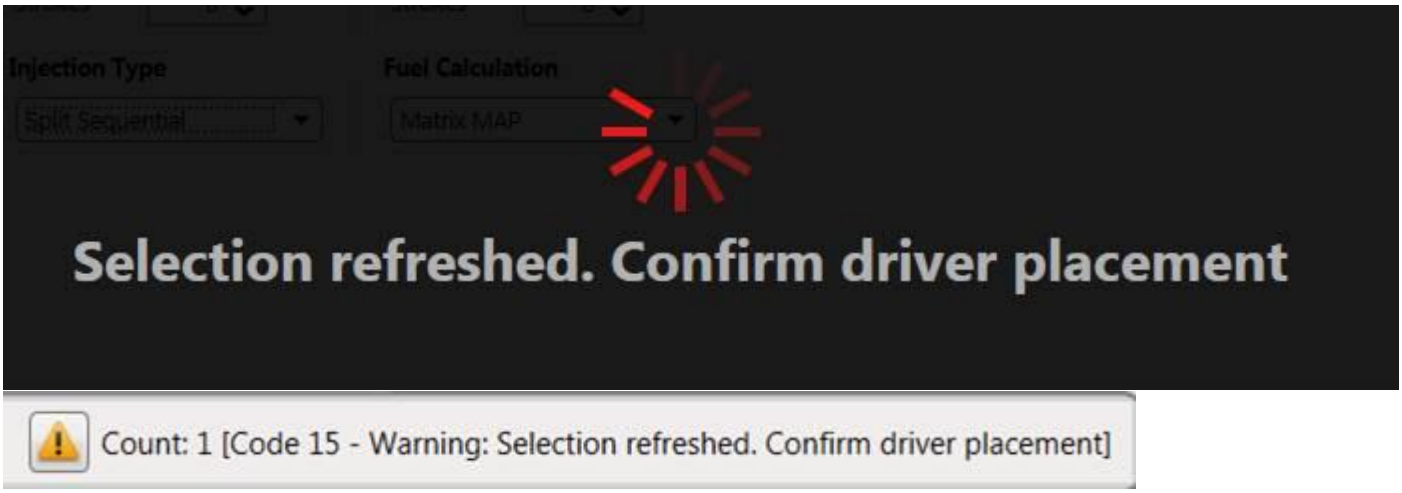
The TCU software has only a few Error, Warning and Information codes displayed in the Status tool bar at the bottom. These codes will help the tuner to find problems during startup and tuning, also to see if the TCU is functioning correctly. Some of the functions on the TCU will indicate to the tuner what is happening. He can then see if these functions are operating correctly.

The codes are displayed at the right hand bottom corner. The code list  will display a list of accumulating codes so that the tuner can see what the codes were and in which order. The bottom indication will only show the last code. Also note that a code is only updated once, until it disappears and when it appears again the code will be logged again. This is to prevent the list from being too long. This does not apply to the angle sensor error codes during cranking. They will increment the counter as each one occurs.

Press the ‘’**C**’’ key to clear the error codes. This is handy as you will not be able to see is the code is still present or if it was only listed once.

Selection Refreshed

This feature is initiated by the firmware to force the software to refresh its database. It happens when the tuner makes selections that are not legal for that specific firmware or when GP outputs are re-arranged by the features. The software will refresh and change the setting of the tuner to a safe level or disable other features. The messages below will then appear:



TCU firmware do not shift drivers around so no need to go through the setup again. .