

Spitronics ECU - Software Overview - Guide

The Spitronics ECU software provides the interface between the user and the ECU.

From the main software screen, the user can:

- Connect to an ECU.
- Open and save Tunes.
- Configure the ECU.
- View Real-Time Data.
- Set up Inputs and Features.
- Tune Graphs and Matrixes.
- Save changes to the Device.
- Record and analyse Data Logs.
- View status, warning and diagnostic information.

Cosmos is used as the main visual reference in this guide. Hyperspace follows the same general operating principle and is only discussed separately where the method differs significantly.

Software Terminology

Spitronics terminology has changed over time.

Earlier software may use terms such as Map where newer software uses Tune. This guide uses the current terminology unless an older name is required to identify a specific software control.

Main Software Screen

The main software screen is the working area used for ECU setup, tuning and diagnostics.

When connected to an ECU, the screen is divided into several main areas:

- Top Menu and Toolbar.
- Navigation Tree.
- Main Working Area.
- Real-Time Dash.
- Status Bar.

The screenshot displays the Cosmos ECU V1.2.15 software interface. The top menu bar includes 'Tuning', 'Device', 'File', and 'Help'. Below the menu is a toolbar with icons for various functions. The main window is divided into several sections:

- Device Information:** A table showing hardware and firmware details.

Hardware	
Device Serial Number	001 128 153 194
Board Number	26 01 90 06
Hardware Type	Callisto
Firmware Type Locked	ECU
Firmware Number Locked	41
Brand Code	3

Firmware	
Firmware Type	Engine Control Unit
Firmware Version	1.2.C
Firmware Number	41 (36-2 6Cyl Smart Coil)
Engine Config	65C 6Inj 6GP

Licensing	
Credits	12
Activation Date	2026-08-27
Status	Active
- Real-time Data:** A black panel on the right displays live engine data in yellow and green.
 - 4300 RPM** (Large yellow text)
 - Lambda 100 % (Green bar)
 - Map 0.69 Bar (Green bar)
 - Injector 9.9 ms (Green bar)
 - Inj. Duty 35.5 % (Green bar)
 - TPS 18 % (Green bar)
 - POT 100 % (Green bar)
 - TIMING 38 °BTDC**
 - COOLANT 62 °C**
 - ALTITUDE 0.00 Bar**
 - AIR 48 °C**
 - BAT 12.1 V**
 - CREDITS 12**
 - MAP NO 1**

The bottom status bar shows: 'Device connected: Callisto on COM10 | Bootloader present | Android Enabled - No | Race Pack - Yes | Must Have Internet - No | Save was successful. | Count: 2 [Code 13 - Warning: Lambda control limits reached] | Portal Online'.

The exact information visible depends on the ECU, firmware and enabled features.

Functions that are not available for the connected Device may be hidden automatically.

Offline and Online Operation

The software can be used with or without an ECU connected.

Offline

When no Device is connected, a Tune can be opened from the PC and inspected or edited.

Offline operation is useful for:

- Preparing a Tune before connecting to the vehicle.
- Reviewing an existing Tune.
- Comparing settings.
- Making planned changes.
- Working with saved customer Tunes.

Changes made offline do not affect an ECU until the Tune is deliberately downloaded to the Device.

Real-Time Data viewing is not available offline. Unless a data log is played back

Online

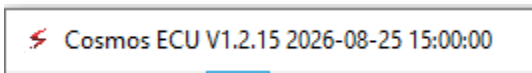
When an ECU is connected, the software communicates with the Device and displays live operating information.

Online operation allows:

- ECU limits to be enforced
- Real-Time Data viewing.
- Sensor checking.
- Setup changes.
- Realtime tuning.
- Diagnostics.
- Saving changes to the Device.

Software Version

The current software version and release information are displayed in the title bar.



Example:

Cosmos ECU V1.2.15 2026-08-25 15:00:00

The version information helps identify which software release is being used when:

- Requesting technical support.
- Comparing software behaviour.
- Checking for updates.
- Diagnosing differences between installations.

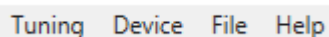
When requesting technical support, provide the software version where relevant.

Top Menu

The Top Menu provides access to the main software functions.

Current Cosmos ECU software contains menu groups such as:

- Tuning.
- Device.
- File.
- Help.

A screenshot of a top menu bar. It contains four items: 'Tuning', 'Device', 'File', and 'Help', all in a light gray sans-serif font. The items are separated by small gaps and are set against a light gray background.

The exact options inside these menus may vary according to the software version and Device.

Tuning Menu

The Tuning menu contains general functions related to the tuning environment and software operation.

Depending on the software version, this may include functions such as:

- Software Settings.
- Connection controls.
- Other tuning-related commands.

Detailed software preferences are covered in the:

Spitronics ECU - Software Settings and Configuration - Guide

Device Menu

The Device menu contains functions that operate directly on the connected ECU.

Depending on the Device and firmware, these may include functions such as:

- Device connection.
- Device assignment or activation.
- Firmware-related functions.
- Device-specific operations.
- Pin Layout functions.

Only use Device functions that are applicable to the ECU being configured.

File Menu

The File menu is used to work with Tune files.

Typical operations include:

- Open Tune.
- Save Tune.
- Auto Saves.
- Device Saves.
- Recent Tunes.
- Other file-management functions.

Detailed Tune handling is covered in the:

Spitronics ECU - Tune and File Management - Guide

Tune recovery is covered in the:

Spitronics ECU - Tune Recovery - Quick Guide

Help Menu

The Help menu provides software and support-related information.

Depending on the software version, functions may include:

- Software information.
- Version or release information.
- Manuals.
- Update functions.

The older Hyperspace software also used the Help menu for release information, manuals and update checking.

Main Toolbar

The Toolbar provides quick access to frequently used functions without opening the main menus.



The available Toolbar buttons depend on the active software page.

Typical functions can include:

- Show Hide Content List
- Zoom Function
- Easy Tune.
- Mouse Tuning.
- Realtime Tuning.
- Data Logger
- Connect Disconnect
- Lock Password
- Open Tune.
- Save Tune.
- Download to Device.
- Upload from Device
- Quit Program
- Save and Device Status

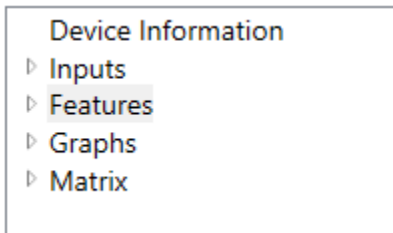
Several Toolbar functions also have Hot Keys.

Detailed editing controls and Hot Keys are covered in the:

Spitronics ECU - Editing Tools and Hot Keys - Guide

Navigation Tree

The Navigation Tree on the left side of the screen is the main method used to move through ECU setup and tuning.



The Tree is arranged in approximately the same order that the ECU should be configured.

Typical sections include:

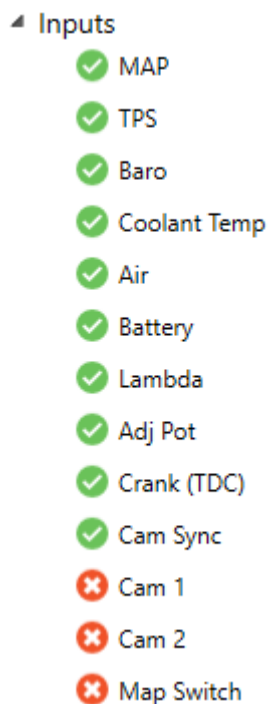
- Inputs.
- Features.
- Graphs.
- Matrix.

The exact items displayed depend on the connected ECU, firmware and selected features.

This means two ECUs may not display exactly the same Tree.

Inputs

The Inputs section contains the sensors and signals required by the ECU.



Typical ECU Inputs may include:

- MAP Sensor.
- TPS.
- Barometric Pressure.
- Coolant Temperature.
- Air Temperature.
- Battery Voltage.
- Lambda.
- Adjustment POT.
- Fuel Pressure.
- Crank and Cam Sensors.
- Tune Selection inputs.

Each Input should be configured and verified before relying on it for engine control.

Detailed information is provided under the applicable Input topic in the ECU documentation.

Features

The Features section contains the main engine-control functions.

▲ Features

Engine Data

Outputs

Spark & Timing

Fuel & Timing

Prime & Accel

Idle Control

Launch Control

Anti-Lag

Flat Shift

Lambda Control

Engine Limits

Cam & Intake Control

Typical examples include:

- Engine Data.
- General Purpose Outputs.
- Spark and Timing.
- Fuel and Timing.
- Fuel Compensation.
- Idle Control.
- Launch and Spinning.
- Anti-Lag.

- FlatShift.
- Lambda Control
- Engine Limits.
- Cam Control.

The available Feature list depends on the ECU firmware and enabled options.

Selecting a Feature opens its settings in the Main Working Area.

Graphs

Graphs are used for tuning functions that change according to one operating axis.

▴ Graphs

Timing Graph

Fuel Graph

TPS Graph

Lambda Graph

Air Graph

Coolant Graph

Voltage Graph

Typical examples can include:

- Timing Graphs.
- Fuel Graphs.
- TPS Graph
- Lambda Graph
- Air Temperature Compensation.
- Coolant Compensation.
- Voltage Compensation.

Graphs provide a visual representation of the Tune and can also display the current operating position while the engine is running.

Detailed Graph tuning is covered in the applicable tuning documentation.

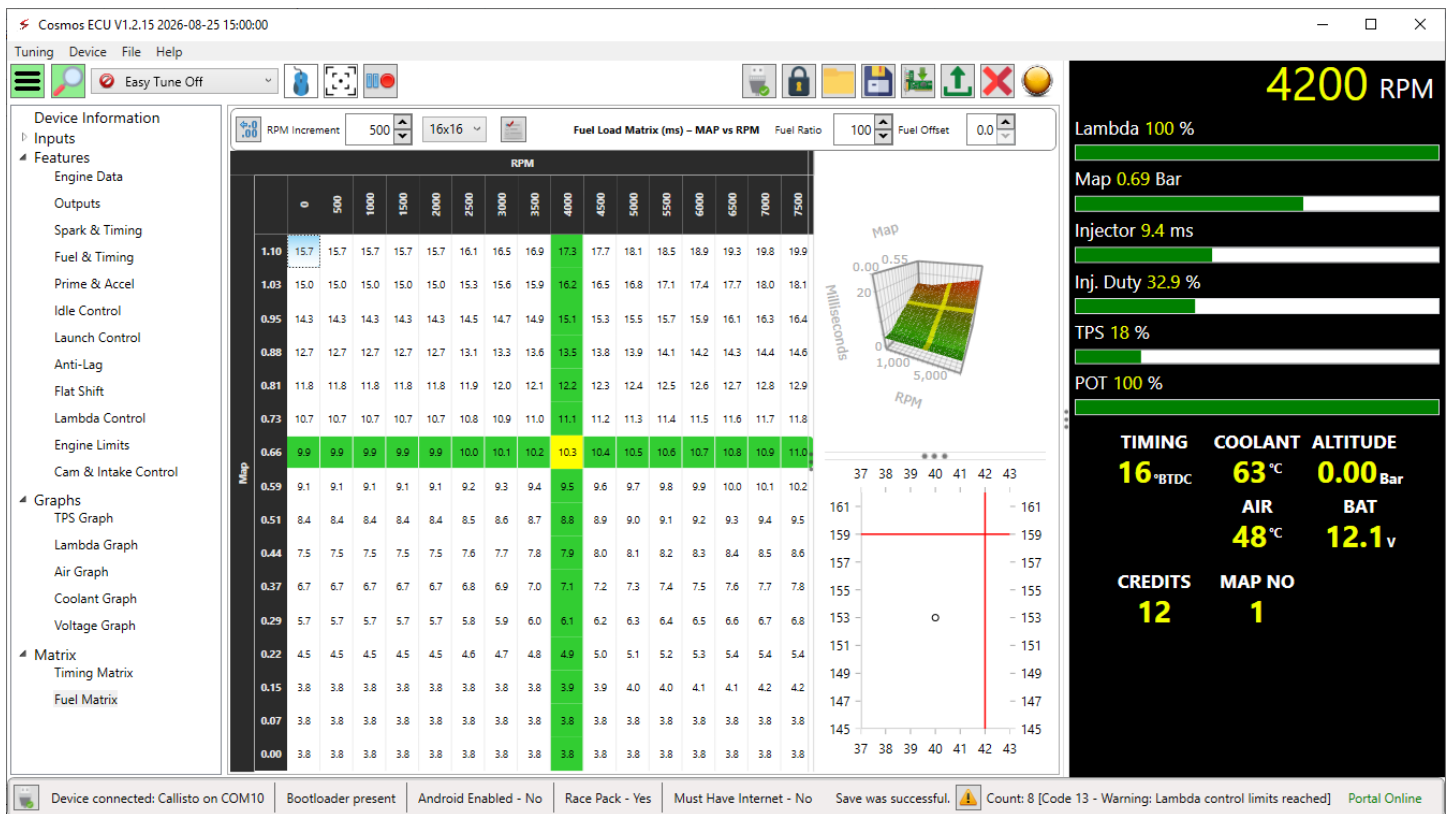
Matrix

Matrix tuning uses two operating axes, normally engine load and RPM.

▴ Matrix

Timing Matrix

Fuel Matrix



The Matrix allows the tuner to adjust individual areas of the Tune according to both load and RPM.

The software can also display a 3D representation of the Matrix to help identify:

- Peaks.
- Valleys.
- Uneven transitions.
- Overall Tune shape.

Realtime tracking shows the area of the Matrix currently being used by the engine.

Main Working Area

The centre of the software screen is the Main Working Area.

This area changes according to the item selected in the Navigation Tree.

It may contain:

- Settings.
- Drop-down selections.
- Numerical values.
- Graphs.
- Matrixes.
- Calibration controls.
- Information fields.

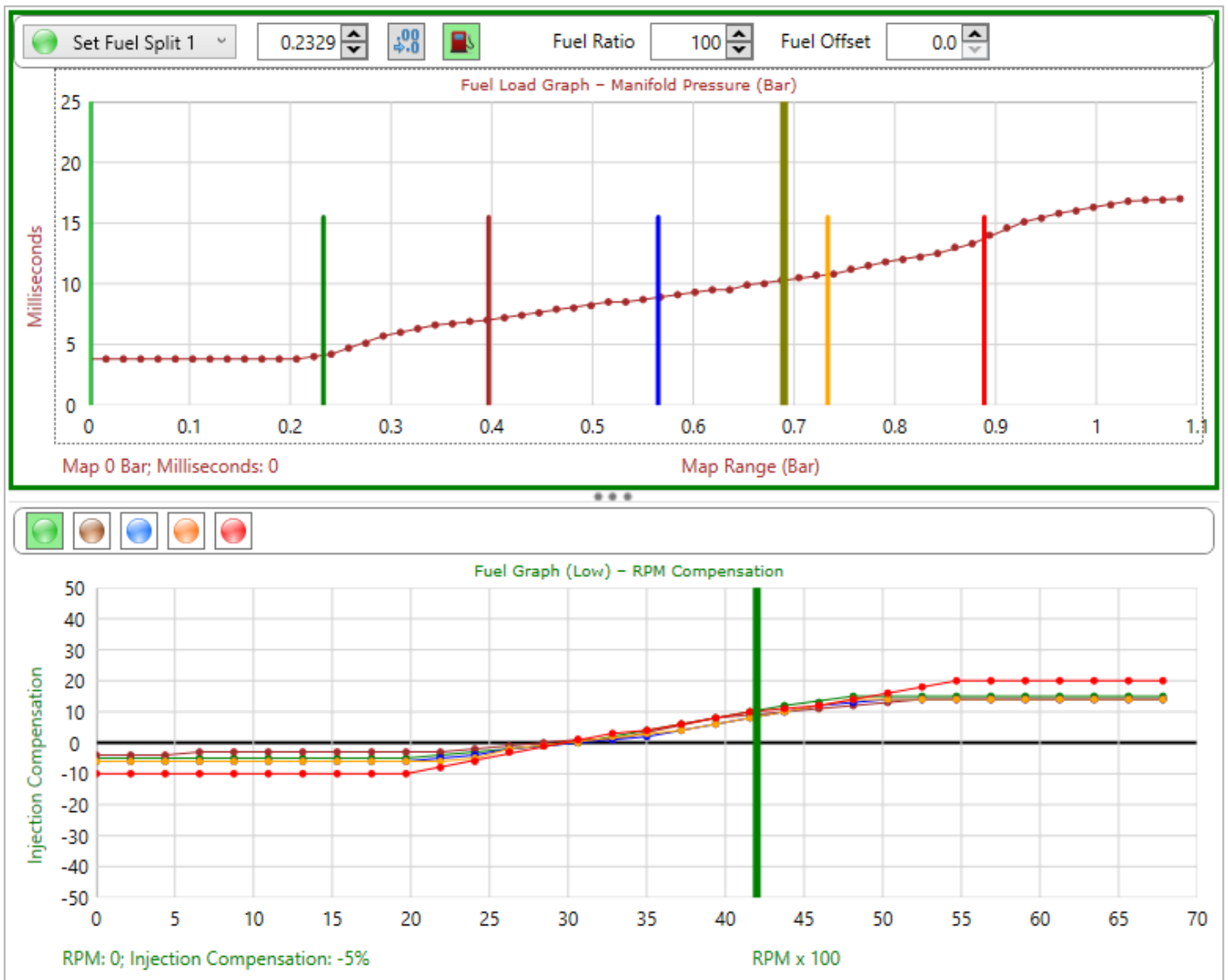
[Insert Screenshot 7 - Main Working Area crop]

Changes should be made only after understanding the purpose of the applicable setting.

Some settings can affect ECU wiring or driver allocation and are identified as Critical Settings.

Real-Time Dash

The Real-Time Dash is displayed on the right side of the software and provides important live engine information.



Typical displayed values include:

- Engine RPM.
- MAP.
- Injector Time.

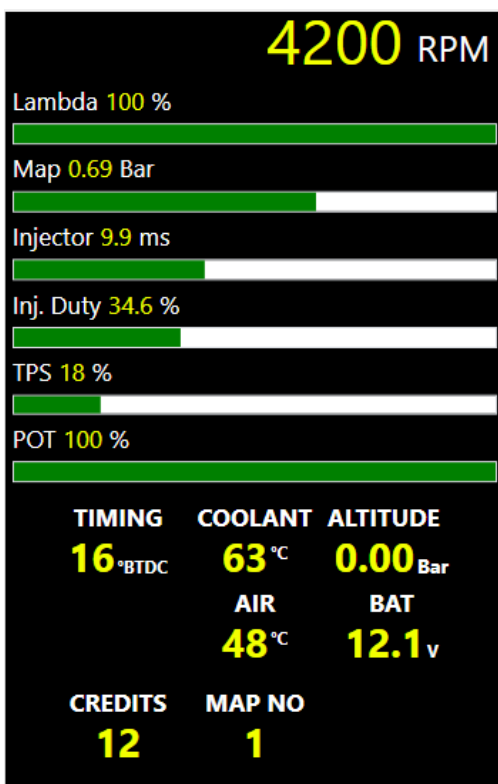
- Injector Duty.
- TPS.
- Ignition Timing.
- Coolant Temperature.
- Battery Voltage.
- Other application-specific values.

The Real-Time Dash allows the tuner to monitor important engine conditions while working on another software page.

The exact displayed items depend on the ECU, firmware and software configuration.

Real-Time Indicators

Real-Time Data is used throughout the software to show where the engine is currently operating.



This may appear as:

- Moving Graph indicator.
- Highlighted Matrix cells.
- Progress bars.
- Numerical values.
- Active or inactive Input indicators.

These indicators are particularly useful during:

- First Start.
- Sensor testing.
- Tuning.
- Road testing.
- Dyno tuning.
- Fault finding.

Do not assume that a Tune is incorrect until the Real-Time Inputs have first been verified.

Input Status Indicators

The Navigation Tree may display a status symbol alongside Inputs.

[Insert Screenshot 9 - Crop showing green and red Input status symbols]

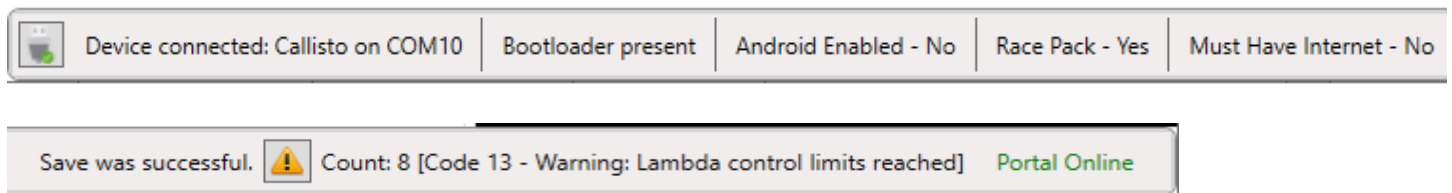
These indicators provide a quick visual indication of the current Input state or whether an Input is enabled and operating as expected.

A red indicator does not always mean that a fault exists. Some Inputs may simply be disabled, not fitted or inactive for the selected firmware.

Always open the applicable Input and verify its configuration before diagnosing a fault from the symbol alone.

Status Bar

The Status Bar at the bottom of the software provides important information about the connected Device and current software state.



Depending on the Device and firmware, information may include:

- Device connection.
- Communication port.
- Bootloader status.
- Android Enabled options.
- RacePack Options
- Internet Force
- Software Actions
- Warning or Information messages.
- Portal connection status.

The Status Bar should be monitored during setup and fault finding.

The older Hyperspace software similarly used the bottom status area for connection information, communication status, warnings and information messages.

Connection Status

The Status Bar indicates whether a Device is connected and normally identifies the communication port.

Example:

Device connected: Callisto on COM10

If communication is lost, first check:

- Device power.
- USB connection.
- Communication cable.
- Correct COM port.
- Grounding.
- Software communication settings.

Communication settings are covered in the Software Settings and Configuration guide.

Messages and Diagnostic Information

The software can display:

- Error messages.
- Warnings.
- Information messages.
- Function status information.

These messages help the tuner understand what the ECU is doing.

Do not assume that every displayed message represents an ECU failure.

Some messages simply indicate that a normal function has occurred.

The older Hyperspace software similarly distinguished between errors, warnings and information messages in the Status Bar.

Detailed diagnostic information is covered in the Troubleshooting section.

Saving Changes

Changes made while connected to the ECU may initially exist in working memory.

The software indicates when changes still need to be saved permanently to the Device.

Save the Tune regularly while tuning.

Default Hot Key:

Ctrl + S

The software LED use a green indication when PC and Device memory agreed and a yellow indication when parameters had been changed but not yet saved permanently. Red indicate that communication to the ECU is lost.

The current visual indication may differ, but the principle remains important:

Do not switch the ECU off with important unsaved changes.

Working Through the Software

For a new ECU installation, do not simply work through random software pages.

A practical sequence is:

1. Complete the ECU Startup Procedures.
2. Verify Device information.
3. Configure and test Inputs.
4. Configure required Features.
5. Verify Critical Settings and Pin Layout.
6. Establish the basic Tune.
7. Configure Graphs and compensation.
8. Configure Matrix tuning where used.
9. Tune the engine.
10. Verify protection and diagnostic functions.

The Startup Procedures should always be completed before attempting to tune a newly installed ECU.

Software Documentation Structure

The ECU documentation broadly follows the software layout.

For example:

Inputs → Coolant Temperature Sensor

contains the software setup, calibration, testing and related hardware information for the Coolant Sensor.

Features → Spark and Timing

contains the software settings together with related ignition hardware and setup information.

This means the customer can normally follow the same path in the documentation as the path used in the software.

Setup Check

Before beginning ECU setup or tuning, confirm:

- ☐ Correct ECU software is being used.
- ☐ Software version is suitable for the Device.
- ☐ Device connects correctly.
- ☐ Real-Time Data is updating.
- ☐ Status Bar does not show an unexplained fault.
- ☐ Correct Tune is open.
- ☐ Important Tune backups have been made.
- ☐ Startup Procedures have been completed for a new installation.
- ☐ Inputs are verified before tuning begins.