

Spitronics - Callisto Platform – Guide



Introduction

Welcome to the Callisto Platform

Callisto represents the latest generation of Spitronics engine management products. Developed from over 18 years of engine management experience, the platform combines modern hardware with a common software philosophy to provide professional control of engines, automatic transmissions and electronic throttle systems.

Rather than producing a different controller for every application, the Callisto platform uses dedicated hardware variants sharing the same Cosmos software environment, documentation structure and tuning philosophy.

Whether you are an enthusiast, professional installer, dealer or technology partner, the platform has been designed to provide a reliable and scalable solution that grows with your requirements.

Why Callisto?

The Callisto platform was developed around five simple objectives:

- Simplify installation.
- Reduce wiring complexity.
- Improve reliability.
- Standardise software.
- Provide a platform for future development.

Every design decision was made to reduce installation time while maintaining the flexibility expected from a professional engine management system.

Product Range

The Callisto platform consists of three dedicated controllers.

Callisto ECU





Designed specifically for engine management.

Applications include:

- Naturally aspirated engines
- Turbocharged engines
- Rotary engines
- Performance vehicles
- Vehicle conversions
- Motorsport
- Marine applications

Callisto TCU

Designed specifically for electronically controlled automatic transmissions.

Applications include:

- Automatic transmissions
- Tiptronic
- Paddle Shift
- Performance vehicles
- Off-road vehicles

Callisto ETC

Electronic Throttle Controller.

Provides standalone electronic throttle control suitable for modern drive-by-wire systems.

Applications include:

- Engine conversions
 - Motorsport
 - OEM throttle body retrofits
 - Future Cruise Control systems
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Platform Philosophy

Unlike previous generations, each Callisto controller is assembled specifically for its intended application.

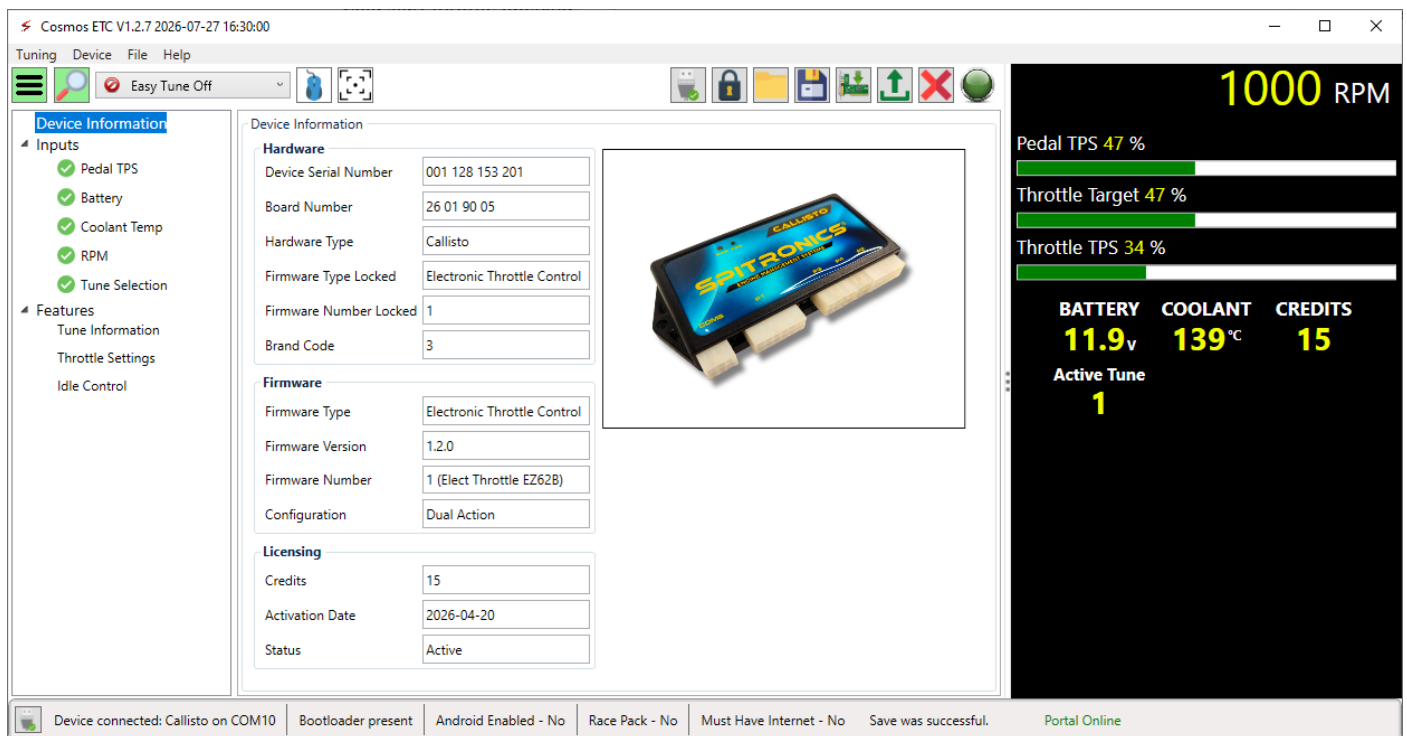
This philosophy offers several advantages:

- Reduced harness complexity.
- Lower component count.
- Improved reliability.
- Lower installation cost.
- Cleaner wiring.

Each product contains only the electronic components required for its intended function.

Although the ECU, TCU and ETC share the same platform philosophy, they are not interchangeable by simply changing firmware.

Cosmos Software Platform



All Callisto products use the Cosmos software platform.

Regardless of the product selected, the software provides:

- Common user interface.
- Common tuning philosophy.
- Common data logger.
- Common diagnostics.
- Common documentation.
- Common software updates.

Features not available within the selected firmware are automatically hidden, making the software simple to navigate.

Product Licensing

Callisto products are supplied using a modern online activation system.

Hardware and software licensing are separated.

Benefits include:

- Reduced dealer inventory.
- Improved cash flow.
- Online activation.
- Activation Wallet.
- Commercial Class.
- RacePack upgrades.

The screenshot displays the EeziRider Device Management Portal interface. On the left is a sidebar menu with icons and labels for: Home, Administration, Dealers, Members, Change Password, Device Management, Search Device Audits, Feedback, Reports, and Logout. The main content area is divided into two sections. The top section, titled 'Wallet', contains a table with two rows: 'Limit' with a value of 'R0.00' and 'Balance' with a value of 'R464.00'. The bottom section, titled 'Devices', features a 'Search Device' form with a 'Device Type' dropdown menu set to 'Callisto', a 'Serial No' input field containing '000 000 000 000', and a 'Search Device' button.

Wallet	
Limit	R0.00
Balance	R464.00

Devices

Search Device

Device Type: Callisto

Serial No: 000 000 000 000

Search Device

Qualified dealers can stock unactivated products and activate them online when required without contacting Spitronics.

Hardware Philosophy

The Callisto platform is designed to connect directly to most modern automotive sensors and actuators.

Examples include:

Inputs

- Crank Position
- Cam Position
- TPS
- MAP
- Coolant Temperature

- Air Temperature
- Lambda
- Vehicle Speed

Outputs

- Injectors
- Smart Coils
- Basic Coils
- Solenoids
- Relays
- Idle Valves
- Electronic Throttle Bodies

Dedicated hardware variants simplify installation while maintaining maximum flexibility.

Engine Control Unit (ECU)

The Callisto ECU supports engines ranging from simple distributor systems through to full sequential fuel injection and ignition.

Major functions include:

- Fuel Delivery
- Ignition Timing
- Idle Control
- Lambda Control
- Boost Control
- Cam Control
- Launch Control
- RapidFire
- Diagnostics
- Data Logging

Detailed setup and tuning information is provided in the ECU Manual.

Transmission Control Unit (TCU)

The Callisto TCU is supplied with dedicated firmware for each supported transmission.

Major functions include:

- Gear Selection
- Line Pressure Control
- Torque Converter Lockup
- Manual Shift
- Tiptronic
- Paddle Shift
- Multiple Transmission Tunes
- Diagnostics
- Data Logging

Refer to the TCU Manual for detailed setup and tuning procedures.

Electronic Throttle Controller (ETC)

The Electronic Throttle Controller (ETC) is a standalone drive-by-wire control system designed to provide smooth, accurate and reliable electronic throttle operation for aftermarket engine management systems.

The controller uses closed-loop throttle position control with configurable protection and compensation strategies to deliver OEM-quality throttle response while remaining flexible for custom applications.

Current Features

- Closed-loop electronic throttle position control
- Pedal response mapping
- Idle Speed Control
- Cold start throttle opening
- Multiple Tune support
- RPM throttle limiting
- Coolant temperature throttle protection
- Pedal and throttle sensor calibration
- Throttle motor diagnostics
- Sensor fault detection (DTC)
- Adjustable throttle response and damping
- Real-time monitoring and diagnostics

Planned Enhancements

The modular software architecture allows additional features to be introduced through future firmware updates, including:

- Cruise Control
- Driver-selectable operating modes
- Advanced torque management
- Additional driver assistance functions

Commercial & RacePack

Callisto is supplied in two software classes.

Commercial Class

Designed for everyday road vehicles.
Includes all functions required for normal vehicle operation.

RacePack

Unlocks additional performance functions such as:

- Launch Control
- RapidFire
- Motorsport functions
- Advanced tuning options

RacePack can be activated online at any stage without replacing the hardware.

Hardware Specifications

This section contains a summary of the Callisto hardware.

ECU Application

Power Supply

12V Ignition power 100mA, filtered on board
12V Ignition battery power 100mA, filtered on board
12V Driver Power up to 14 amps depending on power used by items driven.
2.5mm² Earth Strap for internal negative drivers
1.5mm² Battery Earth for Electronic components

Fixed Inputs

2x Digital Inputs for Magnetic, Hall or Optic sensors. (Jumper selectable)
1x Digital Input for Dual Map, FlatShift or RapidFire
4x Analog Input 0-5V Map, TPS, POT and Lambda
1x Built in 1.15 Bar Altitude Sensor input 0-5V (Optional. Sensor installed at purchase)
1x Water Temperature Input 1, 2, and 2.5K NTC Resistance Sensor Selectable
1x Air Temperature Input 1, 2, 2.5, and 10K NTC Resistance Sensor Selectable
1x UART Port for Spitronics USB Cable Interface

Fixed Outputs

12x 20A 400V HV Negative Drivers for Coils/Injectors/GP Outputs - Ground and Floating output
6x 6A 36V Positive Drivers for Smart Coils and GP Outputs +12V and Floating
2x 9A 100V Negative Drivers for Relay and RPM Output - Ground and Floating output

Communication

Software UART Connection via USB2 converter cable
Bootloader installed for firmware programming at purchase via the USB cable

Dimensions

Size 144 x 68mm x 22mm
Weight 187g non-resin filled *
5 x Connector Type Plastic Molex 12, 10, 8, 6, 4

* This unit can be resin filled. Weight will increase depending on the type of resin.

TCU Application

Power Supply

12V Ignition power 100mA, filtered on board
12V Ignition battery power 100mA, filtered on board
12V Driver Power up to 14 amps depending on power used by items driven.
2.5mm² Earth Strap for internal negative drivers
1.5mm² Battery Earth for Electronic components

Fixed Inputs

2x Digital Inputs for Magnetic, Hall or Optic sensors. (Jumper selectable) RPM and Speed
2x Digital Inputs for Tiptronic Switches
3x Analog Input 0-5V 4xMap Switch, TPS, Shifter Switch
1x Oil Temperature Input NTC Resistance Sensor Custom calibrated by Firmware type

1x Digital Input Low Range
1x UART Port for Spitronics USB Cable Interface

Fixed Outputs

10 (+2 Optional) x 20A 400V HV Negative Drivers for Coils/Injectors/GP Outputs - Ground and Floating output plus Free-Wheel Diode
4 (+2 Optional) x 6A 36V Positive Drivers for Smart Coils and GP Outputs +12V and Floating plus Free-Wheel Diode
2x 9A 100V Negative Drivers for Relay and Speed Output - Ground and Floating output

Communication

Software UART Connection via USB2 converter cable
Bootloader installed for firmware programming at purchase via the USB cable

Dimensions

Size 144 x 68mm x 22mm
Weight 187g non-resin filled *
5 x Connector Type Plastic Molex 12, 10, 8, 6, 4

* This unit can be resin filled. Weight will increase depending on the type of resin.

TxW Application

Power Supply

12V Ignition power 100mA, filtered on board
12V Ignition battery power 100mA, filtered on board
12V Driver Power up to 14 amps depending on power used by items driven.
2.5mm² Earth Strap for internal negative drivers
1.5mm² Battery Earth for Electronic components

Fixed Inputs

1x Digital Inputs for Magnetic, Hall or Optic sensors. (Jumper selectable) RPM
3x Analog Input 0-5V Throttle TPS, Pedal TPS Water Temperature
1x UART Port for Spitronics USB Cable Interface

Fixed Outputs

2 (+2 Optional) x 20A 400V HV Negative Drivers for Coils/Injectors/GP Outputs - Ground and Floating output plus Free-Wheel Diode
3 (+2 Optional) x 6A 36V Positive Drivers for Smart Coils and GP Outputs +12V and Floating plus Free-Wheel Diode

Communication

Software UART Connection via USB2 converter cable
Bootloader installed for firmware programming at purchase via the USB cable

Dimensions

Size 144 x 68mm x 22mm
Weight 187g non-resin filled *
5 x Connector Type Plastic Molex 12, 8, 6

* This unit can be resin filled. Weight will increase depending on the type of resin.

Accessories

Optional accessories include:

- USB Tune Cable



- Bluetooth Cables



- Universal Harnesses



- Level 2 & 3 Harnesses



- MAP Sensors



- LCD Displays

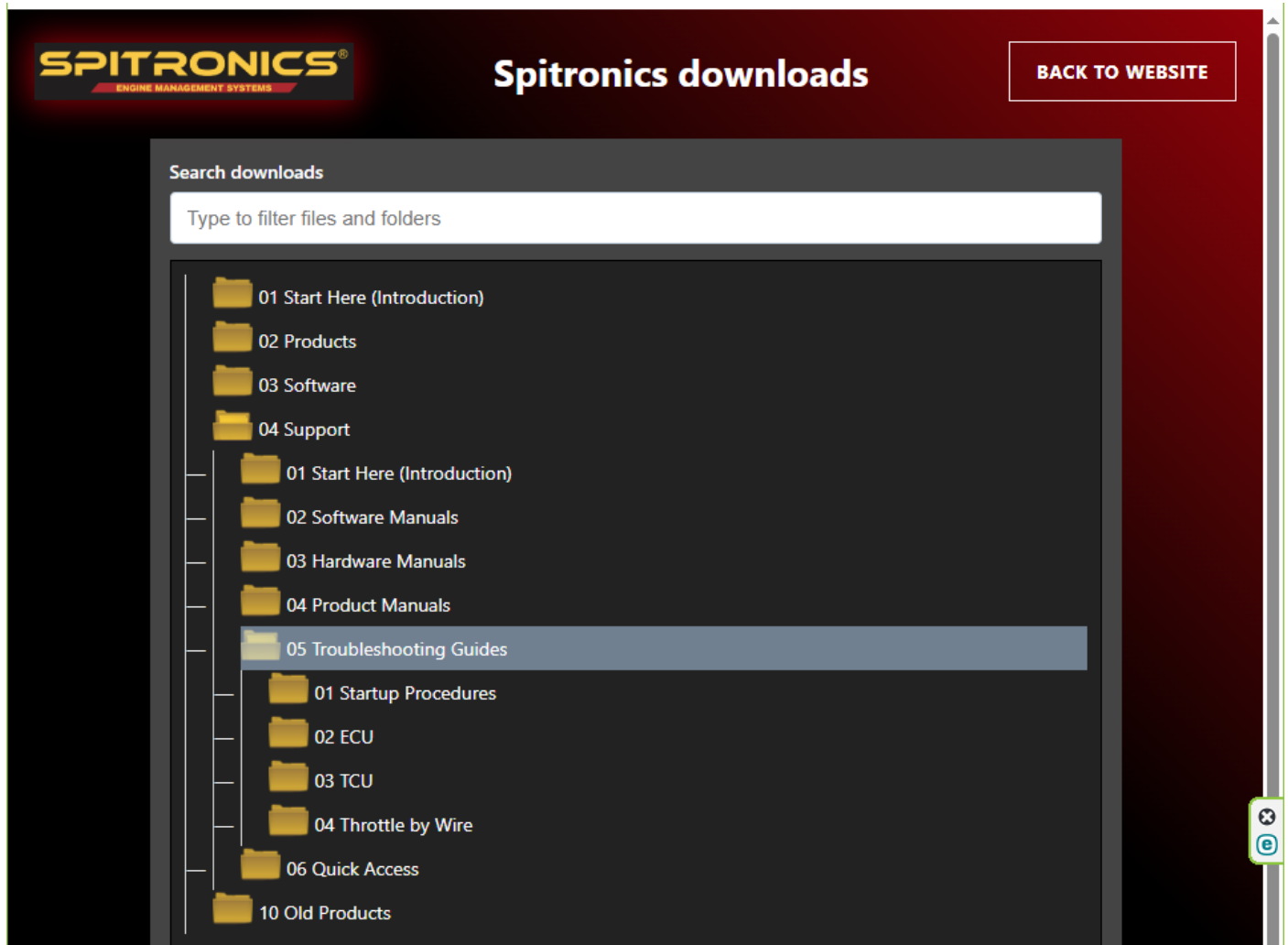


- Touchscreen Displays
- Expansion Modules



Refer to the [Accessories Guide](#) for current products.

Documentation



- tree.spitronics.com

The Callisto platform is supported by a growing library of technical documentation.

Platform

- Mercury3 vs Callisto
- Firmware Policy
- Software Troubleshooting

ECU

- ECU Manual
- Fuel Tuning
- Ignition Tuning
- Trigger Systems
- Road Tuning
- Narrowband Tuning
- Wideband Tuning
- Data Logger

TCU

- TCU Manual
- Line Pressure

- Torque Converter Lockup
- PWM Solenoid Operation
- Solenoid Testing
- Data Logger

ETC

- ETC Manual
 - Setup Guide
 - Calibration Guide
 - Diagnostics Guide
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Technology Partnership

For manufacturers wishing to build their own products around the Callisto platform, EeziRider Engine Management offers several levels of technology partnership.

These range from branded solutions through to complete hardware and software development. Refer to the **EeziRider Technology Partnership Programme** for further information.

Technical Support

The latest software, firmware information, manuals and drawings are available online.

Downloads

- tree.spitronics.com

Support is available through approved Spitronics dealers.

Conclusion

The Callisto platform combines proven engine management experience with a modern software and hardware architecture to provide a flexible solution for enthusiasts, professional installers, dealers and technology partners.

Whether installing a single ECU or developing a complete product around the platform, Callisto has been designed to provide a reliable foundation for long-term growth.
