

# Enhanced Ethernet Switch

## APPLICATION

**Multi-gigabit automotive ethernet switch platform with strong AVB/TSN capabilities intended for testing and analysing onboard vehicle networks.**

# Enhanced Ethernet Switch



## DESCRIPTION

With the constant need for higher bandwidth in the in-vehicle network, the **Enhanced Ethernet Switch product family** of Technica Engineering allows the users to connect up to 8x gigabit ethernet ports and 2x 1Gb/10Gb ports available through SFP+ connectors.

The EES product family has three variants that cover the possibility to select physical layer protocol as well as connectors for the 8x gigabit ports of the switch. Options currently include variants with automotive ethernet gigabit ports and MATEnet or H-MTD connectors as well as a variant with regular IEEE 1000BASE-T ethernet ports on RJ-45 connectors.

They can establish virtual point-to-point connections, using single tagged VLANs (802.1q) and double-tagged VLANs (802.1q-in-q), thus enabling filter and control over data streams. Each port provides 8-levels of Quality of Services (QoS) classes and advanced traffic filtering capabilities with ingress and egress rules, which ensures the prioritization, resource reservation, and control mechanisms over the data received.

Through an internal configuration website, the user can easily configure the device for their use cases, abstracting the complex underlying switch hardware. This includes: VLANs, port mirroring, forwarding or filtering, deep inspection through TCAM rules, port segmentation, and many other features offered by Layer 2 switches.

The Enhanced Ethernet Switch provides a reliable gPTP/802.1AS automotive profile stack for time synchronization that allows strong customization possibilities to adapt to any customer use case. Our product is also capable of Audio Video Bridging (AVB) functions with the possibility to statically configure stream reservation and shaping features (802.1Qav).

The Enhanced Ethernet Switch is also prepared for additional TSN functionalities support: 802.1Qav, Qci, Qbv, and Qbu. Customer specific use cases can be supported, if needed. Contact the Technica Engineering sales team for additional information.

The product also provides wake-up and sleep features.

## FEATURES AND FACTS

- ✓ 8x 100/1000BASE-T1 ports (MATEnet, H-MTD variants) or 8x 1000BASE-T ports (RJ45 variant)
- ✓ 2x SFP+ Ports for Logging data output (up to 10Gps each)
- ✓ 1x 100BASE-T Fast Ethernet Port for configuration
- ✓ Selectable connector interface between: MATEnet, H-MTD or RJ-45 connector, depending on the intended customer use case.
- ✓ Easy configuration via webserver and remote configuration messages
- ✓ Import and export of configurations
- ✓ Wake up / sleep functionality
- ✓ Possibility to reset to default settings by push button
- ✓ Automotive ethernet variants are dual speed capable 100/1000BASE-T1
- ✓ Time synchronization: 802.1AS automotive profile (gPTP) support on up to 10 ports.
- ✓ Individual use cases for the following TSN functionalities as on-demand support: 802.1Qav, Qci, Qbv, Qbu (check with our Technical Sales Team)
- ✓ Extended voltage range: 12-to-24-volt automotive battery voltage systems compatible
- ✓ Extended operating temperature range: -40°C to +85°C
- ✓ Robust steel case
- ✓ Size 164x120x35 mm

Control system/  
Logger

1000BASE-T Ethernet  
(RJ-45)

10Gigabit Ethernet  
(SFP+)



Enhanced Ethernet Switch  
MATEnet, H-MTD or RJ-45

IEEE regular 1000BASE-T

100/1000BASE-T1

Vehicle Ethernet  
Devices