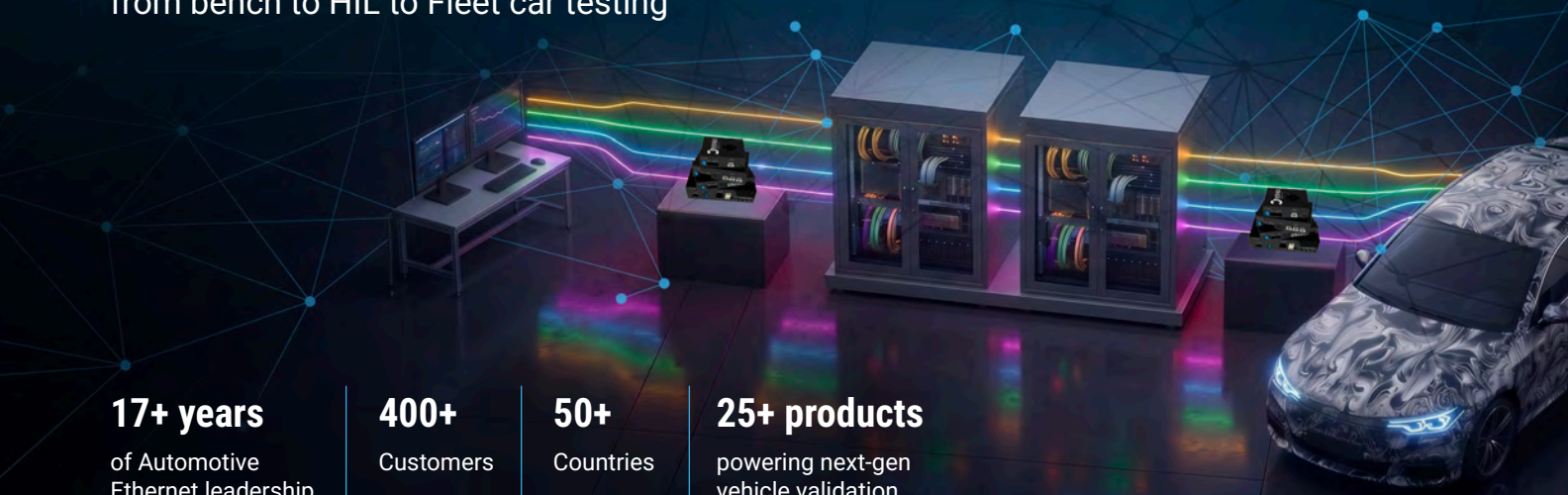
technica engineering
Member of KPIT Group

PRODUCTS & SOLUTIONS FOR AUTOMOTIVE NETWORK VALIDATION

Ensuring accuracy, efficiency, and future-ready development from bench to HIL to Fleet car testing



17+ years
of Automotive Ethernet leadership

400+
Customers

50+
Countries

25+ products
powering next-gen vehicle validation

MediaConverters | Capture Modules | Enhanced Ethernet Switches | Test Benches & HIL Systems | Software Platform

WHO WE ARE

At Technica Engineering, we design and validate the electrical and electronic systems that power the vehicles of today and tomorrow. Trusted by global OEMs and Tier suppliers, we combine cutting-edge hardware and software with deep expertise in E/E architecture, automotive security, and communication networks.

As pioneers of Automotive Ethernet and innovators in leading concepts such as zonal architecture and TSN, we provide an end-to-end approach — seamlessly covering every step from concept and system design to integration, testing, and validation. Our mission: to reduce complexity, accelerate development, and make mobility safer and smarter for all.





























REQUIREMENT ENGINEERING
Requirements/ Targets
ARCHITECTURE REFERENCE
Architecture Specification
TECHNOLOGY PROTOTYPES
Technology Specification
MODULAR PROTOTYPE PLATFORMS
System-HW-SW Specification
A-SAMPLE ELECTRONIC CONTROL UNITS
SYSTEM-SOFTWARE-HARDWARE
DESIGN | IMPLEMENTATION | INTEGRATION
B-Samples For Industrialization

CONCEPT VALIDATION
TESTING SERVICES
SYSTEM ENGINEERING
PRODUCT AND TOOLS

Vehicle Test
FLEET CAR TEST SOLUTIONS
System Test
SYSTEM/ G-HILS/ LABCARS
Integration Test
INTEGRATION TEST BENCHES/ HILS
Component Test
COMPONENT TEST BENCHES/ HILS
TABLE-TOP TEST BENCHES
(Switches, CAN, LIN, Flexray interfaces, MediaConverters)

One validation partner across the entire V-cycle

PRECISION PRODUCTS FOR VALIDATION OF MODERN HIGH-SPEED AND DATA INTENSIVE ARCHITECTURES

	Products	What it's for?	Best used when you need…
	**MediaConverters (MC)**	Physical-layer conversion between Automotive Ethernet and standard Ethernet	Enable ethernet conversion between ECUs and standard tools (PCs/ switches) for **debugging, validation,** and **system integration.**
	**Capture Modules (CM)**	Non-disturbing network capture across in-vehicle communication domains	**One correlated view** of IVN behavior across bench, vehicle, and fleet logging
	**Enhanced Ethernet Switches (EES)**	Network connectivity + controllable switching for validation setups	**Traffic segmentation, mirroring, and controlled topologies** for debug/ validation workflows, time synchronized network with multiple time domains like gPTP & PTPv2
	**Test Benches & HIL Systems**	Customizable validation benches tailored to program needs	**Test Bench/ HIL infrastructure** that matches your test scope and growth path

SOFTWARE SOLUTION

aurora
TEK SOFTWARE HUB

Aurora TEK is unified software platform for Software-Defined Vehicle (SDV) validation, connecting test execution and bench orchestration into one continuous flow, from developer workstation to global test farm to fleet vehicles.

The Aurora TEK portfolio starts with IGNITE for early validation and test execution and expands through TORQ to enable scalable validation across HIL benches and test farms.

MEDIACONVERTERS

The challenges our products can help you overcome

Ethernet Conversion

Convert Automotive Ethernet (100/1000/ 2.5G/5G/10GBASE-T1) to standard Ethernet for seamless integration with test benches and PCs.

Connector Compatibility

Support for MATEnet, H-MTD, MQS, and SFP interfaces to match diverse OEM setups.

Bandwidth Scaling

The MultiGigabit Media-Converters, compliant with IEEE 802.3ch, support the demand for higher bandwidth in Automotive Ethernet test environments.

MACsec and TC10 Support

Selected models support MACsec configuration for secure data transmission and TC10 Functionality for efficient power management.

Automation in HiL Systems

Designed for automated HiL testing, offering remote access and built-in diagnostics (SQI/CRC).

Scalability and Cost Efficiency

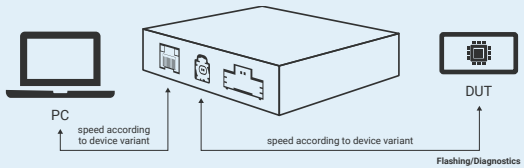
Compact MediaConverters with configurable options for efficient and scalable test environments.

Seamless physical-layer conversion between Automotive Ethernet and standard Ethernet

MediaConverters provide a compact, reliable way to **convert 100/1000BASE-T1/Multigigabit speeds to standard Ethernet,** enabling automotive ECUs to connect to **PCs, NICs, and standard switches.** Simple standalone setup supports quick bench work, while console/remote access supports deeper debugging and dynamic use cases. Selected variants support **hardware MACsec** for security validation scenarios.

Use Cases

- ECU bench + integration labs (T1 ECUs PC tools)
- Interoperability testing (Automotive-standard Ethernet segments)
- Debug/validation setups requiring repeatable conversion behavior
- MACsec/security validation environments (selected variants)
- Mixed setups where T1 traffic must traverse standard Ethernet for tools/logging



Explore the full range here >

Product variants



MEDIACONVERTER 100BASE-T1 | MEDIACONVERTER 1000BASE-T1 MATENET (TC10) | MEDIACONVERTER 1000BASE-T1 H-MTD (TC10) | MEDIACONVERTER MULTIGIGABIT | NETWORK INTERFACER 10BASE-T1S | SFP MODULE 1000BASE-T1/ MULTIGIGABIT

CAPTURE MODULES

The challenges our products can help you overcome

Require instant startup logging

Our modules start capturing data as fast as possible with the optimized startup logic and store the very first frames with the built-in device buffers.

Nanoseconds-accurate timestamping

Synchronize data across multiple bus systems with hardware timestamping down to nanoseconds. Perfect for root cause analysis and seamless traceability.

Smoother data flow

Avoid data bursts and logger overload. Our modules balance output traffic, ensuring consistent and loss-free logging.

Scalable test setups

Combine multiple modules in one setup. Whether you're testing on a bench or in a fleet car, our scalable design adapts to your needs.

Need for easy configuration

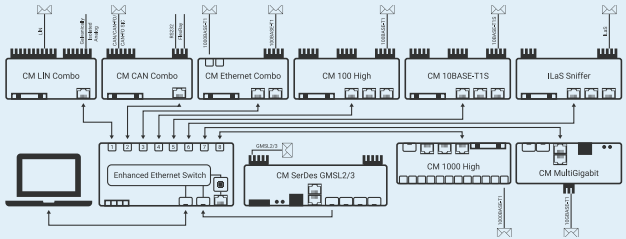
Our modules integrate effortlessly with Ethernet-capable devices. Configure everything via a simple web interface — no lock-in.

Precise In-Vehicle data logging with nanoseconds accuracy

Capture Modules deliver **non-disturbing, hardware-timestamped capture** across **CAN, LIN, FlexRay, and Automotive Ethernet networks** – so engineers can observe real network behavior with **nanosecond accuracy,** from **system startup to long-duration fleet logging.**

Use Cases

- ECU bench & development setups
- HIL and system test benches
- Test drives and Fleet car validation
- AVB/TSN + multi-bus synchronization



Product variants

Explore the full range here >


CAPTURE MODULE 1000 HIGH


CAPTURE MODULE 100 HIGH (TC10)


CAPTURE MODULE LIN COMBO


CAPTURE MODULE CAN COMBO


CAPTURE MODULE SERDES GMSL2/3


CAPTURE MODULE MULTIGIGABIT


CAPTURE MODULE 10BASE-T1S


ILAS SNIFFER


CAPTURE MODULE SENSE

ENHANCED ETHERNET SWITCHES

The challenges our products can help you overcome

Fragmented time domains

Struggling with synchronizing ECUs across different time domains? Our switches bridge PTPv2 and gPTP seamlessly, ensuring unified time synchronization across the network.

Encrypted traffic validation

With MACsec becoming a standard, validating encrypted traffic is a challenge. Our switches support full MACsec integration with MKA handshake, enabling secure packet inspection without compromising performance.

Complex configuration overhead

Competing switches require CLI or external tools for setup. Technica's intuitive web interface allows real-time configuration of VLANs, port roles, and time sync parameters — no scripting required.

Data flow management

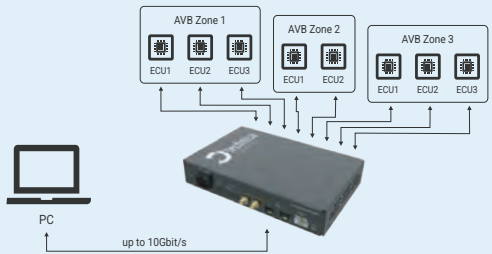
As test benches grow, managing traffic shaping, ingress rate limiting, and port segmentation becomes critical. Our advanced feature set supports granular control over bandwidth and traffic flow.

Powering secure, high-speed in-vehicle networks for real-time network validation

Enhanced Ethernet Switches (EES) let validation teams **connect, segment, mirror, and filter** automotive Ethernet traffic — while supporting **time synchronization** and **AVB/TSN-relevant behaviors** for realistic network validation. Built-in web configuration makes setups **scalable across labs and teams.**

Use Cases

- Network validation benches (segmentation, mirroring, analysis)
- AVB/TSN validation requiring time sync + shaping behaviors
- Gateway / domain testing (selective forwarding + filtering)
- High-bandwidth aggregation/ logging via SFP+ (variant dependent)



Product variants

Explore the full range here >



ENHANCED ETHERNET SWITCH MACSEC MATENET



ENHANCED ETHERNET SWITCH MACSEC H-MTD



ENHANCED ETHERNET SWITCH MACSEC HYBRID

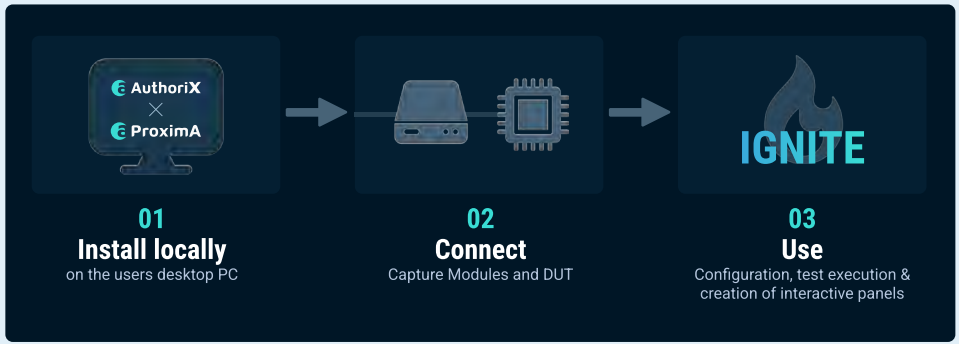


ENHANCED ETHERNET SWITCH RJ-45

TECHNICA'S AURORA TEK SOFTWARE | IGNITE

IGNITE enables engineers to create, configure, execute, and debug test cases from the earliest stages of development. By combining test authoring, hardware configuration, protocol access, and execution into a single workflow, teams can shift validation left and discover issues earlier in the development lifecycle.

IGNITE | Validate SDV behavior from your first line of code.



Validate Earlier

Author and execute test cases from day one of development, enabling earlier defect discovery and reducing downstream rework.

Author Once, Run Anywhere

Execute the same test logic across desktop, virtual, and HIL environments using a consistent validation workflow

Reduce Hardware Dependency

Validate software behaviour before full bench availability through desktop and virtual validation approaches.

Comprehensive SDV Test Coverage

Support functional, performance, security, protocol conformance, diagnostics, gateway, and time-synchronisation testing across modern vehicle architectures

ELECTRO SYSTEMS ASSOCIATES GROUP (ESA GROUP): PREMIER SALES & TECHNICAL PARTNER FOR TECHNICA ENGINEERING

Through **Electro Systems Associates (ESA), Embedded Systems Solutions (ESS), and Gopalam Embedded Systems (GES)**, the **ESA Group** provides strong regional sales and technical support for **Technica Engineering's automotive network development, test and validation solutions** across **India and ASEAN Regions.**

Combining Technica's expertise in **Automotive Ethernet, in-vehicle networking and next-generation E/E architectures** with the ESA Group's deep embedded and automotive domain knowledge, our teams work closely with **OEMs, Tier-1 suppliers and engineering organizations** to understand their architectures and recommend the **right validation solutions for their applications.** Technica's portfolio includes **Enhanced Ethernet Switches, Capture Modules, Media Converters Test Benches & HIL Systems, Software Platforms and Scalable Validation Solutions**, supporting automotive development from prototyping through production.

Our focus is on solution-oriented technical engagement. We work closely with engineering teams to understand their **system architecture, development environment, test requirements and validation challenges**, and help them select the right products and technology solutions for their engineering applications.

Our involvement extends from **solution selection and technical evaluation through integration, deployment and final adoption**, backed by continued local support. **With local technical SMEs engaged throughout the engineering lifecycle,** ESA, ESS and GES provide the application expertise and hands-on support required to successfully deploy the right validation solutions for complex automotive network development and testing.

ESA Group

India • Singapore • Malaysia • Vietnam • ASEAN

Global Automotive Networking Expertise backed by Strong Regional Sales, Application Knowledge and Technical Support.

INDIA

ELECTRO SYSTEMS ASSOCIATES

technicasales@esaindia.com
www.esaindia.com

INDIA

EMBEDDED SYSTEMS SOLUTIONS

sales@embeddedindia.com
www.embeddedindia.com

SINGAPORE • MALAYSIA • VIETNAM • ASEAN

GOPALAM EMBEDDED SYSTEMS

sales@embeddedsingapore.com
www.embeddedsingapore.com