ATI ACCURATE TECHNOLOGIES

Beyond Automotive

Measurement, Calibration & Diagnostics Portfolio Overview

ICE HEV EV + Embedded Systems

DATA ACQUISITION

ECU CALIBRATION

ECU RAPID PROTOTYPING

ECU INTERFACES

CAN BUS INTERFACES

NETWORK SOLUTIONS

TEST CELL MEASUREMENT

ENHANCED DIAGNOSTICS

More than 30 years
of advanced technology, successful collaborations and valued partnerships

Opened in 2017
ATI's new global headquarters in Novi, Michigan USA is five times larger than its previous facility

Accurate Technologies Company Timeline

1992
IGTM 1000 Timing Measurement
COMPANY FOUNDED US Office Opened

1994
Injector / Coil Driver modules

1995
SmartTach Speed Measurement

1997
EDAQ Data Acquisition
ROM2CAN Emulator

1998
VISION 1.0 & VISION HUB Calibration Software

2000
M5 Memory Emulator
UNITED KINGDOM Office Opened

2001
No-Hooks Rapid Prototyping
GERMANY Office Opened

2002
Apollo Pro Data Analysis Software

2003
M6 Memory Emulator
SWEDEN Office Opened

2005
CANLab 1.0 Bus Analysis
CANverter

2006
A7 Serial Interface
JAPAN Office Opened

2007
FRANCE Office Opened

Accurate Technologies Inc. (ATI) is a global, independent supplier of cutting-edge software and hardware solutions for the measurement, calibration, and diagnostics (MCD) sector. With over 30 years of engineering innovation, ATI has built an enviable reputation as a trusted partner for major OEMs and Tier One suppliers across the automotive, defense, marine, and aerospace industries worldwide.

ATI's comprehensive product portfolio spans the full spectrum of electronic control system development, encompassing ECU calibration, data acquisition, ECU code rapid prototyping, network analysis, CAN bus products, ECU interfaces, test cell measurement, and diagnostics services. Underpinning these hardware offerings is ATI's powerfulVISION software platform, providing engineers with tools to capture, analyse, and act on critical data throughout the development cycle.

From conventional combustion powertrains to next-generation electric and hybrid vehicle platforms, ATI delivers the versatile tools and expertise needed to accelerate development programs across two-wheel, automotive, heavy truck, agricultural, construction, recreational, and aerospace applications.

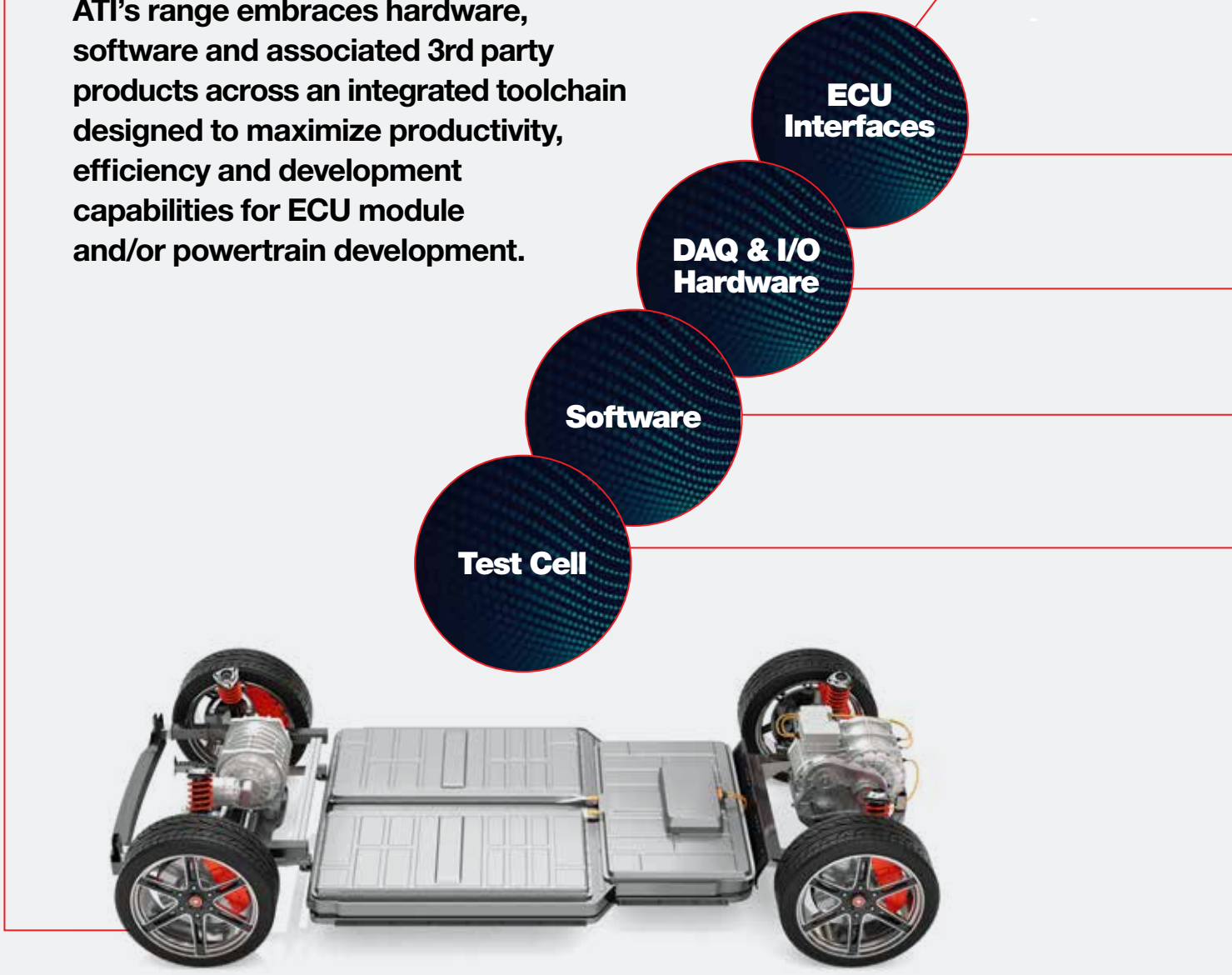
Backed by a dedicated global network spanning the United States and key markets in Europe, Asia, and India, ATI combines world-class technical capability with exceptional customer support — empowering engineering teams to innovate with confidence at every stage of the product development journey.

ATI ACCURATE TECHNOLOGIES

ICE HEV EV + Embedded Systems

ATI's Product Portfolio
An Integrated MCD Toolchain

ATI's range embraces hardware, software and associated 3rd party products across an integrated toolchain designed to maximize productivity, efficiency and development capabilities for ECU module and/or powertrain development.



Klaric HV Measurement Modules

Data Acquisition Devices

Data Loggers

I/O Modules

Serial Interfaces

CAN Interfaces

Kvaser CAN bus Interfaces & Loggers

ECU Calibration, Data Acquisition & Diagnostics

Data Analysis

ECU Code Rapid Prototyping

CANLab Multi-bus Network Analysis

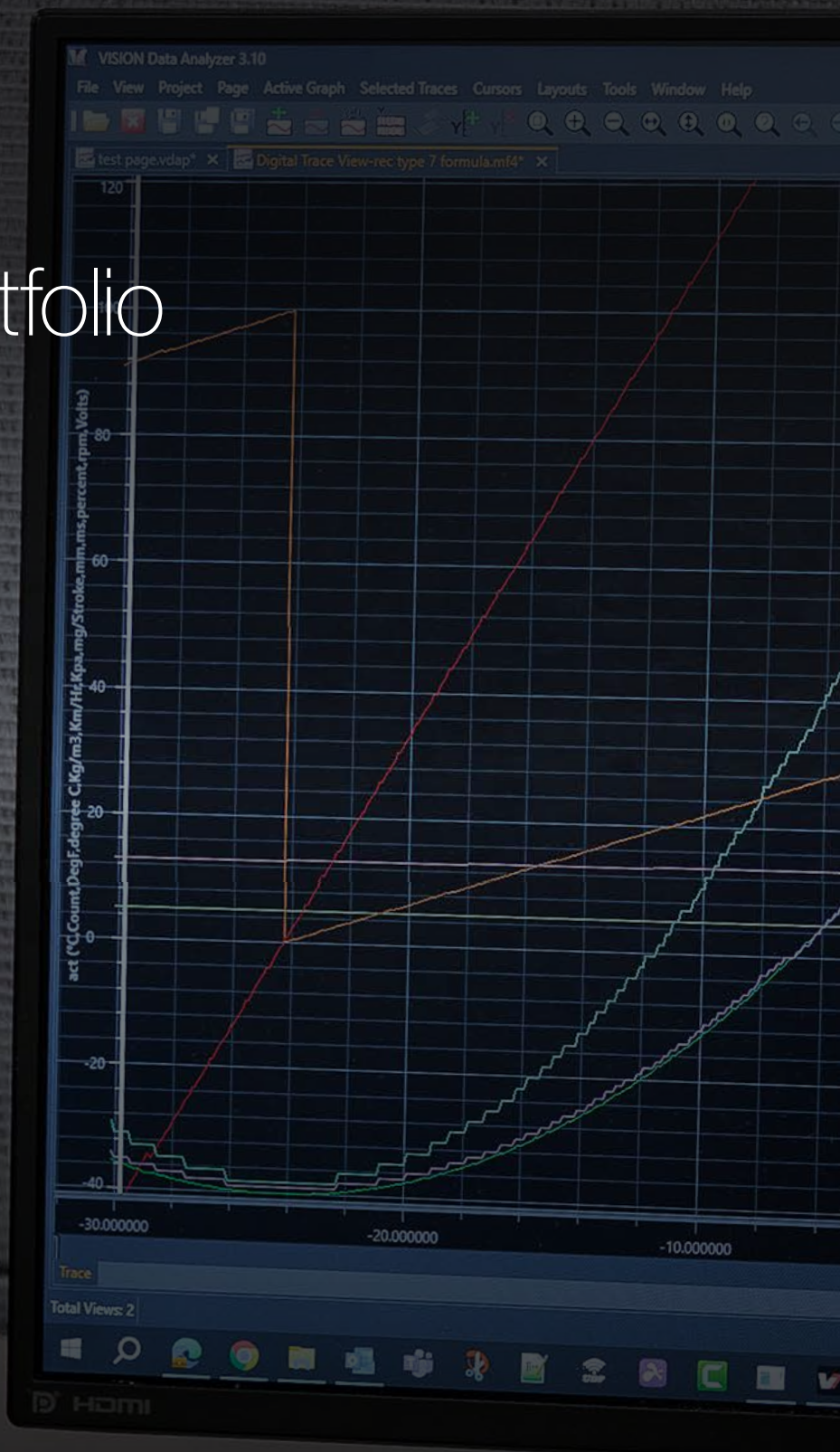
Ignition Timing Meter

SmartTach Module

PICOTURN Turbocharger Speed Measurement

ATI ACCURATE TECHNOLOGIES

Software Portfolio



ATI 30+ EST. 1992

CANLab
Multi-bus Network Analysis

CAN FD READY

LOG SEND REPLAY CAN DATA

SUPPORTS INDUSTRY LEADING INTERFACES

MDF4 COMPATIBLE

SCRIPTING FUNCTIONALITY AS STANDARD

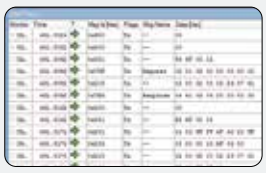
CANLab is a multi-bus network analysis tool that provides a complete solution for key industry standard network protocols such as Controller Area Network (CAN) including SAEJ1939 and Local Interconnect Network (LIN).

Support of popular databases and hardware with advanced post analysis is always included. CANLab can be used to view network activity, send and receive signals or messages, record and replay data, manipulate and analyze data, and check statistics, all in real-time:

- Accommodates most CAN hardware interfaces
- Offers analysis and scripting at no extra cost
- Provides a sophisticated strip chart recorder and replay
- No need to stop for changes - start or stop recording on the fly
- Connect or disconnect hardware without stopping the software

Key CANLab features include:

- Intuitive GUI design
- Log, send and replay CAN and CAN FD data
- Supports industry leading interfaces
- CCP/XCP/KWP Protocol Decoders



CANLab features dials and gauges for viewing signals that significantly improve the data analysis process. Recorded or 'live' signals and statistics can be graphed and analyzed simultaneously.

VISION

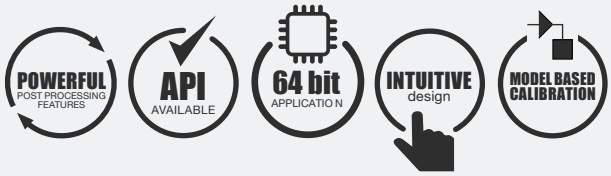
The user-friendly Software suite offering fully integrated calibration

VISION is a user-friendly, powerful, comprehensive software solution offering fully integrated calibration and data acquisition capabilities for a wide variety of electronic control systems. VISION enables the signal collation from ECUs and external sources, plus the measurement and real-time calibration/ modification of closed-loop electronic control systems.

VISION time aligns data and facilitates the analysis of information, manages calibration changes and enables flashing of the ECU, all in one platform.

Now 64-bit to ensure compliance with large data sets, VISION is available innumerous versions incrementing in toolkit functionality, enabling a wide range of capabilities from basic data acquisition to post-analysis, ECU calibration and ultimately the rapid prototyping of module functionality using patented 'No- Hooks' technology.

With several licencing models available from a monthly subscription to a server based licence for volume users, the entire ATI VISION eco-system is designed with ease of use in mind.

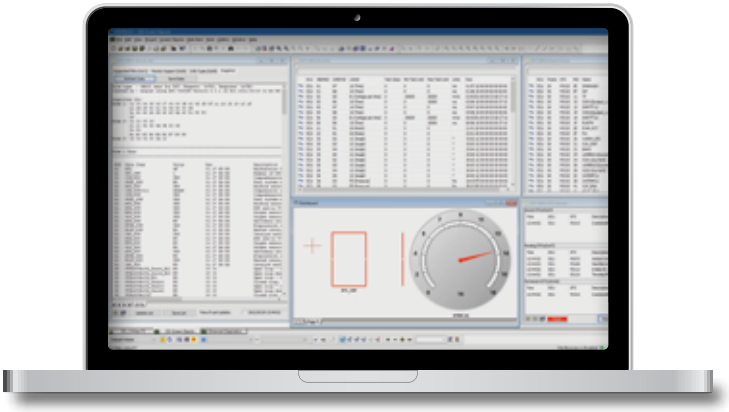


Key VISION Software features include:

- ECU Flashing, Calibration and Rapid Prototyping packages
- Data Acquisition and Data Analysis packages
- Intuitive GUI design
- Powerful API and post processing features
- 64-bit architecture
- Model based calibration available

Enhanced Diagnostics

Advanced Vehicle On-board Diagnostics



VISION Diagnostics is the combination of the CAN OBDII Toolkit and the Enhanced Diagnostics Toolkit (EDT). This provides VISION with integrated support for legislated OBD functionality and advanced features available in World-Wide Harmonized On-Board Diagnostics (WWH-OBD).

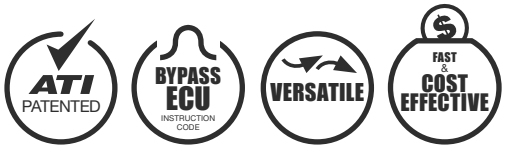
EDT extends VISION's diagnostic capabilities to include ISO-14229 diagnostic services. These services can be accessed using the feature rich API. In addition to reading and clearing codes, EDT allows users to gain access to extended trouble code descriptions and help information (when available), plus access to hundreds of additional parameters that can be viewed in real-time.

Key EDT Software features include:

- Full integration with VISION's Data Item Manager, screen controls, and recorders to optimize work flow.
- Simplify data collection and analysis by combining Measurement, Calibration and Diagnostics data onto a single recording.
- Auto-detect connected ECUs for quick discovery and connectivity. Manual overrides for custom applications.

Comprehensive API documentation, quick-start guide, and SDK with example source code.

No-Hooks
ECU Code Variable Bypass



ATI offers an innovative, patented software-centric method for rapid prototyping production ECUs with its sector leading No-Hooks technology. Functioning as an extension of VISION Calibration and Data Acquisition Software, the primary benefit of No-Hooks is that it allows users to internally bypass Read-Only control variables in the ECU's RAM with calibratable parameters.

As such, ATI's No-Hooks enables users to explore a wide variety of advanced rapid prototyping applications including system validation and fault injection, all without requiring costly external hardware-in-the-loop (HIL) systems.

- Use only the standard files needed for calibration; the original ECU source code is not required
- Perform rapid prototyping; then calibrate on your prototype and acquire data within the same tool
- Calibrate the base strategy and the bypass model simultaneously

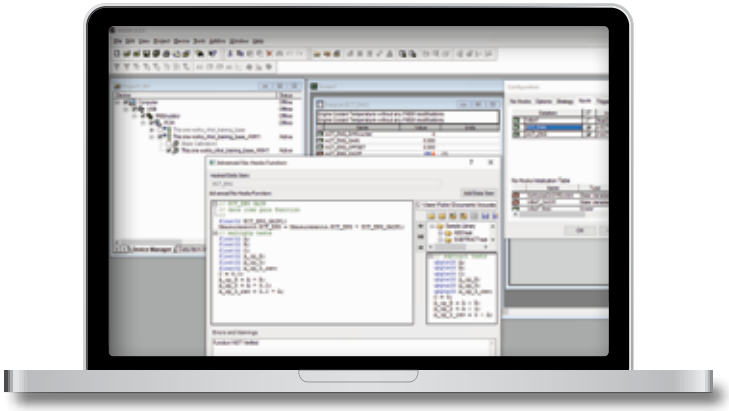
No-Hooks is fully integrated within ATI's VISION Calibration and Data Acquisition Software.

Key No-Hooks features include:

- Bypass ECU instruction code
- No source code needed
- Fast and cost effective
- Fault simulation

Advanced No-Hooks

Dynamic Hooks without MATLAB/ Simulink®

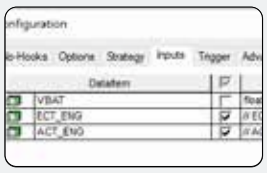


Advanced No-Hooks is based on ATI's patented No-Hooks technology, extending it to allow ECU functionality to be modified by user defined functions, without access to the original ECU source code or the need for other applications such as MATLAB/Simulink®.

Advanced No-Hooks shortens the development cycle to bring products to market faster. The prototype runs on production intent ECU which corresponds in every way to improving the success of the final product. The Advanced No-Hooks bypass runs in-line with the rest of the original code on the target ECU. There is no need for data transfer protocols or the resulting delays for running the bypass on external devices, which translates into virtually no latency.

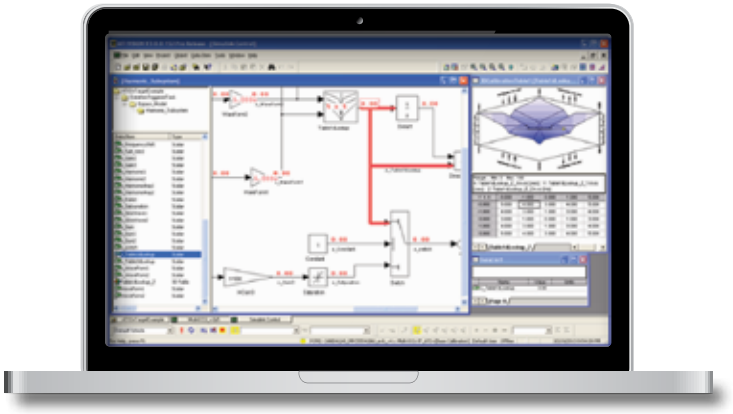
Key Advanced No-Hooks features include:

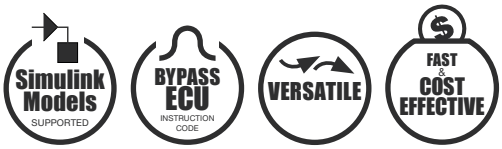
- User defines a function in C-like syntax for the dynamic hook value using VISION data items, constants, and Advanced No-Hooks variables
- No-Hooks DLL creates relocation and trigger code
- Function Library and function editing with syntax highlighting
- Requires only No-Hooks DLL for target CPU



Each hooked item can have its own function. Hooked item functions can be selectively enabled/disabled to control the bypass operation as an Advanced or base No-Hooks bypass.

OnTarget
Advanced ECU Code RP





OnTarget enables the expanded capability to integrate custom model based control algorithms into existing ECU code.

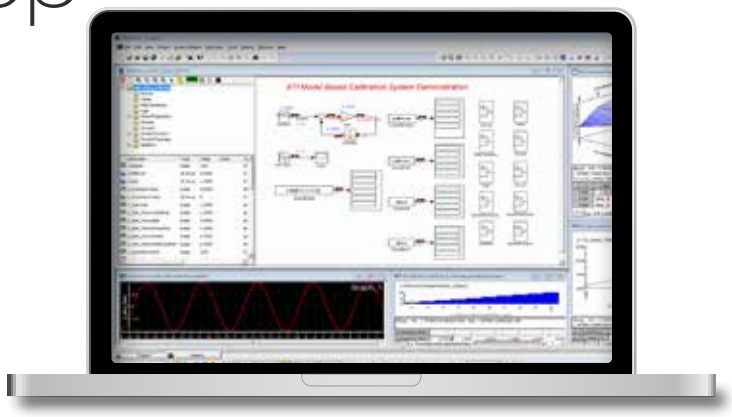
In the No-Hooks tradition, there is no need for access to or modification of the ECU source code; all that is required are the ECU executable and description files.

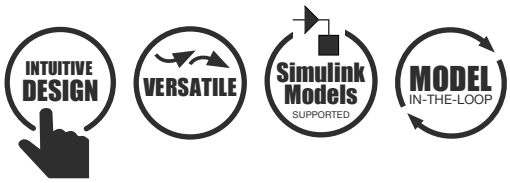
- All the features of No-Hooks Rapid Prototyping
- Bypass variables with outputs from a Simulink® model, allowing the addition of an entirely new control algorithm to be added to the existing ECU code without modifying the original ECU source code
- Free ATI GNU compiler is available for a variety of micro-controllers
- Supports most microprocessors commonly used in ECUs
- Cost effective for design and validation of new algorithms
- OnTarget is ideal for the prototyping and testing of new closed-loop functions and Function A/Function B comparison testing
- Harnesses the modeling abilities of Simulink combined with the calibration support of VISION

Key OnTarget features include:

- Original source code is not required
- Provides additional Simulink blocks to stitch models into existing code
- Integrates seamlessly with VISION

Model Based Calibration
Implementation of Model-in-the-loop





The VISION Model Based Calibration toolkit (VISION MBC) is the implementation of a Model-in-the-loop (MIL) system. The MathWorks' tools, MATLAB® and Simulink®, provide the modeling environment and VISION MBC provides the 'in-the-loop' capability, integrating VISION with the model as it runs natively within the Simulink® environment.

The MBC System interrogates the model to discover the set of supported signals and parameters within the model. These signals and parameters are then incorporated into a VISION Strategy file (*.vst) which in turn is associated with the MBC Device within VISION. Once so incorporated, the signals and parameters discovered within the model are exposed to VISION as standard data items that may be used in data lists, recorders, table editors, etc. The MBC device in VISION must also control (load, start pause, step, and stop) the model as it runs in simulation (which may also be done directly in Simulink).

Key MBC features include:

- Integrates VISION with existing models by linking VISION and the model running within the Simulink® environment on the VISION computer.
- Once the model is integrated, VISION will use the same interface used by all other devices within VISION. The distinction between this virtual device and all other physical devices is transparent to VISION.
- Powerful display of signals and calibration parameters, including configurable strip charts, recorders, lookups, dials and gauges.
- Viewing of the model in VISION along with dynamic data overlays using the optional VISION Browser for Simulink® Models Toolkit.

VISION Data Analyzer

Advanced ASAM MDF4 Data Analysis Tool

VISION Data Analyzer (VDA) is a powerful, stand-alone, user-friendly 64-bit application purpose-built for viewing industry-standard ASAM MDF4 files of any size, from both ATI and third-party data loggers and software platforms.

VDA's Display presents each file as an independent layout tab containing pages with graphs and side windows. Tabs can be freely undocked and repositioned across multiple monitors or docked within the main workspace. Panel Pages allow simultaneous side-by-side views of graphs, data grids, GPS maps, and CAN/LIN bus trace data for complete and rapid user analysis and export all within a single software tool.

Each VDA page layout supports up to sixteen independently configured graphs, with options to resize, add, remove, rename, and apply custom color themes and Y-axes, powering faster ASAM MDF4 analysis across developments teams - at scale.

Key VDA Software features include:

- Native CAN and LIN bus trace viewing
- Dashboard pages with live gauges for professional test debrief presentations
- User-configurable overlay layouts saved as VISION Data Analyzer Project (VDAP) files, packageable as a ZIP archive
- Channel-selective loading to optimize performance
- 64-bit architecture for large datasets
- Native ASAM MDF 4.1 file format

VDA has popup tool tips such as interactive floating cursor window that displays the current cursor positions and the time delta between the cursors.

ATI ACCURATE TECHNOLOGIES

DAQ Hardware Portfolio

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EMX 2.0
Data Acquisition Redefined

ANALOG & THERMOCOUPLE MODULES

SUPPORTS USER DEFINED CAN MESSAGING

IP67 RATED

AEROSPACE GRADE QUALITY

ETHERNET CONNECTIVITY

The EMX 2.0 Data Acquisition product line is based on a modular chassis design offering combinations of internal measurement module types to support different applications. This provides cost-effective flexibility and efficiency for various channel count needs. Multiple input types are supported within a single EMX device, avoiding the higher cost, extra space, and extra cables needed for a cluster of chained-together devices having only one type of measurement each.

Measurement inputs typically provide several software configurable options per channel including advanced DSP filtering algorithms with selectable filter response characteristics and stop band frequencies to ensure repeatable and accurate measurements of the performance level that typically requires laboratory style equipment. Each channel also allows independent selection of its output data rate.

Flexible communication options are available including CAN/CAN-FD and Ethernet. When used with ATI software products like VISION, the EMX operates as a plug and play device and benefits from enhanced features including dynamic acquisition rates and automatic filter compensation. Quickly integrate high quality EMX data with any generic CAN/CAN-FD based acquisition system using the EMX's open Message Based Protocol (MBP). MBP allows for the highly flexible freeform configuration of free running CAN message formats and rates – a feature not commonly found in traditional CAN based DAQ hardware.

EMX modules feature a hermetically sealed design, internal damping, hard-anodized billet aluminum IP67 rated enclosures and aerospace-grade Deutsch connectors.

Key EMX DAQ module features include:

- Analog, thermocouple, and cost-effective mixed I/O types available
- Accuracy and precision typical of larger, more costly laboratory style equipment
- Advanced anti-aliasing and DSP filters with selectable filter characteristic/cutoff
- Multiple thermocouple types: B, E, J, K, N, R, S, T, selectable per channel
- Advanced quick response thermocouple cold-junction compensation
- Competitive cost-per channel especially for high channel count applications
    - o Flexible communication interface options CAN and CAN-FD for easy daisy-chaining
    - o Ethernet with hardware IEEE-1588 PTP time sync for maximum performance
    - o Generic message-based open protocol available
- Aerospace grade connectors and hard anodized billet aluminum enclosure design
- IP67 rated for installation in vehicles or other rugged environments
- Wide operating temperature range for hot and cold weather testing
- Variety of I/O breakout cable and breakout box options available

The EMX design is based on a modular chassis, available in thermo, analog or as a combination of channels, in a variety of size formats.

DLX
Compact Data Logger

The DLX Data Logger offers a unique combination of functions, providing the features of a CAN interface, data acquisition module, and data logger all in one compact package. Communication channels include CAN and K-line that interface to ECUs or communicate with ATI data acquisition hardware.

The DLX brings a robust and cost effective data logger and calibration interface to small engine development, including eight analog channels, one sensor power output, four thermocouple channels and four digital input/output channels. This combination ensures that ECU and instrumentation data are properly correlated for easy analysis. The small form factor and IP65 rating make the DLX ideal for space constrained applications.

ATI's all-new VISION Data Analyzer enables users to view DLX Data Logger data stored in ASAM MDF4 version 4.1 file format without requiring an additional software utility to interpret MDF4 files - a first for data loggers in this segment.

Key DLX Data Logger features include:

- Four digital input/output channels
- Four +/-5 V differential analog inputs
- Four 0 to 20 V single-ended analog inputs
- Four K-type thermocouple input channels
- Two high speed CAN 2.0B channels
- One ISO 9141 compliant K-Line channel

Data is stored on the DLX in ASAM MDF V4 files that can be easily accessed by using the USB port or removing the SDHC card.

DLX 2
Compact Data Logger

ANALOG & THERMOCOUPLE MODULES

SUPPORTS CAN AND K-LINE CHANNELS

IP65 RATED

MDF4 COMPATIBLE

ROBUST DESIGN

The DLX2 is ATI's next-generation compact wireless connected data logging solution, combining a powerful CAN interface, data acquisition module, and stand-alone logger into a single splash-proof, lightweight package. Communication channels include CAN-FD, K-Line, LIN, and RS-485 that interface to ECUs via CCP and XCP protocols or communicate with ATI data acquisition hardware. DLX2 also supports DMR's over UDS for diagnostics logging via OBD.

The DLX2 delivers a robust and cost-effective package for two- and four-wheel powertrain development, featuring four+/–5 V differential and four 0–40 V single-ended analog inputs, four K-type thermocouple channels, four digital I/O channels, and an integrated 9-axis IMU (3-axis accelerometer, gyroscope, and magnetometer) for GPS measurements. Up to five CAN/CAN-FD channels and optional LIN, K-Line, and RS-485 round out the connectivity. The sealed IP65-rated nylon enclosure and –40 to +85°C operating range make it ideal for in and on-vehicle use including hot and cold weather testing. DLX2 stores data in ASAM MDF4 V4.1 file format — while 'one click' configuration is via free to download ATI VISION Base software.

Key DLX 2 features include:

- Wi-Fi Bluetooth 4.2 & GPS via 9-axis IMU (accelerometer, gyroscope, magnetometer)
- Four digital input/output channels
- Four +/–5 V 16-bit differential analog inputs
- Four 0 to 40 V 16-bit single-ended analog inputs
- Four K-type thermo channels
- Up to five high-speed CAN-FD channels (CAN 2.0B compatible)
- Up to three LIN channels
- One ISO 9141 compliant K-Line channel
- ASAM MDF4 SD logging up to 2 TB

Data is stored on the DLX2 in ASAM MDF V4 files accessible via USB-C or directly from the removable SDXC card. Operational voltage: 5–36 VDC.

ATI ACCURATE TECHNOLOGIES

Serial / CAN Interface Portfolio

ATI 30+ EST. 1992

A8
High-Speed ECU Serial Interface

ACQUIRE CALIBRATE & FLASH IN-ONE

HIGH SPEED ECU DAQ

DYNAMIC DATA RATES

ETHERNET CONNECTIVITY

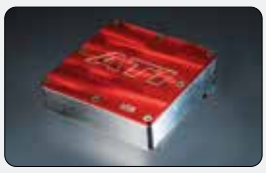
USB CONNECTIVITY

The A8 is ATI's next generation of ECU serial interfaces, providing easy connectivity between a PC USB or Ethernet port and an Electronic Control Unit (ECU). Connecting via the microprocessor's debugger interface, the A8 enables data acquisition, calibration, and flashing functionality to the ECU's microprocessor memory regions. Connecting through the debugger interface provides the capability of acquiring data and flashing the ECU at a significantly higher rate than via the CAN bus.

The A8 allows modification of the ECU memory without interrupting the ECU processor. Keeping up with technology, the A8 supports the latest microprocessors' debug interfaces including JTAG, OCDS, Nexus, and DAP2. Additional processors can be supported based on customer requests. Built for automotive environments, the A8 is designed to be user-friendly, versatile and to deliver fast data throughput.

Key A8 Serial ECU Interface features include:

- Fully integrated ECU interface
- Acquire, calibrate and flash all-in-one
- High speed ECU data acquisition
- Dynamic data rates
- Plug and play USB or Ethernet connectivity



ATI can create custom enclosures to enable A8 integration on space restricted ECU modules.

Built for the most demanding environments, including usage within the ECU underhood.

A9
High-Speed ECU Serial Interface

ACQUIRE CALIBRATE & FLASH IN-ONE

HIGH SPEED ECU DAQ

DYNAMIC DATA RATES

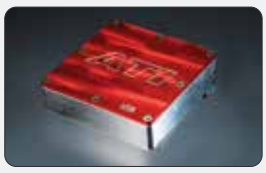
1 Gbps ETHERNET CONNECTIVITY

The A9 ECU Interface product is a high-speed ECU interface that efficiently communicates to an ECU over the processor's DAP interface. To use the A9, a simple plug-and-play gigabit Ethernet interface can be connected directly to a PC or standard LAN, eliminating any need for expensive interface boxes. Hardware IEEE-1588 PTP time synchronization ensures accurate correlation to other acquired data.

The A9 ECU Interface enables data acquisition, calibration, and flashing functionality to ECUs with supported microprocessors (OCDS, DAP2, JTAG) and Nexus via a connection through the microprocessors debugger interface which in turn provides Real-Time access to memory mapped resources. Our interfaces are specifically designed for flexibility, ease of use, and optimized throughput. Direct connection to the PC allows our interfaces to have Plug and Play connectivity on both USB and Ethernet with VISION. XCP-on-Ethernet support is provided for third party applications for acquiring data from the A9 device using the ASAM standard XCP protocol.

Key A9 ECU Interface features include:

- Calibrate, DAQ, and Flash ECUs
- DAP interface up to 160MHz
- 3.2MB/s data throughput
- Capable of supporting ECUs from most OEMs
- Dynamic Overlay calibration handling
- ECU cold start capability
- 1Gbps Ethernet w/IEEE-1588 PTP time sync
- Plug and play direct connection to PC
- Wide operating temperature (-40 to 105°C)



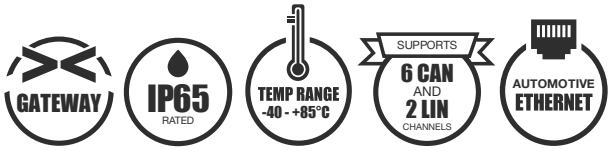
Custom tool enclosures and ECU housing modifications available to suit packaging needs.

ATI ACCURATE TECHNOLOGIES

CAN Product Portfolio

ATI 30+ EST. 1992

VCG-1
Intuitive Vehicle Communication Gateway



The VCG Vehicle Communication Gateway allows users to bridge multiple modules and busses including CAN, CAN-FD, LIN and Automotive Ethernet with this single, innovative, easy to configure standalone data translation device. The VCG will host user-developed programs for applications such as node simulation, watchdog timer functions, CAN to CAN FD translation and more.

The VCG housing is weatherproof and easy to configure and features multi-port, multi-bus message routing and data translation. VCG is designed for both in-vehicle or test cell use.

Key VCG features include:

- (6) CAN-FD, (2) LIN, (1) Automotive Ethernet and (2) Digital I/O all available for user configuration and control
- Merge and convert data from LIN, CAN, CAN-FD and Automotive Ethernet
- Route messages between traditional CAN networks and new CAN-FD networks
- Physical switches per channel maintain CAN termination regardless of device power
- Galvanic isolation on all CAN channels

The sealed enclosure and wide -40 to +85°C operating temperature is suitable for use in-vehicle including hot and cold weather testing.

CANary & CANary FD Compact CAN Interfaces

4 HIGH SPEED CAN CHANNELS · SUPPORTS CCP AND XCP · ATI TIMESTAMPED DAQ · ROBUST DESIGN · CAN FD READY

CANary is a robust, compact interface, featuring two high speed CAN and two LIN channels that are electrically isolated from the USB connection. Internal bus termination can be configured using ATI VISION software.

CANary FD offers four galvanically isolated CAN /FD channels to easily connect to PC over USB to acquire CAN data using VISION. Each channel features an in-built termination switch, negating the need for a separate CAN terminator.

Supported devices include:

- ATI data acquisition hardware; EMX series, EDAQ series, Voltage Output Module (VOM), and Vehicle Information Display (VID)
- ASAM communication protocols (CCP/XCP) typically used for calibration, monitoring, and flashing of ECUs
- Generic CAN devices that utilize database files

Key CANary features include:

- 2 high speed CAN channels electrically isolated from channel to USB
- 2 LIN channels supporting M/S mode
- Advanced time synchronization of ATI DAQ Hardware
- Micro robust design

Key CANary FD features include:

- 4 high speed CAN/FD channels
- Galvanically isolation from channel to channel & channel to USB
- Supports ATI Optimized DAQ when used with VISION and ATI DAQ hardware
- Mechanically switchable CAN terminations
- SAE J2534 drivers available
- USB/DB9-M physical connections

The J2534/2-2019 API allows usage of multiple CAN channels with 3rd party software applications and maintains support for the GMW17753 method.

CANverter
I/O module

BIDIRECTIONAL CAN TO I/O CONVERSION

COMPACT & COST EFFECTIVE

SUPPORTS CAN DATABASE FILES

IP65 RATED

The CANverter is a compact and cost effective I/O module suitable for any high-speed physical layer CAN network. Used globally, this well-proven device can either send a message on a CAN bus or translate CAN data to an external acquisition system.

Produced in high-quality ABS plastic, CANverter's light weight and compact size makes it portable and simple to install just about anywhere.

Features:

- Converts CAN bus data to analog voltages, digital signals or PWM output
- Converts analog or digital inputs to CAN data
- Easy setup via the CANverter Configuration Software (using a .dbc or .uef database, drag and drop signals onto the desired pin for quick configuration)

Key CANverter I/O module features include:

- Bidirectional CAN to I/O conversion
- Compact and cost effective
- Supports CAN database files
- Easy drag and drop

CANverter is a versatile I/O module featuring high-speed CAN network and RS-232 configuration ports.

Klaric
High Voltage Modules

Klaric and ATI partnered to leverage the synergies between ATI's measurement and calibration competencies and Klaric's competitive advantage in the high voltage sector.

The Klaric range of high-voltage modules and EV Charge Monitors is the perfect, high-quality hardware compliment to ATI's VISION Calibration and Data Acquisition software packages, which have been successfully used by global OEMs and Tier Ones in hybrid and EV platforms.

These data acquisition systems are optimized for testing new electric and hybrid vehicles making tasks easier, safer and faster. Klaric's precision measurement modules have Ethernet, CAN and USB interfaces for monitoring data output, setting range selection, and making automated measurements.

Key Klaric High Voltage Module features include:

- Galvanic isolation up to 1500V DC
- Sample rate up to 8 kHz
- CAN data output
- XCP-on-Ethernet data output
- Dynamic sampling rate minimises data volume
- Automatic measurement range selection reduces implementation setup time
- Automatic probe identification reduces setup time

Use a standard Klaric breakout box solution or a DIY breakout box which provides glands for HV cable harness integration.

CW-401 MkII

Non-intrusive Amperage Testing and Data Logging

VERSATILE · ROBUST DESIGN · SUPPORTS CAN BUS PRODUCTS · DIAGNOSTIC SERVICES

CW-401 MkII is a high-precision current clamp meter for contactless current measurement in the measuring ranges from ±10 A to ±1000 A. The high-quality and robust case - with very small dimensions - makes it ideal suited for measurements in rugged environments and hard-to-reach places, e.g. in the engine compartment.

Even at high ambient temperatures, up to +120 °C, the CW-401 has an outstanding accuracy due to an intelligent temperature compensation. This is achieved by digital signal processing of its integrated logic. Current measurements are transmitted comfortably via CAN-bus. Though this bus system, measurements can be sent over long distances without any signal degradation due to EMI or noise.

Key current clamp meter features include:

- Measuring ranges ±10 A to ±1000 A
- High accuracy 1%
- Extended temperature range
- Temperature compensation, sensor position- and remanence correction
- Output of the measuring values via CAN-bus
- Robust case
- Small form factor, for application to hard-to-reach measuring points
- Factory calibration
- Intuitive configuration software

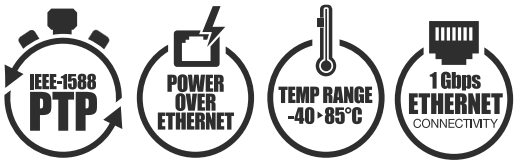
Simplify your process and save yourself time and effort with a non-invasive meter installation solution.

ATI ACCURATE TECHNOLOGIES

Test Cell Products

ATI 30+ EST. 1992

NS-1
Revolutionary Network Switch



The NS-1 Network Switch is a 6-port Gigabit Ethernet switch that is designed to meet the needs of using Ethernet devices in development vehicles and industrial applications. It provides a unique combination of features not found in most commercial and industrial ethernet switches.

The automotive surge tolerant wide operating voltage of 6 to 36VDC allows the NS-1 to be reliably powered from a vehicle power system without fear of power dropouts even during engine crank. Most commercial and industrial switches require minimum 12VDC power and are not suitable for being directly powered from vehicle power systems.

The NS-1 can be used out-of-the-box with all standard Ethernet devices and does not require VISION or any other software to operate or configure.

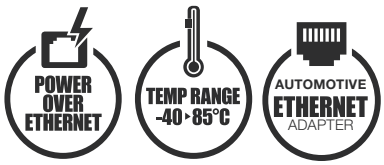
Key NS-1 features include:

- (6) 10/100/1000Mbps Gigabit Ethernet ports
- Compatible with standard Ethernet devices
- Supports IEEE-1588 Precision Time Protocol (PTP) in hardware on all 6 ports
- Supplies Power over Ethernet (PoE) on all 6 ports
- Automotive surge tolerant wide operating voltage of 6 to 36VDC
- Wide operating temperature range for hot and cold weather testing
- Fan-less design for high reliability
- Lemo and Phoenix terminal block power connector options

The NS-1 Network Switch takes PoE further by offering 30 watts per bank (1-3 and 4-6).

AE-100 & AE-1000

Plug and Play Automotive Ethernet Adapters

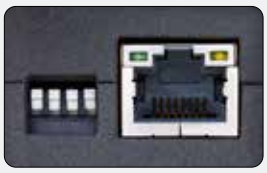


The **AE-100**, **AE-1000**, and **AE-1000** USB Automotive Ethernet Adapters are bi-directional physical layer media converters between standard Ethernet and Automotive Ethernet (OPEN Alliance BroadR-Reach).

Key Automotive Ethernet Adapter Product Features include:

- All versions are intended for plug and play use without any additional configuration software
- Compact, rugged nylon enclosure with an optional clip-on mounting bracket
- -40 to +85°C operating temperature for in-vehicle use including hot/cold weather testing
- Physical Commander/Responder mode selection switch minimizes start up negotiation delays
- AE-100 and AE-1000 support Power over Ethernet (PoE) to eliminate extra power wiring or can be DC powered using a surge tolerant operating voltage of 6-36VDC (suitable for in-vehicle use)
- AE-1000 USB is powered via USB and supports standard NIC drivers installing as an Ethernet port on the PC

AE-100
Configuration Switch



AE-1000 / USB
Configuration Switches

PICOTURN
Compact Controller for Turbochargers

ROBUST DESIGN · TEST CELL · IP67 RATED · LEMO Connector

The PICOTURN® PTCM is a compact controller for turbocharger rotational speed sensors. Rated as IP67 proof, it is ideal for on vehicle fitments, yet is capable of minimum compressor wheel speed measurement of just 200 rpm, to a maximum of 400,000 rpm.

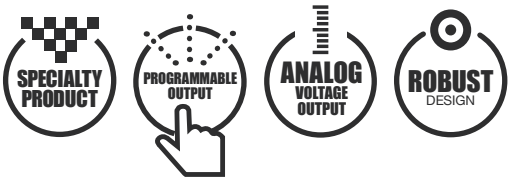
The PICOTURN PTCM consists of a sensor with a 1.5m cable, a compact, ruggedised signal-conditioning box, plus a lead for output and power supply. Both the sensor and PTCM box are rated as IP67 proof if connected and installed as per PICOTURN's recommendations, making it ideal for underbonnet fitments. The PTCM is capable of compressor wheel speed measurement up to 400,000 rpm with a minimum operating speed of 200 rpm.

The PICOTURN system benefits from high sensitivity, allowing a large distance between sensor and the rotating vanes in the range of 1 mm at 0.6mm vane thickness. Various sensors are available to accommodate numerous user cases differentiated by the length and thread of the sensor head. The PTSM-H series benefits from enhanced sensitivity, enabling use with titanium wheel and other critical applications where higher temperatures are a priority.

Key PTCM features include:

- Compact size
- Adjustable number of vanes
- Designed for underbonnet use
- IP67 rating

IGTM
Ignition Timing Meter



SmartTach
Module

SmartTach Module
Universal speed measurement made easy with ATI's SmartTach. The SmartTach takes pulse output from Engine position sensors, Dyno Encoders, Ignition drivers and other sources providing a scaled analog speed output.

The SmartTach can easily handle missing tooth wheels and multi-strike ignition systems that cause problems with Frequency to Voltage conversions. Use the SmartTach to also measure frequency, pulse width or duty cycle.

Ignition Timing Meter
ATI's Ignition Timing Meter (IGTM) is a precision timing measurement instrument designed for engine development and testing.

Measure ignition, camshaft or injector timing with an accuracy of +/-0.05 degrees for steady-state and transient testing. The IGTM-2000 provides an easy means for data acquisition systems to collect real-time measured ignition timing on spark ignited engines.

ATI has developed unique products that satisfy specific test cell or dynamometer challenges. These highly accurate products measure engine timing (IGTM) or speed (SmartTach) in convenient ways to provide information that otherwise may not be available.

- Satisfy a unique need
- Rugged construction
- Resistant to extremes of temperature
- High levels of reliability

Comprehensive ongoing **Training**

ATI offers hands-on training to its customers globally. The courses offered are designed to gain a complete understanding of ATI's product concepts, functions, and features. Through instructor led demonstrations and hands-on simulations, attendees will be able to apply this newly-acquired knowledge directly to their skillset. ATI training classes can be conducted on-site or virtually at your convenience. To determine your training needs or to schedule training, please contact your local ATI office.

Examples of ATI's Most Popular Classes:

Basic/Advanced VISION

Focus on time-saving using the advanced features offered by VISION, including:

- Customization
- Calibration Manager
- Advanced table views and templates

Rapid Prototyping Basics

- No-Hooks software set up overview
- Perform real-world modification of ECU parameters and algorithms
- Discover RP functions that make this patented product unique
- Review real-world examples to expand the capabilities of your own processes

Scripting

- Overview of scripting
- Create individualized tools to automate custom activities or repetitive tasks
- Review examples of scripting techniques to improve productivity

Introduction to CANLab

This class covers initial set up and use of ATI's CANLab software. Learn more about using CAN with VISION, CAN Message functionality, and configuring CAN interface hardware.

Practical examples include:

- Monitoring, recording, and sending CAN messages
- Filtering and replaying CAN messages
- Using CAN Database (dbc) files
- Overview of CANLab Scripting

VDA Training

- Opening and working with ASAM MDF4 files
- Floating and docking window architecture
- Use of dashboard page screen objects
- Exploiting the CAN/LIN Trace page for viewing bus data traffic in MDF4 files

ATI ACCURATE TECHNOLOGIES

Rapid on-site support **Worldwide**

In addition to free product training, ATI prides itself on delivering a reactive global support service that recognizes that your time is precious, enabling your team to maximize productivity with confidence. For longer-term projects a comprehensive on-site support service is also available on request globally for our major OEM and Tier One partners.

- Typical support emails answered within one hour
- Two week average repair
- On-site support available worldwide
- Free, ongoing product training
- Free, ongoing software updates and feature additions*

*Current ATI SW Maintenance and Support required

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Photo - courtesy Delta Motorsport

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ATI - Your Global Measurement, Calibration and Diagnostics Partner

With over three decades of experience in developing cutting-edge software and hardware solutions for the measurement, calibration and diagnostics (MCD) sector, Accurate Technologies Inc.'s (ATI's) extensive product portfolio is used globally by major OEMs and Tier One clients across a wide variety of powertrain formats in the automotive, defense, marine and aerospace sectors.

ATI 30+ EST. 1992

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Ref. Measurement, Calibration & Diagnostics Product Range & Corporate Overview 06/2026