

**EMBEDDED SYSTEMS
SOLUTIONS**

www.embeddedindia.com

**LEADING
ONE STOP
PROVIDER FOR
EMBEDDED
SYSTEMS**

ESS AUTOMOTIVE PRODUCT PORTFOLIO

ESS's synergetic Automotive Product Portfolio holistically supports design, development and debugging of High Performing Mission and Safety Critical Automotive Solutions.

Multicore Development Qualification ToolKits

Functional Safety Driver Monitoring Static Code Analysis

Model Based Development Tools EV Test Solutions SafeTPack

AUTOSAR AUTOMOTIVE Safety RTOS
LV 123, LV 124, LV 148

HYPERVISOR SOLUTIONS CAN/CAN-FD

Automotive Electrical Test Solutions JTAG Debuggers

High Speed Data Acquisition MCAL ISO 26262 ADAS

Automotive Ethernet TESTING (MIL, SIL, PIL, HIL)

High Performance Power Supplies Automotive Stacks





Multi-Core Multi-Architecture



COMPILER
BUILD TOOL



PXROS-HR
REAL-TIME OS



QKIT
TOOL QUALIFICATION



B2B

CONSULTING & SUPPORT



• Automotive Development Platform

- AURIX TC4xx, TC3xx, AURIX TC2xx and TriCore TC1xx Variants, C compilers for HSM, Compilers for GTM/MCS, Assembler for GTM
- NXP S32Z and S32E Processor Families
- STMicroelectronics SPC56x, SPC57x, SPC58xPower Architecture
- NXP Qorivva MPC56xx, MPC57xx, MPC58xx

• Compiler ASIL D Qualified

- Toolkit Qualification ISO26262 ASIL D, IEC 61508 SIL4, EN 50128 SIL4

• PXROS-HR SIL-3 Certified Micro Kernel RTOS

• Advanced Multi-Core C/C++ Compiler with Multi-Architecture Support

• Industry Shortest (Compile-Link) Build Times

• Commercial standard and math libraries (no open source, no viral GPL implication)

• Preferred Design House by Infineon & Preferred Compiler Partner by STMicroelectronics

- Infineon and ST AUTOSAR MCAL
- Infineon SafeTLlib for AURIX and SafeTPack for AURIX 2G

• 3rd Party Debugger Support (Lauterbach Trace32)

TRACE32®

Debuggers from the Automotive Specialist



TRACE32® supports technologies like JTAG, SWD, NEXUS or ETM with embedded debuggers and software and hardware trace.

Supports almost 100 cores deployed in over 5000 chip families like ARC, Arm® Cortex®-A/-R/-M, Neoverse and Armv9, RISC-V®, Power Architecture®, TriCore™, RH850, Xtensa® etc.

• Universal Debug and Trace Support

- ARM - Cortex-A/-R/-X Armv8/Armv9, Neoverse Armv8/Armv9, Cortex-A/-R Armv7, Cortex-M
- Infineon - TC4xx: TriCore, CSRM (TriCore), SCR (XC800), PPU (ARC), GTM. TC2xx/3xx: TriCore, HSM (Cortex-M), SCR (XC800), GTM
- Power Architecture- Qorivva MPC5XXX / SPC5XXX, QorIQ, PowerQUICC
- Renesas - RH850/U2B, V850. R-CAR

• AUTOSAR Debugging with new ARTI Support

• Multicore Tracing, Onchip and Off-chip Tracing, Trace Based Code Coverage

• AMP and SMP Debugging

• Debugger for Synopsys Virtualizer

• ISO 26262 Tool Qualification Support-Kit

• Vector Integration: Software Debugging via XCP

• OS & Hypervisor-Awareness Debugging (QNX, Nucleus, VxWorks)

• Test Automation via Scripts & API

• PIL Simulation - Support for Mathworks Simulink

AUTOSAR solutions from ETAS

Tools, basic software, and services

AUTOSAR Classic Platform RTA-CAR



Complete solution ready-to-go

- Comprehensive AUTOSAR solution
- One development framework for multiple OEM platforms
- Wide range of hardware support across many components like OS, HSM, MCAL, transceivers and switches
- World's smallest and fastest AUTOSAR OS
- OEM extensions and flash bootloaders
- Enhanced solutions by non-AUTOSAR extensions



Market leading state of the art security

- Cutting edge AUTOSAR security stack combined with CycurHSM
- Functional safety and ISO26262 certified up to ASIL-D



Proven and reliable

- More than 3 billion ECUs on the road
- Qualified by several OEMs
- Proven at hundreds of customers



RTA-SAFE	RTA-SEC	RTA-DIAG	RTA-M939	RTA-COM	RTA-MEM	RTA-IDAE
WdgM	CSM	Dem	J11939Tp	Com	Num	Ecu_JA
WdgM	CAL	Dec	J1939Dcm	PduR	MemIf	Ecu_ID
EZE	CRY	Fim	J1939Rm	IpduM	Fec	Ecu_PwM
CAC	CycurHSM		J1939Nm	ComM	EsS	Ecu_PM
				Nm		Ecu_PO
RTA-BASE	RTA-CAN	RTA-FRAY	RTA-LIN	RTA-ETH	RTA-XCP	RTA-HWD
WdgM	CanTp	FrTp	LinTp	EthIf	XCP	Ecu_JA
WdgM	CanSM	FrSM	LinSM	EthSM	XCPW	Ecu_ID
EZE	CanNM	FrNM	LinNM	SoAd		Ecu_PwM
CAC	CanIf	FrIf	LinIf	UDPNm	RTA-CD	Ecu_PM
				Tcplp	CD	Ecu_PO
				Sd		
RTA-MCAL						
WDG	ICU	ADC	OCU		CAN	LIM
MCU	PORT	DIO	PMW	SPI	FLS	FRAY
						ETH

Hardware-department modules available today for a wide range of microcon combinations with further ports available on request

Hardware-department modules

AUTOSAR solutions from ETAS

Tools, basic software, and services

AUTOSAR Adaptive Platform RTA-VRTE



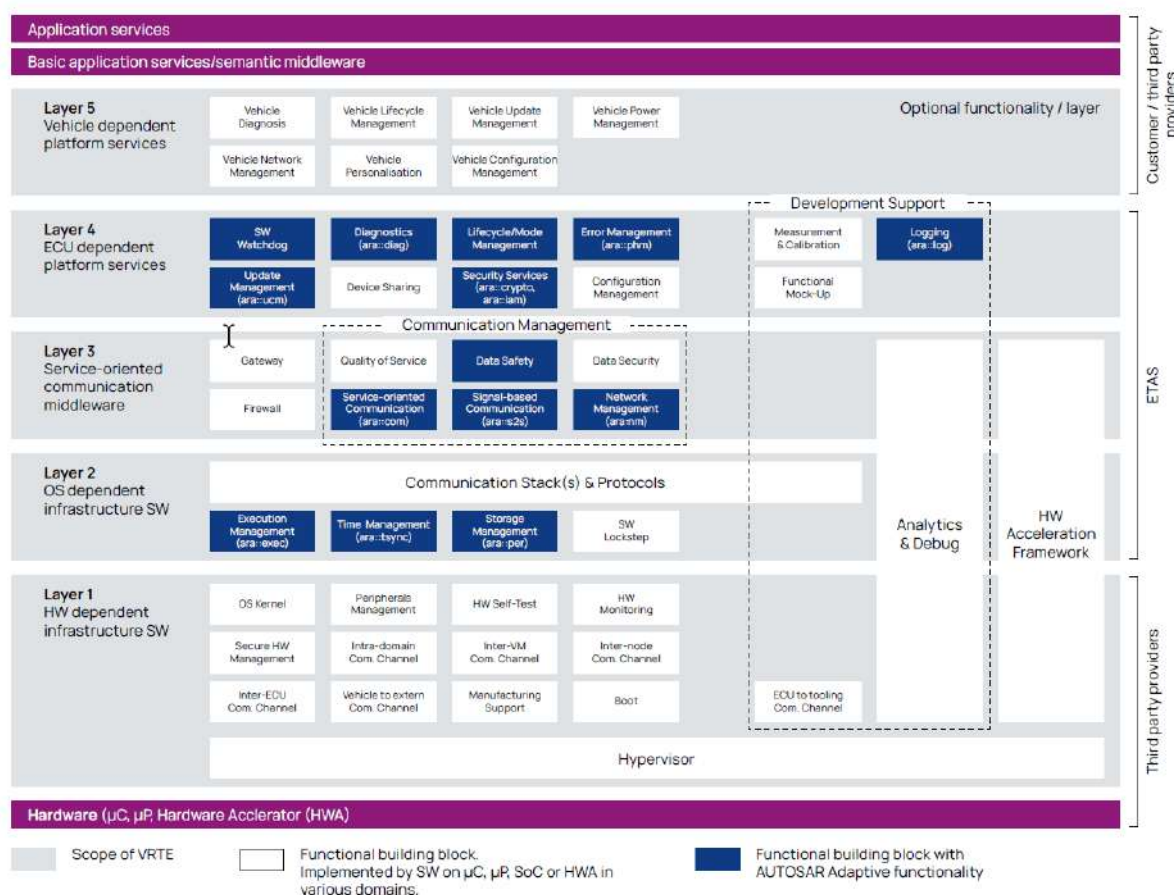
Off the shelf solution

- Cloud development ready
- Integrates with a wide range of 3rd party software solutions
- Runs on POSIX OS (Linux and QNX out of the box)
- Easy and user-friendly configuration
- Nominated by various customers for upcoming series cars
- Supporting the newest standards
- Starter kit, which gets you running immediately



Safety & security from the inside out

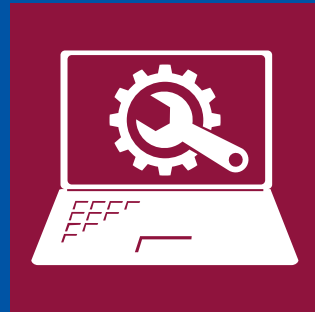
- Ready for integration in safety related ECUs up to ISO26262 and ASIL-B (up to ASIL-D on request)
- Cutting edge security extensions in combination with ETAS security solutions



Embedded development tools by SEGGER



Debug & Trace probes



Software Tools



Embedded Software



Production Tools



RTOS

File system

Compression

IP

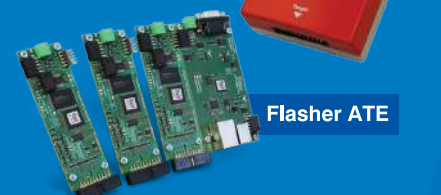
Firmware updates

USB

Encryption

Authentication

User interface



FOUNDATIONAL SOFTWARE SOLUTIONS FOR THE MODERN VEHICLE



BlackBerry QNX eases the challenges of building ISO 26262 compliant automotive systems through its solutions

BLACKBERRY QNX FUNCTIONAL SAFETY SOLUTIONS



OPERATING SYSTEM

Provides a reliable RTOS foundation that is pre-certified to the highest level of ISO 26262 - ASIL D

VEHICLE INSTRUMENT CLUSTERS

Delivers an ISO 26262 ASIL B pre-certified graphics solution

ADVANCED DRIVER ASSISTANCE

Provides a foundation on which to build safe and reliable autonomous driving software

HYPERVERSOR

Isolates safety-critical systems from non-safety critical systems

SYSTEM SAFETY DETECTION

A fault tolerant technique to address hardware and software errors in safety-critical systems

BlackBerry QNX's safety solutions mitigate risk of non-compliance and reduce development and certification costs.

QNX OFFERS SAFETY-CERTIFIED AND SECURE SOFTWARE SOLUTIONS TO BUILD AUTOMOTIVE SUBSYSTEMS AND ECUS.



ADAS & AUTOMATED DRIVE

BlackBerry QNX powers advanced driver assistance systems (ADAS) with an OS certified to ISO 26262 ASIL D, as well as frameworks and middleware to enable automated drive features.

Products: QNX OS for Safety, QNX Hypervisor for Safety, QNX® Sensor Framework



DIGITAL COCKPIT

BlackBerry QNX enables digital cockpits that integrate multiple in-car systems while separating safety-critical systems from non-safety critical systems.

Products: QNX Hypervisor, QNX Hypervisor for Safety, QNX® Advanced Virtualization Frameworks, QNX® Acoustics Management Platform, QNX® Sensor Framework, QNX® Multimedia Suite, QNX® Speech Framework, QNX® SDK for Smartphone Connectivity



INSTRUMENT CLUSTERS

BlackBerry QNX offers a reliable, functionally safe solution for digital instrument clusters. Its one-of-a-kind ISO 26262 ASIL B pre-certified graphics solution and ISO 26262 ASIL D pre-certified RTOS

Products: QNX® Graphics for Safety, QNX OS for Safety



INFOTAINMENT

BlackBerry QNX offers market-leading technologies for the development of connected, safe and secure infotainment systems.

Products: QNX Acoustics Management Platform, QNX Sensor Framework, QNX Multimedia Suite, QNX Speech Framework, QNX SDK for Smartphone Connectivity

Static Application Security Testing

CodeSonar is a static application security testing solution (SAST) that helps you find and understand security and quality defects in your source code or binaries.

Security: CodeSonar checks for the use of tainted data, buffer issues, dangerous memory access, integer and floating-point overflow, and other common security coding errors.

Code Quality: CodeSonar detects memory leaks, dangerous memory access, and other common causes of low-quality code.

Code Performance: CodeSonar detects code that negatively affects performance, such as unnecessary tests for nullness, the creation of redundant objects, or superfluous memory writes.

Reporting: CodeSonar provides built-in reports for standards, such as MISRA, OWASP, and CWE. CodeSonar also includes a custom report builder your organization can use to develop a better understanding of the quality and security of your software projects. Export in CSV, PDF, HTML, or XML so you can work the way you want to.

Safety and Security Standards

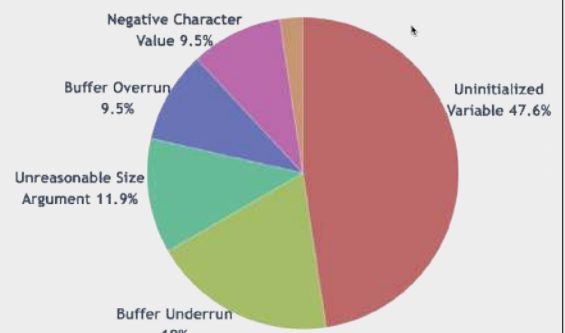
- **Safety Critical:** MISRA C 2023, MISRA C++, AUTOSAR C++ 14, JSF++
- **Security:** CERT, DISA STIG, OWASP, CWE

Functional Safety

- Pre-qualified for the highest levels of safety for the IEC 61508, ISO 26262, and CENELEC EN 50128 standards.
- Artifacts for qualification according to DO-178C/DO-330 are also available.

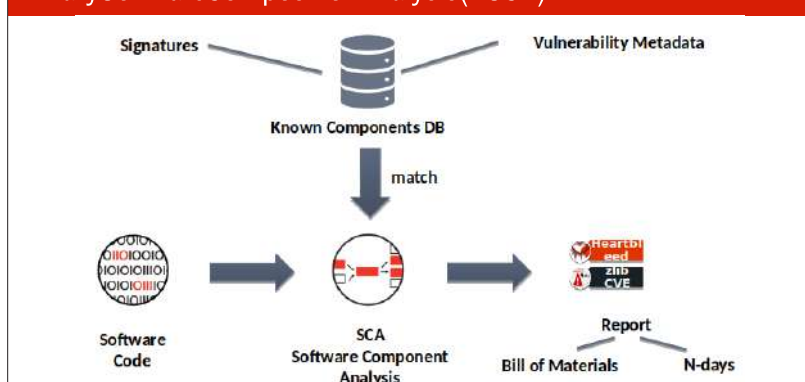
Deep Insights

Buffer over-and under-runs
Copy-paste error
Memory leak
Dangerous function
Cast and conversion
Concurrency problems
Unused parameter
Tainted data value
Command injection
Ignored return value
Null pointer dereference
And hundreds more



Enhancing Automotive Cybersecurity Through Software Transparency

BinarySoftwareCompositionAnalysis(BSCA)



Binary Composition Analysis (BCA)

Identify Vulnerable Open-Source Software (OSS) in Third-Party Components | Create SBOMS

Software Bill of Materials (SBOM) without Source Code

- Identifies open-source components and shared library dependencies in binaries, including firmware and containers
- Generates component inventory in SBOM with Annotation support
- SBOM mapped to VulnDB, the industry's most complete database of software vulnerabilities.
- Vulnerability Analysis and Software Supply Chain Security (SSCS) Risk Mitigation

Testwell CTC++ Code Coverage Analyzer

Code Coverage compliant to highest safety requirements



Code Coverage with Testwell CTC++

- ▶ Fulfill requirements of standards
- ▶ Write better test cases
- ▶ Avoid redundant test cases
- ▶ Find dead code
- ▶ Prove code coverage to your customers
- ▶ Demand proof of code coverage from your suppliers
- ▶ Find bottlenecks by examining runtime behavior



Optimal Solution

- ▶ Very small instrumentation overhead
- ▶ Analyses code coverage on all targets
- ▶ Works with even the smallest targets
- ▶ Works with any compiler/cross compiler
- ▶ No modifications necessary for existing code
- ▶ Support of existing make files
- ▶ Very fast execution speed
- ▶ Seamless integration into common IDEs
- ▶ Support for C and C++



Coverage Levels

- ▶ Statement Coverage
- ▶ Function Coverage
- ▶ Decision Coverage/Branch Coverage
- ▶ Condition Coverage
- ▶ Modified Condition/Decision Coverage (MC/DC)
- ▶ Multicondition Coverage (MCC)



Code Coverage Results

- ▶ Summary Coverage Reports
- ▶ Directory
- ▶ Files
- ▶ Functions
- ▶ Execution Profile Listing
- ▶ Untested Code Listing
- ▶ Coverage Summary Listing
- ▶ Execution Time Listing

Meet the Code Coverage Requirements of ISO 26262 and IEC 61508

In order to evaluate the completeness of test cases, ISO 26262 requires the measurement of structural coverage. Depending on the Automotive Safety Integrity Level statement coverage, branch coverage and/or MC/DC (Modified Condition/Decision Coverage) is required (see 8.4.5 of 26262-6).

Coverage Level	ASIL A	ASIL B	ASIL C	ASIL D
Statement Coverage	++	++	+	+
Branch Coverage	+	++	++	++
MC/DC (Modified Condition/Decision Coverage)	+	+	+	++

++ + stands for "highly recommended", + stands for "recommended"

Qualification Kit for Standards:

DO-178C - IEC 61508 - EN 50128 - ISO 26262-IEC 60880



MES MODEL EXAMINER®

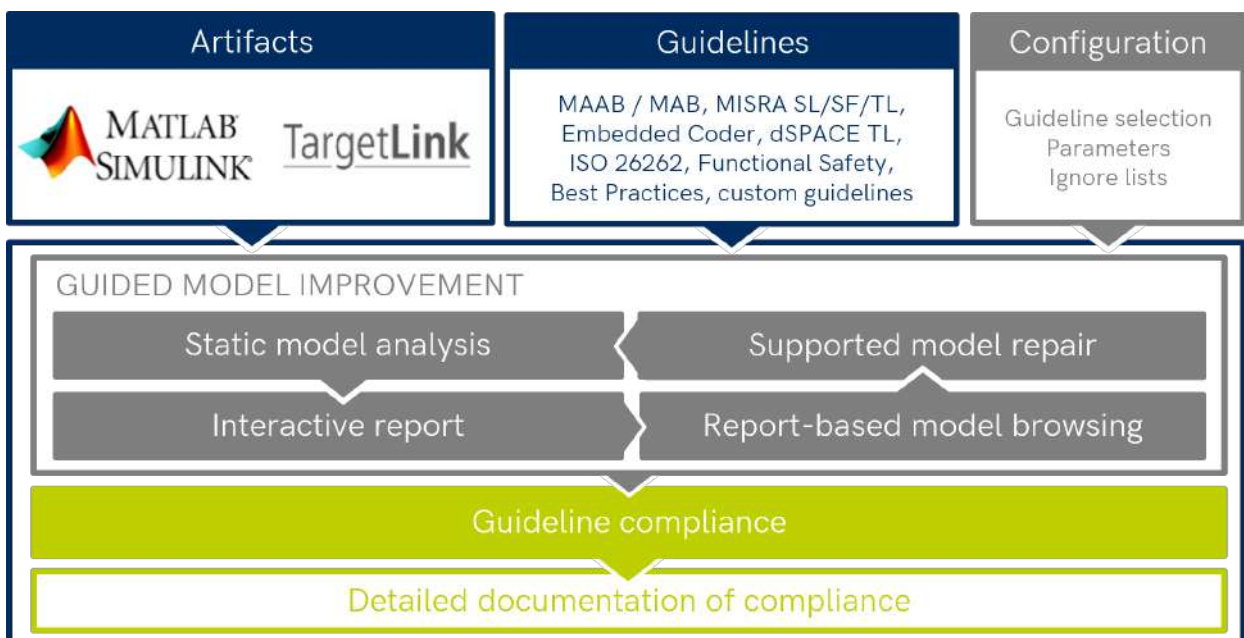
The first choice for static model analysis

Easy Checking of Modeling Guidelines

The Model Examiner (MXAM) is your first choice for a comprehensive static model analysis. MXAM offers an easy way to check modeling guidelines, analyze model structure, and evaluate model metrics, all in a single tool. Comprehensive user guidance through analysis results as well as the repair and improvement process effectively ensures ISO 26262 standard compliance for your software models.

Ensuring ISO 26262 Compliance

MES Model Examiner® is certified by TÜV SÜD as a T2 Offline Support Tool for use in safety-relevant software development in compliance with ISO 26262, IEC 61508 & ISO 25119.



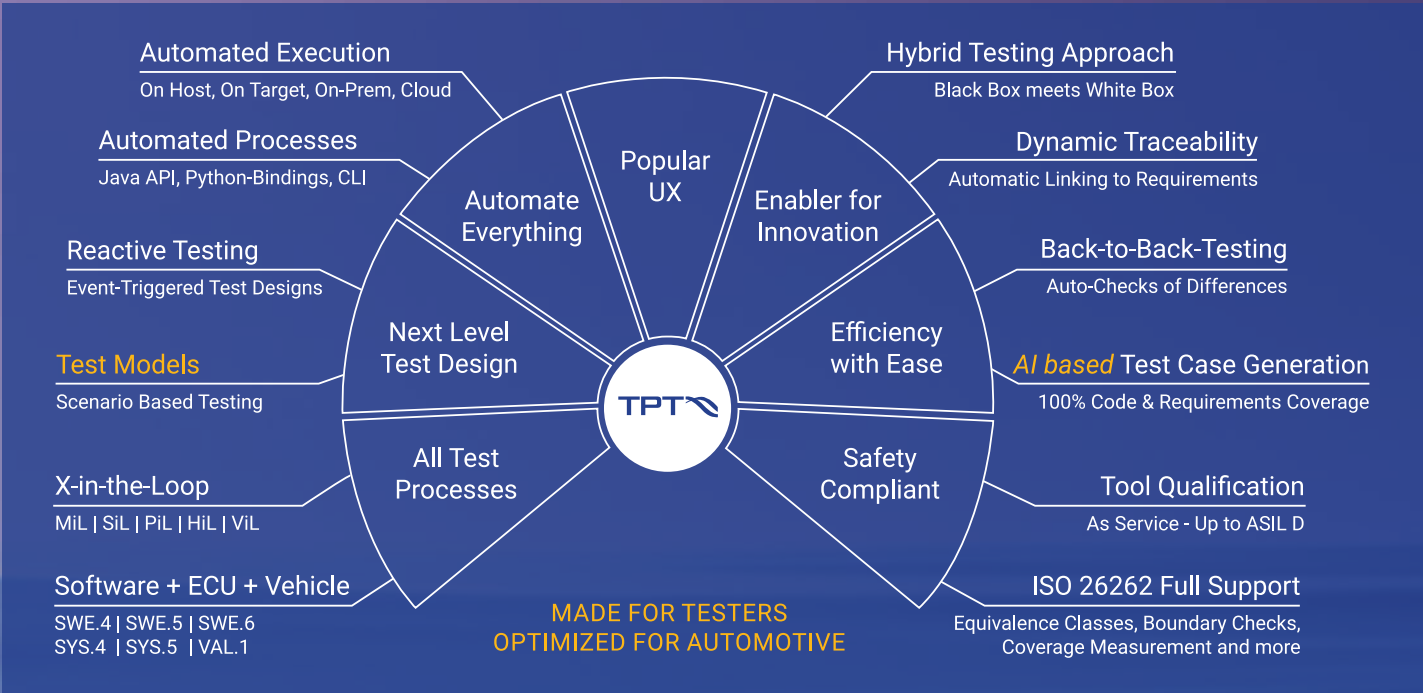
MES Model Examiner® analyzes software models for guideline compliance and guides the user through the repair and improvement process.

Key Benefits

- Automated checks and repairs for Simulink®, Stateflow®, Embedded Coder®, TargetLink®, ASCET® and Excel® guideline violations
- Efficiently ensure ISO 26262-, ASPICE-, and MISRA®-compliant software models
- API for developing and integrating company-specific checks
- Simple integration into existing development environments
- Support system for guideline and check development

TPT Test Automation Framework

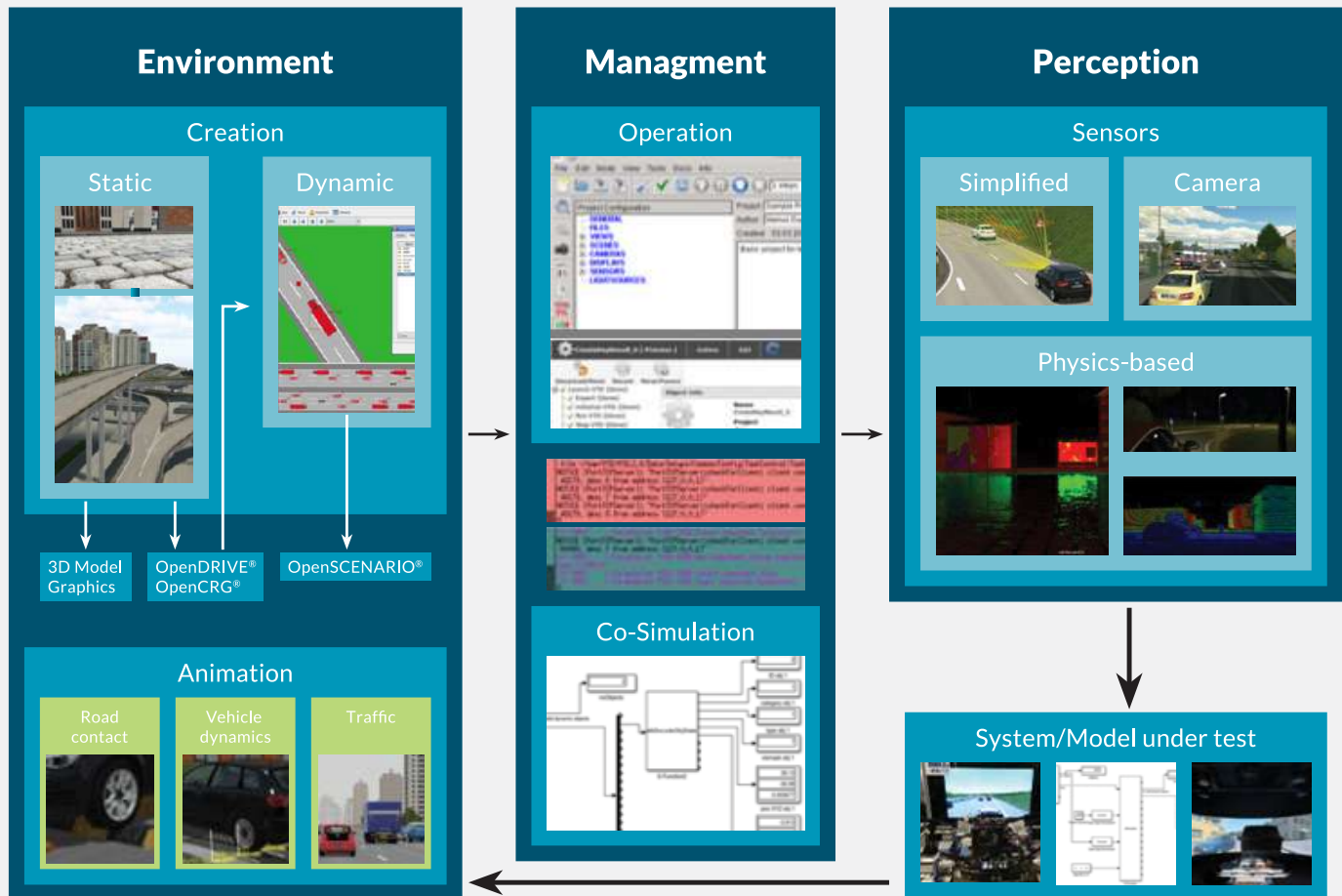
TPT a leading Automotive Test Automation Platform for Software-In-Loop, Model-In-Loop (Simulink Models), Processor-In-Loop, Vehicle-In-Loop testing and even AUTOSAR SWC testing. Most automotive OEMs and TIER 1s have been using TPT to build comprehensive test automation suites quickly and effortlessly for different test environments.



FEATURES	DESCRIPTION
Test Automation	Automates unit, integration, and system-level testing for embedded software.
Model-Based Testing	Supports MATLAB/Simulink, dSPACE TargetLink, ASCET, and AUTOSAR.
Model Coverage Analysis	Targets model coverage goals like MC/DC or branch coverage
Automatic Test Case Generation	Automatic Test Case Generation <ul style="list-style-type: none"> • For 100% Model & Code Coverage • For 100% Requirements Coverage • Based on Formal Requirements • Based on test data/equivalence classes/variants/value rangesTT
ECU Testing	Runs tests on real ECUs, HIL, PIL, MIL and SIL platforms.
Back-to-Back Testing	Compares MIL, SIL, PIL, and HIL test results for consistency.
Requirements-Based Testing	Ensures traceability with requirements captured in all popular Requirement Management Tools/PLM tools (DOORS, Polarion, Codebeamer)
Code Coverage Analysis	Measures MC/DC, condition, decision, and statement coverage.
ISO 26262 Compliance	Certified tool for safety-critical automotive software testing.

Virtual Test Drive®

VIRES Virtual Test Drive (VTD®) is a complete tool-chain for driving simulation applications.



VTD provides a modular tool-set for road network creation, scenario definition, vehicle dynamics, traffic and sound simulation, simulation control, image generation, sensor perception etc. It uses established standard file formats.

VTD supports:

OpenDRIVE®
OpenCRG®
OpenSCENARIO®

VTD provides open interfaces for 3rd party components and a plugin concept with API for 3rd party modules; it allows for wide-ranging customization of its functionality.

VTD is an established software package which is in service at numerous installations in the automotive and railroad industry.

For more information, visit:
www.hexagon.com/products/virtual-test-drive

Innovation that solves your Bluetooth® Test Challenges

- CS RF PHY & Part H CS Layer Tests
- HDT & higher bands ready
- BLE/Classic/802.15.4 RF PHY Tests
- Smallest, lowest power sniffer
- Bespoke protocols on request
- Production & Development Options
- Android sniffer/coverage app
- LE Audio latency measurements
- Runs in Windows, MacOS & Linux
- Configurable GUI & API
- Bespoke protocols on request
- Perpetual SW Licenses - no OPEX

with NXP, future chip development
mini-moreph



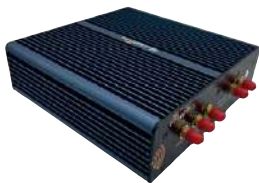
- World's smallest USB powered Protocol Analyser
- BR/EDR, BLE, Qualcomm QBHSL, MediaTek mHDTV2.0, IEEE 802.15.4, LE Audio and CS (Single/Dual/+++ options)
- Simultaneous RX & TX over the entire 2.4 GHz ISM band
- Live or post-capture decryption with blueSPY GUI
- 16 channel Logic Analysis & WiFi Packet Timing
- Custom 2.4 GHz PHYs available upon request

morephE



- Specifically designed for PHY Layer Testing
- Options for BR/EDR, BLE, QBHSL, IEEE 802.15.4
- RF Spectrum Record and Playback option - 3 hrs 40 mins
- C/I, blocking & intermodulation signals generated internally
- Accurate power control to -115dBm for coded PHY tests
- Full support for in-band emissions
- Production Line or Development options available

morephCS
channel sounding



- Support for all CS RF-PHY test cases, including BT=2.0 modulation index & CS Layer tests via HCI
- Simple control via comprehensive GUI or Python/C dll.
- Log of all HCI traffic and key events
- Export of raw IQ data, spectrogram or the entire capture
- Capture of GPIO time aligned with IQ data
- Production Line or Development options available

pod audio



- Audio latency measured end-to-end, between-channels or relative to on-air packets in real-time
- Audio capture and generation accurately timestamped relative to Bluetooth packets
- Measures LE Audio Presentation Delay
- Measures SYNC between Left and Right channels

neXt generation in data acquisition and signal conditioning

For analog, digital, optical and
MHz signals

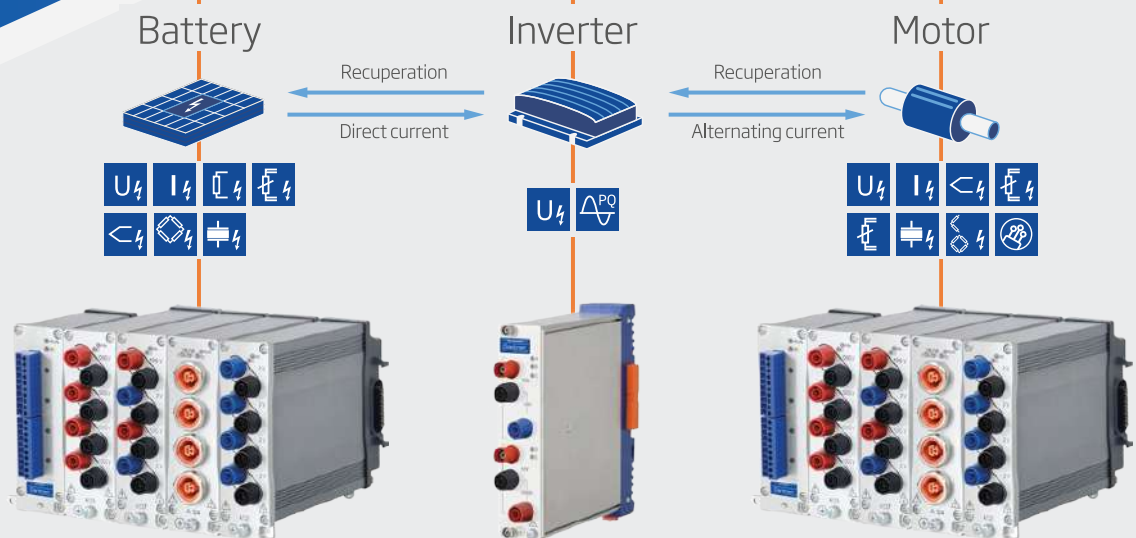
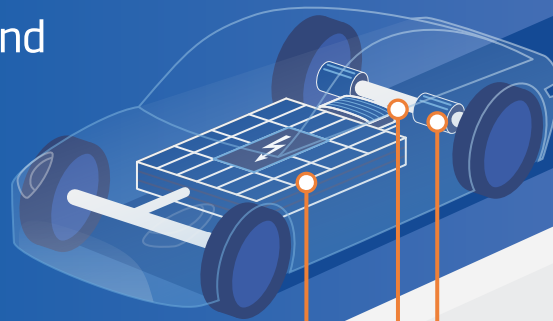
MHz

High isolation I/O
modules for electric
vehicle testing



1200 VDC continuous isolation

**5000 VDC
peak**



Q.series X

Continuous
1200 VDC isolation

Q.boost

Up to 4 MHz per
channel, triggered
or continuously

Q.series X

Up to 100 kHz
per channel

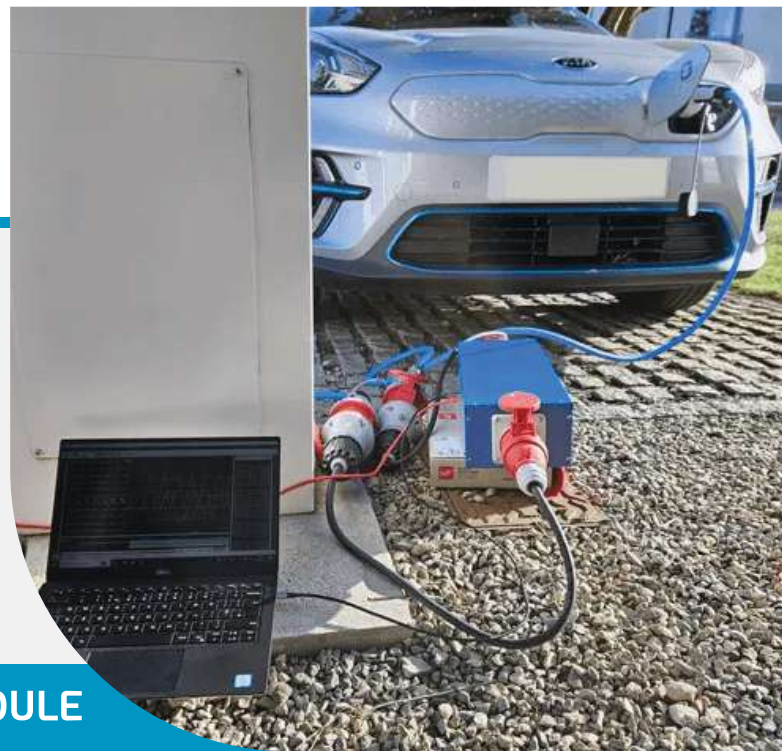


www.gantner-instruments.com

info@gantner-instruments.com | T +43 5556 77 463-0

HOW TO ANALYZE AN EV CHARGER

EV charging is a complex process. With many different vehicles and chargers, we would expect to see a range of compatibility issues and charging speeds. Understanding and solving problems requires data, and this is where the 3-phase AC PAM (Power Analysis Module) comes in.



3-PHASE MAINS POWER ANALYSIS MODULE



FEATURES

- Measure 3-phase supplies
- Monitor voltage, current and power
- Capture data in Power Studio or direct to your own files
- Powerful automation option for capture and analysis

This device can capture high resolution AC traces for long periods of time:

- 8,000 Samples per second
- 16, 32 and 63 Amp versions
- Plug-and-play setup
- Manual and fully automated capture options
- PoE powered
- USB and LAN connectivity
- Supports upto 400v AC

QUARCH POWER STUDIO

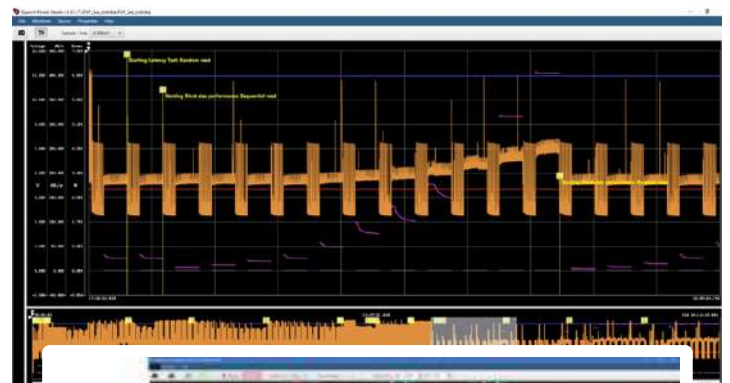
QPS (Quarch Power Studio) allows you to view and capture power data over extended periods of time, and easily analyze the power performance

FEATURES

- Record any length of power trace
- High resolution capture for detailed analysis
- Annotate traces
- Export screenshots and trace sections
- Measure detailed features and view area statistics

TECHNICAL

- Server (QIS)
- Handles multi-gigabyte files
- Java based application
- Built on Quarch Instrument
- No additional drivers needed



AUTOMOTIVE ELECTRICAL TEST SOLUTIONS



ASR-6000 Series AC/DC Power Source

Phase voltage: 0-175/350Vrms,
Line voltage: 0-700Vrms
4.5kVA, 6kVA. Max: 24KVA AC/24KW DC



PSU-Series (Switching DC Power Supply)

6V/200A to 600V/10.4A
1.2KW to 6 KW (1U to 4U)
1U, RS-485, Bleeder Control Function
Applications: LED Driver Testing,
EV Battery Testing & Simulation



PSW-Series (Switching DC Power Supply)

Broad range (e.g., 30V/36A, 160V/7.2A,
800V/1.44 A), 2 channel (720W),
3 channel (1080W), High Efficiency,
High Power, 2U, USB & LAN
Applications: LED Driver Testing,
EV Battery Testing & Simulation

Automotive Test waveforms for ISO16750 & ISO7637 included



GBM-3000 Series Battery Meter

DC Voltage, AC Internal Resistance Measurement
Voltage (1000/300/80V) & Internal resistance
(0mΩ~3.2kΩ), Resolution: 10μV & 0.1μΩ,
Speed 60 time/s



PEL-5000C High Power Compact DC Load

150V/ 600V/ 1200V models
6kW~24kW (Single Unit)
Maximum power: **192KW**



GDM-906x Dual Measurement Multimeter

12 measurement functions (DC V/A,
AC V/A, 2-wire/4-wire Ω, frequency, period,
diode, continuity beeper, temperature,
capacitance)

Automotive Wiring Harness, Electronics Burn in & Ageing Tests



GPT-15012 Electrical Safety Analyzer

DC 12kV / IR 5kV
Comply with IEC 61010-2-034
RMS Current Measurement



GPT-9500 Multi-Channel Hipot Tester

150VA AC Test Capacity
3 in 1 Tester : AC, DC, IR (10GΩ)
Open/Short Check (OSC)
ARC detection



DAQ-9600 Data Acquisition System

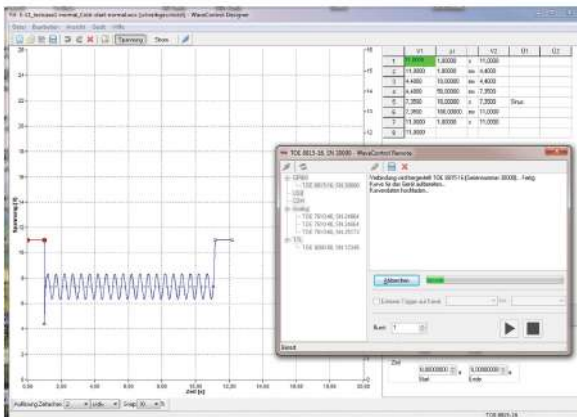
450 channel/s Scan Rate - Temperature,
DC/AC volts/current; Resistance,
Capacitance; Frequency, Direct/Bridge Strain

DC and Arbitrary Power Supplies Arbitrary & Function Generators 4-Quadrant and Broadband Amplifiers Special Instruments

Comprehensive Test Bench For Automotive Testing

TOELLNER offers flexible solutions for on-board network simulation and testing of components, e.g. for the automotive and avionics industries. The Software WaveControl provides waveforms and controls the TOELLNER system components at the test station, which can be individually tailored to your requirements. Using a DAQ-Card, any signal waveform can be provided with Arbitrary Power Supplies or 4-Quadrant Amplifiers with outputs from 160 W to 5200 W. For fast interruptions, TOELLNER offers electronic switches with switching times below 500 ns.

WaveControl Software includes a comprehensive library of waveforms supporting these standardized automotive industry tests:



The Software WaveControl provides

- ✓ Extensive Waveform Libraries for Normative Tests, e.g.
 - LV 124, LV 148
 - VDA 320
 - VW 80000-1
 - VW 82148
 - GMW 3172
 - MBN 10615
 - ISO 16750-2
 - BMW GS 95024-2-1
 - BMW GS 95026
- ✓ Import & Export of recorded Data
- ✓ Visual Generation of individual Waveforms
- ✓ Sequence Controlling and Timing

- Electronic Switch for short interruptions up to 60V / 100A; tr / tf < 500 ns
- 4-Quadrant-Power-Supply up to ± 100 V / ± 40 A; > 100 kHz, 320W / 1kW, modularly expandable up to 6,4 kW / 20 kW
- Arbitrary Power Supply up to 100 V / 320 A, AC-superimposition up to 70 kHz, 320 W / 1 kW up to 5.2 kW / 16 kW
- Software to create arbitrary waveforms, an extensive library of normative waveforms included
- All instruments can also be used individually



HARDWARE AND SOFTWARE TOOLS FOR TESTING AND VALIDATING AUTOMOTIVE NETWORKS



CAPTURE MODULES

Capture and log messages from a variety of bus topologies are captured, timestamped (the same timestamp across different bus systems) offers five variants to cover Automotive Ethernet (100BASE-T1, 1000BASE-T1 and 2.5/5/10/10GBASE-T1), as well as common IVN technologies (CAN, CAN-FD, FlexRay, LIN)

CM MULTIGIGABIT

CAPTURE YOUR AUTOMOTIVE MULTIGIGABIT TRAFFIC IN THE CAR WITHOUT INTERFERING THE ORIGINAL NETWORK



The **CM MultiGigabit**, enabled through new PHY technology, can be set to log three different data rates:

2.5 Gbit/s (2.5 GBASE-T1)
5 Gbit/s (5 GBASE-T1)
10 Gbit/s (10 GBASE-T1)

CM CAN COMBO

CAPTURE RELIABLY ALL RELEVANT IN-VEHICLE-NETWORK (IVN) TRAFFIC FROM DIFFERENT COMMUNICATION TECHNOLOGIES INSIDE THE VEHICLE



The CM CAN COMBO can capture traffic from the conventional CAN buses, as well as CAN-FD, FlexRay, and RS-232 can be captured without interfering with the original networks

6x CAN/ CAN-FD	1x FLEXRAY 2x RS232/TTL	1x GIGABIT ETHERNET (RJ-45)	1x SYSTEM CONNECTOR
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MEDIA CONVERTORS

Establish a physical layer conversion between Automotive Ethernet connections (100BASE-T1, 1000BASE-T1, 2.5/5/10GBASE-T1, 10BASE-T1S) and any device with a standard Ethernet Network Interface Card (NIC) with an RJ-45 connector

MEDIA CONVERTOR 1000BASE-T1 MATENET/H-MTD



Converts between 100/1000BASE-T1 Automotive Ethernet and 100BASE-TX /1000BASE-T Standard Ethernet

NETWORK INTERFACER 10BASE-T1S



Acts as a communication hub, seamlessly routing data between 10BASE-T1S and point-to-point ports

SWITCH-BASED PRODUCTS

Allow for a managed, multi-directional exchange of Ethernet messages

ENHANCED ETHERNET SWITCH MACSEC HYBRID

AUTOMOTIVE ETHERNET SWITCH WITH AVB/TSN CAPABILITIES TO TEST AND ANALYZE VEHICLE NETWORKS



- 4x 100/1000BASE-T1, 4x 10/100/1000BASE-T, 2x SFP+ slots supporting up to 10 Gbits
- Provides a reliable gPTP/802.1AS-2011 automotive profile stack
- MACsec Feature Package supports the MKA (MACsec Key Agreement) protocol
- Selectable connector interface between MATENet, H-MTD, or RJ-45 connector, depending on the intended customer use case

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

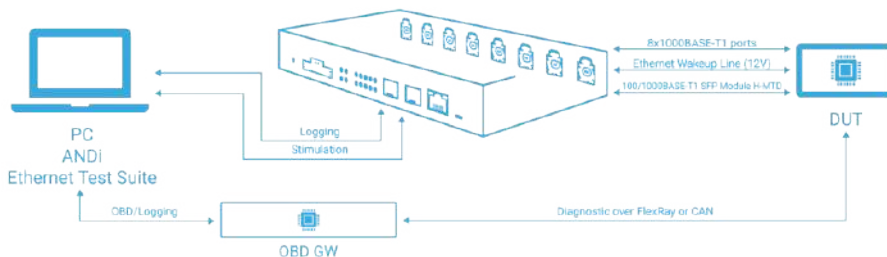
Vehicle Ethernet
Devices

HARDWARE AND SOFTWARE TOOLS FOR TESTING AND VALIDATING AUTOMOTIVE NETWORKS



ANDI PREMIUM

ANDI (Automotive Network Diagnoser) is a testing and analysis tool which is used for Automotive software in every development phase. The tool is designed to simulate electronic networks, test components, and to analyze test results effortlessly. The major strength of the ANDi tool, is in depth network analysis and testing activities of Automotive Networks.



SUPPORTED HARDWARE

TECHNICA'S HARDWARE

Captures Modules:

- CAN COMBO
- CM LIN COMBO
- CM Ethernet COMBO
- CM 100 High
- CM 1000 High
- MediaGateway
- Enhanced Ethernet Switches (EES)
- BTS EVO

3RD PARTY HARDWARE

MAIN FUNCTIONALITIES

CREATING TEST CASES

- Easy-to-learn test case creation in Python
- Large number of convenience functions and extensions
- High data rates supported for load tests
- Extensive and efficient API interfaces to import any .NET extensions

RESIDUAL BUS SIMULATION (RBS)

- User-friendly drag and drop functions for creating simulation nodes
- Extending and customizing of the generated simulation nodes with Python Scripts

TRAFFIC VIEWER

- Advanced Filtering
- Fixed functionality
- Database Mapping

MULTIPLE CHANNELS

- Specify several channels and record all the traffic they receive in one window, respecting time synchronization

MATH FUNCTION

- Display signals by a simple specification of its mathematical equation, automatically completed by the Rest Bus Simulation and Traffic Generator

IMPROVED PCAP RECORDER

- Record the entire traffic or just a part of it by defining one or multiple Start/Stop conditions
- Scroll back to view and capture past packets

GRAPHICAL PANELS

- Create your own design with use cases and test scenarios
- Visualize and modify signals and global variables by using a set of toolbox items
- Show a different image for each value of the signal by triggering messages and scripts via the transmit button

SCRIPT DEBUGGING

- Enable debugging of the test scripts and setting of breakpoints in the test script editor

SIGNAL GRAPHICS

- Generate a time-correlated graphical representation of different signals on multiple buses
- Analyze data logging into trace files

PCAP PLAYER

- Replay data from a PCAP file as live traffic to a chosen adaptiontime synchronization

FILE CONVERTER

- Convert a PCAP or PCAPNG file with a gateway header to a new PCAP or PCAPNG file without a gateway header

Leading provider of hardware, software, and services for automotive and industrial communication with emphasis on the fieldbuses CAN, CAN FD & LIN. Support for Automotive APIs

PCAN-Router Pro FD



Ixxat Mobilizer

Flexible Automotive Gateway Solution



PCAN-MicroMod FD ECU



PCAN-USB X6



CAN & CAN FD Interfaces



PCAN-GPS Pro FD



CAN/CAN FD/LIN Interfaces

- Single, dual and six Channels Interfaces for classic CAN/CAN FD/LIN/J1939 etc protocols
- Complies with CAN specifications 2.0 A/B and FD
- CAN/CAN FD bit rates for the data field (64 bytes max.) up to 12 Mbit/s
- LIN interfaces are compliant with all LIN specifications (up to version 2.2) and can be used as a LIN master or slave

CAN Analyser: PCAN Explorer6

- Cost effective, life time tool - no AMC
- Recording and playback of CAN/CAN FD / J1939 traffic
- Create your own database
- Import/Export existing DBC & ARXML files
- Automation with macros or VBScript
- Plotter, Instruments Panel analysis support for CAN/CAN FD and J1939 protocols

Diagnostic Tools: CanEasy Professional

- Protocols: CAN/CAN FD, LIN, J1939
- Diagnostic functions: UDS, KWP2000, XCP/CCP
- ECU Simulation & Analysis
- Graphical Interface: Rich Panels and Database Editors (ARXML, DBC, LDF, CDD, ODX, PDX & A2L/ELF files)
- Plug & Play: Supports all PCAN, Ixxat and other Third-Party Hardware
- Automated Testing: Supports Scripting, CAPL converter, CAPL loader

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