LAUTERBACH
DEVELOPMENT TOOLS

TRACE32®
SOLUTIONS OVERVIEW

Leading-Edge Debug- and Trace-Tools to Analyze, Optimize, and Certify All Kinds of Embedded Systems

#1 DEBUG & TRACE TOOLS

PAGE 4/5

PowerDebug System

MODULAR AND POWERFUL DEBUG SYSTEM

PowerDebug is our powerful, modular, flexible debug system that provides the broadest coverage of supported chips and core architectures in the embedded industry.

You can extend it with trace and logic analyzer modules for run-time analysis, code coverage or in-depth troubleshooting.

PowerDebug System

PAGE 6/7

PowerTrace System

SEE YOUR CODE IN ACTION

Our PowerTrace extensions collect information while the system under examination is running normally, without interruption, and without impacting its real-time performance in any way.

With PowerTrace extensions you can bring your embedded designs to market faster and more reliably than ever, while creating a safer and more stable product.

PowerTrace System

PAGE 8

CombiProbe

COMPACT DEBUG AND TRACE TOOL

The CombiProbe 2 is a compact debug and trace system that provides our full feature set to embedded systems with compact trace ports of up to 4 bits wide.

PAGE 9

µTrace®

ALL-IN-ONE DEBUG AND TRACE SOLUTION

µTrace® is our cost-effective all-in-one Debug- and Trace-solution for Arm®Cortex®-M and RV32 RISC-V microcontrollers, providing highest quality, exceptional functionality and superior support.

PAGE 10

Instruction Set Simulator

DEVELOP WITHOUT HARDWARE

The TRACE32® Instruction Set Simulator is a built-in feature of our TRACE32® PowerView software and is used to develop or test application code without the need of a target hardware.

PAGE 11

TQSK

Tool Qualification Support-Kit

TRUSTED TOOLS FOR FUNCTIONAL SAFETY

The TQSK provide everything you need to qualify our TRACE32® solutions. Different TQSK variants prove the suitability of code coverage, debugging, and instruction set simulator for use in avionics, medical, automotive, railroad, or general industrial projects.

PAGE 12/13

TRACE32® PowerView Software

THE ONLY DEBUG SOFTWARE YOU'LL NEED FOR ALL YOUR TARGETS

The TRACE32® PowerView software provides you with a uniform GUI in all your projects and has enjoyed a very high reputation in the embedded community for many years because of its almost unlimited, industry-leading debug and trace features, but also because of its exceptionally high stability and reliability.

PowerView Software

PAGE 14

Partner Ecosystem

We actively engaged in partnerships and collaborations with suppliers and industry leaders to foster innovation, exchange knowledge, and collectively drive success for your benefit.

PAGE 15

About Us

WE ARE WHERE YOU ARE

Our global presence includes 11 branch offices and more than 20 technical value-added resellers around the whole world. This network helps us to maintain our legendary support services and reinforces our commitment to helping customers get up to speed as quickly as possible.

TABLE OF CONTENTS

PowerDebug System

MODULAR, VERSATILE AND FUTURE-PROOF DEBUG SOLUTION FOR ALMOST ANY CHIP

The modular design of the TRACE32® PowerDebug System allows it to grow and adapt to your needs. The foundation of the debug system is a Power Debug base module providing a universal, target-independent connection to your host PC either via USB 3 or 2.5 Gigabit Ethernet. Together with a platform-specific debug probe it forms a complete debug system.

The PowerDebug modules are dedicated debug accelerators, close to the target, to reduce response times, improve upload/download speeds, and off-load many debug decisions from the host. This makes debugging tasks magnitudes faster compared to host-based debug systems, slashing development times and costs.

Support for more than 150 microprocessor architectures

We provide debug probes for more than 150 microprocessor architectures, making the PowerDebug system a future-proof investment.

Located between your target and your PowerDebug base module the platform-specific debug probe adapts to debug interface specifics like voltage, signals, supported protocols, and physical dimensions. The active circuitry located as close as possible to the target processor ensures the highest possible signal integrity.

The debug probe includes the license for the target processor architecture. For concurrent debugging of multiple cores within an SoC, the probe can be licensed for more than one processor architecture.

Trace and Mixed-Signal Extensions

For advanced analysis needs like trace-based debugging and code-coverage tests, the PowerDebug system can be extended with trace modules. Synchronization between all attached modules provides consistent timestamps for all data captured.

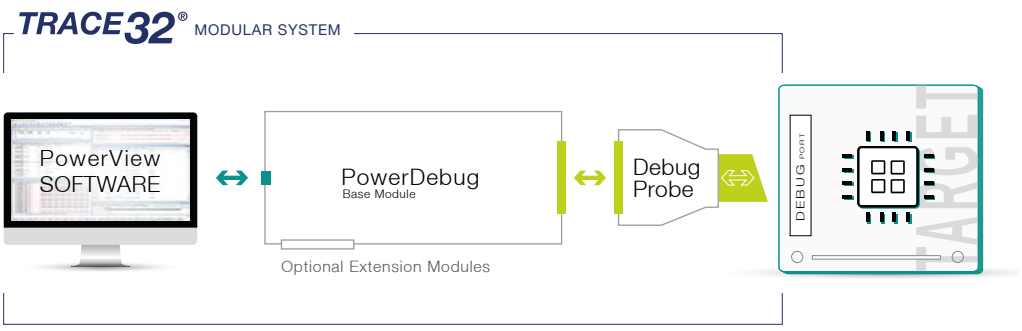
Mixed signal extensions and an auxiliary I/O connector with trigger-in and -out functionality on all base modules, allow to extend synchronized data capture to analog and digital signals as well as synchronization with external tools like logic analyzers and oscilloscopes.

Ideal Solution for Remote- and On-The-Road-Operation

The 2.5 Gigabit Ethernet support for remote access is ideal to share targets with colleagues, place them in a secure lab, or even in another country. A power supply via USB-C without a separate adapter enables e.g. the operation on a laptop in a car.

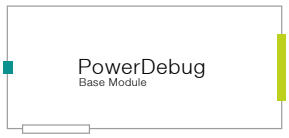
BENEFITS

- Highest download speeds and smallest response times
- Advanced multi-core debugging
- Hypervisor and OS-aware debugging
- Support for new CPUs is just a software upgrade, adding a new license or debug probe
- Toolkit is fully scriptable
- Usable as standalone flashing tool (PowerDebug X51)
- Consistent GUI saves time and eases the transition from one CPU architecture to another



The modular TRACE32® PowerDebug System supports by far the most architectures in the embedded industry

PowerDebug – Base Modules

		
PRODUCT	**PowerDebug E40**	**PowerDebug X51**
PC Interface	USB 3.2 Gen 1, Type B	USB 3.2 Gen 1, Type C and 2.5 Gigabit Ethernet
Power Supply	included plug-in power supply	included desktop power supply or via USB-C
Remote access to target serial ports	N/A	via USB-C
Stand alone mode	N/A	via µSD-Card, Start-Buttons, User LEDs
Extension Connectors	PodBus	PodBus and PodBus Express
Possible Trace Extensions	CombiProbe 2	CombiProbe 2, PowerTrace III, PowerTrace Serial 2
Possible Logic Analyzer Extensions	Mixed-Signal Probe @ CombiProbe 2	Mixed-Signal Probe @ CombiProbe 2, Mixed-Signal Probe @ PowerTrace III, PowerIntegrator II
Trigger Connector	Out 4.4V / In 3.3V (5V tolerant)	
Supported Architectures	Over 150 microprocessor architectures	

Debug Probes (most popular models)

PRODUCT	**IDC20A Debug Probe**	**AUTO26 Debug Probe**	**CombiProbe with MIPI20T-HS Whisker**	**CombiProbe with AUTO26 Whisker**	**CombiProbe with MIPI60C Whisker**
Connector	IDCA20A	AUTO26, AUTO20, AUTO10	MIPI20T, MIPI10	AUTO26, AUTO20, AUTO10	MIPI60C
Voltage Range	0.4V to 5.0 V	1.8V to 5.0V	1.2V to 5.0V	1.8V to 5.0V	1.0V to 1.8V
Debug Clock	10 kHz to 100 MHz	10 kHz to 160 MHz	10 kHz to 100 MHz	10 kHz to 160 MHz	10 kHz to 100 MHz
Debug Ports	1	1	up to 2	1	2
Debug Protocols	JTAG, cJTAG, SWD, UPDI, TOOL, SDP	JTAG, cJTAG, SWD, Infineon DAP, LPD/UART, Spitfire™, DXCPL/DXCM	JTAG, cJTAG, SWD, I3C	JTAG, cJTAG, SWD, Infineon DAP, Spitfire™, DXCPL/DXCM	JTAG
Trace Protocols	SWO	DAP Streaming, SWO	4-bit ETM / ITM / STP, 4-bit Nexus, SWO	DAP Streaming	STP
Extensions	N/A	CAN-Box and Galvanic Isolation	Mixed-Signal Probe or 2nd Whisker	Mixed-Signal Probe or 2nd Whisker, CAN-Box	N/A
Architectures	Arm®/Cortex®, RISC-V®, Xtensa®, ARC®, Hexagon, C2000, C6000, RL78 and more	TriCore™/AURIX™, GTM, RH850, ARC®, MPC5xxx/SPC5, XC800, RISC-V, dsPIC® and more	Arm®/Cortex®, RISC-V®, Xtensa®, ARC®, Hexagon, CEVA-X, C2000, C6000 and more	TriCore™/AURIX™, GTM, ARC®, dsPIC® and more	All cores inside an Intel® SoC

PowerTrace System

SEE YOUR CODE IN ACTION WITH REAL TIME TRACING

Our PowerTrace System provides you with full insights of what your embedded system is doing without impacting its real-time performance in any way, creating a record of each step along the way.

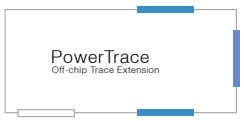
You can determine the performance of your application and capture coverage data for certifying your safety critical application. You can bring your embedded designs to market faster and more reliably than ever, while creating a safer and more stable product. This is what trace-based debugging gives you.

Our PowerTrace extensions collect information while the system under examination is running normally, without interruption. You can instantly start examining the data, as it is translated and displayed, using the same TRACE32® PowerView GUI you already know from debugging. With this comes all of the control and scriptable actions you are used to from Lauterbach TRACE32® tools.

Decoding Whatever Trace Protocol Your Target Uses

Trace data emitted by embedded devices follow certain encoding formats, or trace protocols. TRACE32® understands a wide variety of standard and proprietary trace protocols for both system-level and program-flow traces. These include Embedded Trace Macrocell (ETM), Infineon Multi-Core Debug Solution (MCDS), MIPI System Trace Protocol (STP), Nexus trace (IEEE-ISTO 5001), MIPI Trace Wrapper Protocol (TWP) and Tessent Embedded Analytics.

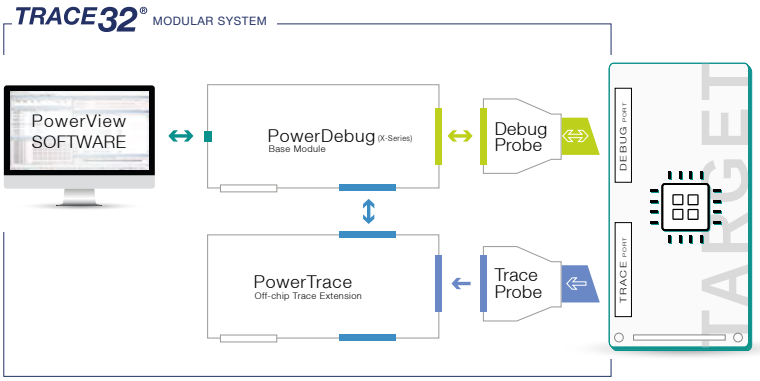
Off-Chip Trace Extensions



PRODUCT	PowerTrace II Lite	PowerTrace III	PowerTrace Serial 2
Application	Mid-Speed Parallel Tracing	High-Performance Parallel Tracing	High-Performance Serial Tracing
Memory Size	1 GByte	4 or 8 GByte	4 or 8 GByte
Maximum Bandwidth	10.8 Gbit/s	19.2 Gbit/s	80 Gbit/s
Streaming Performance (Peak / Average)	1350 / 100 MByte/s	2400 / 400 MByte/s	10000 / 400 MByte/s
Parallel Trace	via required trace probe		N/A
Serial Trace	via required SerialTrace Preprocessor		via flex-cable, adapter or probe (see trace probes)
PCIe Trace	N/A		via adapter or probe (see trace probes)
Logic Analyzer and Energy Profiling	N/A	via optional Mixed-Signal Probe (12 digital signals (0 to 5V), 6 voltage channels (±12V / 13 bit resolution), 2 current sense channels via shunt)	
Required Debug Module	PowerDebug II / E40 / X51		

BENEFITS

- Recording ‘one in a million’ events and discovering why they happen
- Homogenous and heterogenous multicore tracing
- Saving ultra long-term test data by streaming the trace data to local PC
- Simultaneously inspection of hypervisor; all guest operating systems, middleware and application software
- Highest performance trace recording with buffer sizes of up to 8 GB and trace port bandwidths of up to 100 Gbit/s
- Record digital or analog signals corre-lated to the program flow trace with the optional Mixed Signal Probe. Suitable for protocol analysis and energy profiling



All PowerTrace extensions provide highest data rates and reliability

Trace Probes for PowerTrace II and III

	PRODUCT	Connector	Pincount	Speed per Pin	Architectures
Trace Probe	**AutoFocus-II Preprocessor V2**	2x MICTOR38 (ETM)	up to 36 parallel trace-lines	up to 600+ Mbit/s	Arm®/Cortex®, ARC, Beyond, C5000, C6000, C7000, CEVA-Teak, CEVA-X, Hexagon, Micro-Blaze, Nios® II, PowerPC, RH850, RISC-V, StarCore, STRED, SuperH, Xtensa®
	AutoFocus-II-MIPI Preprocessor	QSH-030 (MIPI60)	up to 40 parallel trace-lines	up to 600 Mbit/s	Arm®/Cortex®, C6000, C7000, MIPS, STRED
	Nexus Adapter	MICTOR38 or 50pin-ERM8	up to 16 MDO and 2 MSEO lines	up to 100 Mbit/s	MPC5xxx/SPC5
	SerialTrace Preprocessor V2	40pin-ERM8 (HSSTP)	up to 4 serial lanes (8b/10b)	up to 6.25 Gbit/s link-speed per lane	Arm®/Cortex®, C6000, MPC57xx/SPC5, QorIQ PowerPC, VSPA, TriCore™/AURIX™, Xtensa®

Trace Probes and Adapters for PowerTrace Serial

	PRODUCT	Connector	Lanecount	Speed per Lane (link-speed)	Architectures
Trace Probe	**Aurora 2 Preprocessor**	40pin-ERM8 (HSSTP)	4	22.5 Gbit/s	Arm®/Cortex®, ARC®, C6000, CEVA-X, MPC57xx/SPC5, QorIQ PowerPC, RISC-V, VSPA, Xtensa®
	HSSTP Flex Cables	40pin-ERM8 (HSSTP) or 80pin-ERM8	6 or 8	12.5 Gbit/s	
	AGBT/SGBT Trace Adapters	22pin-ERM8 or HSTCU (USB-C)	4	12.5 Gbit/s	TriCore™/AURIX™
	RH850 Trace Adapters	34pin-ERM8 or 40pin-ERM8	4	12.5 Gbit/s	RH850
	HSDP Adapter	USB-C	1	10 GBit/s	Arm®/Cortex®
	OCuLink Trace Adapter	OCuLink	4	12.5 Gbit/s	Arm®/Cortex®, ARC®, C6000, CEVA-X, MPC57xx/SPC5, QorIQ PowerPC, RH850, RISC-V, TriCore™/AURIX™
	PCIe Gen 3 Slot-Card-Adapters	PCIe Slot x1, x4, or x8 or MiniPCIe Slot x1	1 / 4 / 8	8 Gbit/s	
	PCIe Gen 4 Preprocessor	PCIe x4 Slot or OCuLink	4	16 Gbit/s	

CombiProbe

COMPACT DEBUG AND TRACE PROBE

Our CombiProbe 2 is a compact debug and trace system that brings our full feature set to embedded systems with two parallel trace ports of up to 4 bits wide.

Besides its comprehensive debug capabilities, it can capture real-time information like system traces and some flow traces, which are essential for system profiling or safety certification, helping you to get your product to market faster and with greater confidence. Data is transferred on-the-fly to your PC for practically endless recordings at an average data-rate of 140 MByte/s with peaks of up to 200 MByte/s per port, buffered by 512 MByte of trace memory.

Debug & Trace Whisker for Excellent Signal Integrity at Highest Transfer Speeds

A debug and trace whisker provides the physical link from your target's debug and trace port to your CombiProbe 2. With the whisker's transceivers located close to the target, it provides excellent signal integrity at the highest transfer speeds.

Each of our whisker models is optimized to perfectly match the physical and electrical specification of the target's debug and trace ports.

BENEFITS

- Debug and trace two multi-core SoCs at the same time
- Implement numerous architectures and thousands of devices
- Stream long-term trace data recordings to your host PC for later analysis
- Profile your AUTOSAR Adaptive Platform
- Sample analog/digital signals over time and decode protocols sent via digital lines
- Simplify energy profiling
- Adjust sampling point for each signal of your trace lines automatically with AutoFocus technology

Target-Specific Whisker

Whisker Debug + Trace						
PRODUCT	**MIPI20T-HS Whisker**	**MIPI34 Whisker**	**AUTO26 Whisker**	**MIPI60C Whisker**	**DCI OOB v2 Whisker**	**Mixed-Signal Probe**
Use Case	Debugging and system trace. Flow trace for various Cortex®-M and RISC-V cores.	Debugging and system trace. Flow trace for various Cortex®-M and MIPS32 cores.	Debugging, system trace and compact function trace with TriCore™. Dual-chip debugging with dsPIC.	Debugging Intel® SoCs with optional system trace.	Closed chassis debugging via the Intel® Direct Connect Interface (DCI) with optional system trace.	Recording of digital and analog signals for protocol analysis and energy profiling.
Target Connector	MIPI20T, MIPI10	MIPI34, MIPI20T, MIPI10	AUTO26, AUTO20, AUTO10	MIPI60C	USB 3 (Std.-A or Micro-B)	flying wires
Voltage Range	1.2V to 5.0V	1.2V to 3.3V (5V tolerant inputs)	1.8V to 5.0V	1.0V to 1.8V	1.2V	±12V analog/ 0..5V digital
Debug Ports / Protocols	1 Port JTAG, cJTAG, SWD, I3C	1 Port JTAG, cJTAG, SWD	1 Port / JTAG, cJTAG, SWD, Infineon DAP, Spitfire™, DXCPL/DXCM	2 Ports JTAG (+ 8 HOOK pins)	1 Port DCI OOB	N/A
Trace Port	4 pins with 400 Mbit/s per pin (ETM, ITM, STP, N-Trace Nexus), 1 pin SWO with 200 Mbit/s	4 pins with 200 Mbit/s per pin (ETM, ITM, STP, IFLOW), 1 pin SWO with 150 Mbit/s	DAP Streaming with up to 320 MBit/s (MCDS, miniMCDS, MCDSlight)	2 separate STP ports (4 pin + 8 pin), 200 Mbit/s per pin	STP within DCI OOB with 100 Mbit/s	12 digital, 6 voltage, 2 current channels. 200 Mbit/s digital, 1 Mbit/s analog
Combinations	Mixed-Signal Probe or 2nd MIPI20T-HS Whisker	Mixed-Signal Probe or 2nd MIPI34 Whisker	Mixed-Signal Probe or 2nd AUTO26 Whisker and CAN-Box	N/A	N/A	MIPI20T, MIPI34, or AUTO26 Whisker
Architectures	Arm®/Cortex®, RISC-V®, Xtensa®, ARC®, Hexagon, CEVA-X, C2000, C6000 and more	Arm®/Cortex®, MIPS32, PIC32, C166 and more	TriCore™/AURIX™, GTM, ARC®, dsPIC® and more	All cores inside an Intel® SoC	All cores inside an Intel® SoC	Arm®/Cortex®, RISC-V®, Xtensa®, ARC®, Hexagon, TriCore™/AURIX™, C6000 and more

µTrace®

COST-EFFECTIVE ALL-IN-ONE DEBUG AND TRACE MODULE

µTrace® is our cost-effective all-in-one solution for Arm® Cortex®-M and 32-bit RISC-V micro-controllers implementing a compact trace port of up to 4 bits.

µTrace® provides the same features that our industry leading high-end products are known for: highest quality, exceptional functionality and superior support.

With our Mixed-Signal Probe µTrace® can sample analog and digital signals and correlate them to the executed code.

Capture Real-Time Information for Functional Safety Applications

In addition to its leading debug capabilities, µTrace® can capture real-time information like system traces, data traces and program flow traces from either onchip-buffers or from a parallel trace port with up to 4 physical data pins, enabling e.g. code coverage and code profiling.

In many use cases, real-time trace can bring embedded designs to market faster, safer and with more reliability.

BENEFITS

- Highest debug and trace performance in the industry in its class
- Ultra long trace with highest streaming performance in its class
- Enables code coverage, code profiling and energy profiling
- Debugging and tracing any Cortex®-M and any RV32 chip including hidden cores
- Sampling of analog and digital signals and correlation to executed code

µTrace® – Key Parameter

PRODUCT	µTrace® for Cortex®-M	µTrace® for RISC-V
PC Interface	USB 3	
Target Connector	MIPI20T, MIPI10	
Voltage Range	1.2 to 5.0V	
Debug Ports / Clock / Protocols	1 Port / 10 kHz to 100 MHz / JTAG, cJTAG, SWD	
Parallel Trace Port	4 pins for ETM and ITM via TPIU with 400 Mbit/s per pin, 1 pin for ITM via SWO with 200 Mbit/s	4 pins for N-Trace or E-Trace via RISC-V PIB or CoreSight TPIU with 400 Mbit/s per pin
Trace Streaming Performance (Peak / Average)	up to 200 / 140 MByte/s	
Trace Memory Size	256 MByte	
Trigger Connector	3.3V out / 3.3V in (5V tolerant)	
Extensions	Mixed-Signal Probe	
Architectures	Arm® Cortex®-M	RISC-V 32-bit (RV32)

Instruction Set Simulator

DEVELOPING CODE WITHOUT REAL HARDWARE

Our instruction set simulator is used to develop or test application code without the need of a target hardware. It is a built-in feature of our PowerView software and is freely available to all owners of a debug module. The instruction set simulator is also available as trial version for evaluation.

Get the Same Debug Experience as with a Real Target

The instruction set simulator is the perfect complement to our debug and trace tools. Integrated in PowerView, it provides the same look and feel as a real debugger connected to a real target.

Debugging your application code and making trace based statistics, analyzing issues and performing code coverage – all without target – will make your development process more efficient and easier spreadable on many shoulders.

Qualification for Simulator Use in Safety Critical Projects

The TRACE32® Tool Qualification Support-Kit (TQSK) helps you to qualify the instruction set simulator as valuable tool for unit or integration testing. Tool qualification is typically required in the context of safety-related projects where it is beneficial to test early and closely to the target environment.

With the instruction set simulator you can execute tests, run Processor-In-The-Loop (PIL) tests or measure the code coverage without the need for development hardware.

Simulation of Peripherals for Driver Code Tests

Lauterbach provides a TRACE32® Simulator API to write a Peripheral Simulation Model (PSM). The PSM contains functions and registers of corresponding physical modules supported by the processor. It is able to simulate any module which significantly increases functionality of the entire simulation environment. We provide several examples of peripheral simulation models as reference.

BENEFITS

- Developing applications without real hardware
- Virtualization of tests at early stages to avoids extensive rework in later project phases
- Adding individual peripheral simulation models for driver code tests
- Testing of even complex applications with built-in simulation of cache, MMU and timers

Debugging with Simulators, Emulators and Virtual Targets

Development cycles are getting shorter and shorter. It is essential to discover and debug issues as soon as possible. Our TRACE32® Tools can connect to various simulators, emulators, and virtual targets. You can reuse the scripts generated in this phase throughout the entire product life cycle because the user interface and scripting commands stay the same from simulations through use in the field by your customers. This will enable you to find bugs earlier in the cycle, lowering costs and getting your product to market quicker.

You can leverage your existing development environment of your choice with TRACE32 PowerView. Thanks to the wide variety of APIs that TRACE32® supports, TRACE32® connects to almost every simulator, emulator, and virtual platform environment.

SCAN FOR MORE INFO!

Tool Qualifikation Kit (TQSK)

MINIMIZING TOOL QUALIFICATION EFFORTS FOR FUNCTIONAL SAFETY

Functional safety is a key requirement for safety-critical embedded systems. Qualification also includes the development tools used and their integration into the project environment. Our certified Tool Qualification Support Kits (TQSK) provide everything you need to qualify our TRACE32® debug- and trace solutions. Different TQSK variants prove the suitability of code coverage, debugging, and instruction set simulator for use in avionics, medical, automotive, railroad, or general industrial projects and reduce your time-to-market, effort, and costs.

The TQSK for All Kinds of Embedded Applications

Several safety-critical industries need to comply with safety standards. Some safety standards focus on safe software development processes, others focus on system safety requirements. Our TQSK covers all the key standards that you need to fulfill in the development process of embedded systems in order to declare that a product is functionally safe.

BENEFITS

- Reduces development effort and costs in safety critical projects
- Measuring code coverage for all use cases providing test cases for all common debug tasks
- Compliance to automotive and other safety standards
- Full support and service for tool qualification
- Covering future use cases and requirements
- Includes test suites for real targets and simulators
- Supports all important safety standards

SUPPORTED SAFETY STANDARDS

The TQSK for All of Your Embedded Applications

Several safety-critical industries need to comply with safety standards. Some safety standards focus on safe software development processes, others focus on system safety requirements. Our TQSK covers all the key standards that you need to fulfill in the development process of Embedded Systems in order to declare that a product is functionally safe.

Brochures with more detailed information are available to download from our TQSK website for the following important safety standards:

- DO-178C / Avionics
- EN 50128 / Railway
- IEC 61508 / The Umbrella Standard
- IEC 62304 / Medical Devices
- ISO 26262 / Automotive

PowerView Software

THE ONLY DEBUG SOFTWARE FOR ALL KINDS OF TARGETS

The TRACE32® PowerView software is your central front end for all our debug and trace solutions, no matter which hardware module, software solution and target you use. It provides you with a uniform GUI in all your projects and has enjoyed a very high reputation in the embedded community for many years, not only because of its almost unlimited, industry-leading debug and trace features, but also because of its exceptionally high stability and reliability.

One GUI for all Use Cases

PowerView provides a consistent user interface and feature set for all use cases. Depending on your requirements, you can debug a real target via our hardware modules or a pure software solution via USB or XCP.

You can also work without a target, with simulators, emulators, virtual targets or with our built-in instruction set simulator. No matter which approach you choose, your PowerView remains the same.

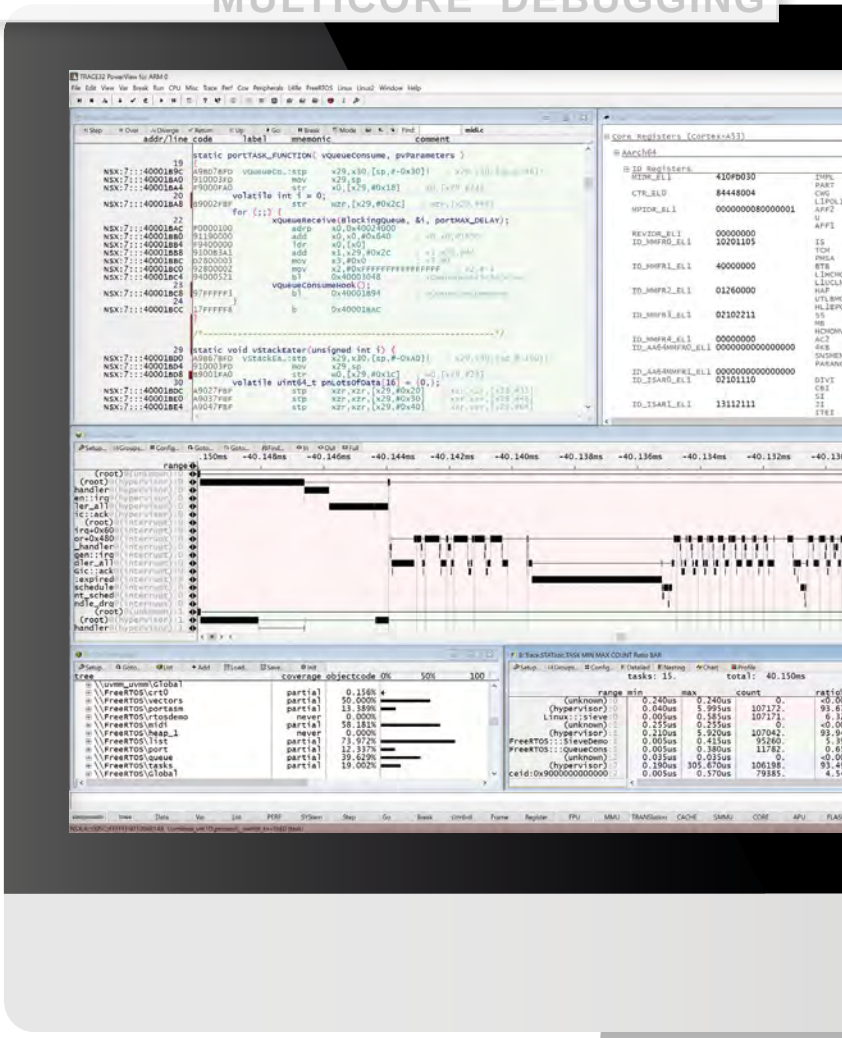
BENEFITS

- A single GUI for everything
- Fully automate debug and trace exceptional stability
- Extensions for OS- and hypervisor-awareness
- Easy connection of third party tools
- Runs on all major OSes
- Time savings with peripheral register display merging program-flow and target-signals

Multicore Debugging without Limits

- Heterogeneous and homogeneous multicore debugging
- OS and hypervisor awareness
- Sophisticated AUTOSAR support
- Coupling of source and assembler code
- Trigger on data values/conditions/memory accesses with advanced breakpoints

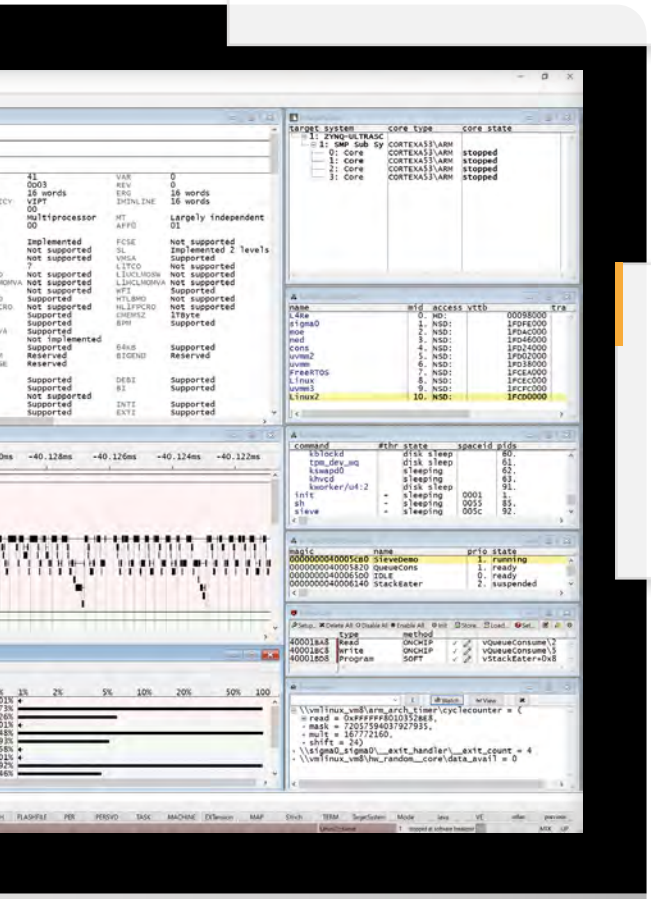
MULTICORE DEBUGGING



Full Insights of Your Embedded System

- Heterogeneous and homogeneous multicore tracing
- Recreating the full state of the target system
- Statistical analyzes
- Code coverage analyzes without instrumentation
- Capturing extremely long-term trace recordings
- Merging machine code instructions with source code

TRACE



Merge Program-Flow and Target-Signals

- Protocol analysis
- Matching signals to the application code
- Energy profiling

LOGIC ANALYZING

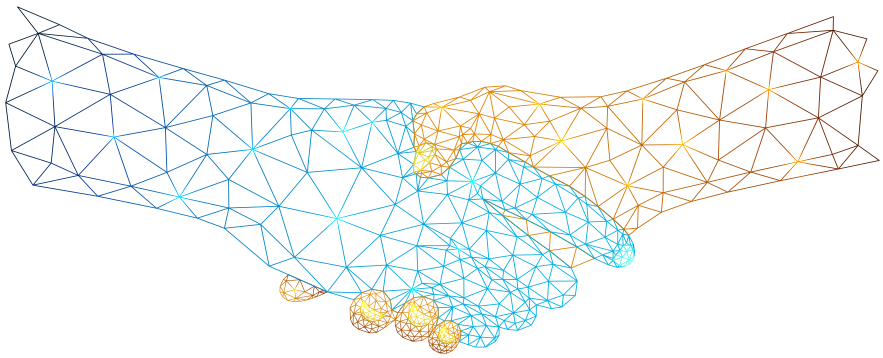
Maximize Your Productivity with Automation

- Easy integration into production
- Running python-scripts
- Full scriptability with our script language PRACTICE®
- Controlling targets from third-party programs with remote APIs

AUTOMATION

Driving Innovation Together

OUR PARTNER ECOSYSTEM



PARTNER ECOSYSTEM

We collaborate with the industry's leading semiconductor manufacturers, development tool vendors, compiler, OS, and hypervisor vendors, to provide you leading-edge products and a more powerful toolchain – a total of more than 100 partners. This broad and vibrant partner ecosystem increases the synergy between you, our partners, and ourselves.

STRATEGIC PARTNERS

Achieving Success Jointly with Our Strategic Partners

We actively engage partnerships and collaborations with suppliers and industry leaders to foster innovation, exchange knowledge, and collectively drive success for your benefit. By working together with various strategic partners, we aim to create a synergistic ecosystem that benefits everyone involved.

TOOLCHAIN PARTNERS

Providing You with More Development Opportunities Thanks to Our Toolchain Partners

We work closely with a great deal of partners in various aspects to continuously extend our tool chain and provide you with more development opportunities. Hereby you can find the partners we are working with, in respect to supported tool integrations, compilers, operating systems, hypervisors and chip vendors.

TOOLCHAIN PARTNERS

TOOL INTEGRATION

We have an open API, used by many of our Partners. This results in an optimized exchange of information between the partner's product, TRACE32® and the target system.

COMPILER

When using our TRACE32® tools, you are free to select the compiler that fits best for your requirements.

TARGET OPERATING SYSTEMS

The TRACE32® OS awareness is available for a huge amount of embedded operating systems including RTOSes and rich OSes.

CHIP VENDORS

Find the right TRACE32® tools for more than 15.000 chips from all relevant chip vendors utilizing 150+ microarchitectures.

HYPERVISOR

TRACE32® offers an excellent hypervisor support for many products frequently used in the embedded industry.

SCAN FOR MORE INFO!

We Are Where You Are

ABOUT US

Embedded systems are used to enhance your quality of life in many ways. Embedded technology is also enabling everyday devices to become increasingly energy efficient and help to significantly reduce CO2 emissions – smarter devices are greener devices as well.
Enabling the development of smarter products using embedded systems has been always at our hearts – it's our Lauterbach DNA. With more than 45 years of experience, our easy-to-use TRACE32® debug and trace tools are the de-facto standard in many industries from renewable energies to smartphones to vehicles and many more.

Embedded systems are a part of all our lives and we at Lauterbach support you in bringing your ideas to life – faster, reliably, and successfully.

Our global presence includes 11 branch offices and more than 20 technical value-added resellers around the whole world.

This network helps us to maintain our legendary support services and reinforces our commitment to helping customers get up to speed as quickly as possible.

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TRACE32®

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