LAUTERBACH
DEVELOPMENT TOOLS

Renesas Ready Ecosystem Partner Solution
TRACE32® Debug- and Trace-Tools

RENESAS
PARTNER
NETWORK
READY

Solution Summary

Lauterbach TRACE32® tools are a suite of leading-edge hardware and software components that enables you to analyze, optimize and certify all kinds of embedded systems. The globally renowned debug and trace solutions for embedded systems and SoCs are the perfect solution for all development phases from early pre-silicon development up to product certification and troubleshooting in the field. The intuitive modular design provides the highest available performance for the RZ Family, RX Family, RA Family and RISC-V Family of processors.

Features/Benefits

- Provide the most extensive feature set and performance in the embedded industry, including
    - Full OS- and RTOS-debug-support for RISC-V, RA and RX Family of MCUs
    - Full OS-, RTOS- and Hypervisor-debug-support for RZ Family of MPUs

- World-class support providing fast response times, deep processor expertise, and lifetime coverage.

- Covering the entire life-cycle of a design: Simulation, virtual platforms, real-life hardware, automated test regression and continuous integration.

- Tool Qualification Support Kit (TQSK) and minimal intrusive Code Coverage measurements for safety-related projects are simplifying path to certification.

- Modular approach allows easy migration to other processors and microcontrollers, such as Renesas RH850 and R-Car families.

Diagrams/Graphics

HW Debugger Solutions
for more than 150 microprocessor architectures and 10.000++ chips

High-Speed Trace Extensions
for every available trace protocol

Feature-Rich Debugger SW Suite
complements our hw solutions but acts also a standalone SW-only debugger solution

Target Markets and Applications

- Internet of Things (IoT)
- Industrial
- Connectivity
- Motor control
- HMI
- Functional safety
- Metering & measurement
- Safety & security
- Consumer electronics
- Medical

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Modular Debug and Trace System for any Renesas Microcontroller & Microprocessor

TRACE32® Debug and Trace tools cover the requirements for any Renesas microcontroller and microprocessor. The table below shows which products fit best to which MCU/MPU family.

MCU/ MPU Family	CPU Architecture(s)	Debug	On-Chip-Trace	Off-Chip-Trace	XCP Debugging	Instruction Set Simulator
RZ	Arm® Cortex-A/R/M, 64-bit-AX45MP RISC-V	PowerDebug System	PowerDebug System*	PowerTrace System*	Yes*	Yes
RX	Renesas RX	PowerDebug System	PowerDebug System	PowerTrace System	Yes	Yes
RA	Arm® Cortex-M	PowerDebug System, µTrace®, CombiProbe	PowerDebug System*, µTrace*, CombiProbe*	µTrace®*, PowerTrace System*	Yes	Yes
RISC-V 32-bit	Renesas RV32I RISC-V	PowerDebug System, µTrace®	N/A	N/A	N/A	Yes

* : Availability depends on the sub family, please check support for thousands of Renesas MCUs/MPUs easily and configure your solution using Lauterbach's chip search:

www.lauterbach.com/chips

Instruction Set Simulator: Complete Debug Experience without Real Targets

The TRACE32® Instruction Set Simulator (ISS) is used to develop or test application code for Renesas RA microcontroller without the need of a target hardware. It is freely available to all owners of a TRACE32® debug module and also as trial version for evaluation.

The ISS provides the same look and feel as a real debugger connected to a real target.

TRACE32® Tool Qualification Support-Kit (TQSK) 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® 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.