

MODULAR, POWERFUL AND FUTURE PROVEN

# Debugger & Trace Solutions for **RENESAS** Microprocessors & Microcontrollers

Renesas offers a comprehensive portfolio of Microcontrollers (MCUs) and Microprocessors (MPUs) to address requirements across a wide set of industries and applications. They implement several kinds of Arm®, RISC-V and inhouse-designed CPUs.

Lauterbach's market leading TRACE32® debug and trace development tools provide not only full insights into all today's Renesas chips for the whole SoC lifecycle: They also facilitate the path to certification for safety-critical applications in accordance with ISO 26262, DO-178C, and other standards.

Thanks to the long-standing close partnership with Renesas, future chip developments are also accompanied by Lauterbach from the very beginning ensuring a future proof investment.



DOWNLOAD OUR SOLUTIONS OVERVIEW



All information about Lauterbach's products for debugging and tracing.



## KEY FEATURES

### Unlimited Multicore Debugging

Renesas MPUs and MCUs implement different kinds of Arm® CPUs of the Cortex-A/R/M families as well as RISC-V and inhouse-designed CPUs like RH850 or RX. No matter what kind of multicore system is used, Lauterbach's TRACE32® tools support them all.

### OS-Aware Debugging of Any Core

Lauterbach's TRACE32® OS-aware debugging provides key insights into applications and the operating systems they are running on, no matter if rich operating systems like Linux, real-time operating systems (RTOS), or a mixture of all is used. With this, engineers can better understand how they are behaving and utilizing chip resources.

### Simplifying Certification of Safety-Critical Applications

Lauterbach's certified Tool Qualification Support Kits (TQSK) provide everything developers need to qualify TRACE32® solutions according to ISO 26262, DO-178C, IEC 61508, IEC 62304 and EN 50128. Different TQSK variants prove the suitability of code coverage, debugging, and instruction set simulator to reduce time-to-market, effort, and costs.

### Covering the Whole Renesas Chip Lifecycle

Besides to real silicon, TRACE32® tools can connect to various simulators, emulators, and virtual targets. Developers 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 the customers.

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[lauterbach.com](http://lauterbach.com)



# DEBUGGER and TRACE-Solutions for All Renesas MCUs and MPUs

Chip-Family	Architectures	Debug	On-Chip Trace	Off-Chip Trace	XCP Debugging	Instruction Set Simulator
CHIPS		AVAILABLE TRACE32® SOLUTIONS				
R-Car	Arm® Cortex-A/R, RH850*	✓ 1	✓ 1	✓ 3	✓ 5	✓ 6
RH850	RH850, GTM*	✓ 1	✓* 1	✓* 3	✓ 5	✓ 6
RZ	Arm® Cortex-A/R/M, RISC-V	✓ 1	✓* 1	✓* 3	✓* 5	✓ 6
RX	Renesas RX	✓ 1	✓ 1	✓ 3	✓ 5	✓ 6
RA	Arm® Cortex-M	✓ 1/2/4	✓* 1/2/4	✓* 2/4	✓ 5	✓ 6
RISC-V 32-bit	Renesas RISC-V	✓ 1/2	—	—	—	✓ 6
...further Renesas Chips	Please search Lauterbach's chip database – see QR code below					

\* : Availability depending on the sub series



Find the Right TRACE32® Solution for Your Chip:  
[lauterbach.com/supported-platforms/renesas](https://lauterbach.com/supported-platforms/renesas)

## PowerDebug System



**1** Powerful, modular, flexible debug system for 150+ microprocessor families

## µTrace®



**2** All-in-one Debug- and Trace-Tool for Cortex®-M

## PowerTrace System



**3** Highest performance parallel and serial trace system

## CombiProbe 2



**4** Compact debug & trace probe for low-bandwidth trace capture

## XCP Debug & Trace



**5** Software debugger via XCP measurement and calibration protocol

## Instruction Set Simulator



**6** ISS for developing or testing application code without target hardware