

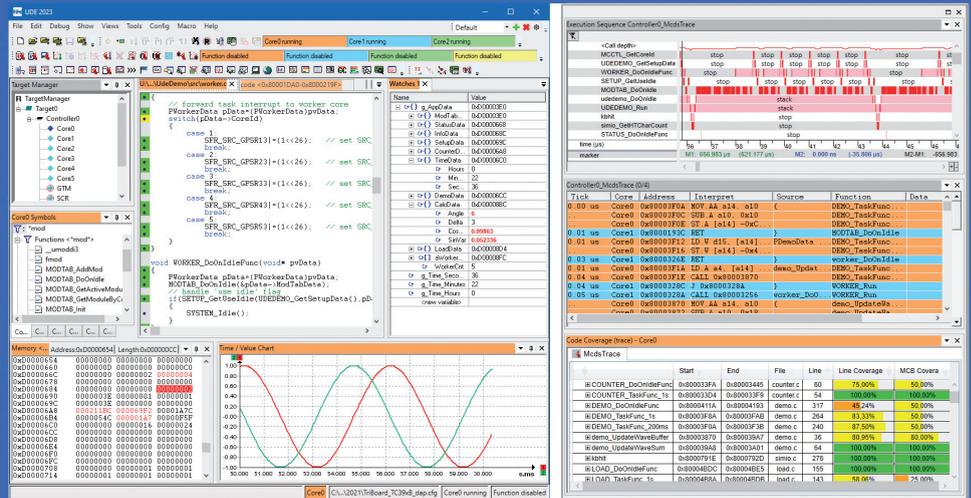


Universal Debug Engine®

Leading Edge in Debugging, Trace & Test

The Universal Debug Engine® UDE is a professional framework for debugging, trace and test of multi-core SoCs and microcontrollers. UDE combines a comprehensive feature set for HLL and assembler level debugging, run-time observation, system visualization and system-level analysis with efficiency and ease of use.

- ### UDE 2023 Highlights
- Intuitive user interface with »Perspectives« feature
 - Support for multi-screen operation
 - UDE SimplyTrace for easy trace configuration
 - Global time base for trace-based analysis functions
 - AUTOSAR ARTI support
 - Enhanced Execution Sequence Chart



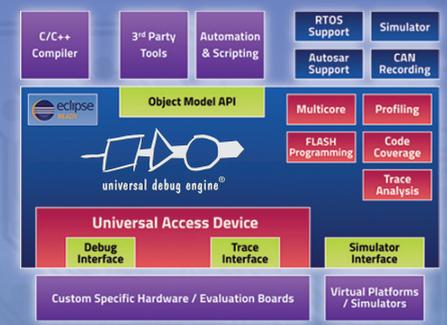
- ### Supported Microcontrollers
- Infineon**
AURIX TC4x, TC3xx, TC2xx, TriCore
Cortex XMC1xxx, XMC4xxx
Cypress PSoc4
- STMicroelectronics**
Stellar E/P/G, STM32, STM32H7
Power Architecture:
SPC56, SPC57, SPC58
- NXP**
Cortex-A53 S32G, S32V
Cortex-R52 S32Z, S32E
Power Architecture MPC56,
MPC57, S32R
Cortex-M i.MX RT, S32K, Kinetis
- Renesas**
RH850, R-Car H3, RZ/T2M
- Arm**
Cortex-R52, Cortex-A53
Cortex-A8, Cortex-A9, Cortex-M33
Cortex-M / R / A, Arm7 / 9 / 11
- Various vendors**
e.g. RISC-V, Synopsys ARC
TI Jacinto, Sitara
Hilscher NETX 90
Xilinx ZYNQ7000
and more...

- ### Multi-core debugging and trace
- Debug and trace for 32 and 64 bit MCUs
 - Comfortable multi-core debugging and visualization
 - Synchronous start, stop, and single step
 - Flexible core groups and multi-core breakpoints
 - Support for eTPU, GTM, HSM, SCR and PPU (ARC)
 - Parallel capturing and visualization of multiple trace sources

- ### Compiler, RTOS & AUTOSAR
- Support for C/C++ cross compilers: HighTec, Tasking, Keil, ARM, Wind River, Green Hills, etc.
 - RTOS awareness: FreeRTOS, SAFERTOS, OSEK, PXROS, PXROS-HR, CMX, µC/OSII, rcX
 - AUTOSAR and ARTI support

- ### Software API for tool automation
- Open software API
 - Based on Microsoft Component Object Model (COM)
 - Debug and test automation by scripting
 - Support for Perl, Python, Java, VB Script, Power Shell
 - Integrated Python console
 - C/C++, .NET, etc.
 - Tool interface for third party tools

- ### Trace data analysis at system level
- Visualization of task and code execution
 - Code coverage without influence on runtime behavior
 - Profiling provides runtime information for efficient detection of bottlenecks in applications
 - UDE SimplyTrace for easy configuration of every days trace tasks
 - Global time base for trace-based analysis functions
 - Offline analysis of traces



- ### Target interfaces and hosts
- Universal Access Devices UAD2^{pro}, UAD2^{next}, UAD3+
 - Virtual prototypes / simulators
 - Functional interfaces and protocols (CAN, XCP)
 - Windows 10 / 11 (64 bit)
 - Eclipse plug-in (64 bit) for UDE





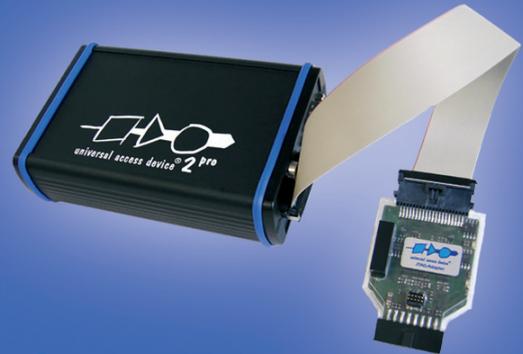
Universal Access Device

Leading Edge in Debugging, Trace & Test

The UAD Universal Access Device family completes UDE's full featured debug solution with a fast and robust access to the target systems. The flexible adapter concept of the UAD family supports a wide range of debug interfaces as well as on-chip and external trace solutions.

Smart debugging with UDE/UAD2^{pro}

- High speed USB 2.0 host interface
- Proven adapter solution for fastest and reliable target access: JTAG, DAP, SWD, OnCE, LPD, H-UDI
- Up to 50 MHz shift clock and 1.65 V - 5.5 V I/O voltage
- Electrically isolated target adapters (option)
- Combined connector for CAN and serial interface
- Support for on-chip trace buffer



Universal debug system UDE/UAD2^{next}

- High speed host interfaces: USB3, Gigabit Ethernet
- Proven adapter solution for fastest and reliable target access: JTAG, DAP, SWD, OnCE, LPD, H-UDI
- Up to 160 MHz shift clock and 1.65 V - 5.5 V I/O voltage
- ASC and CAN target interface, CAN FD available upon request
- Electrically isolated target adapters (option)
- Range Extender to bridge distances up to 2 meters between UAD2^{next} and target
- Easy extension by pluggable target specific trace modules
- AURORA serial high-speed trace with up to 1.25 Gbit/s
- Parallel trace with up to 12 bit @ 125 MHz DDR
- 512 MByte trace memory

High-end trace with UDE/UAD3+

- High speed host interfaces: USB 2.0, Gigabit Ethernet, IEEE1394b (FireWire-800)
- Fast multi-target access – up to 8 debug interfaces
- Proven adapter solution for fastest and reliable target access: JTAG, DAP, SWD, OnCE, LPD, H-UDI
- Separate debug pods for up to 5 meters distance to the target
- Up to 160 MHz shift clock and 1.65 V - 5.5 V I/O voltage
- Electrically isolated target adapters (option)
- Serial high-speed trace with max. overall bandwidth of 100 Gbit/s, up to 8 lanes @ 12.5 Gbit/s per lane
- Parallel trace with up to 20 bit @ 500 MHz
- Up to 8 GByte trace memory



PLS Programmierbare Logik & Systeme GmbH based in Germany is the manufacturer of the debugger, trace and test framework Universal Debug Engine® (UDE). Thanks to its innovative tools for embedded software development, PLS has become one of the technology leaders in this area and provides high-quality development tools to engineers worldwide since more than 30 years.

www.pls-mc.com
info@pls-mc.com

PLS Programmierbare
 Logik & Systeme GmbH
 Technologiepark
 D-02991 Lauta, Germany
 Phone: +49 (35722) 384-0
 Fax: +49 (35722) 384-69

PLS Development Tools
 19925 Stevens Creek Blvd
 Cupertino, CA 95014, USA
 Phone: +1-408-451-8408
 Fax: +1-408-501-8808
 Toll Free: +1-877-77-DEBUG

pls
 Development Tools