

# OCDS L2, ETM, ETB Trace

## OCDS L2, ETM and ETB Trace Support by UDE

Hard real-time debugging requires close interaction with the processor. Tracing shall provide a chronological picture of a systems inner workings up to, starting from or in the vicinity an event, mainly to guide a human in understanding a faulty program. **OCDS L2**, **ETM** and **ETB** were defined for this purpose and are available on the TriCore and the ARM7/ARM9 derivatives.

### Trace Board Add-on

The trace board is an add-on module for the Universal Access Device 2+ and allows recording of trace information of a running program in real-time. Core, PCP, PCP2 and DMA trace are supported when available.

The Universal Debug Engine contains additional software components to display the trace information and setup trace conditions (trace input filter). These features enable qualified trace recording and performance measurement based on timestamps with full system clock frequency resolution. Target connector pods for different connector types, recommended by Infineon and ARM, are available for the trace board.

### Features

- Trace ports supported up to 180 MHz
- 1M Sample trace depth
- Timestamp resolution  $1/f_{MCU}$  (i.e. 10ns at  $f_{MCU}=100MHz$ ) on each second MCU step
- 40bit time stamp range
- Support the full OCDS L1 / ETM functionality for providing the trigger events for the tracing unit
- Intelligent trace filter for optimal trace utilization
- ARM and TriCore, PCP, PCP2, DMA trace support
- Additional 8 external trace lines to observe peripherals and external signals
- LVDS interface to external connector pod supports pods 60 pin OCDS L2 High-Speed Connector and the 38 pin Mictor High-Speed Connector
- Supported derivatives:
  - TC1130, TC1766, TC1796, and future devices
  - LPC21xx, AT91RM9200 and future devices.

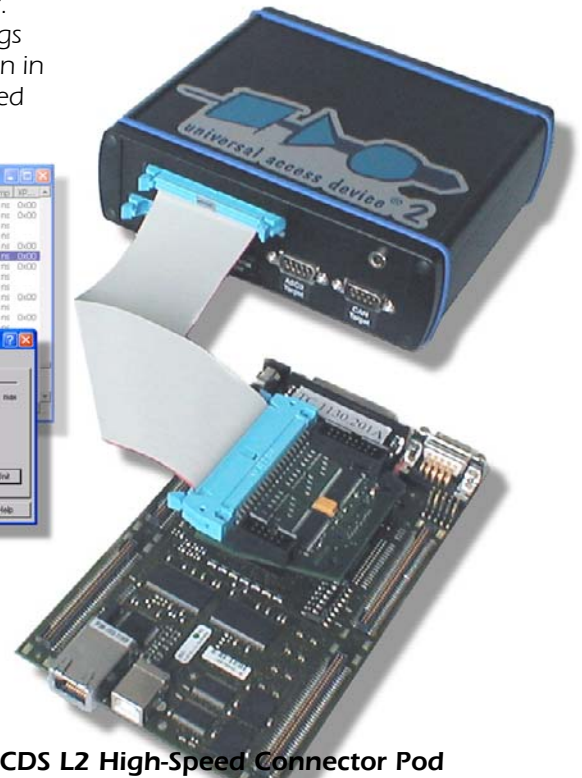
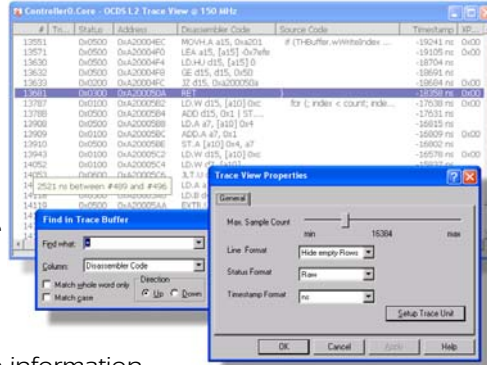
### 60 Pin OCDS L2 High-Speed Connector Pod

- Proposed by Infineon to support connection to OCDS L2 port of TriCore 1.3 systems (TC11xx, TC17xx, TC19xx and future derivatives)
- Connector system based on SAMTEC 60 pin high-speed connector QSH-030-01-F-D-A
- Supports 2,5V to 3,6V I/O ring voltage
- 80 pin cable to trace base board using LVDS interface to ensure high trace signal quality.

### 38 Pin ETM High-Speed Connector Pod

- Proposed by ARM to support connection to ETM port of ARM systems (LPC21xx and further ARM7 and ARM9 derivatives)
- Connector system based on 38 pin high-speed connector AMP-MICTOR
- Supports 2,5V to 3,6V I/O ring voltage

The ARM **ETB** is an internal implementation of a full ETM trace system. UDE supports ETM as well as the external trace mechanism. There is no additional hardware required.



**If you have any questions about your application development tools, please contact us at:**

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