

# Vitra-XD Trace Probe

For ARM™-powered embedded systems



## Overview

**Vitra-XD** is a powerful high-speed, high-capacity trace (500+ GB) and run-time control debug probe for embedded development on ARM™ RISC cores. Vitra-XD works with Mentor Graphics®'s Sourcery™ CodeBench for advanced embedded system debugging and analysis. Vitra-XD allows:

- Capture and viewing of program-flow and data-accesses in real-time, non-intrusively
- Capture and viewing of performance-analysis and code-coverage data in real-time, non-intrusively
- Download program from host PC to target embedded system
- Exercise program in target (go, step, halt, breakpoints, interrogate memory, registers and variables)

**Mentor Graphics®'s Sourcery™ CodeBench** is a complete development environment for embedded C/C++ development on ARM and includes an Eclipse based Integrated Development Environment, GNU compiler, and Debugging and Analysis tools.

## Vitra-XD Features

- Fast, trouble-free "plug-and-play" installation using high-speed USB2.0 or Gigabit Ethernet host interfaces
- Up to 3MB/s download speed particularly suitable for large, complex projects
- World's fastest trace capture rates:
  - Parallel (up to 16-bits) trace up to 400MHz double-data rate (DDR).
  - Serial Gigabit trace (ARM™ HSSTP). Up to 4 lanes supported at speeds of up to 25.6Gb/s divided by number of lanes e.g. 6.4Gb/s for 4 lanes
  - Captured data can be independently timestamped using Vitra-XD's 50-bits, 5ns resolution timestamp generator
- World's largest trace storage:
  - 502GB on-board trace storage memory (2GB DDR3 RAM and 500GB high-speed hard-disk). Allows extended trace capture for non-intrusive profiling and code-coverage
  - Automatic trace clock/data skew adjustment ("AUTOLOCK") to ensure integrity of captured high-speed data. Vitra-XD automatically calibrates itself to your target's trace data port
  - Real-time trace streaming to host PC through Gigabit Ethernet interface allows unlimited trace capture (pending available host PC disk space)
- Supports all ARM™ hardware-debug standards including EmbeddedICE, ETM, PTM and CoreSight™
- Fine-grained adjustment of JTAG clock frequency from 1kHz to 150MHz. ARM RTCK support
- Multi-core support with full JTAG scan-chain configurability
- Hot-plug support; allows connection to a running target without resetting or halting
- 38-way Mictor, 10 and 20-way CoreSight (0.05") and legacy 20-way (0.1") target connector support
- Detects and automatically configures for the appropriate target voltage from 0.4V to 3.6V
- Support for all on-chip hardware breakpoints; unlimited number of software breakpoints
- Configurable Target-Reset and Test-Port-Reset, under full user control
- Universal Hardware-Debug platform for all popular target architectures
- Compact, tower-design form factor

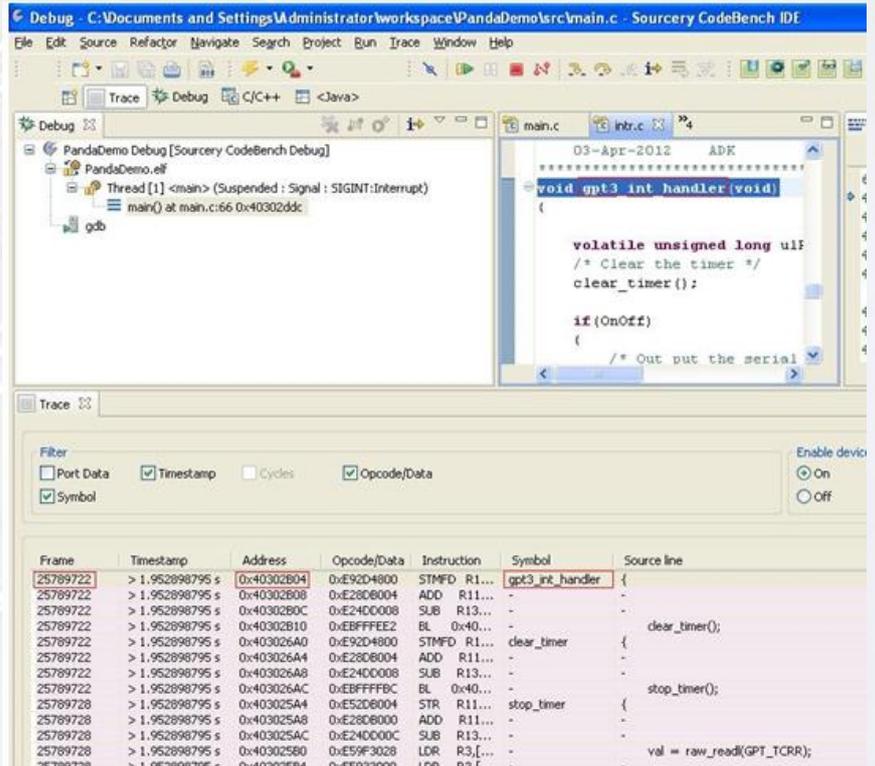


### Sourcery™ CodeBench

With Sourcery™ CodeBench you can develop embedded systems on microcontrollers and microprocessors for bare metal and Linux based applications. Sourcery™ CodeBench is a validated and robust development toolchain based on open-source components and enables C/C++ development, debug and analysis on ARM architectures.

Configuration and use of Vitra-XD is fully integrated into Sourcery™ CodeBench thus providing full hardware-based debug and trace capabilities including:

- JTAG based board initialization
- Board reset control
- Hardware (ROM/flash) and software (RAM) based breakpoints
- Hardware watchpoints (break on data-access)
- Go, Halt and Step control
- Trigger setup (i.e. specify rules for trace capture)
- Trace capture, upload and display



Sourcery™ CodeBench and Vitra-XD support both bare-metal and Linux kernel/application debugging, tracing and analysis. Sourcery™ CodeBench is hosted on Linux x86 and Windows™ hosts.

### Broad Device Support

Vitra-XD and Sourcery™ CodeBench support a wide range of ARM cores including ARM7, ARM9, ARM11, Cortex-M, Cortex-R and Cortex-A families. In addition, Vitra-XD supports several devices from ARM™ licensees including: Atmel, Freescale, NXP, Renesas, Samsung, ST, and Texas Instruments. Contact Ashling for latest support information.

### Order Codes

Product	Order Code
Vitra-XD for ARM™ (includes all necessary cables, documentation)	Vitra-XD-ARM
Mentor Graphics® Sourcery™ CodeBench	Code Bench