

Ashling Vitra-MPC55xx NEXUS Emulator and Trace

Debugging tools for Freescale Power Architecture cores

Ashling's Vitra-MPC55xx Emulator, supplied and supported by Arcadi Systems, is a powerful Networked Emulator and Trace System for Freescale's MPC5554, MPC56xx, MPC565 and MPC555 Power Architecture embedded microprocessors, using the NEXUS 5001™ on-chip debug interface.

Vitra debugging is completely non-intrusive and requires no target system resources. Together with Ashling's PathFinder source-level debugger, Vitra provides powerful run/stop control of embedded software, supporting both hardware and software breakpoints.

Vitra provides full Instruction Trace and Data Trace using the NEXUS 5001™ standard on-chip debug interface.

Vitra provides fast code download to the target system, and allows control and interrogation of all processor, co-processor and system resources.

Flash Programming for On-Chip MPC55xx/MPC56x/MPC555 and external Flash memory is supported.

High-speed Ethernet (RJ45), USB and serial connections to the host PC are included.

The Vitra Emulator and PathFinder debugger provide full multi-core debug support for the Power Architecture **eTPU Enhanced Timer Processor Unit**, with individual windows for disassembled eTPU instructions, eTPU memory and registers.

As an active participant in the Nexus 5001 Forum, Ashling has worked with Freescale Semiconductor and the other forum members to produce Emulator and Real-time Trace systems for Freescale's MPC55xx, MPC56xx, MPC56x and MPC53x automotive microprocessor families, the first microprocessors to incorporate the IEEE-ISTO 5001 (NEXUS 5001™) Global Embedded Processor Debug Interface.



In addition to NEXUS support for the MPC5554, MPC56xx, MPC565 and MPC53x families, Vitra supports Freescale's MPC555 Power Architecture automotive and industrial-control microprocessor, using the MPC555's BDM debug interface.

System Specification

PathFinder is Ashling's C Source-Level Debugger for Power Architecture devices, with multiple user-configurable windows, point-and-click, drag-and-drop, hover help and hover data display, splitter windows, menu-bar, button, hot-key and script (macro)-file controls. PathFinder runs on all current versions of Windows. PathFinder's Object-Oriented Monitoring and Editing System provides tree-structured "click to expand" access to all memory-areas, register sets, registers and bits of the Power Architecture core and co-processors with a logical and friendly Windows display.

PathFinder is the user-interface for the Ashling Genia-MPC55xx and Vitra-MPC55xx Emulators for Freescale's MPC5554, MPC56xx, MPC565, MPC53x and MPC555 embedded microprocessor families.

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Trigger Events System:

On-chip PowerPC trigger resources are complemented with Vitra triggers, including maskable trace port data comparators, counters and sequencers. External trigger inputs and outputs. Triggers can be specified symbolically and can be set on code execution or data access.

Compiler support:

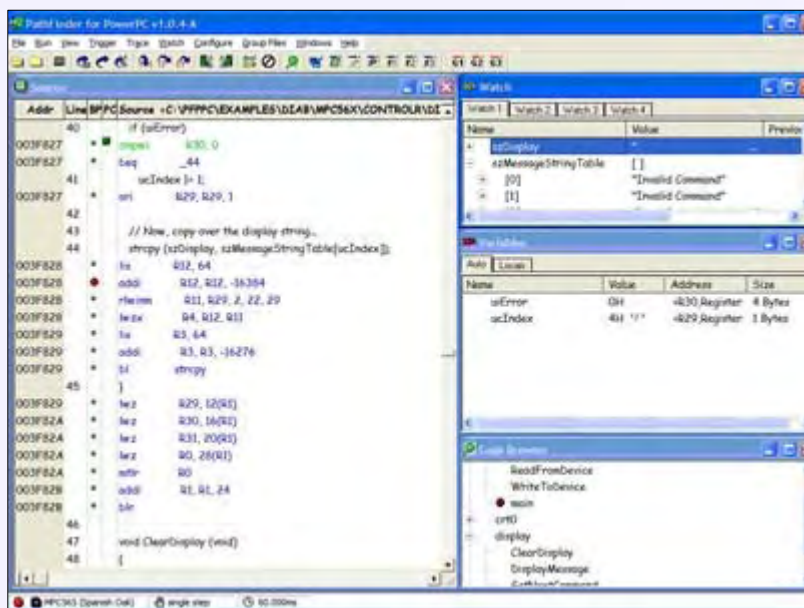
Supports all popular Power Architecture C compilers, including GNU GCC, Green Hills Systems, ARC MetaWare, Freescale Metrowerks, Wind River Systems and all other ELF-DWARF compliant compilers.

Host:

PC with Windows Vista/XP/2000. Ethernet, USB and RS232 serial connections to host.

Script language:

Powerful macro language to control, monitor and log all Emulator functions



Vitra Emulator and Trace Specification

- Run/stop control of target application including go, halt, step over, step into and step out of.
- Display/read/write of target system memory, peripheral registers and IO space.
- Simultaneous display of source and assembly code.
- High-speed application code download.
- Real-Time Code Trace, Data Trace and Triggering
- Support for all on-chip hardware breakpoints; unlimited software breakpoints.
- Automatic sensing of low voltage target systems.
- Target Reset control and Remote Reset detect.
- PathFinder **Flash Programming Utilities** Package

Real-Time Trace: Vitra traces instruction execution and data accesses at target system clock speeds up to 200MHz, for PowerPC-based embedded systems with the NEXUS on-chip trace interface. PathFinder shows traced data as symbolic disassembly, source code or bus trace (data access), with time-stamp. Trace buffer is 128-bits wide and is available in sizes of 64K Frames (default) or 512K Frames.

Target connection: Range of NEXUS Debug and Trace connectors, or 10-pin BDM connector for MPC555. Supports 1.8V, 2.5V, 3.3V and 5V targets. Optional **Extended Trigger and Trace** Probe captures up to twelve user signals in Logic-Analyzer mode, together with three external trigger inputs to qualify trace capture and two trigger output signals

Device Support: All Freescale Power Architecture devices with NEXUS on-chip debug interfaces, including MPC5554, MPC5553; MPC5632, MPC5633, MPC5634; MPC561, MPC562, MPC563, MPC564, MPC565, MPC566, MPC53x; and Freescale MPC555 with BDM debug interface. Contact Arcadi for support on new Power Architecture cores.

Order Codes

Product	Order Code	Product	Order Code
Vitra Emulator with standard 64K x 128-bit trace	Vitra-MPC55xx	NEXUS M38C 38-way MPC55xx Debug and Trace connector	TPA-5500-M38C
Vitra Emulator with optional 512K x 128-bit trace	Vitra- MPC55xx-T512K	NEXUS R51C 51-way MPC5500 Robust debug/trace connector	TPA-5500-R51C-1
PathFinder Source Debugger for MPC55xx	PathFinder-MPC5500	14-way NEXUS JTAG debug cable for Freescale MPC55xx	TPA-5500-JTAG-14
PathFinder Source Debugger for MPC56x, MPC555	PathFinder -MPC56x	NEXUS R51A 51-way MPC56x Robust debug/trace connector	TPA-PPC-R51A-1
10-way BDM debug cable for MPC555	TPA-PPC-BDM10	NEXUS 50-way debug and trace connector for MPC56x	TPA-PPC-NEXUS-50

Ashling Microsystems Ltd. reserves the right to alter product specifications at any time and without notice



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