VITRA-PPC

PowerPC NEXUS™ Networked Emulator with Real-time Trace

High-Speed NEXUS Emulator, Source Debugger and Real-Time Trace for MPC55xx, MPC56x and MPC555 PowerPC embedded systems

Overview

Ashling Vitra-PPC NEXUS Emulator for MPC56x and MPC55xx

Ashling's Vitra-PPC Emulator is a powerful networked Emulation and Trace system for embedded development with Freescale's PowerPC RISC cores, 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, with hardware and software breakpoints. Vitra provides fast code download to the target system, and allows control and interrogation of all core-processor and system resources.

Vitra incorporates high speed Ethernet, USB and serial connections to the host PC.

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

Vitra also supports Freescale's MPC555 automotive/industrial-control microprocessor, using the PowerPC BDM debug interface.

Vitra provides Flash Programming for On-Chip MPC5xx/MPC55xx and external Flash memory.

As an active participant in the Nexus 5001 Forum, Ashling has worked with Freescale to produce Emulator and Real-time Trace systems for Freescale's MPC55xx, MPC56x and MPC555 automotive microprocessor families, the first microprocessors to incorporate the NEXUS 5001™ Global Embedded Processor Debug Interface.

System Specification

Source-level debugger:

PathFinder is Ashling's C Source Debugger for PowerPC 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 32-bit 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 PowerPC core and co-processors, with a logical and friendly Windows-XP-style display.

PathFinder is the user interface for all Ashling products, including the Ashling Vitra, Genia and Opella Emulators for PowerPC.

IEEE-ISTO 5001 and Nexus 5001 Forum are trademarks of the IEEE-ISTO

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 PowerPC C/C++ compilers, including GNU, Green Hills Systems, ARC MetaWare, Freescale Metrowerks, Altium-Tasking, Wind River Systems (Diab Data) and all other ELF-DWARF compliant compilers.

Host:

PC with Windows-XP/2000/Me/9x/NT. Ethernet, USB and RS232 serial connections to host.

Script language:

Powerful macro language to control, monitor and log all Emulator functions.
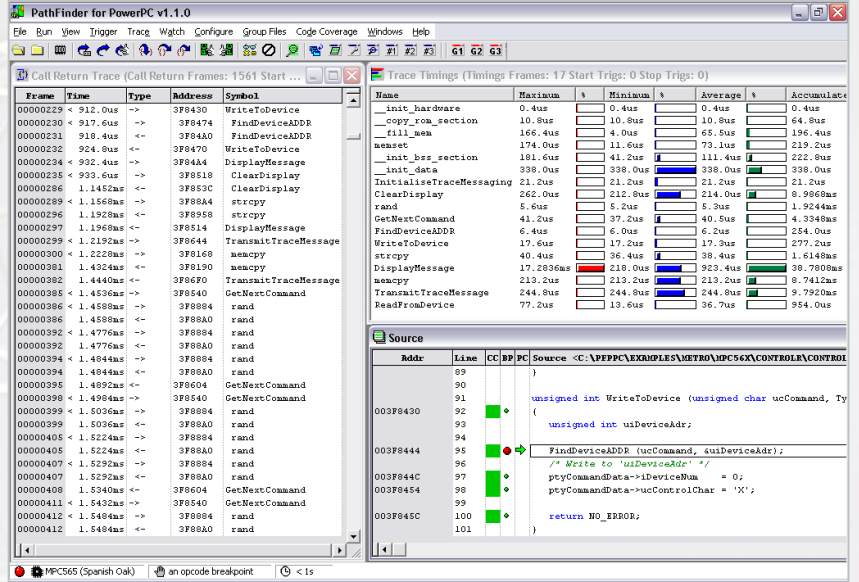
PathFinder provides source-level debugging for PowerPC systems, with mouse, command-line, accelerator-key and button-bar controls

VITRA EMULATOR SPECIFICATION

- Run/stop control of target application including go, halt, step over, step into and step out of.
- Full expression-handling for all Variables.
- 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 system
- 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-standard on-chip debug and trace interface. PathFinder shows traced data as bus trace (data access), symbolic disassembly or source code with time-stamp. Trace buffer is 128-bits x 512K Frames.

Target connection: Standard NEXUS 50-pin debug and trace connector, Robust NEXUS 51-pin connector, or 10-pin BDM connector for MPC555. 4 auxiliary control outputs to target and 4 inputs, all under user control from PathFinder. 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 PowerPC devices with NEXUS on-chip debug interface, including:
MPC5533, MPC5534, MPC5553, MPC5554, MPC5561, MPC5565, MPC5566, MPC5567
MPC561, MPC562, MPC563, MPC564, MPC565, MPC566 and Freescale MPC555 with BDM debug interface.

ORDER CODES

Product	Order Code	Product	Order Code
Vitra Emulator with 512K x 128-bit trace	VITRA-PPC-T512K	50-way NEXUS Target Probe Assembly for MPC56x	TPA-PPC-NEXUS-50
PathFinder Source-Level Debugger for MPC56x	PF-PPC	40/50-way adapter for TPA-PPC-NEXUS-50	TB-PPC-NEXUS-40/50
PathFinder Source-Level Debugger for MPC55xx	PF-MPC5500	NEXUS R51A 51-way Robust debug and trace connector for MPC56x	TPA-PPC-MD-51
Extended Trigger/Trace Target Probe Assembly	TPA-TRIG-TRACE	Mictor 38-way Target debug and Trace for MPC55xx	TPA-MPC5500-M38C
General Purpose User I/O Cable	TPA-GENIO	NEXUS R51C 51-way Robust debug and trace connector for MPC55xx	TPA-MPC5500-MD-51
BDM 10-way IDC Target Probe Assembly for MPC56x	TPA-PPC-BDM-10	14-way NEXUS JTAG debug cable for Motorola MPC55xx	TPA-MPC5500-JTAG-14

DS224 V9

Ashling Microsystems Ltd. is certified to I.S. EN ISO 9001:2000, NSAI Registration No. 19.09069.

Distributors in Australia, Austria, Belgium, Canada, China, Cyprus, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, India, Israel, Italy, Japan, Korea, Luxembourg, Malaysia, Netherlands, Norway, Poland, Russia, Singapore, Spain, Sweden, Switzerland, Taiwan, Turkey and USA

www.ashling.com