

# Vitra-ARM Emulator

*High-Speed Networked Emulator, Source-Level Debugger and Real Time Trace for ARM™-powered embedded systems*

## Overview

Ashling's Vitra-ARM Emulator is a powerful networked Emulation and Trace system for embedded development based on the ARM™ RISC cores.

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 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 provides Instruction Trace and Data access Trace for target systems that incorporate the ARM™ Embedded Trace Macrocell™ (ETM) core extension. Vitra provides high-speed Ethernet, USB and serial connections to the host PC.

Vitra supports all popular ARM™ cores, using ARM Ltd.'s EmbeddedICE™ or EmbeddedICE-RT™ on-chip debug interfaces.

Vitra provides Flash Programming for On-Chip and external Flash memory



## SYSTEM SPECIFICATION

### Source-level debugger

PathFinder is Ashling's C Source-Level Debugger for ARM™ core 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 ARM™ Core and other co-processors, with a logical and friendly Win2000-style display.

PathFinder is the user interface for all Ashling products including the Ashling Vitra, Genia and Opella Emulators. In addition, PathFinder supports the ARMulator™ Instruction Set Simulator. ARMulator™ is supplied with the ARM Ltd. Development Suite (ADS). PathFinder uses the ARM™ Remote Debug Interface (RDI) standard at version 1.5.1 for all target communication. An optional RDI compliant driver (Windows .DLL) allows Vitra to be used with RDI-compliant third party debuggers or user-developed application.

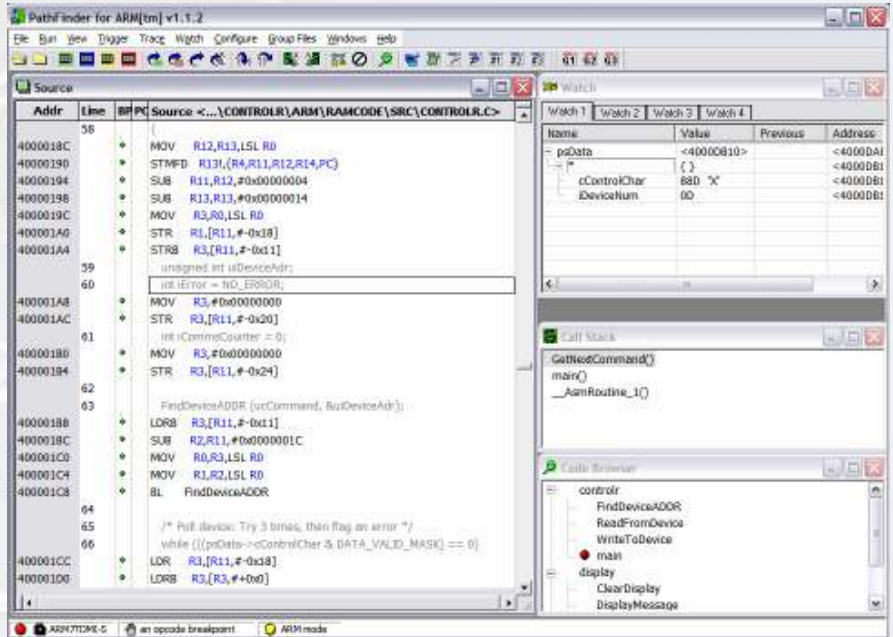
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**Compiler support:** All popular ARM™ C/C++ compilers are supported, including ARM Ltd's ADS, GNU, Ashling AsIDE-ARM, Green Hills Software, IAR, ARC-MetaWare, Motorola-Metrowerks and all other ELF/DWARF compliant compilers.

**Host:** PC with Windows9x/NT/2000/Me/XP. Ethernet, USB and RS232 serial connection to host PC.

**Emulator Script language:** Powerful script language to control, monitor and log all Emulator functions.

**Optional IDE and Compiler/Linker:** Ashling's AsIDE-ARM Integrated Development Environment includes SlickEdit project build manager and Programmer's Editor, and GNU GCC ARM Compiler and Linker (configured and invoked from the IDE).



PathFinder provides source-level debugging for ARM™ systems, with mouse, command-line, accelerator-key or button-bar controls

## Vitra-ARM Emulator Specification

### Feature Set

- Run/stop control of target application
- Display/modification of processor registers
- Full variable expression handling.
- Read/write access to target system memory, peripheral registers and I/O space.
- Real-Time Trace and Triggering system
- Single step, function step-into, step-over

- Simultaneous display of Source and Assembly application code
- High speed application code download
- Support for all on-chip hardware breakpoints; unlimited software breakpoints
- Automatic sensing of target operating voltage; support for low-voltage targets.
- Target Reset control and Remote Reset detect

**Real-Time Trace:** Vitra supports target system clock speeds up to 200MHz for target systems with the ARM™ Embedded Trace Macrocell™ (ETM) core extension. PathFinder shows the traced data in hex, symbolic disassembly or source code, with time-stamps.

**Trigger Events System:** On-chip ARM™ ETM trigger resources are complemented with Vitra triggers, including maskable trace port data comparators, counters and sequencers. Triggers can be specified symbolically and can be set on code execution or data access.

**Target connection:** ARM™ standard 20-way connector for EmbeddedICE™ (JTAG) debug port. AMP MICTOR 38-way connector for ETM™ port (4, 8 and 16-bit trace data supported). Supports 3.3V and 5V target systems. Vitra is supplied with a universal a.c. power unit.

**Device Support:** All ARM™ cores with EmbeddedICE or EmbeddedICE-RT, including ARM7DI, ARM7TDMI, ARM7TDMI-S, ARM710T, ARM720T, ARM740T, ARM9TDMI, ARM920T, ARM926EJ-S, ARM940T, ARM9E, ARM922T, ARM946E, ARM946E-S, ARM966E, ARM966E-S. Trace support for all ETM-equipped targets. Contact Ashling for support on new ARM™ cores.

## Order Codes

Product	Order Code
Vitra Emulator with standard 64K Frames x 128-bit trace	VITRA-ARM-T64K
Vitra Emulator with optional 512K Frames x 128-bit trace	VITRA-ARM-T512K
PathFinder for ARM Source Debugger	PF-ARM
General Purpose User I/O Cable	TPA-GENIO

DS218 V12

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

Ashling Microsystems Ltd  
National Technology Park  
Limerick  
Ireland  
Tel: +353 61 334466  
Fax: +353 61 334477  
Email : Sales.ie@ashling.com

Ashling Microsystems Ltd  
Albany House  
14 Shute end  
Wokingham RG40 1BJ  
Tel: 0870 240 5209  
Fax: 0870 242 6052  
Email : sales.uk@ashling.com

Ashling Microsystems Ltd  
11 Avenue Charles de Gaulle  
95700 Roissy en France  
Tel: 01.43.41.06.37  
Fax: +353 61 334477  
Email : Sales.fr@ashling.com

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