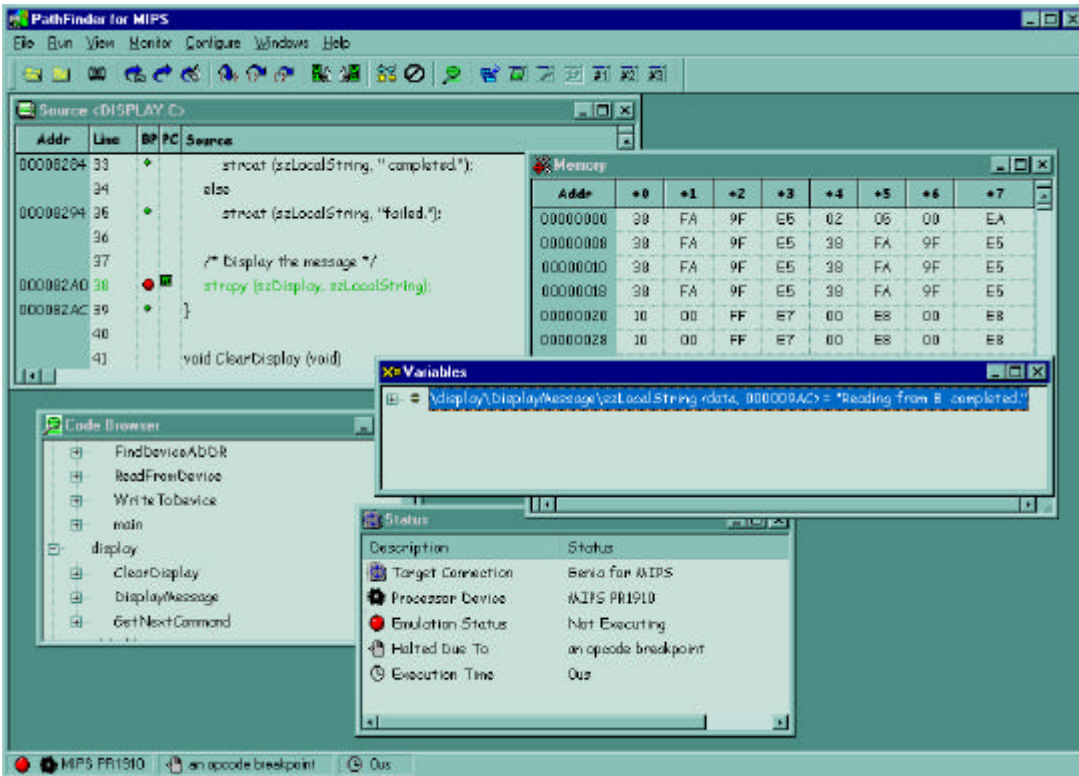


PATHFINDER

Source-Level Debugger for Embedded Microcontroller Development

INTRODUCTION



PATHFINDER is Ashling's C/C++ Source-Level Debugger 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™.

The Ashling **PATHFINDER** Source-Level Debugger

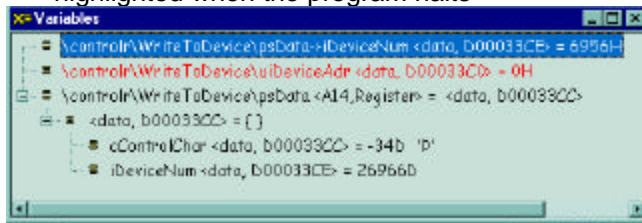
OVERVIEW

Ashling developed PathFinder to be a fully compliant 32-bit Microsoft Windows™ application in order to reduce the debugger learning curve and increase user friendliness, while also maintaining a consistent style between the debugger and other Windows™ applications. In-Circuit Emulation, Source-level Debug, Simulation, Performance Analysis and Code Coverage are all controlled by PathFinder thus providing a true integrated view of the Embedded Development Domain.

PathFinder is the user Interface for all Ashling products including the Ashling Opella, Genia, Ultra and Vitra Emulators and is designed to support a number of different 8-bit, 16-bit and 32-bit processor architectures. PathFinder is a highly modular debugger and can be easily configured to support different targets including Emulators, Evaluation Boards, On-chip Debug Interfaces and Hardware based (e.g. FPGA) or Software based Simulation Engines. In addition, PathFinder supports effective simultaneous debugging of both Multi-core systems (e.g. System on Chip) and Co-processors.

PATHFINDER FEATURE SET

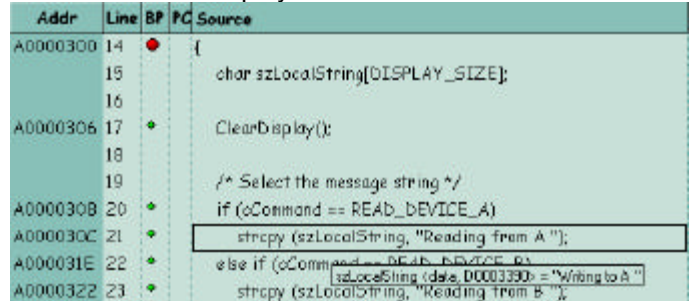
- Operates under all 32-bit versions of Windows™
- Full C and Assembler Source Level debug support
- Full 'C' expression handling support
- Non-intrusive 'On-the-Fly' Variable and Memory viewing during program execution
- Supports all popular C compilers including Cosmic, Diab (Wind River), Green Hills, GNU, HI-TECH, High-tec, IAR, KEIL, MetaWare, Metroworks and Tasking
- Support for all standard industry file formats (object formats) including COFF, DWARF, ELF, IEEE695 and OMF
- Automatic update and synchronisation of all windows after halt from program execution
- Code Browser window allows rapid browsing of loaded program, showing all modules and functions.
- Full run-time control features including: single step, step over, step into, step out of (current function), go and halt.
- Support for software and hardware break-points and watch-points
- Windows for on-chip RAM, external data memory, SFRs, CPU status and Co-processor status
- Full Multi-core and Co-processor debugging support
- All changed Memory and Variable values are highlighted when the program halts



changed since the previous break are shown in Red. or all variables (in this

WriteToDevice() controlr absolute address is shown after the variable name; notice how certain variables are located in Registers (psData).

- 'Splitter' window support for Source, Disassembly and Memory windows allow up to four distinct views (panes) within a single window.
- Inline-editable Memory, Register and Variable windows
- Drag & Drop Support (drag variable from the Source Window to the Variable Window)
- Hover Data Display



The above screen-shot shows PathFinder's Source window. Positioning the mouse pointer (not shown) over the variable szLocalString causes PathFinder to automatically open a pop-up window showing the current value of szLocalString.

- Right mouse button pop-up context menu support for all windows
- Powerful C-like macro test language can control, monitor and log all emulator functions, for automatic testing of software and hardware. Record mode allows automatic generation of macros
- Most Recently Used (MRU) file list
- RTOS debugging support using the using the Kernel Debug Interface (KDI) standard. Allows debug support for third party or 'in-house developed' Operating Systems.
- Full support for Trigger and Trace including Bus Trace window (shows low-level 'bus' view) and Code Trace window (shows traced code as C or Assembler)
- Integrated Support for Ashling Software Quality Assurance tools including the **STARS** Performance Analyser and **CODESCAN** Code Coverage System
- Ethernet, USB and RS232 connection support

ORDER CODES

PathFinder is available for all Ashling Emulators. For details on specific order codes please refer to the appropriate Ashling Emulator datasheet.

Ashling Microsystems Ltd. is Certified to EN ISO 9001, NSAI Registration No. M619.

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