Opella-XD for MIPS

Ultra-high-speed EJTAG Debug Probe

Overview

Ashling's **Opella-XD EJTAG Debug Probe** is the fastest available debug probe for embedded development on MIPS™ RISC cores.

Advanced features of Opella-XD include:

- Fast, easy-to-install USB 2.0 High-Speed Interface (480Mb/s)
- Supports all popular hardware debug protocols
- Unique Autoconditioning Probe provides maximum possible download speed to target with fastest JTAG clock frequencies
- Hot-plug support allows post-mortem debugging
- Fast, trouble-free Plug-and-Play installation
- Small, versatile Target Probe Cable fits on any target board
- Fast in-target Flash Programming
- Supports latest EJTAG 4.10 MIPS™ debug protocol
- Wide target voltage range: 0.9V to 3.6V
- Versatile Target-Reset and Test-Port-Reset support
- Works with Windows and Linux hosts
- Built-in diagnostics instantly show status of Target, Debug Probe and USB link
- Universal Hardware-Debug platform for all popular target architectures and compilers

Benefits of **Opella-XD** to the embedded hardware developer:

- Accelerates the entire embedded-hardware debug process: ultra-fast installation, code download and flash programming saves time at every code rebuild
- Instantly autoconfigures to target system
- Long-term investment: works with all popular target architectures and compilers
- Helps with the most difficult debugging tasks: hardware bring-up, operating-system booting, post-mortem debugging
- Future-proof: works with latest hardware-debug protocols, all popular host operating-systems
- Compact, easy-to-install target probe cables support all popular debug interfaces

Opella-XD Debug Probe Specification

- High-speed USB2.0 (480Mb/s) interface to host PC or Linux workstation
- Target EJTAG clock rates up to 100MHz
- Autoconditioning for fast EJTAG clock frequencies
- Sustained code download to target at over 3MB/s (using 100MHz EJTAG clock)
- Supports all MIPS™ hardware-debug standards: EJTAG 4.10, 3.10, 2.6x, 2.5x, 2.0x and 1.5x
- 14-way or 20-way IDC target EJTAG connectors
- Configurable Target-Reset and Test-Port-Reset, under full user control
- Fine-grained adjustment of JTAG clock frequency from 1KHz to 100MHz
- Supports target operating voltages from 0.9V to 3.6V. Opella-XD detects and automatically configures for the appropriate target voltage.
- Supports RTCK adaptive clocking of debug data from target (EJTAG 4.10)
- "Hot-plug" support; allows connection to a running target without resetting or halting
- Fully powered by USB interface; no external power-supply needed
- Support for all on-chip hardware breakpoints; unlimited number of software breakpoints
- Big-endian and little-endian target architectures supported
- Full support for MIPS16™/MIPS16e™ code compression

Source-level debugger

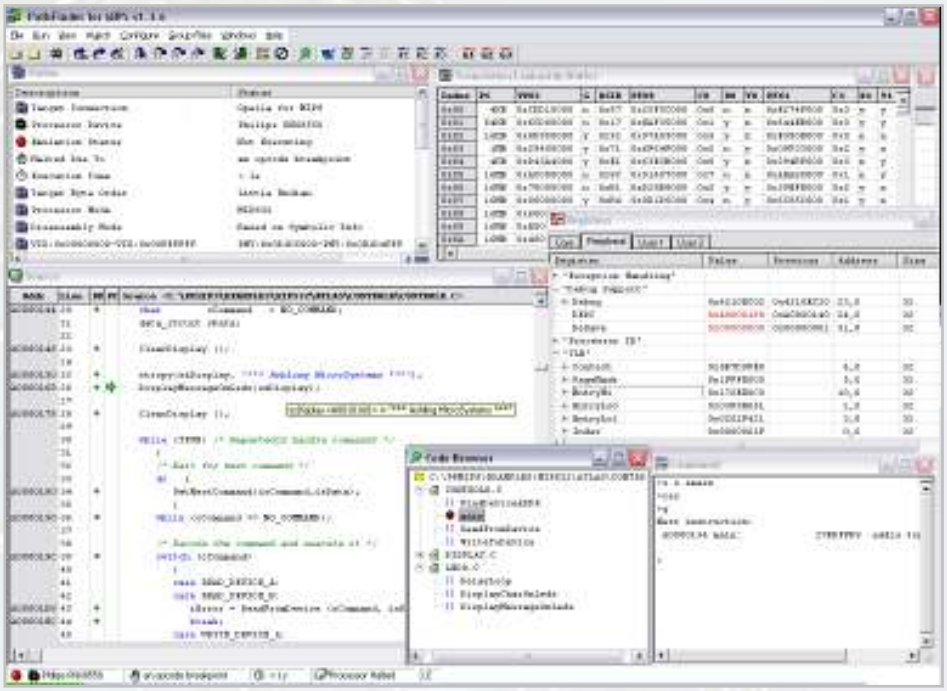
PathFinder is Ashling's Source-Level Debugger for MIPS™-core devices, with multiple user-configurable windows and intuitive operation.

Full target debug control is supported, including program download, go/halt/step and setting/clearing of breakpoints. Variable, target memory and registers may also be viewed and modified.

A built-in macro language allows automation of repetitive tasks.

Target flash programming support for a broad range of devices is also provided.

Compiler support:
All popular MIPS™ C/C++ compilers are supported including GNU GCC, Green Hills Software and WRS/Diab Data and all other ELF/DWARF compliant compilers. See the separate PF-MIPS datasheet



GDB-Server-MIPS

Ashling's **GDB-Server-MIPS** software package allows Ashling's Target Debug Probes to be used with the GNU GDB open-source debugger. The Ashling GNU GDB Server is available for Windows and Linux (x86 based) hosts and supports GNU GDB and all Eclipse CDT based debuggers (e.g. MontaVista Devrocket).

AsIDE Integrated Development Environment for MIPS™ development

AsIDE is Ashling's Integrated Development Environment for MIPS™ application development, based on the open-source Eclipse and GNU GCC compiler tools. See the separate AsIDE-MIPS Datasheet.

Order Codes

Product	Order Code
Opella-XD for MIPS Debug Probe. Includes USB 2.0 cable, documentation and diagnostic software	Opella-XD-MIPS
14-pin Target Probe cable with 0.1"-pitch IDC connector for EJTAG versions 2.5 – 4.10. Supports target voltages 0.9V to 3.3V	TPAOP-MIPS14
Adapter with 20-pin 0.05"-pitch IDC connector for EJTAG versions 1.5x – 2.0x. Used with TPAOP-MIPS14 or TPAOP-5V-MIPS14 Target Probes	AD-EJTAG20
PathFinder for MIPS Source Debugger software for Windows hosts; supports all popular MIPS compilers.	PF-MIPS
GDB-Server for GNU GDB MIPS. Connects GNU GDB open-source debugger (Windows and Linux hosts) to Opella-XD Debug Probe.	GDB-Server-MIPS
AsIDE for MIPS: Integrated Development Environment, programmers text editor, GNU GCC MIPS Compiler/Assembler/Linker	ASIDE-MIPS
Ribbon cable assembly for use with TPAOP-MIPS14. Useful for target systems with restricted access	WC0078

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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: ashling.sales@nestgroup.net