Sophia systems™

Product Brief

Version 2.04-E1

Cortex & ARM series: EJ-Debug ETM + JTAG Emulator

- Supports Cortex®, ARM11®, ARM9TDMI® ARM7TDMI®
- ARM®/Thumb® state debugging supported, etc. (Thumb, Thumb2, Thumb2EE, UFP, SIMD, etc.)
- Set hardware breakpoints on address and status
- Unlimited software breakpoints
- Clear, read and program FLASH
- 512 K-step ETM trace including ETB
- Available ETM trace up to 200MHz clock
- 1.8V up to 3.6V target voltage support
- Perfect for field debugging or maintenance.
  - USB bus powered- No AC adapter required
  - Pocket sized, 86x101x23mm
- JTAG pod button runs User macro scripts
  - Perfect for hardware test, small run programming and automatic field upgrades
- Fast USB PC interface.
- EJ-Debug includes WATCHPOINT® for Windows®

* Multi-core debugging available as an optional feature.

Specifications

Target CPU	● Cortex, ARM11, ARM9, ARM7 ● TI :CORTEX A8 (**OMAP**[3410, 3420, 3430, 3440, 3503, 3515, 3525, 3530]) :ARM1136 (**OMAP**[2420, 2430, 2431]) :ARM926 (**OMAP**[17xx, 16xx, 15xx, 59xx, 1610, 1611, 1612, 1621, 1710, 5912], **TMS320DM**[350, 355, 6446]) :ARM7 (**TMS**[320, 470, etc], **OMAP**[DM270, 850, 7xx]) ● FREESCALE :ARM1136 (i.MX31, i.MX31L) :ARM926 (i.MX21, i.MX21S, i.MX27) :ARM920 (i.MX1, iMXL, i.MXS) ● NXP :ARM922T (LH7A400)
Clock	Maximum CPU clock
Target Vcc	Target Vcc from +1.8 V to 3.6 V
Memory & I/O	Entire space is available to the User.
Interrupts	Both internal and external interrupts are available to the User.
Breakpoints and Break Options	Hardware breakpoints: Per Cortex cpu's capabilities. 2 hardware breakpoints in (ARM7 and ARM9)* Instruction execution address, memory access, data can be specified. 7 hardware breakpoints(ARM11): Instruction execution address(3 points), memory access(2 points), others(2 points) Unlimited software breakpoints Other break options: Forced break from Debug Monitor *ARM7&9, Step Over, Step Out, &Run to Cursor functions use 1 core hardware breakpoint.
ETM Trace Embedded Trace Macro cell, + ETB	200Mhz clock support. Contact Sophia Systems for latest SPEED upgrades. 512 K-step trace memory The following conditions can be specified: Set area start and stop trace triggers, Time stamp capability. Includes ETB JTAG capability as an alternative trace method.
Flash Memory	1. JTAG target FLASH read, test, clear and programming functions. Direct download. 2. High-speed download using the target's memory resources.

Configuration

Hardware

The EJ-Debug ETM for Cortex & ARM system consists of a JTAG pod with a USB to PC interface.
This JTAG emulator is for Cortex & ARM cpu types.
Respond by history column display.
Enhance work space of Debug, respond docking windows.
Possible to set individual details of CPU
CPU Equipped with automatic detecting function (JTAG Selector)

Software

WATCHPOINT® high-level language debugger for Windows® XP/2000/Vista*, is included with the EJ-Debug hardware unit.

Media

CD-ROM

Supported Tool Chains

WATCHPOINT supports the following compilers and OS*

Compilers:

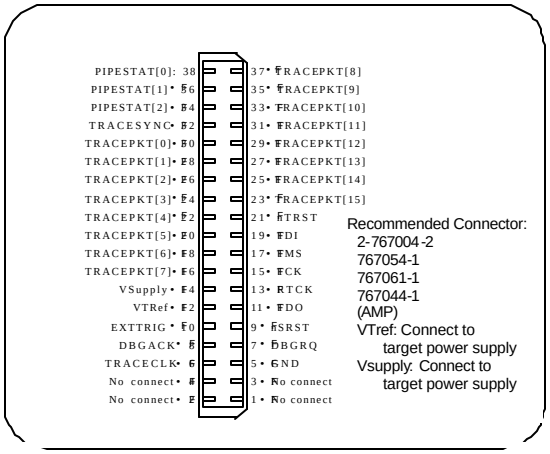
TI	Code Composer Studio®
ARM	ADS, SDT, RVCT
Metaware	High C/C++/EC++ for ARM
Green Hills	GHS
GAIO	XCC-V
GNU	
IAR:	EWARM

Supported OS:

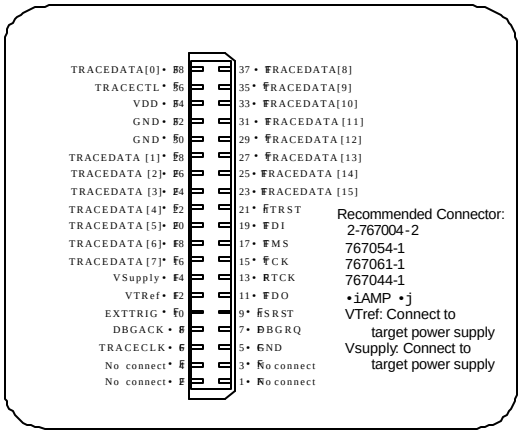
Linux	Windows CE™	Symbian OS
NORTi	G-OS	PrKERNEL
VxWorks	iTRON	L4 µ-kernel

* Please contact Sophia Systems for latest tool chain info.

Target JTAG Connections

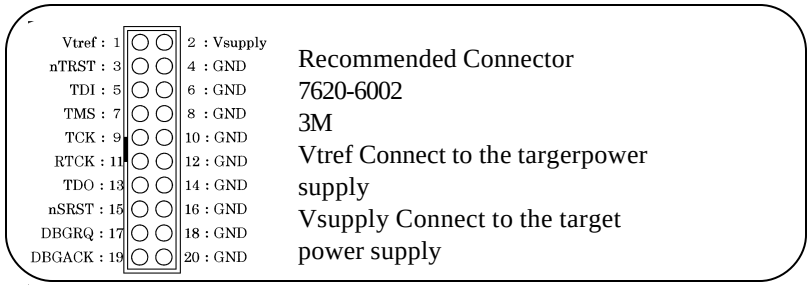


Single ETM Target connector pins for ARM7/9 - Top View



Single ETM connector pins for ARM11, Cortex – Top View

JTAG Connector pins-Top View



Ordering Information

Part No.	Description
EJD7221E	JTAG Emulator, EJ-Debug ETM for Cortex and ARM7/9/11 series with USB host interface. Includes WATCHPOINT® debugger for Windows®XP/2000, Vista*

System requirements for WATCHPOINT® Debugger:

OS	Memory	Hard Disk
Windows XP/2000	64 Mbytes	25 Mbytes for installation
Windows Vista	512 Mbytes	25 Mbytes for installation

Notes: * Vista (32-bit version): driver software update is required.
*** Vista (64-bit version): contact Sophia Systems for WATCHPOINT updates.**
*** XP (64-bit version): driver software update is required.**

Please contact your local Rep/Distributor.

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