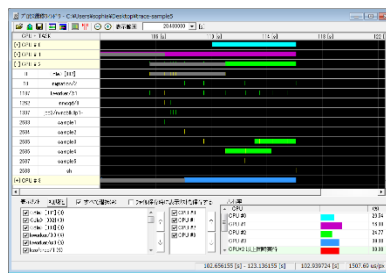
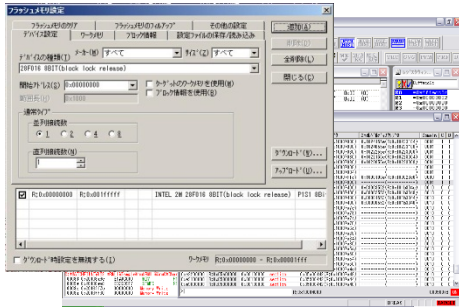




WATCHPOINT Debugger for EJ-SCT ARM / ARM Multi Core



Process transitions window

This software is to be used with the JTAG emulator "EJ-SCT"



- Compact (70mm × 108mm × 17mm)
- USB bus-powered when using as a debugger or a writer connecting to PC

Features

- Writes to on-board and CPU internal flash memory
- Usable as a stand-alone writer without PC
- Writes data by one-touch PLAY button on the unit
- Outputs signals of script execution start and execution end state by external terminals
- Usable as a device for automatic test and upgrade of trial and mass produced products
- Supports ARM7, ARM9, ARM11 and Cortex series
- Supports multiple CPUs in one unit ※1 ※2
- Supports SWD/SWV ※4
- Supports ARM/Thumb state debug
- Supports semi-hosting function
- Supports Linux Debug
 - AMP/SMP Linux debug ※1
 - Boot loader debug
 - Linux kernel driver debug
 - Linux application debug
 - Graphic display of Process transitions and CPU status
- RTOS Task transitions graphic display
- Docking of windows
- Supports ETB as an option
- Supports C/C++ languages

Specifications

Supported CPU	ARM7 core series (ARM7TDMI, ARM7TDMI-S, ARM710T, ARM720T, ARM740T, etc.) ARM9 core series (ARM9TDMI, ARM9TDMI-S, ARM910T, ARM920T, ARM940T ARM9E, ARM946E, ARM966E, ARM922, ARM925, ARM926, etc.) ARM11 core series (ARM1136, ARM1176, etc.), Cortex core series (A15, A9 MPCore, A8, R4, M0/M3/M4)
User power	VCC 0.8~5.0V
Memory space	Entire space is available to user
Interrupts	All interrupts are available to user
Break	The following conditions can be set. - Hardware Breakpoints ARM7/ARM9 core : Max. 2 points ※3 on instruction execution address, memory access or data ARM11 core : Max. 7 points 3 on instruction execution address, 2 on memory access and 2 on others Cortex core (A15) : 5 on instruction execution address and 4 on memory access (A8/A9 MPCore) : 5 on instruction execution address and 2 on memory access (R4) : 7 on instruction execution address and 8 on memory access (M0) : 4 on instruction execution address (M3/M4) : 5 on instruction execution address - Software Breakpoints : Unlimited software breakpoints can be set for RAM and Flash memory - Other break : Forced break from debugger
Trace	For ETB capability : Optional WATCHPOINT add-on software is available.
SWD / SWV※4	See the reverse side
Flash memory download	It is possible to download a user program directly to flash memory on target board by debugger

※1 This function is supported only by WATCHPOINT Debugger for EJ-SCT ARM Multi Core.

※2 Up to 10 CPUs can be debugged simultaneously, but the number may be fewer than 10 depending on the CPU internal structure and PC environment.

※3 When one of the following functions is in use as for ARM7/ARM9 core, release one hardware breakpoint.

[Software breakpoint, PASS step, Step out, or COME]

※4 SWD is supported by Cortex-A/R/M series. SWV is supported only by Cortex-M series.

Configuration



■CD-ROM (WATCHPOINT)
•This debugger supports Cortex core, ARM7 core, ARM9 core and ARM 11 core CPUs including their licensees and cannot be used for software development of other CPUs.



■JTAG CABLE types
SCP7500 : SCP 20to20
SCP7200 : SCP CortexMx-PB-HF10-JCB
SCP7300 : SCP CortexMx-PB-HF20-JCB
VK0019 : TI-ARM exclusive JTAG cable

Supported Languages :

In order to debug high-level languages by WATCHPOINT, the debug information for user program is needed. The following C compilers and assemblers output the most suitable debug information.

The output debug information may vary depending on the version of the compilers and compiler options. Contact us for the operation confirmation.

Maker	Compiler, Assembler
ARM	MDK-ARM, DS-5
IAR	EWARM
GreenHills	GHS
GAIO	XCC-V
GNU	GCC
Metaware	High C/C++/EC++ for ARM

Supported OS :

The OS below may not be supported depending on the version of the language. Also optional software may be required to support the OS. Contact us for more detail.

OS		
μ-T-Kernel/Cortex-M3,M4	μT-REALOS/M3	Keil RTX/Cortex-M3
UDEOS4/Cortex-M3	μC3/Standard	TOPPERS/JSP
G-OS	NORTI4	Thread X/Cortex-M3
Other ITRON OS	Linux	L4 μ-kernel
Windows CE	VxWorks	Symbian OS

Target Connections

JTAG Header Connector Pin Assignment(Top View)

0.1 inch 2 × 10 Connector

VTRef	1	2	VSupply
NC (nTRST)	3	4	GND
NC (TDI)	5	6	GND
SWDIO (TMS)	7	8	GND
SWCLK (TCK)	9	10	GND
NC (RTCK)	11	12	GND
SWO (TDO)	13	14	GND
nSRST	15	16	GND
DBGREQ	17	18	GND
DBGACK	19	20	GND

Recommended connector: 7620-6002 (3M)
VTRef: Connect to target power supply
Vsupply: Connect to target power supply

0.05 inch 2 × 5 Connector

VTRef	1	2	SWDIO / TMS
GND	3	4	SWCLK / TCK
GND	5	6	SWO / TDO
KEY	7	8	NC/EXTb / TDI
GNDDetect	9	10	nRESET

Recommended connector :
SHF-105-01-L-D-** (SAMTEC)
VTRef : Connect to target power supply
Option cable: SCP7200
* SCP7200 is required when half pitch 10 pin connector is mounted on the target board.

0.05 inch 2 × 10 Connector

VTRef	1	2	SWDIO / TMS
GND	3	4	SWCLK / TCK
GND	5	6	SWO/EXTb/TRACECTL / TDO
KEY	7	8	NC/EXTb / TDI
GNDDetect	9	10	nRESET
GND	11	12	TRACELCK
GND	13	14	TRACEDATA[0]
GND	15	16	TRACEDATA[1]
GND	17	18	TRACEDATA[2]
GND	19	20	TRACEDATA[3]

Recommended connector :
SHF-110-01-L-D-** (SAMTEC)
VTRef : Connect to target power supply
Option cable : SCP7300
* SCP7300 is required when half pitch 20 pin connector is mounted on the target board.

SWD (Serial Wire Debug) interface is supported.
SWV (Serial Wire Viewer) is supported. It is possible to view the values of variables and event information without break during execution.

About WATCHPOINT Software License

The SSS key is required to use this product. The SSS key is written on the SSS (Sophia Support Service) registration certificate.
Multiple types of WATCHPOINT licenses can be assigned (related) to one JTAG emulator.
* Once a WATCHPOINT license is assigned to a JTAG emulator, you will be able to use the WATCHPOINT license only with the related JTAG emulator. When you wish to use with other JTAG emulator you need to purchase another WATCHPOINT software.

Ordering Information

To be prepared by customer		Items you need to purchase from us to build standard debugging system			Options
Host PC * 1	Connection to PC	JTAG Emulator Hardware & Software	Support service	JTAG cable (Select at least one cable to fit the target connector)	Software
Windows PC	USB2.0/1.1	SCD001 : EJ-SCT SCM0790E : WP DBG for EJS ARM SCM0791E : WP DBG for EJS ARM MC	SSS010 : Sophia Support Service	SCP7500 : SCP 20to20 SCP7200 : SCP CortexMx-PB-HF10-JCB SCP7300 : SCP CortexMx-PB-HF20-JCB VK0019 : TI-ARM exclusive JTAG cable	U4A401 : WP4ARMEtB * Required for ETB trace capability

Items in the box surrounded by bold lines ☐ are required to build a standard debugging system.
The JTAG emulator is served as the hardware key to use the debugger software license.

(Ver.141205)

*1 Host PC OS : Windows Vista/7
Minimum memory requirement : The amount of memory recommended for each OS by OS vendor.
HDD: At least 500MB of free hard disk space when installing.
• The names of products and services are trademarks or registered trademarks of their respective owners.
• Specifications and configurations are subject to change without notice.