

## EJ-Extreme for SH7206 In-Circuit Emulator



- ❑ Supports Renesas Technology 's SH7206
- ❑ Supports SH-2A extension instruction
- ❑ Sophia's special connector provides On-chip debugging
- ❑ Supports H-UDI, AUD connection as well as Full ICE connection
- ❑ View/modify internal peripheral register
- ❑ 10 hardware breakpoints, unlimited software breakpoints
- ❑ Download to external Flash memory
- ❑ 8 Mbytes emulation memory can be allocated
- ❑ Real-time bus trace capability
- ❑ Software Performance measurement
- ❑ Watchpoint®, a powerful high-level language debugger for Windows®98SE/Me/NT/2000/XP, provides common user interface for all Sophia Systems emulators
- ❑ Supports C++(Renesas Technology SHC), Green Hills, GAIO C compiler
- ❑ High-speed host I/F supporting USB2.0 high-speed mode
- ❑ USB and LAN host interfaces supported for high-speed communication with each PC<sup>\*1</sup>

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All configurations are subject to change without notice.

## Specifications

<b>Target CPU</b>	SH7206(R5S72060)
<b>Package</b>	Supports Sophia's special connector and QFP176
<b>CPU Clock</b>	Maximum internal clock speed: 200 MHz
<b>Target Vcc</b>	I/O=3.3V Internal=1.2V
<b>Memory and I/O</b>	Entire space is available to user
<b>Interrupts</b>	Both internal and external interrupts are available for real-time CPU execution
<b>Breakpoints and Break options</b>	Execution address break options <ul style="list-style-type: none"> <li>• Max 10 hardware breakpoints<sup>*2</sup></li> <li>• Unlimited software breakpoints<sup>*3</sup></li> </ul> Other break options <ul style="list-style-type: none"> <li>• Forced break from Debug Monitor</li> <li>• Bus count capability(1 ch)</li> <li>• Trace End</li> <li>• Sequential Break</li> <li>• Write-protect error(only for emulation RAM)</li> </ul>
<b>ICE Environment Settings</b>	The following can be switched by the key operation. <ul style="list-style-type: none"> <li>- Setup MD pin</li> <li>- The signals from the following user system can be masked: NMI, STANBY, RESET</li> </ul>
<b>Reset</b>	Reset the MCU during program execution
<b>Flash Memory</b>	Download to flash memory on the target system
<b>Emulation Memory</b>	8 Mbytes emulation memory available as standard

<b>Real-time Trace</b>	<b>Trace Memory Capability</b> 16KB(internal), 512KB(AUD branch trace) <b>Trace Data</b> address, data, status, branch information <b>Trace Modes:</b> <b>Free run-</b> Continuously records Trace data <b>All trigger:</b> From starting trigger until RAM is FULL <b>Specify Area-</b> <b>Sequential-</b> Triggers on sequential levels <b>Sampling-</b> Records specific trigger cycles <b>Trigger Point Conditions:</b> <b>Address:</b> Specifies a trigger address <b>Data:</b> Specifies a trigger data value <b>Status:</b> Specify CPU signals, external trigger
<b>CPA capability</b>	<b>Performance measurement</b> Count of each event, time measurement <b>Profile measurement</b> Measurement of the access rate in the specified area
<b>Flash memory</b>	Download to the Flash memory in the target system
<b>RAM monitor</b>	Monitoring or tuning of internal RAM monitor

\*1 = The operation check is required for some PCs.

\*2 = It is exclusively used with other capabilities and the trigger condition.

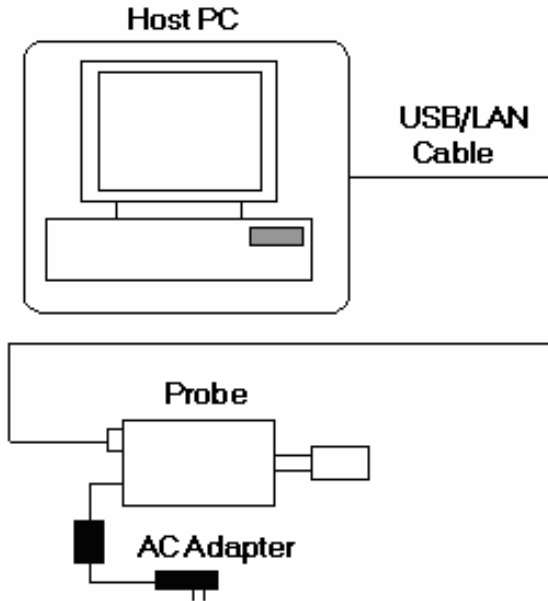
\*3 = Not valid for ROM/FLASH ROM

# Configuration

The EJ-Extreme is the latest state of the art emulator, which connects directly to your PC/AT or notebook computer and provides a high level of software debugging for embedded system development.

## Hardware

The EJ-Extreme SH7206 Emulation System\*<sup>1</sup> consists of the EJ-Extreme SH7206 Probe Set with USB/LAN host interface.



EJ-Extreme for SH7206 ICE System

## Software

Watchpoint®, a high-level language debugger for Windows®98SE/Me/NT/2000/XP, is included with the SH7206 Probe Set.

**Media:**  
CD-ROM

### Supported Tool Chains:

Watchpoint supports the following language and RTOS\*<sup>2</sup>:

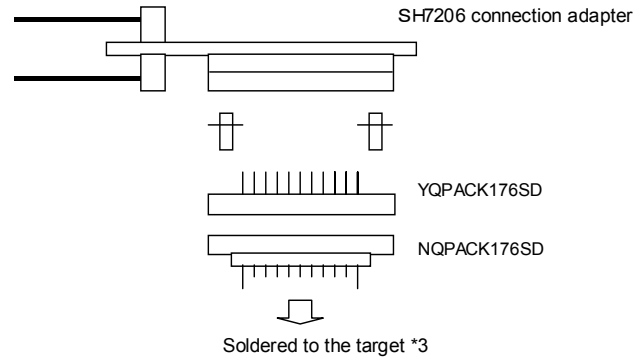
#### Supported language:

Renasas	SHC
Green Hills	GreenHills
GAIO	XCC-V
GNU	

#### Supported RTOS:

HI-SH7	HI7000	PrKERNEL
NORTi3	NORTi4	G-OS

## Target Connections



# Ordering Information

Part No.	Description
AK40010E	Probe Set, EJ-Extreme SH-2A-E with USB/LAN interface, and Watchpoint® SH7206 debugger

## Probe End Adapters

CPU	Package	Probe End Adapter Set
SH7206* <sup>4</sup>	QFP176	CS2334B: YQPACK176SD CS2334C: NQPACK176SD CS2334H: HQPACK176SD

> 1 set

Minimum Host System requirements for EJ-Extreme with Watchpoint Debugger:

**OS:** Windows98SE/Me/NT/2000/XP      **Memory:** 32 MB (64 MB recommended)      **Hard Disk:** 20MB

\*<sup>1</sup>=EJ-Extreme for SH7206 ICE system is not available for other CPUs except for SH7206.

\*<sup>2</sup>=Contact Sophia Systems about the supported compiler or its version.

\*<sup>3</sup>=For some adapters, guide holes on the target are recommended in order to better position the adapter with the target to be soldered.

\*<sup>4</sup>=SH7206 connection adapter is included as standard.



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