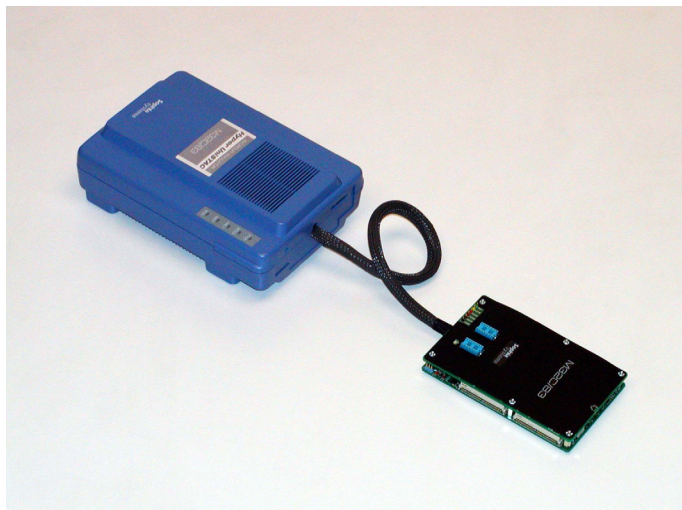


# HyperSTAC™ M32C/83 In-Circuit Emulator



- Supports Renesas Technology M32C/81, 82 and 83 microcontrollers
- Real-time execution with 0 wait state up to 30 MHz in target system
- Optional probe end adapters are available to support different MCU packages
- Internal access trace capability
- Unlimited software breakpoints
- Flash ROM download capability
- View/modify internal peripheral register
- USB and LAN host interfaces supported for high-speed communication with host computer
- Watchpoint®, a powerful high-level language debugger for Windows®, provides common user interface for all Sophia Systems emulators  
(USB: Windows98/Me/2000/XP)  
(TCP/IP: Windows98/Me/NT/2000/XP)
- IBM PC/AT or compatible, NEC PC98, and Notebook PC

## Specifications

<b>Target CPU</b>	M32C/81, 82, 83
<b>Emulator CPU</b>	M30835FJGP
<b>Memory and I/O</b>	Minimal space is required for monitor area
<b>Packages</b>	100P6S-A (100-pin, 0.65mm) 100P6Q-A (100-pin, 0.5mm) 144P6Q-A (144-pin, 0.5mm)
<b>Interrupts</b>	Both internal and external interrupts are available for real-time MCU execution.
<b>CPU Clock</b>	Maximum 30 MHz
<b>Target Voltage</b>	5V to 3.3V
<b>Breakpoints and Break options</b>	Execution address break options: <ul style="list-style-type: none"> <li>• 3 hardware breakpoints (execution address break)</li> <li>• Unlimited software breakpoints (Not valid for ROM)</li> </ul> Other break options: <ul style="list-style-type: none"> <li>• Forced break from Debug Monitor</li> <li>• Break on Write-protect error</li> <li>• Break on Access-protect error</li> <li>• Break on Trace-End</li> </ul>
<b>Reset</b>	Reset the MCU during program execution
<b>ICE Environment Setting</b>	Enable/disable bus cycle time-out Enable/disable target control signals: RES-, NMI
<b>Emulation Memory</b>	Internal ROM 512K, internal RAM (using CPU internal resources), 4 Mbytes SRAM is available for emulation memory as standard

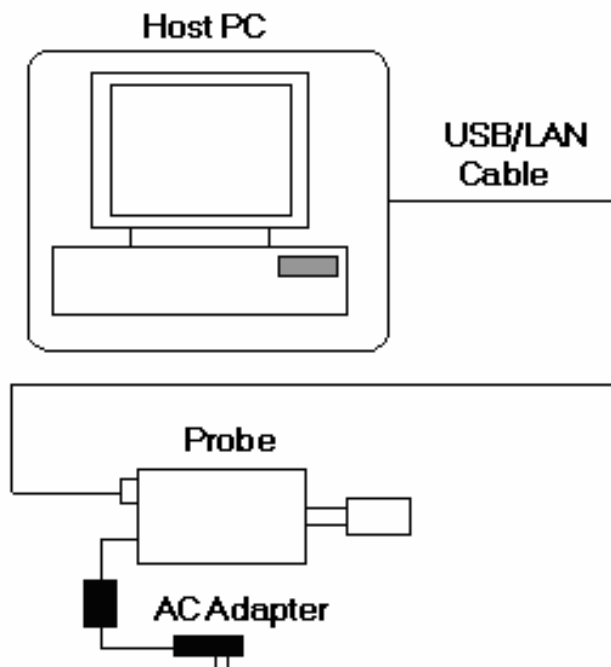
<b>Real-time Trace</b>	-64K clock cycles branch trace storage capacity -Store trace address, data, status, external control signal <b>Real-time Trace Mode:</b> <b>Free run-</b> Continuously records Trace data <b>And-</b> Triggers when all of the points are satisfied (any sequence) <b>Or-</b> Triggers when one of the points is satisfied. <b>Sequential-</b> Triggers on sequential levels <b>Sampling-</b> Records specific trigger cycles <b>Trigger Point Conditions:</b> The following conditions can be specified when defining trigger points: <b>Address:</b> Specify a memory address or address range. (Maskable) <b>Data:</b> Specify a data value (Maskable) <b>CPU Status:</b> Specify (CPU signals, External trigger).
<b>Flash Memory</b>	Download to flash memory on the target system
<b>Bus Monitor</b>	Monitor a specific block of memory data bus in real-time
<b>Coverage Performance Analyzer</b>	The following measurements can be performed <b>Profile:</b> Measures the frequency of the program cycle, or the module cycle within the respected address spaces. <b>Coverage:</b> Measures the ratio of instruction execution, access data address spaces. <b>Performance:</b> Measures the time of the program execution cycles, the function execution time.

# Configuration

The HyperSTAC 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 HyperSTAC M32C/83 Emulation System consists of the M32C/83 Probe Set and with USB host interface or LAN interface as an option.



## Software

**Watchpoint®**, a high-level language debugger for Windows®, is included with the M32C/83 Probe Set.

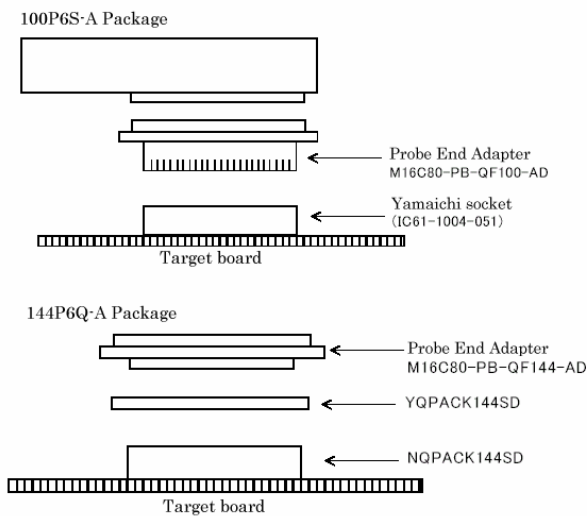
**Media:** CD-ROM

### Supported Tool Chains:

Watchpoint supports the following compiler and assemblers:

- Renesas M32C/80 series compiler

## Target Connection



## Ordering Information

Part No.	Description
HY65000E	Probe Set, HyperSTAC M32C/83 with USB interface, and Watchpoint® M32C/83 debugger
HY65001E	Probe Set, HyperSTAC M32C/83 with USB & LAN interface, and Watchpoint® M32C/83 debugger
<b>Option</b>	
CS2242E	Extension Cable SH704x

### Probe End Adapters

Support Package	Part Number	Description
100P6S-A (100-pin, 0.65mm)	<b>CS2253A</b>	M16C80-PB-QF100-AD
	<b>Yamaichi socket</b>	IC61-1004-051
100P6Q-A (100-pin, 0.5mm)	<b>CS2650A</b>	M16C62P-PB-QF100S-AD
	<b>CS2231B</b>	YQPACK100SD
	<b>CS2231C</b>	NQPACK100SD
144P6Q-A (144-pin, 0.5mm)	<b>CS2253D</b>	M16C80-PB-QF144-AD
	<b>CS2246B</b>	YQPACK144SD
	<b>CS2246C</b>	NQPACK144SD

Minimum Host System requirements for HyperSTAC/Watchpoint M16C/62P Debugger:

**OS:** <USB>Windows98/Me/2000/XP  
<TCP/IP>Windows98/Me/NT/2000/XP  
**Memory:** 32 MB (64 MB recommended)  
**Hard Disk:** 20 MB

All configurations are subject to change without notice. Watchpoint is a registered trademark of Sophia Systems Co., Ltd. HyperSTAC is a trademark of Sophia Systems Co., Ltd. All other brands and product names are trademarks or registered trademarks of their respective companies. Windows98/Me/NT/2000/XP is a registered trademark of Microsoft Corporation.