



Embedded PC HiCO.SH4 based on the Renesas SuperH SH4

Overview:

- An embedded PC based on high performance Renesas Super SH4R Processor: >250MIPS
- Low power consumption - only 2 Watts with graphics, hence no heat sink required
- HiCO.SH4-core module - provides the optimum price-/performance ratio at high volume
- HiCO.SH4-base - additional PC/104 carrier module provides flexible low cost adaptation for low volumes and prototypes

Main features:

- RISC Processor SH4 running at 240 MHz
- On board memory: 16 MB / 64 MB
- VGA graphic controller with 1.2 MB video memory and CRT/LCD support
- Ethernet interface
- USB, PS/2 keyboard/mouse, audio and serial interfaces
- Standard ISA bus interface and PC/104 connector on carrier module
- Compact Flash socket on carrier module

Order Description:

HiCO.SH4-core	CORE Module
HiCO.SH4-base	PC/104 Carrier Module
HiCO.SH4-con	Adapter Board
HiCO.SH4-STCE	Starter Kit for Windows CE
HiCO.SH4-STQNX	Starter Kit for QNX



Main Office Germany

Greschbachstraße 12
D-76229 Karlsruhe
Tel. +49 (721) 627 25-0
Fax +49 (721) 627 25-19
eMail: sales@emtrion.com
Visit us on the internet!
www.emtrion.com

A PC-System without an x86 Processor Renesas SH4 based PC/104 Module

Background

Emtrion has developed an embedded PC in PC/104 format that is based on the popular SH4 processor from the Renesas SuperH family.

This is the same processor that is used in products such as the Sega Dreamcast game console and the HP Jornada electronic organizer. The high-performance low - power embedded PC delivers state of the art Pocket-PC technology with high levels of quality and reliability, making it ideal for industrial applications.

Furthermore, real-time operating systems such as Microsoft Windows CE are readily available for the embedded PC.

Modular Concept

The HiCO.SH4 provides high performance processing at an extremely low level of power consumption - 250MIPS at 2 Watts! The system comprises of a CORE module and a PC/104 carrier board. The CORE module can be integrated on its own at minimum cost into high volume application specific products. Alternatively, for low to medium volumes, the CORE module can be mounted to the PC/104 carrier board, which allows adaptation to take place without the risk and cost of redesigning the CORE.

The HiCO.SH4-con module offers standard PC sockets for easy connectivity to the outside world. Not only does this aid prototyping in the lab, it can also be integrated into full-scale production units.

The CORE Module HiCO.SH4-core comprises of:

- SuperH SH4R Processor running at 240MHz (HD6417750R)
- Memory: 16 MB Flash / 64 MB RAM
- USB, PS/2 keyboard/mouse, AC97 audio-codec and serial interfaces
- VGA graphics controller with 1.2 MB memory for LCD/CRT
- Ethernet interface
- Bus interface compliant with ISA standard

Fine-pitch connectors for mounting on any desired carrier board (e.g. HiCO.SH4-base)

The carrier module HiCO.SH4-base adapts the CORE to a PC/104 module and provides:

- PC/104 interface for expansion
- Compact Flash socket
- Connector for diverse LCD displays
- Audio interface

The HiCO.SH4-con adapter module provides connectivity to standard PC components via the following interfaces:

- Analog Monitor (CRT)
- Ethernet 10Base-T
- USB Host
- PS/2 for Keyboard and Mouse
- Serial RS232



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Software's Already Available

The use of standard real-time operating systems and development environments eases application development. Some of the software solutions available for the Renesas SuperH processor family are:

- Microsoft Windows CE
- QNX
- Linux / Embedded Linux
- GNU Compiler/Debugger
- Greenhills

Emtrion delivers an optionally pre-installed version of Microsoft Windows CE, allowing developers to immediately get to work on creating their own applications.

Get into it with a Starter Kit

For quick and easy setting up of the target system and the development environment, we recommend using our extensive starter kits for QNX or Windows CE and accessories. The popular Windows CE Starter Kit from emtrion

The kit comprises of a HiCO.SH4 system with a preinstalled and adapted Windows CE kernel and the Microsoft development environment for application development, which includes embedded Visual Tools and a version of Platform Builder together with useful accessories and excellent detailed documentation.

The preinstalled Windows CE kernel uses a bootloader that has been developed by emtrion and an OAL (OEM Adaptation Layer) that has been optimally adapted to the hardware. This results in industry attractive features such as boot times of only 2-3 seconds, CAN fieldbus support, system update on-the-fly (without the need to exchange hardware) and real-time interrupts and timer.



is available with the HiCO.SH4 embedded PC as the target platform.



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