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# PMC-HS Serial

## Quad Channel High Speed Serial PMC Module

### Application Information

The PMC-HS Serial provides four channels of high-speed serial data communications channels on a single-wide PMC module. It can be used in many data communications, LAN/WAN networking and telecommunications applications. A maximum data rate of 10 Mbit/sec is supported for synchronous protocols utilizing an external clock. Up to 2 Mbit/sec is supported for asynchronous protocols, with popular baud rates of up to 921.6K baud available using the standard 14.7456MHz oscillator in RS-422 interface mode. Each of the four channels is fully programmable to support many high performance serial communications protocols, such as asynchronous, monosync, bisync, HDLC, SDLC, LAPB, LAPD, ISDN, and PPP.

The PMC-HS Serial supports a wide selection of physical interfaces, configurable by software alone. Channels can be individually selected as RS-232, RS-422, EIA-449, EIA-530, or V.35. No hardware re-configuration is required. Seven signal pairs for each channel are available at the rear-panel P4 connector and the front panel I/O connector. An optional transition cable is available to interface the 68-pin front panel I/O connector to four DB25s.

A 14.7456 MHz standard oscillator provides standard asynchronous baud rates. In addition, a user-supplied oscillator location is available for custom baud rate generation. Interrupts are fully supported for each channel. Interrupts sources include transmission error, reception error, completions of transmit packets and completions of receive packets.

The module has a central receive FIFO and a central transmit FIFO, each 128 deep by 32 bits wide. Additionally, each channel has a local receive FIFO 17 deep by 32 wide, and a local transmit FIFO of 8 deep by 32 wide. Eight DMA controllers are available to enable the central FIFO to burst into shared memory. PMC-HS Serial must be plugged into a CPU slot that has bus mastering capability.

The PMC-HS Serial uses a high performance Siemens PEB20534 Serial Communication Controller with integral PCI bus interface.

A VxWorks 5.3 Driver is available for the PMC-HS Serial for asynchronous operation. A Windows NT 4.0 driver is available for synchronous HDLC operation.

### Features

- Four channels of high speed serial
- Maximum data rate of 10 Mbit/sec (synchronous) and 2 Mbit/sec (asynchronous)
- Asynchronous, monosync, bisync, HDLC, SDLC, LAPB, LAPD, ISDN, and PPP communication protocols supported
- RS-232, RS-422, EIA-449, EIA-530, or V.35 physical interfaces supported
- 306 x 32-bit total FIFO
- PMC module with front and rear panel I/O
- PCI bus master

## Specifications

Form Factor	PMC
PCI Interface	33 MHz, 32 bit, master/slave Bus mastering required
PMC Conformance	PCI Protocol and Electrical Rev 2.0 Specification.
PCI Interface/Serial Controller	Siemens PEB 20534
Number of Serial Channels	Four
Maximum Data Rate	Asynchronous: 2 Mbits/sec Synchronous: 10 Mbits/sec
Physical Levels Supported	RS-232, RS-422, EIA-449, EIA-530, V.35
Protocols Supported	Asynchronous UART, bisync, monosync, HDLC, SDLC, LAPB, LAPD, PPP, ISDN BRI
RS-422, EIA-449, EIA-530 Signals Supported	RxD+, RxD-, RxC+, RxC-, CTS+, CTS-, CD+, CD-, TxD+, TxD-, TxC+, TxC-, RTS+, RTS-
RS-232 Signals Supported	RxD, RxC, CTS, CD, TxD, TxC, RTS
V.35 Signals Supported	TxD+, TxD-, RxD+, RxD-, TxC+, TxC-, RxC+, RxC-, CTS, RTS, CD
FIFOs	Local Receive 17 x 32-bit, each channel Local Transmit 8 x 32-bit, each channel Central Receive 128 x 32-bit Central Transmit 128 x 32-bit
On-Board Oscillator	14.7456 MHz to support standard asynch baud rates. User- supplied oscillator location is available for custom baud rate generation.
DMA Controllers	Eight
Front panel I/O	68-pin high density female connector
Rear panel I/O	Via PMC P4
Dimensions	75.0 mm x 150.0 mm
Weight	0.085 kg (0.19 lb)
Power Requirements	+5.0 VDC (typical): 860 mA operating V.35 mode 640 mA operating EIA 422 mode 430 mA operating EIA-232 mode
Environmental	Operating temperature: 0 to 70°C Humidity: 5 to 95% non-condensing Storage: -40 to +85°C

## Ordering Information

PMC-HS-SERIAL	Quad Channel High Speed Serial PMC
EKPMC-HS-SERIAL	Engineering Kit for PMC-HS Serial. Contains: Printed hardware user manual Transition cable HD68 to quad DB25 male (C-HD68M-4D25M) DB25 to DB9 adaptor (A-D9M-D25F) Null modem (NULL-MODEM) Bill of materials Circuit schematic Assembly diagram Siemens PEB 20534 data sheets Linear Technology LTC1344A, LTC1543, LTC1544 data sheets
VD-PM-HSS	VxWorks 5.3 Asynchronous driver. Floppy disk containing: Driver source License agreement
ND-HSS-H	Windows NT driver for HS Serial, HDLC. Floppy disk containing: Installation program with: Driver executable Header file User manual in PDF Software license agreement Installation instructions

## Associated Products

P2-HSS2	Type II PC•MIP module with two High Speed Serial interfaces
C-HD68M-4D25M	Transition cable from HD68 male to four DB25 male. Connects PMC-HS Serial using standard pin assignments for EIA-232 and EIA-422
C-HD68M-HD68M	Transition cable from HD68 male to HD68 male. Connects PMC-HS Serial to terminal block IP-Term-HD68
IP-TERM-HD68	68-pin screw terminal block with HD68 female connector
A-D9M-D25F	DB25 to DB9 serial port adaptor
NULL-MODEM	DB25 serial port NULL modem adaptor



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