

PC/104 HighRel 6486DX4 100MHz cpuModules™

-40 to +85°C Industrial PC Compatible Embedded CPUs & Controllers

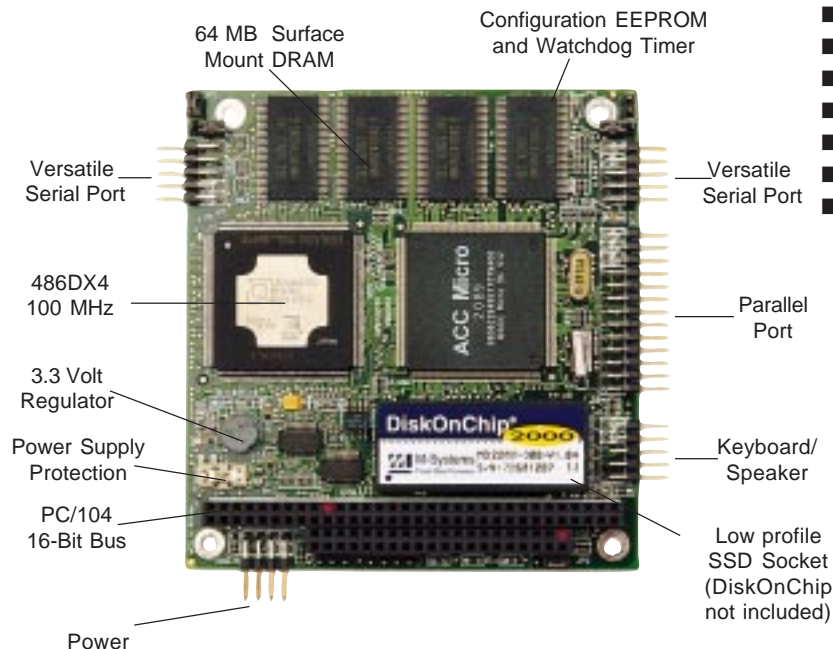
PC/104



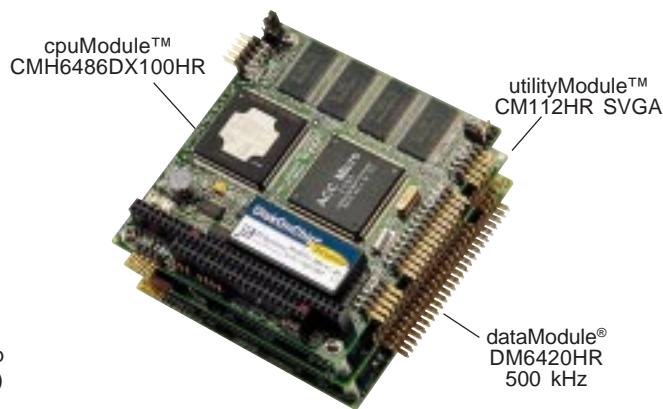
COMPLIANT

Features:

- -40 to +85°C Operation
- Intel 82527 CAN Controller (CMK)
- 1 or 2 SSD sockets
- Nonvolatile Configuration & Flash BIOS
- Software selectable RS-232/422/485 ports
- Virtual Device Mode
- Windows® CE Certified



CMH6486DX100HR cpuModule™
with 64 MB DRAM Shown



CMH6486DX100HR PC-AT
Embedded DAS System

RTD HighRel 100 MHz PC/104 cpuModules target installations operating under extreme environmental conditions, shock, and vibration. These 32-bit PC compatible embedded Single Board Computers and controllers are based on 486DX4 extended temperature range processors and have the power to run demanding applications at operating temperatures between -40 to +85°C with only a factory installed low-profile passive heatsink. Low power 486DX2 66 MHz based cpuModules are also available with 16, 32, or 64MB surface mount DRAM. Hard wired jumpers and special connectors installed on request.

CMH, CMi, CMV or CMK configurations feature programmable clock speed, one or two 32 pin Solid State Disk sockets, watchdog timer, two software selectable 16C550 RS-232/422/485 serial ports, bidirectional parallel port, keyboard port, speaker port, and power protection circuitry. Configurations differ in memory size, number of SSD sockets and availability of onboard floppy, IDE or isolated CAN bus controllers. ROM DOS is installed in the Fail Safe Boot ROM. Modules are Windows CE certified.

RTD's enhanced BIOS assures PC compatibility. BIOS enhancements include nonvolatile configuration, quick boot, virtual device & SSD support with Flash File system for Atmel Flash devices. Virtual device mode allows the operator to use

the keyboard, video, floppy, and hard disk on another PC compatible computer through the serial port of the CMH, CMV and CMK series cpuModules. The 1024-bit configuration EEPROM stores the system setup and reserves 256 bits for user applications.

Compare the HighRel 6486DX100HR series controllers to other RTD CPUs shown in the table below.

cpuModule™ Features	CMH6486DX100HR	CMH6486DX100HR	CMV6486DX100HR	CMK6486DX100HR	CMH6586DX133	CMH6586DX133	CMV6586DX133	CMK6586DX133	CMK6586DX133	CMC686GX233HR	CMR686GX233HR	CMH686GX233	CMV686GX233	CMK686GX233HR	CMH7686GX233
AT Expansion Bus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PCI Expansion Bus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CPU Clock Rate (MHz)	100	100	100	100	133	133	133	133	133	233	233	233	233	233	233
Programmable Clock	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Max Onboard Memory (MB)	64	32	32	32	64	32	32	32	32	128	256	128	256	128	128
SSD Sockets, 32 DIP	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1
Fail Safe Boot ROM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ROM-DOS Installed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SVGA Interface															
Isolated CAN Bus				✓						✓					
RS-232/422/485 Port	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Parallel Port	ECP	ECP	ECP	ECP	ECP	ECP	ECP	ECP	ECP	ECP	ECP	ECP	ECP	ECP	ECP
IDE & FDC Interface	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Keyboard Port	AT	AT	AT	AT	AT	AT	AT	AT	AT	AT	AT	AT	AT	AT	AT
RTD Enhanced Flash BIOS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nonvolatile Configuration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Virtual Device Mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Watchdog Timer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Real Time Clock	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE Certified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std Op Temp 0 to +70°C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std Op Temp -40 to +85°C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Power W (+5V typ)	5.3	5.3	5.3	5.9	6.2	6.2	6.2	6.6	6.8	7.5	7.5	7.9	7.9	7.5	7.9
Available in IDAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

HR postscript designates HighRel series with -40 to +85°C operating range.



For additional information:

Phone: 1 (814) 234-8087 ■ Fax: 1 (814) 234-5218

www.rtdusa.com ■ E-mail: sales@rtdusa.com

Real Time Devices USA, Inc.

"Accessing the Analog World"®

Select a CMH, CMi, CMV or CMK6486DX100 cpuModule depending on memory, Solid State Disk, IDE, floppy, or CAN bus requirements.

CMH6486DX100: 16, 32, or 64MB surface mount DRAM.

CMi6486DX100: 16 or 32MB surface mount DRAM, IDE and floppy disk controllers.

CMV6486DX100: 16 or 32MB surface mount DRAM and two SSD sockets.

CMK6486DX100: 16 or 32MB surface mount DRAM and on-board CAN bus controller.

HighRel CPU Specifications not shown in table

- 3.3 volt 100 MHz 486DX4 processors with internal math coprocessor and 16 KB internal cache
- Enhanced BIOS with Quick Boot virtual device support
- Virtual device support (CMH, CMV & CMK only)
- Each low profile 32-pin DIP SSD socket supports: 512 KB Flash, SRAM and NOVRAM; or 1 MB EPROM; DiskOnChip
- 1024-bit configuration EEPROM (256 user bits)
- 7 DMA, 15 interrupt, 3 timer/counter channels
- Software selectable 16C550 RS232/422/485 serial ports
- Bidirectional / ECP parallel port
- PC-AT compatible keyboard and speaker (0.1 W output) ports
- Intel 82527 CAN Controller. Isolated ISO11898/2/ CAN Interface. Isolation up to 750Vac-rms. 82C251 CAN transceiver
- Power requirements for 486DX66: reduce values shown in table for 100 MHz modules by 1.1 W @ 5 volts
- Operating Temp: -40 to +85°C; 90% humidity, non-condensing
- Storage Temperature: -65 to +125°C
- Size: 90mm L x 96mm W x 15mm H (3.6"L x 3.8"W x 0.6"H)
- Software programmable clock in BIOS setup of 30, 45, 60, 75 and 100 MHz; 20, 30, 40, 50 and 66 MHz for 486DX66 series

A Selection of RTD PC/104 dataModules®

dataModule® Features	DM5300	DM5408	DM5416	DM6210	DM6420HR	DM6430HR	DM7420HR	DM7520HR	DM5602	DM6604	DM620HR	DM6804	DM6810HR	DM6812HR	DM6816HR	DM6856HR	DM6858HR	DM6852
Bus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
XT Expansion Bus (PC/104)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AT Expansion Bus (PC/104)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PCI Expansion Bus (PC/104-Plus)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Analog Input	16	16	16	16	16	16	16	16										
Differential Inputs	8	8	8	8	8	8	8	8										
Max Throughput (kHz)	V/F	200	100	40	500	100	600	1250										
Max Resolution (bits)	18	12	16	12	12	16	12	12										
Input Ranges	4	3	1	3	3	1	3	3										
Programmable Gains	4	4	4	4	4	4	6	6										
Data Marker Inputs	4	4	4	3	3	3	3	3										
Conversions																		
Channel Scan/Burst/Multiburst	✓	✓	✓	✓	✓	✓	✓	✓										
Channel-Gain Table (Max)	1K	1K	1K	8K	8K	8K	8K	8K										
A/D Buffer Size (Max)	1K	1K	1K	8K	8K	8K	8K	8K										
Sample Counter	✓	✓	✓	✓	✓	✓	✓	✓										
DMA Transfer	✓	✓	✓	✓	✓	✓	✓	✓										
PCI Bus Master											✓							
Digital I/O	16	16	16	16	16	16	16	16	24	24	16	24	48	48	24	9	32	32
Bit Programmable I/O	8	8	8	8	8	8	8	8			8		48	24				
Input Sample Buffer (Max)				8K	8K	8K	8K	8K										
Optoisolated Inputs																	16	32
Optoisolated Outputs																	16	
Digital Interrupt Modes		2	2		2	2	2	2			2		2					
PWM Outputs															9			
User Timer/Counters	3	2	2	3	2	2	3	3			3	5	3	3	3			
External Trigger	✓	✓	✓	✓	✓	✓	✓	✓			✓							
Relay Outputs																		16
Analog Out	2	2	2	2	1	2	4	8	4									
Max Throughput (kHz)	100	100	100	100	100	200	100	100	200									
Resolution (bits)	12	12	16	12	16	12	12	12	12									
Output Ranges	4	3	1	3	1	4	4	4	4									
DA Buffer size/channel (Max)						8K			8K									
4-20 mA Current Loop									✓									
Std Op Temp 0 to +70°C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std Op Temp -40 to +85°C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Power W (+5V typ)	2.0	2.5	2.5	0.6	2.4	2.4	2.4	2.4	1.7	2.4	2.5	0.9	1.2	1.2	1.2	0.8	0.8	1.2
Available in IDAN				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

HR postscript designates HighRel series with -40 to +85°C operating range.



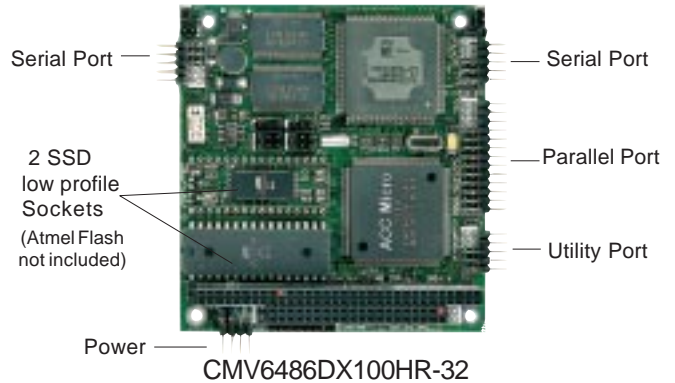
For additional information:

Phone: 1 (814) 234-8087 ■ Fax: 1 (814) 234-5218

486-2k0719

www.rtdusa.com ■ E-mail: sales@rtdusa.com

CMV Form Factor



PC/104 utilityModules™

SVGA modules support LCD, EL and plasma flat panels with on-board switched panel supplies and optional floppy and IDE interfaces. PCMCIA, IDE and SanDisk interfaces expand the solid state disk device. NE2000 Ethernet, CAN or Serial Network modules along with Isolated Power Supplies complete the array of RTD versatile utilityModules.

HighRel PC/104EZ™ IDAN System Modules

Use this revolutionary modular system to construct a rugged self-stacking Intelligent Data Acquisition Node. Machined aluminum frame mounted modules with integrated external I/O connectors assure field expansion without rewiring or redesigning the enclosure. -40 to +85°C operation is guaranteed when using IDAN system cpuModules, dataModules and utilityModules.



HighRel PC/104EZ™ IDAN Node and System Modules

Ordering Information and Prices

CMH6486DX100HR-16 -- 16 MB DRAM	\$ 645
CMH6486DX100HR-32 -- 32 MB DRAM	695
CMH6486DX100HR-64 -- 64 MB DRAM	795
CMi6486DX100HR-16 -- 16 MB DRAM with FDC & IDE	695
CMi6486DX100HR-32 -- 32 MB DRAM with FDC & IDE	745
CMV6486DX100HR-16 -- 16MB DRAM with 2 SSD sockets	695
CMV6486DX100HR-32 -- 32 MB DRAM with 2 SSD sockets	745
CMK6486100DXHR-16 -- 16MB DRAM with CAN controller	745
CMK6486DX100HR-32 -- 32MB DRAM with CAN controller	795
CM110HR -- SVGA/CRT, LCD, EL & plasma panels	295
CM112HR -- SVGA/CRT, LCD, EL & plasma panels with FDC & IDE	395
CM107HR -- FDC & IDE controllers	195
XK-CM10 / CM16 -- CMV & CMH / CMI cable kits	65/99
486DX66 Processors: reduce prices shown above for 100MHz modules by	20

All modules shipped with a stackthrough PC/104 bus connector

Consult website (www.rtdusa.com) for development kits & platforms

Real Time Devices USA, Inc.
 200 Innovation Blvd. • P.O. Box 906
 State College, PA 16804-0906 • USA
 Phone: 1 (814) 234-8087 • Fax: 1 (814) 234-5218

Real Time Devices Scandinavia Oy
 Lepolantie 14 • FIN-00660 Helsinki • Finland
 Phone: (358) 9 346-4538 • Fax: (358) 9 346-4539

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