

Overview:

The **VRM-CD1-X** is a powerful 6U (double size Eurocard) *CompactPCI*® CPU board equipped with the Intel® Pentium®4 Mobile Processor up to 2.2 GHz. The board is provided with the chipset 845G(V) (Brookdale®), which contains an embedded graphics controller. The DVI-1 interface allows for attachment of both, advanced (digital) and legacy (analog) flat panel displays and CRT monitors. The mobile 0.13µ processor (Northwood®) reduces the power consumption considerably, thus enabling a reliable passive heatsink for thermal discharge. Three USB ports (one of them 2.0 capable) allow for plug & play attachment of a variety of peripheral devices. For high speed networking up to 1000Mbps, the **VRM-CD1-X** is equipped with three independent Gigabit Ethernet controllers. The PICMG® 2.16 standard (Ethernet over CPCI backplane) is also supported. As mass storage interface, the **VRM-CD1-X** provides for an Ultra ATA/100 connector. In addition, a receptacle for ATA CompactFlash cards allows utilization of a silicon disk. The main memory is a SO-DIMM 200 form factor DDR-SDRAM module up to 1GB capacity. The PCI bridge allows for configuring of the **VRM-CD1-X** as a CompactPCI system slot controller, or peripheral slot board in multi-processor applications. Alternatively, either two PC MIP mezzanine module slots or one PMC card socket enable on-board expansion of the **VRM-CD1-X**. A local PXI controller is provided for measuring and testing applications. The Phoenix Bios is maintained by V Rose. So custom specific enhancements can be realized. The **VRM-CD1-X** is a high performance industrial CPU, suitable for stand-alone applications as well as large CPCI systems, up to cluster computing.

Features:

- Double size CompactPCI style Eurocard (160x233mm²), front panel width 4HP (20.3mm)
- Intel® Pentium® 4 Mobile Processor (Northwood® 0.13µ generation), 400MHz PSB, 512KB second level cache, clock rate 1.7GHz (1.3V/30W) or 2.2GHz (1.3V/35W)
- i845G(V) (Brookdale®) chipset consisting of:
 - 82845G(V) Graphics/Memory Controller Hub (GMCH)
 - 82801 I/O Controller Hub (ICH4)
 - 2 x 82802 Firmware Hub (FWH)
- 200-pin SO-DIMM socket (notebook style module), PC2100 DDR266-SDRAM, 1GB maximum capacity
- Analog monitor and digital flat-panel display support by DVI-1 connector (front panel), up to 2048 x 1536 pixel 16M colors 85Hz refresh rate, incorporates Panellink Digital technology (Silicon Image)
- Type A connector (front panel) USB 2.0, another two USB ports across rear I/O (J4)
- 3 independent 10/100/1000Mbps Gigabit Ethernet controllers, 82540 chip, 2xRJ45 connectors available from the front panel, 1x rear I/O according to PICMG®2.16 across J3
- LPC Super I/O controller on-board, COM1 (front panel), combined PS/2 keyboard and mouse port (front panel), COM2, parallel port, floppy disk interface (rear I/O across J4)
- Ultra ATA/100 44-pin connector (secondary IDE, master), CompactFlash socket for CFA ATA cards (secondary IDE, slave), Primary IDE port available across rear I/O (J4), Primary IDE port optionally available for on-board 2.5" hard disk mezzanine module (VRM-CD1-4)
- PCI eXtensions for Instrumentation Standard, Rev.2.0 (rear I/O across J2)
- Stuffed alternatively:
 - 1 slot for a PMC module, I/O from the front panel and across J5
 - 2 slots for PC MIP modules, I/O from front panel and across J5
 - On-board 2.5" hard disk module (primary IDE)
- Rear I/O: IDE, Floppy, USB2, USB3, LPT, COM2, GPIO (J4), Gigabit Ethernet (3), Mezzanine Rear I/O (J5), Rear I/O transition module available
- 64-bit, 33/66MHz PCI Bridge HINT HB6 (PLX), configurable as CompactPCI system slot controller, or peripheral slot board.
- Installing and removing the card without adversely effecting a running system, 'Full Hot Swap' implementation according to CompactPCI Hot Swap Specification PICMG®2.1 (for peripheral slot boards only)
- Phoenix BIOS 4.0 Rel. 6.0, 8/16Mbit Flash (Dual Firmware Hub)
- 88,000h MTBF
- Ambient Temperature: 0°C to +60°C (operating) / -40°C to +85°C (storage)
- Relative Humidity: 5% to 95% (non-condensing)
- Altitude: -300m to +3000m
- Shock: 15g 0.33ms, 6g 6ms
- Vibration: 1g 5-2000Hz
- Typical Calculating Performance: PC Mark2002 under Windows2000, CPU/MEM Score: 4132/3931 @ 1.7GHz | 5236/4152 @ 2.2GHz



(Subject to change)

Typical Power Consumption:

1.7GHz	3.3V	5V
Modest load (Win XP)	2.2A	0.9A
Full load (MaxPow80)	2.2A	5.4A
Full load (PCMark 2002)	2.9A	5.4A
2.2GHz	3.3A	5V
Modest load (WinXP)	2.2A	1.1A
Full load (MaxPow80)	2.2A	7.2A
Full load (PCMark 2002)	2.9A	7.2A
1.2GHz Battery Optimized Mode	3.3V	5V
Modest load (WinXP)	2.2A	0.7A
Full load (MaxPow80)	2.2A	3.2A
Full load (PCMark 2002)	2.9A	3.2A



Ordering Options:

- VRM-CD1-1:** 6U CPCI CPU card, 1.7GHz Mobile Northwood P4, 512MB DDR SDRAM, 3xUSB, 2xGigabit Ethernet, 1xPICMG 2.16 Backplane Ethernet, Ultra ATA/100 IDE, CompactFlash ATA slot, DVI-1 video out, KDB/mouse, COM1/2, floppy, 1xPMC mezzanine slot, CompactPCI system controller
- VRM-CD1-2:** Same as VRM-CD1-1, except 2 x PCMIP mezzanine slots
- VRM-CD1-3:** Same as VRM-CD1-1, except without PICMG 2.16 Backplane Ethernet (J3 not stuffed)
- VRM-CD1-4:** Same as VRM-CD1-1, with 2.5" hard disk mezzanine module
- VRM-CD1-A:** Similar to VRM-CD1-1, but configured as CompactPCI peripheral board (slave CPU), suitable for multi-processing applications
- VRM-CD1-B:** Similar to VRM-CD-2, but configured as CompactPCI peripheral board (slave CPU), suitable for multi-processing applications
- VRM-CD1-P22:** 2.2GHz processor option
- VRM-CD1-Z:** 1GB memory option
- VRM-CDX-1-RIO:** 6U, 4HP J4/J5 rear I/O transition module
- VRM-CDX-2-RIO:** 6U, 8HP J4/J5 rear I/O transition module with rear I/O 2.5" hard disk module
- VRM-280740:** External PS/2 keyboard/mouse Y-splitter-cable Mini-DIN male to 2 x Mini-DIN female
- VRM-908510201:** DVI-D to DVI-D cable assembly, 2m, connects the VRM-CD1 to DVI monitors (digital way)
- VRM-908570201:** DVI-I to HD DSUB15 cable assembly, 2m, connects the VRM-CD1 to VGA monitors (analog way)
- VRM-908571201:** DVI-I to VGA adapter (plug to receptacle), to be plugged onto the VRM-CD1 DVI output, with HDDSUB15 socket.