

Overview:

The **VRM-CD2-X** is a high performance, low power 6U (double size Eurocard) CompactPCI® CPU board with the Intel® Pentium®M processor. The **VRM-CD2-X** is provided with an embedded graphics controller. The user can choose between a DVI-I receptacle, which allows for attachment of both, advanced (digital) and legacy (analog) flat panel displays and CRT monitors, or the classic VGA D-Sub connector. The Pentium®M (in particular the Low Voltage 1.4GHz chip) reduces the power consumption considerably compared to previous processor generations, thus enabling a reliable passive heatsink solution for thermal discharge. The **VRM-CD2-X** is equipped with several USB2.0 ports and four (4) independent Ethernet controllers for high speed networking up to 1000Mbps. The PICMG®2.16 Packet Switching Backplane is also supported (Dual Link Port). For mass storage attachment, the **VRM-CD2-X** provides both Ultra ATA/IDE and S-ATA interfaces. In addition, a socket for Compact-Flash cards allows utilization of a silicon disk. The main memory is a SO-DIMM 200 DDR SDRAM module up to 1GB capacity. A bootable on-board USB2.0 FLASH disk drive up to 2GB is available as an option. The PMC mezzanine card socket enables on-board expansion of the **VRM-CD2-X**. Alternatively, an on-board hard disk drive mounted is optionally available which fits on the PMC slot as well. In addition to the front panel connectors, the optional VRM-CDY-RIO rear I/O transition module offers a variety of on-board and back panel connectors for versatile usage of the **VRM-CD2-X**.

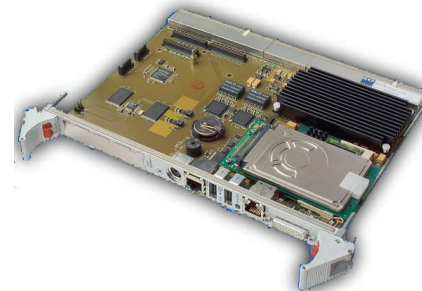
Features:

- Double size CompactPCI style Eurocard (160x233mm²), front panel width 4HP (20.3mm)
- Designed for Intel®Pentium® M Micro FC-BGA 479 processors (0.13u Banias, 0.09u Dothan), maximum junction temperature 100°C
 - 1.4GHz LV Pentium®M, (Dothan 733), 2MB L2 cache
 - 1.8GHz Pentium®M (Dothan745), 2MB L2 cache
- i855G (Brookdale) chipset consisting of:
 - 82855GME Graphics/Memory Controller Hub (GMCH)- Montara
 - 82801D I/O Controller Hub (ICH4)
 - 82802 Firmware Hub (FWH) compatible
 - 200-pin SO-DIMM socket (notebook style module), PC2100/2700 DDR266/333-SDRAM, 1GB maximum
- Analog monitor and digital flat-panel display support by DV1-1 connector (front panel), up to 2048x1536 pixel 16M colors @ 75Hz refresh rate (analog), up to 1600x1200 pixel 16M colours @ 60Hz (digital), incorporates PanelLink Digital technology (Silicon Image). Front panel option: D-Sub (female HD15) VGA connector available, replaces the DVI-I connector
- All ports over-current protected, data transfer rate of up to 480Mbps, conforming to USB2.0
 - USB port 1-2: Type A connector (front panel)
 - USB port 3: Expansion interface option (VRM-CCA mezzanine companion board)
 - USB port 4-5: J4/P4 Rear I/O option (VRM-CDY-RIO rear I/O transition module)
 - USB port 6: Dedicated to the optional on-board USB Flash drive
- 3 x 10/100/1000Mbps Gigabit Ethernet controllers, (82541), 1 x 10/100Mbps Fast Ethernet Controller (82562), 1 x Gigabit and Fast Ethernet accessible via RJ45 jacks from the front panel, 2 x Gigabit Ethernet as rear I/O according to PICMG®2.16 across J3 (alternatively accessible via RJ45 jacks from the VRM-CDY-RIO backpanel)
- Ultra ATA/100 connector (secondary IDE), handover to VRM-CCA mezzanine expansion board with VRM-CCA on-board hard disk drive or external device. Compact Flash socket (mezzanine module) for CFA ATA cards (Secondary IDE), J4/P4 Rear I/O option: Primary IDE accessible from VRM-CDY-RIO rear I/O transition module.
- VRM-CD2 on-board hard disk drive module option (Primary IDE)
- On-board dual Serial ATA controller, ports available across J5/P5 on VRM-CDY-RIO rear I/O module (alternatively accessible via Serial ATA connectors on board) RAID and non-RAID drivers
- Optional on-board USB2.0 FLASH drive controller and 2 pcs. NAND FLASH up to 8Gbit each (total memory capacity up to 2Gbyte), can be configured as bootable disk, data transfer rates up to 18MB/s for read, 13MB/s for write (dual channel mode)
- Optional usage of either: 1 slot for a PMC module, I/O from the front panel and across J5, On-board 2.5" hard disk module (primary IDE)
- On-board LPC/USB/AC97 Super I/O, USB and audio expansion interface connector, suitable VRM-CCA 3U mezzanine companion board available
- Rear I/O: 2 x Gigabit Ethernet (J3), 2 x Serial ATA (J3), Primary IDE (J4), 2 x USB (J4), LPT,COM,GPIO (J4), PMC mezzanine rear I/O (J5), Suitable rear I/O transition module VRM-CDY-RIO available

Features continued:

- CompactPCI Bus: 32-bit PCI bridge chip PLX PCI 6150 (HB4), 133 MBps CPCI master, transparent mode (CPCI system slot operation). When using the VRM-CD2 on a peripheral slot, the PCI bridge must be removed (special board versions available on request)
- Hot Swap Function: Board hot insertion/extraction without adversely affecting a running system, 'Basic Hot Swap' implementation according to CompactPCI Hot Swap Specification PICMG® 2.1. In order to use the VRM-CD2 as a peripheral slot board, the local PCI bridge must be removed (stand-alone operation or PICMG 2.16 communications path required instead of PCI bus data exchange), special board versions are available on request.
 - Dual Link Port Node, complies with the PICMG® 2.16 CompactPCI® Packet Switching Backplane Specification
 - Phoenix BIOS
- Typical Power Consumption: +5V +0.25V/-0.15V TBD A max. / +3.3V +0.17V/-0.1 TBD A max.
- Thermal Conditions: Operating Temperature: 0°c +70°C (CPU dependent)
- Storage Temperature: -40°C ... +85°C, max gradient 5°C/min
- Environmental Conditions: Humidity 5%...95% non condensing / Altitude -300m...+3000m
- Shock: 15g 0.33ms, 6g 6ms
- Vibration: 1g 5-2000Hz
- EC Regulations: EN55022, EN55024, EN60950-1 (UL60950-1/IEC60950-1)
- Typical Performance Rating : (CMark2002 under Windows XP with 512MB PC2700 DDR)
- | Board | Processor | CPU/Mem Score |
|--------------|-----------------------------------|---------------|
| • VRM-CD2-1X | 1.4GHz LV Pentium® M (Dothan 738) | 4745/8489 |
| • VRM-CD2-2X | 1.8GHz Pentium® M | 6100/10441 |
| • VRM-CD2-3X | 2.0GHz Pentium® M | 6773/11398 |
- MTBF: tbd

(Subject to change)



Ordering options:

- VRM-CD2-1A:** 6U, LV Pentium® M 1.4GHz 738, 512MB RAM, 6 x USB, 4 x Ethernet (3x GB), PICMG2.16 Dual Link, IDE, SATA, CompactFlash ATA slot, 1 x PMC mezzanine, DVI-I video, rear I/O, on-board USB Flash drive.
- VRM-CD2-2A:** Similar to VRM-CD2-1A, 1.8GHz Pentium®M 745
- VRM-CD2-Z:** 1GB memory option
- VRM-CD2-XH:** Hard disk drive module option) replaces PMC slot), X = 1/2/3
- VRM-CDY-1-RIO:** 6U, 4HP J4/J5 rear I/O transition module
- VRM-CDY-2-RIO:** 6U, 8HP J4/J5 rear I/O transition module with 2.5" rear I/O hard disk module
- VRM-CCA-1:** 3U mezzanine module, local expansion board complementing the VRM-CD2, front panel width 4HP, optional AC'97 codec
- VRM-DB1-1:** PMC Module, USB2.0 controller
- VRM-DE2-2:** PMC Module, SATA controller + 1.8" hard disk drive
- VRM-2807400:** 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-CD2 to DVI monitors (digital way)
- VRM-908570201:** DVI-I to HD DSUB15 cable assembly, 2m, connects the VRM-CD2 to VGA monitors (analog way)
- VRM-908571201:** DVI-I to VGA adapter (plug to receptacle), to be plugged onto the VRM-CD2 DVI output, with HDDSUB15 socket, suitable especially for analog monitors with attached VGA cable.

Block Diagram:

