



V Rose Microsystems, Inc.

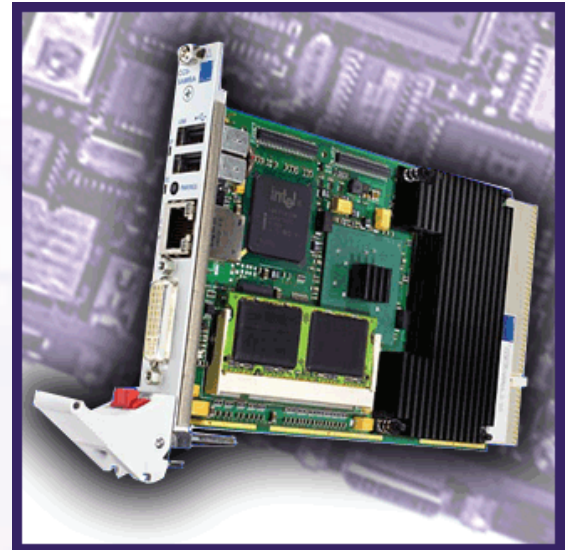
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VRM-CC9-X

Product Data Sheet

Overview:

The **VRM-CC9-X** is a 4HP/3U CompactPCI Pentium® M CPU alternatively equipped with the Intel® series of (LV) Pentium® M or ULV Celeron® M processors and designed especially for systems which require low power consumption. Available with a variety of processors, starting with the ULV 600MHz Celeron® M up to the 2.0 GHz Pentium® M Dothan 760, the **VRM-CC9-X** covers a wide range of industrial applications. The DVI-I video interface allows for attachment of both, advanced (digital) and legacy (analog) flat panel displays and CRT monitors (D-SUB connector optionally). The **VRM-CC9-X** is provided with a Gigabit Ethernet controller. The on-board CompactFlash socket allows for utilization of an ATA Flash card or IBM Microdrive®. A local expansion interface connector may be used to directly attach a mezzanine companion I/O board, which can also carry a hard disk drive. As an option, rear I/O across the J2/P2 connector is available.



Features:

- **FORM FACTOR:** Single size CompactPCI style Euro-card (160x100mm²), front panel width 4HP (20.3mm)
- **PROCESSOR:** Designed for Intel® Pentium® M Micro FC-BGA 479 processors (0.13µm Banias, 0.09µm Dothan), max. junction temperature 100°C
- **VRM-CC9-1:** 600MHz ULV Celeron® M, 512KB L2 cache, 7W.
- **VRM-CC9-2:** 1.0GHz ULV Celeron® M (Dothan 373), 512KB L2 cache, 5W.
- **VRM-CC9-3:** 1.4GHz LV Pentium® M (Dothan 738), 2MB L2 cache, 10W.
- **VRM-CC9-5:** 1.8GHz Pentium® M (Dothan 745), 2MB L2 cache, 21W.
- **VRM-CC9-6:** 2.0GHz Pentium® M (Dothan 755), 2MB L2 cache, 21W.
- **CHIPSET:** Intel® i855 consisting of: 82855GME Graphics/Memory Controller Hub (GMCH), 82801D I/O Controller Hub (ICH4), and 82802 Compatible Firmware Hub (FWH)
- **MEMORY:** 200-pin SO-DIMM socket (notebook style module), PC2100/2700 DDR266/333-SDRAM, 1GB max
- **VIDEO I/O:** Analog monitor and digital flat-panel display support by DVI-I 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 HD 15) VGA connector available, replaces DVI-I connector. Rear I/O option: Analog video across J2/P2 (VRM-CCR-RIO rear I/O transition module)
- **USB I/O:** 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 3/5: J2/P2 Rear I/O option (VRM-CCR-RIO rear I/O transition module) USB ports 4/6: Expansion interface option (VRM-CCA mezzanine companion board).
- **ETHERNET I/O:** 10/100/1000Mbps Gigabit Ethernet controller, accessible via RJ45 jack from the front panel or as an option across J2/P2 with attached VRM-CCR-RIO rear I/O transition module. Option 10/100 Ethernet (secondary LAN port), accessible via expansion connector LCI (LAN Connect Interface ICH4), requires 82562 PHY on expansion board (VRM-CCB)



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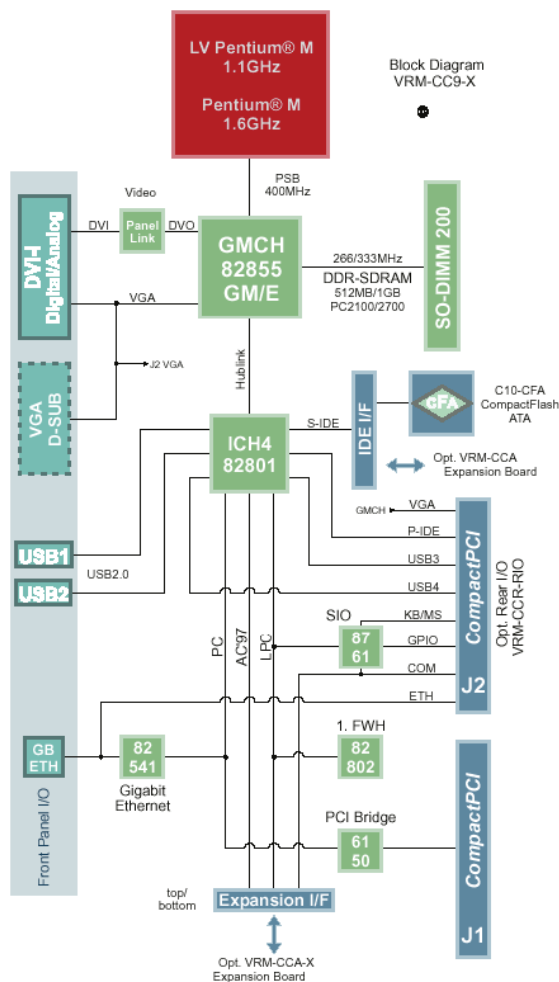
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Features:

- **MEZZANINE I/O:** On-board LPC/USB/AC97 Super I/O, USB, and audio interface connector. Suitable companion board, VRM-CCA and VRM-CCB available. On-board LCI connector for additional Ethernet port (suitable companion board VRM-CCB)
- **IDE/ATA:** Ultra ATA/100 connector (Secondary IDE), handover to VRM-CCA/VRM-CCB mezzanine companion board with optional on-board 2.5" hard disk drive or external device. CompactFlash socket for CFA ATA memory card or Microdrive® (Secondary IDE). Option 1.8" on-board hard disk module (Secondary IDE), replaces CompactFlash facility, J2/P2 Rear I/O: Primary IDE accessible from VRM-CCR-RIO rear I/O transition module.
- **COMPACT PCI:** 32-bit PCI bridge chip PLX PCI 6150 (HB4), 133MBps CPCI master
- **J2/P2 REAR I/O:** Primary IDE. GB Ethernet (option). USB Ports 3,5. VGA Analog Video (option). Keyboard, Mouse. COM 1 (TTL Level). Rear I/O transition module VRM-CCR-RIO available.
- **BIOS:** Phoenix BIOS, single or dual FWH (8/16Mbit Flash Memory)
- **DRIVERS:** (All Major O/S): Intel graphics drivers, Intel networking drivers.
- **Typical Power Requirements:** +3.3V/+ .17V/- .1V, +5V/+ .25V-.15V
- **THERMAL CONDITIONS/ ENVIRONMENTAL CONDITIONS:**
Operating Temperature: 0°C....+70°C (CPU dependent)
Storage Temperature: -40°C ... +85°C, max gradient 5°C/min
Humidity: 5%....95% RH non-condensing
Shock: 15g 0.33ms, 6g 6ms
Vibration: 1g 5-2000Hz

Block Diagram VRM-CC9-X



TYPICAL PERFORMANCE RATING: (PCMark2002 under WinXP with 512MB PC 2700 DDR):
Board Processor CPU/Mem Score
VRM-CC9-1 600MHz ULV Celeron®M (Banias) 1986/2645
VRM-CC9-2 1GHz ULV Celeron® M (Dothan 373) 3386/3274
VRM-CC9-3 1.4GHz LV Pentium® M (Dothan 738) 4745/8489
VRM-CC9-5 1.8GHz Pentium® M (Dothan 745) 6143/10609
VRM-CC9-6 2.0GHz Pentium® M (Dothan 755) tbd



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Ordering:

VRM-CC9-1(R): 3U/4HP CPCI CPU Board, 600MHz ULV Celeron® M, 512MB DDR SDRAM, GB Ethernet, DVI-I video, CompactFlash slot.

VRM-CC9-2(R): Similar to VRM-CC9-1, 1.0GHz ULV Celeron® M Dothan 373

VRM-CC9-3 (R): Similar to VRM-CC9-1, 1.4GHz LV Pentium® M Dothan 738

VRM-CC9-5 (R): Similar to VRM-CC9-1, 1.8GHz Pentium® M Dothan 745

VRM-CC9-6(R): Similar to VRM-CC9-1, 2.0GHz Pentium® M Dothan 755

VRM-CC9-A (R): Similar to VRM-CC9-1, VGA video connector

VRM-CC9-B (R): Similar to VRM-CC9-2, VGA video connector

VRM-CC9-C (R): Similar to VRM-CC9-3, VGA video connector

VRM-CC9-D (R): Similar to VRM-CC9-4, VGA video connector

VRM-CC9-E (R): Similar to VRM-CC9-5, VGA video connector

VRM-CC9-H: On-board 1.8" hard disk drive module 20GB (replaces CompactFlash slot)

VRM-CC9-Z: 1GB DDR SDRAM Option

VRM-CCA-1: 3U Super I/O Module, local expansion board complementing the VRM-CC9, front panel width 4HP, with

PS/2 keyboard/mouse, RS-232, optional audio connectors & AC97 Codec, mounting on top or bottom of VRM-CC9

VRM-CCA-8-HD: Optional hard disk drive, on-board mounting on top of VRM-CCA

VRM-CCB-1: 3U Super I/O module, local expansion board complementing the VRM-CC9, front panel width 4HP,

10/100 Ethernet, 2 x USB, 1 x RS-232, PS/2 MS/KB, mounting on top or bottom of the VRM-CC9

VRM-CCB-2: 3U Super I/O module, local expansion board complementing the VRM-CC9, front panel width 4HP,

10/100 Ethernet, 2 x RS-232, PS/2 MS/KB, mounting on top or bottom of the VRM-CC9

VRM-CCB-8-HD: Option hard disk drive, on-board mounting on to of the VRM-CCB

VRM-CCR-1-RIO: Rear I/O transition module for VRM-CC9.

VRM-CCZ-A-RIO: *Rear I/O transition module for VRM-CCA*

VRM-CCZ-B-RIO: *Rear I/O transition module for VRM-CCB*

VRM-CR9-5-ADAPT: Mechanical kit, expands the VRM-CC9 front panel to 6U full height

VRM-2807400: External 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-CC9 to DVI monitors (digital way)

VRM-908570201: DVI-I to HD DSUB15 cable assembly, 2m, connects the VRM-CC9 to VGA monitors (analog way)

VRM-908571201: DVI-I to VGA adapter (plug to receptacle), to be plugged onto the VRM-CC9 DVI output, with HD

DSUB15 socket, suitable especially for analog monitors with attached VGA cable

VRM-932201000: P1/P2 single slot rear I/O backplane (required for VRM-CCZ-RIO)