V Rose Microsystems, Inc.

VRM-CP3-1 **Product Datasheet**

Overview:

The **VRM-CP3-1** is a CompactPCI® Dual Slot PC Card Hostadapter PCMCIA/CardBus Drive for Instant System Expansion. The **VRM-CP3-1** supports any combination of 16-bit PCMCIA and 32-bit CardBus PC Cards in its two sockets, automatically powered at 5V or 3.3V. By employing a simple adapter, also CompactFlash cards can be used. Hot swap (hot insertion and removal) of the PC Cards is allowed. The **VRM-CP3-1** is a 3U CPCI card. Designed for industrial use, the **VRM-CP3-1** is a rugged and reliable PC Card drive, suitable for any CompactPCI® system. I/O Expansion or storage upgrades can be realized fast and easily. The PC Card specification defines three card sizes (3.3/5.0/10.5mm thick), referred to as Type I…III. The dual slot of the **VRM-CP3-1** accepts two PC Cards of the type I/II, or a single type III PC Card. The PC Card represents a flexible method for external system expansion, without any need to open the case, or power down and reboot the whole system. While the 32-bit CardBus PC Card is equivalent to a modern PCI slot board, the 16-bit PCMCIA PC Card could be loosely compared to a vintage ISA slot board. The **VRM-CP3-1** recognizes automatically the PC Card type in use and configures itself for PCMCIA or CardBus operation dynamically. Mix and match operation of 5V/3.3V 16-bit PCMCIA cards and 3.3V CardBus cards is guaranteed. When serving 32-bit PC Cards, the **VRM-CP3-1** acts as a PCI bridge. This allows direct access to the PC Card by the host CPU. Vice versa CardBus cards can become DMA bus masters in order to transfer data at full 133MBps bandwidth across the PCI system bus.

The **VRM-CP3-1** is equipped with the popular PCI 1420 (Texas Instruments) controller chip. Among other features, Hot Insertion and Removal and the Exchangeable Card Architecture (ExCA) are supported by the PCI 1420. Both PCI 1420 PC Card device drivers, PCMCIA and CardBus, are already integral parts of the Windows 2000 operating system.
Slot Vcc and Vpp are controlled by the programmable power switch TPS2224, including over-current protection. Green LED's in the front panel adjacent to each slot indicate the present slot power status. Yellow LED's signal the PC Card activity.
Optionally, the board is provided with a Zoomed Video (ZV) connector. ZV, as an extension to the PC Card standard, is a fast one-way data path from a ZV card to any ZV compliant display controller. ZV allows for real time, uninterrupted full frame-rate (live video) display, without charging the PCI system bus or spending CPU calculation time. PCM audio data can be derived from the optional Zoomed Video Audio (ZVA) connector.

When older software (legacy drivers) is in use, especially in combination with 16-bit PCMCIA I/O cards (i.e. Modem cards), ISA interrupts may be activated. However, due to restrictions of the CPCI bus specification, the **VRM-CP3-1** is capable of routing PC Card interrupts to the CompactPCI bus interrupt lines INTA and INTP/INTS only. The CPCI bus does not at all support legacy ISA interrupts (with the exception of the primary/secondary IDE IRQ14/15, which can be optionally processed as INTP/INTS). A solution to this limitation is to transfer serialized ISA interrupts across INTS to the host CPU, which requires that the CPU board can be configured for receiving serial IRQs. ISA service requests typically are caused by legacy software drivers for 16-bit (PCMCIA) I/O PC Cards. When using recent drivers, serialized ISA IRQ jumpering should be superfluous. This also applies for most PCMCIA memory cards, ATA harddisks, and CardBus products.

Due to the huge variety of PC Card products available, often 16-bit (low cost) PCMCIA products, potential conflicts between PC Card application software, the operating system and the system BIOS can arise. In addition, CPCI systems use a PCI bridge to isolate the backplane from the primary (host) PCI bus. Stipulated for CPCI passive backplanes, this is an important improvement in reliability, but not typical for desktop and notebook computers.

V Rose Microsystems, Inc.
55 East Main Street
Johnstown, NY 12095

PH: 518.762.1288
FX: 518.762.4399
www.vrosemicrosystems.com

Features:

- PC Board Dimensions: 3U Eurocard (100mmx160mm²), front panel width 20.2mm (4HP), mechanics constructed with respect to EMC requirements, ejector lever
- PC Card Host Interface: PC Card Standard 1997 16/32-bit 5V/3.3V
  - PCMCIA/PC Card R2 (16 bit)
  - CardBus (32-bit)
- Connector: Dual slot with ejectors, external insertion/removal (front panel extrusion), 2 x 68-position
- Card Types: 2 x Type 1 (3.3mm) and II (5.0mm), alternatively 1 x Type III (10.5mm)
  - CompactFlash: Adapter required (not included with VRM-CP3)
- PC Card Socket Power Interface: Texas Instruments TPS2224
  - short circuit and thermal protection
  - +5V/3.3V 1A (each slot)
  - +12V/100mA (each slot)
- PC Card Socket Controller: Texas Instruments PCI 1420
  - Intel 82365SL-DF register compatibility
  - PC Card hot insertion/ removal
  - Exchangeable Card Architecture (ExCA)
  - Microsoft PC99
  - PCI Local Bus Specification 2.2
  - Supports DMA on both PC Card sockets
  - Multifunction PCI device with separate configuration spaces for each socket
  - Five PCI memory windows and two I/O windows available to each PCMCIA socket
  - Two I/O windows and two memory windows available to each CardBus socket
  - Uses serial interface to Texas Instruments TPS2224 Dual Power Switch
- *Zoomed Video Connector ZV/ZVA: 40-pos. metric header 2.0mm (ZV)-OPTIONAL*
- *Speaker: 5-pos. pin row 2.54mm (ZVA) –OPTIONAL*
- CompactPCI Bus: Connector J1: 32-Bit, 33 MHz (133MB/s), DMA bus master, 3.3V or 5V interface
- Power Consumption (without PC cards)- +5V ±5% 0.5A max
  +3.3V ±0.3V 0.2A max.
  +12V ±5% 0.1A max.
  +Vio 3.3V/5V 0.1A max.
- Temperature Humidity (Commercial Version): Operating Temperature 0-70°C. Humidity: 5-90% non-condensing.

Ordering Options:

VRM-CP3-1: 3U CompactPCI dual slot PC Card PCMCIA/CardBus hostadapter.
VRM-CR9-ADP: mechanical kit, expands front panel from 3U to 6U.

V Rose Microsystems, Inc.
55 East Main Street
Johnstown, NY 12095

PH: 518.762.1288
FX: 518.762.4399
www.vrosemicrosystems.com