

### Overview:

The **VRM-CS3** is a *CompactPCI*® based Ultra2 SCSI Hostadapter, suitable for attachment of LVD/SE 16-bit peripherals like Raid-systems, high performance hard disks and streamer tape drives. LVD (low voltage differential) signalling technology allows an overall cable length of the SCSI bus up to 12m. LVD and SE (single ended) devices are sensed automatically by the **VRM-CS3**, and the SCSI interface is self-configured to match the peripherals SCSI operating mode. The **VRM-CS3** hostadapter is offering a data transfer rate of up to 80MBps when operated in the Ultra2 mode. Compatibility is maintained to all previous SCSI standards (e.g. Fast and Ultra SCSI). The board is provided with two HD68 receptacles; therefore external and internal devices can be connected simultaneously. SCAM (SCSI Configured AutoMatically) as well as PCI plug & play technology care for effortless installation of the **VRM-CS3**. The **VRM-CS3** allows for connecting of up to 15 peripherals with 16-bit (Wide) connector. Internal and/or external mounting of the devices is at the users choice; the active termination of the **VRM-CS3** follows any configuration automatically. The jumperless board is built around the LSI Logic (Symbios) SYM53C895 PCI-SCSI I/O processor, a high performance, and widely accepted industry standard chip. Being also compatible to the popular SYM8951U hostadapter board, the **VRM-CS3** can be used with all LSI Logic software and all existing SYM8951U drivers for operating systems as Windows9x/NT or Linux are valid also for the **VRM-CS3**. For flexible cabling, the **VRM-CS3** is provided with SCSI connectors for both internal and external use. Both of the SCSI connectors can be used together at the same time. The 68-position receptacle SCSI\_A protrudes through the front panel of the **VRM-CS3**. External SCSI devices with 16-bit (Wide) interface can be connected directly here; 8-bit (Narrow) SCSI peripherals need an adapter (connector or cable) in order to reduce from 68 to 50 leads. The connector SCSI\_B is provided for internal wiring to 16-bit Wide SCSI devices, mounted within the *CompactPCI*® rack. Peripherals, attached to any of the SCSI connectors, are sensed by a logic circuitry. If the logic detects the **VRM-CS3** to be one end of the SCSI bus, the local SCSI terminators are activated. The **VRM-CS3** contains a Flash Extended BIOS, allowing operating system boot from a SCSI drive. The Flash-EEPROM can be updated at any time by means of a utility program. The **VRM-CS3** is additionally provided with a serial EEPROM, acting as a NVRAM, saving configuration parameters of the board (e.g. for SCAM support).



Several LED's show interesting board status information to help with installation or fault detection:

- LED1 SCSI Bus Busy Signal
- LED2 Flash EEPROM programming, +12V attached (PGM)
- LED3 Read/write serial EEPROM (SEE)
- LED4 SCSI Single Ended (Ultra) mode (SE)
- LED5 SCSI LVD (Ultra2) mode (LVD)
- LED6 SCSI on-board line terminators enabled (TRM)
- LED7 (FP left) SCSI bus TERMPOWER line (+4.7V)
- LED7 (FP right) SYM53C895 I/O processor activity



The **VRM-CS3** sources the voltage for the on-board and external SCSI terminators (TERMPower), fused by a Polyswitch (reversible fuse). SCSI Bus data and control signal integrity will be improved by the SCSI controller chip using the Symbios Tolerant™ filtering technology, thus minimizing the influence of critical SCSI cabling (poor cables, mixed cable types, noisy environment).

### Features:

- 3U Eurocard (100x160mm<sup>2</sup>), front panel 20.2mm (4HP), mechanics constructed with respect to EMC requirements, ejector lever
- SCSI Bus Type: ANSI SCSI Parallel Interface-2 (SPI-2) 16-bit (8-bit by adapter), LVD/SE
  - LVD (low voltage differential signal) max. 15 devices
  - SE (single ended) max 15 devices (16-bit), 7 devices (8-bit)
- Connector SCSI\_A: external connector (front panel) 68-pin HD, screw lock 2-56 UNC
- Connector SCSI\_B: internal connector 68-pin HD
- Overall SCSI cable length:
  - Low voltage differential (LVD) mode: Ultra2 SCSI 12m single ended (SE) mode: Fast SCSI 3m, Ultra SCSI 3m (4 devices), 1.5m (8 devices)
- Performance:
  - Wide Ultra 40MBps (16-Bit), Narrow Ultra 20MBps (8-Bit)
  - Wide Fast 20Mbyte/s (16-Bit), Narrow Fast 10Mbyte/s (8-Bit)
  - Ultra2 80MBps
- Active termination, automatically disabled when both SCSI connectors are in use, LVD/SE self configuring, termination power fused by Polyswitch 1.25A
- Features of the I/O SYM53C895
  - Pre-fetches of 8 SCRIPTS™ dword instructions minimize PCI bus load
  - Load and store SCRIPTS™ instruction increases performance
  - Includes 4kB internal RAM for SCRIPTS™ instruction storage
  - Optimized block transfers at Ultra SCSI clock rates
  - 816 Byte DMA FIFO
  - on-chip LVD/SE transceivers, 2kV ESD protection
  - SCAM (SCSI Configured AutoMatically) level 1 functionality
  - Target disconnect/reconnect (interrupt)
  - Symbios TolerANT™ SCSI signal filtering
- *CompactPCI*® Bus
  - 32-Bit, 33MHz (133MB/s)
  - PCI Burst Mode
  - 32-Bit DMA Bus Master (133MB/s)
  - 3.3V or 5V interface
- Power Supply: +5V ±5% 1.5A max. (includes termination power). +3.3V ±0.3V 130mA max., +12V ±5% 50mA max. (programming Flash )
- Temperature/Humidity: operating temp. range 0-70°C. Relative humidity range 5-90% non-condensing.  
*(specifications are subject to change without further notice)*

### Ordering Options:

- **VRM-CS3:** 3HE CompactPCI Ultra2 SCSI Hostadapter
- **VRM-CR9-ADP:** Front panel expansion to 6U, mechanical kit