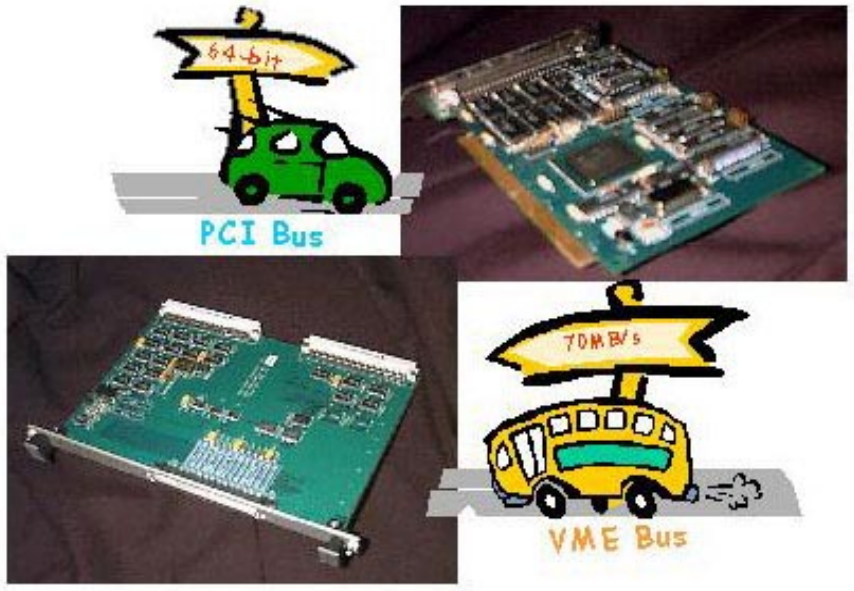
PCI_VME

Adapter bridges PCI bus to VME64 bus



olflower's PCI-VME Adapter is a high performance interconnect designed to provide VME connectivity to the Sun™ Ultra™ PCI-based workstation

General

The Solflower PCI-VME Adapter enables the Sun Ultra PCI-based workstation to connect to a wide range of existing VMEbus peripherals. The adapter includes a Solaris™ 2.5.1 - 2.8 software driver which allows peripheral devices on the VMEbus to interact transparently with the host. All software written for current VME applications can be utilized without modification in the Solaris 2.x environment.

Product Description

The Solflower PCI-VME Adapter is built with a Universe 2™ single chip PCI-VME interface. The Universe uses built-in FIFO to decouple the transfer of data between the asynchronous VME and the synchronous PCI bus. The advantage of a decoupled system is increased bandwidth and a decrease of local bus latency. There is no waiting for remote bus arbitration and data acknowledgment; therefore, each bus operates at its optimum speed. By using the Solflower PCI-VME bridge, system integrators can now rely on a product which allows direct connection of all off-the-shelf VME interfaces to the Sun Ultra PCI-based workstation.

The Solflower PCI-VME Adapter consists of a board set connected via a shielded cable (two, four, six up to 24-foot length). One board (PCI card) uses a single PCI slot of the host, the other board (6U VME interface board) is installed in a VME card cage. The software is compatible with Solaris 2.5.1+ or higher.

Features

- Supports 64-bit VME interface including D64 and D64 BLT modes
- Fully compliant, 64-bit 33 MHz PCI local bus interface version 2.1
- Transfer rate up to 60-70 MB/s between two buses
- Built-in DMA controller which supports VME BLT and MBLT block transfer mode
- Concurrent access from both VME side and PCI side

PCI INDUSTRIAL PICMG COMPUTERS

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Specifications

PCI bus Interface

- PCI Local Bus version 2.1
- Supports both 32 bit and 64 bit cPCI bus
- PCI clock rate 25 - 33Mhz
- Multiple bus masters and DMA capability
- Programmable burst size 32/64 bytes burst
- 5V interface, PCI short card

VMEbus Interface

- Conforming to VME64 specification including A64 and D64 modes
- Support Read Modify Write (RMW) and Address Only with Handshake mode (ADOH)
- Seven interrupt levels for either Fairness or Round Robin modes
- Release When Done (RWD) or Release On Request (ROR) modes programmable

Utilities Interface

- Built-in DMA controller
- Programmable VME time-out 16 to 1024 usecs
- Supports SYSCLK on slot 1 VME

Software Support

- Plug-and-play driver for Solaris 2.5.1 and 2.8 distributed in Solaris's pkgadd format
- Utilities for using built-in DMA controller to transfer data across buses
- Automatic adjust the mapping windows when host access any VME address.
- Cover up to 8 PCI slave windows, allow simultaneous mapping of multiple VME spaces .

Physical Dimensions

6-slot 6U VME Tower		4-slot VME horizontal Box	
Height	14.50 inches	Height	3.75 inches
Width	5.50 inches	Width	16.00 inches
Depth	12.50 inches	Depth	16.00 inches

Power Supply (Total 300 Watts)

Input voltages:	115/220 VAC @ 60/50 Hz
Output voltages:	5 VDC @ 25 Amps
	12 VDC @ 10 Amps.
	-12 VDC @ 0.5 Amps.

Ordering Information

SFPCI 110	PCI/VME subsystem with 6-slot enclosure
SFPCI 110-4	PCI/VME subsystem with 4-slot enclosure
SFPCI 110B	PCI/VME board set without enclosure

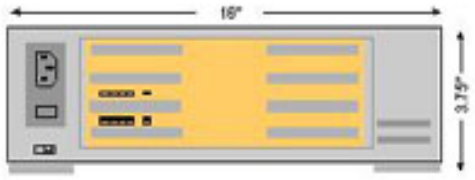
Operation

Features

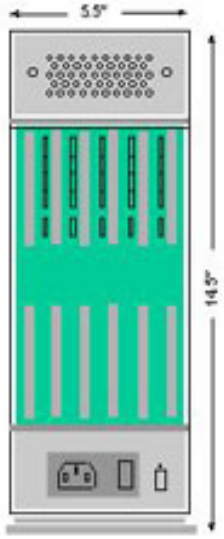
Solflower PCI-VMEbus Adapter can be used in two modes - plug-and-play under Solaris 2.5 - 2.6 or using ioctl and mmap() functions to access VME slave memory space. The Solflower nexus driver for the plug-and-play mode allows existing Sun4 VME drivers to run on Sun Ultra PCI-based workstation without modification.

Performance

PCI DMA read/write 32 bytes per block	51 MB/s
PCI DMA read/write 64 bytes per block	74 MB/s
VME DMA D32 mode read/write	30-40 MB/s
VME DMA D64 mode read/write	60-70 MB/s



4-slot 6U VME Horizontal Enclosure



6-slot 6U VME Tower

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