Artisan Technology Group

Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS
Experienced engineers and technicians on staff at our full-service, in-house repair center

InstraView℠ REMOTE INSPECTION
Remotely inspect equipment before purchasing with our interactive website at ***www.instraview.com*** ↗

WE BUY USED EQUIPMENT
Sell your excess, underutilized, and idle used equipment
We also offer credit for buy-backs and trade-ins
www.artisantg.com/WeBuyEquipment ↗

LOOKING FOR MORE INFORMATION?
Visit us on the web at ***www.artisantg.com*** ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisantg.com | www.artisantg.com

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

PT-SBS915
SBus-To-VMEbus Adapter

Features

- Flexible/high performance SBus to VMEbus interconnection
- Transfer rate capability to 11 Mbytes/sec
- Sun4/VME software for high degree of “Plug and Play” with many VME modules that have Sun4 drivers (SunOS 4.1.x)
- Solaris 2.x “Bus NEXUS” driver support
- Comprehensive adapter software support
- Two board set with single slot SBus module, single 6U VMEbus module and 10' or 20' cable
- VMEbus masters may access SBus slaves/SBus masters may access VMEbus slaves
- VMEbus masters may access VMEbus slaves without affecting ongoing SBus operations
- Flexible SBus-to-VMEbus address translation with support for 28 bit SBus addresses (256 Mbytes)
- VMEbus interrupt requests translated to SBus interrupts
- Optional 6U to 9U adapter

General Description

Since 1985, Performance Technologies, has provided a variety of products that allow standard computer bus structures to be easily interconnected. These buses have included VMEbus-to-Multibus, Qbus-to-VMEbus, Qbus-to-Multibus and VMEbus-to-VMEbus. They are frequently used with open bus computers such as SUN, and DEC workstations. The PT-SBS915 provides a means of efficiently extending the SUN Microsystems SBus to an external VMEbus chassis.

The Adapter consists of a single slot SBus module that plugs into the Workstation, a 6U VMEbus module that resides in the external VMEbus chassis and a shielded 10 foot or 20 foot cable for interconnect. Custom configurations are also available.

The design of the PT-SBS915 focuses on two primary criteria. These are: 1)Transparent operation wherever possible to reduce the software required to operate the Adapter; and 2) minimum Adapter overhead and latency to provide maximum performance in connecting the SBus and VMEbus environments.

The Adapter is delivered with a comprehensive range of software support for both the Sun 4.1.x and Solaris 2.x Operating System environments.

Operation Details

The PT-SBS915 Adapter is a full function hardware based interconnection of the SBus and VMEbus. VMEbus “Masters” in an external chassis may access “Slave” functions in the SBus environment. Conversely, SBus “Masters” may access VMEbus “Slaves” across the Adapter. This provides a fully orthogonal hardware interconnect between the buses, allowing a high degree of flexibility. The PT-SBS915 provides full “Master” and “Slave” capability on the SBus, significantly enhancing performance and applications flexibility.

The Adapter uses a windowing technique to map address spaces between the two bus structures. All translation of the address maps between the SBus and the VMEbus is accomplished by the PT-SBS915 hardware. The SBus-to-VMEbus “windows” are defined by using the SBus concept of geographic addressing. That is, only those accesses by a SBus master to the geographic address range of the SBus Adapter will result in operations on the VMEbus. The VMEbus “window” to the SBus can be programmed in both size and location in the VMEbus address map. Only accesses by a VMEbus master in this address range will result in operations on the SBus. This allows activity on either the SBus or the VMEbus to occur independently outside the respective “windows.”

PERFORMANCE TECHNOLOGIES, INC

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Comprehensive Adapter Software Support

Each PT-SBS915 is supplied to users with comprehensive software for both Sun 4.1.x and Solaris 2.x OS environments. The standard PT-SBS915 software package includes:

SunOS 4.1.x Under this version of the SunOS, the PT-SBS915 is supported by the Performance Technologies Sun4/VMEbus driver with a simple to use "INSTALL" script. This unique driver allows the SPARCstation to emulate the software environment of a Sun4 VMEbus platform. In this emulation, any VMEbus module with a Sun4 software driver can be loaded onto the SPARCstation with little or no modification. This allows most Sun or third party VMEbus modules with Sun4 drivers to be used transparently with an SBus based SPARC platform.

Solaris 2.x Operation of the PT-SBS915 under Sun's Solaris 2.x OS, is via the Performance Technologies "bus nexus" driver. This driver support, developed in conjunction with Sun Microsystems, is the first full bus nexus to be written and documented for a third party SBus product. The PT-SBS915 bus nexus driver provides a seamless approach to interfacing the SBus-to-VMEbus Adapter with VMEbus module drivers written for operation under Solaris 2.x. This includes Sun's IPI, VME SCSI, SMD, MCP and Mag Tape drivers or other third party suppliers such as (Datacube, Mercury Computer, CSPI, etc.) which have been ported from SunOS 4.1.x to Solaris 2.x.

User Utilities In addition to the SunOS 4.1.x and the Solaris 2.x drivers, the Adapter is supplied with complete information on the FCODE Boot which is part of the PT-SBS915 software package. The following utilities are also provided.

915 Info A formatted display of the 915 control registers. This interprets and displays the SBus-to VMEbus and VMEbus-to-SBus mapping information.

Config. 915 This utility allows the user to initialize the PT-SBS915 via an easily generated ASCII file.

Interrupts

The VMEbus and the SBus environments have different interrupt structures. The PT-SBS915 resolves the incompatibility by "ORing" one or more of the seven VMEbus interrupt request levels onto one selectable SBus interrupt level. Registers on the PT-SBS915 Adapter fulfill the role of the "internal register" required by the SBus specification. These are used to transmit interrupt information that is normally contained in the VME bus interrupt Vector.

SBus Burst/VMEbus Block Transfer Mode

The SBus specification allows for operation in the BURST mode. This provides a means of transferring multiple 32 bit words during one bus cycle. Similarly, the VMEbus supports the Block Transfer Mode (BLT) which allows up to 64 sequential 32 bit long words to be transferred using one address cycle on the VMEbus. The PT-SBS915 supports both these performance oriented modes. The SBus BURST capability is translated by the Adapter to VMEbus single cycles and conversely, VMEbus Block Transfers are translated to single cycle SBus activity.

Adapter Performance

The interrelated design objectives of software transparency and high throughput capability have been carefully carried out in the PT-SBS915 design. The Adapter operates in a compelled mode where single bus cycles are interlocked between the two buses, when an appropriate address access occurs in the Adapter address window. This operating mode logically interconnects the control strobes for both buses during an SBus/VMEbus transaction, assuring that the cycle takes place on the slave before the master receives an acknowledgement on the opposite side of the adapter.

The transfer performance capability through the adapter is as follows:*

VME Write to SBus	7.4 MBytes/sec
VME Read to SBus	6.4 MBytes/sec
SBus Write to VME	10.0 MBytes/sec
SBus Read to VME	11.8 MBytes/sec

Bus To Bus Address Mapping

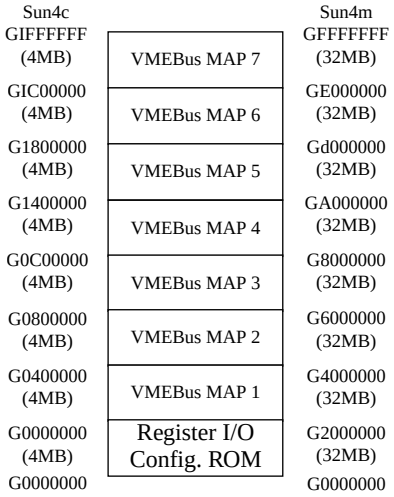
The PT-SBS915 Adapter utilizes an "Address Map" scheme for interconnection which permits devices from one bus to address another bus' memory as if it were local. Address Maps are provided for SBus-to-VMEbus and VMEbus-to-SBus.

The SBus-to-VMEbus address map is defined by the SBus concept of geographic addressing. The SBus-to-VME address mapping implementation is both flexible and comprehensive. There are 7 definable address map windows which are user programmable. These maps can access 7 different areas in VMEbus, or can be combined into one or more large map(s).

On SBus systems that support 25 bit addressing, each address map is 4 MBytes long, giving a total map size of 28 MBytes. On Mbus architectures (Ultra/ Classic/LX/ SPARCserver) the SBus operates with 28 bit addressing. When used in these platforms, the Adapter allows each window to be 32 MBytes, giving a total map size of 224 MBytes. Each map can independently access A16, A24 and A32 space.

The mapping flexibility of the PT-SBS915 provides the user a means to dynamically move the window(s) under program control. This "sliding window" feature allows unbounded access of the complete A32 (4 Gigabyte) address space.

Going from VME-to-SBus, the Adapter provides a single address map. This map allows for VMEbus masters to directly access the SBus. The VMEbus-to-SBus map can be located anywhere in A24 or A32 space and can range in size from 128 KB to 4 GB.



SBus to VME Address Mapping

Ordering Information

PT-SBS915
SBus to 6U VMEbus Adapter w/10' cable

PT-SBS915-2
SBus to 6U VMEbus Adapter w/20' cable

PT-ACC9xx-3
5 slot VME chassis

PT-ACC9xx-4
6U to 9U Adapter

*This performance is based on 25 MHz SBus using minimum SBus and VME Specification timing Block, Burst Mode Transfers and a 10 foot cable.

Prices and specifications subject to change.

PERFORMANCE TECHNOLOGIES, INC

315 Science Parkway • Rochester, NY 14620
Tel: 716 256 0200 • Fax: 716 256 0791
http://www.pt.com
e-mail: info@pt.com

Performance Technologies acknowledges that the product and company names mentioned in this document are the trademarks or registered tradenames of their respective holders.

Artisan Technology Group

Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS
Experienced engineers and technicians on staff at our full-service, in-house repair center

InstraView℠ REMOTE INSPECTION
Remotely inspect equipment before purchasing with our interactive website at ***www.instraview.com*** ↗

WE BUY USED EQUIPMENT
Sell your excess, underutilized, and idle used equipment
We also offer credit for buy-backs and trade-ins
www.artisantg.com/WeBuyEquipment ↗

LOOKING FOR MORE INFORMATION?
Visit us on the web at ***www.artisantg.com*** ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisantg.com | www.artisantg.com