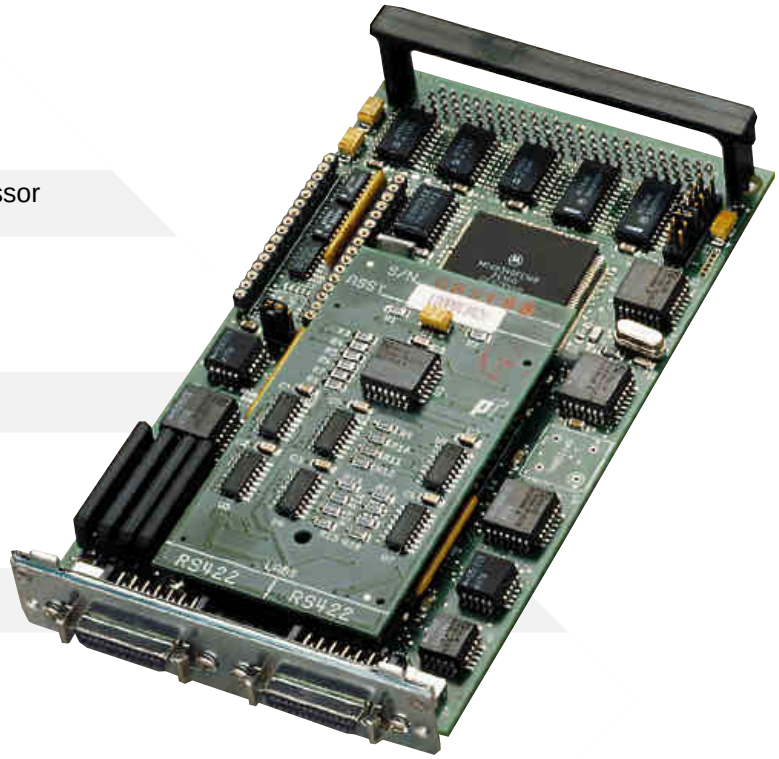
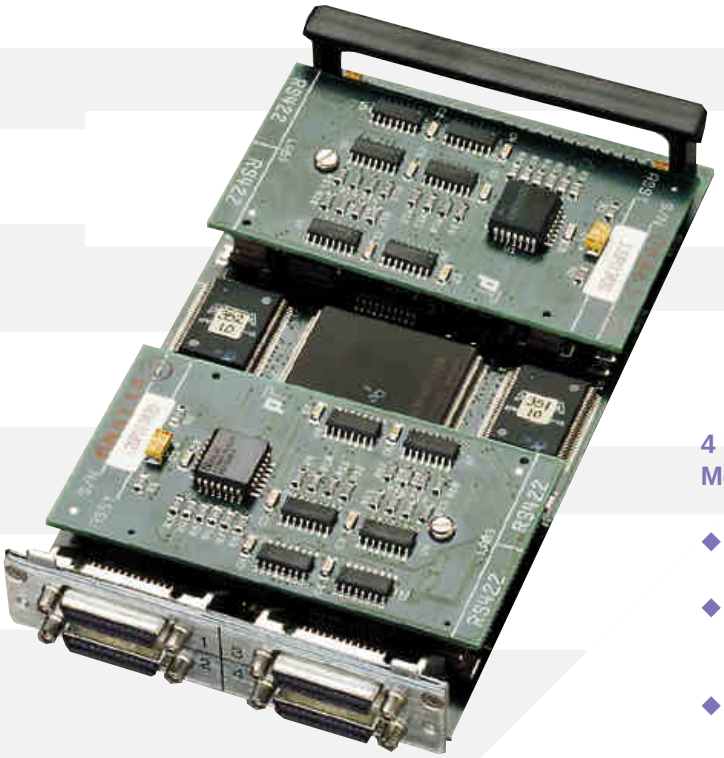
Model PT-SBS332/334A
High Speed Synchronous Serial I/O
Intelligent Communication Controller Series for SBus

Features

2 Port SIO Controller
Model PT-SBS332

- Two-channel, high-speed synchronous serial I/O
- Onboard intelligence via a 68340 integrated processor
- Four channel DMA supporting serial I/O rates up to 1 Mbit/sec
- 2 MByte onboard DRAM for data buffer and program storage
- Wide range of line interfaces (RS-232C/449/485/530/V.35/MIL-STD-188C)





4 Port SIO Controller
Model PT-SBS334A

- Four channel high speed synchronous serial I/O
- Onboard intelligence via 68360(QUICC) integrated communication controller
- Sustained serial I/O rates of 2 Mbit/sec/port
- Four times the performance of Sun's HSI card
- 4 MByte onboard DRAM for data buffer and program storage
- Wide range of line interfaces (RS-232C/449/V.35)

PERFORMANCE TECHNOLOGIES, INC

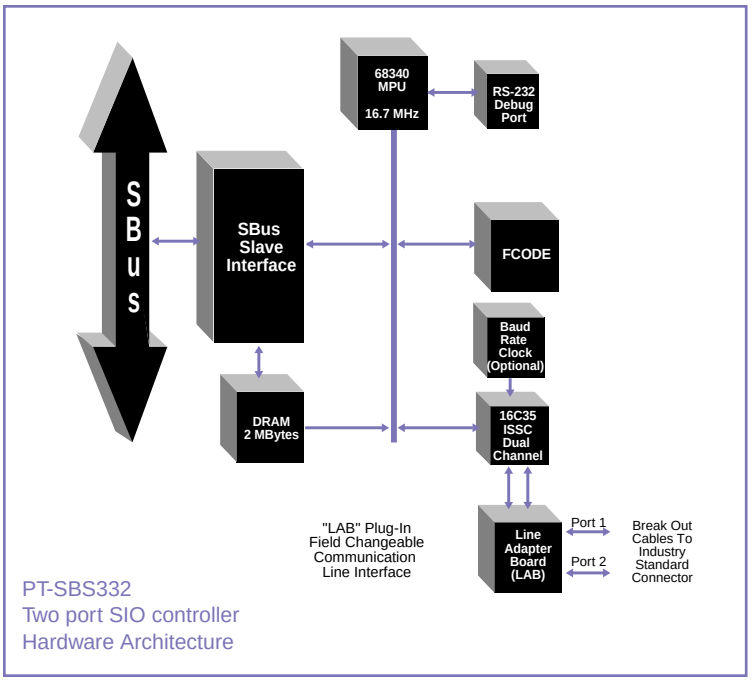
General Description

The PT-SBS332 and PT-SBS334A SBus Intelligent Communication Controllers provide OEMs, integrators and end-users an intelligent, 2 or 4 port, high speed serial communications interface for platforms with SBus expansion facilities. Both modules are designed as programmable serial controllers capable of high speed data rates for a variety of protocols used in synchronous and asynchronous data communication. The modules' hardware architecture includes:

—A powerful onboard CPU to efficiently service the demanding requirements of high speed serial I/O
—A large DRAM buffer allowing the downloading of protocols for execution on the PT-SBS332/334A and buffering of high speed transmit/receive data.
—Comprehensive communication "silicon" supporting high speed data rates. The two port PT-SBS332 controller utilizes the Zilog 16C35 dual channel communication controller with integral Direct Memory Access (DMA).
The 16C35 is code compatible with the popular Zilog 85C30 SCC. The PT-SBS334A utilizes the highly integrated Motorola MC68360 (QUICC) communication interface. This provides the PT-SBS334A with four very high speed SIO channels coupled to eight integral Direct Memory Access (DMA) channels.

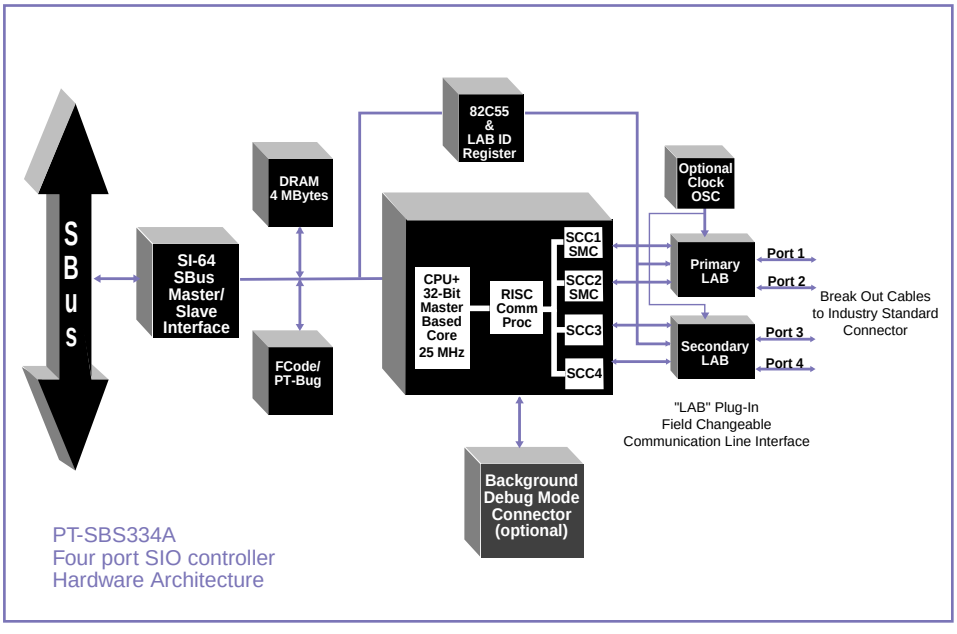
The architecture of both the PT-SBS332 and PT-SBS334A utilize onboard intelligence (68000/68020 MPU's) and a large block of memory to optimize high speed data transmission. Unlike other synchronous communication controllers, the PT-SBS332/334A series allows much of the low level communication protocol activity to be carried out on the SBus controller module.

High speed data rates involve intensive interrupt servicing as data is received or transmitted. "Unintelligent" SBus communication controllers rely solely on the SPARCstation or SPARCserver to handle all interrupt servicing and move the data to/from the module. By relegating much of the serial I/O communication related processing to the SBus controller (PT-SBS332/334A), the Host Platform (SPARCstation or SPARCserver) can operate much more efficiently and is available to service other concurrent tasks.

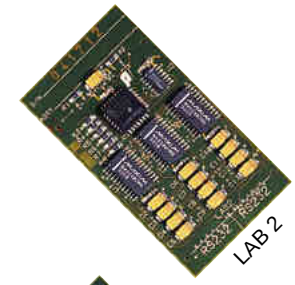


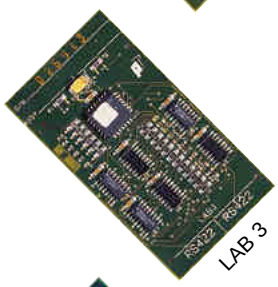
PT-SBS332
Two port SIO controller
Hardware Architecture

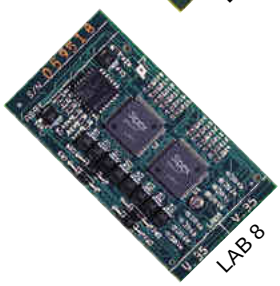
Both PTI high speed SBus communications controllers utilize communication interfaces (Zilog 16C35 and Motorola QUICC) that will operate at T1/E1 SIO rates. The PT-SBS332 operating under typical protocol overheads can sustain a 500-600 Kbits data rate on each channel. The PT-SBS334A will sustain T1/E1 rates (2 MBits/sec) on each channel, including recovery times and typical communication overheads.



PT-SBS334A
Four port SIO controller
Hardware Architecture







Communication Line Interface Flexibility

The physical communication line interface on both the PT-SBS332 and the PT-SBS334A Controllers are accomplished via a "Line Adapter Board" (LAB). This plug-in "personality module," approximately the size of a business card, attaches as a mezzanine to the SBus controller platform. The PT-SBS332 accommodates one LAB assembly, while the PT-SBS334A accommodates 2 LAB assemblies for its four serial I/O ports.

Communication interfaces include RS-232C, RS-422/449/485/530, V.35/Bell 306 and MIL-STD-188C/114A. All line interfaces include a full complement of modem control signals on the data communication ports. External cables that plug into the PT-SBS332/334A allow a direct interface to industry standard connections (eg., DB-25 for RS-232C, DB-37 for RS-449, etc.). PTI can easily accommodate requirements for special line interfaces or a combination of two different line interfaces on one communication line interface. This flexible approach contrasts to other add-in SBus SIO modules (including the Sun HSI/S) that provide only one or two inflexible communication interfaces.

Communication Software

Both communications controllers are available with a variety of software support packages. These software packages include the following:

PTbug

PTI's low level debugger allows the code developer to exercise the hardware and examine basic code execution. PTbug can run in Sun Monitor mode or under SunOS Open Windows environment, assisting both driver and application code development.

ComLink

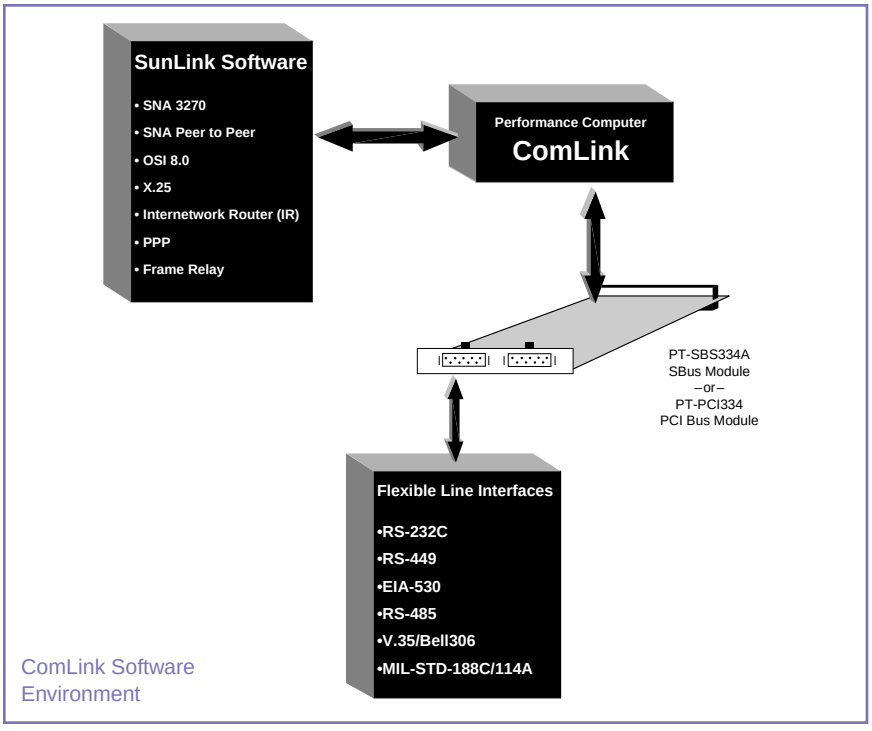
This easy-to-use software makes PTI's SBus and PCI controllers, the SBS334A and the new PCI334, plug-and-play compatible with SunLink communications packages from SunSoft. These adapters provide an effective way to dramatically increase the WAN communications throughput for Sun workstations and servers, delivering a four-fold increase in speed when compared to SUN's HSI card.

Users of SunSoft's communications protocols, such as X.25, PPP, SLIP, Frame Relay, SNA 3270, etc., can easily upgrade their hardware from the Sun HSI/S SBus module or low performance PCI communications adapters to one of PTI's high performance, intelligent synchronous communications adapters for either the SBus or PCI bus. ComLink now supports all Sun platforms running Solaris 2.X.

Third Party/Custom Software

In addition to supporting standard SunSoft protocols, a number of third parties have already ported a variety of specialized communications protocols to these adapters. Examples include: HDLC, HDLC-NRM, HDLC-LAPB, HDLC-Frame Transfer, SDLC, DCCMP, ADCCP, CD-2, Synchronous Bit Stream Receiver, BSC 3280, 3270 Remote Operation, Reuters Market Feed 2000 and Telekurs Data feed, to name a few. This list is constantly expanding. Please contact PTI for additional information.

Developer's versions of ComLink for SBus and the PCI bus include source code and documentation. Both now provide users direct support of Sun's "zsh" interface. Customers who choose to write their own protocols will find it much easier to intergrate the result with PTI's leading edge communications controllers.



ComLink Software Environment

Specifications

PT-SBS332

Mechanical: One SBus slot
Processor: Motorola 68340 @ 16 MHz
Memory: 2 Megabyte DRAM - zero wait state tri-ported

Communication Controller: Z16C35 ISCC
4 Channel DMA with transfer rates up to 1 Mbit/sec
ISCC Pclock - 16 MHz

SBus Interface:
- High performance SBus slave
- Mailbox registers w/interrupts
- Slave security partitioning
- SBus interrupter capability
- SBus compliance IEEE STD 1496

PT-SBS334A

One SBus slot
Motorola 68360(QUICC) @ 25 MHz
4 Megabyte 60-ns zero waitstate DRAM, 32-bit wide, dual-ported with transfer capability of 8 Mbits/sec to QUICC and SBus

Four synchronous Serial I/O Channels integrated with the 68360 Processor supports sustained transfer rates of 2 Mbits/sec/channel - 8Mbits/sec total

- High performance SBus master/slave provided by LSI Logic L64864 SI-64. This 32-bit DMA controller supports up to 64 byte burst
- Greater than 11 MBytes/sec peak DVMA transfer rate
- Software reset of QUICC through SI-64
- Mailbox registers w/interrupts
- SBus interrupter capability
- SBus compliance IEEE STD 1496

Line Adapter Boards (LABs)

RS-232C LAB002:
2 full duplex communication ports each supporting:
TxD, RxD, TxC, RxC,
DTR, CTS, DSR, RTS,
DCD, DSRS, SRTS, RI
Connector: DB-25

RS-422 (RS-449/EIA-530) LAB003:
2 full duplex communication ports each supporting:
TxD(+),RxD(+-),TxC(+-),
RxC(+-), DTR(+), CTS(+),
DSR (+), RTS (+-),
User defined output (+-), RS
User defined input (+-)
Connector: DB-37(RS-449)
Connector: DB-25 (EIA-530)

RS-485 LAB004: 2 full duplex communication ports for multidrop RS-485 operation
DTR, CTS, DSR, RTS, DCD,
LT, RI Connector: ISO 2593

MIL-STD-188C/114A LAB006:
2 full duplex communication ports each supporting: Data, CTS, RCR, RAI, PTIC, SCT, RPS.

Combined RS-232C/RS-422 (RS-449) LAB007:
2 full duplex communication ports, one supporting full RS-232C and one supporting full RS-422 (RS-449)

V.35/Bell 306 LAB008:
2 full duplex communication ports each supporting: TxD(+-),
RxD(+-), TT(+), RT(+-), ST(+-)

Ordering Information

PT-SBS334A—4 Port SIO

PT-SBS334A-10561	PT-SBS334A SIO controller
PT-LAB002-10512	RS-232C Line Adapter Board w/two 6’ cables
PT-LAB003-10513	RS-422 (RS-449) Line Adapter Board w/two 6’ cables
PT-LAB003-10527	RS-422 (EIA-530) Line Adapter Board w/two 6’ cables
PT-LAB008-10518	5 volt only V.35 Line Adapter Board w/two 6’ cables
PT-ACC334A-10571	ComLink communication package
PT-ACC334A-10555	UconX SBS334A Enable ROM

Note: A minimum of one Line Adapter Board and a maximum of two must be ordered with each PT-SBS334A-10561 SIO Controller

PT-SBS332—2 Port SIO

PT-SBS332-10332	PT-SBS332 SIO controller
PT-LAB002-10262	RS-232C Line Adapter Board w/two 6’ cables
PT-LAB003-10263	RS-422 (RS-449) Line Adapter Board w/two 6’ cables
PT-LAB003-10321	RS-422 (EIA-530) Line Adapter Board w/two 6’cables
PT-LAB008-10518	5 volt only V.35 Line Adapter Board w/two 6’ cables
PT-ACC332-10539	UconX SBS332 Enable ROM

Note: One Line Adapter Board must be ordered with each PT-SBS332-10332 SIO Controller

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