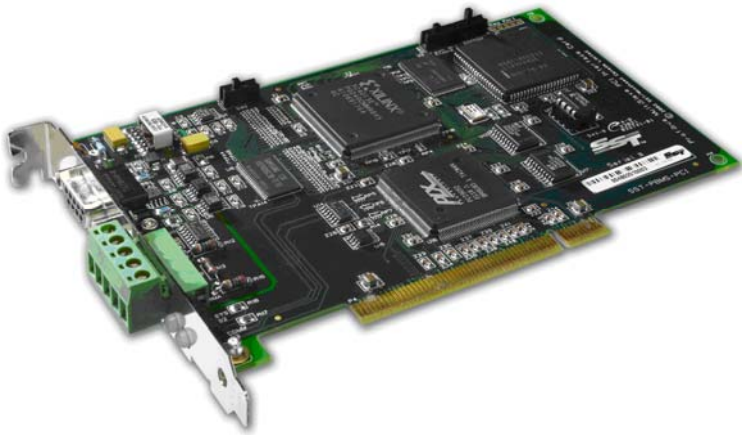
The BradCommunications™ SST™ PROFIBUS® multi-slave interface emulates or monitor 1 to 125 PROFIBUS DP devices on one physical PROFIBUS connection.

PROFIBUS® DP Multi-Slave Interface

For Emulating or Monitoring PROFIBUS DP Devices



Features

- Monitor up to 125 devices
  - Avoids 244 bytes in and 244 bytes out limitation
  - Connects as a passive station, does not affect existing network traffic
  - View input and output data for each slave
  - View slave diagnostic and parameterization data for each slave
- Emulate up to 125 devices
  - Virtually any PROFIBUS DP slave device (e.g. drives, motors, I/O) can be emulated to any PROFIBUS master including DCS, PLC and PC control
  - Use with SST PICS Simulation™ software and other third party simulation software
  - Several DP Class 1 masters can communicate to one SST PROFIBUS multi-slave card
- Ease of use
  - Minimal set up and configuration required
  - Set up a fully loaded network emulation in just a few steps using the SST PROFIBUS configuration tool
- Communicate with several DP Class 1 masters using only one SST multi-slave interface card

Software Tools Included

- Configuration tool
- OPC server
- DDE server

OS and Drivers Supported

- Microsoft® 32-bit driver (Windows® NT4, 2000, XP)
- Open, documented memory map interface with example C source code and Windows 32-bit DLLs for custom driver development

Overview

The BradCommunications™ SST™ PROFIBUS® DP multi-slave interface card allows a PCI bus computer to emulate or monitor 1 to 125 PROFIBUS DP slave devices using only one physical connection. Network traffic is not affected when this interface card is used to monitor other nodes.

Applications

The BradCommunications SST PROFIBUS DP multi-slave interface card can be used to:

- Connect a PCI bus computer running HMI or operator interface software to PROFIBUS DP
- I/O emulation
- Network monitoring
- Test a fully loaded network of PROFIBUS DP masters and other PROFIBUS products

Benefits

Minimal to no impact on I/O scan time

- Since the card listens passively on the network, an HMI system can monitor all I/O on the network without affecting the scan time

Ethernet alternative

- HMI users can pass large amounts of data without impacting the network or PLC scan time, or any additional cost for Ethernet connectivity

No devices or wiring required

- Have a completely functional PROFIBUS network of slaves contained in one card in minutes
- Using simulation to duplicate the behavior of the actual process and I/O on the plant floor will identify and correct network bottlenecks before they become expensive plant-floor problems
- Quickly differentiate between wiring, devices, and network problems by comparing real-world results with the emulation

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Profibus® DP Multi-Slave

Network Interface

Application Stories

Emulating I/O
Reduced Commissioning Time
When a large power generation company decided to modernize its coal conveyor system, Brock Solutions, a large automation engineering firm, was brought in to develop and test the new tracking system. The system, which must run 24/7 to generate electricity, uses ABB PLCs and PROFIBUS DP I/O. To ensure high availability and minimize downtime, simulation software was used to test the coal conveyors and control gates which route and divert coal to different locations.

The BradCommunications™ SST™ PROFIBUS multi-slave card was used to emulate the many PROFIBUS DP slaves. This enabled Brock Solutions to thoroughly test the security and emergency logic repeatly without risk. By reducing commissioning time, the power generating company was able to use its system with minimal delays, making for a smooth transition to start-up.

Vigorous Testing Leads to
Improved Product Development
A leading multi-national developer and manufacturer of industrial products required a tool to test its PROFIBUS DP master and slave products. To determine the products' capabilities and limitations on a fully loaded PROFIBUS network, stress tests were setup to evaluate the maximum for the baud rate, the number of slaves, and I/O supported. I/O mappings also needed to be tested to ensure what was read/written on the network was written in the host memory mapped to the product.

The BradCommunications SST PROFIBUS multi-slave card allowed the company to successfully complete the stress tests and verify the products' stability and compatibility on a PROFIBUS network. By emulating 125 PROFIBUS DP slaves, the company was able to work with different GSD files and device types without actually having them physically there. Understanding the products' capabilities avoided costly future hardware and firmware changes.

Network Specifications

Protocol	PROFIBUS® Slave DP-V0
Data Rate	All PROFIBUS data rates up to 12 Mbps
Cable	Belden 3079A Brad Harrison® 85-001 PVR2 conductor with shield, UL-listed
Connector	5-pin Phoenix connector internally connected to DB9 DB9 female connector Brad Harrison Diagnostic D-Sub connector part number: MA9D01-42
Isolation	1000 V

Hardware Specifications

Bus Interface	Compliant with PCI 2.1 and 2.2
Processor	Intel 80186
Memory	512 Kbytes of on-board shared memory, accessible from the host computer in 16K pages 512 Kbytes of sectored flash memory
Diagnostics	two LEDs for communication and system status
Interrupts	Hardware Plug & Play
Dimensions (Length x Width)	6.875in x 4.2in (17.463cm x 10.668cm)
Typical Current Draw	700 mA @ 5V
Voltage Requirements	5V
Resources	PCI Region 0 = 128b of 32-bit PCI memory PCI Region 1 = 128b of I/O port memory PCI Region 2 = 8b of I/O port memory PCI Region 3 = 64Kb of 32-bit PCI memory One PCI interrupt
Operating Temperature	0ºC (32ºF) up to +50ºC (122ºF)
Storage Temperature	-25ºC (-13°F) up to +70ºC (158°F)
Humidity	5% to 95% non-condensing

Ordering Information

Part Number	Product Description
SST-PBMS-PCI	PROFIBUS DP multi-slave card, PCI
Other PROFIBUS Interface Card Part Numbers:	
SST-PB3-PCU	PROFIBUS card, universal PCI bus (3.3V/5V)
SST-PB3-104	PROFIBUS card, PC/104
SST-PB3-ISA	PROFIBUS card, ISA
SST-PB3-VME-1	PROFIBUS card, VME, 1 channel/port
SST-PB3-VME-2	PROFIBUS card, VME, 2 channels/ports

Other Related Products:
- IP67 and IP20 PROFIBUS I/O modules
- Gateway solutions
- Cable, cordsets, receptacles, and other media components
- Diagnostic tools

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