



PowerSpan II™

Multi-port PCI Bus Switch for PowerPC and the Motorola PowerQUICC II

Features

Processor Support

- Direct connect interface for embedded processors:
 - Motorola: MPC825x, MPC826x, MPC7xx, MPC7400
 - PowerPC™: PowerPC 7xx, PowerPC 7400
 - Wintegra WinPath™
- 25 MHz to 100 MHz bus frequency
- Programmable endian conversion
- MPC8260 Configuration Slave support for power-up options
- Eight programmable memory maps to PCI from the processor
- Processor bus arbiter with support for three requesters

PowerSpan II is the proven PowerPC-to-PCI Bus Switch.

PCI Support

- Single PCI PowerSpan II: 64-bit/66MHz
- Dual PCI PowerSpan II: 64-bit/66MHz and 32-bit/66MHz
- Programmable 33 or 66 MHz PCI bus
- Integrated, non-transparent PCI-to-PCI bridge in the Dual PCI PowerSpan II
- PCI arbiters on each PCI interface
- CompactPCI Hot Swap Friendly
- PCI 2.2 Specification compliant

Packaging

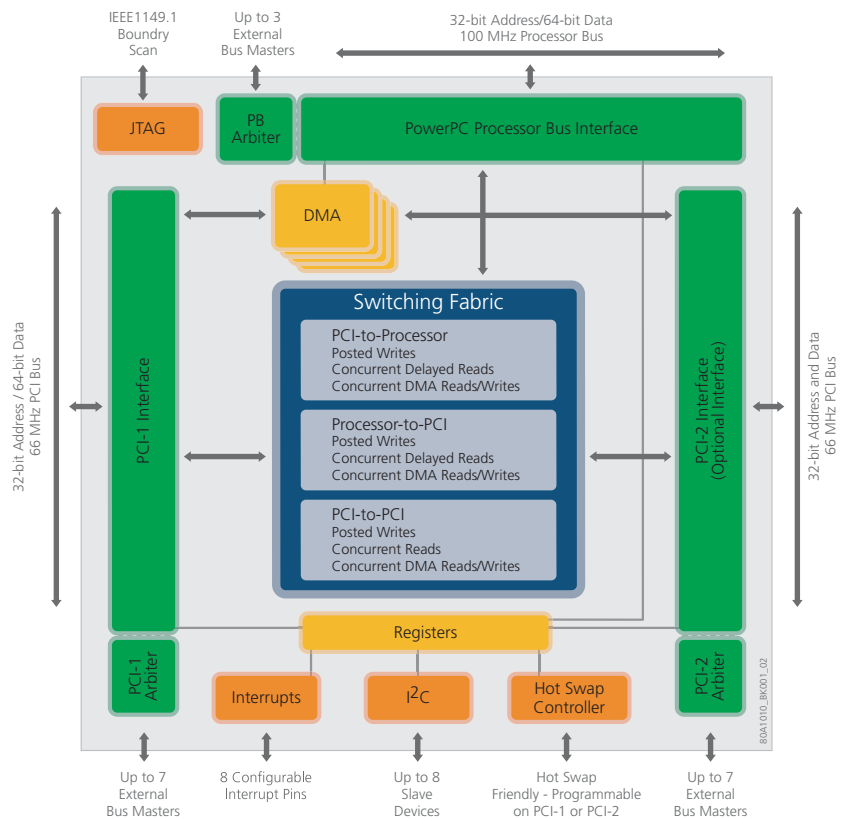
- Single PCI PowerSpan II
 - 420 HSBGA: 1.27mm ball pitch, 35mm body size
 - 484 PBGA: 1.0mm ball pitch, 23mm body size
- Dual PCI PowerSpan II
 - 480 HSBGA: 1.27mm ball pitch, 37.5mm body size
 - 504 HSBGA: 1.0mm ball pitch, 27mm body size

The Tundra Semiconductor PowerSpan II is a Multi-port PCI Bus Switch that bridges PCI to the PowerQUICC II (MPC8260), MPC7xx, PowerPC™ 7xx, and the Wintegra WinPath™ processors. PowerSpan II is available in either a single PCI or dual PCI variant. PowerSpan II defines a new level of PCI bus switch flexibility.

The integrated, non-transparent PCI-to-PCI bridge in the Dual PCI PowerSpan II provides a significant opportunity for designers to reduce component count and increase overall system performance.

PowerSpan II offers a flexible package design. The design is available in both the original PowerSpan package dimensions and newly designed, smaller packages.

Block Diagram



The high level of performance and flexibility of PowerSpan II is made possible through *Switched PCI* - unique to PowerSpan II. Switched PCI uses a switching fabric to enable data streams to pass from port-to-port across the multi-ported PowerSpan II without collision. This improves the burst performance and decreases latency on the PCI and processor buses — a key element in enabling increased I/O performance.

Benefits

- Proven Product: Based on the proven PowerSpan device.
- Ease of Use: A comprehensive suite of Design Support Tools are available today, including an MPC8260/PowerSpan II evaluation board from our partner Wind River™
- Smaller Packages: The PowerSpan II packages are more than 50% smaller than the original PowerSpan device.

PowerSpan II integrates many features—arbiters, PCI-to-PCI bridge— which decreases the number of components on a system board.

- Performance: The key attributes of the PowerSpan II that enable higher data throughput, decreased latency, and an overall increase in system performance are:
 - Switched PCI Architecture
 - Integrated, Non-transparent PCI-to-PCI bridge
 - Support for multiple I/O reads in parallel, non-blocking streams

Design Support Tools

Tundra is committed to helping customers minimize their time to market. That's why we provide one of the highest levels of design support in the industry, including:

- Application notes
- Evaluation boards
- IC models
- Hardware and software development tools

For more information, see the Tundra website at www.tundra.com/dst.

Ordering Information

For ordering information, see the Tundra website at www.tundra.com/PowerSpanII

Typical Applications

Tundra understands vendors' needs to increase performance throughout today's communications networks. From premise equipment to local carrier gear to high-end switches, designer's need to deliver ever-faster traffic through the same or smaller footprint at a reduced cost. Tundra System Interconnect helps in that effort by providing features and benefits across all areas of the network. PowerSpan II helps designers working on infrastructure equipment in the following areas:

| LAN/WAN | Remote/Local Access | Wireless |
|--------------------------------------|---------------------|-------------------------------------|
| Exchange Carrier Switching Equipment | ADSL Concentrators | Third Generation (3G) Base Stations |
| Ethernet Switches | VoIP Gateways | |
| MPEG 2 Encoders | VPN Equipment | |

The following diagram shows a typical PowerPC system architecture using PowerQUICC II and the dual PCI PowerSpan II.

Application Diagram

