

Features

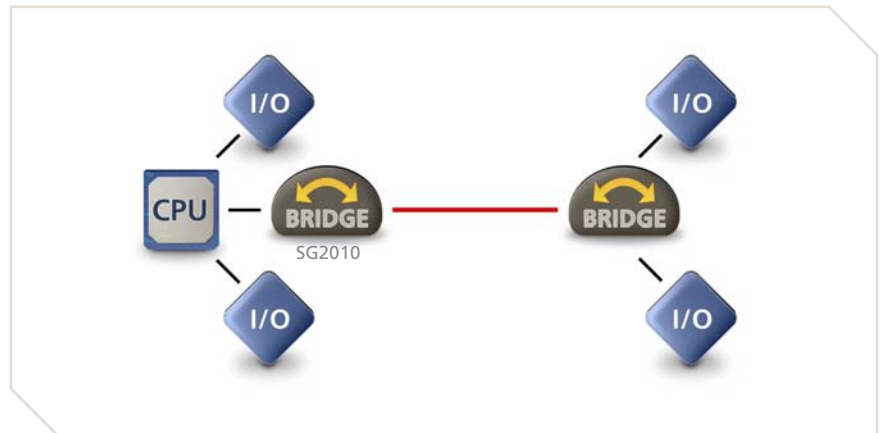
- ❖ Two StarFabric interface links, 2.5 Gbps, full duplex each link
- ❖ Links can be bundled to create a 5 Gbps, full duplex point to point link
- ❖ Chip-to-chip, board-to-board and chassis-to-chassis connections with off the shelf connectors
- ❖ Chassis-to-chassis interconnect with low-cost CAT5 cables up to 10 meters
- ❖ Supports either an 8 channel, 43-bit wide local address space or a 50-bit global address space
- ❖ Support for three routing methods:
 - Standard PCI addressing (address routing)
 - Path routing
 - Multicast routing
- ❖ Standard PCI addressing supports 100% PCI software compatibility
- ❖ Credit based flow control guarantees forward progress through the fabric
- ❖ Four classes of service:
 - Asynchronous
 - Isochronous
 - Multicast
 - High priority
- ❖ Link-by-link CRC and 8b/10b checking on all traffic
- ❖ Design complies with the PCI Local Bus Specification Revision 2.2, the PCI to PCI Bridge Architecture Specification Revision 1.1, and the CompactPCI Hot Swap Specification
- ❖ Physical layer interface is compatible with the IEEE 1596.3 and TIA/EIA-644 Low-Voltage Differential Signaling (LVDS) standards
- ❖ Eight general-purpose I/O pins with accessible registers
- ❖ IEEE standard 1149.1 JTAG interface

StarGen's SG2010 PCI-to-StarFabric Bridge provides an interface between PCI and StarFabric. The bridge translates PCI traffic into serial frame format for transmission across StarFabric.

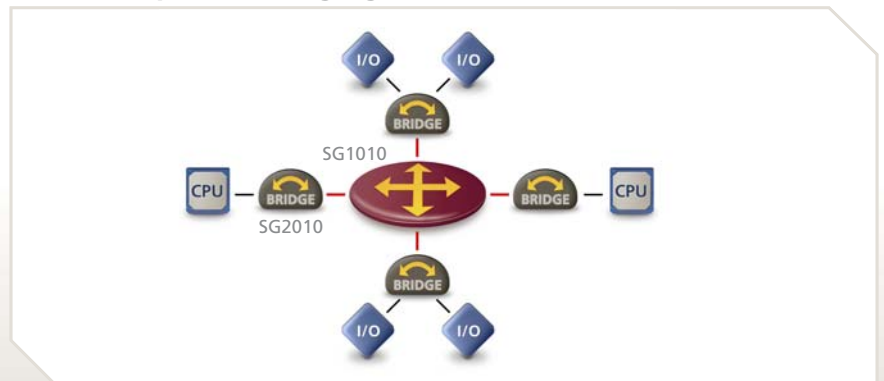
By connecting the bridge's serial interfaces to other bridges, or to StarGen's StarFabric switches, engineers can design flexible topologies with increased bandwidth, reliability, and number of endpoints or slots. PCI buses can be 32 or 64 bit, and can operate at 33 or 66 MHz.

The PCI-to-StarFabric Bridge supports legacy address-routed traffic with full compatibility to existing PCI software, including configuration, BIOS, OS, and drivers. With the SG2010 Bridge's gateway function, it supports StarFabric-native path and multicast routing capability along with other enhanced features.

PCI Expansion through Transparent Bridging



Non-Transparent Bridging



The fabric interface consists of two 2.5 Gbps full-duplex links. These links are comprised of four aggregated 622 Mbps LVDS differential pairs. The two links can be bundled to create a 5 Gbps full duplex link to a single device or they can be used separately for redundant connections.

Example Applications

- Networking and Telecommunication Equipment
- Servers and Storage Systems
- Medical Imaging Systems
- Industrial Control & Automation Systems
- Video and Image Processing Systems
- Military Imaging and Communication Equipment
- Scientific High Performance Computing
- Automated Test Equipment
- PICMG 2.17 & 3.3 Compliant

Specifications

Core Power Supply:	Vdd = 1.5V +/-5%
I/O Power Supply:	Vdd = 3.3V +/-5%
Operating Temperature:	-40 to 85 Degrees C
Storage Temperature:	-55 to 125 Degrees C
Power Dissipation:	2.15W maximum
Package:	272 PBGA
Part Number:	SG2010-A4



Benefits

- ❏ Full PCI compatibility maintains investment in existing PCI hardware and software
- ❏ Non-transparent bridging function enables use of multiple processors and I/O domains in systems
- ❏ Provides two StarFabric ports for redundant routing and flexible topologies
- ❏ CAT5e cabling supplies a simple low cost method to cable multiple systems and expansion boxes for up to 40 feet
- ❏ Improves system performance through utilization of multiple classes of service (CoS)
- ❏ Low latency interconnect

PCI to StarFabric Interface

