

IXS600

PCI Express® Gen2 Switch

PCI Express provides low latency, highly efficient switching for high performance applications. Dolphin Express implements PCI Express switching for its high speed inter-system switching solution. The IXS600 PCI Express switch delivers a powerful, flexible, Gen2 switching solution. Enabling I/O scaling and inter-processor communication by combining IDT's transparent and non-transparent bridging capabilities with Dolphin's software and clustering technology. IXS600 users can mount multiple PCI Express devices or create a highly efficient compute cluster.

The IXS600 is the switching element of Dolphin's IX product line. This eight port, 1U cluster switch delivers 40 Gbps of non-blocking bandwidth per port at ultra low latencies. Each x8 PCI Express port delivers maximum bandwidth to each device while maintaining backwards compatibility for Gen1 I/O components. As with other IX products, the IXS600 utilizes standard iPass™ connectors to string components via copper or fiber-optic cabling. IXS600 customer can link multiple standardized PCI Express devices such as graphics, storage, and I/O expansion units.

For Non Transparent Bridging (NTB) or clustering applications, the IXS600 integrates with Dolphin's IXH610 PCI Express Host Adapter or IXH620 XMC Adapter. The total NTB solution solves many of the problems related to PCI Express operations, such as power sequencing and standard software. Dolphin customers avoid the severe power-on requirements normally associated with PCI Express. Hosts, cables, and the switch can be hot-swapped and power cycled in any sequence for real plug and play.

The IXS600 switch supports Dolphin's comprehensive software suite. The Shared-Memory Cluster Interconnect (SISCI) API is a robust and powerful programming environment for easy development of shared memory applications. The optimized TCP/IP driver and SuperSockets™ software remove traditional networking bottlenecks. IP and Sockets applications can take advantage of the high performance PCI Express interconnect. This comprehensive solution is ideal for real-time, technical and high performance computing, cloud computing, and enterprise business applications.



FEATURES

- PCI Express 2.1 compliant -5.0 Gbps per lane
- Link compliant with Gen1 PCI Express
- Auto-training to lower lane widths
- Eight PCI Express Gen2 x8 ports
- Transparent and Non Transparent support
- PCI Express External Cabling Specification Rev1.0
 - PCI Express x8 iPass Connectors
- Fiber-optic and copper cable support
- Hot Plug PCI Express cabling support in NTB mode
- Built in management processor
- Boot configuration and user data support for cluster and system configuration
- 19 Inch 1U rack mountable chassis
- Front and rear operational status and alert LEDs
- Redundant Fans



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Product Deployment Applications

Inter-Processor Switching

The IXS600 is a key element in Dolphin's Gen2 inter-processor connectivity strategy. A IXS600 Industrial, military, or enterprise customer can create diverse multiprocessing configurations. The hybrid configuration illustrated shows single board computers and data nodes connected through the switch. The IXH610 host adapter and IXH620 XMC adapter are used to connect to different compute nodes.

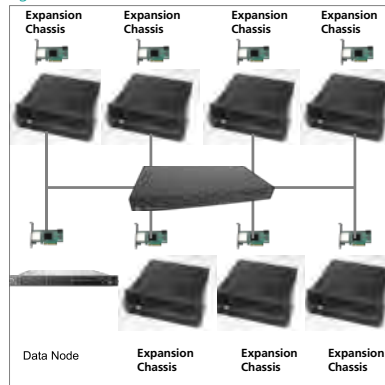
Figure 1



I/O Expansion Interconnect

Increasing the number of I/O components in a system is accomplished by using the IXS600 with PCI Express I/O expansion boxes. Figure 2 illustrates the IXS600 connecting 7 additional I/O expansion boxes. These boxes can accommodate components such as sensors, graphics, coprocessors, video capture cards, and other I/O devices.

Figure 2



SPECIFICATIONS

Link Speeds	40 Gbits/s duplex
Application Performance	3Gbytes/s application data rate 150ns port latency
Active Components	IDT® PES64H16AG2 Switch
Ports	8 - x8 non-blocking 40Gbps ports
Cable connections	PCI Express copper Cables - up to 3 meters Fiber-Optic cables- up to 300 meters
Management	RJ45 and USB management port Operational status and alert LEDs
Power	Auto-sensing power supply 110 - 240 V AC 50-60Hz Power consumption (including power to the optional fiber transceiver cables) : Max 80 Watts
Mechanical	1U, 19 inch rackmountable chassis 440mm (W) x 300mm (D) x 45mm (H) Redundant Fans
Operating Environment	Operating Temperature: 0° C -55° C Relative Humidity: 5% -95% non-condensing
Operating Systems	Windows XP, Windows 2003, Windows 2008, Windows Vista, and Windows 7 Linux VX works
Regulatory	CE Mark EN 55022, EN 55024-A1&A2, EN 61000-6-2 FCC Class A UL94V-0 compliant RoHS
Product Codes	IXS600

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