Dolphin Interconnect Solutions

Dolphin has deep experience in developing leading and innovative computer interconnect technology. Since the early 1990øs the company has been instrumental in the development of many of the industryøs most important standards including PCI, SCI, StarFabric, and PCI Express. Dolphin has supplied itøs interconnect products to major industry players including Siemens, Philips, Sony, Sun MicroSystems, Lexmark, Boeing, GE Medical, BNP Parabis, CAE, and Thales.

Dolphinøs PCI Express® solutions deliver outstanding performance compared to other interconnects in latency and throughput. When compared to 10 Gigabit Ethernet, PCI Express® latency is significantly lower, with measured latency 10 times lower than standard 10 Gigabit Ethernet. This lower latency is achieved without special tuning or complex optimization schemes. In addition, Dolphin takes advantage of the high throughput of PCI Express®.

What is a PCI Express® Network?

Maximizing application performance is a combination of processing, communication, and software. A PCI Express® Network is a Local Area Network (LAN) used to connect Processors, I/O devices, FPGAs and GPUs into an intelligent network using flexible cabling or fixed backplanes. PCI Express® networks eliminate system bottlenecks related to communication by reducing latency and delivering high bandwidth, allowing applications to reach their potential. Processors, FPGAs, and GPUs connected into an intelligent network benefit from the ultra-low latency and high throughput.

Dolphinøs PCI Express® networking solution consists of standardized computer hardware and software that obtains the most out of applications. Our standard form factor boards reduce time to market, enabling customers to rapidly develop PCI Express® networking solutions for data centers and embedded systems. Custom form factor boards meet customer requirements while delivering software compatibility and high performance.

PCI Express Software

The Dolphin Express Software Suite is aimed at performance for critical inter-processor communication and clustered distributed applications. The suite includes advanced performance tools for new and existing applications. Dolphinøs SuperSocketsÎ API removes traditional stack based network bottlenecks allowing Sockets and IP applications take advantage of the PIO and DMA operations. This functionality addition is supported on all PCI Express® devices without modification, improving performance and reducing time to market. SuperSocketsÎ enabled applications to experience latencies of 1.25 μs and throughput at 22 Gigabit/s at Gen2 PCI Express performance. The optimized TCP/IP driver enables IP applications to take advantage of the performance of PCI Express® providing increased throughput and reduced latency than traditional Ethernet based network communications.

The Dolphin enhanced SISCI embedded software API offers further optimization for shared memory and replicated shared memory applications. Embedded customers can benefit from even lower latencies in the range of 0.74μs latency with higher throughput of over 3500 MB/s. It also includes features such as data multicast and device to device transfers for FPGAs and GPUs.

Ultra Low Latency Ultra High Throughput

Maximizing application performance is a combination of processing, communication, and software. Dolphin develops PCI Express® interconnect solutions to eliminate system bottlenecks related to communication, allowing applications to reach their potential. Dolphinøs PCI Express® products reduce latency for database, storage, and high performance distributed applications while improving throughput for data transfers. Dolphin combines PCI Express®øs superior performance and ultra-low latency with standardized computer hardware and software to obtain the most out of applications.

The current Dolphin solution utilizes Gen 2 PCI Express® with 40 Gbps of raw bandwidth. Future product generations can easily upgrade to Gen 3 PCI Express®, doubling the bandwidth. The upgrade to Gen3 requires no software changes and maintains the low latency device characteristic of PCI Express®. The investment in low latency high performance Dolphin products will yield dividends today and into the future.

Dolphin Interconnect is headquartered in Oslo, Norway. U.S. operations are located in New Hampshire. Dolphin maintains sales offices in Dallas, Los Angeles, Boston, Oslo, and Toulouse and is represented internationally by a network of resellers, distributors and integrators. **www.dolphinics.com**