CPS-1616 16-Port, 16-Lane Serial RapidIO® Gen 2 Switch

IDT RapidIO Gen2 Switch

IDT is the industry’s leading supplier of RapidIO® interconnect solutions, providing a broad portfolio of switches, bridges, IP, and development platforms for defense, aerospace, video, imaging, and wireless markets. The IDT CPS-1616 Serial RapidIO Gen2 switch is optimized for systems that are footprint constrained. It can support complex systems driving RapidIO links across backplanes, as well as for chip-to-chip interconnect on boards.

Device Overview

The CPS-1616 provides a full, non-blocking bandwidth of 80 Gbps for up to 16 ports. The device uses a 5th generation switch fabric, building upon Gen1 CPS and Tsi switching architectures. This new switch uses patent pending features to minimize latency, ensure scheduling fairness, and provide superior multicast throughput. The CPS-1616’s 6.25 Gbaud SerDes is ideal for doing both local interconnect with low power, while also driving backplane links. This performance is realized over twice the transmission channel distance and three orders of magnitude improvement in bit error rate (BER) compared to the very capable Gen1 standard.

IDT’s Gen2 switches connect the Serial RapidIO ecosystem, including full backward compatibility to RapidIO 1.3 systems and components. The Serial RapidIO ecosystem enables carrier-grade reliable, fault-tolerant systems with four standard traffic priority levels for quality of service. It also offers best-in-class messaging and atomic transaction support with protocol throughput efficiencies superior to other leading embedded interconnect protocols.

Applications

IDT’s Gen2 switches, in tandem with other Serial RapidIO ecosystem switches and endpoints, enable next-generation compute density and power efficiencies. This significantly increases channel capacity for 3G to 4G wireless infrastructure, media gateways, video conferencing, and defense and medical imaging systems. Full peer-to-peer networking makes systems of arbitrary topology possible.
CPS-1616 BENEFITS FOR WIRELESS

- Carrier-grade reliable packet transport
- Gen2 performance to power ratio allows unprecedented compute density to enable 3G and 4G systems
- Switched architecture allows highly scalable system for micro and macro BTS implementations
- Carrier-grade 6.25 Gbaud SerDes enables backplane-based modular systems and system scaling by inter-chassis cabling
- Ecosystem-standard support for four priorities plus Critical Request Flow provides strong QoS support for multiple data flows plus control plane

CPS-1616 BENEFITS FOR DEFENSE AND AEROSPACE

- Serial RapidIO Error Management Extension support including Time-to-Live enables fault-tolerant systems
- VITA 41, Open VPX, and ATCA fabric mappings enable rapid development of modular, standards-based systems
- RapidIO-standard, true peer-to-peer networking allows scaling of arbitrary topology and simplifies hot swap software implementation
- Per-port filter feature allows blocking errant packets or malicious attack (for example, denial of service, system memory reads and writes)

CPS-1616 BENEFITS FOR VIDEO AND IMAGING

- 40 multicast masks per port provides strong support for broadcasting or multicasting a given data stream to multiple endpoints executing unique transforms, scaling, and CODECs
- IDT-proprietary “retransmit mimic” feature improves real-time support for latency sensitive lossy data transfers

SOFTWARE AND HARDWARE ECOSYSTEM

- Serial RapidIO Development Platform Gen2 (SRDP2)
- Serial RapidIO Gen2 Endpoint Intellectual Property for ASIC, CPU, DSP, and FPGAs
- Numerous partner RapidIO-enabled AMCs
- RapidFET JTAG edition software support
- RapidIO Linux support
- Power Calculator tool
- HSPICE and IBIS models

Discover what IDT know-how can do for you:
www.IDT.com/go/SRIOGen2