SPS-1616 AES-128 Encryption Serial RapidIO® Switch

IDT RapidIO Gen2 AES-128 Encryption Enabled 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 infrastructure markets. The IDT SPS-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 chassis-to-chassis links with hardware encryption and decryption.

Device Overview

The SPS-1616 is an AES-128 encryption RapidIO switch, which allows OEMs to implement hardware enabled encryption on RapidIO links that have to go outside a box, over cabling to an external network. This is ideal for applications where multiple boxes need to be cascaded to increase overall modularity and scalability of system deployment. By performing the encryption on transmit links and decryption on receive links in hardware, the SPS-1616 allows OEMs to maximize the 5 Gbps of data rate available on a x1 link with no increase to latency. This would not be possible with an encryption processor that would need to involve software in this process. By using the SPS-1616, system OEMs are able to develop high performance, scalable, RapidIO based networks. The SPS-1616 is ideal for system OEMs in meeting the security requirements for out-of-the-box cabling necessitated by the LTE specification.

In addition to the above, the SPS-1616 supports all RapidIO features available in the CPS-1616 including a full, non-blocking bandwidth of 80 Gbps for up to 16 ports. The device uses a 5th generation switch fabric, building upon IDT’s Gen1 switching architecture. This new switch uses patent-pending features to minimize latency, ensure scheduling fairness, and provide superior multicast throughput. The SPS-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 ratio (BER) compared to the very capable Gen1 standard.

Applications

IDT’s Gen2 switches, in tandem with other Serial RapidIO 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. The SPS-1616 security features are optimized for the application needs of wireless and defense applications.
SPS-1616 BENEFITS FOR WIRELESS

- Carrier-grade reliable packet transport with security features
- Hardware enabled security features allows OEMs to encrypt out-of-box links without software overhead and zero additional latency
- Maximizes available bandwidth on out-of-box links and meets LTE specification requirements
- Enables Wireless OEMs to develop scalable, stackable, small form-factor base stations while having high throughput between boxes and meeting security requirements
- SPS-1616 changes economics of network deployment by allowing OEMs to move from chassis based systems to small, scalable, modular systems improving network coverage
- Carrier-grade 6.25 Gbaud SerDes enables backplane-based modular systems and system scaling by inter-chassis cabling

SPS-1616 BENEFITS FOR DEFENSE AND AEROSPACE

- Use security enabled link on front panel to provide network access while also protecting registers, etc. from intrusion by non-secure sources
- Serial RapidIO Error Management Extension including Time-to-Live enables fault-tolerant systems
- VITA 41, OpenVPX, 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)

SOFTWARE AND HARDWARE ECOSYSTEM

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

Discover what IDT know-how can do for you:
www.IDT.com/go/SRI0Gen2