

Serial RapidIO®—The Second Generation

Serial RapidIO Gen2 solutions from IDT increase performance, reduce power consumption, and lower design costs.

Feature enhancements

IDT is enhancing many features in its RapidIO 1.3 offering as we bring Gen2 features to market, including:

- Full line rate non-blocking fabrics with 20 Gbps per port full duplex
- Support for all RapidIO Gen2 speeds up to 6.25 Gbaud
- RapidIO Gen2 reach requirements up to 100 cm 2connectors
- Superior latency
- High-performance multicast
- Best in class power per 10 Gbps of data
- Programmable pre-emphasis and receive equalization
- On-die scope capability allows engineers to view eye diagram on SerDes receiver
- Programmable watermarks on packet buffers
- Packet trace / mirror / filter per port for system debugging
- Backward compatibility to RapidIO 1.3
- Virtual channel support

Why Serial RapidIO Gen2

Serial RapidIO® interconnect switches have become the standard in wireless infrastructure, video and military/critical embedded systems. RapidIO Gen2 builds on the successful penetration of RapidIO 1.3 in these applications, where connecting large clusters of peer-to-peer processing elements is the preferred architecture.

RapidIO Gen2 provides interconnect speeds of 5 Gbaud and 6.25 Gbaud, doubling the speed of RapidIO 1.3. This increase enables the deployment of next-generation systems using higher processor speeds and allows for the aggregation of a larger number of processors while keeping up with real-time performance needs. Switches based on the RapidIO Gen2 specification also minimize end-to-end system latencies and feature deterministic system throughput.

The IDT RapidIO Gen2 family supports switching and IP solutions as well as bridging options to other interconnect protocols for heterogeneous system solutions.

Applications that benefit from RapidIO Gen2

Wireless baseband, video and military/critical embedded systems applications deploy large clusters of peer-to-peer ASICs, FPGAs and DSPs and are ideal candidates for RapidIO Gen2. These applications are increasingly driven by performance demands that require ever larger and more powerful clusters of processing elements.

3G and 4G Wireless

- Pervasive broadband everywhere through 3G high speed packet access, 3G LTE and WiMax
- Supports more subscribers per base station with higher data rate and service per subscriber
- Handoffs at higher speed supports broadband mobility up to and exceeding 100 km/h
- Increases performance of backplanes
- Reduces cost by running less links of long traces
- Allows better MIMO and advanced antenna systems algorithms within the system

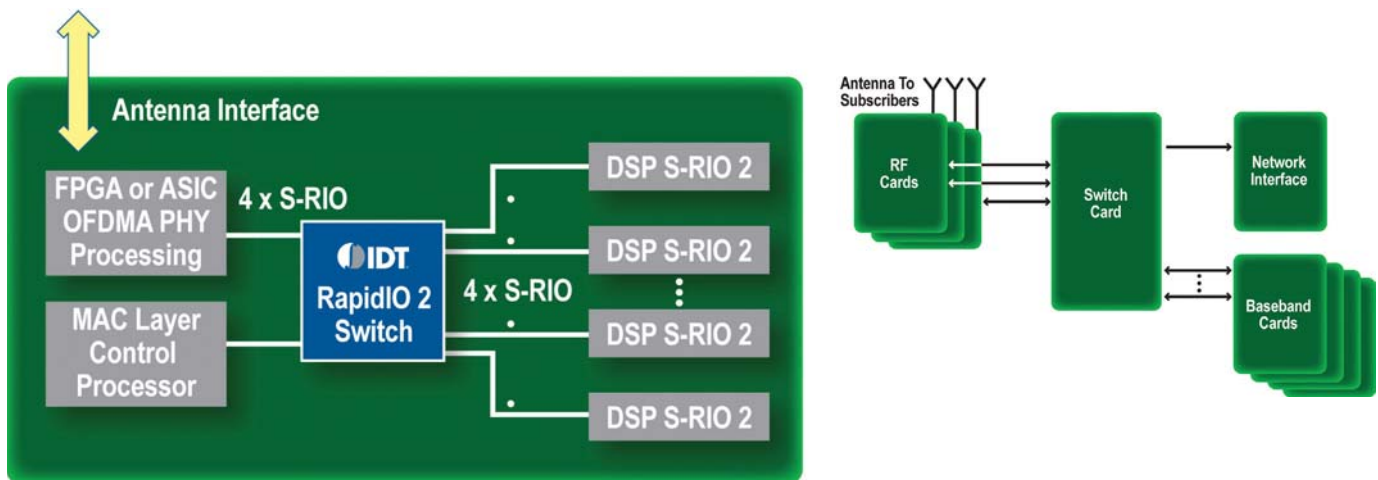


Figure 1. Typical wireless 3G LTE baseband card

Leadership in Serial RapidIO

The IDT Serial RapidIO Gen2 program builds on our RapidIO 1.3 solutions, currently in production in 3G wireless, WiMax, video and military applications.

Serial RapidIO Gen2 solutions from IDT:

- Deliver the best performance, lowest power, lowest latency switching solutions
- Leverage the IDT application knowledge in wireless, video and military markets
- IDT IP works out-of-the-box with IDT Serial RapidIO switches for proven interoperability
- System modeling allows customers to maximize bandwidth utilization and system performance

Video

- Supports high bandwidth to large DSP clusters using less wires
- Leverage multicast at higher data rates per link
- Enables applications like high definition video conferencing and internet protocol television (IPTV) leveraging the peer-to-peer embedded communication capability at the higher speeds

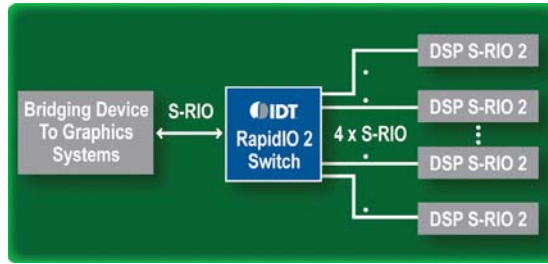


Figure 2. Video processing blade for high definition video conferencing

Military and Critical Embedded

- Most reliable embedded interconnect, and double per link performance over RapidIO 1.3
- Supports aggregation of larger processor clusters with fewer traces on single board computers
- Supports more bandwidth to backplane and board-to-board interconnect, enabling a higher performance system
- Interconnect for VMEbus International Trade Association (VITA) 41 and VITA 46

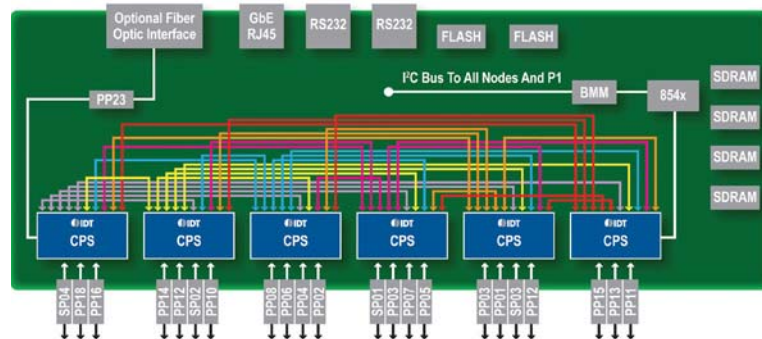


Figure 3. Military VITA 41 20+ port RapidIO-enabled switch card



Figure 4. S-RIO board with IDT CPS-10Q and TI chip

IDT RapidIO Gen2 Intellectual Property (IP)

As part of its RapidIO Gen2 portfolio, IDT offers endpoint IP which allows DSPs, FPGAs, ASICs and microprocessors to easily access RapidIO networks. By using IDT RapidIO Gen2 IP, customers are assured of interoperability with the number one supplier of RapidIO switches: IDT.

Texas Instruments™ has already adopted this IP in its next generation DSP program and will support RapidIO Gen2 with out-of-the-box interoperability with IDT RapidIO Gen2 switches. IDT RapidIO Gen2 endpoint IP will work seamlessly with all silicon tested pre-silicon with the RapidIO Trade Association's bus functional model, and post-silicon with RapidIO Interoperability Lab (RIOLAB™) certified devices.

Customers using the IDT RapidIO endpoint IP are supported by the IDT RapidIO system modeling tool, allowing them to proactively architect RapidIO networks with a variety of traffic scenarios, port widths and speeds in advance of board design. This allows customers to optimally select systems configuration based on overall performance. In summary, IDT remains committed to ensuring a robust RapidIO Gen2 ecosystem for high performance wireless, military and video systems.

Discover what IDT know-how can do for you.

www.IDT.com/go/SRIOGen2

