RapidIO® Gen 2 System Modeling Tool

TOOL OVERVIEW AND BENEFITS

- Tool to proactively architect embedded systems networks using RapidIO
- Analyze traffic under different network loading scenarios in advance of building hardware
- Optimize hardware infrastructure to use the optimal mix of components
- Maximize performance, minimize power consumption, reduce bill of materials
- Develop a single hardware platform for multiple product lines by simulating expected traffic for a variety of end applications with confidence
- Visualize network hot spots
- Easily configure RapidIO networks with a mix of endpoints and switches
- Gain early access to IDT RapidIO Gen 2 performance enhancement features

KEY FEATURES

- Model a complete RapidIO system, including switches and endpoints
- Support for Tsi57x, CPS Gen 2 switches, including all performance features
- Support for IDT Gen 1 and Gen 2 endpoint IP
- Support for RapidIO enabled TI DSPs
- Configure latency and scheduling options for switches, endpoints, and RapidIO connections
- Flexible traffic generation, including
  - Constrained random packet generation
  - Transfers of an amount of data using a particular packet type
  - Support for native RapidIO packet types (i.e. NREAD, Message, Data Streaming) including responses
  - Ability to relate traffic flows to each other in time
  - Configurable random delays for generation of requests and responses, which allows modeling of internal packet processing factors within endpoints
- Tools for investigation / interpretation of system performance
  - GUI for interpretation of model results
  - Displays diagram of the system
  - Displays packet exchange time line
  - Information for each endpoint flow
  - Information for packets transmitted/received on each link
  - Summary statistics

APPLICATIONS

- Wireless: 3G LTE, WiMAX, WCDMA, TD-SCDMA
- Aerospace and Defense: Radar, Sonar, Navigation, Signal Processing
- Video Conferencing
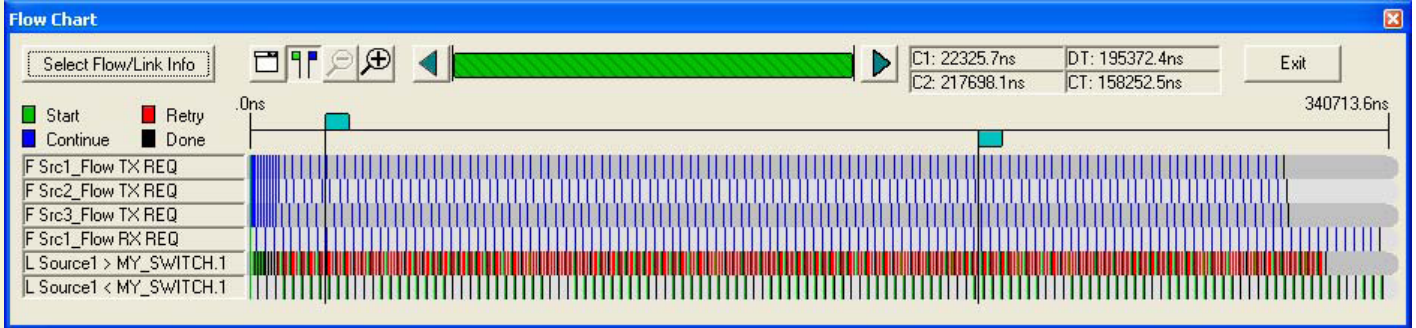- Medical Imaging
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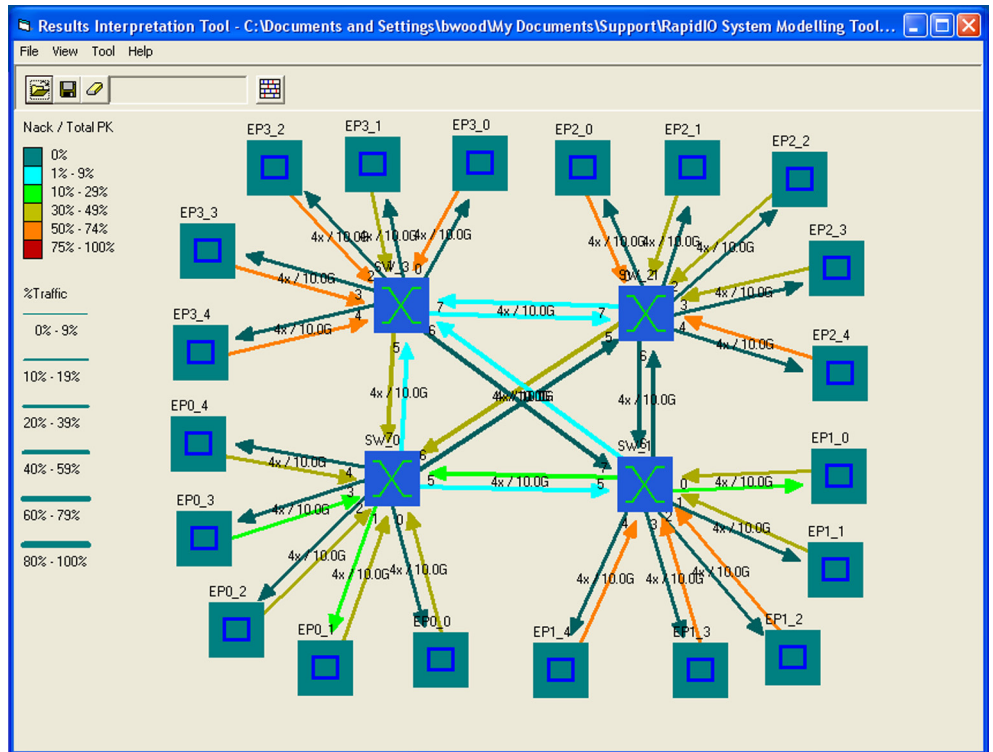
IDT RapidIO

Integrated Device Technology offers an extensive line of high-performance, low-latency RapidIO® switches with industry leading interoperability, configurability, and power per port. Today, IDT is shipping five generations of RapidIO switches in wireless, video, military, and industrial applications.

IDT RapidIO switches connect the latest generation of 3G and 4G wireless base stations, making pervasive mobile broadband a reality. IDT RapidIO solutions are literally bringing high definition real-time imaging, video and teleconferencing systems to life. In military and embedded computing the reliability and robustness of IDT RapidIO solutions are battlefield proven, making the jobs of servicemen and women safer and more effective.

System Architects are continuously faced with the problem of optimally designing networks in embedded systems. Typical trade-offs are maximizing performance, minimizing power, reducing bill of materials. The traditional means for maximizing performance is using more processing capacity and packing as many components as possible into the circuit board.

RapidIO offers users much more intelligent ways of maximizing performance. There are several features related to traffic management, priorities and fabric performance monitoring that can be used to improve network performance in advance of hardware availability.

Performance can be maximized for a network's intended usage without the traditional means of over provisioning links. By using the RapidIO2 System Modeling Tool, IDT offers engineers a means to get the performance they are looking for in an optimal way. Business managers benefit by doing this with lower power and lower bill of materials.

RapidIO® Gen 2 System Modeling Tool

POWER MANAGEMENT | ANALOG & RF | **INTERFACE & CONNECTIVITY** | CLOCKS & TIMING | MEMORY & LOGIC | TOUCH & USER INTERFACE | VIDEO & DISPLAY | AUDIO

The field-proven tool allows the user to easily understand the performance characteristics of their system on a packet-by-packet and flow-by-flow basis, delivering fast, accurate answers to architectural questions. The execution of the model gives the degree of control necessary to examine system execution down to the nanosecond, while retaining the ability to summarize packet transfer characteristics on a flow-by-flow, endpoint-by-endpoint, and link-by-link basis.

The tool also enables users to gauge performance in advance of systems development, and to identify the overall gains of using RapidIO over existing interconnect technologies.

Using the tool, designers can analyze traffic in a visual environment, with traffic information viewable on a link by link or flow by flow basis, based on the intended network traffic that the architect envisions between endpoints and switches in a system. Different scenarios can be virtually attempted with the tool to view the impact on system performance. It gives users unparalleled ability to "drive" their RapidIO network in advance of developing hardware, allowing them to make not only intelligent technical and business decisions, but also plan a basic hardware platform that has the capacity to be used in multiple product lines with only software and firmware changes.
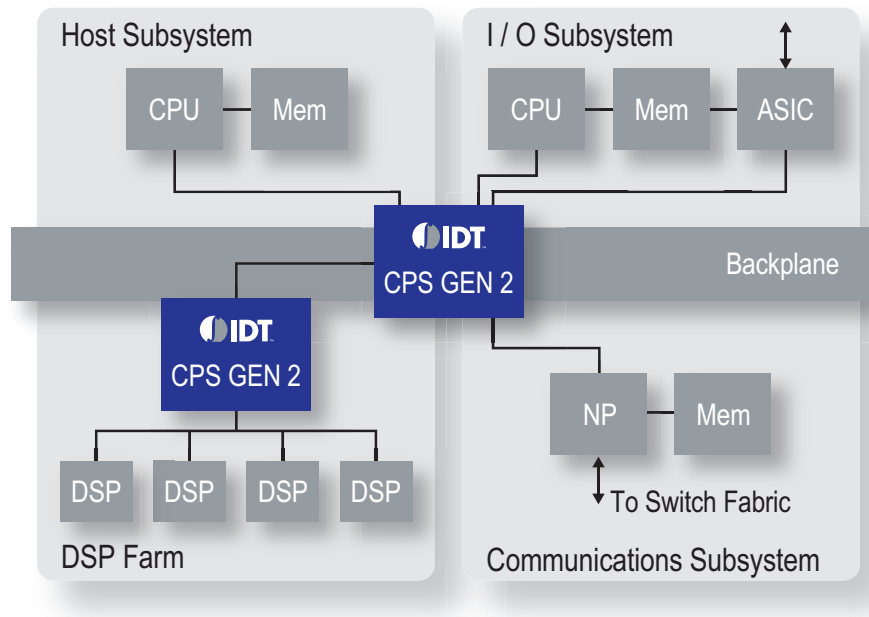
Discover what IDT know-how can do for you:
www.IDT.com/go/SRIOG2ModelTool