

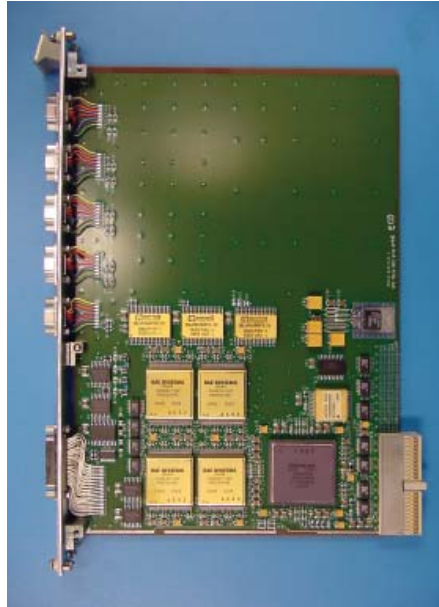
SpaceWire evaluation board

The 6U 160 CompactPCI SpaceWire evaluation board represents our first generation of SpaceWire solutions. This cost-effective prototyping board uses our custom SpaceWire radiation-hardened, ASIC to implement a four-port SpaceWire card with onboard memory. It provides complete router capability among the four ports, along with two user-end-point ports.



The SpaceWire evaluation board can stand alone or be integrated with other CompactPCI boards, such as the 3U RAD750® single-board computer. In either case the board-processing function easily can be extended by taking advantage of the onboard embedded microcontroller. C programming tools facilitate embedded micro-controller application development and debugging. A VxWorks device driver also is available for RAD750® applications.

BAE Systems SpaceWire ASIC development was sponsored by NASA's Glenn Research Center and Goddard Space Flight Center, and included joint-ASIC development with NASA Goddard.



FEATURES AND CAPABILITIES

Standard product

- BAE Systems #8421831-1
- Direct memory access (DMA) controller
- Embedded microcontroller
- 50-MHz oscillator
- External oscillator input
- 3.3V operation
- 2.5V regulator on board

SpaceWire interface

- 250 MHz
- Compliant-standard four ports (external)
- Two DMA-controlled internal ports
- Path and logical address support
- Fully configurable router
- Router and link status
- Transaction layer support

Memory interface

- 256 kB electrically erasable, programmable, read-only memory (EEPROM)
- 8 MB BAE Systems SRAM
- Error correction code
 - None
 - Parity
 - Single-error correct, double-error detect

PCI bus interface

- 32-bit 33 MHz +3.3V PCI bus peripheral
- Discretes

Test interfaces

- Universal asynchronous receiver transmitter
- Joint Test Action Group
- Discretes

Packaging

- 6U-160 CompactPCI

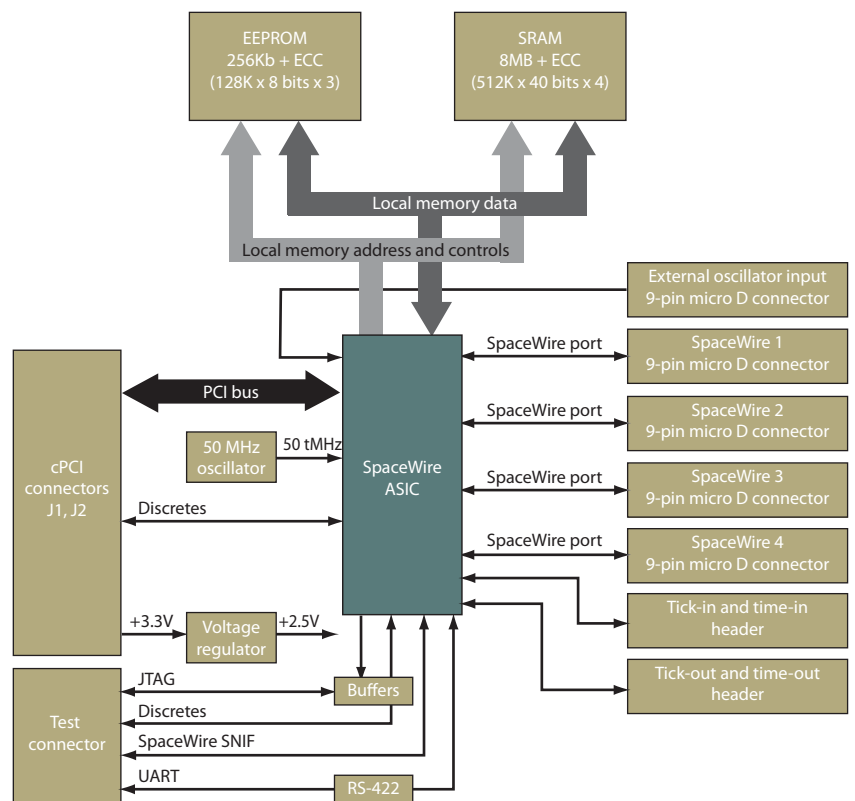
FOUR-PORT SPACEWIRE 6U cPCI EVALUATION BOARD

Router capabilities

Routing among the four external ports and the two local ports is accomplished with a non-blocking crossbar switch. A "round robin" arbitration algorithm ensures fairness in traffic management. An integrated routing table can be fully configured via the four external ports or locally via the CompactPCI interface.

Not just a router

The SpaceWire evaluation board also provides two user-end-point ports. These are supported by an embedded micro-controller that can be used to manage data movement or support upper-layer protocols. A memory subsystem also is provided for local data storage. A CompactPCI interface provides the means to connect with other system components.



FOR MORE INFORMATION, CONTACT:

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