Reflective Memory

PCIE-5565RC Reflective Memory Node Cards

ULTRA HIGH-SPEED, FIBER OPTIC NETWORK FOR DISTRIBUTED PROCESSING USING REFLECTIVE MEMORY

BENEFITS

- Highly scalable technology supports up to 256 nodes
- Bus independent design protects investments in your current network infrastructure
- Low latency, deterministic data transfer rate allows for predictable, high performance application deployment
- Seamless integration with SBC solutions and most industry standard offerings
- PIO versions offer improved PIO read performance and field upgradeable firmware

Reflective Memory is an optical ring-based, ultra high-speed shared memory network solution. It allows a distributed network to share real-time data at a deterministic rate, regardless of bus structures and operating systems. With more than 15 years of experience in this field,we are an original pioneer of this technology and our 5565 Reflective Memory family extends our market leadership position.

How do we do it? We keep it simple. Our Reflective Memory technology is centered on an innovative and efficiently designed hardware platform that is easy to use, provides for greater distance between nodes, high noise immunity, optional node bypass, and no software overhead. Just read and write to the onboard memory and the Reflective Memory node controller does the rest.

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PCIE-5565RC REFLECTIVE MEMORY NODE CARDS

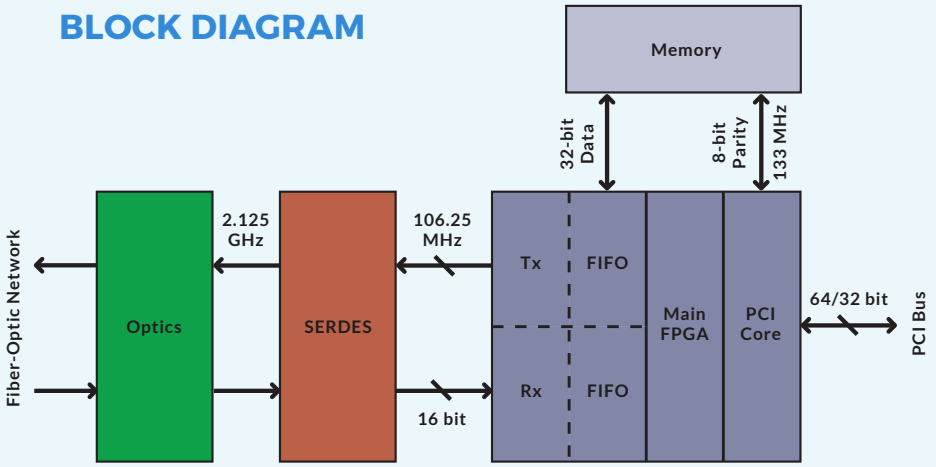
The 5565 Reflective Memory family is available in multiple form factors, including PCI Express (PCIE-5565RC), low profile PCI Express (PCIE-5565PIORC), PMC (PMC-5565PIORC), PCI (PCI-5565PIORC), and VME (VME-5565).

The family allows computers, workstations, PLCs, and other embedded controllers to all share data in real-time. The transfer of data between nodes is software transparent so no processor overhead is required. Data written into the Reflective Memory is broadcast to all nodes on the network without further involvement of the sending or receiving nodes.

J-Squared's Reflective Memory products are proven, highly reliable, and have been implemented worldwide in applications such as data acquisition, simulation and training, industrial automation, and telecommunications.

Best of all, it comes with the global support and services from a company with the experience, stability, innovation, and commitment you can rely on – J-Squared.

BLOCK DIAGRAM



FEATURES

- 2.12 Gbaud serial connection speed
- Supports dynamic packet sizes ranging from 4 to 64 bytes
- Up to 170 Mbyte/s sustained data rate
- Deterministic transfer rate with only 450 to 500 nanoseconds of latency between nodes
- Error management and detection protects against lost data
- Interrupt transfers support for any node
- 128 or 256 Mbytes of onboard SDRAM
- Multimode fiber support up to 300 m, single mode fiber support up to 10 km
- PCI Express, low profile PCI Express, PMC, PCI and VME form factors available
- Designed to meet the European Union (EU) Restriction of Hazardous Substance (RoHS) Directive (2002/95/EC) current revision – except VME-5565
- Star configuration available by using the ACC-5595 managed hub

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SPECIFICATIONS

SDRAM	• 128 or 256 Mbyte
Transfer Specifications	• 43 Mbyte/s (single longword accesses) to 170 Mbyte/s (64 byte bursts) nonredundant transfer rate • 20 Mbyte/s (single longword accesses) to 87 Mbyte/s (64 byte bursts) redundant transfer rate
PCI Transfer Rate	• 132 Mbyte/s (33 MHz/32-bit bus), 264 Mbyte/s (33 MHz/64-bit bus or 66 MHz/32-bit bus) or 528 Mbyte/s (66 MHz/64-bit bus) and throttles back to available link data rate as FIFOs begin to fill • PCI Express transfer rate: 4 lanes at 2.5GHz
Environmental Specifications	• Operating: 0 to +65 °C, with forced air cooling • Storage: -40 to +85 °C • Relative humidity: 20% to 80%, noncondensing
Power Requirements	• PMC PIO: 0.7A typical, 1.5A max at +3.3 VDC (±5 percent); 0.7A typical, 1.8A max at 5 VDC (±5 percent) • PCI PIO: 0.7A typical, 1.5A max at +3.3 VDC (±5 percent); 0.7A typical, 1.8A max at 5 VDC (±5 percent) • VME: 5.0A max at +5 VDC • PCIE: 0.6A max at +12 VDC (± 5 percent) and 1.6A max at +3.3 VDC • PCIE PIO: 0.7A max at +12 VDC (± 5 percent) and 0.6A max at +3.3 VDC
MTBF (Bellcore)	• PMC PIO: 1,307,078 hours • VME: 163,995 hours • PCI PIO: 1,225,247 hours • PCIE: 607,680 hours • PCIE PIO: 607,680 hours
Cables	• Multimode: small form factor (SFF) 850 nm, 300 m max • Single mode: small form factor (SFF) 1,310 nm, 10 km max
Operating Systems Support	• Windows XP (PMC, PCI, PCIE), NT, 2000 (VME only) • Linux (PMC, PCI, VME, PCIE) • VxWorks (PMC, PCI, VME, PCIE) • Solaris (PMC, PCI, VME) • Irix (VME only) • Compaq Tru64 (VME only)

ORDERING INFORMATION

PCIE-5565RC - A B C D E F

A = Memory Options
- 0 = Reserved
- 1 = 128 Mbyte
- 2 = 256 Mbyte

B = 0 (reserved for future use)
C = Transmission Mode
- 0 = Multimode
- 1 = Single mode

DEF = 000 (reserved for future use)

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