



M1EG4SFPI6

Quad Port SFP Gigabit Ethernet ExpressModule Server Adapter

Product Description

Silicom's Quad Port Copper Gigabit Ethernet ExpressModule Server adapter is PCI-Express X8 SFP Gigabit Ethernet network interface card that contain Multiple Gigabit ports on a PCI-Express adapter.

Silicom's Quad Port SFP Gigabit Ethernet ExpressModule Server adapter is designed for Servers and high-end appliances. The performance is optimized so that system I/O is not the bottleneck in high-performance networking applications.

Silicom's Quad Port SFP Gigabit Ethernet ExpressModule Server adapter enable fault-tolerant via teaming. Traffic from the failed port is routed through other members of the team.

Silicom's Quad Port SFP Gigabit Ethernet ExpressModule Server adapter has an integrated hardware acceleration that performs TCP/UDP/IP checksum offload and TCP segmentation. The host processing offloads accelerators frees CPU for application processing.

Silicom's Quad Port SFP Gigabit Ethernet ExpressModule Server adapter is the ideal solution for implementing multiple network segments, mission-critical high-powered networking applications and environments within high performance servers.

Key Features

Performance Features:

- 16 Transmit and Receive queues per port
- Up to 16 queues of Receive Side Scaling (RSS) minimize CPU utilization across multiple processor systems
- Support for 8 pools of virtual machine Device Queues (VMDq) per port
- Support Direct Cache Access (DCA)
- Support Intel I/O AT 2.0
- TSO interleaving for reduced latency
- UDP TSO
- Minimized device I/O interrupts using MSI and MSI-X
- Offload of TCP / IP / UDP checksum calculation and TCP segmentation
- SCTP receive and transmit checksum offload
- Packet interrupt coalescing timers (packet timers) and absolute- delay interrupt timers for both transmit and receive operation

SFP Gigabit Ethernet:

- Gigabit Ethernet Adapters with SFP cage support
- 1000Base-LX Fiber Gigabit Ethernet with 1000Base-LX SFP transceiver
- 1000Base-SX Fiber Gigabit Ethernet with 1000Base-SX SFP transceiver
- 1000Base-T (1000Mbit/s) Copper Gigabit Ethernet with 1000Base-T SFP transceiver

- Small Form Factor Pluggable (SFP) Cage for SFP LC connectors
- 2PortLink synchronization
- Optional SGMII mode (future support)

Common Key features:

- Host Interface standard support PCI Express ExpressModule 1.0
- High performance, reliability, and low power use in Intel 82576 Dual integrated MAC + PHY and SERDES chip Controllers
- Ultra deep, packet buffer per channel lowers CPU utilization
- Hardware acceleration that can offload tasks from the host processor. The Controllers can offload TCP/UDP/IP checksum calculations and TCP segmentation
- Server class reliability, availability and performance features
- Link Aggregation and Load Balancing
- Switch dependent: 802.3ad (LACP), Generic Trunking (GEC / FEC)
- Switch and NIC Independent
- Failover
- Priority queuing – 802.1p layer 2 priority encoding
- Virtual LANs –802.1q VLAN tagging
- Jumbo Frame (16KB)
- 802.x flow control
- PCI-SIG SR IOV (8 VF)
- Multicast/ broadcast Packet replication
- Statistics for SNMP MIB II, Ethernet like MIB, and Ethernet MIB (802.3z, Clause 30)
- Supports Vital Product Data (VPD)
- Integrated LinkSec security engines
- Supports IEEE 1588
- LEDs indicators for link/Activity status
- Hot Plug not supported. Can be supported by assembly change

Technical Specifications

SFP Gigabit Ethernet Technical Specifications -(SFP) Adapters	
SFP (Small Form Factor Pluggable) supports	1 Gbit SERDES interfaces supports 1000Base-X in order to connect with SFP to 1000Base-SX / 1000Base-LX / 1000Base-T SFP transceivers
IEEE Standard / Network topology: with 1000Base-T SFP	Gigabit Ethernet (1000Mbit/s only), 1000Base-T
IEEE Standard / Network topology: with 1000Base-SX SFP	Fiber Gigabit Ethernet, 1000Base-SX (850nM)
IEEE Standard / Network topology:	Fiber Gigabit Ethernet, 1000Base-LX (1310nM)

with 1000Base-LX SFP	
Operating Systems Support	
Operating system support:	Windows Linux FreeBSD VMware
General Technical Specifications	
Interface Standard:	PCI Express ExpressModule Specification Revision 1.0
Board Size:	168.2mm x 98mm (6.62"X3.858")
PCI Express Card Type:	X8
PCI Express Voltage:	+12V +- 8%
PCI Connector:	Gold Finger: X8
Controller:	Intel 82576EB
Holder:	Not included
I/O:	Small Form Factor Pluggable (SFP) Cage located on edge of the board
Weight:	120gr (4.23oz)
Power Consumption:	<p>10.32 W, 0.86 A at 12V : Typical, 1000Base-LX transceivers are installed in all ports; all ports operate at 1000Mbit/s</p> <p>9.00 W, 0.75 A at 12V: Typical , 1000Base-SX transceivers are installed in all ports; all ports operate at 1000Mbit/s</p> <p>11.64 W, 0.97 A at 12V: Typical 1000Base-T (copper) transceivers are installed in all ports; all ports operate at 1000Mbit/s</p> <p>7.56 W, 0.63 A at 12V: Typical 1000Base-T (copper) transceivers are installed in all ports; No link at all ports.</p> <p>6.48 W, 0.54 A at 12V: Typical, without SFP transceiver</p>
Operating Temperature:	0°C – 50°C (32°F – 122°F)
Storage:	-20°C–65°C (-4°F–149°F)

EMC Certifications:	<p>FCC Part 15, Subpart B Class B Conducted Emissions Radiated Emissions CE EN 55022: 1998 Class B Amendments A1: 2000; A2: 2003 Conducted Emissions Radiated Emissions CE EN 55024: 1998 Amendments A1: 2000; A2: 2003 Immunity for ITE Amendment A1: 2001 CE EN 61000-3-2 2000, Class A Harmonic Current Emissions CE EN 61000 3-3 1995, Amendment A1: 2001 Voltage Fluctuations and Flicker CE IEC 6100-4-2: 1995 ESD Air Discharge 8kV. Contact Discharge 4kV. CE IEC 6100-4-3:1995 Radiated Immunity (80-1000Mhz), 3V/m 80% A.M. by 1kHz CE IEC 6100-4-4:1995 EFT/B: Immunity to electrical fast transients 1kV Power Leads, 0.5Kv Signals Leads CE IEC 6100-4-5:1995 Immunity to conductive surges COM Mode; 2kV, Dif. Mode 1kV CE IEC 6100-4-6:1996 Conducted immunity (0.15-80 MHz) 3VRMS 80% A.M. By 1kHz CE IEC 6100-4-11:1994 Voltage Dips and Short Interruptions V reduc >95%, 30% >95% Duration 0.5per, 25per, 250per</p>
MTBF:	<p>70 Years * The prediction was performed for 40°C Ambient temperature, GB Environmental condition. The reliability prediction was performed in accordance with Telcordia SR-332</p>
LEDs	
LEDs:	<p>(2) LEDs per port Left LED: Link/Act : Turns on link (Green), Blinks on activity (Green) Right LED : Link Speed: Turns on Yellow 1G Link. Turns on Green 100M Link (optional for SGMII mode)</p>
LEDs location:	<p>LEDs are located on the PCB, visible via holes in the metal bracket. Each Green Link/Act and Yellow Link Speed LEDs are located above their own SFP connector port by light pipes</p>
Connectors:	<p>Small Form Factor Pluggable (SFP) Cage</p>

Order Information

P/N	Description	Notes
M1EG4SFPI6-R	Quad Port SFP Gigabit Ethernet ExpressModule Server Adapter	RoHS Compliant, X8, based on Intel 82576, PCI-E ExpressModule

Note: Model P/N -R: RoHS Compliant / Lead free adapter

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