PE2G4SFPI80L

Quad Port SFP Gigabit Ethernet PCI Express Server Adapter Intel® 82580EB Based

Product Description



Silicom's Quad Port SFP Gigabit Ethernet PCI Express Server adapter is PCI-Express X4 SFP Gigabit Ethernet network interface card that contain Multiple Gigabit ports on a PCI-Express adapter.

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

Silicom's Quad Port SFP Gigabit Ethernet server adapter is based on Intel 82580 Quad port Gigabit Ethernet MAC+PHY of Intel Controller.

Key Features

Performance Features:

- 8 Transmit and Receive queues per port
- Up to 8 queues of Receive Side Scaling (RSS) minimize CPU utilization across multiple processor systems
- Support for 8 pools (single queue) of virtual machine Device Queues (VMDq) per port
- Support Direct Cache Access (DCA)

- Support Intel I/O Acceleration Technology v3.0.
- TSO interleaving for reduced latency
- Minimized device I/O interrupts using MSI and MSI-X
- UDP, TCP and IP checksum offload
- UDP and TCP transmit segmentation offload (TSO)
- 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
- SFP (1000Mb/s) Copper Gigabit Ethernet with SFP transceiver
- Small Form Factor Pluggable (SFP) Cage for SFP LC connectors
- 2PortLink synchronization
- Optional SGMII mode (future support)

Common Key features:

- Support PCI Express Base Specification 2.0 (5 GTs)
- High performance, reliability, and low power use in Intel 82580 Quad 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 (9.5KB)
- 802.x flow control
- Multicast/ broadcast Packet replication
- Statistics for SNMP MIB II, Ethernet like MIB, and Ethernet MIB (802.3z, Clause 30)

- Supports Vital Product Data (VPD)
- LEDs indicators for link/Activity status

Technical Specifications

SFP Gigabit Ethernet Technical Specifications – (SFP) Adapters:	
SFP (Small Form Factor Pluggable) supports:	1 Gigabit 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 (1000Mb/s only), 1000Base-T
IEEE Standard / Network topology: with 1000Base-SX SFP	Fiber Gigabit Ethernet, 1000Base-SX (850nM)
IEEE Standard / Network topology: with 1000Base-LX SFP	Fiber Gigabit Ethernet, 1000Base-LX (1310nM)
SFP Gigabit Ethernet Technical Specifications (SFP 1000Base-SX) Adapters:	
IEEE Standard / Network topology: with 1000Base-SX SFP	Fiber Gigabit Ethernet, 1000Base-SX (850nM)
Cables and Operating distance:	Multimode fiber: 220m at 62.5 um 550m at 50 um
Optical Output Power:	Minimum: -5.95 dBm
Optical Receive Sensitivity:	Maximum: -9.5 dBm
Optical Receive Sensitivity:	Typical: -22.58 dBm Maximum: -17 dBm
SFP Gigabit Ethernet Technical Specifications (SFP 1000Base-LX) Adapters:	
IEEE Standard / Network topology: with 1000Base-LX SFP	Fiber Gigabit Ethernet, 1000Base-LX (1310nM)

Cables and Operating distance:	Single-Mode: 5000m at 9um Multimode fiber: 550m at 50 um 550m at 62.5 um
Optical Output Power:	Typical: -5.75 dBm Minimum: -3 dBm
Optical Receive Sensitivity:	Typical: -25.57 dBm Maximum: -19 dBm
Operating Systems Support	
Operating system support:	Windows Linux VMware
General Technical Specifications	
Interface Standard:	PCI-Express Base Specification Revision 2.0 (5 GTs)
Board Size:	167.64mm x 68.91mm (6.6”X2.713”)
PCI Express Card Type:	X4 Lane
PCI Express Voltage:	+12V +- 8%
PCI Express Connector:	Gold Finger: X4
Holder:	Metal Bracket: Full Height
Controller:	Intel 82580EB
I/O:	Small Form Factor Pluggable (SFP) Cage located on edge of the board
Weight:	100 gram (3.5275 oz)
Power Consumption:	5.88 W, 0.49 A at 12V: Typical all ports operate at 1000 BASE-LX 5.4 W, 0.45 A at 12V: No links in all ports operate with LX transceivers 4.8 W, 0.4A at 12V: Typical all ports operate at 1000 BASE-SX 4.56 W, 0.38 A at 12V: No links in all ports operate with SX transceivers 7.8 W, 0.65A at 12V: Typical all ports operate at 1000 BASE-T 3.84 W,0.32 A at 12V: No links in all ports operate at 1000 BASE-T 2.88 W,0.24A at 12V: Without transceivers

Operating Humidity:	0%–90%, non-condensing
Operating Temperature:	0°C – 45°C (32°F – 113°F)
Storage:	-40°C–65°C (-40°F–149°F)
EMC Certifications:	FCC Part 15, Subpart B Class A Conducted Emissions Radiated Emissions CE EN 55022: 1998 Class A 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
MTBF:	211 (Years) * According to Telcordia SR-332 Issue 2. Environmental condition – GB (Ground, Fixed, and Controlled). Ambient temperature 40°C
LEDs	
LEDs:	2 LEDs per port Left LED : Link: Turns on Yellow Any Speed Link. Right LED: Link/Act :

	Turns on link (Green), Blinks on activity (Green)
LEDs location:	LEDs are located on the PCB, visible via holes in the metal bracket. Each Green Link/Act and Link Speed LEDs is located above their own SFP connector port by light pipes.
Connectors:	Small Form Factor Pluggable (SFP) Cage (4X1)

Order Information

P/N	Description	Notes
PE2G4SFPI80L-R	Quad Port SFP Gigabit Ethernet PCI Express Server Adapter	X4, Based on Intel 82580EB, RoHS compliant
PE2G4SFPI80L-SX-R	Quad Port SFP (SX) Gigabit Ethernet PCI Express Server Adapter	X4, Based on Intel 82580EB, RoHS compliant
PE2G4SFPI80L-LX-R	Quad Port SFP (LX) Gigabit Ethernet PCI Express Server Adapter	X4, Based on Intel 82580EB, RoHS compliant

Model P/N -R

-R: RoHS Compliant / Lead free adapter

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