PE2G4I80

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

Product Description

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

Silicom's PCI Network 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 Copper 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 Copper 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 Copper 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 Copper 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

Copper Gigabit Ethernet 1000Base-T :

- Independently copper Gigabit Ethernet channels support four Gigabit Ethernet (1000Base-T), Fast Ethernet (100Base-Tx) and Ethernet (10Base-T)
- Triple speed 1000Mbps (1000Base-T), 100 Mbps (100Base-Tx) and 10 Mbps (100Base-T) operation
- Nway auto negotiation automatic sensing and switching between 1Gbps full duplex and 100 / 10 Mbps operations Simplex or Full Duplex
- RJ-45 female connectors

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/Speed status

Technical Specifications

Copper Gigabit Ethernet Technical Specifications – (1000Base-T) Adapters:	
IEEE Standard / Network topology:	Gigabit Ethernet, 1000Base-T Fast Ethernet, 100Base-TX Ethernet, 10Base-T
Full duplex / Simplex:	Support both Simplex & Full duplex operation in all operating speeds
Auto negotiation:	Auto-negotiation between Full duplex and simplex operations and between 10Mb/s 100Mb/s speeds and duplex 1000Mb/s
Data Transfer Rate:	1000 Mb/s, 100 Mb/s and 10 Mb/sec in simplex mode per port 2000Mb/s 200 and 20 Mb/s in full duplex mode per port
Operating Systems Support	
Operating system support:	Windows Linux FreeBSD VMware
General Technical Specifications	
Interface Standard:	PCI-Express Base Specification Revision 2.0 (5 GTs)
Board Size:	Standard height short add-in card 167.64mm X 111.18mm (6.60”X 4.377”)
PCI Express Card Type:	X4 Lane
PCI Express Voltage:	+3.3V +-9%, +12V +- 8%
PCI Connector:	Gold Finger: X4
Controller:	Intel 82580EB
I/O:	4x RJ45 located on edge of the board
Weight:	150g
Power Consumption:	5.04 W, 0.42A at 12V: Typical all ports operate at 1000Mb/s. 3.6 W, 0.3 at 12V:

	Typical all ports operate at 100Mb/s. 3.36 W. 0.28 at 12V: Typical all ports operate at 10Mb/s. 2.76 W, 0.23 A at 12V: Typical No link at all ports
Holder:	Metal Bracket: Full Height
Operating Humidity:	0%–90%, non-condensing
Operating Temperature:	0°C – 50°C (32°F – 122°F)
Storage:	-20°C–65°C (-4°F–149°F)
EMC Certifications:	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
MTBF:	281 (Years)

	*According to Telcordia SR-332 Issue 1 Environmental condition – GB (Ground, Fixed, Controlled). Ambient temperature – 25°C. Temperature rise of 15°C above the system ambient temperature was assumed for the cards components.
LEDs	
LEDs:	(2) LEDs per port Link / Act Led: Turn on any Link speed , Blinks on Activity (green) Speed (Bi-color) Led: 1000Mb/s: Turns on Orange 100Mbi/s: Turns on Green. 10Mb/s: Turns off
LEDs location:	LEDs are integrated on RJ-45 connector
Connectors:	(4) Shielded RJ-45

Order Information

P/N	Description	Notes
PE2G4i80-R	Quad Port Copper Gigabit Ethernet PCI Express Server Adapter	X4, Based on Intel 82580EB, Standard Height, RoHS compliant

Note: Model P/N -LP /-RoHS

-RoHS: RoHS Compliant / Lead free adapter

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