Silicom Ltd.
Connectivity Solutions

PEG2
Dual Port Copper Gigabit Ethernet PCI Express Server Adapter Broadcom® based

Description

The Silicom Gigabit Ethernet PCI Express server adapters are PCI Express network interface cards that contain Multiple / Single independent Gigabit Ethernet port/s on a PCI Express adapter.

Silicom Gigabit Ethernet PCI Express server adapters are Silicom's second-generation solution for high performance Server Network application. Silicom Gigabit Ethernet PCI Express Servers adapters are based on Broadcom BCM57XX PCI-E / PCI-X Gigabit Ethernet controllers that feature an industry first support for PCI Express server Adapters.

Industry-leading performance The Silicom Gigabit Ethernet PCI Express server adapters solution 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.

Reliability, Availability, Serviceability Silicom Gigabit Ethernet PCI Express server adapters enables fault-tolerant via teaming. Traffic from the failed port is routed through up to seven other members of the team.

Silicom Gigabit Ethernet PCI Express servers' adapters include software that offers the industry's best performance and features. VLAN (802.1q) allow traffic segregation and data privacy. Support of 802.1p traffic prioritization gives administrations ability to offer Quality of Service (QOS) on the network.

Silicom Gigabit Ethernet PCI Express Servers adapters have 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 Gigabit Ethernet PCI Express Servers adapters are the ideal solution for implementing multiple network segments, mission-critical high-powered networking applications and environments within high performance servers.

Key Features

Copper Gigabit Ethernet (1000Base-T) Adapters:

- Independently copper Gigabit Ethernet channels support six, four, two and one 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:

- Host Interface standard support PCI Express 1.0a
- High performance, reliability, and low power use in Broadcom 5714 / 5715 / 5704 dual integrated MAC + PHY / SERDES chip controller
- Ultra deep packet buffer per channel lowers CPU utilization
- Dual high speed RISC processor per channel for advanced packet classification
- 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 (9KB)
- 802.x flow control
- Boot ROM embedded or optional can be used for Boot ROM applications
- PCI Power Management Interface. (v1.1)
- Statistics for SNMP MIB II, Ethernet like MIB, and Ethernet MIB (802.3z, Clause 30)
- 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 Mbit/s, 100 Mbit/s and 10 Mbits/sec in simplex mode per port 2000Mbit/s 200 and 20 Mbit/s in full duplex mode per port
Cables and Operating distance:	10Base-T Category 3, 4, or 5 maximum 100m 100Base-Tx Category 5 maximum 100m 1000Base-T Category 5E maximum 100m
Operating Systems Support	
Operating system support:	Windows.NET Windows 2000 Windows NT Windows98 / WindowsXP Netware Linux FreeBSD Unix: SCO Open Server UnixWare / OpenUnix 8 Solaris
General Technical Specifications	
Interface Standard:	PCI Express Base Specification Revision 1.0

Board Size:	Low profile Short PCI Add in card 167.74mm X 63.5 mm (6.6” X 2.5”)
PCI Express Card Type:	X4 Lane
PCI Connector:	X4 Lane
PCI Express Voltage:	+3.3V +-9%,
Controller: :	Broadcom BCM5715C
Holder:	Metal Bracket
Weight:	80 gram (2.82 oz)
Power Consumption:	1.97A at 3.3V: Typical, port operates at 1000Mbit/s. 1.31A at 3.3V: Typical, port operates at 100Mbit/s. 1.14A at 3.3V: Typical, port operates at 100Mbit/s. 1.23A at 3.3V: Typical, No link
Operating Temperature:	0℃ – 50℃ (32℉ - 122℉)
Storage:	-20℃–65℃ (-4℉–149℉)
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*:	213 (Years) *According to Telcordia SR-332 Issue 1 Environmental condition – GB (Ground, Fixed, Controlled). Ambient temperature - 25℃. Temperature rise of 10℃ above the system ambient temperature was assumed for the cards components

LEDs

LEDs:	(3) LEDs per port Link Activity: Turns on any link speed, blinks on activity (green) 100Mbits/s: Turns on 100 Mbit/s link (green) 1000Mbit/s: Turn on 1000 Mbit/s link (green)

LEDs location:	LEDs are located on the PCB, visible via holes in the metal bracket holder
Connectors:	(2) Shielded RJ-45

Order Information

P/N	Description
PEG2-RoHS	Dual Port Copper Gigabit Ethernet PCI Express Server Adapter

Note: Model P/N /S/-LP /-RoHs
-RoHS: RoHS Compliant / Lead free adapter
S: Solaris:
-LP: Assemble Low Profile Metal Bracket:

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