

### **PE2G4SFPi35L** **Quad Port SFP Gigabit Ethernet PCI Express Server Adapter Intel® based**

#### **Description**

Silicom's Quad Port SFP Gigabit Ethernet PCI Express Server adapter is PCI-Express X4 SFP Gigabit Ethernet network interface card that is based on a single chip, non-Bridged quad port GBE controller.

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 server adapter is based on Intel i350 Quad port Gigabit Ethernet MAC+PHY of Intel Controller. The Silicom i350 support PCI-SIG Single-Root I/O virtualization and sharing specification (SR-IOV).

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.



#### **Key Features**

##### **Performance Features:**

- 8 Transmit and 8 Receive queues per port
- Up to 8 queues of Receive Side Scaling (RSS) minimize CPU utilization across multiple processor systems
- Support PCI-SIG Single-Root I/O virtualization Rev 1.1.
  - Support for up to 8 virtual function ( VFs)
  - Partial replication of PCI Configuration space
- Support for 8 pools (single queue) of virtual machine Device Queues (VMDq) per port
- Support Direct Cache Access (DCA)
- 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). machine
- 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 2.1 (5 GTs)
- High performance, reliability, and low power use in Intel i350 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.
- 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
- Supports Vital Product Data (VPD)
- LEDs indicators for link/Activity status

**Technical Specifications**

<b>SFP Gigabit Ethernet Technical Specifications - (SFP) Adapters:</b>	
SFP (Small Form Factor Pluggable) supports:	1Gb 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)
<b>SFP Gigabit Ethernet Technical Specifications (SFP 1000Base-SX) Adapters:</b>	
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:	Typical: -5.97 dBm Minimum: -9.5 dBm

Optical Receive Sensitivity:	Typical: -19.69 dBm Maximum: -17 dBm
<b>SFP Gigabit Ethernet Technical Specifications (SFP 1000Base-LX) Adapters:</b>	
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
Cables and Operating distance: Up to:	Single-Mode: 10000m at 9um
Optical Output Power:	Typical: -5.87 dBm Minimum: -3 dBm
Optical Receive Sensitivity:	Typical: -25.35 dBm Maximum: -19 dBm
<b>Operating Systems Support</b>	
Operating system support:	Linux Windows
<b>General Technical Specifications</b>	
Interface Standard:	PCI-Express Base Specification Revision 2.1 ( 5 GTs)
Board Size:	165.15mm x 68.91mm (6.502"X2.713")
PCI Express Card Type:	X4 Lane
PCI Express Voltage:	+3.3V +-9%, +12V +- 8%
PCI Connector:	Gold Finger: X4
Controller: :	Intel i350AM4
I/O:	4 x SFP located on edge of the board
Weight:	100 gram (3.5275 oz)
Power Consumption:	5.64 W, 0.47 A at 12V: Typical all ports operate at 1000 BASE-LX 5.28 W, 0.44 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 7.44 W, 0.62A at 12V: Typical all ports operate at 1000 BASE-T 3.6 W,0.3 A at 12V: No links in all ports operate at 1000 BASE-T 2.76 W,0.23A at 12V: Without transceivers
Holder:	Metal Bracket
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

	<p>Radiated Emissions CE EN 55022: 1998 Class A Amendments A1: 2000; A2: 2003</p> <p>Conducted Emissions Radiated Emissions CE EN 55024: 1998 Amendments A1: 2000; A2: 2003</p> <p>Immunity for ITE Amendment A1: 2001 CE EN 61000-3-2 2000, Class A</p> <p>Harmonic Current Emissions CE EN 61000 3-3 1995, Amendment A1: 2001</p> <p>Voltage Fluctuations and Flicker CE IEC 6100-4-2: 1995</p> <p>ESD Air Discharge 8kV. Contact Discharge 4kV. CE IEC 6100-4-3:1995</p> <p>Radiated Immunity (80-1000Mhz), 3V/m 80% A.M. by 1kHz CE IEC 6100-4-4:1995</p> <p>EFT/B: Immunity to electrical fast transients 1kV Power Leads, 0.5Kv Signals Leads CE IEC 6100-4-5:1995</p> <p>Immunity to conductive surges COM Mode; 2kV, Dif. Mode 1kV CE IEC 6100-4-6:1996</p> <p>Conducted immunity (0.15-80 MHz) 3VRMS 80% A.M. By 1kHz CE IEC 6100-4-11:1994</p> <p>Voltage Dips and Short Interruptions V reduc &gt;95%, 30% &gt;95% Duration 0.5per, 25per, 250per</p>
MTBF:	<p>213 (Years) * According to Telcordia SR-332 Issue 2. Environmental condition – GB (Ground, Fixed, and Controlled). Ambient temperature 40°C.</p>
<b>LEDs</b>	
LEDs:	<p>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)</p>
LEDs location:	<p>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.</p>
Connectors:	<p>Small Form Factor Pluggable (SFP) Cage (4X1)</p>

## Order Information

P/N	Description	Notes
PE2G4SFPi35L	Quad Port SFP Gigabit Ethernet PCI Express Server Adapter	X4, Based on Intel i350AM4, RoHS compliant
PE2G4SFPi35L-SX	Quad Port SFP(SX) Gigabit Ethernet PCI Express Server Adapter	X4, Based on Intel i350AM4, RoHS compliant
PE2G4SFPi35L-LX	Quad Port SFP(LX)Gigabit Ethernet PCI Express Server Adapter	X4, Based on Intel i350AM4, RoHS compliant

Model P/N  
RoHS Compliant / Lead free adapter.