

## **PE10G1i-T - Single Port Copper 10 Gigabit Ethernet PCI Express Server Adapter Intel® based**

### **Introduction**

Silicom's 10 Gigabit Ethernet PCI Express server adapters are designed for Servers and high-end appliances. The Silicom 10 Gigabit Ethernet PCI Express Server adapters offer simple integration into any PCI Express X8 to 10Gigabit Networks. The performance is optimized so that system I/O is not the bottleneck in high-performance networking applications.



The Silicom 10 Gigabit Ethernet PCI Express server adapters are based on Intel 82598EB Ethernet controller with two fully integrated Gigabit Ethernet Media Access Control (MAC) and XAUI ports. In addition to managing MAC and PHY Ethernet layer functions, the controller manages PCI Express packet traffic across its transaction, link, and physical/logical layers. Using hardware acceleration, the controller offloads tasks from the host, such as TCP/UDP/IP checksum calculations and TCP segmentation.

Silicom's 10 Gigabit Ethernet PCI-Express Server 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 10Gigabit Ethernet 10GBASE-T :**

- \* 10 Gigabit Copper Ethernet port supports 10GBASE-T and 1000 BASE-T
- \* RJ-45 connector, supports CAT 6 cable

#### **Host Interface:**

- \* PCI Express X8 lane
- \* Support PCI Express Base Specification 1.1
- \* Low-Profile Adapter
- \* Low power

#### **Performance Features:**

- \* IPV6 Supports for IP/ TCP and IP/UDP Receive Checksum offload
- \* Fragmented UDP checksum offload for Packet Reassembly
- \* Receive Side Scaling minimize CPU utilization across multiple processor systems
- \* Support for 16 virtual machine Device Queues ( VMDq) per port
- \* Support Direct Cache Access ( DCA)
- \* Advanced memory architecture reduces latency
- \* Minimized device I/O interrupts using MSI and MSI-X
- \* Offload of TCP / IP / UDP checksum calculation and TCP segmentation.
- \* Large on chip receive packet buffer (520 KB)

\* Large on chip transmit packet buffer ( 320KB)

**LAN Features:**

- \* IEEE 802.x flow control support
- \* IEEE 802.q VLAN tagging support
- \* IEEE 802.1p layer 2 priority encoding
- \* Jumbo Frame (up to 16KB).
- \* Link Aggregation and Load Balancing.
- \* RFC2819 RMON MIB statistics
- \* TCP Segmentation Offload Up to 256KB
- \* Ipv6 Support for IP/TCP Receive Checksum Offload
- \* DDP Offload
- \* LEDs indicator for link/Activity.

**Technical Specifications:**

**Copper Ethernet Technical Specifications - (10GBASE-T) Adapters:**

<b>IEEE Standard / Network topology:</b>	Copper 10Gigabit Ethernet, 10GBASE-T Gigabit Ethernet, 1000Base-T
<b>Full duplex / Simplex</b>	Support both Simplex & Full duplex operation in 1000Mbit/sec operating speed, and only Full duplex in 10Gbit/s operating speed
<b>Auto negotiation</b>	Auto-negotiation between Full duplex and simplex in 1Gbit/s operations, and between 10Gb/s and 1000Mb/s
<b>Data Transfer Rate:</b>	1000 Mbit/s in simplex mode per port. 20Gbit/s and 2000 Mbit/s in full duplex mode per port.
<b>Cables and Operating distance:</b>	10G Base-T Category 6 supports distance of 55m to 100m * 1000Base-T Category 5E maximum 50m ** * Supported link segments up to 100m shall meet the alien crosstalk to insertion loss requirements specified in 55.7.3.1.2 and 55.7.3.2.2 of IEEE802.3an-2006 **theoretical Distance – Defined as half a distance as stated by the IEEE 802.3 standard

**Operating Systems Support:**

<b>Operating system support:</b>	Windows
	Linux
	FreeBSD
	VMware

## PE10G1i-T

### PE10G1i-T: General Technical Specifications

<b>Interface Standard:</b>	PCI-Express Base Specification Revision 1.1
<b>Board Size:</b>	Low profile add-in card: 167.65mm X 68.91mm (6.60"X 2.713")
<b>PCI Express Card Type:</b>	X8 Lane
<b>PCI Express Voltage:</b>	+3.3V +-9%, +12V +- 8%
<b>PCI Connector:</b>	X8 Lane
<b>Controller:</b>	Intel 82598EB
<b>Holder:</b>	Metal Bracket
<b>Operating Humidity:</b>	0% – 90%, non-condensing
<b>Operating Temperature:</b>	0°C – 50°C (32°F - 122°F)
<b>Storage:</b>	-20°C – 65°C (-4°F – 149°F)
<b>EMC Certifications:</b>	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

## PE10G1i-T: LED / Connector Specifications

<b>LEDs:</b>	3 LEDs per port: Link of 1Gb/s: Turns on link (green) Link of 10Gb/s: Turns on link (green) Link /ACT : Turns on link , blinks on activity (green)
<b>LEDs location:</b>	LEDs are located on the PCB, visible via holes in the metal bracket holder
<b>Connectors:</b>	RJ-45

## Order Information:

<b>P/N</b>	<b>Description</b>	<b>Notes</b>
<b>PE10G1i-T</b>	Single Port Copper 10 Gigabit Ethernet PCI Express Server Adapter (10G BASE- T)	X8, Based on Intel 82598EB, Low-profile, RoHS compliant

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