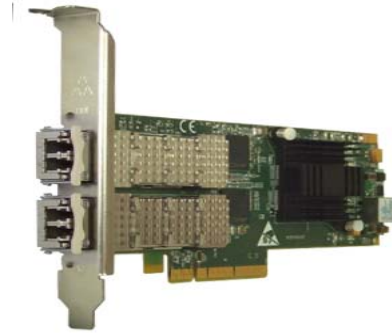# PE10G2i-LR - Dual Port Fiber (LR) 10 Gigabit Ethernet PCI Express Server Adapter Intel® based

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

Fiber 10 Gigabit Ethernet 10GBASE-LR:
• 10 Gigabit Fiber Ethernet port supports 10GBASE-LR (1310nM LAN PHY)
• 10 Gigabit 1310nM Small form Factor Pluggable (XFP)
• LC duplex connector

Common Key features:
• Host Interface:
  • PCI Express X8 lane
  • Support PCI Express Base Specification Revision 2.0 (2.5 GHz)
  • 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 intterupts 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:

Fiber Gigabit Ethernet Technical Specifications - (10GBASE-LR) Adapters

IEEE Standard / Network topology:	Fiber 10Gigabit Ethernet, 10GBASE-LR (1310nM LAN PHY)
Data Transfer Rate:	10.3125GBd
Cables and Operating distance:	Single-Mode: 10000m at 9um
Output Transmit Power:	Typical : -2.25 dBm Minimum : +0.5dBm
Optical Receive Sensitivity:	Typical : -19.5 dBm Minimum : +12.6 dBm
Maximum Input Power	Maximum: +0.5dBm

Operating Systems Support :

Operating system support:	Windows Linux

PE10G2i-LR

PE10G2i-LR: General Technical Specifications

Interface Standard:	PCI-Express Base Specification Revision 2.0 (2.5 GHz)
Board Size:	Low profile add-in card: 167.65mm X 68.91mm (6.60"X 2.713")
PCI Express Card Type:	X8 Lane
PCI Express Voltage	+3.3V +-9%, +12V +- 8%
PCI Connector:	X8 Lane
Controller:	Intel 82598EB
Holder:	Metal Bracket
Weight:	210 gram (7.408 oz)
Power Consumption:	13.97W 1.62 A at 3.3V and 0.72 A at 12V: Typical all ports operate at 10Gbit/s. 13.72W 1.540 A at 3.3V and 0.720 at 12V: Typical No link at all ports 9.59W 0.470 A at 3.3V and 0.670 at 12V: Typical No XFPs
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:	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*	60 (Years)
	*According to Telcordia SR-332 Issue 1
	Environmental condition – G_B (Ground, Fixed, Controlled). Ambient temperature - 25°C. Temperature rise of 10°C above the system ambient temperature was assumed for the cards components

PE10G2i-LR : LED / Connector Specifications

LEDs:	LED per port Link / ACT : Turns on link , Blinks on activity (green)
LEDs location	LEDs are located on the PCB, visible via holes in the metal bracket holder
Connectors:	LC

Order Information:

P/N	Description	Note
PE10G2i-LR	Dual Port Fiber (LR) 10 Gigabit Ethernet PCI Express Server Adapter	X8, Based on Intel 82598EB, Low-profile, on board support for Fiber LR, RoHS complaint

Note: Model P/N -LP

-LP: Assemble Low Profile Metal Bracket

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