



PE340G1QI71

Single Port Fiber 40 Gigabit Ethernet PCI Express Server Adapter Intel® XL710BM1 Based

Product Description

Silicom's 40 Gigabit Ethernet PCI Express server adapters are designed for Servers and high-end appliances.

The Silicom 40 Gigabit Ethernet PCI Express Server adapters offer simple integration into any PCI Express X8 to 40Gigabit Networks. The performance is optimized so that system I/O is not the bottleneck in high-performance networking applications.

The Silicom 40 Gigabit Ethernet PCI Express server adapters are based on Intel XL710BM1 Ethernet controller with two fully integrated Gigabit Ethernet Media Access Control (MAC) and XLPPi Interface.

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 40 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

Performance Features:

- Support for jumbo frame up to 9.5KB
- Flow control support
- Priority Flow Control (draft IEEE 802.1Qbb)
- Enhanced Transmission Selection (draft IEEE802.1az)
- Statistics management and RMON
- 802.1q VLAN support

- DCB/DCB-X support
- Message Signal interrupts (MSI-X)
- Storage – Enabling competitive performance with native OS intelligent offload solutions, including NAS, iSCSI and FCoE

Host Interface:

- PCI Express X8 lanes
- Support PCI Express Base Specification 3.0 (8GT/sec)

LAN and Virtualization Features:

- Network Virtualization offloads for VXLAN and NVGRE
- Unified Networking Providing a single wire for LAN and storage: NAS (SMB, NFS) and SAN (iSCSI, FCoE)
- Virtual Bridging Support – VEPA/802.1Qbg, BPE/802.1Qbh
- Physical Functions – Up to 8 per port, up to 16 per device
- Support for 128 Virtual Device Queues (VMDq) per port
- Hardware Queue Pairs – Up to 1.5K (non-RDMA); up to 256K (RDMA)
- Virtualization – Alleviating hypervisor I/O bottlenecks by providing flow separation for Virtual Machines (VMs)
- TCP/IP/L2 features:
 - Receive Side Scaling (RSS)
 - Large Send Offload (LSO)
 - TCP/UDP/IP/SCTP Checksum Offload
- IPV4, IPV6

Technical Specifications

QX4: QSFP+ 40Gigabit Ethernet Technical Specifications Adapters:	
QSFP+ (Quad Small Form-factor Pluggable) supports:	XLPPi interfaces supports 40GBase-R PCS and 40 Gigabit PMA in order to connect with QSFP+ to 40GBase-SR4 / 40GBase-LR4 / 40G Direct Attach Cable
IEEE Standard / Network topology: with 40GBase-SR4 QSFP+	Fiber 40Gigabit Ethernet, 40GBASE-SR4 (850nm LAN PHY)
IEEE Standard / Network topology: with 40GBase-LR4 QSFP+	Fiber 40Gigabit Ethernet, 40GBASE-LR4 (1310nm LAN PHY)

QS41: Fiber 40GBASE-SR4 Ethernet Technical Specifications:

IEEE Standard / Network topology:	Fiber 40Gigabit Ethernet, 40GBASE-SR4 (840 to 860 nm LAN PHY). IEEE 802.3ba
Data Transfer Rate:	10.5 GBd per lane
Cables and Operating distance:	50um, (OM3) 1500 MHz*Km, 0.5 to 100 m 50um, (OM4) 3500 MHz*Km, 0.5 to 150 m
Output Transmit Power:	Maximum: 2.4 dBm per lane Minimum: -7.6 dBm per lane
Optical Receive Sensitivity:	Minimum: -5.4 dBm
Maximum Input Power:	Maximum: 2.4 dBm

QS43: Fiber 40GBASE-SR4 Ethernet Technical Specifications:

IEEE Standard / Network topology:	Fiber 40Gigabit Ethernet, 40GBASE-SR4 (840 to 860 nm LAN PHY). IEEE 802.3ba
Data Transfer Rate:	10.5 GBd per lane
Cables and Operating distance:	50um, (OM3) 1500 MHz*Km, 0.5 to 300 m 50um, (OM4) 3500 MHz*Km, 0.5 to 400 m
Output Transmit Power:	Maximum: 0.5 dBm per lane Minimum: -7.5 dBm per lane
Optical Receive Sensitivity:	Minimum -7.5dBm
Maximum Input Power:	Maximum: 2.4 dBm

QL4: Fiber 40GBASE-LR4 Ethernet Technical Specifications:

IEEE Standard / Network topology:	Fiber 40Gigabit Ethernet, 40GBASE-LR4 (1264.5nm – 1277.5nm ; 1284.5nm – 1297.5nm ; 1304.5nm – 1317.5nm ; 1324.5nm – 1337.5nm LAN PHY). IEEE 802.3ba
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Data Transfer Rate:	10.3125 GBd per lane
Cables and Operating distance:	SMF-28, 10Km
Output Transmit Power:	Maximum: 2.3 dBm per lane Minimum: -7.0dBm per lane
Optical Receive Sensitivity:	Maximum: -9.6 dBm
Maximum Input Power:	Maximum: 2.3 dBm
Operating Systems Support	
Operating system support:	Windows Linux
General Technical Specifications	
Interface Standard:	PCI-Express Base Specification Revision 3.0 (8 GT/sec)
Board Size:	167.6mm X 64.38mm(6.600" X 2.535") PCB thickness is 0.062 inch
PCI Express Card Type:	X8 Lane
PCI Express Voltage:	+12V +- 8%
PCI Connector:	X8 Lane
Controller:	Intel XL710BM1
Holder:	Metal Bracket
Weight:	130gr (4.568 oz)
Power Consumption –QX4:	3.600W
Power Consumption –QS43:	4.680W
Power Consumption –QL4:	6.600W
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:	<p>FCC 47CFR Part 15:2013, Subpart B Class B</p> <p>Conducted emissions</p> <p>Radiated emissions</p> <p>EN 55022: 2010, Class B</p> <p>Conducted disturbance at mains terminals</p> <p>Conducted disturbance at telecommunication port</p> <p>Radiated disturbance</p> <p>EN 61000-3-2: 2006+A1(09)+A2(09)</p> <p>Harmonic current emissions</p> <p>EN 61000-3-3: 2008</p> <p>Voltage fluctuations and flicker</p> <p>EN 55024: 2010</p> <p>Immunity to electrostatic discharge (ESD)</p> <p>Radiated immunity to radio frequency electromagnetic field</p> <p>Conducted immunity to electrical fast transients / bursts (EFT/ B)</p> <p>Conducted immunity to voltage surges</p> <p>Conducted immunity to disturbances induced by radio frequency field</p> <p>Conducted immunity to voltage dips and short interruptions</p>
MTBF*:	<p>201 (Years)</p> <p>*According to Telcordia SR-332 Issue 1</p> <p>Environmental condition – GB (Ground, Fixed, Controlled). Ambient temperature – 25°C. Temperature rise of 10°C above the system ambient temperature was assumed for the cards components</p>
LEDs	
LEDs:	<p>Link/Act: Turns on Green , Blink on Activity (KINGBRIGHT, P/N KPHB-1608CGKSYKC, or compatible. Id : 574 nm)</p> <p>Speed 40G: Turns on Green (KINGBRIGHT, P/N KPHB-1608CGKSYKC, or compatible. Id : 574 nm)</p>
LEDs location:	LED is located on the PCB, visible via lightpipe holes in the metal bracket holder
Connectors:	(1) QSFP+ cage: MOLEX, P/N 75586-0010, or compatible

Order Information

P/N	Description	Notes
PE340G1QI71-QS41	Fiber (SR4) 40 Gigabit Ethernet PCI Express Server Adapter	X8 Gen3, Based on Intel XL710BM1, on board support for Fiber SR4 up to length 100m on OM3 MMF, RoHS compliant
PE340G1QI71-QS43	Fiber (SR4) 40 Gigabit Ethernet PCI Express Server Adapter	X8 Gen3, Based on Intel XL710BM1, on board support for Fiber SR4 300m on OM3 MMF, RoHS compliant
PE340G1QI71A-QL4	Fiber (LR4) 40 Gigabit Ethernet PCI Express Server Adapter	X8 Gen3, Based on Intel XL710BM1, on board support for Fiber LR4, RoHS compliant
PE340G1QI71-QX4	QSFP+ 40 Gigabit Ethernet PCI Express Server Adapter	X8 Gen3, Based on Intel XL710AM1, on board support for QSFP+, RoHS compliant
PE340G1QI71A-QX4	QSFP+ 40 Gigabit Ethernet PCI Express Server Adapter	X8 Gen3, Based on Intel XL710BM1, on board support for QSFP+LR4, RoHS compliant
PE340G1QI71-QX410	QSFP+40G to 4x SFP+10 Gigabit Ethernet PCI Express Server Adapter	X8 Gen3, Based on Intel XL710BM1, on board support for SR4/DA QSFP+, RoHS compliant
PE340G1QI71-QS410	QSFP+ 40G to 4x SFP+ 10 Gigabit Ethernet PCI Express Server Adapter	X8 Gen3, Based on Intel XL710BM1, on board support for Fiber SR4 break-out cable, RoHS compliant

Model P/N -LP /

-LP: Assemble Low Profile Metal Bracket

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