



M1E340G2Qi71

Fiber (SR4) 40 Gigabit Ethernet PCI Express Module Server Adapter

Product Description

Silicom's 40 Gigabit Ethernet PCI Express Module server adapters are designed for Servers and high-end appliances. The Silicom 40 Gigabit Ethernet PCI Express Module Server adapter is a PCI- Express X8 two 40 Gigabit Ethernet network interface card that can fit into a 3.5" HD form factor.

The Silicom Dual Port QSFP+ Express Module is the front I/O module in Silicom Server to Network Appliance Converter (SETAC) architecture. 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 Module server adapters are based on Intel XL710AM2 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 Module 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:	XLPP1 interfaces supports 40GBase-R PCS and 40 Gigabit PMA in order to connect with QSFP+ to 40GBase-SR4 / 40GBase-LR4
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
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 Module Specification revision 1.0 Silicom SETAC PCI-Express Base Specification Revision 3.0 (8 GT/sec)
Board Size:	168.2mm X 98mm(6.62" X 3.858") PCB thickness is 0.062 inch
PCI-E Module Card Type:	X8 Lane
PCI-E Module Voltage:	+12V +- 8%
PCI Connector:	X8 Lane
Controller:	Intel XL710AM2
Holder:	Not included
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 47CFR Part 15:2013, Subpart B Class B Conducted emissions Radiated emissions EN 55022: 2010, Class B Conducted disturbance at mains terminals Conducted disturbance at telecommunication port Radiated disturbance EN 61000-3-2: 2006+A1(09)+A2(09) Harmonic current emissions EN 61000-3-3: 2008

	<p>Voltage fluctuations and flicker 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>TBD (Years)</p> <p>*According to Telcordia SR-332 Issue 1</p> <p>Environmental condition – GB (Ground, Fixed, Controlled). Ambient temperature – 25°C.</p> <p>Temperature rise of 10°C above the system ambient temperature was assumed for the cards components</p>
LEDs	
LEDs:	<p>Link/Act 40G: Turns on Green , Blink on Activity (DIALIGHT, P/N 553-0744F, or compatible. Id : 569 nm)</p>
LEDs location:	<p>LEDs are located on the PCB, visible via holes in the metal bracket. Each Green Link/Act LED and Green Link Speed LED is located next its own QSFP+ connector port</p>
Connectors:	<p>(2) QSFP+ cage: MOLEX, P/N 75586-0010, or compatible</p>

Order Information

P/N	Description	Notes
M1E340G2QI71-QS41	Fiber (SR4) 40 Gigabit Ethernet PCI Express Module Server Adapter	X8 Gen3, Based on Intel XL710AM2, on board support for Fiber SR4 up to length 100m on OM3 MMF, RoHS compliant
M1E340G2QI71-QS43	Fiber (SR4) 40 Gigabit Ethernet PCI Express Module Server Adapter	X8 Gen3, Based on Intel XL710AM2, on board support for Fiber SR4 300m on OM3 MMF, RoHS compliant
M1E340G2QI71-QL4	Fiber (LR4) 40 Gigabit Ethernet PCI Express Module Server Adapter	X8 Gen3, Based on Intel XL710AM2, on board support for Fiber LR4, RoHS compliant
M1E340G2QI71-QX4	QSFP+ 40 Gigabit Ethernet PCI Express Module Server Adapter	X8 Gen3, Based on Intel XL710AM2, on board support for QSFP+, RoHS compliant

Amphenol 603020002(2m)	QSFP to QSFP Copper DA cables	
Amphenol 603020005(5m)	QSFP to QSFP Copper DA cables	

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