



[OE310G4I71](#)

Quad Port SFP+ 10 Gigabit Ethernet OCP Mezzanine Card Intel® XL710 Based

Product Description

Silicom's SFP+ 10 Gigabit Ethernet Open Compute Project (OCP) mezzanine card is designed for use in any mother board that can utilize "OCP_Mezz 2.0_rev1.00" MEZZ cards. The Silicom's 10 Gigabit Ethernet OCP mezzanine Quad 10 Gigabit Ethernet connectivity to the OCP Server node.

The Silicom SFP+ 10 Gigabit Ethernet OCP mezzanine card is based on Intel XL710 Ethernet controller with fully integrated Gigabit Ethernet Media Access Control (MAC) and SFI 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.



The Silicom SFP+ 10 Gigabit Ethernet OCP mezzanine card implement a type C NC-SI interface (single package, common bus buffers and shared RX queue).

Silicom's SFP+ 10 Gigabit Ethernet OCP Mezzanine cards is the ideal solution for implementing multiple network segments, mission-critical high-powered networking applications and environments within high performance OCP servers.



Key Features

Host Interface:

- Supports OCP Mezzanine card 2.0 Design Specification
- Supports FCI 61083-124402LT or equivalent mounted on the mezzanine card
- PCI Express Gen 3.0 X8 lanes in Connector A
- NC-SI for Manageability connection to BMC

Form Factor:

- Open Compute Project Mezzanine Card, Type 3

SFP+ 10Gigabit Ethernet:

10Gigabit Ethernet Adapter with SFP cage support:.

- -SRD: Fiber 1/10 Gigabit Ethernet 1000Base-SX / 10GBASE-SR:
 - 1000BASE-SX with 1G 850nM Small form Factor Pluggable (SFP+)
 - 10GBASE-SR with 10Gigabit 850nM Small form Factor Pluggable (SFP+)
- -LRD: Fiber 1/10 Gigabit Ethernet 1000Base-LX / 10GBASE-LR:
 - 1000BASE-LX with 1G 1310nM Small form Factor Pluggable (SFP+)
 - 10GBASE-LR with 10Gigabit 1310nM Small form Factor Pluggable (SFP+)

-SRD: Fiber 1/10 Gigabit Ethernet 1000Base-SX / 10GBASE-SR:

- 10 Gigabit Fiber Ethernet port supports 10GBASE-SR (850nM LAN PHY)
- 1Gigabit Fiber Ethernet port supports 1000BASE-SX (850nM LAN PHY)
- 1/10Gigabit 850nM Small form Factor Pluggable (SFP+)

-LRD: Fiber 1/10 Gigabit Ethernet 1000Base-LX / 10GBASE-LR:

- 10 Gigabit Fiber Ethernet port supports 10GBASE-LR (1310nM LAN PHY)
- 1Gigabit Fiber Ethernet port supports 1000BASE-LX (1310nM LAN PHY)
- 1/10Gigabit 1310nM Small form Factor Pluggable (SFP+)

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

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

-SFP+ 10Gigabit Ethernet Technical Specifications Adapters:	
SFP+ (Small Form Factor Pluggable) supports:	SFI interfaces supports 10GBase-R PCS and 10 Gigabit PMA in order to connect with SFP+ to 10GBase-SR // 1000Base-SX / 10GBase-LR and SFP+ Direct Attach
10GBase-SR SFP+: IEEE Standard / Network topology:	Fiber 10Gigabit Ethernet, 10GBASE-SR (850nm LAN PHY)
10GBase-SR SFP+: Data Transfer Rate :	10.3125GBd
10GBase-SR SFP+: Cables and Operating distance Up to:	62.5um, 160MHz/Km 26m 62.5um, (OM1)200MHz/Km 33m 50um, 400MHz/Km 66m 50um, (OM2)500 MHz/Km 82m 50um, (OM3)2000MHz/Km 300m
10GBase-LR SFP+: IEEE Standard / Network topology:	Fiber 10Gigabit Ethernet, 10GBASE-LR (1310nm LAN PHY)
10GBase-LR SFP+: Data Transfer Rate:	10.3125GBd
10GBase-LR SFP+: Cables and Operating distance Up to:	Single-Mode: 10000m at 9um
10GSFP+Cu : IEEE Standard / Network topology:	Copper 10Gigabit Ethernet, 10GSFP+Cu (Direct Attach) up to 7 meters
1000Base-SX / 10GBase-SR	Fiber Gigabit Ethernet, 1000Base-SX (850nm LAN PHY)

SFP+: IEEE Standard / Network topology:	Fiber 10Gigabit Ethernet, 10GBASE-SR (850nm LAN PHY).
1000Base-SX / 10GBase-SR SFP+: Data Transfer Rate:	10.3125GBd / 1.25GBd
10000Base-SX / 10GBase-SR SFP+: Cables and Operating distance Up to:	10000Base-SX: 62.5um, 160MHz/Km 220m 62.5um, (OM1)200MHz/Km 275m 50um, 400MHz/Km 500m 50um, (OM2)500 MHz/Km 550m 50um, (OM3)2000MHz/Km >550m 10GBase-SR: 62.5um, 160MHz/Km 26m 62.5um, (OM1)200MHz/Km 33m 50um, 400MHz/Km 66m 50um, (OM2)500 MHz/Km 82m 50um, (OM3)2000MHz/Km 300m
1000Base-LX / 10GBase-LR SFP+: IEEE Standard / Network topology:	Fiber Gigabit Ethernet, 1000Base-LX (1310nm LAN PHY) Fiber 10Gigabit Ethernet, 10GBASE-LR (1310nm LAN PHY).
1000Base-LX / 10GBase-LR SFP+: Data Transfer Rate :	10.3125GBd / 1.25GBd
1000Base-LX / 10GBase-LR SFP+: Cables and Operating distance Up to:	10000Base-LX: Single-Mode: 5000m at 9um 10GBase-LR: Single-Mode: 10000m at 9um
– SRD: Fiber 1000BASE-SX / 10GBASE-SR Technical Specifications:	
Optical Output Power (1G):	Minimum: -9.5 dBm
Optical Receive Sensitivity (1G):	Maximum: -17 dBm
Maximum Input Power (1G):	Maximum: +0.5dBm

Output Transmit Power (10G):	Minimum: -5 dBm
Optical Receive Sensitivity (10G):	Maximum: -11.1 dBm
Maximum Input Power (10G):	Maximum: +0.5dBm
– LRD: Fiber 1000BASE-LX / 10GBASE-LR Technical Specifications:	
Optical Output Power (1G):	Minimum: -11 dBm
Optical Receive Sensitivity (1G):	Maximum: -19 dBm
Maximum Input Power (1G):	Maximum: +0.5dBm
Output Transmit Power (10G):	Minimum: -8.2 dBm
Optical Receive Sensitivity (10G):	Maximum: -12.5 dBm
Maximum Input Power (10G):	Maximum: +0.5dBm
Operating Systems Support	
Operating system support:	Windows Linux FreeBSD VMware
General Technical Specifications	
Interface Standard:	OCP Mezzanine card 2.0 Design Specification 1.00 PCI-Express Base Specification Revision 3.0 (8GT/s)
Mezzanine Form Factor Vertical Stack	Open Compute Project Mezzanine Card Type 3
PCI Express Card Type:	PCI Express Gen 3.0 X8 lanes in Connector A
PCI Express Voltage	+12V +- 8%
PCI Connector:	FCI 61083-124402LF or equivalent mounted on the mezzanine card

Controller:	Intel FTXL710-BM1
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:	<p>FCC Part 15, Subpart B Class B</p> <p>Conducted Emissions</p> <p>Radiated Emissions</p> <p>CE EN 55022: 1998 Class B Amendments A1: 2000; A2: 2003</p> <p>Conducted Emissions</p> <p>Radiated Emissions</p> <p>CE EN 55024: 1998 Amendments A1: 2000; A2: 2003</p> <p>Immunity for ITE Amendment A1: 2001</p> <p>CE EN 61000-3-2 2000, Class A</p> <p>Harmonic Current Emissions</p> <p>CE EN 61000 3-3 1995, Amendment A1: 2001</p> <p>Voltage Fluctuations and Flicker</p> <p>CE IEC 6100-4-2: 1995</p> <p>ESD Air Discharge 8kV. Contact Discharge 4kV.</p> <p>CE IEC 6100-4-3:1995</p> <p>Radiated Immunity (80-1000Mhz), 3V/m 80% A.M. by 1kHz</p> <p>CE IEC 6100-4-4:1995</p> <p>EFT/B: Immunity to electrical fast transients 1kV Power Leads, 0.5Kv Signals Leads</p> <p>CE IEC 6100-4-5:1995</p> <p>Immunity to conductive surges COM Mode; 2kV, Dif. Mode 1kV</p> <p>CE IEC 6100-4-6:1996</p> <p>Conducted immunity (0.15-80 MHz) 3VRMS 80% A.M. By 1kHz</p> <p>CE IEC 6100-4-11:1994</p> <p>Voltage Dips and Short Interruptions</p> <p>V reduc >95%, 30% >95% Duration 0.5per, 25per, 250per</p>
LEDs	
LEDs:	<p>Each Port has 2 LEDs to indicate link status and speed.</p> <p>Link: Physical link Speed: Green stay on – physical link on with 10G Speed Yellow stay on – physical link on with 1G Speed Off – physical link off.</p> <p>Link /ACT: Logic Link/Activity, Green Green stay on – logic link up, no activity Green blinking – logic link up, activity Off – logic link off</p>

LEDs location:	LEDs are located on the PCB ,below its own SFP connectors.
Connectors:	(2) SFP+ cage

Order Information

P/N	Description	Notes
OE310G4I71-XR	Quad Port SFP+ 10 Gigabit Ethernet OCP Mezzanine Card	X8 Gen3 , Based on Intel XL710-BM1, Support Direct Attached Copper cable, Support Silicom SFP+ approved transceiver. RoHS compliant
OE310G4I71-SRD	Quad Port Fiber (SX/SR) 1/10 Gigabit Ethernet OCP Mezzanine Card	X8 Gen3, Based on Intel XL710-BM1, on board support for Fiber SX/SR, RoHS compliant
OE310G4i71-LRD	Quad Port Fiber (SX/SR) 1/10 Gigabit Ethernet OCP Mezzanine Card	X8 Gen3, Based on Intel XL710-BM1, on board support for Fiber LX/LR, RoHS compliant

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