



PE31610G4ISLBLL

Quad Port 10G Ethernet PCIe Crypto / Compression LBG Server Adapter

Product Description

Silicom's LBG-x NS Crypto / Compression server adapters are 3rd generation of Silicom adapters which are based Intel 3rd generation chipset to integrate Intel® QuickAssist Technology.

Silicom's LBG-x NS Crypto / Compression server adapters are optimized to Intel® Architecture provide Data Centers and Cloud applications benefit greatly from the high performance security and compression capabilities, enabling more efficient network and storage architectures.

Servers with Intel® QuickAssist technology create a new compute paradigm in cloud services. Virtualized machines with virtualized acceleration services allow for network function virtualization as standard practice.

Network elements share the same common standard hardware implementation. True software define network elements run on standard server

Silicom's LBG-x NS Crypto/ Compression server adapters integrates 100Gbps accelerator and an integrated Intel 4x 10GbE.

Silicom's LBG-x NS Crypto / Compression server adapters Optimized to Intel® Architecture. Simplest and highly mature architecture leading to highest reliability.

Silicom's LBG-x NS Crypto / Compression server adapters uses Intel solution and drivers: Seamless integration with the customer's OS and application.

Key Features

- **Intel® QuickAssist Technology for Crypto and Compression**
 - Bulk: AES, 3DES, (A) RC4
 - Hash: MD5, SHA-1/2 SHA-3 HMAC
 - Wireless: KASUMI , ZUC, SNOW 3G
 - Public Key – DH, RSA, DSA, EDSA, ECDH
 - Compression/Decompression- Deflate



- SR-IOV Support 3 PFs, 48VFs
- Integrated Ethernet
- 10 /1 GbE Ethernet
- RDMA (iWARP) support per link
- PCI Express X16 lanes
- Support PCI Express Base Specification 3.0 (8 GTs)
- x4 SFI/KR/KX 10 GbE/1 GbE Interface
- RDMA (iWARP) support per link
- IEEE 1588/802.1as time stamp/link
- IEEE 802.1p/q support
- 802.3az EEE
- VMDq support
- SR-IOV support (4 PFs, 128 VFs per device)
- VEB enhancement + RSS per VSI
- DCB priority grouping, flow control
- RSS Queues (Up to 128 per PF and 16 per VF or VSI)

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+)

System Acceleration Throughput

	INTEL® C628 CHIPSET/ INTEL® C627 CHIPSET	INTEL® C626 CHIPSET	INTEL® C625 CHIPSET
SSL/IPSec	100Gbps	40Gbps	20Gbps
Compression Deflate	100Gbps	40Gbps	20Gbps
Decompression Deflate	100Gbps	100Gbps	100Gbps
RSA Decrypt 1k-bit	550K Ops/sec	550K Ops/sec	550K Ops/sec
RSA Decrypt 2k-bit	100K Ops/Sec	40K Ops/Sec	20K Ops/Sec
TLS Handshakes ECDH_RSA2K:	440K Ops/sec		
TLS Handshakes EDHE+ECDSA	51K Ops/sec		
SSL/IPSec + Compression + PKE	Total 120 Gbps + 100K Ops/sec		

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)
1000Base-SX / 10GBase-SR SFP+: IEEE Standard / Network topology:	Fiber Gigabit Ethernet, 1000Base-SX (850nm LAN PHY) 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:	Linux
General Technical Specifications	
Interface Standard:	PCI-Express Base Specification Revision 3.0 (8 GTs)
Board Size:	Low profile short add-in card: 167.64 mm X 64.389mm (6600"X 2.535")
PCI Express Card Type:	X16 Lane
PCI Express Voltage	+12V +- 8% and external 3x2 connector
PCI Connector:	Gold Finger: X16
Controllers:	INTEL® C628 CHIPSET also support on: INTEL® C627 CHIPSET , INTEL® C625 CHIPSET and INTEL® C626 CHIPSET Device SKU
Power Consumption-XR:	For PE31610G4ISLBLL-XR 10.140W, 0.845A at 12V: Full Typical No SFP+ 20.16W, 1.68A at 12V: Full Typical only security running Power calculated: Total: Max. 26.68W For PE31610G4ISLBTL-XR Power calculated: Total: Max. 26.68W
Power Consumption-SR:	For PE31610G4ISLBLL-SR 12W, 1A at 12V: Full Typical (1 port operate at 10Gb/s.) 12W, 1A at 12V: Full Typical (2 port operate at 10Gb/s.) 12.120W, 1.01A at 12V: Full Typical (3 port operate at 10Gb/s.) 12.240W, 1.02A at 12V: Full Typical (4 port operate at 10Gb/s.) 20.280W, 1.390A at 12V: Full Typical (4 port operate at 10Gb/s And security running) Power calculated: Total: Max. 36.07W For PE31610G4ISLBTL-SR Power calculated: Total: Max. 36.07W
Holder:	Metal Bracket: Full Height and Low Height
Operating Humidity:	0%–90%, non-condensing
Operating Temperature:	0°C – 45°C (32°F – 113°F) Air flow requirement for this adapter is 200 LFM

Storage:	-40°C–65°C (-40°F–149°F)
Regulation:	Card shall meet CE, FCC Class B, ROHS requirements.
LEDs/ Connectors Specifications:	
LEDs:	(2) LEDs per port Upper LED : Link Speed: Turns on Green – 10G Link. Turns on Yellow – 1G Link Lower LED: Link/Act : Turns on link (Green), Blinks on activity (Green)
LEDs location:	LEDs are located on the PCB, visible via holes in the metal bracket. Each Green Link/Act and LED and Yellow/Green Link Speed LED is located above its own SFP connector port by light pipes.
Connector:	(1) Quad SFP+ cage

Order Information

P/N	Description	Notes
PE31610G4ISLBLL-SR:	Quad Port 10G (SR) Ethernet PCIe Crypto / Compression LBG Server Adapter	Based on INTEL® C628 CHIPSET Gen 3.0 x16
PE31610G4ISLBLL-LR:	Quad Port 10G (LR) Ethernet PCIe Crypto / Compression LBG Server Adapter	Based on INTEL® C628 CHIPSET Gen 3.0 x16
PE31610G4ISLBLL-XR:	Quad Port 10G (DA) Ethernet PCIe Crypto / Compression LBG Server Adapter	Based on INTEL® C628 CHIPSET Gen 3.0 x16

Model P/N -LP

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