



PE425G2i81 NIC

Dual Port Fiber 25 Gigabit Ethernet PCI Express Server Adapter Intel® Based

Product Description

Silicom's PE425G2i81 25 Gigabit Ethernet PCI Express server adapter is designed for Servers and high-end appliances. The PE425G2i81 25 Gigabit Ethernet PCI Express Server adapters offer simple integration into PCI Express x16 to 25Gigabit Networks. The performance is optimized so that system I/O is not the bottleneck in high-performance networking applications.



The PE425G2i81 25 Gigabit Ethernet PCI Express server adapter is based on Intel E810-XXVAM2 Ethernet controller with fully integrated 25 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.

Silicom's 25 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

Network Interface:

- SERDES capable of 25G NRZ
- Supports up to 2 ports.
- 50Gb/s total BW, 2x25G (SR/LR) /2x10G (SR/ LR) /2x1G (SR/LR)
- 2x SFP28
- Auto-negotiation with auto-detect.
- IEEE1588

LAN and Virtualization Features:

- 100Gbps throughput (each of Tx and Rx)
- Parse up to 504B from packet header.
- 768 switch ports (VSIs)
- Programmable forwarding rules
- Virtualization
 - Host virtualization via VMQ and SR-IOV
 - 256 SR-IOV Virtual Functions
 - Stateless offloads for tunneled packets (network virtualization support)
 - Malicious VF protection
- RDMA

- iWARP and RoCE v2
- 256K Queue Pairs (QPs)
- Send Queue Push Mode
- QoS
 - WFQ Transmit scheduler with 9 programmable layers.
 - Pipeline sharing and starvation avoidance.
 - Up to 32 Congestion Domains in the Tx and Rx paths
 - QoS via 802.1p PCP or Differentiated services DSCP value.
 - Rx Packet buffer supports at least 3 no-drop flow control events, shared among ports.

Host Interface:

- PCIe x8 lanes from/to host via gold fingers of edge card.
- Support PCI Express Base Specification Revision 4.0, 16GT/s, 8GT/s, 5GT/s or 2.5GT/s

Technical Specifications

FP28 25Gigabit Ethernet Technical Specifications Adapters:	
SFP28 (Small Form Factor Pluggable) supports:	SFI interfaces supports 25GBase-R PCS and 25 Gigabit PMA in order to connect with SFP28 to 25GBase-SR
25GBase-SR SFP28: IEEE Standard / Network topology:	Fiber 25Gigabit Ethernet, 25GBASE-SR (850nm LAN PHY).
25GBase-SR SFP28: Data Transfer Rate:	25.78125Gbps
25GBase-LR SFP28: IEEE Standard / Network topology:	Fiber 25Gigabit Ethernet, 25GBASE-LR (1310nm LAN PHY)
25GBase-LR SFP28: Data Transfer Rate:	25.78125Gbps
25GBase-LR SFP28: Cables and Operating distance Up to:	Single-Mode: 10000m at 9um
-ZS: Fiber 25GBASE-SR Technical Specifications:	
Output Transmit Power (25G):	Minimum: -1.42 dBm
Optical Receive Sensitivity (25G):	Maximum: -5.98 dBm
Operating Systems Support	
Operating system support:	Windows Linux FreeBSD VMware
General Technical Specifications	
Interface Standard:	PCI-Express Base Specification Revision 4.0 (16 GTs)
Board Size:	Half Height Half Length add-in card: 145.542mm X 64.389mm (5.730"X 2.535")
PCI Express Card Type:	X8 Lane
On Board Connector Voltage:	+12V +/-8%
PCI Connector:	Gold Finger: X16 Lane
Controllers:	Intel E810-XXVAM2
Holder:	Metal Bracket
SRIOV Capable:	Yes
Weight without transceivers:	98 g (3.457 oz)
Weight with transceivers:	137 g (4.883 oz)

Power Consumption- QX4:	5.97W, 0.49A at 12V: Full Typical No SFP28 Power calculated: Total: Max. 19.2 W
Power Consumption- ZS4:	9.14W, 0.75A at 12V: Full Typical (1 port operate at 25Gb/s.) 9.51W, 0.78A at 12V: Full Typical (2 port operate at 25Gb/s.) Power calculated: Total: Max. 27.1 W
Power Consumption- SR:	8.05W, 0.66A at 12V: Full Typical (1 port operate at 10Gb/s.) 8.17W, 0.67A at 12V: Full Typical (2 port operate at 10Gb/s.) Power calculated: Total: Max. 27.1 W
Power Consumption- ZL4:	9.51W, 0.78A at 12V: Full Typical (1 port operate at 25Gb/s.) 9.75W, 0.8A at 12V: Full Typical (2 port operate at 25Gb/s.) Power calculated: Total: Max. 27.1 W
Power Consumption- LR:	8.29W, 0.68A at 12V: Full Typical (1 port operate at 10Gb/s.) 8.41W, 0.69A at 12V: Full Typical (2 port operate at 10Gb/s.) Power calculated: Total: Max. 27.1 W
Operating Temperature:	0°C – 45°C (32°F – 113°F)
Air Flow Requirements:	150 ft./min *see thermal cold/hot profile section
Storage:	-40°C–65°C (-40°F–149°F)
Regulation:	Card shall meet CE, FCC Class B, ROHS requirements.
MTBF*:	1452.025 years * According to Telcordia SR-332 Issue 4. Environmental condition – GB (Ground, Fixed, and Controlled). Ambient temperature 40°C
LEDs	
LEDs:	Each Port has 2 LEDs to indicate link status and speed. Link: Physical link Speed: <ul style="list-style-type: none"> • Green stay on – physical link on with 25G Speed (Max speed) • Yellow stay on – physical link on with 10G / 1G / 100M (Not max Speed) • Off – physical link off. Link /ACT: Logic Link/Activity, Green <ul style="list-style-type: none"> • Green stay on – logic link up, no activity. • Green blinking – logic link up, activity. • Off – logic link off
LED's location:	LEDs are located on the PCB, visible via holes in the metal bracket
Connectors:	(2) SFP28 / SFP+ Cage

Order Information

P/N	Description	Notes
PE425G2i81-XR	Dual Port SFP28 25/10/1 Gigabit Ethernet PCI Express Server Adapter	X8 Gen4, Low Profile, Based on Intel E810-CAM2, Support Direct Attached Copper cable, Support Silicom SFP28 approved transceiver. RoHS compliant
PE425G2i81-ZS	Dual Port Fiber (SR) 25 Gigabit Ethernet PCI Express Server Adapter	X8 Gen4, Based on Intel E810-CAM2, Low-profile, on-board support for Fiber SR, RoHS compliant
PE425G2i81-ZL	Dual Port Fiber (LR) 25 Gigabit Ethernet PCI Express Server Adapter	X8 Gen4, Based on Intel E810-CAM2, Low-profile, on-board support for Fiber LR, RoHS compliant
PE425G2i81-SR	Dual Port Fiber (SR) 10 Gigabit Ethernet PCI Express Server Adapter	X8 Gen4, Based on Intel E810-CAM2, Low-profile, on-board support for Fiber SR, RoHS compliant
PE425G2i81-LR	Dual Port Fiber (LR) 10 Gigabit Ethernet PCI Express Server Adapter	X8 Gen4, Based on Intel E810-CAM2, Low-profile, on-board support for Fiber LR, RoHS compliant

Order information: Model P/N -LP /

-LP: Assemble Low Profile Metal Bracket

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