



PE2S28C62G

Security Protocol Processor PCI Express Server Adapter / 28x CN1620 Cavium® Based

Product Description

The Silicom protocol processor adapter is a PCI Express server adapter that incorporates 28 Cavium Nitrox 1620 IPsec, IKE, SSL and TLS protocol processing.

The Silicom protocol processor PCI Express adapter provides bulk cryptographic acceleration for 3DES, DES, AES and ARCFOUR symmetric encryption algorithms, for the SHA-1 and MD5 hash algorithm, and for the HMAC-SHA-1 and HMAC-MD5 keyed authentication algorithms. It provides public key acceleration for the RSA, DSA, and diffie-Helman asymmetric algorithms, as well as basic Modular Math functions.

The Silicom protocol processor PCI Express adapter provides a True Random Number Generator and can use it to generate on-chip random values for Diffie-Helman key generation and DSA signatures. The adapter is built of two long low profile PCI express cards – A main (host) card and a daughter card. The adapter uses an envelope of double wide PCI Express cards.

The main (host) card includes PCI express X8 gold finger and a board to board connector to the daughter card. The main (host) card supports 14 Nitrox 1620 controllers and connector to the the daughter card. The duagher card supports additional 14 Nitrox 1620.

The main (host) card can be used without the daughter card. The Silicom protocol processor PCI Express adapter provides combined encryption and HMAC authentication for single authentication for single-pass IPsec processing. It also executes protocol-specific instruction to support the SSL/TLS or IPsec/IKE security protocols.

The Silicom Protocol Processor PCI Express adapter is the ideal solution for high-end and mid-end virtual private networking (VPN), firewall appliances and SSL-based appliances.

Key Features

- Twenty-Eight processors solutions that accelerates all cryptographic operations and the SSL, IPsec / IKE, and CCMP protocols.
- Up to 32K 180-bit Diffie-Hellman Public Key generation (groups 1, 2, 5) per processor.
- Up to 17K 1024-bit RSA operations/second per processor.
- Up to 2.5Gbps Bulk Data Encryption + Hashing (SSL, IPsec, or CCMP) per processor.
- Multi Algorithm support
 - RSA and Diffie-Helman (Groups 1,2,5)
 - DES/3DES, AES, ARCFOUR
 - MD5, SHA-1, HMAC-MD5, HMAC-SHA-1
 - AES-GCM

- KASUMI
- SHA-256/384/512
- 200Mbps Random Number Generator per processor

Host Interface:

- Support PCI Express Base Specification 2.0 (5 GTs)
- PCI Express x8 lanes

Applications:

- VPN appliances
- VPN firewalls, routers and switches
- Secure WEB Servers and storage
- Secure Access devices

Technical Specifications

System Throughout Per Processor (Per Processor)	
System Throughout values are shown below. System values represent measured, memory-to-memory, in-system throughput on an optional platform using large buffer sizes and maximum pipelining per chip	
Function	Value
Full SSL processing throughput AES+SHA	2500 Mbp/s (per chip)
Full IPSec AES/SHA	2500 Mbp/s (per chip)
MAX Diffie-Helman (1024-bit module, 180-bit exponent)	32000 Transaction /Second (per chip)
MAX RSA 1024-bit exponent with CRT	17000 Transaction /Second (per chip)
Random Number Generator	200 Mbps (per chip)
Operating Systems Support	
Operating system support:	Linux

General Technical Specifications	
Interface Standard:	PCI-Express Base Specification Revision 2.0 (5 GTs)
Board Size:	Low profile long add-in card: 330.2mm X 72.50mm (13" X 2.854") Fit in two adjacent PCIe Slots
PCI Express Card Type:	X8 Lane
PCI Express Voltage:	+12V +- 8%
PCI Connector:	X8 Lane
Controller:	28 x Cavium CN1620
Holder:	Metal Bracket
Weight:	940 gram (33.16 oz)
Power Consumption:	34.2 W, 2.85A at 12V: Typical values, on boot state. 123.96W, 10.33A: full load state
Operating Temperature:	0°C – 55°C (32°F – 131°F) Air-Flow: 650 ft/sec
Storage:	-40°C–65°C (-40°F–149°F)
EMC Certifications:	FCC Part 15, Subpart B Class A Conducted Emissions Radiated Emissions CE EN 55022: 1998 Class A Amendments A1: 2000; A2: 2003 Conducted Emissions Radiated Emissions CE EN 55024: 1998 Amendments A1: 2000; A2: 2003 Immunity for ITE Amendment A1: 2001 CE EN 61000-3-2 2000, Class A Harmonic Current Emissions CE EN 61000 3-3 1995, Amendment A1: 2001 Voltage Fluctuations and Flicker CE IEC 6100-4-2: 1995 ESD Air Discharge 8kV. Contact Discharge 4kV. CE IEC 6100-4-3:1995 Radiated Immunity (80-1000Mhz), 3V/m 80% A.M. by 1kHz CE IEC 6100-4-4:1995

	<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>
MTBF*:	<p>24 years</p> <p>* According to Telcordia SR-332 Issue 2. Environmental condition – GB (Ground, Fixed, and Controlled). Ambient temperature 40°C</p>

Order Information

P/N	Description	Notes
PE2S28C62G-R	Security Protocol Processor PCI Express Adapter / 28 xCN1620	based on Cavium 28 xCN1620. The adapter is built of a long low profile PCI express card.
PE2S14C62G-R	Security Protocol Processor PCI Express Adapter / 14 xCN1620	based on Cavium 14 xCN1620. The adapter is built of a long low profile PCI express card.

Model P/N -RoHS

-RS: RoHS Compliant / Lead free adapter

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