## PXSC51

### Security Protocol Processor PCI-X Server Adapter / CN1510 Cavium® Based

### Product Description

The Silicom protocol processor adapters are PCI-X adapters that incorporate specialized features for IPSec, IKE, SSL and TLS protocol processing.

The Silicom protocol processor PCI-X adapter are based on Cavium CN1510. The Silicom protocol processor PCI-X 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-X 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 Silicom protocol processor PCI-X adapter provides combined encryption and HMAC authentication for single authentication for single-pass Ipsec processing. It also provides SSL MAC and TLS HMAC functions needed for SSL and TLS record layer processing.

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

### Key Features

**Key Features:**

- Single Chip solutions that accelerates all cryptographic operations and the SSL, IPsec / IKE CCMP protocols
- Up to 32000 Diffie-Hellman Public Key generation (groups 1,2,5 and 180-bit exponent)
- Up to 13000 RSA operations/second
- 1500 Mbps full SSL record ( RC4+MD5)
- 1500 Mbps Full IPsec (AES/DES+SHA1)
- Multi Algorithm support
- RSA and Diffie-Helman (Groups 1,2,5)
- DES/3DES, AES, ARCFOUR
- MD5, SHA-1, HMAC-MD5, HMAC-SHA-1
- AES-CGM, KASUMI and SHA-256/384/512

- 200Mbps Random Number Generator

**Host Interface:**

- PCI-X v1.0 32/64-bit, 66/100/133MHz
- PCI 2.2 32/64 bit 33/66MHz 3.3V

**Applications:**

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

## Technical Specifications

| **System Throughout PXSC51:** | |
|---|---|
| System Throughout values are shown below. System values represent measured, memory-to-memory, in-system throughout on an optional platform using large buffer sizes and maximum pipelining | |
| **Function** | **Value** |
| **Full SSL record throughout RC4+MD5** | 1500 Mbp/s |
| **Full IPSec AES/ 3DES+SHA1** | 1500 Mbp/s |
| **MAX Diffie-Helman (1024-bit module, 180-bit exponent)** | 32,000 Transaction /Second |
| **MAX RSA 1024-bit exponent with CRT** | 13000 Transaction /Second |
| **Random Number Generator** | 200 Mbps |
| **Operating Systems Support** | |
| **Operating system support:** | Windows<br>Linux<br>FreeBSD |
| **General Technical Specifications** | |
| **Interface Standard:** | PCI-X v1.0 32/64-bit, 66/100/133MHz |

| | |
|---|---|
| | PCI 2.2 32/64 bit 33/66MHz 3.3V |
| **Board Size:** | PCI low profile short add in Card167.64 mm x 63.5mm (”6.6×2.5”), detailed information |
| **PCI Card Type:** | +3.3V 64 bit Card |
| **PCI Voltage:** | +3.3V (Min 3.135V, Max, 3.465V) |
| **PCI Connector:** | +3.3V 64 bit |
| **Controller:** | Cavium CN1510 |
| **Power Consumption:** | 1.386W, 0.42A at 3.3V: Typical 5 clients traffic<br>1.386W, 0.42A at 3.3V: Typical 4 clients traffic<br>1.320W, 0.40A at 3.3V: Typical 3 clients traffic<br>1.221W, 0.37A at 3.3V: Typical 2 clients traffic<br>1.089W, 0.33A at 3.3V: Typical 1 clients traffic<br>0.957W, 0.29A at 3.3V: Typical No traffic |
| **Operating Temperature:** | 0°C – 50°C (32°F – 122°F) |
| **Storage:** | -20°C–65°C (-4°F–149°F) |
| **EMC Certifications:** | FCC Part 15, Subpart B Class B<br>Conducted Emissions<br>Radiated Emissions<br>CE EN 55022: 1998 Class B Amendments A1: 2000; A2: 2003<br>Conducted Emissions<br>Radiated Emissions<br>CE EN 55024: 1998 Amendments A1: 2000; A2: 2003<br>Immunity for ITE Amendment A1: 2001<br>CE EN 61000-3-2 2000, Class A<br>Harmonic Current Emissions<br>CE EN 61000 3-3 1995, Amendment A1: 2001<br>Voltage Fluctuations and Flicker<br>CE IEC 6100-4-2: 1995<br>ESD Air Discharge 8kV. Contact Discharge 4kV<br>CE IEC 6100-4-3:1995<br>Radiated Immunity (80-1000Mhz), 3V/m 80% A.M. by 1kHz<br>CE IEC 6100-4-4:1995<br>EFT/B: Immunity to electrical fast transients 1kV PowerLeads, 0.5Kv Signals Leads<br>CE IEC 6100-4-5:1995<br>Immunity to conductive surges COM Mode; 2kV, |

| | |
|---|---|
| | Dif. Mode 1kV<br>CE IEC 6100-4-6:1996<br>Conducted immunity (0.15-80 MHz) 3VRMS 80% A.M.By 1kHz<br>CE IEC 6100-4-11:1994<br>Voltage Dips and Short Interruptions<br>V reduc >95%, 30% >95% Duration 0.5per, 25per, 250per |

## Order Information

| P/N | Description | Notes |
|---|---|---|
| **PXSC51-RoHS** | Security Protocol Processor PCI-X Server Adapter / CN1510 | Low profile Adapter, PCI-X 64bit, 133MHZ |

Note: Model P/N -LP /-RoHS

-RoHS: RoHS Compliant / Lead free adapter.

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