

# Vesuvius 7956 Product Sheet

## Six-Port RJ-45 Gigabit Ethernet Network Adapter with Integrated IPsec Processor



### Highlights:

- Integrated Multi-port Gigabit Ethernet and Security Processor
- Highest Port Density
- Maximum Network Bandwidth
- 7 Gb/s Clear Text
- 525 Mb/s 3DES or AES128
- Native Ethernet Driver support for all major Operating Systems

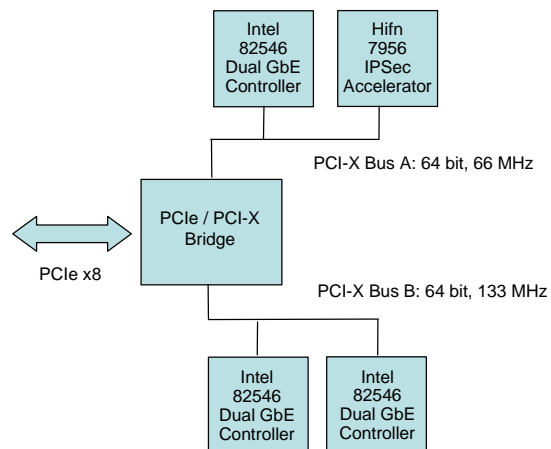
### Six Independent Gigabit Ethernet Ports – RJ-45 Copper

The Vesuvius 7956 is a RoHS compliant adapter offering six independent RJ-45 gigabit Ethernet channels and an IPsec security processor on a single PCI Express card. Ideally suited for space constrained network appliances and servers, it accelerates VPN operations and offers maximum port density and network bandwidth.

### Applications

<b>Network Security Appliances</b>	Firewall / VPN Gateway Multi-purpose Gateway / Router High Availability / Redundancy Load Balancing
<b>Servers</b>	Link Aggregation High Availability / Redundancy Backup Networks Storage / Web / DNS
<b>NAS</b>	iSCSI, AoE, SoIP
<b>Virtualization</b>	Multiple Dedicated VM Ports Maximize Network Bandwidth Redundancy / Backup
<b>Video over IP</b>	Surveillance, IPTV

### Block Diagram



## Controller Specific Data

### Intel 82546 Ethernet Controller Features

- Highest Ethernet Port Density
- Small Form Pluggable (SFP) Transceivers
- IEEE 802.3ab compliance
- Ultra Deep 64KB Packet Buffers
- Large Send Off-load & TCP Segmentation Off-load
- Adapter Fault Tolerance
- Switch Fault Tolerance
- Adaptive Load Balancing
- 802.3AD Link Aggregation
- 802.1Q VLAN Tagging
- 802.3x Flow Control
- 802.1p Class of Services
- TCP Checksum Offload
- TCP Segmentation Offload
- Interrupt Moderation

### Intel 82546 Ethernet Controller Performance

- Clear Text Performance**
- 7 Gbps sustained (1500 byte pkts)

### Hifn 7956 Operating System Support

- Linux 2.6x
- VxWorks
- Windows
- Inferno

### Hifn 7956 Security Processor Features

#### Security Regulatory Compliance:

- NIST certified hardware implementation of standard strong cryptography functions
- AES FIPS 197; Cert. #101
- DES FIPS 46-3, FIPS 81 Cert. #236
- 3DES FIPS 46-3, FIPS 81, Cert. #214
- SHA FIPS 180-1, Cert. #193
- HMAC FIPS 198, Cert. #TBD
- PRNG FIPS 186-2, ANSIX9.62, ANSIX9.31 Cert. #110

#### Lossless Data Compression:

- LZS, MPPC

#### Encryption:

- AES (128, 192, 256); CBC, ECB, and CTR modes)
- 3DES/DES, ARC4

### Hifn 7956 Security Processor Performance

#### IPSec Performance

- 3DES/SHA1 – 525 Mbps (1500 byte), 150 Mbps (64-byte)
- AES/SHA1 – 525 Mbps (1500 byte), 190 Mbps (64-byte)

#### Public Key Cryptography:

- RSA, Diffie-Hellman, DSA
- True random number generator
- 3K Bignum ALU

#### Symmetric Key Cryptography

- AES (128, 192, 256-bit keys); ECB, CBC, CTR modes
- ARC4

#### Secure Hash

- SHA-1, MD5

#### Message Authentication

- HMAC, SSL-MAC

#### Protocol Support:

- IPSec (ESP, AH, Transport and Tunnel modes)
- UDP encapsulation for NAT traversal
- IKE, IPPCP, SSL/TLS/DTLS, 802.11i, IPv4, IPv6

### Intel 82546 Ethernet Controller Operating System Support

- Windows Server 2003 and 2000
- Windows XP, 32 & 64 bit
- Windows NT 4.0
- Linux 2.4x or later, 32 bit & 64 bit
- FreeBSD 4.x or later
- NetBSD 1.6.x or later
- Novell Netware 4.11 or later
- Solaris 7 or later
- UnixWare 7.x

#### Public key performance

- 1K IKE handshakes/sec (quick mode w/2DH)
- 1K SSL/TLS handshakes/sec
- Support for up to 3,072-bit public keys native

#### Compression

- Up to 700 Mbps LZS, MPPC, PPP

- OpenUNIX 8 (ddl8)
- SCO5
- VxWorks
- Inferno
- Xen, XenEnterprise
- VMWare ESX
- Mac OS X (from Small Tree Communications, www.small-tree.com)

**Onboard Controllers** (3) Intel 82546GB Dual Port Gigabit Ethernet, (1) Hifn 7956 IPSec Processor

**Power** 20W Max

**Status LEDs** Link Active, Link Activity, VPN Activity

**Media Connector** (6) 10/100/1000BASE-T MDX Auto Sensing RJ45

**IEEE Compliance** 802.3z, 802.3ad, 802.1q, 802.3x, 802.1p, 802.11i

**Network Topology** 1000BASE-SX, 1000BASE-LX, 1000BASE-T

**Onboard Memory** 384 KB (64 KB/port) for Ethernet

**Form Factor** 7.00 in x 4.38 in

**Slot Type** PCI Express, x8. Operable in x8 and x16 slots

#### Environmental

Operating Temp 0 to 55° C with 200 LFM air flow  
 Storage Temp -40 to 80° C  
 Operating Humidity 5 to 85% non-condensing  
 Storage Humidity 0 to 85% non-condensing  
 RoHS Compliant Yes - 6/6

### Ordering Information

Product Name	Part Number	Description
Vesuvius 7956	6C1E465610	Six-port PCI-Express RJ-45 Copper Gigabit NIC with Integrated Hifn 7956 IPSec Processor