



PEG4RS416

Quad Port Copper Gigabit Ethernet PCI Express Packet Processor Server Adapter

Product Description

Silicom's Gigabit Ethernet PCI Express RMI Packet Processor Server Adapter is designed for servers and high-end appliances.

The Silicom's Gigabit Ethernet PCI Express RMI Packet Processor server adapter is targeted for network applications, such as multiservice VPN/Firewall/IDS systems, that needs to process and monitor packets.

The Silicom's Gigabit Ethernet PCI Express RMI Packet Processor server adapter offloads host system processor from various tasks related to packet processing. In networks rates up to 1Gigabit this is essential.

The Silicom's Gigabit Ethernet PCI Express RMI Packet Processor server adapter is a complete PCI Express server adapter solution incorporates security acceleration engine with up to 2.5 Gigabit of DES/3DES, AES, SHA-1, MD5 and RSA to support in-line IPsec, SSL, and other secure protocol processing.

The Silicom's Gigabit Ethernet PCI Express RMI Packet Processor server adapter can be programmable using SuperSOC™ solution built for a C/C++ environment; it eliminates the need for microcoding or proprietary scripting to enable rapid application development and leverages widely available, well understood development tools.

The Silicom's Gigabit Ethernet PCI Express RMI Packet Processor server adapter is based on XLS416: RMI Multi-Core Superscalar Communication Processor.

The Silicom's Gigabit Ethernet PCI Express RMI Packet Processor server adapter offers simple integration into any PCI Express X4 to Gigabit Network.

Key Features

Key Features:

- Programmable Intelligent Gigabit Ethernet copper PCI Express Quad NIC
- Front End Packet Processing offload
- C-programmable, flexible
- Cost and power efficient
- Potential Capabilities:
- Offloading from L1 to L7
- Deep packet Inspection

- RegEx Acceleration
- Unified threat management, Firewall, Anti-Virus, VPN
- Content Aware Packet forwarding
- TCP/IP Offloading
- Security Acceleration (IPSec, SSL)
- Compression Acceleration
- Storage Acceleration (RDMA, iSCSI, and FCoE)

Programmable Adapter:

- A true programmable solution built for a C/C++ environment
- The RMI processor eliminates the need for micro coding or proprietary scripting, enabling rapid application development and leveraging widely-available well-understood development tools
- Software investment protection due to compatibility among RMI processors
- The combination of multi-issue, multi-threaded architecture with security accelerators and NetLogic's regular expression matching with zero memory footprint, offers the best of both worlds – in terms of price, power, and performance

Chips-set:

- Based on RMI XLS416
- XLS Software will be forward compatible with RMI XLP series: Customer can start with XLS and port to XLP

XLS416 Processor Features:

- CPU @ 1.2 GHz
- Up to four processor cores each 4-way multithreaded
- MIPS64®-compatible architecture with enhanced instructions
- Security: DES/3DES, AES, ARC4, Kasumi, SHA, MD5, RSA, ECC
- Compression: GZIP, DEFLATE, ZLIB

Copper Gigabit Ethernet 1000Base-T :

- Independently copper Gigabit Ethernet channels support Single Gigabit Ethernet (1000Base-T), Fast Ethernet (100Base-Tx) and Ethernet (10Base-T)
- Triple speed 1000Mbps (1000Base-T), 100 Mbps (100Base-Tx) and 10 Mbps (10Base-T) operation.
- Nway auto negotiation automatic sensing and switching between 1Gigabit full duplex and 100 / 10 Mbps operations Simplex or Full Duplex.
- RJ-45 female connectors

Host Interface:

- PCI Express X4 lane
- Support PCI Express Base Specification Revision 1.1
- LEDs indicator for link/Activity

Software:

A BSP will be provided which includes boot-loader, Linux kernel and drivers for the XLS and NLS device. This will allow user to develop application on top of Linux. RMI also provides an RMIOs environment, which allows C program to run directly on the processor without a full-fledge OS. RMIOs provides optimized driver for the networking controller in XLS that is optimized for high performance packet processing applications

Technical Specifications

Adapters:	
IEEE Standard / Network topology:	Gigabit Ethernet, 1000Base-T Fast Ethernet, 100Base-TX Ethernet, 10Base-T
Full duplex / Simplex:	Support both Simplex & Full duplex operation in all operating speeds
Auto negotiation:	Auto-negotiation between Full duplex and simplex operations and between 10Mb/s 100Mb/s speeds and duplex 1000Mb/s.
Data Transfer Rate:	1000 Mb/s, 100 Mb/s and 10 Mb/s in simplex mode per port. 2000Mb/s 200 and 20 Mb/s in full duplex mode per port
Cables and Operating distance:	10Base-T Category 3, 4, or 5 maximum 100m 100Base-Tx Category 5 maximum 100m 1000Base-T Category 5E maximum 100m
Operating Systems Support	
Operating system support:	Linux
General Technical Specifications	
Interface Standard:	PCI-Express Base Specification Revision 1.1
PCI Express Card Type:	X4 Lane
PCI Express Voltage:	+3.3V +-9%, +12V +- 8%

PCI Connector:	Gold Finger: X4
Processor:	XLS416
Holder:	Metal Bracket
Operating Humidity:	0%–90%, non-condensing
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 Conducted Emissions Radiated Emissions CE EN 55022: 1998 Class B 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 EFT/B: Immunity to electrical fast transients 1kV Power Leads, 0.5Kv Signals Leads CE IEC 6100-4-5:1995 Immunity to conductive surges COM Mode; 2kV, Dif. Mode 1kV CE IEC 6100-4-6:1996 Conducted immunity (0.15-80 MHz) 3VRMS 80% A.M. By 1kHz CE IEC 6100-4-11:1994 Voltage Dips and Short Interruptions V reduc >95%, 30% >95% Duration 0.5per, 25per, 250per
LEDs	
LEDs location:	LEDs are located in RJ45 connector

Connectors:

Shielded RJ-45

Order Information

P/N	Description	Notes
PEG4RS416-R	Quad port Gigabit Ethernet PCI Express Packet Processor Server Adapter	X4, based on RMI XLS416 Freq 1.2Ghz, Up to 2.5 Gbps throughout, 1Giga Byte DDR2 Freq. 667Mhz

1V0