

PXG2BP -Dual Port Copper Gigabit Ethernet PCI-X Bypass Server Adapter Broadcom® based

Introduction

Silicom Gigabit Ethernet Bypass server adapters are 64-bit/133Mhz PCI-X network interface cards that contain four/ two independent Gigabit ports on one PCI-X adapter.

Silicom's Gigabit Ethernet Bypass server adapters are designed with bypass circuitry in order to provide maximum up time for the network .

Silicom's Gigabit Ethernet Bypass server adapters can Bypass its Ethernet ports on a host system failure, power off, or upon software request.

In Bypass mode , the connections of the Ethernet network ports are disconnected from the interfaces and switched over to the other port to create a crossed connection loop - back between the Ethernet ports. Hence, in bypass mode all packets received from one port are transmitted to other port and vice versa. This feature enables to bypass a failed system and provides maximum up time for the network.

Silicom's Gigabit Ethernet Bypass server adapters include an on board WDT (Watch Dog Timer) controller. The adapter's software drivers or software application can write commands to the on board WDT controller. The adapter's software drivers, WDT controller and the Bypass circuitry provide an interface that control and manage the mode of the adapter.

Silicom Gigabit Ethernet Bypass server adapters have an integrated hardware acceleration that performs TCP/UDP/IP checksum offload and TCP segmentation. The host processing offloads accelerators frees CPU for application processing

Silicom's Gigabit Ethernet Bypass server adapters are based on the Dual port Gigabit Ethernet MAC+PHY of Broadcom Controller

Key features

- Bypass:
- Bypass Ethernet ports on Power Fail, System Hangs or Software Application Hangs.
- Software programmable Bypass or Normal Mode.
- On Board Watch Dog Timer (WDT) Controller.
- Software programmable time out interval.
- Software Programmable WDT Enable / Disable counter.
- Software programmable Bypass Capability Enable / Disable.
- Emulates standard NIC.

Copper Gigabit Ethernet 1000Base-T:

- Independently copper Gigabit Ethernet channels support six, four, two and one 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 1Gbps full duplex and 100 / 10 Mbps operations Simplex or Full Duplex.
- RJ-45 female connectors.



Common Key features:

- Host Interface standard support:
- PCI v2.2 32/64 bit, 33/66Mhz
- PCI-X v1.0 32/64-bit, 66/100/133MHz
- High performance, reliability, and low power use in Broadcom 5704 dual integrated MAC +.
- Ultra deep, 64 KB packet buffer per channel lowers CPU utilization, avoids PCI-X congestion
- Hardware acceleration that can offload tasks from the host processor. The controllers can offload TCP/UDP/IP checksum calculations and TCP segmentation.
- Server class reliability, availability and performance
- Jumbo Frame (9KB).
- 802.x flow control.
- LEDs indicators for link/Activity/Speed/.

Technical Specifications

Bypass Specification

WDT Interval (Software Programmable):	64,000 mSec (64 Sec): Maximum 500 mSec (0.5 Sec): Minimum Step 500 mS (0.5 Sec) WDT timeout interval = wdt_timeout_parameter *mSec wdt_timeout_parameter : {Valid range: 500-64,000}
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Copper Gigabit Ethernet Technical Specifications - (1000Base-T) 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 Mbit/s, 100 Mbit/s and 10 Mbits/sec in simplex mode per port. 2000Mbit/s 200 and 20 Mbit/s in full duplex mode per port.
Cables and Operating distance:	10Base-T Category 3, 4, or 5 maximum 50m * 100Base-Tx Category 5 maximum 50m * 1000Base-T Category 5E maximum 50m * *Theoretical Distance – Defined as half a distance as stated by the IEEE 802.3 standard

Operating Systems Support :

Operating system support:	Linux kernel 2.4.x & 2.6.x FreeBDS 4.7, 4.9, 5.3, 5.4, 6.x Windows 2000 Windows 2003 Solaris 7,8,9,10 Sparc & x86 platforms
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PEG4BP: General Technical Specifications

Interface Standard:	PCI v2.2 32/64 bit, 33/66Mhz PCI-X v1.0 32/64-bit, 66/100/133MHz
Board Size:	PCI add in Card 167.64mm x 64.41mm (6.6" x 2.5")
PCI Card Type:	Universal 64 bit Card
PCI Connector:	Universal 64 bit 4
PCI Voltage:	+12V (Min 11.4, Max 12.6V) +5V (Min 4.75V, Max 5.25V)
Holder:	Metal Bracket
Weight:	100 gram (3.53 oz)
Power Consumption:	1.6A at 5V: Typical all ports operate at 1000Mbit/s. 1.1A at 5V: Typical all ports operate at 100Mbit/s. 0.9A at 5V: Typical all ports operate at 10Mbit/s. 0.9A at 5V: Typical No link at all ports
Operating Humidity:	0%–90%, non-condensing
Operating Temperature:	0°C – 50°C (32°F - 122°F)
Storage Temperature:	-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 Conducted Emissions Radiated Emissions CE EN 55024: 1998 Immunity for ITE Amendment A1: 2001 CE EN 61000-3-2 2000 Harmonic Current Emissions CE EN 61000 3-3 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 1k VCE 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

PXG2BP: LED / Connector Specifications

LEDs:	(3) LEDs per port 1. Activity: ACT LED Blinks on Activity on any Link speed 2. 1000Mbit/s Link: 1000 LED is on 1000Mbit/s Link 3. 100Mbits/s Link: 100 LED is on 100Mbit/s Link 10Mbit/s Link: 1000 LED and 100 LED are on in 10Mbit/s Link
LEDs location	LEDs are located on the PCB, visible via holes in the metal bracket holder
Connectors:	(4) Shielded RJ-45

Order Information:

P/N	Description
PXG2BPRB-RoHS	Dual Port Copper Gigabit Ethernet PCI Express Bypass Server Adapter

Note: Model P/N /-RoHS /-LP
-RoHS: RoHS Compliant / Lead free adapter.
-LP: Assemble Low Profile Metal Bracket.

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