

Application: Server cPCI Interface Cards
Pericom Device: PI3L301D – Gigabit LAN Switch

Overview

Pericom’s PI3L301D is the first unified Gigabit Ethernet LAN Switch solution in the world. The PI3L301D Gigabit LAN Switch is ideal for server Compact PCI (cPCI) applications where Gigabit Ethernet functionality is required, but have the flexibility to optimize the utilization of higher cost components through the addition of switching technology. This single low cost device can replace a 2nd PHY that is required to support additional front panel ports or backplane connections on the card. For card and server designers, this means a reduction in materials cost per card as well as simplification of routing and interconnection between the cards and the larger system.



Server Platforms

Reference Design Implementation

Existing reference design methodology utilizes separate Gigabit Ethernet PHY devices to support the required connections. This results in all ports and connections having 100% availability, which depending on the role of the card in the system, may not be required. Since these PHY devices are relatively expensive components (~\$7 USD), the duplication makes for a costly design.

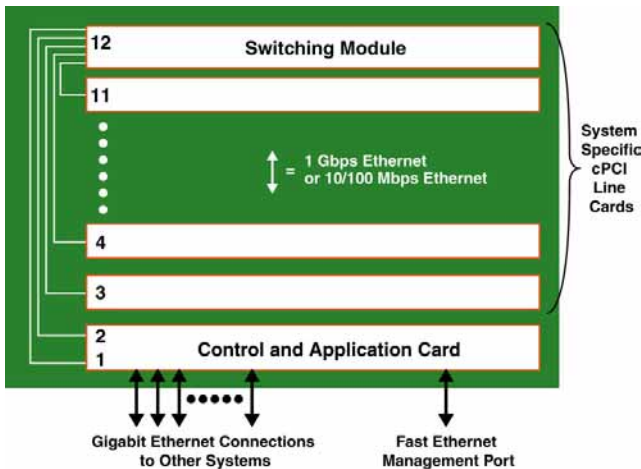


Figure 1: Server System Boards Interconnect

Gigabit Ethernet Switch Modification

To save considerable cost, manufacturers can choose to drop the additional PHYs on the cPCI cards, and instead add a combination of Pericom’s PI3L301D LAN switches. With Gigabit LAN’s growing popularity and presence in server systems, this type of implementation will allow for supporting the additional connections without breaking the cost budget for the overall system by taking advantage of switching to best maximize PHY usage.

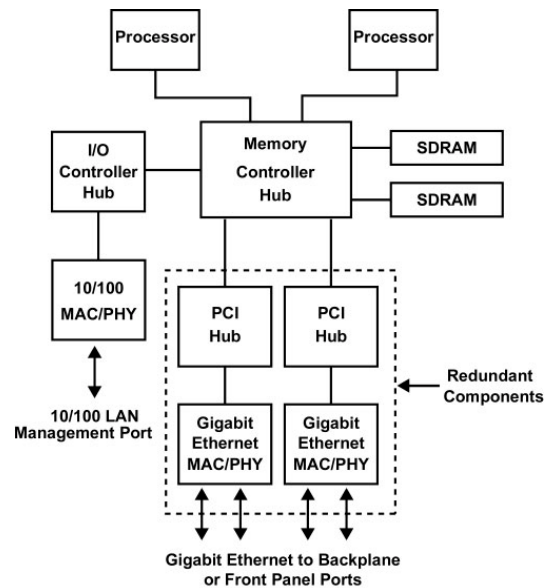


Figure 2: Server Line Card with Dual MAC/PHY

Pericom’s new Gigabit LAN switch supports all the needs of the system with one device. It has also been designed for ease of layout. The PI3L301D aligns the differential signals from the Gigabit Ethernet transceiver in such a way to reduce Crosstalk and other noise interference between the signal lines.

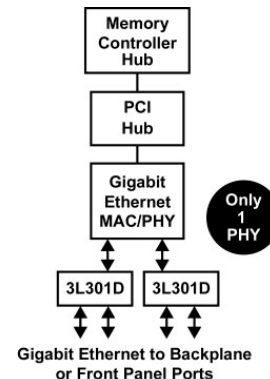


Figure 3: Single PHY Solution

Key Features & Specifications

- Single Device
- Differential 16-bit to 8-bit Mux/Demux Switching
- Package and pinout created for this application
 - Standard TSSOP & reduced pin pitch TVSOP
- Low On-Resistance for maximum signal transfer and low distortion
 - 4-Ohms with a 3V supply
 - 1-Ohm On-Resistance flatness
- Low Current Drain: 5 micro amps (max)
- Operating Voltage: 3.3V +/-10%
- Excellent Isolation & unwanted signal rejection
 - Off Isolation: -75dB at 250 MHz
 - Crosstalk: -90dB at 250 MHz
- Low bit-to-bit output skew: 100ps
- Near-Zero Propagation Delay: 250ps
- Switching Speed: 9ns
- Channel On-Capacitance: 6pF
- Bandwidth/Data Frequency: >350 MHz

Key Benefits

- Integrated 10/100/1000-BaseT Solution
- Lower Cost Solution (Replaces redundant MAC/PHY)
- Easy layout (Does not require multiple PCB layers for routing the I/O lines)

Competition

- Currently none.

Product Status

- Samples: Available Today
- Production: Available Today
- Press Release: March 3, 2003
- Pricing: Available Today

Additional Information

- On the Website
 - Datasheet
 - <http://www.pericom.com/specs/PI3L301D.pdf>
 - Customer Power Point Presentation
 - http://www.pericom.com/presentations/PI3L301D_ow.pdf
 - IBIS Model
 - <http://www.pericom.com/ibis/3l301da.ibs>

Contact Information

Please contact your local Pericom Sales Representative or franchised distributor. Contact list provided on the web:

<http://www.pericom.com/partners/index.php>

Or

Application Support:

<http://www.pericom.com/support/apps.php>