

Application: Video Graphics Card Pericom Device: PI3L301D – Gigabit LAN Switch

Overview

The new demands placed on Desktop and Notebook PC Video Graphic Cards (VGC) for switching and isolation of Digital Video inputs from a Camcorder, DVD, or TV to a Digital Flat Panel Display has increased over the past year. The trend has moved from sending traditional YGB video parallel data streams, to four pairs of high-speed differential data using LVDS /TMDS differential signaling. This evolution of I/O's was necessary to support higher resolution video and digital images for display on 15", 17", and 21" Digital Flat Panel Displays used in Desktop and Notebook PC's. Traditional single ended digital & video bus switch performance falls short in meeting the advanced performance necessary to address this application. The video graphics card industry needs a high-speed Differential Signaling Switch that can accommodate LVDS / TMDS signals between 100 MHz to 200 MHz.



The advanced graphics ASIC or Video Graphics Controller (VGC) does all of the graphics and digital video rendering of the images. This VGC engine passes video information to and from the main Intel based microprocessor via the PCI bus or the AGP interface. The need to switch or isolate additional digital sources arises when the video graphics card incorporates a TV tuner, Camcorder, or DVD interface.



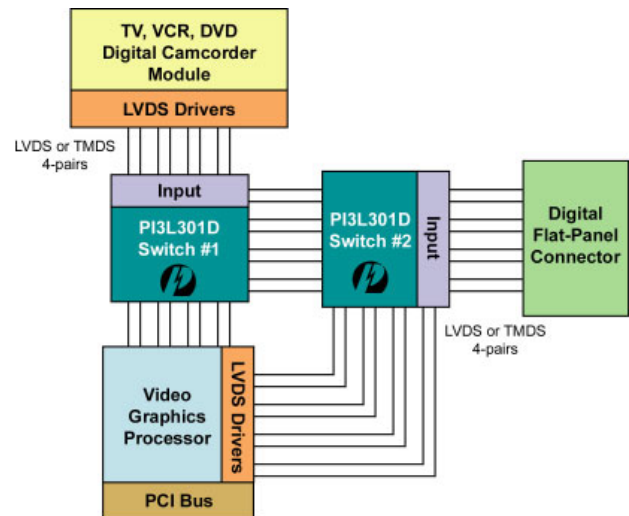
Pericom Solution

The PI3L301D switch supports 4 pairs of differential I/O that can accommodate LVDS / TMDS signaling. By implementing a simple logic table, the PI3L301D switches can provide three modes of operation.

Mode #1: This mode provides a direct path from the TV, VCR, DVD, Digital Camcorder module to the Digital Flat Panel display. This is accomplished by enabling switch #1 to the path of the Digital Flat Panel display via switch #2.

Mode #2: In this mode, a path is enabled from the TV, VCR, DVD, Digital Camcorder module to the Video Graphics Controller via switch #1. The Video Graphics Controller allows the user to render the digital image or provides the ability to capture an image that is later sent via switch #2 to the Digital Flat Panel display.

Mode #3: Switch #1 enables the path to switch #2, while switch #2 selects a path to the Video Graphics Controller. This implementation results in isolating the TV, VCR, DVD, and Digital Camcorder module from the rest of the circuit.



The PI3L301D switches provide a simple way to manage multiple LVDS or TMDS differential digital video signals, while maintaining a high quality of signal integrity. The implementation of this solution is found on a standalone Video Graphics Card accessed via the PCI bus or in a hardwired solution as part of a Notebook PC's motherboard.

Key Features & Specifications

- Operating Voltage: 3.3V +/-10%
- 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 Off-Capacitance: 6pF
- Bandwidth/Data Frequency: >350 MHz Key Feature

Key Benefits

- Provides 4 pair of high speed Differential signaling
- Enables video performance to 350 MHz
- Simplifies layout by offering flow through architecture

Product Status and Pricing

- Samples: Available Today
- Production: Available Today
- Pricing: \$1.66 per 500 pieces

Competition

No competition at this time. **The performance of the PI3L301D is un-matched in the industry** at this time.

Potential competition in the future may come from Fairchild and TI.

Additional Information

- [Press Release](#): February 28, 2003
- [Website](#)
 - Datasheets, Product Presentations, IBIS, Application Notes, Quality & Package data
<http://www.pericom.com/alvswitch/psempart.php?productID=PI3L301D>
- [Order Literature Online](#)
 - Product Selection Guide and Cross Reference
 - Databook CD
 - Powerful Presentation with Navigation
 - Order the Databook CD

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>

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Application Support:

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

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