Version 1.0 2004

PCI 6156

Synchronous, 32-bit, 33MHz PCI-to-PCI Bridge for Video Capture Applications

Connectivity

- Support for up to ten PCI Masters
- Synchronous Primary & Secondary PCI Bus Operation
- PCI revision 2.2 with VPD support
- Provides programmable arbitration support for up to ten bus masters on the secondary interface
- Five buffered secondary PCI clock outputs
  - Supports 32-bit I/O Address range
  - Supports 64-bit Memory Address range
  - ISA-Aware mode for legacy support in the first 64 KB of I/O Address range
  - VGA addressing and VGA palette snooping support
- Supports 3.3V PCI with 5V tolerant I/O
- Industry-standard 206-pin Plastic Quad Flat Pack (PQFP) package

PLX TECHNOLOGY
THE I/O INTERCONNECT SOLUTION

Industry's First and Only PCI-to-PCI Bridge that Supports up to Ten PCI Devices

The PLX FastLane™ PCI 6156 PCI-to-PCI Bridge is a 32-bit, 33MHz device capable of supporting up to ten PCI devices. Targeted at the video capture and surveillance add-in card markets, the PCI 6156 brings unprecedented bridging, through support of the greatest number of PCI loads, as well as cost savings and increased performance, to OEM systems.

PCI CONVENTIONAL

Total System Cost Savings

The PLX FastLane PCI 6156 reduces total system cost for OEM developers because rather than needing two cards to support a large number of camera feeds, only one card is needed. As an example, the typical PCI-to-PCI Bridge supports four PCI loads. In order to support 8-10 cameras, at least two or perhaps three, different cards need to be installed in order to address the load requirements and stay within the PCI load tolerance. But with the FastLane PCI 6156, only one card is required to support all ten cameras, thus reducing the overall system add-in card cost by 50%-66%!

The additional cameras on a single card also provides for more system efficiency. Since the PCI 6156 allows more cameras to be supported on a single card, more cameras can be accommodated per system. Most surveillance systems have six slots per system. Each slot can now host, rather than four cameras, up to ten cameras each. This provides an increased system efficiency of 40%. This efficiency equates to an overall reduced system cost, as only one, rather than multiple, surveillance systems are required to support up to 60 cameras.

Performance

The PLX FastLane PCI 6156 offers increased PCI throughput performance. The PCI 6156 optimizes performance with "no retry penalty" flow and uninterrupted zero wait state bursts (for up to 1KB packets). The no retry penalty flow feature prohibits a requesting device from being held off from the bus, and "re-tried" while the PCI Bridge pursues the request on the secondary bus. A typical retry policy results in increased overall latency, as the requesting device will have to continue to retry the bus, wait until it gains access to the bus, and then subsequently get the data, once the data is available.



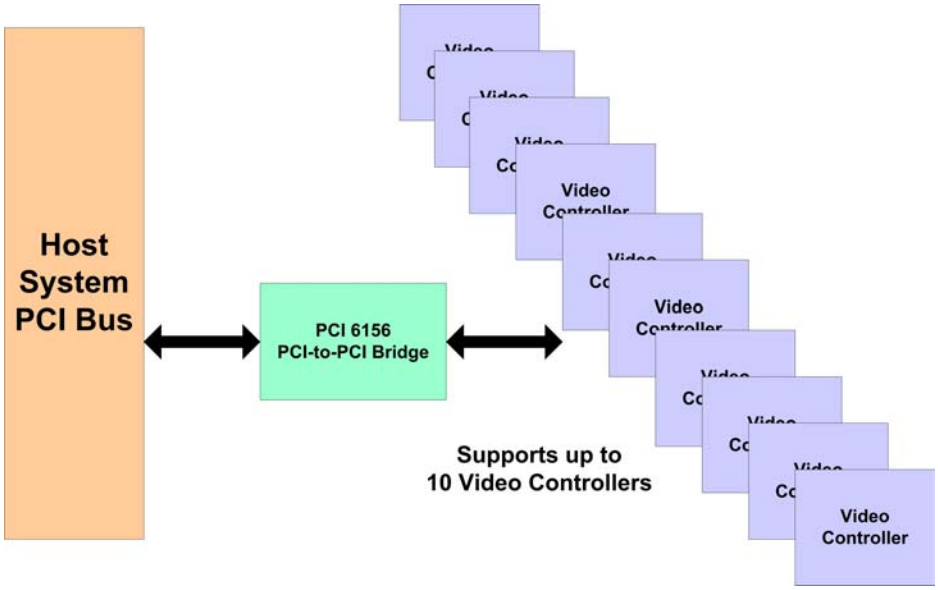


Figure 1. The PCI 6156 in a Video Capture Application

If the data is not available, this long cycle starts again. Even at the point when the data becomes available, an additional delay in getting the data still applies because the requestor has to go through the process of gaining access to the bus and other arbitrating issues before gaining access to the data.

The PCI 6156 device, however, prohibits such delays from decreasing system performance. The requestor device on the primary bus, rather than being retried, is allowed to hold onto the bus and wait until the data is ready on the secondary side. When the data on the secondary side is ready, the data is delivered immediately to the requestor device, waiting on the primary side. Because data is immediately presented to the requestor at the earliest possible time, the "no retry penalty" flow service offered by the PCI 6156 results in reduced transaction latency and increased throughput performance. The PLX FastLane PCI 6156 offers unparalleled PCI load support and advanced performance features, enabling cost sensitive, space limited applications to continue to provide high quality, high performance data transmission capability.

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Product Ordering Information

Part Number	Description
PCI 6156-DA33PC	PCI 6156 PCI--to-PCI Bridge Chip (PQFP)

Please visit the PLX Web site at http://www.plxtech.com or contact PLX sales at 408-774-9060 for more information.

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