



Tsi340™ PCI-to-PCI Bridge Product Brief

Device Overview

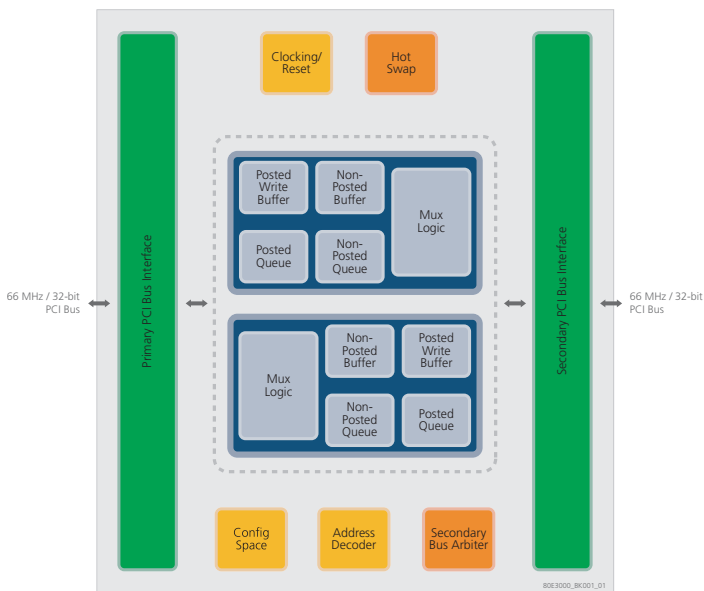
The IDT Tsi340 is a PCI-to-PCI bridge that is fully compliant with the *PCI Local Bus Specification, Revision 2.3*. The Tsi340 has sufficient clock and arbitration pins to support four PCI bus master devices directly on its secondary interface.

The Tsi340 allows the two PCI buses to operate concurrently. This means that a master and a target on the same PCI bus can communicate while the other PCI bus is busy. This traffic isolation may increase system performance in applications such as multimedia.

The Tsi340 makes it possible to extend a system's load capability limit beyond that of a single PCI bus by allowing designers to add more PCI devices or more PCI option card slots than a single PCI bus can support.

The Tsi340 has two identical PCI Interfaces that each handle PCI transactions for its respective bus, and, depending on the type of transaction, can act as either a bus master or a bus slave. These interfaces transfer data and control information flowing to and from the blocks shown below.

Block Diagram



Features

PCI Interfaces

- Industry Standard 32bit PCI bridge
- Synchronous PCI operation up to 66 MHz on primary and secondary busses
- Supports up to four PCI bus masters on secondary interface.
- Concurrent primary and secondary port operation

Compliance

- PCI-to-PCI Bridge Architecture Specification (Revision 1.1)
- PCI Local Bus *Specification (Revision 2.3)*
- PCI bus Power Management Interface Specification (Revision 1.1)
- Advanced Configuration Power Interface (ACPI)

Other Features

- Supports four external masters through a programmable 2-level built-in arbiter
- Supports for external arbiter
- PCI Clock run support
- Supports posted write buffers in both directions
- Two 256-byte buffers for delay transactions
- Two 256-byte buffers for posted memory transactions.
- Enhanced address decoding
- Compatible with existing solutions from PLX and Pericom.

Physical

- 23x17mm, 128 PQFP package
- Available in RoHS compliant package
- 3.3 V I/O, 5 V tolerant

Benefits

- Extends PCI load capability
- Straightforward system design through the Tsi340's highly configurable features

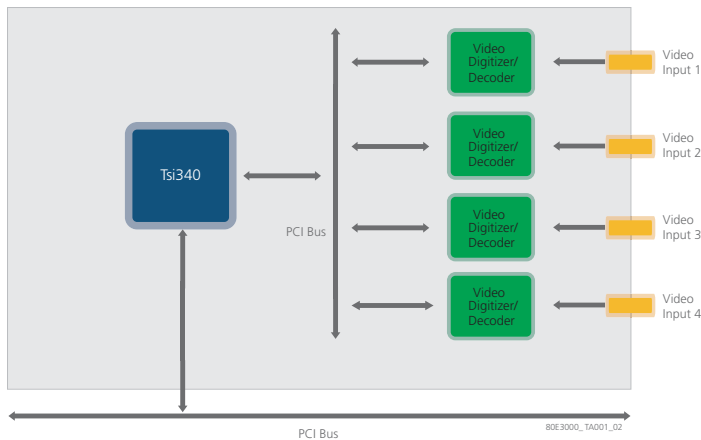
Typical Applications

- Video capture cards
- Embedded video recorders (EVRs)
- Industrial PC's (IPC) backplanes
- Multi-function printers
- Storage host bus adapters (HBAs)
- Network interface cards (NICs)
- Firewall and security gateways
- Printers, graphics and imaging systems

Option card designers can use Tsi340 to implement multiple-device PCI option cards. Without a PCI-to-PCI bridge, PCI loading rules would limit option cards to one device. The *PCI Local Bus Specification* loading rules limit PCI option cards to a single connection per PCI signal in the option card connector. The Tsi340 overcomes this restriction by providing, on the option card, an independent PCI bus to which up to four devices can be attached.

The application diagram shows how the Tsi340 enables the design of a multi-component option card or expand existing PCI buses.

Application Diagram - Digital Video Recorder



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