FireBridge II

High performance, low-cost docking station solution

Product Highlights

- Provides true “hot” docking and undocking
- Supports 3.3V or 5.0V PCI dock
- Host and docking PCI buses can be asynchronous
- Provides eight windows, selectable for memory or I/O
- Additional windows support distributed DMA devices on the docking station
- Offers extra fixed window for VGA
- Supports INTA#, INTB#, INTC#, INTD# interrupts
- Supports four bus masters
- Generates PCI clocks for four devices
- Supports cascaded docking with multiple FireBridge controllers
- PCI power management compliant
- Increases primary PCI bus bandwidth by off-loading transactions into buffers
- Supports external bus arbiter for secondary PCI bus
- Packaged in 144-pin Low-profile Quad Flat Pack

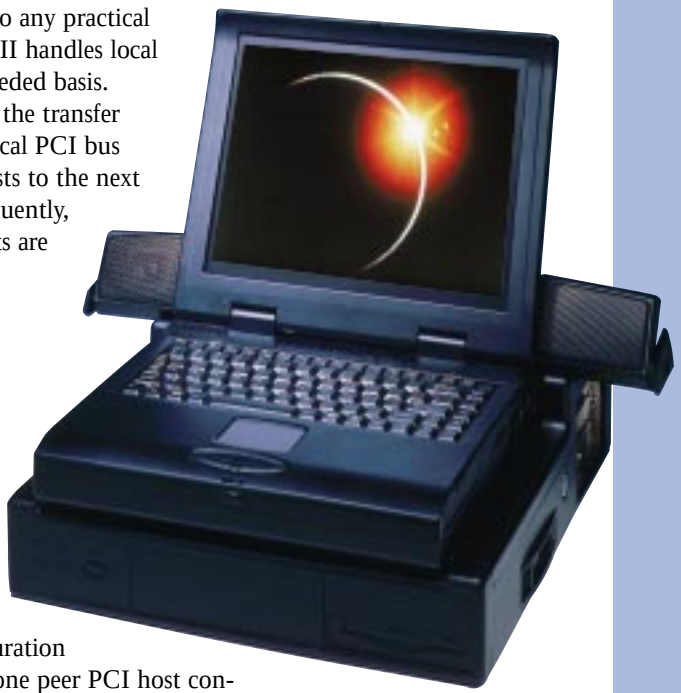
The OPTi FireBridge II chip provides a high performance, low-cost docking station solution for notebook computer designers. Compliant with the PC 98 and the expected PC99 standards, the FireBridge II chip gives host notebook computer systems the ability to reliably do “hot” docking. FireBridge II replaces “Q” switches in notebooks, protecting the primary PCI bus from spurious signals generated during “hot” docking. FireBridge II also provides notebook systems with the capability to recover gracefully from failed attachments and surprise undockings.

When incorporated into host PCI docking interfaces, FireBridge II either runs synchronously at host PCI speed or asynchronously at speeds up to 33 MHz. Asynchronous operation of the PCI docking interface allows the CPU to operate at full speed without hindrance by slower docking station connections. FireBridge II increases the effective bandwidth of the PCI bus by off-loading the primary PCI bus commands to the 8-level FIFO of FireBridge II.

Complete isolation of primary and secondary bus operations enables FireBridge II applications that are impossible to implement with standard docking technology. Examples of such applications are:

Cascade docking

Docking can be nested to any practical level because FireBridge II handles local bus requests on an as-needed basis. FireBridge II waits until the transfer actually begins on the local PCI bus before forcing the requests to the next higher bus level. Consequently, PCI latency requirements are not exceeded.



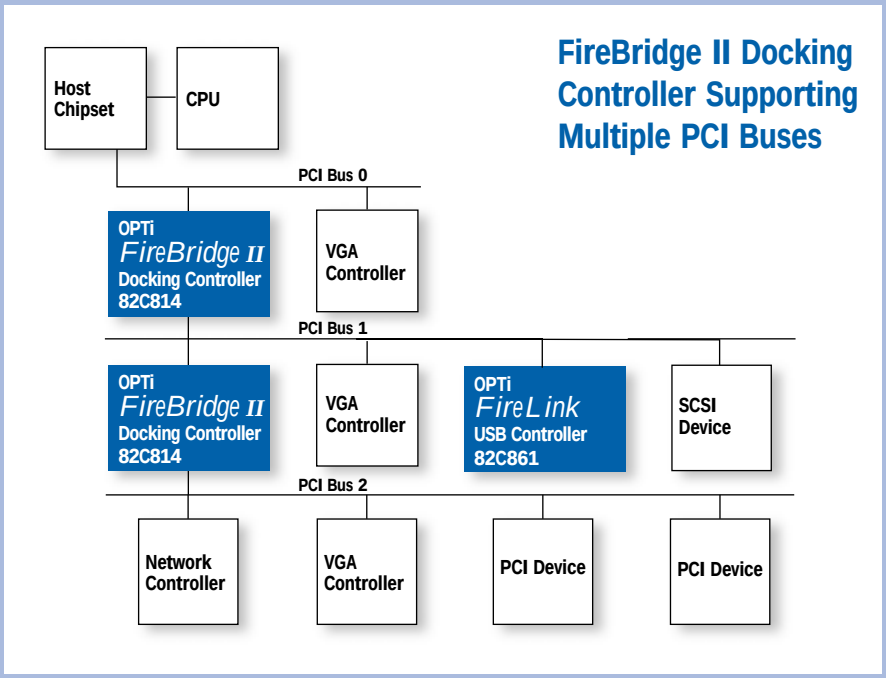
Peer bus connection

FireBridge II chips can connect two host PCI controllers together since the 82C814 logic provides for external arbitration on its secondary bus. In addition, the 82C814 logic optionally passes configuration cycles upstream so that one peer PCI host controller can configure devices on another peer PCI bus. Asynchronous bus operation allows peer buses to be operated independently (no need for speed or phase synchronization).

OPTi®

Building Innovative IC Solutions

FireBridge II



FireBridge II Docking Controller Supporting Multiple PCI Buses

About OPTi

OPTi's focus is on building innovative ASIC solutions for the technology of today and for the future. Our chipset solutions for the PC and consumer electronics markets include mobile, docking, USB, graphics, and our new embedded chipset program. OPTi's Aviva group provides IC design and implementation services to the semiconductor industry.

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