



PCI Express Bridges : Device Definitions

What is a PCIe Switch?

A PCI Express switch provides serial, high-speed, point-to-point connections between multiple I/O devices and a microprocessor (or root complex) allowing peer-to-peer communication, fan-out, or aggregation of end-point traffic to the host. The PCI Software views a PCIe switch as a hierarchy of PCI-to-PCI bridges (connected back-to-back). Within each switch, one port is designated as an upstream port connecting to a processor or a root-complex and the rest are downstream ports connecting to various I/Os. All PCI Express control transactions and interrupts automatically flow to the upstream.

When would you use this?

Most processors and root complexes offer limited PCI Express ports. A PCIe switch allows the host to connect to multiple PCIe I/Os or endpoints, effectively creating additional PCIe ports.

What is a USB Peripheral Controller?

Universal Serial Bus (USB) is a hardware interface used to connect external peripheral devices.

When would you use this?

If you wish to transfer data to or from your PC to another peripheral device, you would use USB.

What is USB Duet™ Technology?

USB Duet Technology adds a multi-function USB Peripheral port on the PC. The port allows you to connect other PCs with a single USB cable. The USB Duet port co-exists with current USB 2.0 (Host) ports already on today's PCs to offer high speed communication between PCs.

When would you use this?

If you wish to connect multiple PCs with a single USB cable, you would require USB Duet Technology.

What is an I/O Accelerator?

In addition to being a local bus to PCI bus bridge, an I/O Accelerator should provide a controller that connects to a bus to communicate directly with other devices on the bus without going through the CPU. PLX I/O Accelerators support bus mastering (DMA) as a means of improved performance.

When would you use this?

If you need to connect a generic local bus interface to a PCI bus interface with improved performance by mastering both the local bus & the PCI bus, you would require an I/O Accelerator.

What is a PCI Express Bridge?

A PCI Express Bridge is an I/O interconnect device that allows you to connect two I/O bus architectures with one of them being PCI Express.

When would you use this?

If you were to migrate a generic local bus, PCI or PCI-X based system to PCI Express, you would require a PCI Express Bridge.

What is a PCI to PCI or PCI to PCI-X Bridge?

A PCI-to-PCI / PCI-X bridge provides a connection path between two independent PCI buses. The primary function of the bridge is to allow transactions to occur between a master on one PCI bus and a target on the other PCI bus.

Source: PCI-SIG

When would you use this?

If your application is in need of a PCI bus expansion or isolation allowing more PCI/PCI-X devices to be connected through a fanned out PCI/PCI-X connector.