

**1. What is PCI?**

A. PCI, the Peripheral Component Interconnect, is a parallel bus architecture developed in 1992 for desktop and server applications. In the latter half of the 1990’s, PCI also established itself in communications and other embedded applications. Today, PCI is the predominant local bus used in PCs, servers, communications, and embedded applications. PCI has evolved into several variations (PCI, PCI-X, PCMCIA, CardBus, CompactPCI, etc.), all parallel bus technologies, to meet the specific requirements of its many applications.

**2. What is PCI Express\* Architecture?**

A. The PCI Express\* Architecture is an open specification designed from the start to address the wide range of current and future system interconnect requirements of multiple market segments in the computing and communications industries. The PCI Express\* Architecture defines a flexible, scalable, high-speed, serial, point-to-point, hot pluggable/hot swappable interconnect that is software-compatible with PCI.

**3. What are the key differences between serial and parallel bus architectures?**

A. Serial bus architectures deliver more bandwidth per pin than parallel bus architectures, and they scale more easily to higher bandwidths. Serial bus architectures enable a network of dedicated point-to-point links between devices as opposed to the multi-drop basis of parallel bus architectures. This eliminates the need for bus arbitration, provides deterministic low latency, and greatly simplifies hot plug/hot swap system implementations.

**4. Is the PCI Express\* Architecture intended to replace PCI/PCI-X?**

A. No. Both PCI/PCI-X and the PCI Express\* Architecture will be supported well into the future. PCI/PCI-X are established technologies with very mature infrastructures that will continue to be very attractive to many applications. The PCI-SIG will continue to actively promote both technologies as interfaces for system expansion slots, adapter cards, embedded host, and other applications. OEMs and IHVs will determine which technology is used in specific applications.

**5. Are PCI Express\* Architecture slots intended to co-exist in systems with PCI/PCI-X slots?**

A. Yes. PCI Express\* Architecture slots can co-exist with PCI/PCI-X slots via the *PCI Express Translation Bridge Specification*.

**6. Is the PCI Express\* Architecture intended to replace AGP?**

A. Yes. Since one of the targeted application of this technology is for use as a graphics I/O attach point.

**7. Will there be any issues about compatibility on the software layer when future enhancements are implemented ? (e.g. adding addition lanes for faster throughput)**

A. No. Since the change would only impact the Physical Layer.

**8. Do we have a PCI Express\* connector comparison?**

A. Yes. See Figure below. The top row is the **card type**, the left hand column is the **connector type**.

| <b>Card type</b><br><b>Connector type</b> | <b>x1</b> | <b>x4</b>     | <b>x8</b>     | <b>x16</b>    |
|---|-----------|---------------|---------------|---------------|
| <b>x1</b>                                 | x1        | Not Supported | Not Supported | Not Supported |
| <b>x4</b>                                 | x1        | x4            | Not Supported | Not Supported |

|                                |    |    |    |               |
|--------------------------------|----|----|----|---------------|
| <b>x8 connector / x4 links</b> | x1 | x4 | x4 | Not Supported |
| <b>x8</b>                      | x1 | x4 | x8 | Not Supported |
| <b>x16</b>                     | x1 | x4 | x8 | x16           |

**9. Compared with PCI / PCI-X, what are the Bus Characteristics of PCI Express\* ?**

A. Below is a short comparison of BUS Characteristics of PCI / PCI-X and PCI Express\*

| <i>Bus Characteristic</i>             | <i>PCI and PCI-X</i> | <i>PCI Express*</i>         |
|---------------------------------------|----------------------|-----------------------------|
| <b>Bandwidth</b>                      | <b>Shared</b>        | <b>Dedicated</b>            |
| <b>Bandwidth and Pin Efficiency</b>   | <b>Low</b>           | <b>High</b>                 |
| <b>Fan Out and Latency</b>            | <b>Complex, High</b> | <b>Less Complex, Low</b>    |
| <b>PCI Compatibility</b>              | <b>Compatible</b>    | <b>Compatible</b>           |
| <b>Cost / Performance Scalability</b> | <b>Prohibitive</b>   | <b>Enabling</b>             |
| <b>Future I/O Demands</b>             | <b>No QoS</b>        | <b>QoS with VCs and TCs</b> |

**10. What does PCI Express\* deliver to the Desktop Arena ?**

A. PCI Express\* enables greater bandwidth and performance, in graphics for a 4GBytes/second per direction using a x16 slot. Great I/O Performance is also achieved for x1 or greater in the GbE (Gigabit Ethernet), 1394, etc ... PCI Express\* also enables new usage models, via the isochronous support for streaming media for TV tuners, graphics and cameras, PCI Express\* also provides hot plug support for new form factors and modules – Express Card™

**11. What does PCI Express\* deliver to the Mobile Arena ?**

A. New form factor such as Express Card™ /34 and Express Card™ /54 which will enable usage of PCI Express\* & USB 2.0 Interfaces. Contributes to low wattage, small footprint & consumer friendly. Primary use is on communications, storage & I/O Migration.

**12. What does PCI Express\* deliver into the Enterprise Arena?**

A. PCI Express\* enables adapters to connect directly to the MCH without a bridge allowing lower latency, lower cost and fewer pins which equates to less board space.

**13. What is Intel's® PCI Express\* commitment ?**

A. Intel has committed to support PCI Express\* through Products (chipsets, adapters, building blocks & platforms) and Enabling Programs (Developer's Network, Product Development Kits, IT Network & Interoperability Lab)