Industry Support for PCI-X: FuturePlus® Systems Provides PCI-X Analysis Probes that Ease Hardware Debug of Complex I/O Architectures for Next-generation Computing Designs

FuturePlus Systems Corporation, which provides measurement and debugging tools for the computing industry, has developed two PCI-X analysis probes for designers of high-performance I/O architectures. The FS2007 passive analysis probe and the FS2105 active analysis probe allow hardware debuggers to view PCI-X bus activity, characterize software, measure performance specifications, and integrate peripherals into PCI-X based systems.

The FS2007 clocks the multiplexed PCI bus into a logic analyzer, where data can be analyzed by provided software. The FS2105 de-multiplexes and pre-processes the PCI-X bus in hardware on the analysis probe. The FS2105 then clocks the data into the logic analyzer. Both devices offer complete state analysis to 133 MHz and accurate timing analysis to 2 GSa/s, as well as a mechanical and electrical interface between the PCI-X bus and an Agilent logic analyzer. Logic analyzer configuration software is included, along with software that decodes bus transactions into easy-to-read mnemonics.

The ability to easily set up a test environment is critical for PCI-X systems, since the bus operates in a complex environment where multiple PC, workstation or embedded applications interact using various system interconnects, such as SCSI, FireWire, AGP, IDE and USB. In this dynamic I/O environment, designers must be able to test and measure performance of traffic from all bus sources interacting together. FuturePlus probes enable cross-bus analysis, which allows designers to pinpoint and debug compliance violations that may arise from other system sources. Compliance verification is based on the PCI-X Compliance Checklist and the PCI-X Specification. The FuturePlus probes are capable of checking over 50 PCI-X Protocol rules in real time.

"Migrating from PCI to PCI-X requires well-thought-out system design and comprehensive design tools, because PCI-X is more complex than PCI running at a higher speed," said marketing engineer Gregg Buzard of FuturePlus Systems Corporation. "Our analysis tools support this transition to PCI-X, which we believe is integral to our customer's ability to meet next-generation system requirements. We believe PCI-X will become the primary bus interface within PCs, workstations and servers, because it takes the robustness of PCI and enhances it to eliminate bottlenecks and dead time."

Able to accelerate the speed of existing PCI bus technology, and to allow simultaneous bus transactions to eliminate I/O bottlenecks, PCI-X provides the highest level of performance for demanding applications. The 64-bit architecture runs at speeds up to 133 MHz, providing burst transfer rates of up to 1GByte/s. Designers can choose whether to put four 66-MHz slots behind each PCI bridge or one 133-MHz slot behind each bridge. This flexibility is critical to meeting specific performance requirements of systems with advanced peripheral devices, multiple PCI-X buses running at different speeds, and maximum slot capacity.

PCI-X is a compatible extension of the existing PCI bus, which is used in almost every PC today, as well as new applications, such as routers, NICs and embedded systems. As a fully backward-compatible technology, PCI-X allows significant enhancements, while also maintaining customer investment protection in current PCI adapter technology.

About FuturePlus Systems Corporation
FuturePlus Systems Corporation is a privately held manufacturer of measurement and debugging tools for the computer industry. The company's products are used in more than 20 different countries. FuturePlus Systems Corporation is a supplier of Agilent Technologies. Agilent Technologies has been designated an official distributor by FuturePlus Systems.

About the PCI-SIG
Formed in 1992, the PCI Special Interest Group (PCI-SIG) is the organization that develops and manages what has become one of the most successful I/O bus standards ever, the PCI bus specification. Through wide industry support and active developer participation, the PCI bus specification has been a well-maintained, open and non-proprietary solution that is scalable to the needs of today's industry, while also retaining legacy compatibility. In addition to the advancement of the PCI specification, the PCI-SIG educates the industry on the latest developments of the PCI interconnect through technical seminars and via its Compliance Workshops (Plugfests), which provide forums for testing the interoperability of the many PCI-related systems and software in the market.

The PCI-SIG has continued to develop successful extensions to the PCI bus, such as PCI-X and Mini PCI, and remains committed to furthering and advancing the specification. By adding new features and increased functionality, the PCI-SIG is driving the evolution of one of the most successful standards ever created for the computing industry.