PXI – Continued success delivering high performance, functional test solutions

Today, PXI-based solutions are delivering the performance and capabilities required for testing mission critical, high performance devices, modules, subsystems, and systems for a wide range of applications including military, medical, automotive, semiconductor, and the aerospace markets. The many advancements in digital, RF, and microwave PXI instrumentation have all contributed to PXI’s ongoing success, growth, and acceptance in the functional test market. Performance test solutions based on PXI have become the rule rather than the exception for most test applications ranging from manufacturing and depot testing through portable field and flight-line test applications.

PXI, as the dominant modular platform today, continues to advance the capabilities of functional test. This applies not only to new designs but also to the replacement of legacy test systems. Many of today’s proprietary ATE functional systems as well as first and second generation VXI platforms are in need of replacement. These systems, which are now obsolete and in many cases, unsupportable, are offering the PXI market with new opportunities. The investment in PXI products by the members of the PXI Systems Alliance (PXISA) is continuously delivering new products, new capabilities, higher density, and improved performance, facilitating the migration to PXI based systems. New RF test products are being introduced almost on a daily basis with performance that rivals much larger “box” products, and today we are seeing offerings that support test capabilities to 27 GHz. Similarly, high performance FPGA-based PXI products can now be found in most test applications and high-performance, pin-electronics based PXI digital products are now available, surpassing the performance and density of any instrumentation platform. With the availability of advanced digital subsystems, an extensive portfolio of analogue instrumentation, and advanced RF and microwave products, the migration and acceptance of PXI as a core system architecture continues to accelerate.

The flexibility of PXI with its 3U and 6U standard is also contributing to the adoption and advancement of PXI for high performance functional test solutions. Today’s PXI systems are moving from a collection of cards and a simple chassis to an engineered test platform. These platforms offer more than just a compliant PXI bus, chassis, and power system. To meet the needs associated with performance functional test, these ‘purpose built’ platforms leverage the flexibility of the PXI standard and build on the 3U and 6U formats, offering additional power and cooling, innovative switching architectures that are integrated into the backplane, and integrated mass interconnect interfaces, providing the foundation for building high performance, mixed-signal, functional test solutions. The result is that with these engineered platforms, test engineers and system designers are able to realise PXI-based, high performance functional test systems that can replicate and replace legacy ATE systems that offer hybrid pin capability, performance digital, and complex / high density switching configurations – all within a single chassis.

The ongoing investment in PXI products, coupled with the development and availability of core functional test platforms, is contributing to PXI’s success in delivering performance functional test solutions. Also, with the continued adoption of the PXI platform for both new and replacement test solutions, it’s no surprise that PXI continues to experience a robust annual growth rate of >15% with an overall market size of close to $1B USD projected for 2017 (Frost and Sullivan). The market acceptance and projected growth of PXI, coupled with the broad offering of products and suppliers, confirms PXI’s place in the T&M market as the preferred and dominant standard for both current and future test and measurement applications.

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