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NI PXIe-7902 Ethernet Test Solution for LabVIEW™

PXIe Test Instrument for Ethernet Protocol

Applications

Functional test, analysis, and performance characterization of 10G and 40G Ethernet equipment

Emulation/simulation of Ethernet equipment and systems

Aircraft subsystems such as mission processors, sensors, displays, radar, and other high-throughput systems

Error-injection and detection

Benefits

Flexible test configuration with software/LabVIEW control of test instrument

Complete FPGA design with FPGA-based offload of protocol. No FPGA design needed by user

Reduce development time focused on software test applications instead of test hardware development

Lower total cost of test development and test system operation

Specifications

6 mini-SAS HD (SFF-8644) 1x4 ports

- Copper or active optical cables supported
- 10G and/or 40G Ethernet via copper or optical
- 1G Ethernet via optical
- 1, 2, 3, or 4 independent Ethernet lanes per port
- Port output disable via the PXI Trigger Bus

Fully-compatible and programmable with LabVIEW

Designed to IEEE 802.3-2012 specification

Jumbo frame support



[National Instruments PXIe-7902 card](#)

Overview

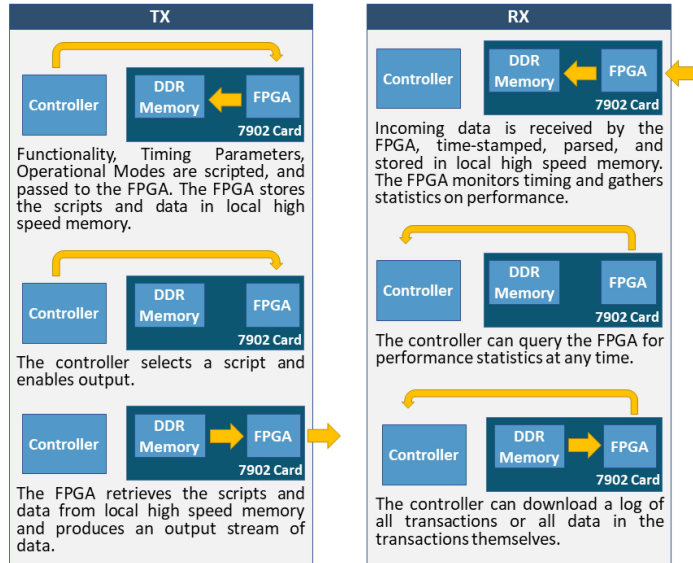
The Ethernet Test Instruments integrates up to twelve independent Ethernet interfaces into the LabVIEW environment using the National Instruments PXIe-7902 card. The FPGA core is designed and optimized for test and verification applications in a variety of conditions and is available with LabVIEW support or Windows C API. Non-performance critical Ethernet functions are implemented in software for maximum flexibility and development ease, but performance critical functions are off-loaded to FPGA hardware.

The Test Instrument can be operated in two modes: an interface mode and a scripted test mode. In interface mode, the user can control the Ethernet interfaces in real time via software. Test mode is conducted via scripted operations where the user specifies all facets of the transaction including header info, payload, packet type, and cadence/timing of operations before handing off execution to the hardware. During both modes, all incoming and outgoing packets are time stamped, recorded, and logged for user review. Both modes of functionality can also be further integrated into LabVIEW TestStand.

CONTACT US TODAY

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> [Ethernet Test and Validation System Architecture](#)

Our Commitment

New Wave DV is committed to providing the latest innovations in technology, architectures, and techniques to keep our customers one step ahead of the rest. Our products, complete with the Development Framework, are intended to offer our customers an entirely unique out-of-the-box experience.

Complete Product Support Program

New Wave DV prides itself on its excellent customer support, a fact that is echoed by our customers. New Wave DV provides industry standard warranty on its products, but it is the human factor that makes our support so valuable to our customers. Our team takes the time and effort to ensure that the customer experience with our products is a positive one.

CONTACT US TODAY

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Features

- Fully-programmable Ethernet traffic patterns
- Hardware offload of performance critical traffic flows
 - Script engine defines transaction mix, hardware executes script at wire speed
 - Hardware transmit and receive logs with time-stamping
- DRAM transmit and receive packet buffers
- DMA channels from DRAM to host
- Record all transactions with hardware time-stamping
- Supports established or user-defined protocols for your custom application
- Windows C or LabVIEW API and example designs
- Independent operation of each Ethernet interface
- Error-injection, error-detection, and checksum corruption
- Real-time statistics gathering
- User-definable MAC addresses

Configuration

- PXIe HARDWARE:**
NI PXIe-7902 PXIe Card
- NETWORK INTERFACE:**
Up to 12 TX/RX lanes over 6 ports
- PROTOCOL:**
Ethernet

Ordering Information

400-784232-01-XX: NI PXIe-7902R High-speed Serial Instrument, Ethernet IP Core

[Contact New Wave DV today for more information.](#)

