

NI PXIe-6593 Serial RapidIO® Protocol Endpoint Offload for LabVIEW™ PXIe Test Instrument for Serial RapidIO® Protocol

Applications

LabVIEW™ integrated SRIO host or endpoint

Script-based data generation for emulation of sensors and systems

Benefits

Full hardware offload of SRIO endpoint.

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 by focusing on software test applications instead of test hardware development

Lower total cost of test development and test system operation

Specifications

Fully compatible and integrated into LabVIEW™

2 independent SRIO ports via QSFP connectors

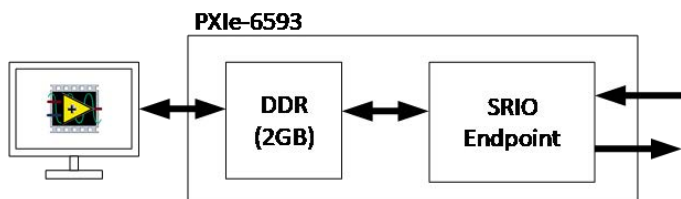
1x, 2x, 4x lane modes at 1.25, 2.5, 3.125, 5 Gbps

Supports 8-bit or 16-bit device IDs

2GB memory per SRIO port

Packet support:

- Type 2 (NREAD non-atomic)
- Type 5 (NWRITE, NWRITE_R non-atomic)
- Type 6 (SWRITE)
- Type 8 (Maintenance)
- Type 9 (Data Streaming)
- Type 10 (Doorbell)
- Type 11 (Data Message)



> The SRIO endpoint will automatically maintain the 6593 card's DDR memory based on incoming transactions. The memory is available asynchronously for reading/writing by both the host and the SRIO endpoint.



[National Instruments PXIe-6593 card](#)

Overview

Available on the National Instruments 6593 card, the SRIO Endpoint Offload has two fully functional and independent SRIO endpoints. Each SRIO port is automatically managed and maintained by the FPGA and requires no host/software interaction. The FPGA updates and maintains its memory bank (2GB per port) based on SRIO transactions. The port memory can be accessed asynchronously at any time by the host. The design provides a way to have a SRIO device completely integrated into LabVIEW™ without the software overhead of maintaining the link.

The endpoint processes and responds to requests without host/software intervention. The on-board memory is updated with incoming NWRITE, SWRITE, Data Streaming, Doorbell, and Message packets. NWRITE and SWRITE operations are stored at the addressed location while Doorbell, Message, and Data Streaming packets are stored in a circular buffer. Responses to received NREAD requests return the data from the addressed location of the on-board memory.

Packet generation can be configured to be regular and periodic (hardware offload mode) or driven by the host software. When in hardware offload mode, data generation is handled by a scripting-based hardware offload engine. The user defines a script that determines the format and timing of any data transmission. The script is executed completely in hardware which gives the user a very high degree of precision and control in creating data transmission patterns.

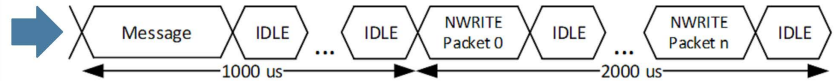
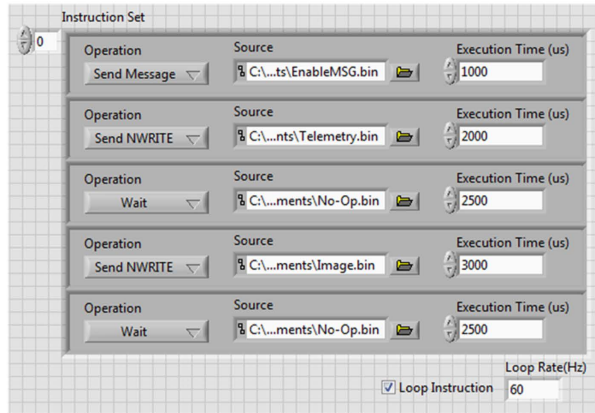
Optionally, the system can be operated as a standalone instrument and controlled remotely via a network connection. Command and control is handled via plain text UDP commands which allows integration into test systems running C#, C++, Python, and more.

Can be combined with the [SRIO Data Recorder](#) functionality into a single design.

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NI PXIe-6593 Serial RapidIO® Protocol Endpoint Offload for LabVIEW™

PXIe Test Instrument for Serial RapidIO® Protocol



> Data transmissions can be scripted to emulate sensors and systems. Included support VIs allow the user to specify files to be sent (system is agnostic to content), transmission rates, and resend them periodically.

Features

Windows C or LabVIEW™ API. Example designs provided.
 Example Python API for remote command and control of the host application.
 Statistical eye diagrams for signal integrity measurements.
 Error monitoring and tracking.

Ordering Information

400-56593-00-88-00: sRIO Protocol EndPoint Offload: NI PXIe-6594 High Speed Serial Instrument, sRIO Test Solution for LabVIEW IP Core, 1.25/2.5/3.125/5G

400-56593-00-89-00*: sRIO Protocol Test Suite (Data Recorder+ EndPoint Offload) : NI PXIe-6594 High Speed Serial Instrument, sRIO Test Solution for LabVIEW IP Core, 1.25/2.5/3.125/5G

Contact New Wave DV today for more information.

*Please note that the protocol test suite is a combination of the Data Recorder and EndPoint Offload.

CONTACT US TODAY

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Configuration

PXIe HARDWARE:

PXIe-6593 NI PXI High-Speed Serial Instrument

NETWORK INTERFACE:

Up to 2 ports using QSFP connectors

PROTOCOL:

Serial RapidIO®

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.

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.



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