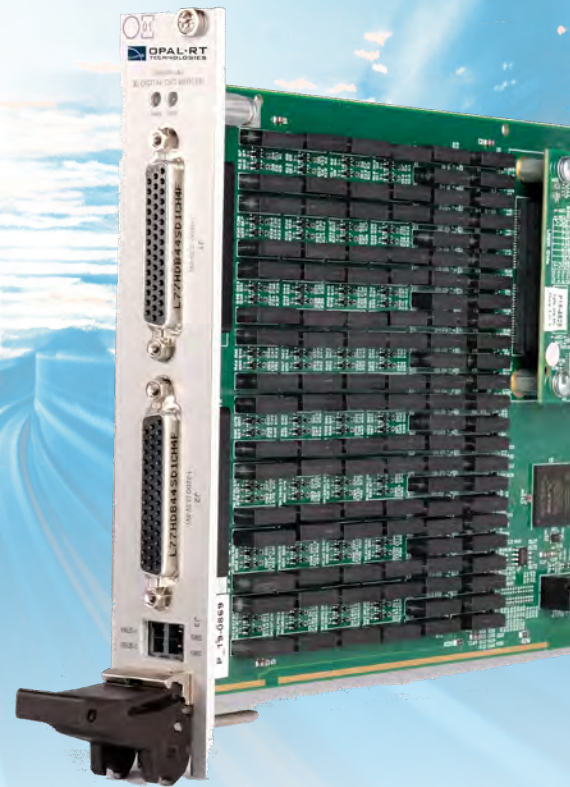
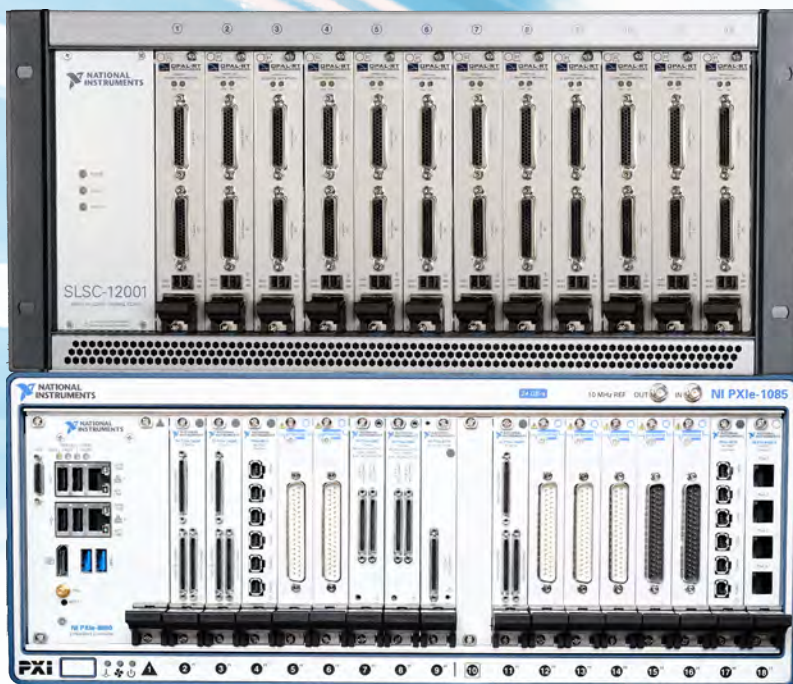




OPAL-RT
TECHNOLOGIES

OPAL-RT'S SLSC MODULES FOR HARDWARE-IN-THE-LOOP TESTING

Off-the-Shelf Configurable Signal Conditioning & Flexible FIU
for NI's SLSC Platform



Leverages NI's SLSC Platform

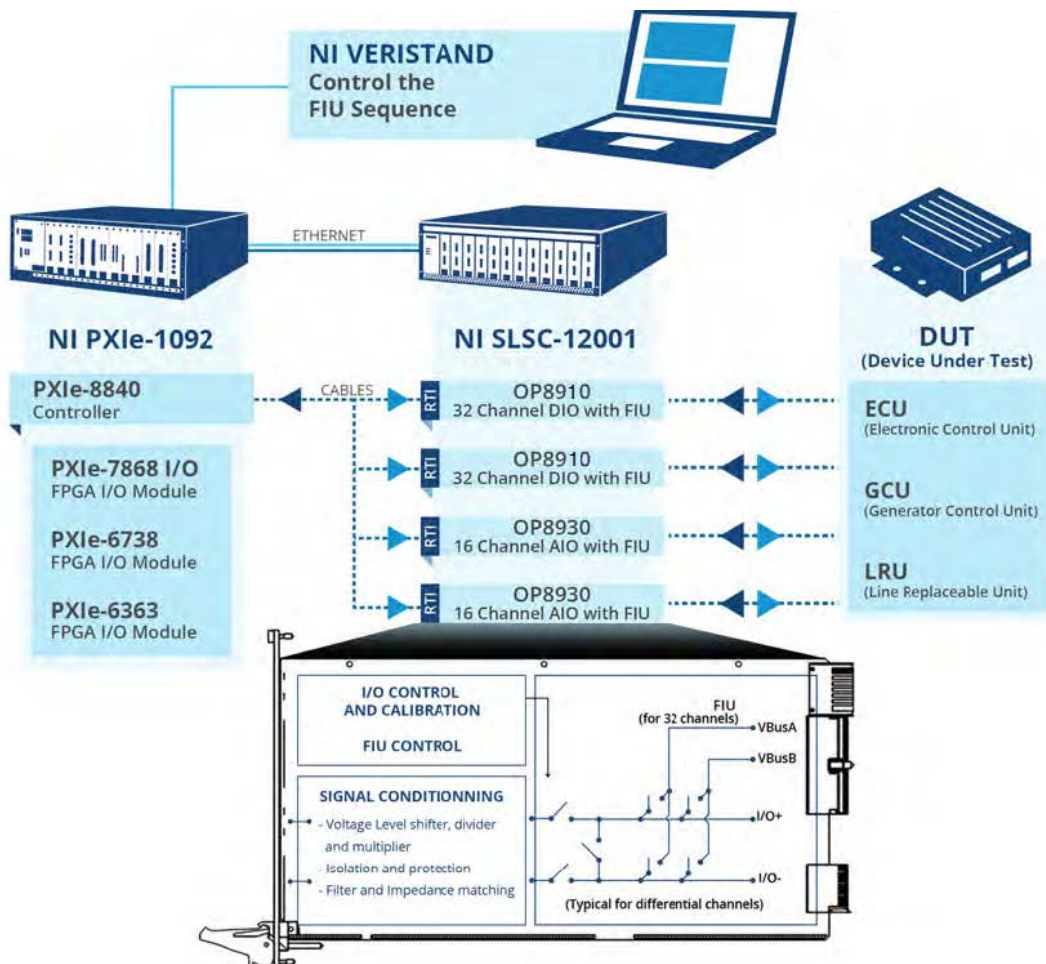
Easily access and interact with your electronic control unit (ECU) or device under test (DUT). OPAL-RT has created powerful, open, and flexible test systems from off-the-shelf components that leverage National Instruments' (NI) Switch, Load, and Signal Conditioning (SLSC) platform.

Off-the-Shelf, Powerful, Fast and Configurable Platform

Our new range of SLSC modules enables HIL users to maximize their time and resources through our configurable signal conditioning stage, ensuring that signals are the right level and type, as well as by providing configuration for voltage level shifting, dividing and multiplying or integrated filters and impedance matching.

Every card provides an on-board flexible fault insertion unit (FIU) giving full relay control during testing when applying faults to the Device Under Test through NI's VeriStand interface.

TYPICAL CONFIGURATION



SLSC MODULES

OP8910 32-CHANNEL HIGH SPEED DIGITAL I/O CONDITIONING BOARD WITH FIU

A high-speed DIO board with TTL/VTTL (5.0V, 3.3V) output and galvanic isolation.

Features

- Low latency < 40ns, High resolution of 10ns.
- Digital In programmable threshold 0-50V.
- Digital Out maximum current: 32mA per channel/800mA total.
- Signal conditioning & FIU on a single board.

OP8920 32-CHANNEL ISOLATED DIGITAL I/O CONDITIONING BOARD WITH FIU

A single-ended output voltage board, 5-30V push-pull FET isolated.

Features

- Low latency < 90ns, high resolution of 100ns.
- Digital In: Programmable threshold 0-50V.
- Digital Out maximum current: 24 mA per channel.
- Signal conditioning & FIU on a single board.

OP8930 16-CHANNEL ANALOG I/O CONDITIONING BOARD WITH FIU

Features differential analog input to single-ended analog signal, with a high bandwidth of 500kHz, 35 mA analog out maximum current, and is protected for reverse voltage up to 50V.

Features

- Signal conditioning & FIU on a single board.
- I/O conditioning user configurable for impedance matching.
- Analog filter or analog divider.

OP8940 32-CHANNEL PASS-THROUGH WITH FIU BOARD

This board has a pass-through module and complete FIU capability.

Features

- The fault injection architecture features 7 relays per differential pair.
- FIU features 2 voltage references for the entire board.
- FIU also has independent control of all 112 relays.

Powerful. Fast. Configurable.



FAULT INSERTION UNITS (FIUs)

FIU allow users to better understand how the test units react under all operational circumstances—including unexpected, adverse, or unlikely yet possible events.

SIGNAL CONDITIONING

A superior, configurable signal conditioning stage of testing/simulation, ensuring that signals are the right level and type, and handling of signals for various parts of system testing.

FLEXIBLE CONFIGURATION

Flexible configuration of the platform and cards themselves allow users from various sectors with differing priorities to select what is important in their fields or sectors.

FLEXIBLE LOAD TESTING

Flexible load testing allows engineers and QA personnel to see the DUT or ECU subjected to extreme, yet controlled, conditions as required to quantify the strength and resilience of the unit.

ABOUT OPAL-RT TECHNOLOGIES

OPAL-RT is the world leader in the development of PC/FPGA Based Real-Time Digital Simulator, Hardware-In-the-Loop (HIL) testing equipment and Rapid Control Prototyping (RCP) systems to design, test and optimize control and protection systems used in power grids, power electronics, motor drives, automotive industry, trains, aircraft and various industries, as well as R&D centers and universities.



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