New Product Guide

July–December 2022
New Product Guide

NI offers hardware, software, and services that help you turn real-world data into insights that drive your business decisions. Check out the new products we have launched so far this year to help you test faster, design better, improve reliability, and maximize your test data.

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Welcome to the New Product Guide! We are excited to share with you our new measurement technologies, systems, and software capabilities—all designed to support you as you drive higher performance out of your products through digital transformation initiatives, processes, and products. We support you in your pursuit to power and improve product performance through software. NI always has created software that equips engineering teams to be more productive and innovative in developing the world’s most complex products and systems.

We are evolving test—just as we always have done—by leveraging the latest software capabilities to help you Engineer Ambitiously™. Now, we are going beyond test by connecting valuable test data with all sources of product data—simulation, design, manufacturing, machines, in-use—and applying advanced analytics to unlock actionable insights that improve product performance. We already offer the most comprehensive software platform in the industry that provides value across all phases of your product lifecycle.

Now, we are offering our software via subscription. Across industries, customers expect new software, and they purchase and consume it differently. Today’s customers want to pay for the software they need, when they need it, and easily access it from wherever they need it. More than half of NI customers already are using subscription software and benefiting from fast innovation cycles, a shared commitment to success, and the opportunity to use the most comprehensive software across their entire product workflow through the new Test Workflow bundle. All of this comes at a lower up-front cost, with an annual subscription that is easy to plan for and budget, operationally.

Software delivery through subscription is a natural evolution for NI, but it is just the beginning of the plan to modernize our software capabilities and delivery. We are investing to ensure that you can take full advantage of the incredible benefits of data, analytics, and automation while we accelerate cloud and Software-as-a-Service capabilities to deliver those benefits. We are committed to increasing the software value we bring you.
Software

From interactive exploration and test development to systems and data management, NI’s software portfolio helps you drive actionable insights at scale while proactively improving product performance.
LabVIEW 2022

LabVIEW is a graphical programming environment engineers use to develop automated research, validation, and production test systems.

This new release brings exciting user-experience improvements, including decoupling LabVIEW, drivers, and toolkit version dependence. You won’t need to update your driver or toolkit version every time you update your version of LabVIEW.

Also, LabVIEW 2022 adds improved support for Python and MathWorks MATLAB® software code and updates for new software technologies.

NI’s goal is to release LabVIEW twice yearly to provide users with new features, faster. In the latest release, you’ll find:

- Version independence for select NI drivers
- Version independence for select LabVIEW toolkits
- Python and MATLAB integration improvements, such as:
  - Support for Python classes
  - Debugging for MATLAB (.m) files
  - Editable MATLAB (.m) files in a MATLAB integrated development environment by calling from LabVIEW
- Software technology support, including:
  - Upgraded Xilinx Vivado compilation tools to 2021.1
  - Complete support for LabVIEW Real-Time Module 64-bit development

Learn more
Test Workflow 2022 Q3

Test Workflow is a bundle of select NI software that helps test professionals accomplish anything from their day-to-day work to overcoming their most challenging obstacles. With Test Workflow, you have access to a suite of tools designed for engineers.

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<td>Research New and Emerging Technology</td>
<td>Test new technologies and evaluate design concepts with data-focused tools. Updates include additional Python support and experience improvements.</td>
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<tr>
<td>Test Anything, Measure Everything</td>
<td>Connect to any NI or third-party instrument to measure and analyze data. Updates include interoperability improvements with Python and MATLAB.</td>
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Transition to Subscription Software

We’re modernizing how we develop and deliver software to test engineers worldwide, and have transitioned all test and measurement software to annual subscriptions as part of that effort.

Take advantage of the benefits of NI’s test and measurement software subscriptions:

- Scale your software to meet your needs. Buy more licenses when you need them. Turn them off when the project is complete.
- Gain access to the latest improvements: NI’s goal is to release software updates (inclusive of bug fixes and new features) at least twice a year.
- Get help when you need it with NI technical support.
- Maintain existing code with access to historical software versions.

NI’s shift to a subscription model does not impact:

- Debug and deployment licenses
- Perpetual licenses you already own

We have some exciting new features that just launched, and you might have read about them in this guide, but even more exciting is what’s yet to come. Learn more about where we’re investing in test software from the roadmaps for LabVIEW and Test Workflow.

ActiveUptime™ Solution

The ActiveUptime™ solution increases your test system reliability and uptime with complete and ongoing turnkey maintenance-as-a-service for condition monitoring and predictive maintenance. The ActiveUptime™ solution gives you visibility into the physical world through real-time monitoring and changing as conditions approach critical thresholds. Combined with intelligent environmental sensors, robust data ingestion service, and efficient edge preprocessing, the ActiveUptime™ solution predicts when those failures will occur so that you can perform the proper maintenance, ensuring your equipment is ready when you need it.

This release includes:

- Condition Monitoring—Real-time insights into the health of test systems and test facilities are a necessity for being digitally aware.
- Predictive Maintenance—Equipment is serviced based on actual wear and tear and need for service, reducing unexpected outages and overall costs.
- Correlation Analysis—Connecting critical events on a system to the overall system health and state provides accelerated root-cause analysis.
- Building and Maintaining a Digital Thread—This proactive approach helps you understand what is happening on each asset and what is likely to happen.

Learn more
DataStudio

While there always have been disconnects during product development, there has rarely (if ever) been a way of connecting the wide variety of tools used in design, validation, and production. DataStudio aims to do exactly that. DataStudio is a new product-centric data management and analysis platform aimed at improving data management, analysis, and workflows with open, scalable, and integrated data-sharing practices for use through the entire product lifecycle—from specifications to volume production. There are several distinct applications within the DataStudio family, each aimed at tackling challenges unique to connecting the product lifecycle. Each part works together to solve the challenges faced by many product development teams around connected data, integrated tools/processes, and meaningful data analysis. The three applications include:

- The Specification Compliance Manager (SCM) to compare validation results to specifications
- The Data Manager (DM) for centralized simulation, validation, and production test data management
- The Bench Data Connector (BDC), a standard method to capture validation data and format it in a way to automatically upload the results

Learn more

Measurement Software Development Kit

Unique in its approach to increasing validation productivity, the NI Measurement Software Development Kit (SDK) is a downloadable validation infrastructure tool that provides a test workflow, connecting interactive configuration, debug, and automation with no-code/low-code simplified measurements. With the Measurement SDK, you can build measurements once in the API of your choice and use code interactively in InstrumentStudio™ software for device bring-up, and again in TestStand for powerful automated characterization. Custom plug-ins built using Python, LabVIEW, or C# mean that the Measurement SDK is expandable and scalable to accommodate all validation requirements. By tackling workflow challenges in this way, test engineers can focus on test execution rather than test infrastructure, and this holistic view of connecting validation workflows provides a step function in productivity—one that takes you beyond programming custom applications and delivers a complete set of functionality, with the ability to customize measurements and algorithms in a framework where test engineering domain expertise provides unique and scalable value.

Learn more
Semiconductor Device Control (SDC) Add-On for InstrumentStudio Software

The Semiconductor Device Control (SDC) Add-On for InstrumentStudio software is a software add-on that helps you perform interactive and automated register read/write operations using digital protocols. Use an intuitive InstrumentStudio software panel to interactively configure and execute device control operations, and then save your InstrumentStudio project and return later, or export measurement configurations for a simplified path to automation with LabVIEW, Python, C#, or TestStand. There are two editions:

- The Base edition, with support for standard digital protocols such as MIPI I3C, I2C, SPI, or RFFE
- The Pro edition, with which C# developers can create custom protocols and interfaces using templates for adding protocols to PXIe-657x Digital Pattern Instruments and utilize support for custom hardware

To extend the capabilities of the SDC Add-On, you can deploy any custom protocol created in the Pro edition on the Base edition.

RFmx 21.8

The latest RFmx release aims to keep pace with rapidly developing RF test specifications, measurement requirements, and innovations. RFmx 21.8 provides simple access to the most advanced optimization techniques, such as multimeasurement parallelism and multisite measurements, as well as support for the latest 3GPP and IEEE standards for new-radio and wireless local-area network applications. Additional feature enhancements include key applications to improve measurement capabilities, resulting in extremely fast and high-quality measurements with minimal software development effort.

Learn more
R&D Q&A about ActiveUptime™ Service with Anthony Bacak

What is most exciting about the ActiveUptime™ Solution?
The most exciting aspect of ActiveUptime™ service is the opportunity it provides NI to get more intimate with our customers than ever before, fully understanding how NI’s customers are using our products to achieve their desired outcomes.

How did the idea of creating the ActiveUptime™ Solution come about?
The idea started about eight years ago and initially was going to be a postsales service offering improved customer experience with our NI application systems; later, we realized that what we had developed was 100 percent applicable to systems beyond NI, and the idea grew to what it is today.

How did you end up working on the ActiveUptime™ Solution?
I initially proposed the idea to the Global Services Leadership Team in 2015. It was something I had seen from other companies at the Field Service USA conference in Palm Springs, CA, and it was apparent to me that our expertise in test and connectivity, combined with a new product—SystemLink™ software—provided our customers an advantage in this space.

What are some other things you have worked on at your time at NI?
I started at NI in 2002 as an applications engineer in our ELP program, and at that time I supported LabVIEW, GPIB, and DAQ, and was one of the first AEs (now called TSEs) to support PXI systems. I then worked on the Manufacturing Team for 10 years, where I was fortunate to lead our first true rack-mount system build and on-site bring-up for ZUT in Poland, followed closely by our first mass-scale system integration for our largest customer. I then joined our Post-Sales Services Team, where I’ve helped develop and implement many of the scalable service capabilities we offer in support of strategic customers and also in support of our application systems.

What was something you learned in the development process?
In the development process for ActiveUptime™ service, I confirmed something I already knew: With the right team, anything is possible.
Hardware

NI offers many different types of hardware for multiple applications including data acquisition, electronic test, wireless design, and many others. These products feature specialized synchronization and key software features for high-performance automated test, design, and device validation.
PXle-4190 LCR Meter and SMU

Many semiconductor elements and devices require both current-voltage (IV) and capacitance-voltage (CV) measurements to extract critical information about a manufacturing process or validate device performance. Traditionally, IV measurements are made with a source measure unit (SMU), and CV measurements are made with an LCR meter, capacitance measurement unit (CMU), or impedance analyzer. Systems needing both CV and IV measurements for a given device under test (DUT) must combine these two discrete instrument types with a switch, which degrades measurement accuracy and increases test time. As semiconductor complexity continues to rise rapidly and time-to-market windows narrow, validation and test organizations must find new and innovative ways to adapt and keep up with throughput targets without an exorbitant cost.

This new PXI Express module provides a high-channel-count IV/CV measurement solution for improved parallelism at a competitive cost and small footprint, and includes the following features:

- Combines the functionality of a femtofarad-class LCR meter and a femtoampere-class SMU into a single-slot PXI card
- Offers a more seamless test experience
- Provides higher throughput, higher channel density, simpler integration, and lower cost of ownership

Learn more
**PXIe-6569**

The PXIe-6569 is a FlexRIO low-voltage differential signal (LVDS) module available in multiple FPGA sizes and fixed-direction channel configurations for various I/O requirements. Capable of data rates of up to 1.25 Gb/s, the module is available with 32 LVDS channels in/32 LVDS channels out, 64 LVDS channels in, or 64 LVDS channels out. Each channel configuration is available with either the Xilinx KU035 (2 GB of DRAM) or the Xilinx KU060 (4 GB of DRAM) FPGA.

[Learn more](#)

**PXIe-8285 RDMA Module**

The PXIe-8285 is an Ethernet network adapter that leverages remote direct memory access (RDMA) technology to enable low-latency data movement in a zero-copy manner. This module provides two SFP28 ports, each capable of streaming data up to 25 Gb/s. The driver software, NI-RDMA, abstracts the low-level details of programming an RMDA-compatible interface and features a simple and efficient API for transferring data.

[Learn more](#)
Challenge

Ei is a company out of Ireland that makes fire alarms. Until fairly recently, fire alarms were relatively simple devices. Recent technology innovations have made fire alarms much more effective, but also much harder to test. To develop a good test strategy that would be applicable across the design lifecycle, Ei wanted to standardize the system architecture and have common processes, data infrastructure, and software.

Solution

Ei standardized with NI systems across the design lifecycle to automate their processes and develop digital passports to create a digitally connected thread of information. This saved them from having to create and maintain hundreds of custom testers as their business grew. Additionally, their design team shares ideas and even code with the production engineers. This helps with quality on both teams and speeds their product development schedule.

“Automating validation tests with PXI and LabVIEW saved more than 50 percent of time per project compared with our previous strategy.”

Paul Kilbridge
Test Manager, Ei Electronics
Transportation

Together, we can create a more sustainable future for mobility—without shortcuts. NI can help you ensure quality and accelerate time to market. Let’s turn test into your enabler of performance and strategic advantage.
Battery Test System 3.0

The latest Battery Test System (BTS) release includes major productivity improvements so that battery test engineers waste less time in implementation details, gain efficiency, and scale:

- Respond to time-to-market pressures with out-of-the-box functionality and a system architecture that effectively scales and adapts from single test cells to large-scale, distributed battery test labs.
- Optimize operating expenses and reduce your battery test facility's overall CO₂ footprint by leveraging powerful data and system management software to improve test cell utilization and efficiency.
- Deliver higher-performance batteries faster and within budget with agile test plan development, improved workflow management from design to test engineering, and powerful data management and analytics software.

Learn more
Power Electronics for EV Test

NI's vast power electronics portfolio, integrated with our EV test solutions, gives maximum flexibility in power, test type, DUT, test requirements, and deployment needs:

- Find power-level test solutions for battery cycling, simulation, and emulation; eDyno, motor/inverter emulation, and motor drive for powertrain test; and general bidirectional power supplies with global sales, support, service, and delivery.
- Work with best-in-class power electronics equipment from NI's high-power systems, NH Research and Heinzinger Automotive, and our collaboration with Elektro-Automatik and D&V.
- Seamlessly integrate your choice of power electronics through hardware abstraction layers, specialized drivers, or customized software development from our partners.

Learn more

Battery Management System Hardware-in-the-Loop from NI Partners

NI works with partners such as Opal-RT and Aliaro to deliver hardware-in-the-loop (HIL) solutions for battery management systems (BMSs) that adapt to growing needs to validate BMS communication, safety functions, cell balancing, and fault-monitoring algorithms through battery cell emulation, simulating sensors, I/O, and communication to other electronic control units (ECUs). With the BMS HIL solutions from our partners, engineers can:

- Shorten test plan implementation time, integrating off-the-shelf components from NI and other market leaders specializing in BMS test
- Test BMSs under extenuating safety conditions with NI's real-time test software and native simulation model integration
- Add every signal—real or simulated—to a BMS test system with minimum incremental cost thanks to NI's platform scalability and openness
- Ensure timely test system delivery by combining NI's global footprint with vast partner expertise

Learn more
ADAS Replay and Hardware-in-the-Loop System

Streamline your advanced driver assistance system (ADAS) and autonomous driving (AD) development with a unified test system architecture to move back and forth between data replay and HIL test within the same system:

- Ensure synchronous data feed with replay and HIL AD software for direct interface with the ECU, full customization, data repositories, and simulation interfaces.
- Integrate simulation from modeling software and inject signals from different sources for maximum test tool interoperability.
- Maximize test coverage by running more test cases and scenarios with the lab and simulation to decide which tests to perform on the road.
- Interface with a variety of simulators and IT infrastructure and cloud service providers with a software-centric approach.
- Develop faster by leveraging work across design and validation through a single toolchain for data record, replay and HIL, software in-the-loop (SIL), and test coverage.

Learn more
ADAS CATR System

NI and NOFFZ Technology partnered to develop a fast and accurate radar compact antenna test range (CATR) test system optimized for production test:

- Compact test bench tailored to your specific test and automation needs and horizontal or vertical design to fit your production environment.
- Future-proof investment with a modular, flexible, and adaptable radar test system to keep up with new requirements requests.
- Ready-to-use turnkey solution with global on-site support, service coverage, and short-term manufacturing capabilities.
- Fast, accurate, and efficient test system optimized for production that facilitates the transition from radar sensor development to economical mass production.

Learn more

C-V2X Functional Tester

The NI and S.E.A. C-V2X functional tester or open-loop test system is configurable for maximum scalability, cost efficiency, and deployment options:

- V2X device test functionality with synchronized driving scenario emulation using predefined Day One use cases and customer-defined use cases also for high-load situations (congestion)
- Flexible software defined radio (SDR) V2X open-loop test solution is future-proof for current and developing standards such as 5G NR
- Expandable to include RF measurements and closed-loop HIL test for dynamic control/interaction with other traffic objects and sensors

Learn more
C-V2X RF Compliance Tester

The NI and S.E.A. C-V2X RF compliance or conformance test system for communication standards and RF regulations:

- Is the first OmniAir OQTE-certified C-V2X modular bench tester for comprehensive C-V2X conformance testing
- Offers modular architecture expandable to HIL test or other test and measurement needs in a larger road/traffic/vehicle system
- Uses the same base platform for 802.11p/DSRC testing
- Provides test system turnkey solutions for functional and V2X application-level test, including dynamic control and interactions with other traffic objects, sensors, and ADAS applications

Learn more

C-V2X Sniffer

The NI + S.E.A. C-V2X sniffer test system monitors, validates, and decodes V2X signals:

- The only V2X sniffer that is OmniAir-certified for C-V2X and 802.11p/DSRC
- Offers a future-safe design with SDR technology and integrates into the comprehensive NI/S.E.A. V2X test and measurement ecosystem
- Concurrently monitors C-V2X and DSRC communication and online RF signal quality and messages
- Supports high-load (congestion) situations with hundreds of vehicles at a time
- Extendable for logging and IQ data recording

Learn more
New TestStand ECU Software Toolkit

The new TestStand ECU Software Toolkit greatly increases performance when testing ECUs for a variety of vehicle domains, including body, chassis, and powertrain. The latest release includes:

- New native hardware support for additional PXI controllers and modular instrumentation, switches, relays modules, and power supplies/loads commonly used across the industry, such as the Keysight N67xx mainframe and PSU/electronic load modules.
- Improved workflow for parallel test through an intuitive pin-centric and site-aware UI that uses the TestStand Engine to abstract much of the instrument/session management and batch synchronization.
- Faster maintenance with web-based system configuration reporting and mass-interconnect to instrumentation connections on a single software toolchain.

Learn more
Challenge

Virgin Hyperloop is on a mission to create fast, effortless journeys that expand possibilities. With the introduction of hyperloop, the Virgin Hyperloop team is transforming the way we think about mobility and creating viable, sustainable alternatives to modern transportation. The hyperloop system consists of vehicles called “pods” that travel in a near-vacuum tube at speeds that can reach approximately 670 mph, or 1,080 km/h, and require a lot of testing.

Solution

Testing hyperloop pod components and embedded control systems can be time-consuming without a simulation environment. A team at Virgin Hyperloop uses HIL for testing controller behavior by integrating models into HIL systems, all built on the same platform: NI VeriStand. Virgin Hyperloop also utilized NI hardware and software applications—including CompactRIO systems and LabVIEW technology—to accelerate timelines and drive optimal performance.

“Testing is a core component of our ethos at Virgin Hyperloop. We want to bring this new form of mass mobility to market quickly, and, at the same time, want to make sure hyperloop is the safest and most reliable form of transportation, which naturally requires lots of testing.”

Trevor Hanken
Test Automation Engineer, Virgin Hyperloop
Semiconductor

As devices get smarter, so do our semiconductor test solutions. We know that semiconductor technology requirements outpace traditional test coverage approaches. That’s why we prioritize investments in software and systems that help you build solutions that meet your evolving needs and increase performance at every step of the process.
NI Ettus USRP X410

The NI Ettus USRP X410 is a high-performance SDR designed for next-generation wireless applications. The revolutionary SDR boasts best-in-class RF capability with four transmit and four receive channels with 400 MHz instantaneous bandwidth, and is tunable to 8 GHz. It is built on the powerful Xilinx Zynq UltraScale+ RFSOC device technology so that you can customize it for the most advanced wireless system requirements. Offload data with either the dual 100 Gigabit Ethernet interface or a PCI Express Gen3 x8 interface to a host computer or PXI chassis. Develop with the software tool of your choice—the NI Ettus USRP X410 supports open-source APIs such as the USRP Hardware Driver with GNU Radio as well as advanced tools such as LabVIEW and MathWorks MATLAB® software.

Learn more

Power Validation Solution

The NI Electronics Validation Solution is an efficient way to validate power consumption across multiple power rails while offering the capability to scale and adapt to changing requirements. It encompasses an easy-to-use modular and scalable system, integrated debug and logging software, reusable code with popular scripting support, and extensive data management and analysis frameworks. This solution helps you replace multiple discrete instruments in a smaller form factor, with integrated power software for fast and fluid multi-instrument usage, data capture, and sharing with high-channel-density instruments that minimize the time to develop a fully automated power characterization and validation system. With it, you can:

- Leverage high-performance PXI instrumentation, including the PXI Analog Input Module, PXI SMUs, PXI Digital Multimeters, and PXI Oscilloscopes
- Facilitate powerful engineering workflows between interactive tasks (bring-up and debug) and automated tasks (fully automated validation and characterization)
- Seamlessly configure measurements in an intuitive InstrumentStudio software panel and then export configuration settings for simple automation with TestStand or LabVIEW

Learn more
Audio and Acoustics Automated Production Test Solution

With NI’s audio and acoustics solution for analog and digital audio, you can meet stringent test coverage specifications with high-accuracy hardware. It’s optimized for cost, with a high channel density and a reference architecture that helps reduce your system development time. Additionally, you can increase throughput with fast measurement speed and built-in parallel testing. Use this solution to:

- Efficiently test digital microphones with parallel FPGA-based pulse-density demodulation for high-channel-count, multiup test with 120 dB stopband attenuation
- Utilize TestStand and LabVIEW software to develop complex test steps and sequence rapidly
Aerospace, Defense, and Government

When you’re working on mission-critical assets, quality and reliability are imperative. From early-stage research to the sustainment of long lifecycle programs, NI can help you address your most significant challenges across design, test, deployment, and maintenance.
NI Radar Target Generation Driver 1.0

The NI Radar Target Generation Driver is an alternative FPGA configuration for certain models of the PXI Express Vector Signal Transceiver (VST). The VST configuration is a closed-source and license-restricted FPGA build in which the VST can operate as a closed loop, real-time radar target generator, or channel emulator. As a fully validated FPGA configuration, you’re able to confidently inject up to four independent targets into your radar or provide four multipath delay channels for data link systems test:

- Reduce cost with a single standard RF instrument for multiple test requirements
- Help identify issues before costly open-air range tests
- Improve uptime with industry-leading low lead times as well as included standard technical support services
- Increase confidence in your radar system performance with accurately calibrated RF test capability

Learn more

LRU Test System Reference Architecture

The NI LRU Test System Reference Architecture is a set of core system components designed, built, tested, and validated by NI to meet documented specifications. Some key aspects of the reference architecture include its standardized and modular connectivity scheme—including pinouts, signal banking, standardized connectors, and cables. The connectivity scheme is a primary attribute of a modular, scalable, extensible architecture. The user manual documents the supported signal types and communication interfaces, theory of operation, connections, bill of materials, specifications, and supporting software.

Learn more
Static Structural Test Reference Architecture

The Static Structural Test Reference Architecture is a formula for building static structural measurement systems with NI hardware and software in a validated and tested design pattern. The reference architecture includes:

- Guidance for designing structural test systems for your specific testing requirements
- Setup, installation, configuration, and operation instructions for the hardware and software components
- A user’s guide for a new piece of application software built for structural engineers and analysts
- Expected performance specifications of a static structural test system based on actual system testing

Learn more

Open Architecture for Radar and EW Research

As threats and countermeasures evolve, researchers and systems engineers are challenged with bringing new radar capabilities from concept to lab to fielded systems. A major obstacle on this journey is the time it takes to migrate IP from simulation to firmware, and to build boards and infrastructure to form a testbed for assessing the real-world performance of novel algorithms, waveforms, and components. The Open Architecture for Radar and EW Research is NI’s blueprint for prototyping novel radar and electronic warfare (EW) capabilities, with specified performance and documentation to help you get up and running quickly.

Learn more
**HUGIN 4000**

HUGIN 4000 is a state-of-the-art, PXI-based receiver platform for communications intelligence monitoring, providing high dynamic range and sensitivity, with which operators can intercept all signals of interest. It supports monitoring receiver and scanning receiver functionality, and may be configured from two RF inputs up to 12 RF inputs in a single PXI chassis. With a cost-efficient receiver design, HUGIN 4000 offers a very low cost-per-channel ratio. It provides up to 1,024 configurable digital down-converters per two RF inputs, with a maximum of 6,144 narrowband DDCs in one system. It comes with a server architecture to stream channel data concurrently to multiple remote operators and back-end processing servers.

HUGIN 4000 is a product of NI Partner Novator Solutions, who develops systems for customers both as project consultants and complete turnkey system suppliers, including mechanics, electronics, assembly, installation, maintenance, and support.

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<td>Operating altitude</td>
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