



What Is the LabVIEW FPGA Module?

The LabVIEW FPGA Module enables engineers and scientists to develop, debug, and deploy custom FPGA code for NI hardware with user-programmable FPGAs.

Explore the LabVIEW FPGA Module Features

LabVIEW FPGA helps you more efficiently and effectively design complex systems by providing a highly integrated development environment, IP libraries, a high-fidelity simulator, and debugging features. You can create embedded FPGA VIs that combine direct access to I/O with user-defined LabVIEW logic to define custom hardware for applications such as digital protocol communication, hardware-in-the-loop simulation, and rapid control prototyping. Though LabVIEW FPGA contains many built-in signal processing routines, you can also integrate your existing HDL code as well as third-party IP.

Graphically Program FPGAs

Program FPGAs more intuitively without HDL expertise using a graphical programming language that mirrors the parallelism of hardware.

Abstract hardware and data interfaces

Simplify time-consuming tasks like I/O configuration, clocking, and data movement using a programming environment that is tightly integrated with NI hardware.

Program with a unified development toolchain

Use a single IDE to program general-purpose processors, real-time controllers, and FPGAs.

What Can You Do With the LabVIEW FPGA Module?

LabVIEW FPGA accelerates FPGA development for test, measurement, control, and prototyping applications. View the demo below to learn how to implement common FPGA tasks with LabVIEW FPGA.

Graphically Program FPGAs

You can graphically implement digital circuits on NI FPGA hardware using LabVIEW FPGA. Watch these short videos to see how to implement basic tasks using analog and digital I/O.

Software Benefits

Standard Service Program

Every purchase includes a renewable, one-year membership to the Standard Service Program (SSP) for software, which offers the following:

- Live phone and email technical support from local, degreed engineers
- Automatic version updates to DIAdem
- 24/7 access to selected online training and virtual demonstrations
- Access to historical versions in case you need to share code with your team

How to Buy the LabVIEW FPGA Module

Buy the LabVIEW FPGA Module for You

Every purchase of the LabVIEW FPGA Module includes both the LabVIEW 2020 FPGA Module and LabVIEW NXG FPGA Module.

Buy LabVIEW FPGA Module for Your Team

The Volume License Program is designed for teams that need five or more licenses. It reduces the total cost of ownership by providing streamlined asset management to your organization.

Buy the Embedded Control and Monitoring Software Suite

You can purchase LabVIEW FPGA Module as part of the Embedded Control and Monitoring Software Suite, which includes LabVIEW and LabVIEW NXG, LabVIEW Real-Time, and LabVIEW FPGA and LabVIEW NXG FPGA.

What Hardware Can I Use With the LabVIEW FPGA Module?

You can use the LabVIEW 2020 FPGA Module with the hardware below. See the compare table to see which hardware the LabVIEW NXG FPGA Module supports.

CompactRIO Systems

CompactRIO systems provide high-performance processing capabilities, sensor-specific conditioned I/O, and a closely integrated software toolchain that make them ideal for Industrial Internet of Things (IIoT), monitoring, and control applications.

Software Defined Radios

Software defined radios (SDRs) incorporate transceivers, receivers, and an onboard FPGA for rapidly prototyping high-performance, high-channel-count wireless communications systems.

FlexRIO

FlexRIO offers the flexibility of custom hardware without the cost of custom design by combining large, user-programmable FPGAs and high-performance analog, digital, and RF I/O.

Spectrum and Signal Analyzers

Spectrum and signal analyzers measure electrical signals in the frequency and time domains. Use these products for applications such as wireless communications, RFIC characterization, radar test, spectrum monitoring, and signal intelligence.

PXI Multifunction Reconfigurable I/O Module

This module combines analog and digital I/O with a user-programmable FPGA for onboard signal processing and custom system timing and synchronization.

Industrial Controllers

Industrial controllers offer high levels of processing power and connectivity for automated image processing, data acquisition, and control applications in extreme environments.

Related Products

LabVIEW Real-Time Module

The LabVIEW Real-Time Module helps you create and debug reliable, deterministic applications that run on stand-alone embedded hardware targets.

LabVIEW FPGA IP Export Utility

The LabVIEW FPGA IP Export Utility helps you export algorithms written in LabVIEW FPGA for deployment on third-party hardware.

LabVIEW

LabVIEW is systems engineering software for applications that require test, measurement, and control with rapid access to hardware and data insights.

Every Purchase of the LabVIEW FPGA Module Includes both LabVIEW 2020 FPGA Module and LabVIEW NXG FPGA Module

Compare LabVIEW 2020 FPGA Module and LabVIEW NXG FPGA Module to see which version is right for your application

	LabVIEW 2020 FPGA Module	LabVIEW NXG FPGA Module 5.0
Hardware		
USRP-2940/2942/2943/2944/2950/2952/2953/2954	✓	✓
USRP-2974	-	✓
USRP-29x5 (TwinRX)	✓	-
Ettus Research USRP B2x0, USRP N210	✓	✓
Ettus Research USRP X310	✓	✓
FlexRIO PXIe-797x (Kintex-7) + Select FAMs	✓	✓
FlexRIO PXIe-576x/791x (UltraScale)	✓	-
ATCA-3671	✓	-
C-Series Modules	✓	<u>Partial</u>
CompactRIO Systems	✓	<u>Partial</u>
Reconfigurable I/O Modules and Devices (R Series)	✓	-
PXI High-Speed Serial Instruments	✓	-
PXI Vector Signal Transceivers	✓	-
myRIO Student Embedded Device	✓	-
Programming Environment		
SystemDesigner	-	✓
FPGA Resource Collection	-	✓
Interactive Front Panel Communication	✓	-
Clock-Driven Logic (Including Single-Cycle Timed loops)	✓	✓
Standard loops structures (not using Clock-Driven logic)	✓	✓
Programming Structures	✓	✓
Data Communications and Storage	✓	✓
Classes	✓	✓
FPGA Instrument Design Libraries	✓	<u>Partial</u>
Sampling Probes	✓	✓
Advanced Sampling Probes	-	✓
Linear Algebra	✓	✓
FPGA Math	✓	✓
Third-Party Software Interoperability and Code Integration		
Xilinx IP	✓	✓
Integrate VHDL—IP Integration Node	✓	✓

	LabVIEW 2020 FPGA Module	LabVIEW NXG FPGA Module 5.0
Integrate VHDL—User-Defined CLIP	✓	✓
Integrate VHDL—Socketed CLIP	✓	<u>Partial</u>

Part Number Table

Description	Part Number
LabVIEW FPGA Module, Download	778694-35
LabVIEW FPGA Module, Japanese, Download	778694-3512
LabVIEW FPGA Module, Japanese, with Media	778694-3512WM
LabVIEW FPGA Module, Chinese, with Media	778694-3518WM
LabVIEW FPGA Module, with Media	778694-35WM