2026
Product Catalog

DIGILENT®
Part of the **NI** Product Family

Digilent - A Part of the NI Product Family

Founded in 2000 by two Washington State University electrical engineering professors, Digilent's original mission was to make electrical engineering and design technologies understandable and accessible to educators and students with high-value, industry-relevant educational tools and curriculum. After laying down successful roots in Academia, Digilent — now a part of Emerson Test & Measurement — has proven to be an invaluable resource for professional engineers as well. With a diverse offering of multi-instrument PC-based test devices and system boards, Digilent's products empower engineers, researchers, and scientists with the flexibility to design rapidly and test the world around them in either the lab or at home.

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ANALOG DISCOVERY PRO 2440 / 2450

Smart. Capable. Balanced.

Smart: The Analog Discovery Pro 2440 and 2450 deliver professional-grade performance in a compact, cost-effective form factor. Designed for test engineers who need flexibility without sacrificing precision, these USB multi-instruments combine advanced mixed-signal capabilities with intuitive software integration.

Capable: Choose the model that fits your requirements: the ADP2440 offers four analog input channels with 12-bit resolution, 100+ MHz bandwidth, and up to 600 MS/s interleaved sampling, while the ADP2450 provides 8-bit resolution, 200+ MHz bandwidth, and 1 GS/s interleaved sampling. Both models feature ±25 V input range, 10 selectable hardware ranges, and advanced visualization options including FFT, Histogram, Persistence, Eye Diagram, and Analog-to-Digital plots. Complex triggering conditions—such as Edge, Pulse, Timeout, Glitch, Transition, and Window—give full analog control over signal capture.

Balanced: The Analog Discovery Pro series integrates a 14-bit arbitrary waveform generator with 15+ MHz bandwidth, supporting standard and custom waveforms, frequency sweeps, and modulation techniques like AM, FM, and PM. Additionally equipped with 16 digital I/O channels, plus protocol decoding and generation for SPI, I^2C, UART, CAN, and more, these devices deliver true mixed-signal analysis in one platform. Dual Mode operation even allows two units to work together for 8 analog inputs, 32 digital I/O, and synchronized AWGs.

- Engineered for modern workflows
- USB 3.2 connectivity
- Deep buffer memory with segmentation
- Cross-triggering between instruments
- Durable metal enclosure with DIN rail support
- Paired with Digilent's WaveForms software
- Includes WaveForms SDK for custom scripting

Powered By WaveForms

SUPPORTED IN NI LabVIEW

NI Ettus USRP Products

Software-Defined Radio Solutions

By supporting a wide variety of development environments on an expansive portfolio of high-performance RF hardware, the USRP platform is the SDR platform of choice for thousands of engineers, hobbyists, and students worldwide for exploration, prototyping and developing next-generation wireless technologies across a wide variety of applications. This software-defined radio portfolio combines ease of use and a robust open-source software community.

Ettus USRP B206mini-i

The USRP B206mini-i is a flexible and compact platform that is ideal for both hobbyist and OEM applications. It is designed by Ettus Research™ and provides a wide frequency range (70 MHz to 6 GHz) and a user-programmable, industrial-grade AMD Spartan-6 XC6SLX150 FPGA. The similar Ettus USRP B200mini is limited to a narrower operating temperature range and utilizes a smaller FPGA. The RF front end uses the Analog Devices AD9364 RFIC transceiver with 56 MHz of instantaneous bandwidth. The board is bus-powered by a high-speed USB 3.0 connection for streaming data to the host computer. The USRP B206mini-i also includes connectors for GPIO, JTAG, and synchronization with a 10 MHz clock reference or PPS time reference input signal.

Ettus USRP E320

The USRP E320 brings performance to embedded software defined radios by offering four times more FPGA resources compared to the USRP E31x devices. The USRP E320 also introduces improvements in streaming, synchronization, integration, fault-recovery, and remote management capability. This field deployable SDR continues to use the flexible 2×2 MIMO AD9361 transceiver from Analog Devices, which covers frequencies from 70 MHz – 6 GHz and provides up to 56 MHz of instantaneous bandwidth. The USRP E320 is available in both 3U board-only and fully enclosed form factor variants. The compact size of the USRP E320 is highly suitable for deployment as a mobile radio in manpacks or mounted on unmanned aerial vehicles.

Ettus OctoClock-G

The OctoClock-G CDA-2990 is an affordable, high-accuracy timing reference and distribution system. This is a useful accessory for users that would like to build multi-channel systems that are synchronized to a common timing source. For example, the OctoClock-G CDA-2990 can be used to synchronize a system of USRP N210s for coherent operation. This can enable phased array applications such as beamforming, super-resolution direction-finding, diversity combining, or MIMO transceiver design. The OctoClock-G CDA-2990 distributes 10 MHz and 1 PPS signals generated from an internal GPS-disciplined, oven-controlled oscillator (GPSDO), or an external source. The user can switch between these sources with a front-panel switch, and there is an automatic switch-over capability in case of failure or source disconnect.

13-In-1: The Analog Discovery Product Family

With lab spaces decreasing and engineering teams becoming more distributed, companies are choosing all-in-one instruments as a supplement to traditional laboratories, creating a need for a portable test and measurement bench that can support all types of designs.

Engineers all over the world use Digilent Test and Measurement devices to decrease their design cycle time and increase their impact by always having an oscilloscope, logic analyzer, waveform generator and more within reach. Our line of Test and Measurement products enables engineers to continue their designs in the library, home office, or even a coffee shop without having to reserve a lab that has all the necessary equipment.

There isn't a more flexible scope solution or cost-effective value in the industry. With up to 13 functions and a range of specifications between them, our WaveForms-powered products like the Analog Discovery 3, Analog Discovery Pro ADP3450, Analog Discovery Studio Max, and the new Analog Discovery Pro 2440/2450 are perfectly capable of acting as an entire stack of lab instruments.

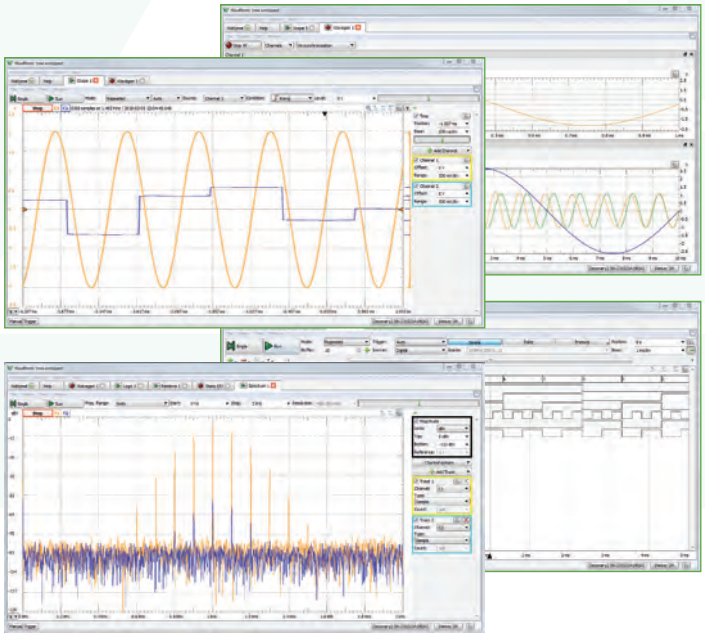
- **Oscilloscope**
- **Arbitrary Waveform Generator**
- **Power Supplies**
- **Voltmeter**
- **Data Logger**
- **Logic Analyzer**
- **Digital Pattern Generator**
- **Virtual I/O**
- **Spectrum Analyzer**
- **Network Analyzer**
- **Impedance Analyzer**
- **Protocol Analyzer**
- **Script Editor**

WaveForms

Supported by Windows, macOS, and Linux

All of our Test and Measurement devices come with the multi-instrument software application, WaveForms. It seamlessly connects our Analog Discovery products and the Digital Discovery with full Windows, macOS, and Linux support.

Designed with a clean, easy-to-use graphical interface for each instrument, WaveForms makes it easy to acquire, visualize, store, analyze, produce and reuse analog and digital signals. And as an added perk, it's FREE for all to download and use.



Mixed-Signal Oscilloscopes

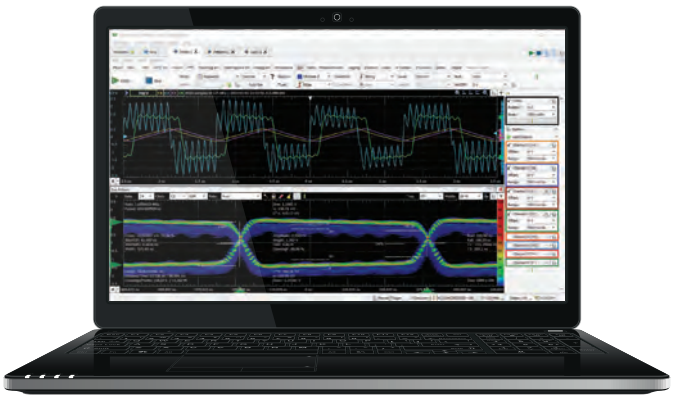
Discover More.

ANALOG DISCOVERY 3

The Analog Discovery 3 is a digital oscilloscope, logic analyzer, waveform generator, pattern generator, and much more. Using the flexible WaveForms software (supported by Windows, Mac, and Linux), the Analog Discovery 3 can be used in the lab, in the field, or even at home - you're no longer tied down to a traditional benchtop and stacks of expensive test instruments.

Mixed-Signal USB Oscilloscope:

- Two differential channels with 14-bit resolution at up to 125 MS/s per channel with a +/-25 V input range, 30+ MHz bandwidth with BNC Adapter
- FFT, Spectrogram, Eye Diagram, XY Plot views, and more



Arbitrary Waveform Generator:

- Two channels with 14-bit resolution at up to 125 MS/s per channel with a +/-5 V output range, 12 MHz bandwidth with BNC Adapter
- Standard waveforms, amplitude and frequency modulated signals, direct playback from analog inputs, custom waveforms, and more

Logic Analyzer and Pattern Generator:

- 16 digital I/O channels at up to 125 MS/s per channel
- SPI, I2C, UART, CAN, JTAG, ROM logic, custom protocols, and more

Programmable Power Supplies

- 0.5 V to 5 V and -0.5 V to -5 V, up to 2.4 W per channel

Additional Features:

- Additional software instruments including Spectrum Analyzer, Network Analyzer, Impedance Analyzer plus many more!
- SDK for hardware control in C, C++, Python, & other languages
- Support for LabVIEW and MATLAB
- Plus more than we can list!

Powered By WaveForms

SUPPORTED IN NI LabVIEW

ANALOG DISCOVERY PRO

2000 SERIES

Maximum Utility, Minimum Footprint.

ANALOG DISCOVERY PRO ADP2230

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The Analog Discovery Pro (ADP2230)™ is a mixed signal oscilloscope (MSO) designed for professional engineers. It features analog inputs, analog output, and digital I/O, all operating at up to 125 MS/s. Users can both receive and generate analog and digital signals to test and analyze data from various devices while simultaneously powering those systems with its robust power supply. The feature-packed design allows the ADP2230 to perform the functions of several test and measurement devices and can replace a stack of traditional instruments.

With the free WaveForms software, users can view and capture complex data, perform spectral and network analysis, and quickly retrieve large amounts of data. WaveForms leverages the ADP2230's deep buffer memory, allowing hundreds of millions of samples to be stored and streamed back to the host computer. WaveForms' friendly user interface has the feel of traditional benchtop oscilloscopes.

- USB Mixed Signal Oscilloscope with deep memory buffers for long acquisitions
- BNC connectors and an aluminum case
- Two analog inputs – 50+ MHz bandwidth
- One analog output – 15 MHz bandwidth
- 16 digital input/output channels
- Sample rates up to 125 MS/s
- Two power supply outputs
- USB 3.0 communication speeds
- Sync multiple devices for increased channel count
- Extensive software support with WaveForms, WaveForms SDK, LabVIEW, MATLAB

New for 2026!

ANALOG DISCOVERY PRO 2440 / 2450

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ANALOG DISCOVERY PRO

3000 SERIES

Portable High Resolution Mixed Signal USB Oscilloscopes

FRONT

BACK

What is the Analog Discovery Pro 3000 Series?

Devices in the Analog Discovery Pro 3000 series provide the utility of professional benchtop equipment with the flexibility of a portable instrument. With myriad choices available for test and measurement devices, adding to your benchtop can be a daunting task, especially sorting through which features on your new instrument are included versus what you'll need to pay extra for. With the ADP3450, every listed feature is an included feature, making it an investment that will last — *at a price without surprises.*

Introducing Linux Mode

Linux Mode provides an on-device terminal-based operating system that, when combined with WaveForms SDK, is a flexible starting point for all kinds of custom tests and applications. Running embedded on the device itself or via WaveForms, engineers and measurement enthusiasts alike can take advantage of data streaming via Ethernet, and the on-device storage to capture buffers of millions of samples.

Powered By WaveForms

SUPPORTED IN NI LabVIEW

Key Features

Analog Inputs

- Two (ADP3250) or Four (ADP3450) BNC input channels with 14-bit resolution and up to ±25 V input range
- 55+ MHz bandwidth, 125 MS/s, 0.5 GS/s with oversampling
- On-device shared buffering of 128 MS among analog inputs

Digital Channels

- 16 dynamically configurable digital input/output with LVCMOS 1.2 V to 3.3 V
- On-device buffering up to 64 MS per channel

Analog Outputs

- Two BNC output channels with 14-bit resolution and ±5 V output range
- 15 MHz bandwidth @ -3 dB, 125 MS/s

Additional Features

- Embedded Linux Mode
- Flexible USB or Ethernet connectivity

ANALOG DISCOVERY PRO

5000 SERIES

All-In-One Mixed Signal Oscilloscope, Function Generator, Power Supply, & DMM

Bolster your benchtop with the biggest, baddest, and boldest Analog Discovery yet! The Analog Discovery Pro 5000 Series devices, the ADP5470 and ADP5490, are Digilent's most ambitious mixed signal oscilloscopes to date, bringing higher sample rates, wider bandwidth, and more power to your benchtop. Each ADP 5000 Series device sports an integrated CAT II Digital Multimeter, three programmable power supplies, a dedicated trigger line, and arbitrary waveform generator to complement the mixed signal oscilloscope. With 34 digital inputs operating at 1 GS/s working in tandem with the analog system, the rugged 5000 Series devices provide a range of bandwidths and sample rates for analog inputs to fit your needs – from a base of 100 MHz at 1 GS/s, to 350 MHz at 1.5 GS/s, all the way up to 500 MHz at 2 GS/s.

Driven by Digilent's free WaveForms software and with everything included with a one-time purchase of the hardware, the Analog Discovery Pro 5000 Series is more than just a tool – it's analysis uncompromised.

Higher Sample Rate and Bandwidth

Designed to combine a complete set of instruments into a singular device, ADP 5000 Series devices are flexible and programmable mixed-signal oscilloscopes. Each has two or four analog input channels with bandwidth and sample rates ranging from 100 MHz at 1 GS/s up to 500 MHz at 2 GS/s. All devices in the series feature 34 digital channels with 1 GS/s inputs, a tri-output programmable power supply capable of up to 25 V, an external trigger, Waveform Generator, and a built-in DMM.

The Ultimate All-In-One Test System

The Analog Discovery Pro 5000 Series feature a variety of trigger options. Instruments within WaveForms can be cross-triggered by an activated oscilloscope capture based on the start of the Waveform Generator. In addition, external signals can trigger events using the dedicated external trigger input/output. Digilent's free WaveForms software provides these configurable features in the instruments themselves, or for more control or automation in one of the available scripting interfaces.

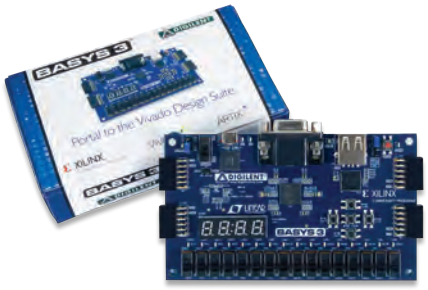
Note: The ADP 5000 Series devices are Windows® only.

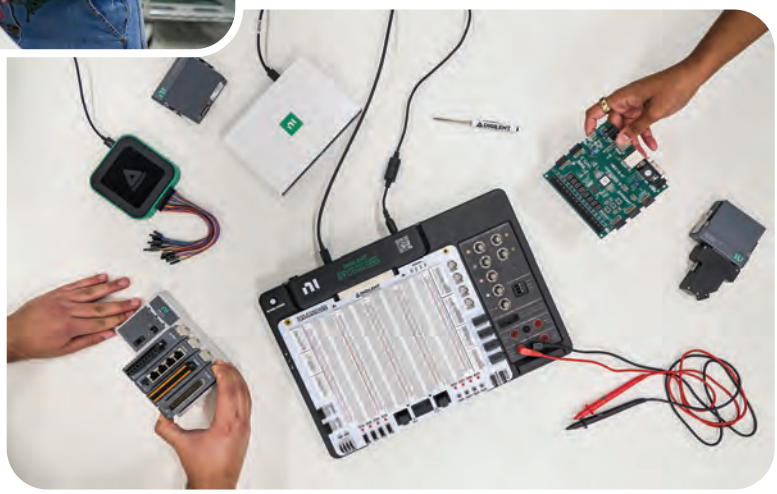
Teaching with Digilent

At Digilent, our mission has always been - and still is - to make engineering technologies understandable and accessible to all. We provide professors, lab managers and students with low-cost, fundamental tools and coursework to turn this mission into reality. Products like the portable Analog Discovery 3 mixed signal oscilloscope and versatile Analog Discovery Studio Max engineering lab for teaching electronics and circuits, or the entry-level Basys 3 FPGA development board put the hardware in the student's hands for maximum engagement and growth in a traditional classroom setting or remote.

In addition to NI myDAQ and NI Ettus products, Digilent and NI offer a complete range of low cost options that make practical hands-on teaching possible, whether classes are in person or remote.

digilent.com/academic





Solutions for Engineering Curricula

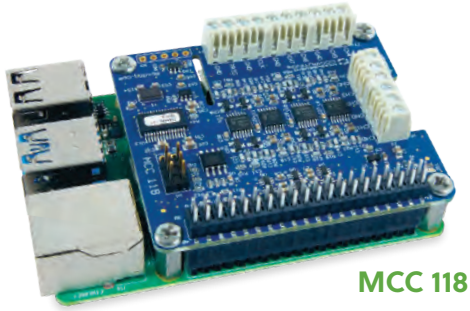
Collaborating with educators from around the world, Digilent has taken feedback to create learning tools that can work in multiple academic disciplines. In analog and circuits courses, portable test devices equipped with our popular WaveForms software allow students to use multiple test instruments (both input and output) on their PC or Mac while giving freedom and flexibility to complete projects either in the classroom or work on them at home. Digilent's FPGA development boards (based on AMD chips) give hands-on application experience in digital and computer architecture courses by providing multiple I/O and peripheral connection options. All of Digilent's education offerings can be extrapolated past graduation and the same skills can be applied in almost any professional setting.

Product / *Course*	Analog Discovery 3	Analog Discovery Studio Max	Analog Discovery Pro 5470	Zybo Z7	Basys 3
					
Analog	●	●	●		
Digital	●	●	●		●
Power	●	●	●		
Signal Processing		●		●	●
Communications		●		●	●
Computer Architecture				●	●
Projects	●	●	●	●	●

MCC DAQ HAT Series for Raspberry Pi®

Precision Voltage, Thermocouple, and IEPE Measurements, Plus Analog and Digital I/O

	Analog Inputs	Sample Rate	Resolution
MCC 118	8 SE Voltage	100 kS/s	12-bit
MCC 128	8 SE/4 DIFF Voltage	100 kS/s	16-bit
	Analog Inputs	**Update Interval**	**Resolution**
MCC 134	4 Thermocouple	1 Sec	24-bit
	Analog Outputs	**Digital I/O**	**Resolution**
MCC 152	2 Voltage	8	12-bit
	Analog Inputs	**Sample Rate**	**Resolution**
MCC 172	2 IEPE	51.2 kS/s/ch	24-bit



MCC 118

Raspberry Pi is the most popular single-board computer in use today. Many traditional DAQ users are designing systems around it because of its flexibility and low cost. This growing base of Raspberry Pi users, along with open-source software becoming more industry accepted, is driving growth and making single-board computer use more prevalent in professional DAQ applications.

WebDAQ Series

Internet Enabled Data Loggers for the Internet of Things

WebDAQ Series internet data logger devices offer a complete and easy-to-use remote data acquisition solution. With an embedded web server, users can configure and run simple to complex data logging operations, log data, set alarm conditions, and view the data in real-time from anywhere on an internet-enabled device.

	Analog Inputs	Sample Rate	Resolution
WebDAQ 316	16 Thermocouple	75 S/s/ch Max	24-bit
WebDAQ 504	4 IEPE	51 kS/s/ch Max	24-bit
WebDAQ 904	4 Universal	100 S/s/ch Max	24-bit

WebDAQ 504

There are three devices in the WebDAQ Series. Devices are available to log multiple signal types including voltage (up to ±60 V), thermocouples, IEPE-based sensors like accelerometers, current, RTDs, resistance, and bridge-based sensors.

Data Acquisition

What is Data Acquisition?

Data acquisition, or DAQ as it is often referred, is the process of digitizing data from the world around us so it can be displayed, analyzed, and stored in a computer. A simple example is the process of measuring the temperature in a room as a digital value using a sensor such as a thermocouple. Modern data acquisition systems can include the addition of data analysis and reporting software, network connectivity, and remote control and monitoring options.

USB, Ethernet, Temperature, and Remote DAQ

USB-200 Series: These low-cost, multifunction devices are designed for general purpose DAQ applications and feature analog input, analog output, DIO, and one counter input.

MCC multifunction data acquisition devices are available with analog input and output, digital I/O, and counter/timers to suite your various application requirements. Devices are available with up to 64 analog inputs, sample rates up to 2 MS/s, and resolution from 12-24 bits. Signal conditioning for measuring sensors like pressure, strain, and accelerometers is also available.

Ethernet DAQ

Ethernet-based data acquisition devices are ideal for remote measurement and control applications. These devices feature up to eight analog inputs, analog output, and digital I/O.

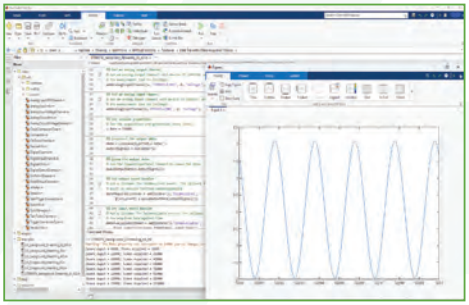
E-1608 Series: These Ethernet devices have built-in 10/100 BASE-T auto-negotiation, high-speed communication port for data transfers over a network.

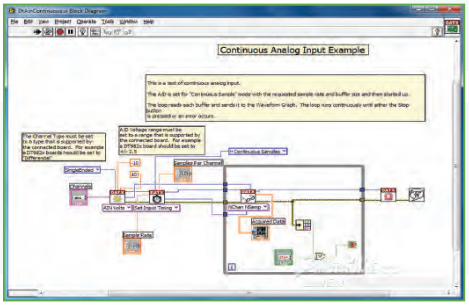
Temperature Measurement

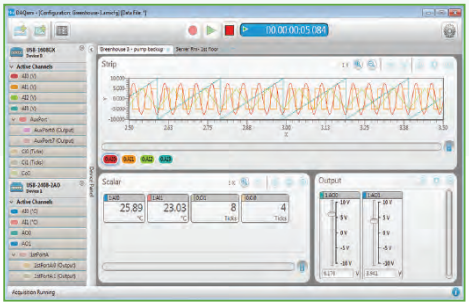
Temperature is one of the most common measurement types in DAQ applications. **These devices** are offered in USB, Ethernet, or stand alone configurations, with the ability to measure 8-64 thermocouples, RTD's, or thermistors. Built-in cold-junction compensation and up to 24-bit resolution provide superior measurement capability.

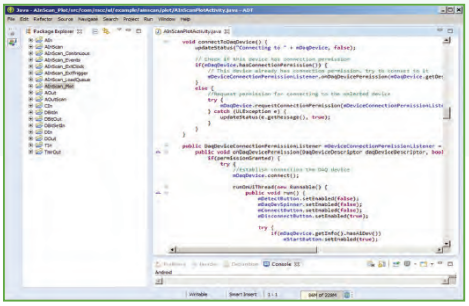
Data Acquisition Software

Out-of-the-box software provides the ability to log and view data and generate signals. Drivers are also included for the most popular applications and programming languages, including Visual C++®, Visual C#®, Visual Basic®.NET, NI LabVIEW™, MATLAB®, Linux®, and Python™.









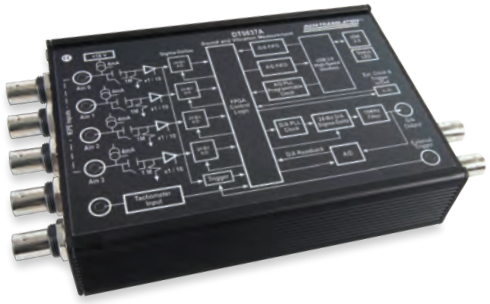
USB DAQ

Multifunction devices with analog input and output, digital I/O, and counter/timers

Whether you are measuring voltage, current, temperature, or digital signals, these products include accompanying software and drivers for a quick and customizable solution for your unique application. Most devices are available in an enclosed or board-only version for embedded and OEM applications.

USB-1608GX-2AO

USB-205



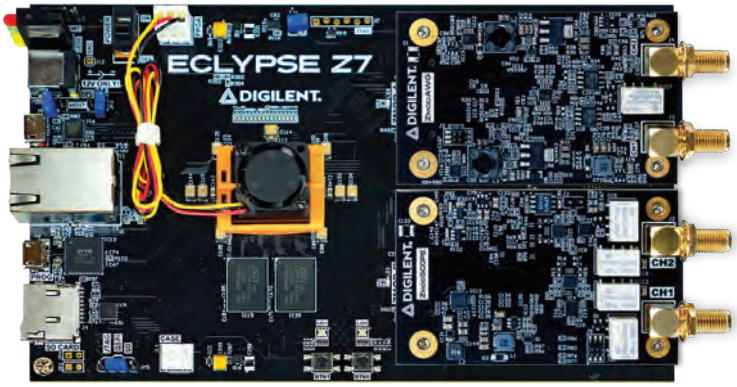
DT9837A

TC-32

	Analog Inputs	Sample Rate	Resolution	Analog Outputs	DIO
USB-205	8 SE	500 kS/s	12-bit	2	8 DIO/1 CTR
USB-234	8 SE/4 DIFF	100 kS/s	16-bit	2	8 DIO/1 CTR
USB-1608GX-2AO	16SE/8 DIFF	500 kS/s	16-bit	2	8 DIO/2 CTR
USB-1808X	8 SE/8 DIFF	200 kS/s/ch	18-bit	2	4 DIO/2 CTR
USB-2637	64 SE	1 MS/s	16-bit	4	24 DIO/4 CTR
USB-Temp	8 Temperature	2 S/s/ch	24-bit		8 DIO
TC-32	Up to 64 Thermocouple	3 S/s/ch	24-bit		Up to 40 DIO
DT9837A	4 IEPE	52.7 kS/s/ch	24-bit	1	1 Tach input

ECLYPSE Z7

A New Way to Accelerate Design Flow



The Eclypse Z7 is a high-performance FPGA/SoC development platform from designed for modular, high-speed instrumentation, signal processing, and edge-computing applications. Each device features two Zmod ports, which are high-speed I/O expansion modules that, coupled with Eclypse Z7, form a scalable, modular instrumentation system that lets engineers quickly assemble custom measurement, control, and software-defined radio (SDR) platforms without designing custom hardware from scratch. The Eclypse Z7 is also supported by WaveForms and the WaveForms SDK.

The Ecosystem

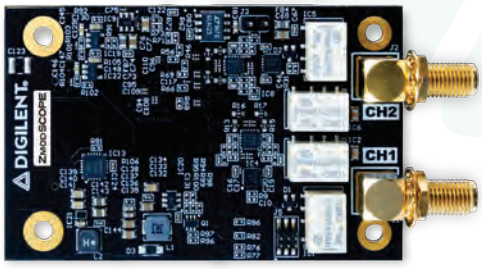
The Zmods you choose to configure your Eclypse Z7 with dictate the utility - there are four popular combinations:

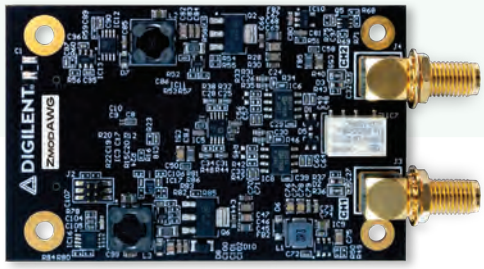
1. 2-channel Scope (Zmod Scope and Zmod AWG)
2. 4-Channel Scope (Two Zmod Scopes)
3. Software-Defined Radio (Zmod SDR and Zmod AWG)
4. Digitizer Bundle (Two Zmod Digitizers)

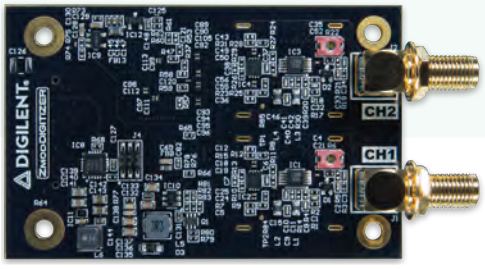
ZMOD

Digilent's Zmods are intended to be included in user-defined data acquisition or signal processing systems. They use Opal Kelly's SYZYGY standard, which fits — in cost, size, and performance — somewhere between our existing Pmod and FPGA Mezzanine Card (FMC) standards.

Although not much larger than Pmods, SYZYGY-compatible modules are capable of high-bandwidth connections to an FPGA (such as the Eclypse Z7), enabling very compact and cost-effective high performance I/O. We recommend them for compact, configurable, and rugged systems, though the high bandwidth and sampling rate (up to 125 MS/s), the flexible input/output range, the high resolution, and the flexibility provided by the FPGA interface make the Zmods an ideal solution for a wide variety of applications.

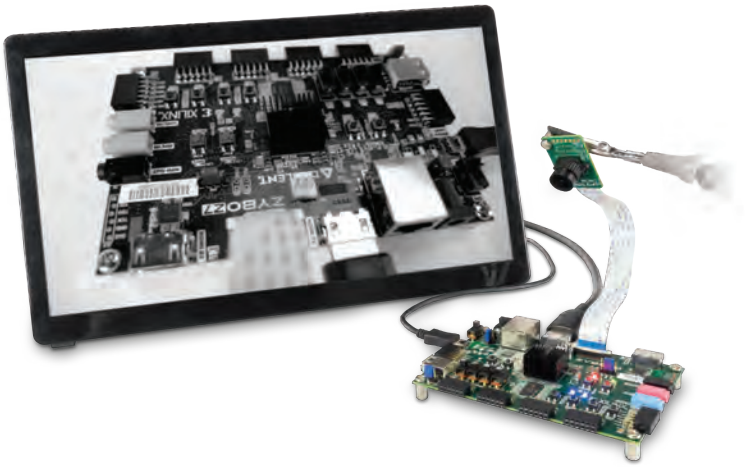






FPGA Boards

Plenty of attention goes into making sure that the **Digilent FPGA boards** you're buying are optimized for both performance and cost. Our proud partnership with AMD means that each of our kits features one of their industry-leading devices. Our FPGA boards range from the accessible Cmod S7 to more powerful system-on-a-chip offerings like the Genesys ZU 5EV, featuring UltraScale+ technology.



Why FPGAs?

- **PARALLEL:** FPGAs can be programmed as parallel processing devices, whereas CPUs execute operations in a sequential manner.
- **ACCURACY:** FPGAs can perform consistent time critical processing.
- **FLEXIBILITY:** FPGAs can be configured for a specific application, and then changed again after installation.
- **POWER:** FPGAs have high performance per watt.
- **EFFICIENT:** No overhead of an Operating System, such as you would have with a CPU.
- **CUSTOMIZABLE:** The programmer decides what is accomplished with each clock cycle.

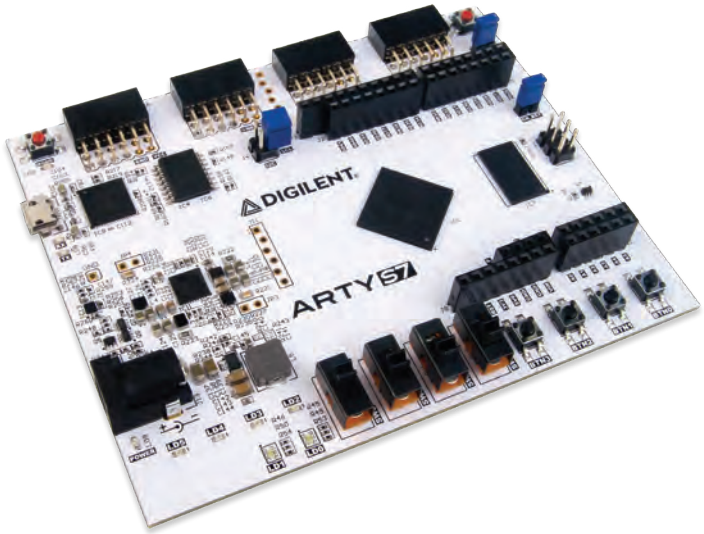
ARTY S7

Spartan-7 FPGA Development Board

The Arty family of Digilent FPGA/SoC boards was designed with versatility and flexibility in mind. With universally popular Arduino™ headers and multiple Pmod™ ports, an Arty will be the most adaptable FPGA/SoC board in your toolbox.

The Arty S7 is an affordable, ready to use development platform designed around the Xilinx Spartan®-7 FPGA family. With the Spartan-7 devices, the Arty S7 board offers best-in-class performance-per-watt, along with small form-factor packaging to meet the most stringent requirements. With the MicroBlaze Soft Processor Core from Xilinx, you can create embedded applications with a variety of peripherals, memory, and interfaces.

The Arty S7 is supported by AMD's Vivado Design Suite, including the free Vivado ML Edition. You can also leverage the Vitis Core Development Kit or Xilinx Software Development Kit to start developing for the MicroBlaze processor with no prior FPGA experience.



Key Features

- **Internal clock speeds exceeding 450 MHz**
- **On-chip analog-to-digital converter (XADC)**
- **Programmable over JTAG and Quad-SPI Flash**
- **256 MB DDR3L with a 16-bit bus @ 650 MHz**
- **128 Mbits Quad-SPI Flash**
- **100 MHz External Clock**

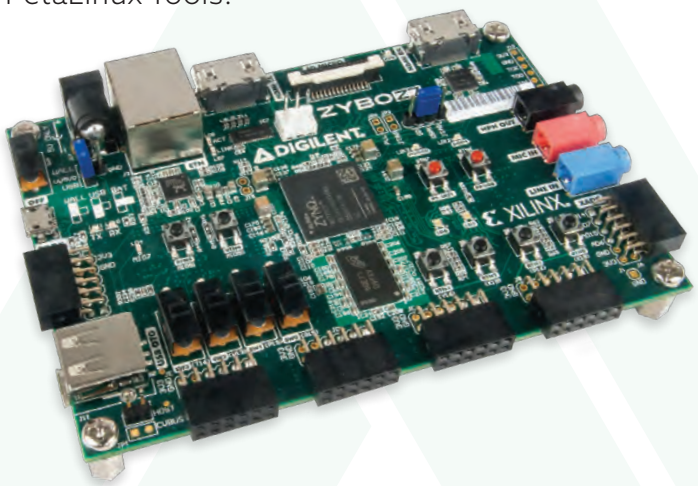
ZYBO Z7

Zynq-7000 ARM/FPGA SoC Development Board

The Zybo Z7 is a ready-to-use embedded software and digital circuit development board built around the Xilinx Zynq™-7000 family. The Zynq-7000 tightly integrates a dual-core ARM Cortex-A9 processor with Xilinx 7-series Field Programmable Gate Array (FPGA) logic.

A rich set of multimedia and connectivity peripherals make the Zybo Z7 a formidable single-board computer. A MIPI CSI-2 compatible Pcam connector, HDMI input, HDMI output, and high DDR3L bandwidth establish the Zybo Z7 as an affordable, yet capable, solution for high-end embedded vision applications. Attaching additional hardware is made easy by the Zybo Z7's Pmod connectors, allowing access to Digilent's catalog of over 60 Pmod peripheral boards, including motor controllers, sensors, displays, and more.

The Zybo Z7 is supported by Xilinx's Vivado Design Suite, including the free Vivado ML Edition. You can also interact with the processing system (PS) with Xilinx's Vitis Unified Software Platform and PetaLinux Tools.



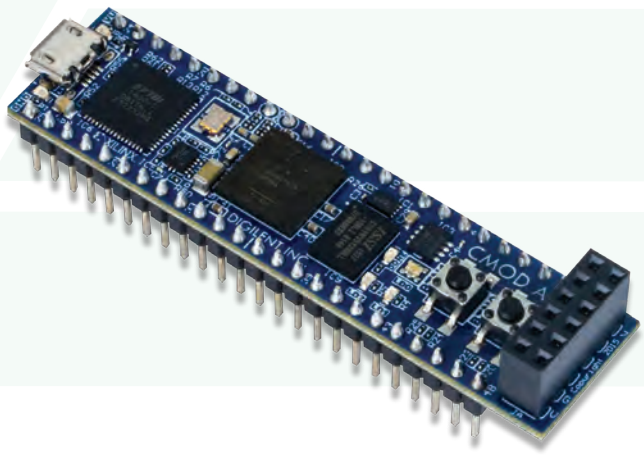
CMOD A7™

Artix-7 Power in a 48Pin DIP Package

The Digilent Cmod A7 is a small, 48-pin DIP form factor board built around a Xilinx® Artix®-7 FPGA that brings FPGA power and prototyping to a solderless breadboard.

The Cmod A7 board includes a Quad-SPI flash for programming, as well as a USB-JTAG programming circuit and USB-UART bridge. The Cmod A7 also features a clock source, Pmod port, and onboard I/O with LEDs and pushbuttons. There are 44 FPGA I/O signals that are routed to 100-mil-spaced through-hole pins, making the Cmod A7 compatible with solderless breadboards. This form factor makes the Cmod A7 a great option for flexible and affordable prototyping, or learning FPGA and digital logic circuits. At just .7" by 2.75", it can also be loaded in a standard socket and used in embedded systems.

The Artix®-7 FPGA on the Cmod A7 provides the highest performance-per-watt fabric, transceiver line rates, DSP processing, and AMS integration for a cost-optimized FPGA. With the MicroBlaze Soft Processor Core from Xilinx, you can create embedded applications with a variety of peripherals, memory, and interfaces.



Product Comparison

Mixed-Signal Oscilloscopes

Product	Analog Input	Analog Output	Digital Channels	Power Supplies
Analog Discovery 3	2 Ch, 14-bit, ±25 V, 125 MS/s, 30 MHz BW with BNC	2 Ch, 14-bit, 12 MHz BW, ±5 V	16 I/O channels, 125 MS/s, 3.3 V CMOS	-5 V and +5 V variable, 600 mW over USB, 2.4 W via external power
Analog Discovery Studio	2 Ch, 14-bit, ±25 V, 100 MS/s, 30 MHz BW with BNC	2 Ch, 14-bit, 8 MHz BW, ±5 V	16 I/O channels, 125 MS/s, 3.3 V CMOS	-5 V and +5 V variable at 2.1 W, ±12 V at 0.2 A, 5 V and 3.3 V at 1 A
Analog Discovery Pro 2230	2 Ch, 14-bit, ±25 V, 125 MS/s, 50 MHz BW *	1 Ch, 14-bit, 15 MHz BW, ±5 V	16 I/O channels, 125 MS/s, 3.3 V CMOS	-5 V and +5 V variable at 3 W
Analog Discovery Pro 2440 / Analog Discovery Pro 2450	4 Ch, 12 / 8-bit, ±25 V, 600 MS/s / 1 GS/s, 100 / 200 MHz BW *	1 Ch, 14-bit, 15 MHz BW, ±5 V	16 I/O channels, 1.2 GS/s 3.3 V CMOS	N/A
Analog Discovery Pro 3450 / Analog Discovery Pro 3250	4 / 2 Ch, 14-bit, ±25 V, 125 MS/s, 55 MHz BW *	2 Ch, 14-bit, 15 MHz BW, ±5 V	16 I/O channels, 125 MS/s, 1.2 V to 3.3 V CMOS	1.2 V to 3.3 V at 300 mA digital supply
Analog Discovery Pro 5470 / Analog Discovery Pro 5490	4 Ch, 8-bit, ±20 V, 1.5 / 2 GS/s, 350 / 500 MHz BW *	1 Ch, 14-bit, 20 / 40 MHz BW, ±12 V	34 input channels, 1 GS/s, 0 V to 5 V input	6 V variable at 3 A -25 V and +25 V variable at 1 A
Digital Discovery	N/A	N/A	24 input channels at up to 800 MS/s input, 16 I/O channels at 100 MS/s, 1.2 V to 3.3 V CMOS, 5 V tolerant	1.2 V to 3.3 V at 100 mA digital supply
Eclypse Z7 *(as a four-channel Oscilloscope)*	4 Ch, 14-bit, ±25 V, 125 MS/s, 70 MHz BW *	N/A	16 Pmod I/O channels, 125 MS/s, 3.3 V CMOS	3.3 V Pmod supply
Eclypse Z7 *(as a two-channel Oscilloscope)*	2 Ch, 14-bit, ±25 V, 125 MS/s, 70 MHz BW *	2 Ch, 14-bit, 40 MHz BW, ±5 V	16 Pmod I/O channels, 125 MS/s, 3.3 V CMOS	3.3 V Pmod supply

* *features deep buffer memory*

FPGA Boards

Product	FPGA Part	Expansion Connectors	Highlighted Features
Arty A7	Artix-7 (XC7A100T/XC7A35T)	4x Pmod, Shield Connector	80+ GPIOs
Arty S7	Spartan-7 (XC7S50/XC7S25)	4x Pmod, Shield Connector	80+ GPIOs
Arty Z7	Zynq-7000 (XC7Z020/XC7Z010)	2x Pmod, Shield Connector	60+ GPIOs, HDMI, Ethernet
Basys 3	Artix-7 (XC7A35T)	4x Pmod	Easy-to-learn interfaces like switches, LEDs, 7-seg display
Cmod A7 / S7	Artix-7 (XC7A35T), Spartan-7 (XC7S25)	1x Pmod	48-pin DIP form factor for breadboarding
Cora Z7	Zynq-7000 (XC7Z07S)	2x Pmod, Shield Connector	Ethernet, 60+ GPIOs
Eclypse Z7	Zynq-7000 (XC7Z020)	2x SYZYGY connectors, 2x Pmods	SYZYGY-based Zmod ecosystem for modular test
Genesys ZU	Zynq UltraScale+ (XCZU5EV/XCZU3EG)	FMC, SYZYGY, dual-slot miniPCIe, 4x Pmods	Variety of video and camera interfaces, audio, ethernet
Nexys A7	Artix-7 (XC7A100T)	5x Pmod	DDR memory & easy-to-learn interfaces like switches, LEDs, 7-seg display
Zybo Z7	Zynq-7000 (XC7Z020/XC7Z010)	6x/5x Pmod	HDMI in, HDMI out, MIPI camera connector, audio codec

Product Comparison

DAQ: USB

Product	Analog Inputs	Analog Outputs	Digital I/O	Counters	Timers
USB-200 Series	8 SE, Up to 500 kS/s, 12-bit	2x, Up to 250 S/s, 12-bit	8	1	
USB-230 Series	8 SE / 4 DIFF, Up to 100 kS/s, 16-bit	2x, 5 kS/s/ch, 16-bit	8	1	
USB-1208FS-Plus / 1408FS-Plus Series	8 SE / 4 DIFF, Up to 50 kS/s, 14-bit	2x, 50 kS/s, 12-bit	16	1	
USB-1608FS-Plus	8 SE, 100 kS/s/ch, 16-bit		8	1	
USB-1208HS-4AO	8 SE / 4 DIFF, 1 MS/s, 13-bit	4x, 1 MS/s, 12-bit	16	2	1
USB-1608G Series	16 SE / 8 DIFF, Up to 500 kS/s, 16-bit	Up to 2, Up to 500 kS/s, 16-bit	8	2	1
USB-1808X Series	8 SE / 8 DIFF, 200 kS/s/ch, 18-bit	2x, Up to 500 kS/s, 16-bit	4	2 (+2 quad inputs)	2
USB-2408-2AO	16 SE / 8 DIFF, 1 kS/s, 24-bit	2x, 1 kS/s, 16-bit	8	2	
USB-2416-4AO	32 SE / 16 DIFF (Expandable to 64 SE / 32 DIFF), 1 kS/s, 24-bit	4x, 1 kS/s, 16-bit	8	2	
USB-2600 Series	16 or 64 SE, 1 MS/s, 16-bit	4x, Up to 1 MS/s, 16-bit	24	4	4
USB-3100 Series		4/8/16, 100 S/s, 16-bit	8	1	
USB-CTR Series			8	4/8	4
USB-DIO24 Series			24	1	
USB-DIO32HS			32		
USB-DIO96H			96	1	
USB-QUAD08			8	8 quad inputs	
USB-TEMP & TC Series	8 Thermocouple, RTD, or Voltage, 2 S/s/ch, 24-bit		8	1	
TC-32	32 Thermocouple (Expandable to 64), 3 S/s/ch, 24-bit		40 (Expandable to 80)		
DT9837A Series	4 IEPE, 52.7 kS/s/ch, 24-bit	1x, 52.7 kS/s/ch, 24-bit		1 tach	
DT9857E Series	16 IEPE, 105.4 kS/s/ch, 24-bit		16	3 (+1 tach)	1

DAQ HATs

Product	Analog Inputs	Analog Outputs	Digital I/O	Sample Rate	Update Interval	Resolution
MCC 118	8 SE Voltage			100 kS/s		12-bit
MCC 128	8 SE/4 Diff Voltage			100 kS/s		16-bit
MCC 134	4 Thermocouple				1 Sec	24-bit
MCC 152		2 Voltage	8			12-bit
MCC 172	2 IEPE			51.2 kS/s/ch		24-bit

Product Comparison

DAQ: Ethernet

Product	Analog Inputs	Analog Outputs	Digital I/O	Counters
E-1608	8 SE / 4 DIFF, 250 kS/s, 16-bit	2 x 500 S/s, 16-bit	8	1
E-DIO24			24	1
E-TC	8 Thermocouple, 4 S/s/ch, 24-bit		8	1
TC-32	32 Thermocouple (Expandable to 64), 3 S/s/ch, 24-bit		40 (Expandable to 80)	

WebDAQ

Product	Analog Inputs	Sample Rate	Resolution
WebDAQ 316	16 Thermocouple	75 S/s/ch Max	24-bit
WebDAQ 504	4 IEPE	51 kS/s/ch Max	24-bit
WebDAQ 904	4 Universal	100 S/s/ch Max	24-bit

Software-Defined Radio

Product	Channels	Frequency Range	Highlighted Features
USRP B200	1 TX & 1 RX	70 MHz - 6 GHz	
USRP B200mini	1 TX & 1 RX	70 MHz - 6 GHz	Small form factor
USRP B206mini-i	1 TX & 1 RX	70 MHz - 6 GHz	Small form factor, industrial-grade Spartan-6 FPGA
USRP B210	2 TX & 2 RX	70 MHz - 6 GHz	Full-duplex, MIMO
USRP E320	2 TX & 2 RX	70 MHz - 6 GHz	Low SWAP, embedded, deployable, standalone
Eclypse Z7 with Zmod SDR	2 RX	35 kHz - 470 MHz analog bandwidth	Modular test ecosystem