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Analog Discovery Pro 3000 Series: Portable High Resolution Mixed Signal Oscilloscopes

Provide the utility of professional benchtop equipment with the flexibility of a portable instrument

Product Description

ADP 3450 and ADP3250, in the line of Analog Discovery Pro devices, offers 4 channels (ADP3450) / 2 channels (ADP3250) analog input with 14-bit resolution at up to 0.5 GS/s. Additionally, to meet the needs of an increasingly digital world, 16 dedicated digital channels make the ADP3450 a true mixed signal oscilloscope. With the included digital power supply, digital outputs, two channel arbitrary waveform generator, and two dedicated external triggers Analog Discovery Pro comes with 12 instruments ready to analyze mixed signal systems through our free software, WaveForms.

- Oscilloscope
- Power Supplies
- Data Logger
- Pattern Generator
- Spectrum Analyzer
- Impedance Analyzer
- Waveform Generator
- Voltmeter
- Logic Analyzer
- Static I/O
- Network Analyzer
- Protocol Analyzer

Test your systems in Linux environment

Analog Discovery Pro introduces 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.

Advanced Trigger Modes

Analog Discovery Pro features a variety of advanced triggering options. Instruments within WaveForms can be cross-triggered for example, activating an oscilloscope capture based on a received and decoded digital protocol. And external signals can trigger events using the two dedicated external trigger inputs on the back of the device. WaveForms provides these features configurable in the instruments themselves, or for more control or automation in one of the available scripting interfaces

WaveForms Software Applications

WaveForms is the free software application for the ADP3450 and ADP3250 and enables use of the available analog and digital instruments. The software has been refined by customer feedback for over 10 years and features a computer and laptop friendly user interface that has the feel of traditional benchtop software. The device communicates with WaveForms via a USB or ethernet connection to your computer, allowing users to capture, record, analyze, and generate mixed signal and mixed domain waveforms. WaveForms can be downloaded and installed in under 60 seconds and can be tested without hardware using its demo mode feature. In addition to the use of instruments in the application, the WaveForms application has a script editor tool, which allows custom scripting of the instrument in JavaScript. WaveForms is designed to be run on a laptop or desktop computer and is Mac, Windows, and Linux compatible. WaveForms SDK is a set of software libraries and examples that can be used to develop custom applications that can control Digilent Test and Measurement devices. Supported languages include C, C++, C#, Visual Basic, and Python. Third-party toolkits are available for LabVIEW and MATLAB. Instructions for using WaveForms with LabVIEW are available through our guide Getting Started with LabVIEW and a Test and Measurement Device. More information about WaveForms SDK can be found through the WaveForms SDK Resource Center.

Features

Analog Inputs:

- Used in the Oscilloscope, Network Analyzer, Spectrum Analyzer, Voltmeter, Impedance Analyzer, and Data Logger
- ADP3450: Four analog input channels accessible via front panel BNC connectors
- ADP3250: Two analog input channels accessible via front panel BNC connectors
- Channel type: single ended
- Analog bandwidth: 55+ MHz @ 3 dB
- Noise limiting hardware bandwidth filter: 20 MHz
  - Can be enabled or disabled
- 14-bit resolution (16-bit resolution with oversampling)
- Input range ±25 V (±50 V diff)
- Input protected to ±50 V
- Max sampling rate:
  - 0.5 GS/s (with oversampling enabled)
  - 100 MS/s default
- AC or DC coupling
- Input buffer Size
  - 128 MS total in record mode
  - 32 k + samples per channel in repeated/shift/screen modes
- Channel type: single-ended

Analog Outputs:

- Used in the Waveform Generator, Impedance Analyzer, and Network Analyzer
- Two arbitrary waveform generator channels, accessible via front panel BNC connectors
- 14-bit Resolution
- AC amplitude (max): ±5 V
- Analog bandwidth: 15 MHz @ 3 dB
- Maximum Sampling Rate: 125 MS/s

Digital Power Supply:

- One Power supply with two access points
- Voltage Range: 1.2 V to 3.3 V
- Output Current: 300 mA

Digital Inputs and Outputs:

- Used in the Logic Analyzer, Pattern Generator, Protocol Analyzer, and Digital I/O
- Channels: 16
- Input logic standard: LVCMOS (adjustable 1.2 V to 3.3 V, 5 V tolerant)
- Output logic standard: LVCMOS (adjustable 1.2 V to 3.3 V, 8 mA)
- Max sampling rate: 125 MS/s
- Logic analyzer buffer memory:
  - 64 MS total in Record Mode
  - 32 k+ per channel in Repeated/Shift/Screen modes

Advanced Triggering:

- Trigger sources: oscilloscope analog channels, function generator start, digital I/O lines, external triggers, manual trigger button
- Trigger Modes
  - None, auto, manual (forced trigger), single
- Analog Trigger
  - Edge, pulse, transition, condition, level, hysteresis, hold-off
- Digital Trigger
  - Edge, level, pattern, glitch, protocol

Connectivity:

- Device to computer: USB or Ethernet connection (in Linux or Standard Modes)
- 4 High-speed USB 2.0 ports for peripheral connection (enabled in Linux mode)
  - Enabled for set and tested WiFi dongles (in Linux Mode)

Other:

- Auxiliary Powered
- Dimensions: 23.40 cm x 19.40 cm x 3.81 cm (9.2 in x 7.6 in x 1.5 in)
- Weight: 450 g

What's included:

ADP3450:

- 1 ADP3450
- 1 USB A to B cable
- 1 19V 3.4A power supply brick
- 1 US IEC cable
- 1 EU IEC cable
- 1 2x12 MTE cable

ADP3250:

- 1 ADP3250
- 1 USB A to B cable
- 1 19V 3.4A power supply brick
- 1 US IEC cable
- 1 EU IEC cable
- 1 2x12 MTE cable

ADP3450 with BNC Probes

- 1 ADP3450
- 1 USB A to B cable
- 1 19V 3.4A power supply brick
- 1 US IEC cable
- 1 EU IEC cable
- 1 2x12 MTE cable
- 4 BNC to mini-grabber cables
- 4 P2150 oscilloscope probes

ADP3250 with BNC Probes

- 1 ADP3250
- 1 USB A to B cable
- 1 19V 3.4A power supply cable
- 1 US IEC cable
- 1 EU IEC cable
- 1 2x12 MTE cable
- 4 BNC to mini-grabber cables
- 2 P2150 oscilloscope probes