


NEW PRODUCT	 A National Instruments Company	<i>Release Year</i> 2022	<i>Released Quarter</i> Q1
<i>Digilent Part Number</i> 411-001 / 471-058		<i>Category</i> Test & Measurement	

OVERVIEW

Product Name: *Analog Discovery Pro ADP5250: All-In-One 1GS/s 100MHz Mixed Signal Oscilloscope, Function Generator, Power Supply, and DMM*

Product Subtitle: *Bolster your benchtop with the biggest, baddest, and boldest Analog Discovery yet.*

Product Description: The ADP5250 brings higher sample rate and bandwidth and a more rugged design to the Analog Discovery family, keeping our free highly rated WaveForms application software at the controls.

Higher Sample Rate and Bandwidth Mixed Signal Oscilloscope

Designed to combine a complete set of instruments into a flexible and programmable device, the ADP5250 features a mixed-signal oscilloscope with two 100 MHz, up to 1 GS/s analog input channels, one waveform generator with up to with up to 20 MHz sine output, 34 digital channels at a sample rate of up to 100 MS/s, a tri-output power supply capable of up to 25 V, an external trigger, and a built-in programmable DMM.

Ultimate All-In-One Test System

Analog Discovery Pro devices feature a variety of advanced triggering options. Instruments within WaveForms can be cross-triggered, for example, by activating an oscilloscope capture based on a received and decoded digital protocol. In addition, external signals can trigger events using the dedicated external trigger input/output. Our free WaveForms software provides these features configurable in the instruments themselves, or for more control or automation in one of the available scripting interfaces. The following instruments are available in the WaveForms application for the ADP5250:


- Oscilloscope
- Waveform Generator
- Power Supplies
- DMM
- Logic Analyzer
- Static I/O
- Spectrum Analyzer
- Network Analyzer
- Impedance Analyzer

Note: The ADP5250 is Windows® only.

WaveForms Software Applications


WaveForms is the free software application for the ADP5250 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 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.

For even more customization potential, the WaveForms Software Development Kit (SDK) can be used to create custom applications and scripts in Python®, C, and additional languages. While not officially supported, the ADP5250 is also compatible with NI's VirtualBench C API and VirtualBench LabVIEW™ VIs..

NEW PRODUCT	 DIGILENT A National Instruments Company	<i>Release Year</i> 2021	<i>Released Quarter</i> Q2
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OVERVIEW

Key Search Terms: Analog Discovery, Test & Measurement, Benchtop, Instrument, GHz, MHz, signal processing, LabVIEW, high-res, giga-sample speed, long memory depth, triggers, customizable, Windows, Waveforms, Software Development Kit, SDK, Analog, Digital, Mixed-signal, Oscilloscope, AC/DC Coupling, Network Analyzer, Spectrum Analyzer, Impedance Analyzer, Logic Analyzer, Pattern Generator, Protocol Analyzer, DMM, FFT, histogram, complex functions, sine, triangle, sawtooth, noise, SPI, I2C, UART, CAN, and I2S, SFDR, Nyquist, JavaScript, C++, Python	Video Link: NA
Datasheet: https://digilent.com/reference/test-and-measurement/analog-discovery-pro-5250/reference-manual	
Specifications:	
Demo / Project Links:	
Tutorials	
<ul style="list-style-type: none"> • Getting Started Guide • Using the Oscilloscope • Using the Waveform Generator • Using the Power Supplies • Using the DMM • Using the Logic Analyzer • Using the Static I/O • Using the Spectrum Analyzer • Using the Network Analyzer • Using the Impedance Analyzer • Using the Script Editor • Calibrating a Digilent Test and Measurement Device • Saving and Sharing WaveForms Workspaces • Using Cross Triggering • Using External Triggers • Using WaveForms SDK 	
Projects	
<ul style="list-style-type: none"> • Power Measurement with the Analog Discovery Pro (ADP5250) 	
Certifications:	
<ul style="list-style-type: none"> • Statement of Volatility 	

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		2021	Q2
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OVERVIEW

Features

Analog Inputs:

- Used in the Oscilloscope, Network Analyzer, Spectrum Analyzer, and Impedance Analyzer
- Two analog input channels accessible via front panel BNC connectors
- Channel type: single ended
- Analog bandwidth: 100 MHz @ 3 dB
- 8-bit resolution
- Max sampling rate: 1 GS/s single channel
- Maximum input range: 40V peak to peak
- AC or DC coupling
- Maximum record length: 1 MS per channel

Analog Outputs:

- Used in the Waveform Generator, Impedance Analyzer, and Network Analyzer
- One channel accessible via a front panel BNC connector
- 14-bit resolution
- AC amplitude (max): ± 12 V
- Maximum analog bandwidth: 50 MHz @ 3 dB
- Maximum sampling rate: 125 MS/s

Power Supplies:

- Digital supply: 3.3 V, 20 mA
- DC power supplies:
 - 0 to 6 V variable, 1 A max current
 - 0 to 25 V variable, 500 mA max current (isolated)
 - 0 to -25 V variable, 500 mA max current (isolated)

Digital Multimeter:

- Used in the DMM instrument
- Functions: DC voltage, AC voltage, DC current, AC current, resistance, diode, continuity
- Resolution: 5 1/2 digits
- Sample rate 5 S/s
- Input protection:
 - Resistance, diode: up to 300 V DC
 - DC and AC voltage: up to 300 V DC or 265 VAC (rms) 400 V AC (peak)
 - DMM A current connector fuse: internal ceramic fuse, 10 A 250 V, time-delay, 5 x 20 mm, T 10 A H 250 V
 - DMM mA current connector fuse: internal ceramic fuse, 1.25 A 250 V, time-delay, 5 x 20 mm, T 1.25 A H 250 V
 - Maximum common-mode voltage: 300 V DC or AC (rms) \

Digital Inputs:

- Used in the Logic Analyzer
- Channels: 34
- Input voltage: 0V to 5 V
- Input threshold: 0 to 2 V
- Max sampling rate: 100 MS/s
- Typical record length: 1 MS

Digital Inputs and Outputs:

- Used in the Static I/O instrument
- Channels: 8
- Input logic standard: 5 V compatible TTL
- Output logic standard: 3.3 V LVTTTL

Advanced Triggering:


- Trigger sources: oscilloscope analog channels, function generator start, digital inputs, digital I/O, power line frequency, external trigger
- Trigger modes
 - Normal, auto, force, single
- Analog trigger
 - Edge with hysteresis
- Digital trigger
 - Edge, level, pattern, glitch
- External trigger:
 - 5V compatible TTL input or 3.3V LVLTTTL output
 - 4 mA drive strength

Connectivity:

- Device to computer: USB 2.0 Hi-Speed

Other:

- Auxiliary powered
- Shock and vibration tested (details in the specification sheet)

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OVERVIEW

What's included:

ADP5250:

- ADP5250
- 1 USB A to B cable
- 1 1x14 Digital I/O Screw Terminal Adapter
- 1 1x6 Power Supply Screw Terminal Adapter
- 1 2x18 Logic Analyzer MTE Cable
- 1 US IEC Cable
- 1 EU Adapter
- 1 UK Adapter

ADP5250 with BNC Probes

- ADP5250
- 1 USB A to B cable
- 1 1x14 Digital I/O Screw Terminal Adapter
- 1 1x6 Power Supply Screw Terminal Adapter
- 1 2x18 Logic Analyzer MTE Cable
- 1 US IEC Cable
- 1 EU Adapter
- 1 UK Adapter

Product Image



Image Links:

- <https://www.flickr.com/photos/127815101@N07/51535337037/>
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Applications:

- NA

Related Products:

- Analog Discovery Pro ADP3450 (410-394)
- Analog Discovery Pro ADP3250 (410-394-1)