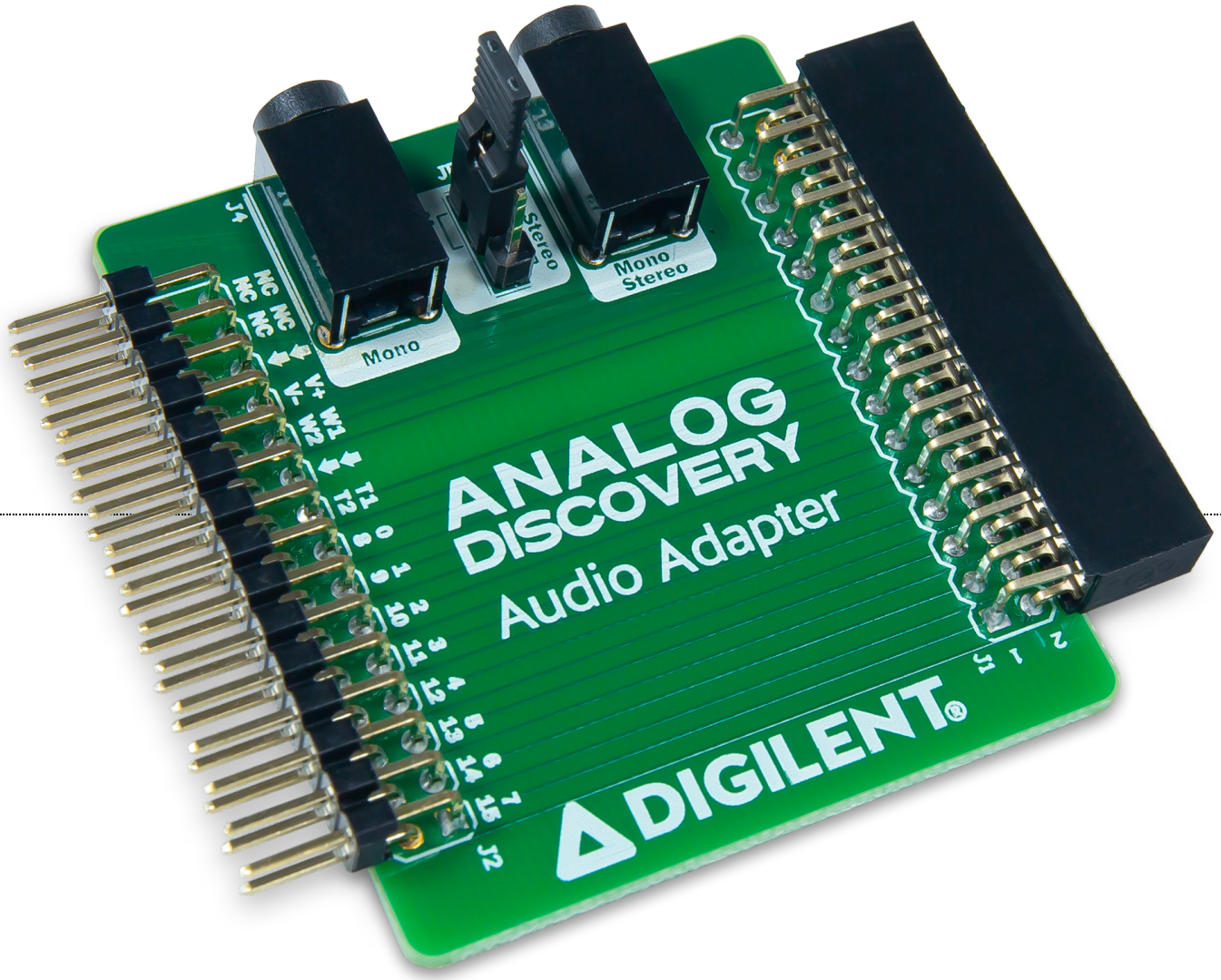
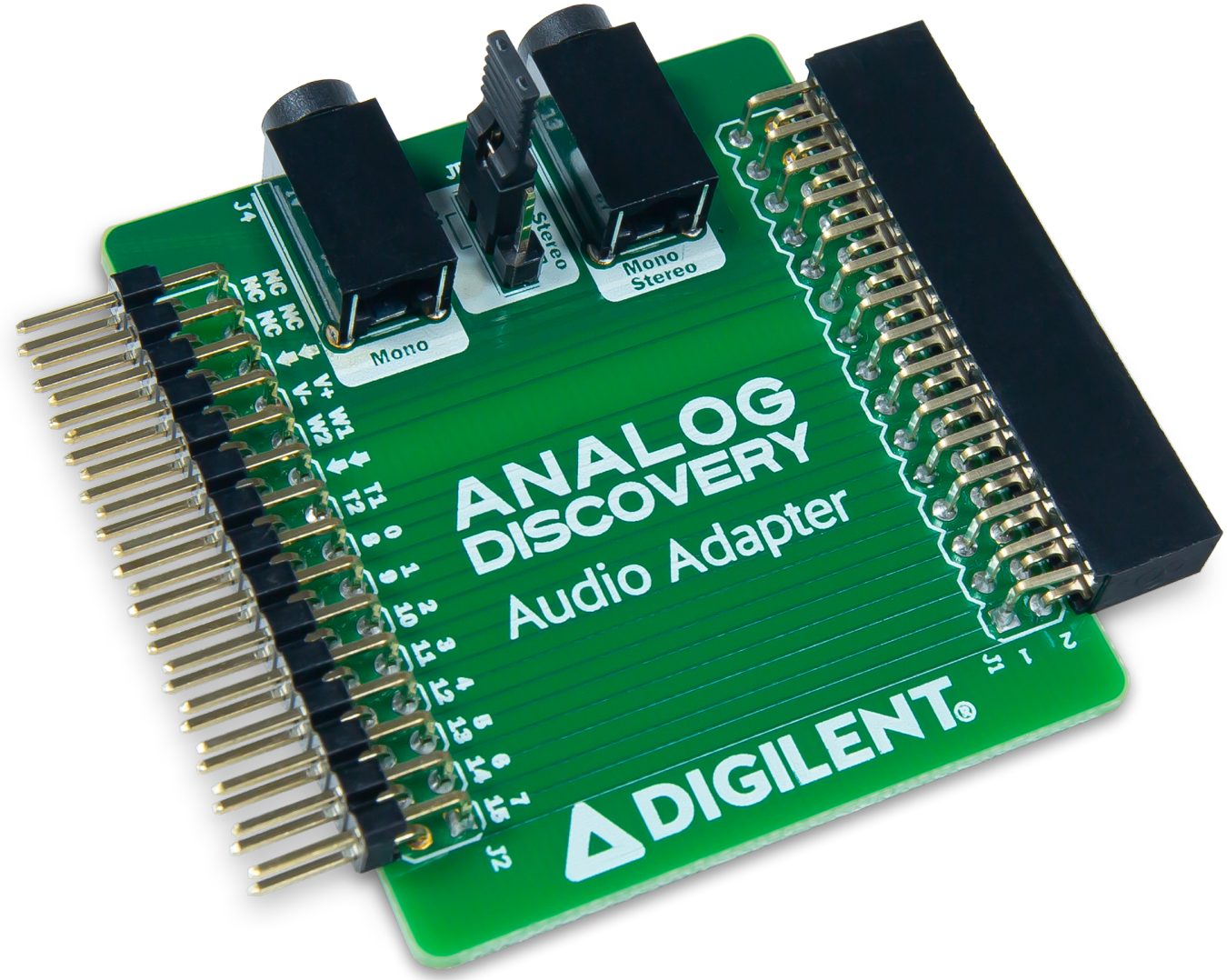
Analog Discovery Audio Adapter Reference Manual

The Analog Discovery Audio Adapter is a module that allows analyzing audio signals from external sources or from the Analog Discovery audio jack socket. It is equipped with a Mono and a Mono/Stereo Jack connector that are connected to the inputs of the oscilloscope. The Audio Adapter is equipped with the 2×15 Analog Discovery connector, which makes it compatible with Analog Discovery Legacy and Analog Discovery 2. An additional 2×15 Analog Discovery connector is loaded as a pass through for the digital signals that can be further used for other applications.



(https://reference.digilentinc.com/_media/reference/add-ons/audio-adapter/analogdiscoveryaudioadapter-obl-2000.png)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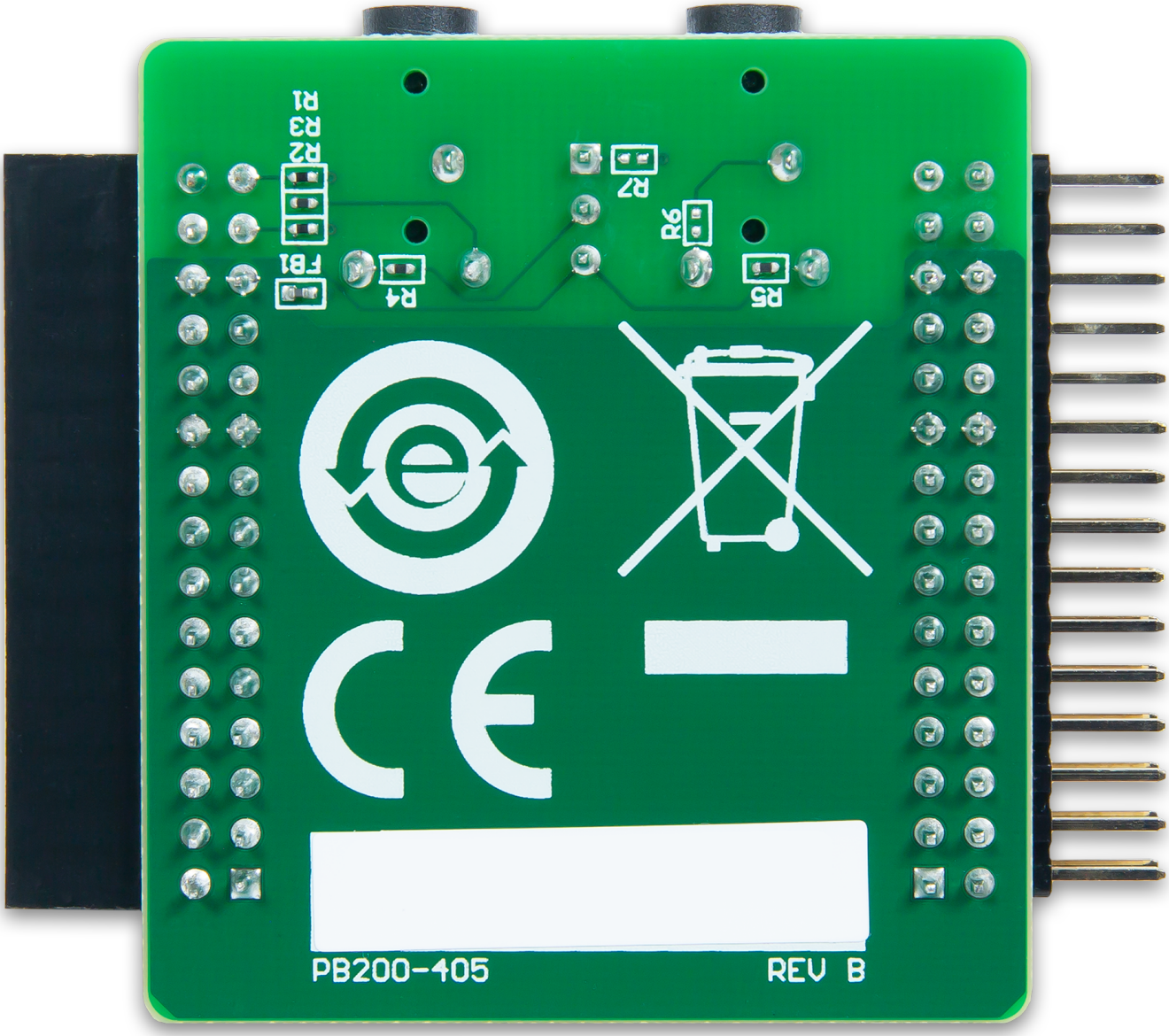
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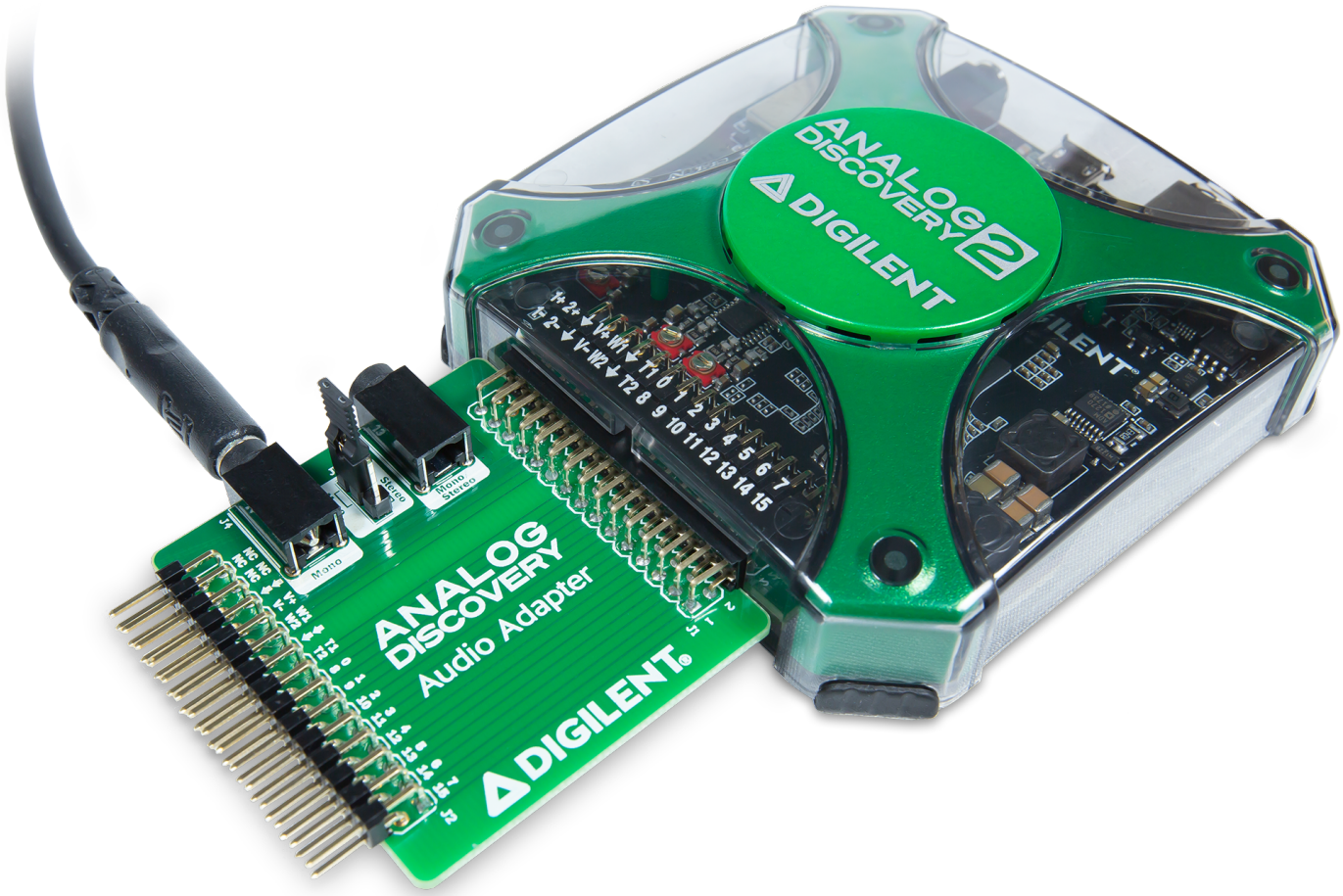


Overview

Features

- Mono and Mono/Stereo Jack connectors
- Selection Jumper
- Pass through Connector for the Digital I/O Signals
- Compatible with the Analog Discovery 2 and Analog Discovery (Legacy)

Compatible Products

The Analog Discovery Audio Adapter is compatible with the following:

- Analog Discovery 2 (https://store.digilentinc.com/analog-discovery-2-100msps-usb-oscilloscope-logic-analyzer-and-variable-power-supply)
- Analog Discovery (Legacy) (https://store.digilentinc.com/analog-discovery-100msps-usb-oscilloscope-logic-analyzer-limited-time/)

About this Document

This reference manual applies to Revision B of the Analog Discovery Audio Adapter.

Functional Description

Connectors and Jumpers

Label	Name	Description
J1	2×15 Analog Discovery connector	Interfaces the Audio Adapter with the Analog Discovery
J2	2×15 Analog Discovery connector	Used for passing through the unused signals of the Analog Discovery
J3	Mono/Stereo Jack connector	Used to connect a mono or a stereo audio source to the inputs of the Analog Discovery scope
J4	Mono Jack connector	Used to connect a mono audio source to the inputs of the Analog Discovery scope
JP1	Mono/Stereo Selection Jumper	Used to select if through J3 will pass a mono or stereo signal

Visualizing the Audio Signals

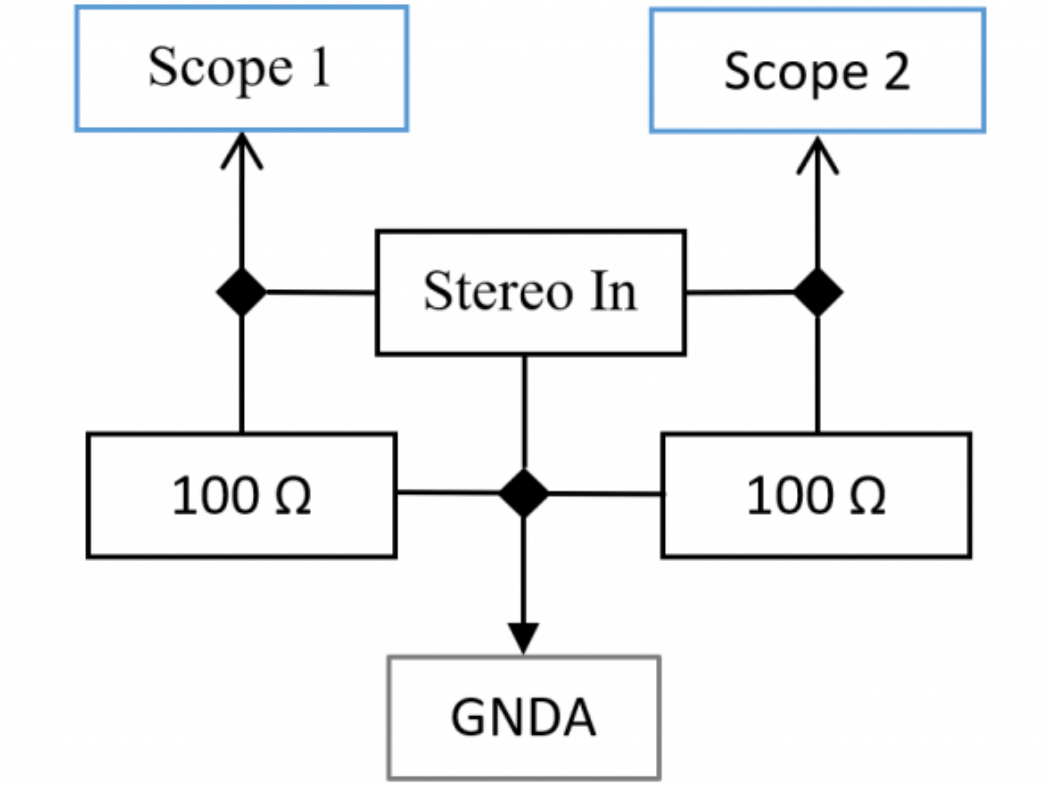
The Analog Discovery Audio Adapter is used to analyze the audio signals taken from an external source or from the Analog Discovery. It uses the Oscilloscope device instrument. If the audio signals are generated by the Analog Discovery, a 3.5mm male jack stereo cable needs to be connected to the stereo input of the audio adapter. The Wavegen of the Analog Discovery is not directly connected to the adapter. The adapter can process stereo audio signals from the Analog Discovery or from external sources. It can also be used for analyzing mono audio signals fro external sources.

The **Mono** and **Mono/Stereo** measuring functions are implemented as in the circuits below:

Mono/Stereo connector (J3) can be used to see mono or stereo inputs. In order to select the mode for the oscilloscope, JP1 should be placed in the desired mode.

Stereo Mode

In stereo mode the signals from the connector are routed to Scope1+ and Scope2+ of the Analog Discovery. Scope1- and Scope2- are connected to the ground. In this mode, each audio channel corresponds to a scope channel.

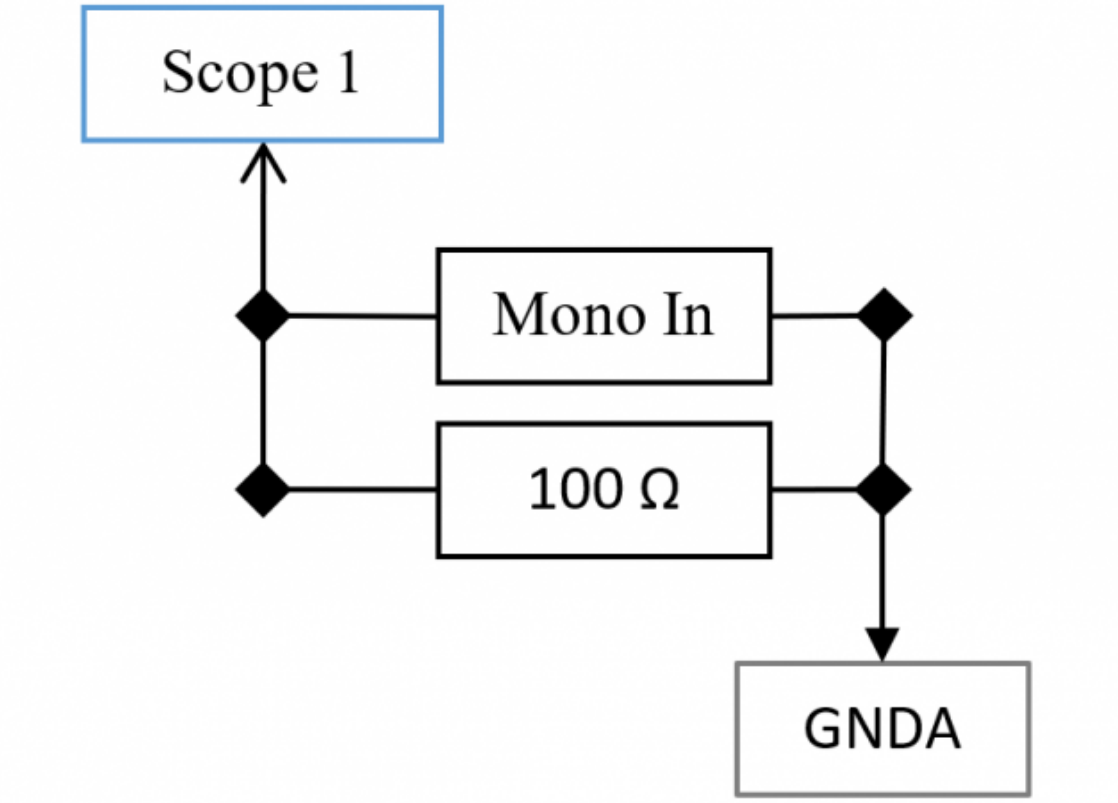


Stereo Connection-Mono/Stereo Connector

(https://reference.digilentinc.com/_media/reference/add-ons/audio-adapter/stereo-stereo.png)

Mono Mode

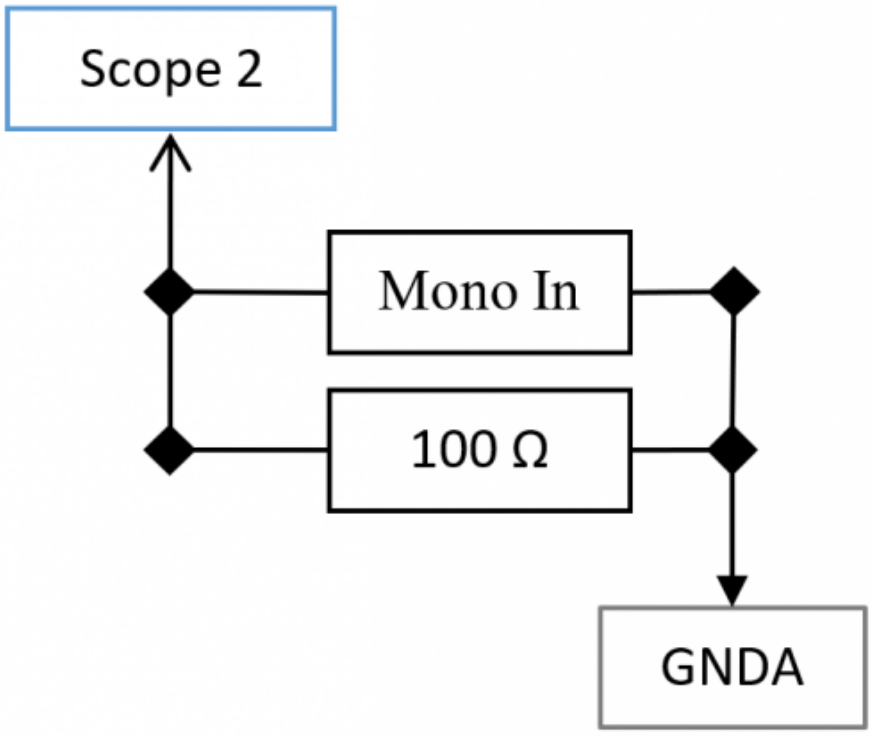
By selecting the mode Mono on JP1, the audio channel will be routed to Scope1+. As the Jack connector is stereo, the second signal contact will be connected to the ground.



Mono Connection-Mono/Stereo Connector

(https://reference.digilentinc.com/_media/reference/add-ons/audio-adapter/mono-stereo.png)

Mono connector (J4) can be used to see mono inputs. Paired with the Mono/Stereo connector in Mono mode, gives access to two individual mono channels. The audio channel is routed to Scope2+.



Mono Connection-Mono Connector

(https://reference.digilentinc.com/_media/reference/add-ons/audio-adapter/mono-mono.png)

Warning: Please be careful when connecting a stereo audio source into the mono connectors as it will short the second channel to ground. This may lead to damaging your audio equipment if it's not protected.

Power

The device doesn't require any external power supply.

Software Support

The Analog Discovery Audio Adapter is controlled with the Analog Discovery through the use of WaveForms.

Additional Information

- WaveForms can be downloaded from the WaveForms Resource Center (https://reference.digilentinc.com/reference/software/waveforms/waveforms-3/start).
- Documentation and installation instructions can be found in the WaveForms Reference Manual (https://reference.digilentinc.com/reference/software/waveforms/waveforms-3/reference-manual).
- Analog Discovery Audio Adapter Schematic (Rev. B) (https://reference.digilentinc.com/learn/documentation/schematics/audio-adapter-schematic)

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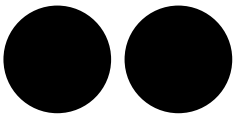
-  (https://www.flickr.com/photos/127815101@N07)