

Getting Started with the Breadboard Breakout for Analog Discovery 2

This guide will walk through the process of setting up a simple circuit, applying a waveform to it, and reading the results using the Analog Discovery 2 and Breadboard Breakout.

Prerequisites

Hardware

- **An Analog Discovery 2**
- **A Breadboard Breakout for Analog Discovery 2**
- **A breadboard and circuit to test**
 - *The circuit constructed in this guide requires three identical resistors and several jumper wires.*

Software

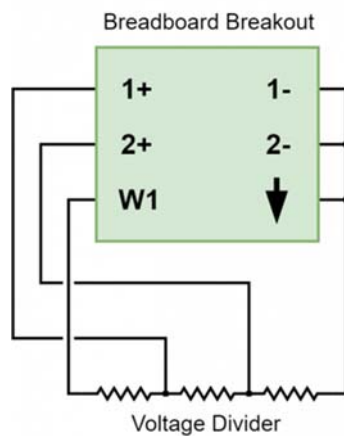
- **Digilent Waveforms**
 - *Follow the **Getting Started with Analog Discovery 2** to install Waveforms.*
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Guide

Set up a Circuit

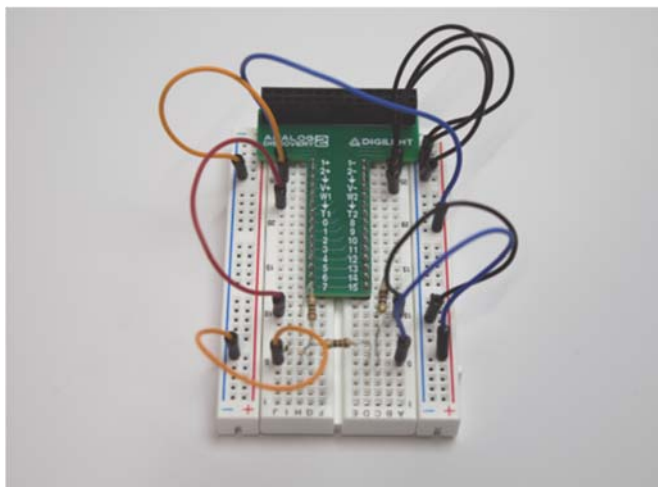
1.

The image to the right is a diagram of the circuit that will be connected to the Analog Discovery 2 through the Breadboard Breakout. Three 10Ω resistors are used to create a Voltage divider circuit, which will have a waveform applied from the **W1** pin of the Analog Discovery 2. The circuit will be grounded to the Analog Discovery 2, and will be probed at the two intermediate nodes using the **1+** and **2+** pins. The **1-** and **2-** pins should be grounded to get accurate readings on Analog Channels 1 and 2.



2.

Connect the Breadboard Breakout to the breadboard and construct the circuit. This image shows one way of creating this circuit on a breadboard.



3.

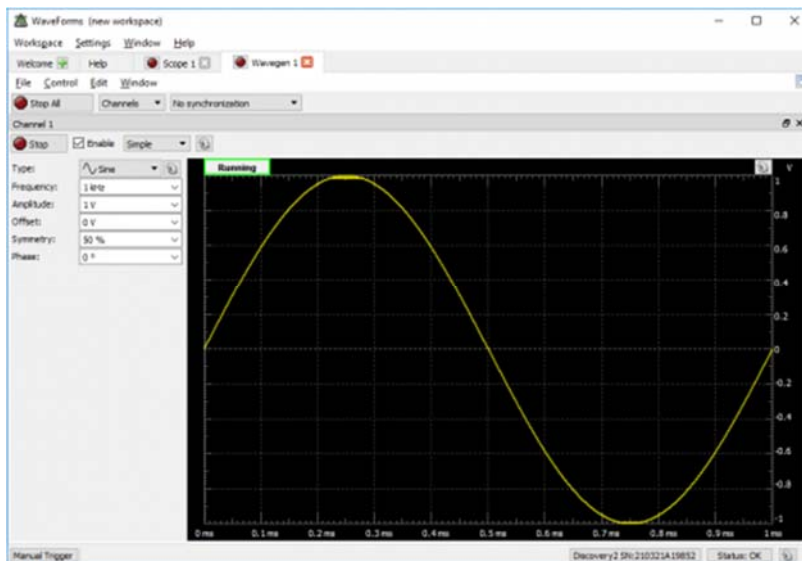
Connect the Analog Discovery 2 to the Breadboard Breakout as in the image to the right.



Use Waveforms to Probe the Circuit

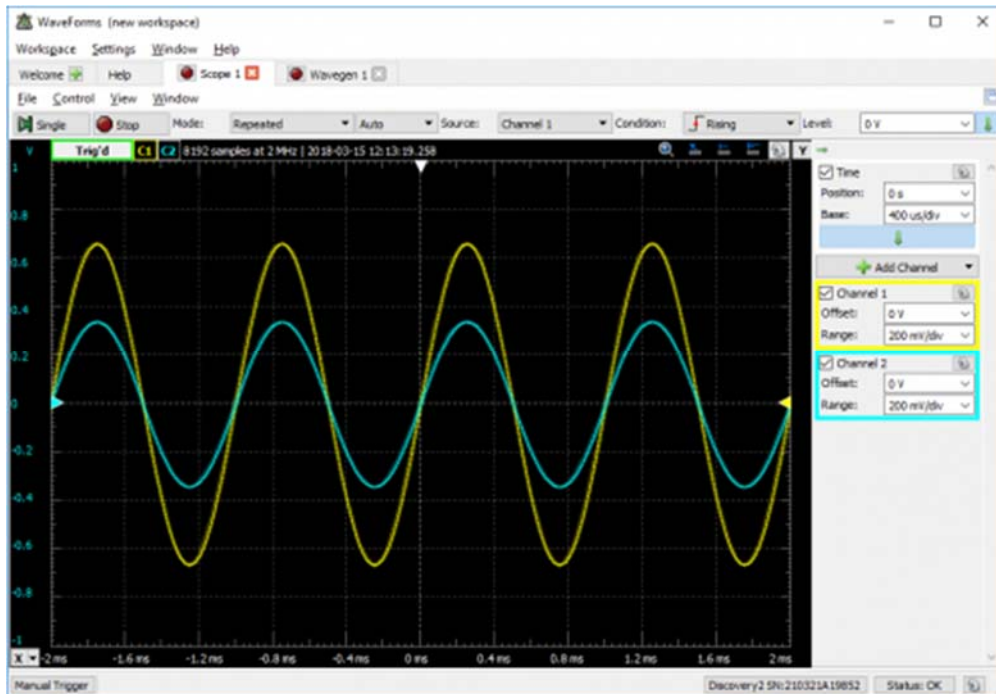
4.

Plug the Analog Discovery 2 into a computer with a microUSB cable and launch Waveforms. Open the **Wavegen** tab and create a *Sine* wave at *1kHz* frequency and *1V* amplitude on *Channel 1*. Click **Run** to apply this waveform to the Analog Discovery 2's **W1** pin.



5.

Open the **Scope** tab. Since both channels of the Analog Discovery 2 scope are already connected to the circuit, enable both channels with an Offset of 0 V and a Range of 200 mV/div . Click **Run** to begin displaying the waveforms seen at the two intermediate nodes of the voltage divider circuit. As seen in the image to the right, Channel 1 will see a 1 kHz Sine wave with an amplitude of 0.67 V , while Channel 2 will see a 1 kHz Sine wave with an amplitude of 0.33 V .



In Conclusion

The Breadboard Breakout for Analog Discovery 2 makes an already-powerful tool that much more easy to use. Play around with it, and see what you can do! Let us know what you think on the Digilent Forum.