

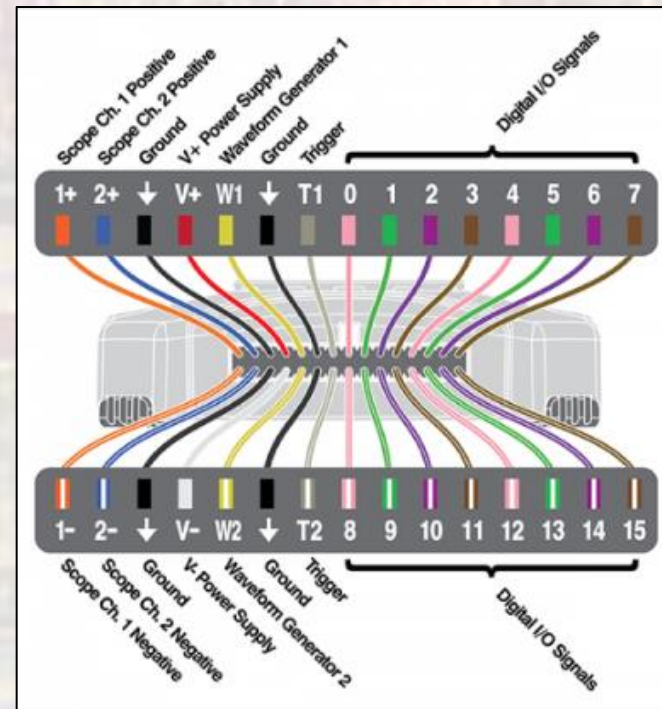
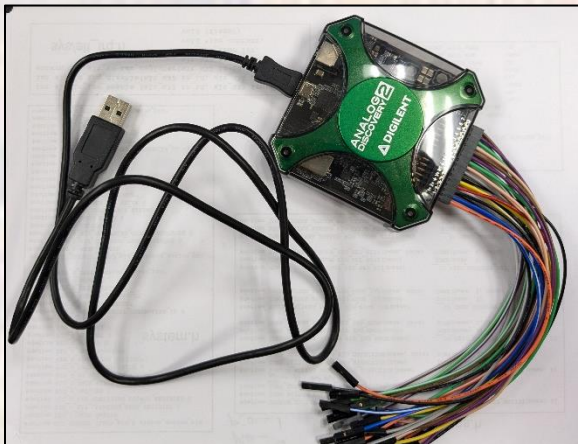
Using the AD2

Last updated 1/29/25

Using the Analog Discovery 2

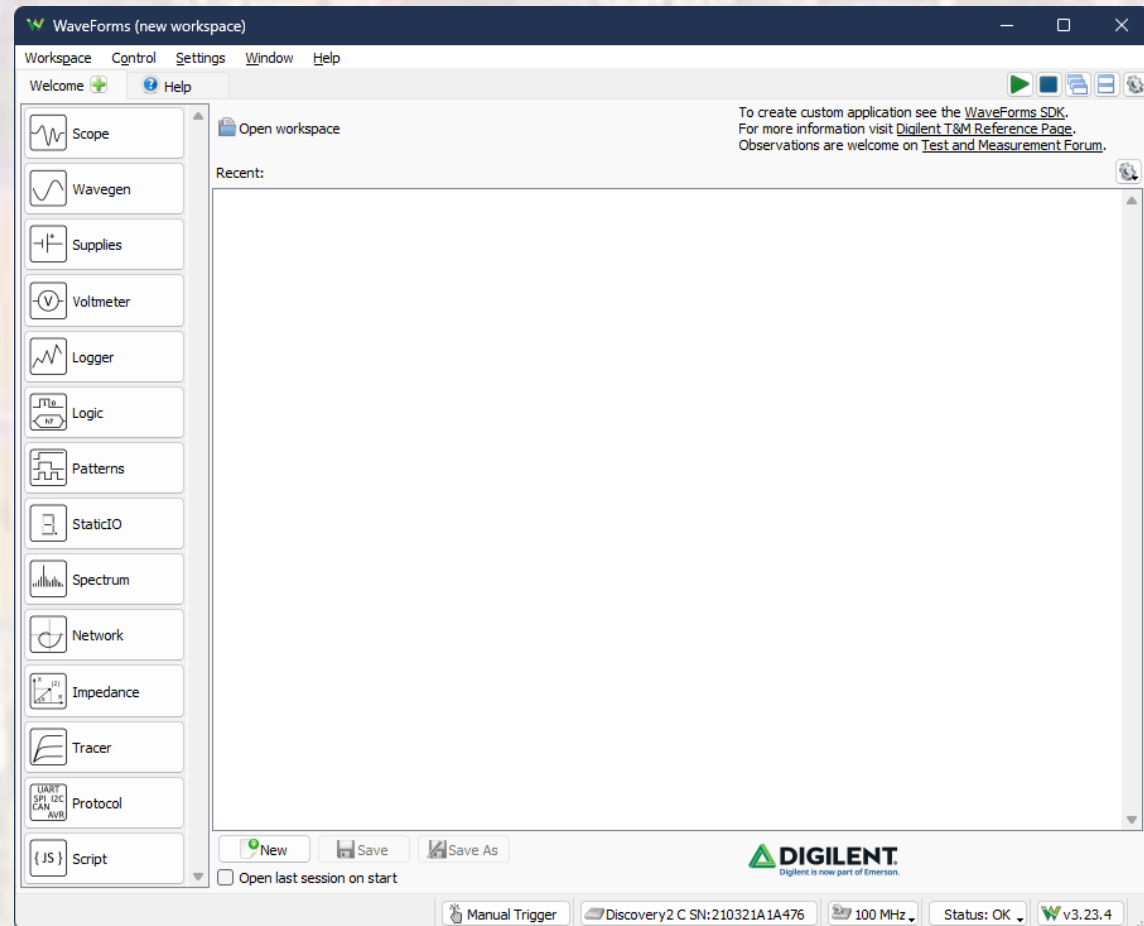
- Hardware Overview

- USB power source
- 30 pins (color coded wires)
 - Make sure your circuit always has a ground connection
 - Only need to connect 1 of the ground wires



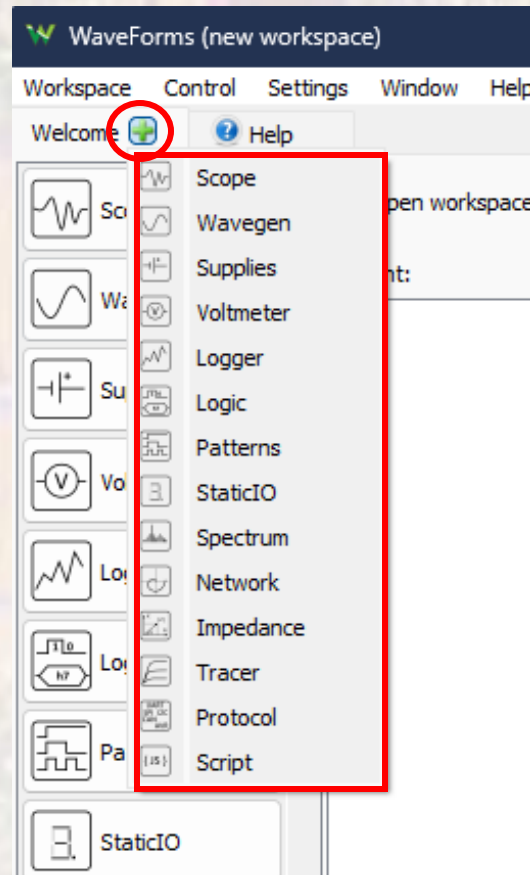
Using the Analog Discovery 2

- Software Overview
 - The Waveforms software will not start without the AD2 plugged in



Using the Analog Discovery 2

- Add a tool
- Select the **Welcome +**



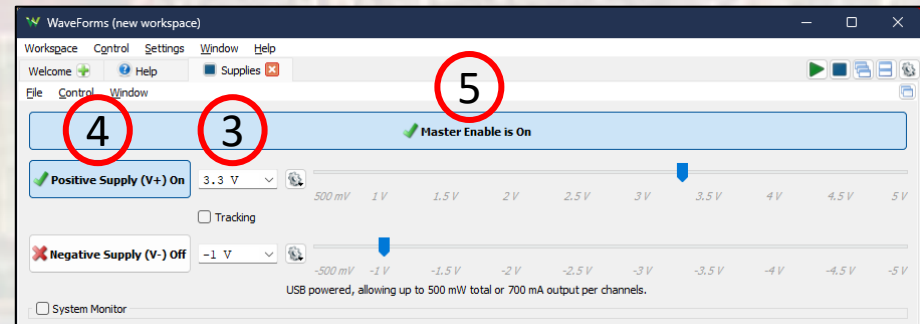
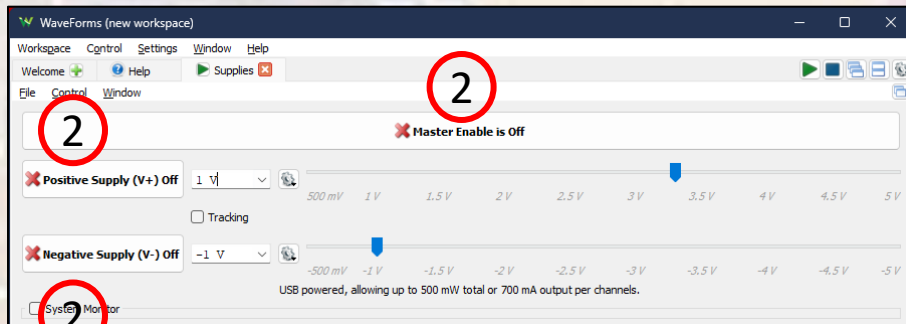
Using the Analog Discovery 2

- Create a DC supply voltage - Supplies

- Uses V+ and V- as outputs
- V+ (500mV → 5V), V- (-5V → -500mV)
- We will only use the positive supply
- Process

1. Select Welcome + → Supplies
2. Turn off all 3 supply enables
3. Select the desired supply voltage
4. Enable the Positive Supply
5. Enable the Master Enable

Only enable the power supplies after connecting ALL of your circuit component



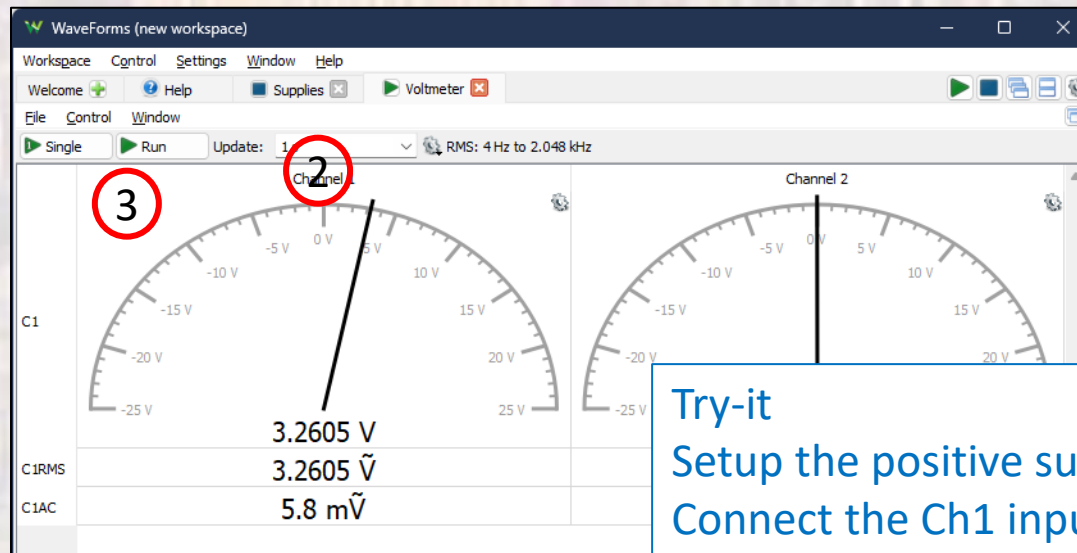
Using the Analog Discovery 2

- Measure a DC voltage - Voltmeter

- Uses the 1+ and 2+ inputs

- Process

1. Select **Welcome +** → **Voltmeter**
2. Select a measurement update rate
3. Select run



Try-it

Setup the positive supply to 3.3V

Connect the Ch1 input to the V+ output

Using the Analog Discovery 2

- Create an Analog Signal - Wavegen

- Creates time-varying voltage signals
- 2 Channels available (W1, W2)

- Process

1. Select **Welcome +** → **Wavegen**
2. Select a waveform type
3. Select the signal characteristics

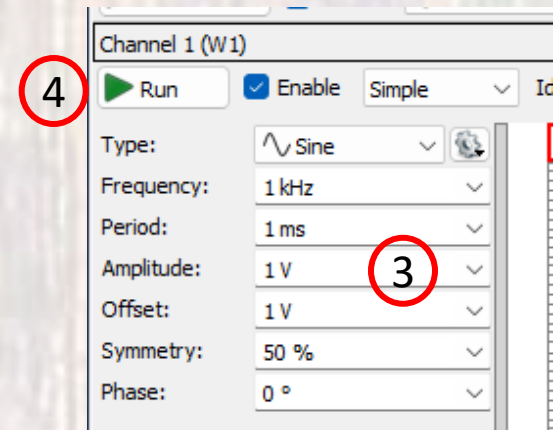
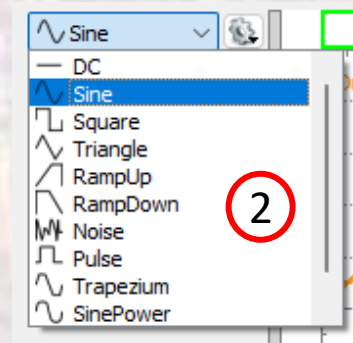
NOTE:

Amplitude is +/-

A 0-2v signal would be set to:

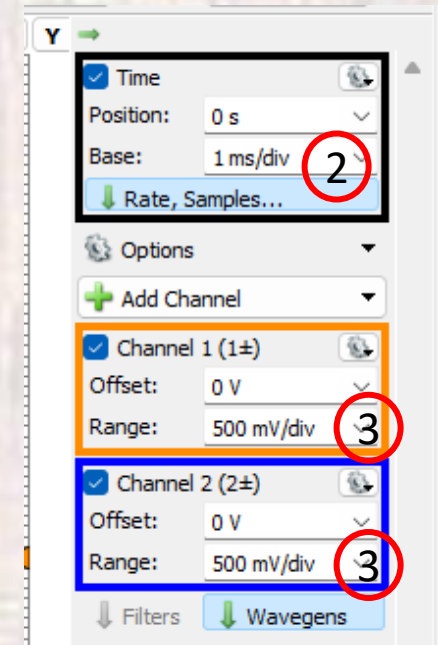
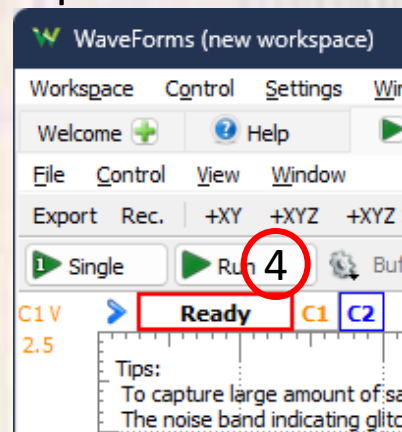
Amplitude: 1v, Offset: 1v

4. Select Run
5. Adjust the controls as necessary



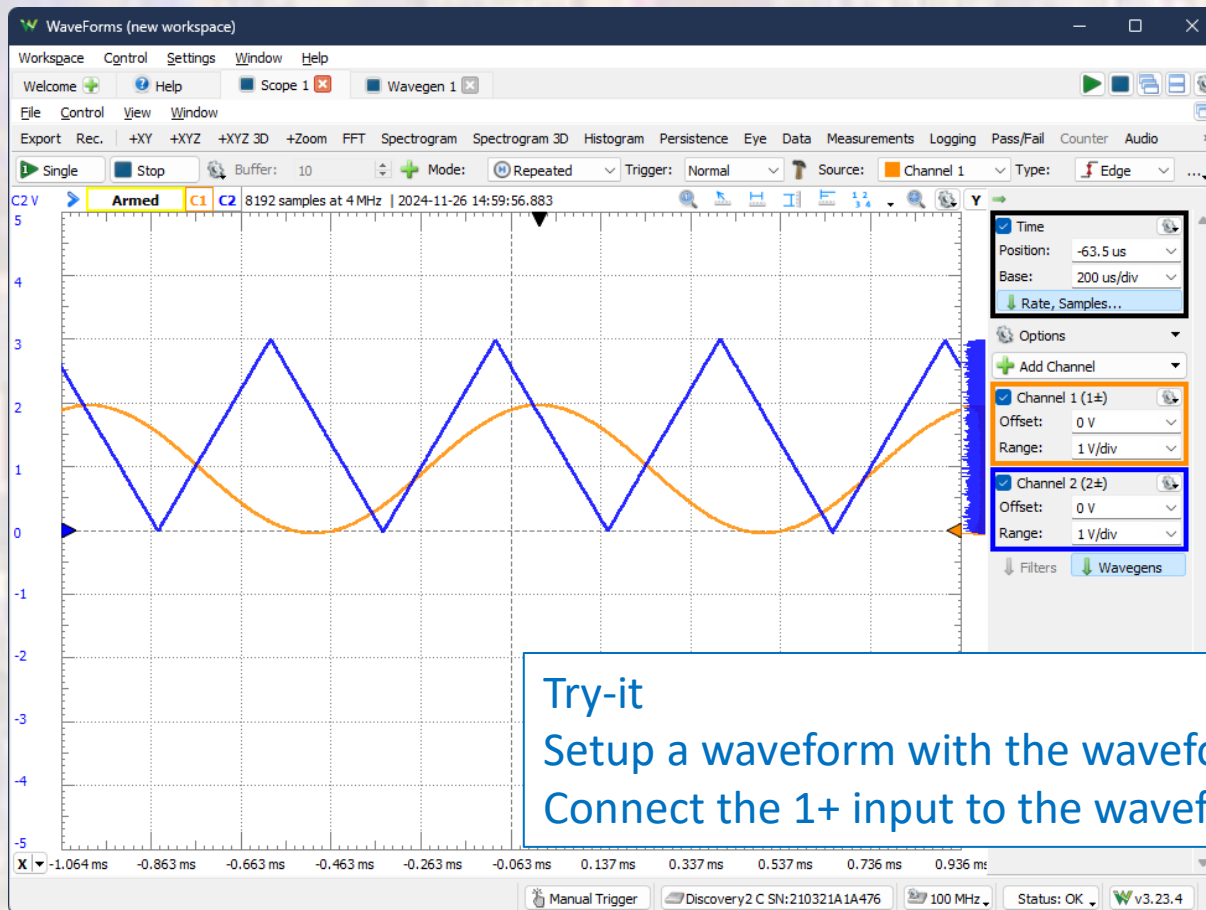
Using the Analog Discovery 2

- Measure a time varying signal – Scope
 - Simplified for CPE1500
 - Measures time-varying voltage signals
 - Uses the 1+ and 2+ inputs
 - Process
 1. Select **Welcome +** → **Scope**
 2. Select a time scale appropriate for the expected signal(s) – time per graph division
 3. Select voltage ranges appropriate for the expected signal(s) – volts
 4. Select Run
 5. Adjust the controls as necessary



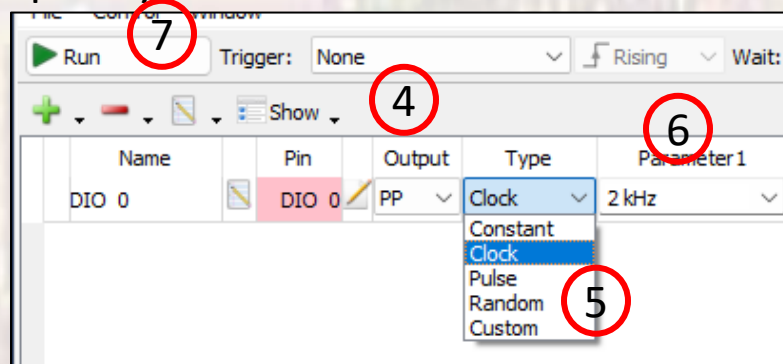
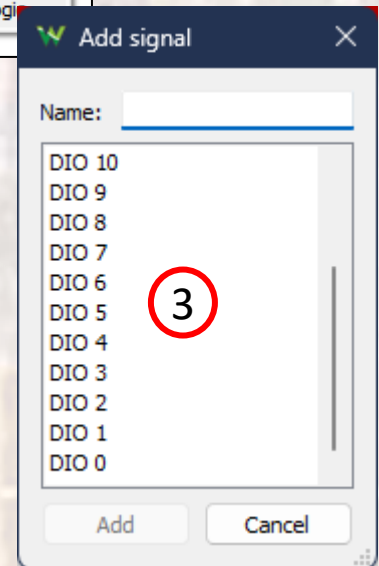
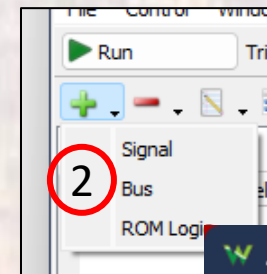
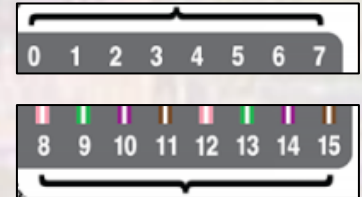
Using the Analog Discovery 2

- Measure a time varying signal – Scope
- Simplified for CPE1500



Using the Analog Discovery 2

- Create digital signals – Patterns
 - 1 pin signals
 - Creates time varying digital signals
 - Uses the 16 digital I/O pins (0 – 15)
 - Process
 1. Select **Welcome +** → **Patterns**
 2. Select **+** to choose **Signal**
 3. Select the pin to use (rename it if you wish)
 4. Select the output to be PP (push-pull)
 5. Select the signal type
 6. Select the Frequency
 7. Select Run

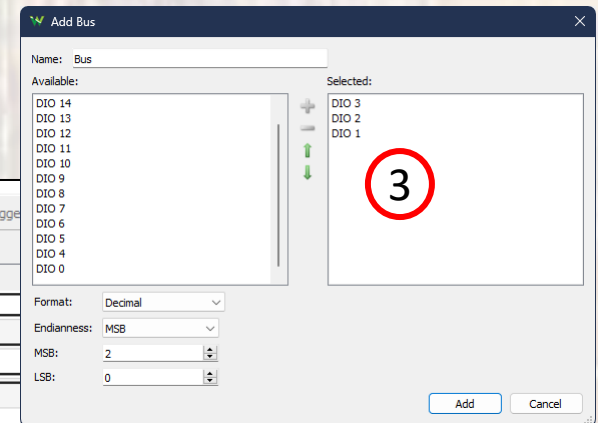
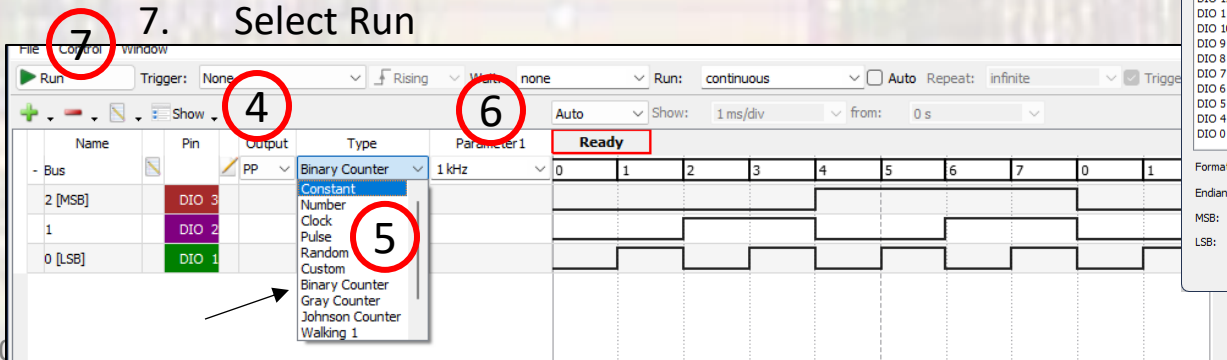
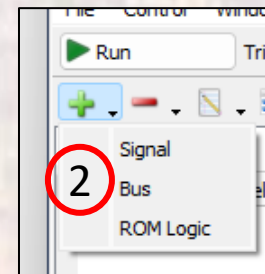
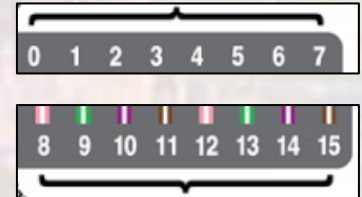


Using the Analog Discovery 2

- Create digital signals – Patterns

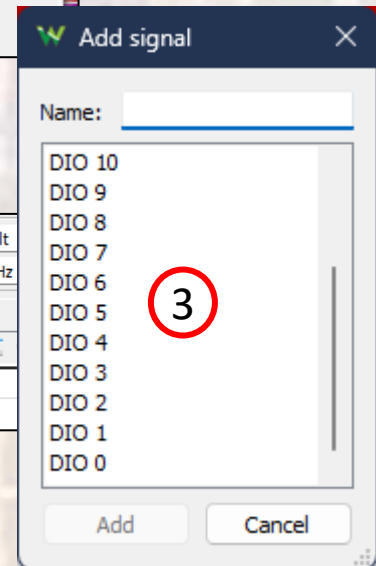
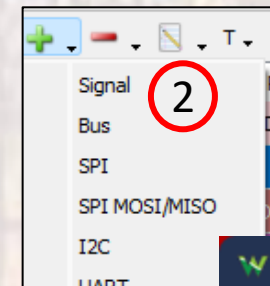
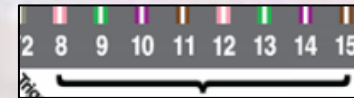
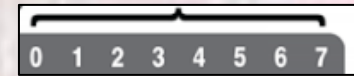
- Multi-pin signals (Bus)
- Creates time varying digital signals
- Uses the 16 digital I/O pins (0 – 15)
- Process

1. Select **Welcome +** → **Logic**
2. Select **+** to choose **Bus**
3. Select the pins to use (add to right column) order from MSB at top to LSB at bottom
4. Select the output to be PP (push-pull)
5. Select the signal type
6. Select the Frequency
7. Select Run

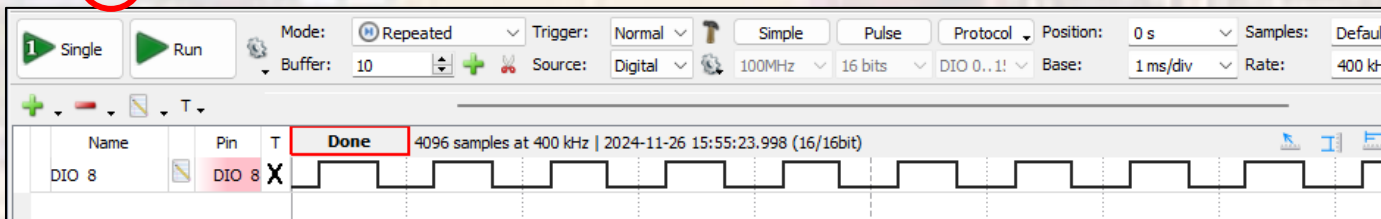


Using the Analog Discovery 2

- Measure Digital Signals - Logic
 - 1 pin signals
 - Measures time varying digital signals
 - Uses the 16 digital I/O pins (0 – 15)
 - Process
 1. Select **Welcome +** → **Logic**
 2. Select **+** to choose **Signal**
 3. Select the pin to use (rename it if you wish)
 4. Select Single or Run

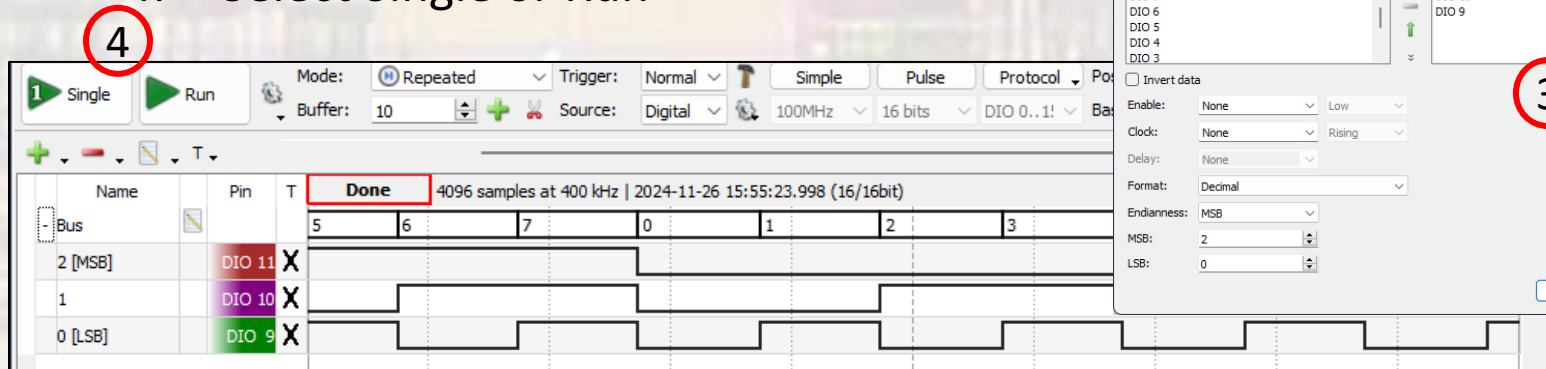
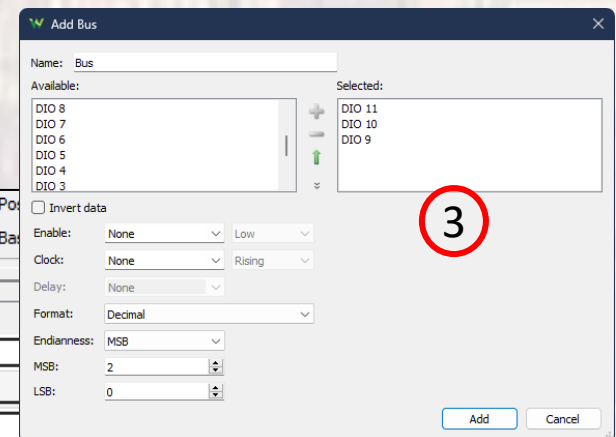
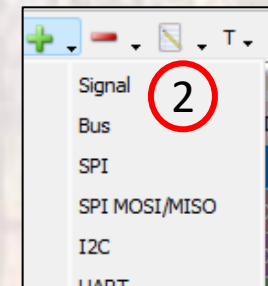


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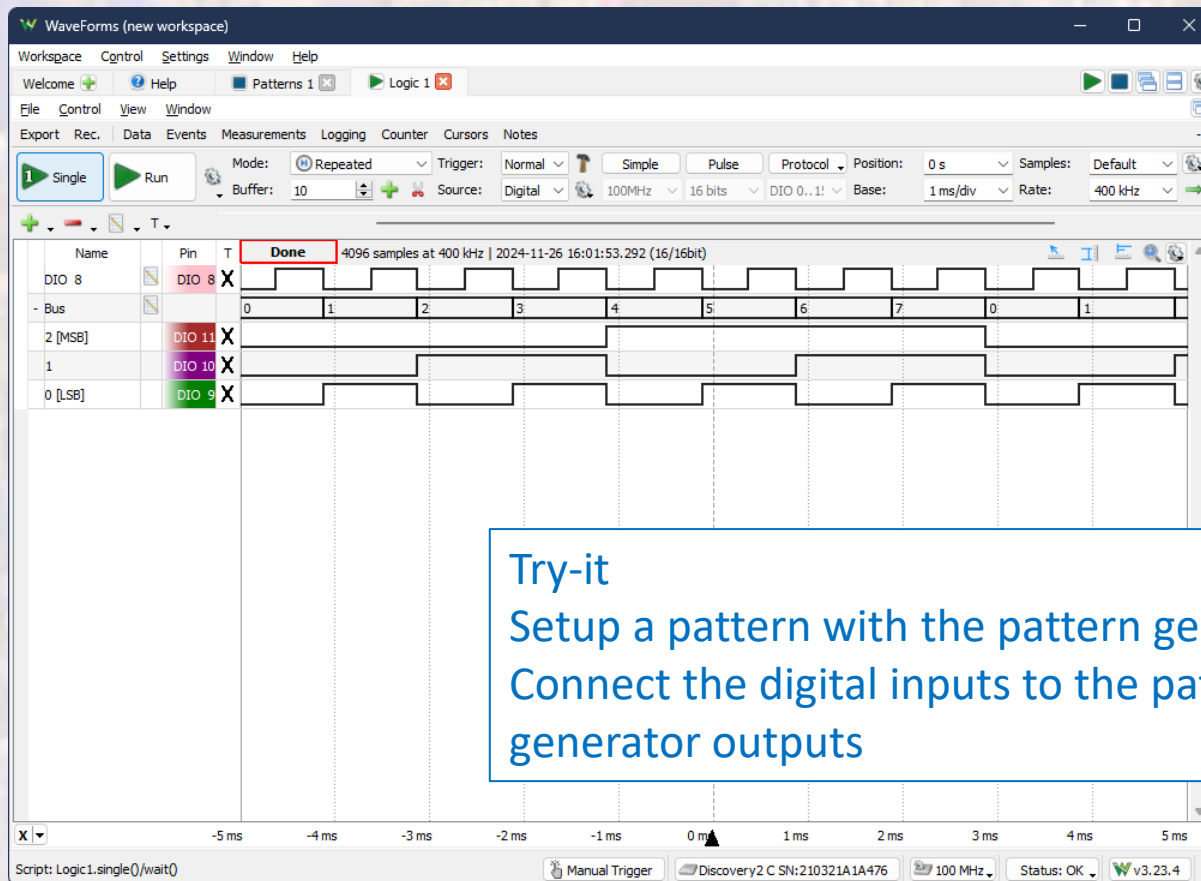
Using the Analog Discovery 2

- Measure Digital Signals - Logic
 - Multi-pin signals
 - Measures time varying digital signals
 - Uses the 16 digital I/O pins (0 – 15)
 - Process
 1. Select **Welcome +** → **Logic**
 2. Select **+** to choose **Bus**
 3. Select the pins to use (add to right column) order from MSB at top to LSB at bottom
 4. Select **Single** or **Run**



Using the Analog Discovery 2

- Measure Digital Signals - Logic
 - Measures time varying digital signals



Try-it

Setup a pattern with the pattern generator
Connect the digital inputs to the pattern generator outputs

Using the Analog Discovery 2

- Saving your settings
 - Workspace → Save as
 - Select an appropriate location
- Restoring your settings
 - Workspace → Open
 - You will need to restart your patterns using Run