myDAQ How-to Guide

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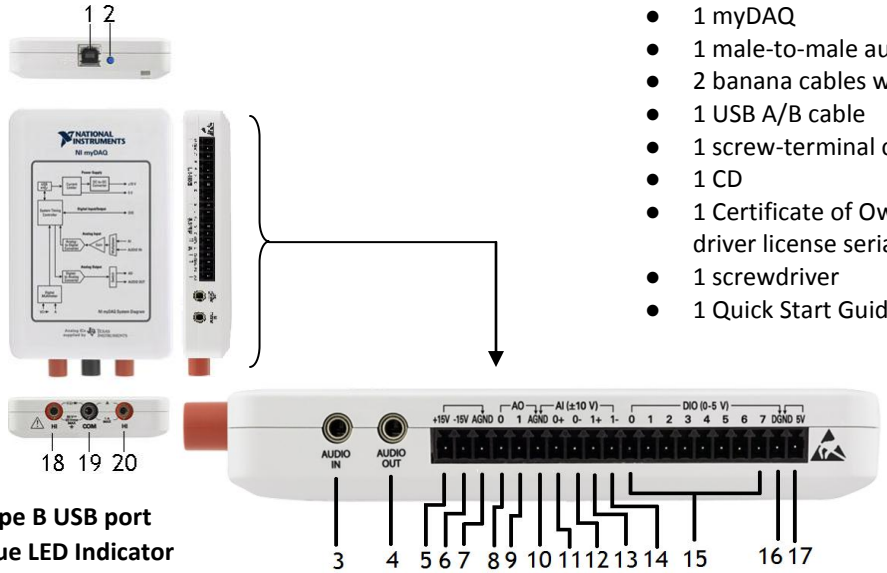
Intro



USB:

1. **Type B USB port**
2. **Blue LED Indicator**

Audio:

3. **Audio In**
4. **Audio Out**

Power Supply:

5. **+15V:** +15V Power Supply
6. **-15V:** -15V Power Supply
7. **AGND:** Power Supply Ground

Analog Input:

8. **AO0:** Analog Output 0
9. **AO1:** Analog Output 1
10. **AGND:** Analog Input/Output Ground

Analog Output:

11. **AI0+:** Analog Input 0, Positive Terminal
12. **AI0-:** Analog Input 0, Negative Terminal
13. **AI1+:** Analog Input 1, Positive Terminal
14. **AI1-:** Analog Input 1, Negative Terminal

Digital Input/Output:

15. **DIO:** Digital Input/Output Pins 0-7
16. **DGND:** Digital Input/Output Ground
17. **5V:** 5V Digital Power Supply

Digital Multimeter:

18. **HI:** Positive Terminal for V,Ω,Diode ***(60V Max)***
19. **COM:** Common Ground
20. **HI:** Positive Terminal for Current ***(1A Max)***

Installation notes[i]**:**

1. Make sure to install LABVIEW, NI ELVISmx, and Multisim (the installation times are specified in the installer as well)
2. Information releasing and NI update installer: up to you
3. Full name and company: up to you
4. Serial numbers are on the Certificate of Ownership (see **"Materials"**)
5. Several dialogs requiring user interaction will appear during installation.
6. Installation time: about 45 minutes
7. Restart your computer after installation.

Kit Materials (from the box):

- 1 myDAQ
- 1 male-to-male audio cable
- 2 banana cables with probes
- 1 USB A/B cable
- 1 screw-terminal connector
- 1 CD
- 1 Certificate of Ownership (this contains software and driver license serial numbers)
- 1 screwdriver
- 1 Quick Start Guide

Basic Usage

(bolded numbers refer to the myDAQ diagram)

To enable the myDAQ:

1. Plug in one end of the USB cable to the computer, and the other end to the top of the myDAQ **(1)**
2. A blue LED indicator on top of the myDAQ will turn on **(2)**

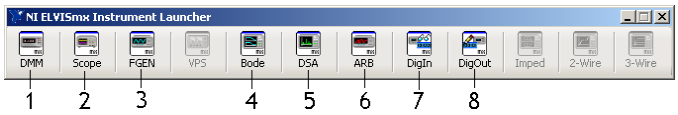
Using the screw terminals (5-17):

- Attach the screw-terminal connector
- Insert/remove wires when the appropriate screw is loose.
- Turn the appropriate screw counterclockwise (with the screwdriver) to loosen.
- Turn the appropriate screw clockwise to tighten.

±15V Power Supply (non-adjustable):

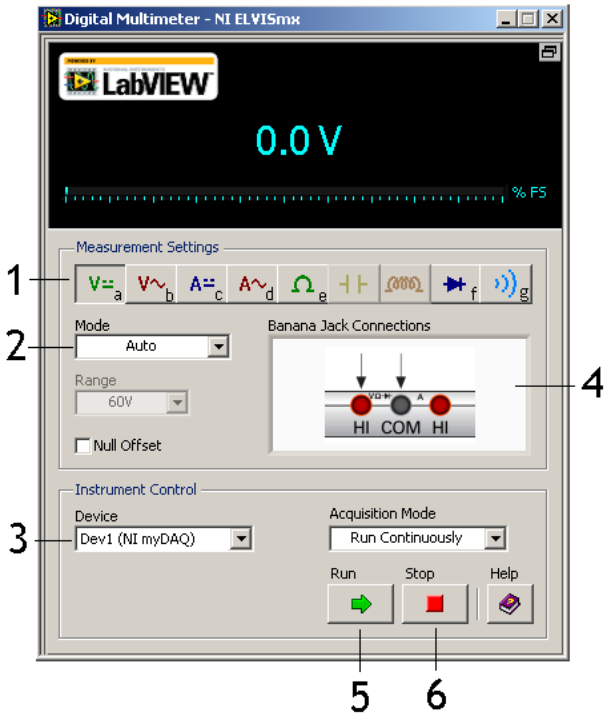
1. Insert a wire into the +15V power supply **(5)** and/or -15V power supply **(7) (see "Using the terminals")**
2. Insert a wire into AGND **(5)**
3. Connect wires to the appropriate places in your circuit

NI ELVISmx (virtual instruments)[ii]



Launch: Start -> All Programs -> National Instruments -> NI ELVISmx for NI ELVIS & NI myDAQ -> NI ELVISmx Instrument Launcher

1. **DMM:** Digital Multimeter
2. **Scope:** Oscilloscope
3. **FGEN:** Function Generator
4. **Bode:** Bode Analyzer
5. **DSA:** Dynamic Signal Analyzer
6. **ARB:** Arbitrary Waveform Generator
7. **DigIn:** Digital Reader
8. **DigOut:** Digital Writer

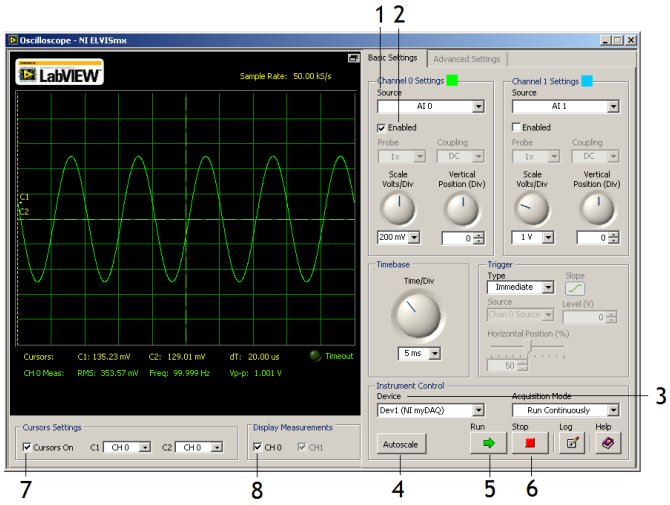


Digital Multimeter

Launch: NI ELVISmx Instrument launcher -> **DMM**

1. **Measurement settings**
   a. DC Voltage **(60V Max)**
   b. AC Voltage **(60V Max)**
   c. DC Current **(1A Max)**
   d. AC Current **(1A Max)**
   e. Resistance
   f. Diode
   g. Continuity
2. **Mode:** Auto (recommended) or Specify Range (and set the limit under "Range")
3. **Device:** Should include "(NI myDAQ)"
4. **Banana Jack Connections:** The arrows indicate where to connect the banana cables to on the myDAQ **(18-20)**
5. **Run:** Starts the multimeter
6. **Stop:** Stops the multimeter

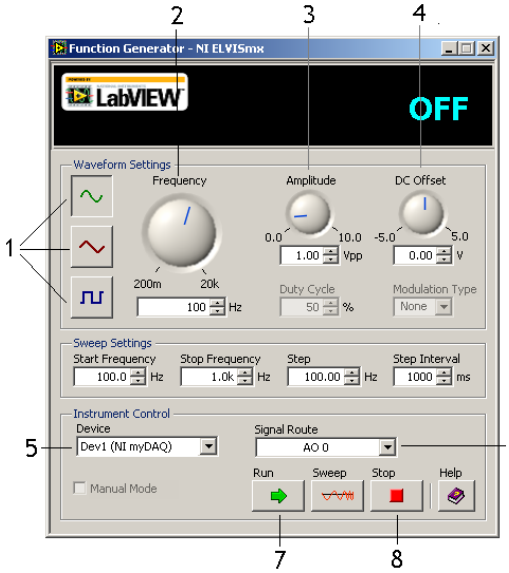
Oscilloscope



Launch: NI ELVISmx Instrument Launcher -> **Scope**

1. **Source:** Input channel from the myDAQ (either AI0**(11)** or AI1**(13)**). Make sure the negative terminal of the corresponding channel goes to ground (**12** or **14**, respectively)
2. **Enable:** Make sure this is checked to view the channel
3. **Device:** Should include "(NI myDAQ)"
4. **Autoscale:** Press to fit data on the viewer
5. **Run:** Starts the oscilloscope
6. **Stop:** Stops the oscilloscope
7. **Cursors On:** Enable to read the current data point
8. **Display Measurements**: Enable for RMS voltage, frequency, and peak-to-peak voltage

Function Generator



Launch: NI ELVISmx Instrument launcher -> **FGEN**

1. **Waveform:** Sine, triangle, or square waveforms
2. **Frequency:** Waveform frequency (Hz)
3. **Amplitude:** Waveform peak-to-peak voltage (Vpp)
4. **DC Offset:** Constant offset to waveform
5. **Device:** Should include "(NI myDAQ)"
6. **Signal Route:** Output channel to myDAQ (AO0**(8)** or AO1**(9)**)
7. **Run:** Starts the function generator
8. **Stop:** Stops the function generator

[i] For Macs, refer to http://goo.gl/swG2P. Basically, you need Windows on the Mac.

[ii] The grayed-out instruments in the launcher and DMM require an NI ELVIS system. http://www.ni.com/nielvis/