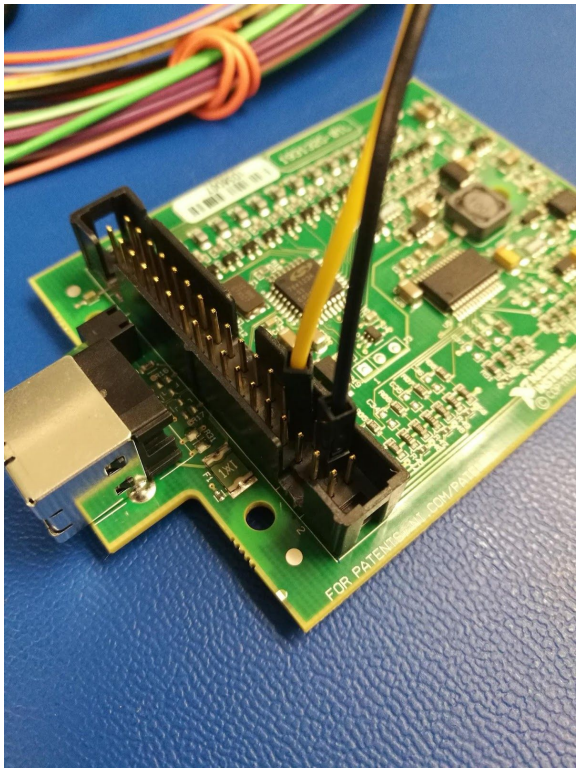
Using Analog Discovery 2

The purpose of this document is to show how to use an Analog Discovery 2 to set up waveforms, similar to a waveform generator. Note, that you can only create a single signal with the analog discovery, as the device itself only has two waveform outputs.

Hardware

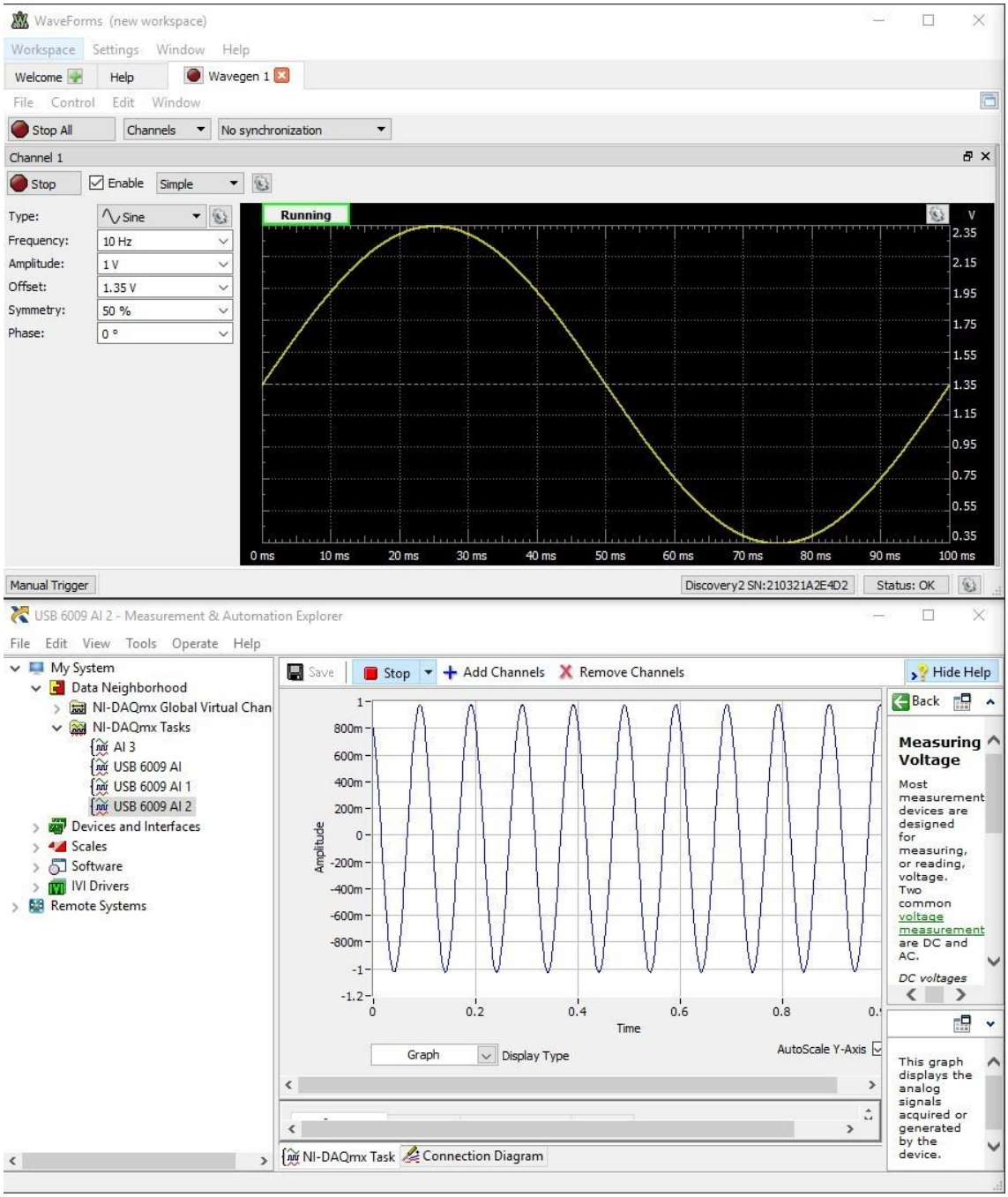
To set up the hardware you will need the Analog Discovery 2 (AD), the rainbow cables that come with it, the NI USB 6009 OEM and all other cables to connect the two devices to your computer. To connect the AD to the USB 6009, simply plug the waveform cable directly on to the pin/port you would like. Shown below., I connected W1 to AI 2 of the USB 6009 OEM. The pin diagram of the USB 6009 OEM is also shown.

+5 V	34	33	PFI 0
D GND	32	31	P1.3
P1.2	30	29	P1.1
P1.0	28	27	P0.7
P0.6	26	25	P0.5
P0.4	24	23	P0.3
P0.2	22	21	P0.1
P0.0	20	19	D GND
LED	18	17	D+
VBUS	16	15	D–
AI GND	14	13	AI GND
AI 4 (AI 0–)	12	11	AI 0 (AI 0+)
AI 5 (AI 1–)	10	9	AI 1 (AI 1+)
AI 6 (AI 2–)	8	7	AI 2 (AI 2+)
AI 7 (AI 3–)	6	5	AI 3 (AI 3+)
AI GND	4	3	AI GND
AO 1	2	1	AO 0



Software

To actually set up the connection, open NI MAX, and if you don't have it installed, download and install and open Digilent/ Analog Discovery WaveForms. In WaveForms, select Wavegen, and modify the settings to an appropriate waveform (50-60 Hz, 1 V amplitude). Make sure to select an offset that makes sense (I had to set mine to around + 1.35 V). In NI MAX, navigate to your NI-DAQmx Tasks, and select the appropriate Analog Input. Run NI MAX, then run WaveForms. You should get something similar to the following: Also, when finished, make sure to stop both WaveForms and NI MAX.



You should now be able to open the VI 00 Main Simulated Signal and run the VI to see the output from the Analog Discovery. Make sure to set your input task ports to the correct AI input in the Sub VI 14 Function Generator Signal.