

Using the DAQ Assistant

Goal

Configure a simulated DAQ device and build a simple example with the DAQ Assistant.

Description

Use Measurement & Automation Explorer to configure a simulated DAQ device. Then, build a VI using the DAQ Assistant to communicate with the newly-configured simulated DAQ device.

Implementation

The folder where you need to save this exercise is here: <NI eLearning>\LV Core 1\DAQ_Acquiring Data\Exercise.

1. From the LabVIEW Getting Started window, select **Tools» Measurement & Automation Explorer**.
2. Configure a simulated device.
 - ☐ If not already expanded, click the My System drop-down menu in the left column of the Explorer.
 - ☐ Select **Devices and Interfaces**.
 - ☐ Click **Create New** at the top of the window.
 - ☐ In the window that appears, select **Simulated NI-DAQmx Device or Modular Instrument**.
 - ☐ Click **Finish**.
 - ☐ In the new window, expand the X Series DAQ category.
 - ☐ Select **NI PCIE-6351**.
 - ☐ Click **OK**.

The simulated device appears in MAX, as shown in Figure 1.

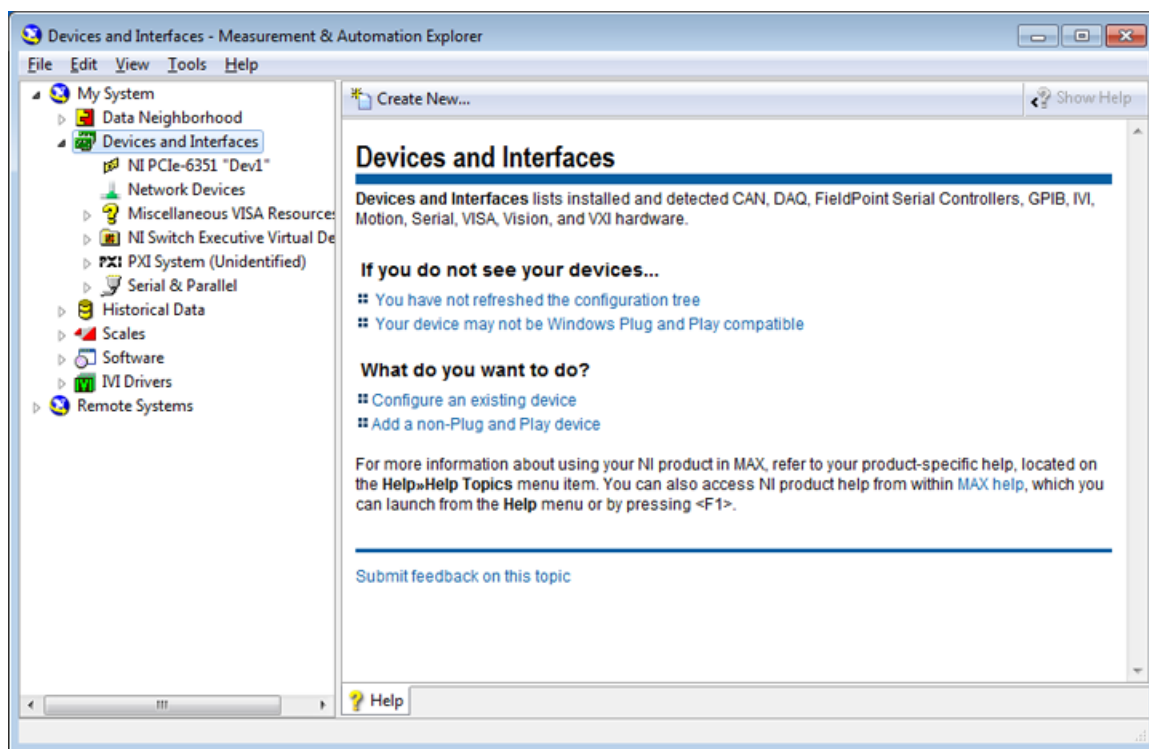


Figure 1. Device Configured in MAX

3. Test the configured device.

- ☐ Select the **NI PCIe-6351** device from the Devices and Interfaces list.
- ☐ Click **Self-Test** at the top of the window.
- ☐ Click **OK** in the Self-Test popup.
- ☐ Click **Test Panels...** at the top of the window.
- ☐ In the Test Panels window, select the **Analog Input** tab.
- ☐ Click the **Start** button. Simulated data will be displayed in the chart.
- ☐ Click **Stop**.
- ☐ Click **Close**.
- ☐ Close MAX and return to LabVIEW.

Now that the device has been configured and tested, use the DAQ Assistant in LabVIEW to acquire data from the simulated device.

4. Open a blank VI.
5. Switch to the block diagram and place the DAQ Assistant Express VI.



Figure 2. Define DAQ Measurement Type

6. Acquire multiple signals from the simulated device.
 - ☐ Click **Acquire Signals»Analog Input»Voltage** as shown in Figure 2.
 - ☐ Select the first 4 channels from the simulated device in the Supported Physical Channels box. Hold <Shift> or <Ctrl> while clicking to select multiple channels.
 - ☐ Click **Finish**.

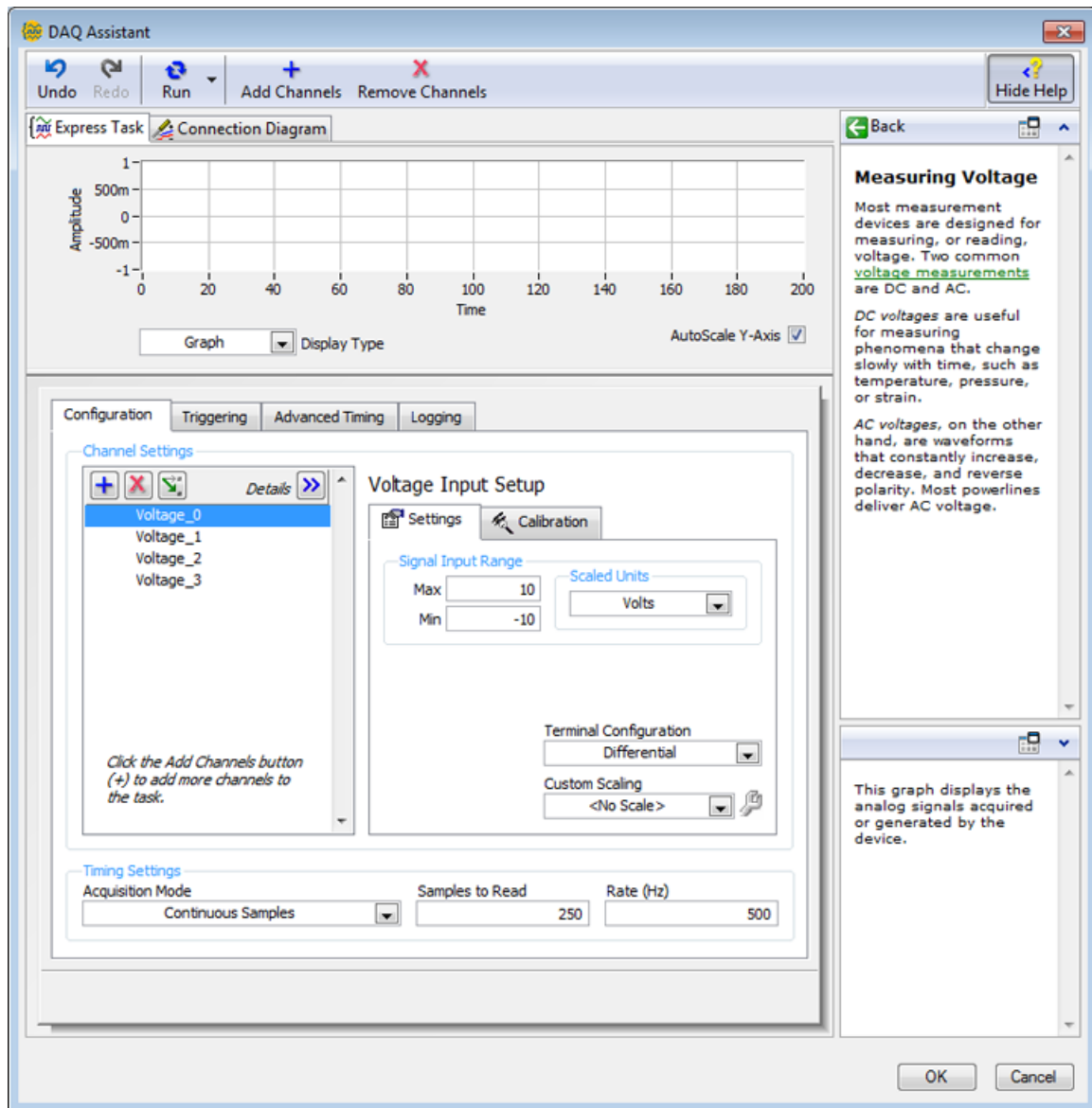


Figure 3. DAQ Assistant Configuration

7. Define the measurement settings, as shown in Figure 3.
 - ☐ Change the Acquisition Mode to **Continuous Samples**.
 - ☐ Change the Samples to Read to 250.
 - ☐ Change the Rate (Hz) to 500.
 - ☐ Click **OK**.

8. Configure the DAQ Assistant Express VI to run inside a While Loop.
 - ☐ In the pop-up window that appears, click **Yes**.
 - ☐ Right-click the data output from the DAQ Assistant and select **Create»Graph Indicator**.
9. Save the VI as Simulated Device Measurement.vi in the <Exercise> directory.

Test

1. Run the VI.
2. Notice that the device returns simulated data.
3. Close the VI when you are finished.

End of Exercise

Notes
