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**.
- 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.

2. Configure a simulated device.

☐ Click **OK**.



- - X Devices and Interfaces - Measurement & Automation Explorer File Edit View Tools Help 🛮 🥴 My System * Create New... Show Help Data Neighborhood Devices and Interfaces Devices and Interfaces № NI PCIe-6351 "Dev1" Network Devices Devices and Interfaces lists installed and detected CAN, DAQ, FieldPoint Serial Controllers, GPIB, IVI, Miscellaneous VISA Resources Motion, Serial, VISA, Vision, and VXI hardware. NI Switch Executive Virtual De PXI PXI System (Unidentified) If you do not see your devices... Serial & Parallel # You have not refreshed the configuration tree Historical Data # Your device may not be Windows Plug and Play compatible Scales What do you want to do? IVI Drivers # Configure an existing device Remote Systems # Add a non-Plug and Play device For more information about using your NI product in MAX, refer to your product-specific help, located on the Help»Help Topics menu item. You can also access NI product help from within MAX help, which you can launch from the Help menu or by pressing <F1>. Submit feedback on this topic Help

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.

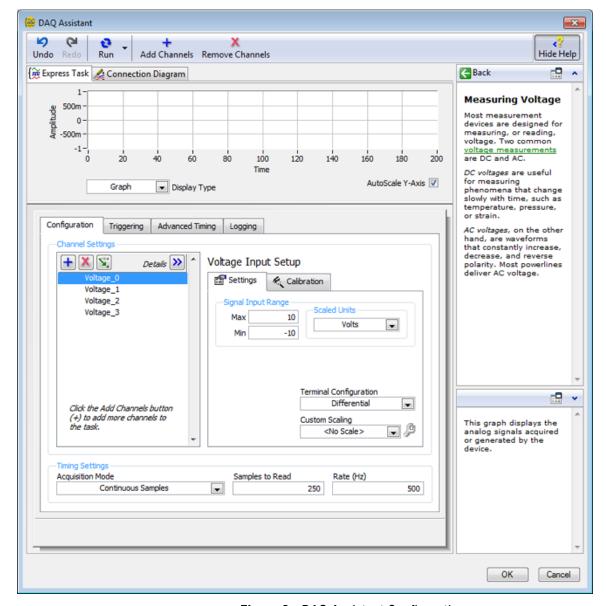


Figure 3. DAQ Assistant Configuration

- 7. Define the measurement settings, as shown in Figure 3.
 - ☐ Change the Acquisition Mode to **Continuous Samples**.
 - ☐ Change the Samples to Read to 250.
 - \Box 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.</exercise>
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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