Triggering Data Acquisition: Step by Step Procedure

Before starting this procedure, you need to complete the exercise and use the solution in the Taking a Measurement module. You can also create a numeric control to simulate the data acquisition input.

Note that hardware triggering is not available on all NI data acquisition devices, including the NI myDAQ. Ensure that you are using a device that supports hardware digital triggering, such as the National Instruments Educational Laboratory Virtual Instrumentation Suite (NI ELVIS) II.

1. Connect a 5 V trigger source to the PFI0 terminal of your DAQ device – you can also achieve this by simply connecting a wire from PFI0 to the +5 V rail of your device
   a. You can locate the device pinouts for a DAQ device by searching for your device online at ni.com
   b. The user guide and specifications contain this diagram
   c. Or right-click your device in Measurement & Automation Explorer (MAX) configuration software and select Device Pinouts

2. Double-click the DAQ Assistant to open the configuration window
   a. Right-click Voltage in the Channel Settings window and select Change Physical Channel…
   b. Ensure that the proper analog input channel is selected for your device

3. Navigate to the Triggering tab of the DAQ Assistant configuration window
   a. Select Digital Edge for the Trigger Type
   b. Select PFI0 for Trigger Source
   c. Select OK to apply configuration settings

4. Run the VI
   a. Notice that the acquisition does not begin until the digital trigger is received

   Note: If the stop button is pressed, and the trigger has not yet been received, the program does not stop unless you press the Abort button.

You can convert your DAQ Assistant Express VIs into low-level NI-DAQmx functions by right-clicking the DAQ Assistant and selecting Generate NI-DAQmx Code. The low-level NI-DAQmx API exposes more functionality and customization options for programming.