



## Installation Guide: Quanser Rapid Control Prototyping Toolkit® 2012 for Windows<sup>1</sup>

### STEP 1 Install NI LabVIEW™ and Add-on Requirements

The Quanser Rapid Control Prototyping (RCP) Toolkit® supports either 32-bit or 64-bit Microsoft Windows® 7.

Ensure LabVIEW™ is installed on the computer with the following required add-ons:

1. 32-bit LabVIEW™ 2012
2. LabVIEW™ Control Design and Simulation Module 2012
3. Device Drivers 2012 (i.e., NI DAQmx 2012)
4. LabVIEW™ MathScript RT Module 2012 (only used in certain curriculum VIs)

### STEP 2 Install Quanser Rapid Control Prototyping Toolkit on Windows 7

A



Uninstall any previous version of the Quanser Rapid Control Prototyping (RCP) Toolkit that may be present on the computer [e.g., RCP Lite 2011]. Do so by launching the *Programs and Features* dialog from the *Windows Control Panel*.

B



1. Insert the RCP Toolkit 2012 Installation CD.
2. The Quanser Rapid Control Prototyping Toolkit installation screen should appear.
3. Click on **CHECK FOR UPDATES** to open the RCP Toolkit download page containing the latest RCP version available.

**Note:** The version of the RCP Toolkit software you received on the Intallation CD is shown on the installation screen.

C

If a more recent RCP Toolkit version is available on the RCP Toolkit download webpage, do the following. Otherwise, skip this step.

1. **Download** and **run** the latest RCP Toolkit 2012 installer, which consists of a single executable, named *install\_quanser\_rcp\_toolkit.exe* .
2. A new RCP Toolkit installation screen should appear and replace the previous one.
3. Eject the RCP Toolkit Installation CD.

<sup>1</sup>Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

D



Click on **INSTALL** to start the RCP Toolkit installation process.

E

Follow the steps of the installation wizard.

F



On the *Setup Type* installation screen, choose **Typical**.

G



If during the installation, a *Windows Security* dialog appears asking *Would you like to install this device software?*, check the *Always trust software from Quanser Consulting Inc* checkbox and click on the **Install** button.

**Note:** If a *Windows can't verify the publisher of this driver software* dialog appears, click on the *Install this driver software anyway* option.

H

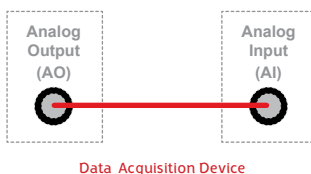


Once the installation is complete, click on **EXIT** to close the RCP Toolkit installation screen.

### STEP 3 DAQ Test on Windows 7

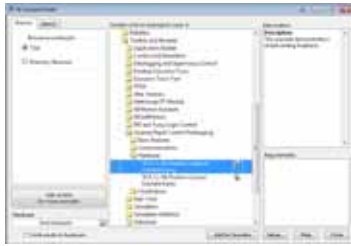
The Analog Loopback VI used in this section is to confirm that the Quanser RCP Toolkit has been installed properly. It also tests the data acquisition (DAQ) device on Windows. Refer to the DAQ Quick Start Guide for more information about setting up the DAQ device.

A



Using the RCA cable supplied with the data acquisition device, connect **Analog Output Channel #0 (AO #0)** to **Analog Input Channel #0 (AI #0)**.

B



1. In LabVIEW™, open the **NI Example Finder** by selecting *Find Examples...* from the *Help* menu.
2. In the *NI Example Finder* dialog, when browsing according to **Task**, open the *Toolkits and Modules/Quanser Rapid Control Prototyping/Hardware* folder.
3. Double-click on the *RCP CL HIL Analog Loopback Example*. *lvproj* LabVIEW™ project to open the RCP Toolkit example.

C

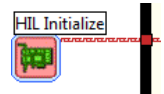


LabVIEW™ VI Front Panel

In the *RCP CL HIL Analog Loopback Example.lvproj* example, double-click on the *RCP CL HIL Analog Loopback Example.vi* file listed under *My Computer*.

D

Open the VI Block Diagram (CTRL+E) and double-click on the **HIL Initialize VI**.



E



Configure HIL Initialize window

In the *Board type* options under the *Main* tab, select the data acquisition device that is installed on the computer (e.g., q2\_usb).

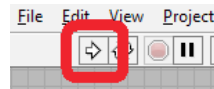
F

Click on the OK button.

G

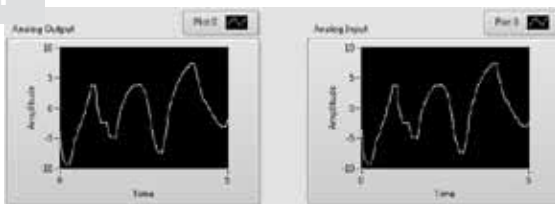
Go to the Front Panel of the VI (CTRL-E) pictured in Step 3C.

H



Click on the white arrow button to run the VI.

I

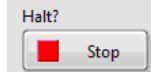


Scope view of the VI Front Panel

When manually moving the **Analog Output Signal** knob of the VI, both **Analog Input** and **Analog Output** scopes should display the same trace. If not, go to the *Troubleshooting* section.

J

Click on the **STOP** button to stop running the VI.



## TROUBLESHOOTING

Review the following recommendations before contacting Quanser's technical support engineers.

Getting 'VI Missing' messages when opening the DAQ Test example VI.

- Ensure LabVIEW™ and all the add-ons listed in Step 1 have been installed.
- Ensure the Quanser Rapid Control Prototyping Toolkit has been installed, as detailed in Step 2.

The NI DAQ device is not recognized: driver not installed.

- Ensure the NI DAQmx drivers are installed, as described in Step 1. The NI DAQmx installer is on a DVD that comes with the NI hardware; it can also be downloaded from <http://www.ni.com/drivers/>.
- Verify the data acquisition (DAQ) device is properly connected to the computer.

When running the DAQ Test, the Analog Input scope does not read anything.

- Ensure the RCA loopback connection is made on the data acquisition (DAQ) device, as described in Step 3A.
- Verify that the proper DAQ device name was selected in the HIL Initialize VI, as described in Step 3E.

STILL NEED HELP?

For further assistance from a Quanser engineer, contact us at [tech@quanser.com](mailto:tech@quanser.com) or call +1-905-940-3575.

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