


## Simulink Quick Start Guide for Windows: **Qube-Servo 3**

### STEP 1 Check Components and Details

Make sure your Qube-Servo 3 Platform includes the following components.



1. Quanser Qube-Servo 3
2. Rotary Pendulum module
3. Inertial disc module
4. 24V, 2.71A power supply and power cable
5. USB A/C cable
6. Qube-Servo 3 Resources. Content and courseware provided in digital form at [www.quanser.com/resources](http://www.quanser.com/resources)

### STEP 2 Install and Test QUARC

1. Make sure you have all the required software as listed in the QUARC Compatibility Table included in the installation software and online at [www.quanser.com](http://www.quanser.com)
2. Follow the QUARC Installation Guide for further installation and testing instructions.
3. Make sure the QUARC Sine and Scope Demo successfully runs before continuing.

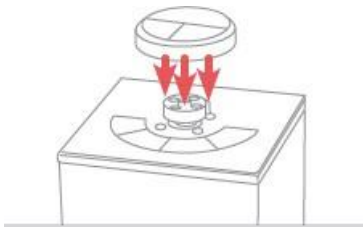
### STEP 3 Set Up the Hardware

The steps below outline the instructions to setup the Qube-Servo 3.

- A

Place the Qube-Servo 3 on a flat surface with enough space so that the modules will not be obstructed.

B



Connect the inertia disc module to Qube-Servo 3 base by aligning the inertia disc magnets with the magnets on the Qube-Servo 3 module connector. The module should snap into place.

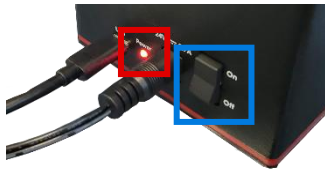
C



First, connect the supplied 24V power supply to the **Power connector** on the Qube-Servo 3 and then to a wall outlet using the included power cable.

Next, connect the **USB C connector** to the Qube-Servo 3 and then to a USB port on your desktop PC or laptop.

D



Move the **power switch** to the On position.

The **Power LED** on the Qube-Servo 3 should light up red.

E

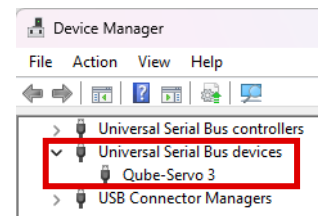
If step 2 was done successfully, Windows<sup>1</sup> should automatically detect the presence of the Qube-Servo 3.

F



The **Power LED** on the Qube-Servo 3 should change from red to green and the top LED lights should turn red.

G



Go to Windows Device Manager and verify that the Qube-Servo 3 item appears under the *Universal Serial Bus devices*.

## STEP 4

### Testing the Qube-Servo 3

Follow the procedure below to test your Qube-Servo 3 experiment.

A

Make sure your PC and the Qube-Servo 3 are powered ON and connected.

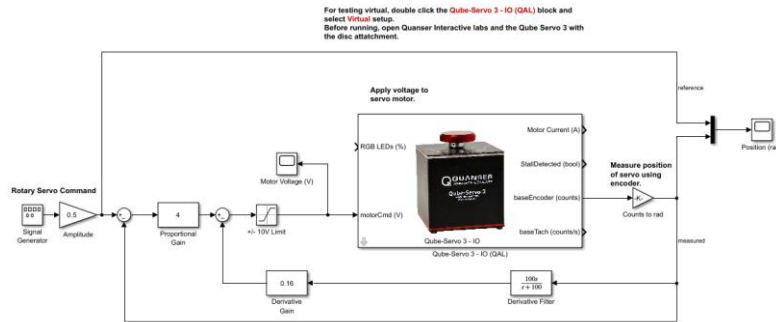
B

1. Download the Qube-Servo 3 **Simulink Technical Resources** and **Simulink Courseware Resources** from [www.quanser.com/resources](http://www.quanser.com/resources).
2. Extract the **Technical Resources** file to a folder on your local hard drive.

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

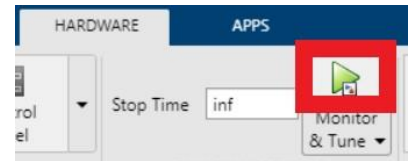
C

Open the Simulink model file (.slx) found in the **Technical Resources\Quick Start\Software** folder on your hard drive.

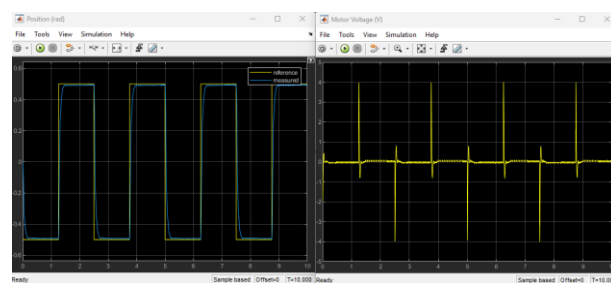


D

Click on the **Monitor & Tune** button under the *HARDWARE* or *QUARC* tab in Simulink to build and run your model in QUARC.



E

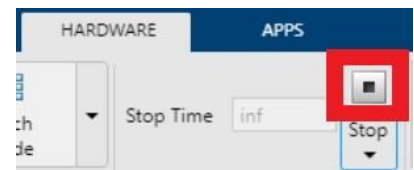


The scopes should look like those shown here.

The measured angle (in blue) should be tracking the desired angle (in yellow) in the **Position (rad)** scope. The motor voltage is displayed in the **Motor Voltage (V)** scope. If it is not working, consult the Troubleshooting section at the end of this guide.

F

Click the **Stop** button under the *HARDWARE* or *QUARC* tab to stop the QUARC model.



## TROUBLESHOOTING

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

Check the connections outlined in Step 3 of this guide and ensure that the cables are connected firmly.

Getting an error when trying to build or run the Quick Start Simulink model

- Verify that the MATLAB/Simulink and compiler version are compared with your version of QUARC. See the QUARC Software Compatibility table supplied in the QUARC Quick Installation Guide or online at <http://www.quanser.com/products/quarc-real-time-control-software/>.
- Type **ver** in the MATLAB Command Window and verify that Quanser Real-Time Control (QUARC) is on the list. If not, then go through the QUARC Quick Installation Guide to install QUARC. If it is listed, run mex-setup as described in the QUARC installation guide.

You see 'An operating system specific kernel-level driver for the specified card could not be found' message.

- A. Make sure the Qube-Servo 3 is connected to your PC/Laptop with the supplied USB cable to an enabled USB port.
- B. Ensure the green *Power* LED on the Qube-Servo 3 is lit. If not, confirm that the power supply is operational (i.e., LED is lit) and properly connected.
- C. Ensure the *qube\_servo3\_usb* has been selected as the board type in the HIL Initialize block, as outlined in step 5D.

The Motor is not responding.

Ensure the green *Power* LED on the Qube-Servo 3 is lit. If not, make sure the power supply is operational and properly connected.

LEARN MORE

To browse and download the latest Quanser resources visit  
[www.quanser.com/courseware](http://www.quanser.com/courseware)

STILL NEED HELP

For further assistance from a Quanser engineer, contact us at [tech@quanser.com](mailto:tech@quanser.com)  
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