Quick Start Guide: QArm Mini

STEP 1 Check Components and Details

Make sure you have the following items ready before you begin:

Ensure your QArm Mini Manipulator includes the following components

1. QArm Mini
2. Base Plate
3. 24V 2.71A Power Supply
4. USB-B to USB-C 3.0 QArm Mini interface cable

Ensure you local computer has the following components

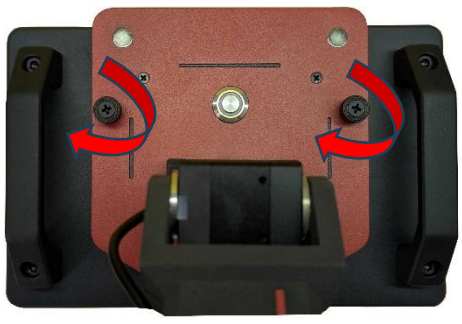
1. Windows 10/11 operating system
2. MATLAB® 2024a or later installed w/ MATLAB® Coder & Simulink® Coder
3. QUARC 2024 SP1 or later installed

STEP 2 Setup the Hardware

The steps below outline the instructions to setup the QBot Platform for testing:

A

Firmly secure the QArm Mini to the base plate by tightening the thumb screws.



B

Place the QArm Mini on a flat surface and ensure that a cylindrical space of 0.5m radius and height is around it so that all the joints can rotate freely.

C

1. Connect the provided power supply to the power port of the QArm Mini.
2. Connect the QArm Mini to your workstation using the provided USB-B to USB-C cable.
3. Power switch used to turn ON/OFF the QArm Mini.

D

Rest Configuration

Home Configuration

1. Ensure that the power switch is OFF.
2. Move the QArm Mini to Rest Configuration.
3. Turn ON the power switch.
4. The LED around the power switch should glow RED.

STEP 3 Running an example

The steps below outline the instructions to run the Quick Start Example for MATLAB®/Simulink®:

A

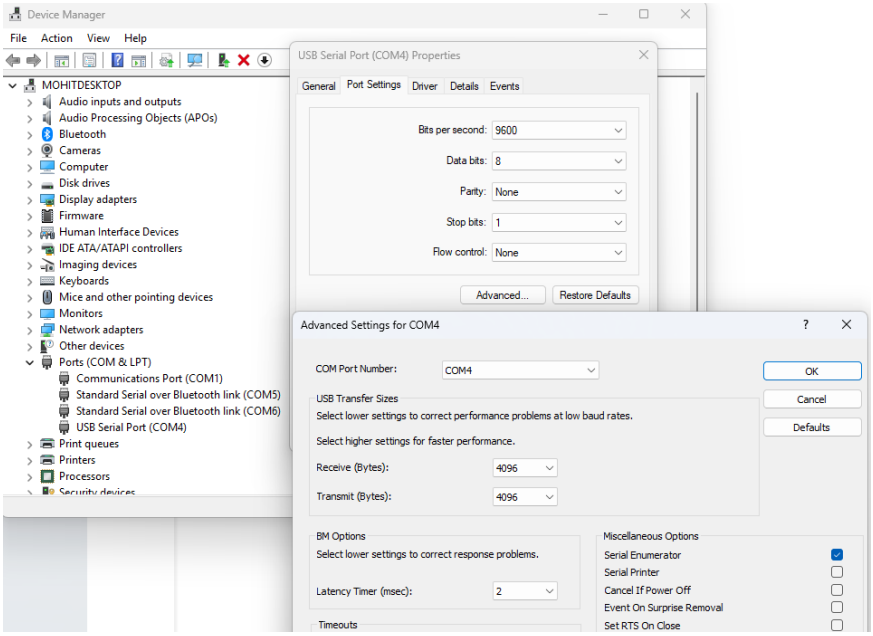
Check and update the latency setting:

i. Navigate to Device Manager > Ports

ii. Select the appropriate device - USB Serial Port (COMx) Make a note of the COM port Number.

iii. Go to Port Settings > Advanced > Latency

iv. Set the latency to 2 ms



B

1. Lauch Visual Studio.
2. File > Open Folder, navigate to the 2_quick_start_guides directory inside Quanser folder.
3. Open the qarm_mini_quick_start.py file under qarm_mini/hardware/python

C

Update the id parameter to match the correct COM port.

```
myMiniArm    = QArmMini(hardware=1, id=7)
```

Run the script using the ▷ button on the top right corner.

D

The manipulator starts in the home position. Note the following actions you can take.

1. Tap any of the 1 through 4 NUMBER keys on your keyboard once (not the NUMPAD keys). This selects the corresponding joint on the QArm Mini.
2. Press and hold the UP or DOWN ARROW keys to increase or decrease the selected joint's position respectively.

Try using the NUMBER keys and ARROW keys to familiarize yourself with the motion of the arm. Try to reach each joint's positive and negative limits safely.

E

Stop the model. While supporting the QArm Mini manipulator by hand, turn OFF the power switch. The manipulator should now be gently moved to the Rest Configuration.

TROUBLESHOOTING

Common issues and possible solutions

QArm Mini Power switch LED does not light up	Ensure that the power connector is connected firmly. Ensure that the USB-B to USB-C cable is connected to the manipulator and your workstation properly. 

LEARN MORE

To browse and download the latest Quanser resources visit www.quanser.com/courseware or call +1-905-940-3575

STILL NEED HELP

For further assistance from a Quanser engineer, contact us at tech@quanser.com