

Autonomous Vehicles Research Studio

Setup Guide – Software and QUARC Testing

v 2.0 – 18th April 2023

Table of Contents

A. MATLAB Licensing and Toolboxes	2
B. Checkpoint – Sine Scope Demo	3

A. MATLAB Licensing and Toolboxes

The PC already comes with all the required software installed and configured, as shown in table 1.

Software	Version QDrone 1 Qbot 2/2e	Version QDrone 2	Installed?	Licensed?
MATLAB/Simulink	R2019a	R2023a	<input checked="" type="checkbox"/>	<input type="warning"/>
QUARC	2020 SP1	2023	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Visual Studio Community Compiler	2017	2022	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Motive	2.0	2.x	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Bonjour for Windows	2.0.2+	2.0.2+	<input checked="" type="checkbox"/>	N/A

Table 1: Software Summary



IMPORTANT: The MATLAB/Simulink license on the ground station supplied is a **trial** license only valid for 30 days. The end-user **must** acquire and configure the appropriate MATLAB/Simulink license. Please contact the MathWorks representative in your region or your IT department.

Please check if your MATLAB/Simulink versions are **compatible** with the Quanser QUARC software (see the QUARC documentation or Compatibility Table) and ensure that your MATLAB/Simulink license includes:

1. MATLAB Coder
2. Simulink Coder
3. Control Systems Toolbox

Note: Depending on MATLAB configuration on your system you may be using the default date/time format. It is recommended to use uuuu-MM-dd HH:mm:ss as the "**Default date and time format**" which can be found under MATLAB Preferences/Command Window.

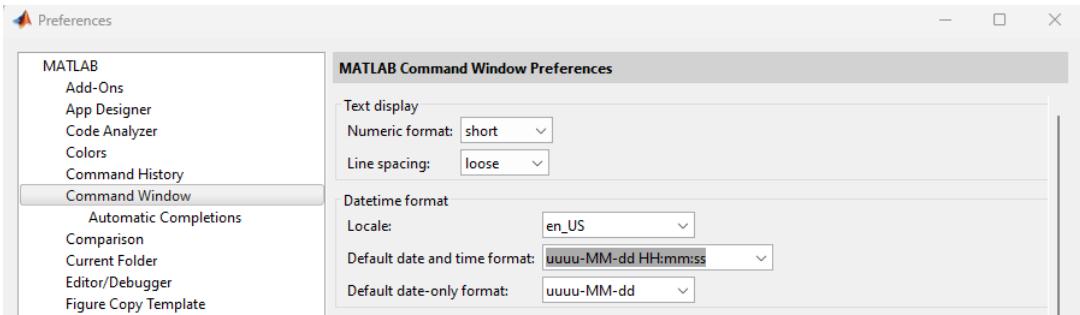


Figure 1: MATLAB date and time settings

B. Checkpoint – Sine Scope Demo

1. Open the MATLAB version installed on your computer.
2. In your **MATLAB Command Window**, type
`>> ver`
 Make sure that the list includes:
 Quanser Real-Time Control (QUARC)
3. In the **MATLAB Command Window**, type
`>> qc_show_demos`
4. In the **QUARC Examples Help** page, click on the QUARC Sine and Scope Demo under **Basic Features**.
5. Click on **Open this Model** on the top right of the page, which opens a Simulink/QUARC model.
6. In the model that loads, click on the **HARDWARE** tab on the top menu and click the green play button (**Monitor & Tune**). It should build and start the model.
7. The open **Scope** should display a sine wave in real time (Figure 2). If the Scope is not opened, double click it to see the sine wave.

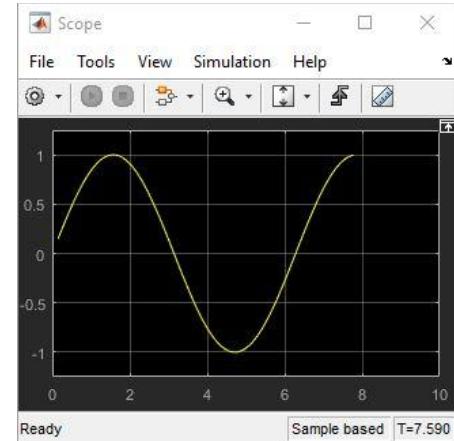


Figure 2: Scope output

This completes the checkpoint task and confirms that your MATLAB/Simulink/QUARC software is running successfully. If you encounter any errors, make sure that all the steps prior to this checkpoint have been followed. If further issues persist, please contact Quanser technical support (tech@quanser.com).

© Quanser Inc., All rights reserved.



Solutions for teaching and research. Made in Canada.