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Guides and Resources: Basic IO - QBot 3

LEDs

This document will summarize how to command the QBot 3's 2 LEDs.

Writing to LEDs

Note: Ensure that your QBot 3 is powered ON and that a connection has been established to it. Follow the steps under Charging Vehicle Batteries and Communicating with the QBot 3 in the Research Studio Setup Guide.

Note: Ensure that you have read and understood all the safety procedures and guidelines regarding charging Lithium Polymer batteries as well as guidelines on using the QBot 3 in a safe manner outlined in the Research Studio Setup Guide. If you have any concerns or questions, please contact Quanser technical support (tech@quanser.com).

Note: Safety eye glasses should always be worn, even outside the net.

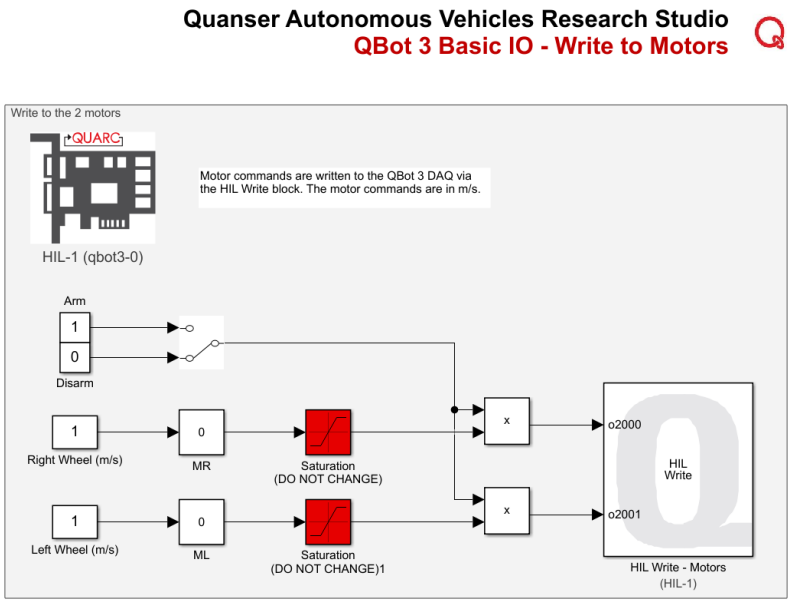

Figure 1: Write_LEDs.slx model

1. Under the Guides and Resources > Basic IO > QBot 3 > Software folder, open Write_LEDs.mdl (Figure 1)

Note: For the latest documentation and controllers, please visit Autonomous Vehicles Research Studio Resources.

Autonomous Vehicles Research Studio Resources weblink:
https://www.quanser.com/products/autonomous-vehicles-research-studio/

2. Under Model Configuration Settings, enter the correct QBot 3 IP address.

Note: See the QBot 3 IO Check section in the Research Studio Setup Guide for more information.

3. Build the model (QUARC menu > Build).

4. Start the model (QUARC menu > Start).

5. The QBot 3 will emit a sequence of beeps signifying that the model is running.

6. Change the 4 manual switches between 0 and 1 to change the 2 user-programmable LEDs on the QBot 3 between the 4 states - OFF, Red, Green and Yellow. The corresponding LED on the QBot 3 should change its color accordingly (Figure 2).

Figure 2: User programmable LEDs on the QBot 3

Note: A HIL Initialize block must always be present and configured correctly for any IO to take place. The HIL read/write blocks allow you to read from and write to the channels configured in the HIL Initialize block. See Guides and Resources > Concepts for more information.

7. Stop the model.

This completes a tutorial on how to write values to the LEDs.