

Simulink Configuration Guide with Arduino

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Revision: x

Status: Final

Description: Simulink configuration guide with Arduino UNO3

Prerequisites:

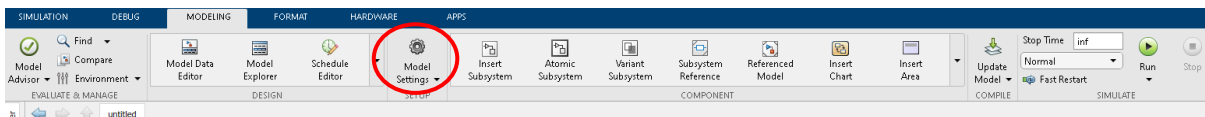
- Matlab Simulink with the Arduino toolbox.
- Arduino board
- USB cable.

Step 1: Connect the Arduino to the PC via the USB cable.

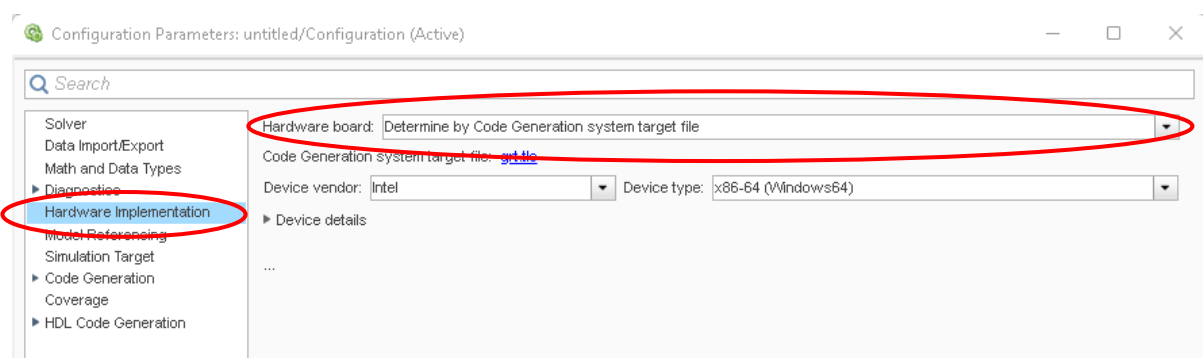
Step 2: Open Simulink.

Step 3: Create a new blank document.

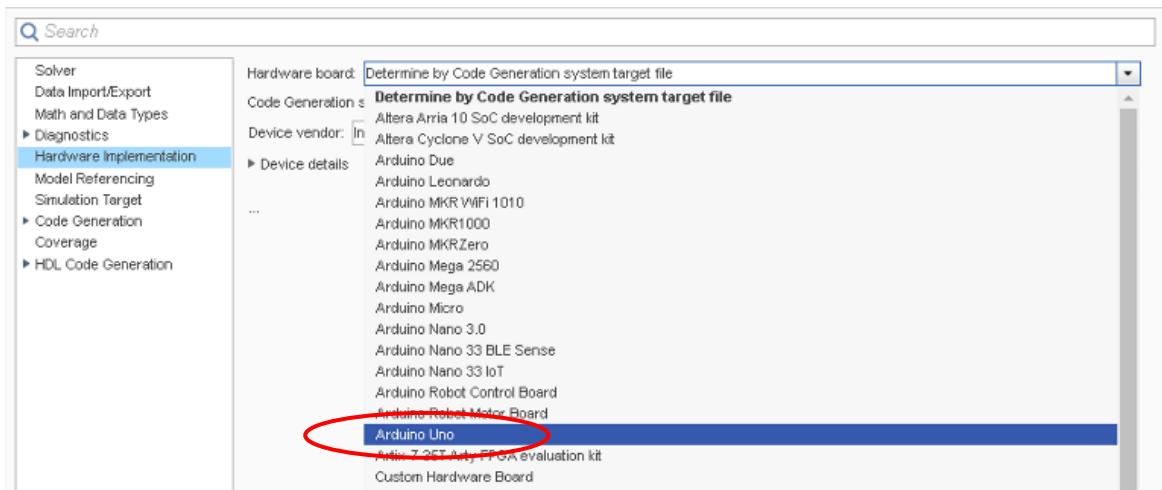
Step 4: Navigate to the "Commonly Used" toolbar → "Modeling" → "Modeling Settings".



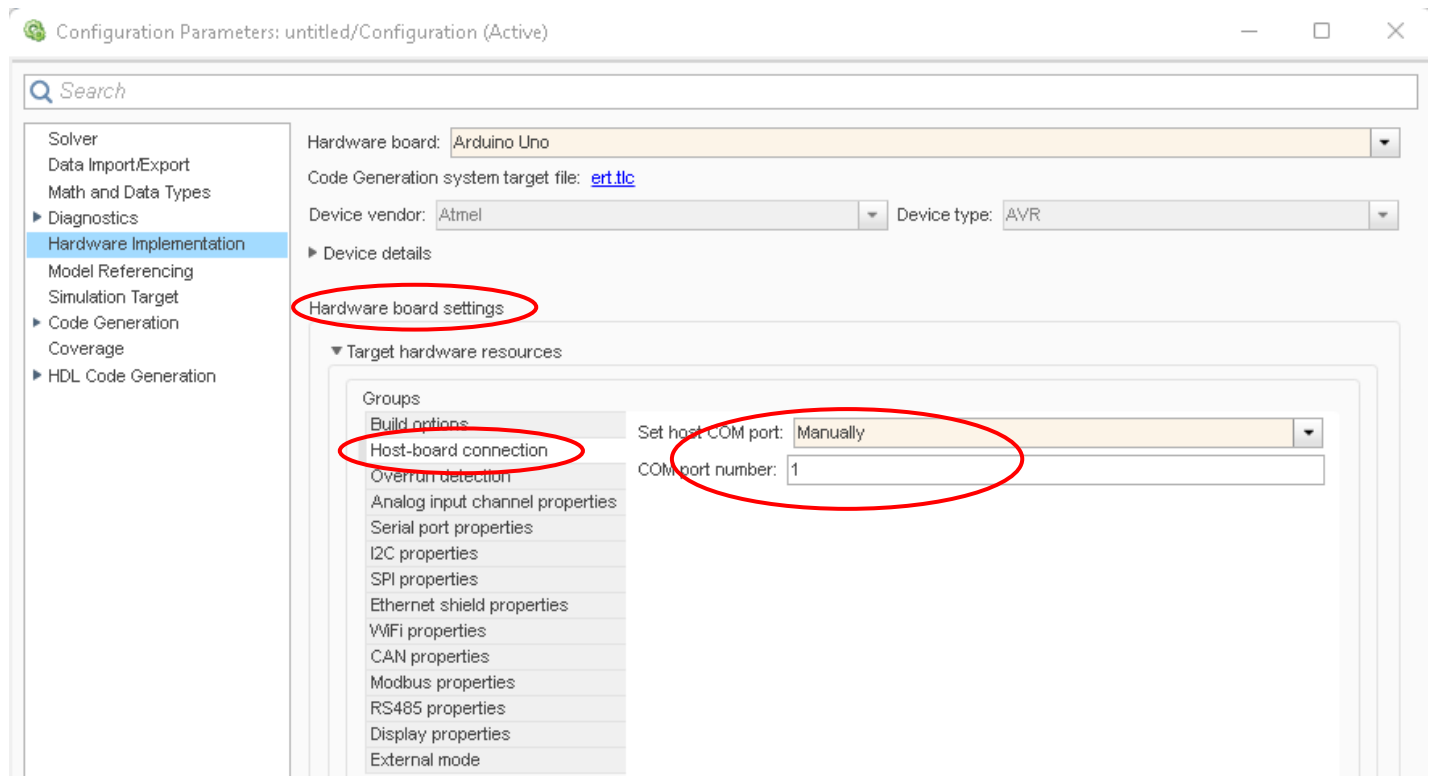
Step 5: Navigate to "Hardware Implementation" → "Hardware Board".

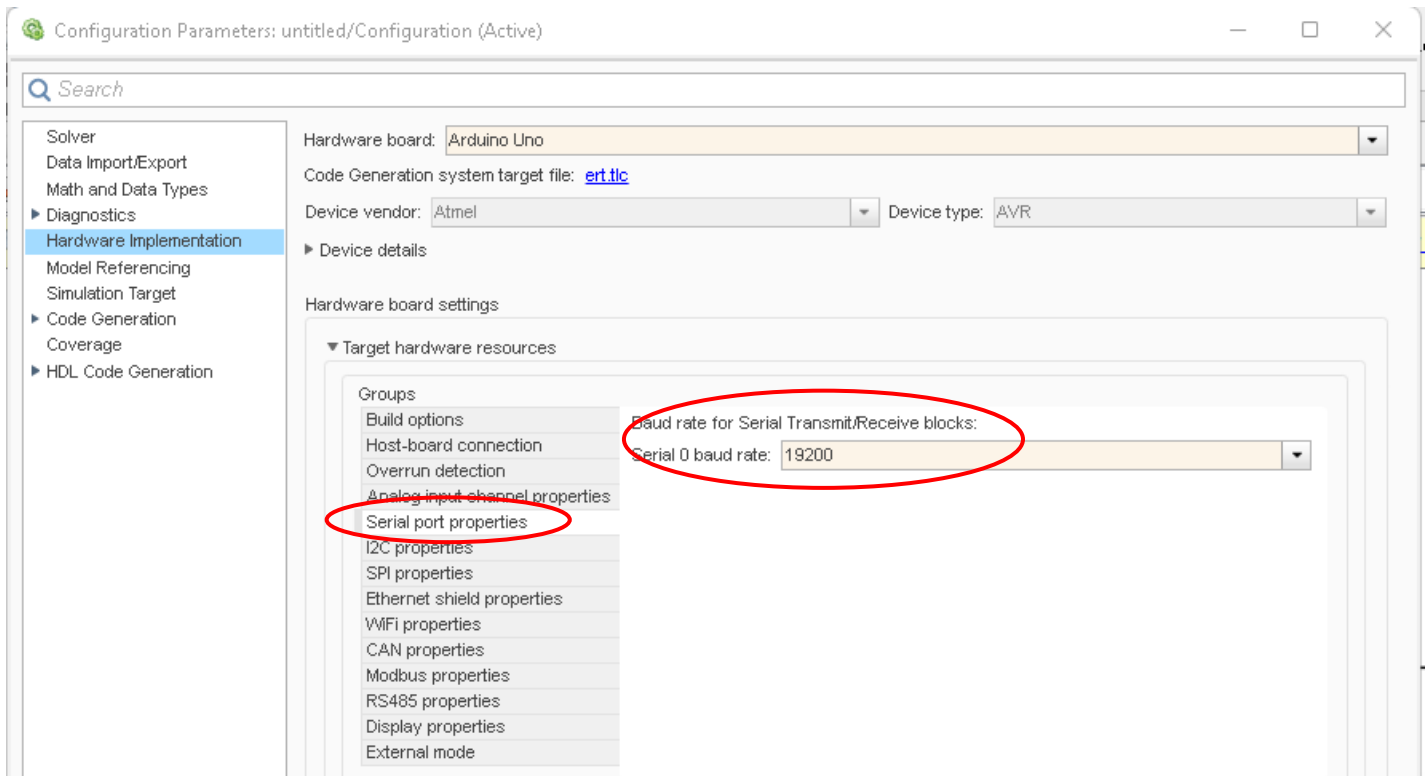


Step 6: Select the connected Arduino board.

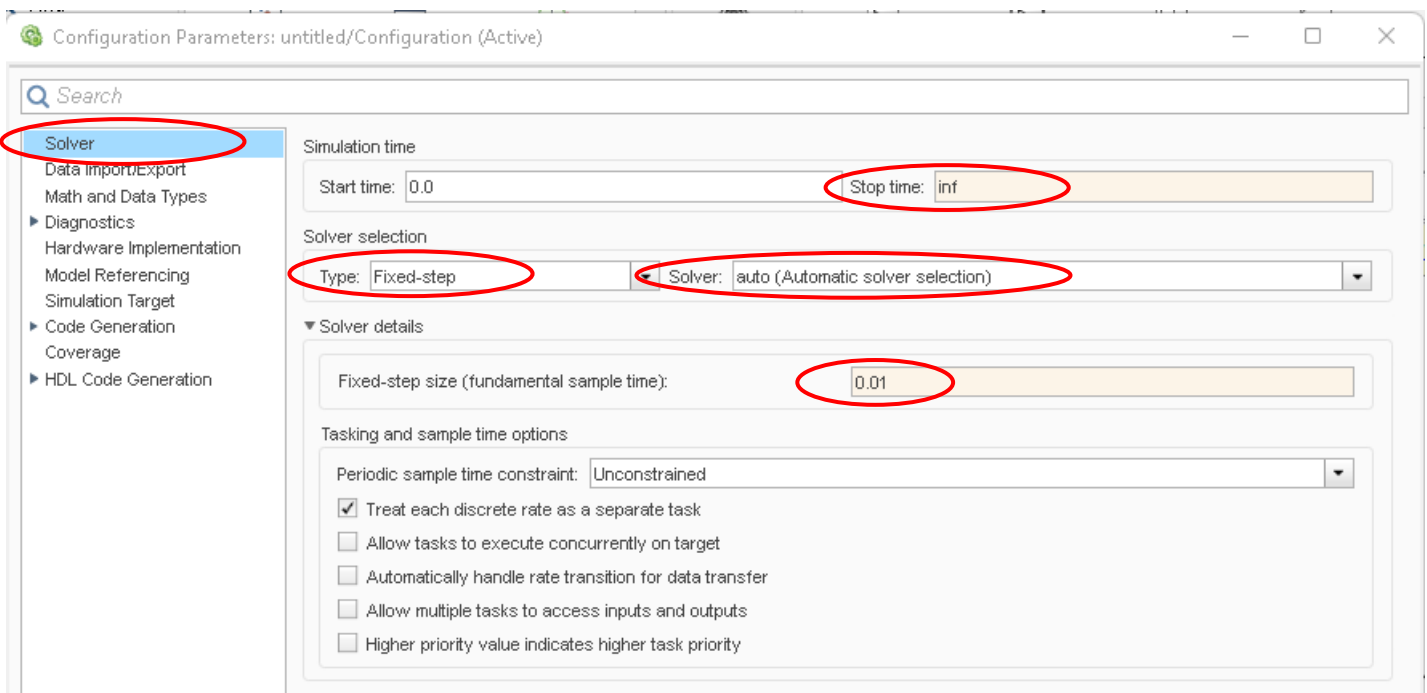


Step 7: After selecting the Arduino board, click on "Hardware Board Settings".



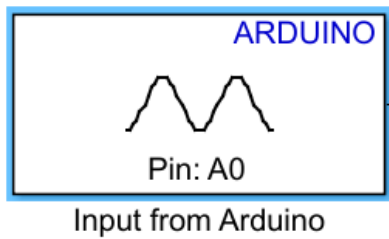


Step 8 : Navigate to the "Solver" settings.



Step 9 : Apply and OK.

Step 10 : In Simulink, add an "Analog Input" block, then adjust the following settings:



Block Parameters: Input from Arduino

Arduino Analog Input

Measure the voltage of an analog input pin.

The block outputs the voltage of the specified analog pin as a digital value.

For Arduino Due, Arduino MKR1000, Arduino MKR WiFi 1010, Arduino MKRZero and Arduino Nano 33 IoT the voltage is measured as a 12-bit value ranging between 0 and 4095. For all other boards, the voltage is measured as a 10-bit value ranging between 0 and 1023.

An output of 0 indicates that the voltage at the specified pin equals the ground voltage. An output of 4095 (for Due, MKR1000, MKR WiFi 1010, MKR Zero and Nano 33 IoT) and 1023 (for all other boards) indicates that the voltage at the specified pin equals the analog reference voltage.

View pin map

Pin number: 0

Sample time: 0.01

OK Cancel Help Apply

Step 11 : Create the program that converts input from Arduino to voltage