RENSSELAER MECHATRONICS
# RASPLIB INSTALLATION INSTRUCTIONS 2020A

Rensselaer Arduino Support Package - RASPlib installation Instructions 2020a:

Prerequisite: MATLAB/Simulink 2020 and Arduino Support package for Simulink has been installed.

RASPlib Installation and Verification

1. Obtain RASPLib from: https://www.mathworks.com/matlabcentral/fileexchange/62702-rensselaer-arduino-support-package-library--rasplib-

2. Unzip the contents and copy the "RASPlib" folder and 'startup.m' file to your home MATLAB directory for example C:\Users\hurstj\Documents\MATLAB\RASPlib (**not** the installation directory, e.g C:\Program Files (x86)\MATLAB):

   o There should be a RASPlib and 'startup.m' file in the directory:
     C:\Users\hurstj\Documents\MATLAB\
     - Folder location: C:\Users\hurstj\Documents\MATLAB\RASPlib
     - File location : C:\Users\hurstj\Documents\MATLAB\statup.m

   Exactly as shown below:
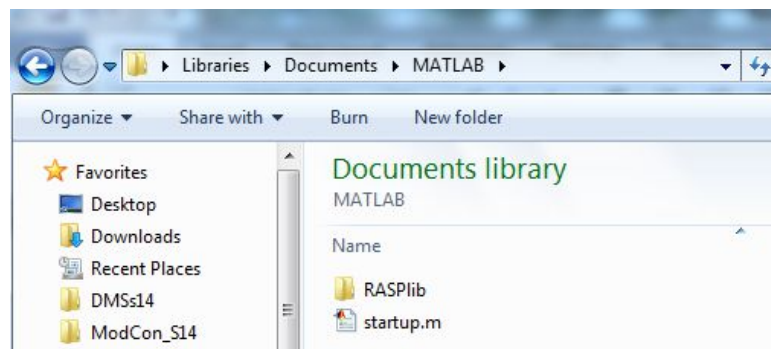
   - NOT C:\Users\hurstj\Documents\MATLAB\RASPlib\RASPlib
   - NOT C:\Users\hurstj\Documents\MATLAB\RASPlib\startup.m
   - NOT ...\Documents\MATLAB\hurstj01-RASPLib-36dd13e\hurstj01-RASPLib-36dd13e\RASPlib
   - NOT ...\Documents\MATLAB\hurstj01-RASPLib-36dd13e\RASPlib

3. Open RASPlib from the MATLAB file browser:
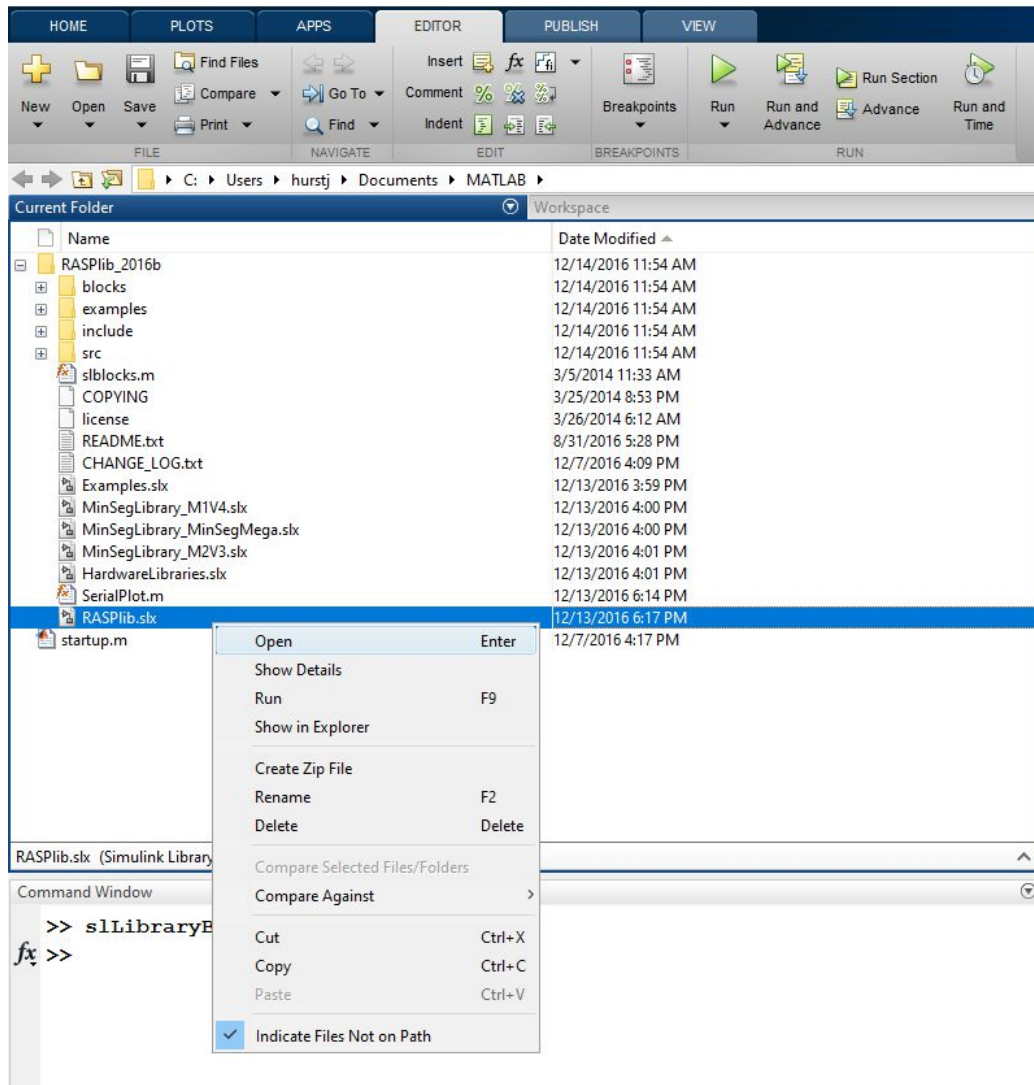
4. Open the demo file for your particular hardware (if you have a generic hardware setup you can create a Simulink example using the one of the available blocks in the main library or adopt any of the provided device specific libraries blocks using the indicated pins). **The demo**
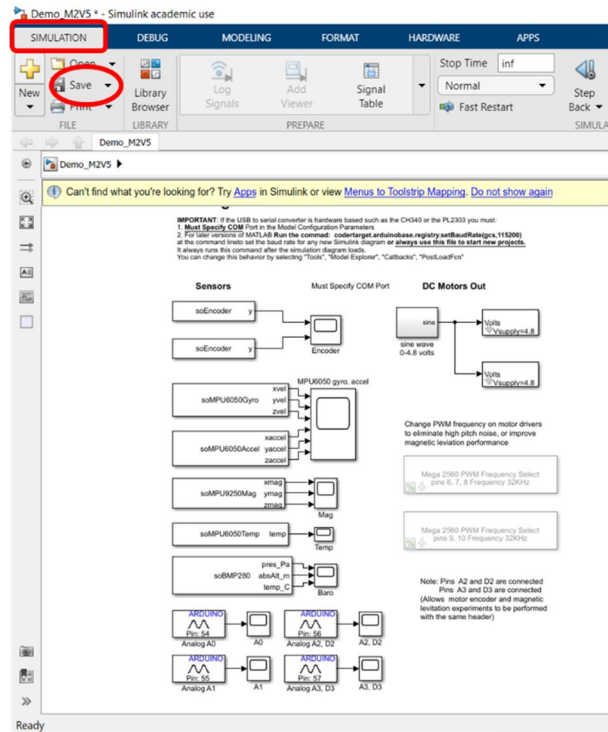
for the board at RPI is M2V5.
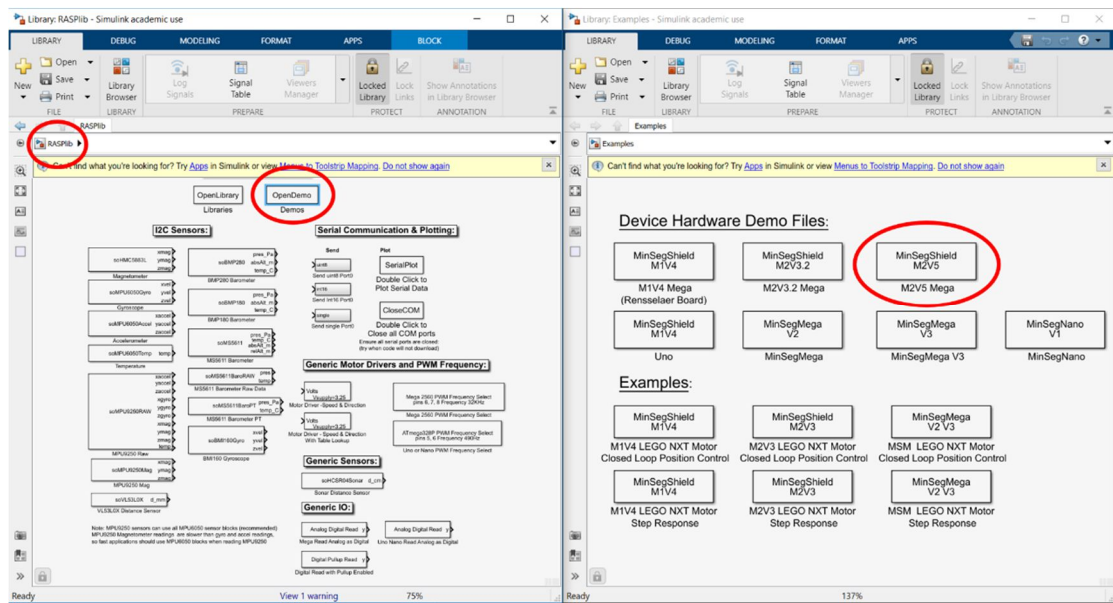
You can also open examples directly from the "examples" folder in "RASPlib" folder.
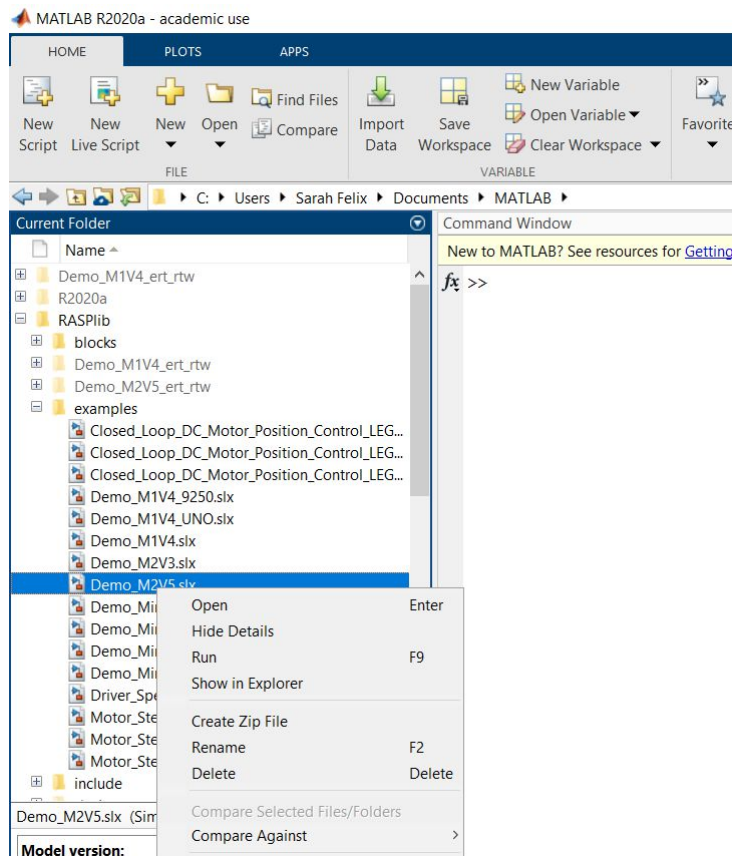
- After opening the Demo save it to your home directory with "save-as" (under the "SIMULATION" tab). From now on you can create Simulink diagrams in any location and just drag the blocks from the library since MATLAB knows where all the necessary library files are.
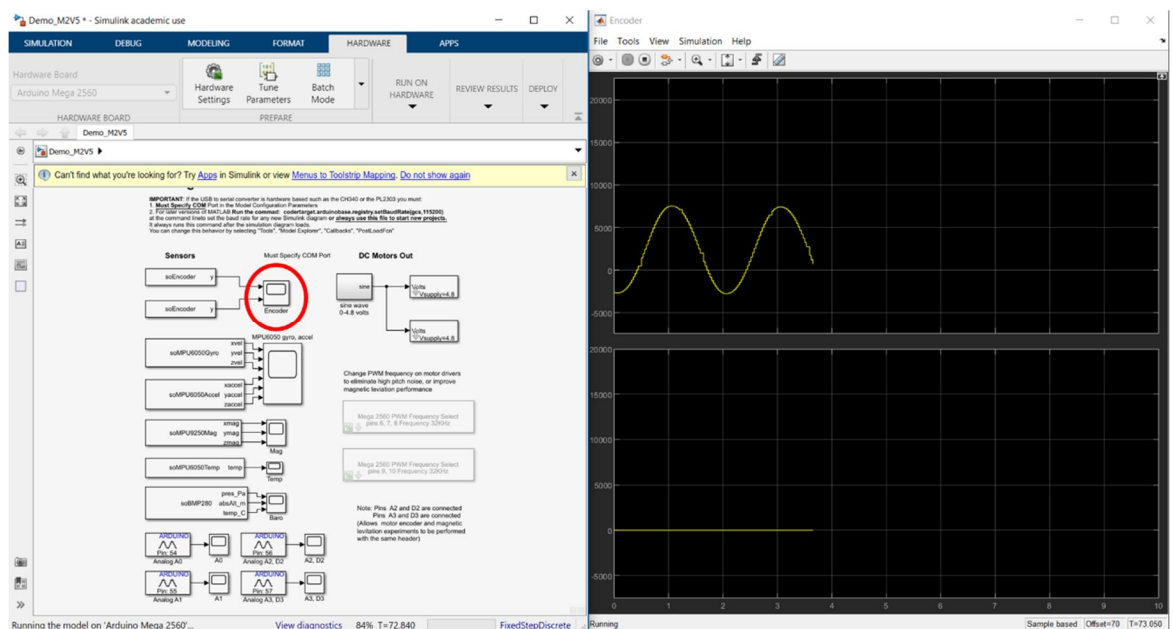

- Run the demo on the hardware by clicking "Monitor & Tune" under the "HARDWARE" tab:
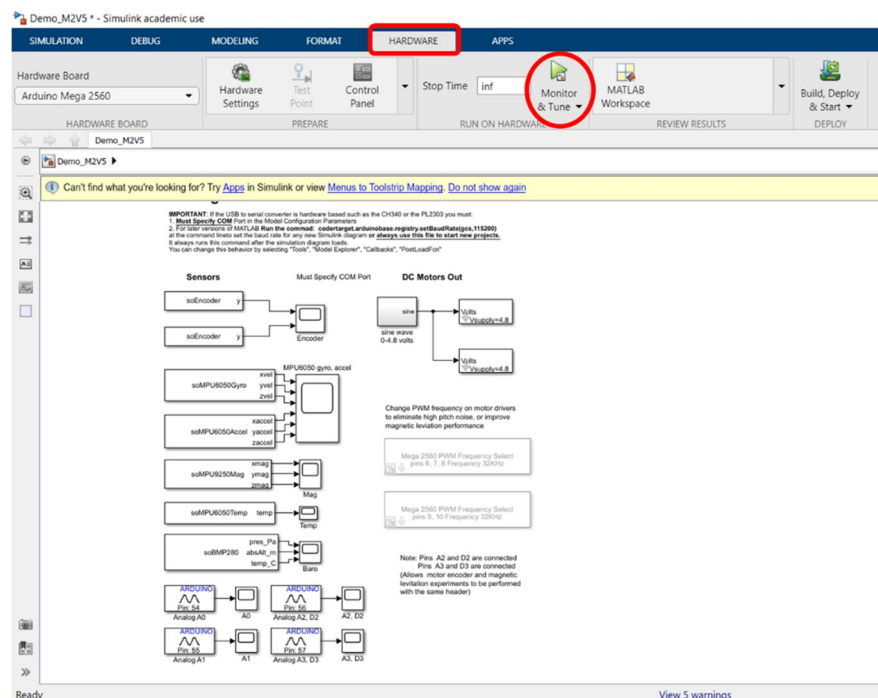
- If it cannot find your COM port, right click in the demo file and select "Model Configuration Parameters" to specify your COM port and setup the hardware.
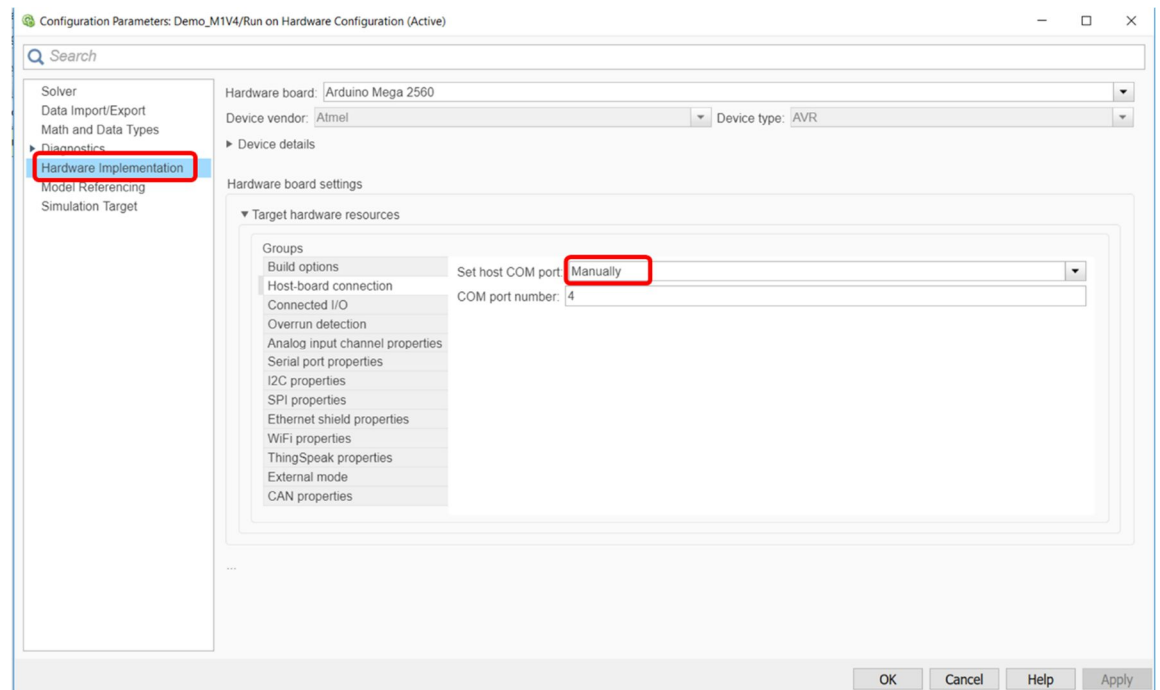
If any motors are hooked up they should begin to move back and forth. You can view the outputs of the sensors by double clicking scope.
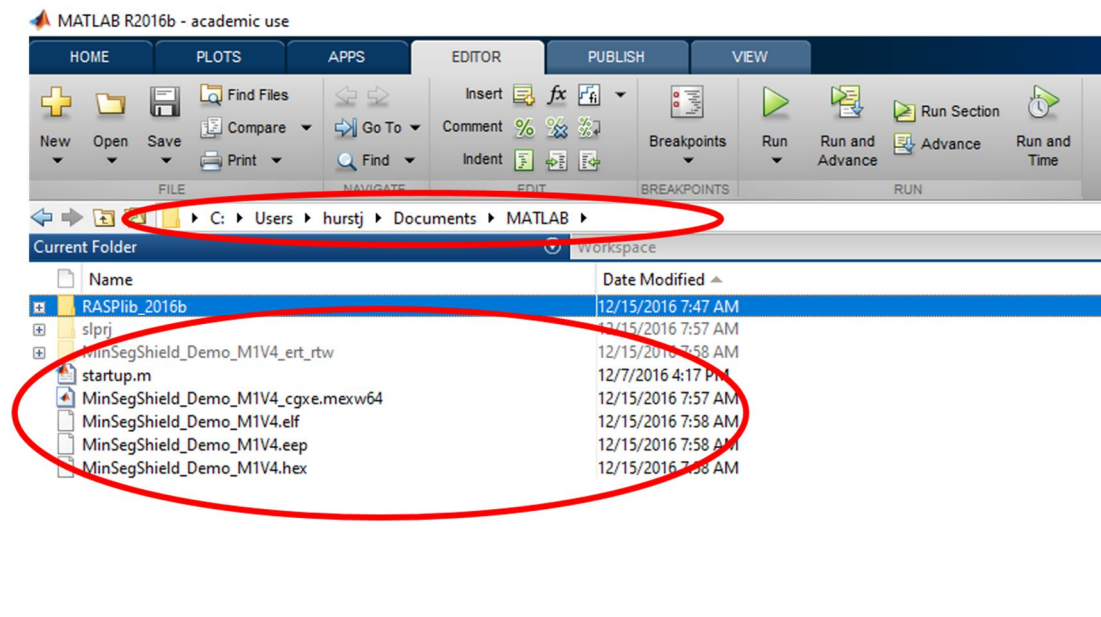

Other examples for the hardware can now be run.

Troubleshooting

1. Cleaning Compilation files

When you press "Run" or "Deploy to Hardware" the code will get compiled in the current directory and necessary compilation files and folders are produced in the current directory:


To help keep your files organized it is recommended to create a folder to compile in, this way all the compilation files and folders can be deleted. Sometimes if there is unusual behavior or errors delete all these temporary compilation files.
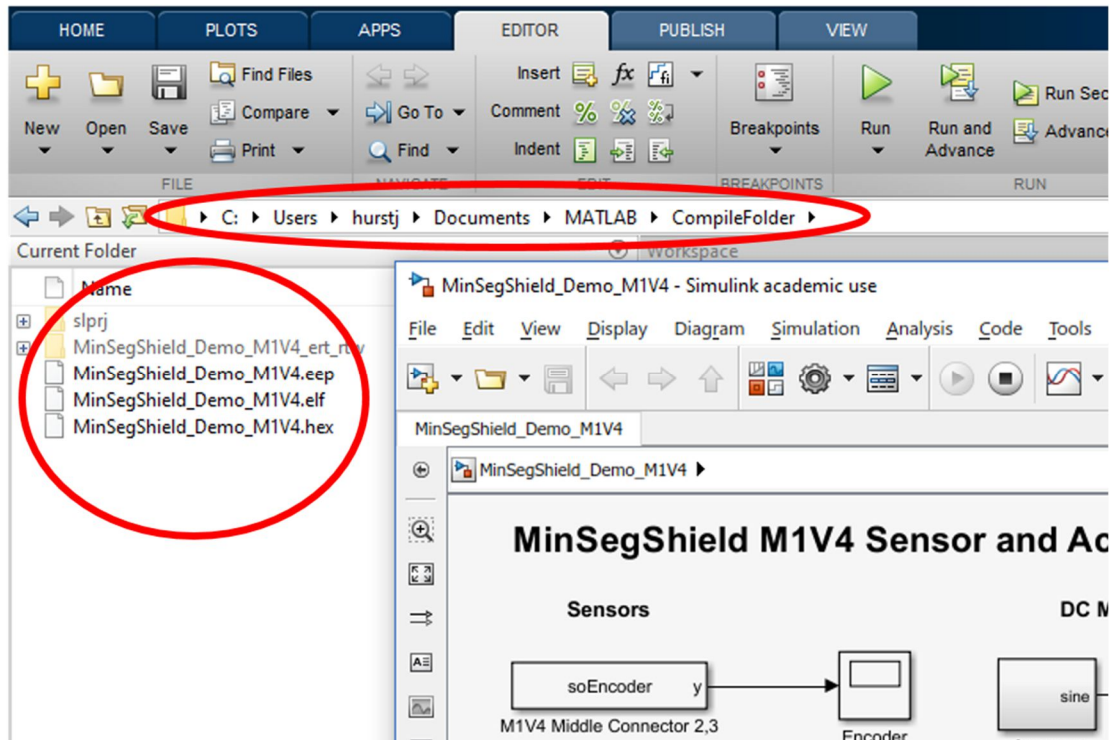
In general, you will not want to delete the files unless you suspect a problem. When the code is first compiles it can take a while, but after the first compilation it can be much faster if these files exist already.

If there are compilation problems, try cleaning up the temporary compilation files:
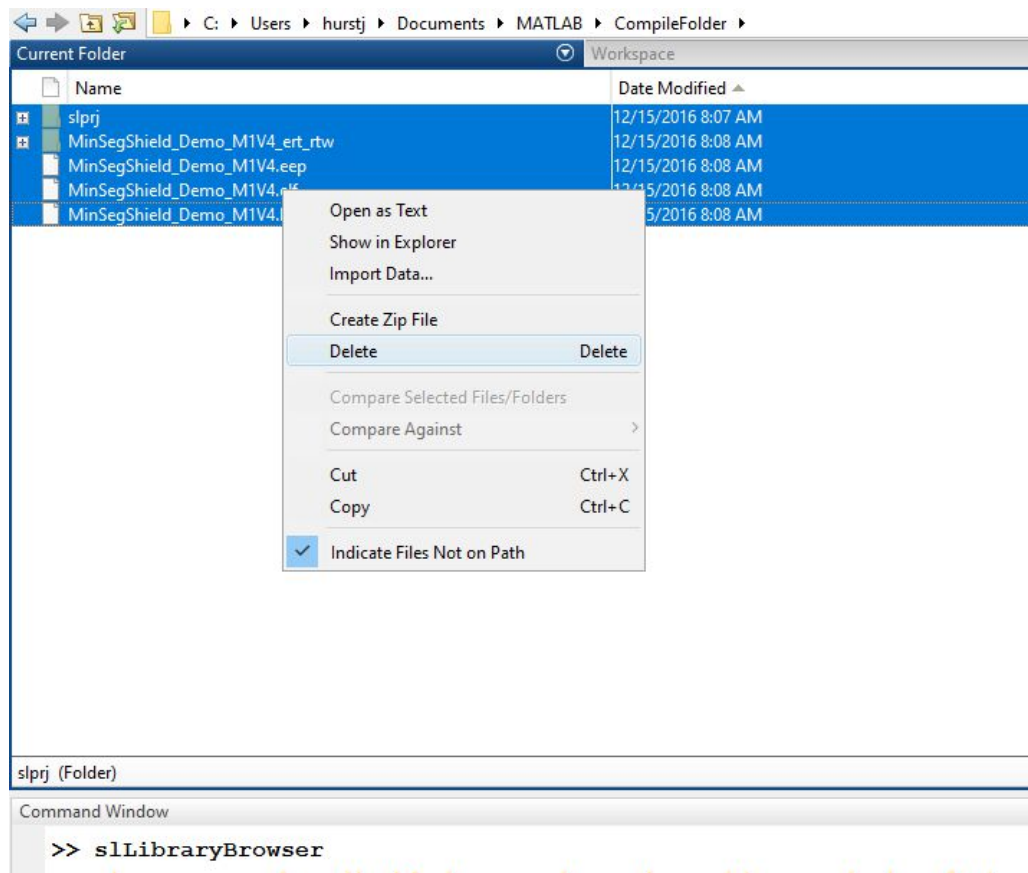
2. If the system gets "stuck" building, or cannot find the COM port
   a. Try disconnecting and reconnecting the USB cable