SPERTE Installation

Required Matlab prerequisites

Matlab R2020a, R2020b or R2021a is strongly recommended, but R2018b or R2019x should work as well.

Matlab R2021b is not supported yet.

Toolboxes

In order generate and compile c-code and to work with the SPERTE system you will need the following toolboxes:

- MATLAB Coder
- Simulink Coder
- (Optional) Embedded Coder

These can be installed from the **add-on explorer in Matlab**.

Moreover, the **`Signal Processing Toolbox`** is recommended for Frequency domain analysis.

Compiler

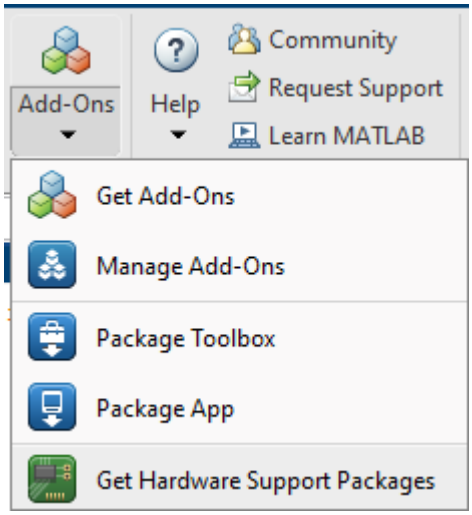
To compile some of the c-code provided along with the SPERTE installation, you will need a suitable compiler. You can check if you already have a compiler by running the command

```
mex -setup.
```

If this is not the case, please download a compatible compiler.
See the Mathworks page for more info.

Warning, MACOS users will need to download XCode, this package is quite large and installation can take a long time. Please ensure you have this installed before an experimenting session.

Hardware support package

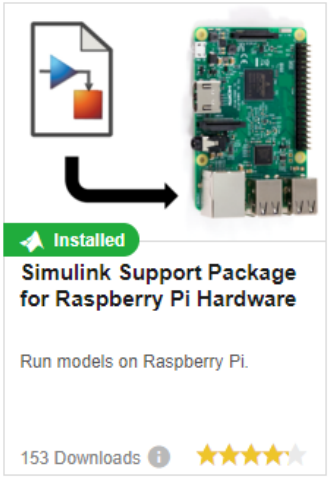


To install the required hardware support package, open the Add-on explorer in Matlab. You can do so by clicking on "Get hardware support packages" in the "Add-Ons" menu.

In the search bar, type **raspberry** to find 2 hardware support packages. Please install, in this order, the following packages:

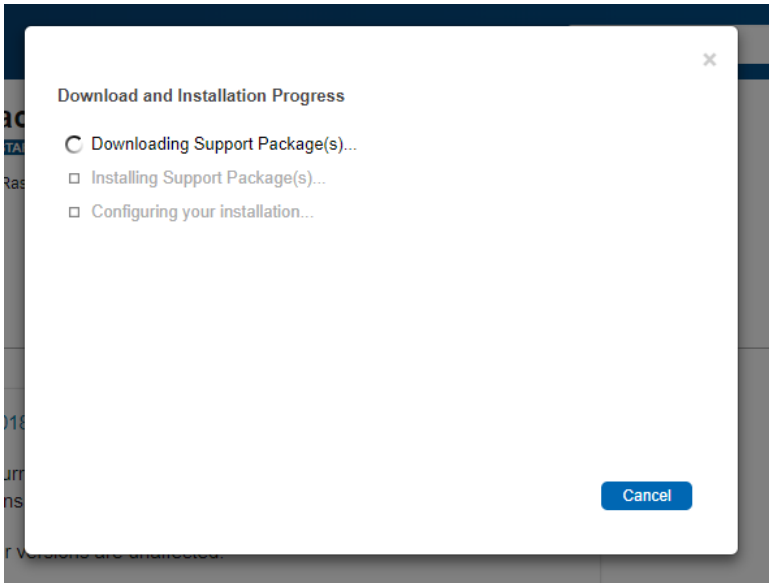
1. MATLAB Support package for Raspberry Pi Hardware.
2. Simulink Support Package for Raspberry Pi Hardware.

See below for how to install these packages.
Choose 'Setup later' when prompted!



Matlab hardware support for Raspberry Pi

Please install the support package, after opening the package you should see the following screen.



If you are asked to setup the Raspberry Pi, please select: Setup later

The installation should finish after downloading and installing the required tools and scripts. No further action is required.

Simulink hardware support for Raspberry Pi.

Please install the support package, don't perform any setup.

When you are doing the experiments, you can test the connection to the setup by using:

```
p = raspi(IP_ADDRESS,'pi','PASSWORD')
```

where `IP_ADDRESS` is the ip-address of the SPERTE setup and `PASSWORD` the password. This will be provided with the specific setup.

Installing the SPERTE Tooling and examples

- Download the provided SPERTE_Installation.zip file containing the SPERTE tools.
- Unpack the folder to your Matlab path.
- Execute the command: **SPERTE_Install_User()**

This should install the required tools, compile the c-code and add everything to your Matlab path.

After this step is completed you are ready to perform the experiments.
Feel free to explore the example model provided in the Examples folder.
