

**Universidade Federal da Paraíba – UFPB**

**Centro de Energias Alternativas e Renováveis – CEAR**

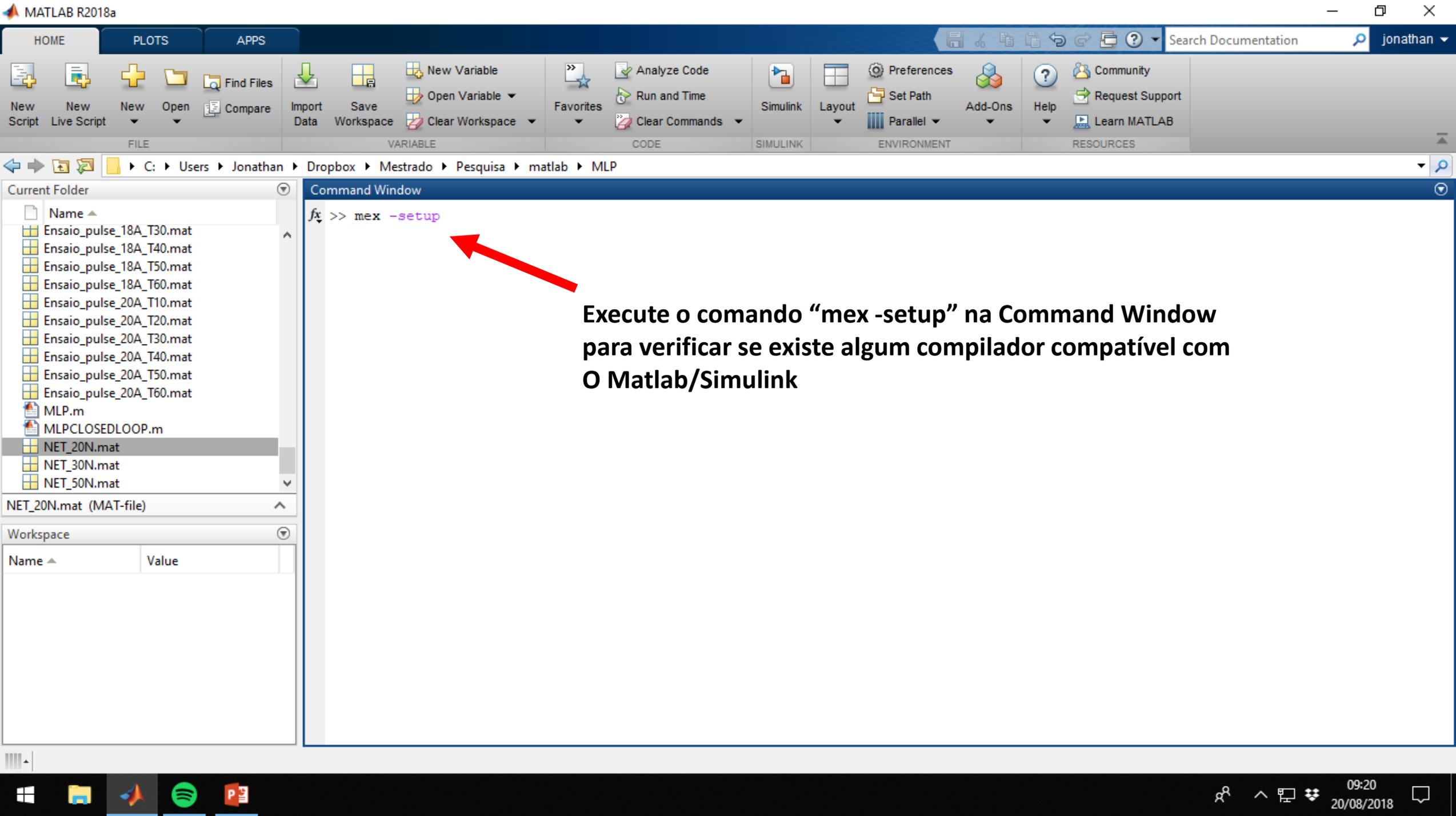
**Programa de Pós-Graduação em Engenharia Elétrica - PPGEE**

# **Tutorial: Geração de Códigos para Arduino na Ferramenta Simulink**

**Aluno:** Jonathan Jefferson Pereira Moura

**Orientador:** Juan Moisés Maurício Villanueva

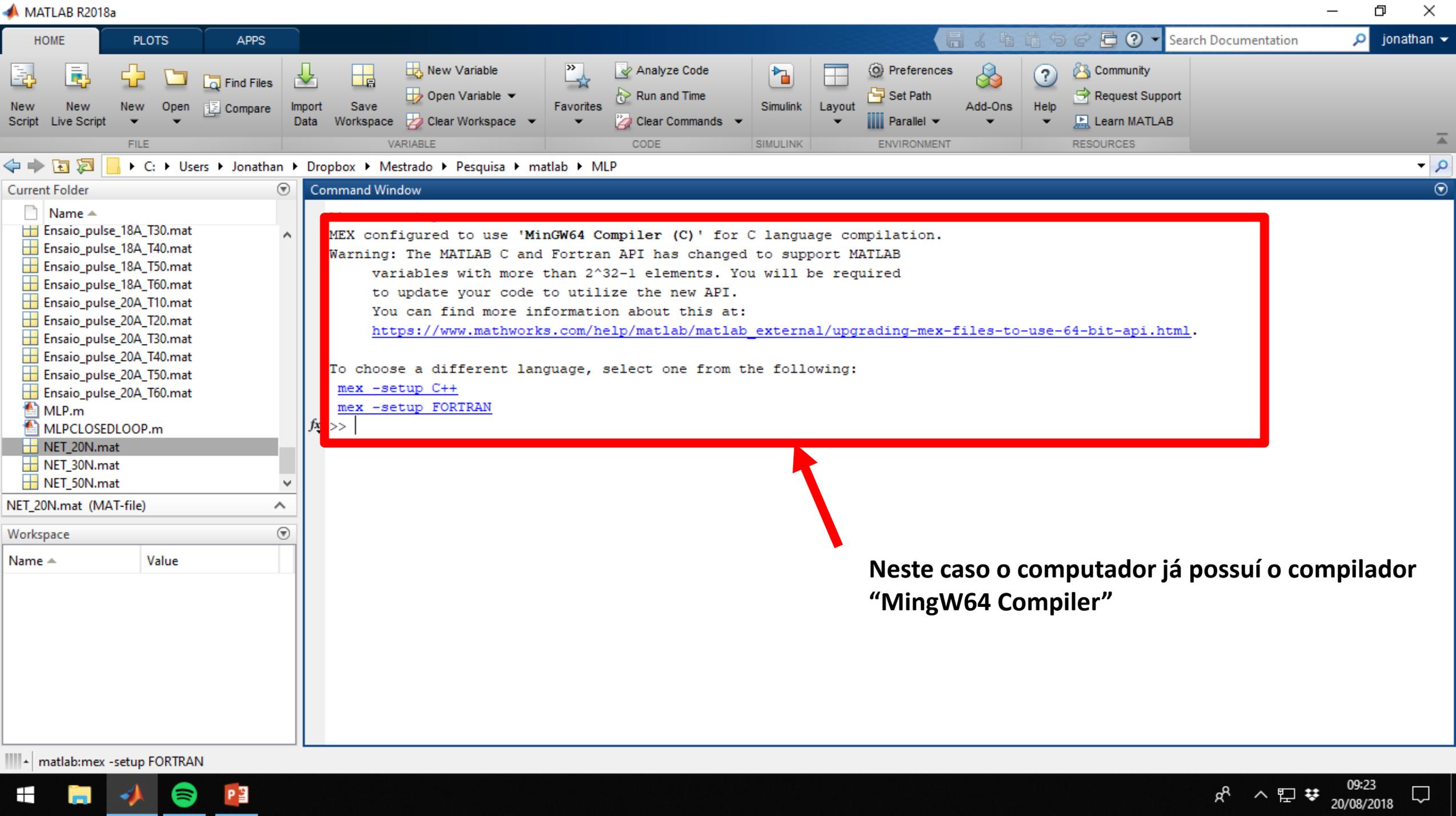
# Instalando o MinGW64 *Compiler*



Command Window

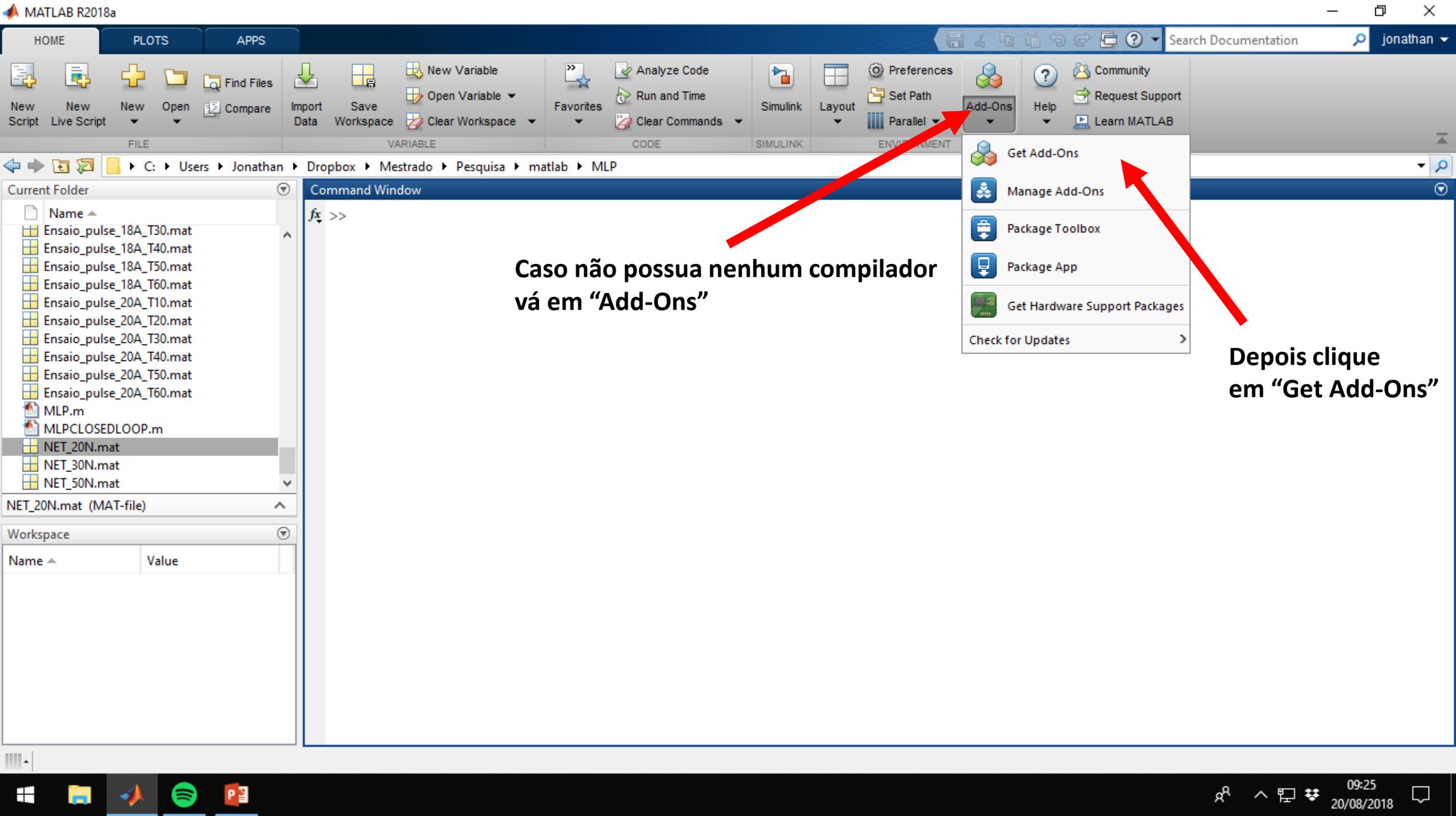
```
fx >> mex -setup
```

**Execute o comando "mex -setup" na Command Window para verificar se existe algum compilador compatível com O Matlab/Simulink**



```
MEX configured to use 'MinGW64 Compiler (C)' for C language compilation.  
Warning: The MATLAB C and Fortran API has changed to support MATLAB  
variables with more than 2^32-1 elements. You will be required  
to update your code to utilize the new API.  
You can find more information about this at:  
https://www.mathworks.com/help/matlab/matlab\_external/upgrading-mex-files-to-use-64-bit-api.html.  
  
To choose a different language, select one from the following:  
mex -setup C++  
mex -setup FORTRAN  
f>> |
```

**Neste caso o computador já possui o compilador "MingW64 Compiler"**



**Caso não possua nenhum compilador vá em "Add-Ons"**

**Depois clique em "Get Add-Ons"**

Mingw compiler

- Filter by Source**
- MathWorks 317
  - Community 33,304
- Filter by Category**
- Using MATLAB**
- Language Fundamentals 761
  - Mathematics 1,243
  - Graphics 1,096
  - Data Import, Export and Analysis 861
  - Programming Scripts and Functions 444
  - App Building 255
  - Advanced Software Development 386
  - Desktop Environment 97
  - Installation, Licensing, and Activation 8**
  - Parallel Computing 128
  - Application Deployment 48
  - Report Generation 53
- Applications**
- Science and Industry 2,736
  - Image Processing and Computer Vision 2,279
  - Data Analytics and Machine Learning 2,296
  - Signal Processing and...

### MathWorks Toolboxes and Products

**Installed**

**Statistics and Machine Learning Toolbox**

Analyze and model data using statistics and machine learning

**Installed**

**Computer Vision System Toolbox**

Design and simulate computer vision and video processing systems

**Installed**

**Robotics System Toolbox**

Design and test algorithms for robotics applications

**Installed**

**Simscape**

Model and simulate multidomain physical systems

Procure por "Mingw compiler"

### Community Toolboxes

**GUI Layout Toolbox**

**Deep Neural Network**

**Numerical Computing with**

**"JSON": MATLAB**

**JSONlab: a toolbox to**

- Filter by Source**
- MathWorks 1
  - Community 7
- Filter by Category**
- Using MATLAB**
- Data Import, Export and Analysis 2
  - Application Deployment 1
- Applications**
- Data Analytics and Machine Learning 2
  - Signal Processing and Communications 1
- Using Simulink**
- Simulink Fundamentals 1
  - Code Generation 1
- Filter by Type**
- Simulink Models 2
  - Optional Features 1
  - Functions 4
- Filter by Product Family**
- MATLAB 5
  - Simulink 2

8 RESULTS

← Clique neste link

Installed



**MATLAB Support for MinGW-w64 C/C++ Compiler** by MathWorks Supported Compilers Team

Install the MinGW-w64 C/C++ compiler for Windows

versions of **MinGW** GCC based on your version of MATLAB: MATLAB R2015b, R2016a, R2016b, R2017a: **MinGW** GCC 4.9.2 from TDMATLAB R2017b and beyond: **MinGW** GCC 5.3 from **mingw-w64.org** Learn more about this **compiler**

MathWorks Optional Feature

★ ★ ★ ★ ☆

4661 Downloads ⓘ

Updated 14 Jun 2018



**Raspberry Pi 2, get system clock with timeval** version 1.0.0.0 by Marc Compere

This Simulink model has an S-function builder block to access the linux system time via gettimeofday

Pi-----This Simulink model was tested and runs on R2015b on Windows 10 with the gcc **MinGW** 64-bit **compiler**. To run this model on a PC with Matlab, double click the light blue initialization block to specify

Simulink Model

★ ★ ★ ★ ★

6 Downloads ⓘ

Updated 16 Dec 2015



**Gnu Fortran, C, Lapack and Blas from Windows Matlab** version 1.0.0.0 by Kristjan Jonasson

Setting up of a free environment for calling Fortran 77 routines from Matlab and using Lapack and BI

**MinGW** and Gnumex, and describes the following procedures:· Setting up **MinGW** and Gnumex· Using Gnumex to make mex file creation compatible with Gnu· **Compiling** Fortran programs from within Matlab· Writing

★ ★ ★ ★ ★

3 Downloads ⓘ

Updated 22 Oct 2008



**NetCDF/GRIB reader** version 1.1.0.0 by Klaus Wyser

A collection of functions to read GRIB and netCDF files

to **compile** and install programs in a Linux-like environment such as cygwin or **MinGW**. (Actually, it's not the MATLAB-CDI package

★ ★ ★ ★ ☆

50 Downloads ⓘ

Updated 26 May 2009



Installed

MinGW-w64

## MATLAB Support for MinGW-w64 C/C++ Compiler

by MathWorks Supported Compilers Team

Install the MinGW-w64 C/C++ compiler for Windows

 MathWorks Optional Feature

★★★★☆ 168 Ratings

4662 Downloads 

Updated 14 Jun 2018

Em vez de “Manage” no seu computador vai ter a opção “Install”, clique nela e faça o procedimento de instalação normalmente



Manage

Overview

**Editor's Note:** Popular File [2016](#) [2017](#)

 This support package is currently unable to download third-party software for MATLAB R2017a and earlier versions. For details and workaround, see this [Bug Report](#).

 MATLAB R2017b and later versions are unaffected.

MinGW-w64 is a compiler suite for Windows based on the GNU tool chain. It includes a GCC compiler and related tools for compiling C and C++ applications for Windows. C and C++ applications compiled with MinGW-w64 GCC can be called from MATLAB using MEX. This GCC compiler can also be helpful for other MathWorks products that require a C or C++ compiler.

This Add-On installs one of the following versions of MinGW GCC based on your version of MATLAB:

MATLAB R2015b, R2016a, R2016b, R2017a: MinGW GCC 4.9.2 from TDM

MATLAB R2017b and beyond: MinGW GCC 5.3 from mingw-w64.org

Learn more about this compiler and related tools at:

### Requires

Requirements: For use on Windows 64-bit MATLAB. Supported by MATLAB R2015b and beyond.

### MATLAB Release Compatibility

Created with R2015b

Compatible with R2015b to R2018a

### Platform Compatibility

Windows  macOS  Linux

### Tags

[Add Tags](#)

2013b

2015b

2016b

compiler

mbuild

mex

mingw

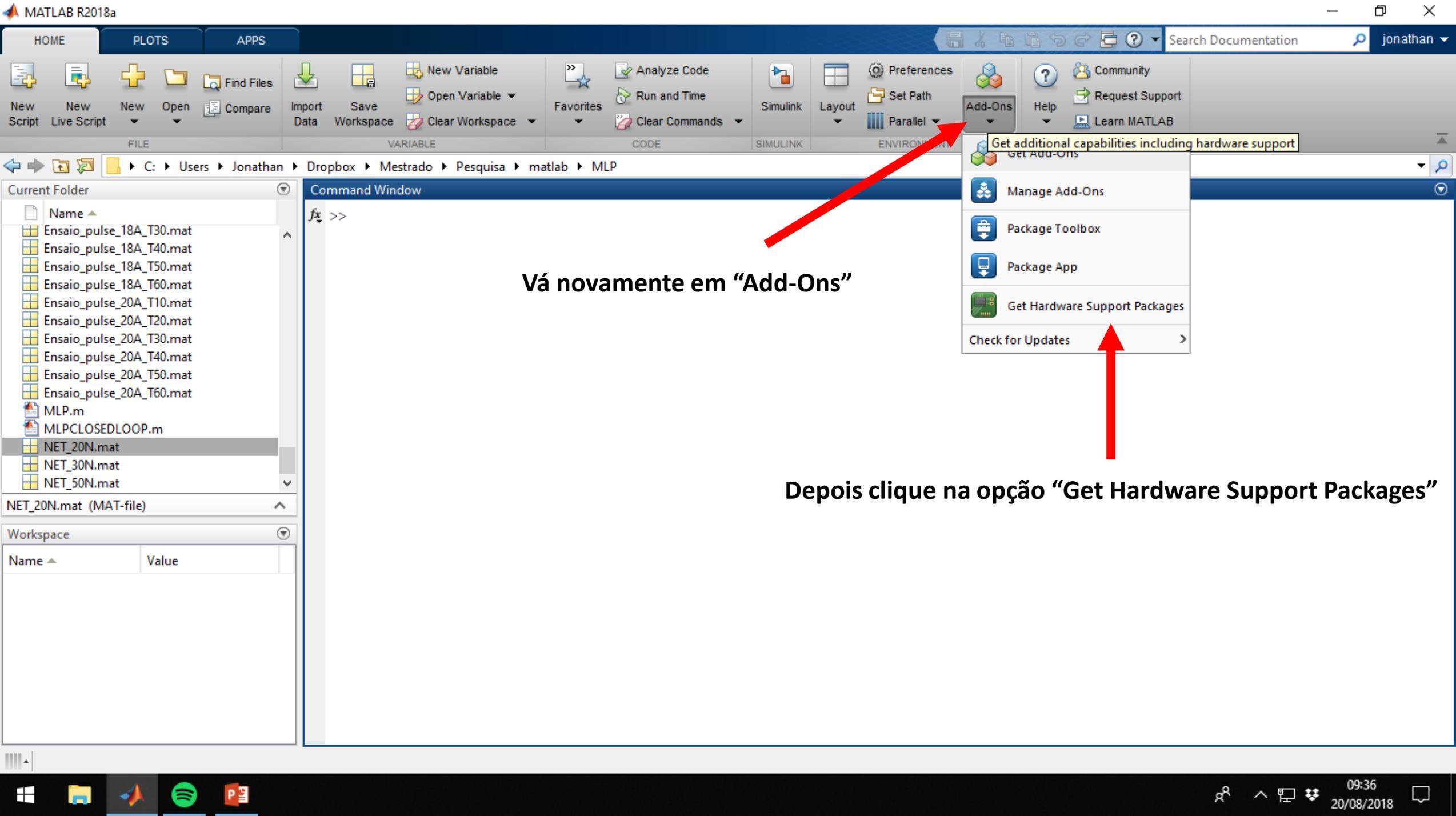
popular file 2016

popular file 2017

r2015a

r2017a

# Instalando os pacotes para utilização da placa Arduino Uno/Mega no Simulink



Vá novamente em "Add-Ons"

Depois clique na opção "Get Hardware Support Packages"

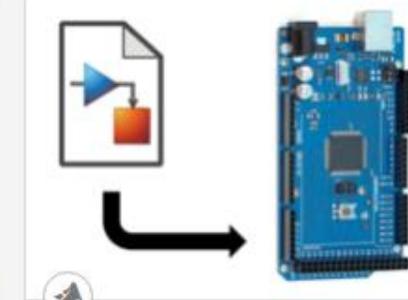


## Pesquisa por "Simulink Support Package Arduino"

- Filter by Source**
- MathWorks 181
  - Community 115
- Filter by Category**
- Using MATLAB**
- Data Import, Export and Analysis 6
- Applications**
- Science and Industry 12
  - Image Processing and Computer Vision 27
  - Data Analytics and Machine Learning 2
  - Signal Processing and Communications 22
  - Control Systems 13
  - Robotics and Autonomous Systems 20
  - Hardware Interfacing and IoT 174
- Using Simulink**
- Simulink Fundamentals 33
  - Physical Modeling 4
  - Code Generation 46
  - Verification, Validation, and Test 2
- Filter by Type**
- Toolboxes and Products 18

296 RESULTS

### Hardware Support Packages (296)

|   |  |  |   |
|---|--|--|---|
|  <p><b>MATLAB Support Package for Arduino Hardware</b></p> <p>Acquire inputs and send outputs on Arduino boards</p> <p>1813 Downloads <span>★★★★☆</span></p> |  <p><b>Legacy MATLAB and Simulink Support for Arduino</b></p> <p>MATLAB class and Simulink blocks for communicating with an Arduino microcontroller board</p> <p>1391 Downloads <span>★★★★☆</span></p> |  <p><b>Simulink Support Package for Arduino Hardware</b></p> <p>Run models on Arduino boards.</p> <p>940 Downloads <span>★★★★☆</span></p> |  <p><b>Simulink Support Package for Arduino Uno and Mega 2560 hardware (R2012b)</b></p> <p>Simulink block library for creating standalone applications for Arduino Uno and Mega 2560 platforms</p> <p>783 Downloads <span>★★★★☆</span></p> |
|    |    |   |    |

- Using Simulink
  - Simulink Fundamentals 5
  - Code Generation 2
- Filter by Type
  - Toolboxes and Products 1
  - Simulink Models 6
  - Hardware Support Packages 7
  - Functions 4
- Filter by Hardware Type
  - Hobbyist/Maker 5
  - Robotics 1
- Filter by Vendor
  - Arduino 5
  - LEGO 1
  - Rapiro 1
- Filter by Product Family
  - MATLAB 2
  - Simulink 6



**Support Package for Arduino Hardware:** Read, write, and analyze data from **Arduino** sensors <http://www.mathworks.com/hardware-support/arduino-matlab.html> - Simulink Support Package for **Arduino** Hardware: Develop

Updated 19 Apr 2016

Collection



**Simulink Support Package for Arduino Uno and Mega 2560 hardware (R2012b)** version 2.2.0.3 by MathWorks Simulink Team

★★★★☆

786 Downloads

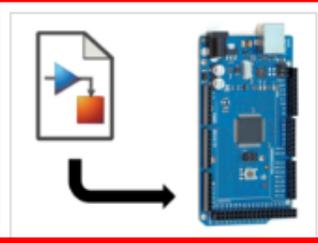
Updated 16 Mar 2018

Simulink block library for creating standalone applications for **Arduino** Uno and Mega 2560 platforms

releases 2013a and newer. Please upgrade your MATLAB release to take advantage of updates to the MATLAB & **Simulink** product families, and the **Simulink Support Package for Arduino** Hardware:

Collection

**Escolha este pacote** ←



**Simulink Support Package for Arduino Hardware** by MathWorks Simulink Team

★★★★☆

955 Downloads

Updated 13 Jan 2014

Run models on **Arduino** boards.

**Simulink**® Support Package for **Arduino**® Hardware enables you to create and run **Simulink** models on **Arduino** boards. The **support package** includes a library of **Simulink** blocks for configuring and

Hardware Support



**Example Driver blocks for Simulink Hardware Support Packages** version 1.2.0.1 by Guy Rouleau

★★★★☆

16 Downloads

Updated 1 Sep 2016

Example Driver blocks for LEGO Mindstorm NXT and **Arduino** support packages

This submission includes example Driver blocks for LEGO Mindstorm NXT and **Arduino** support packages. See this blog posts for more

Simulink Model



**Arduino Library for Sensirion SHT1x Humidity and Temperature sensors.** version 1.2.0.0 by Antonio Beltran

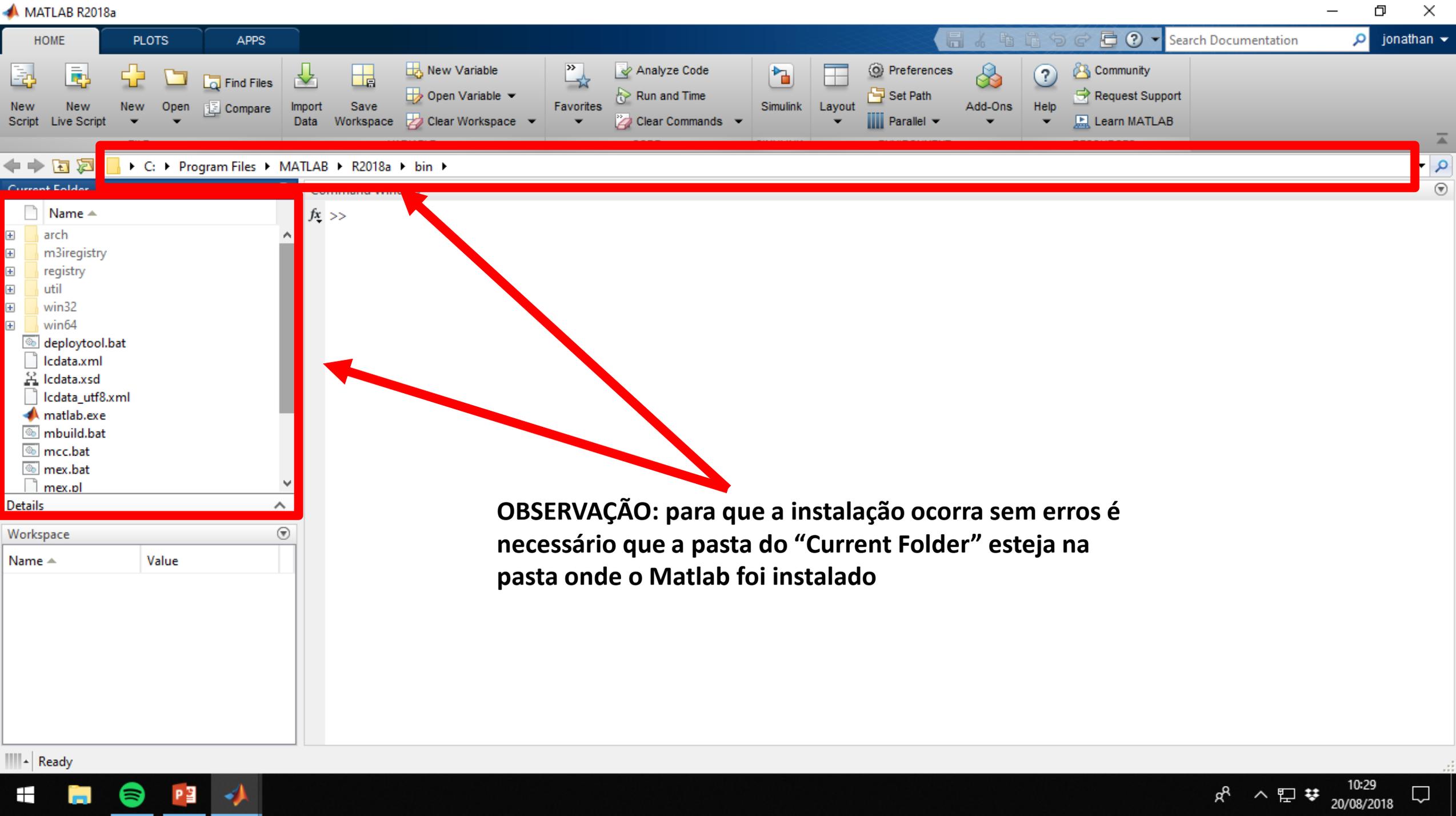
★★★★☆

28 Downloads

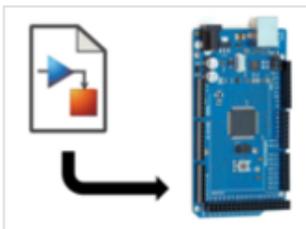
Updated 22 Nov 2013

The library block SHT1x reads the relative humidity [%] and temperature [°C] from a SHT1x Sensor

**Simulink** built-in **support** for **Arduino**, it uses the "Embedded Coder **Support** for **Arduino** Hardware", it can be downloaded here



**OBSERVAÇÃO:** para que a instalação ocorra sem erros é necessário que a pasta do “Current Folder” esteja na pasta onde o Matlab foi instalado



## Simulink Support Package for Arduino Hardware

by MathWorks Simulink Team

Run models on Arduino boards.

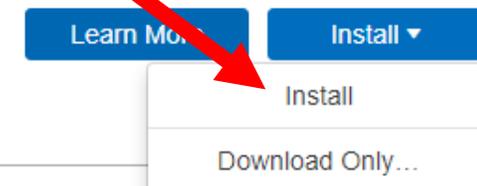
Hardware Support

★★★★☆ 37 Ratings

957 Downloads

Updated 13 Jan 2014

Clique em "Install"



Overview

### Editor's Note:

This support package is currently unable to download third-party software for MATLAB R2016b and earlier versions. For details and workaround, see this [Bug Report](#).

MATLAB R2017a and later versions are unaffected.

Popular File [2013](#) [2014](#) [2015](#) [2016](#) [2017](#)

Simulink® Support Package for Arduino® Hardware enables you to create and run Simulink models on Arduino boards. The support package includes a library of Simulink blocks for configuring and accessing Arduino sensors, actuators, and communication interfaces. It also enables you to interactively monitor and tune algorithms developed in Simulink as they run on Arduino.

This support package is functional for R2013a and beyond.

Comments and Ratings (115)

### Requires

Simulink

### MATLAB Release Compatibility

Created with R2012b

Compatible with R2012b to R2018a

### Platform Compatibility

Windows  macOS  Linux

### Tags



## Simulink Support

by MathWorks Simulink Team

Run models on Arduino boards.

Hardware Support

Overview

### Editor's Note:

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✅ MATLAB R2017a and later versions are unaffected.

Popular File [2013](#) [2014](#) [2015](#) [2016](#) [2017](#)

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This support package is functional for R2013a and beyond.

Comments and Ratings (115)

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### Requires

✅ Simulink

### MATLAB Release Compatibility

Created with R2012b

Compatible with R2012b to R2018a

### Platform Compatibility

Windows  macOS  Linux

### Tags

arduino

arduino board

arduino due

arduino yun

maker

mega 2560

nano

popular file 2013

popular file 2014

popular file 2015

popular file 2016

★★★★☆ 37 Ratings

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Updated 13 Jan 2014

Learn More

Install

## Simulink Support

by MathWorks Simulink Team

Run models on Arduino boards.

Hardware Support

Overview

### Editor's Note:

⚠ This support package is functional for R2016b and earlier versions.

✅ MATLAB R2017a and later versions are unaffected.

Popular File [2013](#) [2014](#) [2015](#) [2016](#) [2017](#)

Simulink® Support Package for Arduino® Hardware enables you to create and run Simulink models on Arduino boards. The support package includes a library of Simulink blocks for configuring and accessing Arduino sensors, actuators, and communication interfaces. It also enables you to interactively monitor and tune algorithms developed in Simulink as they run on Arduino.

This support package is functional for R2013a and beyond.

Comments and Ratings (115)

### Third-Party Software

By clicking Next, you will be installing the software below which may contain open source software that may be under the terms of General Public License (GPL).

#### Simulink Support Package for Arduino Hardware version 18.1.2

##### Third-Party Software:

Arduino software

[License](#)

Ostermiller Circular Buffer

[License](#)

Next

Cancel

Clique em "Next"

★★★★☆ 37 Ratings

957 Downloads

Updated 13 Jan 2014

[Learn More](#)

[Install](#)

### Requires

✅ Simulink

### MATLAB Release Compatibility

Created with R2012b

Compatible with R2012b to R2018a

### Platform Compatibility

Windows  macOS  Linux

### Tags

[arduino](#)

[arduino board](#)

[arduino due](#)

[arduino yun](#)

[maker](#)

[mega 2560](#)

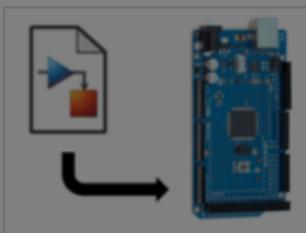
[nano](#)

[popular file 2013](#)

[popular file 2014](#)

[popular file 2015](#)

[popular file 2016](#)



## Simulink Support

by MathWorks Simulink Team

Run models on Arduino boards.

Hardware Support

Overview

### Editor's Note:

This support package is functional for R2013a and beyond.

MATLAB R2017a and later versions are unaffected.

Popular File [2013](#) [2014](#) [2015](#) [2016](#) [2017](#)

Simulink® Support Package for Arduino® Hardware enables you to create and run Simulink models on Arduino boards. The support package includes a library of Simulink blocks for configuring and accessing Arduino sensors, actuators, and communication interfaces. It also enables you to interactively monitor and tune algorithms developed in Simulink as they run on Arduino.

This support package is functional for R2013a and beyond.

Comments and Ratings (115)

### Download and Installation Progress

- Downloading Support Packages... 0%
- Downloading Third-Party Packages...
- Installing Support Packages...
- Installing Third-Party Packages...
- Configuring your installation

# Aguarde a instalação terminar...

Cancel

★★★★☆ 37 Ratings

957 Downloads

Updated 13 Jan 2014

Learn More

Install

### Requires

Simulink

### MATLAB Release Compatibility

Created with R2012b

Compatible with R2012b to R2018a

### Platform Compatibility

Windows  macOS  Linux

### Tags

arduino

arduino board

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arduino yun

maker

mega 2560

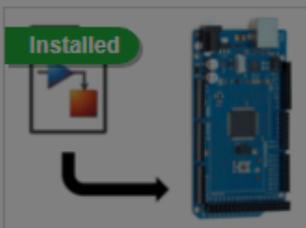
nano

popular file 2013

popular file 2014

popular file 2015

popular file 2016



## Simulink Support

by MathWorks Simulink Team

Run models on Arduino boards.

Hardware Support

Overview

### Editor's Note:

⚠ This support package is functional for R2016b and earlier versions.

✅ MATLAB R2017a and later versions are unaffected.

Popular File 2013 2014 2015 2016 2017

Simulink® Support Package for Arduino® Hardware enables you to create and run Simulink models on Arduino boards. The support package includes a library of Simulink blocks for configuring and accessing Arduino sensors, actuators, and communication interfaces. It also enables you to interactively monitor and tune algorithms developed in Simulink as they run on Arduino.

This support package is functional for R2013a and beyond.

Comments and Ratings (115)

### Installation Complete

Your Hardware Support Package requires configuration.

You can choose to complete the configuration steps now, or do them later from the Add-On Manager in the MATLAB Toolstrip.

**Conecte a placa Arduino no computador e selecione a opção "Setup Now"**

Setup Now

Setup Later

★★★★☆ 37 Ratings

957 Downloads

Updated 13 Jan 2014

Learn More

Manage

### Requires

✅ Simulink

### MATLAB Release Compatibility

Created with R2012b

Compatible with R2012b to R2018a

### Platform Compatibility

Windows  macOS  Linux

### Tags

Add Tags

arduino

arduino board

arduino due

arduino yun

maker

mega 2560

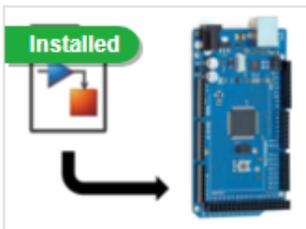
nano

popular file 2013

popular file 2014

popular file 2015

popular file 2016



## Simulink Support

by MathWorks Simulink Team

Run models on Arduino boards

Hardware Support

Overview

### Editor's Note:

⚠ This support package is not supported for MATLAB R2016a. See the [Report](#).

✅ MATLAB R2017a

Popular File 2013-2014

Simulink® Support Package for Arduino® Hardware includes a library of Simulink blocks for configuring and running models on an Arduino board. You can use these blocks to interactively monitor and tune algorithms developed in Simulink as they run on Arduino.

This support package is functional for R2013a and beyond.

Comments and Ratings (115)

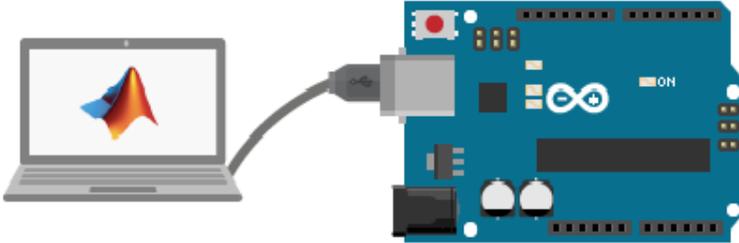
### Hardware Setup

## Connect an Arduino Board

Connect an Arduino® board to your computer using a USB cable.

**What to Consider**  
We recommend you to connect only one board to your computer.

When the Arduino board is connected to your computer, the ON LED starts glowing.



**Antes de selecionar a opção "Next" certifique-se de que a placa está conectada**

Cancel Next >

★★★★☆ 37 Ratings

957 Downloads

Updated 13 Jan 2014

Learn More

Manage

### Requires

✅ Simulink

### MATLAB Release Compatibility

Created with R2012b

Compatible with R2012b to R2018a

### Platform Compatibility

Windows  macOS  Linux

### Tags

Add Tags

arduino

arduino board

arduino due

arduino yun

maker

mega 2560

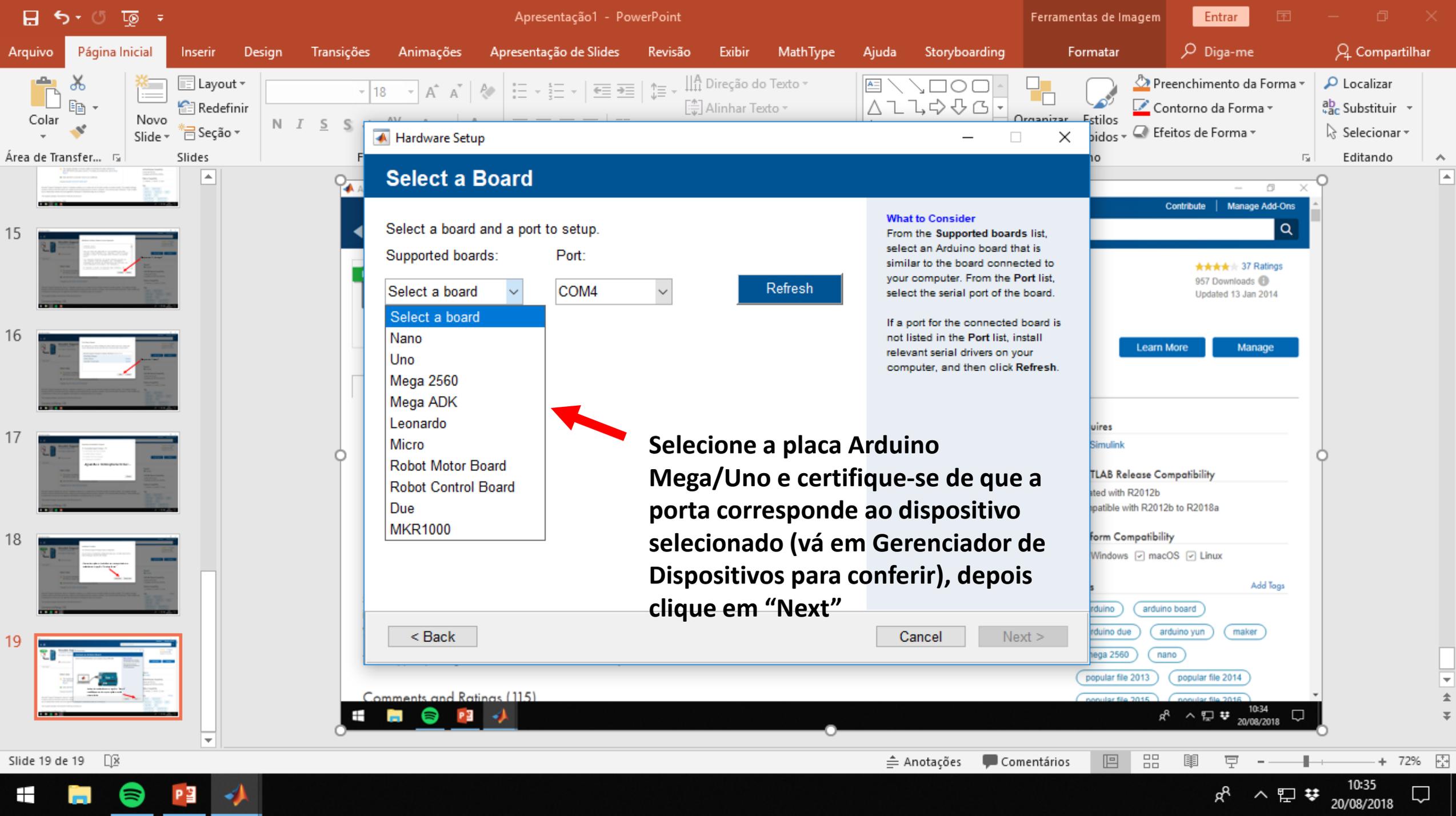
nano

popular file 2013

popular file 2014

popular file 2015

popular file 2016



## Select a Board

Select a board and a port to setup.

Supported boards:

Select a board

Select a board

Nano

Uno

Mega 2560

Mega ADK

Leonardo

Micro

Robot Motor Board

Robot Control Board

Due

MKR1000

Port:

COM4

Refresh

### What to Consider

From the Supported boards list, select an Arduino board that is similar to the board connected to your computer. From the Port list, select the serial port of the board.

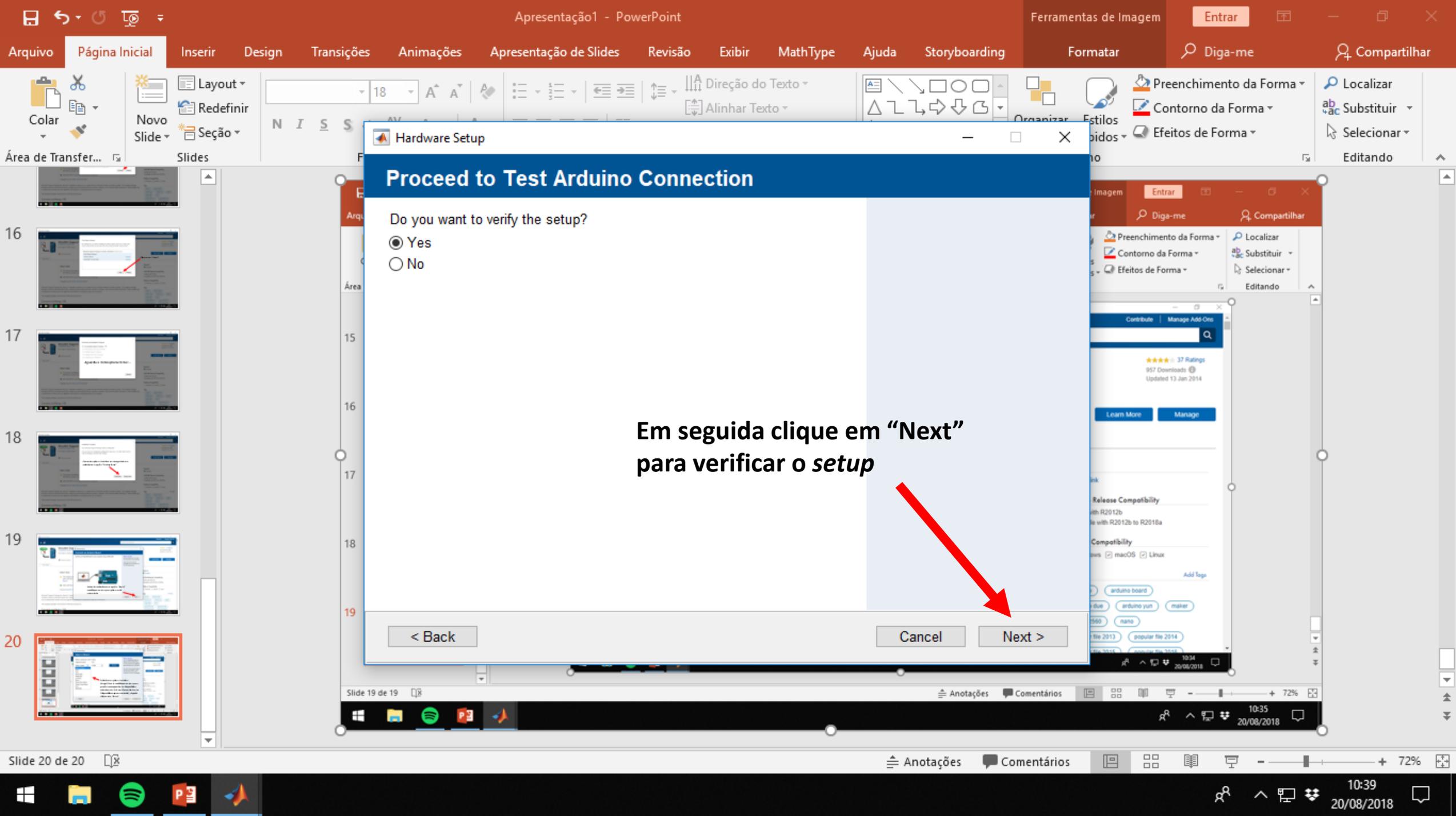
If a port for the connected board is not listed in the Port list, install relevant serial drivers on your computer, and then click Refresh.

< Back

Cancel

Next >

**Selecione a placa Arduino Mega/Uno e certifique-se de que a porta corresponde ao dispositivo selecionado (vá em Gerenciador de Dispositivos para conferir), depois clique em "Next"**



**Hardware Setup**

**Proceed to Test Arduino Connection**

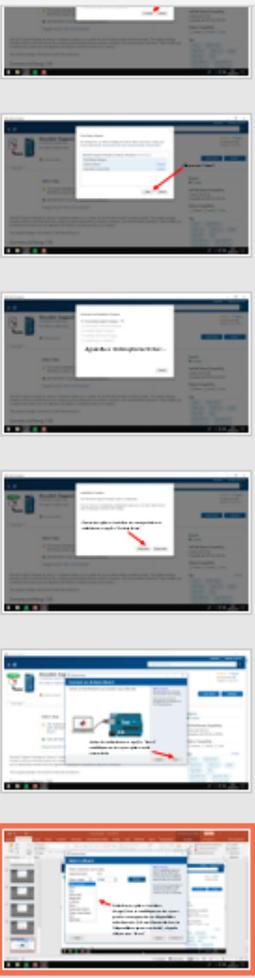
Do you want to verify the setup?

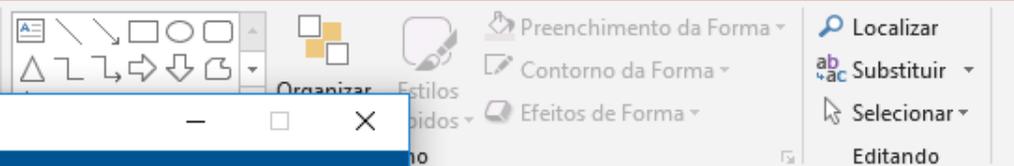
Yes

No

< Back      Cancel      Next >

Em seguida clique em "Next" para verificar o setup





Hardware Setup

## Test Arduino Connection

Board:

|                                     |                     |
|-------------------------------------|---------------------|
| <input checked="" type="checkbox"/> | Build successful    |
| <input checked="" type="checkbox"/> | Download successful |

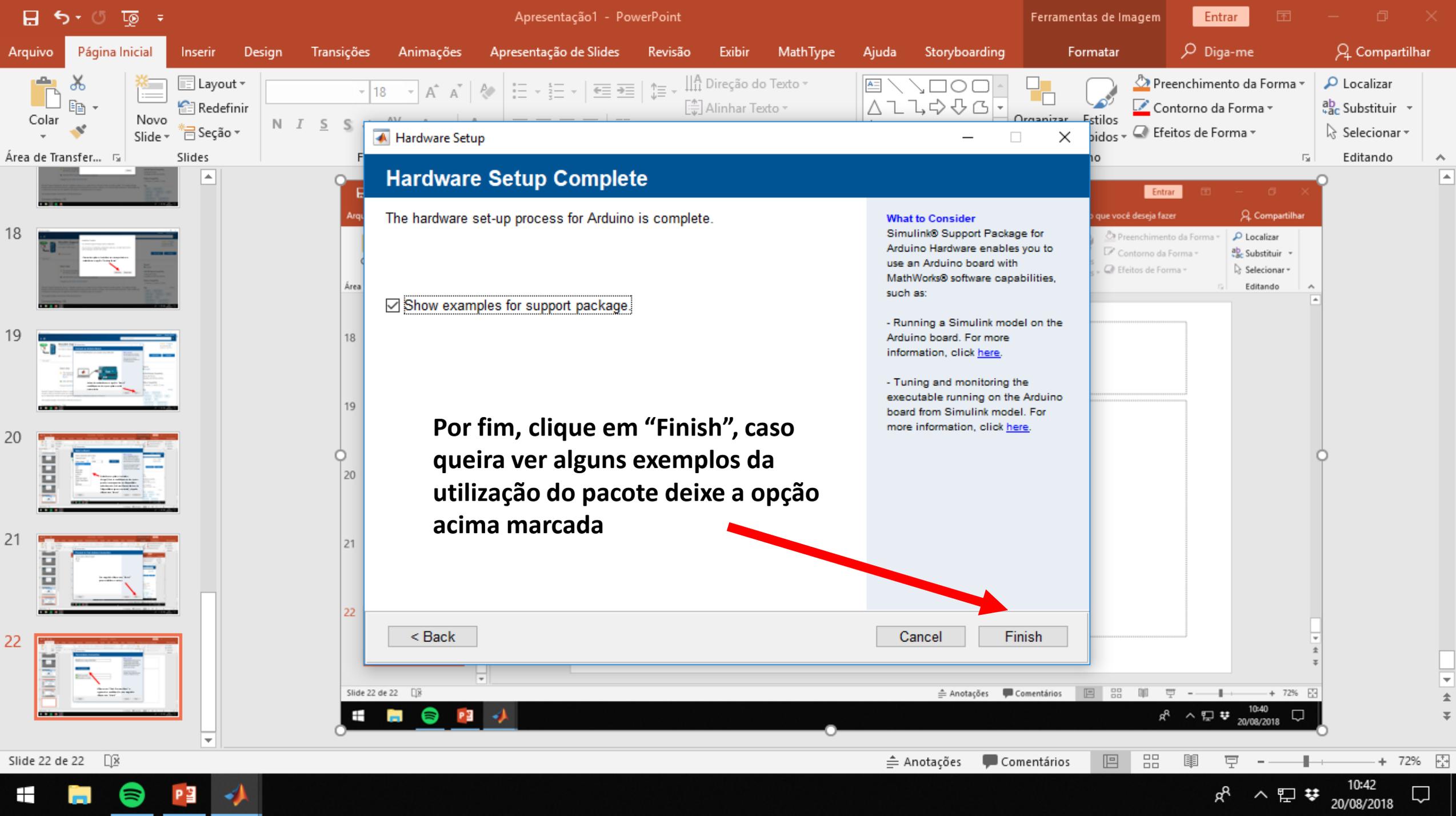
**What to Consider**  
Test Connection does the following:  
1. Build checks if the third-party tools are installed appropriately.  
2. Download tests if the connection between your computer and the Arduino board is proper.

After the test connection is successful, the on-board LED starts blinking. Click Next to continue.

< Back



**Clique em "Test Connection" e  
aguarde a verificação, em seguida  
clique em "Next"**



Hardware Setup

## Hardware Setup Complete

The hardware set-up process for Arduino is complete.

Show examples for support package

### What to Consider

Simulink® Support Package for Arduino Hardware enables you to use an Arduino board with MathWorks® software capabilities, such as:

- Running a Simulink model on the Arduino board. For more information, click [here](#).
- Tuning and monitoring the executable running on the Arduino board from Simulink model. For more information, click [here](#).

**Por fim, clique em “Finish”, caso queira ver alguns exemplos da utilização do pacote deixe a opção acima marcada**

< Back

Cancel

Finish

Slide 22 de 22

Anotações

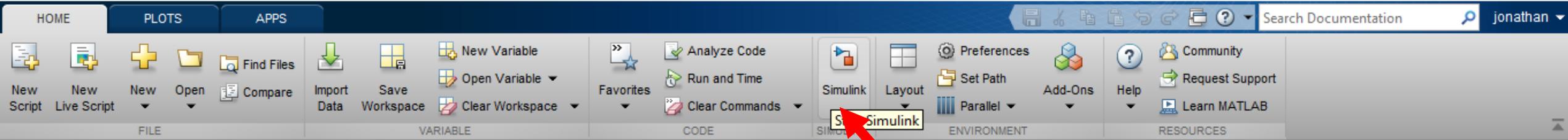
Comentários

72%

10:40  
20/08/2018

10:42  
20/08/2018

# Utilizando o *Simulink Support Package for Arduino Hardware*



Current Folder

- arch
- m3registry
- registry
- util
- win32
- win64
- deploytool.bat
- lcdata.xml
- lcdata.xsd
- lcdata\_utf8.xml
- matlab.exe
- mbuild.bat
- mcc.bat
- mex.bat
- mex.pl

Details

Workspace

| Name | Value |
|------|-------|
|------|-------|

Command Window

```
f> >>
```

**Crie um novo modelo no Simulink**

# SIMULINK

New Examples

Open... Search All Templates

> My Templates [Learn More](#)

Recent

- analog\_input\_test.slx
- digital\_output\_test.slx
- arduino\_gettingstarted.slx
- arduino\_I2C\_temp.slx
- test\_2.slx
- sflib.slx
- test\_1.slx
- power\_battery\_temperature\_model...

Projects

- Source Control...
- Archive...

Blank Model

Blank Library

Blank Project

Folder to Project

Source Control

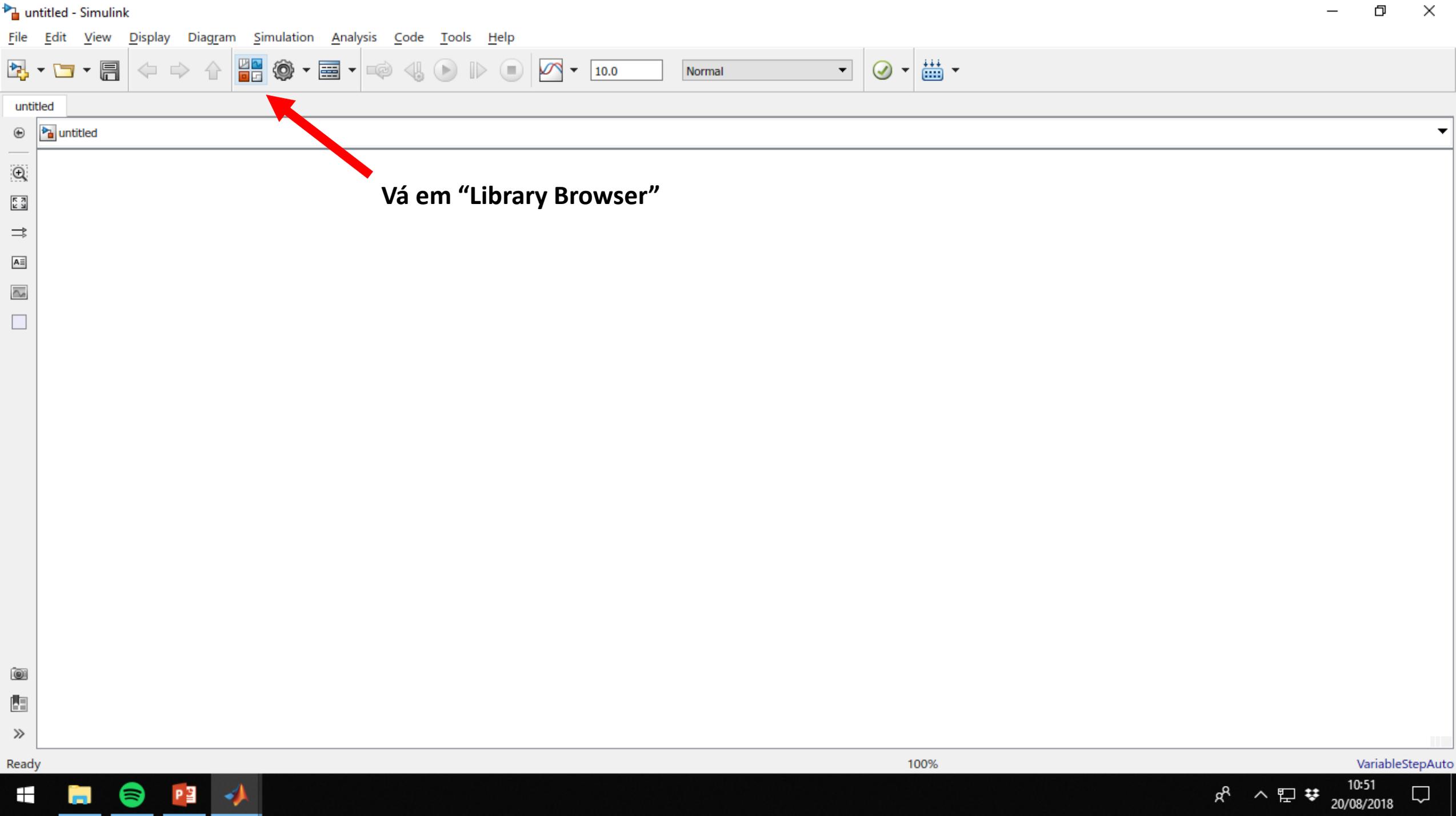
Code Generation

Digital Filter

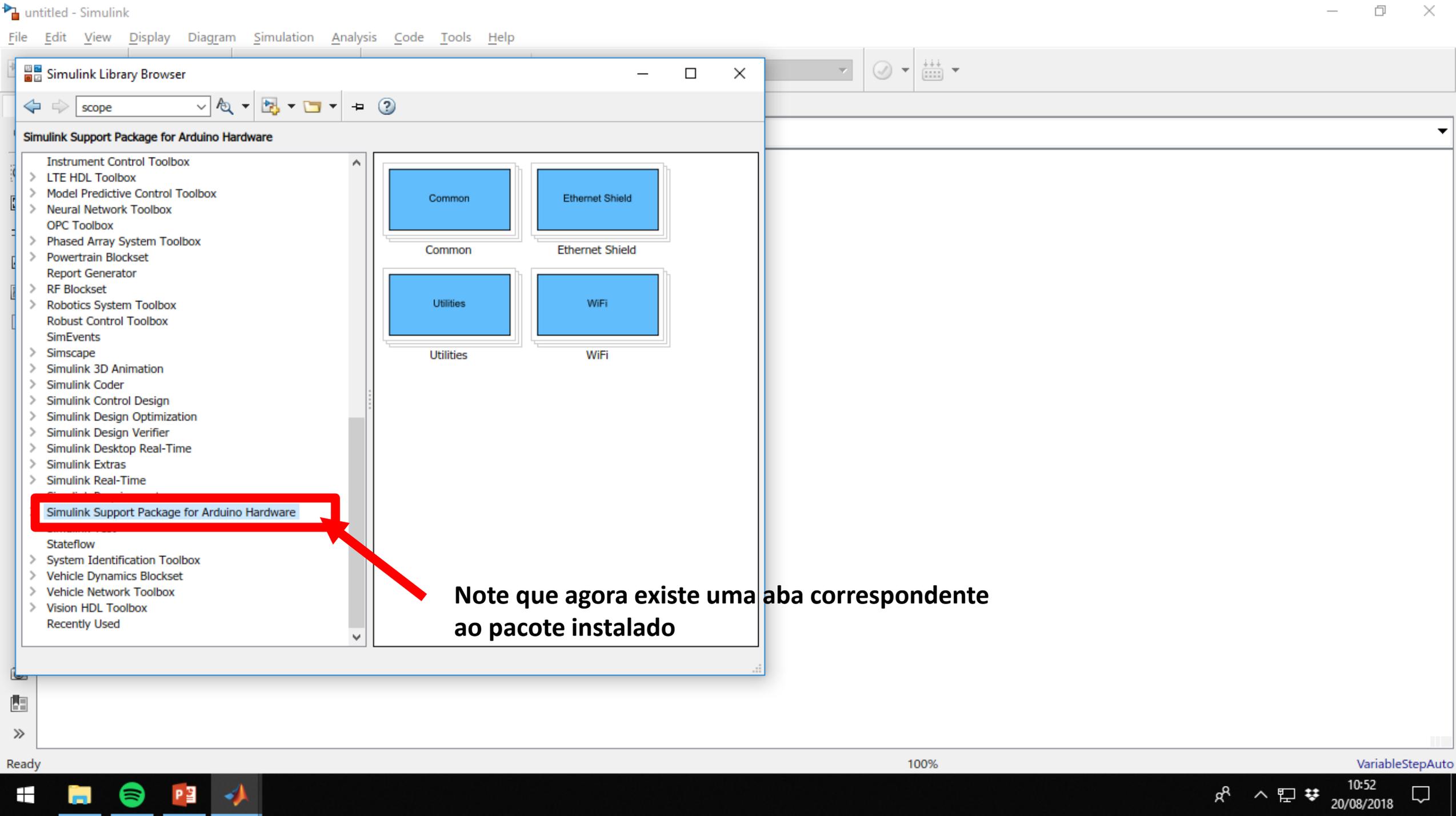
Feedback Controller

Clique em "Blank Model"





Vá em "Library Browser"

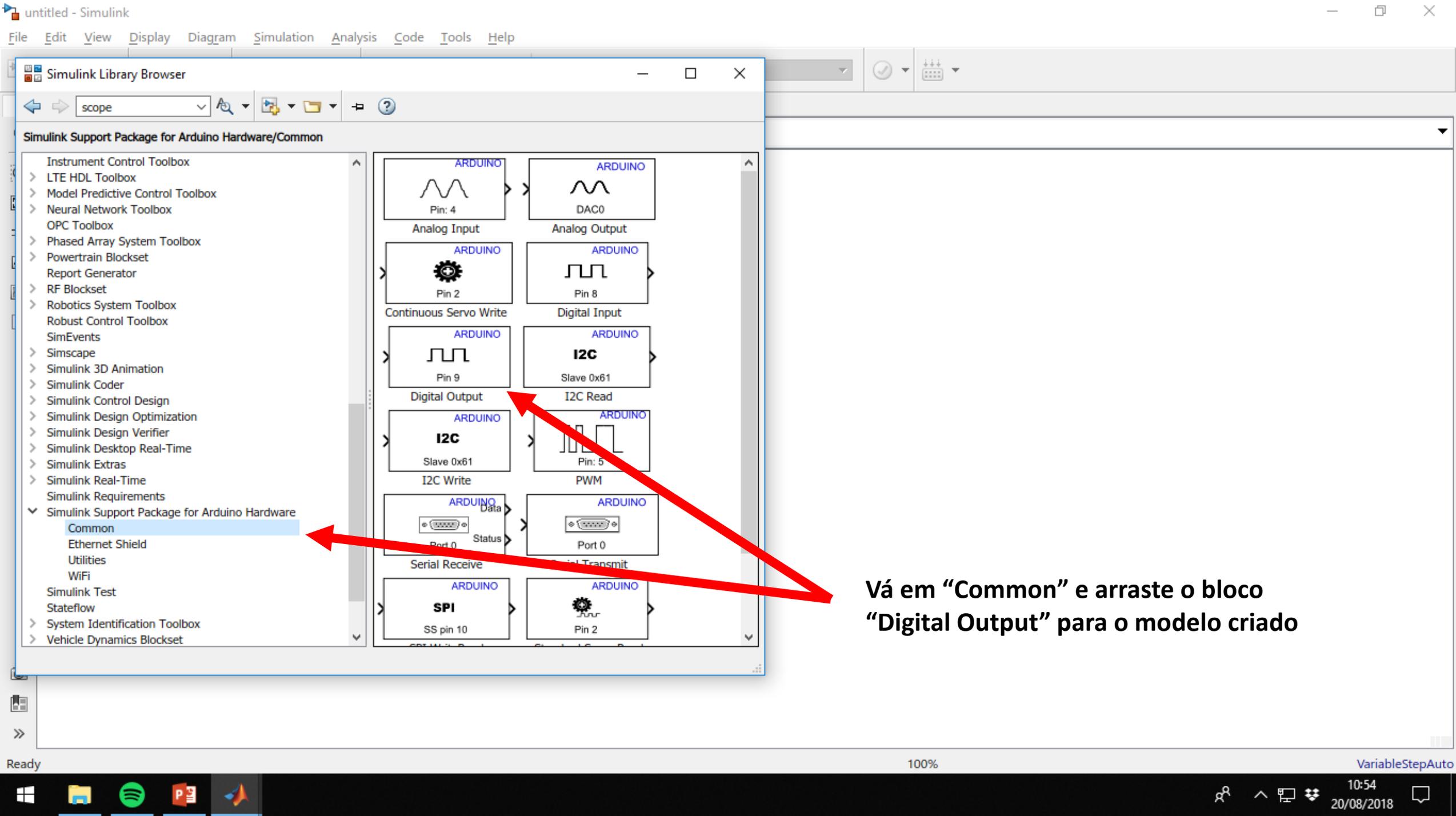


Simulink Support Package for Arduino Hardware

- > Instrument Control Toolbox
- > LTE HDL Toolbox
- > Model Predictive Control Toolbox
- > Neural Network Toolbox
- OPC Toolbox
- > Phased Array System Toolbox
- > Powertrain Blockset
- Report Generator
- > RF Blockset
- > Robotics System Toolbox
- Robust Control Toolbox
- SimEvents
- > Simscape
- > Simulink 3D Animation
- > Simulink Coder
- > Simulink Control Design
- > Simulink Design Optimization
- > Simulink Design Verifier
- > Simulink Desktop Real-Time
- > Simulink Extras
- > Simulink Real-Time
- Simulink Support Package for Arduino Hardware**
- Stateflow
- > System Identification Toolbox
- > Vehicle Dynamics Blockset
- > Vehicle Network Toolbox
- > Vision HDL Toolbox
- Recently Used

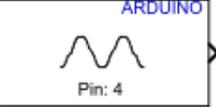
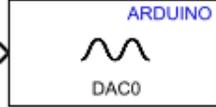
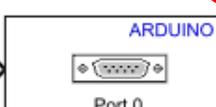
|           |                 |
|-----------|-----------------|
| Common    | Ethernet Shield |
| Utilities | WiFi            |

Note que agora existe uma aba correspondente ao pacote instalado

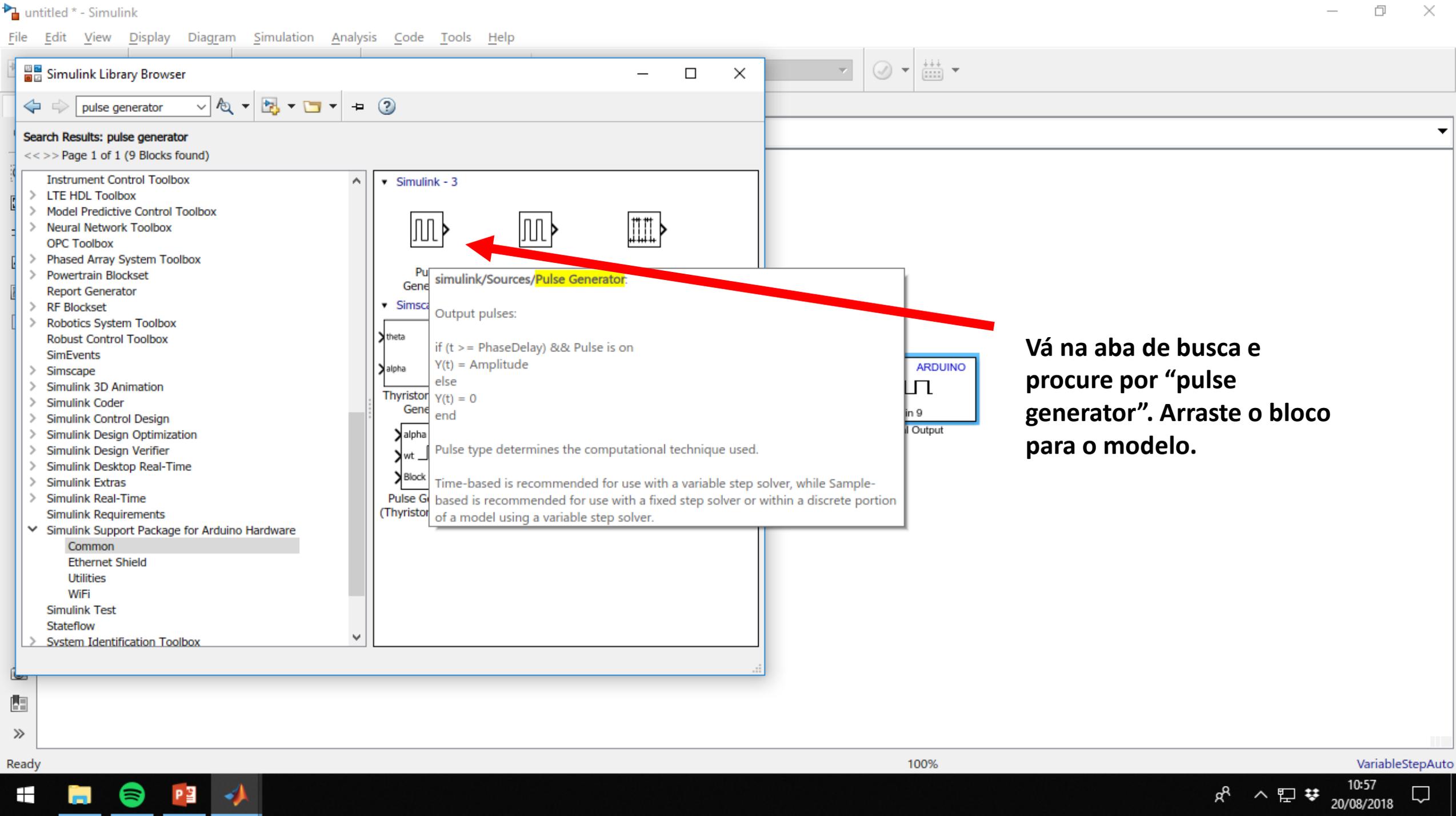


Simulink Support Package for Arduino Hardware/Common

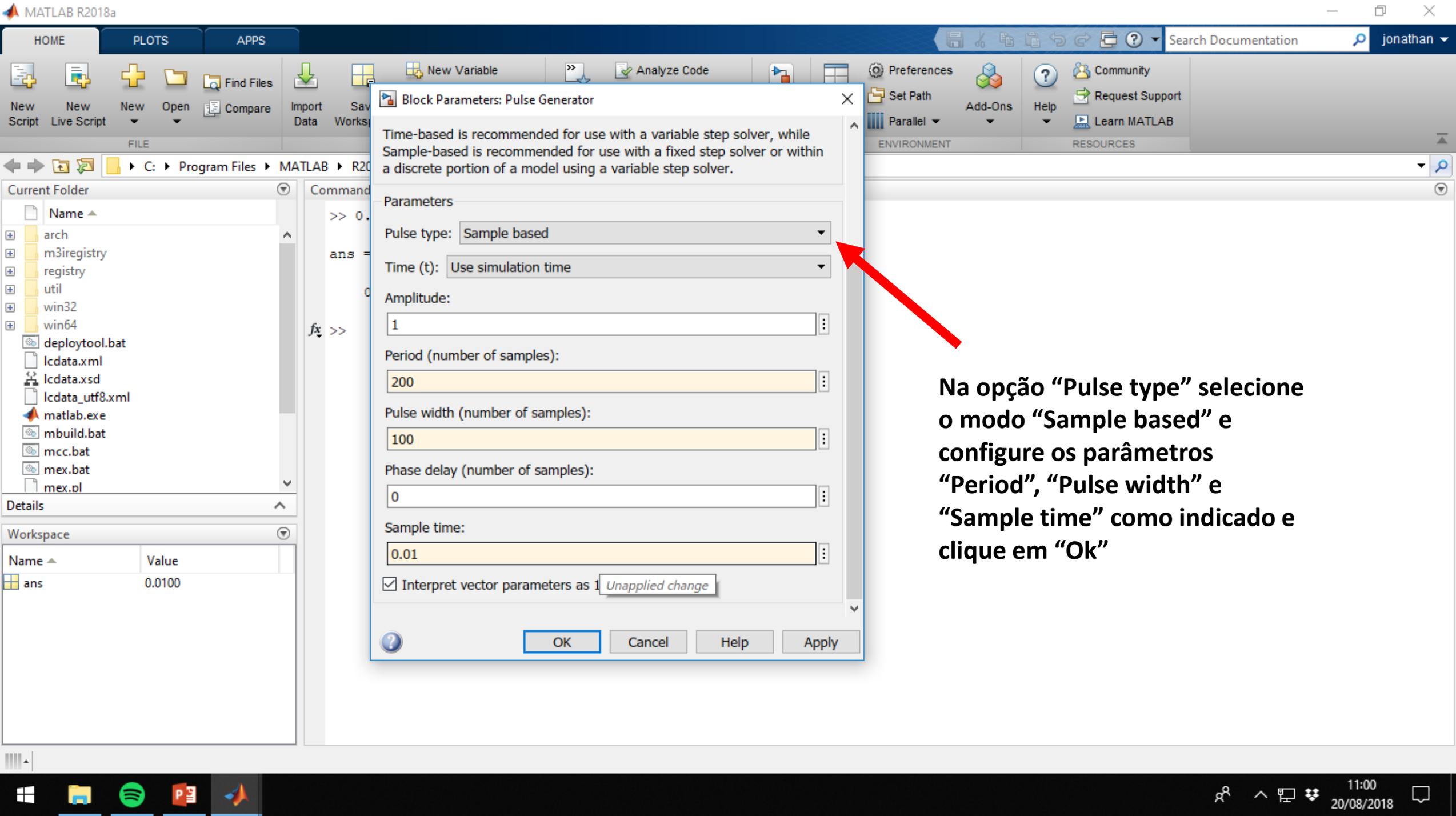
- > Instrument Control Toolbox
- > LTE HDL Toolbox
- > Model Predictive Control Toolbox
- > Neural Network Toolbox
- > OPC Toolbox
- > Phased Array System Toolbox
- > Powertrain Blockset
- > Report Generator
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- > SimEvents
- > Simscape
- > Simulink 3D Animation
- > Simulink Coder
- > Simulink Control Design
- > Simulink Design Optimization
- > Simulink Design Verifier
- > Simulink Desktop Real-Time
- > Simulink Extras
- > Simulink Real-Time
- > Simulink Requirements
- ▼ Simulink Support Package for Arduino Hardware
  - Common**
  - Ethernet Shield
  - Utilities
  - WiFi
- > Simulink Test
- > Stateflow
- > System Identification Toolbox
- > Vehicle Dynamics Blockset

|  |   |
|--|---|
| <br>Pin: 4<br>Analog Input          | <br>DAC0<br>Analog Output     |
| <br>Pin 2<br>Continuous Servo Write | <br>Pin 8<br>Digital Input    |
| <br>Pin 9<br>Digital Output         | <br>Slave 0x61<br>I2C Read    |
| <br>Slave 0x61<br>I2C Write         | <br>Pin: 5<br>PWM             |
| <br>Port 0<br>Serial Receive        | <br>Port 0<br>Serial Transmit |
| <br>SS pin 10<br>SPI               | <br>Pin 2                    |

Vá em "Common" e arraste o bloco "Digital Output" para o modelo criado



Vá na aba de busca e procure por “pulse generator”. Arraste o bloco para o modelo.



**Block Parameters: Pulse Generator**

Time-based is recommended for use with a variable step solver, while Sample-based is recommended for use with a fixed step solver or within a discrete portion of a model using a variable step solver.

**Parameters**

Pulse type: **Sample based**

Time (t): Use simulation time

Amplitude: 1

Period (number of samples): 200

Pulse width (number of samples): 100

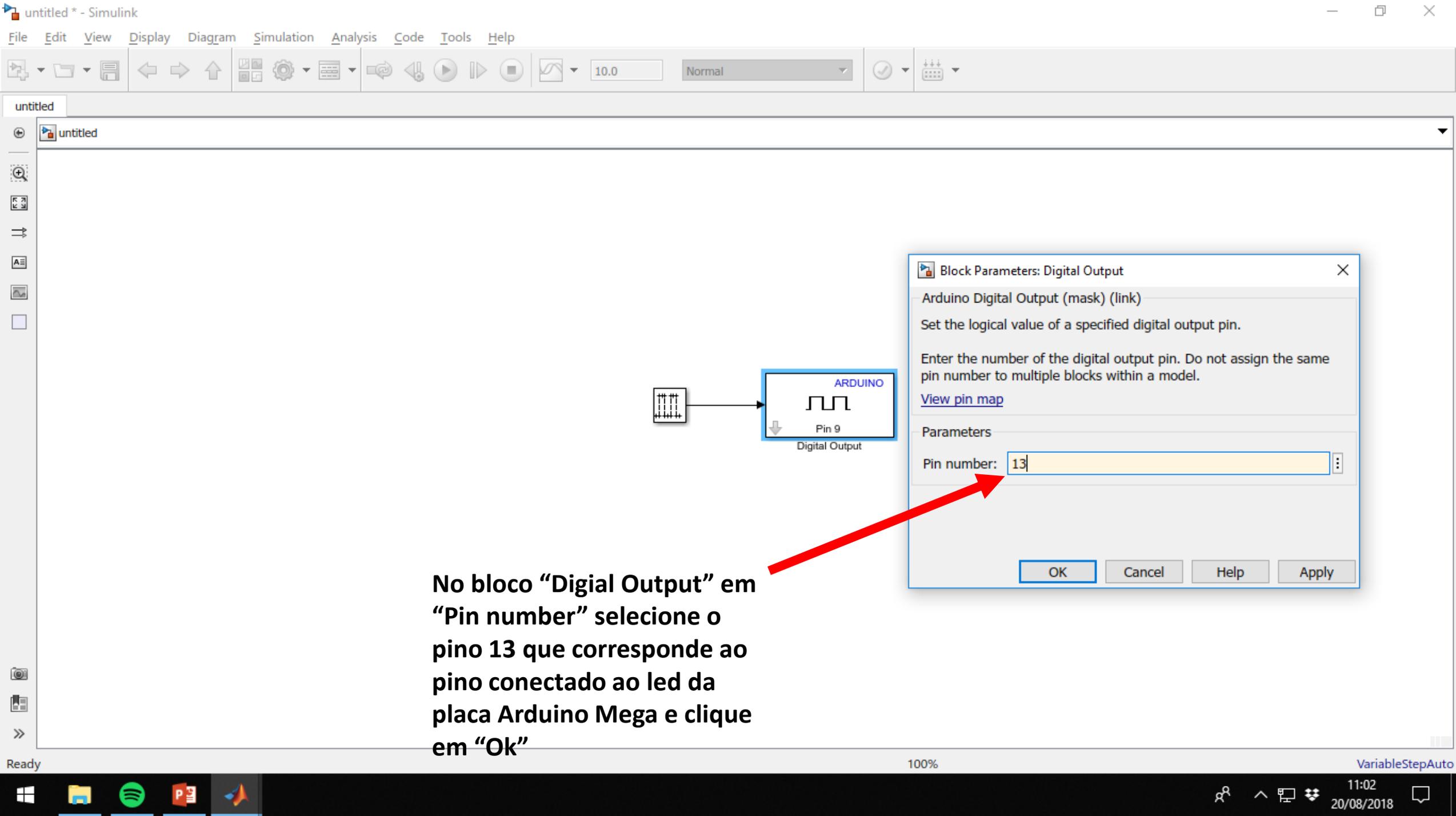
Phase delay (number of samples): 0

Sample time: 0.01

Interpret vector parameters as 1 *Unapplied change*

Buttons: **OK** Cancel Help Apply

**Na opção "Pulse type" selecione o modo "Sample based" e configure os parâmetros "Period", "Pulse width" e "Sample time" como indicado e clique em "Ok"**



No bloco “Digial Output” em “Pin number” selecione o pino 13 que corresponde ao pino conectado ao led da placa Arduino Mega e clique em “Ok”

Block Parameters: Digital Output

Arduino Digital Output (mask) (link)

Set the logical value of a specified digital output pin.

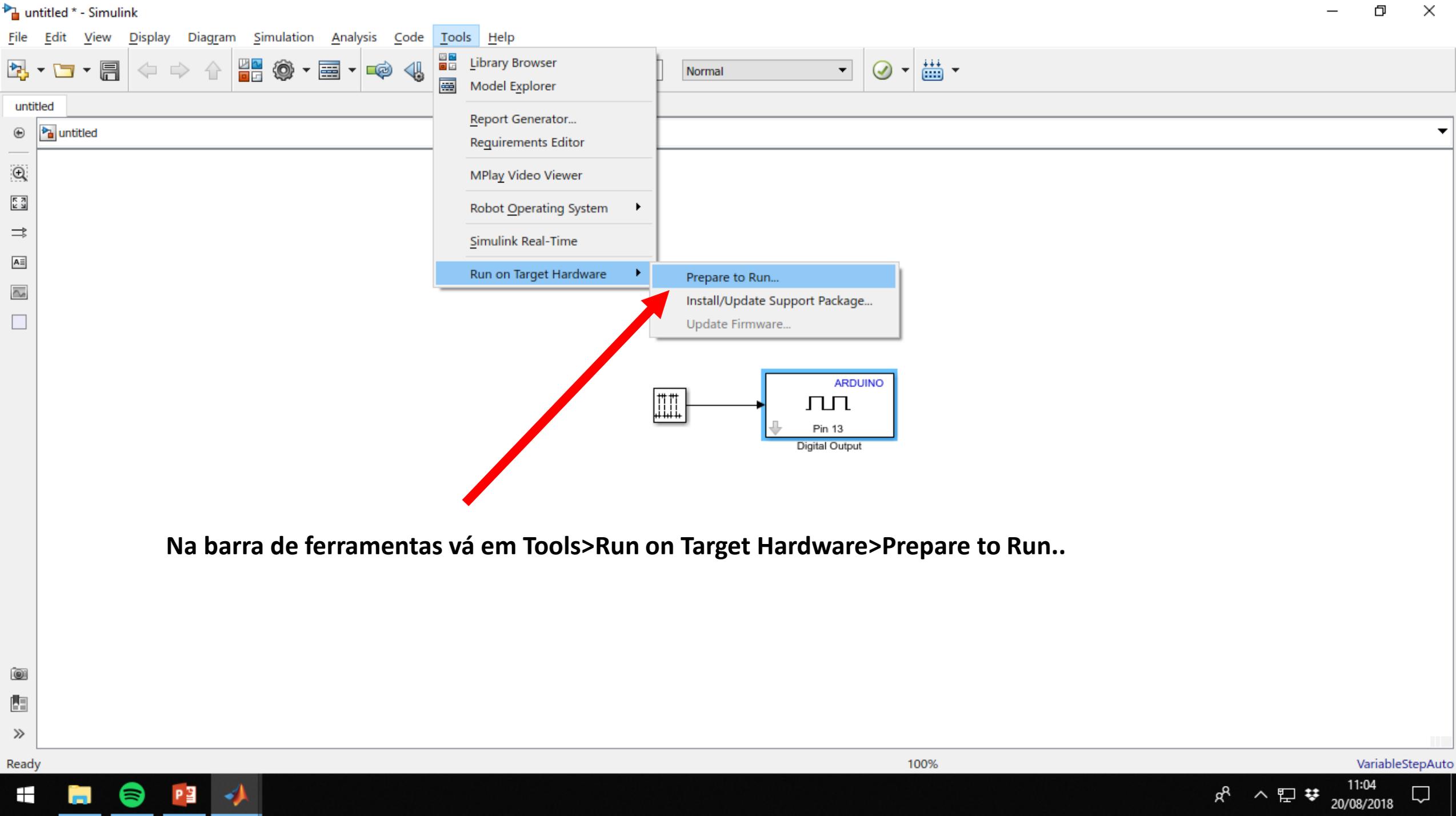
Enter the number of the digital output pin. Do not assign the same pin number to multiple blocks within a model.

[View pin map](#)

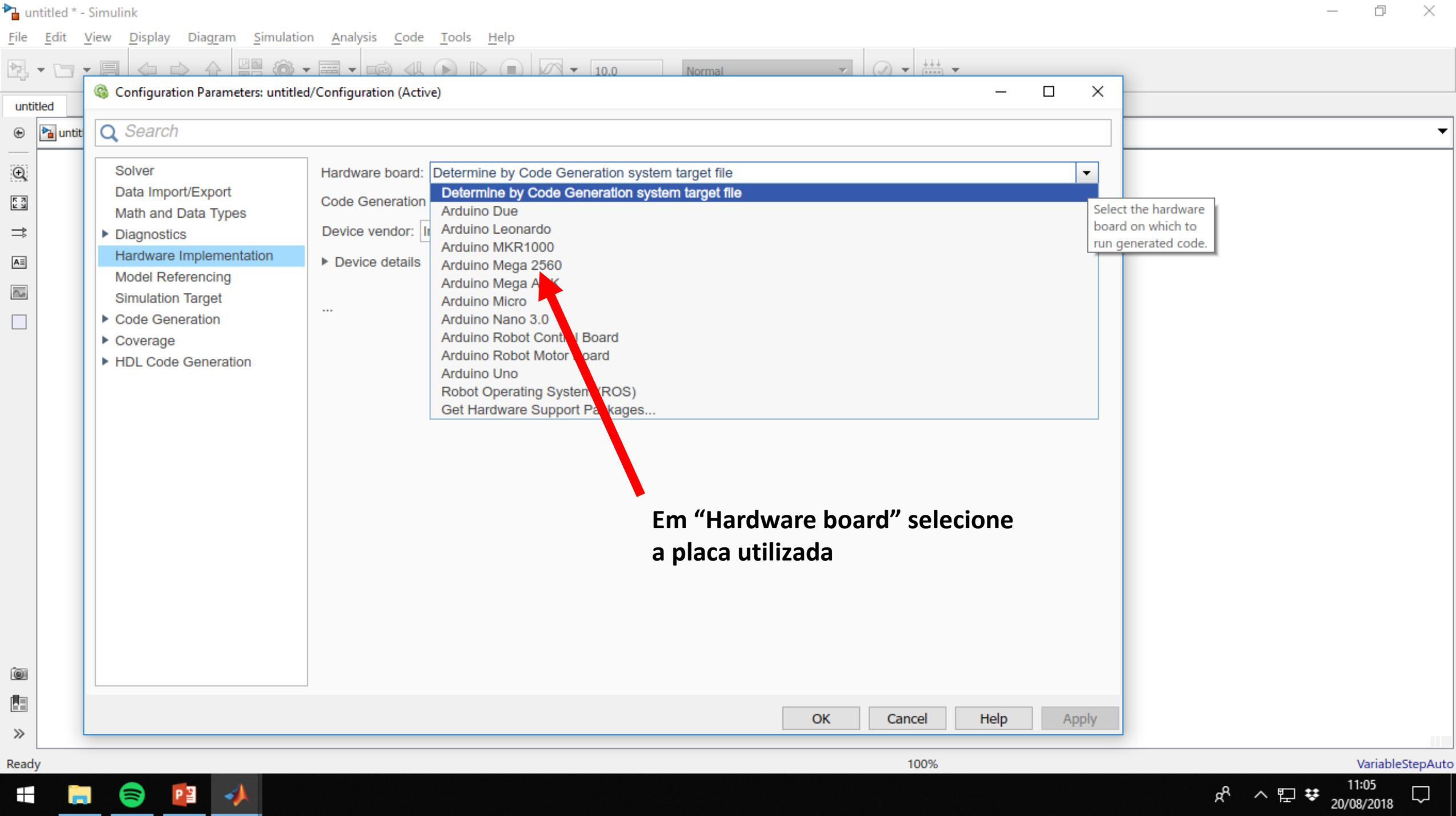
Parameters

Pin number: 13

OK Cancel Help Apply

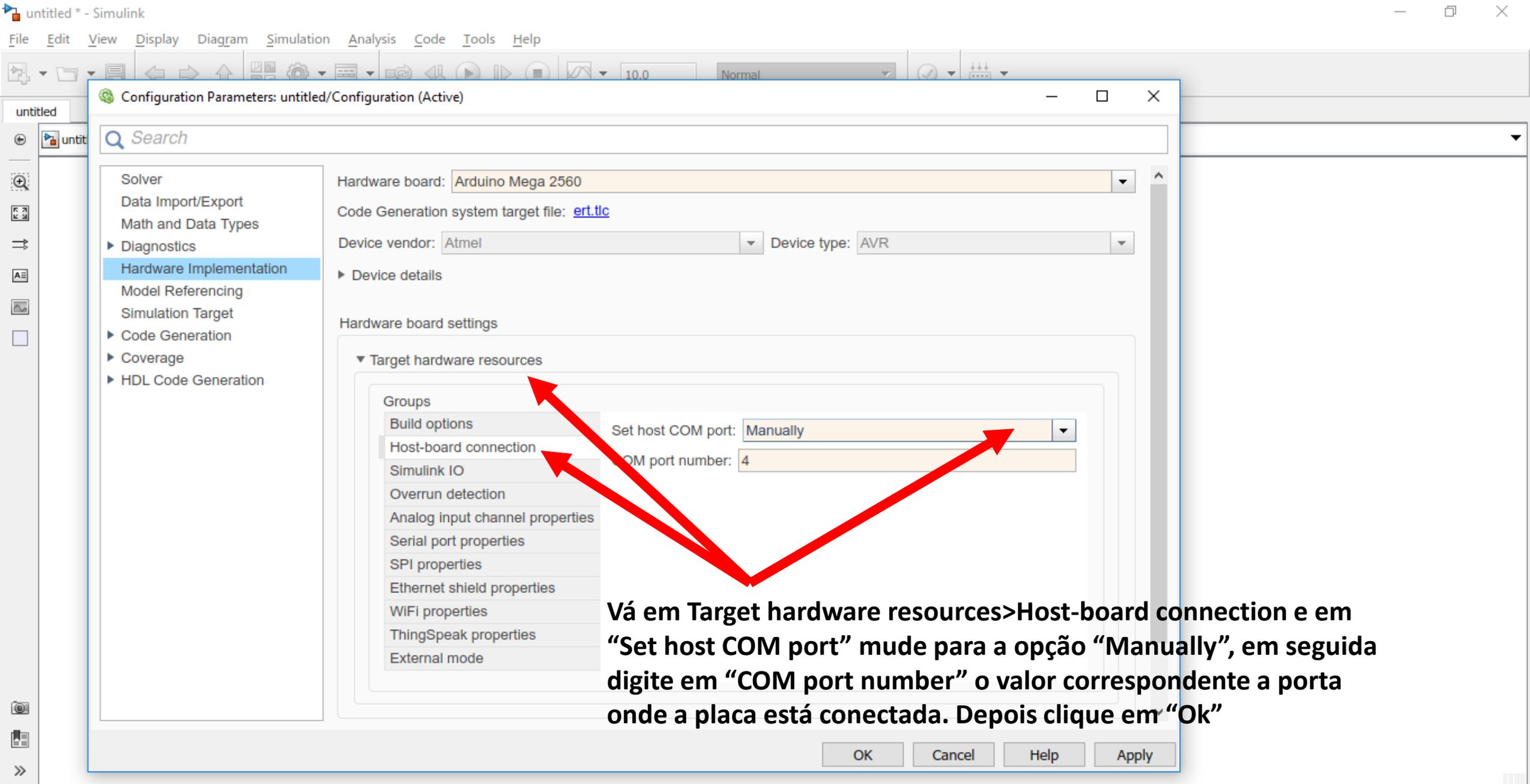


Na barra de ferramentas vá em Tools>Run on Target Hardware>Prepare to Run..

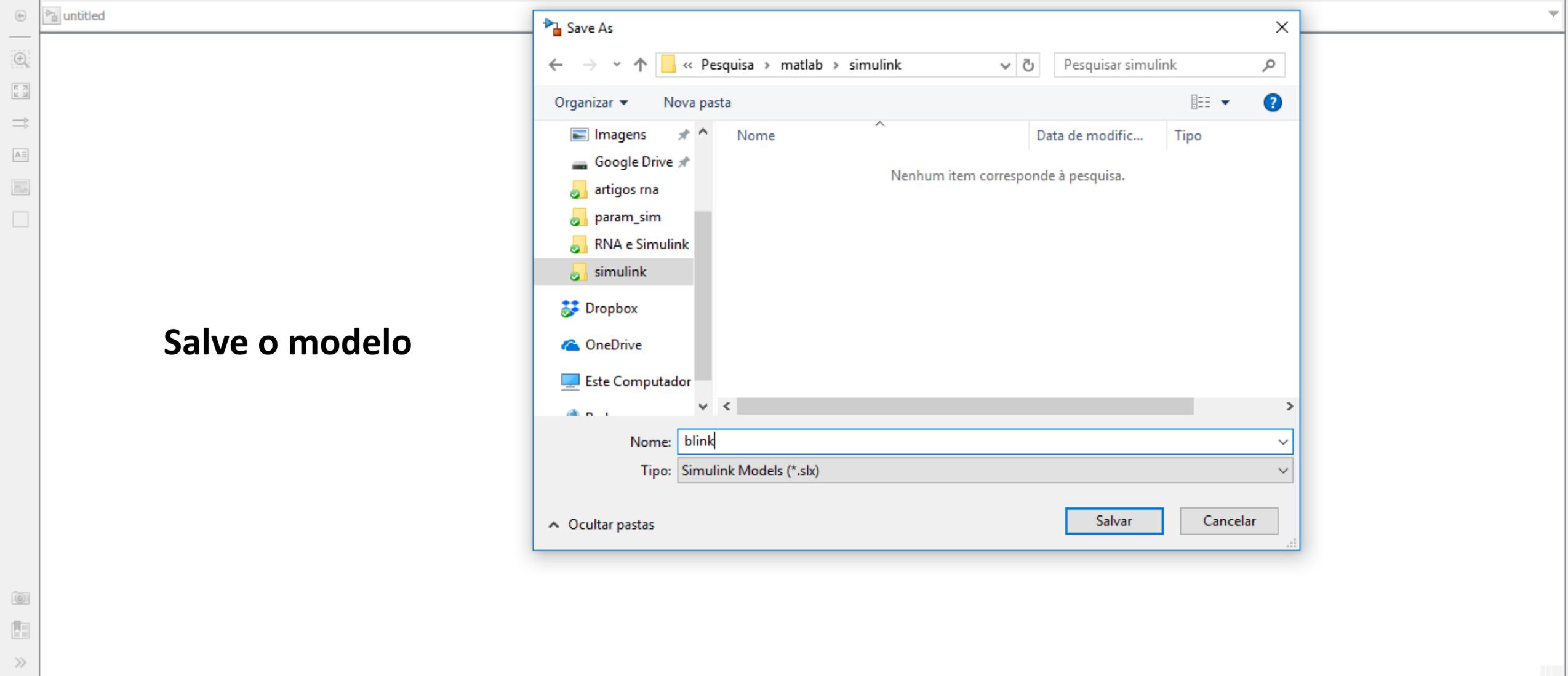


Select the hardware board on which to run generated code.

Em "Hardware board" seleccione a placa utilizada



**Vá em Target hardware resources>Host-board connection e em “Set host COM port” mude para a opção “Manually”, em seguida digite em “COM port number” o valor correspondente a porta onde a placa está conectada. Depois clique em “Ok”**



# Salve o modelo

**Save As**

< > << >> << Pesquisa > matlab > simulink <> Pesquisar simulink

Organizar Nova pasta

|                                     | Nome | Data de modific... | Tipo |
|-------------------------------------|------|--------------------|------|
| Nenhum item corresponde à pesquisa. |      |                    |      |

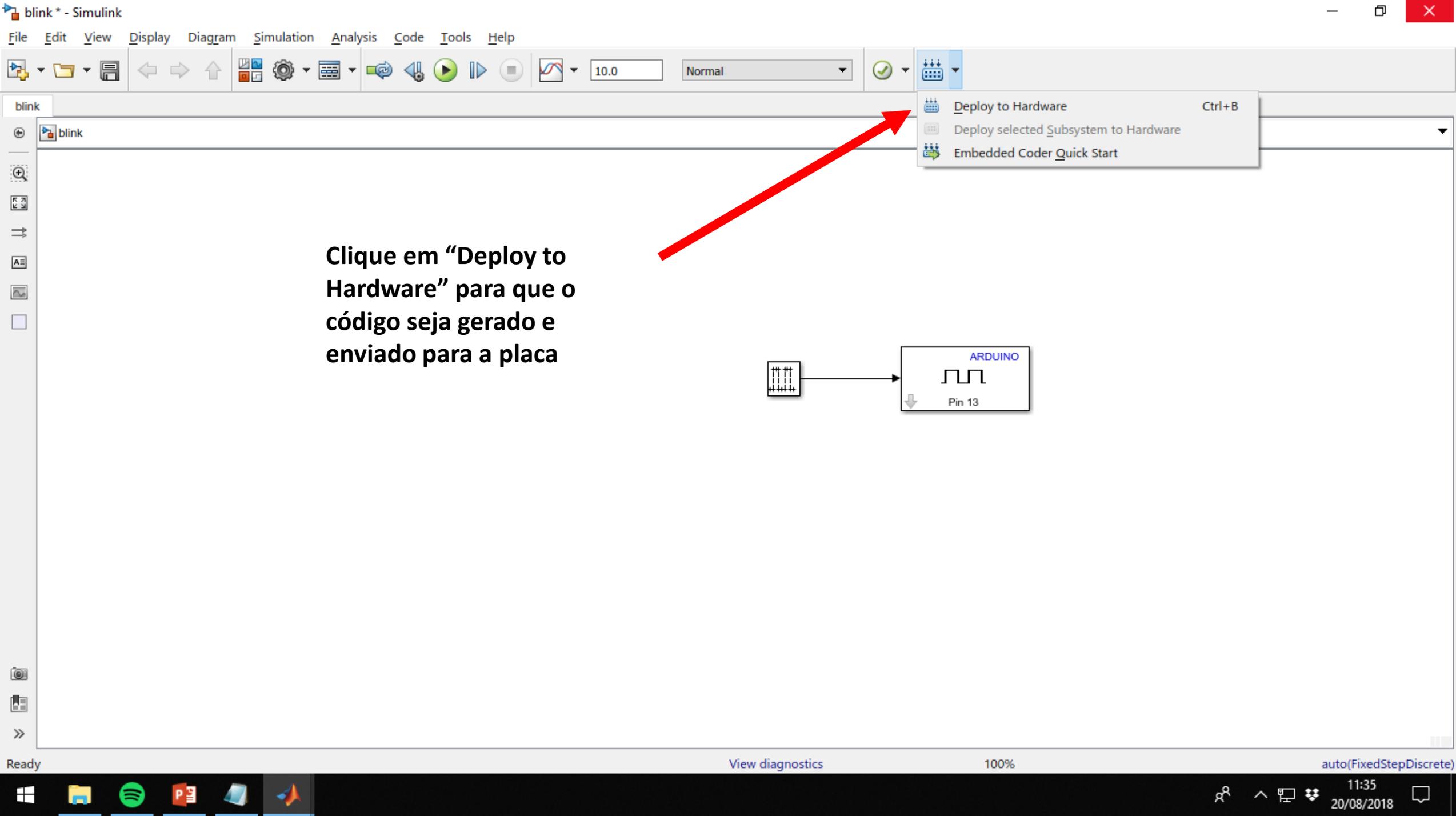
Imagens  
Google Drive  
artigos rna  
param\_sim  
RNA e Simulink  
simulink  
Dropbox  
OneDrive  
Este Computador

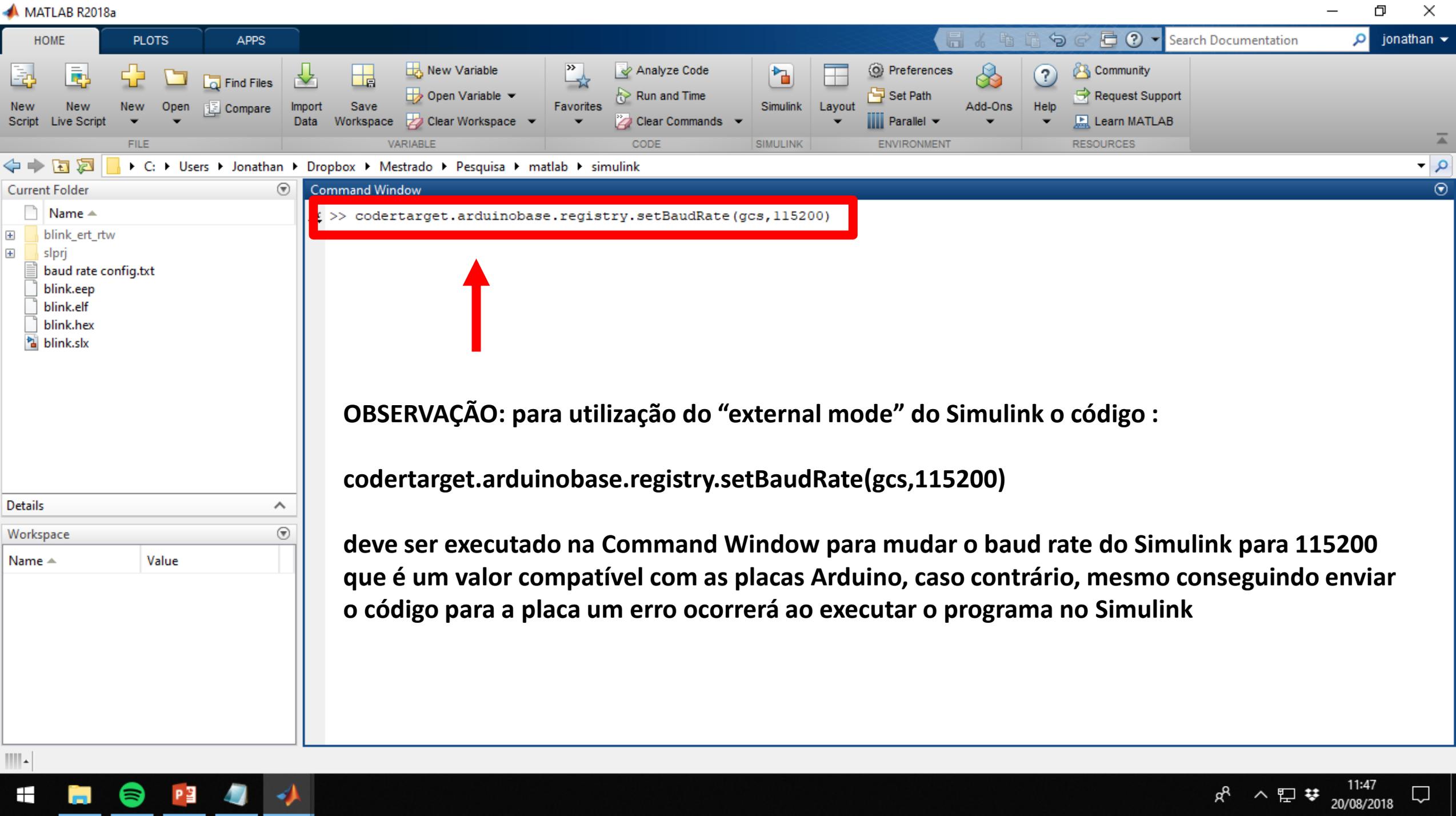
Nome: blink

Tipo: Simulink Models (\*.slx)

Ocultar pastas

Salvar Cancelar





```
>> codertarget.arduino.base.registry.setBaudRate(gcs, 115200)
```



**OBSERVAÇÃO:** para utilização do “external mode” do Simulink o código :

```
codertarget.arduino.base.registry.setBaudRate(gcs,115200)
```

**deve ser executado na Command Window para mudar o baud rate do Simulink para 115200 que é um valor compatível com as placas Arduino, caso contrário, mesmo conseguindo enviar o código para a placa um erro ocorrerá ao executar o programa no Simulink**