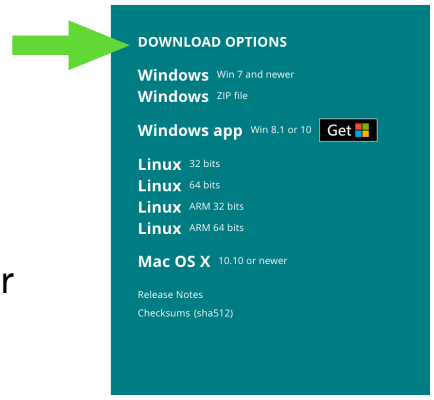
M5-Stick :: The Complete Setup Guide.

Step 1: Downloading Arduino IDE

Download Link: https://www.arduino.cc/en/software

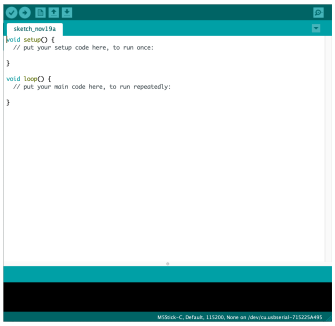


1. Click the Link above and in the side menu of the webpage download the correct version of Arduino IDE for your computer.

2. Arduino is a free to use software but the company relies on public donates, it may prompt you to donate but there is a just download button you can select as well.

3. Once downloaded install the program, when finished it should open a blank Arduino Coding window. This is where we will enter code to change the functions of our m5-sticks.

Arduino Application. Icon



Arduino Programming Window

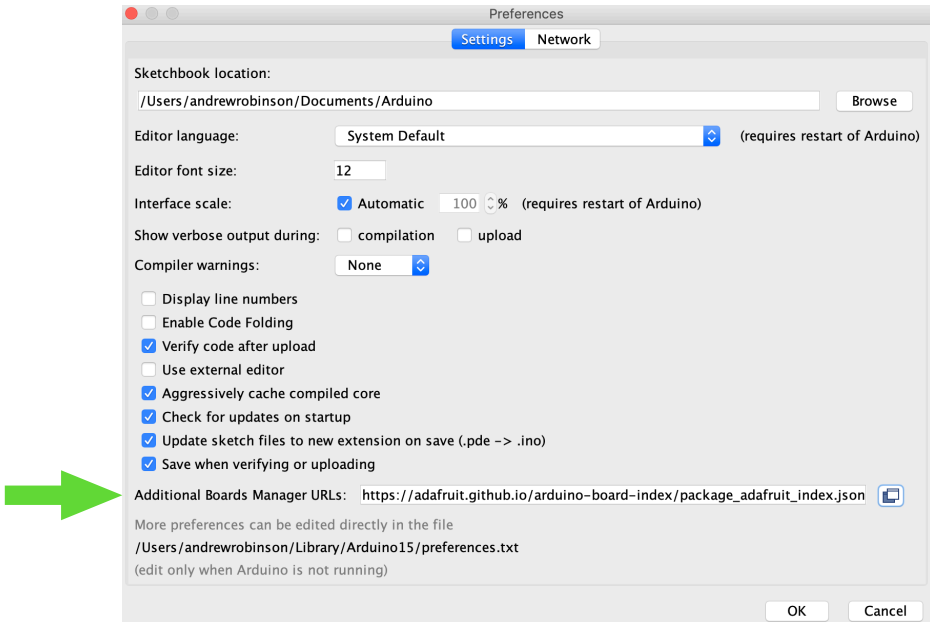
Step 2: Setting up Arduino IDE for the M5-Stick

Goal: We have to get the IDE ready to work with the m5-stick. This requires changing a few parameters in the IDE as well as downloading the correct libraries.

1. After opening up the Arduino IDE, you can open the Preferences window by using shortcut Ctrl+, on Windows(⌘+, on Mac), or look at the toolbar at the top of your window - select “File” - next select “Preferences”. (On Mac computers select “Arduino” from the tool bar - then select “Preferences”)

2. In the Preferences window we have to add the m5-stick board. Copy and paste the following URL into the textbox here it says “Additional Boards Manager URLs:” and click OK.

Copy & Paste:
https://dl.espressif.com/dl/package_esp32_index.json



3. Open the Boards Manager window by going back to the toolbar select tools - board - board manager.

4. In the Board Manager window type in “esp32” - select “esp32 by Espressif Systems” and then click install.

5. Open Library Manager window using shortcut Ctrl+Shift+I on Windows, (⇧+⌘+I on Mac), or go back in the toolbar again select “sketch” - “include library” - then “manage libraries”. This will pull up a similar looking window to our board manager.

6. In the search bar type “m5stickc” - select “m5stickc by m5stickc” and then select install. Next type in “Open Sound Control” - select “OSC by Adrian Freed” and then select install.

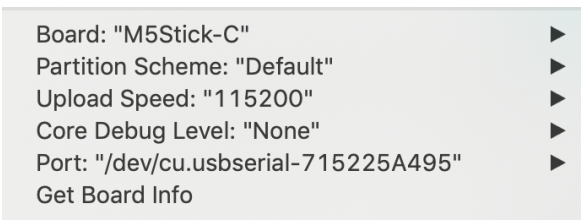
Note: at this point you will need to plug the m5-stick into your computer if you have not done so yet already! This may also require closing out and reopening the Arduino IDE.

7. Back in the Arduino Toolbar select “Tools” - under Board select “ESP32 Arduino” then select “M5Stick-C”.

8. Under “Tools” select “upload speed” and choose “115200”

9. Lastly, under “Tools” select port. There will be several different options
On Mac select /dev/cu.usbserial-73234432/ (exact serial numbers will be vary)
On Windows it will say COM-1, COM-2, COM-3, or COM-4. When uploading codes, you may need to try all the options to find the correct port.

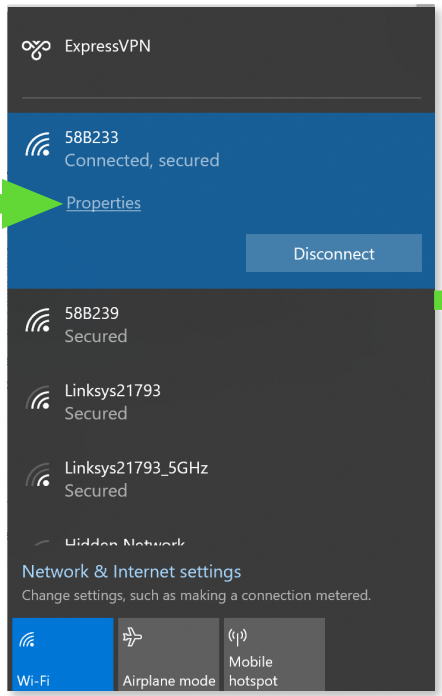
In the end it should look similar to this:

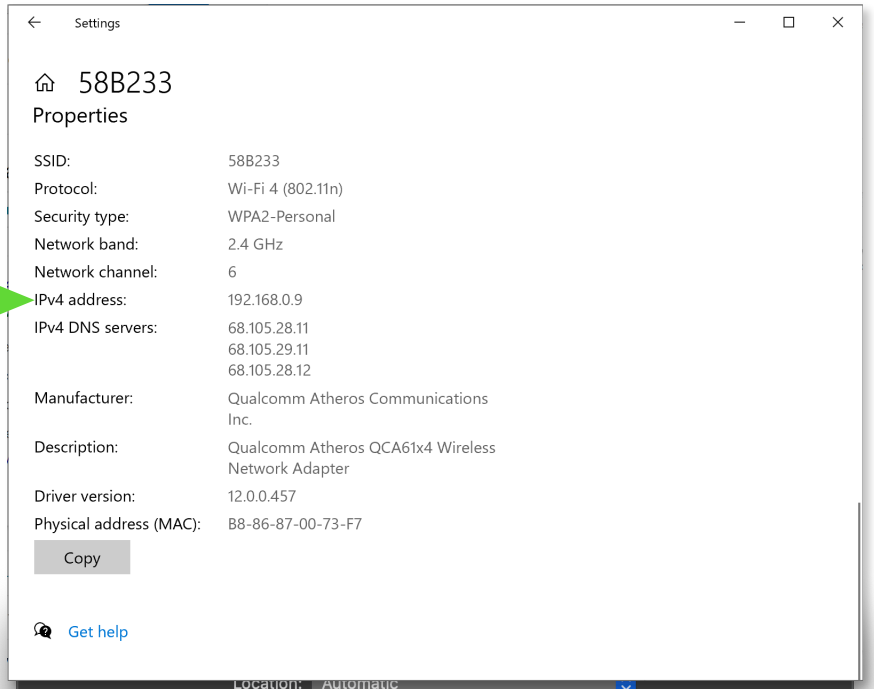


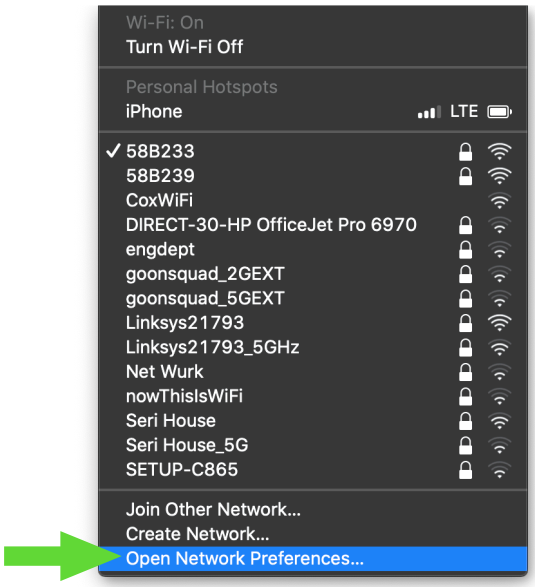
Step 3: Downloading & setting up The Code for our project

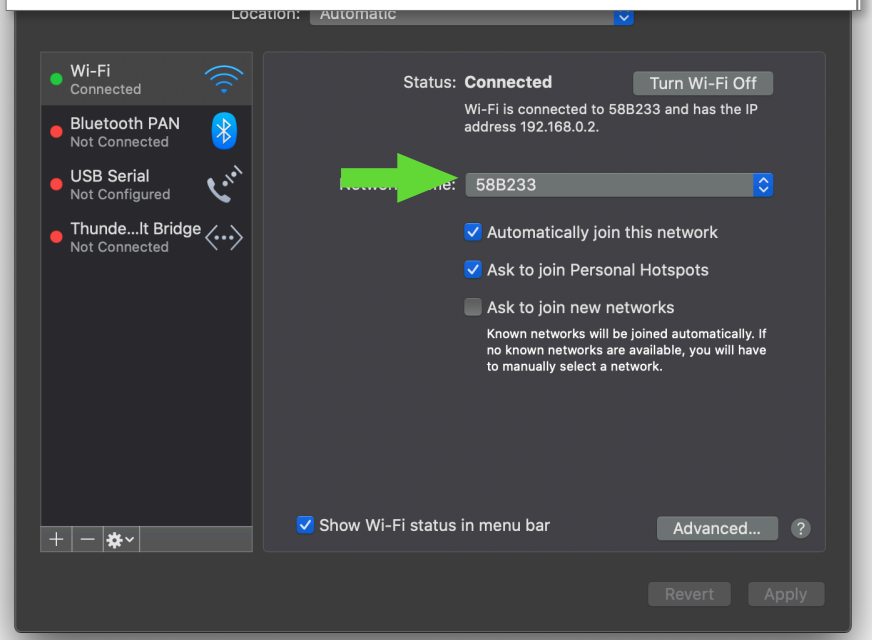
M5-stick Arduino and Max Patch Code Download: https://github.com/Synthesis-ASU-TML/Mated-Objects

1. Now we need to update the network name, the password, and your IP address. First check the name of the WiFi network you are on (note: 5G networks will not work). On Windows, click Properties and scroll to the bottom. Find the number next to IPv4 address. (On Mac, click Open Network Preferences to find your IP address for this network.)









2. In the Arduino IDE, type in the name of the network, the password, and your IP address on the appropriate lines.(Keep it inside the quotation mark)

```
#include <M5StickC.h>
#include <WiFi.h>
#include <WiFiUdp.h>
#include <OSCMessage.h>


////////// User Variables /////////////////////////////////////////////////
// Be sure to set these for your own WiFi network
const char * networkName = "Enter Network Name Here";
const char * networkPswd = "Enter Password for Network Here";

// int sensorIn = G36;

int nonTurboRefreshDelay = 40;

//IP address to send UDP data to:
// either use the ip address of the server or
// a network broadcast address
const char * udpAddress = "Enter IP address here";
const int udpPort = 8001;
```

3. After making these changes click the upload button in the top left corner of the Arduino window

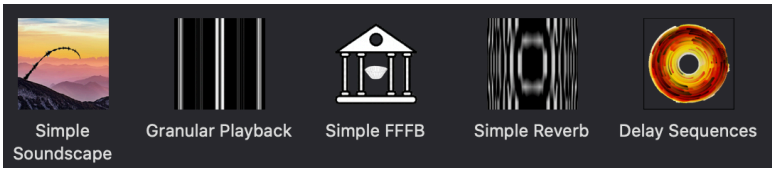
Upload button Icon

Step 4: Downloading The Max MSP Audio patches and m5-stick controller patch

Download link for Max MSP Audio Patches: https://drive.google.com/drive/folders/1Jm1LXCb6_aPaMqAk0uplhBj-IXJRRrm2

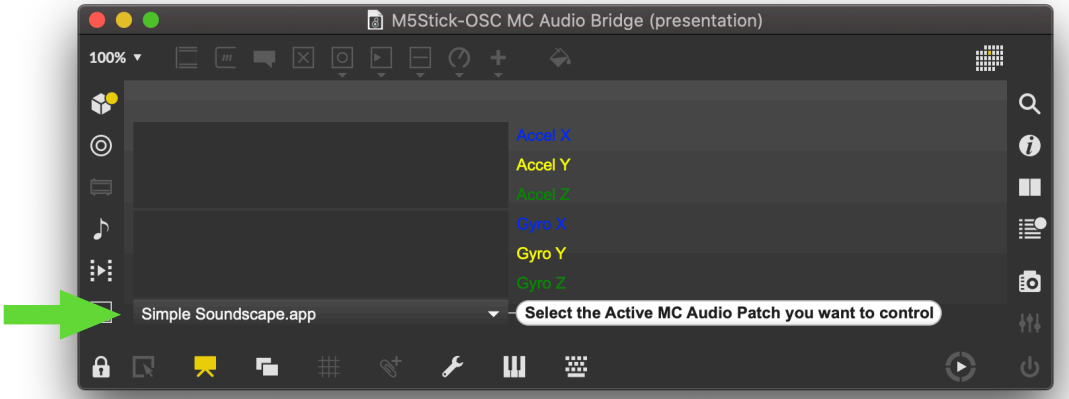
Download link for m5-stick controller patch: https://github.com/Synthesis-ASU-TML/Mated-Objects

1. After Downloading the Max MSP Audio Patches open anyone to start.

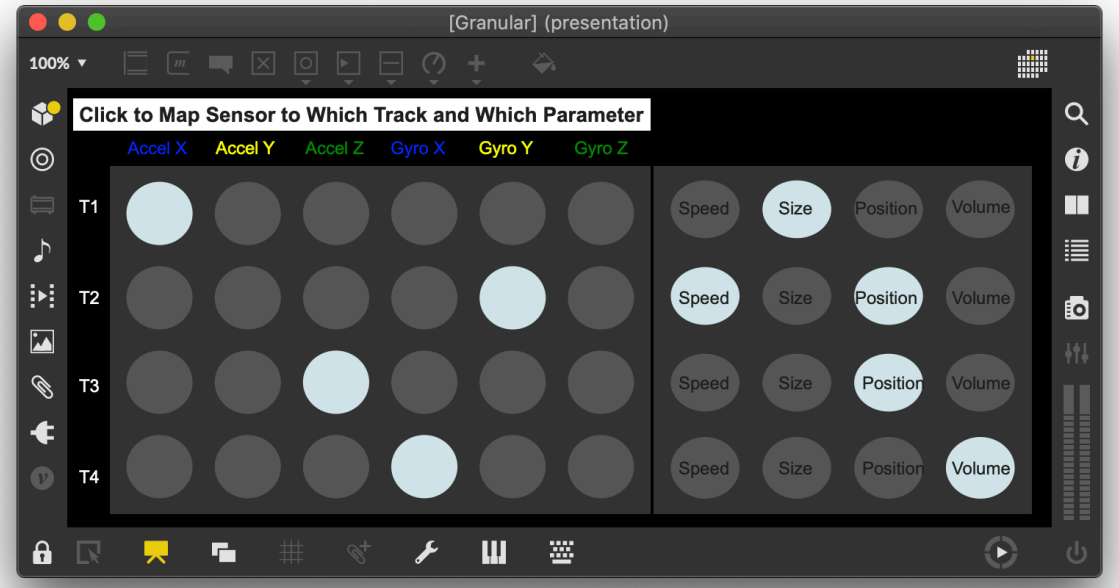


2. After opening the Audio patch then open the m5-stick Controller Patch.

3. In the m5-stick controller patch select the name of the Audio patch you are using from the drop down menu.



4. In the pop up window you can now select and assign different parameters of the m5-stick such as the accelerometer or gyroscope value and map them to controllable parameters of the audio patch.



5. If the controller patch shows the m5-stick is outputting data then you are safe to now unplug the m5-stick from your computer for wireless use.

Troubleshooting:

Q: I downloaded and setup everything properly but the Max m5 stick controller patch isn't outputting the data?

A: Briefly press down both side buttons of the m5-stick. This will reset the output of the m5-stick. If you have the patch open and uploaded the code correctly you should start to see output in the patch as well as on the screen of the m5 stick.

Q: My Arduino code won't upload to the m5 stick. I have everything entered in correctly but every time I go to click upload it fails and says "exit status 1"?

A: Go to the toolbar in Arduino - click sketch, include library, manage libraries - where it says type "All" change that to "Updatable" - Update any out of date libraries we are using (WiFI, OSC, m5-Stick) and then try reuploading.