

Getting started with the Adalogger

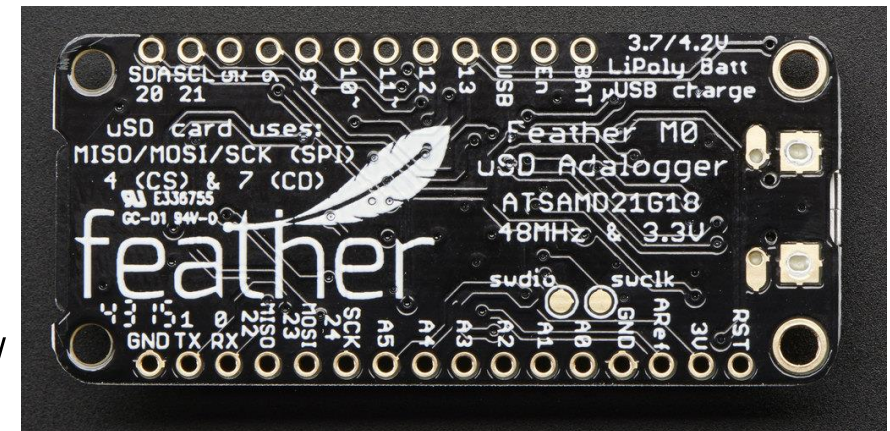
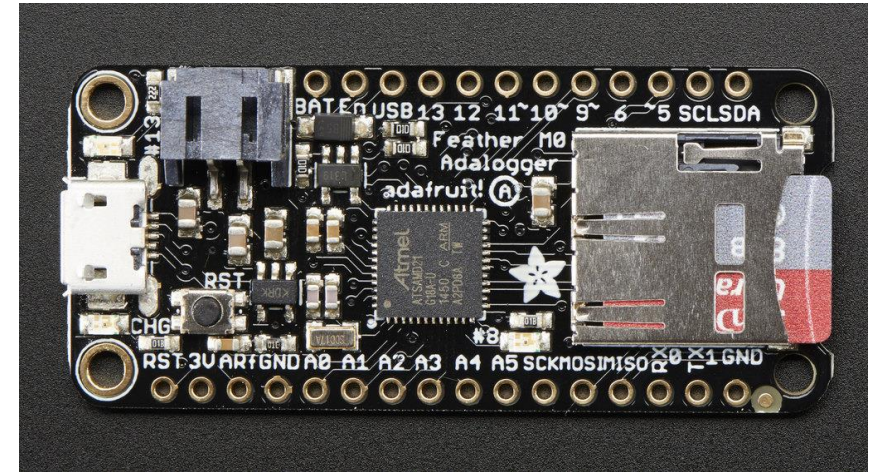
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Getting to know the Adafruit Adalogger

Some key characteristics:


- Small form factor (“feather”)
- 3.3V operation with battery connector
- ATSAM21G18 ARM Cortex M0 processor
- 256KB of FLASH + 32KB of RAM
- Built in micro SD card reader
- 20 GPIO pins

<https://learn.adafruit.com/adafruit-feather-m0-adalogger/>



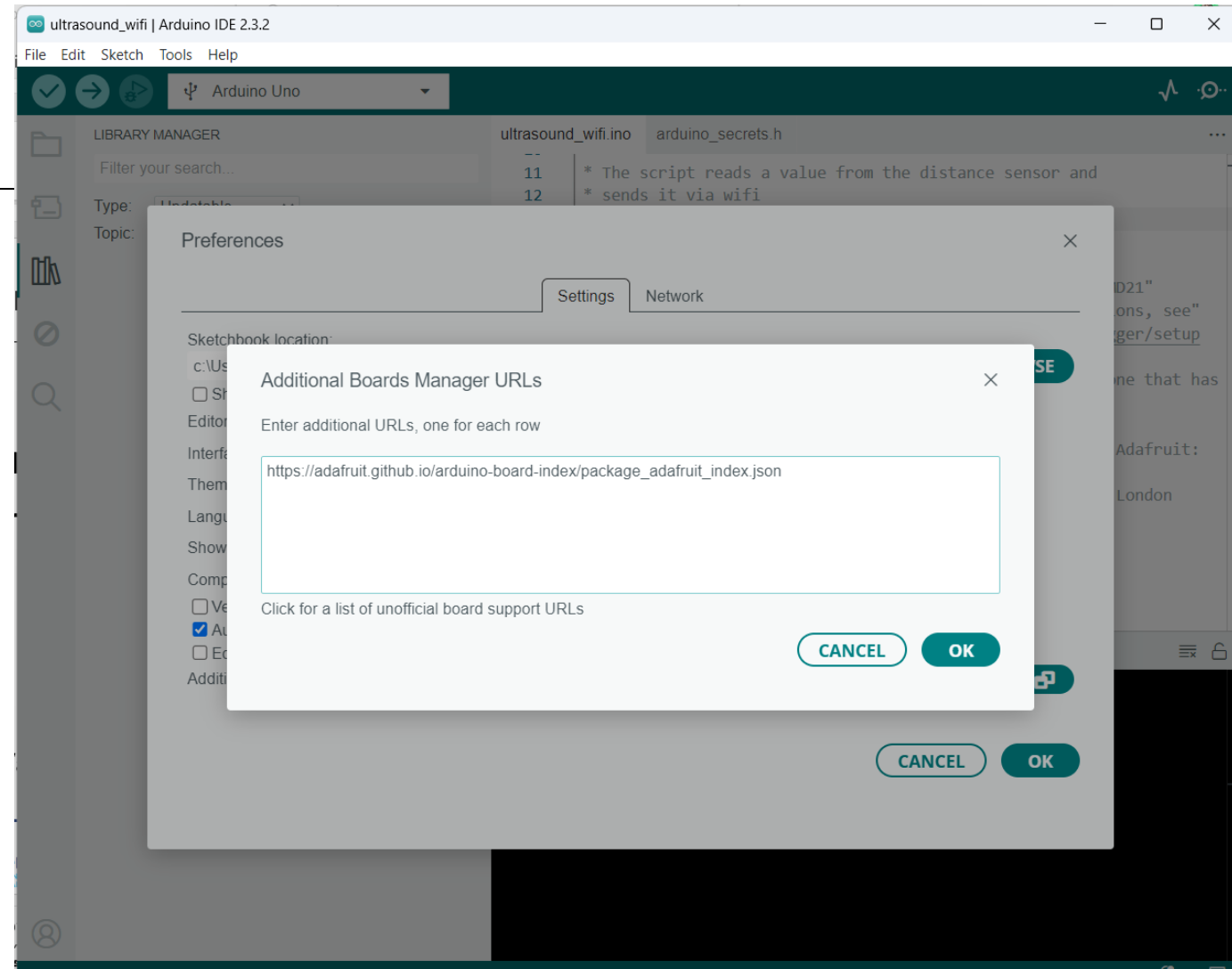
Adding board definitions

Go to File -> preferences

And click on the  icon next to “additional boards manager”

Add the following url:

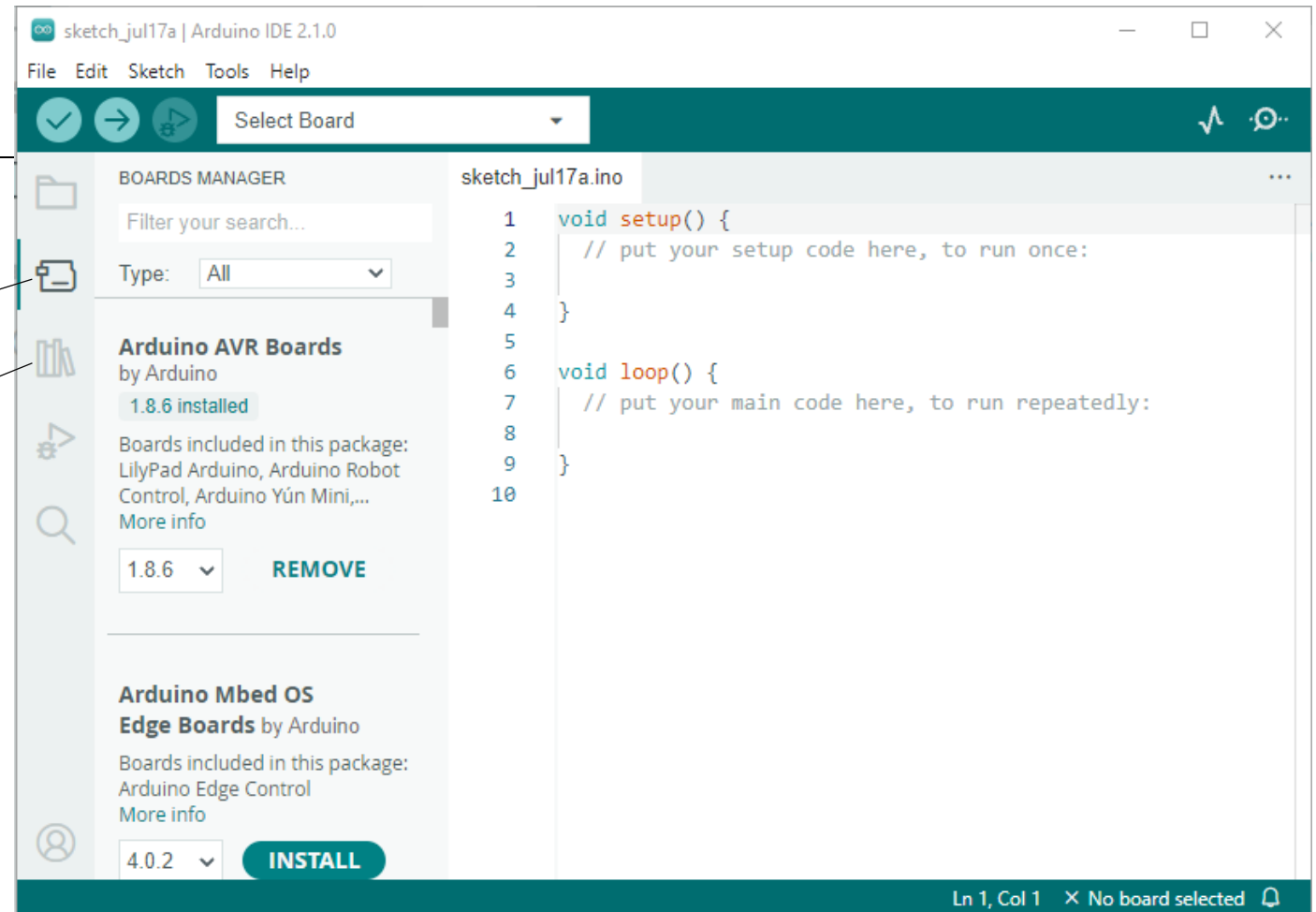
https://adafruit.github.io/arduino-board-index/package_adafruit_index.json



Adding board definitions

Boards Manager

Library Manager



Search for “Adafruit SAMD”

Adding board definitions

Install both:

- Arduino SAMD boards
- Adafruit SAMD boards

The screenshot displays the Arduino IDE 2.3.2 interface. The Boards Manager is open, showing the 'adafruit samd' package installed (version 1.8.14) and the 'Adafruit SAMD Boards' package (version 1.7.14) available for installation. The main editor shows the Blink.ino code, and the Output window shows the following memory usage information:

```
Sketch uses 922 bytes (2%) of program storage space. Maximum is 32256 bytes.
Global variables use 9 bytes (0%) of dynamic memory, leaving 2039 bytes for local variables.
```

Blink | Arduino IDE 2.3.2

File Edit Sketch Tools Help

Auto Format Ctrl+T

Archive Sketch

Manage Libraries... Ctrl+Shift+I

Serial Monitor Ctrl+Shift+M

Serial Plotter

Firmware Updater

Upload SSL Root Certificates

Board: "Arduino Uno" ▶

Port: "COM3" ▶

Get Board Info

Programmer ▶

Burn Bootloader

Boards Manager... Ctrl+Shift+B

Adafruit SAMD Boards ▶

- Arduino AVR Boards ▶
- Arduino Mbed OS Edge Boards ▶
- Arduino Mbed OS Giga Boards ▶
- Arduino Mbed OS Nicla Boards ▶
- Arduino Mbed OS Opta Boards ▶
- Arduino megaAVR Boards ▶
- Arduino nRF52 Boards ▶
- Arduino SAM Boards (32-bits ARM Cortex-M3) ▶
- Arduino SAMD Boards (32-bits ARM Cortex-M0+) ▶
- MiniCore ▶
- SparkFun SAMD (32-bits ARM Cortex-M0+) Boards ▶

domain.

Adafruit Feather M0 (SAMD21)

Adafruit Feather M0 Express (SAMD21)

Adafruit Metro M0 Express (SAMD21)

Adafruit Circuit Playground Express (SAMD21)

Adafruit Gemma M0 (SAMD21)

Adafruit Trinket M0 (SAMD21)

Adafruit QT Py M0 (SAMD21)

Adafruit NeoPixel Trinkey M0 (SAMD21)

Adafruit Rotary Trinkey M0 (SAMD21)

Adafruit NeoKey Trinkey M0 (SAMD21)

Adafruit Slide Trinkey M0 (SAMD21)

Adafruit ProxLight Trinkey M0 (SAMD21)

Adafruit SHT4x Trinkey M0 (SAMD21)

Adafruit ItsyBitsy M0 Express (SAMD21)

Adafruit pIRKey (SAMD21)

Adafruit Hallowing M0 (SAMD21)

Adafruit Crickit M0 (SAMD21)

Adafruit BLM Badge (SAMD21)

Adafruit Metro M4 (SAMD51)

Adafruit Grand Central M4 (SAMD51)

Adafruit ItsyBitsy M4 (SAMD51)

Adafruit Feather M4 Express (SAMD51)

Adafruit Feather M4 CAN (SAMD51)

Blink.ino

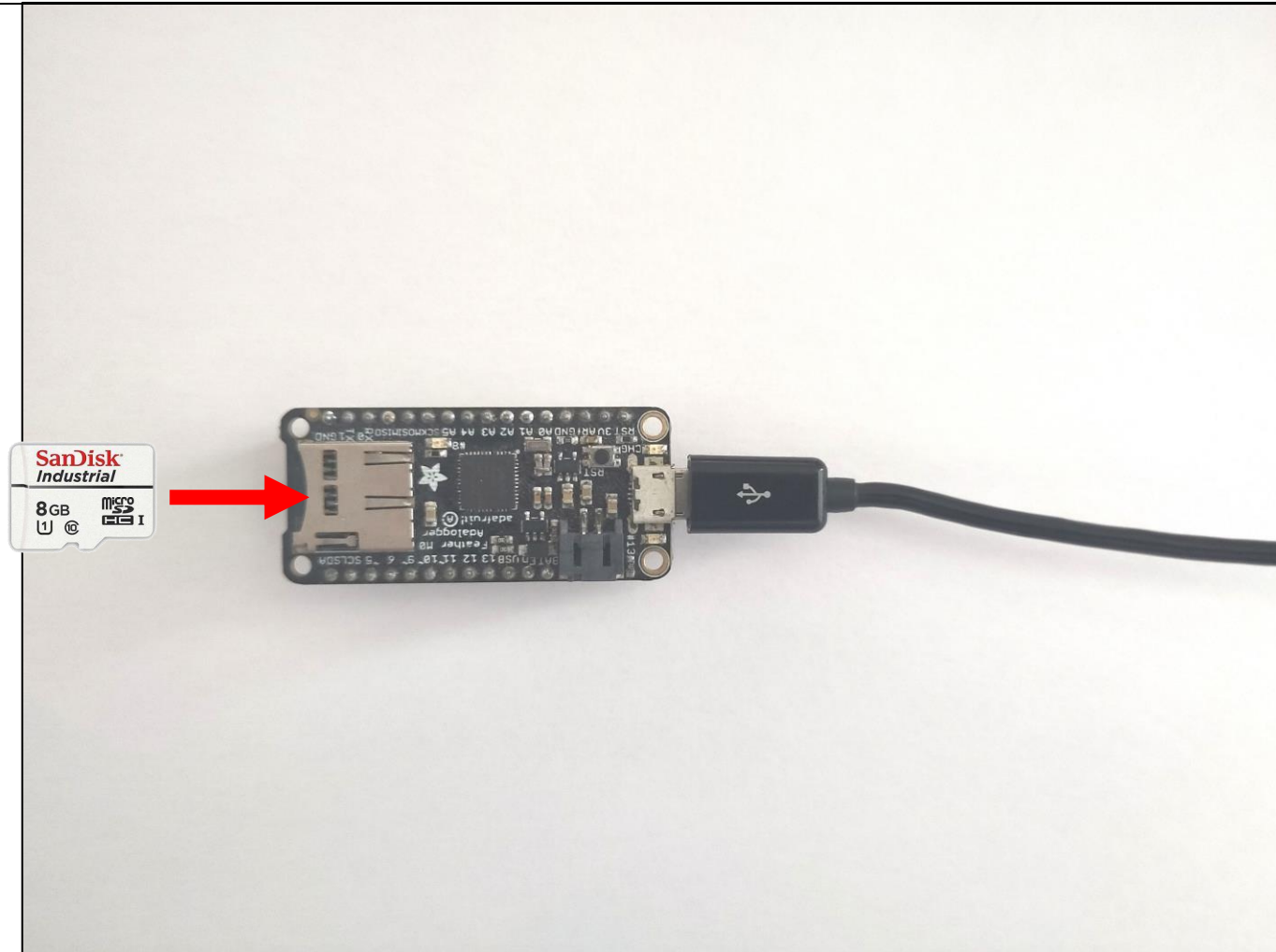
```

16
17
18
19
20
21
22
23
24
25
26
27
28
29 }
30
31 // the loop function runs over and
32 void loop() {
33   digitalWrite(LED_BUILTIN, HIGH);
34   delay(100);
35   digitalWrite(LED_BUILTIN, LOW);
36   delay(100);
37 }
38

```

Output Serial Monitor

Set-up 1: testing the SD card



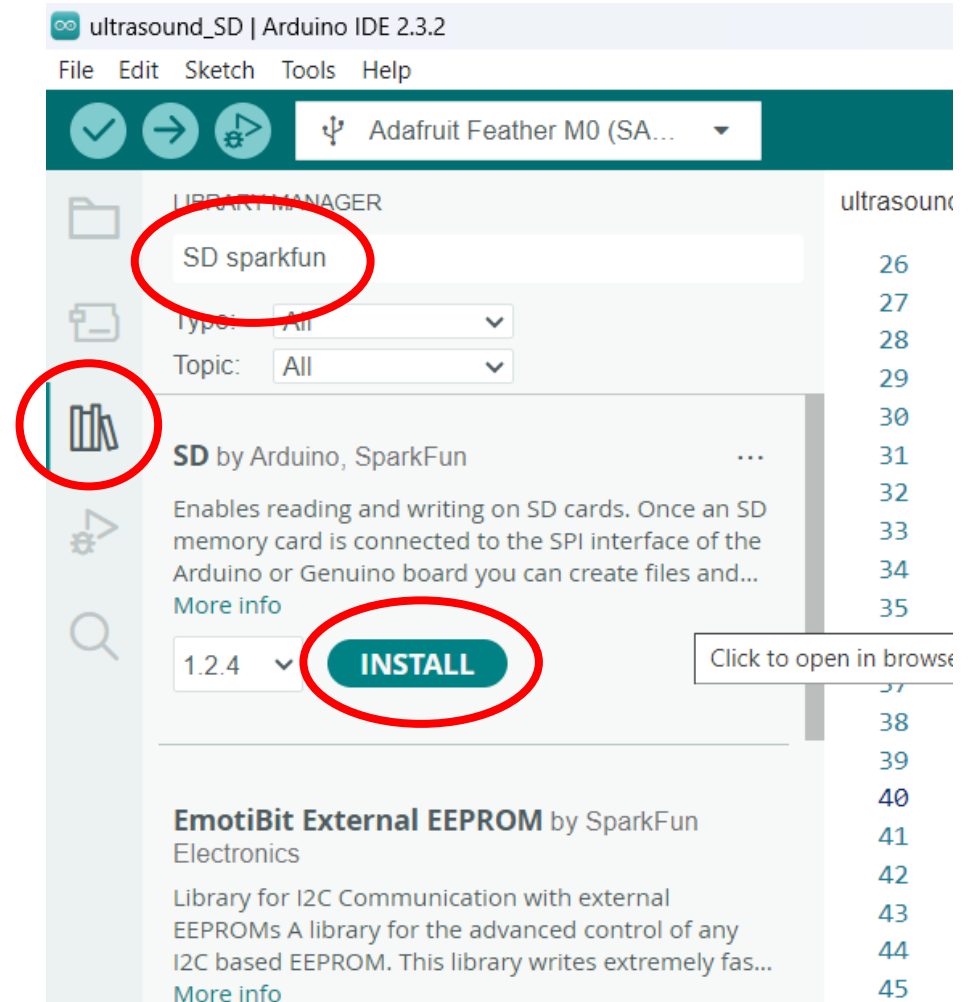
Exercise 1: Revisiting the blink example

- Select the “Adafruit M0 board” from the board definitions
- Select the port
- Open the “blink.ino” script
- Run the script

Exercise 2: Exploring the SD card functionality

Now, we will start using libraries that are not part of the core Arduino installation. So they need to be installed separately, but luckily this is easy to do through the library manager interface. Search in the library for “SD sparkfun” and install the following library:

- SD by Arduino, Sparkfun



Exercise 2: Exploring the SD card functionality

- Run “SD -> Cardinfo.ino”
- Explore the sketch “SD -> datalogger.ino”

Advanced exercise

Modify the “SD -> Readwrite.ino” sketch to write your group’s names to a file on the SD card. Check by whether you have been successful by taking the card out of the Adalogger, and reading it with your PC by means of the SD card reader included in your hardware kit

Download the code

1

2

The screenshot shows the GitHub interface for the repository 'UNESCO_Open_Hardware_Cookbook' by 'ICHydro'. The repository is public and has 1 star and 0 forks. The 'Code' button is highlighted with a red arrow labeled '1'. A dropdown menu is open, showing options to clone the repository using HTTPS, GitHub CLI, or the web URL, or to open it with GitHub Desktop. The 'Download ZIP' option is highlighted with a red arrow labeled '2'. The repository's README is visible, stating that it contains materials for an online course on open hardware sensors for water resources management.

https://github.com/ichydro/UNESCO_Open_Hardware_Cookbook