## Installation of Arduino IDE and Libraries for ESP32

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 Install Arduino IDE and necessary libraries for compilation of the program on ESP32

## ESP32 C3

<u>https://www.designandmake.org/x/rbjPCw</u>



## Outline

- 1. Install Arduino IDE
  - Install the Arduino Integrated development environment (IDE) and the ESP32 core library for compiling and uploading program to an ESP32C3 device
- 2. Compile and Upload "Blink"
  - Compile and upload an example program ("Blink") to ESP32C3 to verify step 1

## Install Arduino IDE (1)

#### https://www.arduino.cc/en/software

©©	HARDWARE	SOFTWARE CLOUD	DOCUMENTATION	COMMUNITY -	BLOG	ABOUT
	Downloads					
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The Arduino IDE 2.0 is open source and its source code is hosted on **GitHub**.

SOURCE CODE

## Install Arduino IDE (2)

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## Install Arduino IDE (3)

#### • Tools > Boards > Board Managers



## Install Arduino IDE (4)

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→ 🚱 🜵 ESP32C3 Dev Module 🔹	
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## Install Arduino IDE (5)

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Department of Alchemy MiniMain ESP32-S2

Bee Data Logger

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## Confirm Type of ESP32 C3 board



With CH343 chip

Without CH343 chip

## For Board Without CH343 (1)

- Connect ESP32C3 board to PC through a USB Type C cable
- Run Device Manager to determine port number



## For Board Without CH343 (2)

### • Set Port on Arduino, and enable CDC

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## For Board With CH343 Chip (1)

- Connect ESP32C3 board to PC through a USB Type C cable
- Run Device Manager to determine port number



## For Board With CH343 Chip (1)

### • Set Port on Arduino, and disable CDC

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### CH343 Driver

- CH343 a chip on ESP32-C3 development board
- For communication between host (Windows/MacOS) and ESP32-C3 chip
- No need to install driver on Windows
- Need to install driver on some Mac
  - Refer to <a href="https://github.com/WCHSoftGroup/ch34xser">https://github.com/WCHSoftGroup/ch34xser</a> macos

## Compile and Upload "Blink" (1)

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## Compile and Upload "Blink" (2)

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Ln 19, Col 1 AirM2M\_CORE\_ESP32C3 on COM8 🗘 2 🗖

## Compile and Upload "LittleFS Initialization" (1)

- Download the zip file from <a href="https://www.designandmake.org/x/EFFvD">https://www.designandmake.org/x/EFFvD</a>
- Unzip and click on the ino file

^	Name	<b>`</b>	Date modified	Туре	Size	File	initialLittleFS   Arc	Juino IDE 2.3.2
	🔤 initialLittleFS.ino		19-Sep-23 10:46 AM	INO File		1 KB		Ŷ AirM2M_CORE_ESP32C3 ▼
						P	initialLittleF	S.ino
						L	1	<pre>#include "LittleFS.h"</pre>
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							3	// the setup function runs once when you press reset or power the board
							4	<pre>void setup() {</pre>
							5	<pre>// initialize digital pin LED_BUILTIN as an output.</pre>
						1	> 6	<pre>pinMode(LED_BUILTIN, OUTPUT);</pre>
							7	LittleFS.begin(true);
						C	8	3
							9	
							10	// the loop function runs over and over again forever
							11	<pre>void loop() {</pre>
							12	digitalWrite(LED_BUILTIN, HIGH); // turn the LED on (HIGH is the voltage leve
							13	delay(1000); // wait for a second
							14	<pre>digitalWrite(LED_BUILTIN, LOW); // turn the LED off by making the voltage LO</pre>
							15	<pre>delay(1000); // wait for a second</pre>
							16	}

# Compile and Upload "LittleFS Initialization" (2)

• Sketch > Include Library > Manage Libraries

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<b>6</b> 3	Expo	rt Compiled Binary Alt+Ctrl+S	Adafruit NeoPixel		
	Optir	nize for Debugging	Adafruit PWM Servo Driver Library		r the board
nh			Adafruit TCS34725		
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÷^	Add	File	ArduinoSTL		
	9	5	ArxTypeTraits		
Q	10	<pre>// the loop function ru</pre>	BH1750FVI		
	11	<pre>void loop() {</pre>	CircularBuffer		
	12	digitalWrite(LED_BUIL	DHT sensor library		H is the voltage level)
	13	delay(1000);	DHT sensor library for ESPx		
	14	digitalWrite(LED_BUIL	Dictionary		making the voltage LOW
	15	delay(1000);	Embedded Template Library - Arduin	10	
	16	}	ESP Async WebServer		
	17		ESP32C3_Servo		
			ESP8266 Web File Manager		
			ESP8266-Arduino-Lua		
			ESP8266MQTTClient		
8			ESPAsyncTCP		

#### Compile and Upload "LittleFS Initialization" Enter "littlefs esp32" initialLittleFS | Arduino IDE 2.3.2 File Edit Sketch Tools Help initialLittleFS | Arduino IDE 2.3.2 AirM2M\_CORE\_F5P32C3 y. File Edit Sketch Tools Help 2 initialLittleFS.ino IRDARY MANAGER initialLittleFS.ino LIBRARY MANAGER littlefs esp32 #include "LittleFS.! ] 1 #include "LittleFS.h" littlefs esp32 9-2 All Type: v All Type: v // the setup function 3 Topic: All v // the setup function runs once when you pre: Topic: All 3 V void setup() { Th 4 4 void setup() { LittleFS esp32 by lorol LittleFS\_esp32 by lorol // initialize dig 5 5 // initialize digital pin LED BUILTIN as ar 1.0.6 installed LittleFS for esp32 based on esp littlefs 8 pinMode(LED BUILTIN, OUTPUT); pinMode(LED BUILT 6 6 IDF component. Use esp32 core-LittleFS for esp32 based on esp littlefs LittleFS.begin(true); provided LITTLEFS library instead of... LittleFS.begin(tr 7 provided LITTLEFS library instead of ... More info 8 More info 8 9 INSTALL 1.0.6 ~ 1.0.6 ~ REMOVE 9 // the loop function runs over and over again 10 10 // the loop functior void loop() { 11 11 void loop() { 12 digitalWrite(LED BUILTIN, HIGH); // turn BlynkESP32 BT WF by Khoi BlynkESP32 BT WF by Khoi Hoang delay(1000); // wait 13 12 digitalWrite(LED E Hoang Enable inclusion of both ESP32 Blynk digitalWrite(LED\_BUILTIN, LOW); 14 // turn Enable inclusion of both ESP32 Blynk 13 delay(1000); BT/BLE and WiFi libraries. Then select BT/BLE and WiFi libraries. Then select one at reboot or run both. Eliminate... 1 -1-1-1/1000). 11 ...... digitalWrite(LED E 14 More info one at reboot or run both. Eliminate... Output More info INSTALL Downloading LittleFS\_esp32@1.0.6 15 delay(1000); 1.2.2 V 122 ~ INSTALL LittleFS esp32@1.0.6 16 Installing LittleFS\_esp32@1.0.6 17 BlynkEthernet\_Manager by Installed LittleFS esp32@1.0.6 Khoi Hoang Simple Ethernet Manager for

MultiBlynk for Teensy, SAM DUE,

# Compile and Upload "LittleFS Initialization" (4)

- Compile and upload to check for correctness
- Note:
  - This program is for initializing the LittleFS on ESP32C3, which is a file system (FS) for storing data