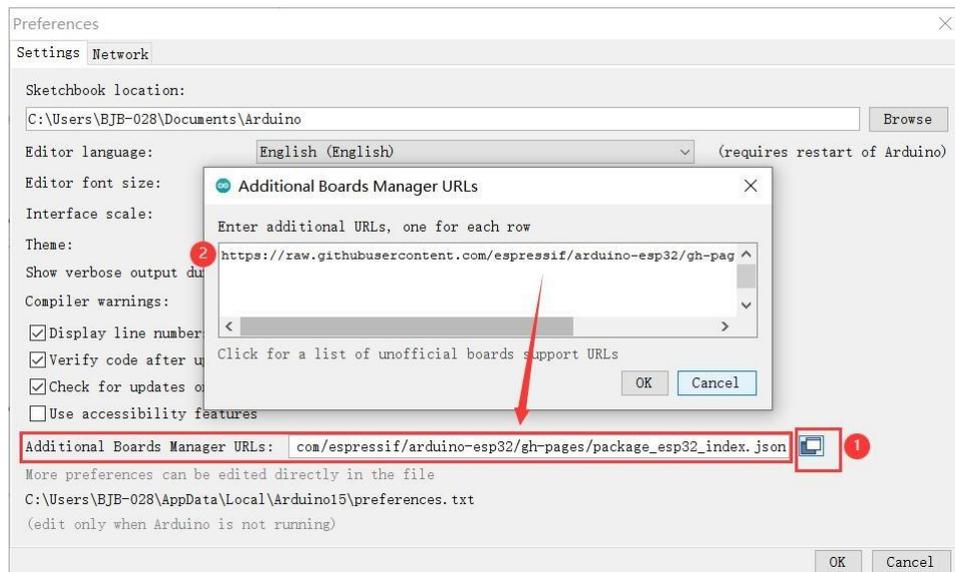


## How to upload the ESP32 display factory program by Arduino IDE?

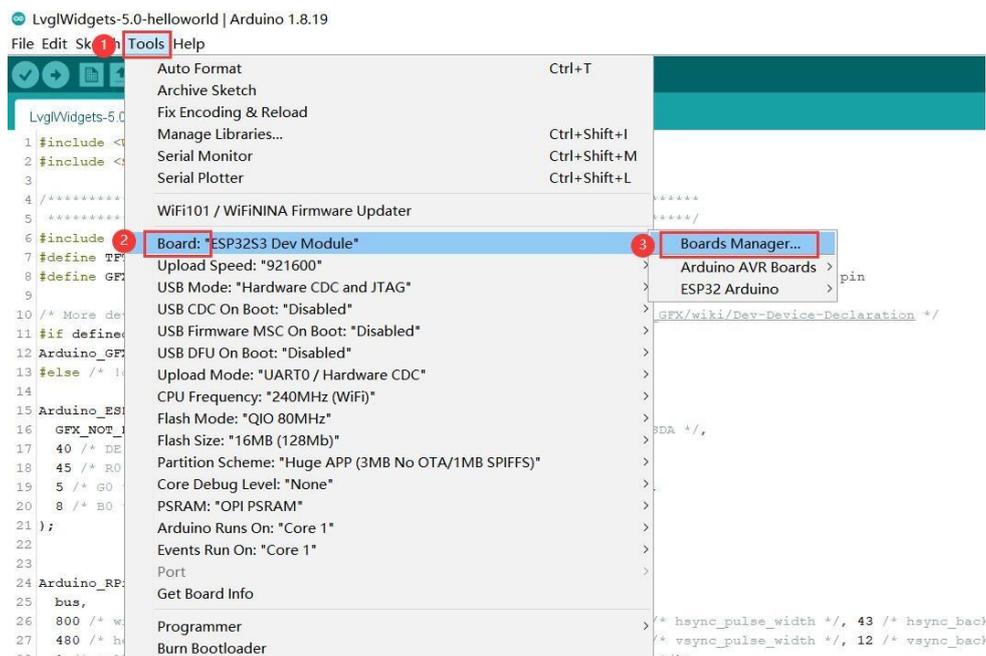
**Step 1** Download the Arduino IDE(<https://www.arduino.cc/en/software>)



**Step 2** After downloading the Arduino IDE, click on "File-->Preference", and add the ESP32 S3 URL([https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package\\_esp32\\_index.json](https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json)) to "Board Manager URLs" as follows:



**Step 3** Click "Tool-->Board-->Board Manager", and search for "esp32". It is recommended to install **version 2.0.3** ESP32 package.





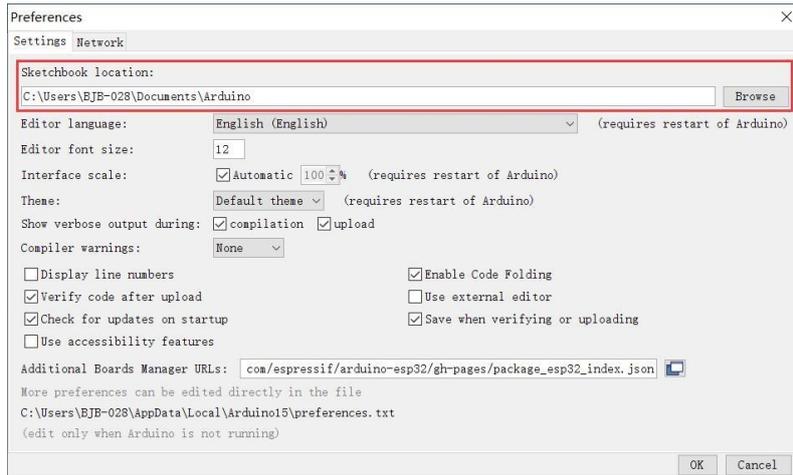
**Step 4** Install the libraries provided by Elecrow

Firstly download the libraries files.

Then copy them to the Arduino libraries directory:



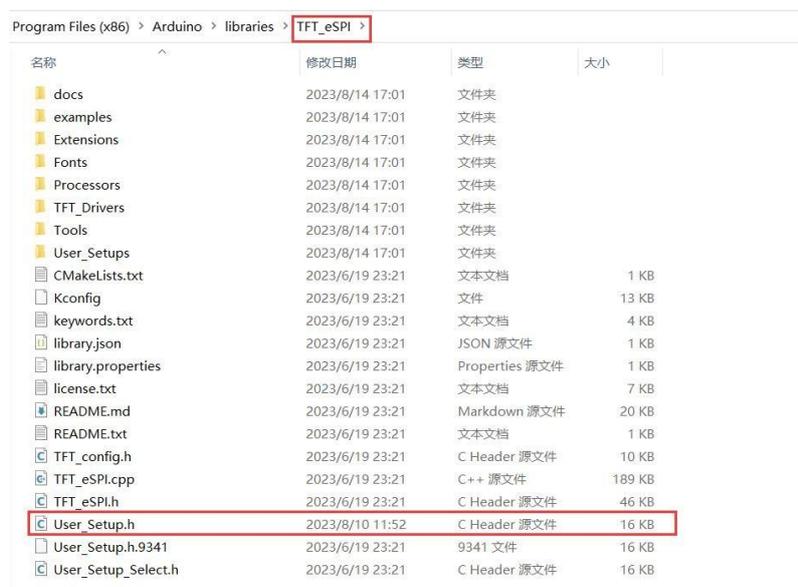
Here's the method to locate the libraries directory: open Arduino IDE→Click on "File"→Click "Preference" →then you will see "Sketchbook location":



Please note that different sizes of the ESP32 display require different UI libraries, you need to replace the UI files when you using different displays.



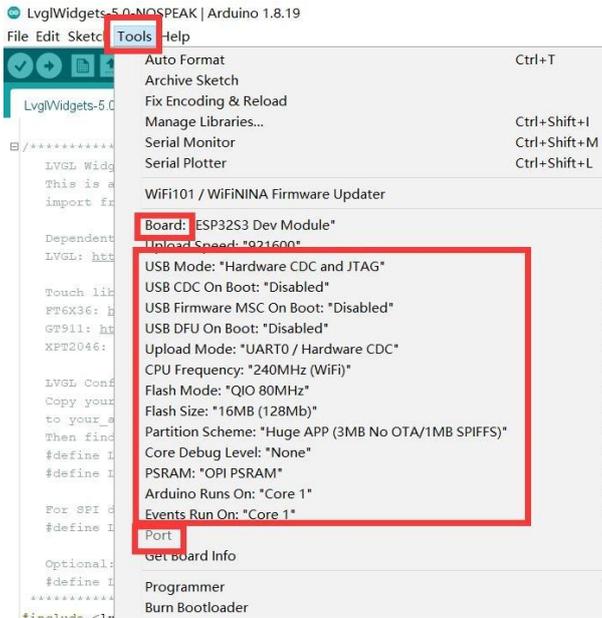
And the User\_Setup.h in TFT\_eSPI library folder also needs to be modified according to their screen driver(except for the 4.3"/5.0"/7.0" HMI display, which do not use TFT\_eSPI library)



**Step 5** Download and open the factory program.

- 2.4-Factory-Program
- 2.8-Factory-Program
- 3.5-Factory-Program
- 4.3-Factory-Program
- 5.0-Factory-Program
- 7.0-Factory-Program

**Step 6** Choose the board and set the parameter on Arduino IDE



**ESP Terminal RGB&SPI :**

Auto Format	Ctrl+T
Archive Sketch	
Fix Encoding & Reload	
Manage Libraries...	Ctrl+Shift+I
Serial Monitor	Ctrl+Shift+M
Serial Plotter	Ctrl+Shift+L
WiFi101 / WiFiNINA Firmware Updater	
Board: "ESP32S3 Dev Module"	>
Upload Speed: "921600"	>
USB Mode: "Hardware CDC and JTAG"	>
USB CDC On Boot: "Disabled"	>
USB Firmware MSC On Boot: "Disabled"	>
USB DFU On Boot: "Disabled"	>
Upload Mode: "UART0 / Hardware CDC"	>
CPU Frequency: "240MHz (WiFi)"	>
Flash Mode: "QIO 80MHz"	>
Flash Size: "16MB (128Mb)"	>
Partition Scheme: "Huge APP (3MB No OTA/1MB SPIFFS)"	>
Core Debug Level: "None"	>
PSRAM: "OPI PSRAM"	>
Arduino Runs On: "Core 1"	>
Events Run On: "Core 1"	>
Port	>
Get Board Info	
Programmer	>
Burn Bootloader	

## ESP32 HMI Display 2.4''&2.8''&3.5''

Auto Format	Ctrl+T
Archive Sketch	
Fix Encoding & Reload	
Manage Libraries...	Ctrl+Shift+I
Serial Monitor	Ctrl+Shift+M
Serial Plotter	Ctrl+Shift+L
WiFi101 / WiFININA Firmware Updater	
Board: "ESP32-WROOM-DA Module"	>
Upload Speed: "921600"	>
CPU Frequency: "240MHz (WiFi/BT)"	>
Flash Frequency: "80MHz"	>
Flash Mode: "QIO"	>
Flash Size: "4MB (32Mb)"	>
Partition Scheme: "Huge APP (3MB No OTA/1MB SPIFFS)"	>
Core Debug Level: "None"	>
Arduino Runs On: "Core 1"	>
Events Run On: "Core 1"	>
Port	>
Get Board Info	
Programmer	>
Burn Bootloader	

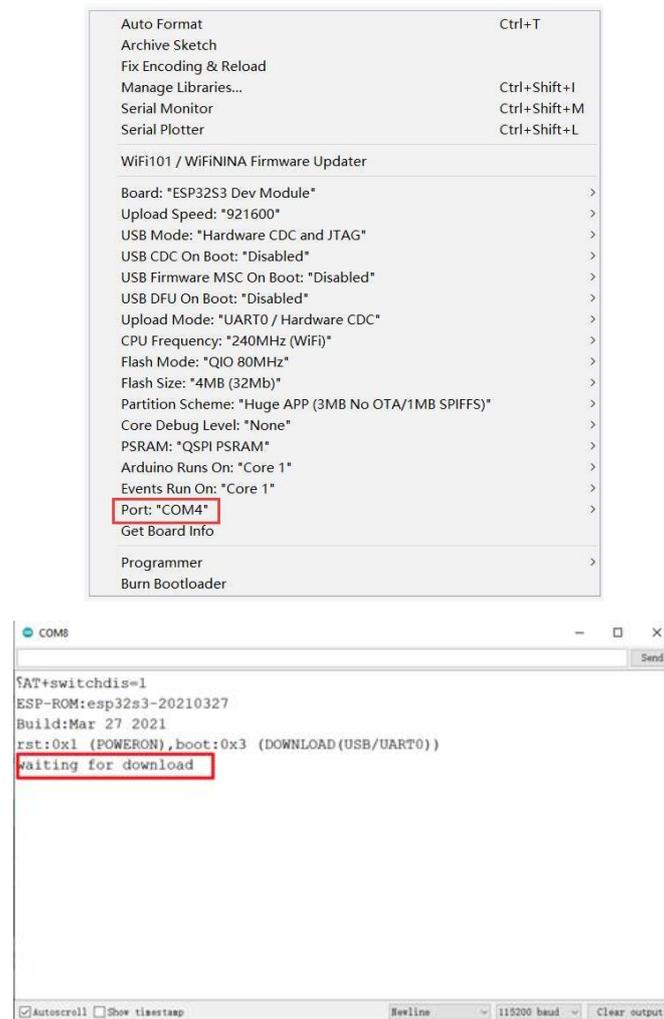
## ESP32 HMI Display 4.3''

Auto Format	Ctrl+T
Archive Sketch	
Fix Encoding & Reload	
Manage Libraries...	Ctrl+Shift+I
Serial Monitor	Ctrl+Shift+M
Serial Plotter	Ctrl+Shift+L
WiFi101 / WiFININA Firmware Updater	
Board: "ESP32S3 Dev Module"	>
Upload Speed: "921600"	>
USB Mode: "Hardware CDC and JTAG"	>
USB CDC On Boot: "Disabled"	>
USB Firmware MSC On Boot: "Disabled"	>
USB DFU On Boot: "Disabled"	>
Upload Mode: "UART0 / Hardware CDC"	>
CPU Frequency: "240MHz (WiFi)"	>
Flash Mode: "QIO 80MHz"	>
Flash Size: "4MB (32Mb)"	>
Partition Scheme: "Huge APP (3MB No OTA/1MB SPIFFS)"	>
Core Debug Level: "None"	>
PSRAM: "QSPI PSRAM"	>
Arduino Runs On: "Core 1"	>
Events Run On: "Core 1"	>
Port	>
Get Board Info	
Programmer	>
Burn Bootloader	

## ESP32 HMI Display 5.0''&7.0''

Auto Format	Ctrl+T
Archive Sketch	
Fix Encoding & Reload	
Manage Libraries...	Ctrl+Shift+I
Serial Monitor	Ctrl+Shift+M
Serial Plotter	Ctrl+Shift+L
WiFi101 / WiFININA Firmware Updater	
Board: "ESP32S3 Dev Module"	>
Upload Speed: "921600"	>
USB Mode: "Hardware CDC and JTAG"	>
USB CDC On Boot: "Disabled"	>
USB Firmware MSC On Boot: "Disabled"	>
USB DFU On Boot: "Disabled"	>
Upload Mode: "UART0 / Hardware CDC"	>
CPU Frequency: "240MHz (WiFi)"	>
Flash Mode: "QIO 80MHz"	>
Flash Size: "16MB (128Mb)"	>
Partition Scheme: "Huge APP (3MB No OTA/1MB SPIFFS)"	>
Core Debug Level: "None"	>
PSRAM: "OPi PSRAM"	>
Arduino Runs On: "Core 1"	>
Events Run On: "Core 1"	>
Port	>
Get Board Info	
Programmer	>
Burn Bootloader	

**Step 7** Choose the correct port number. Open the serial monitor. Press and hold the "BOOT" button and press the "RESET" button, the serial monitor shows "waiting for download".



**Step 8** Then click on "Upload" and wait for the compilation and download...

**Step 9** When the progress finishes, press the **RESET** button then the program will run on ESP32 display.

#### **Tutorial Video:**

For ESP Terminal RGB&SPI: [https://www.youtube.com/watch?v=7rstSmn\\_YKM](https://www.youtube.com/watch?v=7rstSmn_YKM)

For ESP32 HMI 2.4"/2.8"/3.5" Display: <https://www.youtube.com/watch?v=EARKhr3ABEY>

For ESP32 HMI 4.3"/5.0"/7.0" Display: [https://www.youtube.com/watch?v=iKJesBu\\_cg4](https://www.youtube.com/watch?v=iKJesBu_cg4)