

ESP32-S3-1.28inch-AI User Guide

【Resource Introduction】

Note: This tutorial is compatible with the following models.



①. Power Button

②. Wake-up/Interrupt/Boot Firmware Update/Network Pairing Mode

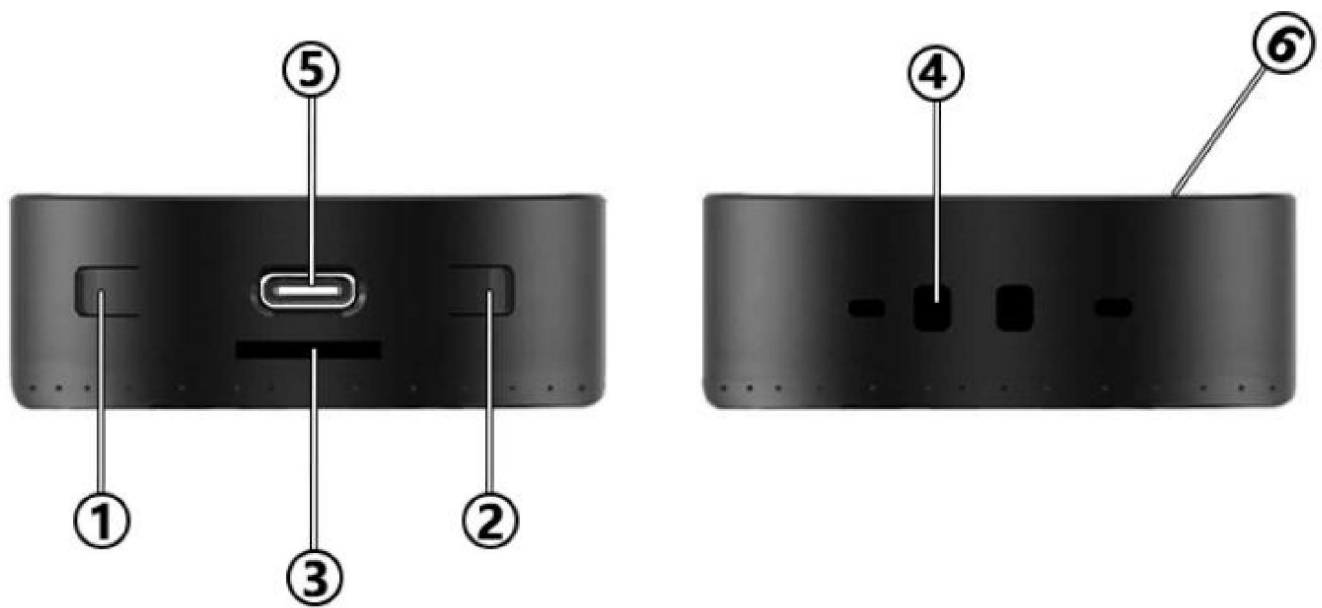
③. SD Card Slot (SD card not included)

④. USB Port: Charging/Firmware Update/Power Supply

⑤. Speaker

⑥. Display (touchscreen version has touchscreen. Non-touchscreen version does not have touchscreen)

⑦. Microphone Hole



①. Power button

②. Boot (button for wake-up/interruption/firmware download)

③. SD card slot (SD card not included by default)

④. Hook

⑤. USB port: for charging/firmware update/power supply

⑥. Display (touchscreen version has touchscreen. Non-touchscreen version does not have touchscreen)

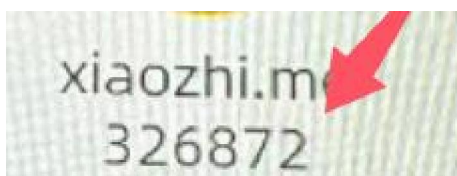
Xiao Zhi's Use

Note: This operation is only required for the first use; subsequent operations do not require repetition. The Xiaozhi firmware requires network configuration.

After powering on, connect your phone to Wi-Fi: Xiaozhi-xxxx

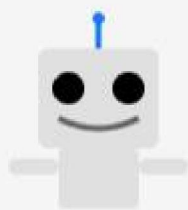


After a successful connection, a network configuration page will pop up shortly, automatically searching for hotspots in the current environment. Select your local area network (LAN) Wi-Fi or mobile hotspot and enter the password (or manually enter your account and password above) to complete the network configuration. (Note: The mobile hotspot Wi-Fi band must be 2.4GHz, and 5G/6G compatibility must be turned off.) After the network configuration is complete, the screen will display the device code.



For devices without a screen: The device code will be announced via voice. Remember the announced device code, as it will be used later for activation. Click to enter the [Xiaozhi backend](#)

Click to enter the console



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Register an account

登录

用户名

手机号

+86 中国大陆

📞 请输入手机号

请输入验证码

发送验证码

登录

Currently, registration is only supported for the following countries or regions: +86 Mainland China, +852 Hong Kong China, +853 Macau China, +886 Taiwan China, +1 USA/Canada, +44 UK, +33 France, +39 Italy, +49 Germany, +48 Poland, +41 Switzerland, +34 Spain, +60 Malaysia, +61 Australia, +62 Indonesia, +63 Philippines, +64 New Zealand, +65 Singapore, +66 Thailand, +81 Japan, +82 South Korea, +84 Vietnam, +91 India, +92 Pakistan, +234 Nigeria, +880 Bangladesh, +966 Saudi Arabia, +971 UAE, +55 Brazil, +52 Mexico, +56 Chile, +54 Argentina, +20 Egypt, +27 South Africa, +254 Kenya, +255 Tanzania.

Other countries are being continuously updated. You can view the latest list of supported countries by going to the [website](#) - > console - > mobile number drop-down box.

新的 WiFi

SSID:

密码:

连接

从下面列表选择 2.4G WiFi:

ChinaNet-JTKB (-63 dBm) 

MIFI_F1181C (-68 dBm) 

Click to add device activation

台湾女友

角色音色: 湾湾小何

语言模型: Qwen 实时 (推荐)

最近对话: 无

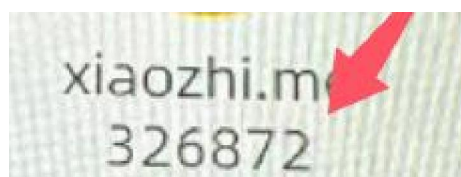
添加设备

声纹识别

历史对话

配置角色

Enter the device code displayed on the screen (or the previously recorded device code announced via voice).



添加设备

* 验证码:

请输入设备播报的6位数验证码

取消

确定

Boot (Button wake-up/interruption/firmware download)

1.28 Boot location

电源按键

boot(按键唤醒/打断/固件下载)



Character selection and AI



Click OK, then power off and restart for the changes to take effect.

Unbinding device



【Weather Clock Usage】

****Download Firmware:**** [ESP32-S3-1.28-BOX-Touch-Clock](#)

Refer to the [【Restore Factory Firmware】](#) section to update the firmware. After successful update, restart the power.

****Connect to Wi-Fi Hotspot:****

Note: Your phone needs to create a hotspot. **Username: spotpear**

Password: 12345678

After your phone creates a hotspot, this product will automatically connect to it.

It is not your phone's Wi-Fi that connects to this product's Wi-Fi. This product does not provide a Wi-Fi hotspot to your phone; it connects to your phone's Wi-Fi hotspot.

【SD Card Playback】

Download Firmware: [esp32-S3-firmware-1.28-SD.bin](#)

Refer to 【Restore Factory Firmware】 to update the firmware.
After successful update, restart the power.

Video Conversion

[] Convert the MP4 format video to a 240*240, 25 FPS, 10 quality

MJPEG file using an [MJPEG converter](#). The video file must be named "video1.mjpeg".

[] Copy the converted [.mjpeg video](#) file to the SD card you are using and insert the device.

Play the Video

Power on again. 【Restore Factory Firmware】

Firmware Download:

[ESP32-S3-LCD-1.28-BOX-THIN \(Xiaozhi AI Firmware\)](#)

[ESP32-S3-1.28-Weather-Clock.bin \(Weather Clock](#)

[Firmware\) esp32-S3 firmware 1.28-SD.bin \(SD](#)

[Playback\)](#)

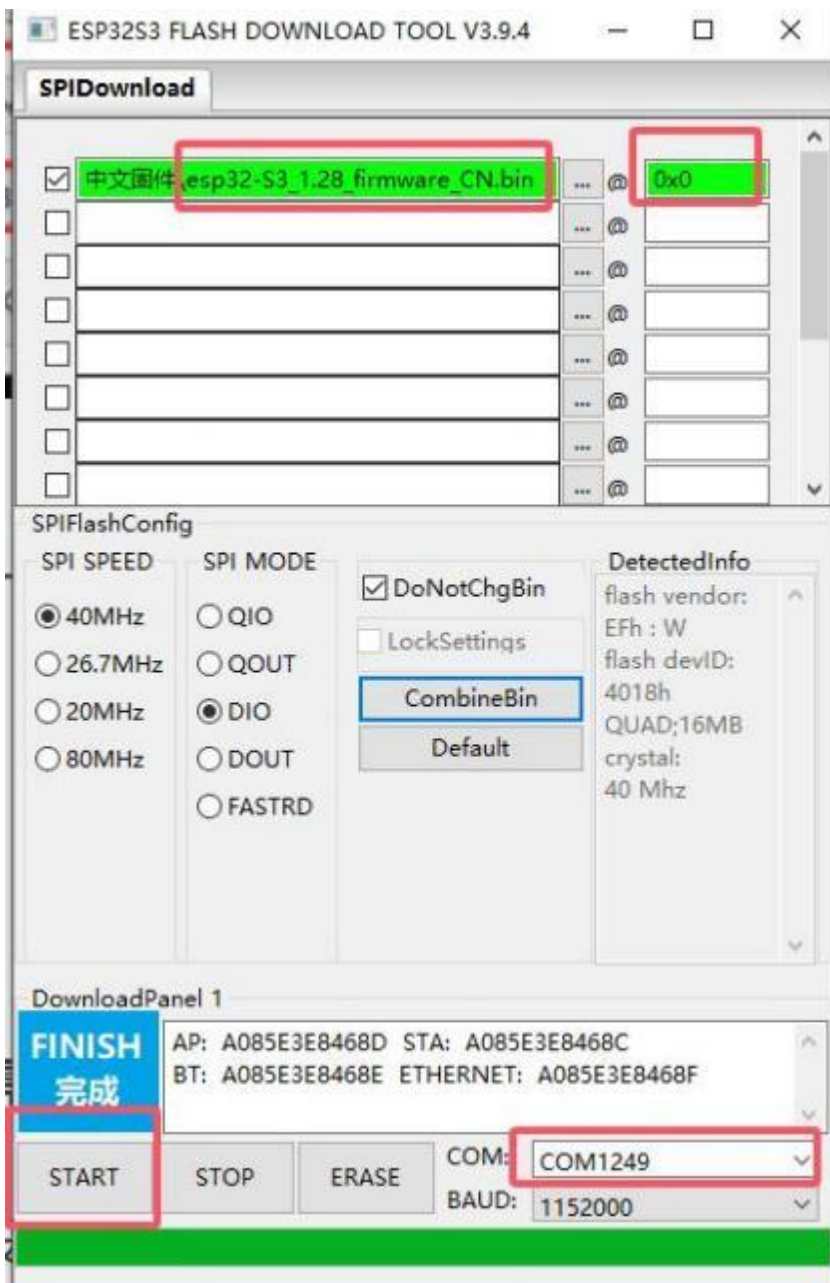
Download and open the [burning software/tool](#)

bin	2024/7/11 10:26	文件夹
combine	2024/7/11 10:26	文件夹
configure	2024/7/11 10:26	文件夹
dl_temp	2024/7/11 10:26	文件夹
doc	2024/7/11 10:26	文件夹
logs	2024/7/27 15:08	文件夹
flash_download_tool_3.9.3.exe	2022/8/26 18:58	应用程序

How to use



You only need to flash the factory firmware, as shown in the picture.



The program was successfully burned. Simply power it on again.

[Compiled by Xiaozhi]

Note: Beginners can ignore this. Programmer/R&D personnel compilation tutorial materials

Compilation environment installation: [ESP-IDF download and installation](#)

Compiling Xiaozhi

Download source code

[xiaozi-esp32.zip](#)

Enter the terminal, open IDF 5.3 or double-click the ESP IDF5.3 PowerShell on your desktop

My extracted directory is different from yours, please enter the directory you just extracted:

```
cd F:\project\esp32\ESP32AI\AW1\xiaozi-esp32-main\xiaozi-esp32-main
```

```
PS F:\project\esp32\ESP32AI\AW1\xiaozi-esp32-main\xiaozi-esp32-main> cd /_
PS F:\> cd F:\project\esp32\ESP32AI\AW1\xiaozi-esp32-main\xiaozi-esp32-main_
```

Set Chip Type

Enter the following command again to set the chip to S3: `idf.py set-target esp32s3`

```
\frameworks\esp-idf-v5.3> cd J:\xiaozi-esp32-main_2\xiaozi-esp32-main
p32-main_2\xiaozi-esp32-main> idf.py set-target esp32s3
et"'s dependency "fullclean" to list of commands with default set of opt
: fullclean
```

After success

```
AW1/xiaozi-esp32-main/xiaozi-esp32-main/m
esp-idf-v5.3.1/components/wear_levelling D:
/Aw/A/esp/Espressif/frameworks/esp-idf-v5.3
components/xtensa
-- Configuring done
-- Generating done
-- Build files have been written to: F:/pro
```

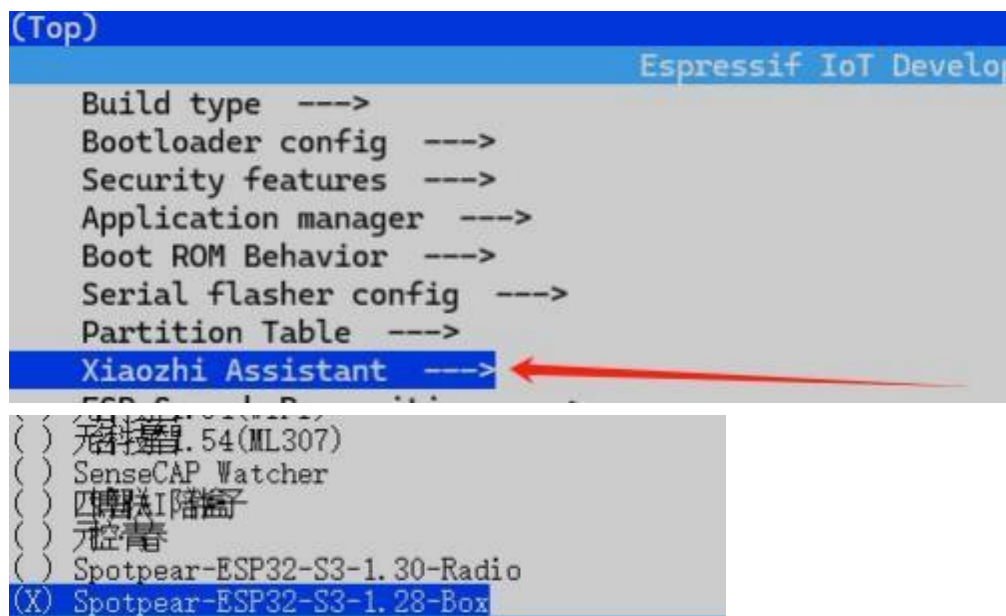
Change the compiled board type

The default compiled firmware is for breadboards. You need to enter `idf.py menuconfig` to select the corresponding board model.

```
PS F:\Github_Test\xiaozi-esp32>
PS F:\Github_Test\xiaozi-esp32> idf.py menuconfig
```

Compatible with [ESP32-S3-AI-DIY-Kit-(A)], [ESP32-S3-AI-Kit-(B)], and [ESP32-S3-1.28-AI].

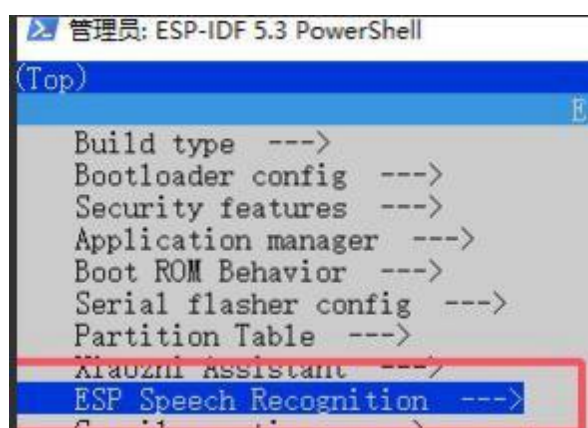
Access Xiaozhi Assistant options (press Enter on your keyboard to access the options).



After selecting the board firmware to be compiled, press the 'S' key on the keyboard to save, then press Esc to exit menuconfig.

Change wake word

(Optional, depending on your needs)



```
管理员: ESP-IDF 5.3 PowerShell
(Top) ->ESP Speech Recognition
Espressif IoT Development Framework
model data path (Read model data from flash) --->
[*] use afe
    Afe interface (afe interface(version: v1)) --->
[ ] use nsnet
[*] use wakenet
    Select wake words (Hi,ESP (wn9_hiesp)) --->
[ ] use multinet
```

Start compiling

Enter idf.py build again to compile.

```
F:\xiaozi-esp32-main\xiaozi-esp32-main> idf.py build
```

```
Project build complete. To flash, run:
idf.py flash
or
idf.py -p PORT flash
or
python -m esptool --chip esp32s3 -b 460800 -
sh_size 16MB --flash_freq 80m 0x0 build\bootl
0 build\ota_data_initial.bin 0x10000 build\sr
For from the "F:\project\esp32\ESP32AI\AW1\xia
pa python -m esptool --chip esp32s3 -b 460800 -
```

Start burning

Enter idf.py build flash monitor

```
F:\xiaozi-esp32-main> idf.py build flash monitor_
```

Press Enter to burn the program.

[Weather Clock Source Code Compilation]

****Compilation Environment Setup:****

<https://spotpear.cn/index/study/detail/id/1056.html>

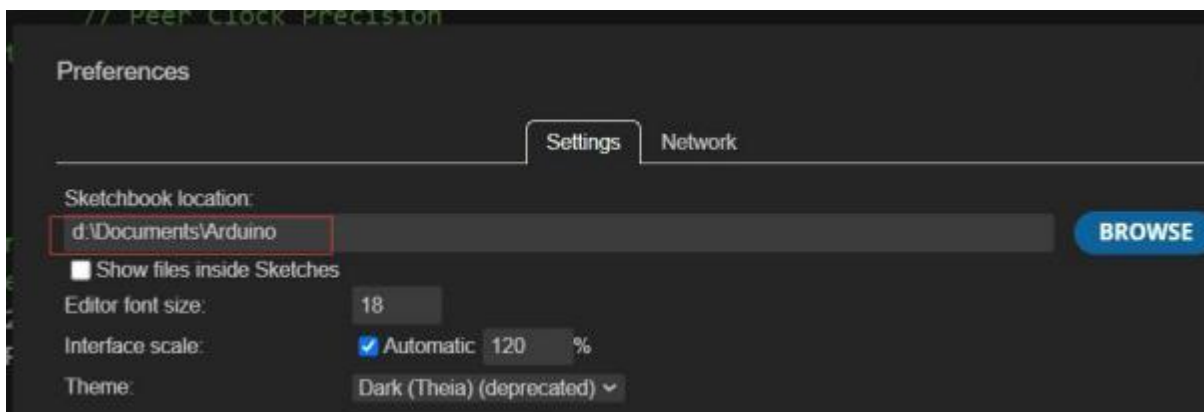
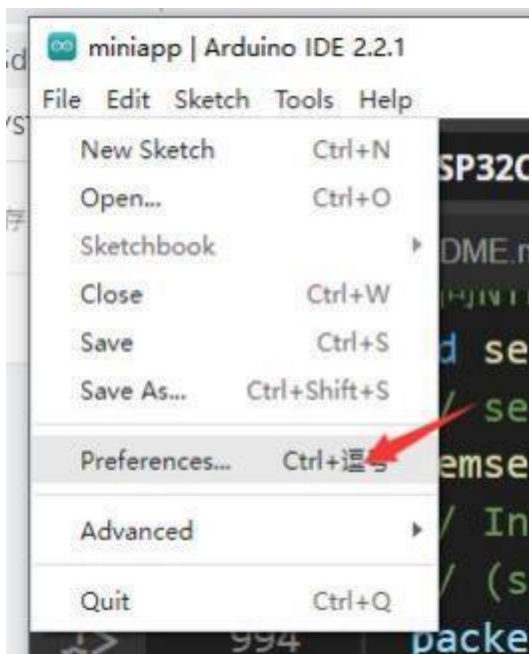
****Download Source Code:****

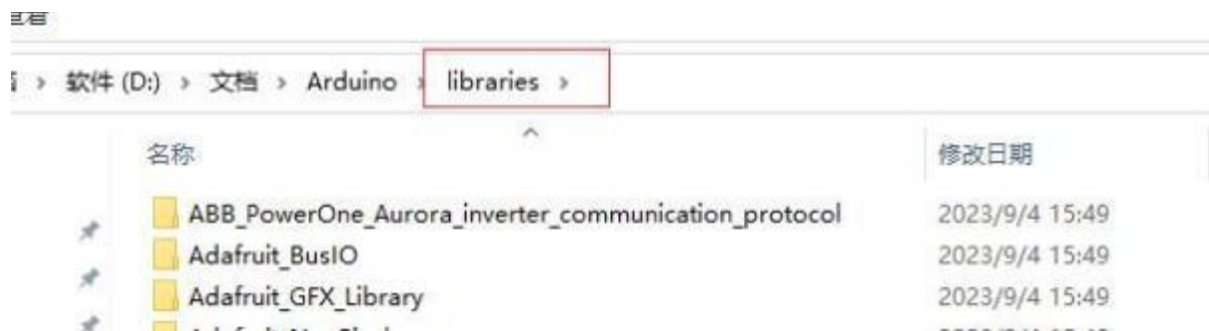
Weather Clock Source Code: [ESP32-S3-WTC.zip](#)

****Install Library Files:****

****Configure Required Third-Party Libraries:****

Simply copy all files from the lib folder in the downloaded source code to the Arduino library path.





Notes:

- The ESP32 library version in Arduino is 2.0.13.
- If you have previously installed other LVGL libraries, please delete the previous LVGL library folder and copy the library files from the lib folder back to the library folder.

Compilation environment parameter configuration:



WIFI configuration information:

- > Open the downloaded example program Arduino\examples\

(This is how you can change your Wi-Fi username and password to your own router's username and password.)

```
47 //----- Mobile hotspot information
48 const char *ssid = "spotpear";
49 const char *password = "12345678";
50 //-----
```

After making the changes, save them, compile, and burn the program.

【SD Player Source Code Compilation】

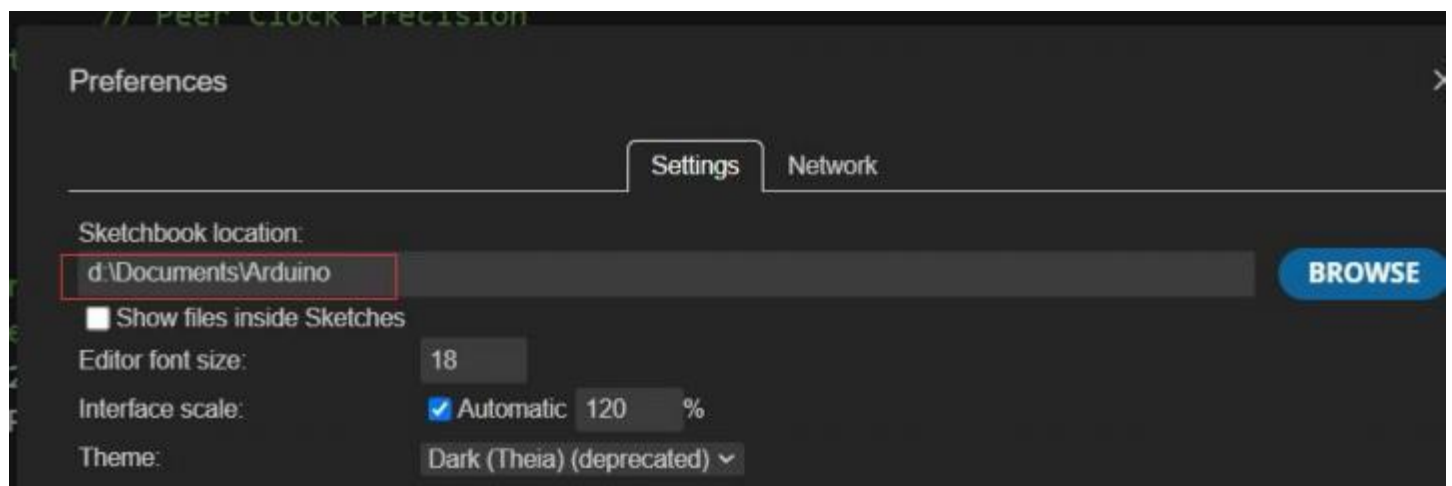
****Compilation Environment Setup (Note: ESP32 library version in Arduino is 2.0.13)****

<https://spotpear.cn/index/study/detail/id/1056.html>

****Download Source Code: [SDcard-Video.zip](#)**

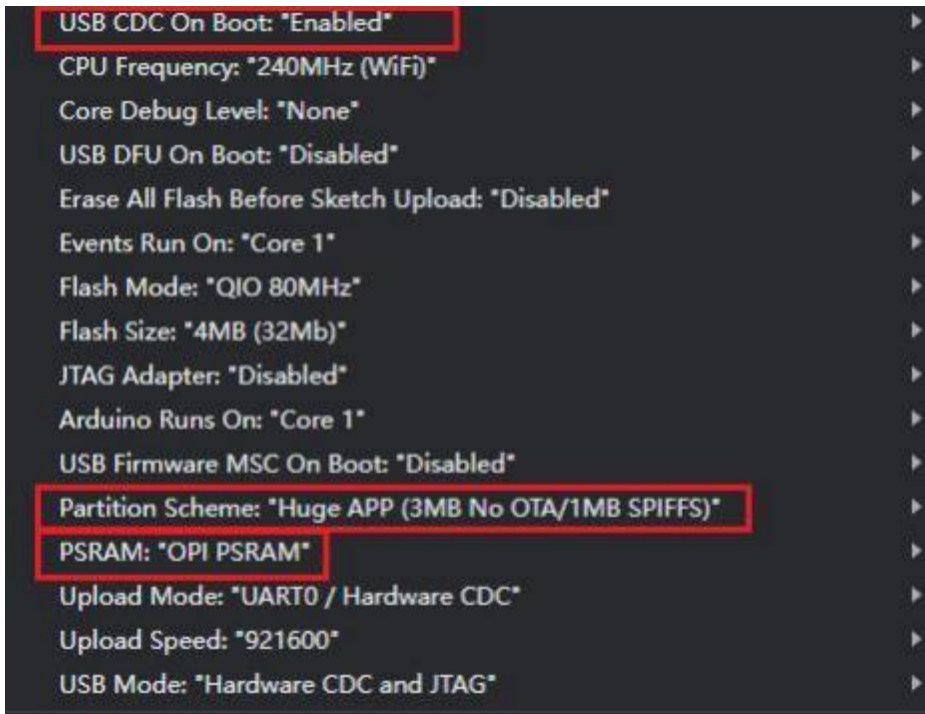
****Install Library Files:****

Import the files from the lib folder in the downloaded source code into the Libraries folder in Arduino preferences..



Compilation environment parameter configuration:

Note the following modifications for Arduino configuration;



Open the main.ino file and modify the code: `#define MJPEG_FILENAME "/sp1.video1"`. Change the name of the video to be played within the quotation marks to your converted .mjpeg format video name (note to keep the leading forward slash).

(Click the text to open the hyperlink.)

[Schematic Diagram](#)

[Display Manual GC9A01A](#)

[Touch Manual CST816](#)

[Pin Connection Definitions]

TFT_DC ---GPIO 47

TFT_CS ---GPIO 5

TFT_SCLK ---GPIO 4

TFT_MOSI ---GPIO 2

TFT_RESET ---GPIO 38

TFT_BL ---GPIO 42

SDMMC_D3--- 13

SDMMC_CMD---18

SDMMC_CLK--- 17

SDMMC_D0--- 21

TP_SDA--- 11

TP_SCL--- 7

TP_INIT---12

TP_RST--- 6