

Getting Started with Seeed Studio Round Display for XIAO



Get One Now 

Introduction

Seeed Studio Round Display for XIAO is an expansion board compatible with all XIAO development boards. It features a fully covered touch screen on one side, designed as a 39mm disc. It contains onboard RTC, charge chip, TF card slot within its compact size, perfect for interactive displays in smart home, wearables and more.

Specification

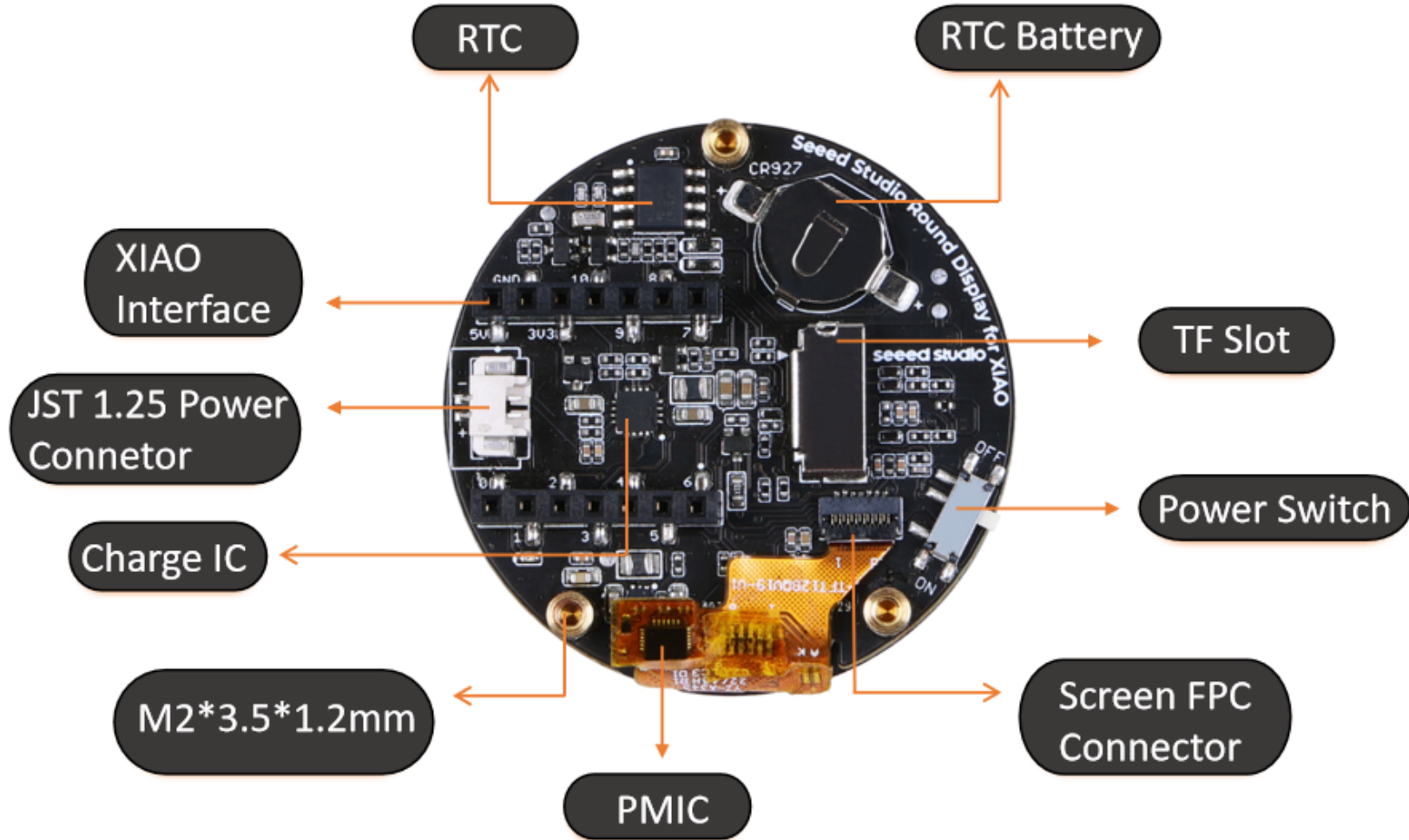
Item	Detail
Power Supply	USB Type-C: 5V @35 mA Battery Charge: 3.7V @37mA
Charge current	~ 485 mA
Expandable memory	TF Card Slot for up to 32GB FAT
Screen	1.28-inch touch screen 240×240 resolution 65K colors
Other External Equipment	JST 1.25 connector
Dimension	39mm x 39mm

Features

- **Capacitive Touch Screen Expansion Board:** Display with 1.28-inch round, 240×240 resolution, 65K colors, providing clear and colorful images exhibition
- **High Compatibility:** Highly compatible with all XIAO series products, easily integrated into your current projects
- **Rich Peripheral:** Feature onboard RTC, battery charge chip, TF card slot, JST 1.25 connector, all within its compact size
- **Watch-sized Design:** Come with 39 mm circular design, suitable for wearable and space-limited projects
- **Plug and Play:** All pins are led out, no soldering is needed

Hardware Overview


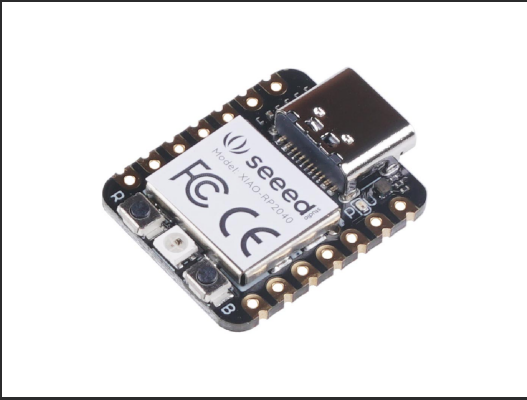
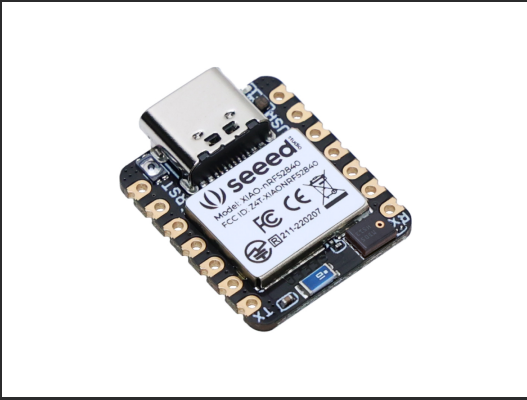





Before we start, we can refer to the following pictures to understand the pin design of the Round Display to facilitate our understanding of the function of the Round Display.



Getting Started

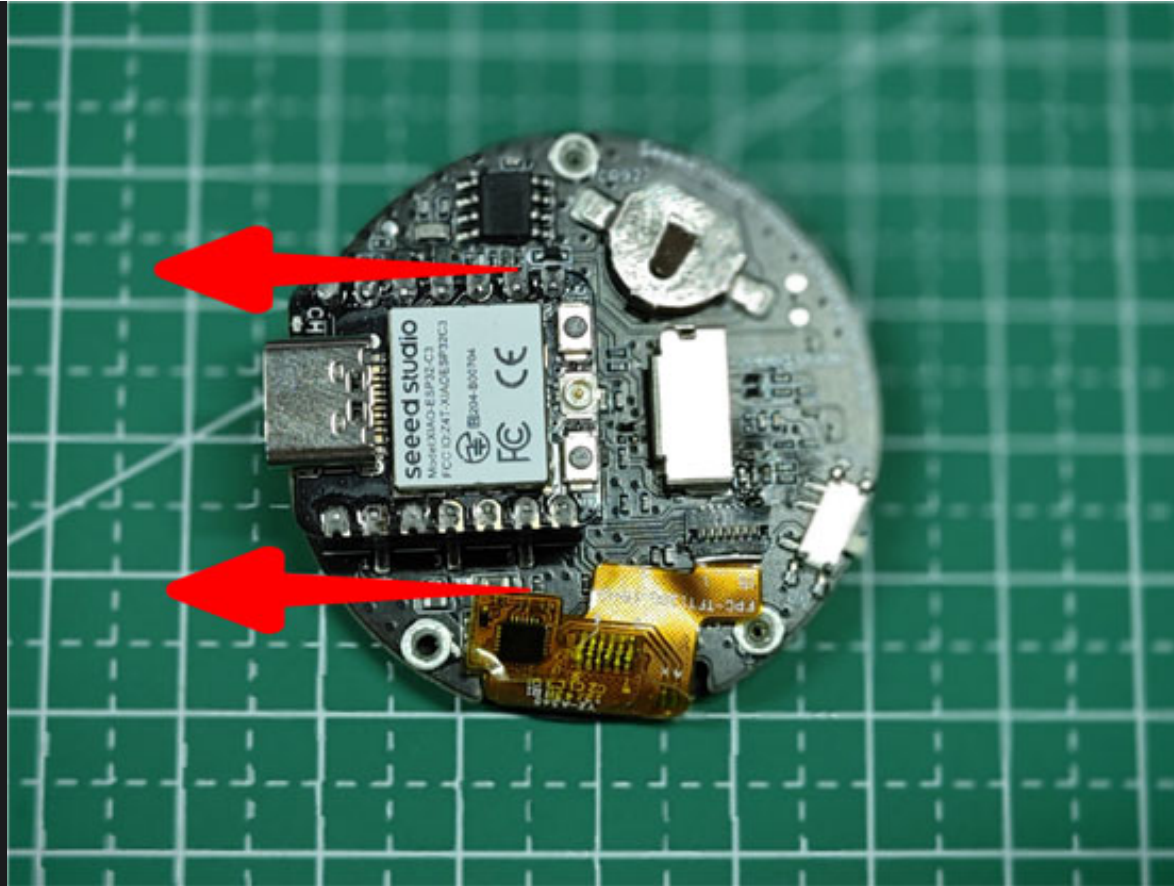
Hardware Preparation

If you want to take advantage of the full capabilities of the Round Display and have a great experience, we highly recommend that you purchase our XIAO series as the motherboard for the Round Display.

Seed Studio XIAO SAMD21	Seed Studio XIAO RP2040	Seed Studio XIAO nRF52840 (Sense)	See
			
Get One Now 	Get One Now 	Get One Now 	Get One Now 

◀ ▶

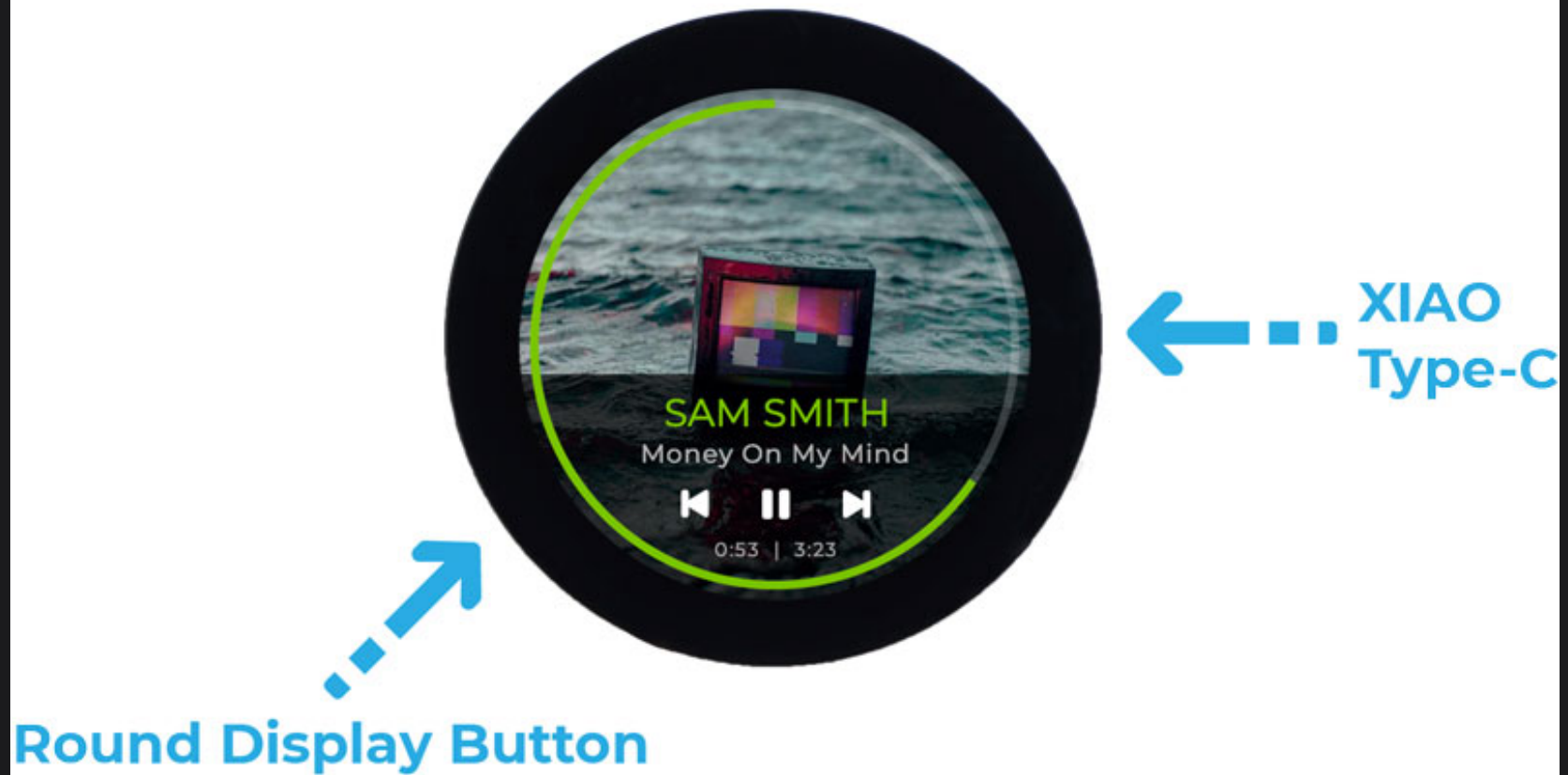
The row of pins on the back of Round Display is designed for XIAO series. If you have XIAO on hand, you don't need to prepare any additional cables, just align the pins of XIAO and plug them directly into Round Display.



⚠ CAUTION

Please note that when connecting the XIAO, **the Type-C connector of the XIAO should be facing the outside of the Round Display**. If you accidentally reversed polarity, don't worry too much, the Round Display has a power protection circuit that won't be easily damaged, but we don't recommend you to stay in the reverse connection for a long time.

The recommended orientation for Round Display is: when you face Round Display, the XIAO's Type-C connector faces to the right, so that the on/off button of Round Display is in the lower left corner.



Software Preparation

To use the Round Display, we need to program the XIAO series. The recommended programming tool is the Arduino IDE, and you need to configure the Arduino environment for the XIAO and add the on-board package.



TIP

If this is your first time using Arduino, we highly recommend you to refer to [Getting Started with Arduino](#).

Step 1. Download and Install the stable version of Arduino IDE according to your operating system.

[Download Arduino IDE](#)

Step 2. Launch the Arduino application.

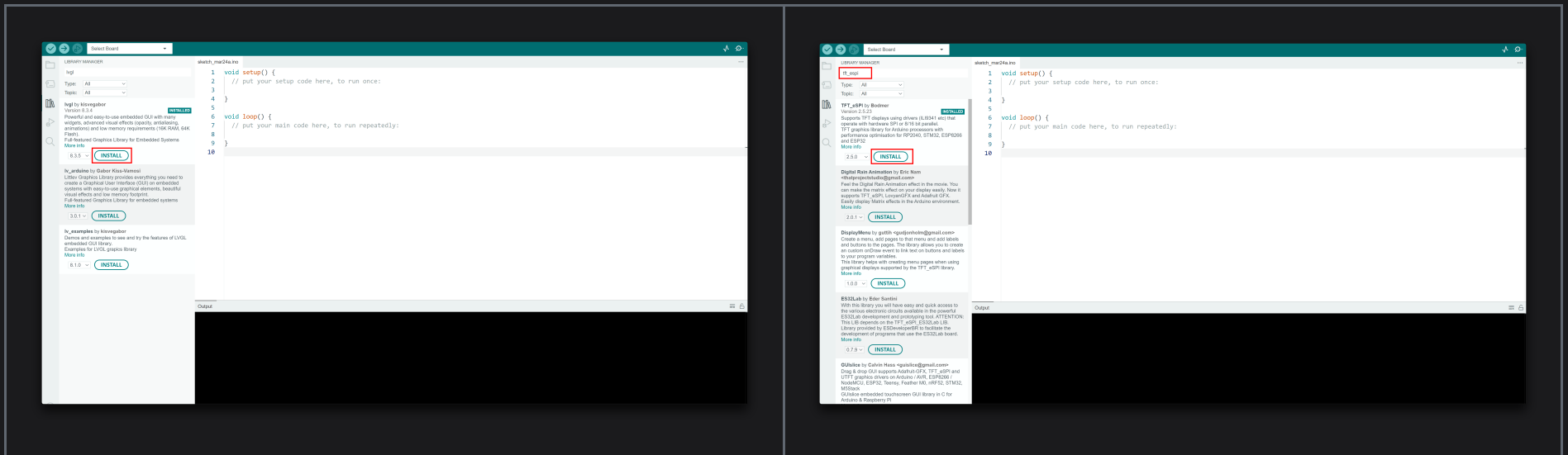
Step 3. Configure the Arduino IDE for the XIAO you are using.

- If you want to use **Seeed Studio XIAO SAMD21** for the later routines, please refer to [this tutorial](#) to finish adding.
- If you want to use **Seeed Studio XIAO RP2040** for the later routines, please refer to [this tutorial](#) to finish adding.
- If you want to use **Seeed Studio XIAO nRF52840** for the later routines, please refer to [this tutorial](#) to finish adding.
- If you want to use **Seeed Studio XIAO ESP32C3** for the later routines, please refer to [this tutorial](#) to finish adding.

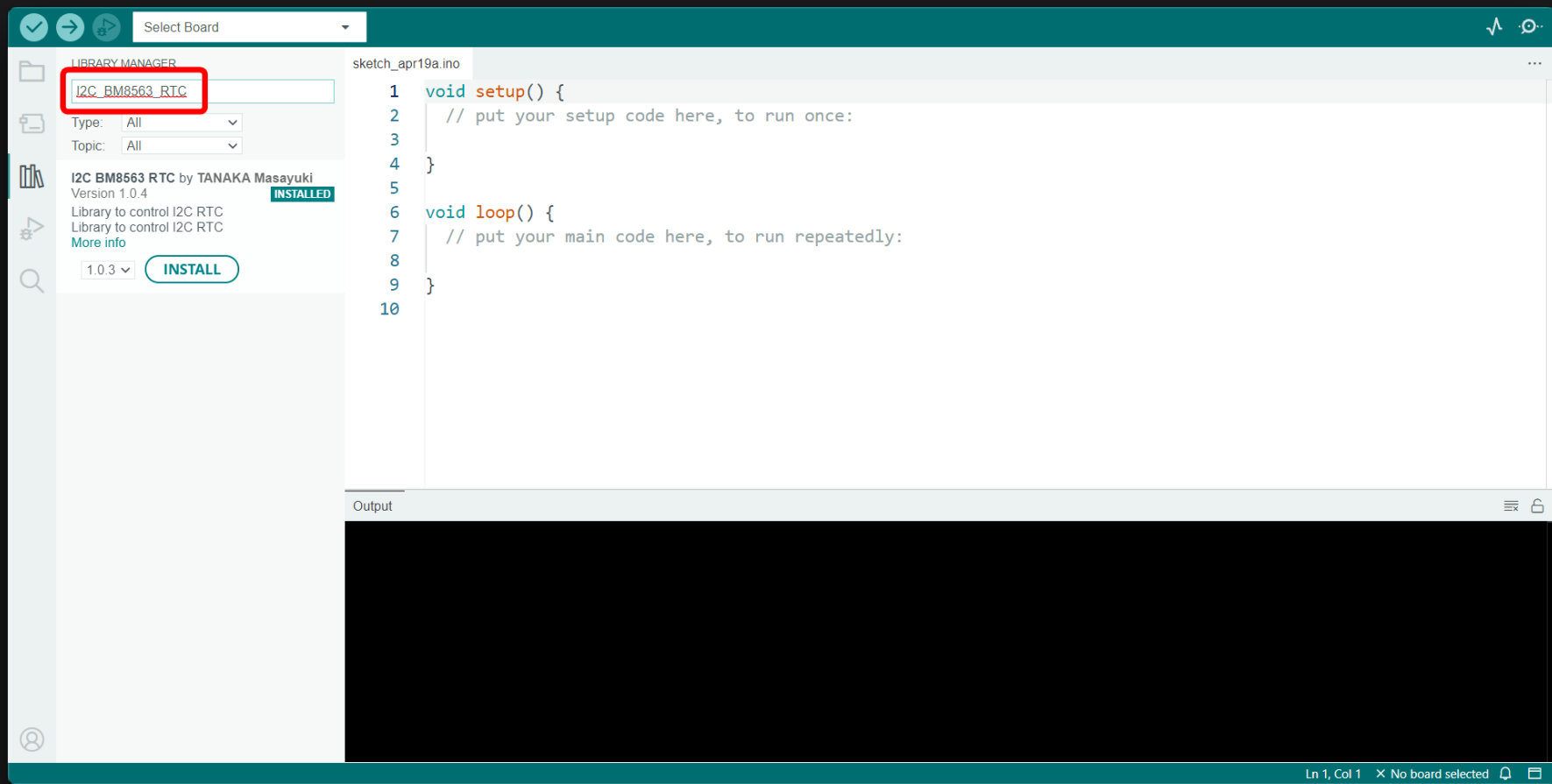
- If you want to use **Seed Studio XIAO ESP32S3** for the later routines, please refer to **this tutorial** to finish adding.

Step 4. Add the library of Round Display to Arduino.

First, you need to search and download the latest version **TFT_eSPI** and **LVGL** libraries in the Arduino IDE.



If you want to use the RTC function on the expansion board, then you also need to search and install the **I2C BM8563 RTC** library.



TIP

The **TFT_eSPI** library compatible with Round Display has been submitted for merge request, so when the next version is released, you can search and download **TFT_eSPI** in Arduino IDE to use it normally. Until then, if you need to use the **TFT_eSPI** library for Round Display, please download it from here.

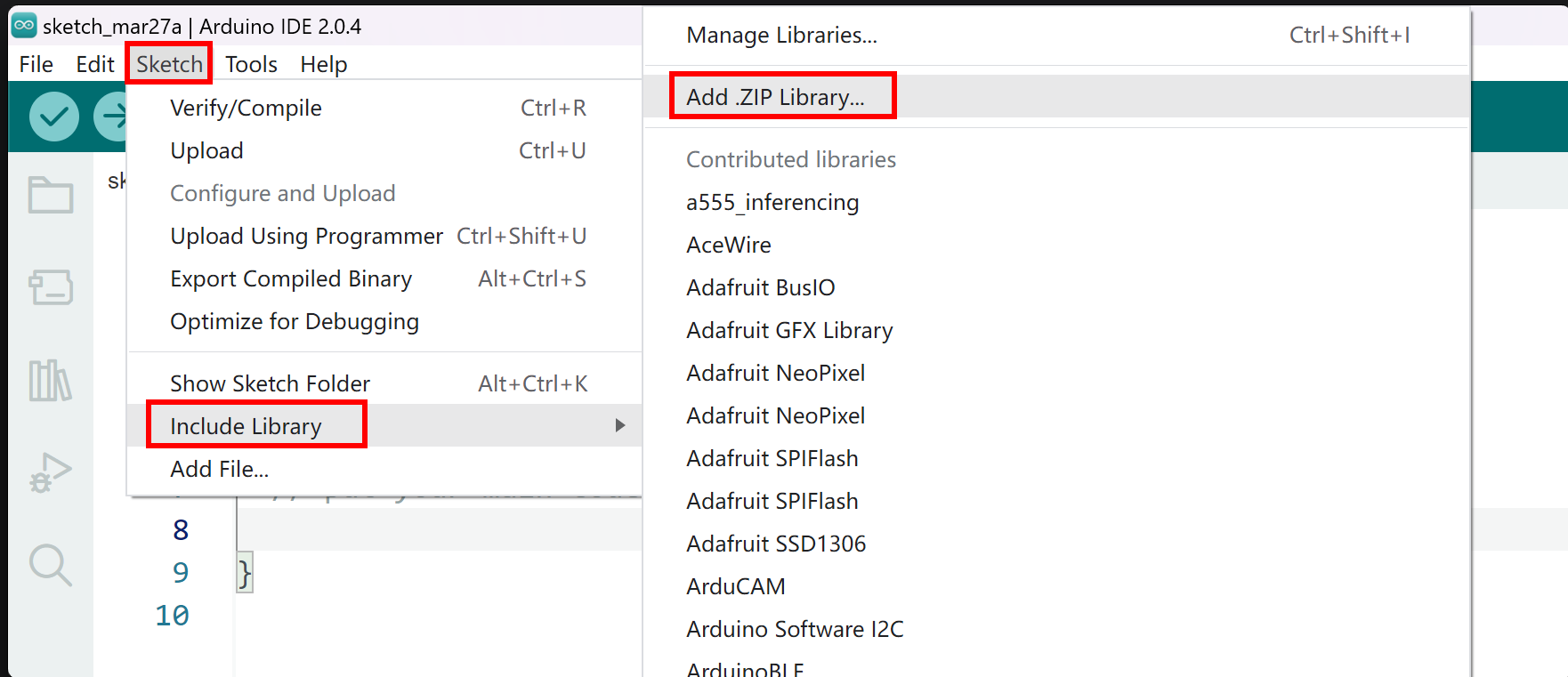
Download the Libraries 

If you have previously installed the **TFT_eSPI** library, please remove the original library and install the new one.

Then, we also need to download and import the configuration library for Round Display.

Download the Libraries 

Since you have downloaded the zip Library, open your Arduino IDE, click on **Sketch > Include Library > Add .ZIP Library**. Choose the zip file you just downloaded, and if the library install correct, you will see **Library added to your libraries** in the notice window. Which means the library is installed successfully.



Then, you need to take the `lv_conf.h` file and cut it to the root directory of the Arduino library.

⚠ CAUTION

Note that the `lv_conf.h` file here is from **Seed_Arduino_RoundDisplay**, not from the **LVGL** library.

On Windows, the root directory of the Arduino library is:

```
C:\Users\${UserName}\Documents\Arduino\libraries
```

C:\Users\mengd\Documents\Arduino\libraries

名称	修改日期	类型	大小
Seeed_Arduino_NFC-master	2022/8/17 15:48	文件夹	
Seeed_Arduino_rpcUnified	2022/8/17 15:48	文件夹	
Seeed_Arduino_rpcWiFi	2022/8/17 15:48	文件夹	
Seeed_Arduino_rpcWiFiManager-master	2022/8/17 15:48	文件夹	
Seeed_Arduino_RTC-master	2022/8/17 15:48	文件夹	
Seeed_Arduino_SFUD-master	2022/8/17 15:48	文件夹	
Seeed_BME680-master	2022/8/17 15:48	文件夹	
Seeed_LDC1612-master	2022/8/17 15:48	文件夹	
Seeed_LED_Ring-master	2022/12/1 9:50	文件夹	
Seeed_PM2_5_sensor_HM3301-master	2022/8/17 15:48	文件夹	
Seeed-Grove-Vision-AI-Moudle-main	2022/8/23 14:38	文件夹	
Seeed-Studio-MR60BHA1-Sensor	2023/2/7 16:14	文件夹	
Seeed-Studio-MR60FDA1-Sensor	2023/2/7 17:07	文件夹	
Servo-master	2022/8/17 15:48	文件夹	
SGP30_Gas_Sensor-master	2022/8/17 15:48	文件夹	
Superbe_rtcDS1302-master	2022/8/17 15:48	文件夹	
TFT_eSPI	2023/3/10 14:03	文件夹	
U8g2_Arduino-master	2022/8/17 15:48	文件夹	
wio_anomaly_detection_inferencing	2022/8/17 15:48	文件夹	

Step 5. (Optional) Configure the usage environment

Round Display currently adapts two different library-based displays, one **TFT_eSPI** and the other **Arduino GFX**. On the nRF52840, the Arduino GFX will have significantly better performance.

NOTE

If you need to use the **TFT_eSPI** library, then proceed to **step 5**. If you are using the Arduino GFX, then you can skip this step.

For the content of Round Display, our tutorial will focus on the use of **TFT_eSPI**.

Please find the **TFT_eSPI** folder in the root directory of the Arduino library, and then modify the `User_Setup_Select.h` file in the **TFT_eSPI** directory.

```
C:\Users\${UserName}\Documents\Arduino\libraries\TFT_eSPI\User_Setup_Select.h
```

C:\Users\mengd\Documents\Arduino\libraries\TFT_eSPI

在 TFT_eSPI 中搜索

名称	修改日期	类型	大小
 .gitignore	2023/3/8 19:11	Git Ignore 源文件	1 KB
 CMakeLists.txt	2023/3/8 19:11	文本文档	1 KB
 Kconfig	2023/3/8 19:11	文件	13 KB
 keywords.txt	2023/3/8 19:11	文本文档	4 KB
 library.json	2023/3/8 19:11	JSON 源文件	1 KB
 library.properties	2023/3/8 19:11	Properties 源文件	1 KB
 license.txt	2023/3/8 19:11	文本文档	7 KB
 README.md	2023/3/8 19:11	Markdown 源文件	21 KB
 README.txt	2023/3/8 19:11	文本文档	1 KB
 TFT_config.h	2023/3/8 19:11	C Header 源文件	10 KB
 TFT_eSPI.cpp	2023/3/8 19:11	C++ 源文件	198 KB
 TFT_eSPI.h	2023/3/8 19:16	C Header 源文件	47 KB
 User_Setup.h	2023/3/8 19:11	C Header 源文件	19 KB
 User_Setup_Select.h	2023/3/14 13:52	C Header 源文件	17 KB

If you want to use the **TFT_eSPI** library for display driving, you must **comment** out the line `#include <User_Setup.h>` and **uncomment** the line `#include <User_Setups/Setup66_Seed_XIAO_RoundDisplay.h>` in the `User_Setup_Select.h` file.

```
23
24 ////////////////////////////////////////////////////////////////////
25 // User configuration selection lines are below //
26 ////////////////////////////////////////////////////////////////////
27
28 // Only ONE line below should be uncommented to define your setup. Add extra lines and files as needed.
29
30 // #include <User_Setup.h> // Default setup is root library folder
31
32 // #include <User_Setups/Setup1_ILI9341.h> // Setup file for ESP8266 configured for my ILI9341
33 // #include <User_Setups/Setup2_ST7735.h> // Setup file for ESP8266 configured for my ST7735
34 // #include <User_Setups/Setup3_ILI9163.h> // Setup file for ESP8266 configured for my ILI9163
35 // #include <User_Setups/Setup4_S6D02A1.h> // Setup file for ESP8266 configured for my S6D02A1
36 // #include <User_Setups/Setup5_RPi_ILI9486.h> // Setup file for ESP8266 configured for my stock RPi TFT
37 // #include <User_Setups/Setup6_RPi_Wr_ILI9486.h> // Setup file for ESP8266 configured for my modified RPi TF
```

```
92 // #include <User_Setups/Setup60_RP2040_ILI9341.h> // Setup file for RP2040 with SPI ILI9341
93 // #include <User_Setups/Setup61_RP2040_ILI9341_PIO_SPI.h> // Setup file for RP2040 with PIO SPI ILI9341
94 // #include <User_Setups/Setup62_RP2040_Nano_Connect_ILI9341.h> // Setup file for RP2040 with SPI ILI9341
95
96 #include <User_Setups/Setup66_Seed_XIAO_Round.h> // Setup file for XIAO serial with GC9A01
97
98 // #include <User_Setups/Setup70_ESP32_S2_ILI9341.h> // Setup file for ESP32 S2 with SPI ILI9341
99 // #include <User_Setups/Setup70b_ESP32_S3_ILI9341.h> // Setup file for ESP32 S3 with SPI ILI9341
```

Arduino Library Overview

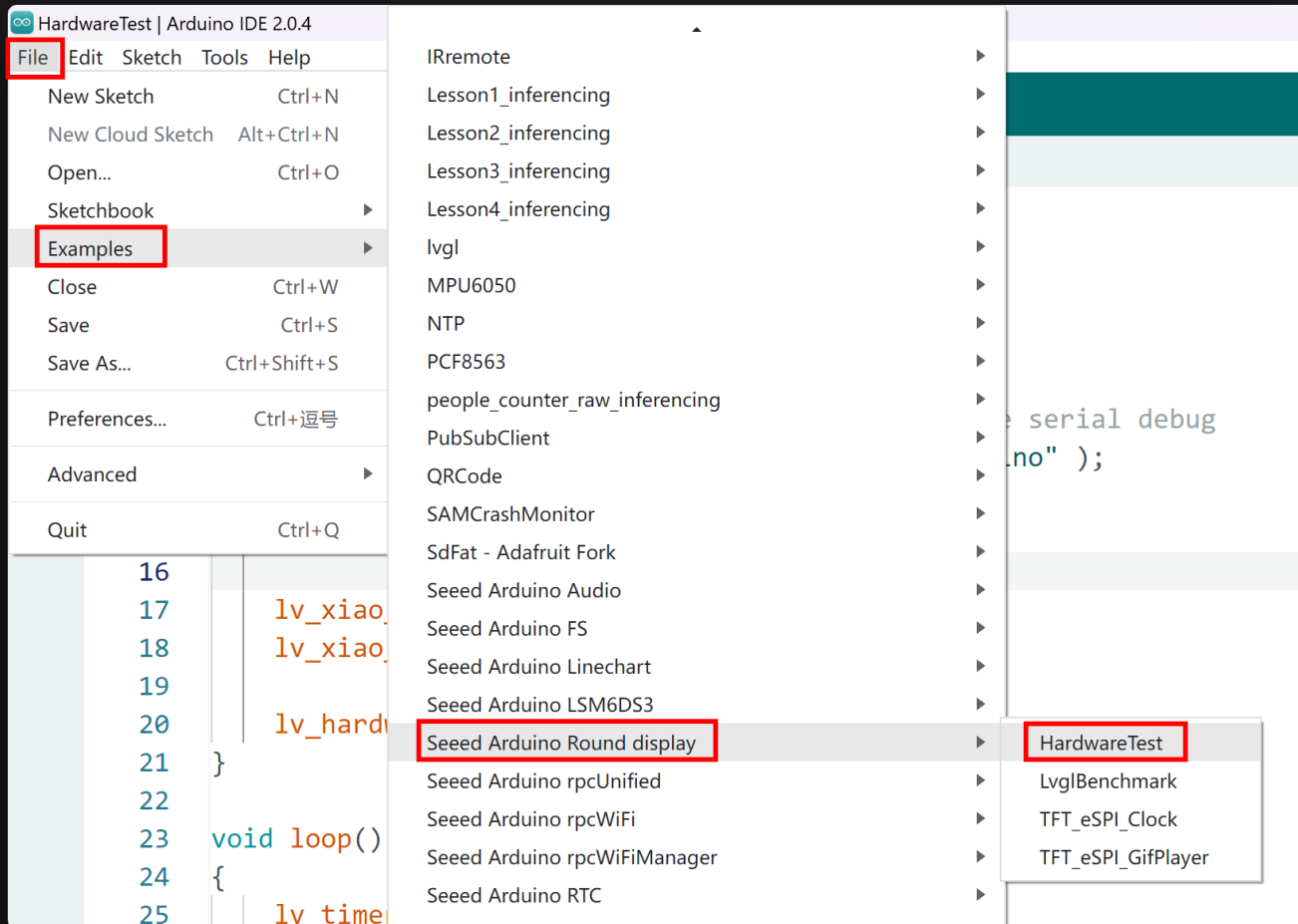
As we can probably tell from the above tutorial, Round Display mainly uses **LVGL**, **TFT_eSPI** and **Arduino GFX** libraries. For the sake of space, we will introduce the use of **LVGL** and **TFT_eSPI** libraries separately with the example of drawing a dial.

- You can learn about the interface and use of the **TFT_eSPI** library by clicking [here](#).
- You can learn about the interface and use of the **LVGL** library by clicking [here](#).
- You can learn about the interface and use of the **Arduino GFX** library by clicking [here](#).

Light up your Round Display

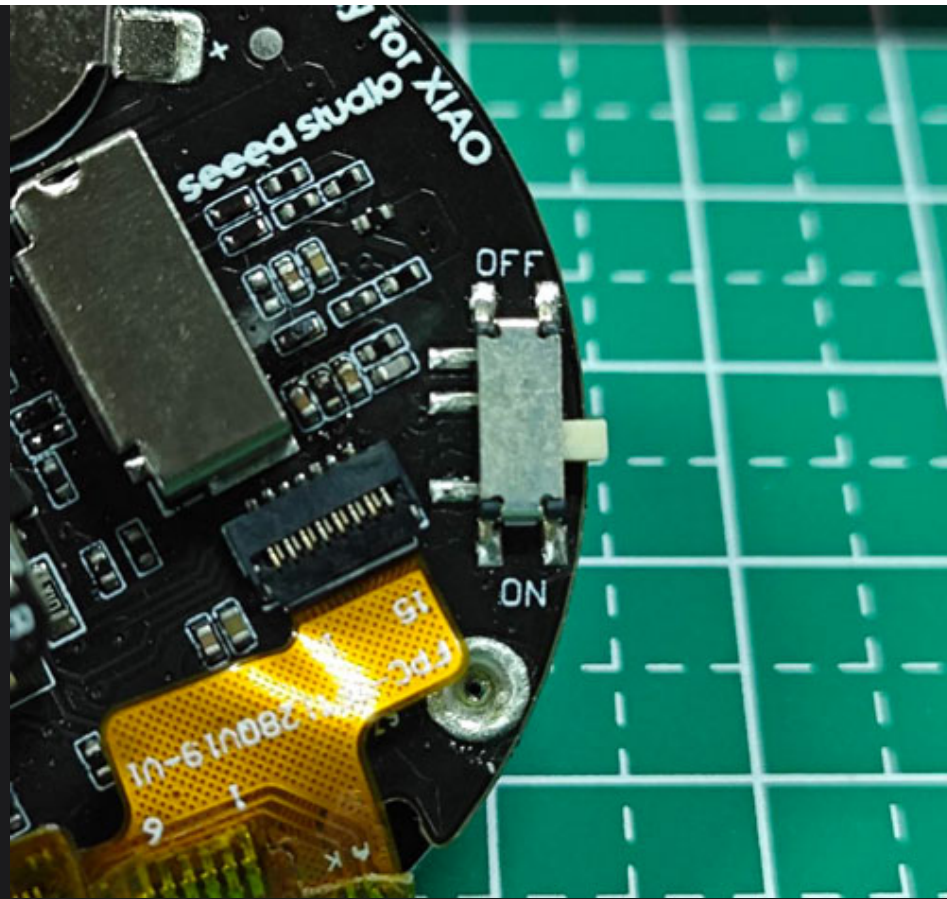
Once the hardware and software are ready, we start uploading our first example program. This sample program can be used to check if the Round Display's RTC clock, SD card and touch functions are working properly.

You can find this sample program in the Arduino IDE under **File -> Examples -> Seed Arduino Round display -> HardwareTest**.



Just select the XIAO you are using and the port number where the XIAO is located, compile and upload it.

Make sure the Round Display switch is toggled to the ON position.



If the program runs smoothly, you will see the following effect.



i NOTE

This sample program will test all the functional items of the expansion board, including the RTC function. If you do not have the I2C BM8563 RTC library installed, then an error may be reported, you can comment out the function `lv_hardware_test()`, then the functional detection of the SD card will also be turned off.

Troubleshooting

Q1: Why doesn't the display show anything after I upload the program?

A: Please check that the Round Display switch is turned on. If you are using the XIAO ESP32C3, you may also need to press Reset after uploading the program to make it work.

Q2: If I want to connect Seeed Studio XIAO ESP32S3 Sense to this extension screen, will there be a conflict with two TF card slots?

A: This does not create a conflict. The different SD card slots are controlled via chip select, if you want to use the microSD card slot on Sense, the chip select pin should be **21**, if you want to use the microSD card slot on Round Display, the chip select pin should be **D2**.

We have [examples](#) of using both hardware and microSD cards in the S3 Sense camera tutorial.

Q3: Why does my XIAO RP2040 get a very strange C++ error when using the code for HardwareTest with Round Display?

A: This may be caused by you not selecting the appropriate compile option for the XIAO RP2040. Please refer to the diagram below to set and re-upload the program.

```
HardwareTest | Arduino 1.8.19
File Edit Sketch Tools Help
HardwareTest
1 #include
2
3 // uncor
4 #define
5 //#defi
6
7 #include Board: "Seeed XIAO RP2040" >
8 #include Flash Size: "2MB (no FS)" >
9 CPU Speed: "133 MHz" >
10 void set Optimize: "Optimize (-O)" >
11 { RTTI: "Disabled" >
12 Ser: Stack Protector: "Disabled" >ible serial debug
13 Ser: C++ Exceptions: "Enabled" >rduno ););
14 Debug Port: "Disabled" >
15 lv_ Debug Level: "None" >
16 USB Stack: "Pico SDK" >
17 lv_ IP/Bluetooth Stack: "IPv4 Only" >
18 lv_ Upload Method: "Default (UF2)" >
19 Port >
20 lv_ Get Board Info >
21 } Programmer >
22 Burn Bootloader >

Done compiling.
C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\tools\python3\1.0.1-base3a5aed/python3 -I "C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\tools\simpleub.py
"C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\tools\python3\1.0.1-base3a5aed/python3 -I "C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\tools\simpleub.py
"C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\tools\python3\1.0.1-base3a5aed/python3 -I "C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\tools\simpleub.py
"C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\tools\python3\1.0.1-base3a5aed/python3 -I "C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\tools\simpleub.py
"C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\tools\python3\1.0.1-base3a5aed/python3 -I "C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\tools\simpleub.py
Multiple libraries were found for "SD.h"
Used: C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\libraries\SD
Not used: C:\Program Files (x86)\Arduino\libraries\SD
Using library lvgl at version 8.2.0 in folder: C:\Users\mengd\Documents\Arduino\libraries\lvgl
Using library Seeed Arduino Round display at version 1.0.0 in folder: C:\Users\mengd\Documents\Arduino\libraries\Seeed_Arduino_Round_display
Using library SPI at version 1.0 in folder: C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\libraries\SPI
Using library Wire at version 1.0 in folder: C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\libraries\Wire
Using library tft_eSPI at version 2.5.22 in folder: C:\Users\mengd\Documents\Arduino\libraries\tft_eSPI
Using library LittleFS at version 0.1.0 in folder: C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\libraries\LittleFS
Using library SD at version 2.0.0 in folder: C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\libraries\SD
Using library SDFS at version 0.1.0 in folder: C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\libraries\SDFS
Using library ESP8266SdFat at version 2.1.1 in folder: C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\libraries\ESP8266SdFat
Using library I2C_BM8563_RTC at version 1.0.4 in folder: C:\Users\mengd\Documents\Arduino\libraries\I2C_BM8563_RTC
"C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\tools\python3\1.0.1-base3a5aed/python3 -I "C:\Users\mengd\AppData\Local\Arduino15\packages\arduino\hardware\rp2040\3.1.1\tools\simpleub.py
Sketch uses 348852 bytes (16%) of program storage space. Maximum is 2093056 bytes.
Global variables use 69604 bytes (26%) of dynamic memory, leaving 192540 bytes for local variables. Maximum is 262144 bytes.

15 Seeed XIAO RP2040, 2MB (no FS), 133 MHz, Optimize (-O), Disabled, Disabled, Enabled, Disabled, None, Pico SDK, IPv4 Only, Default (UF2) on COM3
```

Q4: I have followed the tutorial and still can't get the TFT or LVGL program to compile properly, what should I do?

Updates to the TFT library and the LVGL library may cause the procedures in the tutorial to fail. We recommend that you use our **tested and stable versions of the libraries**, which you can use without even having to change the configuration in them yourself.

Resources


- [PDF] [Charge IC datasheet](#)
- [PDF] [ETA3410 datasheet](#)
- [PDF] [RTC PCF8563 datasheet](#)
- [PDF] [1.28" a-Si TFT Liquid Crystal Display datasheet](#)
- [PDF] [Seed Studio Round Display for XIAO SCH](#)
- [ZIP] [Seed Studio Round Display for XIAO SCH&PCB](#)
- [STL] [The 3D model diagram of the shell for Round Display](#)
- [PDF] [GJX0128A4-15HY Datasheet](#)

Tech Support & Product Discussion

Thank you for choosing our products! We are here to provide you with different support to ensure that your experience with our products is as smooth as possible. We offer several communication channels to cater to different preferences and needs.





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Last updated on **Mar 17, 2023** by **Citric**



4 reactions



29 comments · 53 replies – powered by giscus

Oldest

Newest



tianrking Feb 24

Collaborator

:)



6 replies

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TobiasReich Sep 3

Deutsche Antwort folgt.

Sorry, common language is English here so I ask twice. What exactly do you want to achieve? I really love the XIAO ESP32 and they work really well for me - yet you need some technical skills.

--

Was genau möchtest Du denn erreichen. Ich bin auch kein Experte aber die XIAO Dinger sind eigentlich echt gut (wobei sie natürlich nur gewisse technische Voraussetzungen haben).



GitHub-Karl Sep 3

I didn't find a simple guide for installation the ESP32SE sense (cam). I.e.: how will I get the IP-Address of my XIAO. Which of the arduino *.ino are first to be uploaded.



TobiasReich Sep 3

First question, you know that this is not a stand alone ip camera or something similar, right? It is a development board that offers some functionality (like a camera) but not a device you buy, turn on and use as a CCTV or so.

Depending on your setup you might print your IP address to the Serial output.

E.g. something like this `Serial.print(WiFi.localIP());`

If you are the owner of the WiFi network you can also easily look at your router (e.g. enter fritz.box in your browser and have a look). Once it is connected to the network you should see it in the connected WiFi devices.



GitHub-Karl Sep 3

Thank you, I knew that I didn't buy a stand-alone-cam. I looked for an instruction for board-installation (with cam). What I found, had confused me. I was able to get connection via the arduino blink-script, Then I didn't get further to install the wifi and didn't find in which order I have to install other scripts (and which ones).



TobiasReich Sep 4

I guess it might help to get a specific question. You could also find better help in the forum than on github (which is usually more useful for bug reports than support).

Have a look here:

[Forum](#)

and ask your question there.
Also there is a tech support option on the website:
[Contacts](#)



MatthewJeffson Mar 2

Collaborator

Happy Launch :D

↑ 1



1

0 replies



olaodou Apr 26

good

↑ 1



1

0 replies



robber27199 Jul 24

For Arduino the actual definitions for the 3-in-one LED is actually:

Red LED = LED_BUILTIN or LED_RED

Blue LED = LED_BLUE

Green LED = LED_GREEN

↑ 1



4 replies

 MatthewJeffson Jul 25 [Collaborator](#)

Hi! May I ask what kind of Arduino board are you referred to?



 robber27199 Jul 25

Sorry, this is in relation to the XIAO nRF52840



 MatthewJeffson Jul 26 [Collaborator](#)

edited

Okay, thanks! The contents have been changed!



 MatthewJeffson Jul 26 [Collaborator](#)

Hi! Is it ok that I ask a question: Would you be interested in becoming one of [our contributor](#)?:D



 Piepsakul Jul 27

I'm looking for the correct configuration within ESPHome for the XIAO esp32s3 sense camera.

This is what is not working:

Example configuration entry

esp32_camera:
name: My Camera
external_clock:
pin: GPIO11
frequency: 20MHz
i2c_pins:
sda: GPIO40
scl: GPIO39
data_pins: [GPIO15, GPIO17, GPIO18, GPIO16, GPIO14, GPIO12, GPIO11, GPIO48]
vsync_pin: GPIO38
href_pin: GPIO47
pixel_clock_pin: GPIO13

reset_pin: GPIO48

resolution: 640x480
jpeg_quality: 10



3 replies



MatthewJeffson Jul 28 Collaborator

Hi, we are still trying to find people who can help us to support ESPhome for the XIAO esp32s3 sense, which is an assignment under our [contributor program](#).

May I ask would you be interested in it?

Regards!





Piepsakul Aug 2

I'm sorry, but I don't think I'm qualified to do the job.



MatthewJeffson Aug 2 Collaborator

We are looking forward to any contributions(suggesting updates for wiki platform, fixing typos to wiki documents, [accepting the assignments](#))

We will provide our products to our contributors as a token of appreciation.

No matter how. It is good to have a conversation with you.:D



Eee14 Jul 29

I get the following error while compiling:

```
In file included from c:\Users\${UserName}\Documents\Arduino\libraries\TFT_eSPI/TFT_eSPI.h:68:0,
                  from c:\Users\${UserName}\Documents\Arduino\libraries\Seed_Arduino_RoundDisplay-main\src/lv_xiao
                  from C:\Users\${UserName}\AppData\Local\Temp\.arduinoIDE-unsaved2023629-19620-13g6uvy.5asa\Hardwa
c:\Users\${UserName}\Documents\Arduino\libraries\TFT_eSPI\User_Setup_Select.h:96:10: fatal error: User_Setups/Setu
#include <User_Setups/Setup66_Seed_XIAO_RoundDisplay.h>
      ^~~~~~
compilation terminated.
```

```
exit status 1
```

```
Compilation error: exit status 1
```



How can I fix this?



4 replies



MatthewJeffson Jul 31 Collaborator

Hi! Thank you for your interests in our products! Would you mind check with our tech support platforms?

https://wiki.seeedstudio.com/Getting_Started/#tech-support--product-discussion

Ideas Exchange

Join extensive product usage **discussion**,
and share **experiences**,
getting help from our community and technical experts.

Email

Discord

GitHub



Eee14 Aug 6

Finally! I found the problem!

I was following the text step "#include <User_Setups/Setup66_Seed_XIAO_RoundDisplay.h>", now I follow this

image:

```
92 // #include <User_Setups/Setup60_RP2040_ILI9341.h> // Setup file for RP2040 with SPI ILI9341
93 // #include <User_Setups/Setup61_RP2040_ILI9341_PIO_SPI.h> // Setup file for RP2040 with PIO SPI ILI9341
94 // #include <User_Setups/Setup62_RP2040_Nano_Connect_ILI9341.h> // Setup file for RP2040 with SPI ILI9341
95
96 #include <User_Setups/Setup66_Seed_XIAO_Round.h> // Setup file for XIAO serial with GC9A01
97
98 // #include <User_Setups/Setup70_ESP32_S2_ILI9341.h> // Setup file for ESP32 S2 with SPI ILI9341
99 // #include <User_Setups/Setup70b_ESP32_S3_ILI9341.h> // Setup file for ESP32 S3 with SPI ILI9341
```

change it to "#include <User_Setups/Setup66_Seed_XIAO_Round.h>" then Example HardwareTest works! 🙌



MatthewJeffson Aug 7 Collaborator

Haha wow! Glad you working it out and thanks for sharing it!
Are you interested being one of our contributor?



Eee14 Aug 7

Thanks, but I'm too busy to help you guys right now.



Piepsakul Aug 2

I checked all platforms but there is no simple guide to get the camera working with ESPhome





MatthewJeffson Aug 2 Collaborator

Hi! I really appreciate your efforts! Thanks for checking it.



GitHub-Karl Sep 2

So did I. I didn't find a simple guide. The above didn't help. I.e.: how will I get the IP-Address of my XIAO. Which of the arduino *.ino are first to be uploaded. And so on!



Imanliang Aug 7

I follow the https://wiki.seeedstudio.com/XIAO_BLE/#battery-charging-current

but

```
xxx.ino:113:11: error: 'P0' was not declared in this scope; did you mean 'A0'?  
113 |   pinMode(P0 .13, OUTPUT);
```

I has try P0.13, P0_13, D14,D22

pin not defined ?

I use the macOS

Seed XIAO nRF52840 Sense

VID 8x2886

PID 0x8045



3 replies



MatthewJeffson Aug 8 Collaborator

```
Seed XIAO BLE Sense - nR...  
Blink.ino  
17 modified 8 Sep 2016  
18 by Colby Newman  
19  
20 This example code is in the public domain.  
21  
22 https://www.arduino.cc/en/Tutorial/BuiltInExamples/Blink  
23 */  
24  
25 // the setup function runs once when you press reset or power the board  
26 void setup(){  
27   pinMode (P0_13, OUTPUT);  
28 }  
29 void loop() {  
30   digitalWrite(P0_13, HIGH);  
31 }  
32  
Output  
Sketch uses 83672 bytes (10%) of program storage space. Maximum is 811008 bytes.  
Global variables use 43904 bytes (18%) of dynamic memory, leaving 193664 bytes for local variables. Maximum is 237568 bytes.  
Ln 27, Col 25 Seed XIAO BLE Sense - nRF52840 [not connected] 1
```

mine working OK. But thanks to you I found a missing "(" on the wiki and I will change it soon





Imanliang Aug 8

I found difference.
The Speedd nRF52 Boards 1.1.1. not defined the P0_13,
then Seeed nRF52 med-enabled Board has defined.



MatthewJeffson Aug 8 Collaborator

Wow! Thank you for pointing it out! Have you learnt our [contributor project](#)? Really looking forward that we can build some together with the products you have.



Imanliang Aug 7

How can get battery volt for now?
this wiki not found this information's.

How can I know the usb cable is plugged in?

I has seem <https://forum.seeedstudio.com/t/xiao-nrf52840-how-to-detect-if-usb-c-cable-is-plugged-in/270595>

but I'm use Arduino IDE

↑ 1



9 replies

⋮ [Show 4 previous replies](#)



Imanliang Aug 26

sorry, tolate seem this.

My Device is

I use the macOS

Seeed XIAO nRF52840 Sense

VID 8x2886

PID 0x8045

my application need

check usb cable has plugin, P14 set to High

because

https://wiki.seeedstudio.com/XIAO_BLE/#q3-what-are-the-considerations-when-using-xiao-nrf52840-sense-for-battery-charging

I currently have three 52840s. After connecting the USB, it generates high heat. I suspect this is the reason.





xzxcessarr Aug 28 Collaborator

Hello, if you want to just plug the USB cable in and detect it is difficult but use the RTOS like the freeRTOS, but you can use the similar way:

1. init the "serial" by the "Serial.begin(9600);" to initialize your serial of USB, and set the function "if Serial.available() != 0" for detect whether the serial is available, you can add digitalWrite(P14, HIGH) into it.
2. use the board or other device send a message at the baud rate and your board will detect and execute it



Imanliang Aug 28

Thanks for your recommendation.

but I use this create products, the user behavior plugin the usb cable, devices usually not in power off mode, is run something.

so if P_14 to low, I'm plugin the usb, the board maybe burn.

P_14 to HIGH, I can't read batt.



xzxcessarr Aug 30 Collaborator

Hello, from your description, I think you can try freeRTOS, it has component designed for hot plugging



Imanliang Sep 4

sorry, my english is bad.

I just need to know, battery is very low for now, alert user chage.

not need real battery voltage.

P0_31 max is 3.6V,

use P0.14 read battery is work, but LI-PO maybe 4.2v, so if use P0.14, the voltage maybe voltage too high, so brun P0.31.

so why not change mind, I juse need to alter user chage?

so we can on board 3.3v pin connect to A0

and

```
int cg = analogRead(A0);  
float batt = ((3.7* cg) / 1024);
```


if batt low to 3.0, alert user , need the chage.

Is this idea correct?

I'm not sure there's a risk

this is output data:

USB cable has plugin, and has LI-PO 3.7V battery

Avometer is 3.3v

3.38

3.38

3.38

3.37

3.37

but remove USB cable and battery to low, the number maybe is 3.0.



dwj66 Aug 10

the GPIO5 is not able to read the analog signal, which means the ADC2 is disabled, how can I enable ADC2 in arduino IDE?

↑ 1



1 reply



xzxcessarr Aug 14 Collaborator

Hi, thanks for feedback, can you tell me which board are you mention?





Imanliang Aug 11

Can give me full version Devicetree overlays and KConfig?
arduino may be can may not meet my needs, I am going to use ncs to re-develop



0 replies



TobiasReich Aug 13

I'm experiencing issues with the hardware serial functionality for UART.
E.g. when communicating with the Adafruit Soundboard I have a code like that:

```
#include <Adafruit_Soundboard.h>
#include <HardwareSerial.h>

#define SFX_RST 8

Adafruit_Soundboard sfx = Adafruit_Soundboard(&Serial1, NULL, SFX_RST);

void setup() {
  Serial.begin(9600);
  Serial1.begin(9600);

  if (!sfx.reset()) {
    Serial.println("Not found");
    while (!Serial1) { /* wait until it is connected*/ }
  }
  Serial.println("SFX board found");
  uint8_t files = sfx.listFiles();
  Serial.print("Found "); Serial.print(files); Serial.println(" Files");
```

```
}
```

It can't communicate with the device (finding 0 files). However when I'm switching to SoftwareSerial the same code looks fine.

E.g.

```
#include <Adafruit_Soundboard.h>
#include <SoftwareSerial.h>

#define SFX_TX 6
#define SFX_RX 7
#define SFX_RST 8

SoftwareSerial ss = SoftwareSerial(SFX_TX, SFX_RX); // <---- this worked, hardware did not?!
Adafruit_Soundboard sfx = Adafruit_Soundboard(&ss, NULL, SFX_RST);

void setup() {
  Serial.begin(115200);
  ss.begin(9600);
  if (!sfx.reset()) {
    Serial.println("Not found. Waiting...");
    while (!ss) { /* wait until it is connected*/ }
  }
  Serial.println("SFX board found");
  uint8_t files = sfx.listFiles();
  Serial.print("Found "); Serial.print(files); Serial.println(" Files");
}
```

Any idea what is going on?

↑ 1 

0 replies

 ab-tools Aug 17

What is exposed via the JST 1.25 connector?

↑ 1 

1 reply

 ab-tools Aug 17

Disregard please, I do understand now that this is the connector for the battery.



 ab-tools Aug 17

Is it still possible to use at least some GPIO PINs from the base board while it is connected to this display?

↑ 1 

6 replies

⋮ [Show 1 previous reply](#)

 ab-tools Aug 18

Hello Matthew, first thanks for your quick reply!

My question was about your round touch screen (Seedstudio 104030087) in combination with one of your XIAO base board, e. g. the ESP32 one (Seedstudio 113991114):

It's great to be able to directly connect the base board to the screen, but we would still need some additional IO (including UART).

Is there a way to still use some GPIOs from the ESP32 base board for other things than just the LCD/touch screen connection?

Thanks
Andreas



MatthewJeffson Aug 18 Collaborator

Hi Andreas!

I think that indeed is good question and a great proposal. Because of size maintenance issue, there might be not two line additional interfaces. I will try to inform this to the product manager and hopefully incorporate it in the next iteration...

Sorry for now there might not be any good ways to manage that.

Regards,
Matthew



ab-tools Aug 18

Hello Matthew,

hm, understood, appreciating the quick reply.

We really like your small, round touch screen and would still like to use that for our application.

Do you foresee any problems using your touch screen (Seedstudio 104030087) with a different base board (but still based on an ESP32 or RP2040, of course)?

E. g. simply a standard ESP32-S3 Dev Board or the "official" Raspberry Pi Pico?

It's clear that it cannot be just hooked up together as simple as when using your base board then, but I would assume

that your touch screen should in general work with any base board using an ESP32 or RP2040 chip set, correct?

If so, this would at least allow us to use your round touch screen, even if we are unable to use your base boards due to missing GPIOs.

Best regards
Andreas



MatthewJeffson Aug 18 Collaborator

Hi Andreas,

I'm sorry but it also requires specific libraries for ESP32-S3 Dev Board or the "official" Raspberry Pi Pico, since the IO definitions among them are different. You can change the libraries we provided which might be a solution...

For what's worth, maybe you can leave some gap when you trying to connect with XIAO and the touch screen, then connect a wire with the exposed pin.

Sorry for the inconvenience.XD

Regards,
Matthew



ab-tools Aug 18

Hello Matthias,

I'm sorry but it also requires specific libraries for ESP32-S3 Dev Board or the "official" Raspberry Pi Pico, since the IO definitions among them are different.

What do you mean by "IO definitions"?

I would expect that your base board at the end only provides access to a certain subset of IO PINs of the ESP32/RP2040 base MCU. So while the exposed PINs (and especially their order) might be different compared to

...but, it is to be sure most of the time the exposed pins (and especially their order) might be different compared to other boards, when connecting the correct PINs together, it should "just work". Or do I miss something here?

For what's worth, maybe you can leave some gap when you trying to connect with XIAO and the touch screen, then connect a wire with the exposed pin.

Not sure if I understand your suggestion correctly:

I mean, physically connecting to the PINs is not the problem here - we can just solder some wires on the back side additionally.

But if I understand your "hardware usage" page here

https://wiki.seeedstudio.com/seeedstudio_round_display_usage/

correctly, your round display in fact actually uses almost all of the connected PINs!

Would it then not cause conflicts when we "leave some gap and connect a wire with the exposed pin" additionally to have your touch screen connected?

Best regards and thanks for your support

Andreas



prashik61 Aug 18

Hello,

I am working with the Max30100 sensor and the Xiao ESP32-C3 board. I want to view data on the serial monitor, but nothing is being printed. What should I do? To verify, I tested the code with an ESP32 Dev board, and it successfully printed data on the serial monitor. Now, I'm wondering about the procedure for the Xiao ESP32-C3 board. Do I need any specific drivers for serial communication?

↑ 1



2 replies



domiluci Aug 20

Take a look here: <https://forum.seeedstudio.com/t/xiao-esp32c3-wont-program-without-manually-entering-bootloader-mode/269736>



domiluci Aug 20

They kind of bailed before finding a solution, but there's a bug with the C3's Serial function relating to DTR/RTS. Not sure if this still applies with Native USB's Serial functionality, or the XIAO C3 (I have yet to test mine), but there's a couple fixes available, albeit hard to find. The one I used involves editing the Arduino ESP32 lib's board file. But I wouldn't do that here unless it's a last resort, despite being safe.



ahsanfi Aug 20

Hello, I'm trying to record audio (.wav) to sd card with XIAO BLE SENSE nRF5840 with seeduino extension, but keep getting failed like this:

```
Capturing .wav samples  
initialization failed!
```

I think the module cannot detect the sdc card. Any solutions? Thanks

↑ 1



1 reply



xzxcessarr Aug 24

Collaborator

Hello, from your description, we think you would better to check whether the nRF5840 board or the extension board is well, after we test we find that if using the space of tf card is more than the 16g may the extension board can not read, so we recommand you to check by this list:

1. use the space of the tf card at 16g or below
2. check the nRF5840 board by using the example like the mic-serial-plotter
3. follow the step 2 if is well, check the i2c interface of extansion board, you can use every I2C sensor to test it



Imanliang Aug 28

I'm so sorry , I need Help to more.

I has try the [accelerometer-examples-and-low-power](#)

It's work, but just in Seeed XIAO nRF52840 Sense without the mbeb-enable.

I'm use mbed-enable version is not working.

1. INPUT_PULLDOWN_SENSE is not defined.
2. FlashTransport_QSPI error.

```
/product.ino:32:1: error: 'Adafruit_FlashTransport_QSPI' does not name a type
Adafruit_FlashTransport_QSPI flashTransport;
^~~~~~
/product.ino: In function 'void QSPIF_sleep()':
/product.ino:35:3: error: 'flashTransport' was not declared in this scope
  flashTransport.begin();
  ^~~~~~
```

can help me ?



0 replies



73Volvo Sep 5

I've tried for hours to get this running, but it seems like the sample hardware test is too big to run on the XIAO SAMD21 - is there a smaller test I can use on the SAMD21? Is there a larger chip that's required for this screen?



5 replies



xzxcessarr Sep 5 Collaborator

Hello, could you tell us which screen are you mentioned?



73Volvo Sep 5

Oh, sorry. I found this page embedded on the Seeed 1.28" Round Display - https://wiki.seeedstudio.com/get_start_round_display/



73Volvo Sep 6

Still no luck. I've managed to get the screen running with some simple graphics tests, but not the touchscreen.





73Volvo Sep 7

Here's the thing...

for SAMD21:

TFT_CS = 1

TFT_DC = 3

for ESP32S3:

TFT_CS = D8

TFT_DC = D3

Hope that helps someone else!



73Volvo Sep 7

Wait, that's not working for the ESP32S3, but it's working for the SAMD21. Looks like there might be some more tinkering to do...



skartha-sei Sep 6

Like many other people, I was struggling to get the Arduino IDE to recognize my Xiao, but then I finally remembered having read that power-only USB-C cables can be the cause of this. And, sure enough, a different USB-C cable did the trick! Time to find some red fingernail polish to mark the data-capable USB-C cable!!!

↑ 1



0 replies



userpc42069 Sep 9

Is there a way I can use this board as a webcam or a wired camera by connecting it to my laptop?



2 replies



xzxcassarr Sep 13 Collaborator

Hello, could you tell me which board are you mentioned?



userpc42069 Sep 14

Seeed Studio XIAO ESP32S3 sense with the ov2640 camera



BastelBaus Sep 13

Very nice product and docu. Thanks!

One feature request / proposal would be very helpfull. Sell the XIAO ESP32S3 w/ connector soldered and offer a extention board which fits to the connector and brings most of the PINs to a second small board (same dimensions) on top of the normal board. This could be used by users who would like to use more of the IOs for other purposes. Could be a quite cheap board and usefull extention and keep the very nice form factor (gets only thicker).

BR,
Bastel Baus

↑ 1 

0 replies



KASSIMSAMJI Sep 18

Hello There

I am trying to compile the TFT_eSPI library with Seeed XIAO BLE nRF5 selected but I end up having bunch of errors

But If I compile it with Seeed XIAO nRF5 selected, TFT works, ArduinoBLE no longer works

Any help is really appreciated

↑ 1 

0 replies



userpc42069 Sep 22

can i make seed xiao sense board to host its own wifi to transmit video? or make it a static IP?

↑ 1 

1 reply



TobiasReich Sep 22

The XIAO ESP32S3 Sense has a camera and wifi.

So you can easily create a tiny "web server" and transmit the video there.

Be aware that the tiny camera - though on paper offers 1600 x 1200 - is not the best quality. But I did something similar and it works perfectly fine.

You might have a look for how things are done at his project for instance:

[\[https://www.instructables.com/Camera-NanoTank/\]](https://www.instructables.com/Camera-NanoTank/)



Piepsakul Sep 24

I'm looking for the correct configuration for ESPHOME.

On there are standard configurations for most common camera modules like AI-Thinker, M5Stack, TTGO, ESP-EYE, etcetera.

Can anyone please add the configuration for ESPHOME to this list?

↑ 1



0 replies



khvolk Oct 1

I just ran into problems trying your deep-sleep example. The example worked, as far I could see: in deep sleep there is no more serial connection. But worse: I could not reprogram the esp32c3. I think it got to deep sleep every time I connected it. These tiny push buttons were no help with it:

```
Okt 01 11:48:00 george kernel: usb 5-2.2: new full-speed USB device number 9 using xhci_hcd
```

```
Okt 01 11:48:01 george kernel: usb 5-2.2: New USB device found, idVendor=303a, idProduct=1001, bcdDevice= 1.01
```

```
Okt 01 11:48:01 george kernel: usb 5-2.2: New USB device strings: Mfr=1, Product=2, SerialNumber=3
```

```
Okt 01 11:48:01 george kernel: usb 5-2.2: Product: USB JTAG/serial debug unit
```

```
Okt 01 11:48:01 george kernel: usb 5-2.2: Manufacturer: Espressif
```

```
Okt 01 11:48:01 george kernel: usb 5-2.2: SerialNumber: EC:DA:3B:AA:B6:AC
```

```
Okt 01 11:48:01 george kernel: cdc_acm 5-2.2:1.0: ttyACM0: USB ACM device
```

```
Okt 01 11:48:01 george mtp-probe[4206]: checking bus 5, device 9:
```

```
"/sys/devices/pci0000:00/0000:00:08.1/0000:0a:00.4/usb5/5-2/5-2.2"
```

```
Okt 01 11:48:01 george mtp-probe[4206]: bus: 5, device: 9 was not an MTP device
```

```
Okt 01 11:48:01 george mtp-probe[4209]: checking bus 5, device 9:
```

```
"/sys/devices/pci0000:00/0000:00:08.1/0000:0a:00.4/usb5/5-2/5-2.2"
```

```
Okt 01 11:48:01 george mtp-probe[4209]: bus: 5, device: 9 was not an MTP device
```

```
Okt 01 11:48:01 george kernel: usb 5-2.2: USB disconnect, device number 9
```

Though I have bricked it! I could solve this with my Notebook under Windows flashing the "blink-example" to ist. puuuh.

I recommend to have a back door if you try this example.



0 replies



hbswn Oct 12 Contributor

Has anyone found how to upgrade the firmware using Linux ?



1 reply



hbswn Oct 15 Contributor

To answer my own question: [Standard Toolchain Setup for Linux and macOS](#)



AndreasWes Oct 27

Hi,
I got a weird problem.

I wired my XIAO ESP32C3 to a Ultimate GPS board by Arduino and ran the example code for the GPS.
Since then the XIAO is not recognized when connected via USB.

Do you have any idea how to solve the issue?



2 replies



AndreasWes Oct 28

I found a solution:

I first deinstalled all the Port as mentioned in a forum.

This didnt help by itself.

I found this hint in a different forum which worked for me:

“first of all push and keep the boot button(in xiao esp32c3), then connect the usb cable to the pc.”

XIAO esp32c3 Unknown USB Device (Device Descriptor Request Failed) - Products & Technology / Arduino & Seeeduno - Seeed Forum (seeedstudio.com)



AndreasWes Oct 28

Link to the first forum:

<https://forum.seeedstudio.com/t/seeeduno-xiao-usb-port-stopped-being-recognized-by-windows-10/252618/11>

Link to the second forum:

<https://forum.seeedstudio.com/t/xiao-esp32c3-unknown-usb-device-device-descriptor-request-failed/265933/12>



73Volvo Nov 3

Is it possible to use an SD card board on the ESP32S2 board? It seems to work fine with a 32GB card on my Seeed SAMD21 board, but always fails on the ESP32S2 board.

↑ 1 

0 replies



cmezab Nov 5

Hello. I have followed the "Getting Started" for the STM32MP135D. All steps works fine, but I am not able to finish the installation of the image file. I get the following message after I run "make" to create the image:

```
--2023-11-04 21:56:48-- https://sources.buildroot.net/linux/linux-v6.1-stm32mp-odyssey-r3-br1.tar.gz
Resolving sources.buildroot.net (sources.buildroot.net)... 2606:4700:20::681a:25, 2606:4700:20::ac43:4838,
2606:4700:20::681a:125, ...
Connecting to sources.buildroot.net (sources.buildroot.net)[2606:4700:20::681a:25]:443... connected.
HTTP request sent, awaiting response... 404 Not Found
2023-11-04 21:56:49 ERROR 404: Not Found.
```

Could you help me?

↑ 1 

0 replies

Write

Preview

Aa

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