name	category	sku	tags
Seeeduino XIAO - Arduino Microcontroller - SAMD21 Cortex M0+	Development Board	102010328	

The Seeeduino XIAO is the smallest member of the Seeeduino family. It carries the powerful ATSAMD21G18A-MU which is a low-power microcontrollers. On the other hand, this little board has good performance in processing but needs less power. As a matter of fact, it is designed in a tiny size and can be used for wearable devices and small projects.

Seeeduino XIAO has 14 GPIO PINs, which can be used for 11 digital interfaces, 11 mock interfaces, 10 PWM interfaces (d1-d10), 1 DAC output pin D0, 1 SWD pad interface, 1 I2C interface, 1 SPI interface, 1 UART interface, Serial communication indicator (T/R), Blink light (L). The colors of LEDs(Power,L,RX,TX) are green, yellow, blue and blue. Moreover, Seeeduino XIAO has a Type-C interface which can supply power and download code. There are two reset button, you can short connect them to reset the board.

Features

- Powerful CPU: ARM® Cortex®-M0+ 32bit 48MHz microcontroller(SAMD21G18) with 256KB Flash,32KB SRAM.

- Flexible compatibility: Compatible with Arduino IDE.

- Easy project operation: Breadboard-friendly.

- Small size: As small as a thumb(23.5x17.5mm) for wearable devices and small projects.

- Multiple development interfaces: 11 digital/analog pins, 10 PWM Pins, 1 DAC output, 1 SWD Bonding pad interface, 1 I2C interface, 1 UART interface, 1 SPI interface.

Hardware Overview

Specification

Item	Value
CPU	ARM Cortex-M0+ CPU(SAMD21G18) running at up to 48MHz
Flash Memory	256KB
SRAM	32KB
Digital I/O Pins	11
Analog I/O Pins	11
I2C interface	1
SPI interface	1
UART interface	1
Power supply and downloading interface	Type-C
Power	3.3V/5V DC
Dimensions	20×17.5×3.5mm

!!!Note

```
1.The MCU of this design is powered by 3.3v, please pay attention not to
introduce the IO level of 5V into the IO interface of the system, otherwise
the chip may be damaged;
2.Please pay attention to use, do not lift the shield cover.
```

Reset

Sometimes the Seeeduino XIAO port may disappear when user programming

process fails. we can solve this problem by the following operation:

- Connect the Seeeduino XIAO to your computer.

- Use tweezers or short lines to short the RST pins in the diagram twice.

- The orange LED lights flicker on and light up.

At this point, the chip enters Bootloader mode and the burn port appears

again. Because the samd21 chip has two partitions, one is the Bootloader and

the other is the user program. The product will burn a bootloader code in the

system memory when it leaves the factory. We can switch modes with a quick

reset.

Interrupt

All pins on Seeeduino XIAO support interrupts, but two pins cannot be used at the same time: 5 pin and 7 pin. For more detail about Interrupt please check [here](#).

Pin Multuiplexing

We don't need to configure the pins ourselves, after using the pins, you can call a function directly.

- Use pin 6 as the digital pin:

```cpp
const int buttonPin = 6;     // the number of the pushbutton pin
const int ledPin =  13;      // the number of the LED pin

int buttonState = 0;         // variable for reading the pushbutton status

void setup() {
  // initialize the LED pin as an output:
  pinMode(ledPin, OUTPUT);
  // initialize the pushbutton pin as an input:
  pinMode(buttonPin, INPUT);
}

void loop() {
  // read the state of the pushbutton value:
  buttonState = digitalRead(buttonPin);

  // check if the pushbutton is pressed. If it is, the buttonState is HIGH:
  if (buttonState == HIGH) {
    // turn LED on:
    digitalWrite(ledPin, HIGH);
  } else {
    // turn LED off:
    digitalWrite(ledPin, LOW);
  }
}
```

- Use pin 6 as the analog pin:

```
int sensorPin = A6;     // select the input pin for the potentiometer
int ledPin = 13;        // select the pin for the LED
int sensorValue = 0;  // variable to store the value coming from the sensor

void setup() {
  // declare the ledPin as an OUTPUT:
  pinMode(ledPin, OUTPUT);
}

void loop() {
  // read the value from the sensor:
  sensorValue = analogRead(sensorPin);
  // turn the ledPin on
  digitalWrite(ledPin, HIGH);
  // stop the program for <sensorValue> milliseconds:
  delay(sensorValue);
  // turn the ledPin off:
  digitalWrite(ledPin, LOW);
  // stop the program for for <sensorValue> milliseconds:
  delay(sensorValue);
}
```

Getting Started

Hardware

Materials required

- Seeeduino XIAO x1

- Computer x1

- USB typc cable x1

!!!Tip

```
Some USB cables can only supply power and cannot transfer data. If you
don't have a usb cable or don't know if your usb cable can transmit data,
you can check [seeed USB type C support USB
3.1 ](https://www.seeedstudio.com/USB-Type-C-to-A-Cable-1Meter-p-
4085.html).
```

- Step 1. Prepare a Seeeduino XIAO and a Type-C cable.

- Step 2. Connect the Seeeduino XIAO to your computer.Then the yellow power LED should go on.

Software

!!!Note

```
If this is your first time using Arduino, we highly recommend you to refer
to [Getting Started with
Arduino](http://wiki.seeed.cc/Getting_Started_with_Arduino)
```

- **Step 1. You need to Install an Arduino Software.**

Launch the Arduino application

Double-click the Arduino application (arduino.exe) you have previously

downloaded.

!!!Note

```
If the Arduino Software loads in a different language, you can change it in
the preferences dialog. See the [Arduino Software (IDE)
page](https://www.arduino.cc/en/Guide/Environment#languages) for details.
```

- **Step 2. Open the Blink example**

Open the LED blink example sketch: **File > Examples >01.Basics > Blink**.

- **Step 3. Add Seeeduino to your Arduino IDE**

Click on **File > Preference**, and fill Additional Boards Manager URLs with the

url below: https://raw.githubusercontent.com/Seeed-

[Studio/Seeed_Platform/master/package_seeeduino_boards_index.json](https://raw.githubusercontent.com/Seeed-Studio/Seeed_Platform/master/package_seeeduino_boards_index.json)

Click **Tools-> Board-> Boards Manager...**, print keyword "**Seeeduino XIAO**"

in the searching blank. Here comes the "Seeed SAMD Boards". Install it.

- **Step 4. Select your board and port**

After installing the board, click **Tools-> Board**, find "**Seeeduino XIAO M0**"

and select it. Now you have already set up the board of Seeeduino XIAO for

Arduino IDE.

Select the serial device of the Arduino board from the Tools | Serial Port menu.

This is likely to be COM3 or higher (**COM1** and **COM2** are usually reserved for

hardware serial ports). To find out, you can disconnect your Arduino board

and re-open the menu; the entry that disappears should be the Arduino board. Reconnect the board and select that serial port.

- **Step 5.Upload the program**

Now, simply click the "Upload" button in the environment. Wait a few seconds and if the upload is successful, the message "Done uploading." will appear in the status bar.

A few seconds after the upload finishes, you should see the pin 13 (L) LED on the board start to blink (in orange). If it does, congratulations! You've gotten Arduino up-and-running. If you have problems, please see the troubleshooting suggestions.