M5STACK Core2.75 IoT Development Kit

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OUTLINE

Basic v2.75 is a cost-effective IoT entry-level main controller. It uses the Espress if ESP32 chip, equipped with 2 low-power Xtensa® 32-bit LX6 microprocessors, with a main frequency of up to 240 MHz. It has onboard 16 MB FLASH memory, integrated with a 2.0-inch full-color high-definition IPS display panel, speaker, TF Card slot, and other peripherals. The full-cover casing ensures the stability of circuit operation even in complex industrial application scenarios. The internal bus provides multiple common interface resources (ADC/DAC/I2C/UART/SPI, etc.), with 15 x IO leads on the bottom bus, offering strong expandability. It is suitable for various product prototype development, industrial control, and smart building application scenarios.

Core2.75

1. **Communication Capabilities**
   - **Wireless:** Wi-Fi (802.11 b/g/n) & BLE
   - **Wired:** USB-C port for programming, power and serial (UART) communication Internal Bus
   - **Interfaces:** ADC, DAC, I²C, UART, SPI via 15 I/O leads on the bottom bus
2. **Processor and Performance**
   - **SoC:** ESP32-D0WDQ6-V3 dual-core Xtensa® 32-bit LX6, up to 240 MHz, 600 DMIPS, 520 KB SRAM
   - **Flash Memory**: 16 MB onboard
   - **Power Input**: 5 V @ 500 mA
3. **Display and Input**

- **Display:** 2.0″ 320 x 240 ILI9342C IPS panel (max brightness 853 nit)
- **Buttons:** 3 x user-programmable physical buttons (A/B/C)
- **Speaker:** 1W-0928 audio output

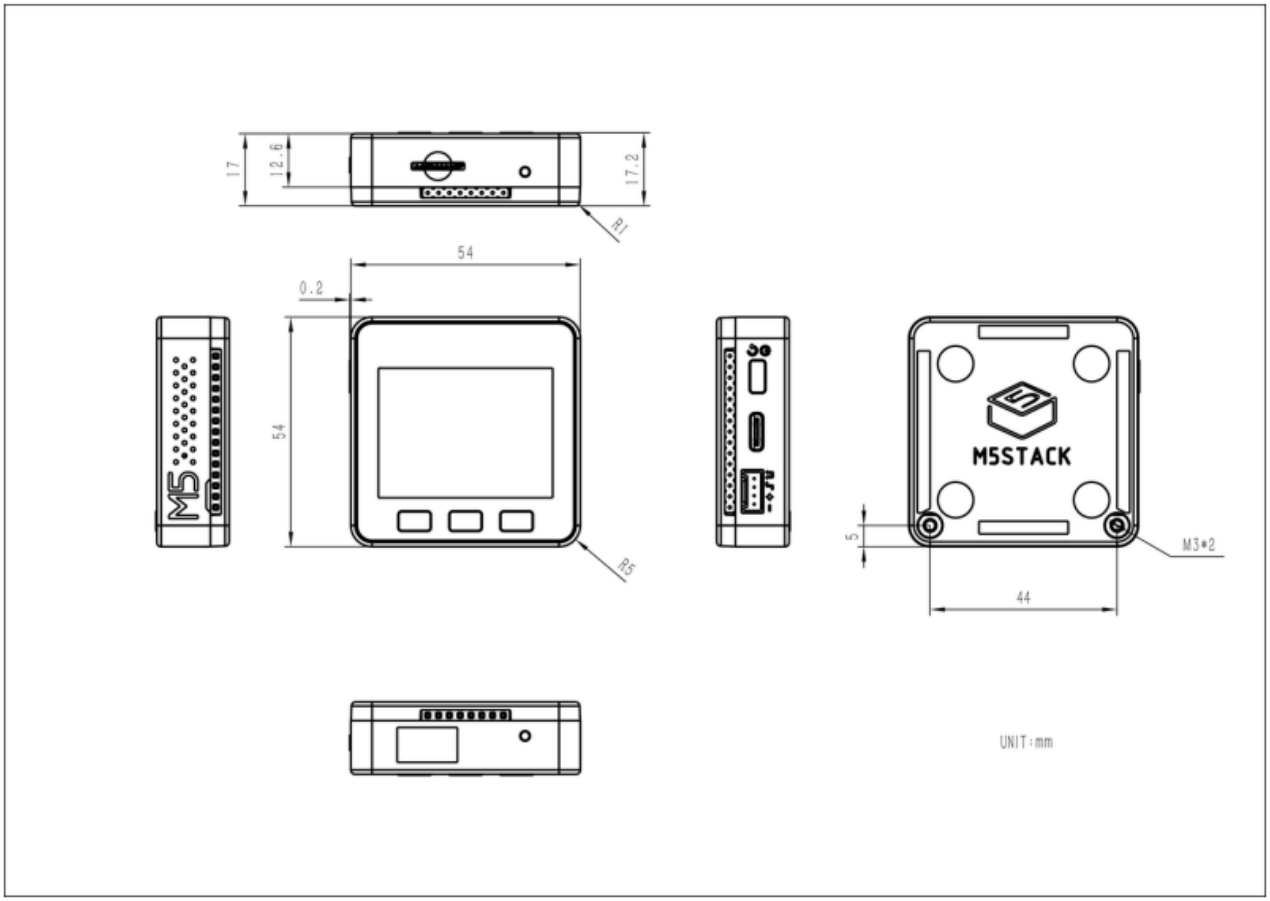
4. **GPIO Pins and Programmable Interfaces**
    - I/O Pins: 15 GPIOS (G21, G22, G23, G19, G18, G3, G1, G16, G17, G2, G5, G25, G26, G35, G36)
    - Expansion:
        - 1x HY2.0-4P Grove ports (Port A)
        - TF-card slot (micro SD, up to 16 GB)
    - Bus Resources: ADC1 (8 channels), ADC2 (10 channels), DAC1/2 (2 channels each), I²C x1, SPI x1, UART ×2
5. **Others**
    - Battery & Power Management: Built-in 110 mAh @ 3.7 V Li-ion cell; IP5306 charge/discharge management
    - USB-Serial Bridge: CH9102F
    - Antenna & Enclosure: 2.4 GHz 3D antenna; PC full-cover plastic housing

SPECIFICATIONS

Specification	Parameter
SoC	ESP32-DOWDQ6-V3, dual-core Xtensa® LX6 @ 240 M Hz, 600 DMIPS, 520 KB SRAM, Wi-Fi
Flash	16 MB
Input Power	5 V @ 500 mA
Interfaces	USB-C 1; I²C × 1
GPIO Pins	G21, G22, G23, G19, G18, G3, G1, G16, G17, G2, G5, G25, G26, G35, G36
Buttons	3 X physical buttons (A/B/C)
LCD Screen	2.0″ 320 × 240 ILI9342C IPS

Speaker	1W-0928 audio output
USB Chip	CH9102F
Antenna	2.4 GHz 3D antenna
Battery	110 mAh @ 3.7V Li-ion
TF Card Slot	Micro SD, up to 16 GB Plastic (PC)
Casing Material	Plastic (PC)
Product Dimensions	54.0 × 540 × 17.0 mm
Product Weight	51.1 g
Packaging Dimensions	94.8 X 65.4 X 25.3 mm 91.1 g
Gross Weight	91.1 g
Manufacturer	M5Stack Technology Co., Ltd

Module Size

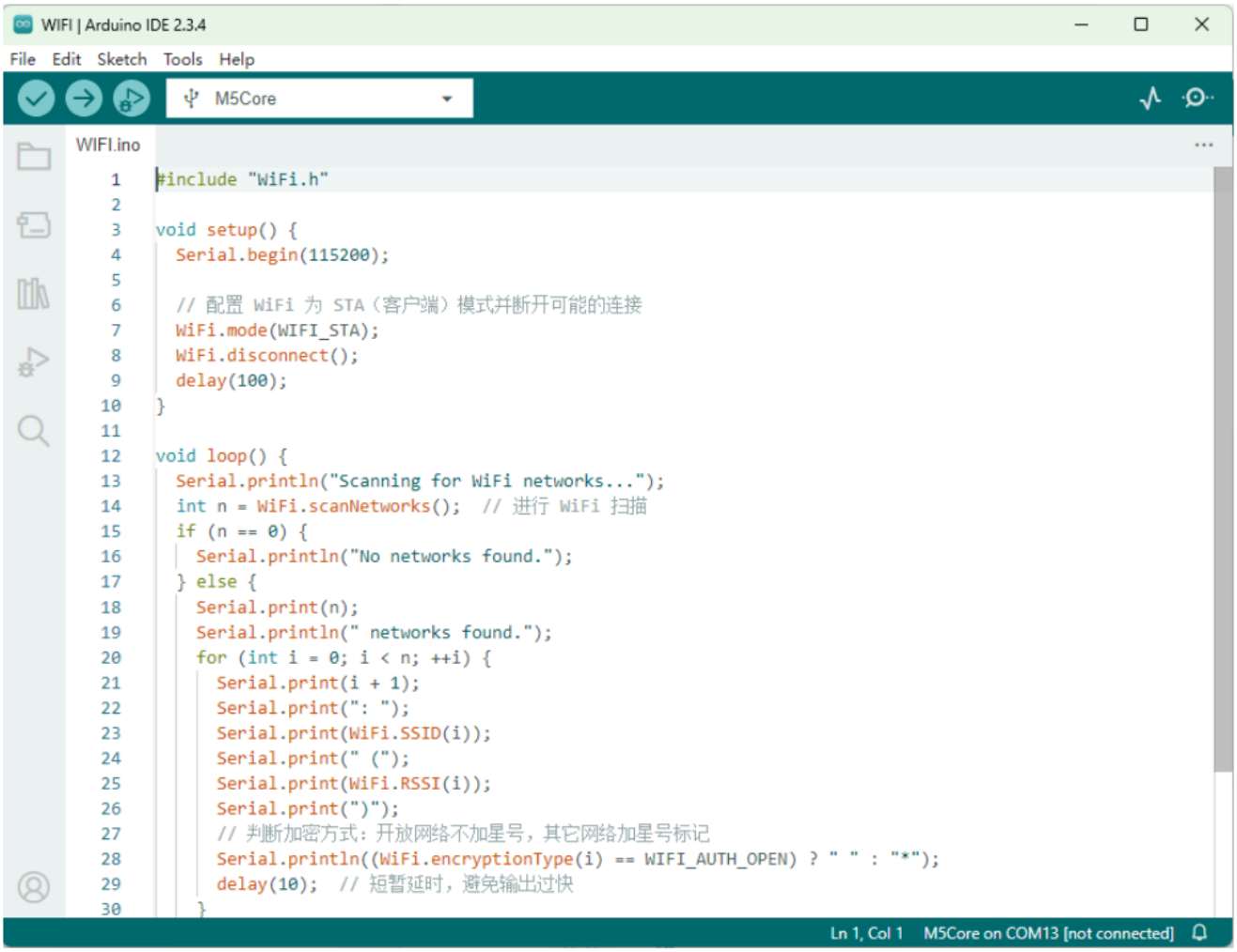


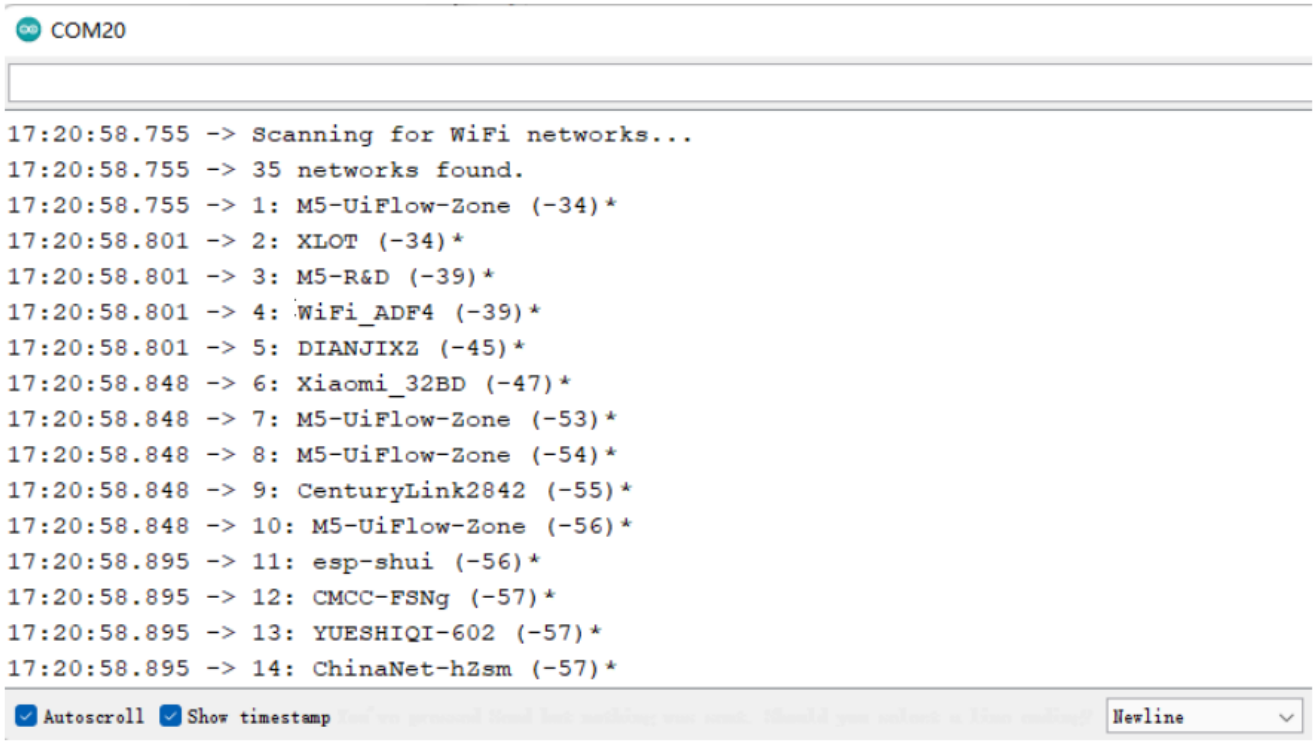
QUICK START

Before you do this step, look at the text in the final appendix: Installing Arduino

Print WiFi information

1. Open Arduino IDE (Refer to https://docs.m5stack.com/en/arduino/arduino_ide for the installation guide for the development board and software)
2. Select the M5Core board and the corresponding port, then upload the code
3. Open the serial monitor to display the scanned WiFi and signal strength information



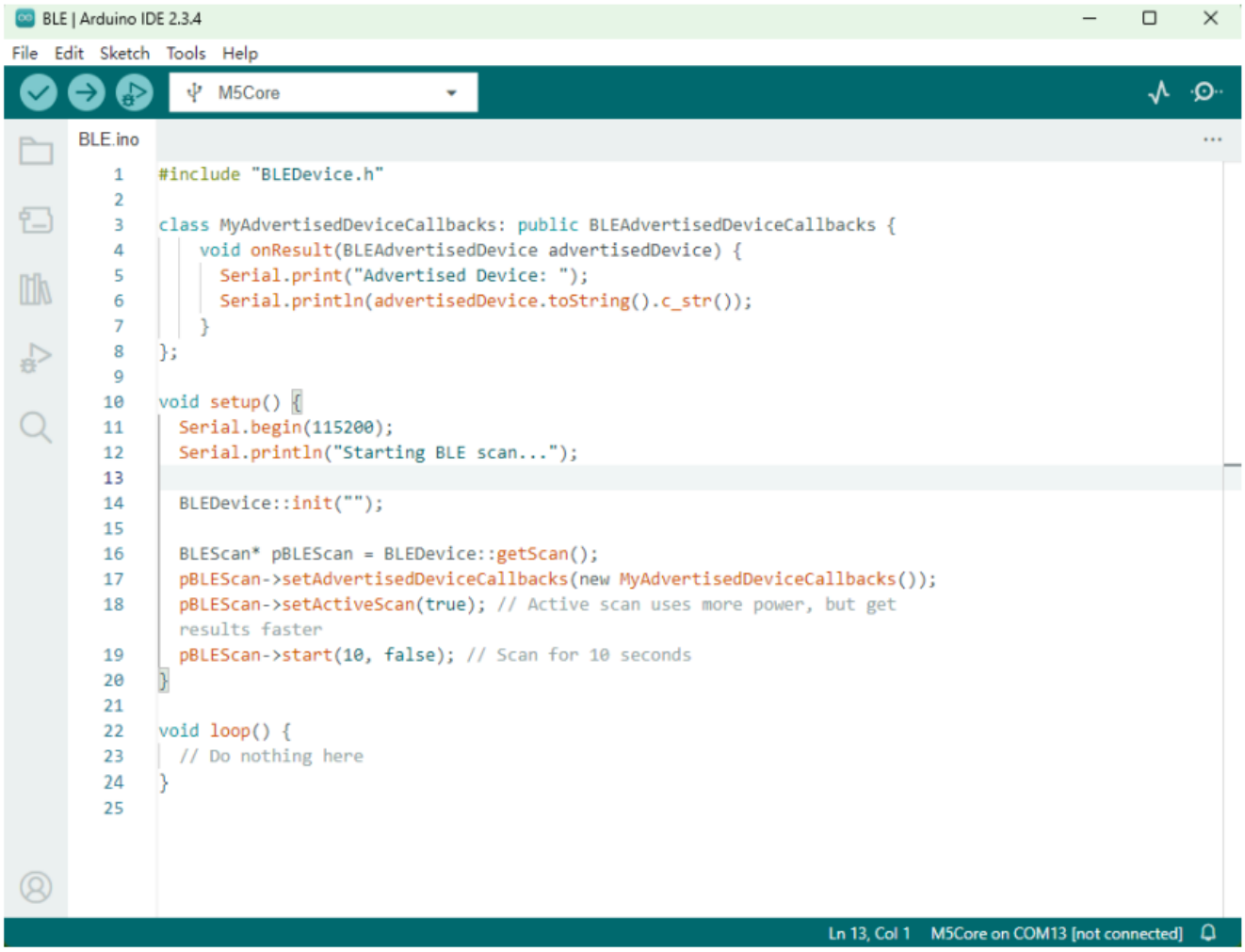


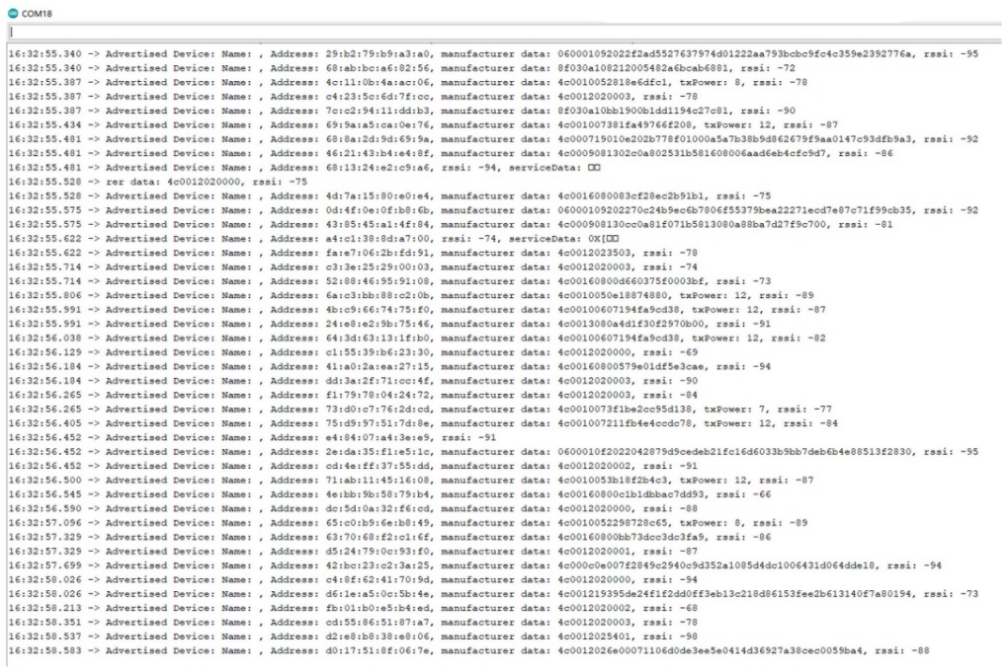
Print BLE information

1. Open Arduino IDE (Refer to https://docs.m5stack.com/en/arduino/arduino_ide for the

installation guide for the development board and software)

2. Select the M5Core board and the corresponding port, then upload the code
3. Open the serial monitor to display the scanned BLE and signal strength information

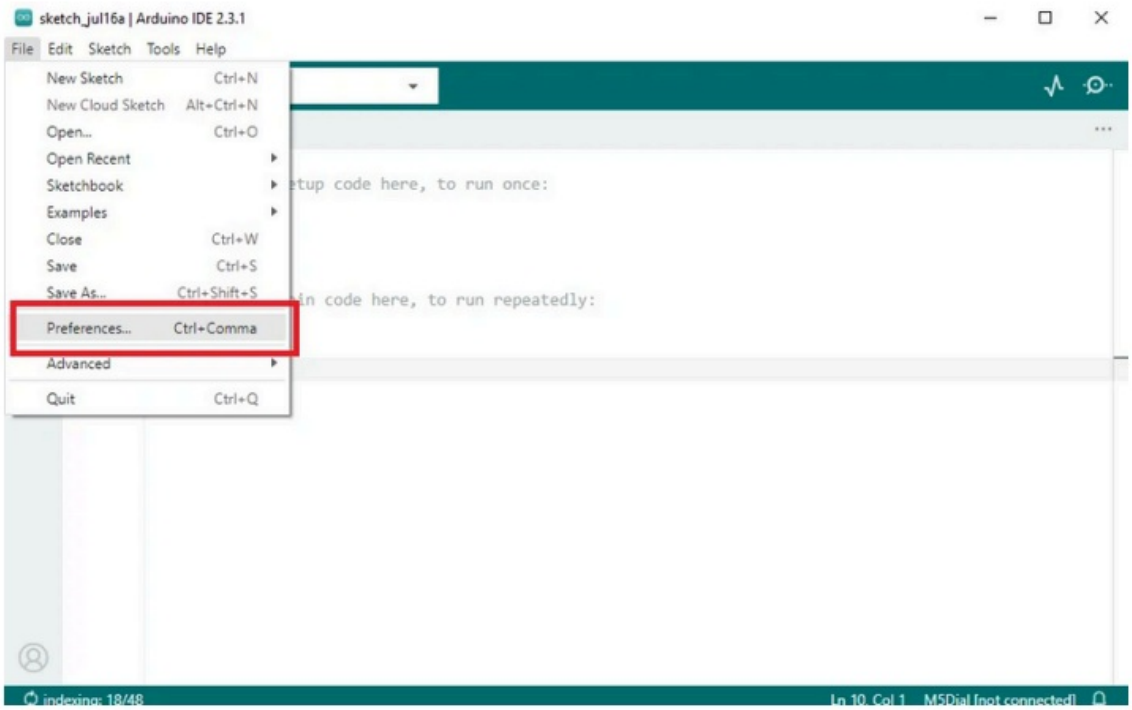




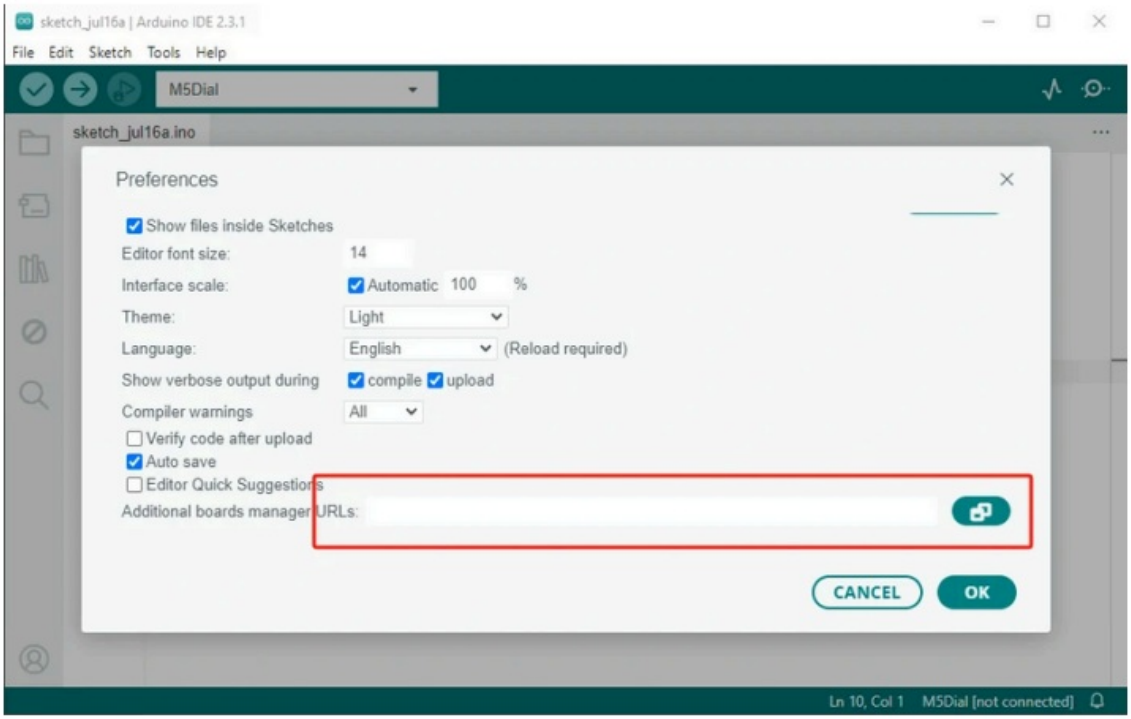
Arduino Install

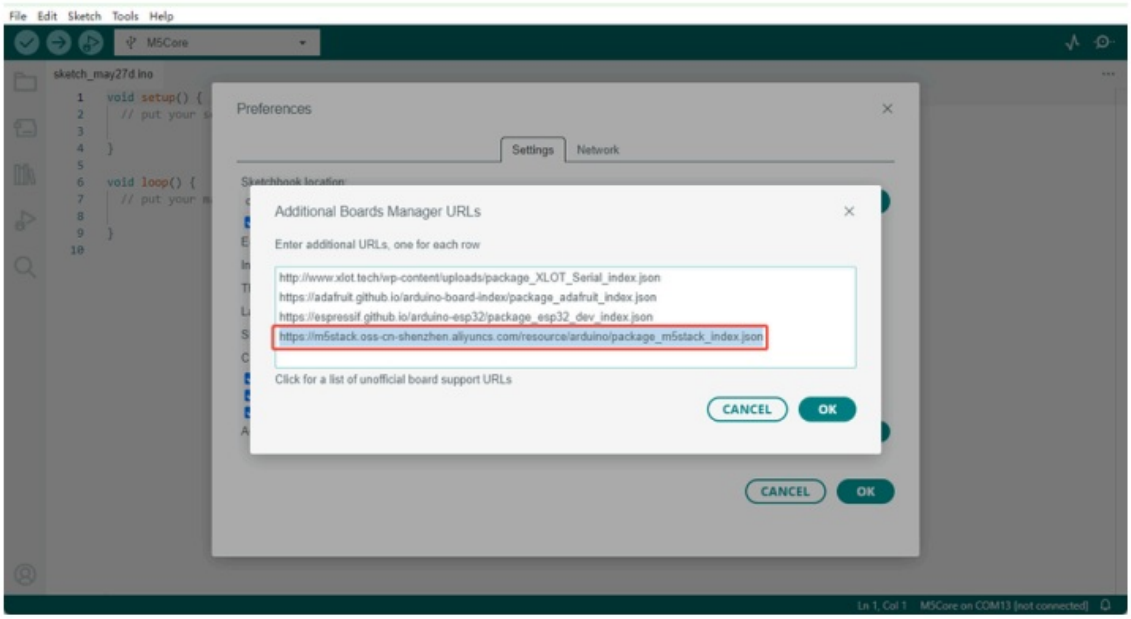
- Installing Arduino IDE (https://www.arduino.cc/en/Main/Software)
  Click to visit the Arduino official website , and select the installation package for your operating system to download.
- Installing Arduino Board Management

1. The Board Manager URL is used to index the development board information for a specific platform. In the Arduino IDE menu, select File -> Preferences

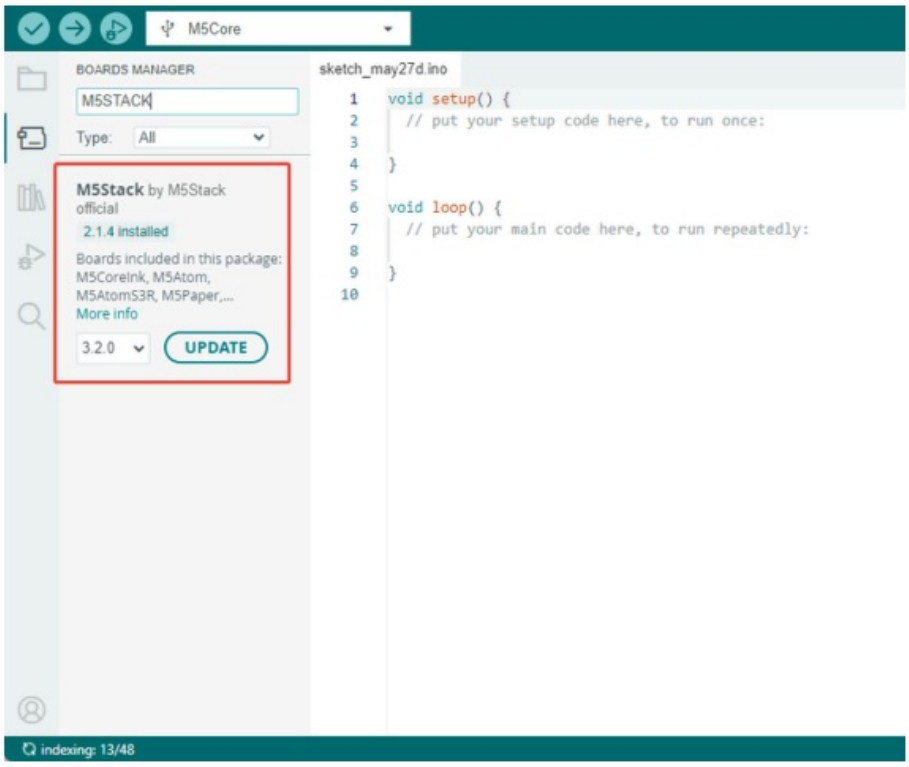


2. Copy the ESP board management URL below into the Additional Board Manager URLs: field, and save.
   https://m5stack.oss-cnshenzhen.aliyuncs.com/resource/arduino/package_m5stack_index.json

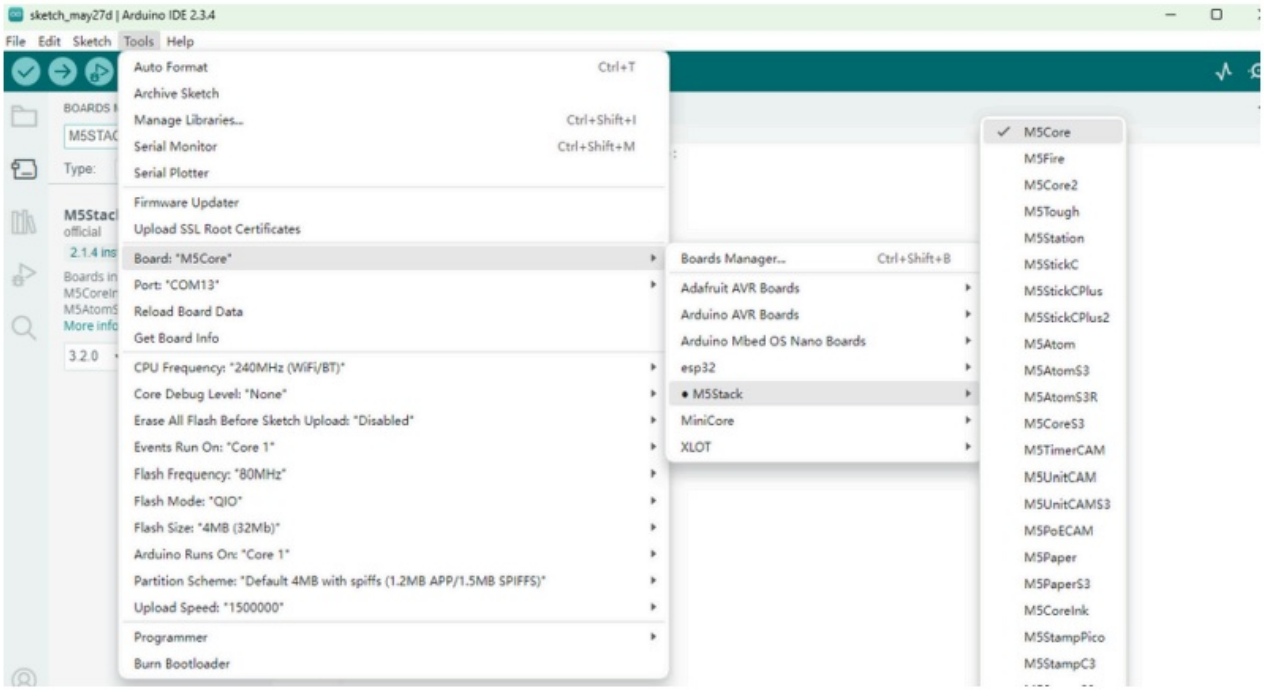




3. In the sidebar, select Board Manager, search for ESP, and click Install.



4. In the sidebar, select Board Manager, search for M5Stack, and click Install.



Depending on the product used, select the corresponding development board under Tools -> Board -> M5Stack -> {M5Core}.

5. Connect the device to your computer with a data cable to upload the program

FCC Warning

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for

compliance could void the user's authority to operate the equipment.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Documents / Resources

	M5STACK Core2.75 IoT Development Kit [pdf] User Manual M5COREV27, Core2.75 IoT Development Kit, Core2.75, IoT Development Kit, Development Kit, Kit

References

- User Manual

M5STACK

Core2.75, Core2.75 IoT Development Kit, Development Kit, IoT Development Kit, Kit, M5COREV27, M5STACK

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