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M5STACK M5 Paper Touchable Ink Screen Controller Device User Manual

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Contents

Overview

M5 Paper is a touchable ink screen controller device. This document will demonstrate how to use the device to test basic WIFI and Bluetooth functions.

Development environment

Arduino IDE

Go to **https://www.arduino.cc/en/main/software** to download the Arduino IDE corresponding to your operating system and install it.
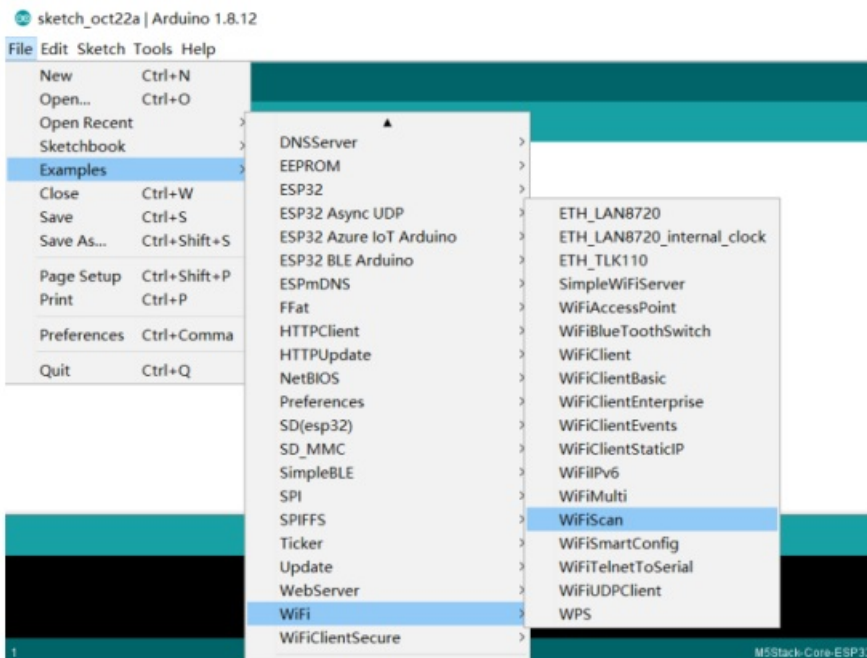

Open the Arduino IDE and add the management address of the M5Stack board to the preferences **https://m5stack.osscnshenzhen.aliyuncs.com/resource/arduino/package_m5stack_index.json**

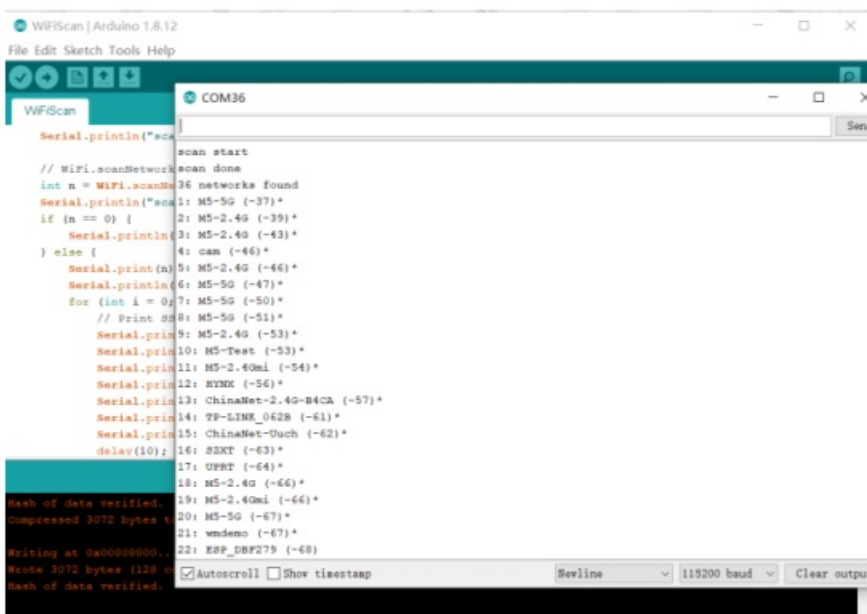Search for "M5Stack" in the board management and download it.
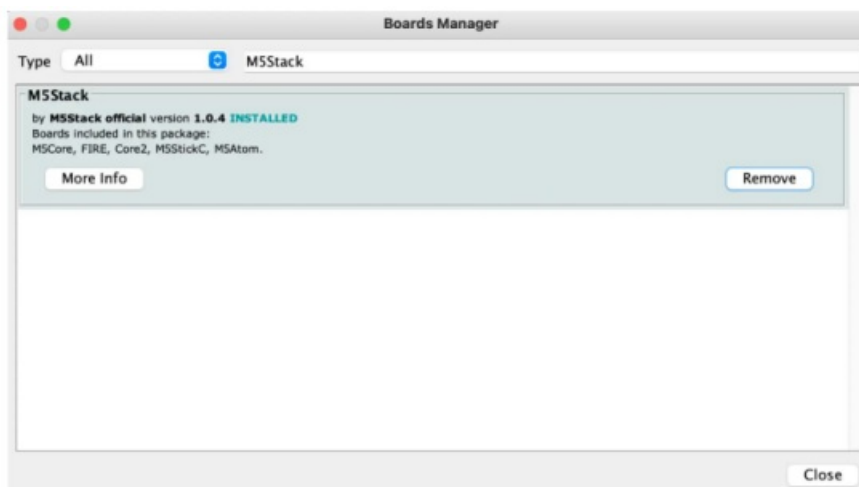
WiFi

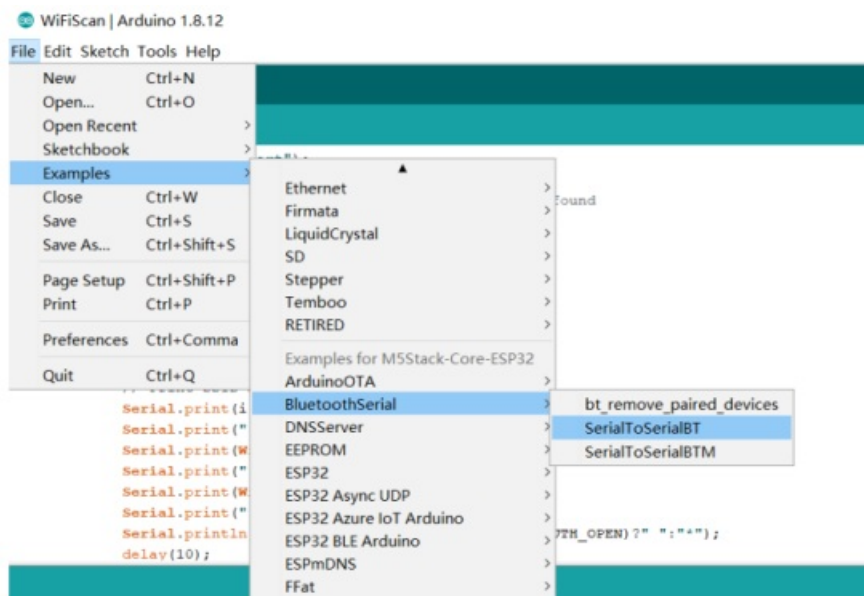Use the official WIFI scanning case provided by ESP32 in the Example list to test

After uploading the program to the development board, open the serial monitor to view the WiFi scan results

Bluetooth

Demonstrate how to use classic Bluetooth to send messages through Bluetooth and transmit them to the serial port for printing.

After uploading the program to the development board, use any Bluetooth serial debugging tool to pair and connect, and send messages. (The following will use the mobile phone Bluetooth serial port debugging app for demonstration)
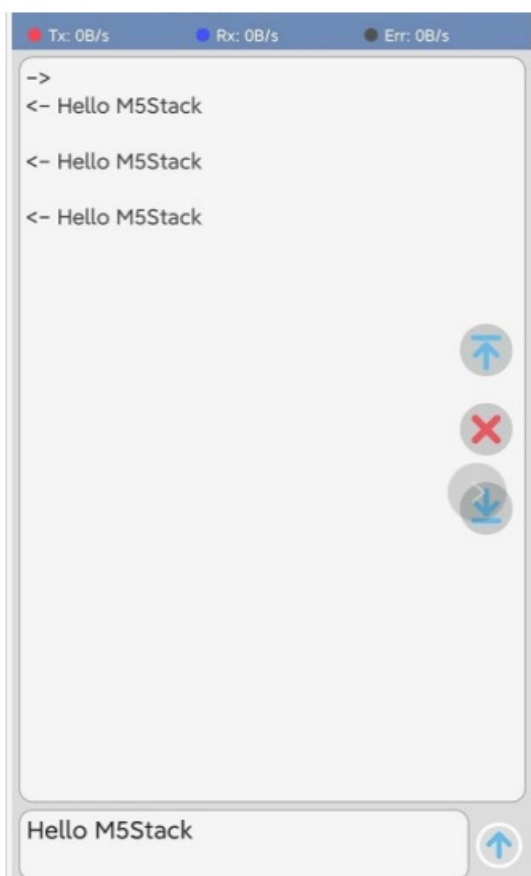
After the debugging tool sends a message, the device will receive the message and print it to the serial port.
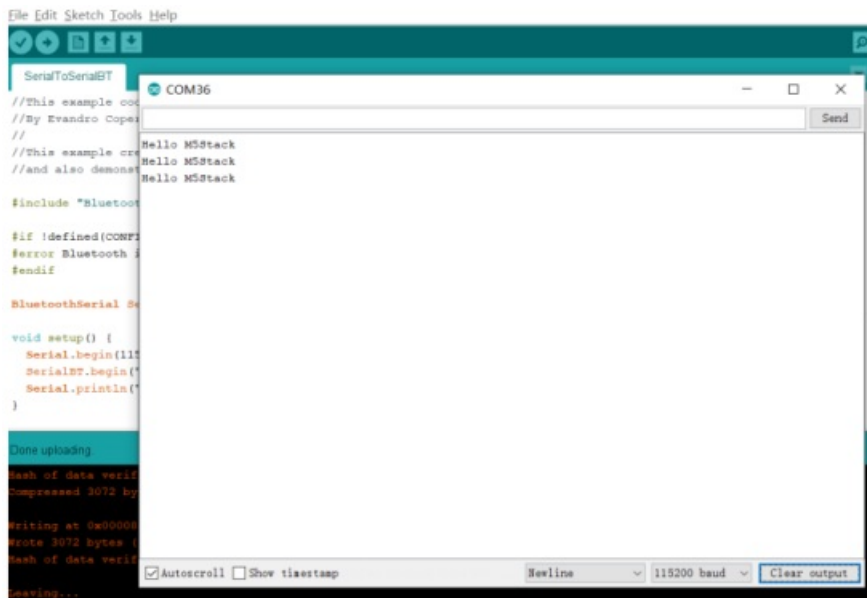
Overview

M5 Paper is a touchable ink screen controller device, the controller adopts ESP32-D0WD. An electronic ink screen with a resolution of 540*960 @4.7″ is embedded on the front, supporting 16-level grayscale display. With GT911 capacitive touch panel, it supports two-point touch and multiple gesture operations. Integrated dial wheel encoder, SD card slot, and physical buttons. An additional FM24C02 storage chip (256KB-EEPROM) is mounted for power-off storage of data. Built-in 1150mAh lithium battery, combined with the internal RTC (BM8563) can achieve sleep and wake-up functions, The device provides strong endurance. The opening of 3 sets of HY2.0-4P peripheral interfaces can expand more sensor devices.

Product Features

Embedded ESP32, support WiFi, Bluetooth
Built-in 16MB Flash
Low-power display panel
Support two-point touch
Nearly 180 degree viewing angle
Human-computer interaction interface
Built-in 1150mAh large capacity lithium battery
Rich expansion interface

Main Hardware

ESP32-D0WD

ESP32-D0WD is a System-in-Package (SiP) module that is based on ESP32, providing complete Wi-Fi and Bluetooth functionalities. The module integrates a 16MB SPI flash. ESP32-D0WD integrates all peripheral components seamlessly, including a crystal oscillator, flash, filter capacitors and RF matching links in one single package.

4.7" Ink screen

model	EPD-ED047TC1
Resolution	540 * 940
Display area	58.32 * 103.68mm
Grayscale	16 Level
Display driver chip	IT8951
Pixel Pitch	0.108 * 0.108 mm

GT911 Touch panel

Built-in capacitive sensing circuit and high-performance MPU Report rate: 100Hz
Outputs touch coordinates in real time
Unified software applicable to capacitive touch screens of various sizes
Single power supply, internal 1.8V LDO
Flash embedded; In-system reprogrammable
HotKnot integrated

Interface

M5Paper is equipped with Type-C USB interface and supports USB2.0 standard

Pin map : The three sets of HY2.0-4P interfaces provided are connected to G25, G32, G26, G33, G18, G19 of ESP32 respectively

Interface	PIN
PORT.A	G25, G32
PORT.B	G26, G33
PORT.C	G18, G19

FCC Statement

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.

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.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

Documents / Resources

M5Paper M5STACK	**M5STACK M5 Paper Touchable Ink Screen Controller Device** [pdf] User Manual M5PAPER, 2AN3WM5PAPER, M5 Paper Touchable Ink Screen Controller Device

References

- ∞ **Software | Arduino**