DIY Smart Home System

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V2.02.309.25

Tutorial introduction

This tutorial includes 32 projects to help you learn this kit and related programming knowledge from the shallower to the deeper. "Project 1_Creating a development environment" is a must-learn content. Please follow the tutorial guidelines to complete the creation of the development environment. This is very important. Each project then contains an Arduino code, Mind+ graphical code and a tutorial document. At the same time, the library files used in this tutorial are also placed in the library file "Libraries-Library".

When you get the version product, you will see the attached paper assembly manual. The wiring part in the assembly manual is for the last project "Project 32 Integrated Smart Home Control System". When you are working on the previous project, there is a certain Wiring may vary in some areas, please refer to the wiring diagrams within each individual project. If you encounter any problems, please contact the sales staff for help.

Project 1 - Create a development environment

1.Install Arduino IDE

Arduino software

The Arduino Integrated Development Environment (IDE) is the software side of the Arduino platform. Used to write and upload code to the dashboard . Let's follow the tutorial to install the Arduino software (IDE) .

1.1 Enter the Arduino software official website

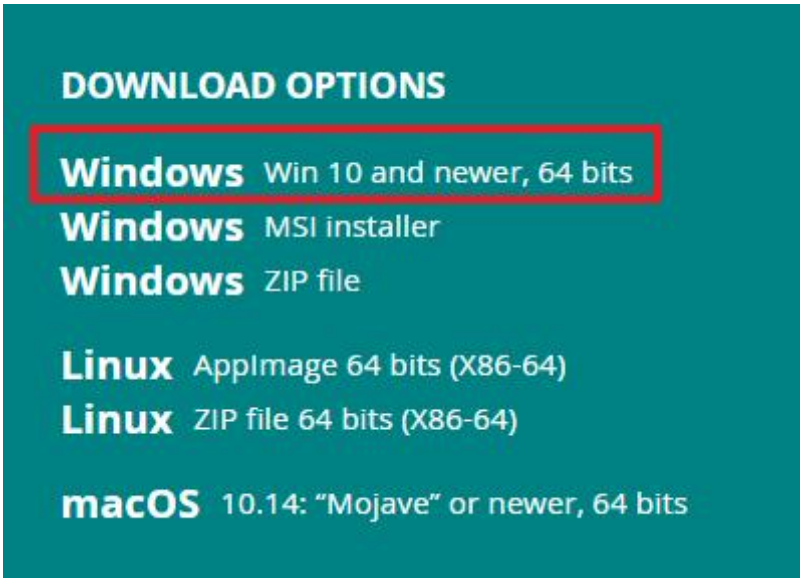
Enter in the browser and click to go to the https://www.arduino.cc/en/software web page. You can see the following web page location:

(Here we take the installation of version 2.0.0 IDE on win10 system as an example. For lower systems, please slide the web page below to

install version 1.8.X software. At the same time, when you see this tutorial, there may be a newer version on the website!)

1.2 Select the system version to which the software is adapted

Select the development software that is compatible with your computer system to download. Here we take Windows 10 as an example.

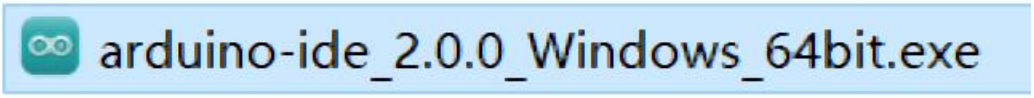


You can choose between installer (.exe) and Zip package. We recommend that you use the first "Windows Win10 and newer" to directly install everything you need to use the Arduino software (IDE), including basic drivers. While using Zip package, you need to install the driver manually.

Click "Windows Win10 and newer"

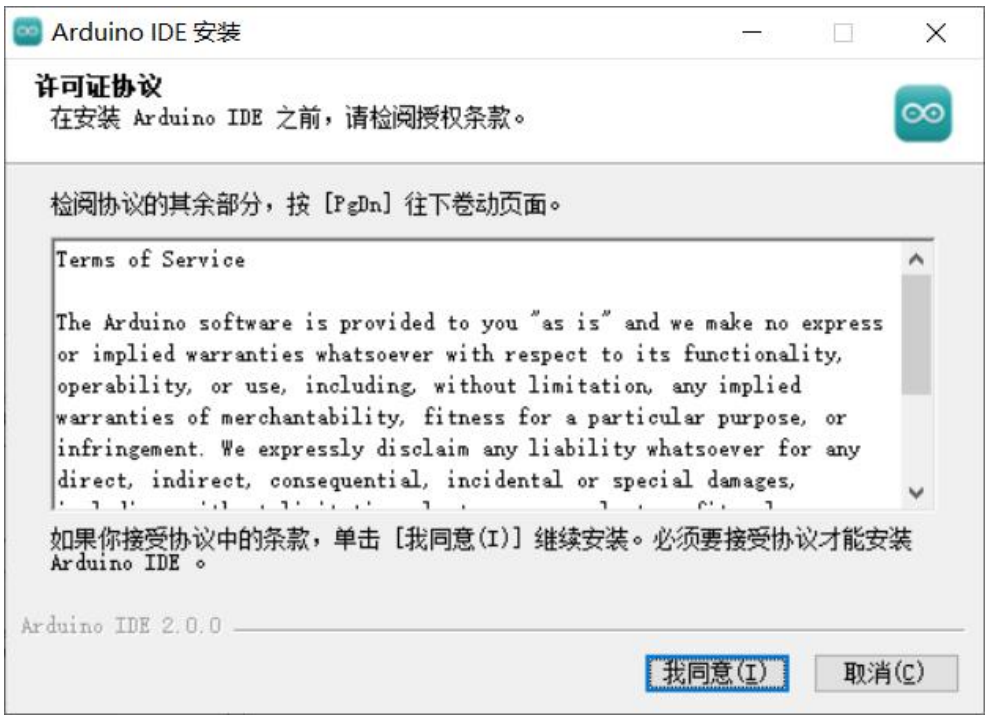
Click "JUST DOWNLOAD".

After the download is complete, you will get the installation package file with the “exe” suffix.



1.3 Officially install Arduino IDE

Double-click to run the installer and click "I agree"



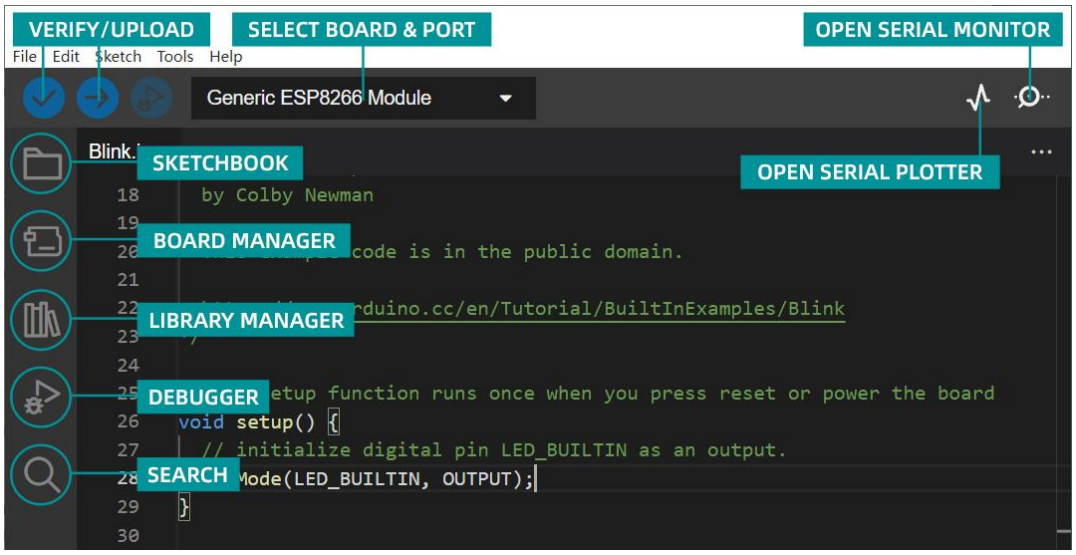
Click "Install" to install

You can click "Browse..." to select the installation path or directly enter the directory you want. Then click "Install" to install. (For Windows users, the driver installation dialog box may pop up during the installation process . When it pops up, please allow the installation)

After the installation is complete, an Arduino IDE software shortcut will be generated on the desktop. 

, double-click to enter the Arduino software platform environment .

The software platform interface is as shown below (the interface will be different in different versions):



Compile /Upload - Compile and upload your code to your Arduino board ;

Select board type and port number - The detected Arduino board and port number will automatically appear here ;

Project Sketch - Here you will find all your sketches stored locally on your computer. Additionally, you can sync with the Arduino Cloud or get your sketches from the online environment ;

Board Manager - Browse Arduino and third-party software packages that can be installed. For example, using the MKR WiFi 1010 board requires installing the Arduino SAMD Boards package ;

Library Manager - Browse thousands of Arduino libraries contributed by Arduino and its community ;

Debugging - testing and debugging programs in real time ;

Search - Search for keywords in code ;

Open Serial Monitor - Opens the Serial Monitor tool as a new tab in

the console ;

Programs written using the Arduino software (IDE) are called "Sketch". These "Sketch" are written in a text editor and saved with the file extension " .ino " . It is worth noting that the "ino" file must be saved in a folder with the same name. If the program is not opened in a folder with the same name, it will be forced to automatically create a file with the same name .

1.4 Install CH340 driver

Sometimes the computer lacks the CH340 serial port driver. Use a USB cable to connect the main control board to the computer, then search and open "Device Manager"

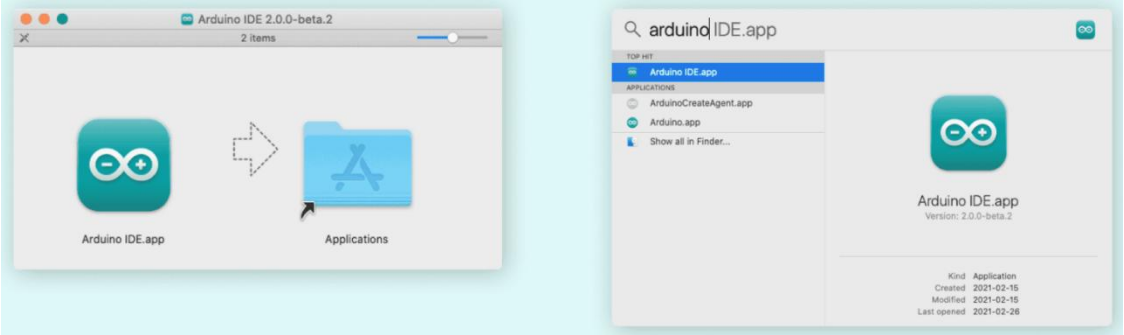
If you do not see the CH340 serial port in the picture above, you need to follow the following steps to install the driver.

Open the folder CH340 Driver File-Windows and double-click the CH340 exe program installation package to start the installation.

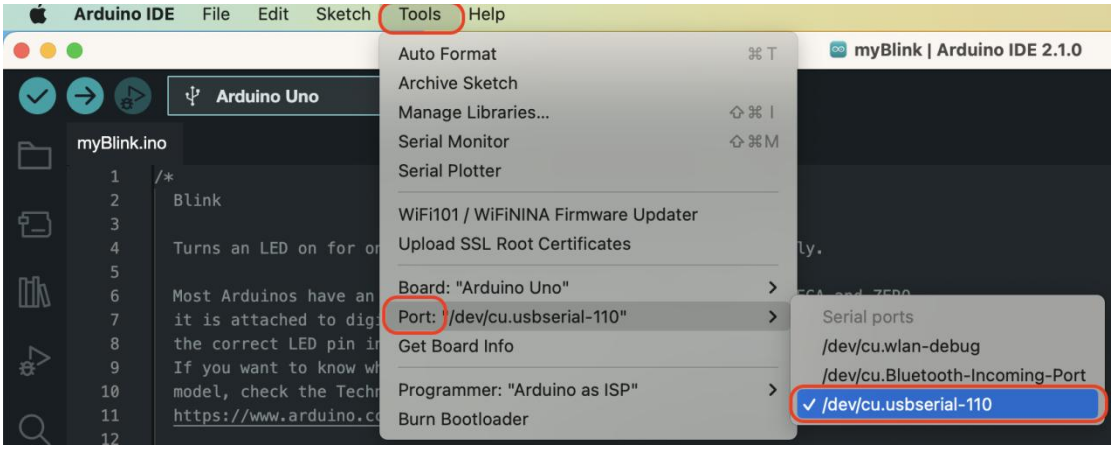
After the installation is completed, you can see that the driver has been displayed in the device manager (make sure the main control board is properly connected to the computer)

Arduino IDE on Mac OS X system

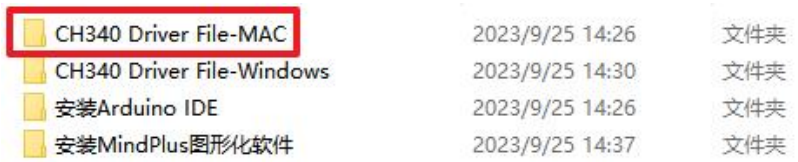
Download and unzip the zip file, double-click Arduino.app to install; if there is no Java runtime library in your computer, the system will ask you to install it. After the installation is complete, you can run the Arduino IDE.



Similarly, when you connect the main control board to the computer with a USB cable, you find that the software recognizes "USBserial" as shown below



If you don't see the USB serial port, you need to install the CH340 driver. Open the folder CH340 Driver File-MAC and double-click to install the pkg file



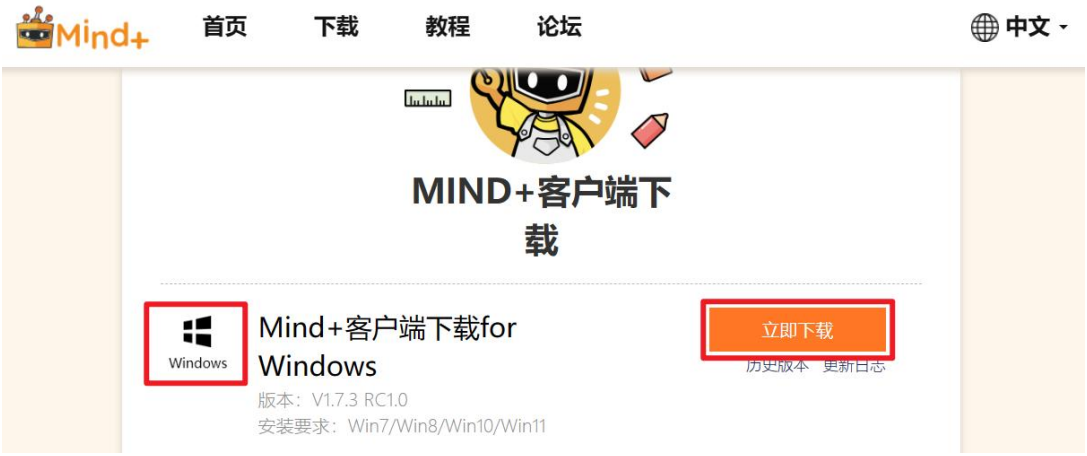
During the installation process, if the computer prompts that installation permission is required, you need to go to the "Security and Privacy" settings to allow the APP to come from any source.

3. Install Mind+ graphical software

Mind+ Integrated Development Environment (IDE) is used to write and upload code to the dashboard . Let’s follow the tutorial to install the Mind+ software (IDE) .

3.1 Download Mind+ software

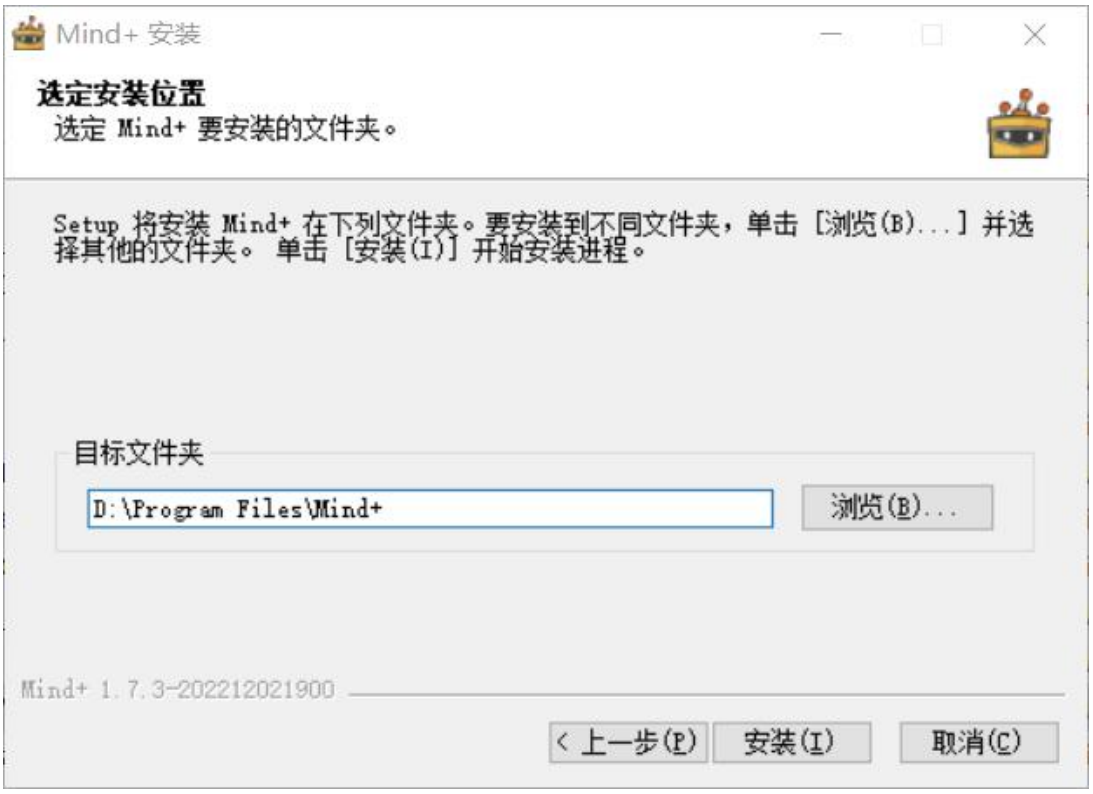
Step 1: Enter in the browser and click to go to the https://mindplus.cc/download.html web page. You can see the following web page location:



Step 2: Download the development software that is compatible with your computer system. Here we take Windows as an example. For MAC systems and Linux systems, please scroll down on the web page to select the corresponding system version software to install. (Here we take the installation of V1.7.3 IDE on win10 system as an example. At the same time, when you see this tutorial, there may be a newer version on the website!)

Click "Download Now", wait for the browser to complete the download and get the ".exe" suffix file, double-click to run the installation.

Select language, select installation location

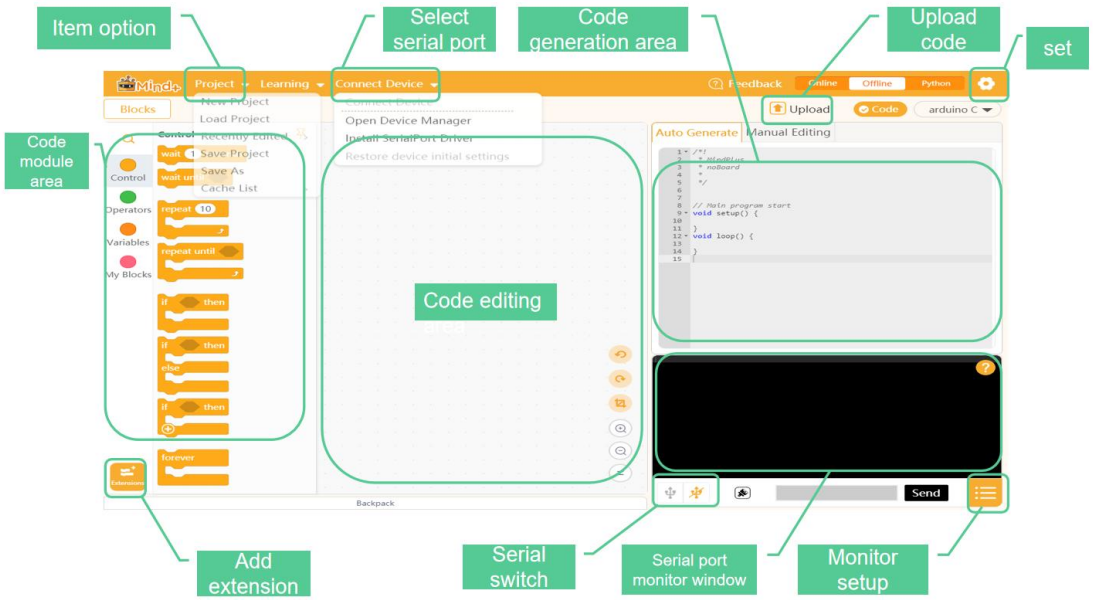


Click "Install" and wait for the installation to complete

After the installation is complete, a Mind+ software shortcut will be generated on the desktop. 

, double-click to enter the Mind+ software platform environment .

Open the software and you will see the software platform interface as shown below:



Project options - create a new project, open a local project and other project operations

Select the serial port - it will automatically recognize the serial port of the CH340 device and click to connect to the motherboard. If it is not recognized, click "One-click installation of the serial port driver"

Upload code - click "Upload to device", the code starts to be compiled and uploaded to the motherboard

Settings - Click the Settings button to set **language** , system, display, etc.

Monitor settings - set whether to scroll, baud rate, terminator, etc.

Serial port switch - open or close the serial port

Extensions - Select motherboard, add sensors and other extensions

Programs written in older versions of Mind+ software have the suffix ".sb3", and programs written in V1.7.3 and later versions are saved with

the file extension " .mp " .

3.2 Install Mind+ (Mac OS X)

Download the dmg suffix file and double-click Mind+_Mac_V1.7.2_RC3.0.dmg to install Mind+; if there is no Java runtime library in your computer, the system will ask you to install it. After the installation is completed, you can run Mind+.

3.3 Install Mind+ (Linux)

Download the Linux version of Mind+ software and make sure the computer system is Ubuntu

You will have to install using the make install command .