The tutorial of Lergde PC control software

The PC control software developed by Lerdge Technology Co., Ltd is used to control 3D printers through windows computers.

1. Download and installation of PC control software

Users can find "Lerdge PC control tool" in the "Download" directory in Lerdge official website (https://www.lerdge.com/download/list/lerdge-ctrl). Please download and decompress, then you can find " Lerdge.exe " in the folder and double-click to open it directly without any installation. It is recommended to copy it to the desktop for convenient use in next time.

2. Preparation before going online

2.1 Update wifi module

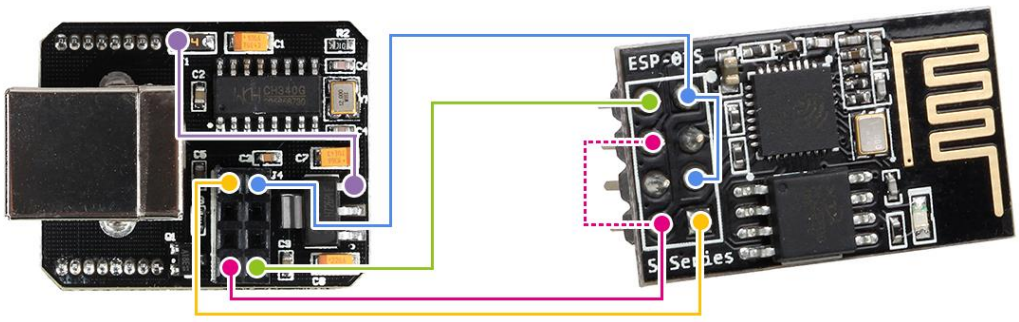
In order to make wifi wireless control more stably, it is recommended to update the wifi module (ESP8266) to the latest firmware provided by Lerdge. If the wifi module is already the latest firmware, please ignore the content of chapter 2.1.

2.1.1 Prepare the necessary accessories

- ✓ Wifi module (ESP8266)
- ✓ Online module for Lerdge motherboard
- ✓ Required software (all included in the folder)
- ✓ Some Dupont lines

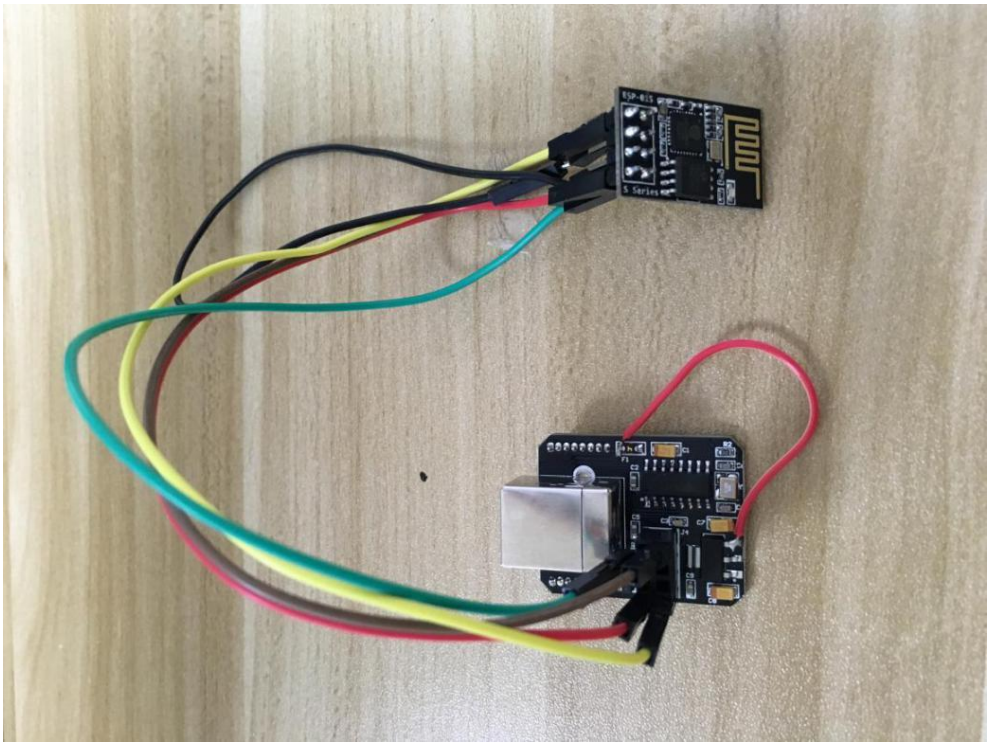
2.1.2 Modify hardware

Here we need to make some hardware modifications to burn the firmware of Lerdge wifi to ESP8266 module. Please solder the jumper wires as shown in the figure below, and connect the online module with ESP8266 module.



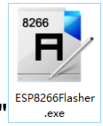
Wiring diagram of online module and ESP8266 module

Note: The purple line segment needs to be welded. if ESP8266 module cannot be programmed, please try to connect the pink dotted line.



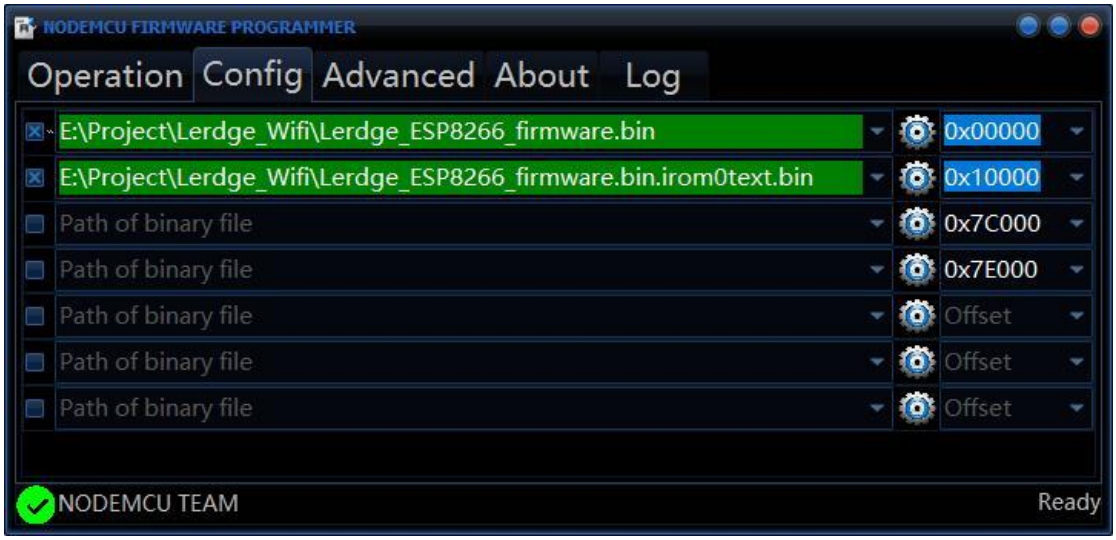
The physical picture of the connected line

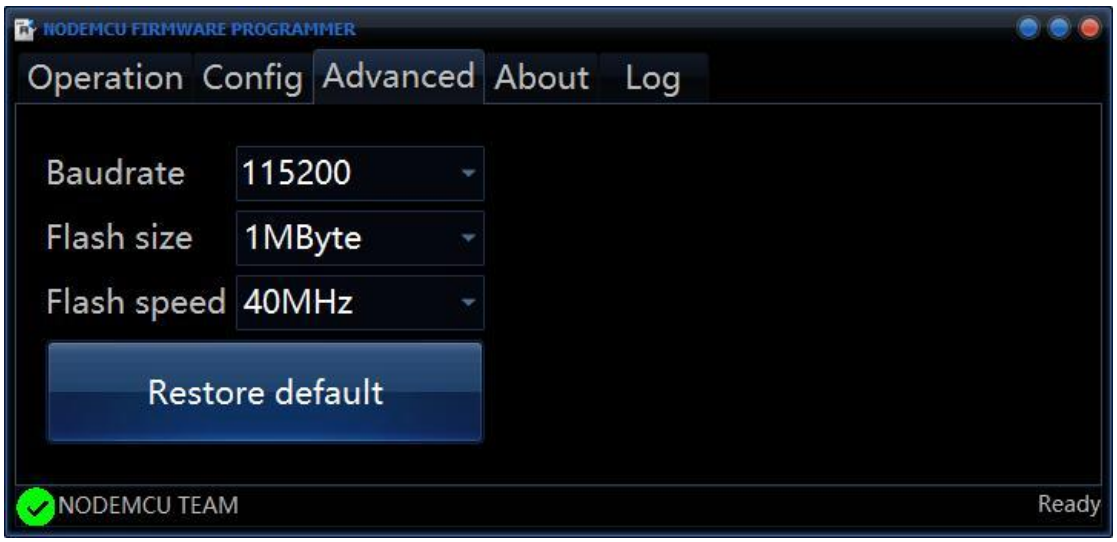
2.1.3 Burn firmware into ESP8266 module

Open the ESP8266 Flasher program " 

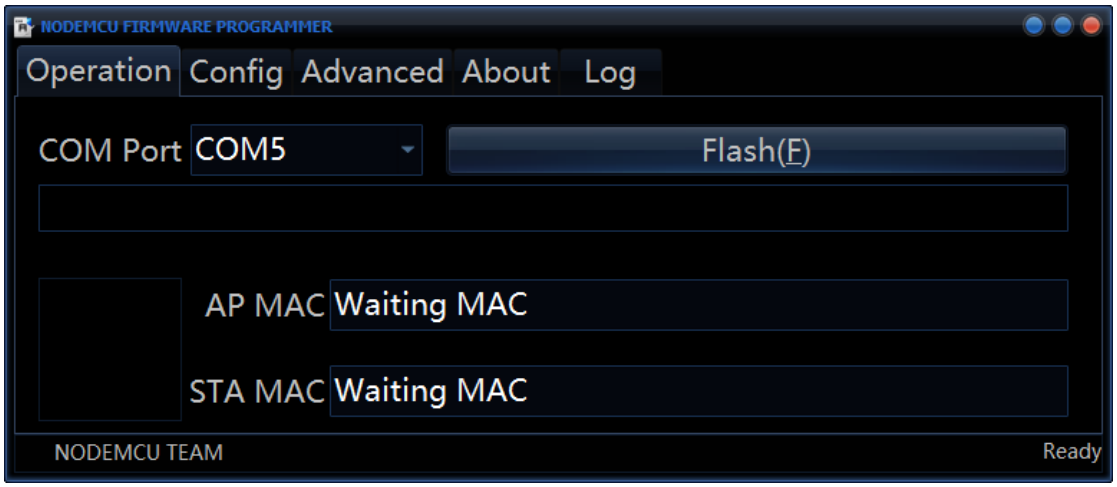
" in the folder， in the "Config" tab：

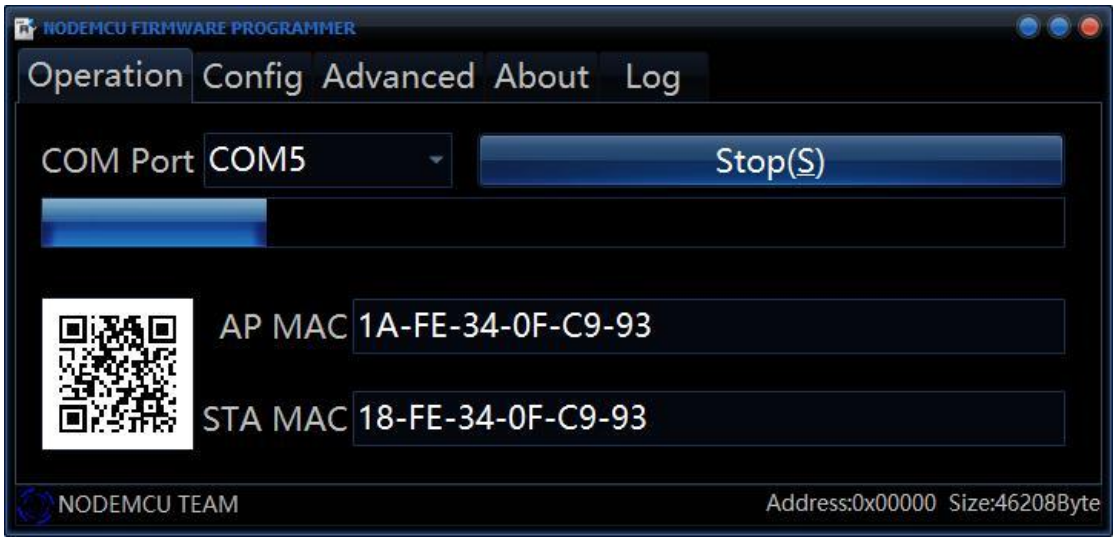
Set the programming address of Lerdge_ESP8266_firmware.bin to 0x0000，
Set the programming address of Lerdge_ESP8266_firmware.bin.irom0text to 0x1000
As shown below:





Connect the online module with ESP8266 module to the computer via a USB cable, and then click the Flash (F) button to start burning. If it can not be programmed, you can try to power it on again, or find other programming methods of ESP8266 module online.





After programming is completed, remove all jumper wires soldered on the online module just now.

2.2 Install online modules

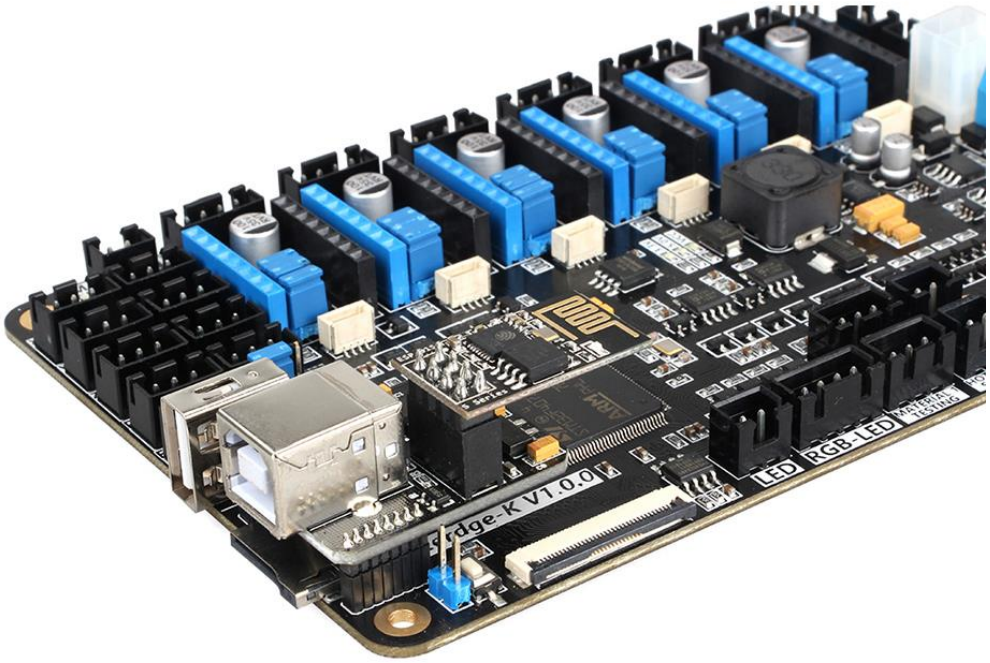
The Lerdge motherboard itself does not have the function of communicating with the computer. You need to use the online module and wifi module on the motherboard to realize the USB serial port or wifi wireless communication function.

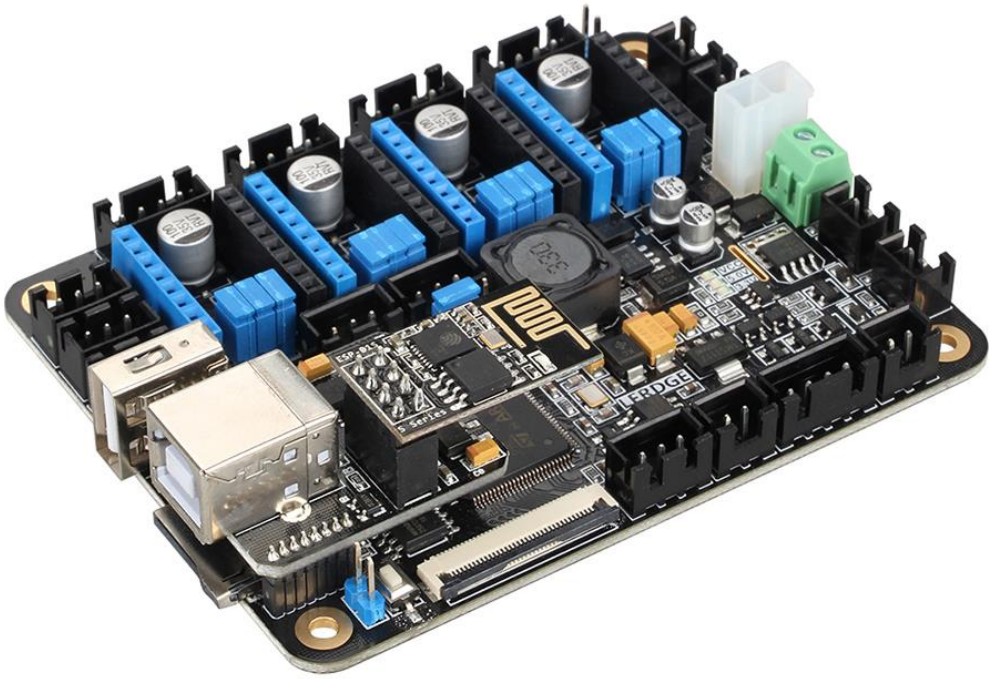
Online module

wifi module

Online module +wifi module

The connection method on the Lerdge K motherboard and Lerdge X motherboard is as follows:





3. Connect 3D printer

Lerdge PC control software can be connected to the computer through two connection methods: wifi or USB serial port.

3.1 Wifi connection

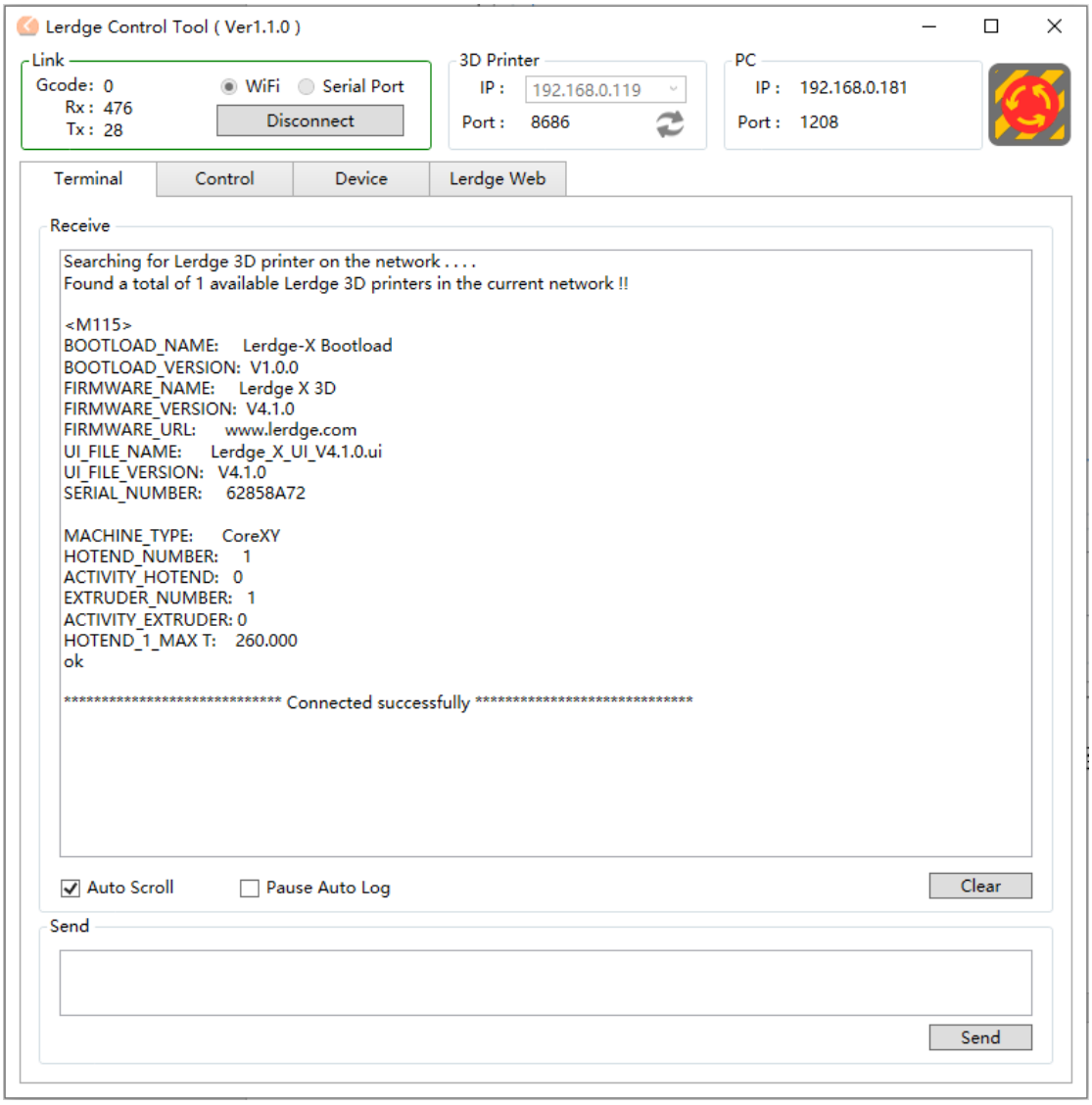
Open the control software and select the "WiFi" option in the "Link" frame in the upper left corner. The computer will actively search for available printers and display the search information in the "Terminal" tab. If the printer is not successfully searched, you can click the port refresh button " ". When the printer is found, the IP addresses of the printers will appear in the "IP" drop-down box.

Select the printer IP to be connected, click the "connect" button, the system will try to connect with the printer, the "Link" frame will turn blue; after the printer is successfully connected, “Link” frame will turn green, and there are changing data in "Rx" and "Tx".

If the printer cannot be found, please make sure that the motherboard and the computer are connected to the same router and under the same network segment. Please refresh multiple times or check network communication.

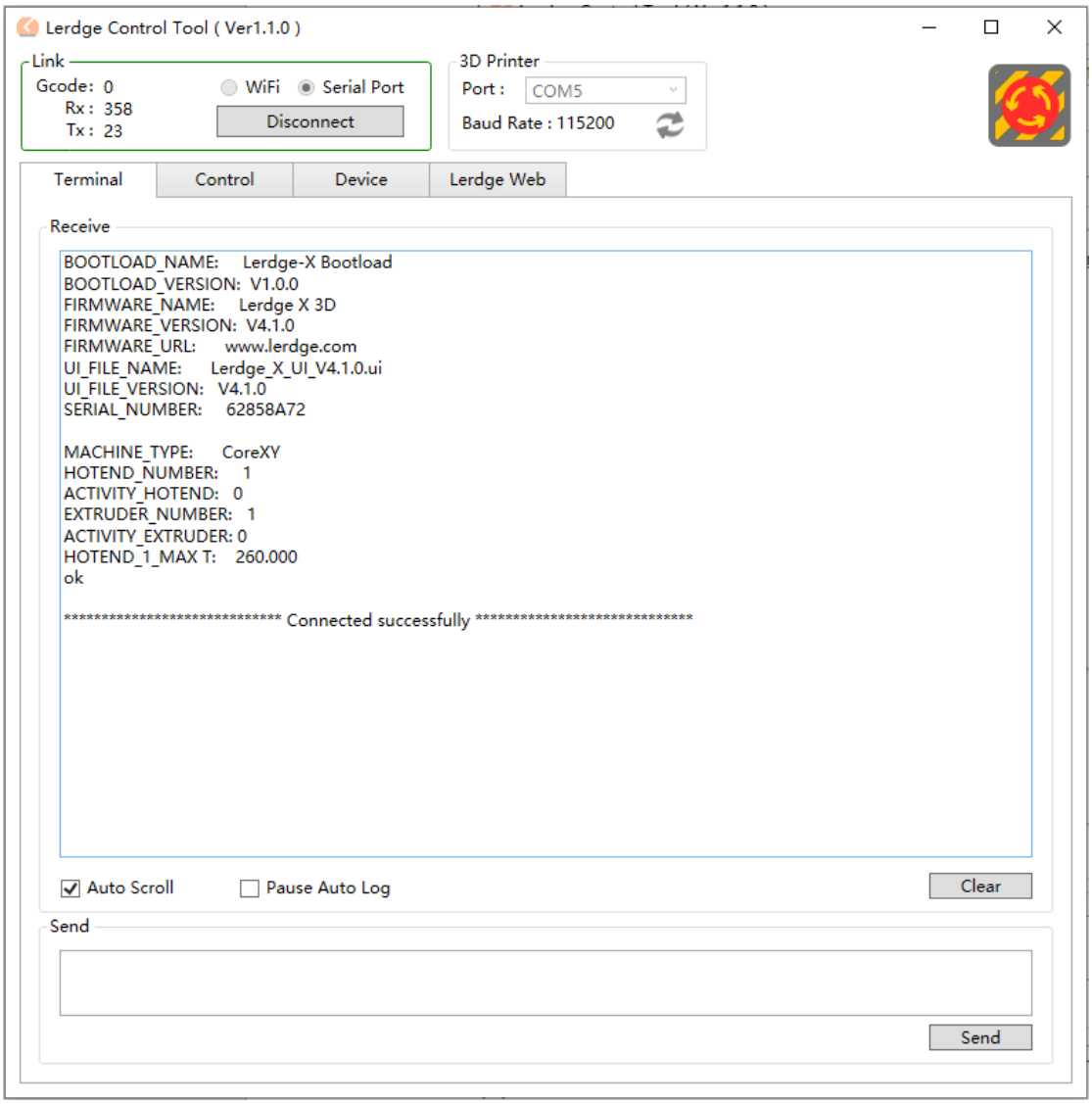
After connecting the printer, the computer IP address and connection port will be displayed under the "PC" frame in the upper right corner. The " " icon in the right corner is the emergency stop button. Please note: click the emergency stop button at any time, the

system will immediately stop and restart the system, without saving any printing progress and data.



3.2 USB serial port connection

Firstly, please connect the motherboard to the computer with a USB cable. Open the control software, select the "Serial port" option, the "PC" frame on the right will disappear, and the IP drop-down list in the "3D Printer" frame will change to the "Port" port list. Click the port refresh button "🔄", select the port number of the printer, and click the "connect" button to connect.



4. Tab Introduction

There are currently four tabs in Lerdge control software, including Terminal, Control, Device, and Lerdge Web. In subsequent versions, Leveling and Setting tabs will be added for printer leveling and parameter settings. Please pay attention to the updates of Lerdge in order to get a better experience.

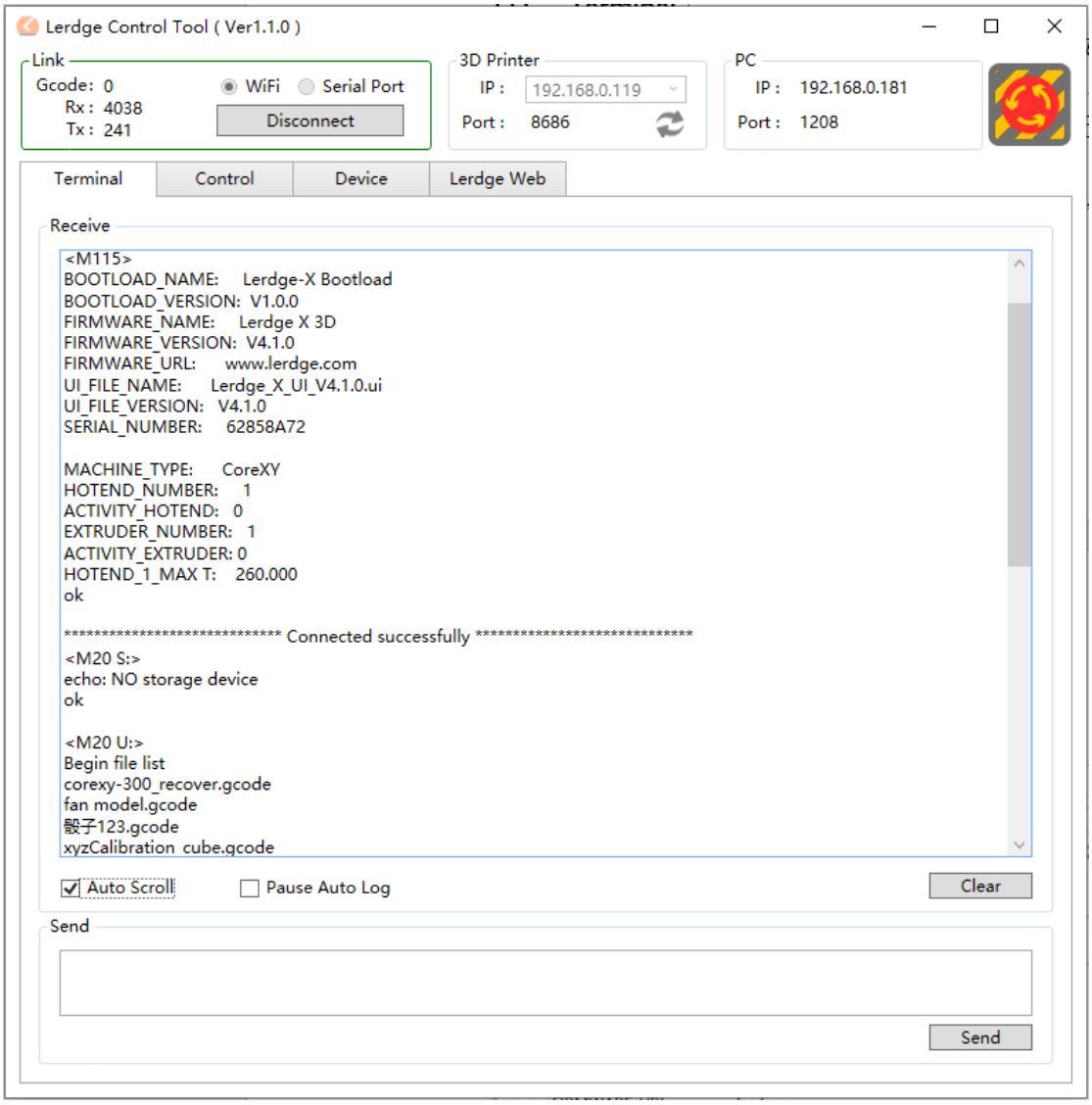
4.1 Terminal

The Terminal tab is mainly used to record all issued commands and received responses.

In this tab, the "Receive" section mainly displays the specific execution of commands and responses in chronological order. The user can select "Auto Scroll" or "Pause Auto Scroll" to decide whether to let the system automatically scroll the above records, or click "clear" to clear all records.

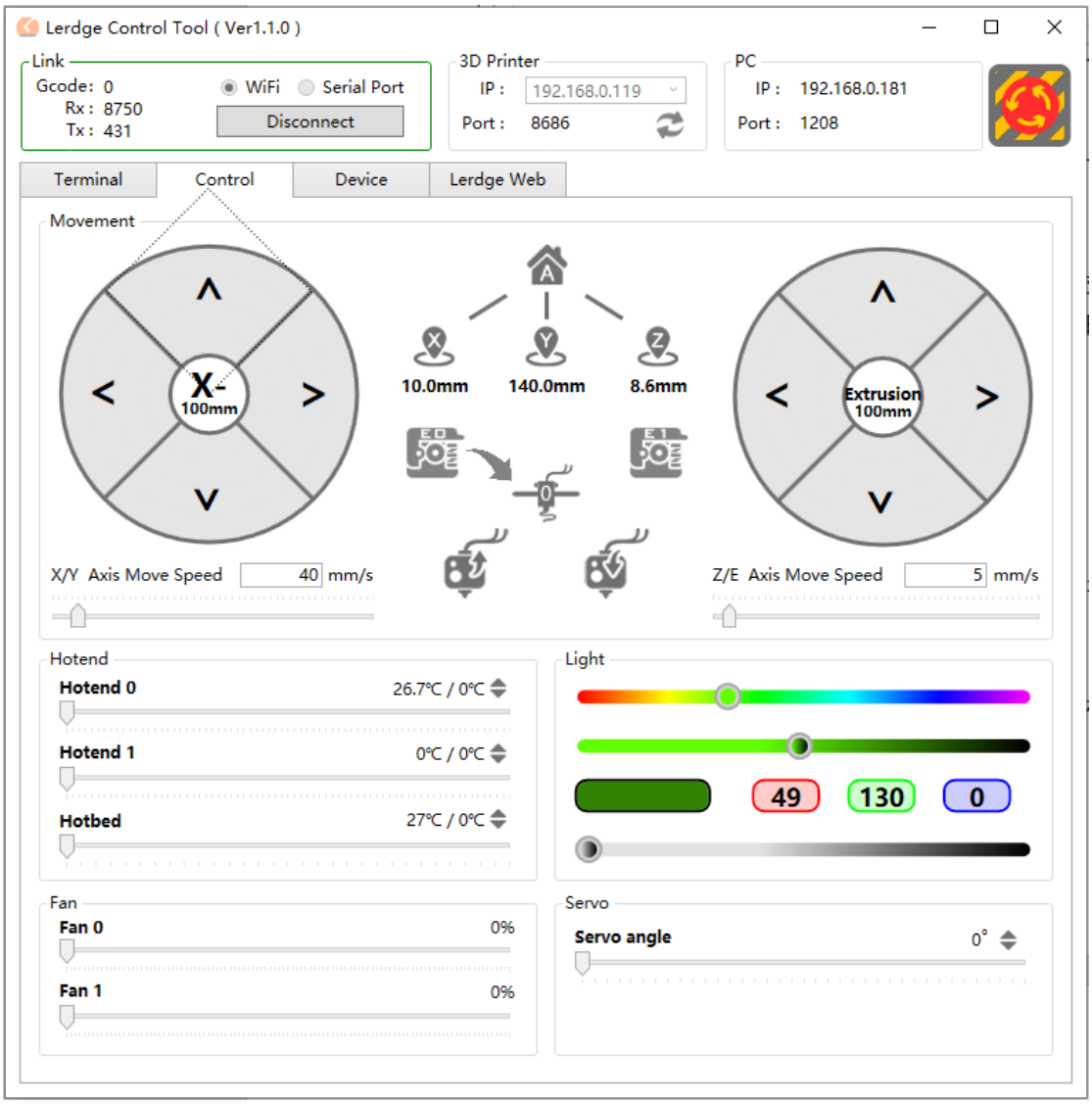
The "Send" part is used to enter the G-code and send it manually so that the printer can

execute it. Note: The enter limitation in the "Send" part cannot exceed 256 bytes. Otherwise, data loss may occur. That is to say, "Terminal" cannot be used to realize the function of online printing.



4.2 Control

The Control tab is divided into five parts: Movement, Hotend, Fan, Light and Servo.



"Movement" part is used to control the movement of the printer. Before printing starts, the left and right discs are used to control the movement of X-axis, Y-axis, Z-axis, and extruder respectively. The unit movement distance of each axis can be selected from 0.01mm, 1mm, 10mm, 100mm through the key scale of the disc, to facilitate the user to control the movement of each axis. The speed of each axis and extruder can be adjusted by the slider under the disc.

The buttons in the middle have the following functions:


: : All axes are homing;

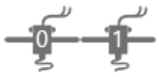

: The X axis is homing. The numbers below represent the real-time coordinates of the X axis;

 : The Y axis is homing. The numbers below represent the real-time coordinates of the Y axis;

 : The Z axis is homing. The numbers below represent the real-time coordinates of the Z axis.

 : Choose E0 extruder.

 : : Choose E1 extruder. In single-extrusion single-hothead mode, this button is invalid.

 : Used to display which print head currently used by the printer.

 : Used to indicate which extruder is feeding filament into the print head

 : Unload material.

 : Load materials.

The "Hotend" part is used to control the temperature of hothead 0, hothead 1, and hotbed. The user can set the target temperature of the hothead and hotbed by moving the slider or clicking the "⬍" button. The two values before "⬍" represent the current temperature and the set target temperature of the hotend respectively.

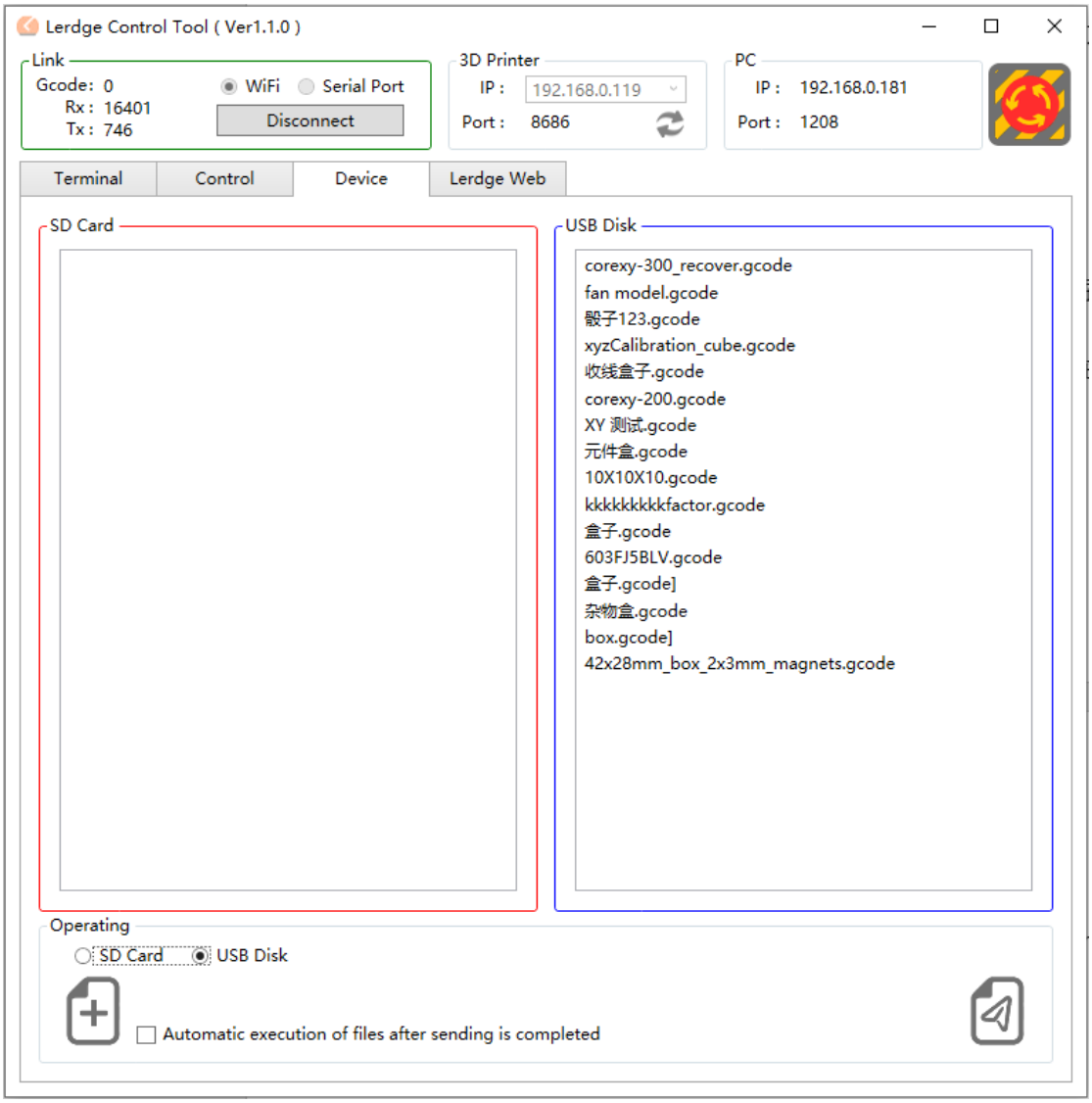
The "Light" part is used to control the color and brightness of the light. For GRB strips, you can select the color of the light by moving the slider in the first spectrum, and adjust the brightness of the light by moving the slider in the second spectrum. For the LED strip, The light color cannot be selected, but the light can be adjusted by moving the slider of the third spectrum.

The "Fan" part is used to control the running speed and wind power of the fan. Fan 0 corresponds to the model cooling fan of Hotend0, and Fan 1 corresponds to the model cooling fan of Hotend1.

The "Servo" part is used to control the servo or Bltouch, and you can set it by moving the slider or clicking "⬍".

4.3 Device

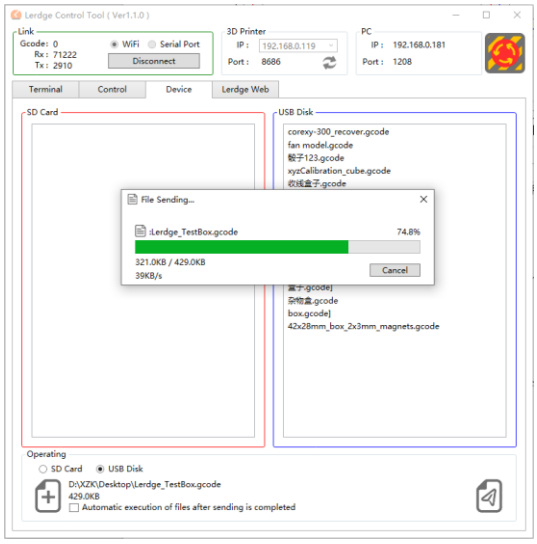
The Device tab shows the memory of the printer, including SD card and U disk storage.

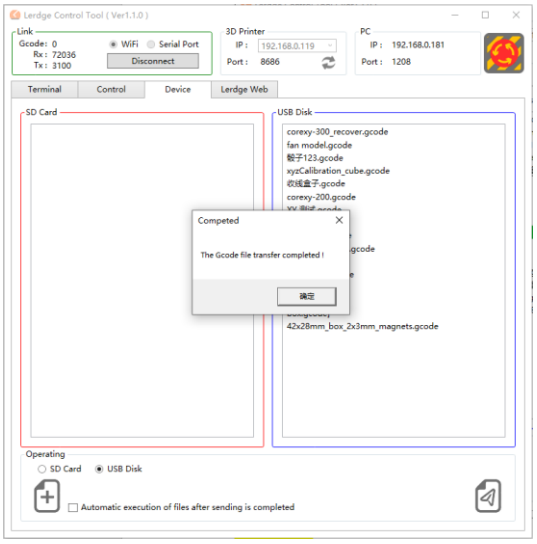


After connecting the printer, when switching from the other tabs to the "Device" tab, it will automatically search for printable files in the storage directory. When the storage is not found, it will be displayed as a red frame. When the storage is found, it will be displayed as a blue frame and automatically display the list of printable files in the root directory of the storage. double-click the file name to start print, and right-click on the file name to execute the operations of deleting the file, starting to print and refreshing the file list.

If the print file is stored in the computer, you can click the "  " icon to open the print file storage path. Select the print file and click the "  " button to transfer the file to the SD card

or USB disk. If it is not displayed after the transfer is completed, please right-click to refresh.

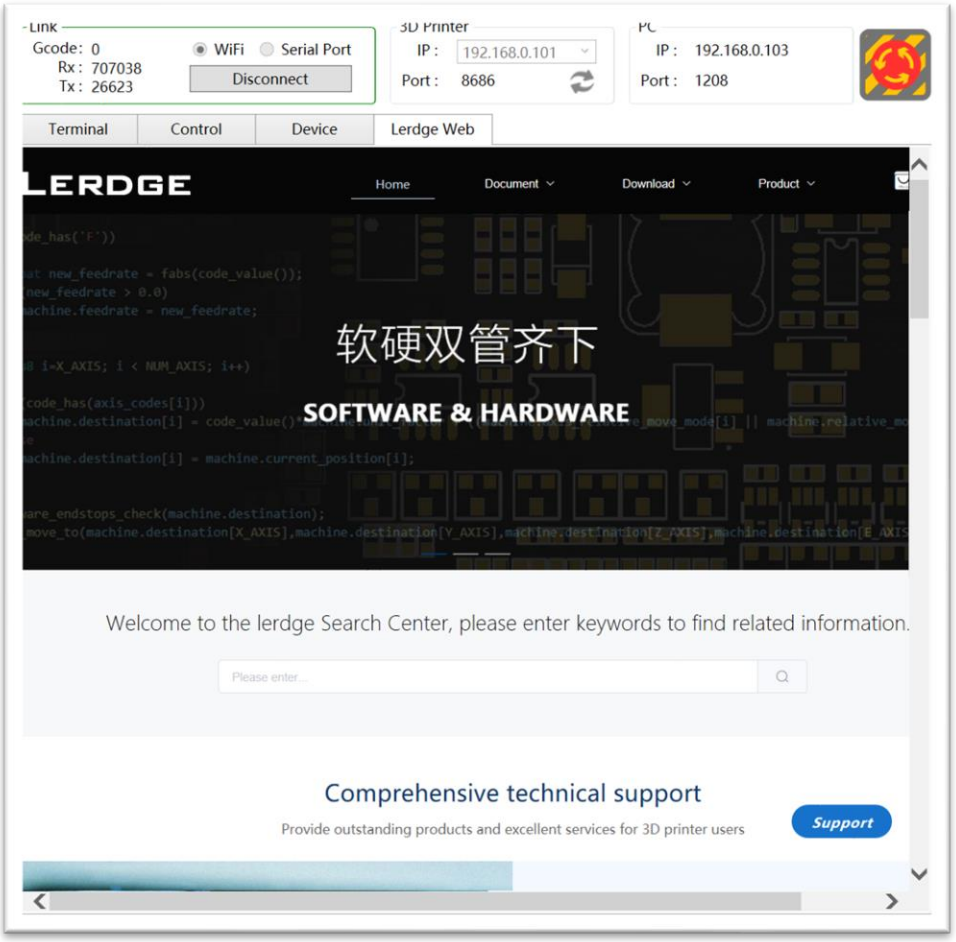




If you check the "Automatic execution of files after sending is completed" option, the printer will automatically start printing after the file is sent and received.

4.4 Lerdge Web

Lerdge web is linked to Lerdge official website to facilitate users to view tutorials and download firmware more quickly.



5. Start to print

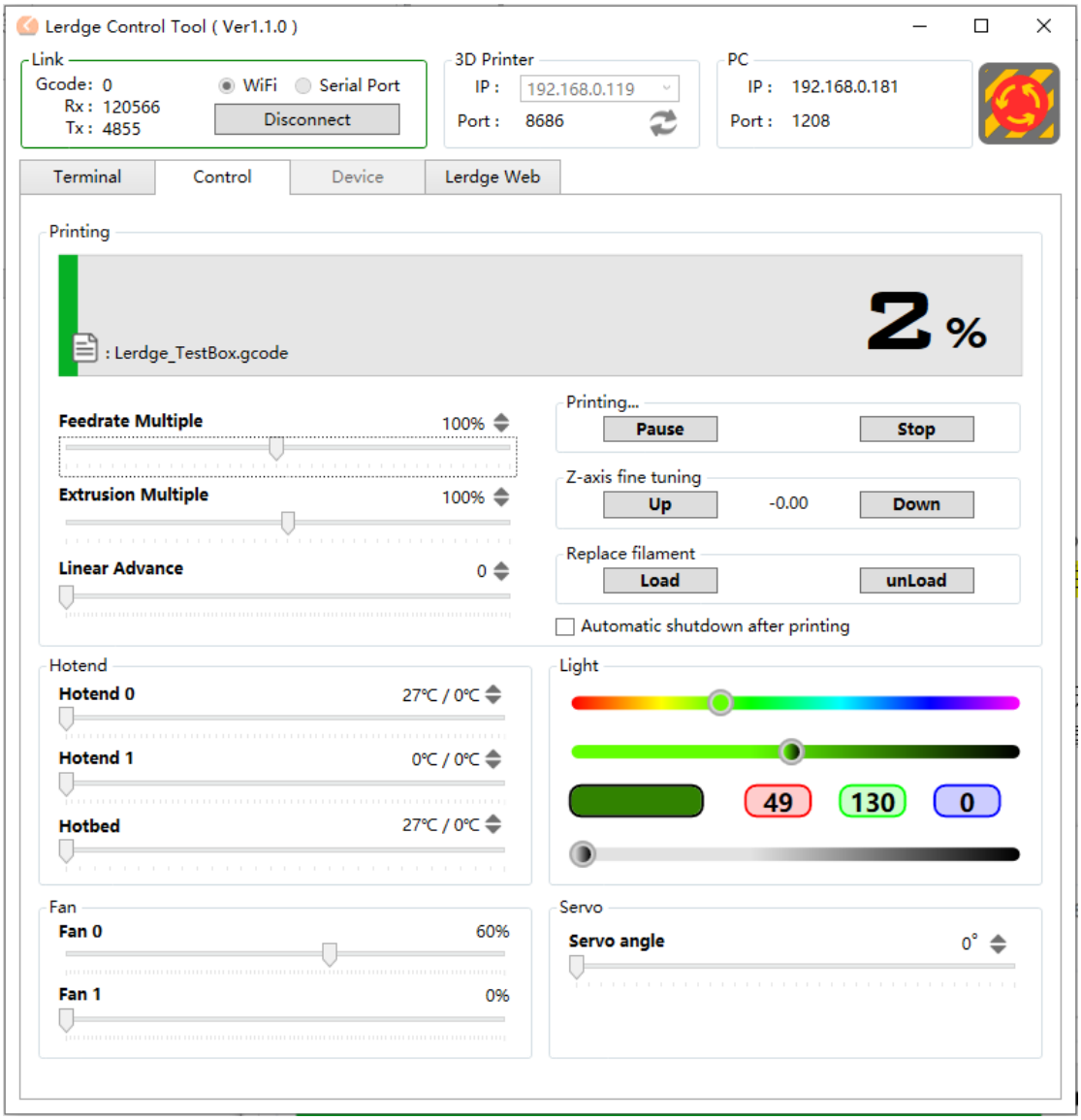
As shown above, double-click the selected print file in the "Device" tab to start printing. After printing starts, the system will automatically jump to the "Control" tab, and the Device tab will no longer be accessible. At this time, the "Control" tab has changed: the "movement" part has changed into "printing" part, and the corresponding operation buttons have also changed.

In the printing part, the progress bar is mainly used to display the printing process and the name of the printed file. The bottom left of the progress bar is "Feedrate Multiple", "Extrusion Multiple" and "Linear Advance" respectively. Users can adjust the printing speed, extrusion, and linear coefficient values according to printing needs.

At the bottom right of the progress bar are "Printing", "Z-axis fine tuning" and "Replace filament". The user can click the pause button under "Printing" to pause the printing process, and click again to quickly resume printing; click the “Stop” button, a prompt about whether keep the printing process will pop up. If you choose No, you can’t continue printing at the original progress the next time; if you choose Yes, you can continue printing at the original progress the next time, but you need to choose from the display screen connected with the motherboard.

"Z-axis fine tuning" is only applicable to the printing process. Click the "Up" or "Down" button to adjust the Z-axis height +0.05mm /-0.05mm each time, which is mainly used to adjust the printing height of the initial layer so that the filament can better bond with the hot bed.

"Replace filament" can only be executed during printing pause, and the filament cannot be replaced during printing. If you need to change the filament, please click "Pause" to pause the printing process, then you can click "Load" to load the filament, or click "Unload" to exit the filament.



6. Disconnect

After printing is completed, if you no longer set other print parameters or use the PC for print control, you can disconnect the printer from the computer by clicking the "Disconnect" button in the upper left corner.

No matter what status the printer is in, it can be connected and disconnected with PC control software, and the connection and disconnection will not affect the printer's work.