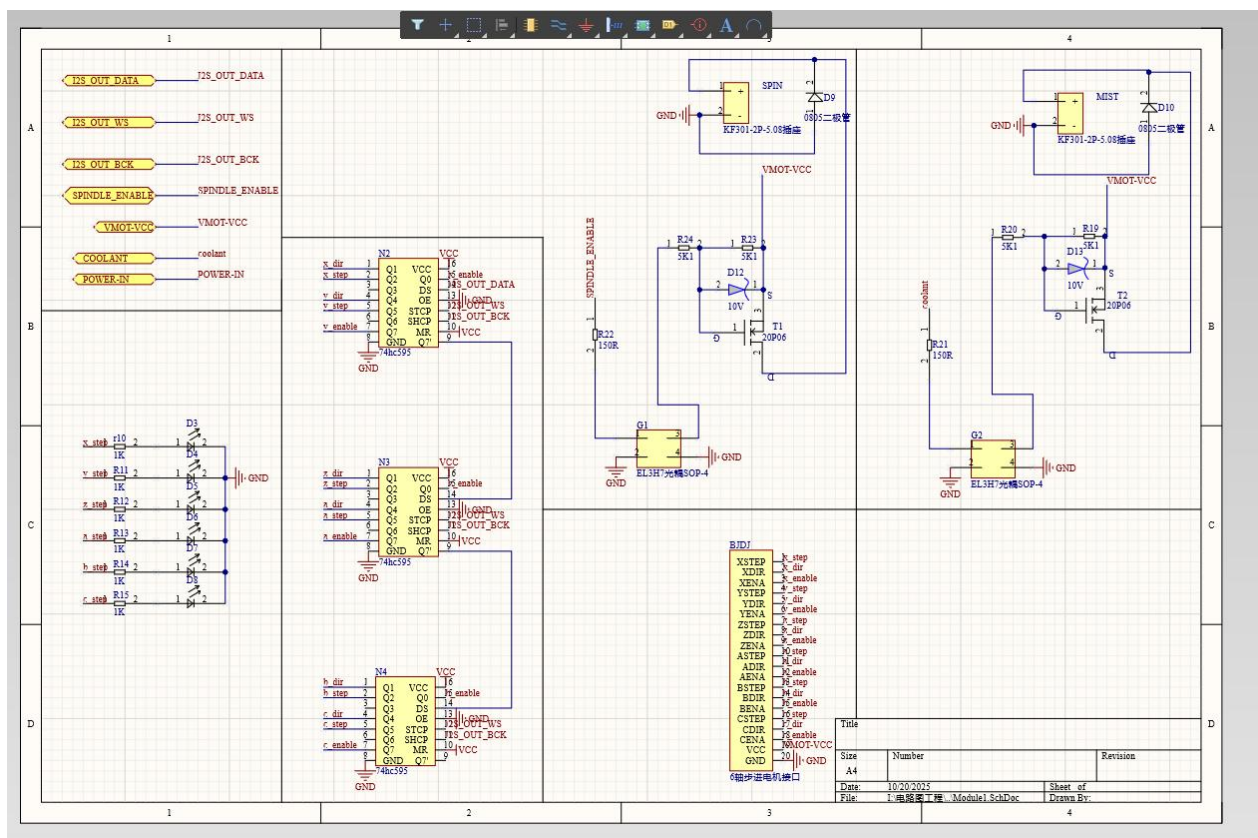
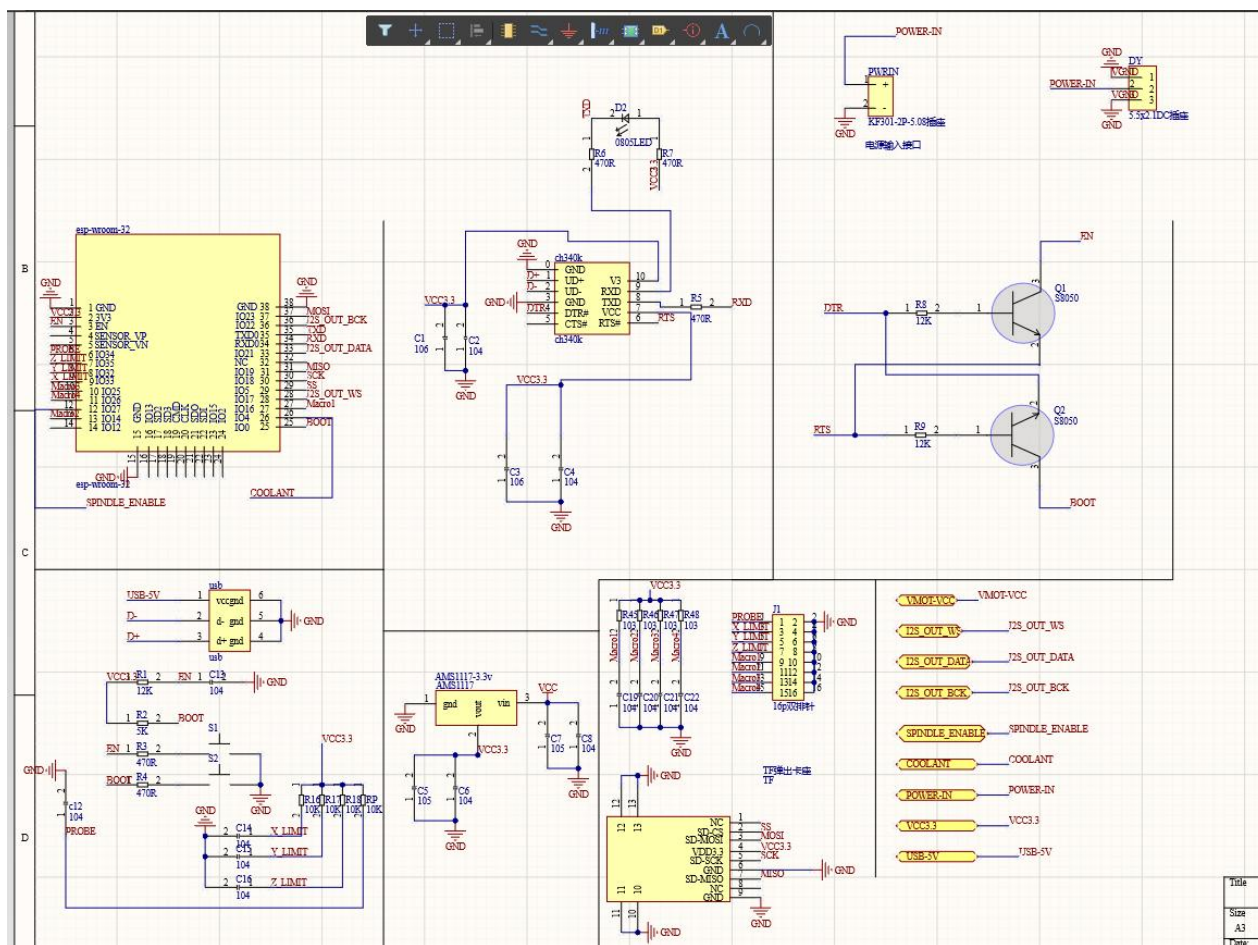
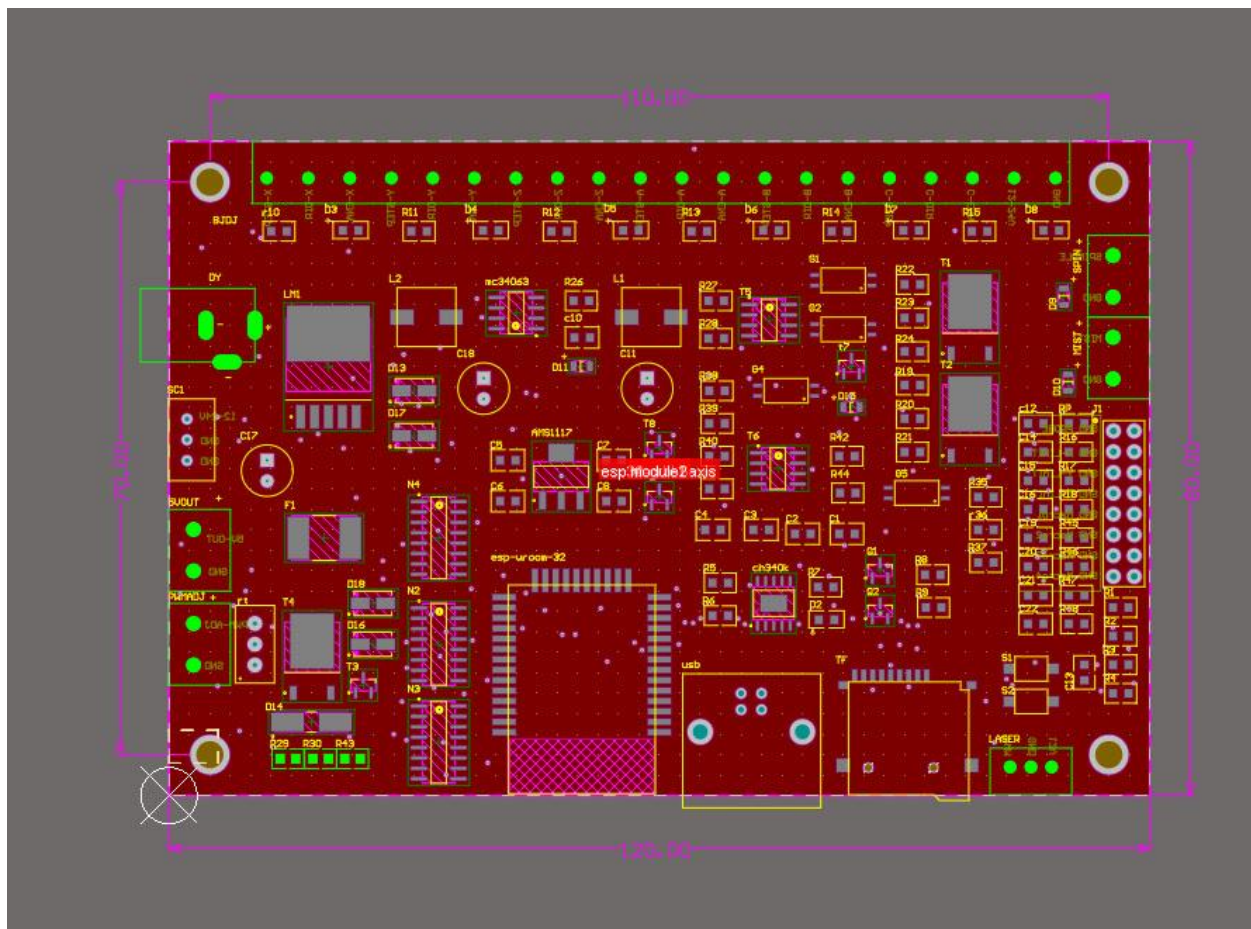
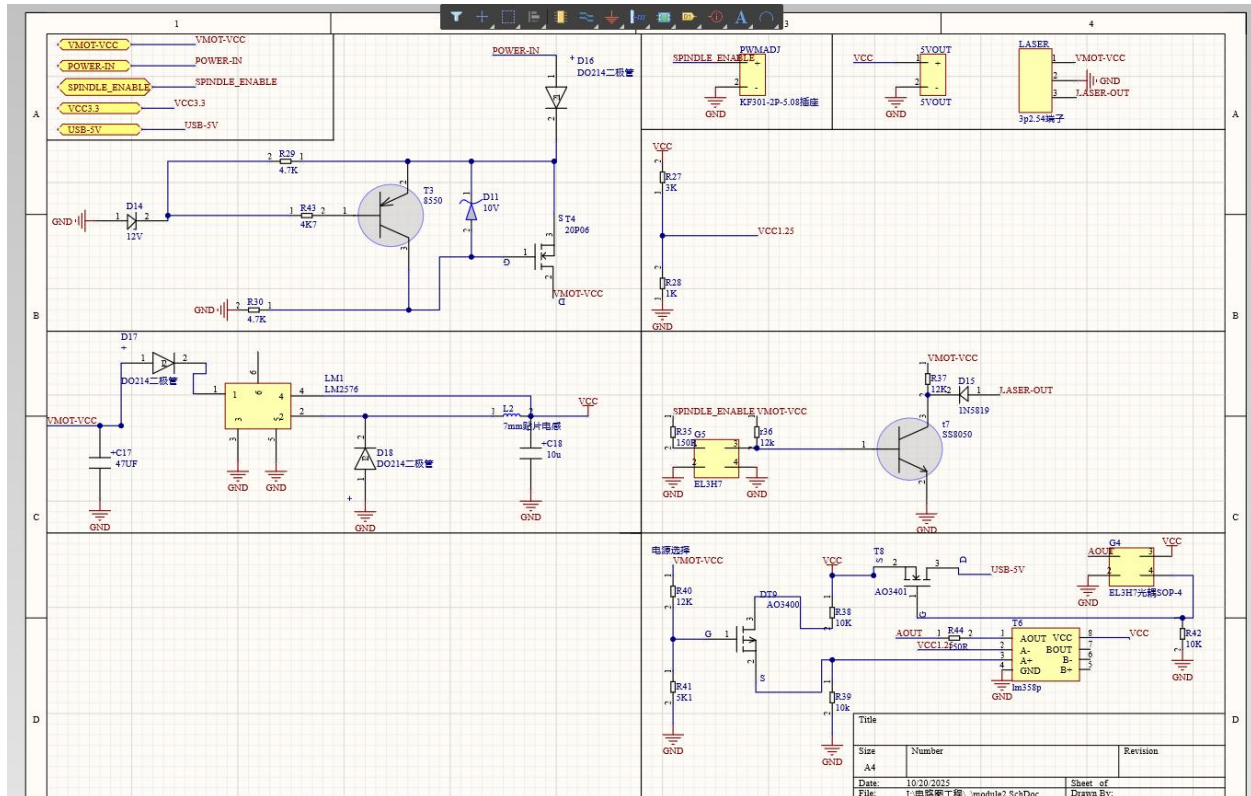


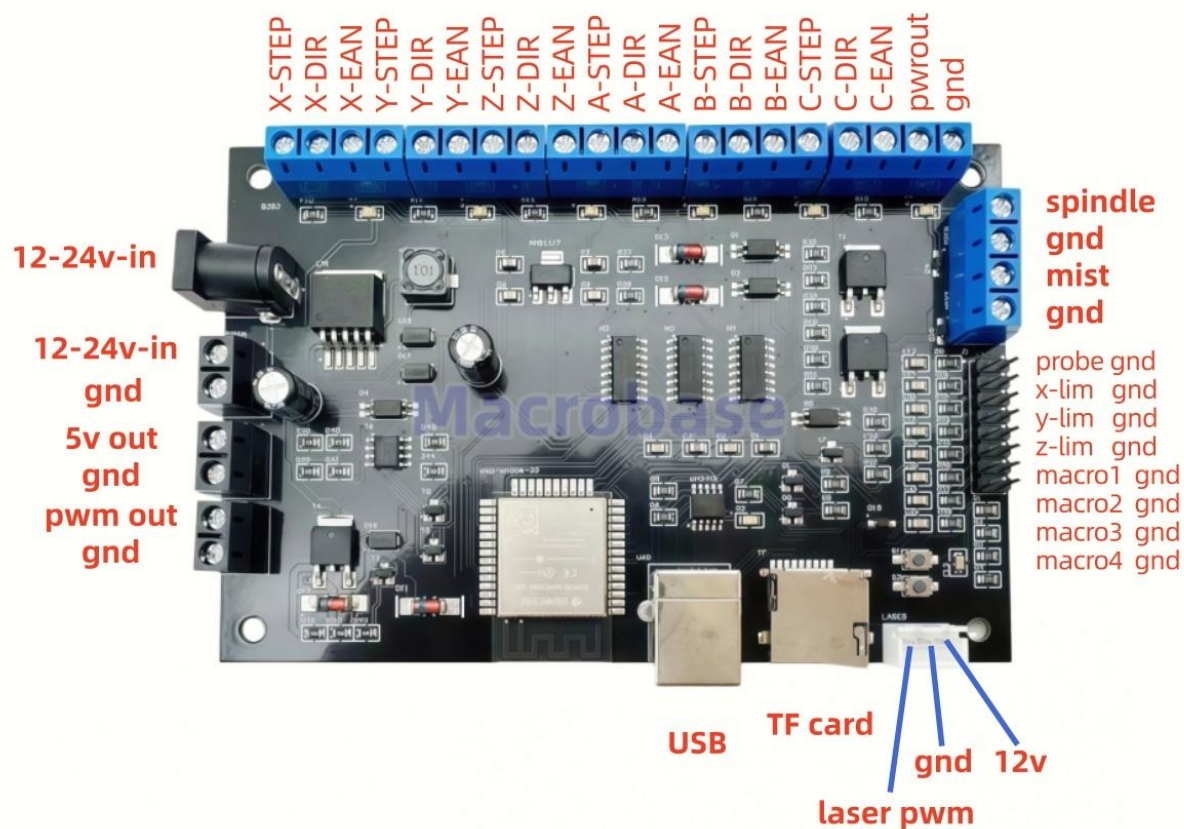
Features

- ❖ Adopting dual-core ESP32 32bits high-speed processor.
- ❖ Pre-installed FluidNC firmware,
compatible with CNC3D COMMANDER,Candle,Bcnc software...
- ❖ Support six stepper drivers. X,Y,Z,A,B,C axis.
- ❖ Support Homing,software/hardware endstop,Z probe.
- ❖ Support hotspot,Wifi to control.
- ❖ Support 3pin laser. 0-10V PWM output.
- ❖ Support 12-24V DC
Auto-cut off power when voltage exceeding 30V.
Automatically select external power supply as the main control input
power,and prevent reverse power transmission,protect USB port.

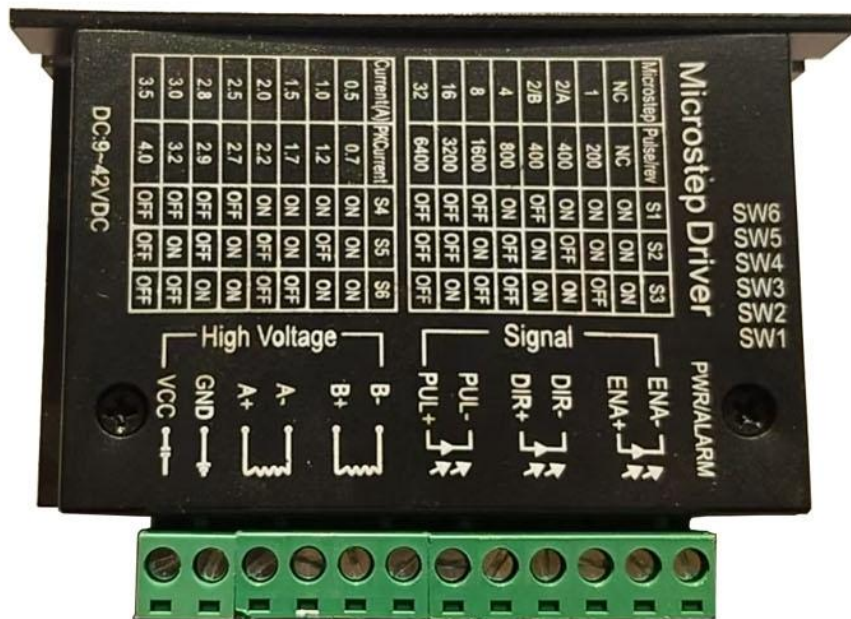





Wiring



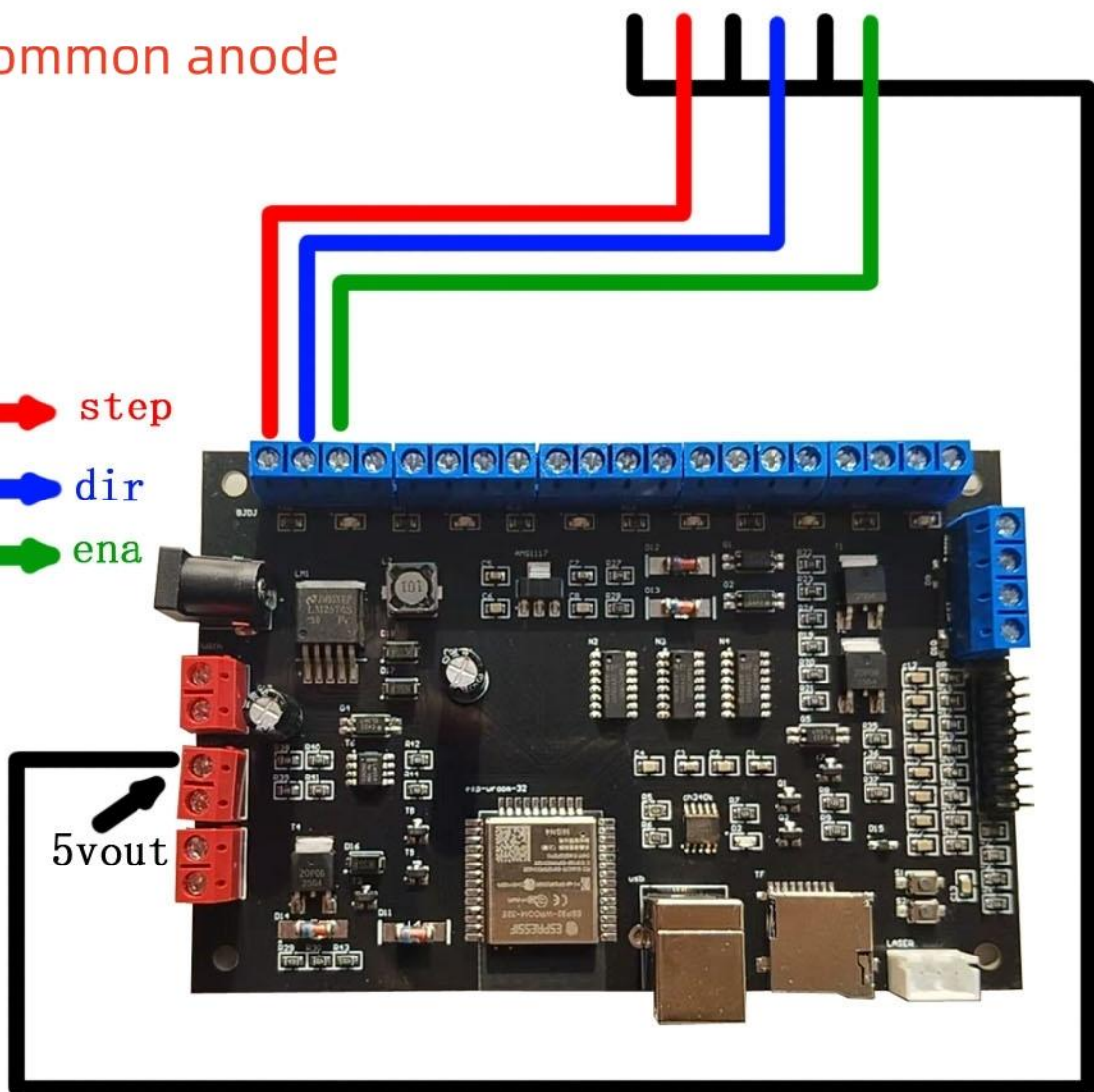
PROBE	Z-probe
X-LIM	X limit,NO
Y-LIM	Y limit,NO
Z-LIM	Z limit,NO
GND	XYZ axis com,probe
PWM-OUT	PWM output
GND	PWM ground
PWM-ADJ	PWM adjustable
GND	All drivers PUL-,EAN-,DIR-
X-STEP	X-PUL+
X-EAN	X-ENA+
X-DIR	X-DIR+

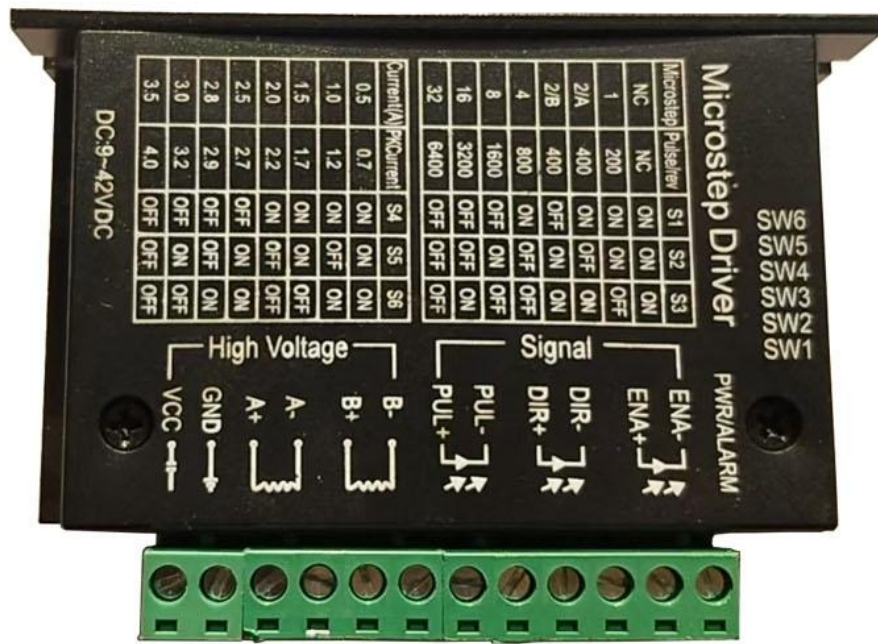


Common anode

 step
 dir
 ena

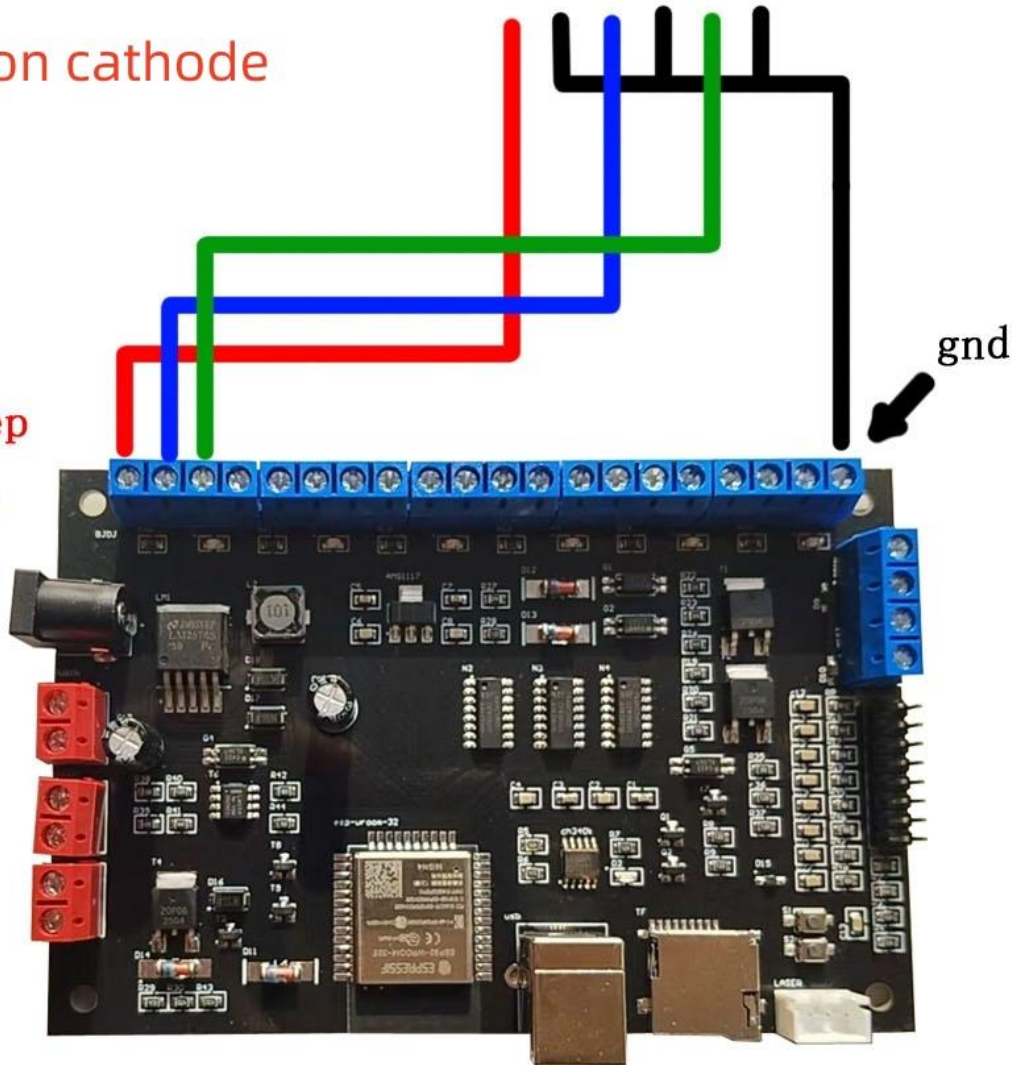
5vout

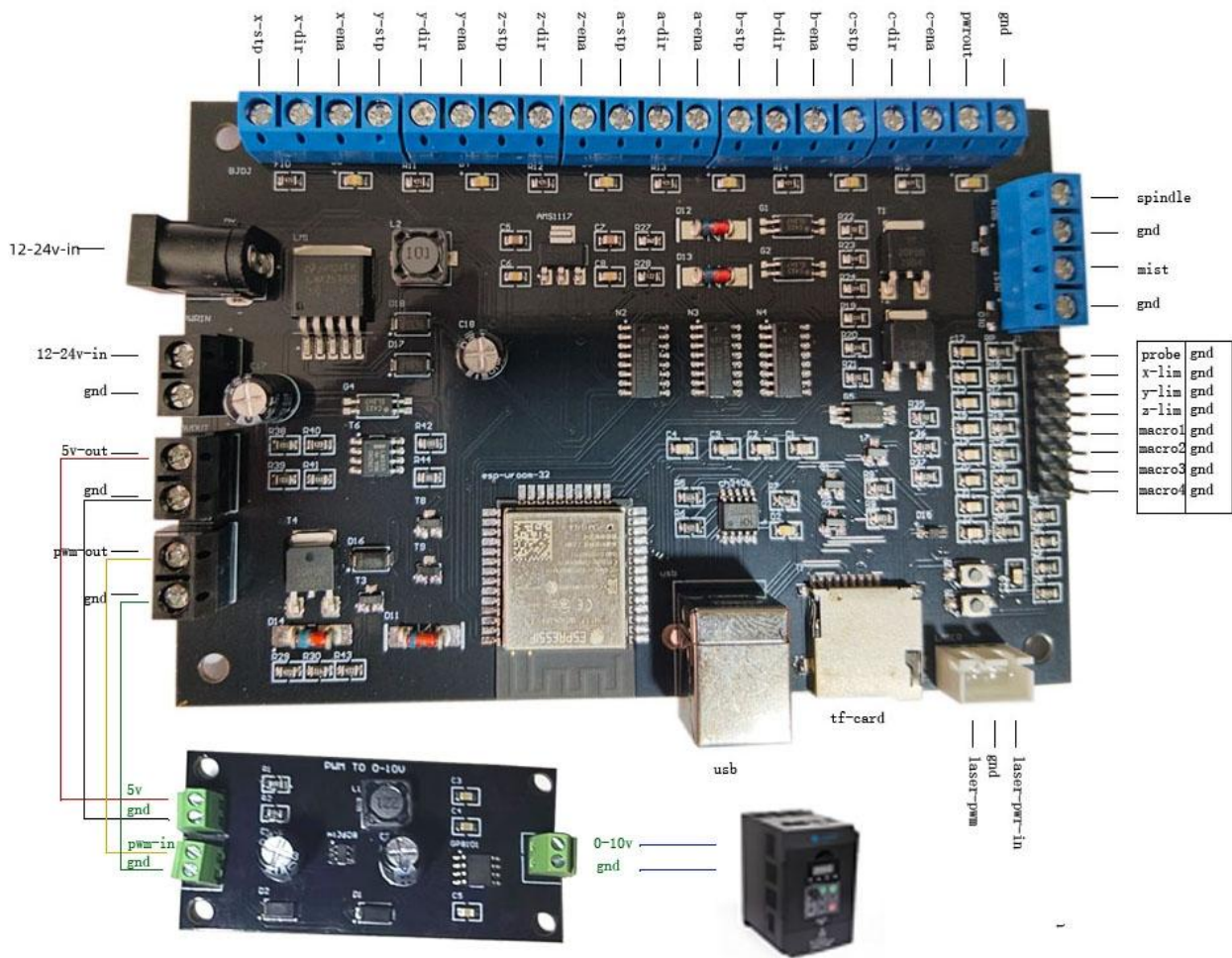




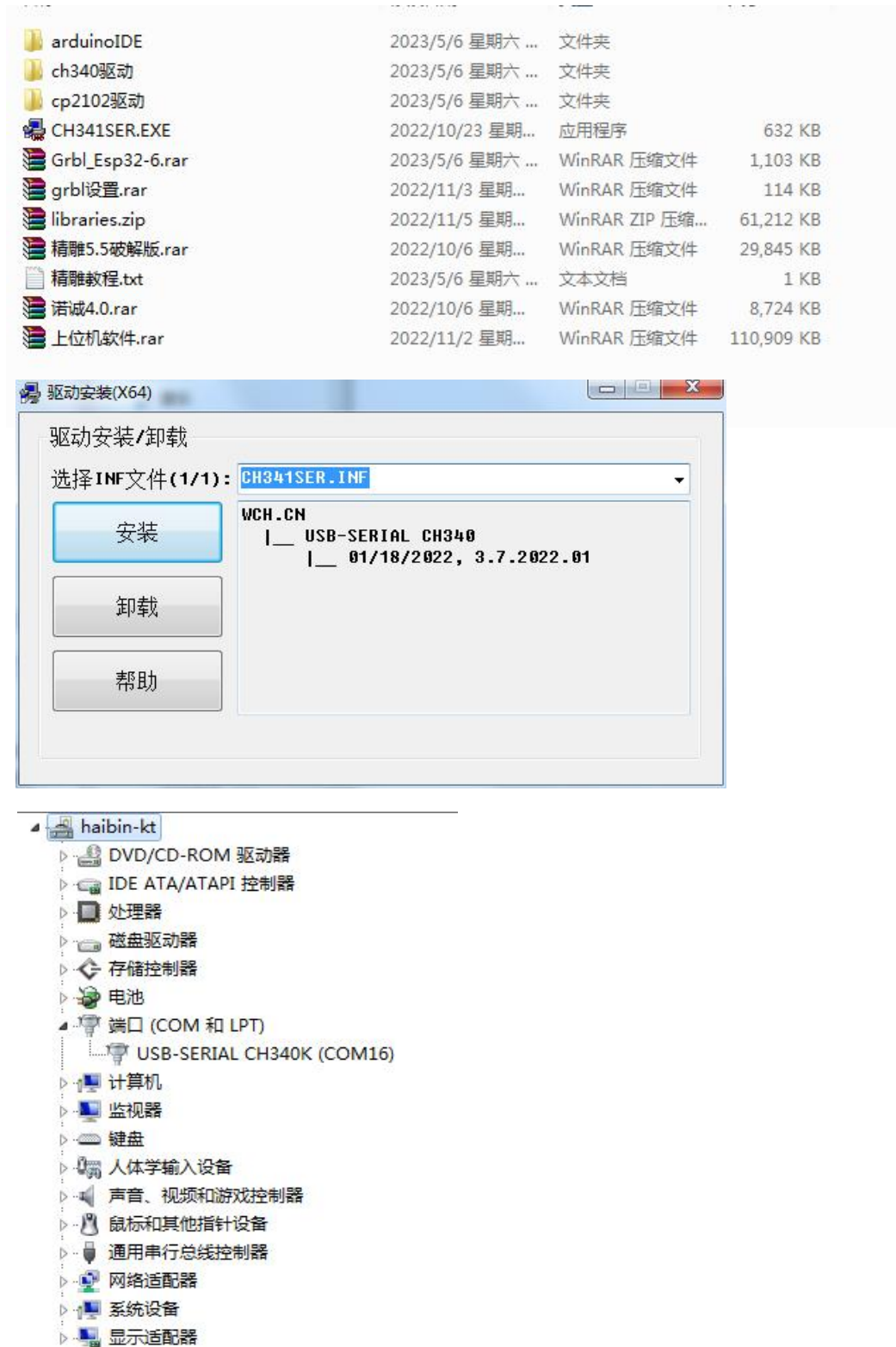
Common cathode

- ➡ step
- ➡ dir
- ➡ ena





Install ch340 USB Driver



See CH340K,successfully install.

Software

CNC3d Commander

CNC3D Commander | Not connected

COM COM10 | USB Refresh Connect My Tools Create Settings About Help CNC3D

Run job Data Log Macros Offsets Profiles Measurements Axes Peripherals Arcs Operation Connections/ESP32

Run a G-code job

1. Load a G-code file from your PC (Not recommended on IP/Wifi)

Load Job Setup / Info View Job Run Job

2. Run a job stored on the SD card storage of your Nighthawk CNC / ESP32 Controller *

Filename	Size
----------	------

Refresh Upload Job Delete Job View SD Job Setup / Info Run SD Job

Click the 'Refresh' button to load SD card files

Ready to run a job... 0%

From Line: 1

Immediate Overrides

Feed Rate: -10% -1% 100% +1% +10% Reset

Spindle: -10% -1% 100% +1% +10% Reset

Spindle Control

ON: M3 S: 700

ON OFF Send

Manual Command

Send

Machine Job

X	0.000	0.000
Y	0.000	0.000
Z	0.000	0.000

Home Machine Go to Zero (XY) Set Job Zero Job

My Buttons Probing Coolant Flood Coolant Mist

Y+ Z+ X- X+ Y- Z-

10 mm 5 mm 1000 mm/m 100 mm/m

EMERGENCY STOP Unlock Hold Keyboard Gamepad

CNC3D Commander | Not connected

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Z	0.000	0.000

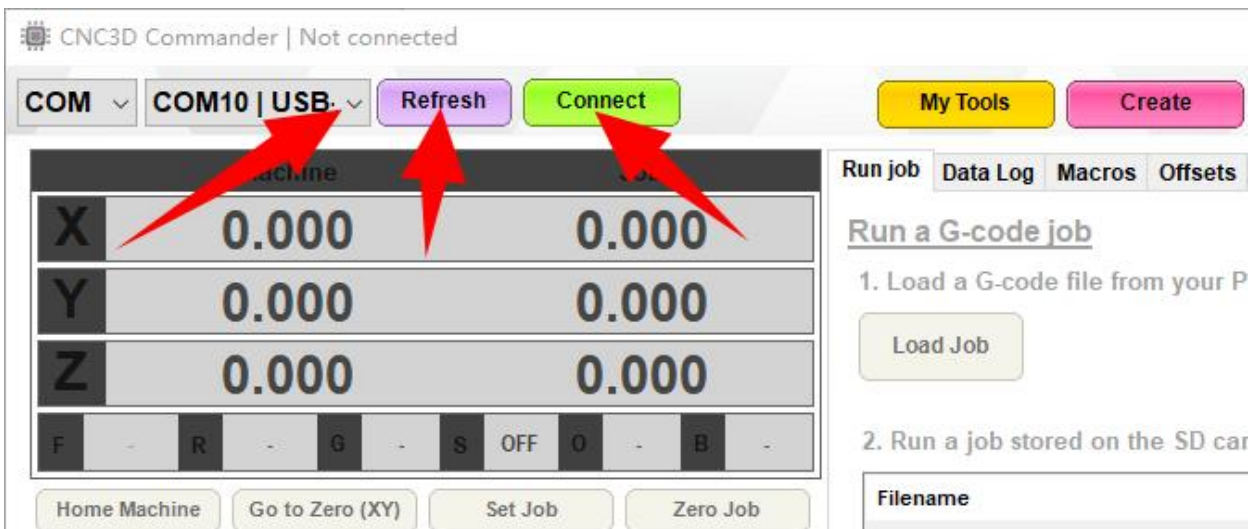
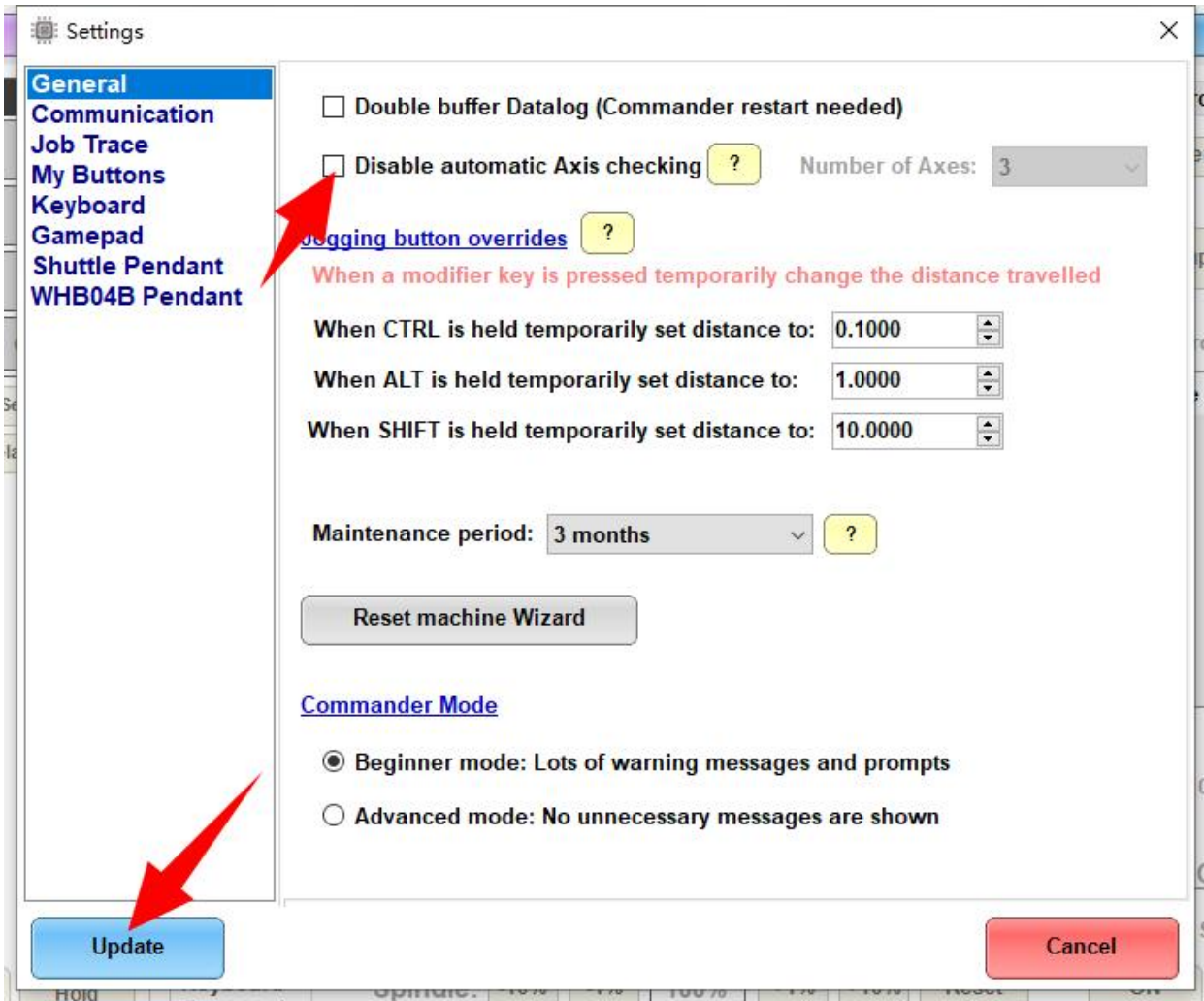
Home Machine Go to Zero (XY) Set Job Zero Job

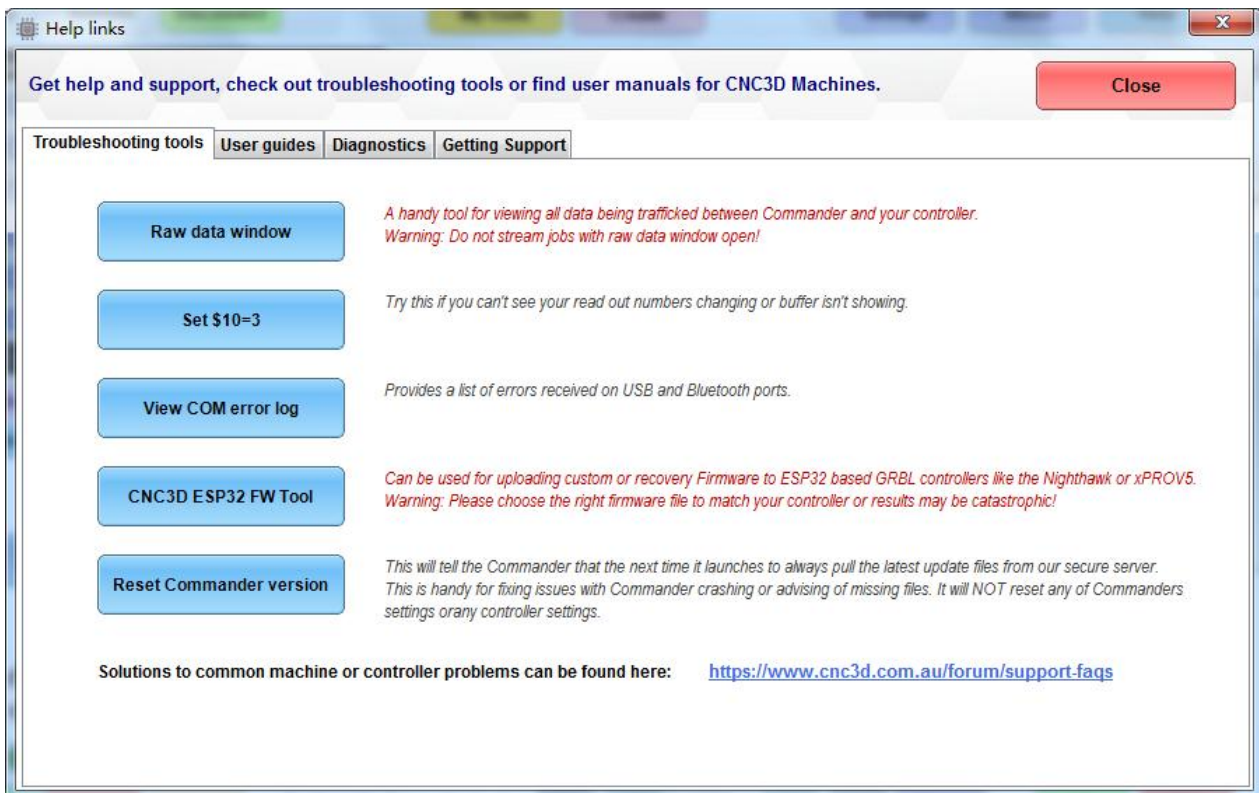
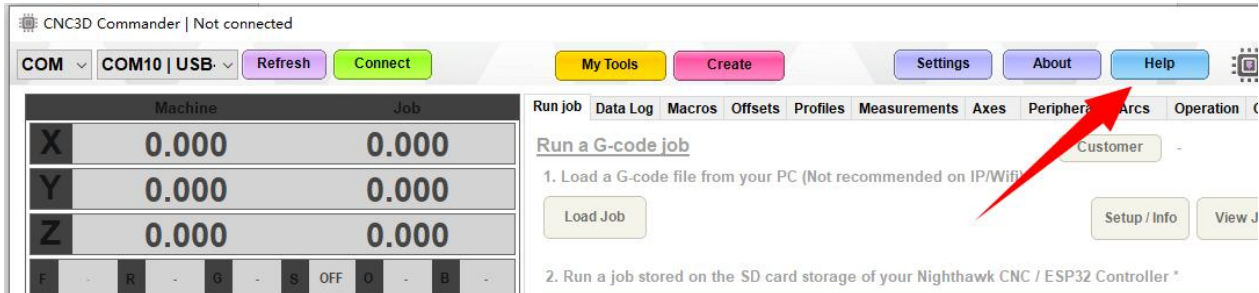
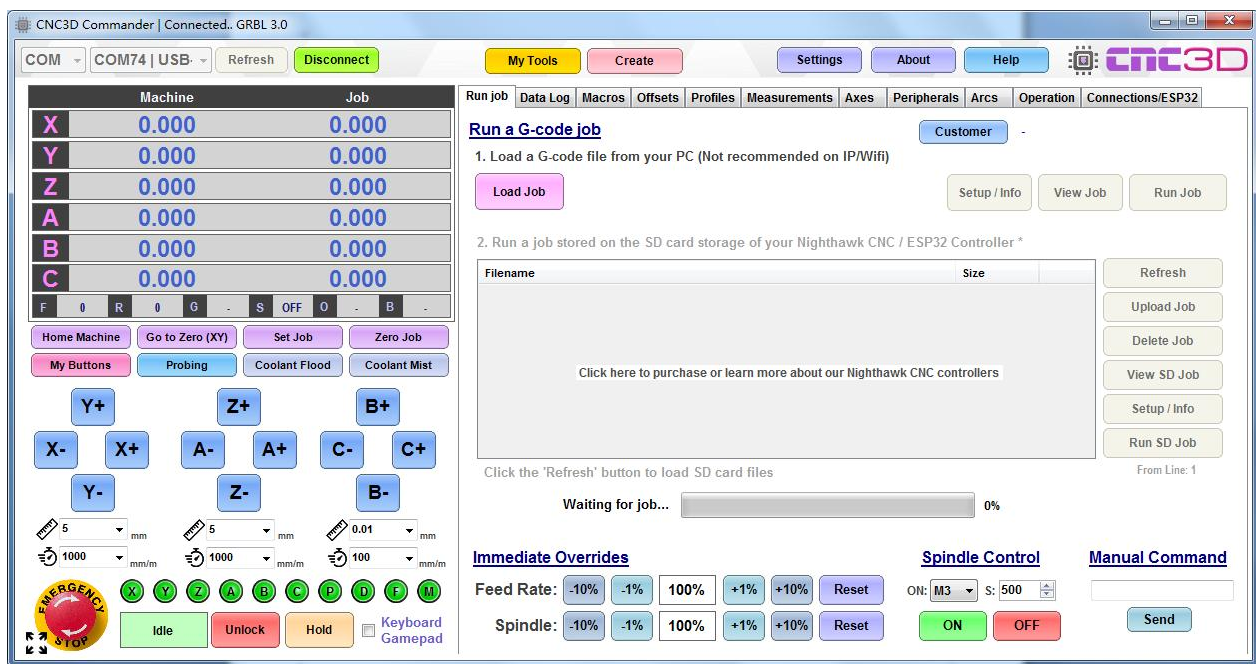
My Buttons Probing Coolant Flood Coolant Mist

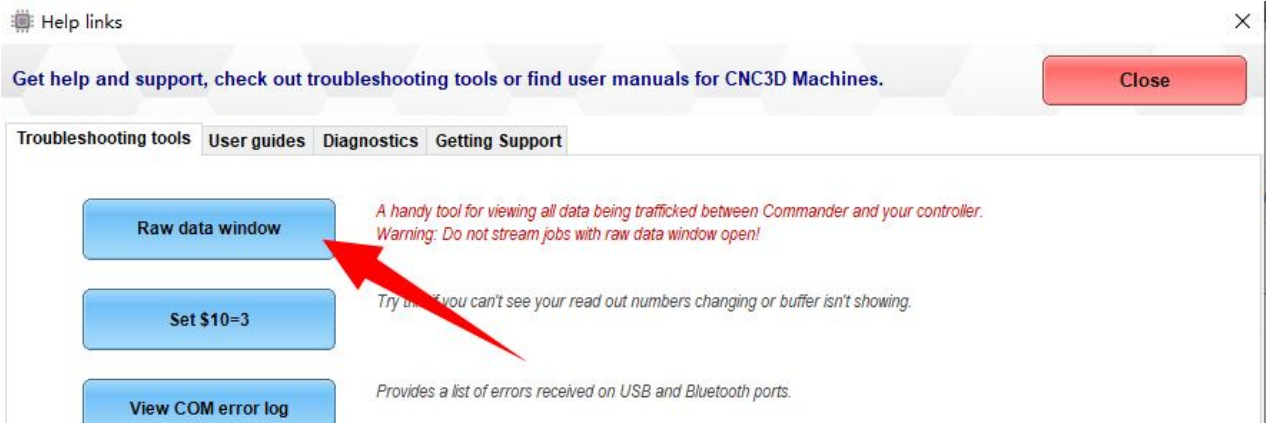
Y+ Z+ X- X+ Y- Z-

10 mm 5 mm 1000 mm/m 100 mm/m

EMERGENCY STOP Unlock Hold Keyboard Gamepad



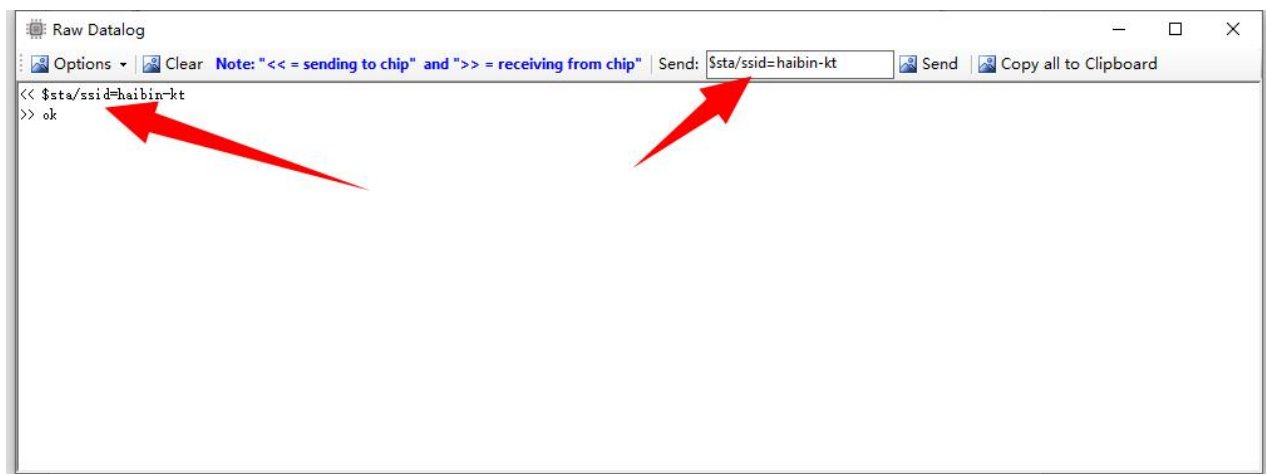


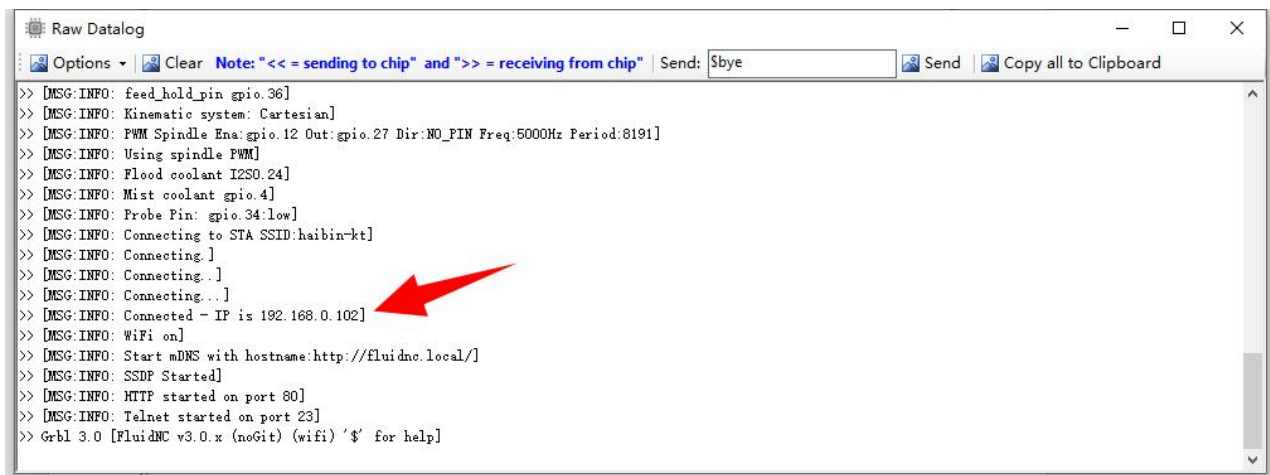


\$sta/ssid=Your wifi account

\$sta/password=Your wifi password

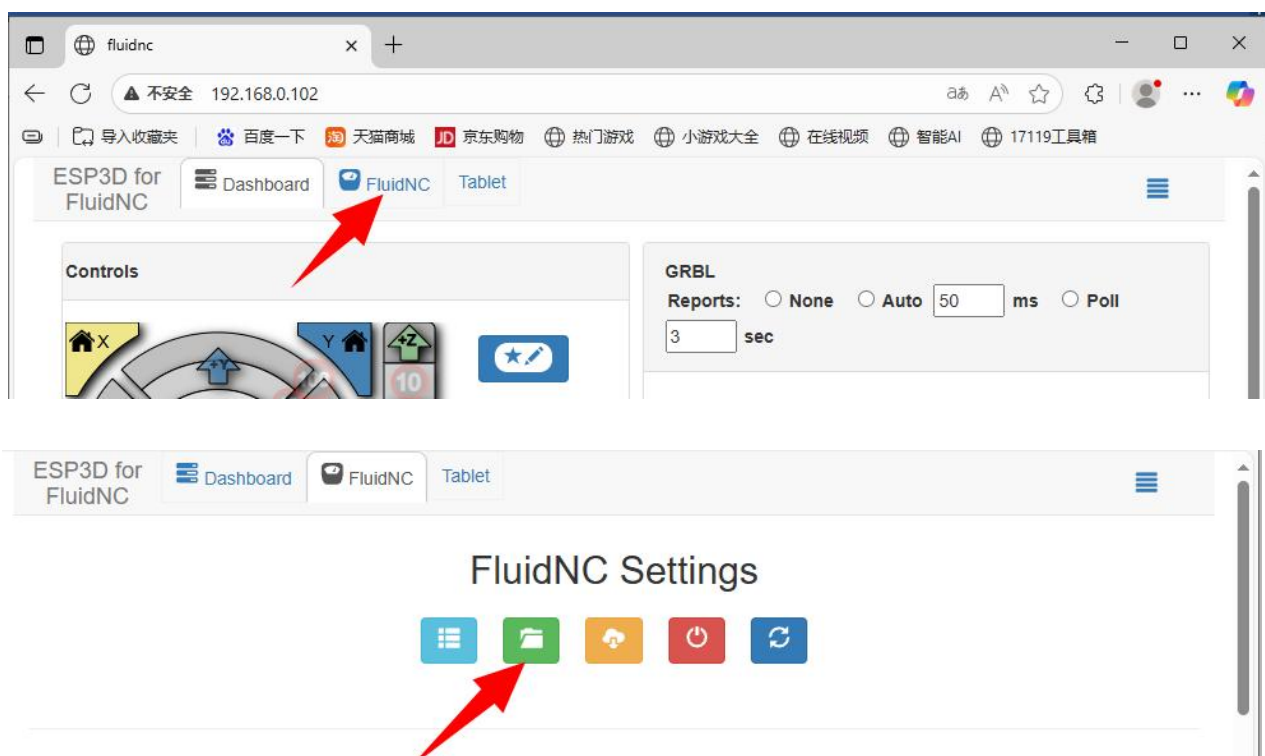
\$bye



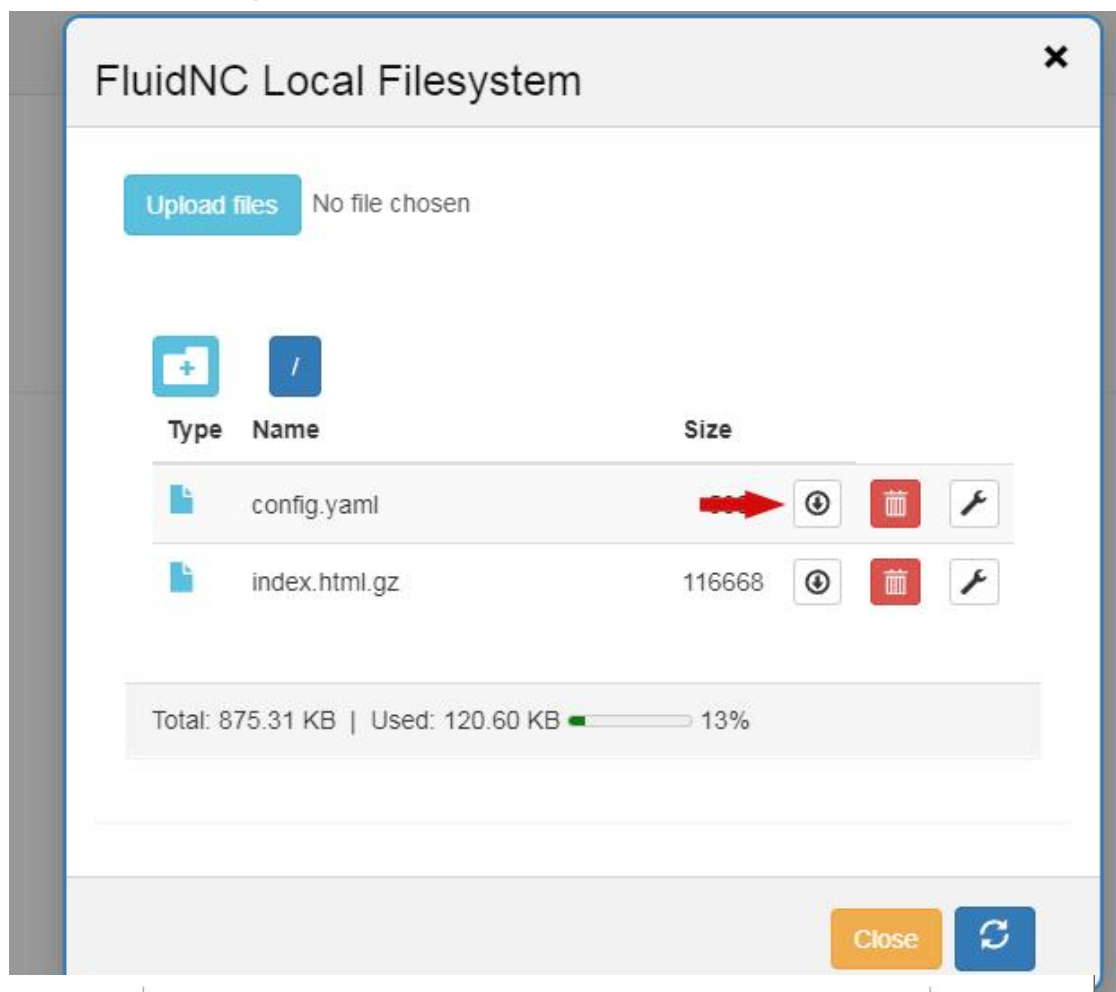


```
Raw Datalog
Options | Clear Note: "<< = sending to chip" and ">> = receiving from chip" Send: $bye Send Copy all to Clipboard
>> [MSG:INFO: feed_hold_pin gpio.36]
>> [MSG:INFO: Kinematic system: Cartesian]
>> [MSG:INFO: PWM Spindle Ena:gpio.12 Out:gpio.27 Dir:NO_PIN Freq:5000Hz Period:8191]
>> [MSG:INFO: Using spindle PWM]
>> [MSG:INFO: Flood coolant I2S0.24]
>> [MSG:INFO: Mist coolant gpio.4]
>> [MSG:INFO: Probe Pin: gpio.34:low]
>> [MSG:INFO: Connecting to STA SSID:haibin-kt]
>> [MSG:INFO: Connecting.]
>> [MSG:INFO: Connecting..]
>> [MSG:INFO: Connecting...]
```

Open browser and enter above IP address to access the control card.



Download config file and open.



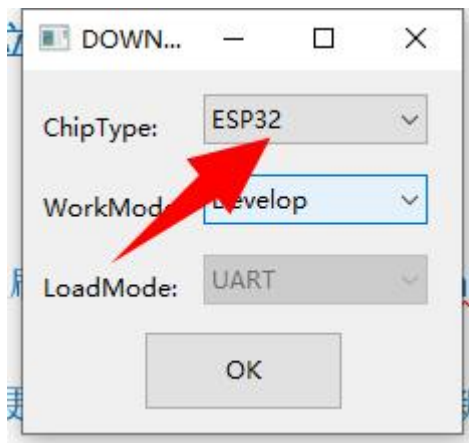
```
board: 6 Pack
name: 6 Pack StepStick XYZABC
stepping:
  engine: I2S_STREAM
  idle_ms: 250
  pulse_us: 4
  dir_delay_us: 6
  disable_delay_us: 0
axes:
  shared_stepper_disable_pin: NO_PIN
  x:
    steps_per_mm: 800.000
    max_rate_mm_per_min: 5000.000
    acceleration_mm_per_sec2: 100.000
    max_travel_mm: 300.000
    soft_limits: false
    homing:
      cycle: 1
      positive_direction: false
      mpos_mm: 0.000
      feed_mm_per_min: 100.000
      seek_mm_per_min: 200.000
      settle_ms: 500
      seek_scaler: 1.100
      feed_scaler: 1.100
  motor0:
    limit_neg_pin: NO_PIN
```


Firmware Update

This board pre-installed FluidNC firmware, also uploaded yaml and index files.

Latest FluidNC: <https://github.com/bdring/FluidNC>

Open flash_download_tool3.9 software.



Upload file

First line

[grbl_controller_esp32.ino.bin](#)

2th

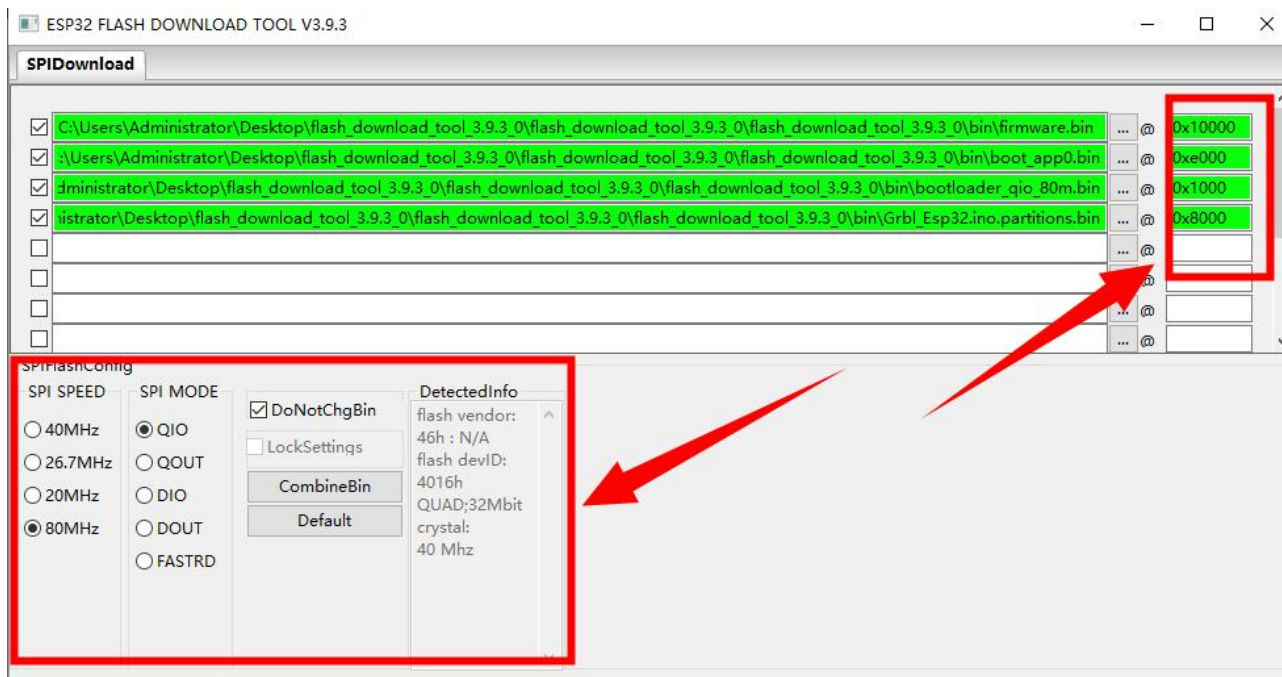
[boot_app0.bin](#)

3th

[bootloader_qio_80m.bin](#)

4th

[Grbl_Esp32.ino.partitions.bin](#)

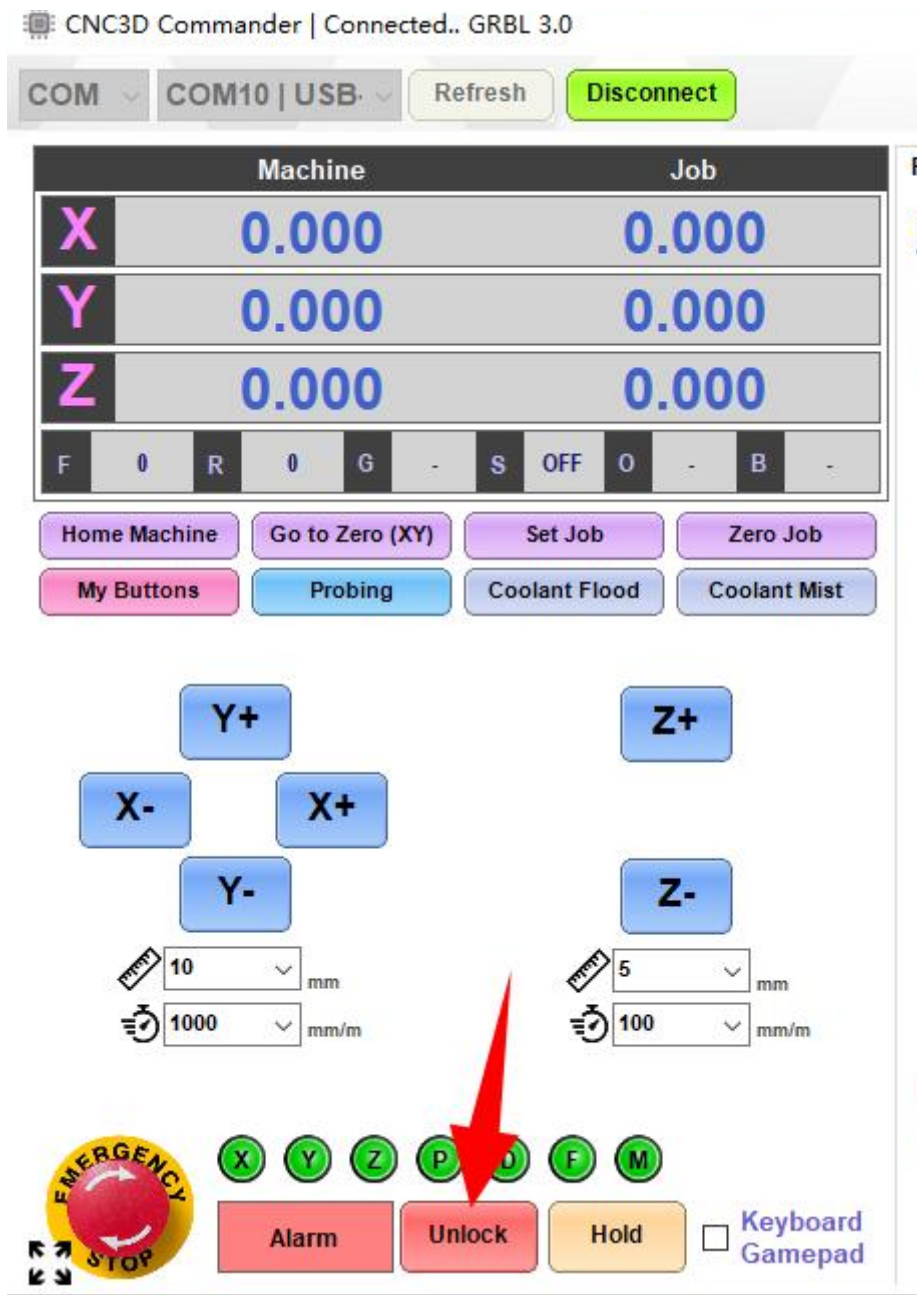


Select COM, then Erase previous files.

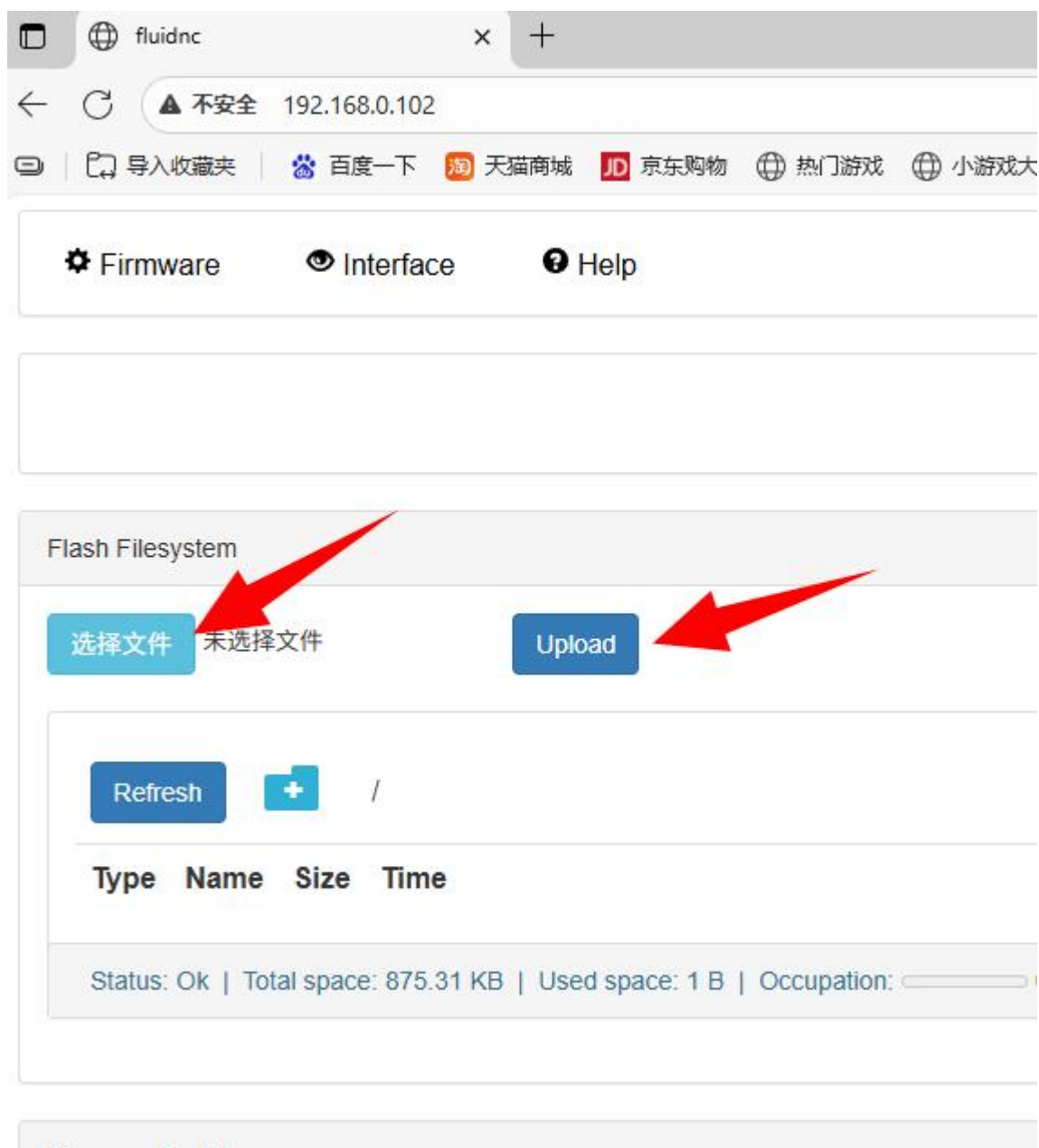


After successfully download,configure wifi as previous tell.

Also,need to upload Yaml and Index file when finish wifi configuration.

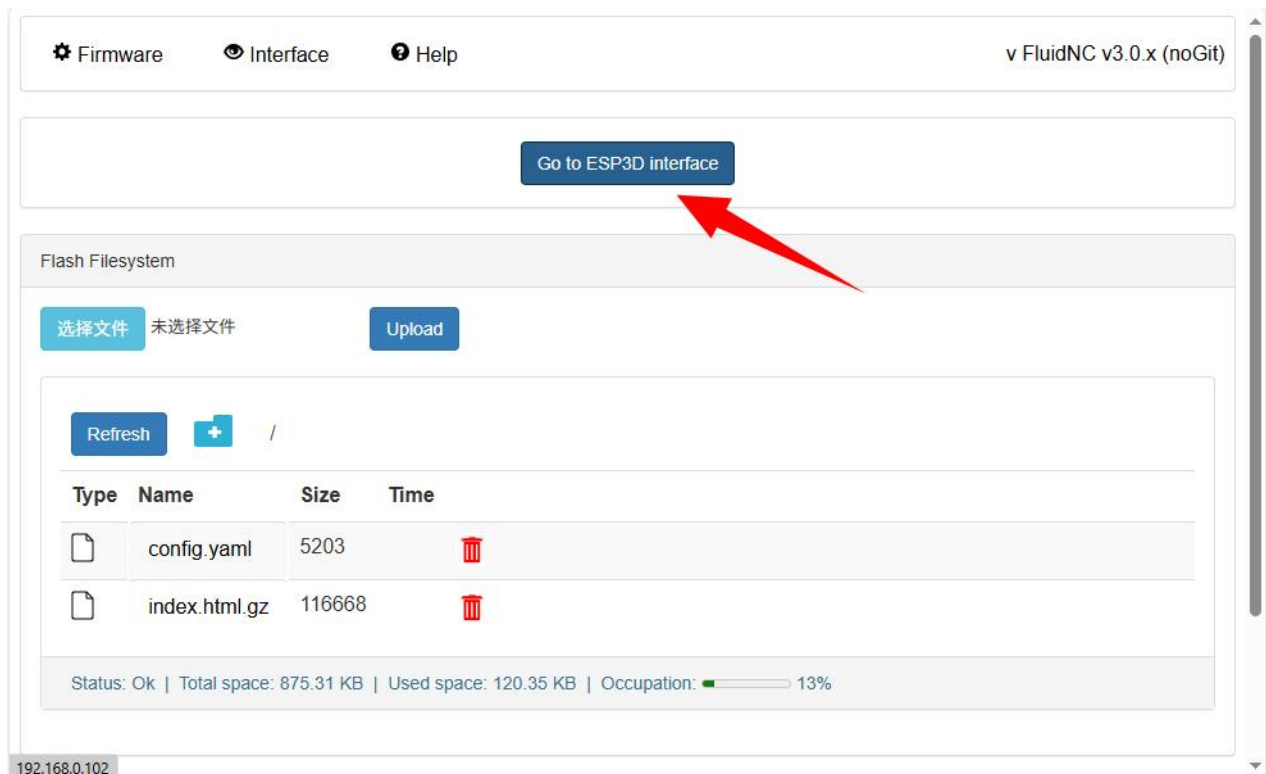


Unlock and upload config.yaml and index file.



名称	修改日期	类型	大小
config.yaml	2024/11/6/周三 9:29	YAML 文件	6 KB
index.html	2024/11/6/周三 9:29	WinRAR 压缩文件	114 KB

Go to ESP3D interface.



Re-start CNC3d commander,will see 6 axis.

Firmware flash complete.

More refer to

<http://wiki.fluidnc.com/en/config/overview>