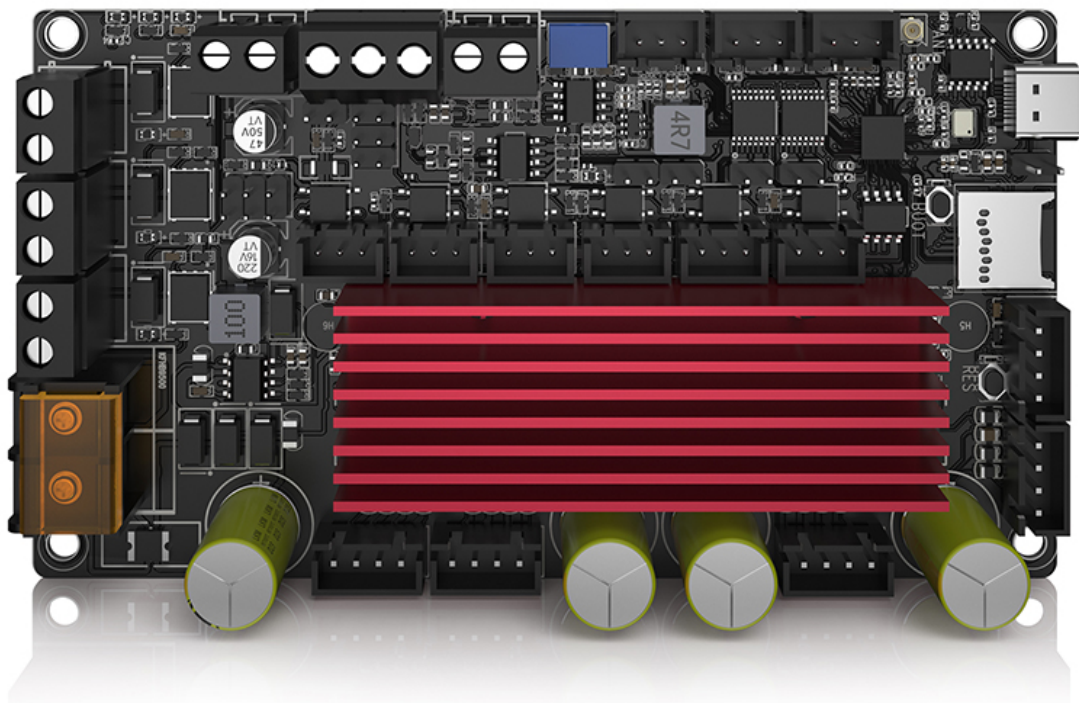


**BIGTREE TECH**

# Rodent V1.0

## User Manual



## Revision Log

Version	Date	Revisions
v1.00	May 29th, 2024	Initial Version

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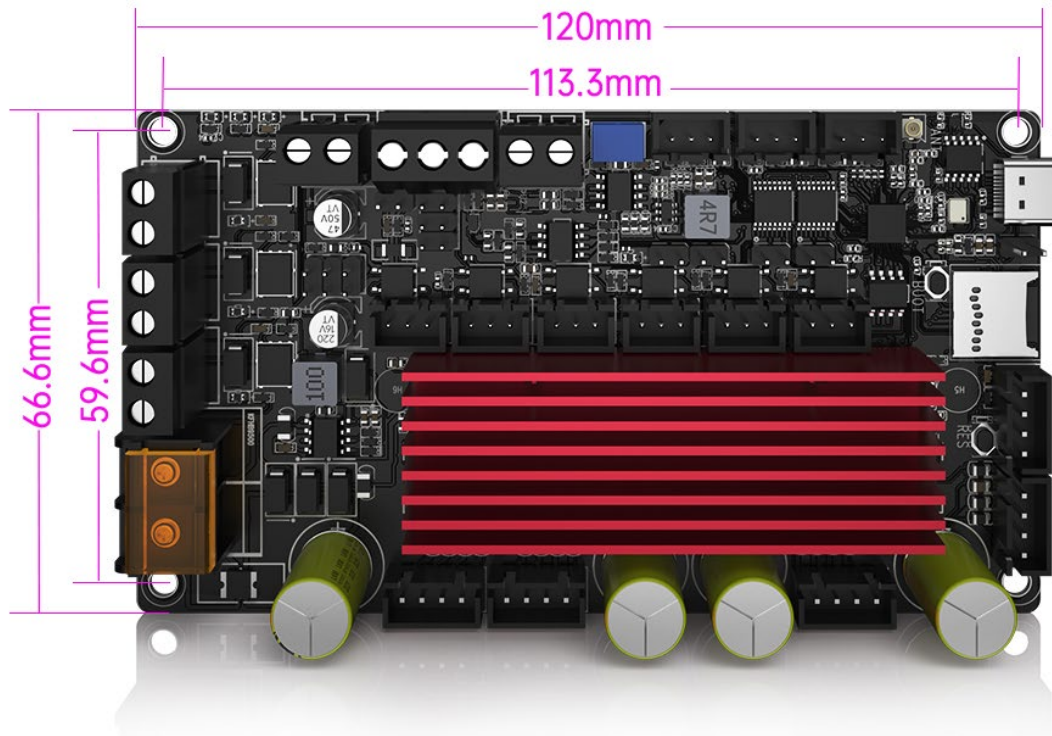
## 1. Product Profile

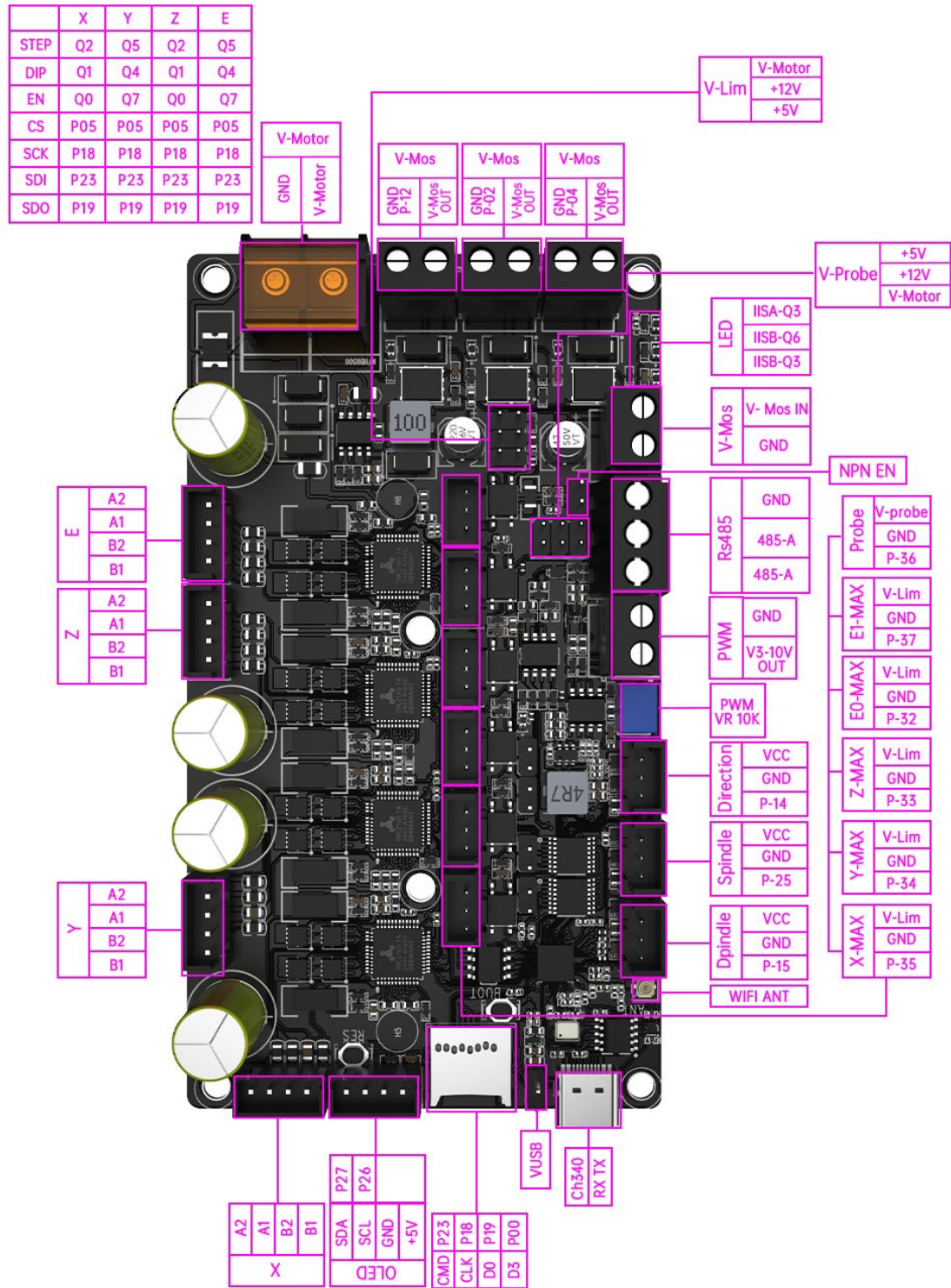
The BIGTREE TECH Rodent V1.0 is our very first control board designed specifically in collaboration with RatRig for CNC machines. It supports USB and RS-485 communication, greatly simplifying the wiring process and providing smooth operation.

### 1.1. Feature Highlights

- MCU: ESP32-D0WD-V3.
- Wi-Fi Capability: Supports 802.11 b/g/n, 802.11 n (2.4 GHz) with maximum speeds of 150 Mbps.
- Integrated Motor Drivers: Onboard four TMC2160 drivers, capable of handling high voltage and current, making them ideal for more powerful motors.
- Power Input Range: DC24V to DC56V at 10A.
- V-MOS Power Input: Accepts DC12V to DC36V with three externally controllable voltage output ports, supporting up to 5A; output voltage depends on the V-MOS input.
- 5 Endstop Switch Interfaces: Support voltage selection of 5V, 12V, and VIN, featuring optocoupler isolation to improve motherboard stability and reduce interference.
- VProbe Control Switch Interface: Support voltage selection of 5V, 12V, and VIN, featuring optocoupler isolation to improve motherboard stability and reduce interference.
- Spindle control interface.
- One PWM output interface (3-10V).
- One TF card interface.
- Firmware Management: Features TYPE-C automatic firmware burning and onboard CH340 for easy updates without external tools. Includes BOOT and RESET buttons for entering DFU mode via USB.
- RS485 Support: Includes a built-in 130R terminal resistor for RS485 communications.
- Expansion Interfaces: Reserved connections for an OLED display (I<sup>2</sup>C) and Wi-Fi antenna, and supports 3-channel RGB LEDs for customization.

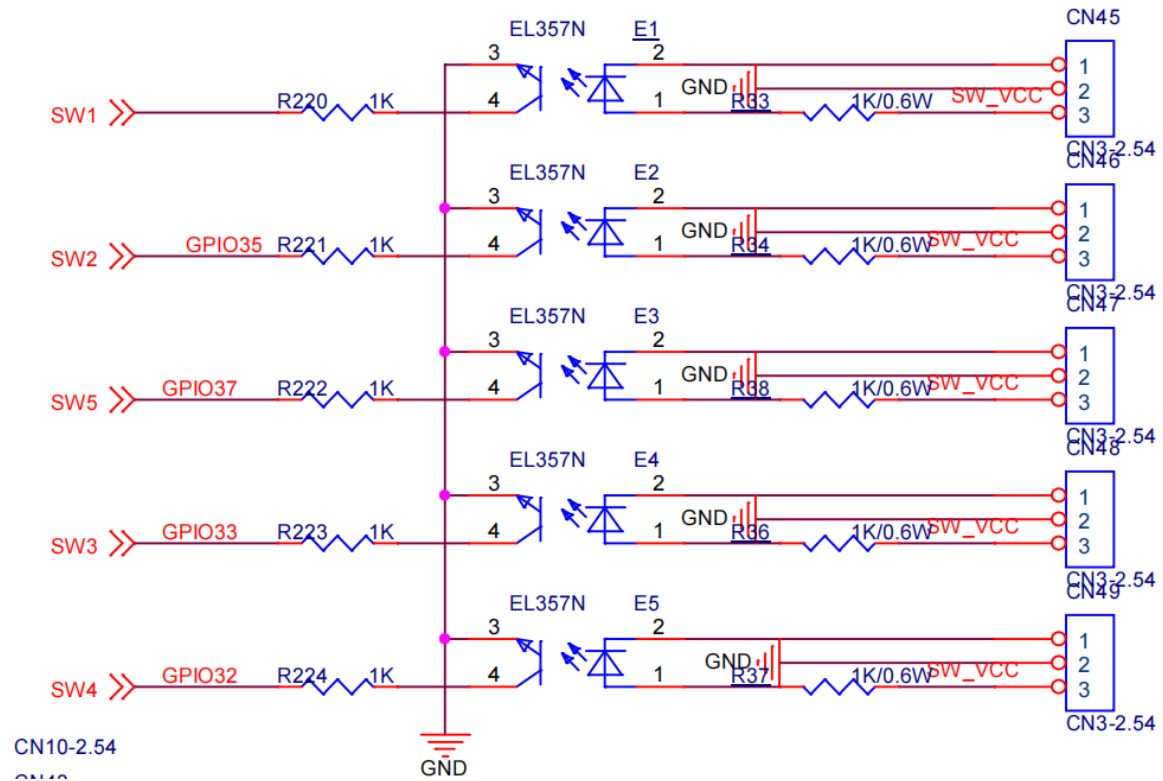
## 1.2. Dimensions



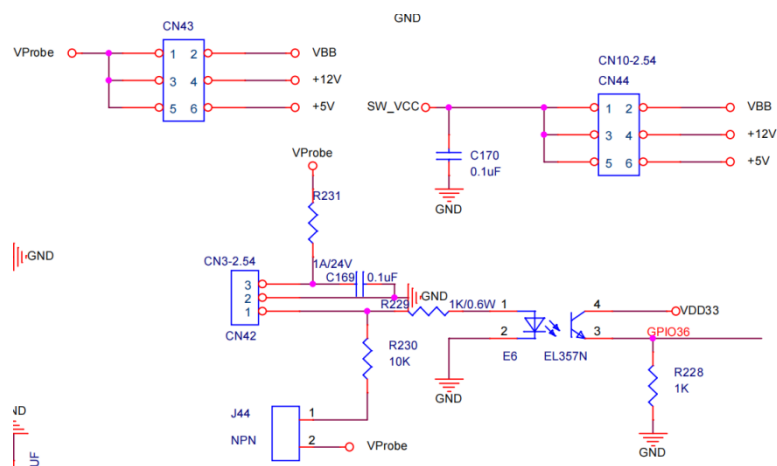


## 3. Interface Details

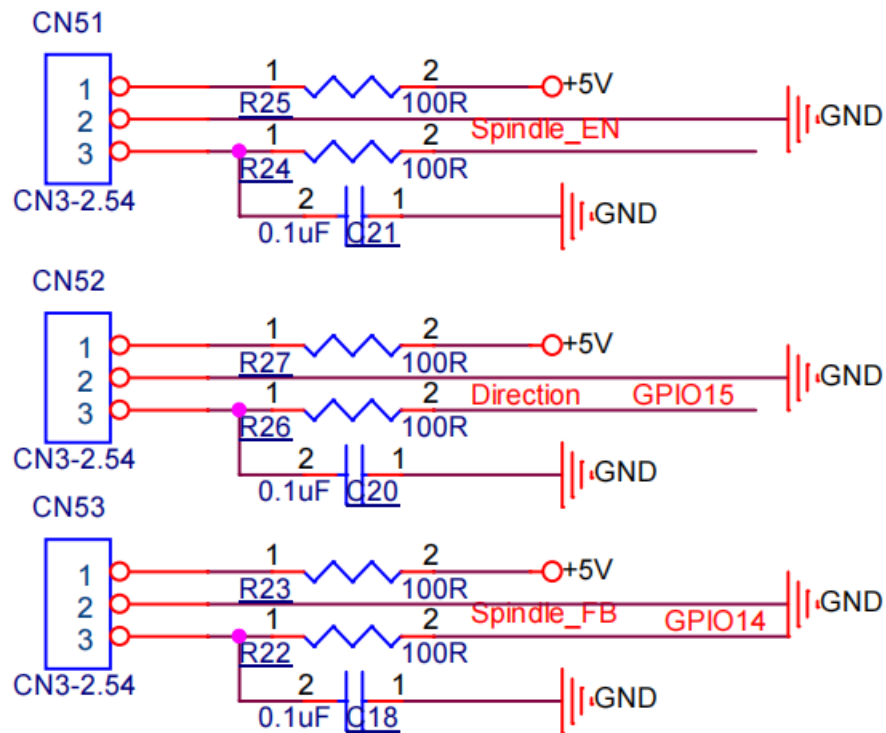
### 3.1. Endstop Switch



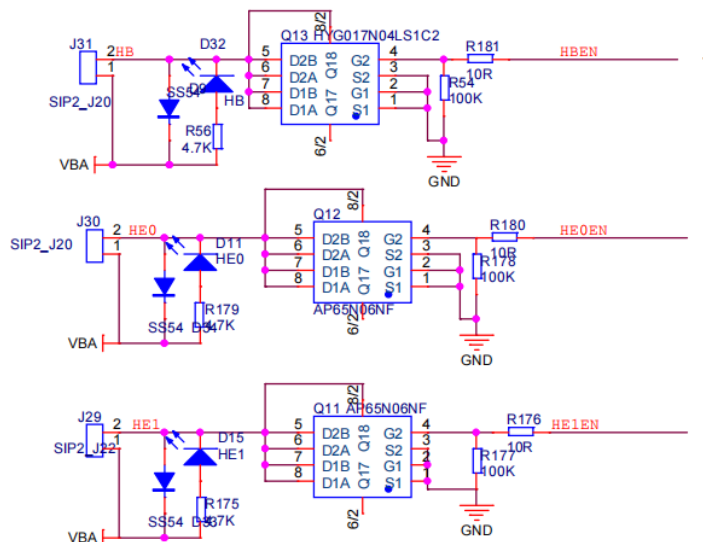
### 3.2. VProbe Switch



### 3.3. Spindle



### 3.4. V-MOS Output Ports







## 4. Software Setup

### 4.1. Firmware Installation

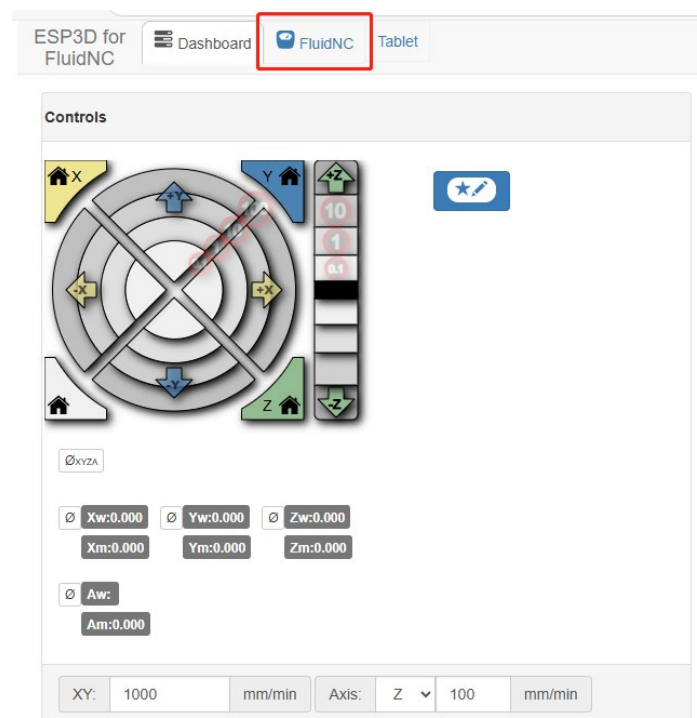
Firmware available at: <https://github.com/bdring/FluidNC>

### 4.2. Wi-Fi Configuration Steps

1. Connect to the FluidNC hotspot to access the configuration interface.



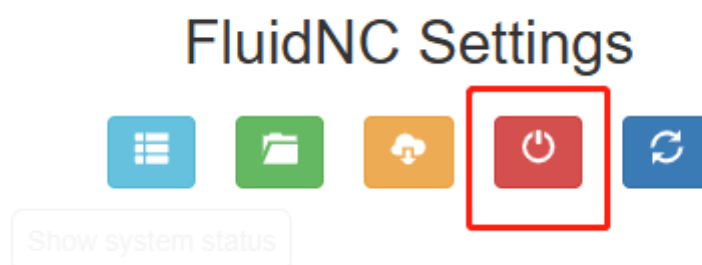
2. Navigate to the FluidNC configuration interface.



3. Modify Sta/SSID (Wi-Fi name) and Sta/Password (Wi-Fi password), then click "Set" to apply changes.

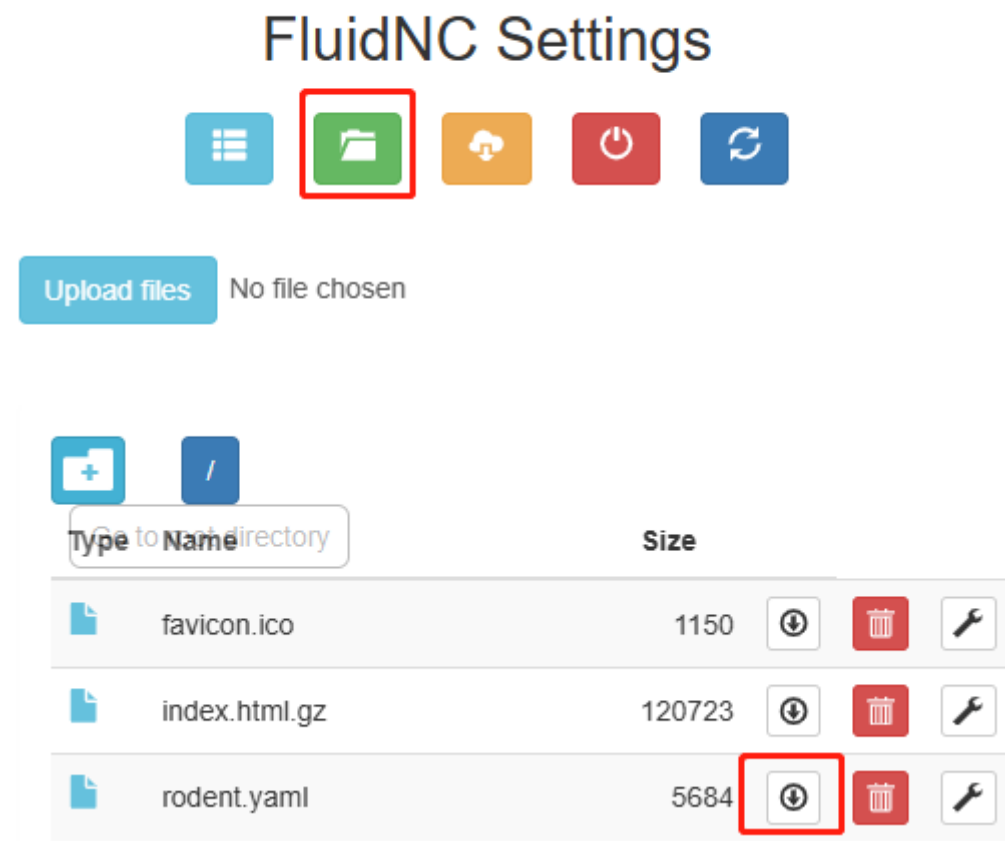
Sta/Password	.....	Set
Sta/MinSecurity	WPA2-PSK	Set
WiFi/FastScan	OFF	Set
Sta/IPMode	DHCP	Set
Sta/IP	0.0.0.0	Set
Sta/Gateway	0.0.0.0	Set
Sta/Netmask	0.0.0.0	Set
AP/Country	01	Set
AP/SSID	FluidNC	Set
AP/Password	.....	Set
AP/IP	192.168.0.1	Set
AP/Channel	1	Set
Hostname	fluidnc	Set
Sta/SSID		Set

4. Restart the FluidNC system to finalize the setup.



### 4.3. Configuring the Machine

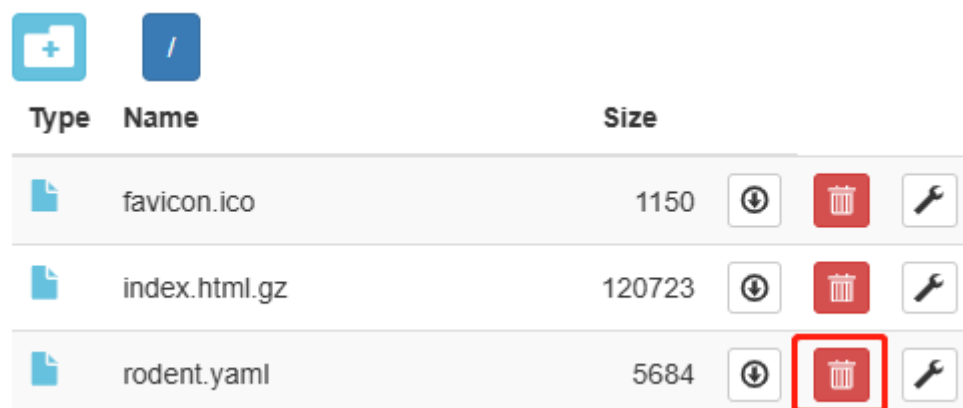
1. Download rodent.yaml from the file icon.



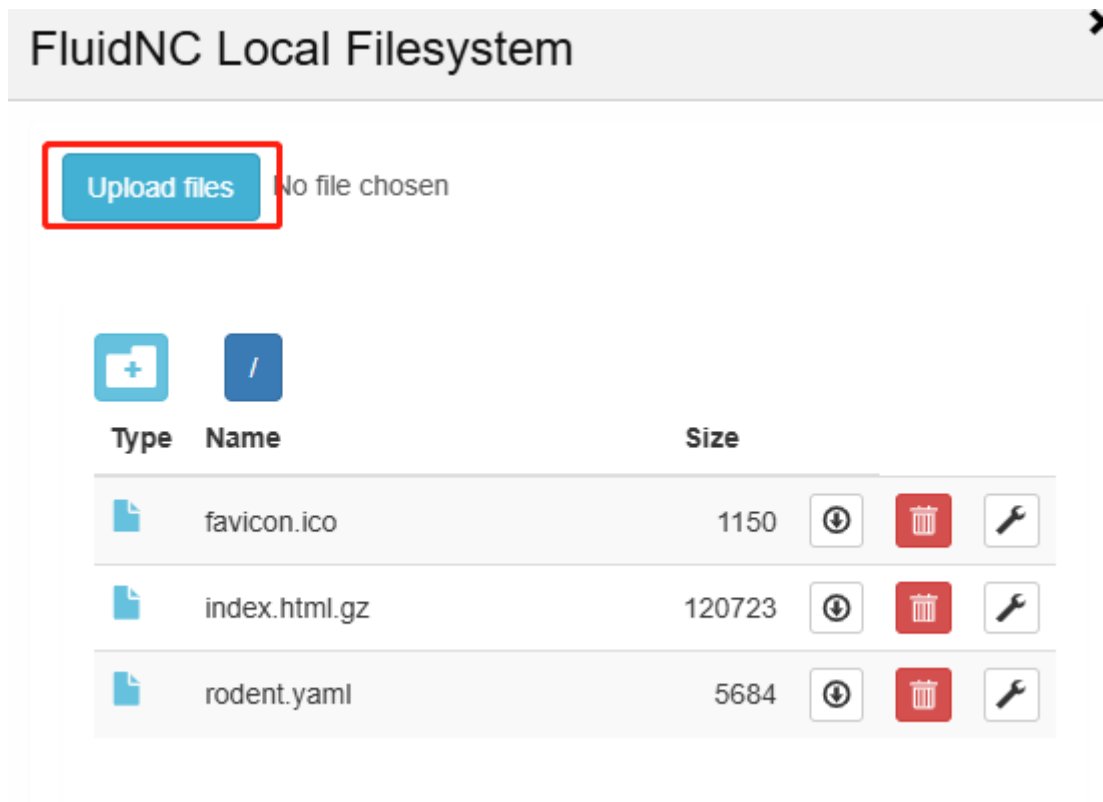
2. Customize your settings by referencing the FluidNC Wiki:

<http://wiki.fluidnc.com/>

3. Click the "Delete icon".



4. Click "Upload files" to upload rodent.yaml.



5. Click "Restart Rodent".

If you need further resources for this product, you can find them at [GitHub](<https://github.com/bigtreotech/>). If you cannot find what you need, you may contact our after-sales support([service005@biqu3d.com](mailto:service005@biqu3d.com)).

If you encounter any other problems during use or have suggestions or feedback, please contact us. Thank you for choosing BIGTREETECH products.