

Ender3 IDEX upgrade kit list



Belt driven wheel fixing frame



Extruder kit



X axis drive motor



Hotend



Motherboard



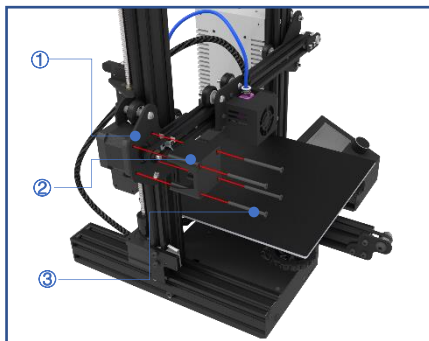
Adapter board

Basic parameters	
Adapted models	Ender 3 and similar models
volume	350x187x100mm
weight	1452g(Including packaging)
Molding technology	FDM Fused Deposition Molding
Number of Hotend	2PCS
Printing thickness	0.1mm - 0.3mm
Nozzle diameter	Standard 0.4mm
Printing accuracy	± 0.05 mm
Printing supplies	PLA
Slice support format	STL / OBJ/ AMF
printing method	Online / TF card offline / U disk offline / LAN
Independent printing area	108*220*250mm
Single print head printing area	163*220*250mm
Mirror mode printing area	75*220*250mm
Copy mode printing area	108*220*250mm
Single nozzle printing	Support
Mirror printing	Support
Copy print	Support

1、Installation of the upgrade kit

Step 1

(1) Use an Allen key to remove the screws that fix the cover of the X-axis timing belt wheel on the original machine.

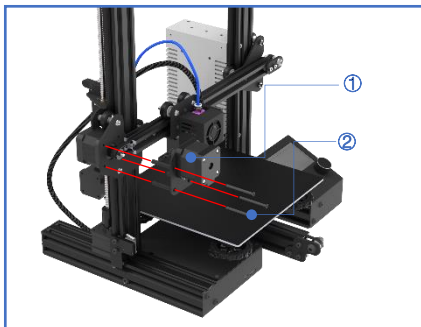


①Sliding group sheet metal

②Synchronous wheel cover

③M3x40 flat head hexagon socket screw

(2) Install the X-axis synchronous wheel drive motor



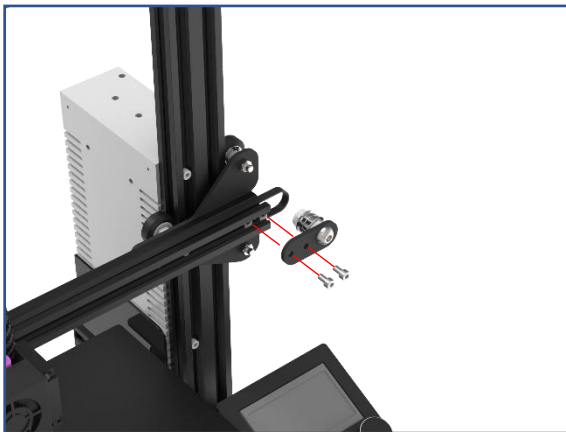
sheet metal in the upgrade kit to the position of the original synchronous wheel cover using the removed M3x40 flat-head hexagon socket screws.

①X-axis drive motor fixed sheet metal

②M3x40 flat head hexagon socket screw

Step 2

(1) Use an Allen key to remove the sheet metal of the X-axis timing belt idler of the original machine.

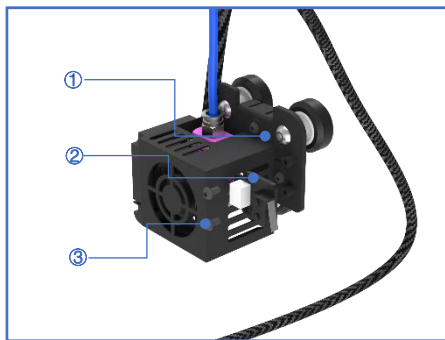


(2) Install the limit switch on the nozzle

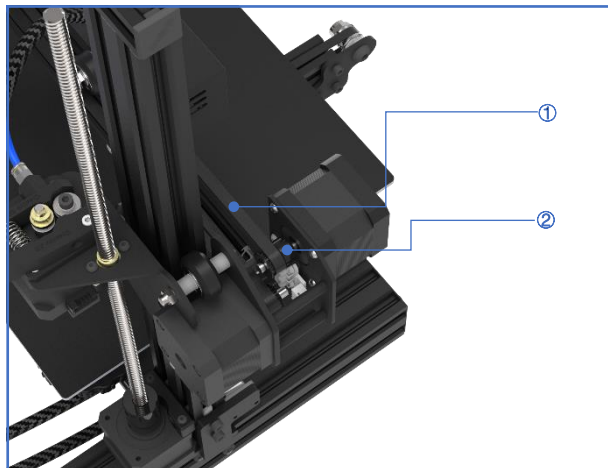
①hot end

②Limit switch

③ M3x6 round head screw



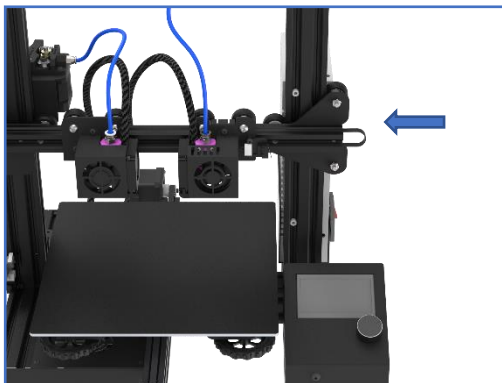
(3) Put the synchronous belt in the upgrade kit into the synchronous wheel of the dual-nozzle X drive motor.



① Synchronous belt

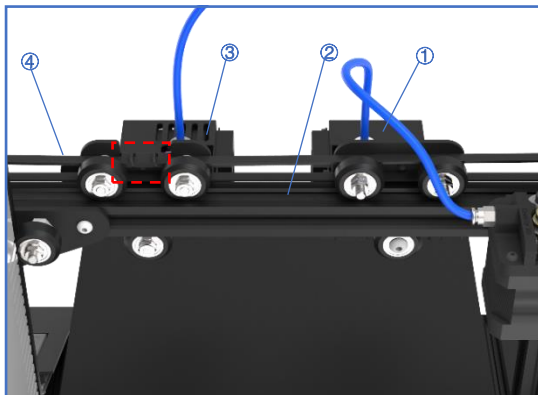
②Synchronous wheel

(4) Mount the print head on the X axis



(5) Pass the second synchronous belt up and down through the BOM wheel blocks of the two X-axis sliding groups, and fix the two ends of the synchronous belt two on the second nozzle sliding group in the upgrade kit.

①Print head 1

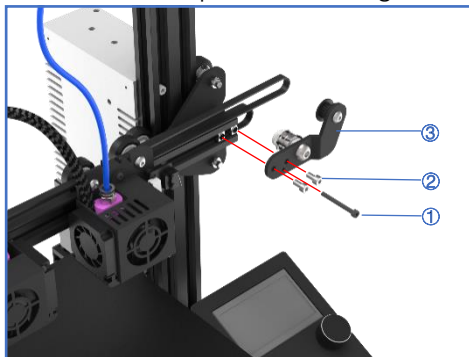


②Synchronous belt 1

③Print head 2

④Synchronous belt 2

(6) Install the double idler on the right side of the X-axis to fix the sheet metal, and place the timing belt on the



idler.

① M3x30 Hexagon Socket Cup Head Screw

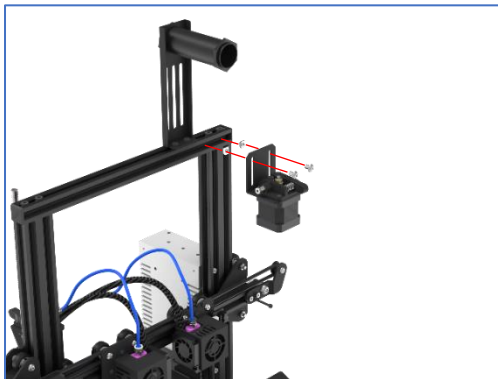
② M4x8 hex socket cup head screw

③ Double idler fixed set machine

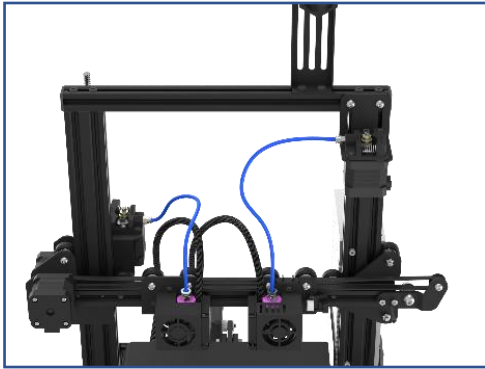
First move the double idler fixing kit in the X direction to adjust the tension of the belt, and then lock the M4x8 hexagon socket head screw with the boat nut to ensure that the boat nut is placed in the X-axis aluminum profile.

Step 3

The extruder in the upgrade kit is installed on the gantry beam, the boat nut is placed on the gantry beam, the screws are tightened, and the boat nut is placed vertically in the aluminum profile of the gantry beam to fix the extruder.

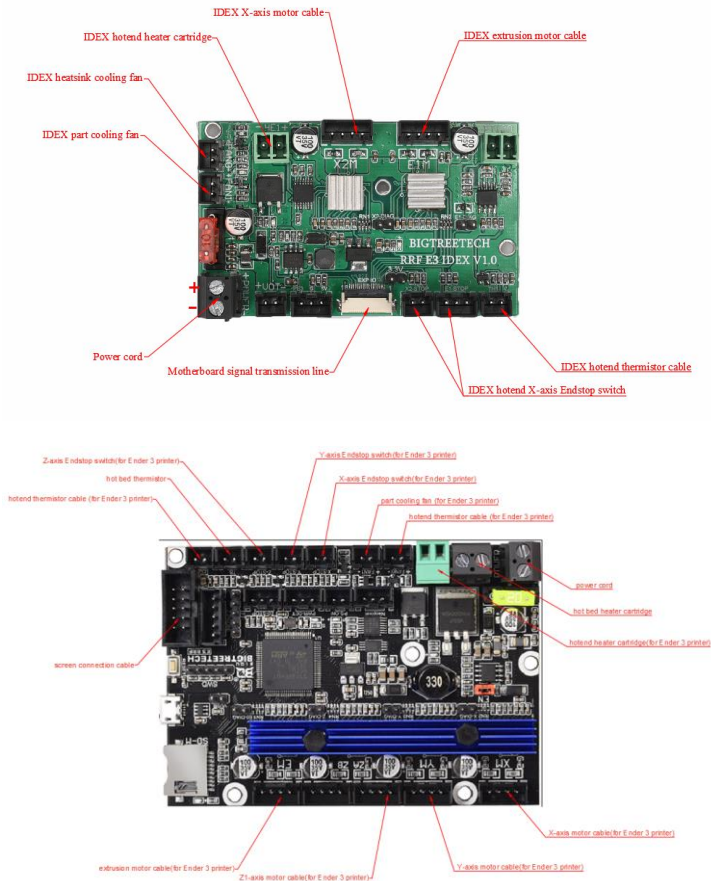


Step 4



Insert two Teflon tubes into the extruder respectively, the insertion depth is 50mm

2.Line connection



According to the picture above, connect the wiring correctly.

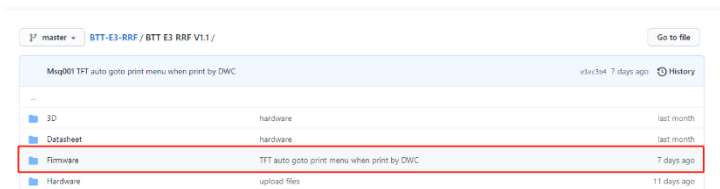
Installation and connection complete

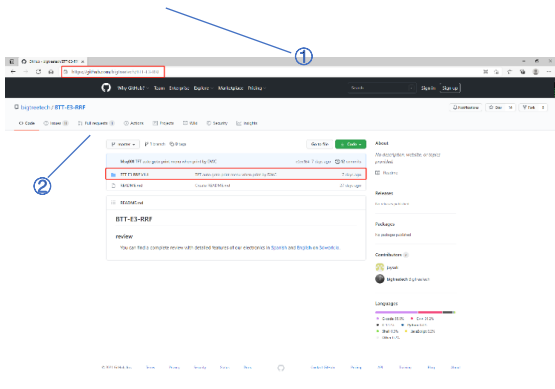
2. Firmware refresh

Download the Ender_3 IDEX firmware to the SD card through the following website.

<https://github.com/bigtreetech/BTT-E3-RRF>

Insert the SD card containing the firmware into the card slot of the motherboard, restart the machine, and refresh the firmware. After finishing, pull out the SD card.





master - BTT-E3-RRF / BTT E3 RRF V1.1 / Firmware / Go to file

Mag001 TFT auto goto print menu when print by DWC view on 7 days ago History

...

MarlinEnder3	fix CR10_STOCKDISPLAY timing	2 months ago
ReprapFirmware	TFT auto goto print menu when print by DWC	7 days ago
E3 RRF Manual -For ReprapFirmware.pdf	upload files	11 days ago
E3 RRF 用户手册 -For Marlin.pdf	upload files	11 days ago
E3 RRF 用户手册 -For ReprapFirmware.pdf	upload files	11 days ago
E3-RRF-User-Guide-For-Marlin_CN.pdf	upload files	11 days ago

master - BTT-E3-RRF / BTT E3 RRF V1.1 / Firmware / Marlin / Ender3 / Go to file

Mag001 fix CR10_STOCKDISPLAY timing commit on 17 Mar History

...

Marlin-2.0.7.2-rc-E3-RRF	fix CR10_STOCKDISPLAY timing	2 months ago
firmware-tiltouch-a-homing.bin	fix CR10_STOCKDISPLAY timing	2 months ago
firmware-tiltouch.bin	fix CR10_STOCKDISPLAY timing	2 months ago
firmware.bin	fix CR10_STOCKDISPLAY timing	2 months ago

Actions Projects Wiki Security Insights

master - BTT-E3-RRF / BTT E3 RRF V1.1 / Firmware / Marlin / Ender3 / firmware.bin Go to file ...

Mag001 fix CR10_STOCKDISPLAY timing Latest commit commit on 17 Mar History

All 0 contributors

120 KB Download View raw

2. Operating instructions

1. Printer parameter setting

The screenshot shows the 'Add Printer' dialog box with the 'Machine Settings' tab selected. The configuration is for a 'Custom FFF printer #4'. The 'Printer' tab is active, showing 'Printer Settings' and 'Start G-code'. The 'Printer Settings' section includes fields for X (Width), Y (Depth), Z (Height), Build plate shape, Origin at center, Heated bed, Heated build volume, and G-code flavor. The 'Start G-code' section contains a list of G-code commands. The 'Extruder 1' and 'Extruder 2' tabs are also visible, showing 'Extruder Settings' and 'End G-code'.

Printer	Extruder 1	Extruder 2
Printer Settings	Extruder Settings	Extruder Settings
X (Width)	108 mm	-20 mm
Y (Depth)	220 mm	-10 mm
Z (Height)	250 mm	10 mm
Build plate shape	Rectangular	Y max
Origin at center	<input type="checkbox"/>	250 mm
Heated bed	<input checked="" type="checkbox"/>	Number of Extruders
Heated build volume	<input type="checkbox"/>	2
G-code flavor	RepRap	
Start G-code	End G-code	
G28 ;Home	M104 S0	
G1 Z15.0 F6000 ;Move the platform d	M140 S0	
;Prewarm the extruder	;Retract the filament	
G92 E0	G92 E1	
G1 F200 E3	G1 E-1 F300	
G92 E0	G28 X0 Y0	
	M84	

If you need to use two nozzles in printing, the printer X size is set to 108mm.

If you only need to use one nozzle for printing, the X size of the printer is set to 163mm.

The screenshot shows the 'Add Printer' dialog box with the 'Machine Settings' tab selected. The configuration is for a 'Custom FFF printer #4'. The 'Extruder 1' tab is active, showing 'Nozzle Settings' and 'Extruder Start G-code'. The 'Nozzle Settings' section includes fields for Nozzle size, Compatible material diameter, Nozzle offset X, Nozzle offset Y, and Cooling Fan Number. The 'Extruder Start G-code' and 'Extruder End G-code' sections are empty.

Printer	Extruder 1	Extruder 2
Printer Settings	Nozzle Settings	Extruder Settings
X (Width)	108 mm	-20 mm
Y (Depth)	220 mm	-10 mm
Z (Height)	250 mm	10 mm
Build plate shape	Rectangular	Y max
Origin at center	<input type="checkbox"/>	250 mm
Heated bed	<input checked="" type="checkbox"/>	Number of Extruders
Heated build volume	<input type="checkbox"/>	2
G-code flavor	RepRap	
Start G-code	Extruder Start G-code	Extruder End G-code
G28 ;Home		
G1 Z15.0 F6000 ;Move the platform d		
;Prewarm the extruder		
G92 E0		
G1 F200 E3		
G92 E0		

Add Printer X

Machine Settings

Custom FFF printer #4

Printer

Extruder 1

Extruder 2

Nozzle Settings

Nozzle size mm

Compatible material diameter mm

Nozzle offset X mm

Nozzle offset Y mm

Cooling Fan Number

Extruder Start G-code

Extruder End G-code

Next

After completing the setting of the print nozzle parameters, you can set the print parameters of the individual Hotends for slice printing.

Print settings X

Profile ★ ▼

1

2

Search settings

- Quality ▼
- Shell <
- Infill <
- Material <
- Speed <
- Travel <
- Cooling <
- Support <
- Build Plate Adhesion <
- Dual Extrusion <
- Mesh Fixes <
- Special Modes <
- Experimental <

< Recommended

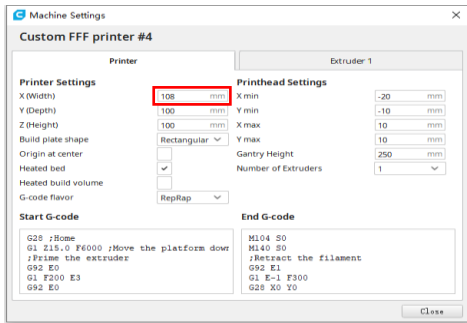
3.extensions

1. Copy or mirror printing

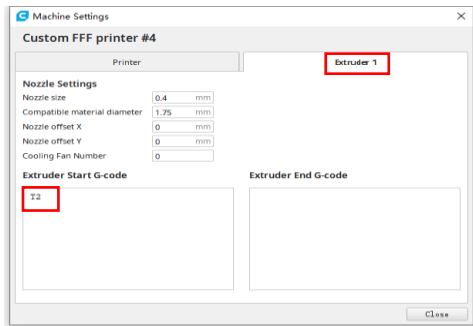
Open the basic parameter settings of the printer and set the number of extruders to "1"

1.1、Copy mode print settings

Set the X-axis width to 108mm



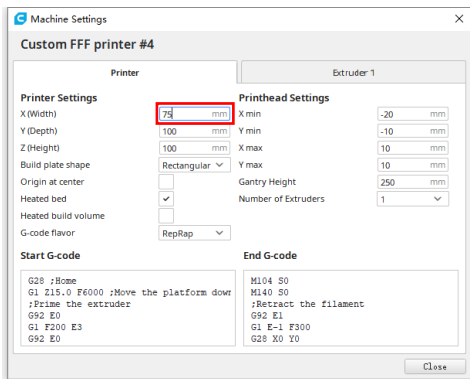
Enter "T2" in the script at the beginning of the extruder



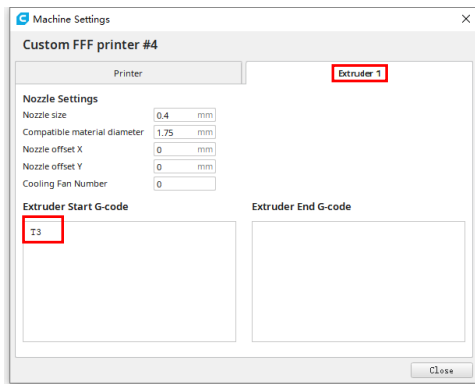
Complete basic parameter setting

1.2、Mirror printing mode

Need to set the X-axis width to 75mm



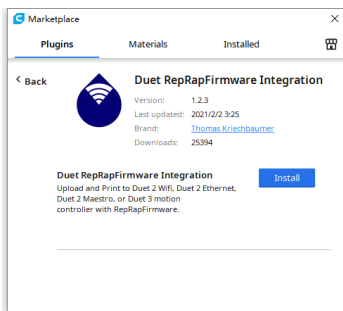
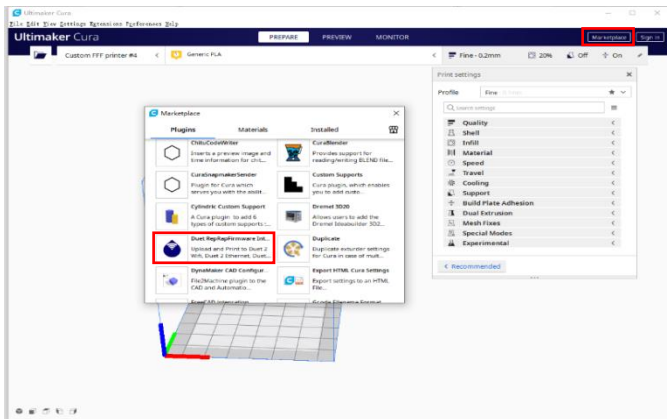
Enter "T3" in the extruder start script



Complete basic parameter setting

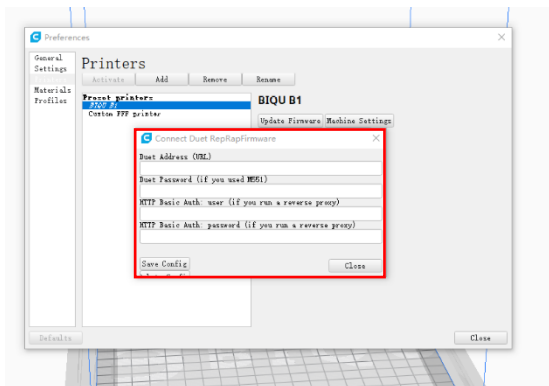
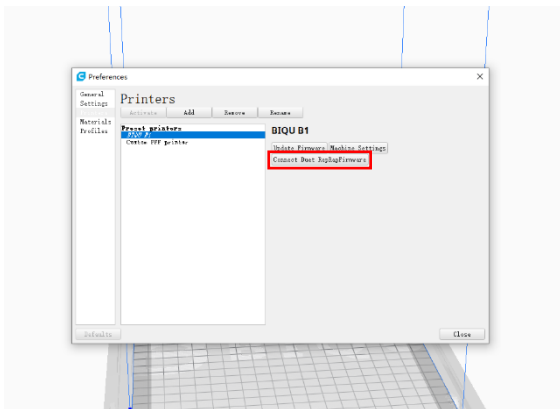
2、Print online

The DUET RRF plug-in can be installed in the plug-in market of CURA to send the CURA slice file directly to the printer for online printing.



Click "Market" in the upper right corner of CURA to download and install the DUET RRF plug-in.

After the installation is successful, open the printer's basic settings interface, and after setting your printing parameters and IP address, you can directly send the sliced file to the printer for printing via CURA.



3、Connect the printer to the WIFI network

(1) You can send the M587 S "WIFI SSID" P "PASSWORD" through the USB cable to connect the printer to the WIFI network.

(2) In the SD card slot on the motherboard, there is an SD card. Use a card reader to read the internal file, find the file CONFIG.G, open it in text format and find the semicolon before M587 ";" delete it to achieve it Features.



```
config.g - 记事本
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)
; Configuration file for SKR GTR v1.0 (firmware version 3)
; executed by the firmware on start-up
;
; generated by RepRapFirmware Configuration Tool v3.1.10+4-LPC on Tue Jan 19 2021 17:25:01 GMT+

; General preferences
G90                ; send absolute coordinates...
M83                ; ...but relative extruder moves
M550 P"BT-E3-RRF"  ; set printer name

; Network
;M587 S"WIFI SSID" P"PASSWORD" ;首次开机前成功连接到WIFI后在此行前面加注释到此行
M552 S0
M586 P0 S1         ; enable HTTP
M586 P1 S0         ; disable FTP
M586 P2 S0         ; disable Telnet

; Drives
M569 P0 S0         ; physical drive 0 goes forwards using default driver timings
M569 P1 S0         ; physical drive 1 goes forwards using default driver timings
M569 P2 S1         ; physical drive 2 goes forwards using default driver timings
M569 P3 S0         ; physical drive 3 goes forwards using default driver timings
M569 P4 S0         ; physical drive 4 goes forwards using default driver timings
M569 P5 S0         ; physical drive 5 goes forwards using default driver timings
M584 X0 Y1 Z2 U4 E3:5 ; set drive mapping
M350 X16 Y16 U16 Z16 E16 I1 ; configure microstepping with interpolation
M92 X80.00 Y80.00 Z400.00 E93.00:137.3 ; set steps per mm
M566 X900.00 Y900.00 U900.00 Z600.00 E1200.00 ; set maximum instantaneous speed changes (mm/mm)
M203 X12000.00 Y12000.00 U12000.00 Z600.00 E1200.00 ; set maximum speeds (mm/min)
M201 X500.00 Y500.00 U500.00 Z20.00 E250.00 ; set accelerations (mm/s^2)
M906 X800 Y800 U800 Z800 E800 I30 ; set motor currents (mA) and motor idle factor in per
M84 S30            ; Set idle timeout

; Axis Limits
M208 X-55 Y0 U0 Z0 S1 ; set axis minima
M208 X108 Y235 U171.2 Z250 S0 ; set axis maxima

; Endstops
M574 X1 S1 P"xstop" ; configure active-high endstop for low end on X via pin xstop
M574 U2 S1 P"x2stop" ; configure active-high endstop for low end on X via pin xstop
M574 Y1 S1 P"ystop" ; configure active-high endstop for low end on Y via pin ystop
```

However, if you choose to use the modified CONFIG file to connect to the WIFI, be sure to add ";" in front of M587 through the WEB terminal to comment it after the printer is successfully connected to the network.