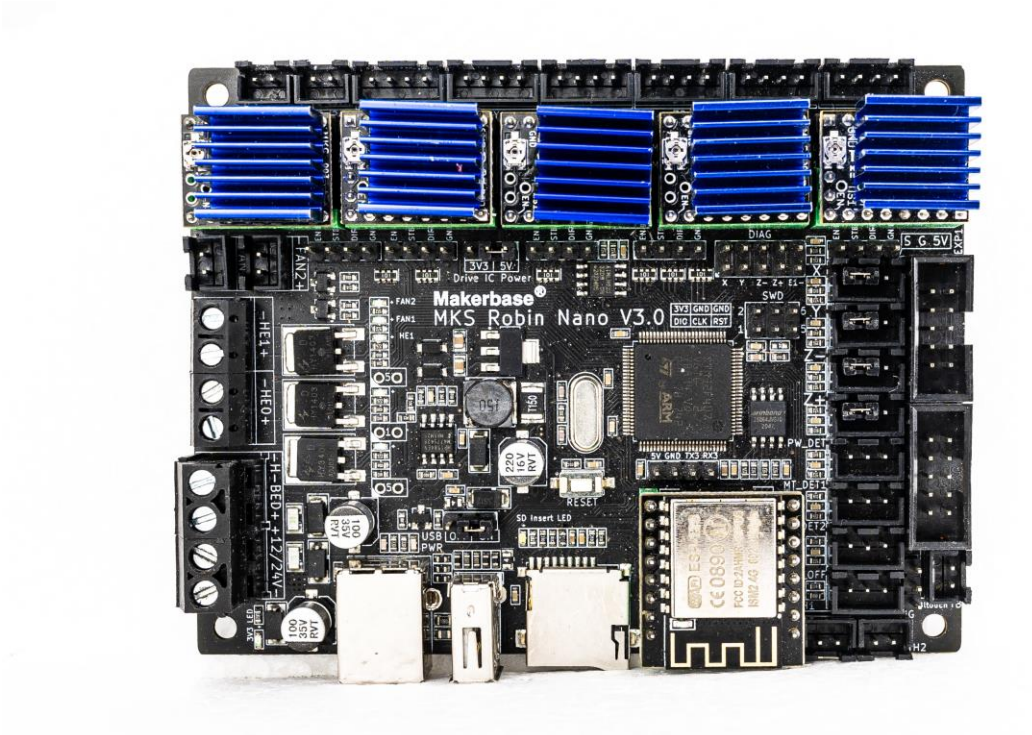
# MKS Robin nano V3.0 使用 RRF 固件教程

## 1、 硬件




在 MKS Robin Nano V3 上插上 MKS Robin WIFI 模块即可，同时需要一个 FAT32 格式的 TF 卡。Robin Nano V3 刷了 RRF 之后，就不可以使用 TS35 显示屏来显示了，只能使用跟 Duet2Wifi 一样的串口屏，有 4.3/5.0/7.0 等几种规格。

## 2、 主板固件更新

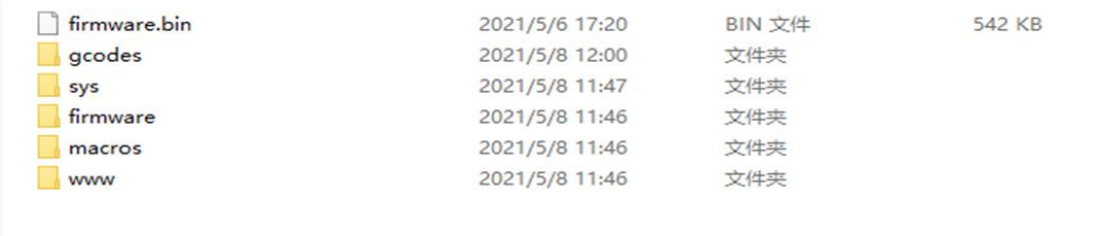
## 主板 boot loader 和主板固件更新

Robin Nano V3 原先的 BootLoader 不支持 RRF，所以需要先更新 bootloader，从 github（https://github.com/makerbase-mks/RepRapFirmware-for-MKS-Boards/tree/main/bootloader）下载以下文件复制到 TF 卡，然后上电，并等待更新完成。这个步骤是一次性的，更新后的 bootloader 同时支持 marlin 和 RRF 的更新了。

| | | | |
|---|---|---|---|
| firmware.bin | 2021/5/28 19:25 | BIN 文件 | 520 KB |
| nano_v3_bootloader.bin | 2021/5/10 12:10 | BIN 文件 | 41 KB |
| Robin_nano_v3.bin | 2021/5/10 10:41 | BIN 文件 | 39 KB |

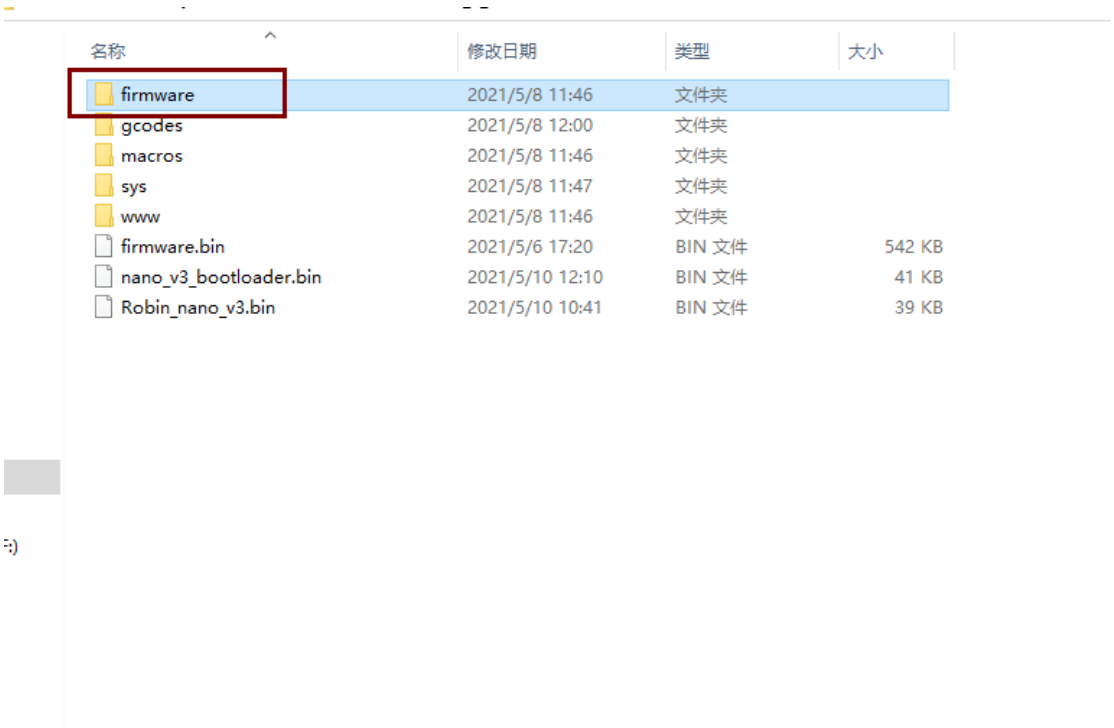
# 更新主板 RRF 固件

下载 Github(https://github.com/makerbase-mks/RepRapFirmware-for-MKS-Boards/tree/main/release%20firmware/rrf_v3.2)下的文件和文件夹，拷贝到 TF 卡上，插入主板并上电，等待主板上的 FAN1 的 led 灯亮起来，固件就更新完毕了。

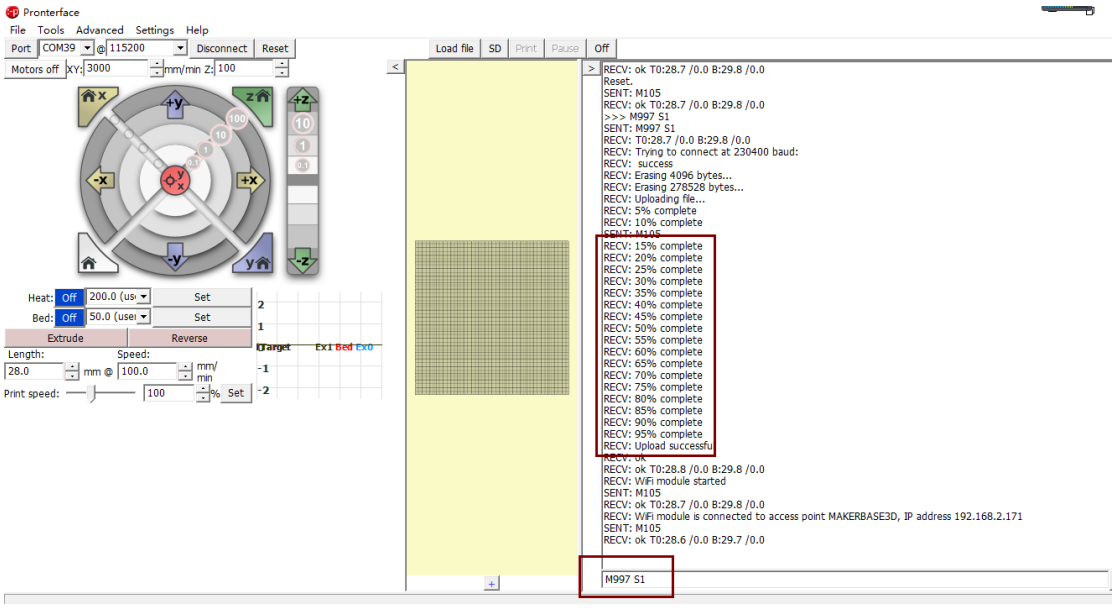



# 3. wifi 固件更新和 wifi 配置

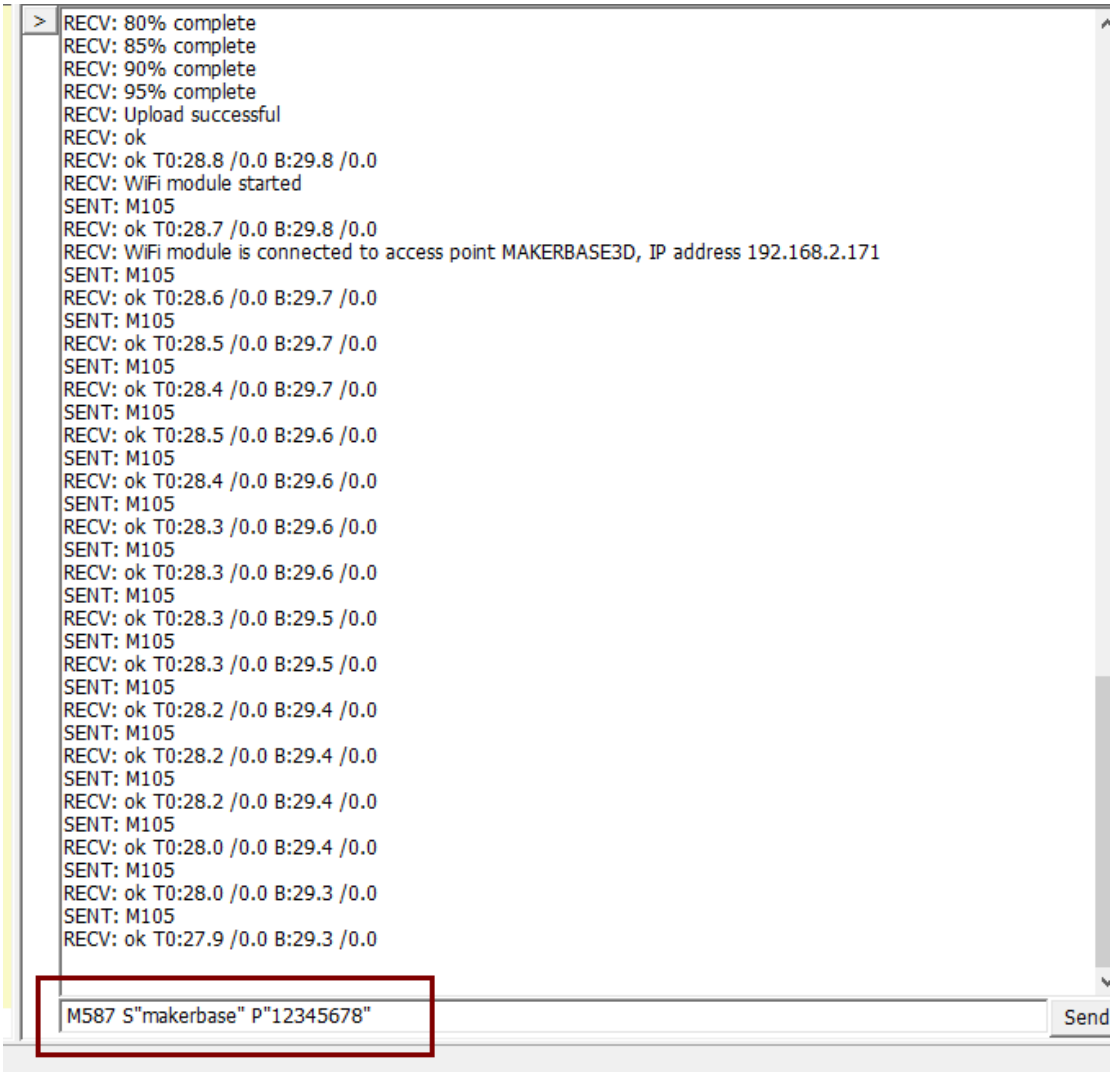
确保 wifi 固件 DuetWiFiServer.bin 在 TF 卡的 firmware 文件夹下



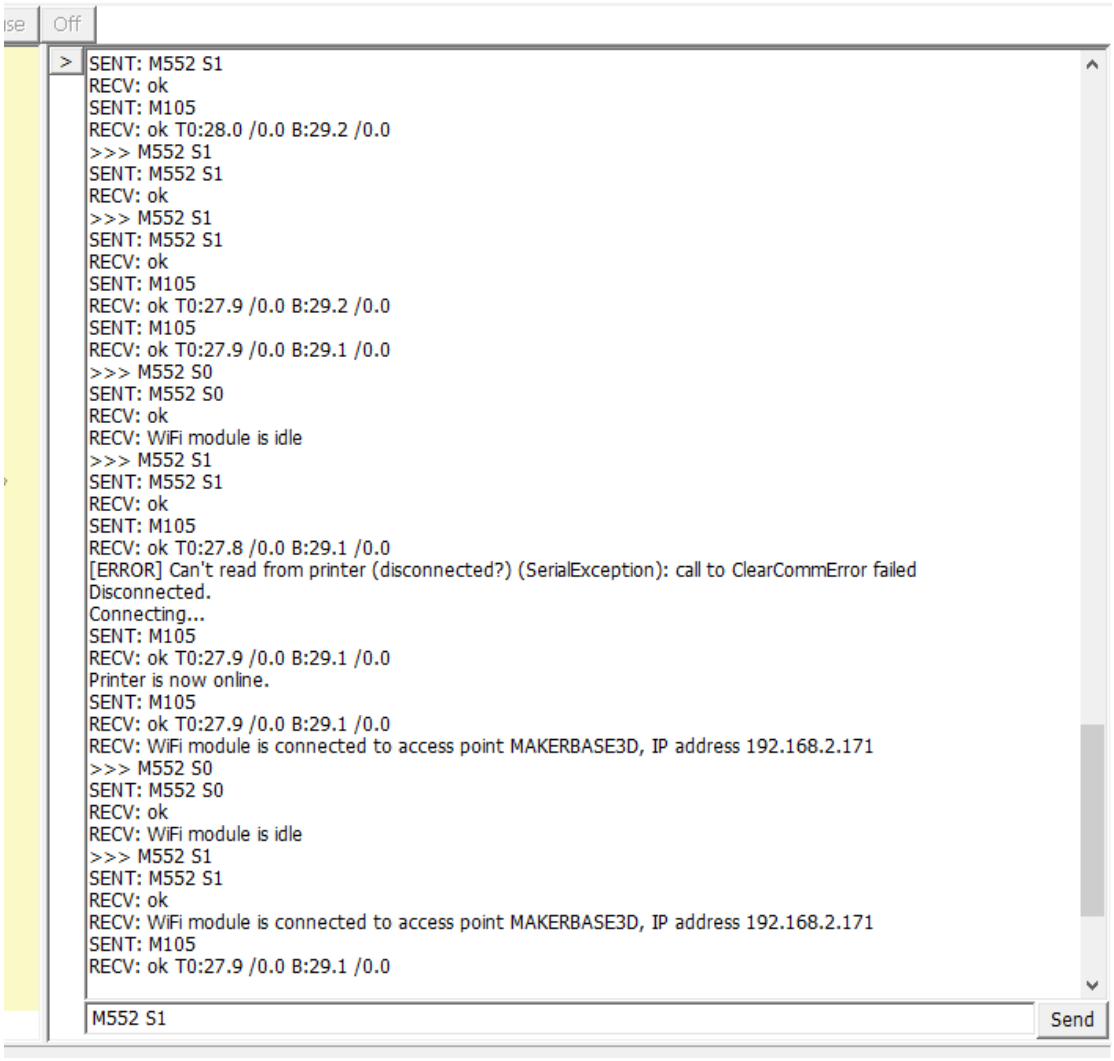

用上位机 Pronterface 或者其他电脑 Host 软件与主板连接，然后发送指令 M997 S1 进行 wifi 固件更新，固件更新过程 Pronterface 上会显示更新进度



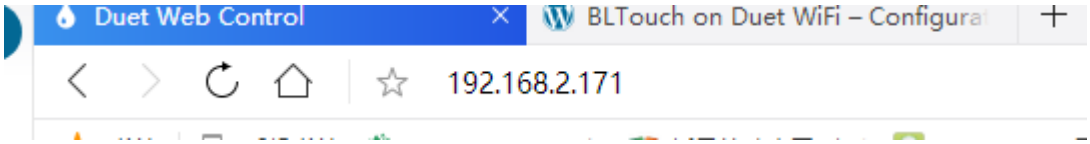

Wifi 名称和 wifi 密码设置，在上位机上发送指令 M587 S”wifi 名称” P”wifi 密码”



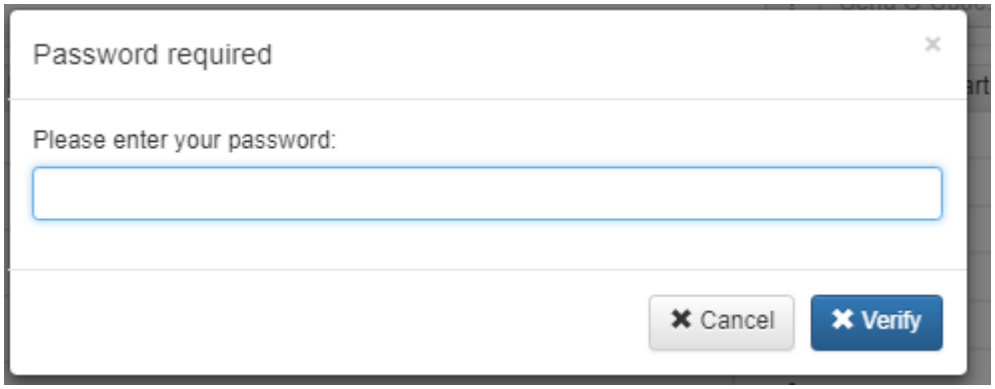

Wfi IP 查询，上位机发送指令 M552 S1




网页控制连接，在浏览器上输入 IP,点击进入



输入登录密码，该密码在配置文件中设置




```
; Configuration file for MKS SGen L v2.0 (firmware version 3)
; executed by the firmware on start-up
;
; generated by RepRapFirmware Configuration Tool v3.2.1-LPC on Wed Feb 03 2021

; General preferences
G90                                             ; send absolute coordinates...
M83                                             ; ...but relative extruder move
M550 P"My Printer"                              ; set printer name
M551 P"makerbase"                 ; Set password

M555 P2                           ; P1;like RepRapFirmare   P2;like Marlin
M575 P1 B115200 S1                ; Paneldue

; Network
M552 S1                                         ; enable network
M586 P0 S1                                      ; enable HTTP
M586 P1 S0                                      ; disable FTP
M586 P2 S0                                      ; disable Telnet

; Drives
M569 P0 S0                                      ; physical drive 0 goes forward
M569 P1 S0                                      ; physical drive 1 goes forward
M569 P2 S1                                      ; physical drive 2 goes forward
M569 P3 S0                                      ; physical drive 3 goes forward
```

# 3、机器参数配置文件修改

3.1 电机转动方向设置，S0 或 S1,转动方向不对后进行相反配置即可

M569 P0 S0 ; （X 轴）physical drive 0 goes forwards using default driver timings

M569 P1 S0 ; （Y 轴）physical drive 1 goes forwards using default driver timings

M569 P2 S1 ; （Z 轴）physical drive 2 goes forwards using default driver timings

M569 P3 S0 ;（E0 轴） physical drive 2 goes forwards using default driver timings

3.2 脉冲设置

M92 X80.00 Y80.00 Z400.00 E420.00 ; set steps per mm

3.3 最大速度、加速度设置

M566 X900.00 Y900.00 Z60.00 E120.00 ; set maximum instantaneous speed changes (mm/min)

M203 X6000.00 Y6000.00 Z180.00 E1200.00 ; set maximum speeds (mm/min)

M201 X500.00 Y500.00 Z20.00 E250.00 ; set accelerations (mm/s^2)

3.4 打印平台范围设置

; Axis Limits

M208 X0 Y0 Z0 S1 ; set axis minima

M208 X230 Y210 Z200 S0 ; set axis maxima

3.5 限位类型设置

; Endstops

M574 X1 S1 P"^xstop" ; configure active-high endstop for low end on X via pin !^xstop

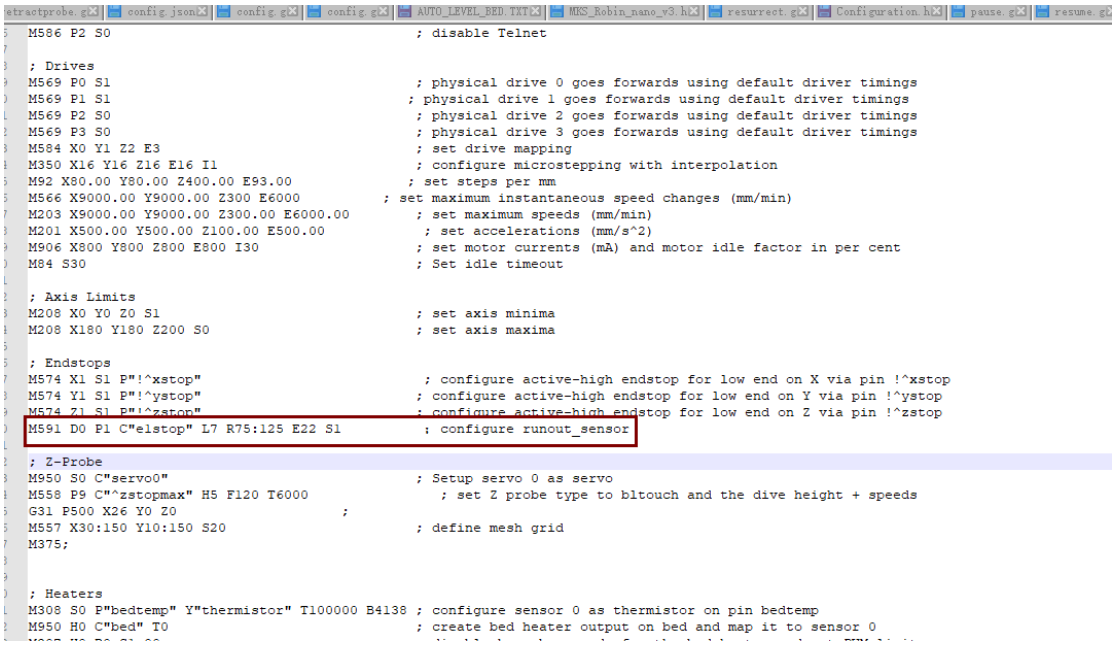
M574 Y1 S1 P"!^ystop" ; configure active-high endstop for low end on Y via pin !^ystop

M574 Z1 S1 P"!^zstop" ; configure active-high endstop for low end on Z via pin !^zstop

# 4、断料检测配置

在 enstops 配置中增加以下代码：

M591 D0 P1 C"e1stop" L7 R75:125 E22 S1 ；configure runout_sensor P1 低电平触发，P2 高电平触发



```
M586 P2 S0                                    ; disable Telnet

; Drives
M569 P0 S1                                    ; physical drive 0 goes forwards using default driver timings
M569 P1 S1                                    ; physical drive 1 goes forwards using default driver timings
M569 P2 S0                                    ; physical drive 2 goes forwards using default driver timings
M569 P3 S0                                    ; physical drive 3 goes forwards using default driver timings
M584 X0 Y1 Z2 E3                              ; set drive mapping
M350 X16 Y16 Z16 E16 I1                       ; configure microstepping with interpolation
M92 X80.00 Y80.00 Z400.00 E93.00              ; set steps per mm
M566 X9000.00 Y9000.00 Z300 E6000          ; set maximum instantaneous speed changes (mm/min)
M203 X9000.00 Y9000.00 Z300.00 E6000.00       ; set maximum speeds (mm/min)
M201 X500.00 Y500.00 Z100.00 E500.00          ; set accelerations (mm/s^2)
M906 X800 Y800 Z800 E800 I30                  ; set motor currents (mA) and motor idle factor in per cent
M84 S30                                       ; Set idle timeout

; Axis Limits
M208 X0 Y0 Z0 S1                              ; set axis minima
M208 X180 Y180 Z200 S0                        ; set axis maxima

; Endstops
M574 X1 S1 P"!^xstop"                         ; 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
M574 Z1 S1 P"!^zstop"                         ; configure active-high endstop for low end on Z via pin !^zstop
M591 D0 P1 C"e1stop" L7 R75:125 E22 S1        ; configure runout_sensor

; Z-Probe
M950 S0 C"servo0"                             ; Setup servo 0 as servo
M558 P9 C"^zstopmax" H5 F120 T6000            ; set Z probe type to bltouch and the dive height + speeds
G31 P500 X26 Y0 Z0                    ;
M557 X30:150 Y10:150 S20                      ; define mesh grid
M375;


; Heaters
M308 S0 P"bedtemp" Y"thermistor" T100000 B4138 ; configure sensor 0 as thermistor on pin bedtemp
M950 H0 C"bed" T0                             ; create bed heater output on bed and map it to sensor 0
```

# 5、使能 PanelDue 屏幕

在配文件中增加指令：

M575 P1 B115200 S2 ; enable support for PanelDue

```
; Heaters                                                                    D:\RRF\R
M308 S0 P"bedtemp" Y"thermistor" T100000 B4138 ; configure sensor 0 as the
M950 H0 C"bed" T0                              ; create bed heater output
M307 H0 B0 S1.00                               ; disable bang-bang mode fo
M140 H0                                        ; map heated bed to heater
M143 H0 S120                                   ; set temperature limit for
M143 H0 S120                                   ; set temperature limit for
M308 S1 P"e0temp" Y"thermistor" T100000 B4138  ; configure sensor 1 as the
M950 H1 C"e0heat" T1                           ; create nozzle heater outp
M307 H1 B0 S1.00                               ; disable bang-bang mode fo
M143 H1 S280                                   ; set temperature limit for

; Fans
M950 F0 C"fan0" Q500                           ; create fan 0 on pin fan0
M106 P0 S0 H-1                                 ; set fan 0 value. Thermost

; Tools
M563 P0 D0 H1 F0                               ; define tool 0
G10 P0 X0 Y0 Z0                                ; set tool 0 axis offsets
G10 P0 R0 S0                                   ; set initial tool 0 active

; Custom settings are not defined
; Miscellaneous
M575 P1 B115200 S2                           ; enable support for PanelDue
M501                                           ; load saved parameters fro
                                             ; select first tool
; Automatic power saving
M911 S21 R22 P"M913 X0 Y0 G91 M83 G1 Z3 E-5 F1000" ; Set voltage threshold
```

# 6、3Dtouch 配置

6.1 在配置文件中增加以下指令;

```
;Z-Probe
M950 S0 C"servo0"                          ; Setup servo 0 as servo
M558 P9 C"^zstopmax" H5 F120 T6000         ; set Z probe type to bltouch and the dive height + speeds
G31 P500 X26 Y0 Z2.1                       ; set X offse\Y offset1\Trigger Z height
M557 X30:150 Y10:150 S20                   ; define mesh grid
M375                                       ; Load height map
```

```
M201 X500.00 Y500.00 Z100.00 E500.00            ; set accelerations (mm/s^
M906 X800 Y800 Z800 E800 I30                    ; set motor currents (mA) a
M84 S30                                         ; Set idle timeout

; Axis Limits
M208 X0 Y0 Z0 S1                                ; set axis minima
M208 X180 Y180 Z200 S0                          ; set axis maxima

; Endstops
M574 X1 S1 P"!^xstop"                           ; configure active-high en
M574 Y1 S1 P"!^ystop"                           ; configure active-high end
M574 Z1 S1 P"!^zstop"                           ; configure active-high end
M591 D0 P1 C"e1stop" L7 R75:125 E22 S1          ; configure runout_sensor

; Z-Probe
M950 S0 C"servo0"                               ; Setup servo 0 as servo
M558 P9 C"^zstopmax" H5 F120 T6000              ; set Z probe type to bltou
G31 P500 X26 Y0 Z2.1                            ; set X offse\Y offset1\Tri
M557 X30:150 Y10:150 S20                        ; define mesh grid
M375                                            ; Load height map

; Heaters
M308 S0 P"bedtemp" Y"thermistor" T100000 B4138 ; configure sensor 0 as the
M950 H0 C"bed" T0                               ; create bed heater output
M307 H0 B0 S1.00                                ; disable bang-bang mode fo
M140 H0                                         ; map heated bed to heater
M143 H0 S120                                    ; set temperature limit for
M143 H0 S120                                    ; set temperature limit for
M308 S1 P"e0temp" Y"thermistor" T100000 B4138  ; configure sensor 1 as the
M950 H1 C"e0heat" T1                            ; create nozzle heater outp
M307 H1 B0 S1.00                                ; disable bang-bang mode fo
```

6.2 在 sys 文件夹中增加 deployprobe.g 文件，文件里面的指令为：M280 P0 S10

6.3 在 sys 文件夹中增加 retractprobe.g 文件，文件里面的指令为：M280 P0 S90

6.4 在 sys 文件夹中增加 heightmap.csv 文件，该文件用于保存测量的高度数据

6.5 在 sys 文件夹中增加 bed.g 文件，文件里面的指令为

M561

G29

6.6 在 macros 文件夹中增加控键 AUTO_BED_LEVELING,该控键用于在屏上进行操作自动调平，里面的指令为

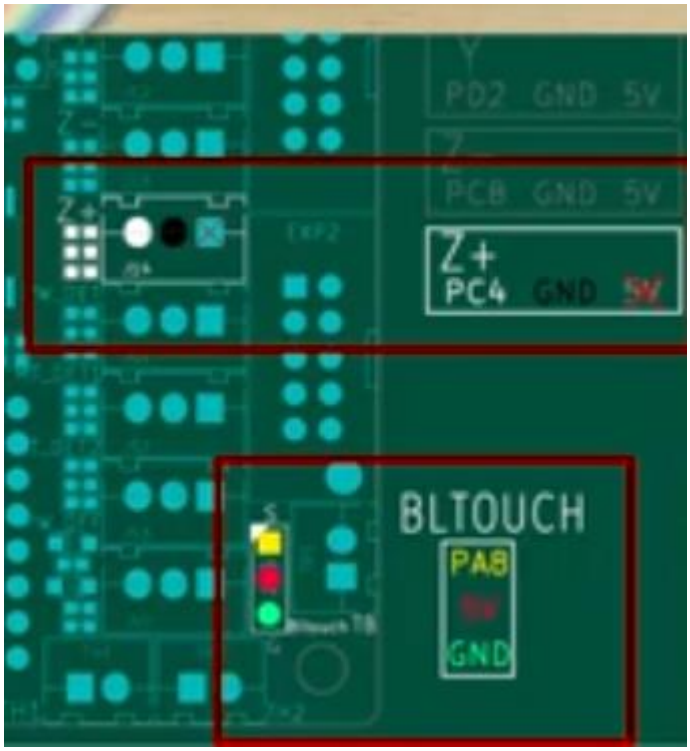
M280 P0 S160

G28

G32

6.7 在 macros 文件夹中增加控键 Alarm Release，里面的指令为 M280 P0 S160，该控键用于解除 3Dtouch 报警

6.8，3Dtouch 接线




6.9 Zoffset 调整，详情参考以下链接中的教程

https://betrue3d.dk/bltouch-on-duet-wifi-configuratio-and-usage/#macrogroup