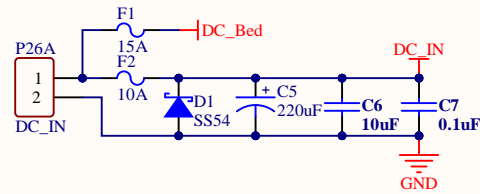
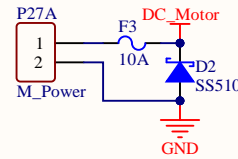


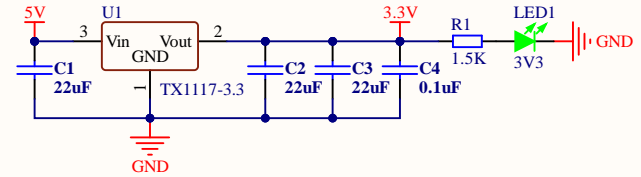
### Motherboard\_Power\_IN



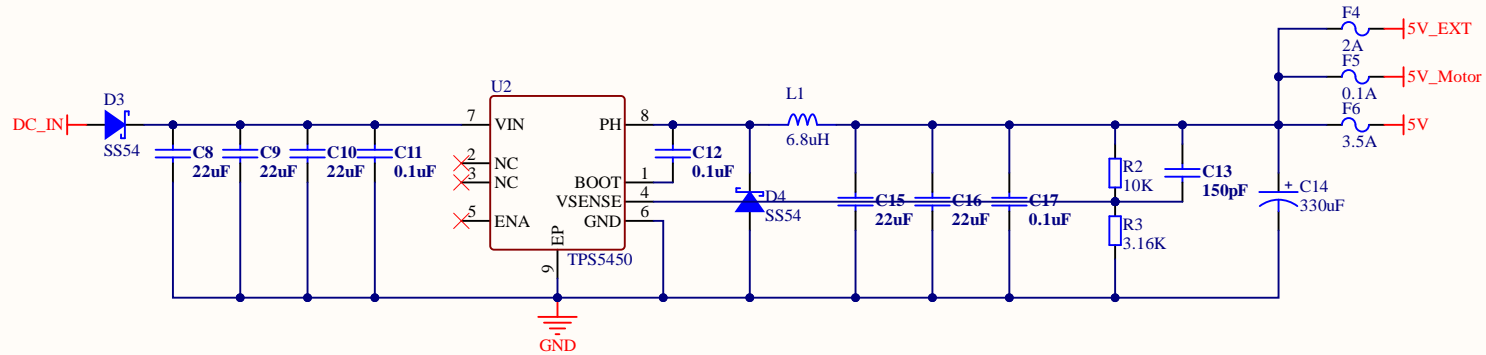
### Motor\_Power\_IN



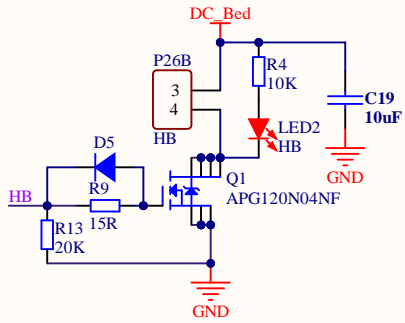
### LDO, 3.3V 1A Output



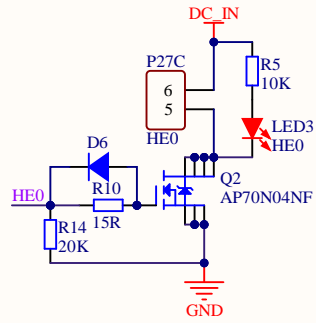
### Buck, 24V Input, 5V 5A Output



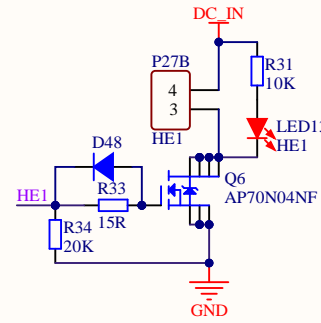
### HB



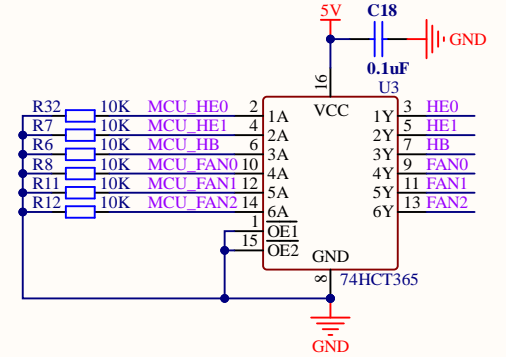
### HE0



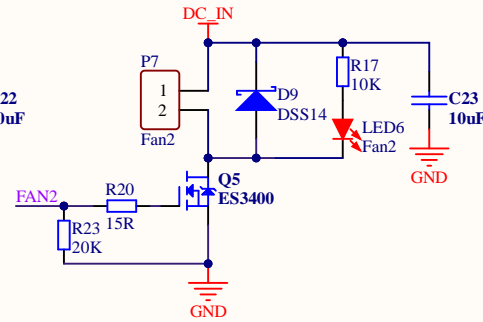
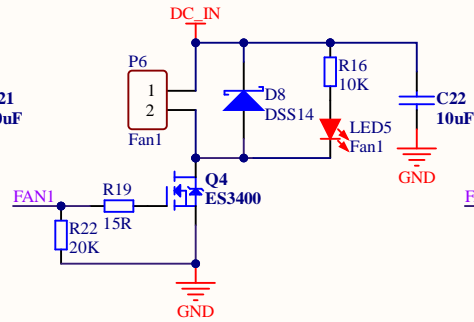
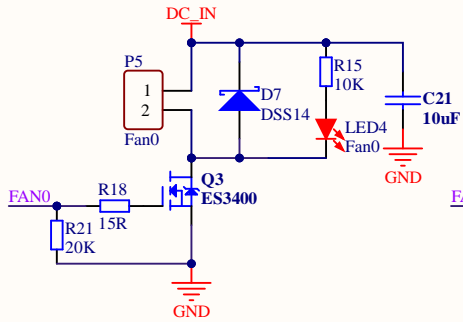
### HE1



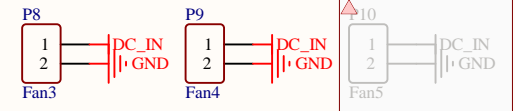
### Level Shifting

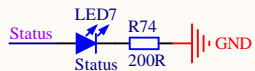
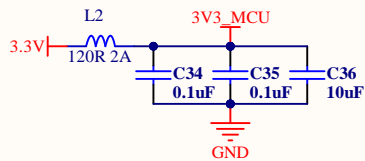


### CNC Fan



### Normally Open Fan





SPI3\_MISO SD\_MISO TMC\_MISO 1  
 SPI3\_MOSI SD\_MOSI TMC\_MOSI 2  
 MCU硬件Iout<3mA且在系统复位时不复位 SD\_CS 3  
 MCU硬件Iout<3mA且在系统复位时不复位 Y\_EN 4  
 MCU硬件Iout<3mA且在系统复位时不复位 SPI2\_CS 5

3V3\_MCU 6  
 3V3\_MCU 7  
 3V3\_MCU 8  
 GND 9

OSC\_IN 10  
 OSC\_OUT 11  
 RESET 12  
 LCD-ENCB 13  
 BEEP 14  
 LCD-BTN 15  
 LCD-ENCA 16

64 TMC\_SCK SD\_CLK SPI2\_SCK  
 63 PWRDET  
 62 X\_CS  
 61 EL\_STEP  
 60 EL\_DIR  
 59 EL\_CS  
 58 EL\_EN  
 57 EO\_EN  
 56 EO\_DIR  
 55 EO\_STEP  
 54 Z\_DIR  
 53 Z\_EN  
 52 Z\_STEP  
 51 EO\_CS  
 50 Z\_CS  
 49 Y\_CS

PC10  
 PB9  
 PB8  
 PB7  
 PB6  
 PB5  
 PB4  
 PB3  
 PD6  
 PD5  
 PD4  
 PD3  
 PD2  
 PD1  
 PD0  
 PC9

PC8  
 PA15  
 PA14-BOOT0  
 PA13  
 PA12[PA10]  
 PA11[PA9]  
 PA10  
 PD9  
 PD8  
 PC7  
 PC6  
 PA9  
 PA8  
 PB15  
 PB14  
 PB13

U6  
 STM32G0B1RET6

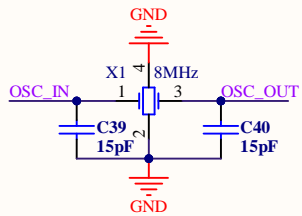
48 Y\_STEP  
 47 Y\_DIR  
 46 BOOT0 SWCLK X\_STEP  
 45 SWDIO X\_EN  
 44 STM\_USB\_P  
 43 STM\_USB\_N  
 42 X\_DIR  
 41 TFT\_RX  
 40 TFT\_TX  
 39 MCU\_RGB  
 38 Z\_Endstop  
 37 PS-ON  
 36 MCU\_FANO  
 35 MCU\_FANI  
 34 MCU\_FAN2  
 33 CAN\_TX

USART3\_RX  
 USART3\_TX  
 Status  
 TIM1\_CH1 MCU硬件内置下拉电阻  
 TIM15\_CH2 MCU硬件内置下拉电阻  
 TIM15\_CH1  
 FDCAN2\_TX

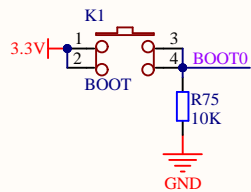
PA0  
 PA1  
 PA2  
 PA3  
 PA4  
 PA5  
 PA6  
 PA7  
 PA8  
 PA9  
 PA10  
 PA11  
 PA12  
 PA13  
 PA14  
 PA15  
 PB0  
 PB1  
 PB2  
 PB3  
 PB4  
 PB5  
 PB6  
 PB7  
 PB8  
 PB9  
 PB10  
 PB11  
 PB12  
 PB13  
 PB14  
 PB15

进入DFU, PA2、PA3、PA6、PA9、PA10、PC10、PC11输出高电平

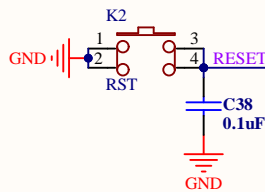
### Crystal



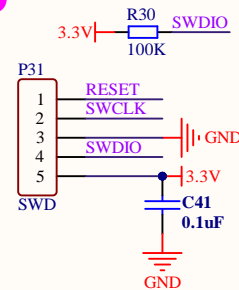
### BOOT



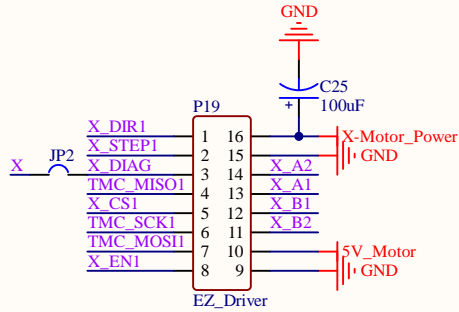
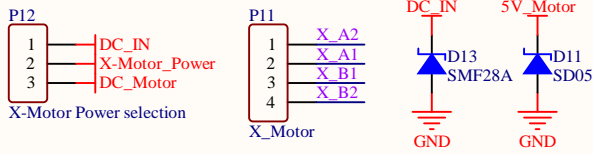
### Reset



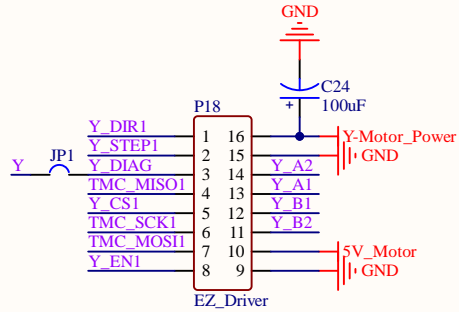
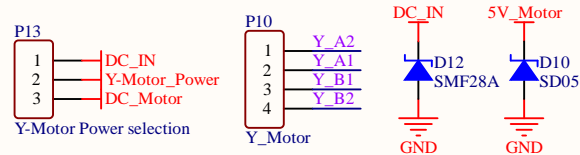
### SWD



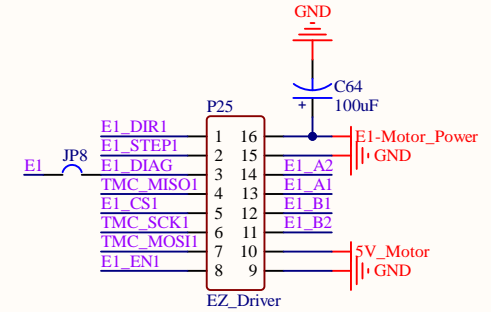
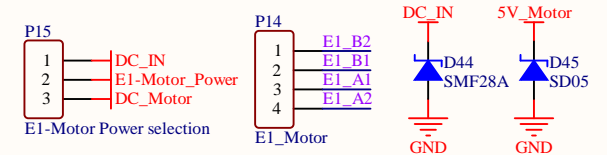
# X\_Motor



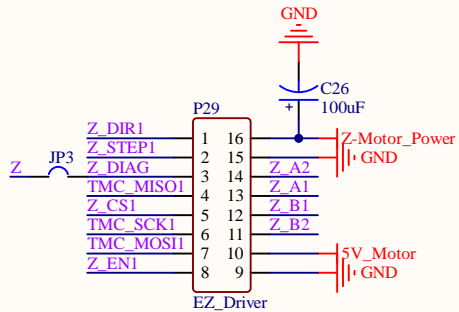
# Y\_Motor



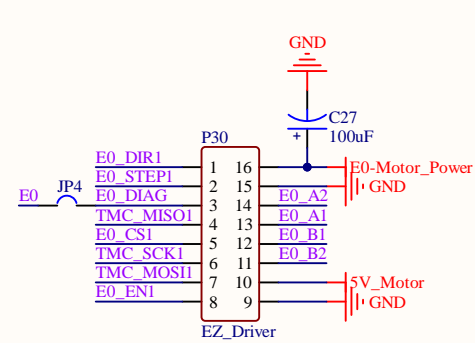
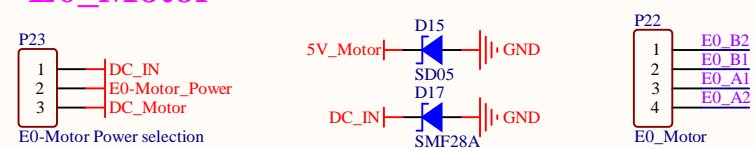
# E1\_Motor

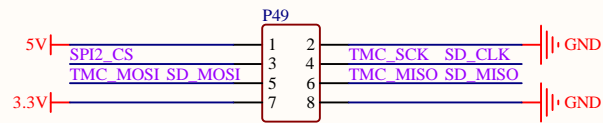
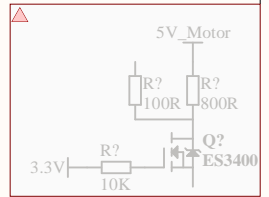
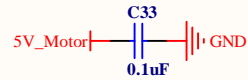
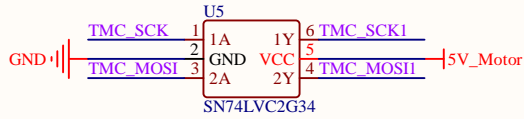
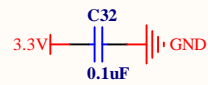
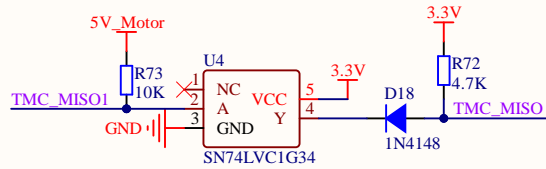
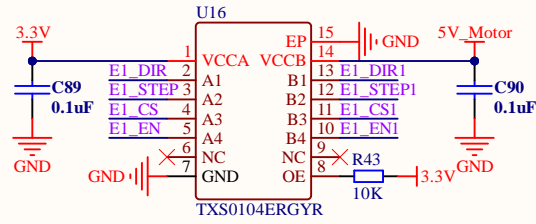
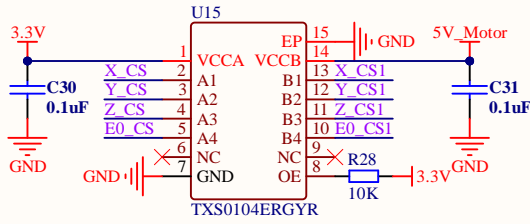
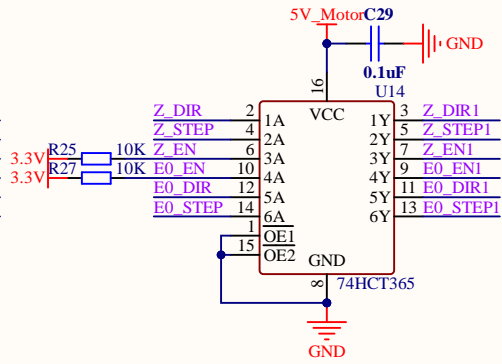
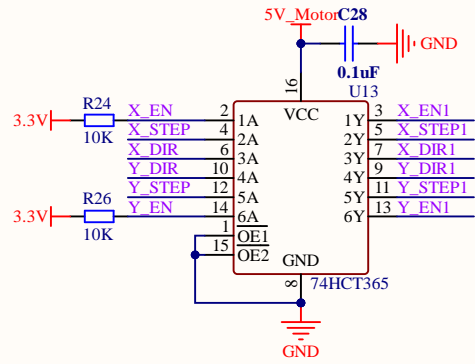


# Z\_Motor

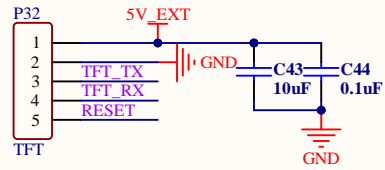


# E0\_Motor



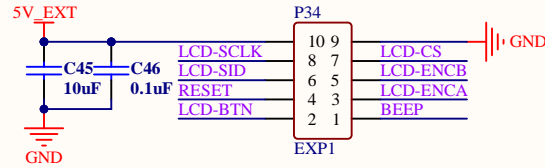


# TFT



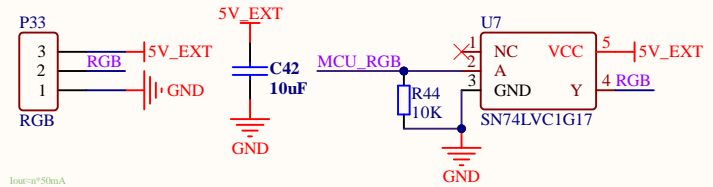
Iout<150mA

# LCD



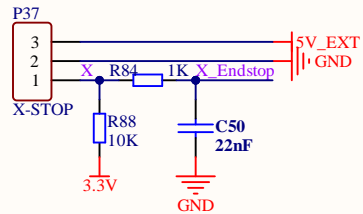
Iout<50mA  
串口线使用普通IO

# RGB

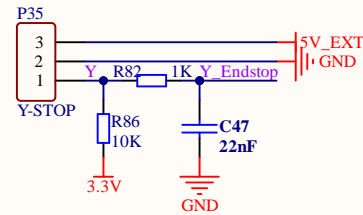


Iout<=50mA

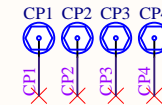
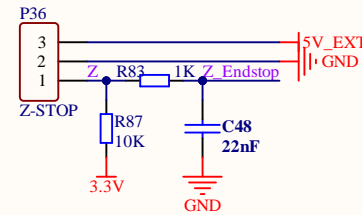
# X\_Endstop



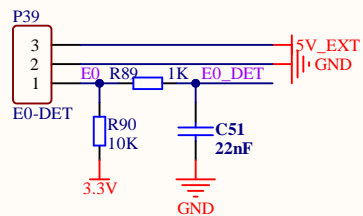
# Y\_Endstop



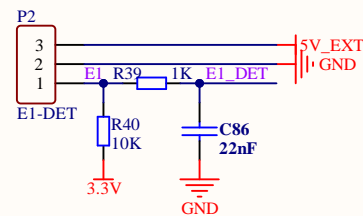
# Z\_Endstop



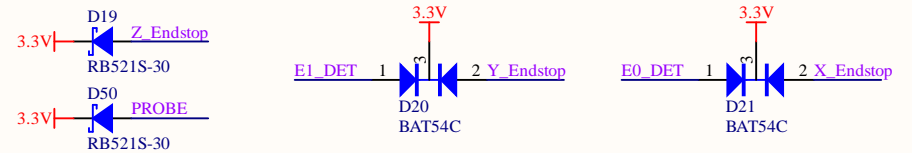
# E0-DET



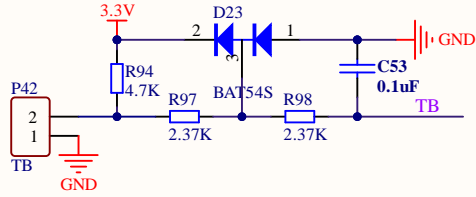
# E1-DET



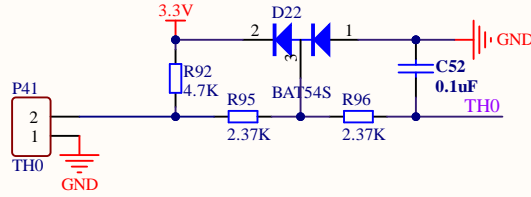
# IO Input Protection



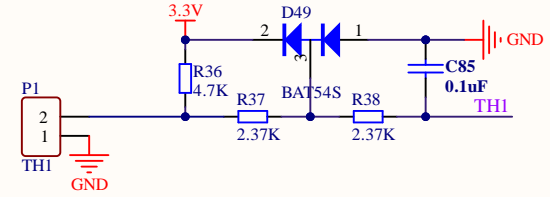
### TB\_Thermistor



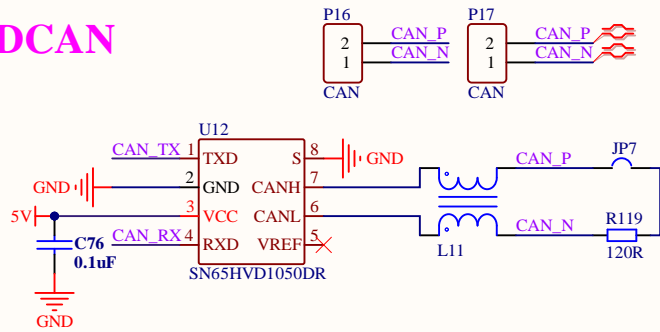
### TH0\_Thermistor



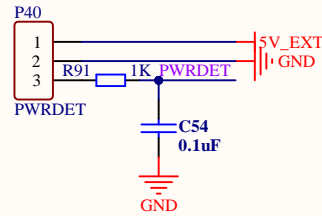
### TH1\_Thermistor



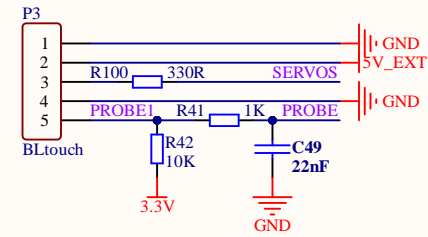
### FDCAN



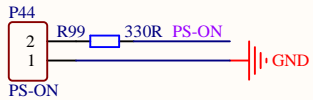
### PWRDET



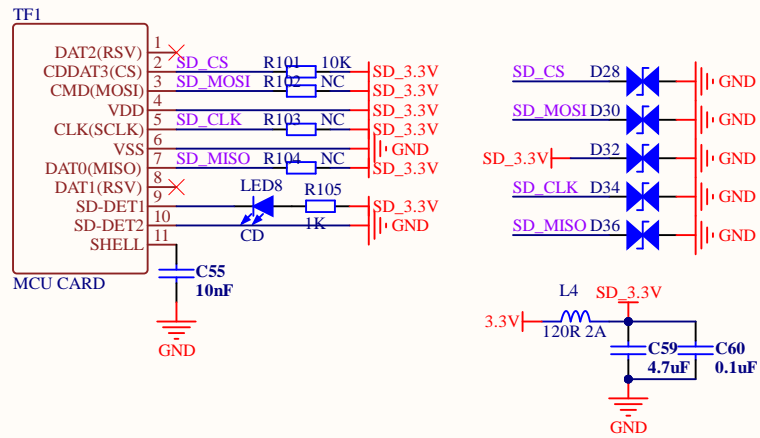
### BLtouch



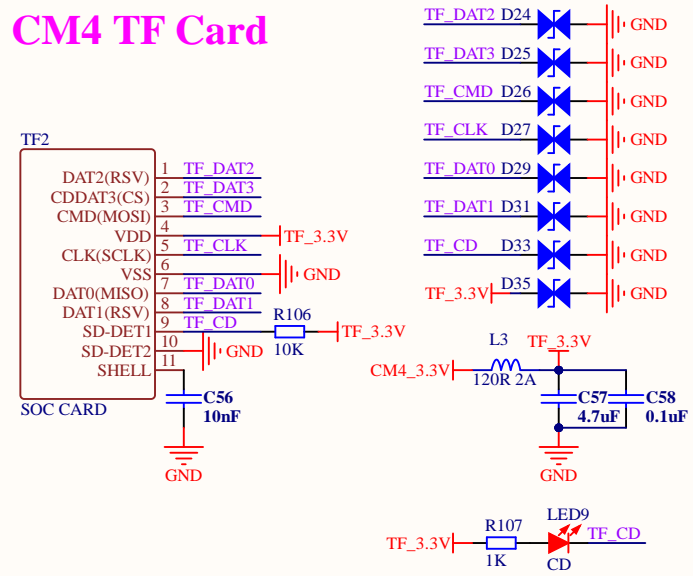
### PS-ON



## TF Card on Board

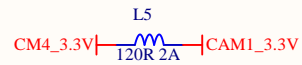
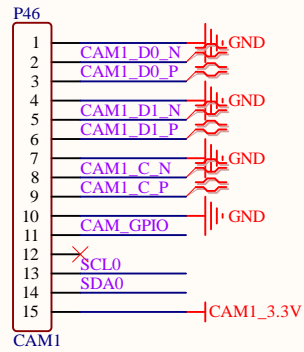


## CM4 TF Card

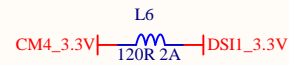
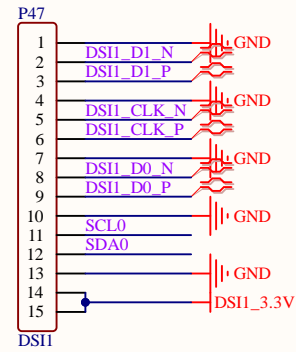




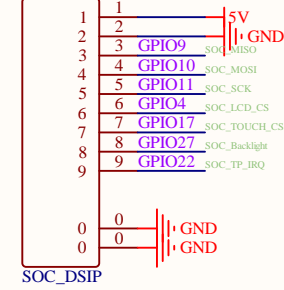
### CAM1

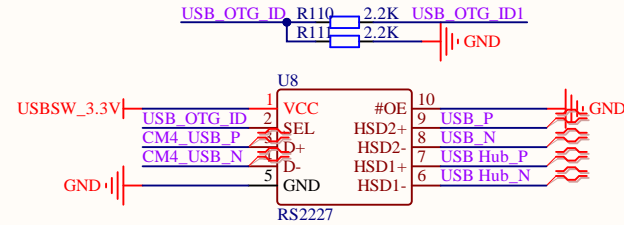
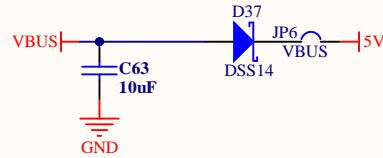
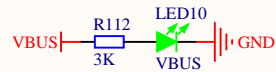
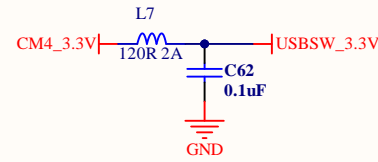
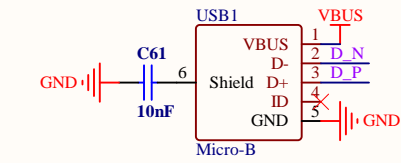


### DSI1



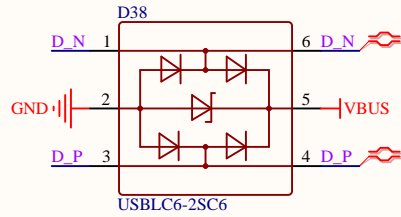
### P45

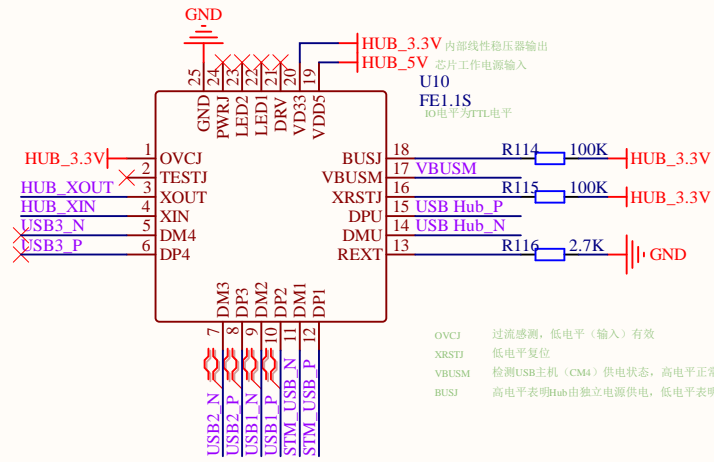
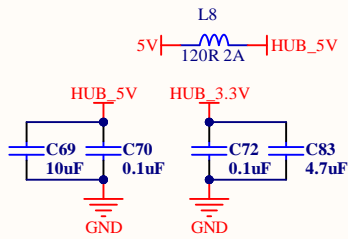
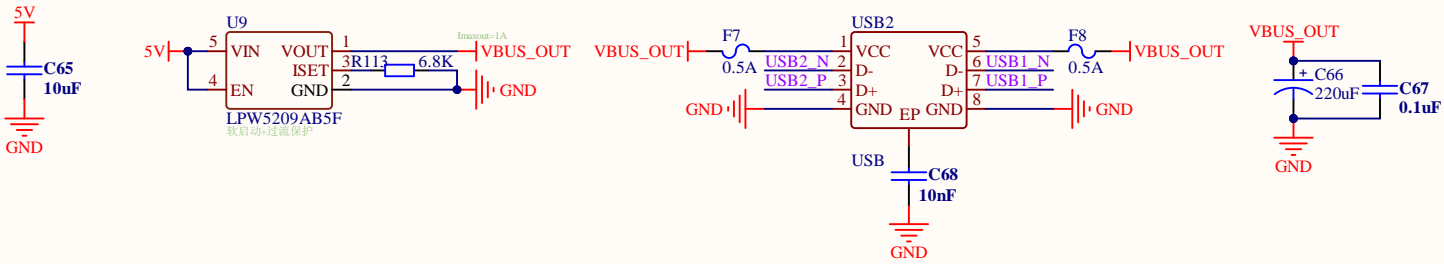




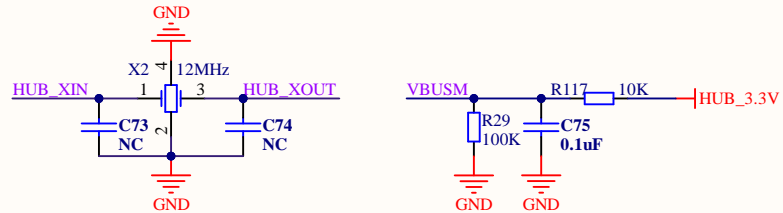
USB\_OTG\_ID1=VBUS时

VBUS=5V	V <sub>USB_OTG_ID1</sub> =2.518V	CM4为USB设备	D <sub>+</sub> →HSD2+, D <sub>-</sub> →HSD2-
VBUS=Floating	V <sub>USB_OTG_ID1</sub> =0.15V	CM4为USB主机	D <sub>+</sub> →HSD1+, D <sub>-</sub> →HSD1-





OVCJ 过流检测, 低电平(输入)有效  
 XRSTJ 低电平复位  
 VBUSM 检测USB主机(CM4)供电状态, 高电平正常, 低电平故障  
 BUSJ 高电平表明Hub由独立电源供电, 低电平表明Hub由上游端口供电, 下游端口只被提供100mA电流



1

2

3

4

A

A

B

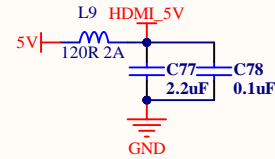
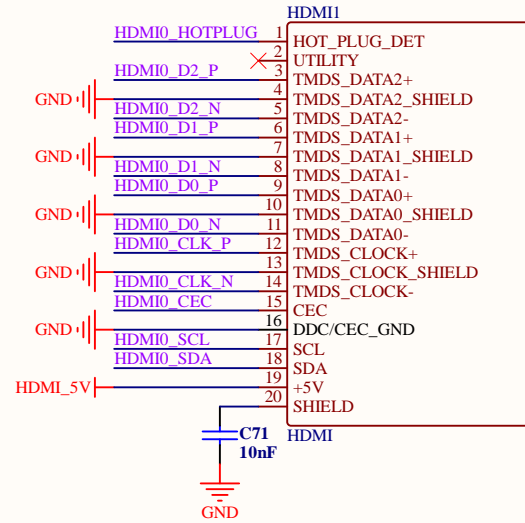
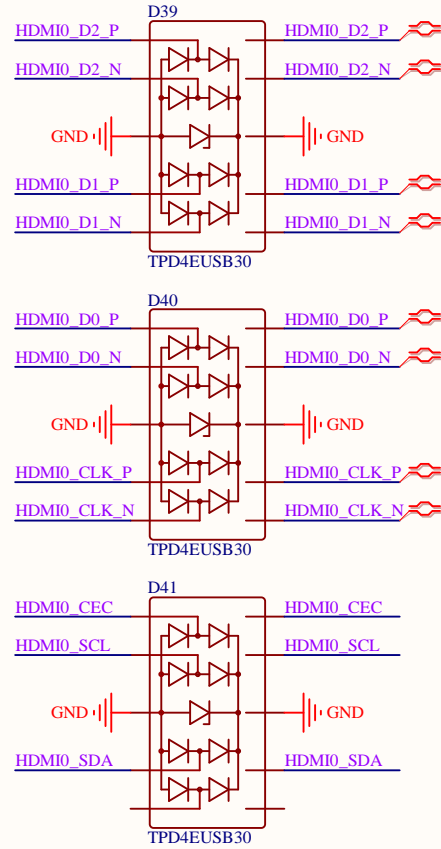
B

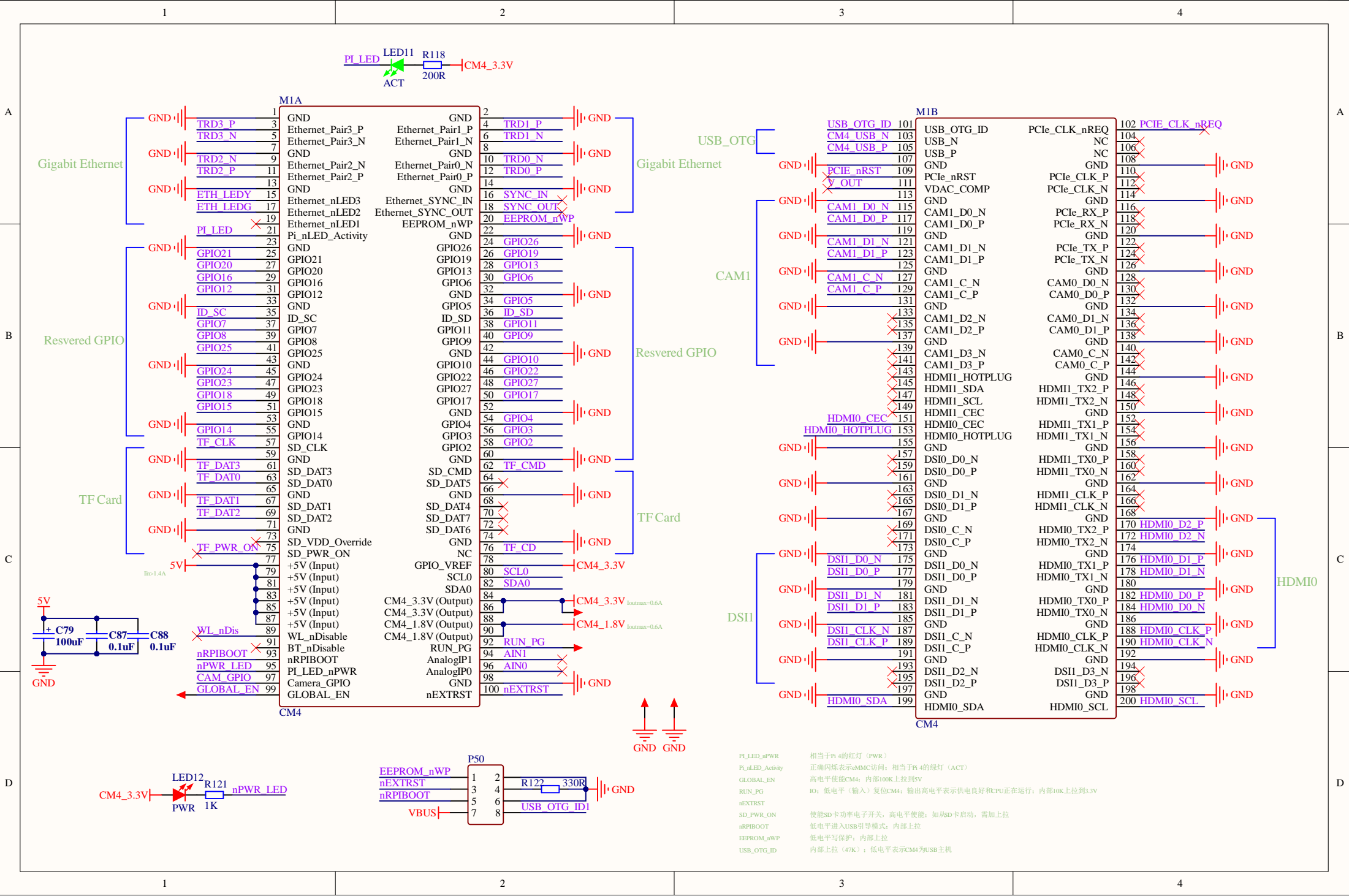
C

C

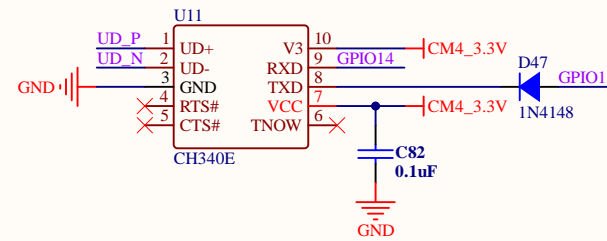
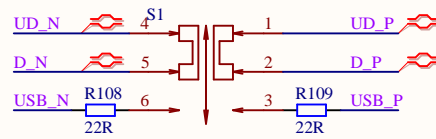
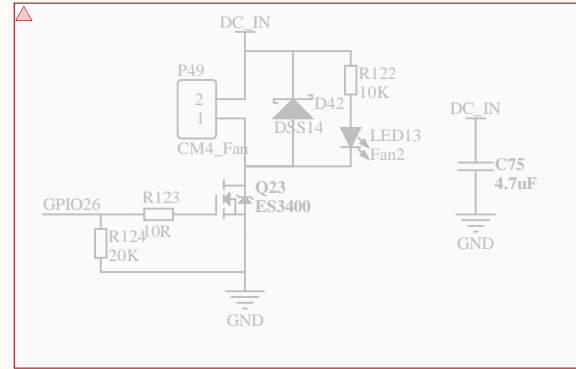
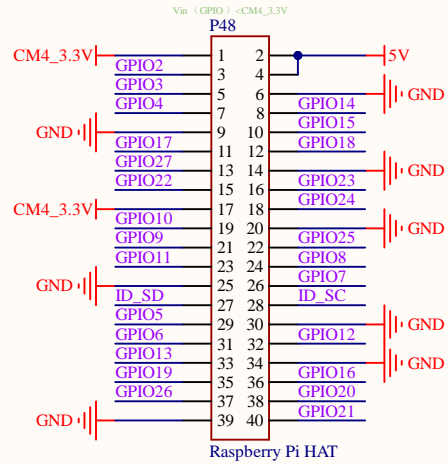
D

D





PL\_LED\_nPWR 相当于P4的红灯 (PWR)  
 PL\_nLED\_Activity 正确闪烁表示eMMC访问; 相当于P4的绿灯 (ACT)  
 GLOBAL\_EN 高电平使能CM4; 内部100K上拉到5V  
 IO; 低电平 (输入) 复位CM4; 输出高电平表示供电良好和CPU正在运行; 内部10k上拉到3.3V  
 nEXTRST  
 SD\_PWR\_ON 使能SD卡功率电子开关, 高电平使能; 如从SD卡启动, 需加上拉  
 nPIBOOT 低电平进入USB引导模式; 内部上拉  
 EEPROM\_nWP 低电平写保护; 内部上拉  
 USB\_OTG\_ID 内部上拉 (47K); 低电平表示CM4为USB主机



A

B

C

D

A

B

C

D

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