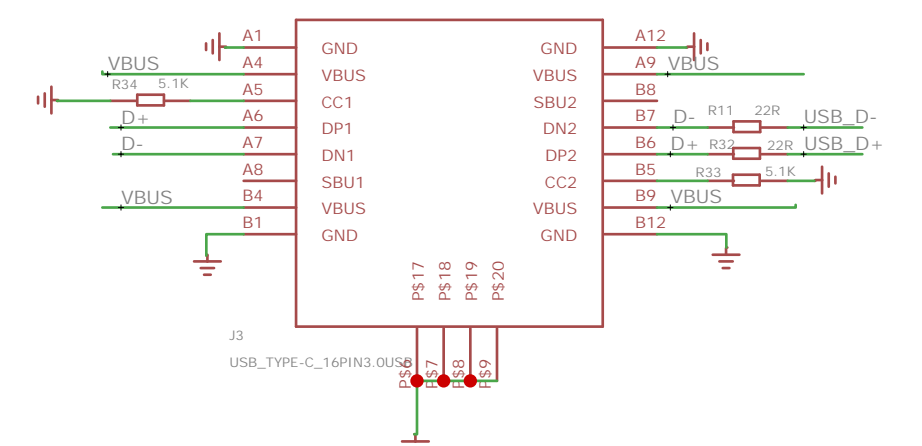
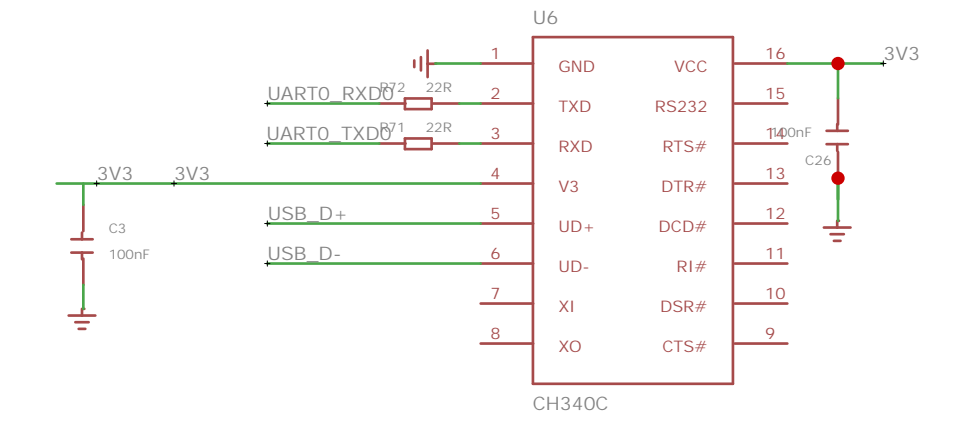


### USB type-c座子

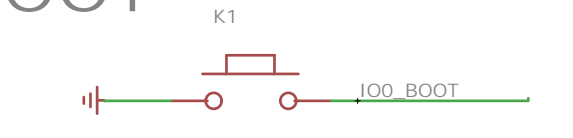


### USB转串口



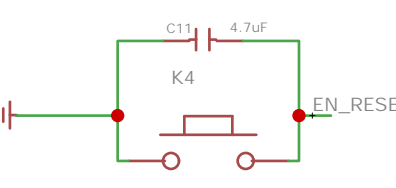
## 主控 ESP32-WROOM-32-N4

### BOOT



IO0:  
低电平：下载启动  
高电平：SPI启动

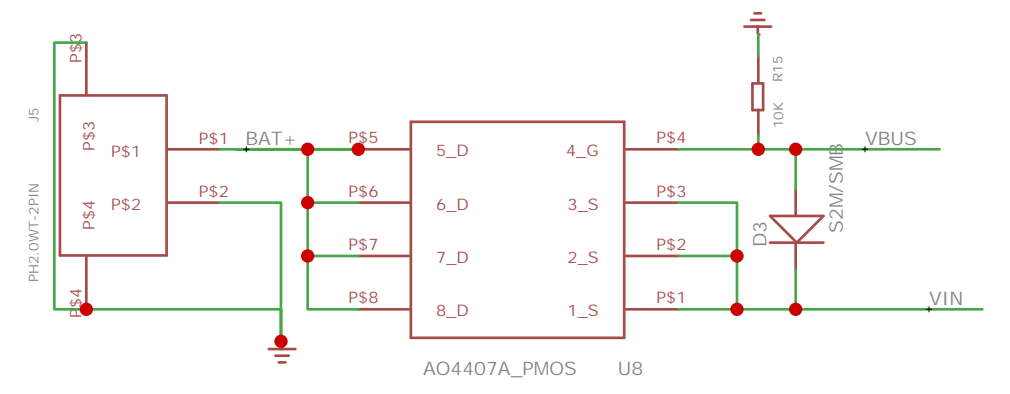
### RESET



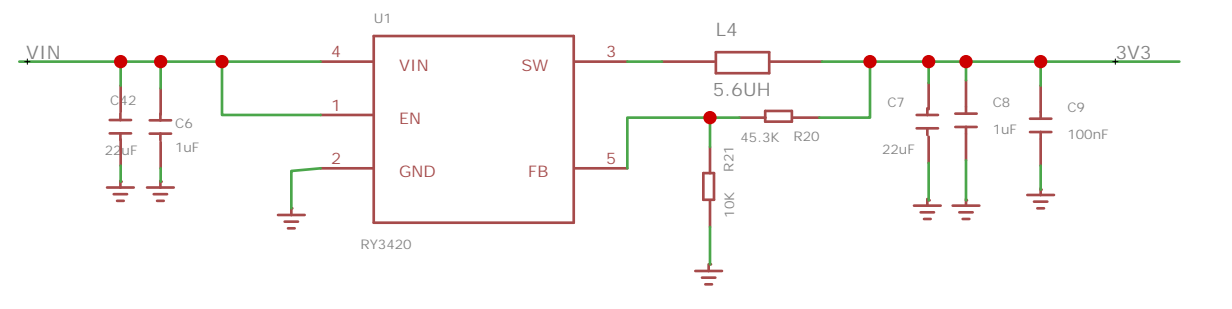
EN:  
高电平：芯片使能；  
低电平：芯片关闭。



### 电池及控制电路

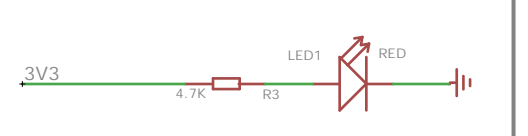


## 系统3.3V电源

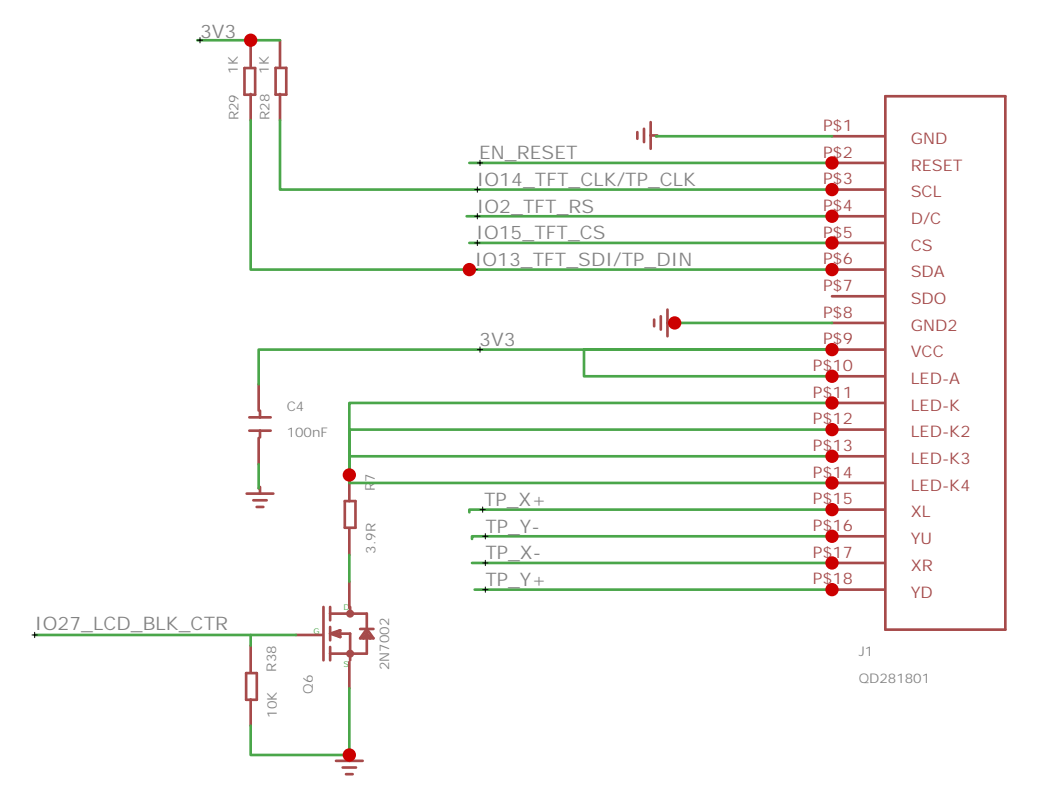


$$V_{out} = 0.6 * (R20/R21 + 1) = 3.3V$$

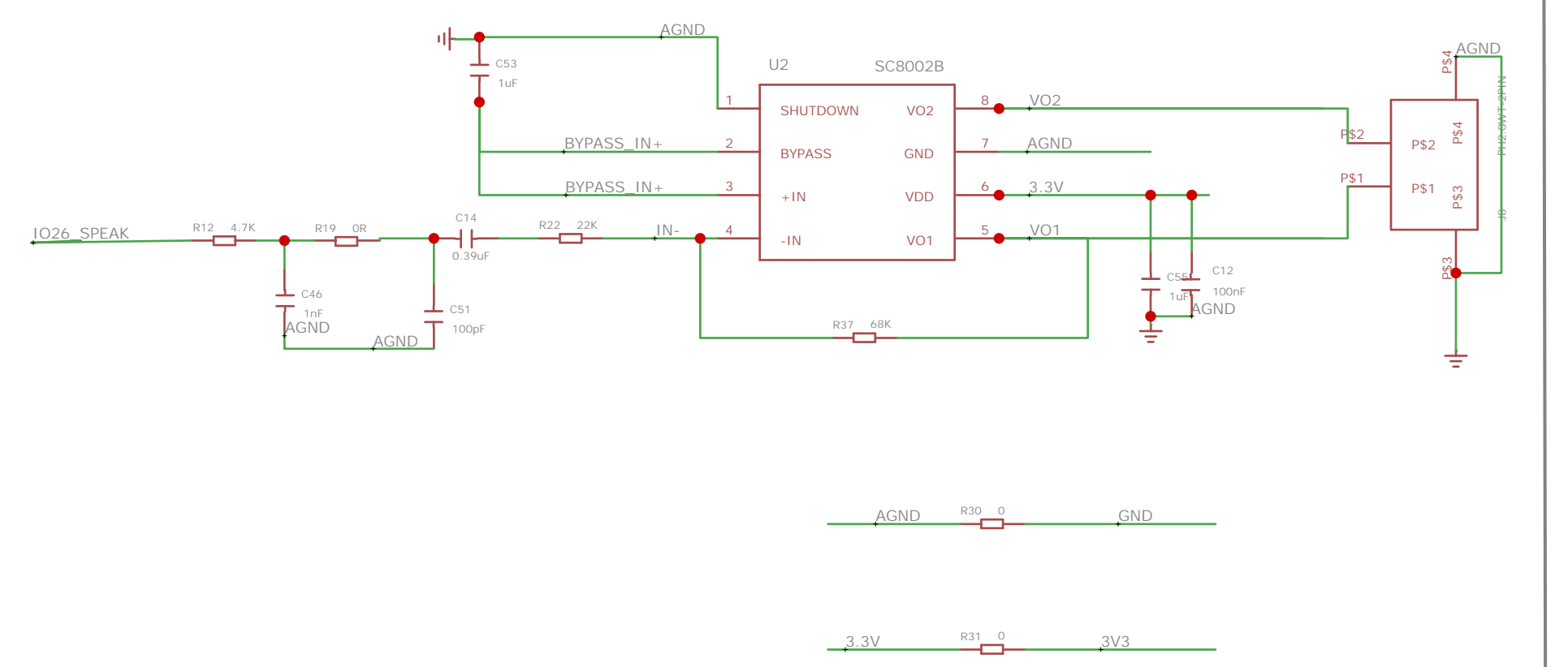
### POWER LED



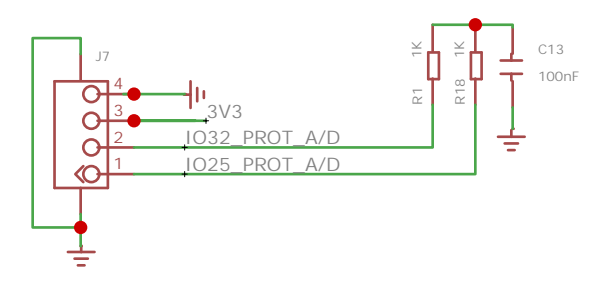
### LCD+TP 接口



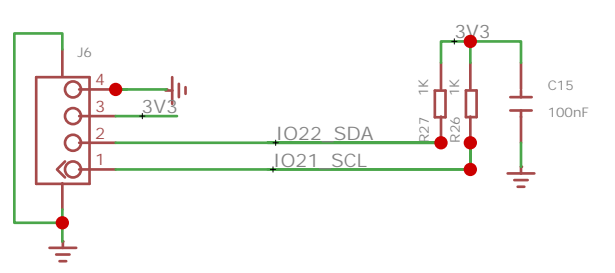
### SPEAK 功放



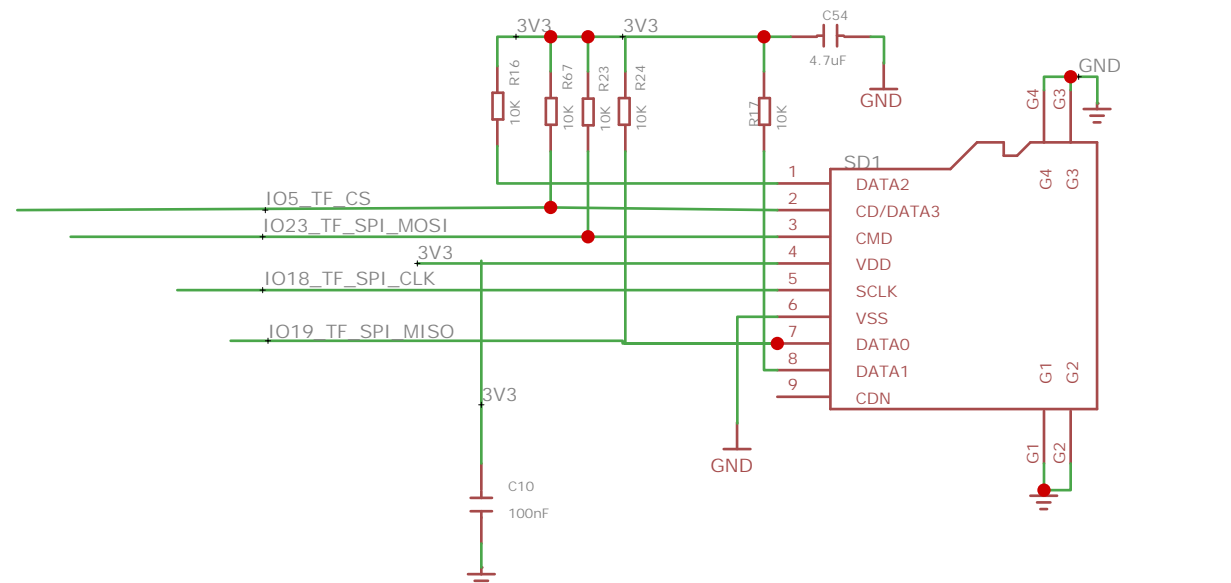
### GPIO A/D接口 可以扩展UART口 可以扩展I2C口



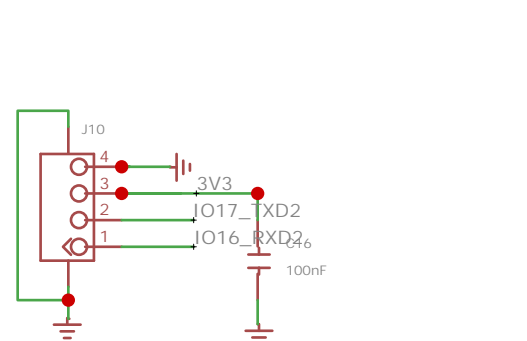
### I2C接口



### TF Card



### UART1接口



### TP驱动: XPT2046

