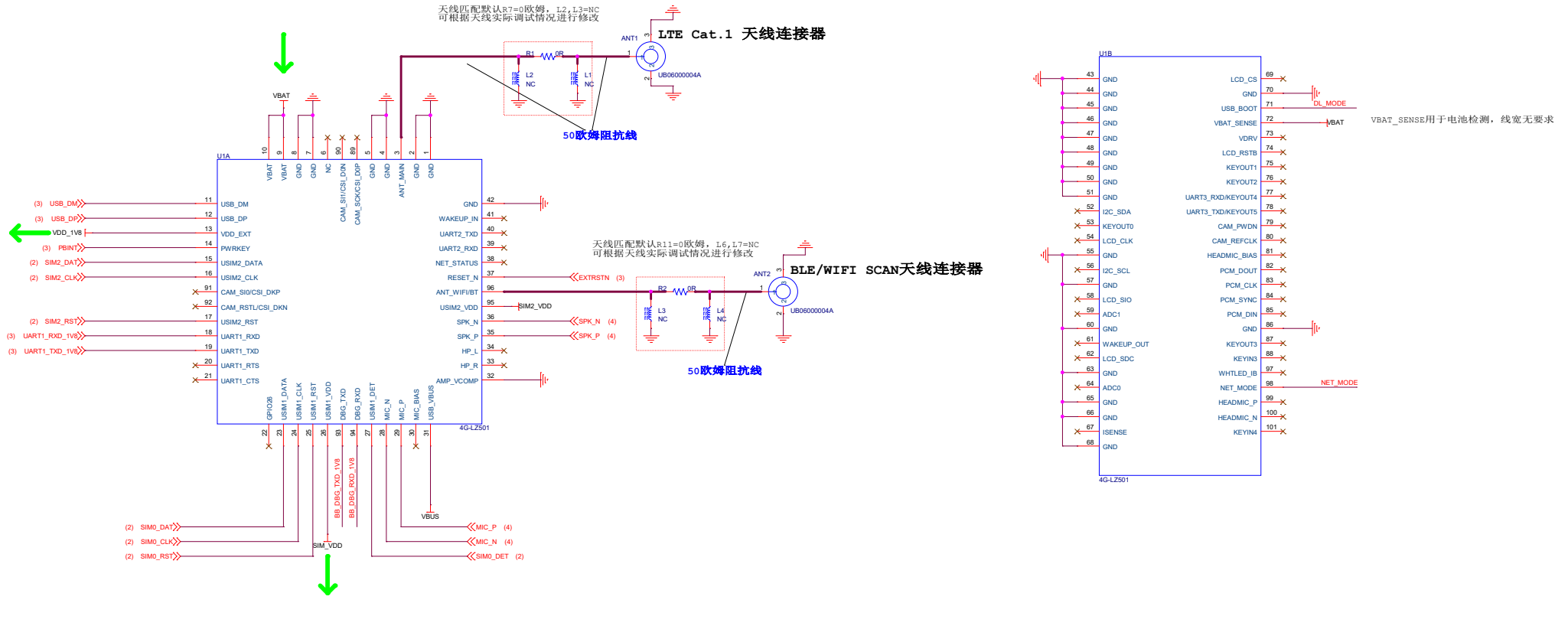
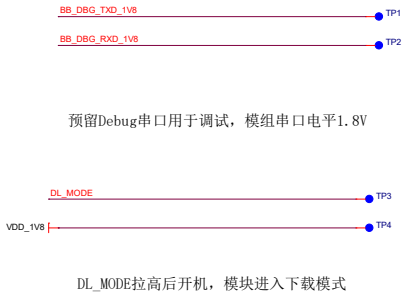


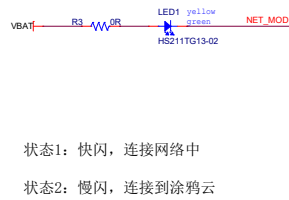
# 模组接口



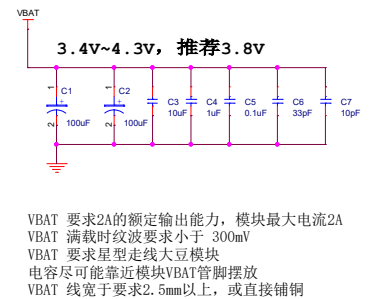
## 测试点



## 状态指示灯

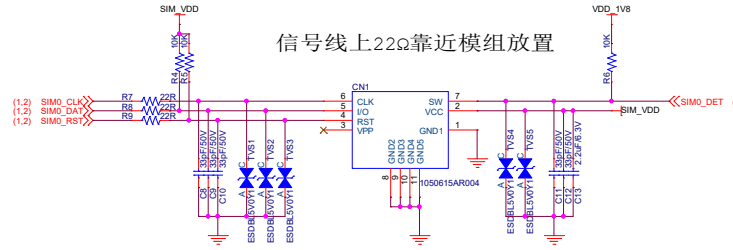


## VBAT

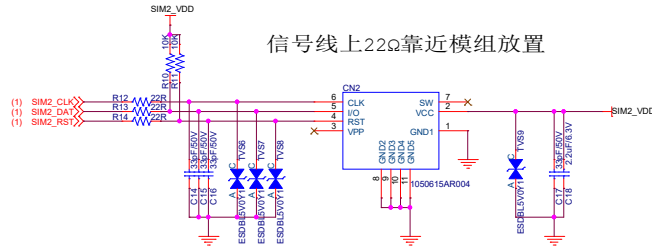


# SIM卡座和ESIM 二选一

## 2FF/3FF SIM卡座

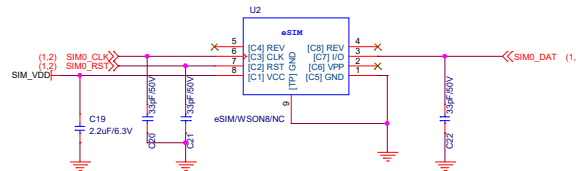


SIM卡座的SW管脚，  
有卡时为悬空，无卡时短接到地  
内置SIM卡座不允许客户插拔的设备，TVS器件可以NC



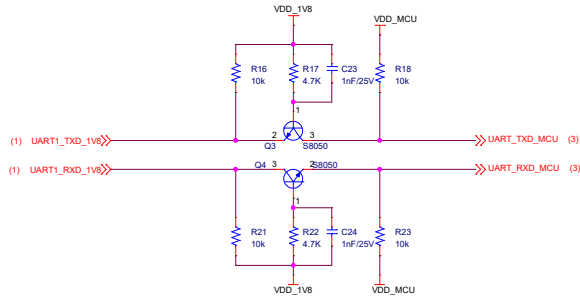
## ESIM MFF2

1.8V WSON 5x6:



# 串口MCU对接

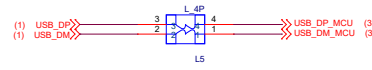
使用涂鸦串口协议，可以通过串口发送数据直接唤醒模块



模块串口为1.8V电平，需要根据MCU电平做电平转换

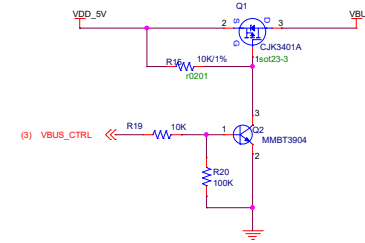
# USB MCU对接

使用涂鸦云模式，RNDIS模式，ECM模式等，通过USB Suspend或VBUS来控制睡眠



建议MCU与模块间USB通信串联共模电感L8以滤除EMI干扰，电感尽量靠近模块侧放置。无干扰时可以用两颗0R代替。

来自底板5V电源

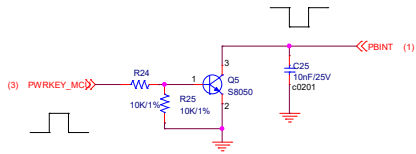


VBUS为USB检测功能，VBUS\_CTRL用来控制VBUS的通断。睡眠控制：

1. 主机USB支持Suspend，可以通过USB Suspend使模组进入睡眠。
2. 主机USB不支持Suspend时，通过断开VBUS来使模组进入睡眠。

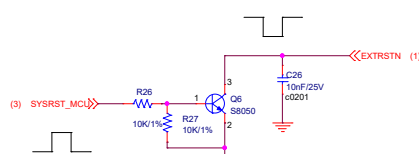
# 控制接口

## 模块开机控制

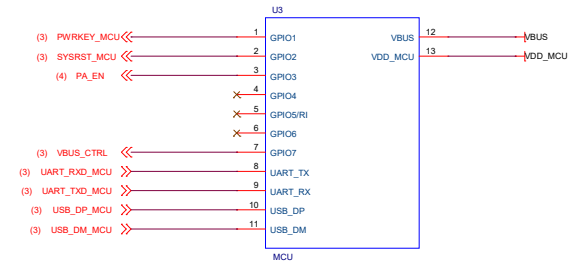


PWRKEY可以通过MCU控制，或者直接串联0R拉低自动开机

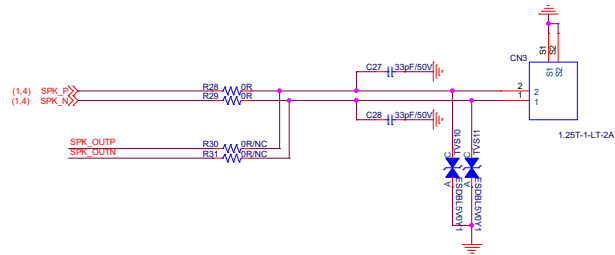
## 模块复位控制



# 主控MCU

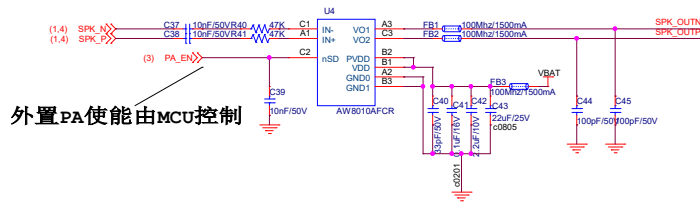


### SPK



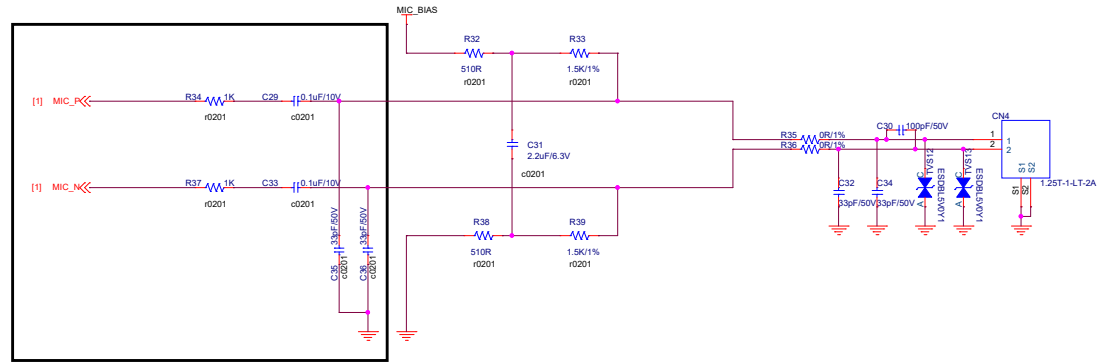
模组内部功放为AB类功放，支持600mW输出，扬声器8欧姆

### 外部功放



外置PA使能由MCU控制

### MIC



靠近模块放置