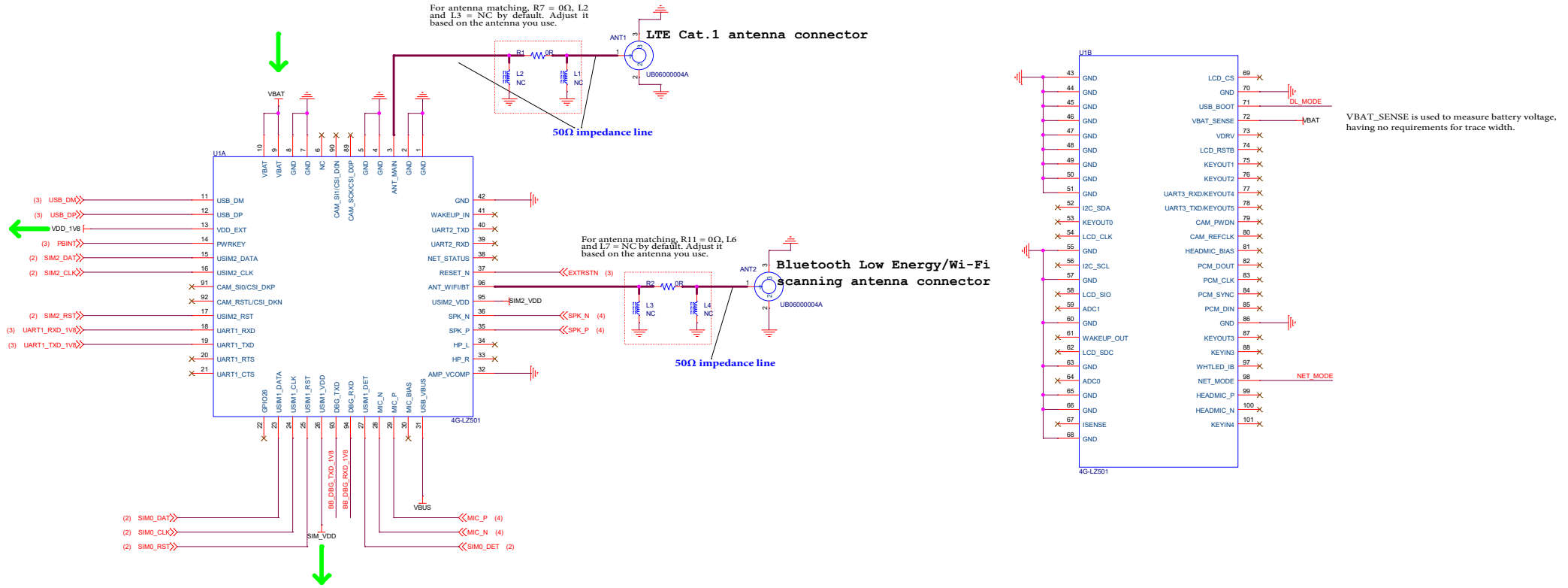
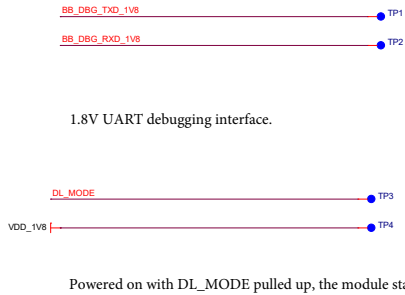


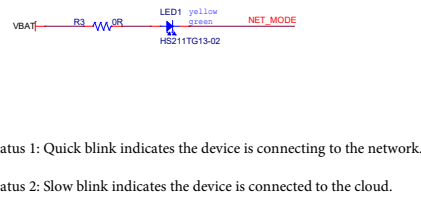
Module Interface



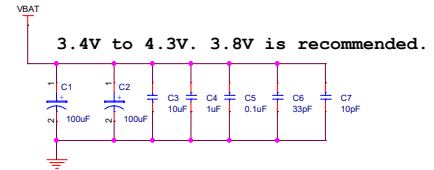
Test Point



Status Indicator



VBAT



VBAT requires a rated output current of 2A. The maximum current of the module is 2A.

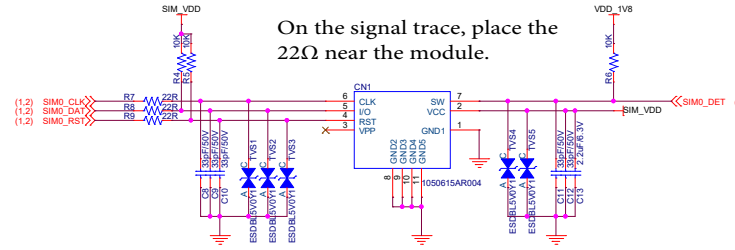
When VBAT is at full load, the ripple should be less than 300 mV. VBAT requires a star routing topology.

Place the capacitor near the VBAT pin on the module.

Keep the VBAT trace wider than 2.5 mm or directly fill the area with copper.

SIM Card Connector or eSIM

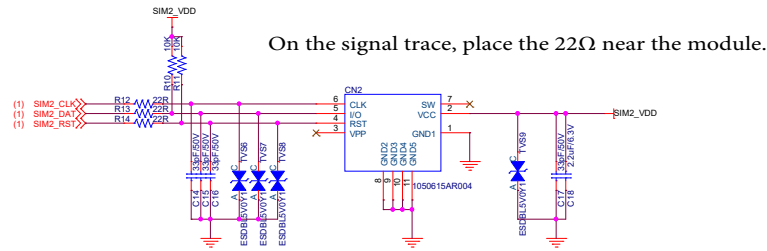
2FF/3FF SIM card connector



SW pin on the SIM card connector

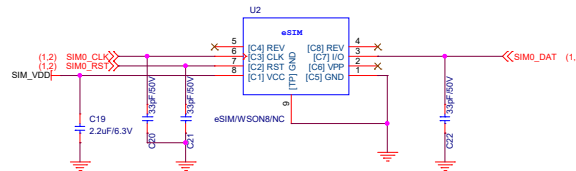
Leave it floating when a card is inserted. Short it to the ground when no card is inserted.

If the built-in SIM card connector is not pluggable, the TVS can be normally closed (NC).



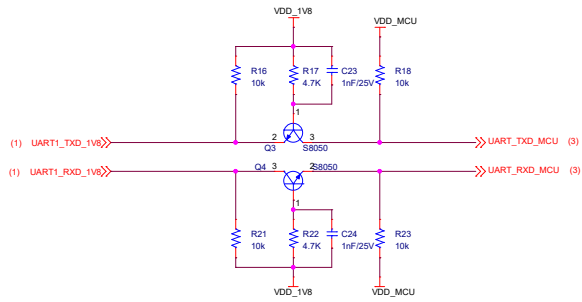
eSIM MFF2

1.8V WSON 5x6:



Interface with MCU via Serial Port

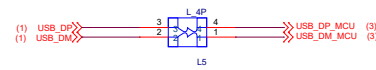
With Tuya serial protocol, you can send serial data to wake up the module.



The serial port level of the module is 1.8V. Use a level shifter if your MCU is not compatible with the voltage requirement.

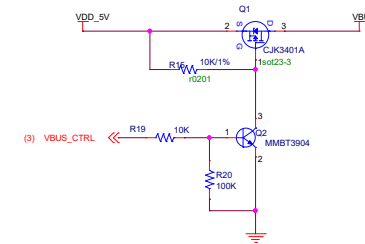
Interface with MCU via USB

You can use cloud mode, RNDIS mode, or ECM mode to control the sleep and wakeup states through USB suspend or VBUS.



Connect a common mode choke L8 between the MCU and module in series. To reduce EMI noise, place the inductor near the module. If no EMI is present, you can use two zero-ohm resistors alternatively.

5V power supply from motherboard

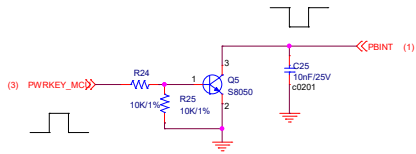


VBUS is used to detect the presence of the USB bus. VBUS_CTRL is used to control the power on and off of VBUS. Control sleep mode:

1. If the host's USB supports suspend, you can use the USB suspend feature to make the module enter sleep mode.
2. If the host's USB does not support suspend, you can power off VBUS to make the module enter sleep mode.

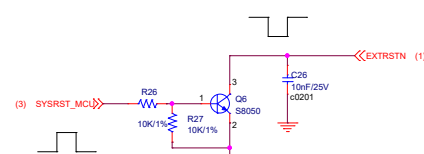
Module control

Module power on/off control

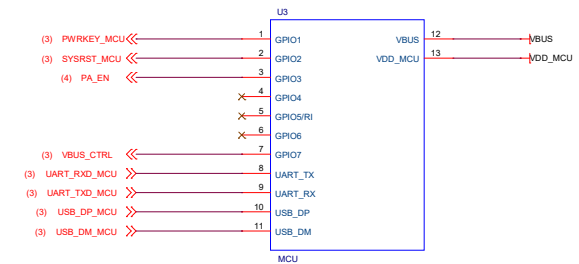


You can control PWRKEY using the MCU, or connect a zero-ohm resistor in series to enable auto power-on by pulling down PWRKEY.

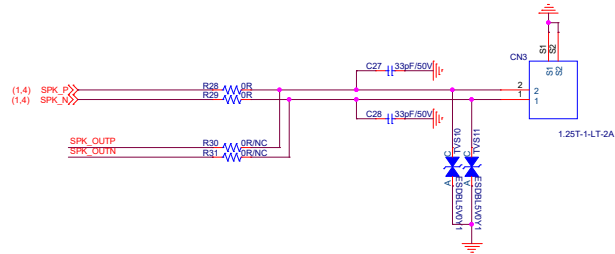
Module reset control



Microcontroller unit

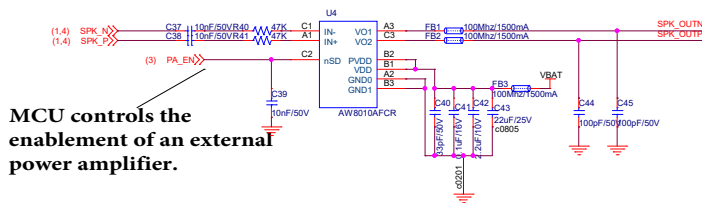


SPK



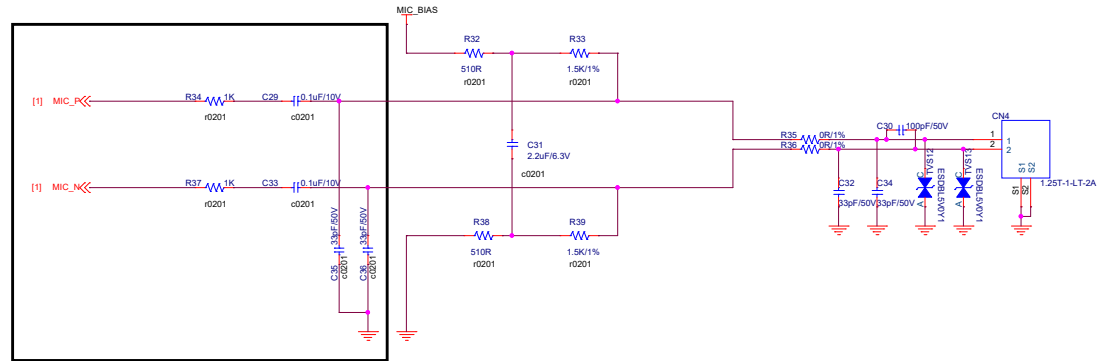
The module has an internal class AB amplifier that features an output power of 600 mW and an 8Ω speaker.

External power amplifier



MCU controls the enablement of an external power amplifier.

MIC



Placed near the module