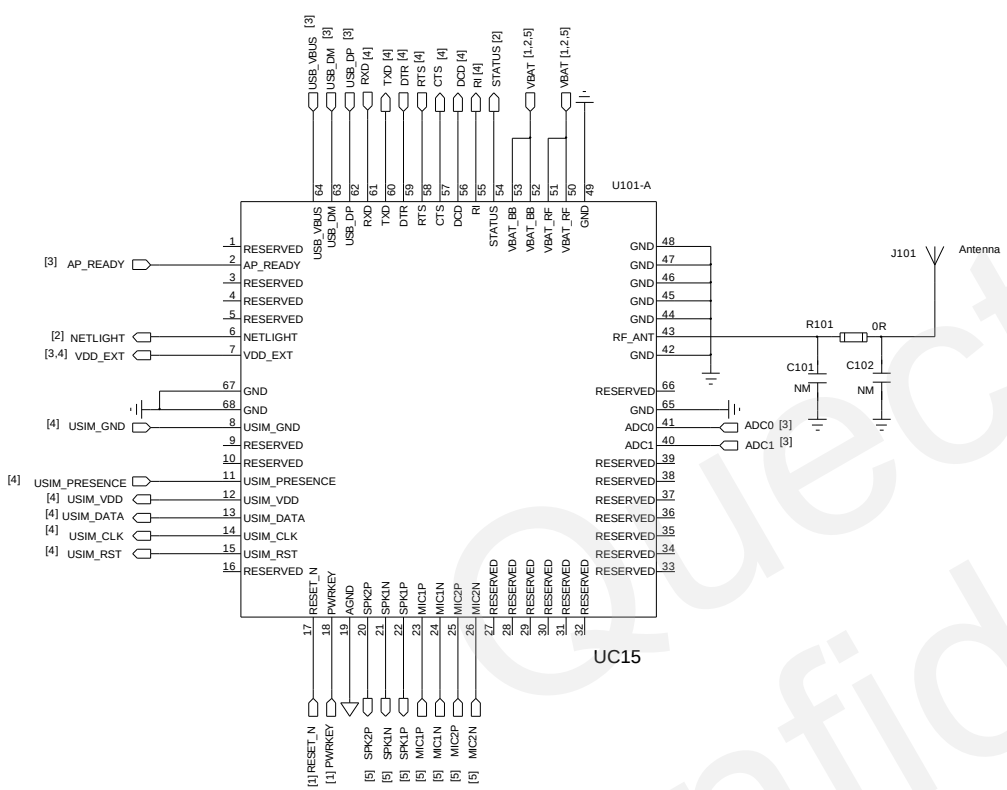
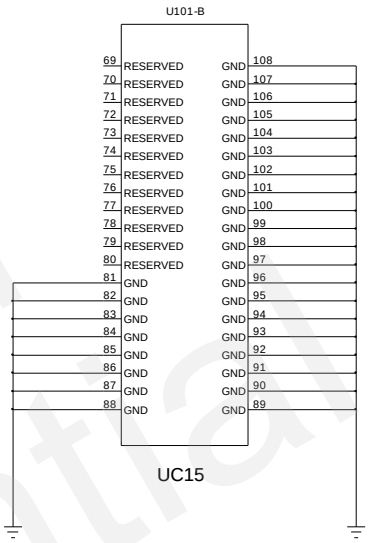
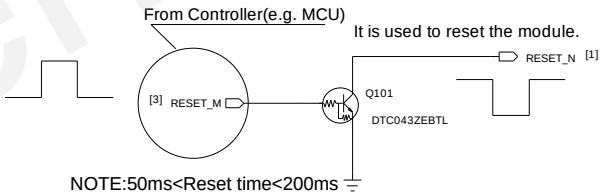
Module Interface



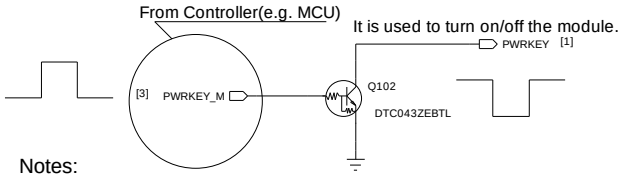


Notes:

1. Keep all reserved pins and unused pins unconnected.
2. For detailed information about AP_READY, please refer to UC15 hardware design.



NOTE:50ms<Reset time<200ms



Notes:

Power on: The time to pull PWRKEY down to power on>100ms

Power off: The time to pull PWRKEY down to power off>0.5s

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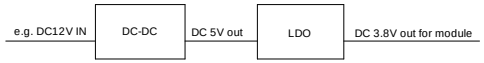
Power Supply and Indicators Design

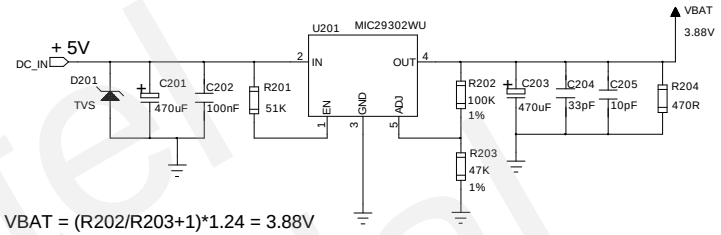
DC-DC Application

1. It is used when the input voltage is above 9V such as vehicle application.
2. Use DC-DC to convert high input voltage to 5V,
   and LDO will generate 3.8V typical voltage for the module.



LDO Application

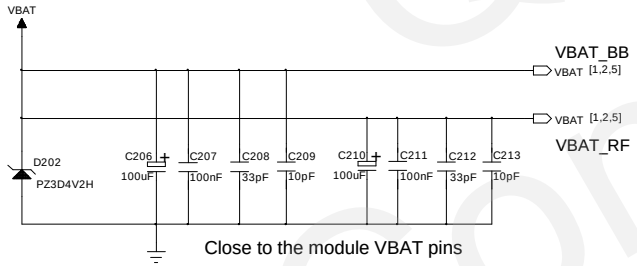
It is used when the input voltage is below 7V.



VBAT = (R202/R203+1)*1.24 = 3.88V

Vmin=3.3V,Vnorm=3.8V,Vmax=4.3V

VBAT Design

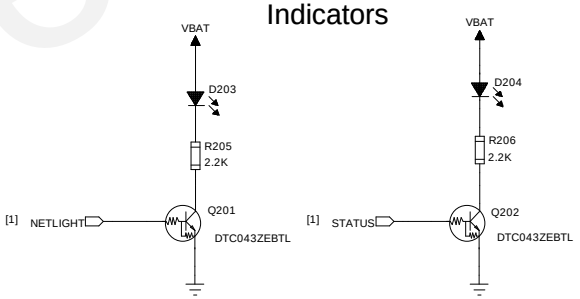


Close to the module VBAT pins

Note:

VBAT should be routed in star mode to VBAT_BB and VBAT_RF pins.

Indicators



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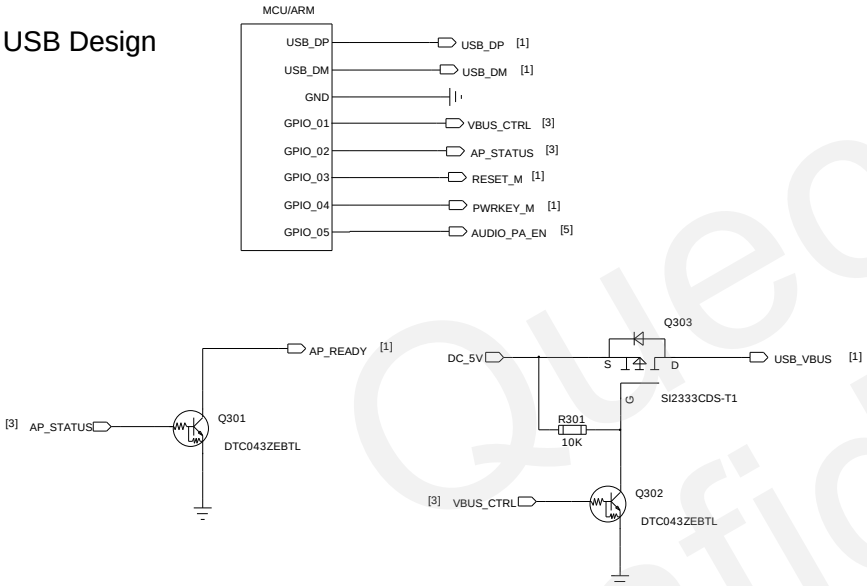
USB and ADC Design

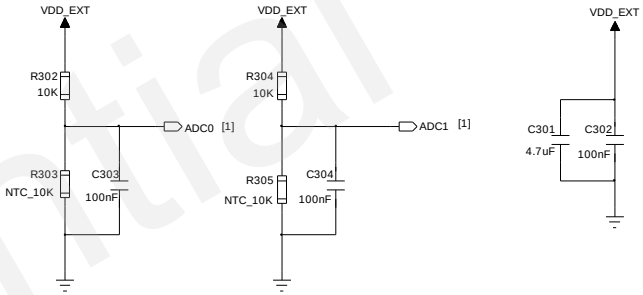
USB Design



Note:

Q301 is used to realize voltage level translation, and AP_READY of UC15 should be configured to low level detection.

ADC Design



Notes:

1. Input voltage range of ADC0 and ADC1 channel is 0~2.1V.
2. When VDD_EXT=2.6V is used to supply power for external circuit, Iout_max=100mA, it is recommended to add a 4.7uF capacitor.

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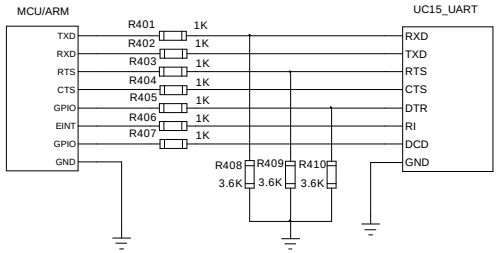
UART and USIM Design

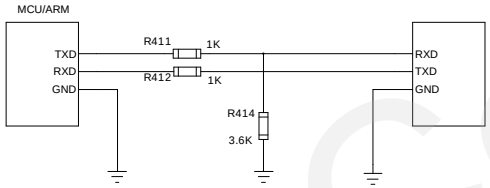
Connection of All Functional UART Interfaces for 3.3V System



Notes:

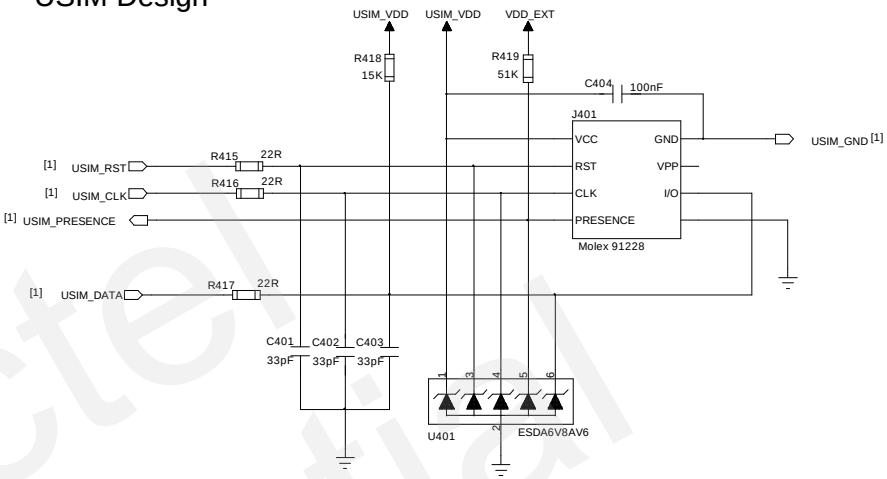
1. CTS&RTS is used for hardware flow control when mass data will be transfered.
2. RI will output an indication signal when there are activites such as voice calling, data calling and SMS.
3. DCD is mainly applied in the modem communication (PPP).
4. Please pay attention to the level match of UART in product application.

Connection of Three Lines UART Interfaces for 3.3V System



* Please pay attention to the level match of UART in product application.

USIM Design



Notes for USIM Card Layout

1.Place USIM card holder to the module as close as possible. Ensure the trace length of USIM signals do not exceed 200mm.

2.Keep the USIM signals far away from VBAT power and RF trace.

3.The width of USIM_VDD and USIM_GND trace is not less than 0.5mm. Place a bypass capacitor less than 1uF close to USIM card power pin.

4.To avoid cross talk between USIM_DATA and USIM_CLK, keep them away from each other and shield them with ground. Furthermore, the USIM_RST should also be protected with ground.

5.In order to ensure good ESD performance, it is recommended to place a TVS array such as ESDA6V8AV6 as close to the card holder as possible. The capacitance of ESD component should be less than 50pF.

6.The 22Ω resistors should be added in series between the module and the SIM card so as to suppress the EMI for enhancing ESD protection.The 33pF capacitors are used for filtering interference of GSM900.

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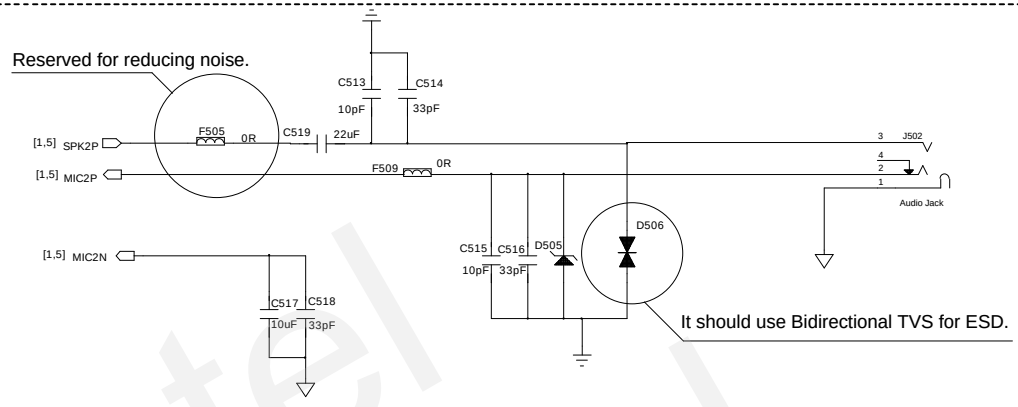
Analog Audio Design

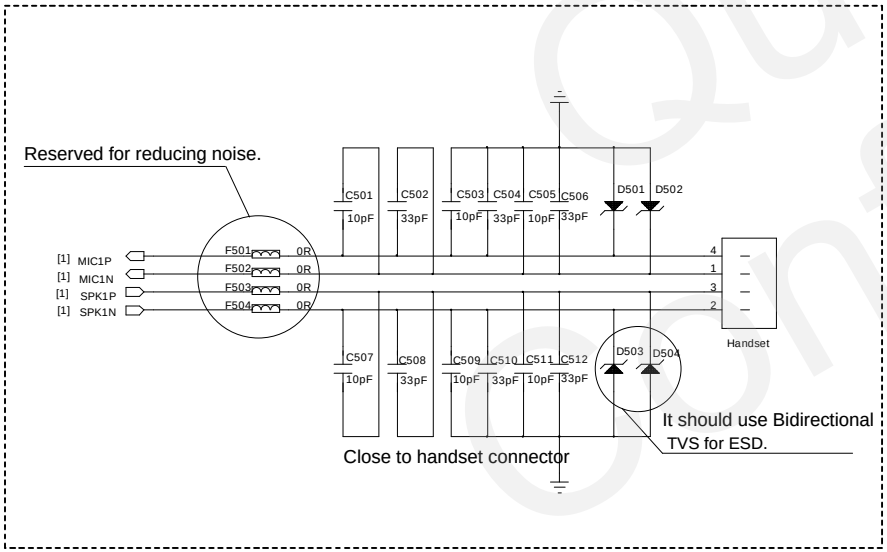
Notes:

1. AGND is recommended to be routed separately.
2. 10P&33P capacitors are used for filtering RF noise.
3. Both AIN1 and AIN2 have micphone bias voltage inside module.
4. Both AOUT1 and AOUT2 are capable of driving 32ohm load, but not 8ohm.

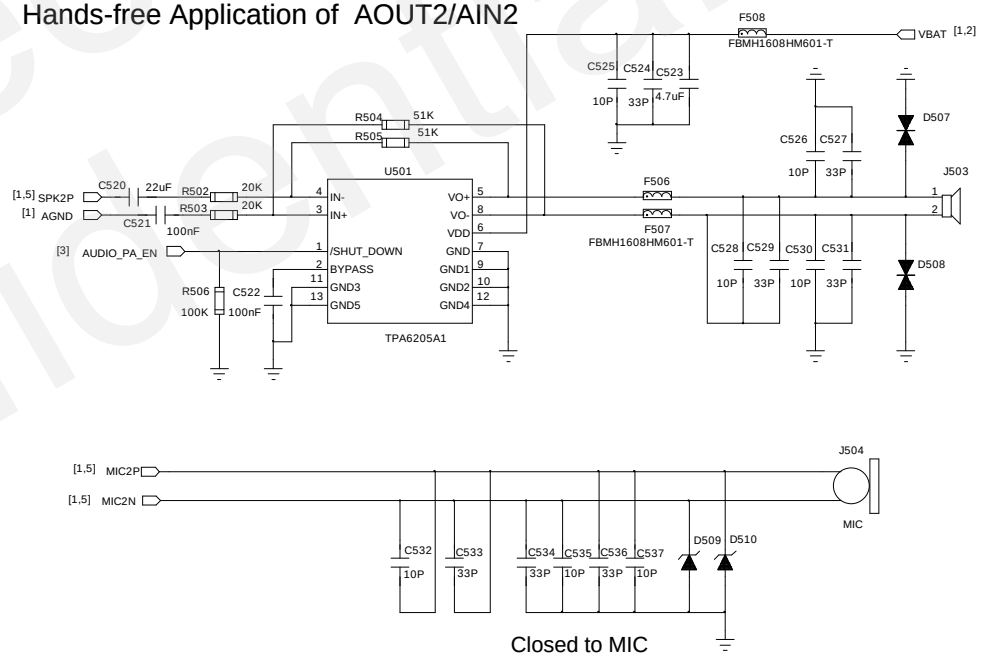
Earphone Application of AIN2/AOUT2



Handset Application of AIN1/AOUT1



Hands-free Application of AOUT2/AIN2



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