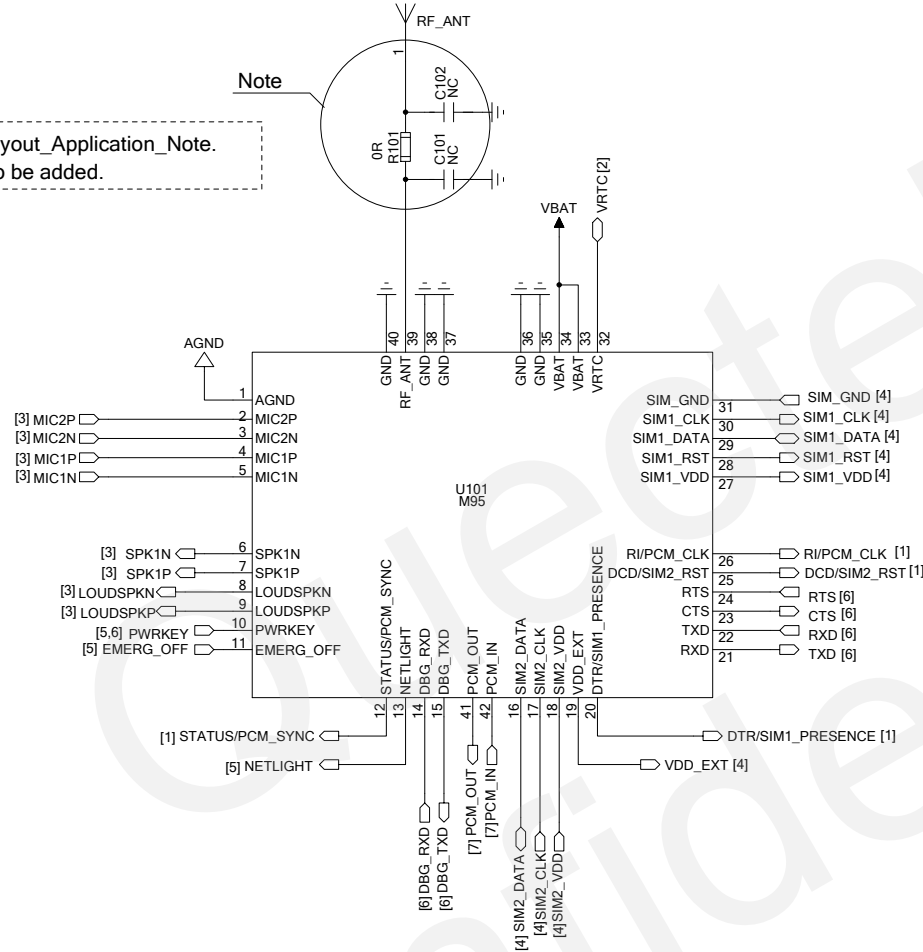


Mould Design

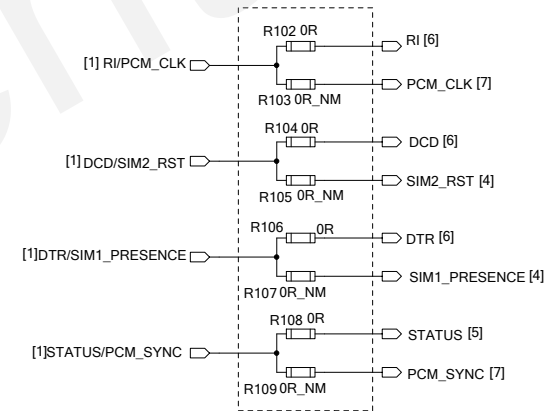
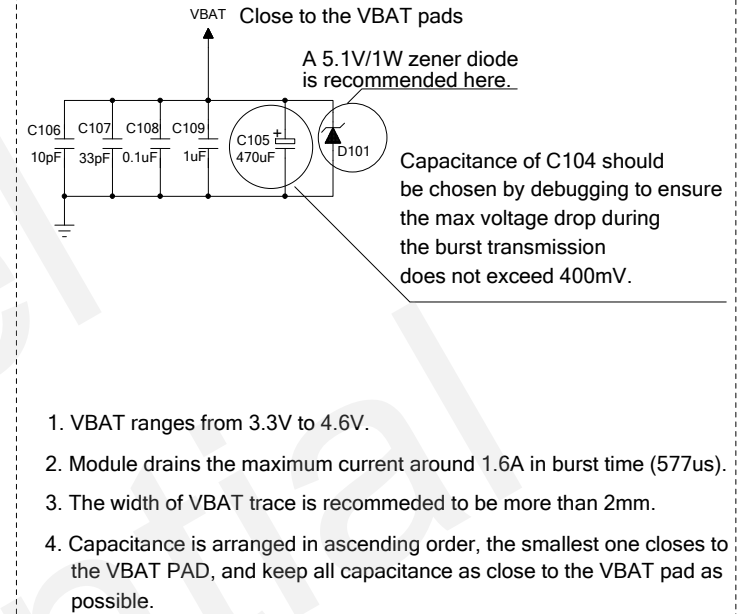
NOTE

For RF layout, please refer to RF_Layout_Application_Note.
A Pi match circuit is recommended to be added.



Multiplexed Functions

PIN NAME	PIN NO.	Default Function	Alternate Function
STATUS/PCM_SYNC	12	STATUS	PCM_SYNC
DTR/SIM1_PRESENCE	20	DTR	SIM1_PRESENCE
DCD/SIM2_RST	25	DCD	SIM2_RST
RI/PCM_CLK	26	RI	PCM_CLK



Multiplexed Functions

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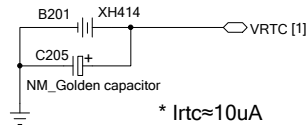
Power Supply

NOTE

The voltage converter should provide current at least 2.0A.

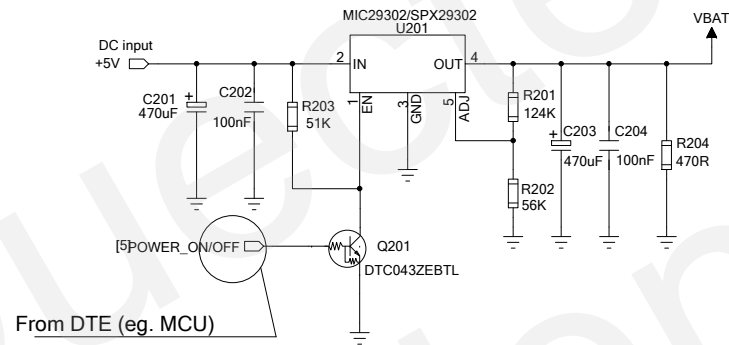
LDO Application

Charge golden capacitor or battery when VBAT is applied.
If unused, keep VRTC open.



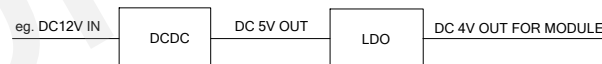
* As only powering the VRTC pin to keep the RTC will lead an error about 5 minutes a day, it is recommended to power VBAT and VRTC pin at the same time when RTC function is needed. For more details, please refer to M95 HD.

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



DC-DC Application

1. It can be used when the input voltage is above 7V in vehicle application.
2. Use DCDC to convert high input voltage to 5V and LDO will generate 4V typical voltage for the module.



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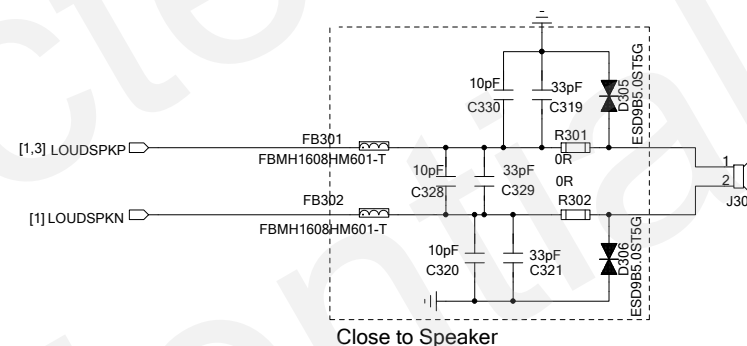
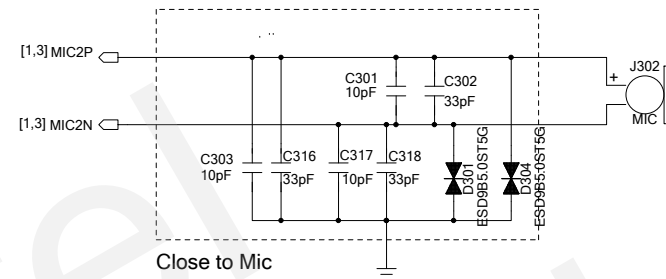
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Audio Design

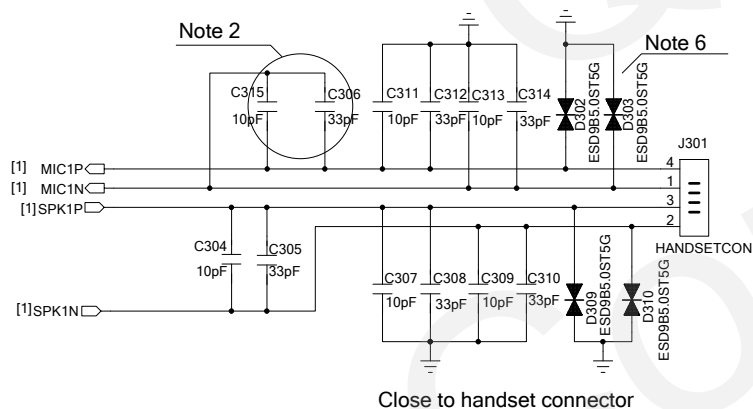
Hands-free Application of AIN2/AOUT2

NOTES

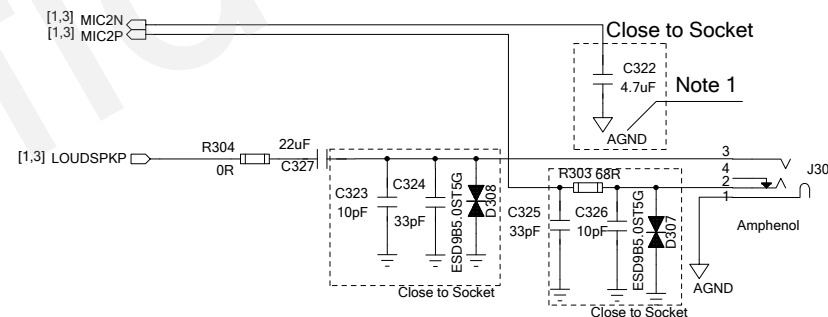
1. AGND is recommended to be routed separately.
2. 10P&33P capacitors are used for filtering TDD noise.
3. Both AIN1 and AIN2 have bias voltage of micphone.
4. AOUT1 is capable of driving 32ohm load.
5. AOUT2 is capable of driving 8ohm load and Earphone.
6. These components are used to enhance the ESD performance of MIC lines, it is strongly recommended to reserve them.



Handset Application of AIN/AOUT1



Earphone Application of AIN2/AOUT2

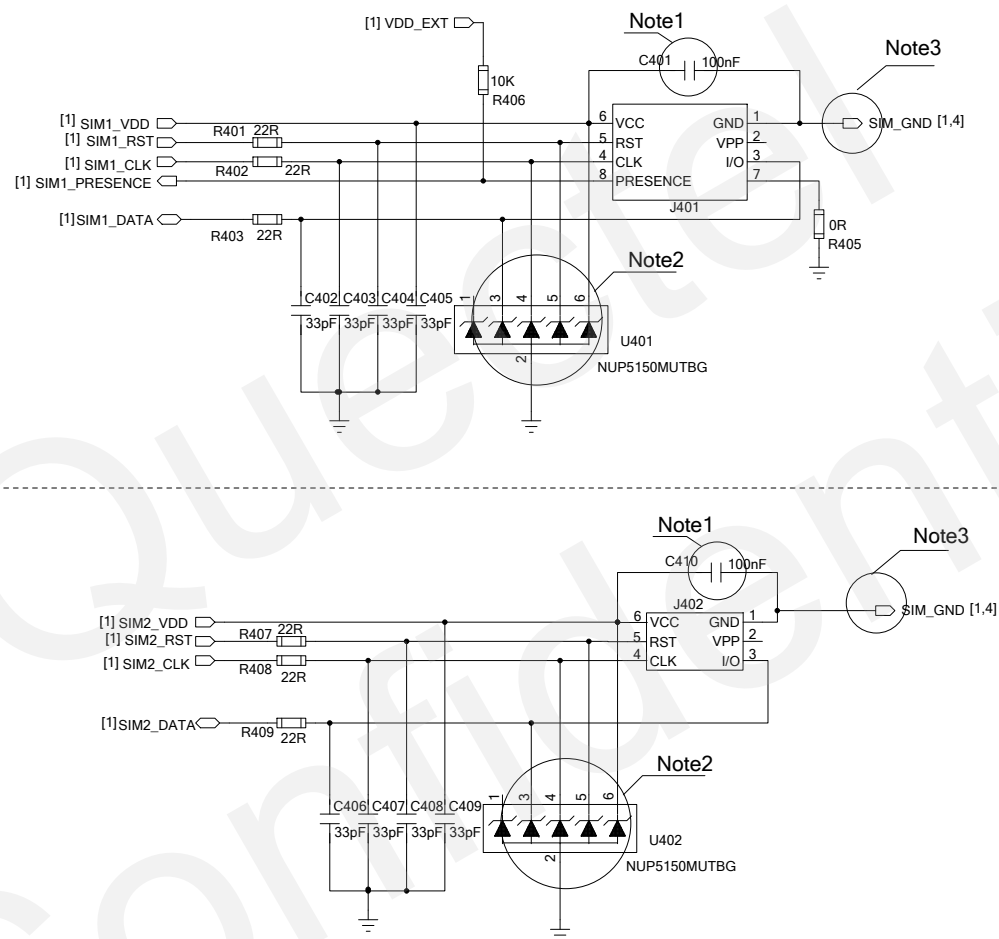


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SIM Card

SIM Card Interfaces



NOTES

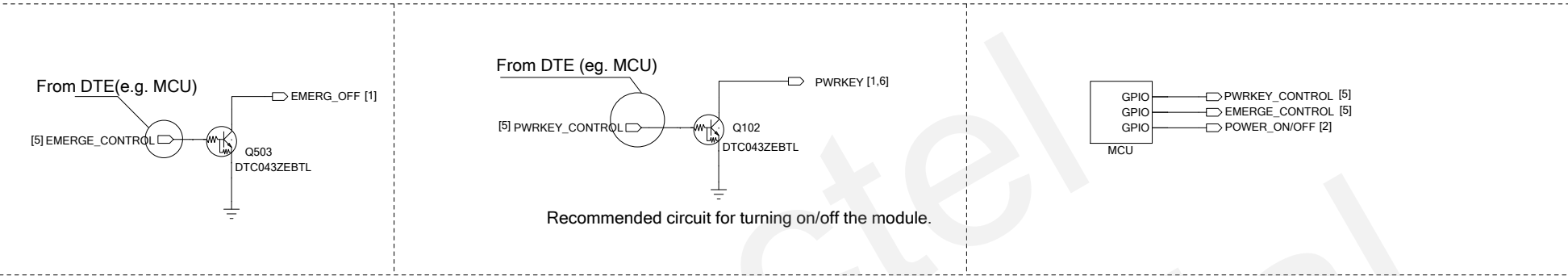
1. The value of C401 and C410 should be less than 1uF.
2. U401 and U402 are used for protecting SIM card against ESD, and the junction capacitance should be less than 50pF. It should be placed nearby SIM card holder.
3. For M95 module, ground of SIM card is recommended to be routed to the Pin 31 ("SIM_GND") of the module separately.
4. M95 module supports dual-cards-one-standby function.

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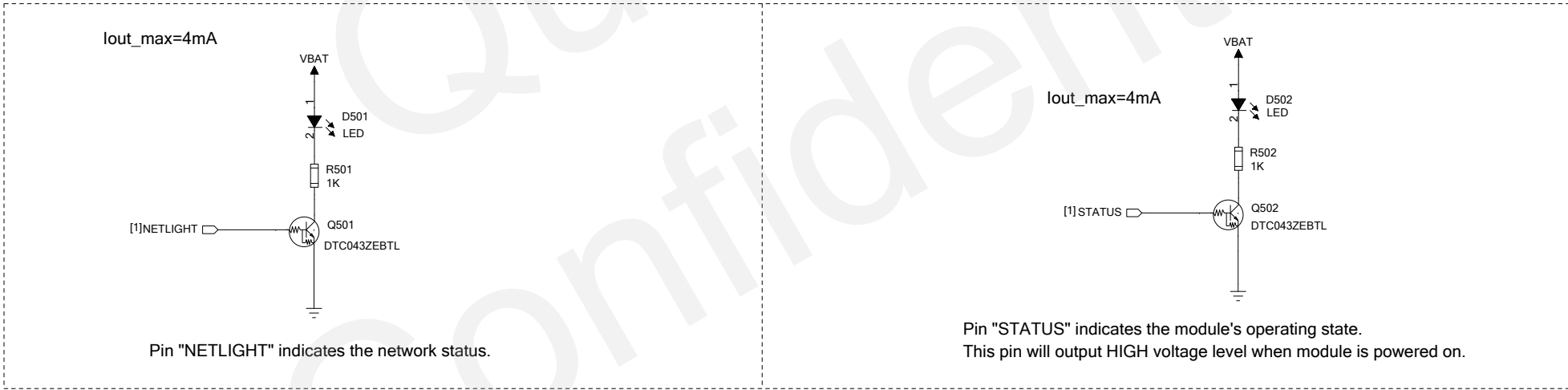
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Drive

Power On/Down



Indication



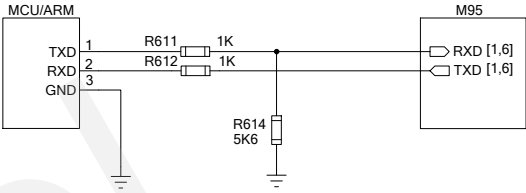
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Serial Interface

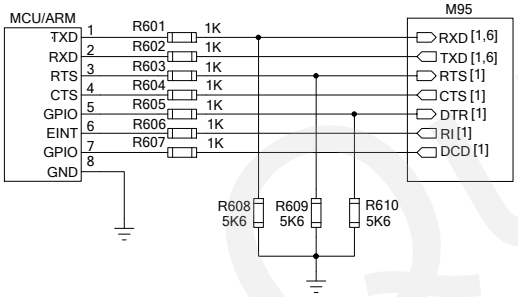
Electric characteristics of module's input and output port:
 $VOH_{min}=0.85*VDD_EXT$
 $VOL_{max}=0.15*VDD_EXT$
 $VIL_{max}=0.25*VDD_EXT$
 $VIH_{min}=0.75*VDD_EXT$
 $VIH_{max}=VDD_EXT+0.2V$
 $VDD_EXT=2.8V$ (typical value)

Connection of Three-line UART Port for 3.3V System



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

Connection of All Functional UART Port for 3.3V System

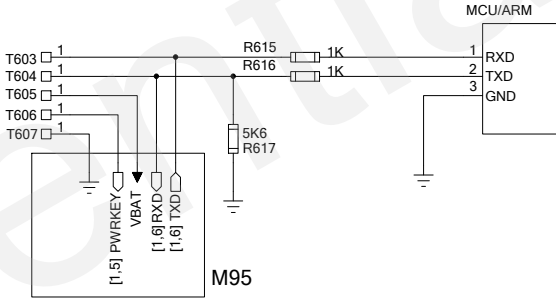


NOTES

- CTS&RTS will be used for HW flow control when mass data has been sent.
- When AT+QSCCLK=1 is set on the module, customer's application can control the module to enter into or exit from the sleep mode through the pin DTR. When DTR is set to high level, and there is no on-air or hardware interrupt, such as GPIO interrupt or data on serial port, the module will enter into sleep mode automatically.
- RI will output a indication signal when activity such as voice call or SMS is coming.
- DCD is mainly applied in modem communication (PPP), the active status represents the communication link has been set up.
- Please pay attention to the level match of UART in product application.

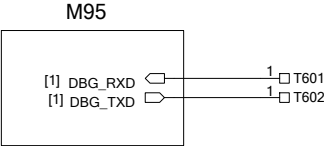
Connection of Upgrade Tool for 3.3V System

It is recommended to reserve test points for upgrading the firmware and debugging.



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

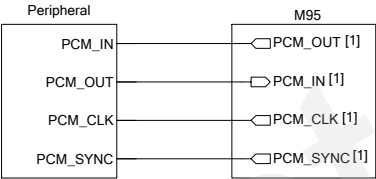
It is recommended to reserve the points for debug port.



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PCM Design



For more details about PCM, please refer to M95 HD.

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