Sheet #	Content	Sheet #	Content	
	01. Table of Content 02. L506 Module and Accessory 03. Sim TF Card 04. UART Port 05. Audio 06. Interactive Interface 07. WIFI and L506 ANT			

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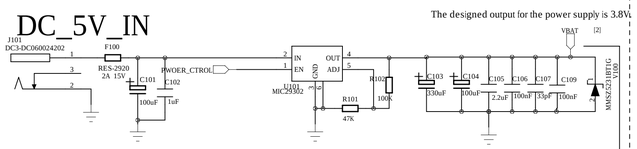
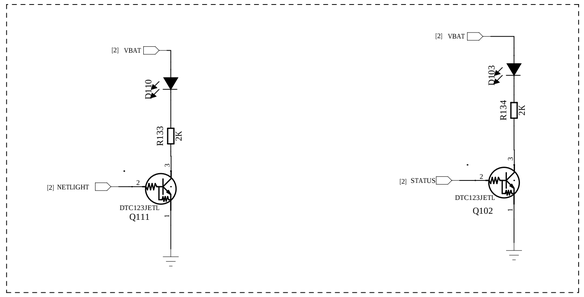
POWER SUPPLY

Note[2]
The voltage converter should provide current at least 2.0A.
It is used when the DC input voltage is below 7V.



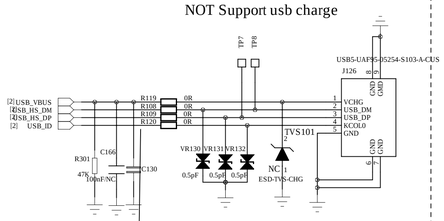
1. VBAT ranges from 3.4V to 4.2V,we strongly suggest use 3.8V.
2. Module drains the maximum current around 2.0A in burst time (577us).
It's will cause the Votage drop about 350mV
3. The width of VBAT trace is recommeded to be more than 2mm.
4.Capacitance is arranged in ascending order, the smallest one closes to the VBAT pad,
and keep all capacitance as close to the VBAT pad as possible.
5. Strongly recommended on the VBAT feet parallel a 5.1 V / 500 mw Zener diode,
To prevent module caused by surge voltage.The zener diode will placed near the VBAT feet.

LED



USB_CONNECTOR

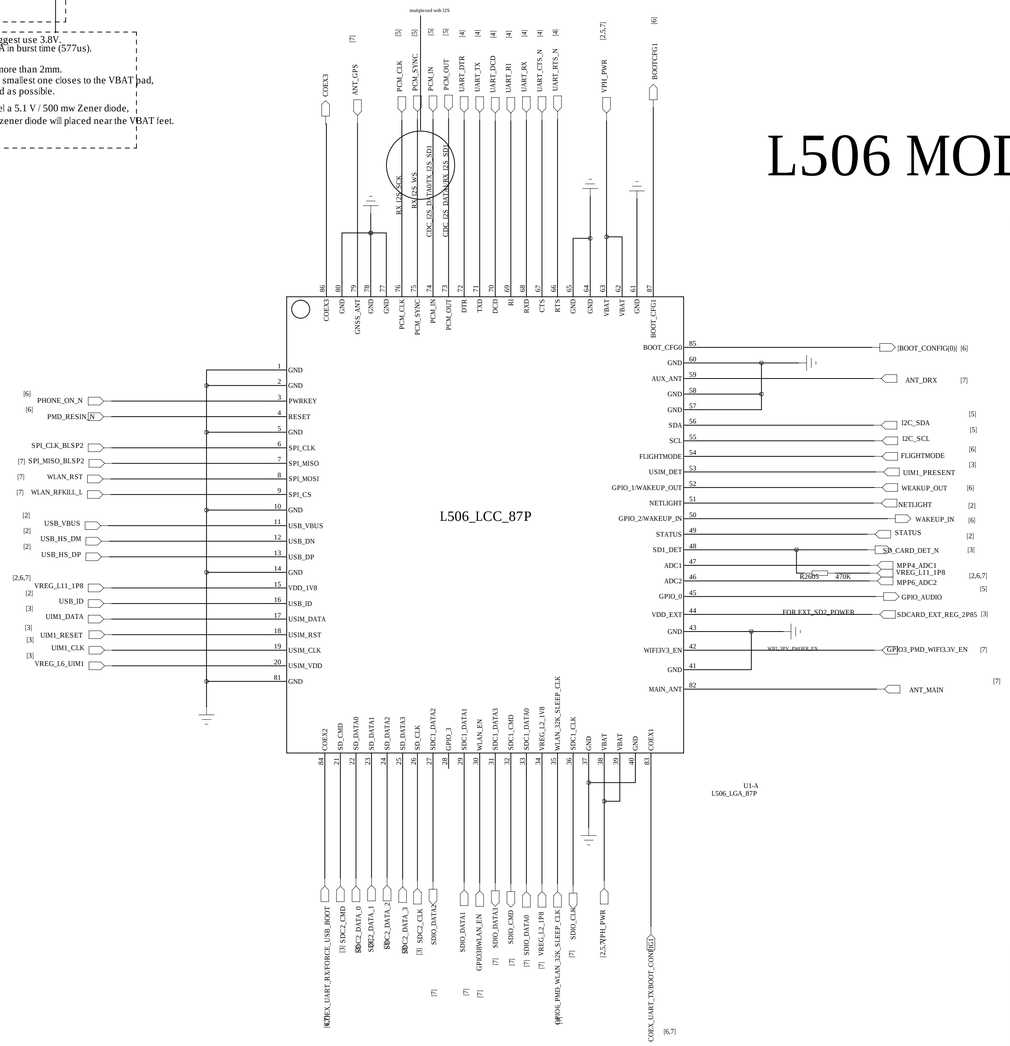
NOT Support usb charge

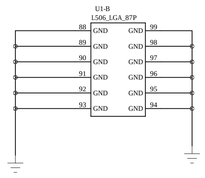


1. VR130/VR131must be less than 2pF about junction capacitance
2. L506 Support USB 2.0 High Speed, the USB_DM and USB_DP must route 90 ohm defferintal
3. Recommended that the rated voltage of the capacitance on the Vbus net is 25V.

L506 MODULE

L506 module have pulled up to 1.8V internal





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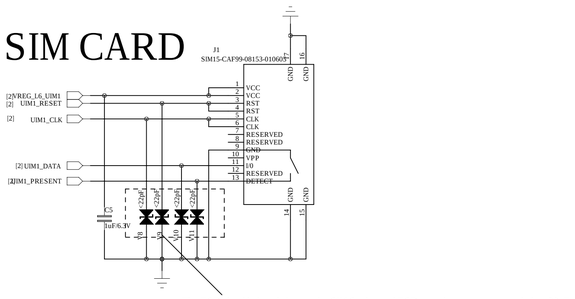
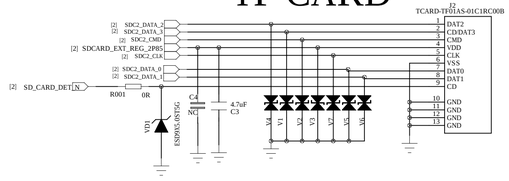
SIM CARD



The ESD should placed close to the SIM Socket,and ESD typical capacitance must below 30pF

TF CARD



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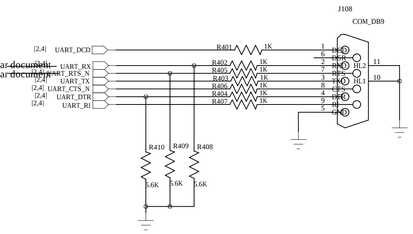
UART PORT

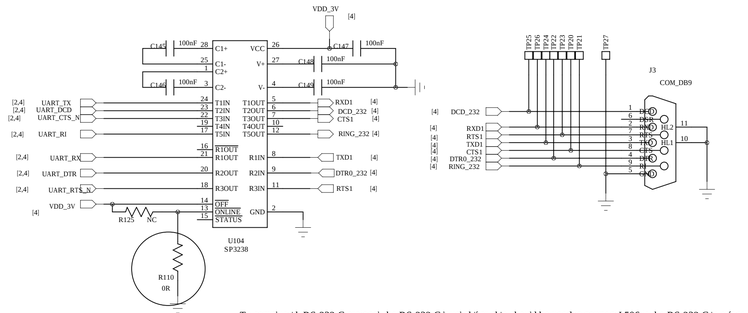


Client RX should connected to the module TX, for detail please refer the hardwar documents.
Client TX should connected to the module RX, for detail please refer the hardwar documents.

Connection of All Functional UART Port for 1.8V System

Note[9]

1. CTS&RTS will be used for HW flow control when mass data has been sent.
2. When AT+QSCLK=1 is set on the module, customer's application can control
3. 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.
4. RI will output an indication signal when activity such as voice call or SMS is coming.
5. DCD is mainly applied in modem communication (PPP), the active status represents the communication link has been set up.
6. Please pay attention to the level match of UART in product application.
7. The L506 UART is 1.8V interface. A level shifter should be used if user¡¯s application is equipped with a 3.3V UART interface.



To comply with RS-232-C protocol, the RS-232-C level shifter chip should be used to connect L506 to the RS-232-C interface.
In this connection, the TTL level and RS-232-C level are converted mutually.
we recommends that user uses the SP3238ECA chip with a full modem.
For more information please refers to the RS-232-C chip datasheet.

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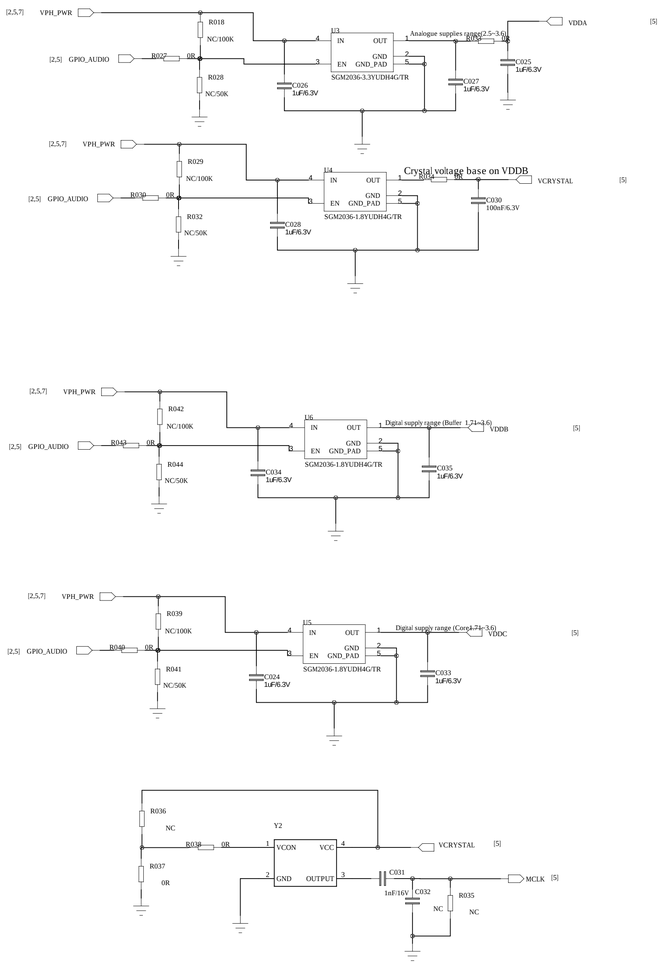
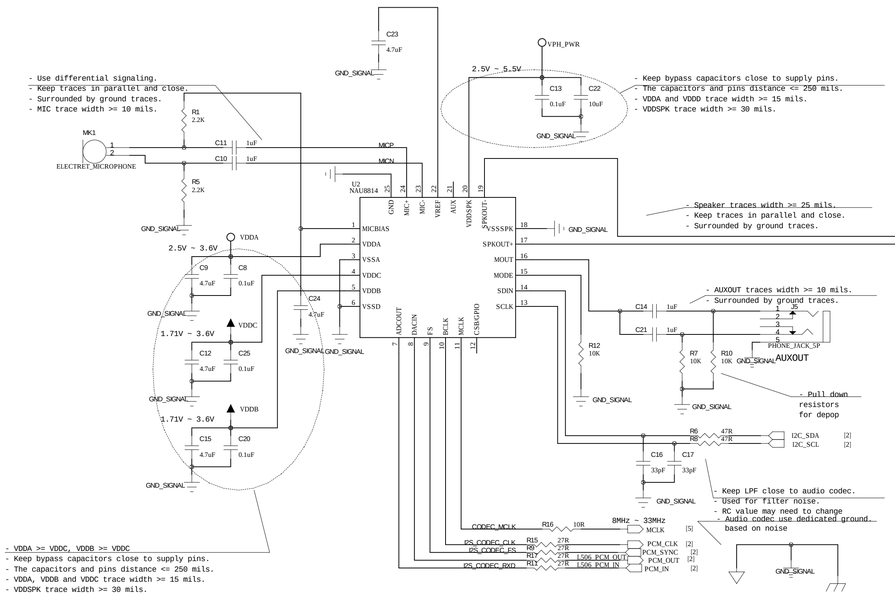
PCM PORT (OPTIONAL)



Note 60-3: ESD diodes are for ehnhacement proposal; also could be cost reduction.



1. PCM design is a optional reference for user, In our reference design used the NAU8814 as the codec chip, the user also can choose the other codec chip as the audio processor.
2. L506 support A full fuction PCM port, (NAU8814 only support A MIC in and A Speaker out) the audio function depend on codec chip
3. Audio system is a very complexity system, It is not only related to circuit also has to do with sound cavity structure

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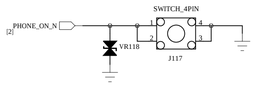
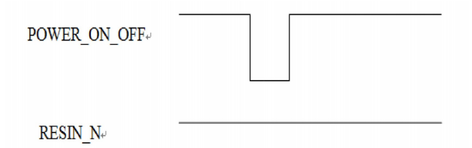
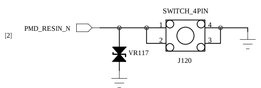
POWER KEY



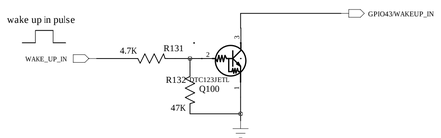
Note:
The moduel power on sequence must after the MCU and the power on diagram as below timing chart
As shown in figure, Application processors need to control the formation of POWER_ON_OFF pulse, the pulse width should be in 8 seconds or so.
If the PPP connection has been established, please disconnect

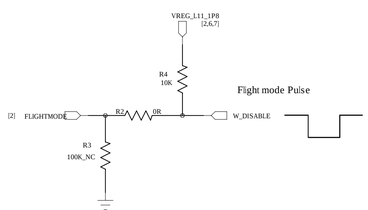


RESET KEY



Note:
Reset active low input must keep above 105ms

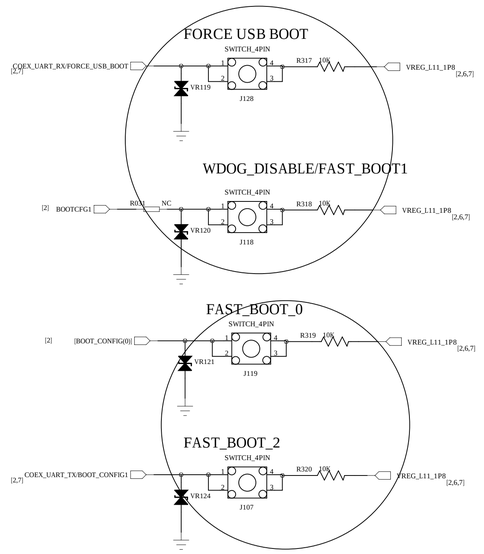




BOOT CONFIGURATION TABLE

BOOT_CONFIG[3:1]	BOOT OPTIONS
0b000	NAND-> USB
0b001	Only USB

Note: Default boot config (0b000) is NAND



Interactive control

L506 provides three shook hands with application processor communication signals.
Application processor can query whether the module boot normal work through MDM_POWERON.
Through the MDM_READY query module is in sleep mode, and sleep in the module, through AP_WAKEUP _MDM wake module.
Similarly, when application processor in the sleep state, the L506 modules can through MDM_WAKEUP_AP wake application processor.
WAKEUP_IN: The host can lower the signal awakens the module;If, low level has maintained, module can't sleep.
WAKEUP_OUT: when L506 need to communicate with the AP, module can be set this pin for low level to awaken application processor.
FLGHTMODE:Through the external output high level module into flight mode;
STATUS:Module sleep instructions, high level indicator to sleep, low level instructions for the awakened state;

Note:
Pull up this net(COEX_UART_RX/FORCE_USB_BOOT) to 1.8V force the module in force usb boot mode.

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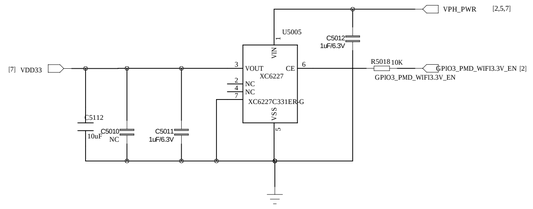
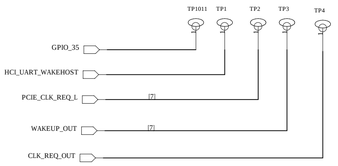
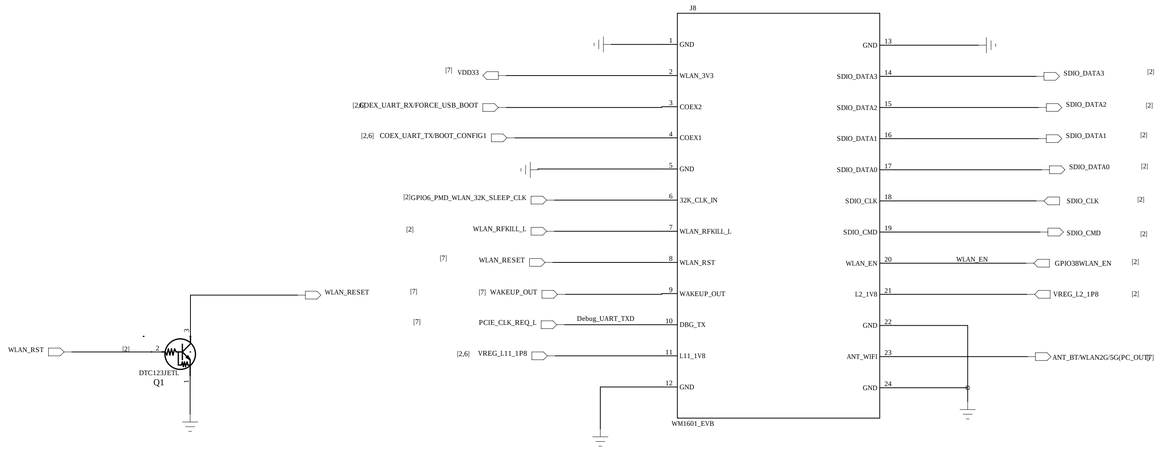
WIFI Module(WM1601)

WIFI 3.3V







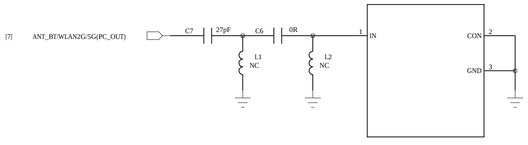
WIFI Connector

Note:[7]

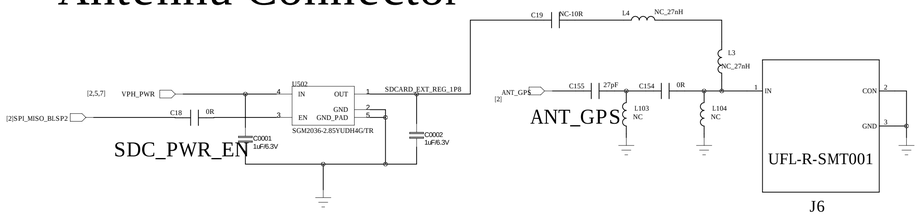
1. WIFI design is a optional reference for user, In our reference design used the WM1601 as the WIFI solution, for more information about WM1601 please contact mobiletek market

J4

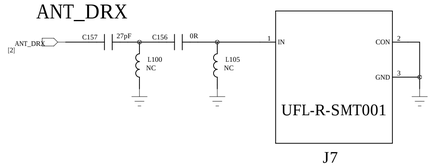
UFL-R-SMT001



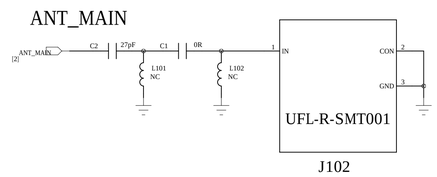
Antenna Connector



J6



J7



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