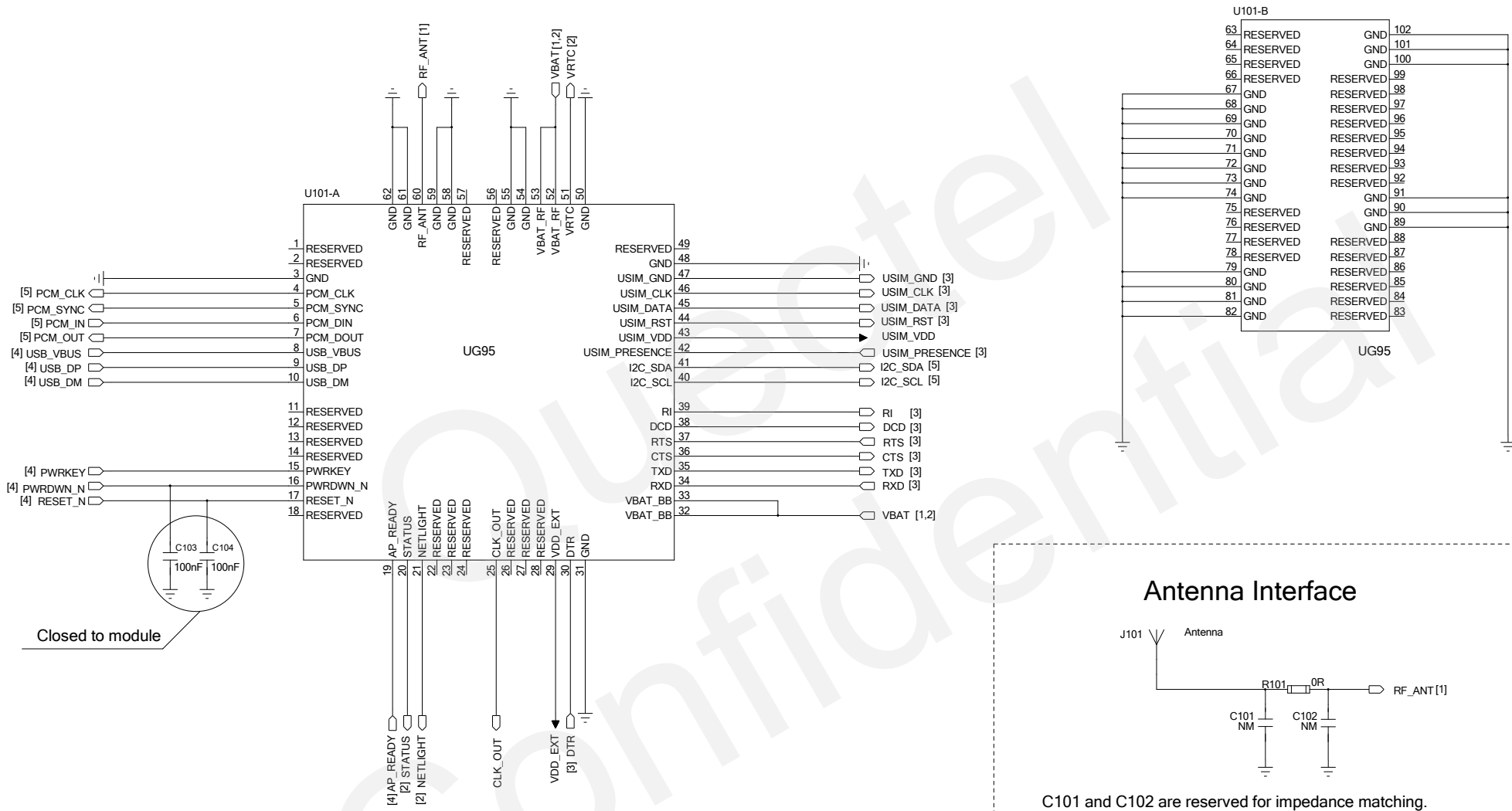


Module Interface



Notes:

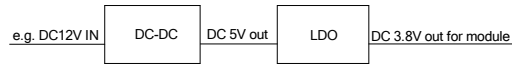
1. Keep all RESERVED and unused pins unconnected. All GND pins should be connected to ground.
2. AP_READY is under development
3. The CLK_OUT is a digital clock output signal for an external audio codec, please refer to UG95 Hardware Design for more details.

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DRAWN BY <Yeoman CHEN>	PROJECT <UG95 Reference.Design>	TITLE <Module Interface>
CHECKED BY <Tony GAO>	SIZE A2	VER 1.3
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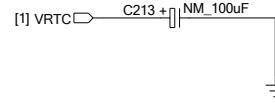
Power Design

DC-DC Application

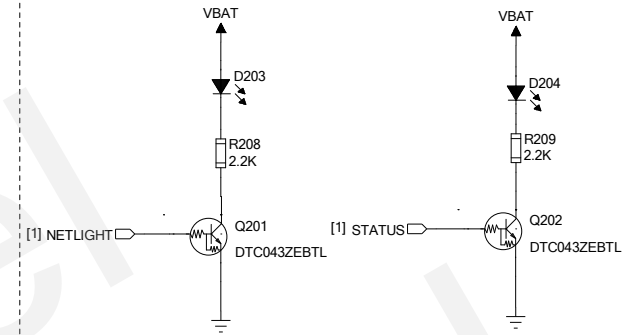
It is used when the input voltage is above 7V. Use DC-DC to convert high input voltage to 5V, and LDO will generate 3.8V typical voltage for the module.



VRTC Design

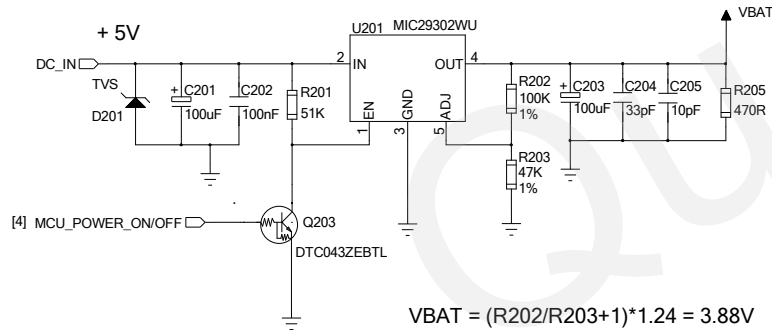


If VRTC function is not used, keep VRTC pin open.



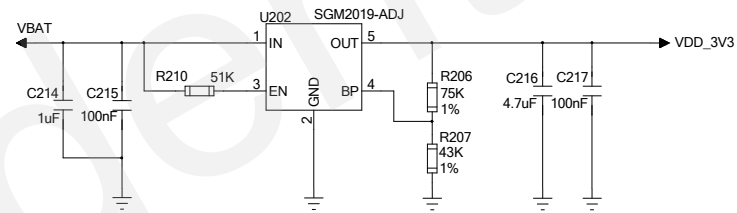
LDO Application

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



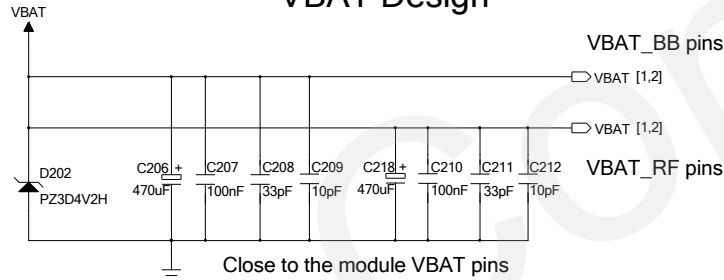
$$VBAT = (R202/R203+1)*1.24 = 3.88V$$

Supply Power to PCM Codec Circuit



$$VDD_3V3 = (R206/R207+1)*1.207 = 3.3V$$

VBAT Design



Note:

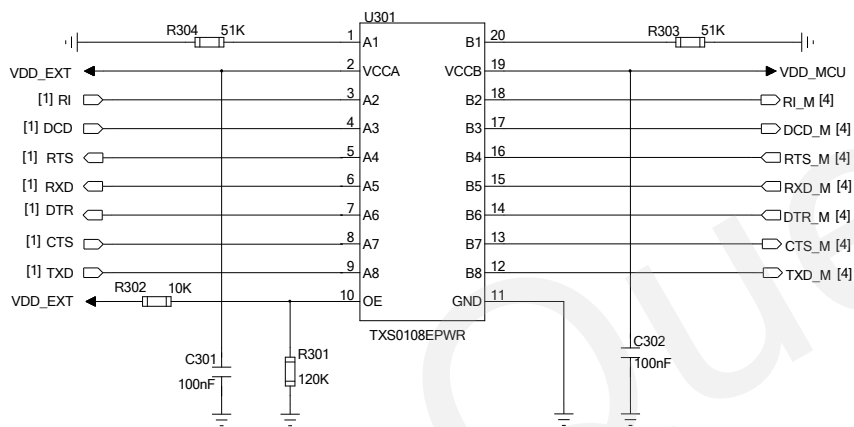
VBAT should be routed in star mode to VBAT_BB and VBAT_RF pins.

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UART and USIM Design

UART Level Translator



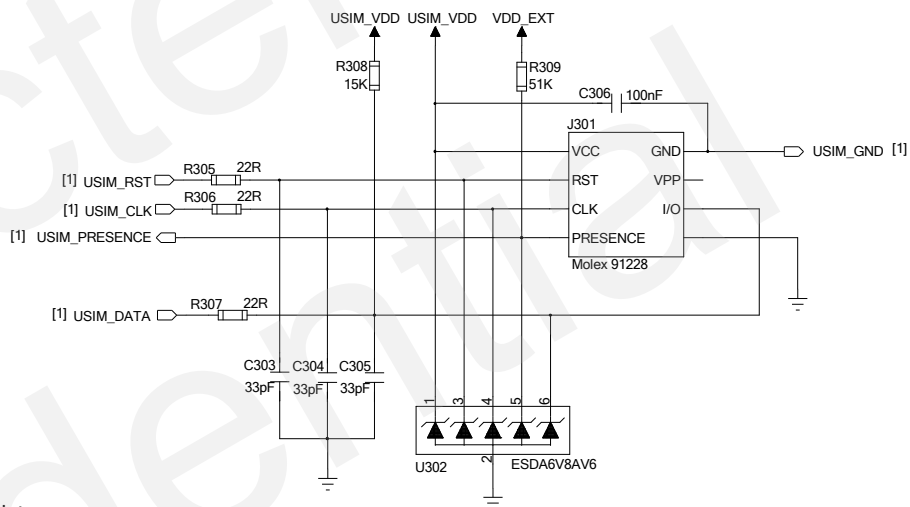
Notes:

1. TXS0108EPWR is to realize the voltage level translation between UG95 and MCU.
2. This circuit is available for UG95 UART voltage level translation design.
3. VCCA should not exceed VCCB.

For more information about TXS0108EPWR, please refer to the datasheet from TI website.

4. DTR is pulled up by software. Driving DTR to low level wakes up the module.

USIM Design



Notes:

1. R305~R307 are applied to suppress the EMI spurious transmission and enhance the ESD protection.
2. R308 can improve anti-jamming capability of the USIM circuit.
3. UG95 supports USIM card hot-plugging, which can be implemented through USIM_PRESENCE pin.

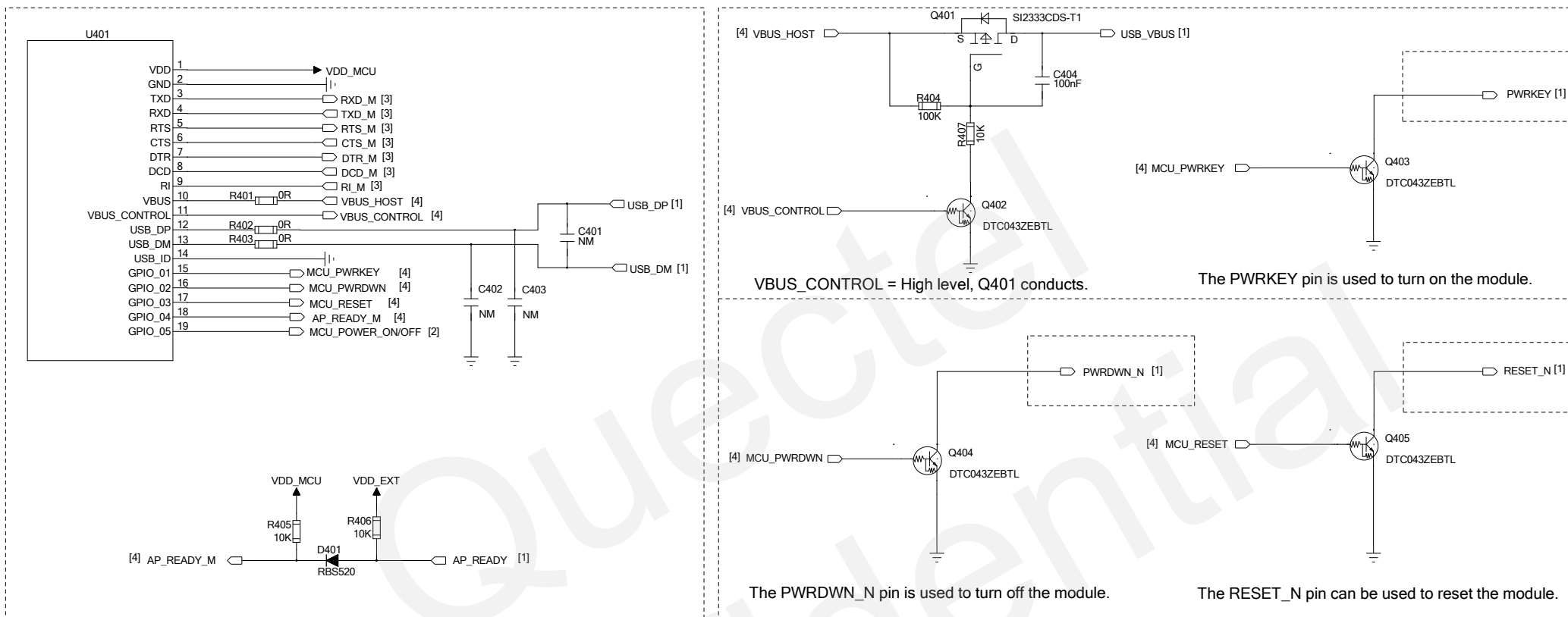
The circuit above is designed for low-level detection.

4. The value of C306 should be less than 1uF.

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MCU Interface



Notes:

- U401 represents customer's MCU.
- Pay attention to the UART connection of RTS/CTS.
- UG95 can only work as a USB device and supports FS/HS mode. To communicate with USB interface, MCU needs to support USB host or OTG function.
The USB interface is primarily used for AT command, data transmission, software debug and firmware upgrade.
The USB_VBUS pin of UG95 is used for USB detection, and VBUS_CONTROL powers on and off VBUS.
- Customers can determine to use USB or UART communication according to their needs.

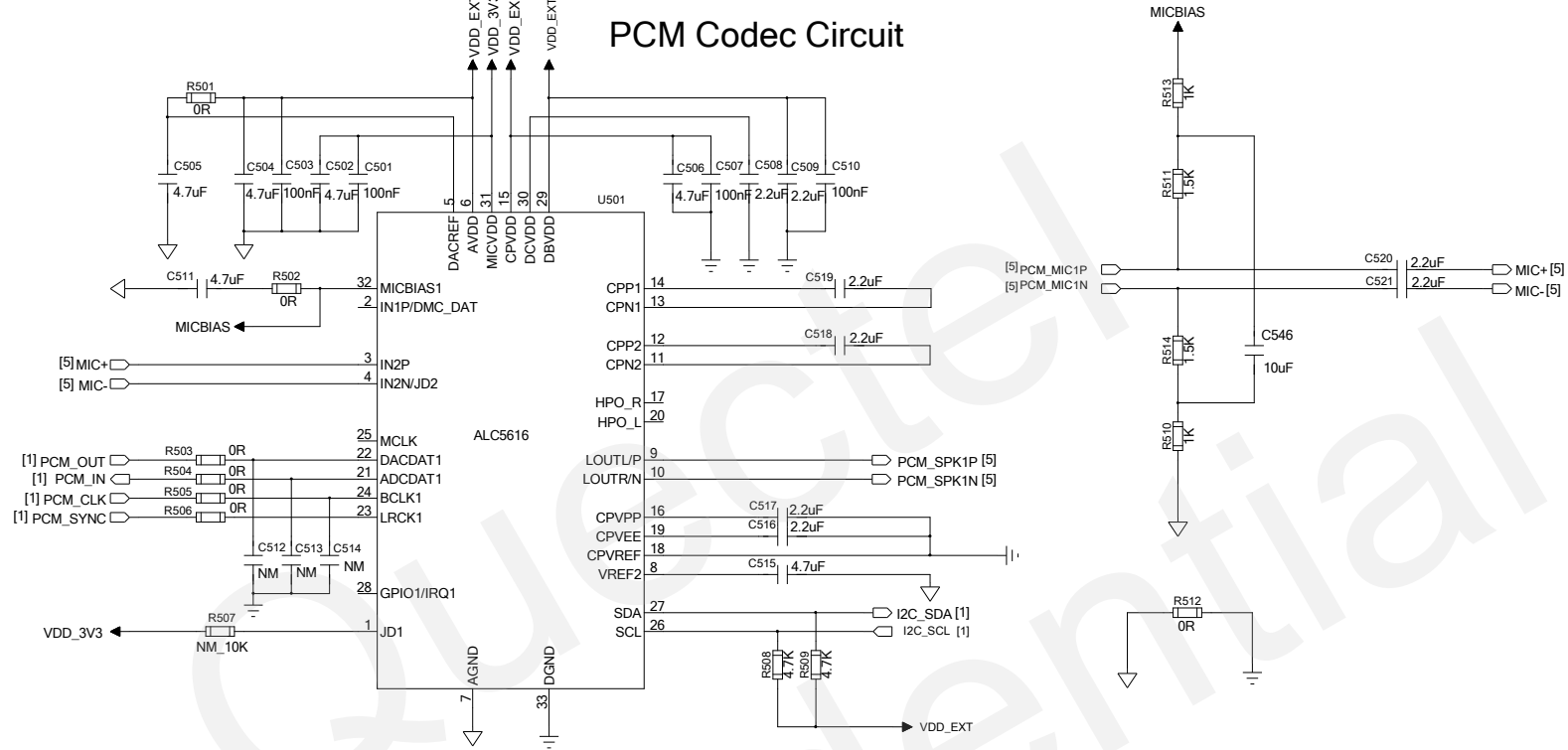
Application	Installed	Not installed
USB	R401~R404, Q401, Q402	U301 circuit
UART	U301 circuit	R401~R404, Q401, Q402

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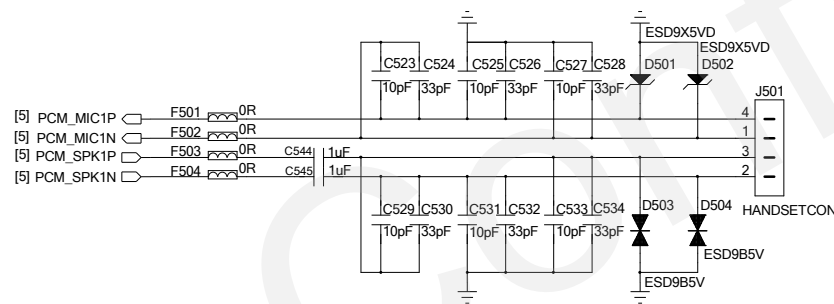
DRAWN BY <Yeoman CHEN>	PROJECT <UG95 Reference Design>	TITLE <MCU Interface>
CHECKED BY <Tony GAO>	SIZE A2	VER 1.3
SHEET 4 of 5		<2015.11>

PCM Design

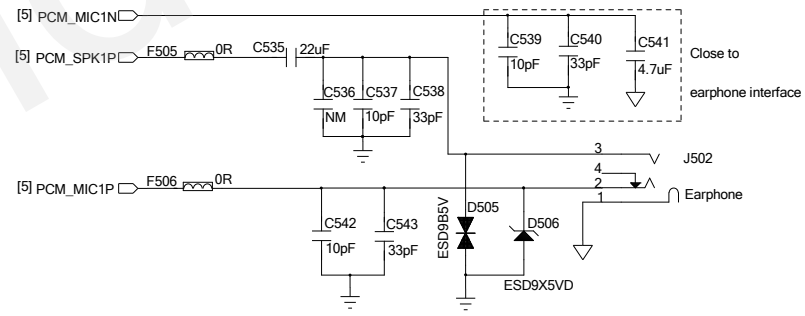
PCM Codec Circuit



Audio Channel - Handset



Audio Channel - Earphone



Note:

PCM_SPK1P&PCM_SPK1N are capable of driving 32ohm load.

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DRAWN BY <Yeoman CHEN>	PROJECT <UG95 Reference.Design>	TITLE <PCM Design>
CHECKED BY <Tony GAO>	SIZE A2	VER 1.3
SHEET 5 of 5		<2015.11>