

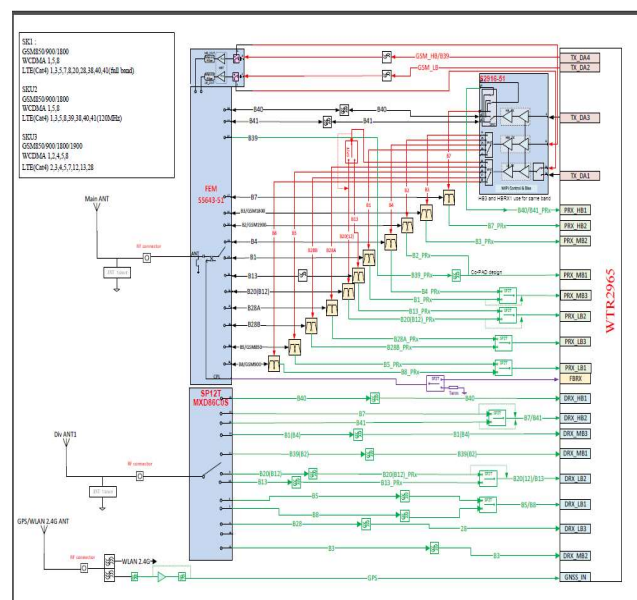
[illegible]

Revision History

REV	DESCRIPTION
TA-1189/TA-1186_V0.1	Pre-EVT
TA-1189/TA-1186_V0.2	EVT: update RF matching; update antenna matching; update HWID information
TA-1189/TA-1186_V0.3	DVT: update RF matching; update antenna matching; update HWID information; remove antenna tuner; remove mic grounding which close to antenna area.

Board Change History

SCHEMATIC MCN	HW VERSION	REVISION	DESCRIPTION OF CHANGE



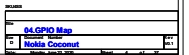
MSM8905 GPIO Configuration For QRD8909

GPIO_0	MI2S_2_WS	GPIO_41	WCSS_WLAN_DATA_1	GPIO_82	APPS_BOOT_FROM_ROM
GPIO_1	MI2S_2_SCK	GPIO_42	WCSS_WLAN_DATA_0	GPIO_83	NC
GPIO_2	MI2S_2_D0	GPIO_43	WCSS_WLAN_RST	GPIO_84	RST_GPS_LNA_EN
GPIO_3	MI2S_2_D1	GPIO_44	WCSS_WLAN_CLK	GPIO_85	CH0_GSM_TX_PHASE_D0
GPIO_4	UART_MSM_TX	GPIO_45	WCSS_FM_SSB1	GPIO_86	RFFE5_CLK
GPIO_5	UART_MSM_RX	GPIO_46	WCSS_FM_SDI	GPIO_87	RFFE5_DATA
GPIO_6	GPIO6_ROW	GPIO_47	WCSS_BT_CTRL	GPIO_88	RFFE4_CLK
GPIO_7	GPIO7_ROW	GPIO_48	WCSS_BT_DAT_STB	GPIO_89	RFFE4_DATA
GPIO_8	NFC_BLSF6_SPI_ESE_MOSI	GPIO_49	UIM2_DATA	GPIO_90	KEY_VOL_UP_N
GPIO_9	NFC_BLSF6_SPI_ESE_MISO	GPIO_50	UIM2_CLK	GPIO_91	LCD_ID
GPIO_10	NFC_BLSF6_SPI_ESE_CS_N	GPIO_51	UIM2_RESET	GPIO_92	SCAM_ID
GPIO_11	NFC_BLSF6_SPI_ESE_CLK	GPIO_52	GPIO52_ROW	GPIO_93	LCD_TE_SCAM_ID
GPIO_12	RGB_SYS_CLK2	GPIO_53	UIM1_DATA	GPIO_94	GPIO94_SENSE
GPIO_13	MHL_RESET	GPIO_54	UIM1_CLK	GPIO_95	GPIO95_SENSE
GPIO_14	MHL_RGB_I2C_SDA	GPIO_55	UIM1_RESET	GPIO_96	GPIO96_SENSE
GPIO_15	MHL_RGB_I2C_SCL	GPIO_56	GPIO56_ROW	GPIO_97	GPIO97_SENSE
GPIO_16	BLSP5_SPI_MOSI	GPIO_57	UIM_BATT_ALM	GPIO_98	MI2S_2_MCLK
GPIO_17	BLSP5_SPI_MISO	GPIO_58	SMB_INT	GPIO_99	GPIO99_ROW
GPIO_18	BLSP5_SPI_CS_N	GPIO_59	CDC_PDM_CLK	GPIO_100	SDC1_CLK
GPIO_19	BLSP5_SPI_CLK	GPIO_60	CDC_PDM_SYNC	GPIO_101	SDC1_DATA7
GPIO_20	NFC_DISABLE	GPIO_61	CDC_PDM_TX	GPIO_102	SDC1_DATA6
GPIO_21	NFC_INT_N	GPIO_62	CDC_PDM_RX0	GPIO_103	SDC1_DATA5
GPIO_22	FLAG_CAMERA_AF_EN	GPIO_63	CDC_PDM_RX1	GPIO_104	SDC1_DATA4
GPIO_23	NFC_DWL_REQ	GPIO_64	CDC_PDM_RX2	GPIO_105	SDC1_DATA3
GPIO_24	LCD_TE0	GPIO_65	ACCL_INT2_N	GPIO_106	SDC1_DATA2
GPIO_25	LCD_RST_N	GPIO_66	RFFE1_CLK	GPIO_107	SDC1_DATA1
GPIO_26	CAM0_MCLK	GPIO_67	RFFE1_DATA	GPIO_108	SDC1_DATA0
GPIO_27	CAM1_MCLK	GPIO_68	RFFE2_CLK	GPIO_109	SDC1_CMD
GPIO_28	SCAM_RST_N	GPIO_69	RFFE2_DATA	GPIO_110	LCM_SPI_RS
GPIO_29	CAM_I2C_SDA	GPIO_70	SP2T_B41_B7	GPIO_111	SMB_NFC_I2C_SDA
GPIO_30	CAM_I2C_SCL	GPIO_71	NC	GPIO_112	SMB_NFC_I2C_SCL
GPIO_31	NFC_ESE_PWR_REQ	GPIO_72	NC		
GPIO_32	NC	GPIO_73	NC		
GPIO_33	SCAM_PWDN	GPIO_74	SP2T_VCTL		
GPIO_34	NCAM_PWDN	GPIO_75	NC		
GPIO_35	NCAM_RST_N	GPIO_76	TX_G_N_SEL0(WDOG_DISABLE)		
GPIO_36	MHL_INT	GPIO_77	NC		
GPIO_37	FORCED_USB_BOOT	GPIO_78	NC		
GPIO_38	SMB_CM	GPIO_79	DRX_MODE_SEL_B41_B7		
GPIO_39	WCSS_BT_SSB1	GPIO_80	DRX_MODE_SEL_B3_B39		
GPIO_40	WCSS_WLAN_DATA_2	GPIO_81	NC		

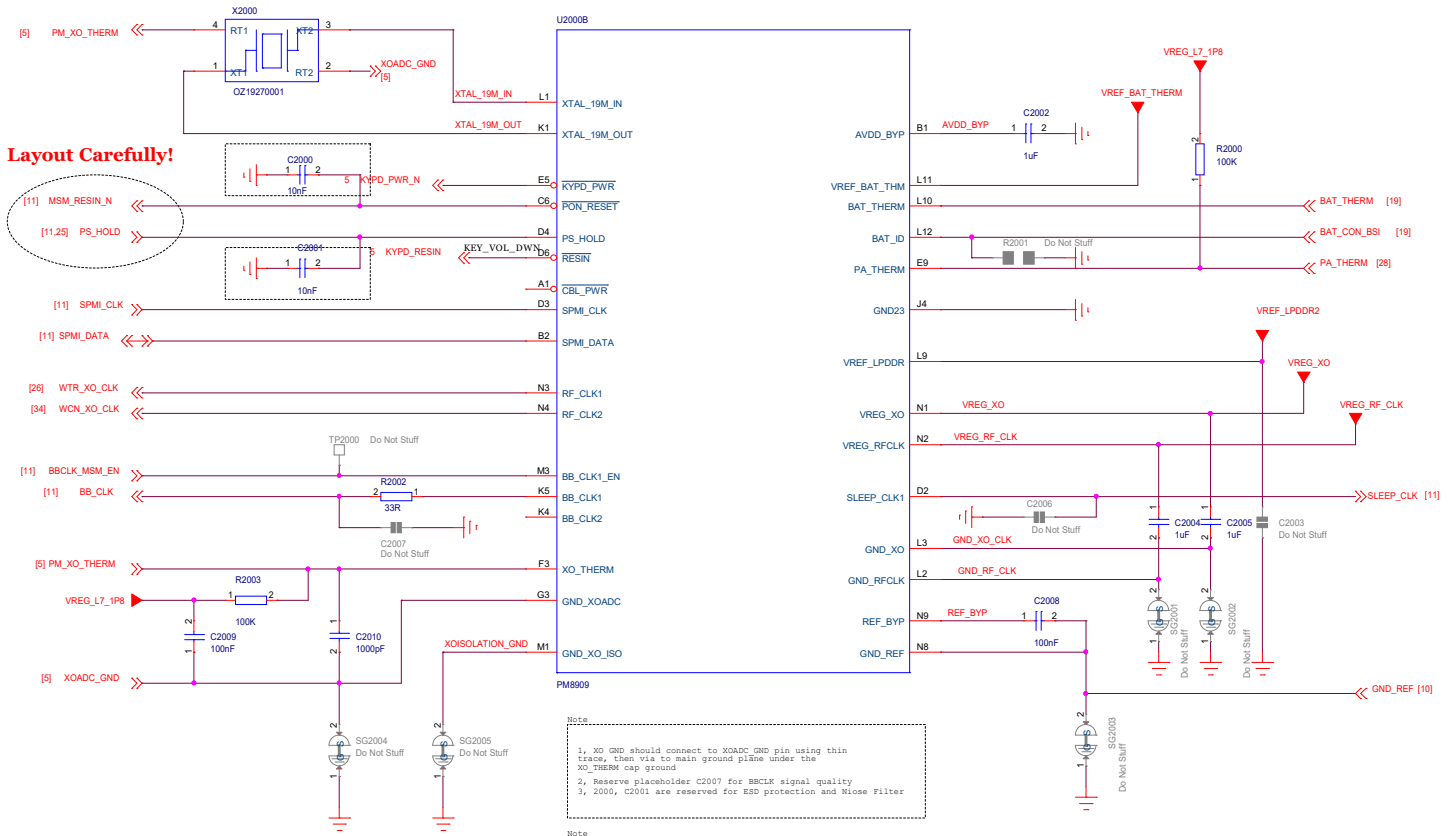
PM8909 GPIO/MPP Configuration For QRD8909

GPIO_1	PM_KEYBL_EN	MPP_1	VDD_PX_BIAS_MPP
GPIO_2	RGB_NFC_CLK_REQ	MPP_2	LCM_BI_EN
GPIO_3	UIM_BATT_ALM	MPP_3	VREF_DAC_MPP
GPIO_4	CAMERA_FLASH_EN	MPP_4	KEY_BL_EN

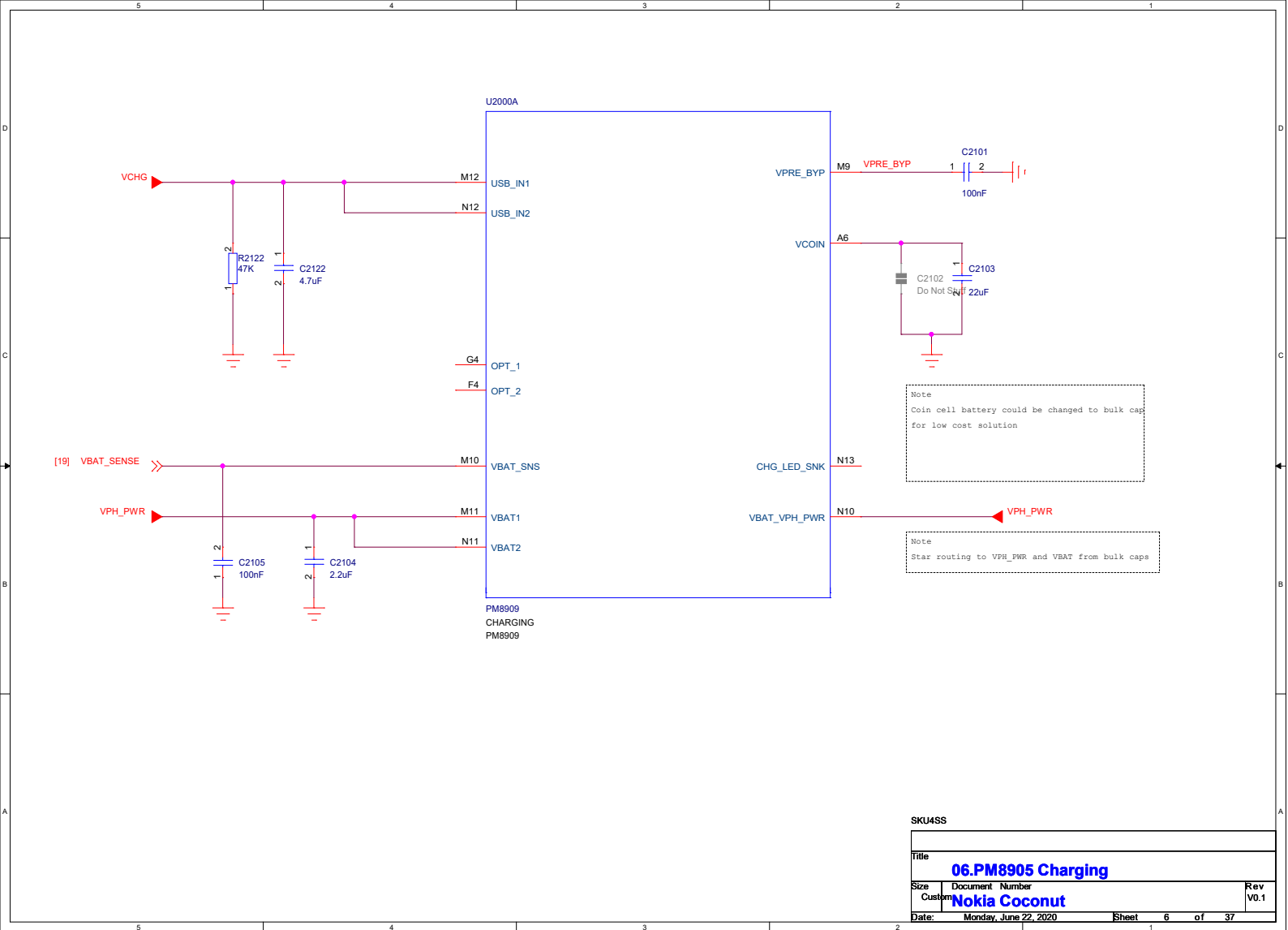
GPIO MAP



Layout Carefully!

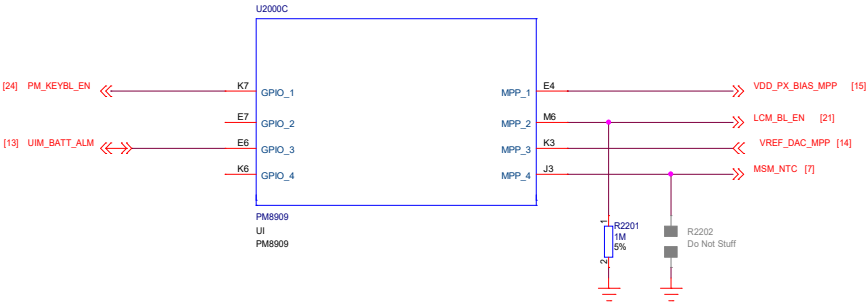


BOM/SS		
Rev		
05.PM8905 Control and MPP/Clock		
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B	Nokia Coconut	V0.1
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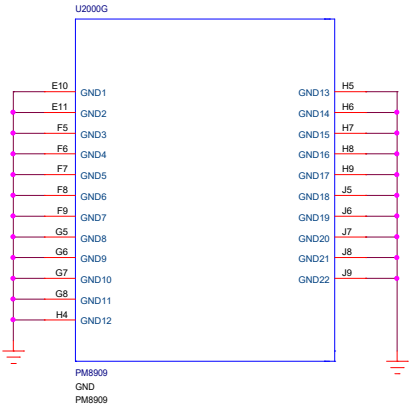
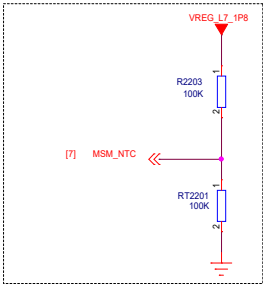


Software Caution:
Need software to config MSM
GPIO internal pullup

PM8905_GPIO_MPP



NTC For MSM

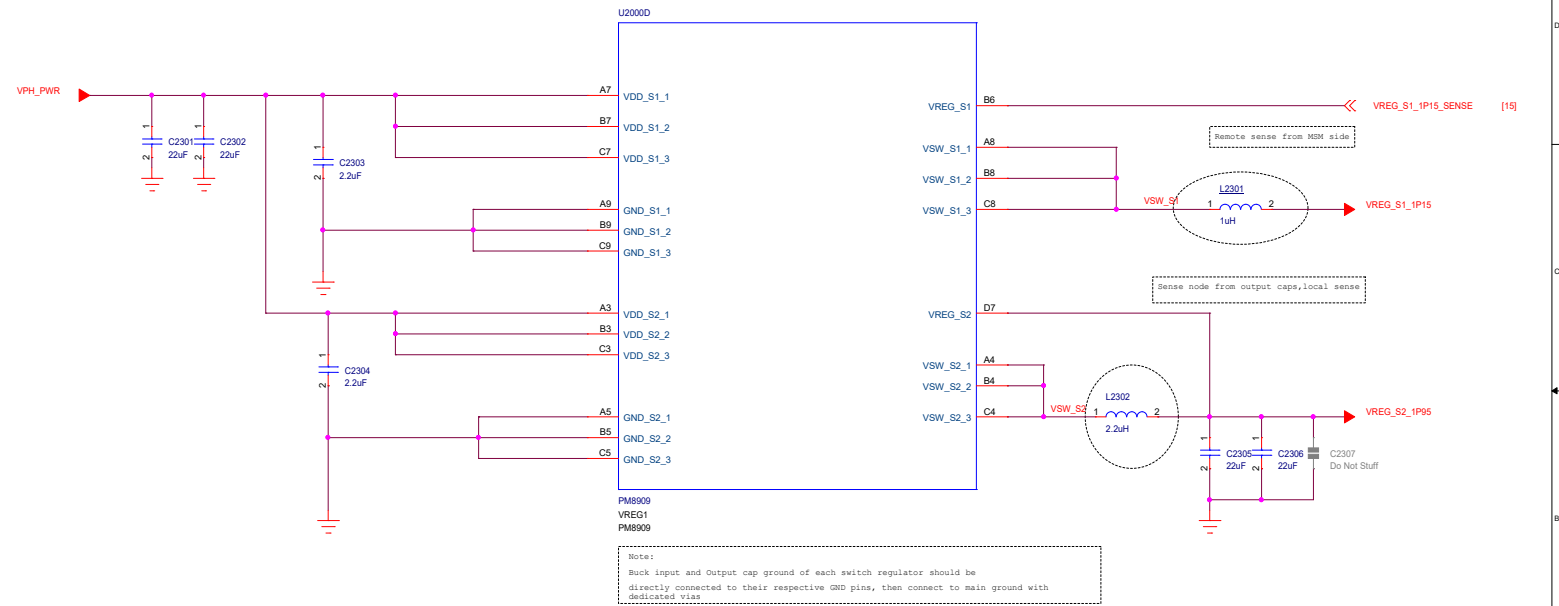


Note:
Change the MPP2 and MPP4 assignment to mitigate coupling risk to XTAL_OUT pin

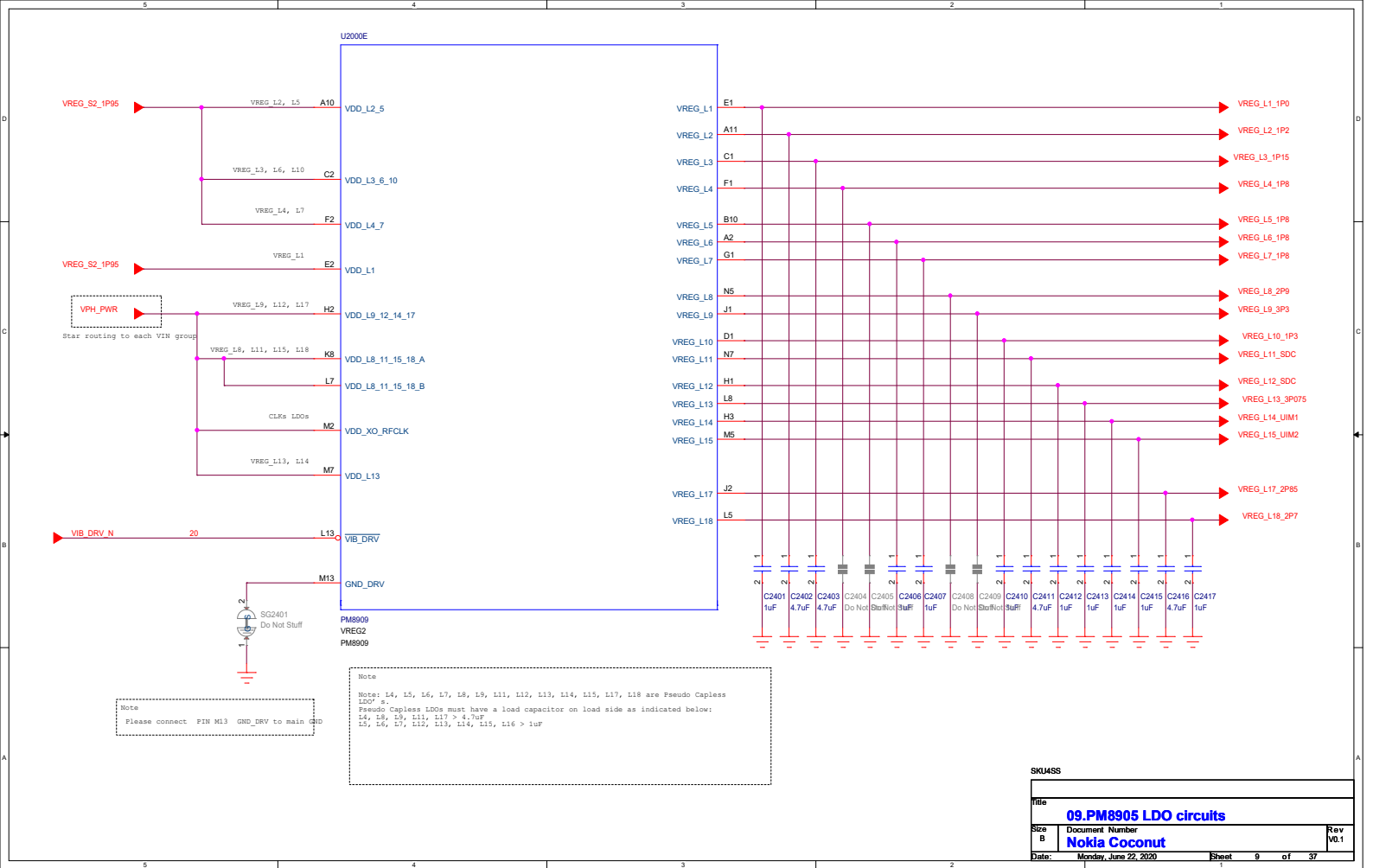
Note:
Ensure that pull down resistor of atleast 1Mohm is placed, if MPP2 and MPP4 are used as DO (Digital Output).

Note:
This thermistor needs to be placed near MSM. It's used to provide better thermal control for skin temperature.

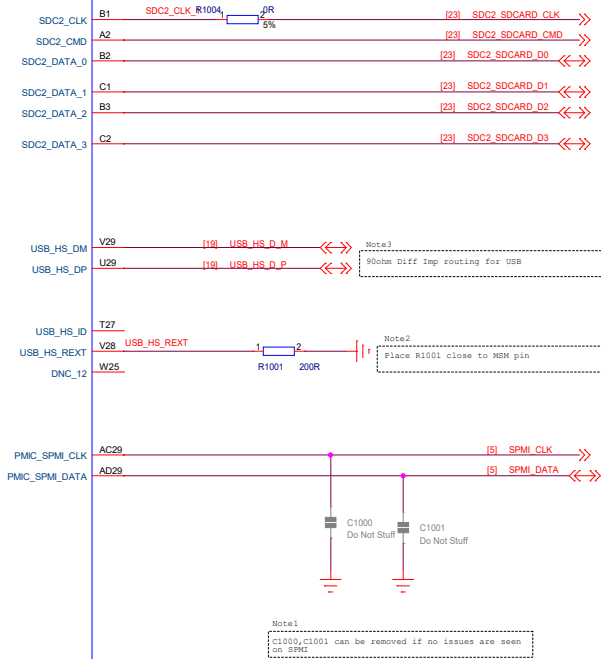
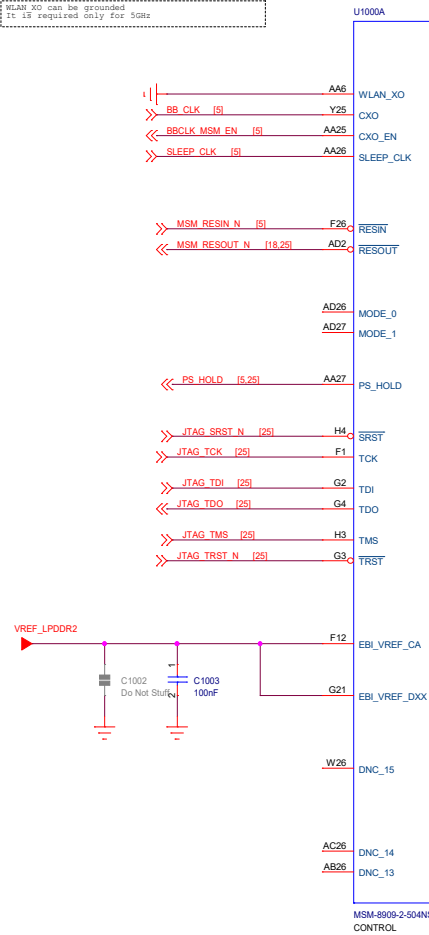
SKU468			
Title			
07.PM8905 GPIO/MPP			
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SKU468			
Title			
08.PM8905 Buck converter			
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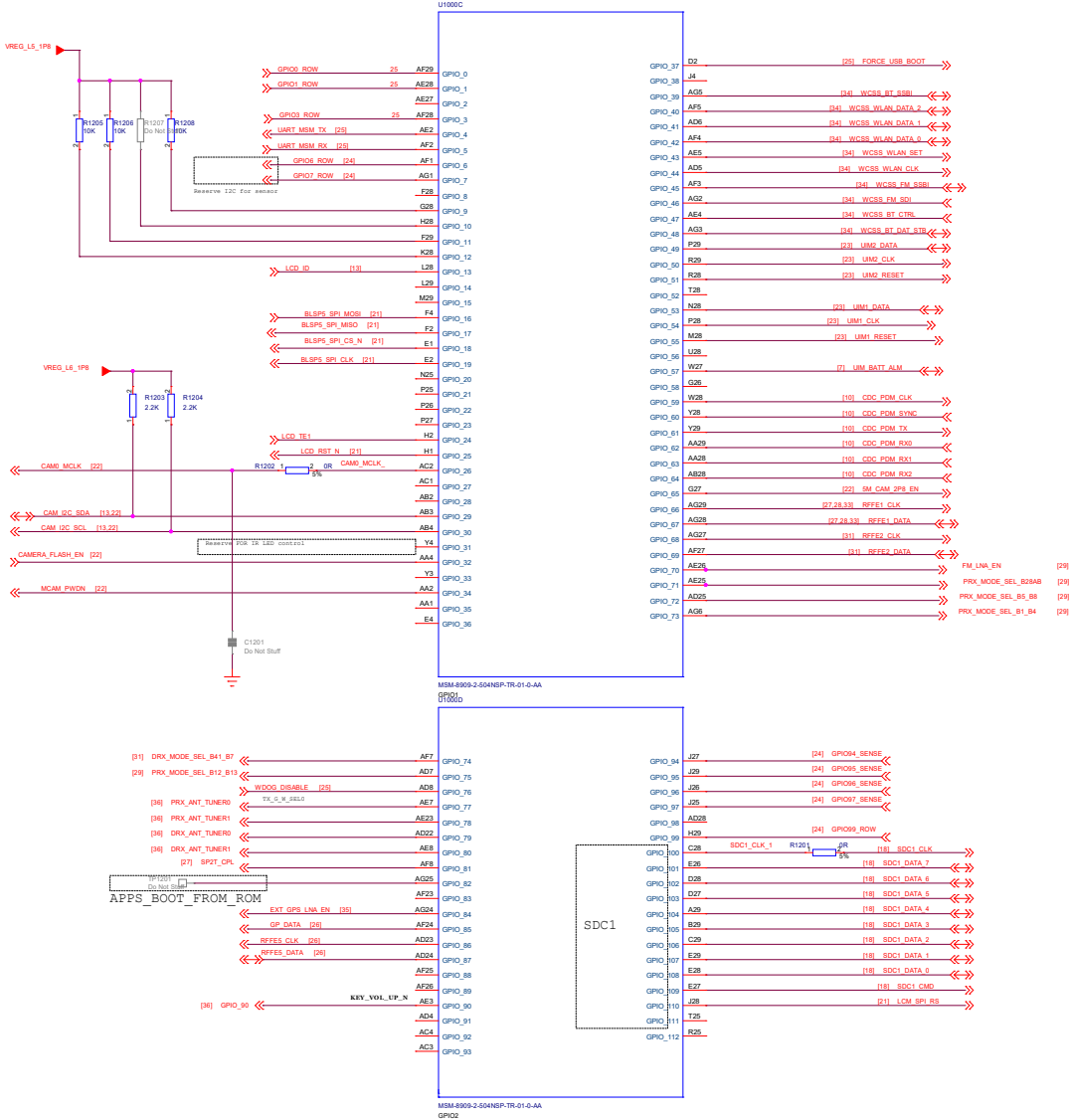


Notes
1. SLEEP_CLK can be grounded
2. It is required only for 50ms



SKU465		
Title		
10.PM8905 CODEC		
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B	Nokia Coconut	V0.1
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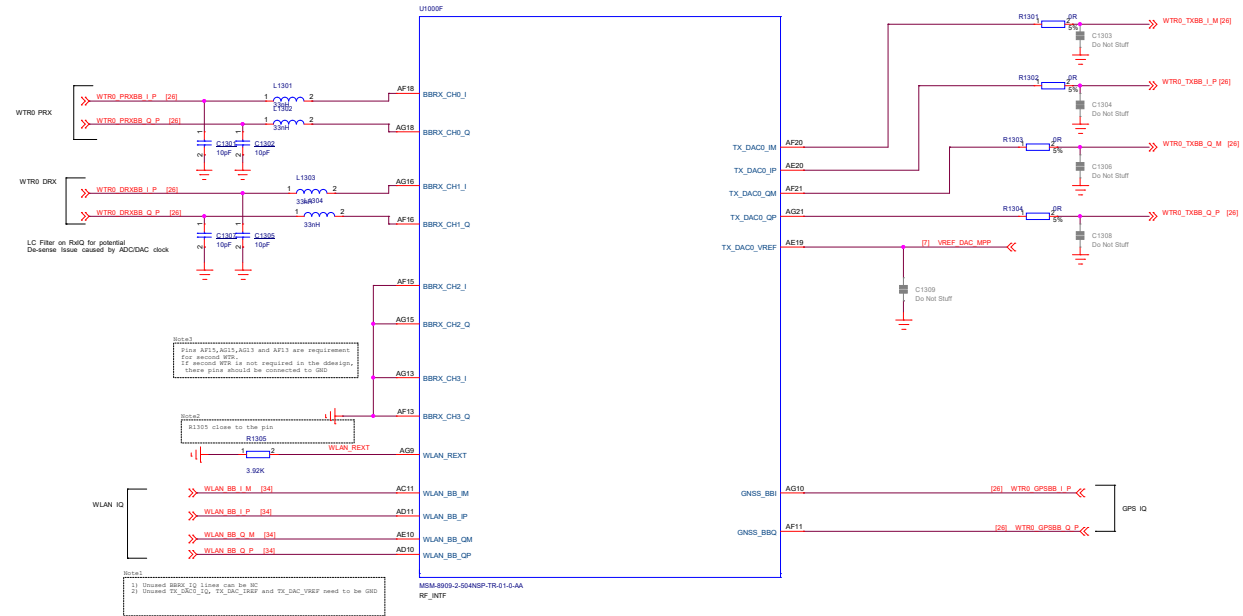
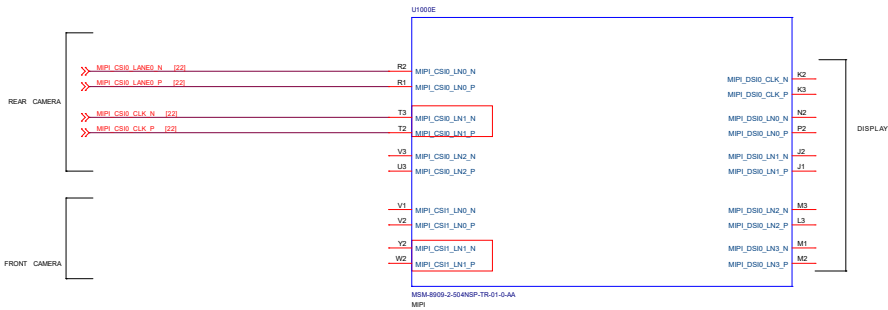




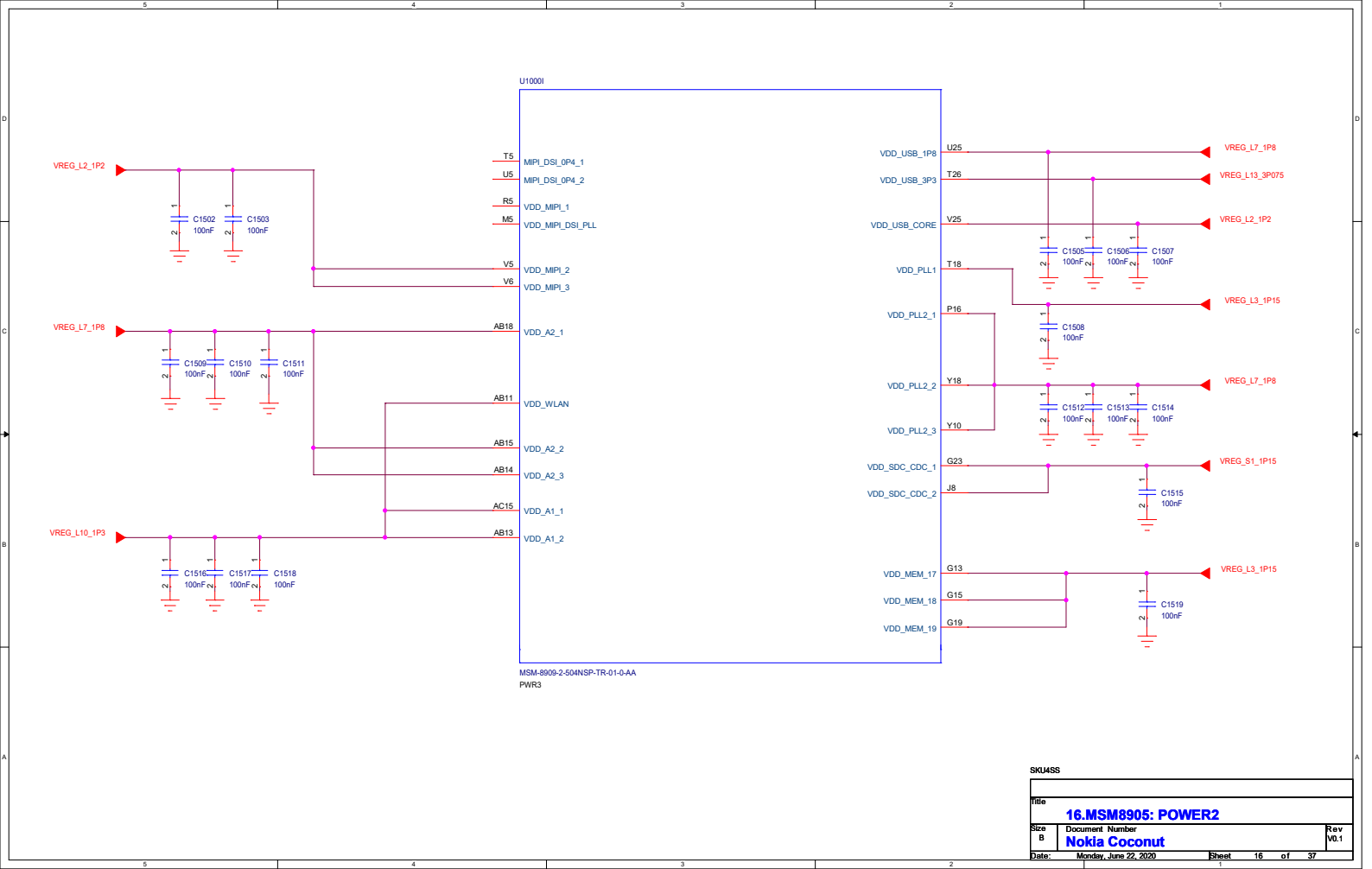
GPIO_0	BOOT_CONFIG
GPIO_1	BOOT_CONFIG[0]
GPIO_2	BOOT_CONFIG[1]
GPIO_3	BOOT_CONFIG[2]
GPIO_4	BOOT_CONFIG[3]
GPIO_5	BOOT_CONFIG[4]
GPIO_6	BOOT_CONFIG[5]
GPIO_7	BOOT_CONFIG[6]
GPIO_8	BOOT_CONFIG[7]
GPIO_9	BOOT_CONFIG[8]
GPIO_10	BOOT_CONFIG[9]
GPIO_11	BOOT_CONFIG[10]
GPIO_12	BOOT_CONFIG[11]
GPIO_13	BOOT_CONFIG[12]
GPIO_14	BOOT_CONFIG[13]
GPIO_15	BOOT_CONFIG[14]
GPIO_16	BOOT_CONFIG[15]
GPIO_17	BOOT_CONFIG[16]
GPIO_18	BOOT_CONFIG[17]
GPIO_19	BOOT_CONFIG[18]
GPIO_20	BOOT_CONFIG[19]
GPIO_21	BOOT_CONFIG[20]
GPIO_22	BOOT_CONFIG[21]
GPIO_23	BOOT_CONFIG[22]
GPIO_24	BOOT_CONFIG[23]
GPIO_25	BOOT_CONFIG[24]
GPIO_26	BOOT_CONFIG[25]
GPIO_27	BOOT_CONFIG[26]
GPIO_28	BOOT_CONFIG[27]
GPIO_29	BOOT_CONFIG[28]
GPIO_30	BOOT_CONFIG[29]
GPIO_31	BOOT_CONFIG[30]
GPIO_32	BOOT_CONFIG[31]
GPIO_33	BOOT_CONFIG[32]
GPIO_34	BOOT_CONFIG[33]
GPIO_35	BOOT_CONFIG[34]
GPIO_36	BOOT_CONFIG[35]
GPIO_37	BOOT_CONFIG[36]
GPIO_38	BOOT_CONFIG[37]
GPIO_39	BOOT_CONFIG[38]
GPIO_40	BOOT_CONFIG[39]
GPIO_41	BOOT_CONFIG[40]
GPIO_42	BOOT_CONFIG[41]
GPIO_43	BOOT_CONFIG[42]
GPIO_44	BOOT_CONFIG[43]
GPIO_45	BOOT_CONFIG[44]
GPIO_46	BOOT_CONFIG[45]
GPIO_47	BOOT_CONFIG[46]
GPIO_48	BOOT_CONFIG[47]
GPIO_49	BOOT_CONFIG[48]
GPIO_50	BOOT_CONFIG[49]
GPIO_51	BOOT_CONFIG[50]
GPIO_52	BOOT_CONFIG[51]
GPIO_53	BOOT_CONFIG[52]
GPIO_54	BOOT_CONFIG[53]
GPIO_55	BOOT_CONFIG[54]
GPIO_56	BOOT_CONFIG[55]
GPIO_57	BOOT_CONFIG[56]
GPIO_58	BOOT_CONFIG[57]
GPIO_59	BOOT_CONFIG[58]
GPIO_60	BOOT_CONFIG[59]
GPIO_61	BOOT_CONFIG[60]
GPIO_62	BOOT_CONFIG[61]
GPIO_63	BOOT_CONFIG[62]
GPIO_64	BOOT_CONFIG[63]
GPIO_65	BOOT_CONFIG[64]
GPIO_66	BOOT_CONFIG[65]
GPIO_67	BOOT_CONFIG[66]
GPIO_68	BOOT_CONFIG[67]
GPIO_69	BOOT_CONFIG[68]
GPIO_70	BOOT_CONFIG[69]
GPIO_71	BOOT_CONFIG[70]
GPIO_72	BOOT_CONFIG[71]
GPIO_73	BOOT_CONFIG[72]
GPIO_74	BOOT_CONFIG[73]
GPIO_75	BOOT_CONFIG[74]
GPIO_76	BOOT_CONFIG[75]
GPIO_77	BOOT_CONFIG[76]
GPIO_78	BOOT_CONFIG[77]
GPIO_79	BOOT_CONFIG[78]
GPIO_80	BOOT_CONFIG[79]
GPIO_81	BOOT_CONFIG[80]
GPIO_82	BOOT_CONFIG[81]
GPIO_83	BOOT_CONFIG[82]
GPIO_84	BOOT_CONFIG[83]
GPIO_85	BOOT_CONFIG[84]
GPIO_86	BOOT_CONFIG[85]
GPIO_87	BOOT_CONFIG[86]
GPIO_88	BOOT_CONFIG[87]
GPIO_89	BOOT_CONFIG[88]
GPIO_90	BOOT_CONFIG[89]
GPIO_91	BOOT_CONFIG[90]
GPIO_92	BOOT_CONFIG[91]
GPIO_93	BOOT_CONFIG[92]
GPIO_94	BOOT_CONFIG[93]
GPIO_95	BOOT_CONFIG[94]
GPIO_96	BOOT_CONFIG[95]
GPIO_97	BOOT_CONFIG[96]
GPIO_98	BOOT_CONFIG[97]
GPIO_99	BOOT_CONFIG[98]
GPIO_100	BOOT_CONFIG[99]
GPIO_101	BOOT_CONFIG[100]
GPIO_102	BOOT_CONFIG[101]
GPIO_103	BOOT_CONFIG[102]
GPIO_104	BOOT_CONFIG[103]
GPIO_105	BOOT_CONFIG[104]
GPIO_106	BOOT_CONFIG[105]
GPIO_107	BOOT_CONFIG[106]
GPIO_108	BOOT_CONFIG[107]
GPIO_109	BOOT_CONFIG[108]
GPIO_110	BOOT_CONFIG[109]
GPIO_111	BOOT_CONFIG[110]
GPIO_112	BOOT_CONFIG[111]

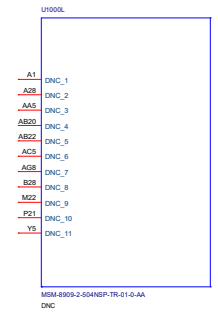
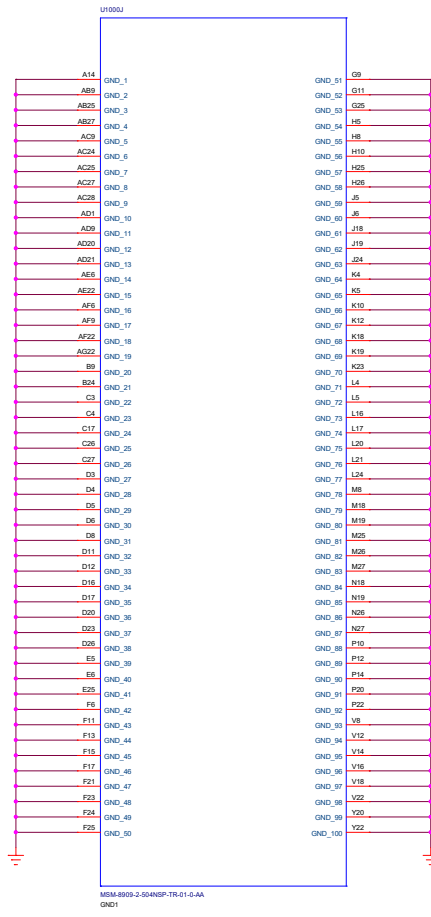
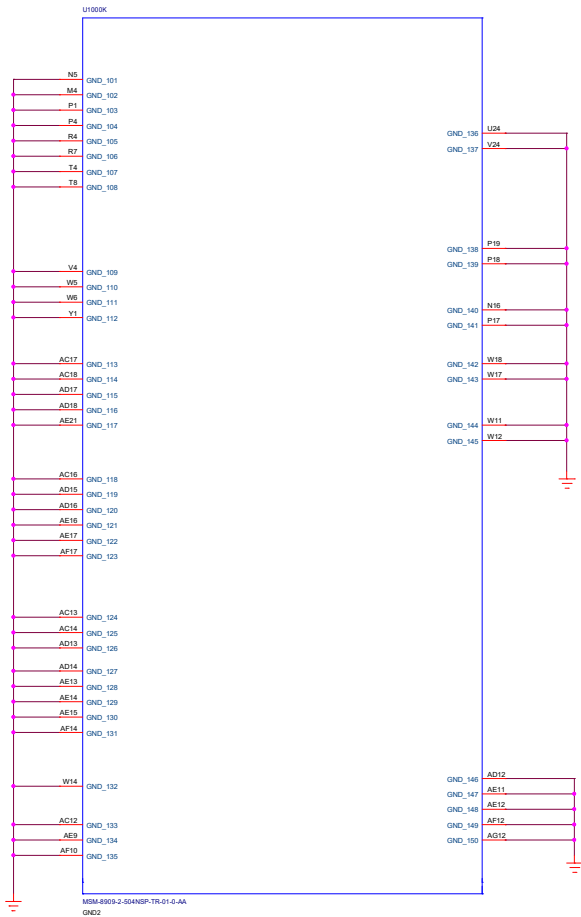
Default Boot Config (GPIO) is 4000

File	13.MSM8905: GPIO	Rev	10.1
Doc	Document	Number	
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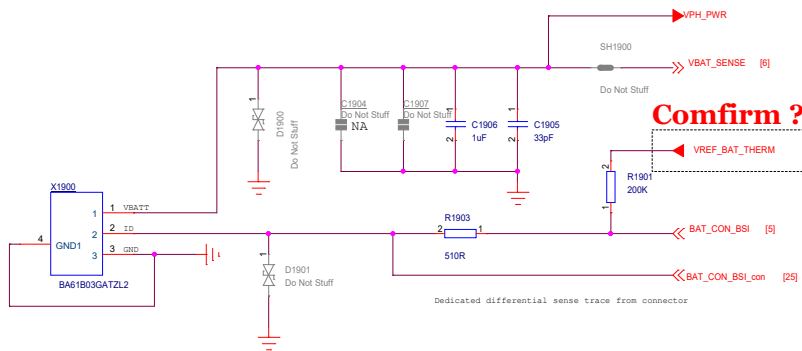
SNU485			
File	14.MSM8909: MIPI and RF Control		
Doc	Document	Number	Rev
C			10.1
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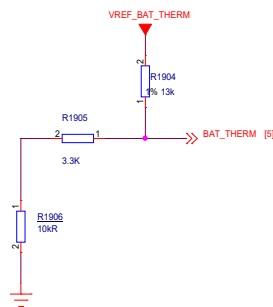


SML485			
File			
17 MSM8905:GND			
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BAT CON



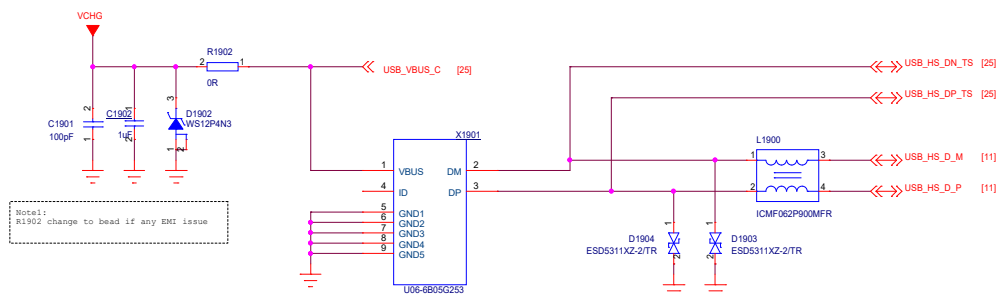
BATTERY NTC



The BPD comparator threshold is set at 95% of VREF_BAT_THERM
NOTE: the overvoltage protection threshold is 6.3V for PMIC

Micro USB CON

NOTE: the overvoltage protection threshold is 6.3V for PMIC

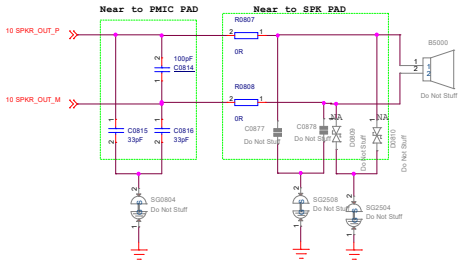


SKU468

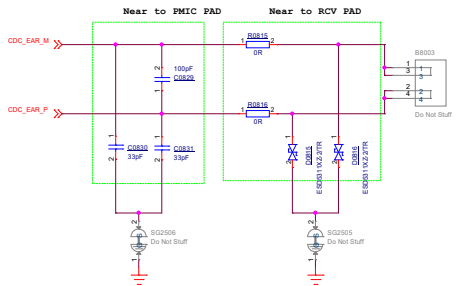
Title			
19.Battery/USB Connector/MHL			
Size	Document Number		Rev
B	Nokia Coconut		V0.1
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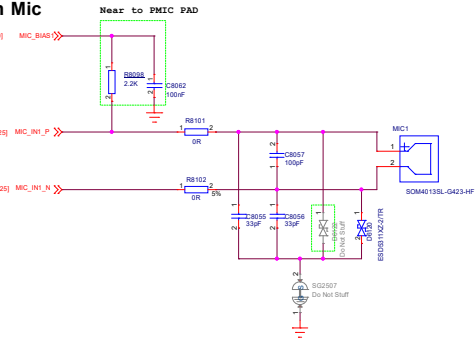
SPK



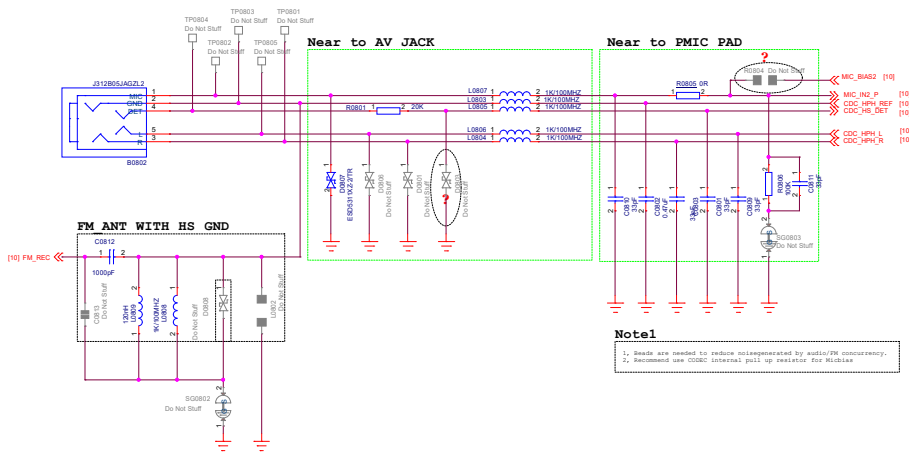
RCV



Main Mic

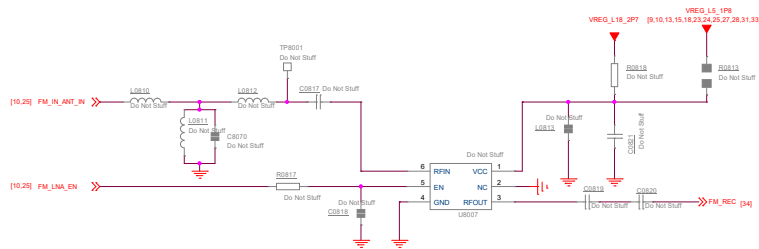


Headset



Note1
1. Beads are needed to reduce noise generated by audio/FM concurrency.
2. Recommended use C839, C840, C841, C842, C843, C844, C845, C846 for Nokia.

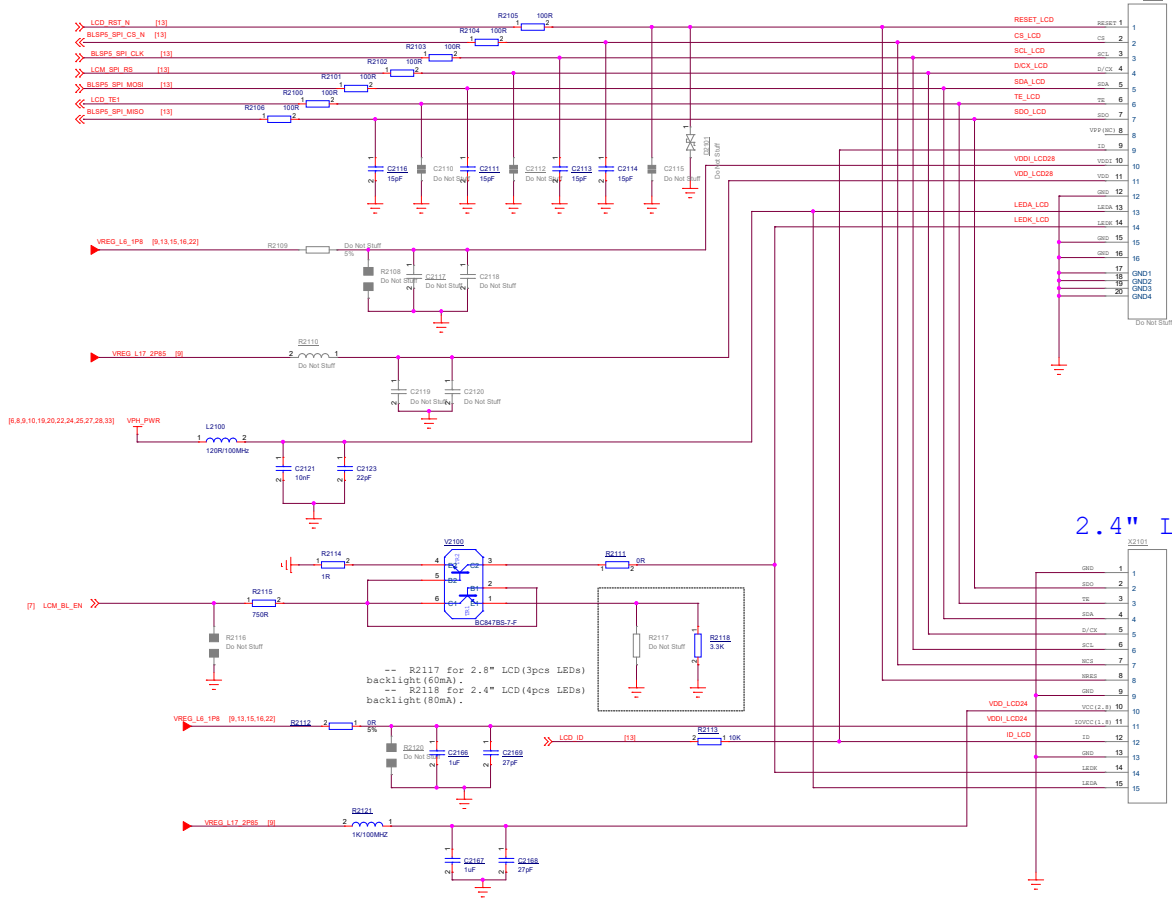
FM_LNA



SHEET			
File	20 Audio	Rev	10.1
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2.8" LCD for Premium Version.
2.4" LCD for Basic Version.

2.8" LCD

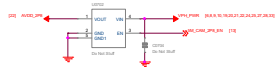
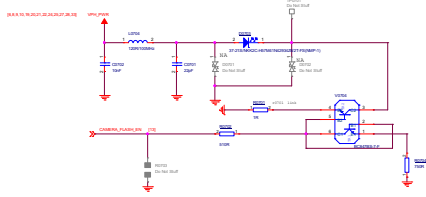


2.4" LCD

SWCLASS

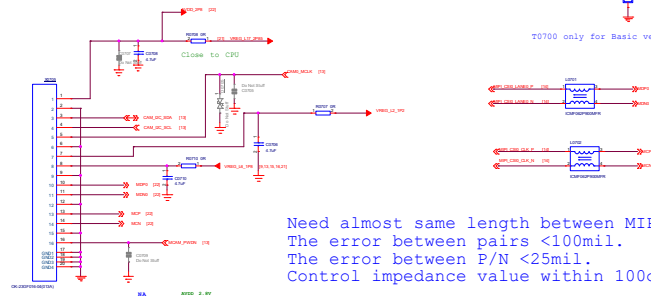
File
21_LCD/backlight
Document Number
Nokia LEO
Rev
12.0
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37

CAMERA FLASH



Pin	Signal	IO	Notes
1	GPIO0	I/O	
2	GPIO1	I/O	
3	GPIO2	I/O	
4	GPIO3	I/O	
5	GPIO4	I/O	
6	GPIO5	I/O	
7	GPIO6	I/O	
8	GPIO7	I/O	
9	GPIO8	I/O	
10	GPIO9	I/O	
11	GPIO10	I/O	
12	GPIO11	I/O	
13	GPIO12	I/O	
14	GPIO13	I/O	
15	GPIO14	I/O	
16	GPIO15	I/O	
17	GPIO16	I/O	
18	GPIO17	I/O	
19	GPIO18	I/O	
20	GPIO19	I/O	

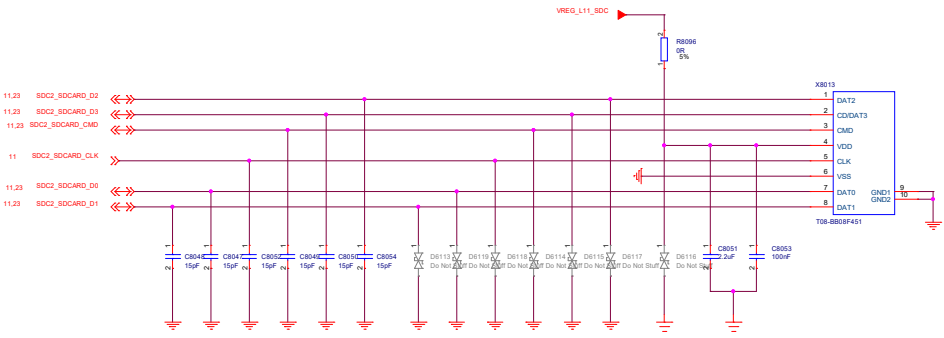
REAR CAMERA



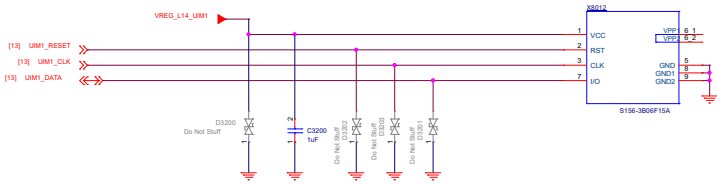
Need almost same length between MIPI lanes.
The error between pairs <100mil.
The error between P/N <25mil.
Control impedance value within 100ohm.

FRONT CAMERA

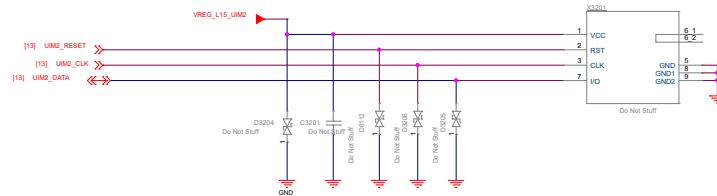
SD_CARD



USIM1

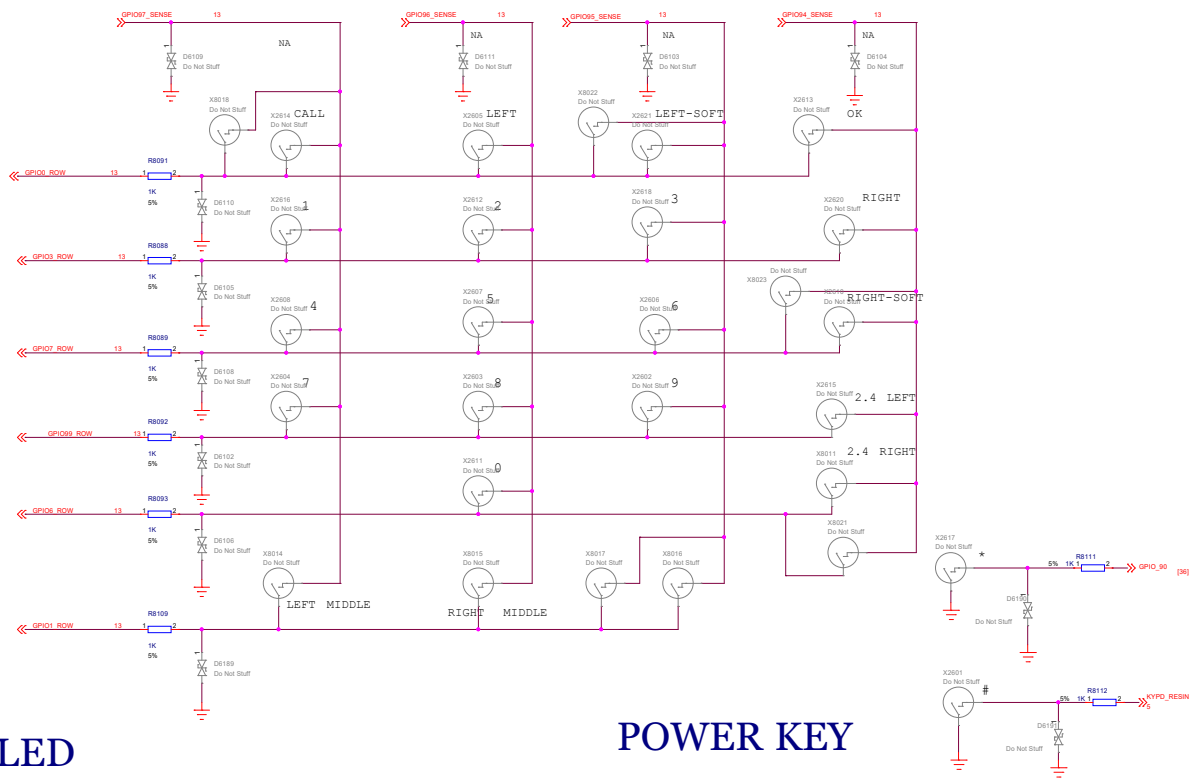


USIM2

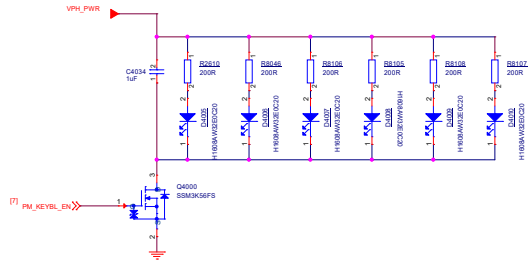


SNU455			
File			
23. SIM/TF card			
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C			10.1
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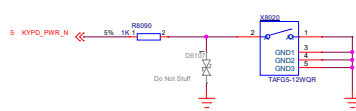
KEYPAD



KEYPAD LED



POWER KEY



SML485			
File	24.KeypadLED/connector		
Rev	Document	Number	Rev
C	Nokia	LEO	10.1
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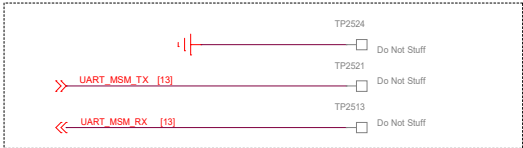
USB Test Point



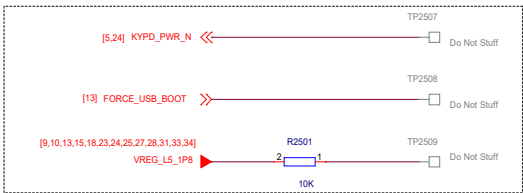
Battery Test Point



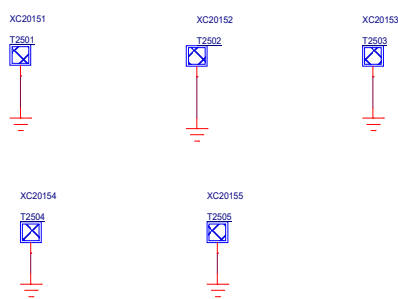
UART Test Point



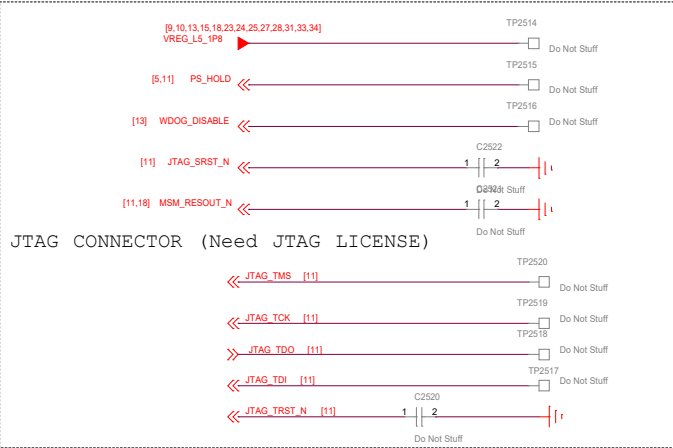
Force BOOT Test PAD



Shielding Frame



SW Test Point (Reserved For QC Debug)

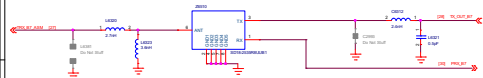


BRU488		
Title		
25.Test Point/GND/Shields		
Size	Document Number	Rev
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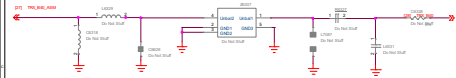
TX_LB/MB_LPF is required to meet 4FMod specs



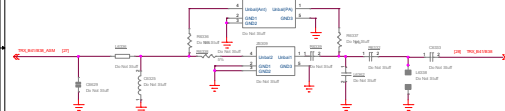
B7 Duplexer



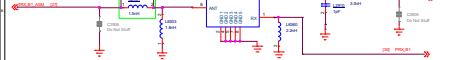
B40 TRx



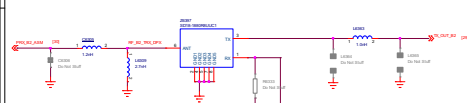
B41 TRx



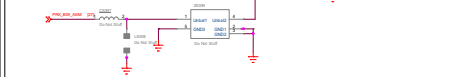
B1 Duplexer



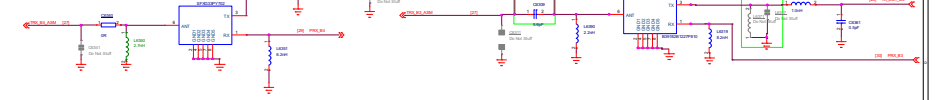
B2 Duplexer



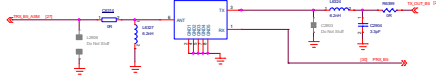
B39 PRx



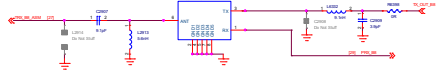
B4 Duplexer



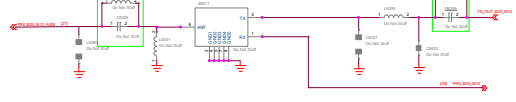
B5 Duplexer



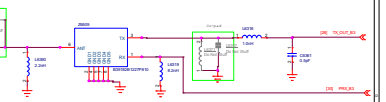
B8 Duplexer



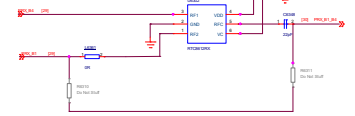
B20 Duplexer



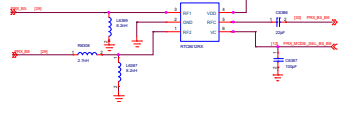
B3 Duplexer



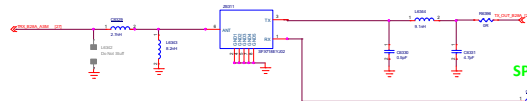
SP2T B1/B4 PRx



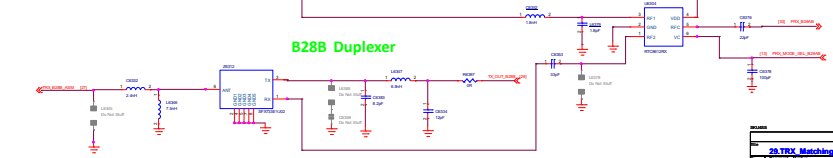
SP2T B5/B8 PRx



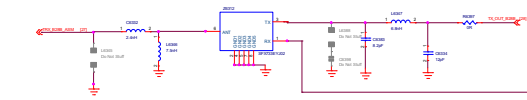
B28A Duplexer



SP2T B28A/B28B PRx

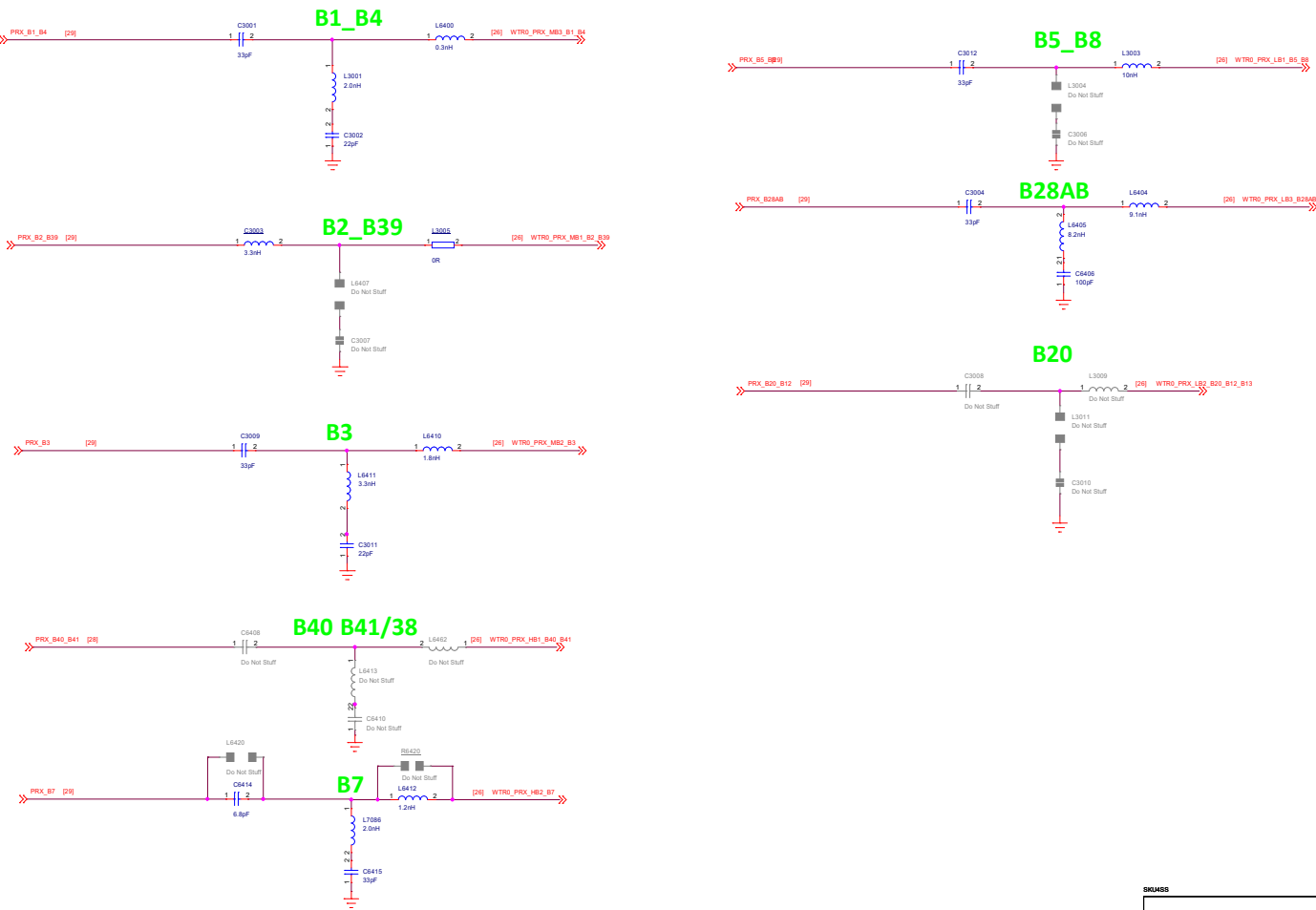


B28B Duplexer



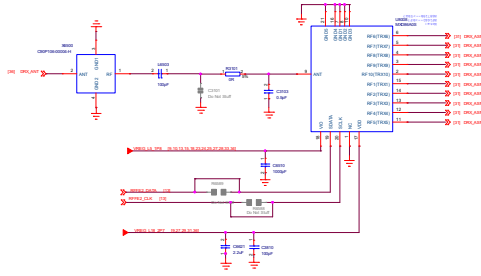
Notes
28 TRX Matching
Nokia Coconut

Note:The matching need close to WTR, RX ports have DC at the pin, so it need DC block



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DRX ASM



B1_B4 DRX



B2_B39 DRX



B3 DRX



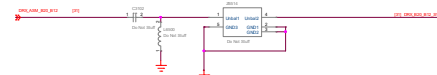
B5 DRX



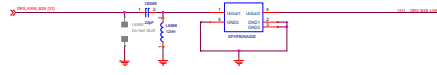
B8 DRX



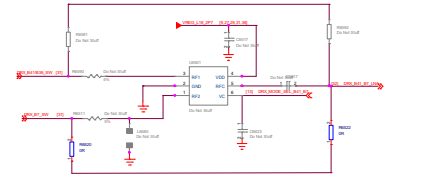
B20_B12 DRX



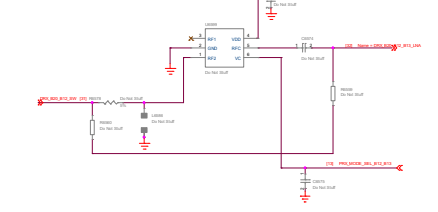
B28 DRX



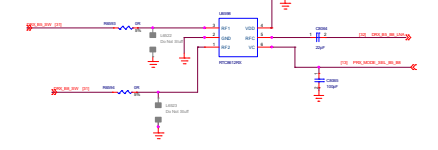
SP2T B41/B7



SP2T B20 DRX

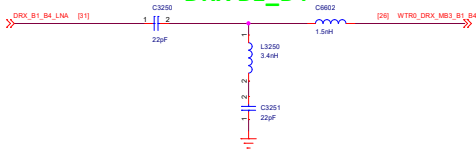


SP2T B5/B8 DRX

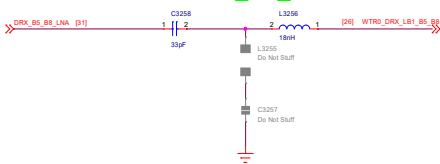


Note:The matching need
close to WTR, RX ports have
DC at the pin, so it need DC block,

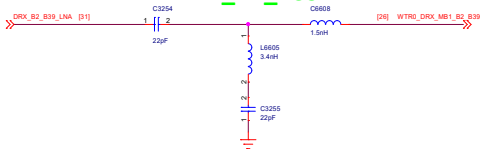
DRX_B1_B4



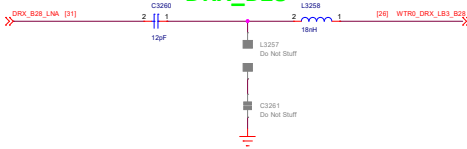
DRX_B5_B8



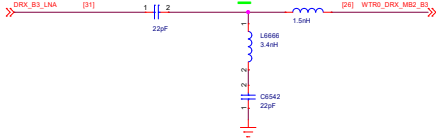
DRX_B2_B39



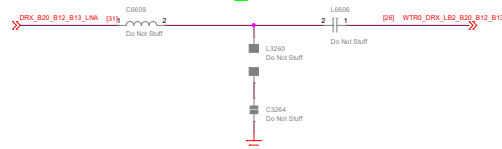
DRX_B28



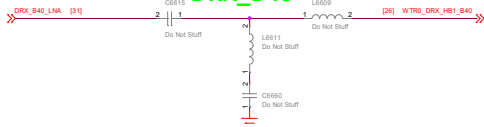
DRX_B3



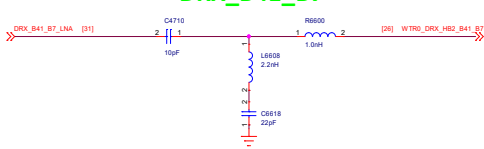
DRX_B20



DRX_B40

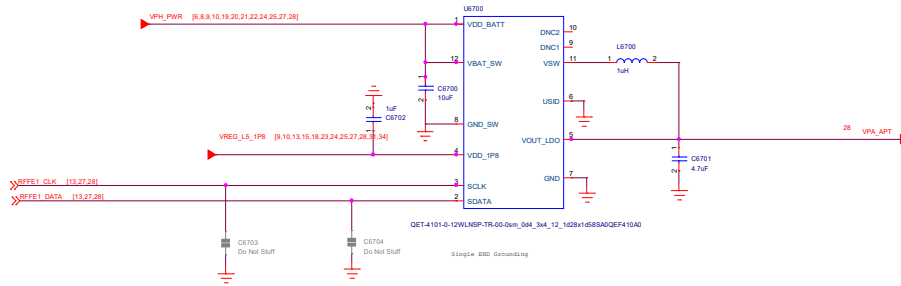


DRX_B41_B7

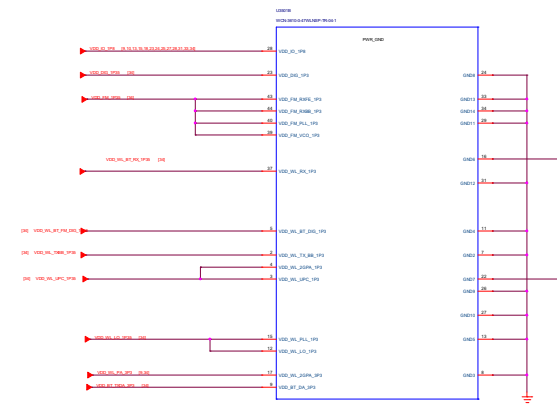
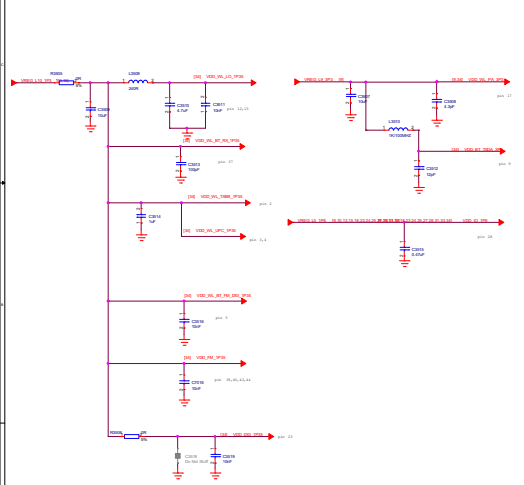
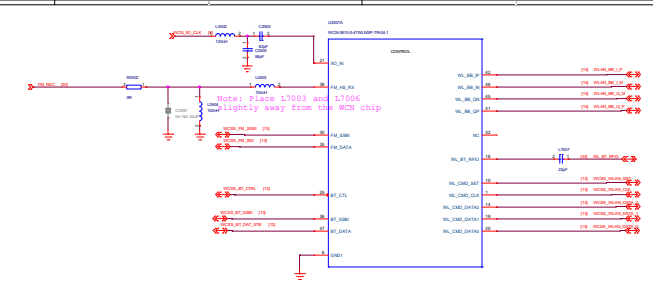
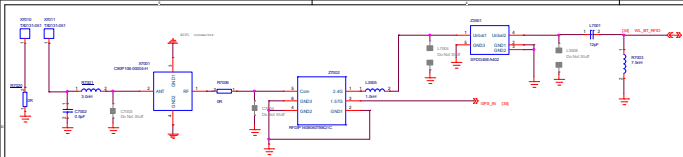


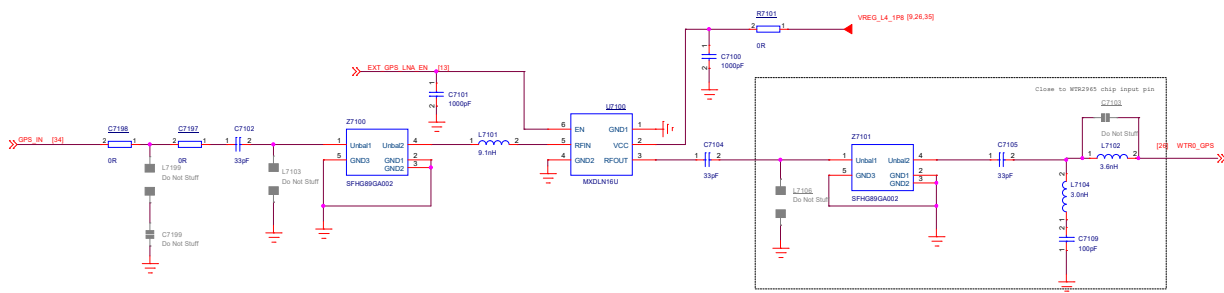
DRX MATCHING

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Change History

- 1. 2022-03-28: Initial version, change part 100 to 101.
- 2. 2022-03-28: Initial version, change part 100 to 101.
- 3. 2022-03-28: Initial version, change part 100 to 101.
- 4. 2022-03-28: Initial version, change part 100 to 101.
- 5. 2022-03-28: Initial version, change part 100 to 101.