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Revision History

SCHEMATIC MCN	HW VERSION	VERSION	DESCRIPTION OF CHANGE
	EVT1.0	A	EVT1.0 Initial Release

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MSM8916 GPIO Configuration For QRD8916

GPIO_0	NC	GPIO_41	WCSS_WLAN_DATA_1	GPIO_82	WTR1_SWITCH_CTL3
GPIO_1	NC	GPIO_42	WCSS_WLAN_DATA_0	GPIO_83	WTR1_GSM_PA_HB_EN
GPIO_2	NC	GPIO_43	WCSS_WLAN_SET	GPIO_84	WTR1_SWITCH_CTL0
GPIO_3	NC	GPIO_44	WCSS_WLAN_CLK	GPIO_85	DRX_MODE_SEL2
GPIO_4	UART_MSM_TX	GPIO_45	WCSS_FM_SSB_I	GPIO_86	NC
GPIO_5	UART_MSM_RX	GPIO_46	WCSS_FM_SDI	GPIO_87	WTR0_PA_R1
GPIO_6	SENSOR_I2C_SDA	GPIO_47	WCSS_BT_CTRL	GPIO_88	WTR1_PA_R1
GPIO_7	SENSOR_I2C_SCL	GPIO_48	WCSS_BT_DAT_STB	GPIO_89	WTR1_PA_R0
GPIO_8	NC	GPIO_49	LCD_ID	GPIO_90	DRX_MODE_SEL0
GPIO_9	NC	GPIO_50	CTP_ID	GPIO_91	GRFC_17
GPIO_10	NC	GPIO_51	MCAM_ID	GPIO_92	WTR1_PA_BC0_EN
GPIO_11	NC	GPIO_52	NC	GPIO_93	DRX_MODE_SEL1
GPIO_12	TP_RST_N	GPIO_53	UIM2_DATA	GPIO_94	WTR0_PA_R0
GPIO_13	TP_INT_N	GPIO_54	UIM2_CLK	GPIO_95	WTR1_SWITCH_CTRL2
GPIO_14	BUCK_SMB_I2C_SDA	GPIO_55	UIM2_RESET	GPIO_96	EXT_GPS_LNA_EN
GPIO_15	BUCK_SMB_I2C_SCL	GPIO_56	NC	GPIO_97	NC
GPIO_16	NC	GPIO_57	UIM1_DATA	GPIO_98	NC
GPIO_17	NC	GPIO_58	UIM1_CLK	GPIO_99	CH0_GSM_TX_PHASE_D0
GPIO_18	TP_I2C_SDA	GPIO_59	UIM1_RESET	GPIO_100	CH0_GSM_TX_PHASE_D1
GPIO_19	TP_I2C_SCL	GPIO_60	NC	GPIO_101	CH1_GSM_TX_PHASE_D0
GPIO_20	NFC_DISABLE	GPIO_61	UIM_BATT_ALM	GPIO_102	CH1_GSM_TX_PHASE_D1
GPIO_21	NFC_INT_N	GPIO_62	SMB_INT	GPIO_103	CH0_SSB_I_WTR_RX
GPIO_22	NFC_I2C_SDA	GPIO_63	CDC_PDM_CLK	GPIO_104	CH0_SSB_I_WTR_TX
GPIO_23	NFC_I2C_SCL	GPIO_64	CDC_PDM_SYNC	GPIO_105	CH1_SSB_I_WTR_RX
GPIO_24	LCD_TE0	GPIO_65	CDC_PDM_TX	GPIO_106	CH1_SSB_I_WTR_TX
GPIO_25	LCD_RST_N	GPIO_66	CDC_PDM_RX0	GPIO_107	KEY_VOL_UP_N
GPIO_26	CAM0_MCLK	GPIO_67	CDC_PDM_RX1	GPIO_108	NC
GPIO_27	CAM1_MCLK	GPIO_68	CDC_PDM_RX2	GPIO_109	NC
GPIO_28	SCAM_RST_N	GPIO_69	NC	GPIO_110	USB_HS_ID
GPIO_29	CAM_I2C_SDA	GPIO_70	RFFE1_CLK	GPIO_111	NC
GPIO_30	CAM_I2C_SCL	GPIO_71	RFFE1_DATA	GPIO_112	ACCL_INT1_N
GPIO_31	CAM_FLASH_TORCH_EN	GPIO_72	RFFE2_CLK	GPIO_113	ALSP_INT_N
GPIO_32	CAM_FLASH_TORCH_MODE	GPIO_73	RFFE2_DATA	GPIO_114	ACCL_INT2_N
GPIO_33	SCAM_PWDN	GPIO_74	NC	GPIO_115	GYRO_INT_N
GPIO_34	MCAM_PWDN	GPIO_75	GRFC_1	GPIO_116	NC
GPIO_35	MCAM_RST_N	GPIO_76	GRFC_2	GPIO_117	NC
GPIO_36	NC	GPIO_77	WTR1_GSM_PA_LB_EN	GPIO_118	NC
GPIO_37	FORCE_USB_BOOT	GPIO_78	TDS_B34/B39_PA_ON	GPIO_119	CTP_LED_EN
GPIO_38	NC	GPIO_79	WTR1_SWITCH_CTL1	GPIO_120	CAM_VCM_PWDN
GPIO_39	WCSS_BT_SSB_I	GPIO_80	WTR0_RX_ON	GPIO_121	NC
GPIO_40	WCSS_WLAN_DATA_2	GPIO_81	WTR0_RF_ON		

PM8916 GPIO/MPP Configuration For QRD8916

GPIO_1	UIM_BATT_ALM	MPP_1	VDD_PX_BIAS_MPP
GPIO_2	NFC_CLK_REQ	MPP_2	SCAM_ID
GPIO_3	NC	MPP_3	VREF_DAC_MPP
GPIO_4	NC	MPP_4	PWM_OUT

Sensors I2C Address List For QRD8916

I2C GPIO	Device	MPN	Write Address	Read Address
GPIO[6:7]	Accelerometer	BMA223	0x30	0x31
	Magnetometer	MMC34160PJ	0x60	0x61
	Gyroscope	MPU- 6050C	0xD0	0xD1
	ALS/Proximity	TMD27723	0x72	0x73
GPIO[18:19]	Touch Screen	FT6346	0x70	0x71
GPIO[29:30]	Front Camera	OV2680	0x20	0x21
	Rear Camera	OV5648	0x6C	0x6D

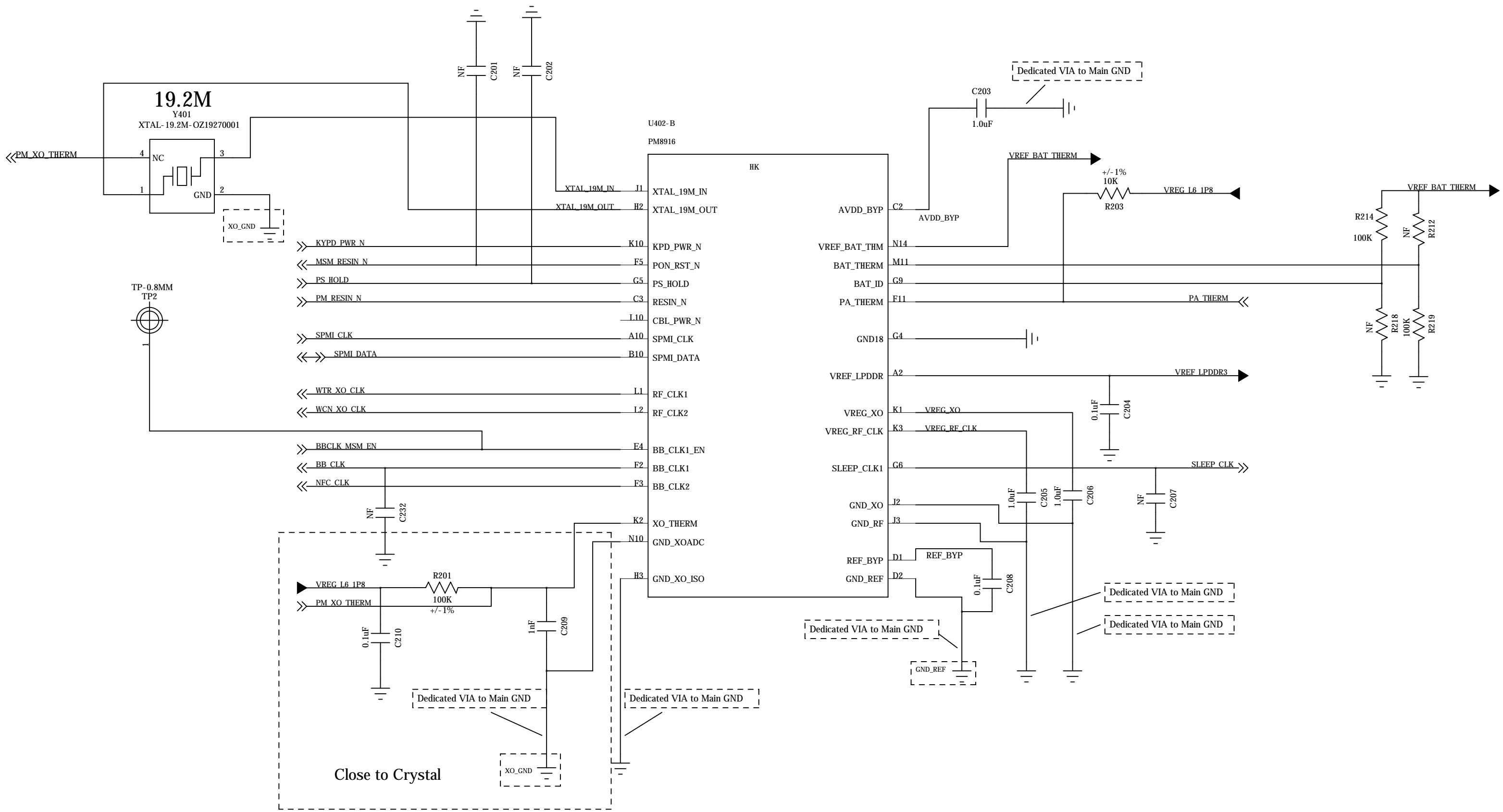
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Pins	Hi Z	GND
OPT_1	No SMB1360	SMB1360 present
OPT_2	No Ext APC buck (S5)	Ext APC buck (S5) present

Dedicated sense trace to battery connector

PM8916 support +15V input protected
USB_VBUS_IN_PMIC

Close to connector
if using PMIC's linear charger
C0301 should assemble 4.7uF/16V capacitor
R0307 should assemble 0 ohm
R0302 should NC
R0312 should be 0ohm
BAT THERM switch to PM8916

SMB1360 can support +28V input protected
USB_VBUS_IN

Software Caution:
Need software to config MSM
GPIO internal pullup

NOTE1: Seperate the AGND from the PGND

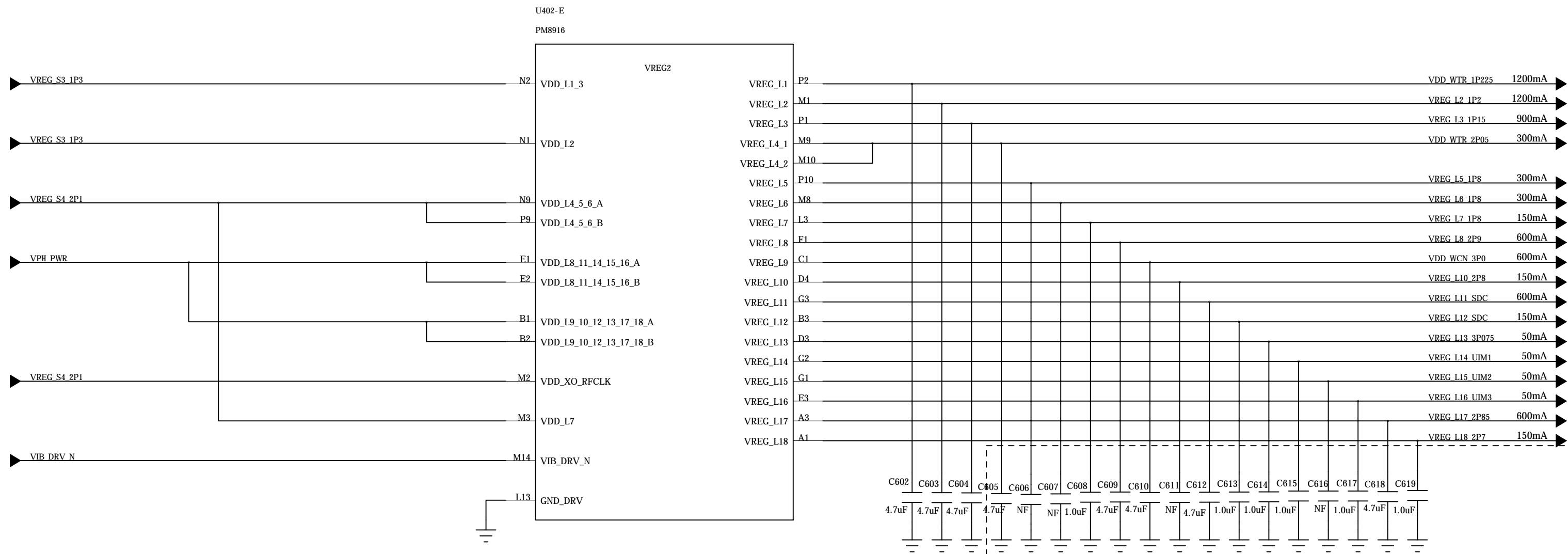
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Software Caution:
L16 Need to Config to 1.8V and turn on later than L17

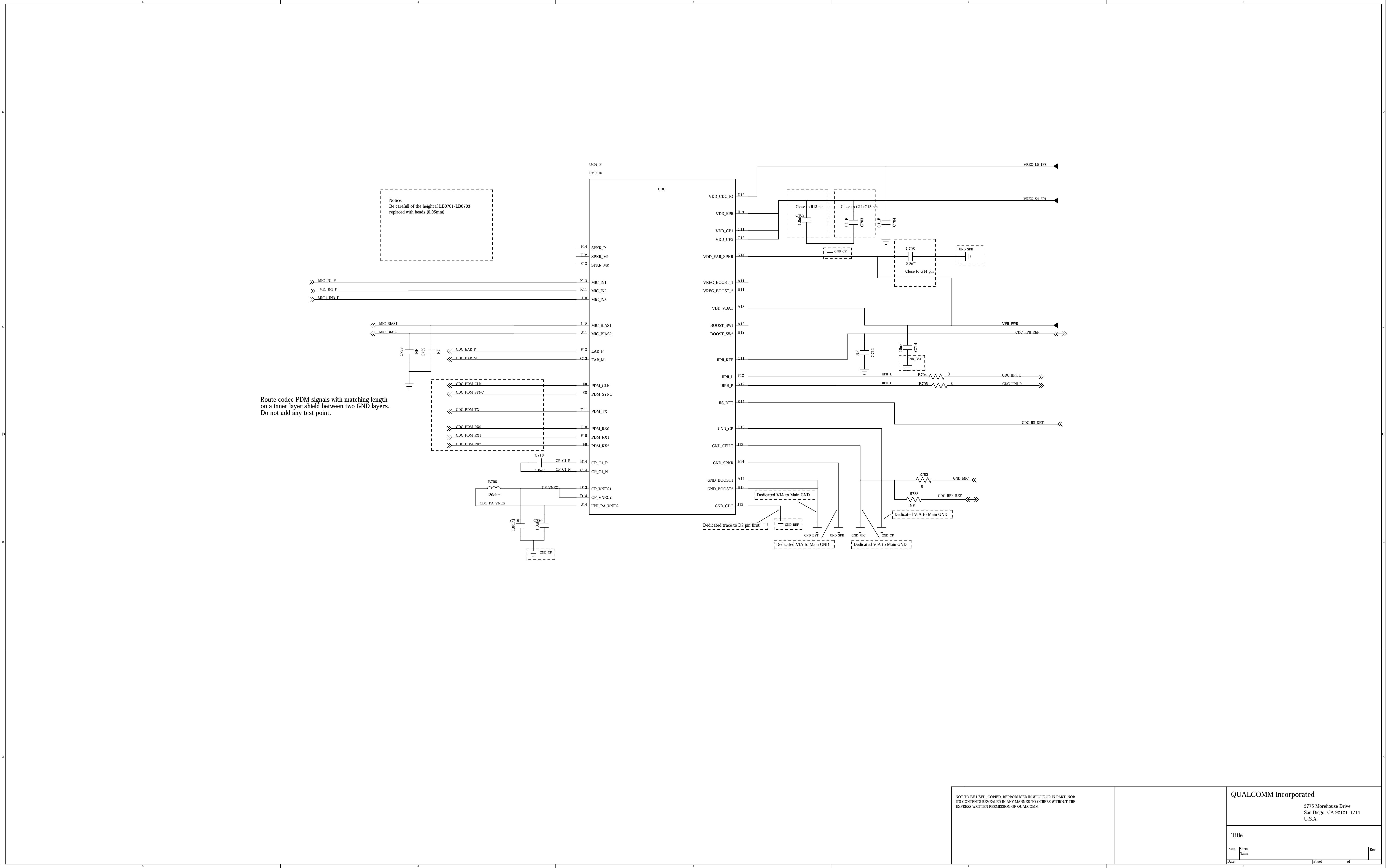
PSEUDO CAPLESS LDOs
L4, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18

Local output capacitor can NC/Remove depends on remote load capacitors and PCB layout
LDOs L8, L9, L11, L17 each shall have total effective output capacitance of 4.7uF.
Please refer to PM8916 training slides(80-NK808-21) for limits on LDO output trace resistance and inductance
Rest of the LDOs shall each have total effective output capacitance of 1.0uF.

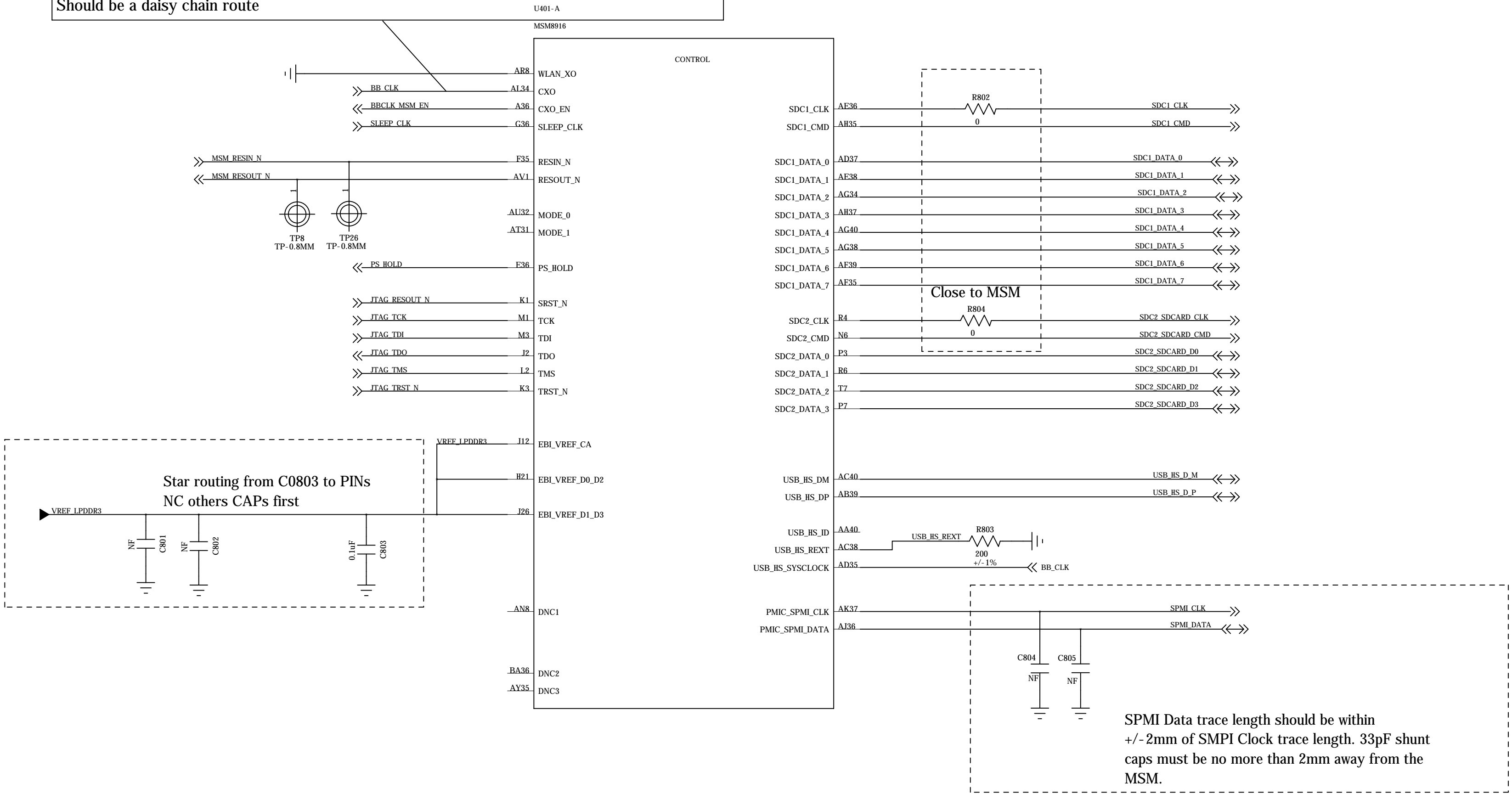
The Pseudo capless LDOs must comply to following tolerable routing requirement:
P50: R<400mOhms, L<45nH
P150: R<200mOhms, L<20nH
P300: R<150mOhms, L<18nH
P600: R<150mOhms, L<18nH

Please ensure when you DNI the output capacitor of Pseudo capless LDOs
the effective total capacitance at load side shall match above requirement

NC first



For BBCLK1,AD35 will be the first load and AL34 will be the final load
Should be a daisy chain route



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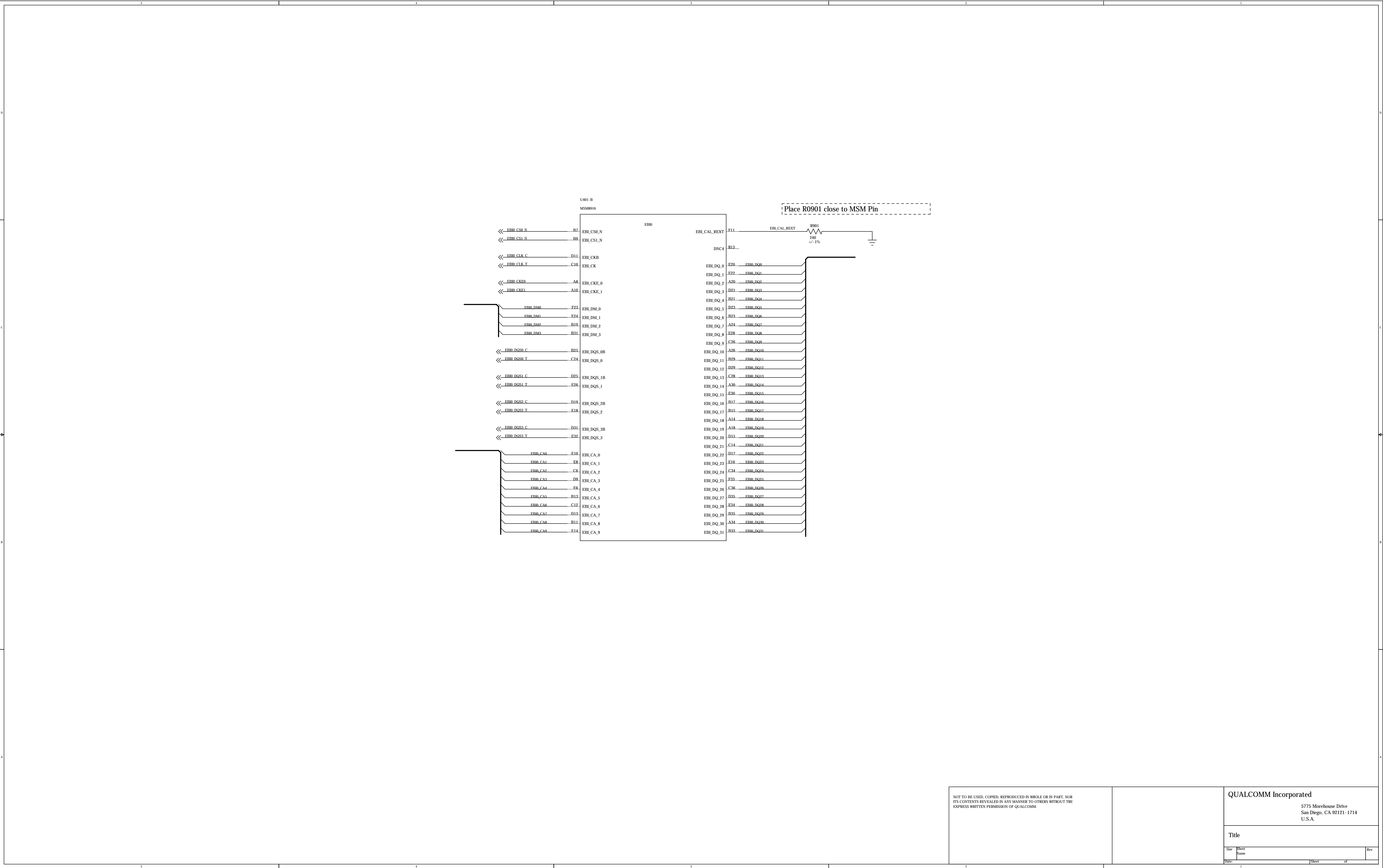
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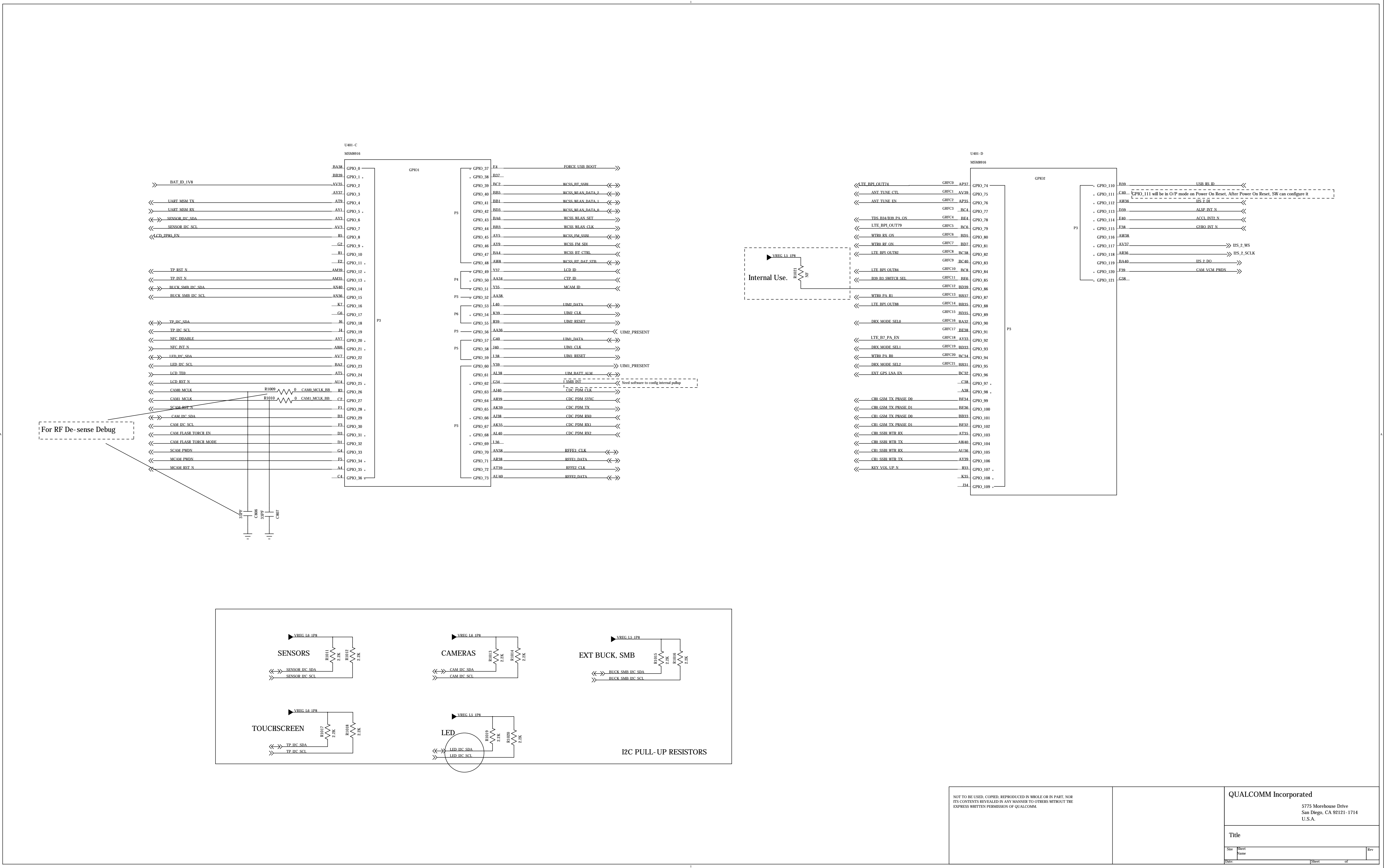
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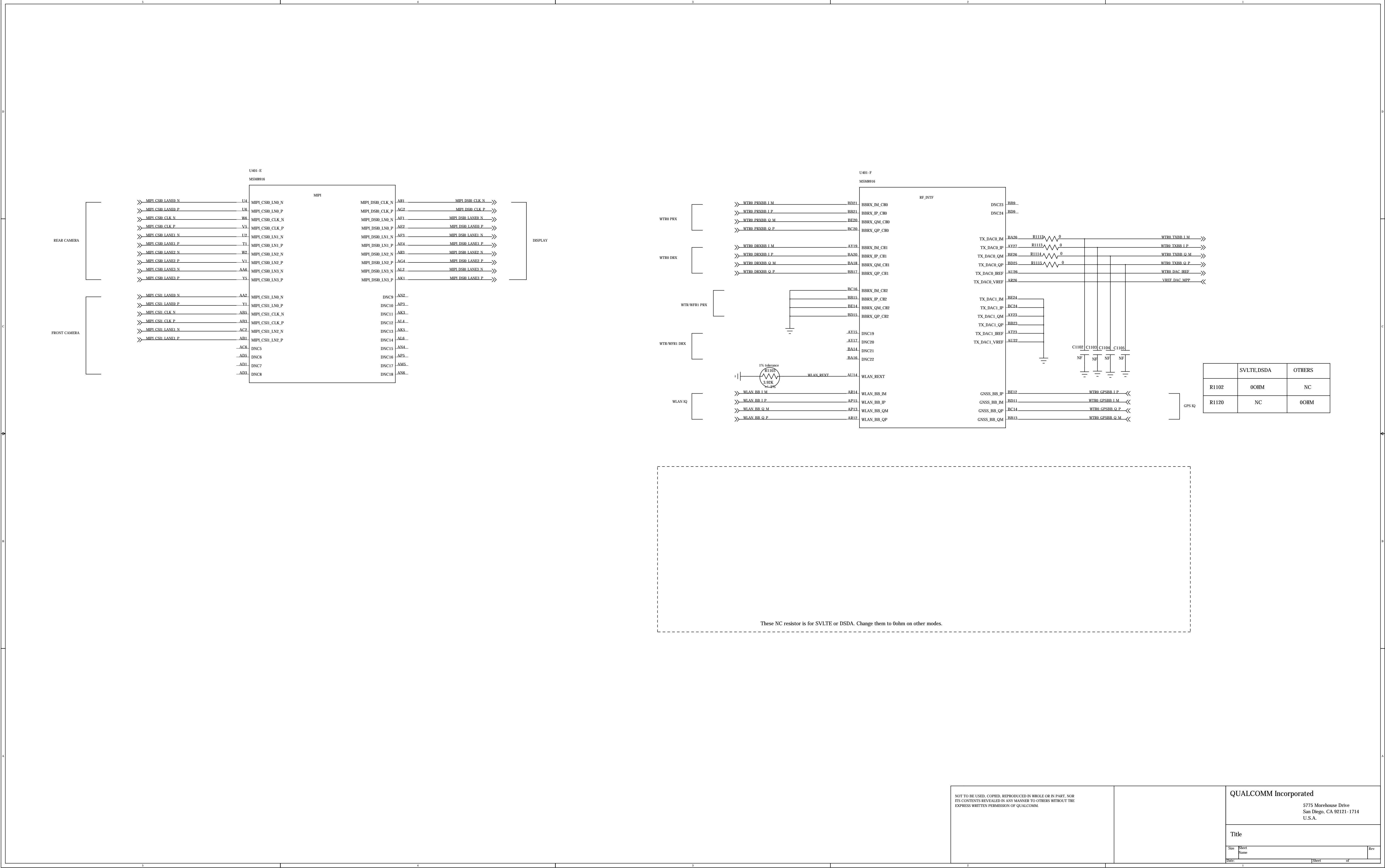
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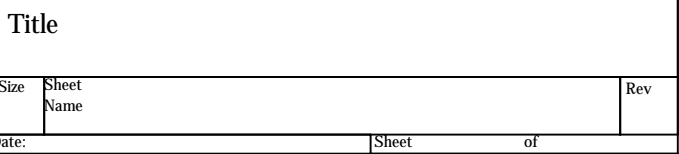
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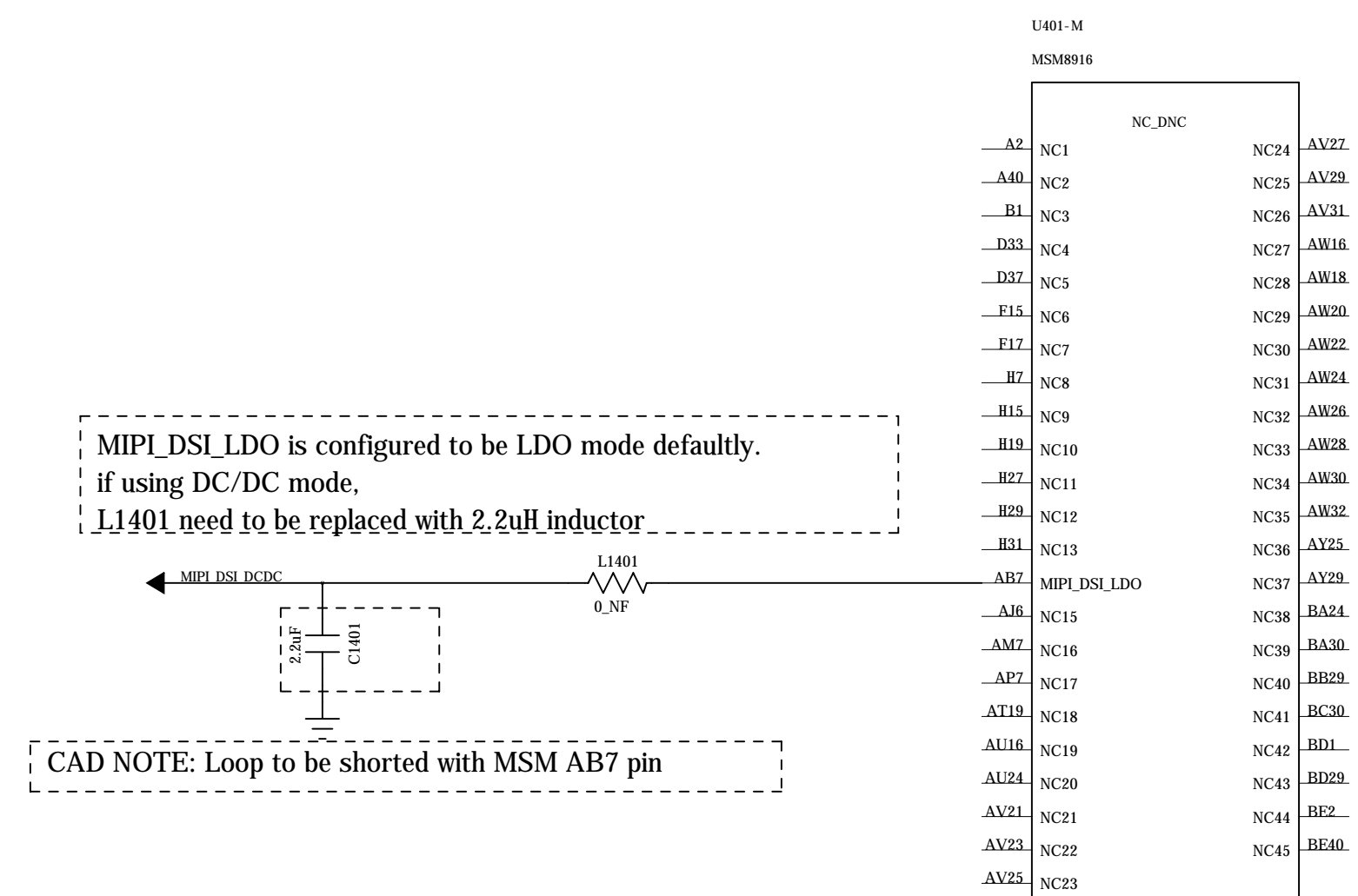
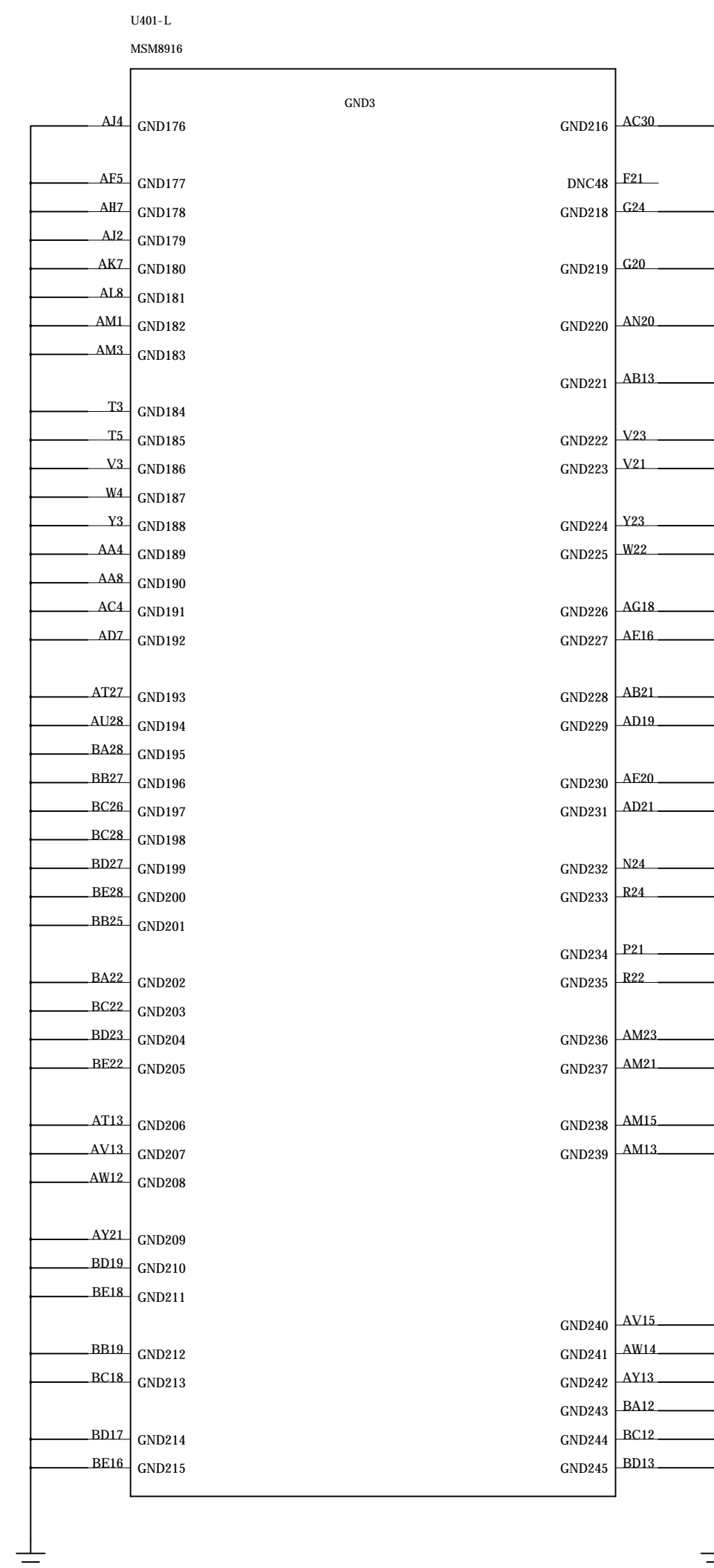
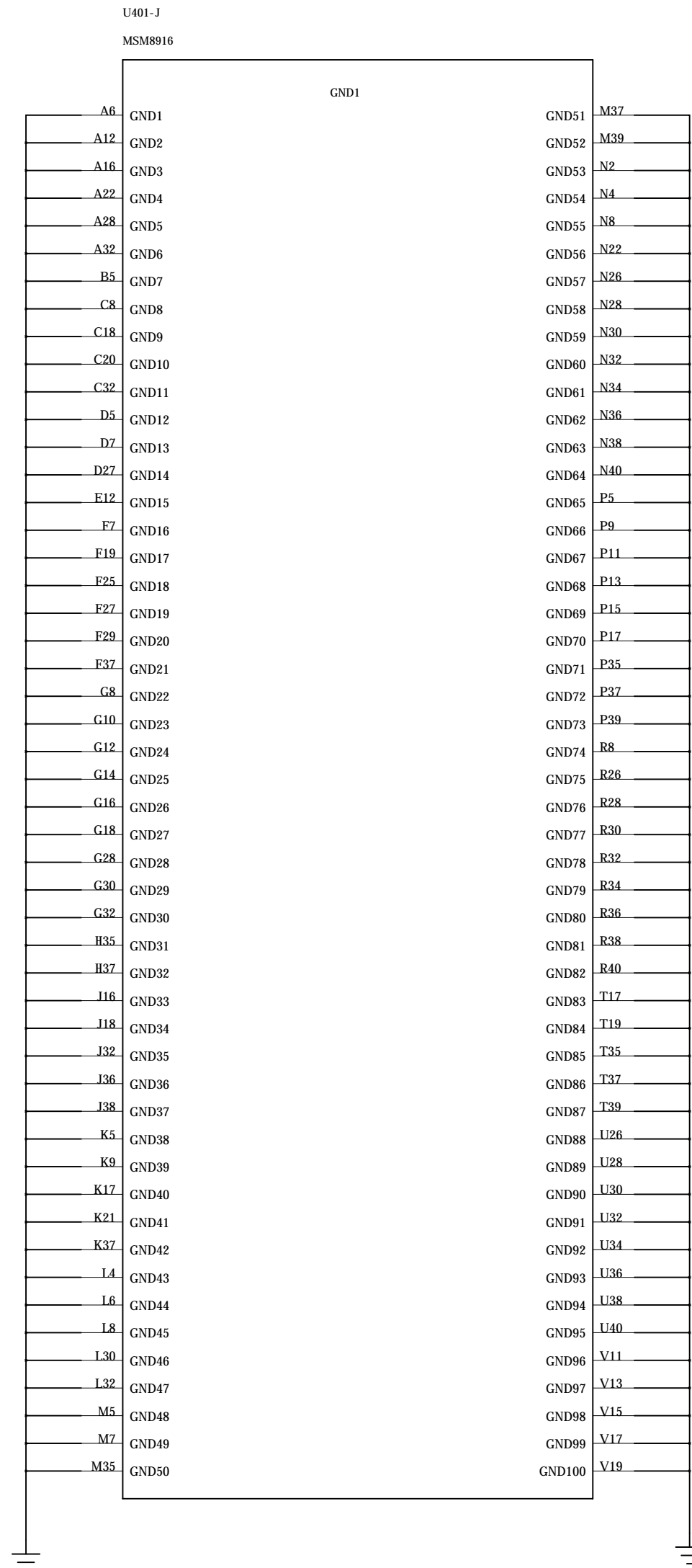
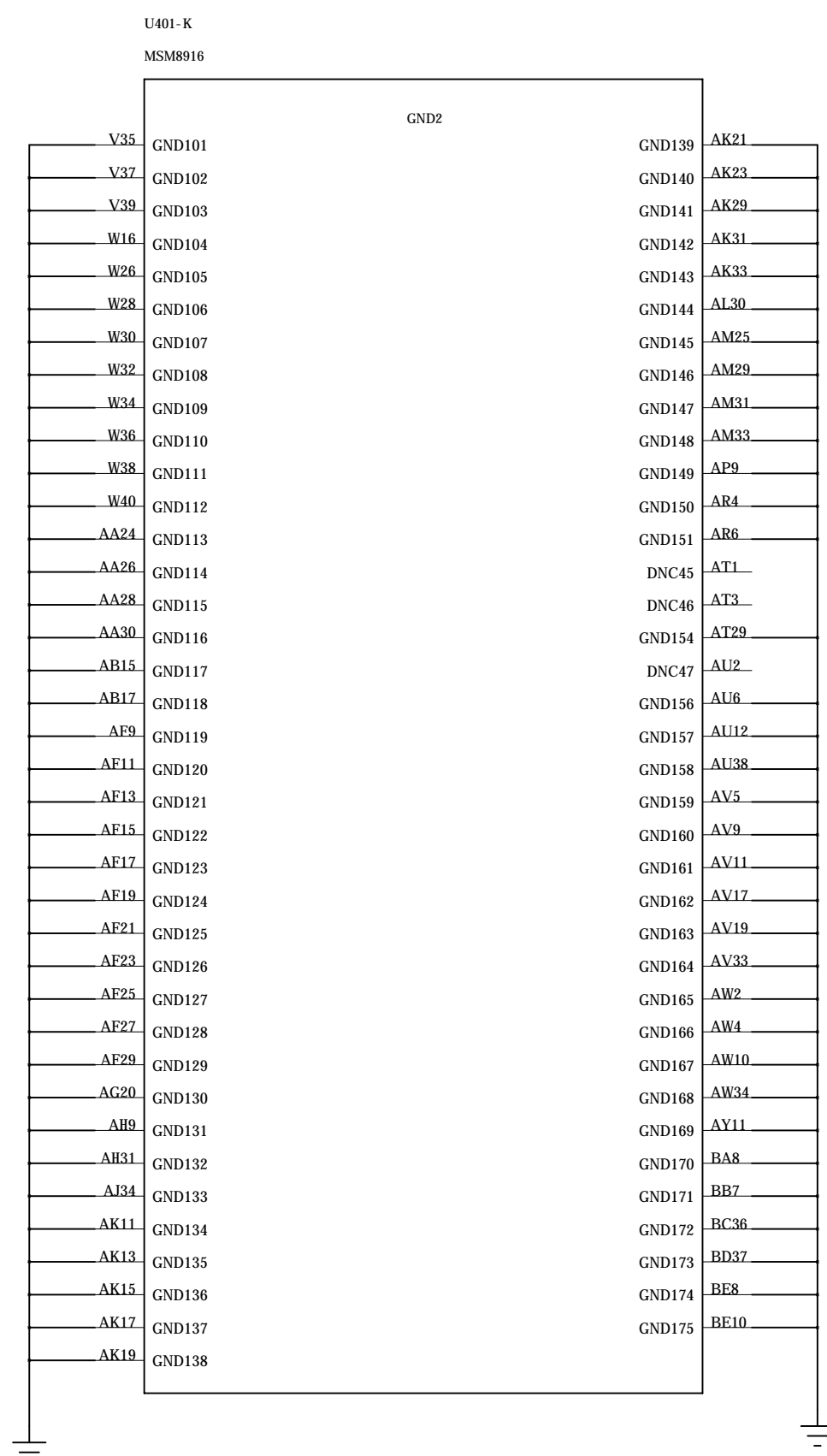
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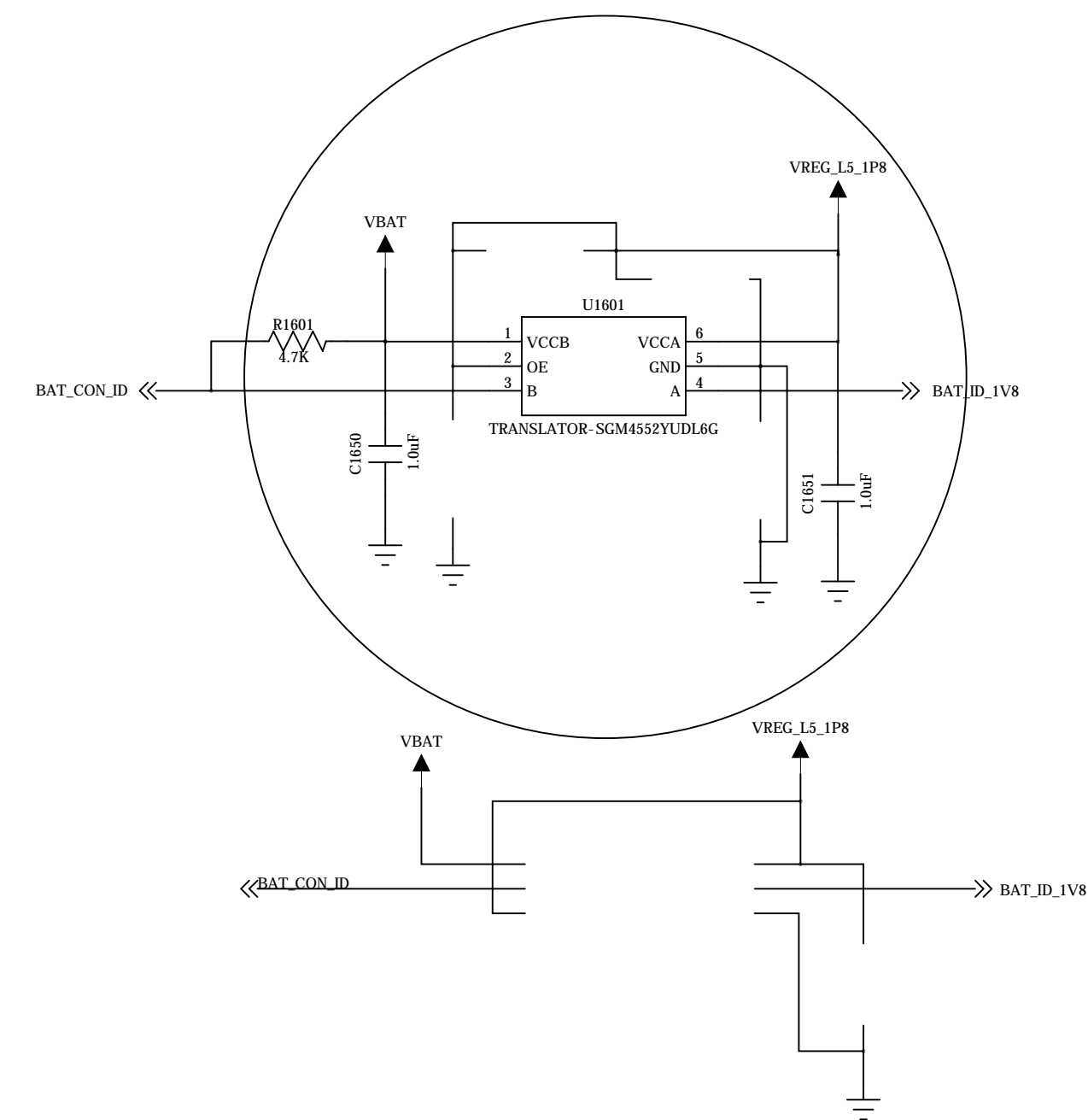
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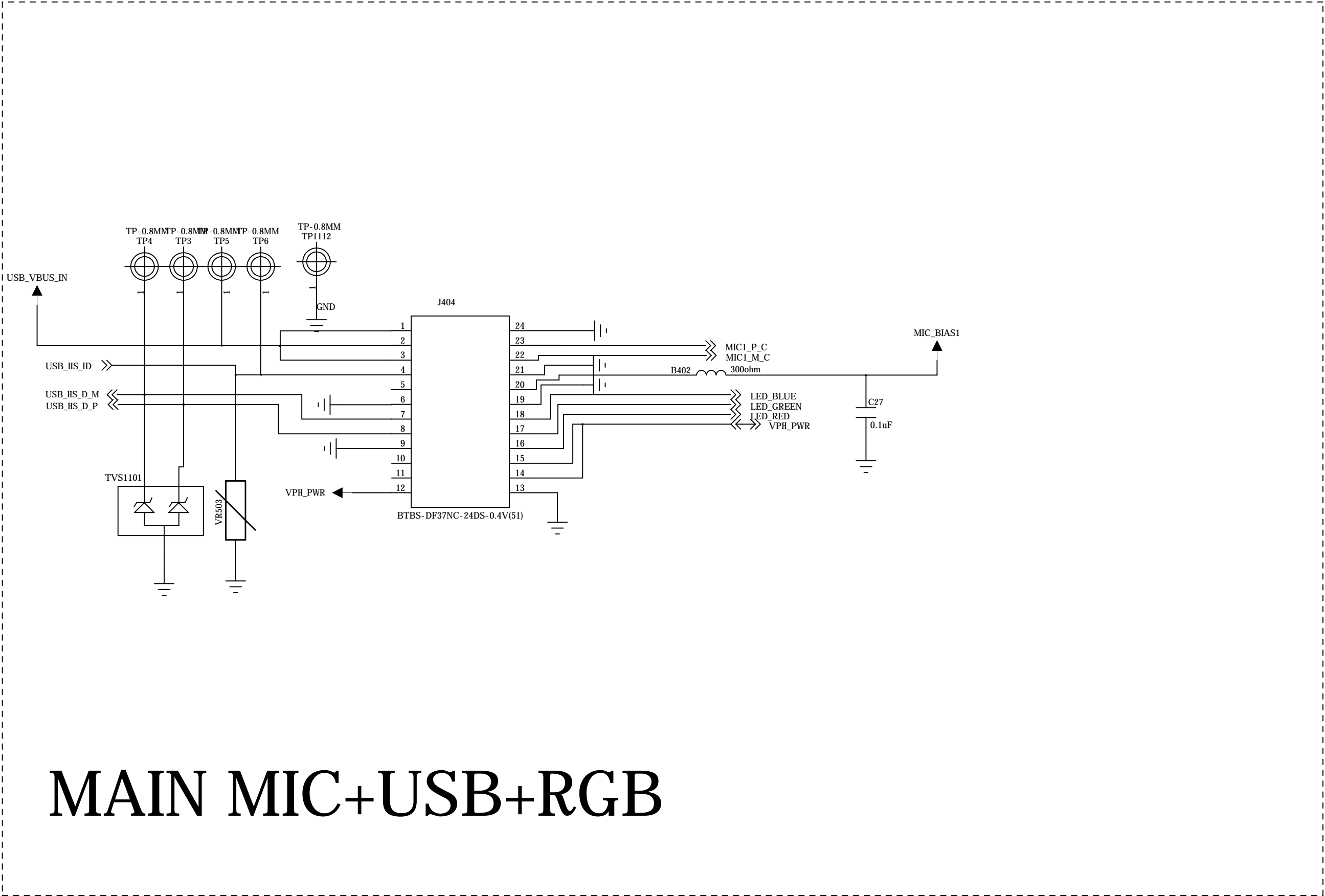




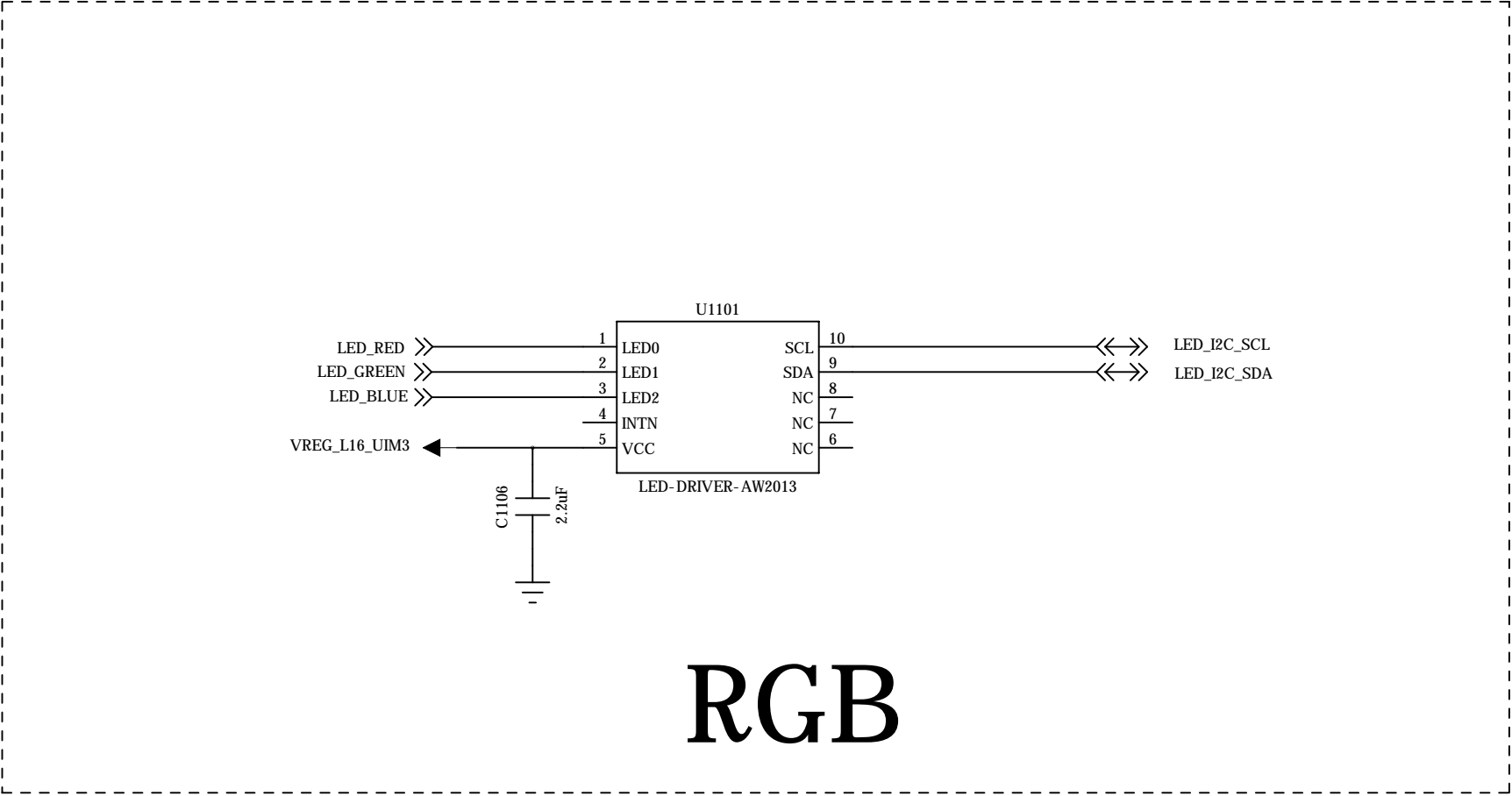


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Sub Board Connector



MAIN MIC+USB+RGB



RGB

I2C Address	
Write	8B0x8A
Read	8B0x8B

Power on sequence: can be applied in any order

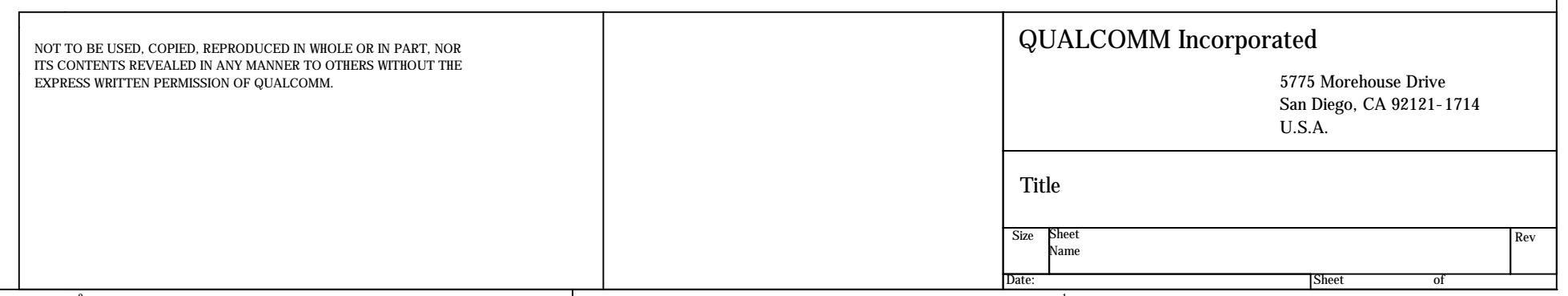
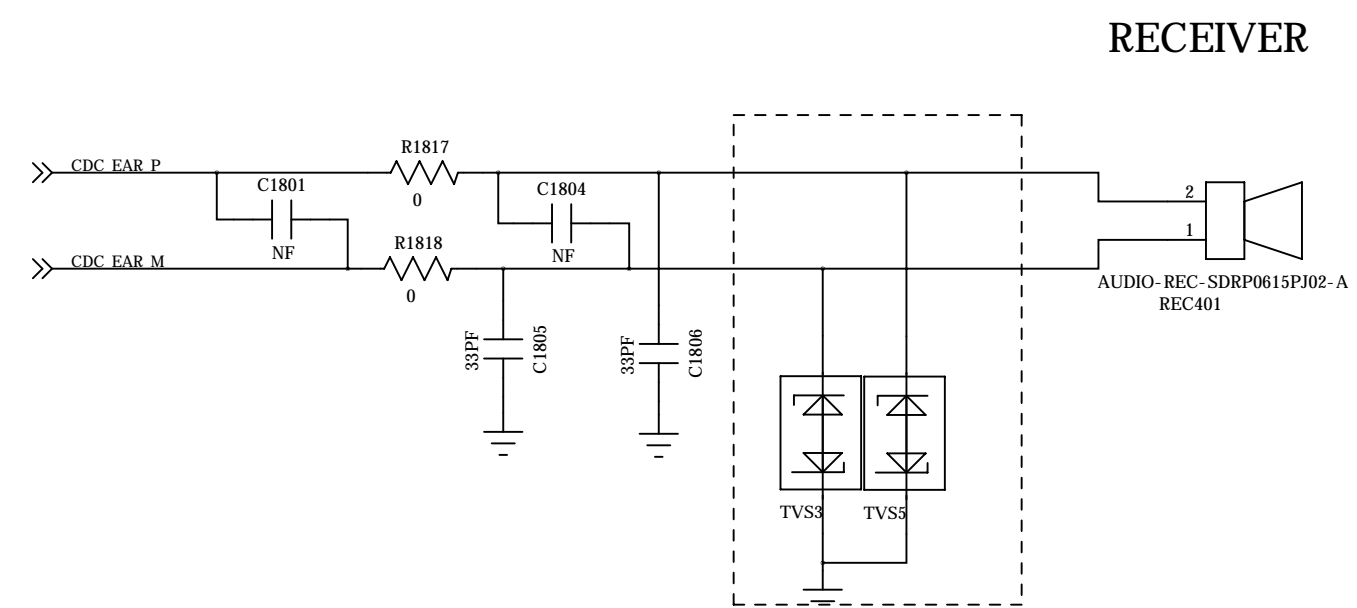
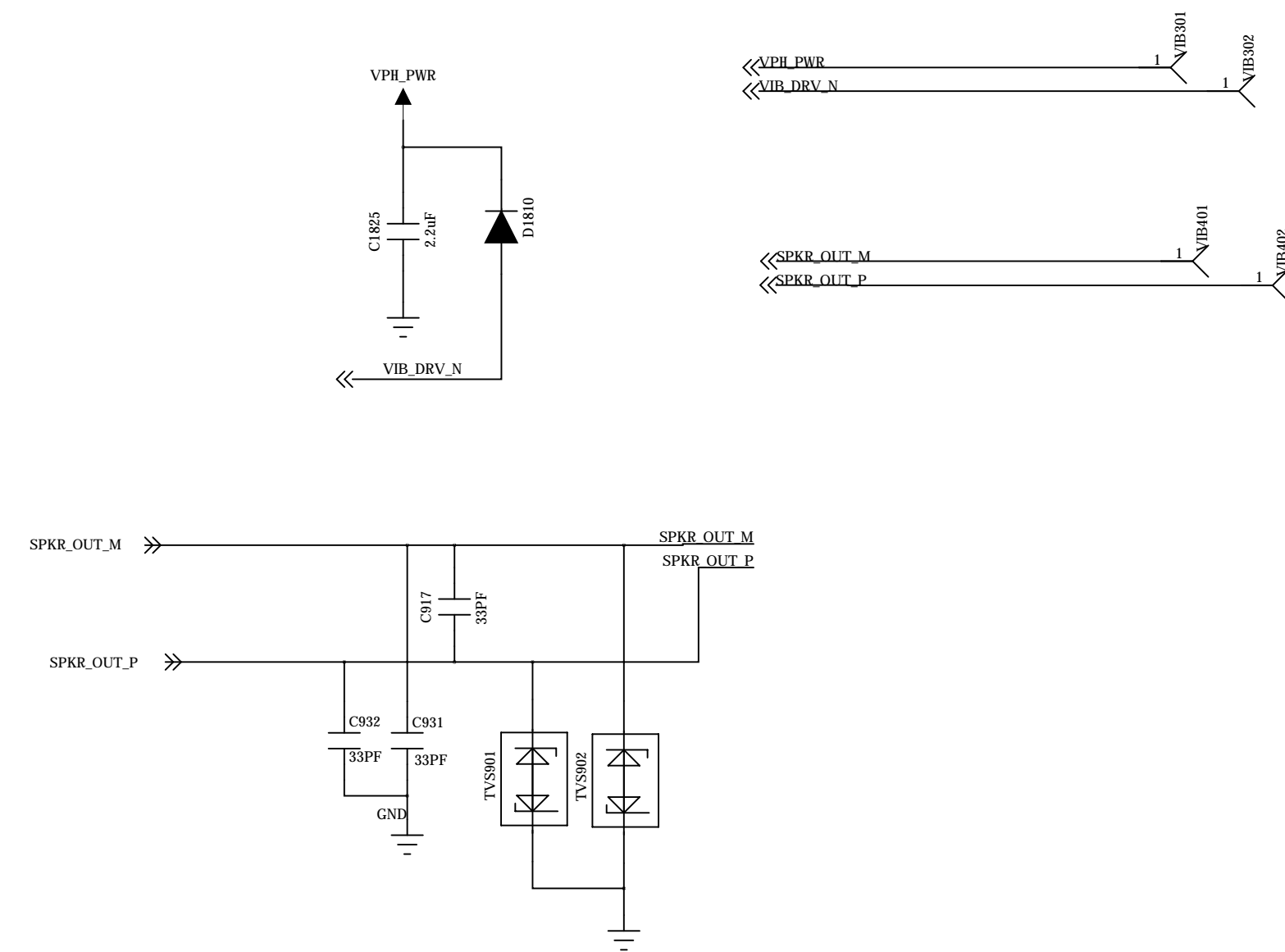
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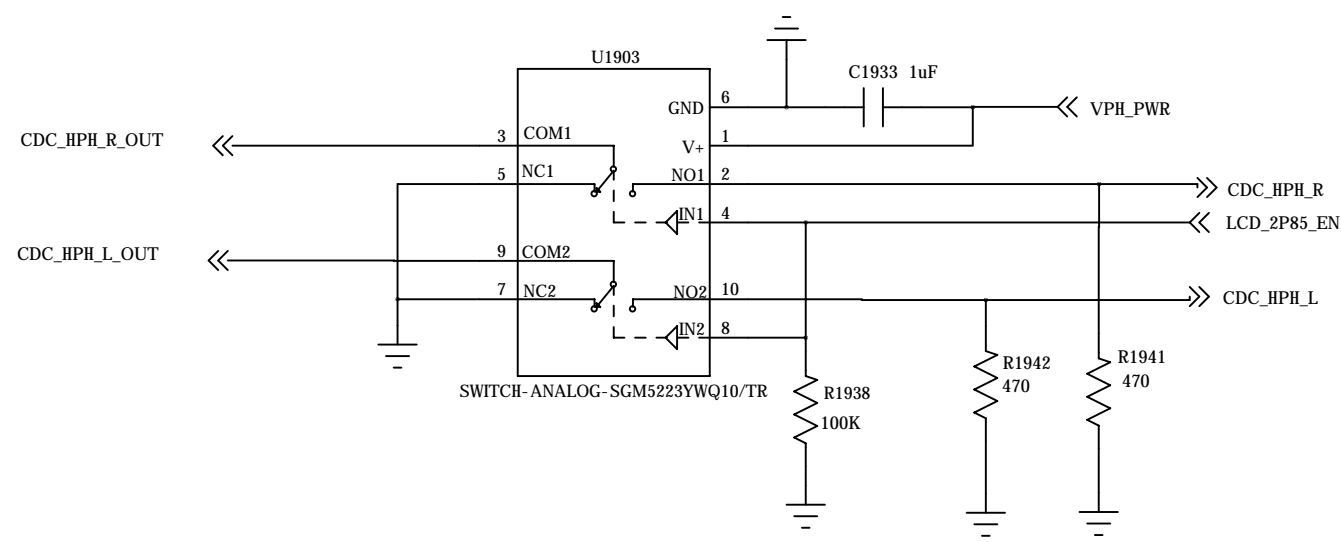
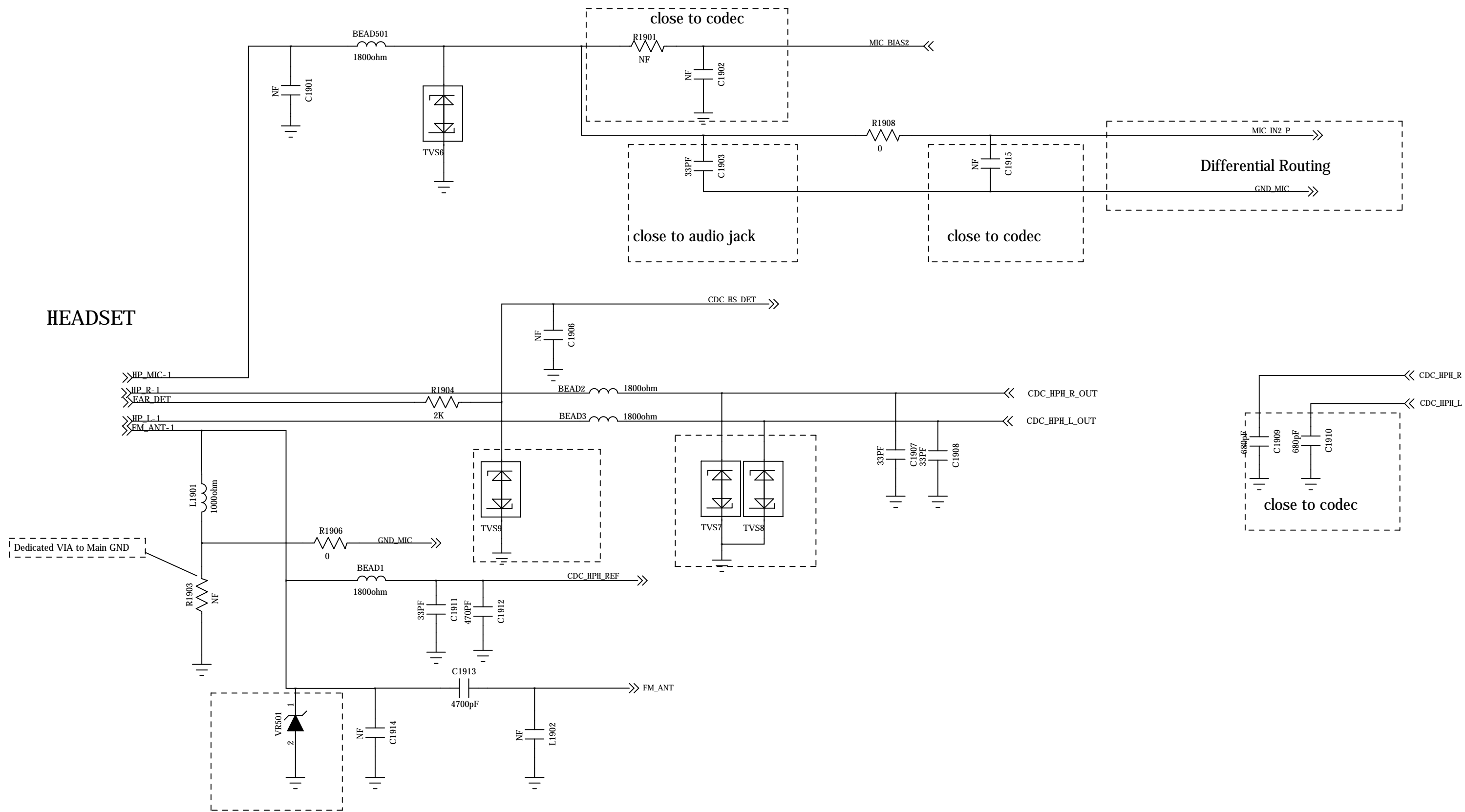
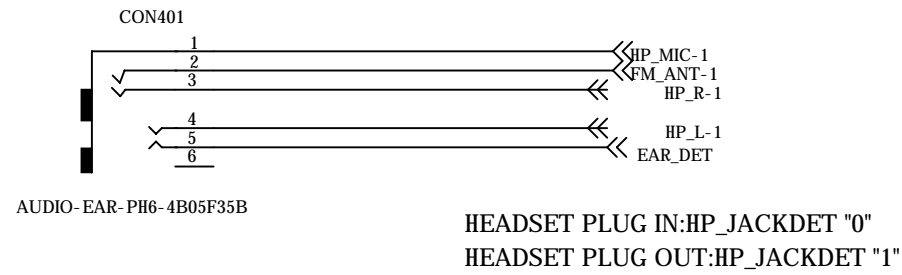
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IN=0, COM Connected to NC;
IN=1, COM Connected to NO;

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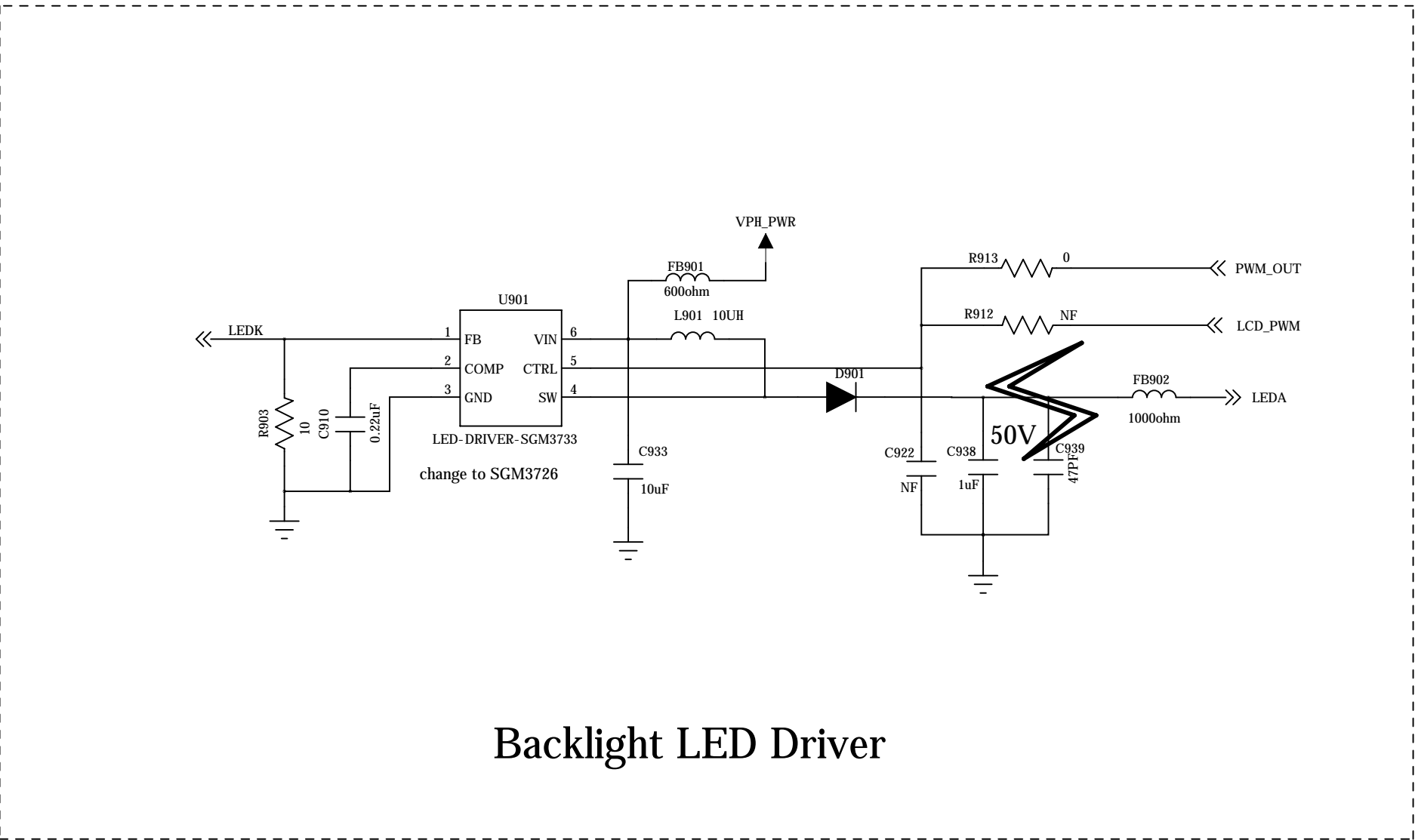
5.0' FWVGA

5.0' FWVGA

Module: KTF-050-D5498OF

Driver: OTM8019A

Power on sequence: L6(IOVCC)/L17(VCC) can be applied in any order



Backlight LED Driver

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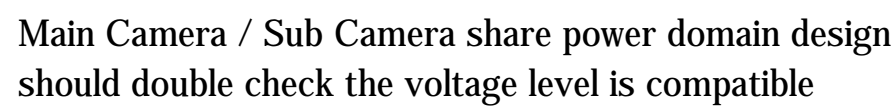
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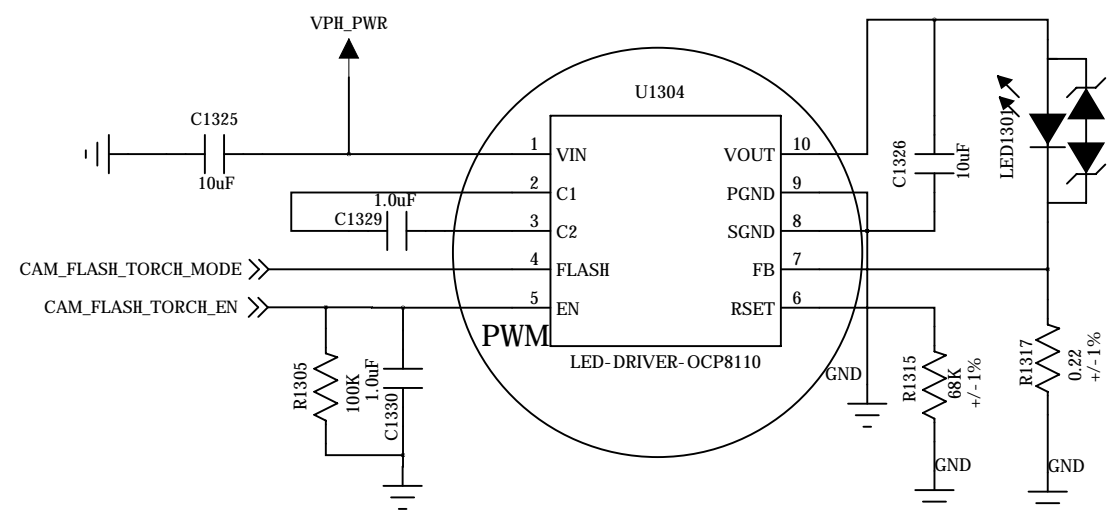
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FRONT_camera+LP Sensor+SPK



Front Camera: 2M	I2C Address	
Module:	Write	0x20
Sensor: OV2680	Read	0x21

Power on sequence: L6(DO VDD)/L17(AVDD) can be applied in any order



OCP8111 R1315=68K R1317=0.22
OCP8110 R1315=82K R1317=0.47
FLASH LED

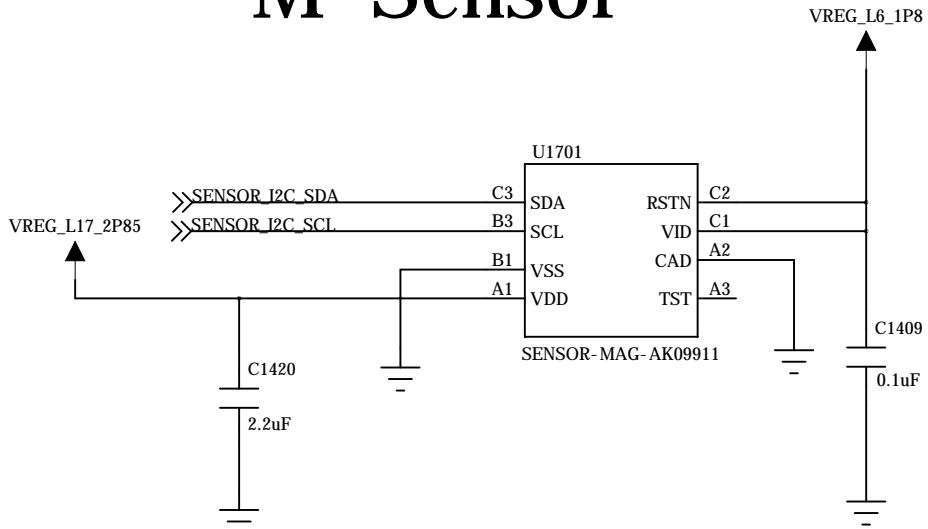
Main Camera / Sub Camera share power domain design
should double check the voltage level is compatible



I2C Address	
Write	0x6C
Read	0x6D

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M- Sensor



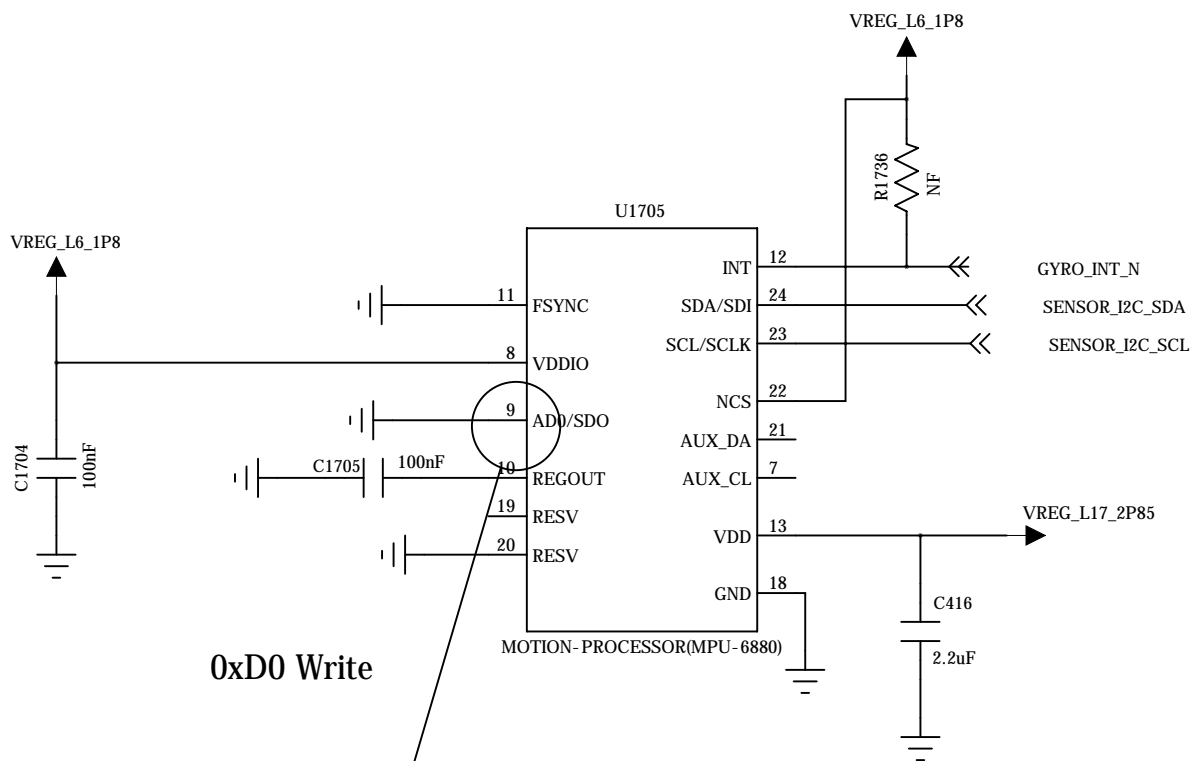
AKM: AK09911

I2C Address@CAD=0	
Write	0x18
Read	0x19

I2C Address@CAD=1	
Write	0x1A
Read	0x1B

Power on sequence: L6/L17 can be applied in any order

Gyroscope



AD0=0 7b1101000 0x68

AD0=1 7b1101001 0x69

InvenSense: MPU6880

I2C Address@AD0=0	
Write	0xD0
Read	0xD1

I2C Address@AD0=1	
Write	0xD2
Read	0xD3

Power on sequence: L6/L17 can be applied in any order

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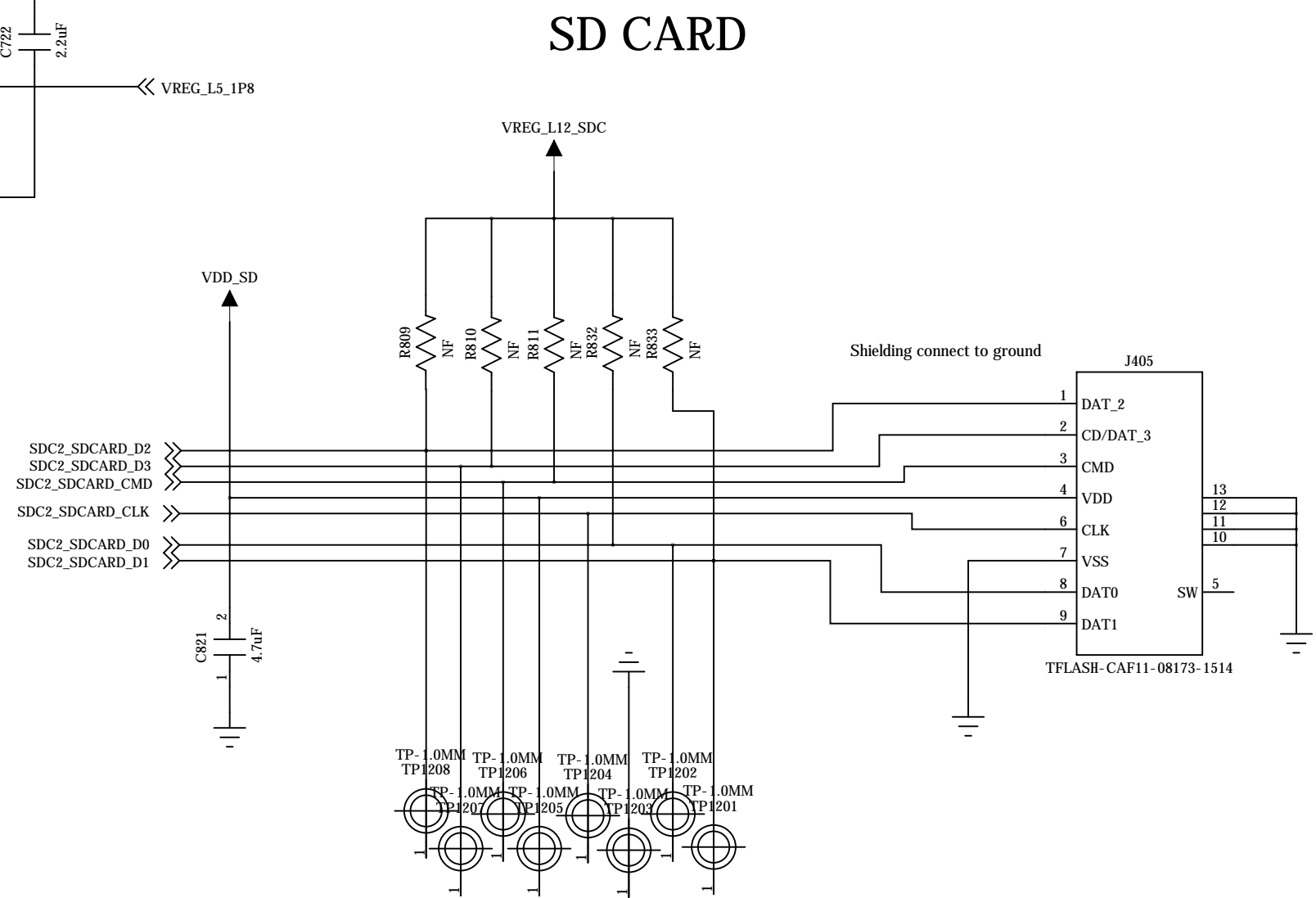
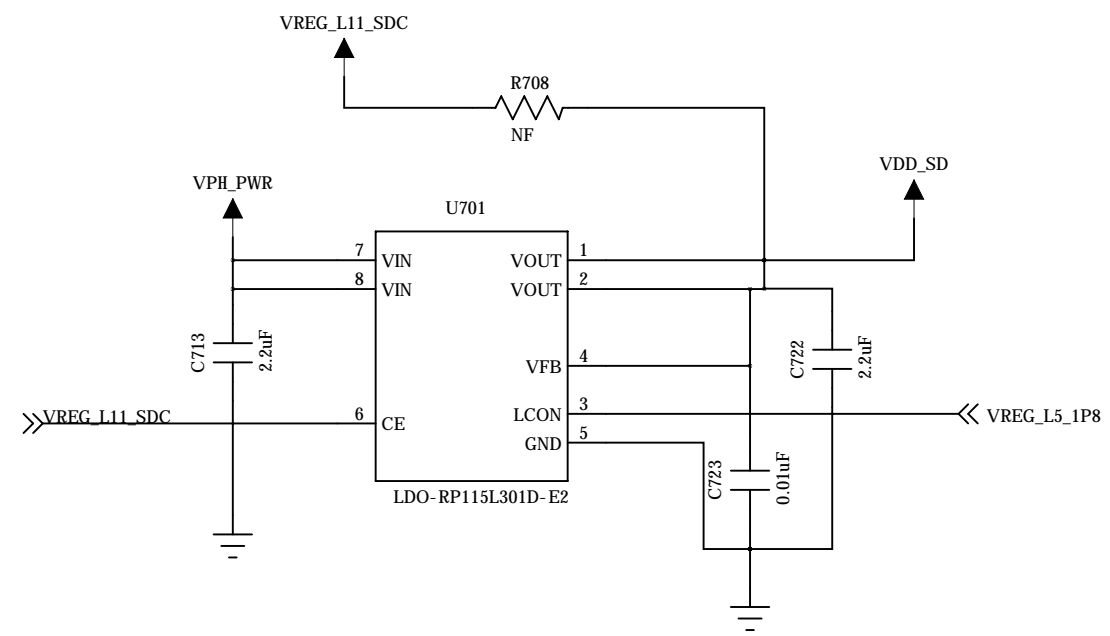
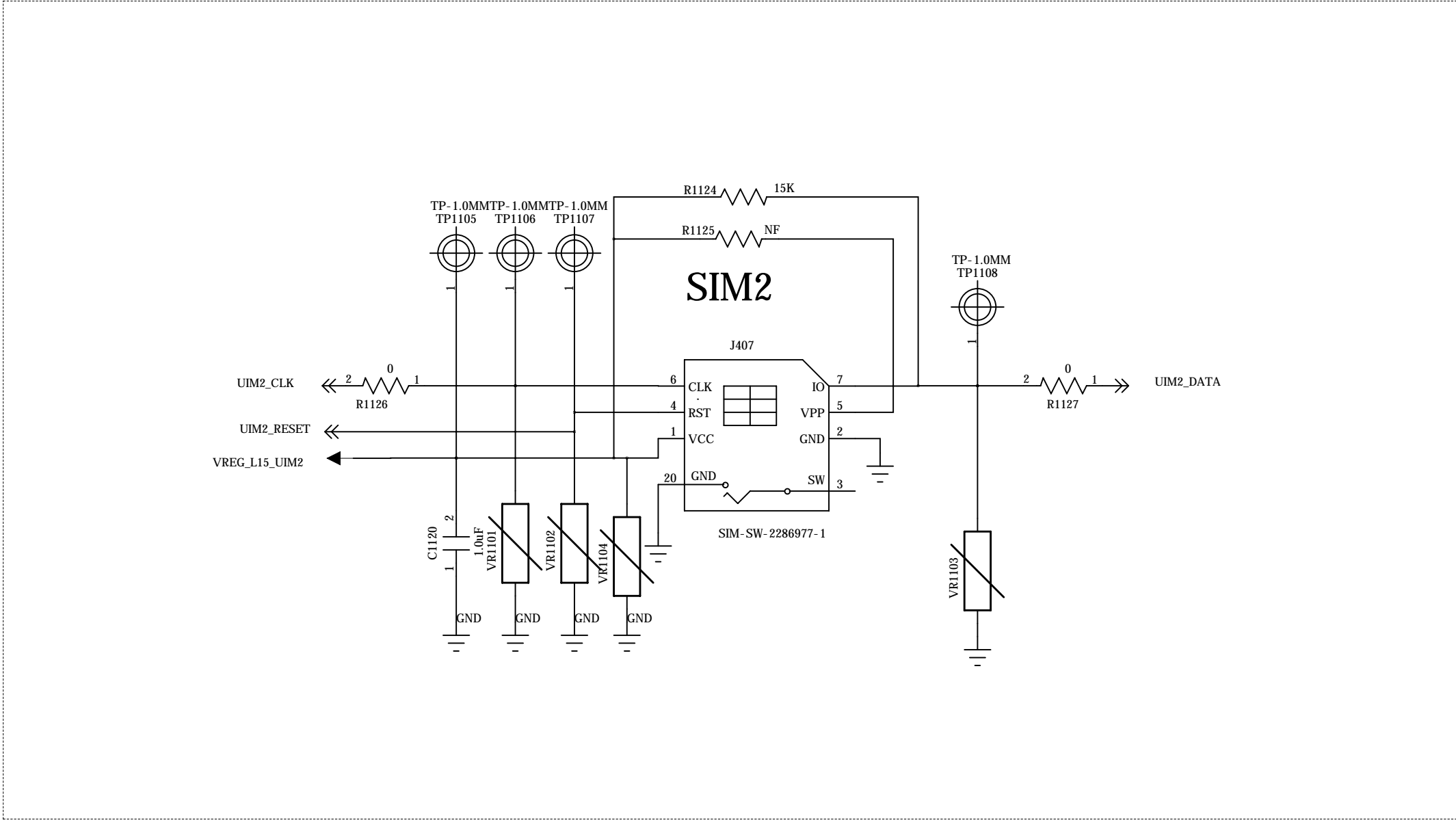
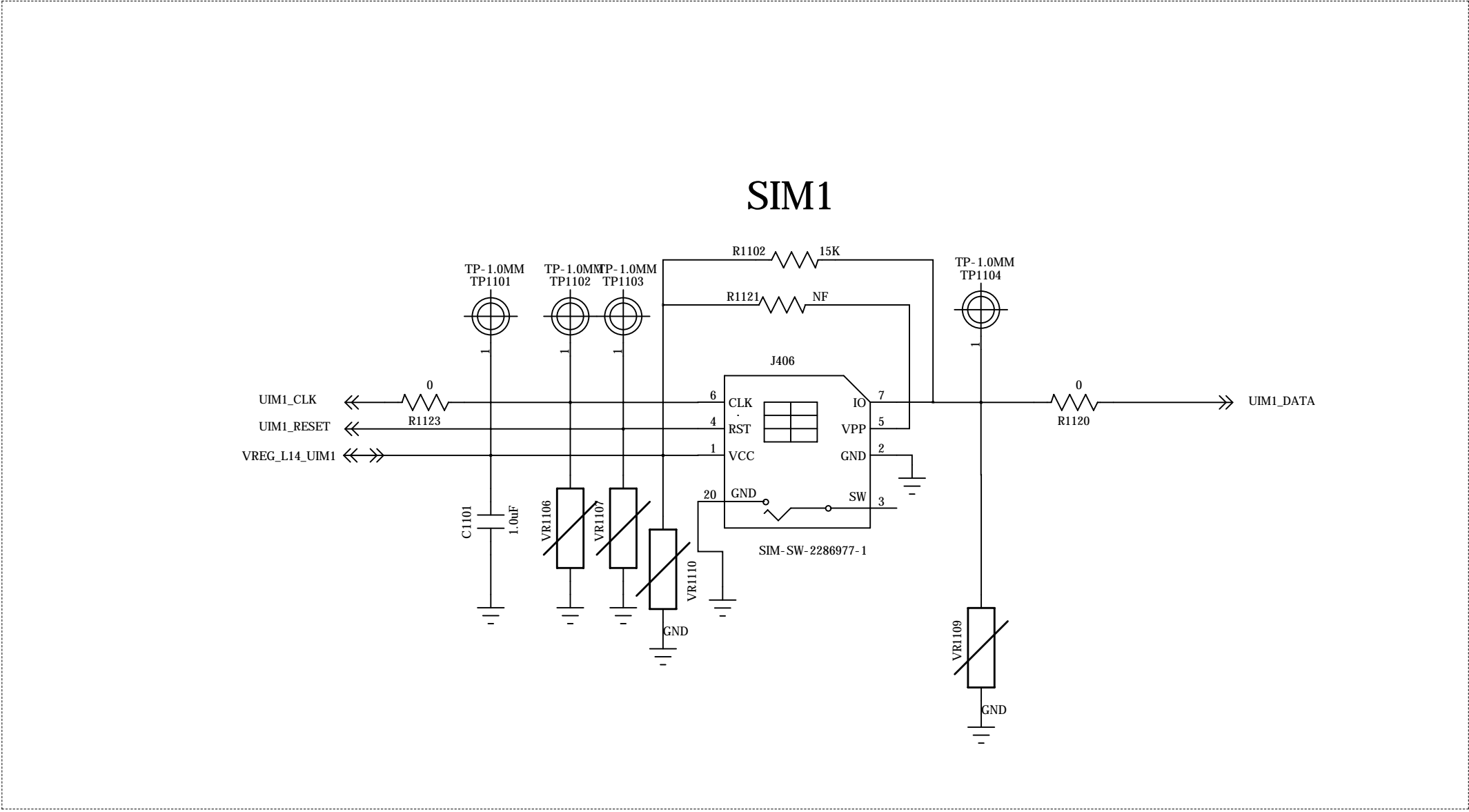
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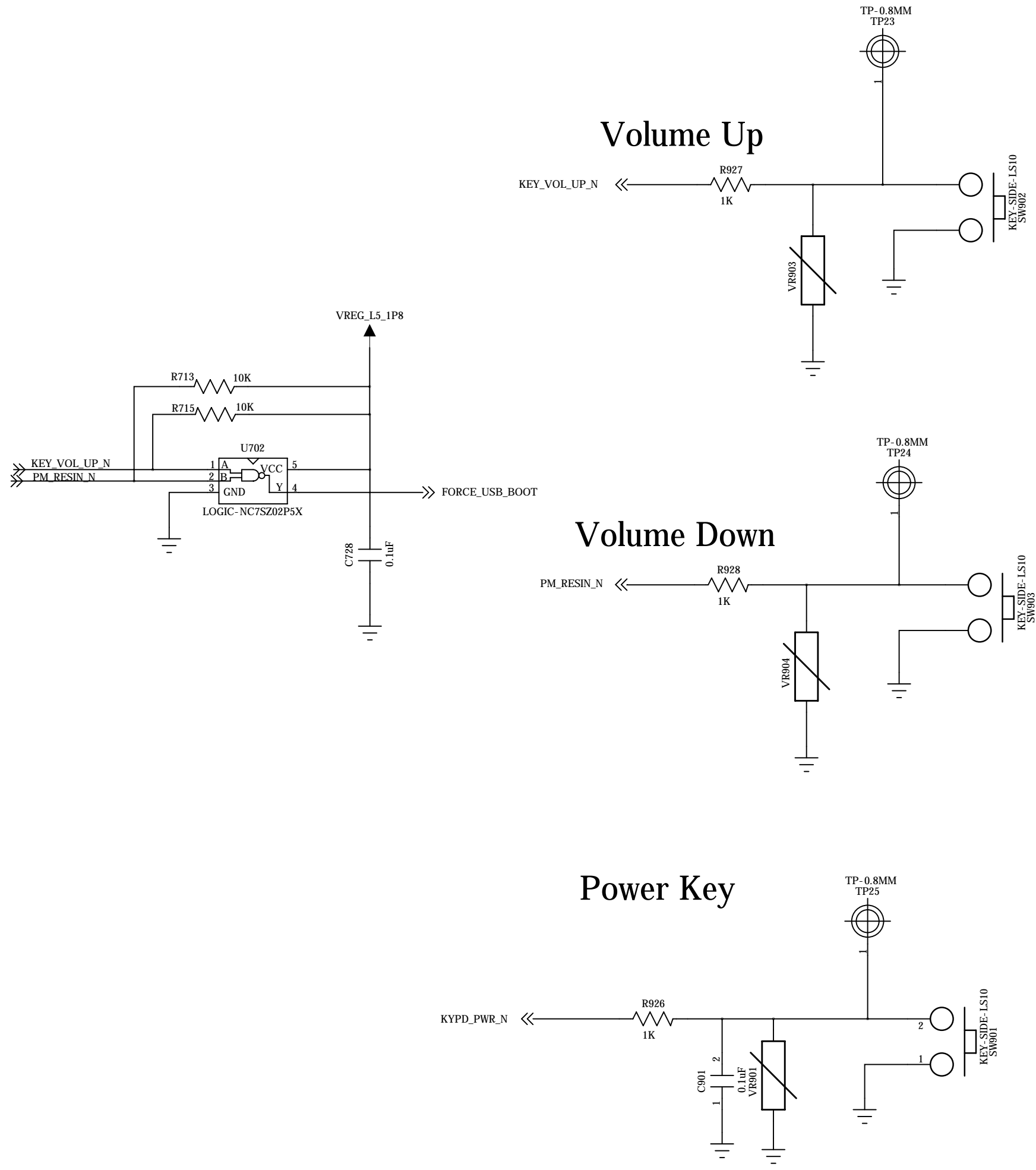
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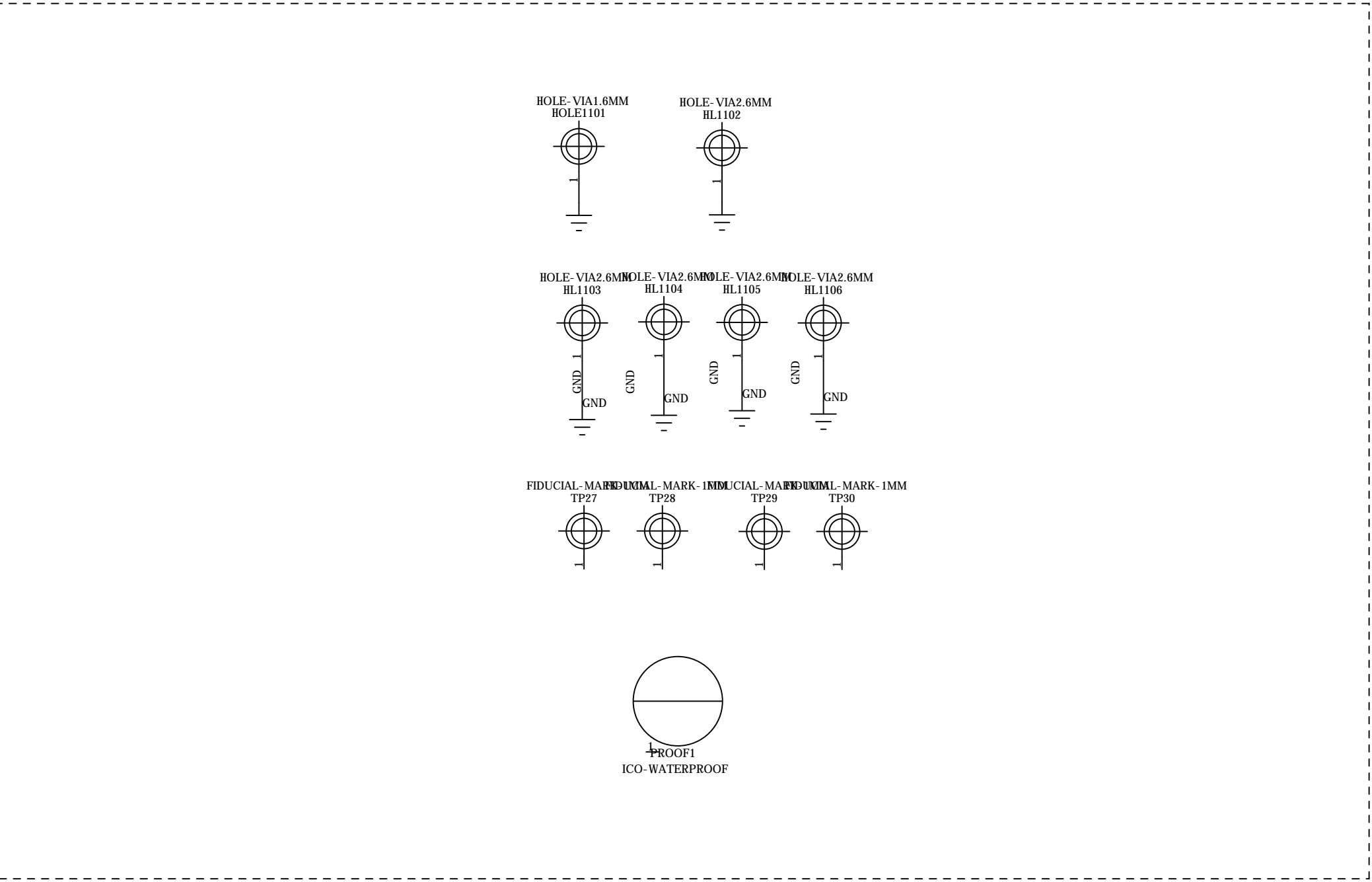
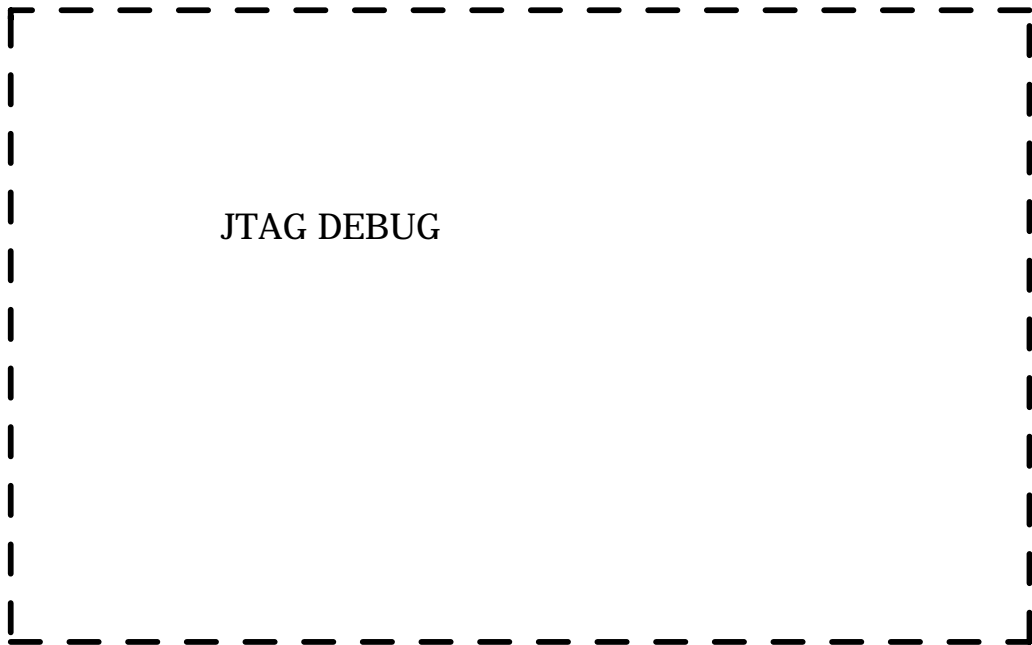
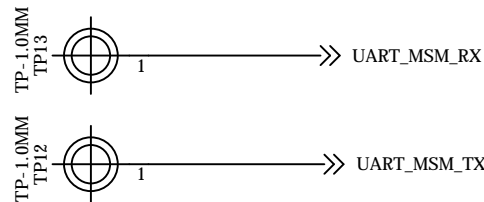
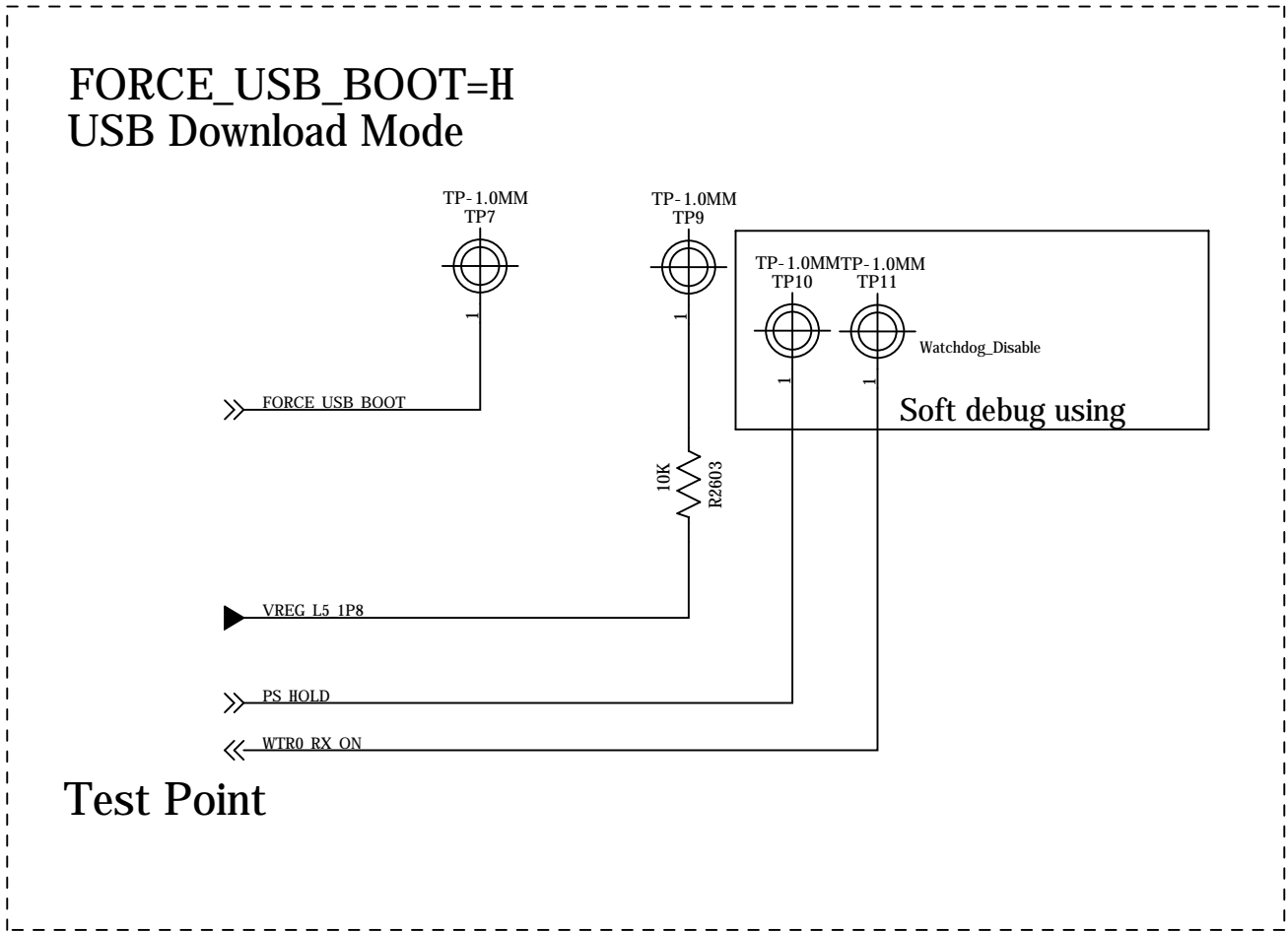
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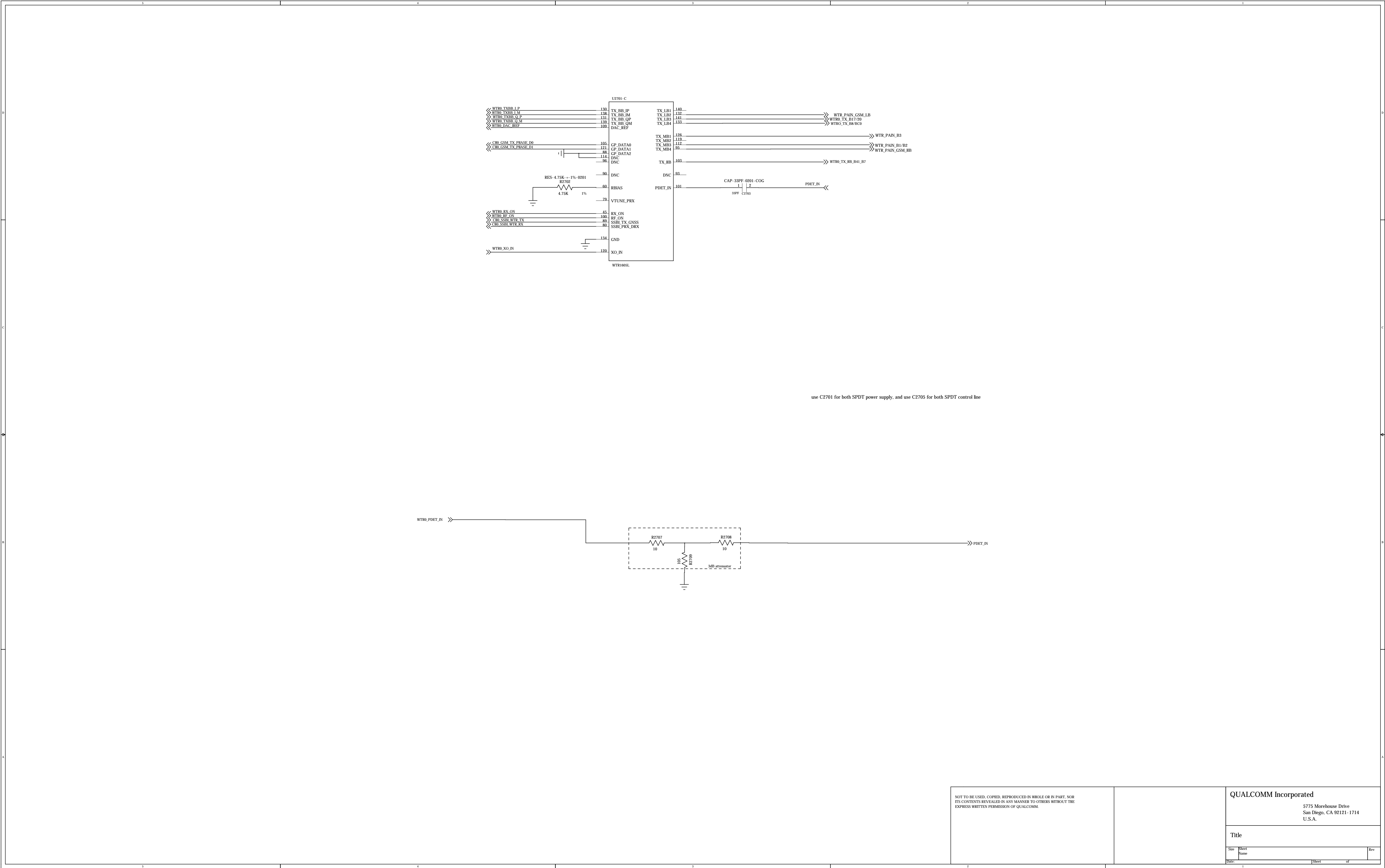
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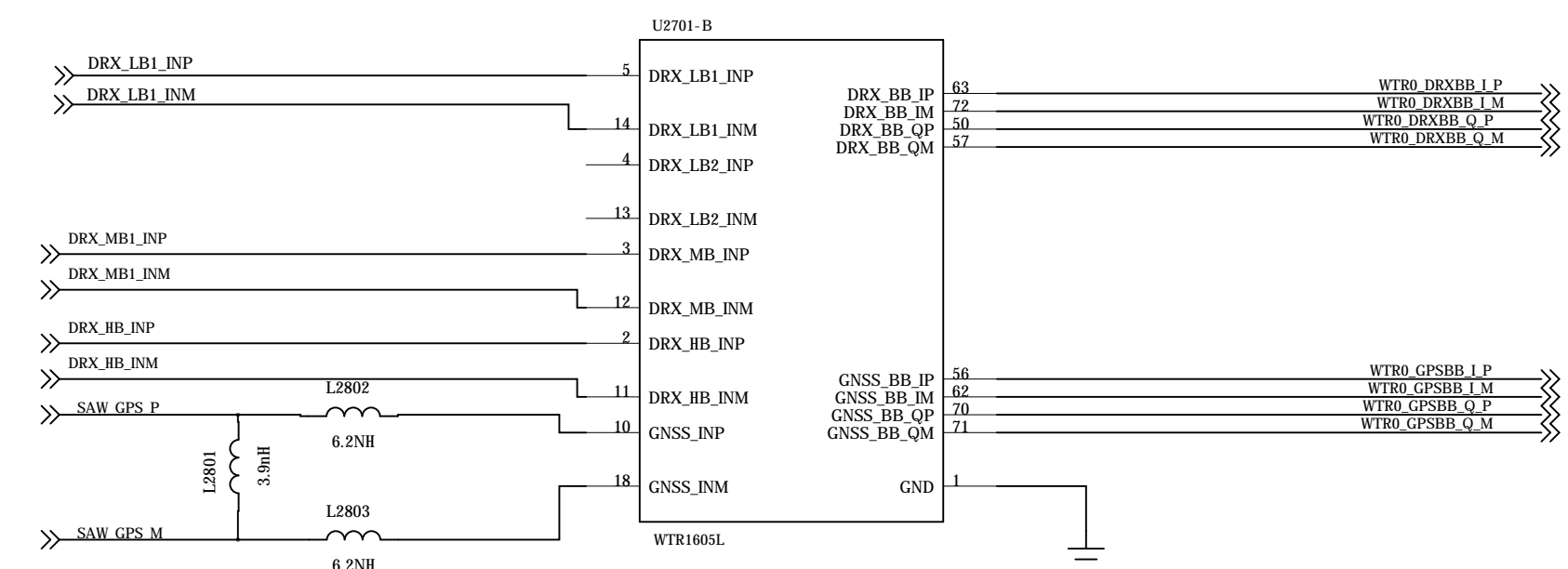
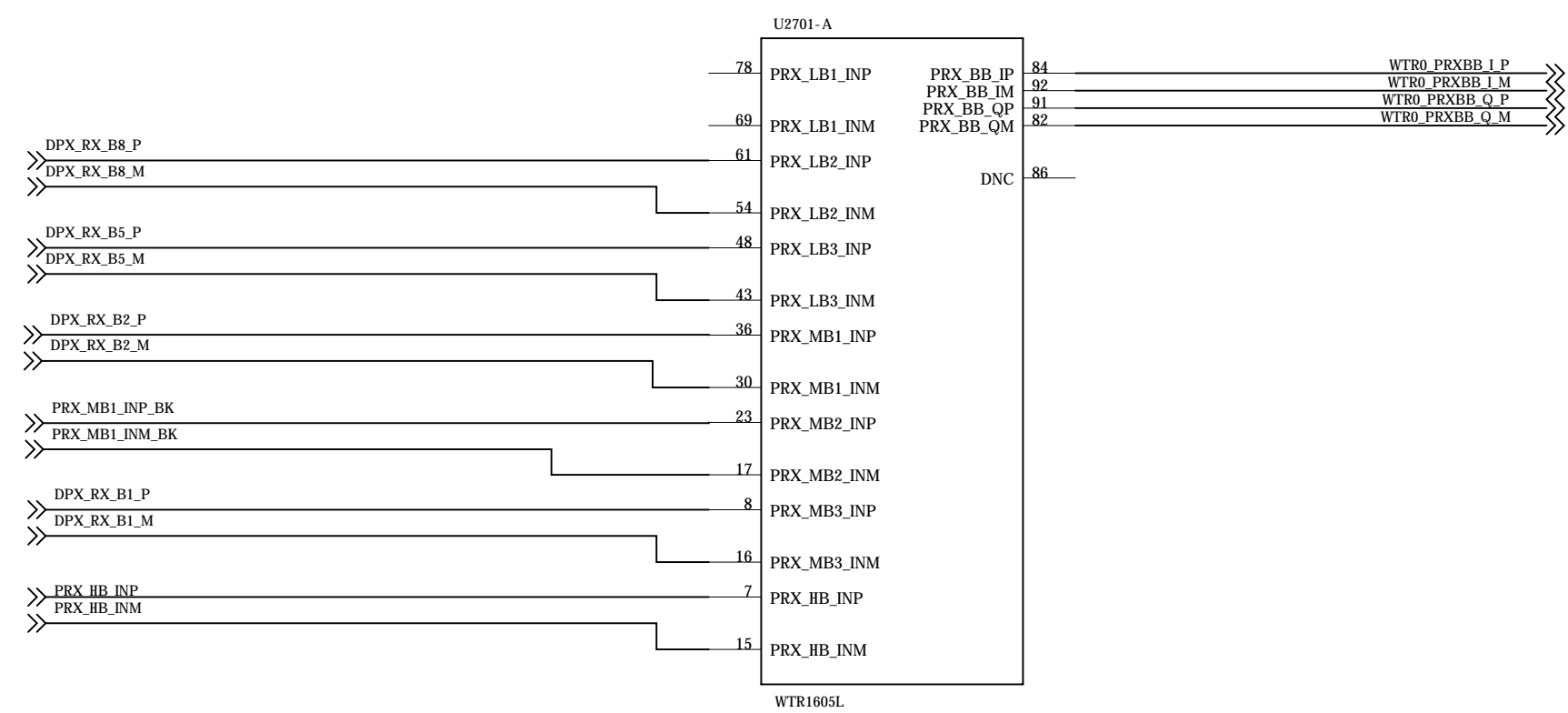
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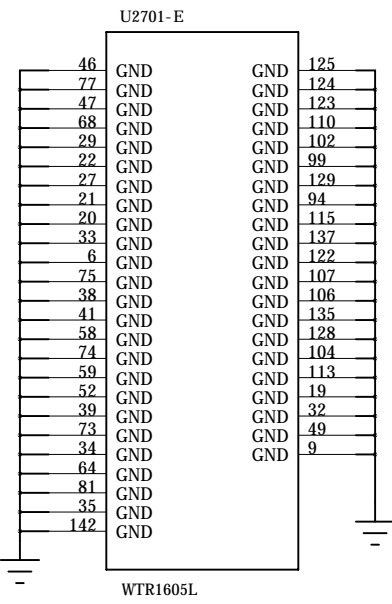
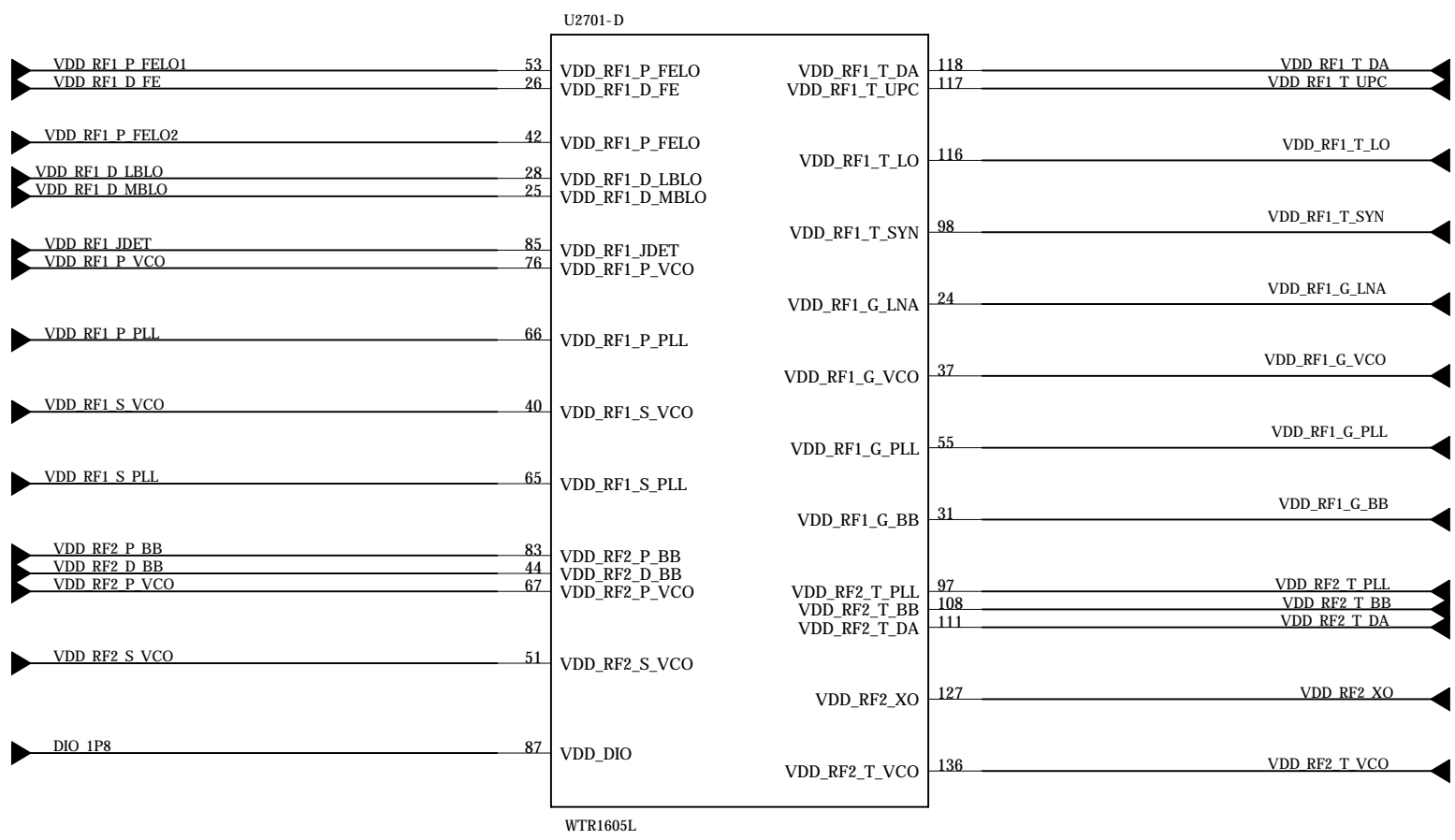
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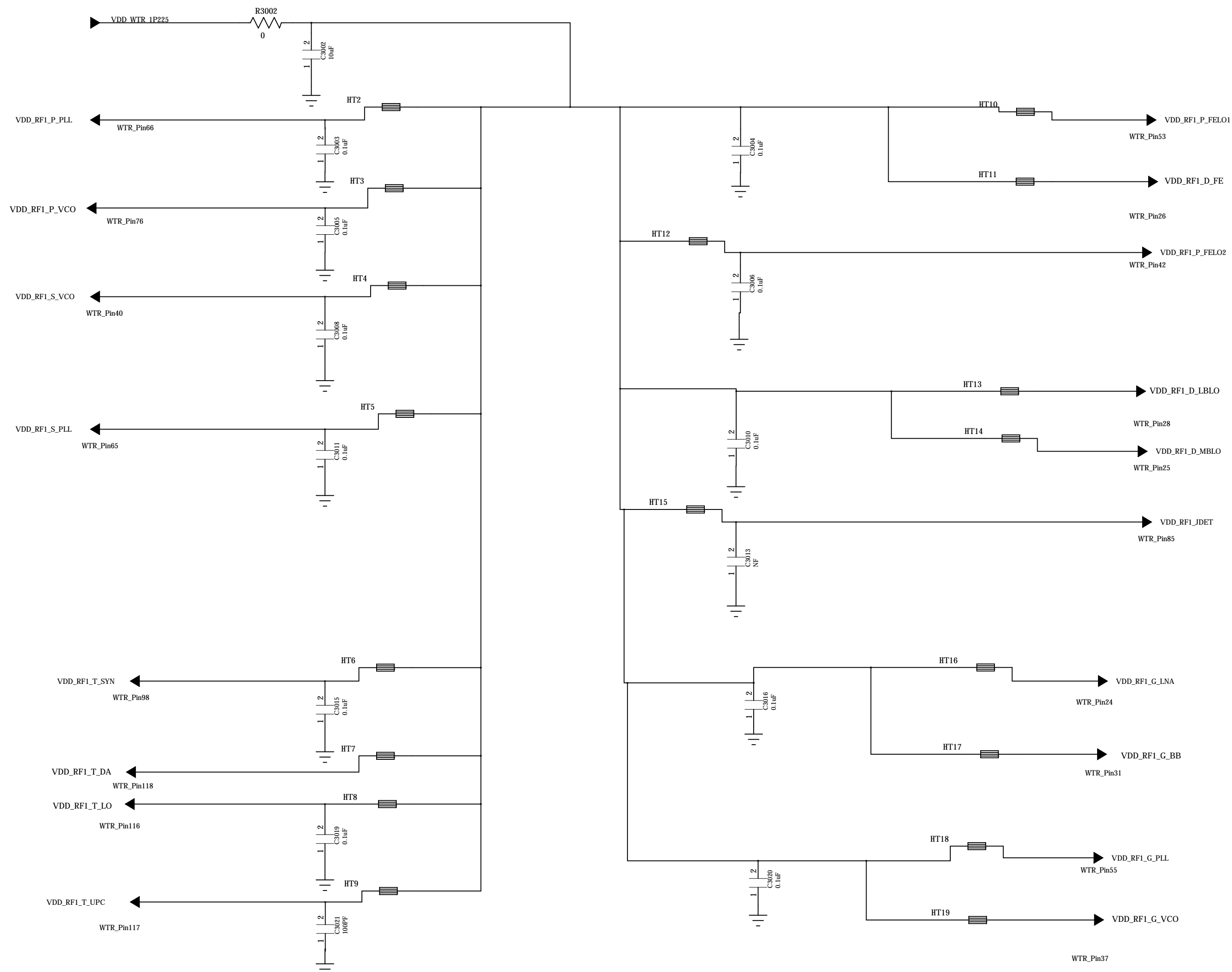
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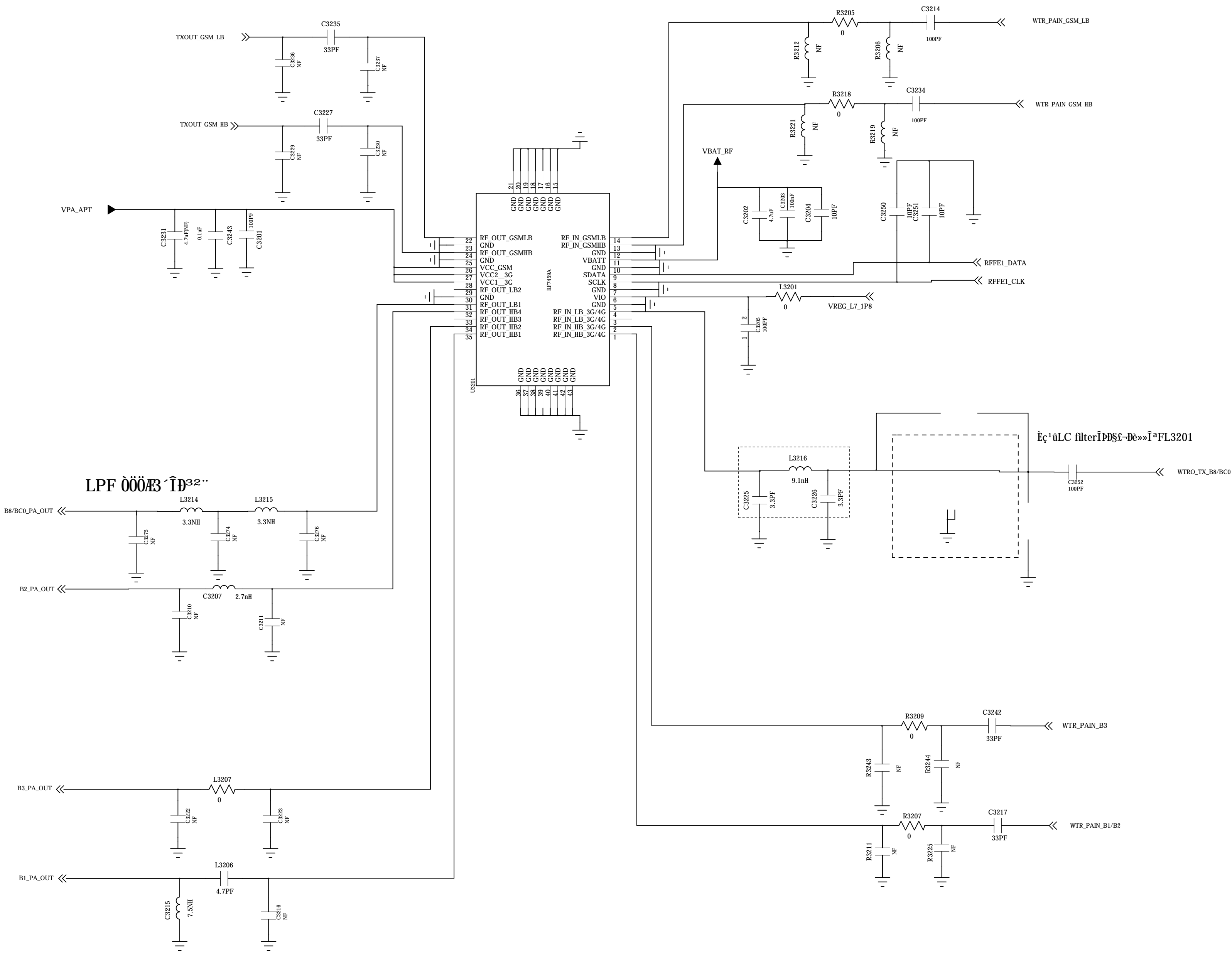
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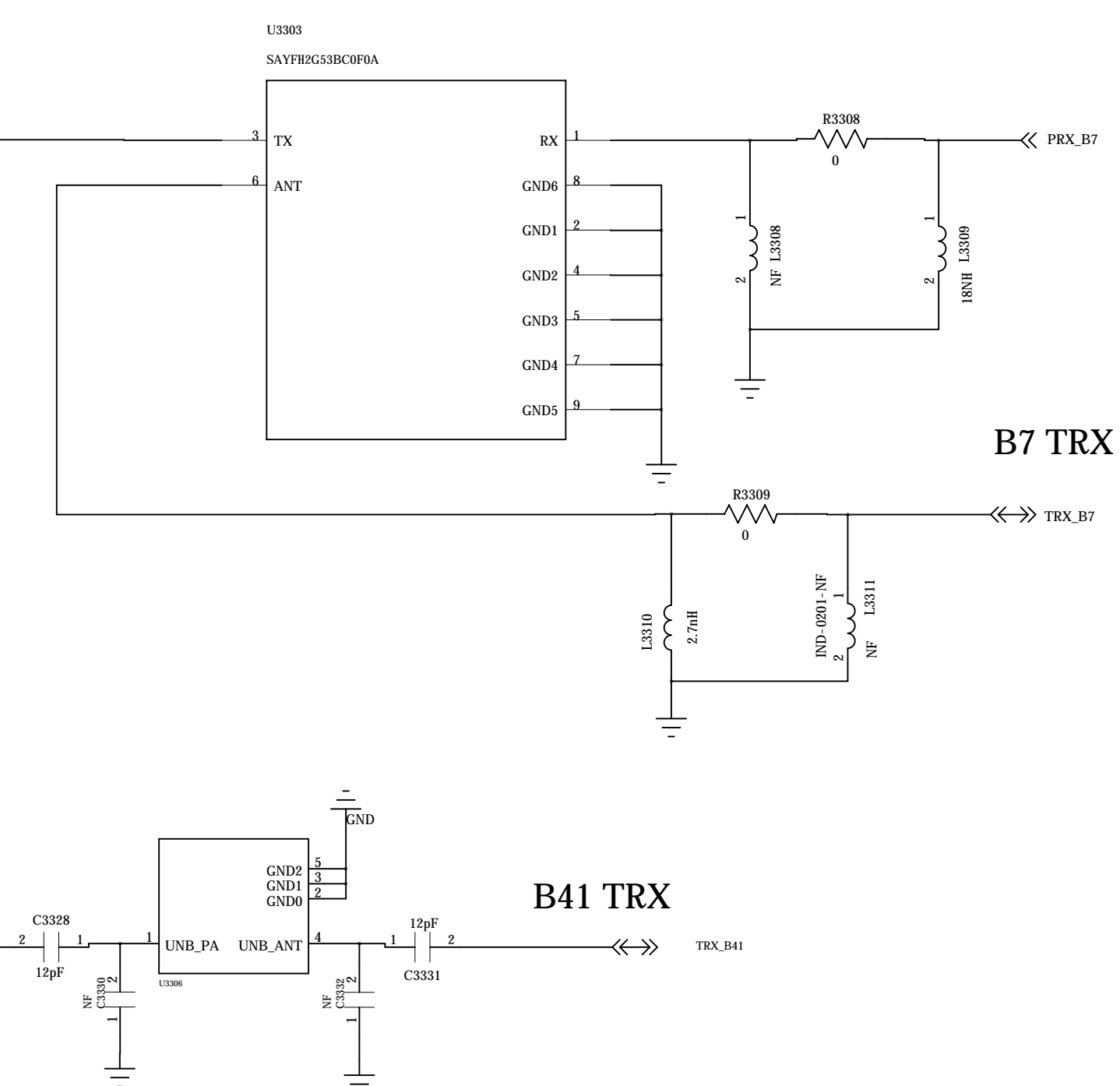
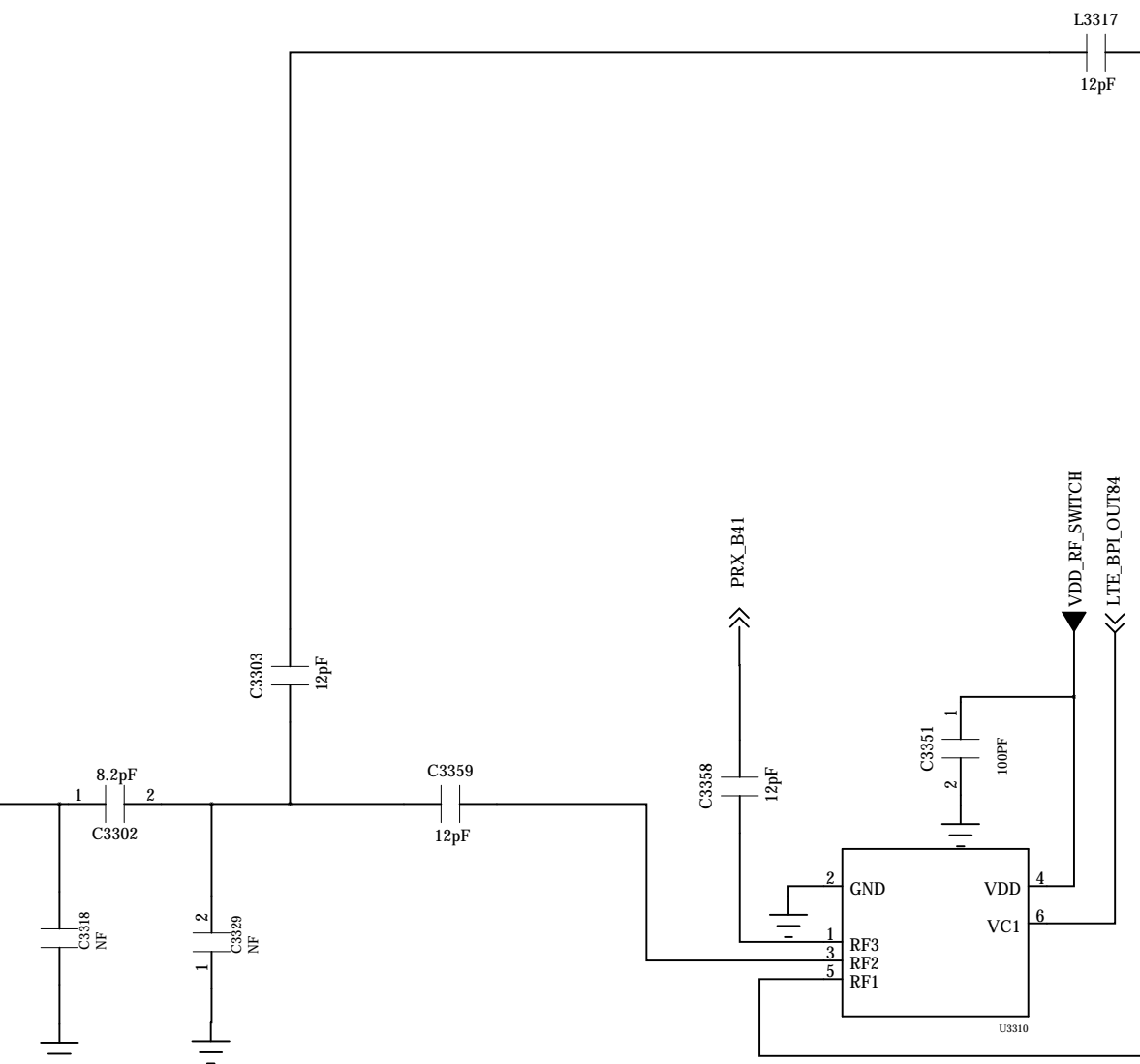
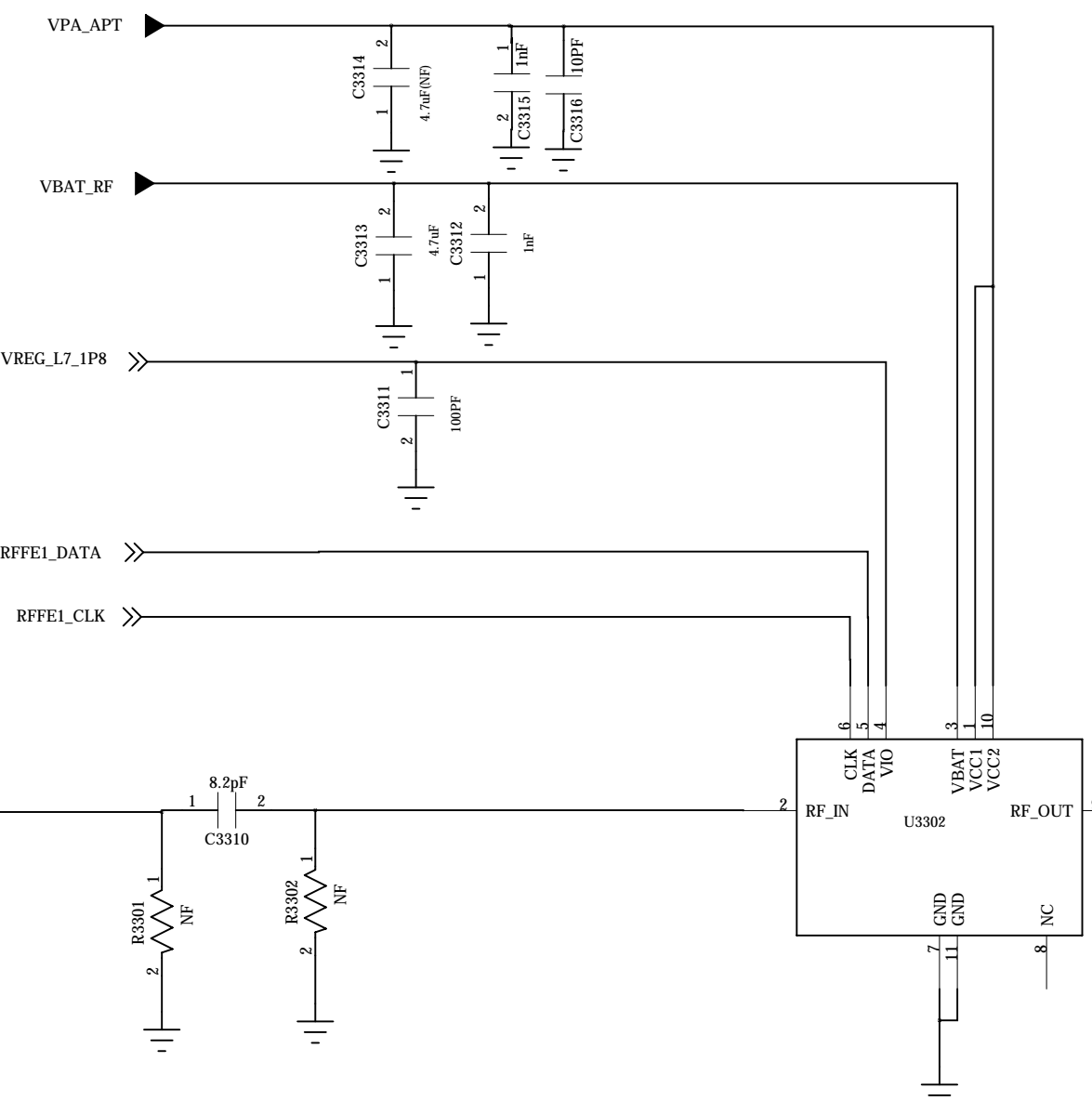
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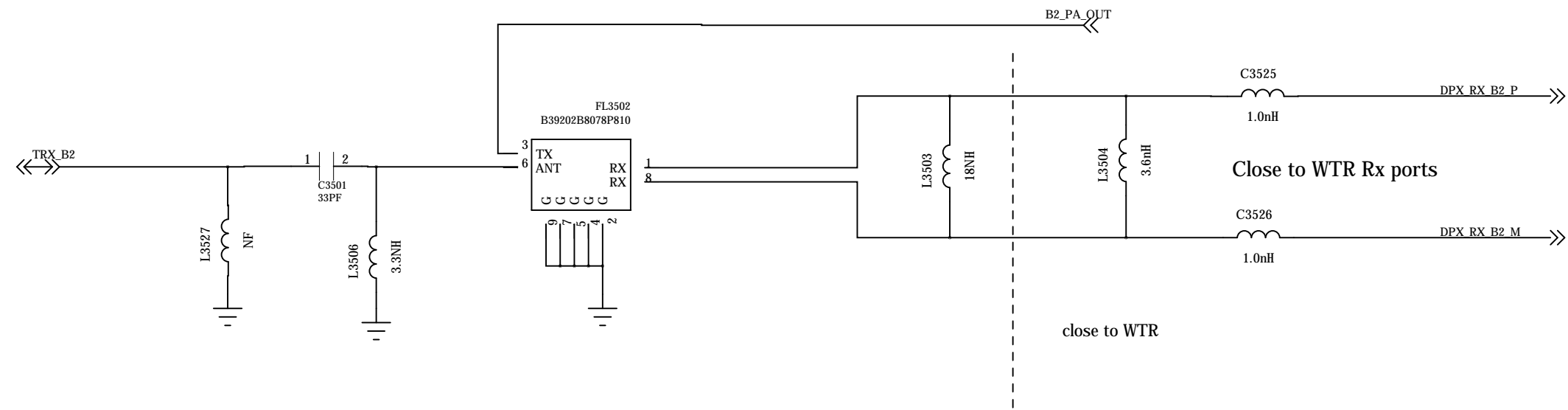
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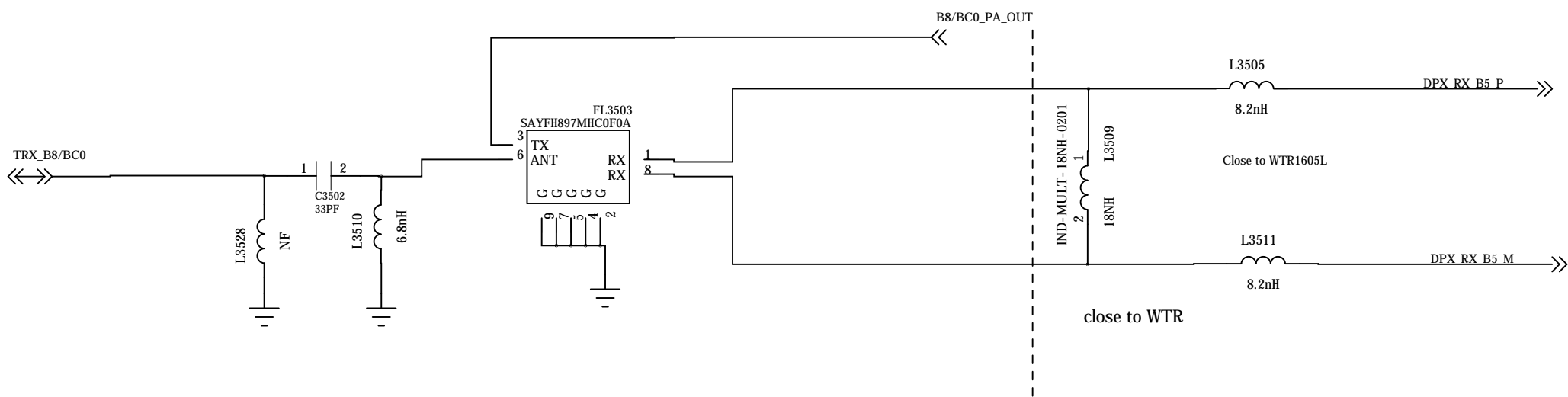


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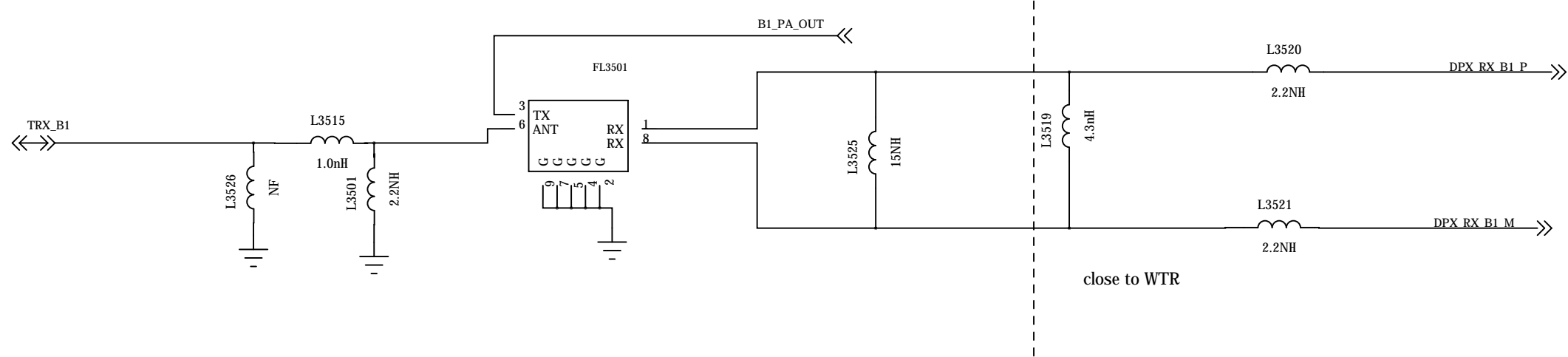
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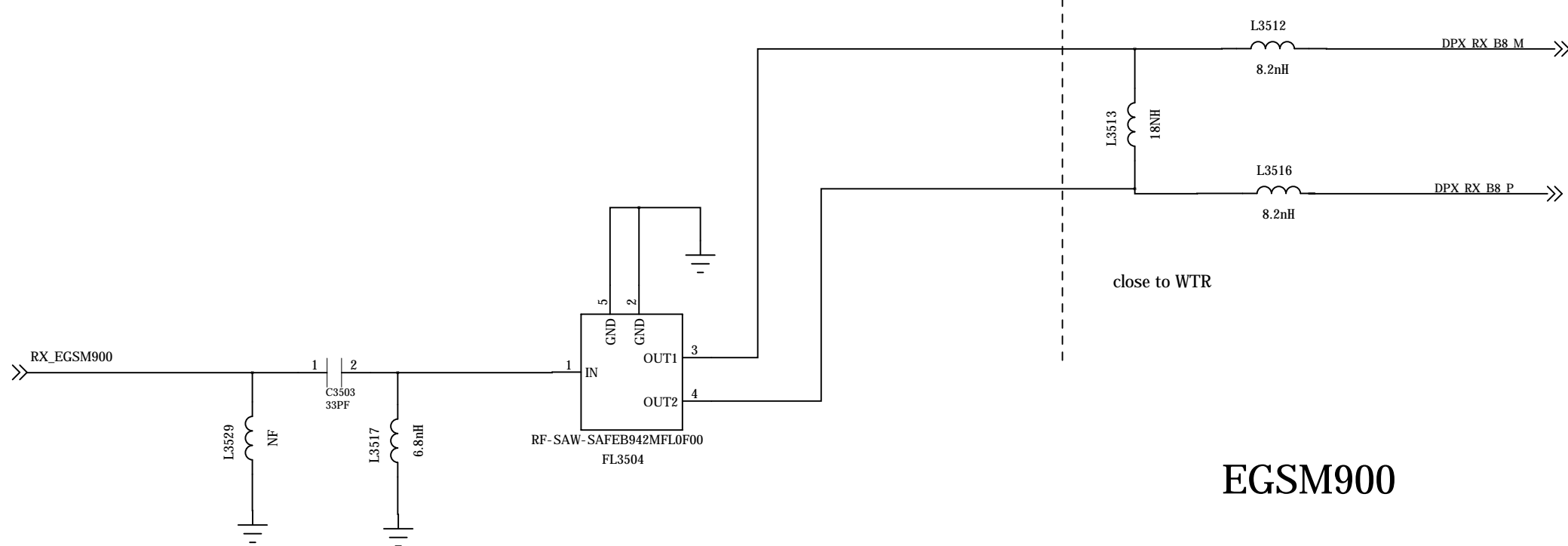
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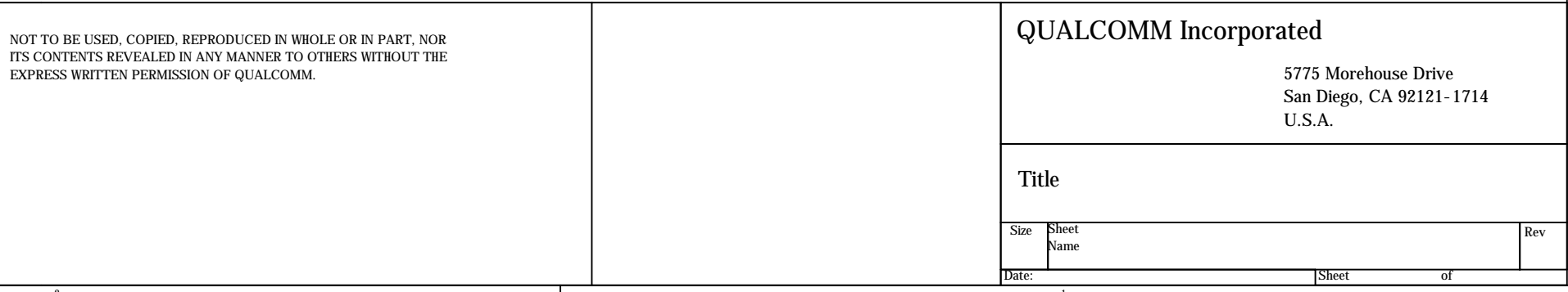
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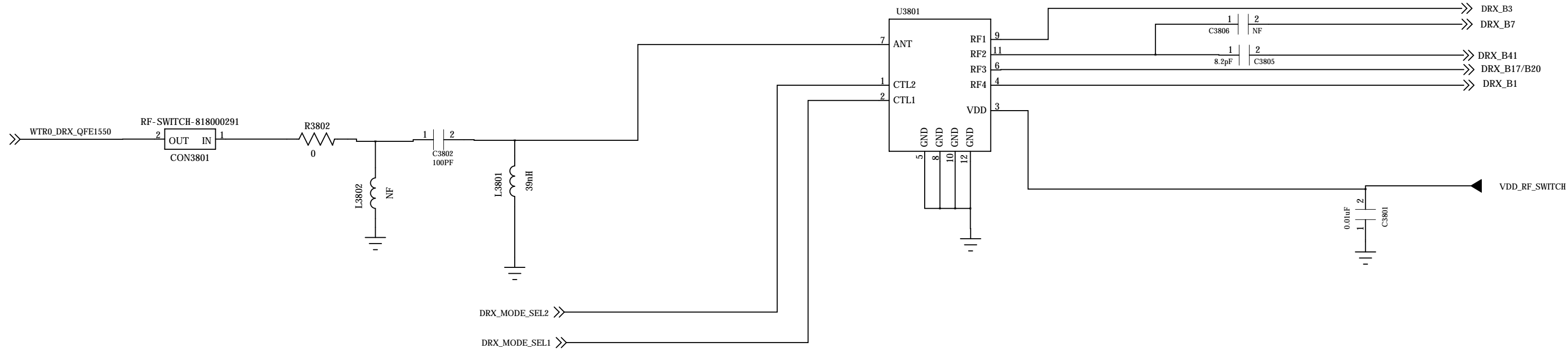


UMTS B1



EGSM900





RX BAND SELECT LOGIC

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DRX_B40	RF2			
DRX_B41	RF3			
DRX_B39_B1	RF4			
DRX_B3	RF6			

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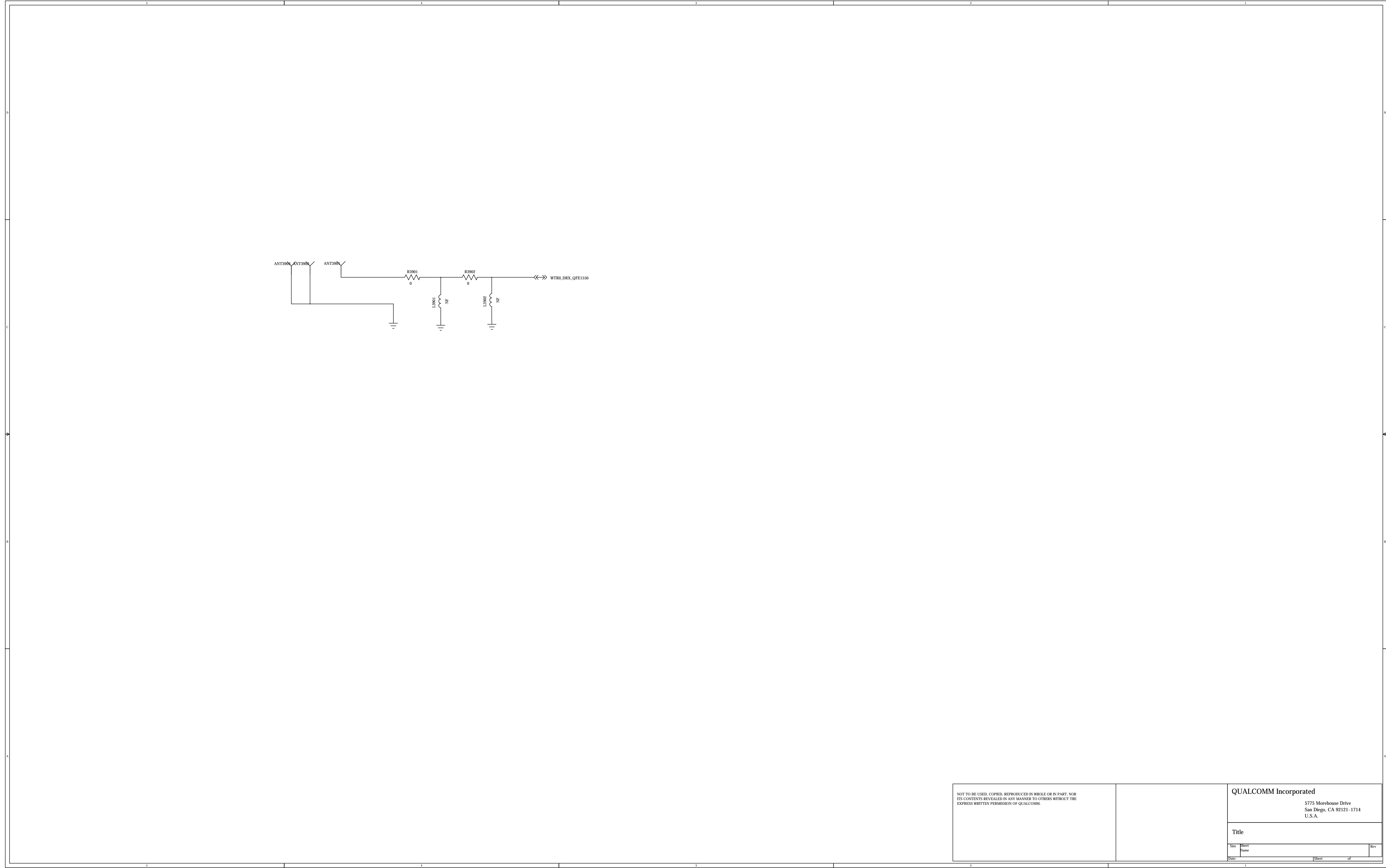
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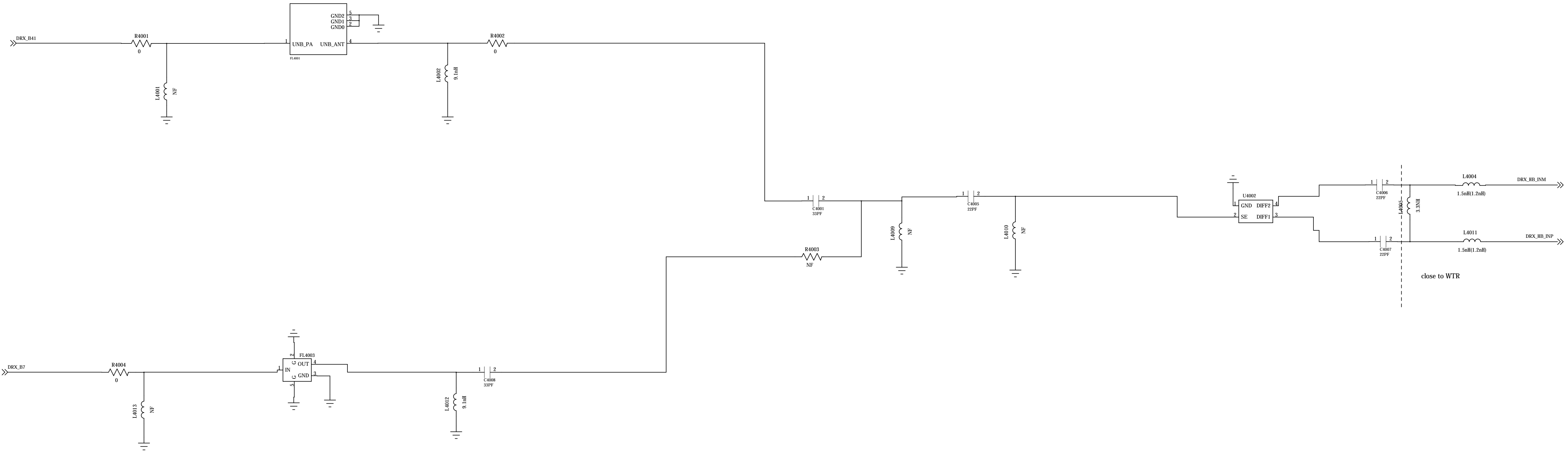
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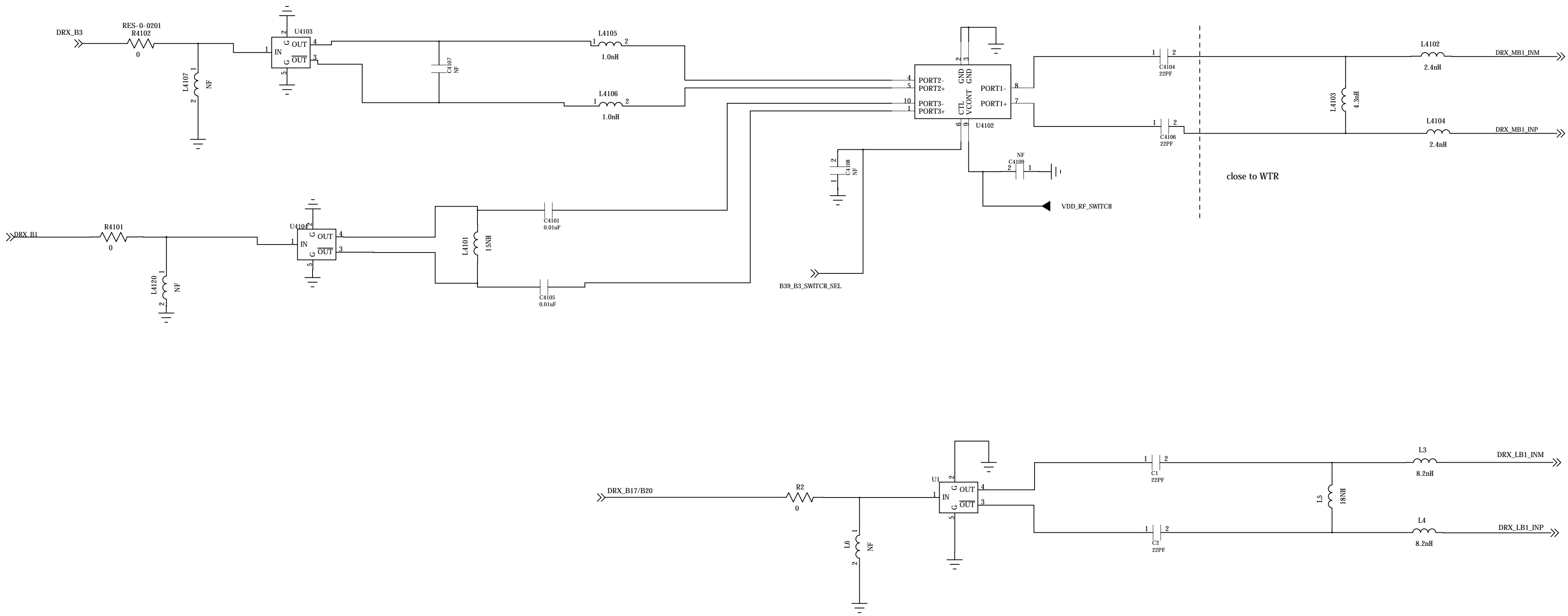


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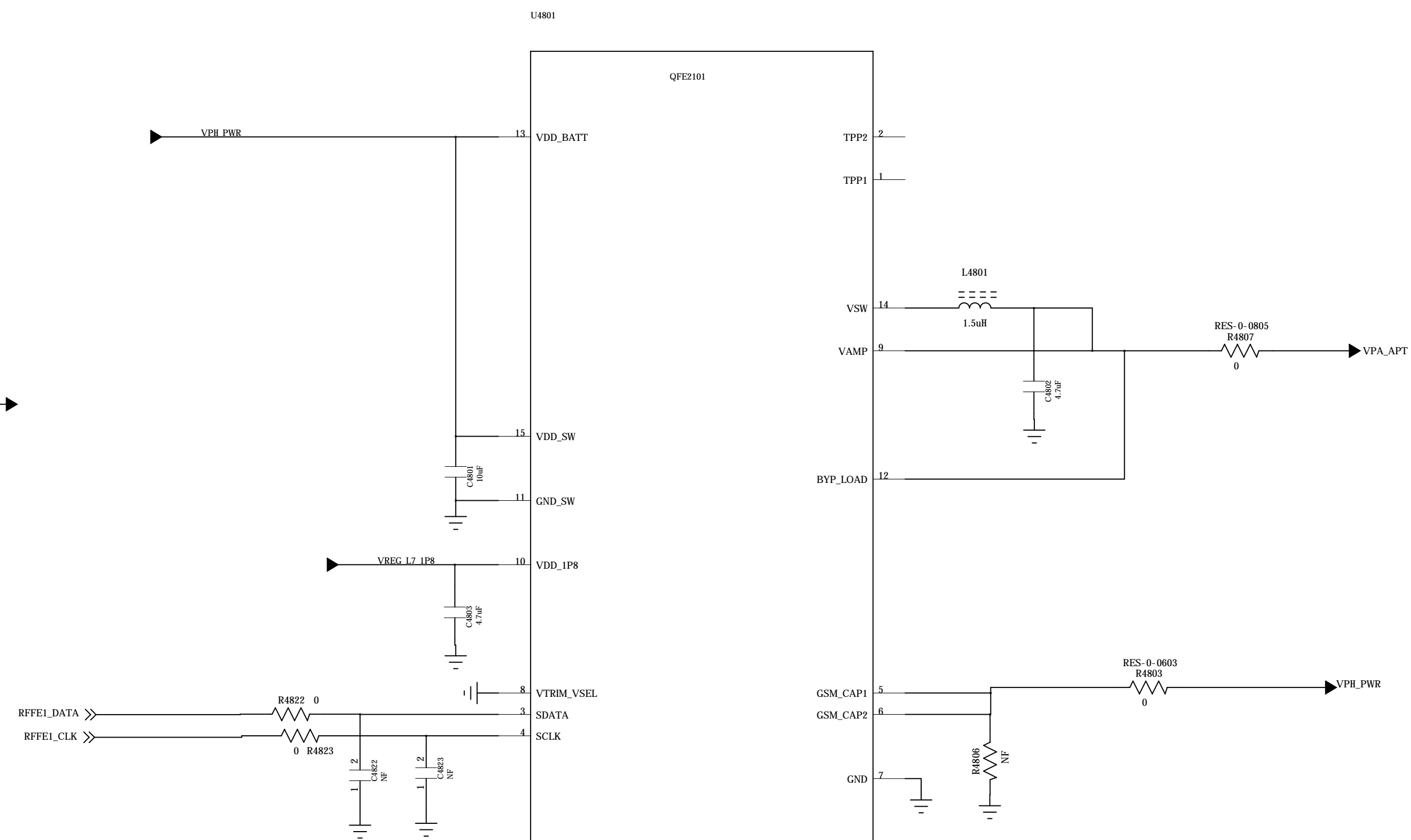
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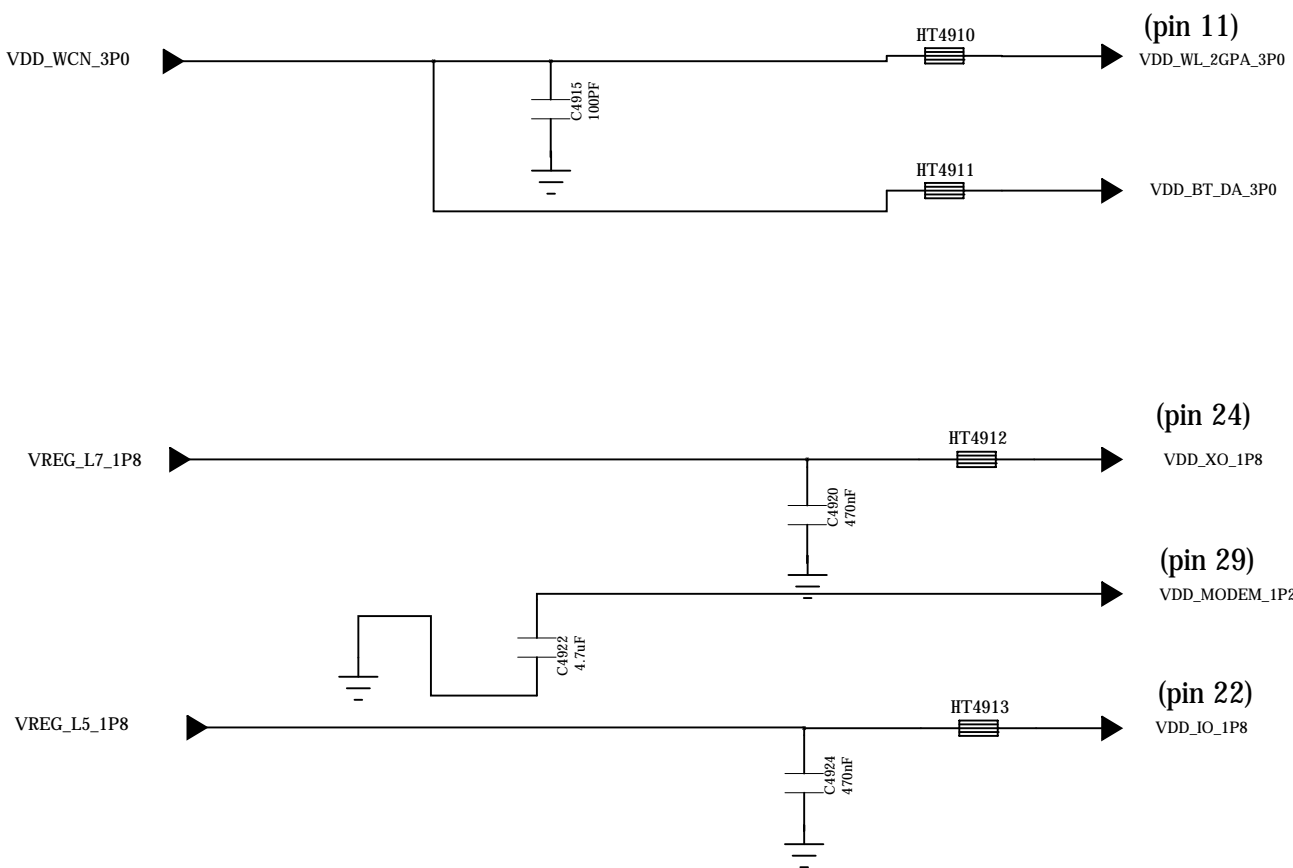
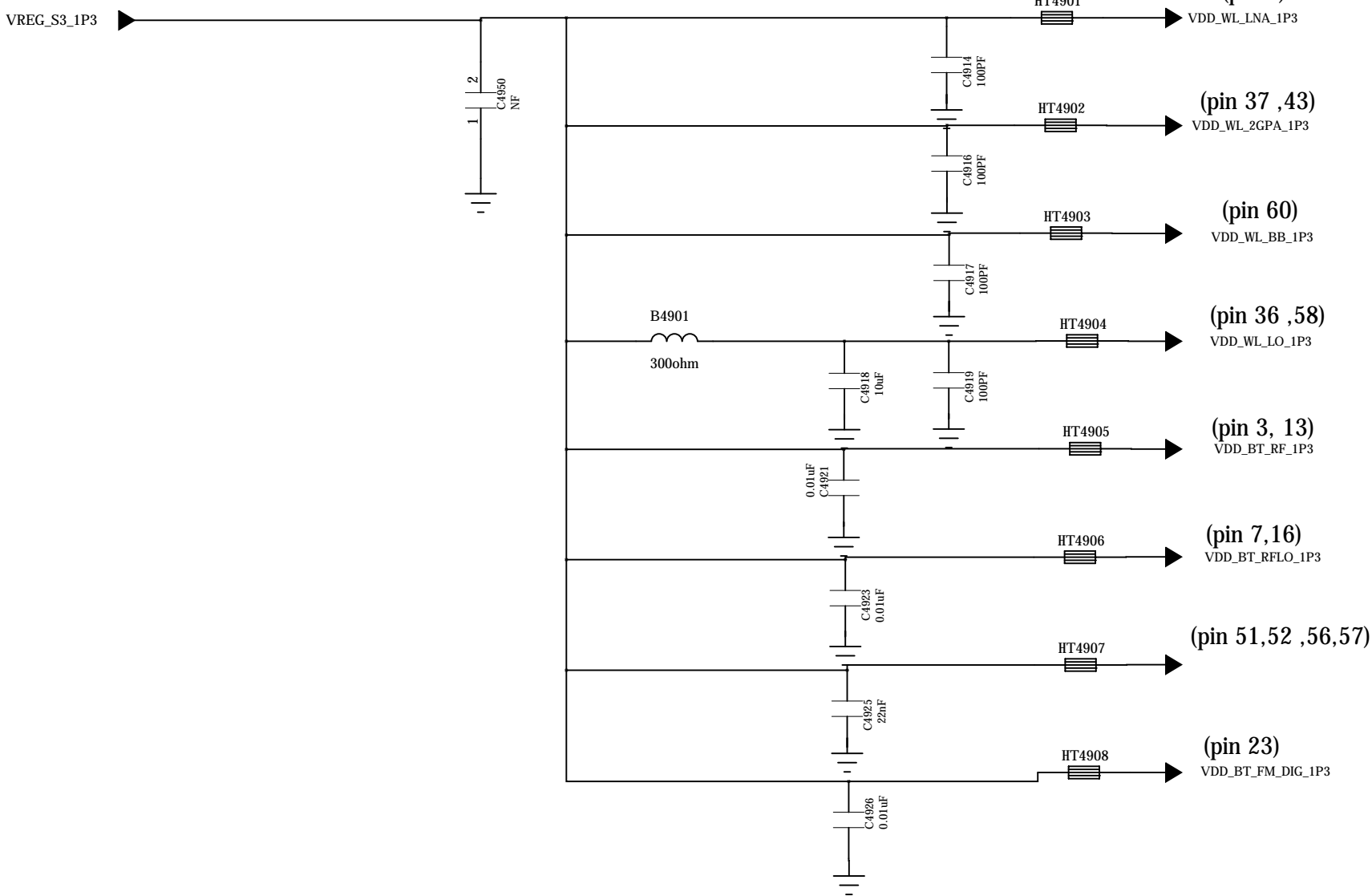
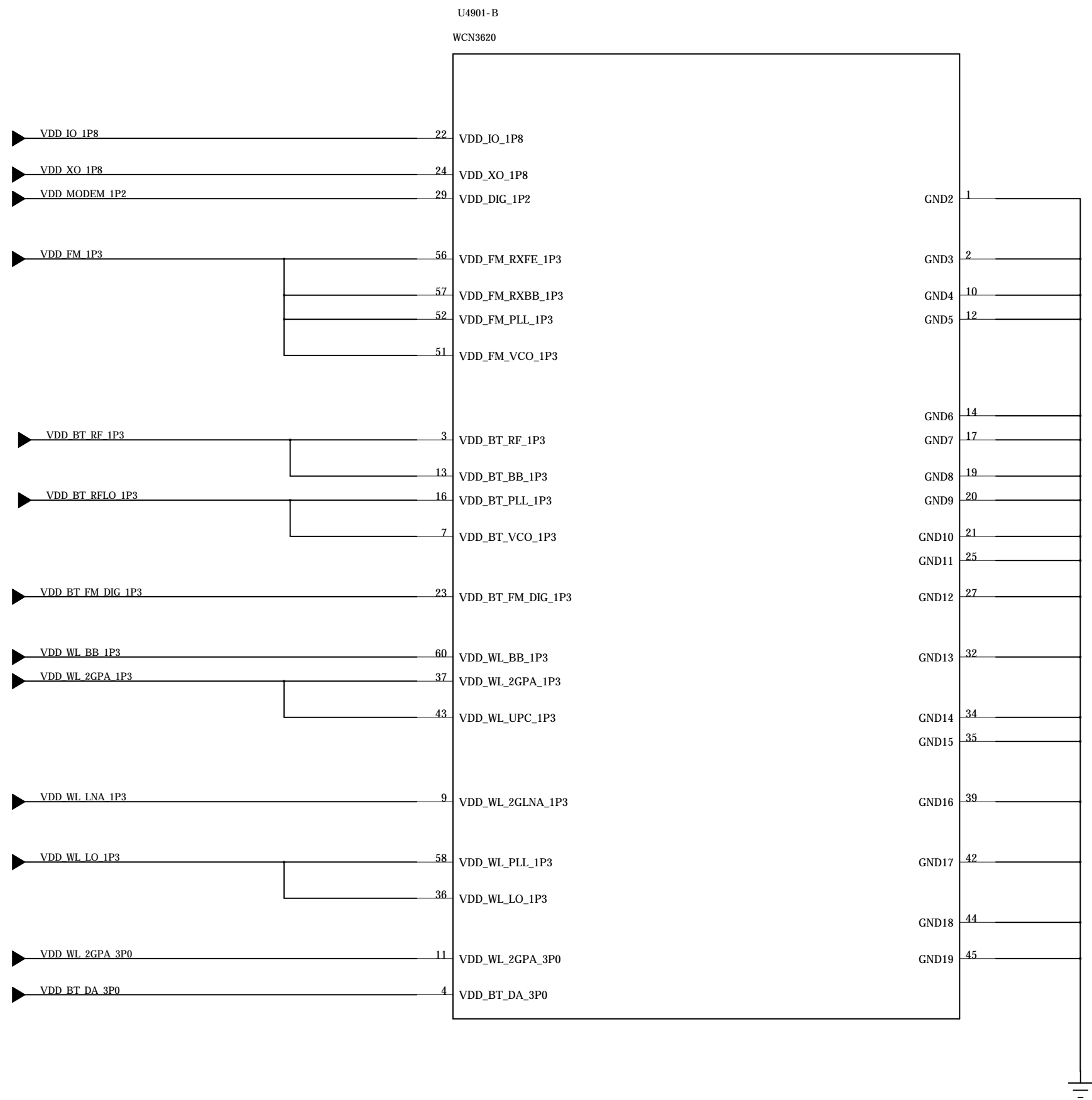
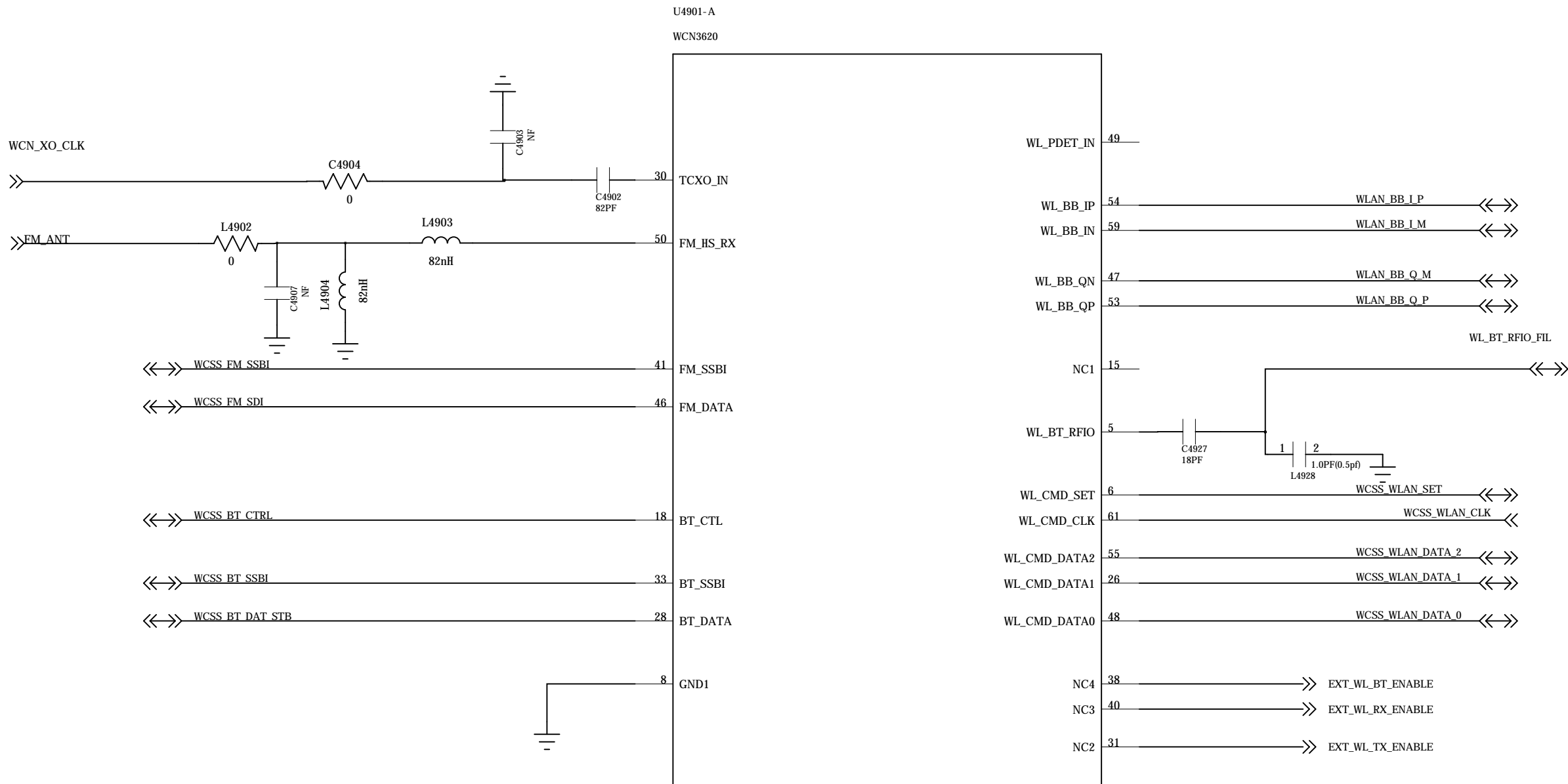
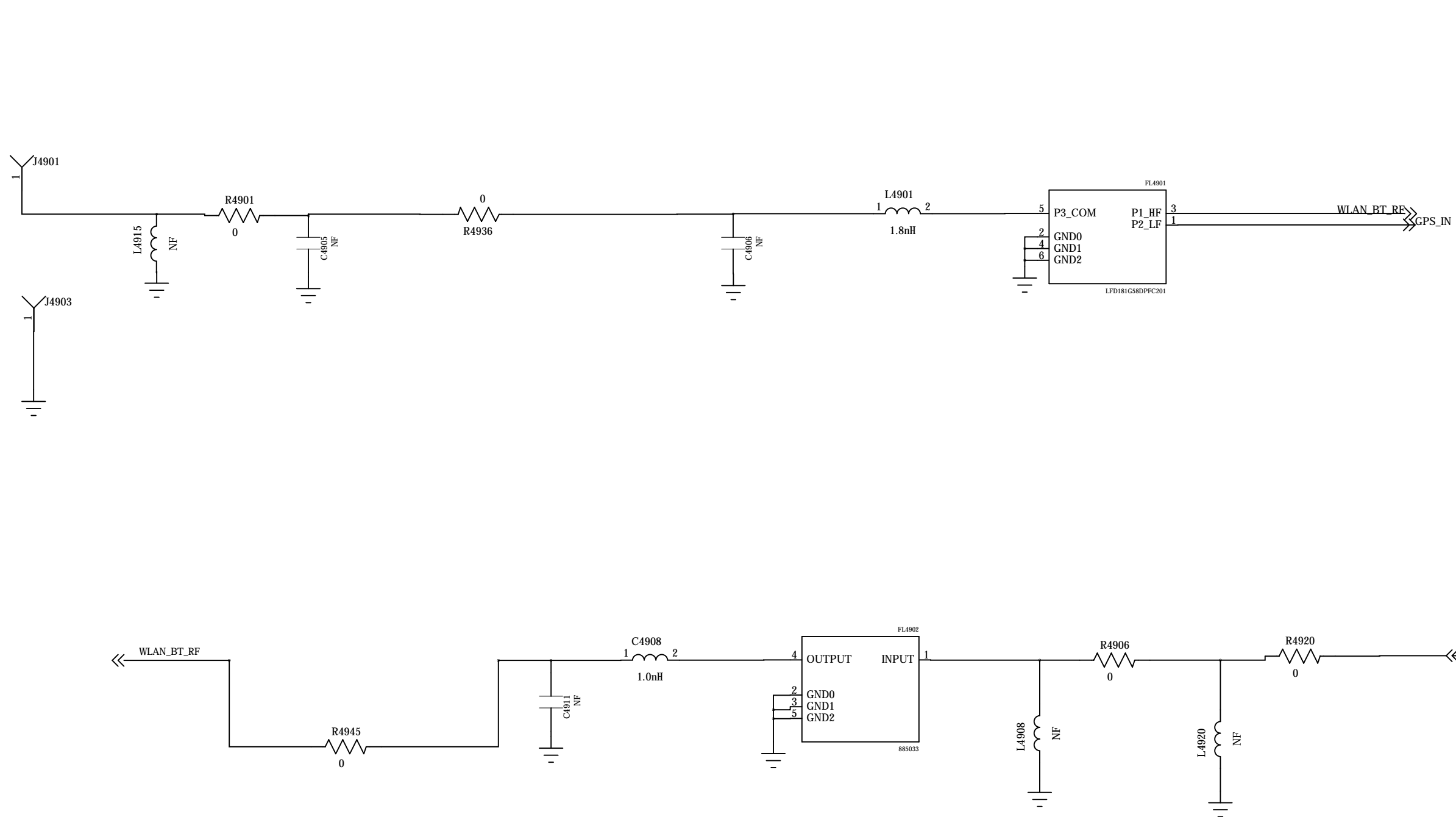
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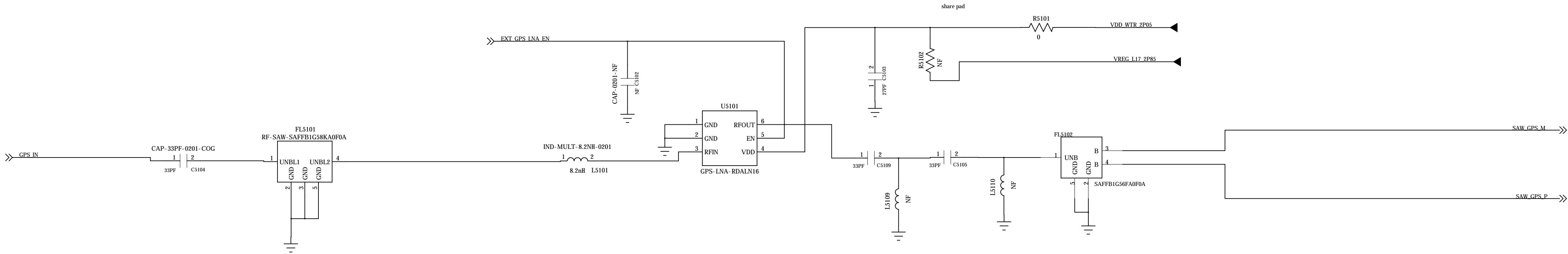
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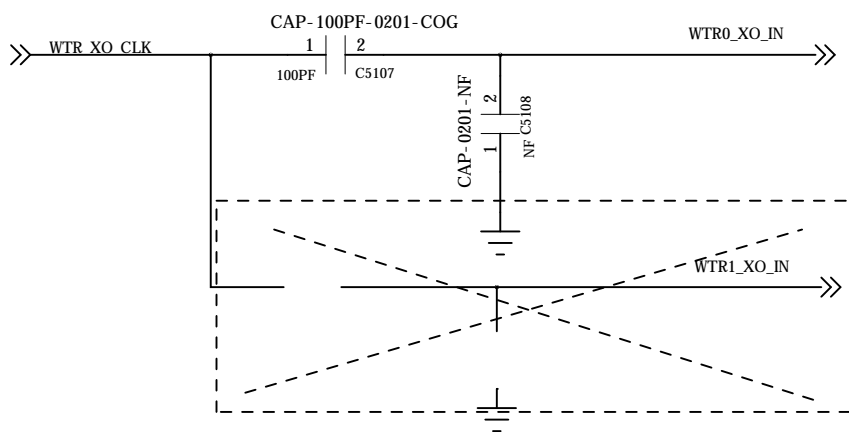
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