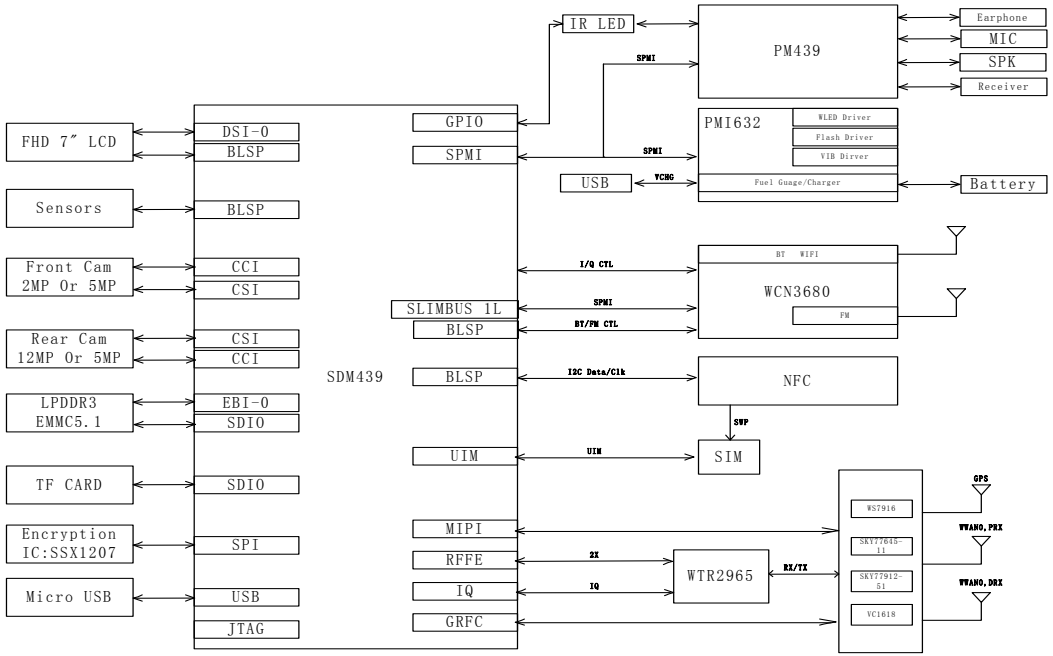

Block Diagram

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SDM439 GPIO Configuration For QRD439+PMI632

GPIO_0	NFC_SPI_ESE_MOSI	GPIO_41		GPIO_82	FM_DATA
GPIO_1	NFC_SPI_ESE_MISO	GPIO_42	ACCL_INT1	GPIO_83	BT_CTL
GPIO_2	NFC_SPI_CS_N_0	GPIO_43	ALSP_INT_N	GPIO_84	BT_DATA
GPIO_3	NFC_SPI_ESE_CLK	GPIO_44	MAG_DRDY_INT	GPIO_85	FP_SPI_MOSI
GPIO_4	QUP_UART_TX_2	GPIO_45	GYRO_INT	GPIO_86	FP_SPI_MISO
GPIO_5	QUP_UART_RX_2	GPIO_46		GPIO_87	FP_SPI_CS
GPIO_6	WSA_SMB_I2C_SDA	GPIO_47	SENSOR_SPI_CS2_N	GPIO_88	FP_SPI_CLK
GPIO_7	WSA_SMB_I2C_SCL	GPIO_48	FP_INT_N1	GPIO_89	
GPIO_8	TP_SPI_MOSI	GPIO_49	UIM_BATT_ALARM	GPIO_90	
GPIO_9	TP_SPI_MISO	GPIO_50		GPIO_91	KEY_VOL_UP_N
GPIO_10	TP_SPI_CS_SDA	GPIO_51	UIM1_DATA	GPIO_92	
GPIO_11	TP_SPI_CLK_SCL	GPIO_52	UIM1_CLK	GPIO_93	NFC_ESE_PWR_REQ
GPIO_12	WSA_INTR	GPIO_53	UIM1_RESET	GPIO_94	WSA_IO_DATA
GPIO_13	LCD_ID	GPIO_54	UIM1_PRESENT	GPIO_95	WSA_IO_CLK
GPIO_14	SENSOR_I2C_SDA	GPIO_55	UIM2_DATA	GPIO_96	WSA_EN
GPIO_15	SENSOR_I2C_SCL	GPIO_56	UIM2_CLK	GPIO_97	HomeKey_FP_INT
GPIO_16	NFC_DISABLE	GPIO_57	UIM2_RESET	GPIO_98	
GPIO_17	NFC_IRQ	GPIO_58	UIM2_PRESENT	GPIO_99	
GPIO_18	NFC_I2C_SDA	GPIO_59		GPIO_100	RFFE1_CLK
GPIO_19	NFC_I2C_SCL	GPIO_60	LCD0_RESET_N	GPIO_101	RFFE1_DATA
GPIO_20	SENSOR_SPI_MOSI	GPIO_61	SMB_INT	GPIO_102	RFFE2_CLK
GPIO_21	SENSOR_SPI_MISO	GPIO_62		GPIO_103	RFFE2_DATA
GPIO_22	SENSOR_SPI_CS0_N	GPIO_63		GPIO_104	
GPIO_23	SENSOR_SPI_CLK	GPIO_64	TP_RST_N	GPIO_105	
GPIO_24	LCD_TE0	GPIO_65	TP_INT_N	GPIO_106	
GPIO_25	WSA_MCLK	GPIO_66		GPIO_107	GRFC3_SEL
GPIO_26	CAM_MCLK0	GPIO_67	SDCARD_DET_N	GPIO_108	
GPIO_27	CAM_MCLK1	GPIO_68		GPIO_109	GRFC5_SEL
GPIO_28		GPIO_69	CDC_PDM_CLK	GPIO_110	GRFC6_SEL
GPIO_29	CAM_I2C_SDA0	GPIO_70	CDC_PDM_SYNC	GPIO_111	GRFC7_SEL
GPIO_30	CAM_I2C_SCL0	GPIO_71	CDC_PDM_TX	GPIO_112	GRFC8_SEL
GPIO_31	CAM_I2C_SDA1	GPIO_72	CDC_PDM_RX0	GPIO_113	GRFC9_SEL
GPIO_32	CAM_I2C_SCL1	GPIO_73	CDC_PDM_RX1	GPIO_114	GRFC10_SEL
GPIO_33		GPIO_74	CDC_PDM_RX2	GPIO_115	
GPIO_34	FLASH_STROBE_NOW	GPIO_75	BT_SSBI	GPIO_116	
GPIO_35	CAM_AVDD_LDO_EN	GPIO_76	WL_CMD_DATA_2	GPIO_117	
GPIO_36	MCAM_RST_N	GPIO_77	WL_CMD_DATA_1	GPIO_118	EXT_GPS_LNA_EN
GPIO_37	FORCE_USB_BOOT	GPIO_78	WL_CMD_DATA_0	GPIO_119	CH0_GSM_TX_PHASE_D0
GPIO_38	SCAM_RST_N	GPIO_79	WL_CMD_SET	GPIO_120	RFFE5_CLK
GPIO_39		GPIO_80	WL_CMD_CLK	GPIO_121	RFFE5_DATA
GPIO_40		GPIO_81	FM_SSBI	GPIO_122	
GPIO_123					
GPIO_124	FP_RESET				
GPIO_125					
GPIO_126					
GPIO_127					
GPIO_128					
GPIO_129					
GPIO_130	NFC_DWL_REQ				
GPIO_131					
GPIO_132	RCM_MARKER1				
GPIO_133	RCM_MARKER2				

PMI632 GPIO/MPP Configuration

GPIO_1	CONNECTOR_THERMAL	GPIO_5	FLASH_STROBE_NOW
GPIO_2	SMB_PARALLEL_CHG_EN	GPIO_6	NEBULA_PWM
GPIO_3	SKIN_THEREMAL	GPIO_7	SMB_VCHG_P
GPIO_4	SMB_THEREMAL	GPIO_8	SMB_VCHG_M

PM439 GPIO/MPP Configuration

GPIO_1		MPP_1	VDD_PX_BIAS_MPP_1
GPIO_2	NFC_CLK_REQ		
GPIO_3	UIM_BATT_ALARM	MPP_3	VREF_DAC_MPP_3
GPIO_4	WLED_EN	MPP_4	QUIET_THERM_TP_LED_K
GPIO_5			
GPIO_6			
GPIO_7			
GPIO_8	LCM_BL_PWM		

GPIO
TABLE

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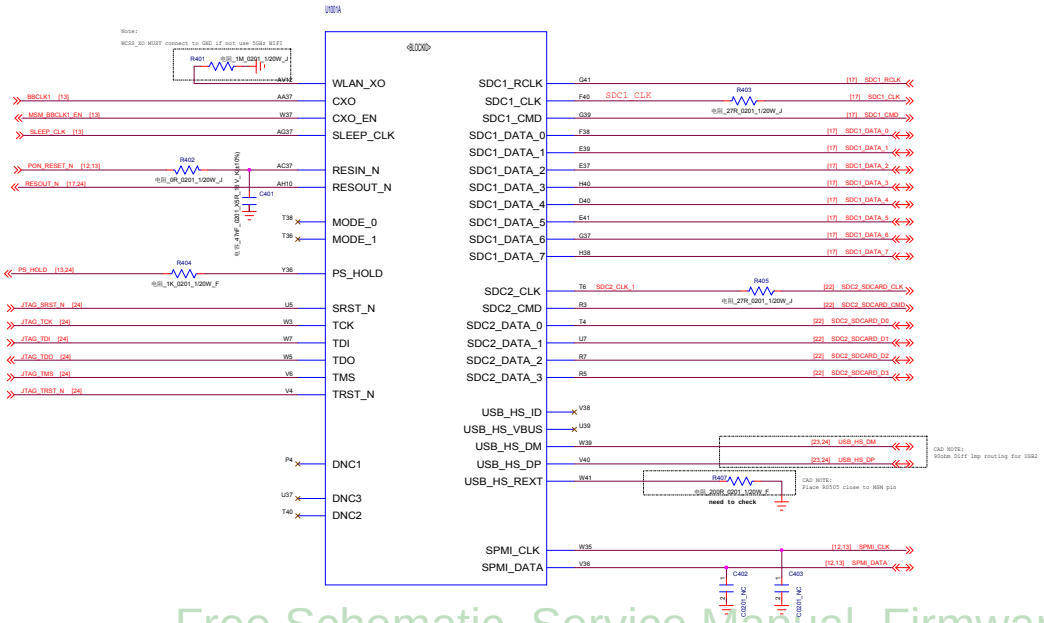

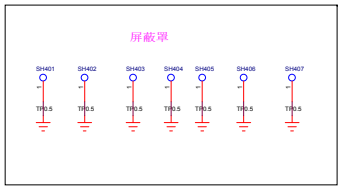

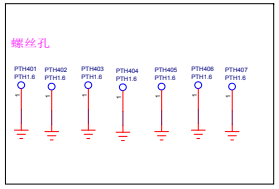

SDM439
Control

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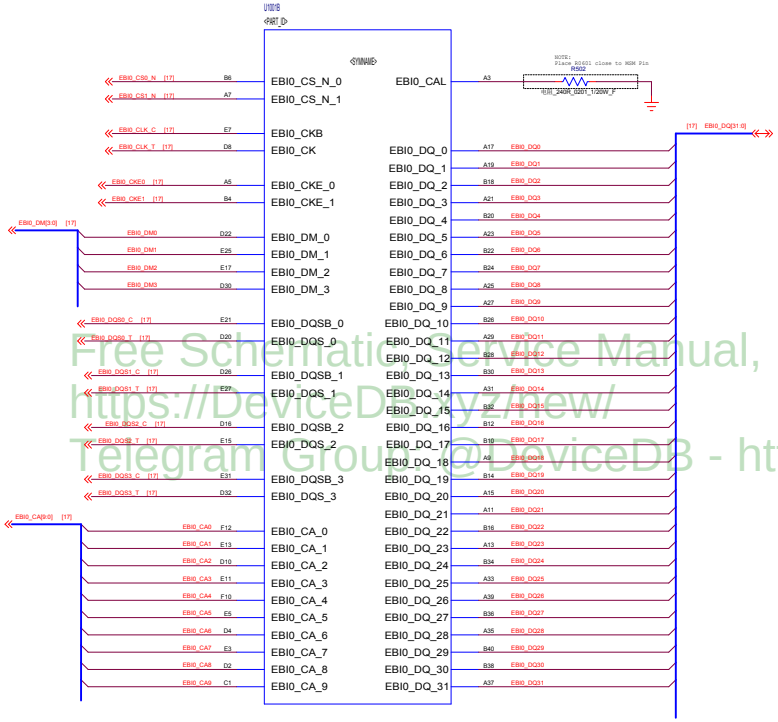

SDM439 EBI

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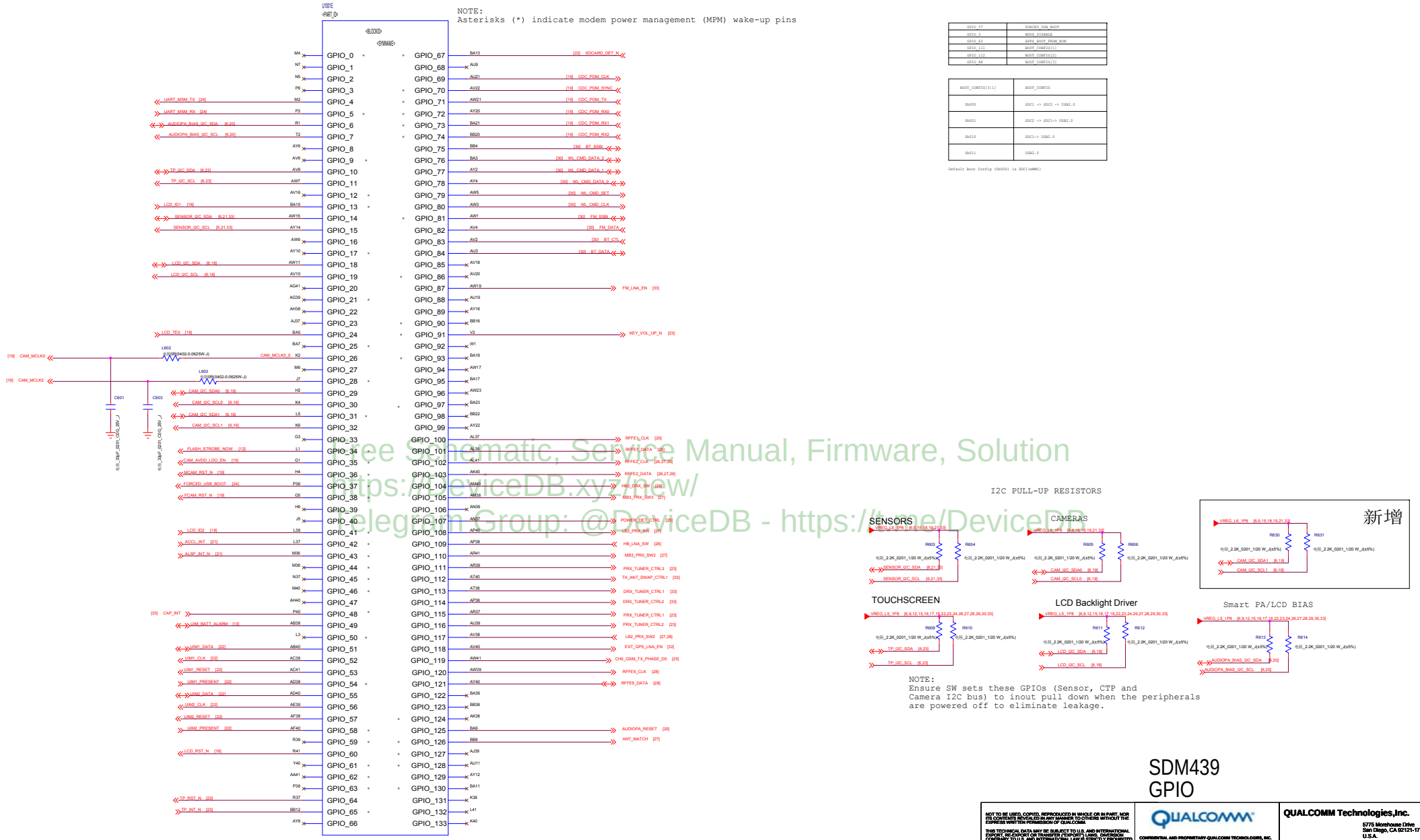

SDM439 MIPI

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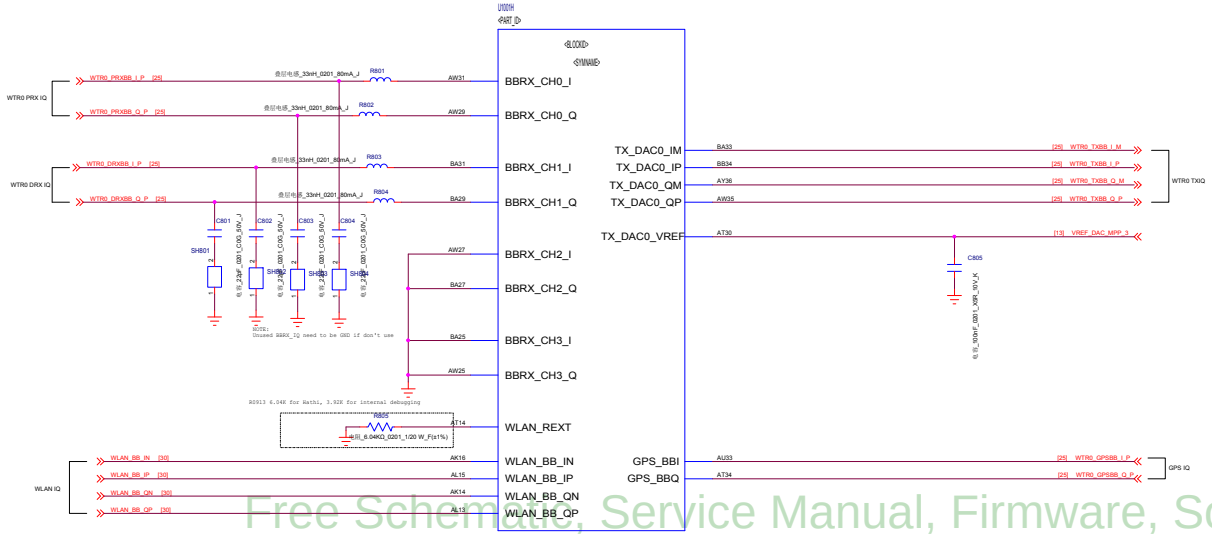

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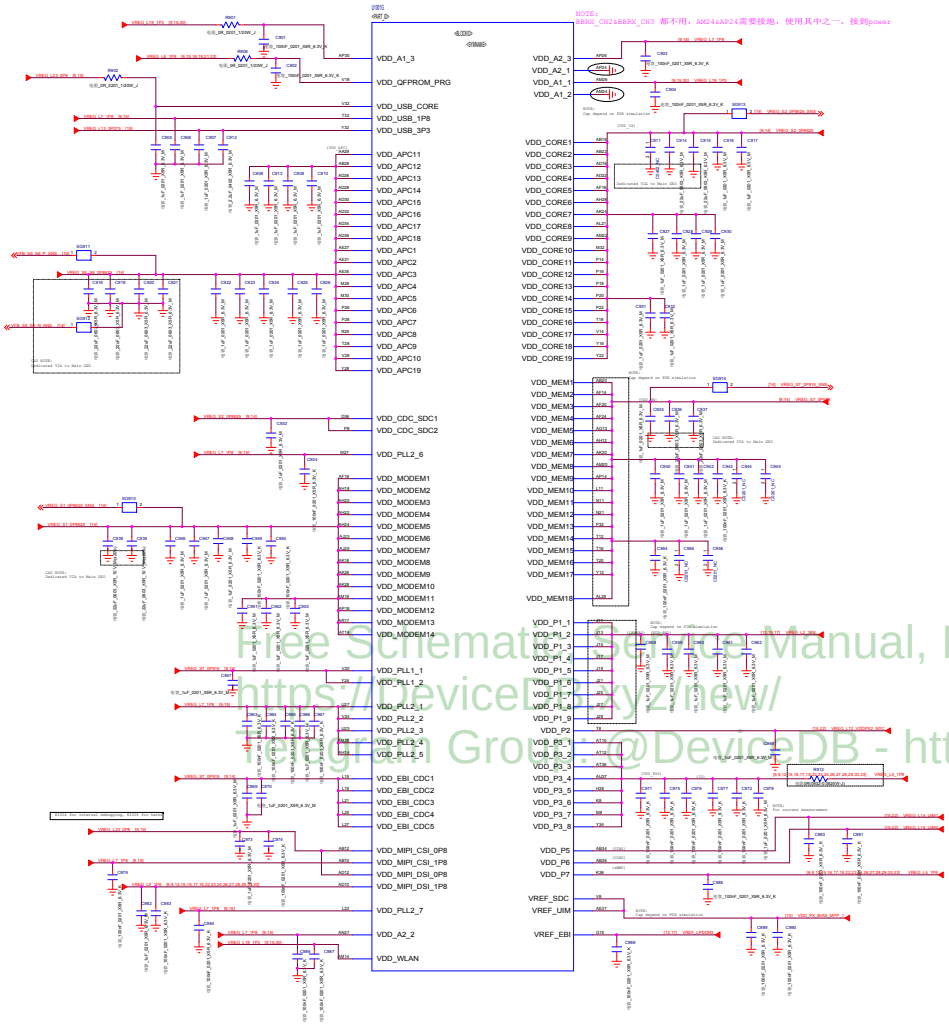
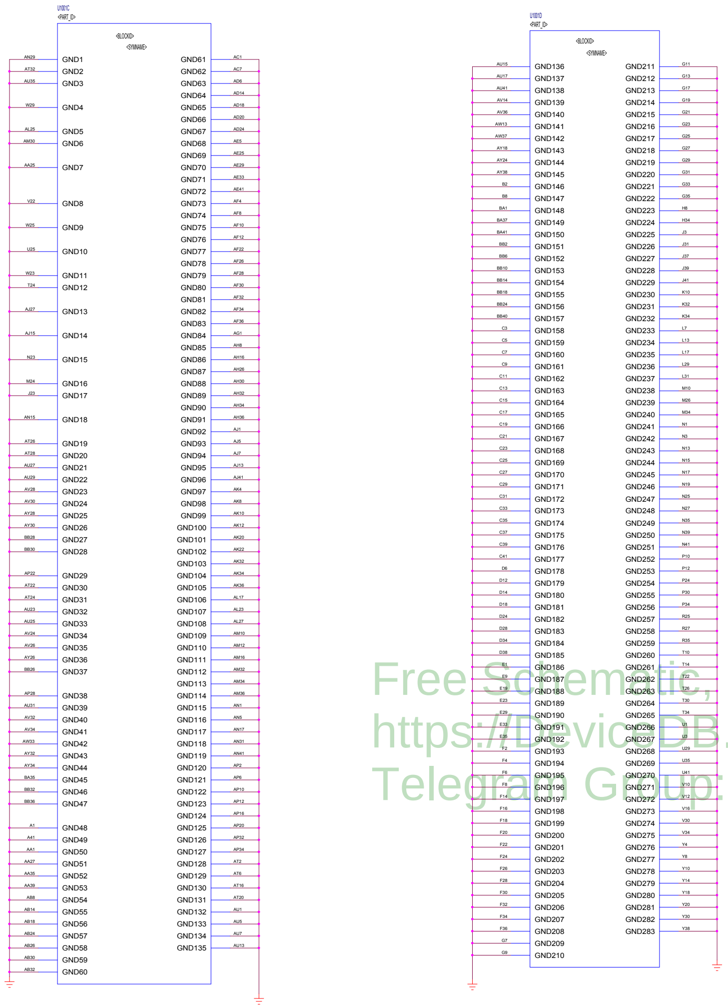


SDM439
POWER1



SDM439
GND

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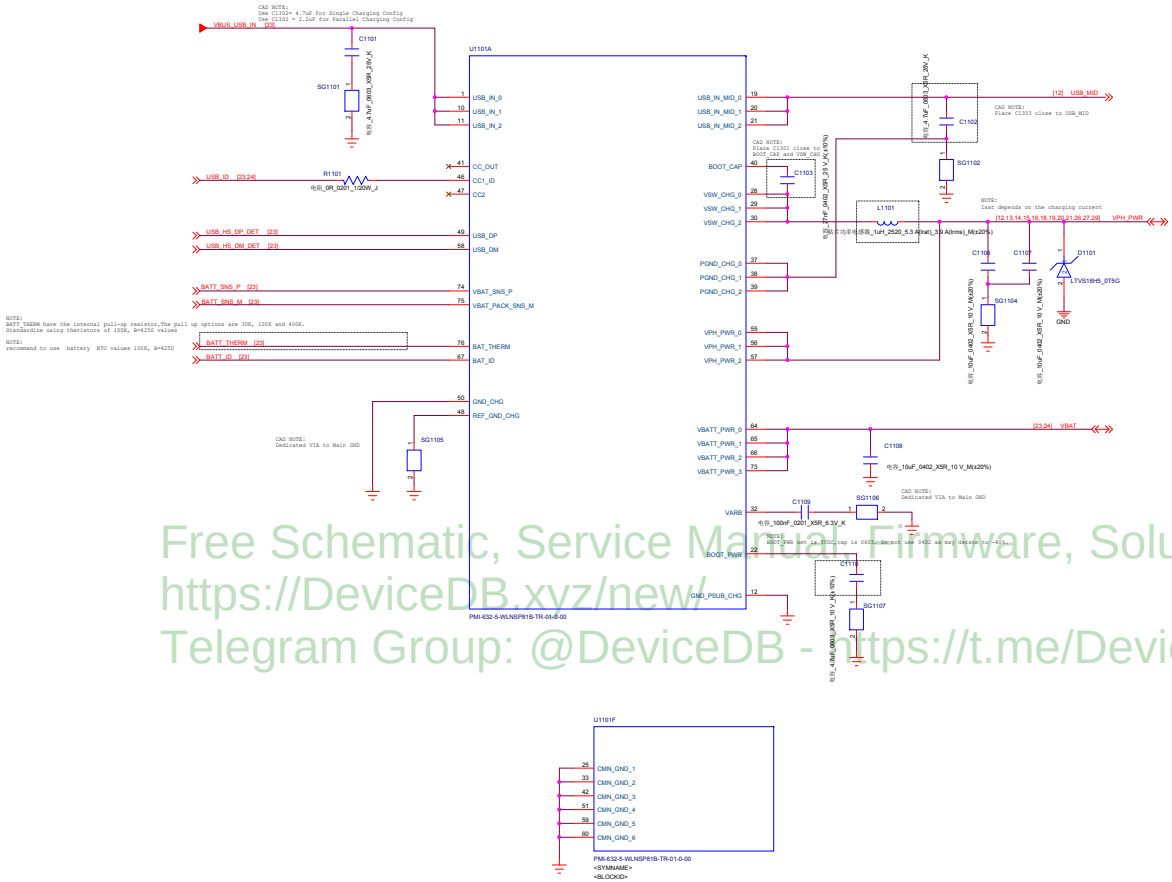

PMI632
Charger

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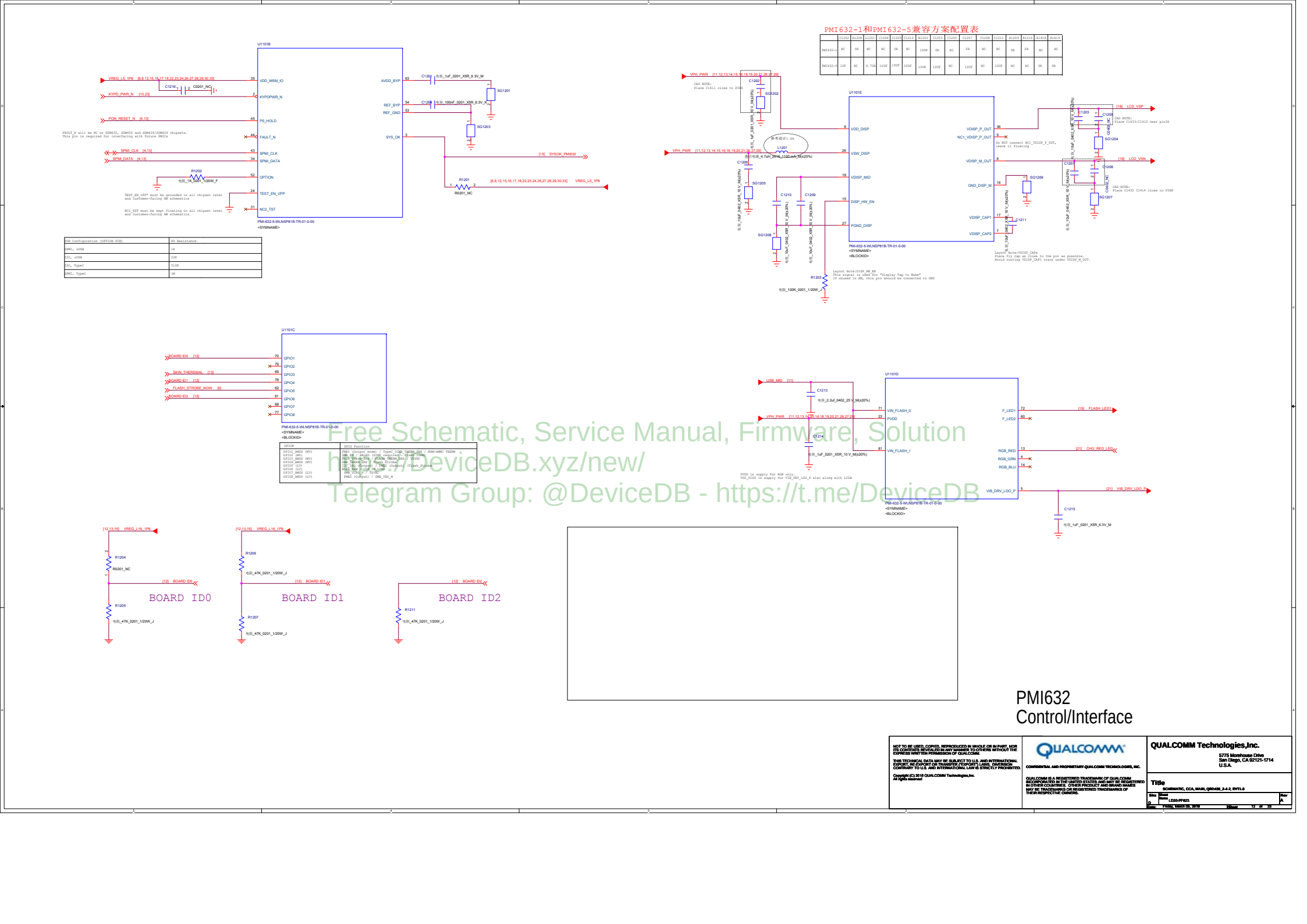

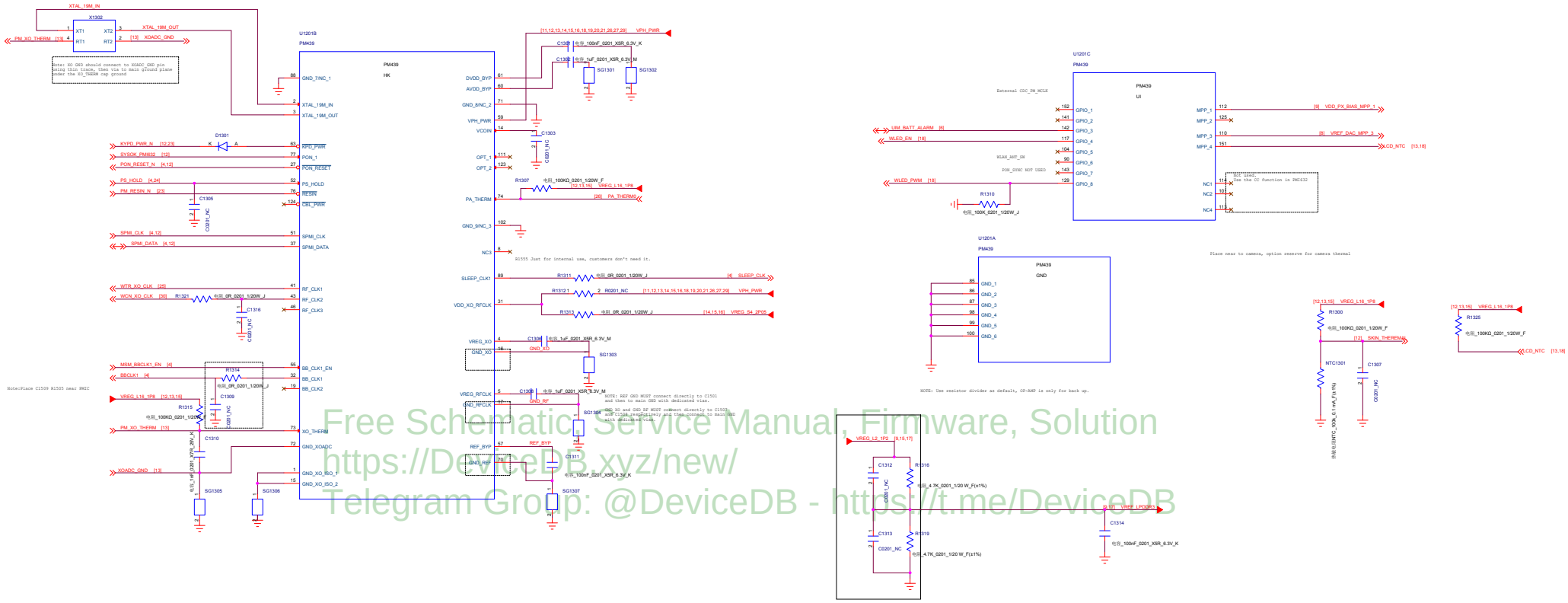

4GB DDR需要将电阻R1316 R1317由4.7K变为3.01K

PM439
Control/Interface

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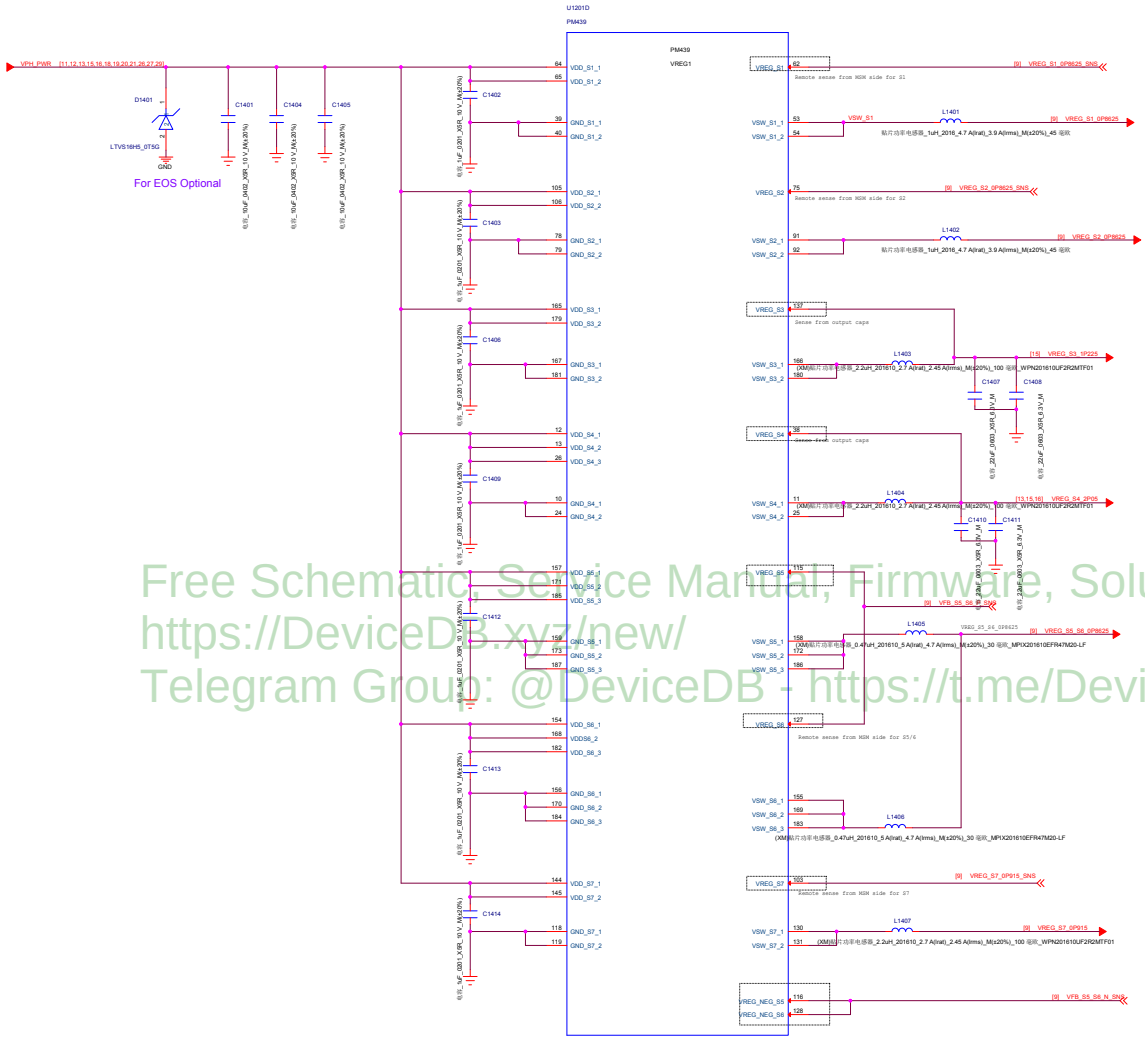

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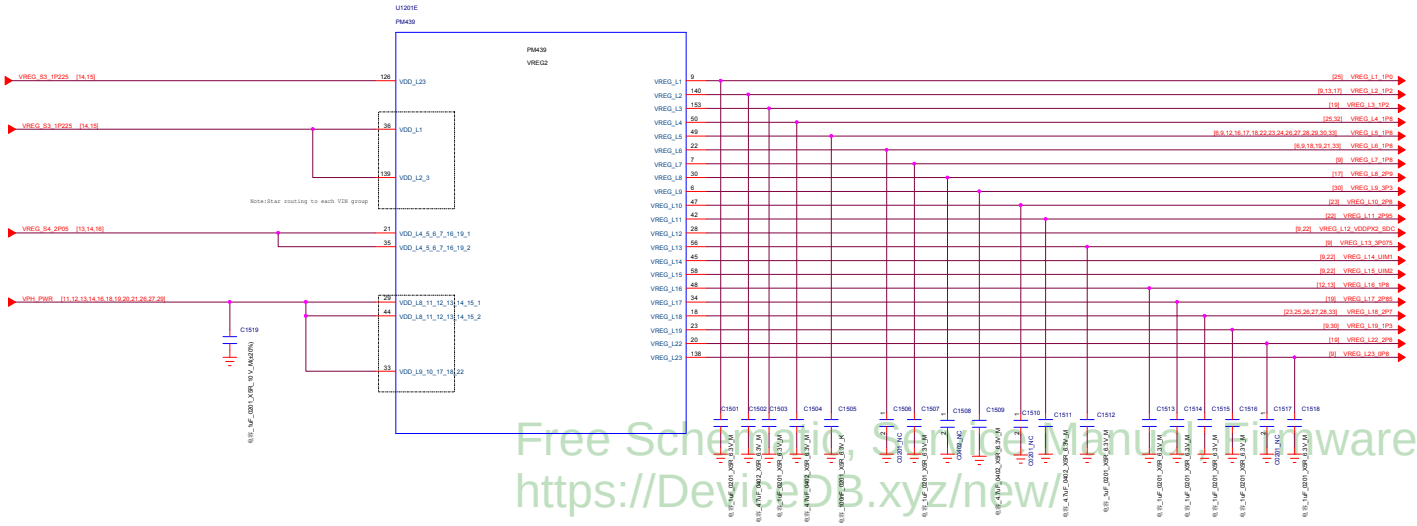

Table 3-6 PM439 regulators and their intended uses for SDM439/SDM429 when paired with PMI632

Function	Circuit type	Default voltage (V) [1]	Specified range (V) [2] (SDM439/SDM429)	Programmable range (V)	Rated current (mA)	Default on	Expected use (SDM439/SDM429)
S1	SMPS	0.744	0.4–1.14	0.32–2.04	3000	N	MSM modem
S2	SMPS	0.744	0.4–1.14	0.32–2.04	4000	Y	MSM core and graphics
S3	SMPS	1.28	1.2–1.25	0.32–2.04	2000	Y	MIPI CSI, and DSI. Low-voltage LDOs (1, 2, 3, and 23)
S4	SMPS	2.04	1.8–2.04	0.32–2.04	2000	Y	High-voltage LDOs (4, 5, 6, 7, 16, and 19)
S5	SMPS	0.735	0.4–1.14	0.350–1.355	3750	Y	MSM applications processor
S6	SMPS	0.735	0.4–1.14	0.350–1.355	3750	Y	MSM applications processor
S7	SMPS	0.752	0.4–1.14	0.32–2.04	2000	Y	MSM VDD memory rail (VDDMX)
L1	NMOS LDO	1.0 [3]	1.0 [3]	0.375–1.5375	600	N	RFICs
L2	NMOS LDO	1.2	1.2	0.375–1.5375	1200	Y	VREF generator for LPDDR3
L3	NMOS LDO	1.2	1.2	0.375–1.5375	600	N	Camera digital
L4	PMOS LDO	1.800	1.800	1.750–3.3375	450	N	RFICs and GPS eLNA
L5 [4]	PMOS LDO	1.800	1.800	1.750–3.3375	600	Y	Most digital I/Os, MSM pad groups 3 and 7, LPDDR, and eMMC
L6	PMOS LDO	1.800	1.800	1.750–3.3375	300	N	MSM QFPROM, camera, touchscreen, display, and sensors
L7	PMOS LDO	1.800	1.800	1.750–3.3375	300	Y	MSM analog, USB and PLLs, WCN XO, and PM baseband clock driver
L8	PMOS LDO	2.900	2.900	1.750–3.3375	600	Y	eMMC
L9	PMOS LDO	V_{out} = 3.3 V for VBAT > 3.575 V; V_{out} = 3 V for VBAT < 3.575 V	3.000–3.300	1.750–3.3375	600	N	WCN
L10	PMOS LDO	3.0	3.0	1.750–3.3375	150	N	Sensors and touchscreen
L11 [5]	PMOS LDO	2.950	2.950	1.750–3.3375	800	Y	Micro SD

Table 3-6 PM439 regulators and their intended uses for SDM439/SDM429 when paired with PMI632 (cont.)

Function	Circuit type	Default voltage (V) [1]	Specified range (V) [2] (SDM439/SDM429)	Programmable range (V)	Rated current (mA)	Default on	Expected use (SDM439/SDM429)
L12 [4]	PMOS LDO	2.950	1.800/2.950	1.750–3.3375	50	Y	MSM pad group 2
L13	PMOS LDO	3.075	3.075	1.750–3.3375	150	Y	MSM USB and PMIC and external codec audio
L14 [5]	PMOS LDO	1.800	1.800	1.750–3.3375	50	N	MSM pad group 5, dual-voltage UIM1, and NFC
L15 [5]	PMOS LDO	1.800	1.800	1.750–3.3375	50	N	MSM pad group 6 and dual-voltage UIM2
L16	PMOS LDO	1.800	1.800	1.750–3.3375	5	N	PMIC HKADC
L17	PMOS LDO	2.850	2.850	1.750–3.3375	300	N	Camera and display
L18	PMOS LDO	2.700	2.700	1.750–3.3375	150	N	QTI RF front-end
L19	NMOS LDO	1.350	1.350	0.375–1.5375	600	N	MSM analog, WCN, and WGR
L20	Low-noise LDO	1.7625	1.7625	1.74–3.3375	5	Y	PMIC XO circuits
L21	Low-noise LDO	1.7625	1.7625	1.74–3.3375	5	N	PMIC RF clock buffers
L22	PMOS LDO	2.800	2.800	1.750–3.3375	150	N	Camera: analog
L23	NMOS LDO	0.8	0.8	0.375–1.5375	600	Y	MIPI CSI, DSI, and USB

1. All regulators have default voltage settings, whether or not they default on; the voltage and state depends upon the programmable boot sequencer (PBS) configuration.
2. The specified voltage range is the programmed range for which performance is guaranteed to meet all specifications.
   For usage outside this range, submit a case to QTI for approval.
   NOTE: LDO-rated current specifications are only valid while maintaining their specified headroom.
3. LDO1 DC accuracy will be 2% at trimmed voltage (1.05 V) and 3% for other settings. Software configures this LDO1 to 1 V, hence 3% DC accuracy must be factored in.
4. L5 powers internal circuits and limited to 1.8 V operation; its programmed voltage should not be changed, and it should not be turned off.
5. L11, L14, and L15, as well as all PMOS LDOs have OCP.

PM439
LDO

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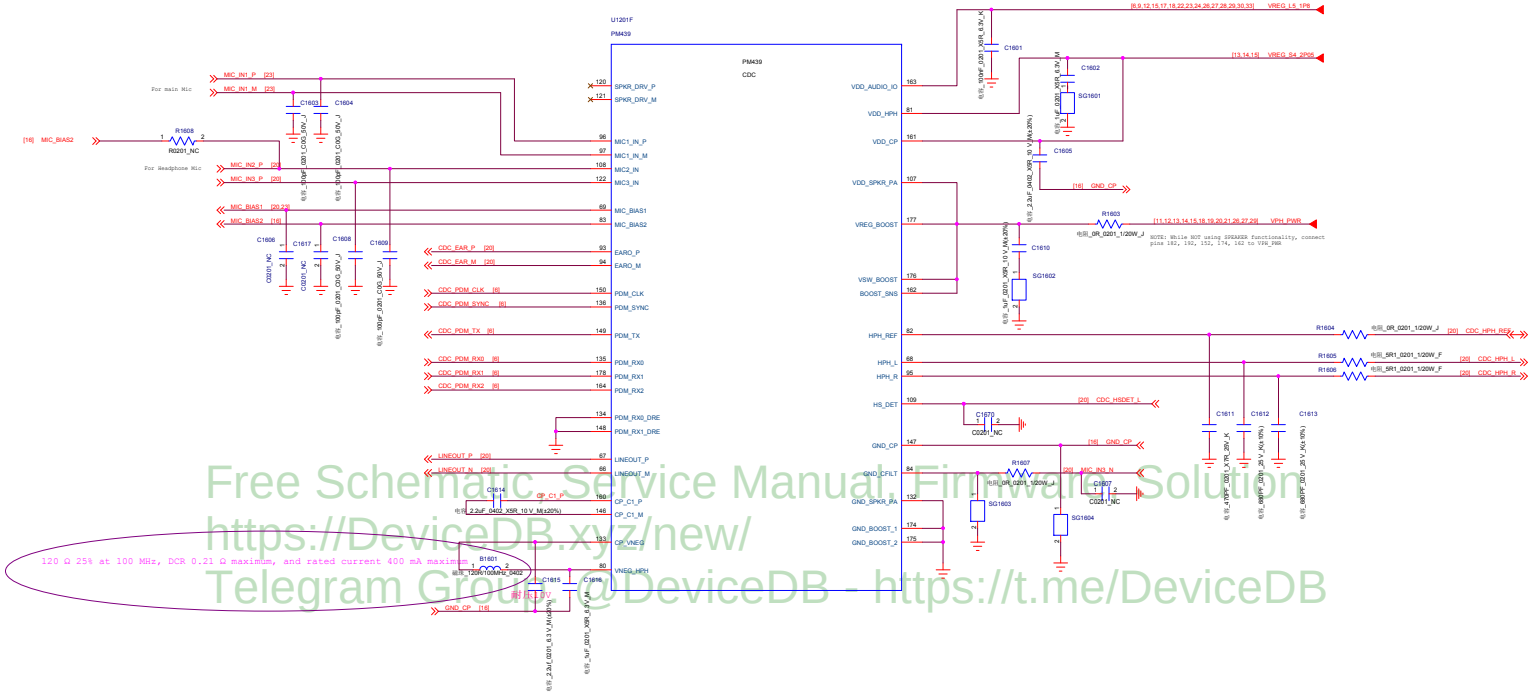

PM439 CODEC/Audio PA

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SCHEMATIC, CCA, MAIN, QRD439_2-4-2, RVT1.0

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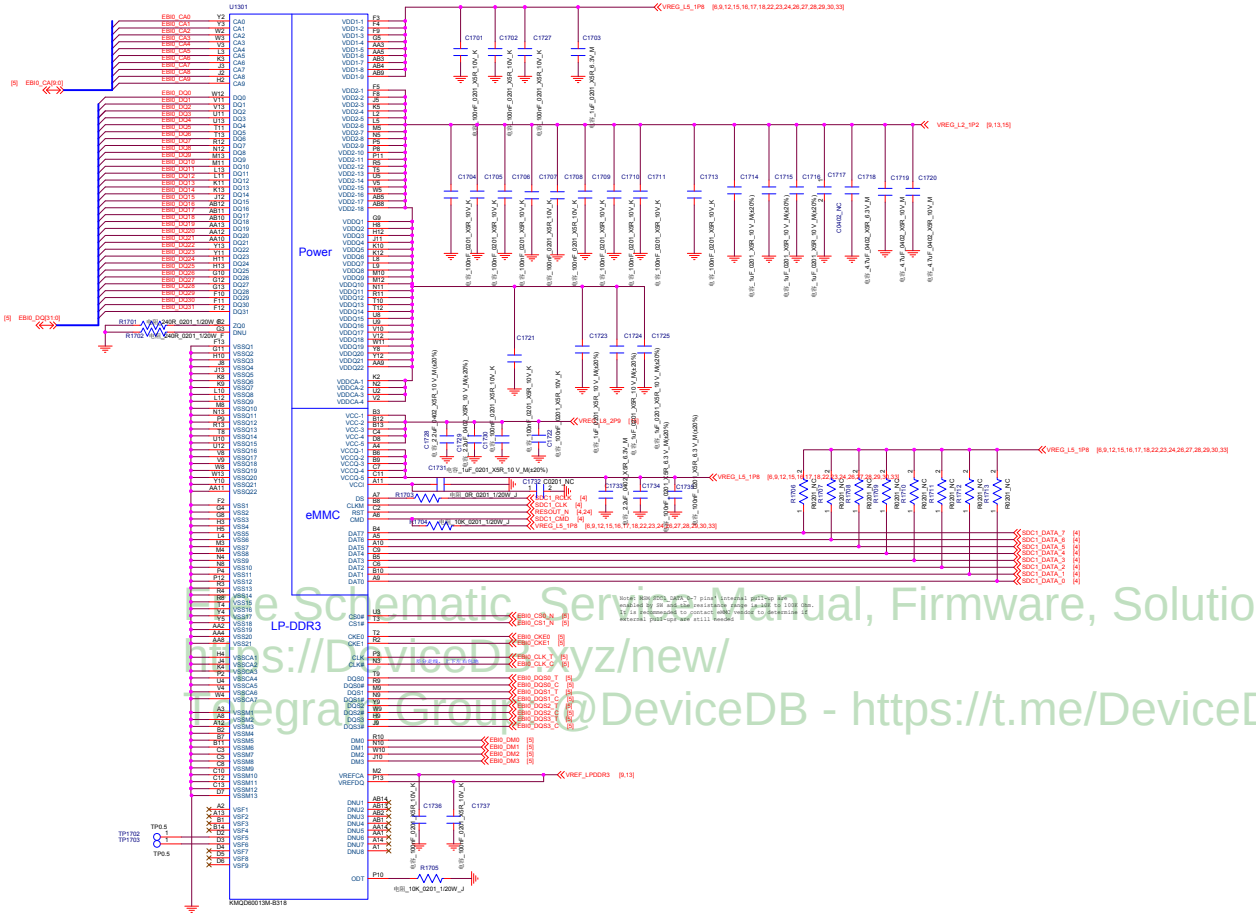

MEMORY(LPDDR3+EMMC V5.1)

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SCHEMATIC, CCA, MAIN, QRD438_3-4-2, BVTL9

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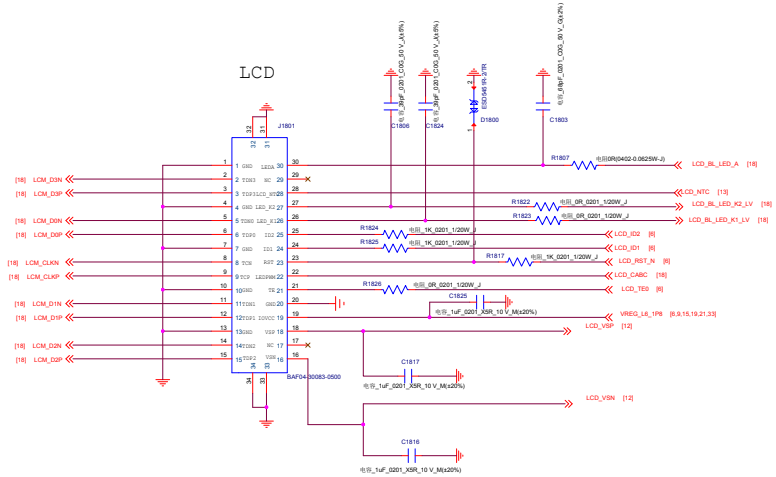
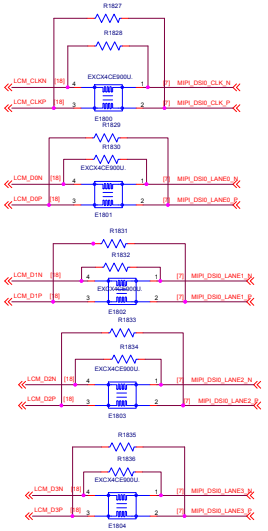
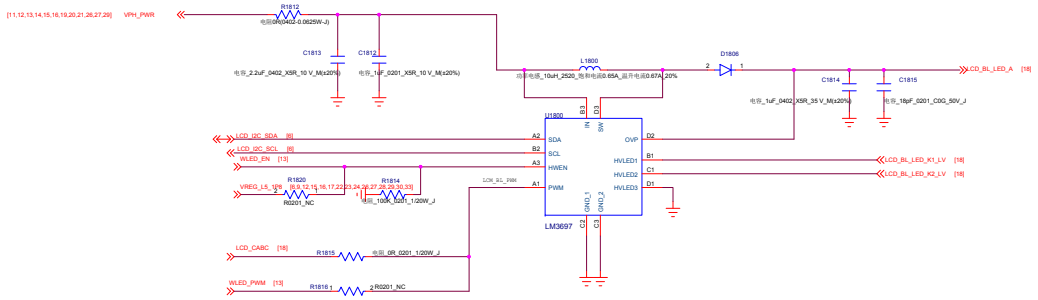




CAP tolerance above 50V!!!

LCD-BACKLIGHT



LCD backlight

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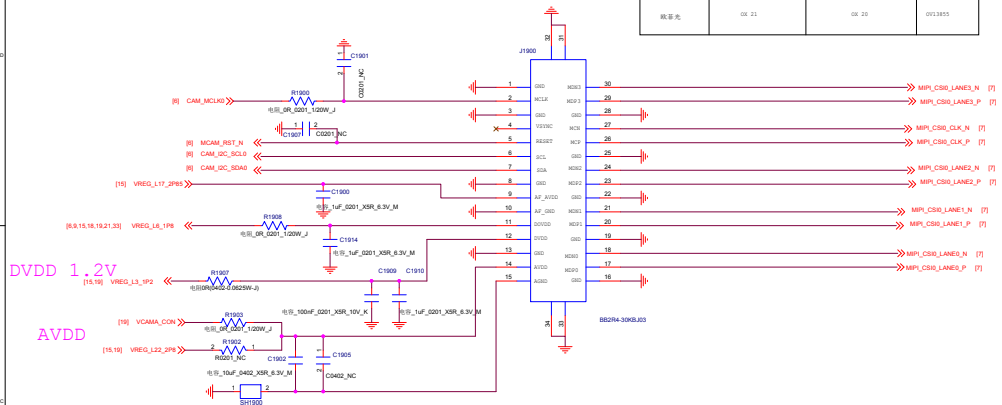
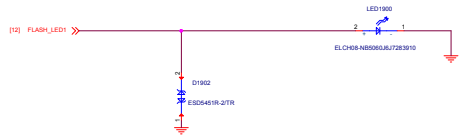
Main MONO Camera 13M

厂家	I2C READ	I2C WRITE	SENSOR IC
丘钛微	0X 21	0X 20	OV13855
欧菲光	0X 21	0X 20	OV13855



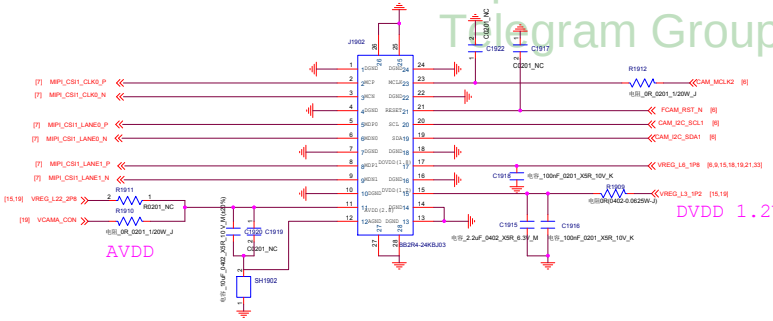
Rear Camera Flash

厂家	I2C READ	I2C WRITE	SENSOR IC
丘钛微	0X 7A	0X 7B	OV02A10-GA4A
欧菲光	0X 7A	0X 7B	OV02A10-GA4A



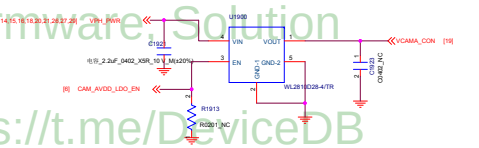
Front Camera 5M

厂家	I2C READ	I2C WRITE	ID
丘钛微	0X 5A	0X 5B	0X5467EXD3-PGE9
欧菲光	0X 5A	0X 5B	0X5467EXD3-PGE9



AVDD LDO

贴片使用WL2820D28-4/TR DFN1x1-4L



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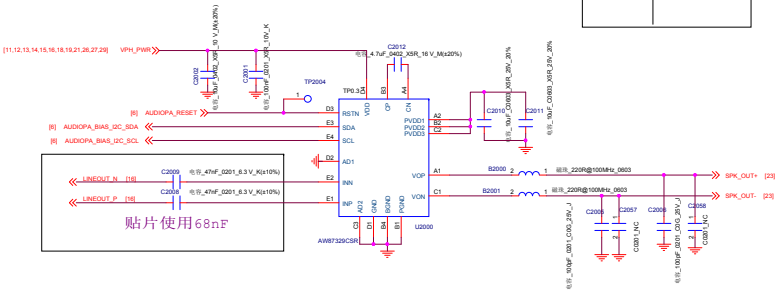
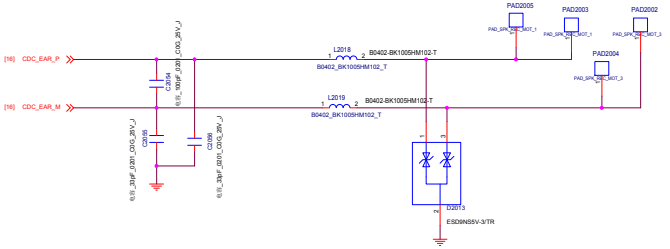
AUDIO PA

厂家	I2C ADDRESS
AW87329	1011DA2A1

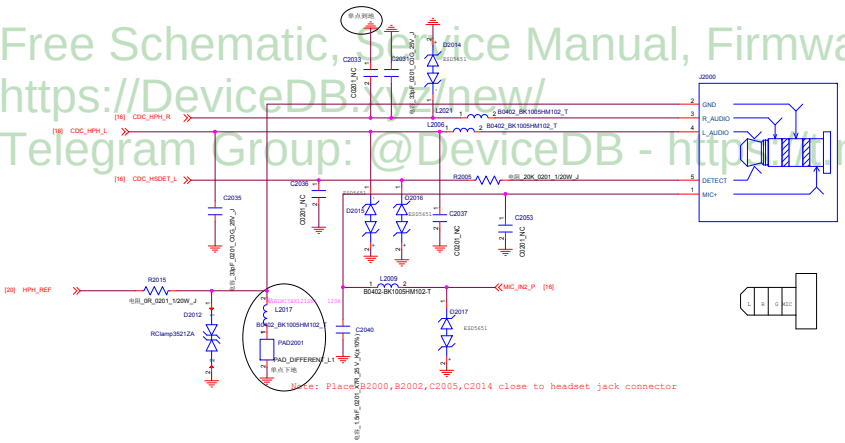


RECEIVER



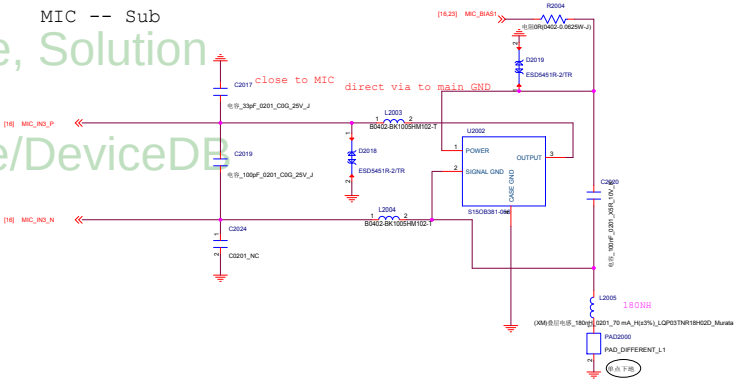
Note: Place B2000,B2002,C2005,C2014 close to headset jack connector

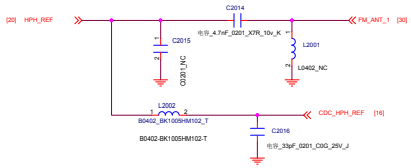
American Standard EARPHONE



Note: Place B2000,B2002,C2005,C2014 close to headset jack connector

MIC -- Sub





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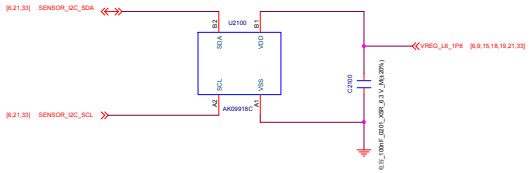
Note: Place B2000,B2002,C2005,C2014 close to headset jack connector

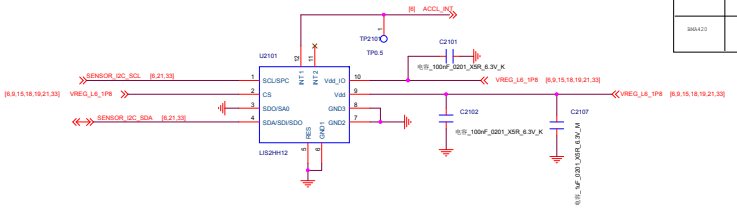
E-compass

厂家	I2C ADDRESS
AKD9918C	0Ch



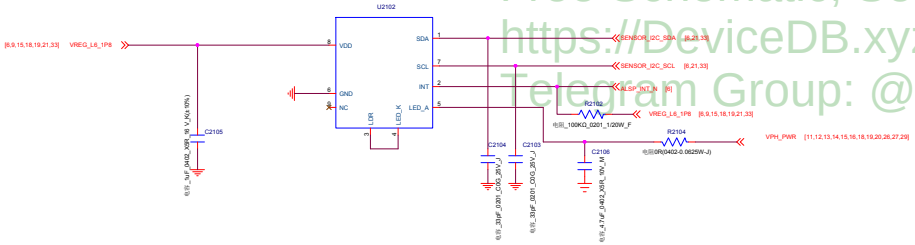
A sensor

厂家	I2C ADDRESS	
	SDO(GND)	SDO(high)
LIS2HH12	0011101b	0011101b
BMA420	0x18	0x19

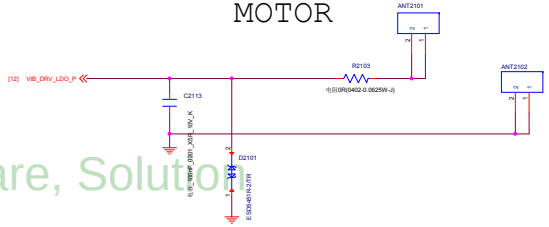


ALS PS

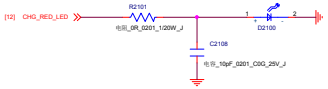
厂家	I2C ADDRESS
STK3332	0x47
LTR-562ALS-WA	0x23



MOTOR



LED



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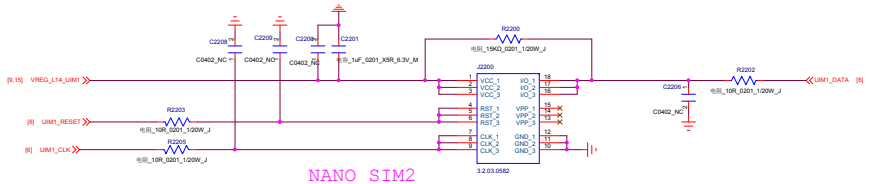
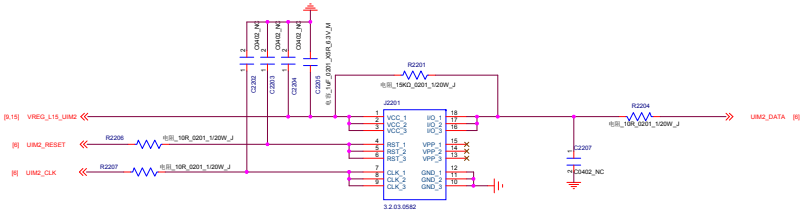
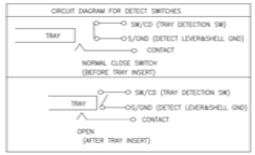
NANO SIM1

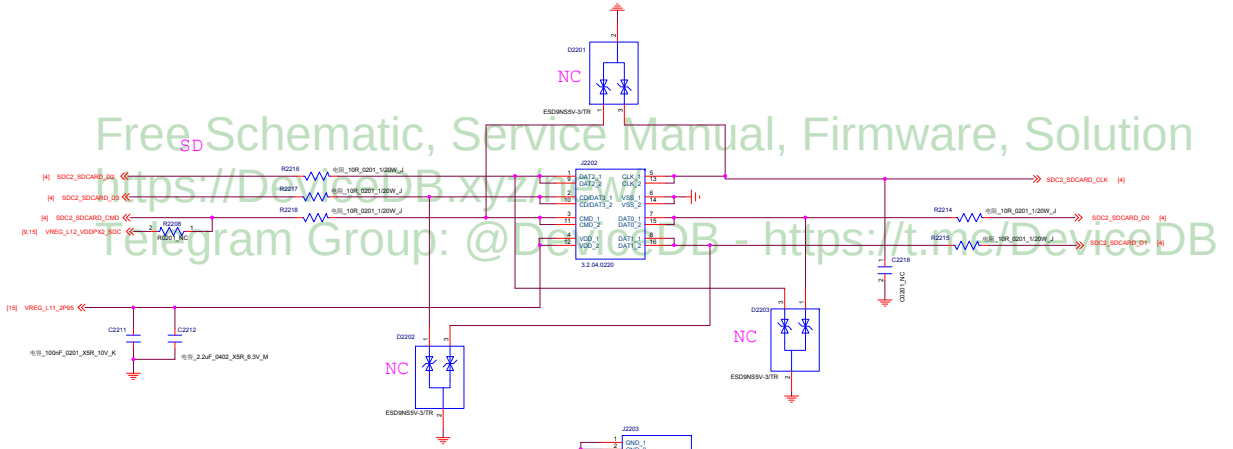


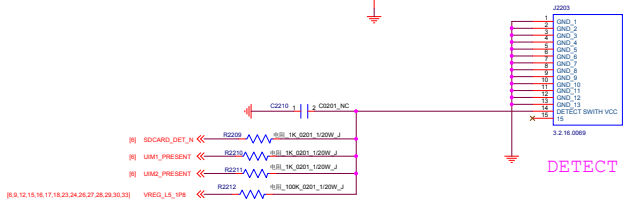
NANO SIM2





SD





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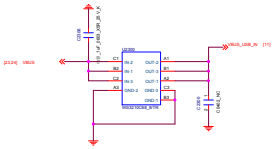
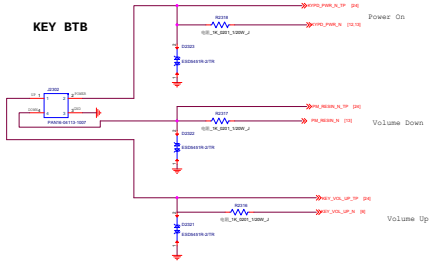
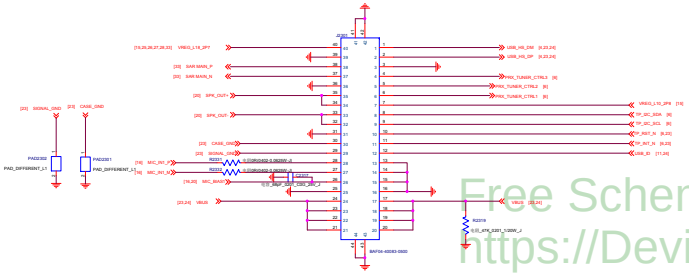
OVP 6.8V WS3210C68-9/TR



KEY BTB

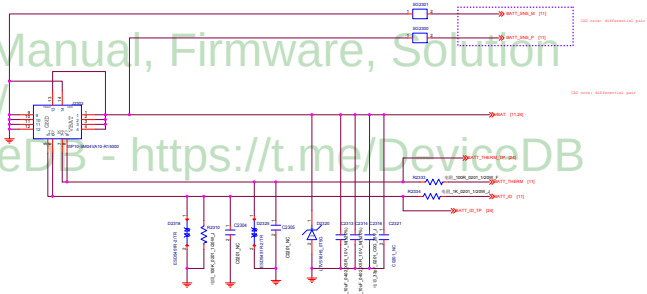


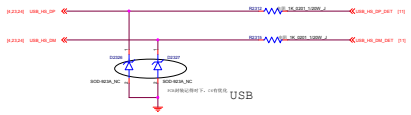
MAIN FPC BTB



Signal	Description
KEY_VOL_UP_N	Volume Up
PM_RESIN_N	Volume Down
KYPD_PWR_N	PWER_ON
KEY_AI	XIAOMI AI

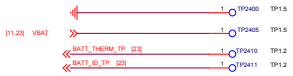
Battery Conector





Test Points

VBAT TEST POINT

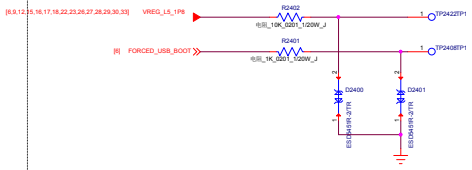


KEY TEST point

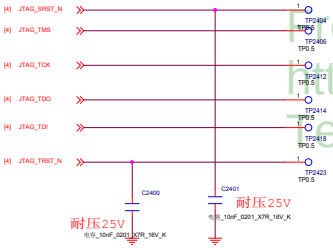
UART TEST point

USB TEST POINT

Force USB boot



JTAG TEST POINT



Company: Huaqin		
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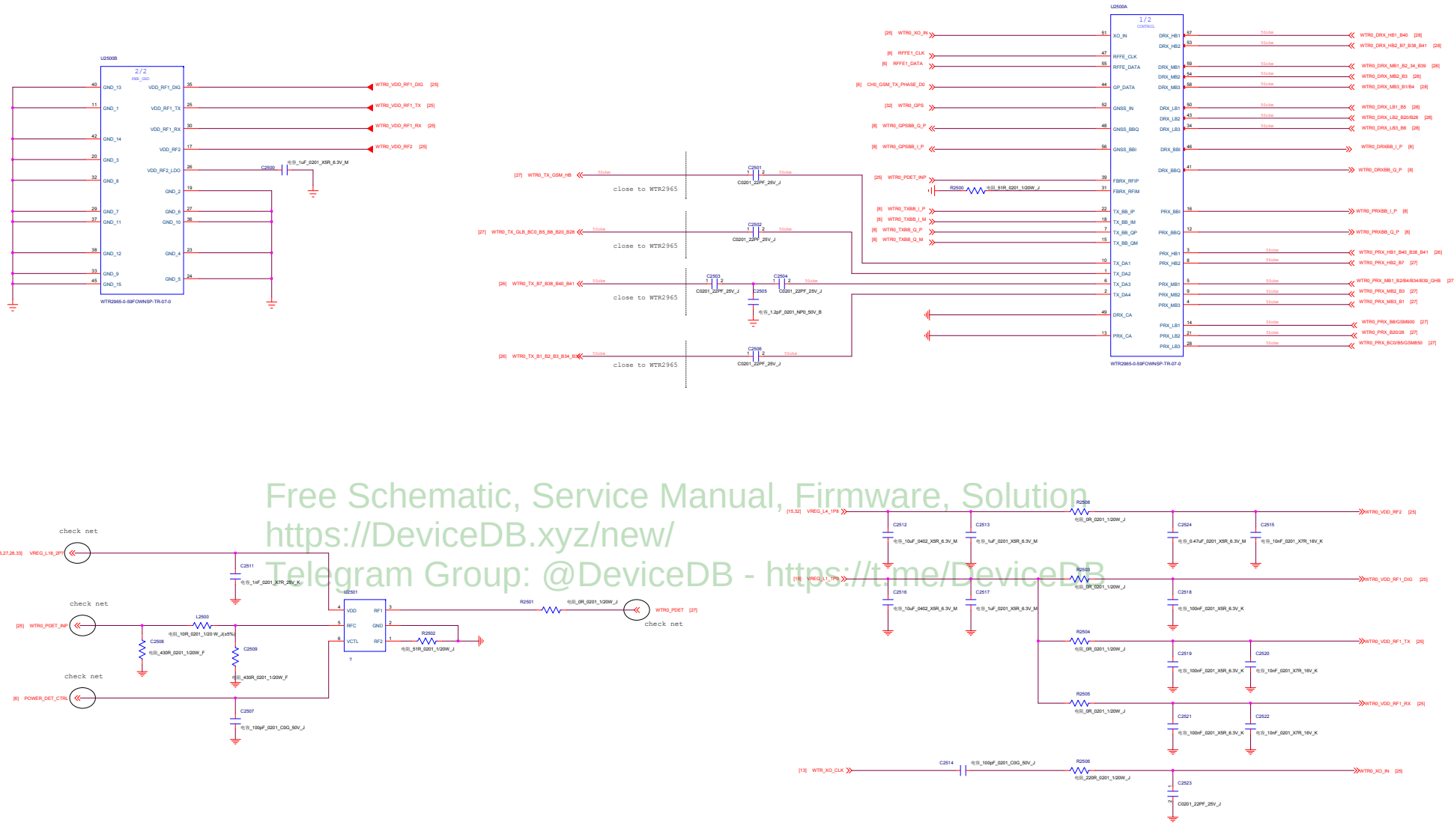

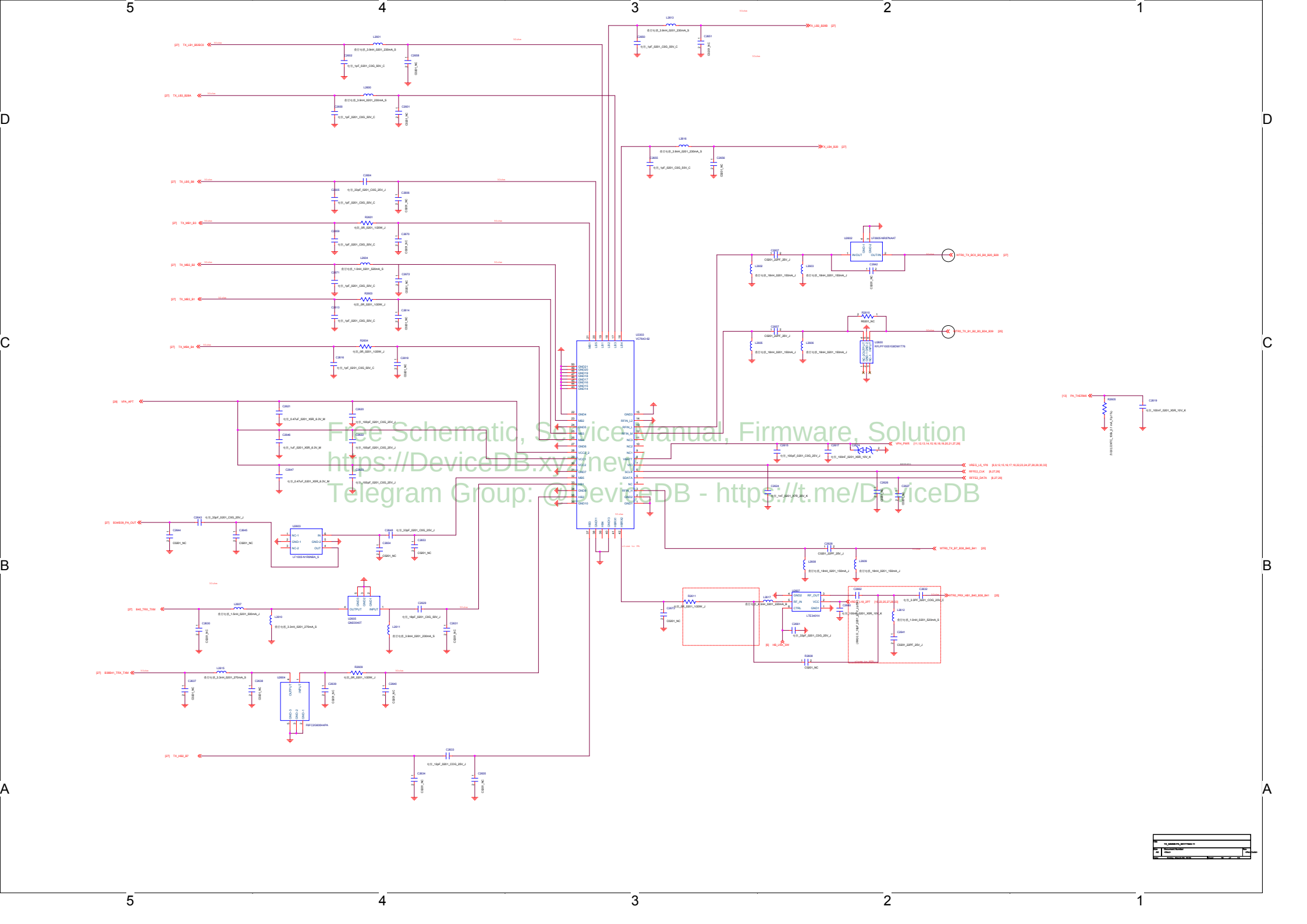

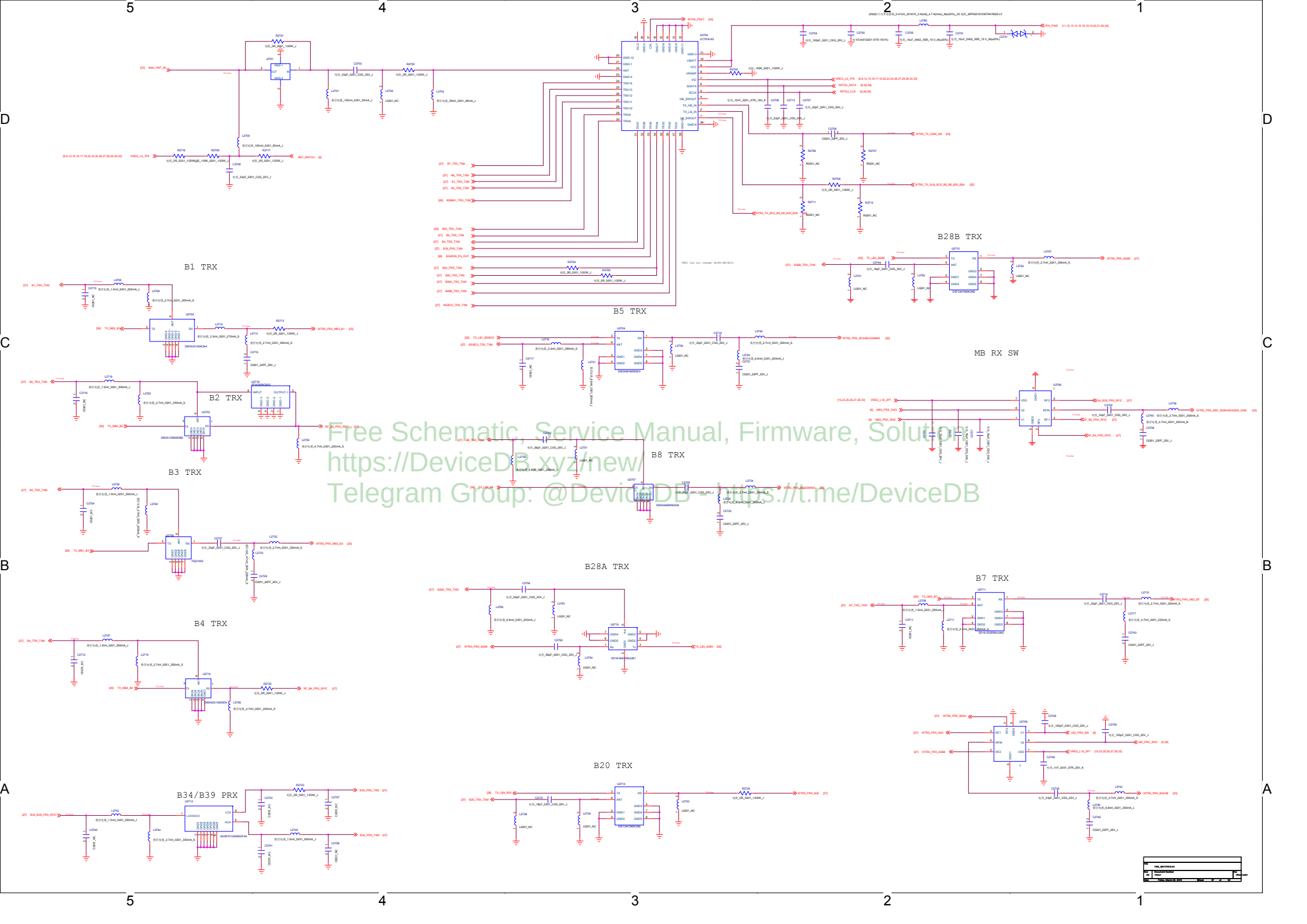

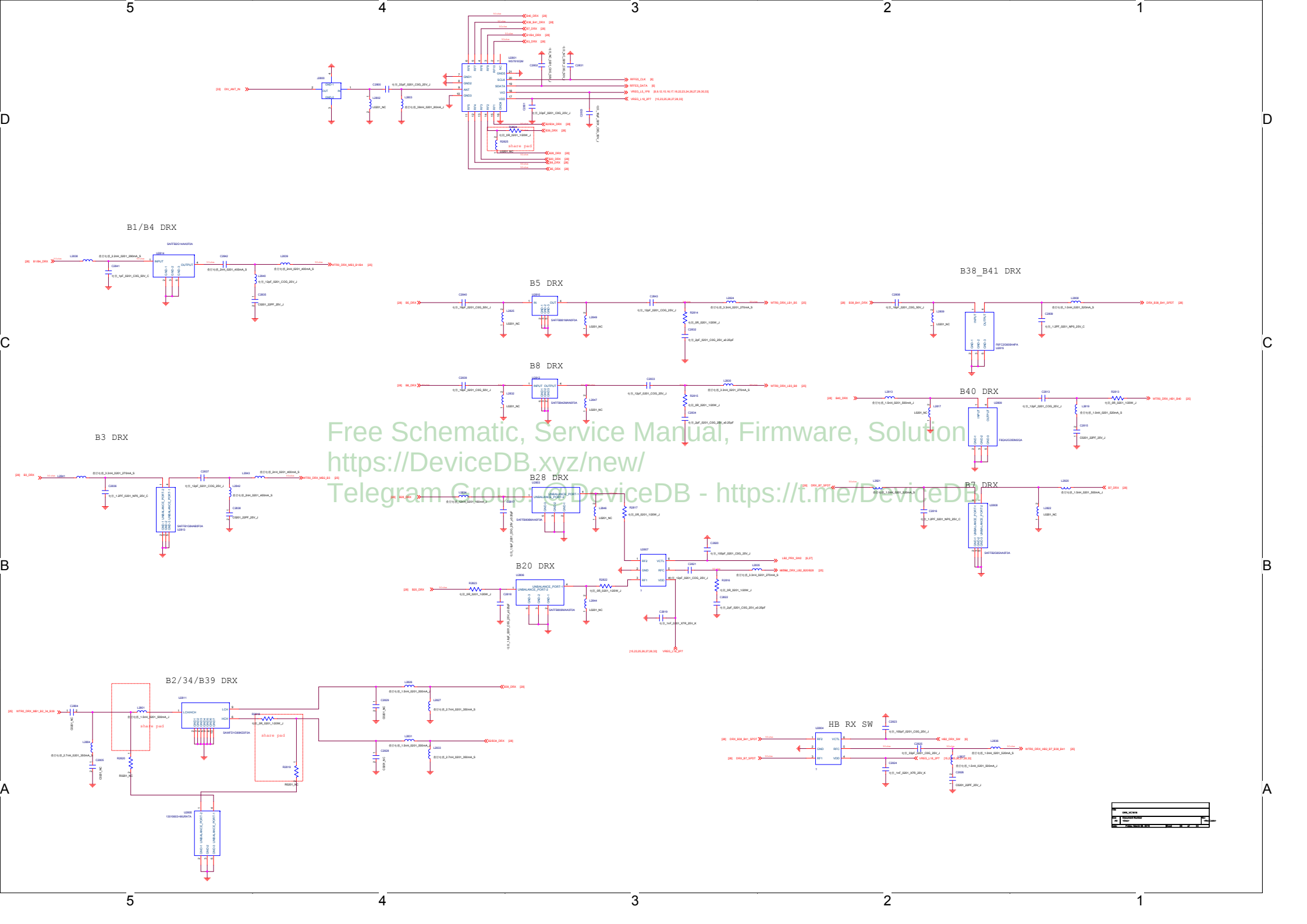

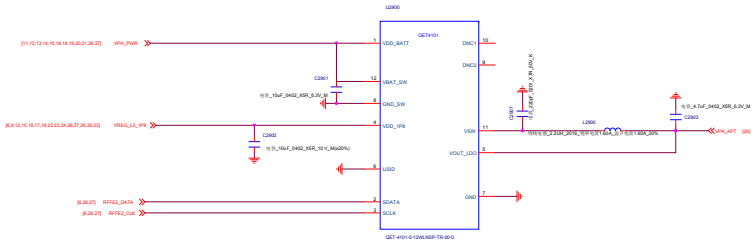

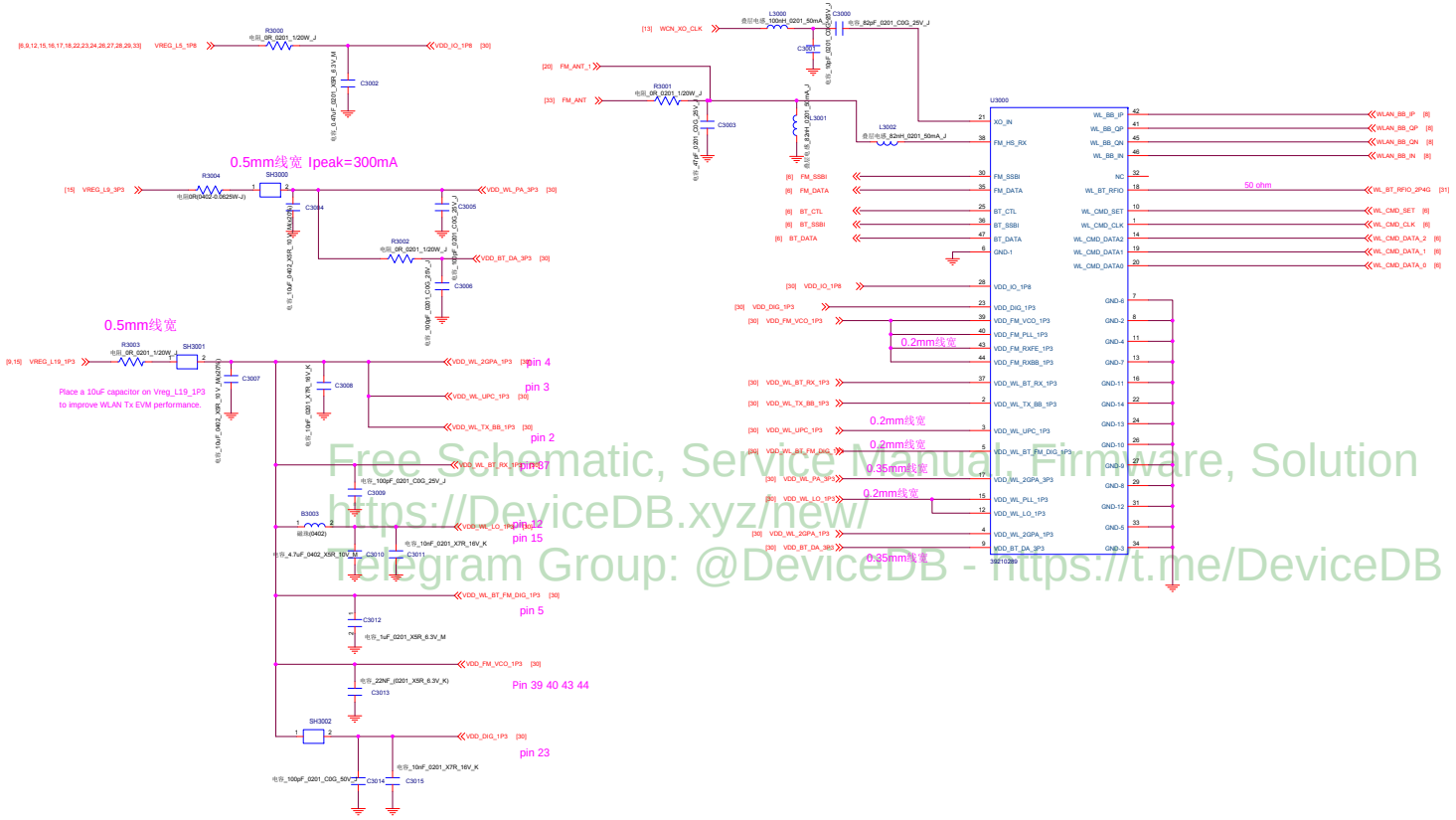

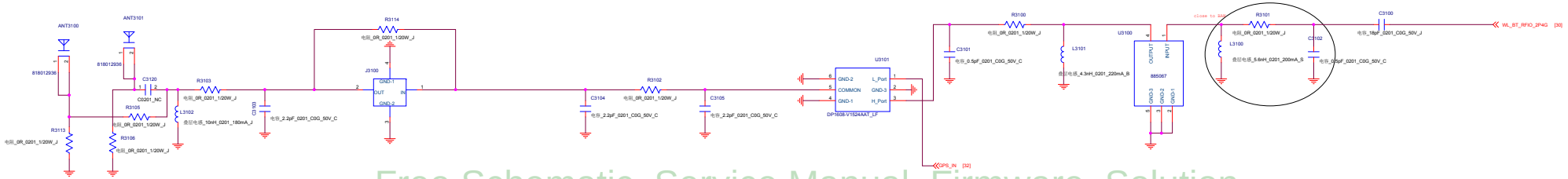

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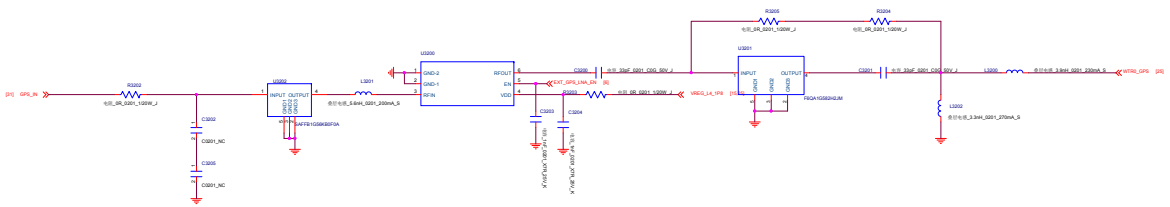

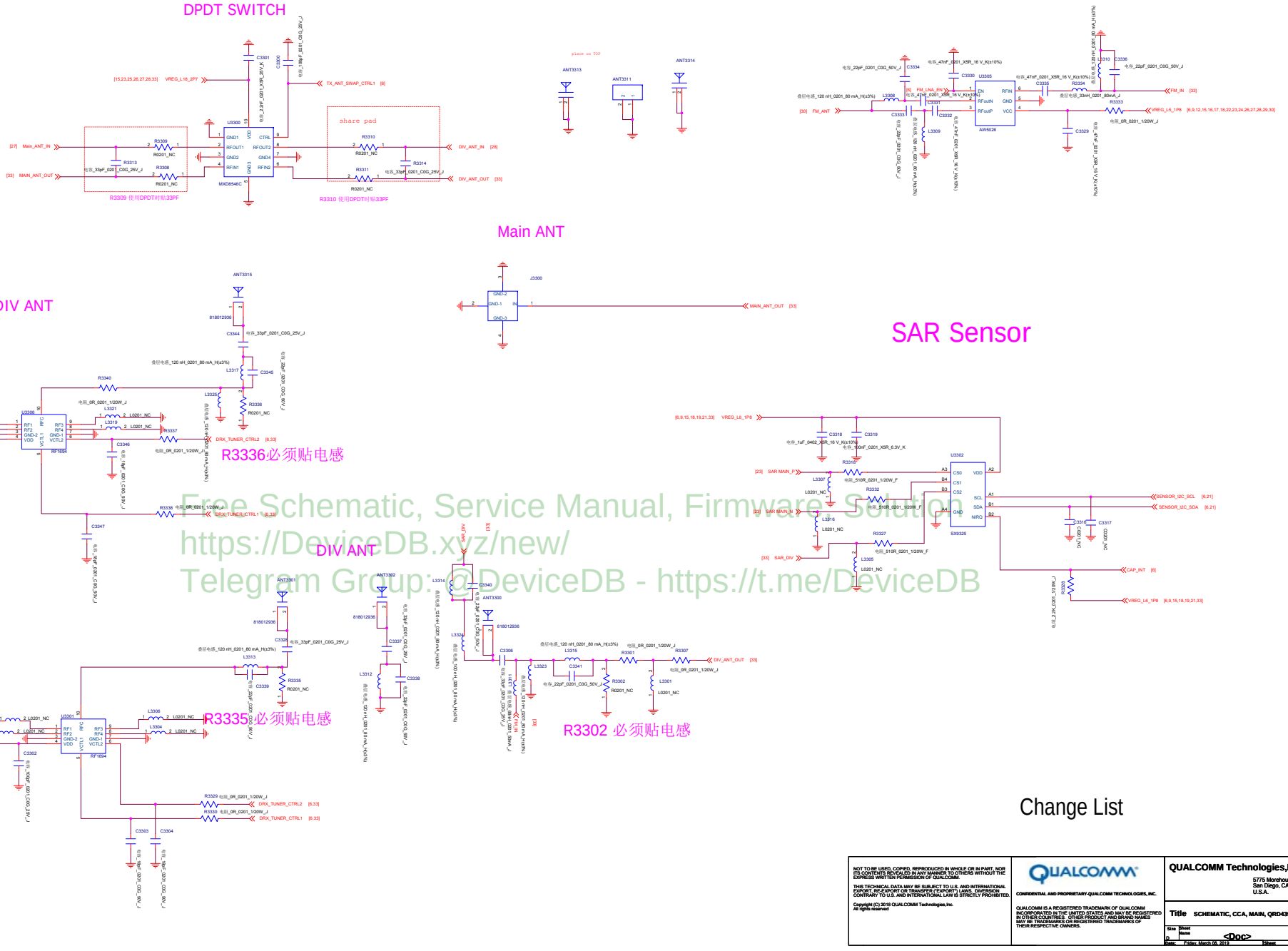

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Title SCHEMATIC, CCA, MAIN, QRD439_2-4-2, EVT1.0

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