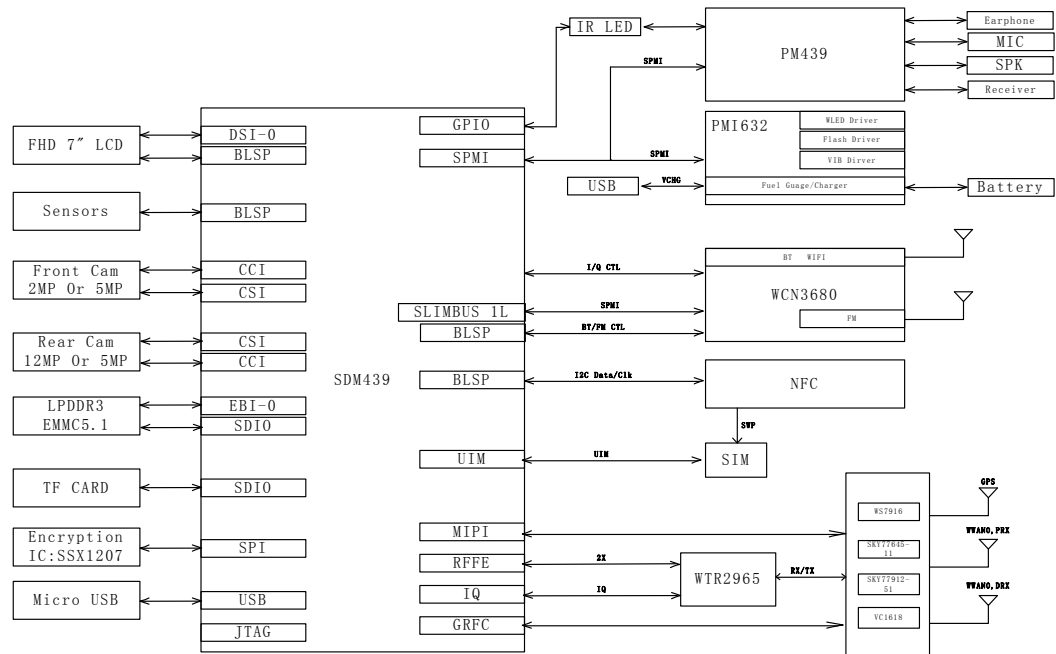


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Block Diagram

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	LCDO_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_TEO	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

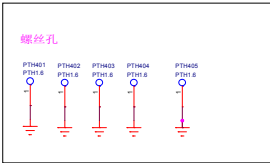
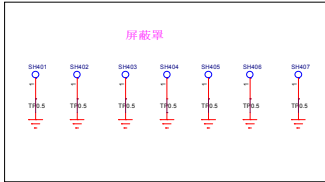
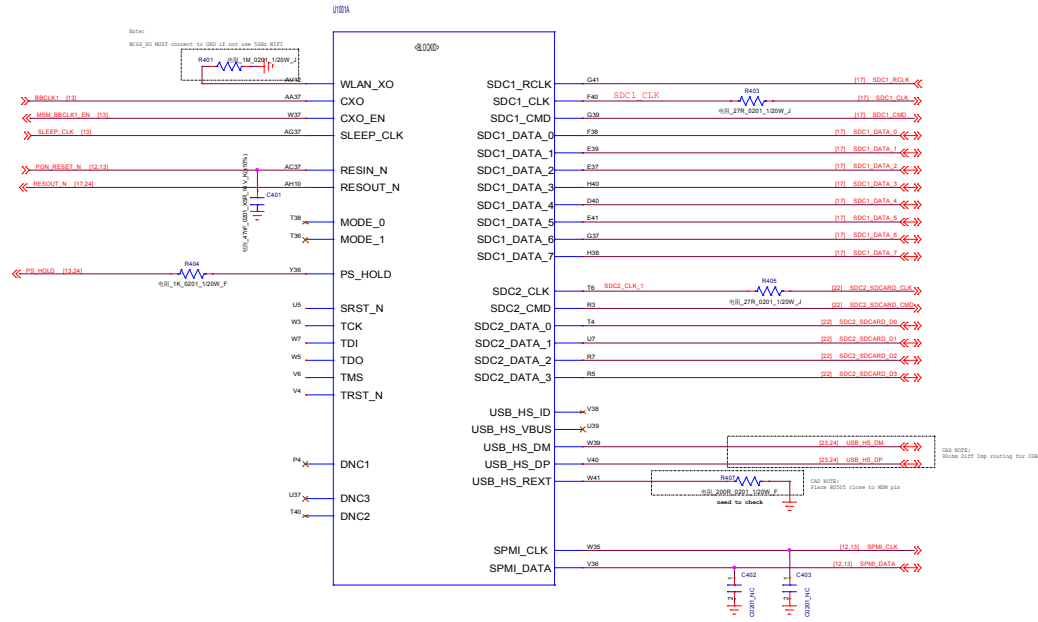
GPIO_1	CONNECTOR_THERMAL	GPIO_5	FLASH_STROBE_NOW
GPIO_2	SMB_PARALLEL_CHG_EN	GPIO_6	NEBULA_PWM
GPIO_3	SKIN_THERMAL	GPIO_7	SMB_VCHG_P
GPIO_4	SMB_THERMAL	GPIO_8	SMB_VCHG_M

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		

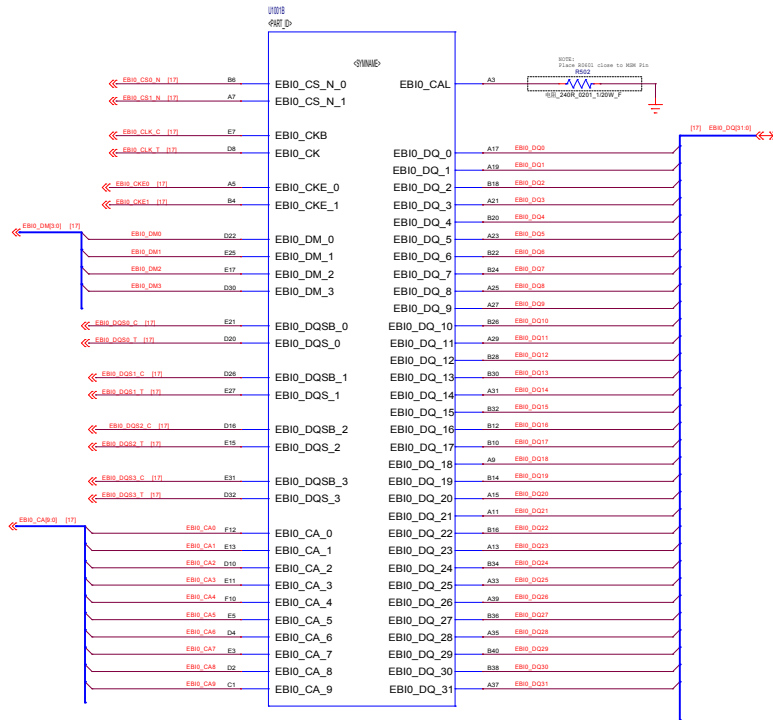
GPIO TABLE

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SDM439 Control

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SDM439 EB1

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NOTE:
Asterisks (*) indicate modem power management (MPM) wake-up pins

GPIO_0	GPIO_0
GPIO_1	GPIO_1
GPIO_2	GPIO_2
GPIO_3	GPIO_3
GPIO_4	GPIO_4
GPIO_5	GPIO_5
GPIO_6	GPIO_6
GPIO_7	GPIO_7
GPIO_8	GPIO_8

BOOT_CFG0[1:1]	BOOT_CFG0
0x00	0x01 -> 0x02 -> 0x03 -> 0x04 -> 0x05 -> 0x06 -> 0x07 -> 0x08 -> 0x09 -> 0x0A -> 0x0B -> 0x0C -> 0x0D -> 0x0E -> 0x0F
0x00	0x01 -> 0x02 -> 0x03 -> 0x04 -> 0x05 -> 0x06 -> 0x07 -> 0x08 -> 0x09 -> 0x0A -> 0x0B -> 0x0C -> 0x0D -> 0x0E -> 0x0F
0x00	0x01 -> 0x02 -> 0x03 -> 0x04 -> 0x05 -> 0x06 -> 0x07 -> 0x08 -> 0x09 -> 0x0A -> 0x0B -> 0x0C -> 0x0D -> 0x0E -> 0x0F
0x00	0x01 -> 0x02 -> 0x03 -> 0x04 -> 0x05 -> 0x06 -> 0x07 -> 0x08 -> 0x09 -> 0x0A -> 0x0B -> 0x0C -> 0x0D -> 0x0E -> 0x0F

Default boot config (0x00) is 0x01(0x00)

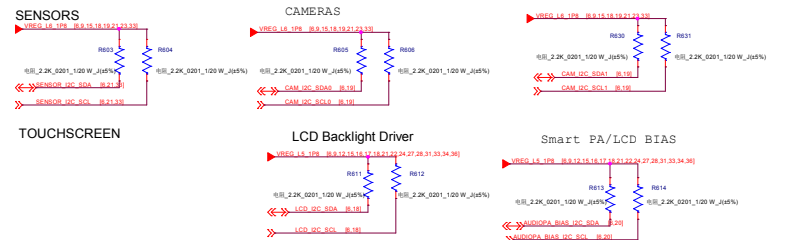


FM_LNA_EN由GPIO87调整到GPIO89

cap_int由GPIO48调整到GPIO46



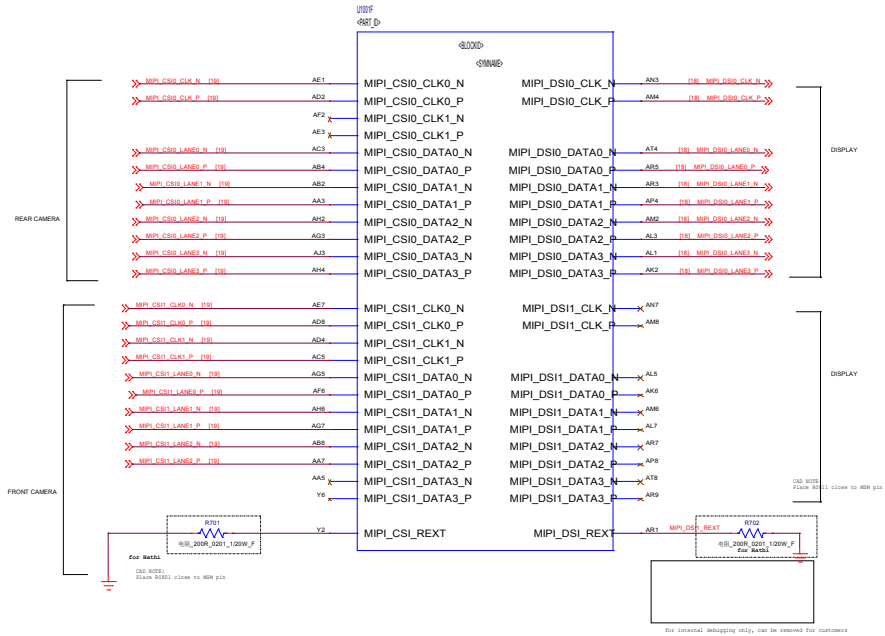
I2C PULL-UP RESISTORS



NOTE:
Ensure SW sets these GPIOs (Sensor, CTP and Camera I2C bus) to inout pull down when the peripherals are powered off to eliminate leakage.

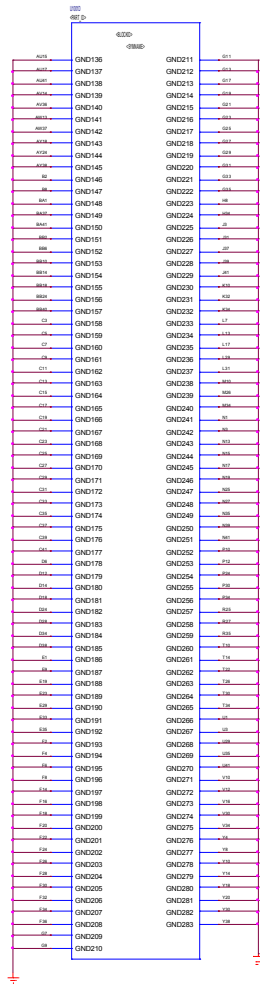
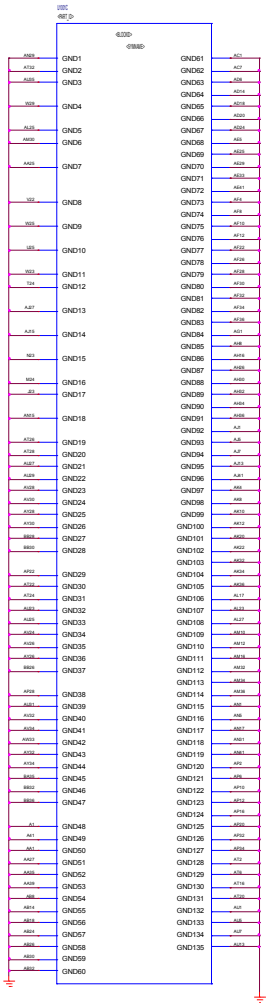
SDM439
GPIO

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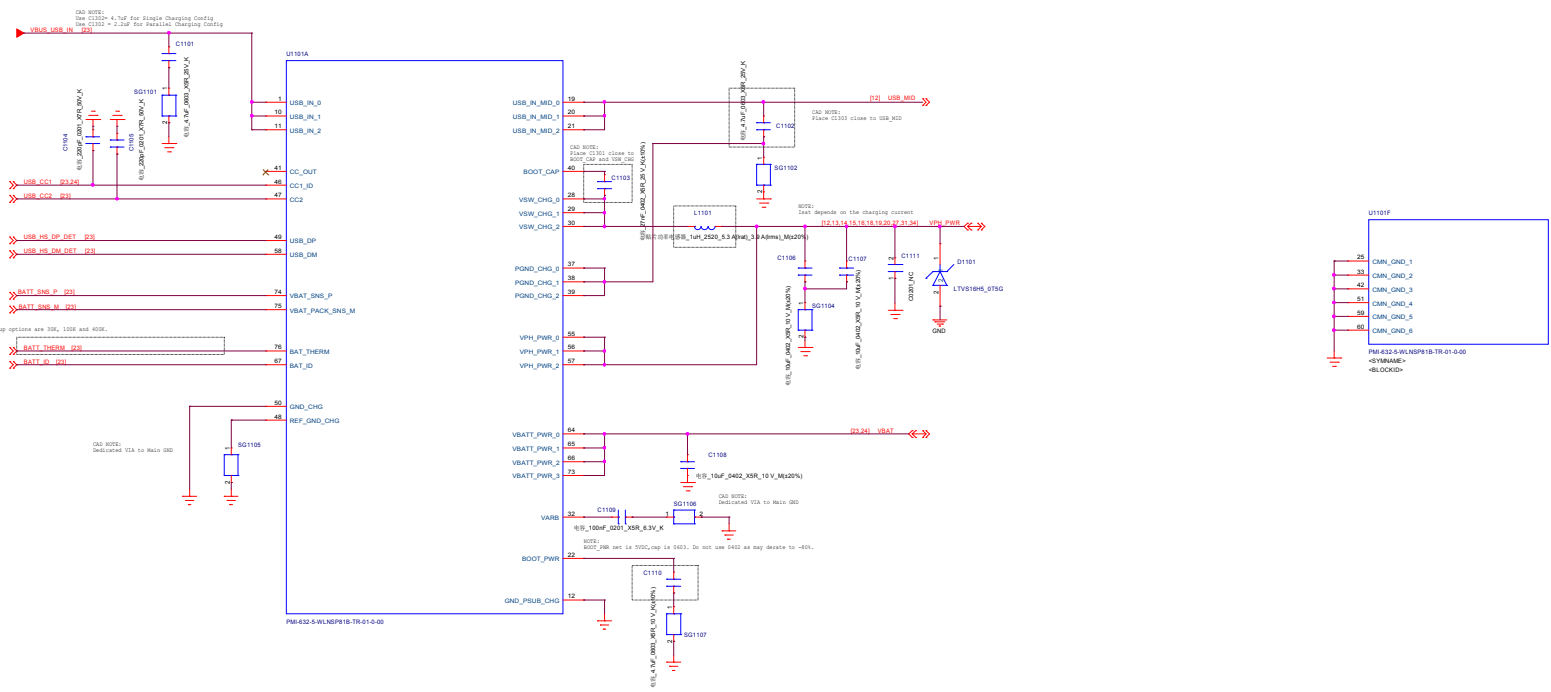
SDM439 MIPI

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SDM439 GND

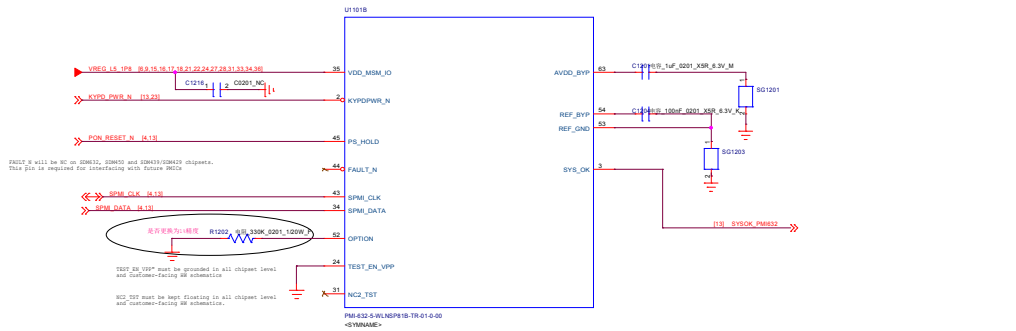
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<p>Part Number: SDM439 GND</p> <p>Revision: 1.0</p> <p>Date: 08/14/12</p>	<p>File Name: SDM439 GND</p> <p>File Path: \\sdm439\gnd</p>



NOTE:
 1. BOOT_CAP must use the nominal pull-up resistor. The pull-up resistors using transistors (P1100, P1101) values are 100k and 400k.
 2. BATT_SNS_P must use the nominal pull-up resistor. The pull-up resistors using transistors (P1100, P1101) values are 100k and 400k.
 3. BATT_SNS_M must use the nominal pull-up resistor. The pull-up resistors using transistors (P1100, P1101) values are 100k and 400k.
 4. BATT_THERM must use the nominal pull-up resistor. The pull-up resistors using transistors (P1100, P1101) values are 100k and 400k.
 5. BATT_ID must use the nominal pull-up resistor. The pull-up resistors using transistors (P1100, P1101) values are 100k and 400k.

PMI632 Charger

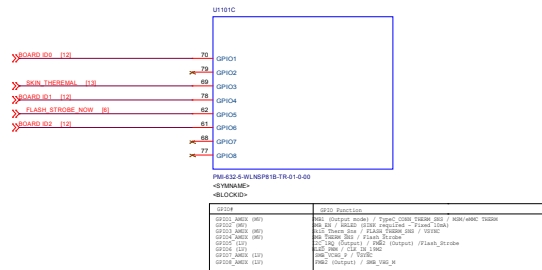
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<p>Rev: 0</p>	<p>Doc: L208-PP633</p>	<p>Rev: Tuesday, June 27, 2018</p>	<p>Page: 11 of 31</p>



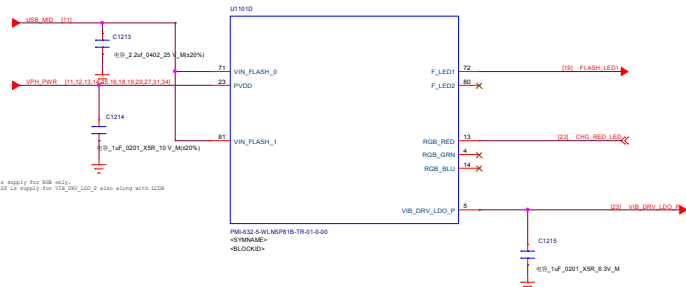
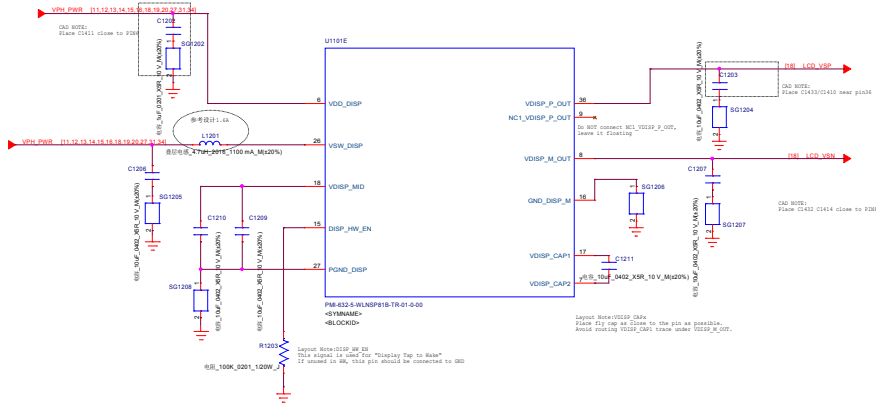
Pin	Signal	IO	Direction
35	VREG_L4	I/O	Input
36	KYDPWR_N	I/O	Output
45	PON_RESET_N	I/O	Output
44	FAULT_N	I/O	Output
43	SPM_CLK	I/O	Output
38	SPM_DATA	I/O	Output
42	OPTION	I/O	Output
24	TEST_EN_VPP	I/O	Output
31	NC2_TST	I/O	Output

PON CONFIGURATIONS

PON Configuration	Option resistor range
SPM, Micro USB, FMB_DIS	R = (Ground, 1K, 1.2K, 1.5K, 1.8K, 1.9K, and 2.2K)
SPM, Micro USB, FMB_EN	R = (3.3K, 3.9K, 4.7K, and 5.6K)
IC2, Micro USB, FMB_DIS	R = (8.2K, 10K, 12K, and 15K)
IC2, Micro USB, FMB_EN	R = (22K, 27K, 33K, and 39K)
IC2, Type-C, FMB_DIS	R = (56K, 68K, 82K, and 100K)
IC2, Type-C, FMB_EN	R = (150K, 180K, and 220K)
SPM, Type-C, FMB_DIS	R = (330K, 390K, and 470K)
SPM, Type-C, FMB_EN	R = (820K, 1M, 1.2M, and Open)

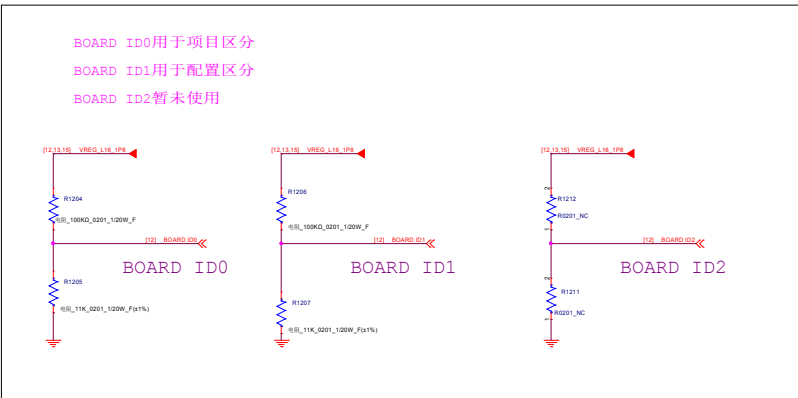


GPIO	GPIO Pin
GPIO0 (06)	GPIO0 (GPIO0) / Type-C (USB) / Micro-USB (USB)
GPIO1 (06)	GPIO1 (GPIO1) / Type-C (USB) / Micro-USB (USB)
GPIO2 (06)	GPIO2 (GPIO2) / Type-C (USB) / Micro-USB (USB)
GPIO3 (06)	GPIO3 (GPIO3) / Type-C (USB) / Micro-USB (USB)
GPIO4 (06)	GPIO4 (GPIO4) / Type-C (USB) / Micro-USB (USB)
GPIO5 (06)	GPIO5 (GPIO5) / Type-C (USB) / Micro-USB (USB)
GPIO6 (06)	GPIO6 (GPIO6) / Type-C (USB) / Micro-USB (USB)
GPIO7 (06)	GPIO7 (GPIO7) / Type-C (USB) / Micro-USB (USB)
GPIO8 (06)	GPIO8 (GPIO8) / Type-C (USB) / Micro-USB (USB)



客户指定电阻选型

11K	0.1 (比例)
11.1K	0.15
24.9K	0.2
33.2K	0.25
43.2K	0.3
53.9K	0.35
68.7K	0.4
82K	0.45
100K	0.5
121K	0.55
150K	0.6
181K	0.65
213K	0.7
300K	0.75
402K	0.8
542K	0.85
700K	0.9



PMI632 Control/Interface

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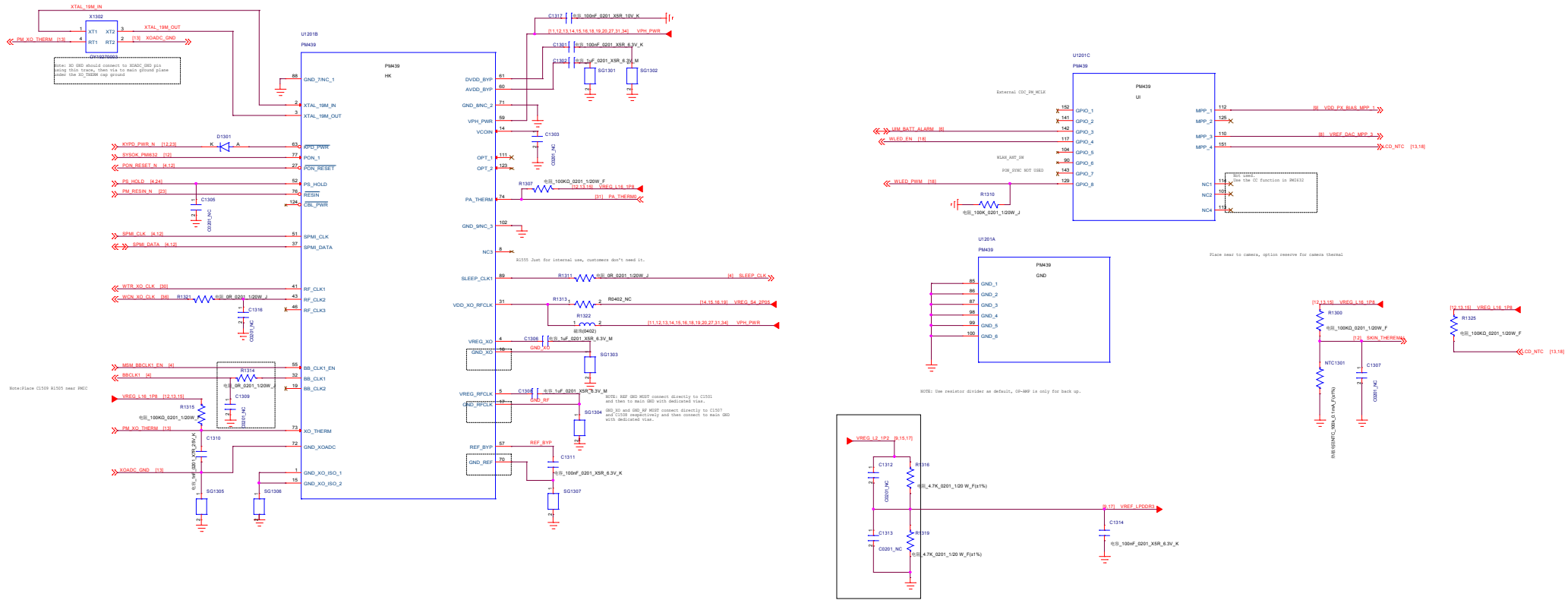
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Title
SCHEMATIC, OCA, BLANK, QPM32_2-4.2, REV1.0

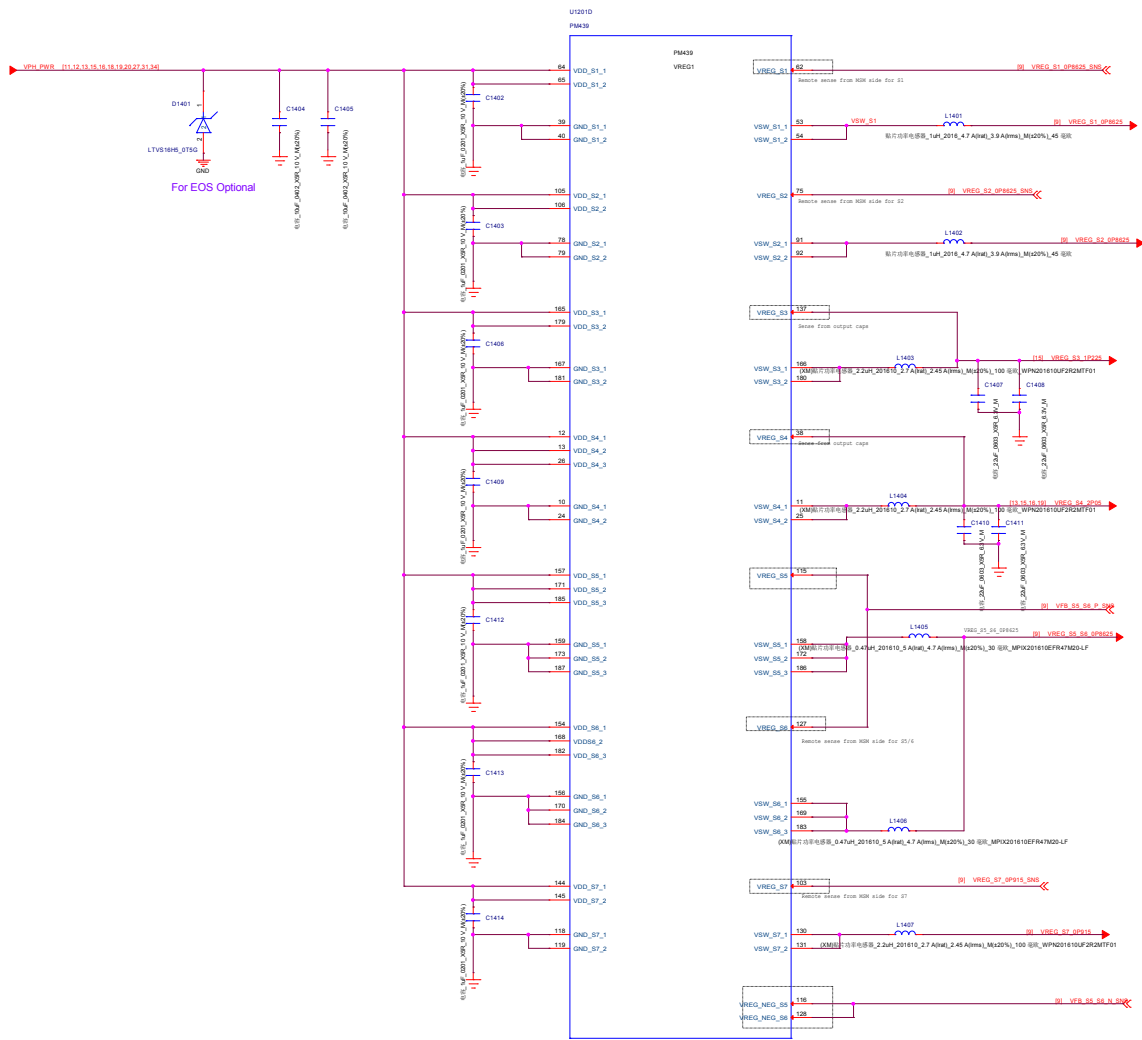
Rev
0
L2024-PP-033
Rev
Tuesday, June 27, 2018
Page 18 of 30



4GB DDR需要将电阻R1316 R1317由4.7k变为3.01K
 C3I所有配置同意贴3.01K

PM439 Control/Interface

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PM439 SMPS

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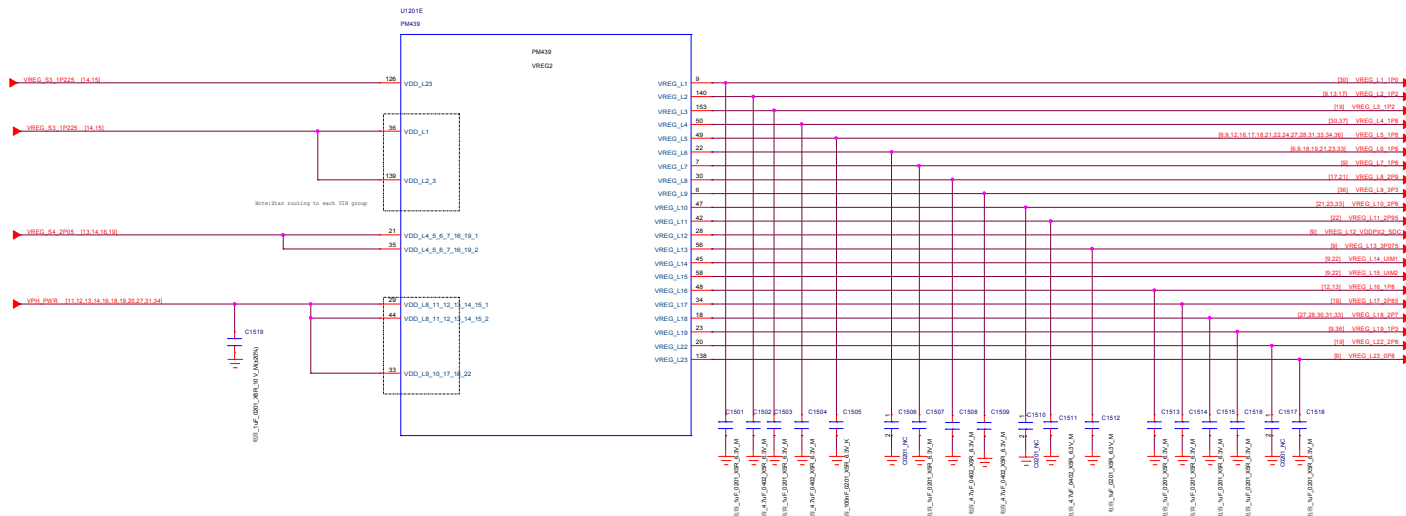


Table 3-6 PM439 regulators and their intended uses for SDM439/SDM429 when paired with PMR52

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	3200	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	MPI 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 (VDDMA)
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 eDMA
L5 ⁴	PMOS LDO	1.800	1.800	1.750-3.3375	600	Y	Mass signal 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 GPR/CM, 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	2.900	2.900-3.300	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	2.900	2.950	1.750-3.3375	800	Y	Micro SD

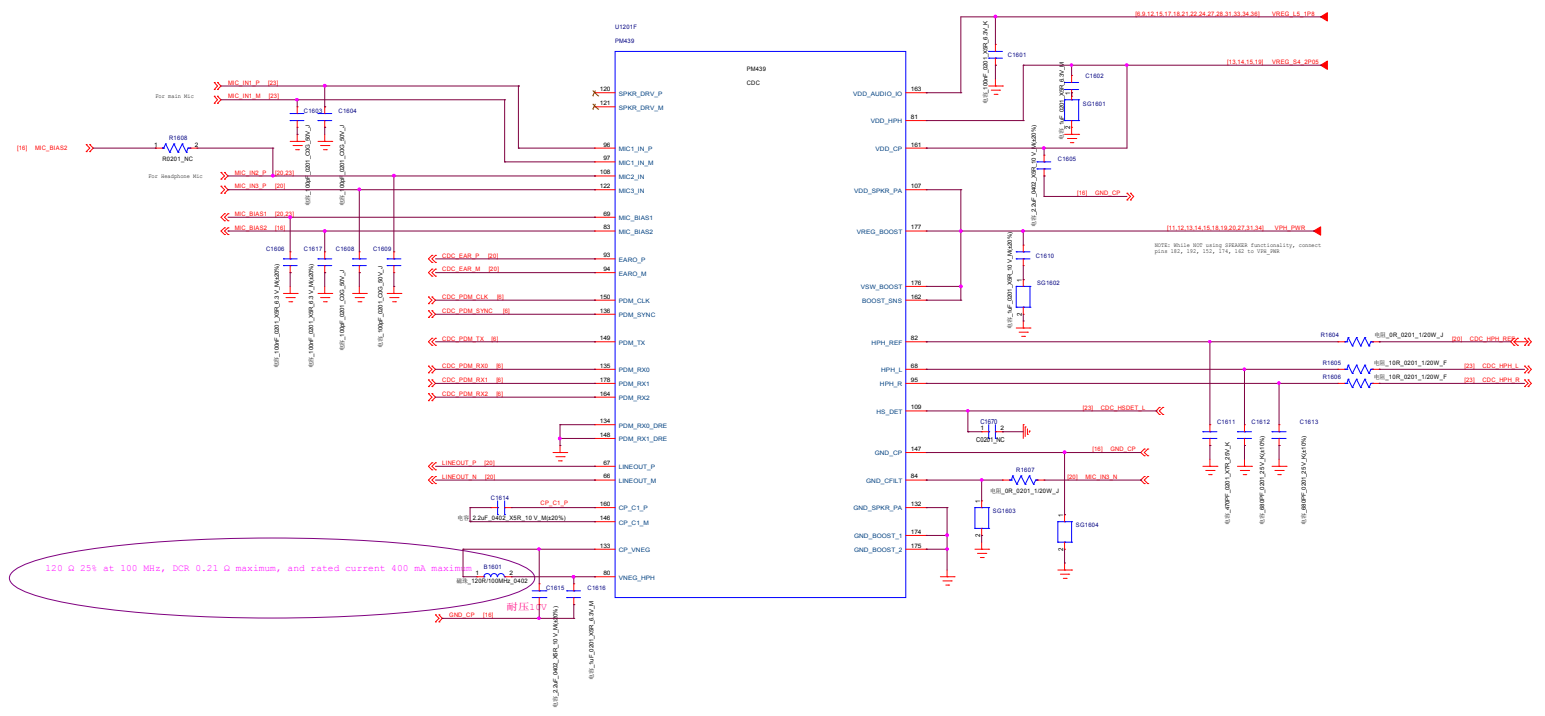
Table 3-6 PM439 regulators and their intended uses for SDM439/SDM429 when paired with PMR52 (cont.)

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	MPI CSI, DSI, and USB

- All regulators have default voltage settings, whether or not they default on; the voltage and state depends upon the programmable boot sequencer (PBS) configuration.
- 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-related current specifications are only valid while maintaining their specified headroom.
- 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.
- 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.
- L1, L14, and L15, as well as all PMOS LDOs have CCP.

PM439 LDO

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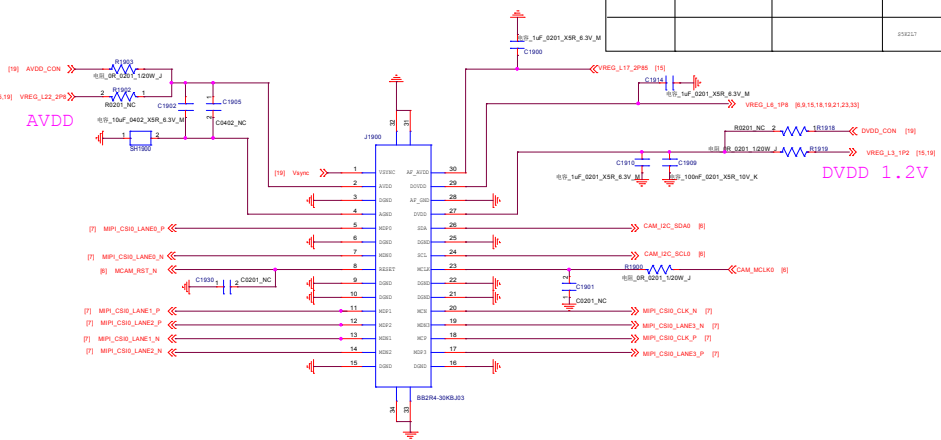
120 Ω 25k at 100 MHz, DCR 0.21 Ω maximum, and rated current 400 mA maximum

PM439 CODEC/Audio PA

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<p>Rev 0</p>	<p>Rev L028-PP033</p>	<p>Rev 1</p>	<p>Rev A</p>
<p>Rev 1/20/2018</p>		<p>Rev 1/20/2018</p>	

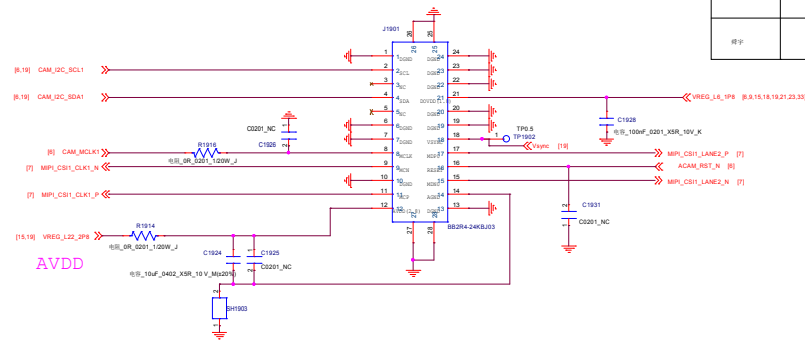
Main MONO Camera 12M

厂家	12C 86A0	12C 86C2E	088508 IC
后视图	08 21	08 20	18A460
后视图	08 21	08 20	18A466
			039217



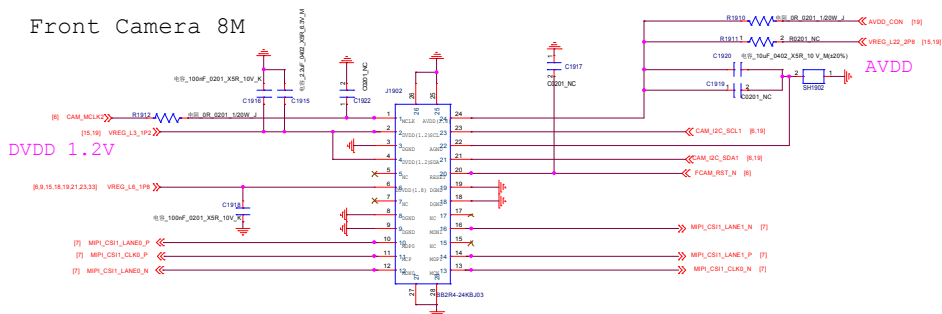
AUX Camera 2M 公用F9 pin定义

厂家	12C 86A0	12C 86C2E	088508 IC
后视图	08 19	08 1A	0705A11-08AA
特字	08 27	08 2E	002375

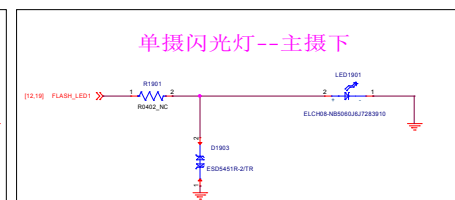
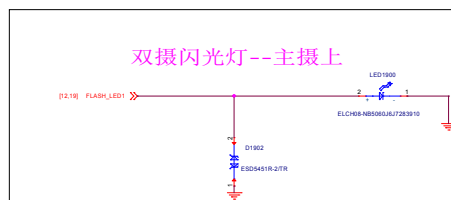


厂家	12C 86A0	12C 86C2E	IC
后视图	08 40	08 40	00884

Front Camera 8M

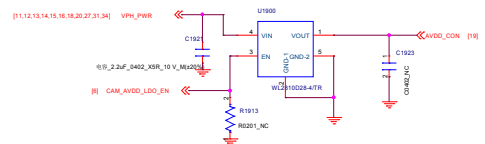


Rear Camera Flash FH15B



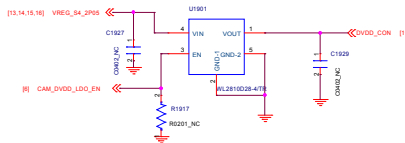
C3I-- 双摄贴此AVDD LDO

贴片使用WL2820D28-4/TR DFN1x1-4L



贴片使用WL2820D105-4/TR DFN1x1-4L

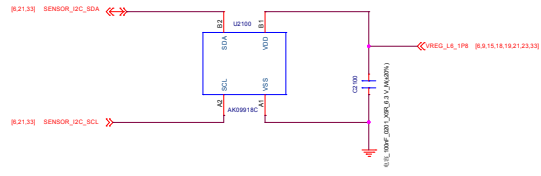
此部分硬件做预留, 印度版ic imx363和s5k217, 贴1.05V LDO



Doc	ARES_M0_V1	Rev	V1.0
Doc ID	Document Number	Doc	
Doc	Version	Doc	

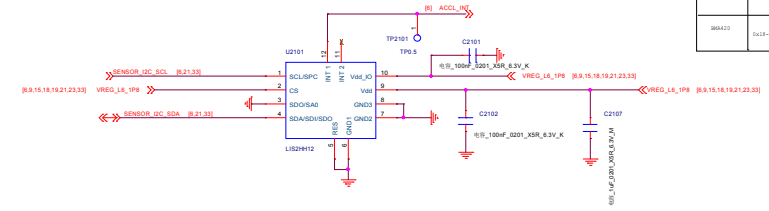
E-compass

厂家	12C A09603
A0956C	00A-0001100



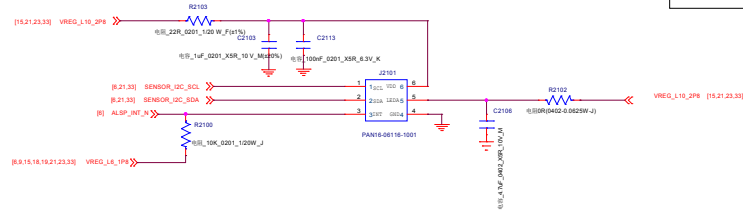
A sensor

厂家	12C A09603	
S20 (S20)	S20 (100g)	
12288C2	002A-0011100	S01F-0011100A
004010	0418-0011100	S019-00111001

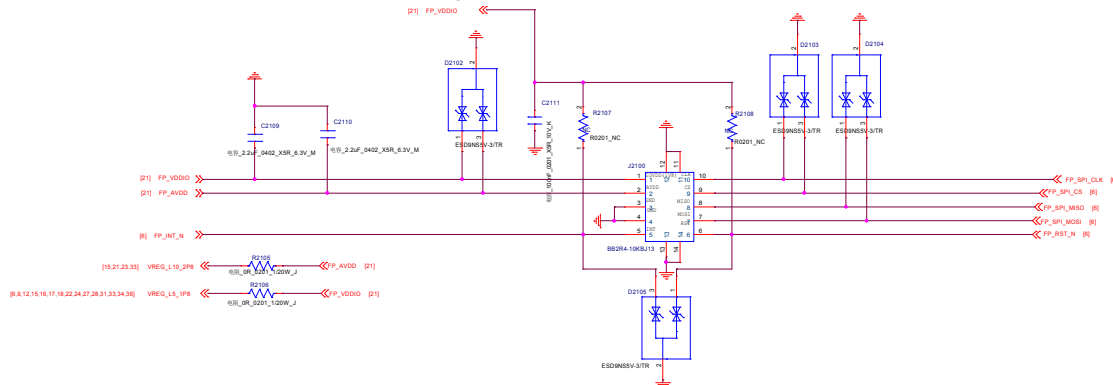


ALS PS LTR2568

厂家	12C A09603
LTR-2568LS-00	0a33---010011

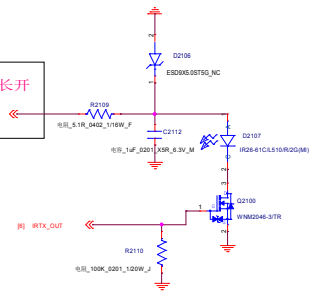


Finger Print



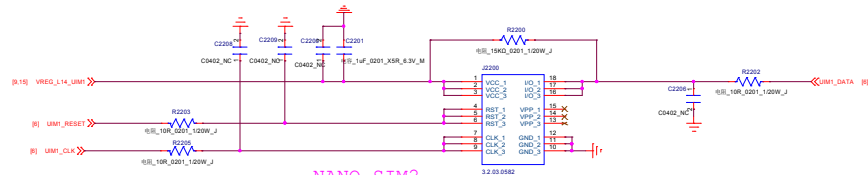
IR

此路与memory的VCC公用，需要在红外工作的时候长开

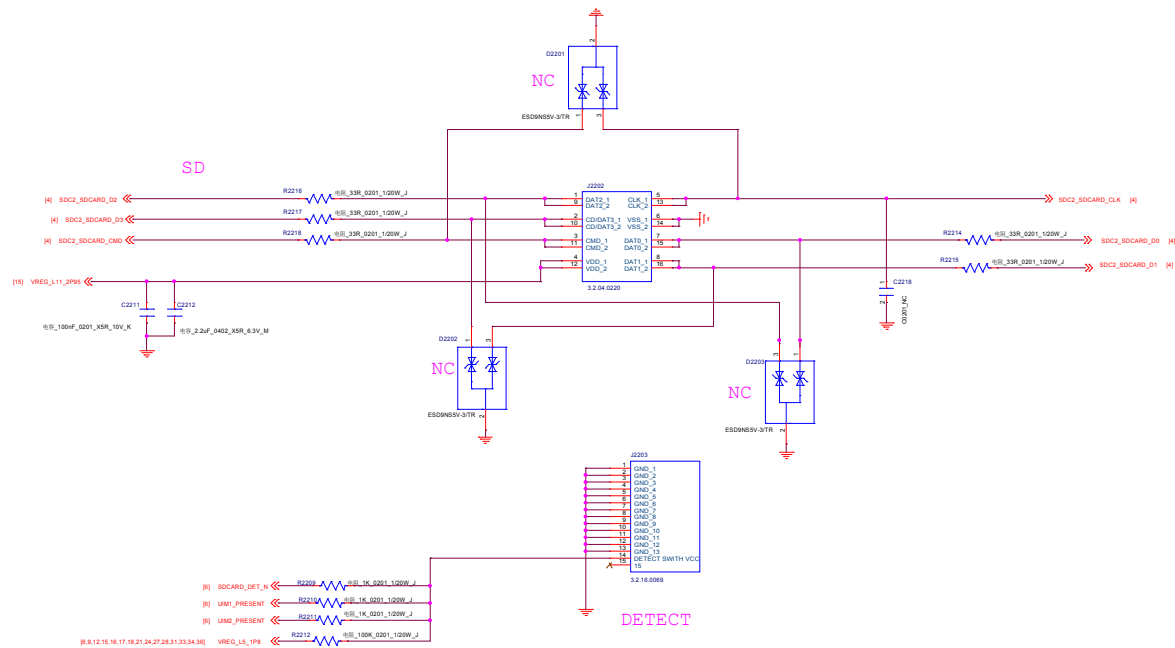
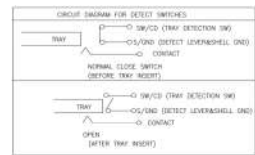
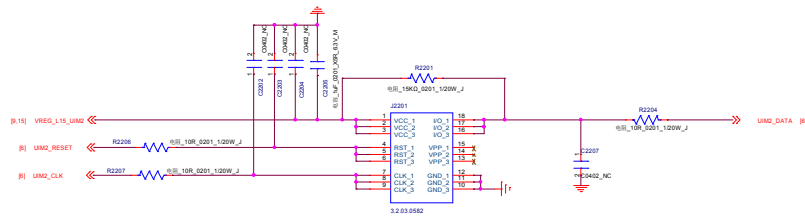


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Rev	Version: June 21, 2018
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NANO SIM1

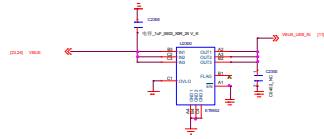


NANO SIM2



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Rev	Thursday, June 27, 2019	Sheet	22 of 33

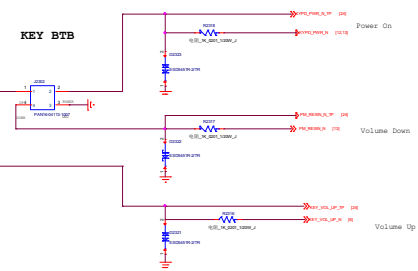
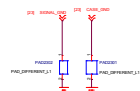
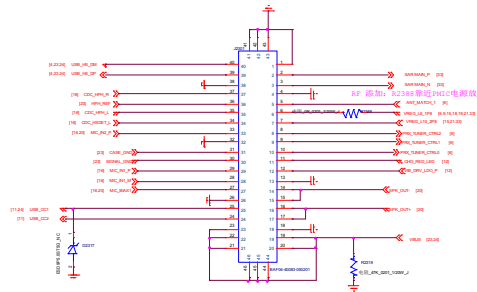
OVP 6.8V ET9552L
 OVP 10.5V ET9552



$$V_{in_pin2} = V_{out_pin1} * (1 + R1/R2)$$

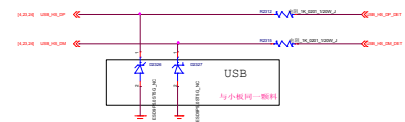
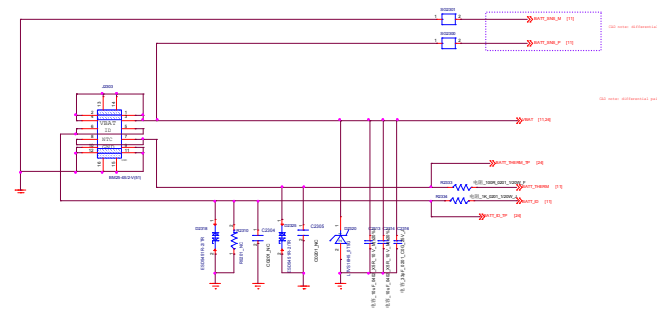
Note: $V_{out_pin1} = 1.2V(TYP.)$

MAIN FPC BTB



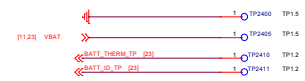
Signal	Description
KEY_VOL_UP_N	Volume Up
PM_RESIN_N	Volume Down
KEY_PWR_N	POWER_ON
KEY_A1	XIAOMI A1

Battery Connector



Test Points

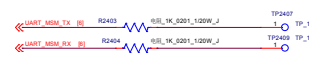
VBAT TEST POINT



KEY TEST point



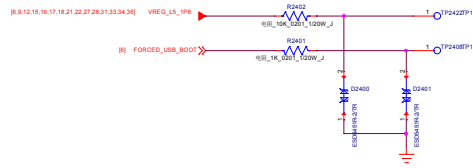
UART TEST point



USB TEST POINT



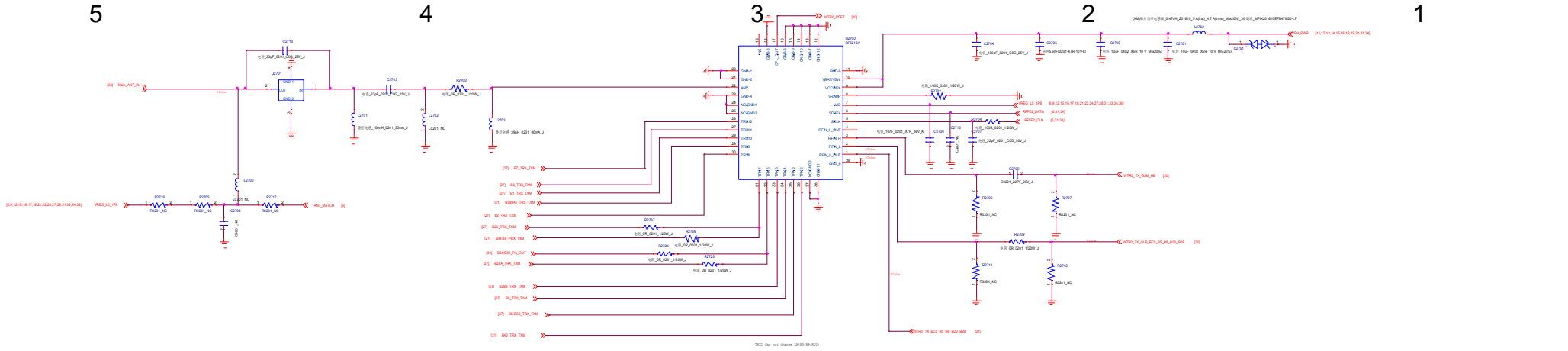
Force USB boot



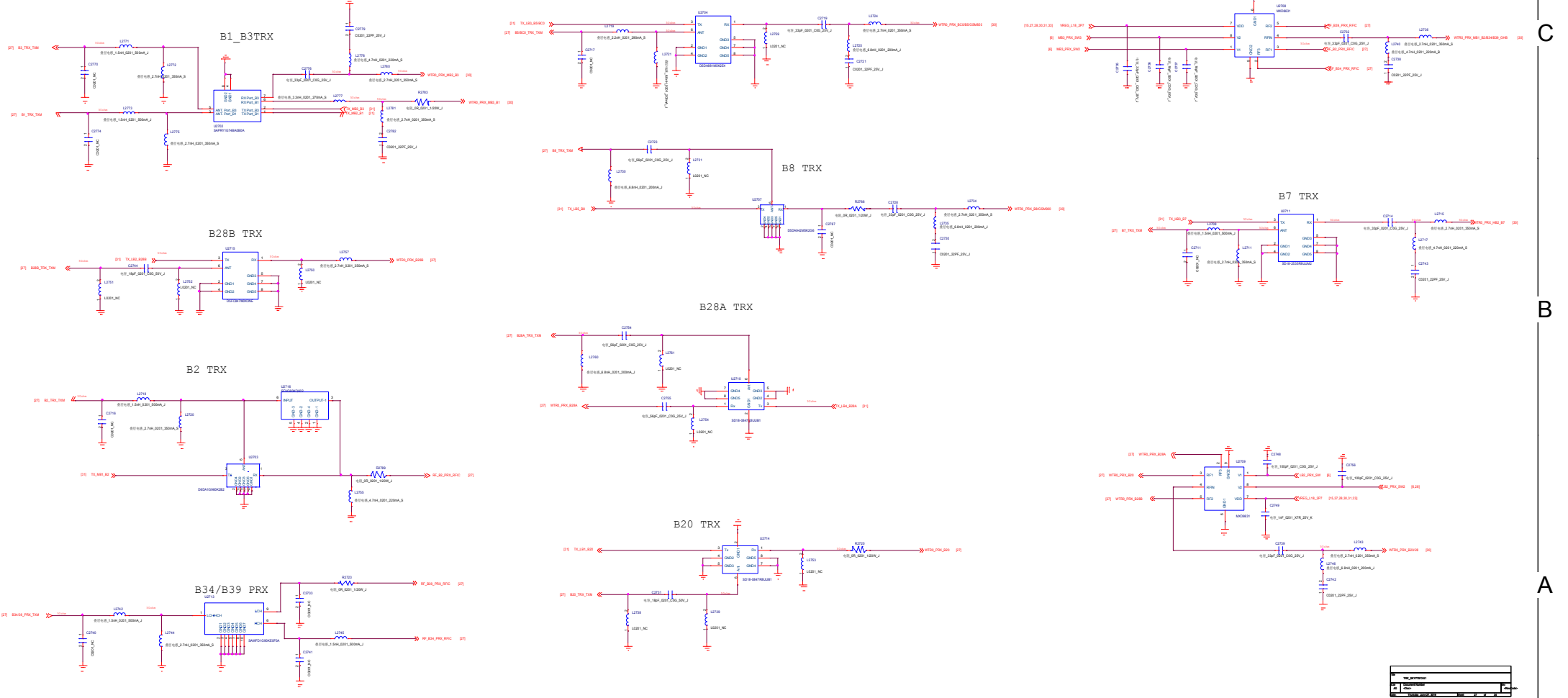
CC TEST POINT



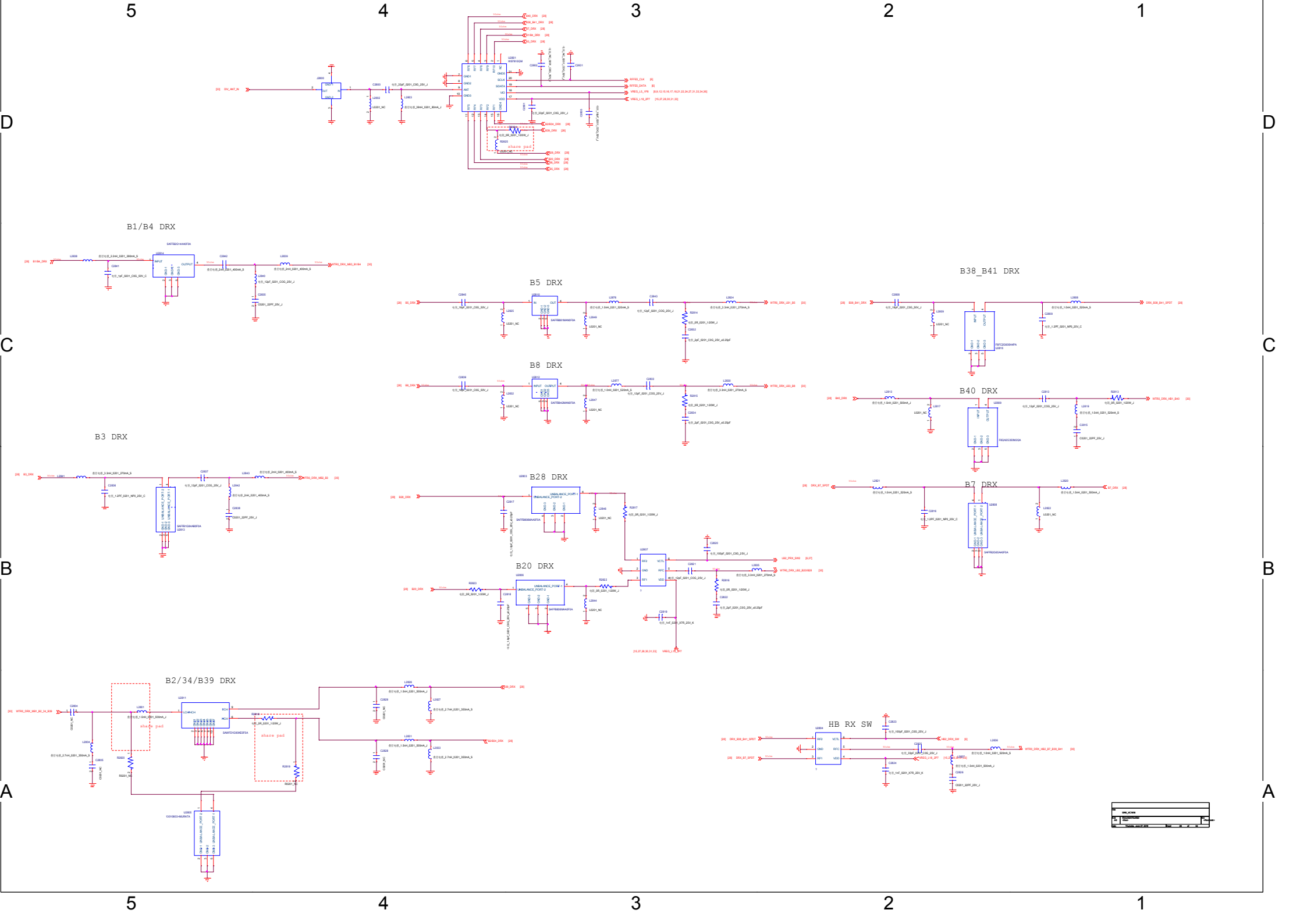
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Project	<Doc> Rev 1.0
Date	Tuesday, June 27, 2018 10:52 AM 23 of 33

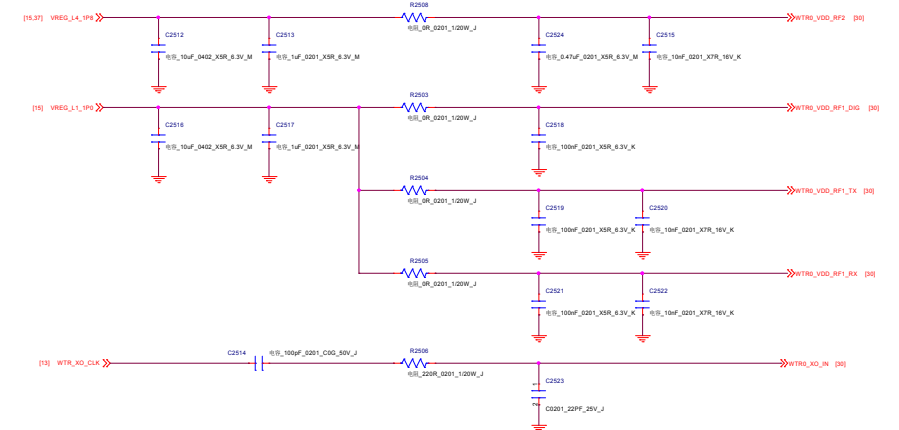
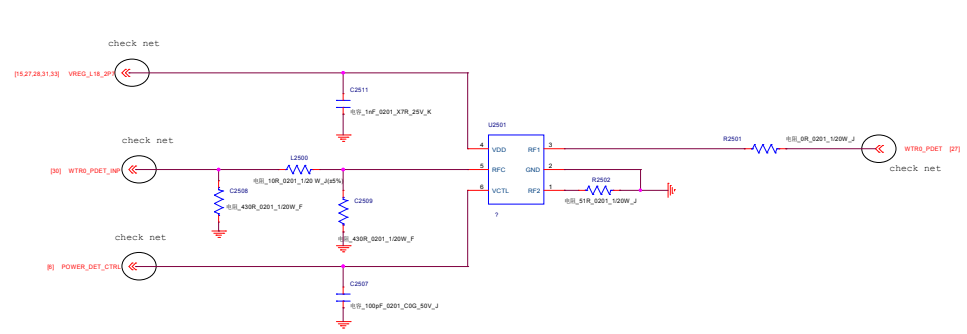
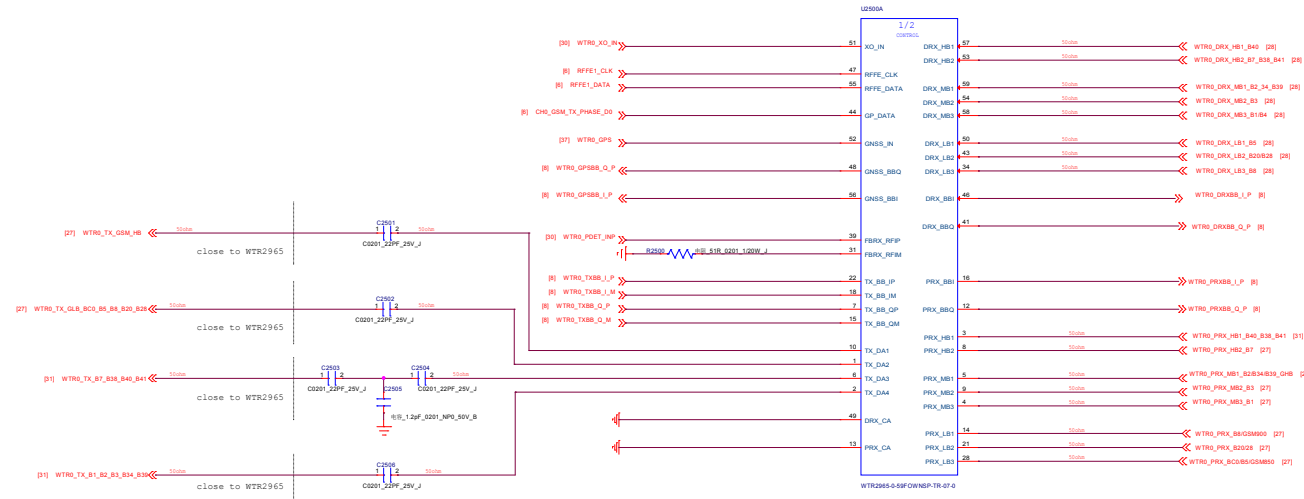
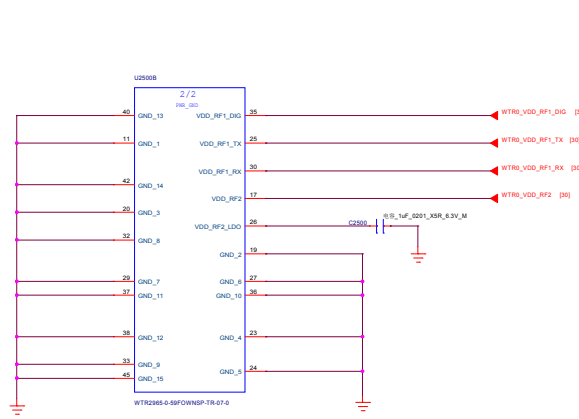


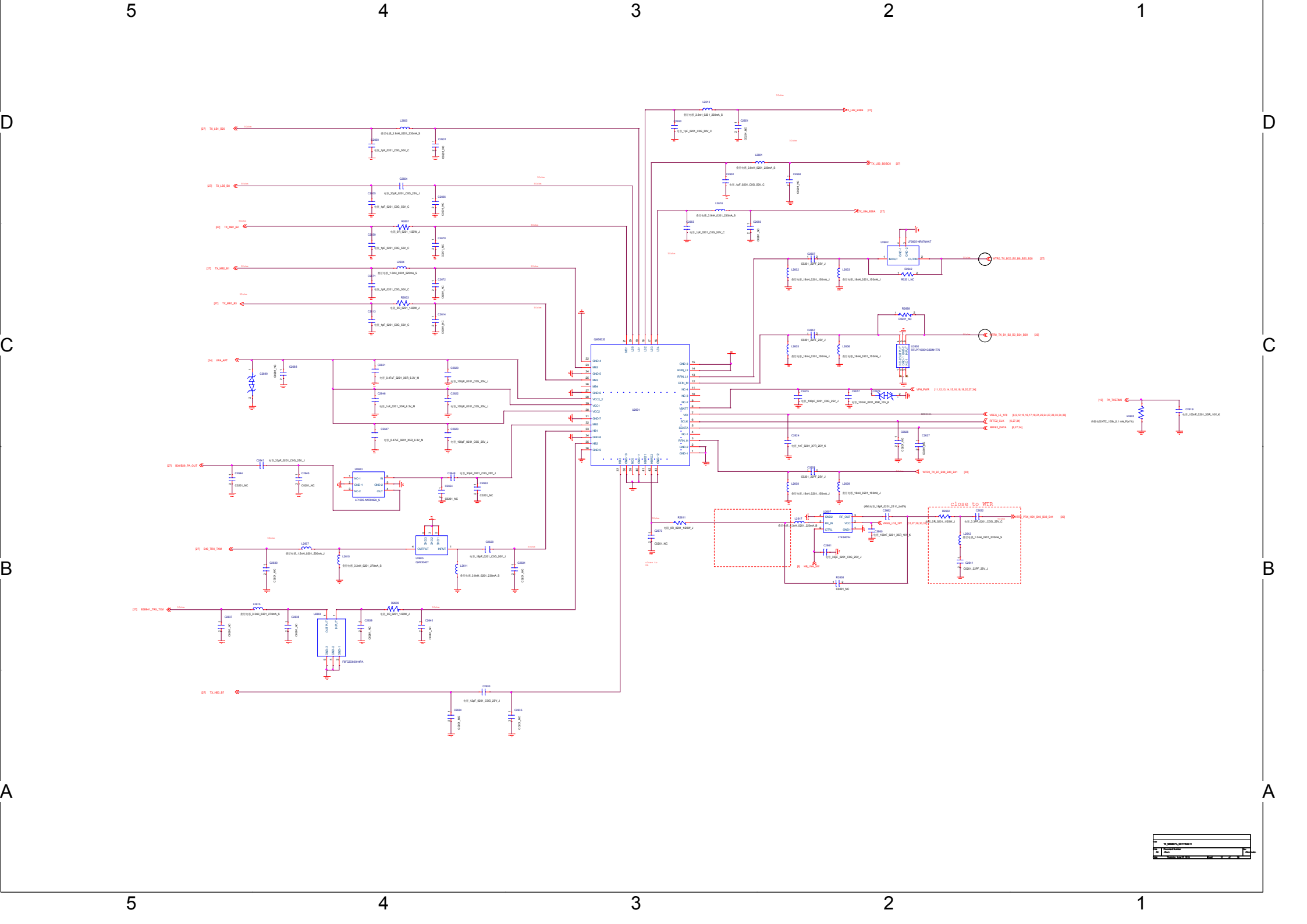
B1+3四工器兼容双功pin to pin. 1) 国内版双双功, L2772脚0对地, L2771断开; 2) 国际版使用四工器, B1+3, B4共用此网络;



1	2	3	4	5
1	2	3	4	5







5

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1

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C

C

B

B

A

A

5

4

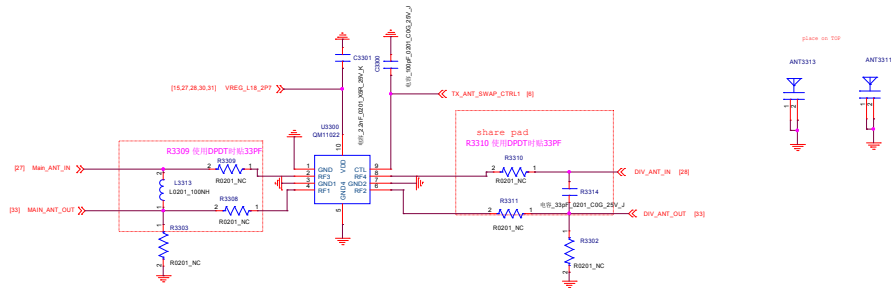
3

2

1

1	U0001	AD9288	28-Channel ADC
2	U0002	74VHC04	Inverter
3	U0003	74VHC00	NAND Gate
4	U0004	74VHC02	NOR Gate
5	U0005	74VHC125	Monostable Multivibrator
6	U0006	74VHC14	Inverter with Schmitt Trigger
7	U0007	74VHC08	3-Input NAND Gate
8	U0008	74VHC04	Inverter
9	U0009	74VHC00	NAND Gate
10	U0010	74VHC02	NOR Gate
11	U0011	74VHC04	Inverter

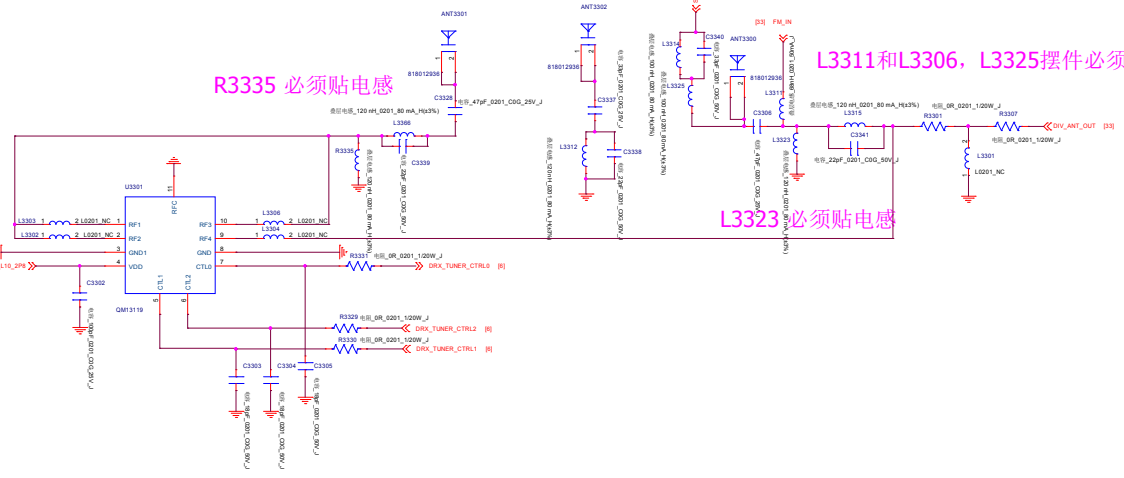
DPDT SWITCH



Main ANT



DIV ANT

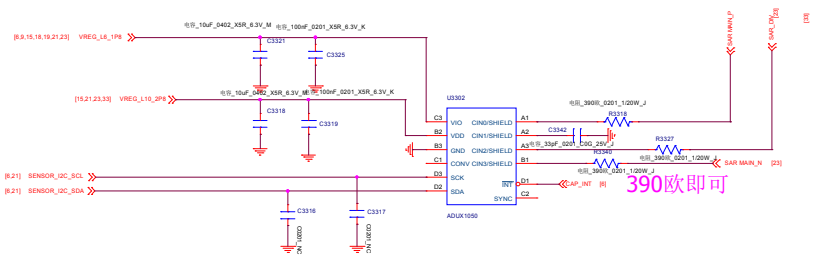


R3335 必须贴电感

L3323 必须贴电感

L3311和L3306, L3325摆件必须靠近弹片

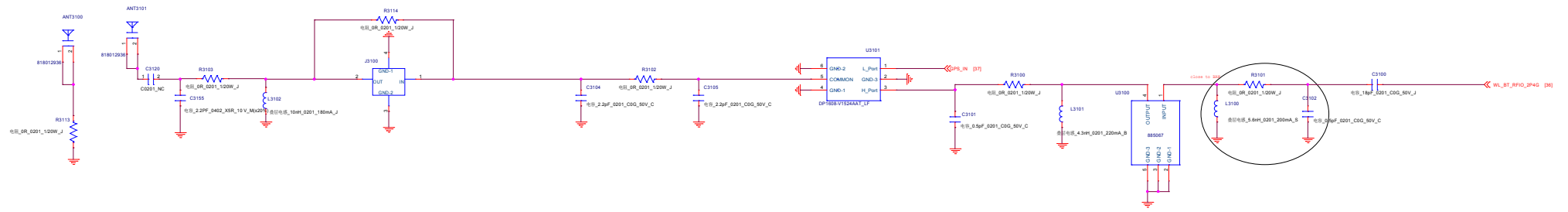
SAR Sensor



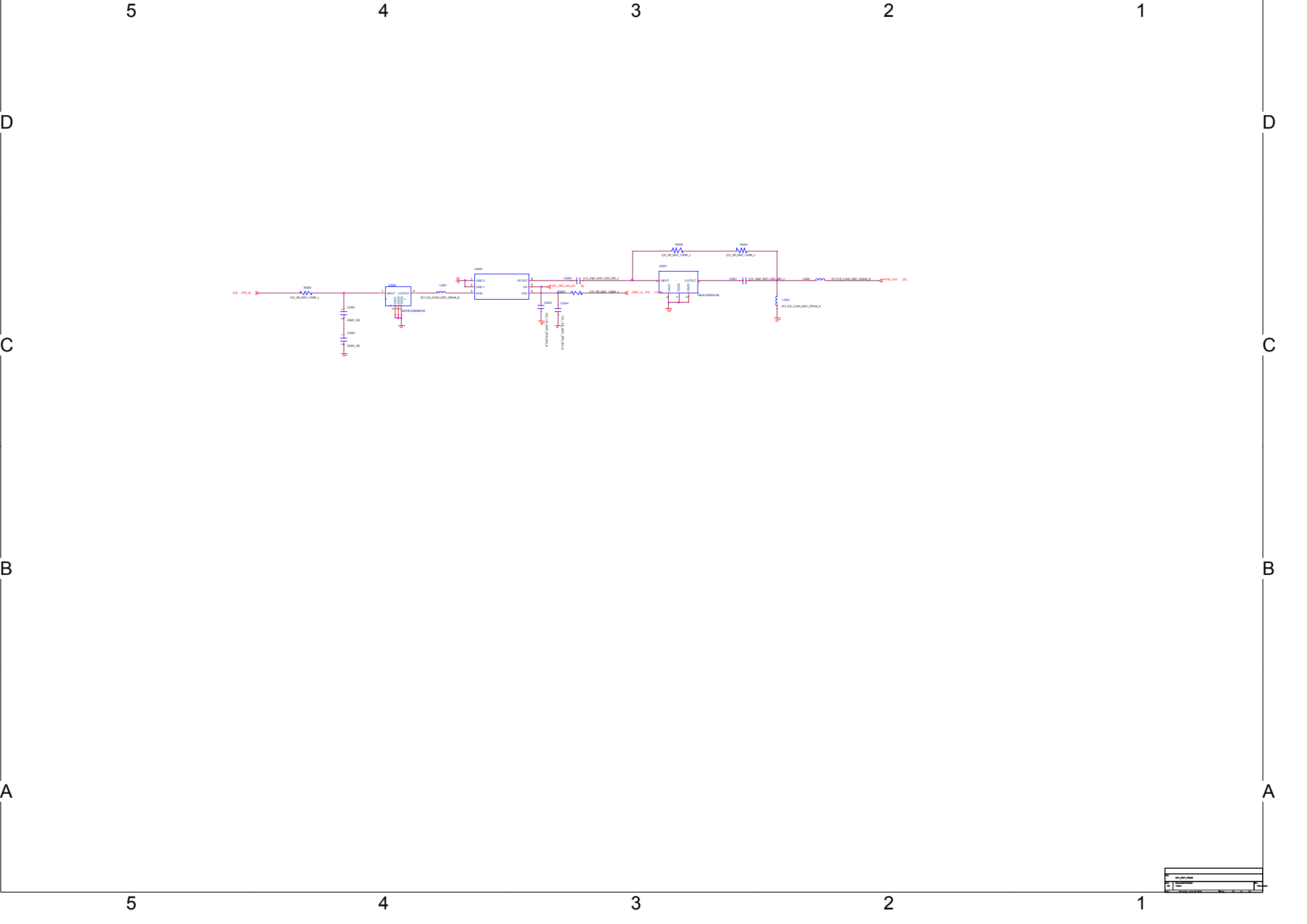
390欧即可

Change List

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		<p>Title SCHEMATIC, CCA MAIN, GRD439_2-4_2, EVT1.0</p> <p>Rev 0</p> <p>Date Thursday, Aug 27, 2015 10:08am 31 of 31</p>	



File	WCH_FEM		
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Date	Thursday, June 27, 2013	Page	31 of 31



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Total	1