

# BB SCHEMETIC

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# RF SCHEMETIC

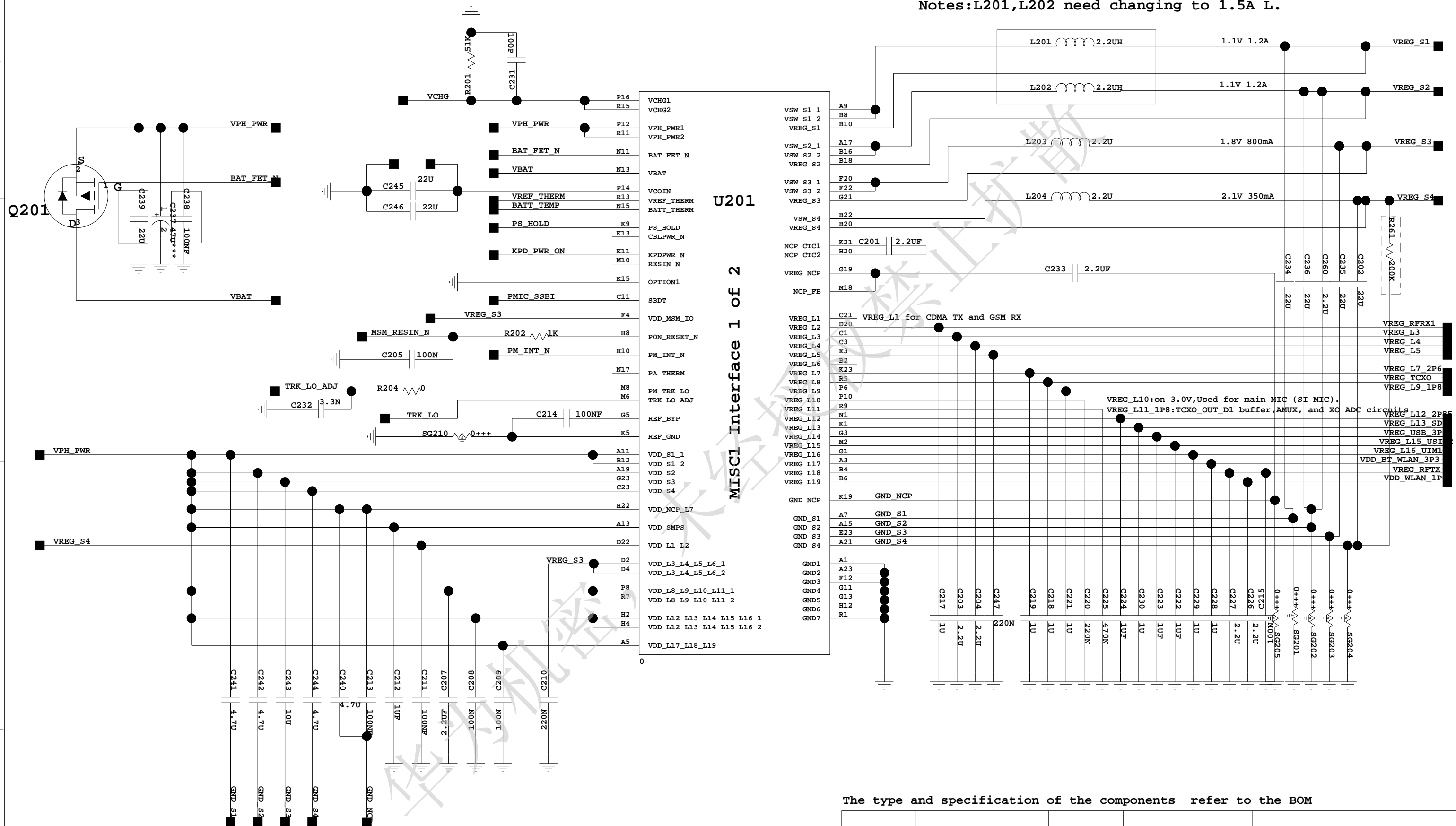
20. DCDC For RF PA
21. RF Input Output Ports
22. 19.2MHz VCTCXO
23. Antenna Switchplexer
24. WCDMA IMT Power Amplifier
25. WCDMA CELL Power Amplifier
26. GSM Quad\_band\_PA
27. RX MATCHING CIRCUIT
28. UMTS IMT RX INTERSTAGE CHAIN
29. RTR6285A CIRCUIT
30. RTR6285A POWER DISTRIBUTION
31. GPS
32. WCDMA PCS Power Amplifier
33. NA
34. NFC
35. BT FM WCN2243
36. AR6005 BB
37. AR6005 RF

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	TANGJIEHUA/00181886	HD2U8951M		00667074	
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER	SHEET 1 OF 37	
		A	03021PBV	HUAWEI TECH CO.,LTD.	

# 2. PM8029 POWER Circuit

Notes:L201,L202 need changing to 1.5A L.

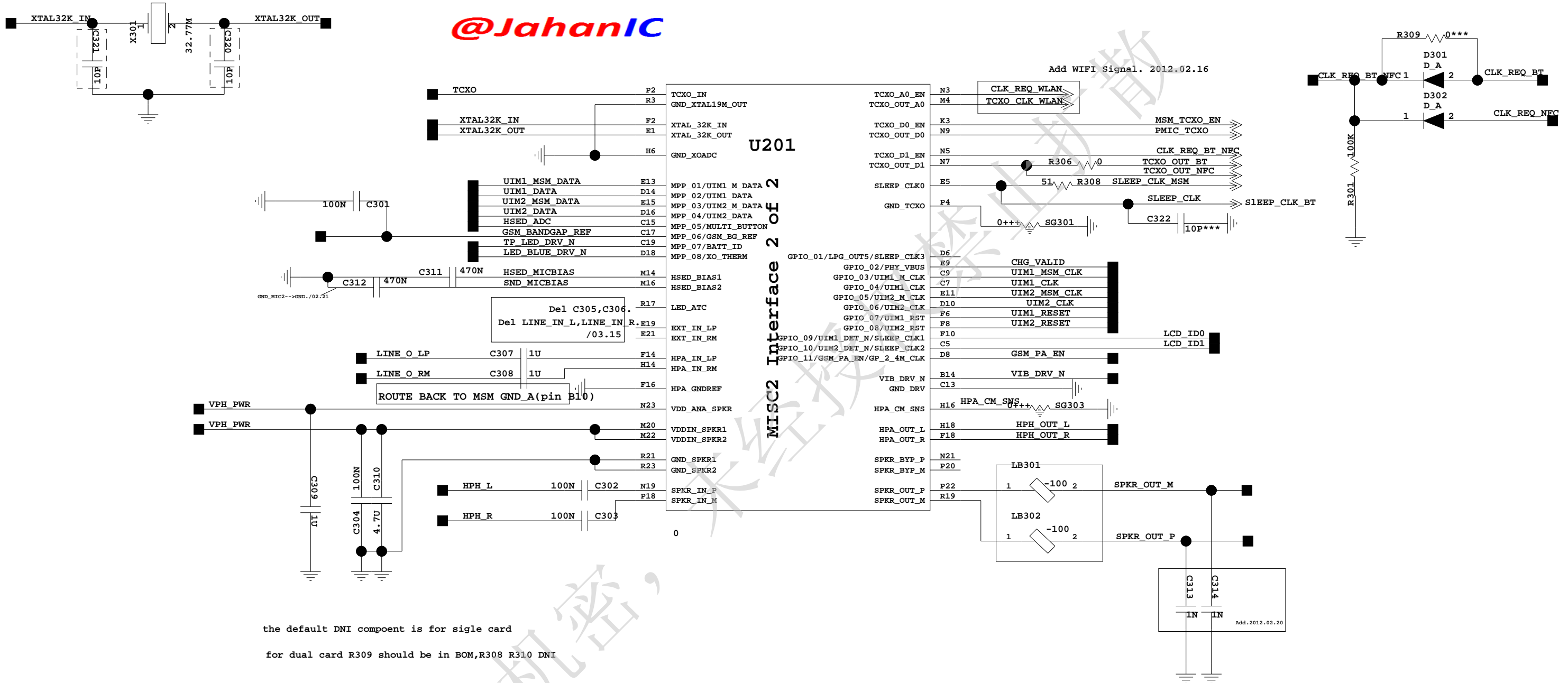


The type and specification of the components refer to the BOM

				NA
				ECA NO
DESIGNED	TANGJIEHUA/00181886			DATE
		HD2U8951M		00667074
REVIEWED	CDMA ANDROID GROUP			
		VER	PART_NUMBER	SHEET 2 OF 37
		A	03021PBV	HUAWEI TECH CO.,LTD.

# 3. PM8029 Analog/CFG/CLOCK and RF Interface

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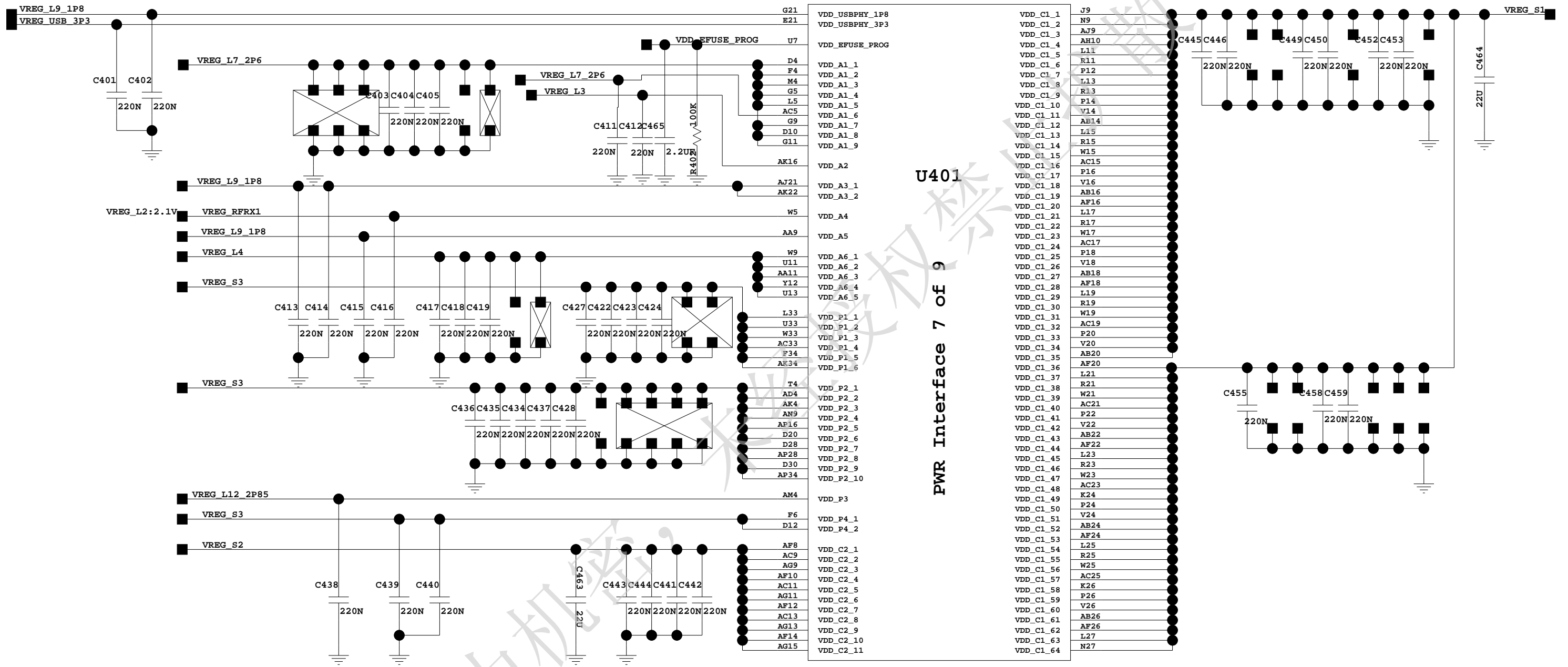


the default DNI component is for single card  
for dual card R309 should be in BOM, R308 R310 DNI

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	TANGJIEHUA/00181886			00667074	
REVIEWED	CDMA ANDROID GROUP		HD2U8951M		
		VER	PART_NUMBER	SHEET 3 OF 37	
		A	03021PBV	HUAWEI TECH CO.,LTD.	

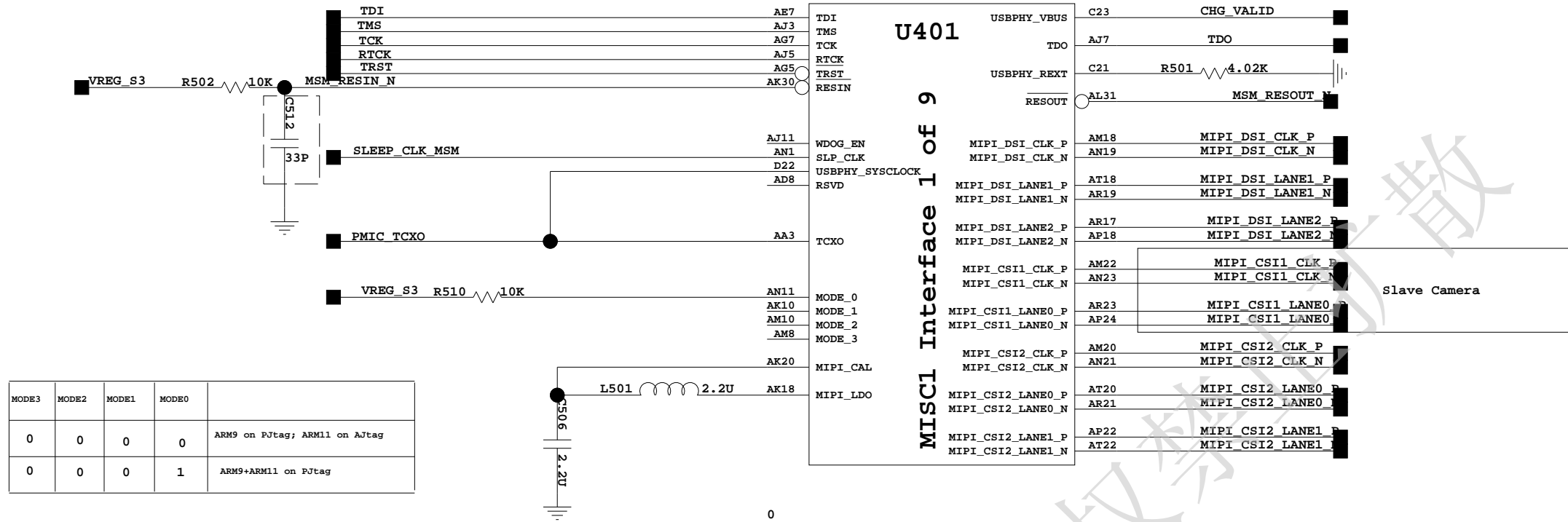
# 4. MSM8225 Power Filter



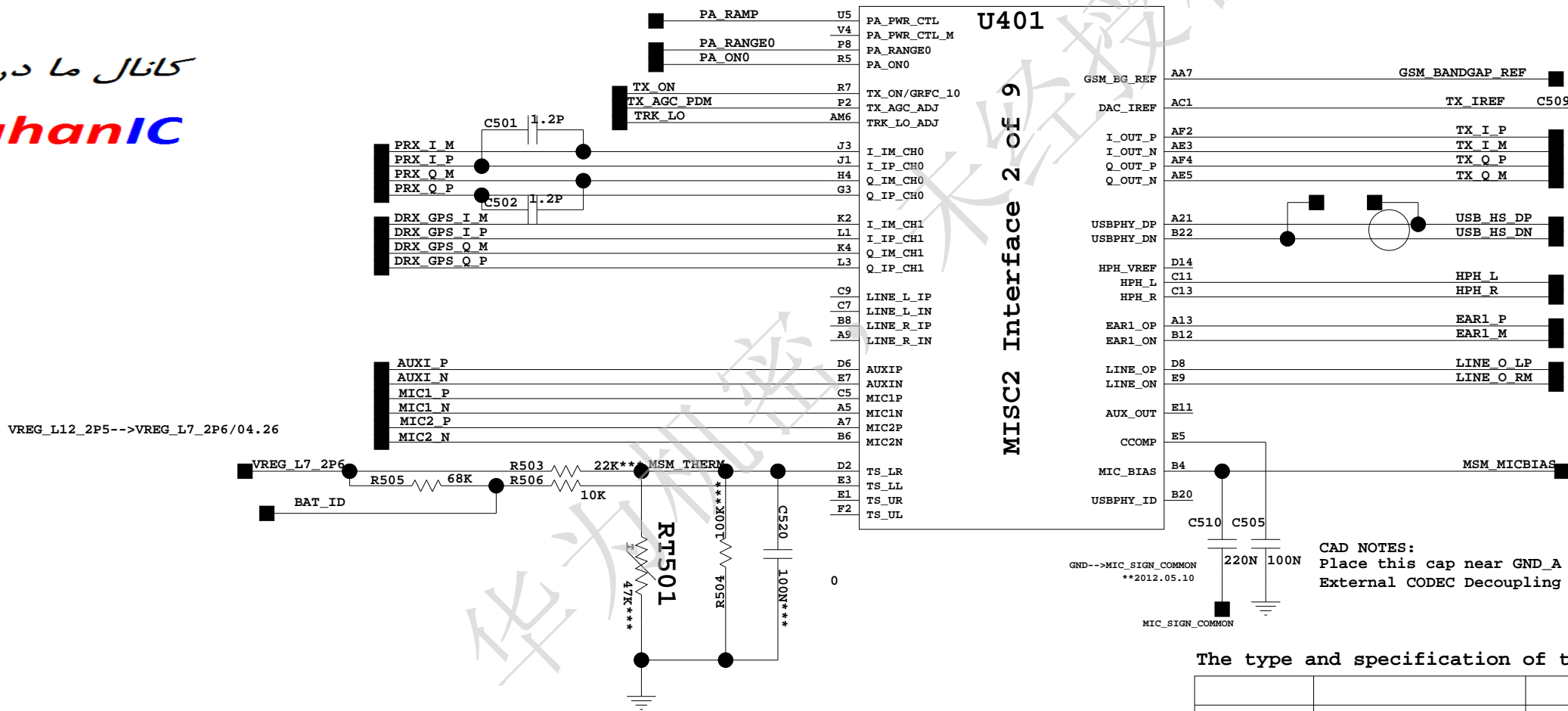
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	TANGJIEHUA/00181886				
REVIEWED	YAODAYI 00167997				
		VER	PART_NUMBER	SHEET 4	OF 37
		A	03021PBV	HUAWEI TECH CO.,LTD.	

# 5. MSM8225 Analog Circuit and RF interface



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CAD NOTES:  
Diff. routing and 90ohm controlled impedance

CAD NOTES:  
Place this cap near GND\_A (pin B10)  
External CODEC Decoupling CAP

Note: Close to U401

The type and specification of the components refer to the BOM

				NA
			ECA NO	DATE
DESIGNED	TANGJIEHUA/00181886		HD2U8951M	00667074
REVIEWED	YAODAYI 00167997		VER	PART_NUMBER
	A	03021PBV	SHEET 5 OF 37	
			HUAWEI TECH CO.,LTD.	

# 6. MSM8225 Nand+DDR1 MCP Circuit

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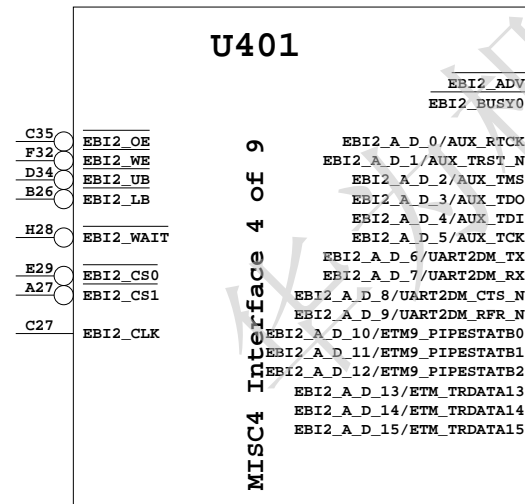
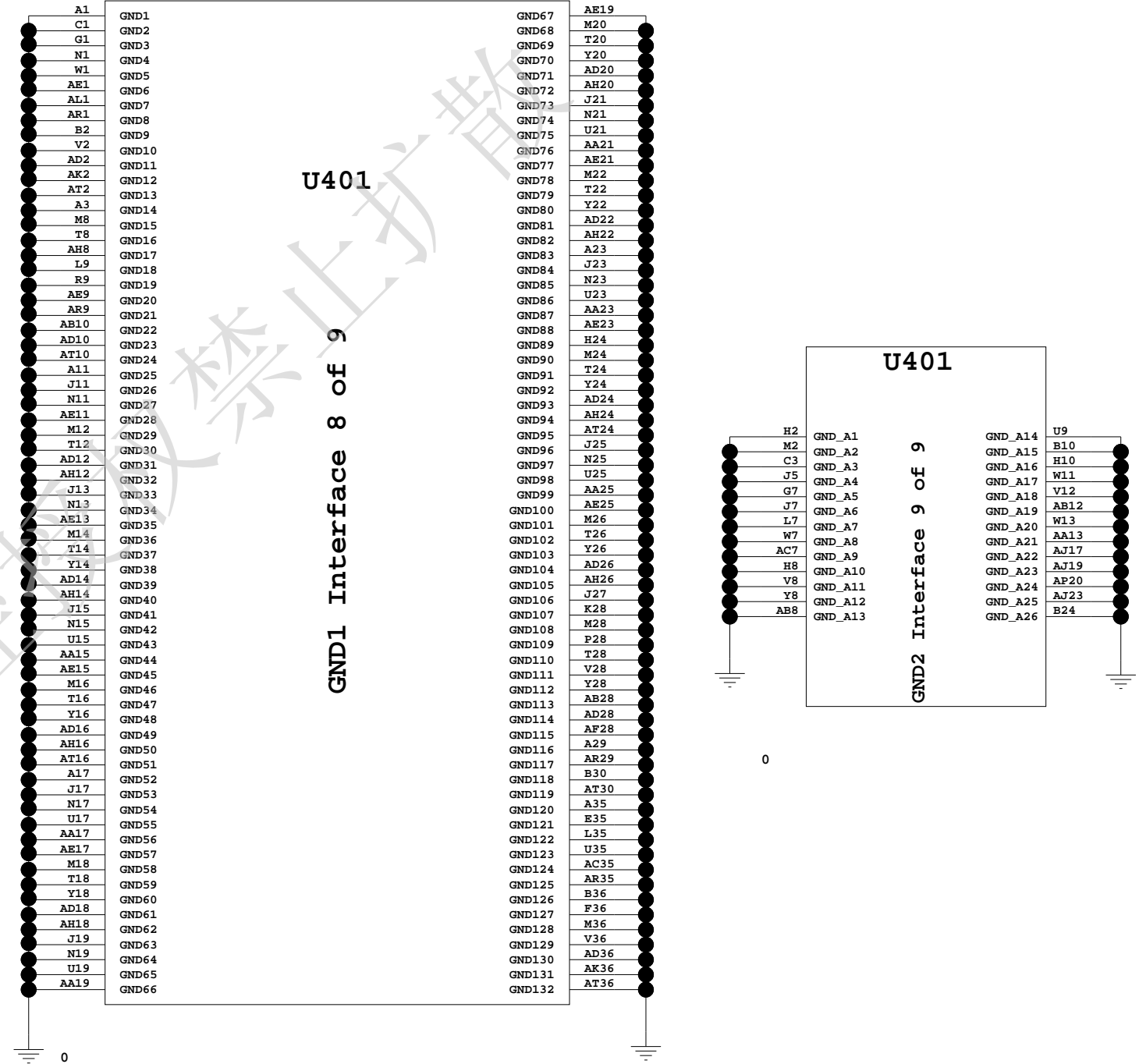
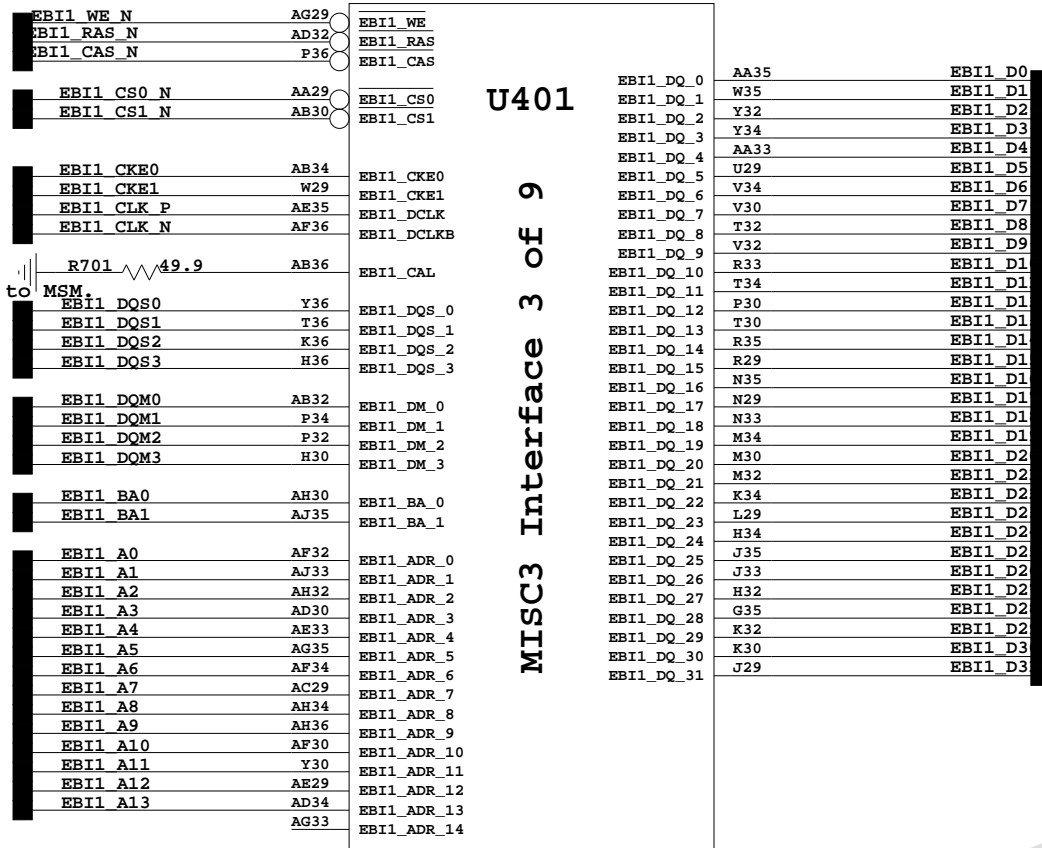
机密

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	TANGJIEHUA/00181886				
			HD2U8951M		00667074
REVIEWED	CDMA ANDROID GROUP				
		VER	PART_NUMBER	SHEET 6 OF 39	
		A	03021PBV	HUAWEI TECH CO.,LTD.	

# 7. MSM8225 MCP interface & GND

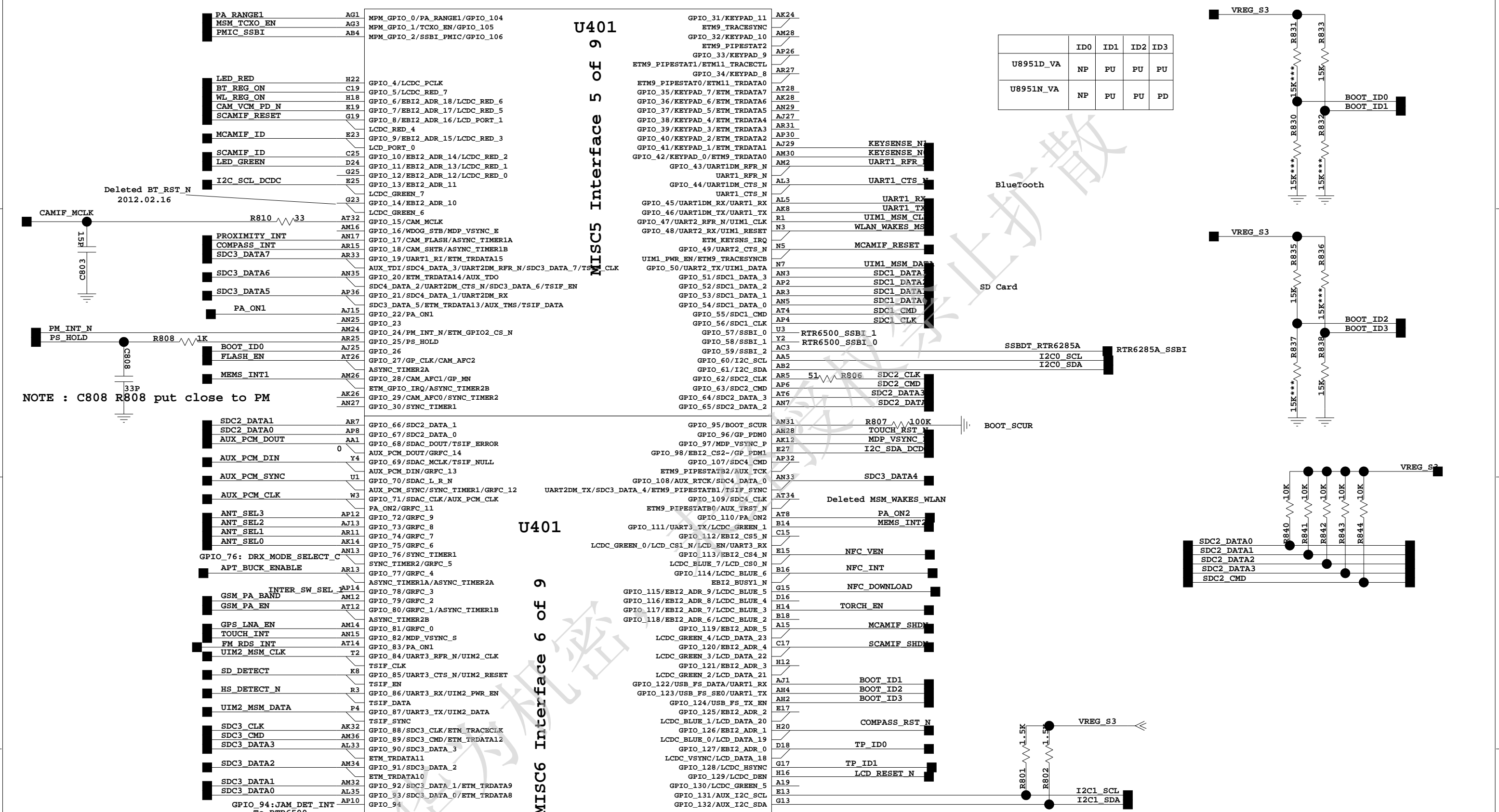
CAD NOTES:  
Place resistor close to



The type and specification of the components refer to the BOM

DESIGNED	TANGJIEHUA/00181886	HD2U8951M	00667074
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER
		A	03021PBV
			SHEET 7 OF 37
			HUAWEI TECH CO.,LTD.

# 8. MSM8225 GPIO Data UI and Other Interface



	ID0	ID1	ID2	ID3
U8951D_VA	NP	PU	PU	PU
U8951N_VA	NP	PU	PU	PD

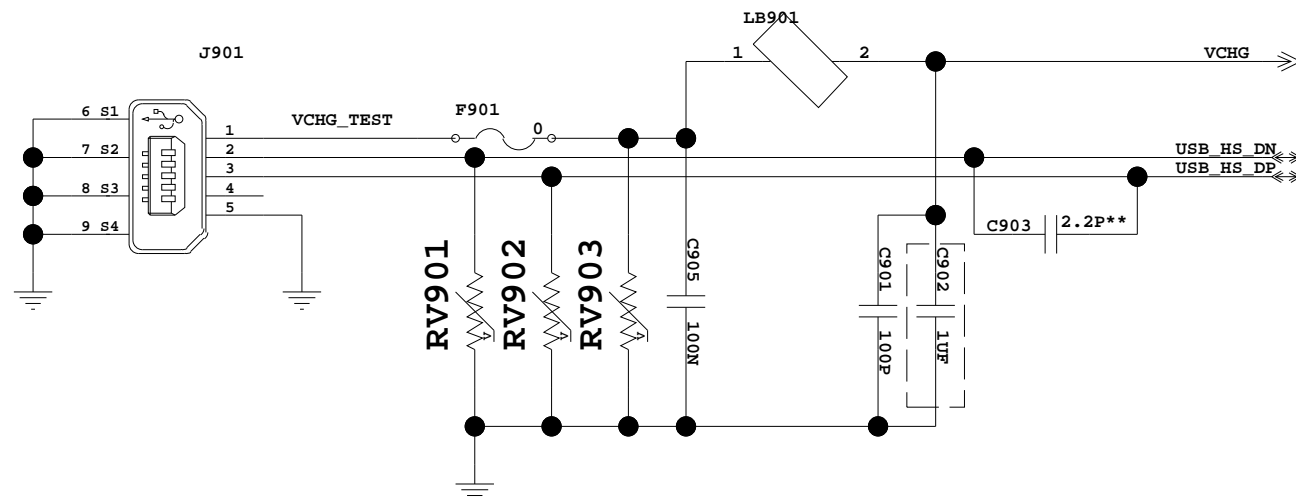
The type and specification of the components refer to the BOM

DESIGNED	TANGJIEHUA/00181886	HD2U8951M	00667074
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER
		A	03021PBV
			SHEET 8 OF 37
			HUAWEI TECH CO.,LTD.

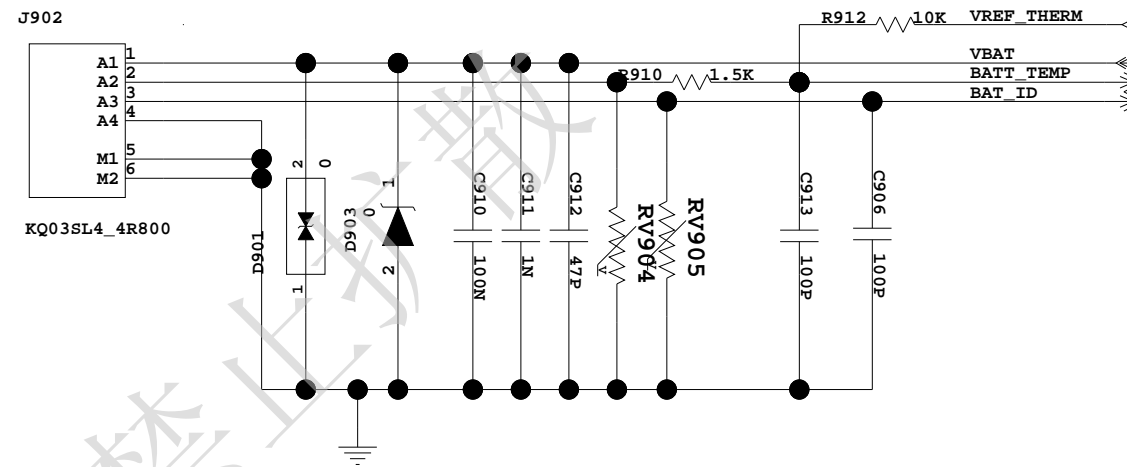


# 9. USB/Charge management/Battery/Vabrator

## Micro USB Connector

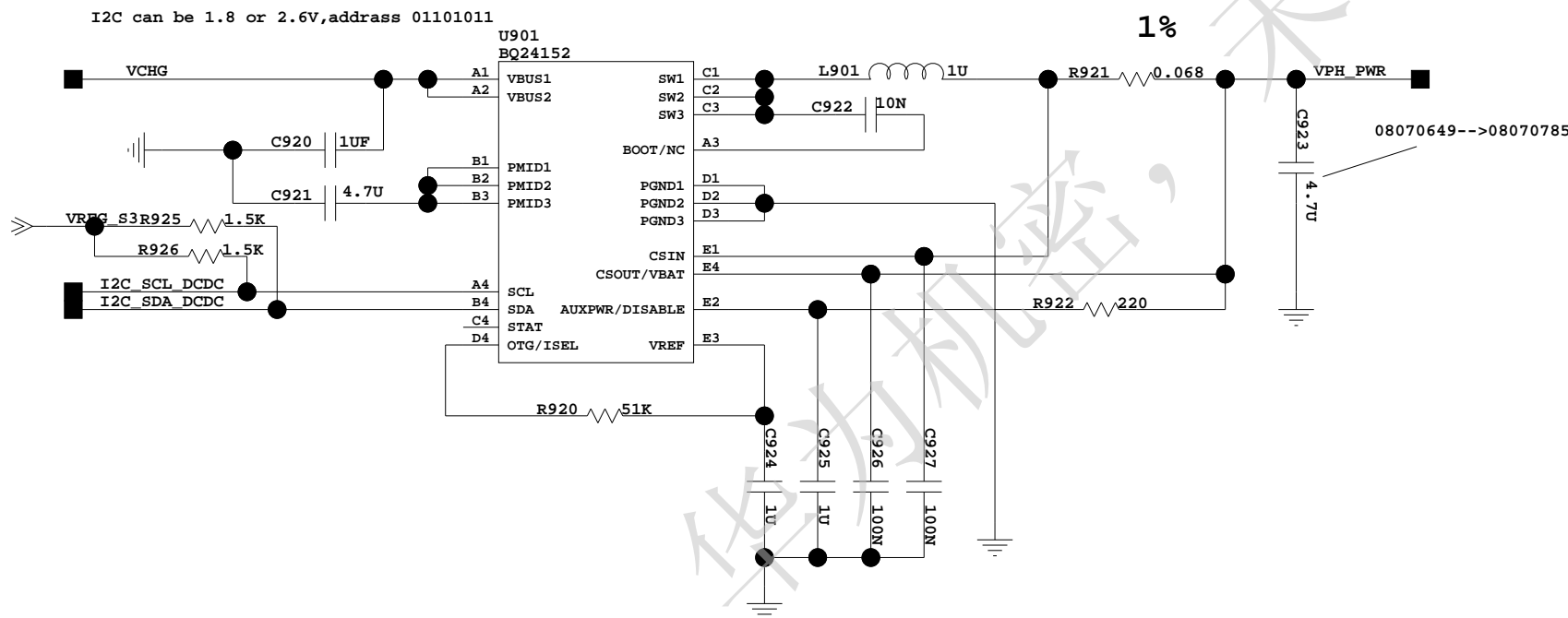


## Battery Conector Battery 24020975

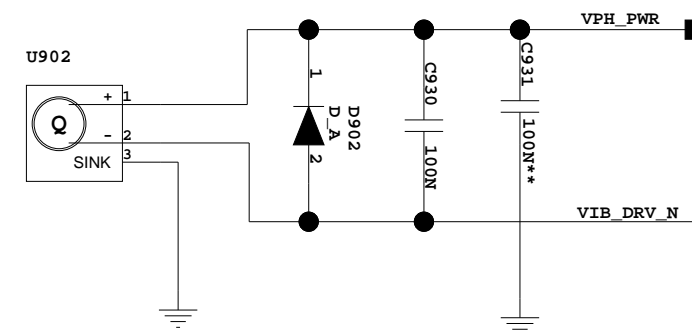


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## Charge management



## Vabrator

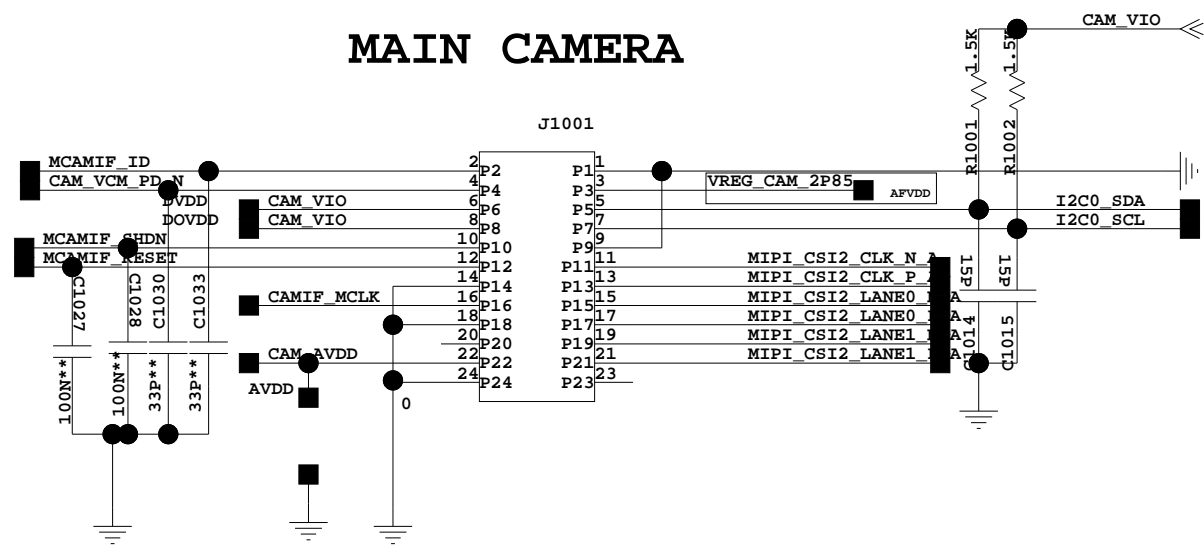


The type and specification of the components refer to the BOM

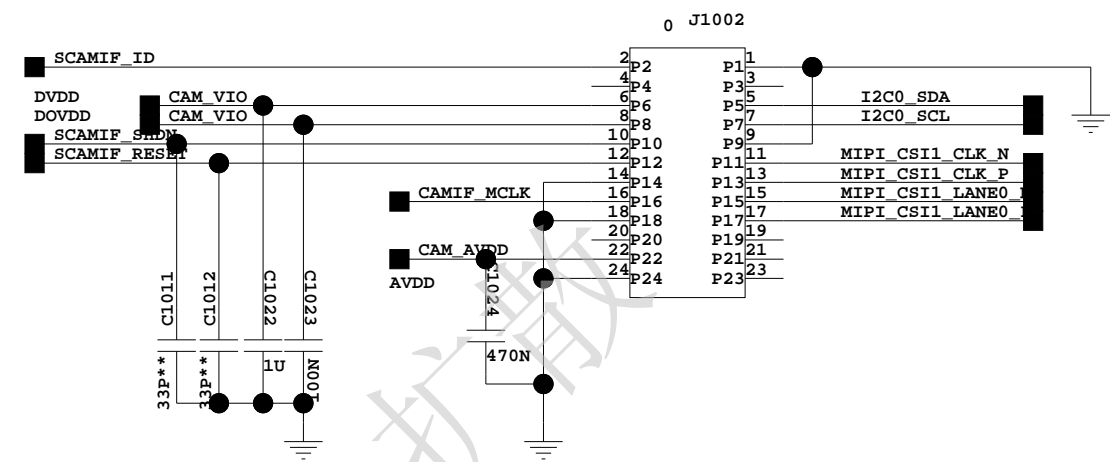
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				ECA NO	DATE
DESIGNED	XIEFENG 00163838	HD2U8951M		00667074	
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER	SHEET 9 OF 37	
		A	03021PBV	HUAWEI TECH CO.,LTD.	

# 10. Main Camera and Slave Camera

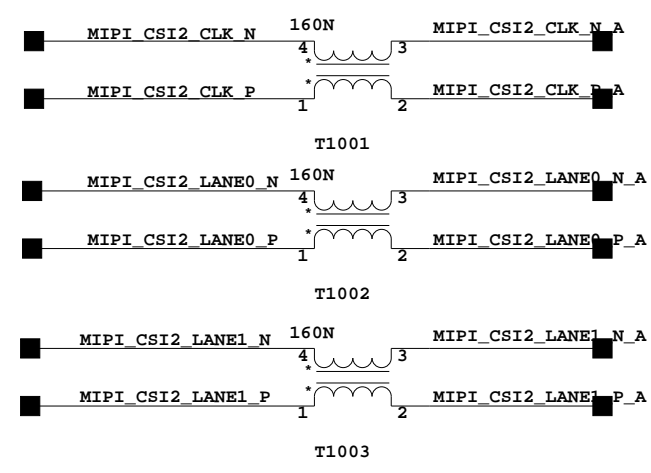
## MAIN CAMERA



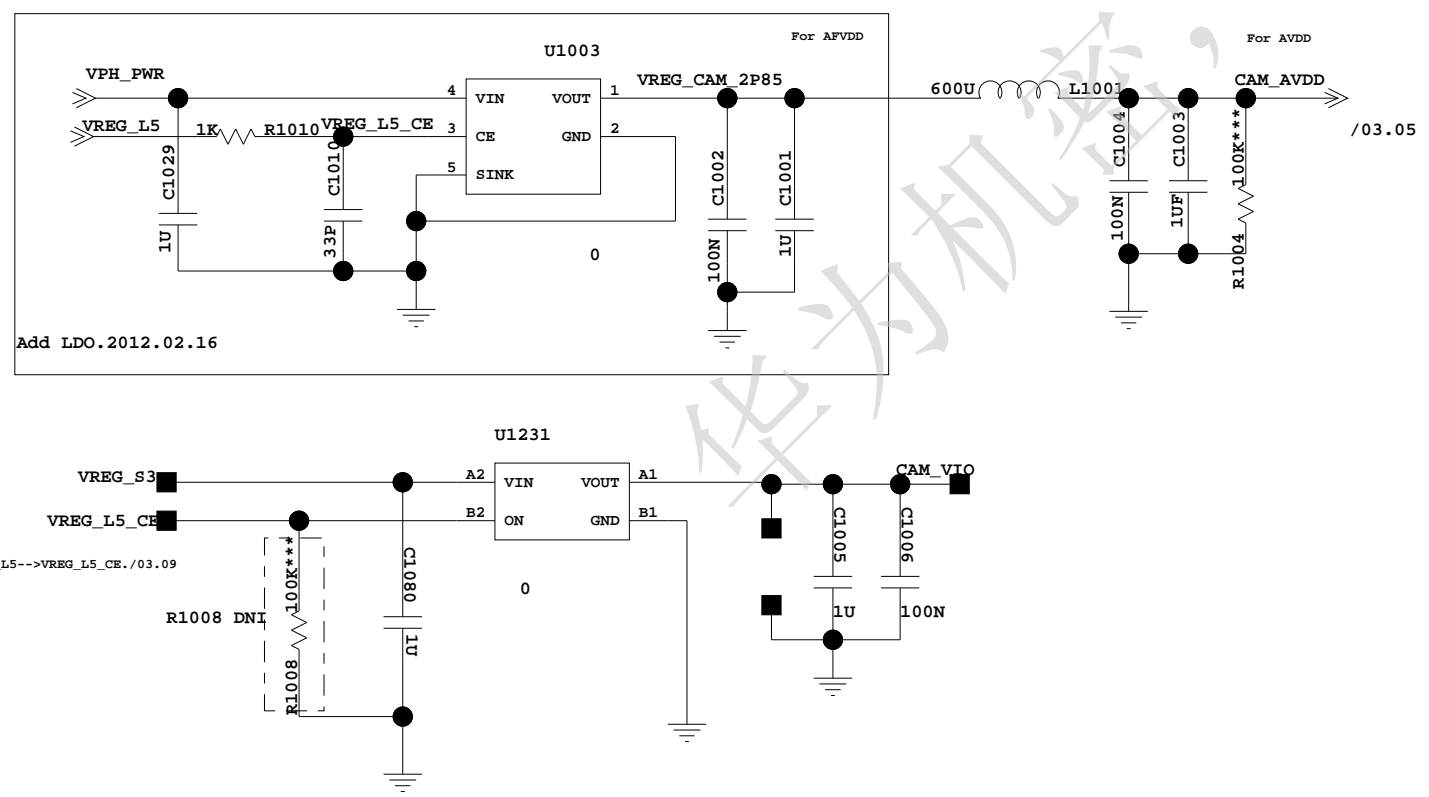
## SLAVE CAMERA



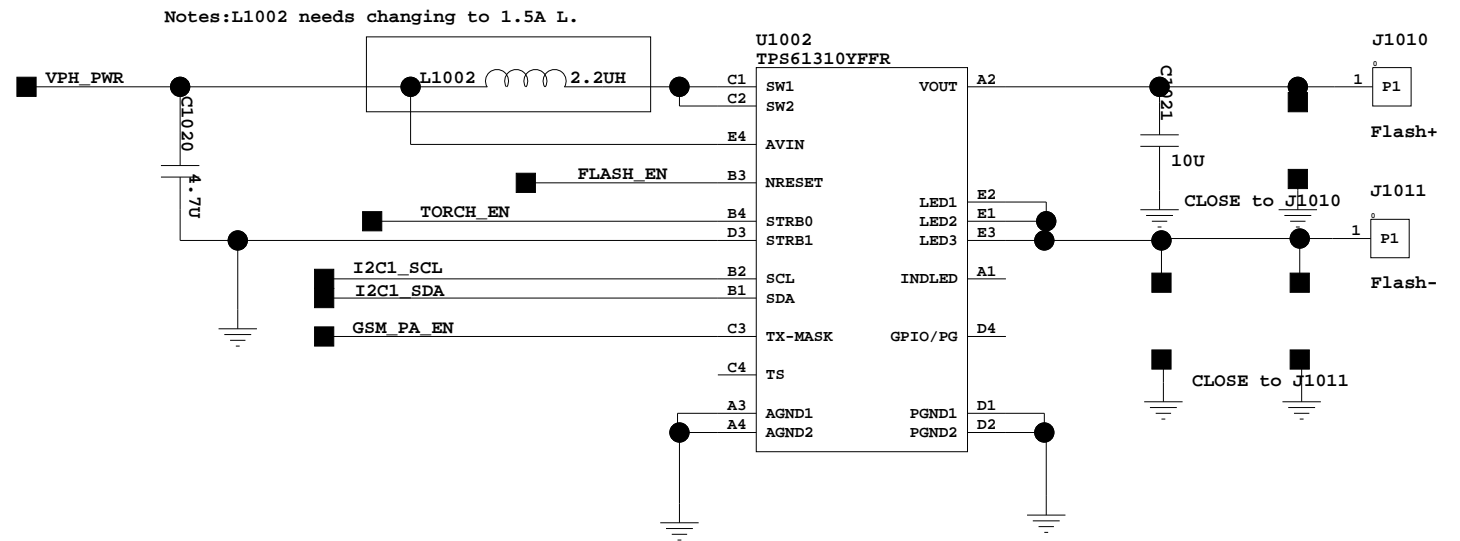
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## POWER CLOSE TO MAIN CAMERA



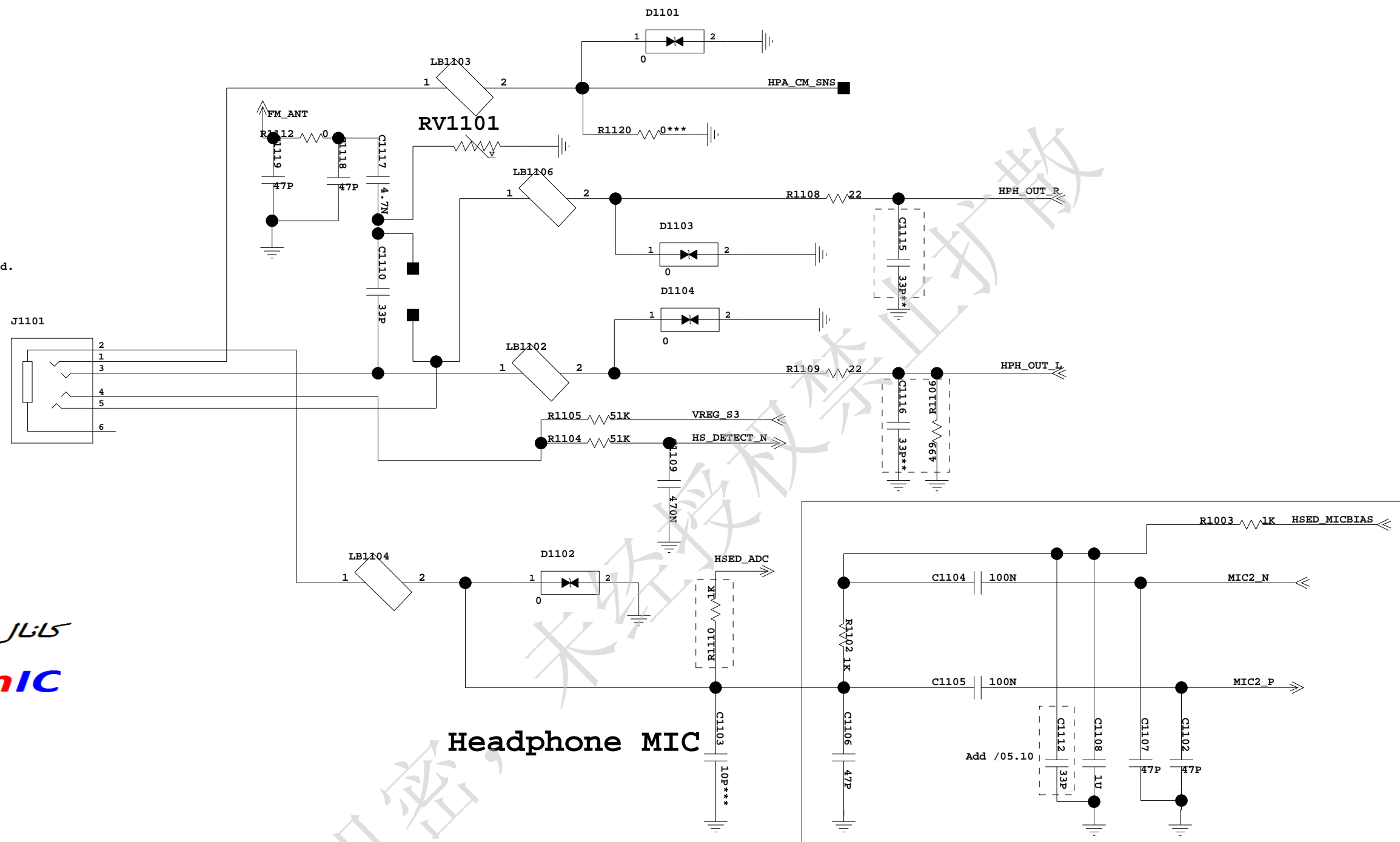
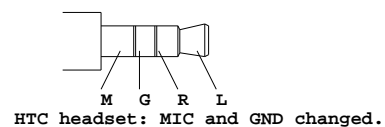
## CAMERA FLASH



The type and specification of the components refer to the BOM

DESIGNED	XIEFENG 00163838	HD2U8951M	00667074
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER
		A	03021PBV
			SHEET 10 OF 37
			HUAWEI TECH CO.,LTD.

# 11. 3.5 Headphone port



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Headphone MIC

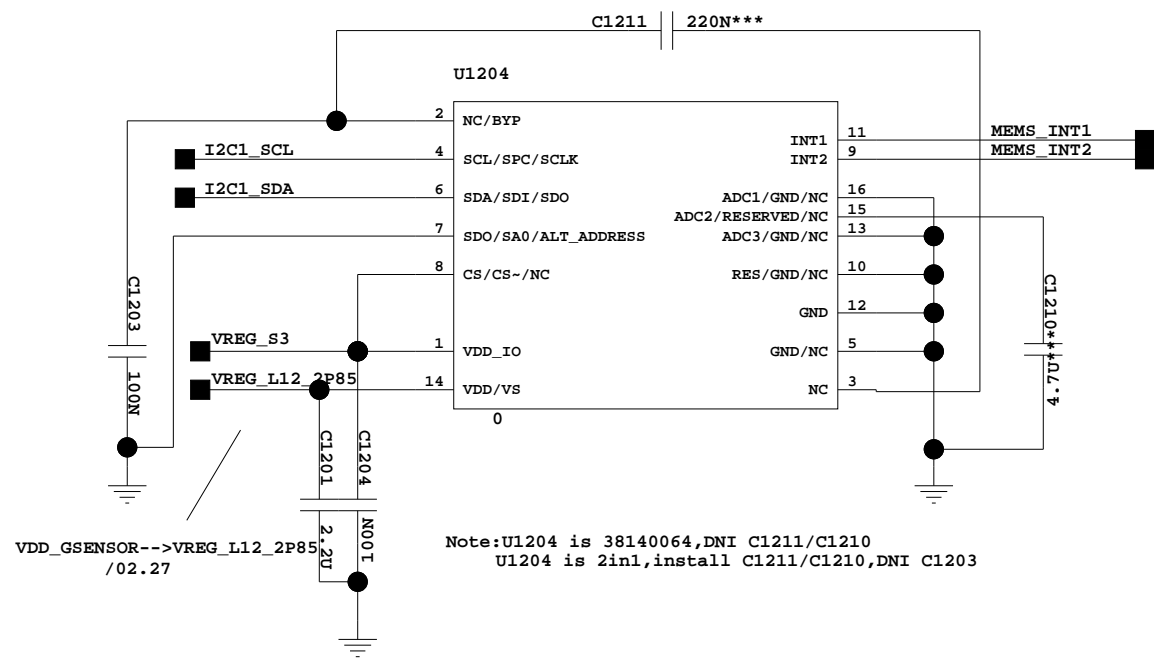
CLOSE to MSM7X27A

The type and specification of the components refer to the BOM

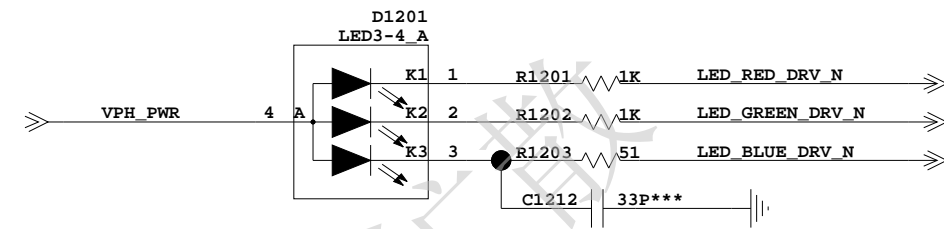
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				ECA NO	DATE
DESIGNED	HUYIXIAN 00143037	HD2U8951M		00667074	
REVIEWED	YAODAYI 00167997	VER	PART_NUMBER	SHEET 11 OF 37	
		A	03021PBV	HUAWAI TECH CO.,LTD.	

# 12. Sensor/Status indicator

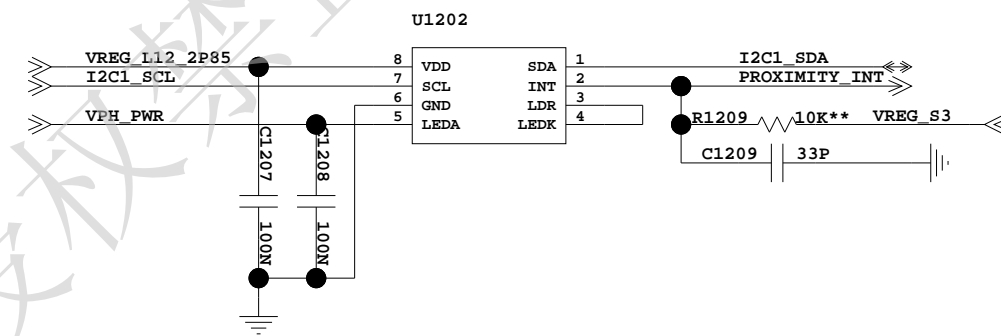
## Accelerometer



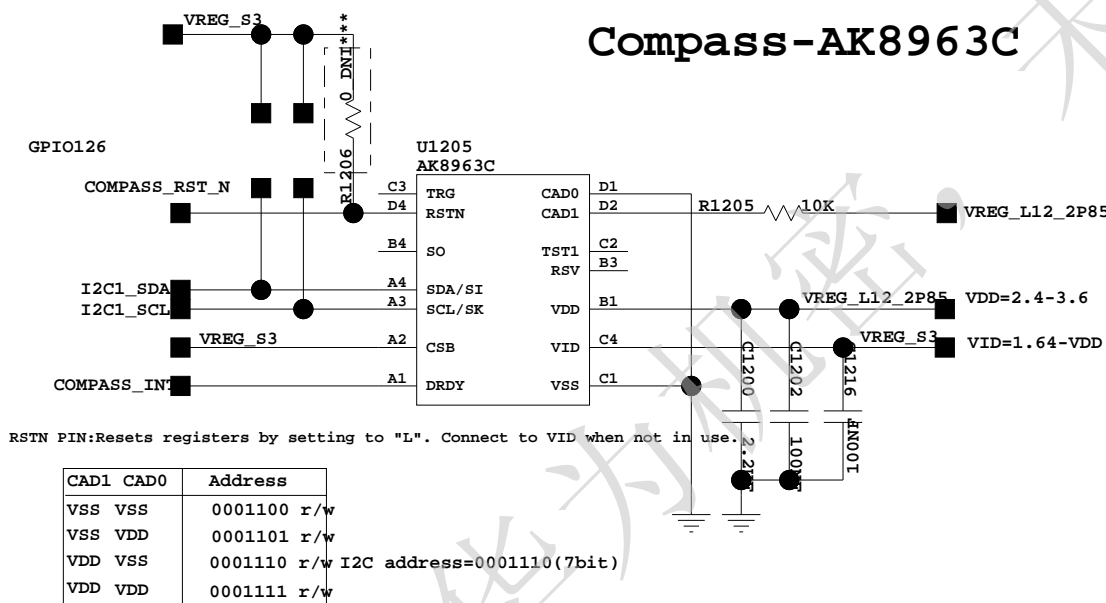
## Ambient Light and Proximity



## Status Indicator



## Compass-AK8963C



U1205: 38140024-->38140069

Compass: 38140024-->38140069 /03.06

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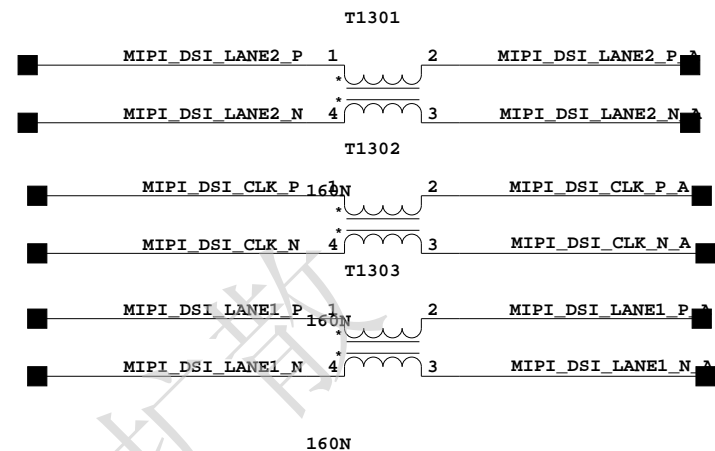
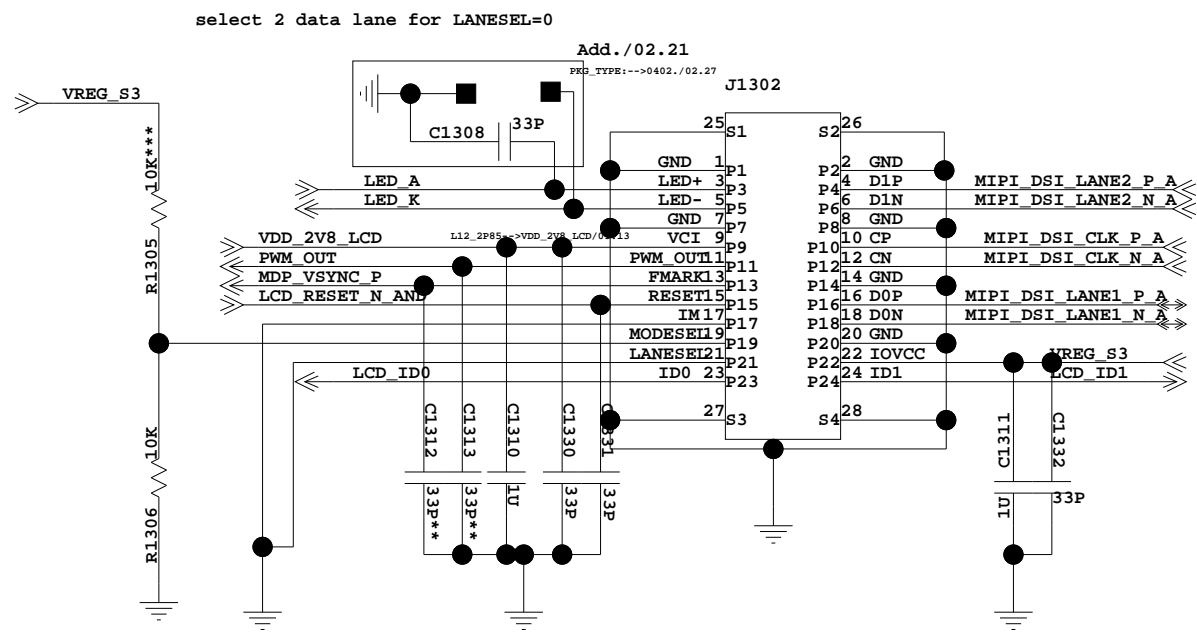
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The type and specification of the components refer to the BOM

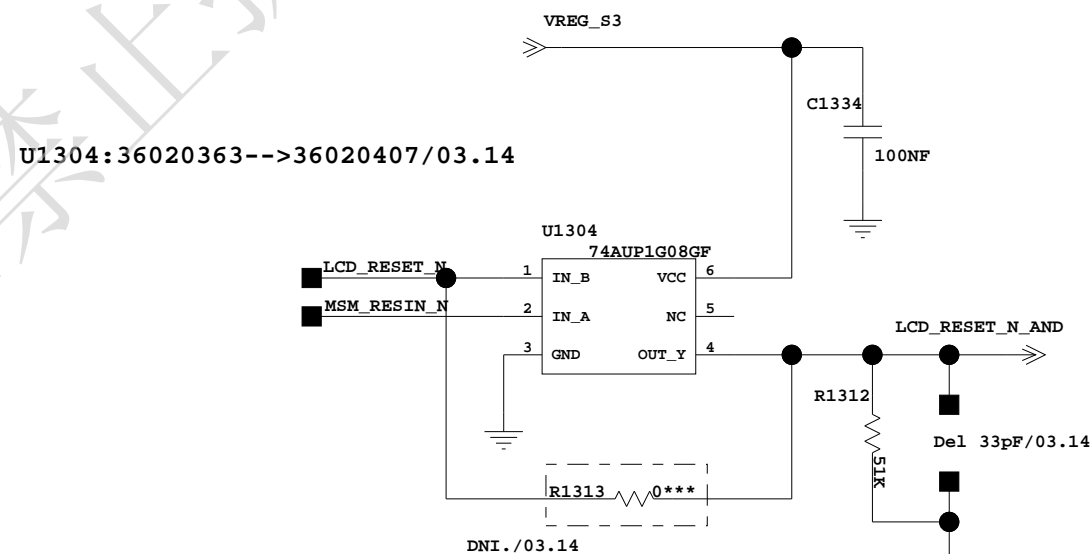
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				ECA NO	DATE
DESIGNED	XIEFENG 00163838	HD2U8951M		00000000	
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER	SHEET 12 OF 37	
		A	0302XXXX	HUAWAI TECH CO.,LTD.	

# 13. LCD interface & LCD backlight driver

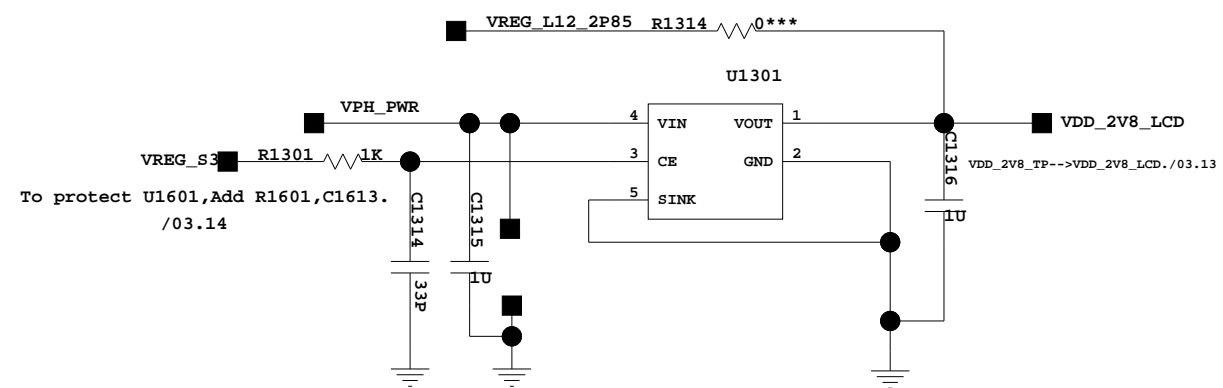
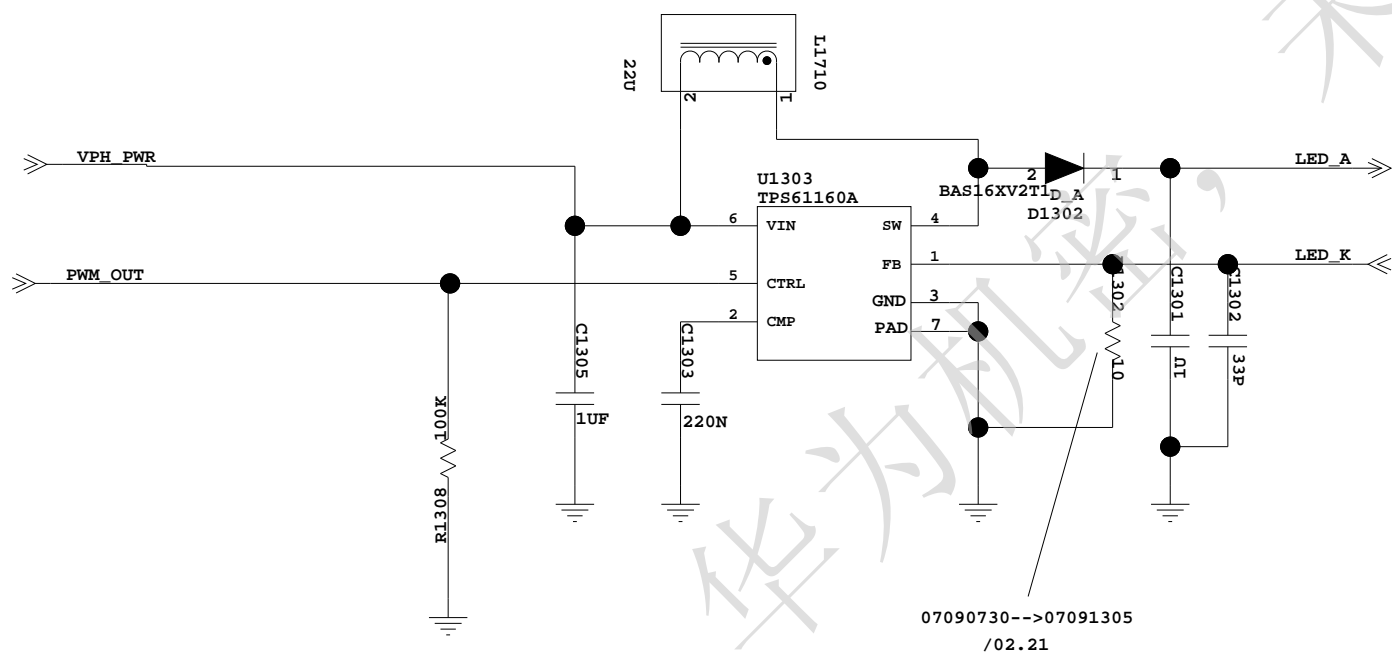
## LCD 24pinBTB(4.0' MIPI 2 LANE)



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## LCM backlight driver



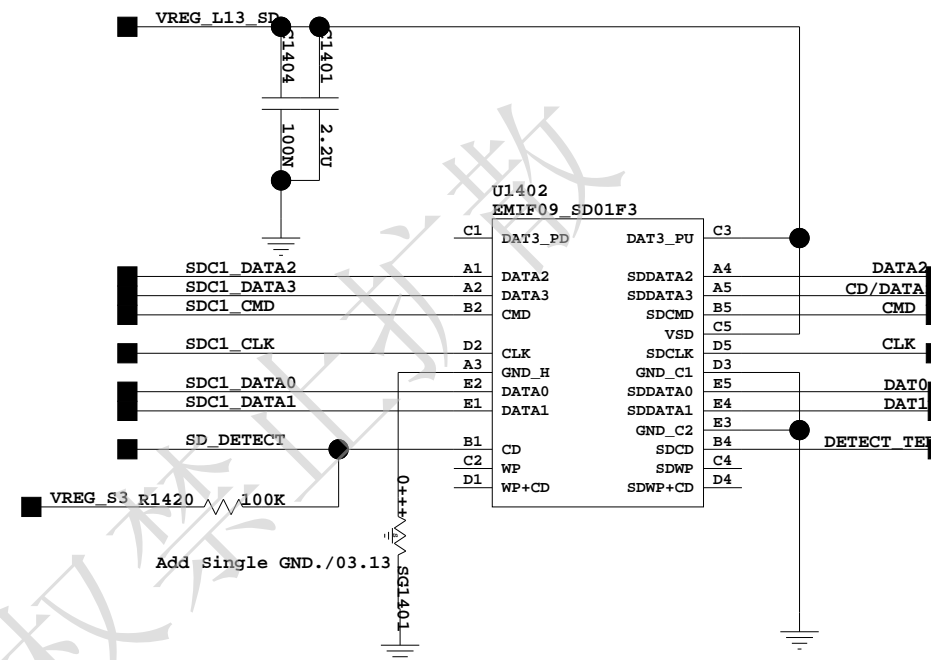
The type and specification of the components refer to the BOM

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				ECA NO	DATE
DESIGNED	GAORUI	HD2U8951M		00627113	
REVIEWED	ZHUJIANWEI	VER	PART_NUMBER	SHEET 13 OF 37	
		A	03020MAR	HUAWEI TECH CO.,LTD.	

# 14. SIM/TF card

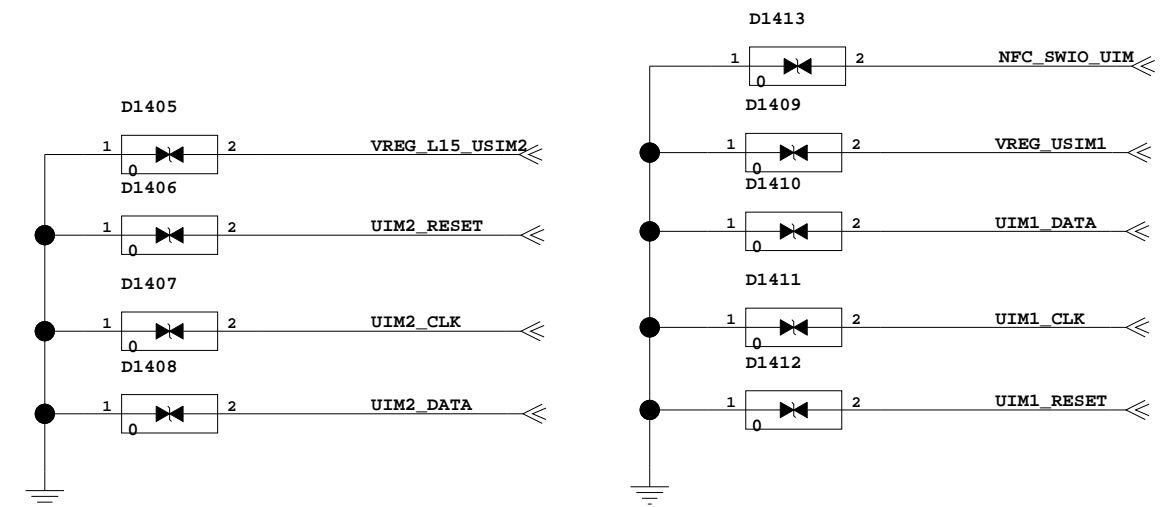
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## TF Card



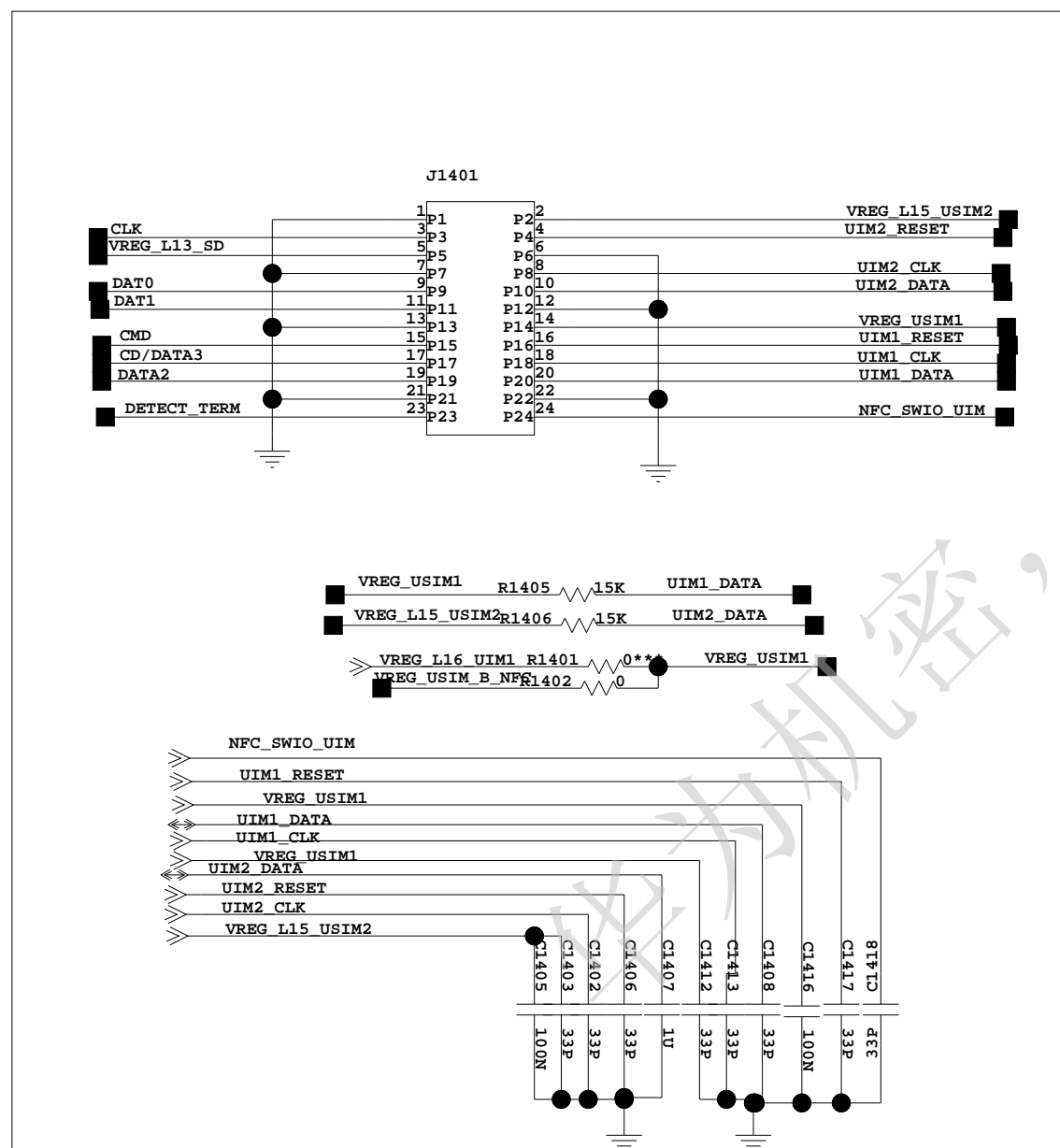
if SD\_DETECT presents, PIN C3 should pull up  
else PIN C1 should pull down

## SIM Card ESD Protect



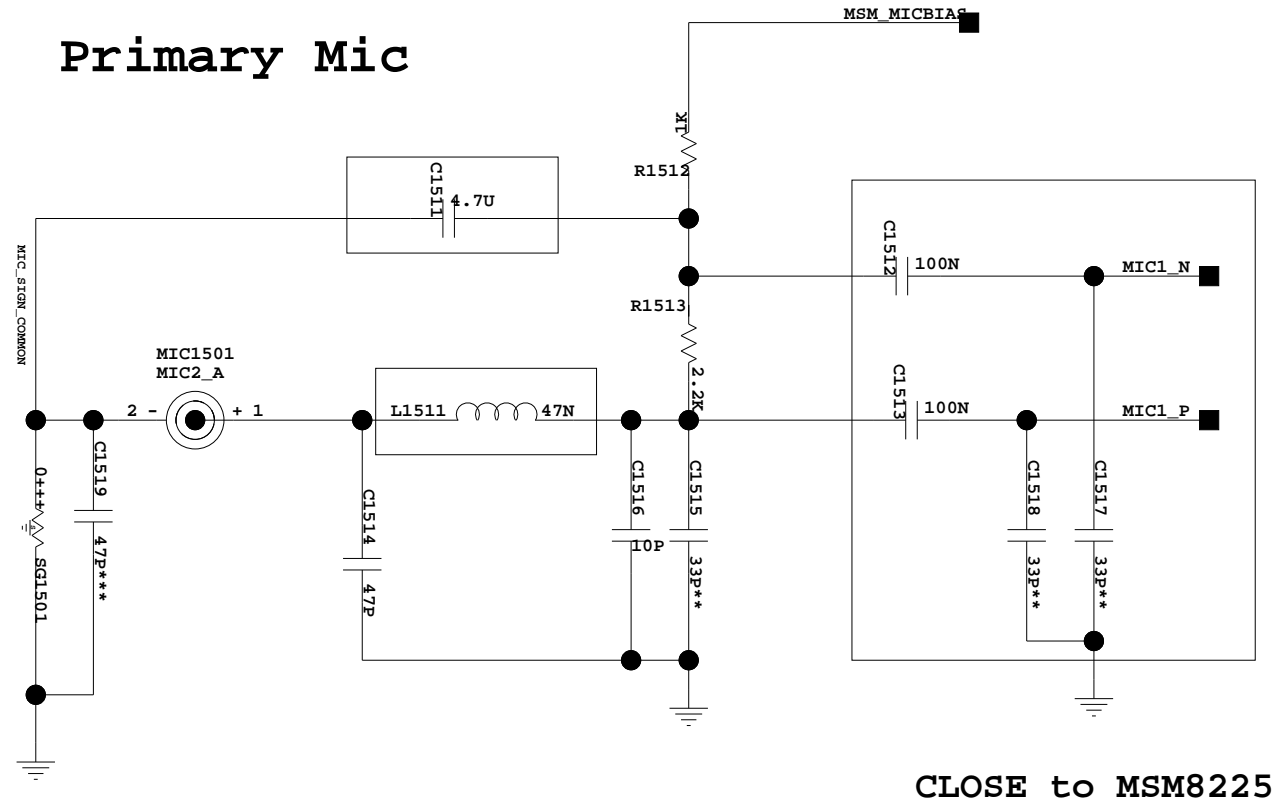
The type and specification of the components refer to the BOM

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DESIGNED	XIEFENG 00163838	HD2U8951M		00667074	
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER	SHEET 14 OF 37	
		A	03021PBV	HUAWAI TECH CO.,LTD.	

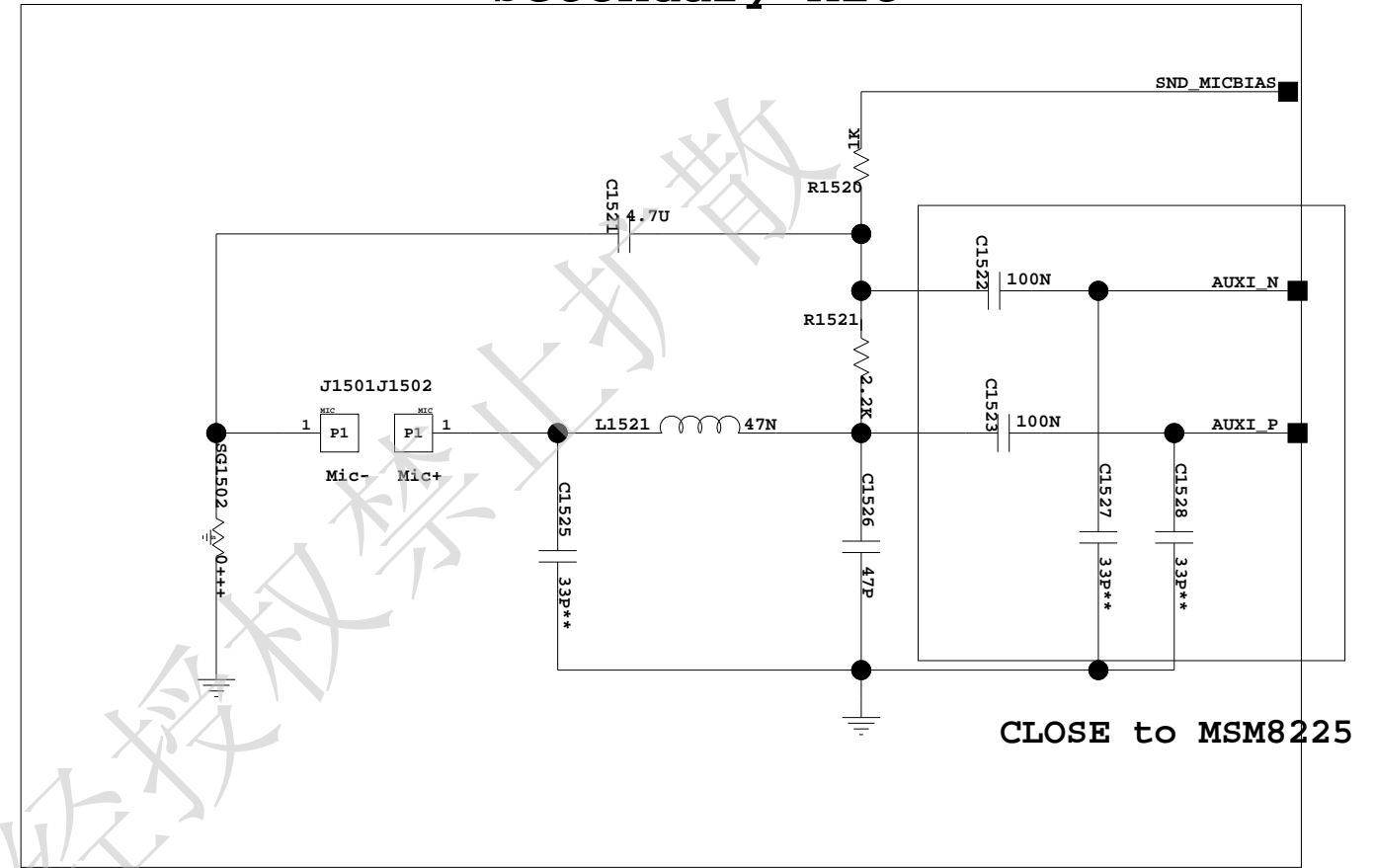


# 15. AUDIO/MIC

## Primary Mic

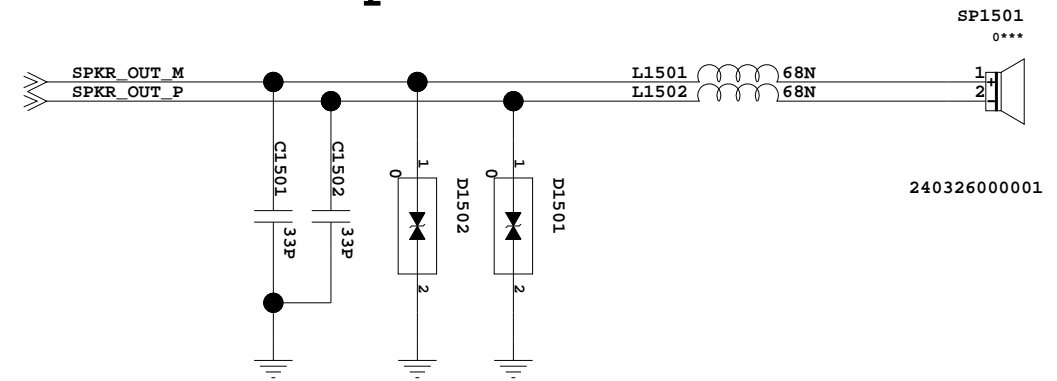


## Secondary Mic

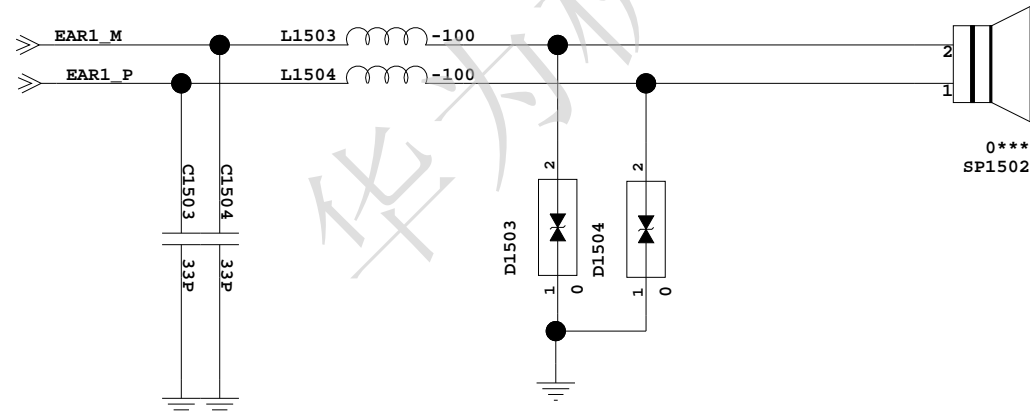


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## Speaker



For different vendor different wire direction

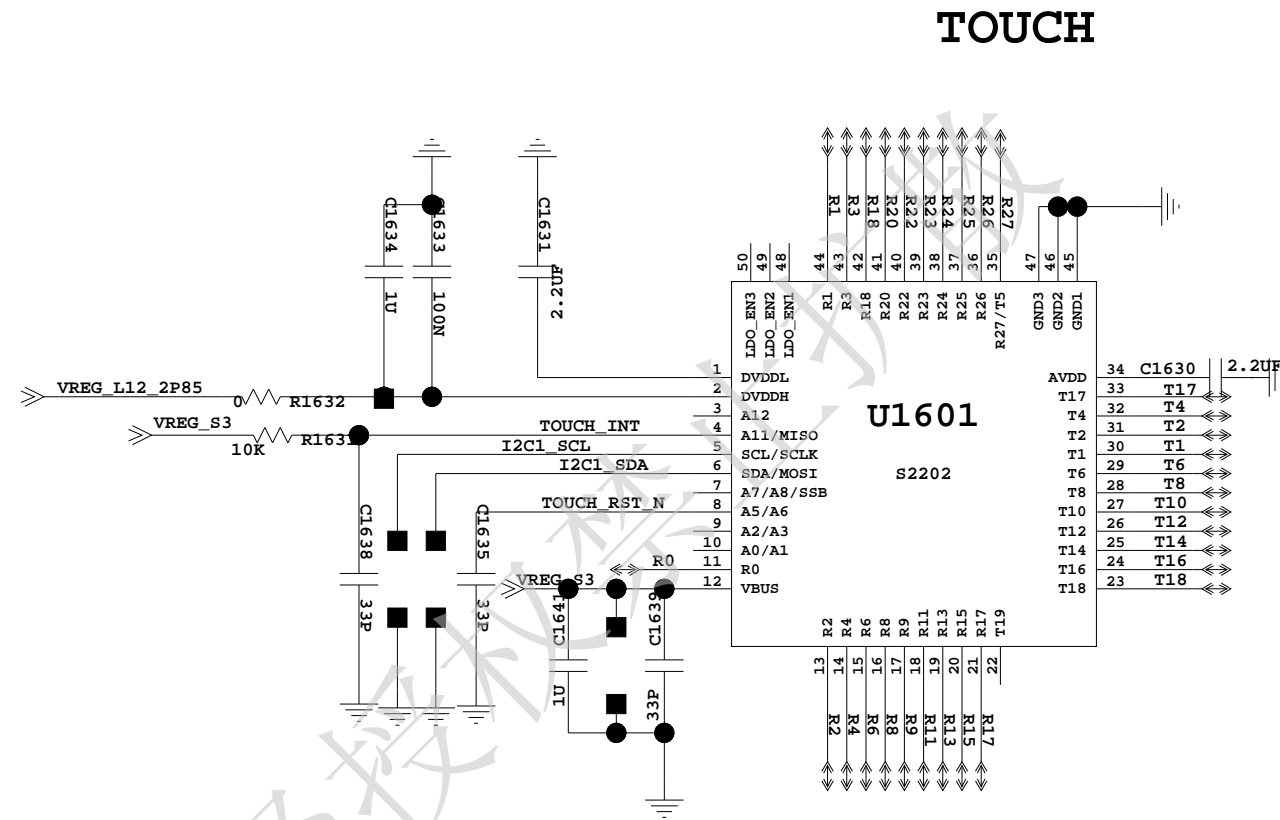
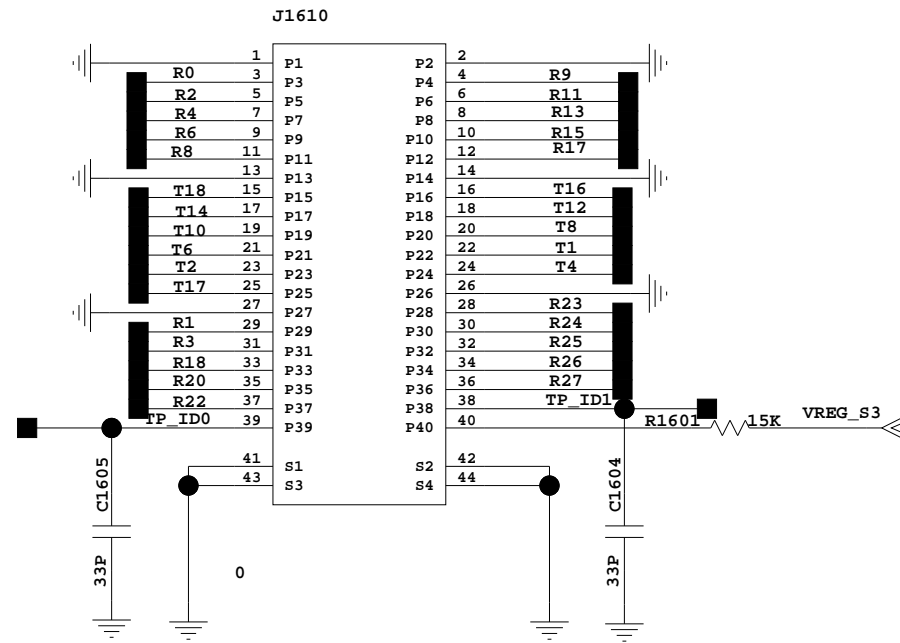


The type and specification of the components refer to the BOM

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				ECA NO	DATE
DESIGNED	HUYIXIAN 00143037	HD2U8951M		00667074	
REVIEWED	YAODAYI 00167997	VER	PART_NUMBER	SHEET 15 OF 37	
		A	03021PBV	HUAWEI TECH CO.,LTD.	

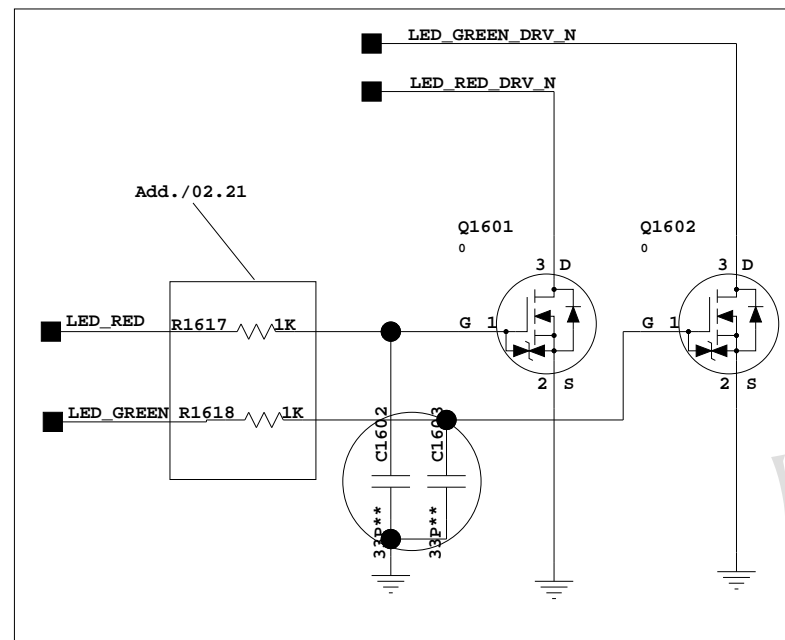
# 16. Keypad/Touch/indicator

TP Connector circuit should be carefully reviewed for every project

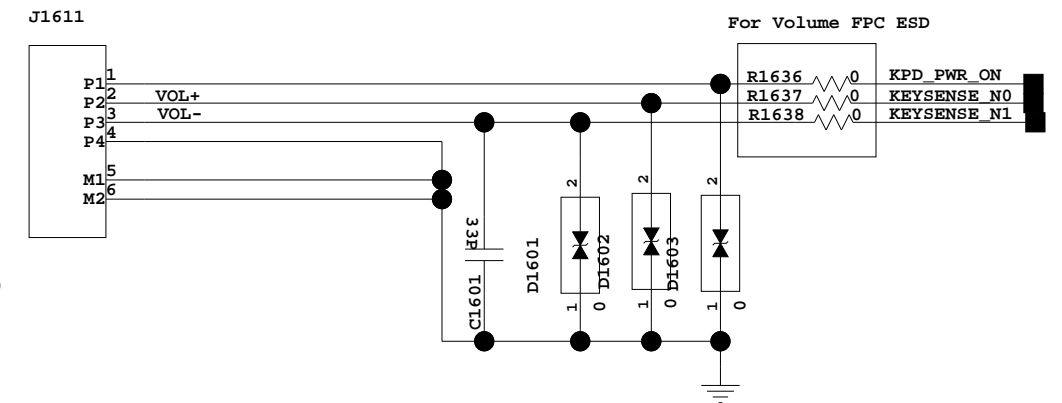
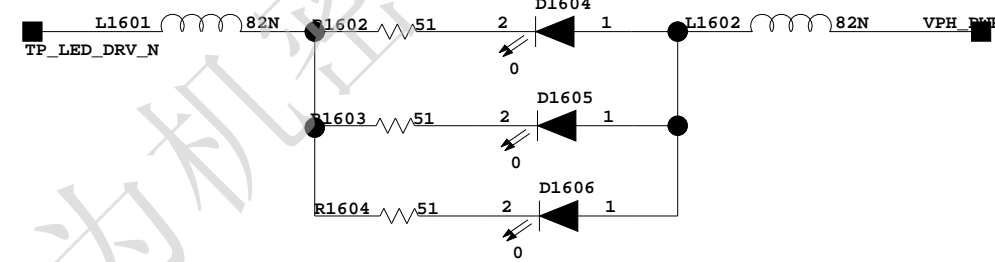


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## Volume&Power Key



Dual SIM card, status indicator  
For signal SIM card, R1617, R1618, R1605, R1606, Q1601, Q1602 DNI



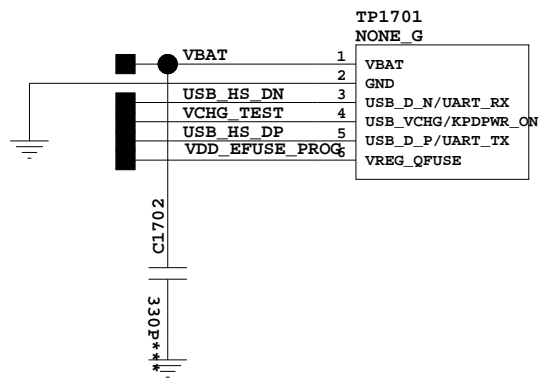
The type and specification of the components refer to the BOM

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DESIGNED	XIEFENG 00163838			00667074	
REVIEWED	CDMA ANDROID GROUP			00667074	
		VER	PART_NUMBER	SHEET 16 OF 37	
		A	03021PBV	HUAWEI TECH CO.,LTD.	

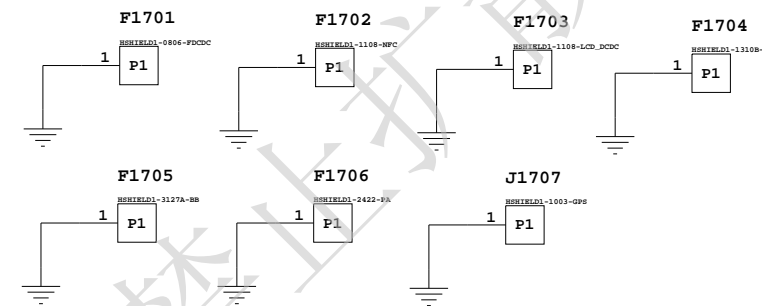


# 17. Test Points/JTAG/Shields

## TEST POINT for CT and BT

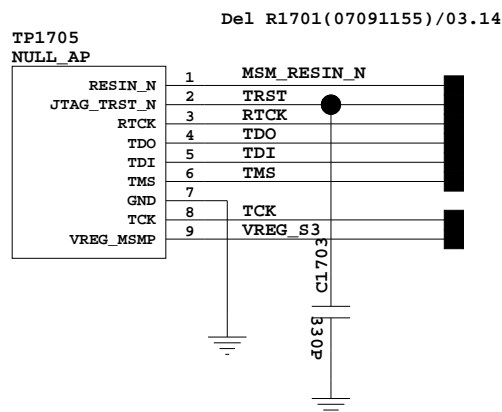


## Shielding

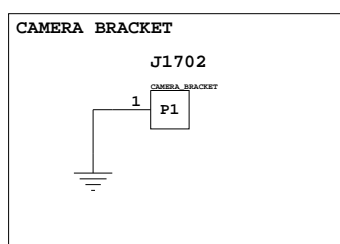
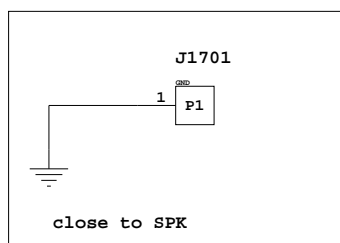


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## JTAG



NOTES: place PS\_HOLD near JTAG



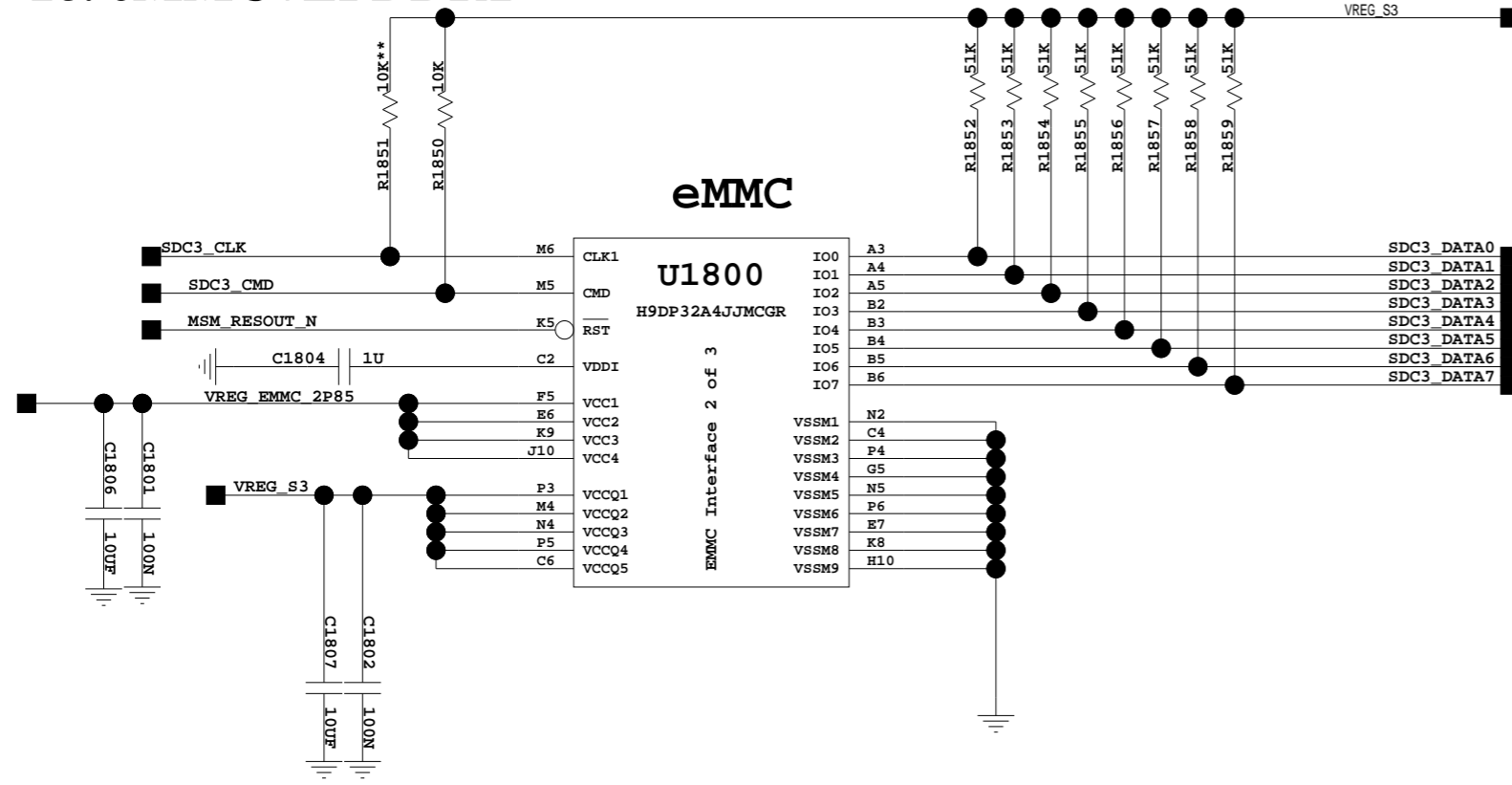
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华为机密，

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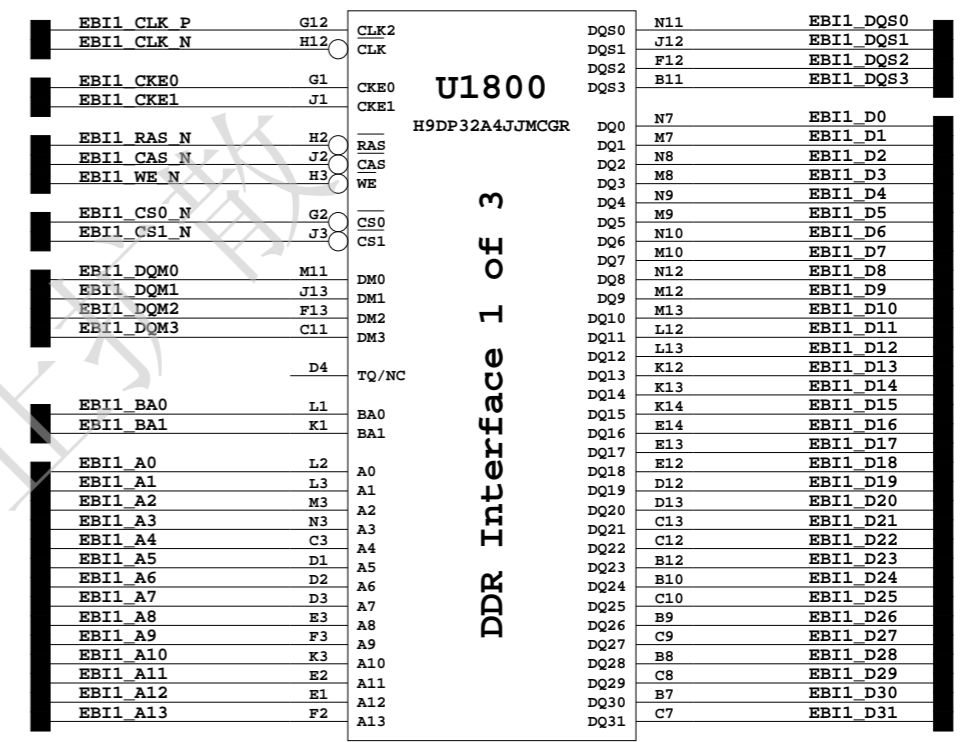
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	XIEFENG 00163838	HD2U8951M		00667074	
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER	SHEET 17 OF 37	
		A	03021PBV	HUAWAI TECH CO.,LTD.	

# 18. eMMC+LPDDR1



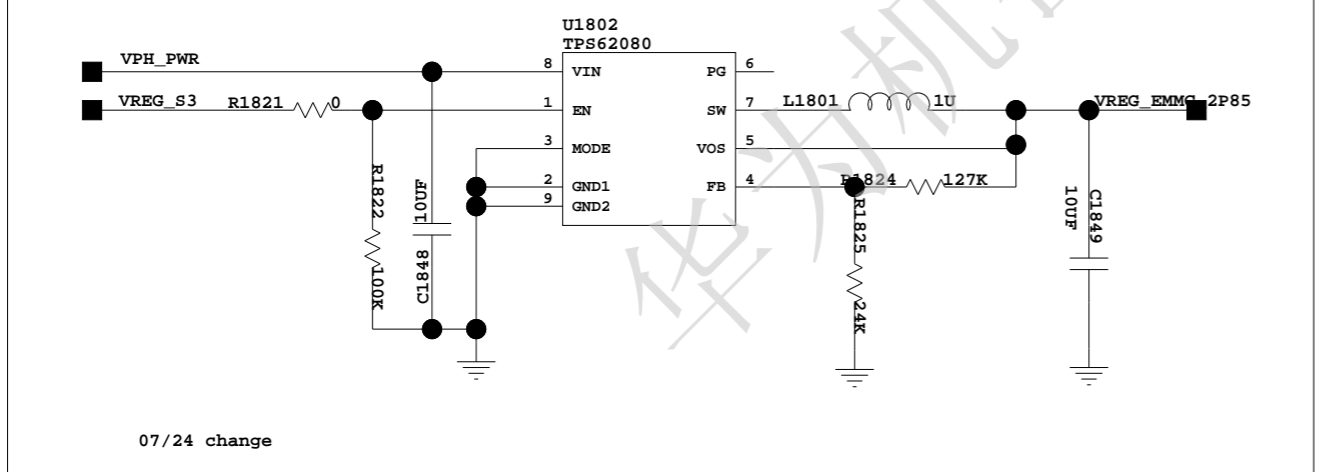
# LPDDR1



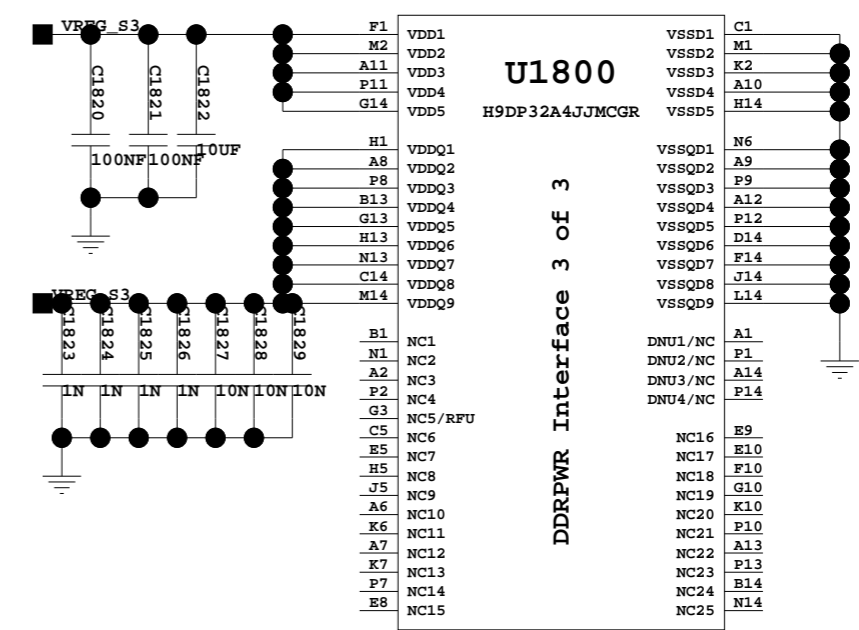
COPY U9800/ R1825 is recommend < 40K

$$V_{OUT} = 0.45V * (1 + R_{1824} / R_{1825})$$

VOUT	VALUE	R1824
2.831V	127K	07090993



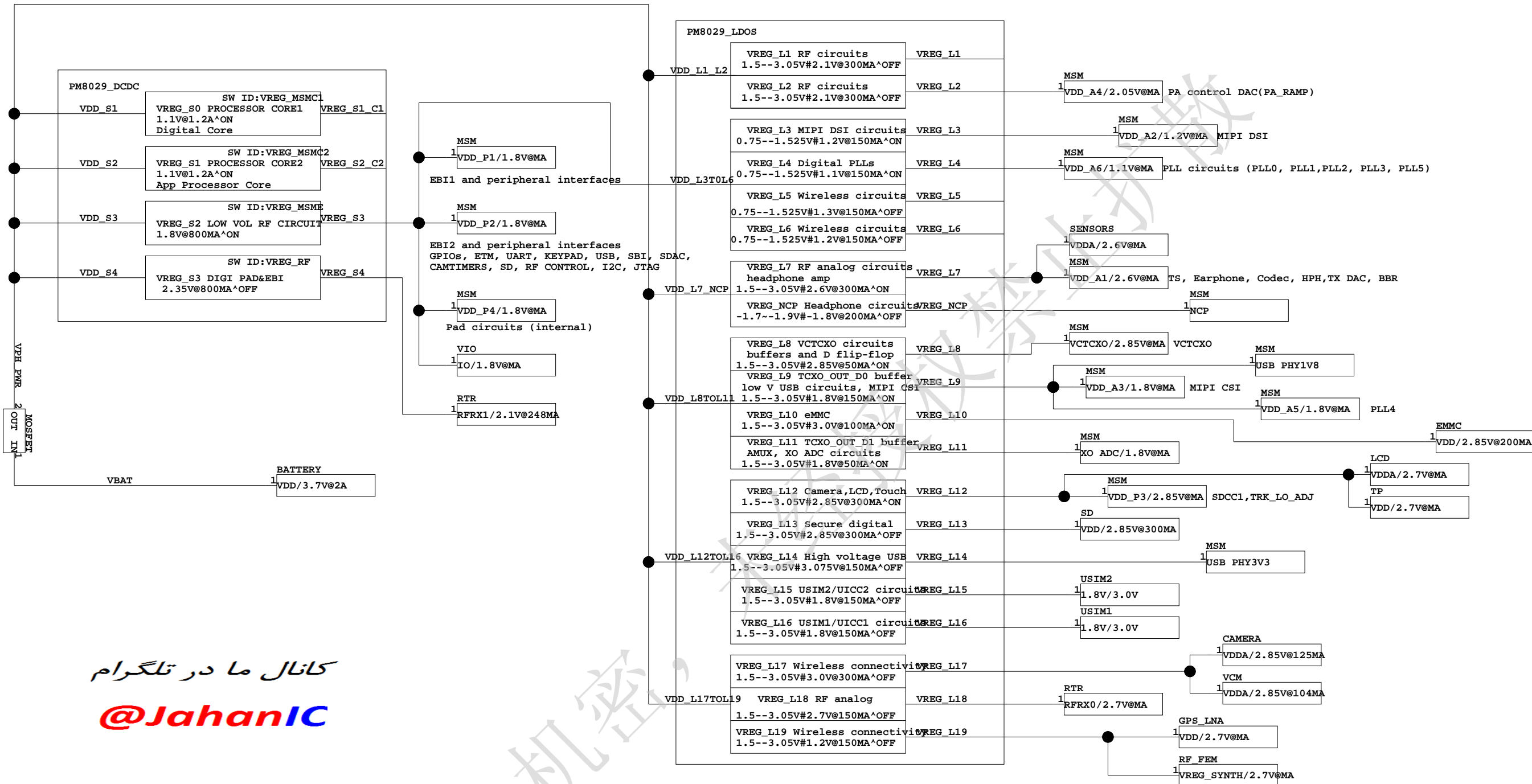
07/24 change



The type and specification of the components refer to the BOM

				NA	2010-9-20
				ECA NO	DATE
DESIGNED	LIYOU/54531	HD2U8951M		00595681	
REVIEWED	LIYOU/54531	VER	PART_NUMBER	SHEET 18 OF 37	
		D	03020XKD	HUAWEI TECH CO.,LTD.	

# 19. Power Map

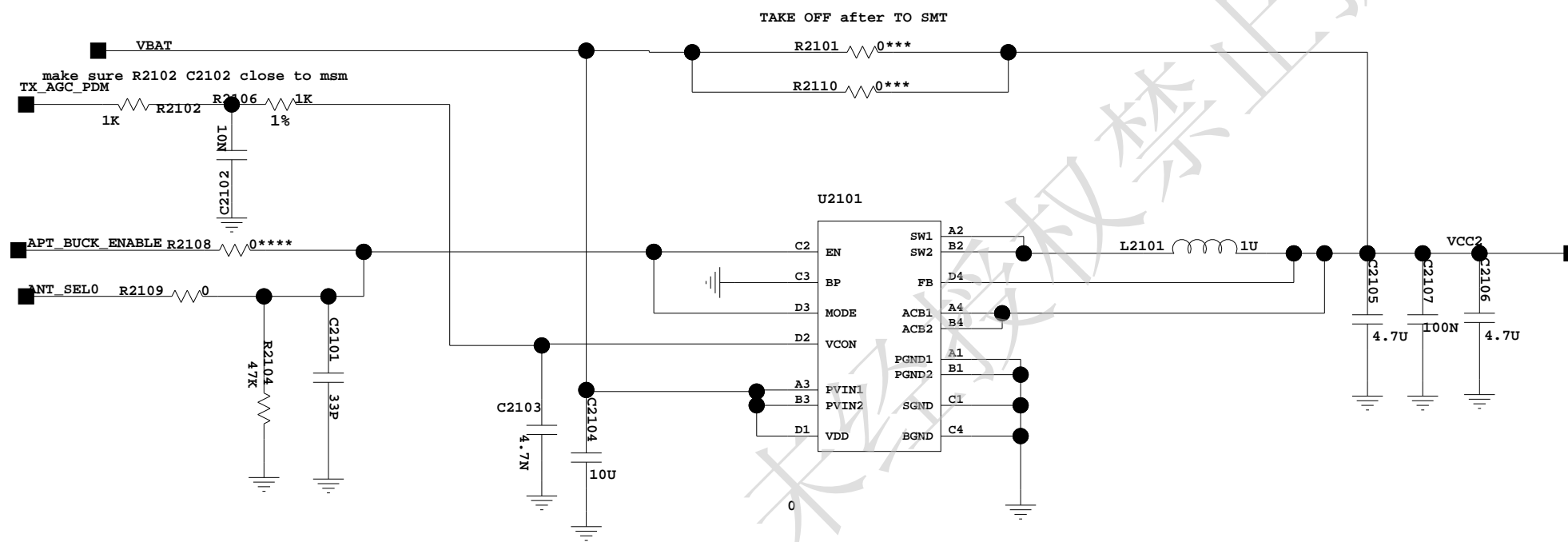


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The type and specification of the components refer to the BOM

DESIGNED	XIEFENG 00163838	HD2U8951M	00604032
REVIEWED	CDMA ANDROID GROUP	VER	PART_NUMBER
		B	03020WGA
			SHEET 19 OF 35
			HUAWEI TECH CO.,LTD.

# 21. DCDC FOR RF PA

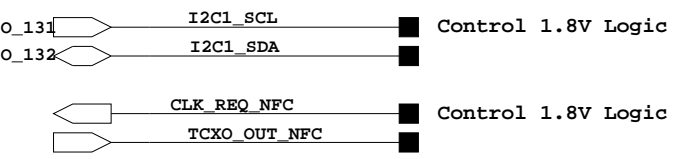
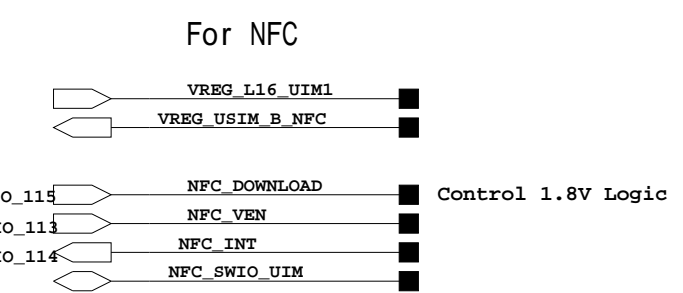
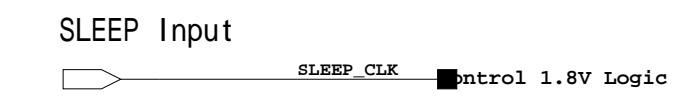
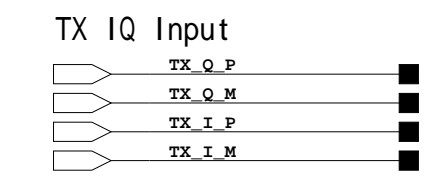
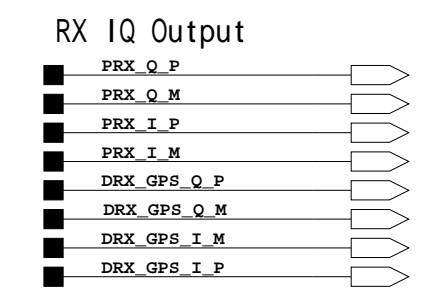
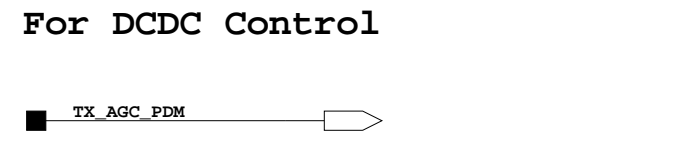
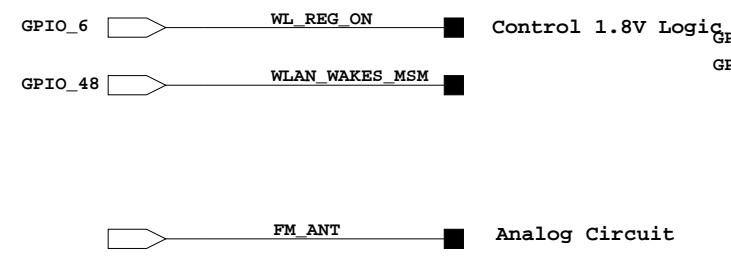
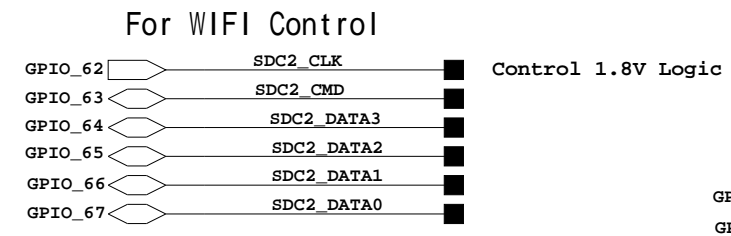
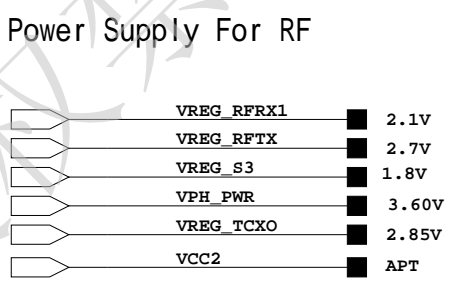
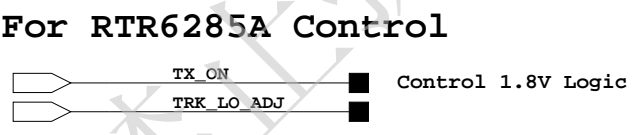
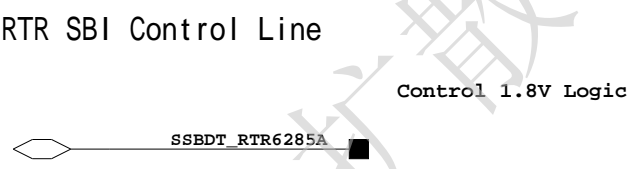
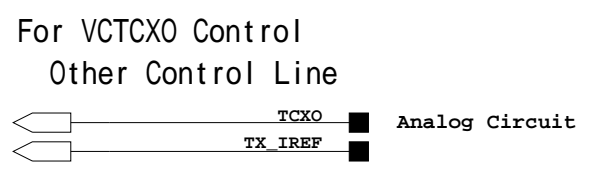
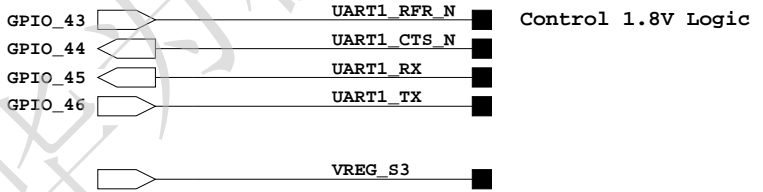
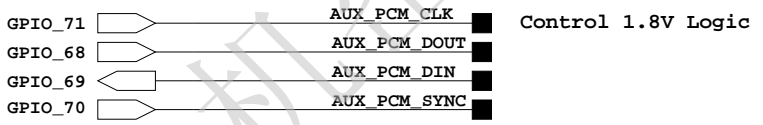
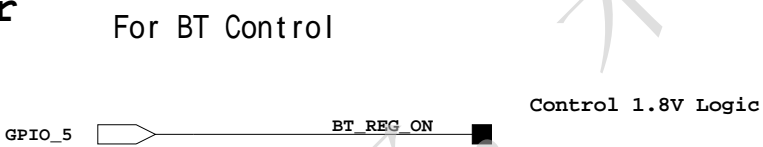
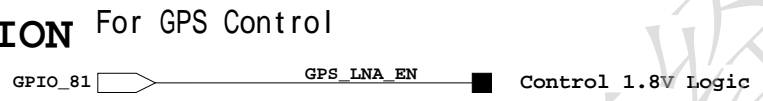
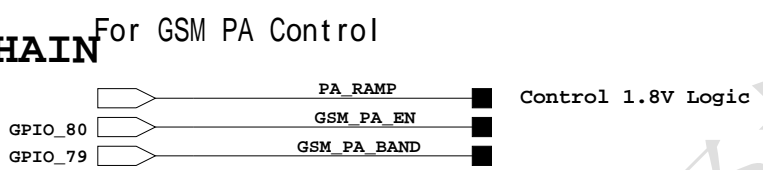
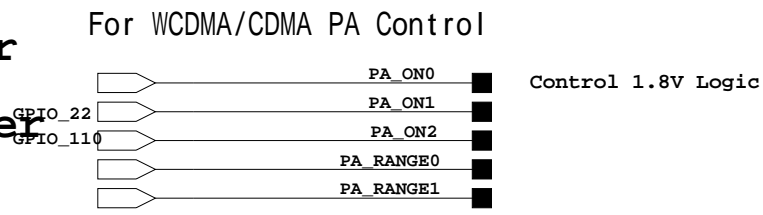
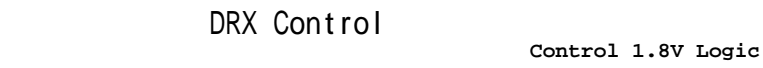
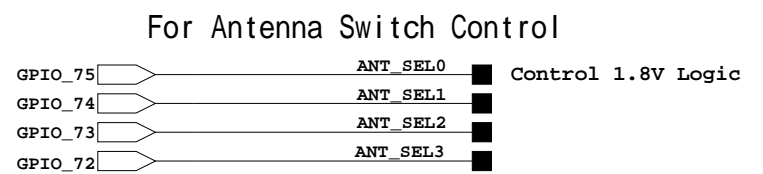


The type and specification of the components refer to the BOM

				NA	2010-7-30
				ECA NO	DATE
DESIGNED	LIYOU/54531	HD2U8951M		00604032	
REVIEWED	LIYOU/54531	VER	PART_NUMBER	SHEET 20 OF 37	
		B	03020WGA	HUAWEI TECH CO.,LTD.	

# 23. RF INPUT OUPUT PORTS

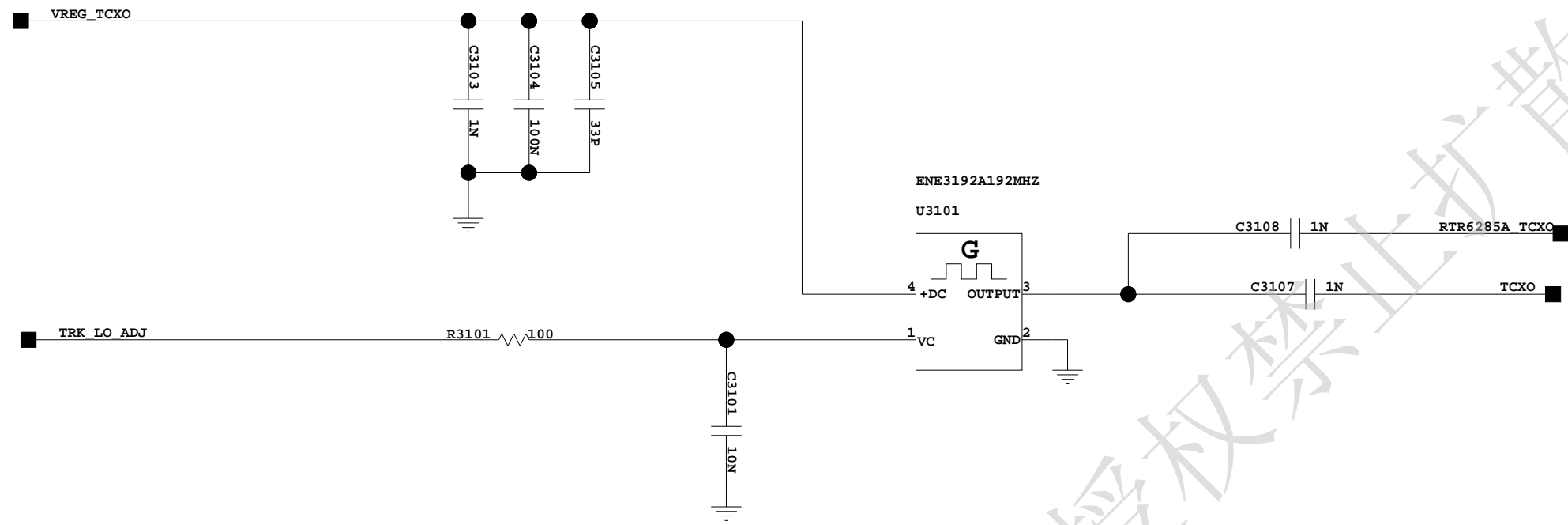
- 20. DCDC For RF PA
- 21. RF Input Output Ports
- 22. 19.2MHz VCTCXO
- 23. Antenna Switchplexer
- 24. WCDMA IMT Power Amplifier
- 25. WCDMA CELL Power Amplifier
- 26. GSM Quad\_band\_PA
- 27. RX MATCHING CIRCUIT
- 28. UMTS IMT RX INTERSTAGE CHAIN
- 29. RTR6285A CIRCUIT
- 30. RTR6285A POWER DISTRIBUTION
- 31. GPS
- 32. WCDMA PCS Power Amplifier
- 33. NA
- 34. NFC
- 35. BT FM WCN2243
- 36. AR6005 BB
- 37. AR6005 RF



The type and specification of the components refer to the BOM

				NA	2007-12-28
				ECA NO	DATE
DESIGNED	ZHANGWENFU 00135043	HD2U8951M	00586863		
REVIEWED					
	RF TMG	VER	PART_NUMBER	SHEET 21 OF 37	
		A	03020WKU	HUAWEI TECH CO.,LTD.	

# 23. 19.2MHz VCTCXO/APT DCDC



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 华为机密

The type and specification of the components refer to the BOM

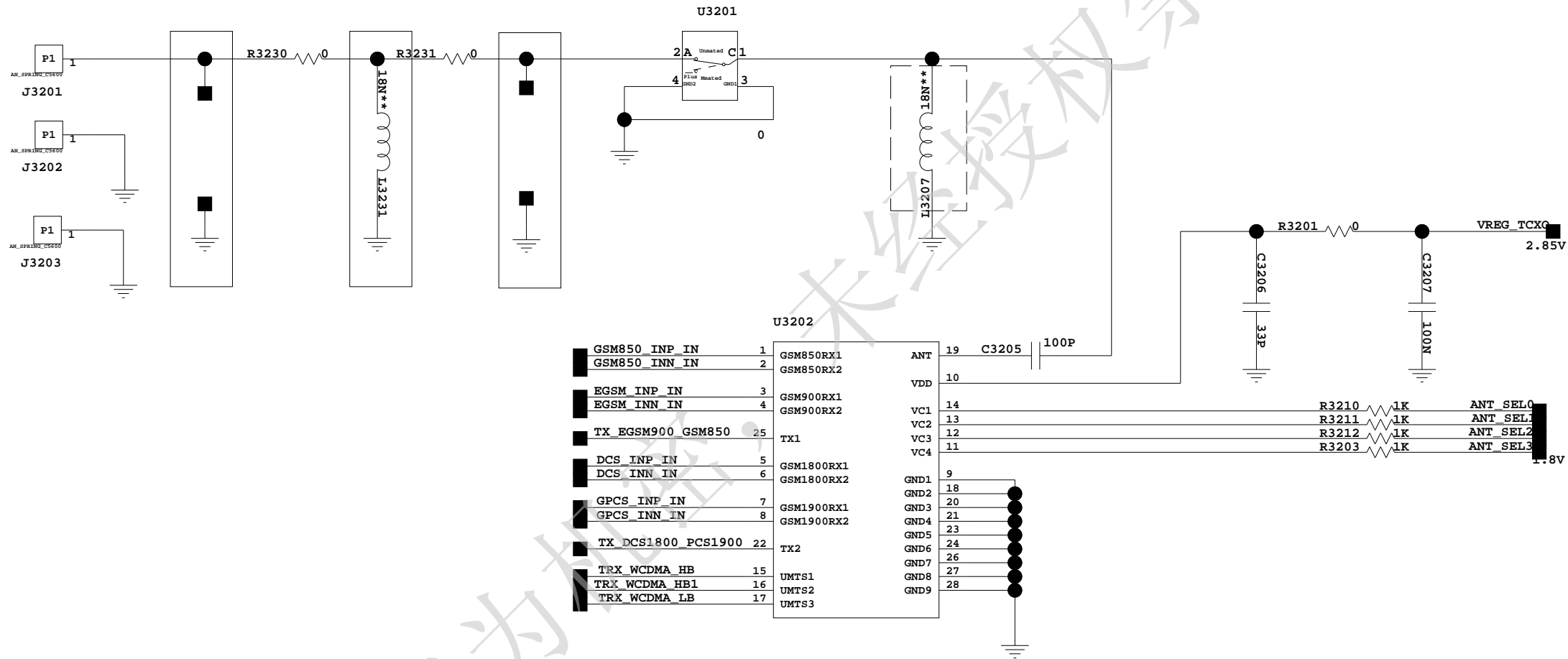
				NA	
				ECA NO	DATE
DESIGNED	FANLEI 00132967	HD2U8951M		6711221_SCH4ZH	
REVIEWED	RF TMG				
		VER	PART_NUMBER	SHEET 22 OF 39	
		A	03021GTT	HUAWEI TECH CO.,LTD.	

# 32. Antenna Switchplexer

MODE	TX FREQ	RX FREQ	PWR CLASS	PWR
GSM850	824-849	869-894	4	33
GSM900	880-915	925-960	4	33
GSML800	1710-1785	1805-1880	1	30
GSML900	1850-1910	1930-1990	1	30
WCDMA IMT	1920-1980	2110-2170	3	24
WCDMA PCS	1850-1910	1930-1990	3	24
WCDMA CELL	824-849	869-894	3	24

		ANT_SEL0	ANT_SEL1	ANT_SEL2	ANT_SEL3
GCELL/EGSM_TX	GSM850/900 TX	1	1	0	0
DCS/PCS_TX	GSM1800/1900 TX	1	0	0	0
DCS_RX	GSM1800 RX	0	0	1	0
PCS_RX	GSM1900 RX	0	0	0	0
EGSM_RX	GSM900 RX	0	1	0	0
GCELL_RX/CUT	GSM850 RX	0	1	1	0
UMTS1		1	0	1	0
UMTS2		1	0	1	1
UMTS3		1	1	1	0

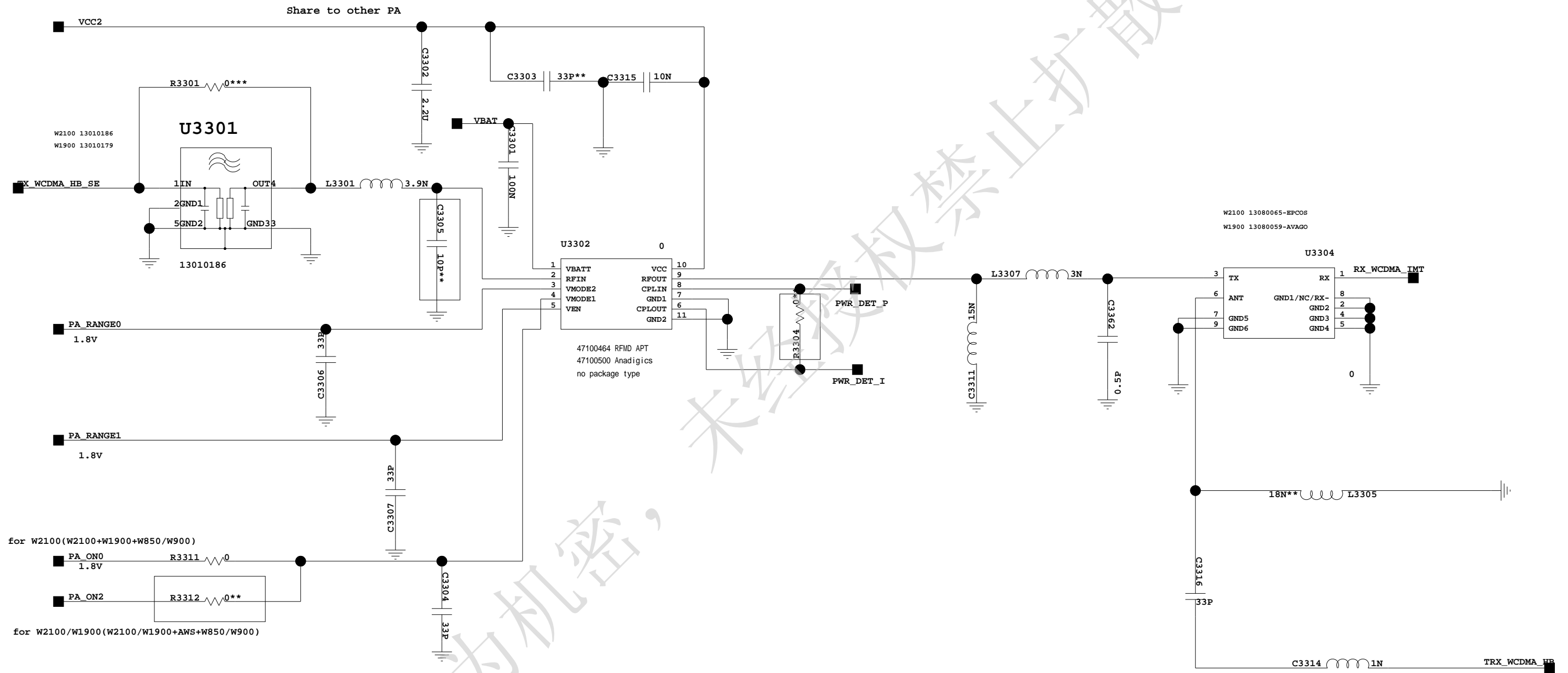
ant spring:51621024, need Pi+L match  
coaxial connector:14240060



The type and specification of the components refer to the BOM

				NA
			ECA NO	DATE
DESIGNED	ZHANGWENFU 00135043	HD2U8951M	00586863	
REVIEWED				
	RF TMG	VER	PART_NUMBER	SHEET 23 OF 37
		A	03020WKU	HUAWEI TECH CO.,LTD.

# 26. WCDMA IMT Power Amplifier



for W2100(W2100+W1900+W850/W900)

PA\_ON0 1.8V

PA\_ON2

for W2100/W1900(W2100/W1900+AWS+W850/W900)

WCDMA_PA_ON0/ON1	PA STATE
H	ON
L	OFF

PA_VMODE0	PA_VMODE1	MODE
L	L	High Power
L	H	Middle Power
H	H	Low Power

WCDMA_PA_ON0	W2100
WCDMA_PA_ON1	W1900
WCDMA_PA_ON2	W850/900

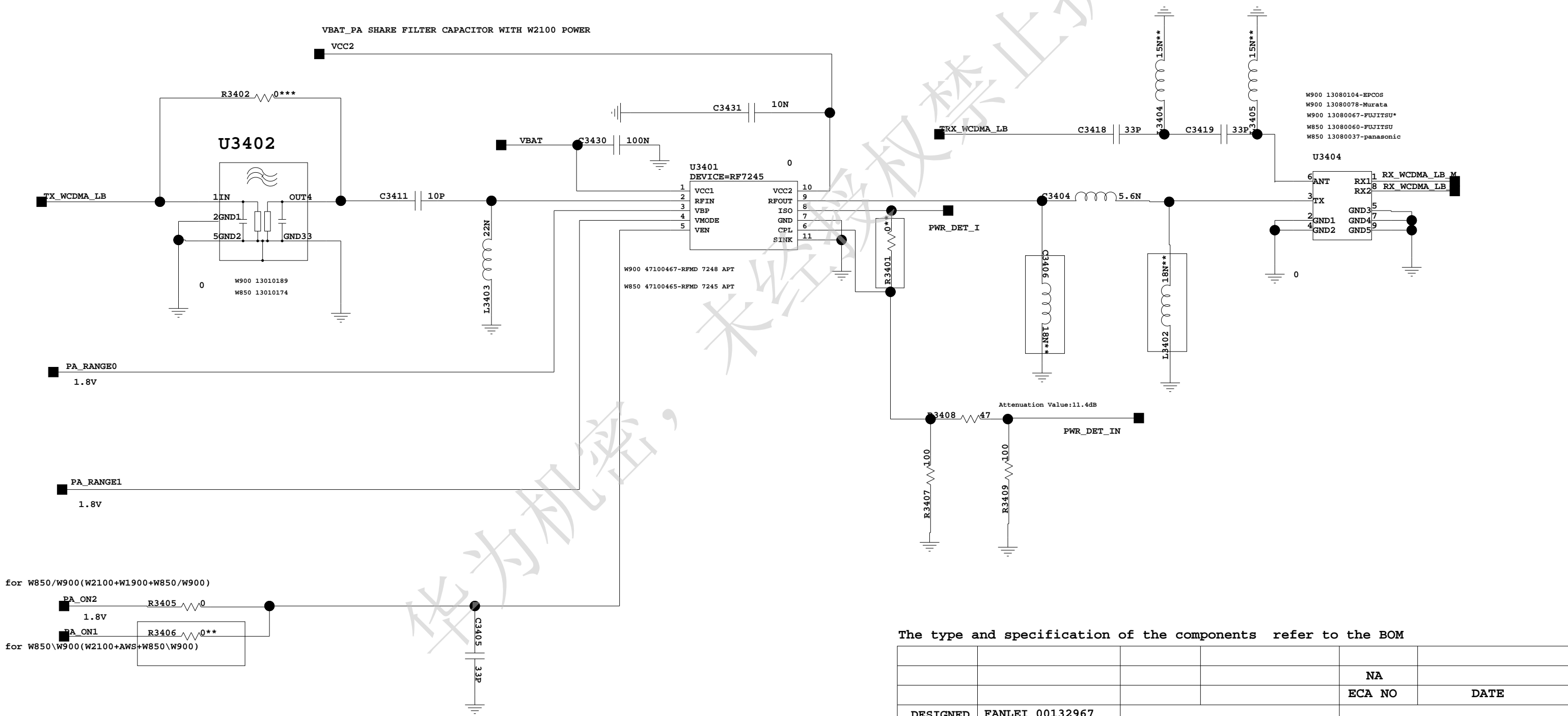
The type and specification of the components refer to the BOM

DESIGNED	FANLEI 00132967	HD2U8951M	6711221_SCH4ZH
REVIEWED	RF TMG	VER	PART_NUMBER
		A	03021GTT
			SHEET 24 OF 37
			HUAWEI TECH CO.,LTD.



# 27. WCDMA CELL Power Amplifier

	W850		W900	
	Part number	CODE	Part number	CODE
U3401	ACPM_7311_TR1	47100231	ACPM_7371_TR1	47100187
U3402	B9425	13010174	SAFEB897MAL0F00R14	13010154
U3404	B7640	13080035	B7681	13080029



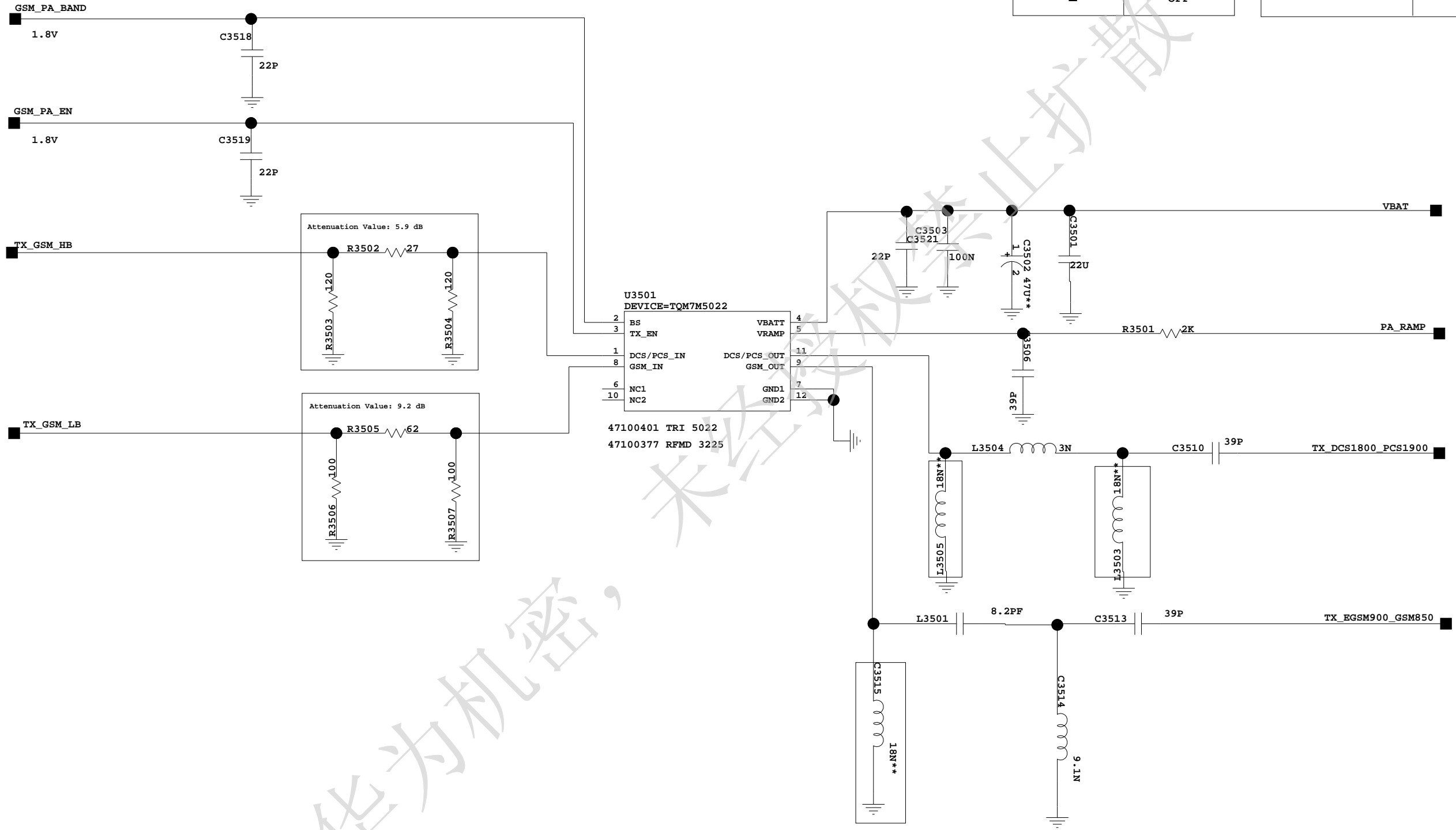
The type and specification of the components refer to the BOM

DESIGNED	FANLEI 00132967	HD2U8951M	6711221_SCH4ZH
REVIEWED	RF TMG	VER	PART_NUMBER
		A	03021GTT
			SHEET 25 OF 37
			HUAWEI TECH CO.,LTD.

# 28. GSM Quad\_band\_PA

GSM_PA_EN	PA
H	ON
L	OFF

GSM_PA_BAND	MODE
L	LOW BAND
H	HIGH BAND



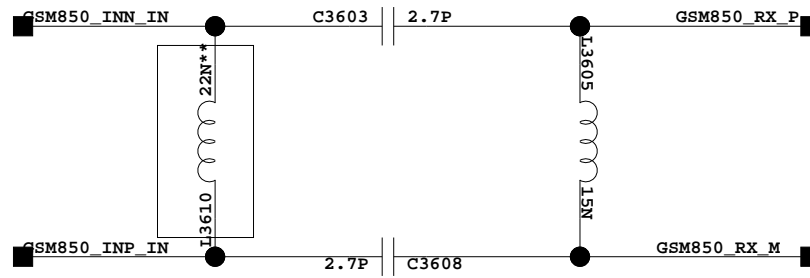
The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	FANLEI 00132967	HD2U8951M		6711221_SCH4ZH	
REVIEWED	RF TMG	VER	PART_NUMBER	SHEET	26 OF 37
		A	03021GTT	HUAWAI TECH CO.,LTD.	

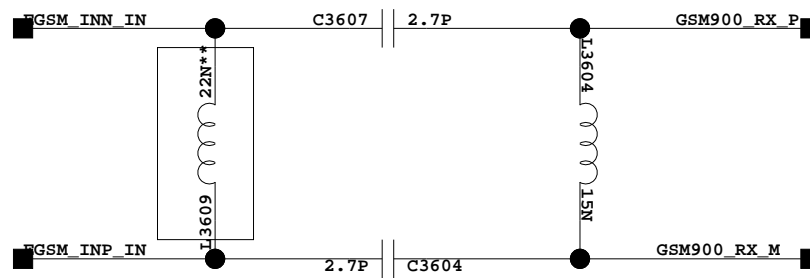
华为机密

# 29. RX MATCHING CIRCUIT

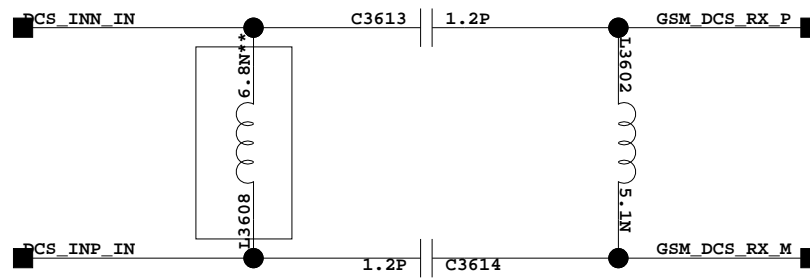
## GSM850 RX MATCHING



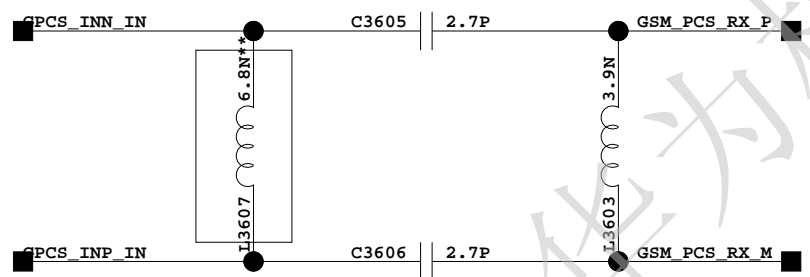
## GSM900 RX MATCHING



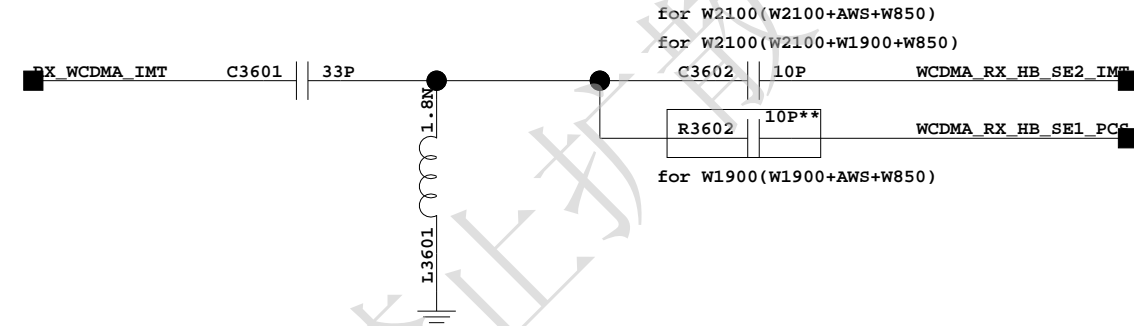
## GSM1800 RX MATCHING



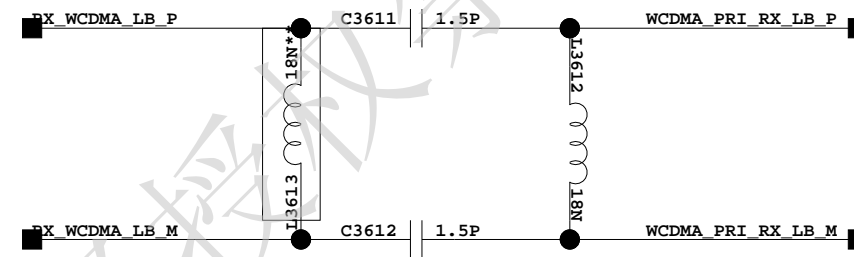
## PCS1900 RX MATCHING



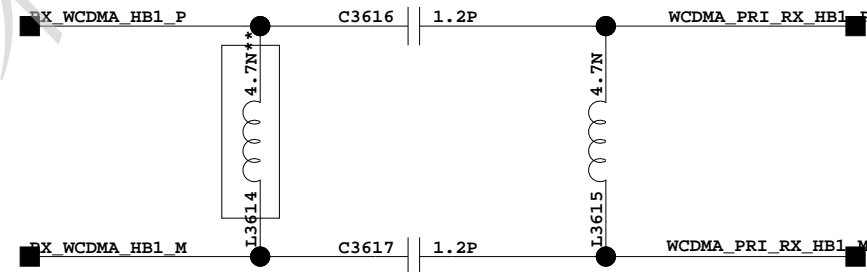
## W2100 PRIMARY RX MATCHING



## W850/900 PRIMARY RX MATCHING



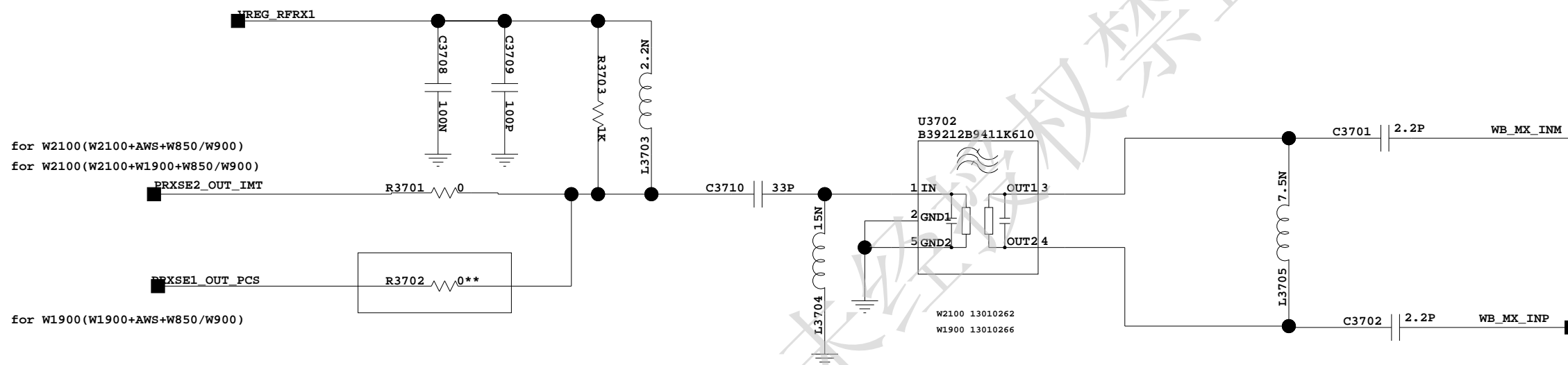
## PCS PRIMARY RX MATCHING



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	FANLEI 00132967	HD2U8951M		6711221_SCH4ZH	
REVIEWED	RF TMG	VER	PART_NUMBER	SHEET 27 OF 37	
		A	03021GTT	HUAWAI TECH CO.,LTD.	

# 30. UMTS IMT RX INTERSTAGE CHAIN

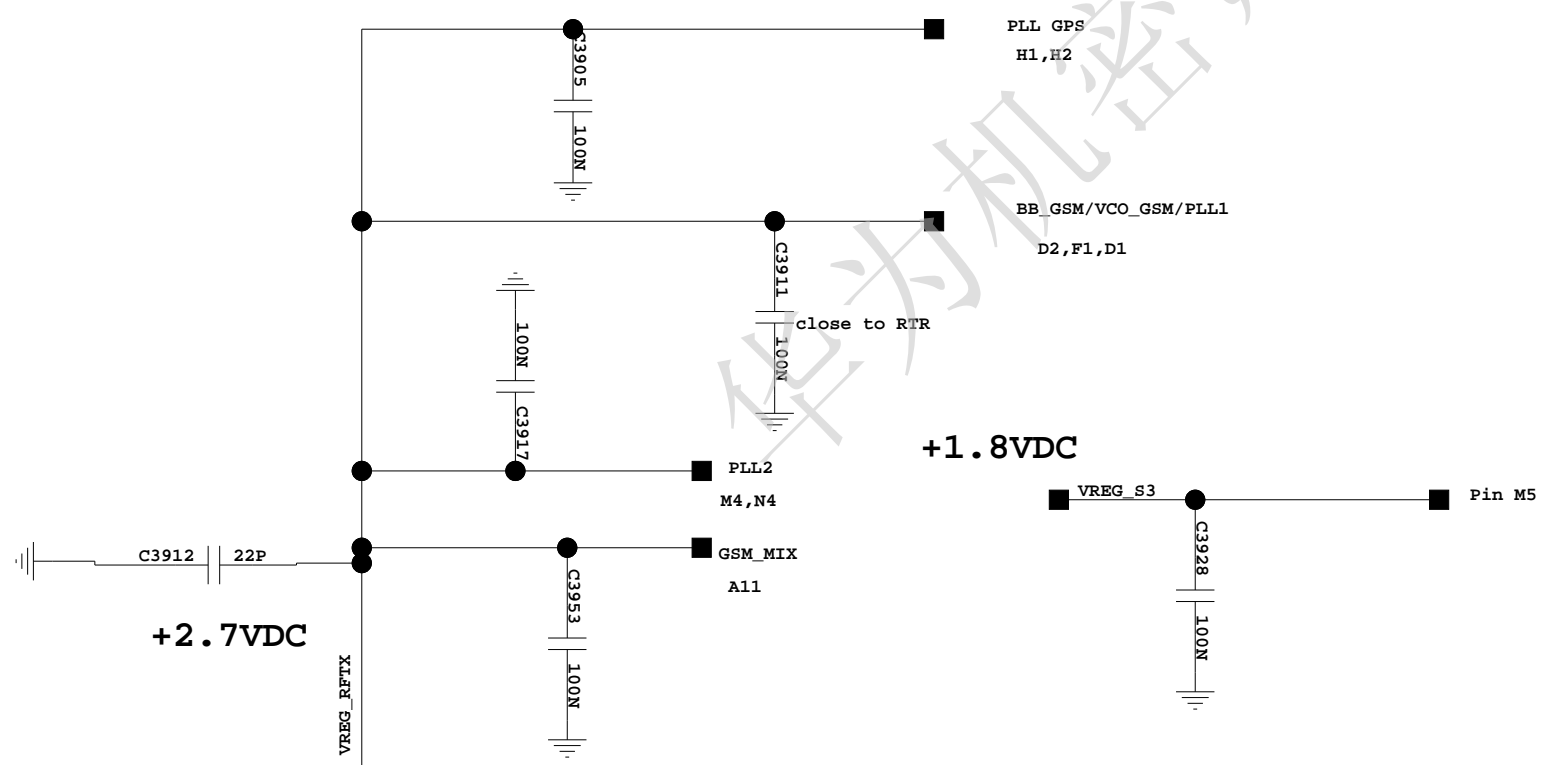
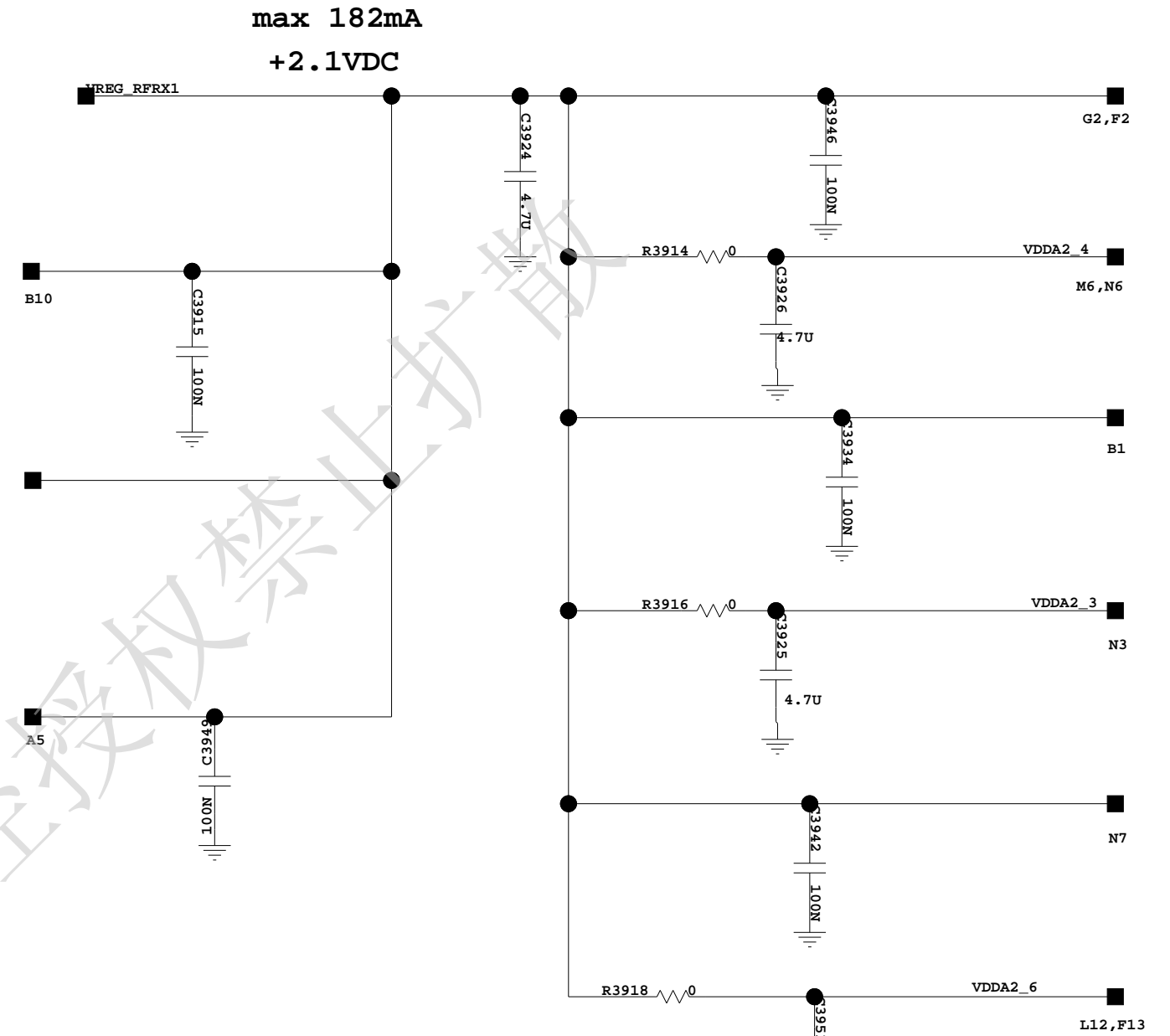
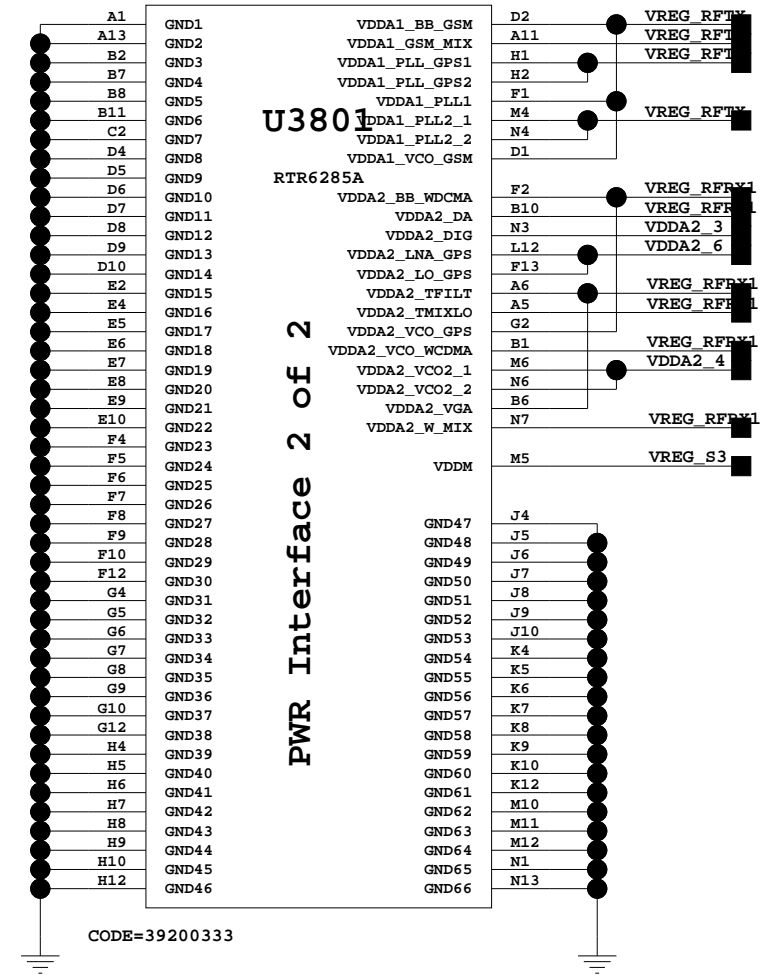


The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	FANLEI 00132967	HD2U8951M		6711221_SCH4ZH	
REVIEWED	RF TMG	VER	PART_NUMBER	SHEET 28 OF 37	
		A	03021GTT	HUAWEI TECH CO.,LTD.	



# 32. RTR6285A POWER DISTRIBUTION

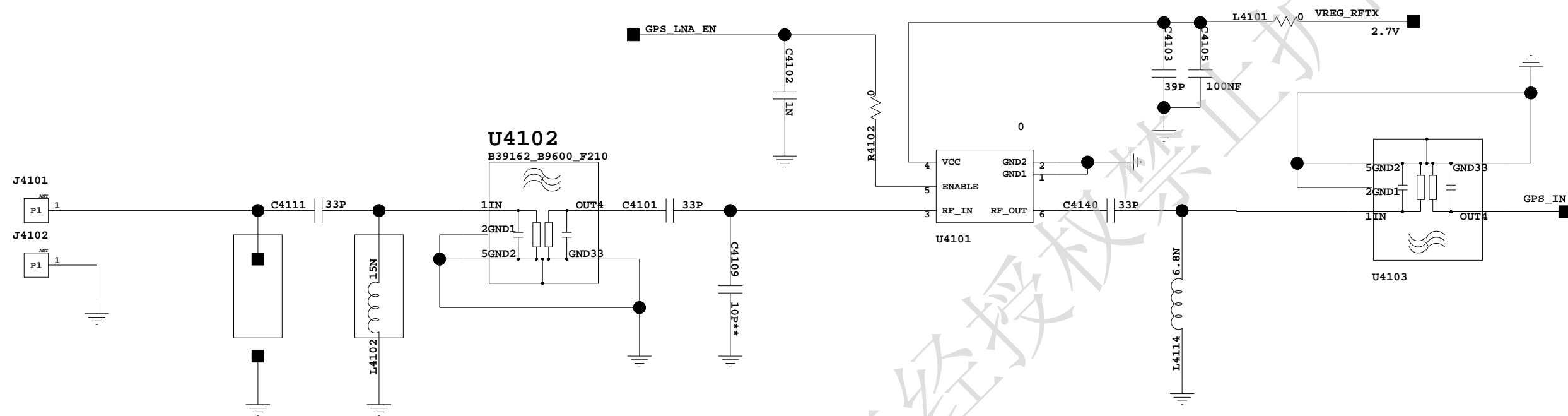


+2.7VDC

The type and specification of the components refer to the BOM

DESIGNED	FANLEI 00132967	HD2U8951M	6711221_SCH4ZH
REVIEWED	RF TMG	VER	PART_NUMBER
		A	03021GTT
			SHEET 30 OF 37
			HUAWEI TECH CO.,LTD.

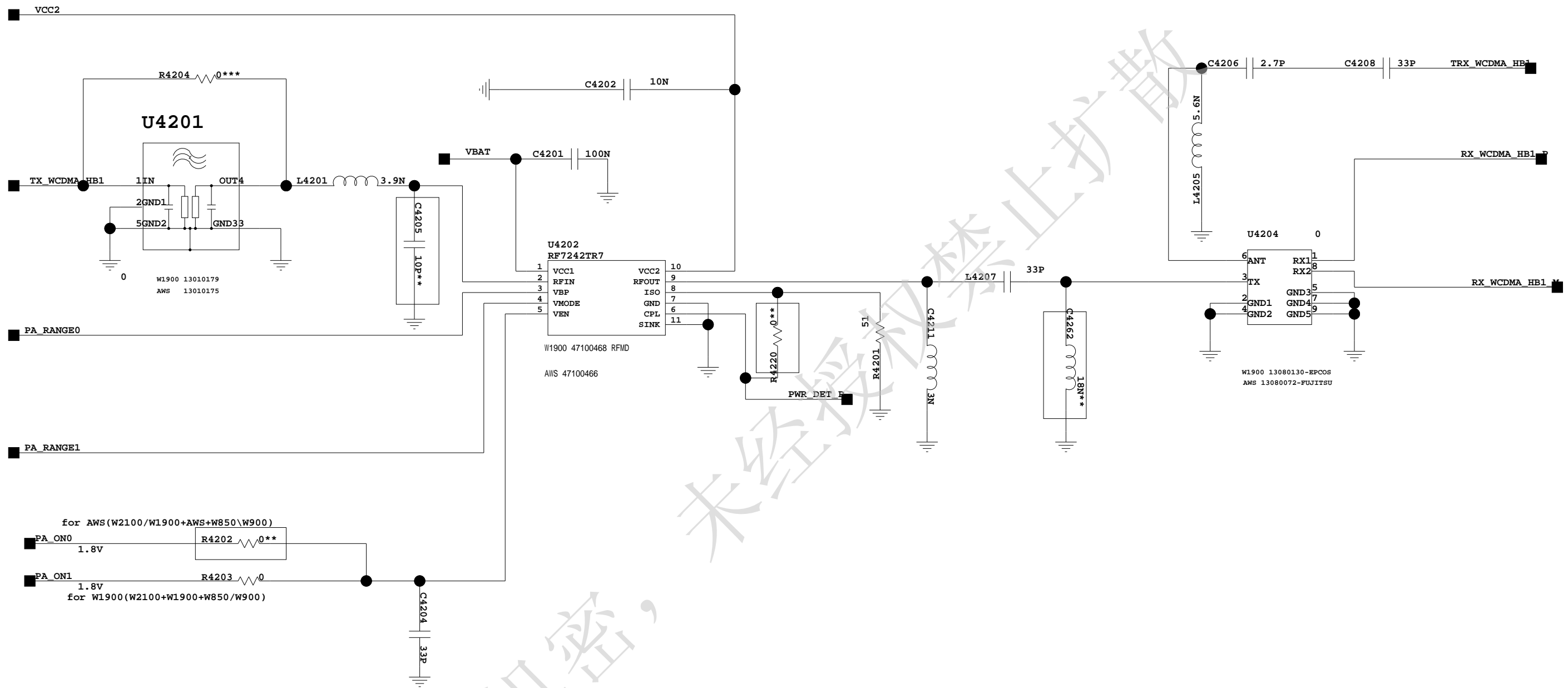
# 41.GPS



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	FANLEI 00132967	HD2U8951M		6711221_SCH4ZH	
REVIEWED	RF TMG	VER	PART_NUMBER	SHEET 31 OF 37	
		A	03021GTT	HUAWEI TECH CO.,LTD.	

# 42.WCDMA PCS Power Amplifier



The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	FANLEI 00132967	HD2U8951M		6711221_SCH4ZH	
REVIEWED	RF TMG	VER	PART_NUMBER	SHEET 32 OF 37	
		A	03021GTT	HUAWAI TECH CO.,LTD.	



# 43. UMTS RX DIVERSITY

A

B

C

D

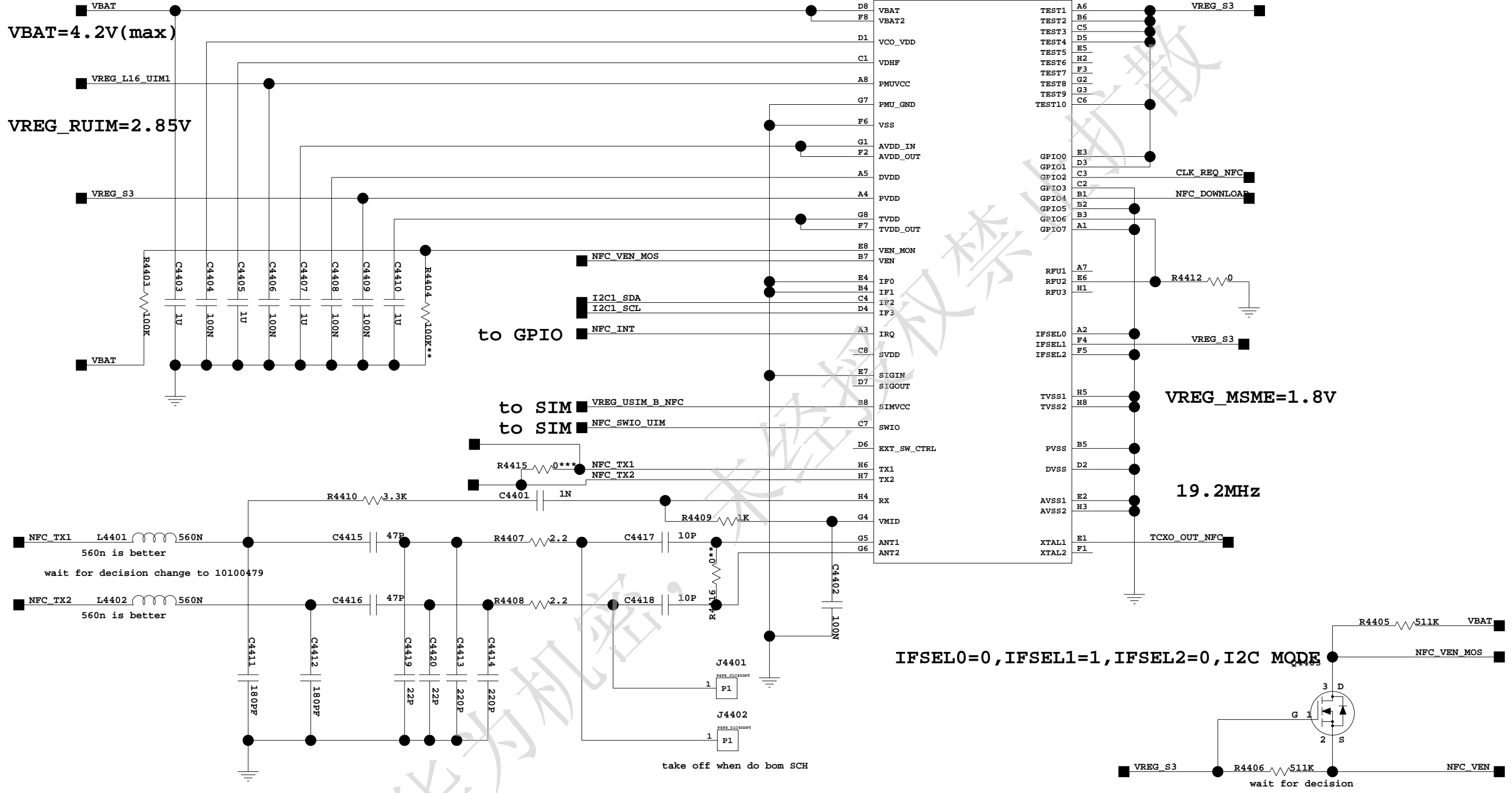
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The type and specification of the components refer to the BOM

				NA	2009-04-15
				ECA NO	DATE
DESIGNED	FANLEI 00132967	HD2U8951M		6711221_SCH5ZH	
REVIEWED	RF TMG				
		VER	PART_NUMBER	SHEET 33 OF 39	
		A	03021GTT	HUAWEI TECH CO.,LTD.	

# 36. NFC

IF0=IF1=GND, I2C ADDRESS is 0x50(0x28+R/W)

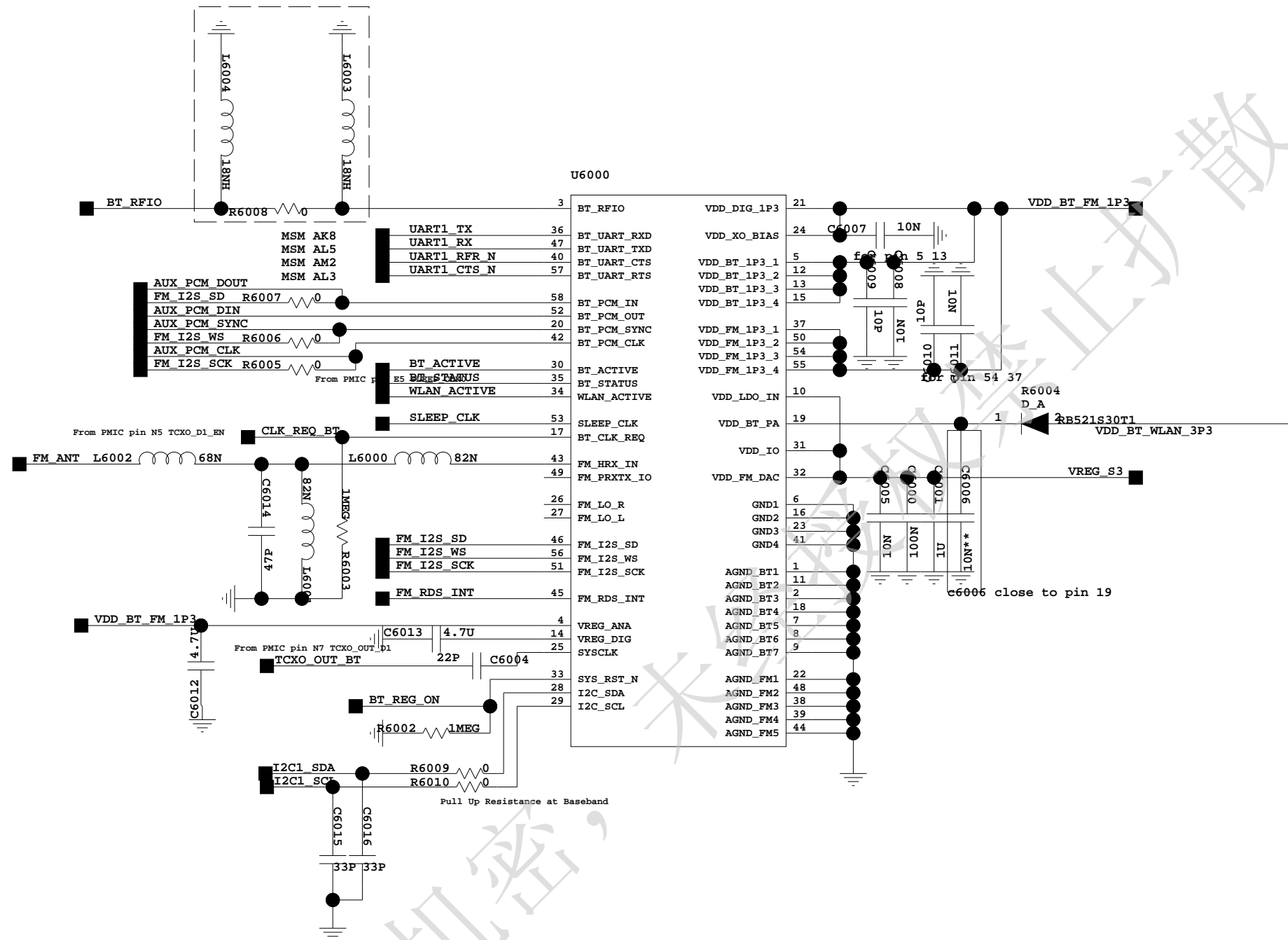


IFSEL0=0, IFSEL1=1, IFSEL2=0, I2C MODE

The type and specification of the components refer to the BOM

				NA	@DATETIME=8-31-2012_10:15
				ECA NO	DATE
DESIGNED	ZHANGWENFU 00135043	HD2U8951M		00651446	
REVIEWED	RF TMG	VER	PART_NUMBER	SHEET 34 OF 37	
		C	03021BWF	HUAWEI TECH CO.,LTD.	

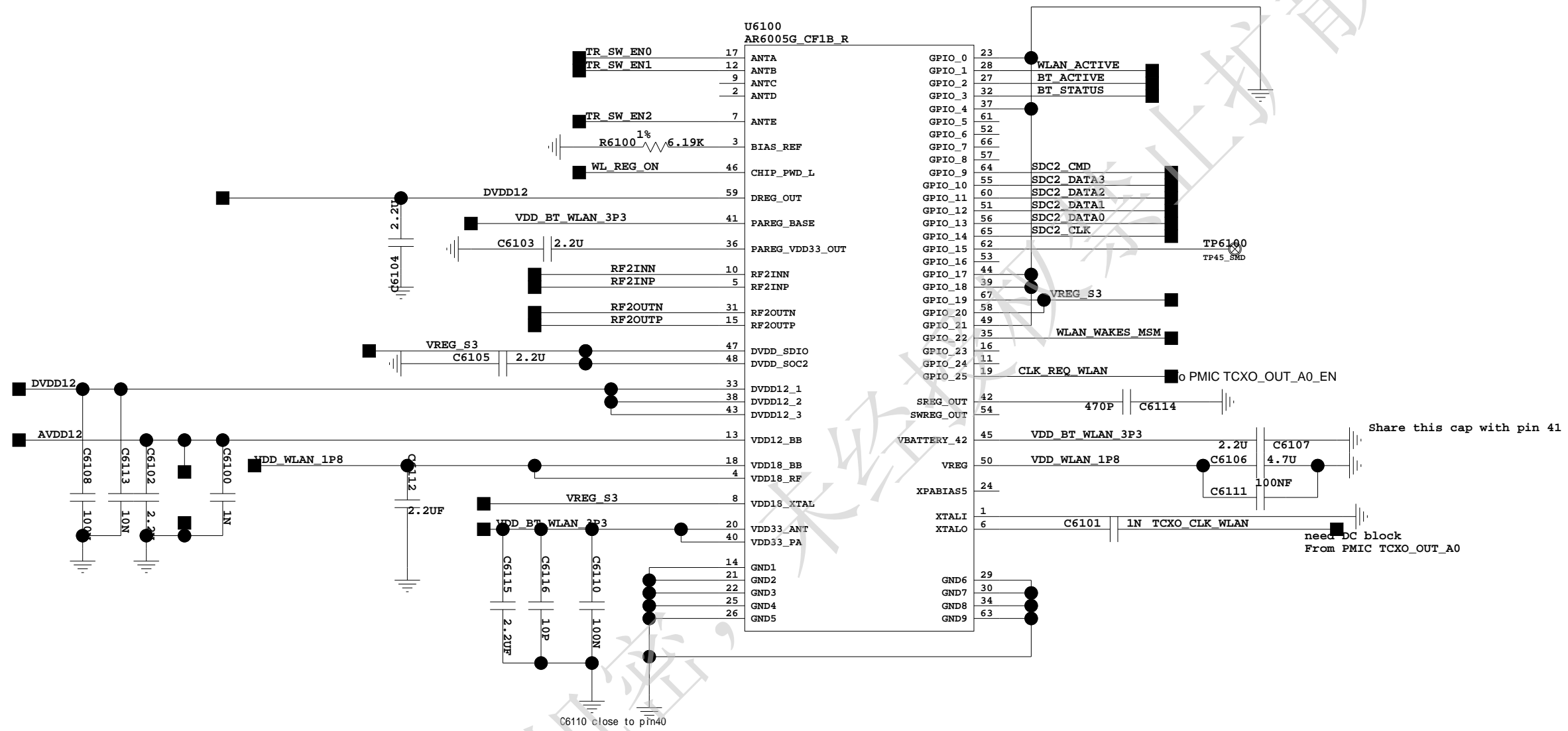
# 60.BT FM WCN2243



The type and specification of the components refer to the BOM

				NA	2010-03-15
				ECA NO	DATE
DESIGNED	ZHANGKUI 00140080	HD2U8951M		6711221_SCH5ZH	
REVIEWED	WANGAIMENG 165565				
		VER	PART_NUMBER	SHEET 35 OF 37	
		B	03021GTT	HUAWAI TECH CO.,LTD.	

# 61.AR6005 BB

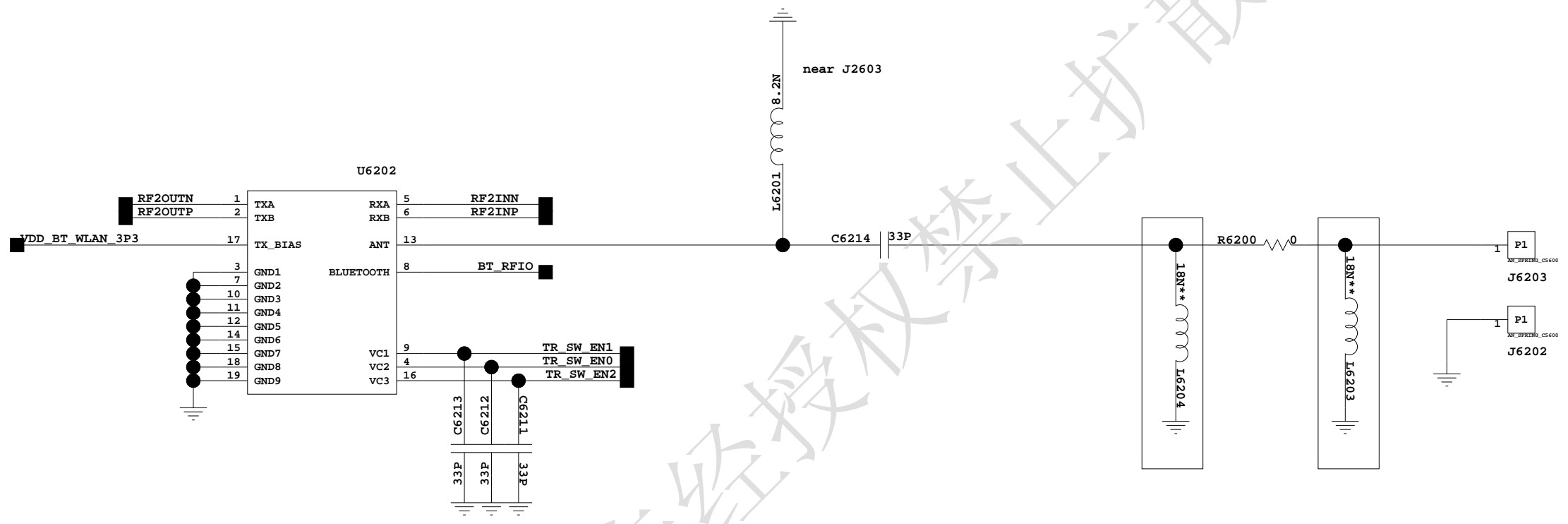


HMODE[1,0]	interface mode
11	SDIO
10	GSPI

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGKUI 00140080	HD2U8951M		6711221_SCH5ZH	
REVIEWED	LIUHONGTAO 163002	VER	PART_NUMBER	SHEET 36 OF 37	
		A	03021GTT	HUAWAI TECH CO.,LTD.	

# 62.AR6005 RF



## ture table

V1	V2	J1-J2	J1-J3
0	Vhigh	Insertion loss	Isolation
Vhigh	0	Isolation	Insertion loss

Vhigh=3-5V

The type and specification of the components refer to the BOM

				NA	
				ECA NO	DATE
DESIGNED	ZHANGKUI 00140080	HD2U8951M		6711221_SCH5ZH	
REVIEWED	LIUHONGTAO 163002	VER	PART_NUMBER	SHEET 37 OF 37	
		A	03021GTT	HUAWEI TECH CO.,LTD.	