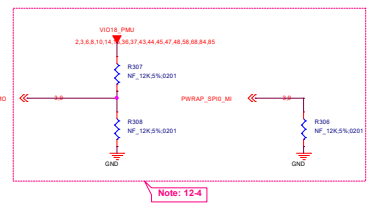
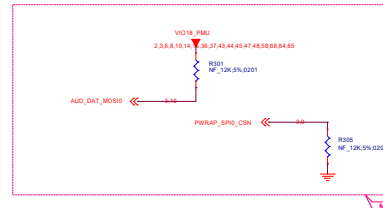
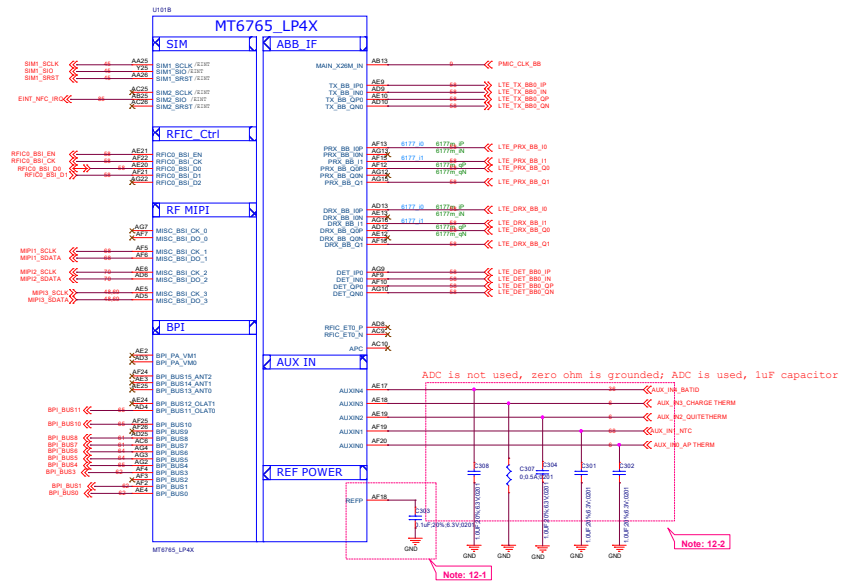
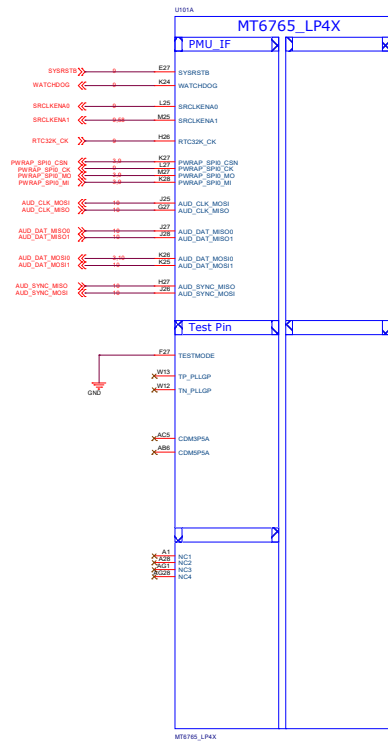


Schematic design notice of "11\_BB\_POWER\_IO" page.

- Note 11-1: C214 closed DVDD18\_MSDC0 150mil
- Note 11-2: C215 closed DVDD28\_MSDC1 150mil
- Note 11-3: C218 closed DVDD18\_MSDC1 150mil

T111	02_BB_POWER_IO	REV: V10
DOCUMENT NO.:	Design Name	Size D
DEPARTMENT:	WINGTECHSH	DESIGNER: VL
<b>WINGTECH</b>		
Date:	Friday, February 11, 2022	Sheet 2 of 48



**Schematic design notice of "12\_BB\_1" page.**

Note 12-1: The de-coupling cap. for REFP (AF18 ball) have to be placed as close to BB as possible.

Note 12-2: To shunt a 1uF capacitor in the AUXIN ADC input to prevent noise coupling. It should be placed as close to BB as possible. Connect the unused AUX ADC input to GND.

Note 12-3: \*PWRAP\_SPI0\_CSN\* and \*AUD\_DAT\_MOSIO0\* are bootstrap pin to select which interface will be the JTAG pin out.

PWRAP_SPI0_CSN	AUD_DAT_MOSIO0	AP_JTAG	JTAG Function
default=PU	default=PD		MD_JTAG
HI	LO	N/A	N/A
HI (by ext. PD)	HI (by ext. PD)	SPI0+EINT8	SPI1+SPI3
LO	LO	SPI0+EINT8	N/A
LO (by ext. PD)	HI (by ext. PD)	MSDC1	N/A

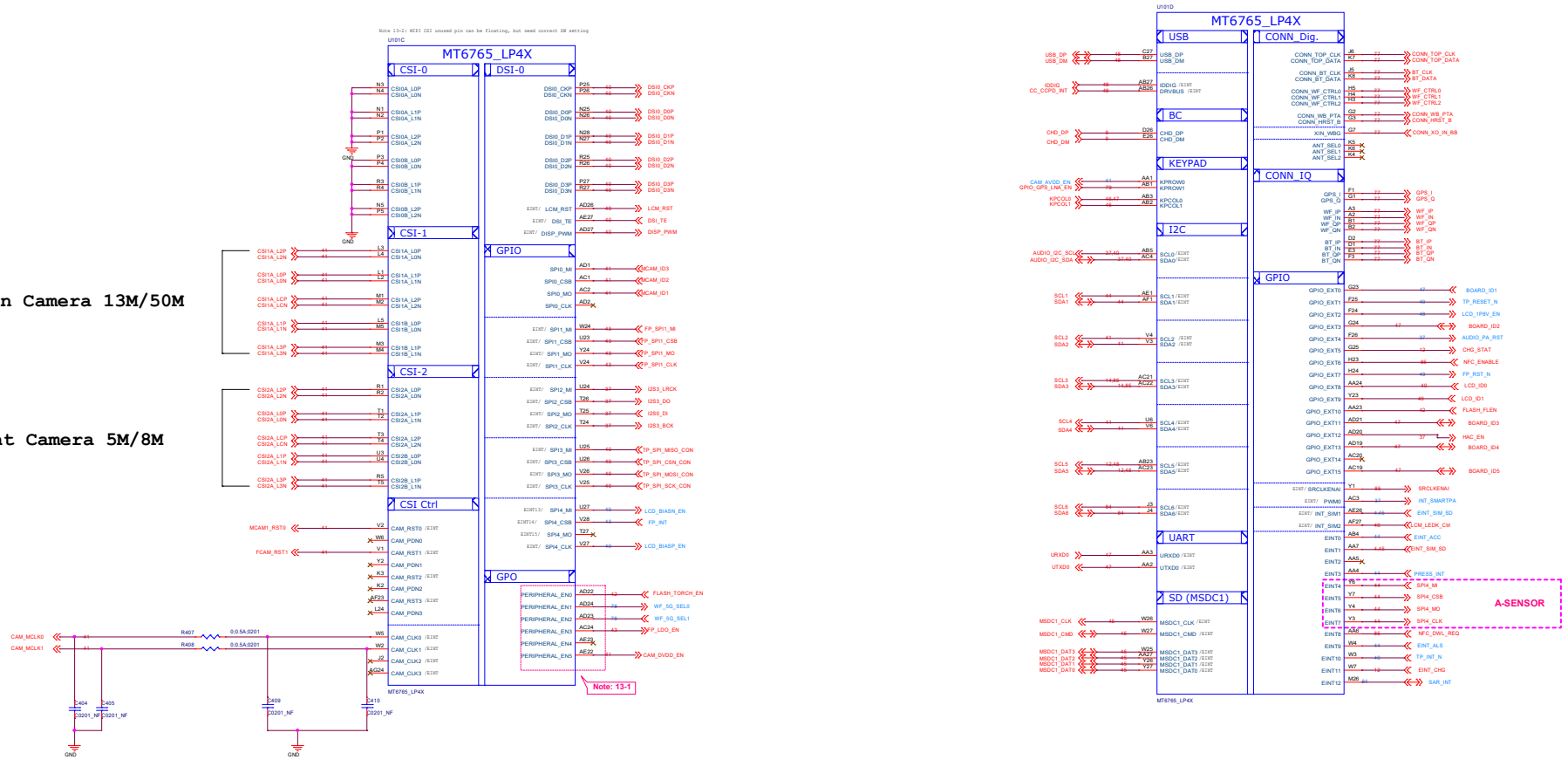
Note 12-4: PWRAP\_SPI0\_MI / PWRAP\_SPI0\_MO is DDR type feature in bootstrap

PWRAP_SPI0_MI	PWRAP_SPI0_MO	Booting interface
default=PU	default=PD	MSDC0 pin mux
LO	LO	LPDDR3 follow LPDDR3 Ref SCH.
HI	HI	N/A
HI	LO	LPDDR4X follow LP4X/LP4 Ref SCH.
HI	HI	LPDDR4 follow LP4X/LP4 Ref SCH.

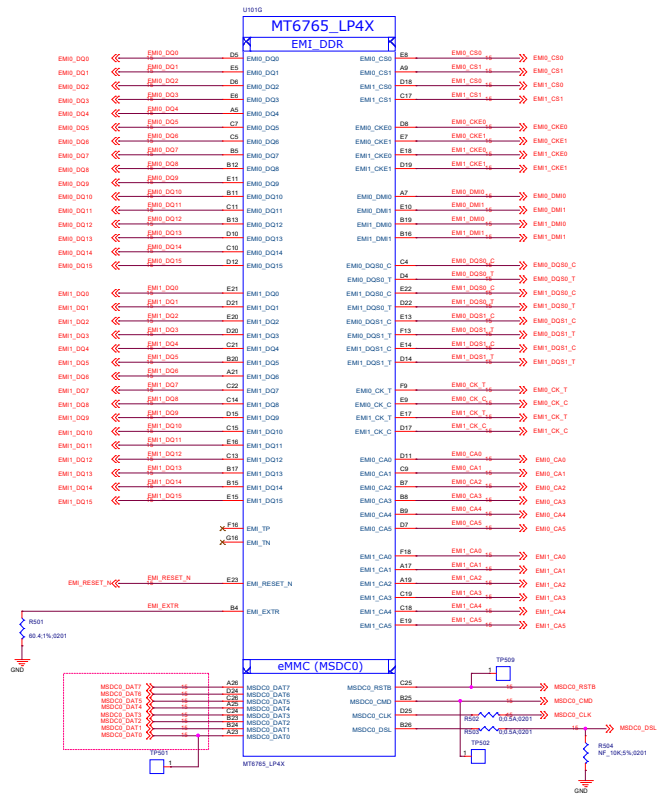
Note 12-5: Please set unused IQ pins in NC

Main Camera 13M/50M

Front Camera 5M/8M







**Schematic design notice of "14\_BB\_3" page.**

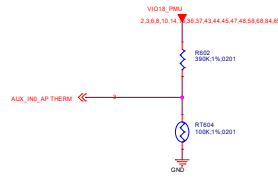
Note 14-1: R501 please select 34.8 ohm (1%) resistor

Note 14-2: Please check eMCP LP3 and eMCP LP4X pin mux

111x	<b>05_BB_3_EMMC</b>	REV: V10
DOCUMENT NO.:	Design Name	Size D
DEPARTMENT:	WINTECHSH	DESIGNER: YL
Date:	Friday, February 11, 2022	Sheet 5 of 48

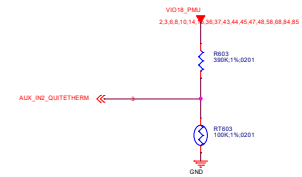


The pull up resister need to be 1% accuracy  
 NTC=100K

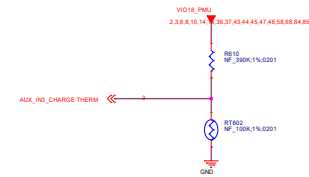


**Thermistor to sense AP temperature**

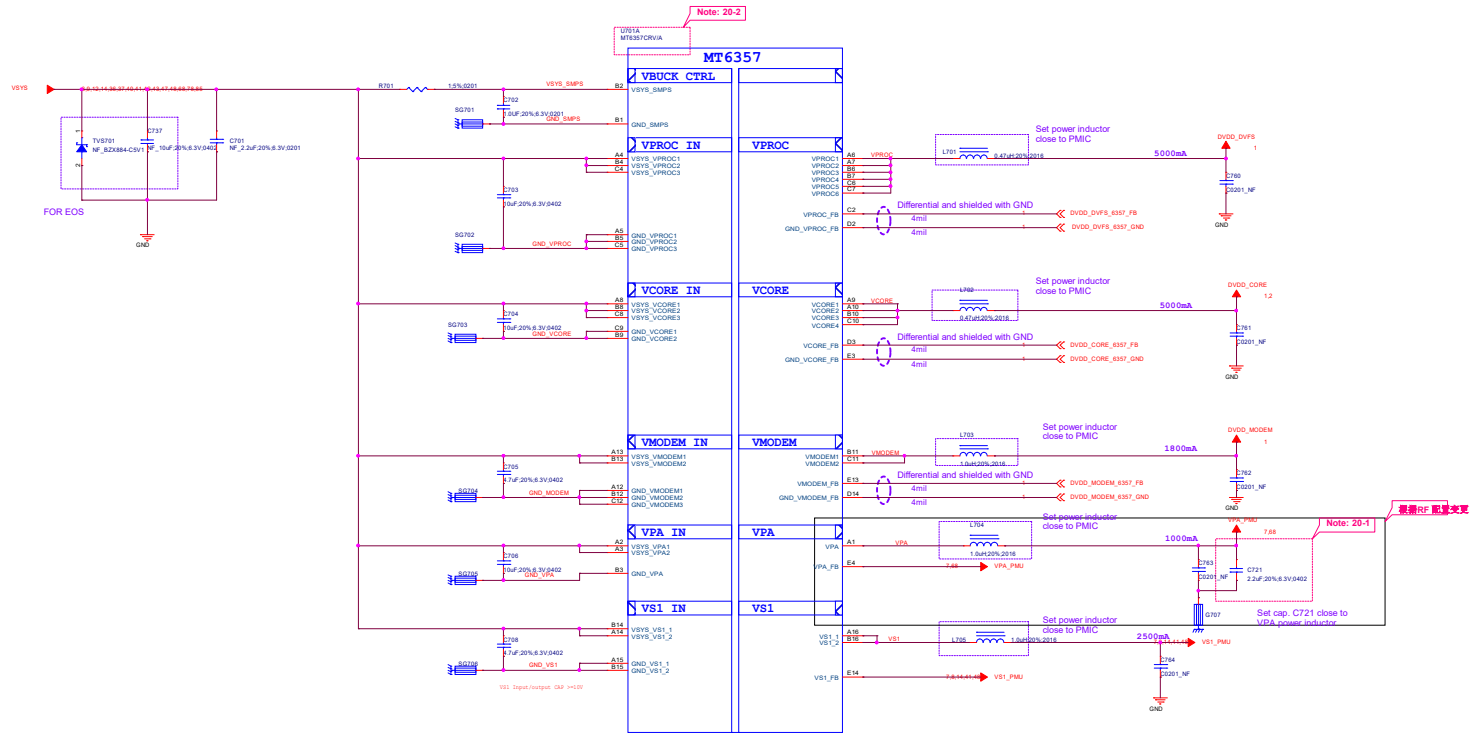
1. RT804 must keep a distance about 6-8 mm away from AP and far from other heat sources. 10 mm at least.
2. The distance is the shortest distance from package edge to edge.



**Quite thermistor  
 Thermistor to sense BORAD temperature**



**Thermistor to sense CHARGE temperature**

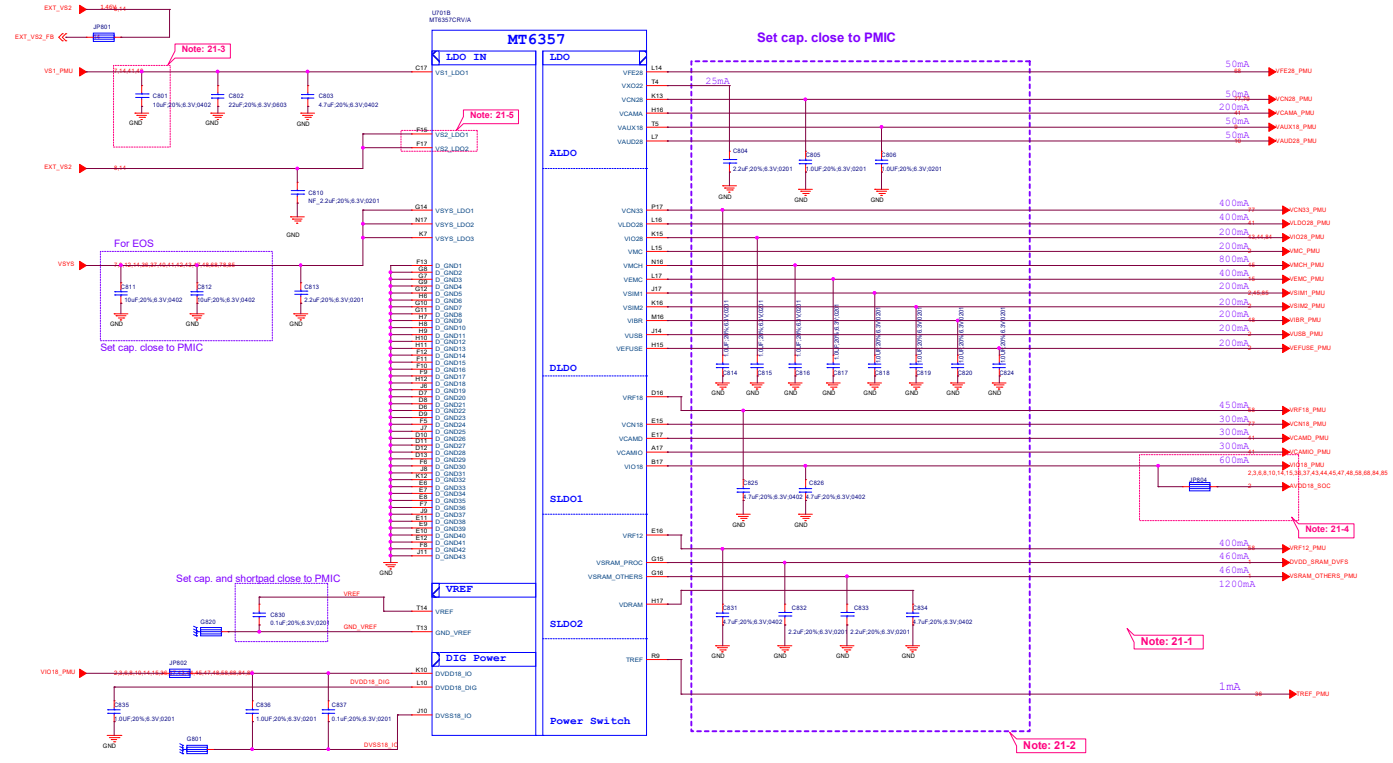


**Schematic design notice of "20\_POWER\_MT6357\_Buck"**

Note 20-1: C707, please choose 0402 size

Note 20-2: For MT6765/62/61 platform, please only use MT6357CRV

1. "Typical Cap" defined in design notice is the minimum cap. to LDO Cout.  
 2. NC cap can move to application, if (PCB L<20nH, PCB R<0.2 ohm)  
 => value and placement of Cap, please refer design notice



**Schematic design notice of "21\_POWER\_MT6357\_LDO"**

Note 21-1: If these power trace can meet LDO layout constraint, these CAP can be NC or removed. Please refer to MT6357 design notice.

Note 21-2: Output cap range please follow MT6357CRV LDO design notice

Note 21-3: Ext Buck BOM option

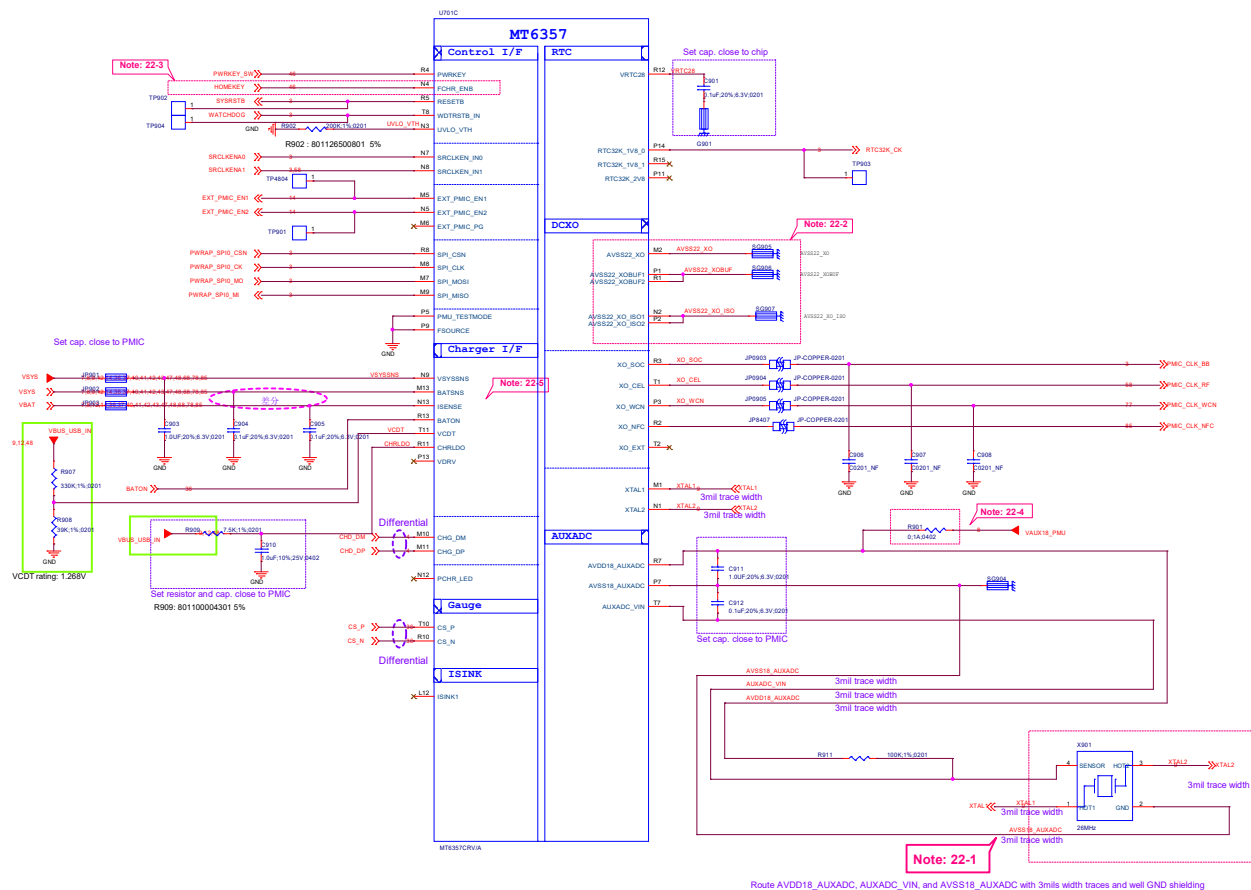
	Ext. buck option	
	w/ EXT VS2 Buck	w/o EXT VS2 Buck
C801	10uF	22uF

Note 21-4: Please set R803 and R803 close to C826, making star connection among VIO18\_PMU, AVDD18\_SOC, and EMI\_VDD1 near to LDO cap. C826

Please also refer to MT6357 design notice for further detail design information

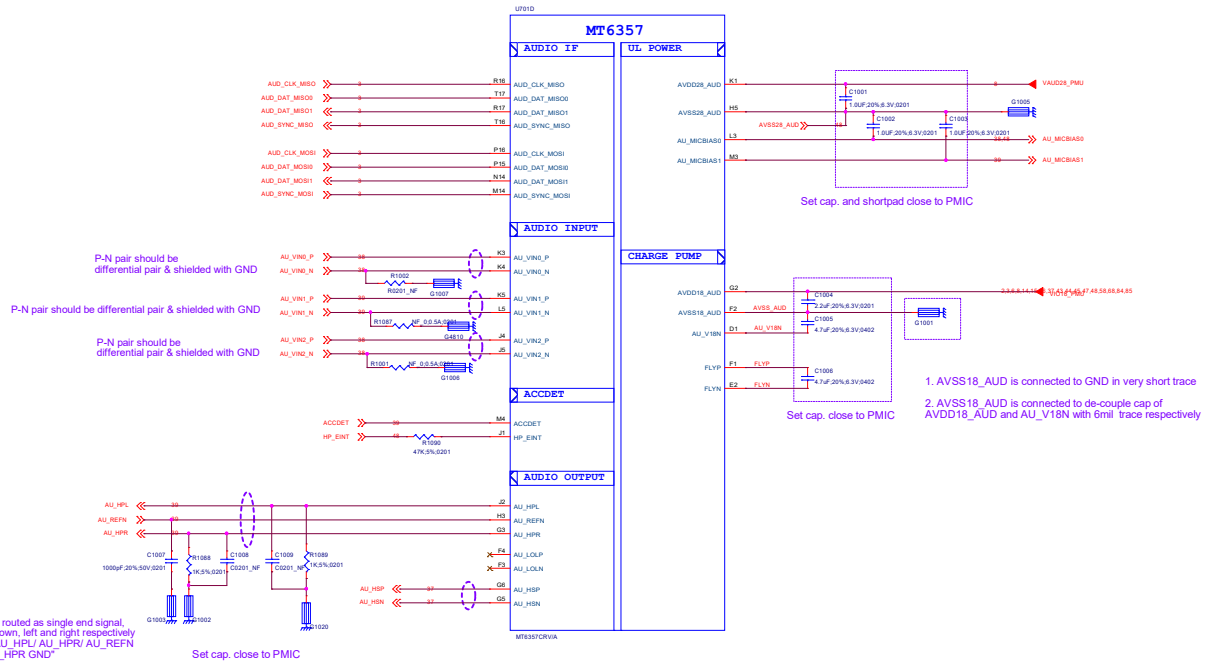
Note 21-5: Please connect V\$2\_LDO1(F15) to VS1\_PMU if voltage applied to VCAM(E17) >= 1.3 V



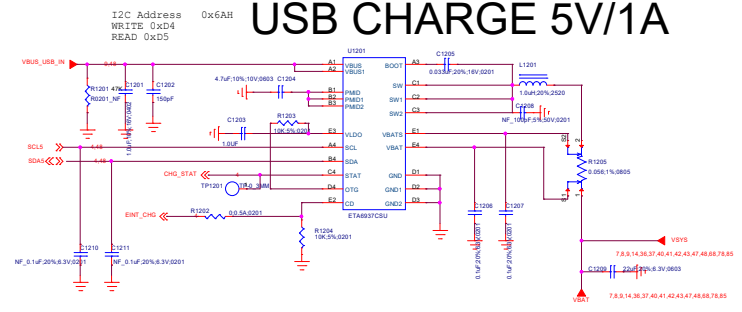


**Schematic design notice of "22\_POWER\_MT6357-IF"**

- Note 22-1: Please implement 2520 & 2016 Size TMS PCB co-layout. Please refer to MT6762\_MT6357 Co-Clock Design Notice for co-layout guide
- Note 22-2: 1. Please Connect P1 and R1 ball first and then to GND  
2. Please Connect P2 and N2 ball first and then to GND  
3. Please connect DCXO GND to main GND by independent L1-2 GND via.; DO NOT connect it through L1 GND
- Note 22-3: Let floating if disable HOMEKEY function
- Note 22-4: Please follow MT6762\_MT6357 Co-Clock Design Notice for Layout guide of VAUX18, then R8101 can use 0 ohm to replace BEAD. Please route VAUX18\_PMU with well-ground shielding if using 0 ohm to replace BEAD for AVDD18\_AUXADC
- Note 22-5: Please connect to battery connector

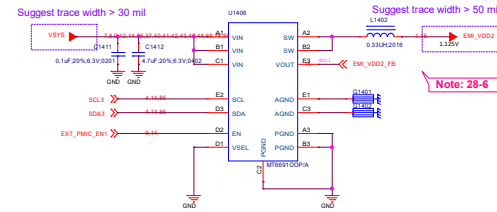


# USB CHARGE 5V/1A

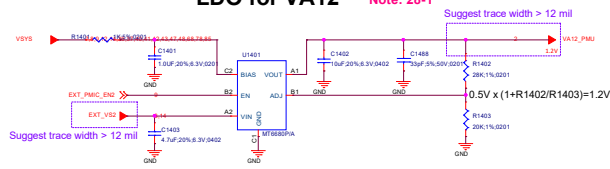


**Ext. buck LPDDR4X/LPDDR4 VDRAM Note: 28-4**

MT66910OP/A / Ext. buck LP4X/LP4 VDRAM (VDD2)  
I2C address: 0X57 (Write:0xA6, Read:0xAF)

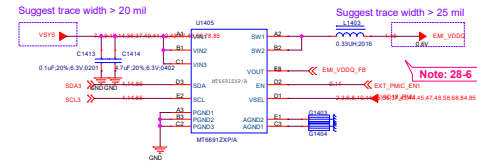


**LDO for VA12 Note: 28-1**

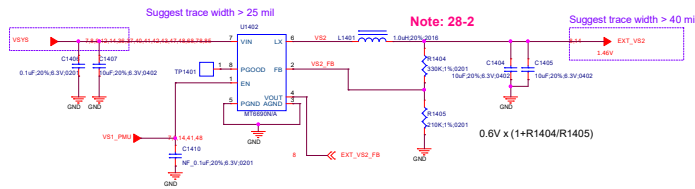


**Ext. buck LPDDR4X VDDQ Note: 28-4**

MT66912XP/A / Ext. buck LP4X VDRAM (VDDQ)  
I2C address: 0x50 (Write:0xA0, Read:0xA1)

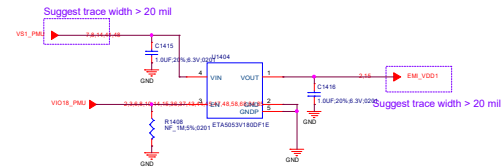


**Ext. Buck for VS2**



NOTE: Do not use VCAMD 1.3/1.5/1.8 when VS2 BUCK applied

**LPDDR4X/LPDDR4 VDD1 1.8V LDO Note: 28-5**



**Schematic design notice of "28\_POWER\_ThirdParty-Power"**

Note 28-1: VA12 Layout placement please close to AP

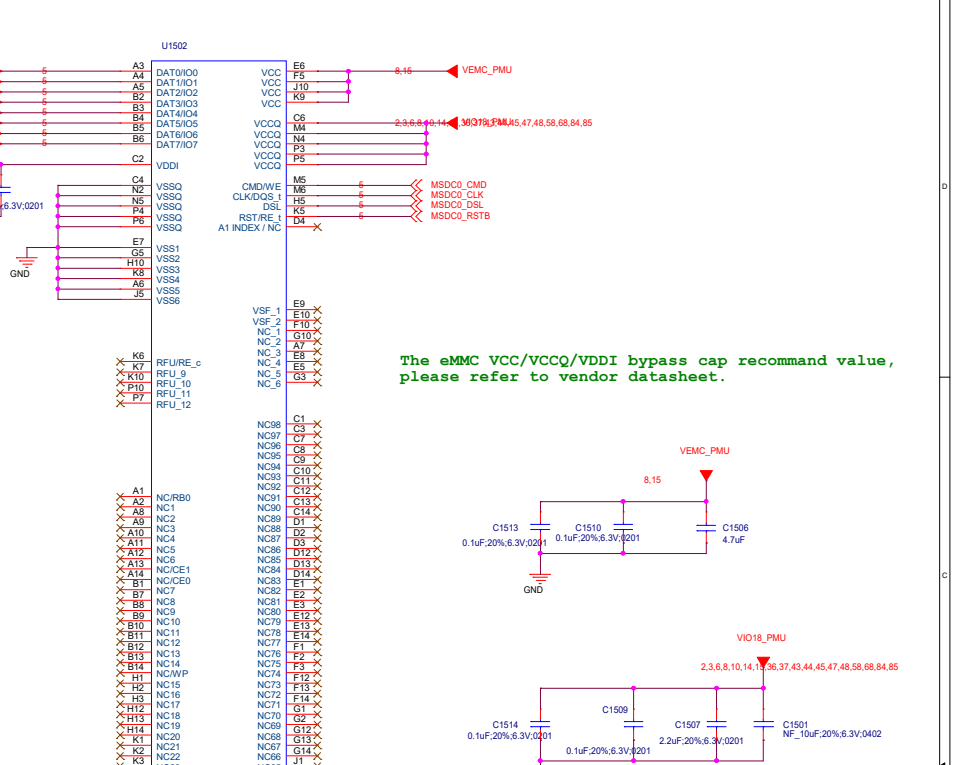
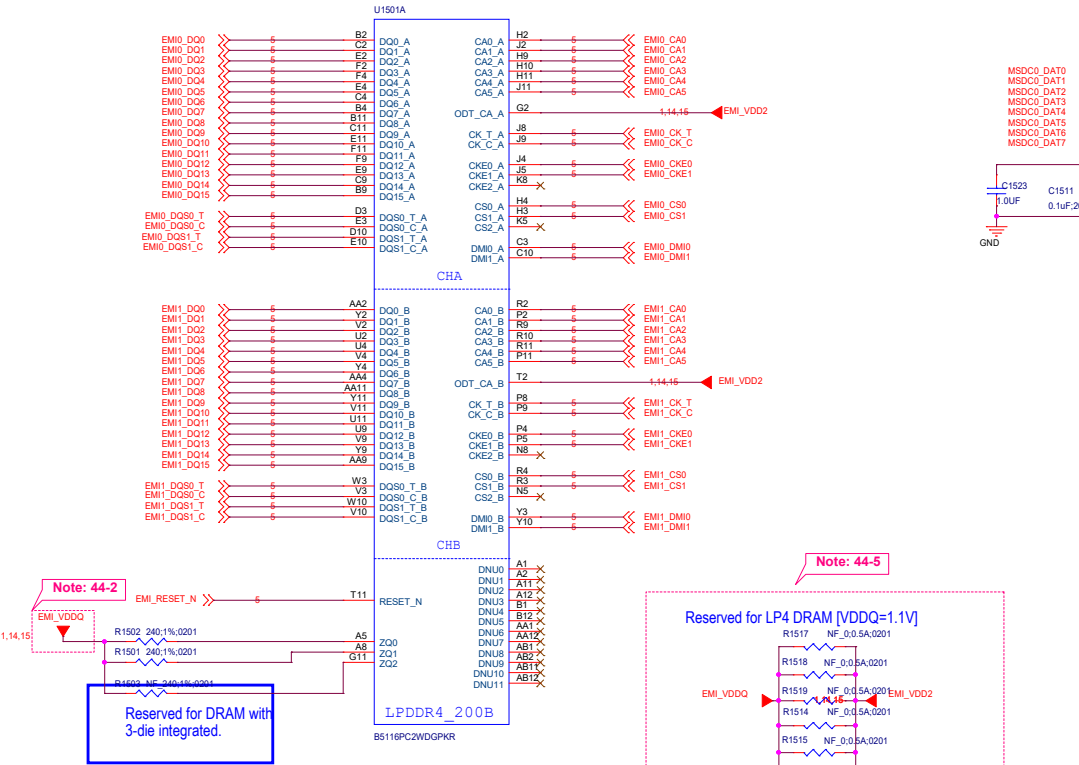
Note 28-2: VS2 Buck Layout placement please close to PMIC MT6357

Note 28-3: VCN33 LDO Layout placement please close to MT6631

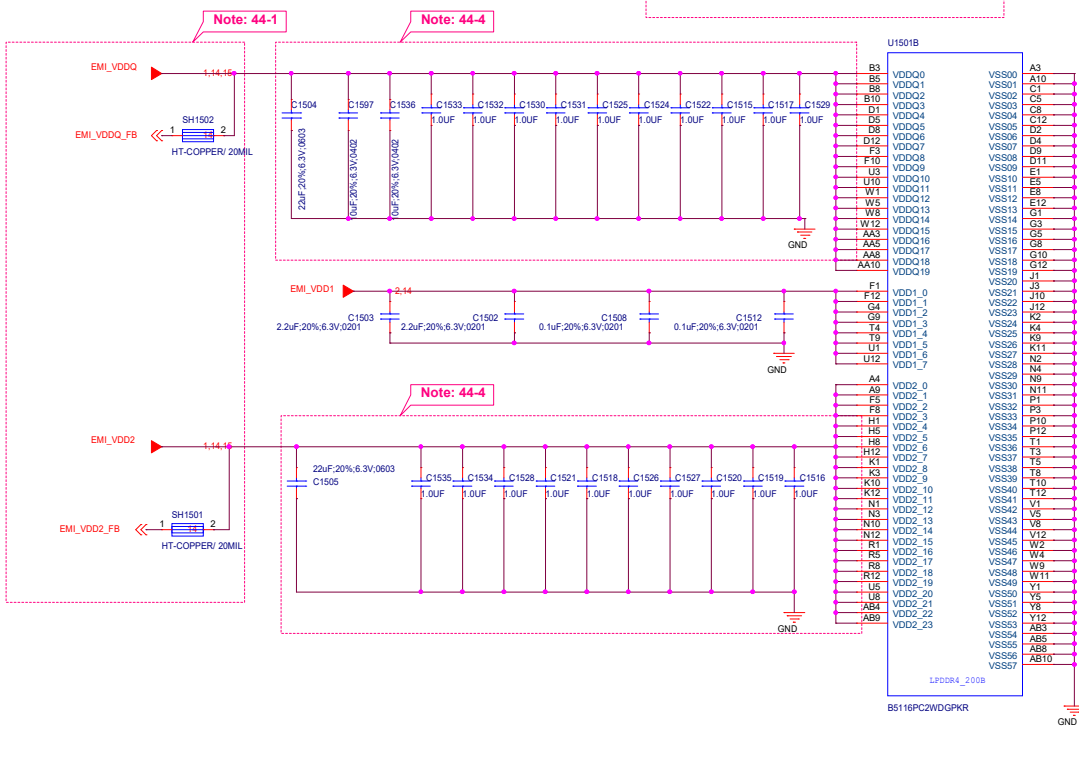
Note 28-4: 1.MT66910OP/A Buck Layout Placement please close to LP4X/LP4  
2.MT66912XP/A Buck Layout Placement please close to LP4X  
3.If DRAM Application is LPDDR4 , MT66912XP/A NC

Note 28-5: U2810 LDO Layout Placement Please close to LPDDR4X/LPDDR4 VDD1 power ball

Note 28-6: For EML\_VDD2\_FB and EML\_VDDQ\_FB, please follow MMD rule



The eMMC VCC/VCCQ/VDDI bypass cap recommend value, please refer to vendor datasheet.



### Schematic design notice of "44\_Memory\_eMMC\_LPDDR4"

**Note 44-1:** Please refer to power supply related page select output voltage for LPDDR4

**Note 44-2:** DRAM ZQ resistor = 240ohm (1%) that must be connected to VDDQ,

**Note 44-4:** VDD2 VDDQ decoupling cap: closed to DRAM ball.  
For other cap for PMIC [ $>10\mu F$ , at PMIC page]: please also refer to MMD and layout guide for placement.

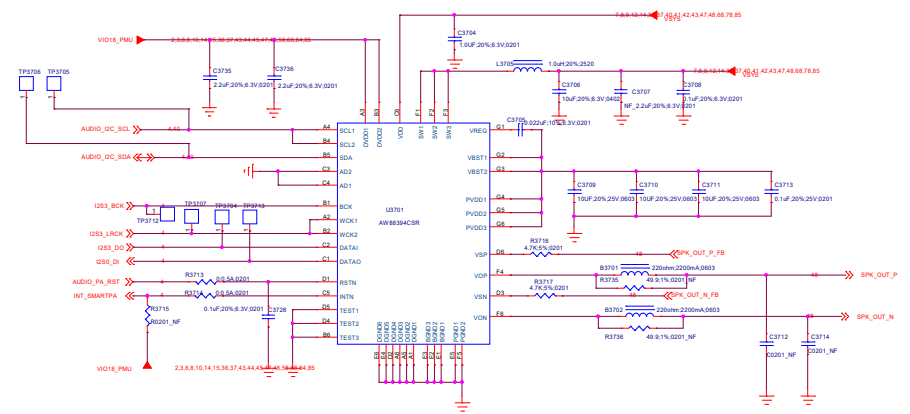
**Note 44-5:**

DRAM type	LPDDR4	LPDDR4X
U1501	Mount	NC
R0303	LPDDR4	LPDDR4X
U1405/L1403 /C1413/C1414	NC	Mount

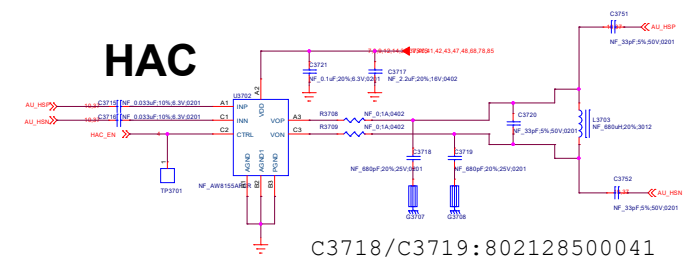
Title	15_Memory_eMMC_LPDDR4	REV: V10
DOCUMENT NO.	98829_1_11M12_20220404_1150	Size C
DEPARTMENT:	WINGTECH-SZ	DESIGNER: LYUda
<b>WINGTECH</b>		
Date:	Friday, February 11, 2022	Sheet 15 of 48



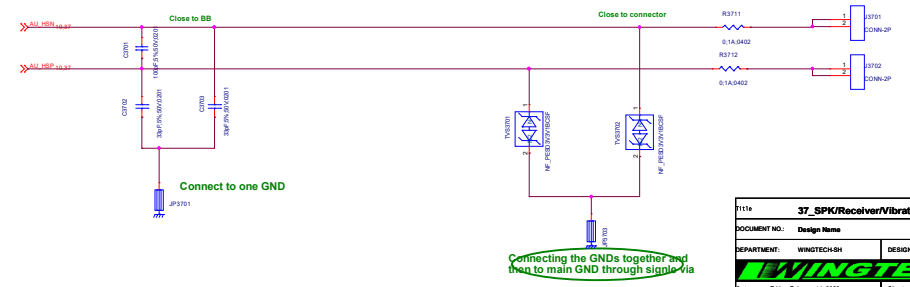
# Audio PA



# HAC



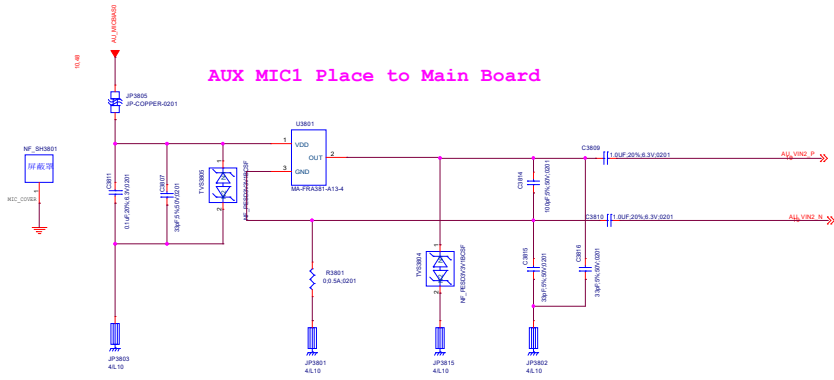
# Receiver



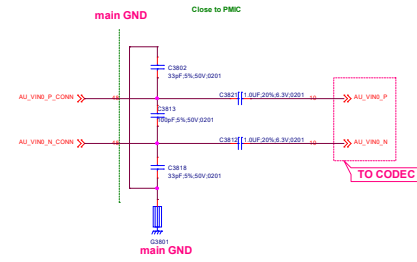
1111x	<b>37_SPK/Receiver/Vibrator</b>	REV: V10
DOCUMENT NO.:	Design Name	Size D
DEPARTMENT:	WINGTECHSH	DESIGNER: YL
Date:	Friday, February 11, 2022	Sheet 37 of 48

# AUX MIC

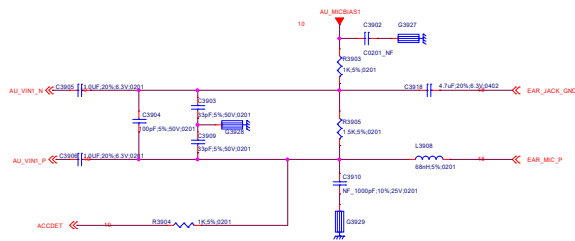
AUX MIC1 Place to Main Board



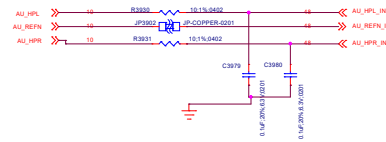
# MAIN MIC







### Earphone



Note 62-1: Part # of BEAD6202, BEAD6203, BEAD6204 and BEAD6205 needs changed to "BLM18BD102SN1" for high THD performance (~90dB) but this BOM change will results in FM RSSI 10dB degraded .

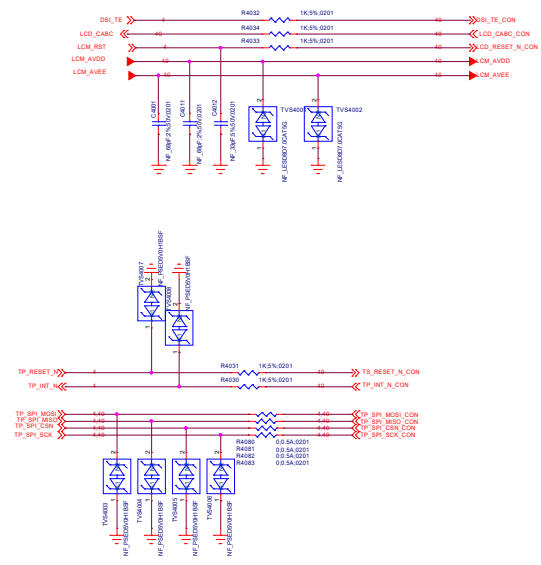
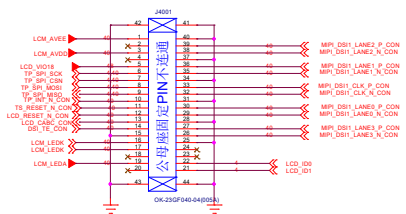
Note 62-2: Reserved Cap for CS/RS test, please double check multi-key function when used

Note 62-3:

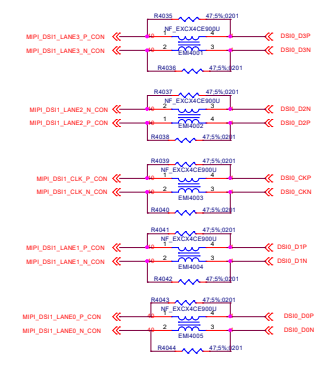
Earphone Jack	Earphone Jack
0 Main Board	0 Sub Board
R5511	R5502

Note 62-4: Please Select ACC Mode for Operator Project to Pass Electrical MOS Test;

Title: <b>39_Earphone</b>		REV: V10
DOCUMENT NO.: Design Name	Size D	
DEPARTMENT: WINGTECHSH	DESIGNER: YL	
Date: Friday, February 11, 2022		Sheet 39 of 48

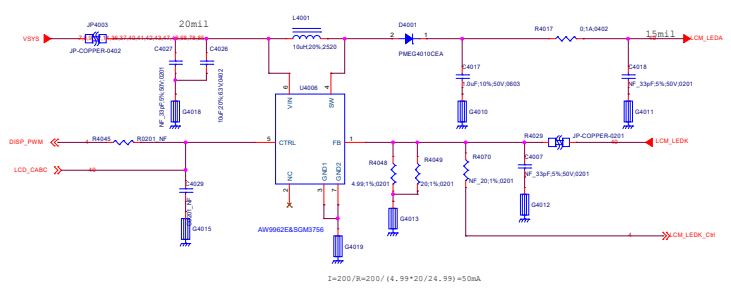


### Common Mode Filter

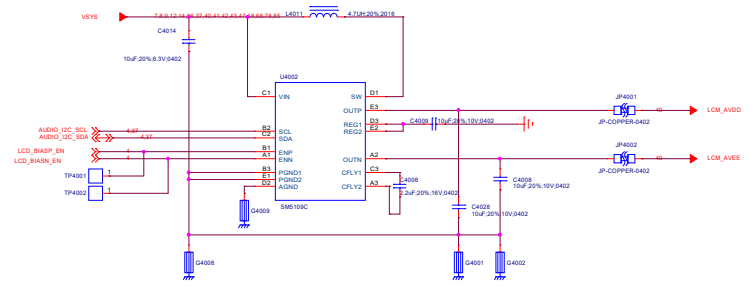


### LCD Backlight LED Driver

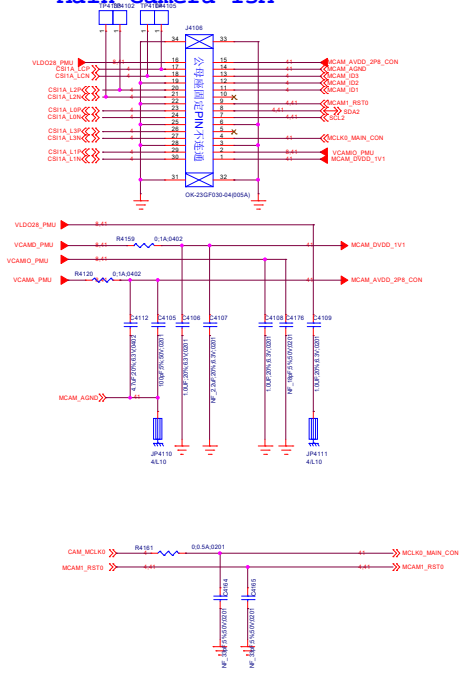
Rating : 50V



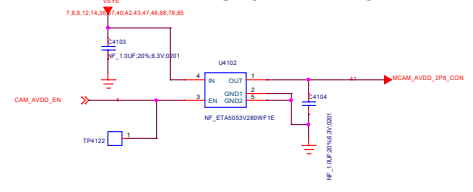
### LCD Gate Drive



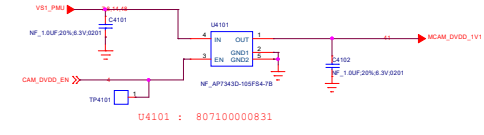
### Main Camera 13M



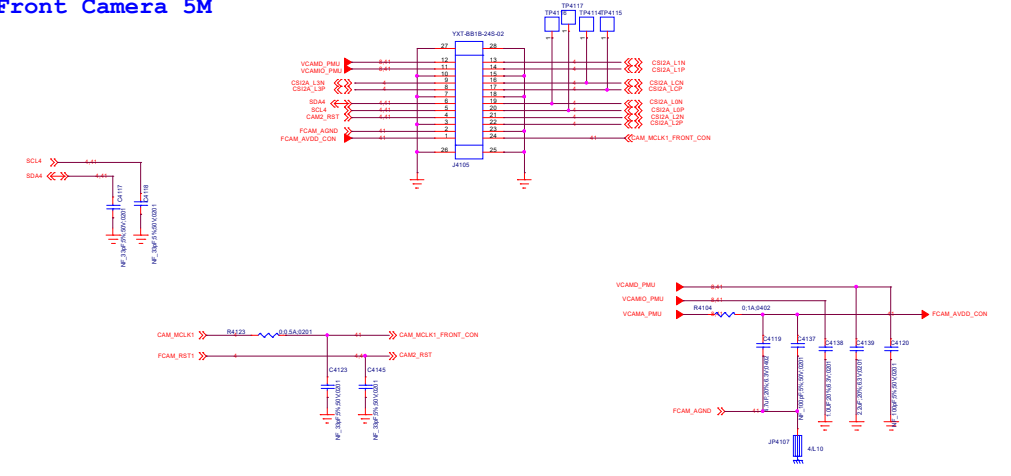
### LDO for AVDD 2.8V



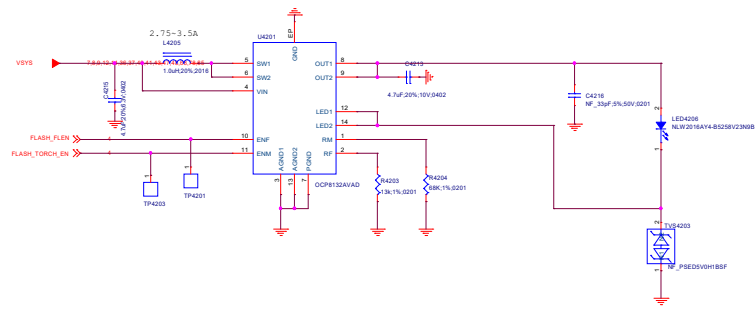
### LDO for DVDD 1.1V



### Front Camera 5M

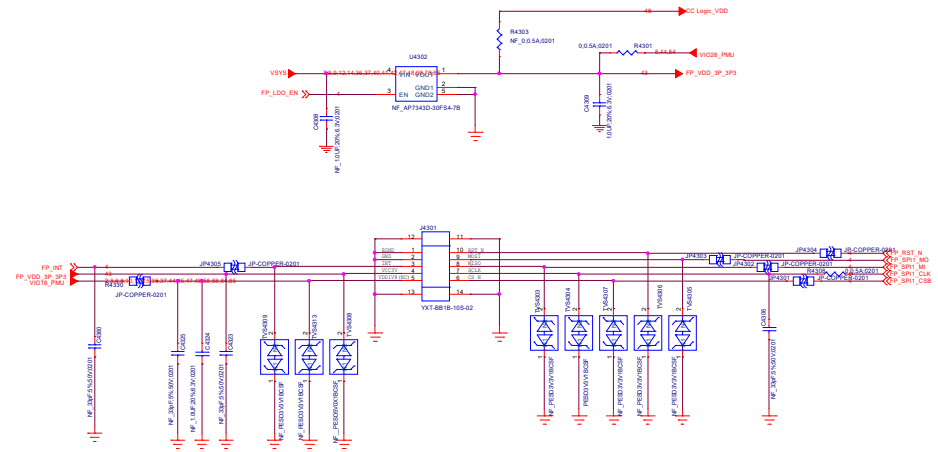


1111x	<b>41_Camera IF</b>	REV: V10
DOCUMENT NO.:	Design Name	Size D
DEPARTMENT:	WINGTECHSH	DESIGNER: YL
<b>WINGTECH</b>		
Date:	Thursday, March 10, 2022	Sheet 41 of 48

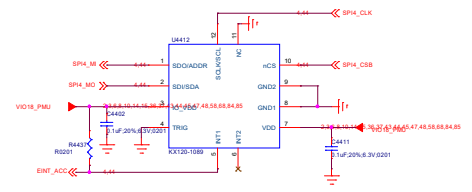


111a		42_FlashRGB	REV: V10
DOCUMENT NO: Design Name		Size: 0	
DEPARTMENT: WINGTECH-SH	DESIGNER: YL		
DATE: Wednesday, March 26, 2022		Sheet: 43 of 43	

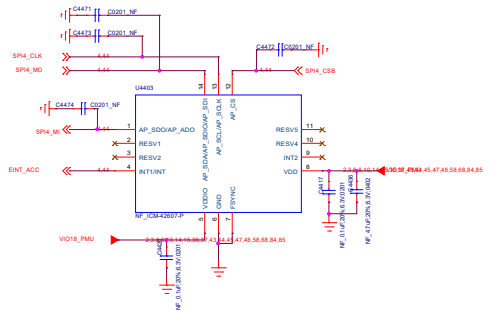
# Fingerprint



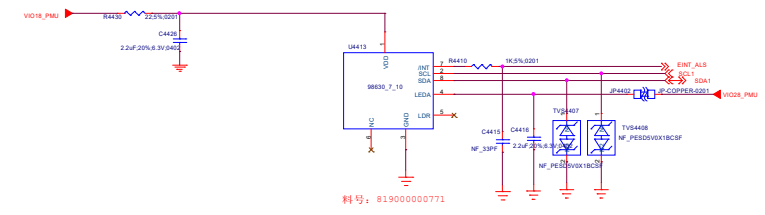
# A Sensor



ACCELEROMETER Keep on but Gyro Cut up



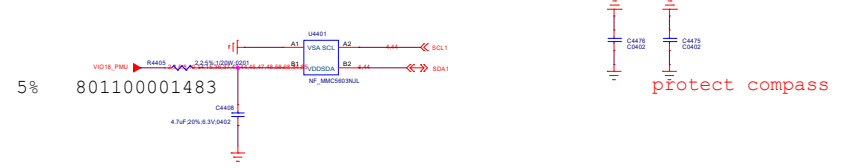
# ALS+Proximity -Sensor



料号: 819000000771

Vendor	Manufacture PN	Slave Address (7-bit)	I2C Address(8-bit)	Remark
Sensortek	STK33562	0X46	Read:0X8C Write:0X8D	

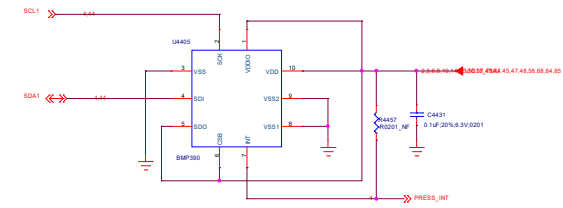
# Compass



5% 801100001483

protect compass

# Barometer Sensor

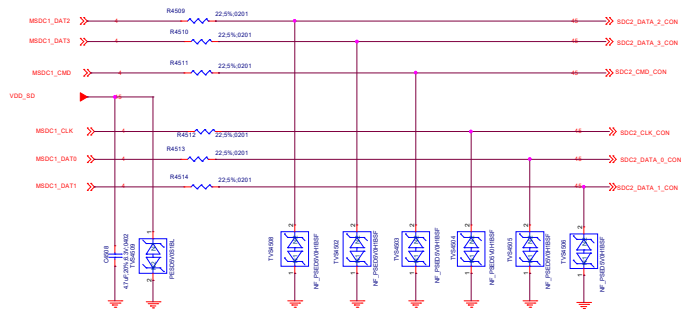


BMP390			
I2C	0x77 (R)	0x76 (W)	SDO--GND
ICP-10101			
I2C	0xc7 (R)	0xc6 (W)	
LPS22HH			
I2C	0x5D (R)	0x5C (W)	

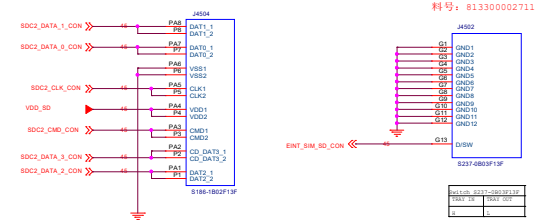
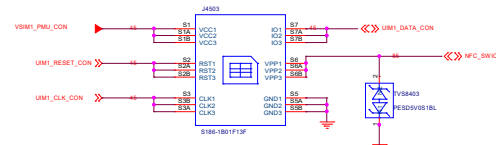
AKM09918C			
I2C	0x19 (R)	0x18 (W)	
MMC5603NJL			
I2C	0x61 (R)	0x60 (W)	

# SIM/TF IF

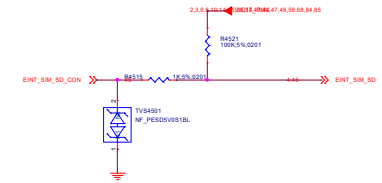
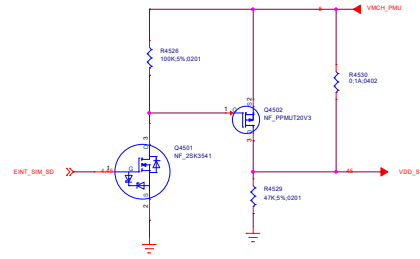
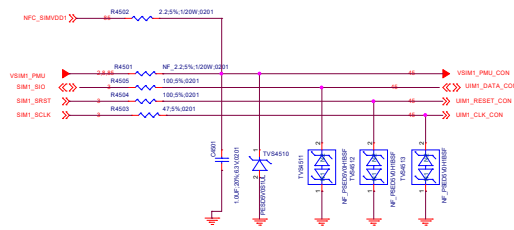
## TF CARD



## TF+SIM1 CARD



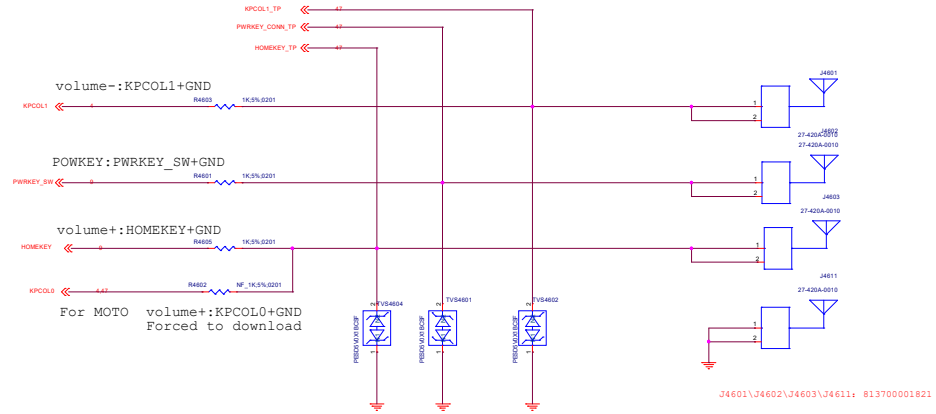
## USIM1



111a	45_SIM/TF IF	REV: V10
DOCUMENT NO:	Design Name	Size: D
DEPARTMENT:	WINGTECH-SH	DESIGNER: YL
Date:	Fri May, February 11, 2022	Sheet: 45 of 45

# Power Key / Key Pad

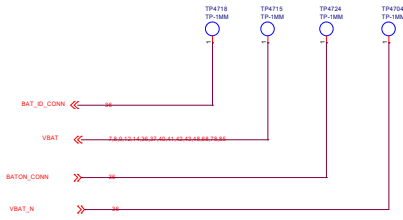
DO NOT put pull-up resistor on PWRKEY



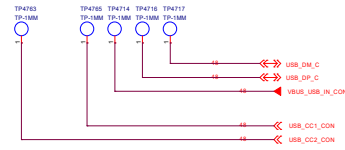
111#	46_Sidekey	REV: V10
DOCUMENT NO.:	Design Name	Size D
DEPARTMENT:	WINGTECH-SH	DESIGNER: YL
		
Date:	Friday, February 11, 2022	Sheet 46 of 48



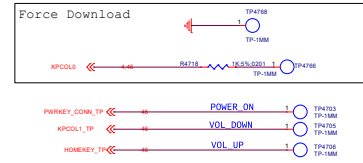
# BATTERY



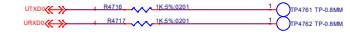
# USB



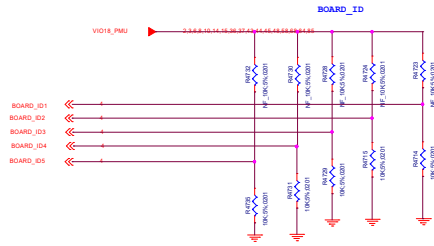
# KEYS



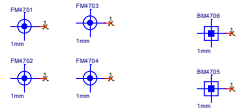
# UART



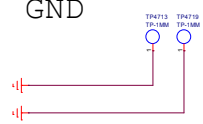
# BOARD ID



# MARK Waterproof



# GND



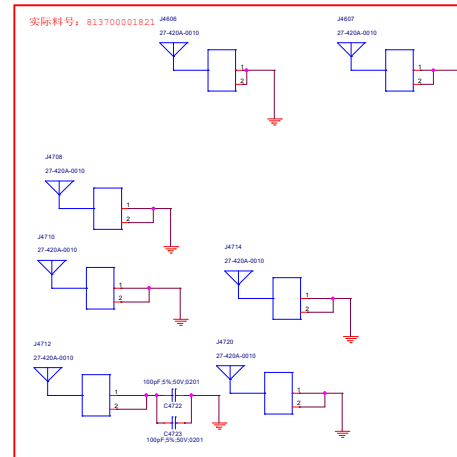
# MIC LABEL



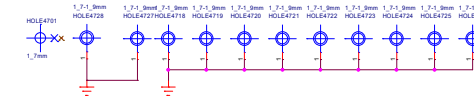
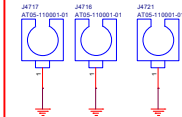
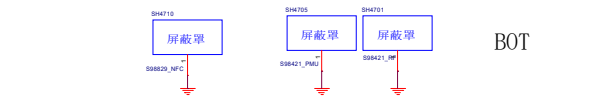
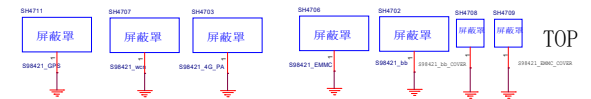
# SN Label



# GND SHRAPNEL

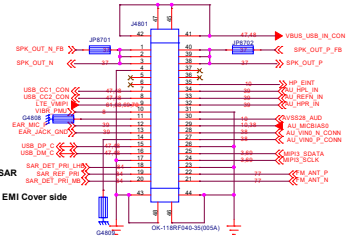


# SHIELDING

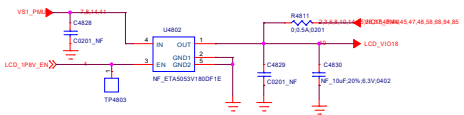


Title: 47_Testpoint/Shielding/GND		REV: V10
DOCUMENT NO.: Design Home	Size: D	
DEPARTMENT: WINGTECH-SH	DESIGNER: YL	
Date: Friday, February 11, 2022		Sheet 47 of 48

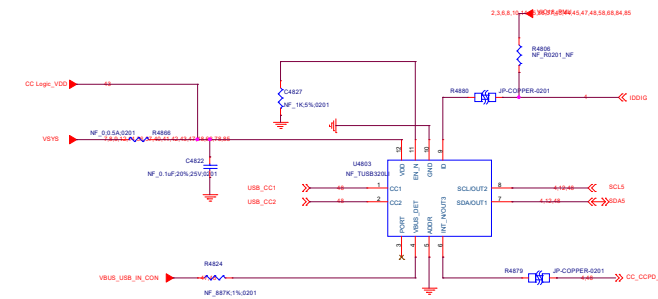
# SUB CONNECTOR



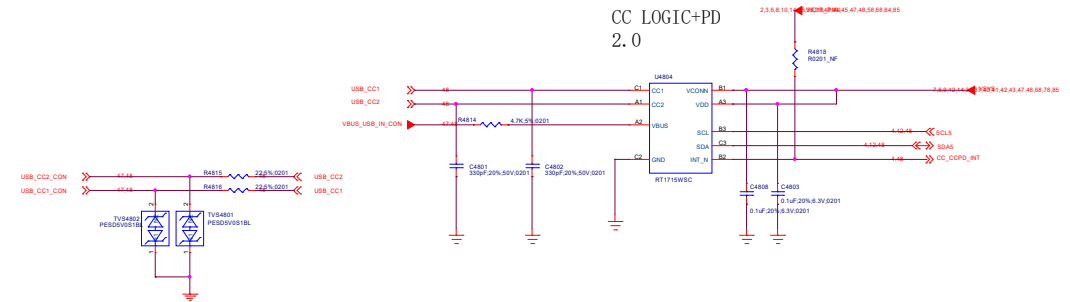
## Reserve for ESD



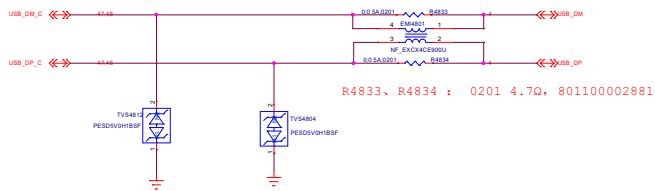
# CC LOGIC



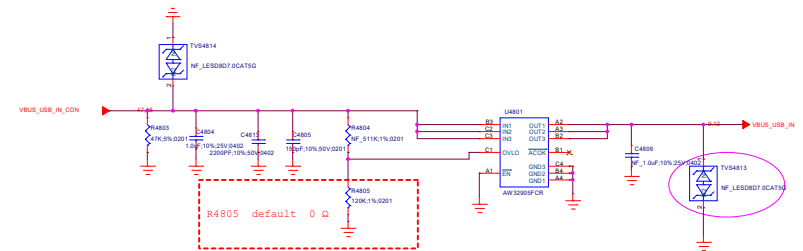
## CC LOGIC+PD 2.0



# USB\_DP DM

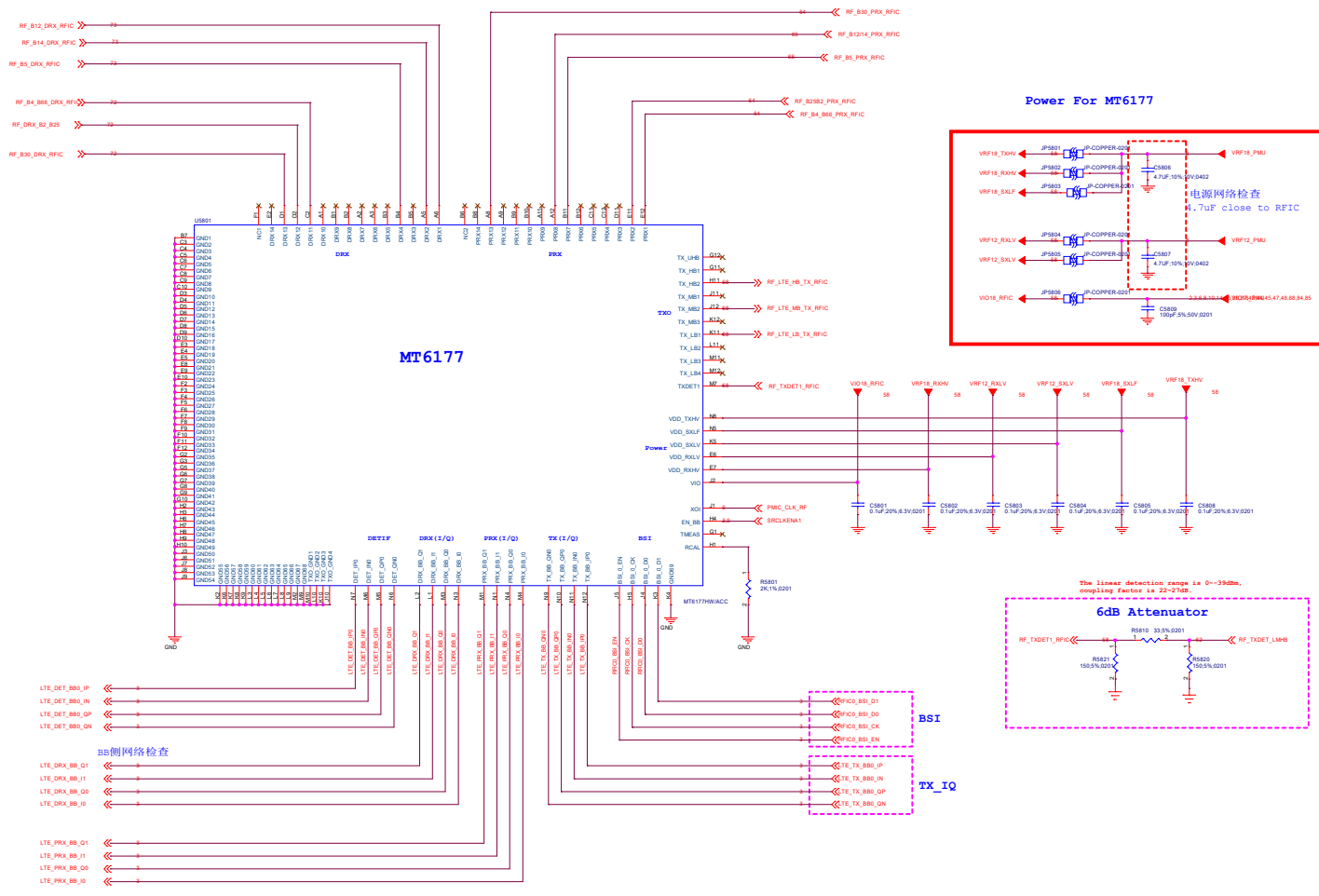


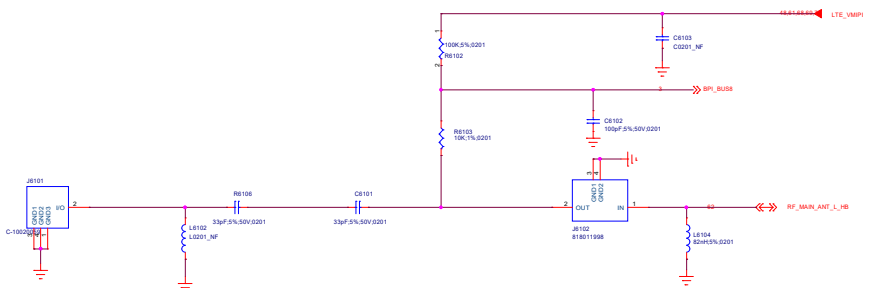
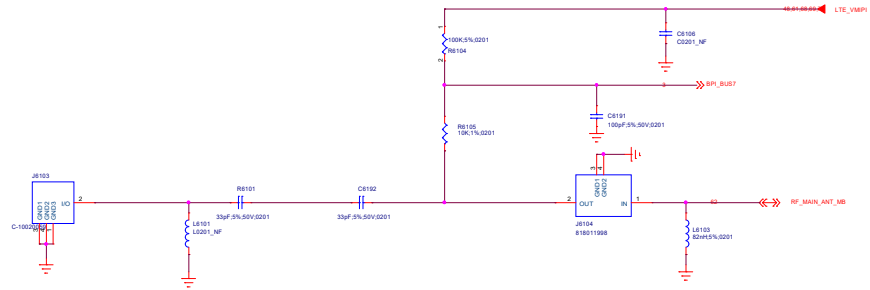
# OVP



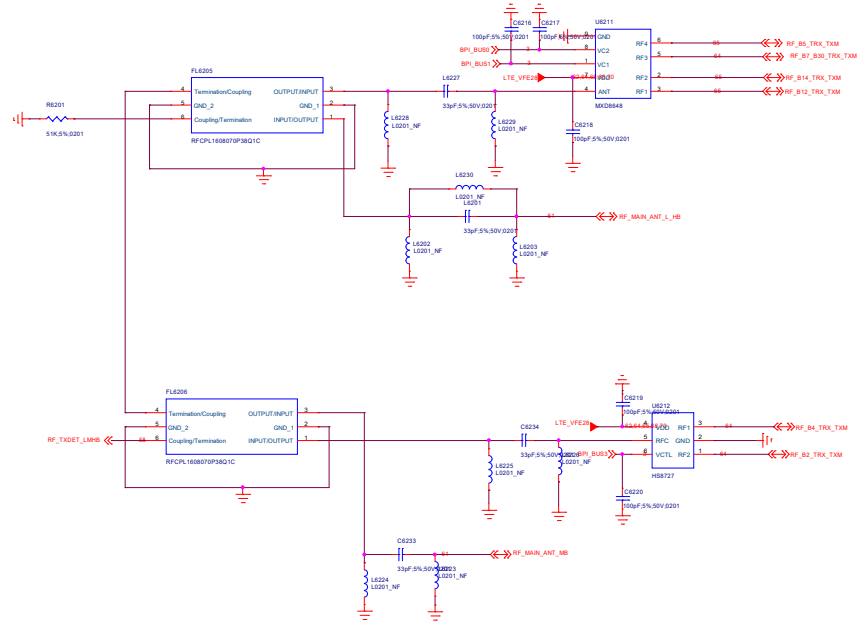
**RX PORT MAPPING**

Area (SU)	SU	SU	SU	4G Roaming	SU Intra-band CA	SU Intra-band CA	SU Inter-band CA	MS/MSB		MS/MS (2)		MS/MS (1)		LS/MS (4)		LS/MS (3)		LS/MS (2)		LS/MS (1)	
								PXA14	PXA13	PXA12	PXA11	PXA10	PXA9	PXA8	PXA7	PXA6	PXA5	PXA4	PXA3	PXA2	PXA1
Ellis SF1	02/03/04/08	01/02/04/05/08	02/04/05/012/013/014/030/066	-	-	-	-	-	30	1	4(06)	-	-	3	2	-	13	8	14	8	12(13)
Ellis SF2	02/03/04/08	01/02/04/05/08	01/02/03/04/05/07/08/010/010/017/020/026/030/041/0511/066/071	-	CA_41C	CA_2C, CA_2A+2A, CA_4A+4A, CA_5B, CA_7C, CA_7A+7A, CA_12B, CA_25A+25A, CA_38C, CA_41C, CA_41A+41A, CA_46B, CA_46C, CA_46A+46A	CA_2A+2A, CA_5A+7A, CA_7A+12A, CA_25A+25A, CA_26A+41A, CA_2A+7A, CA_25A+41A need compatible feature.	-	7	1	4(06)	-	41	3	2(26)	-	13	9(26)	71	8	12(17/13)
Tampa SF1	02/03/04/08	01/02/04/05/08	02/04/05/012/013/014/030/066	-	-	-	-	-	30	1	4(06)	-	-	3	2	-	13	5	14	8	12
Tampa SF2	02/03/04/08	01/02/04/05/08	01/02/03/04/05/07/08/010/010/017/020/026/030/041/0511/066/071	-	CA_41C	CA_2C, CA_2A+2A, CA_4A+4A, CA_5B, CA_7C, CA_7A+7A, CA_12B, CA_25A+25A, CA_38C, CA_41C, CA_41A+41A, CA_46B, CA_46C, CA_46A+46A	CA_2A+2A, CA_5A+7A, CA_7A+12A, CA_25A+25A, CA_26A+41A, CA_2A+7A, CA_25A+41A need compatible feature.	-	7	1	4(06)	-	41	3	2(26)	-	13	9(26)	71	8	12(17)
Ellis SF1	02/03/04/08	01/02/04/05/08	02/04/05/012/013/014/030/066	-	-	-	-	-	30	-	1(4/06)	-	-	3	2	-	-	5	14	8	12(13)
Ellis SF2	02/03/04/08	01/02/04/05/08	01/02/03/04/05/07/08/010/010/017/020/026/030/041/0511/066/071	-	CA_41C	CA_2C, CA_2A+2A, CA_4A+4A, CA_5B, CA_7C, CA_7A+7A, CA_12B, CA_25A+25A, CA_38C, CA_41C, CA_41A+41A, CA_46B, CA_46C, CA_46A+46A	CA_2A+2A, CA_5A+7A, CA_7A+12A, CA_25A+25A, CA_26A+41A, CA_2A+7A, CA_25A+41A need compatible feature.	-	7	-	1(4/06)	-	41	3	2(26)	-	-	9(26)	71	8	12(17/13)
Tampa SF1	02/03/04/08	01/02/04/05/08	02/04/05/012/013/014/030/066	-	-	-	-	-	30	-	1(4/06)	-	-	3	2	-	-	5	14	8	12(13)
Tampa SF2	02/03/04/08	01/02/04/05/08	01/02/03/04/05/07/08/010/010/017/020/026/030/041/0511/066/071	-	CA_41C	CA_2C, CA_2A+2A, CA_4A+4A, CA_5B, CA_7C, CA_7A+7A, CA_12B, CA_25A+25A, CA_38C, CA_41C, CA_41A+41A, CA_46B, CA_46C, CA_46A+46A	CA_2A+2A, CA_5A+7A, CA_7A+12A, CA_25A+25A, CA_26A+41A, CA_2A+7A, CA_25A+41A need compatible feature.	-	7	-	1(4/06)	-	41	3	2(26)	-	-	9(26)	71	8	12(17/13)

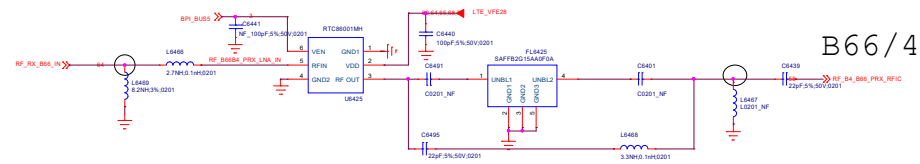
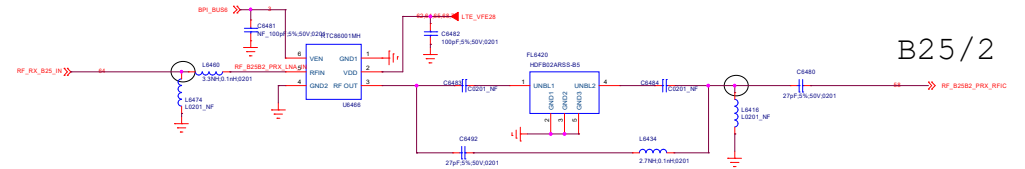
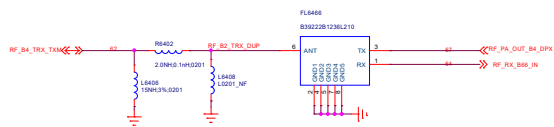
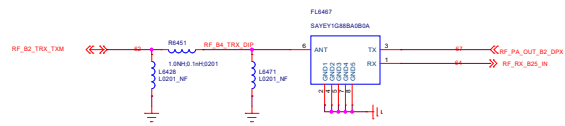
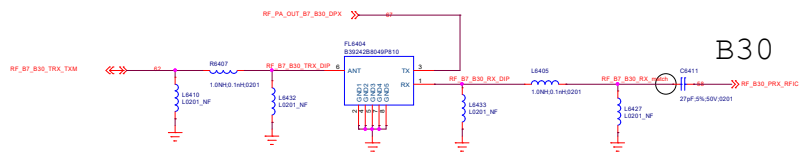




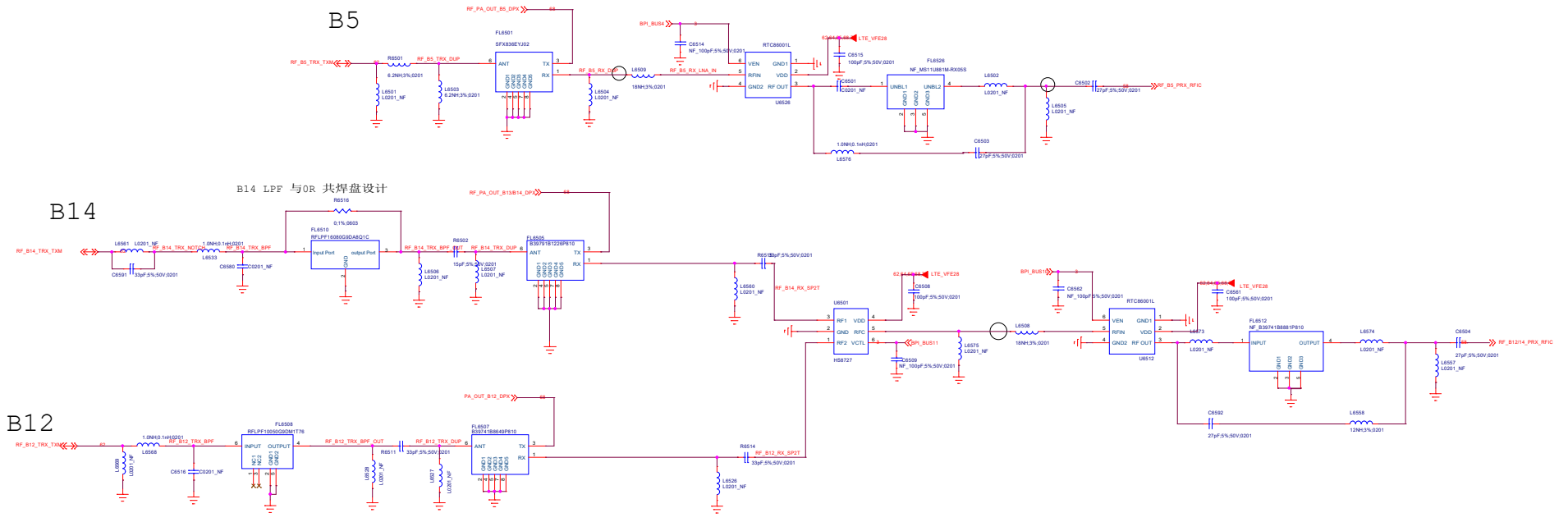
FILE:	SOM32-WTR325 vish CA F&B ES	REV:	V10
DOCUMENT NO.:	WINGTECH-SHAW-SCH001	SIZE:	D
DEPARTMENT:	Shanghai-Hardware	DESIGNER:	WYF+HGO
			
Date:	2018-03-15	Sheet:	07



TITLE	SOM320-WTR3305 with CA F5 8 888	REV:	V10
DOCUMENT NO.:	WINGTECH-SHAW-SCH001	SIZE	D
DEPARTMENT:	Shanghai-Hubei	DESIGNER:	WYF+HGO
		Date:	2019-03-15
		Sheet	07



TITLE: SOM32-WTR320 with CA-FS-BBS	REV: V10
DOCUMENT NO.: WINGTECH-SHAW-SCH001	Size D
DEPARTMENT: Shanghai-Hubei	DESIGNER: WHF-HBG
Date: 2018-03-15	Sheet 07



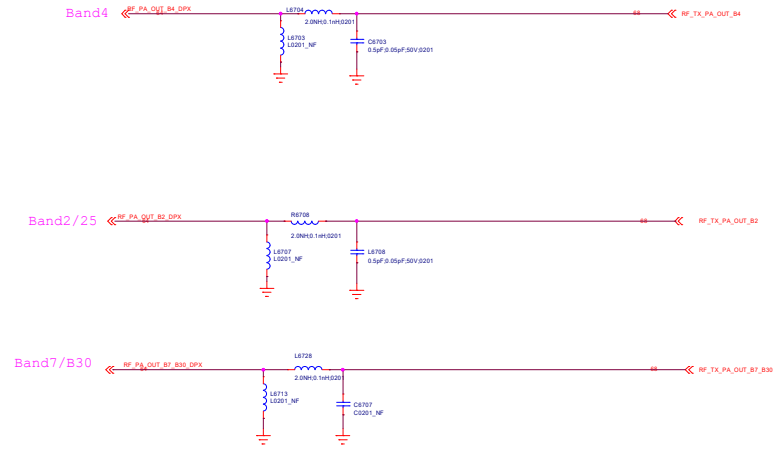
B14

B5

B12

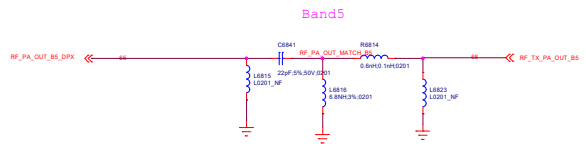
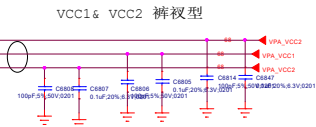
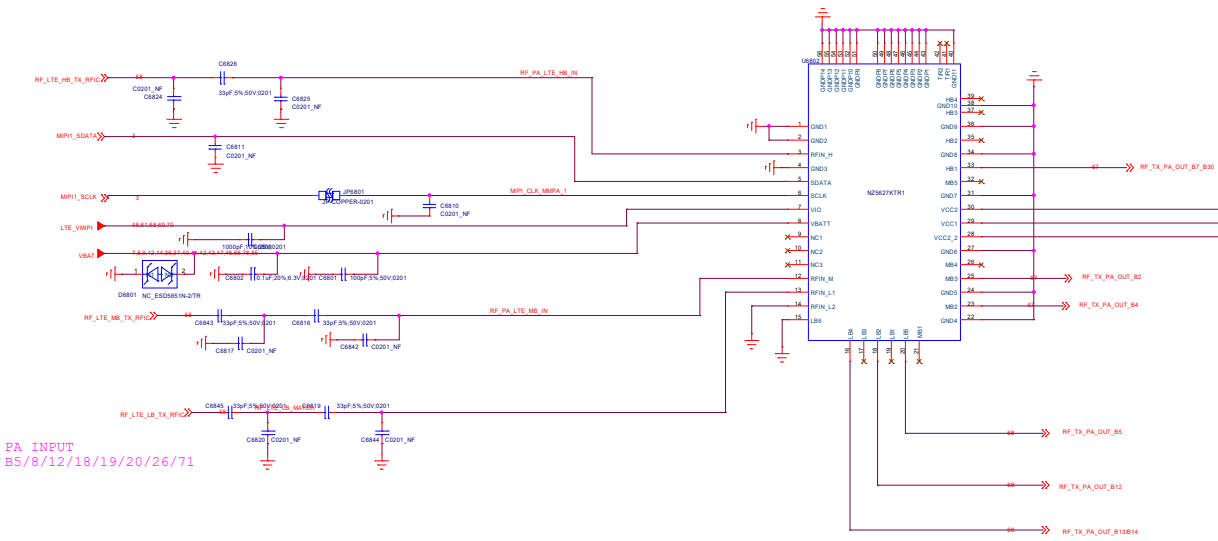
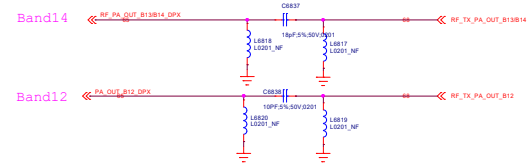
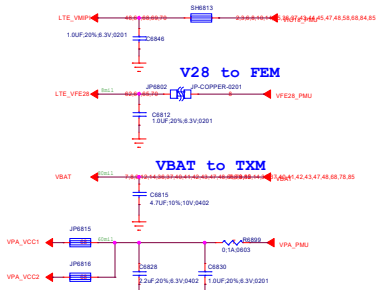
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DOCUMENT NO.: WINGTECH-SHAW-SCH001	Size D
DEPARTMENT: ShengHui-Hubei	DESIGNER: WHF-HBQ
Date: 2019-03-15	Sheet 07



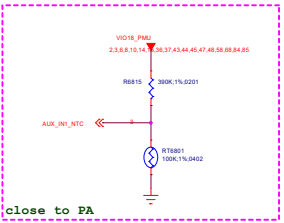


FILE: SOM32-WTR303 with CA F&S BDR	REV: V10
DOCUMENT NO.: WINGTECH-SHAW-SCH001	Size D
DEPARTMENT: ShengHsi-Hardware	DESIGNER: WYF+HGO
<b>WINGTECH</b>	
Date: 2016-03-10	Sheet 07

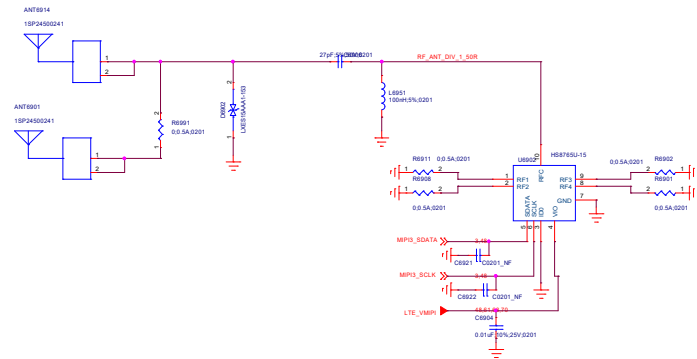
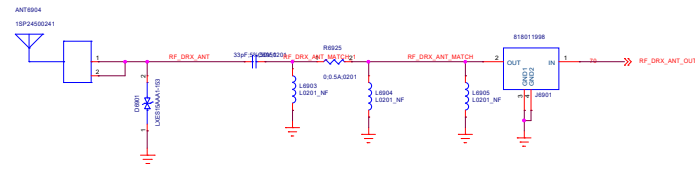
# Power Net Connection



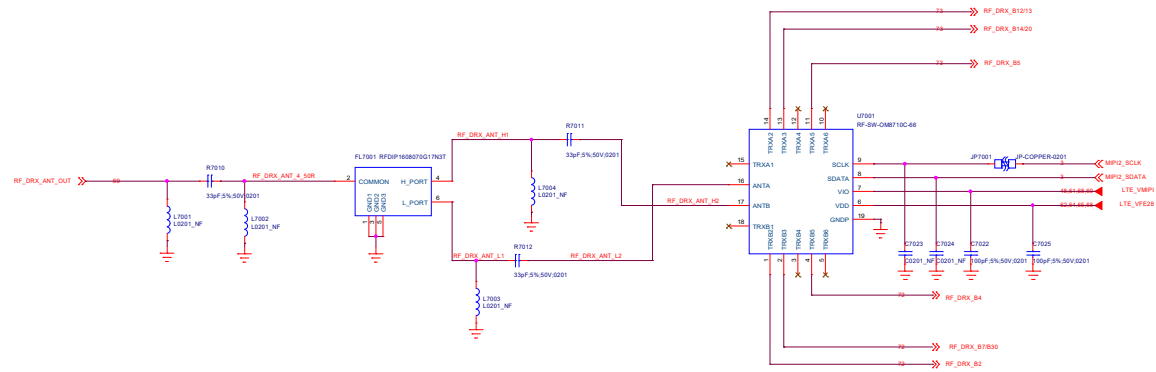
PA INPUT  
B5/8/12/18/19/20/26/71



TITLE: SOM32-WTR3205 with CA F&S BBS	REV: V10
DOCUMENT NO.: WINGTECH-SHAW-SCH001	Size D
DEPARTMENT: ShengHua-Huawei	DESIGNER: WHF+HG
Date: 2016-03-15	Sheet 07

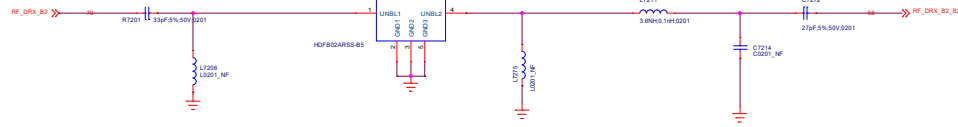


FILE:	S0M32-WTR3025 v04A F05 B03	REV:	V10
DOCUMENT NO.:	WINGTECH-SHAW-SCH001	SIZE:	D
DEPARTMENT:	Shanghai-Hubei	DESIGNER:	WYF+HGO
			
Date:	2016-03-15	Sheet:	07

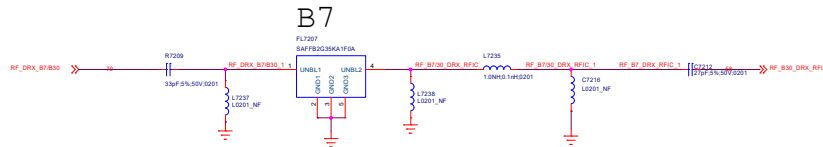




B66/4



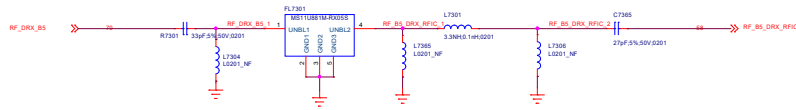
B25/2



B7

Title: SOM32-WTR3305 with CA FCS BBS		REV: V10
DOCUMENT NO.: WINGTECH-SHAW-SCH001		Size D
DEPARTMENT: <b>Shanghai Hardware</b>	DESIGNER: WYF+HGO	
<b>WINGTECH</b>		
Date: 2019-03-15	Sheet	07

### B5



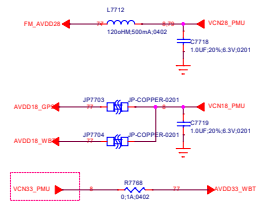
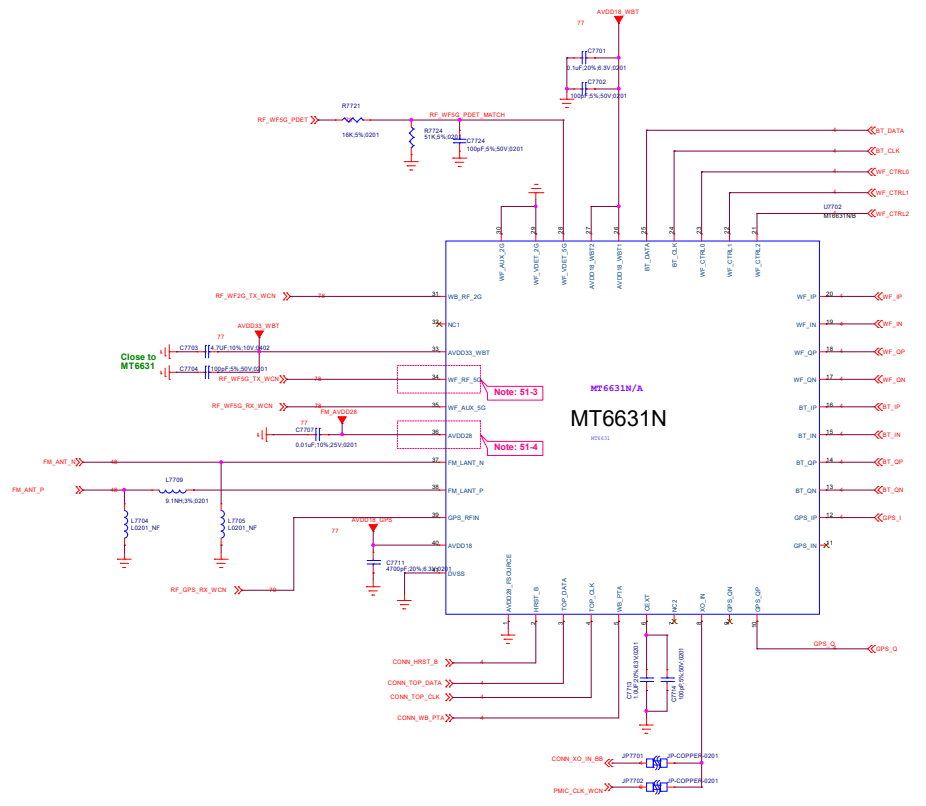
### B12/13



### B14/B20



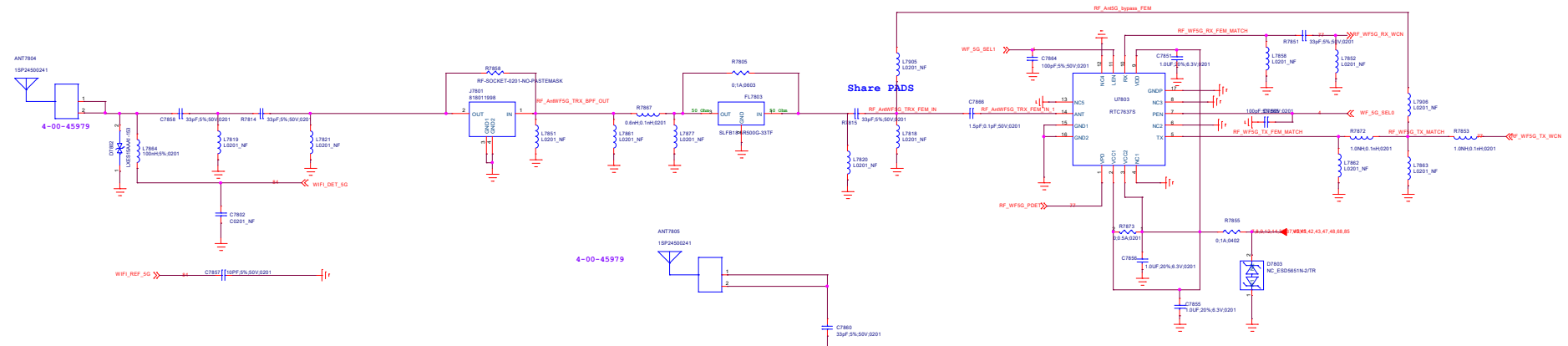
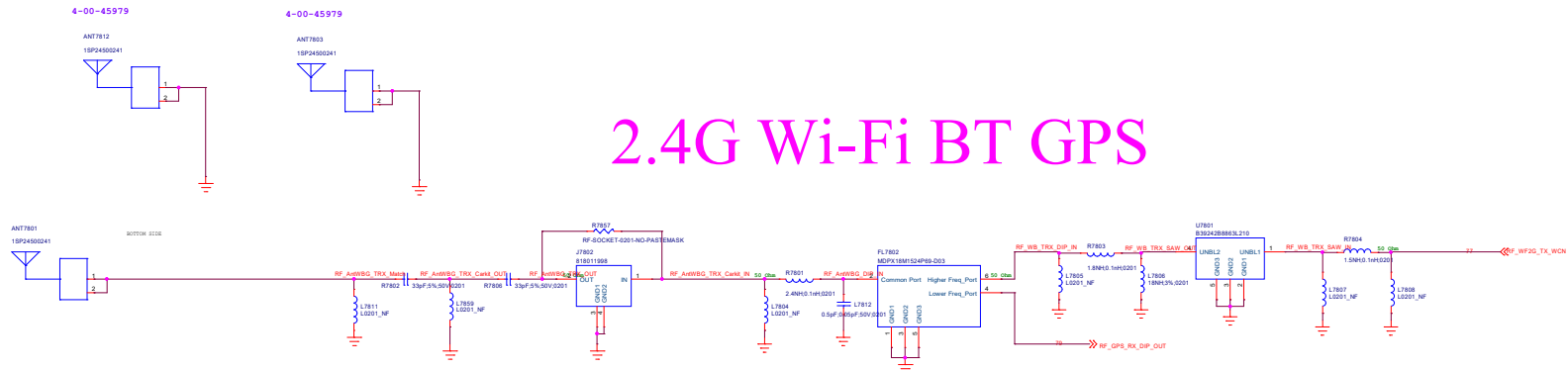
FILE: SOM32-WTR3205-wm-CA-FS-B05	REV: V10
DOCUMENT NO.: WINGTECH-SHAW-SCH001	Size D
DEPARTMENT: ShengJie-Hardware	DESIGNER: WHF-HSQ
<b>WINGTECH</b>	
Date: 2019-03-15	Sheet 07



**Schematic design notice of "51\_CONNECTIVITY\_CONSYS\_MT6631"**

- Note 51-1: For R5015 size, please select 0402 size or larger one
- Note 51-2: Please refer to MT6762 Baseband design notice for VCN33 LDO selection guide
- Note 51-3: If WiFi 5G not support, connect pin 34(WF\_RF\_5G) to GND
- Note 51-4: Pin 36 (AVDD28\_FM) must be connected to VCN28 even if FM not support
- Note 51-5: If WiFi 5G were no need, VCN33 could be chosen from PMIC output (VCN33\_PMU)

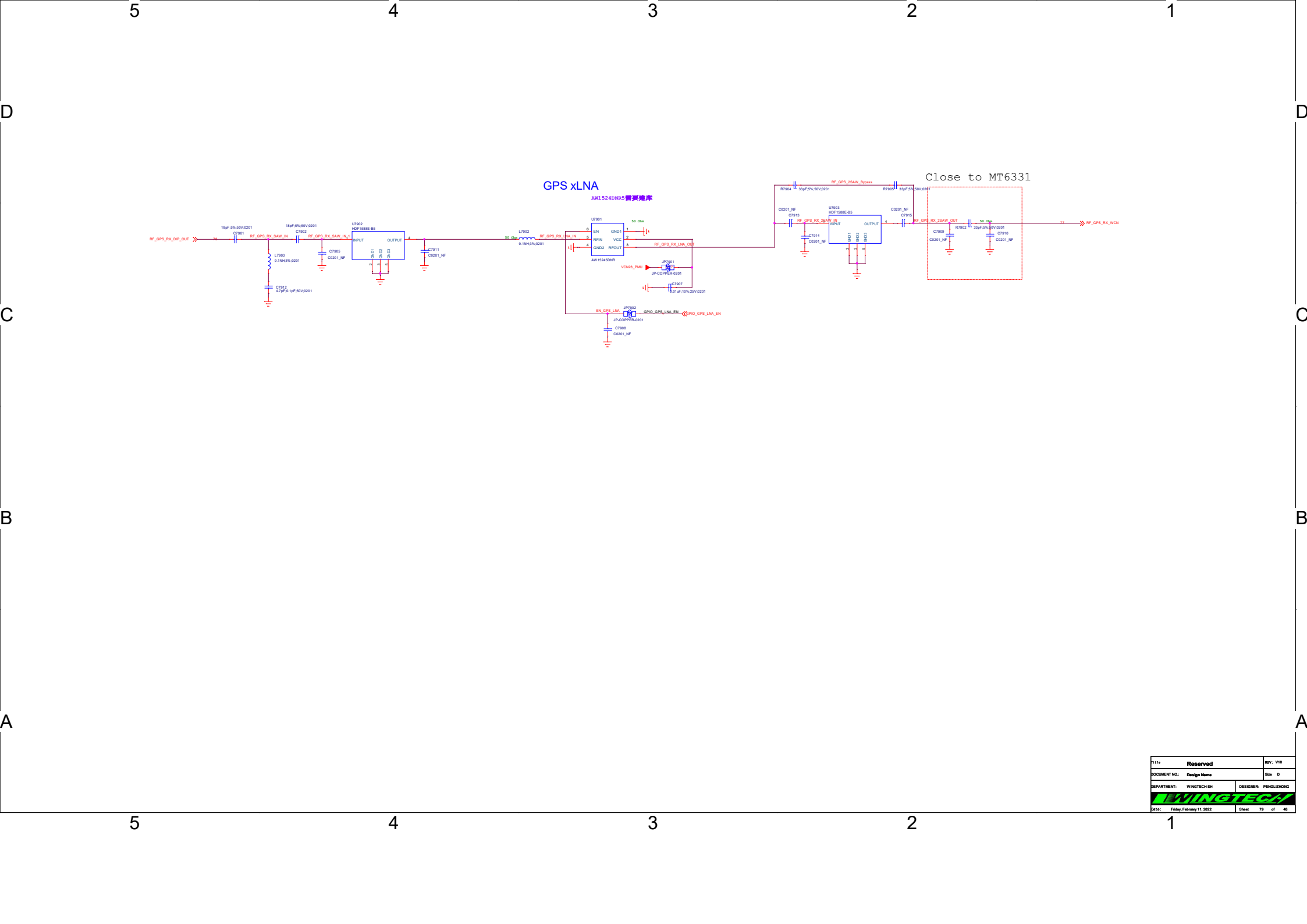
# 2.4G Wi-Fi BT GPS



# 5G Wi-Fi

Title:	Reserved	REV: V10
DOCUMENT NO:	Design Name	Size: D
DEPARTMENT:	WHYTECH-SH	DESIGNER: PENGJINGQI
Date:	Saturday, July 02, 2022	Sheet 78 of 48



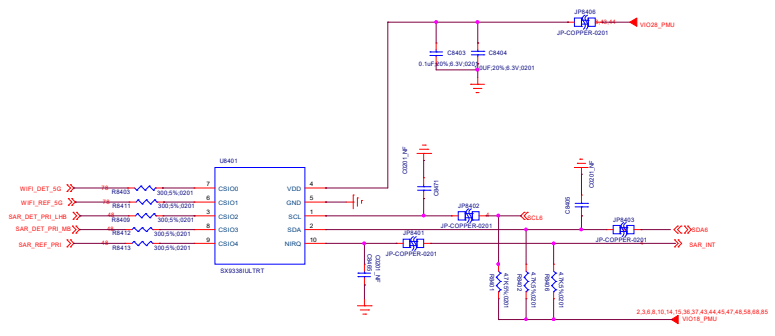


GPS xLNA

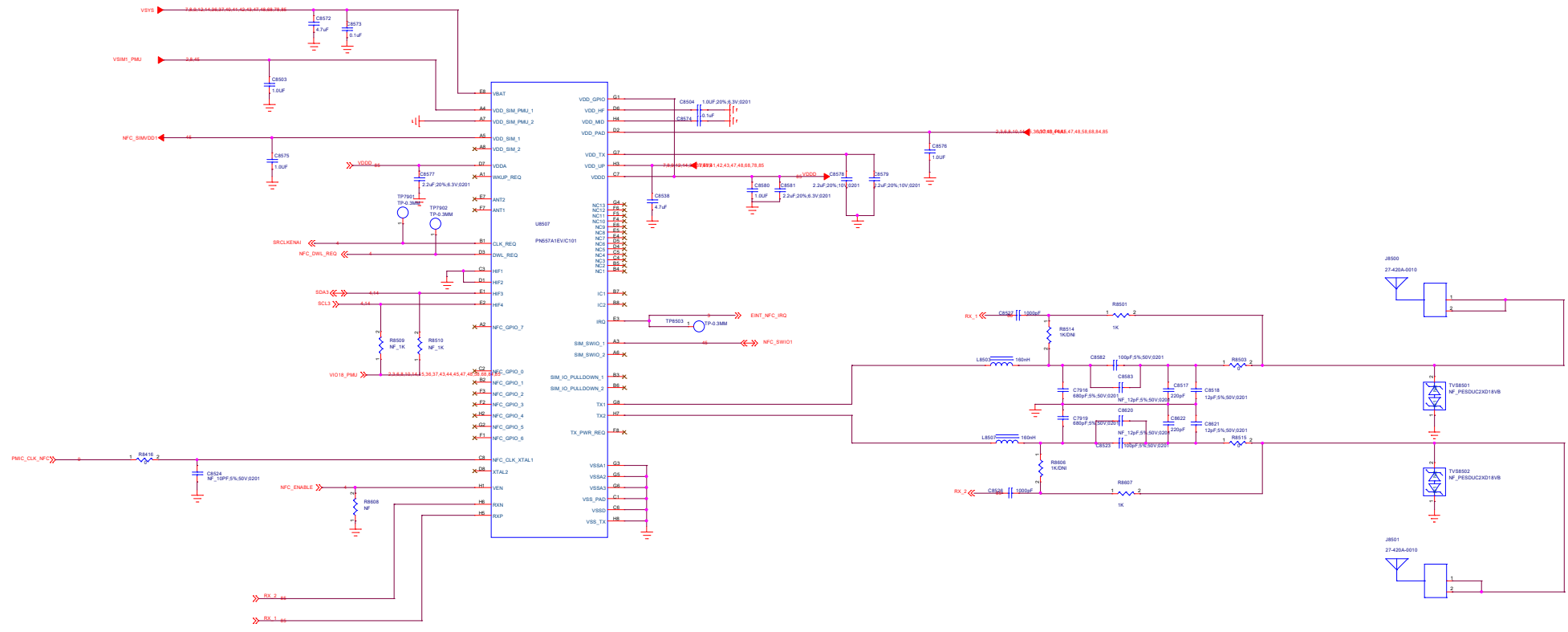
AW1524DNR5 射频滤波器

Close to MT6331

Title:	Reserved	REV:	V10
DOCUMENT NO.:	Design Name	Size:	D
DEPARTMENT:	WHGTECH-SH	DESIGNER:	PENGLIANG
<b>WINTECH</b>			
Date:	Friday, February 11, 2022	Sheet:	79 of 48



Title: <b>48_Sub PCB IF</b>		REV: V10
DOCUMENT NO.:	Design Name	Size D
DEPARTMENT: WINGTECH-SH	DESIGNER: YL	
		
Date: Tuesday, June 28, 2022	Sheet	84 of 48



TI116	85_NFC	REV: V16
DOCUMENT NO.:	Design Name	Size D
DEPARTMENT:	WINGTECH-SH	DESIGNER: YL
Date:	Friday, February 11, 2022	Sheet 85 of 48