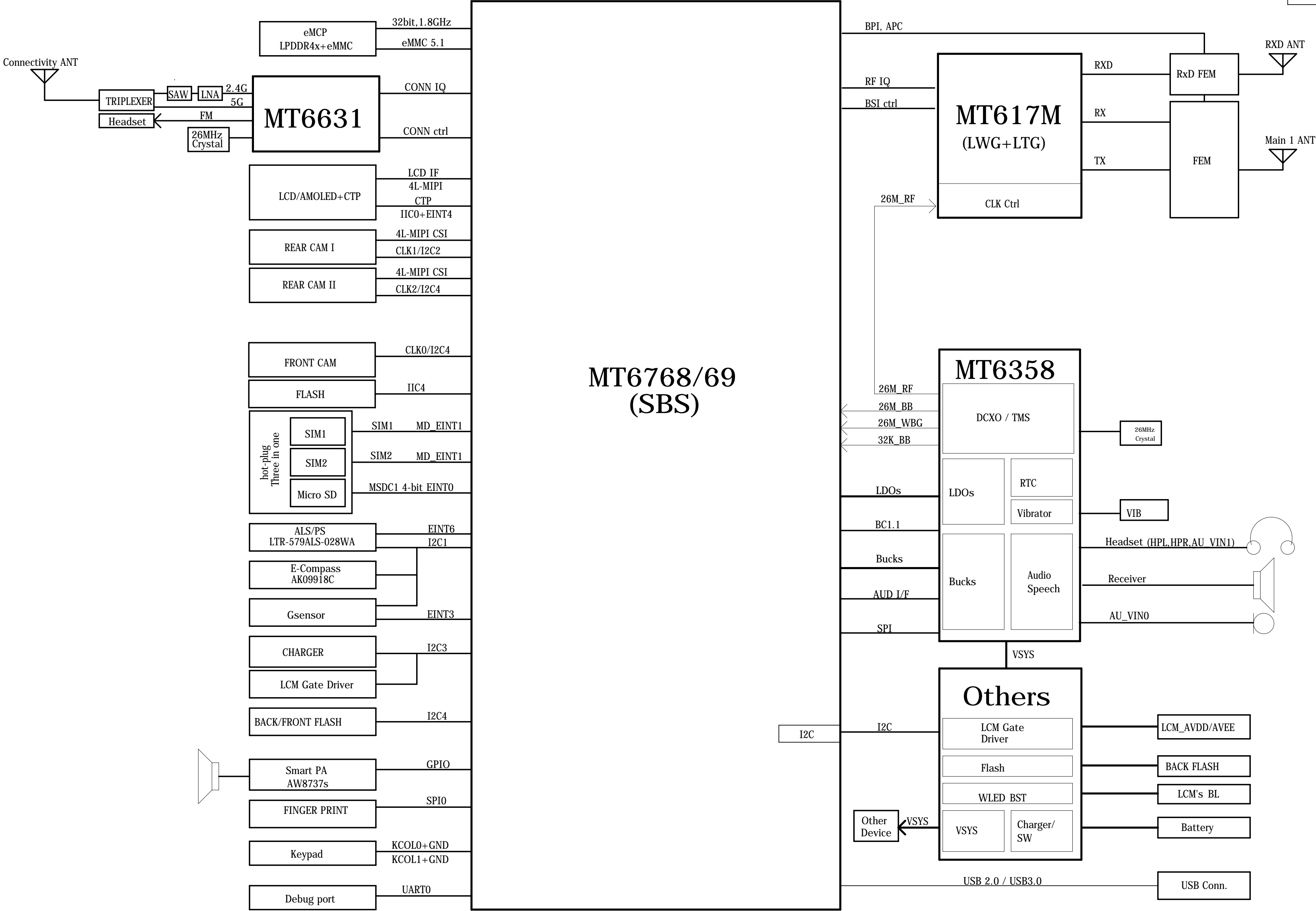


BLOCK_DIAGRAM

Project : MT6768/69 LPDDR4x

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 00_BLOCK_DIAGRAM		VERSION: V1.0	SHEET: 1 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

I2C_ID_OVERVIEW

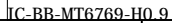
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

I2C	Function	I2C Spec.	Budget Timing	I2C Slave Address (7-bit mode)
I2C-0	CTP	400 Kbps	Yes.	TP£ ¨ NT36572A£ © I2C address:write:0xC4,read:0xC5
		400 Kbps		
I2C-1	M Sensor	400 Kbps	Yes.	AK09918C-L:I2C ADDRESS:0x18(Write)/0x19(Read)
	A+Gyro Sensor	400 Kbps		
	ALS / PS Sensor	400 Kbps	Yes.	LTR-579ALS-028WA/ ALS + PS I2C address: 0x53 (Write:0xA6, Read:0xA7)
	Gsensor	400 Kbps	Yes.	MXC4005XC:I2C ADDRESS:0x2A(Write)/0x2B(Read)£ ¨ default£ © KXTJ3-1057:I2C ADDRESS:0x1C(Write)/0x1D(Read)£ ¨ reserve£ ©
I2C-2	REAR CAMERA Wide (13M+AF)	400 Kbps	Yes.	Back camera I (S5K3L6XX03-FGX9) I2C address: (Write:0x20, Read:0x21) Drv IC(DW9718S) I2C address: (Write:0x18, Read:0x19) EEPROM IC(BL24SA64-CS) I2C address: (Write:0xA0, Read:0xA1)
I2C-3	Charger IC	400 Kbps	Yes.	BQ25601:I2C ADDRESS:0xD6(Write)/0xD7(Read)
	LCM Gate Driver	400 Kbps	Yes.	OCP2131:I2C Address=0x3E write:0x7C read:0x7D
I2C-4	Flash LED Driver	400 Kbps	Yes.	KTD2699:I2C Address=0x63 write:0xC6 read:0xC7
	REAR CAMERA Tele	400 Kbps	Yes.	Back camera(GC5025W) I2C address: (Write:0x6E, Read:0x6F)
	FRONT CAMERA	400 Kbps	Yes.	Front camera sensor(S5K3L6XX03-FGX9) I2C address: (Write:0x5A Read:0x5B) Front camera EEPROM(GT24P64AL-2CSLI-TR) I2C address: (Write:0xA2 Read:0xA3)

Note : I2C Spec. : Standard mode (100 kbps) and Fast mode (400 kbps), Fast mode Plus (1 Mbps) and High-speed mode (3.4 Mbps)

COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 01_I2C_ID_OVERVIEW		VERSION: V1.0	SHEET: 2 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

U1001

SHIELDING&LOGO&SN&MARKTL1001

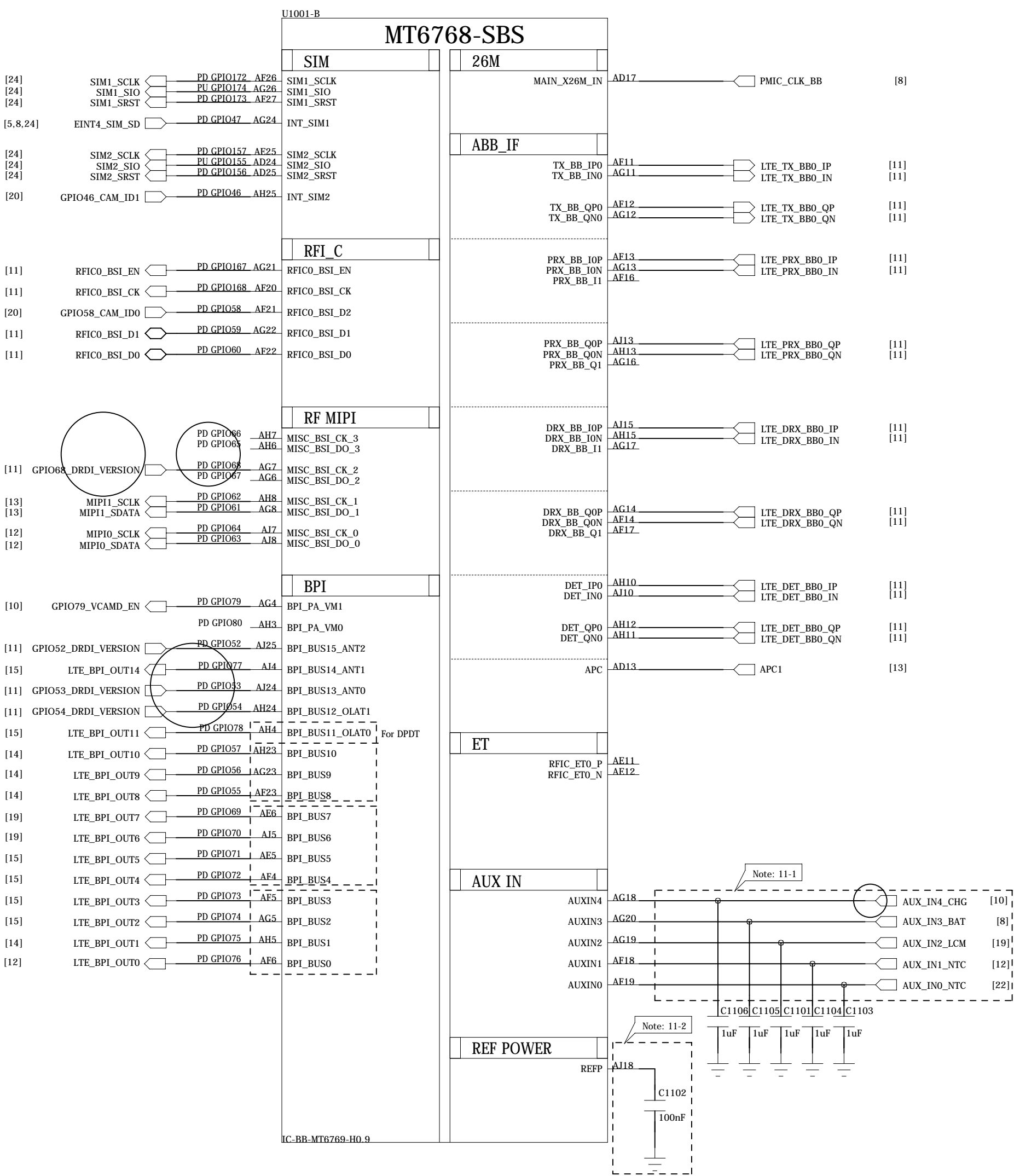
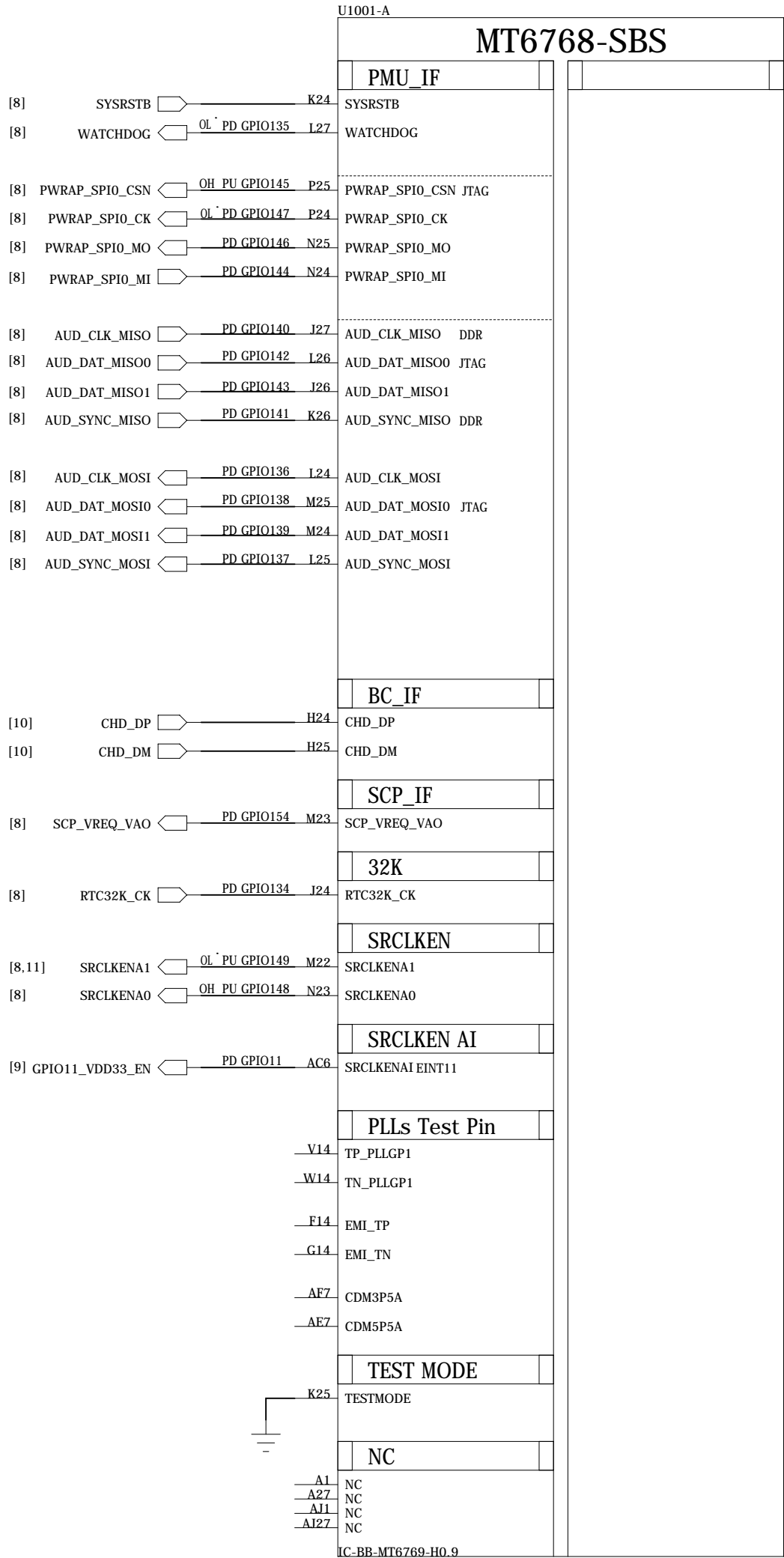
TRANSSION-2.5H

MARK1001 MARK1002 MARK1003 MARK1004

MARK_1.0 MARK_1.0 MARK_1.0 MARK_1.0

SHEET: 3 OF 24

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



"PWRAP_SPI0_CSN" and "AUD_DAT_MOSI0" are bootstrap pin to select which interface will be the JTAG pin out.

	PWRAP_SPI0_CSN	AUD_DAT_MOSI0	AP_JTAG	MD_JTAG
Default	HI	LO	N/A	N/A
	HI	HI	SPI0+EINT8	SP12+SPI3
	LO (by ext. PU)	LO (by ext. PU)	SPI0+EINT8	N/A
	LO (by ext. PU)	HI (by ext. PU)	N/A	N/A

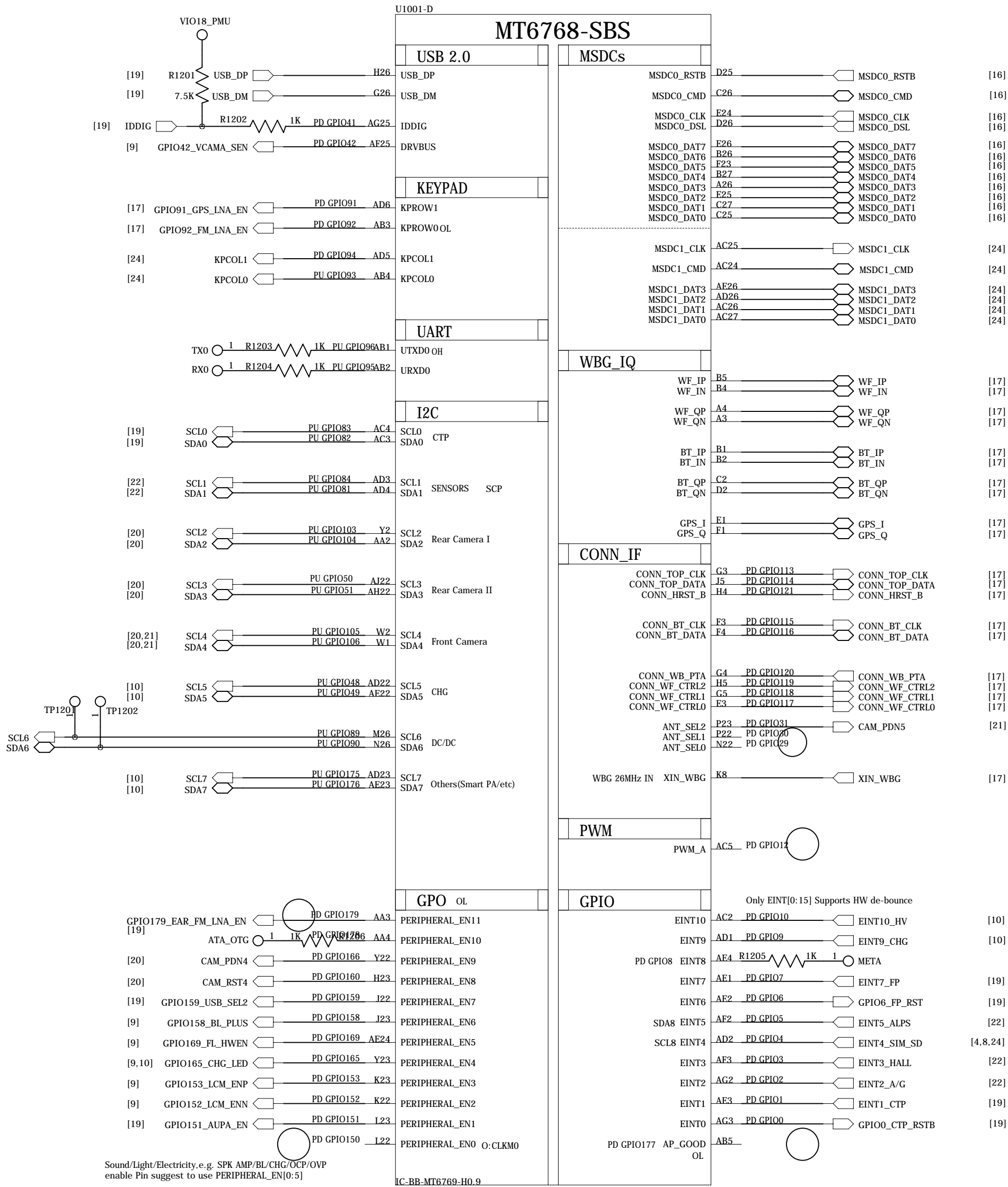
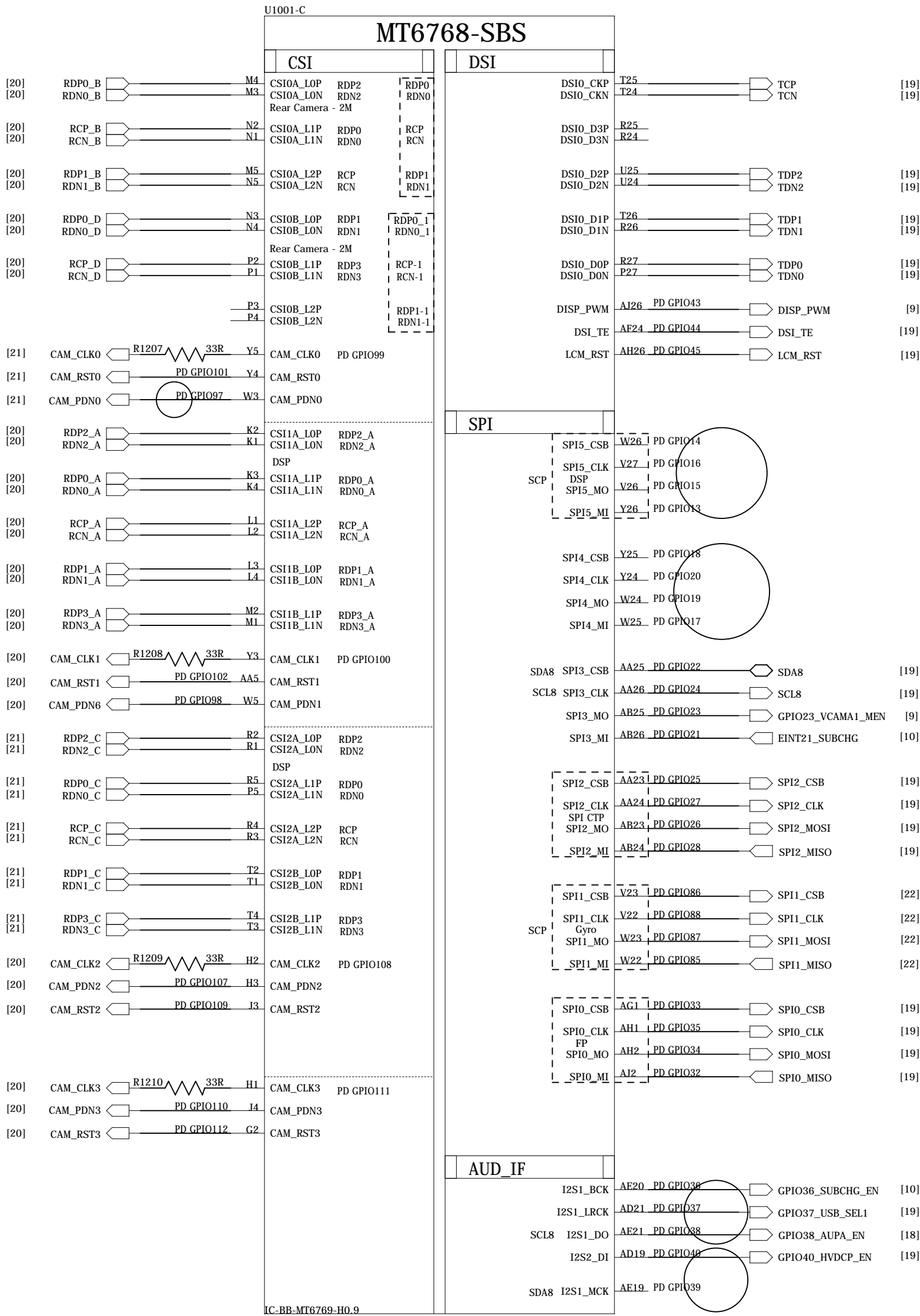
AUD_SYNC_MISO and AUD_CLK_MISO are DDR type feature in bootstrap

	AUD_SYNC_MISO	AUD_CLK_MISO	DDR Type	VDRAM1 / VDRAM2 (PMU)
Default	LO	LO	LP4X eMCP	1.125V/ 0.6V
	LO	HI (by ext. PU)	Reserved	OFF/1.8V
	HI (by ext. PU)	LO	LP3 eMCP	1.225V/OFF
	HI (by ext. PU)	HI (by ext. PU)	Reserved	1.125V/1.8V

Schematic design notice of "11_BB_I" page.	
Note 11-1:	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 11-2:	The de-coupling cap. for REFP (AJ21 ball) have to be placed as close to BB as possible.

COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 11_BB_I		VERSION: V1.0	SHEET: 4 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

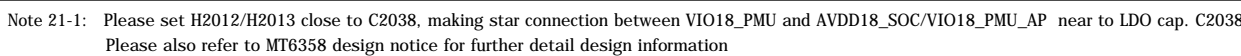
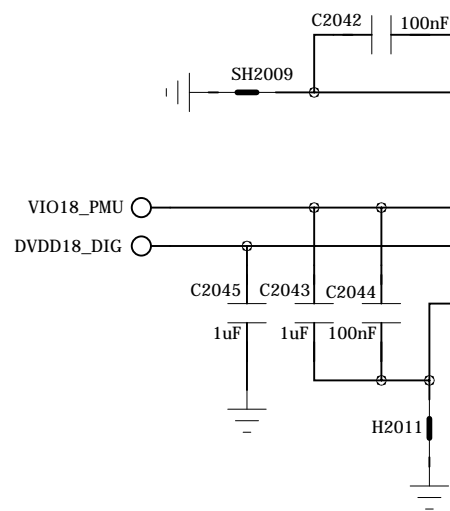
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 12_BB_II		VERSION: V1.0	SHEET: 5 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

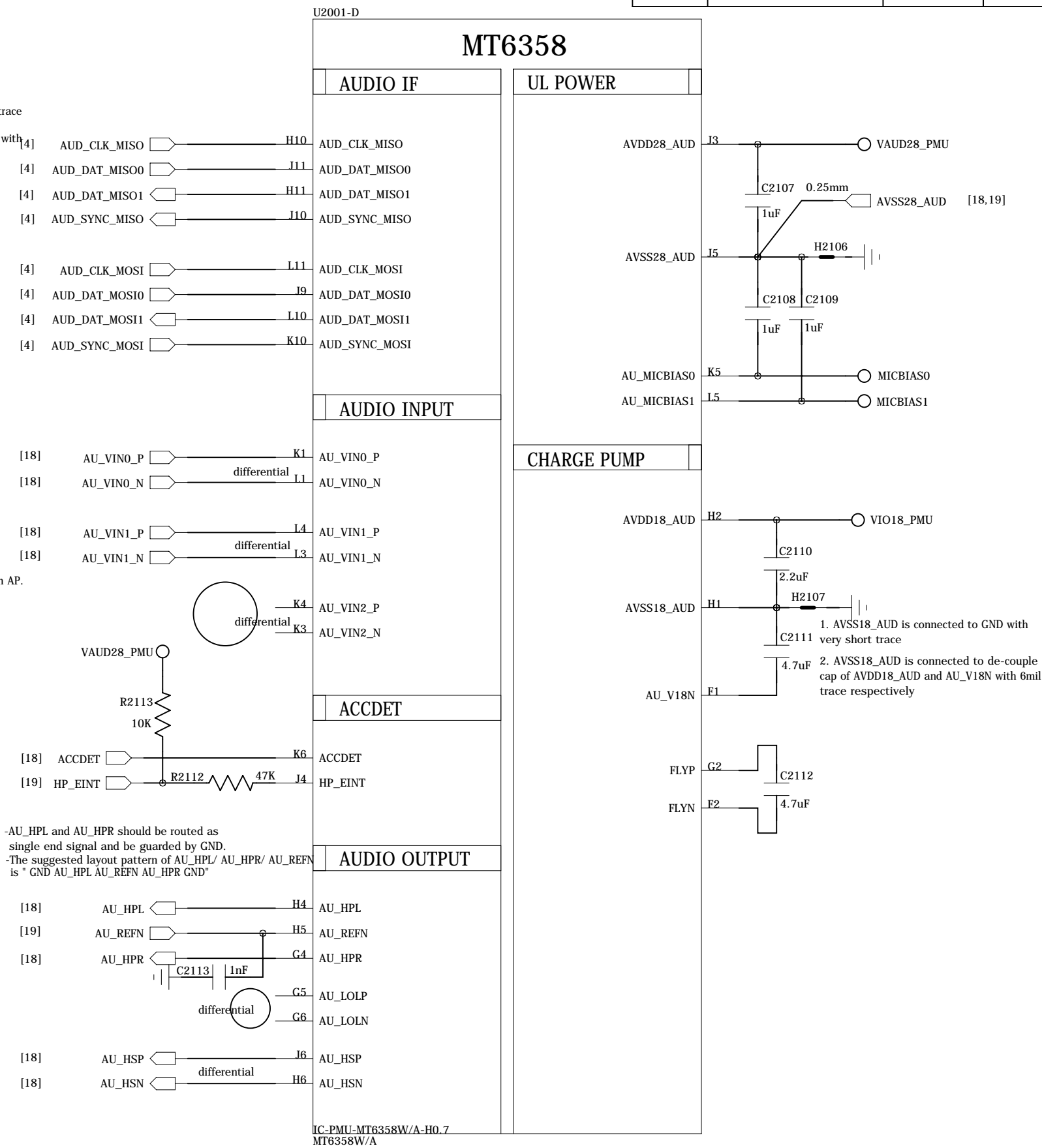
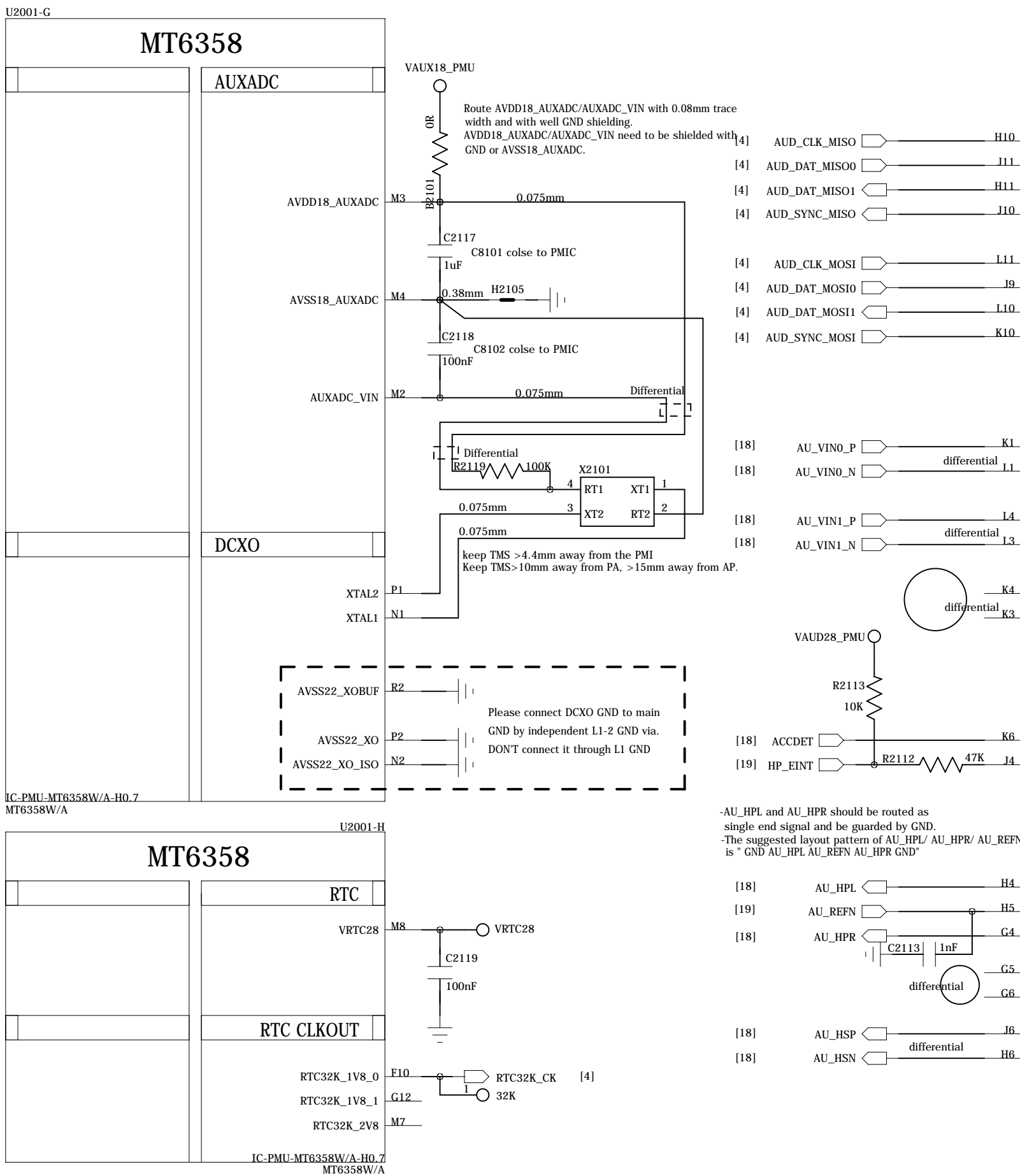
PMU_BUCK

PMU_LDO



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 20_POWER_MT6358_I		VERSION: V1.0	SHEET: 7 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

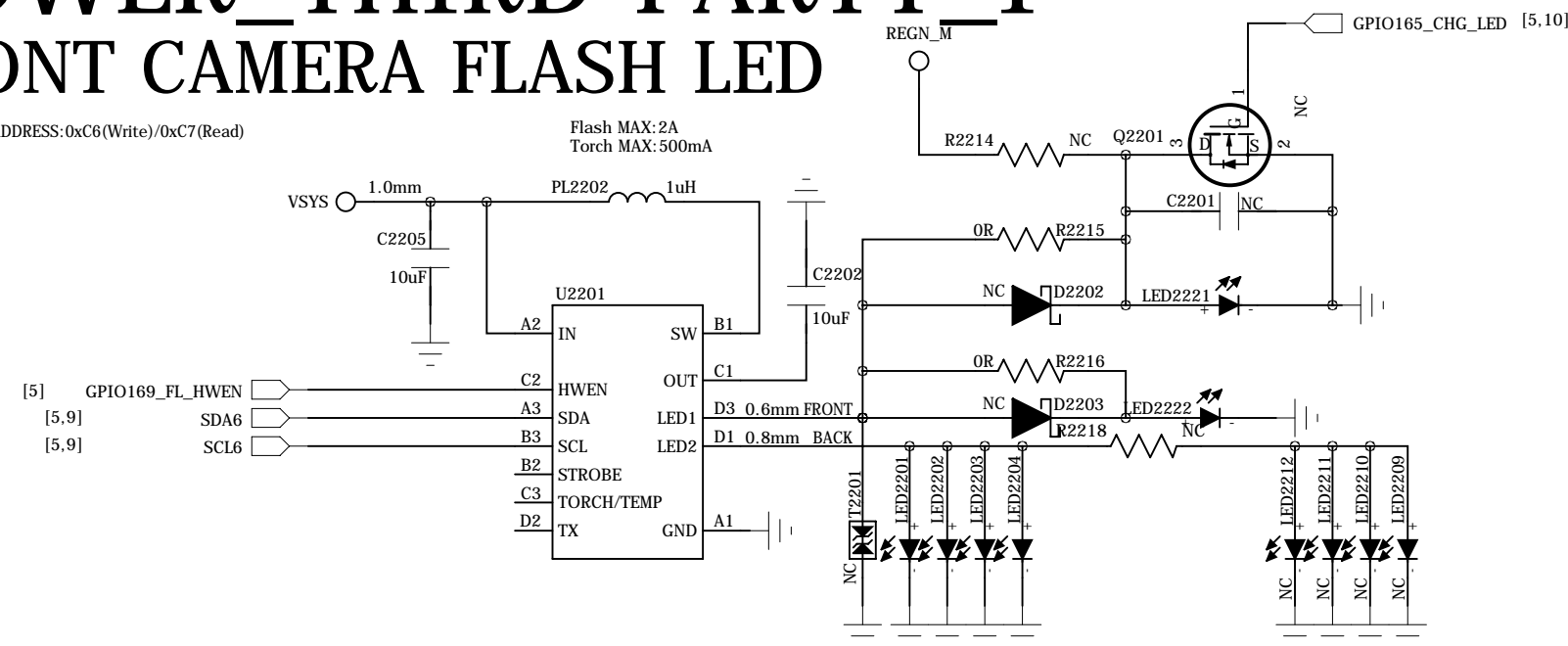
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 21_POWER_MT6358_II		VERSION: V1.0	SHEET: 8 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

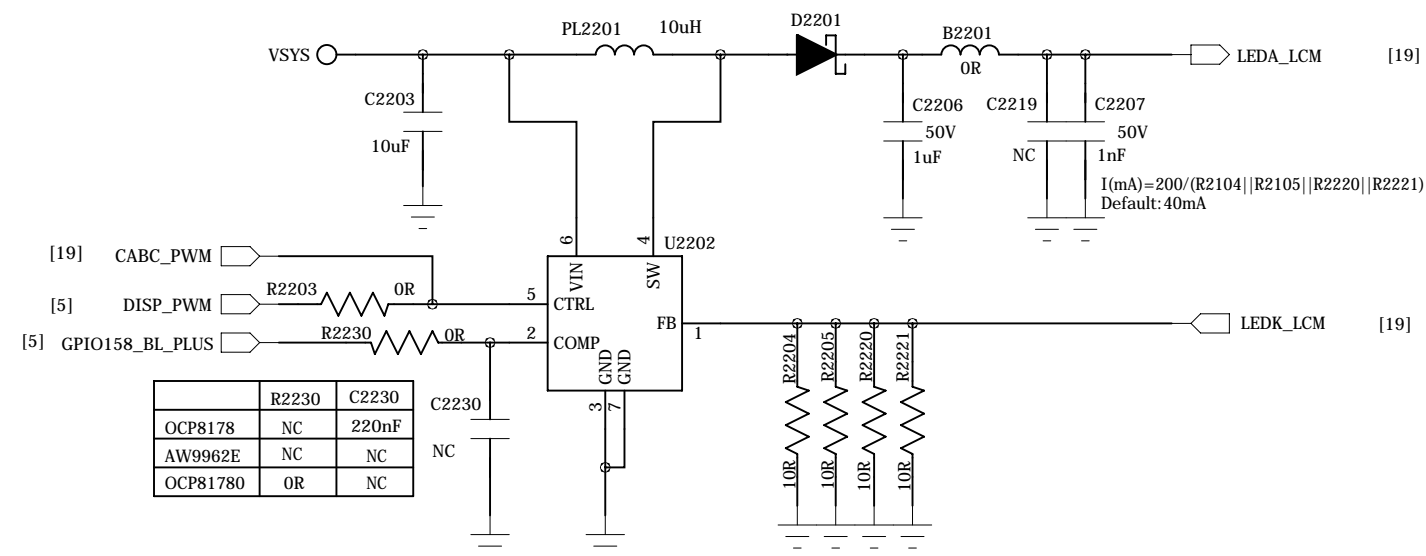
POWER_THIRD-PARTY_I
FRONT CAMERA FLASH LED

AW36515:I2C ADDRESS:0xC6(Write)/0xC7(Read)

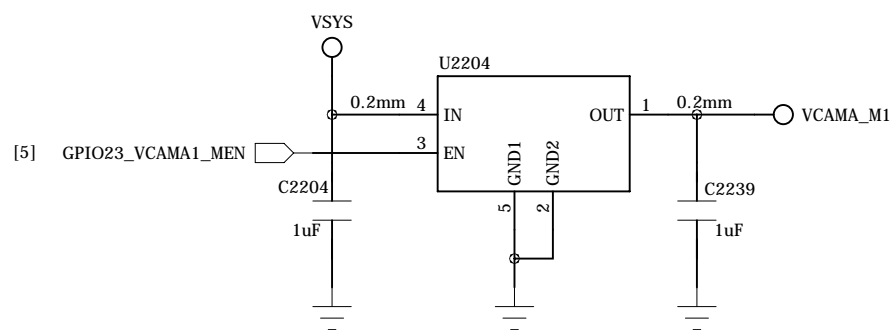


REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

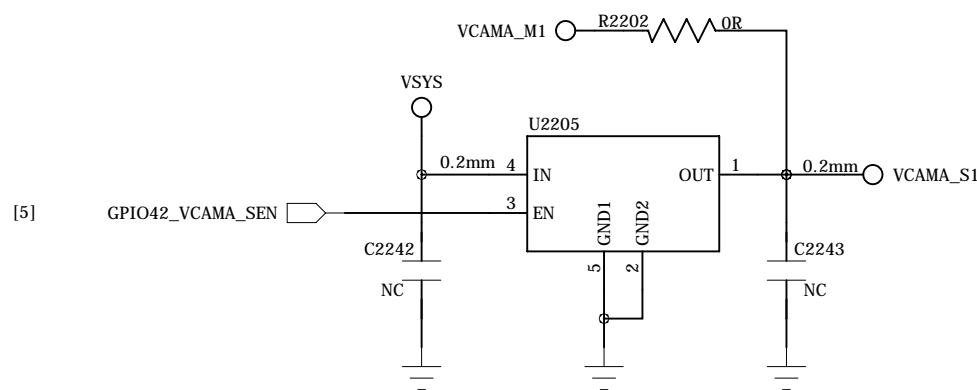
LCM Backlight LED Driver



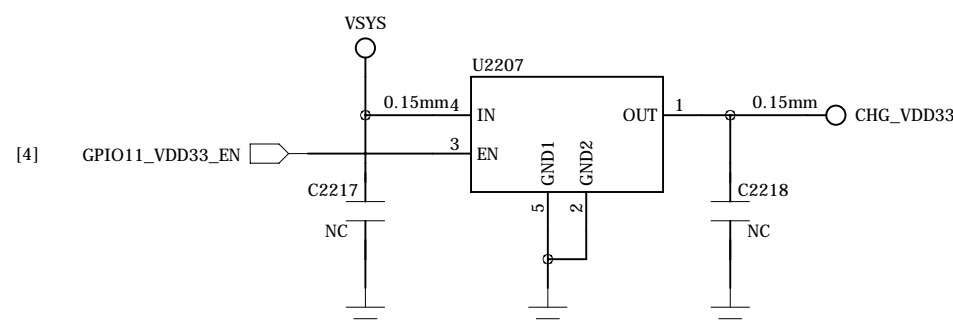
VCAMA_MAIN_1 (2.8V)



VCAMA_SUB_1 (2.8V)

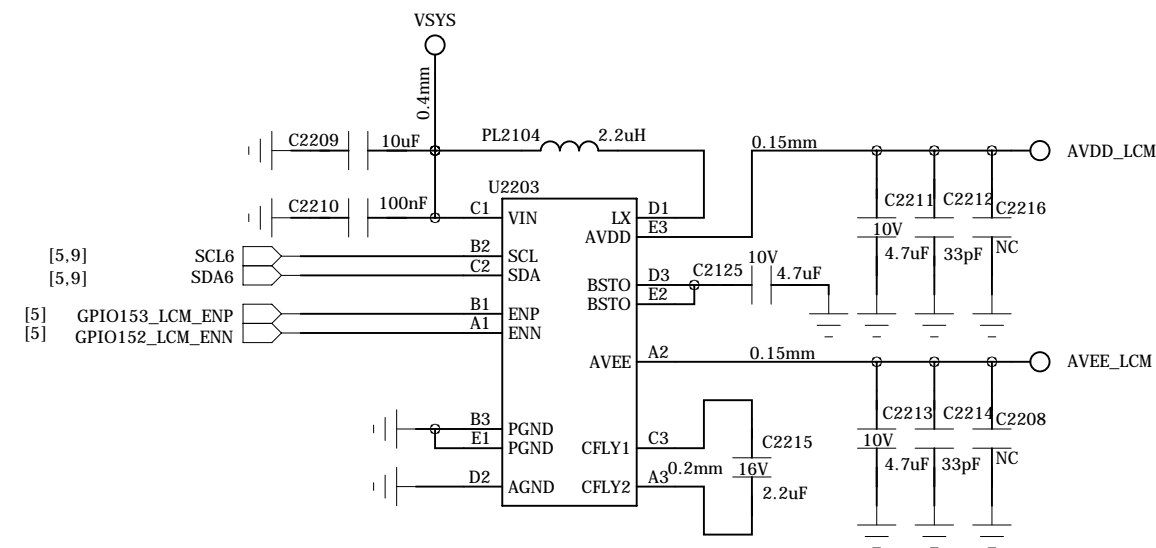


CHG_VDD33 (3.3V)



LCM BIAS

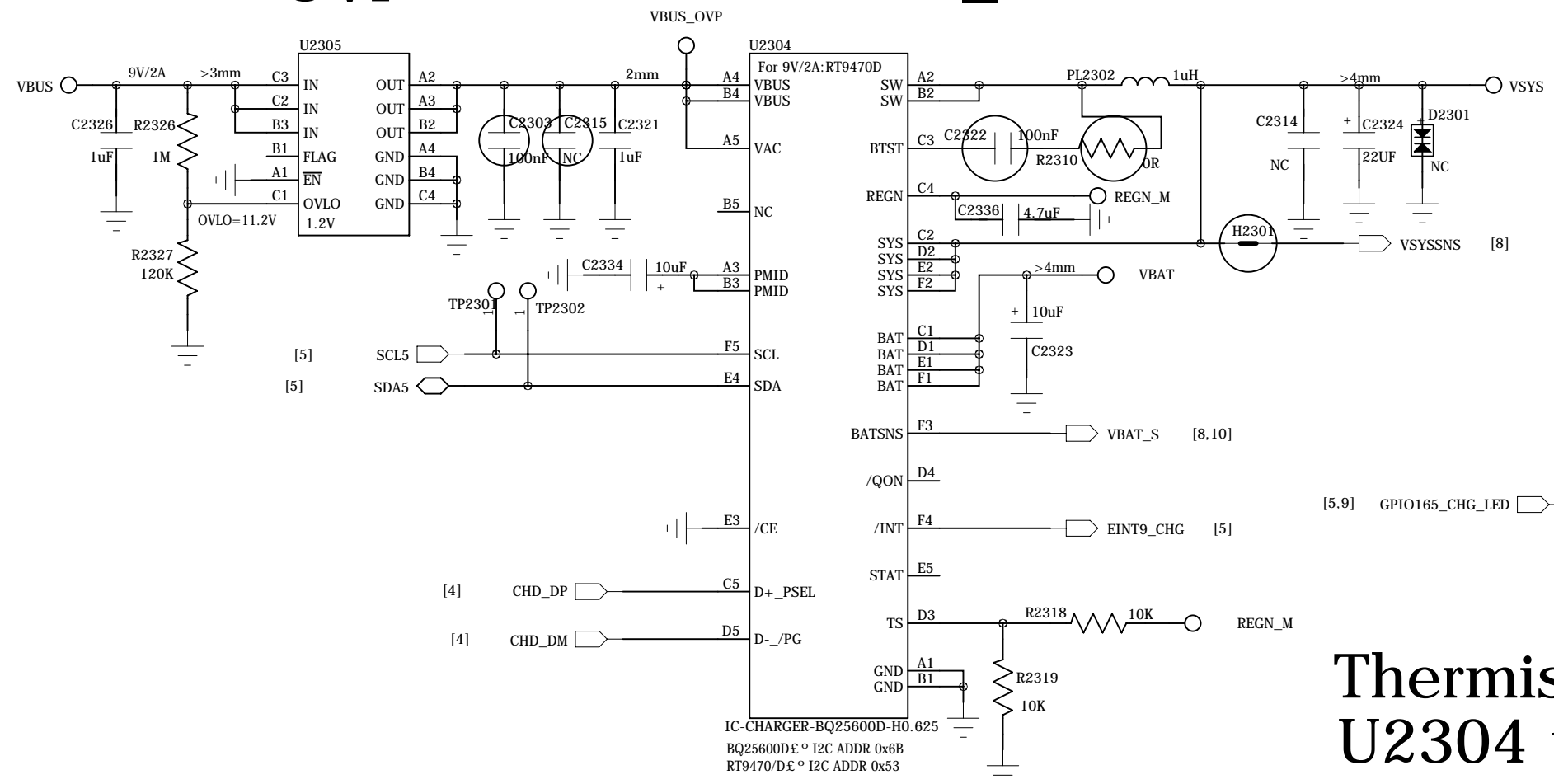
NT50358ACG/J:I2C ADDRESS:0x7C(Write)/0x7D(Read)



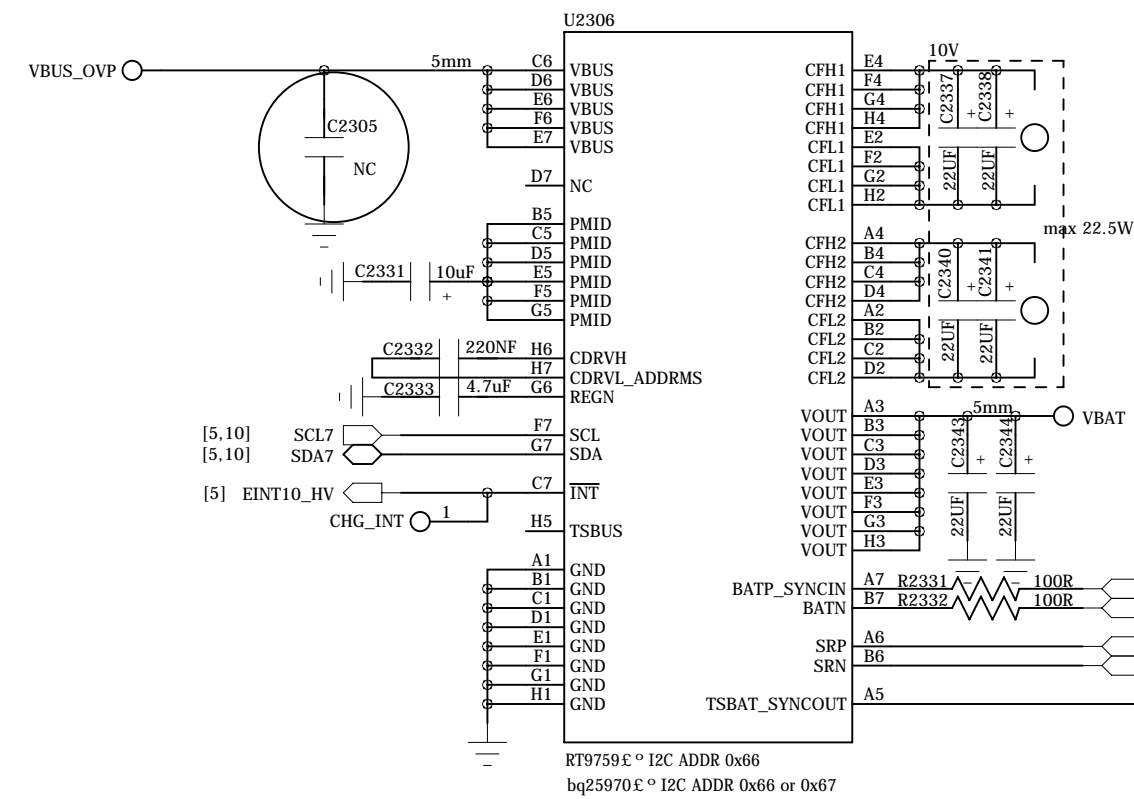
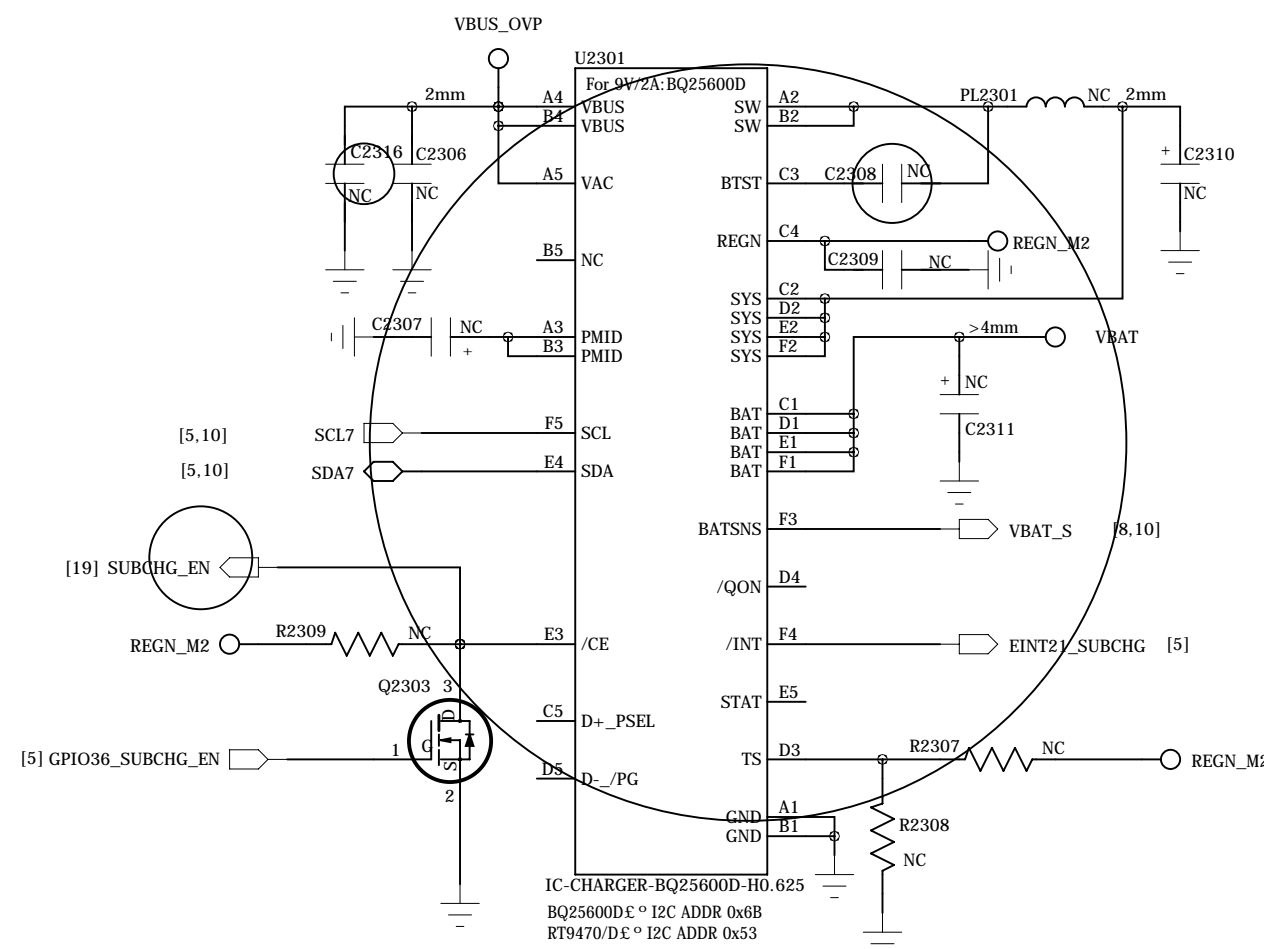
COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 22_POWER_THIRD-PARTY_I		VERSION: V1.0	SHEET: 9 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

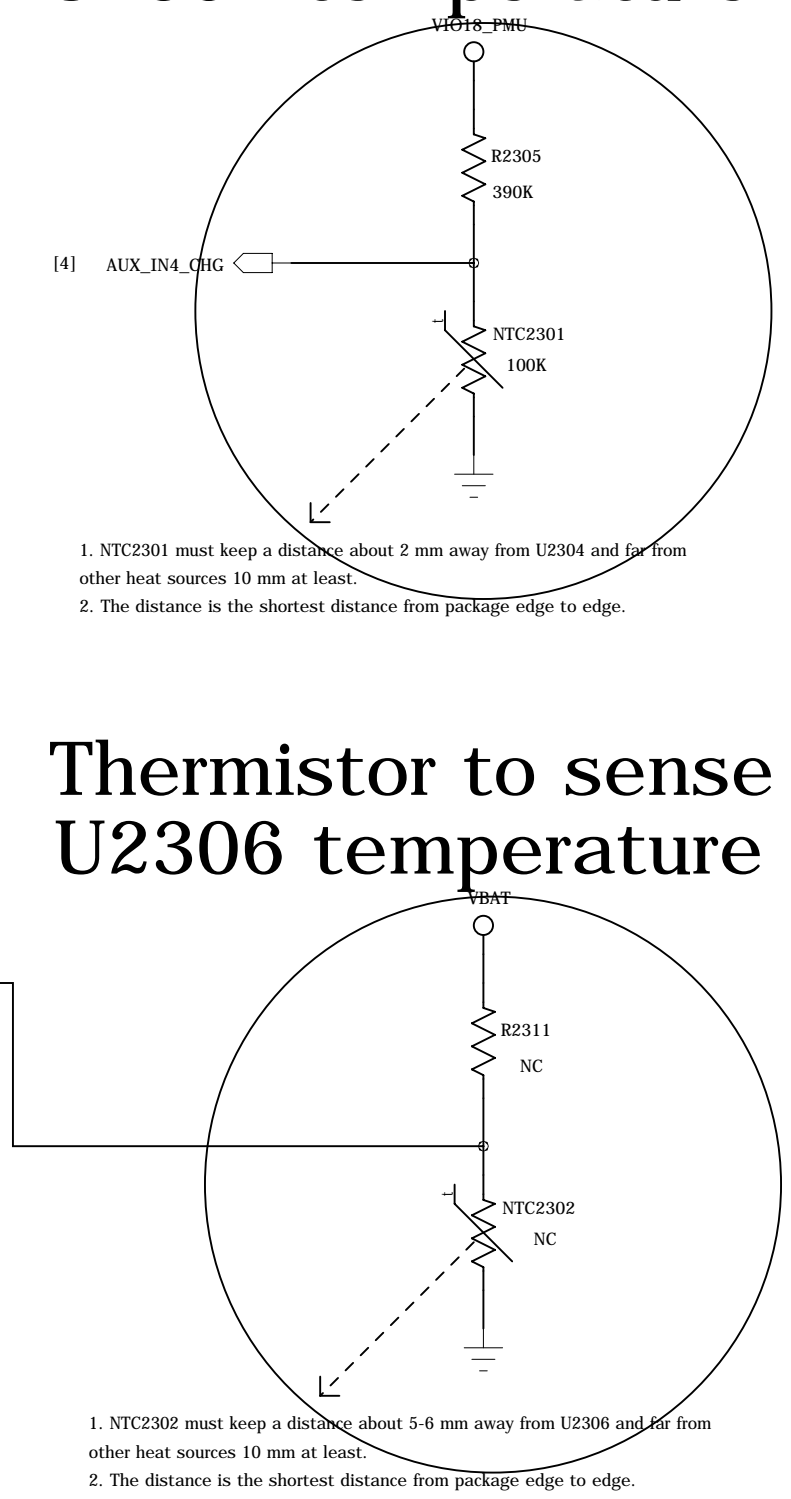
CHARGER_I



CHARGER_II 22.5W



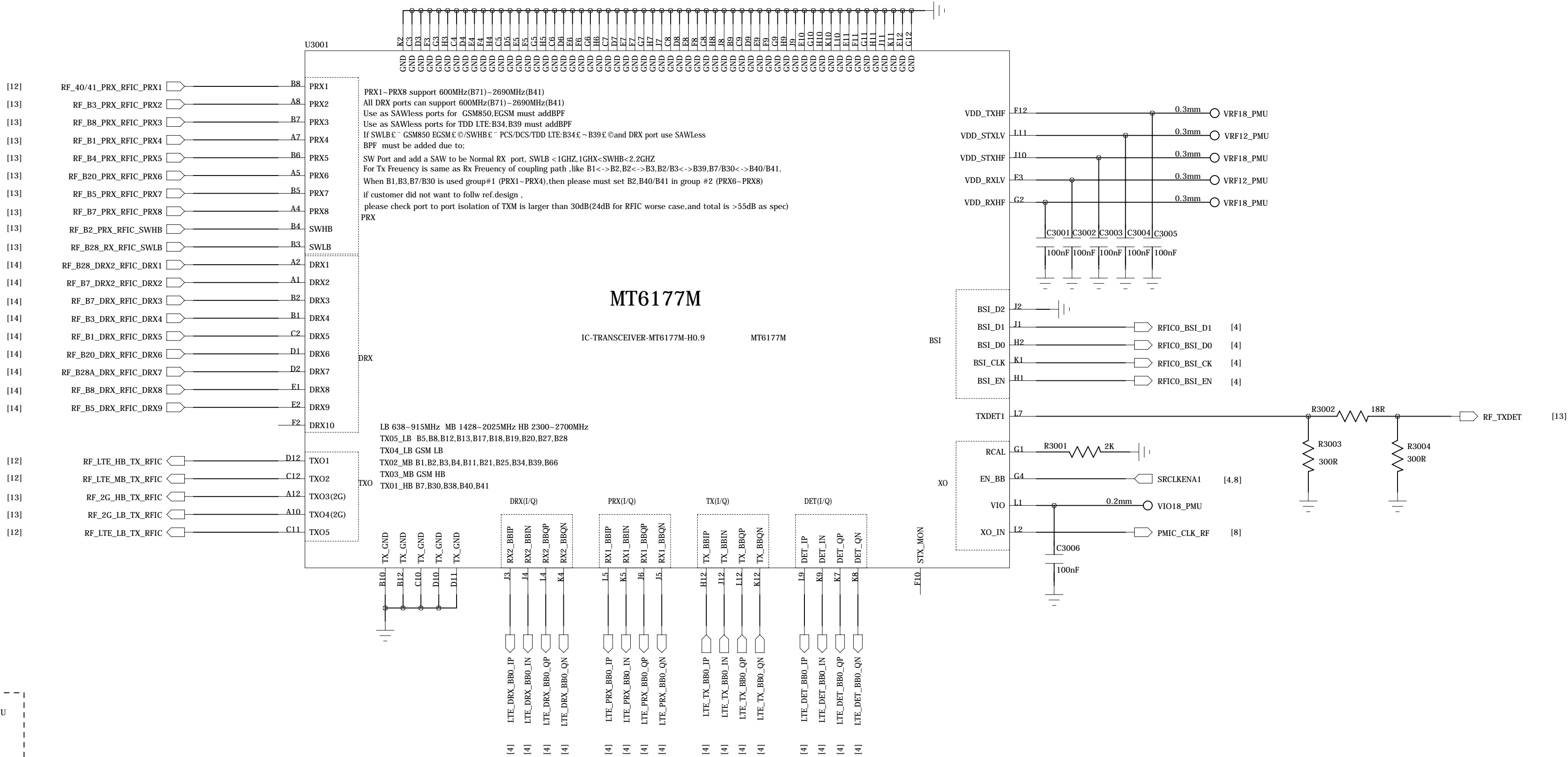
Thermistor to sense
U2306 temperature



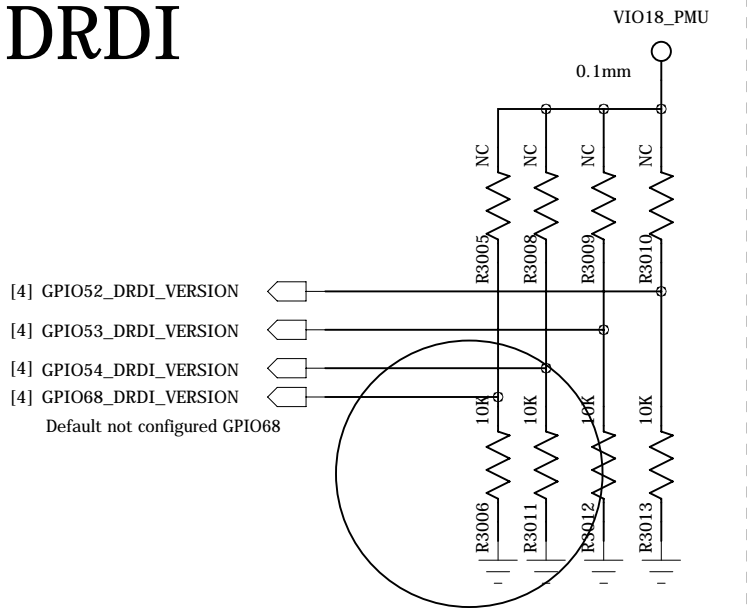
COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 23_POWER_THIRD-PARTY_II		VERSION: V1.0	SHEET: 10 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

RF_MT6177M_PIN_OUT

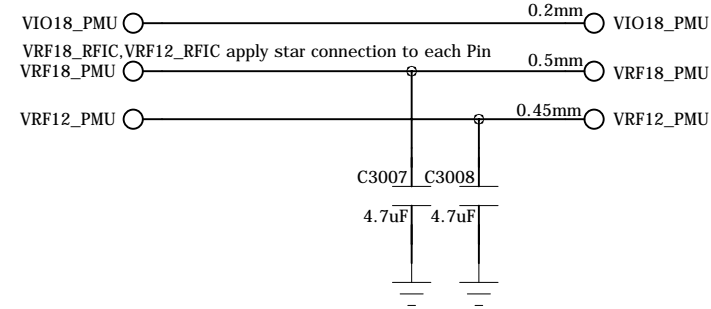
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



DRDI



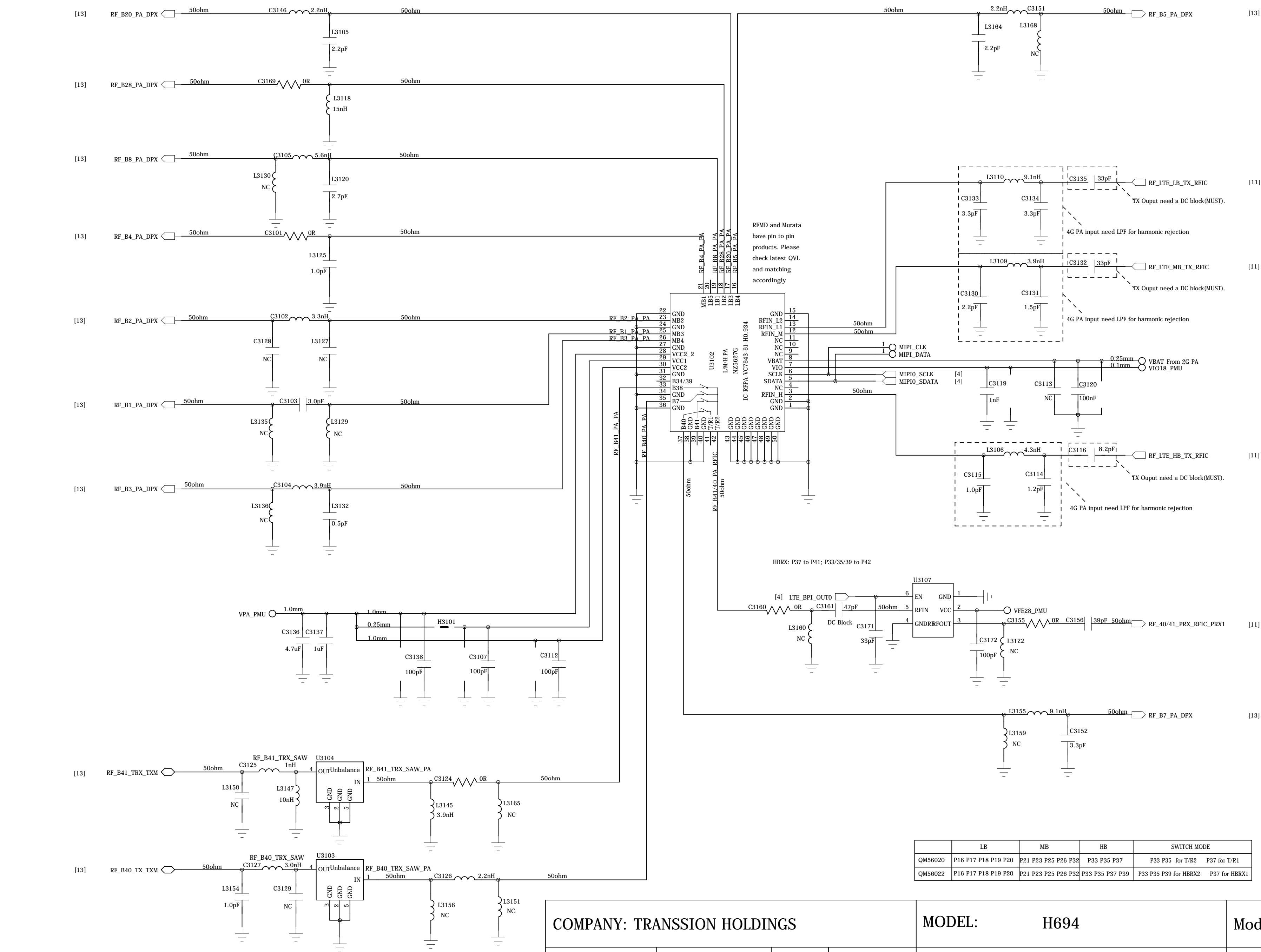
Power domain



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 30_RF_MT6177M_PIN_OUT		VERSION: V1.0	SHEET: 11 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

RF_MT6177M_RF_TX

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



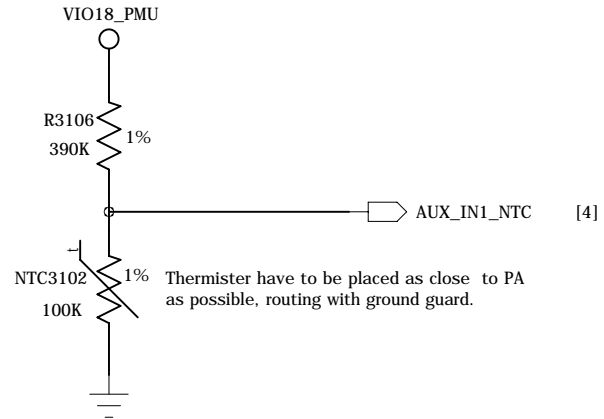
3/4G_PAIN_LB

3/4G_PAIN_MB

3/4G_PAIN_HB

Temp Sensor

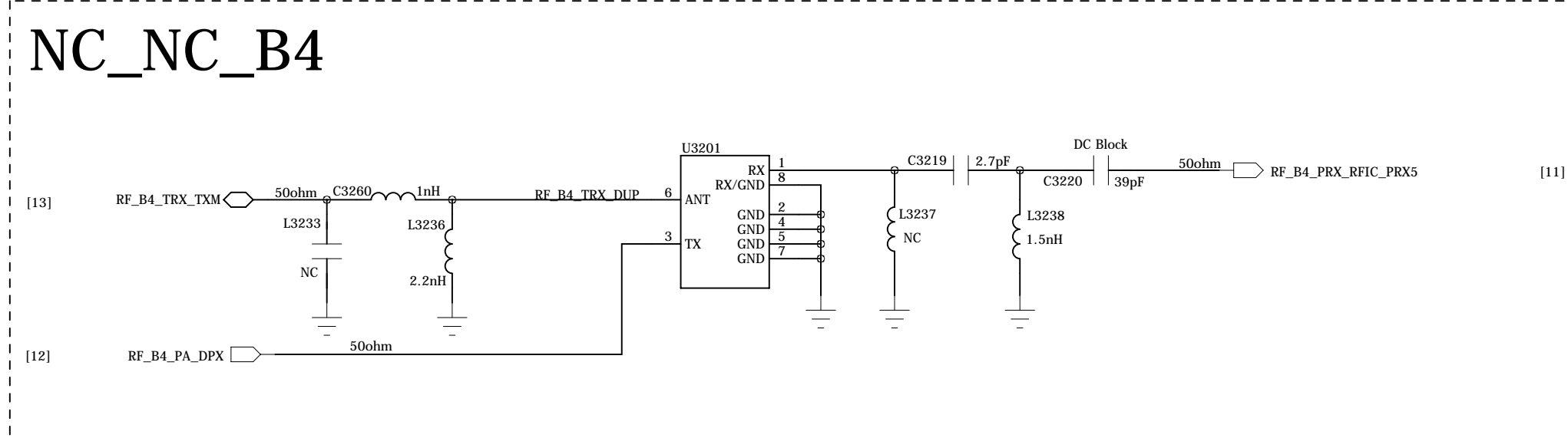
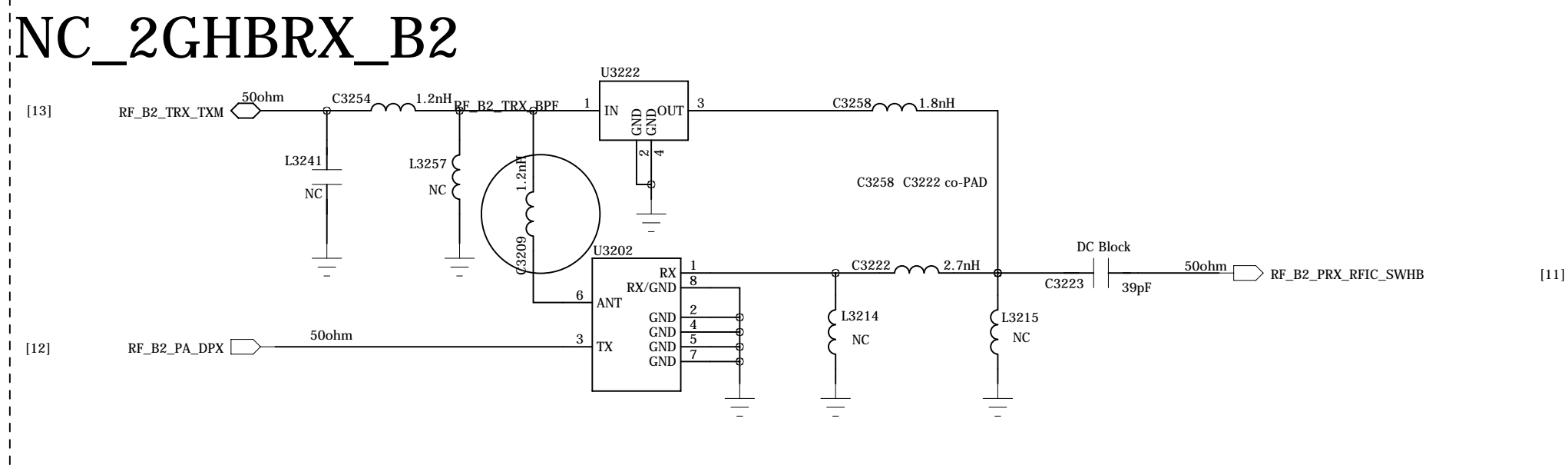
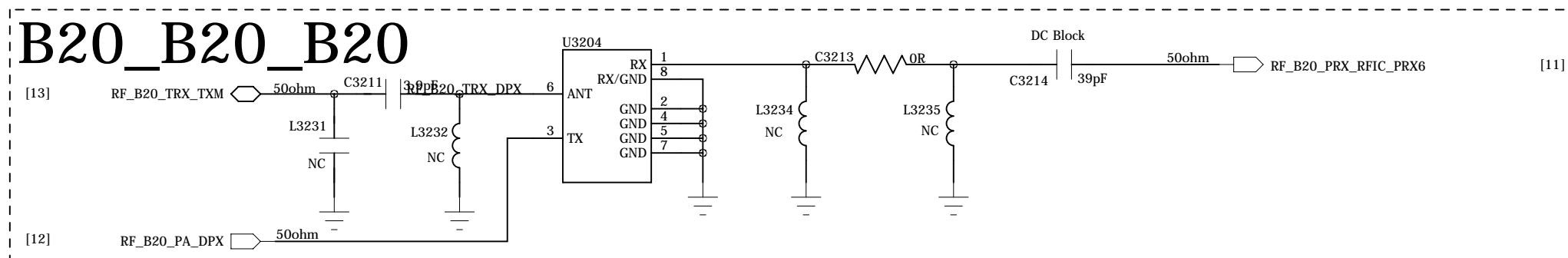
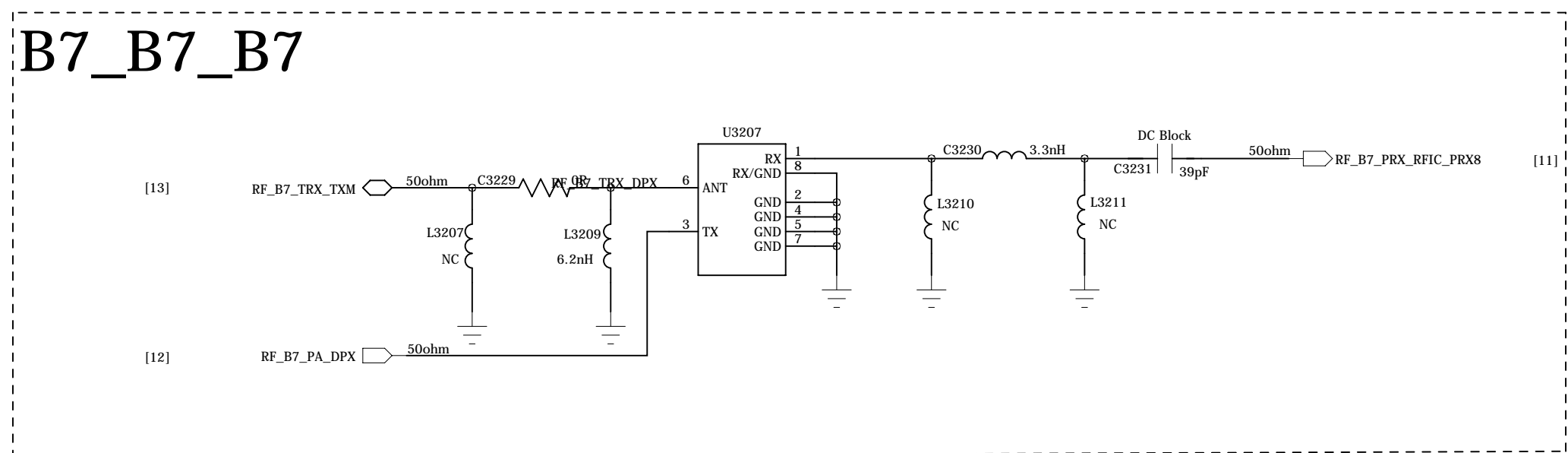
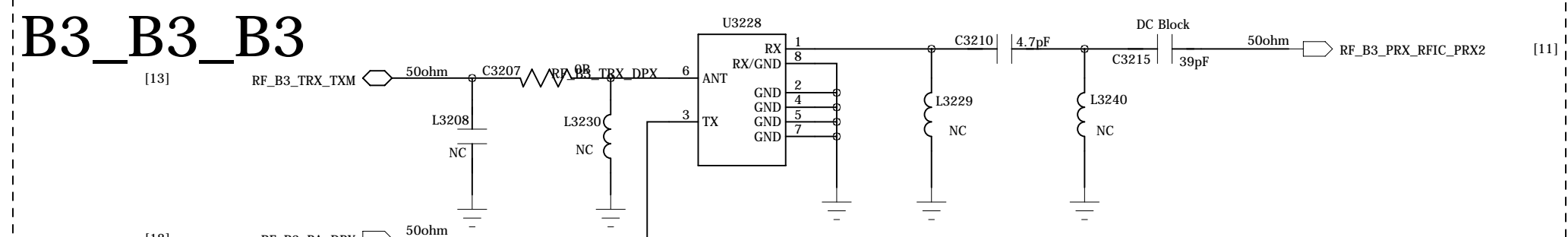
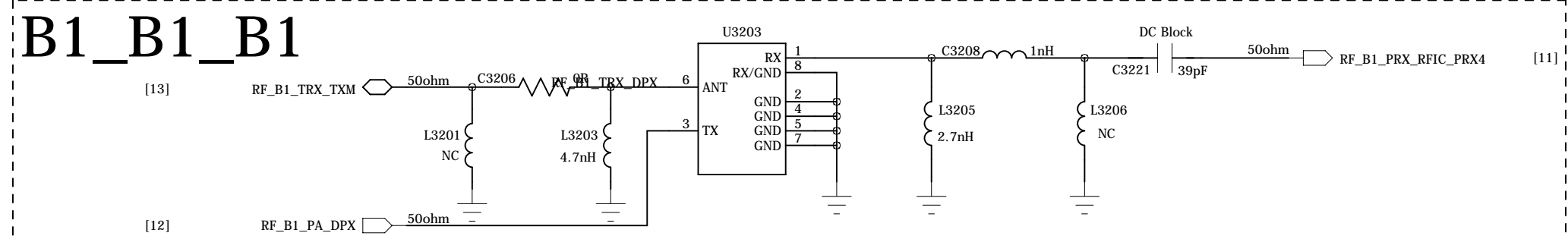
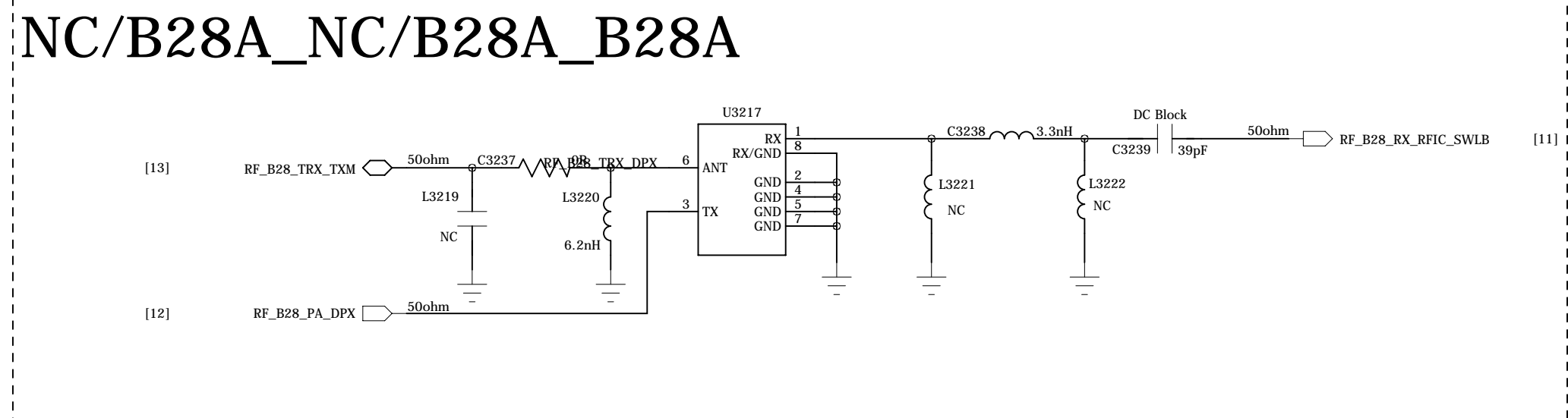
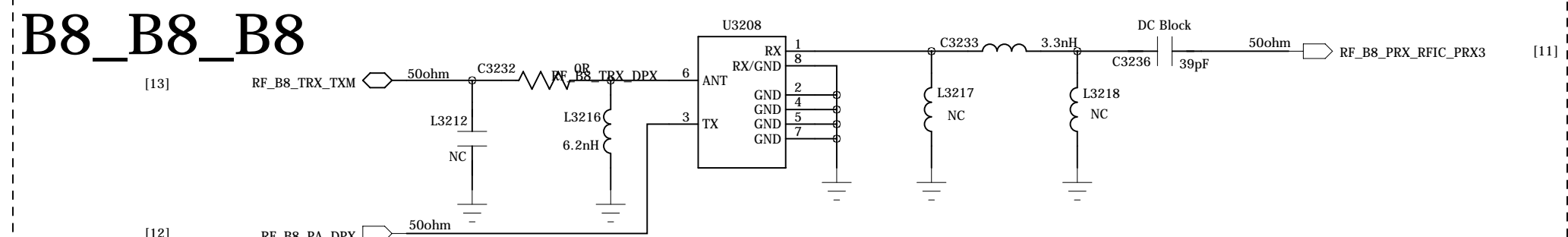
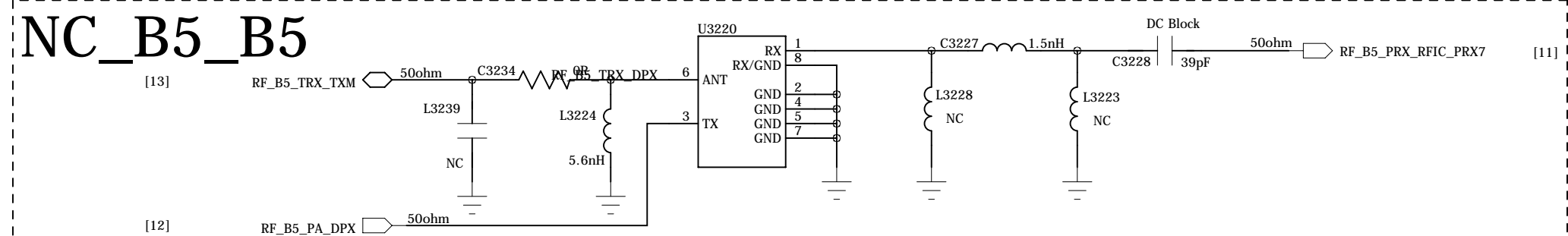
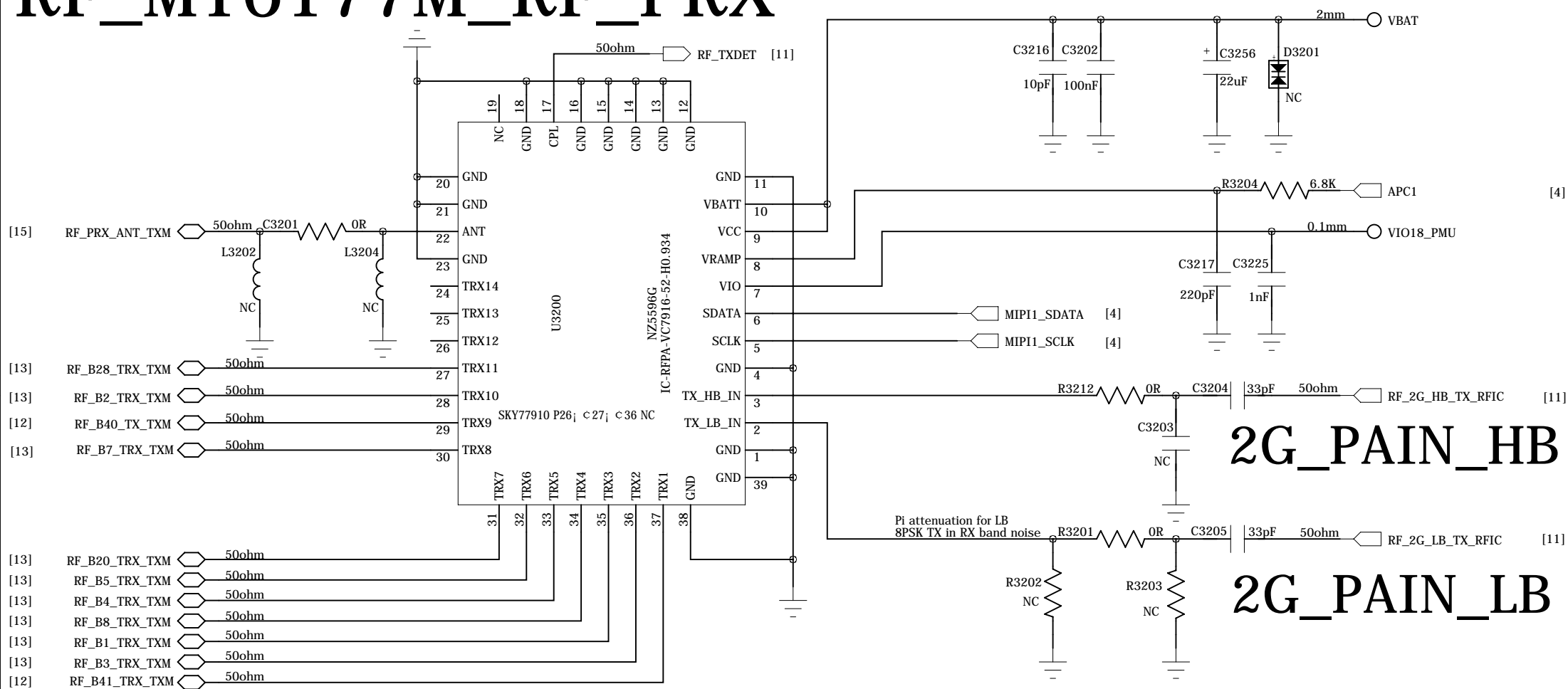
	LB	MB	HB	SWITCH MODE
QM56020	P16 P17 P18 P19 P20	P21 P23 P25 P26 P32	P33 P35 P37	P33 P35 for T/R2 P37 for T/R1
QM56022	P16 P17 P18 P19 P20	P21 P23 P25 P26 P32	P33 P35 P37 P39	P33 P35 P39 for HBRX2 P37 for HBRX1



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 31_RF_MT6177M_RF_TRX		VERSION: V1.0	SHEET: 12 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

RF_MT6177M_RF_PRX

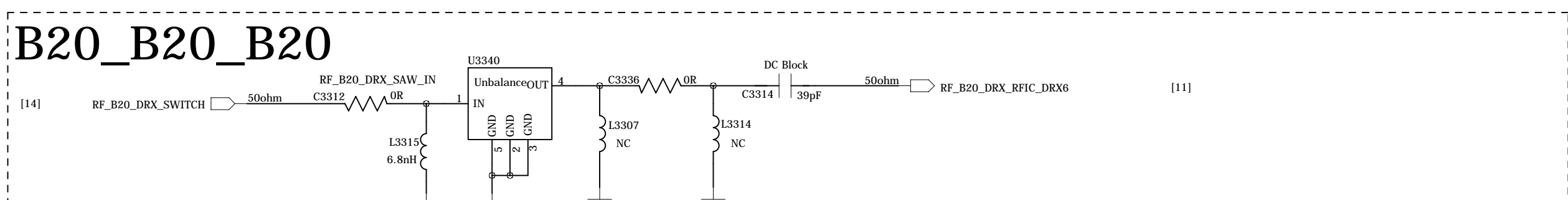
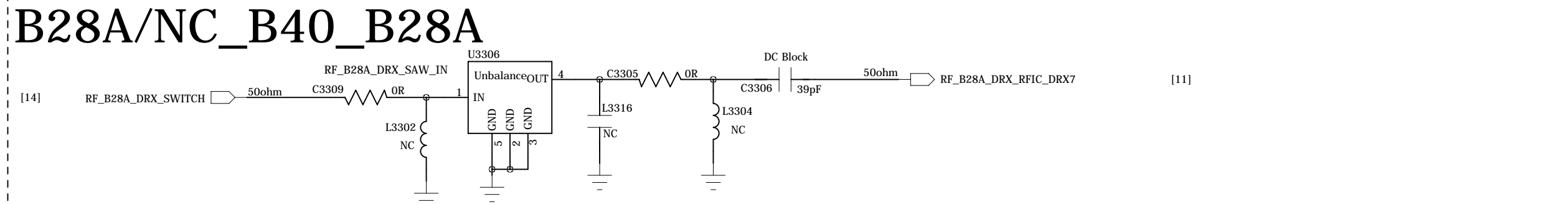
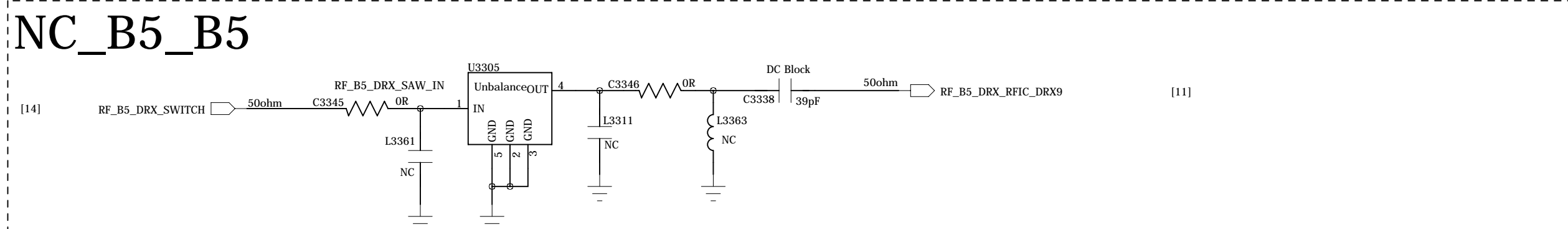
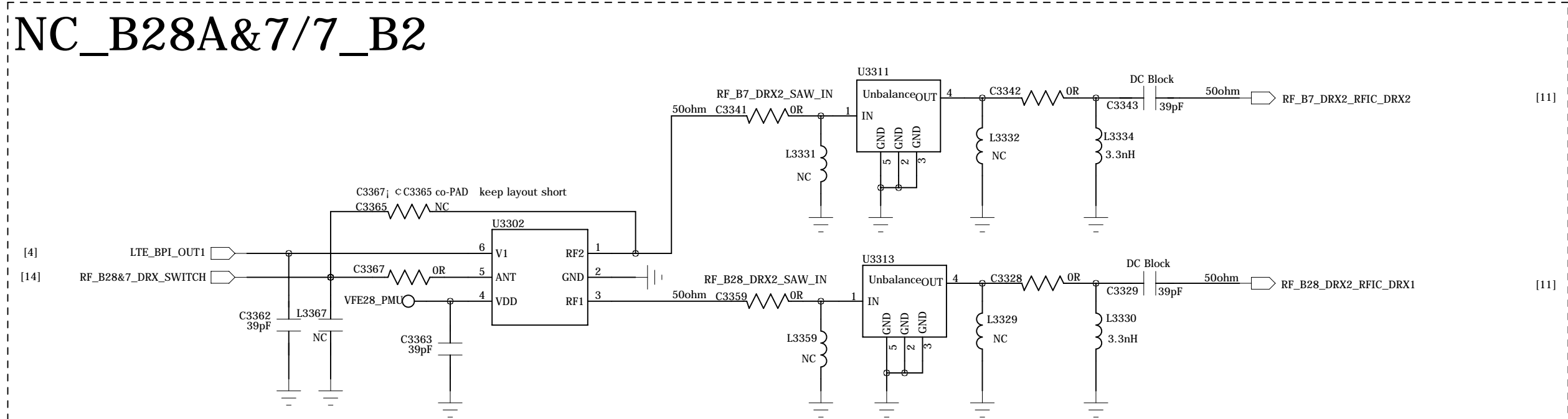
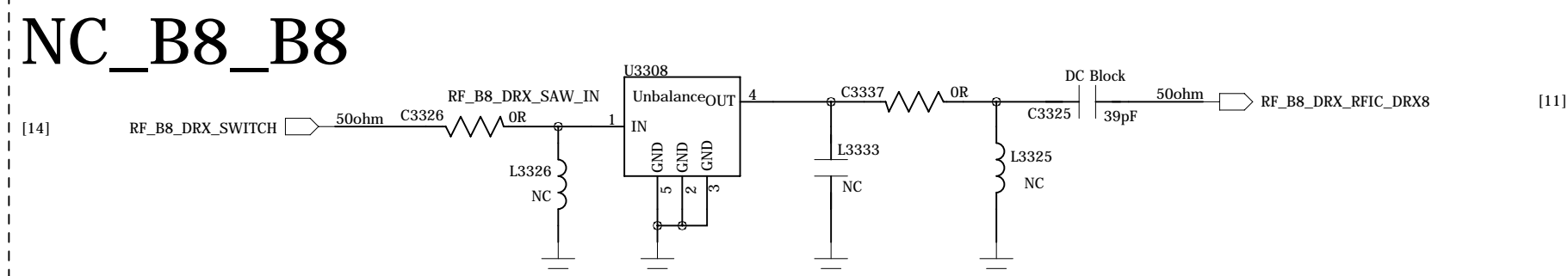
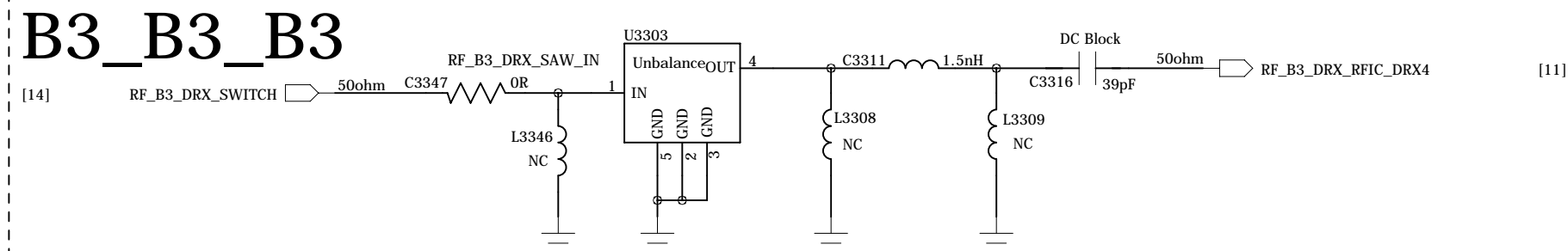
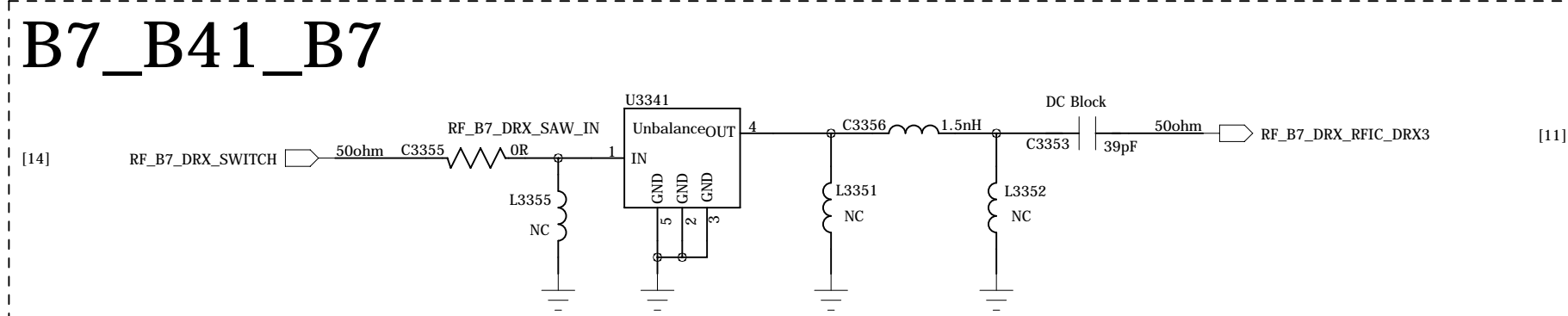
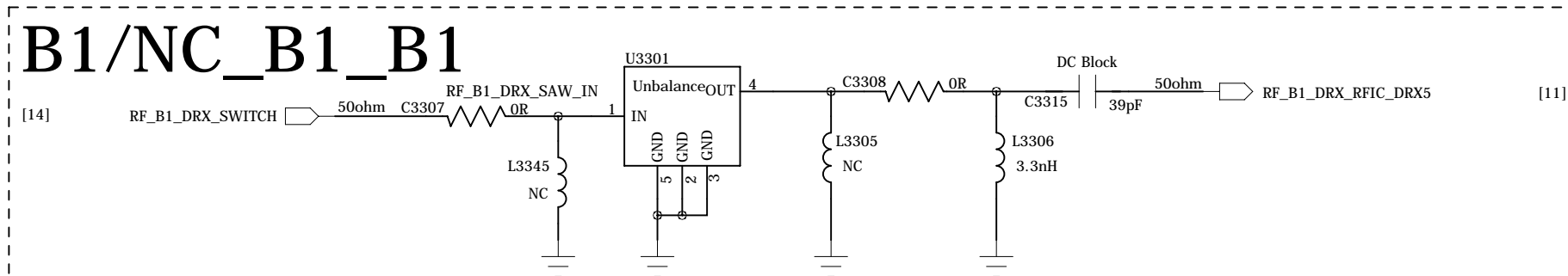
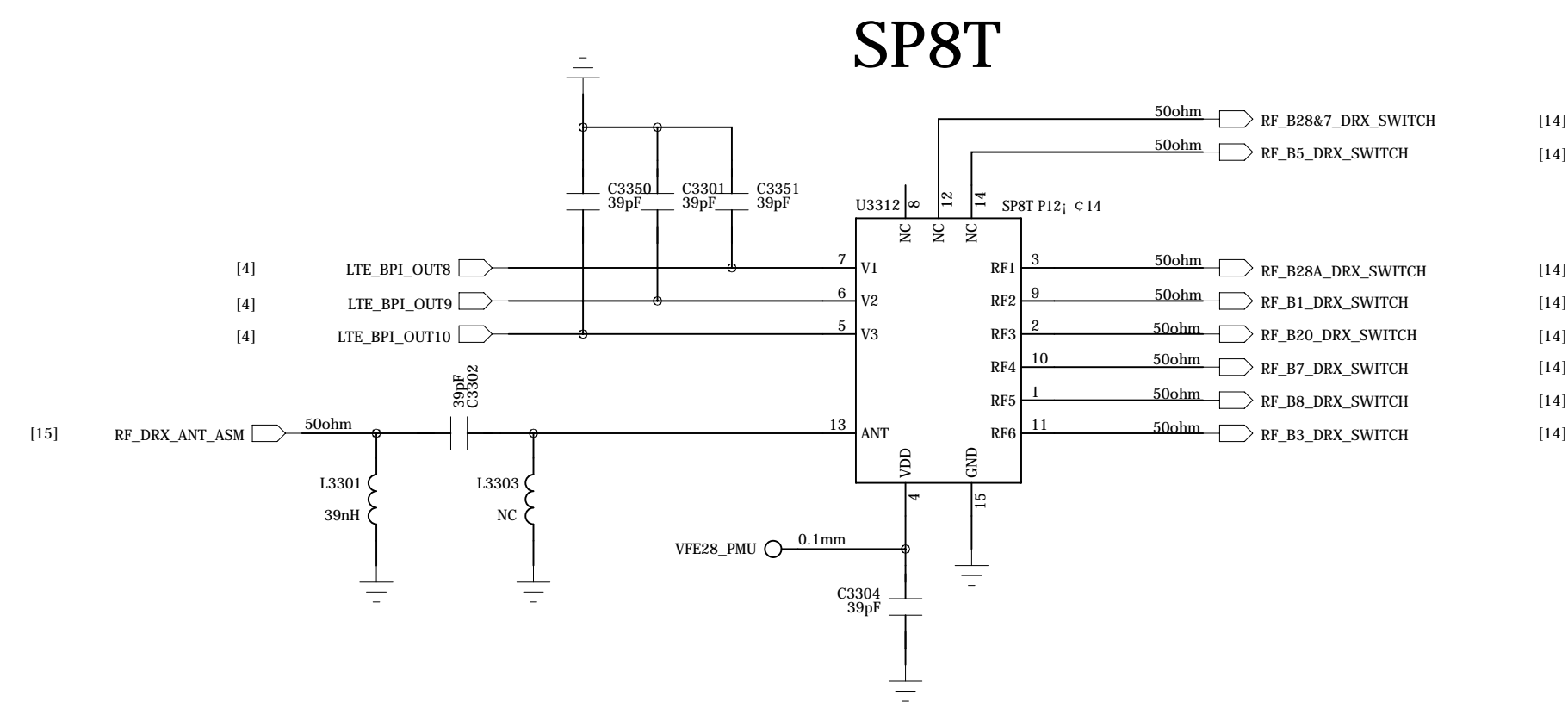
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



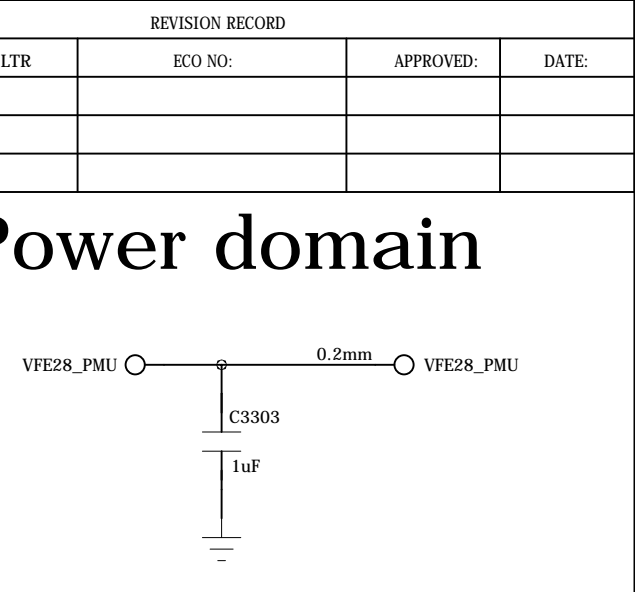
Notice:
NC_PCS_B2:Africa Bom NC;India Bom PCS;South America BOM B2;

COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 32_RF_MT6177M_RF_PRX		VERSION: V1.0	SHEET: 13 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

RF_MT6177M_RF_DRX

[illegible]

VC1613 control logic				
VC1	VC2	RF1	RF2	RF3
H	L	Y	N	N
H	H	N	Y	N
N	H	N	N	Y

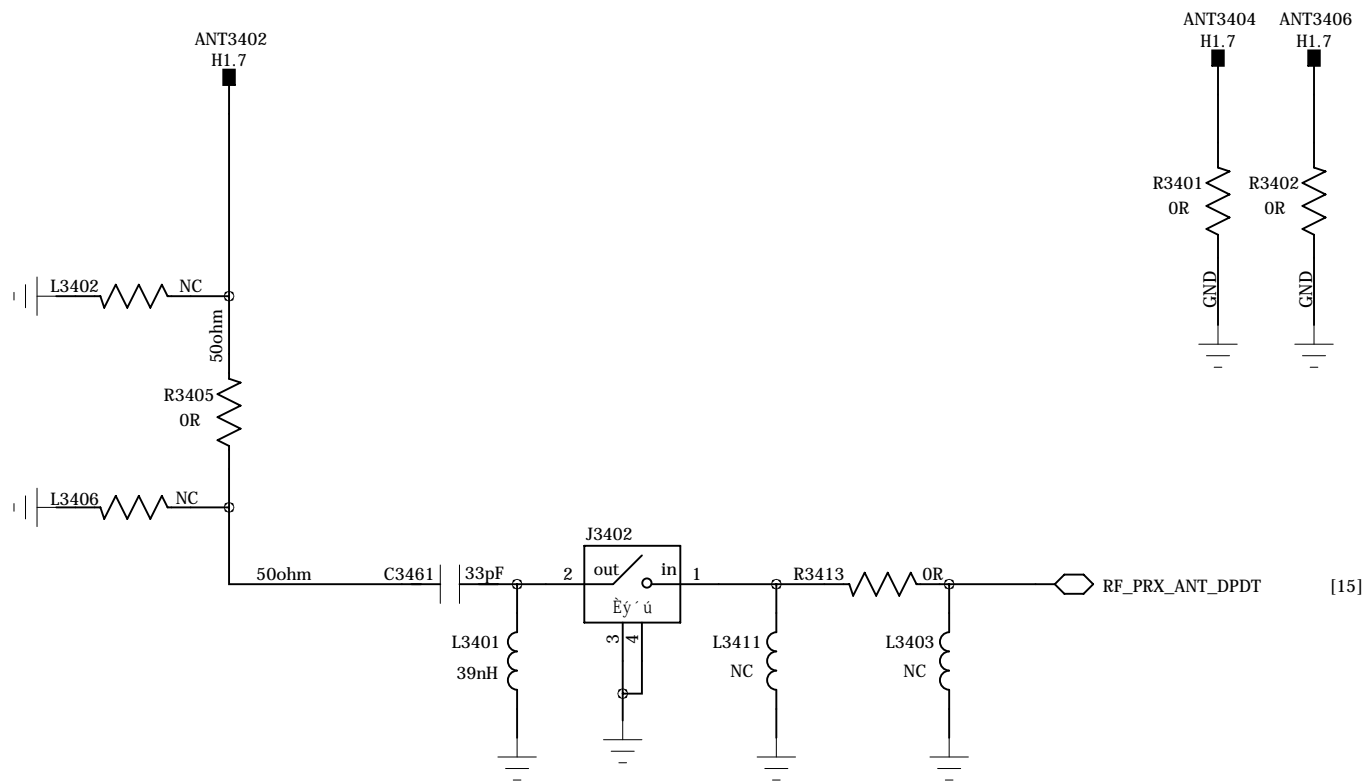


Power domain

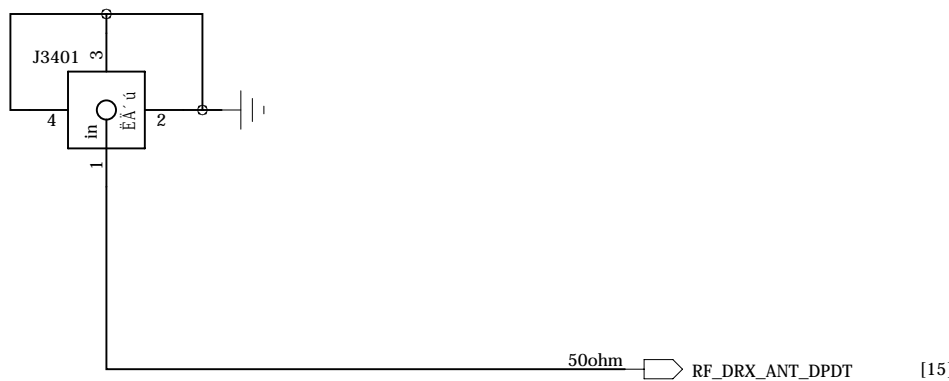
COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 33_RF_MT6177M_RF_DRX		VERSION: V1.0	SHEET: 14 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

RF_MT6177M_RF_ANT

ASM_Main
791~960MHz + 1710~2690MHz

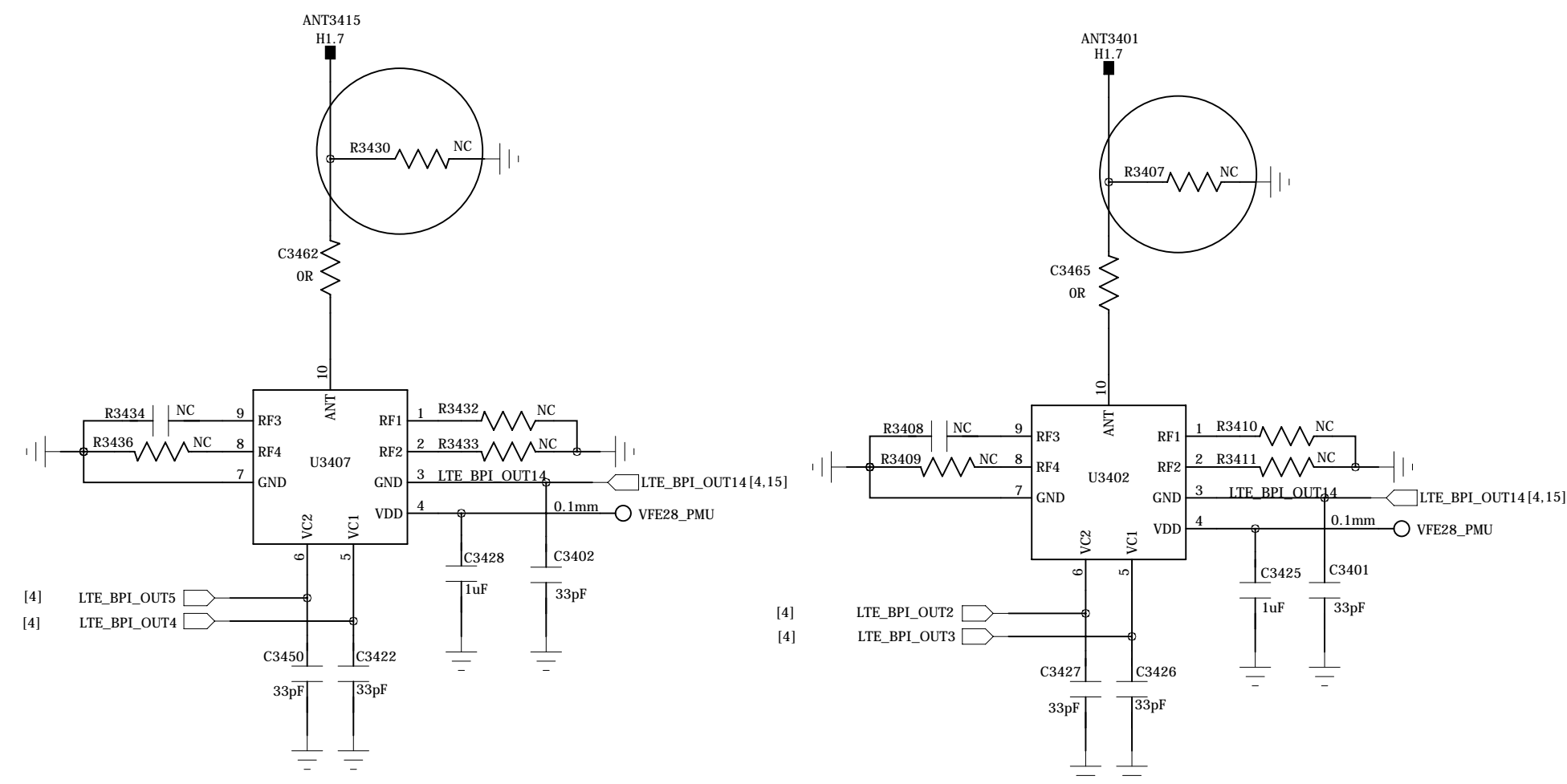


DRX ANT
791~821MHz 1805~2690MHz

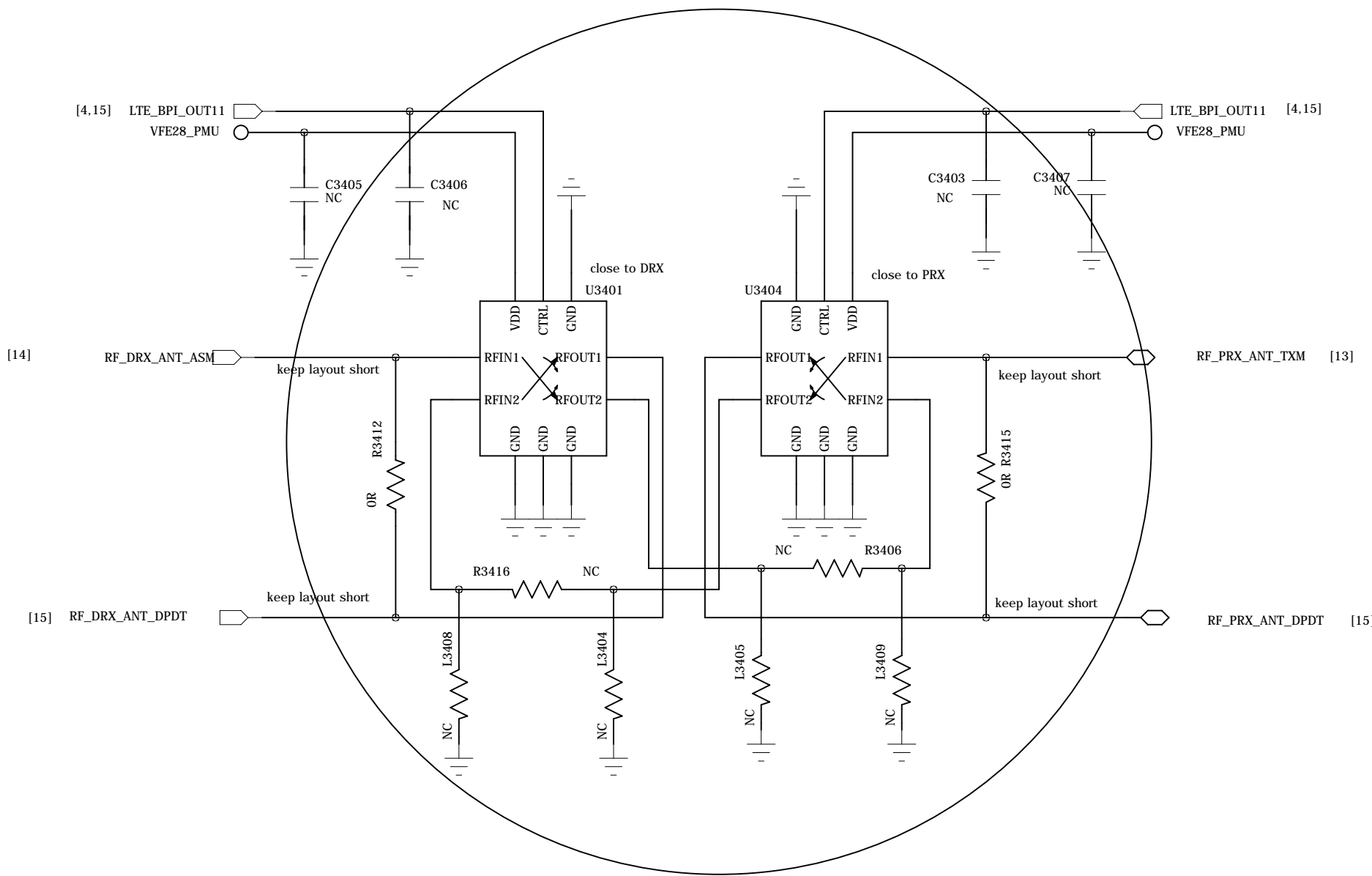


ANT switch

RF1119A & RF1694 control logic						
VC1	VC2	RF1	RF2	RF3	RF4	
L	L	Y	N	N	N	
L	H	N	Y	N	N	
H	L	N	N	Y	N	
H	H	N	N	N	Y	



DPDT



COMPANY: TRANSSION HOLDINGS

MODEL: H694

Modified Date: 2020/4/22

DRAWN

DJF/TS

DATED 2020/03/18

TITLE: 34_RF_ANT_CONTROLLER

VERSION: V1.0

SHEET: 15 OF 24

CHECKED

<CHECKED>

DATED

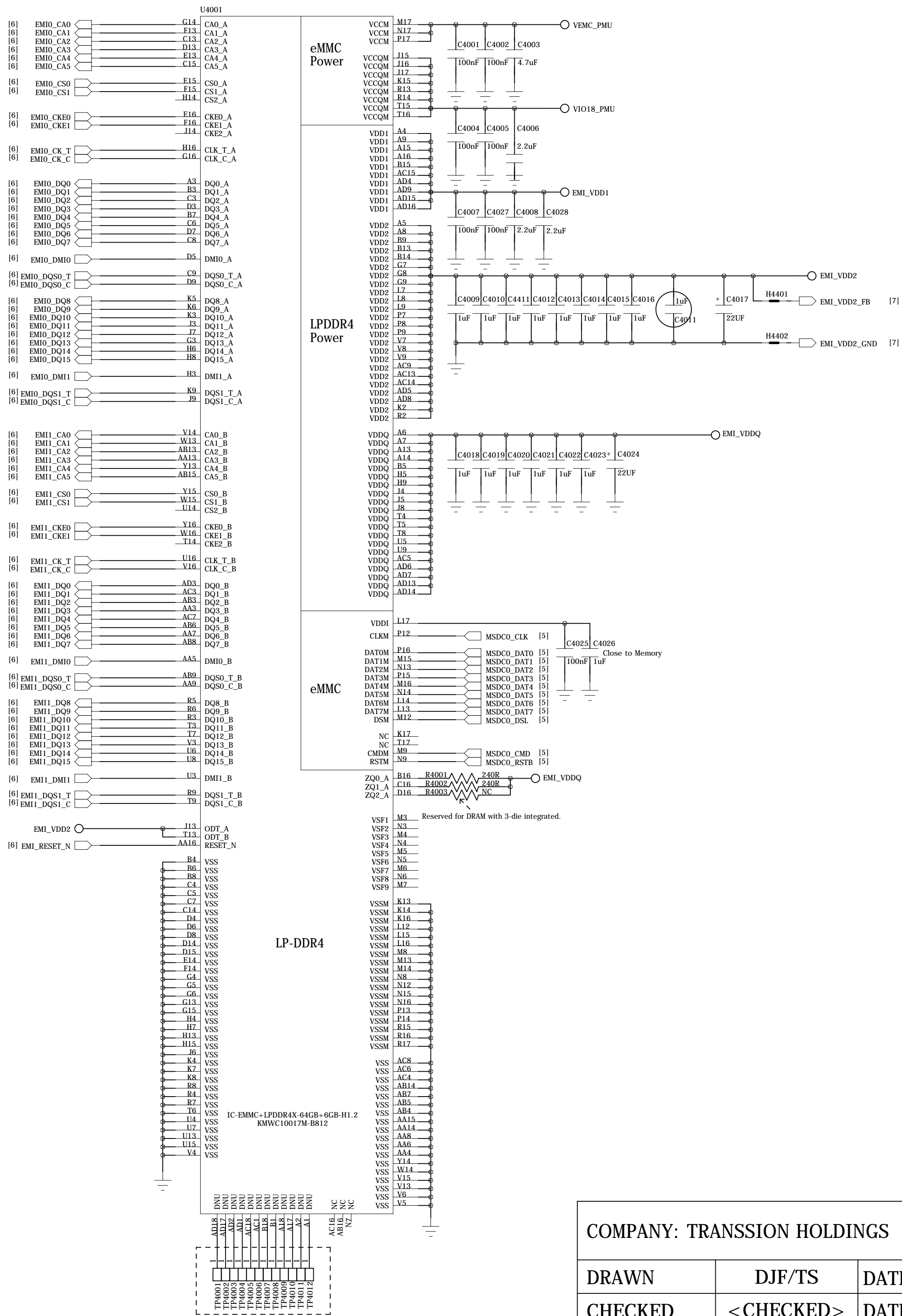
< >

Confidentiality

CONFIDENTIAL

MEMORY_eMCP_LPDDR4X

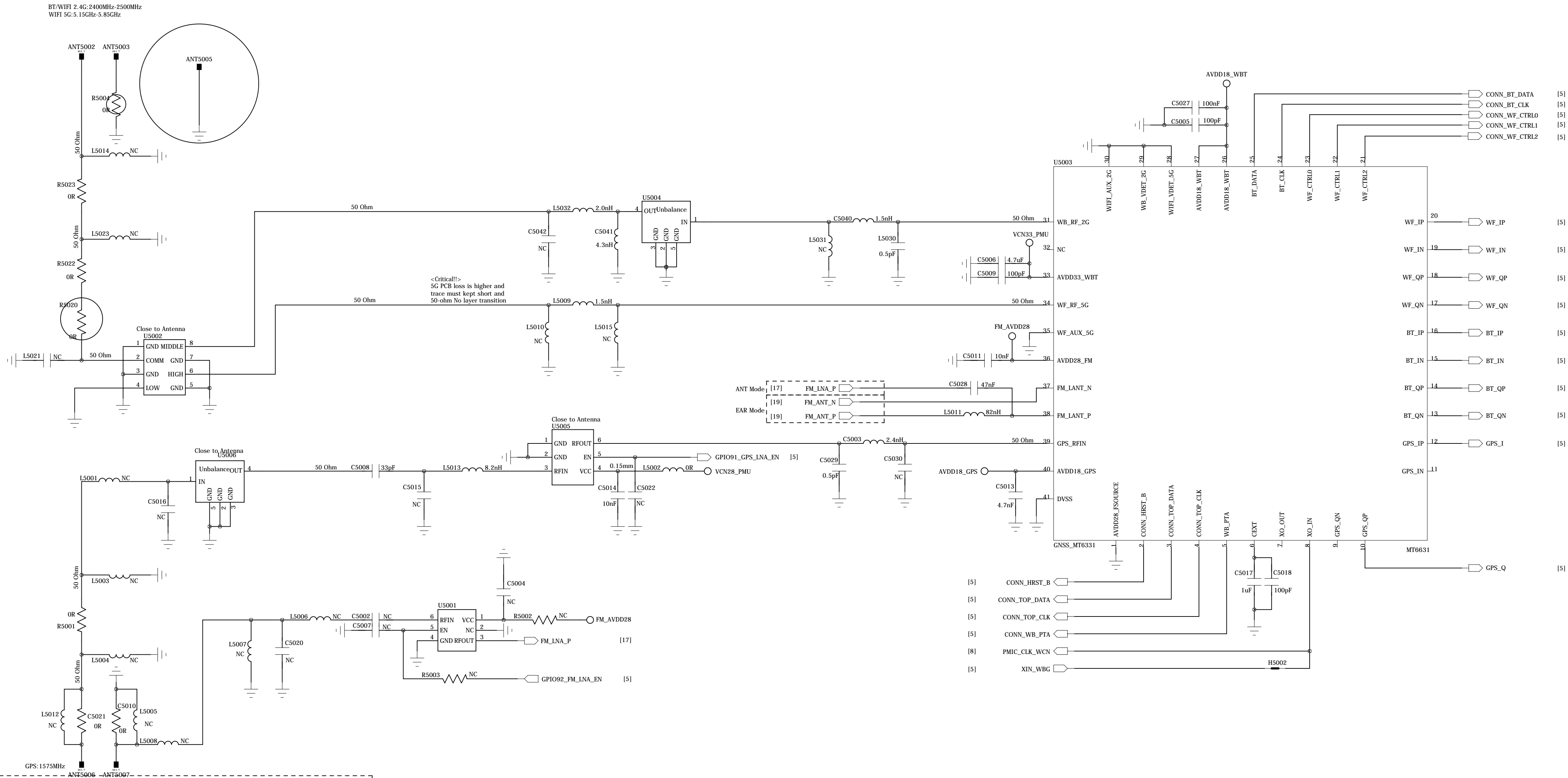
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



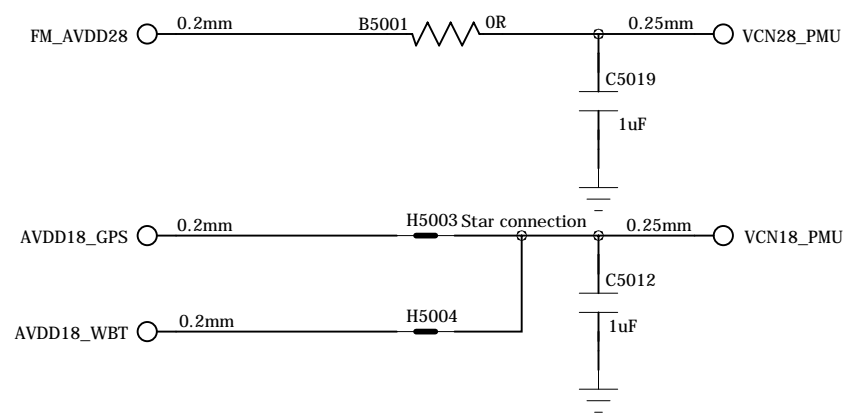
COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: <40_MEMORY_EMMC_LPDDR3>		VERSION: V1.0	SHEET: 16 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

CONNECTIVITY_MT6631

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



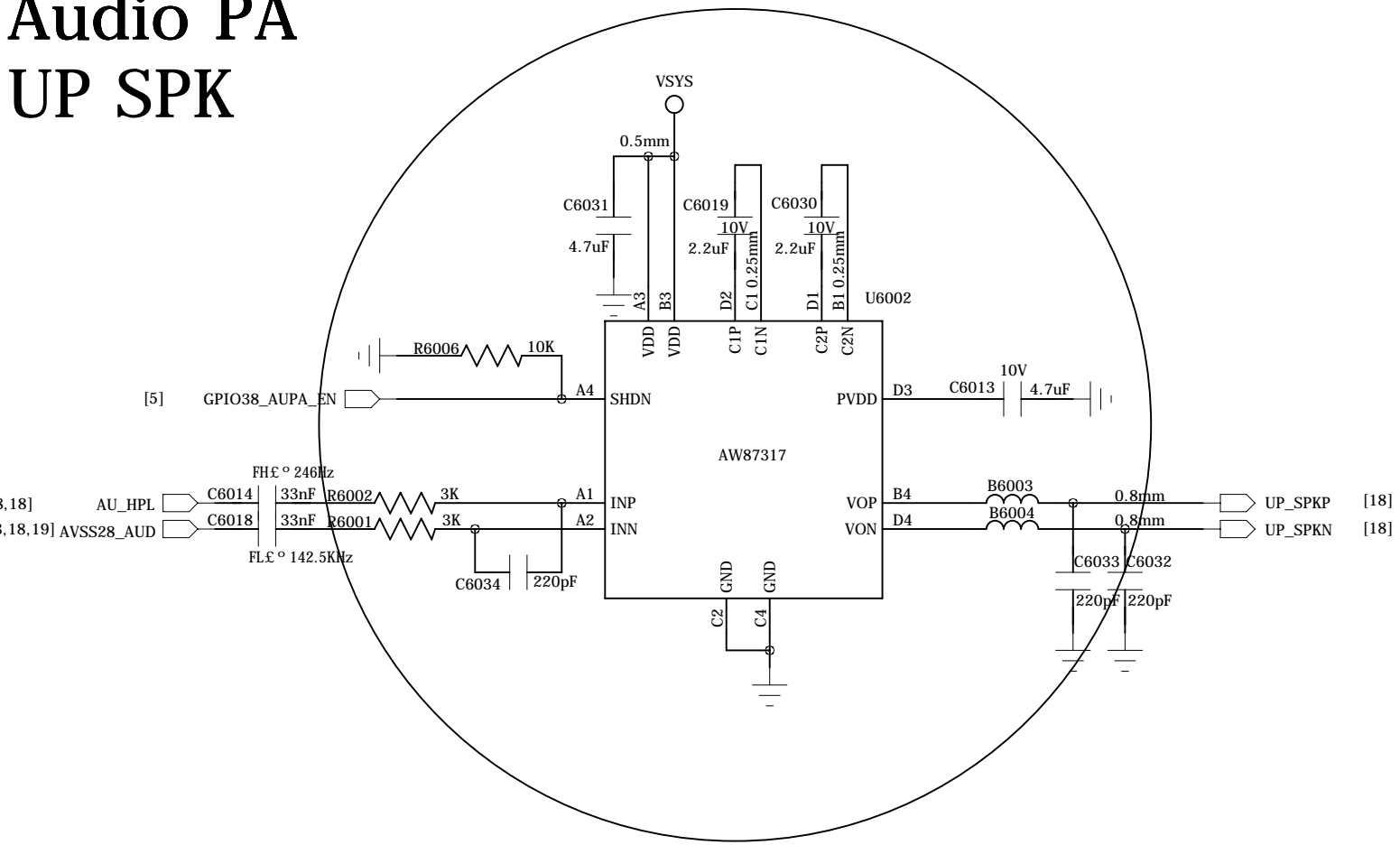
Power domain



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 50_CONNECTIVITY_MT6631		VERSION: V1.0	SHEET: 17 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

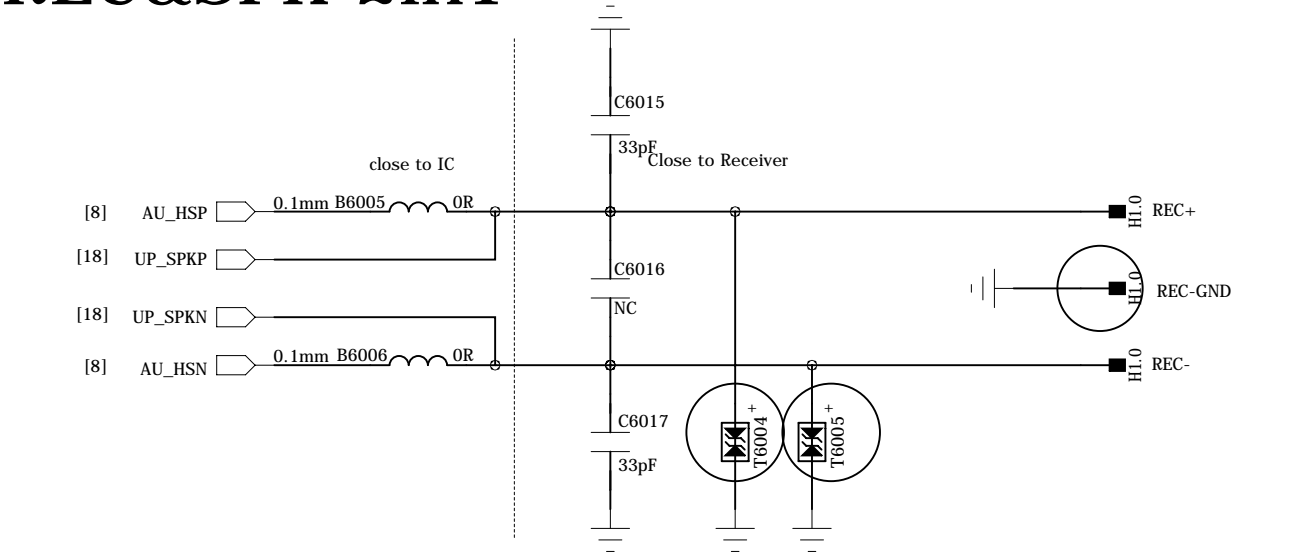
PERI_AUDIO_IO

Audio PA
UP SPK

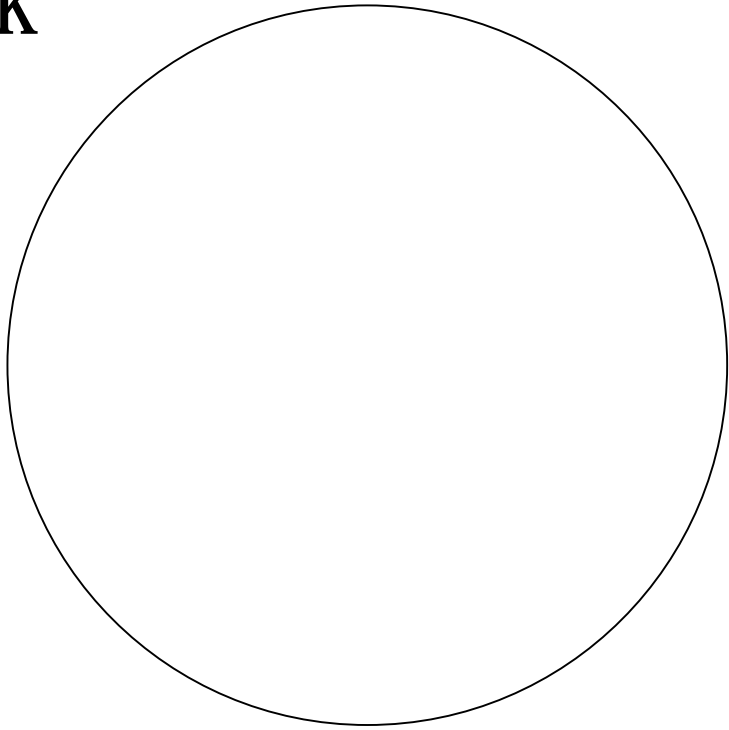


SUB MIC

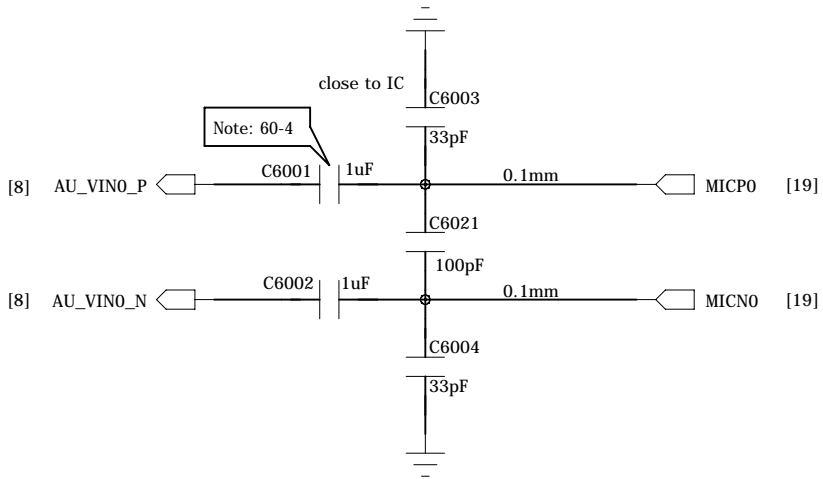
REC&SPK 2in1



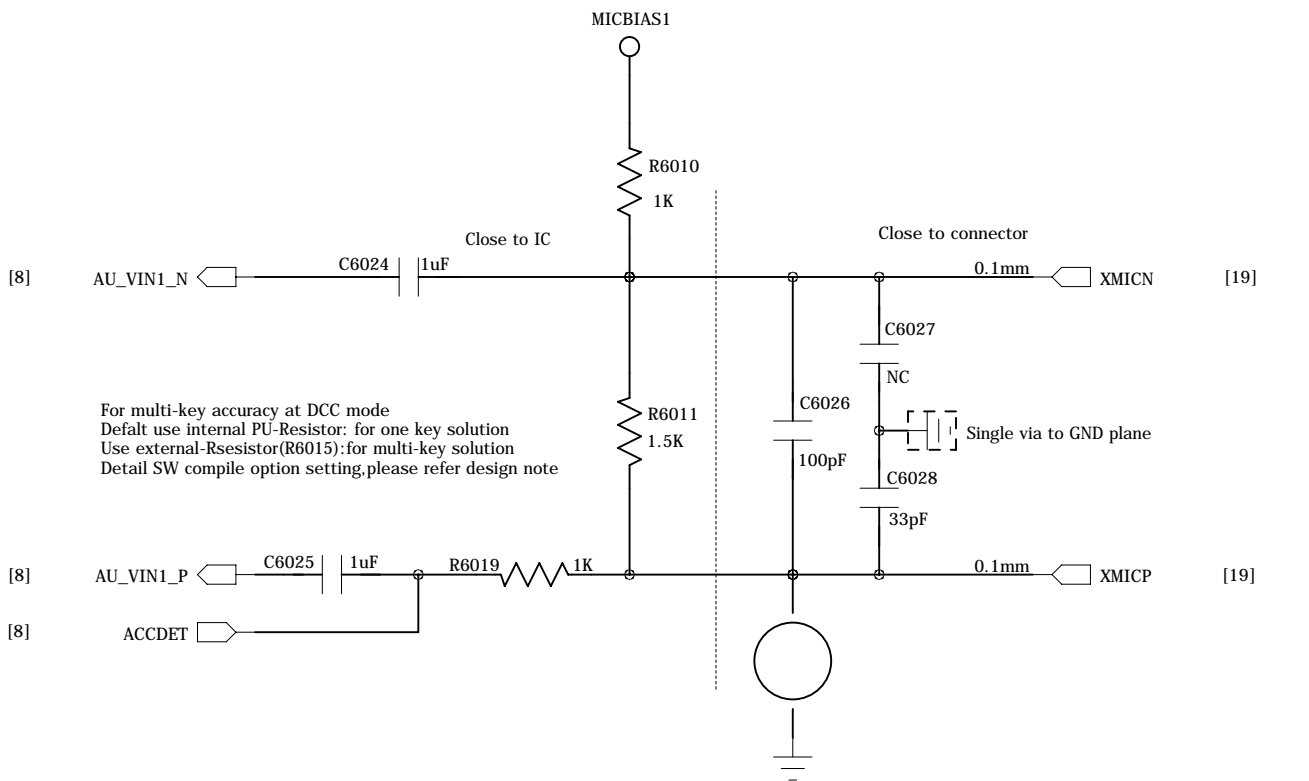
Audio PA
DOWN SPK



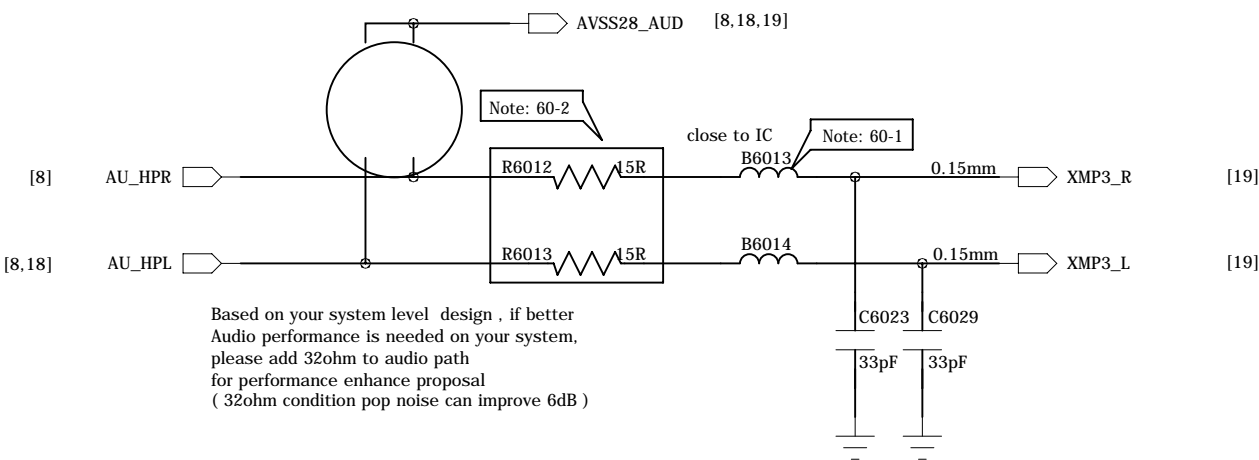
MAIN MIC



Earphone MICPHONE



Earphone Receiver

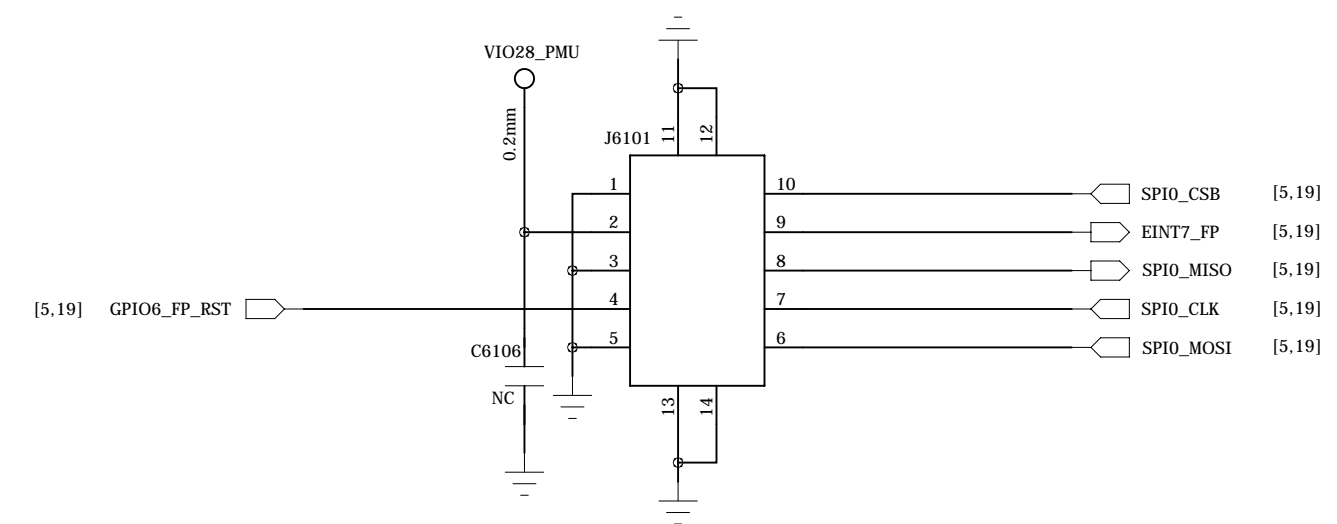
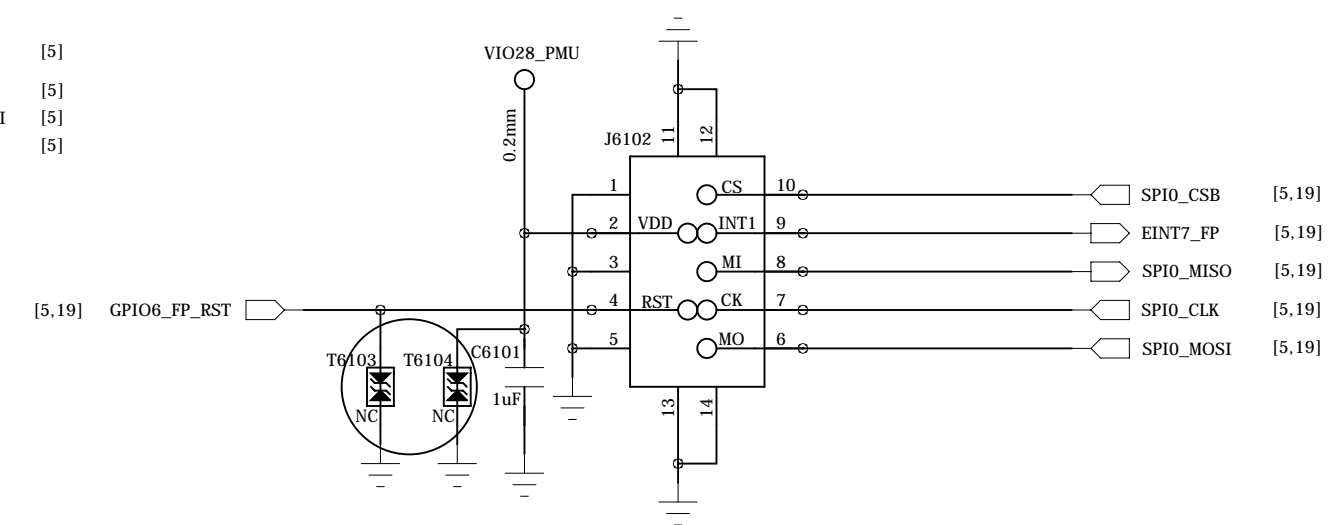


Schematic design notice of "60_PERI_AUDIO_IO" page.			
Note 60-1: B6009 B6010 B6013 B6014 needs change to "BLM18BD102SN1" for high THD performance(-90dB), but this BOM change will result in FM RSSI 10dB degraded.			
Note 60-2: To reserve a resistor in HPL and HPR in series connection both in order to optimize headphone pop noise. The recommended value of this resistor is 33R.			
Note 60-3: Layout trace from MT6353 ball J3 AUDREFN to Audio jack GND must surround shield with GND.			
Note 60-4: 0.1/1uF for ACC mode(1uF for WB_AMR Speech/0.1uF for NB_AMR Speech),OR for DCC mode.			

COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 60_PERI_AUDIO		VERSION: V1.0	SHEET: 18 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

FINGER PRINT



IC-DS-AW35743-H0.624

OEB	SEL1	SEL2	D- Con	D+ Con
Default	L	L	D- to D1-	D+ to D1+
	L	H	D- to D2-	D+ to D2+
Reserved	L	L	D- to D1-	D+ to D2+
	L	H	D- to D2-	D+ to D1+

Close to USB trace

COMPANY: TRANSSION HOLDING

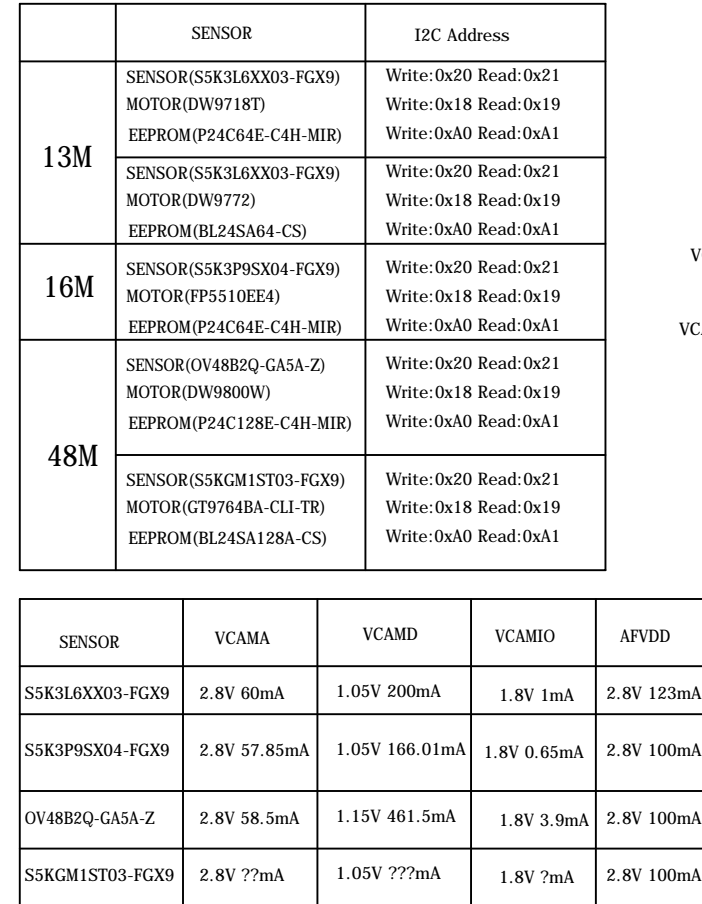
DRAWN: DJF/TS

CHECKED: _____

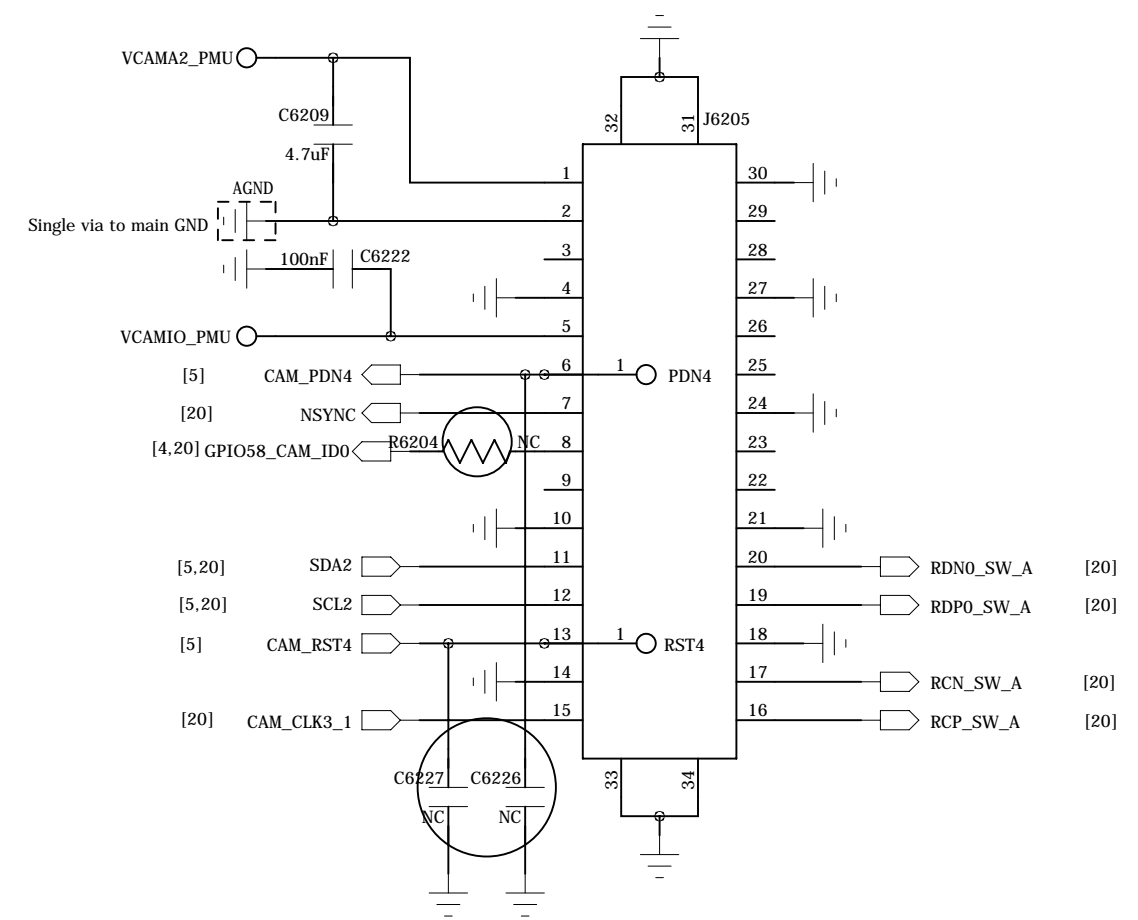
DATE: _____

COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 61_PERI_LCM_CTP_FP		VERSION: V1.0	SHEET: 19 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

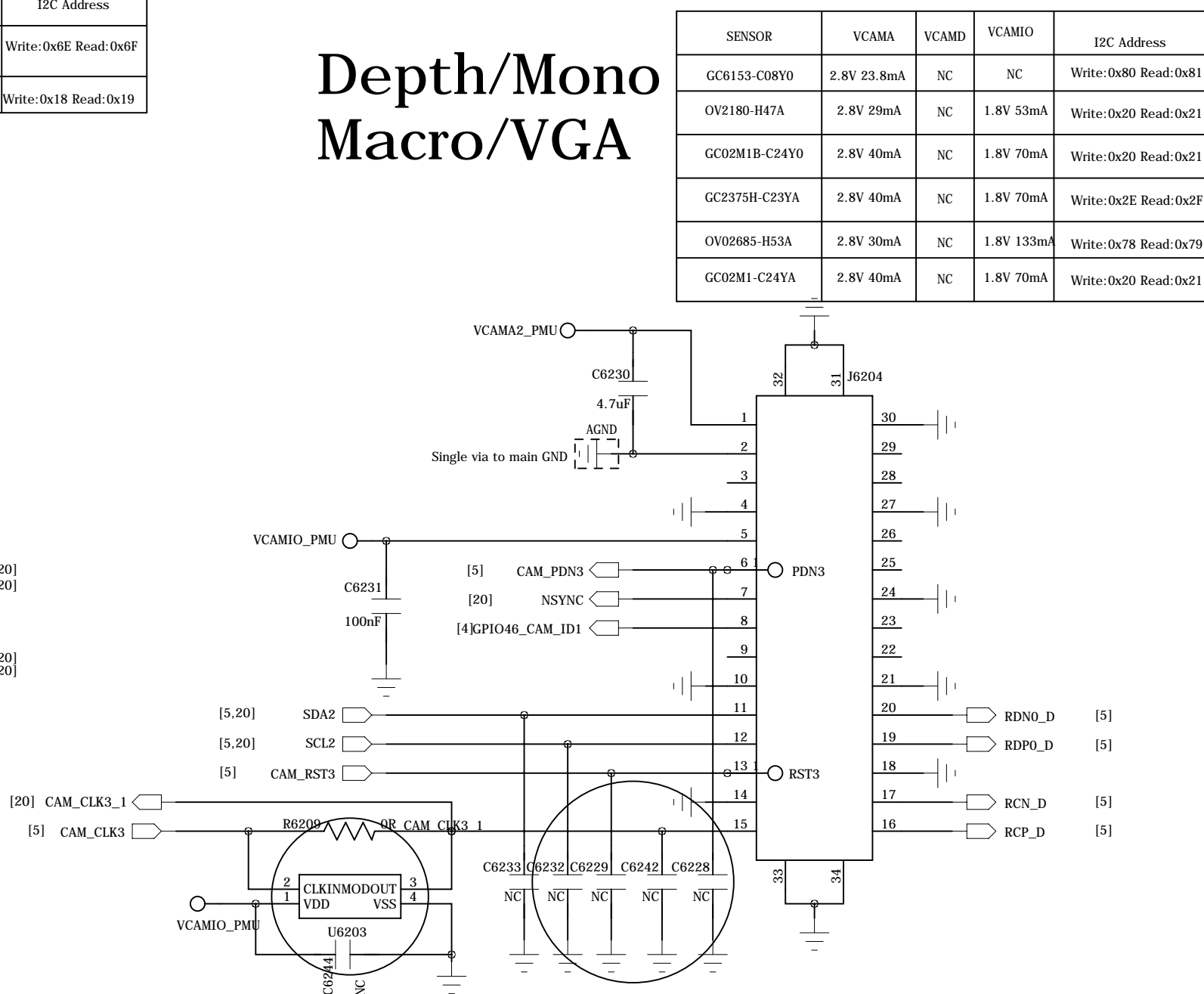
REAR CAMERA_VI (13M~48M+AF)



SENSOR	VCAMA	VCAMD	VCAMIO	I2C Address
GC6153-C08Y0	2.8V 23.8mA	NC	NC	Write:0x80 Read:0x81
OV2180-H47A	2.8V 29mA	NC	1.8V 53mA	Write:0x20 Read:0x21
GC02M1B-C24Y0	2.8V 40mA	NC	1.8V 70mA	Write:0x20 Read:0x21
GC2375H-C23YA	2.8V 40mA	NC	1.8V 70mA	Write:0x2E Read:0x2F
OV0268S-H53A	2.8V 30mA	NC	1.8V 133mA	Write:0x78 Read:0x79
GC02M1-C24YA	2.8V 40mA	NC	1.8V 70mA	Write:0x20 Read:0x21



SENSOR	VCAMA	VCAMD	VCAMIO	VCAMAF	I2C Address
GC5035-WC1X0	2.8V 35mA	1.2V 80mA	1.8V 3mA	2.8V 120mA	Write:0x6E Read:0x6F
DW9714V					Write:0x18 Read:0x19

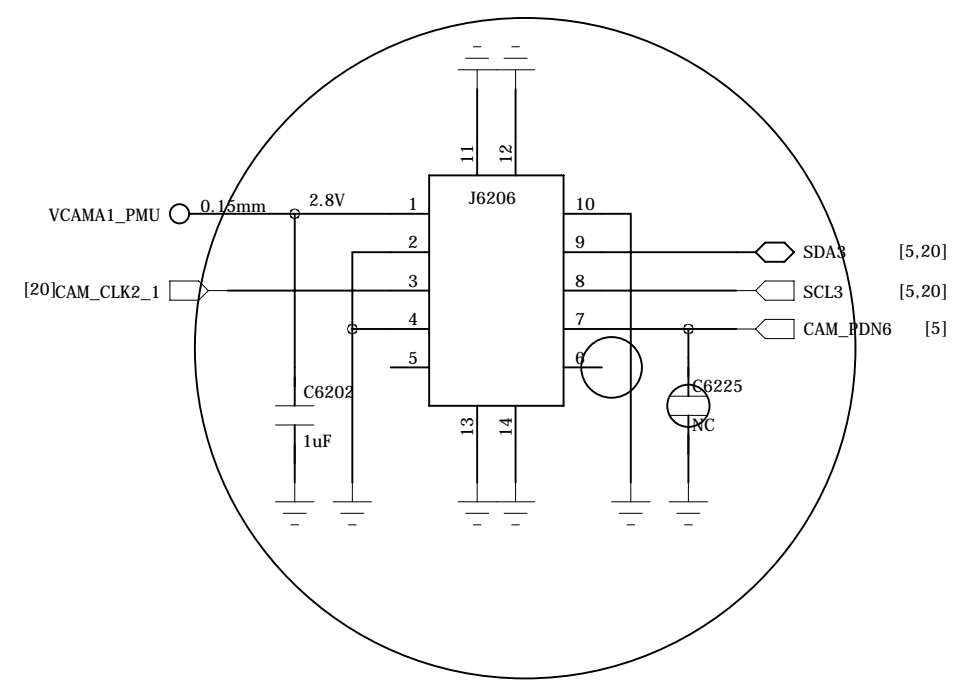


Depth/Mono Macro/VGA

SENSOR	VCAMA	VCAMD	VCAMIO	I2C Address
GC6153-C08Y0	2.8V 23.8mA	NC	NC	Write:0x80 Read:0x81
OV1280-H47A	2.8V 29mA	NC	1.8V 53mA	Write:0x20 Read:0x21
GC02M1B-C24Y0	2.8V 40mA	NC	1.8V 70mA	Write:0x20 Read:0x21
GC2375H-C23YA	2.8V 40mA	NC	1.8V 70mA	Write:0x2E Read:0x2F
OV02685-H53A	2.8V 30mA	NC	1.8V 133mA	Write:0x78 Read:0x79
GC02M1-C24YA	2.8V 40mA	NC	1.8V 70mA	Write:0x20 Read:0x21

REAR CAMERA_V

VGA	SENSOR	VCAMA	I2C Address
	GC6153-C08Y0	2.8V 23.8mA	Write:0x80 Read:0x81



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 62_PERI_CAMERA_I		VERSION: V1.0	SHEET: 20 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

PERI_CAMERA_II
FRONT_CAMERA_I (8M~32M)

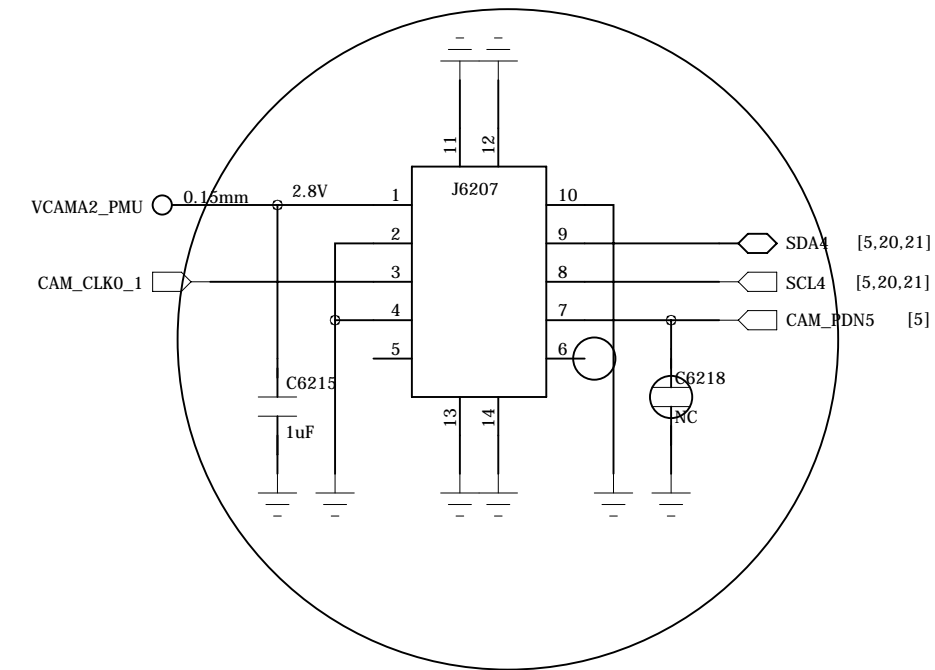
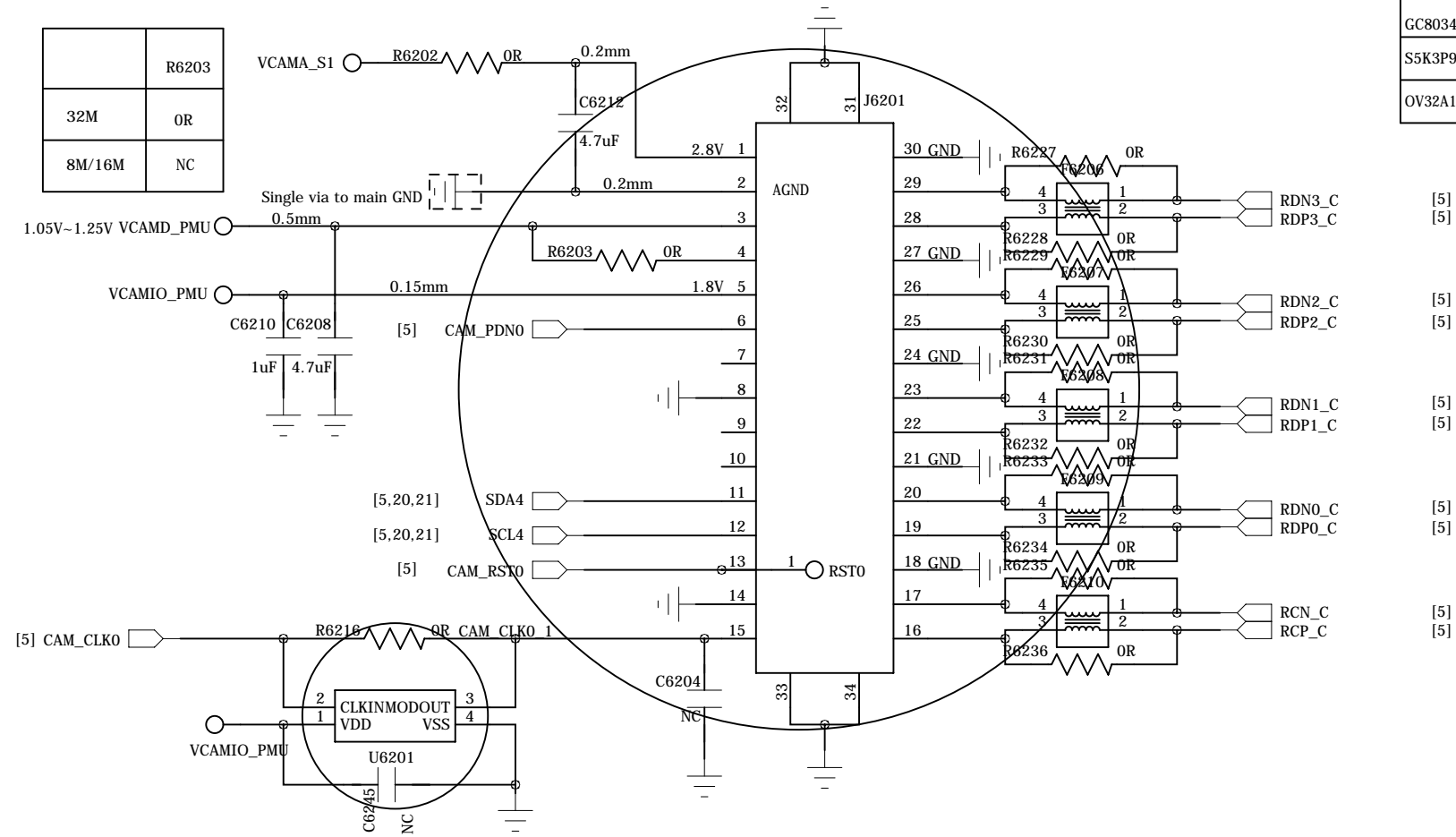
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

FRONT CAMERA_II (8W)

SENSOR	VCAMA	VCAMD	VCAMIO	I2C Address
GC6153-C08Y0	2.8V 23.8mA	NC	NC	Write:0x80 Read:0x81

	SENSOR	I2C Address
8M	GC8034-WC1X0	Write:0x6E Read:0x6F
16M	S5K3P9SX04-FGX9 P24C64E-C4H-MIR	Write:0x5A Read:0x5B Write:0xA2 Read:0xA3
32M	OV32A1Q-GA5A GT24P64B-2CSLI-TR	Write:0x6E Read:0x6D Write:0xA2 Read:0xA3

SENSOR	VCAMA	VCAMD	VCAMIO
GC8034-WC1X0	2.8V 35mA	1.25V 140mA	1.8V 10mA
S5K3P9SX04-FGX9	2.8V 57.5mA	1.05V 159.9mA	1.8V 0.5mA
OV32A1QI-GA5A	2.8V 70mA	1.1V 365mA	1.8V 1.5mA

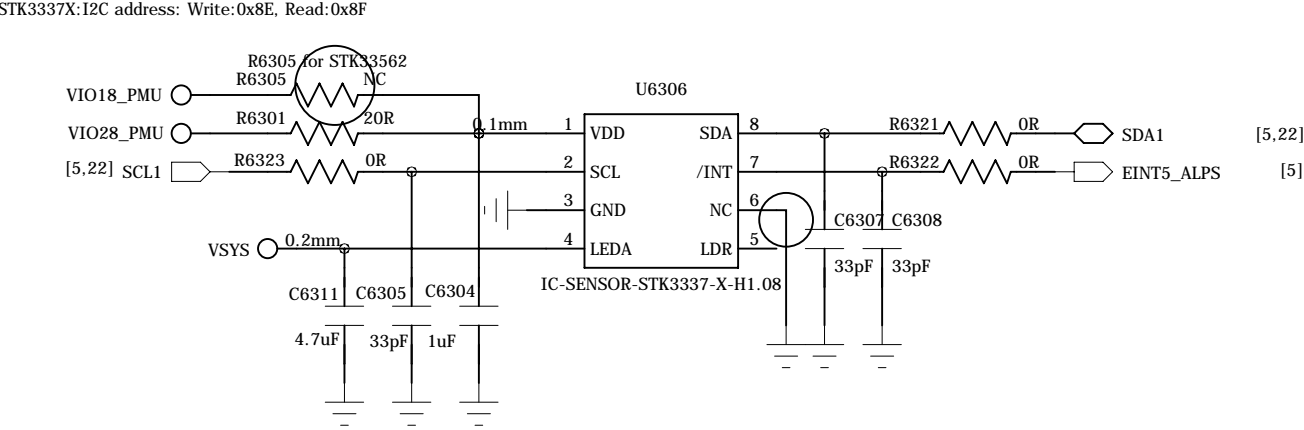


COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 62_PERI_CAMERA_II		VERSION: V1.0	SHEET: 21 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

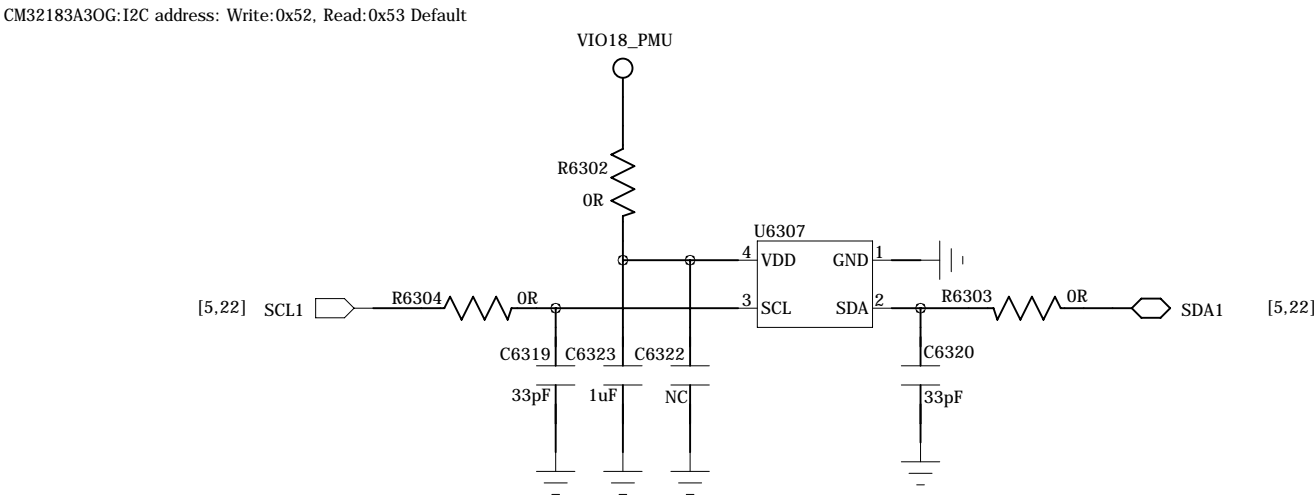
PERI_SENSORS

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

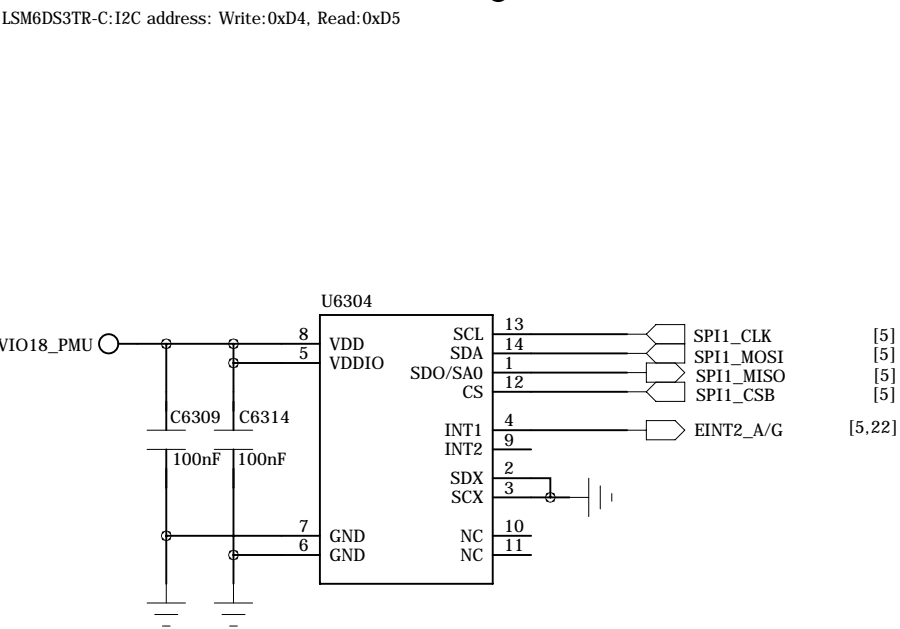
AL& PS Sensor



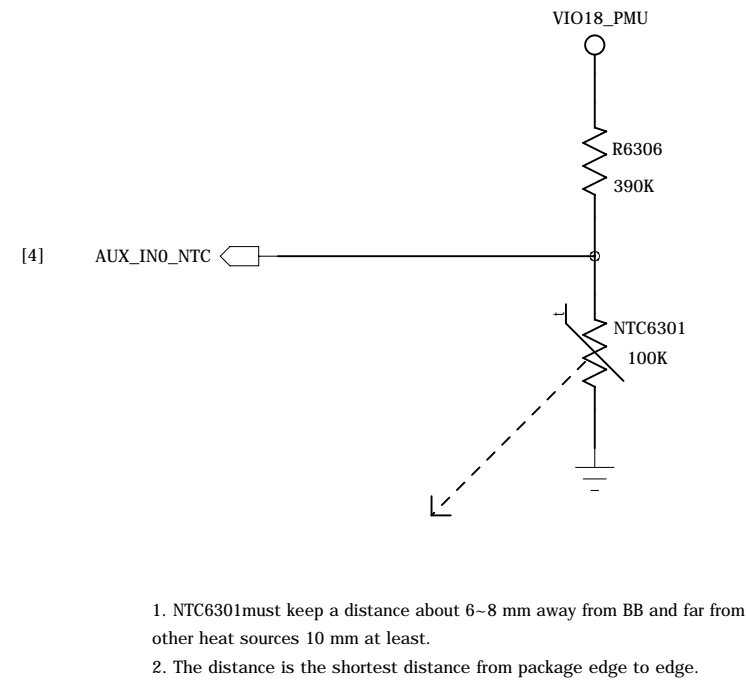
CM32183A30G--ALS



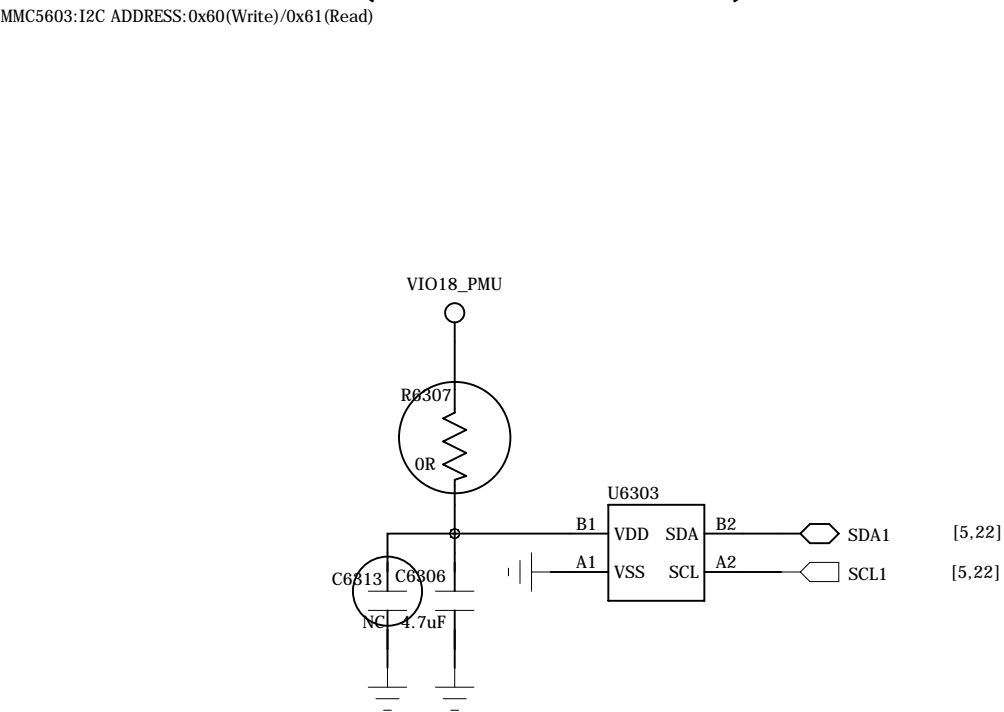
G-Sensor + Gyro Sensor



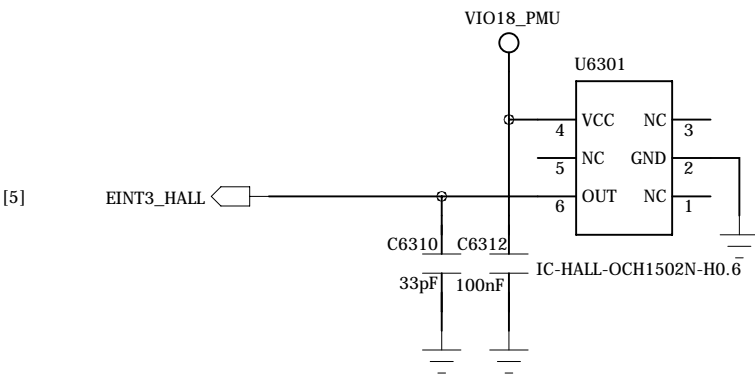
Thermistor to sense AP temperature



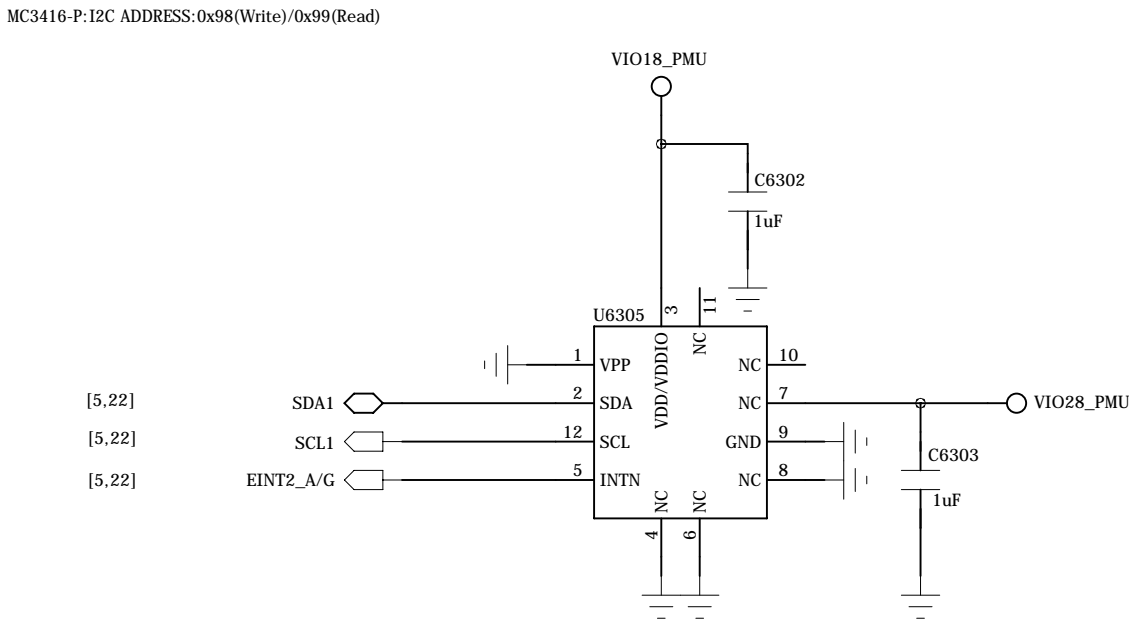
M-Sensor (COMPASS)



Unipolar HALL



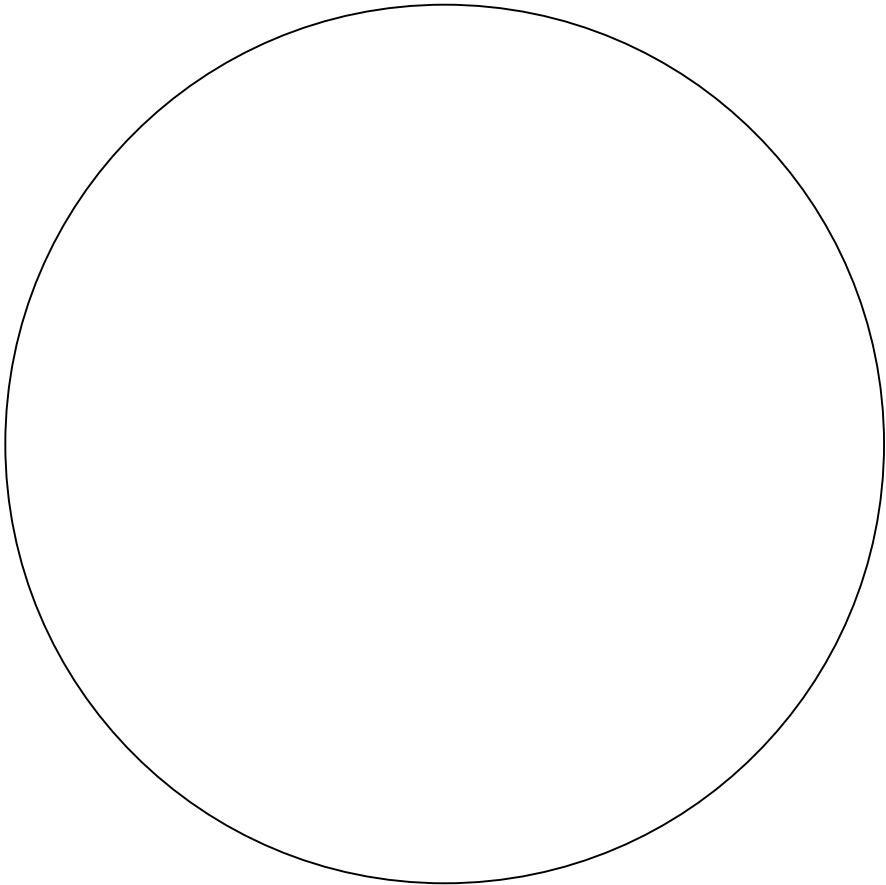
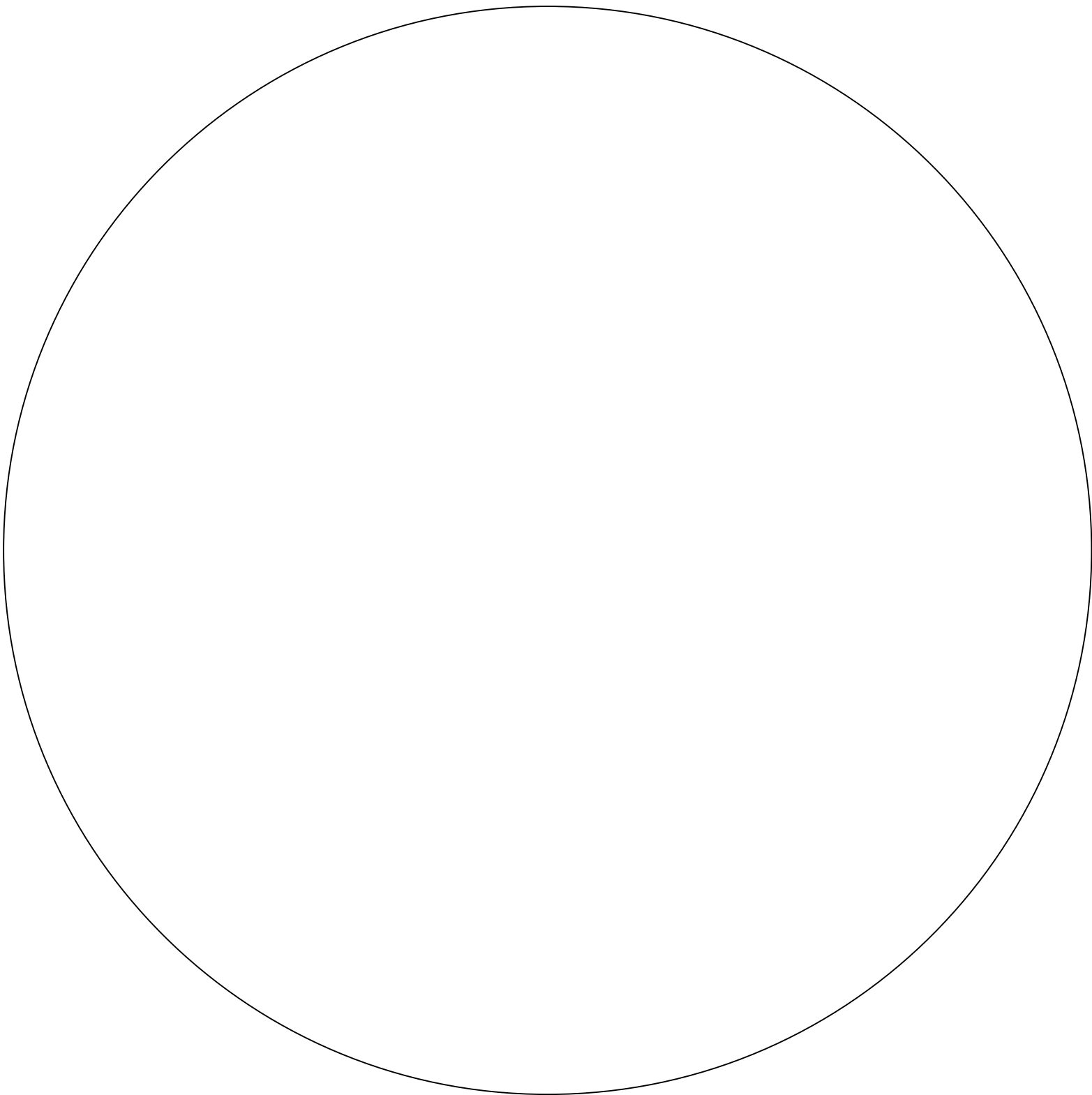
G-Sensor



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 63_PERI_SENSORS		VERSION: V1.0	SHEET: 22 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

PERI_EXCH_IO

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 64_PERI_EXCH_IO		VERSION: V1.0	SHEET: 23 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

	COL0	COL1
GND	UP	DOWN

COMPANY: TRANSSION HOLDINGS				MODEL: H694		Modified Date: 2020/4/22	
DRAWN	DJF/TS	DATED	2020/03/18	TITLE: 65_PERI_SIM_SD_KEYPAD		VERSION: V1.0	SHEET: 24 OF 24
CHECKED	<CHECKED>	DATED	< >	Confidentiality	CONFIDENTIAL		