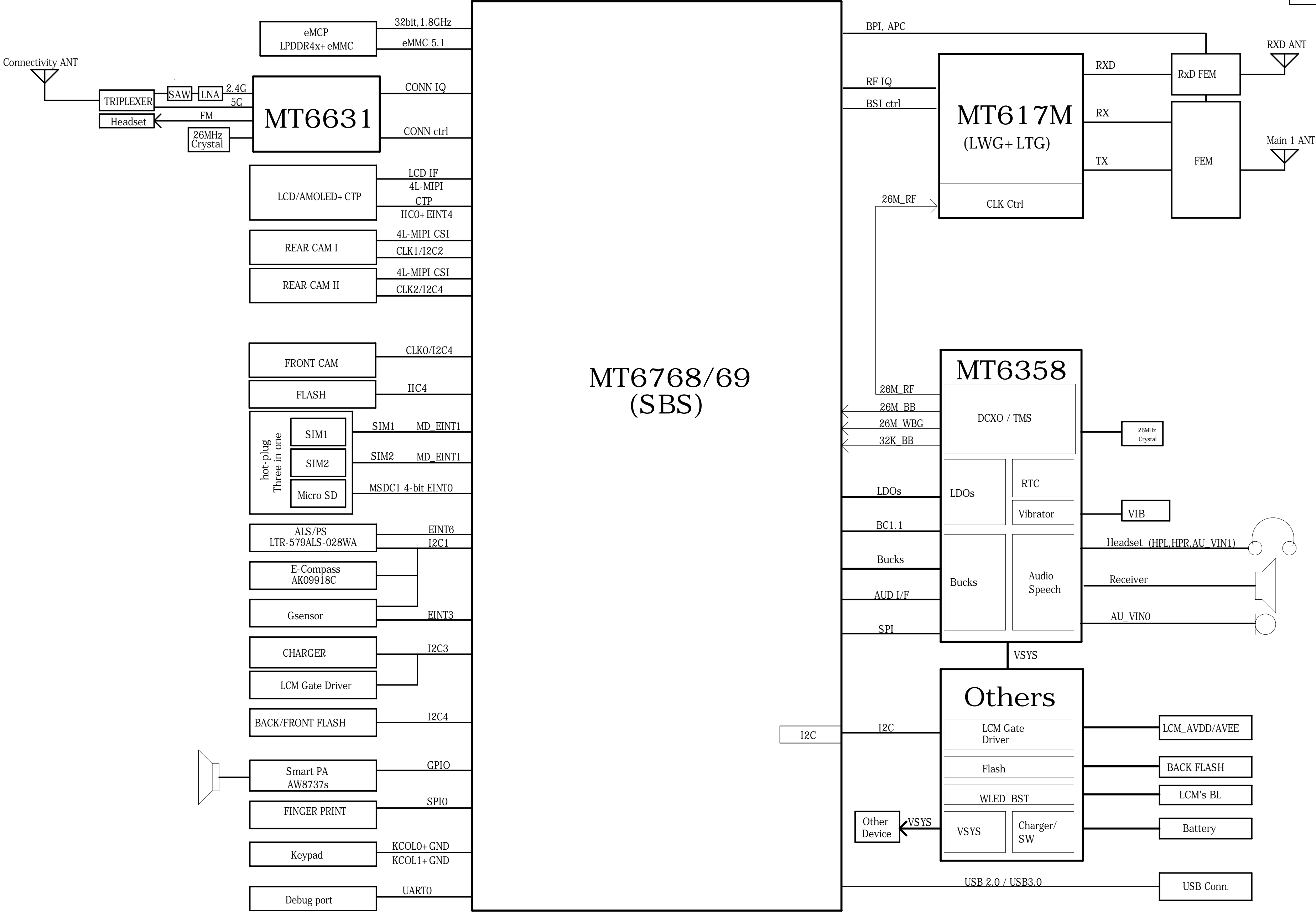


BLOCK_DIAGRAM

Project : MT6768/69 LPDDR4x

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 00_BLOCK_DIAGRAM		VERSION: V1.1	SHEET: 1 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

I2C_ID_OVERVIEW

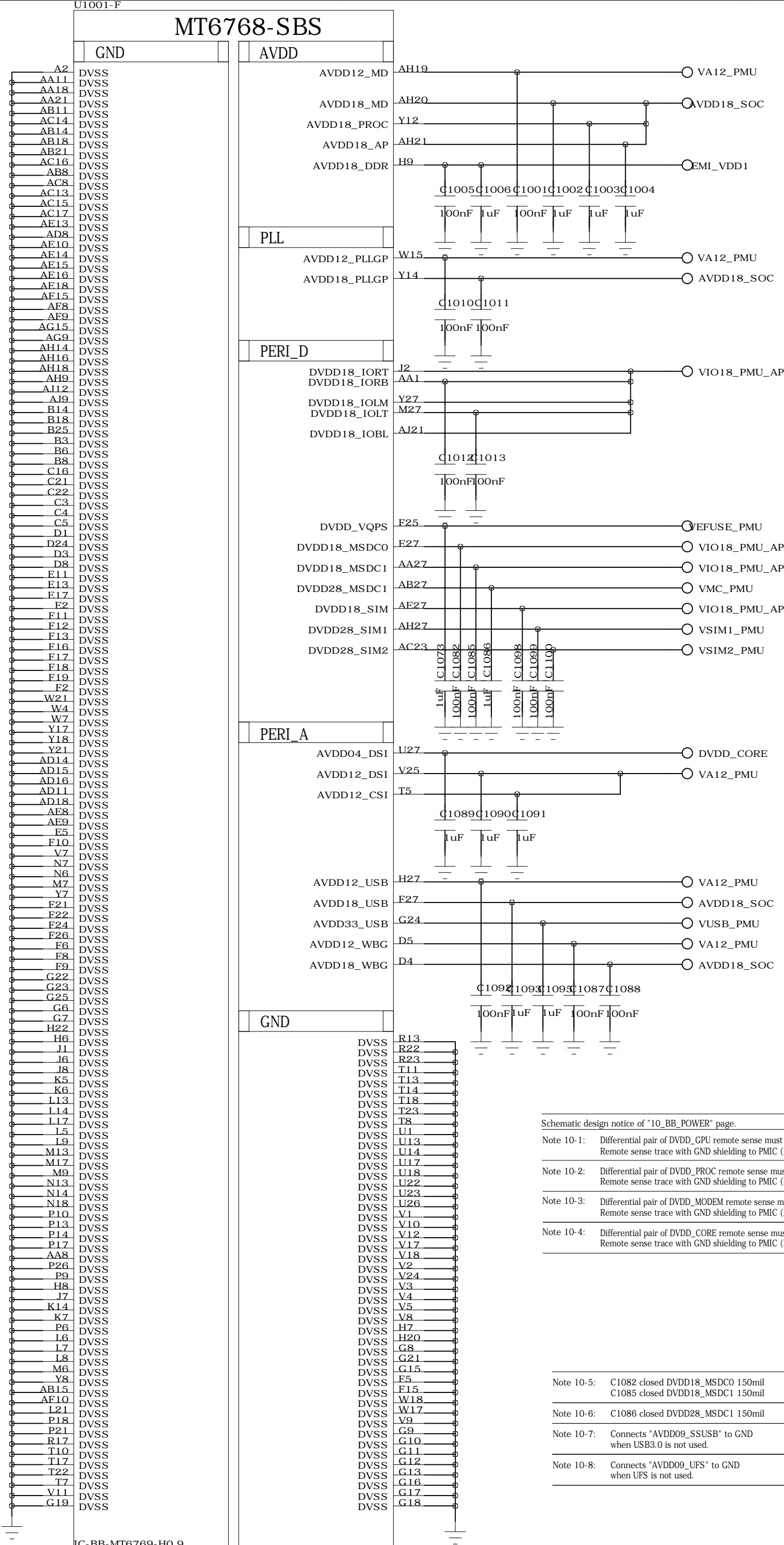
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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)

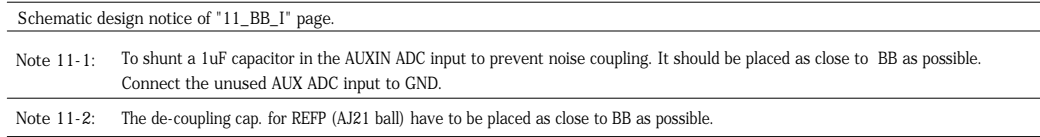
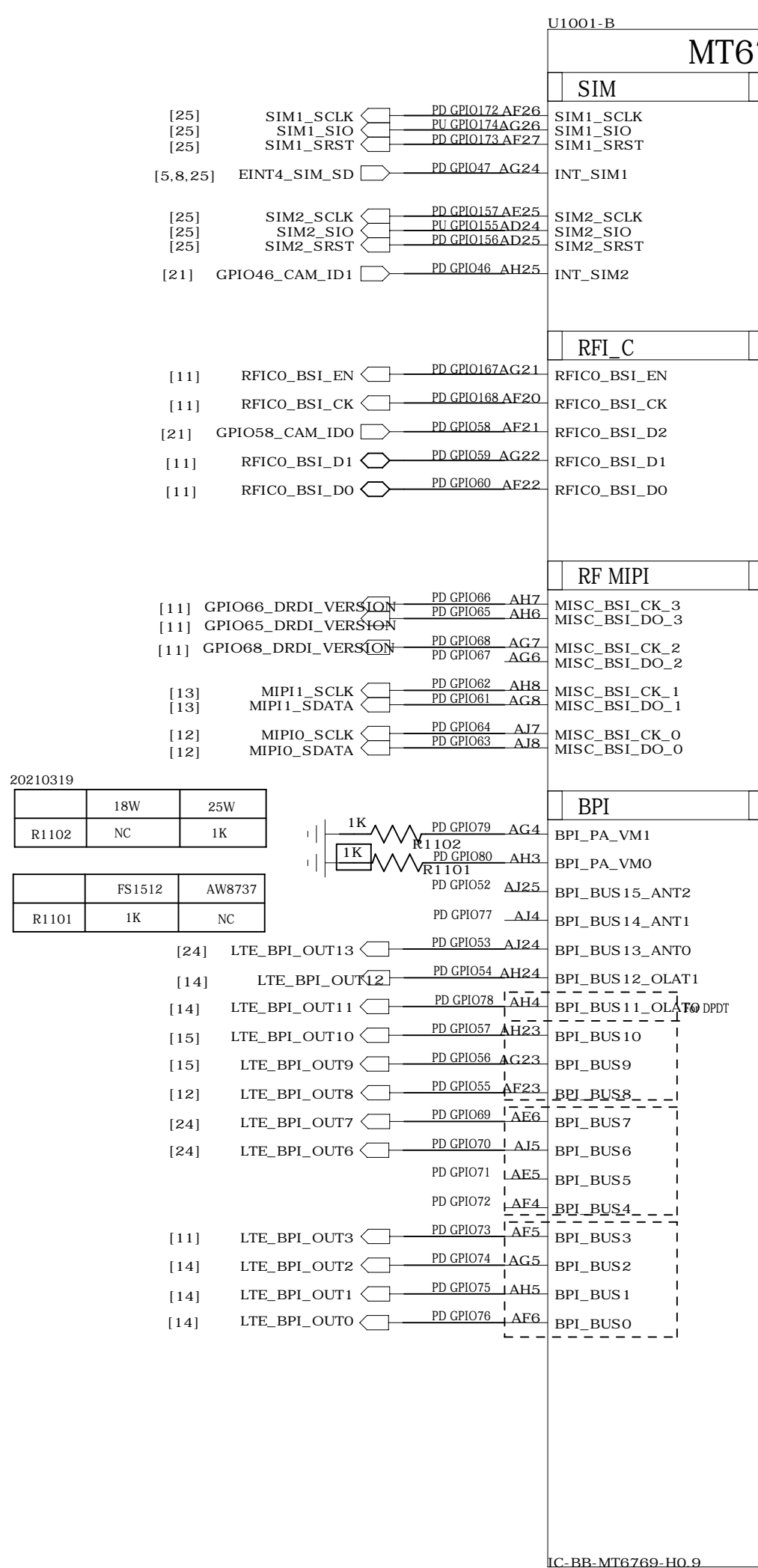
Note : I2C Spec. : Standard mode (100 kbps) and Fast mode (400 kbps), Fast mode Plus (1 Mbps) and High-speed mode (3.4 Mbps)

COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 01_I2C_ID_OVERVIEW		VERSION: V1.1	SHEET: 2 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

11001-F		<div> <div>MT6768-SBS</div> <div> <div>GND</div> <div> <div>DVSS</div> <div>DVSS</div> <div>DVSS</div> </div> </div> <div> <div>AVDD</div> <div> <div>AVDD12_MD</div> <div>AVDD10_MD</div> </div> </div> </div>		<div> <div> <div>AH19</div> <div>AH20</div> </div> <div> <div>VA12_PMU</div> <div>VA12_SGS</div> </div> </div>		<div> <div>REVISION RECORD</div> <table> <tr> <th>LTR</th> <th>ECO NO:</th> <th>APPROVED:</th> <th>DATE:</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table> </div>				LTR	ECO NO:	APPROVED:	DATE:												
LTR	ECO NO:	APPROVED:	DATE:																						

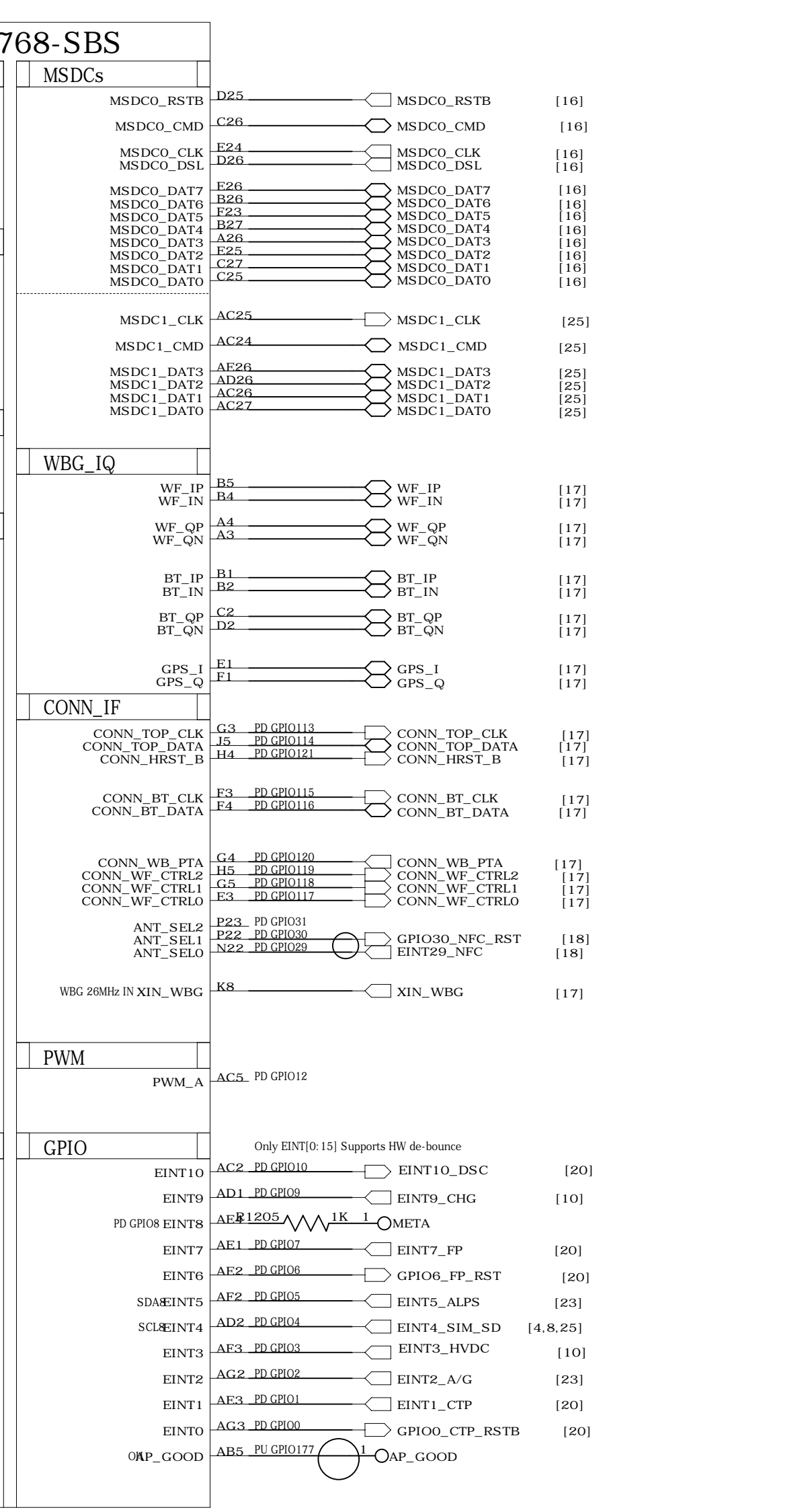
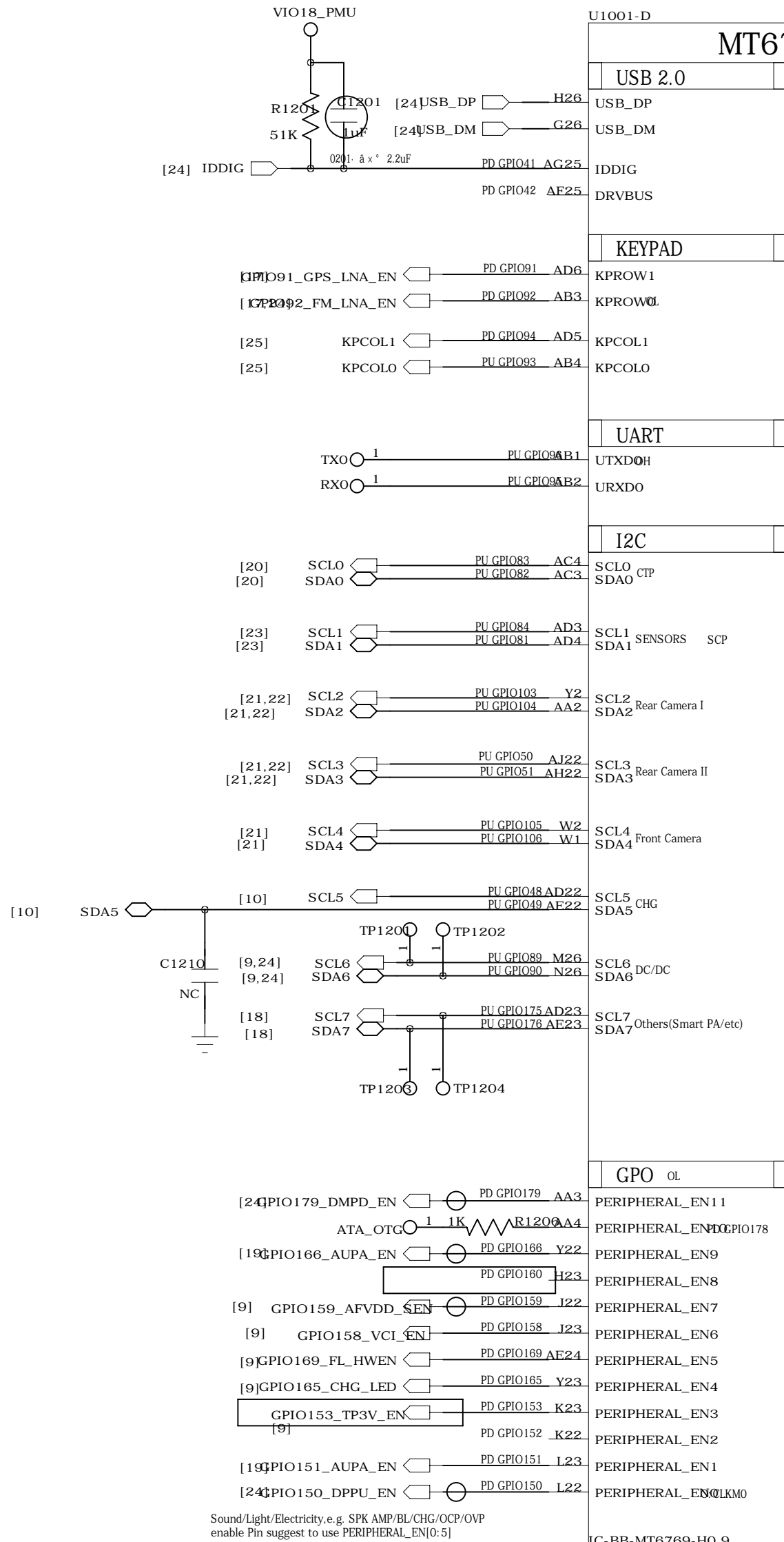


COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
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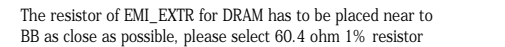
AUD_SYNC_MISO and AUD_CLK_MISO are DDR type feature in bootstrap				
	AUD_SYNC_MISO	AUD_CLK_MISO	DDR Type	VDRAM1 / VDRAM2 (PMU)
Default	LO	LO	LP4X eMCP	1.25V / 0.6V
	LO	HI (By ext. PS)	Reserved	OFF/1.8V
	HI (By ext. PS)	LO	LP3 eMCP	1.225V/OFF
	HI (By ext. PS)	HI (By ext. PS)	Reserved	1.125V/1.8V

COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 11_BB_I		VERSION: V1.1	SHEET: 4 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		



VERSION: V1.1 | SHEET: 5 OF 25

U1001-G		MT6768-SBS	
EMI_IF		EMI_IF	
E16	EMI1_DQ15		EMI1_CS1
A18	EMI1_DQ14		EMI1_CS0
C18	EMI1_DQ13		EMIO_CS1
A16	EMI1_DQ12		EMIO_CS0
D17	EMI1_DQ11		
B17	EMI1_DQ10		
D16	EMI1_DQ9		EMI1_CKE1
B16	EMI1_DQ8		EMI1_CKE0
B24	EMI1_DQ7		EMIO_CKE1
C23	EMI1_DQ6		EMIO_CKE0
A22	EMI1_DQ5		
A24	EMI1_DQ4		
D21	EMI1_DQ3		EMI1_DMI1
E21	EMI1_DQ2		EMI1_DMI0
D22	EMI1_DQ1		EMIO_DMI1
E22	EMI1_DQ0		EMIO_DMI0
E20	EMI1_CA5		EMI1_DQS1_C
A20	EMI1_CA4		EMI1_DQS1_T
B20	EMI1_CA3		EMI1_DQS0_C
B21	EMI1_CA2		EMI1_DQS0_T
C19	EMI1_CA1		
E19	EMI1_CA0		EMIO_DQS1_C
C15	EMIO_DQ15		EMIO_DQS1_T
B12	EMIO_DQ14		EMIO_DQS0_C
D11	EMIO_DQ13		EMIO_DQS0_T
C13	EMIO_DQ12		
B13	EMIO_DQ11		EMI1_CK_C
A14	EMIO_DQ10		EMI1_CK_T
D13	EMIO_DQ9		EMIO_CK_C
C14	EMIO_DQ8		EMIO_CK_T
C7	EMIO_DQ7		
A8	EMIO_DQ6		
B9	EMIO_DQ5		EMI_RESET_N
C8	EMIO_DQ4		
F7	EMIO_DQ3		
D7	EMIO_DQ2		
E7	EMIO_DQ1		
C6	EMIO_DQ0		
E8	EMIO_CA5		
C11	EMIO_CA4		
C10	EMIO_CA3		
A10	EMIO_CA2		
A12	EMIO_CA1		
D12	EMIO_CA0		
EMI_EXTR			
A6	EMI_EXTR		

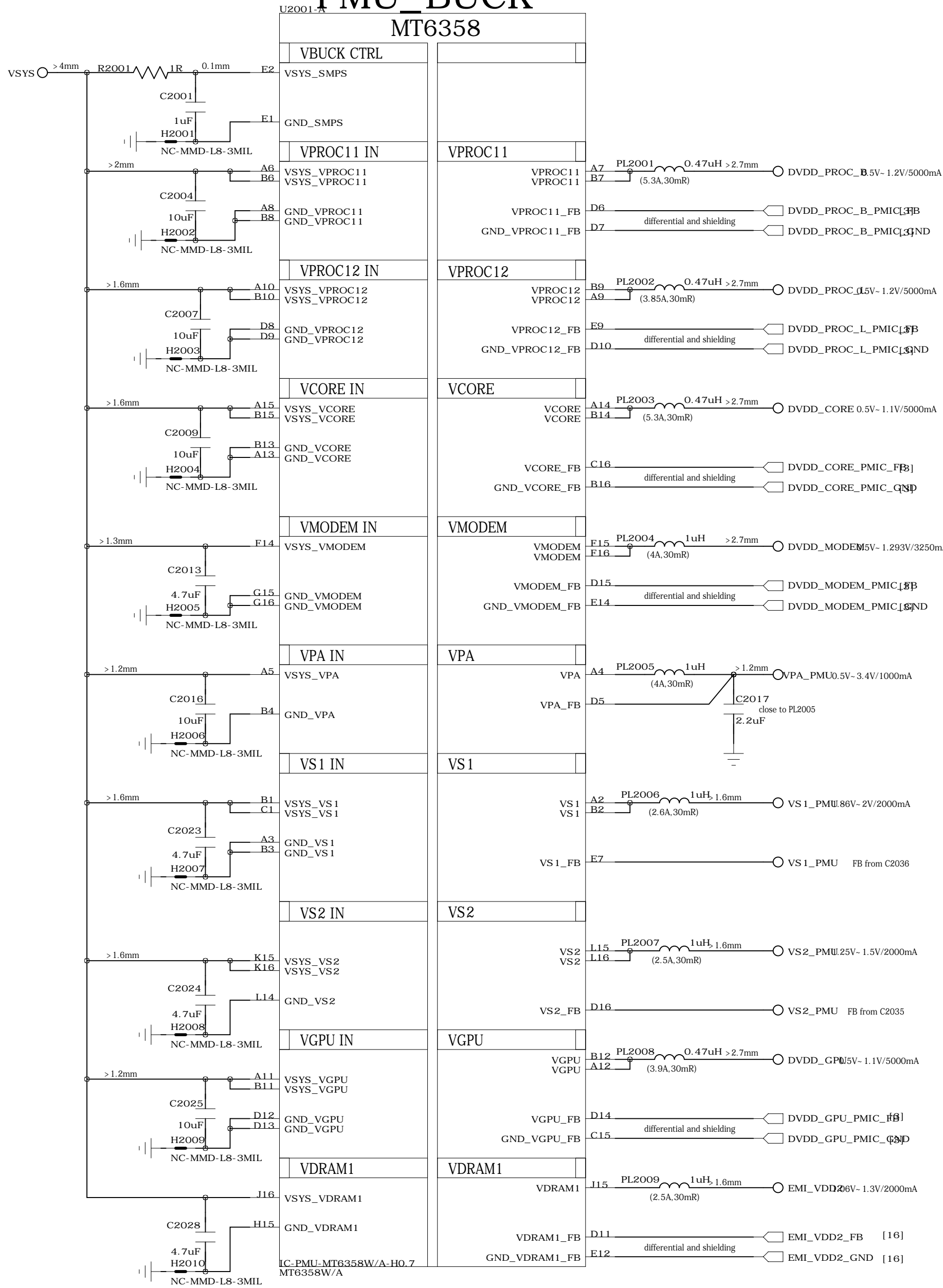


COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
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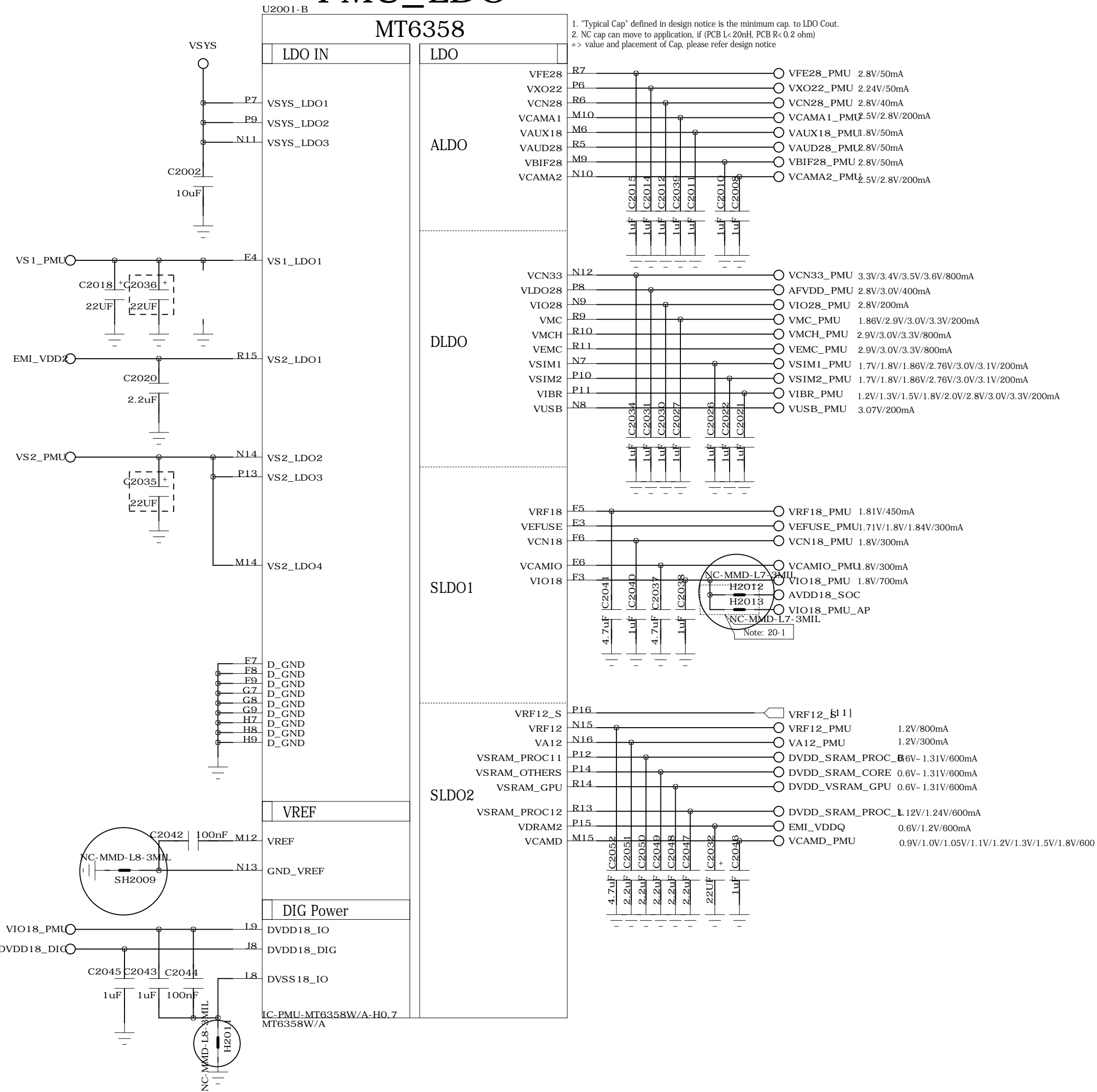
POWER_MT6358_I

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

PMU_BUCK



PMU_LDO

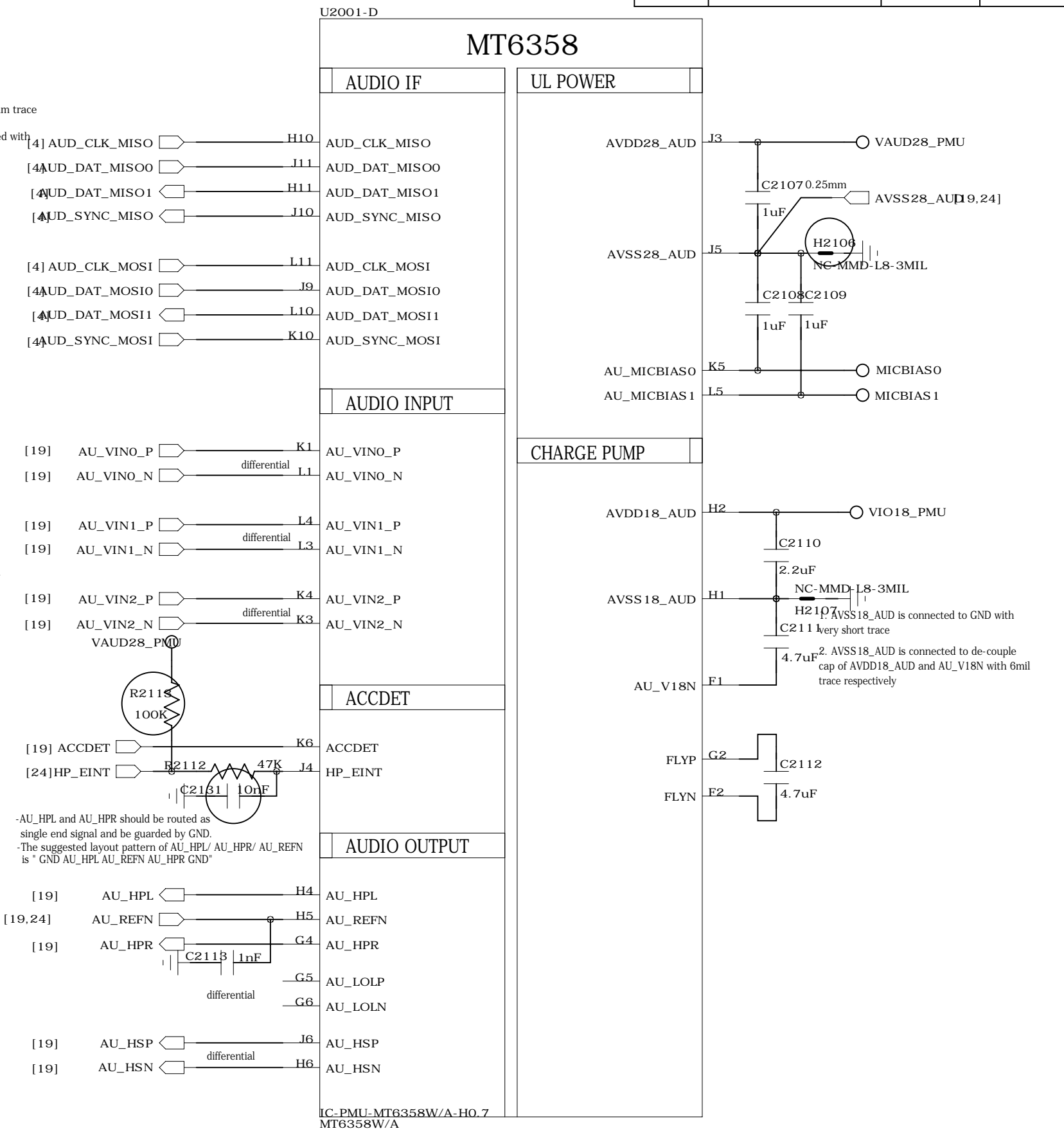
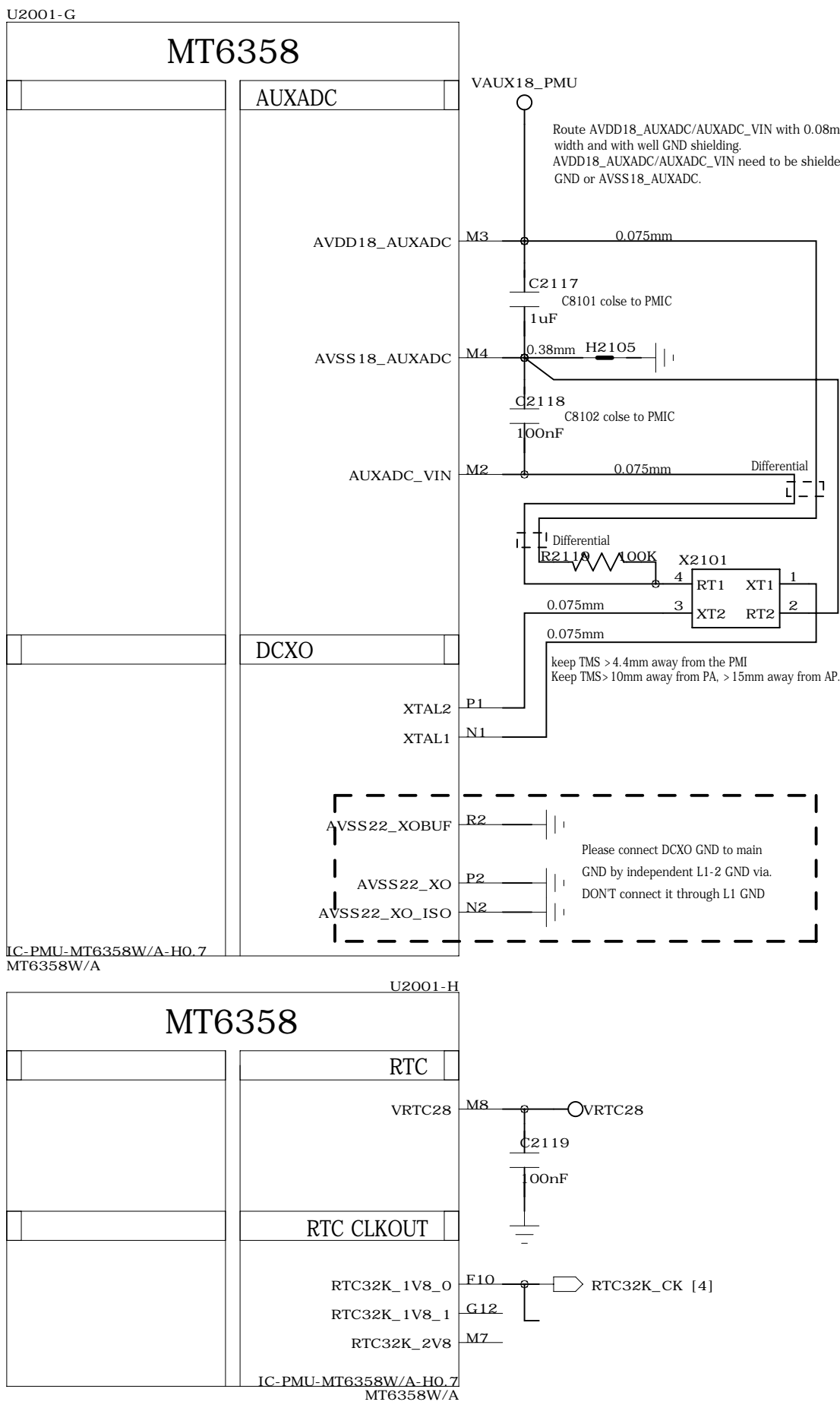


Schematic design notice of "21_POWER_MT6358-LDO" page

Note 21-1: Please set H2012/H2013 close to C2038, making star connection between VIO18_PMU and AVDD18_SOC/VIO18_PMU_AP near to LDO cap. C2038
Please also refer to MT6358 design notice for further detail design information

COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 20_POWER_MT6358_I		VERSION: V1.1	SHEET: 7 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



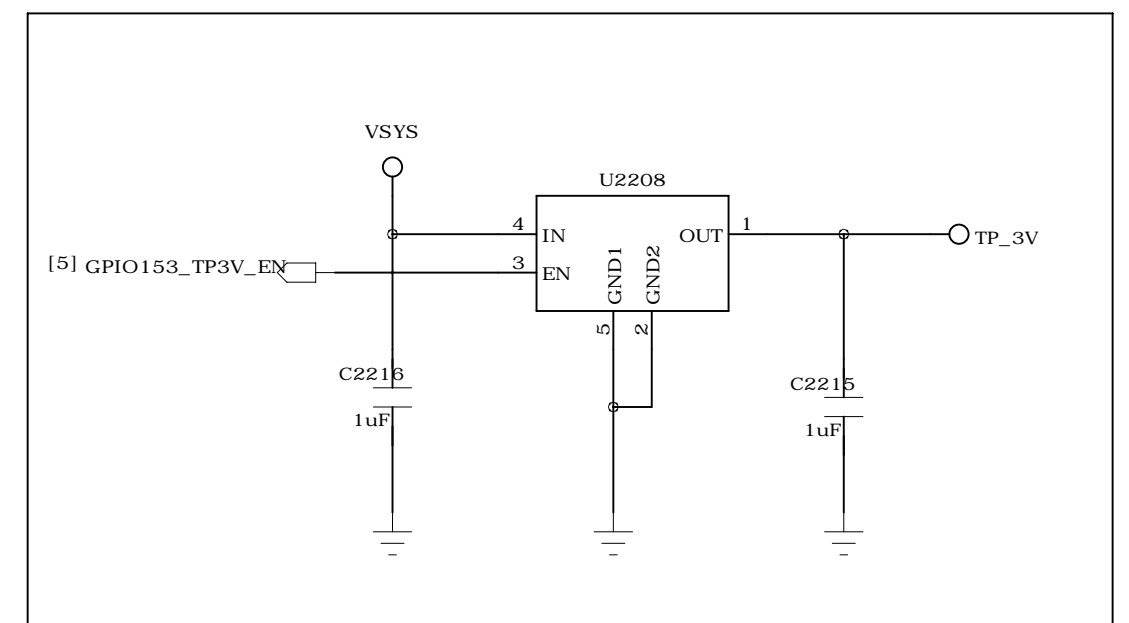
	R2122	R2123
18W	NC	NC
25W	10K	10K

The schematic diagram illustrates the PMU018 module's internal circuitry and external connections. Key components and connections include:

- Power Input:** VBUS, VBAT/BIF28, PMU018, and PMU.
- Resistors:** R2106 (24K), R2108 (39K), R2119 (1K), R2123 (NC), R2124 (8.005R), R2217 (1K), R2218 (1K).
- Capacitors:** C2143 (33pF).
- Diodes:** D2101.
- Connectors:** J2101 (6-pin).
- Signal Pins:** BATON, VBAT_S, BATADC, AUX_IN3_BAT4, CS_N, CS_P.
- Grounds:** BGND, GND.
- Other Labels:** Kelvin connection Rfg, >4mm, >4mm.

COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 21_POWER_MT6358_II		VERSION: V1.1	SHEET: 8 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

FRONT CAMERA FLASH LED

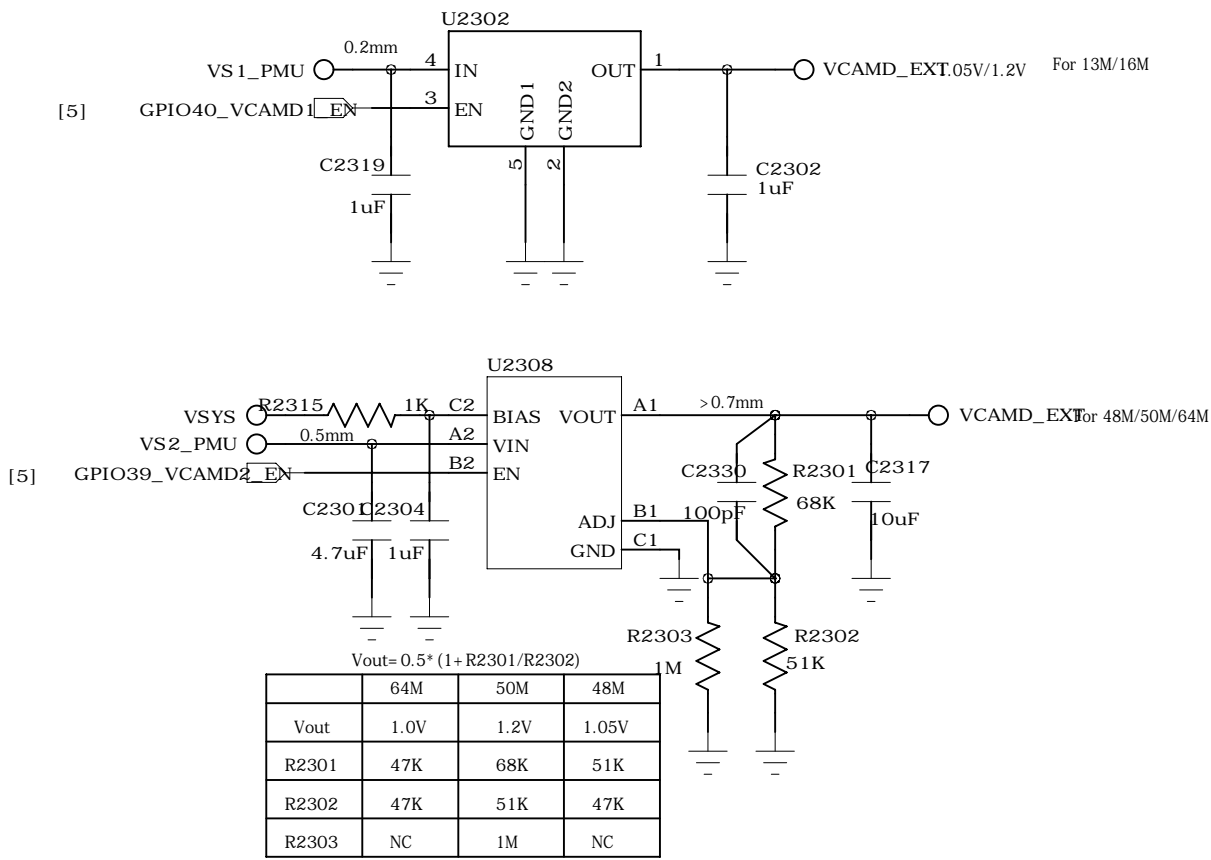


COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
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CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

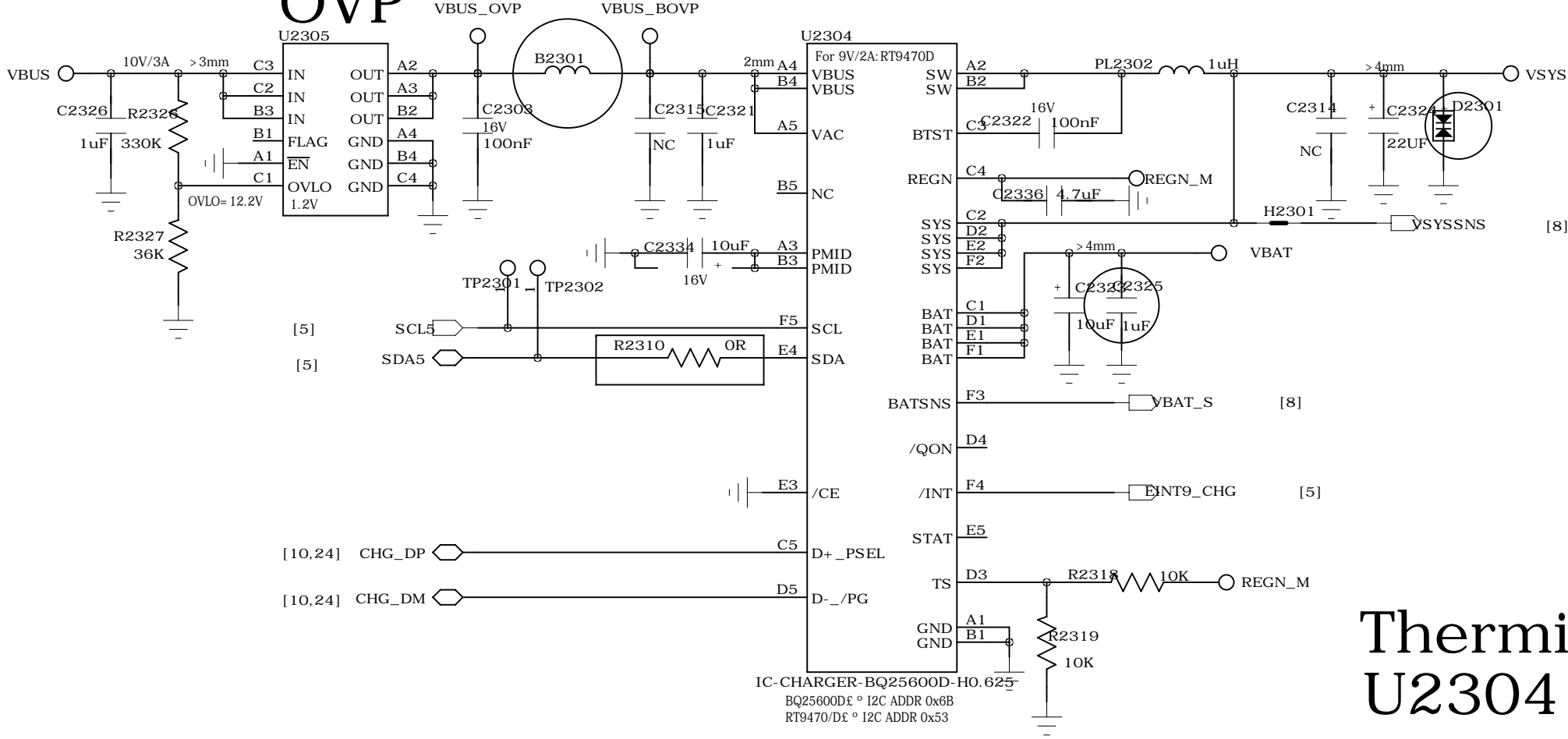
POWER_THIRD-PARTY_II

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

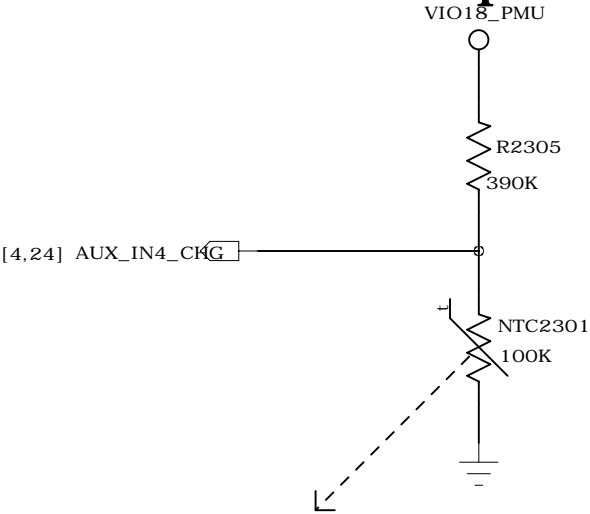
VCAMD_Main(1.05V)



OVP CHARGER_I

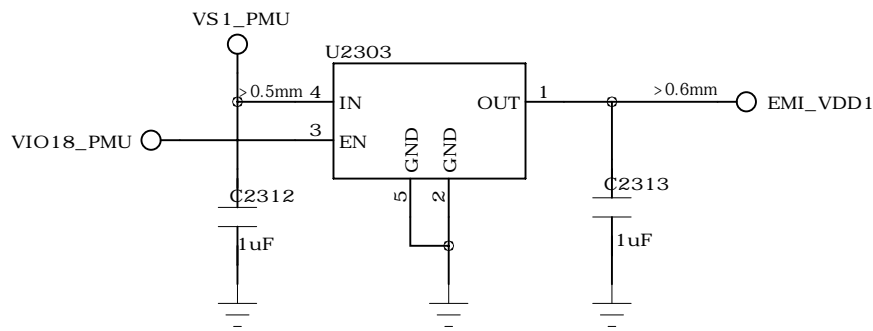


Thermistor to sense U2304 temperature

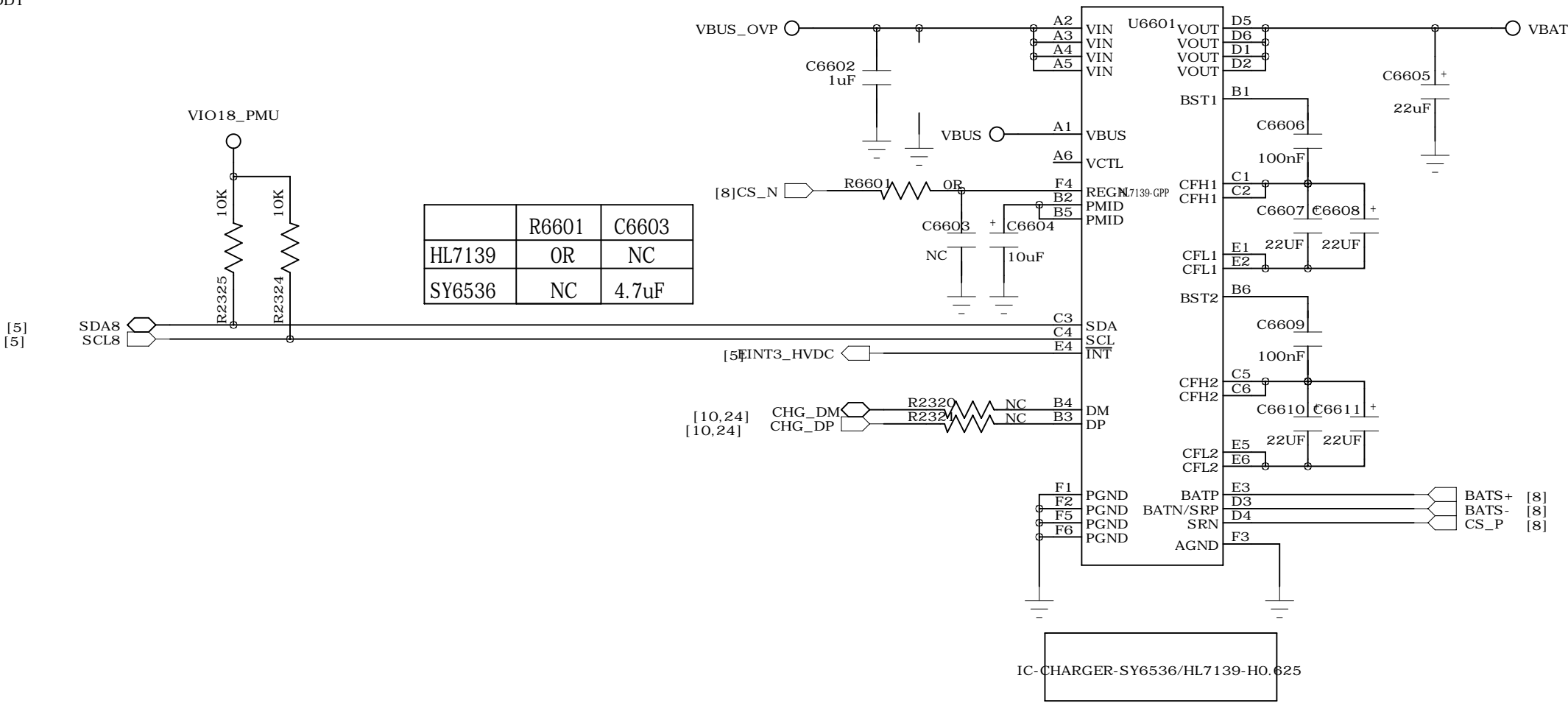


- 1. NTC2301 must keep a distance about 2 mm away from U2304 and far from other heat sources 10 mm at least.
- 2. The distance is the shortest distance from package edge to edge.

LPDDR4X VDD1 1.8V LDO



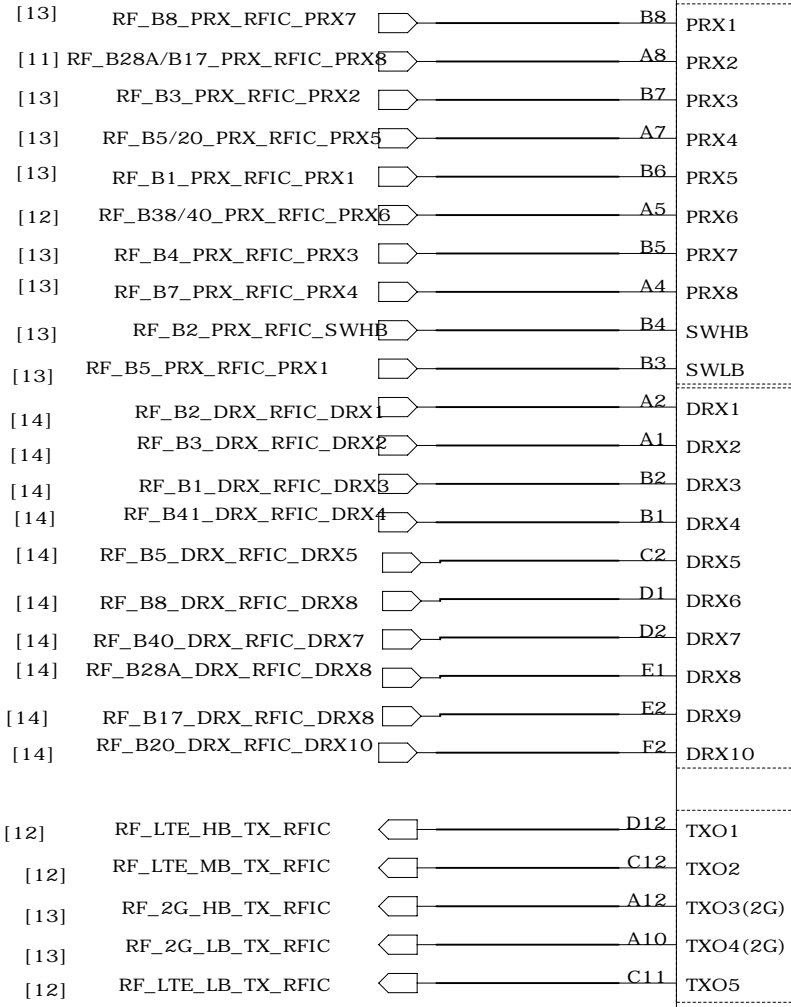
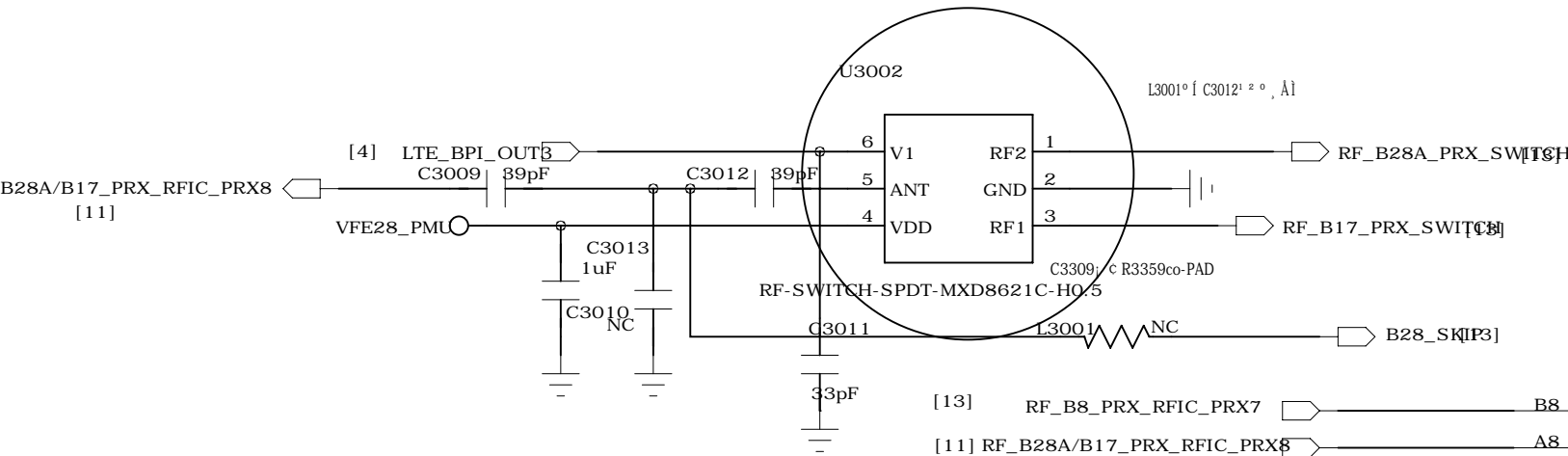
I2C ADR: 0x6F



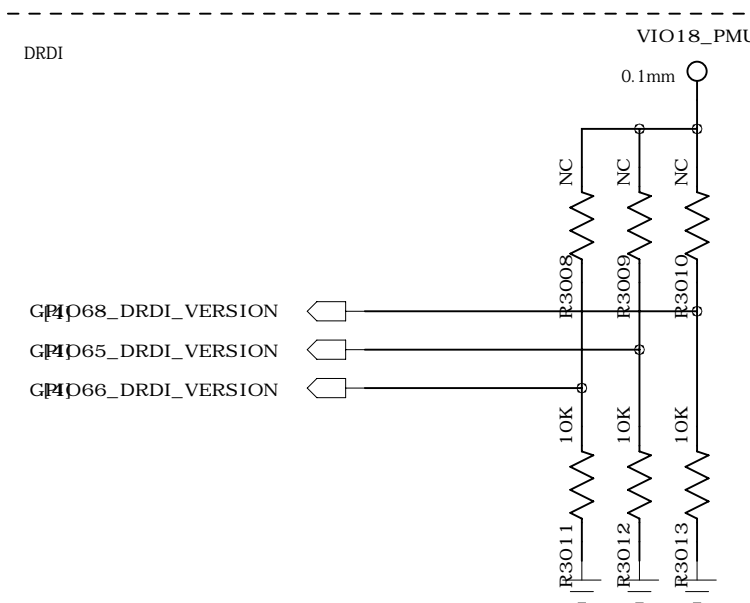
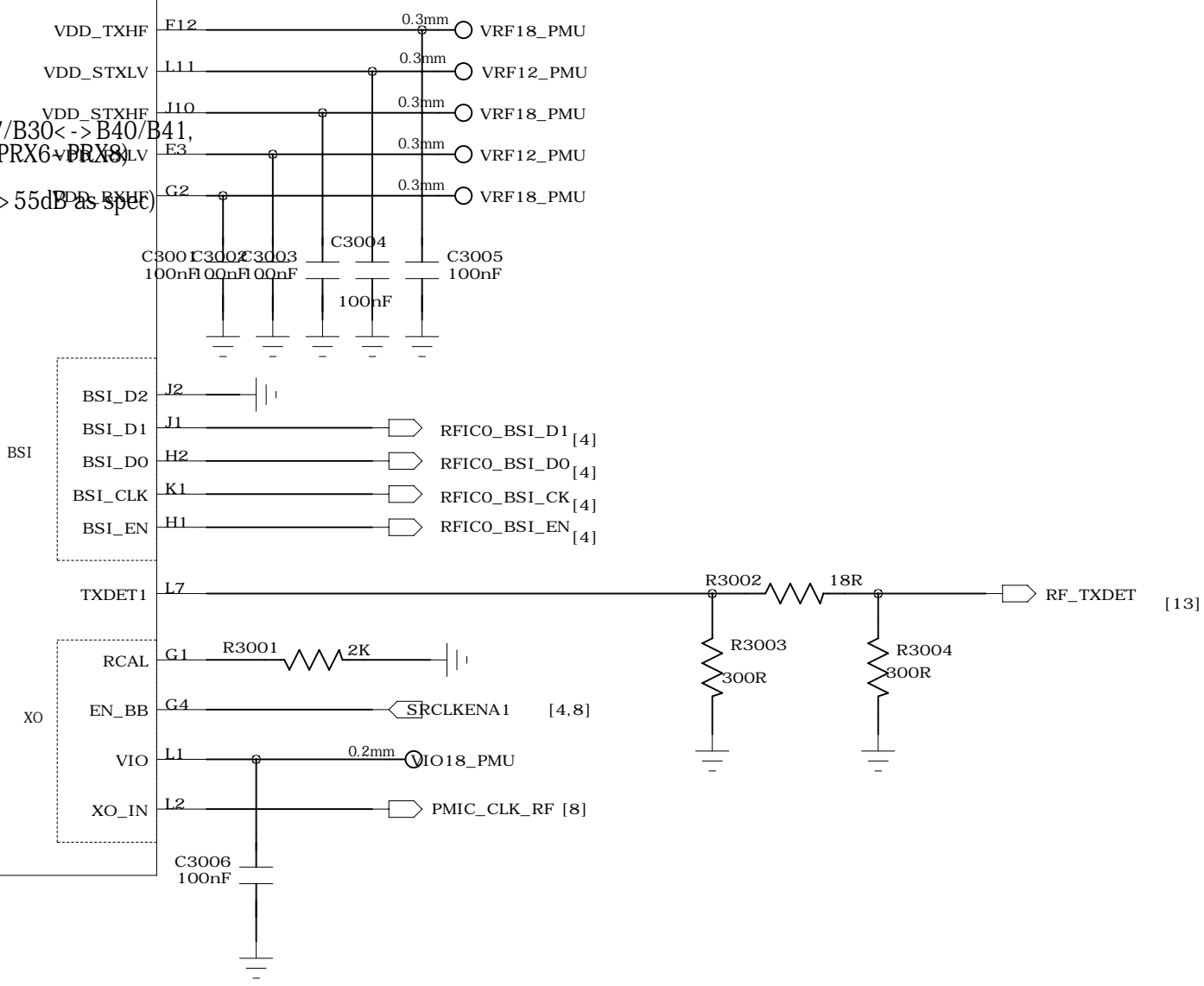
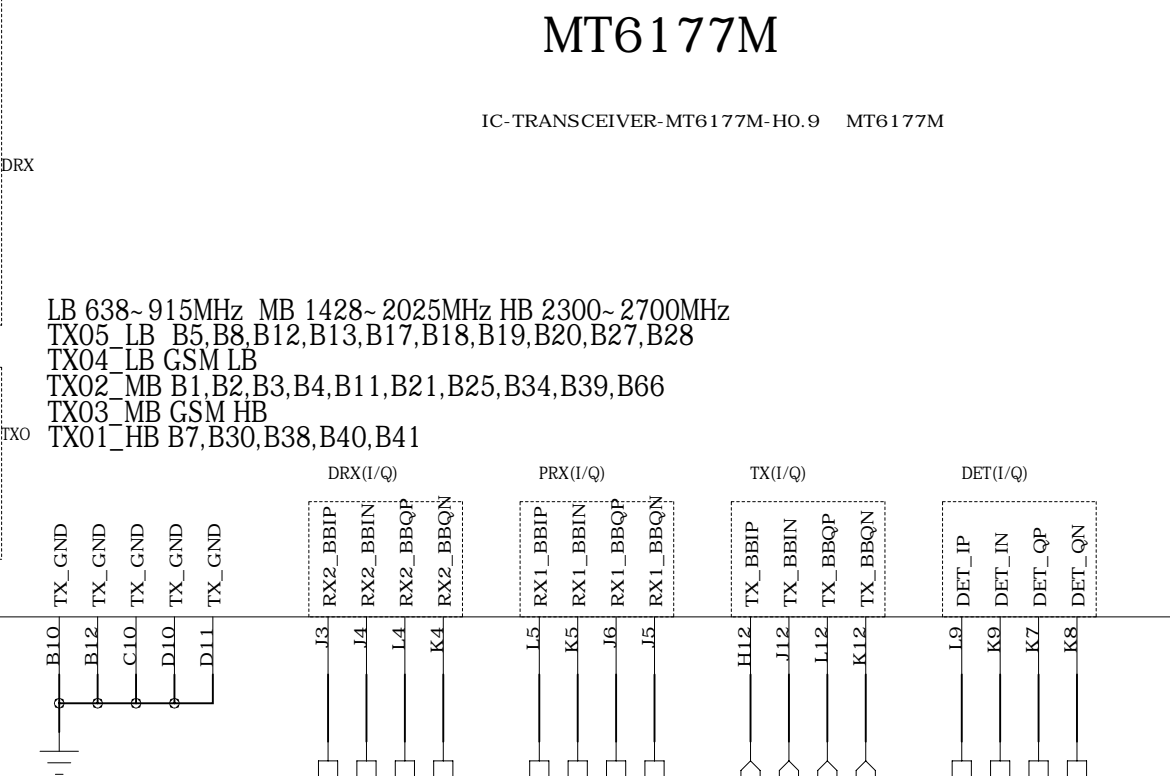
COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 23_POWER_THIRD-PARTY_II		VERSION: V1.1	SHEET: 10 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

RF_MT6177M_PIN_OUT

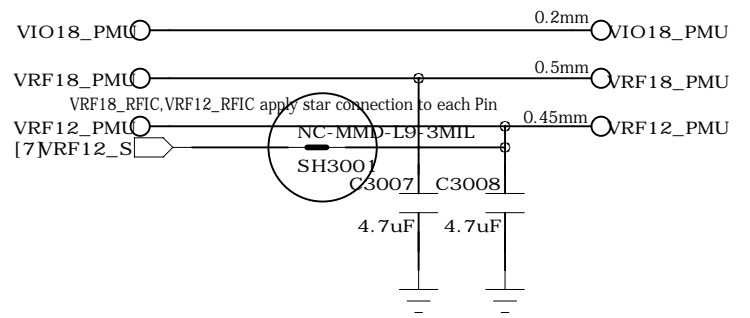
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



PRX1~PRX8 support 600MHz(B71)~2690MHz(B41)
All DRX ports can support 600MHz(B71)~2690MHz(B41)
Use as SAWless ports for GSM850 EGSME must add BPF
Use as SAWless ports for TDD LTE B34,B39 must add BPF
if SWLB< GSM850 EGSME @/SWHBT PCS/DCS/TDD LTE: B34f ~ B39f @ and DRX port use SAWless
BPF must be added due to;
SW Port and add a SAW to be Normal RX port. SWLB<1GHZ, 1GHX<SWHB<2.2GHZ
For Tx Freuency is same as Rx Freuency of coupling path ,like B1<-> B2, B2<-> B3, B2/B3<-> B39, B7/B30<-> B40/B41,
When B1, B3, B7/B30 is used group#1 (PRX1~PRX4), then please must set B2, B40/B41 in group #2 (PRX6~PRX8),
if customer did not want to follw ref.design ,
please check port to port isolation of TXM is larger than 30dB(24dB for RFIC worse case, and total is > 55dB as Spec)



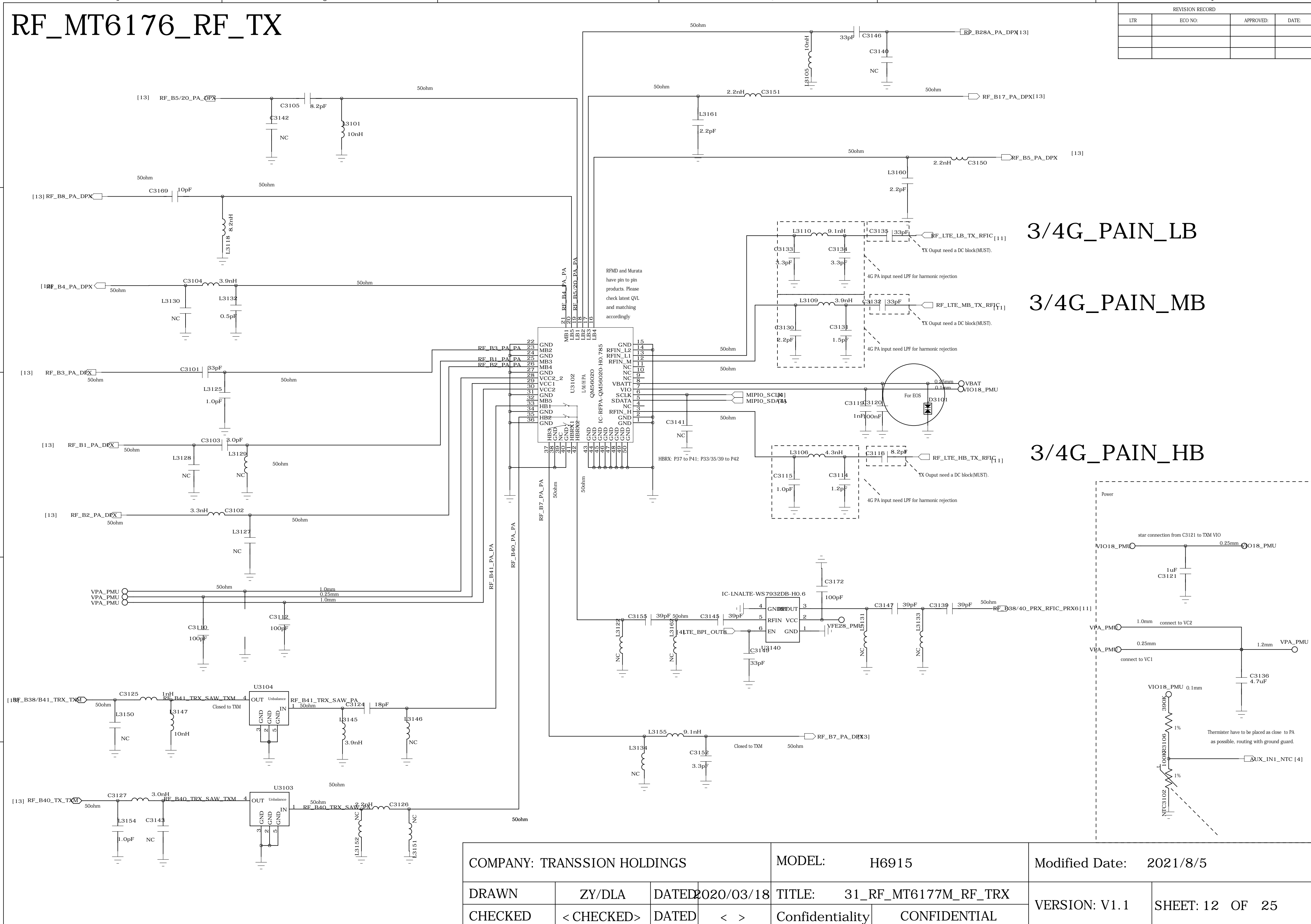
Power domain of MT6177M



COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 30_RF_MT6177M_PIN_OUT		VERSION: V1.1	SHEET: 11 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

RF_MT6176_RF_TX

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

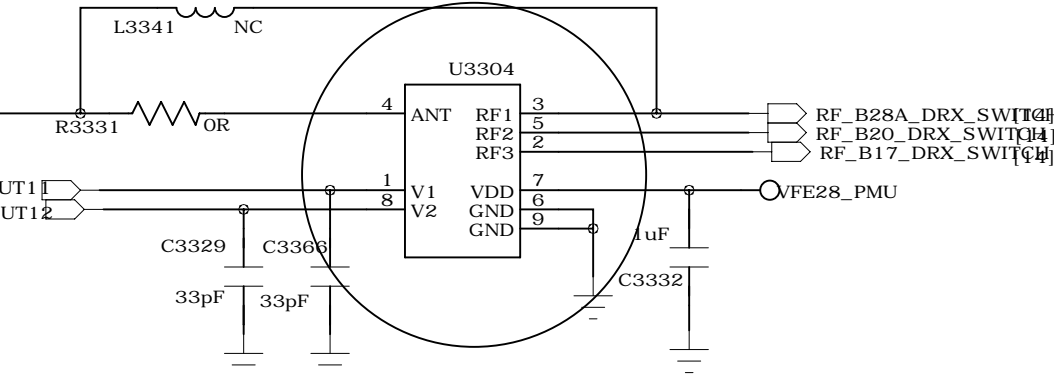
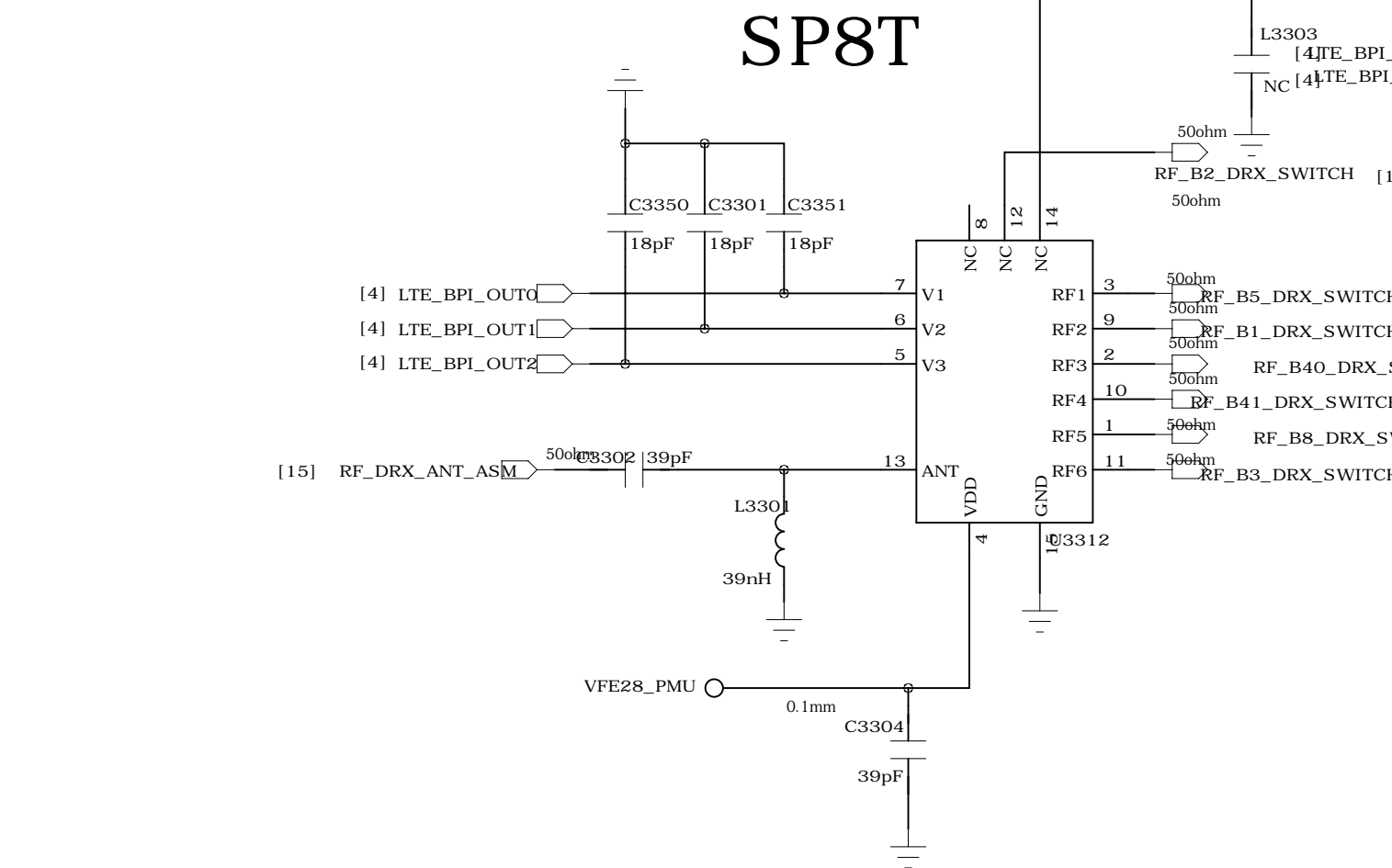


REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



CONFIDENTIAL

RF_MT6177M_RF_DRX

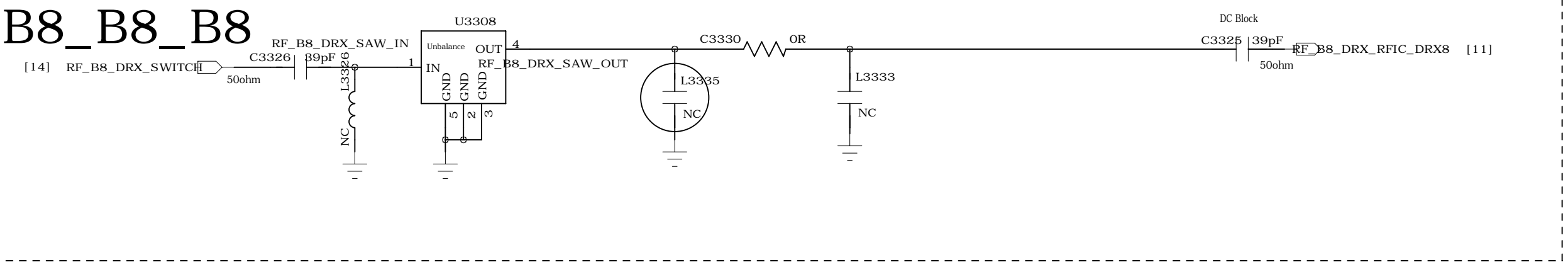


SP8T control logic							
SP6T control logic							
V1	V2	V3	RF1	RF2	RF3	RF4	RF5
L	L	L	Y	N	N	N	N
L	L	H	N	Y	N	N	N
L	H	L	N	N	Y	N	N
L	H	H	N	N	N	Y	N
H	L	L	N	N	N	N	Y
H	L	H	N	N	N	N	Y
H	H	L	N	N	N	N	Y
H	H	H	N	N	N	N	Y

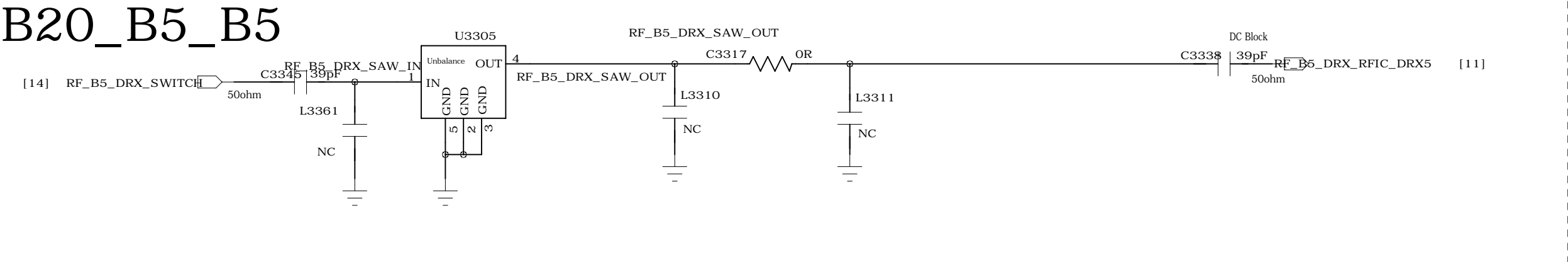
VC1613 control logic				
VC1	VC2	RF1	RF2	RF3
H	L	Y	N	N
H	H	N	Y	N
N	H	N	N	Y

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
Power			

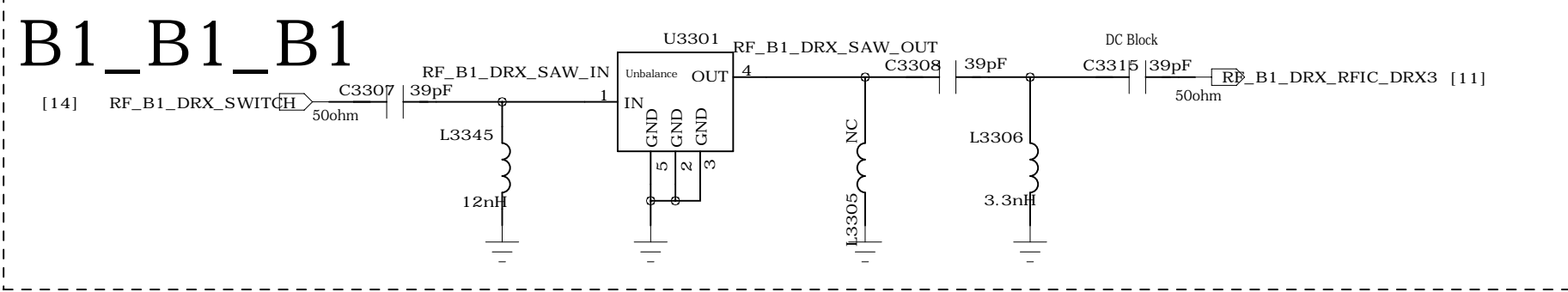
B8_B8_B8



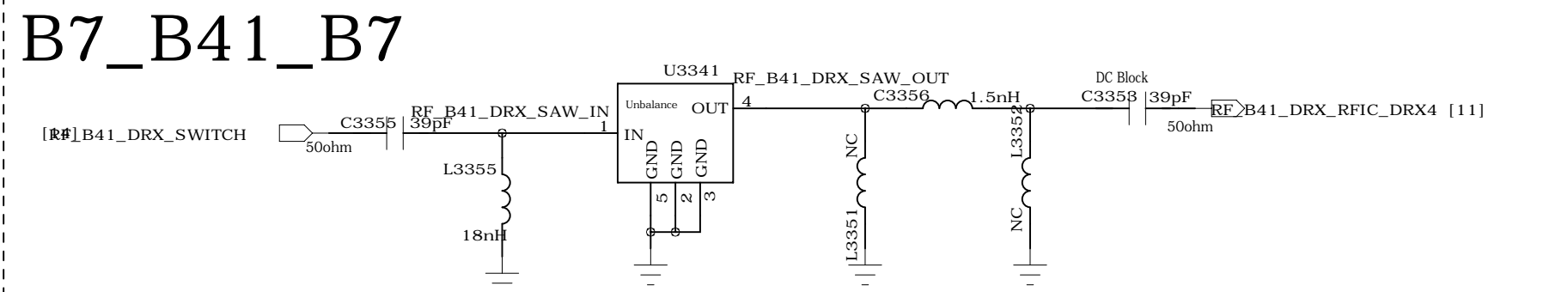
B20_B5_B5



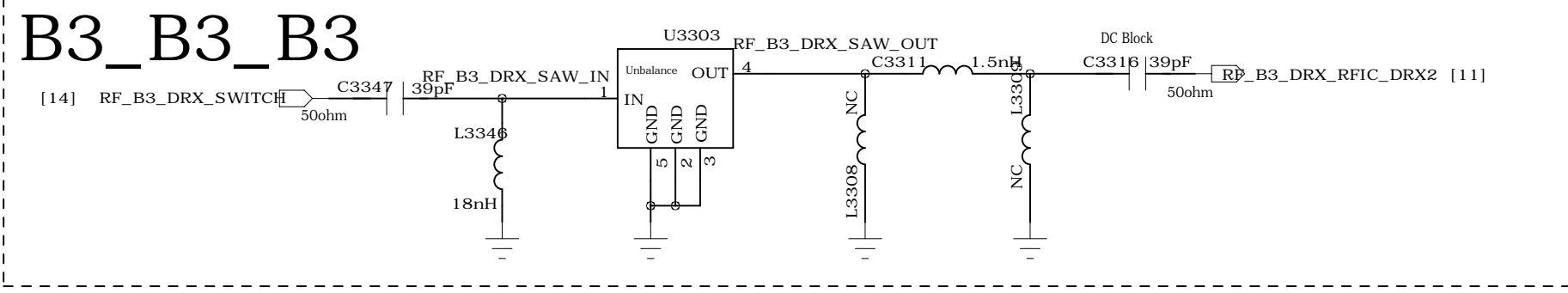
B1_B1_B1



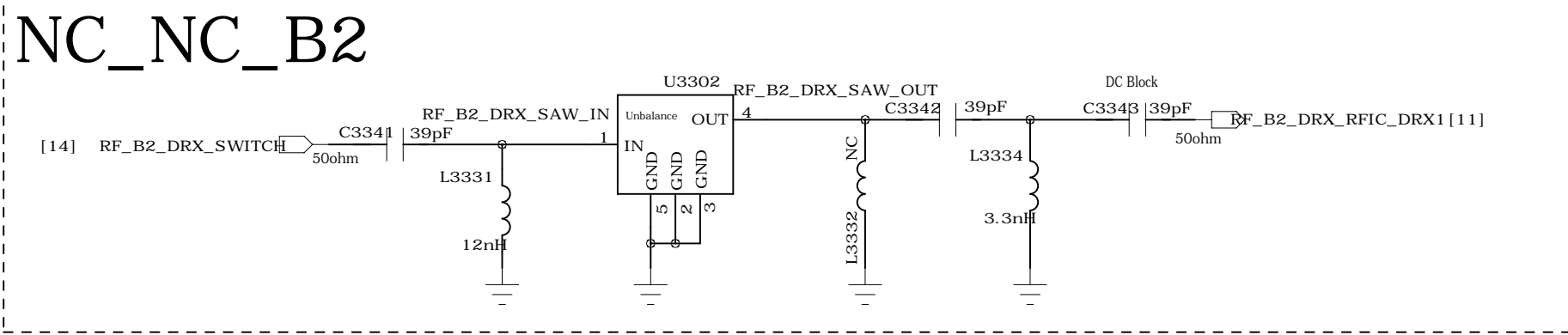
B7_B41_B7



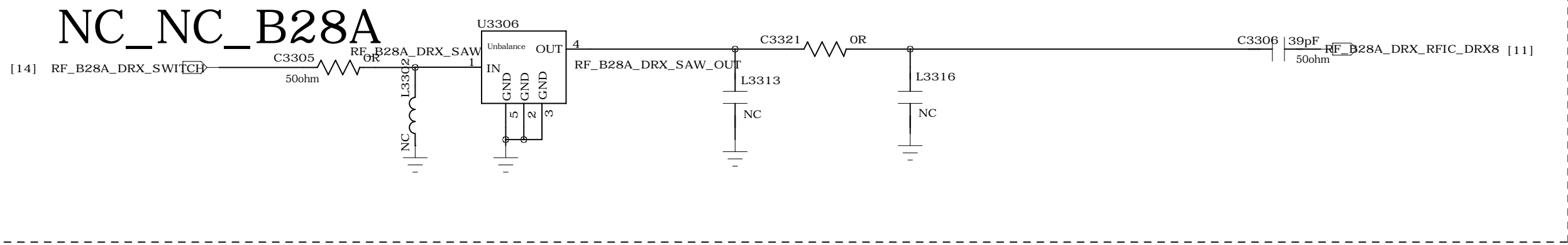
B3_B3_B3



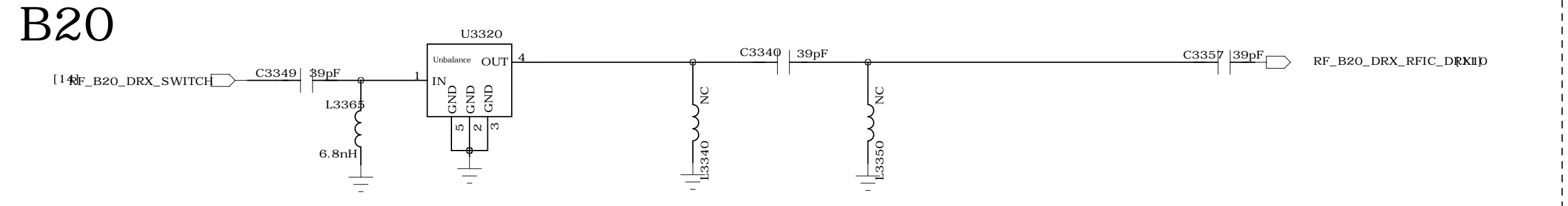
NC_NC_B2



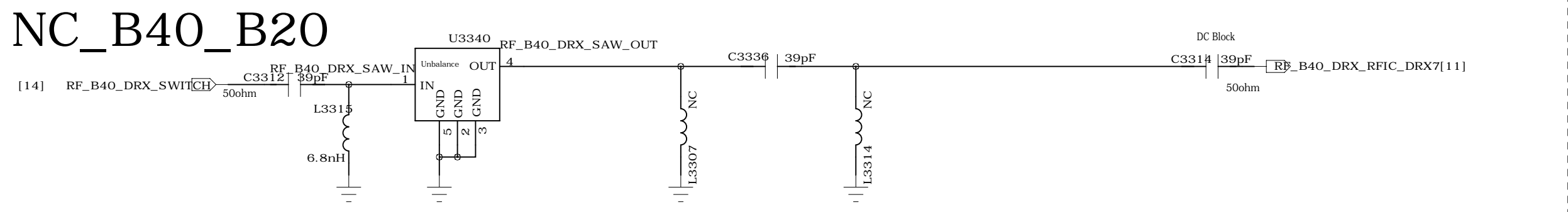
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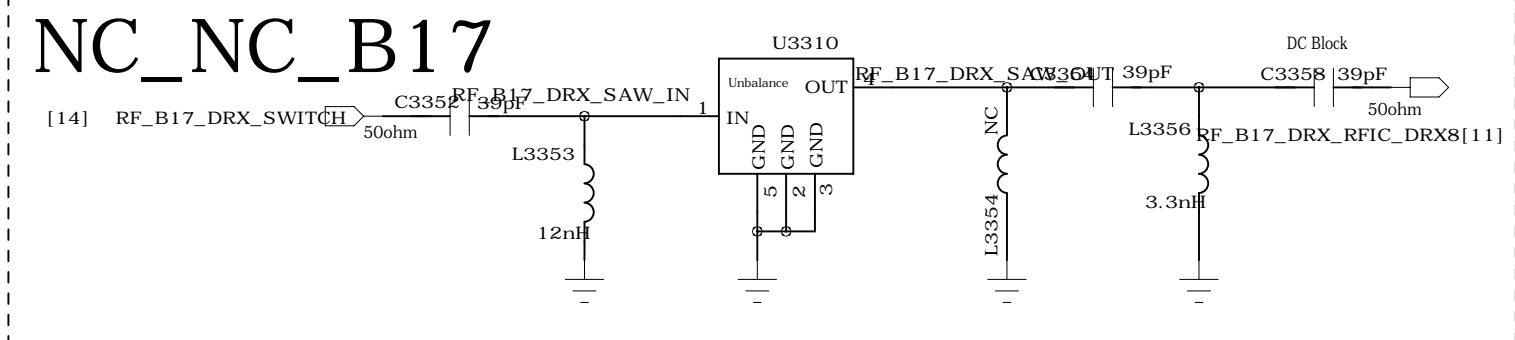
B20



NC_B40_B20



NC_NC_B17



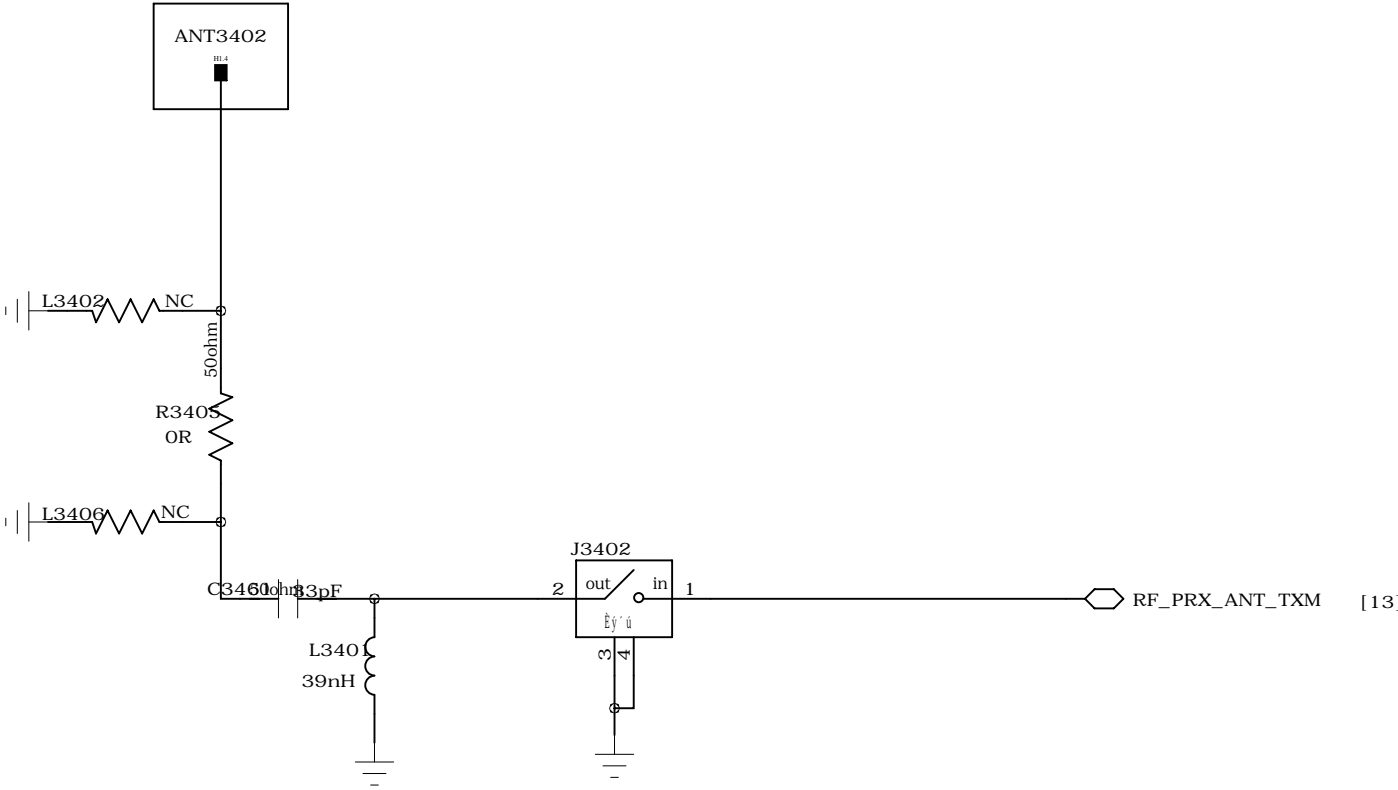
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CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

RF_MT6177M_RF_ANT

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

ASM_Main

791~ 960MHz + 1710~ 2690MHz



DRX ANT

791~ 821MHz 1805~ 2690MHz

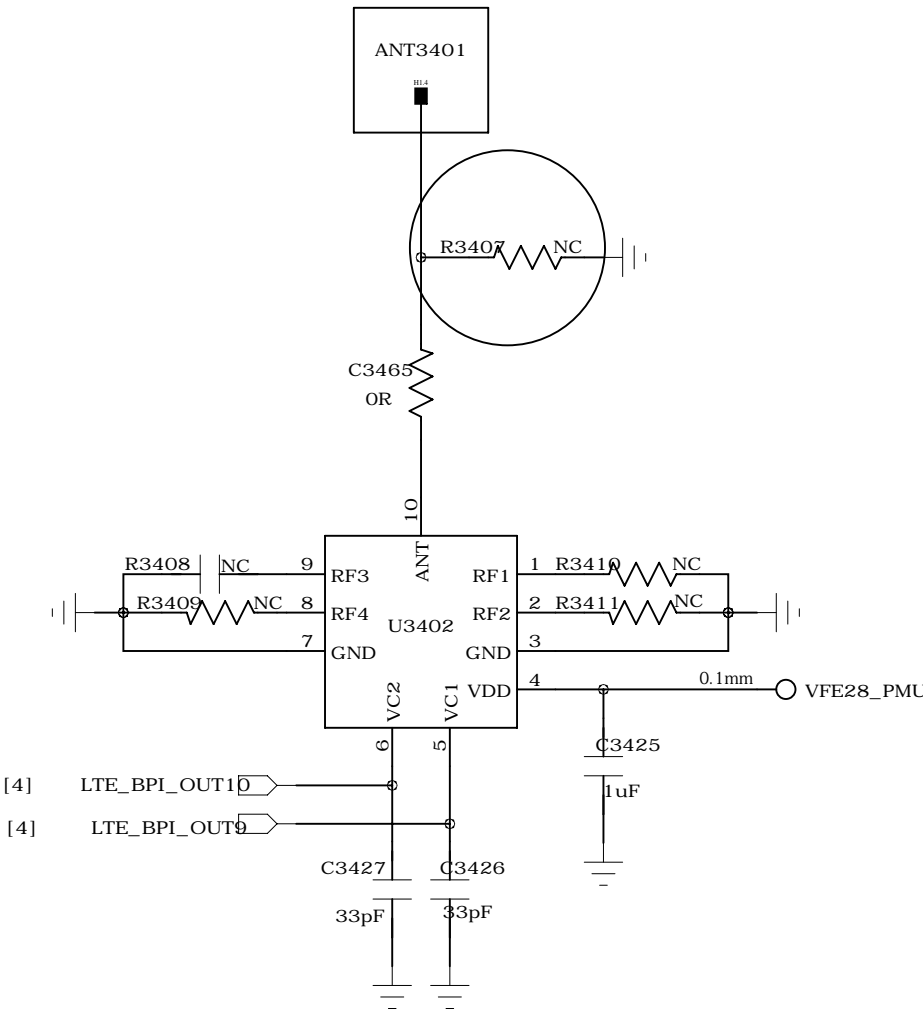


ANT switch

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

C3405,C3407,C3403,C3406,R3406,R3416,R3417,U3401,U3404		R3412,R3415
Without DPDT	Without Material	With Material
DPDT	With Material	Without Material



COMPANY: TRANSSION HOLDINGS

MODEL: H6915

Modified Date: 2021/8/5

DRAWN ZY/DLA DATED2020/03/18

TITLE: 34_RF_ANT_CONTROLLER

VERSION: V1.1

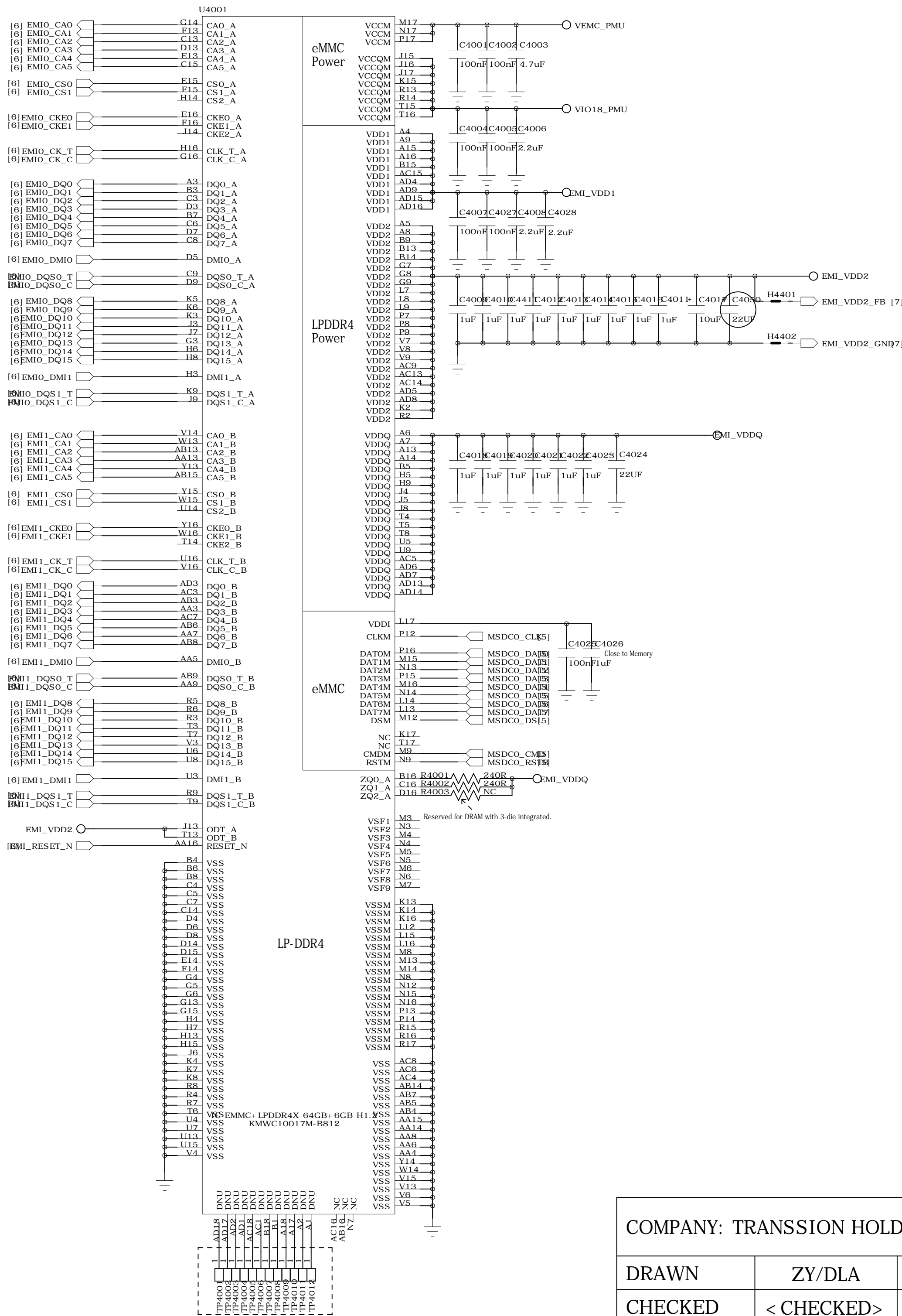
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Confidentiality CONFIDENTIAL

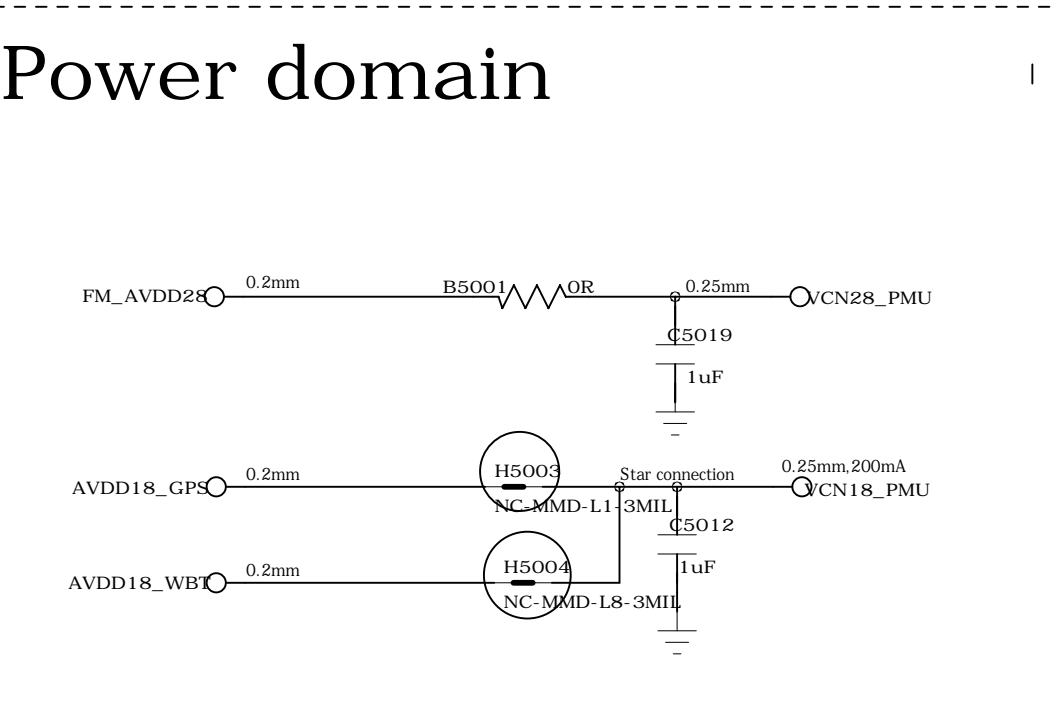
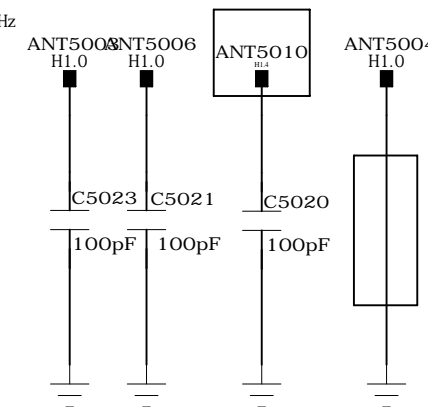
MEMORY_eMCP_LPDDR4X

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



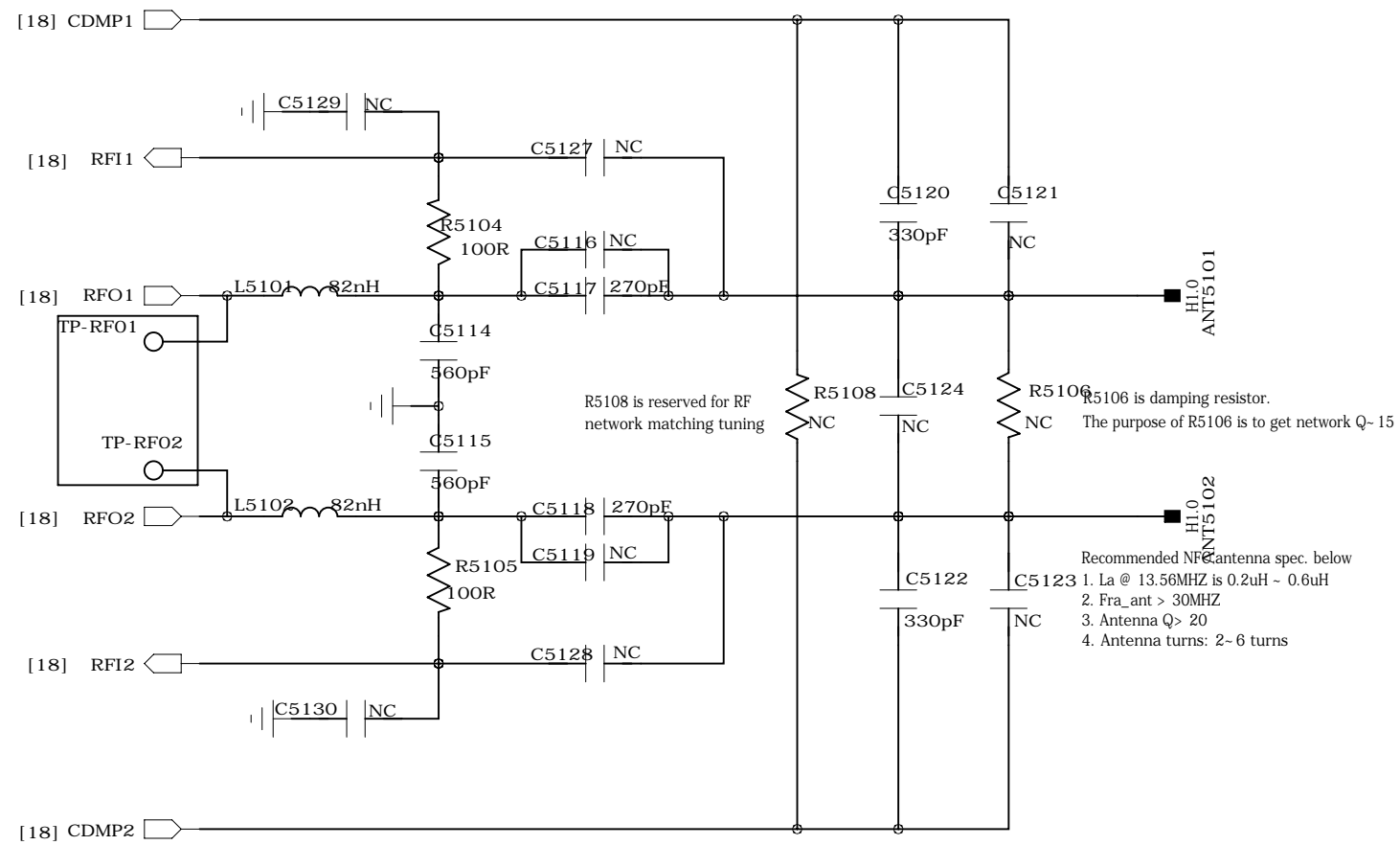
COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: < 40_MEMORY_EMMC_LPDDR3>		VERSION: V1.1	SHEET: 16 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

LTR	ECO NO:	APPROVED:	DATE:



COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 50_CONNECTIVITY_MT6631		VERSION: V1.1	SHEET: 17 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

LTR	ECO NO:	APPROVED:	DATE:

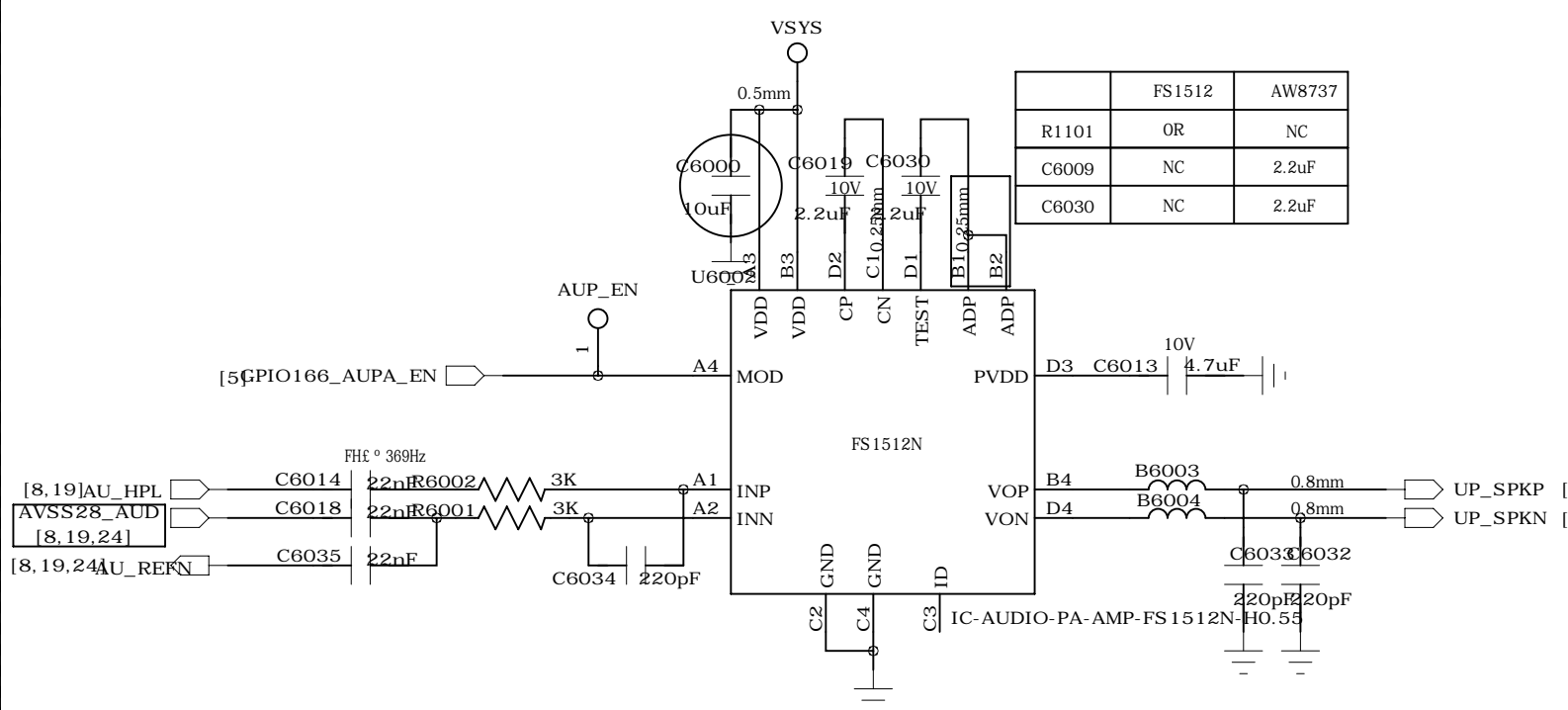


Ball	ST21NFCJ	ST54F	ST54H
D3	NC	SE_SWP	NC
D4	NC	SE_SPI_MISO	SE_SPI_INT
D5	NC	SE_GND	SE_ISO_CLK
E3	NC	SE_SPI_SCK	SE_SPI_OUT(MISO)
E4	NC	SE_SPI_NSS	SE_SPI_NSS
E5	NC	SE_VCC	SE_SWP
E7	NC	NC	SE_SPI_SCK
E8	NC	SE_SPI_MOSI	SE_ISO_IOO
F4	NC	SE_ISO_RST	SE_ISO_RST
G2	NC	SE_ISO_IOO	SE_VCC
G3	NC	SE_ISO_CLK	SE_SPI_IN(MOSI)

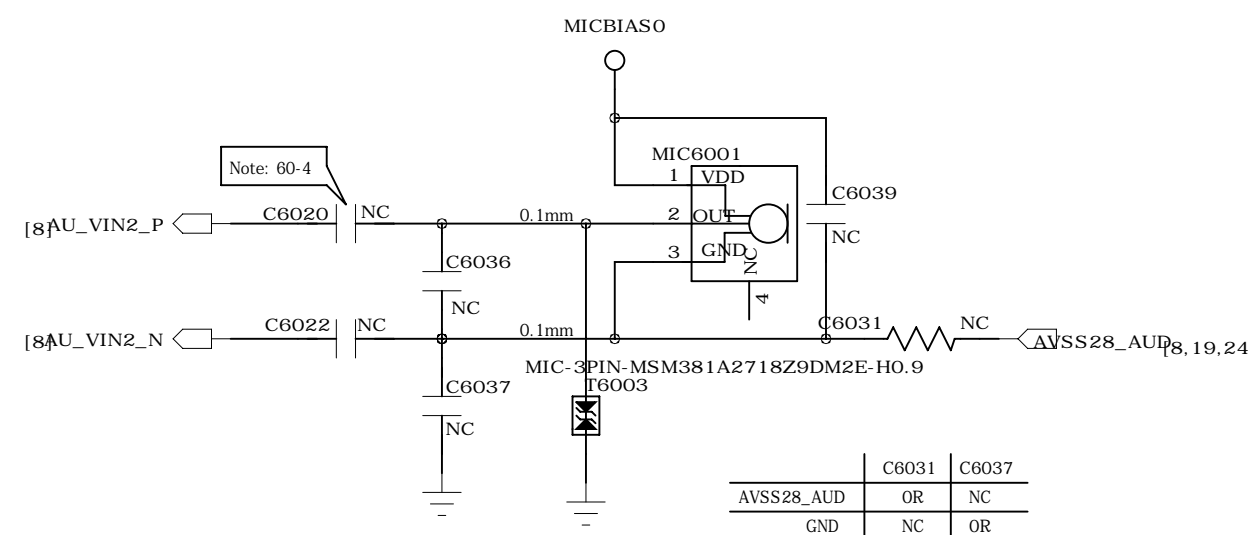
6	5	4	3	2	1
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PERI_AUDIO_IO

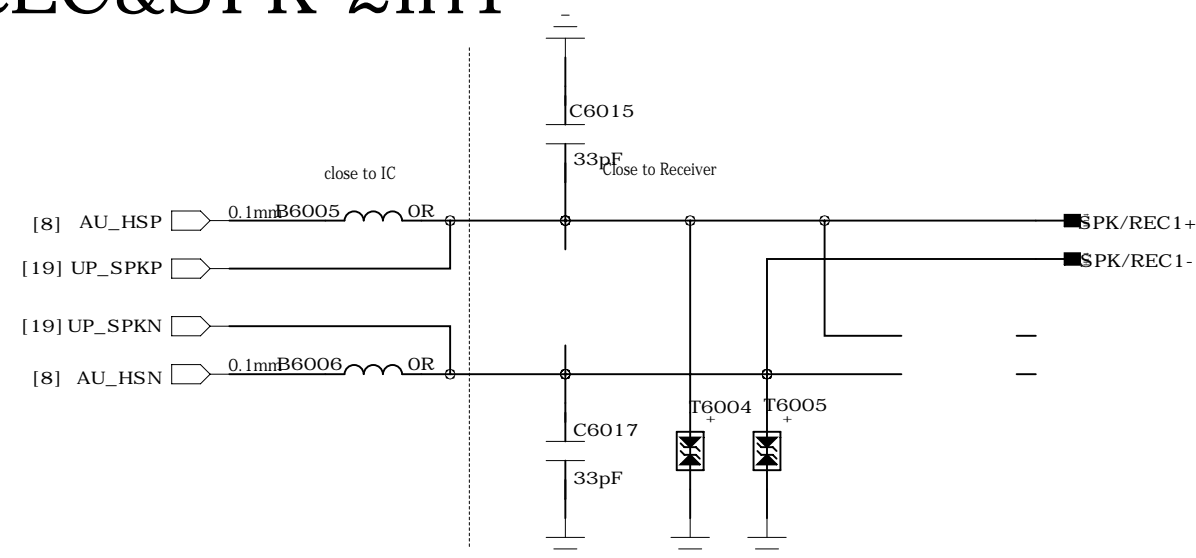
Audio PA
UP SPK



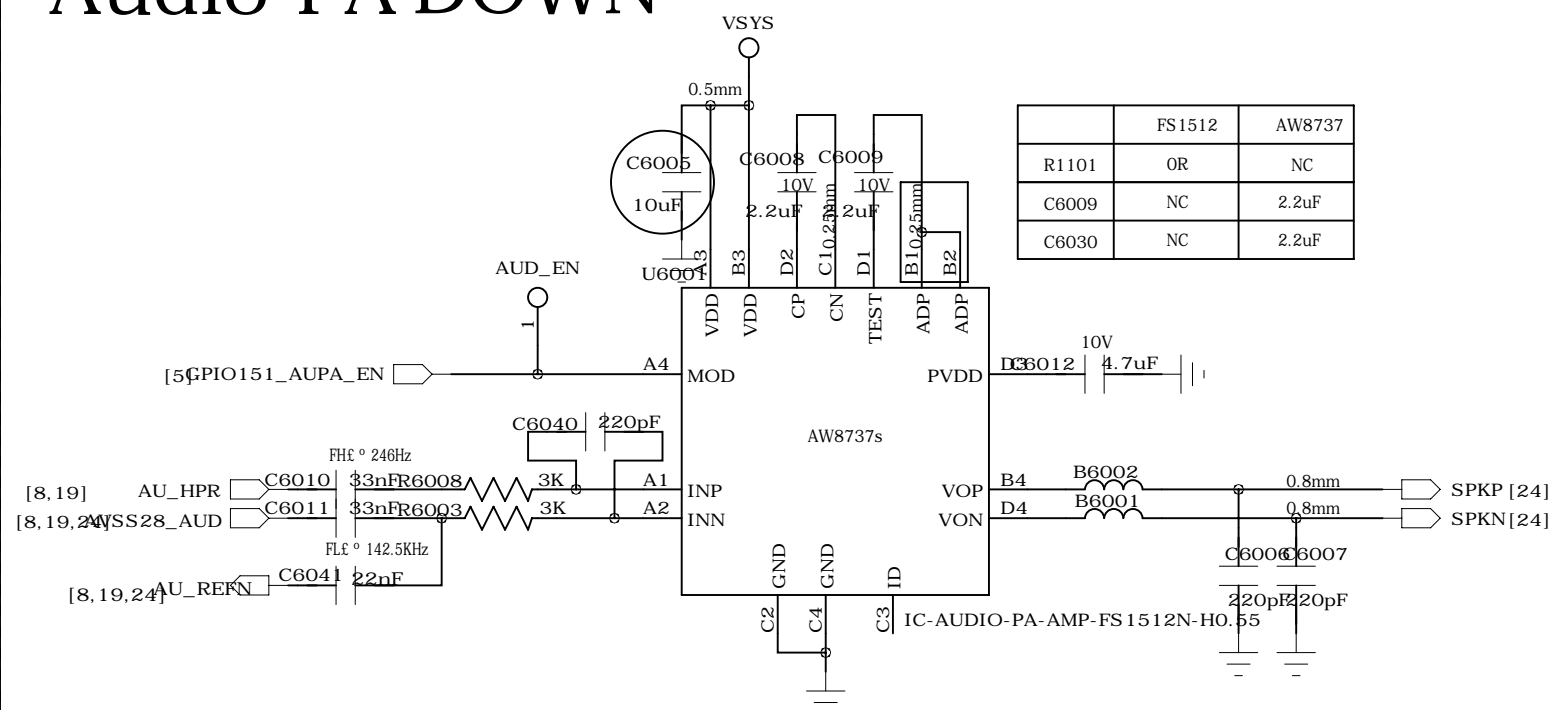
SUB MIC



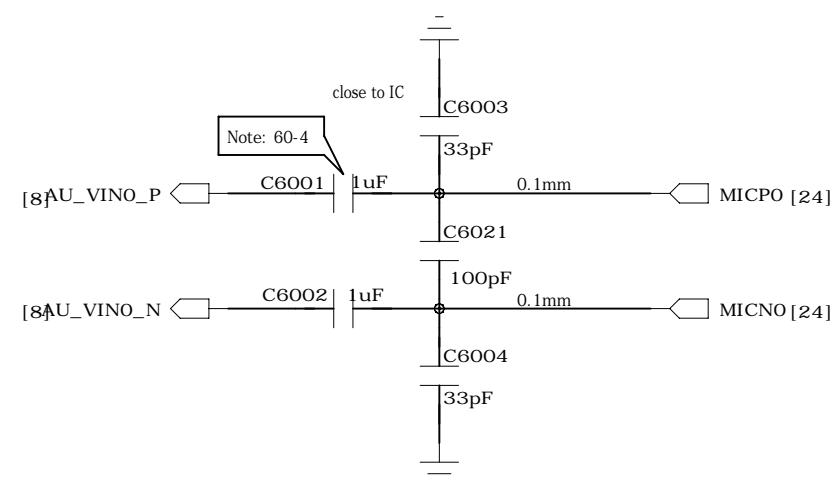
REC&SPK 2in1



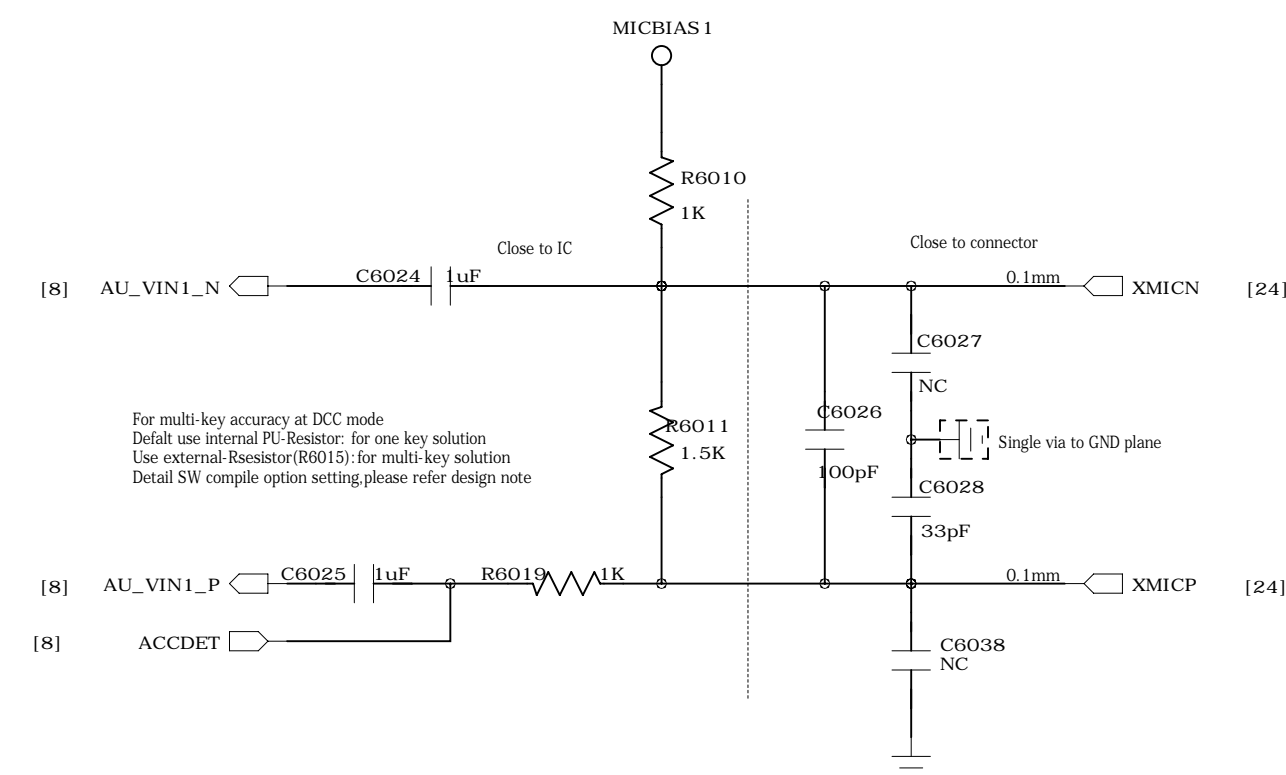
Audio PA DOWN



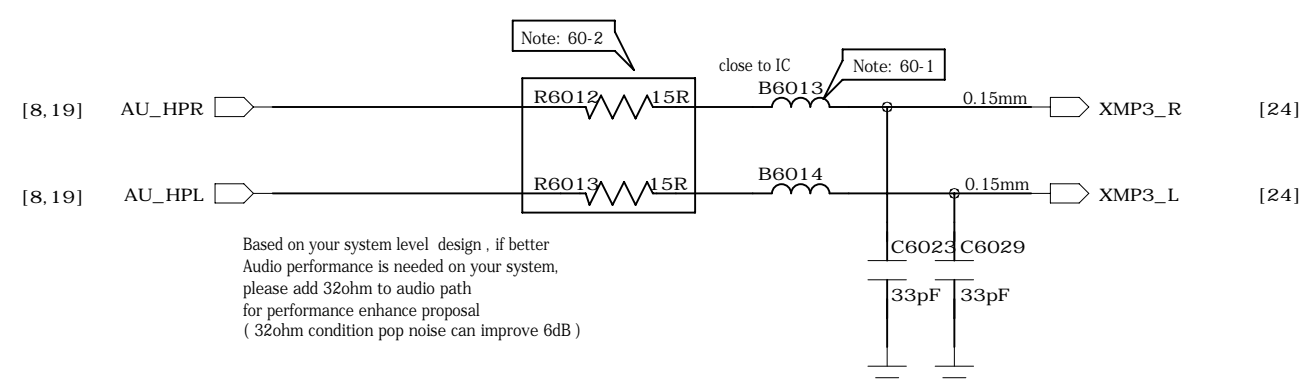
MAIN MIC



Earphone MICPHONE



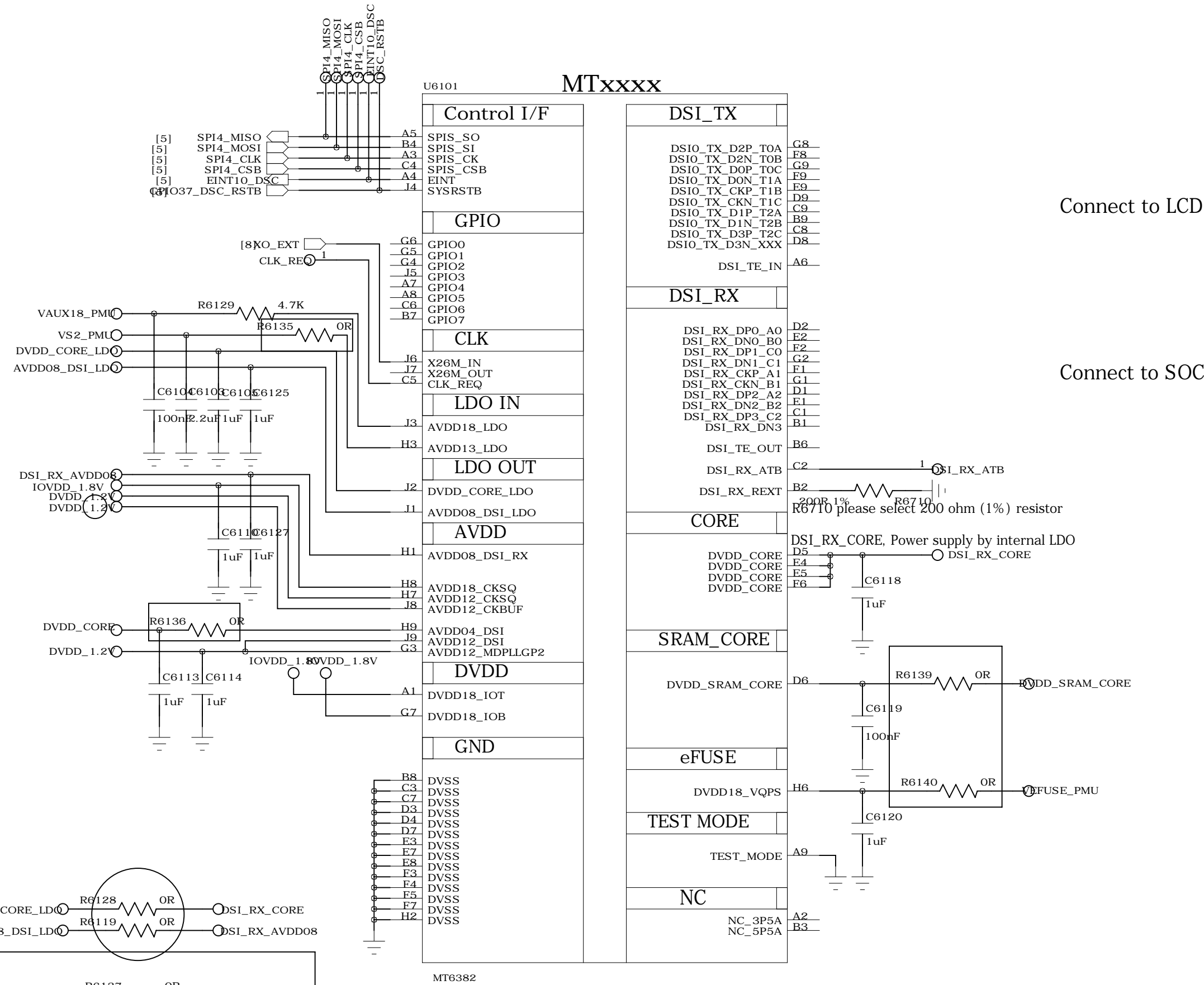
Earphone Receiver



Schematic design notice of "60_PERI_AUDIO_IO" page.
Note 60-1: B6009 B6010 B6013 B6014 needs change to "B1M18BD102SN1" 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 M7R3553 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: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 60_PERI_AUDIO		VERSION: V1.1	SHEET: 19 OF 25
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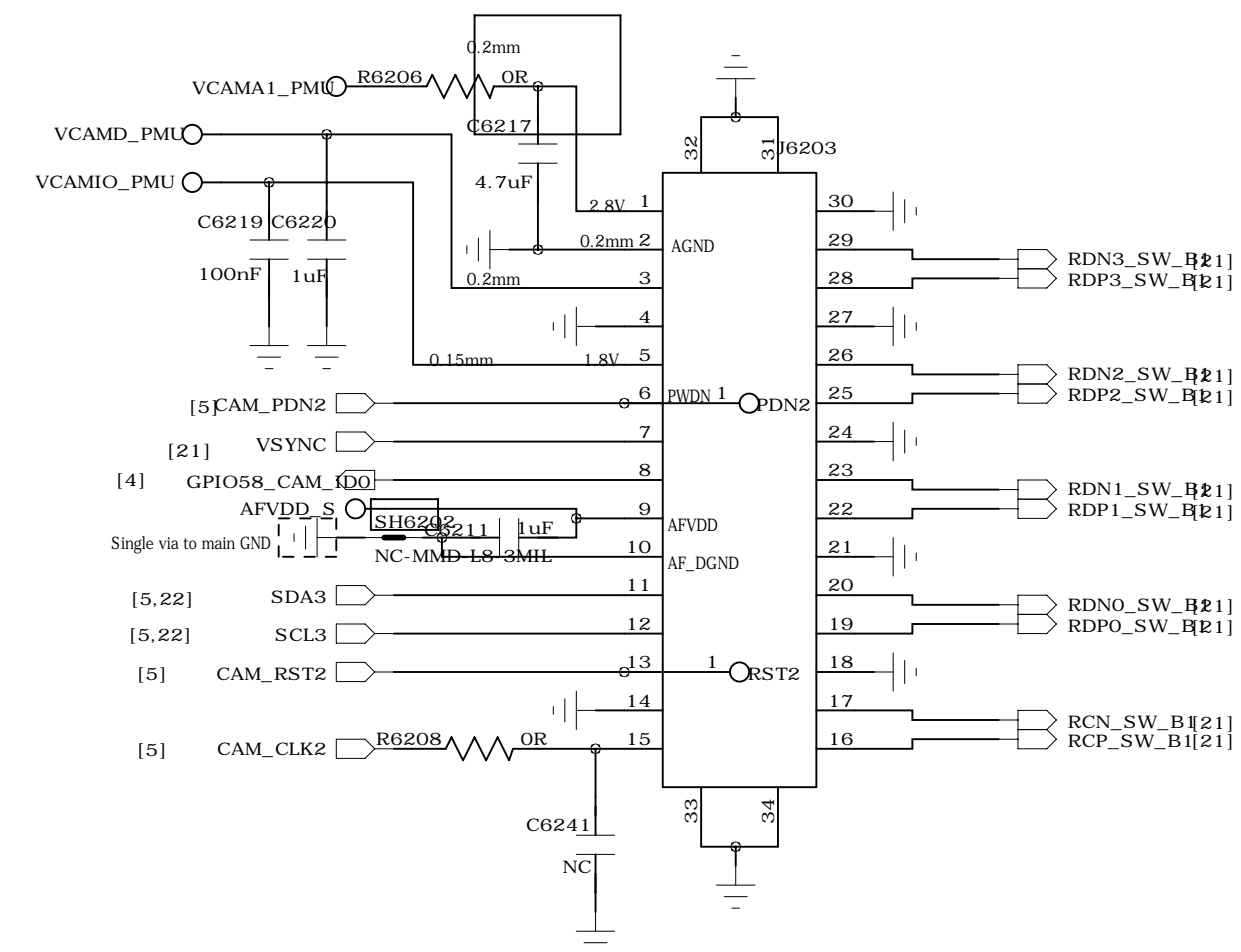
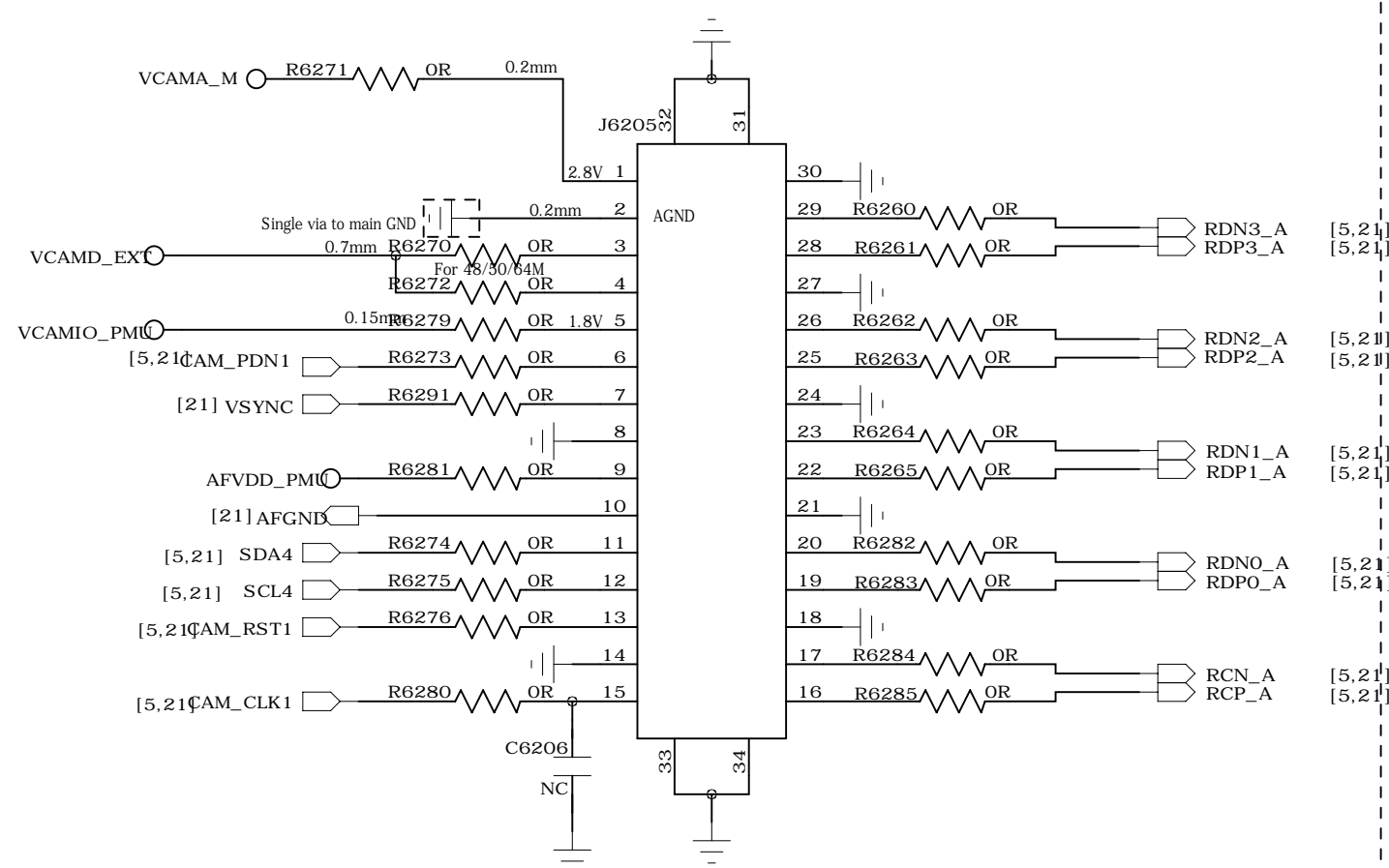
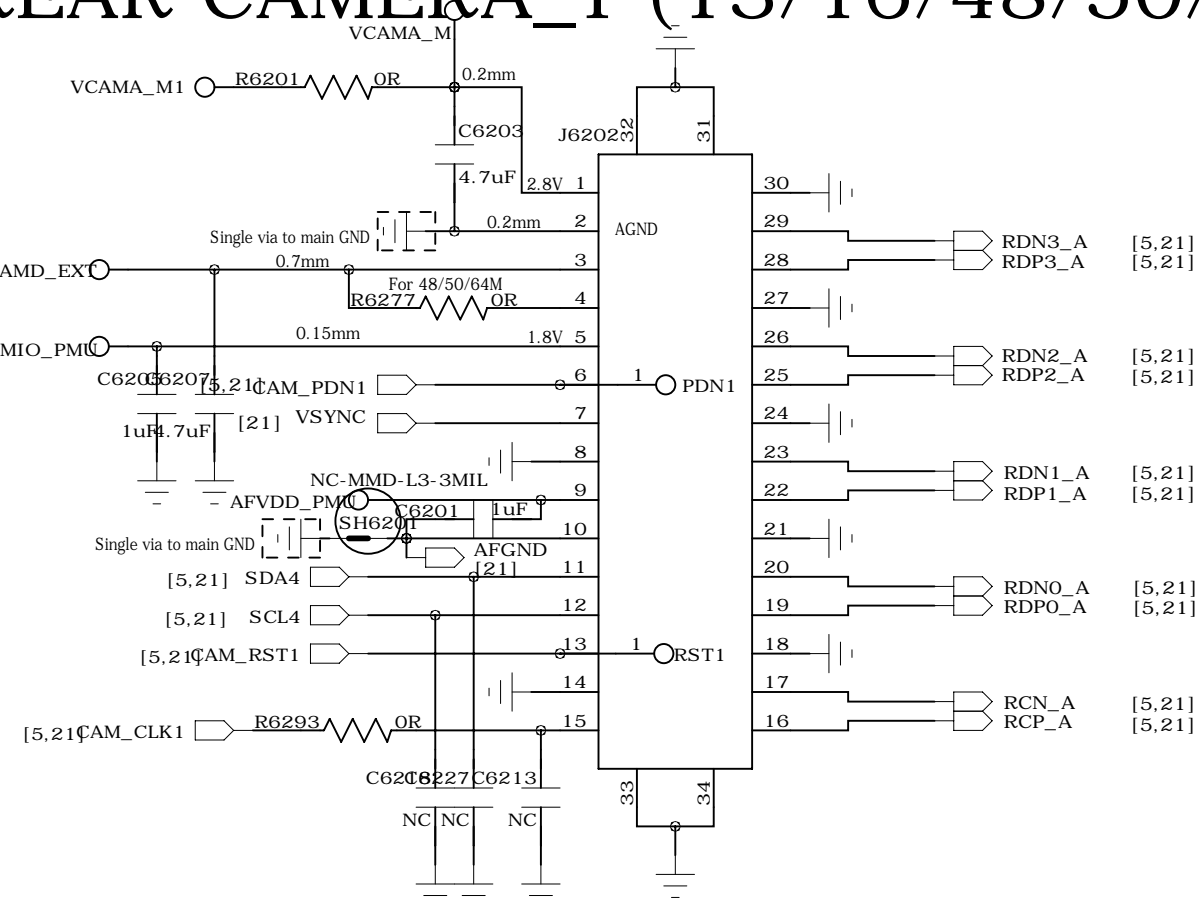
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



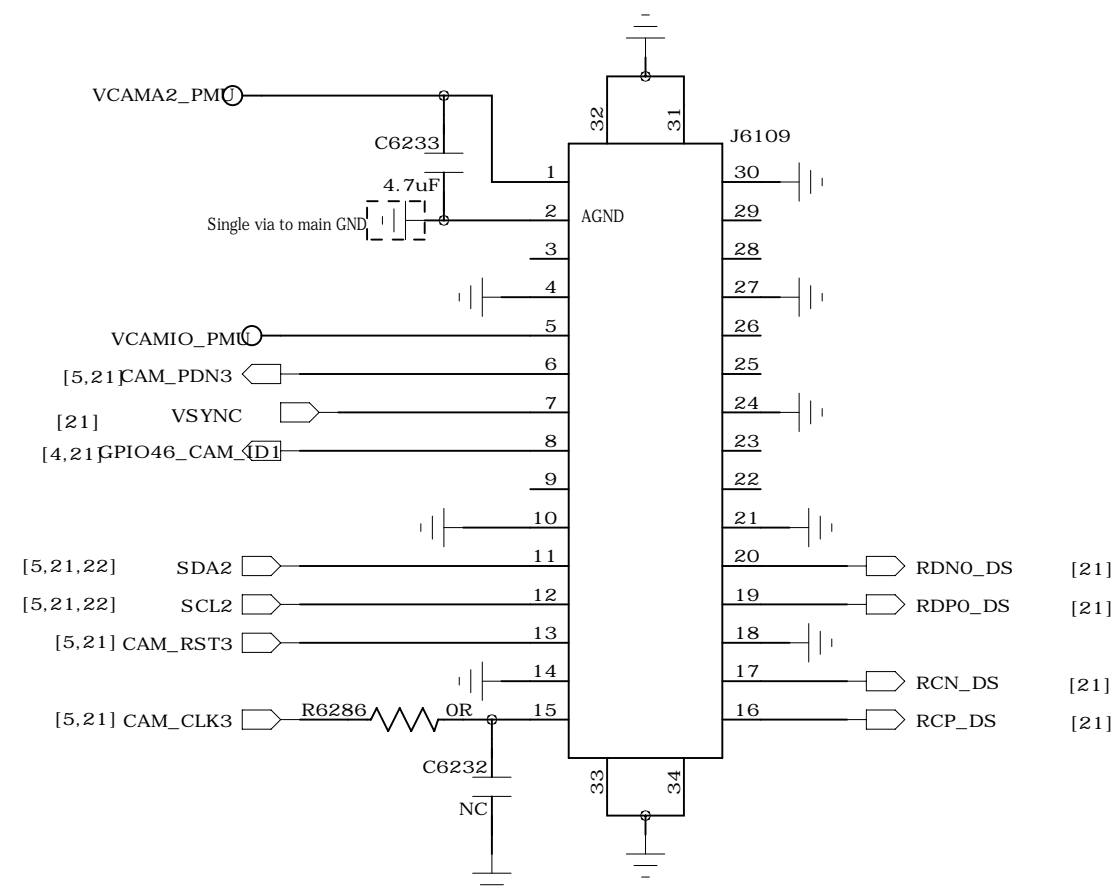
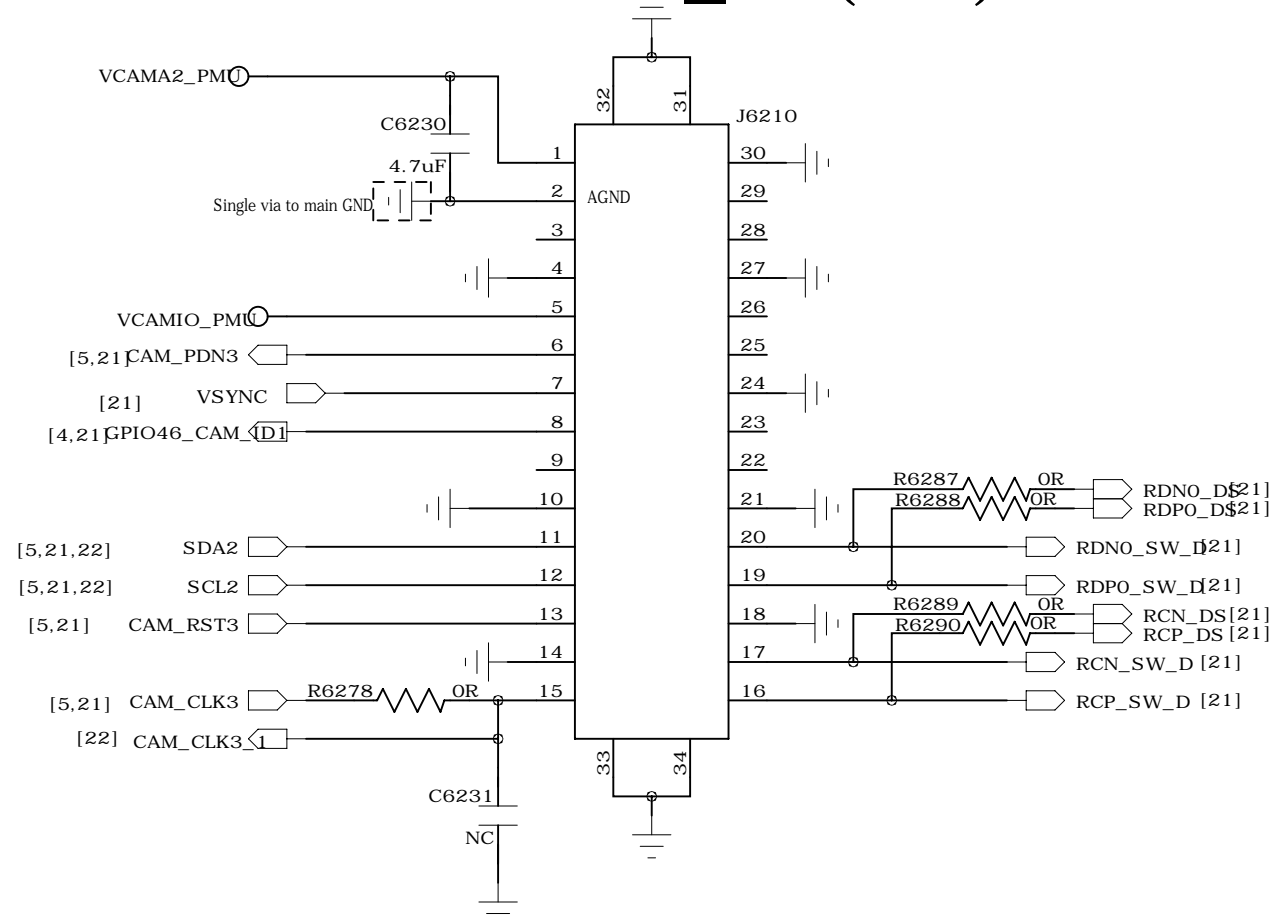
COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 61_PERI_LCM_CTP_FP		VERSION: V1.1	SHEET: 20 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

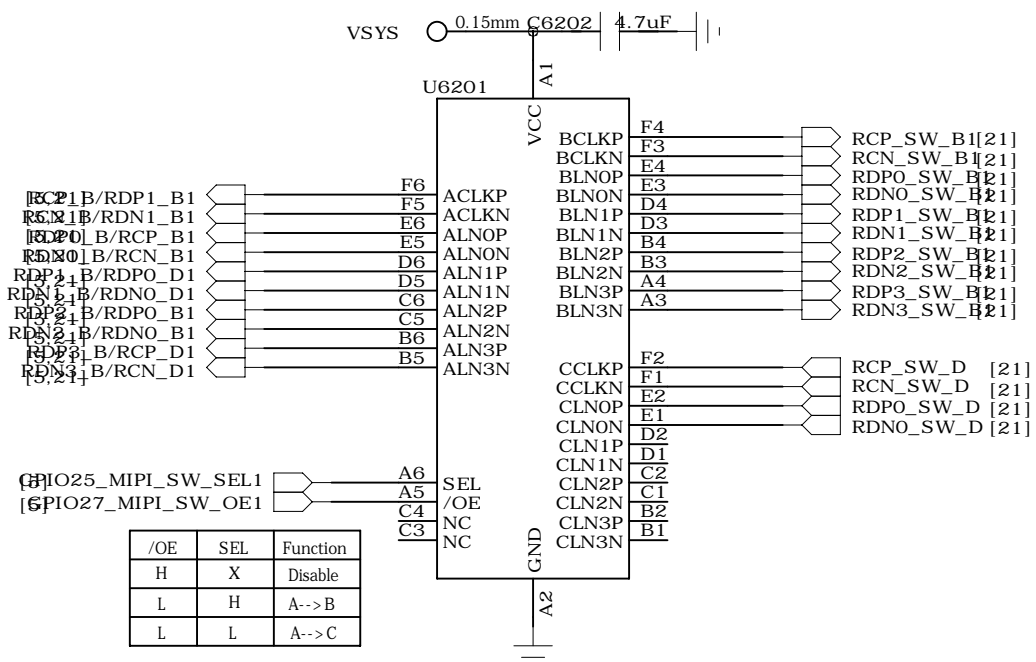
REAR CAMERA_II (2M/8M/13Mx2)



REAR CAMERA_III (2M)



MIPI SWITCH



13Mx2

 $2M$
$$\frac{2M}{8M}$$

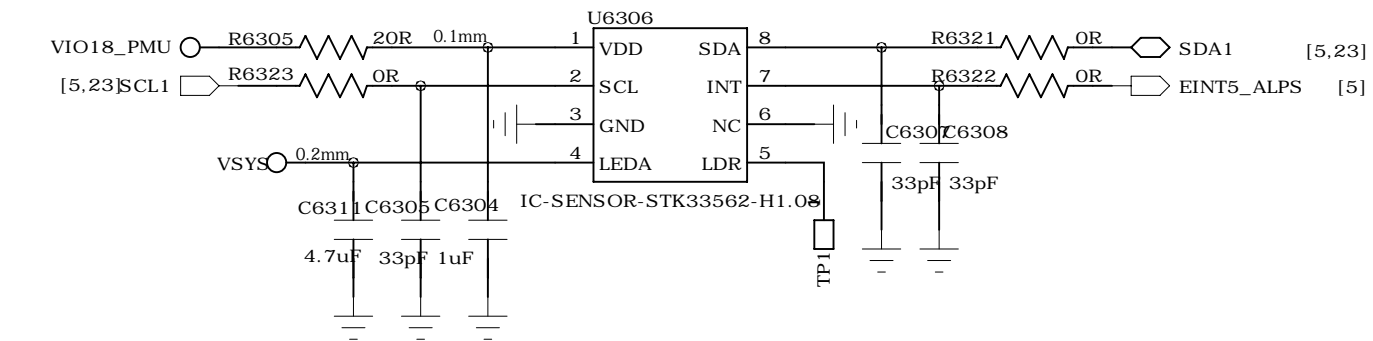
COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 62_PERI_CAMERA_I		VERSION: V1.1	SHEET: 21 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

PERI_SENSORS

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

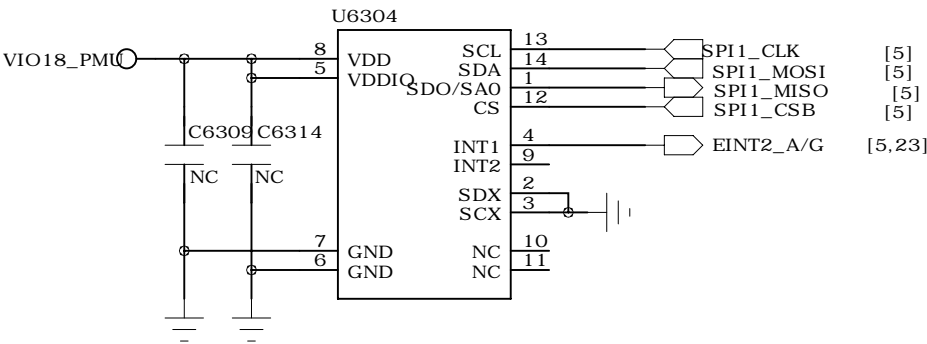
AL& PS Sensor

STK33562: I2C address: Write: 0x8C, Read: 0x8D

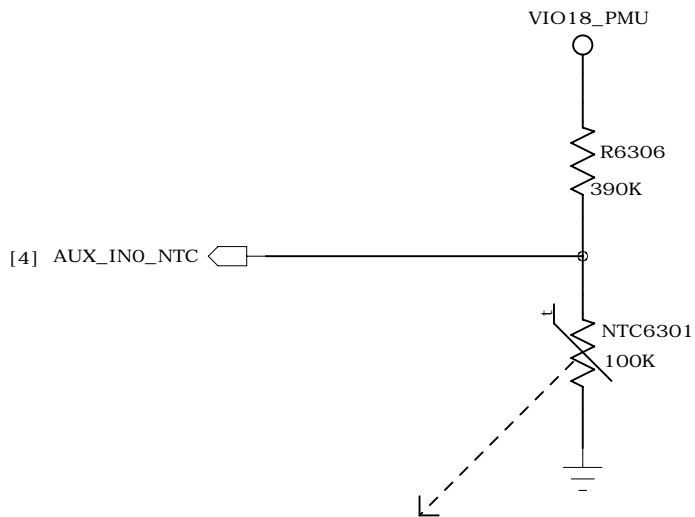


G-Sensor + Gyro Sensor

LSM6DS3TR-C: I2C address: Write: 0xD4, Read: 0xD5

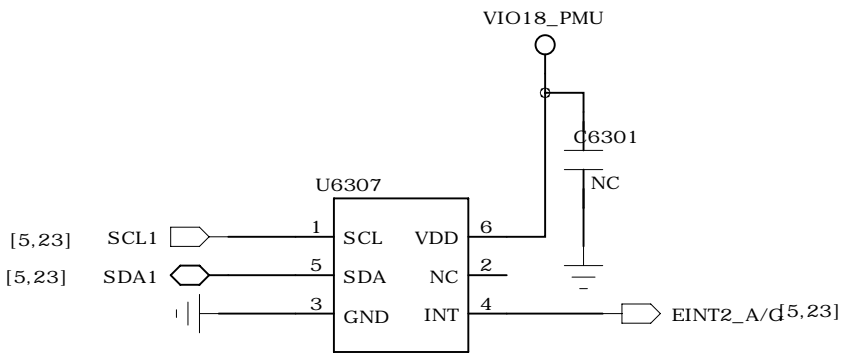
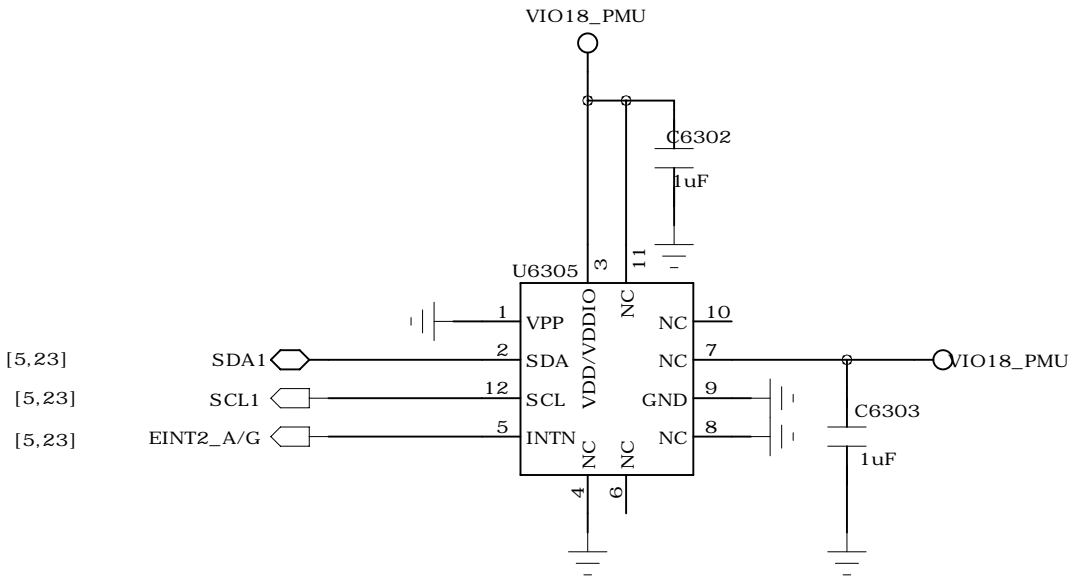


Thermistor to sense AP temperature



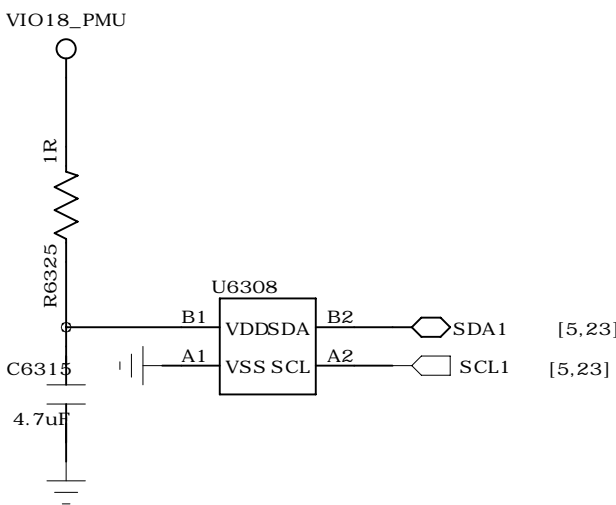
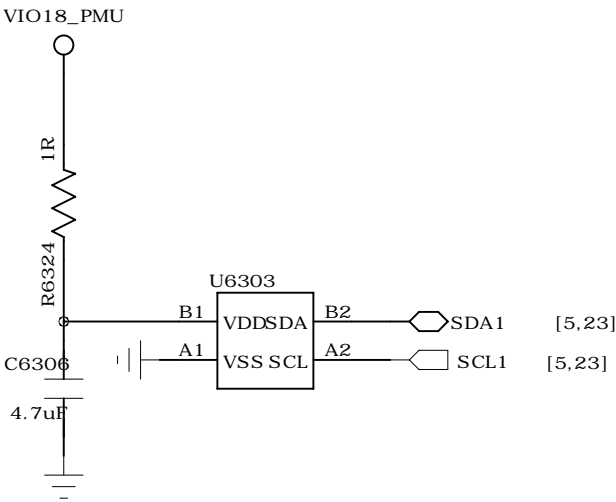
1. NTC6301 must keep a distance about 6-8 mm away from BB and far from other heat sources 10 mm at least.
2. The distance is the shortest distance from package edge to edge.

G-Sensor



M-Sensor (COMPASS)

MMC5603: I2C ADDRESS: 0x60 (Write) / 0x61 (Read)

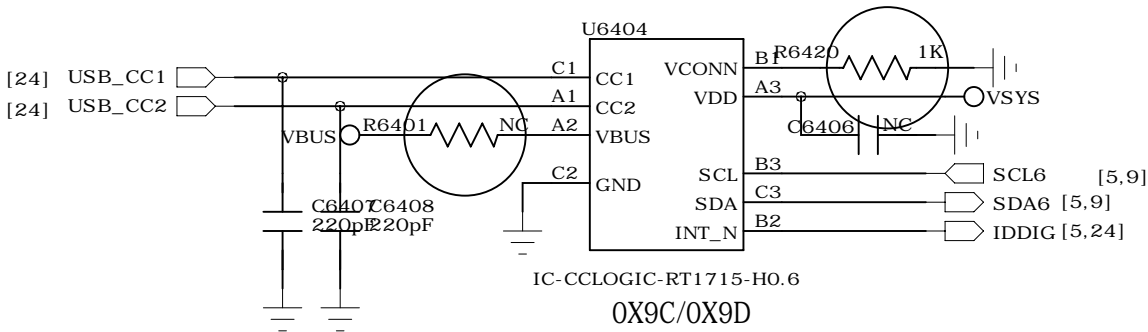


Unipolar HALL

COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 63_PERI_SENSORS		VERSION: V1.1	SHEET: 23 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

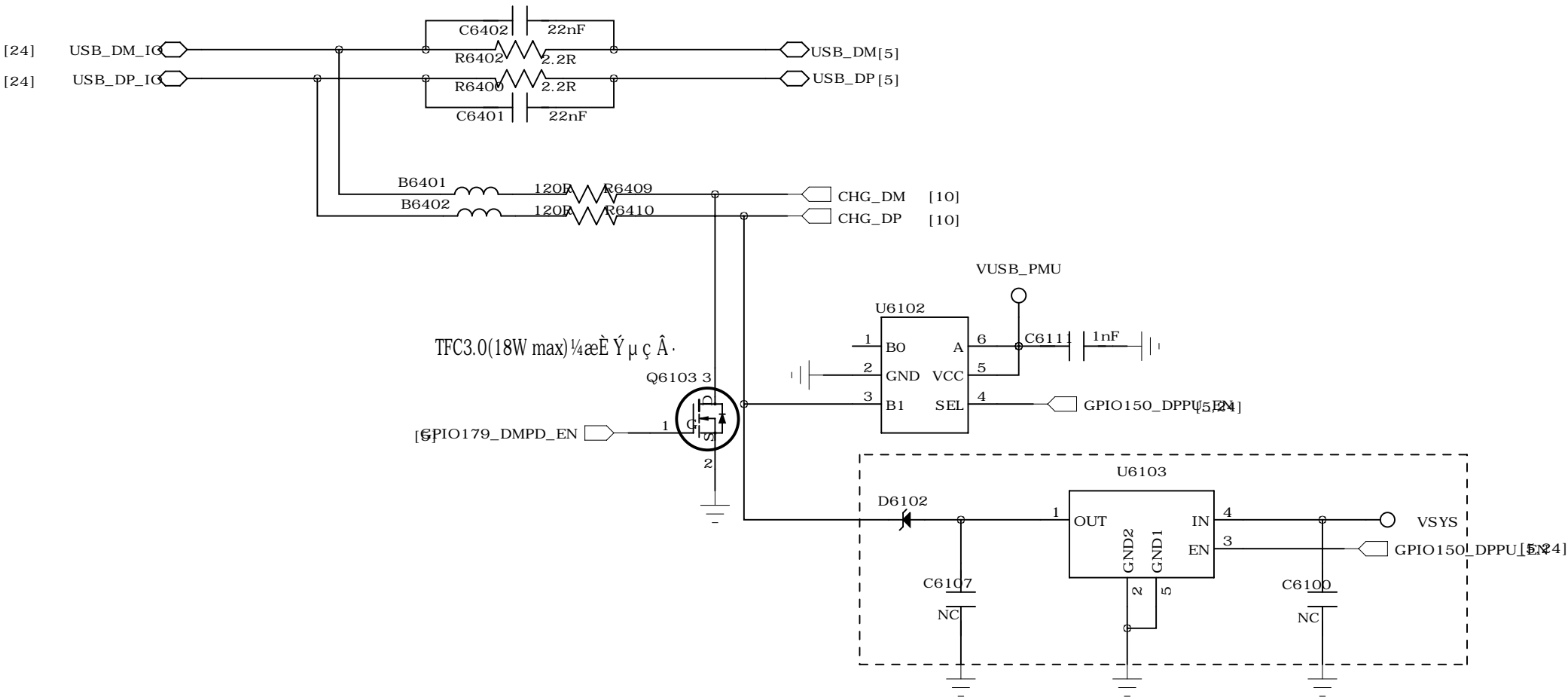
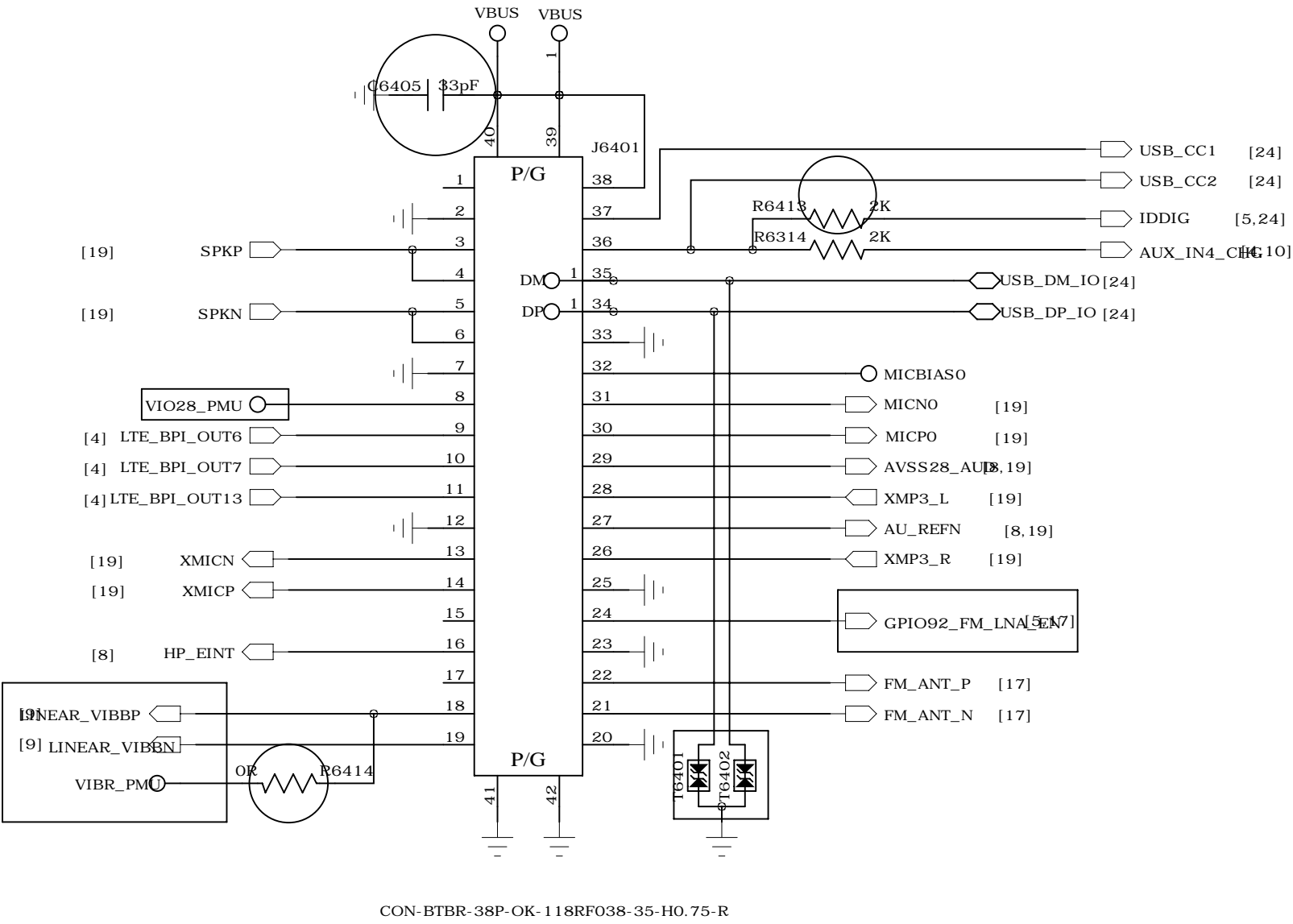
PERI_EXCH_IO

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



CHG Part

Exchange IO



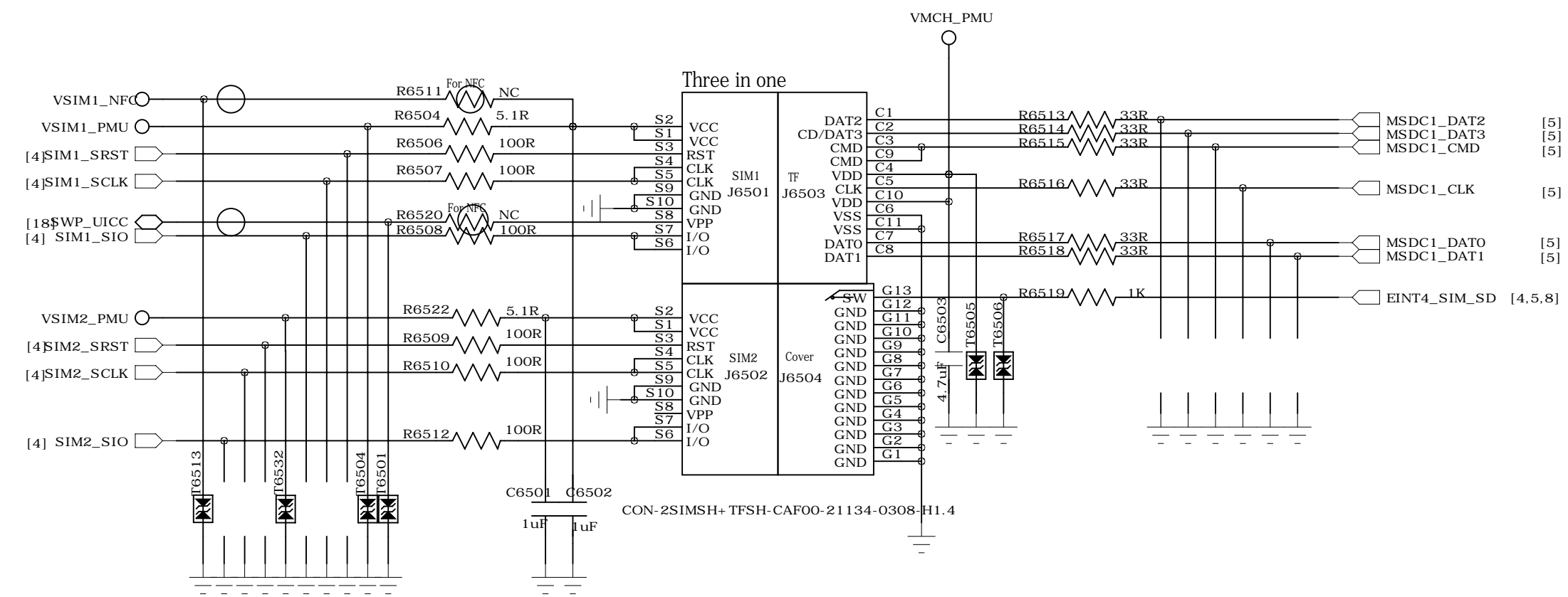
I2C N; On GPIO mode£ - 2 » Ä Ü Ó ë Æ ä Ë ü É è ± , 1 2 Ó Æ

COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 64_PERI_EXCH_IO		VERSION: V1.1	SHEET: 24 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		

PERI_SIM_SD_KEYPAD

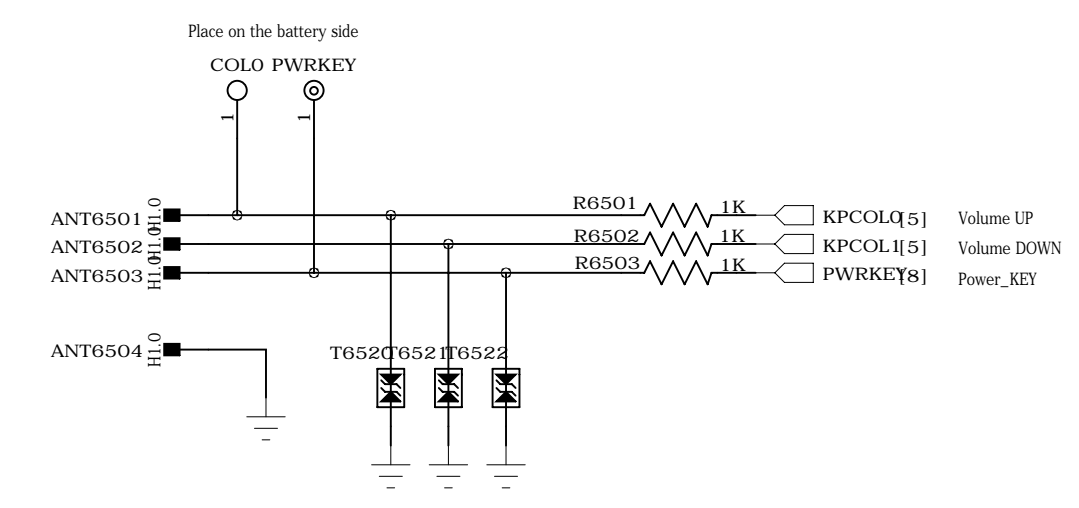
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

SIM1/2-SD-CARD



SD POWER CONTROL

SIDEKEY



COMPANY: TRANSSION HOLDINGS				MODEL: H6915		Modified Date: 2021/8/5	
DRAWN	ZY/DLA	DATED	2020/03/18	TITLE: 65_PERI_SIM_SD_KEYPAD		VERSION: V1.1	SHEET: 25 OF 25
CHECKED	< CHECKED >	DATED	< >	Confidentiality	CONFIDENTIAL		