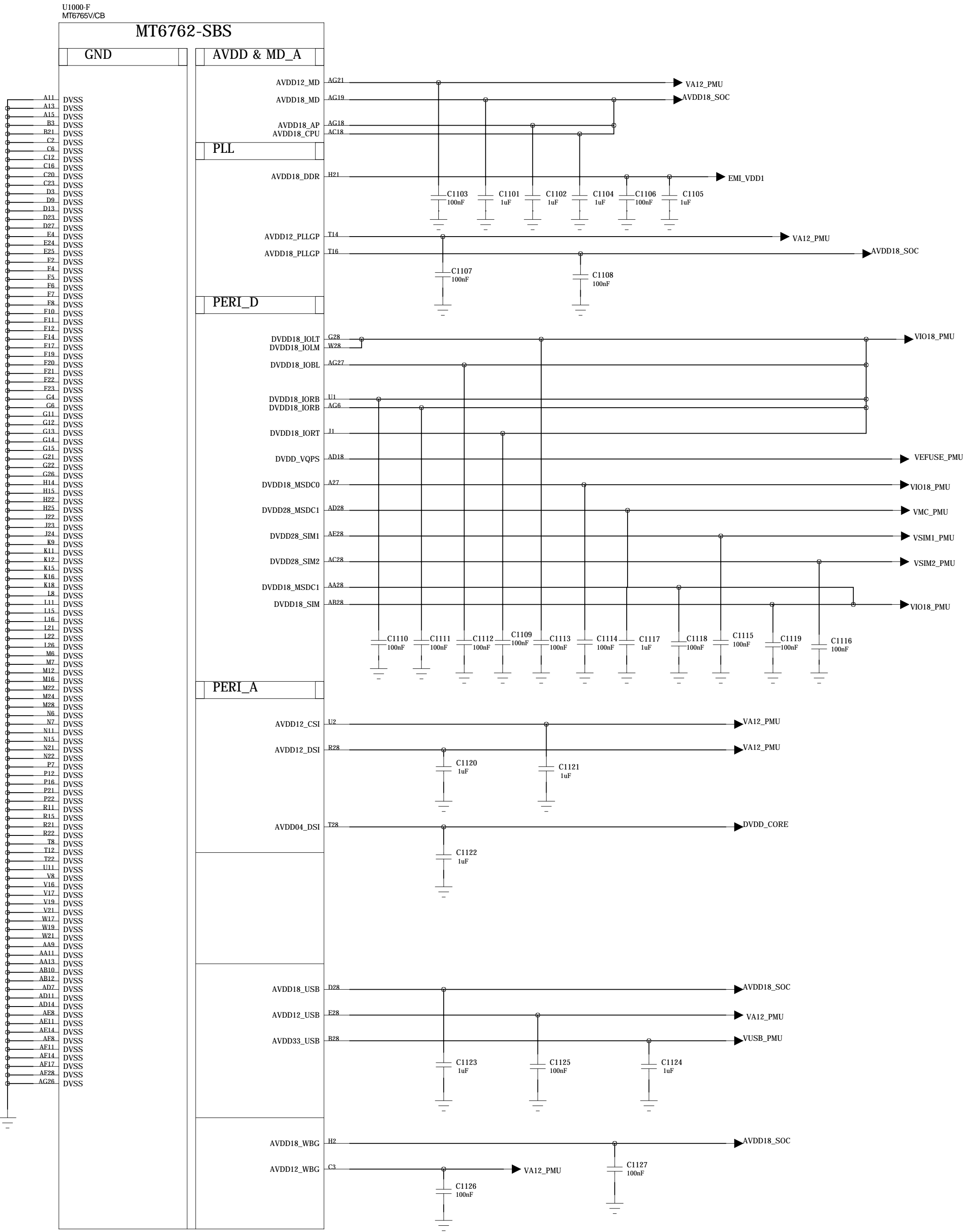




REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:



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

Note 11-1: C4101 closed DVDD18\_MSDC0 150mil

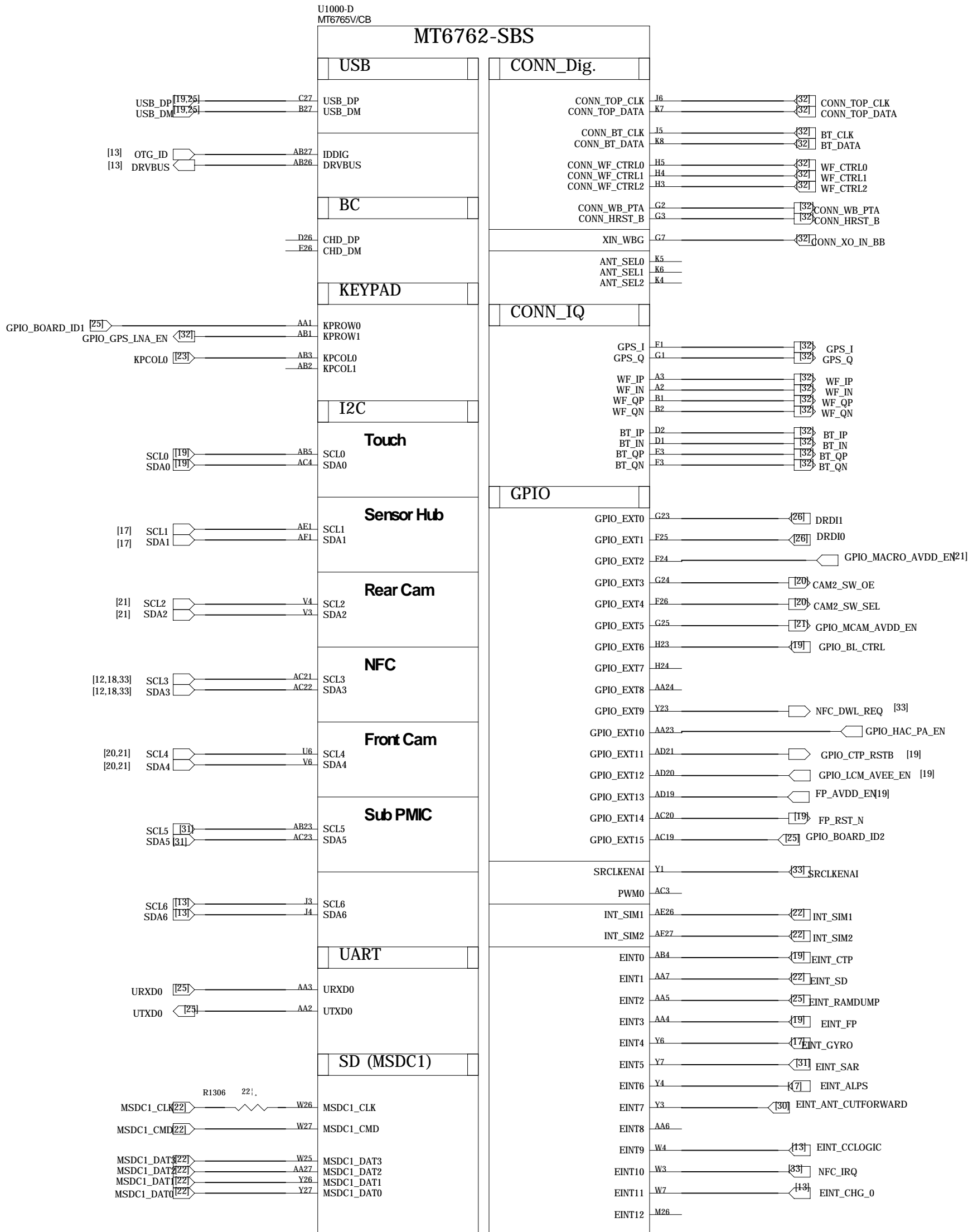
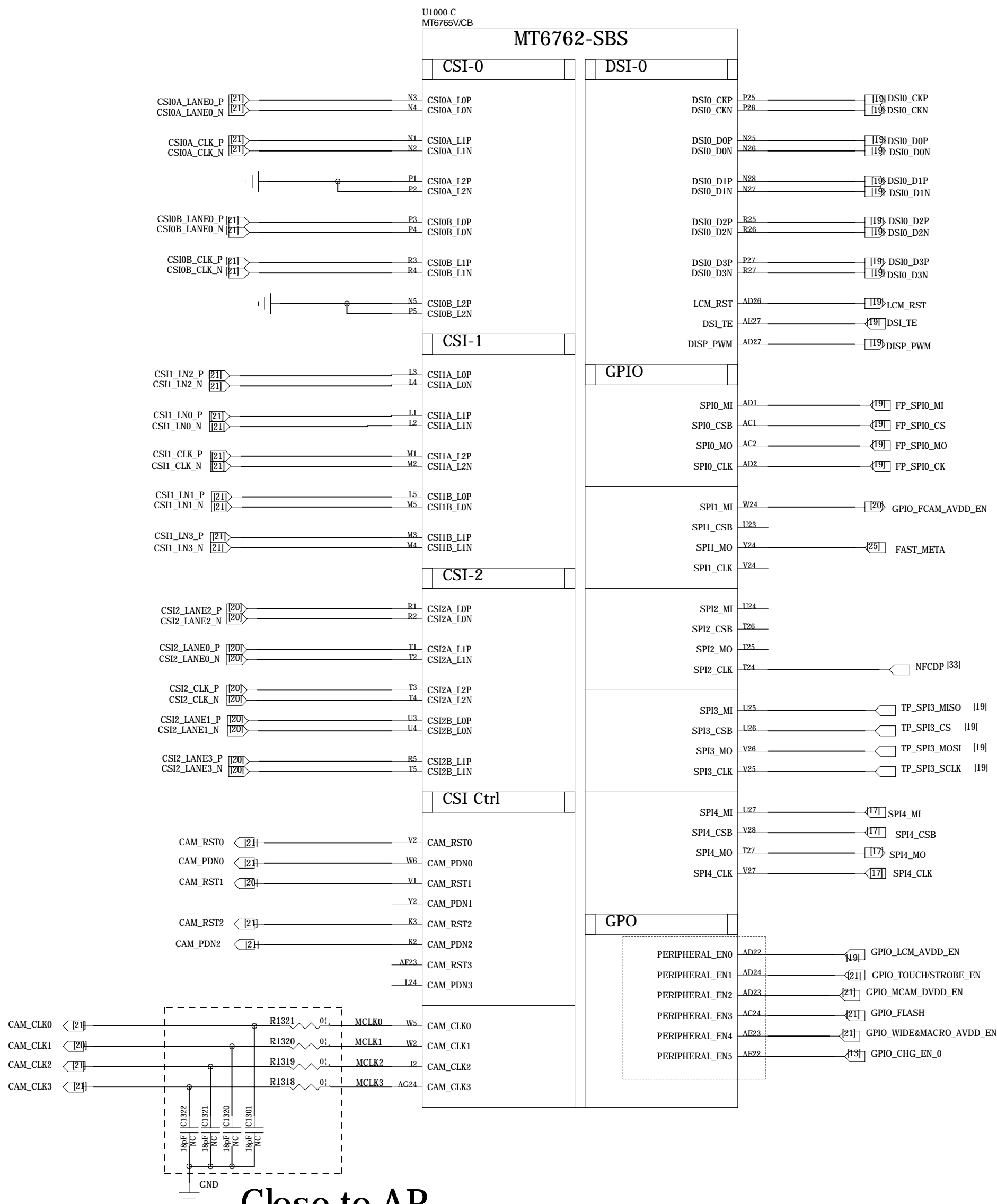
Note 11-2: C4302 closed DVDD28\_MSDC1 150mil

Note 11-3: C4301 closed DVDD18\_MSDC1 150mil

DRAWN: Marshall		DATED: 2018-09-22A		COMPANY: Tinno			
CHECKED: <Checked By>		DATED: <Checked Date>		TITLE: MT6765			
QUALITY CONTROL: <QC By>		DATED: <QC Date>		CODE: P410	SIZE: D	DRAWING NO: P410	REV: V1.0
RELEASED: <Released By>		DATED: <Release Date>		SCALE: <Scale>		SHEET: 3f 33	



REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:



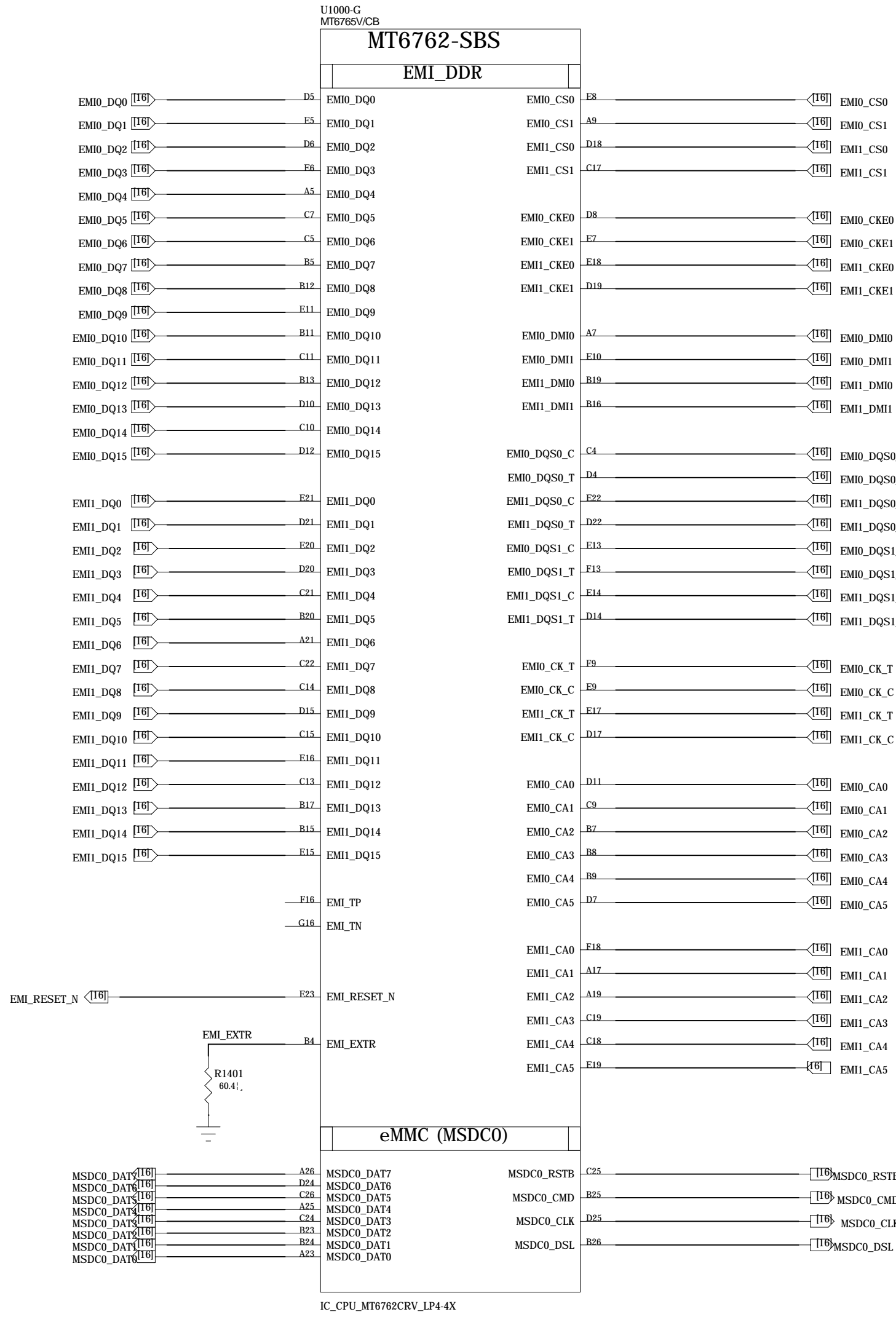
Schematic design notice of "13\_BB\_2" page.

Note 13-1: The enable pin of acoustic or optoelectronic devices (e.g. SPK AMP/Backlight/Charger OCP/OVP) suggest to use Peripheral\_EN[0:5]  
If use other GPIOs as enable pin, suggest to reserve 0201 NC to GND

DRAWN:	Marshall	DATED:	2018-09-22A
CHECKED:	<Checked By>	DATED:	<Checked Date>
QUALITY CONTROL:	<QC By>	DATED:	<QC Date>
RELEASED:	<Released By>	DATED:	<Release Date>

COMPANY:		Tinno	
TITLE:			
MT6765			
CODE:	SIZE:	DRAWING NO:	REV:
P410	D	P410	V1.0
SCALE: <Scale>		SHEET: 5f	33

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:



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

Note 14-1: R4001 please select 60.4 ohm (1%) resistor

Note 14-2: Please check eMCP LP3 and eMCP LP4X/LP4 pin mux

COMPANY: <b>Tinno</b>			
TITLE: <b>MT6765</b>			
CODE: <b>P410</b>	SIZE: <b>D</b>	DRAWING NO: <b>P410</b>	REV: <b>V1.0</b>
SCALE: <Scale>		SHEET: 6f 33	

DRAWN: <b>Marshall</b>	DATED: <b>2018-09-22A</b>
CHECKED: <b>&lt;Checked By&gt;</b>	DATED: <b>&lt;Checked Date&gt;</b>
QUALITY CONTROL: <b>&lt;QC By&gt;</b>	DATED: <b>&lt;QC Date&gt;</b>
RELEASED: <b>&lt;Released By&gt;</b>	DATED: <b>&lt;Release Date&gt;</b>

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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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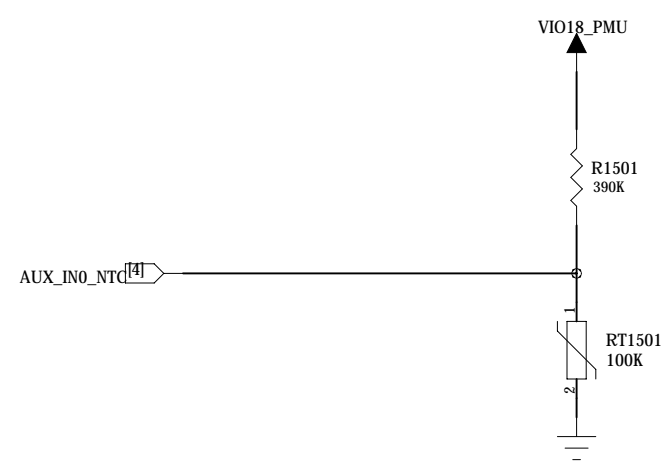
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Thermistor to sense AP temperature

1. NTC1501 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.

		COMPANY: <b>Tinno</b>			
		TITLE: <b>MT6765</b>			
DRAWN: <b>Marshall</b>	DATED: <b>2018-09-22A</b>	CODE: <b>P410</b>	SIZE: <b>D</b>	DRAWING NO: <b>P410</b>	REV: <b>V1.0</b>
CHECKED: <b>&lt;Checked By&gt;</b>	DATED: <b>&lt;Checked Date&gt;</b>				
QUALITY CONTROL: <b>&lt;QC By&gt;</b>	DATED: <b>&lt;QC Date&gt;</b>				
RELEASED: <b>&lt;Released By&gt;</b>	DATED: <b>&lt;Release Date&gt;</b>	SCALE: <b>&lt;Scale&gt;</b>		SHEET: <b>0f</b>	<b>33</b>

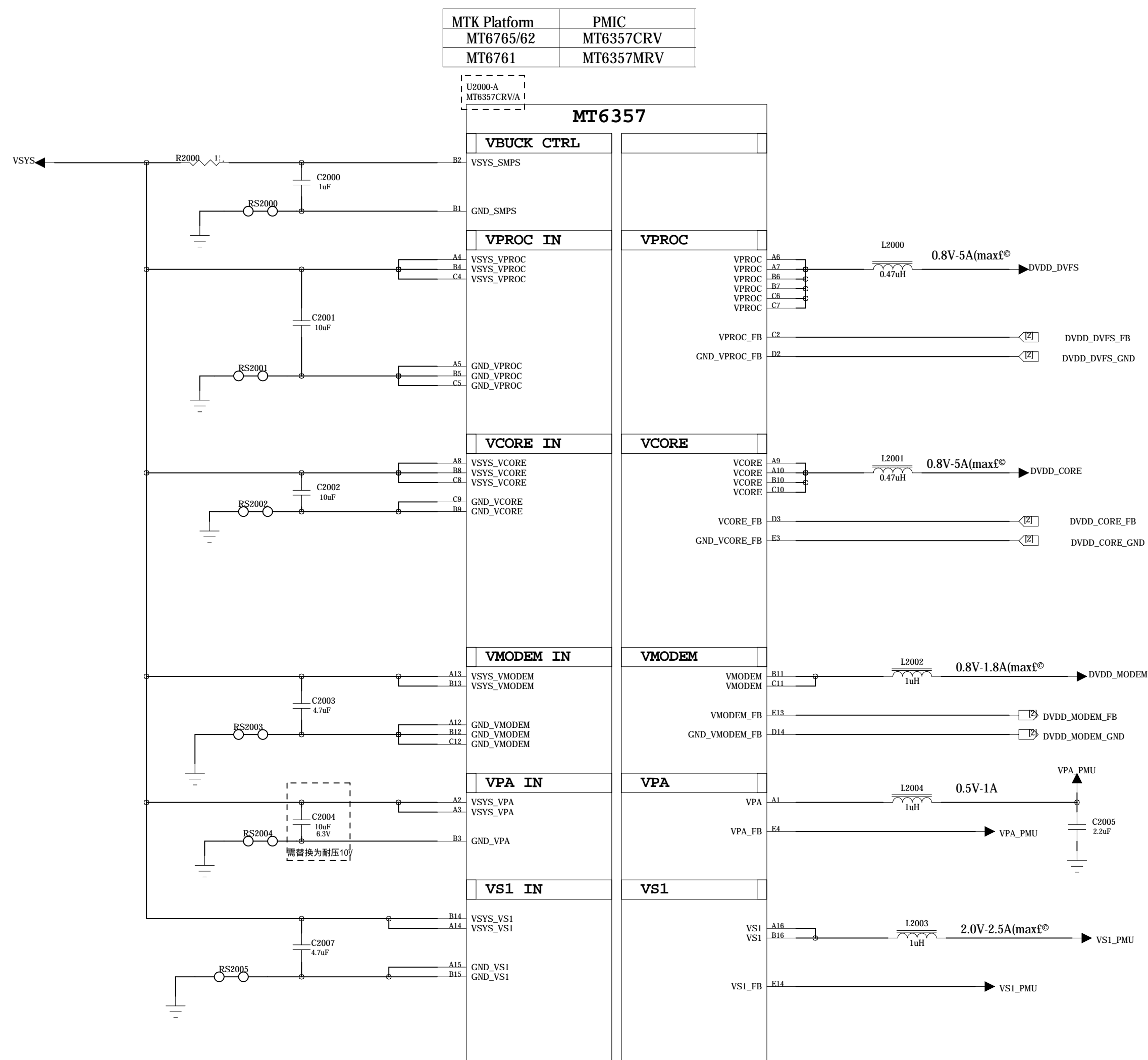
**Schematic design notice of "20\_POWER\_MT6357\_Buck"**

Note 20-1: C2005, please choose 0402 size

Note 20-2: PMIC Part number notice for MT6765/62/61 platform

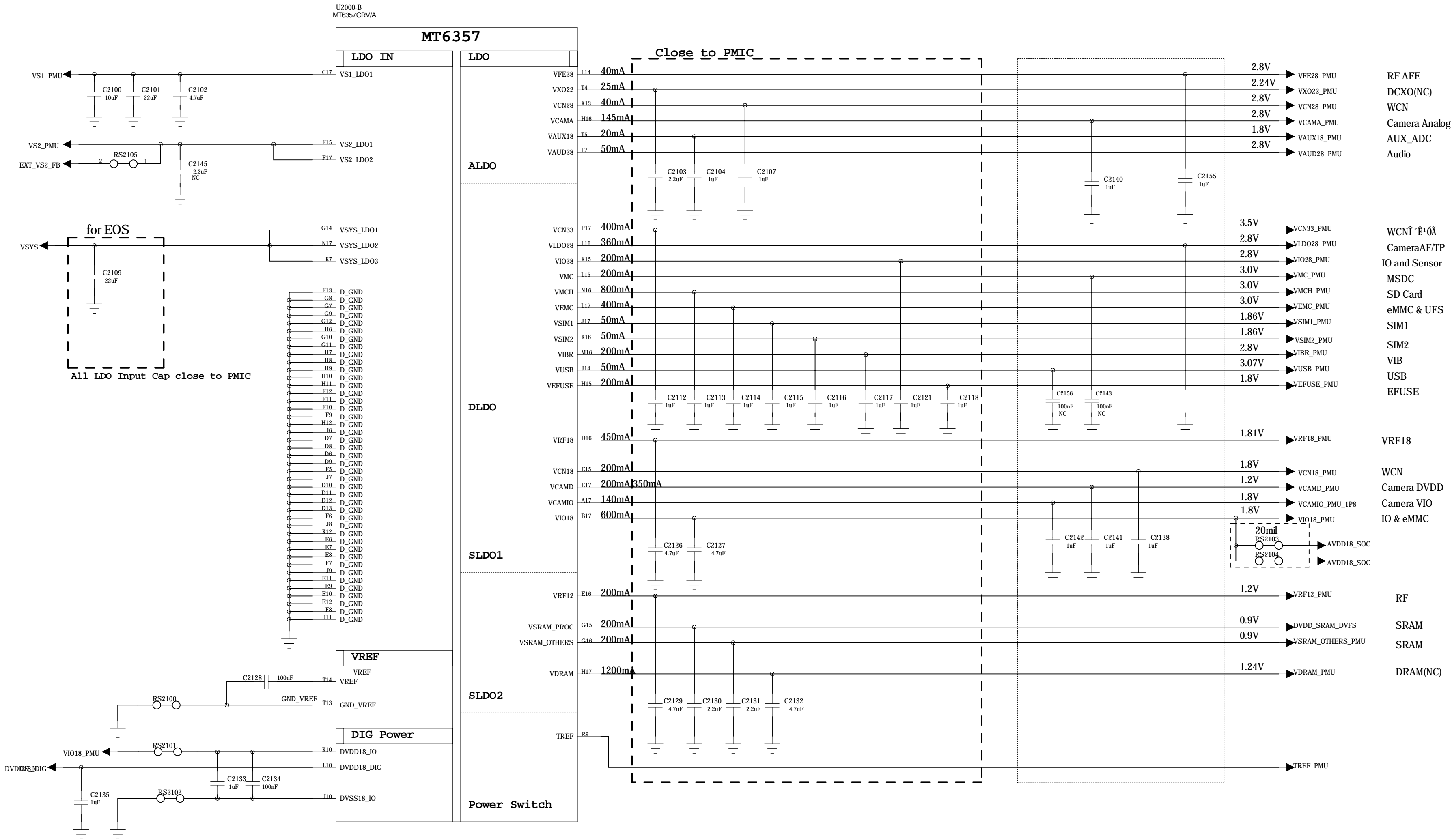
MTK Platform	PMIC	←
MT6765 / 62	MT6357 CRV	
MT6761	MT6357 MRV	

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



DRAWN: Marshall		DATED: 2018-09-22A		M16/65			
CHECKED: <Checked By>		DATED: <Checked Date>		CODE: P410	SIZE: D	DRAWING NO: P410	REV: V1.0
QUALITY CONTROL: <QC By>		DATED: <QC Date>					
RELEASED: <Released By>		DATED: <Release Date>					
SCALE: <Scale>				SHEET: 8		33	

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

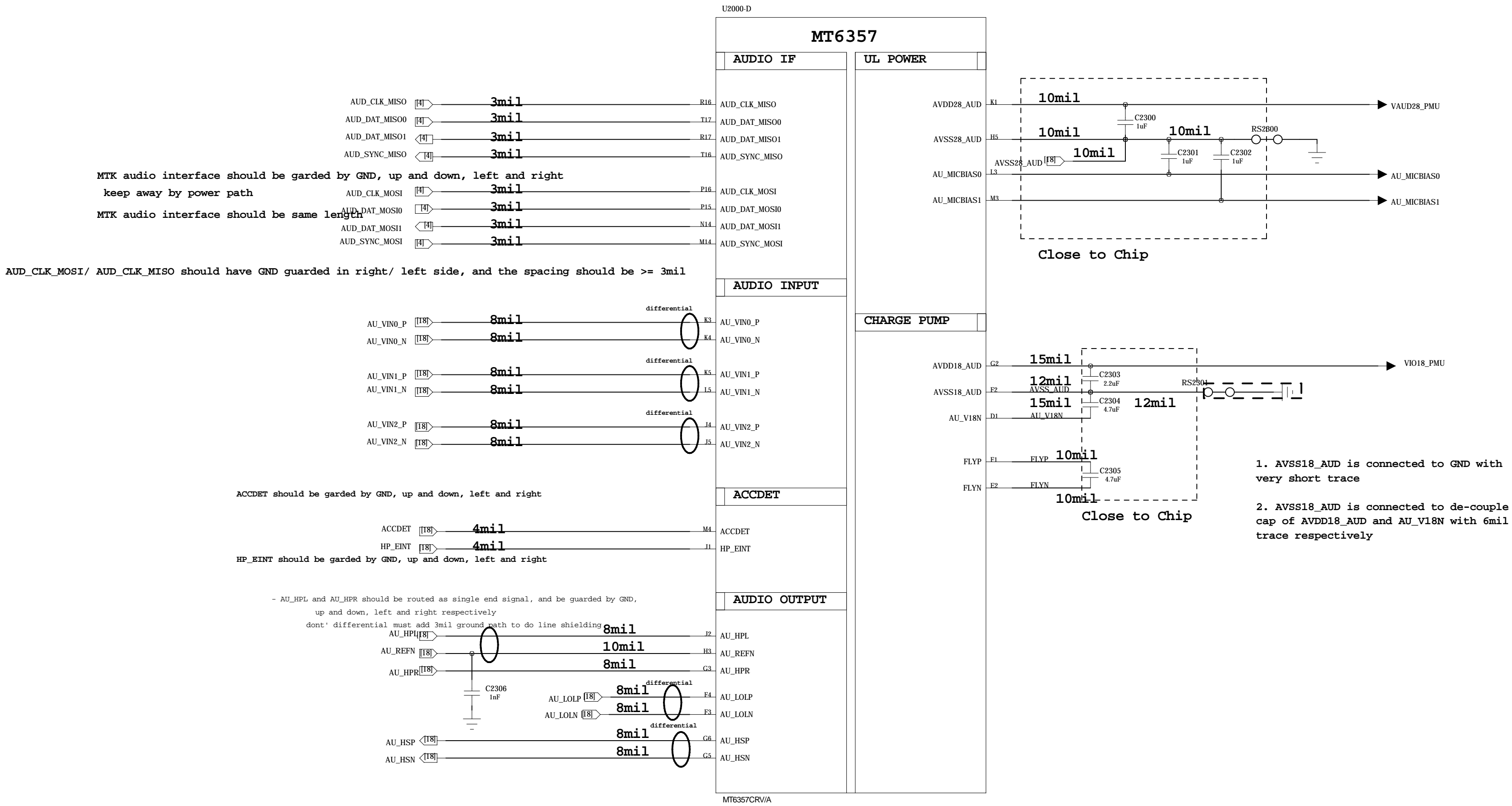


COMPANY: Tinno			
TITLE: MT6765			
DRAWN: Marshall	DATED: 2018-09-22A	CODE: P410	SIZE: D
CHECKED: <Checked By>	DATED: <Checked Date>	DRAWING NO: P410	REV: V1.0
QUALITY CONTROL: <QC By>	DATED: <QC Date>	SCALE: <Scale>	
RELEASED: <Released By>	DATED: <Release Date>	SHEET: 0f 33	





REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

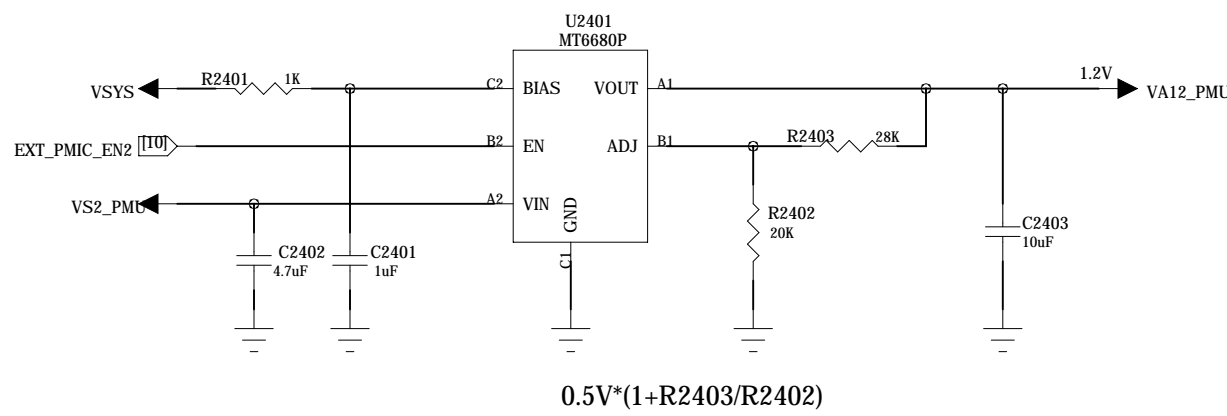


COMPANY: Tinno			
TITLE: MT6765			
CODE: P410	SIZE: D	DRAWING NO: P410	REV: V1.0
SCALE: <Scale>		SHEET: 33	33

DRAWN: Marshall	DATED: 2018-09-22A
CHECKED: <Checked By>	DATED: <Checked Date>
QUALITY CONTROL: <QC By>	DATED: <QC Date>
RELEASED: <Released By>	DATED: <Release Date>

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

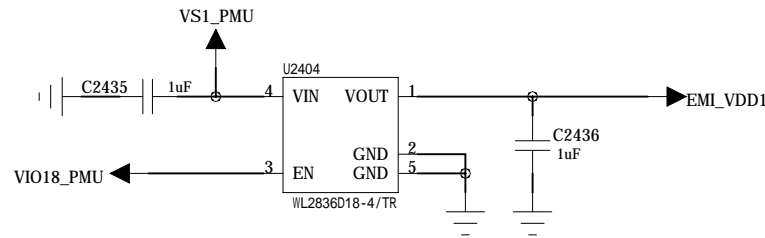
## LDO for VA12



$$0.5V \cdot (1 + R2403/R2402)$$

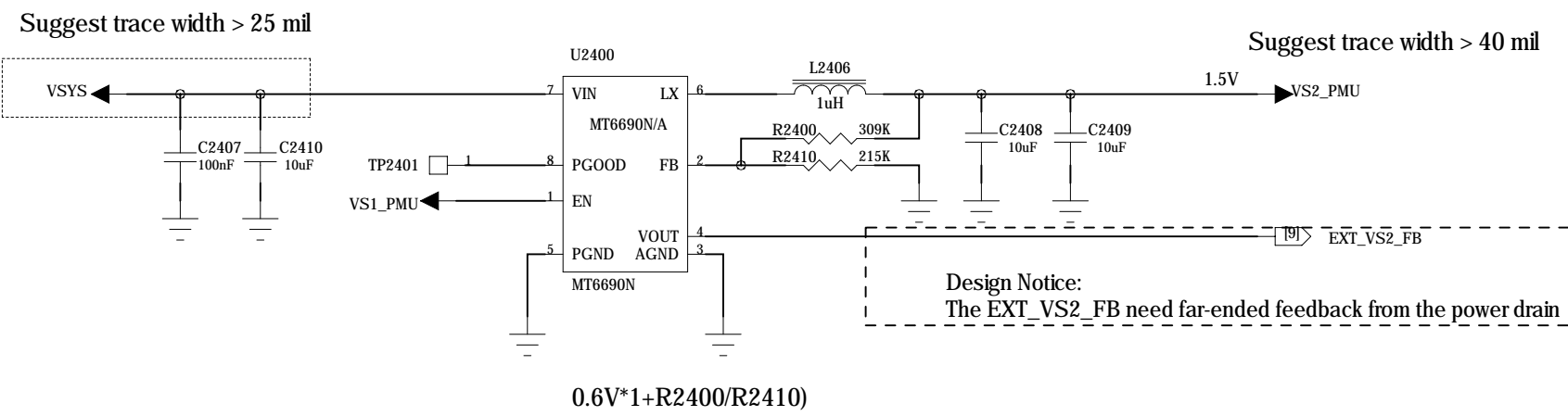
## LPDDR4X VDD1 1.8V LDO

Suggest trace width &gt; 20 mil



## Ext. Bulk for VS2

For Low Power Performance

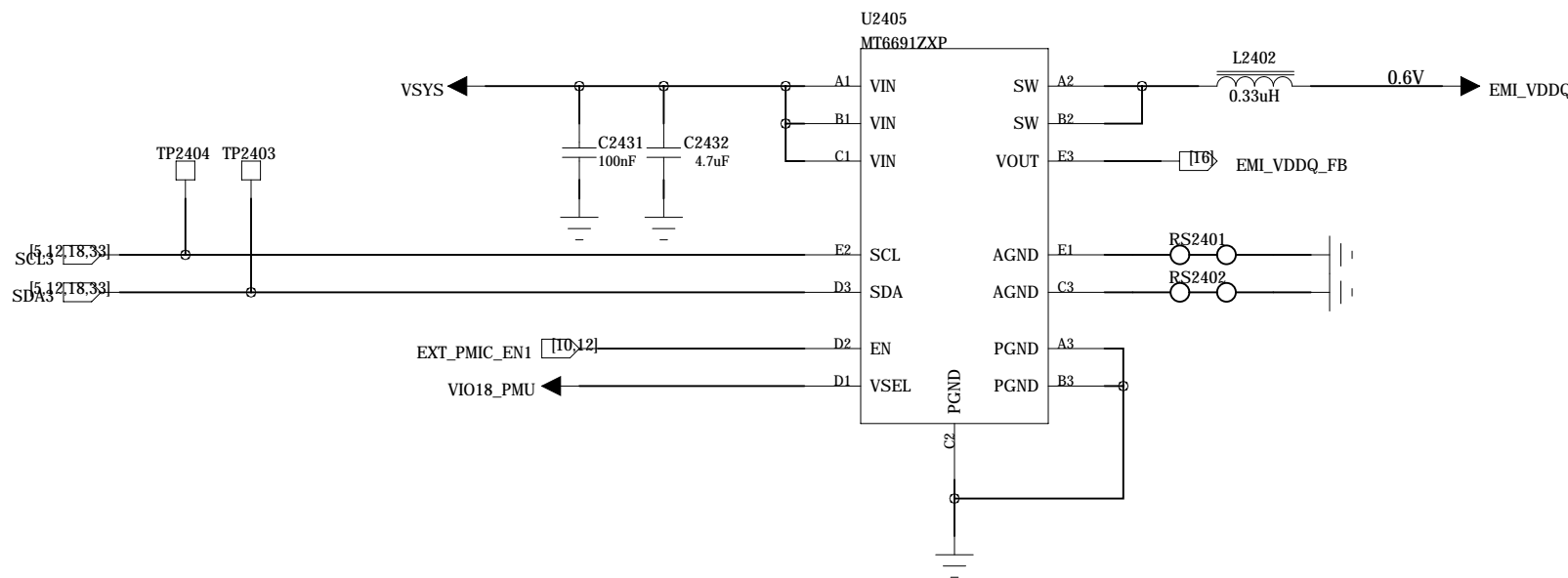


$$0.6V \cdot (1 + R2400/R2410)$$

## Ext. buck LP4/4X VDDQ 1.125V/0.6V

If use LPDDR4, NC U2802 and peripheral components  
MT6691ZXP/A / Ext. buck LP4X VDRAM(VDDQ)  
I2C address: 0x50 (Write:0xA0, Read:0xA1)

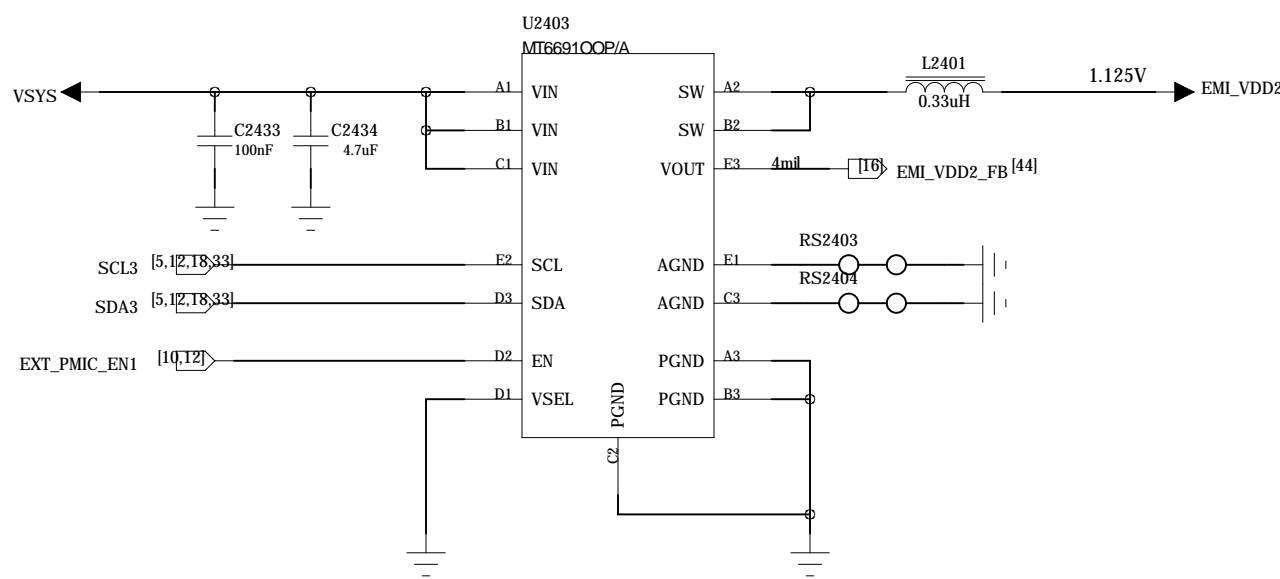
Suggest trace width &gt; 25 mil



## Ext. buck LP4/4X VDD2 1.125V

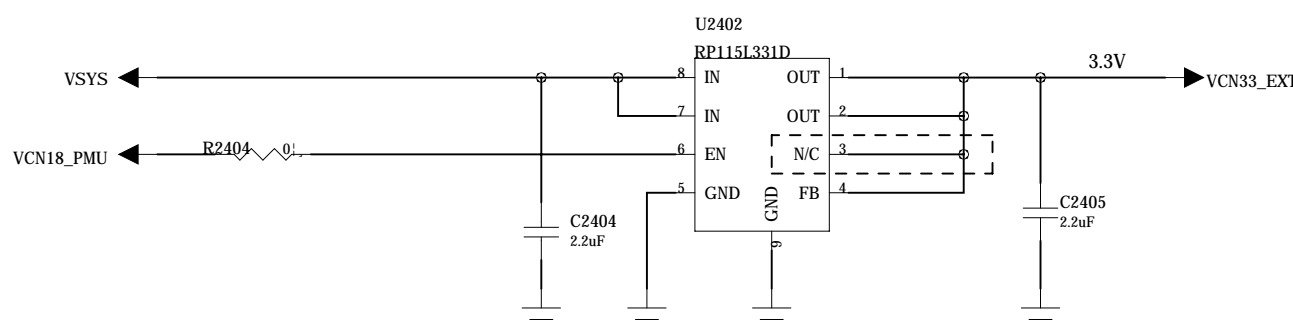
MT6691OOP/A / Ext. buck LP4X VDRAM (VDD2)  
I2C address: 0X57 (Write:0xAE, Read:0xAF)

Suggest trace width &gt; 50 mil



## LDO for VCN33

Suggest trace width &gt; 25 mil



## 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: MT6691ZXP/A and MT6691OOP/A Buck Layout Placement please close to LPDDR4X

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

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

## 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

DRAWN:	Marshall	DATED:	2018-09-22A
CHECKED:	<Checked By>	DATED:	<Checked Date>
QUALITY CONTROL:	<QC By>	DATED:	<QC Date>
RELEASED:	<Released By>	DATED:	<Release Date>

COMPANY:		Tinno	
TITLE:			
MT6765			
CODE:	SIZE:	DRAWING NO:	REV:
P410	D	P410	V1.0
SCALE: <Scale>		SHEET: 42	33



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REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

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		COMPANY: <b>Tinno</b>			
		TITLE: <b>MT6765</b>			
DRAWN: <b>Marshall</b>	DATED: <b>2018-09-22A</b>	CODE: <b>P410</b>	SIZE: <b>D</b>	DRAWING NO: <b>P410</b>	REV: <b>V1.0</b>
CHECKED: <b>&lt;Checked By&gt;</b>	DATED: <b>&lt;Checked Date&gt;</b>				
QUALITY CONTROL: <b>&lt;QC By&gt;</b>	DATED: <b>&lt;QC Date&gt;</b>				
RELEASED: <b>&lt;Released By&gt;</b>	DATED: <b>&lt;Release Date&gt;</b>				
SCALE: <b>&lt;Scale&gt;</b>				SHEET: <b>44</b>	<b>33</b>

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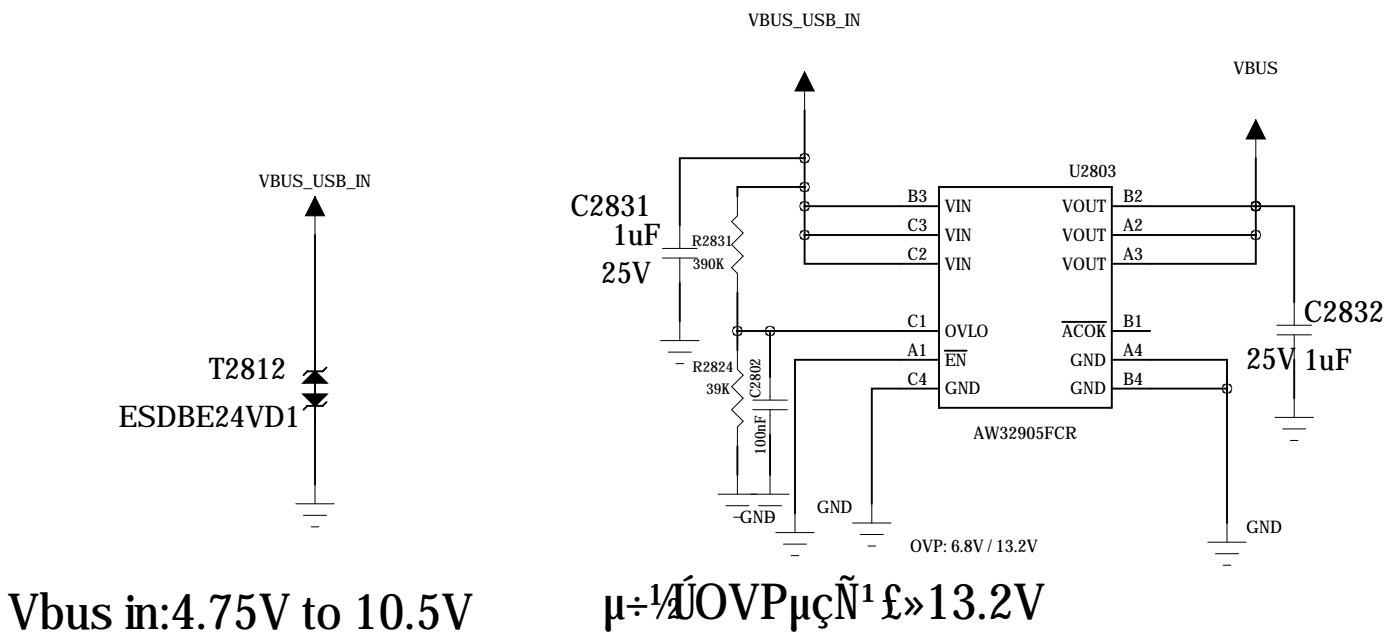
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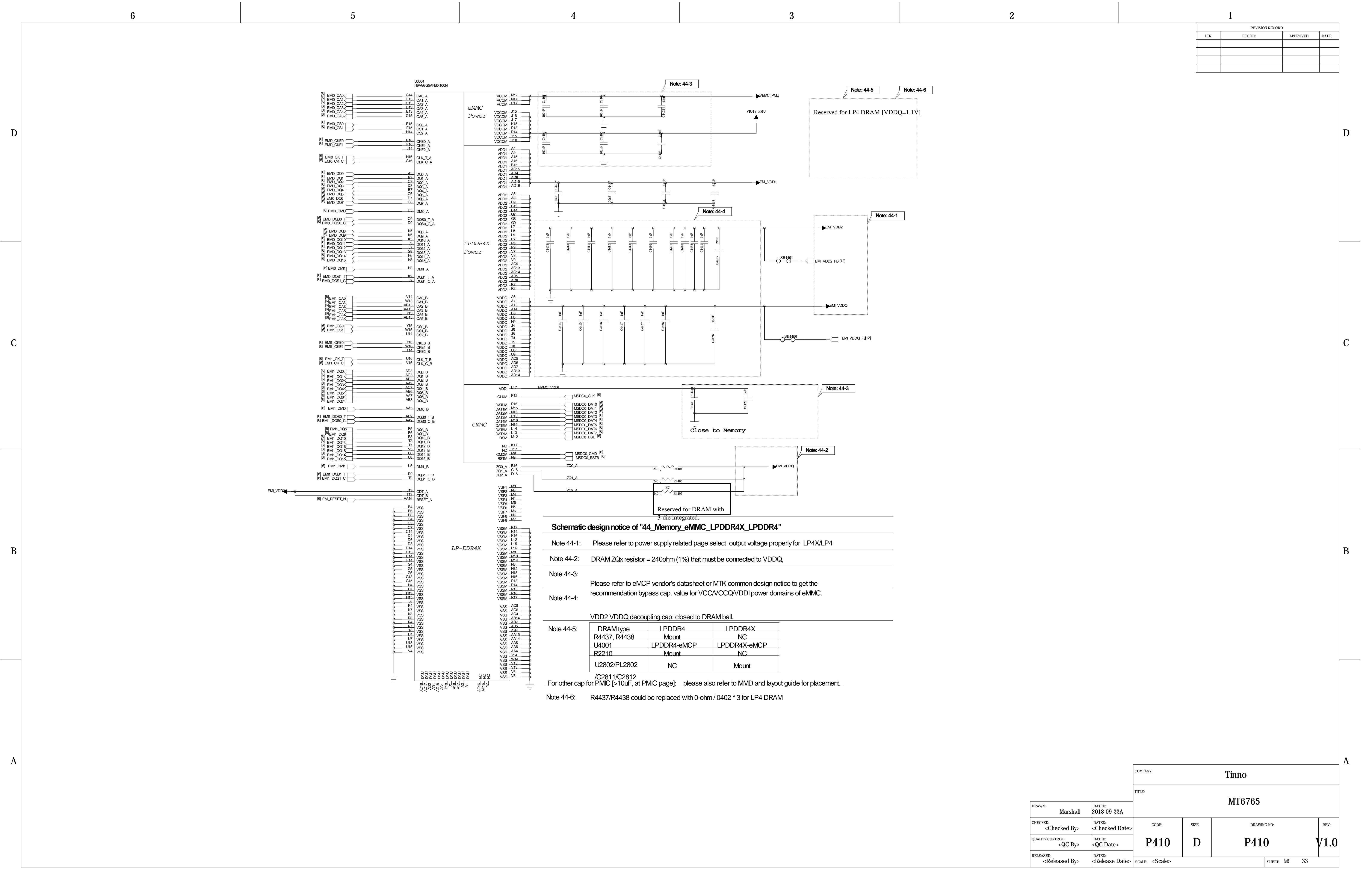
1

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: <b>Tinno</b>			
TITLE: <b>MT6765</b>			
CODE: <b>P410</b>	SIZE: <b>D</b>	DRAWING NO: <b>P410</b>	REV: <b>V1.0</b>
SCALE: <Scale>		SHEET: <b>45</b> 33	

DRAWN: <b>Marshall</b>	DATED: <b>2018-09-22A</b>
CHECKED: <Checked By>	DATED: <Checked Date>
QUALITY CONTROL: <QC By>	DATED: <QC Date>
RELEASED: <Released By>	DATED: <Release Date>

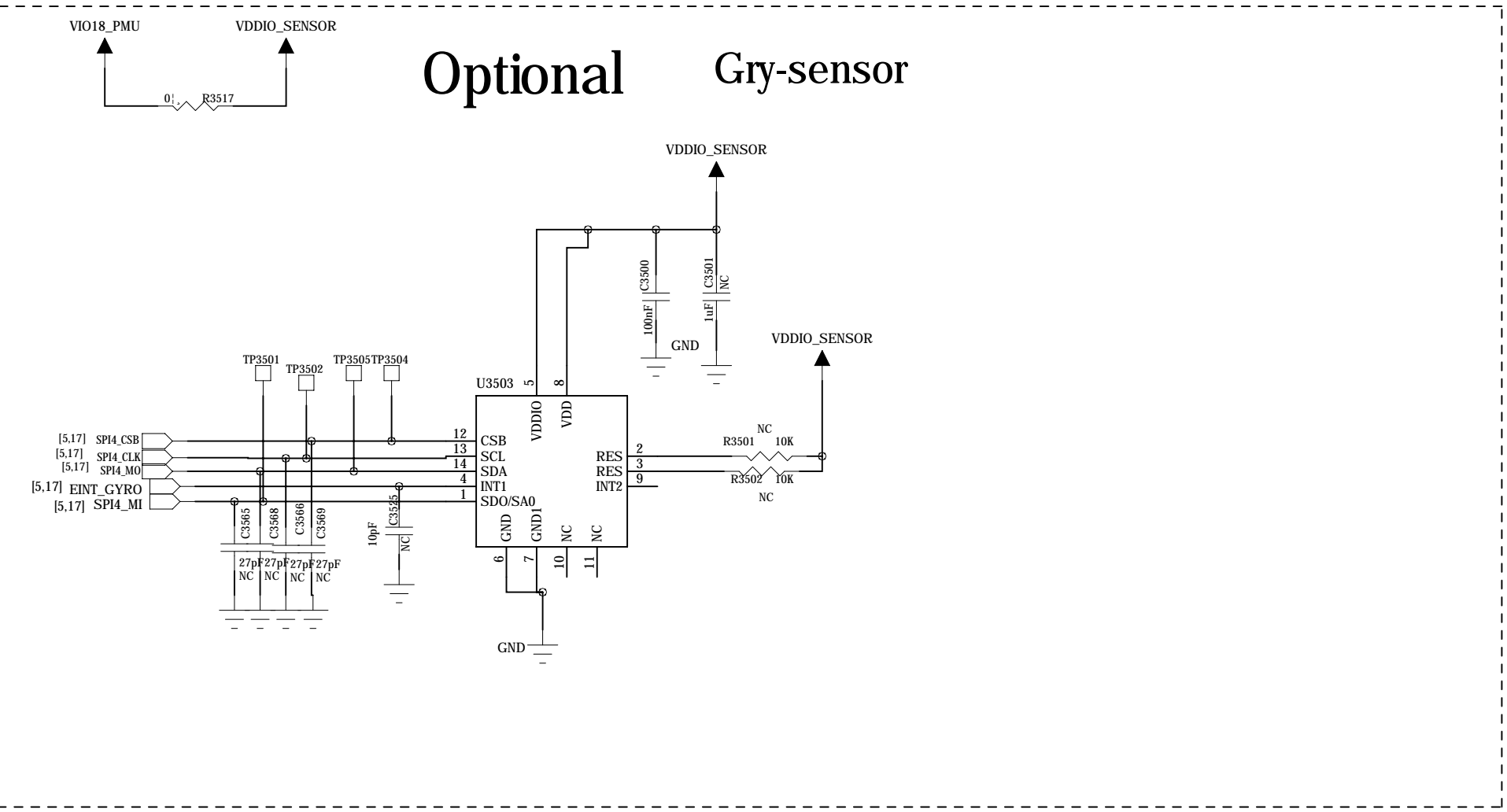


REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

COMPANY: Tinno			
TITLE: MT6765			
DRAWN: Marshall	DATED: 2018-09-22A		
CHECKED: <Checked By>	DATED: <Checked Date>	CODE: P410	SIZE: D
QUALITY CONTROL: <QC By>	DATED: <QC Date>	DRAWING NO: P410	REV: V1.0
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>	SHEET: 46 33

G+Gyro Sensor

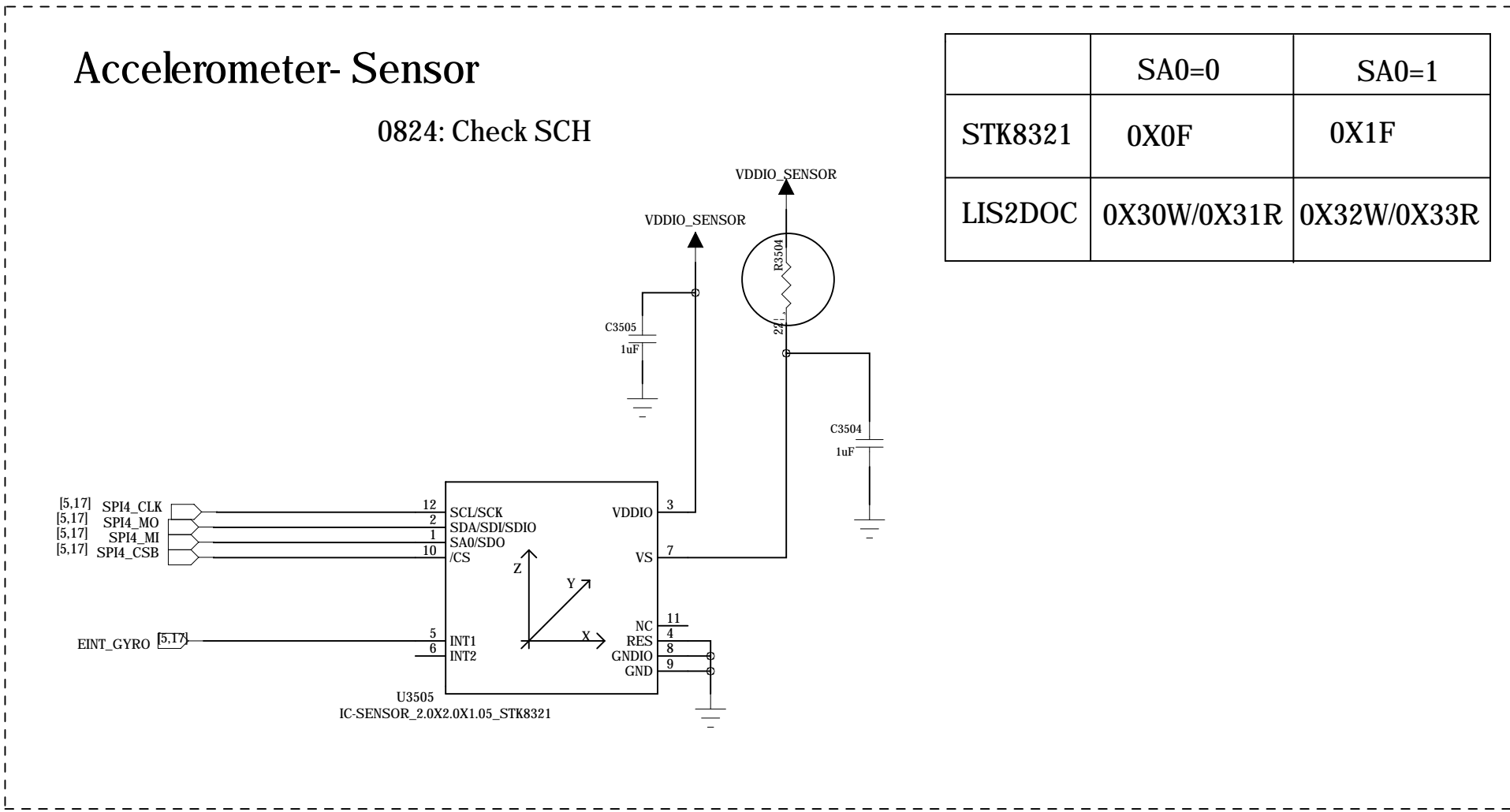
Optional Gry-sensor



Note: 77-4

Accelerometer- Sensor

0824: Check SCH



	SA0=0	SA0=1
STK8321	0X0F	0X1F
LIS2DOC	0X30W/0X31R	0X32W/0X33R

E-Compass

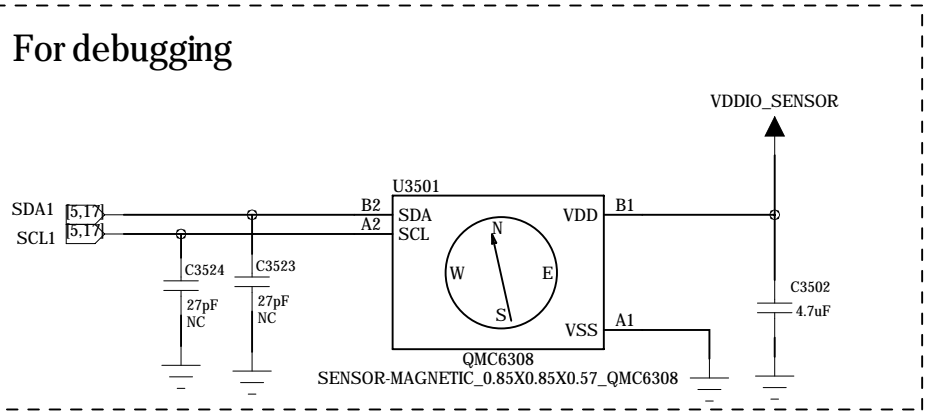
E-Compass

QMC6308	0x2C//58H(W)/59(R)
AKM09918	0x0C

Note: 77-1

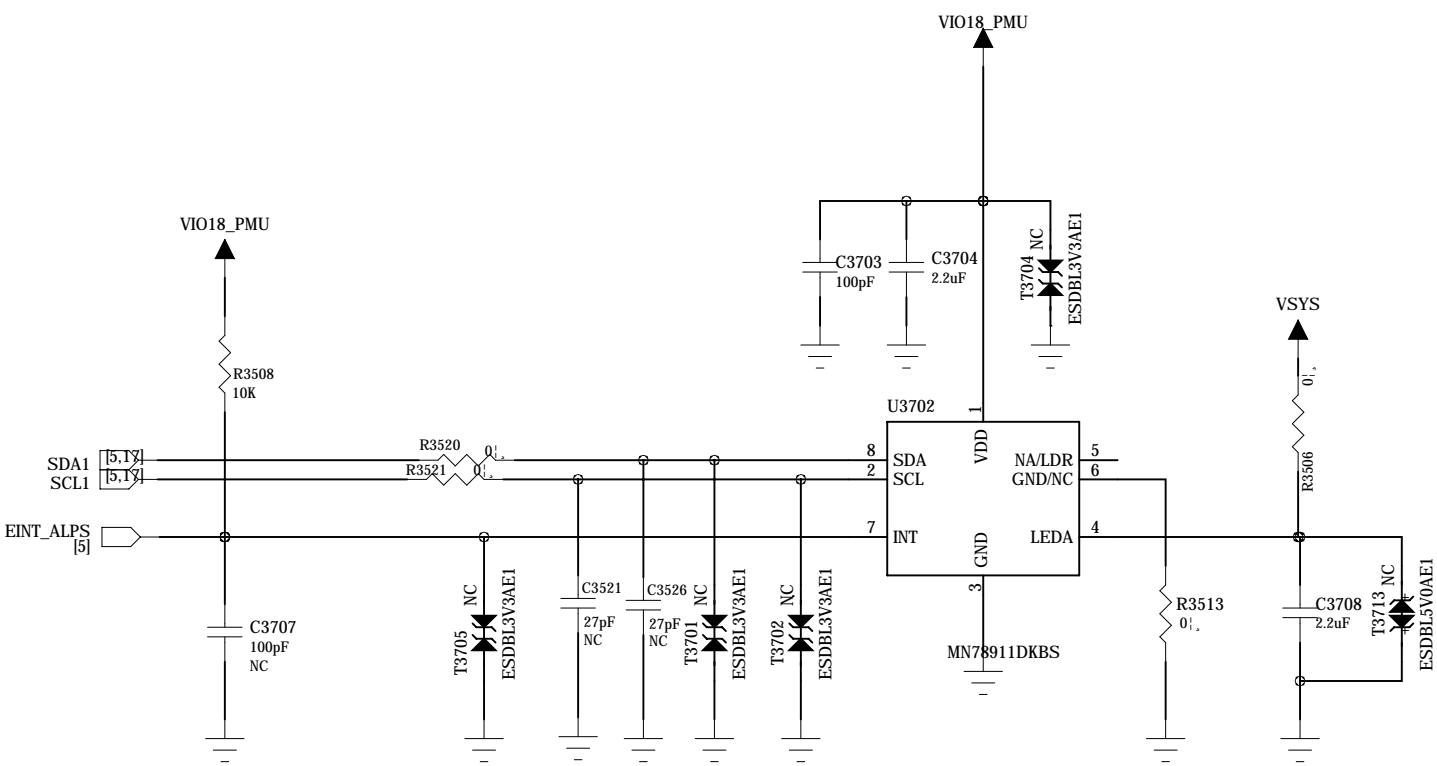
zwt0831: near P/L sensor:

Note: 77-6



Proximity Sensor charge

STK33562	0iÁ46



Baro Sensor

Baro(BMP380) I2C address : 7h'76 (SDO pin tied to GND)

Schematic design notice of "77\_PERI\_SENSORS\_MEMs\_ALS/PS" page.

- Note 77-1: [M sensor] Keep a minimum distance of 15mm from power ICs / PCB traces of more than 100mA / magnet component. Check HW design notice for more detail
- Note 77-2: [A+G] For optimized GPS performance, please check HW design notice for Sensor selection guide
- Note 77-3: [A+G] MUST use SPI for optimized sensor hub performance **DO NOT USE i2C**
- A Note 77-4: [A+G] Suggest choose sensor support FIFO watermark interrupt otherwise we cannot support Hifi-sensor, daydream VR. And Sensor-location accuracy will become worse.
- Note 77-5: [Baro] Reserve Baro sensor for LPPe feautre (Must for North America Operator / NA SKU)
- Note 77-6: DO NOT share Sensor hub i2C to other non-SCP device
- Note 77-7: Interrupt pin of MEMS sensor must be assign to ball EINT[12:0]

COMPANY: Tinnor				
TITLE: MT6765				
DRAWN: Marshall	DATED: 2018-09-22A	CODE: P410	SIZE: D	DRAWING NO: P410
CHECKED: <Checked By>	DATED: <Checked Date>	REV: V1.0		
QUALITY CONTROL: <QC By>	DATED: <QC Date>	SCALE: <Scale>		
RELEASED: <Released By>	DATED: <Release Date>	SHEET: 47		33





<div>DRAWN: Marshall</div> <div>DATED: 2018-09-22A</div>		COMPANY: Tinno			
		TITLE: MT6765			
CHECKED: <Checked By>	DATED: <Checked Date>	CODE: P410	SIZE: D	DRAWING NO: P410	REV: V1.0
QUALITY CONTROL: <QC By>	DATED: <QC Date>				
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>			SHEET: 40 33



Camera LDO

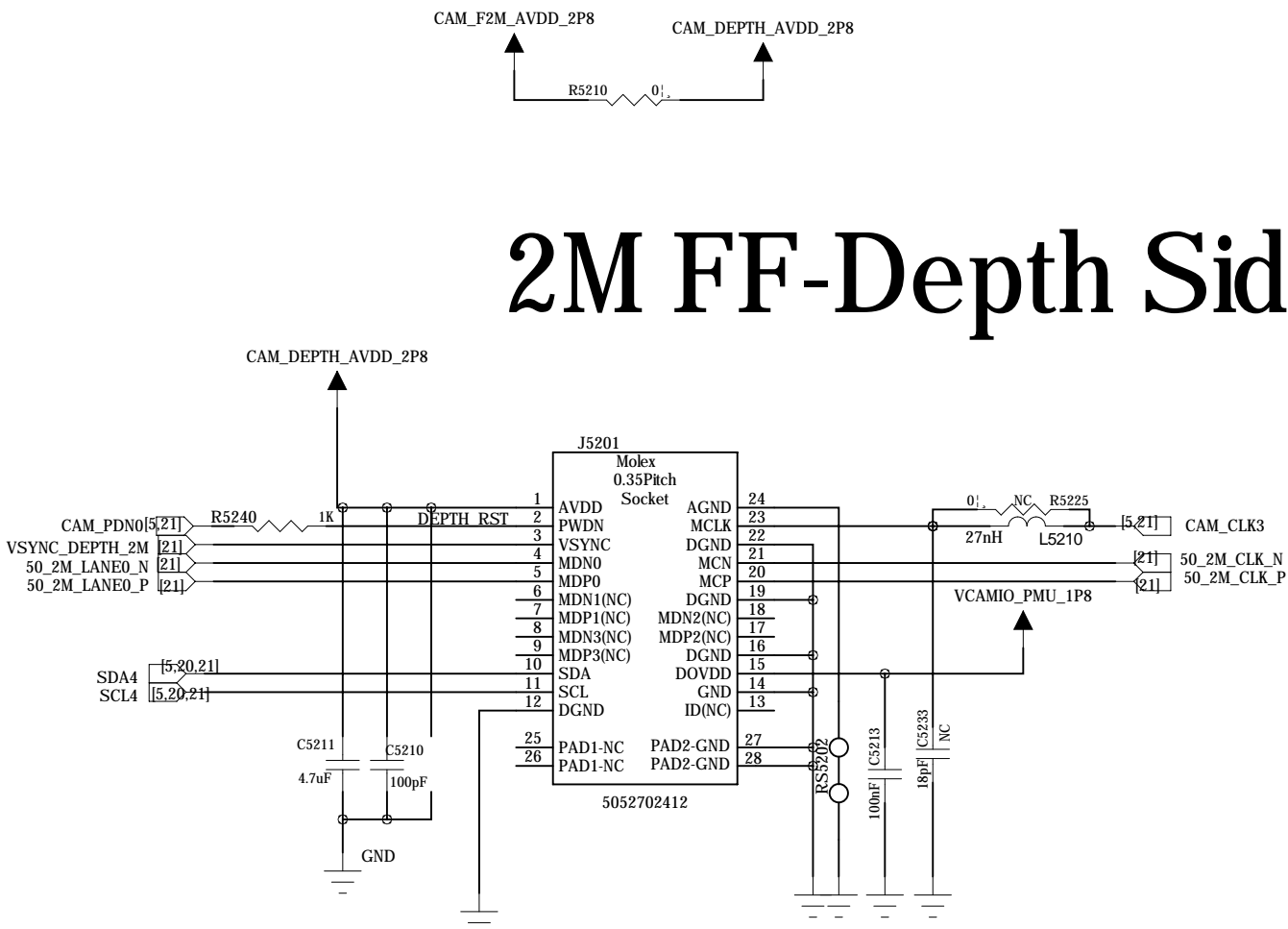
Main-CAMERA

50M/13M

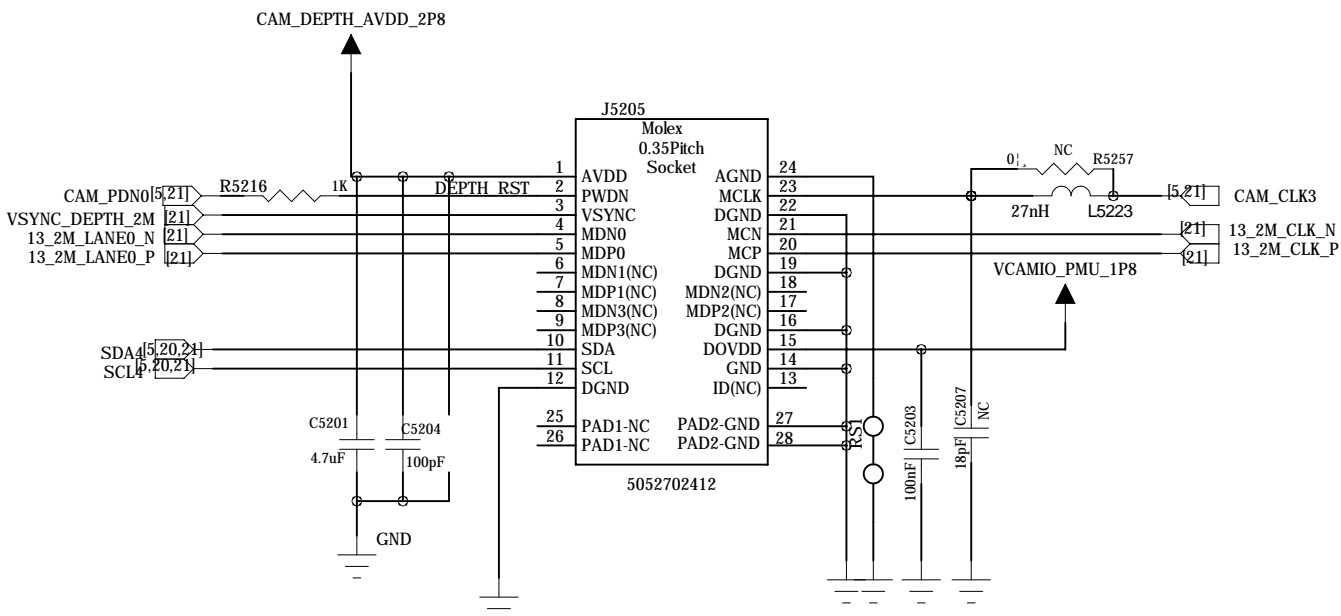
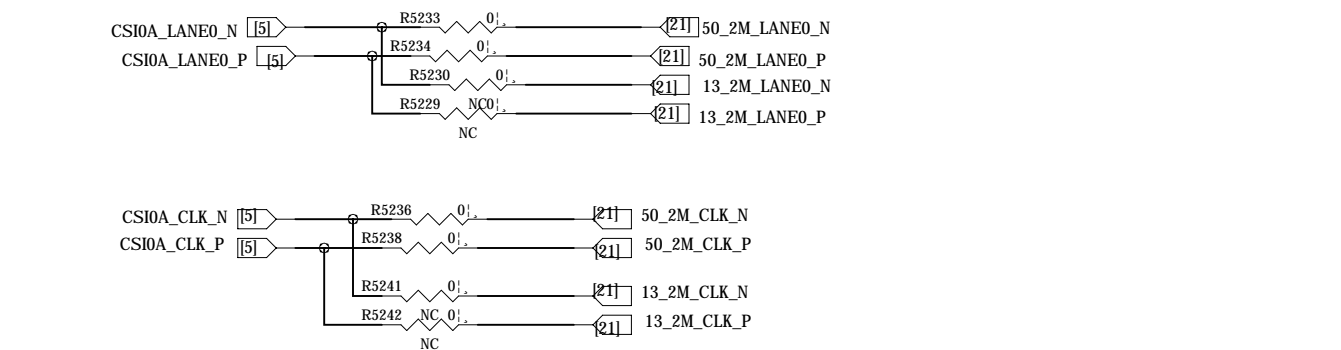
REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

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2M FF-Depth Side-1²ÓÃ8MÎ»ÖÃ



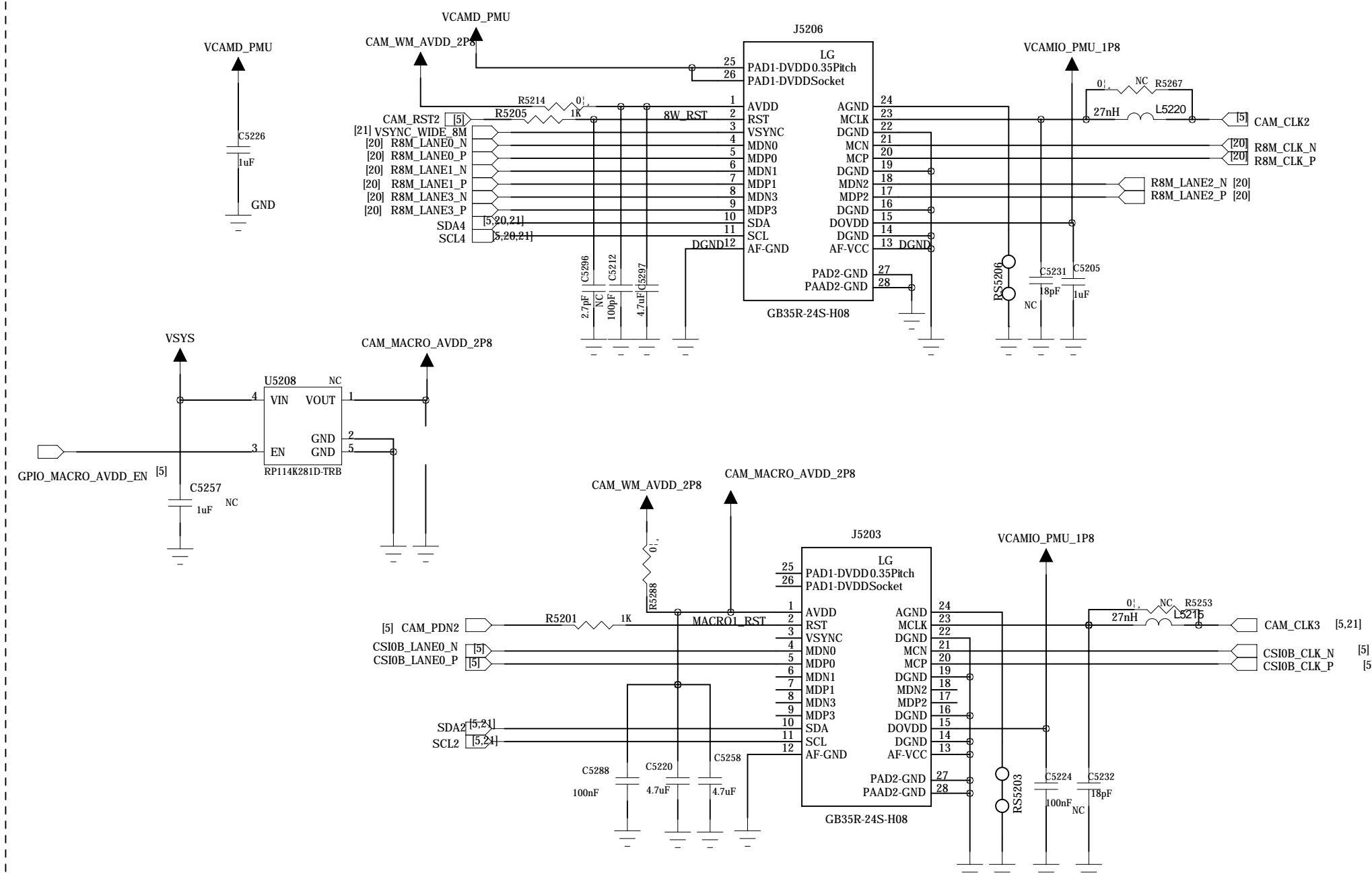
R12,R17,R22,R25 Close to J5201 !!!!



2M FF-Depth Side-50M

8M: WIDE

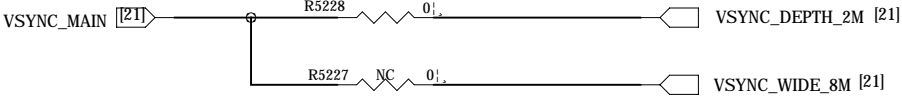
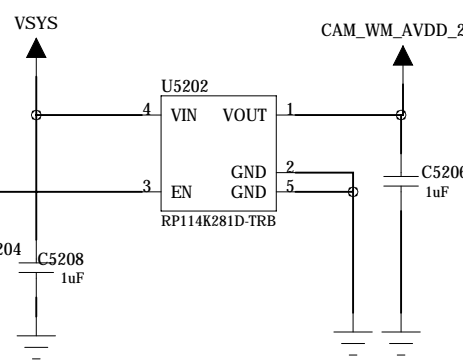
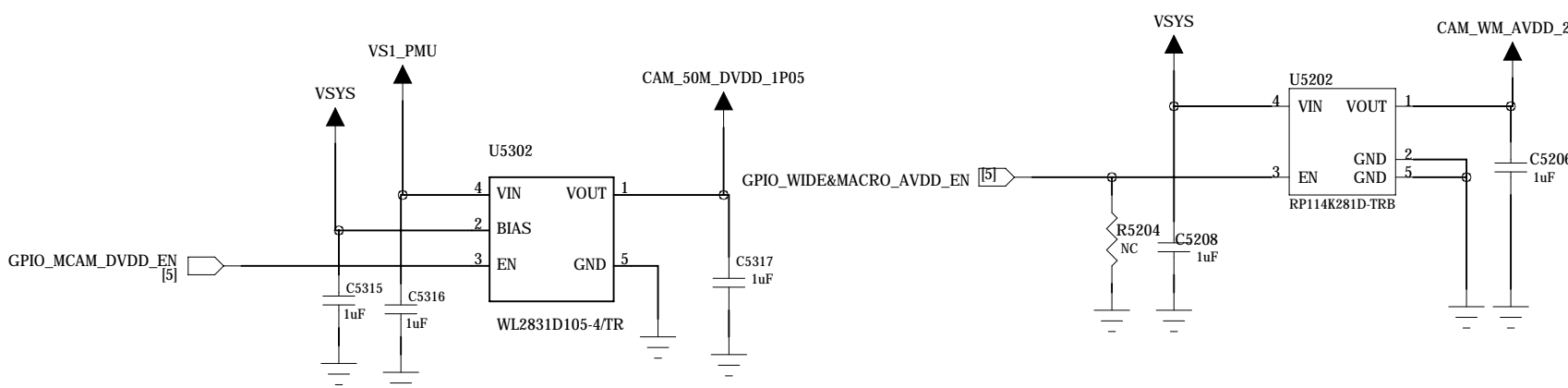
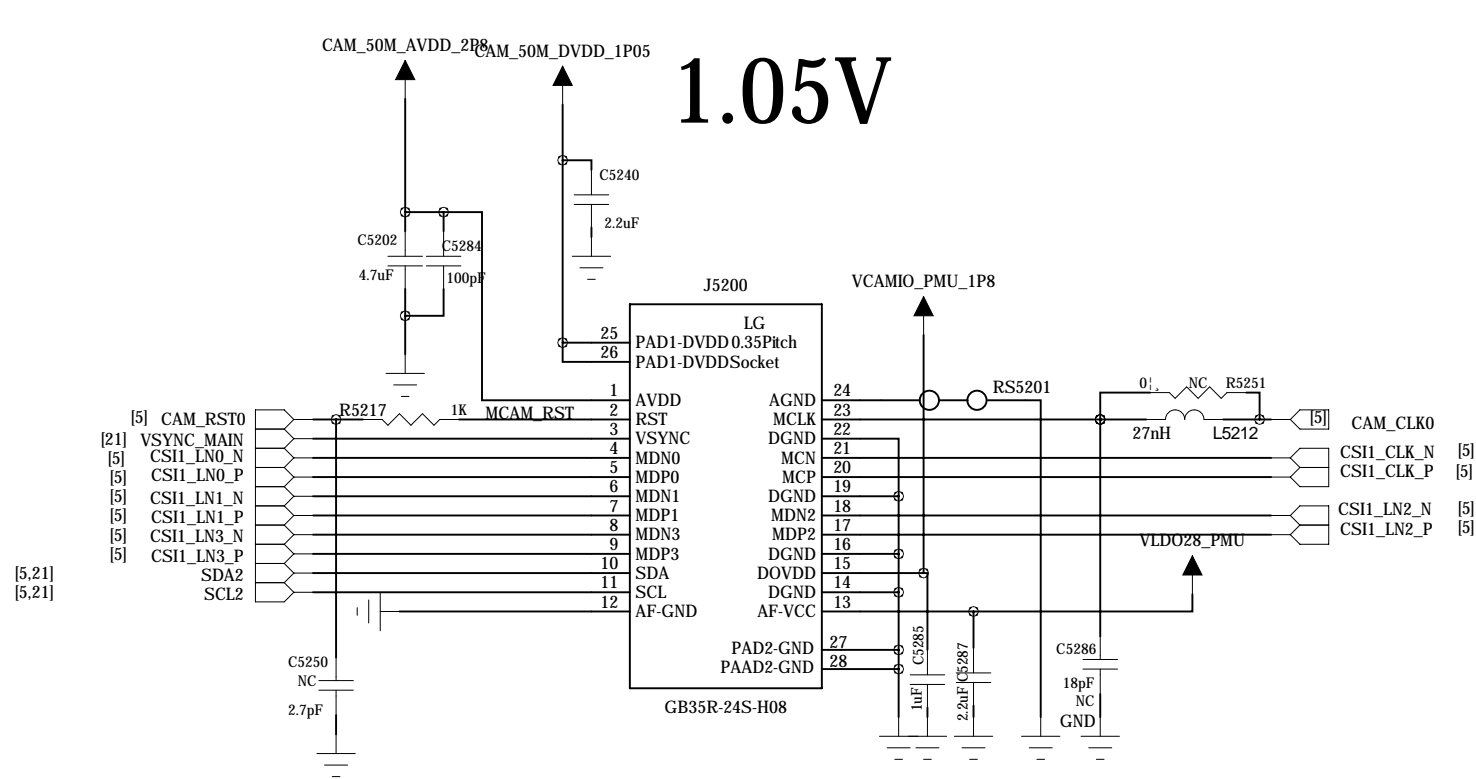
	AVDD	DVDD	DOVDD	ID	I2C
S5K4H7YX03	2.7-2.9 V(2.8V)	1.14-1.26V(1.2V)	1.7-1.9V(1.8V)		0X5A(W)0X5B(R)



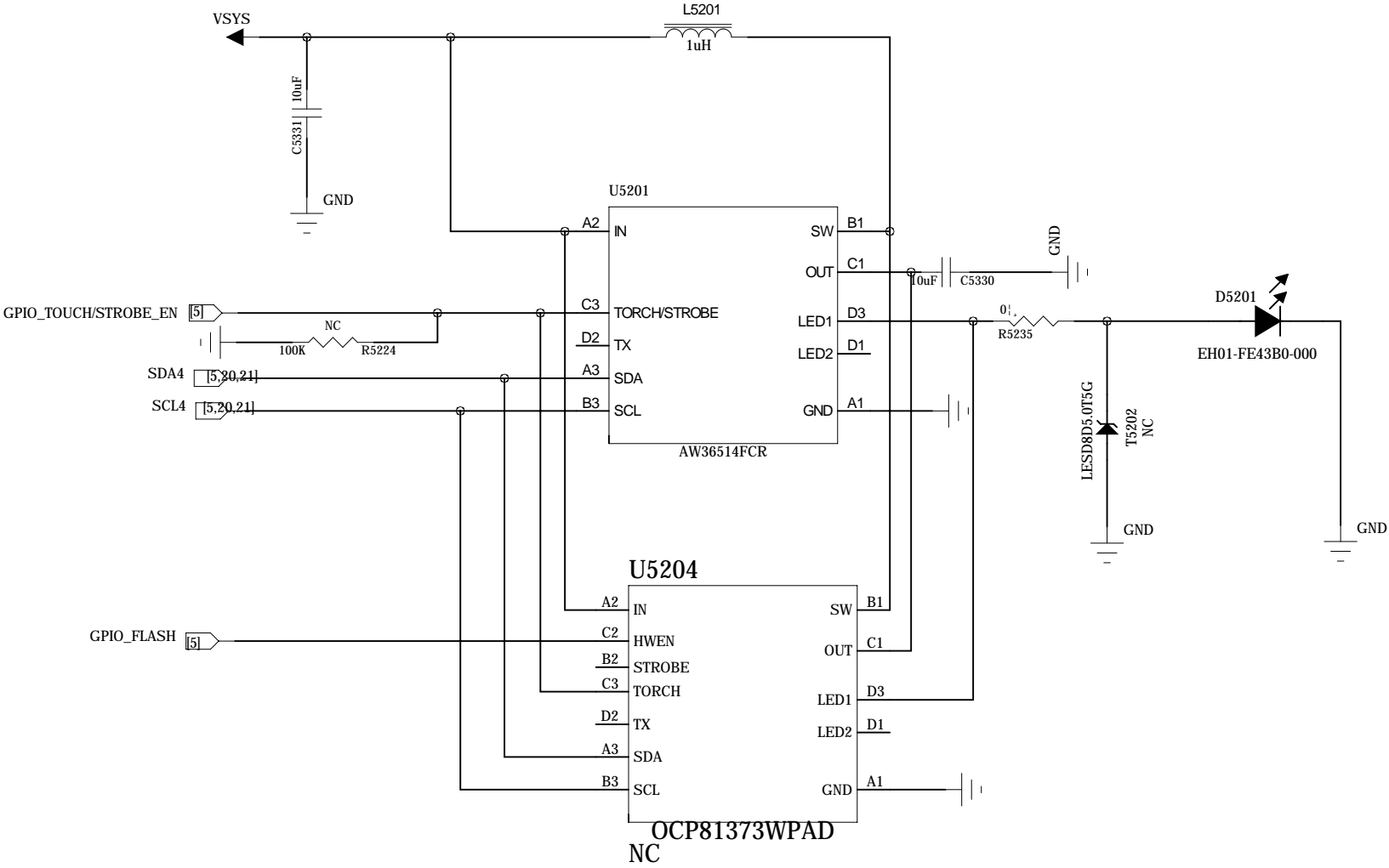
2M FF-Macro

	AVDD	DVDD	DOVDD	I2C
GC5035	2.7V-3.0V	1.15V-1.3V	1.7V-3.0V	W:0x7E R:0x7F

1.05V



Rear CAM Flash LED



COMPANY: Tinno			
TITLE: CAMERA MT6765			
DRAWN: Marshall	DATED: 2018-09-22A	CODE: P410	SIZE: D
CHECKED: <Checked By>	DATED: <Checked Date>	DRAWING NO: P410	REV: V1.0
QUALITY CONTROL: <QC By>	DATED: <QC Date>	SCALE: <Scale>	
RELEASED: <Released By>	DATED: <Release Date>	SHEET 2d 33	

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

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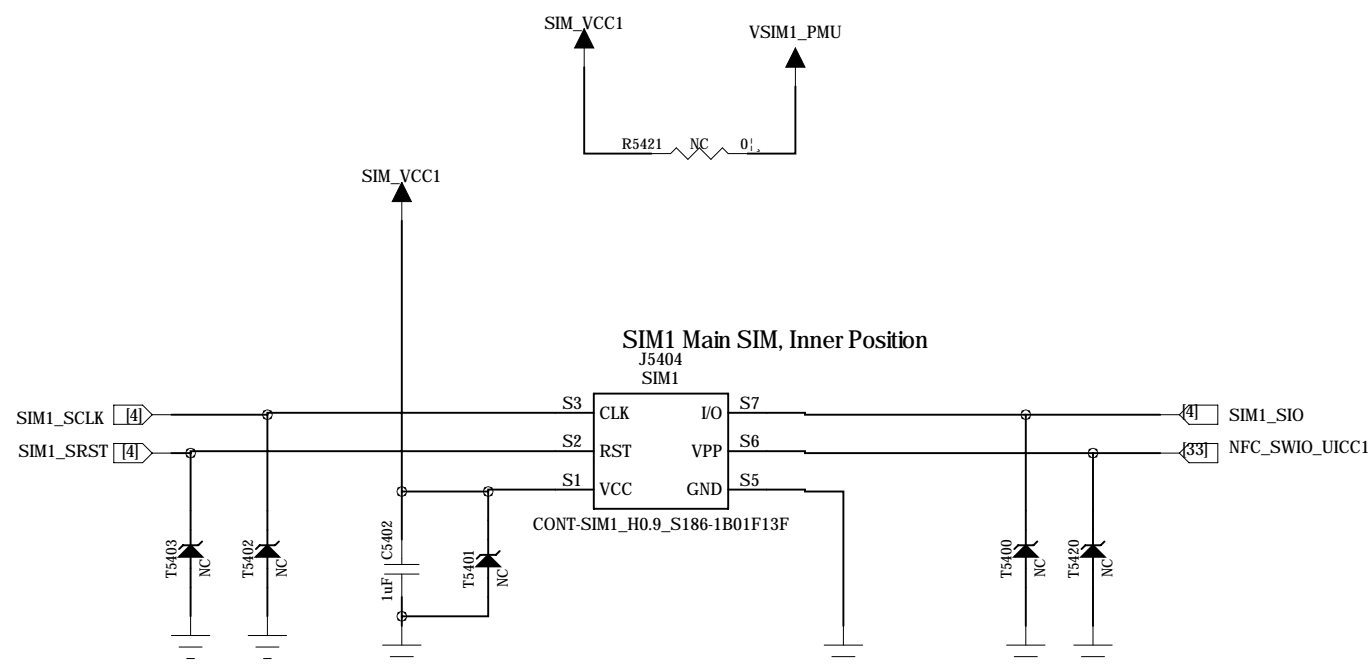
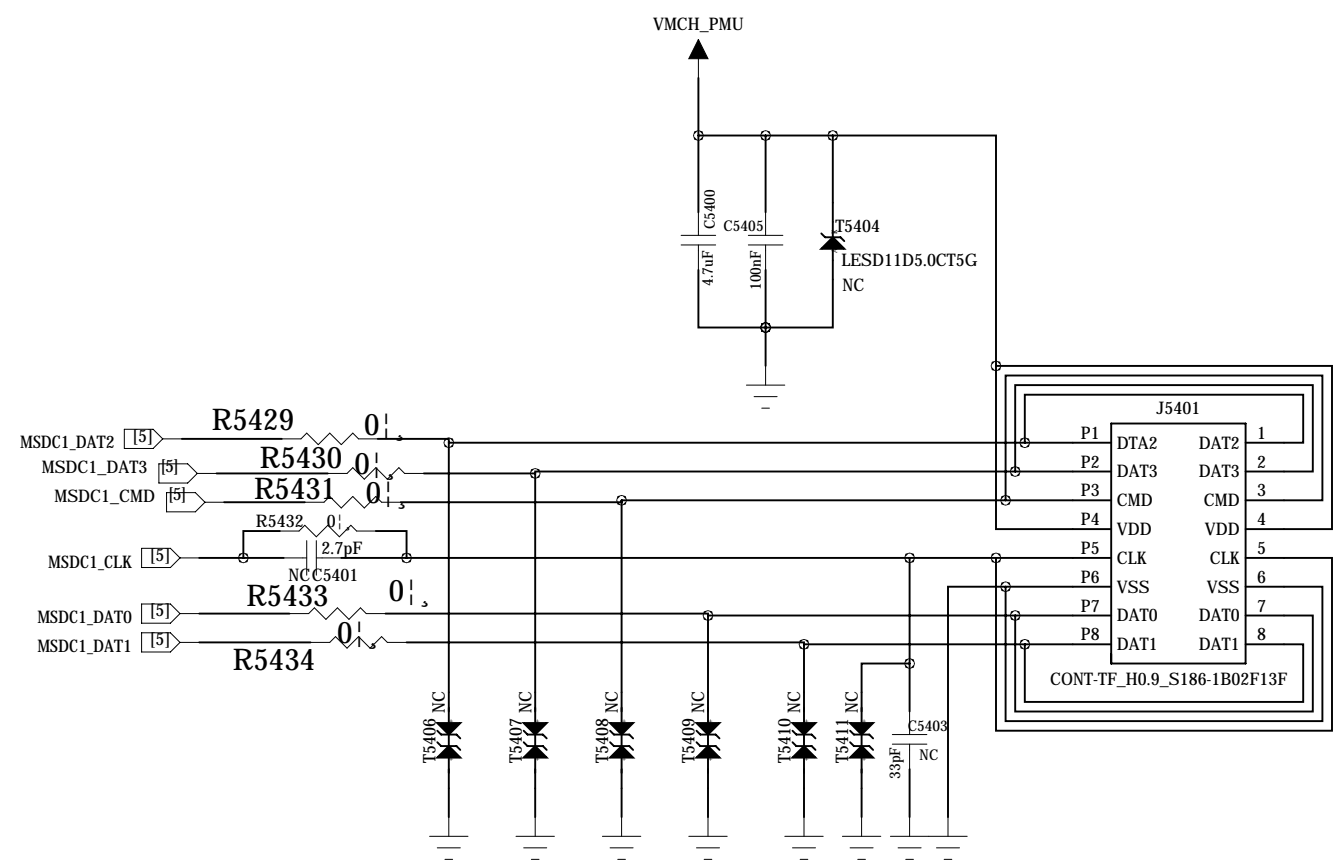
C

B

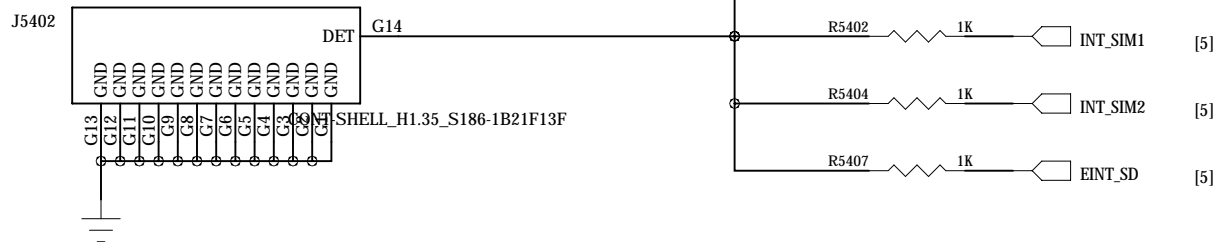
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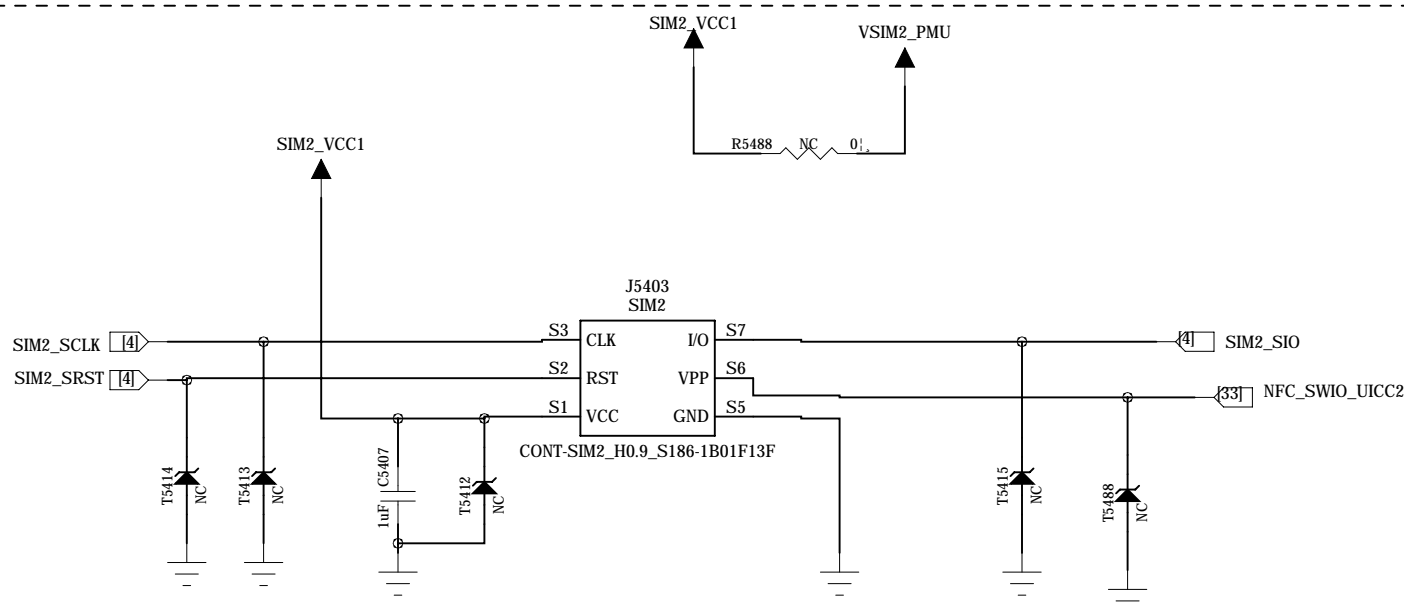
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Card Existing: 1  
Card Not Existing: 0



SIM Card 2

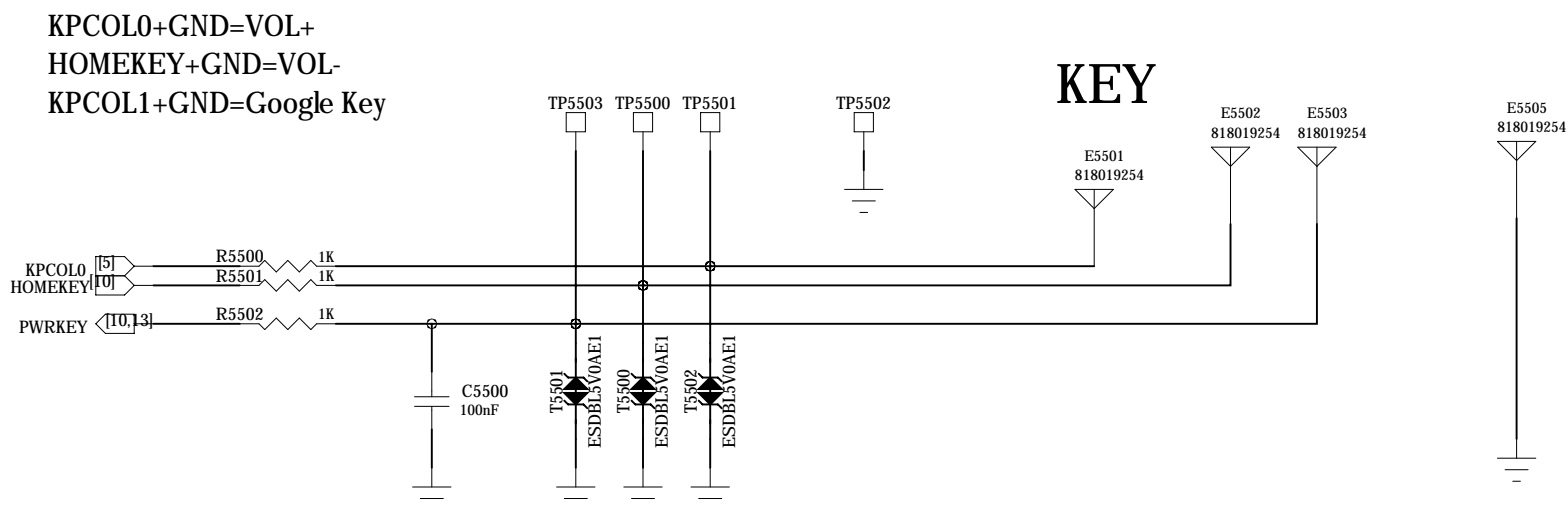


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CHECKED:	<Checked By>	DATED:	<Checked Date>
QUALITY CONTROL:	<QC By>	DATED:	<QC Date>
RELEASED:	<Released By>	DATED:	<Release Date>

COMPANY: Tinnno			
TITLE: MT6765			
CODE: P410	SIZE: D	DRAWING NO: P410	REV: V1.0
SCALE: <Scale>		SHEET: 02 33	

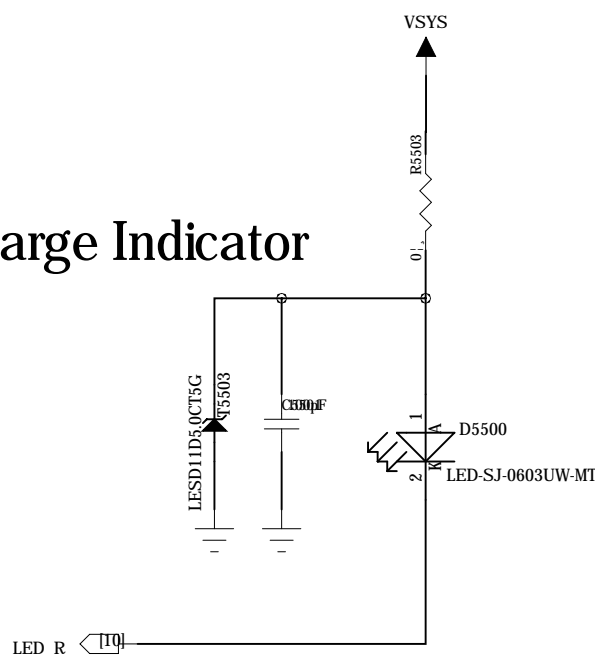
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

MP Test point



COBY-P720AE

## Charge Indicator



		COMPANY: <b>Tinno</b>			
		TITLE: <b>MT6765</b>			
DRAWN: <b>Marshall</b>	DATED: <b>2018-09-22A</b>				
CHECKED: <b>&lt;Checked By&gt;</b>	DATED: <b>&lt;Checked Date&gt;</b>	CODE: <b>P410</b>	SIZE: <b>D</b>	DRAWING NO: <b>P410</b>	REV: <b>V1.0</b>
QUALITY CONTROL: <b>&lt;QC By&gt;</b>	DATED: <b>&lt;QC Date&gt;</b>	<b>P410</b>	<b>D</b>	<b>P410</b>	<b>V1.0</b>
RELEASED: <b>&lt;Released By&gt;</b>	DATED: <b>&lt;Release Date&gt;</b>				
		SCALE: <b>&lt;Scale&gt;</b>		SHEET: <b>08</b>	<b>33</b>

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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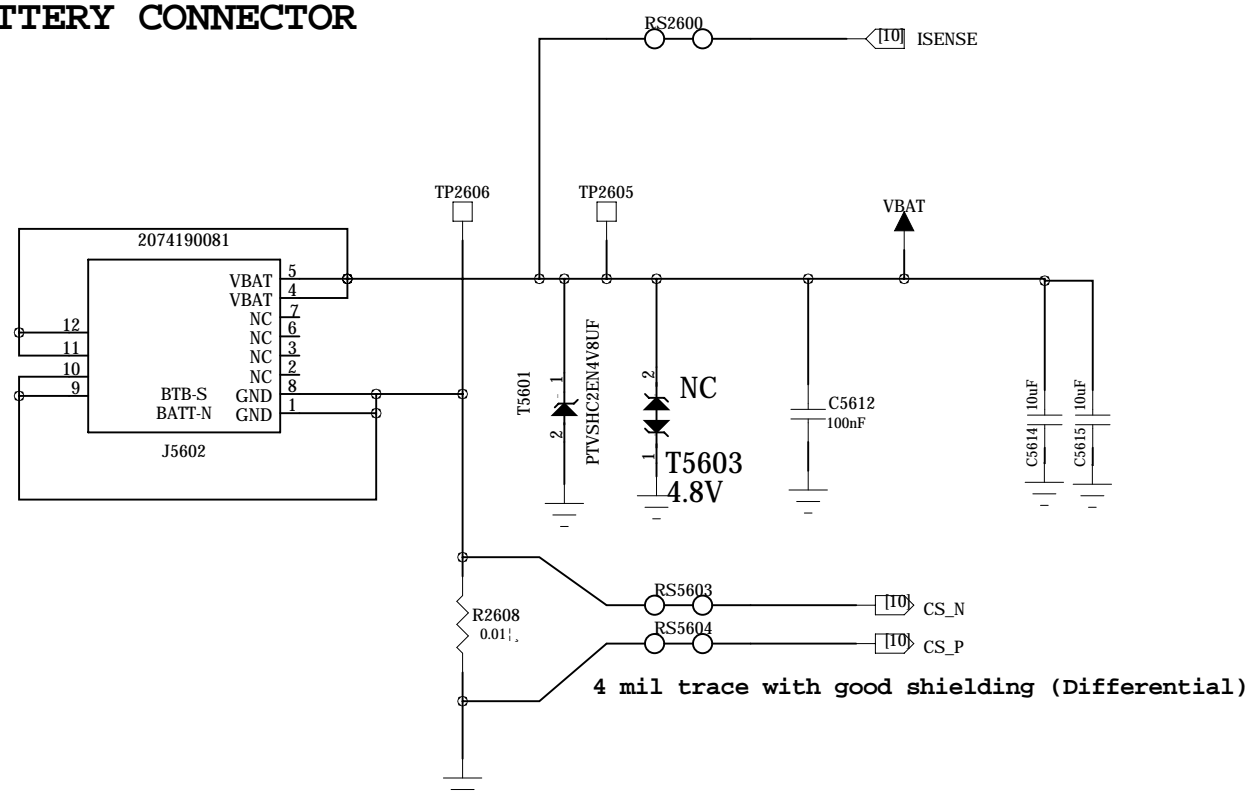
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## BATTERY CONNECTOR



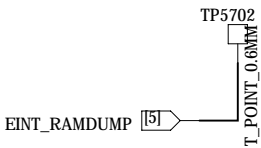
		COMPANY: <b>Tinno</b>			
		TITLE: <b>MT6765</b>			
DRAWN: <b>Marshall</b>	DATED: <b>2018-09-22A</b>				
CHECKED: <b>&lt;Checked By&gt;</b>	DATED: <b>&lt;Checked Date&gt;</b>	CODE: <b>P410</b>	SIZE: <b>D</b>	DRAWING NO: <b>P410</b>	REV: <b>V1.0</b>
QUALITY CONTROL: <b>&lt;QC By&gt;</b>	DATED: <b>&lt;QC Date&gt;</b>				
RELEASED: <b>&lt;Released By&gt;</b>	DATED: <b>&lt;Release Date&gt;</b>	SCALE: <b>&lt;Scale&gt;</b>			SHEET: <b>04</b> <b>33</b>

Debug Test Point

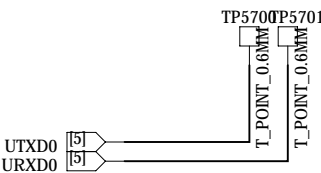
Fixture Test Point

REVISION RECORD			
LTR	ECO NO.	APPROVED	DATE

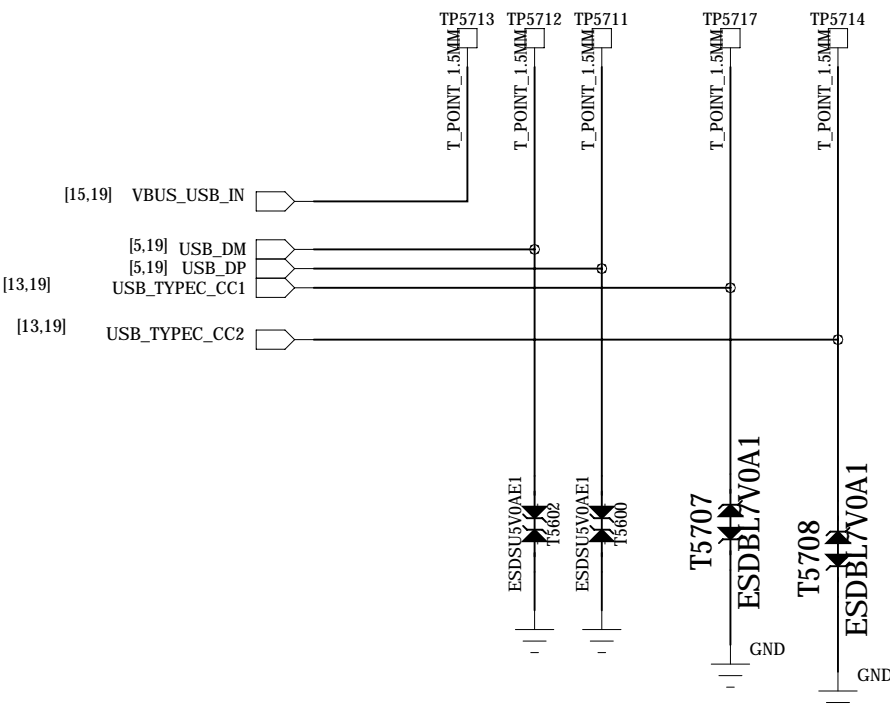
RAM dump



UART



USB

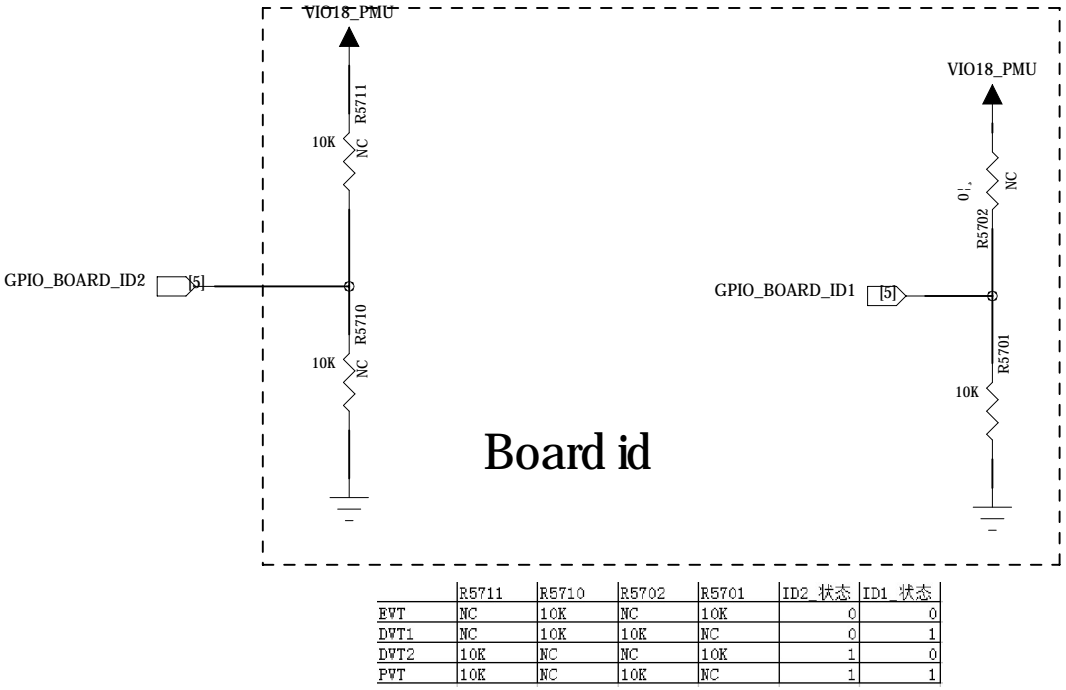
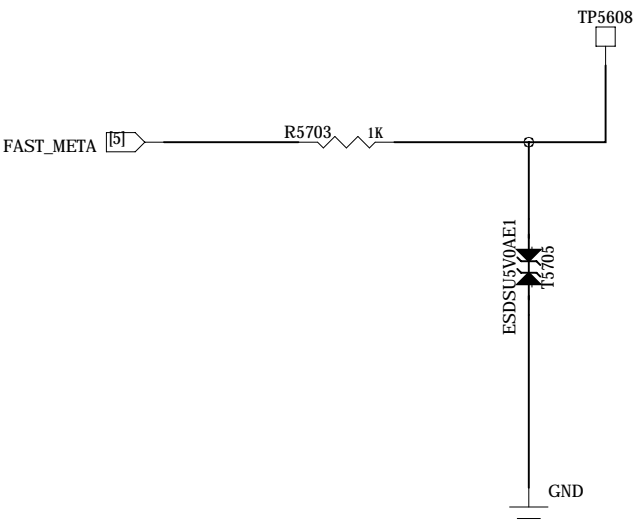


Batery  
Refer to Page 26

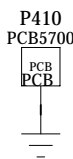
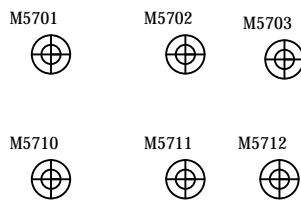
CTP  
Refer to Page 56

Key  
Refer to Page 55

Fast META

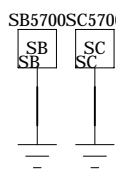


Mark

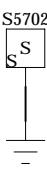


shielding can

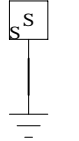
BB



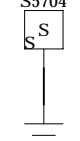
PDN



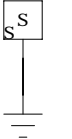
RF



4G\_PA



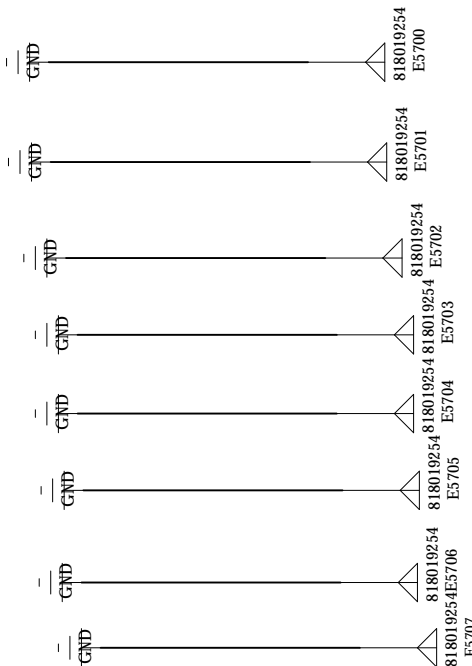
WCN



Metal Grounding

Top

Bottom



COMPANY: Tinno			
TITLE: MT6765			
DRAWN: Marshall	DATED: 2018-09-22A		
CHECKED: <Checked By>	DATED: <Checked Date>	CODE: P410	SIZE: D
QUALITY CONTROL: <QC By>	DATED: <QC Date>	DRAWING NO: P410	REV: V1.0
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>	SHEET: 86 33



D

C

B

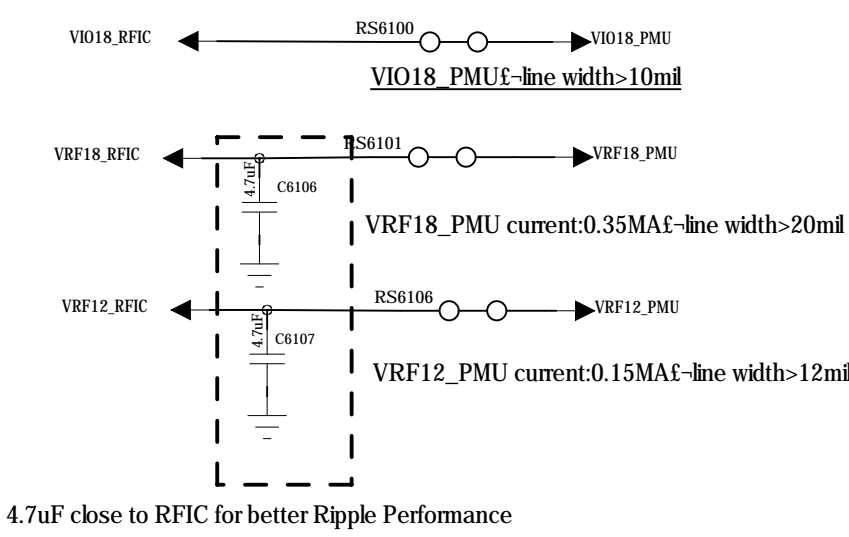
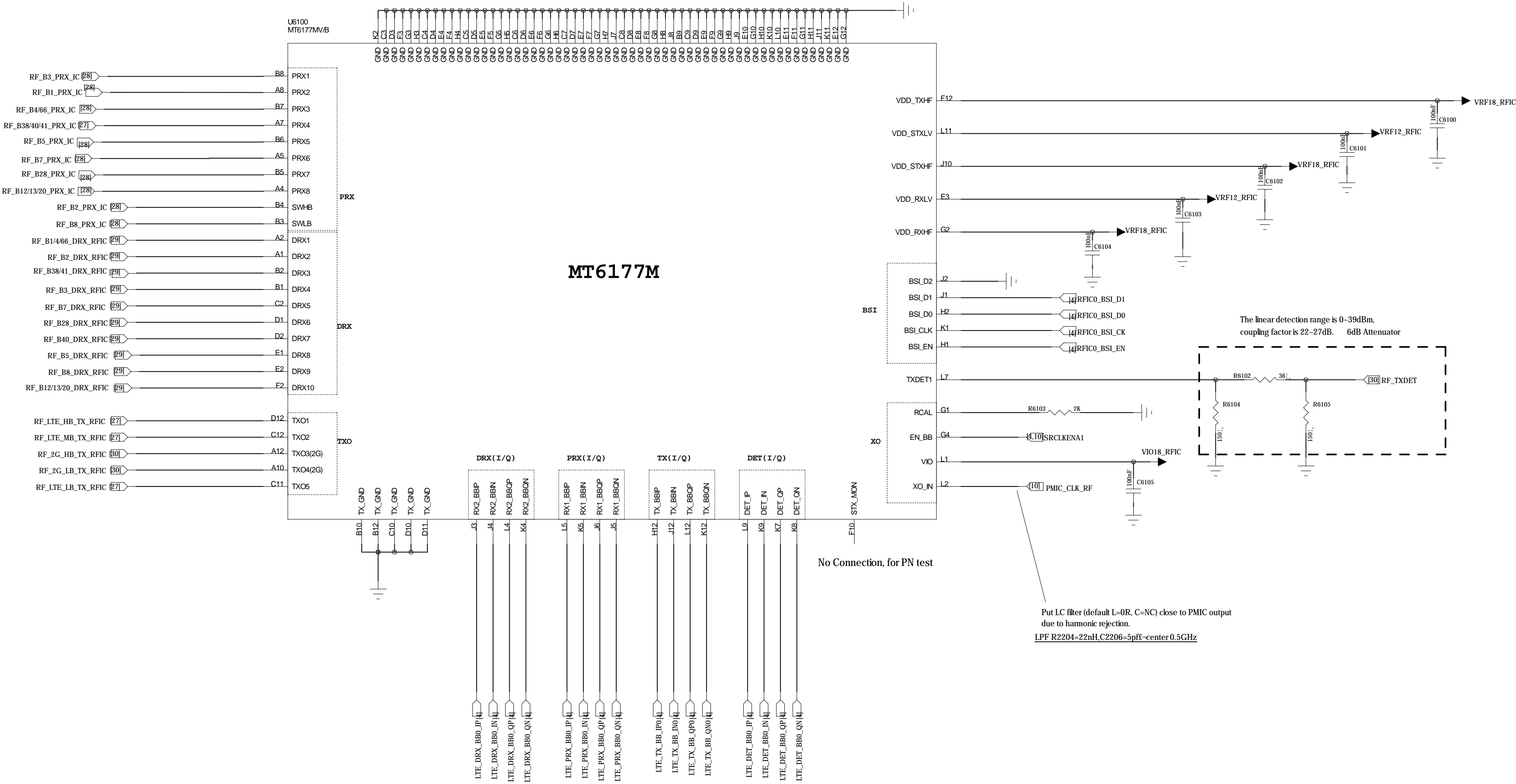
A

D

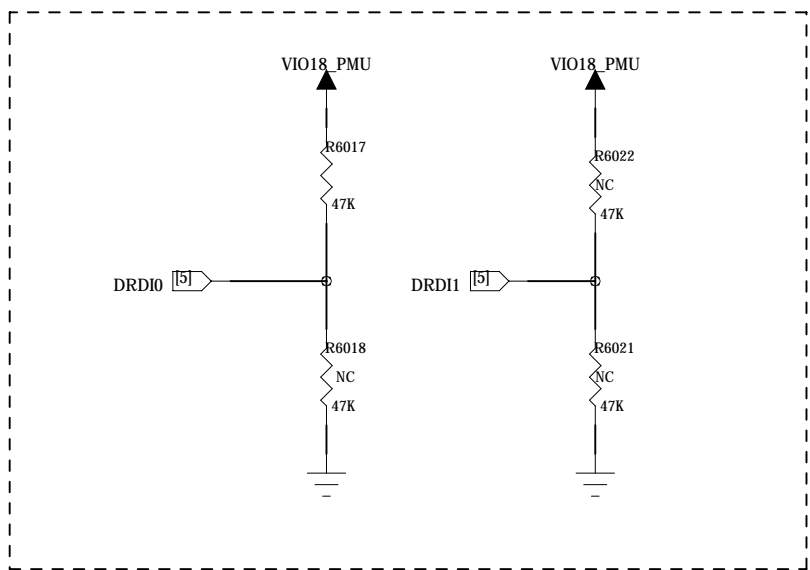
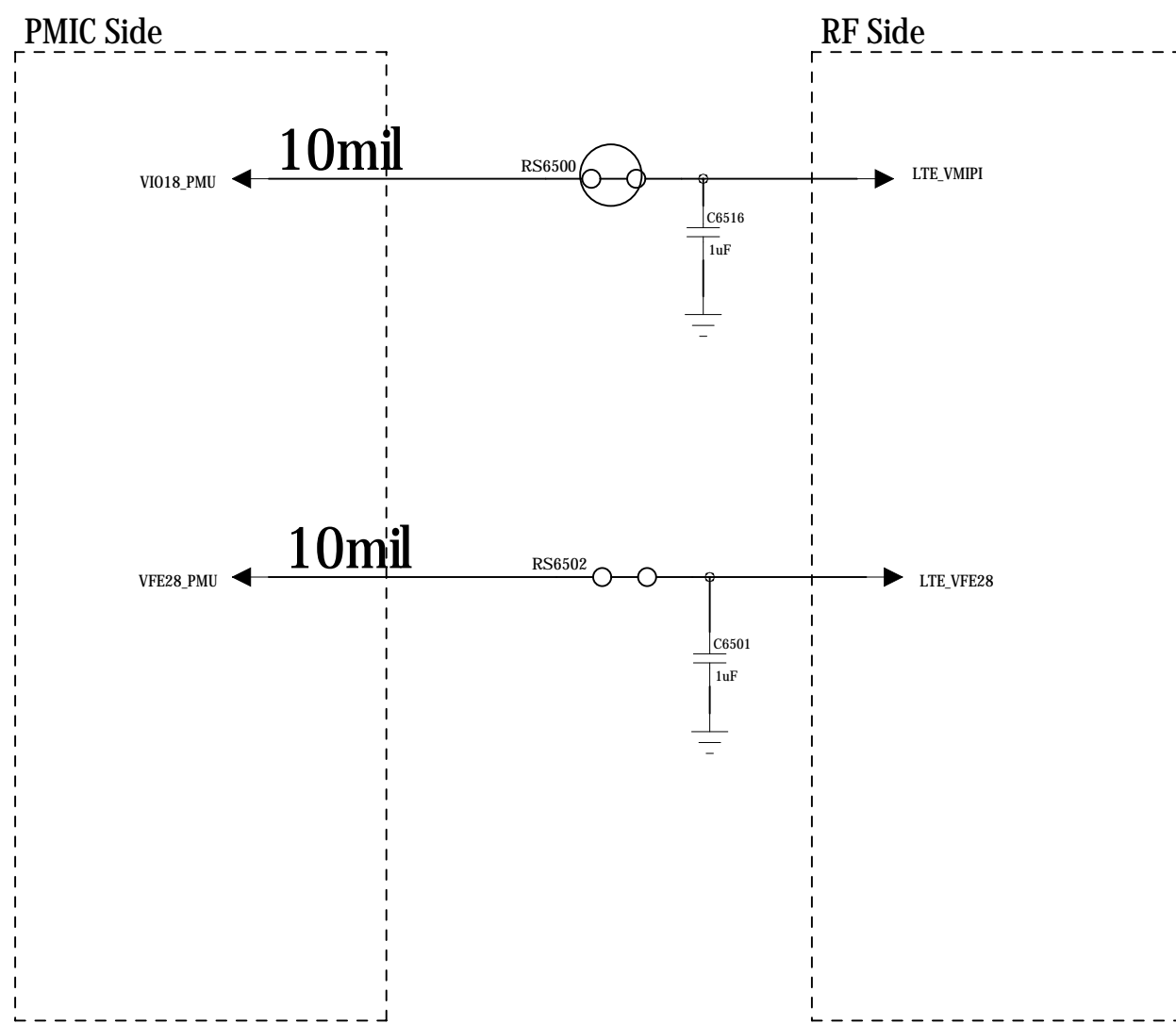
C

B

A



PMIC to RF power net transfer



DRDI

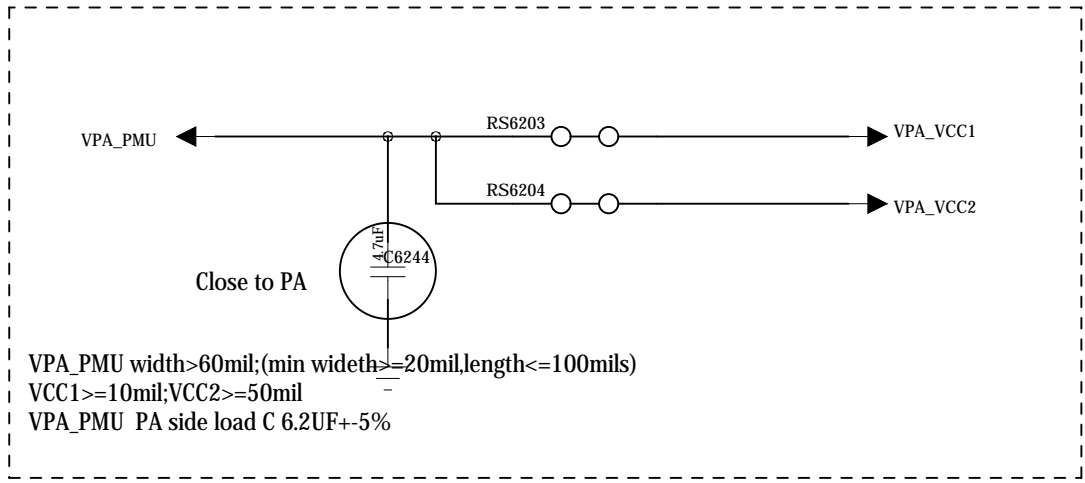
SKU	R6017	R6018	R6022	R6021
EU	47K	NC	NC	NC
LA	NC	47K	NC	NC
AP	NC	NC	47K	NC

DRAWN:	Marshall	DATED:	2018-09-22A
CHECKED:	<Checked By>	DATED:	<Checked Date>
QUALITY CONTROL:	<QC By>	DATED:	<QC Date>
RELEASED:	<Released By>	DATED:	<Release Date>

COMPANY: Tinn			
TITLE: MT6177			
CODE: P410	SIZE: D	DRAWING NO: P410	REV: V1.0
SCALE: <Scale>			SHEET: 26 33

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

CO-lay	C6243	C6247
B4	NC	33pF
B41	33pF	NC



VCC10V VCC20V

Band	RX
B40(pin37)	TRX1(pin41)
B41(pin39)	TRX2(42) pin33,pin35

3/4G\_PAIN\_HB

3/4G\_PAIN\_MB

3/4G\_PAIN\_LB

4C PA input need LPF for harmonic rejection

Thermistor / To sense board level temperature

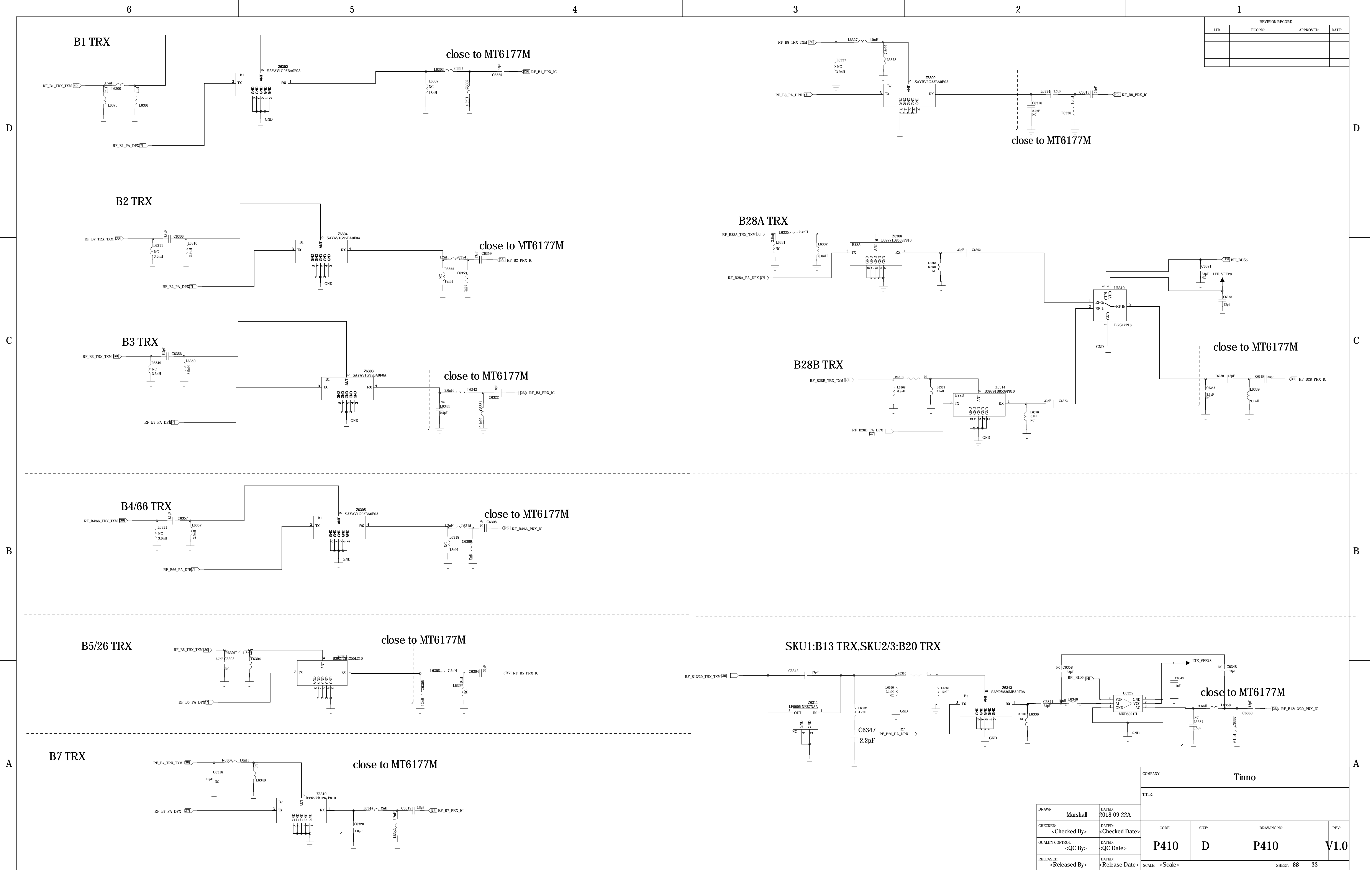
Thermister have to be placed as close to B7&B1 PA as possible, routing with ground guard.  
RT900 close to PA , and located in the same layer

close to MT6177M

CO-lay	C6248	C6248	C6239	C6242
B40_HBRX	NC	33pF	33pF	NC
B40_TXM	NC	33pF	NC	33pF
B28B	33pF	NC	NC	NC

DRAWN:	Marshall	DATED:	2018-09-22A
CHECKED:	<Checked By>	DATED:	<Checked Date>
QUALITY CONTROL:	<QC By>	DATED:	<QC Date>
RELEASED:	<Released By>	DATED:	<Release Date>

COMPANY: Tinno			
TITLE: MT6765			
CODE: P410	SIZE: D	DRAWING NO: P410	REV: V1.0
SCALE: <Scale>		SHEET: 37	33



6

5

4

3

2

1

D

C

B

A

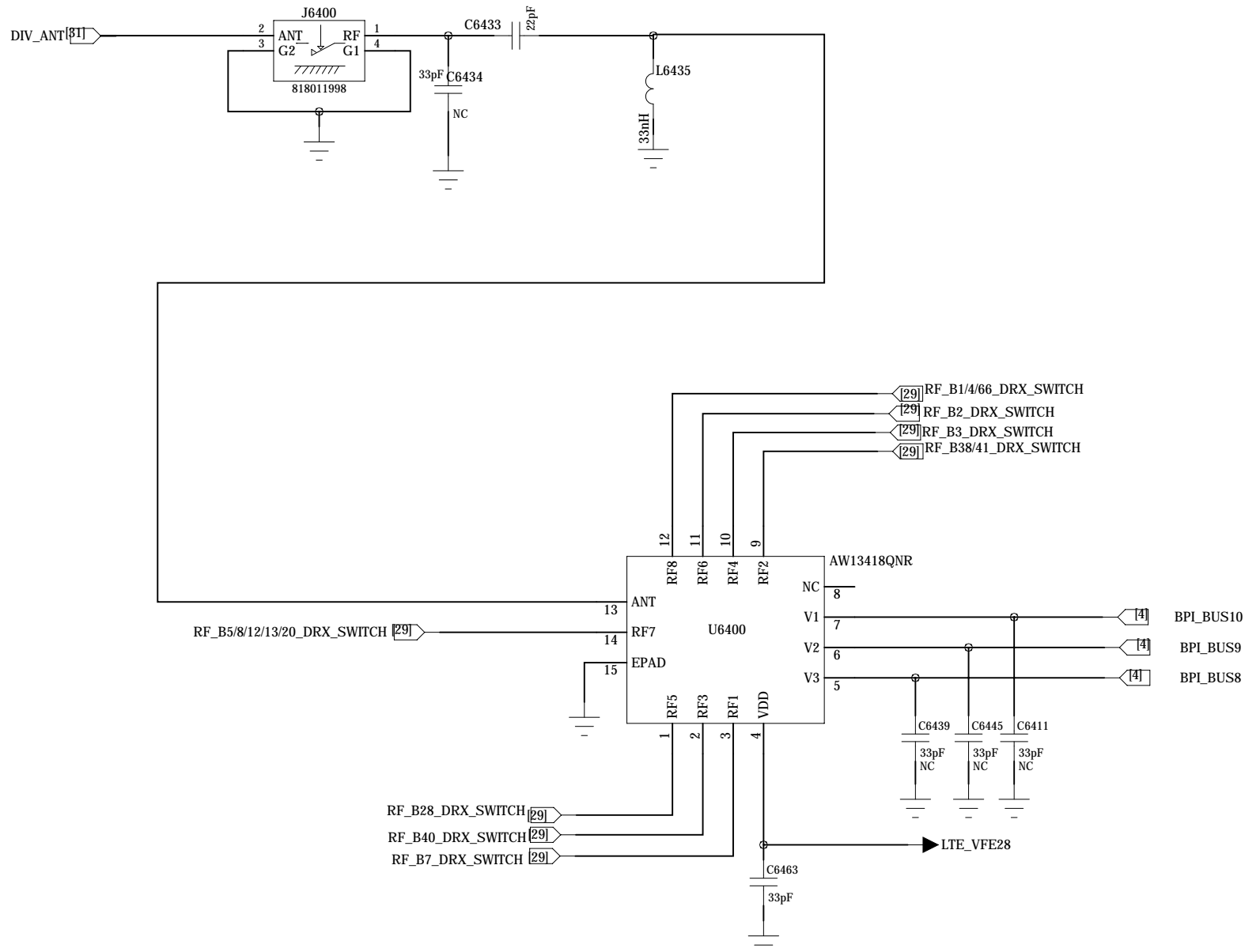
D

C

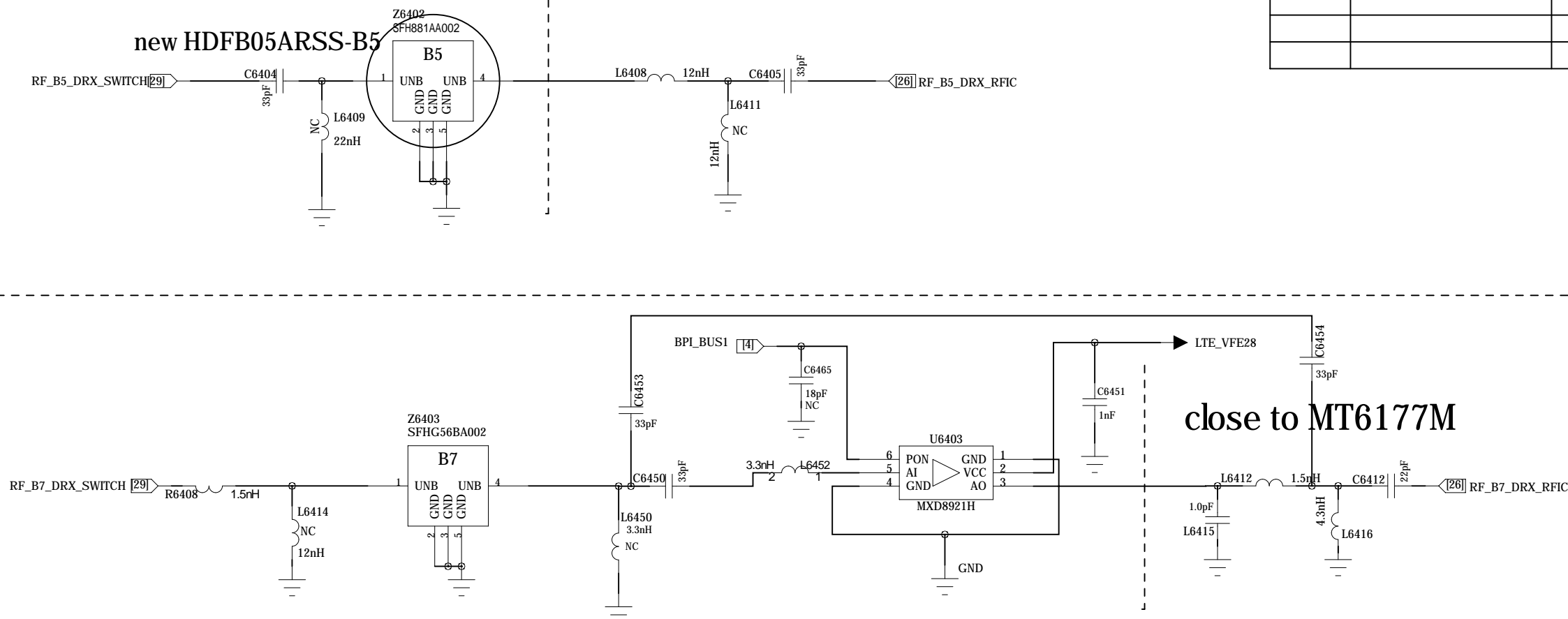
B

A

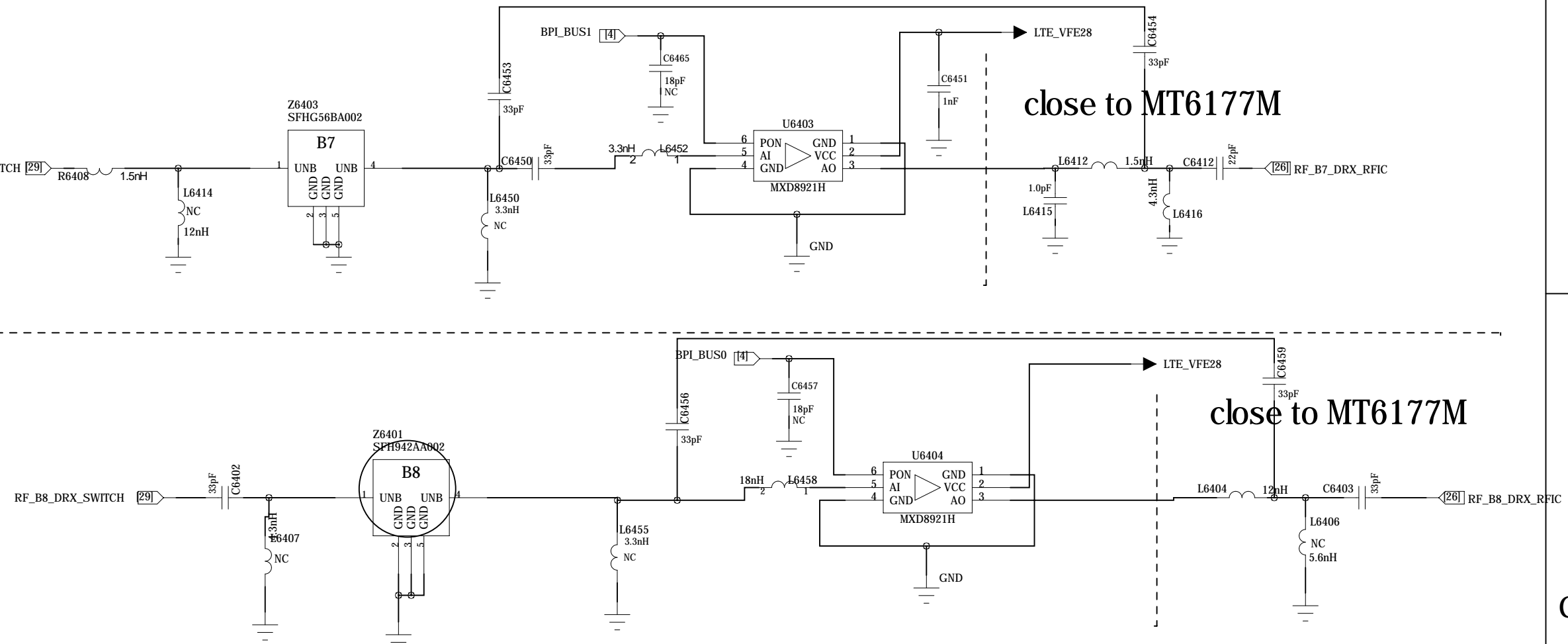
REVISION RECORD			
LTR	ECO NO.	APPROVED	DATE



B7 DRX

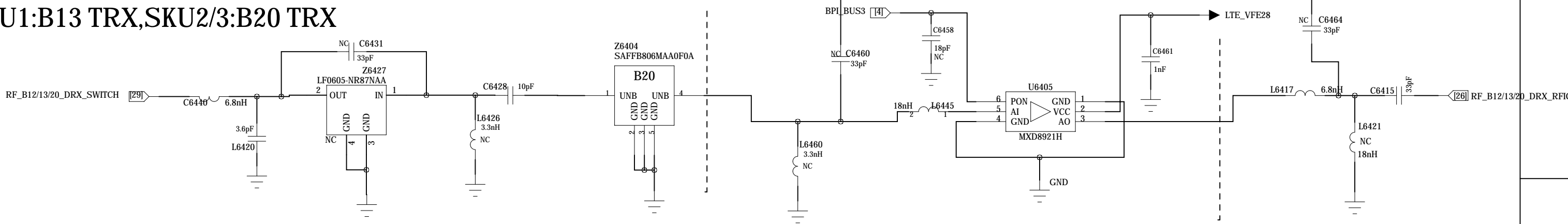


B8 DRX



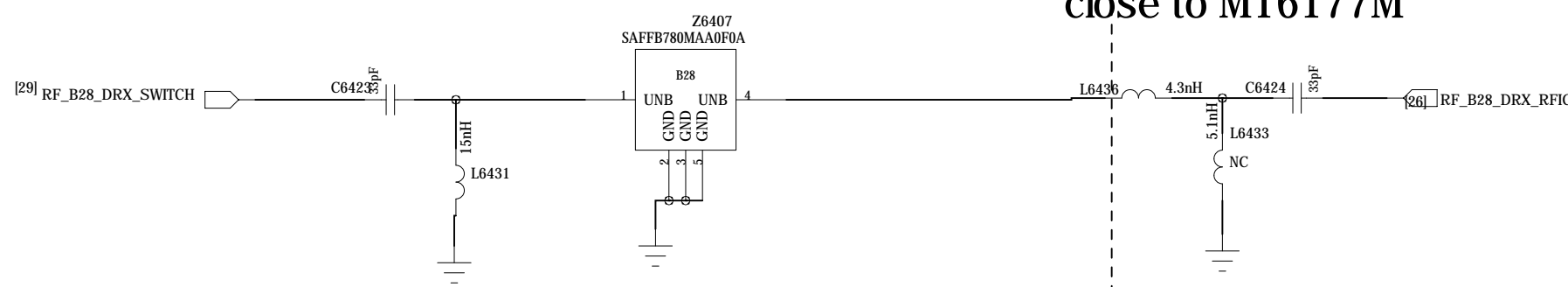
SKU1:B13 TRX,SKU2/3:B20 TRX

close to MT6177M



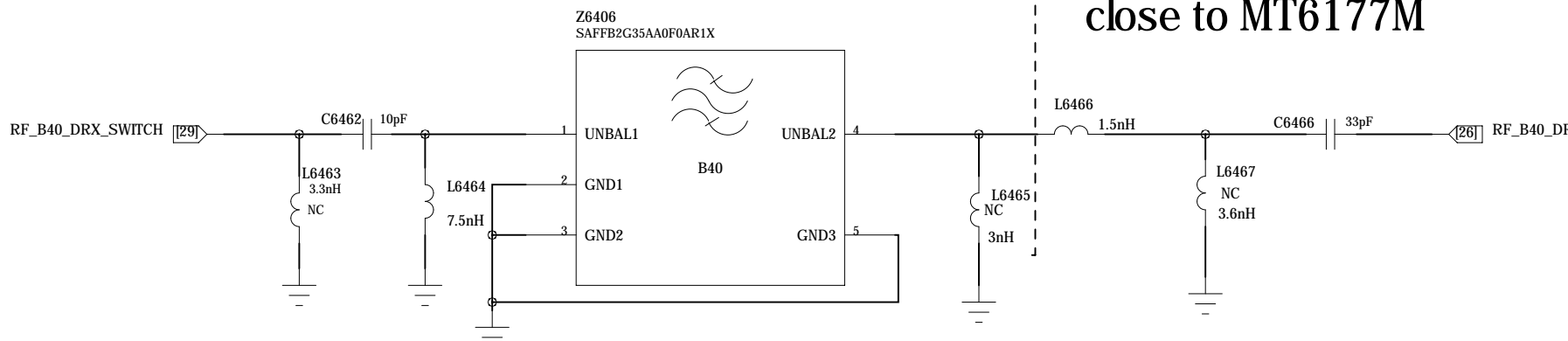
B28 DRX

close to MT6177M



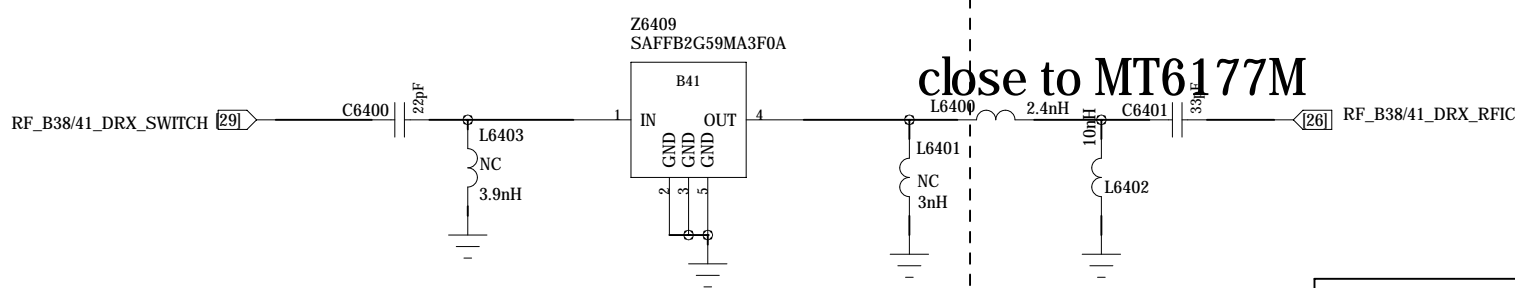
B40 DRX

close to MT6177M

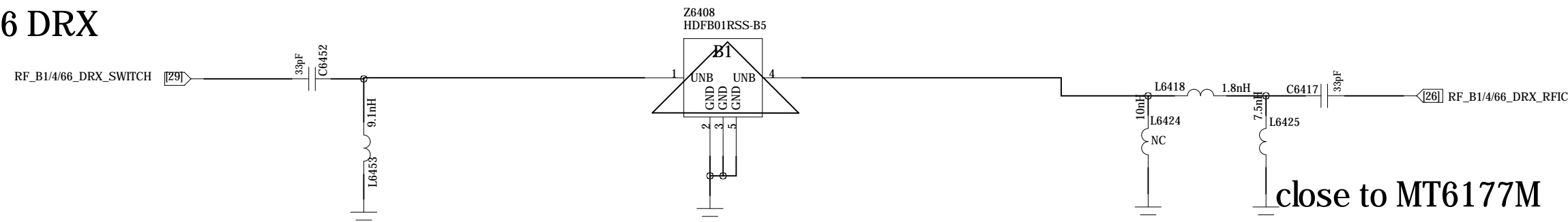


B41 DRX

close to MT6177M

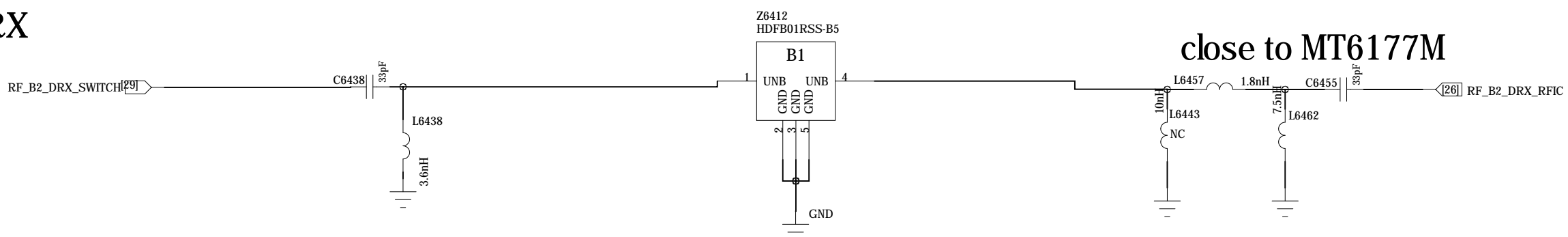


B1/4/66 DRX

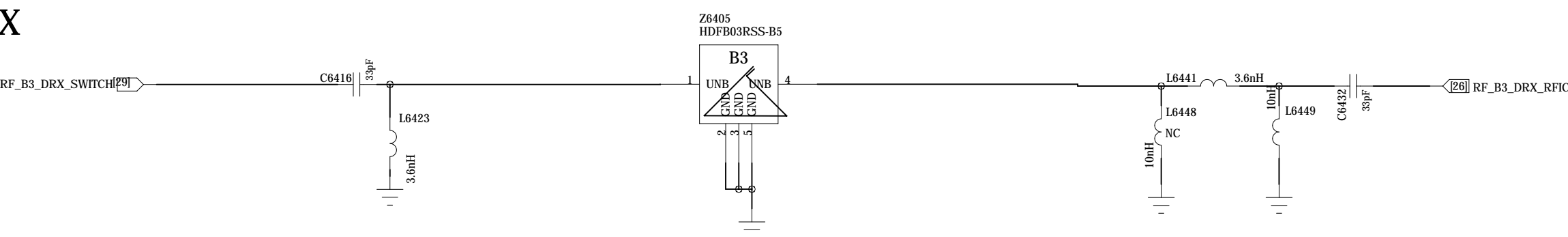


B2 DRX

close to MT6177M

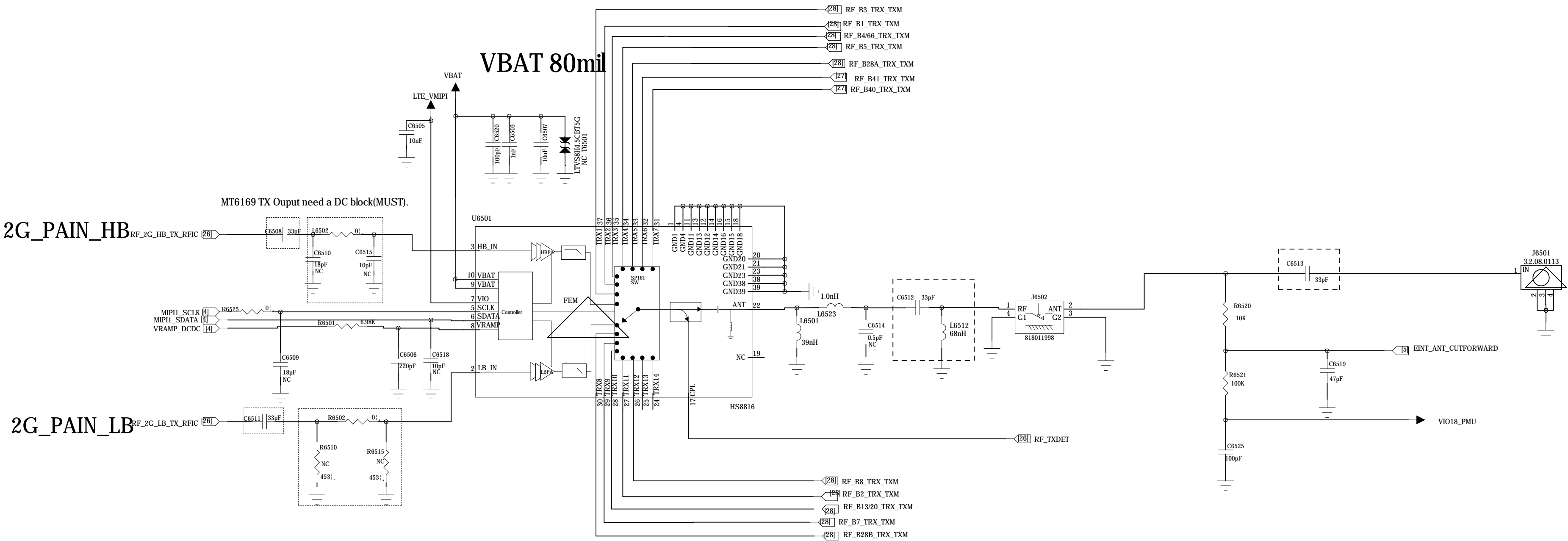


B3 DRX



COMPANY: Tinnco			
TITLE: MT6765			
DRAWN: Marshall	DATED: 2018-09-22A	CODE: P410	SIZE: D
CHECKED: <Checked By>	DATED: <Checked Date>	DRAWING NO: P410	REV: V1.0
QUALITY CONTROL: <QC By>	DATED: <QC Date>	SCALE: <Scale>	SHEET: 20 33
RELEASED: <Released By>	DATED: <Release Date>		

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: Timno			
TITLE:			
DRAWN: Marshall	DATED: 2018-09-22A		
CHECKED: <Checked By>	DATED: <Checked Date>	CODE: P410	SIZE: D
QUALITY CONTROL: <QC By>	DATED: <QC Date>	DRAWING NO: P410	
RELEASED: <Released By>	DATED: <Release Date>	REV: V1.0	
SCALE: <Scale>		SHEET: 30 33	





