

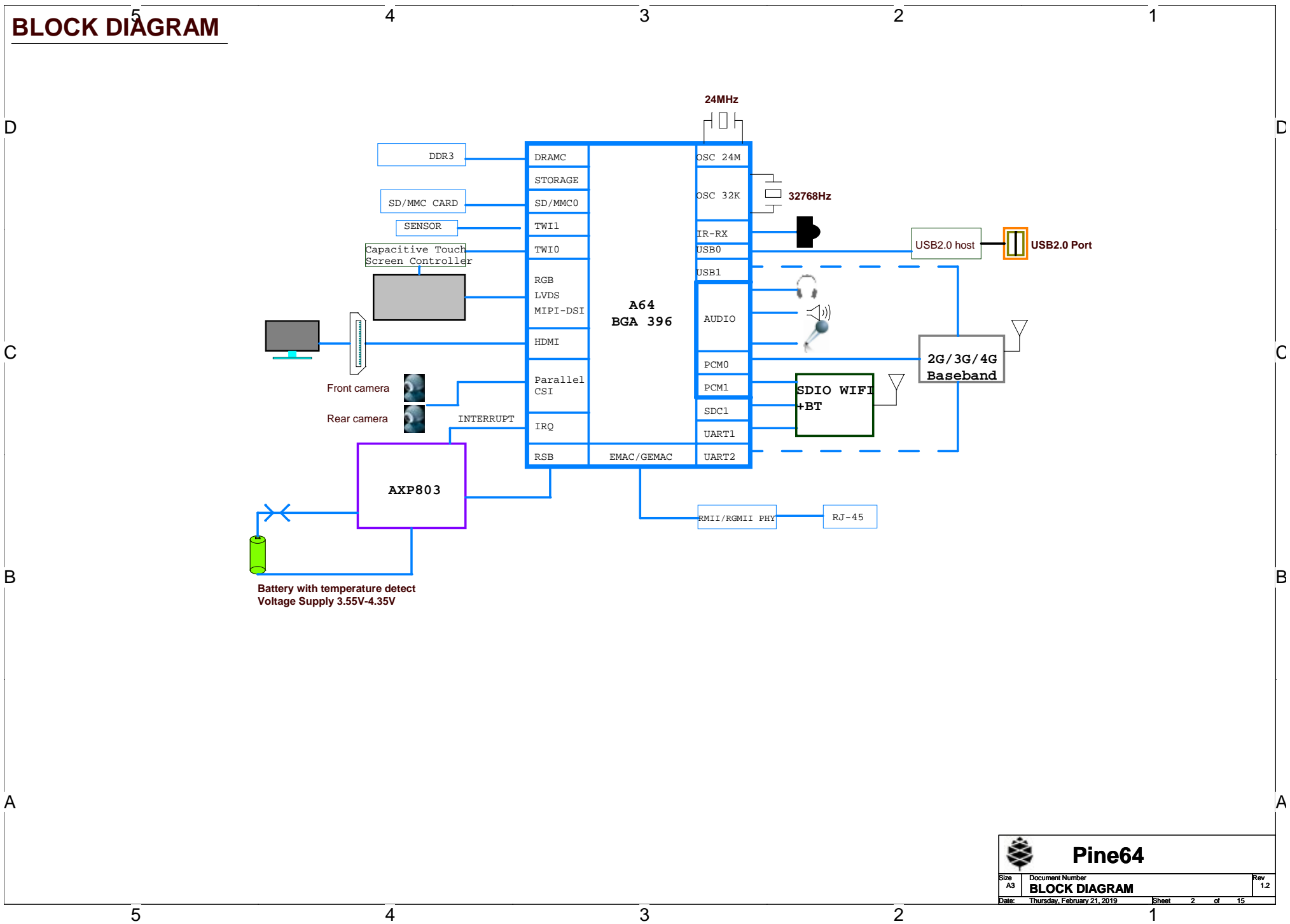
# VERSION HISTORY

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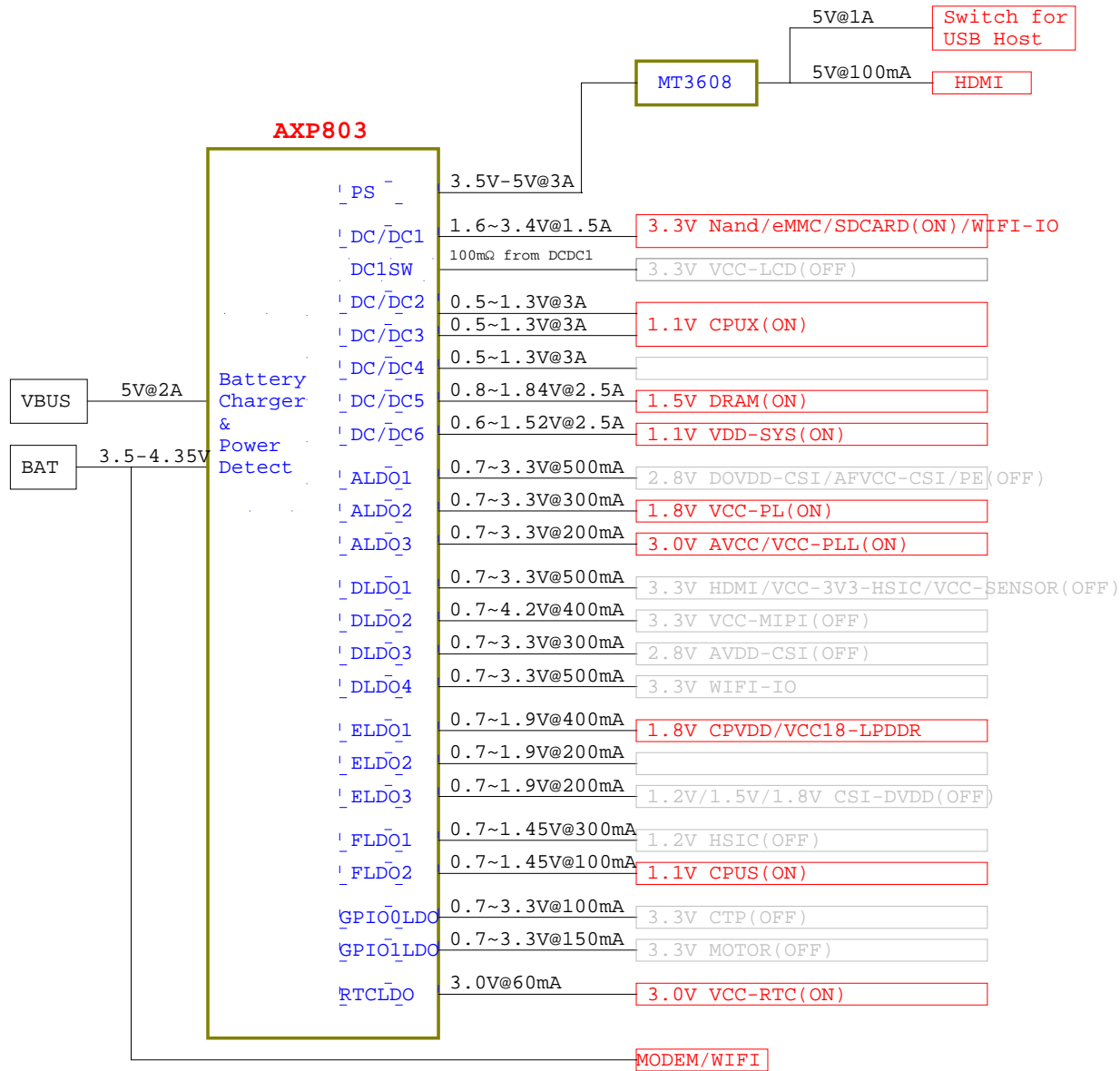
- P01: REVISION HISTORY
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- P04: MODEM-4G/SENSOR
- P06: PMIC/KEY
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Revision	Description	Date	Drawn	Checked	Approved
Ver 1.0	Release version				
Ver 1.2					

# BLOCK DIAGRAM

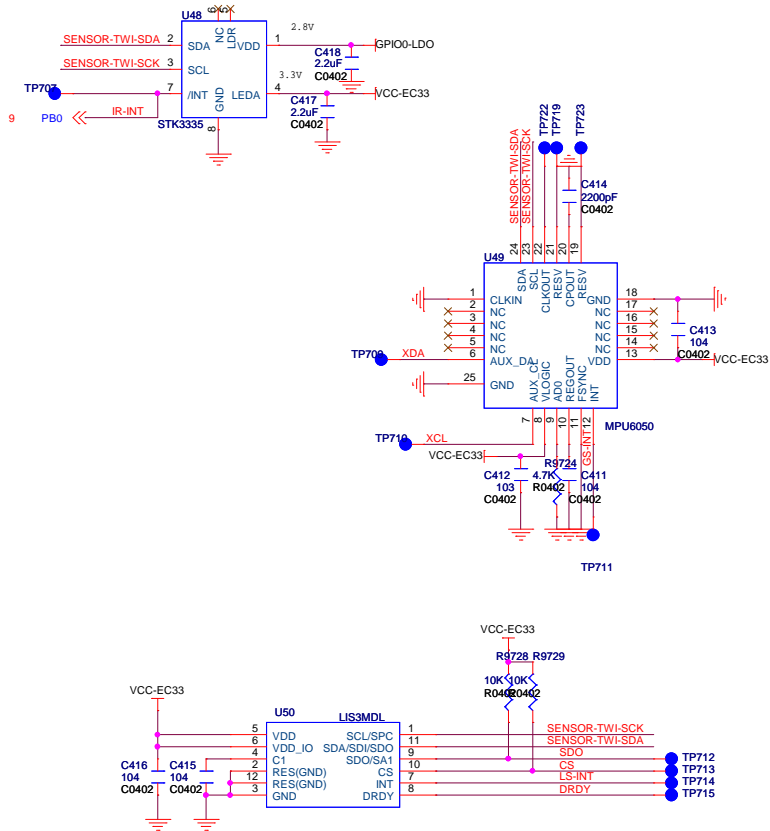


# POWER TREE



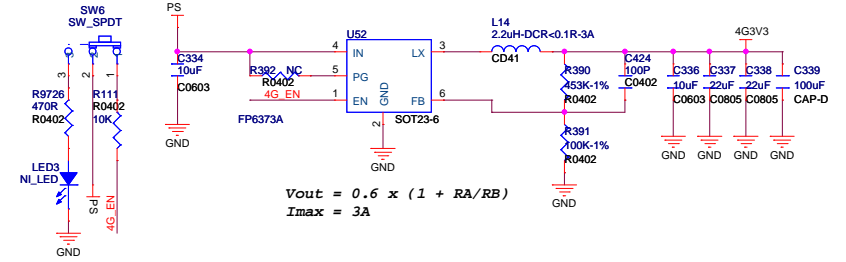
# SENSOR

- 9 TW11-SCK <-> SENSOR-TWI-SCK
- 9 TW11-SDA <-> SENSOR-TWI-SDA
- 9 GS-INT <-> GS-INT
- 9 LS-INT <-> LS-INT
- 9 PB5 <-> PCM\_CLK
- 9 PB7 <-> PCM\_DOUT
- 9 PB6 <-> PCM\_DIN
- 9 PB4 <-> PCM\_SYNC



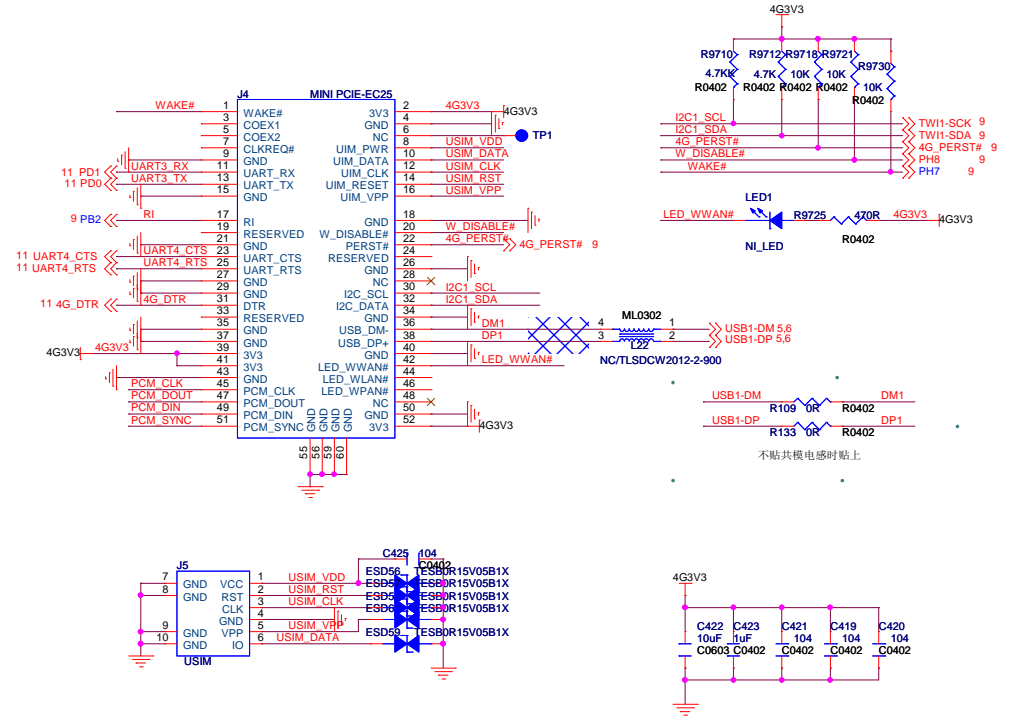
# 4G POWER

## Quectel\_EC25

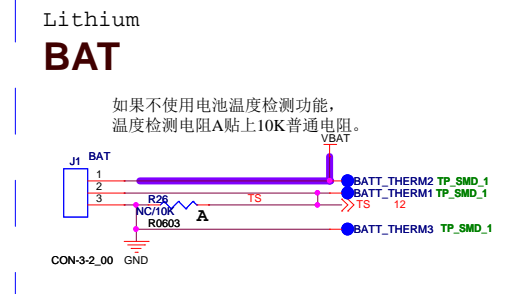
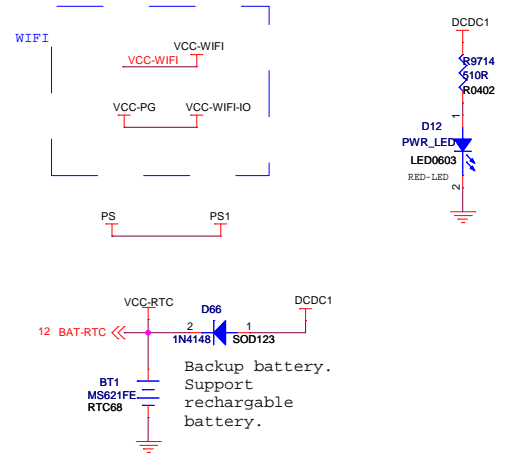
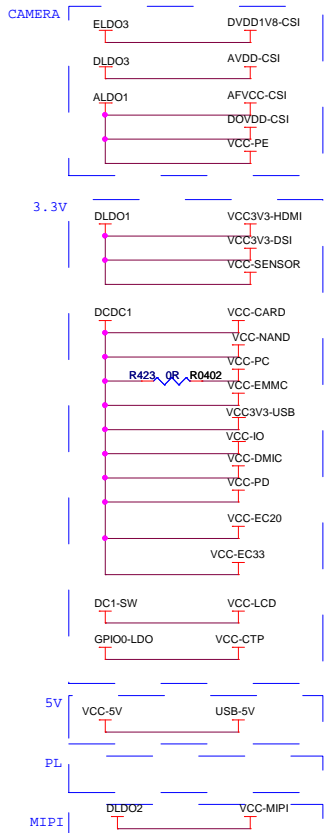
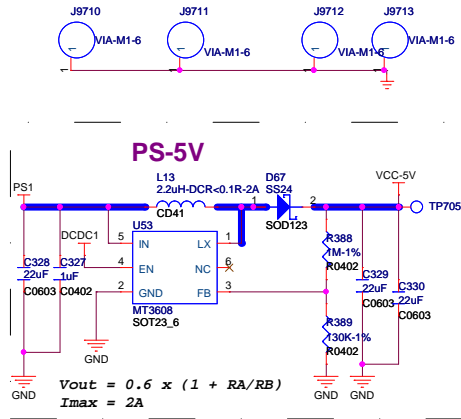


$$V_{out} = 0.6 \times (1 + RA/RB)$$

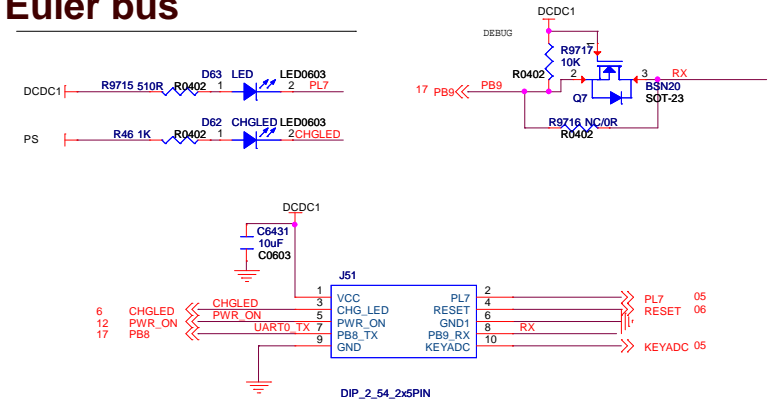
$$I_{max} = 3A$$



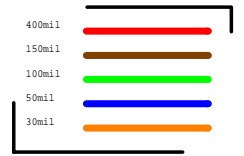
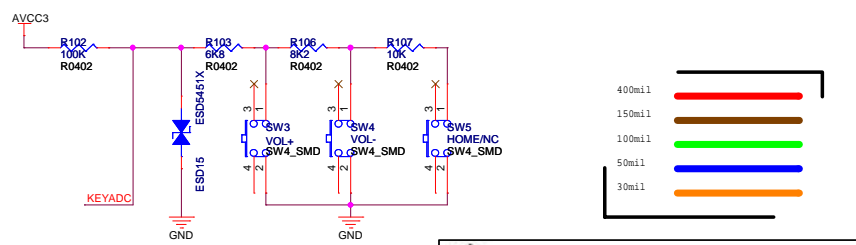
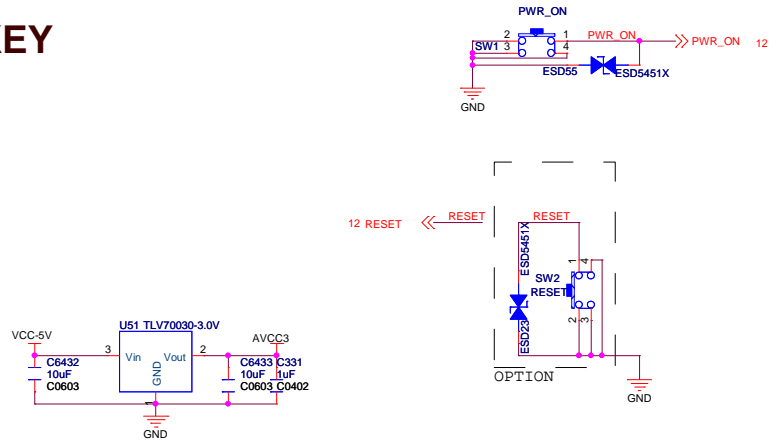
# Power



# Euler bus



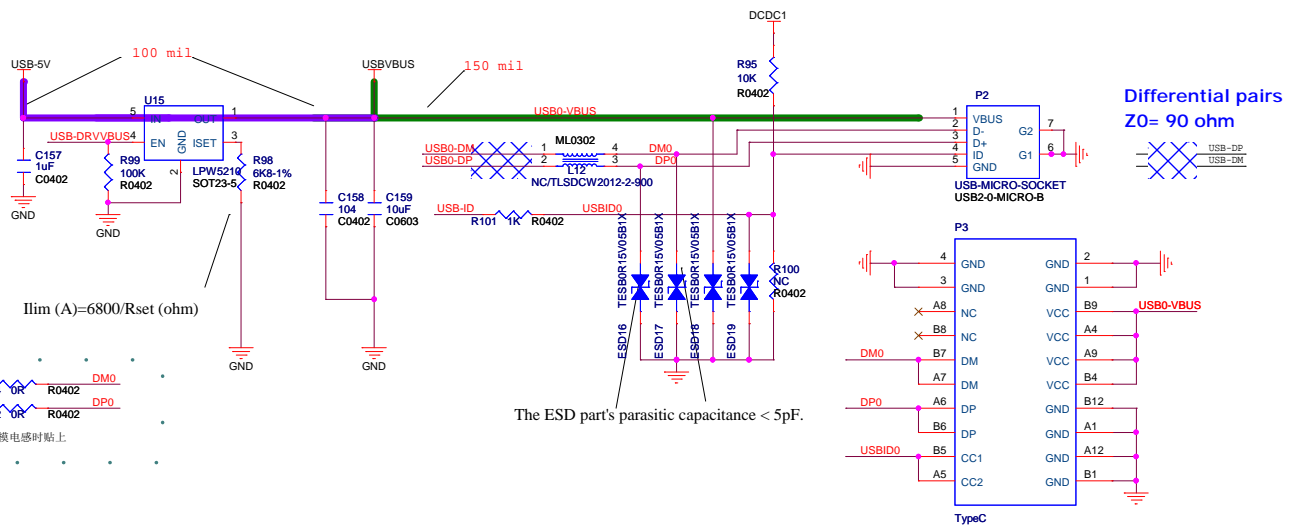
# KEY







### USB OTG



Differential pairs  
Z0= 90 ohm

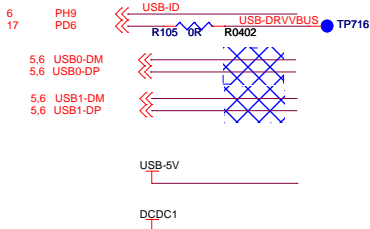


$$I_{lim} (A) = 6800 / R_{set} (ohm)$$

不贴共模电感时贴上

The ESD part's parasitic capacitance < 5pF.

TypeC 和Micro USB两个叠加一起，可以二选一



## Pine64

Size A3	Document Number <b>T-CARD/USB</b>	Rev 1.2
Date: Thursday, February 21, 2019 Sheet 8 of 15		




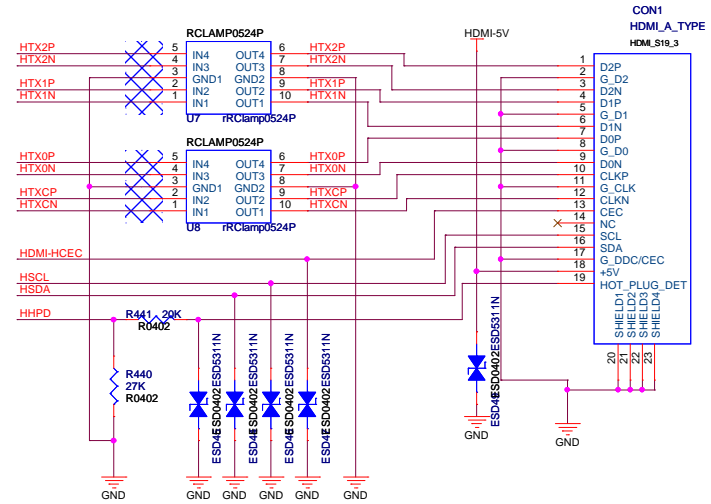
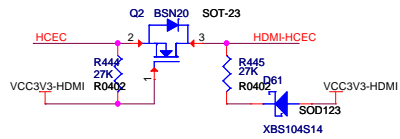
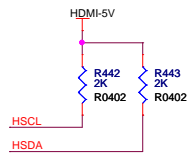
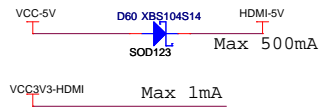


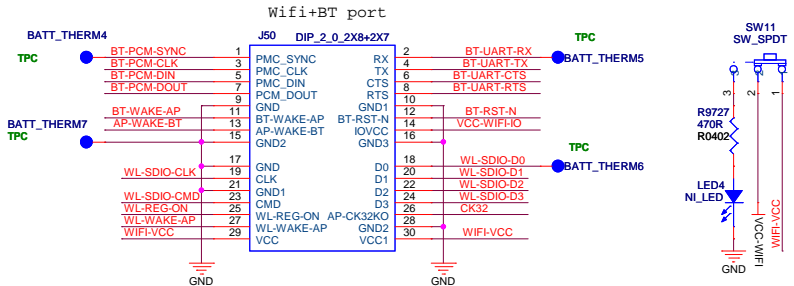
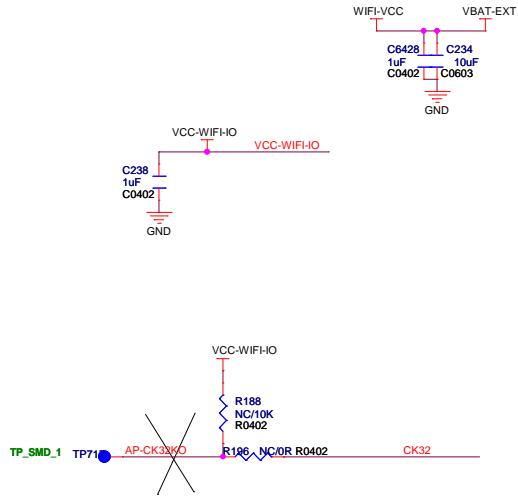
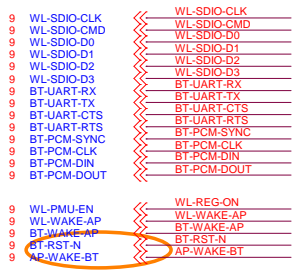


# HDMI

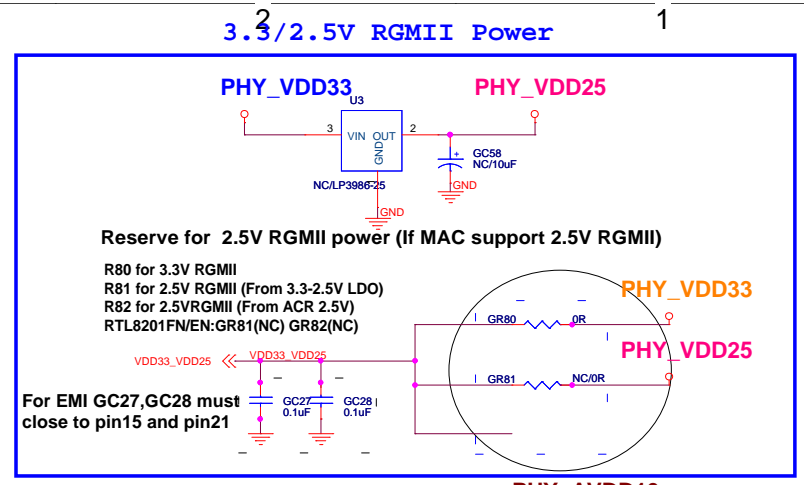
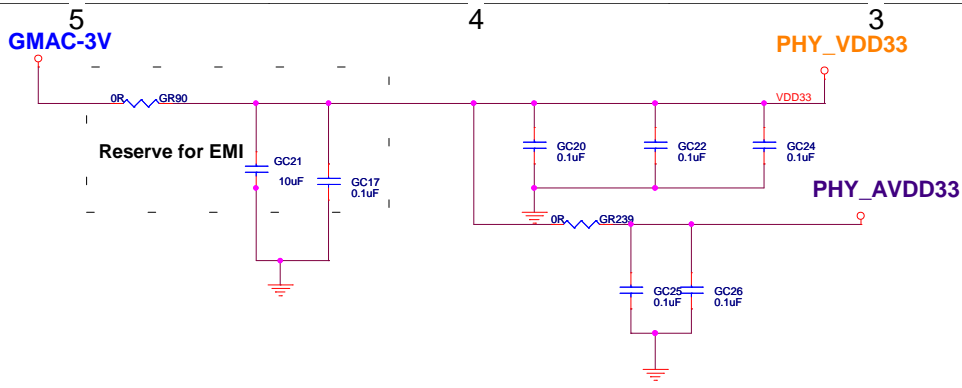


  
 Differential pairs  
 $Z_0 = 100\ \text{ohm}$



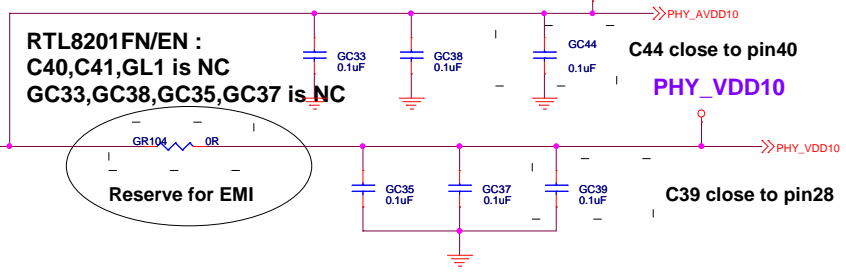
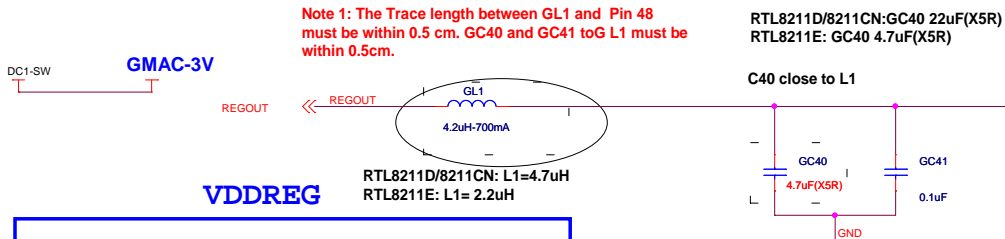




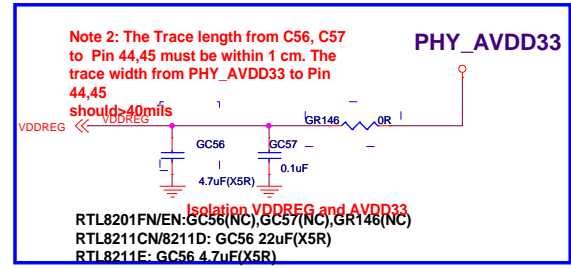


RTL8211CN/D/E	GL1	C56	U10	GR65	GR66	GR122	GC41/GC57
Enable switching regulator	○	○	✗	○	✗	✗	○
Disable switching regulator	✗	✗	○	✗	○	○	✗

Note 1: The Trace length between GL1 and Pin 48 must be within 0.5 cm. GC40 and GC41 to G L1 must be within 0.5cm.

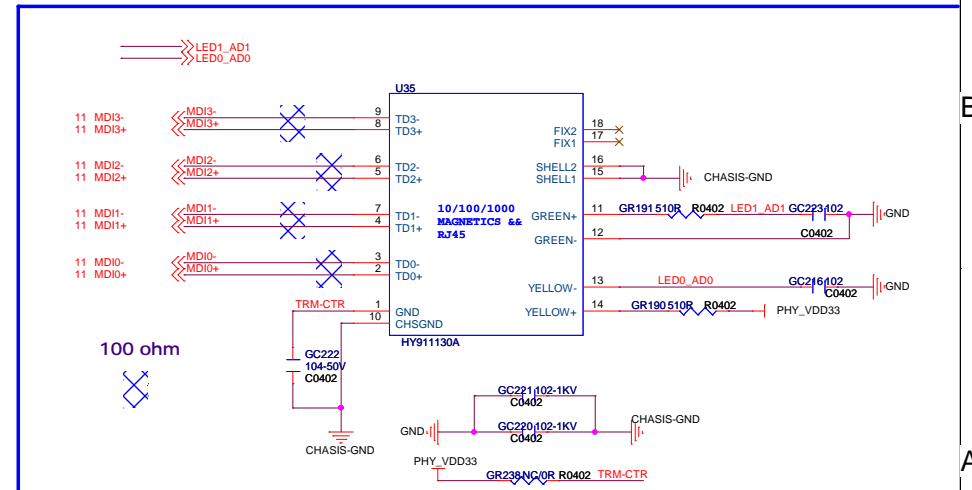
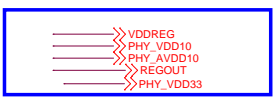


RTL8201FN/EN :  
C40,C41,GL1 is NC  
GC33,GC38,GC35,GC37 is NC



### External Power Source

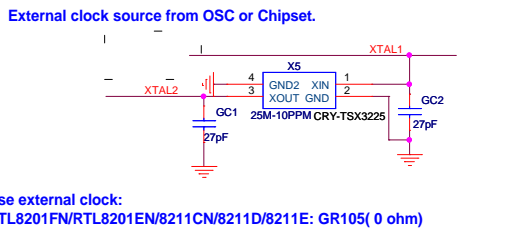
U10,GC69,GC68, GR122,GR120 and GR121 are only used by 8211CN/8211D/8211E application when switching regulator is disabled. For other applications, please remove them.



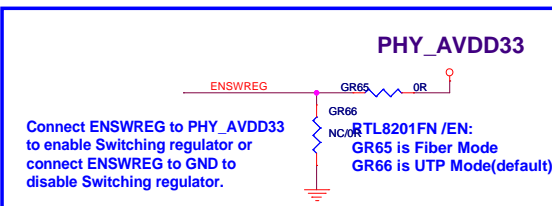
RESERVE

# RTL8211CN/8211D/8211E/8201FN/8201EN

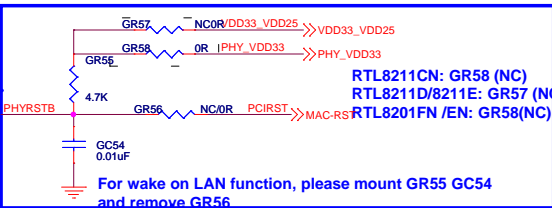
## External clock and Crystal



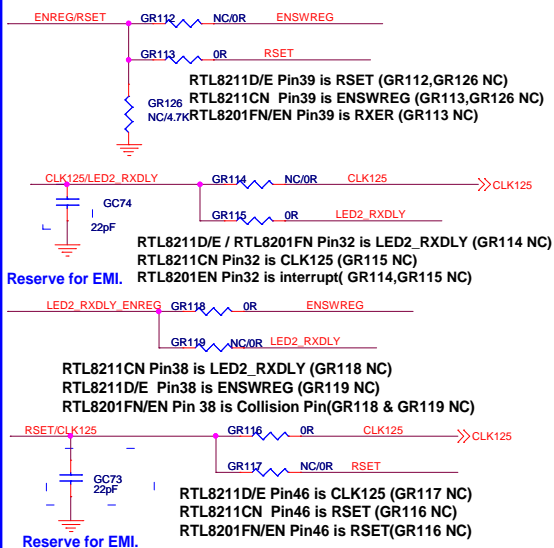
## Enable/Disable SWREG



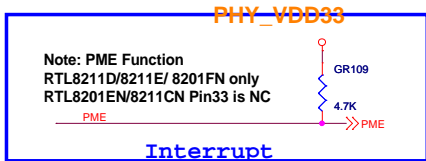
## PHY Reset



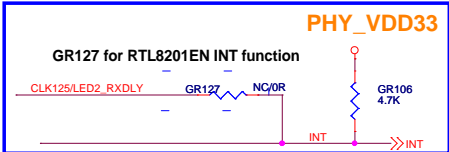
## RSET/ENSWREG/CLK125 Co-layout



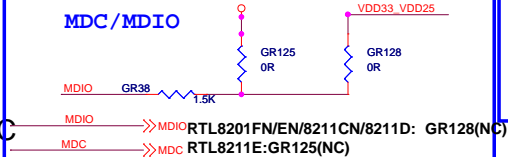
## PME



## Interrupt



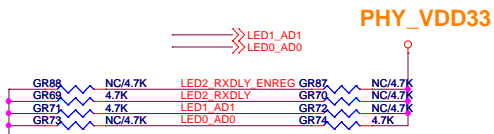
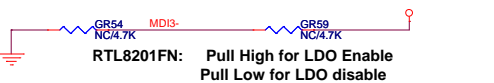
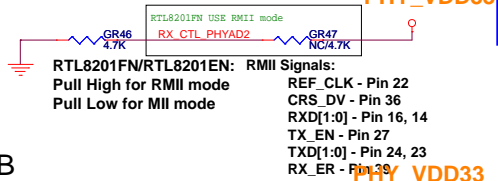
## MDC/MDIO



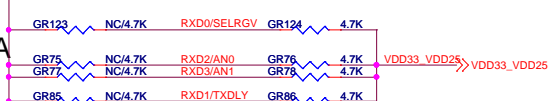
## Configuration Setting

### MII/RMII Setting only for RTL8201FN & RTL8201EN PHYAD2

### Setting only for RTL8211E



### RTL8211D/E: If use 2.5V RGMII please pull down (GR123)RXD0/SELRGV



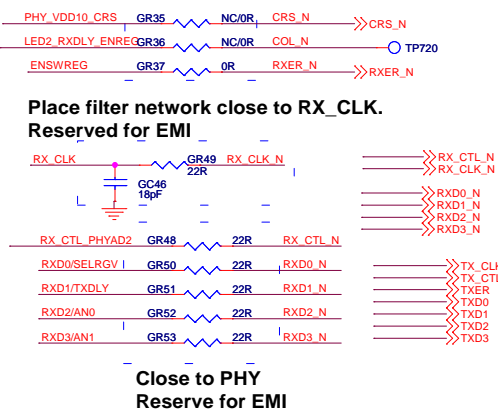
RTL8211CN/8211D/8211E:  
GR76,GR78: Config for all capability  
GR71,GR74: PHY Address=01 (8211D/8211CN)  
GR46,GR71,R74: PHY Address=001 (8211E)  
GR69,GR85: Without TX/RX Delay

RTL8201EN:  
GR88-MII Interface  
GR87-SMI Interface  
GR71,GR74: PHY Address=01  
Other resistors are NC

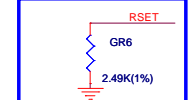
RTL8201FN:  
R78 : REF\_CLK Input  
R77: REF\_CLK Output  
R69,R71,R74: PHY Address=001  
Other resistors are NC

## RGMII /RMII

### R35,36,37 Only for RTL8201FN/EN



### RSET



### Others

