

VERSION HISTORY

4

3

2

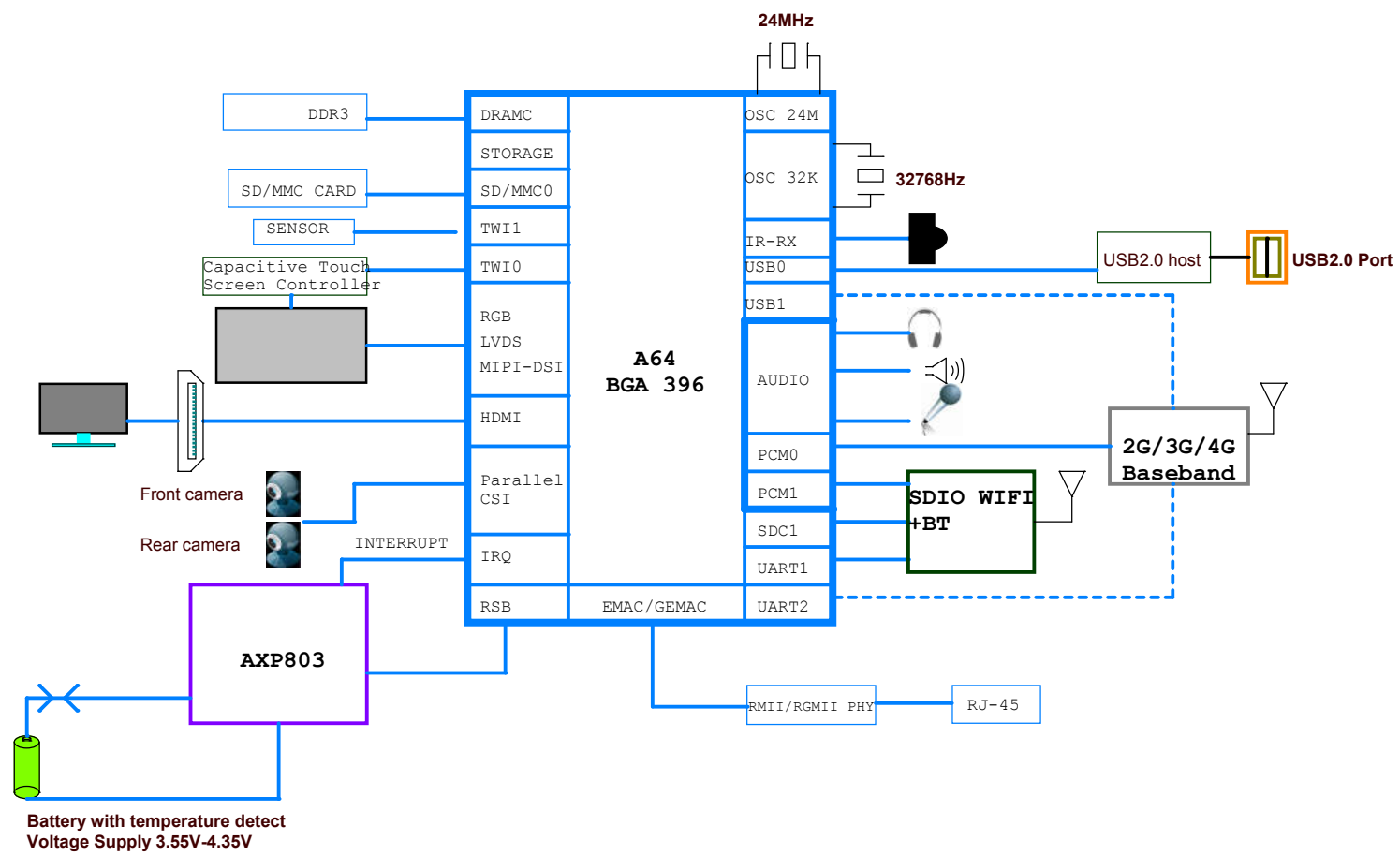
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Index:

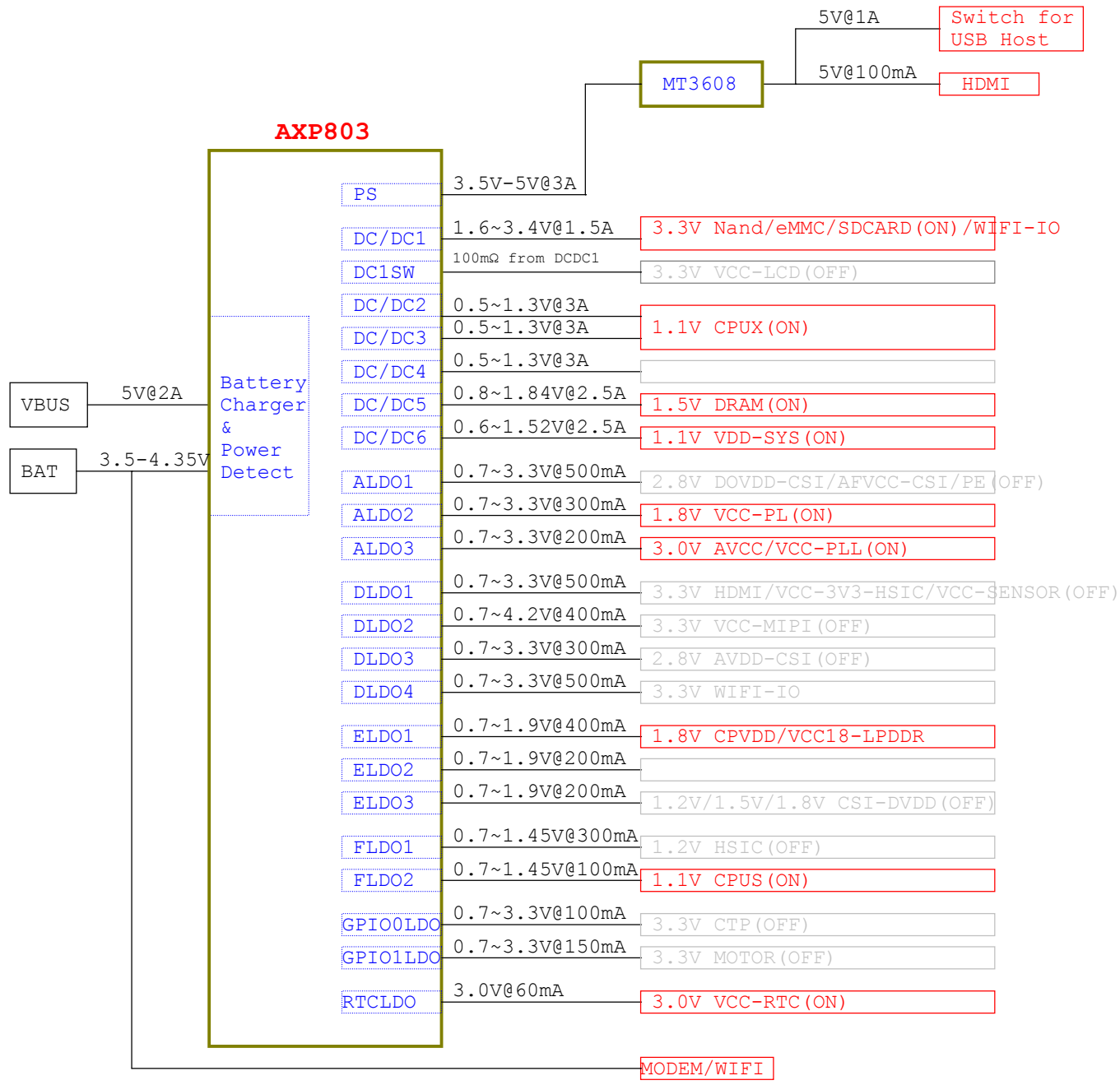
- P01: REVISION HISTORY
- P02: BLOCK DIAGRAM
- P03: POWER TREE
- P04: MODEM-4G/SENSOR
- P06: PMIC/KEY
- P07: EMMC
- P08: AUDIO
- P09: USB
- P10: CAMREA
- P11: LCD
- P13: HDMI
- P15: WIFI+BT
- P16: CTP/IR
- P17: PCI
- P18: Euler e Connector
- P19: Euler e Connector

Revision	Description	Date	Drawn	Checked	Approved
Ver 1.1	Modify LCD				
Ver 1.2	Add RGB LED10				

BLOCK DIAGRAM



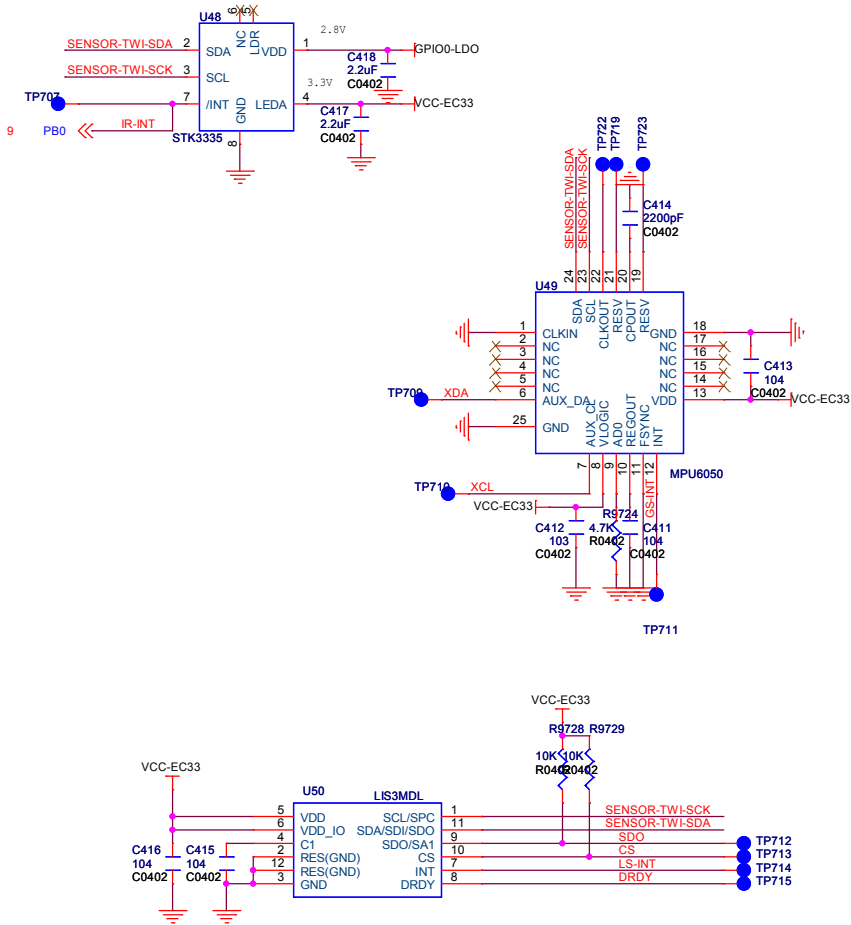
POWER TREE



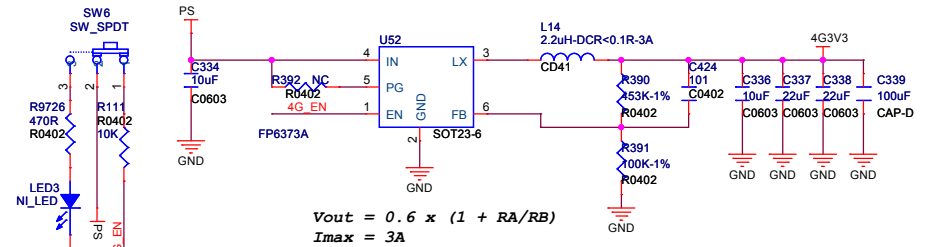
9 TWH-SCK << SENSOR-TWI-SCK
 9 TWH-SDA << SENSOR-TWI-SDA
 9 GS-INT << GS-INT
 9 LS-INT << LS-INT

9 PB5 << PCM_CLK
 9 PB7 << PCM_DOUT
 9 PB6 << PCM_DIN
 9 PB4 << PCM_SYNC

SENSOR



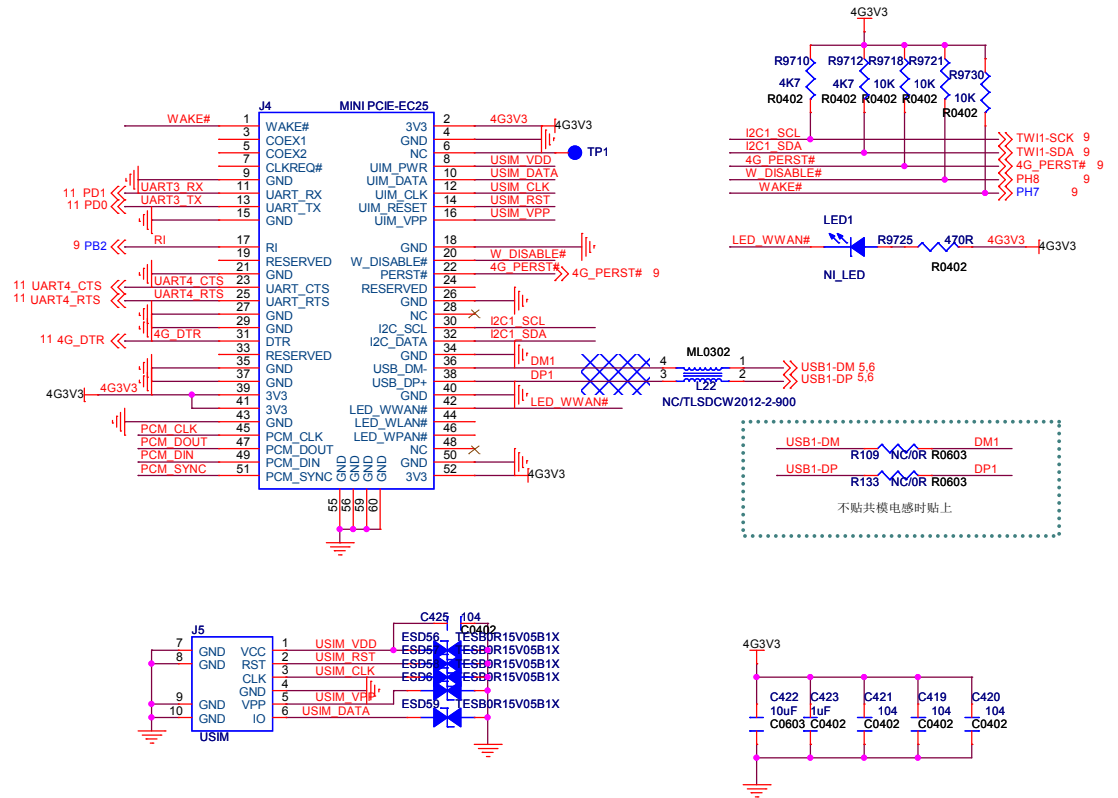
4G POWER



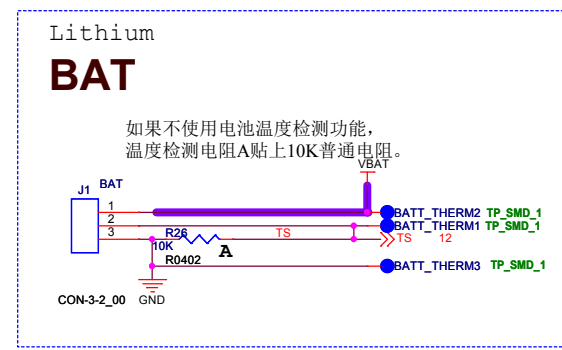
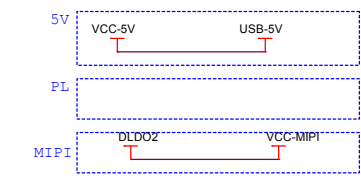
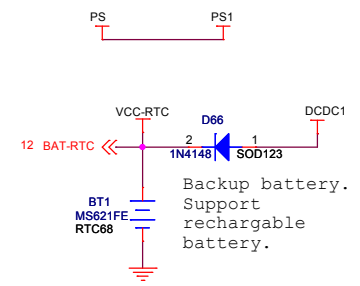
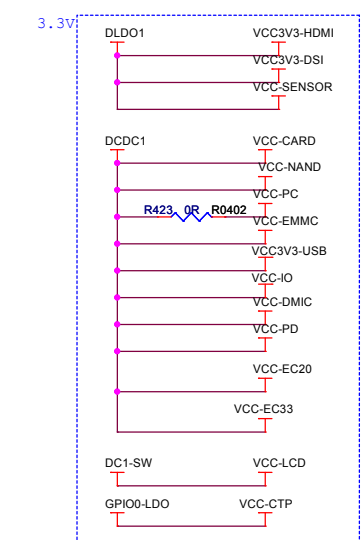
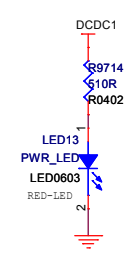
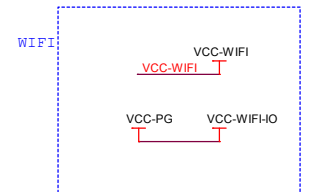
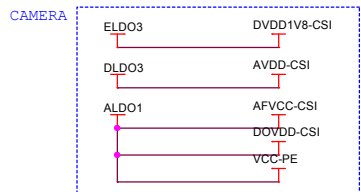
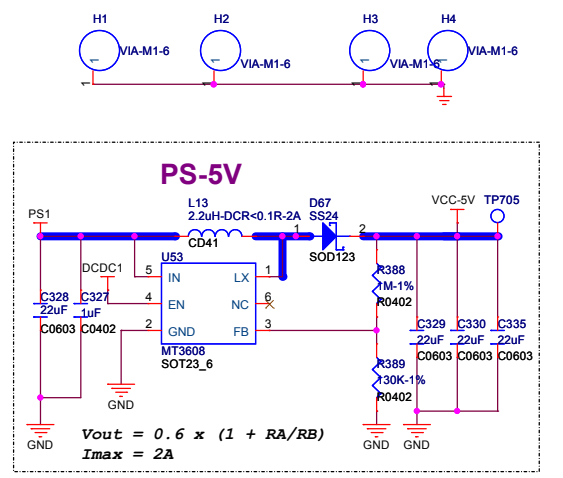
$$V_{out} = 0.6 \times (1 + RA/RB)$$

$$I_{max} = 3A$$

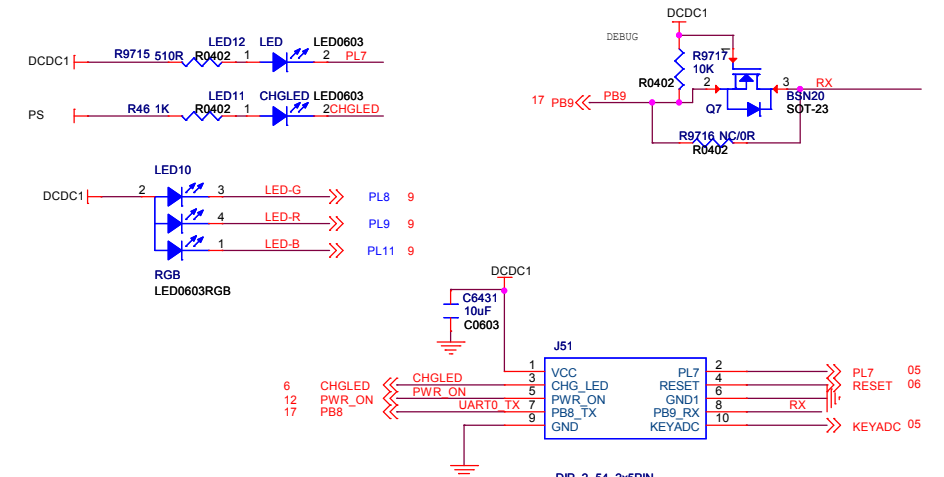
Quectel_EC25



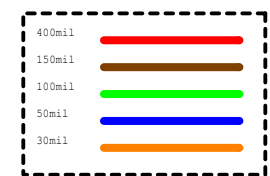
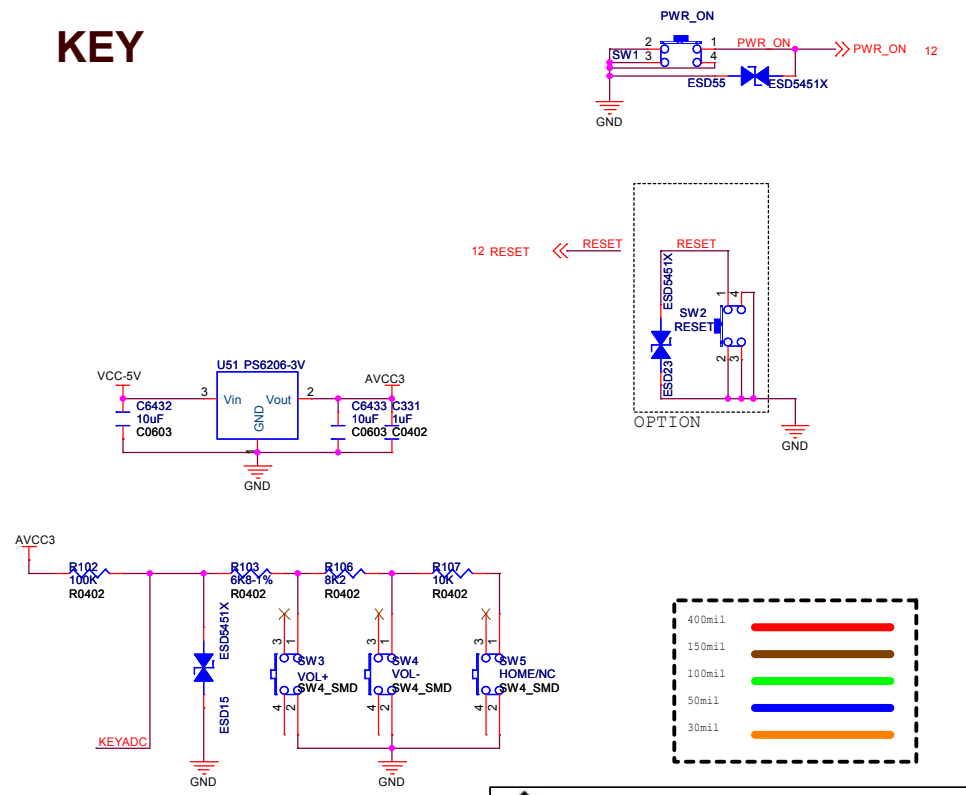
Power

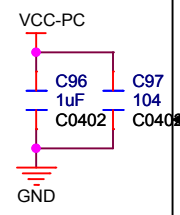
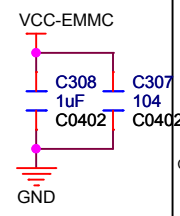
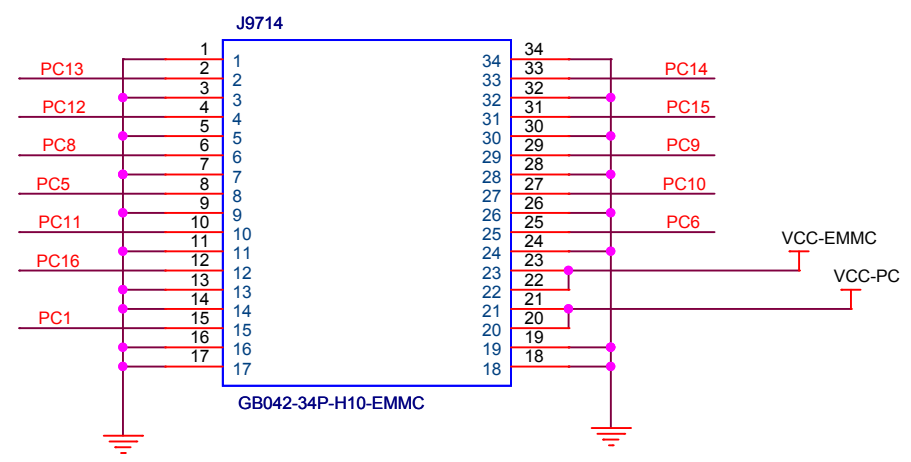
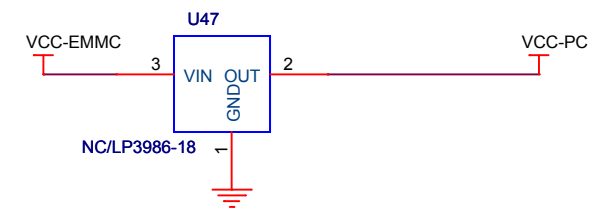
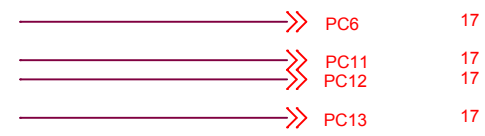
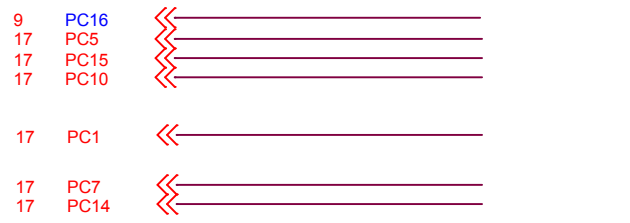


Euler bus



KEY



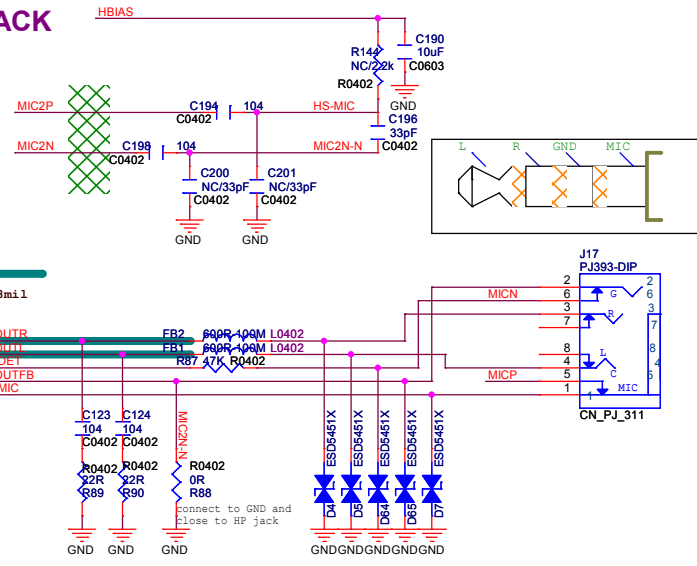


Pine64

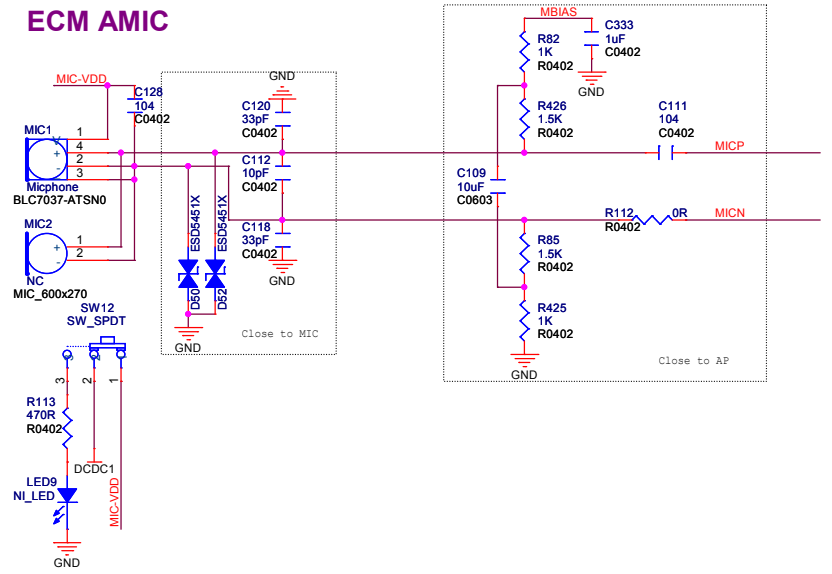
Size A4	Document Number SPI flash	Rev 1.2
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AUDIO

HP_JACK

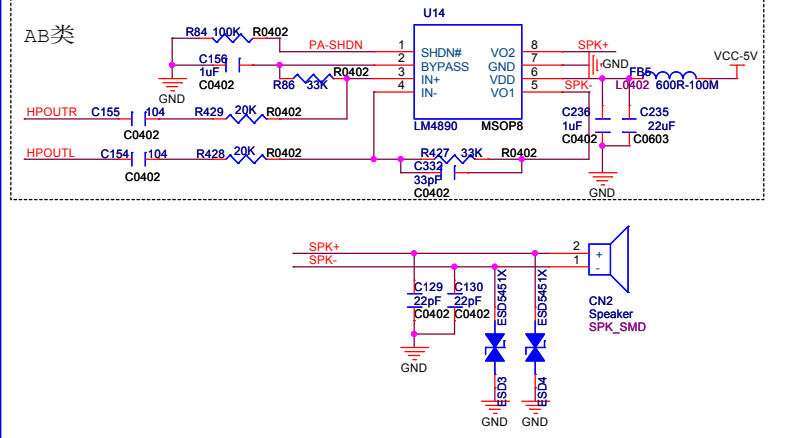


ECM AMIC



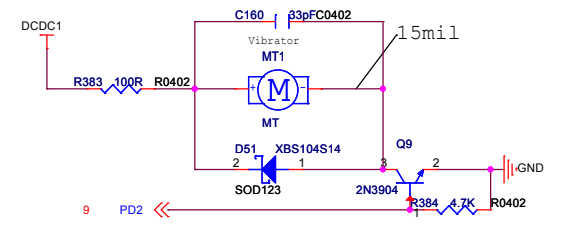
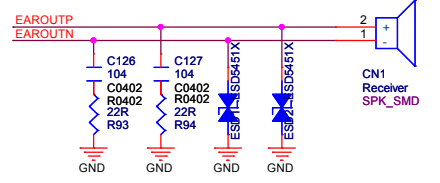
- 5 HBIAS <<
- 5 HP-DET <<
- 5 HPOUTFB <<
- 5 HPOUTL <<
- 5 HPOUTR <<
- 5 MIC2N <<
- 5 MIC2P <<
- 5 HS-MIC <<
- 5 EAROUTP <<
- 5 EAROUTN <<

AB类

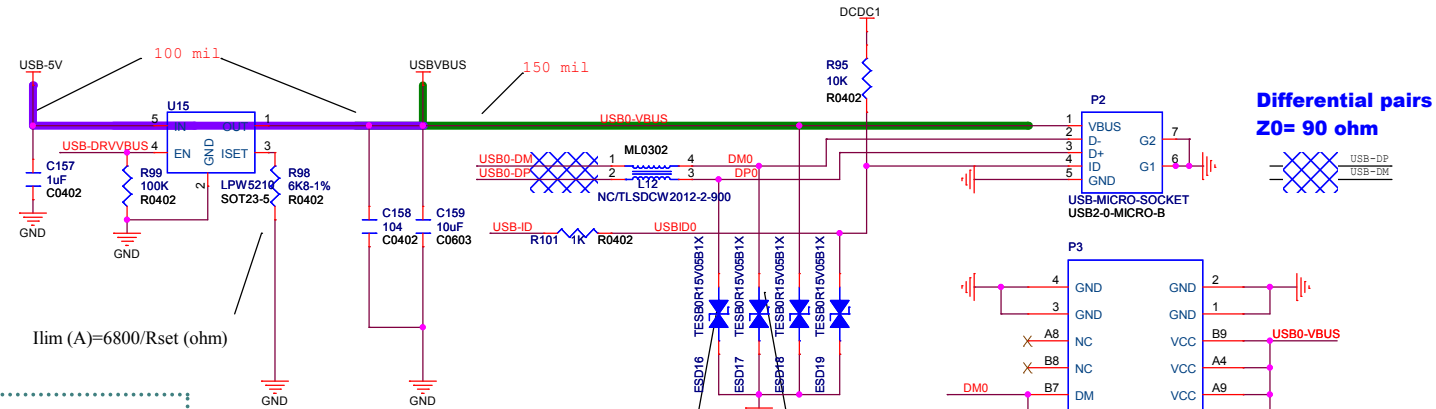


- VCC-5V
- 9 PC7 << PA-SHDN

RECEIVER



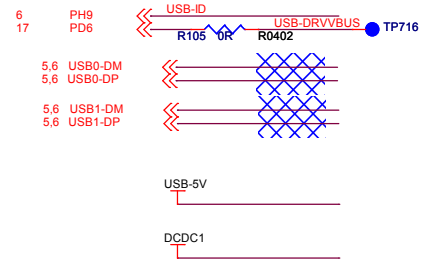
USB OTG



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

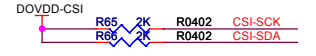


The ESD part's parasitic capacitance < 5pF.



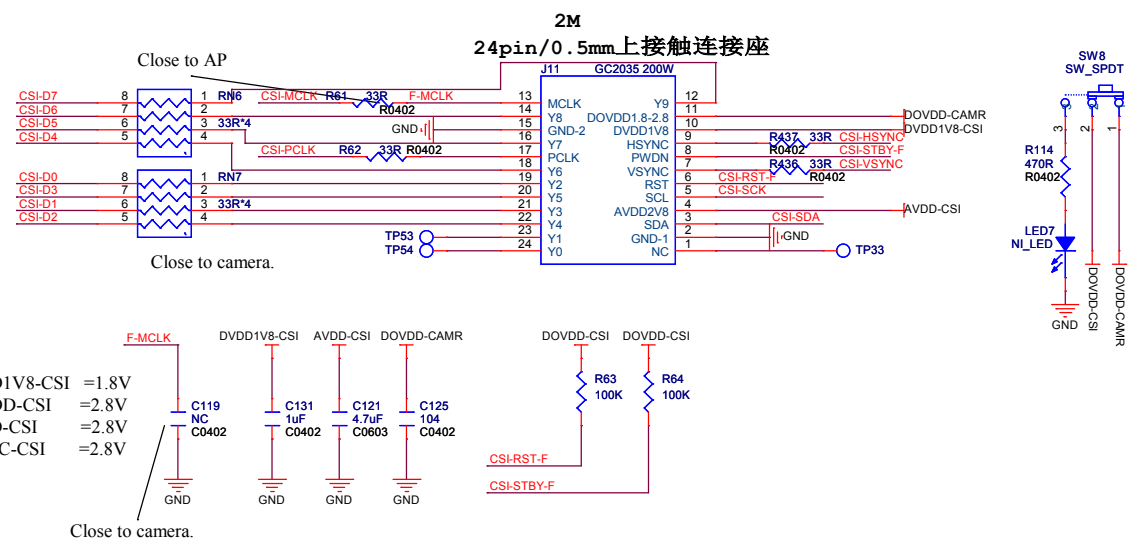
TypeC 和Micro USB两个叠加一起，可以二选一

CAMERA

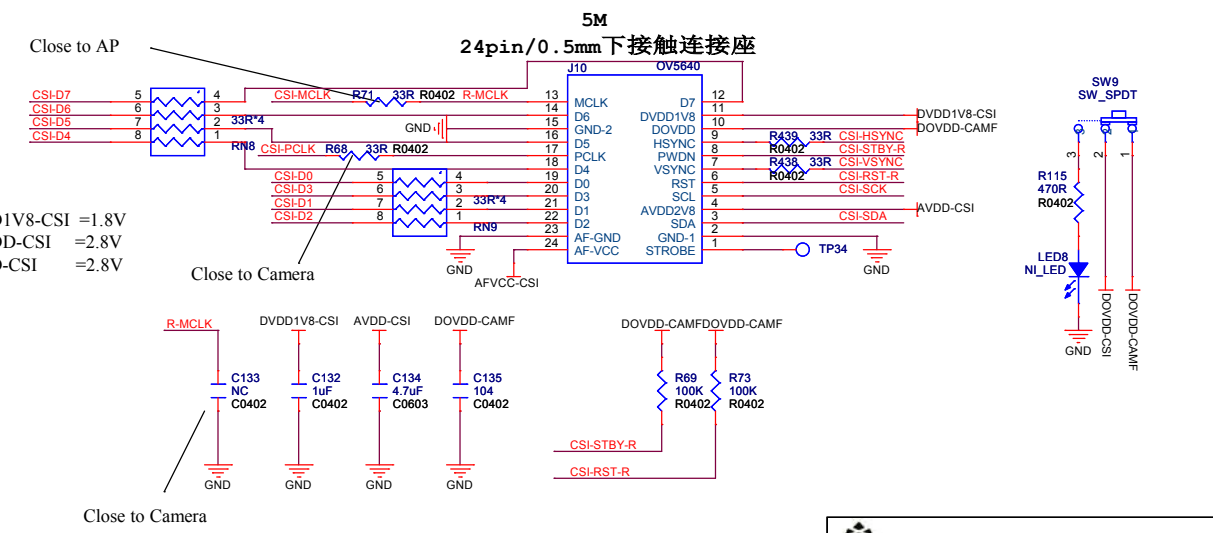


9	CSI-PCLK	CSI-PCLK	TP35
9	CSI-MCLK	CSI-MCLK	TP36
9	CSI-HSYNC	CSI-HSYNC	TP37
9	CSI-VSYNC	CSI-VSYNC	TP38
9	CSI-D0	CSI-D0	TP39
9	CSI-D1	CSI-D1	TP40
9	CSI-D2	CSI-D2	TP41
9	CSI-D3	CSI-D3	TP42
9	CSI-D4	CSI-D4	TP43
9	CSI-D5	CSI-D5	TP44
9	CSI-D6	CSI-D6	TP45
9	CSI-D7	CSI-D7	TP46
9	CSI-SCK	CSI-SCK	TP47
9	CSI-SDA	CSI-SDA	TP48
9	CSI-RST-F	CSI-RST-F	TP49
9	CSI-STBY-F	CSI-STBY-F	TP50
9	CSI-RST-R	CSI-RST-R	TP51
9	CSI-STBY-R	CSI-STBY-R	TP52

Rear Camera

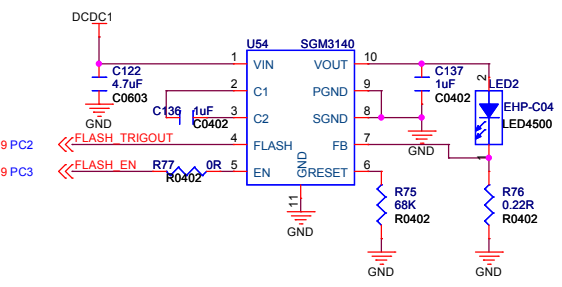


Front Camera



FLASH LED Drive

note: Drive up to 1A

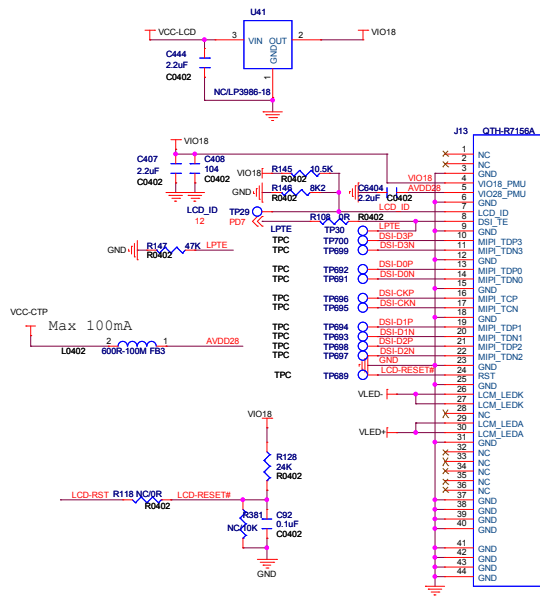
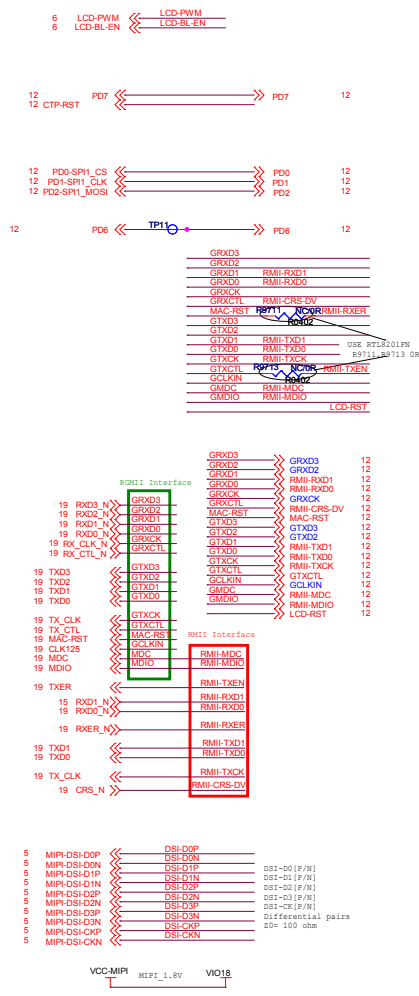


Pine64

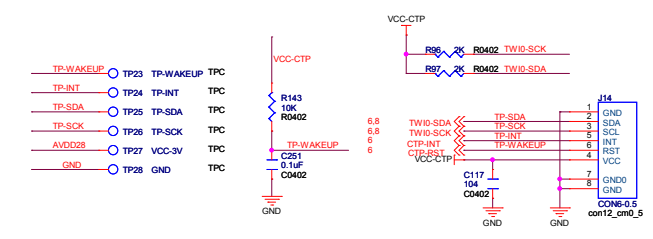
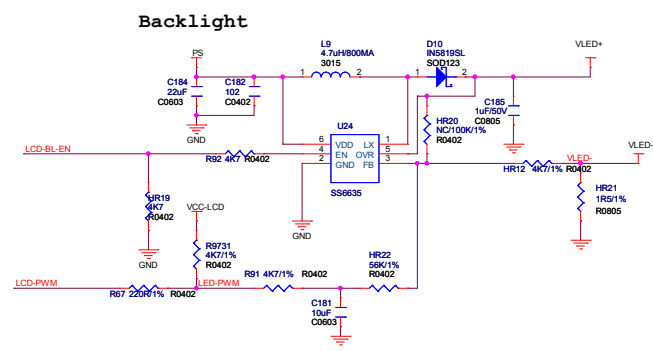
Size A3 Document Number **CAMERA to CAMERA** Rev 1.2

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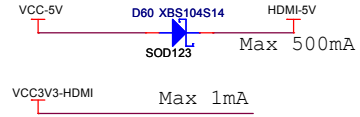
LCD CTP



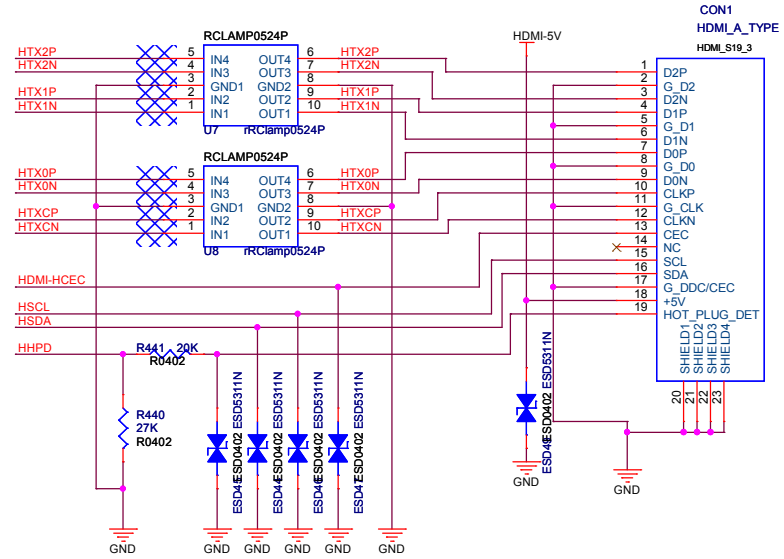
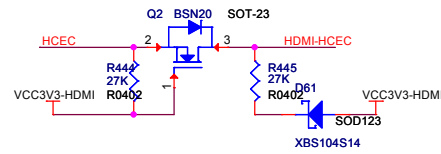
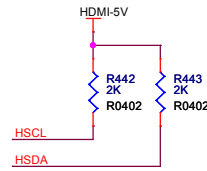
LCD POWER

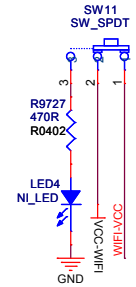
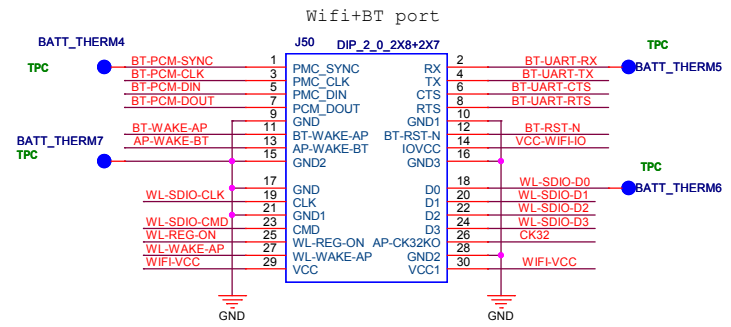
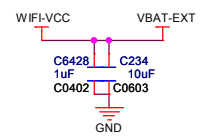
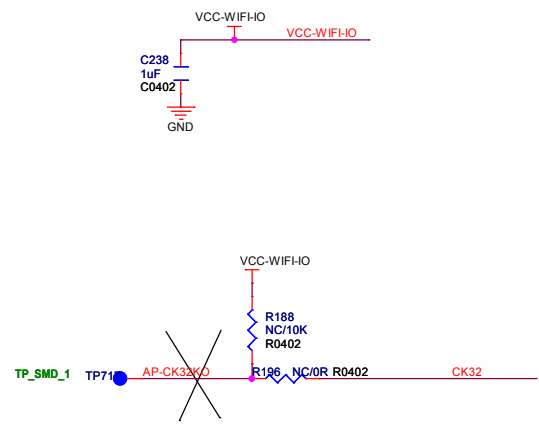
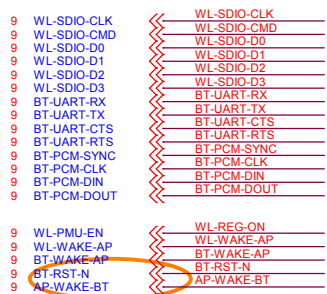


HDMI



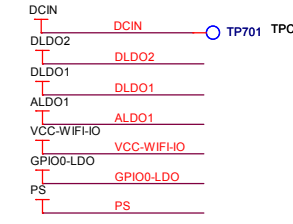
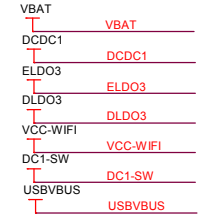
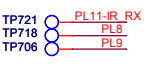
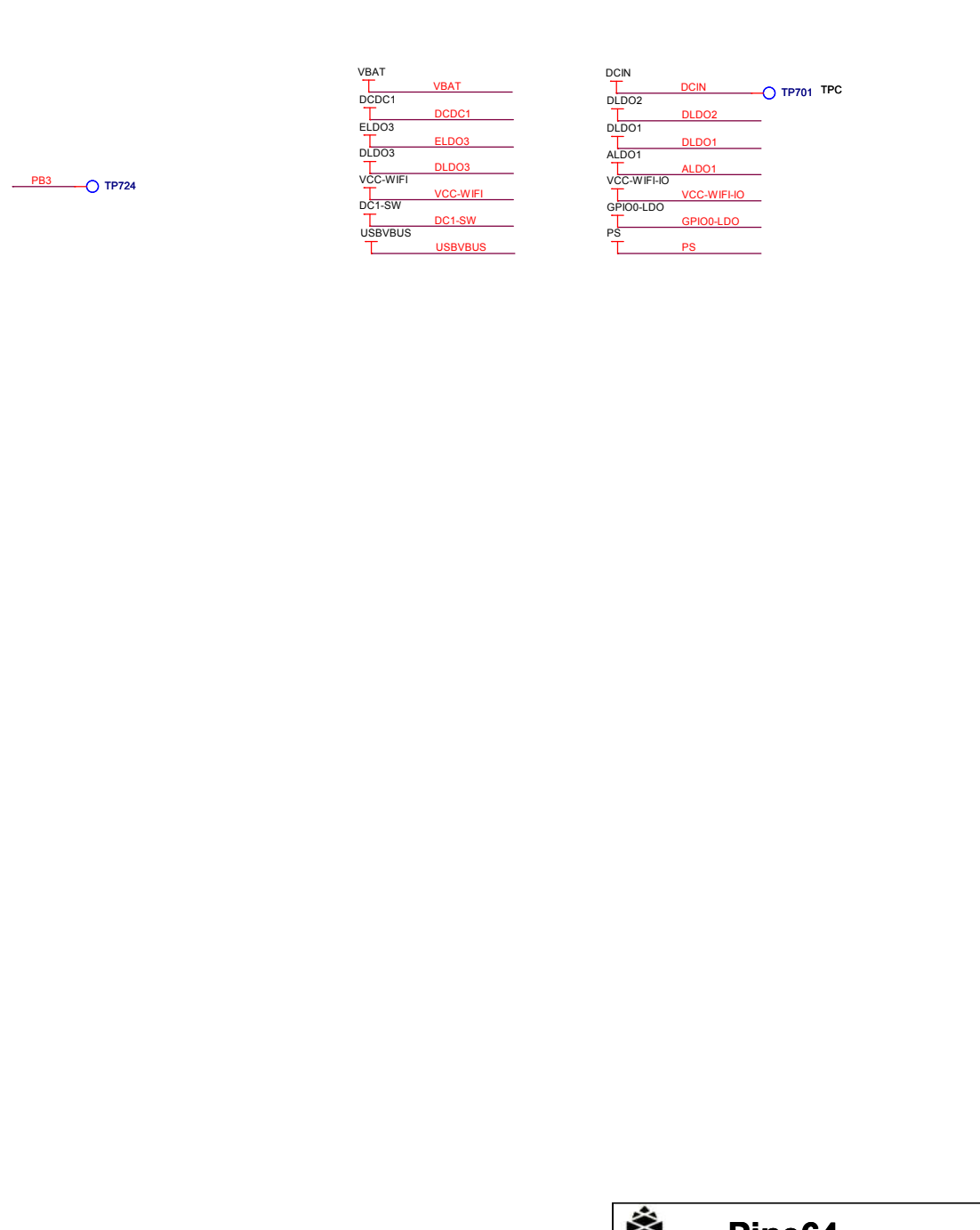
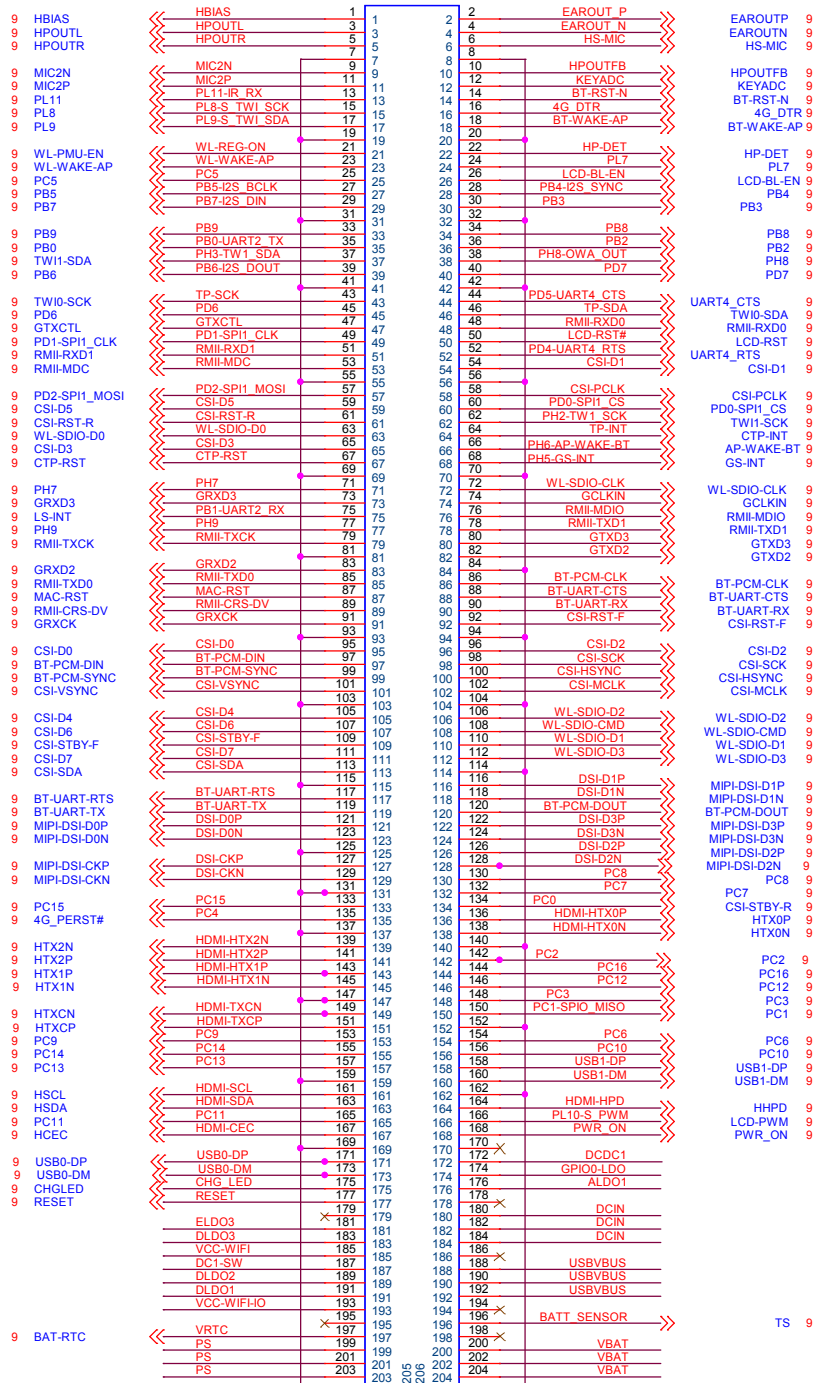
Differential pairs
Z0= 100 ohm





PI-2 bus

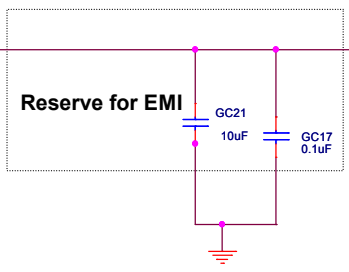
JU1



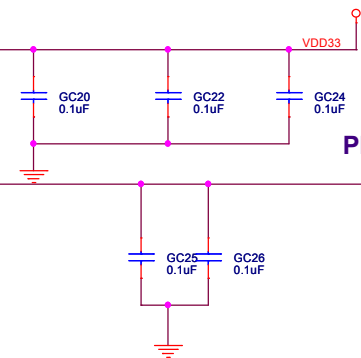
Pine64

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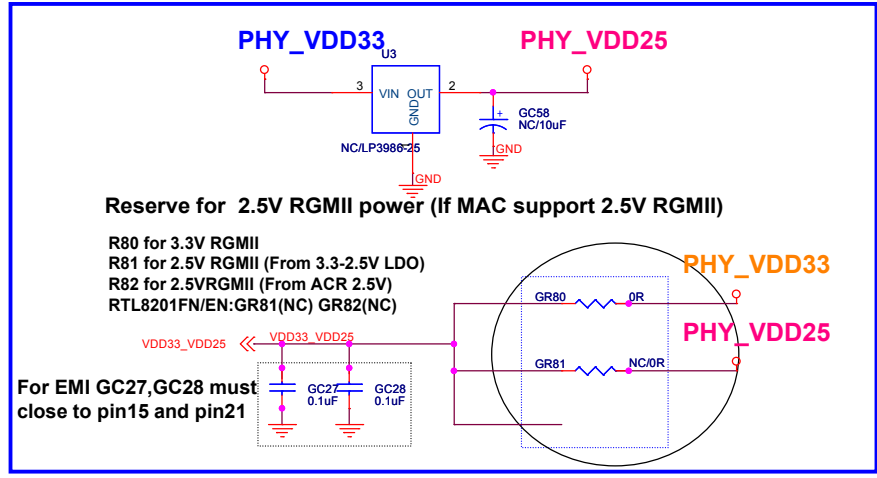
5
GMAC-3V



3
PHY_VDD33



3.3/2.5V RGMII Power

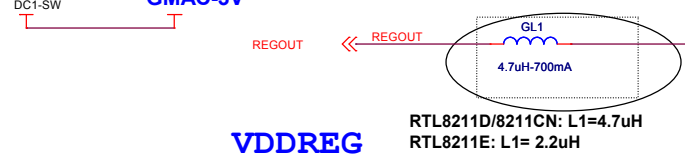


RTL8211CN/D/E	GL1	C56	U10	GR65	GR66	GR122	GC41/GC57
Enable switching regulator	○	○	×	○	×	×	○
Disable switching regulator	×	×	○	×	○	○	×

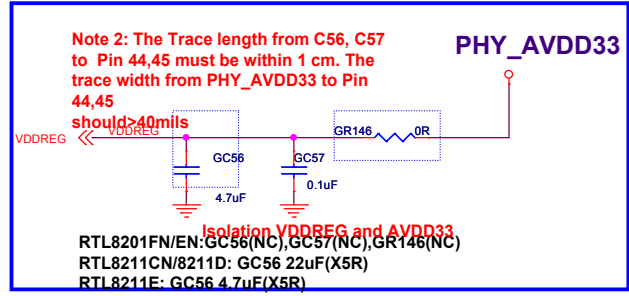
Note 1: The Trace length between GL1 and Pin 48 must be within 0.5 cm. GC40 and GC41 to G L1 must be within 0.5cm.

RTL8211D/8211CN:GC40 22uF(X5R)
RTL8211E: GC40 4.7uF(X5R)

GMAC-3V

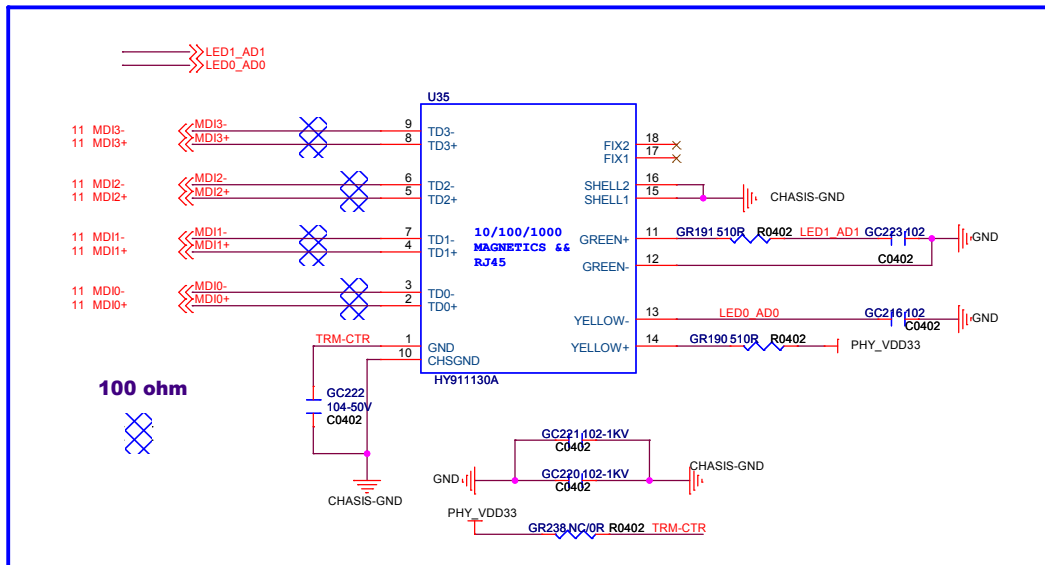
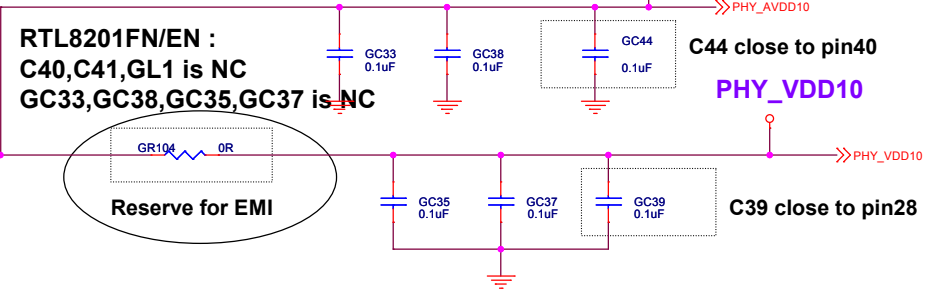
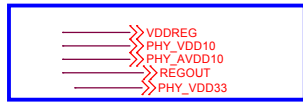


VDDREG

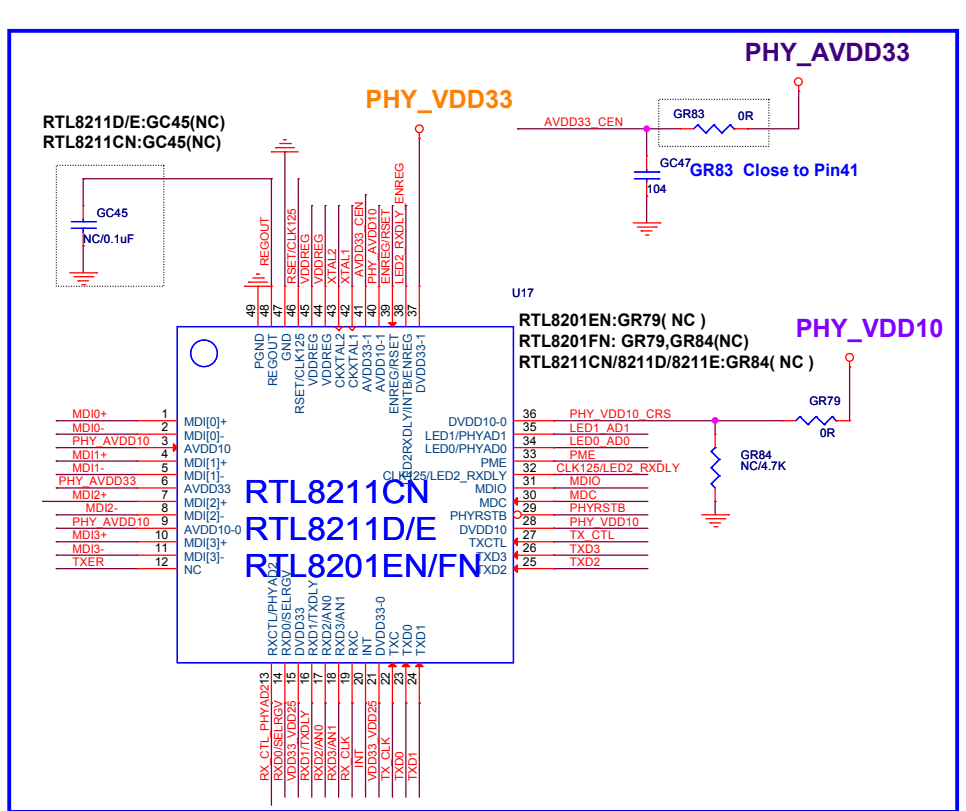
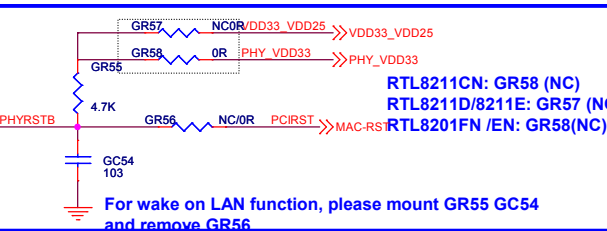
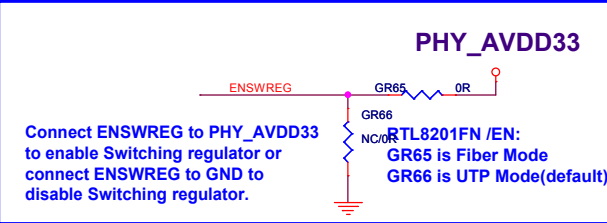
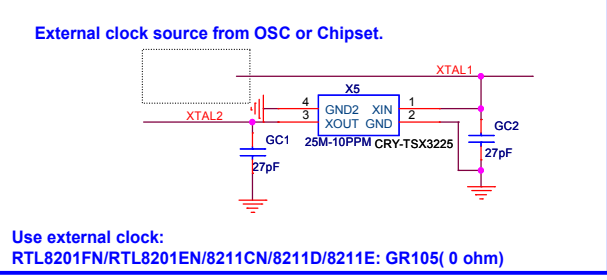
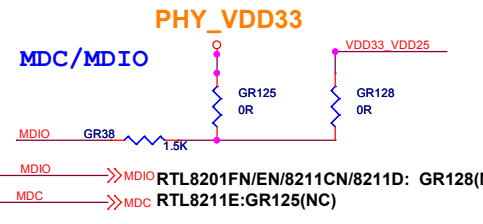
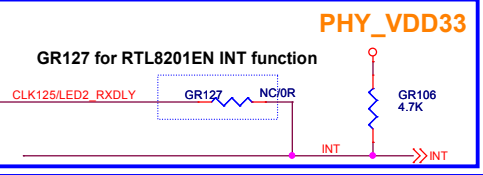
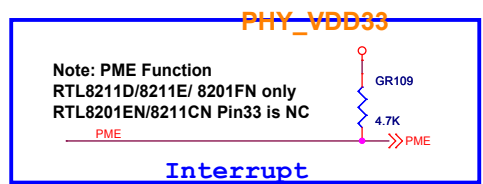


External Power Source

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.

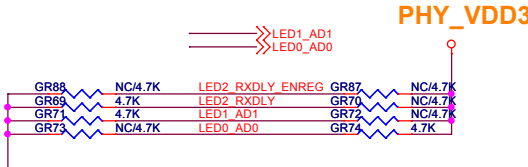
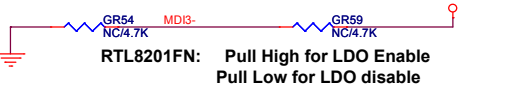
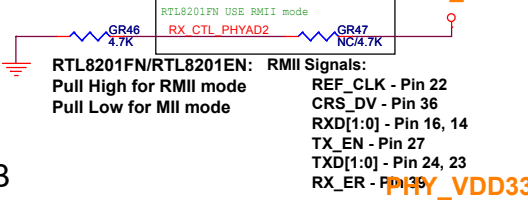


RESERVE

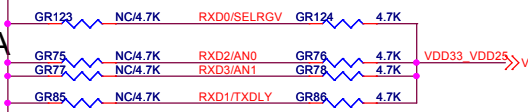


Configuration Setting

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/8201EN:GR123,GR124 NC

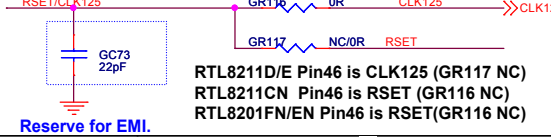
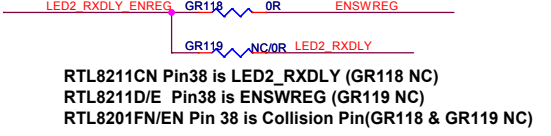
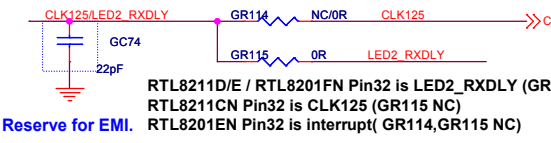
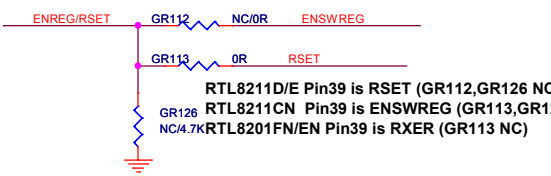


RTL8201CN/8211D/8211E:
GR76,GR78: Config for all capability
GR71,GR74: PHY Address=01 (8211D/8211CN)
GR46,GR71,R74: PHY Address=001 (8211E)
GR69,GR85: Without TX/RX Delay

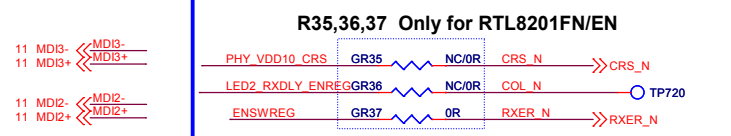
RTL8201EN:
GR88:MII Interface
GR87:SNII Interface
GR71,GR74: PHY Address=01
Other resistors are NC

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

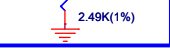
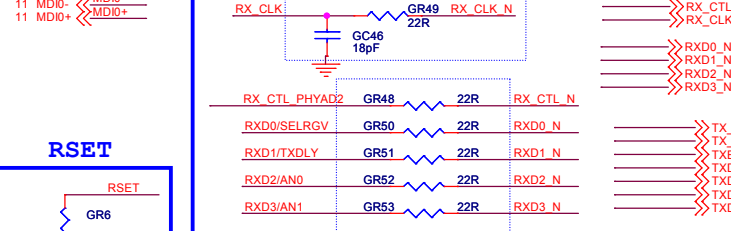
RSET/ENSWREG/CLK125 Co-layout



RGMII/RMII



Place filter network close to RX_CLK. Reserved for EMI



Others

