

# VERSION HISTORY

Revision Description Date Drawn Checked Approved

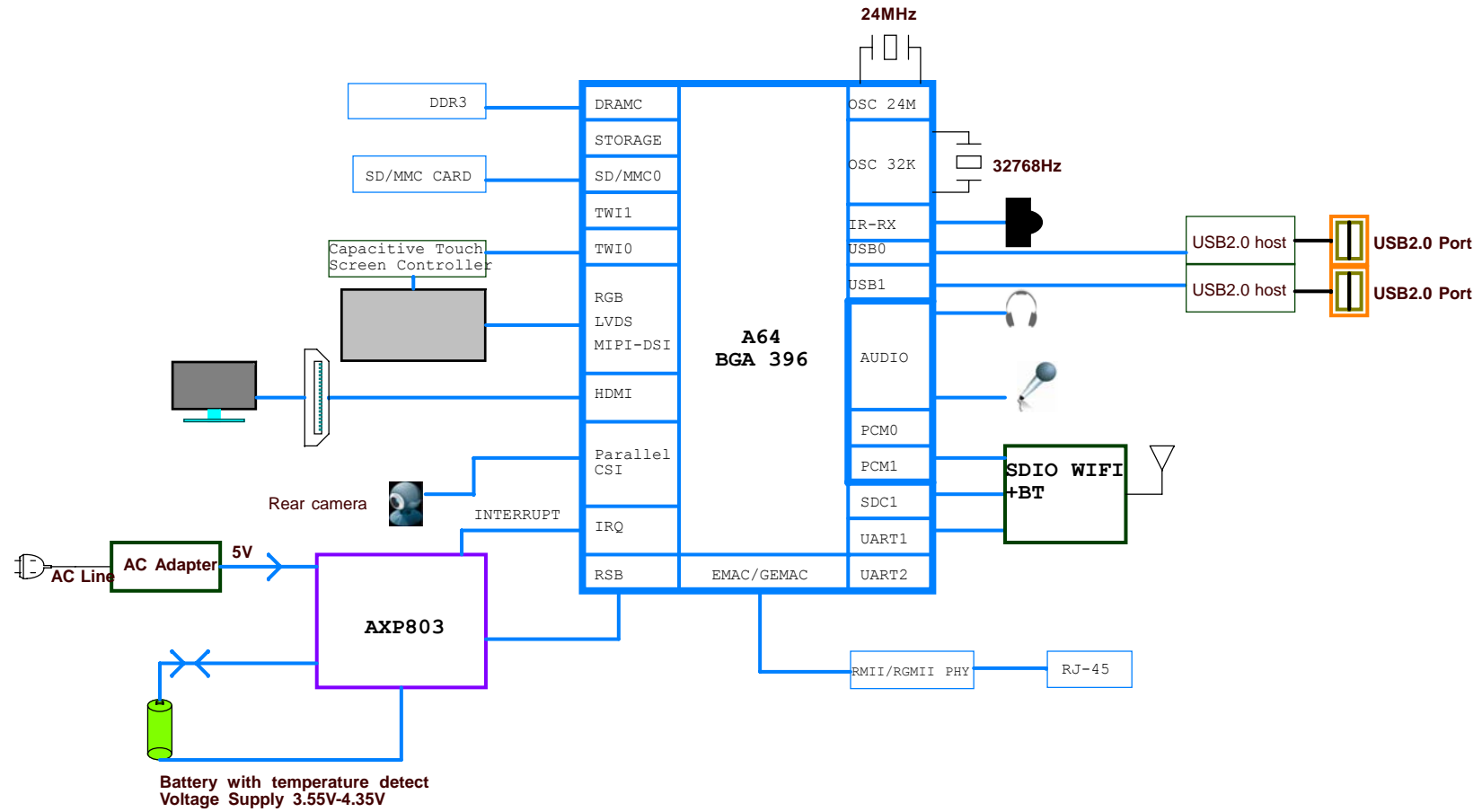
Revision	Description	Date	Drawn	Checked	Approved
Ver 0.9	Release version	2016-08-08			

## Index:

- P01: REVISION HISTORY
- P02: BLOCK DIAGRAM
- P03: POWER TREE
- P04: DDR3 16X2
- P05: CPU
- P06: PMIC
- P07: EMMC
- P08: AUDIO
- P09: USB/T-CARD
- P10: CAMERA
- P11: LCD
- P12: Euler e Connector
- P13: HDMI
- P14: LED POWER
- P15: WIFI+BT
- P16: CTP/IR
- P17: Pi-2 Connector
- P18: EMAC/GMAC
- P19: EMAC/GMAC

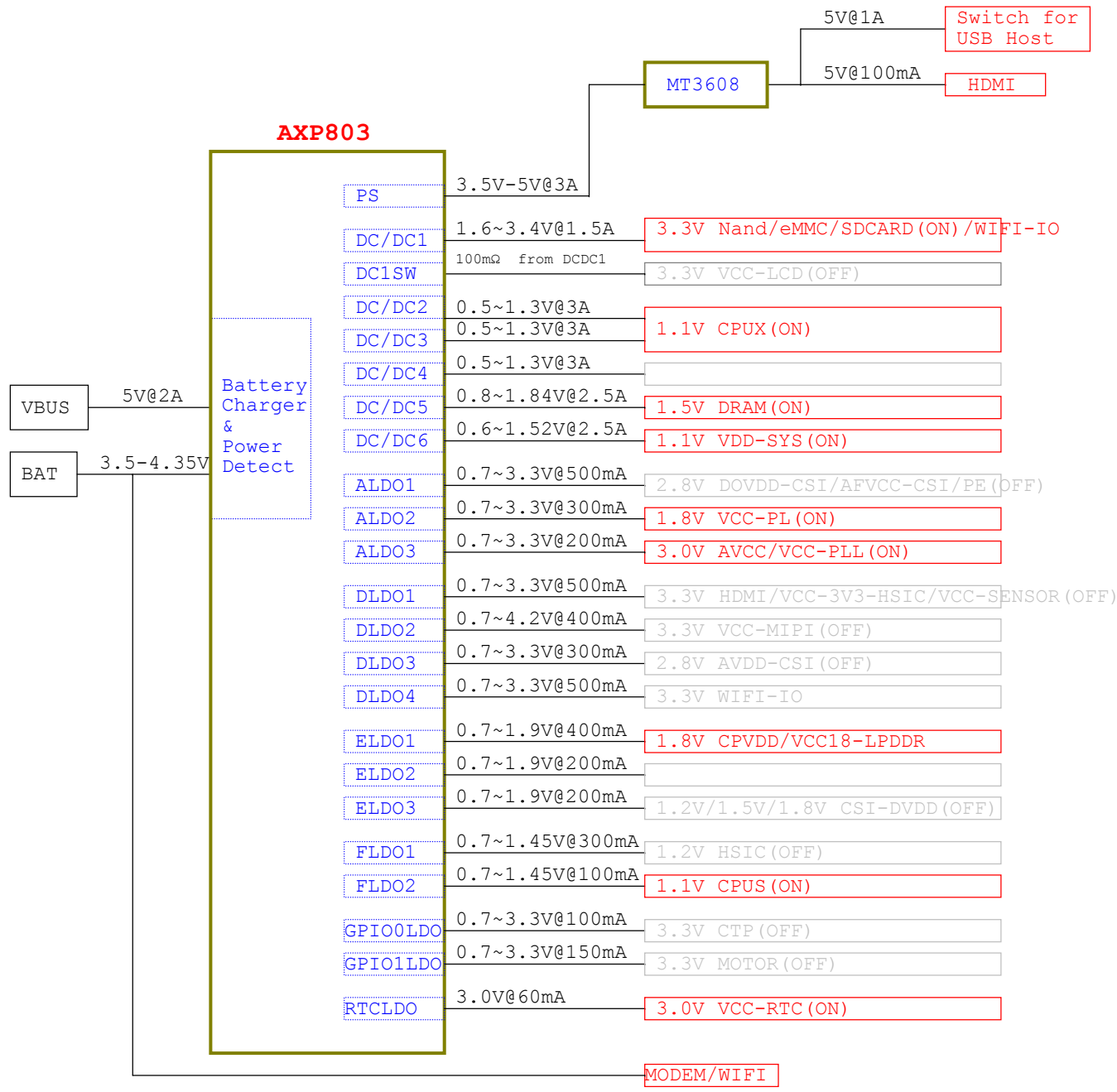
<b>PINE64</b>			
Title SOPINE Baseboard " Model A"			
Size A3	Document Number REVISION HISTORY		Rev 0.9
Date:	Sheet 1 of 19		

# BLOCK DIAGRAM



<b>PINE64</b>			
Title SOPINE Baseboard " Model A"			
Size A3	Document Number BLOCK DIAGRAM	Rev 0.9	
Date:	Sheet 2 of 19		1

# POWER TREE



<b>PINE64</b>			
Title SOPINE Baseboard " Model A"			
Size A3	Document Number	POWER TREE	Rev 0.9
Date:	Sheet 3 of 19		

# LPDDR3 32X1

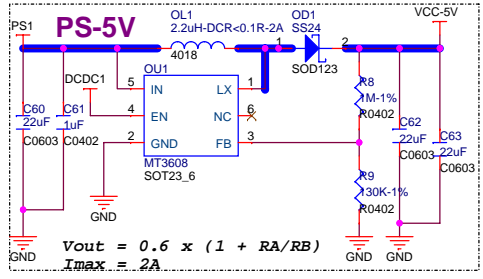
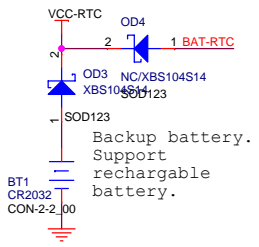
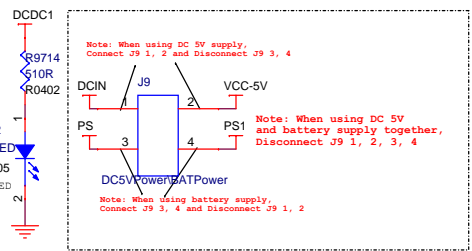
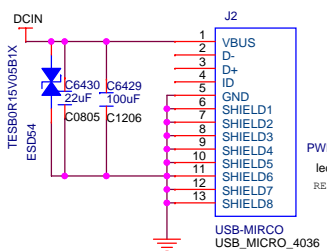


<b>PINE64</b>		
Title SOPINE Baseboard " Model A"		
Size A3	Document Number DDR3 16X2	Rev 0.9
Date:	Sheet 4 of 19	

# CPU

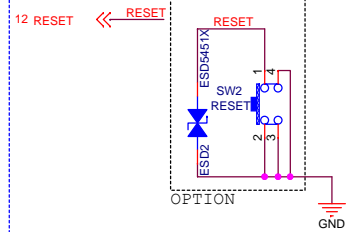
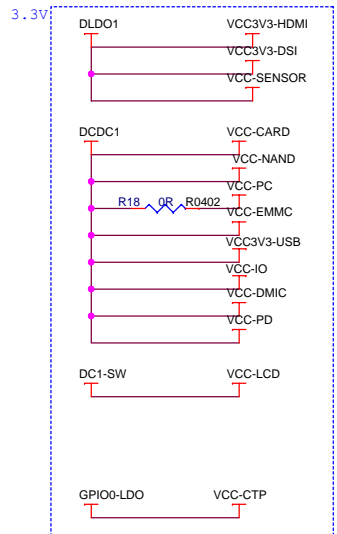
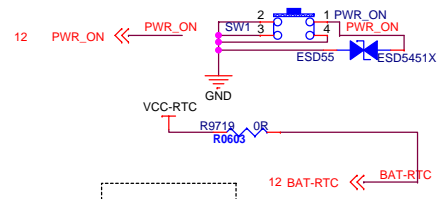
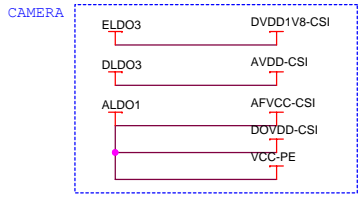
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Title SOPINE Baseboard " Model A"		
Size A3	Document Number CPU	Rev 0.9
Date:	Sheet 5 of 19	

# Power

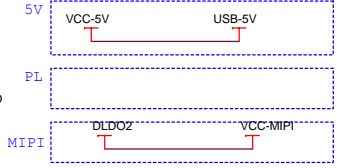
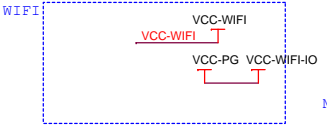
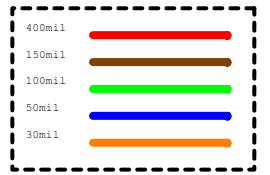
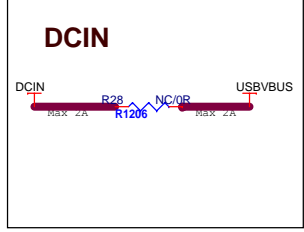
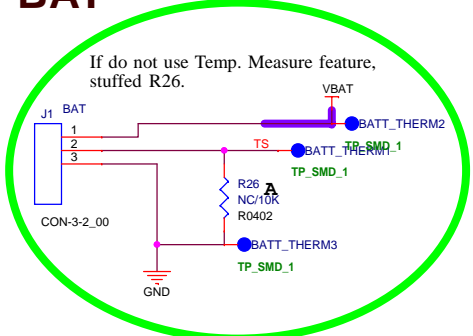


12 TS << TS

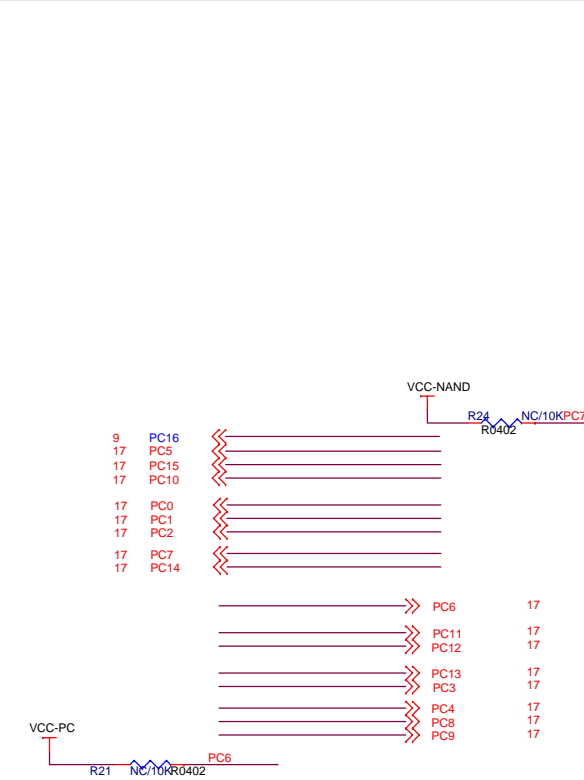
12 CHGLED << CHGLED



## Lithium BAT



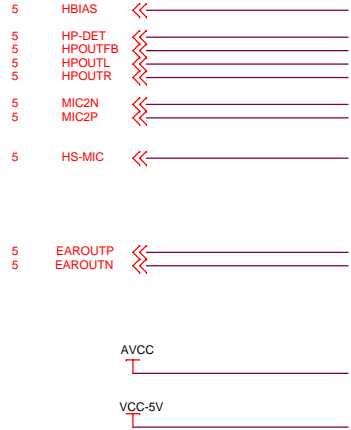
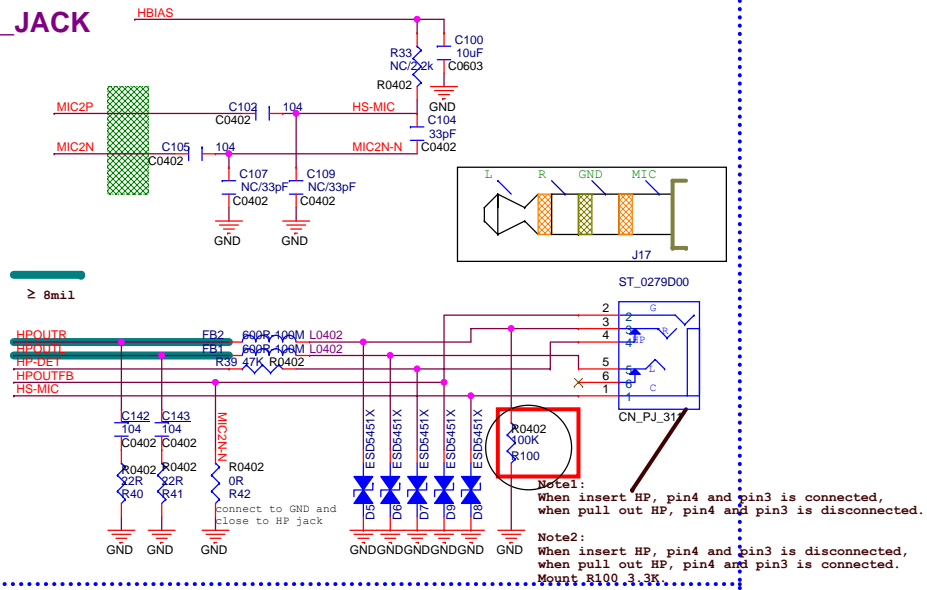
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Title SOPINE Baseboard " Model A"		
Size A3	Document Number PMIC	Rev 0.9
Date:	Sheet 6 of 19	



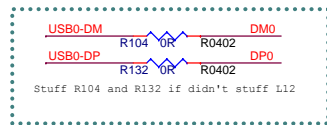
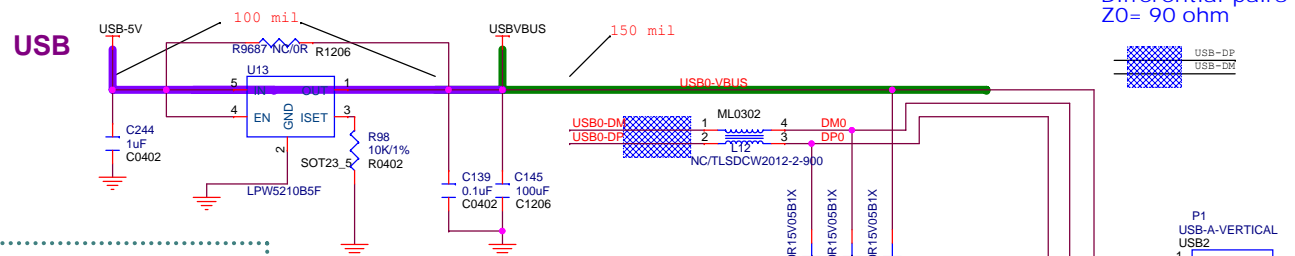
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Title SOPINE Baseboard " Model A"			
Size A3	Document Number EMMC		Rev 0.9
Date:	Sheet 7 of 19		

# AUDIO

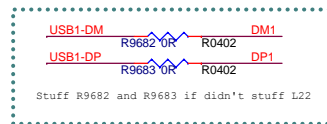
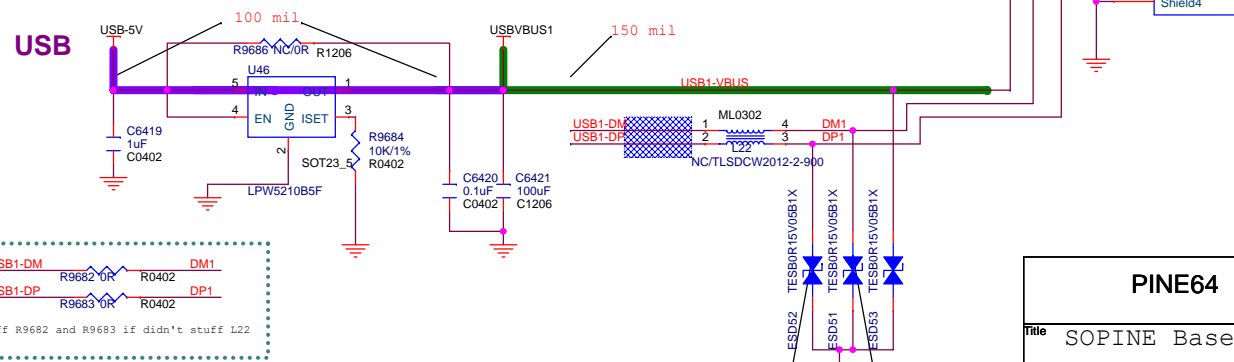
## HP JACK



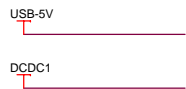




The ESD part's parasitic capacitance < 5pF.

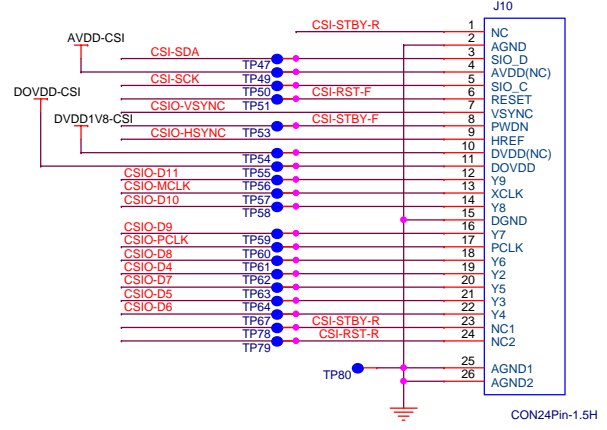
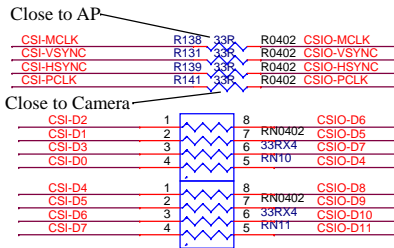
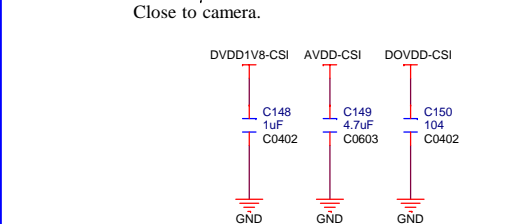
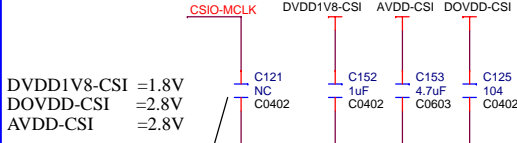
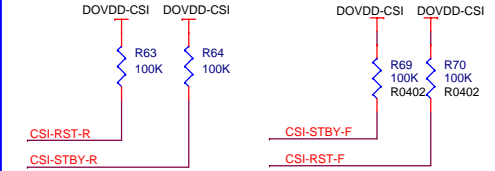
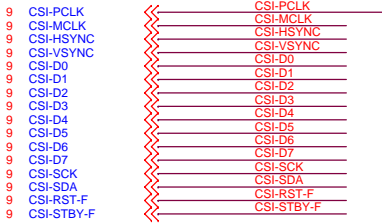
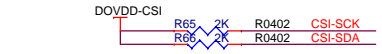


The ESD part's parasitic capacitance < 5pF.



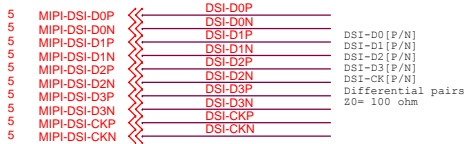
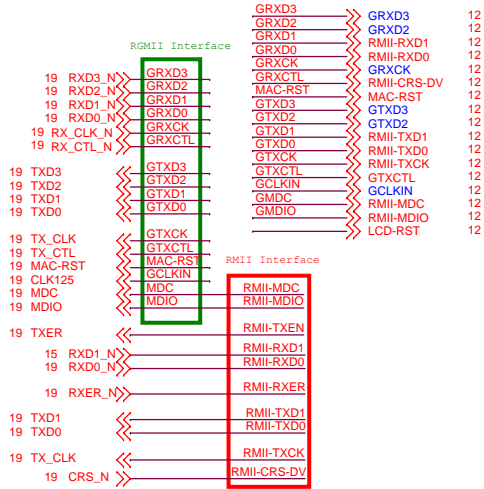
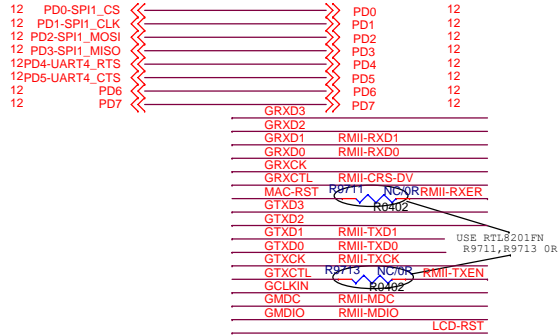
<b>PINE64</b>		
Title SOPINE Baseboard " Model A"		
Size A3	Document Number USB/T-CARD	Rev 0.9
Date:	Sheet 9	of 19

# CAMERA

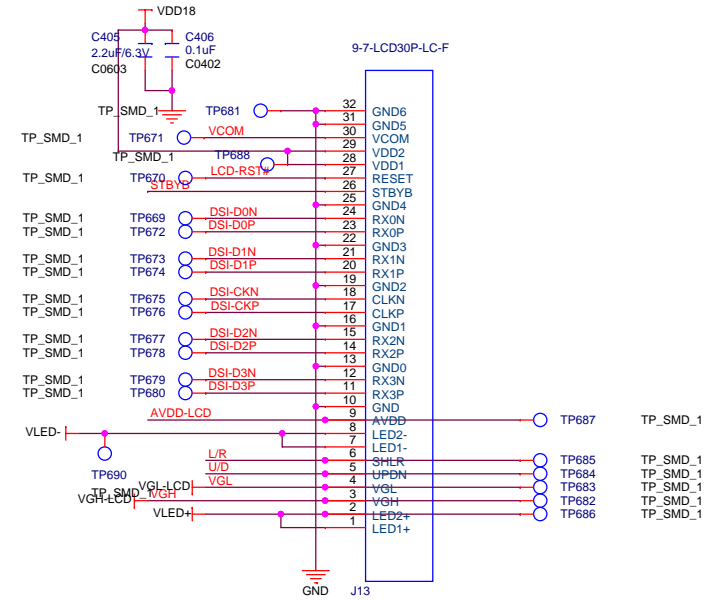
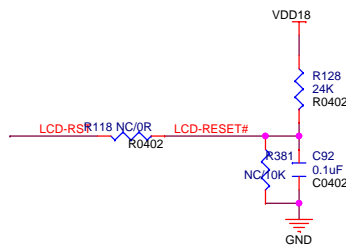
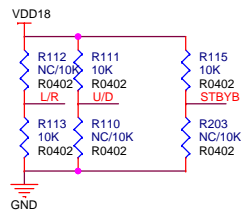
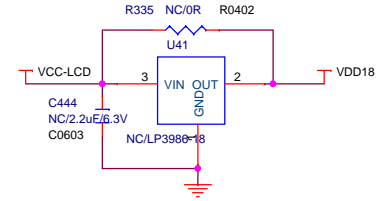
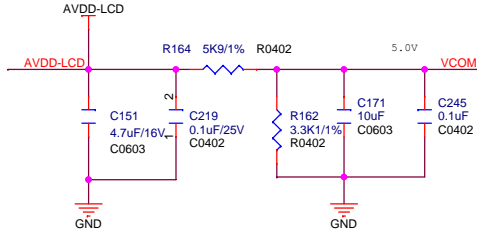


<b>PINE64</b>		
Title SOPINE Baseboard " Model A"		
Size A3	Document Number CAMERA	Rev 0.9
Date:	Sheet 10 of 19	

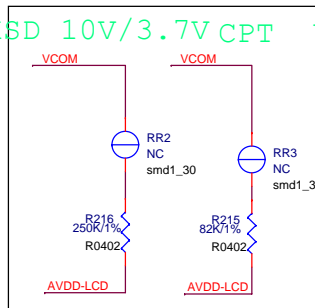
# LCD



# MIPI-LCD

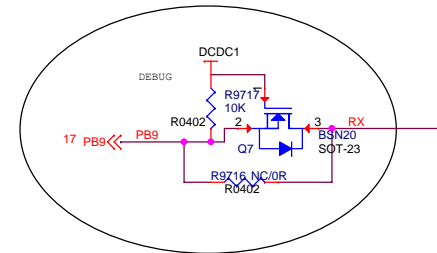
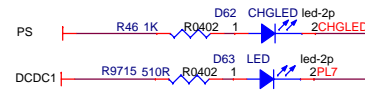
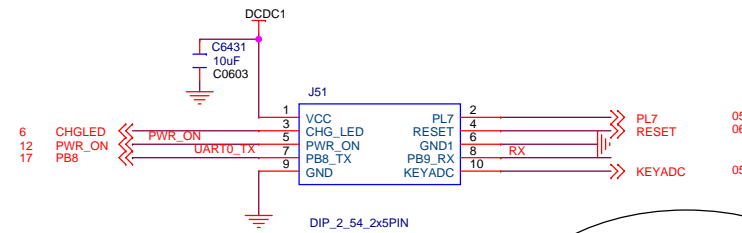
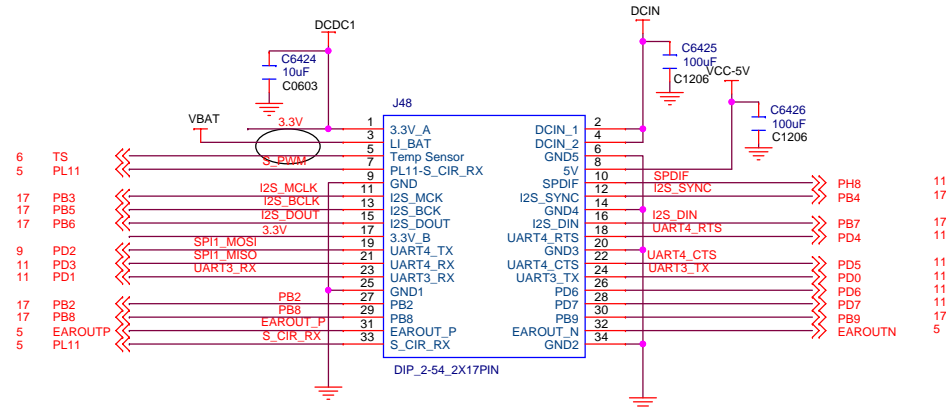


HSD 10V/3.7V CPT Vcom=4.3V



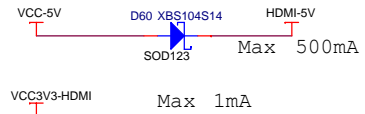
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Title <b>SOPINE Baseboard " Model A "</b>		
Size A3	Document Number	Rev 0.9
Date:		Sheet 11 of 19

# Euler bus

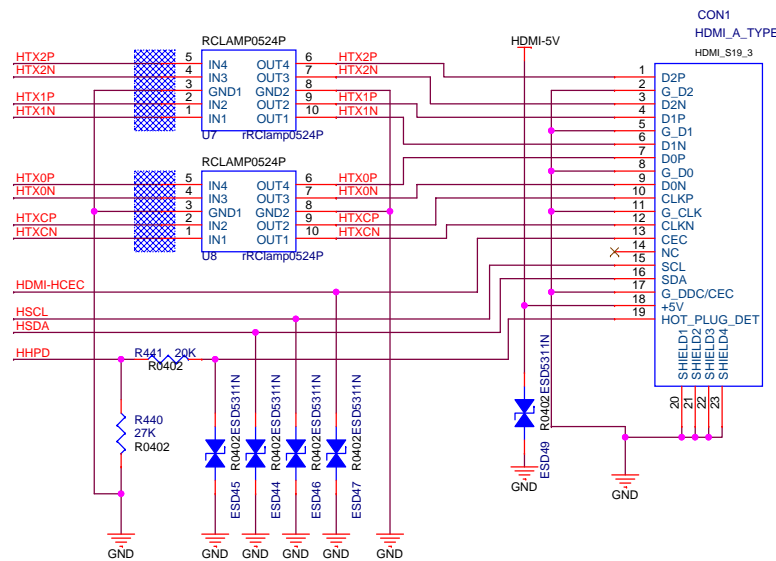
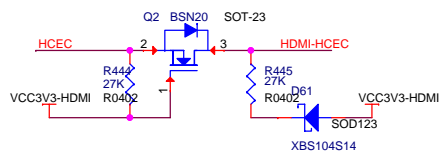
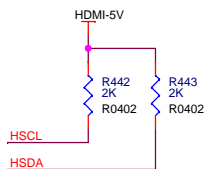


<b>PINE64</b>		
Title SOPINE Baseboard " Model A"		
Size A3	Document Number Euler e Connector	Rev 0.9
Date:	Sheet 12	of 19

# HDMI

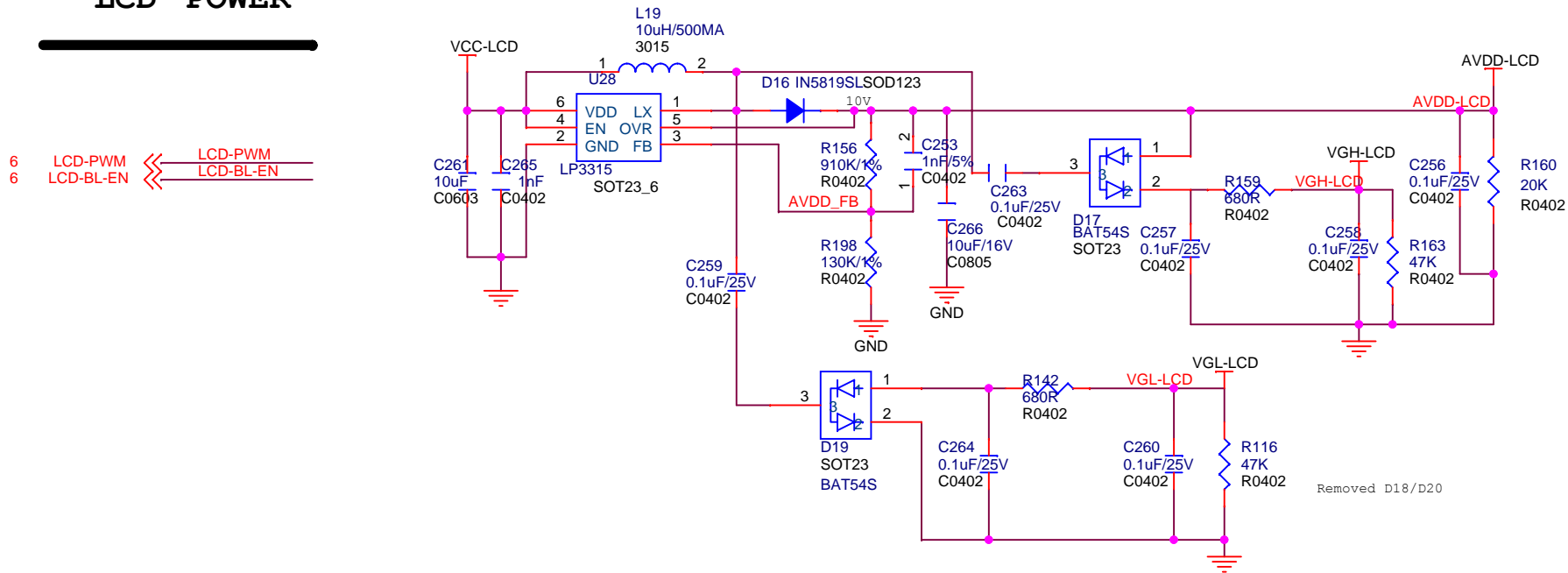


Differential pairs  
Z0= 100 ohm

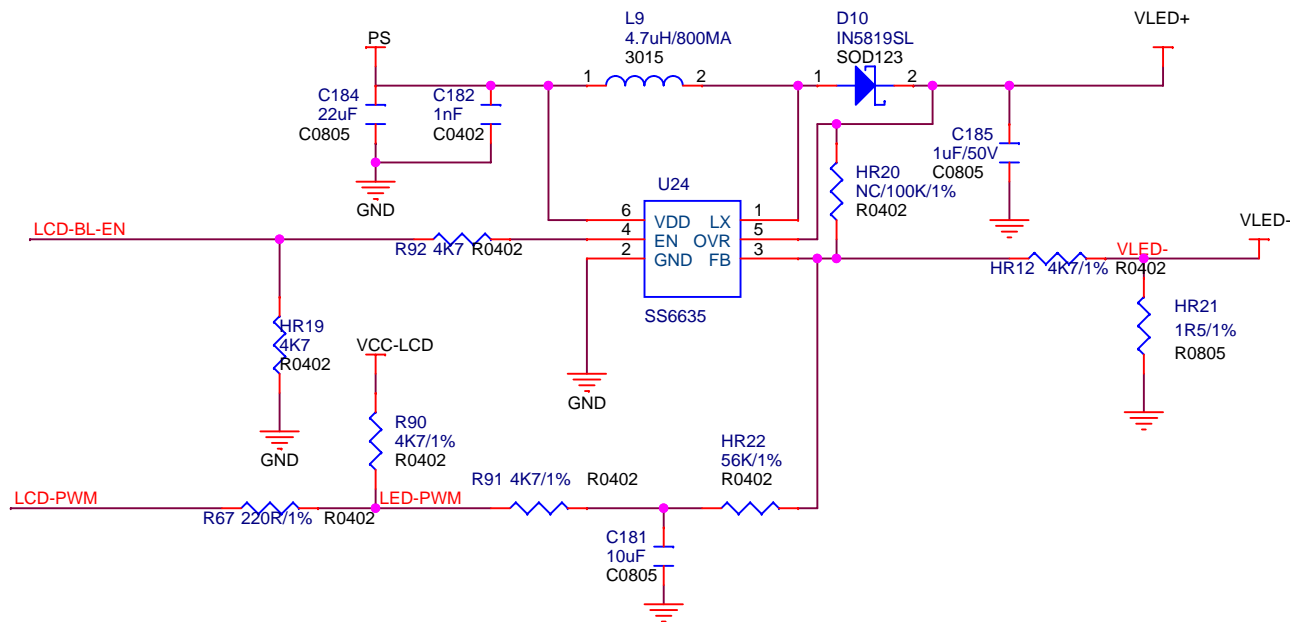


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Title SOPINE Baseboard " Model A"		
Size A3	Document Number HDMI	Rev 0.9
Date:	Sheet 13 of 19	

# LCD POWER



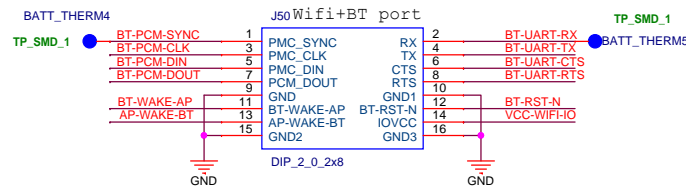
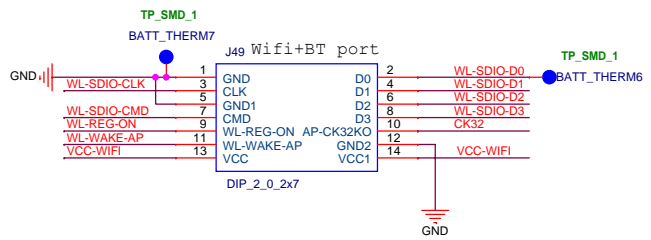
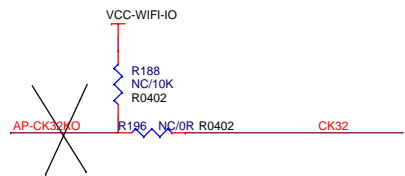
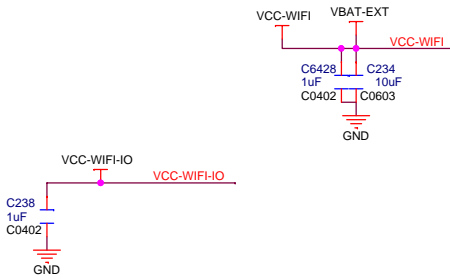
# Backlight



# PINE64

Title		
SOPINE Baseboard " Model A"		
Size	Document Number	Rev
A4	LED POWER	0.9
Date:	Sheet	14 of 19

- |   |             |             |
|---|-------------|-------------|
| 9 | WL-SDIO-CLK | WL-SDIO-CLK |
| 9 | WL-SDIO-CMD | WL-SDIO-CMD |
| 9 | WL-SDIO-D0  | WL-SDIO-D0  |
| 9 | WL-SDIO-D1  | WL-SDIO-D1  |
| 9 | WL-SDIO-D2  | WL-SDIO-D2  |
| 9 | WL-SDIO-D3  | WL-SDIO-D3  |
| 9 | BT-UART-RX  | BT-UART-RX  |
| 9 | BT-UART-TX  | BT-UART-TX  |
| 9 | BT-UART-CTS | BT-UART-CTS |
| 9 | BT-UART-RTS | BT-UART-RTS |
| 9 | BT-PCM-SYNC | BT-PCM-SYNC |
| 9 | BT-PCM-CLK  | BT-PCM-CLK  |
| 9 | BT-PCM-DIN  | BT-PCM-DIN  |
| 9 | BT-PCM-DOUT | BT-PCM-DOUT |
|   |             |             |
| 9 | WL-PMU-EN   | WL-REG-ON   |
| 9 | WL-WAKE-AP  | WL-WAKE-AP  |
| 9 | BT-WAKE-AP  | BT-WAKE-AP  |
| 9 | BT-RST-N    | BT-RST-N    |
| 9 | AP-WAKE-BT  | AP-WAKE-BT  |

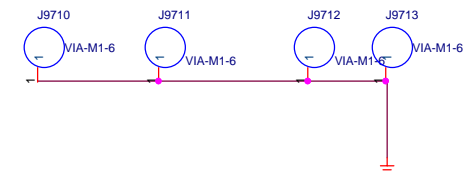
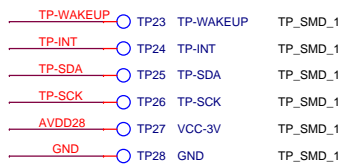
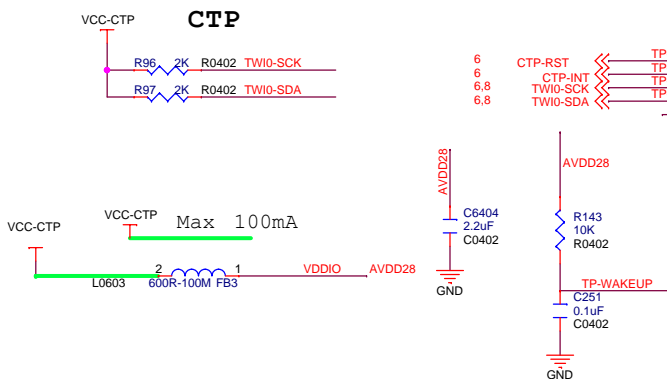
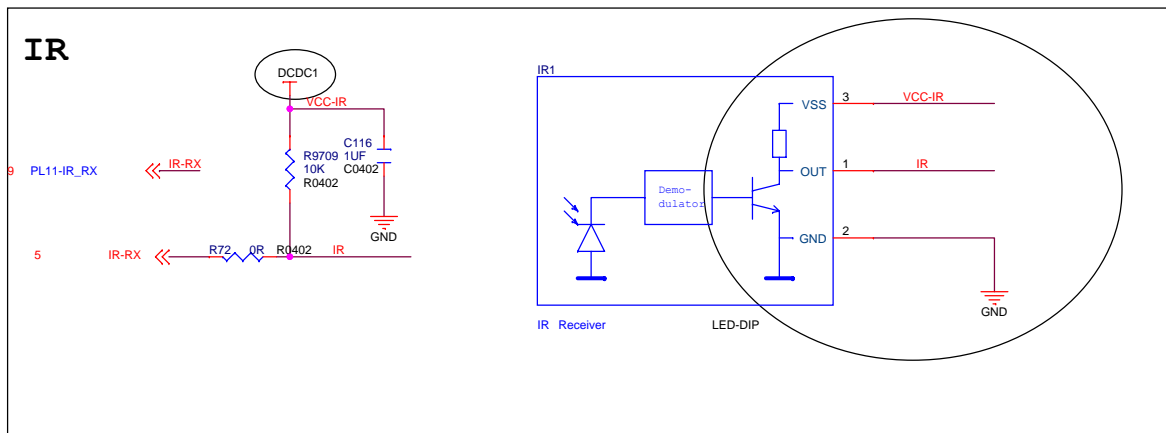


VCC-WIFI-HO

<b>PINE64</b>			
Title SOPINE Baseboard " Model A"			
Size A3	Document Number	WIFI+BT	Rev 0.9
Date:	Sheet 15 of 19		

# CTP

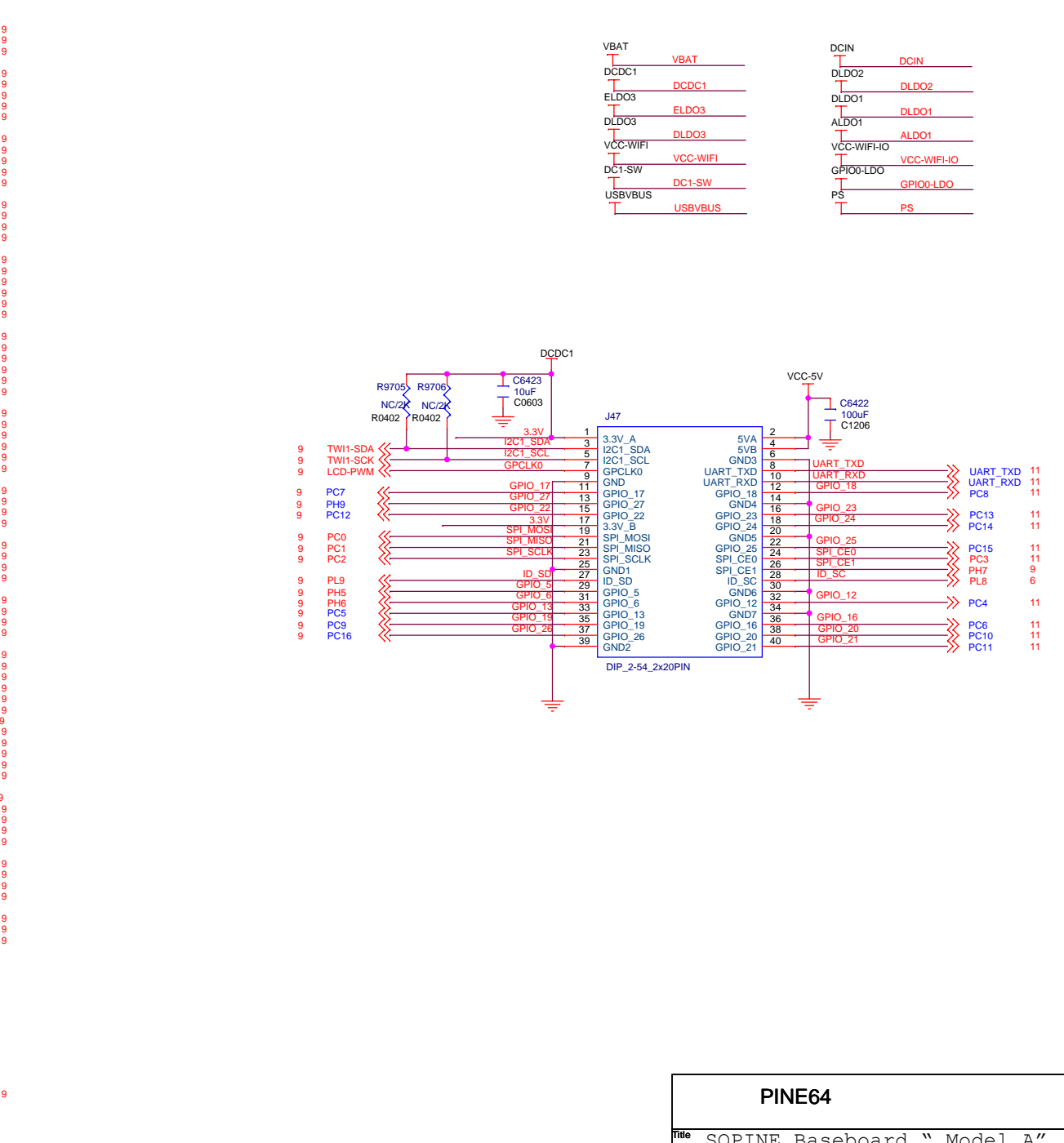
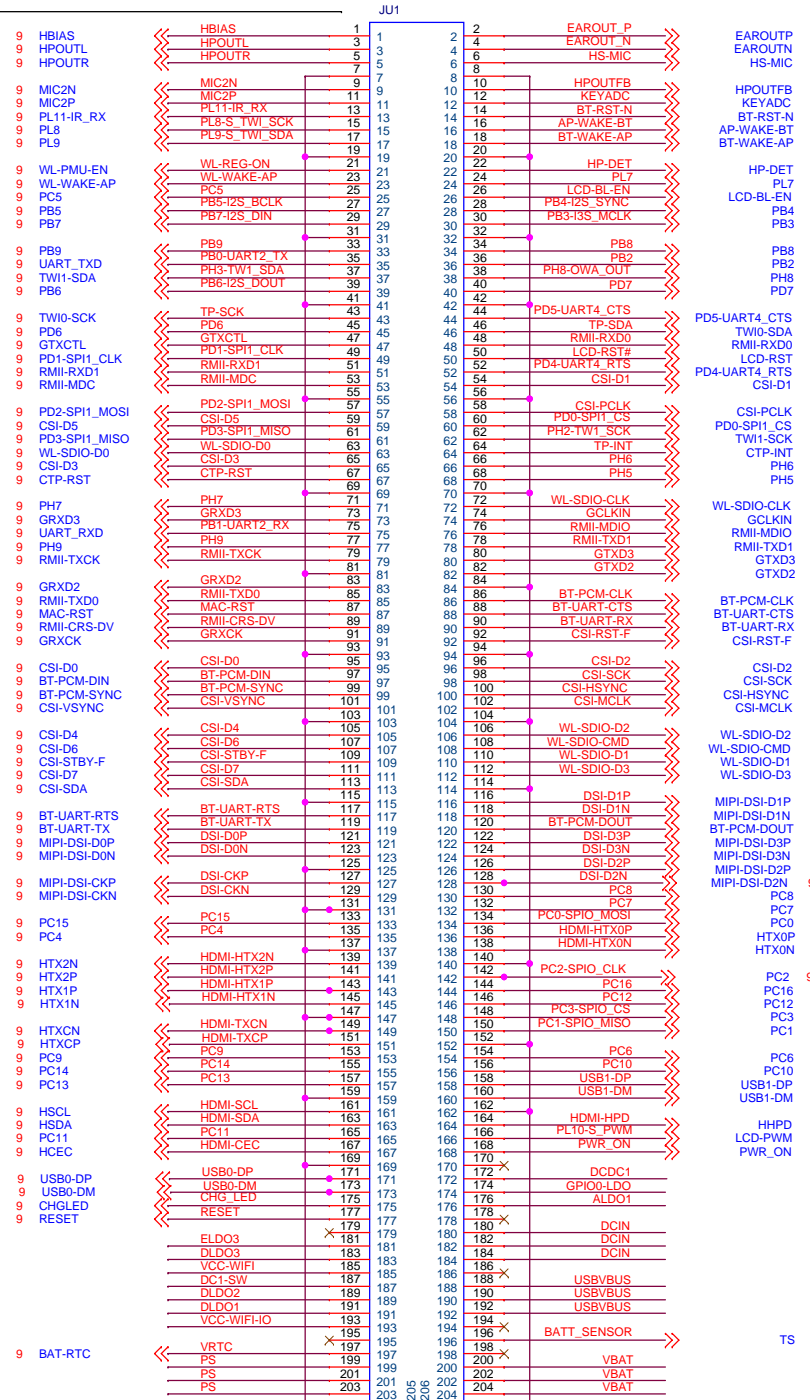
# IR



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Title SOPINE Baseboard " Model A"		
Size A3	Document Number CTP/IR	Rev 0.9
Date:	Sheet 16	of 19

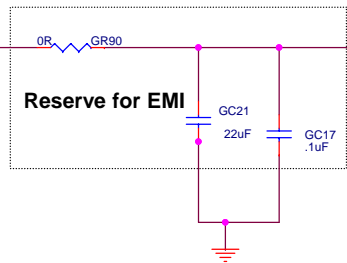


# PI-2 bus



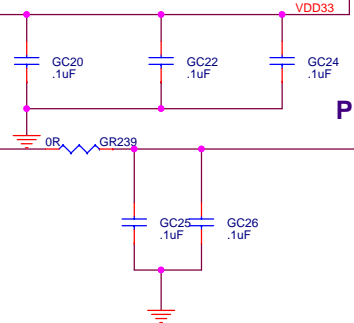
<b>PINE64</b>			
Title SOPINE Baseboard " Model A"			
Size A3	Document Number	Pi-2 Connector	
Date:	Sheet 17	of 19	Rev 0.9

### GMAC-3V



### PHY\_VDD33

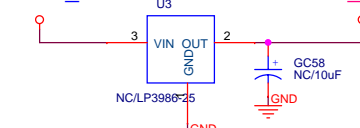
### PHY\_AVDD33



### 3.3/2.5V RGMII Power

### PHY\_VDD33

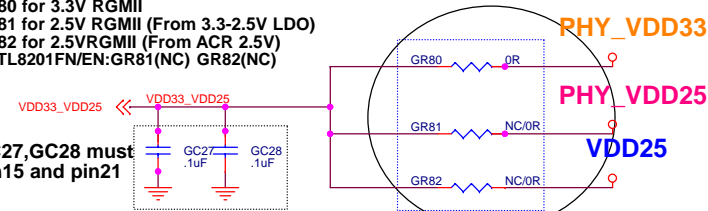
### PHY\_VDD25



Reserve for 2.5V RGMII power (if MAC support 2.5V RGMII)

R80 for 3.3V RGMII  
R81 for 2.5V RGMII (From 3.3-2.5V LDO)  
R82 for 2.5VRGMII (From ACR 2.5V)  
RTL8201FN/EN:GR81(NC) GR82(NC)

For EMI GC27,GC28 must close to pin15 and pin21



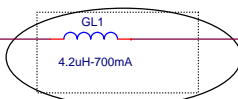
RTL8211CN/D/E	GL1	C56	U10	GR65	GR66	GR122	GC41/GC57
Enable switching regulator	○	○	✗	○	✗	✗	○
Disable switching regulator	✗	✗	○	✗	○	○	✗

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

### REGOUT

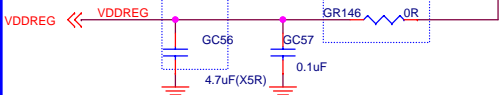


RTL8211D/8211CN: L1=4.7uH  
RTL8211E: L1= 2.2uH

### VDDREG

### PHY\_AVDD33

Note 2: The Trace length from C56, C57 to Pin 44,45 must be within 1 cm. The trace width from PHY\_AVDD33 to Pin 44,45 should >40mils



Isolation VDDREG and AVDD33  
RTL8201FN/EN:GC56(NC),GC57(NC),GR146(NC)  
RTL8211CN/8211D: GC56 22uF(X5R)  
RTL8211E: GC56 4.7uF(X5R)

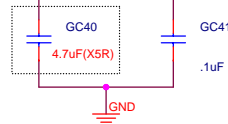
### External Power Source

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.

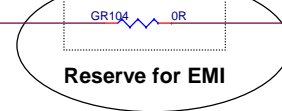
RESERVE

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

C40 close to L1



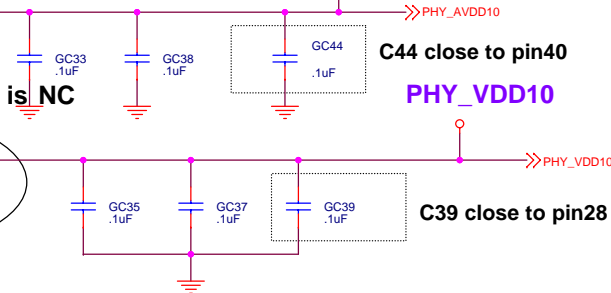
Reserve for EMI



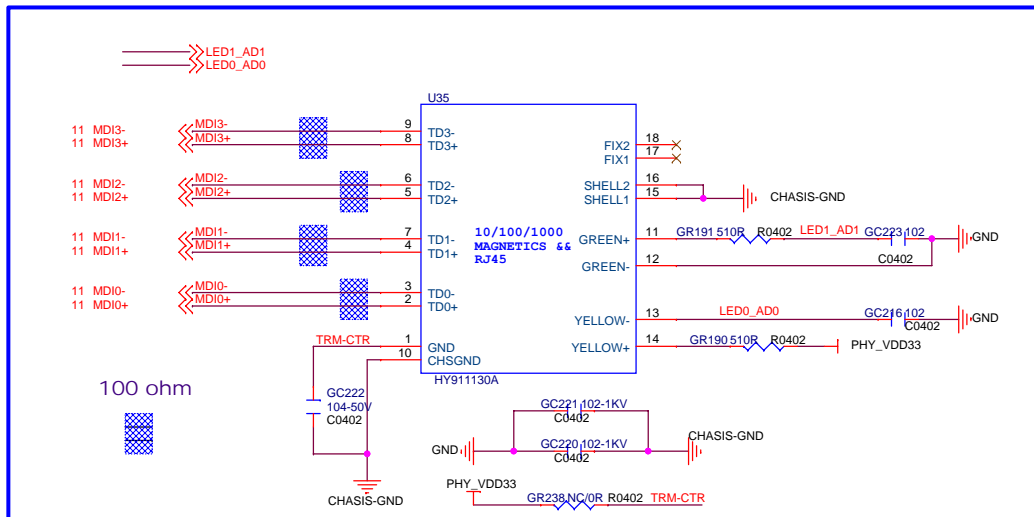
### PHY\_AVDD10

C44 close to pin40

### PHY\_VDD10

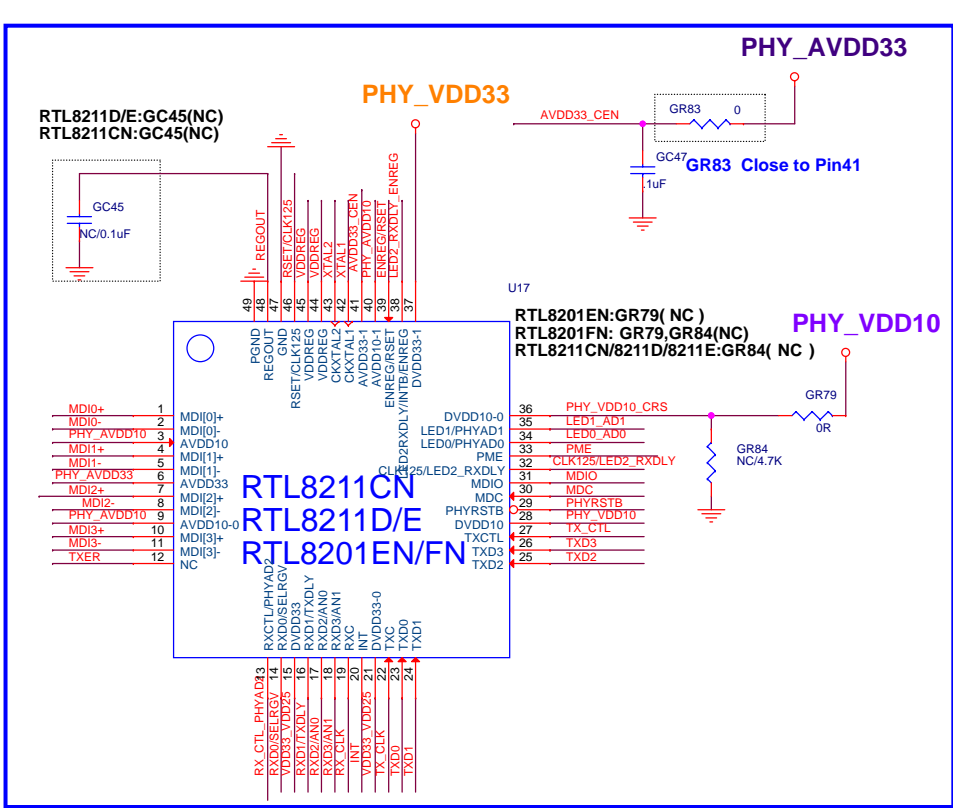
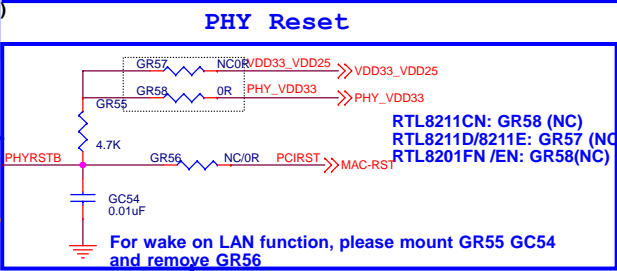
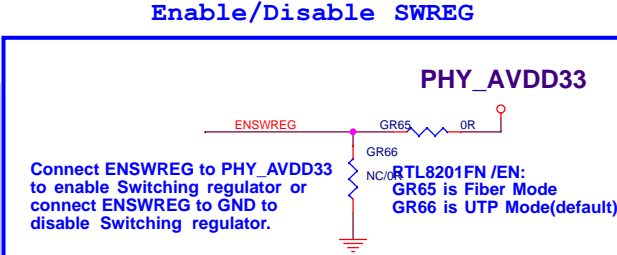
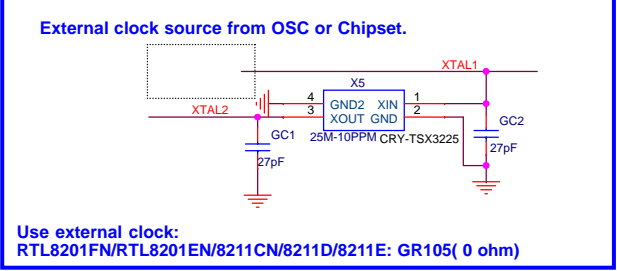
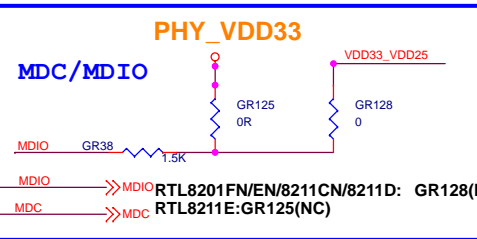
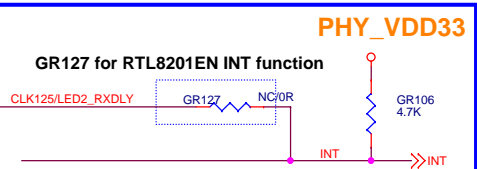
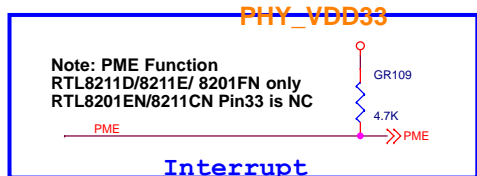


C39 close to pin28

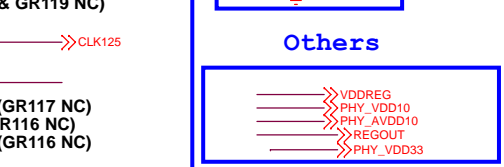
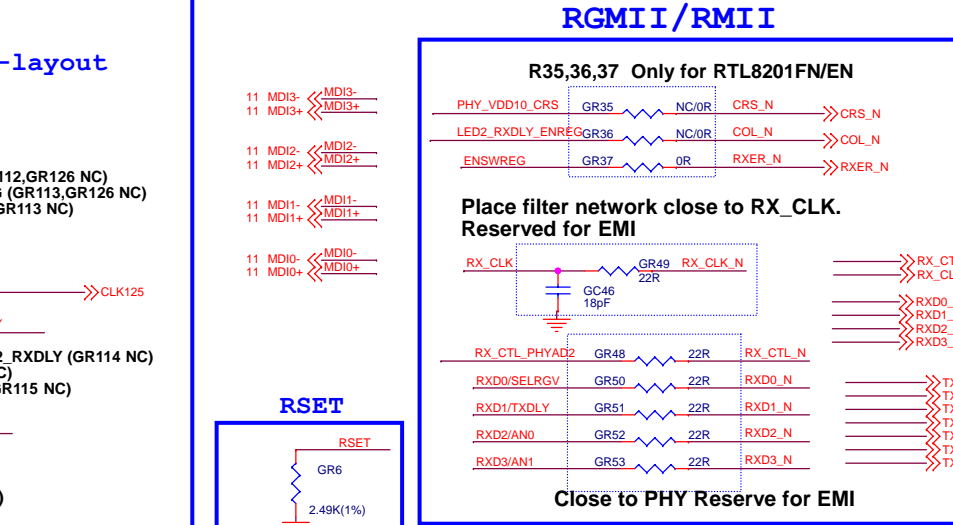
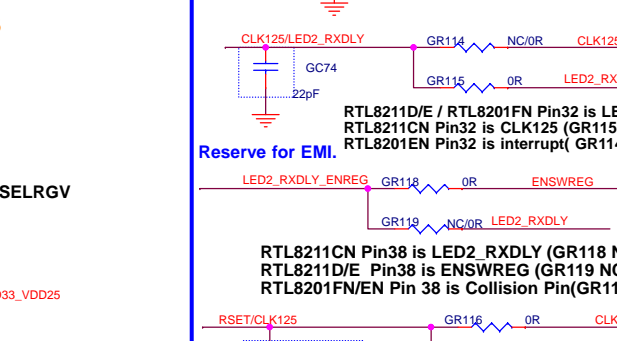
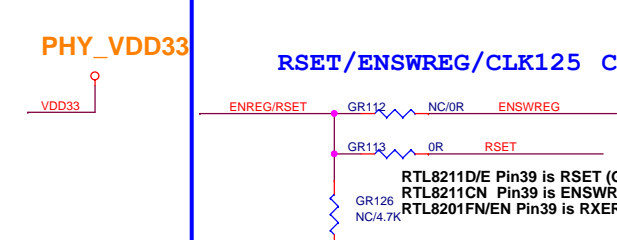
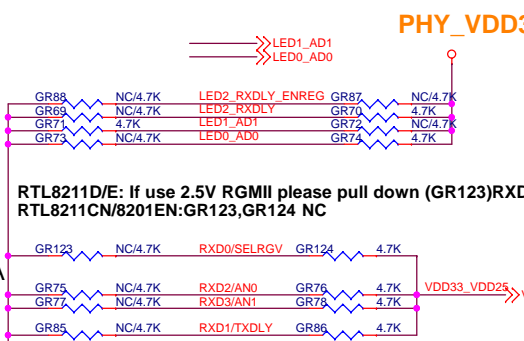
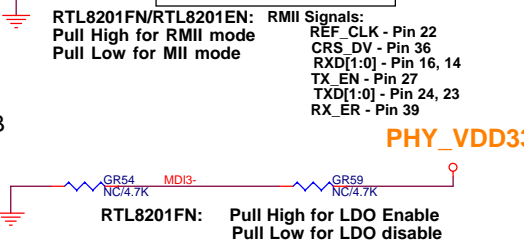
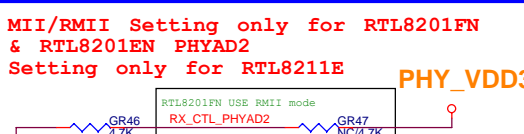


### PINE64

Title			SOPINE Baseboard " Model A"		
Size	Document Number	EMAC/GMAC			Rev
A3				18	0.9
Date:				Sheet	18 of 19



### Configuration Setting



PINE64			
Title SOPINE Baseboard " Model A"			
Size A3	Document Number	EMAC/GMAC	Rev 0.9
Date:	Sheet	19	of 19