

Model Name: GA-H81M-S2V

Revision 1.0

SHEET

TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1150-A
05	CPU_LGA1150-B
06	CPU_LGA1150-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS X1 *1 SLOT
16	ITE 8620 LPC IO
17	COM,KB_MS_USB,USB30_20
18	HWM,FAN CTRL,OV,-PROCHOT
19	SINGLE BIOS
20	FP,FUSB,SPK,SATALED
21	Realtek ALC887-VD2
22	REAR AUDIO JACK
23	REALTEK RTL8111G
24	DISCRETE POWER
25	ATX , CLOCK GEN
26	VCORE ISL95812_1
27	VCORE ISL95812_2

SHEET

TITLE

28	RT8120_DDR POWER
29	DVI

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Cover Sheet

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D

CD

B

A

Size
Custo

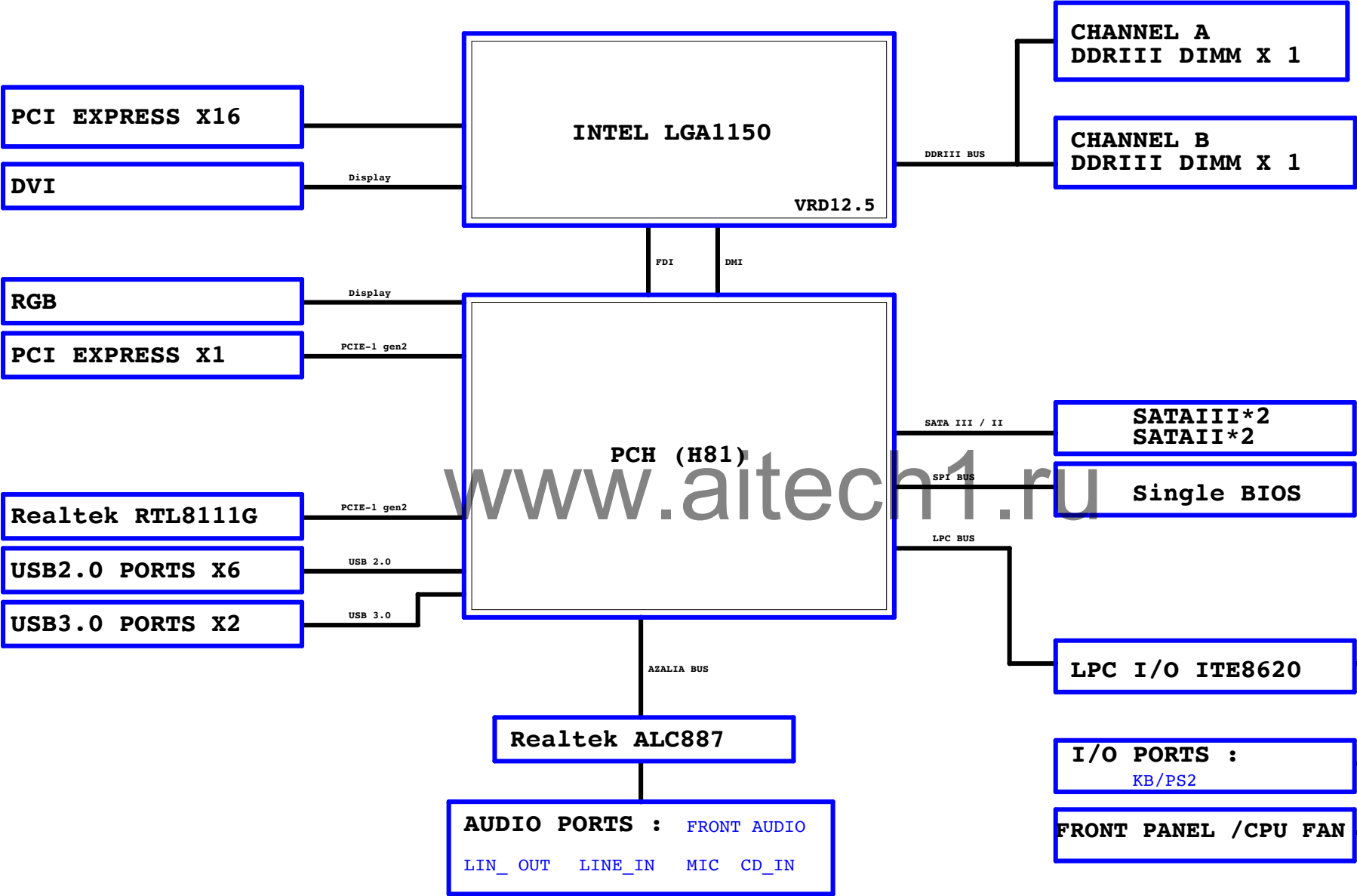
GA-H81M-S2V

Date:

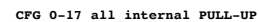
Thursday, May 15, 2014

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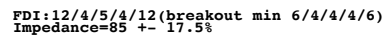
BLOCK DIAGRAM



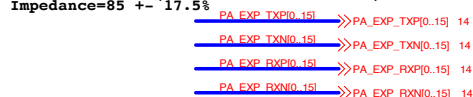
(E)



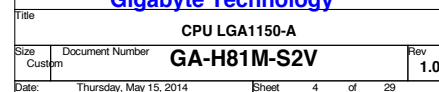
(D)



LGA1



-CPURST



LGA1150

(A)

LGA1150

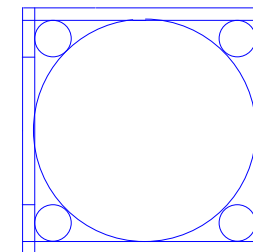
(B)

LGA1150

(CR)

LGA1150A

LGA1150B

CR
CPU RETAINTION/X

LGA1150



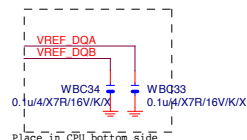
ILM_BP/1156/CSP/ILM_BP/1156/CSP/[12KRC-0F0001-52R_12KRC-0F0001-51R]

DDR BUS

7 MODT_A[0..1] ↔ MODT_A0..1
8 MODT_B[0..1] ↔ MODT_B0..1
7 MDA[0..63] ↔ MDA0..63
8 MDB[0..63] ↔ MDB0..63
7 DQSA[0..7] ↔ DQSA0..7
7 -DQSA[0..7] ↔ -DQSA0..7
7 MAA[0..15] ↔ MAA0..15
8 MAB[0..15] ↔ MAB0..15
8 DQSB[0..7] ↔ DQSB0..7
8 -DQSB[0..7] ↔ -DQSB0..7

HASWELL[10SC1-F01150-11R_10SC1-F01150-12R]

HASWELL[10SC1-F01150-11R_10SC1-F01150-12R]

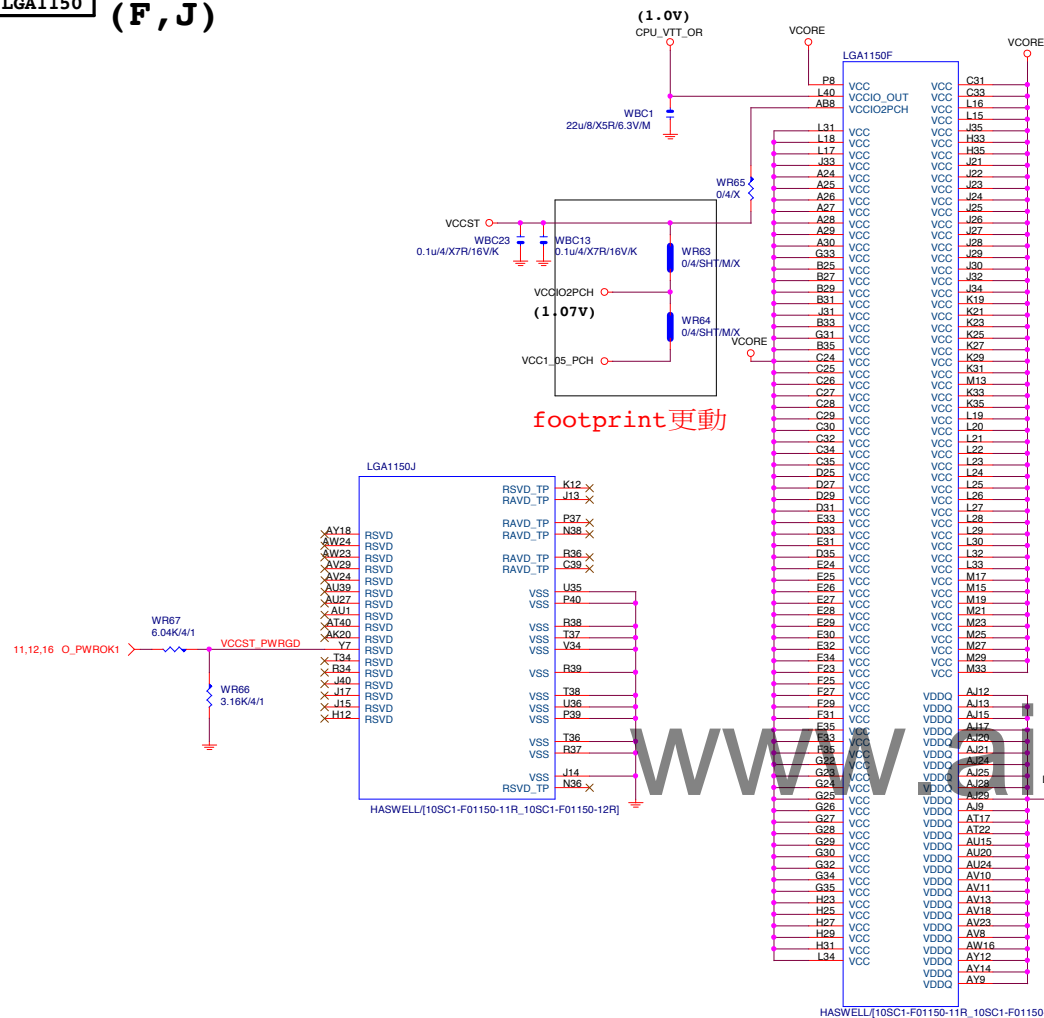


未上件

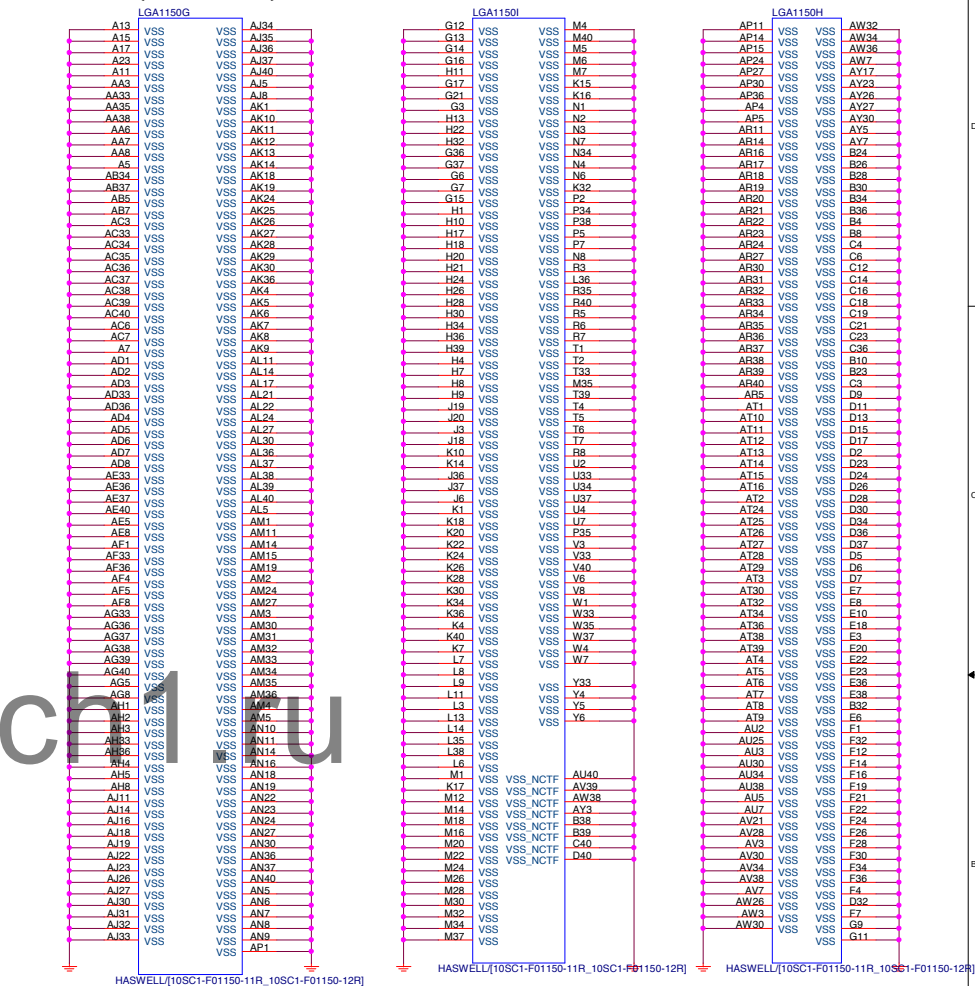
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CPU LGA1150-B			
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LGA1150 (F, J)

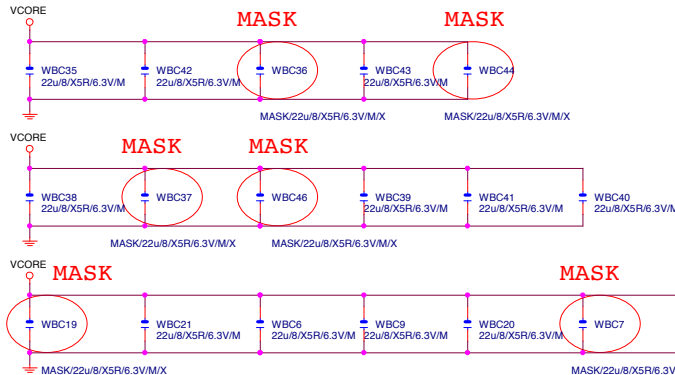


LGA1155 (G, H, I)



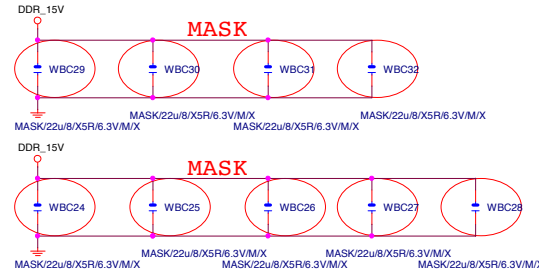
VCore CAP

(X18)



DDR CAP

(X9)



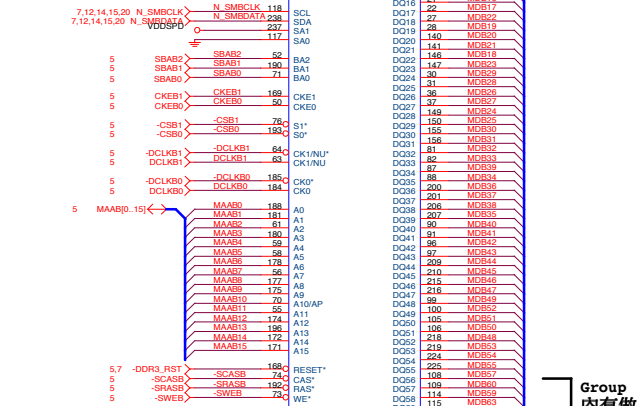
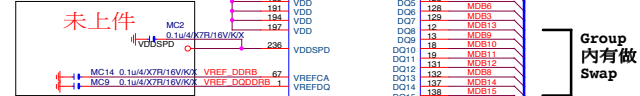
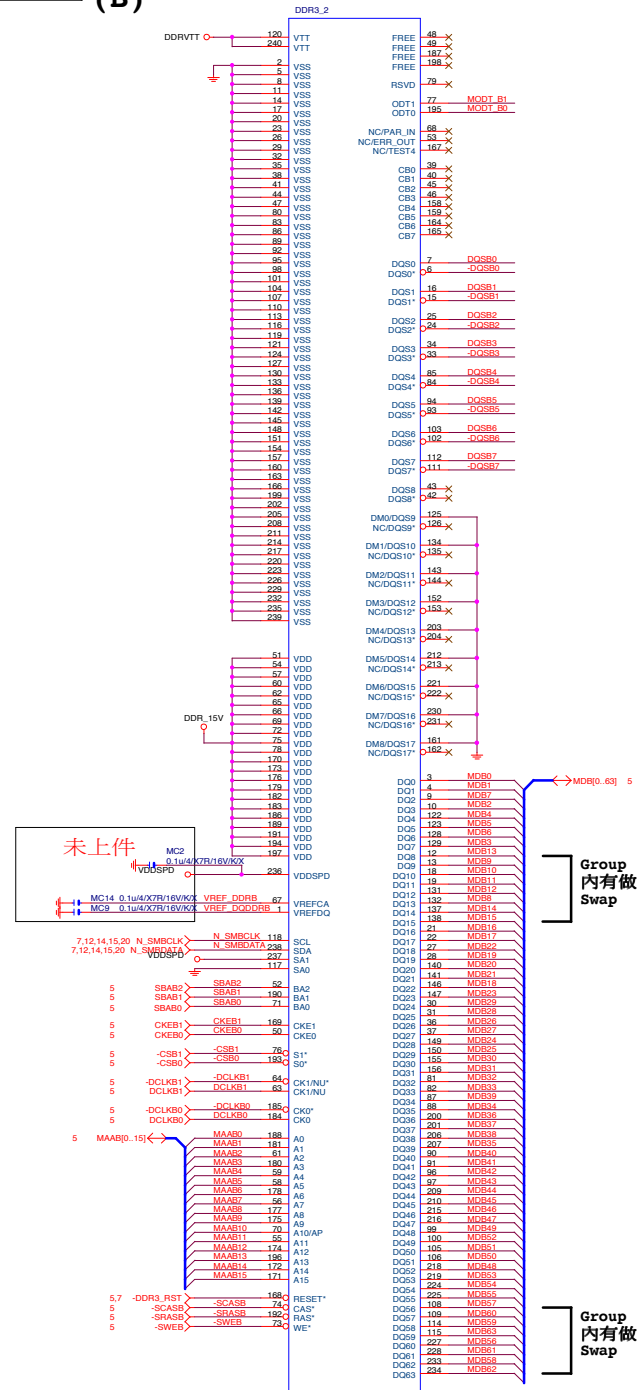
Gigabyte Technology

Title	CPU LGA1150-C		
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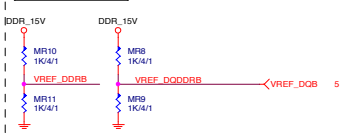
DDR3

(B)



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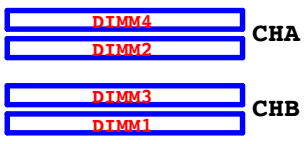
DDR3 VREF



COUPON

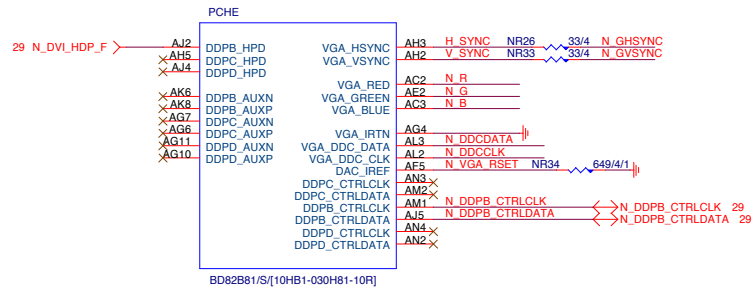


CPU

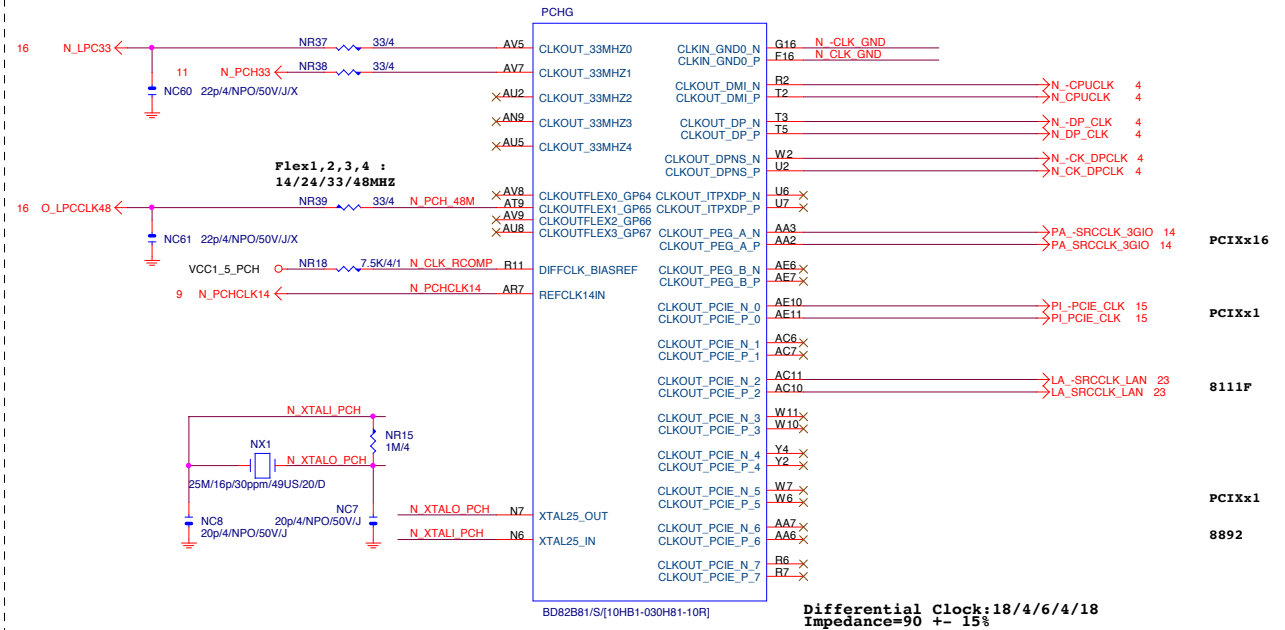


Title			
PCH FDI,DMI,USB ,PCIE,NVRAM			
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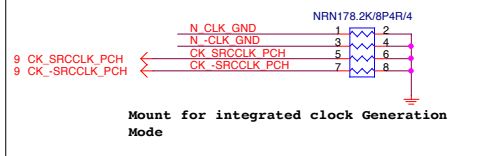
PCH (E)



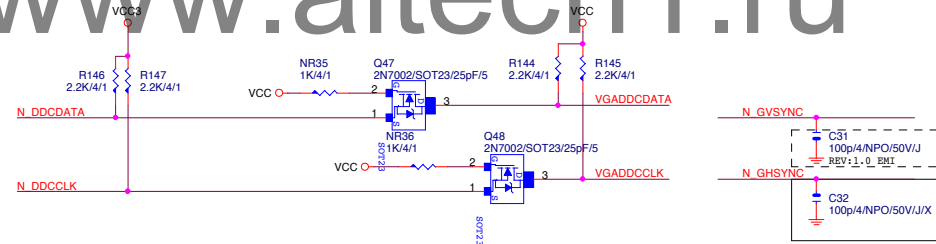
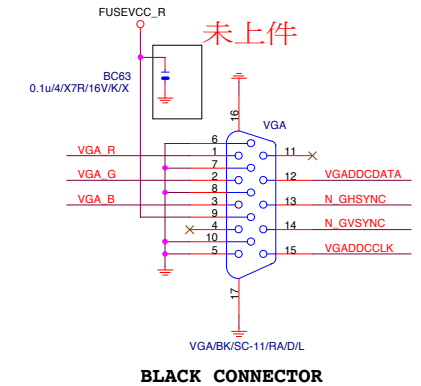
PCH (G)



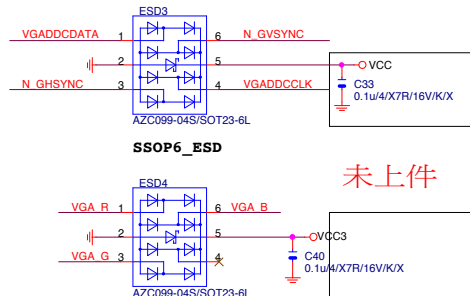
PCH CLK PD



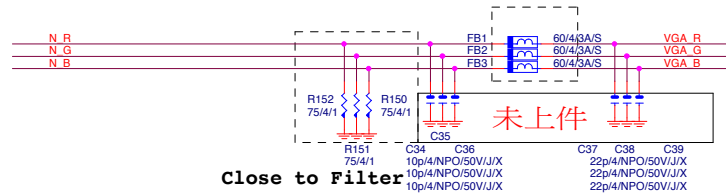
VGA DDC

**VGA CONNECTOR**

VGA ESD



VGA DDC

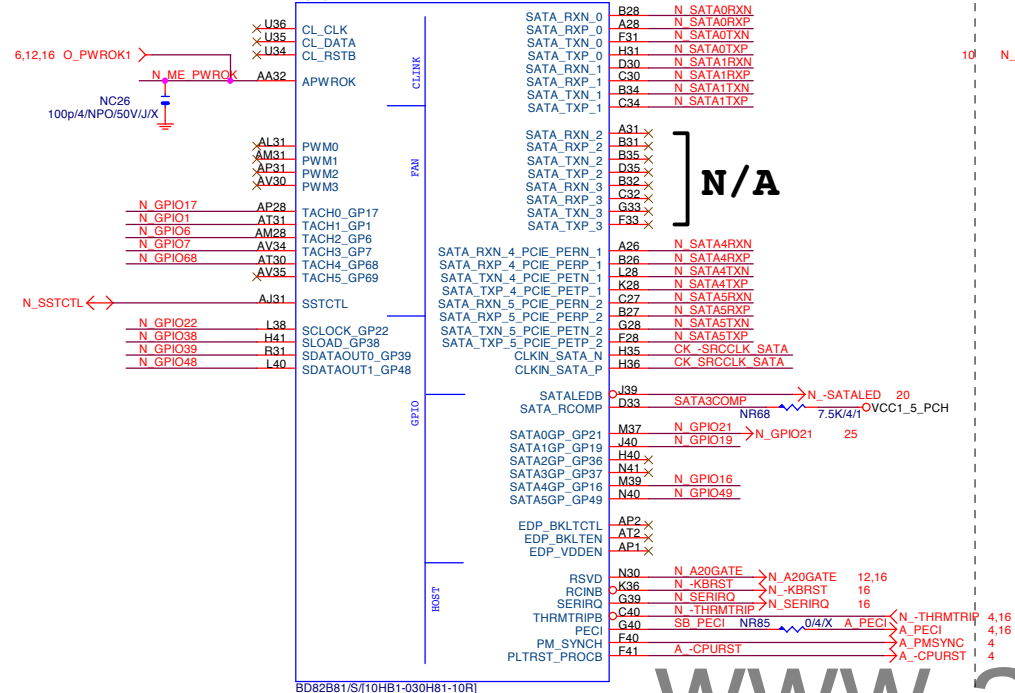


PCH

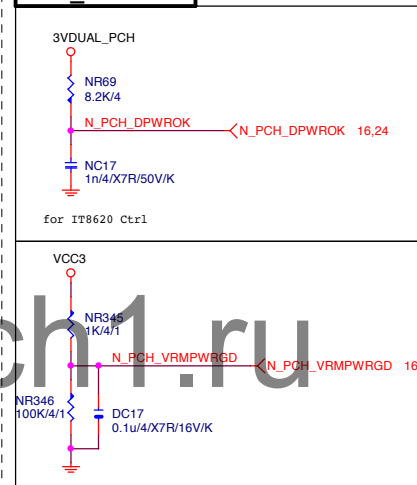
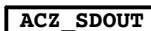
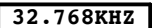
(C)

SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
 Impedance=90 +- 17.5%
 SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
 Impedance=90 +- 17.5%

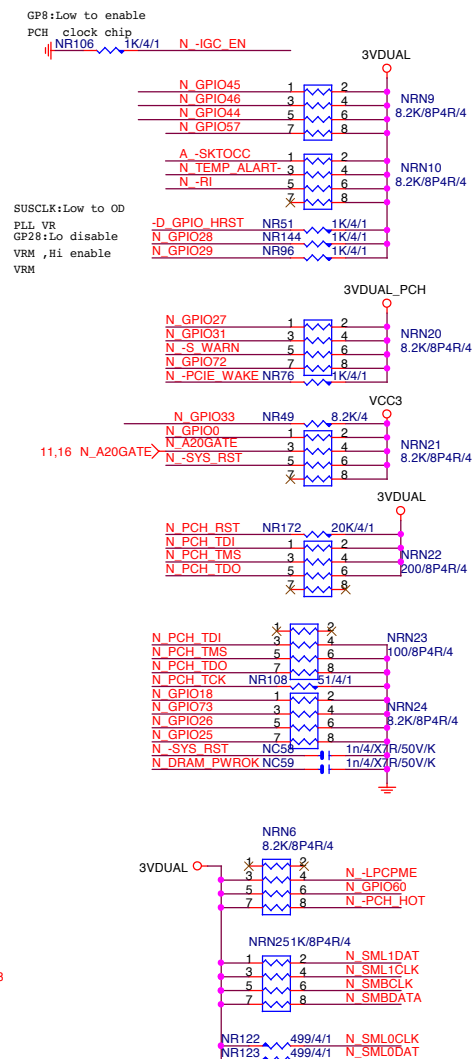
PCHC



(D)



PCH	PU/PD
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PCH GPIO , CTRL , AUDIO

er **GA-H81M-S2V**

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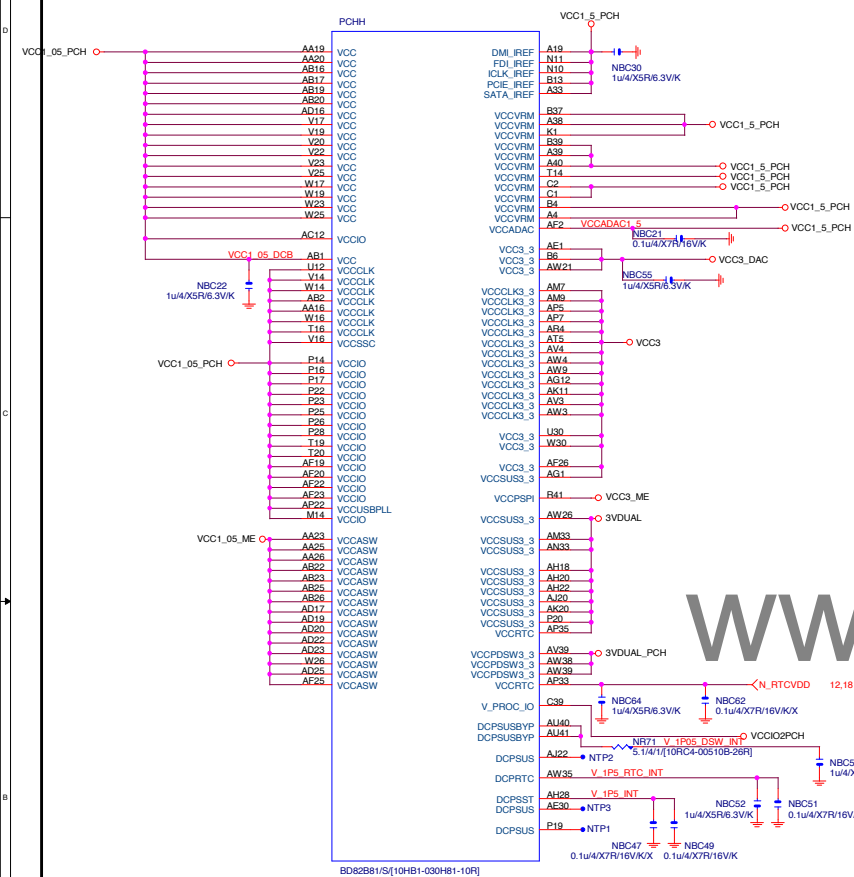
PCH

(H)

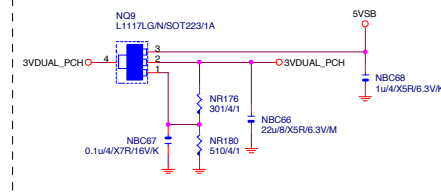
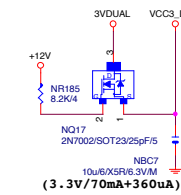
VCC3_DAC

3VDUAL_PCH

SHT_PWR



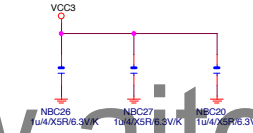
CLOSE北橋(注意震盪水波紋)



VCC3_ME
VCC1_05_PCH

CAP

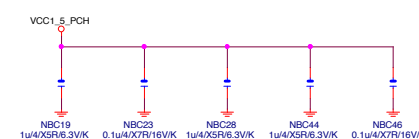
(3.3V) (X6)



(1.05V) (X2) (3.3V) (X2)

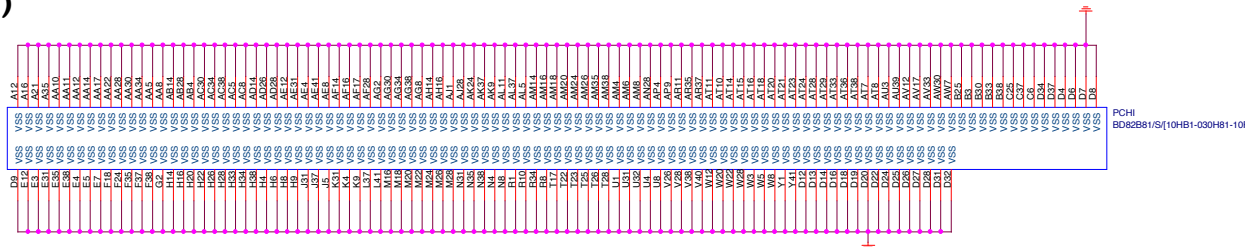


(1.05V) (X10)



PCH

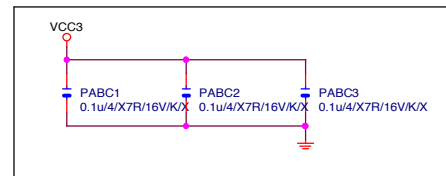
(I)



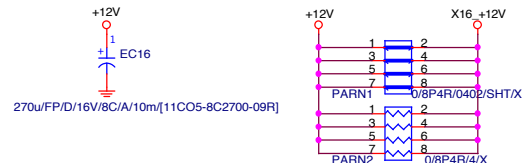
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PCIEX16 CAP



PCIEX16 PROTECT SHT

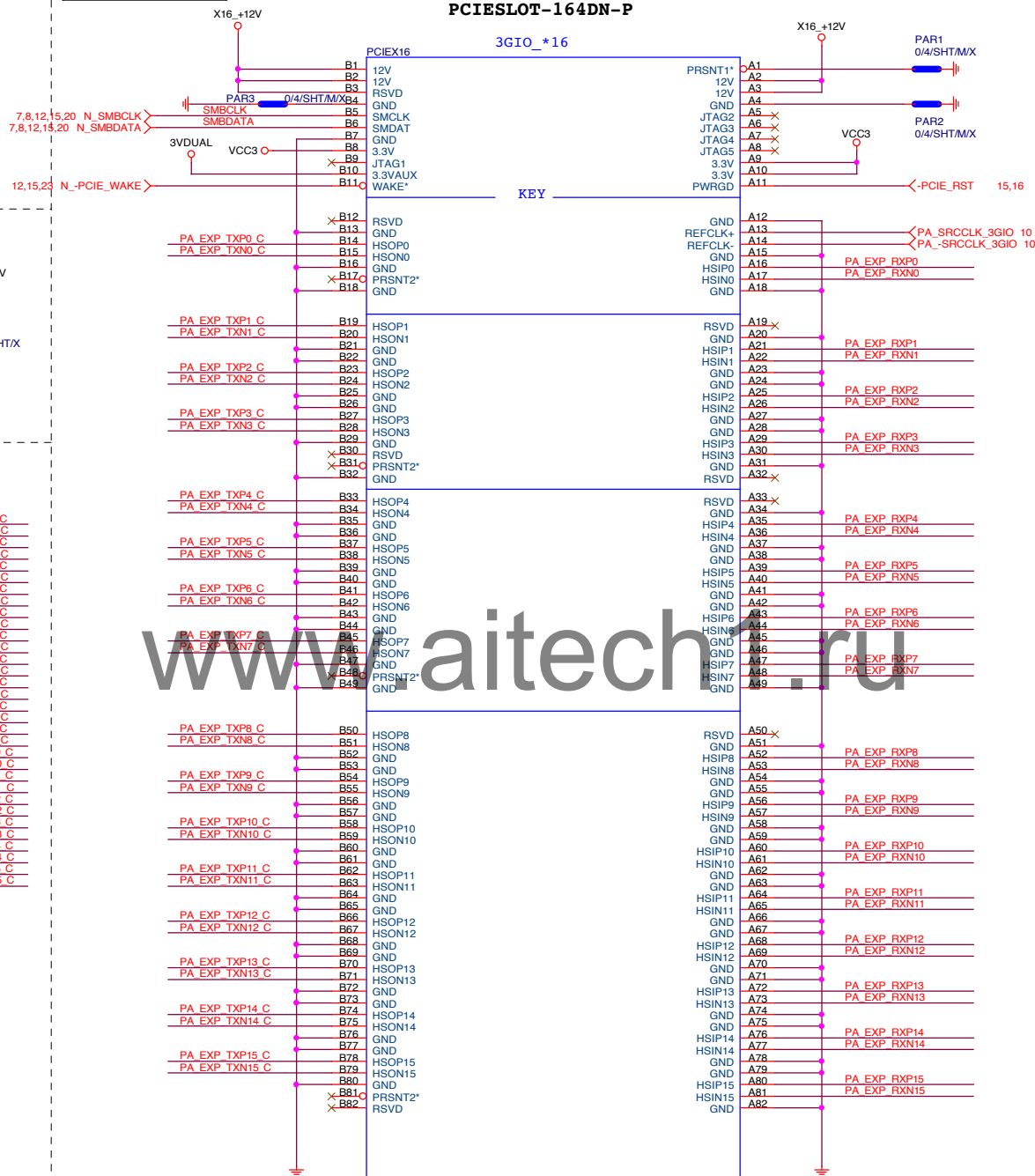


PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22uF/4X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22uF/4X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22uF/4X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22uF/4X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22uF/4X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22uF/4X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22uF/4X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22uF/4X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22uF/4X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22uF/4X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22uF/4X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22uF/4X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22uF/4X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22uF/4X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22uF/4X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22uF/4X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8	PAC20	0.22uF/4X5R/6.3V/K	PA EXP TXP8 C
PA EXP TXN8	PAC21	0.22uF/4X5R/6.3V/K	PA EXP TXN8 C
PA EXP TXP9	PAC22	0.22uF/4X5R/6.3V/K	PA EXP TXP9 C
PA EXP TXN9	PAC23	0.22uF/4X5R/6.3V/K	PA EXP TXN9 C
PA EXP TXP10	PAC24	0.22uF/4X5R/6.3V/K	PA EXP TXP10 C
PA EXP TXN10	PAC25	0.22uF/4X5R/6.3V/K	PA EXP TXN10 C
PA EXP TXP11	PAC26	0.22uF/4X5R/6.3V/K	PA EXP TXP11 C
PA EXP TXN11	PAC27	0.22uF/4X5R/6.3V/K	PA EXP TXN11 C
PA EXP TXP12	PAC28	0.22uF/4X5R/6.3V/K	PA EXP TXP12 C
PA EXP TXN12	PAC29	0.22uF/4X5R/6.3V/K	PA EXP TXN12 C
PA EXP TXP13	PAC30	0.22uF/4X5R/6.3V/K	PA EXP TXP13 C
PA EXP TXN13	PAC31	0.22uF/4X5R/6.3V/K	PA EXP TXN13 C
PA EXP TXP14	PAC32	0.22uF/4X5R/6.3V/K	PA EXP TXP14 C
PA EXP TXN14	PAC33	0.22uF/4X5R/6.3V/K	PA EXP TXN14 C
PA EXP TXP15	PAC34	0.22uF/4X5R/6.3V/K	PA EXP TXP15 C
PA EXP TXN15	PAC35	0.22uF/4X5R/6.3V/K	PA EXP TXN15 C

PA EXP RXP0_15] >>> PA_EXP_RXP[0..15] 4
 PA EXP RXN0_15] >>> PA_EXP_RXN[0..15] 4
 PA EXP TXP0_15] >>> PA_EXP_TXP[0..15] 4
 PA EXP TXN0_15] >>> PA_EXP_TXN[0..15] 4

PCIEX16 SLOT



PCI-E/16X-164P/BK/LONG DOUBLE

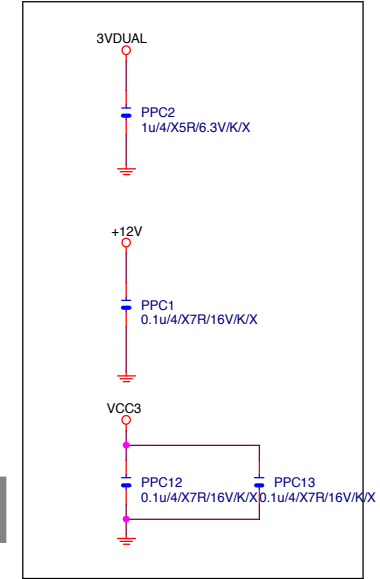
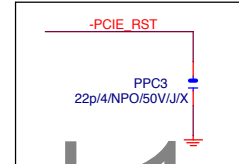
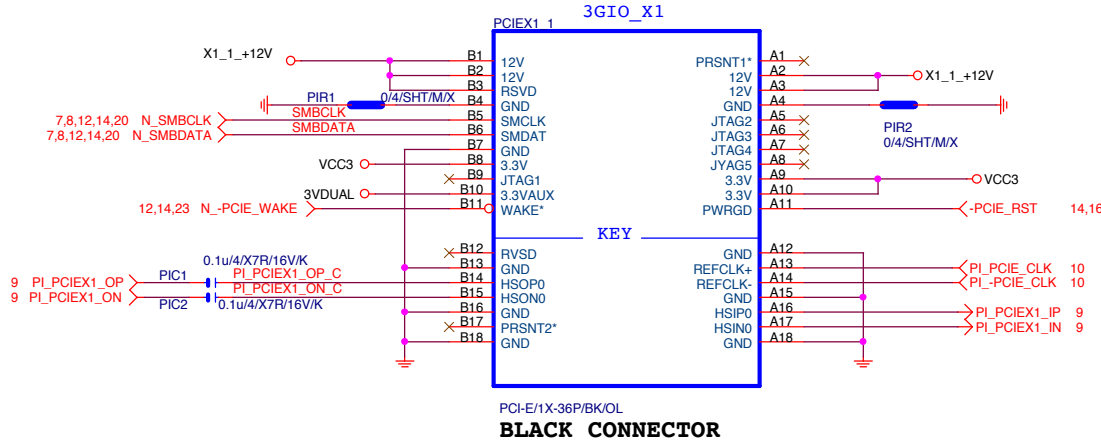
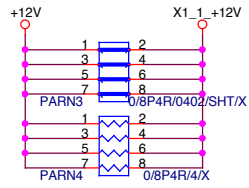
BLACK CONNECTOR

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Title			PCI EXPRESS * 16	
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PCIEX1 SLOT

PCIEX1 PROTECT SHT



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PCI EXPRESS X 1 PORT			
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COM

KB/MS

KB_MS ESD

USB2.0 PWR

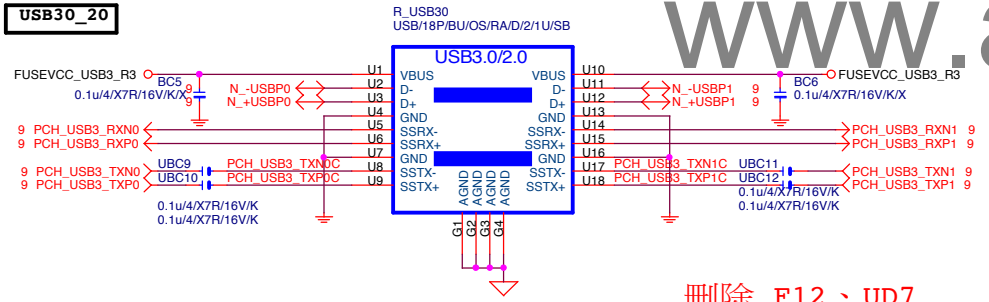
COM RI

USB30_20

USB30_20 ESD PROTECT

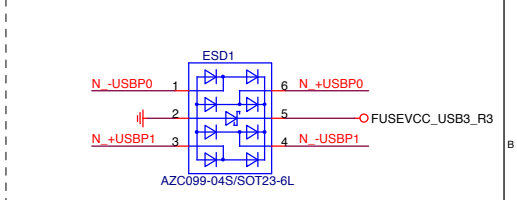
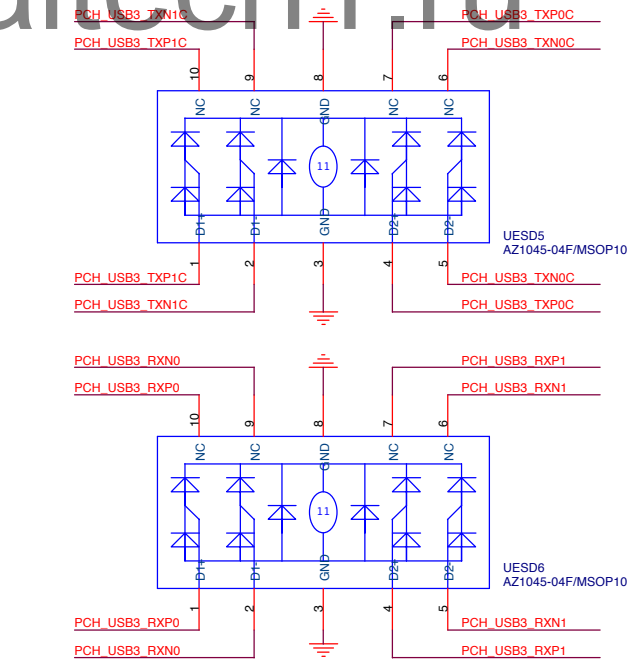
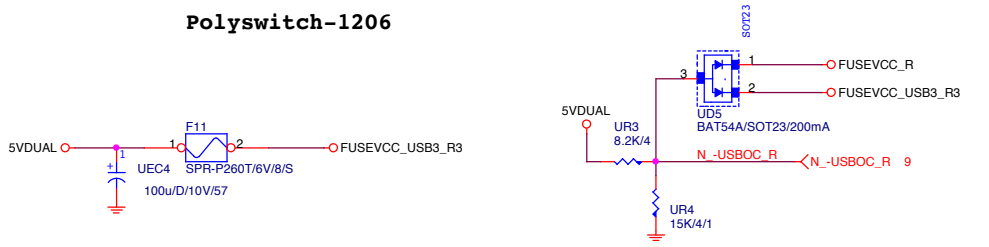
USB3.0 ESD

USB POWER PROTECT

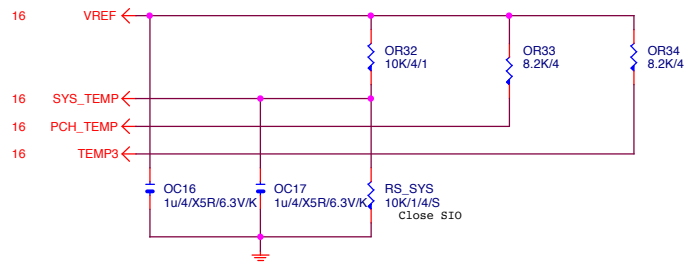


USB30_20 PWR

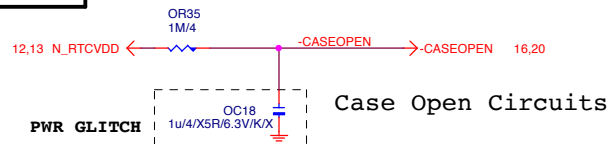
-USBOC_R0



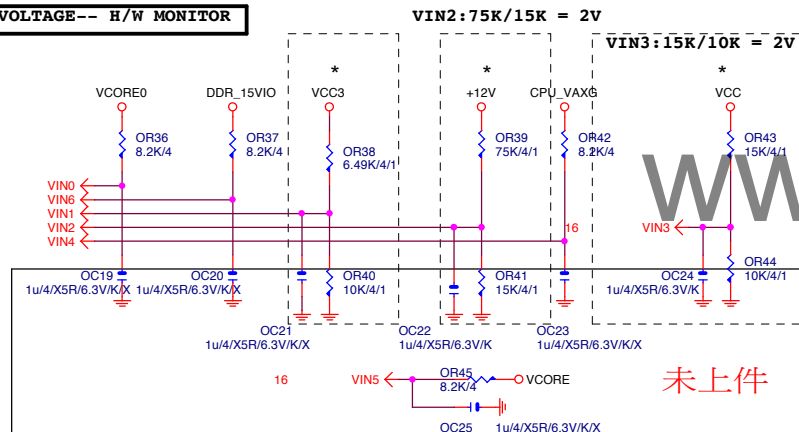
TEMP H/W MONITOR



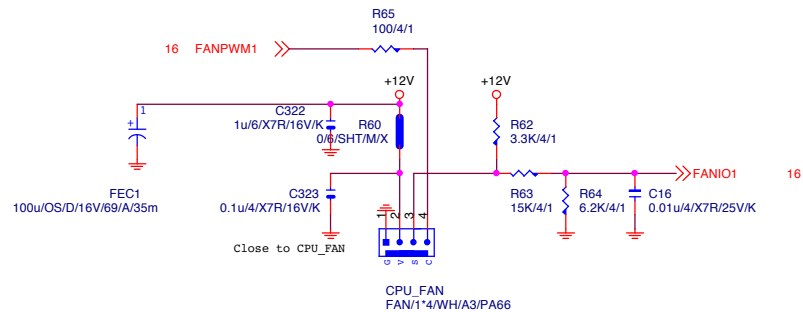
CASE OPEN



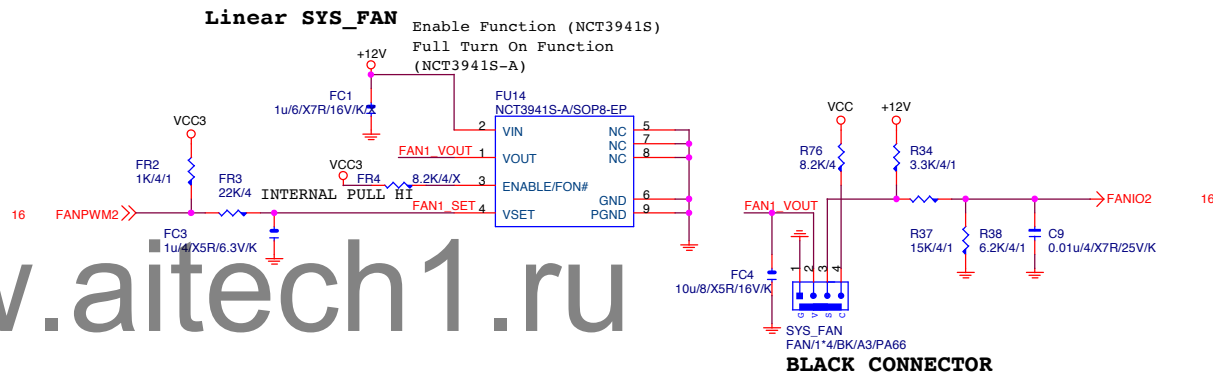
VOLTAGE-- H/W MONITOR



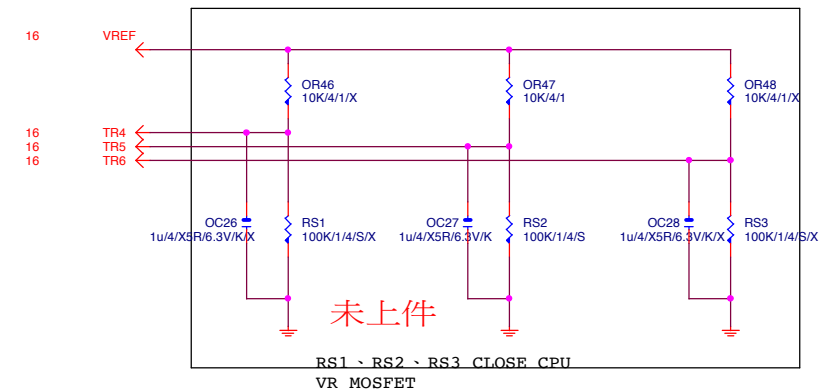
CPU SMART FAN

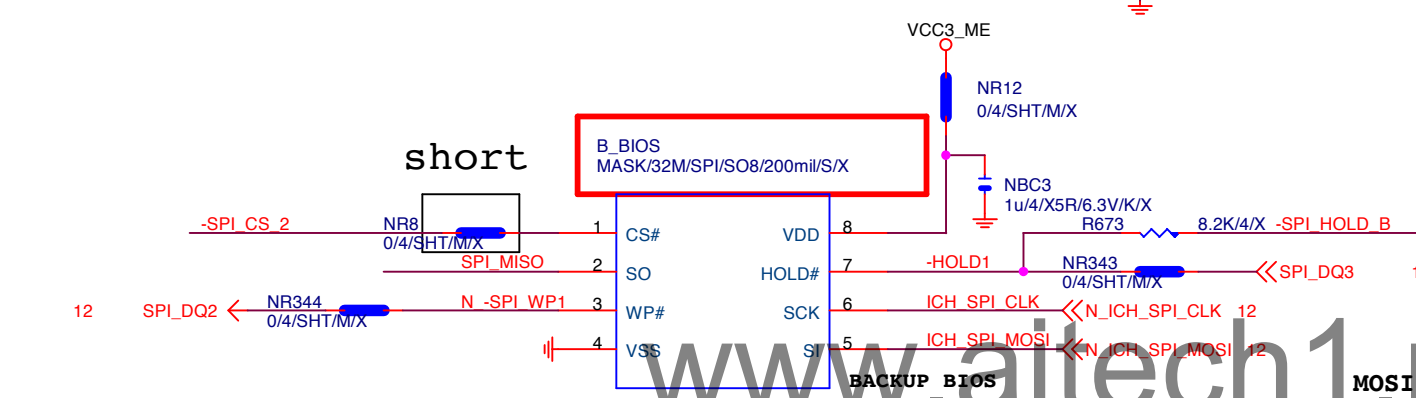
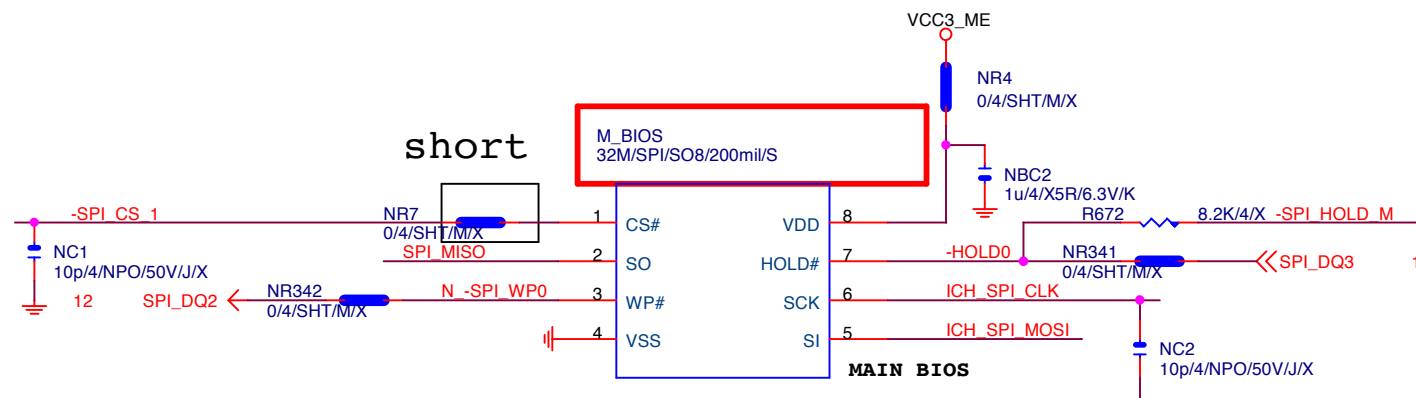


SYS SMART FAN



-PROHOT

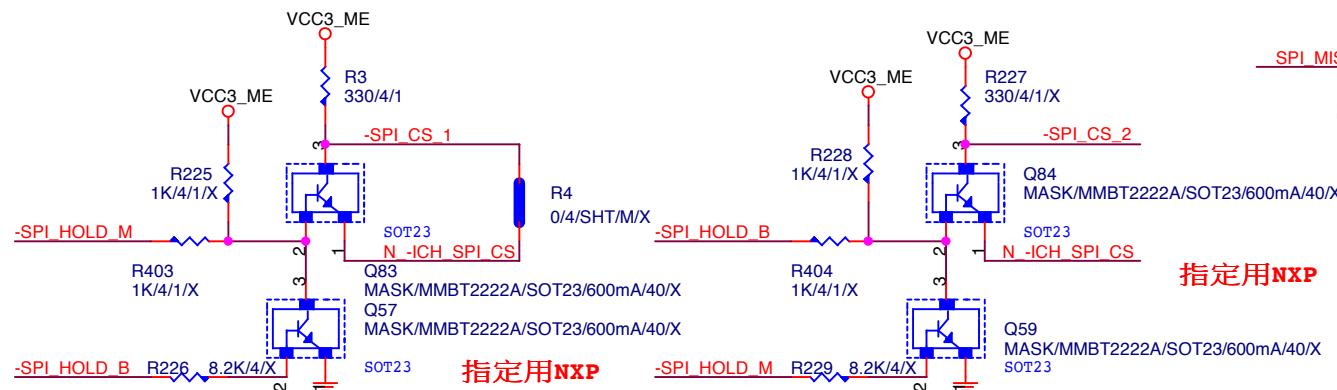
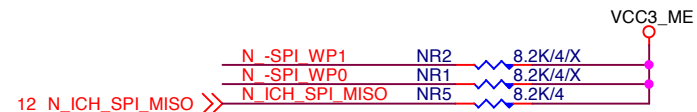
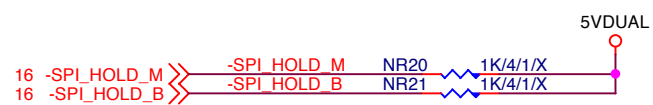
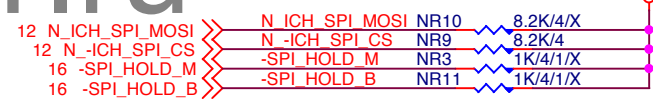




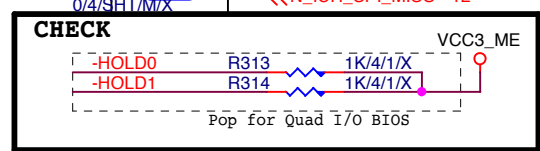
BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K

MOSI For DMI RX Termination Voltage



short



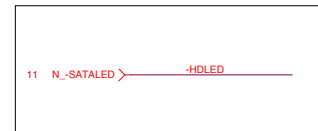
指定用NXP

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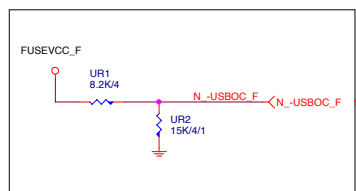
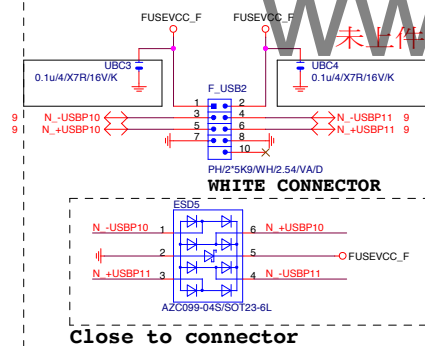
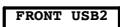
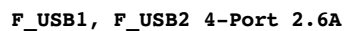
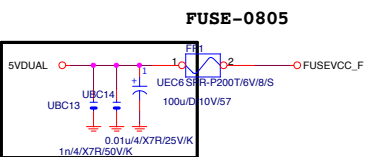
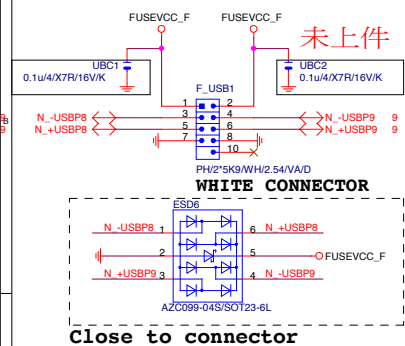
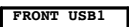
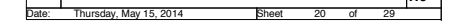
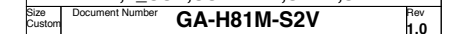
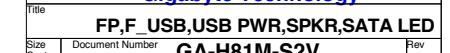
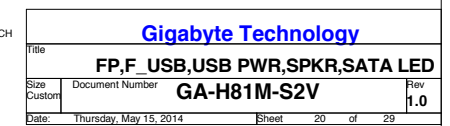
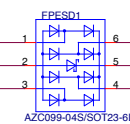
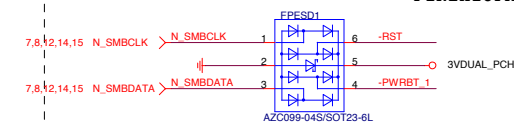
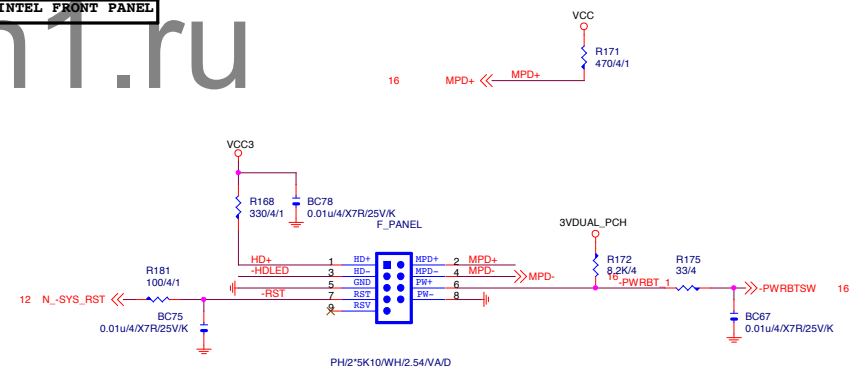
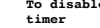
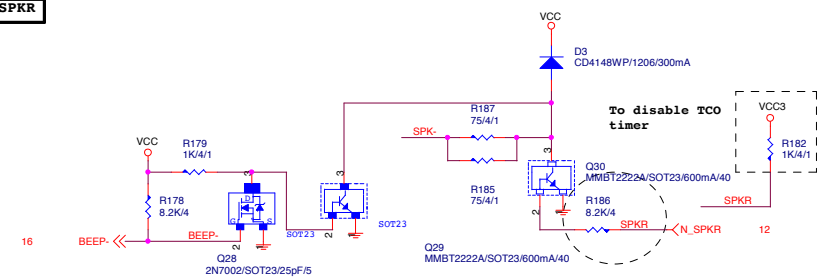
SINGLE BIOS

GA-H81M-S2V

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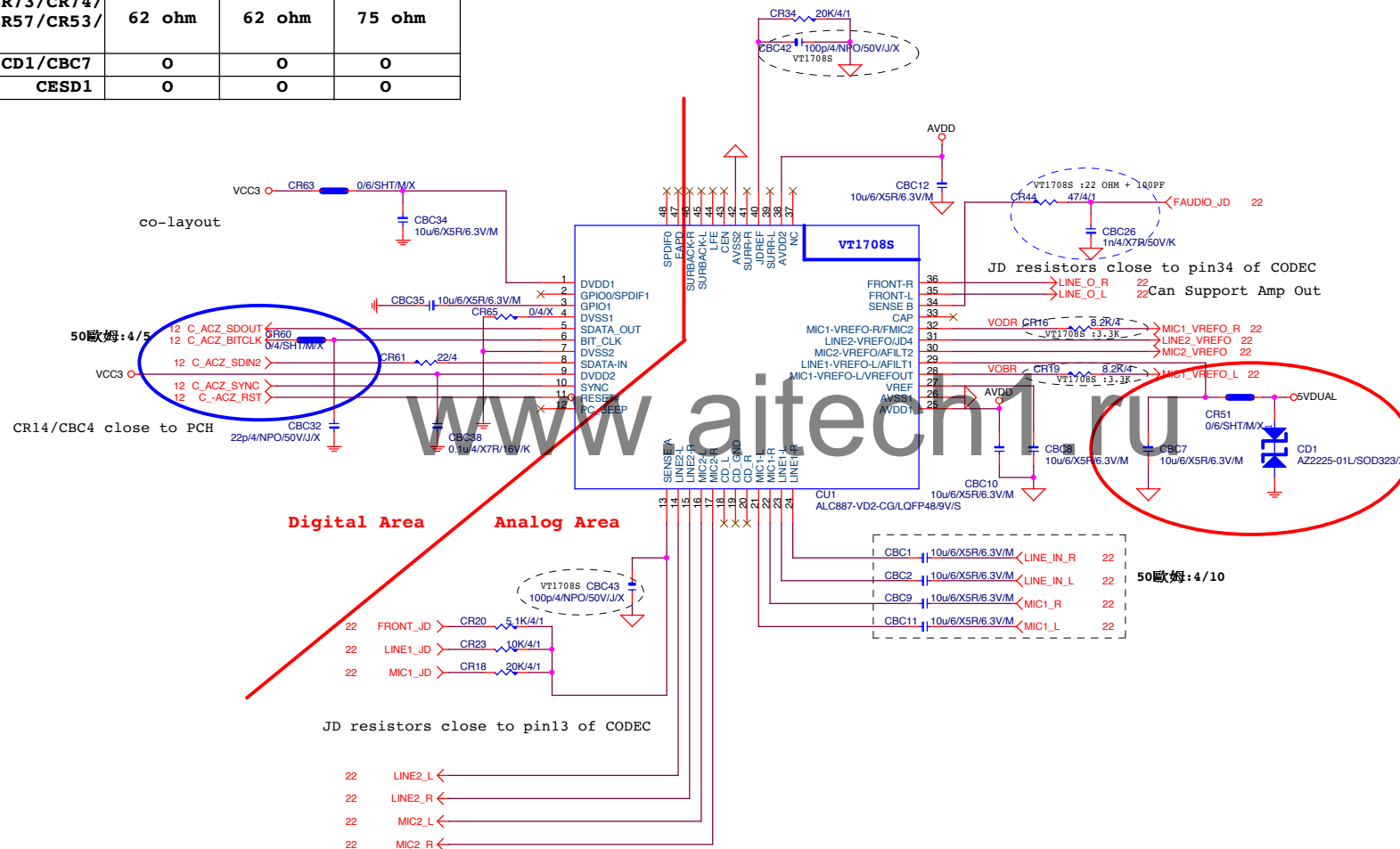


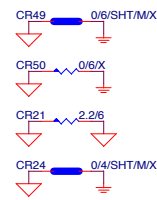
新增



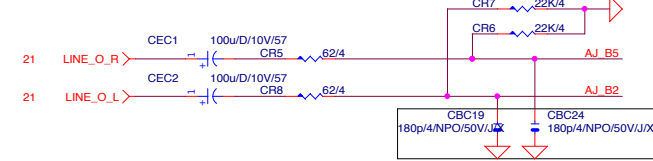
AZALIA CODEC **ALC892/ALC887-VD2/VT1708-CE Colay**

	ALC892	ALC887-VD2	VT1708S-CE
CR44/CBC26	47ohm+1nF	47ohm+1nF	22ohm+100P
CBC42/CBC43	X	X	100P/4
CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70	22K/4	22K/4	10K/4/1
CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76	62 ohm	62 ohm	75 ohm
CR51/CD1/CBC7	0	0	0
CESD1	0	0	0





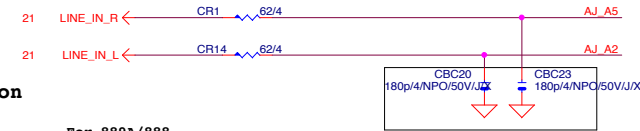
LINE-OUT



LINE-IN

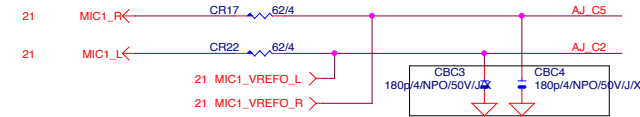
Verify MIC function
in LINE-in

Only reserved for ALC888



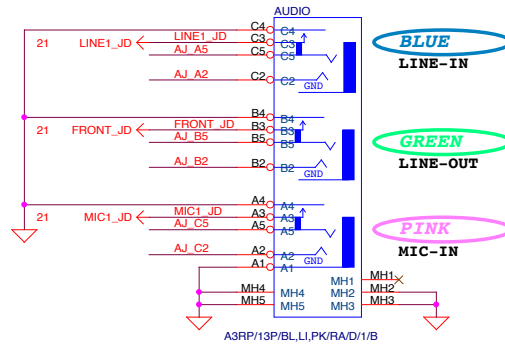
For 889A/888

MIC-IN

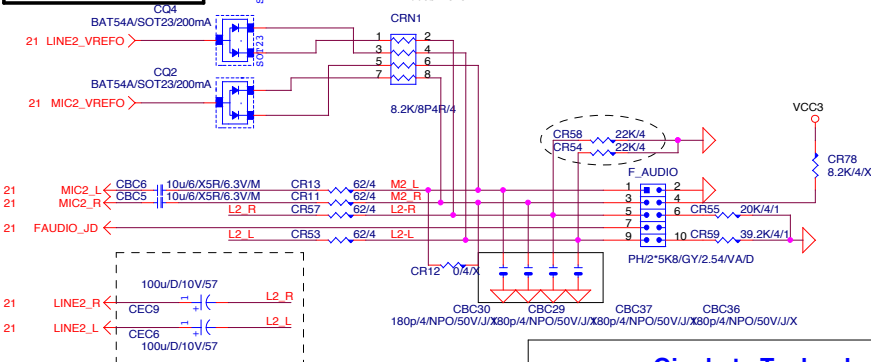


SPDIF_OUT

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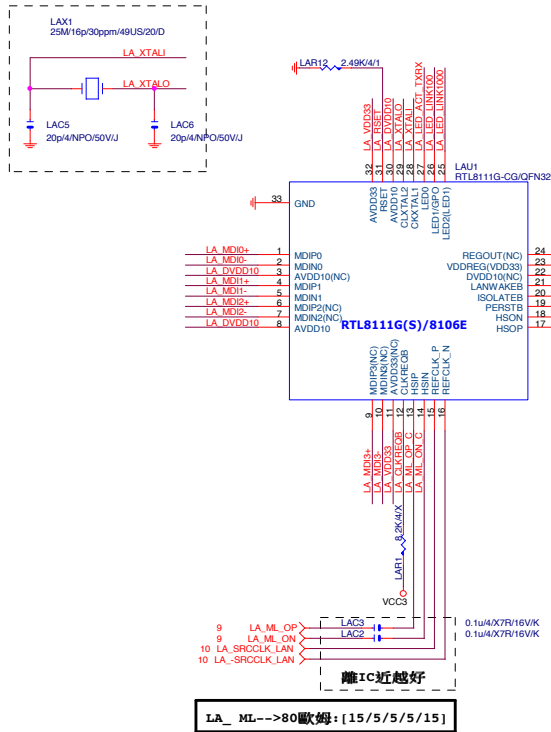
AZALIA FRONT PANEL



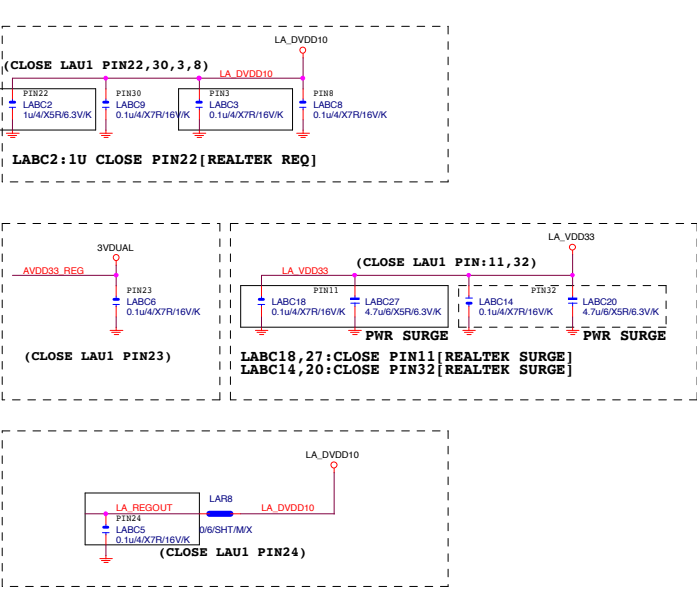
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LAN:RTL8111G

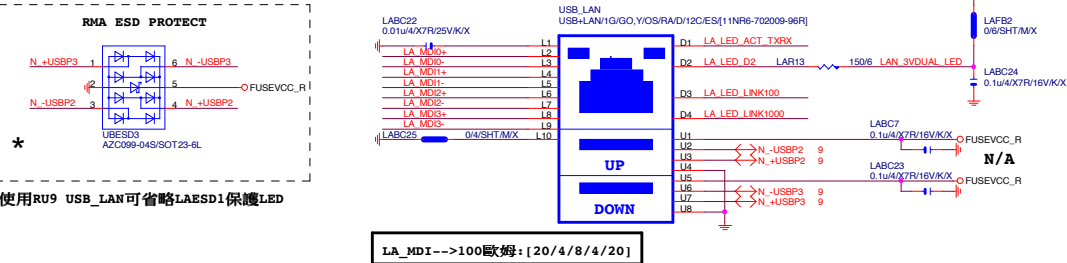


LAN POWER

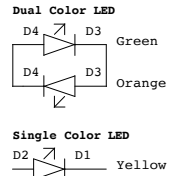
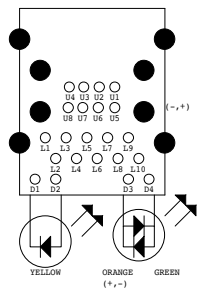
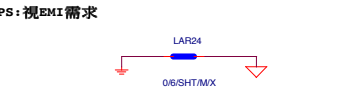


NOTE:
RT8106E: PIN3, 11, 22, 24-->NC
LABC2LABC3, LABC5, LABC18, LABC27-->N/A

USB LAN CONNECTOR



EMI SHORT PAD



注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]

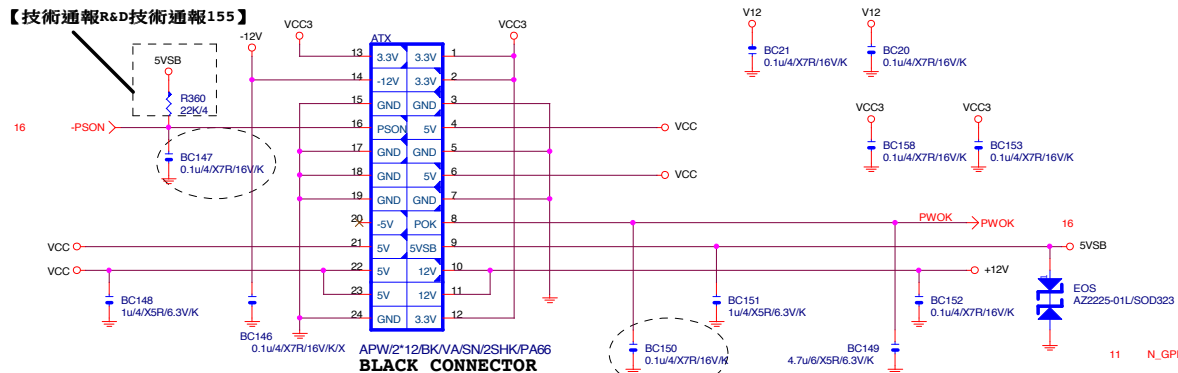
BOM NOTICE

料號	規格	廠商
11NR6-702009-96R	1G LAN (12core)	UDE(RU9 ESD+)
[LED獨立走線, 可省略外加AZC099料件LAESD1]		
1. 9KV ESD BOM: USB LAN (RU9):11NR6-702009-96R		
2. 28KV ESD BOM: USB LAN (RU9):11NR6-702009-96R		
LAESD2, LAESD3: 上件AZC398-04S		

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REALTEK RTL8111G		
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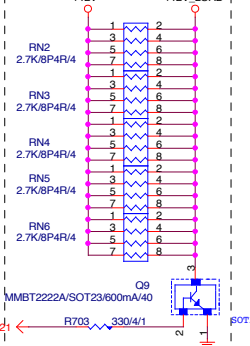
ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】

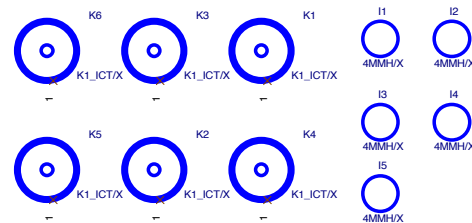
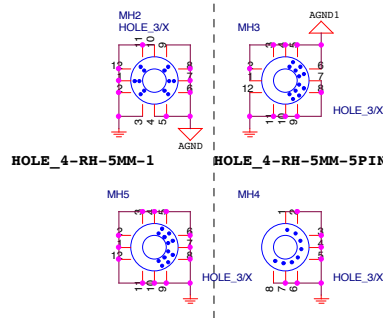
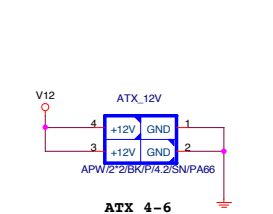


【技術通報R&D技術通報153】

To fix 12V light load abnormal issue



ATXX4 POWER CONNECTOR

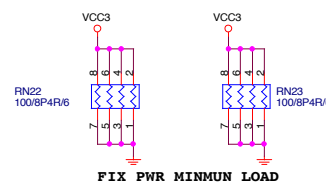


To prevent the 5VSB under loading when boot

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PWOK PATCH

【技術通報R&D技術通報154】



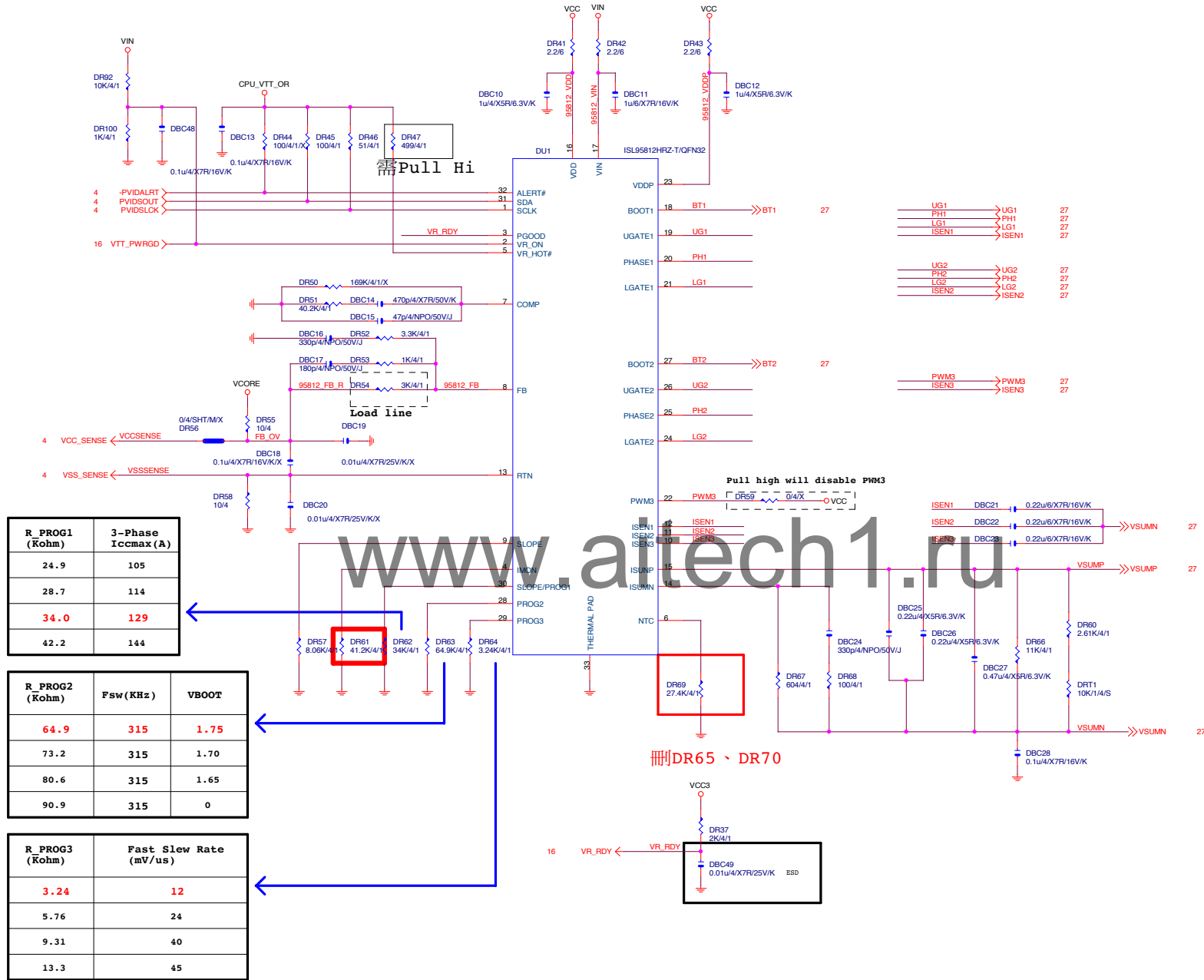
Gigabyte Technology

ATX CONNECTOR

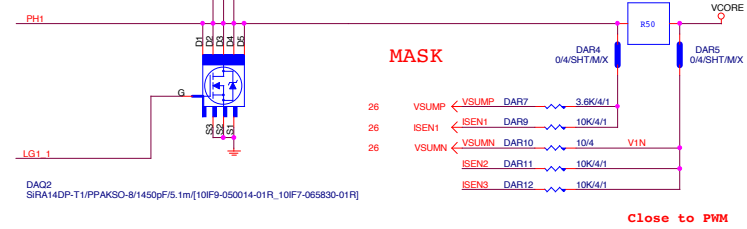
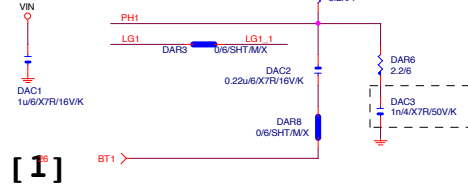
GA-H81M-S2V

Rev 1.0

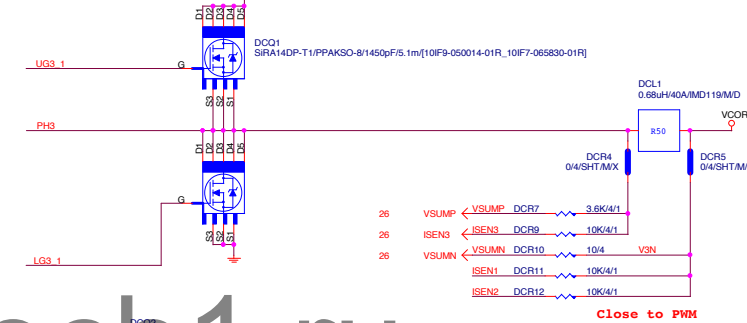
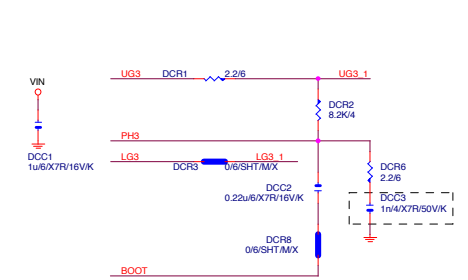
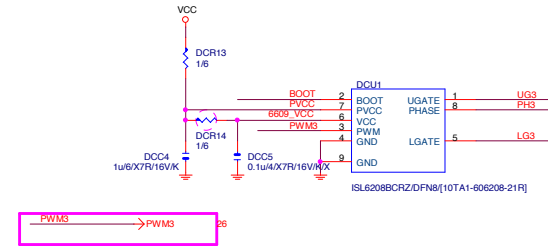
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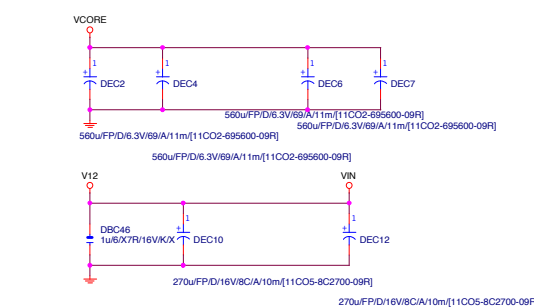
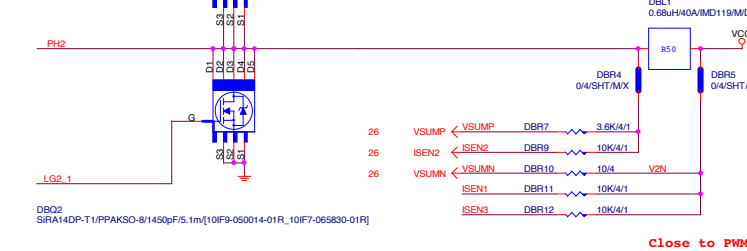
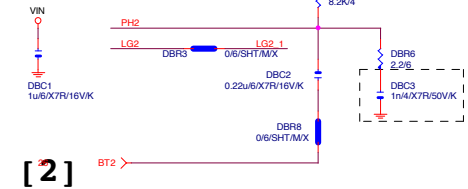
PHASE 1

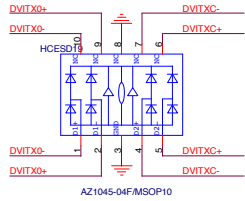


PHASE 3

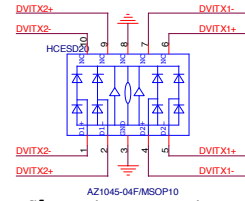


PHASE 2

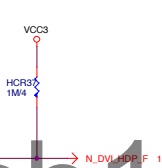
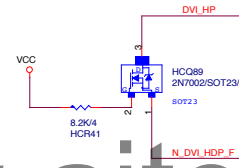
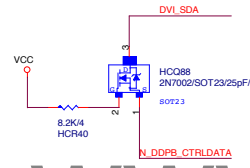
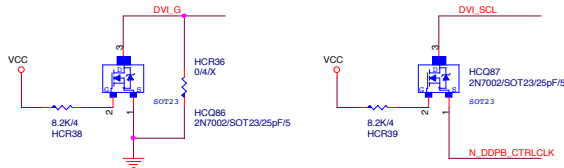
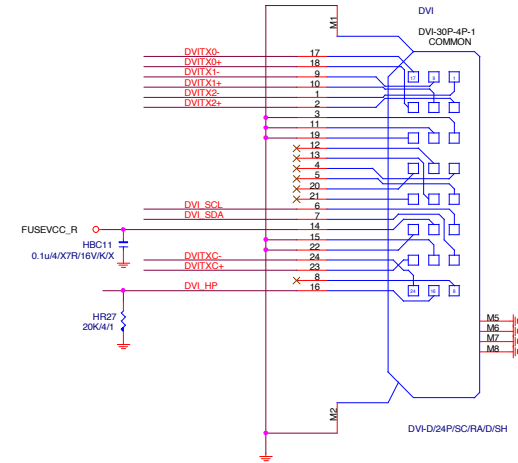
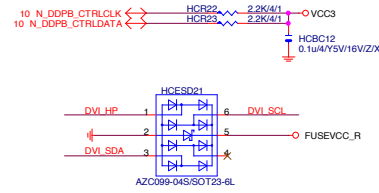




Close to connector



Close to connector



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