

Model Name: GA-H81M-S2PH

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	ITE 8620 LPC IO
16	COM,KB_MS,USB PWR
17	IT8892E
18	PCI SLOT 1,2
19	PCI EXPRESS*1 SLOT.LPT
20	HWM,FAN CTRL,OV,-PROCHOT
21	DUAL BIOS
22	FP,F_USB,SPK,SATALED
23	Realtek ALC887-VD2
24	REAR AUDIO JACK
25	REALTEK RTL8111F
26	DISCRETE POWER
27	ATX,DUMMY LOAD

www.xinxunwei.com 400-800-9990

Revision 2.0

SHEET

TITLE

28	RT8120_DDR POWER
29	VCORE ISL95812_1
30	VCORE ISL95812_2
31	HDMI

Gigabyte Technology		
Cover Sheet		
Size Custom	Document Number GA-H81M-S2PH	Rev 2.0
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Revision 2.0

Component value change history

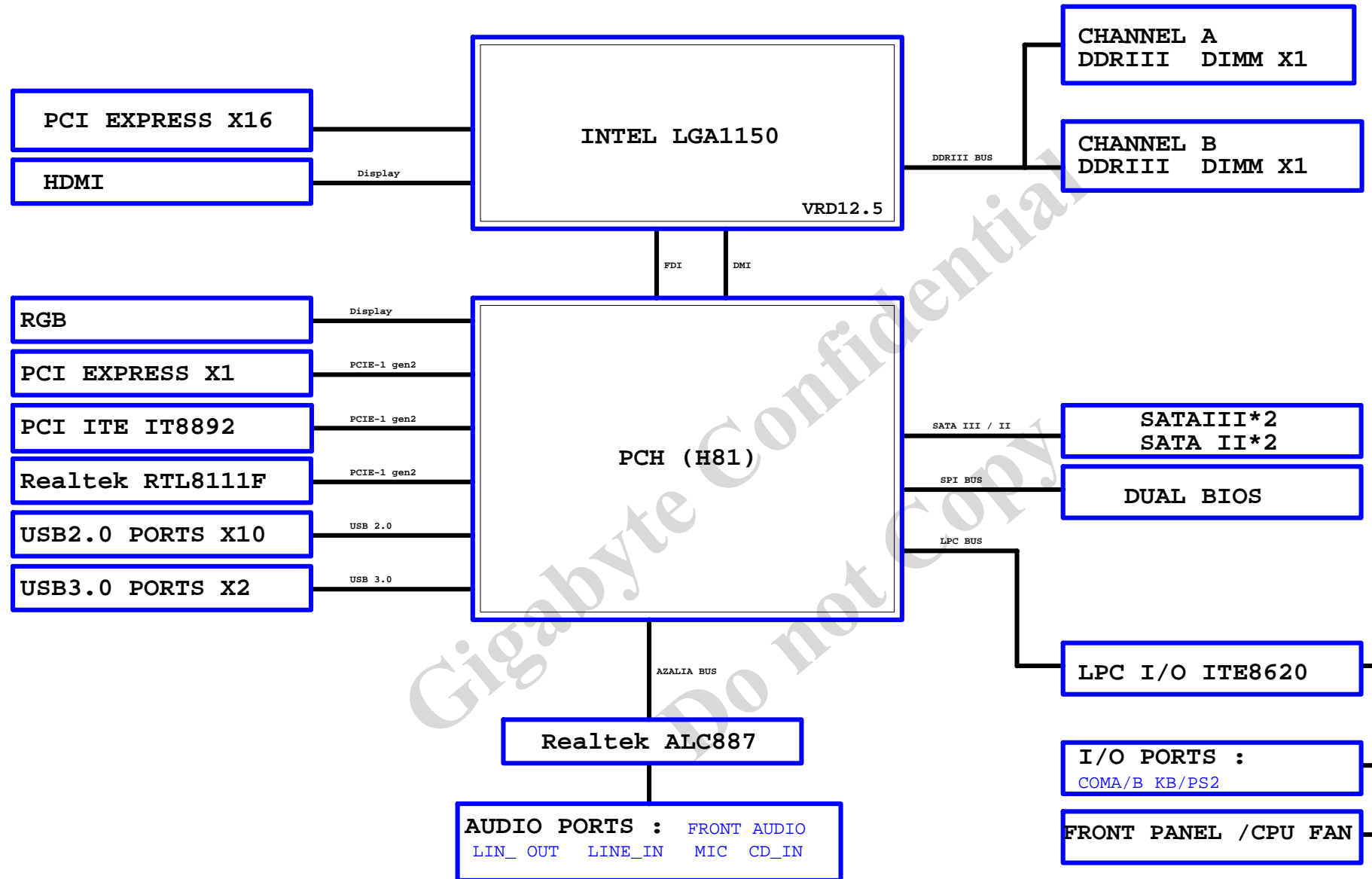
2014/04/08

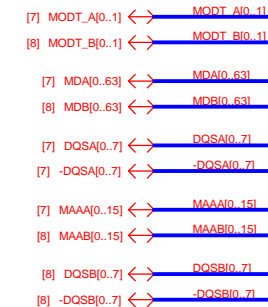
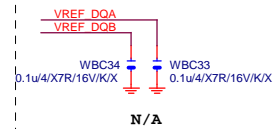
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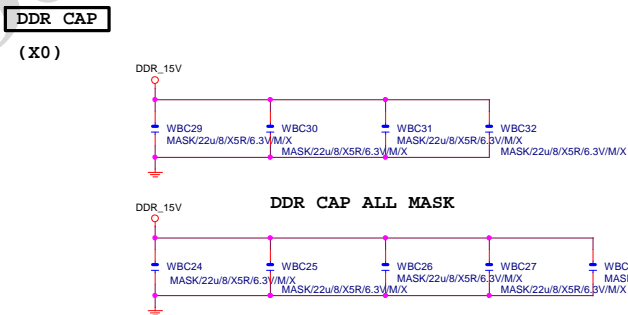
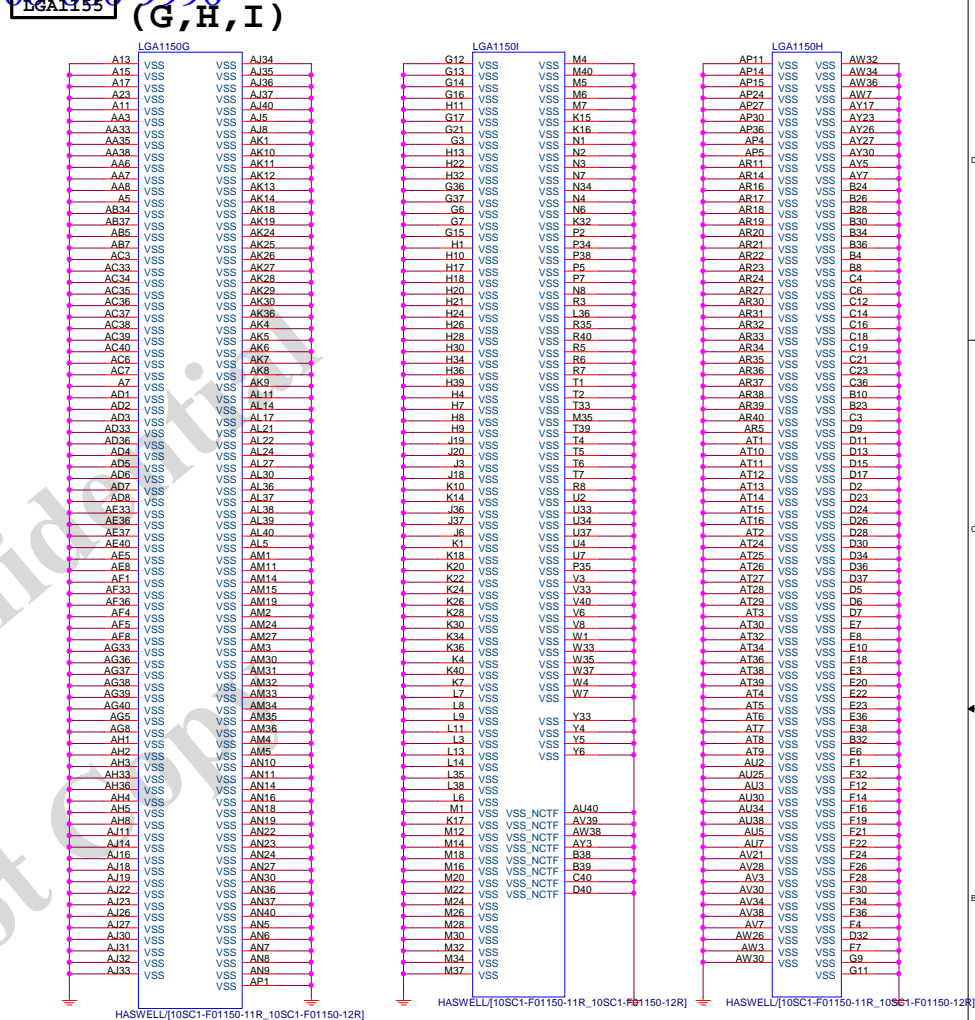
Circuit or PCB layout change

[illegible]

BLOCK DIAGRAM

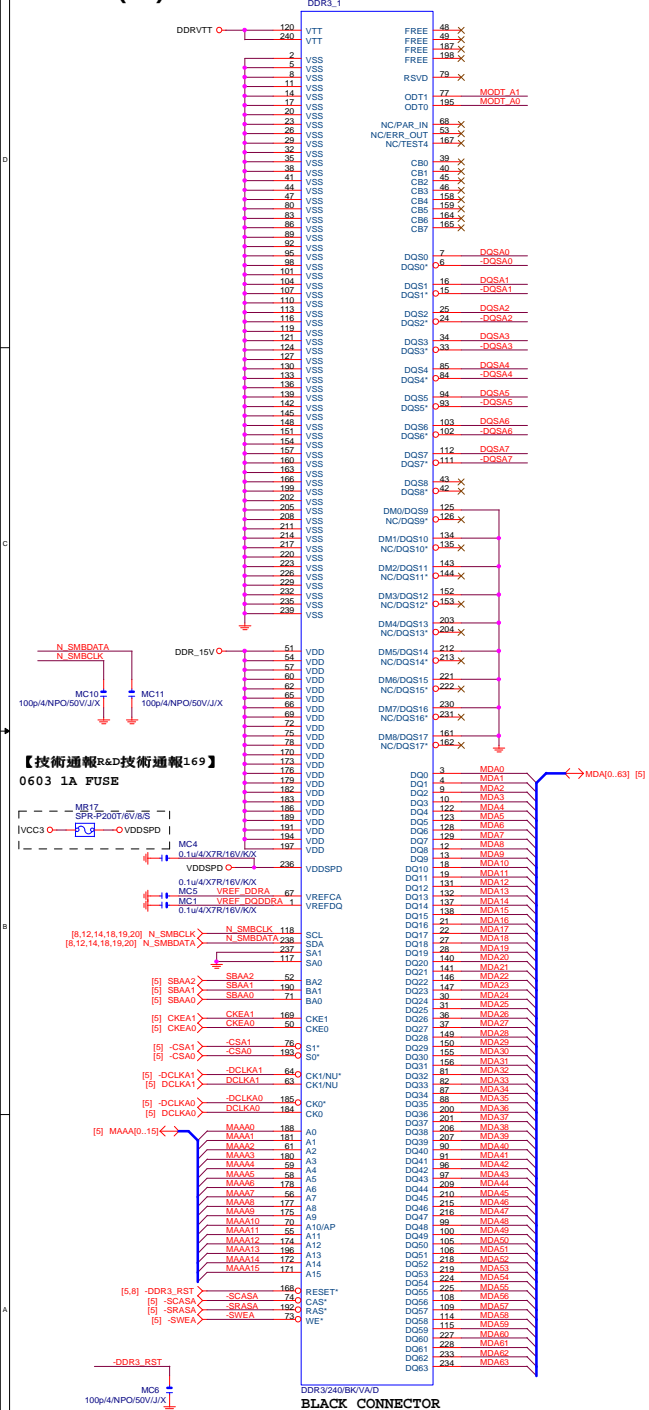




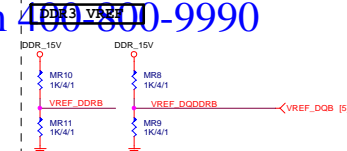
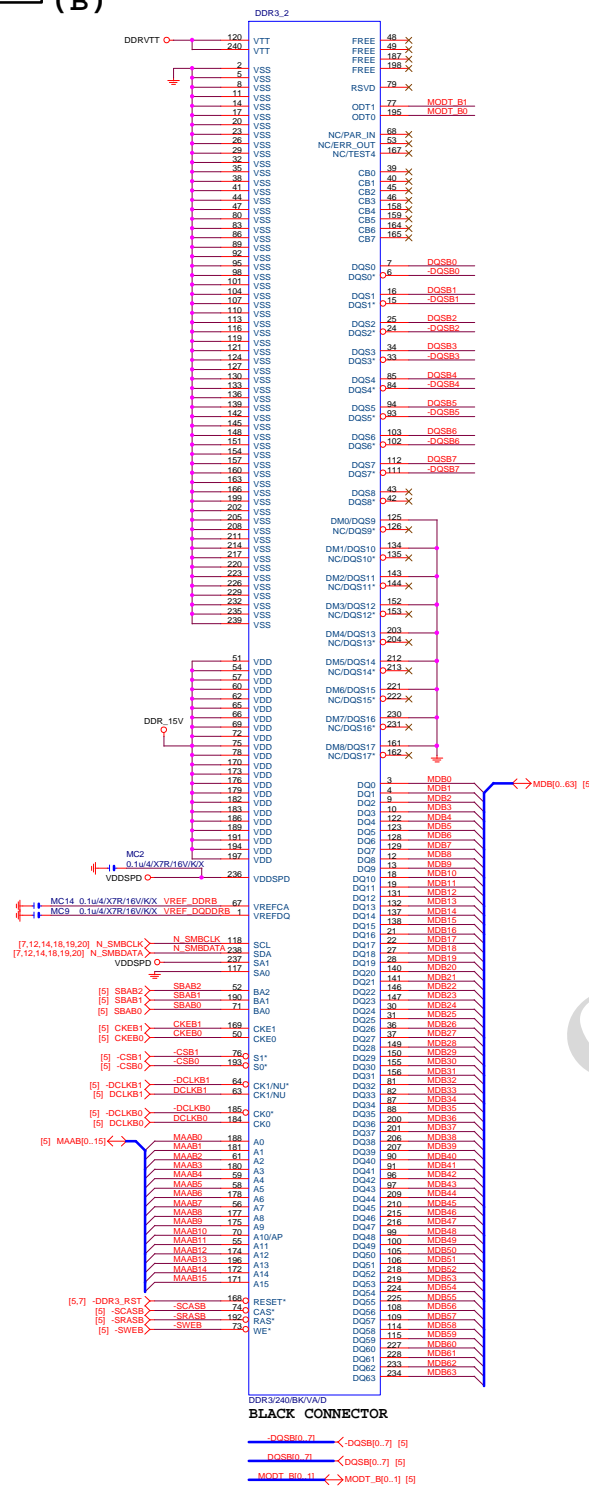


DDR3

(A)



(B)



COUPON



CPU

DIMM:

CHA

DIMM:

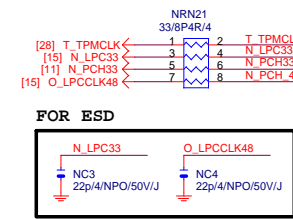
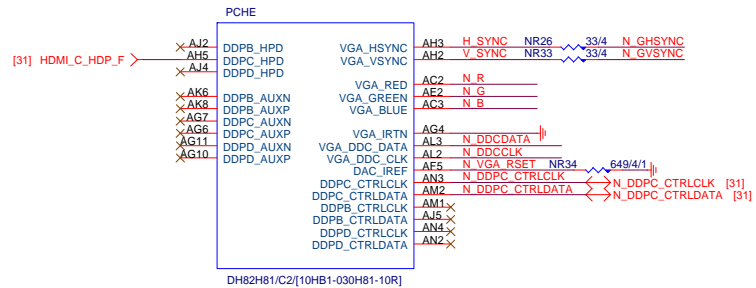
 CHB

PCH

(E)

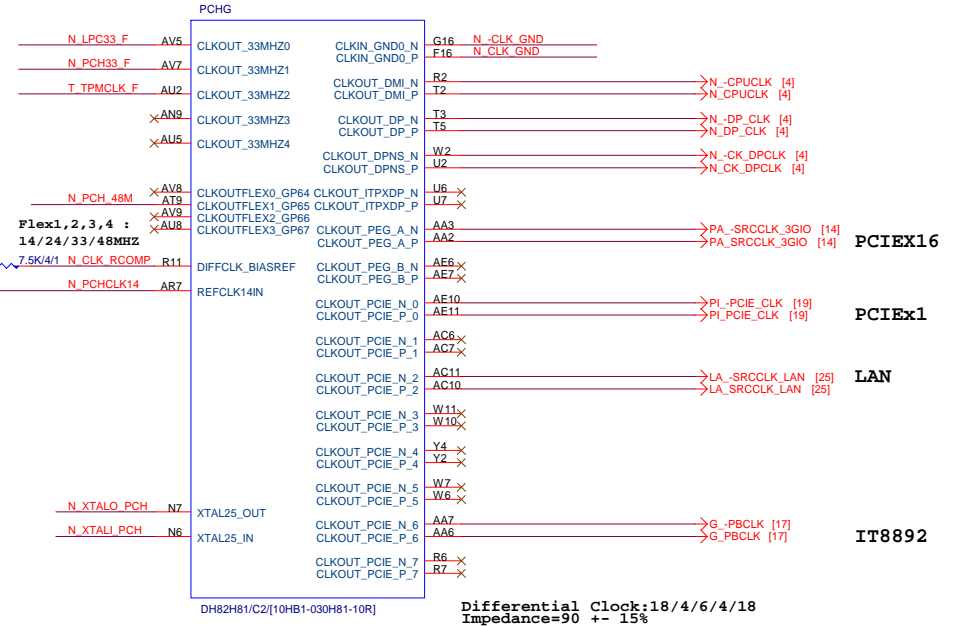
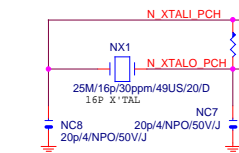
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PCH (G)

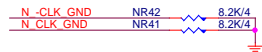


P.D排組PAGE 9

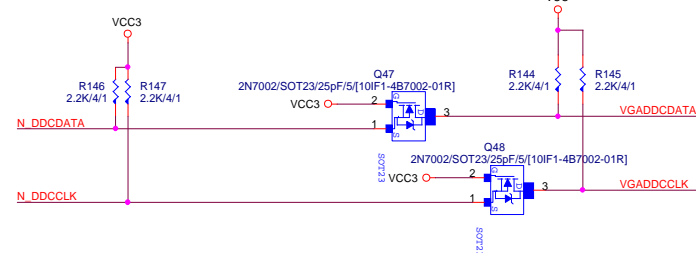
25MHZ X'TAL



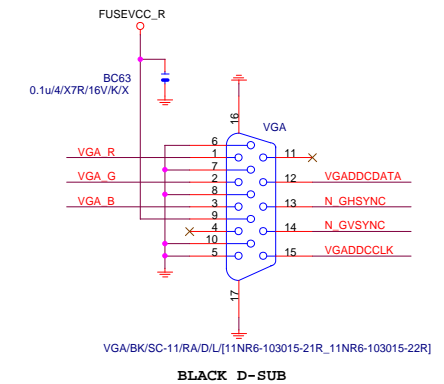
PCH CLK PD



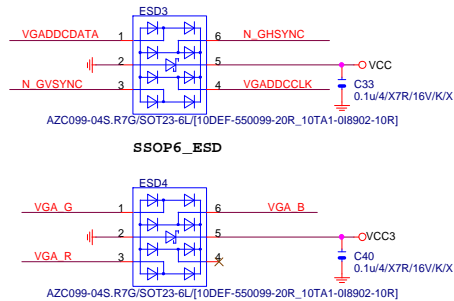
VGA DDC



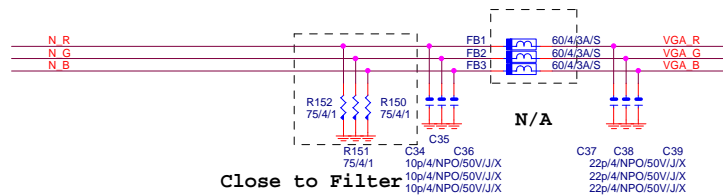
VGA CONNECTOR



VGA ESD



VGA DDC



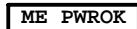
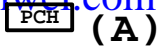
Gigabyte Technology

PCH DISPLAY_CLK BUFFER

GA-H81M-S2PH

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GPIO38 Ctrl

Gigabyte Technology			
Title			
PCH HOST , SATA, PCI			
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PCH (D)

[15,28] N_LAD[0..3] << N_LAD[0..3]

ACZ_SDOUT

N/A

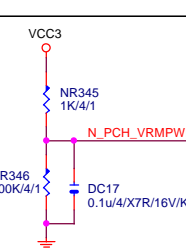
HSW_STRAP13

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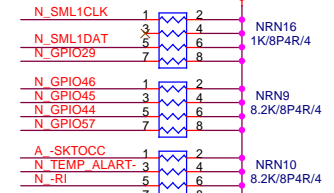
PCH_DPWROK

N_PCH_DPWROK < N_PCH_DPWROK [15]

for IT8620 Ctrl



PCH PU/PD



GP8:Low to enable PCH clock chip

NR106 1K/4/1 N_-IGC_EN

NR153 1K/4/1X N_SUSCLK

SUSCLK:Low to OD

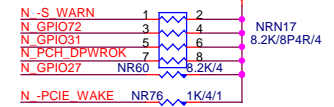
PLL_VR GP28:Lo disable

VRM_H1 enable

VRM

-D GPIO_HRSTNR51 1K/4/1

N_GPIO28 NR144 1K/4/1



VCC3

N_GPIO20 NR109 1K/4/1

N_-SYS_RST NR164 8.2K/4

N_GPIO33 NR49 8.2K/4

3VDUAL

N_PCH_RST NR172 20K/4/1

N_PCH_TDI 1 2

N_PCH_TMS 3 4 NRN18

N_PCH_TDO 5 6 200/8P4R/4

N_PCH_TDO 7 8

N_PCH_TCK NR108 51/4/1

N_GPIO18 1 2

N_GPIO73 3 4 NRN24

N_GPIO26 5 6 8.2K/8P4R/4

N_GPIO25 7 8

N_-SYS_RST NC58 1n/4/X/R/50V/K

N_DRAM_PWROK NC59 1n/4/X/R/50V/K

3VDUAL

NRN6 8.2K/8P4R/4

N_-LPCPME

N_GPIO60

N_-PCH_HOT

NR122 499/4/1 N_SML0CLK

NR123 499/4/1 N_SML0DAT

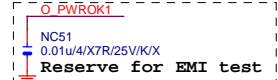
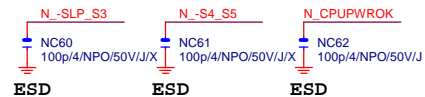
NR121 1K/4/1 N_SMBCLK

NR97 1K/4/1 N_SMBDATA

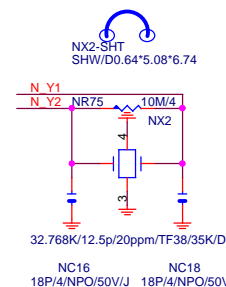
Gigabyte Technology

Title			
PCH GPIO , CTRL , AUDIO			
Size	Document Number	Rev	
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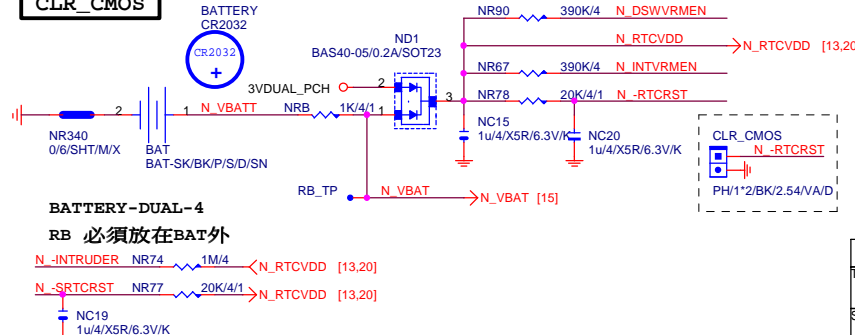
FOR ESD

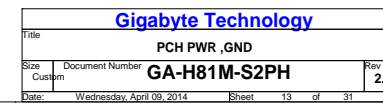
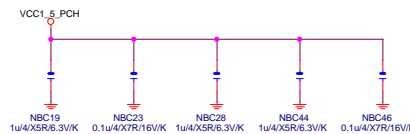


32.768KHZ

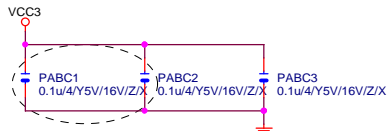


CLR_CMOS

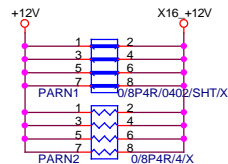




PCIEX16 CAP



PCIEX16 PROTECT SHT



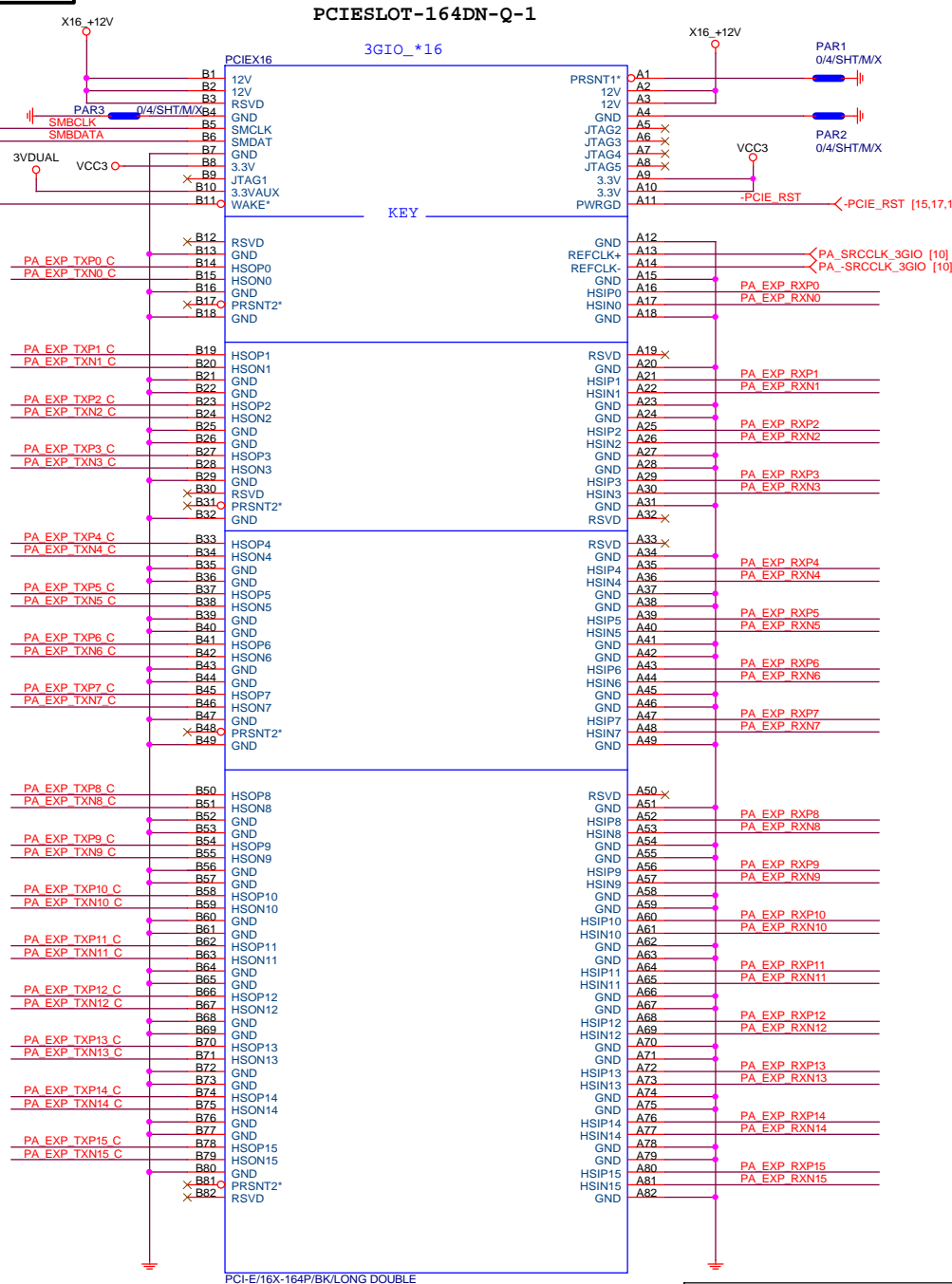
PCIEX16 AC CAP

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

PA EXP RXP0[0..15] >>> PA_EXP_RXP[0..15] [4]
PA EXP RXN0[0..15] >>> PA_EXP_RXN[0..15] [4]
PA EXP TXP0[0..15] >>> PA_EXP_TXP[0..15] [4]
PA EXP TXN0[0..15] >>> PA_EXP_TXN[0..15] [4]

PCIEX16 SLOT

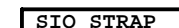
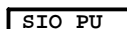
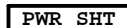
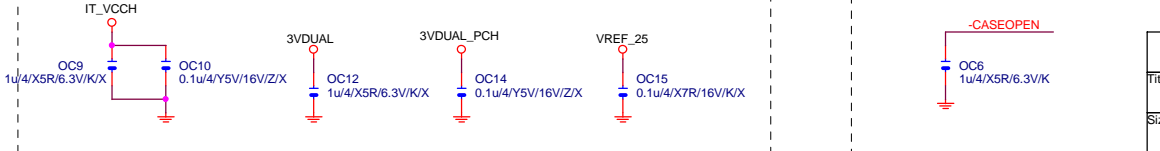
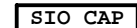
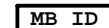
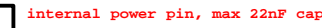
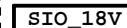
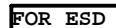
[7,8,12,18,19,20] N_SMBCLK
[7,8,12,18,19,20] N_SMBDATA
[12,17,19,25] N_-PCIE_WAKE



BLACK CONNECTOR

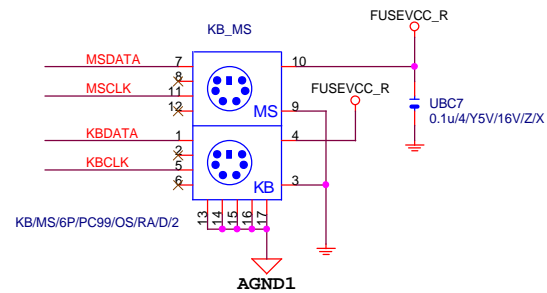
Gigabyte Technology

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Size			GA-H81M-S2PH		
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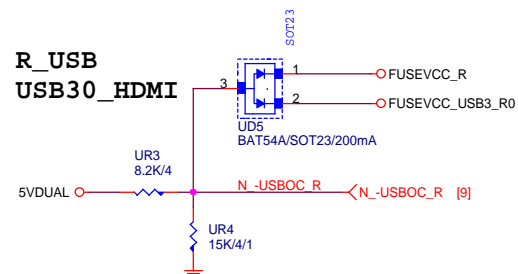
DUAL BIOS OPT STRAP

Title				ITE 8620 LPC IO			
Size	Custom	Document Number				Rev	
		GA-H81M-S2PH				2.0	
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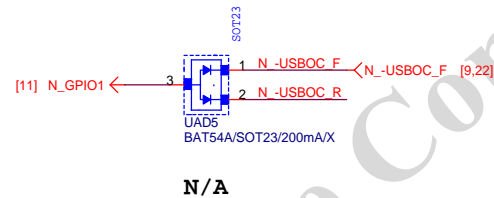
KB/MS



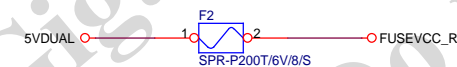
-USBOC_R



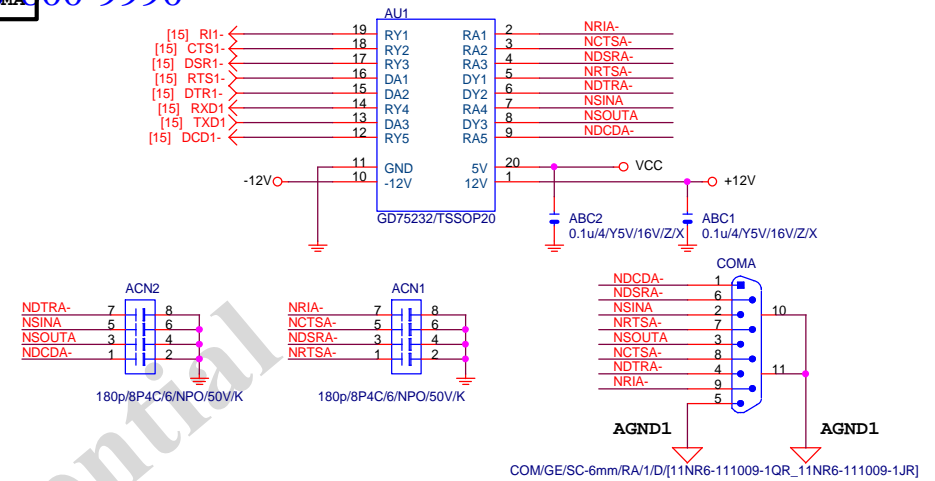
USB POWER PROTECT



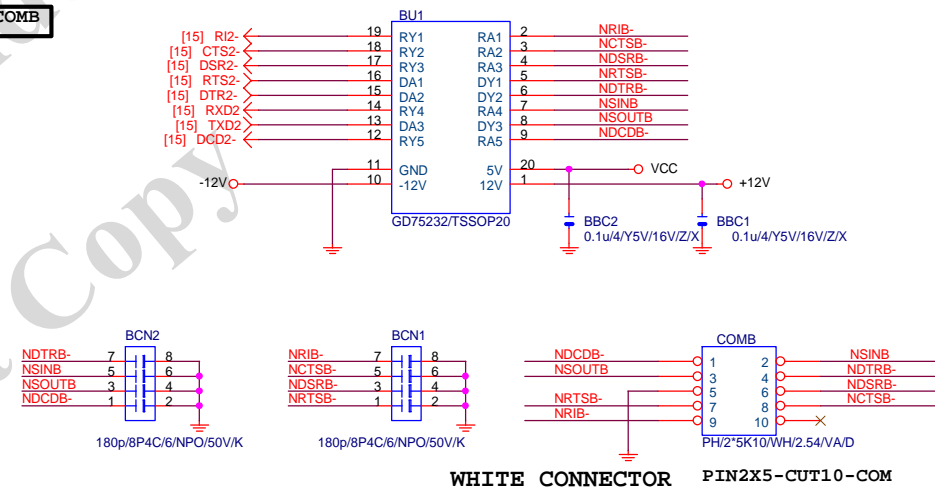
R_USB PWR

Close to connector
KB_MS_USB 2-Port 2.0A

COMA

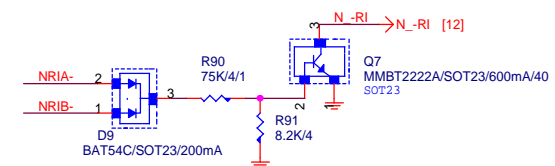


COMB



WHITE CONNECTOR PIN2X5-CUT10-COM

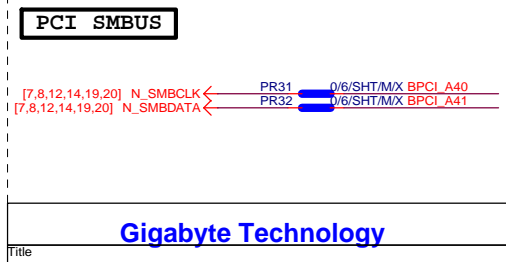
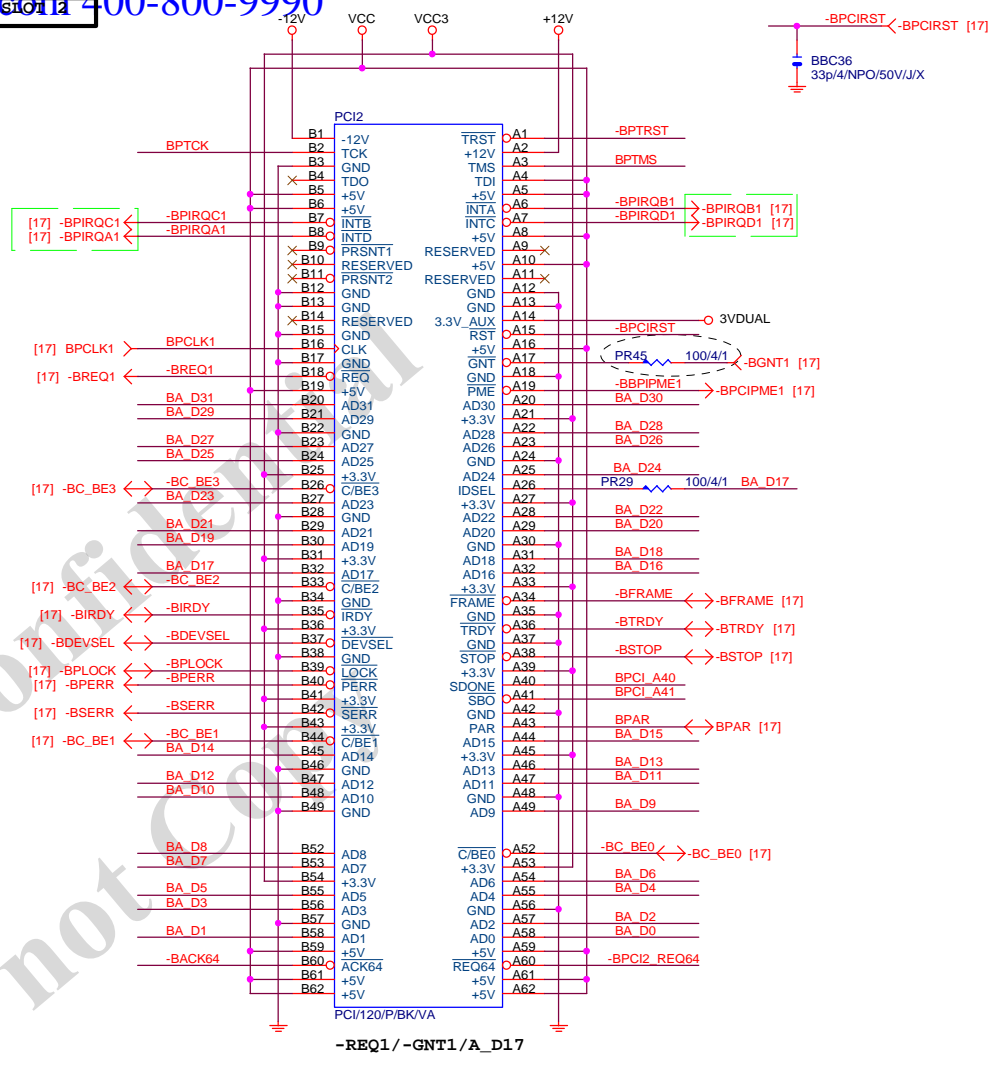
COM RI

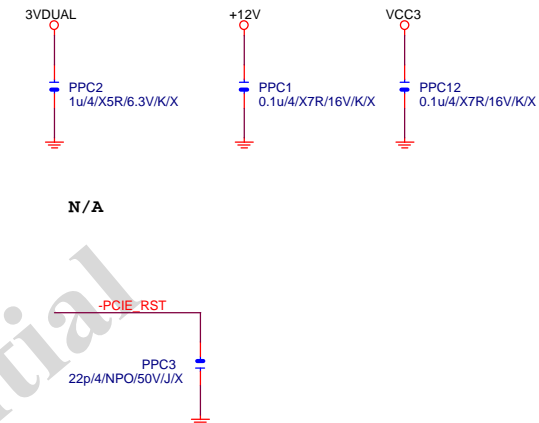


Gigabyte Technology

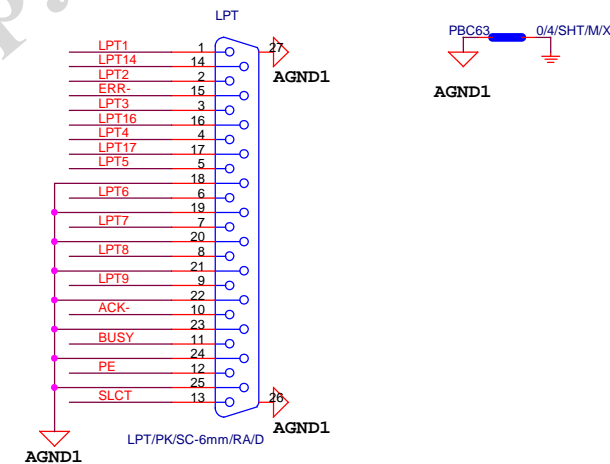
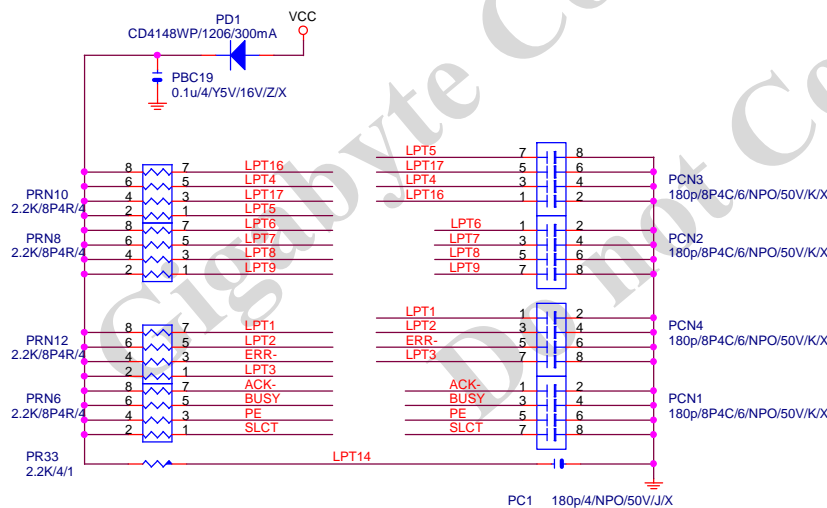
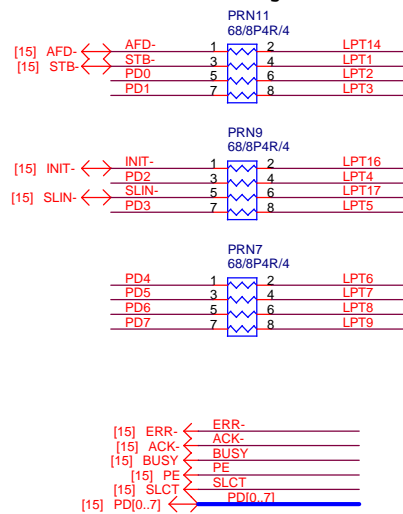
Title			COM,-RI,KB_MS
Size	Document Number	GA-H81M-S2PH	
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<i>Gigabyte Technology</i>			
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ITE IT8892E			
Size	Document Number	GA-H81M-S2PH	Rev
Custom			2.0
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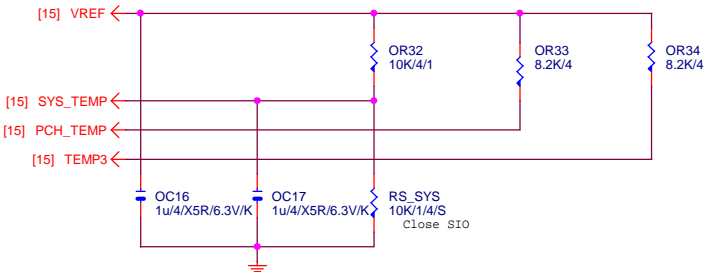




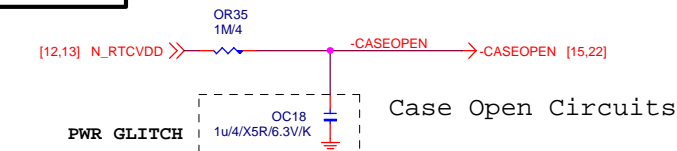
【技術通報R&D技術通報151】
33ohm Change to 68ohm



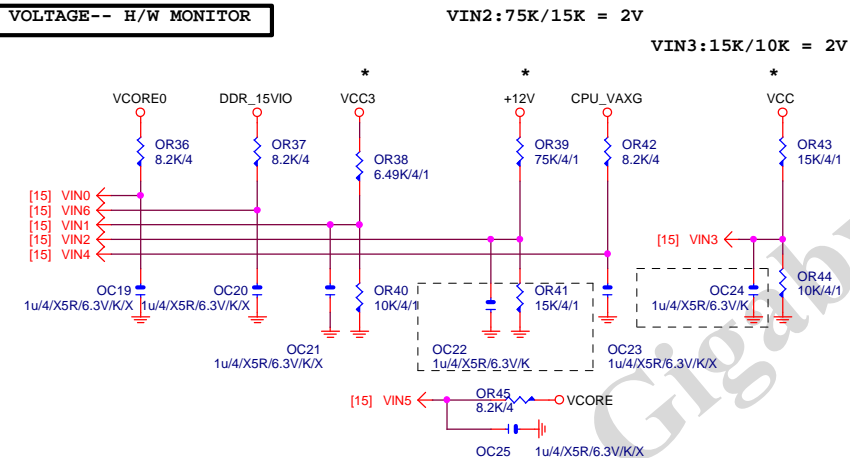
TEMP H/W MONITOR



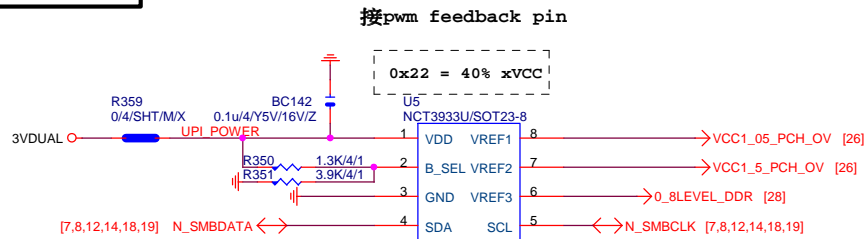
CASE OPEN



VOLTAGE-- H/W MONITOR

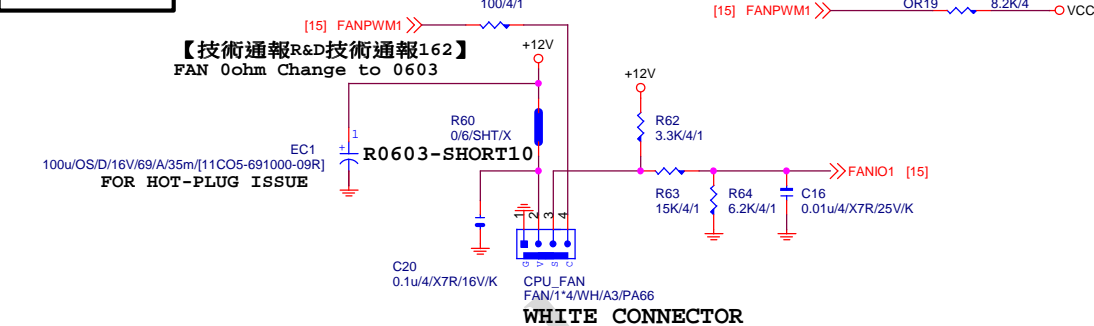


OV NCT3933



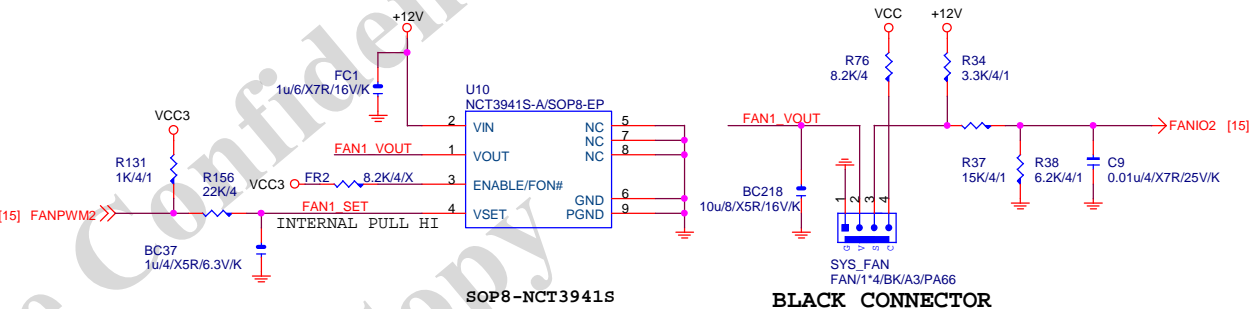
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CPU SMART FAN

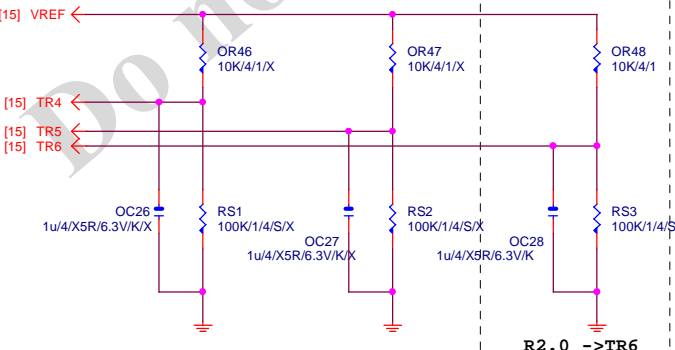


SYS SMART FAN

Linear SYS_FAN



THERMISTOR MONITOR

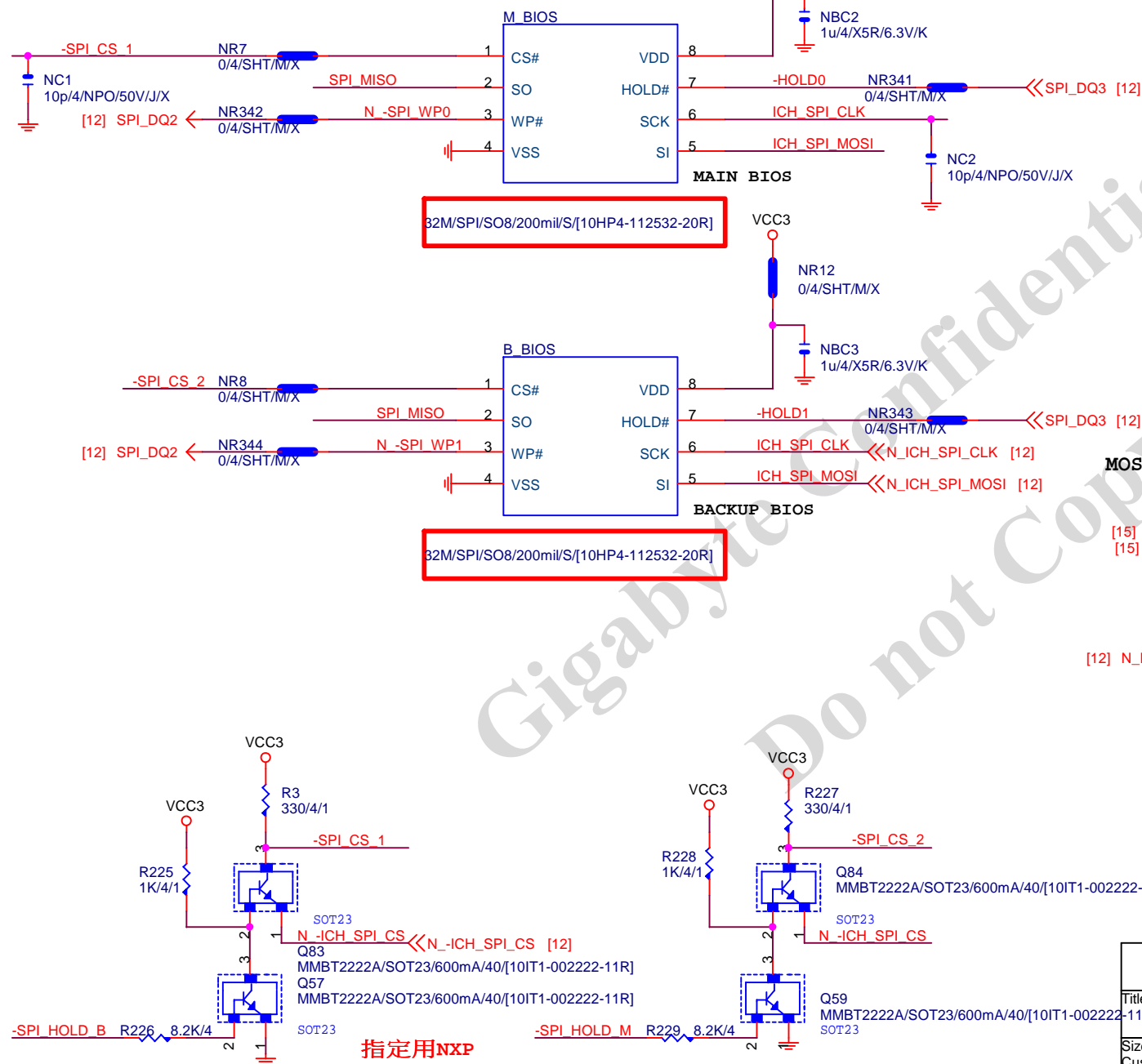


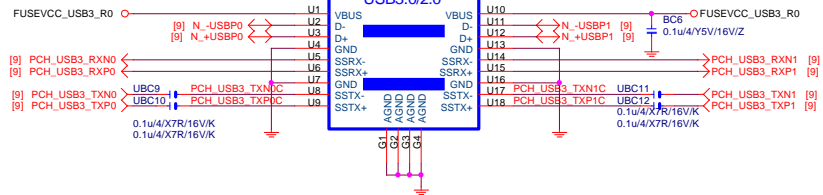
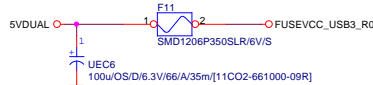
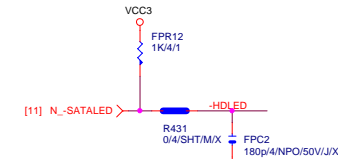
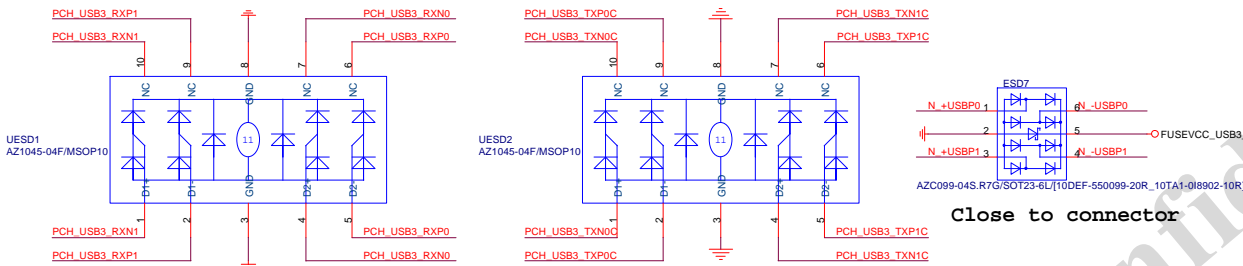
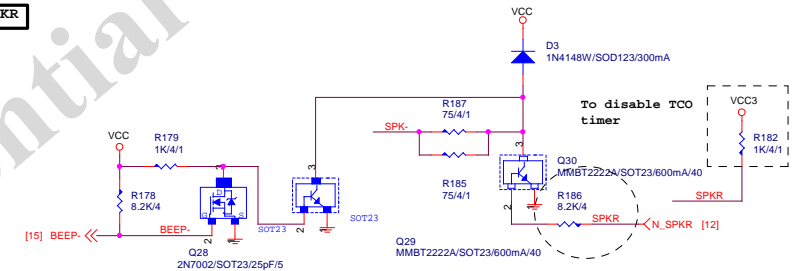
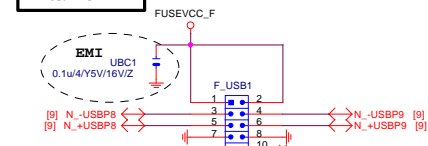
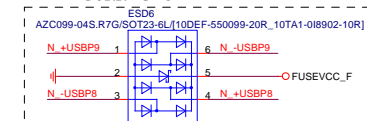
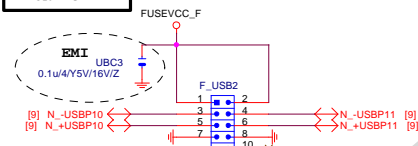
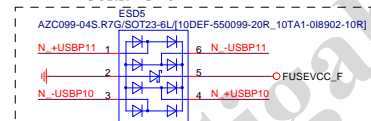
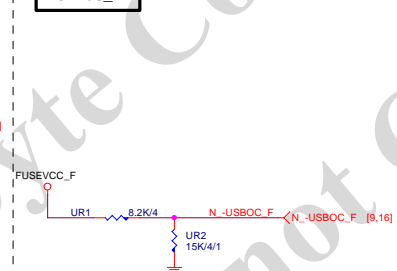
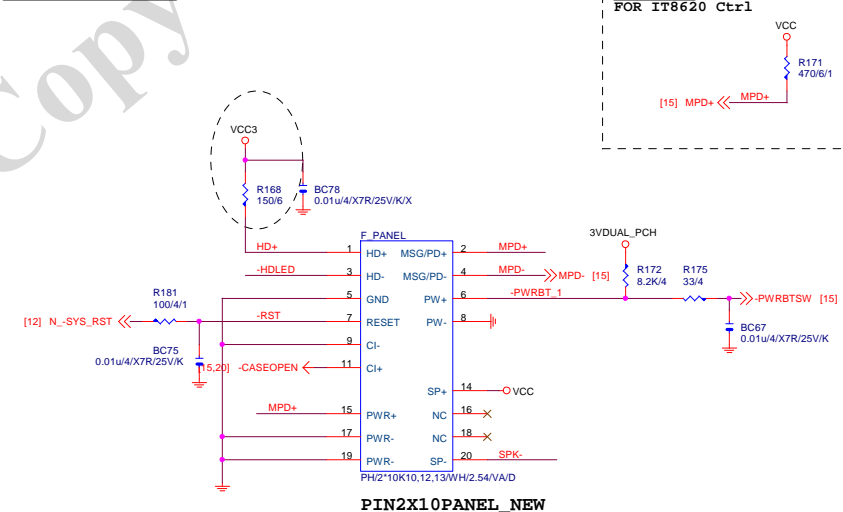
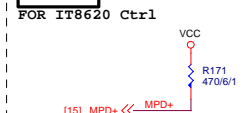
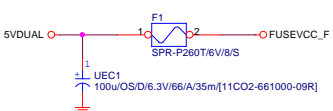
-PROHOT



Gigabyte Technology			
Title			
HWM,FAN CTRL,OV			
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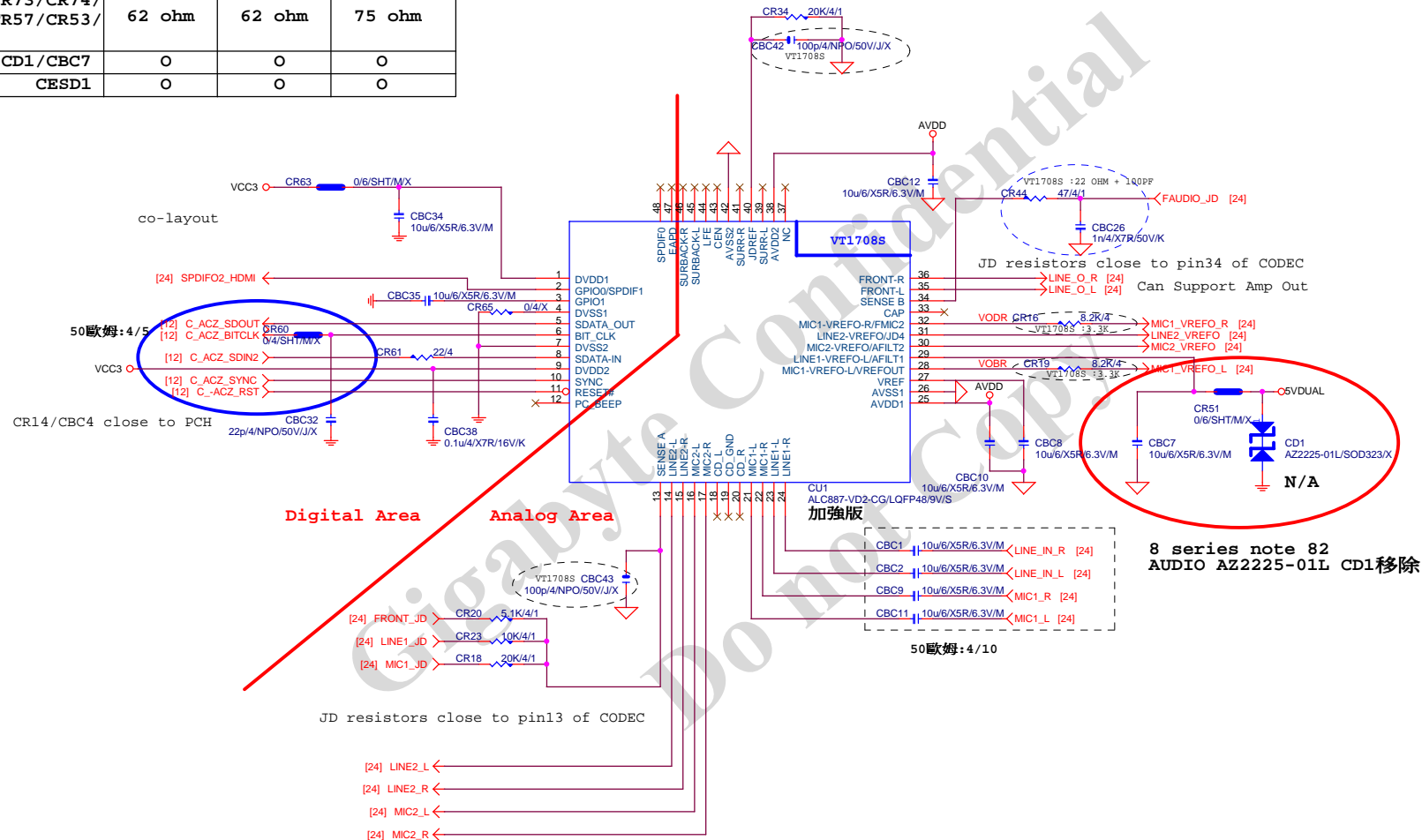
```
1 means floating
0 means PD 1K
```

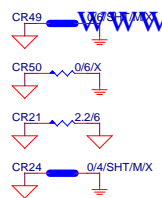


R_USB30**USB30+HDMI 一體式**R_USB30
USB3.0+HDMI/18P+19P/BK/OS/RA[11NR6-H03037-01R]**USB3.0/2.0****POLY SWITCH-1206-1****USB3.0 2Port - 1Fuse (3.5A)****SATA LED****USB30_HDMI ESD PROTECT****Close to connector****SPKR****FRONT USB1****WHITE CONNECTOR****Close to connector****FRONT USB2****WHITE CONNECTOR****Close to connector****-USBOC_F****INTEL FRONT PANEL****PIN2X10PANEL_NEW****PWR LED****FUSEVCC_F****FUSE-0805****F_USB1, F_USB2 4-Port 2.6A**

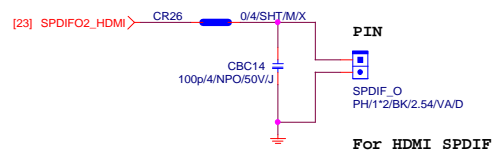
AZALIA CODEC *ALC892/ALC887-VD2/VT1708-CE Colay*

	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	O	O	O
CESD1	O	O	O

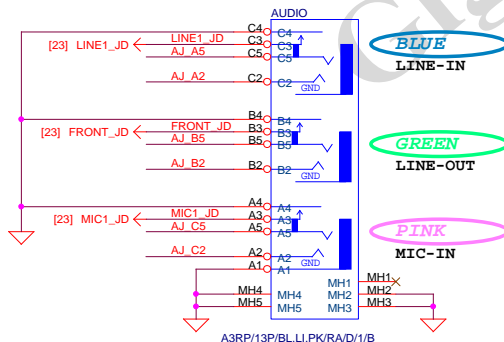




SPDIF_OUT



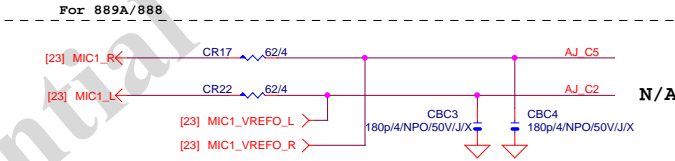
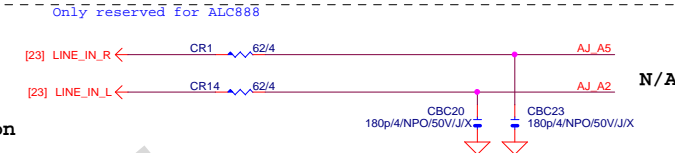
SPDIF_OUT



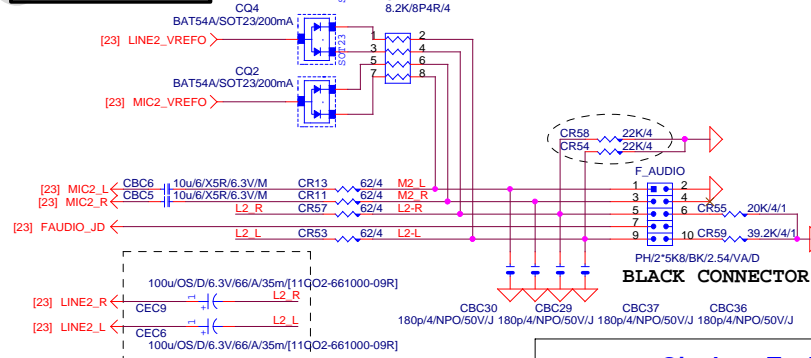
LINE-IN

Verify MIC function
in LINE-in

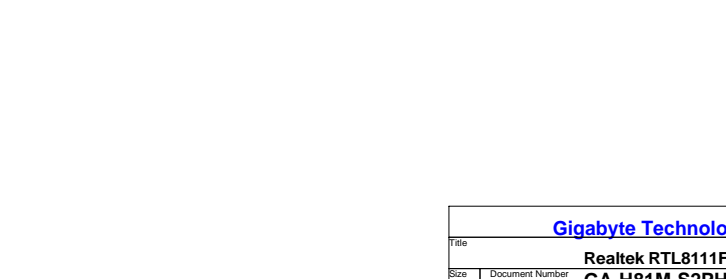
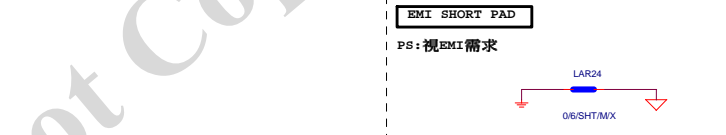
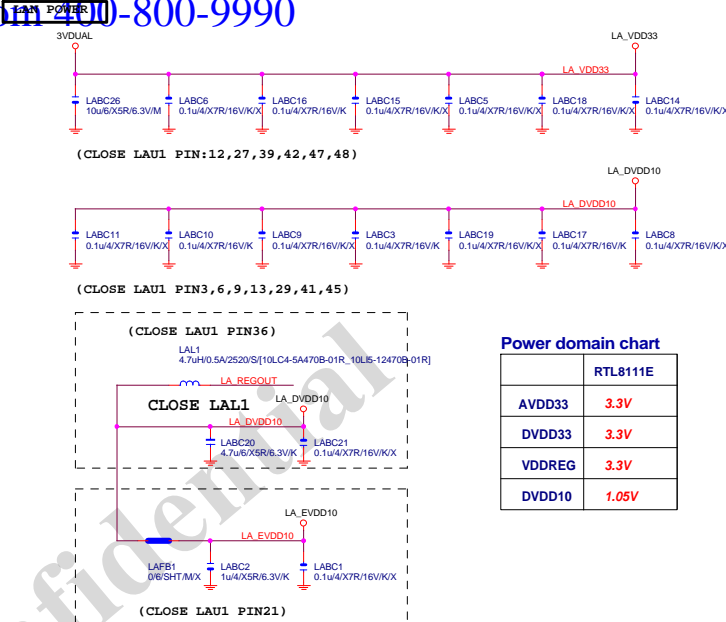
MIC-IN



AZALIA FRONT PANEL

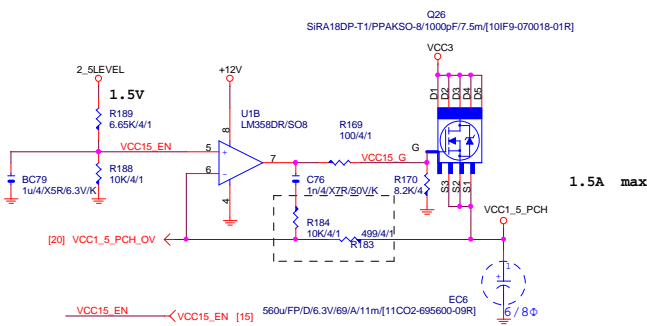


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AUDIO JACK			
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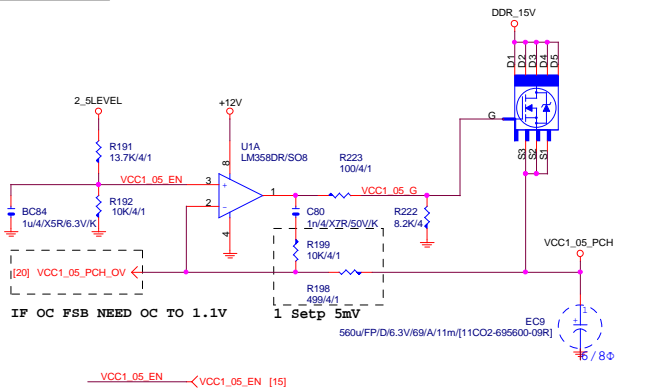


Gigabyte Technology			
Title Realtek RTL8111F			
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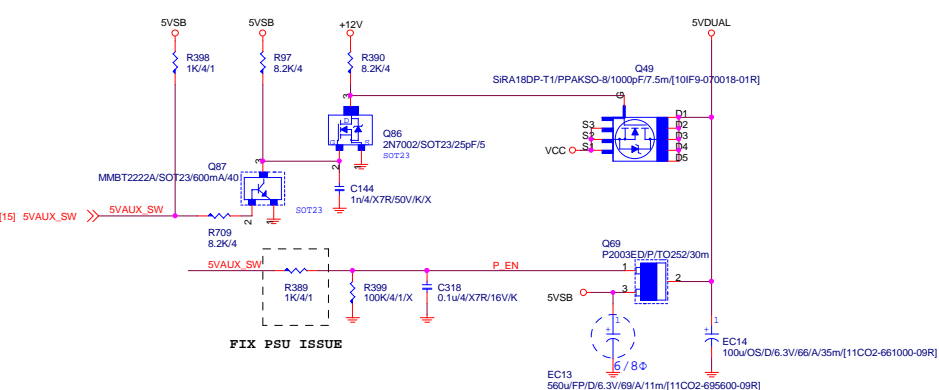
VCC1_5_PCH



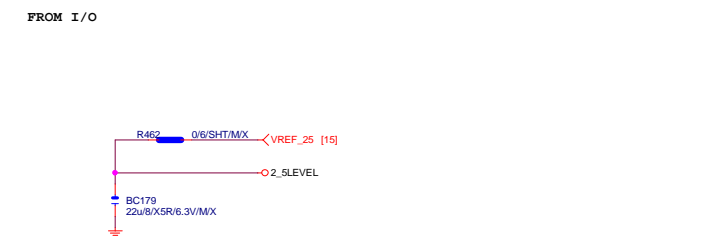
VCC1_05_PCH



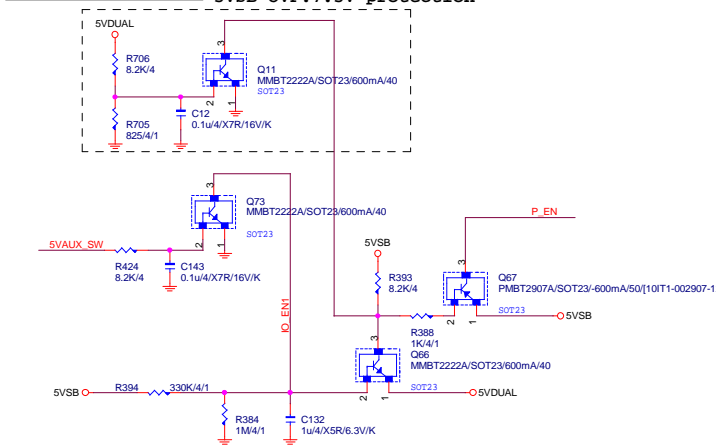
5VDUAL



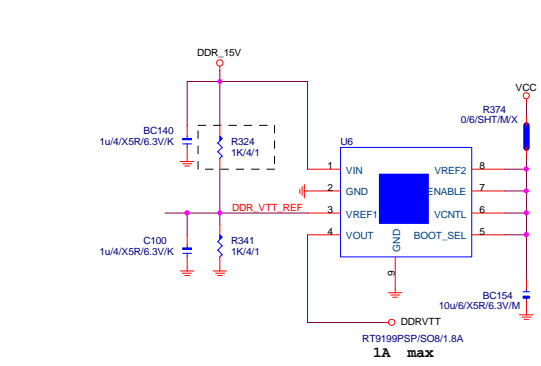
2_5LEVEL



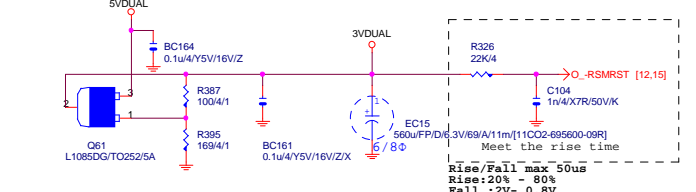
5VDUAL SHORT PROTECT



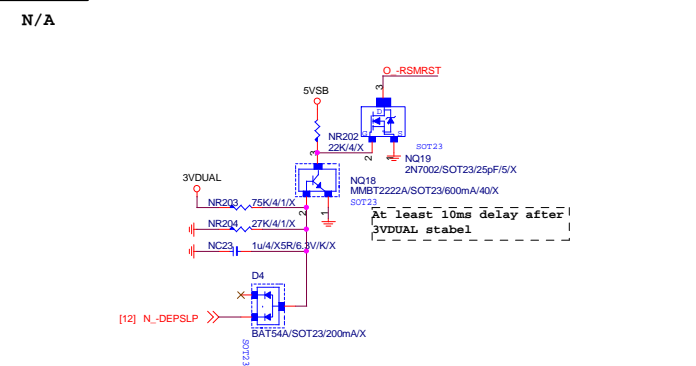
DDR_VTT



3VDUAL

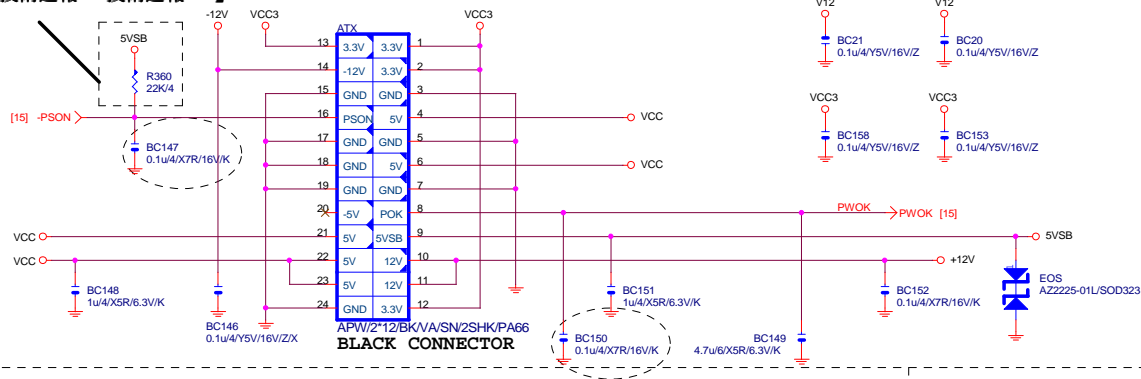


-RSMRST

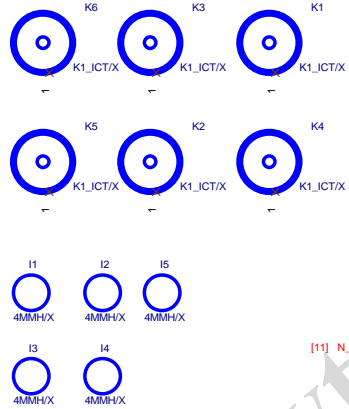
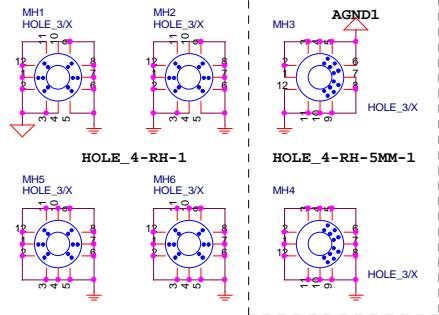


ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】

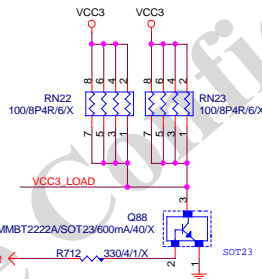


MB LOCATION



FIX PWR MINMUN LOAD

N/A

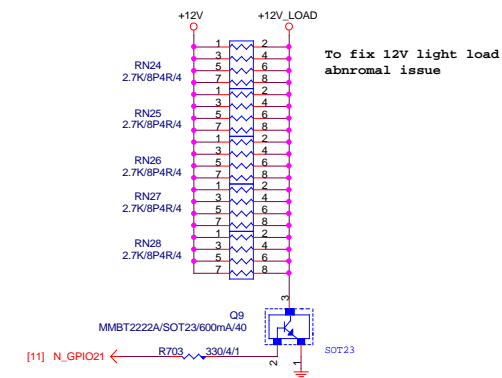


PWOK PATCH

【技術通報R&D技術通報154】

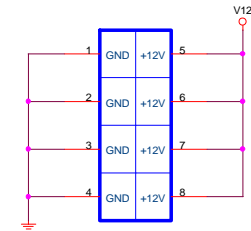
N/A

【技術通報R&D技術通報153】



ATXX4 POWER CONNECTOR

【技術通報R&D技術通報155】



ATX_12V_2X4
APW/Z*4/BK/OC/P4.2/VA/SN/OH:Location ATX_12V_2X4

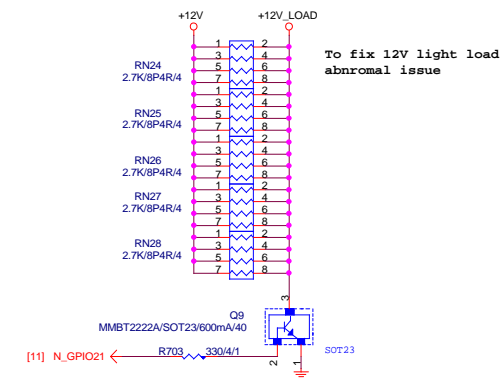
BLACK CONNECTOR

PWOK PATCH

【技術通報R&D技術通報154】

N/A

【技術通報R&D技術通報153】



Gigabyte Technology

ATX CONNECTOR

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DDR_15V DDR_15VIO

MR20 0/4/SHT/M/X

VCC1_05_ME

```

VIN=5V,VOUT=1.5V,IOUT=25A,PHASE=1
IRMS=11.45A
560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
Coefficient=1.7(85°C),1(105°C)
VIN,Ripple current=4.7X1.7=7.99A(85°C)
-->故固態電容須2X7.99=15.98>11.45A

```

[illegible]

	SLB9635	SLB965
TPR2,TPR4,TPR5, TPR6,TPR7,TPR9	MOUNT	N/A
TPR1,TPR10	N/A	MOUNT

Title			
DDR & M3 POWER & TPM			
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