

Model Name : IPMH81G1**Revision 1.1****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 *2 SLOT
16	ITE 8620
17	COM, KB_MS_USB, USB30_20
18	HWM, FAN CTRL, OV, -PROCHOT
19	DUAL BIOS
20	FP, FUSB, SPK, SATALED
21	Realtek ALC887-VD2
22	REAR AUDIO JACK
23	REALTEK RTL8111F
24	DISCRETE POWER
25	ATX , CLOCK GEN
26	VCORE ISL95812_1
27	VCORE ISL95812_2

SHEET**TITLE**

28	RT8120_DDR POWER
29	HDMI
30	
31	
32	

Gigabyte Technology**Cover Sheet**

Size Custom	Document Number IPMH81G1	Rev 1.1
Date: Friday, October 18, 2013	Sheet 1 of 29	

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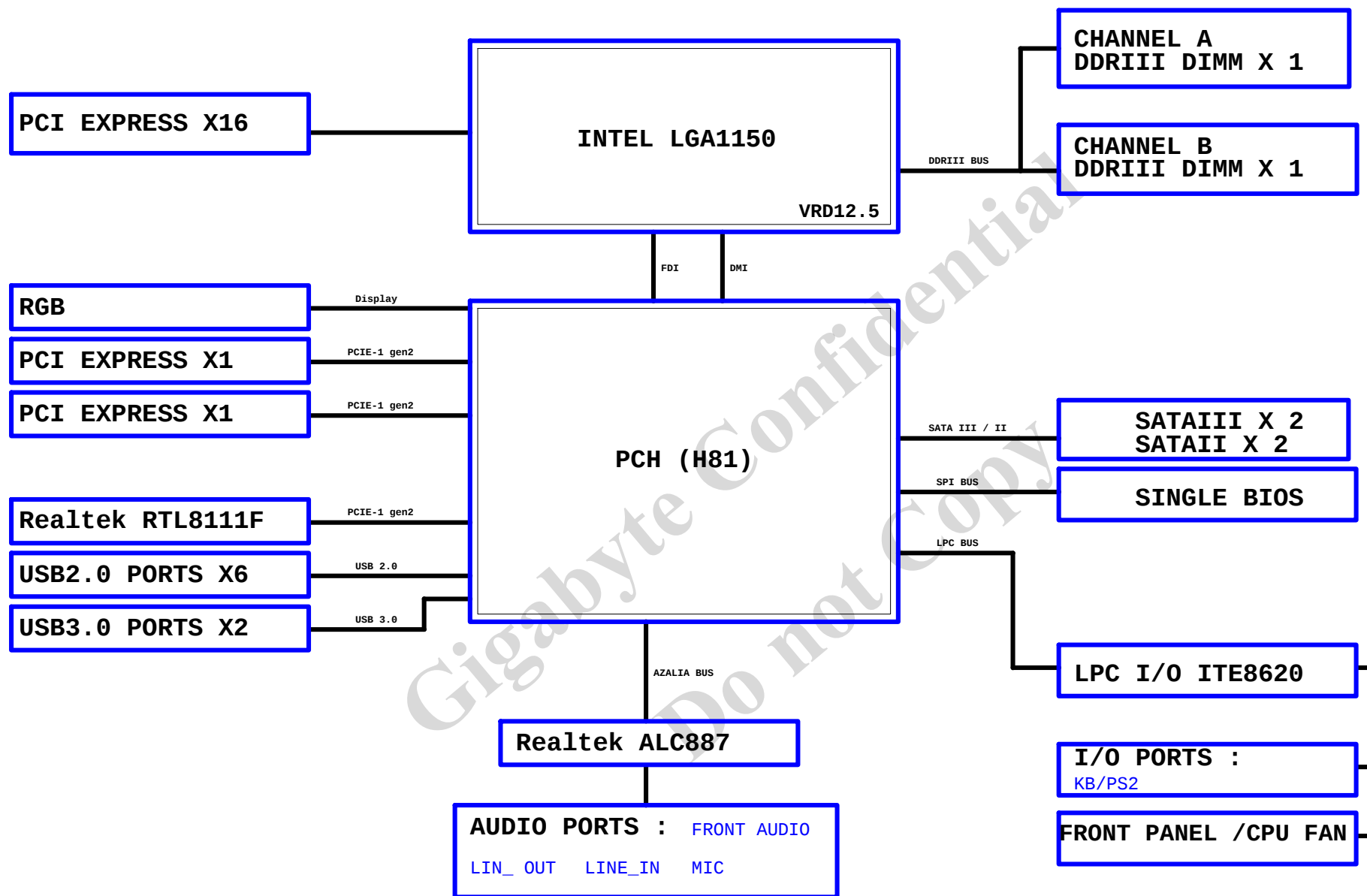
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BLOCK DIAGRAM



(10) N_CPUCLK N_CPUCLK V4 BCLK_P B3M_N33 G39
 (26) PVIDSCLK WR7 0/4/SH/T/M/X C38 VIDSCCLK B3M_N33 G39
 (26) PVIDOUT WR5 0/4/SH/T/M/X C37 VIDSCCLK B3M_N33 G38
 (26) PVIDALRT WR5 44.2/4/1 B37 VIDALRT* B3M_N33 G38
 (12) N_DRAM_PWROK WR6 100/4/1/X AK21 DRAM_PWR_OK B3M_N33 G39
 (11,16) A_CPUURST A_CPUURST AB35 PWRMGOOD B3M_N33 G38
 (11) A_PMSYNC A_PMSYNC N37 PMSYNC B3M_N33 G39
 (11,16) A_PECI A_PECI N37 PMSYNC B3M_N33 G39
 (16,18) A_PROCHOT A_CATERR M36 CATERR* B3M_N33 G39
 (11,16) A_THRMTRIP A_PROCHOT K38 PROCHOT* B3M_N33 G39
 (12) A_SKTOCC F37 THERMTRIP* B3M_N33 G39
 A_SM_VREF AB38 SKTOCC* B3M_N33 G39
 N_DRAM_PWROK WBC2 1n4/XT/50V/K
 N_CPUURST WBC47 1n4/XT/50V/K
 SVID_CTRL (16) SVID_CTRL WR57 1K/4/1/X HSW_CFG9
 A_HSW_STRAP13 (12) A_HSW_STRAP13 WR39 1K/4/1 HSW_CFG13
 CF6 H L NOTE
 0 RSDV RSDV RSDV
 1 RSDV RSDV RSDV
 2 RSDV Reverse LANE REVERSAL [0, x16]
 3 RSDV RSDV RSDV
 4 Disable Enable eDP Enable
 7 RSDV RSDV RSDV
 8 RSDV RSDV RSDV
 9 RSDV RSDV RSDV
 10 RSDV RSDV RSDV
 11 RSDV RSDV RSDV
 12 RSDV RSDV RSDV
 13 RSDV RSDV RSDV
 14 RSDV RSDV RSDV
 15 RSDV RSDV RSDV
 16 RSDV RSDV RSDV
 17 RSDV RSDV RSDV
 CF66 CF65 PCIE CONFIG
 1 1 1x16, Default
 1 0 2x8
 0 1 RSDV
 0 0 X8, X4, X4
 HASWELL-[10SC1-F01150-11R_10SC1-F01150-12R]

FDI12/4/5/4/12 (breakout min 6/4/4/4/6)
Impedance=85 +- 17.5%

PCIE16:16/5/5/16(breakout min 10/4/4/4/10)									
Impedance=80 ± 17.5%									
LGA1150C									
PA EXP RXP0	E15	PEG_RXP0	PEG_TXP0	A12	PA EXP TXP0				
PA EXP RXN0	F15	PEG_RXN0	PEG_TXN0	B12	PA EXP TXN0				
PA EXP RXP1	D14	PEG_RXP1	PEG_TXP1	B11	PA EXP TXP1				
PA EXP RXN1	E14	PEG_RXN1	PEG_TXN1	C11	PA EXP TXN1				
PA EXP RXP2	E13	PEG_RXP2	PEG_TXP2	C10	PA EXP TXP2				
PA EXP RXN2	F13	PEG_RXN2	PEG_TXN2	D10	PA EXP TXN2				
PA EXP RXP3	D12	PEG_RXP3	PEG_TXP3	B9	PA EXP TXP3				
PA EXP RXN3	E12	PEG_RXN3	PEG_TXN3	C9	PA EXP TXN3				
PA EXP RXP4	E11	PEG_RXP4	PEG_TXP4	C8	PA EXP TXP4				
PA EXP RXN4	F11	PEG_RXN4	PEG_TXN4	D8	PA EXP TXN4				
PA EXP RXP5	F10	PEG_RXP5	PEG_TXP5	B7	PA EXP TXP5				
PA EXP RXN5	G10	PEG_RXN5	PEG_TXN5	C7	PA EXP TXN5				
PA EXP RXP6	E9	PEG_RXP6	PEG_TXP6	A6	PA EXP TXP6				
PA EXP RXN6	F9	PEG_RXN6	PEG_TXN6	B6	PA EXP TXN6				
PA EXP RXP7	F8	PEG_RXP7	PEG_TXP7	B5	PA EXP TXP7				
PA EXP RXN7	G8	PEG_RXN7	PEG_TXN7	C5	PA EXP TXN7				
PA EXP RXP8	D3	PEG_RXP8	PEG_TXP8	E1	PA EXP TXP8				
PA EXP RXN8	D4	PEG_RXN8	PEG_TXN8	E2	PA EXP TXN8				
PA EXP RXP9	E4	PEG_RXP9	PEG_TXP9	F3	PA EXP TXP9				
PA EXP RXN9	E5	PEG_RXN9	PEG_TXN9	F3	PA EXP TXN9				
PA EXP RXP10	F5	PEG_RXP10	PEG_TXP10	G1	PA EXP TXP10				
PA EXP RXN10	F6	PEG_RXN10	PEG_TXN10	G2	PA EXP TXN10				
PA EXP RXP11	G4	PEG_RXP11	PEG_TXP11	H2	PA EXP TXP11				
PA EXP RXN11	G5	PEG_RXN11	PEG_TXN11	H3	PA EXP TXN11				
PA EXP RXP12	H5	PEG_RXP12	PEG_TXP12	J1	PA EXP TXP12				
PA EXP RXN12	H6	PEG_RXN12	PEG_TXN12	J2	PA EXP TXN12				
PA EXP RXP13	J4	PEG_RXP13	PEG_TXP13	K2	PA EXP TXP13				
PA EXP RXN13	J5	PEG_RXN13	PEG_TXN13	K3	PA EXP TXN13				
PA EXP RXP14	K5	PEG_RXP14	PEG_TXP14	M2	PA EXP TXP14				
PA EXP RXN14	K6	PEG_RXN14	PEG_TXN14	M3	PA EXP TXN14				
PA EXP RXP15	L4	PEG_RXP15	PEG_TXP15	L1	PA EXP TXP15				
PA EXP RXN15	L5	PEG_RXN15	PEG_TXN15	L2	PA EXP TXN15				
A DMI_0RXP	U3	DMI_RXP0	DMI_TXP0	A44	A DMI_0TXP				
A DMI_0RXN	U3	DMI_RXN0	DMI_TXN0	A45	A DMI_0TXN				
A DMI_1RXP	T7	DMI_RXP1	DMI_TXP1	A43	A DMI_1TXP				
A DMI_1RXN	V1	DMI_RXN1	DMI_TXN1	A44	A DMI_1TXN				
A DMI_2RXP	W2	DMI_RXP2	DMI_TXP2	A45	A DMI_2TXP				
A DMI_2RXN	V2	DMI_RXN2	DMI_TXN2	A44	A DMI_2TXN				
A DMI_3RXP	W3	DMI_RXP3	DMI_TXP3	A41	A DMI_3TXP				
A DMI_3RXN	W3	DMI_RXN3	DMI_TXN3	A42	A DMI_3TXN				
	X D1	RSVD_TP							
	X C2	RSVD_TP							
	X B3	RSVD_TP							
	X A4	RSVD_TP							
	P3	RSVD_RCOMP							
W=12 mil out of CPU									
S=15 mil out of CPU									
VCCIOA_L0	WR15	24.9/4.1	GRCOMP	P3					
HASWELL-10SC1-F01150-11R 10SC1-F01150-12R									

1.1V分壓

VCC3

WR26
2K/4/1/X

WR31
1K/4/1/X

A_CPUREST

A_CPUREST (11,16)

BC102
1n4/XT/R/50V/K

For IT8620 Ctrl

CPU PU/PD

CPU_VTT_OR ○

WR3 80.9/4/1X PVIDSLCK
WR2 116/4/1 PVIDSAUT
WR4 75/4/1 PVIDALRT

WR14 51/4/1X A_TMS
WR16 51/4/1X A_TDO
WR17 51/4/1X A_TDI
WR30 51/4/1 A_HPRDY

WR11 51/4/1 A_TCK
WR9 51/4/1 A_TRST

CPU_VTT_OR ○

WR29 1K/4/1X A_PECI
WR10 1K/4/1X A_CATERR
WR25 1K/4/1 A_PROCHOT
WR56 51/4/1X N_CPUPWROK
WR55 1K/4/1X

A_THRMTRIP WR8 1K/4/1 VCC1_05_PCH

A_PWR_DEBUG WR34 150/4/1 VCC1_06_PCH

WR33 10K/4/1X

WR21 8.2K/4/1X 3VDUAL

A_DBR WR20 0/4/1 N_SYS_RST (12)

A_DDR_COMP0 WR28 100/4/1
A_DDR_COMP1 WR19 75/4/1
A_DDR_COMP2 WR22 100/4/1
A_TESTLOW_1 WR12 49.9/4/1
A_TESTLOW_2 WR12 49.9/4/1
A_HSW_CFG_RCOMP WR24 49.9/4/1

SM REF

DDR_15V

WR62 100/4/1

A_SM_VREF

WR60 100/4/1

WC3 0.1u4/X7R/16VK

Gigabyte Technology

CPU LGA1150-A

Document Number **IPMH81G1** Rev **1.1**

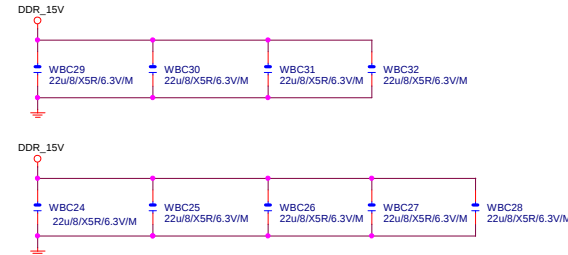
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LGA1150A			
MAAA0	AU13	DDR0_MA0	DDR0_DQ0
MAAA1	AV16	DDR0_MA1	DDR0_DQ1
MAAA2	AU16	DDR0_MA2	DDR0_DQ2
MAAA3	AW17	DDR0_MA3	DDR0_DQ3
MAAA4	AU17	DDR0_MA4	DDR0_DQ4
MAAA5	AW18	DDR0_MA5	DDR0_DQ5
MAAA6	AV17	DDR0_MA6	DDR0_DQ6
MAAA7	AT18	DDR0_MA7	DDR0_DQ7
MAAA8	AU18	DDR0_MA8	DDR0_DQ8
MAAA9	AT19	DDR0_MA9	DDR0_DQ9
MAAA10	AW11	DDR0_MA10	DDR0_DQ10
MAAA11	AV19	DDR0_MA11	DDR0_DQ11
MAAA12	AU19	DDR0_MA12	DDR0_DQ12
MAAA13	AT20	DDR0_MA13	DDR0_DQ13
MAAA14	AT20	DDR0_MA14	DDR0_DQ14
MAAA15	AU21	DDR0_MA15	DDR0_DQ15
MODT_A0	AW10	DDR0_ODT0	DDR0_DQ16
MODT_A1	AV8	DDR0_ODT1	DDR0_DQ17
	AW9	DDR0_ODT2	DDR0_DQ18
	AW8	DDR0_ODT3	DDR0_DQ19
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LGA1155 (G, H, I)



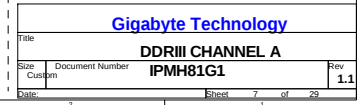
DDR CAP
(X9)



(A)

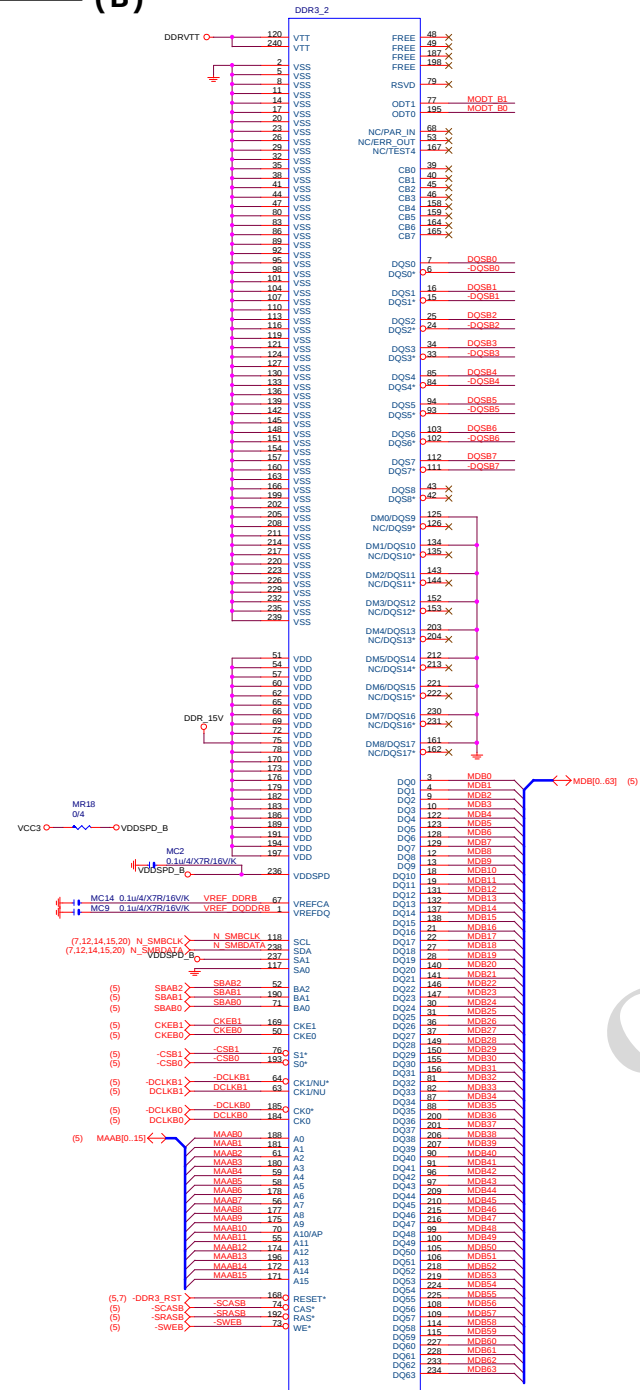


MODT_A[0..1] ↔ MODT_A[0..1] (5)
 -DQSA[0..7] ↔ -DQSA[0..7] (5)
 DQSA[0..7] ↔ DQSA[0..7] (5)

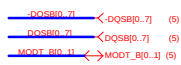


DDR3

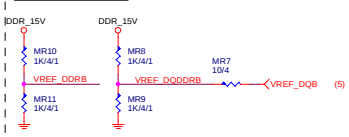
(B)



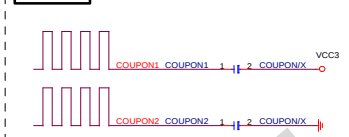
BLACK CONNECTOR



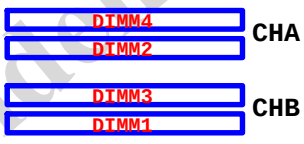
DDR3 VREF



COUPON



CPU



PCH

(B)

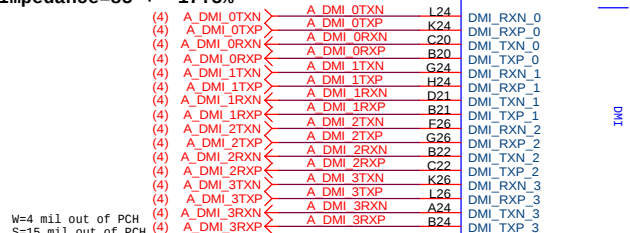
DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +/- 17.5%

USB2.0 : 12/4.5/7.5/4.5/12 (breakout min 8/4/4/4/8)
Impedance=90 +/- 17.5%

PCHB

B85: Port 6/7 N/A

H81: Port 6/7/12/13 N/A



W=4 mil out of PCH
S=15 mil out of PCH

VCC1_5_PCH

PCIE Only

81116

PCIEEx1

N/A

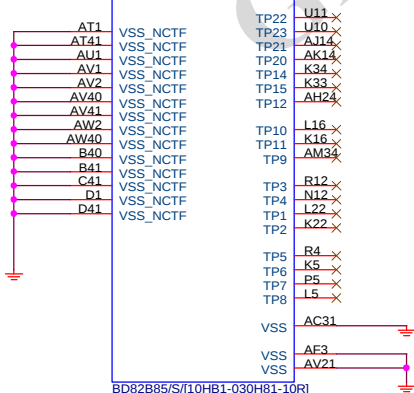
放靠近 Device & PCI-E Slot
Impedance=80 +/- 17.5%

PCIEEx1:16/5/5/5/16 (breakout min 8/4/4/4/8)

PCH

(J)

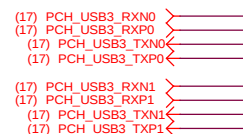
PCHJ



BD82B85/S/[10HB1-030H81-10R]

PCH

(F)



VCC3

N/A

PCHF

USB3

FDILINK

USB3_RXN_0

USB3_RXP_0

USB3_TXN_0

USB3_TXP_0

USB3_RXN_1

USB3_RXP_1

USB3_TXN_1

USB3_TXP_1

USB3_RXN_4

USB3_RXP_4

USB3_TXN_4

USB3_TXP_4

USB3_RXN_5

USB3_RXP_5

USB3_TXN_5

USB3_TXP_5

TACH6_GP70

TACH7_GP71

BD82B85/S/[10HB1-030H81-10R]

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

FDI_TXP0_11

FDI_TXN0_11

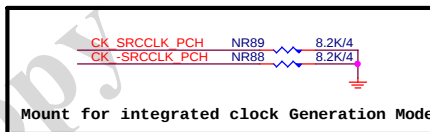
FDI_TXP0_11

FDI_TXN0_11

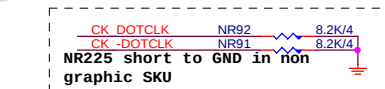
FDI_TXP0_11

FDI_TXN0_11

PCH CLK PD



Mount for integrated clock Generation Mode

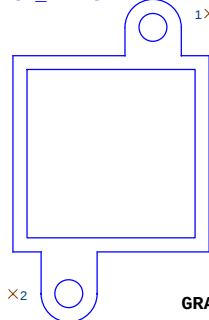


NR225 short to GND in non graphic SKU

PCH H/S

LOW COST ICH7 HEATSINK

SB_HEATSIN



2x

GRAY HS

PCH_HS

PCH_HS/[12SP2-030005-43R_12SP2-030005-41R_12SP2-030005-42R]

USB TABLE

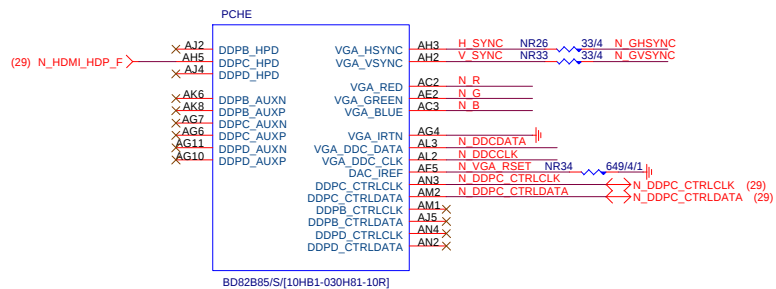
OC[3:0]# for Device 29 (ports 0-7)
OC[7:4]# for Device 26 (ports 8-13)

USB OC# Configure	
OC0#	R_USB30
OC1#	USB_LAN
OC2#	Not Use
OC3#	N/A
OC4#	F_USB1
OC5#	F_USB2
OC6#	Not Use
OC7#	N/A

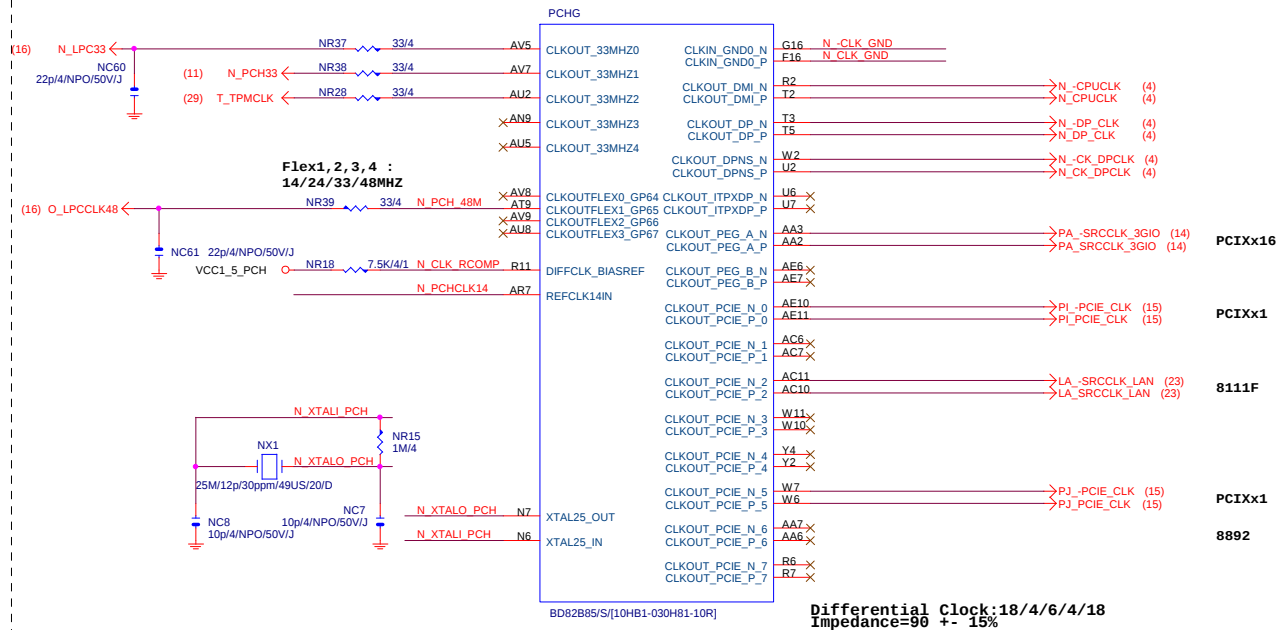
Gigabyte Technology

Title				
PCH FDI,DMI,USB ,PCIE,NVRAM				
Size	Document Number	IPMH81G1		Rev 1.
Custom				
Date:	Friday, October 18, 2013	Sheet	9 of 29	

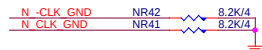
PCH



PCH (G)



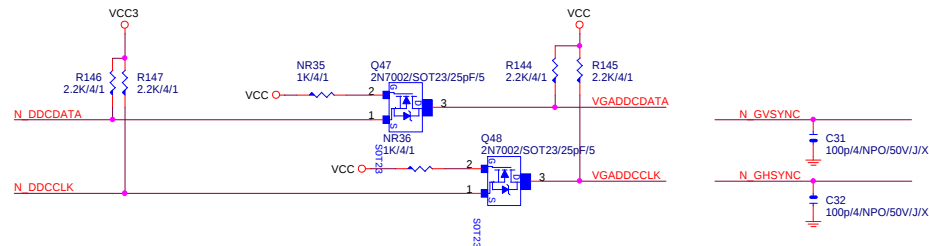
PCH	CLK	PD
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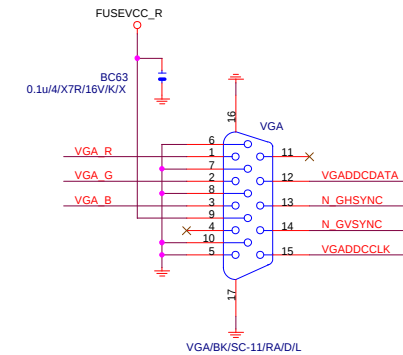
Mount for integrated clock Generation
Mode



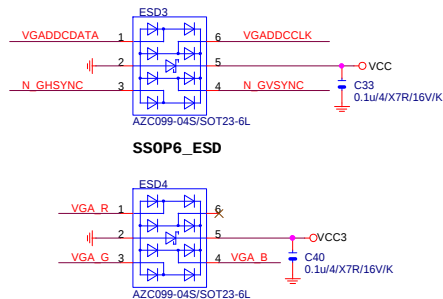
VGA DDC



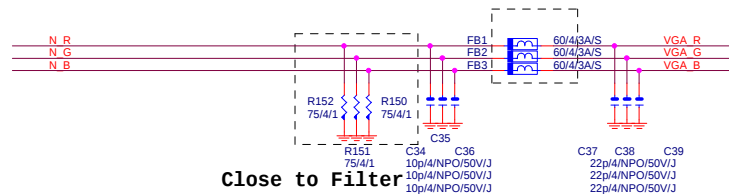
VGA CONNECTOR



VGA ESD



VGA DDC



Close to Filter

Differential Clock: 18/4/6/4/18
Impedance=90 +- 15%

Gigabyte Technology

PCH DISPLAY ,CLK BUFFER

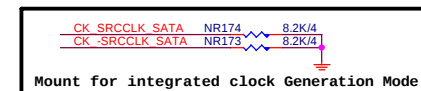
IPMH81G1

Rev	1.1
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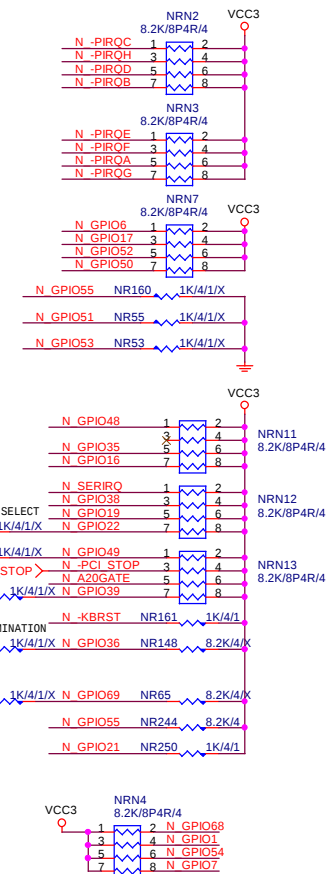
Date: Friday, October 18, 2013 Sheet 10 of 29

	1
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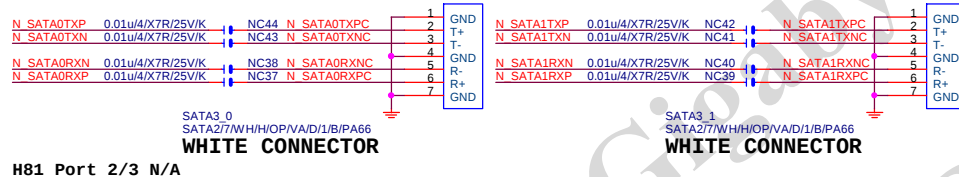
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
Impedance=90 +/- 17.5%
SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
Impedance=90 +/- 17.5%



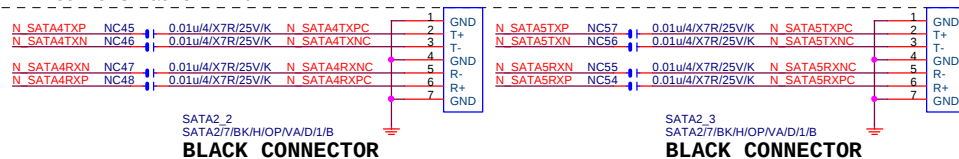
PCH	PU/PD
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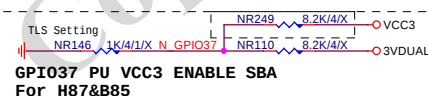
SATA CONNECTOR



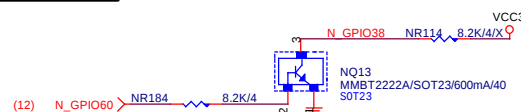
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** Z87/H87 Port 4&5 SATA3.0
** B85 Port 4&5 SATA2.0
```



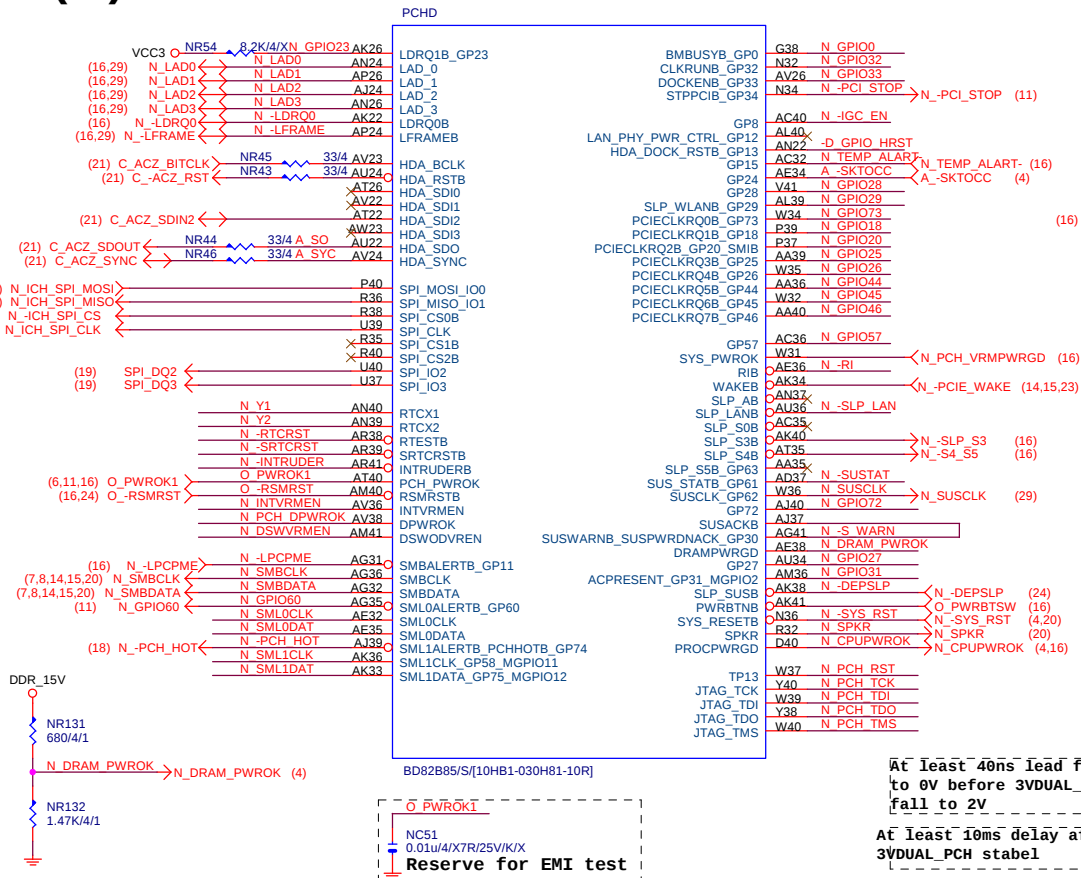
ME PWROK



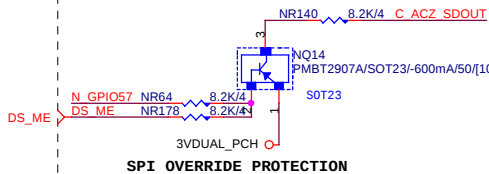
GPI038 Ctrl



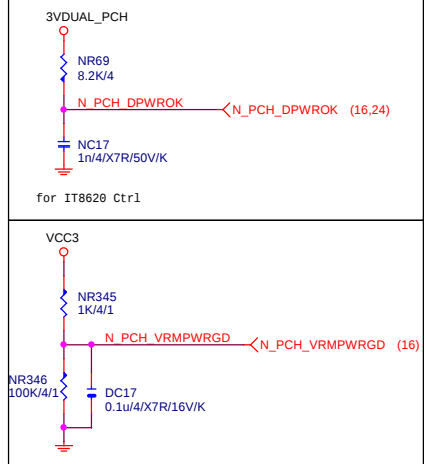
(D)



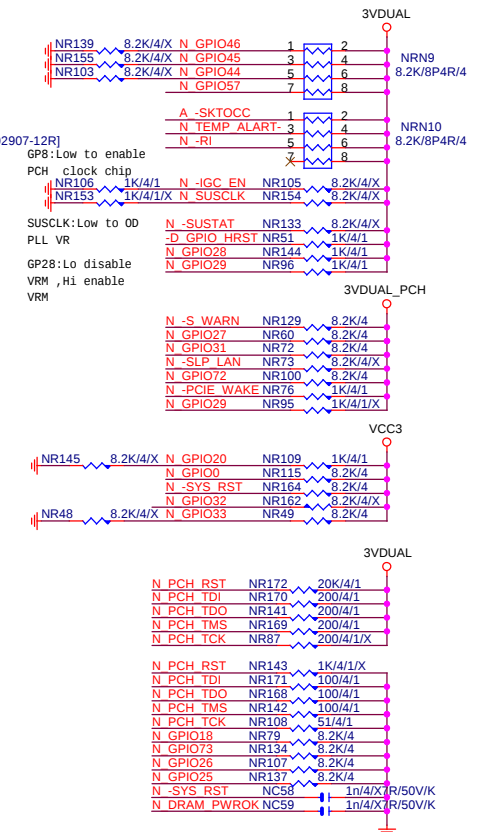
ACZ_SDOUT



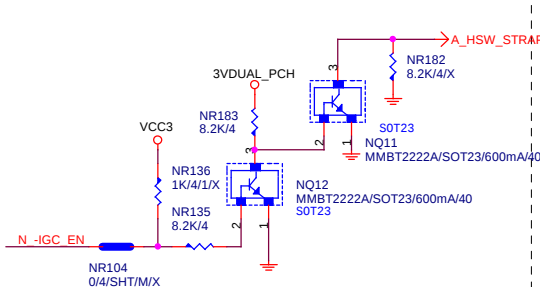
PCH_DPWROK



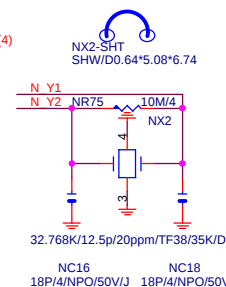
PCH	PU/PD
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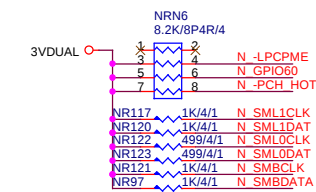
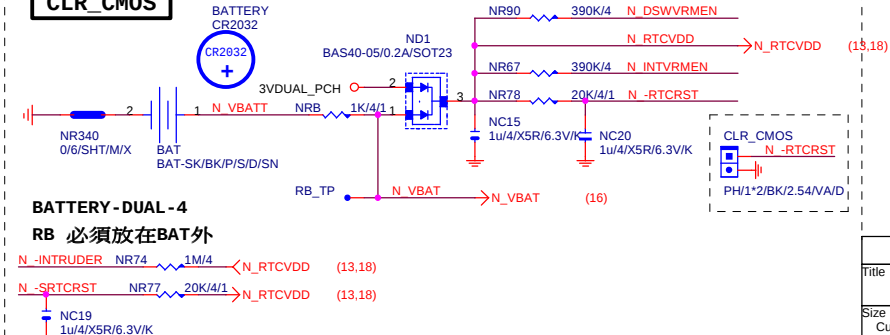
HSW_STRAP13



32.768KHZ



CLR_CMOS



Gigabyte Technology

PCH GPIO , CTRL , AUDIO

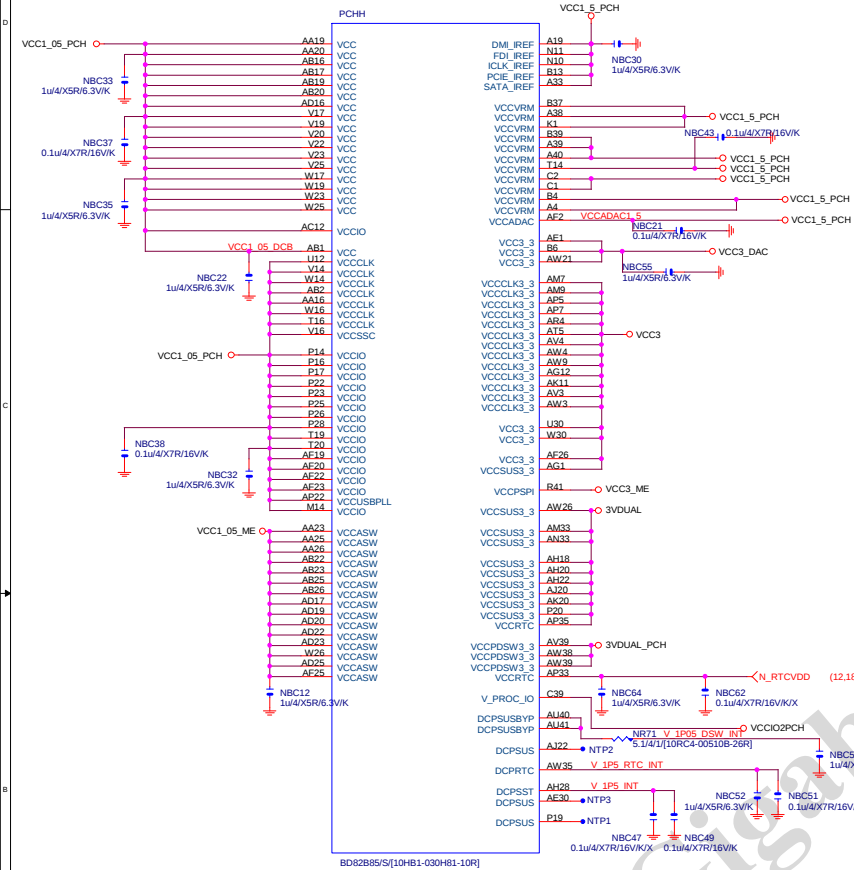
er IPMH81G1

Rev	1.1
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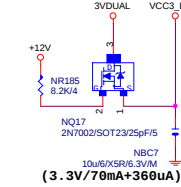
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PCH (H)

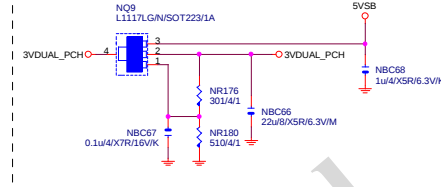


VCC3_DAC

CLOSE北橋(注意震盪水波紋)



3VDUAL_PCH

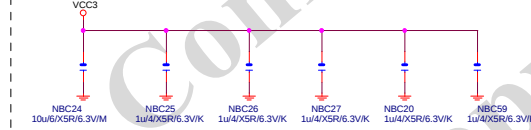


SHT_PWR

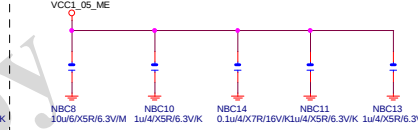


CAP

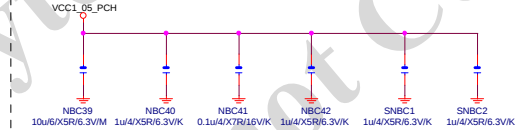
(3.3V) (X6)



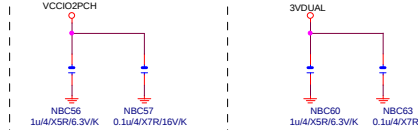
(1.05V) (X5)



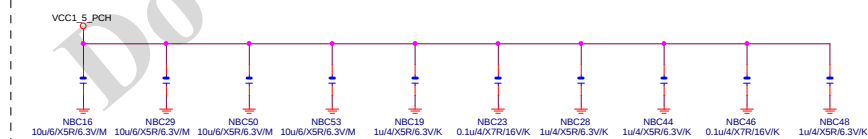
(1.05V) (X6)



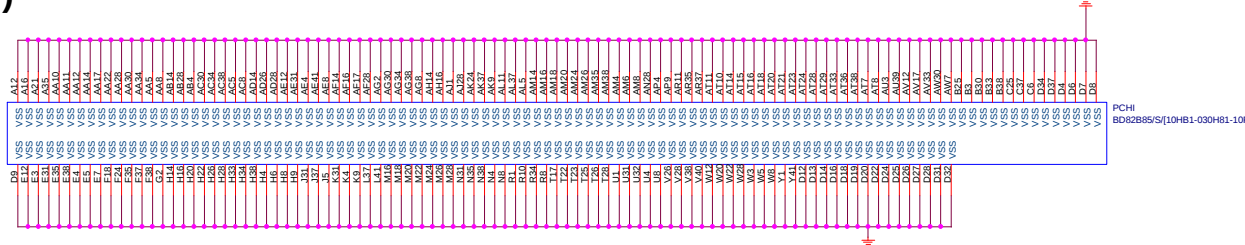
(1.05V) (X2) (3.3V) (X2)



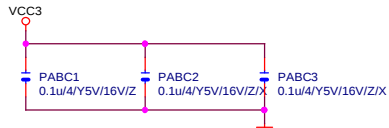
(1.05V) (X10)



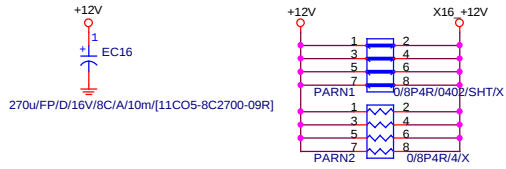
PCH (I)



PCIEX16 CAP



PCIEX16 PROTECT SHT



PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC18	0.22u4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP TXP8	PAC20	0.22u4/X5R/6.3V/K	PA EXP TXP8 C
PA EXP TXN8	PAC21	0.22u4/X5R/6.3V/K	PA EXP TXN8 C
PA EXP TXP9	PAC22	0.22u4/X5R/6.3V/K	PA EXP TXP9 C
PA EXP TXN9	PAC23	0.22u4/X5R/6.3V/K	PA EXP TXN9 C
PA EXP TXP10	PAC24	0.22u4/X5R/6.3V/K	PA EXP TXP10 C
PA EXP TXN10	PAC25	0.22u4/X5R/6.3V/K	PA EXP TXN10 C
PA EXP TXP11	PAC26	0.22u4/X5R/6.3V/K	PA EXP TXP11 C
PA EXP TXN11	PAC27	0.22u4/X5R/6.3V/K	PA EXP TXN11 C
PA EXP TXP12	PAC28	0.22u4/X5R/6.3V/K	PA EXP TXP12 C
PA EXP TXN12	PAC29	0.22u4/X5R/6.3V/K	PA EXP TXN12 C
PA EXP TXP13	PAC30	0.22u4/X5R/6.3V/K	PA EXP TXP13 C
PA EXP TXN13	PAC31	0.22u4/X5R/6.3V/K	PA EXP TXN13 C
PA EXP TXP14	PAC32	0.22u4/X5R/6.3V/K	PA EXP TXP14 C
PA EXP TXN14	PAC33	0.22u4/X5R/6.3V/K	PA EXP TXN14 C
PA EXP TXP15	PAC34	0.22u4/X5R/6.3V/K	PA EXP TXP15 C
PA EXP TXN15	PAC35	0.22u4/X5R/6.3V/K	PA EXP TXN15 C

PA EXP RXPI0.15] >>> PA_EXP_RXP[0.15] (4)

PA EXP RXNI0.15] >>> PA_EXP_RXN[0.15] (4)

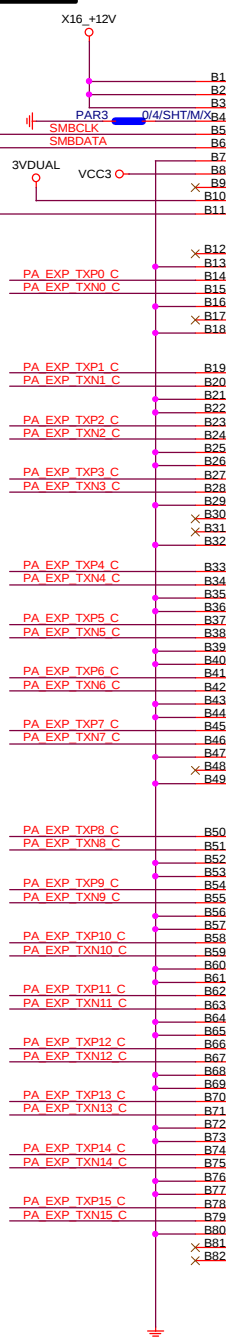
PA EXP TXPI0.15] >>> PA_EXP_TXP[0.15] (4)

PA EXP TXNI0.15] >>> PA_EXP_TXN[0.15] (4)

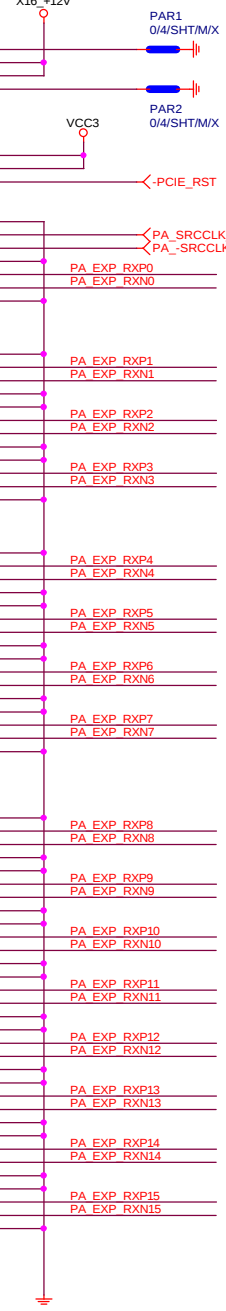
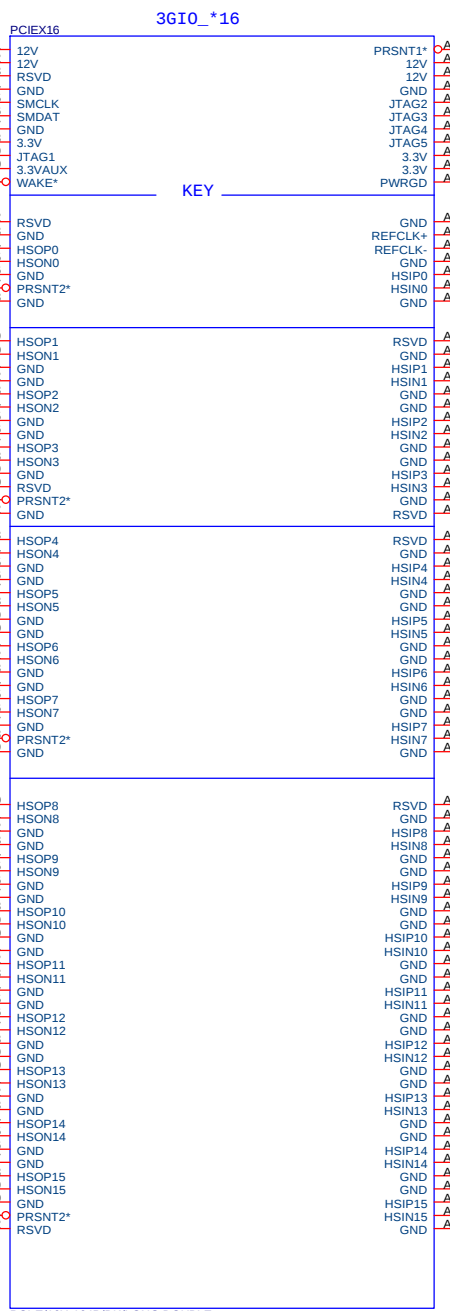
PCIEX16 SLOT

(7,8,12,15,20) N_SMBCLK
(7,8,12,15,20) N_SMBDATA

(12,15,23) N_-PCIE_WAKE



PCIESLOT-164DN-P



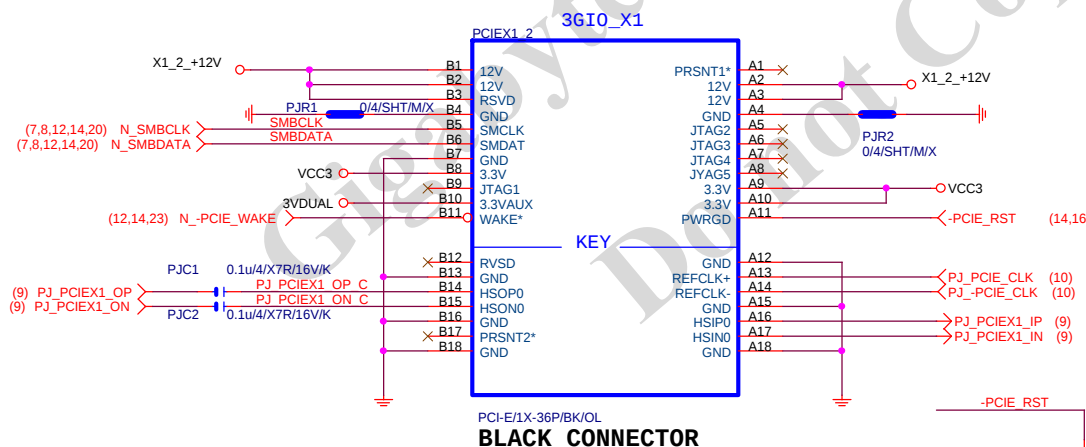
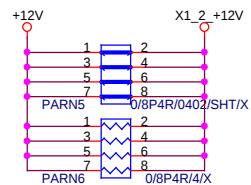
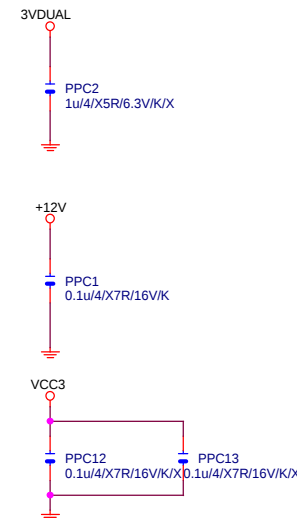
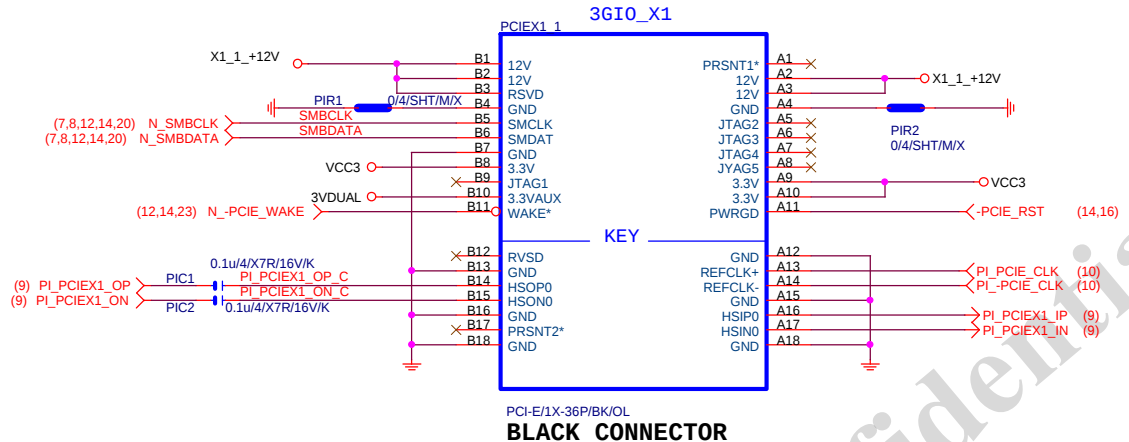
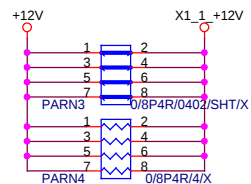
PCI-E/16X-164P/BK/LONG DOUBLE

BLACK CONNECTOR

Gigabyte Technology		
Title		
PCI EXPRESS * 16		
Size	Document Number	Rev
Custom	IPMH81G1	1.1
Date:	Friday, October 18, 2013	Sheet 14 of 29

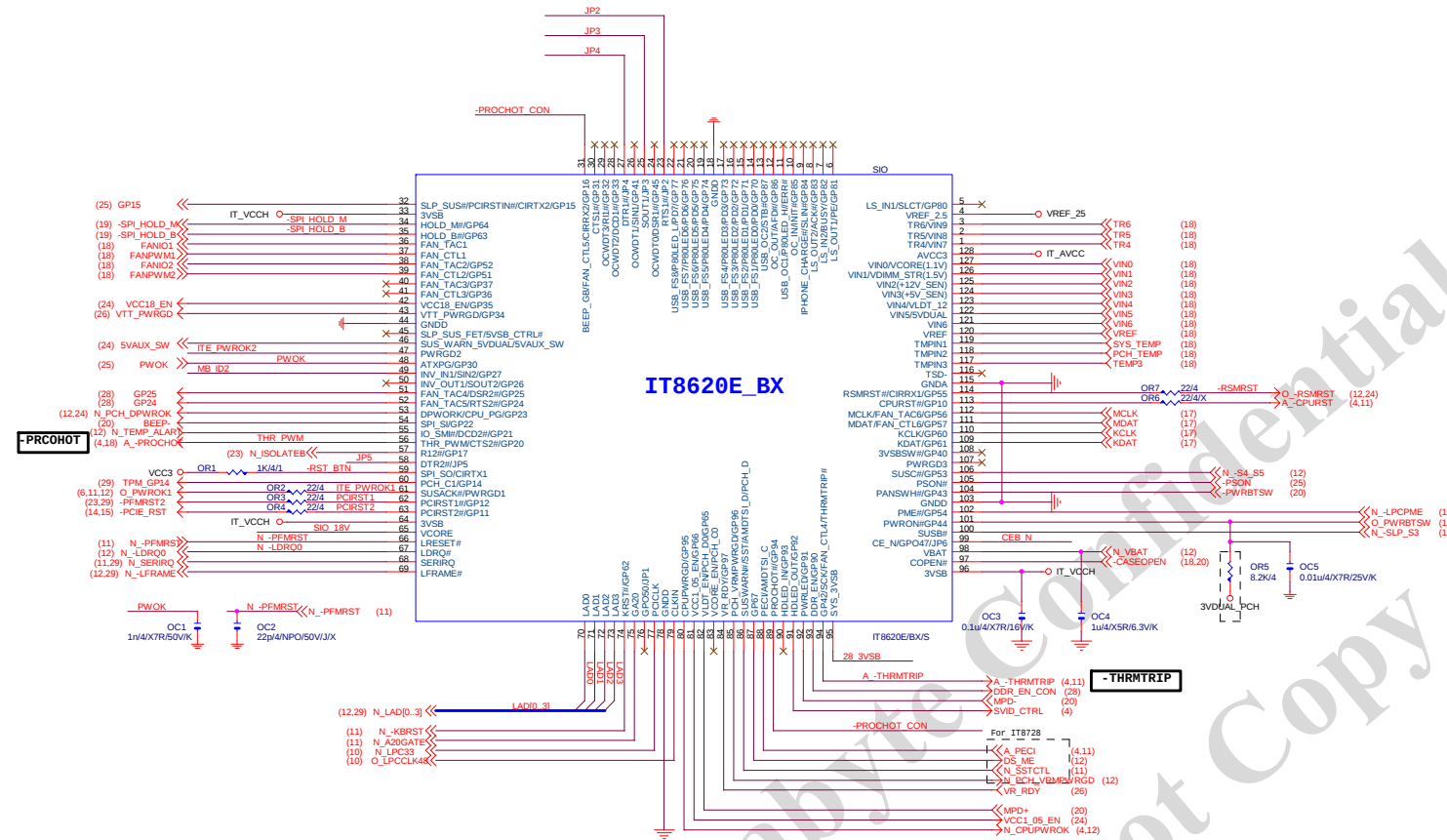
PCIEX1 SLOT

PCIEX1 PROTECT SHT



Gigabyte Technology			
PCI EXPRESS X 1 PORT			
Title	Document Number	Rev	1.1
Size	IPMH81G1		
Custom			
Date:	Friday, October 18, 2013	Sheet	15 of 29

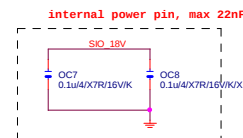
SIO IT8620



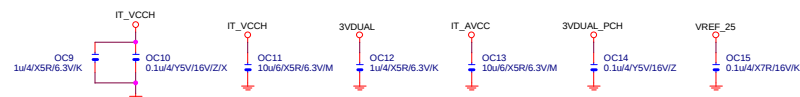
DUAL BIOS OPT STRAP



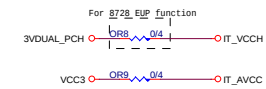
SIO_18V



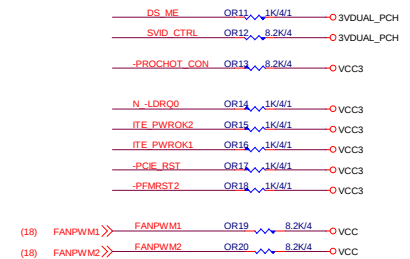
SIO CAP



PWR SHT



SIO PU



SIO STRAP

H61M-S2 1.1 JP6 stuff
pull down



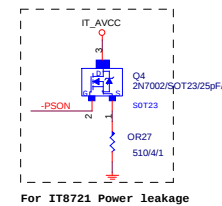
3VDUAL 

```

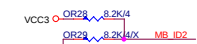
JP3--- High SPI-Flash Disable
      Low SPI-Flash Enable

```

Power leakage



MB ID



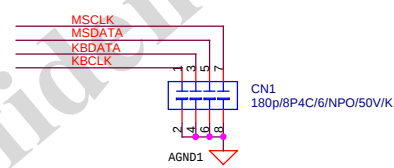
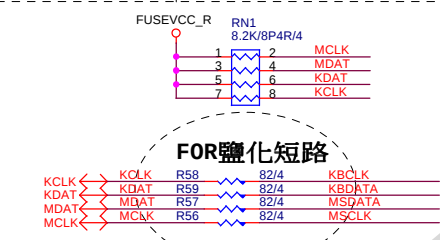
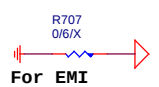
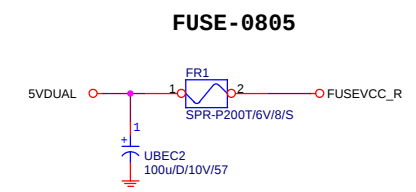
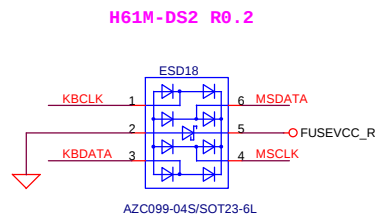
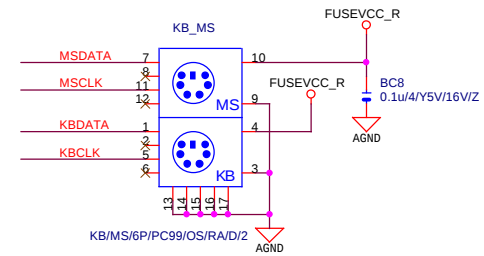
COM

KB/MS

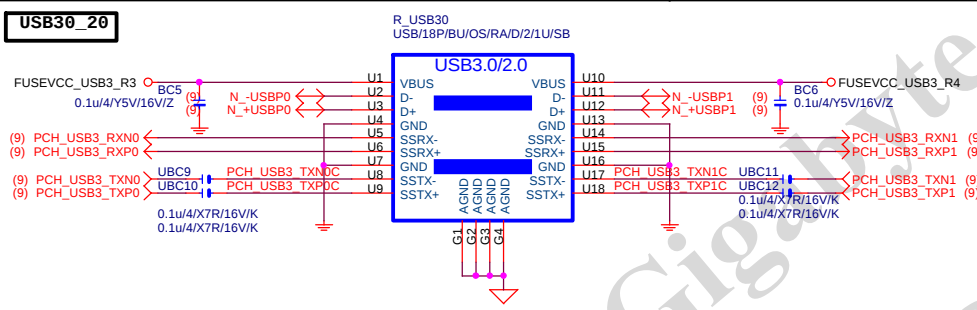
KB_MS ESD

USB2.0 PWR

COM RI

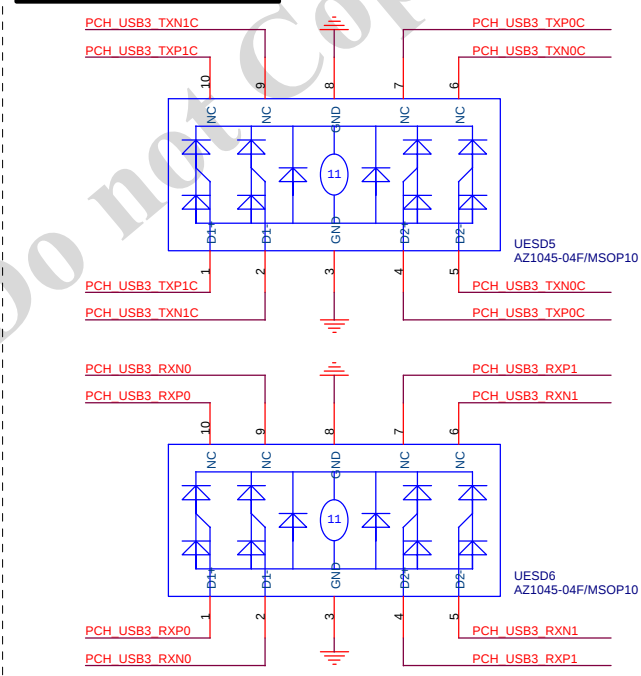


USB30_20

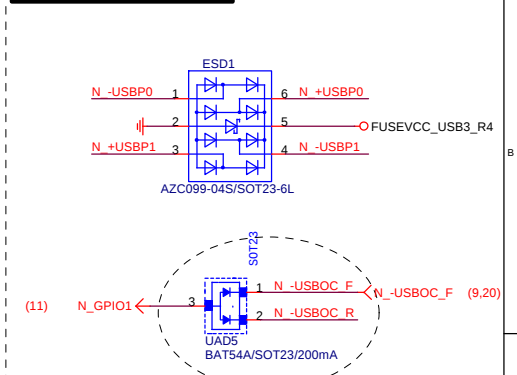


USB30_20 ESD PROTECT

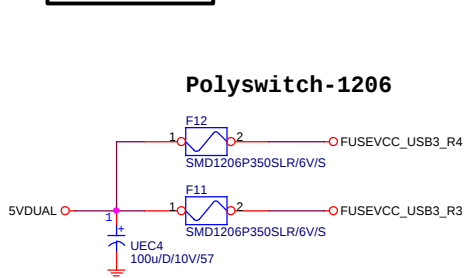
USB3.0 ESD



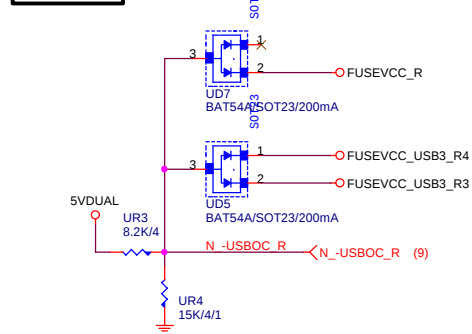
USB POWER PROTECT



USB30_20 PWR



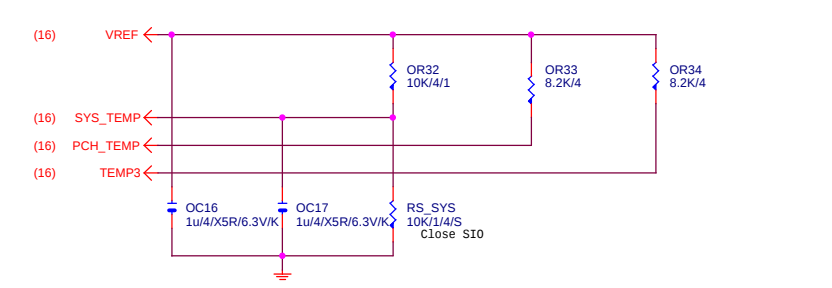
-USBOC_R



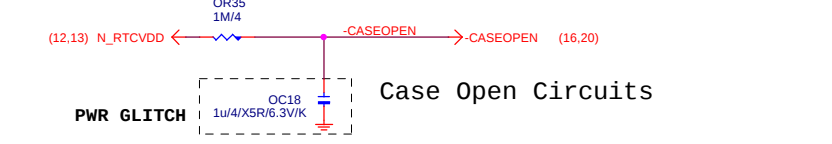
N_GPI01接USBOC, S3/S4/S5會拉LOW

USB3.0 1Port - 1Fuse (3.5A)

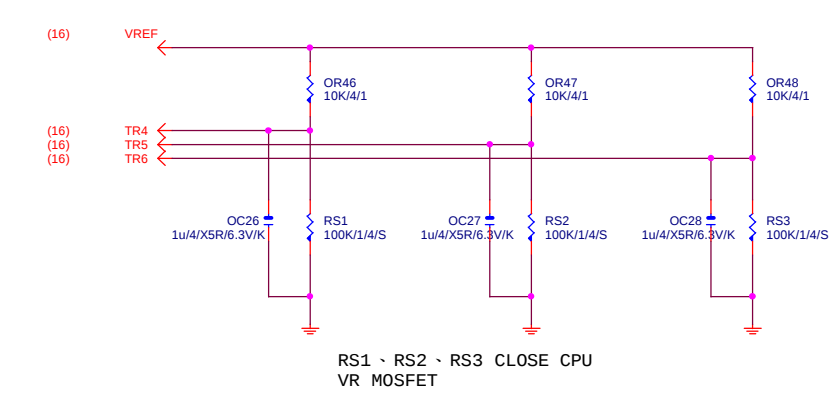
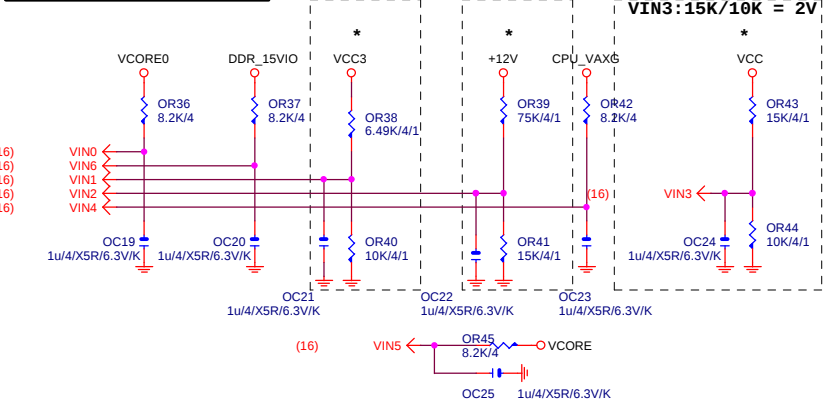
TEMP H/W MONITOR



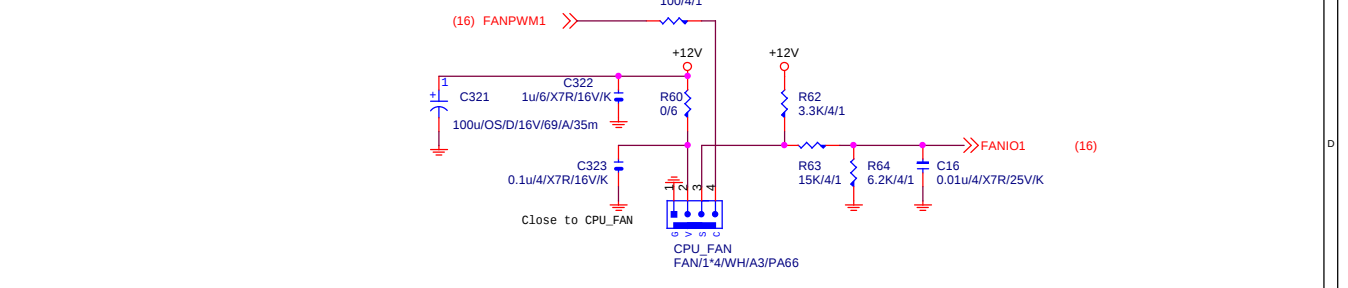
CASE OPEN



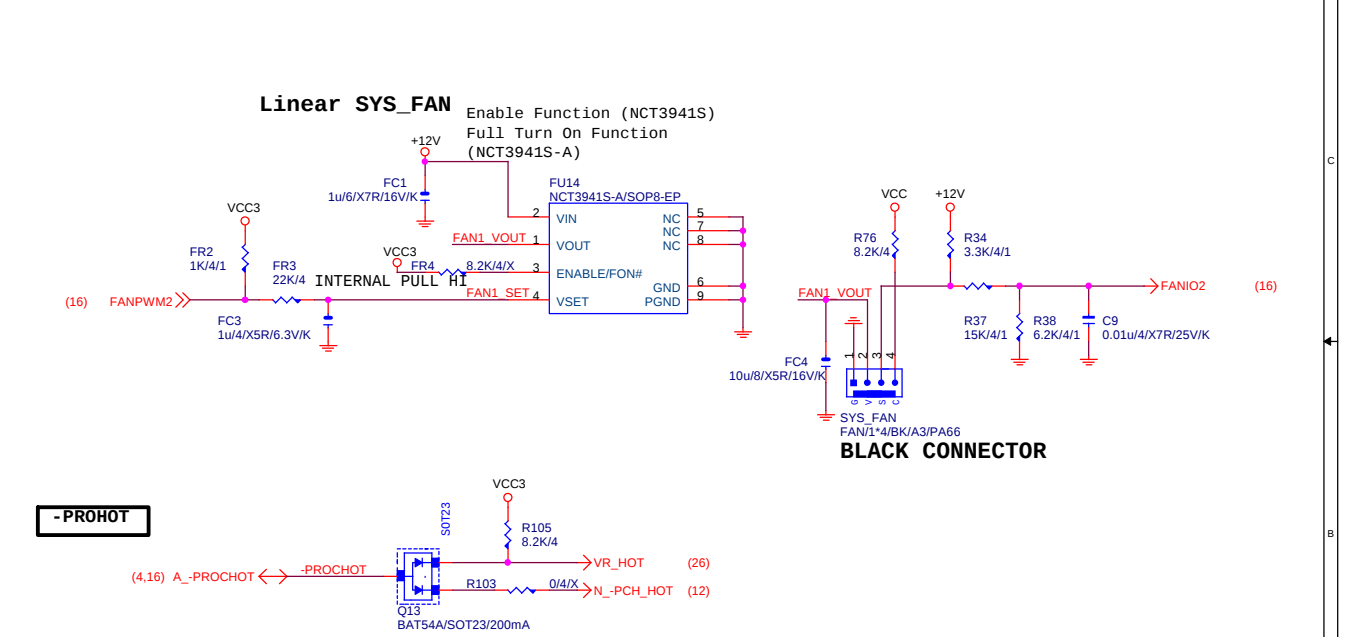
VOLTAGE-- H/W MONITOR



CPU SMART FAN

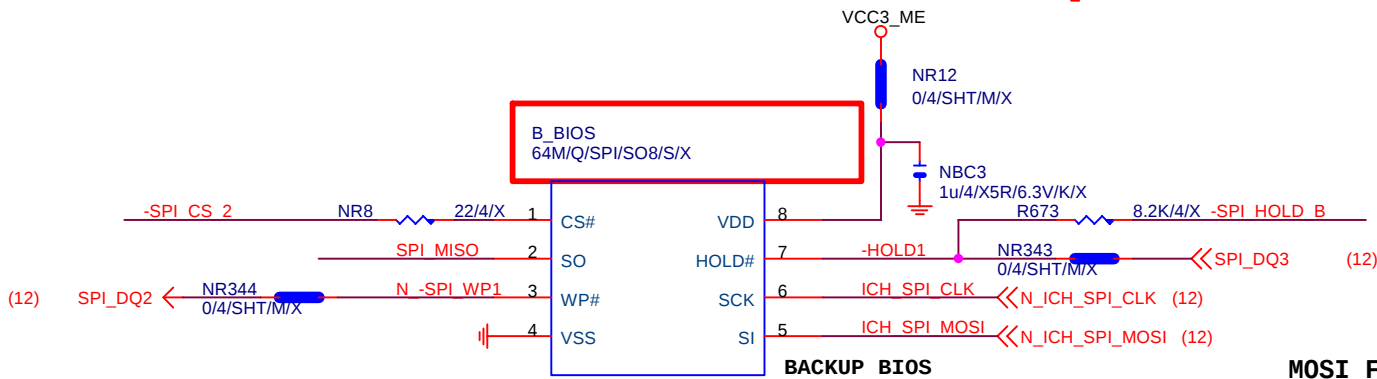
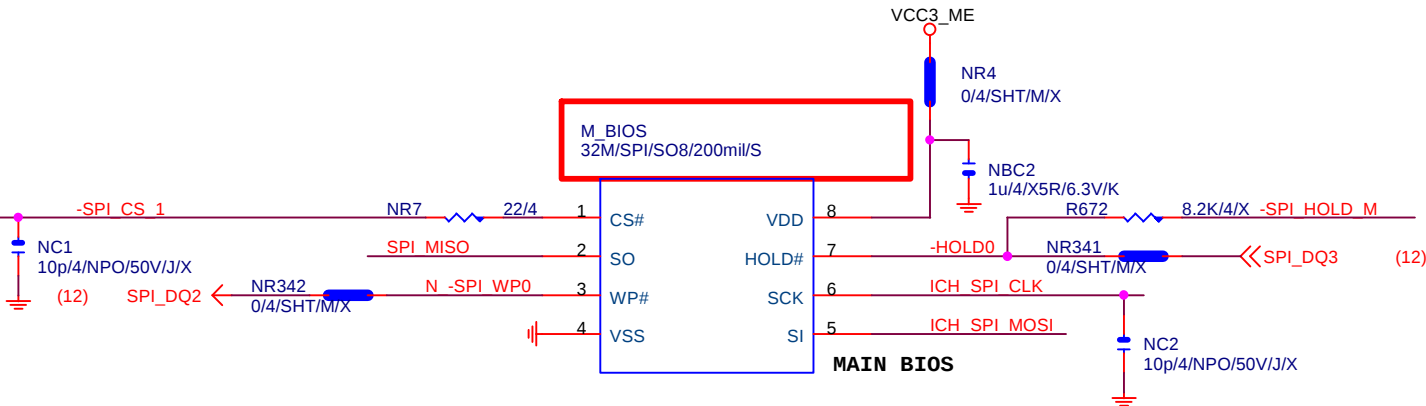


SYS SMART FAN



-PROH0T

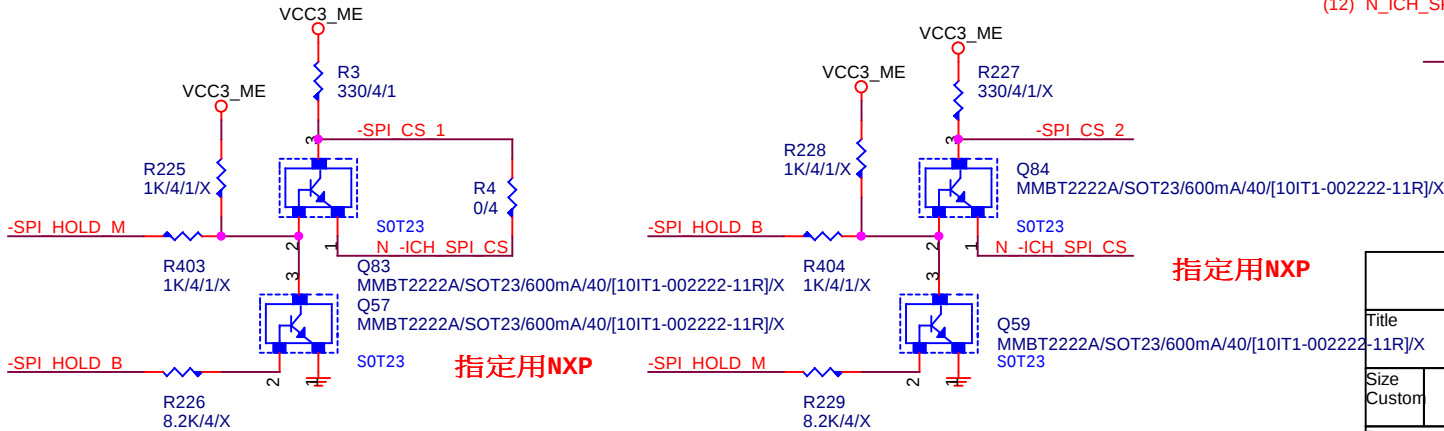
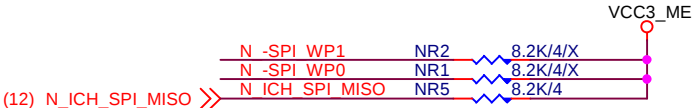
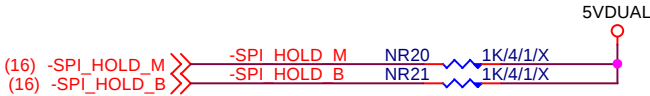
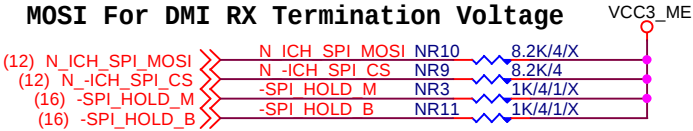




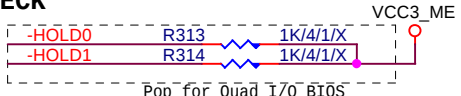
BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K

MOSI For DMI RX Termination Voltage



CHECK

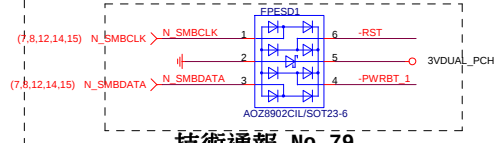
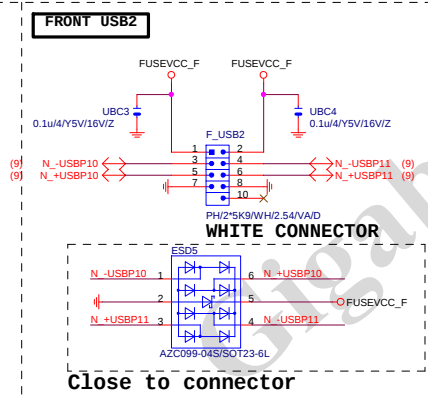


指定用NXP

Gigabyte Technology

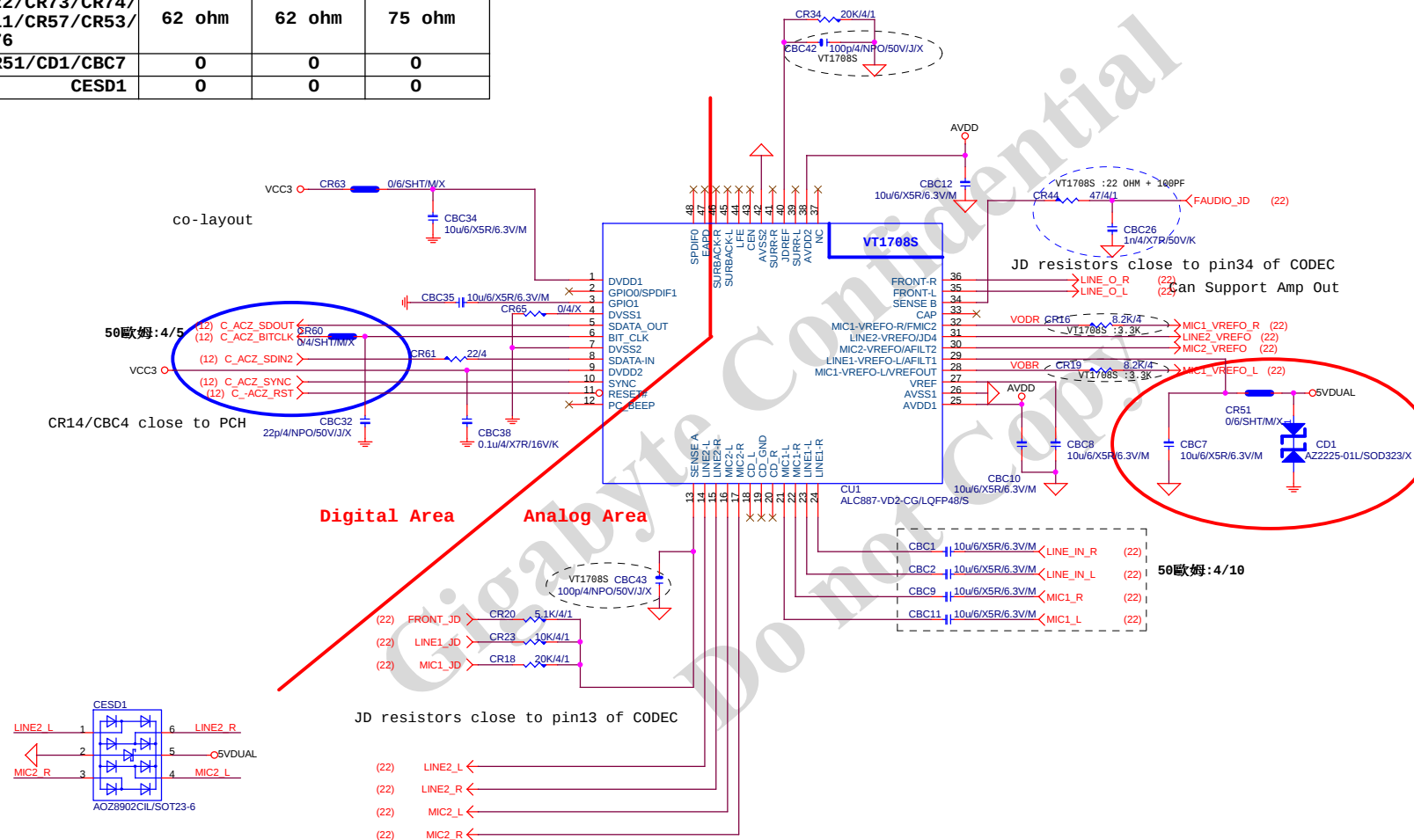
DUAL BIOS

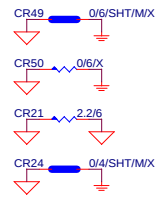
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Custom			
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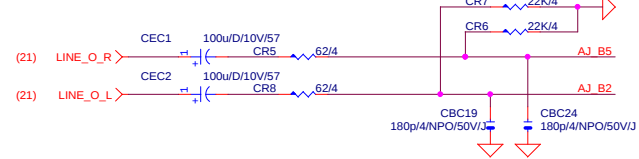
AZALIA CODEC **ALC892/ALC887-VD2/VT1708-CE Colay**

	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

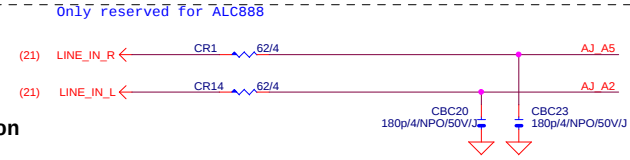




LINE-OUT



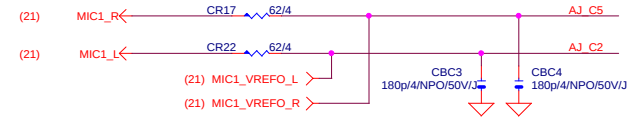
LINE-IN



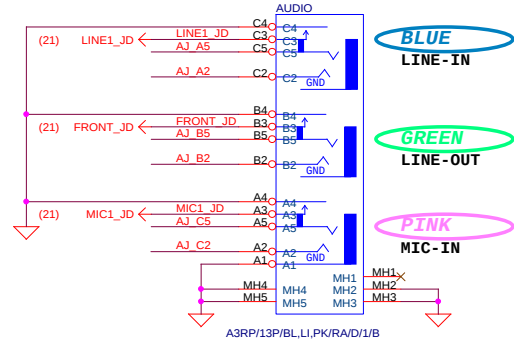
Verify MIC function
in LINE-in

For 889A/888

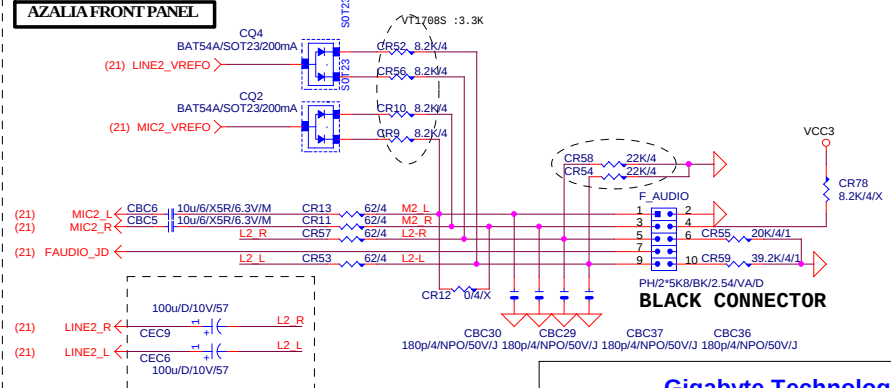
MIC-IN



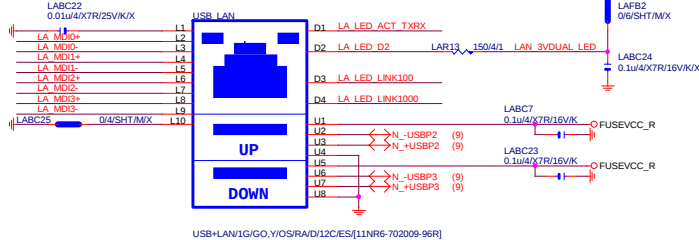
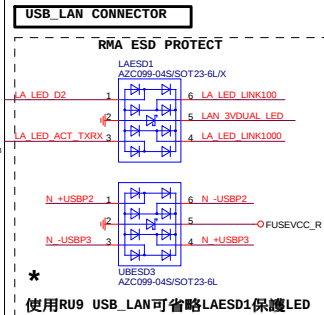
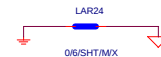
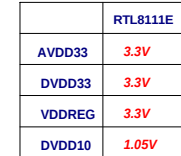
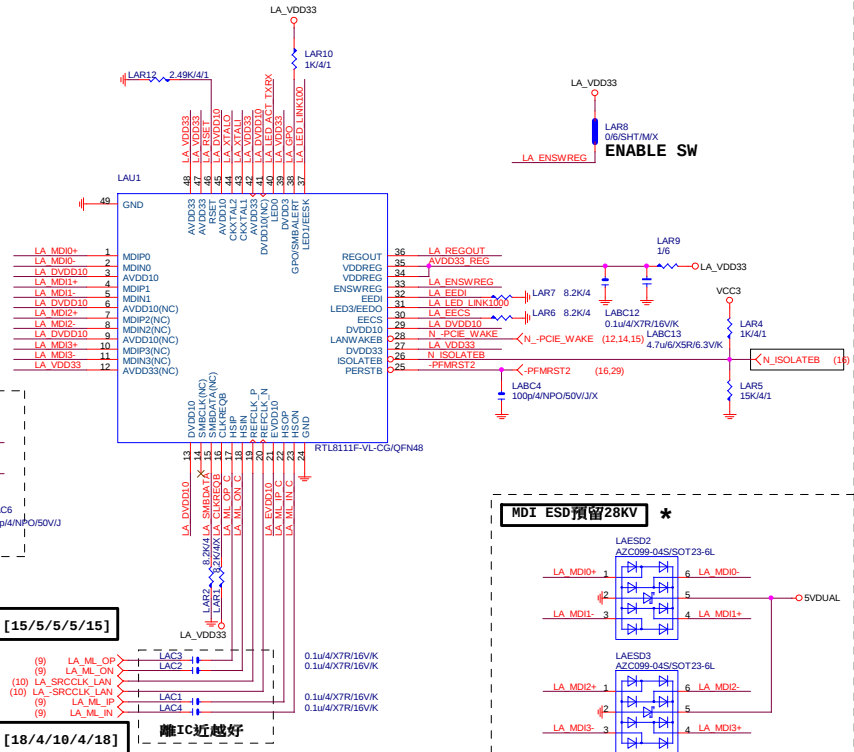
SPDIF_OUT



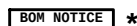
AZALIA FRONT PANEL



Gigabyte Technology			
Title			
AUDIO JACK			
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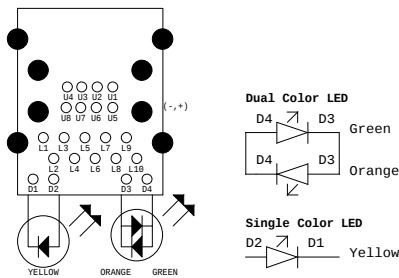


注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]

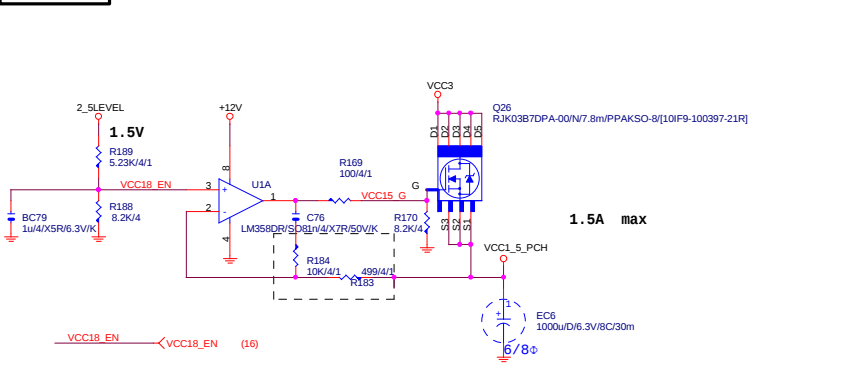


料號	規格	廠商
11NR6-702009-96R 1G LAN (12core)		UDE(RU9 ESD+)
[LED獨立走線,可省略外加AZC099料件LAESD1]		

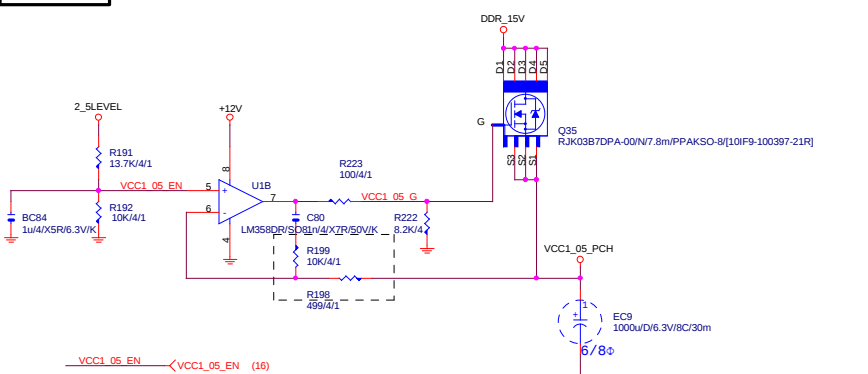
1. 9KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
2. 28KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
LAESD2, LAESD3: 1-4AZC398-04S



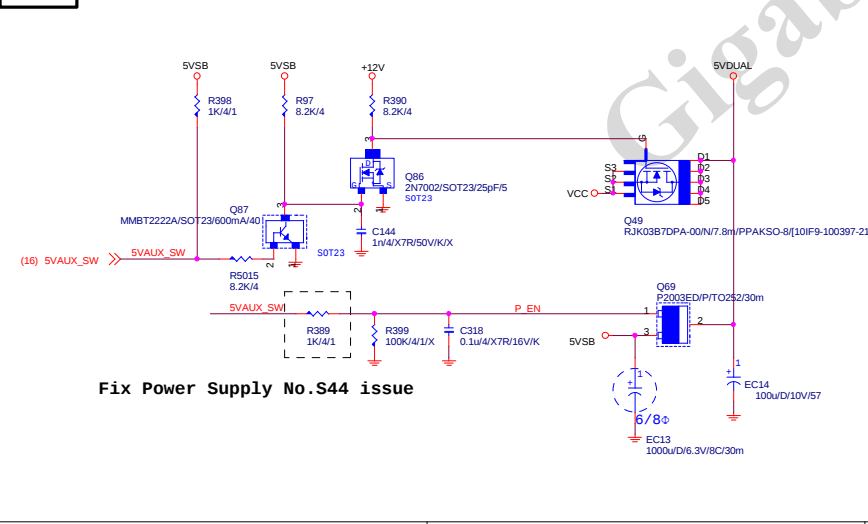
VCC1_8_PCH



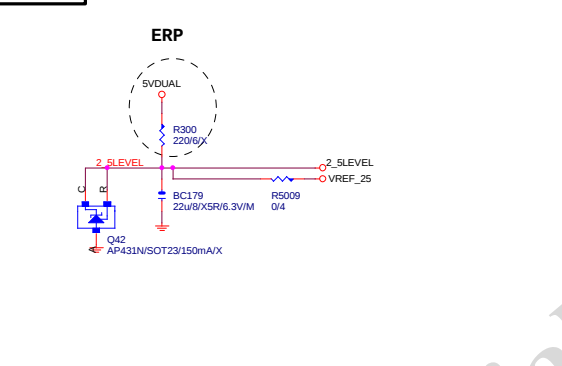
VCC1_05_PCH



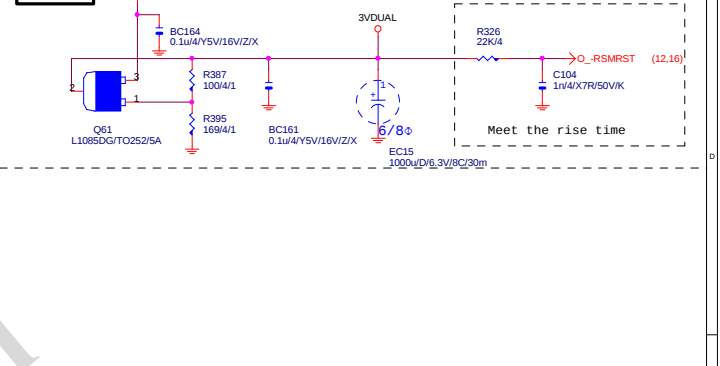
5VDUAL



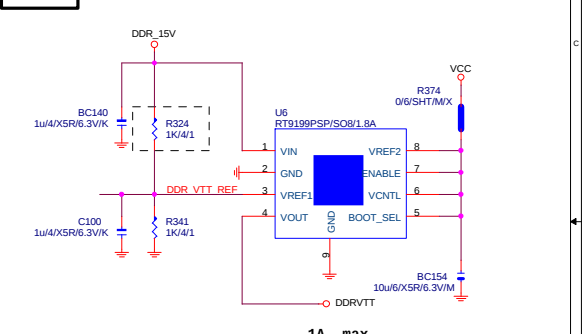
2_5LEVEL



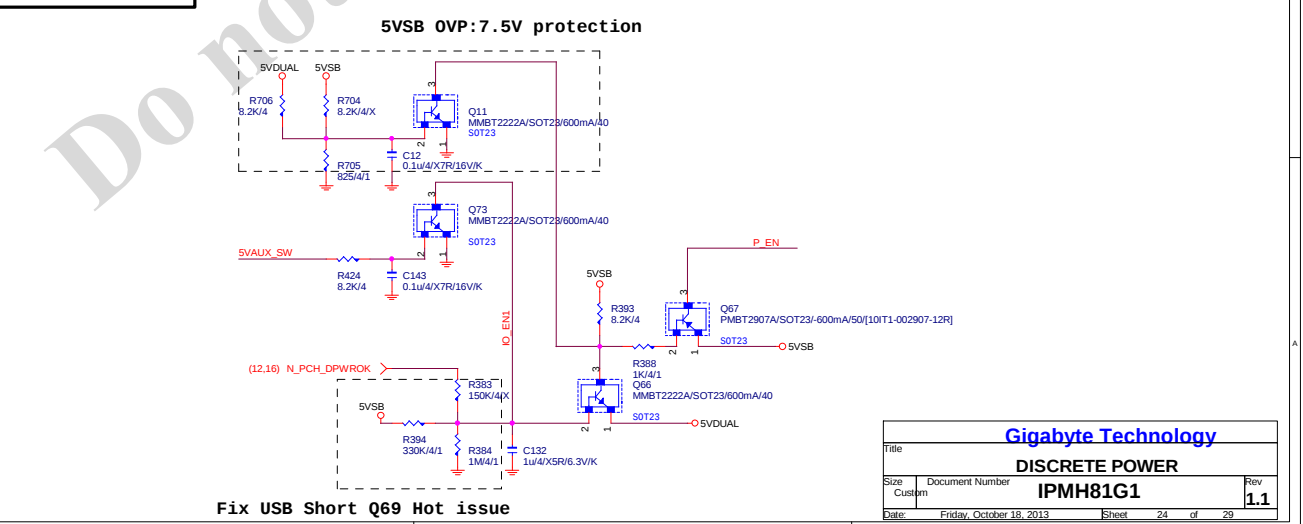
3VDUAL



DDRVTT

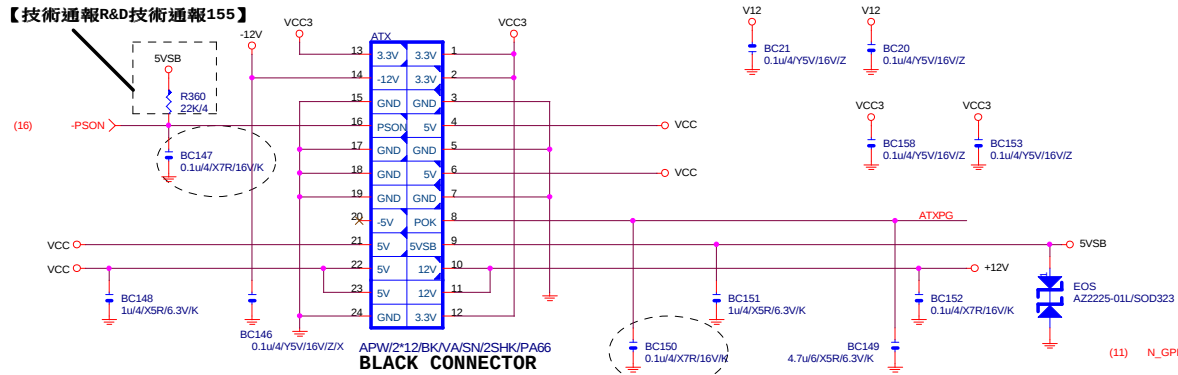


5VDUAL SHORT PROTECT



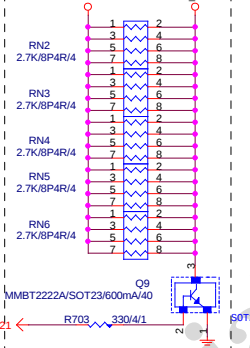
ATXX24 POWER CONNECTOR

【技術通報R&D技術通報155】



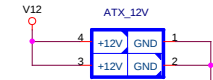
【技術通報R&D技術通報153】

To fix 12V light load abnormal issue

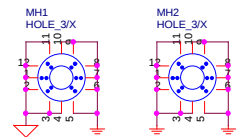


ATXX4 POWER CONNECTOR

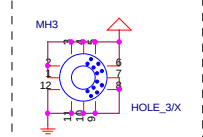
APW/2*2/BK/P/4.2/SN/PA66/[11NH4-020004-G2R]



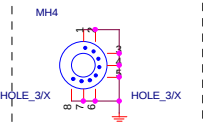
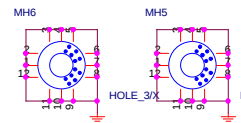
ATX_4-4



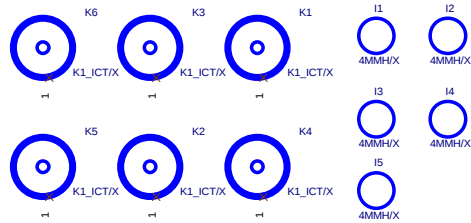
HOLE_4-RH-5MM-1



HOLE_4-RH-5MM-5PIN-1



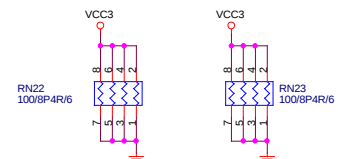
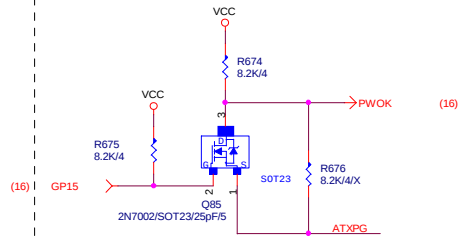
To prevent the 5VSB under loading when boot



TPM

PWOK PATCH

【技術通報R&D技術通報154】



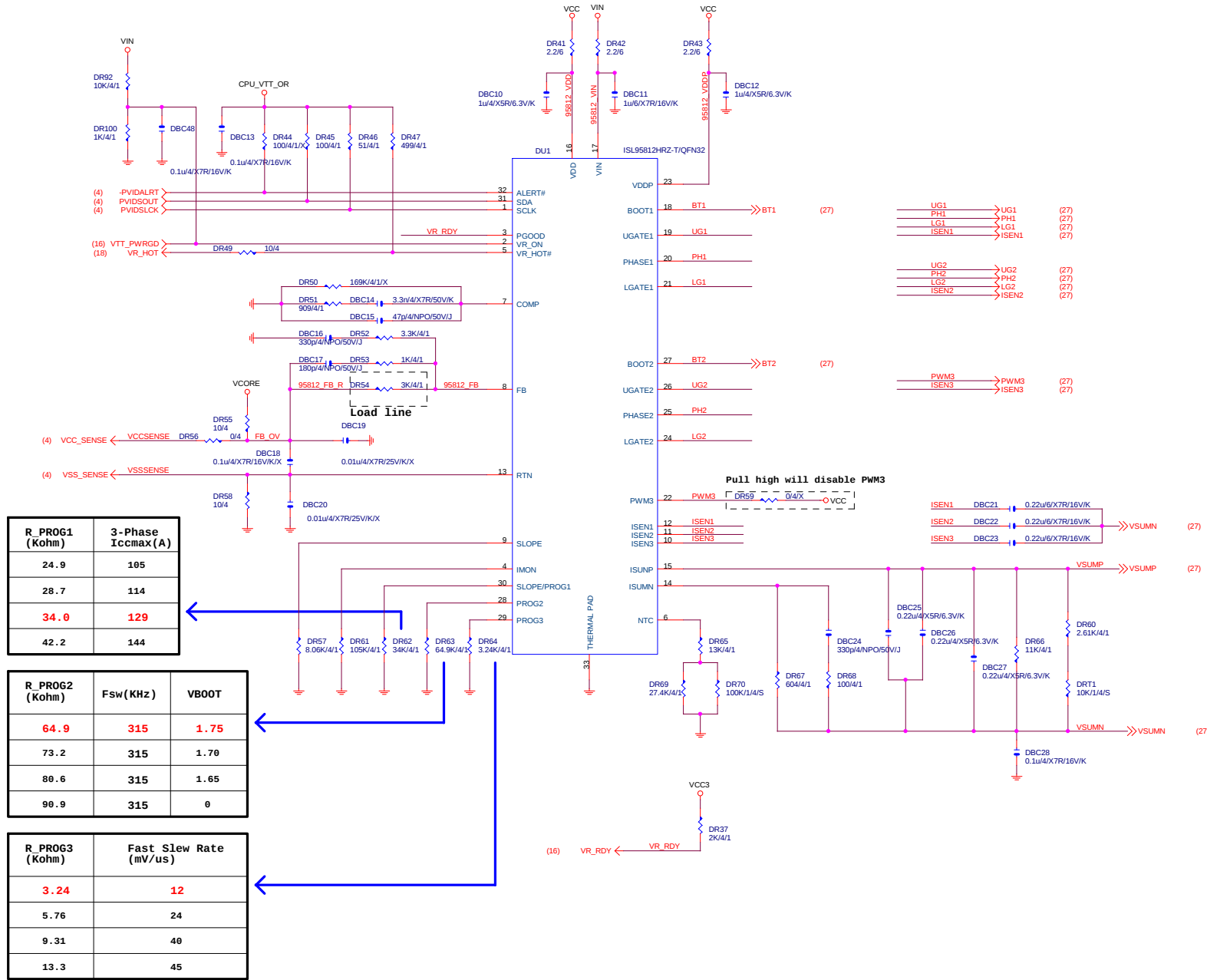
Gigabyte Technology

ATX CONNECTOR

IPMH81G1

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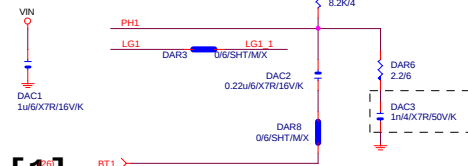


R_PROG1 (Kohm)	3-Phase Iccmax (A)
24.9	105
28.7	114
34.0	129
42.2	144

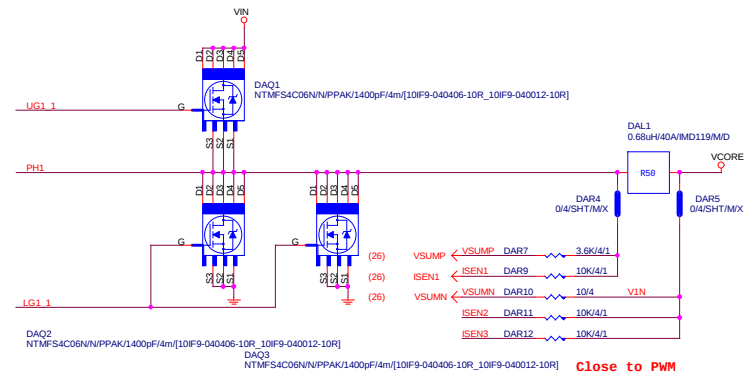
R_PROG2 (Kohm)	Fsw (KHz)	VB00T
64.9	315	1.75
73.2	315	1.70
80.6	315	1.65
90.9	315	0

R_PROG3 (Kohm)	Fast Slew Rate (mV/us)
3.24	12
5.76	24
9.31	40
13.3	45

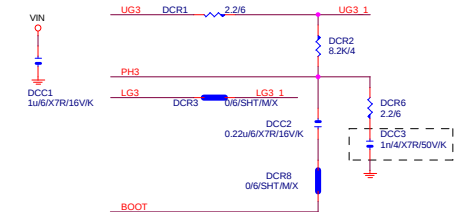
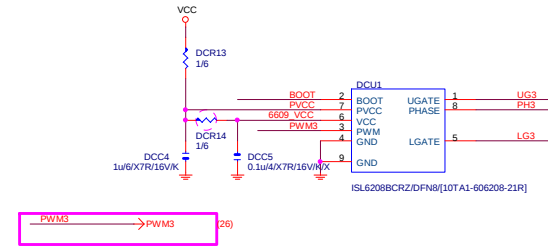
PHASE 1



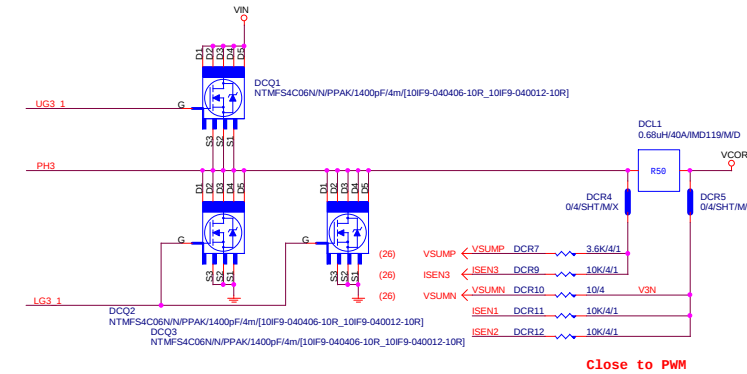
[1]



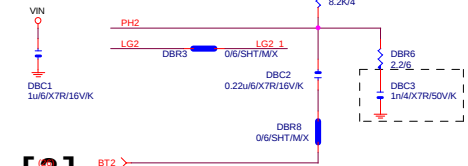
PHASE 3



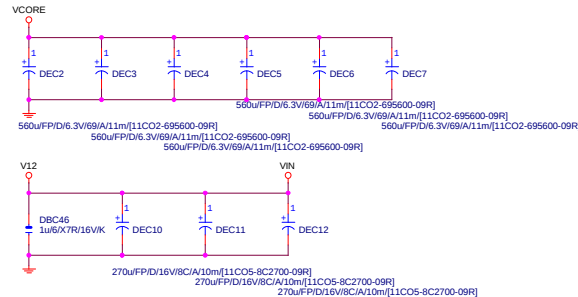
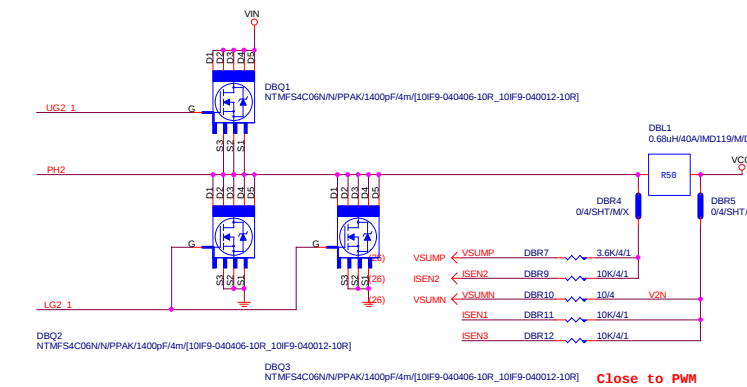
[3]



PHASE 2



[2]



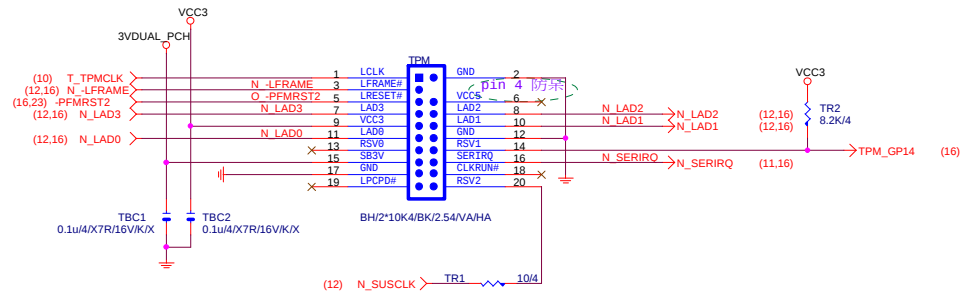
DDR15V

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
Rocset=(Iocp*Lgate, rdson)/Iocset
Rocset=(45A*6.7mOhm)/10uA = 30K
Iocset=10uA

Gigabyte Technology		
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DDR POWER		
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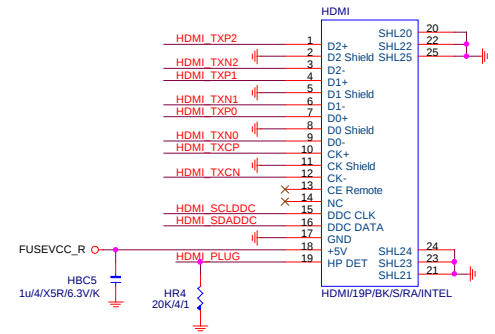
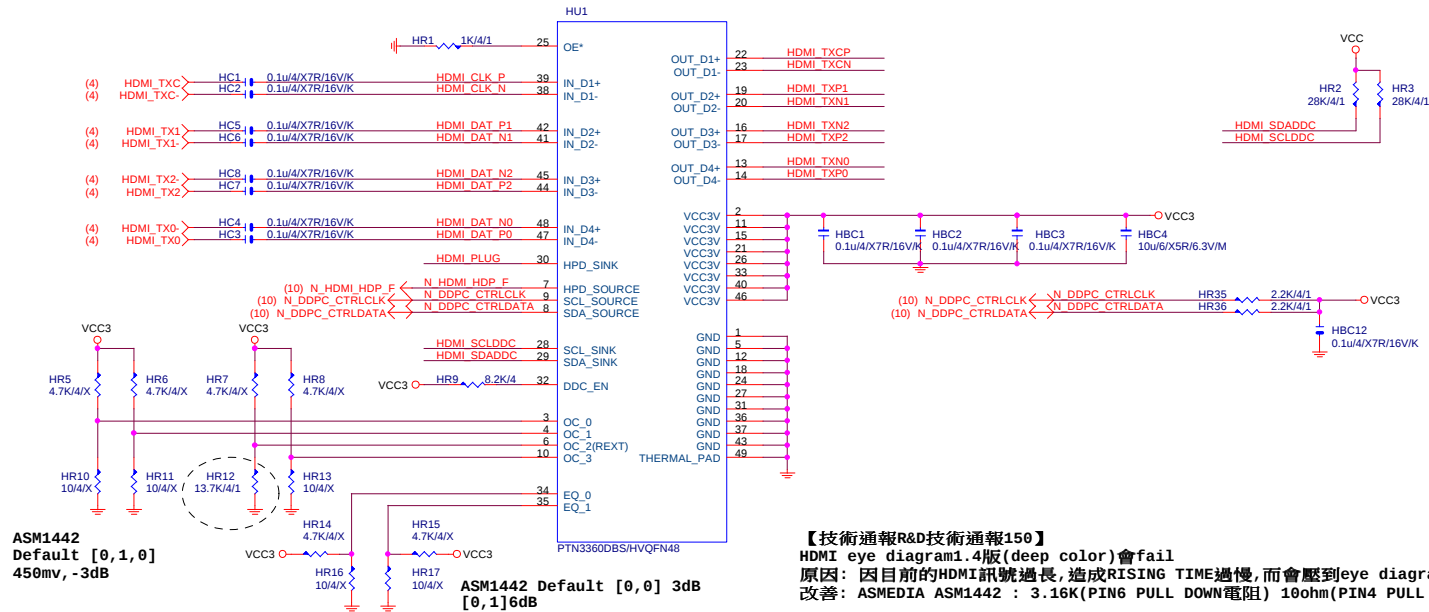
			
Title			
DDR POWER			
Size Custom	Document Number	IPMH81G1	Rev 1.1
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TPM CONNECT



HDMI LEVEL SHIFT

HDMI: 20/4/6/4/20
Impedance=85 +- 17.5%



【技術通報R&D技術通報150】
HDMI eye diagram1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

Gigabyte Technology			
HDMI			
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