

Model Name: GA-H97-D3H

1.0

SHEET

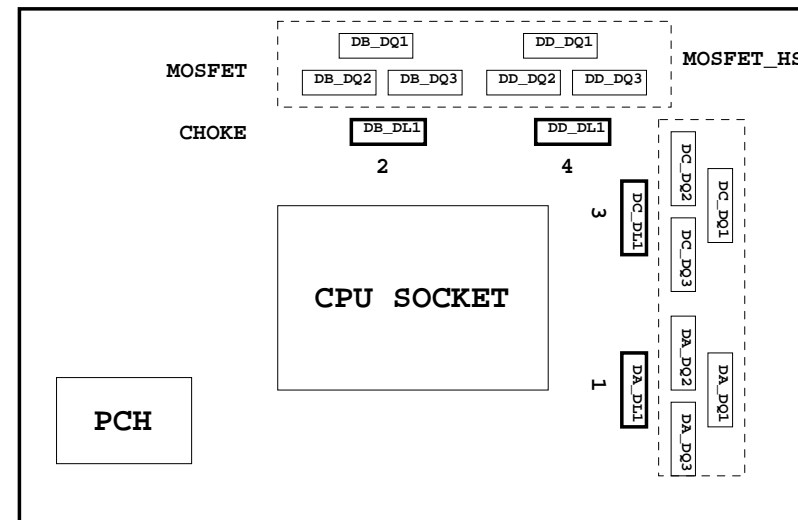
TITLE

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
10	PCH_RGB,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCIEX1*2 , PCIEX4 SLOT
16	ITE8892 PCI BRIDGE
17	PCI SLOT 1&2
18	I/O ITE8728
19	COM, -PROHOT, R_USB
20	Dual BIOS , TPM SLB9635TT
21	ALC892 CODEC
22	REAR AUDIO JACK
23	VCORE PWM_IR3564a
24	VCORE+DDR PWM IR3553+IR3598
25	ME POWER
26	NCP3933 OVER VOLTAGE
27	DISCRETE POWER

SHEET

TITLE

28	F_PANEL , F_USB2.0/3.0
29	ATX POWER, CLOCK GEN
30	HWM , KB/MS , FAN CTRL
31	LAN INTEL i217
32	DVI
33	HDMI , R_USB30
34	TABLE LIST
35	
36	
37	
38	
39	
40	

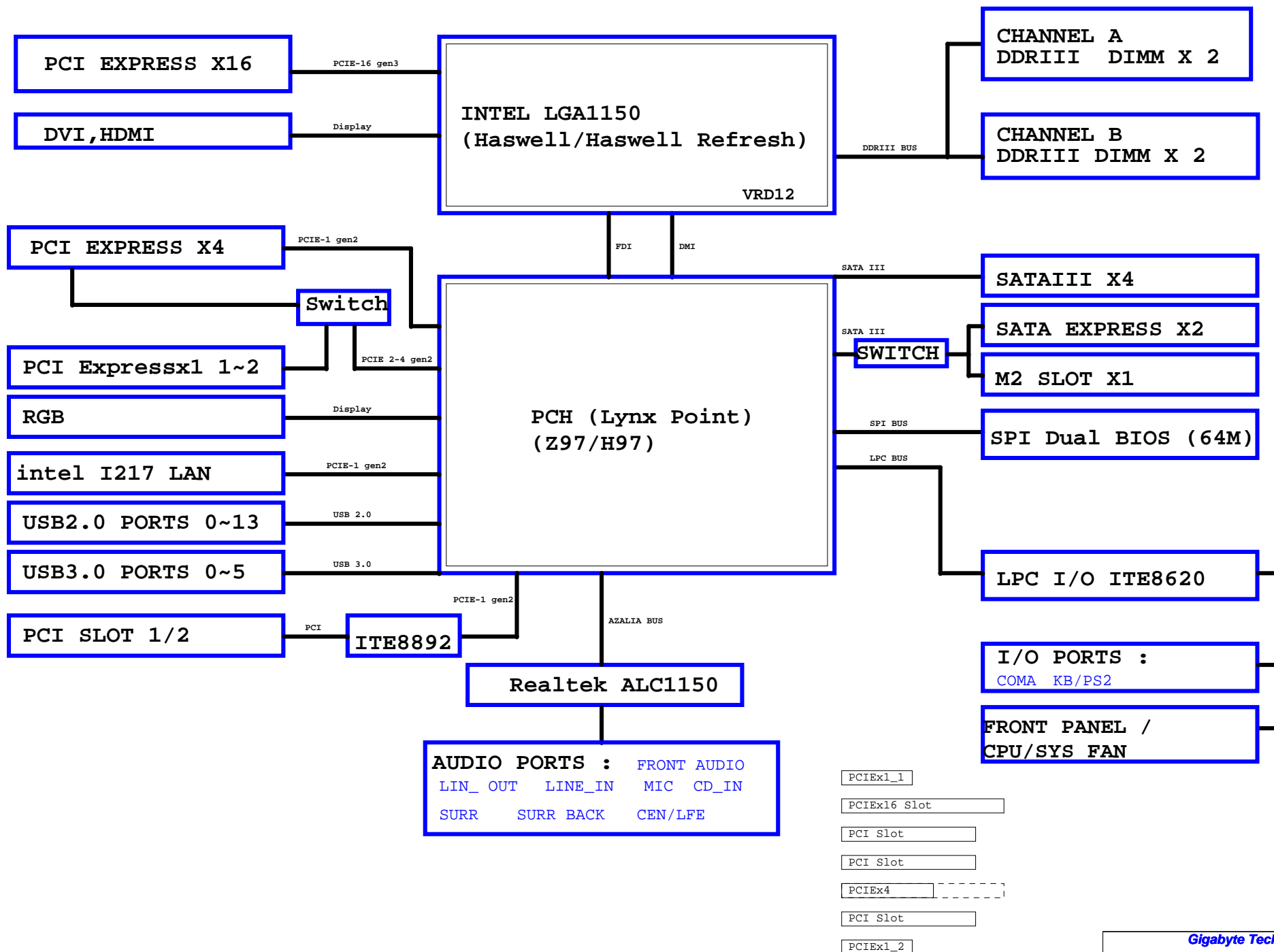


Component value change history

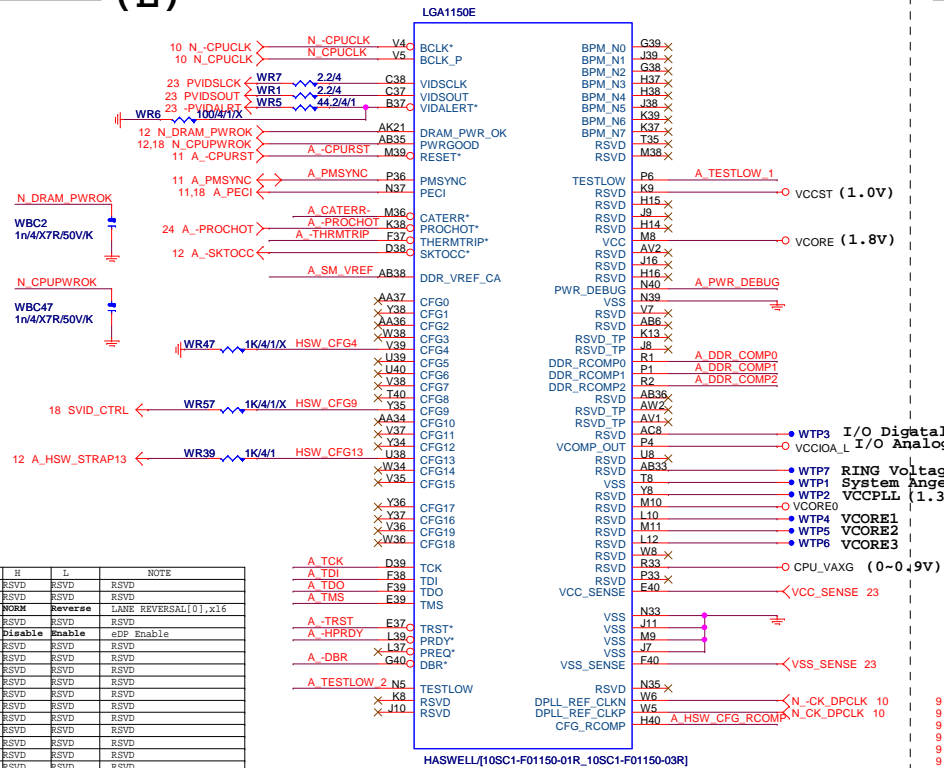
<i>Gigabyte Technology</i>			
Title BOM & PCB MODIFY HISTORY			
Size Custom	Document Number	GA-H97-D3H	Rev 1.0
Date:	Thursday, March 06, 2014	Sheet	2 of 34

DATE	Change Item	Reason
2013/10/18	1. H87-D3H 1.12 修改成 Z97-D3H 0.1	
2013/01/10 PCB:0.2	1. DVI add level shifter IC 2. Fix M2 & SATA EXPRESS circuit 3. CPU_OPT & SYS_FAN1 FAN Control change	
PCB:0.3	1. All 0ohm SHORT PAD (包含0402,0603,0805,8P4R) 2. Vcore 一上二下 --> 另一顆是否mask? 3. Remove BIOS_PH 4. Update "NGFF-M-75P-8CM-1" & "C0402-2" 5. Add "SER11" for M2 control circuit 6. Fix Audio pop noise 7. 2_5LEVEL control , NR205 改R0402-2 , 改上AP431 8. 背面電容mask (包含CPU & PCH) 9. DFM check 10. BIOS_PH 改成 MASK	
PCB:1.0	1. All 0ohm SHORT PAD (包含0402,0603,0805,8P4R)	

BLOCK DIAGRAM



(E)

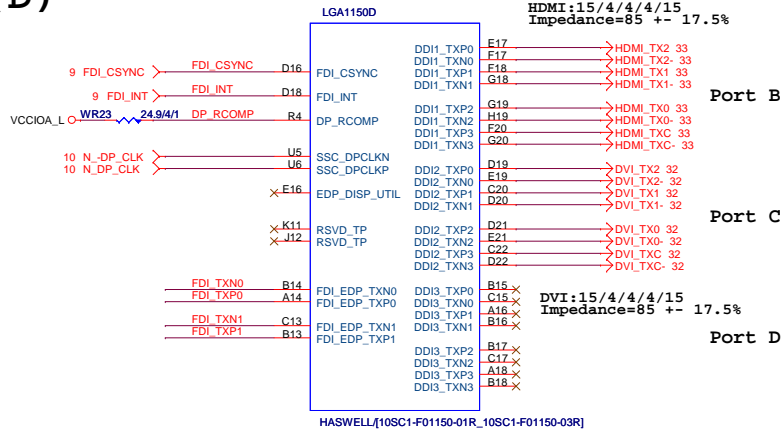


CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	MMIO	Reverse	LANE REVERSAL[0..x16]
3	RSVD	RSVD	RSVD
4	Disable	Enable	as Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
16	RSVD	RSVD	RSVD
17	RSVD	RSVD	RSVD

CFG6	CFG5	PCIE CONFIG
1	1	1x16 , Default
1	0	2X8
0	1	RSVD
0	0	X8,X4,X4

CFG 0-17 all internal PULL-UP

(D)

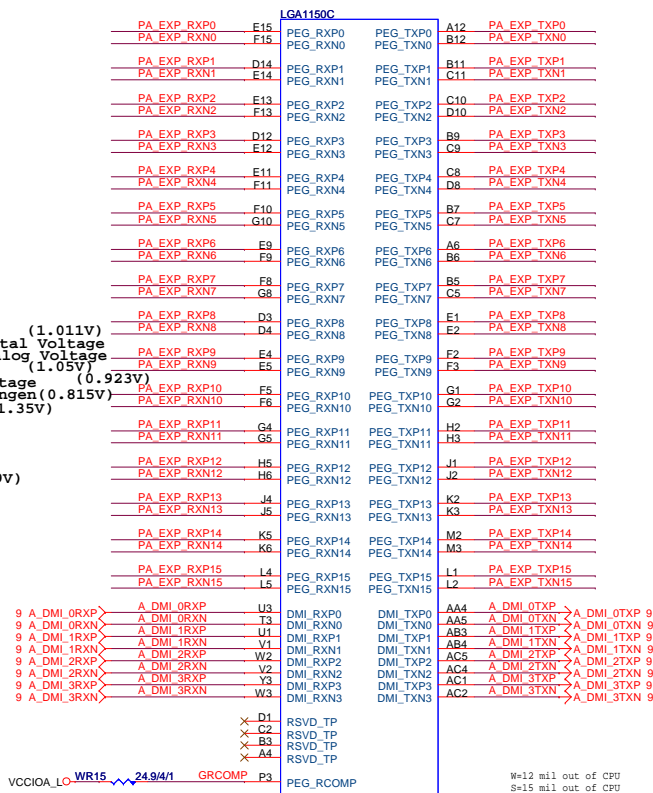


FDI:12/4/4/4/12(breakout min 6/4/4/4/6)
Impedance=85 +- 17.5%

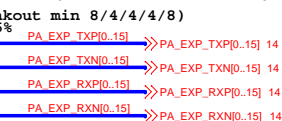


(c)

PCIEX16:20/5/4/5/20(breakout min 10/4/4/4/10)
Impedance=80 +- 17.5%



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



-CPURST

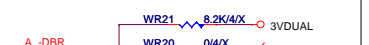
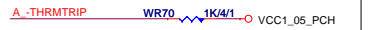
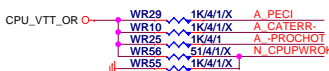
1.1V分壓



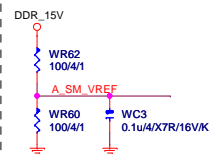
CPU SVID



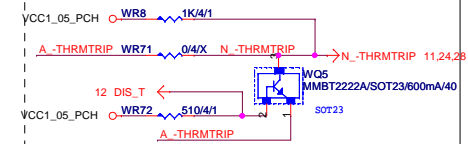
CPU PU/PD



SM REF



THRMTRIP DISABLE



Gigabyte Technology

Title			
CPU LGA1150-A			
Size	Document Number		Rev
Custom	GA-H97-D3H		1.
Date:	Friday, February 28, 2014	Sheet	4 of 34

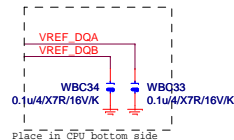
LGA1150 (A)

LGA1150A									
MAAA0	AU13	DDR0_MA0	DDR0_D00	AD38	MDA0				
MAAA1	AV16	DDR0_MA1	DDR0_D01	AD39	MDA1				
MAAA2	AU16	DDR0_MA2	DDR0_D02	AF38	MDA2				
MAAA3	AW17	DDR0_MA3	DDR0_D03	AF39	MDA3				
MAAA4	AW17	DDR0_MA4	DDR0_D04	AD37	MDA4				
MAAA5	AW18	DDR0_MA5	DDR0_D05	AD40	MDA5				
MAAA6	AV17	DDR0_MA6	DDR0_D06	AE37	MDA6				
MAAA7	AT18	DDR0_MA7	DDR0_D07	AF40	MDA7				
MAAA8	AU18	DDR0_MA8	DDR0_D08	AH40	MDA9				
MAAA9	AT19	DDR0_MA9	DDR0_D09	AH39	MDA10				
MAAA10	AW11	DDR0_MA10	DDR0_D10	AK38	MDA10				
MAAA11	AV19	DDR0_MA11	DDR0_D11	AK39	MDA11				
MAAA12	AU19	DDR0_MA12	DDR0_D12	AH37	MDA12				
MAAA13	AY10	DDR0_MA13	DDR0_D13	AH38	MDA12				
MAAA14	AT20	DDR0_MA14	DDR0_D14	AK37	MDA14				
MAAA15	AU21	DDR0_MA15	DDR0_D15	AK40	MDA15				
			DDR0_D16	AM40	MDA17				
MODT_A0	AW10	DDR0_ODT0	DDR0_ODT0	AM39	MDA21				
MODT_A1	AY8	DDR0_ODT1	DDR0_ODT1	AP38	MDA18				
MODT_A2	AW9	DDR0_ODT2	DDR0_ODT2	AP39	MDA19				
MODT_A3	AU8	DDR0_ODT3	DDR0_ODT3	AM37	MDA20				
				AM38	MDA16				
				AM26	MDA22				
				AP27	MDA23				
				AP40	MDA23				
				AV37	MDA25				
				AW37	MDA29				
				AU35	MDA29				
				AV35	MDA27				
				AT37	MDA28				
				AU37	MDA24				
				AT35	MDA30				
				AW35	MDA31				
				AY6	MDA33				
				AU6	MDA37				
				AV4	MDA34				
				AW6	MDA36				
				AW4	MDA38				
				AY4	MDA39				
				AR1	MDA45				
				AN3	MDA42				
				AN4	MDA43				
				AR2	MDA44				
				AR3	MDA40				
				AN2	MDA46				
				AN1	MDA47				
				AL1	MDA49				
				AL4	MDA53				
				AJ3	MDA50				
				AJ4	MDA51				
				AL2	MDA52				
				AJ2	MDA48				
				AJ1	MDA54				
				AG1	MDA55				
				AG4	MDA57				
				AE3	MDA58				
				AG2	MDA60				
				AG3	MDA56				
				AE2	MDA62				
				AE1	MDA63				
				AE39	DQSA0				
				AJ39	DQSA1				
				AN39	DQSA2				
				AV36	DQSA3				
				AV5	DQSA4				
				AP3	DQSA5				
				AK3	DQSA6				
				AF3	DQSA7				
				AV32	DQSA7				
				AE38	DQSA0				
				AJ38	DQSA1				
				AN38	DQSA2				
				AU36	DQSA3				
				AW5	DQSA4				
				AP2	DQSA5				
				AK2	DQSA6				
				AF2	DQSA7				
				AU32	DQSA7				

HASWELL[10SC1-F01150-01R_10SC1-F01150-03R]

LGA1150 (B)

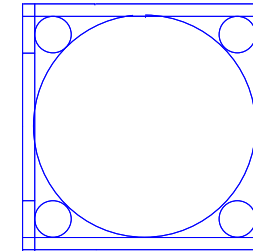
LGA1150B									
MAAB0	AL19	DDR1_MA0	DDR1_D00	AE34	MDB0				
MAAB1	AK23	DDR1_MA1	DDR1_D01	AE35	MDB1				
MAAB2	AM23	DDR1_MA2	DDR1_D02	AG35	MDB2				
MAAB3	AM23	DDR1_MA3	DDR1_D03	AH35	MDB3				
MAAB4	AP23	DDR1_MA4	DDR1_D04	AD34	MDB4				
MAAB5	AL23	DDR1_MA5	DDR1_D05	AD35	MDB5				
MAAB6	AY24	DDR1_MA6	DDR1_D06	AG34	MDB6				
MAAB7	AV25	DDR1_MA7	DDR1_D07	AH34	MDB7				
MAAB8	AU26	DDR1_MA8	DDR1_D08	AL34	MDB8				
MAAB9	AV25	DDR1_MA9	DDR1_D09	AL35	MDB9				
MAAB10	AP18	DDR1_MA10	DDR1_D10	AK31	MDB11				
MAAB11	AY25	DDR1_MA11	DDR1_D11	AL31	MDB11				
MAAB12	AV26	DDR1_MA12	DDR1_D12	AK34	MDB12				
MAAB13	AR15	DDR1_MA13	DDR1_D13	AK35	MDB13				
MAAB14	AV27	DDR1_MA14	DDR1_D14	AK32	MDB14				
MAAB15	AY28	DDR1_MA15	DDR1_D15	AL32	MDB15				
			DDR1_D16	AL34	MDB17				
			DDR1_D17	AP34	MDB21				
			DDR1_D18	AN31	MDB19				
			DDR1_D19	AP31	MDB23				
			DDR1_D20	AN35	MDB20				
			DDR1_D21	AP35	MDB16				
			DDR1_D22	AN32	MDB18				
			DDR1_D23	AP32	MDB22				
			DDR1_D24	AM29	MDB25				
			DDR1_D25	AM28	MDB28				
			DDR1_D26	AR29	MDB27				
			DDR1_D27	AR28	MDB30				
			DDR1_D28	AL28	MDB24				
			DDR1_D29	AP29	MDB29				
			DDR1_D30	AP28	MDB31				
			DDR1_D31	AR12	MDB32				
			DDR1_D32	AP12	MDB33				
			DDR1_D33	AL13	MDB34				
			DDR1_D34	AL12	MDB35				
			DDR1_D35	AR13	MDB36				
			DDR1_D36	AP13	MDB37				
			DDR1_D37	AM13	MDB38				
			DDR1_D38	AM12	MDB39				
			DDR1_D39	AR9	MDB45				
			DDR1_D40	AP9	MDB41				
			DDR1_D41	AR6	MDB47				
			DDR1_D42	AP6	MDB43				
			DDR1_D43	AR10	MDB44				
			DDR1_D44	AP10	MDB40				
			DDR1_D45	AR7	MDB46				
			DDR1_D46	AP7	MDB42				
			DDR1_D47	AM9	MDB52				
			DDR1_D48	AL9	MDB53				
			DDR1_D49	AL6	MDB50				
			DDR1_D50	AL7	MDB55				
			DDR1_D51	AM10	MDB48				
			DDR1_D52	AL10	MDB49				
			DDR1_D53	AM6	MDB54				
			DDR1_D54	AM7	MDB51				
			DDR1_D55	AH6	MDB61				
			DDR1_D56	AH7	MDB60				
			DDR1_D57	AE6	MDB59				
			DDR1_D58	AE7	MDB63				
			DDR1_D59	AJ6	MDB56				
			DDR1_D60	AJ7	MDB57				
			DDR1_D61	AF6	MDB58				
			DDR1_D62	AF7	MDB62				
			DDR1_D63	AF36	DQSB0				
			DDR1_D64	AL33	DQSB1				
			DDR1_D65	AN28	DQSB2				
			DDR1_D66	AN12	DQSB3				
			DDR1_D67	AP8	DQSB5				
			DDR1_D68	AL8	DQSB6				
			DDR1_D69	AG7	DQSB7				
			DDR1_D70	AN25	DQSB7				
			DDR1_D71	AK33	DQSB1				
			DDR1_D72	AK33	DQSB2				
			DDR1_D73	AN29	DQSB3				
			DDR1_D74	AL13	DQSB4				
			DDR1_D75	AR8	DQSB5				
			DDR1_D76	AM8	DQSB6				
			DDR1_D77	AG6	DQSB7				
			DDR1_D78	AN26	DQSB7				



Place in CPU bottom side

HASWELL[10SC1-F01150-01R_10SC1-F01150-03R]

LGA1150 (CR)

LGA1150
ILM_BP_CR/115X/NORMAL NI

DDR BUS

7	MODT_A[0..3]	MODT_A[0..3]
8	MODT_B[0..3]	MODT_B[0..3]
7	MDA[0..63]	MDA[0..63]
8	MDB[0..63]	MDB[0..63]
7	DQSA[0..7]	DQSA[0..7]
7	-DQSA[0..7]	-DQSA[0..7]
7	MAAA[0..15]	MAAA[0..15]
8	MAAB[0..15]	MAAB[0..15]
8	DQSB[0..7]	DQSB[0..7]
8	-DQSB[0..7]	-DQSB[0..7]

Gigabyte Technology

Title			
CPU LGA1150-B			
Size	Document Number	Rev	
Custom	GA-H97-D3H	1.0	
Date:	Friday, February 28, 2014	Sheet	5 of 34

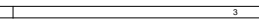
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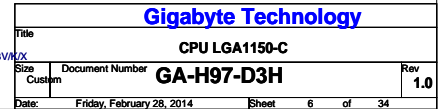
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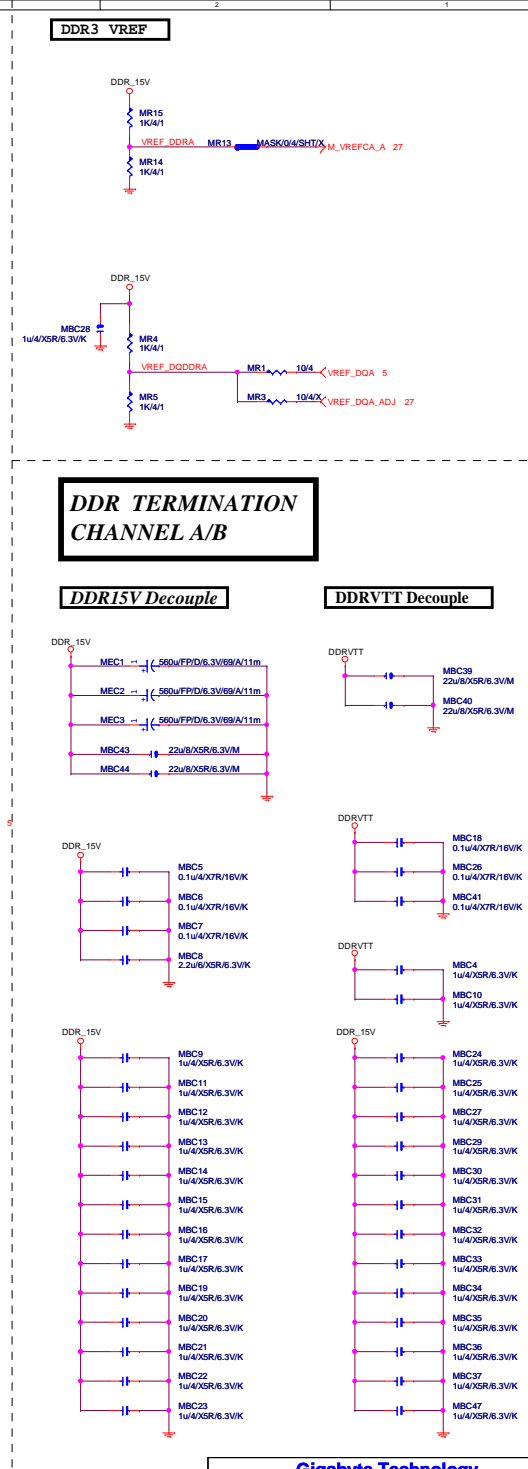


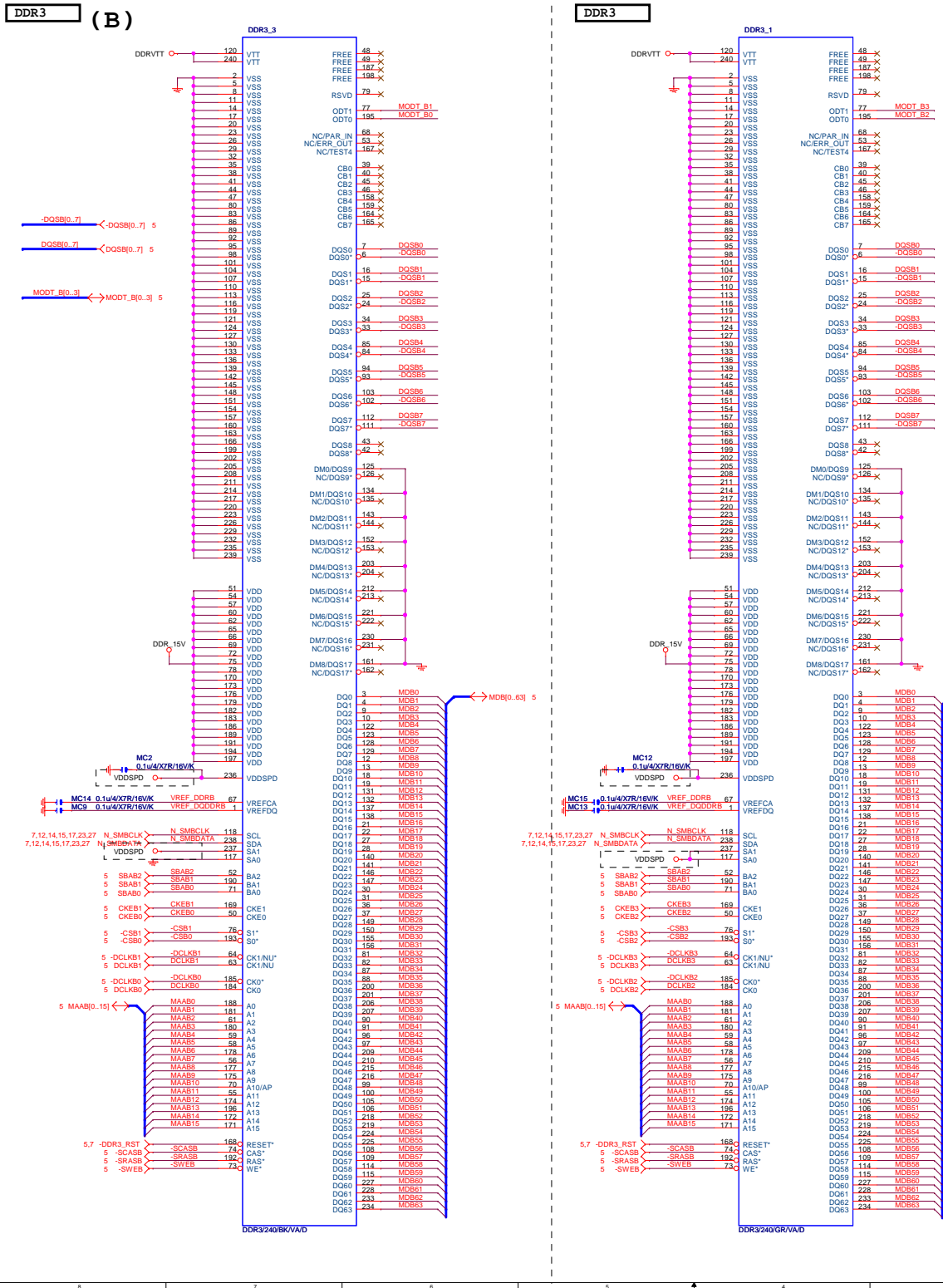
(X30)



(X15)







DDR3 1066,1333,1600MHZ BANDWIDTH

DDR3 1066MHZ
DDR3 clock=533MHZ
DDR3 single channel bandwidth=533x2x8Byte=8.5GB/s
DDR3 dual channel bandwidth=533x2x2x8Byte=17GB/s

DDR3 1333MHZ
DDR3 clock=667MHZ
DDR3 single channel bandwidth=10.6GB/s
DDR3 dual channel bandwidth=21GB/s

DDR3 1600MHZ
DDR3 clock=800MHZ
DDR3 single channel bandwidth=12.8GB/s
DDR3 dual channel bandwidth=25.6GB/s

Coupon



CPU

DIMM4 (黑色) CHA
DIMM2 (灰色)
DIMM3 (黑色) CHB
DIMM1 (灰色)

Gigabyte Technology

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

4	A_DMI_0TXN	A_DMI_0TXN	L
4	A_DMI_0TXP	A_DMI_0TXP	K
4	A_DMI_0RXN	A_DMI_0RXN	C
4	A_DMI_0RXP	A_DMI_0RXP	B
4	A_DMI_1TXN	A_DMI_1TXN	H
4	A_DMI_1TXP	A_DMI_1TXP	G
4	A_DMI_1RXN	A_DMI_1RXN	D
4	A_DMI_1RXP	A_DMI_1RXP	F
4	A_DMI_2TXN	A_DMI_2TXN	E
4	A_DMI_2TXP	A_DMI_2TXP	G
4	A_DMI_2RXN	A_DMI_2RXN	C
4	A_DMI_2RXP	A_DMI_2RXP	B
4	A_DMI_3TXN	A_DMI_3TXN	K
4	A_DMI_3TXP	A_DMI_3TXP	L
4	A_DMI_3RXN	A_DMI_3RXN	A
4	A_DMI_3RXP	A_DMI_3RXP	B

REAR USB3.0

LAN i217v

ITE8892 PCI

PCIE4 port1

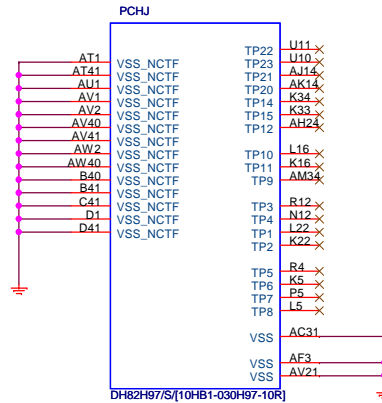
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PCIEX4 port3 {
PCIEX1
```

PCIEA1_2 \ 1

PCIEX1:15/4/4/4/15 (breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%



USB2.0 : 12/5/7/5/12 (breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

PCB#		B85: Port 6/7 N/A H81: Port 6/7/12/13 N/A			
DMI_RXN_0	USBN_0	AV10	N_USBP0	N_USBP0	28
DMI_RXP_0	USBP_0	AU10	N_USBP0	N_USBP0	28
DMI_TXN_0	USBN_1	AV11	N_USBP1	N_USBP1	28
DMI_TXP_0	USBP_1	AU11	N_USBP1	N_USBP1	28
DMI_RXN_1	USBN_2	AN14	N_USBP2	N_USBP2	19
DMI_RXP_1	USBP_2	AP14	N_USBP2	N_USBP2	19
DMI_TXN_1	USBN_3	AJ16	N_USBP3	N_USBP3	19
DMI_TXP_1	USBP_3	AK16	N_USBP3	N_USBP3	19
DMI_RXN_2	USBN_4	AU15	N_USBP4	N_USBP4	31
DMI_RXP_2	USBP_4	AU15	N_USBP4	N_USBP4	31
DMI_TXN_2	USBN_5	AV12	N_USBP5	N_USBP5	31
DMI_TXP_2	USBP_5	AT12	N_USBP5	N_USBP5	31
DMI_RXN_3	USBN_6	AV14	N_USBP6	N_USBP6	28
DMI_RXP_3	USBP_6	AW14	N_USBP6	N_USBP6	28
DMI_TXN_3	USBN_7	AU17	N_USBP7	N_USBP7	28
DMI_TXP_3	USBP_7	AT17	N_USBP7	N_USBP7	28

	USBN_8	AW16	N_-USBP8	N_-USBP8	30
DMI_RCOMP	USBP_8	AV16	N_+USBP8	N_+USBP8	30
PCIe_RCOMP	USBN_9	AN16	N_-USBP9	N_-USBP9	30
	USBP_9	AP16	N_+USBP9	N_+USBP9	30
CLKIN_DMI_N	USBN_10	AJ18	N_-USBP10	N_-USBP10	28
CLKIN_DMI_P	USBP_10	AK18	N_+USBP10	N_+USBP10	28
		AL18	N_-USBP11	N_-USBP11	28

PCIE_PERN_1_USB3_RXN_2	USBN_11	AP18	N -USBP11	N -USBP11	28
PCIE_PERP_1_USB3_RXP_2	USBP_11	AN18	N +USBP11	N +USBP11	28
PCIE_PETN_1_USB3_TXN_2	USBN_12	AW18	N -USBP12	N -USBP12	28
PCIE_PETP_1_USB3_TXP_2	USBP_12	AV18	N +USBP12	N +USBP12	28
PCIE_PERN_2_USB3_RXN_3	USBN_13	AP20	N -USBP13	N -USBP13	28
	USBP_13	AN20	N +USBP13	N +USBP13	28

PCIE_PERP_2_USB3_RXP3	OC0B_GP59	AF40	N_USBOC_F	28
PCIE_PETN_2_USB3_TXN3	OC1B_GP40	AF37		
PCIE_PETP_2_USB3_TXP3	OC2B_GP41	AD39	N_USBOC_R	28
PCIE_PERN_3	OC3B_GP42	AD40		
PCIE_PERP_3	OC4B_GP43	AF39		
PCIE_PETN_3		AC41		

Timing diagram for USB2.0 signals. The diagram shows several digital signals over time. Signals include PCIE_PETP_3, PCIE_PERN_4, PCIE_PERP_4, PCIE_PETN_4, PCIE_PETP_4, PCIE_PERN_5, OC5B_GP9, OC6B_GP10, OC7B_GP14, AV20, and AU20. Annotations include 'N_GPIOT4' near OC7B_GP14, 'N_USRBRBIAS' near AV20, and 'NR47' near AU20. A note at the bottom right states 'W=8 mil out of PCH' and 'S=15 mil to other signals'.

PCIE_PERP_5	CLKIN_DOT96N	AP11	CK_DOTCLK
PCIE_PETN_5	CLKIN_DOT96P	AM11	CK_DOTCLK
PCIE_PETP_5			
PCIE_PERN_6			
PCIE_PERP_6			
PCIE_PETN_6			

N GPIO14 NR130 8.2K/4

PCIE_PETP_6
PCIE_PERN_7
PCIE_PERP_7
PCIE_PETN_7
PCIE_PETP_7
PCIE_PERN_8
PCIE_PERP_8

PCIE_PERP_8
PCIE_PETN_8
PCIE_PETP_8

DBC82
0.1u4/X7R/16V/K

DBC83
0.1u4/

DH82H97/S/[10HB1-030H97-10R]

```

PCH PCIE ,DMI 15/4/4/4/15
-----
usb2.0 12/5/7/5//12
usb3.0 20/5/7/5//20
-----

```

28 PCH_USB3_RXN0

主要對應

28 PCH_USB3_RXP0
28 PCH_USB3_TXN0
28 PCH_USB3_TXP0

28 PCH_USB3_RXN1
28 PCH_USB3_RXP1
28 PCH_USB3_TXN1
28 PCH_USB3_TXP1

31 PCH_USB3_RXN1
31 PCH_USB3_RXP4
31 PCH_USB3_TXN4
31 PCH_USB3_TXP4

31 PCH_USB3_RXN5
31 PCH_USB3_RXP5
31 PCH_USB3_TXN5

31 PCH_USB3_TXP5 ←

VCC3

NR62 8.2K/4

NR63 8.2K/4

USB3
8/4/
Impe
Book

Back
From

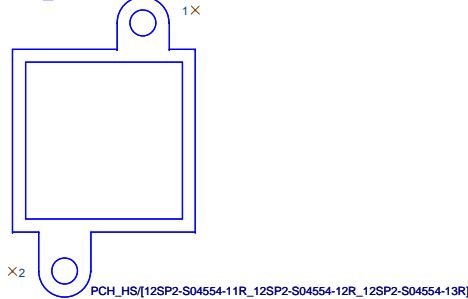
[illegible]

Mount

	N
	g
	_

BGAHSINK-Z97X-SLI

PCH_HS

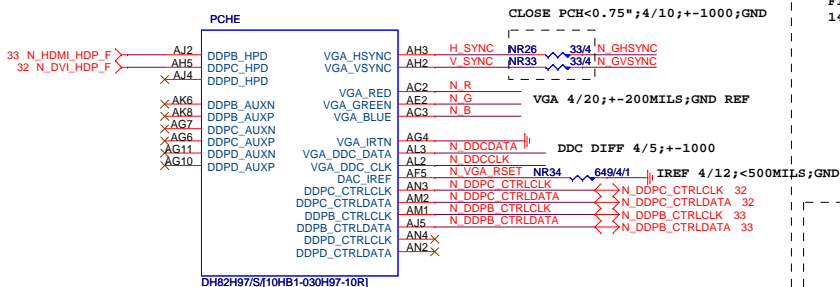


```
OC[3:0]# for Device 29 (ports 0-7)
OC[7:4]# for Device 26 (ports 8-13)
```

USB OC#	Configure
OC0#	USB0,1
OC1#	USB2,3
OC2#	USB4,5
OC3#	USB6,7
OC4#	USB8,9
OC5#	USB10,11
OC6#	USB12,13
OC7#	Not Use

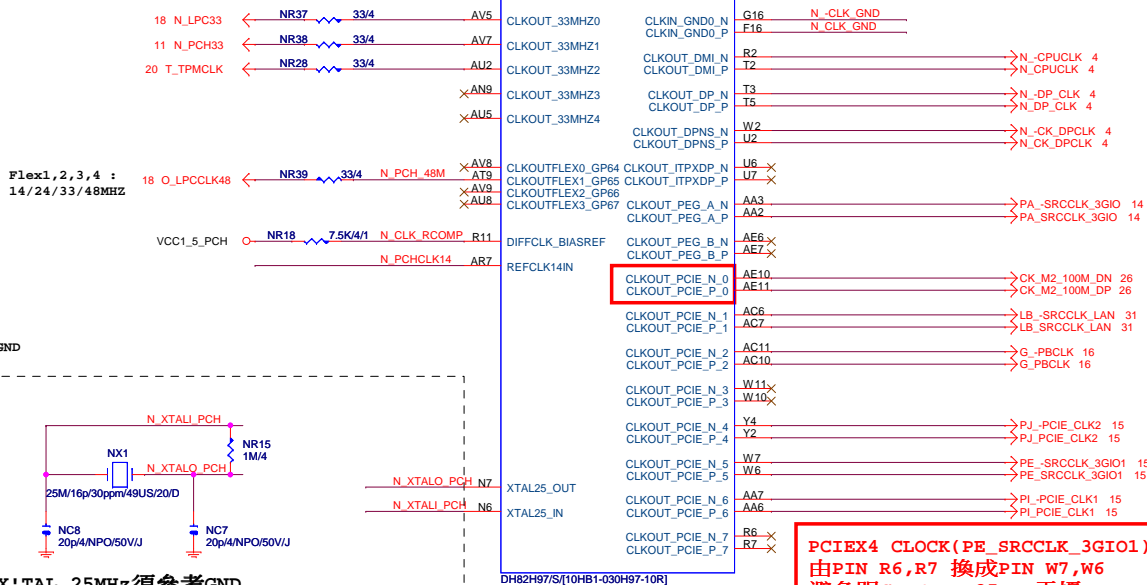
Title			
PCH FDI,DMI,USB ,PCIE			
Size	Document Number	Rev	
Custom	GA-H97-D3H	1.0	
Date:	Friday, February 28, 2014	Sheet	9 of 34

PCH (E)



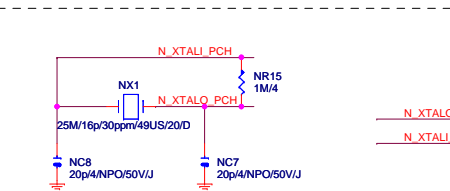
VGA DISABLE	
R,G,B	NC OR GND
IRTN / IREF	GND
VGA_HSYNC, VGA_VSYNC, DDC_CLK, DDC_DATA	NC
POWER VCCADAC(AF2), VCCADACBG(AE1)	GND

PCH (G)



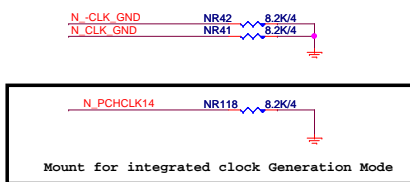
Flex1,2,3,4 : 18 O_LPCLK48
14/24/33/48MHZ

VCC1_5_PCH < NR18 7.5K/4/1 N_CLK_RCOMP R11
N_PCHCLK14 AR7

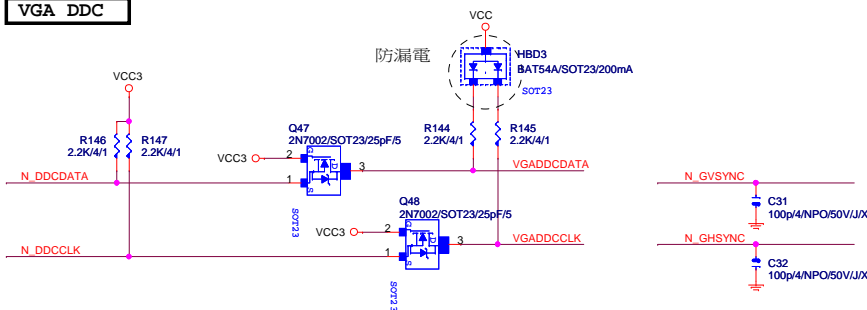


X'TAL 25MHz須參考GND
CRYSTAL/TRACE 週邊不要有訊號,VIA靠近
走線遠離其他40mil以上

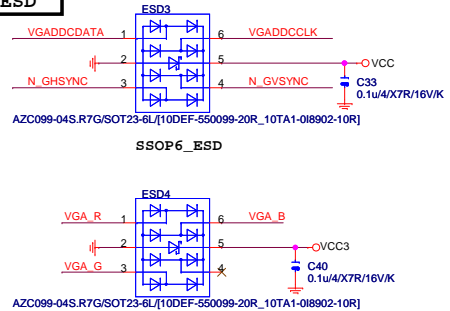
PCH CLK PD



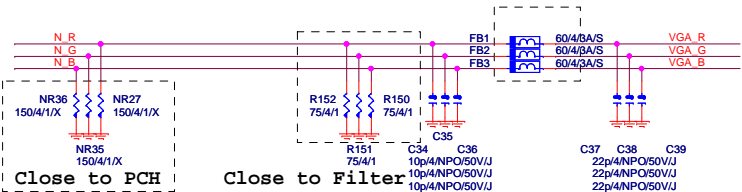
VGA DDC



VGA ESD



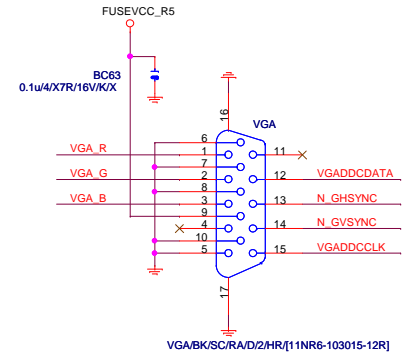
VGA DDC



Close to PCH

Close to Filter

VGA CONNECTOR

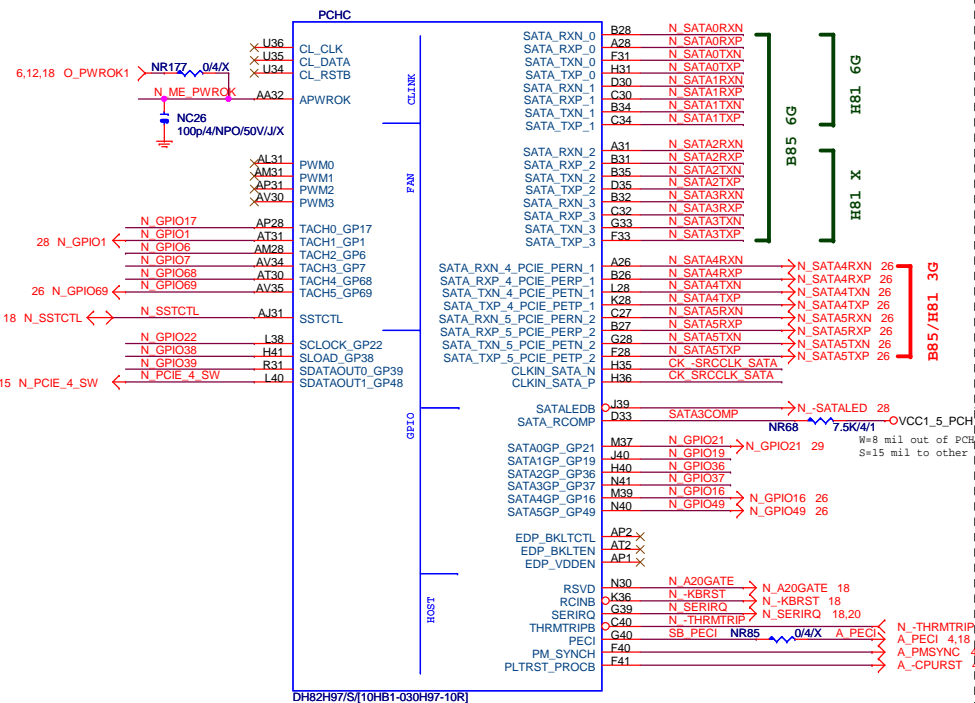


Gigabyte Technology

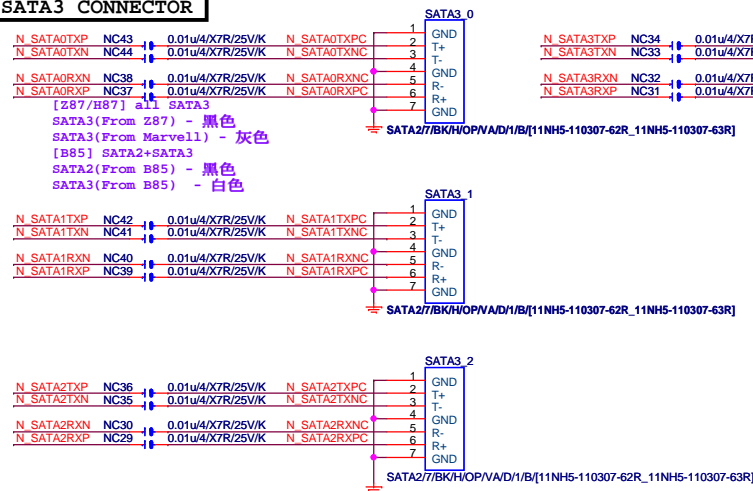
Title			PCH DISPLAY ,CLK BUFFER		
Size	Document Number				Rev
Custom					1.0
Date			THURSDAY, MARCH 06, 2014		
Sheet			10 of 34		

(C)

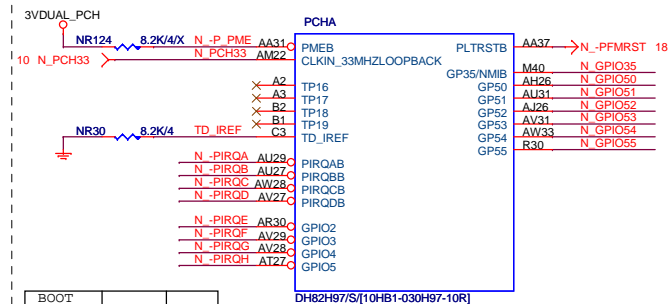
SATA3 : 20/4/4/4/20 (breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%



SATA3 CONNECTOR



PCH (A)

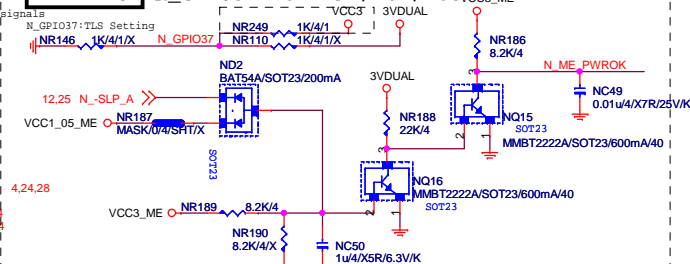


BOOT DEVICE	GP51	GP19
LPC	0	0
SPI	1	1

```
Default int pull up on GP51,  
Default SPI boot devices
```

ME PWROK

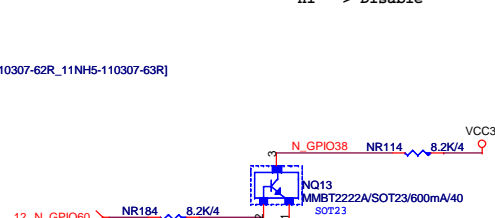
N_GPIO37 For H97/H87/B85



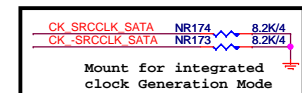
GPIO38 Ctrl

MFG Mode

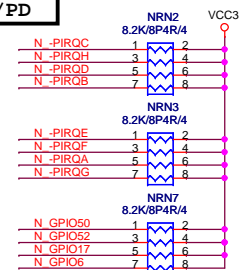
```
N_GPIO38 : Lo --> Enable
           Hi --> Disable
```



PCH CLK PD



PCH	PU/PD
-----	-------



N_GPIO55:A16 SWAP OVERRI

N_GPIO53:DMI AC COUPLING

```

N_GPIO22:PCH CONFIG

```

```

N_GPIO39:GFX MODE

```

NR80 1K/4/1/X

```

N_GPIO36:DMI RX TERMINATION
  NP84  1K/4/1/Y

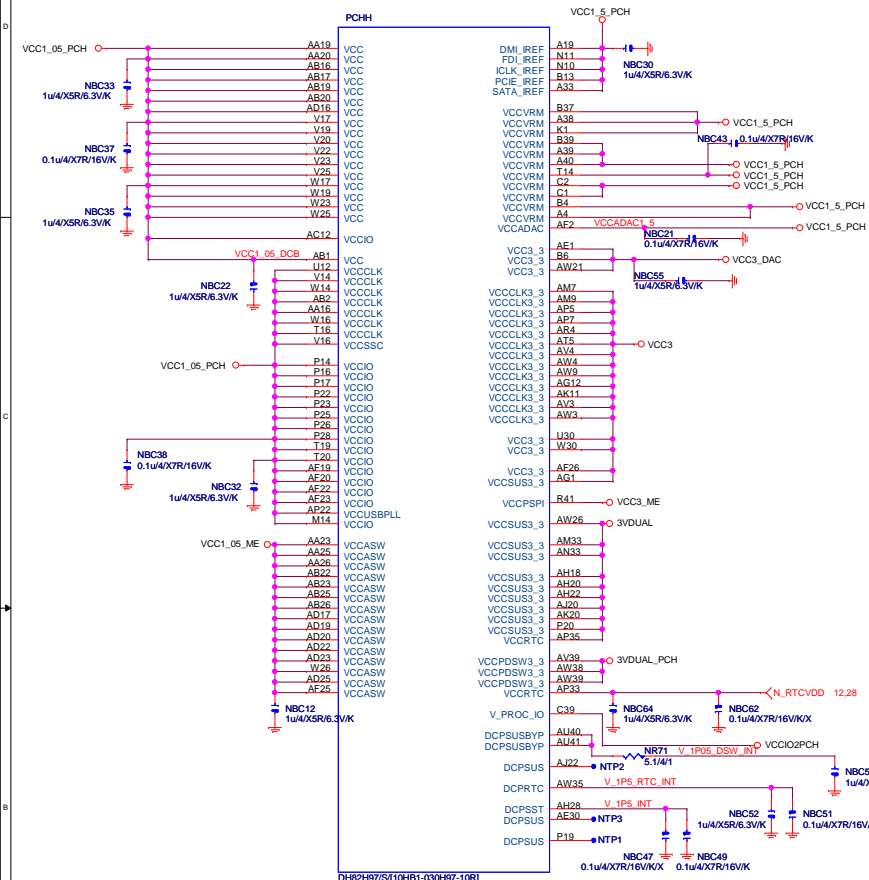
```

N_GPIO69:SV DETEC

Gigabyte Technology

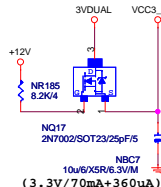
Title			
PCH HOST , SATA, PCI			
Size	Document Number	Rev	
Custom	GA-H97-D3H	1.0	
Date:	Friday, February 28, 2014	Sheet	11 of 34

PCH (H)

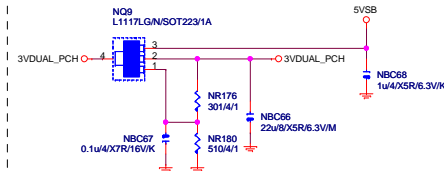


VCC3_DAC

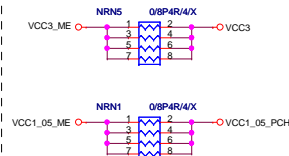
CLOSE北橋(注意震盪水波紋)



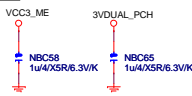
3VDUAL_PCH



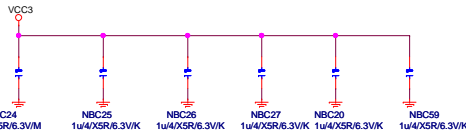
SHT_PWR



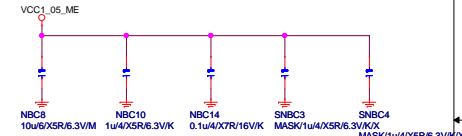
CAP



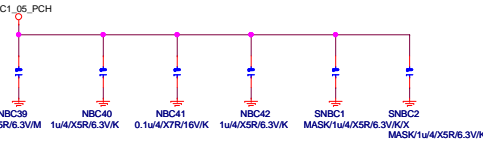
(3.3V) (X6)



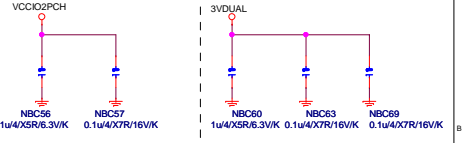
(1.05V) (X5)



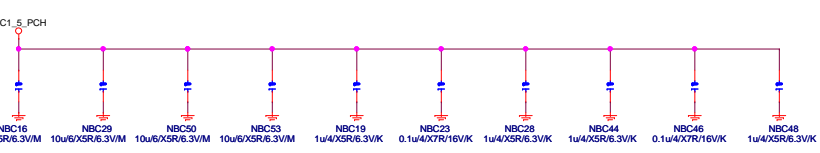
(1.05V) (X6)



(1.05V)(X2) (3.3V) (X3)



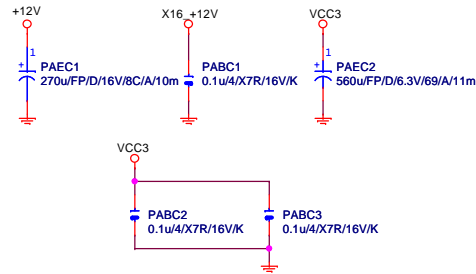
(1.5V) (X10)



PCH (I)

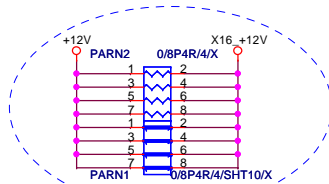


PCIEX16 CAP



PCIEX16	PROTECT	SHT
---------	---------	-----

```
+12  protect
short-wire test
```



PCIEX16 AC CAP

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

PCI-E REV:1.1--> 2.5GHZ

PCE-E X1(單向) BANDWIDTH=2.5GHz*(8b/10b)=2Gb/s=250MB/s

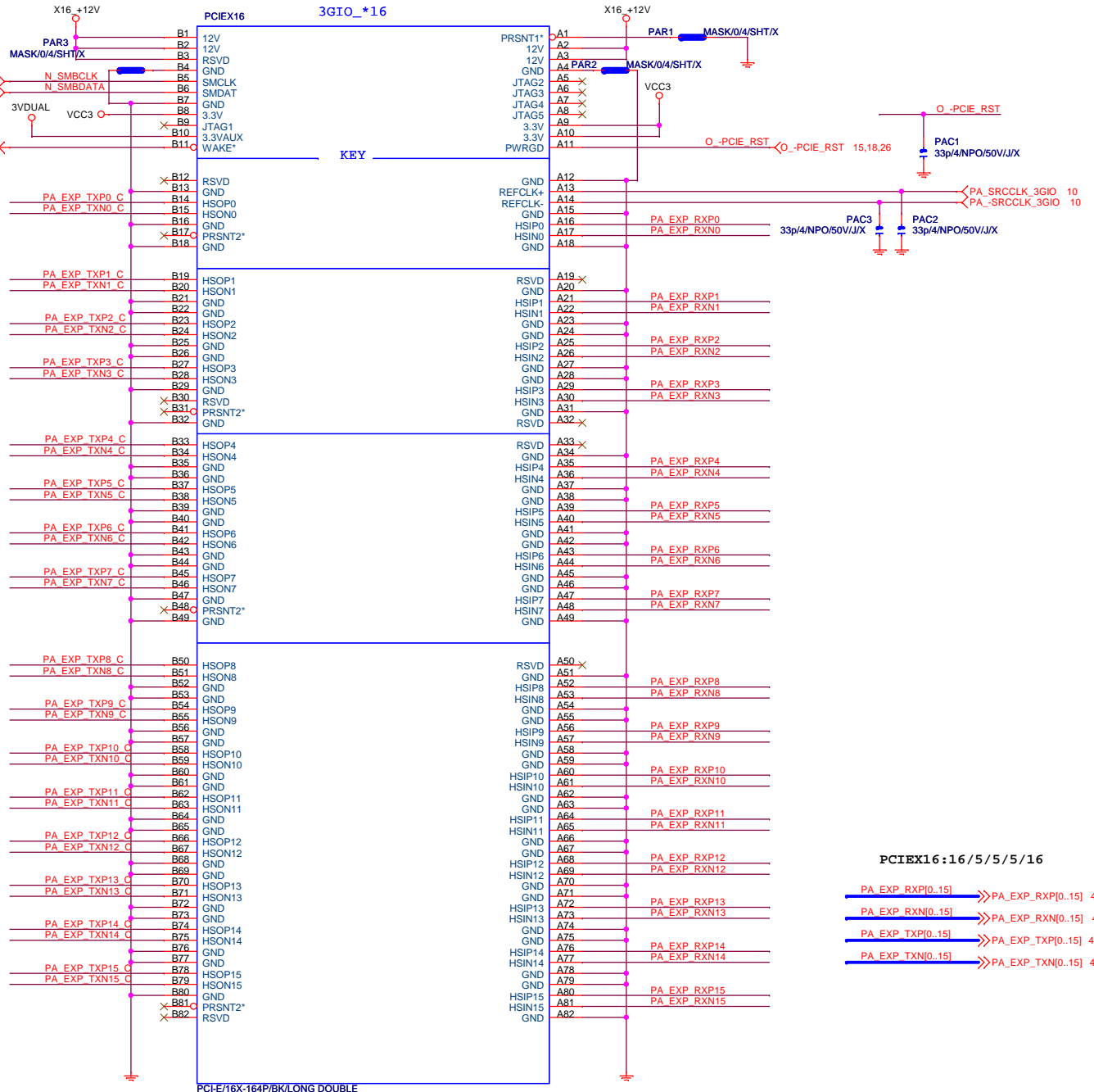
PCE-E X1(雙向) BANDWIDTH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

PCE-E X16(單向) BANDWIDTH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

PCE-E X16(雙向) BANDWIDTH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

PCIEX16 SLOT



PCIEX16:16/5/5/5/16

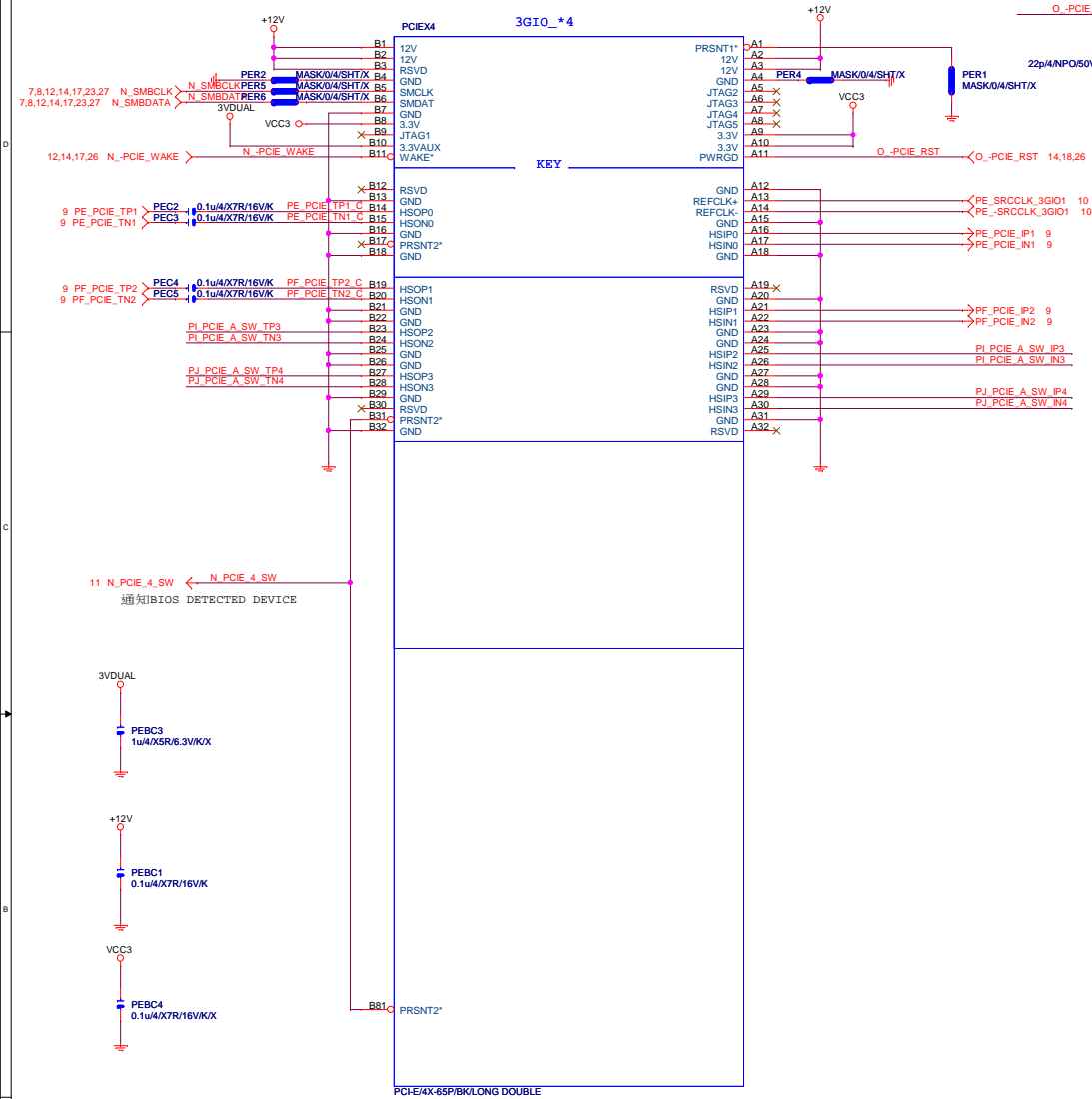
PA_EXP_RXP[0..15] >> PA_EXP_RXP[0..15] 4

PA_EXP_RXN[0..15] >> PA_EXP_RXN[0..15] 4

PA_EXP_TXP[0..15] >> PA_EXP_TXP[0..15] 4

PA_EXP_TXN[0..15] 4

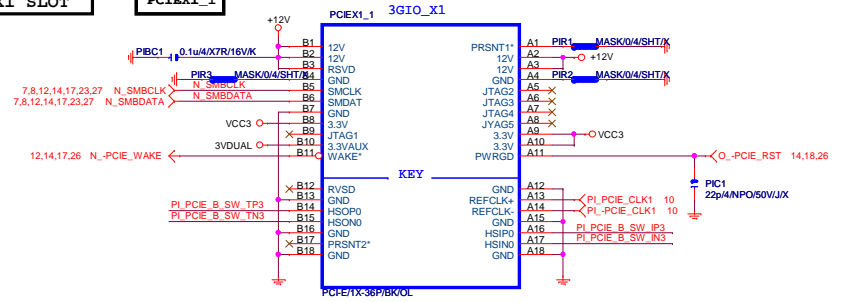
PCIEX4 SLOT



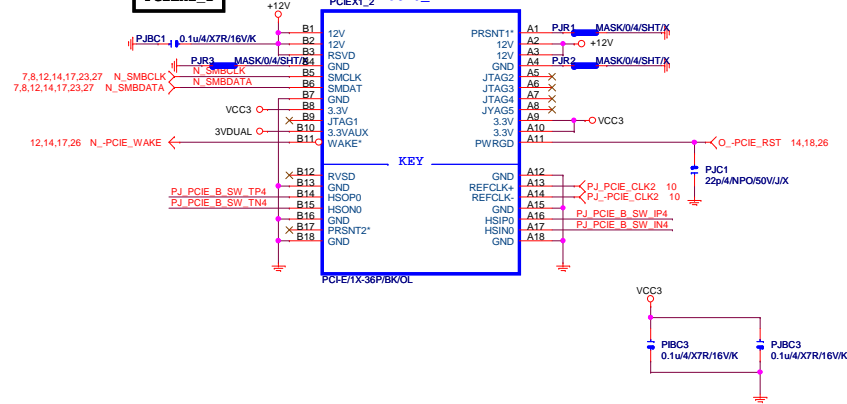
	N_PCIE_4_SW (PCH GPIO48)	PCIEX4_X1 (SIO_GPIO26)
PCIEX4 No devices	H	H
PCIEX4 -> X1	H	H
PCIEX4 Have devices		
PCIEX4 -> X4	L	L
PCIEX1_1/2 --> N/A		

PCIEX1 SLOT

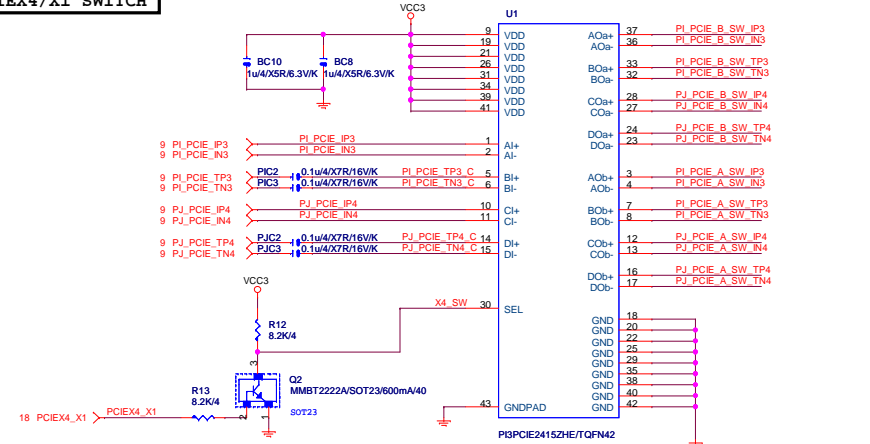
PCIEX1_1



PCIEX1_2

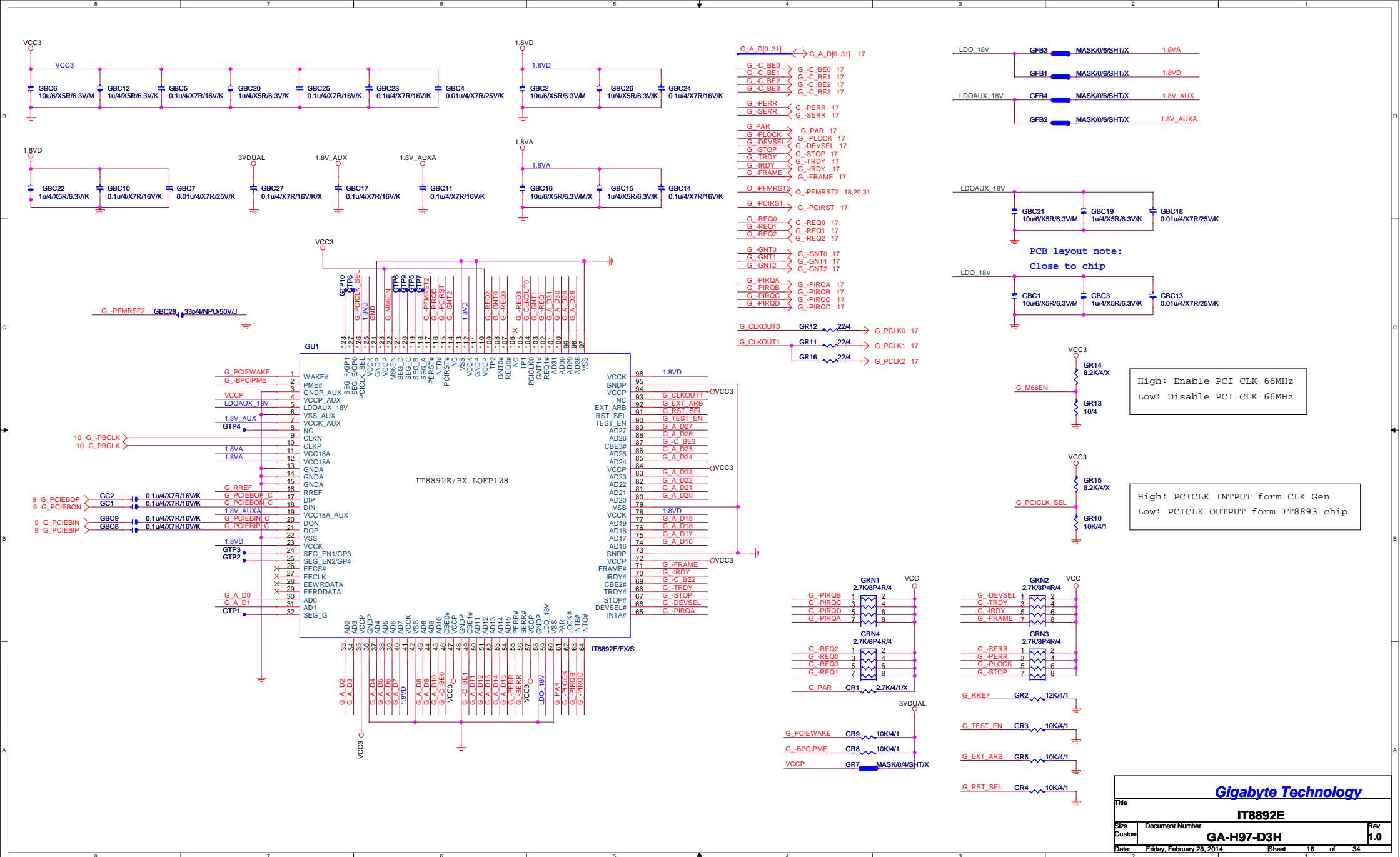


PCIEX4/X1 SWITCH

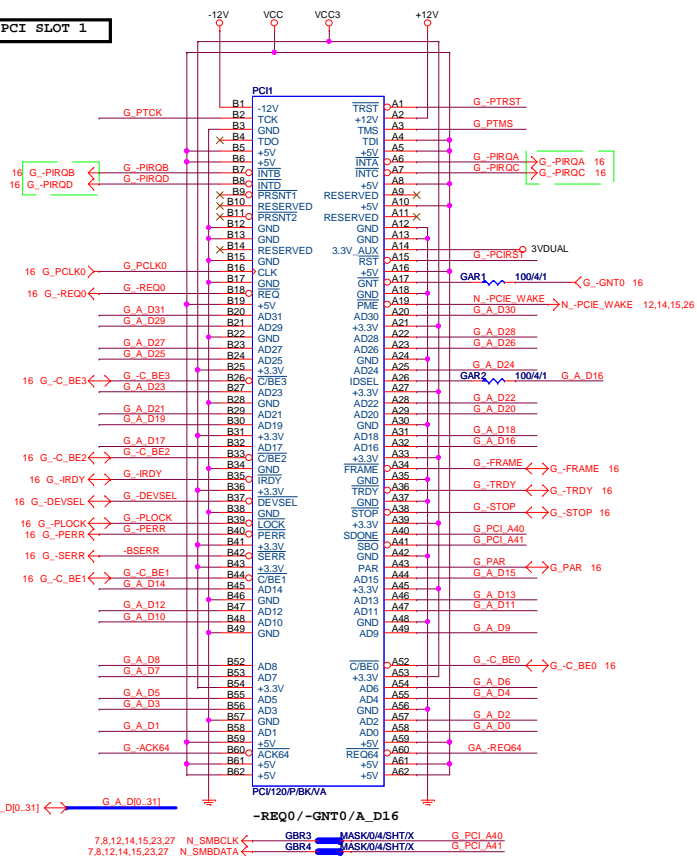


Function	SEL
xI--> x0A	L;PCIEX4 SLOT-->X1
xI--> x0B	H;PCIEX4 SLOT-->X4

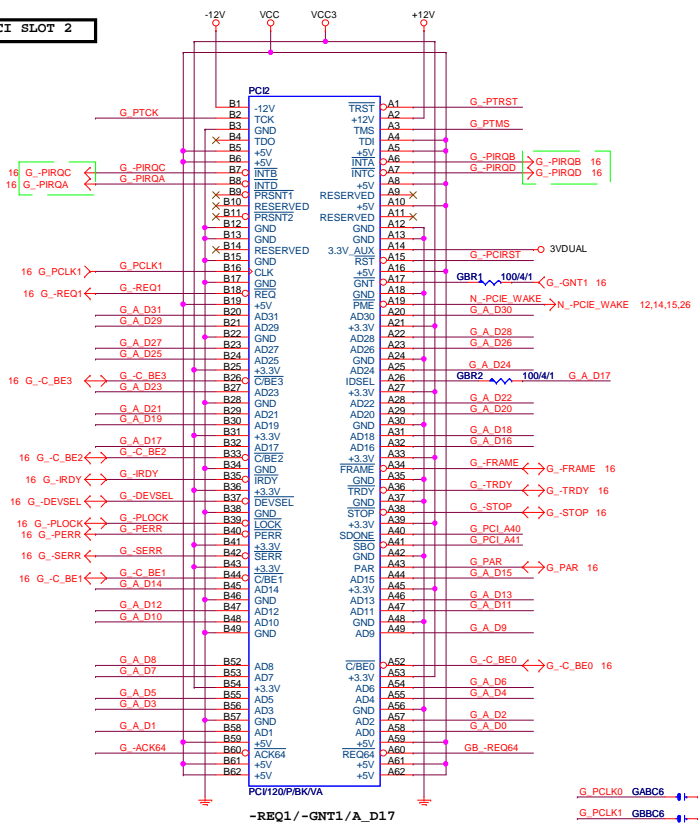
Gigabyte Technology			
Title	PCIE X1 1,2		
Size	Document Number	GA-H97-D3H	
Custom			Rev 1.0
Date:	Friday, February 28, 2014	Sheet 15	of 34



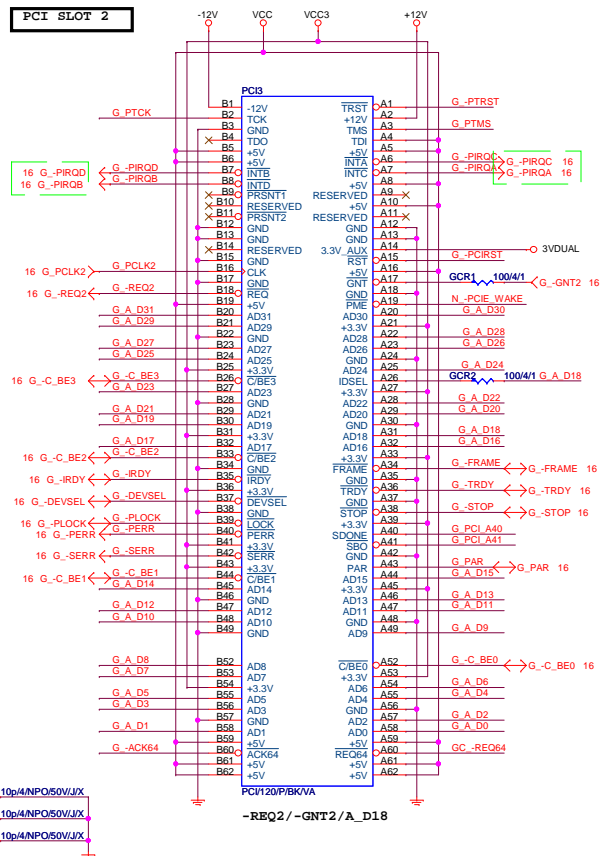
PCI SLOT 1



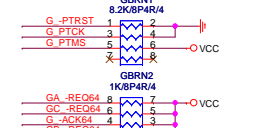
PCI SLOT 2



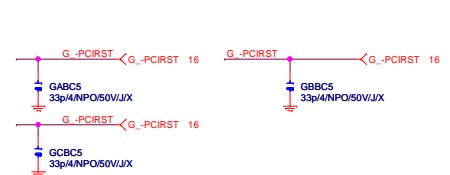
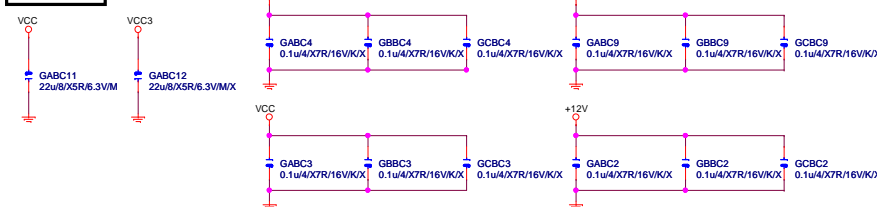
PCI SLOT 2



PCI PU

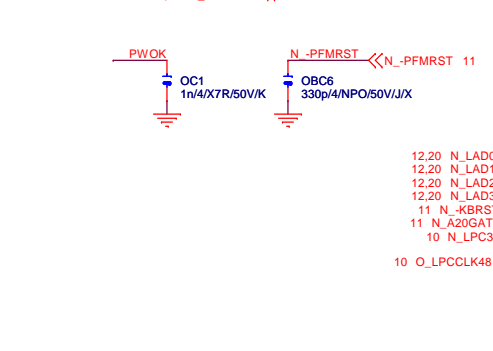
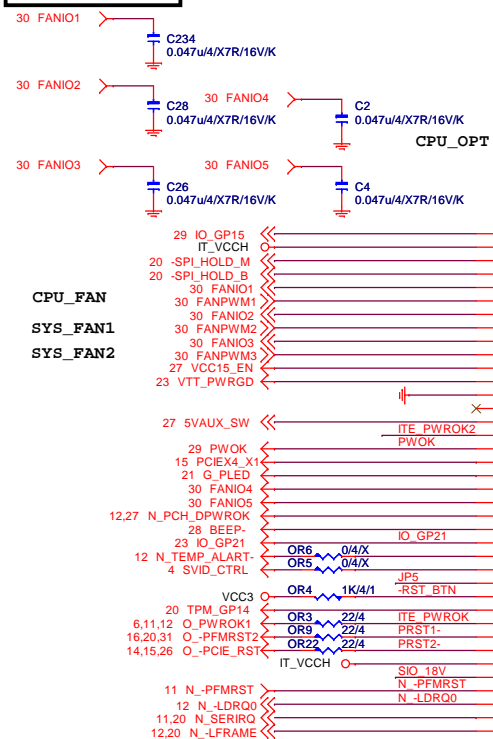


PCI CAP



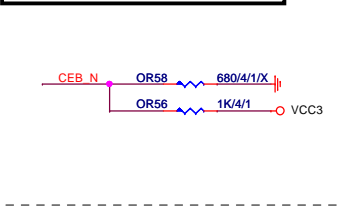
GIGABYTE™			
PCI SLOT 1&2			
Size	Document Number	Rev	
Custom	GA-H97-D3H	1.0	
Date:	Friday, February 28, 2014	Sheet	17 of 34

SIO IT8728F

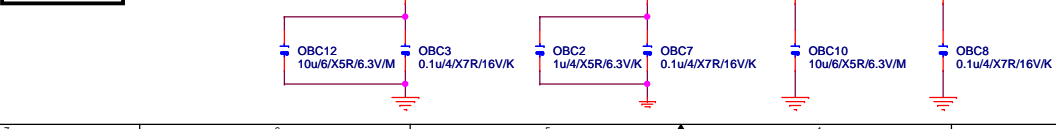


IT8620E GPIO問題匯整	
PIN 50	GP26---第一次接上POWER時會拉 LO
PIN 90/91	DEFAULT為HDLED FUNCTION, GP93 BYPASS TO GP92
	高溫時 GP92 會被拉Lo(ITE BUG)
PIN 108	GP40--- POWER ON時會拉 LO
PIN 111/112	MOUSE 跟FAN6 FUNCTION 擇一使用,不然會互相干擾

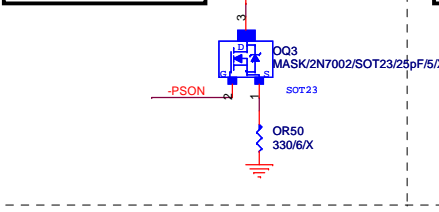
DUAL BIOS OPT STRAP



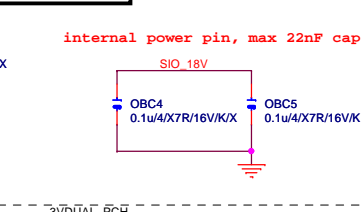
SIO CAP



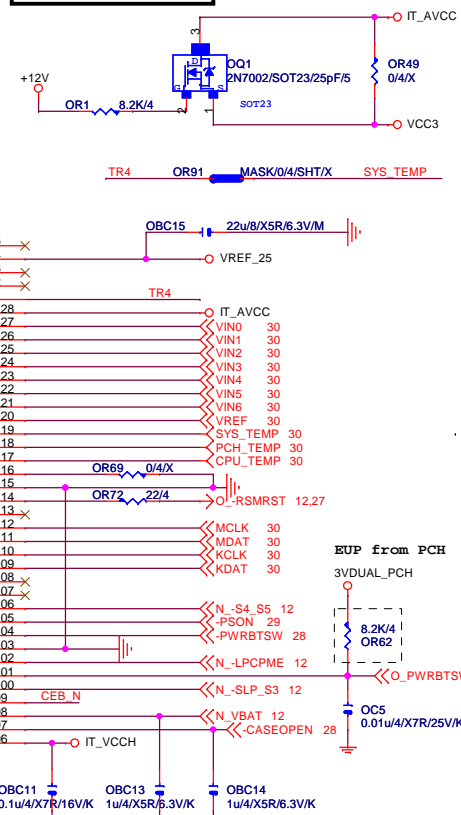
Power leakage



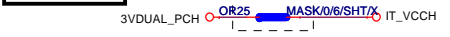
SIO_18V



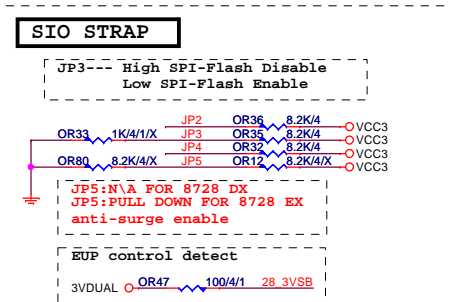
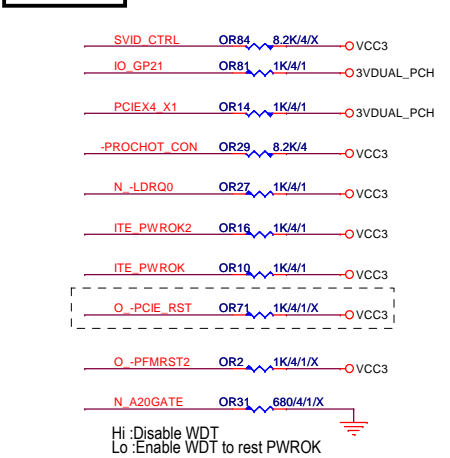
Power leakage



PWR SHT

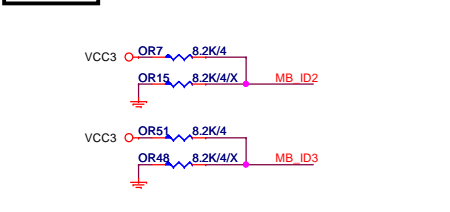


SIO PU



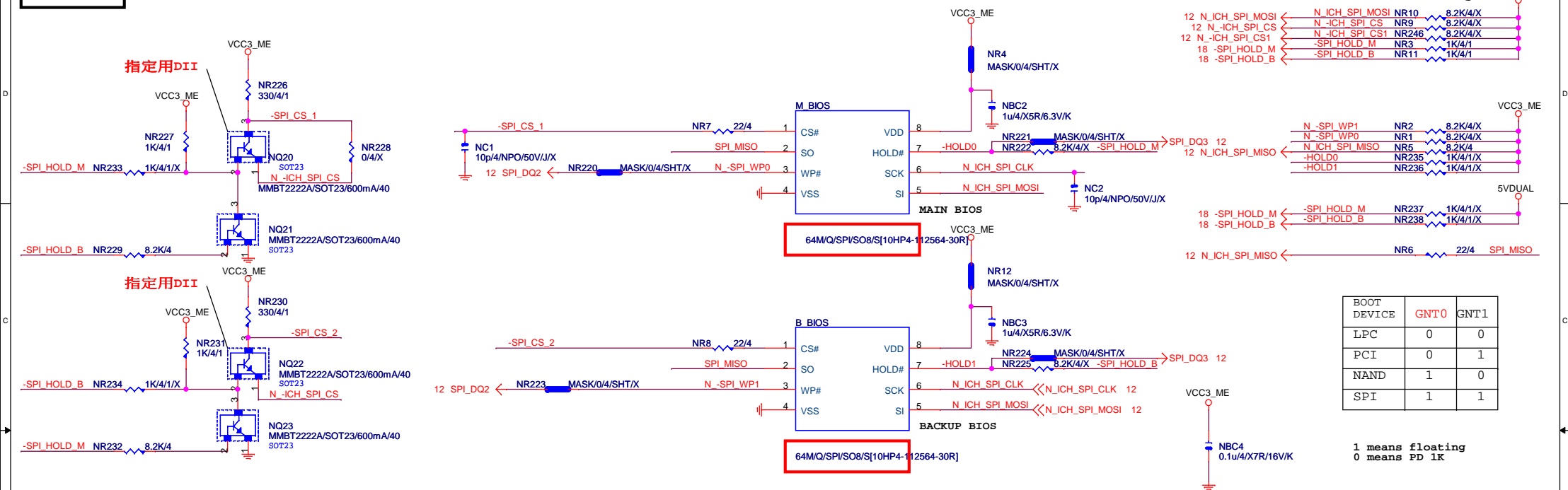
JP3		JP5	
1	k8 power sequency function is Disable	1	The default value of EC Index 63h/6Bh/73h is 80h.
0	k8 power sequency function is Enable	1	The default value of EC Index 63h/6Bh/73h is FFh.
1		0	The default value of EC Index 63h/6Bh/73h is 00h.
0		0	The default value of EC Index 63h/6Bh/73h is 40h.

MB ID

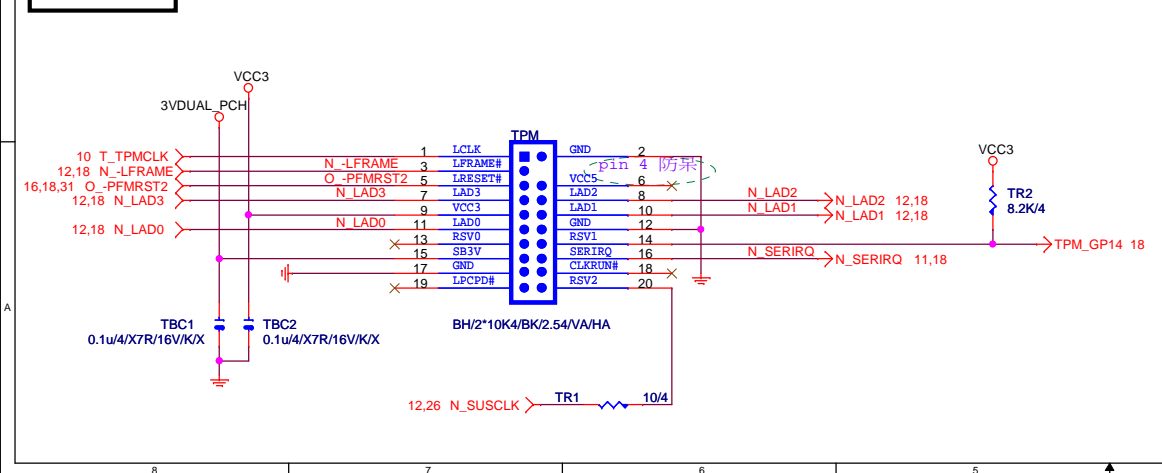


Gigabyte Technology			
ITE 8620 LPC IO			
Document Number	GA-H97-D3H		Rev 1.0
Friday, February 28, 2014	Sheet	18 of 34	

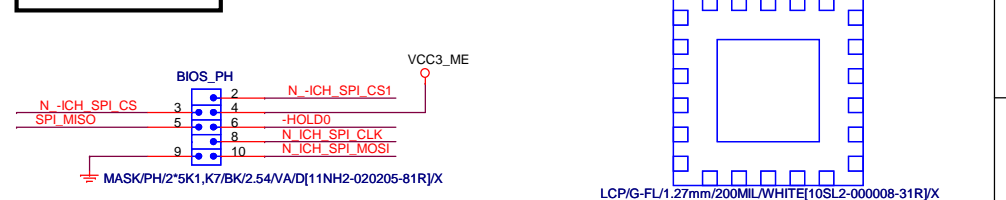
DUAL BIOS



TPM CONNECT



BIOS Debug port

**Gigabyte Technology**

Title		BIOS	
Size	Document Number	GA-H97-D3H	Rev
Custom			1.0
Date:	Friday, February 28, 2014	Sheet	20 of 34

EAPD-

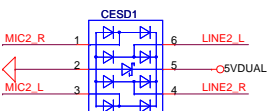
Thermal pad is DGND

Thermal pad is DGND

Digital Area

Analog Area

SMDATR1 MASK/0/6/X

0/6/X For AGND/GND
moat under Codec Body

MASK/AZC099-04S.R7G/SOT23-6L[10DEF-550099-20R_10TA1-018902-10R]X

ALC1150/ALC887-VD2 default不上

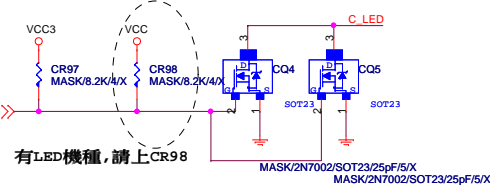
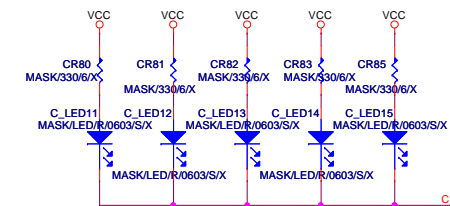
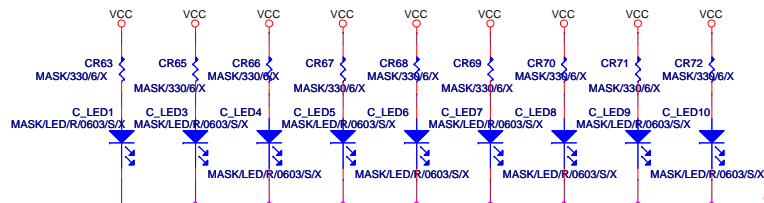
ESD protection diode :

Without : 6~7KV , With : 8.5~9.5KV

JD resistors close CODEC

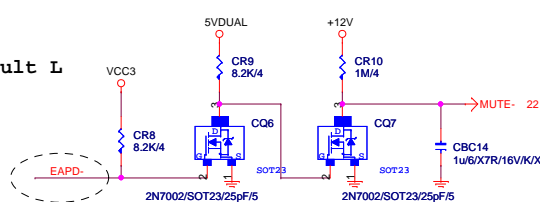
EAPD: Default L
H : ON
L : OFF

Close to ALC1150

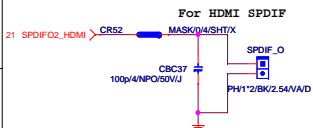
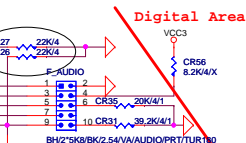
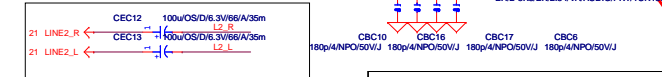
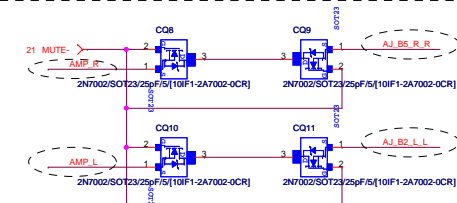


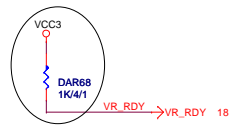
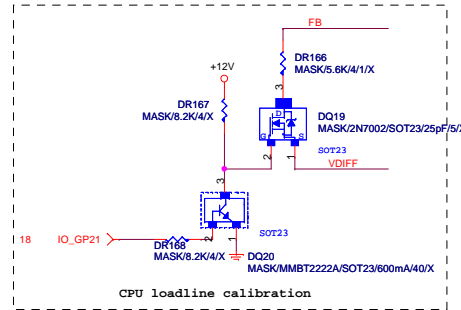
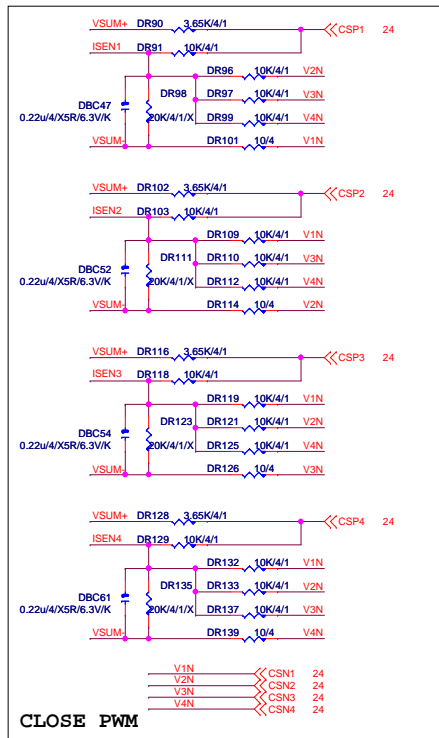
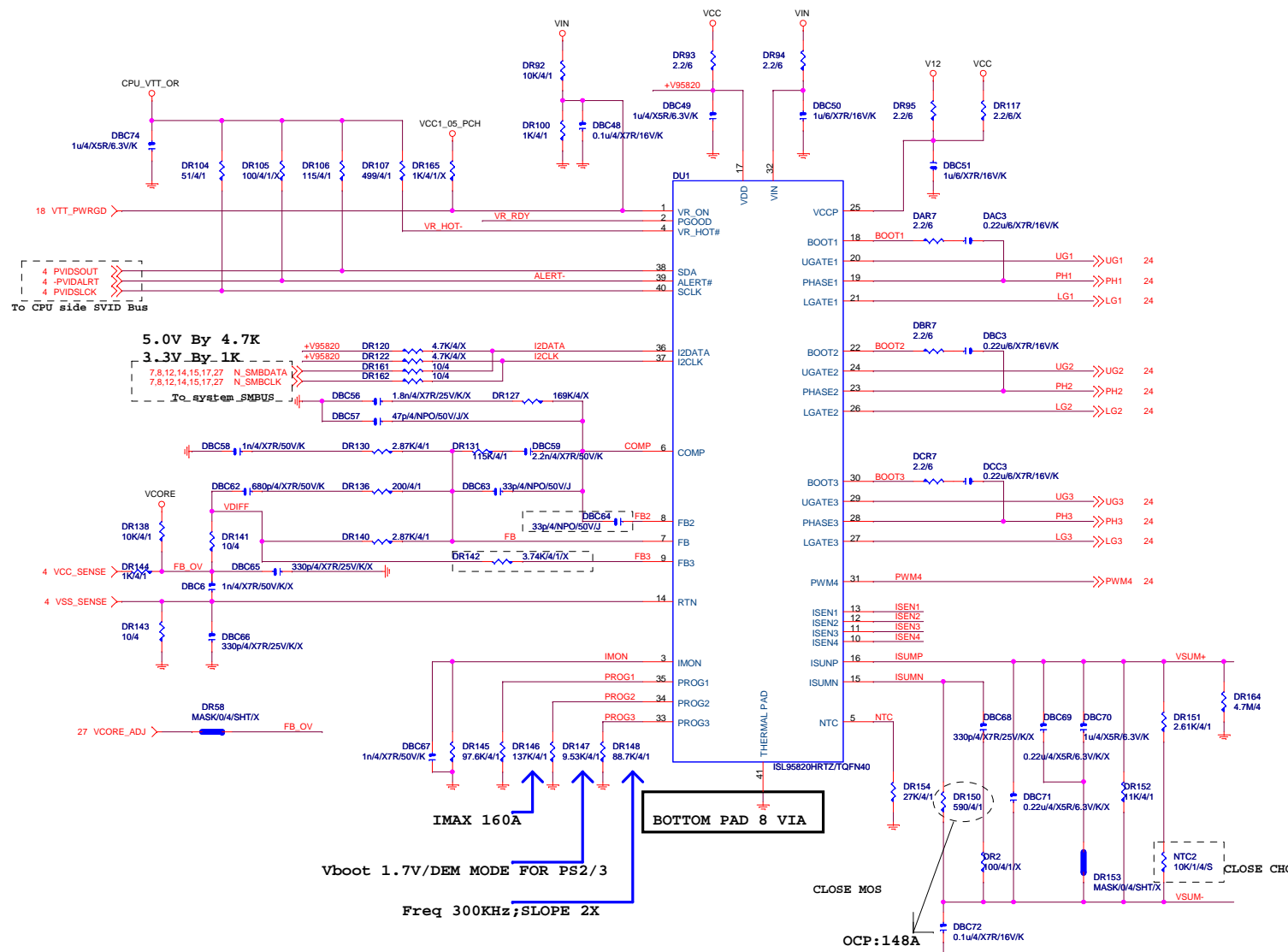
- BOM OPTION :
1. 台固/日固/日黑固/MUSE MW音效電容
 2. 金屬外罩 Reserve
 3. LED Reserve (若LED有上,G_PLED p-up請上CR98)

ALC1150 "CD1" 惠謀指定default要上



Gigabyte Technology			
HD AUDIO ALC1150			
Title	Document Number	Rev	
	GA-H97-D3H	1.0	
Date:	Friday, February 28, 2014	Sheet	21 of 34

**AZALIA FRONT PANE**



VCORE各層切割

第一層:VCORE
第二層:VCORE
第三層:GND
第四層:VCORE

CLOSE PWM

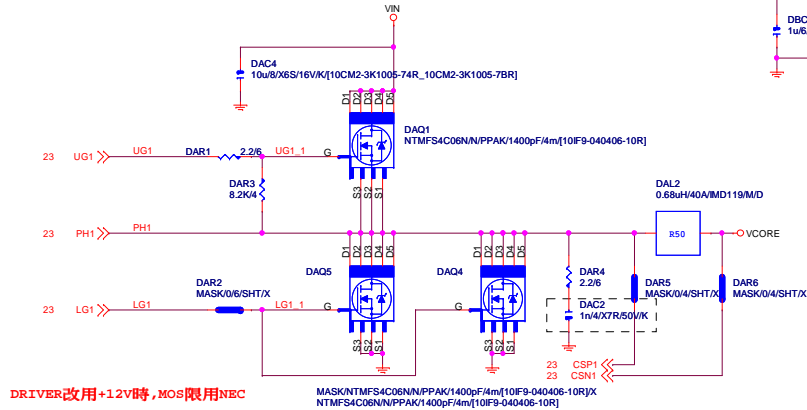
CLOSE MOS

OCP:148A

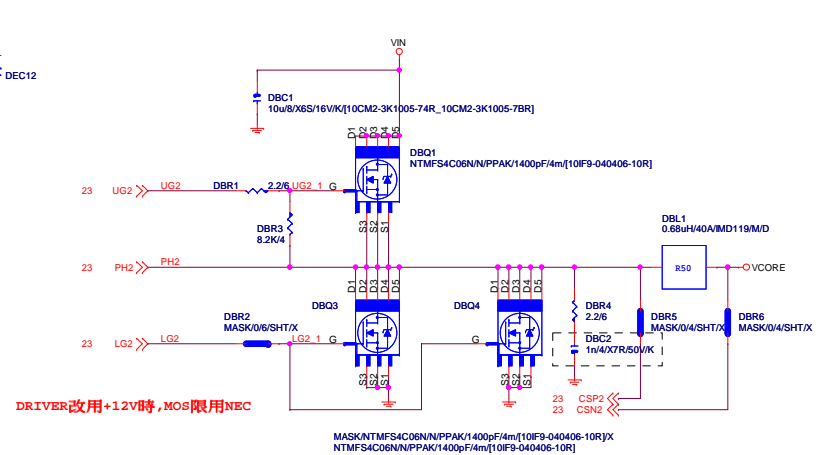
CLOSE CHOKE

VCORE

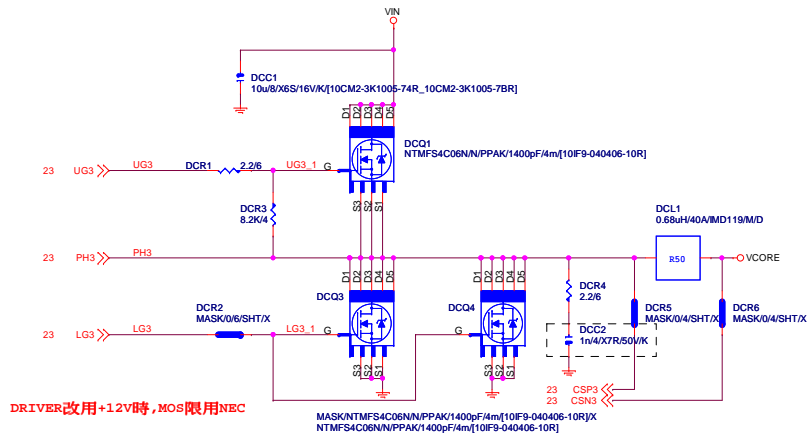
[1]



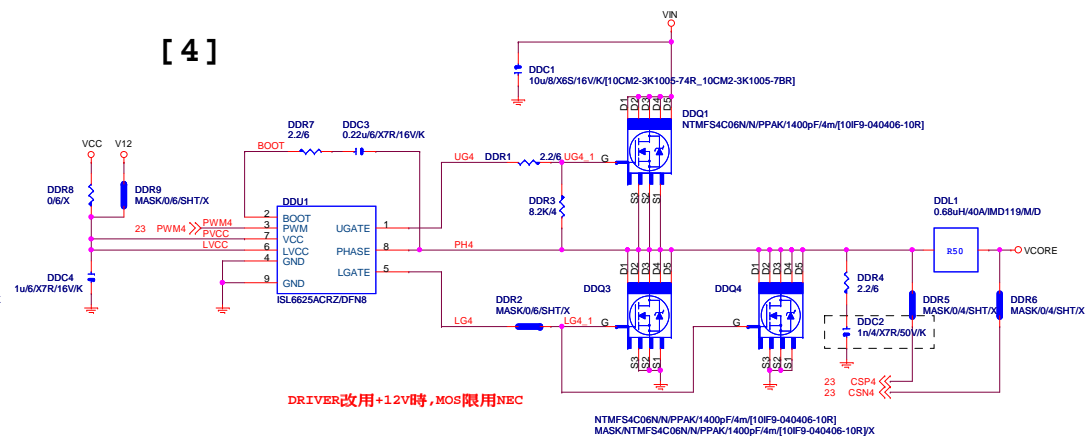
[2]



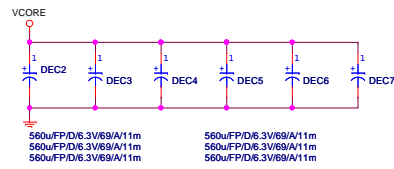
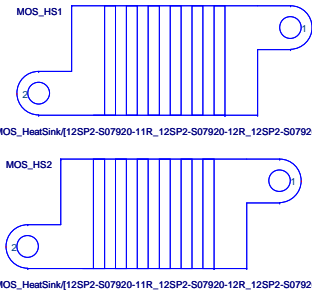
[3]



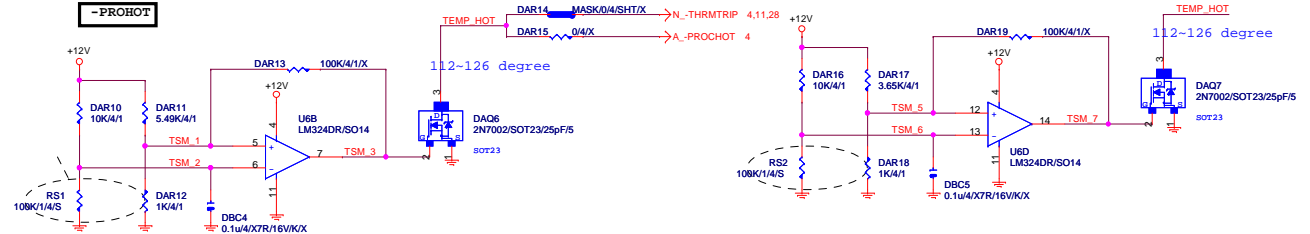
[4]



MOSFET HEATSINK

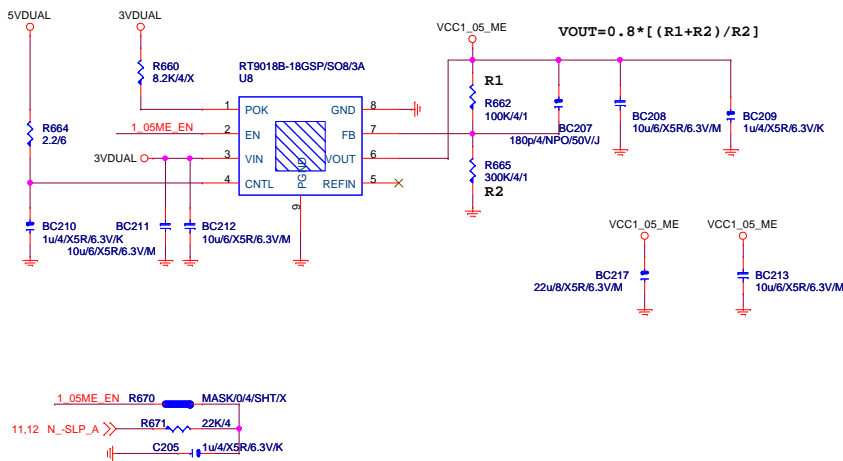


-PROHOT

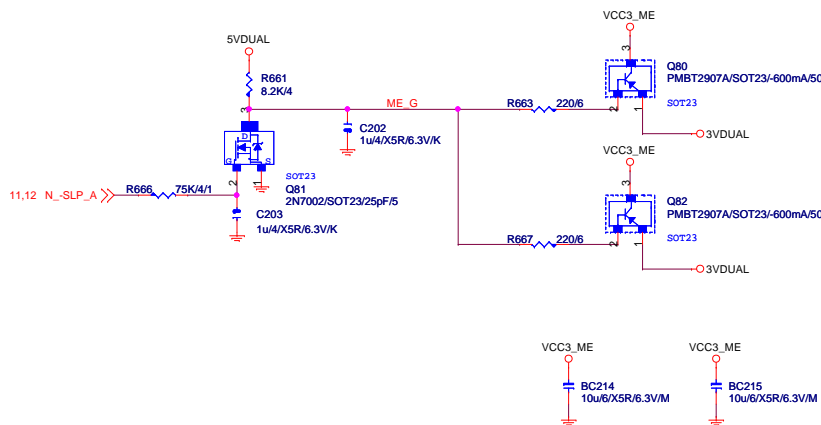


Gigabyte Technology			
Title	ISL95820_2		
Size	Document Number	GA-H97-D3H	
Custom			Rev 1.0
Date	Friday, March 07, 2014	Sheet 24	of 34

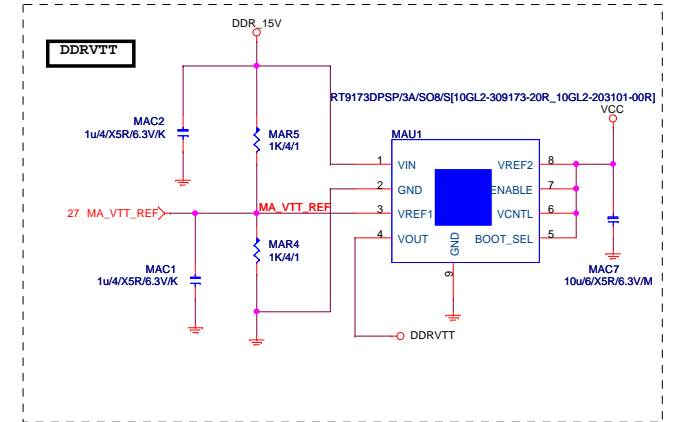
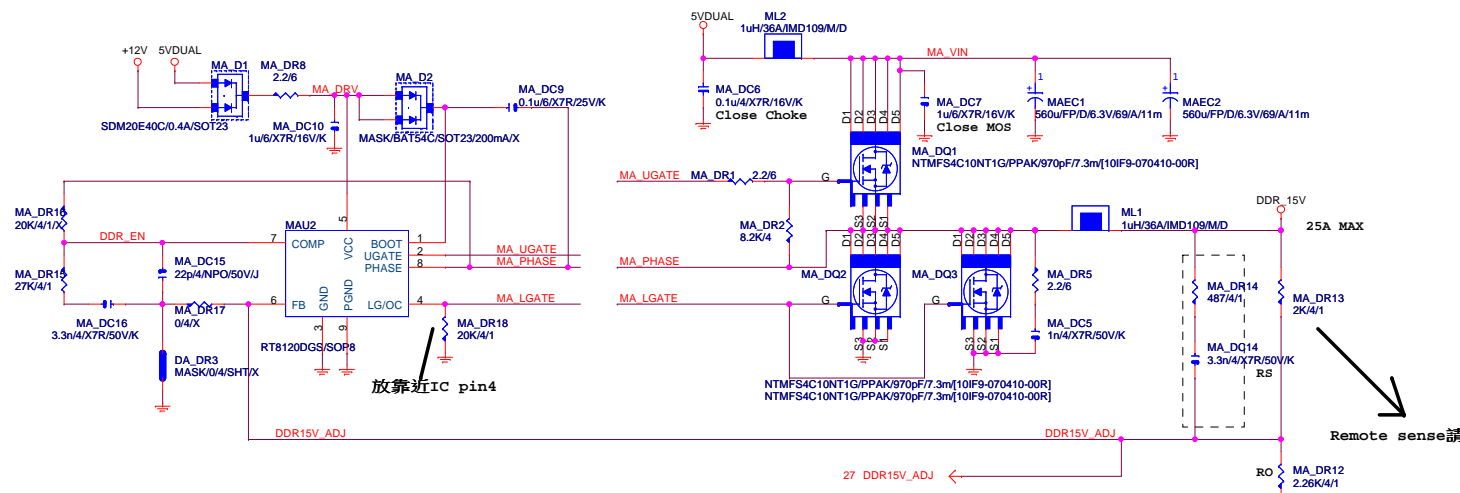
VCC1_05_ME



VCC3_ME



DDR_15V



Remote sense請從最重的負載端點拉回

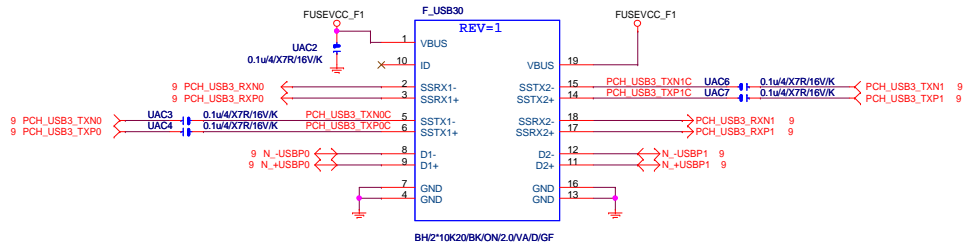
PWR_SEQ

DDR_EN DDR_EN_CON 18

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
 OCP:35.82A for Rds=6.7m for vishay@4.5V
 OCP:72.727A for Rds=3.3m for renesas@10V
 OCP:48A=RoSet*Iocset / Rds(on)
 =12K*10uA / [5//5]

GIGABYTE™			
Title RT8120_DDR_15V			
Size Custom	Document Number GA-H97-D3H	Rev 1.0	
Date: Thursday, March 06, 2014	Sheet 25	of 34	

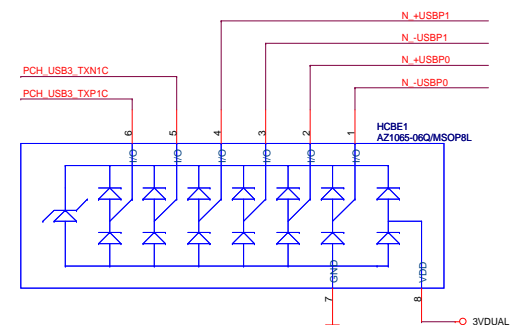
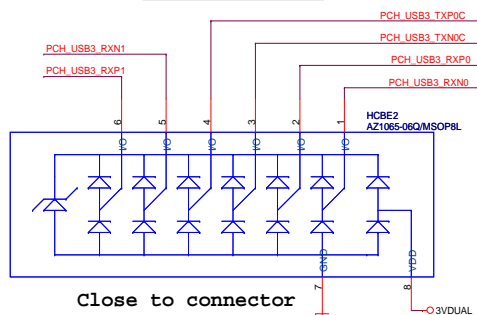
Front USB3.0



F_USB30 PWR

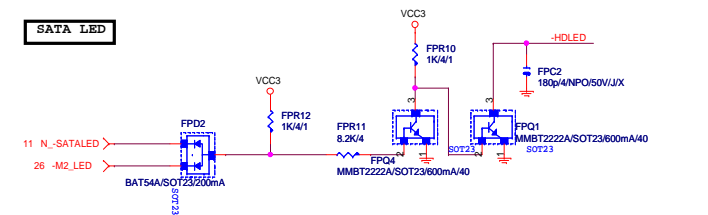


F_USB30 ESD PROTECT

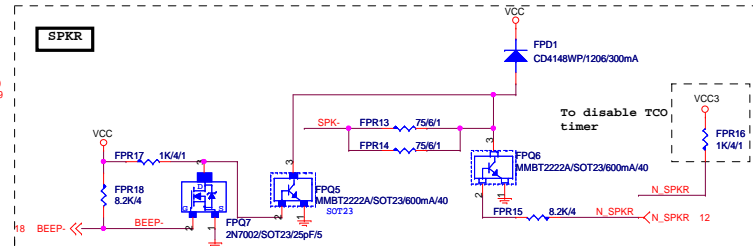


Close to connector

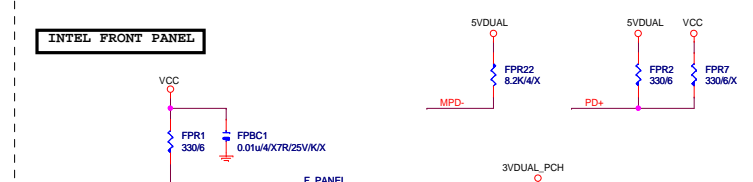
SATA LED



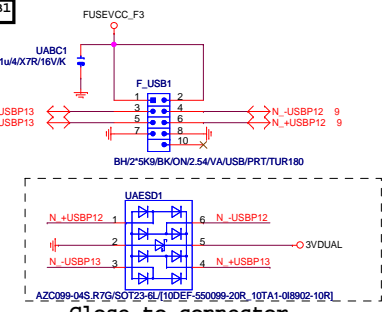
SPKR



INTEL FRONT PANEL

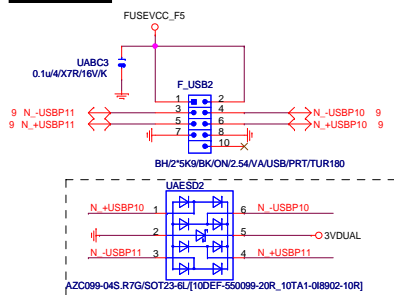


FRONT USB1



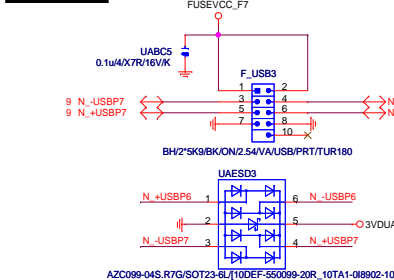
Close to connector

FRONT USB2

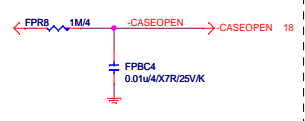


Close to connector

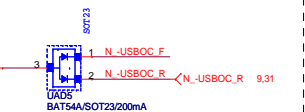
FRONT USB3



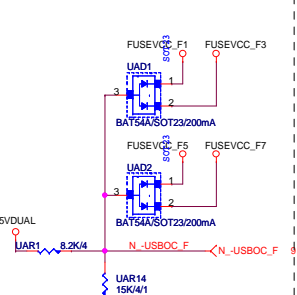
CASE OPEN



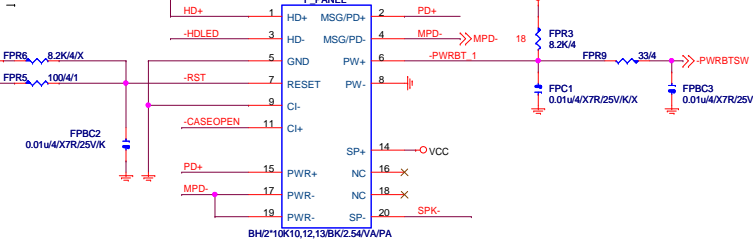
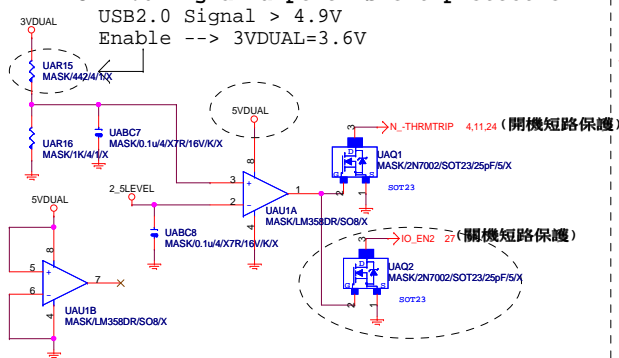
F_USB POWER PROTECT



-USBOC_F

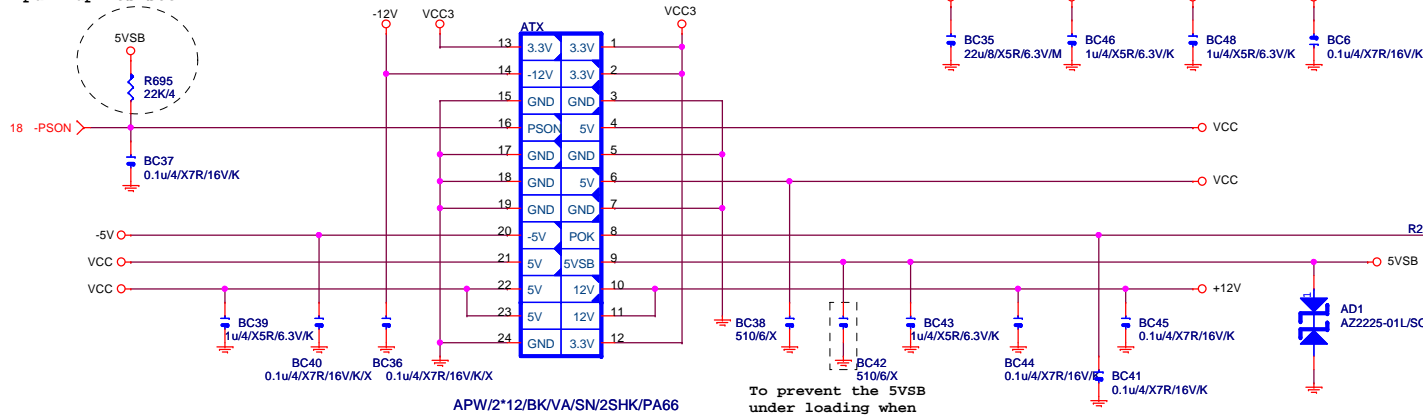


USB2.0 Signal & power short protection



Gigabyte Technology			
FP,F_USB,USB PWR,FDD,BZ			
GA-H97-D3H			
Rev	1.0		
Date:	Friday, February 28, 2014	Sheet	28 of 34

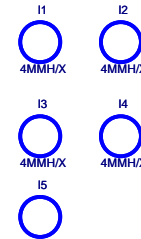
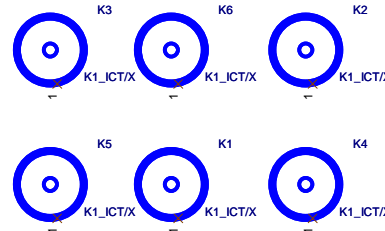
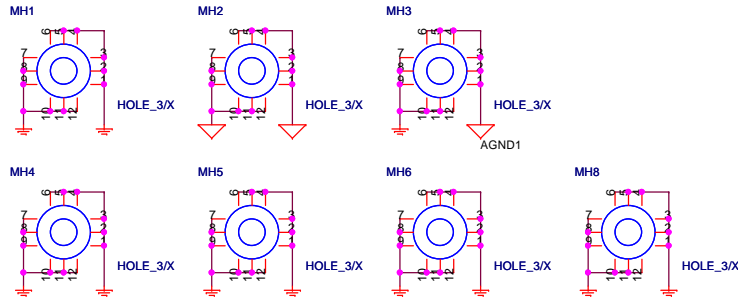
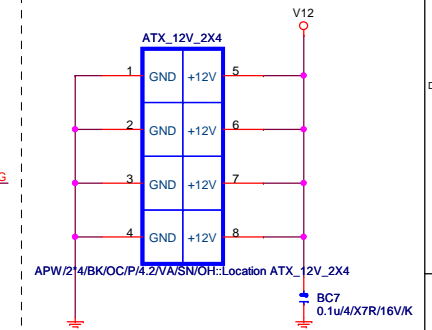
Patch some PSU no internal pull up resistor



APW/2*12/BK/VA/SN/2SHK/PA66

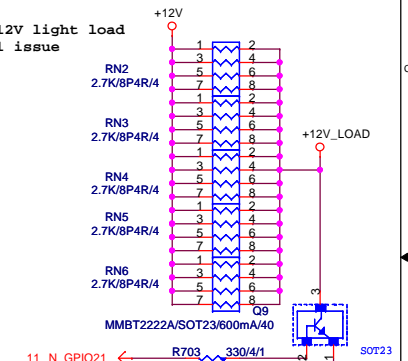
To prevent the 5VSB under loading when boot

ATXX4 POWER CONNECTOR



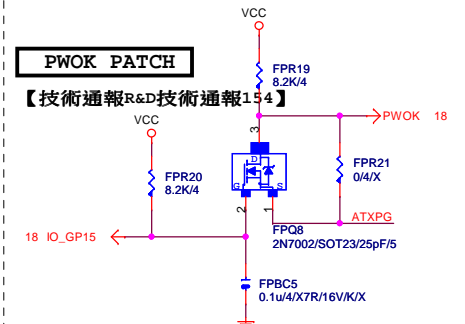
【技術通報R&D技術通報153】

To fix 12V light load abnormal issue



PWOK PATCH

【技術通報R&D技術通報154】



Gigabyte Technology

Title			ATX POWER CONNECTOR
Size			Document Number
Custom			GA-H97-D3H
Date			Rev
Friday, February 28, 2014			1.0
Sheet			29 of 34

Rev 0.2 modify

18 VREF

18 SYS_TEMP

18 CPU_TEMP

18 PCH_TEMP

OC7
1u4/X5R/6.3V/K

OC6
1u4/X5R/6.3V/K

OR73
10K/4

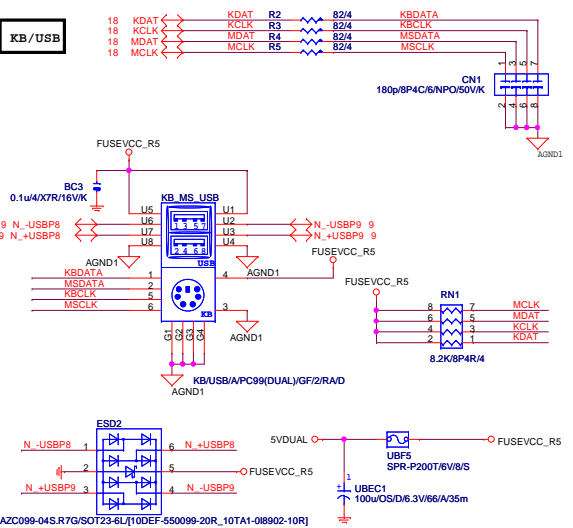
R674
8.2K/4

R675
8.2K/4

RS_SYS
10K1/4/5

Close S10

Vcore

[illegible][illegible]

Full Turn On Function (NCT3941S-A)

CPU_FAN1*48K/3PA66

SYS_FAN1

VCC3

1u6/XR7R16V/K

FC1

+12V

U14 NCT3941S-A/SOP8-EP

VIN 2

VOUT 3

NC 5

NC 7

NC 8

ENABLE/FON# 4

VSET 6

GND PGND 9

FAN1_VOUT 1

FAN1_SET4 3

INTERNAL PULL UP

FR1 9.2K/4/X

R72 1K/4/1

R71 22K/4

18 FANPWM5

BC31 1u4/XSR/6.3V/K

Linear SYS_FAN

+12V

R124 8.2K/4

R123 3.3K/4/1

R122 15K/4/1

R121 6.2K/4/1

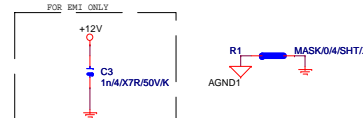
FAN1_VOUT

FC4 10u8/XSR/16V/K

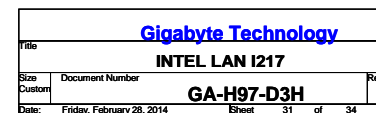
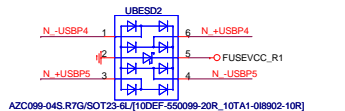
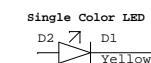
SYS_FAN1

FAN1*48K/3PA66

FAN105 18

[illegible]

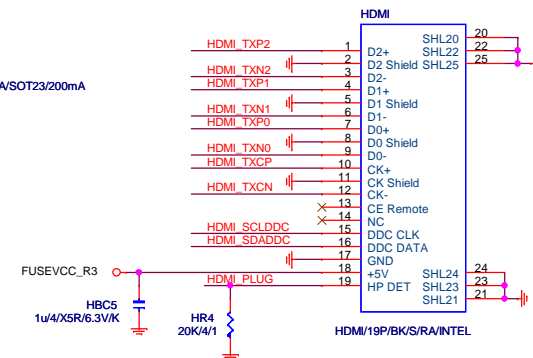
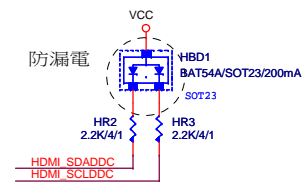
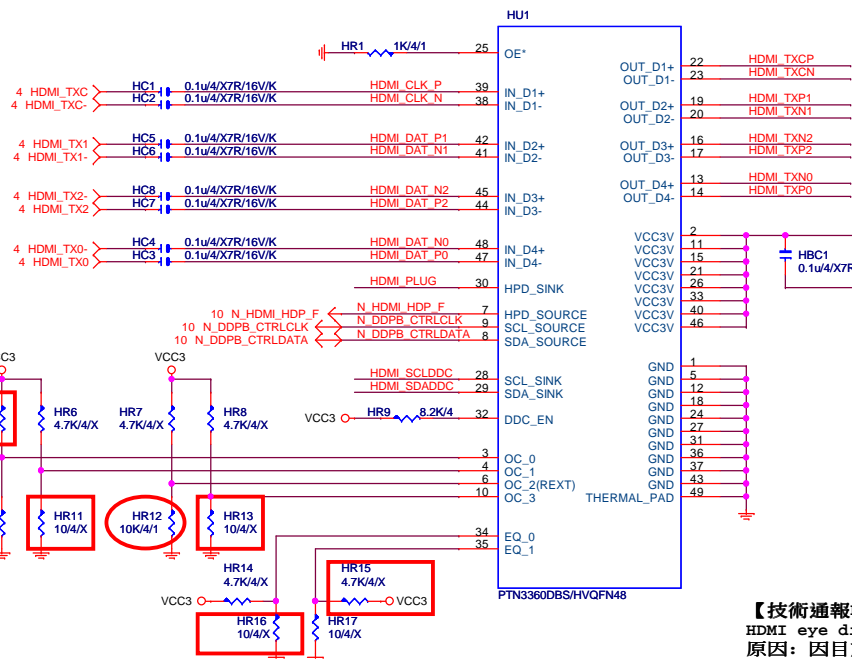
Title			
HWM,KB/MS, FAN CTRL			
Size	Document Number		Rev
Custom	GA-H97-D3H		1.0
Date:	Friday, February 28, 2014	Sheet	30 of 34



HDMI LEVEL SHIFT

HDMI:20/4/6/4/20

Impedance=85 +- 17.5%




PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K
ASM1442:紅色框要上,HR12:3.16K

【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)

				
Title				
HDMI & USB				
Size	Document Number			Rev
Custom	GA-H97-D3H			1.0
Date:	Friday, February 28, 2014	Sheet	33	of 34

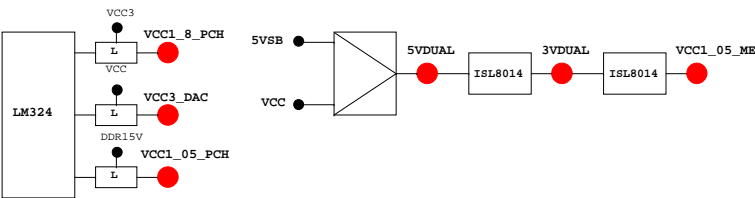
PCB GPIO LIST TABLE

PIN NAME	PWR	AFTER PLUG TEST	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	N/A
GP2/PIRQE#	MAIN		GPI	~PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	~PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	~PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	~PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	PCIEX1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN		GPI	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	GPI	GPIO8	N/A
GP9/OC5#	STBY		NATIVE	USB OC5#	N/A
GP10/OC6#	STBY		NATIVE	USB OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	USB PWR protect	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	GPIO12	N/A
GP13	STBY	L	GPI	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(TLS Enable)	P/U 8.2K 3VDUAL
GP16	MAIN		GPI	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	GPIO17	P/U 8.2K VCC3
GP18	MAIN		GPI	Mobile Only	N/A
GP19	MAIN		GPI	GPIO19	P/U 8.2K VCC3
GP20	MAIN		GPI	GPIO20	P/U 8.2K VCC3
GP21	MAIN		GPI	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	GPIO22	P/U 8.2K VCC3
GP23	MAIN		GPI	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#	N/A
GP25	STBY			Mobile Only	N/A
GP26	STBY			Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	PWR LED	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	Mobile Only	N/A
GP31	STBY	H-Z	GPI	Mobile Only	N/A
GP32	MAIN	H	GPO	N/A	N/A
GP33	MAIN	H	GPO	N/A	N/A
GP34	MAIN	H-Z	GPI	~PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	~ACZ_DET	P/U 8.2K VCC3
GP36	MAIN		GPI	N/A	N/A
GP37	MAIN		GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	GPIO39	P/U 8.2K VCC3
GP40	STBY		NATIVE	USB OC1#	N/A
GP41	STBY		NATIVE	USB OC2#	N/A
GP42	STBY		NATIVE	USB OC3#	N/A
GP43	STBY		NATIVE	USB OC4#	N/A
GP44	STBY	L	NATIVE	GPIO44	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46	P/U 8.2K 3VDUAL
GP47	STBY			Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48	P/U 8.2K 3VDUAL
GP49	MAIN	H-Z	IN	GPIO49	P/U 8.2K 3VDUAL
GP50	MAIN		NATIVE	~REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	~GNT1	N/A
GP52	MAIN		NATIVE	~REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	~GNT2	N/A
GP54	MAIN		NATIVE	~REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	~GNT3	N/A
GP56	STBY		NATIVE	Mobile Only	N/A
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY		NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE	~SUSTAT	N/A
GP62	STBY	L	NATIVE	SUSCLK	N/A
GP63	STBY	L	NATIVE	GPIO63	N/A
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY			Mobile Only	N/A
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL

Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSS11	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSIO	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSCH#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CsisBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMB_C_R	SW_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMB_C_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRX2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：

