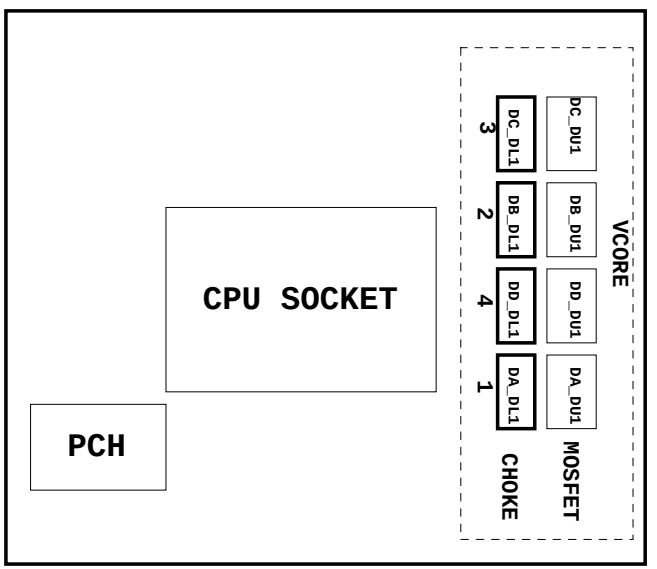
Model Name: GA-Z97-HD3 1.0

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 ITE8620
19	COM, -PROHOT, R_USB
20	Dual BIOS / LPT
21	ALC887-VD2 CODEC
22	REAR AUDIO JACK
23	VCORE_ ISL95820_1
24	VCORE_ ISL95820_2
25	DDR15V / M3 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	Realtek 8111F-VL
32	DVI
33	HDMI
34	TABLE LIST
35	
36	
37	
38	
39	
40	



Gigabyte Technology

Title	Cover Sheet	
Size: Custom	Document Number: GA-Z97-HD3	Rev: 1.0
Date: Wednesday, March 05, 2014	Sheet 1 of 34	

GA-Z97-HD3

Component value change history

Data	Change Item	Reason
2013/11/07 EBOM:01	Z97-DS3H-0.1 E-BOM	
2014/01/07 EBOM:01	H97-HD3-0.1 E-BOM	
2014/01/17 EBOM:02	1.add level shift IC ,Q3,R34	
2014/02/17 EBOM:10A	1.VR11,VR12,HR2,HR3 28K--->2.2K;NR24 5.6K-->6.65K,NR23 8.2K--->10K	
	2.DEL UAU1(LM358),UAQ1,UAQ2,UAR2,UAR3,UABC7,UABC8,R34,Q3,	
	3.ESD PROTECT DIODE改爲用AMC099加強版	
	4.DEL FPR6,PAC1,PEC1	
	5.DAC4,DDC1,DCC1,DBC1 限用10UF/X6S	
2014/03/03 PBOM:10B	1.FOR SINGLE BOM	
	2.DAC4,DDC1,DCC1,DBC1 限用10UF/X6S,SAMSUNG/MURATA	
	3.NON VCORE MOS改用新料 ON /VISHAY	
2014/03/05 PBOM:10C	Z97 CHIP 的VCORE/NON VCORE MOS限用VISHAY	
2014/04/15 PBOM:10D	Z97 CHIP 的料號更換爲20R FOR MP	

Circuit or PCB layout change

DATE	Change Item	Reason
2013/10/15 PCB:0.1	由Z87-DS3H-1.1修改 ----------->Z97-DS3H-0.1	
2013/12/30 PCB:0.1	由Z97-DS3H-0.1修改	
	1.Spec CHANGE 移除SPDIF IN PIN HEADER/THUNDERBALL PIN HEADER;USB two port one fuse	
	2.Spec CHANGE DEL DVI level shift IC,OR68	3.add HBD3 防VGA CONTROL PIN漏電
	4.R676/R692 0603 ---->0603 SHORT-WIRE	5.update PCH heatsink footprint
	6.CR60/R200 0402 ---->SHORT MASK	8.修改HDLED線路;NOTE1202
	7.CR51/DCR2/DDR2/DBR2/DAR2/DDR9 0603----->0603 SHORT MASK	
	9.修正HD /POWER LED SCH	10.Swap DVI & HDMI port
	11.USB2.0/3.0 Signal & power short protection sch	12.CPU MOS改1上1下 FOR H97 SPEC
	13.OR68(CPU RESET) 不上件	14.F_USB30 ESD PROTECT(UAE1,UAE2,UAESD4)改成AZ1065
2014/01/09 PCB:0.2	1.Spec CHANGE add DVI level shift IC	
	2.統一,PWM_TEMP跟CPU_TEMP互換,同時PWM_TEMP換成PCH_TEMP	
	3.預留NR136電阻,NR205 OPEN	
2014/02/13 PCB:1.0	1.ND2,NQ15,NQ16,NR186,NR188,NR189,NR190,NC49,NC50 MASK;NR177 SHOT	
	2.U10,BC30,R62,R63 MASK	
	3.UAU1,UAQ1,UAQ2,UAR2,UAR3,UABC7,UABC8 MASK	
	4.LBESD1 MASK;NRN5,NRN1 SHORT MASK	
	5.NR205 SHORT ,R34,Q3 MASK	
	6.R660,R664,BC210,BC211,BC212,U8,R662,R665,BC207,BC208,BC209,BC213,R671,MASK	
	7.C205,R666,R661,Q80,Q81,Q82,C202,C203,R663,R667,BC214,BC215 MASK	
	8.Q21,R80 MASK	

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Title: BOM & PCB MODIFY HISTORY

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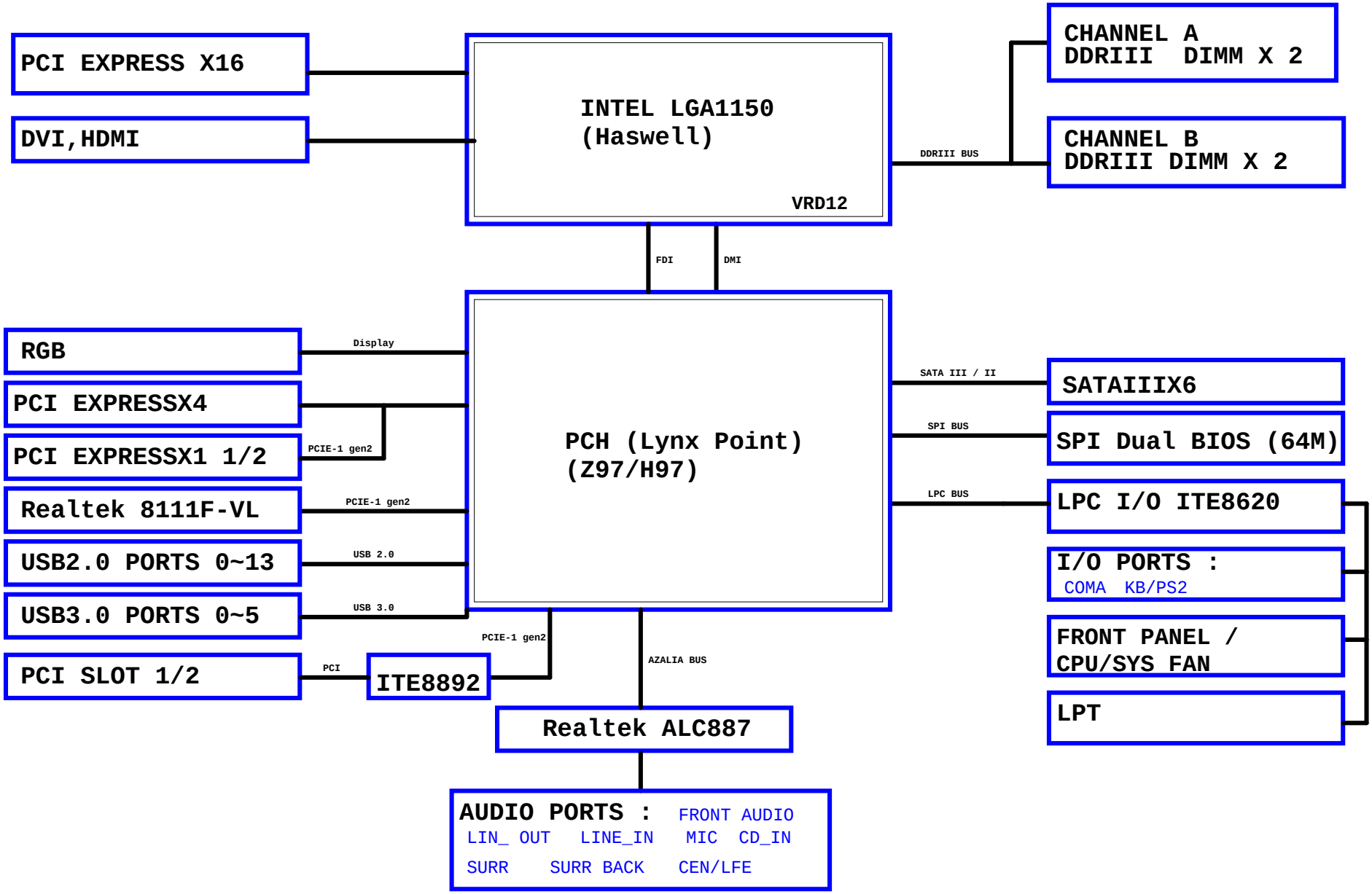
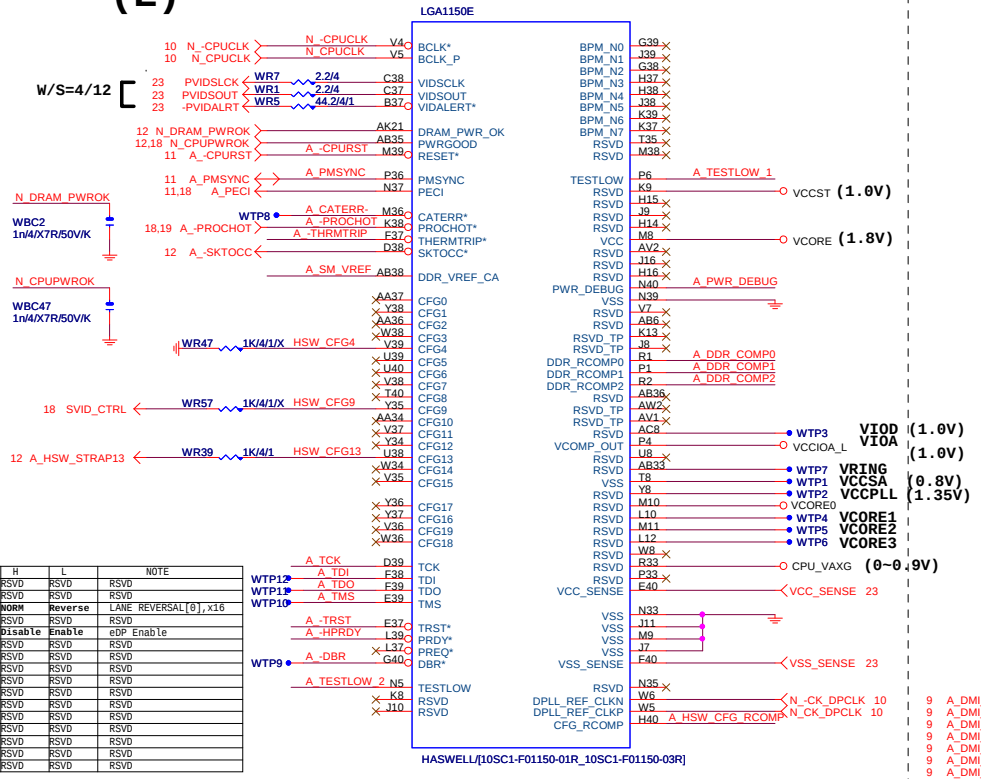
BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-Z97-HD3	Rev: 1.0
Date: Wednesday, March 05, 2014	Sheet 3 of 34	

LGA1150 (E)

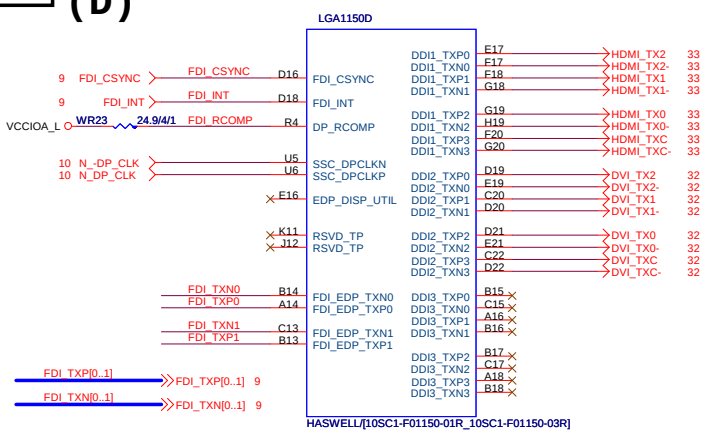


CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	**NORM**	**Reverse**	LANE REVERSAL[0],x16
3	RSVD	RSVD	RSVD
4	**Disable**	**Enable**	eDP Enable
7	RSVD	RSVD	RSVD
8	RSVD	RSVD	RSVD
9	RSVD	RSVD	RSVD
10	RSVD	RSVD	RSVD
11	RSVD	RSVD	RSVD
12	RSVD	RSVD	RSVD
13	RSVD	RSVD	RSVD
14	RSVD	RSVD	RSVD
15	RSVD	RSVD	RSVD
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

LGA1150 (D)

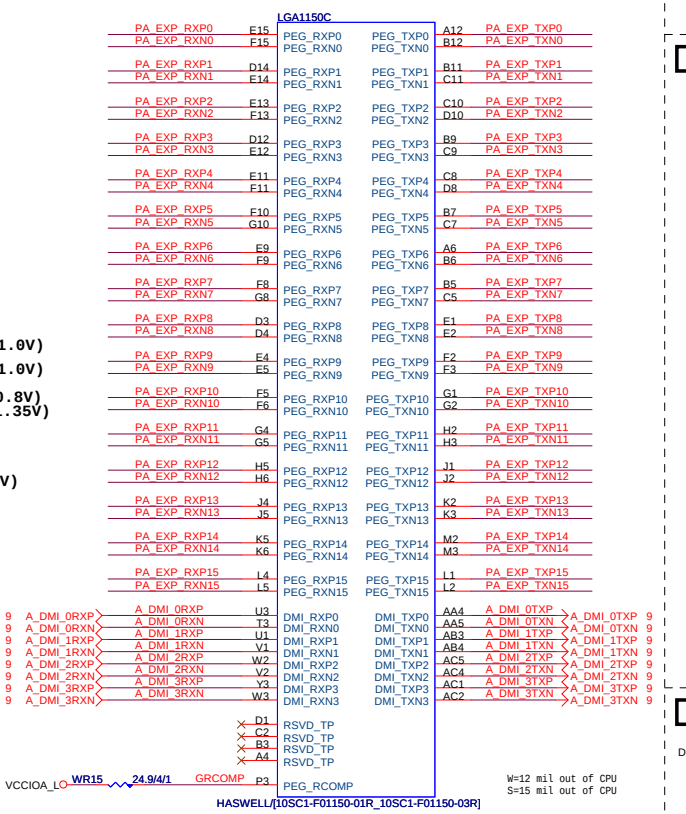


FDI:4/4/4//15(breakout min 4/4/4//8)
Impedance=85 +- 15%

DP/HDMI 4/4/4//20 FDI 4/4/4/12

Impedance=85 +- 15%

LGA1155 (C)

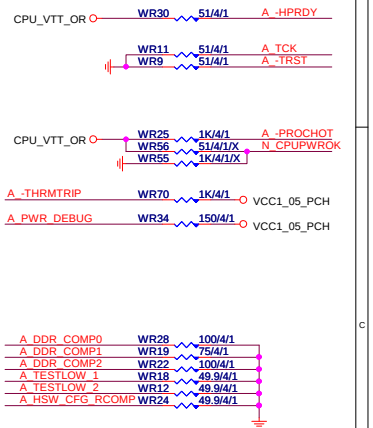


CPU PEG 5/5/5//20 Impedance=80 +- 15%

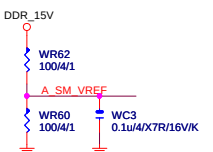
DMI 4/4/4//15 Impedance=85 +- 15%

CPU SVID

CPU PU/PD

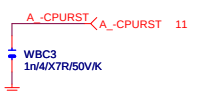


SM REF

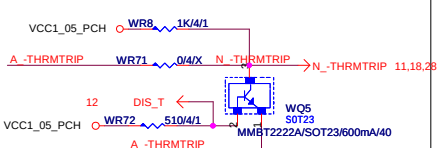


-CPURST

1.1V分壓



THRMTRIP DISABLE FOR Z87 OVERCLOCK



Gigabyte Technology			
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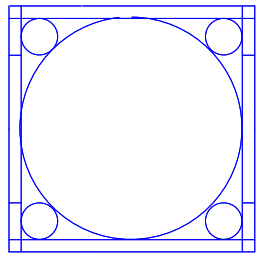
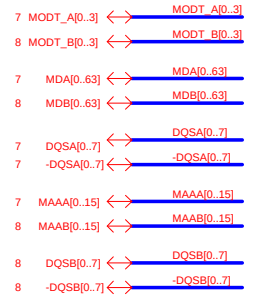
LGA1150 (A)

LGA1150 (B)

LGA1150 (CR)



DDR BUS



Title	CPU LGA1150-B
Size	Custom
Document Number	GA-Z97-HD3
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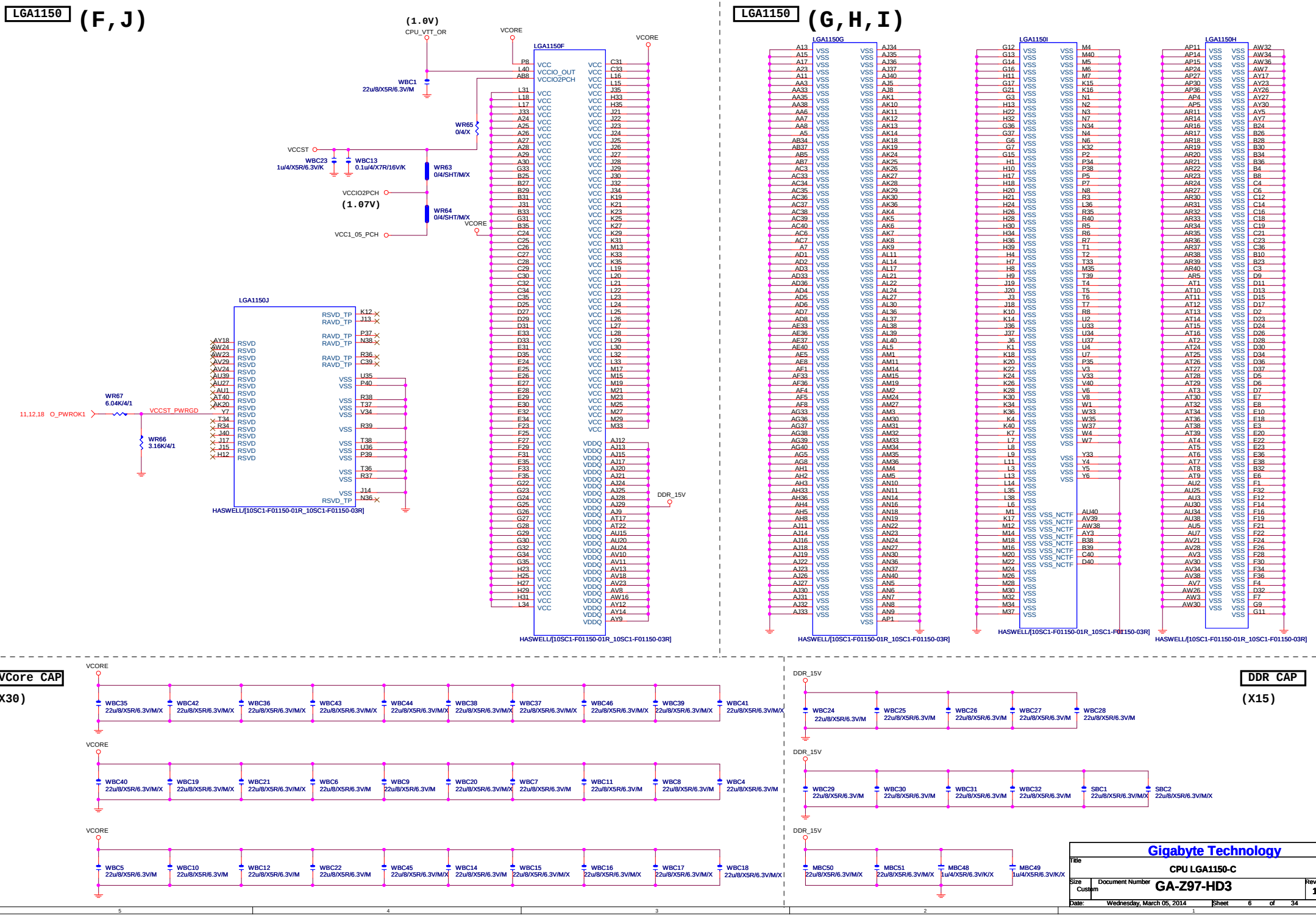
LGA1150 (F,J)
(1.0V)
CPU_VTT_OR
VCORE
LGA1150F
WBC1
22u/8/X5R/6.3V/M
WR65
0/4/X
VCCST
WBC23
1u/4/X5R/6.3V/K
WBC13
0.1u/4/X7R/16V/K
WR63
0/4/SHT/M/X
VCCIO2PCH
(1.07V)
WR64
0/4/SHT/M/X
VCC1_05_PCH
LGA1150J
WR67
6.04K/4/1
11,12,18 O_PWROK1
VCCST_PWRGD
WR66
3.16K/4/1
HASWELL/[10SC1-F01150-01R_10SC1-F01150-03R]
DDR_15V
LGA1150 (G,H,I)
LGA1150G
LGA1150I
LGA1150H
VCore CAP
(X30)
DDR CAP
(X15)
WBC35 22u/8/X5R/6.3V/M/X
WBC42 22u/8/X5R/6.3V/M/X
WBC36 22u/8/X5R/6.3V/M/X
WBC43 22u/8/X5R/6.3V/M/X
WBC44 22u/8/X5R/6.3V/M/X
WBC38 22u/8/X5R/6.3V/M/X
WBC37 22u/8/X5R/6.3V/M/X
WBC46 22u/8/X5R/6.3V/M/X
WBC39 22u/8/X5R/6.3V/M/X
WBC41 22u/8/X5R/6.3V/M/X
WBC40 22u/8/X5R/6.3V/M/X
WBC19 22u/8/X5R/6.3V/M/X
WBC21 22u/8/X5R/6.3V/M/X
WBC6 22u/8/X5R/6.3V/M
WBC9 22u/8/X5R/6.3V/M
WBC20 22u/8/X5R/6.3V/M/X
WBC7 22u/8/X5R/6.3V/M
WBC11 22u/8/X5R/6.3V/M
WBC8 22u/8/X5R/6.3V/M
WBC4 22u/8/X5R/6.3V/M
WBC5 22u/8/X5R/6.3V/M
WBC10 22u/8/X5R/6.3V/M
WBC12 22u/8/X5R/6.3V/M
WBC22 22u/8/X5R/6.3V/M
WBC45 22u/8/X5R/6.3V/M/X
WBC14 22u/8/X5R/6.3V/M
WBC15 22u/8/X5R/6.3V/M/X
WBC16 22u/8/X5R/6.3V/M/X
WBC17 22u/8/X5R/6.3V/M/X
WBC18 22u/8/X5R/6.3V/M/X
WBC24 22u/8/X5R/6.3V/M
WBC25 22u/8/X5R/6.3V/M
WBC26 22u/8/X5R/6.3V/M
WBC27 22u/8/X5R/6.3V/M
WBC28 22u/8/X5R/6.3V/M
WBC29 22u/8/X5R/6.3V/M
WBC30 22u/8/X5R/6.3V/M
WBC31 22u/8/X5R/6.3V/M
WBC32 22u/8/X5R/6.3V/M
SBC1 22u/8/X5R/6.3V/M/X
SBC2 22u/8/X5R/6.3V/M/X
MBC50 22u/8/X5R/6.3V/M/X
MBC51 22u/8/X5R/6.3V/M/X
MBC48 1u/4/X5R/6.3V/K/X
MBC49 1u/4/X5R/6.3V/K/X
Gigabyte Technology
Title
CPU LGA1150-C
Size Custom
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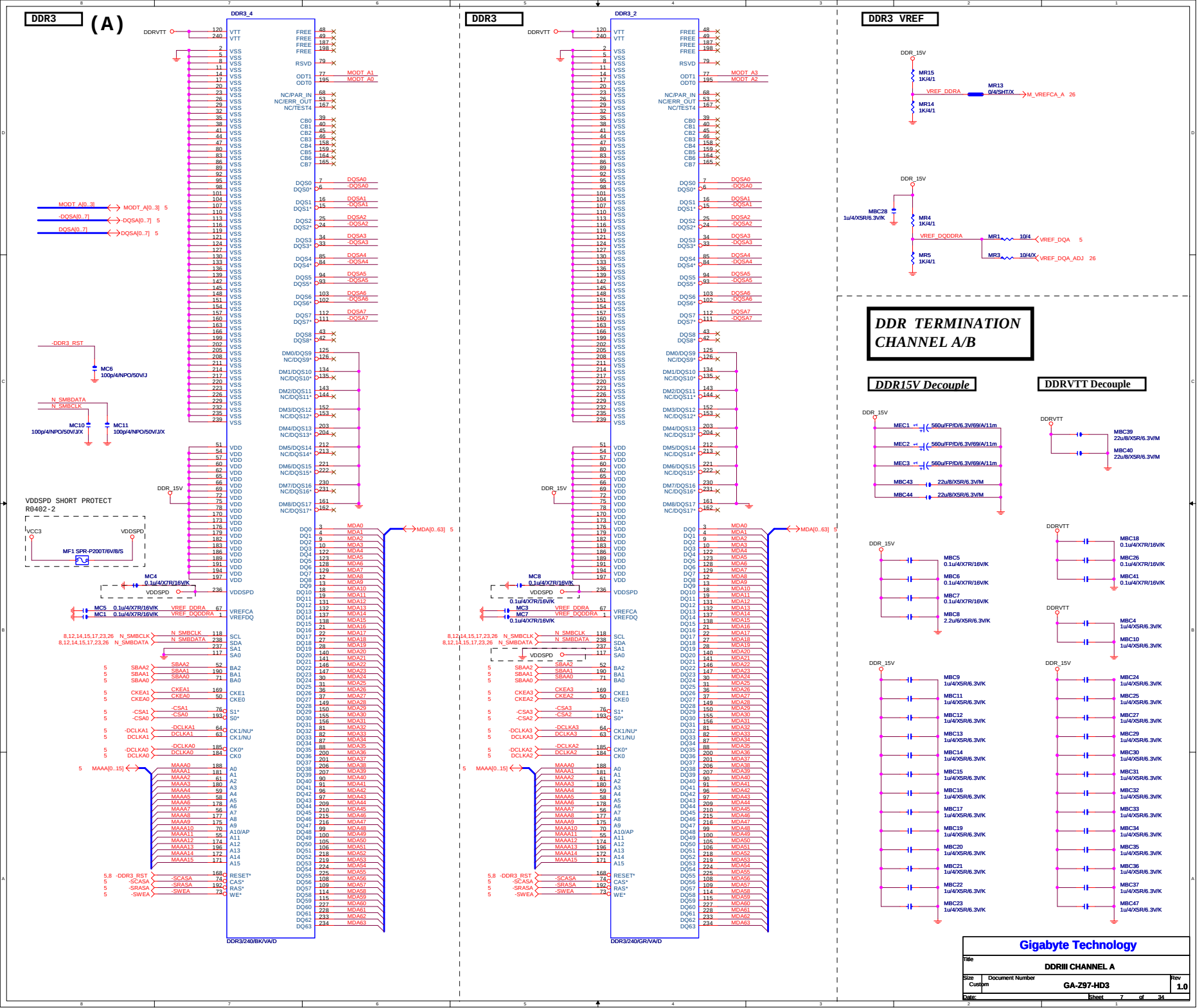
DDR3
(A)
DDR3_4
DDRVTT
VTT
VSS
VDD
FREE
RSVD
ODT1
ODT0
NC/PAR_IN
NC/ERR_OUT
NC/TEST4
CB0
CB1
CB2
CB3
CB4
CB5
CB6
CB7
DQS0
DQS0*
DQS1
DQS1*
DQS2
DQS2*
DQS3
DQS3*
DQS4
DQS4*
DQS5
DQS5*
DQS6
DQS6*
DQS7
DQS7*
DQS8
DQS8*
DM0/DQS9
NC/DQS9*
DM1/DQS10
NC/DQS10*
DM2/DQS11
NC/DQS11*
DM3/DQS12
NC/DQS12*
DM4/DQS13
NC/DQS13*
DM5/DQS14
NC/DQS14*
DM6/DQS15
NC/DQS15*
DM7/DQS16
NC/DQS16*
DM8/DQS17
NC/DQS17*
MODT_A1
MODT_A0
MODT_A[0..3]
-DQSA[0..7]
DQSA[0..7]
-DDR3_RST
MC6
100p/4/NPO/50V/J
N_SMBDATA
N_SMBCLK
MC10
100p/4/NPO/50V/J/X
MC11
100p/4/NPO/50V/J/X
DDR_15V
VDDSPD SHORT PROTECT
R0402-2
VCC3
VDDSPD
MF1 SPR-P2007/6V/B/S
MC4
0.1u/4/X7R/16V/K
MC5
MC1
VREF_DDRA
VREF_DQDDRA
VREFCA
VREFDQ
MDA[0..63]
DQ0
DQ1
DQ2
DQ3
DQ4
DQ5
DQ6
DQ7
DQ8
DQ9
DQ10
DQ11
DQ12
DQ13
DQ14
DQ15
DQ16
DQ17
DQ18
DQ19
DQ20
DQ21
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DQ49
DQ50
DQ51
DQ52
DQ53
DQ54
DQ55
DQ56
DQ57
DQ58
DQ59
DQ60
DQ61
DQ62
DQ63
N_SMBCLK
N_SMBDATA
SCL
SDA
SA1
SA0
SBAA2
SBAA1
SBAA0
BA2
BA1
BA0
CKEA1
CKEA0
CKE1
CKE0
-CSA1
-CSA0
S1*
S0*
-DCLKA1
DCLKA1
CK1/NU*
CK1/NU
-DCLKA0
DCLKA0
CK0*
CK0
MAAA[0..15]
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10/AP
A11
A12
A13
A14
A15
RESET*
-SCASA
-SRASA
-SWEA
CAS*
RAS*
WE*
DDR3/240/BK/VA/D
DDR3_2
MODT_A3
MODT_A2
DDR3/240/GR/VA/D
DDR3 VREF
DDR_15V
MR15
1K/4/1
VREF_DDRA
MR13
0/4/SHT/X
M_VREFCA_A
MR14
1K/4/1
MBC28
1u/4/X5R/6.3V/K
MR4
MR5
VREF_DQDDRA
MR1
10/4
VREF_DQA
MR3
10/4/X
VREF_DQA_ADJ
DDR TERMINATION
CHANNEL A/B
DDR15V Decouple
DDRVTT Decouple
MEC1
MEC2
MEC3
560u/FP/D/6.3V/69/A/11m
MBC43
MBC44
22u/8/X5R/6.3V/M
MBC39
MBC40
MBC5
MBC6
MBC7
MBC8
0.1u/4/X7R/16V/K
2.2u/6/X5R/6.3V/K
MBC18
MBC26
MBC41
MBC4
MBC10
1u/4/X5R/6.3V/K
MBC9
MBC11
MBC12
MBC13
MBC14
MBC15
MBC16
MBC17
MBC19
MBC20
MBC21
MBC22
MBC23
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MBC34
MBC35
MBC36
MBC37
MBC47
Gigabyte Technology
Title
DDRIII CHANNEL A
Size
Custom
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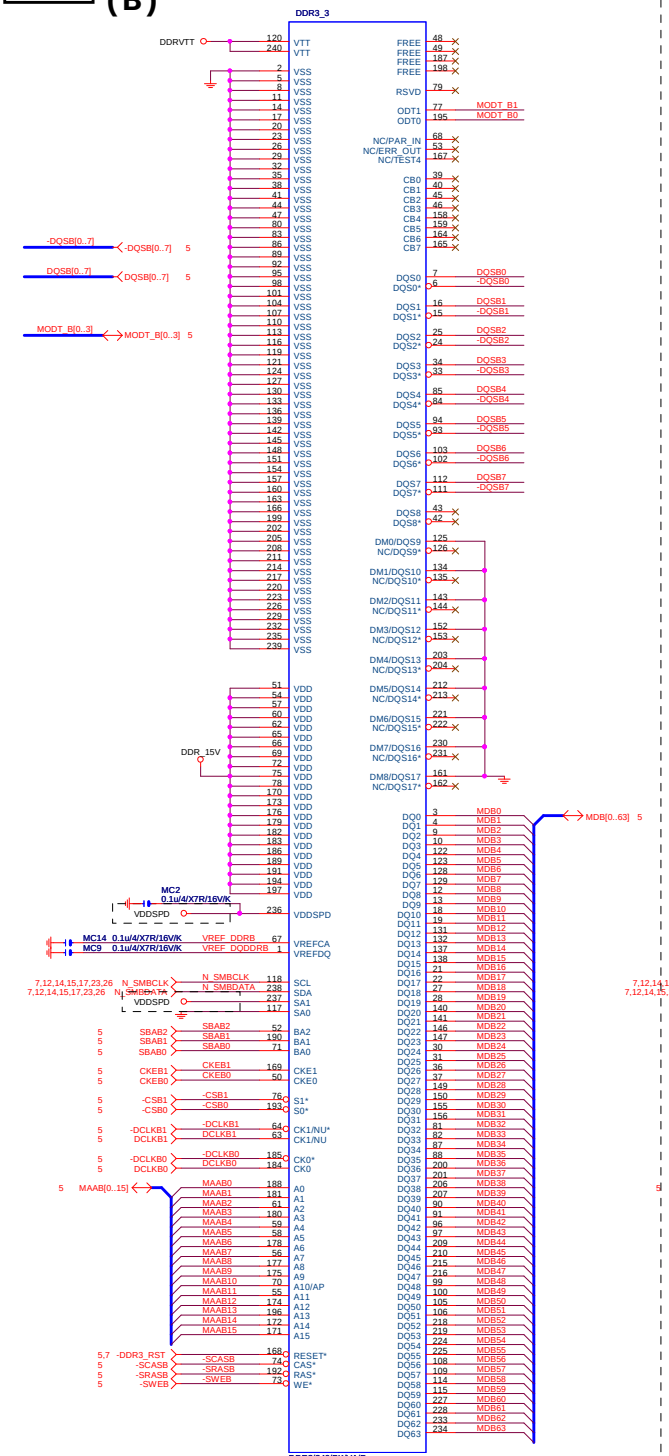
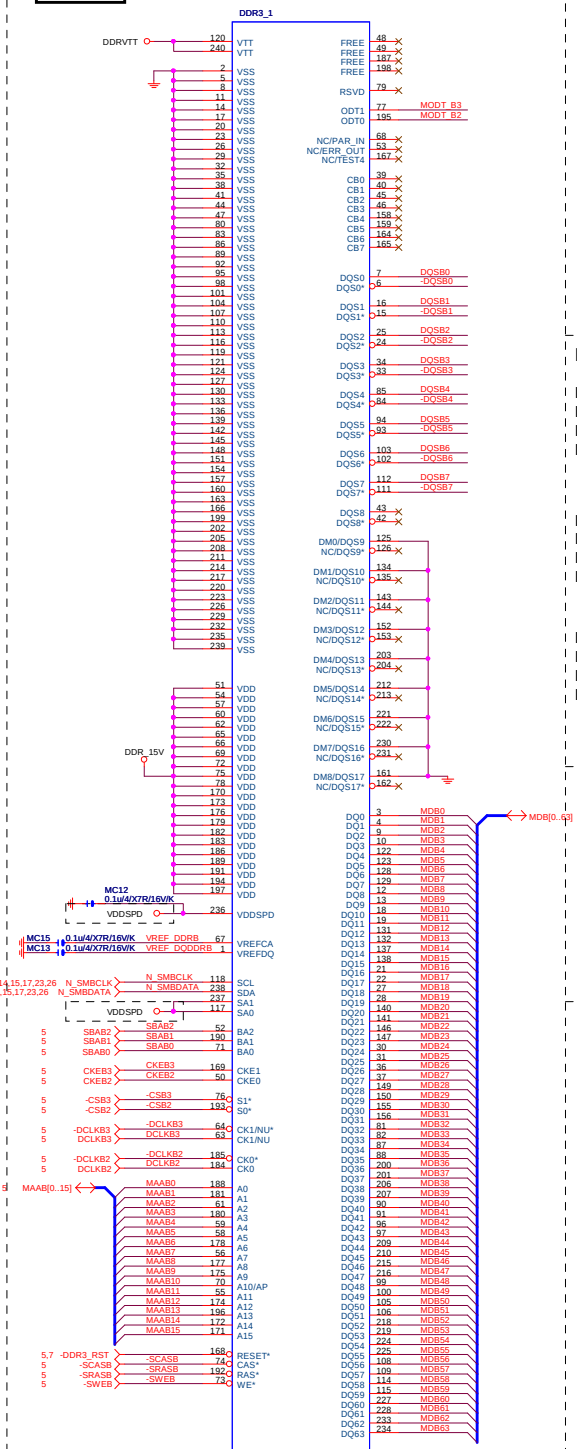
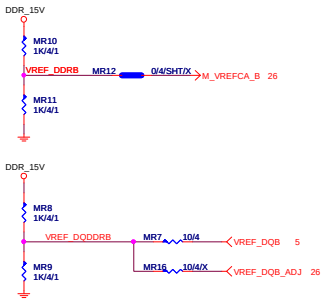
DDR3 (B)



DDR3



DDR3 VREF



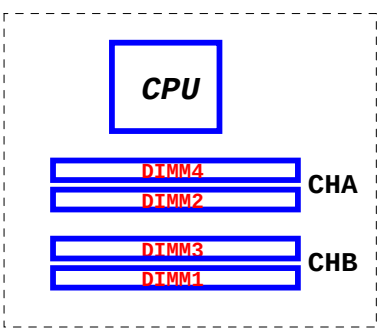
DDR3 1066,1333,1600MHZ BANDWIDTH

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



Gigabyte Technology

Title	DDRIII CHANNEL B	
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PCH (B)

DMI:12/4/4/4/12(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 +- 15%

Port要對應

B85/H81: 6/7 N\A

H81:USB3.0 N\A

H81:12/13 N\A

REAR USB3.0

B85/H81:USB N\A

LAN AR8161

ITE8892 PCI Bridge

PCIEX4 port1

PCIEX4 port2

PCIEX4 port3
PCIEX1_1

H81:PCIE 7/8X
PCIEX4 port4
PCIEX1_2

放靠近 Device & PCI-E Slot

CHIP DH82Z97 A0 INTEL/[10HB1-030Z97-20R]

PCH PCIE ,DMI 4/4/4//15 Impedance=85 +- 15%

usb2.0 5/7/5//12
usb3.0 5/7/5//20 Impedance=85 +- 15%

PCH (F)

FDI:12/4/5/4/12
Impedance=85 +- 17.5%

USB3.0:20/5/7/5/20 (breakout min 8/4/4/4/8) ; ONLY 3 VIAS
Impedance=85 +- 17.5%
Back Panel < 10000 MILS
Front Panel < 6000 MILS

Mount for integrated clock Generation Mode

NR92 short to GND in non graphic SKU

PCH (J)

PCH H/S

BGAHSINK_SB-9M

HEAT SINK/N-BG/GBT MK/Z87/KWOG/[12SP2-S04208-91R_12SP2-S04208-92R_12SP2-S04208-93R]

USB TABLE

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

Gigabyte Technology

Title: PCH FDI,DMI,USB ,PCIE

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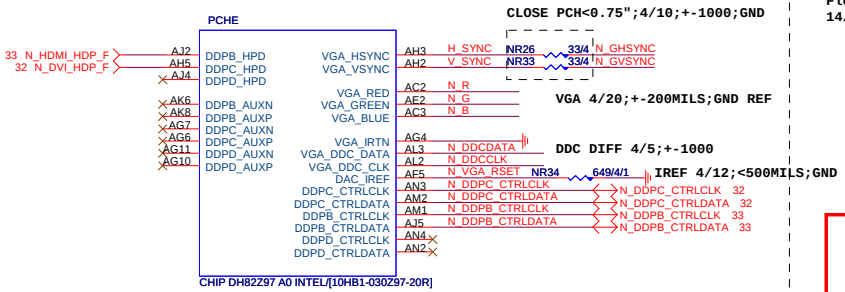
PCH (E)

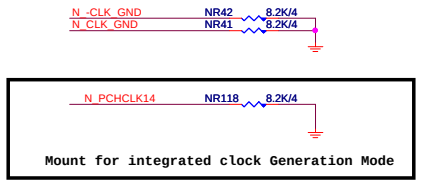


VGA DISABLE
R,G,B NC OR GND
IRTN / IREF GND
VGA_HSYNC, VGA_VSYNC,DDC_CLK, DDC_DATA NC
POWER VCCADAC(AF2), VCCADACBG(AE1) GND

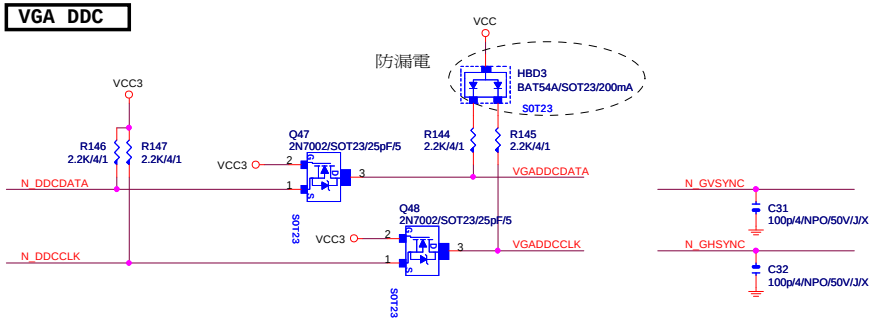
PCH (G)

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

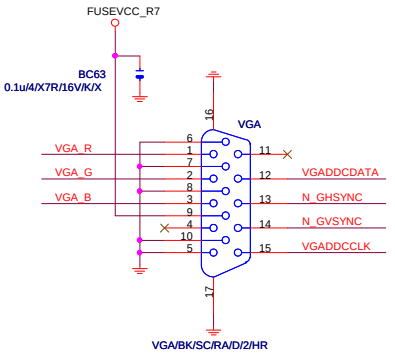
PCH CLK PD



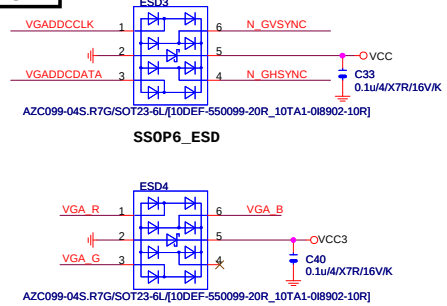
VGA DDC



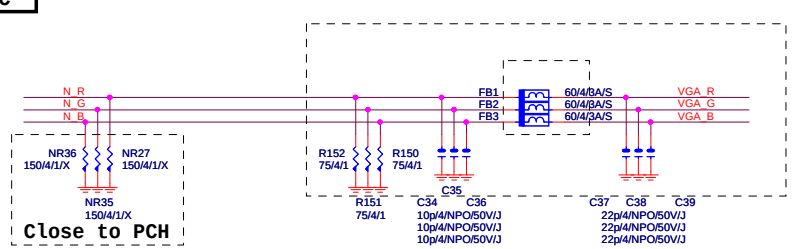
VGA CONNECTOR



VGA ESD



VGA DDC



Gigabyte Technology			
Title: PCH DISPLAY ,CLK BUFFER			
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PCH (C)

SATA3 : 20/4/4/4/20 (breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%
SATA2 4/4/4//15
SATA3 4/4/4//20

PCHC

CHIP DH82Z97 A0 INTEL/[10HB1-030Z97-20R]

PCH (A)

PCHA

CHIP DH82Z97 A0 INTEL/[10HB1-030Z97-20R]

BOOT DEVICE	GP51	GP19
LPC	0	0
SPI	float	float

Default int pull up on GP51,
Default SPI boot devices

PCH CLK PD

Mount for integrated clock Generation Mode

PCH PU/PD

ME PWROK

TLS Setting enable for SBA

SATA CONNECTOR

White connector for SATA3

[Z87/H87] all SATA3
SATA3(From Z87) - 黑色
SATA3(From Marvell) - 灰色
[B85] SATA2+SATA3
SATA2(From B85) - 黑色
SATA3(From B85) - 白色

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

H81 Port 2/3 N/A

GPIO38 Ctrl

MFG Mode

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

soft strap	GP16	GP49
0	pcie1	pcie2
1	sata4	sata5

Gigabyte Technology

Title: PCH HOST , SATA, PCI

Size: Custom | Document Number: GA-Z97-HD3 | Rev: 1.0

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PCH

(D)

PCHD

CHIP DH82Z97 A0 INTEL/[10HB1-030Z97-20R]

ACZ_SDOUT

C_ACZ_SDOUT : HI --> ME Enable
Lo --> ME Disable
HI:disable ME and override SPI Flash Access Permissions

PCH_DPWROK

At least 10ms delay after 3VDUAL_PCH stabel

For IT8620 Ctrl

PCH PU/PD

GP44:DFX test Mode

N_-IGC_EN:Low to over clock validation strap

SUSCLK: OD PLL VR Disable

HSW_STRAP13

32.768KHZ

NX2-SHT
SHW/D0.64*5.08*6.74

32.768K/12.5p/20ppm/TF38/35K/D

CLR_CMOS

BATTERY
CR2032

BAT
BAT-SK/BK/P/S/D/SN

BATTERY-DUAL-4

RB 必須放在BAT外

N_INTERMEN : Integrated 1.05V SUS VRM Enable

CLR_CMOS
PH/1*2/BK/2.54/VA/D

Gigabyte Technology	
Title	PCH GPIO , CTRL , AUDIO
Size: Custom	Document Number: GA-Z97-HD3
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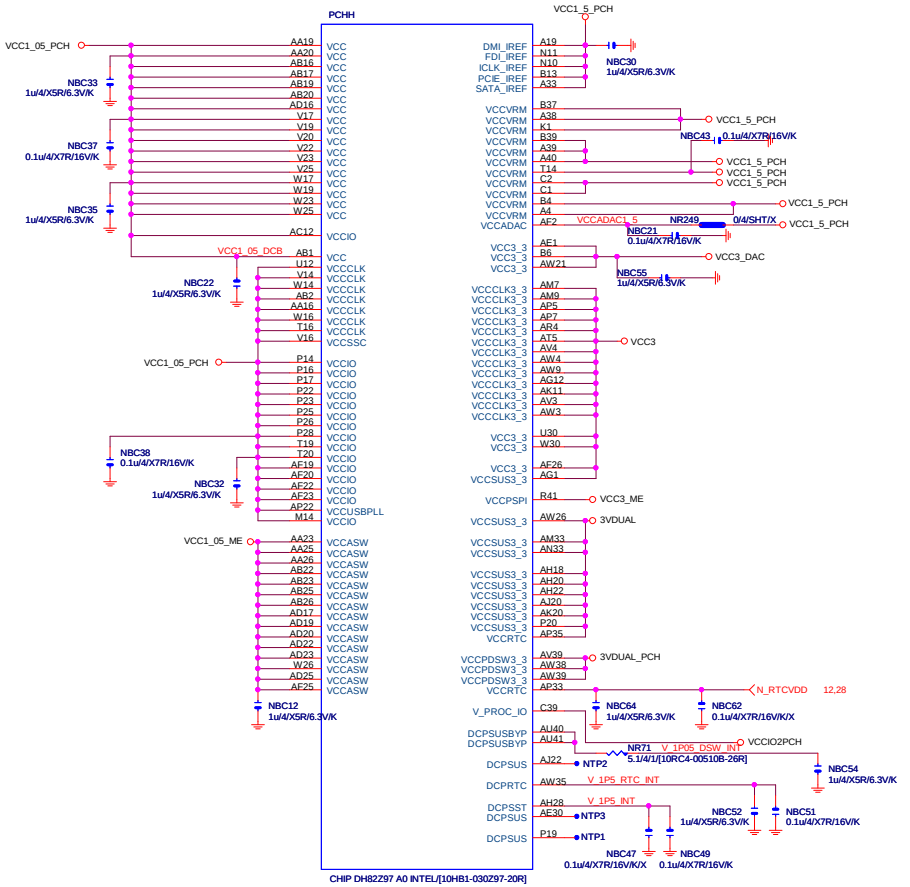
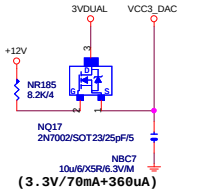
PCH (H)



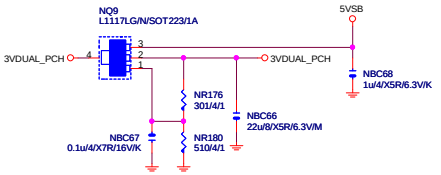
VCC3_DAC

CLOSE北橋(注意震盪水波紋)

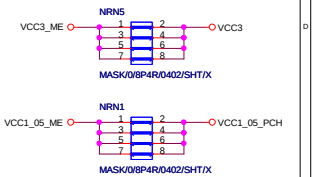


(3.3V/70mA+360uA)

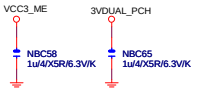
3VDUAL_PCH



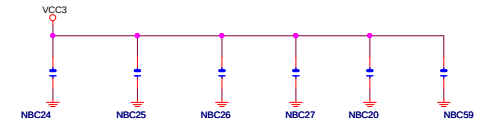
SHT PWR



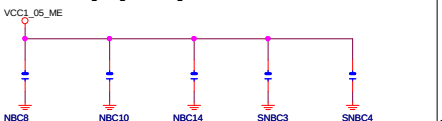
CAP



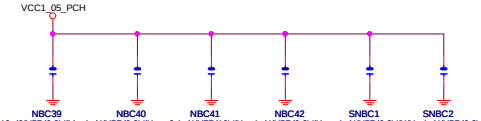
(3.3V)(X6)



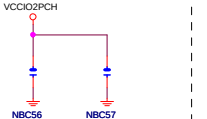
(1.05V)(X5)



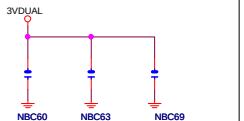
(1.05V)(X6)



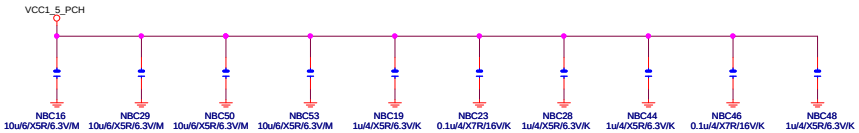
(1.05V)(X2)



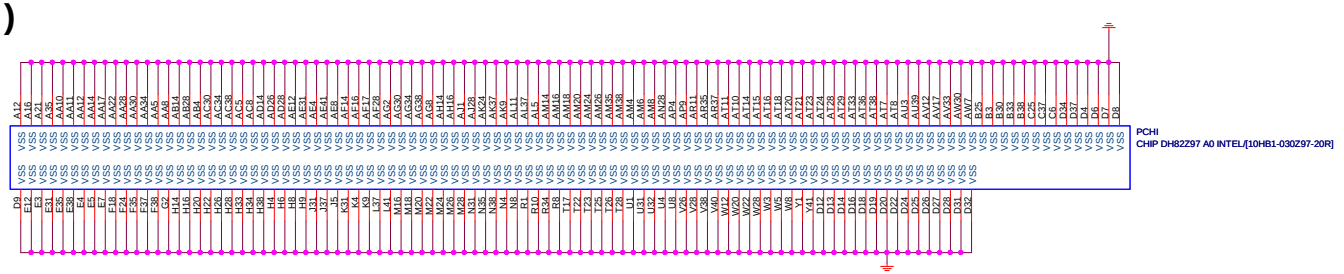
(3.3V)(X2)



(1.5V) (X10)



PCH (I)



Gigabyte Technology			
Title: PCH PWR ,GND			
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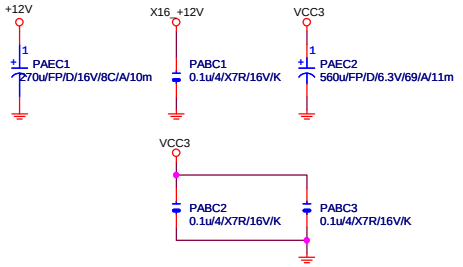
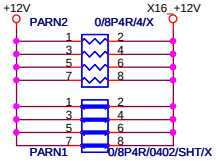
PCIEX16 CAP



PCIEX16 PROTECT SHT

+12 protect short-wire test



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	PAC19	0.22u/4/X5R/6.3V/K	PA_EXP_TXP7_C
PA_EXP_TXN7	PAC18	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

PCI-E REV:1.1--> 2.5GHZ

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

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

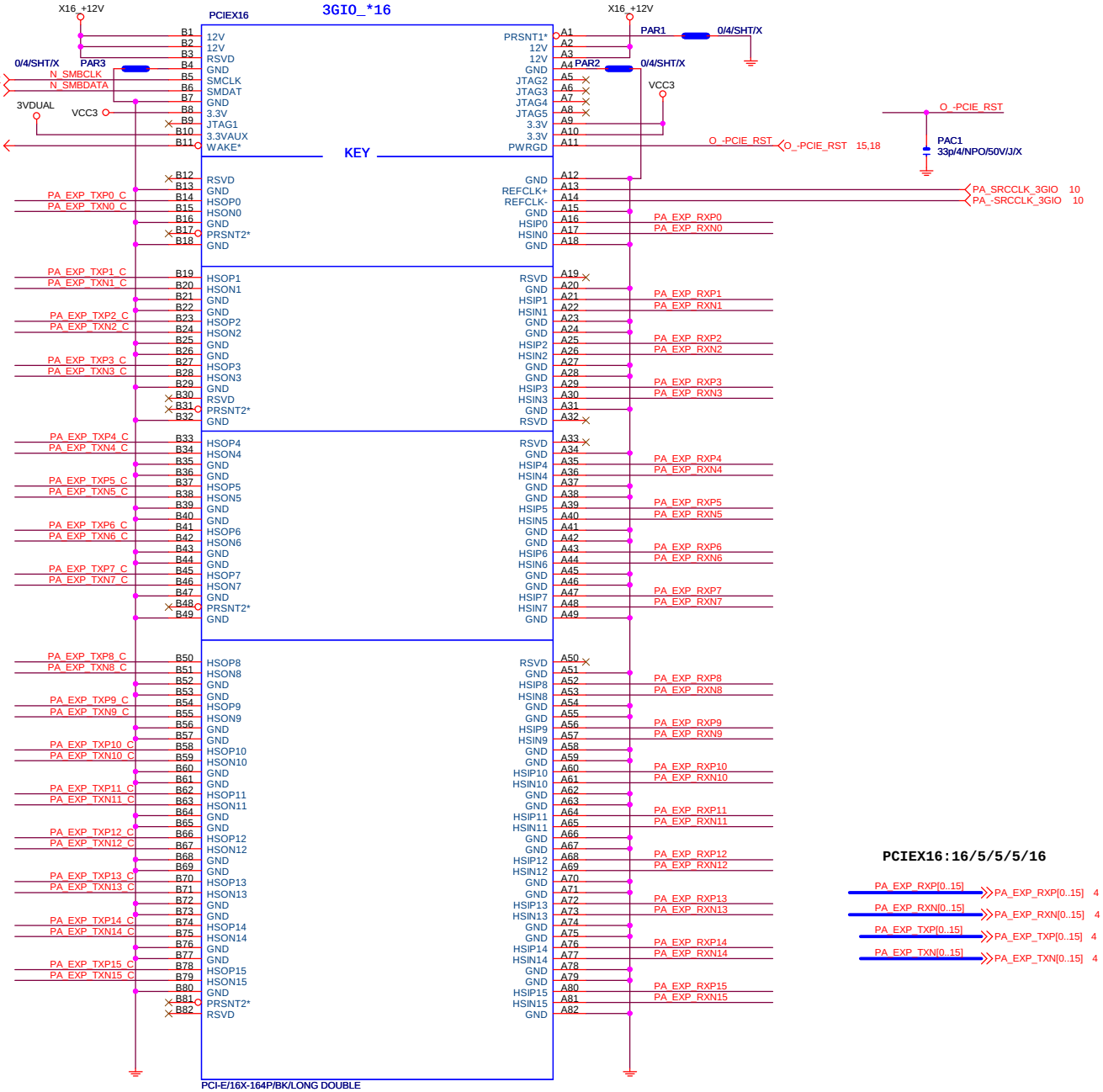
PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

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

PCI-E REV:2.0--> 5GHZ

PCIEX16 SLOT

PCIESLOT-164DN-Q



PCIEX16:16/5/5/5/16

Gigabyte Technology		
Title: PCI EXPRESS * 16		
Size: Custom	Document Number: GA-Z97-HD3	Rev: 1.0
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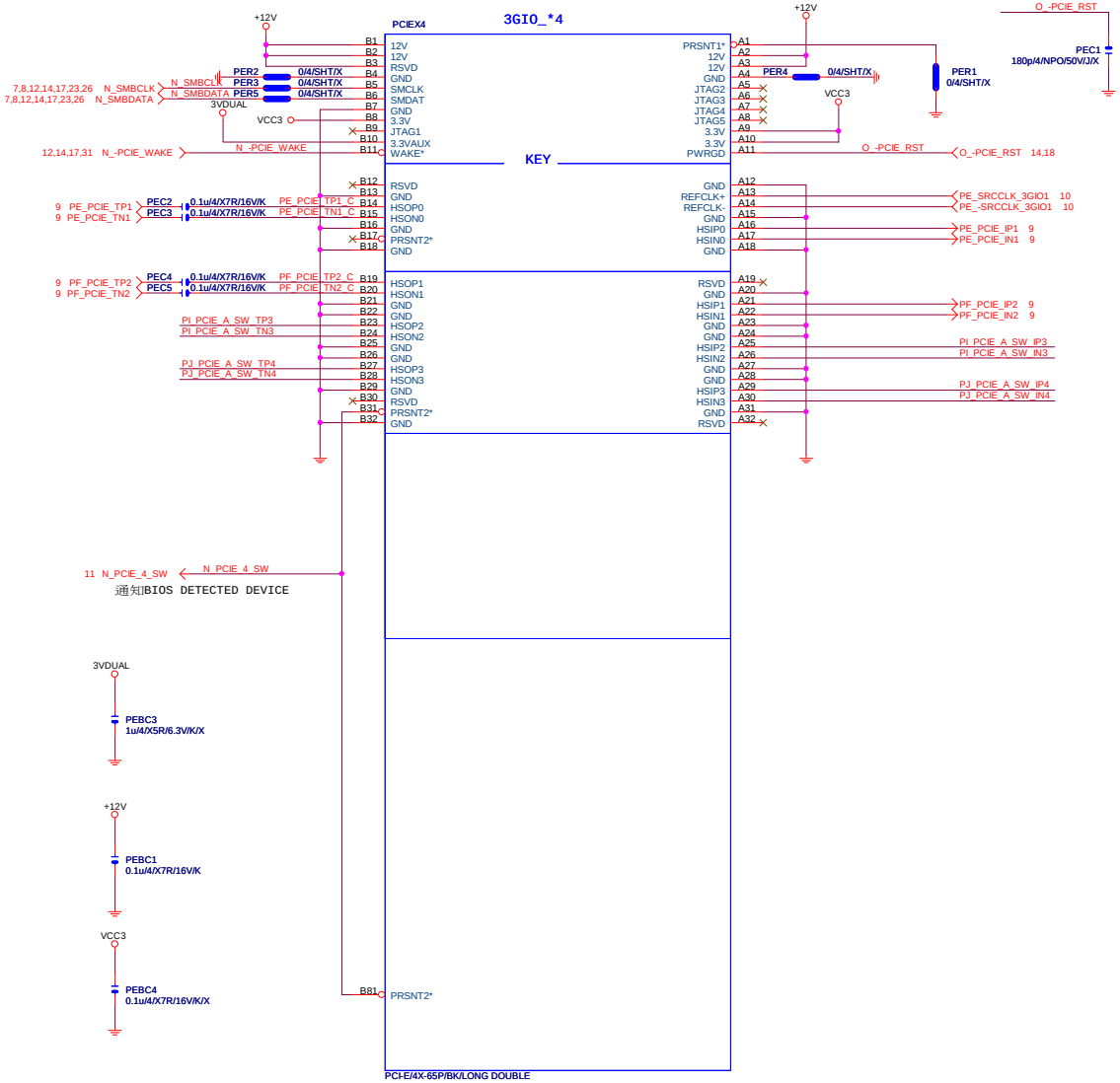
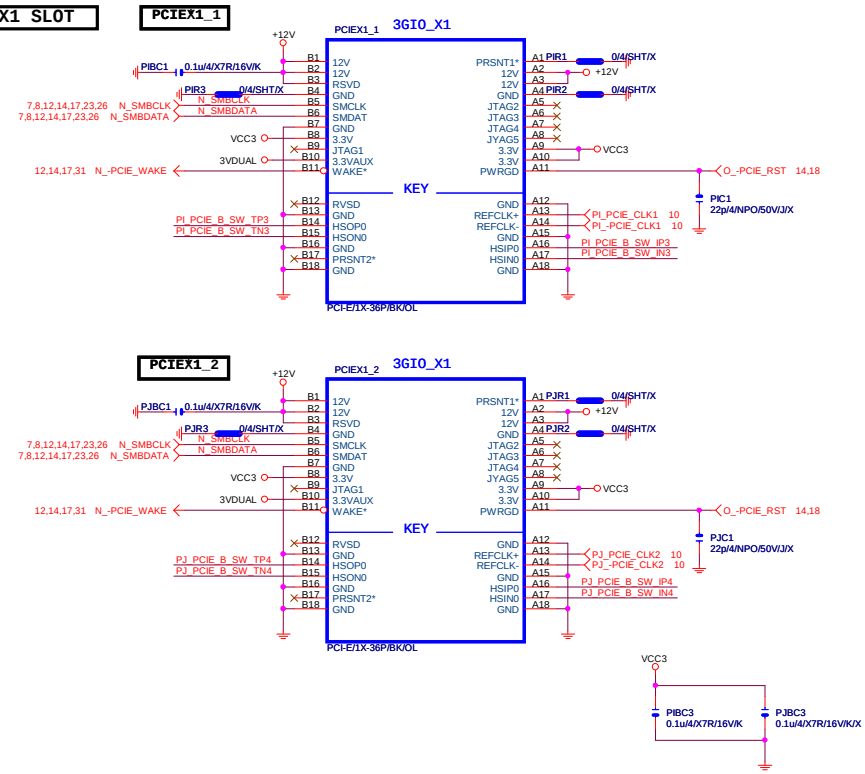
PCIEX4 SLOT

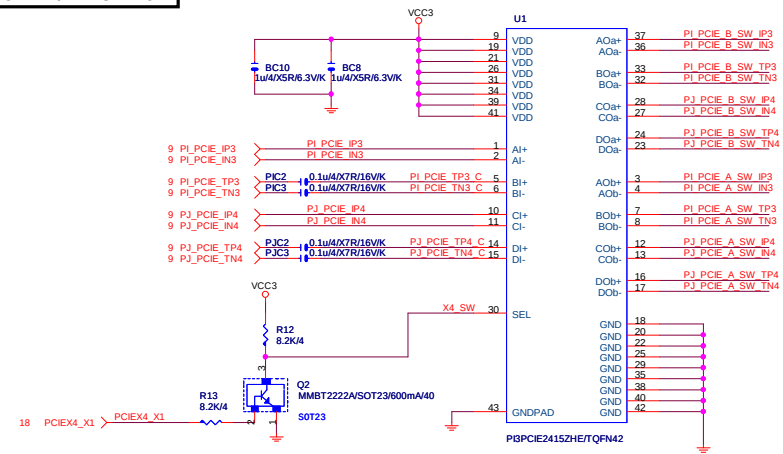


	N_PCIE_4_SW (PCH GPIO48)	PCIEX4_X1 (SIO_GPIO26)
PCIEX4 No devices	H	H
PCIEX4 -> X1	H	H
PCIEX4 Have devices	L	L
PCIEX4 -> X4	L	L
PCIEX1_1/2 --> N/A	L	L

PCIEX1 SLOT



PCIEX4/X1 SWITCH



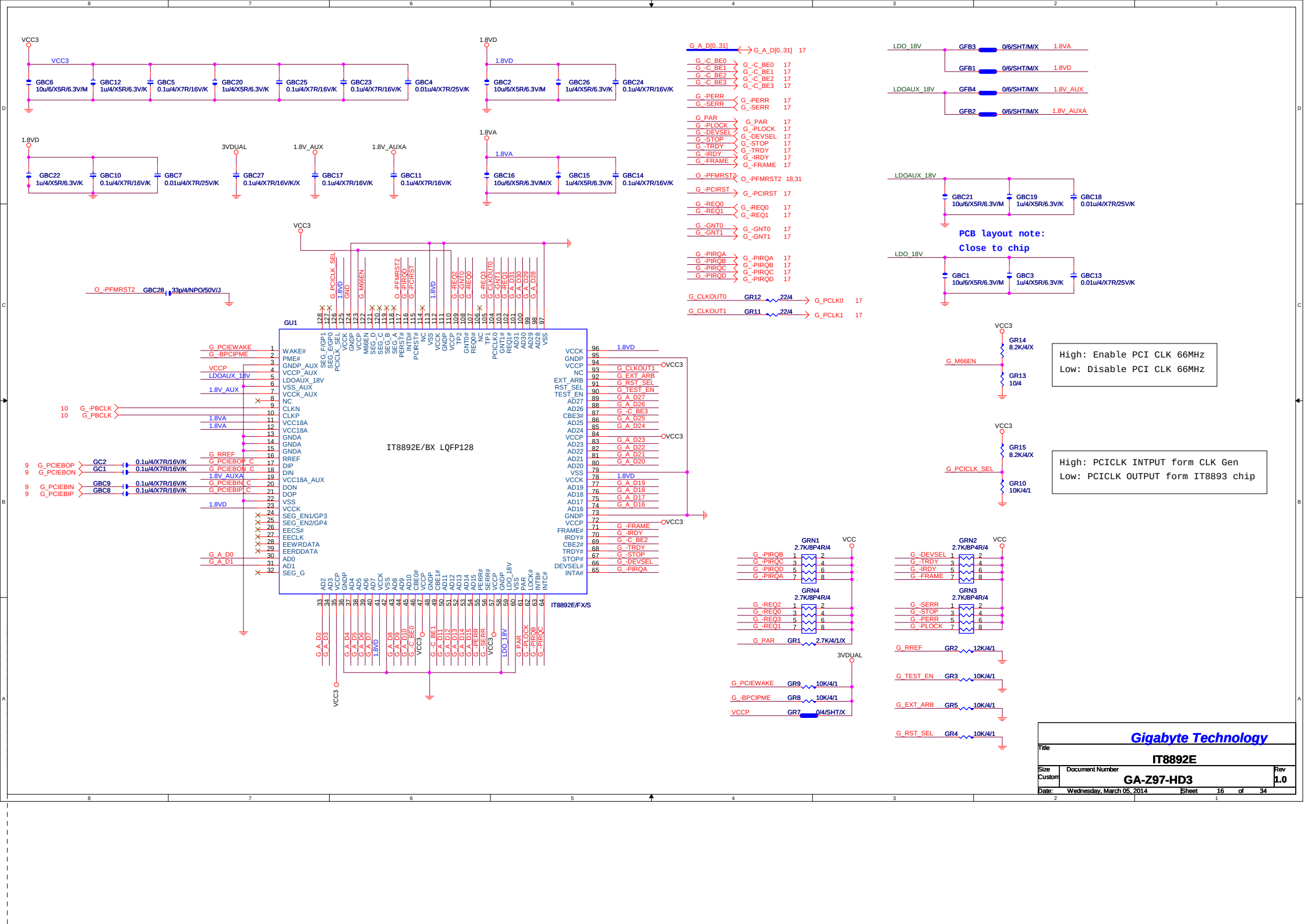
Function	SEL
xI--> x0a	L;PCIEX4 SLOT-->X1
xI--> x0b	H;PCIEX4 SLOT-->X4

Gigabyte Technology

Title: PCIE_X1 1,2,3

Size: Custom | Document Number: GA-Z97-HD3 | Rev: 1.0

Date: Wednesday, March 05, 2014 | Sheet 15 of 34


VCC3
GBC6 10u/6X5R/6.3V/M
GBC12 1u/4/5R/6.3V/K
GBC5 0.1u/4/X7R/16V/K
GBC20 1u/4/X5R/6.3V/K
GBC25 0.1u/4/X7R/16V/K
GBC23 0.1u/4/X7R/16V/K
GBC4 0.01u/4/X7R/25V/K
1.8VD
GBC2 10u/6X5R/6.3V/M
GBC26 1u/4/X5R/6.3V/K
GBC24 0.1u/4/X7R/16V/K
GBC22 1u/4/X5R/6.3V/K
GBC10 0.1u/4/X7R/16V/K
GBC7 0.01u/4/X7R/25V/K
3VDUAL
GBC27 0.1u/4/X7R/16V/K/X
1.8V_AUX
GBC17 0.1u/4/X7R/16V/K
1.8V_AUXA
GBC11 0.1u/4/X7R/16V/K
1.8VA
GBC16 10u/6X5R/6.3V/M/X
GBC15 1u/4/X5R/6.3V/K
GBC14 0.1u/4/X7R/16V/K
G_A_D[0..31]
G_-C_BE0
G_-C_BE1
G_-C_BE2
G_-C_BE3
G_-PERR
G_-SERR
G_PAR
G_-PLOCK
G_-DEVSEL
G_-STOP
G_-TRDY
G_-IRDY
G_-FRAME
O_-PFMRST2
G_-PCIRST
G_-REQ0
G_-REQ1
G_-GNT0
G_-GNT1
G_-PIRQA
G_-PIRQB
G_-PIRQC
G_-PIRQD
G_CLKOUT0
G_CLKOUT1
GR12 22/4
GR11 22/4
G_PCLK0
G_PCLK1
LDO_18V
GFB3 0/6/SHT/M/X 1.8VA
GFB1 0/6/SHT/M/X 1.8VD
LDOAUX_18V
GFB4 0/6/SHT/M/X 1.8V_AUX
GFB2 0/6/SHT/M/X 1.8V_AUXA
GBC21 10u/6X5R/6.3V/M
GBC19 1u/4/X5R/6.3V/K
GBC18 0.01u/4/X7R/25V/K
PCB layout note:
Close to chip
GBC1 10u/6X5R/6.3V/M
GBC3 1u/4/X5R/6.3V/K
GBC13 0.01u/4/X7R/25V/K
O_-PFMRST2
GBC28 33p/4/NPO/50V/J
GU1
IT8892E/BX LQFP128
IT8892E/F/X/S
G_PCIEWAKE
G_-BPCIPME
VCCP
LDOAUX_18V
1.8V_AUX
G_-PBCLK
G_PBCLK
1.8VA
G_RREF
G_PCIEBOP
G_PCIEBON
G_PCIEBIN
G_PCIEBIP
GC2 0.1u/4/X7R/16V/K
GC1 0.1u/4/X7R/16V/K
GBC9 0.1u/4/X7R/16V/K
GBC8 0.1u/4/X7R/16V/K
1.8V_AUXA
G_A_D0
G_A_D1
G_PCICLK_SEL
G_M66EN
G_-PFMRST2
G_-PCIRST
G_-REQ2
G_-GNT0
G_-REQ0
G_-REQ3
G_CLKOUT0
G_CLKOUT1
G_-REQ1
G_A_D31
G_A_D30
G_A_D29
G_A_D28
G_EXT_ARB
G_RST_SEL
G_TEST_EN
G_A_D27
G_A_D26
G_-C_BE3
G_A_D25
G_A_D24
G_A_D23
G_A_D22
G_A_D21
G_A_D20
G_A_D19
G_A_D18
G_A_D17
G_A_D16
G_-FRAME
G_-IRDY
G_-C_BE2
G_-TRDY
G_-STOP
G_-DEVSEL
G_-PIRQA
G_A_D2
G_A_D3
G_A_D4
G_A_D5
G_A_D6
G_A_D7
G_A_D8
G_A_D9
G_A_D10
G_-C_BE0
G_-C_BE1
G_A_D11
G_A_D12
G_A_D13
G_A_D14
G_A_D15
G_-PERR
G_-SERR
G_PAR
G_-PLOCK
G_-PIRQB
G_-PIRQC
GR14 8.2K/4/X
GR13 10/4
High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz
GR15 8.2K/4/X
GR10 10K/4/1
High: PCICLK INTPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip
GRN1 2.7K/8P4R/4
GRN4 2.7K/8P4R/4
GR1 2.7K/4/1/X
GRN2 2.7K/8P4R/4
GRN3 2.7K/8P4R/4
GR2 12K/4/1
GR3 10K/4/1
GR5 10K/4/1
GR4 10K/4/1
GR9 10K/4/1
GR8 10K/4/1
GR7 0/4/SHT/X
Gigabyte Technology
IT8892E
GA-Z97-HD3
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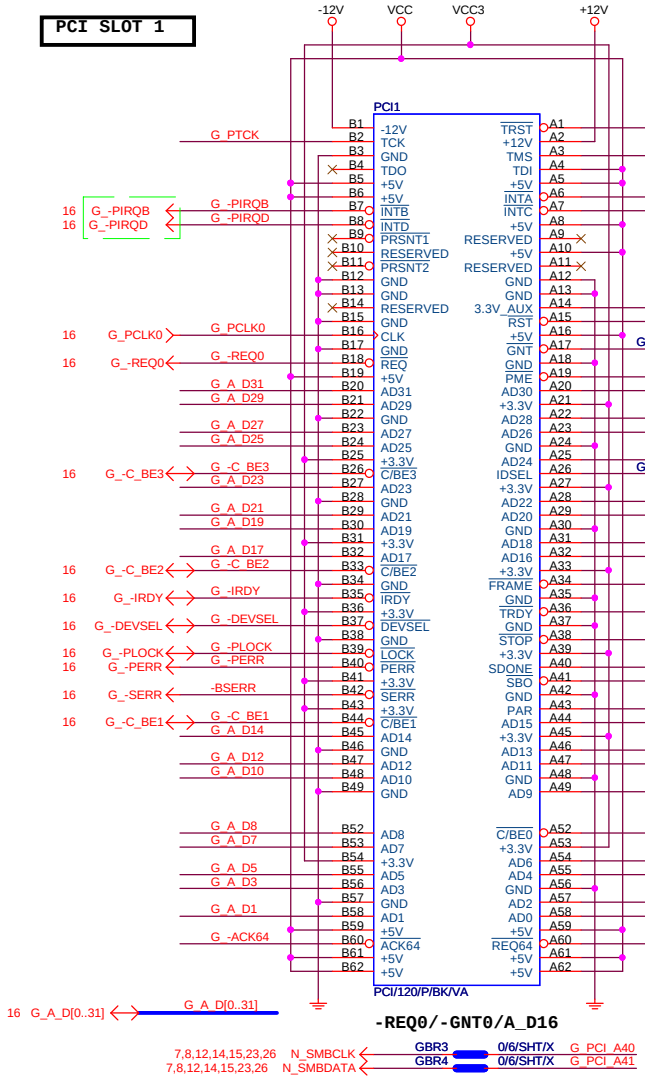
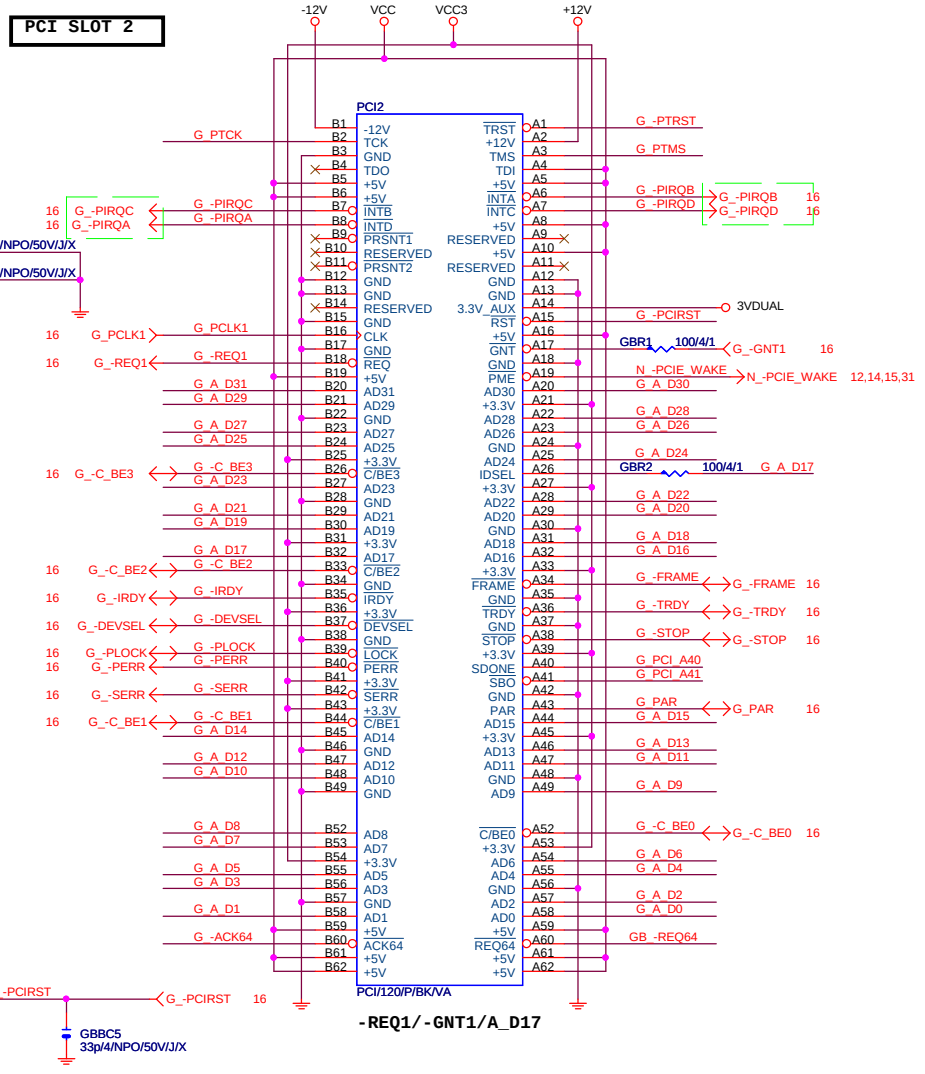
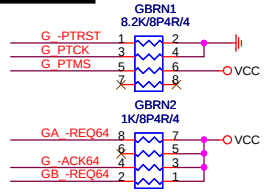
PCI SLOT 1



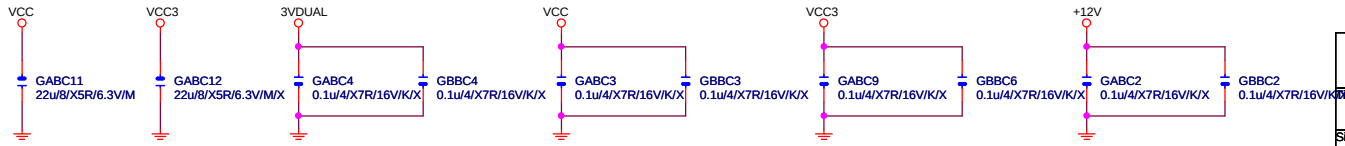
PCI SLOT 2



PCI PU



PCI CAP



GIGABYTE™

Title: PCI SLOT 1&2		
Size: Custom	Document Number: GA-Z97-HD3	Rev: 1.0
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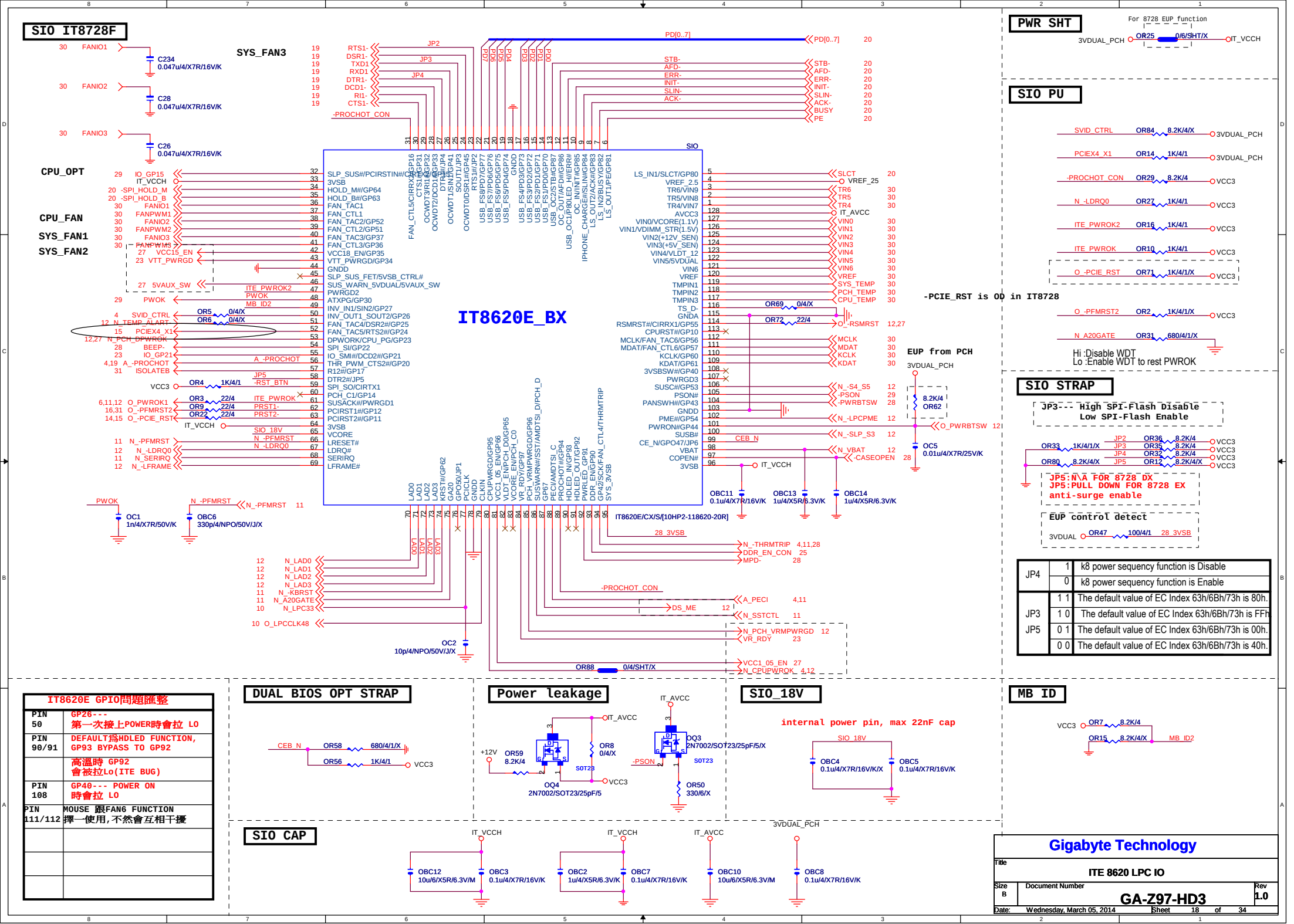
SIO IT8728F
SYS_FAN3
CPU_OPT
CPU_FAN
SYS_FAN1
SYS_FAN2
IT8620E_BX
SIO
IT8620E/CX/S/[10HP2-118620-20R]
-PCIE_RST is OD in IT8728
EUP from PCH
PWR SHT
SIO PU
SIO STRAP
JP3--- High SPI-Flash Disable
Low SPI-Flash Enable
JP5:N\A FOR 8728 DX
JP5:PULL DOWN FOR 8728 EX
anti-surge enable
EUP control detect
Hi :Disable WDT
Lo :Enable WDT to rest PWROK
JP4 1 k8 power sequency function is Disable
JP4 0 k8 power sequency function is Enable
JP3 JP5 1 1 The default value of EC Index 63h/6Bh/73h is 80h.
JP3 1 0 The default value of EC Index 63h/6Bh/73h is FFh
JP5 0 1 The default value of EC Index 63h/6Bh/73h is 00h.
JP5 0 0 The default value of EC Index 63h/6Bh/73h is 40h.
IT8620E GPIO問題匯整
PIN 50 GP26--- 第一次接上POWER時會拉 LO
PIN 90/91 DEFAULT爲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
Power leakage
SIO_18V
internal power pin, max 22nF cap
MB ID
SIO CAP
Gigabyte Technology
Title
ITE 8620 LPC IO
Size B
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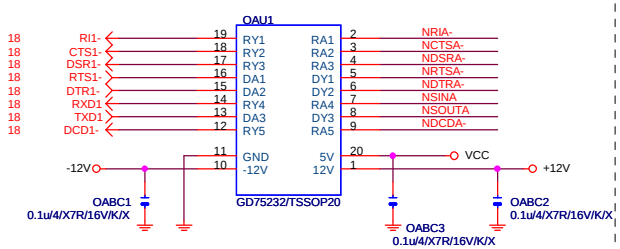
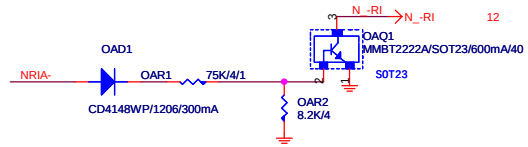
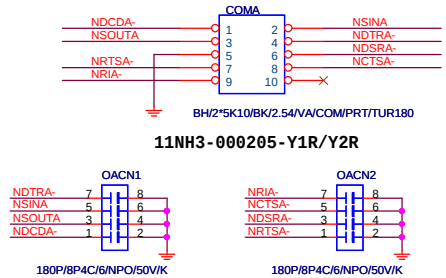
COMA



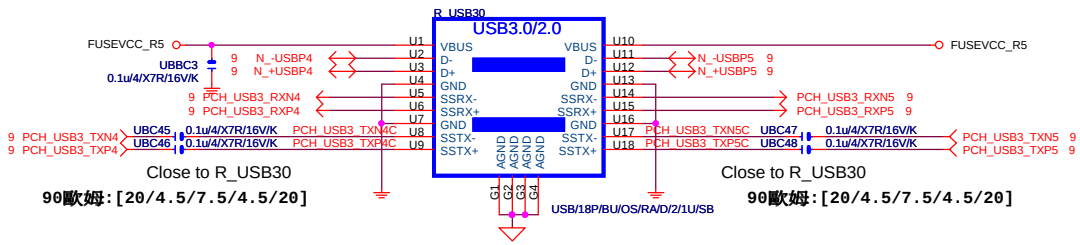
COM RI



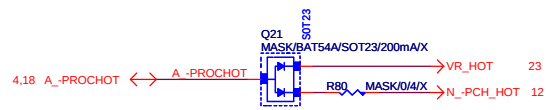
COM BUFFER



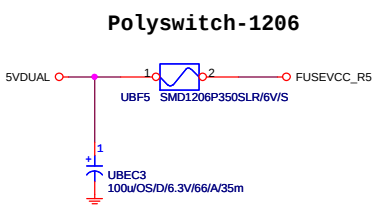
USB30_20 CONNECT



-PROHOT

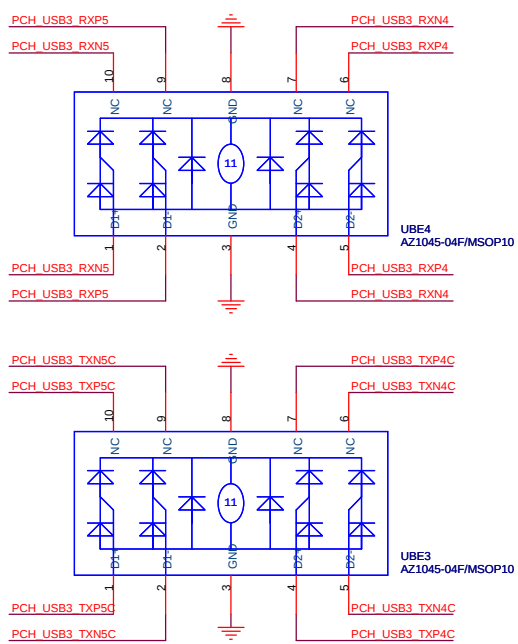


USB30 PWR

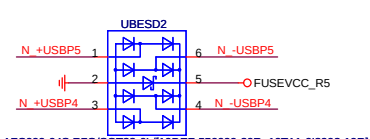


USB3.0 1Port - 1Fuse (3.5A)

USB30 ESD PROCTECT



USB20 ESD PROCTECT



CLOSE R_USB30

AMC099加強版

Thunderbolt pin header

Gigabyte Technology		
Title: COM/ PROHOT/ R_USB		
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DUAL BIOS

MOSI For DMI RX Termination Voltage

指定用DII

VCC3_ME
NR226 330/4/1
-SPI_CS_1
NR227 1K/4/1
NR228 0/4/X
NR239 0/4/X
-SPI_HOLD_M
NQ20 S0T23
N_-ICH_SPI_CS
NQ21 MMBT2222A/SOT23/600mA/40 S0T23
-SPI_HOLD_B NR229 8.2K/4

指定用DII

VCC3_ME
NR230 330/4/1
-SPI_CS_2
NR231 1K/4/1
NQ22 MMBT2222A/SOT23/600mA/40 S0T23
-SPI_HOLD_B NR234 1K/4/1/X
N_-ICH_SPI_CS
NQ23 MMBT2222A/SOT23/600mA/40 S0T23
-SPI_HOLD_M NR232 8.2K/4

M_BIOS
NR4 0/4/SHT/M/X
NBC2 1u/4/X5R/6.3V/K
NC1 10p/4/NPO/50V/J/X
-SPI_CS_1 NR7 22/4
SPI_MISO
SPI_DQ2 NR220 0/4/SHT/X N_-SPI_WP0
CS# VDD SO HOLD# WP# SCK VSS SI
-HOLD0 NR221 0/4/SHT/X NR222 8.2K/4/X -SPI_HOLD_M
SPI_DQ3 12
N_ICH_SPI_CLK
N_ICH_SPI_MOSI
NC2 10p/4/NPO/50V/J/X
MAIN BIOS
64M/Q/SPI/SO8/S

B_BIOS
NR12 0/4/SHT/M/X
NBC3 1u/4/X5R/6.3V/K
-SPI_CS_2 NR8 22/4
SPI_MISO
SPI_DQ2 NR233 0/4/SHT/X N_-SPI_WP1
-HOLD1 NR224 0/4/SHT/X NR225 8.2K/4/X -SPI_HOLD_B
SPI_DQ3 12
N_ICH_SPI_CLK
N_ICH_SPI_MOSI
BACKUP BIOS
64M/Q/SPI/SO8/S
NBC4 0.1u/4/X7R/16V/K

12 N_ICH_SPI_MOSI — N_ICH_SPI_MOSI NR10 8.2K/4/X
12 N_-ICH_SPI_CS — N_-ICH_SPI_CS NR9 8.2K/4/X
12 N_-ICH_SPI_CS1 — N_-ICH_SPI_CS1 NR246 8.2K/4/X
18 -SPI_HOLD_M — -SPI_HOLD_M NR3 1K/4/1
18 -SPI_HOLD_B — -SPI_HOLD_B NR11 1K/4/1

12 N_ICH_SPI_MISO — N_-SPI_WP1 NR2 8.2K/4/X; N_-SPI_WP0 NR1 8.2K/4/X; N_ICH_SPI_MISO NR5 8.2K/4; -HOLD0 NR235 1K/4/1/X; -HOLD1 NR236 1K/4/1/X
12 N_ICH_SPI_MISO — NR6 22/4 SPI_MISO

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

1 means floating
0 means PD 1K

LPT PORT

PRN5 68/8P4R/4
18 AFD- — AFD- 1 2 LPT14
18 STB- — STB- 3 4 LPT1
18 PD0 — PD0 5 6 LPT2
18 INIT- — INIT- 7 8 LPT16

18 ERR- — ERR-
18 ACK- — ACK-
18 BUSY — BUSY
18 PE — PE
18 SLCT — SLCT
18 PD[0..7] — PD[0..7]

PRN3 68/8P4R/4
18 SLIN- — PD1 1 SLIN- 3 PD2 5 PD3 7 — 2 LPT3 4 LPT17 6 LPT4 8 LPT5

PRN1 68/8P4R/4
PD4 1 PD5 3 PD6 5 PD7 7 — 2 LPT6 4 LPT7 6 LPT8 8 LPT9

D1 CD4148WP/1206/300mA
VCC
PBC2 0.1u/4/X7R/16V/K
PBC1 1u/6/X7R/16V/K/X

PRN2 2.2K/8P4R/4: 8 7 LPT5; 6 5 LPT4; 4 3 LPT17; 2 1 LPT3
PRN6 2.2K/8P4R/4: 8 7 LPT9; 6 5 LPT8; 4 3 LPT7; 2 1 LPT6
PRN4 2.2K/8P4R/4: 8 7 LPT16; 6 5 LPT2; 4 3 LPT1; 2 1 ERR-
PRN7 2.2K/8P4R/4: 8 7 SLCT; 6 5 PE; 4 3 BUSY; 2 1 ACK-
PR1 2.2K/4/1: LPT14

R&D技術通報151　有使用PRINT PORT的
MODEL，需使用新料號:10HP2-118728-72R 。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。 串電阻33 ohm改爲68 ohm。

LPT
LPT1 1 — 2 LPT14
LPT2 3 — 4 ERR-
LPT3 5 — 6 LPT16
LPT4 7 — 8 LPT17
LPT5 9 — 10
LPT6 11 — 12
LPT7 13 — 14
LPT8 15 — 16
LPT9 17 — 18
ACK- 19 — 20
BUSY 21 — 22
PE 23 — 24
SLCT 25 — 26
BH/2*13K24/BK/2.54/VA

M_BIOS
LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]/X

Gigabyte Technology

Title	BIOS	
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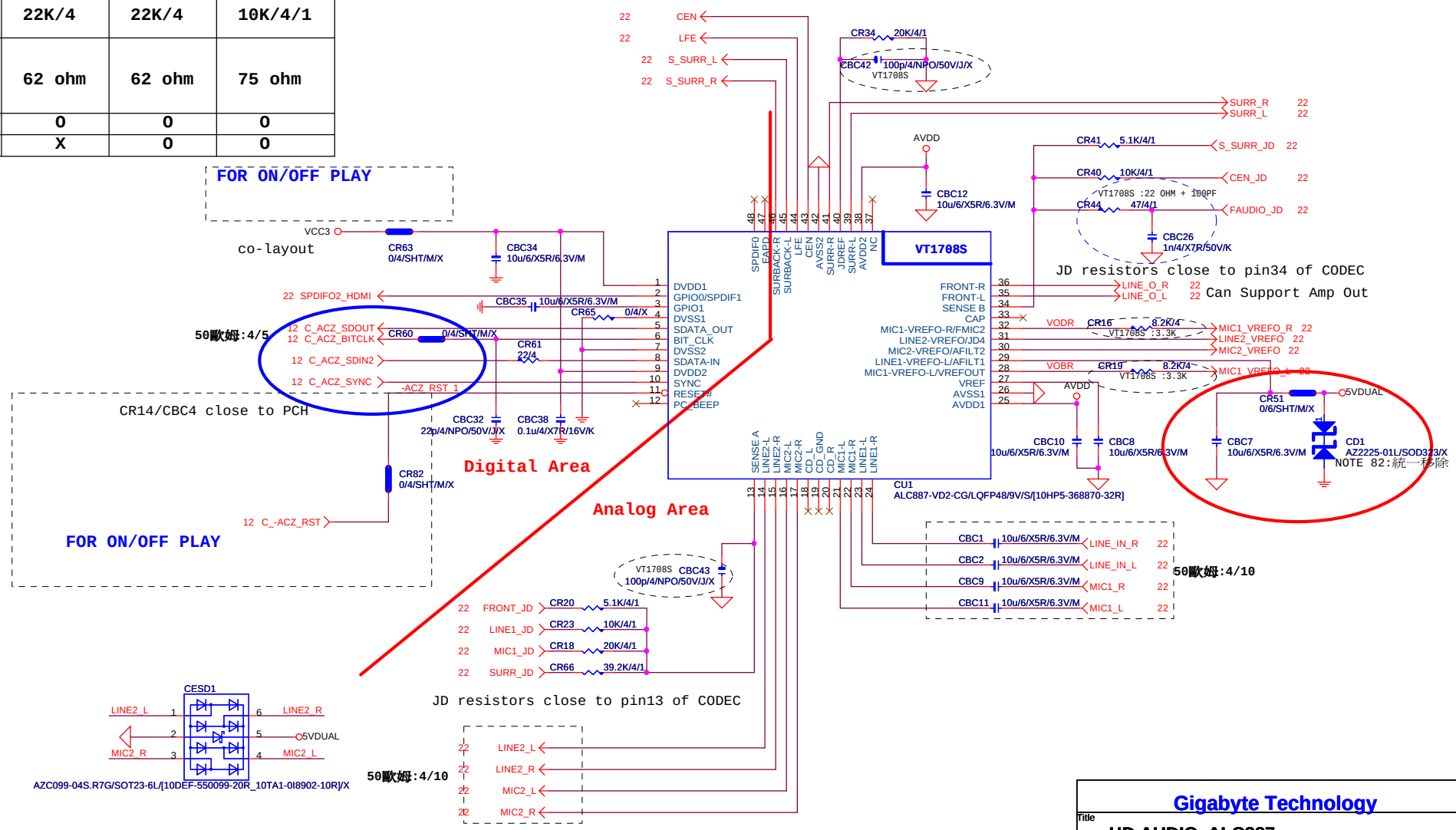
AZALIA CODEC

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
CR16/CR19 CR52/CR56/CR10/CR9	8.2K/4	8.2K/4	3.3K/4/1
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	X	0	0



Title	HD AUDIO ALC887
Size / Document Number	Custom / GA-Z97-HD3
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Gigabyte Technology

CR49 0/6/SHT/M/X → Close F_AUDIO

CR50 0/6/SHT/M/X → Close Codec

CR21 2.2/6 → Audio jack <--> USB_LAN

CR24 0/6/X → Under Audio jack

SPDIF_OUT

21 SPDIFO2_HDMI — CR26 0/4/SHT/M/X — SPDIF_O

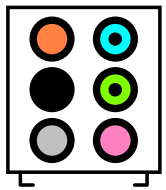
CBC14 100p/4/NPO/50V/J

PH/1*2/BK/2.54/VA/D

For HDMI SPDIF

SPDIF_IN

AZALIA JACK



AUDIOB

21 LINE1_JD — LINE1_JD — AJ_A5 — AJ_A2 — A3 A2 A4 A1 — GND — LINE-IN

21 FRONT_JD — FRONT_JD — AJ_B5 — AJ_B2 — B3 B2 B4 B1 — GND — LINE-OUT

21 MIC1_JD — MIC1_JD — AJ_C5 — AJ_C2 — C3 C2 C4 C1 C0 — GND — MIC-IN

2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

AZALIA JACK

BLUE LINE-IN

GREEN LINE-OUT

PINK MIC-IN

AUDIOA

21 CEN_JD — CEN_JD — BJ_B5 — BJ_B2 — D3 D2 D4 D1 — GND — REAR

21 SURR_JD — SURR_JD — BJ_C5 — BJ_C2 — E3 E2 E4 E1 — GND — CEN

21 S_SURR_JD — S_SURR_JD — BJ_A5 — BJ_A2 — F3 F2 F4 F1 F0 — GND — SIDE

G4 — G1 G2 G3

2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

Orange CEN/LFE

Black SURROUND

Gray SURROUND SIDE

LINE-OUT

21 LINE_O_R — CEC1 100u/OS/D/6.3V/66/A/35m — CR5 62/4

21 LINE_O_L — CEC2 100u/OS/D/6.3V/66/A/35m — CR8 62/4

CR7 22K/4 — CR6 22K/4 — AJ_B5 — AJ_B2

CBC19 180p/4/NPO/50V/J — CBC24 180p/4/NPO/50V/J

Only reserved for ALC888

LINE-IN

21 LINE_IN_R — CR1 62/4 — AJ_A5

21 LINE_IN_L — CR14 62/4 — AJ_A2

CBC20 180p/4/NPO/50V/J — CBC23 180p/4/NPO/50V/J

Verify MIC function in LINE-in

For 889A/888

MIC-IN

21 MIC1_R — CR17 62/4 — AJ_C5

21 MIC1_L — CR22 62/4 — AJ_C2

21 MIC1_VREFO_L

21 MIC1_VREFO_R

CBC3 180p/4/NPO/50V/J — CBC4 180p/4/NPO/50V/J

SURROUND

21 SURR_R — CEC10 100u/OS/D/6.3V/66/A/35m — CR73 62/4

21 SURR_L — CEC11 100u/OS/D/6.3V/66/A/35m — CR74 62/4

CR67 22K/4 — CR68 22K/4 — BJ_C5 — BJ_C2

CBC44 180p/4/NPO/50V/J — CBC45 180p/4/NPO/50V/J

CEN/LFE

21 LFE — CEC12 100u/OS/D/6.3V/66/A/35m — CR75 62/4

21 CEN — CEC13 100u/OS/D/6.3V/66/A/35m — CR76 62/4

CR69 22K/4 — CR70 22K/4 — BJ_B5 — BJ_B2

CBC46 180p/4/NPO/50V/J — CBC47 180p/4/NPO/50V/J

SURR BACK

EMI

21 S_SURR_R — CEC8 100u/OS/D/6.3V/66/A/35m — CR25 62/4

21 S_SURR_L — CEC4 100u/OS/D/6.3V/66/A/35m — CR47 62/4

CR43 22K/4 — CR27 22K/4 — BJ_A5 — BJ_A2

CBC33 180p/4/NPO/50V/J — CBC31 180p/4/NPO/50V/J

AZALIA FRONT PANEL

CQ4 BAT54A/SOT23/200mA — SOT23

21 LINE2_VREFO — CR52 8.2K/4 — CR56 8.2K/4

CQ2 BAT54A/SOT23/200mA — SOT23

21 MIC2_VREFO — CR10 8.2K/4 — CR9 8.2K/4

VT1708S :3.3K

VCC3 — CR78 8.2K/4/X

CR58 22K/4 — CR54 22K/4

F_AUDIO

21 MIC2_L — CBC6 10u/6/X5R/6.3V/M — CR13 62/4 — M2_L

21 MIC2_R — CBC5 10u/6/X5R/6.3V/M — CR11 62/4 — M2_R

L2_R — CR57 62/4 — L2-R

21 FAUDIO_JD

L2_L — CR53 62/4 — L2-L

CR55 20K/4/1 — CR59 39.2K/4/1

BH/2*5K8/BK/2.54/VA/AUDIO/PRT/TUR180

CR12 0/4/X

100u/OS/D/6.3V/66/A/35m

21 LINE2_R — CEC9 — L2_R

21 LINE2_L — CEC6 — L2_L

100u/OS/D/6.3V/66/A/35m

CBC30 180p/4/NPO/50V/J — CBC29 180p/4/NPO/50V/J — CBC37 180p/4/NPO/50V/J — CBC36 180p/4/NPO/50V/J

Gigabyte Technology

Title: AUDIO JACK

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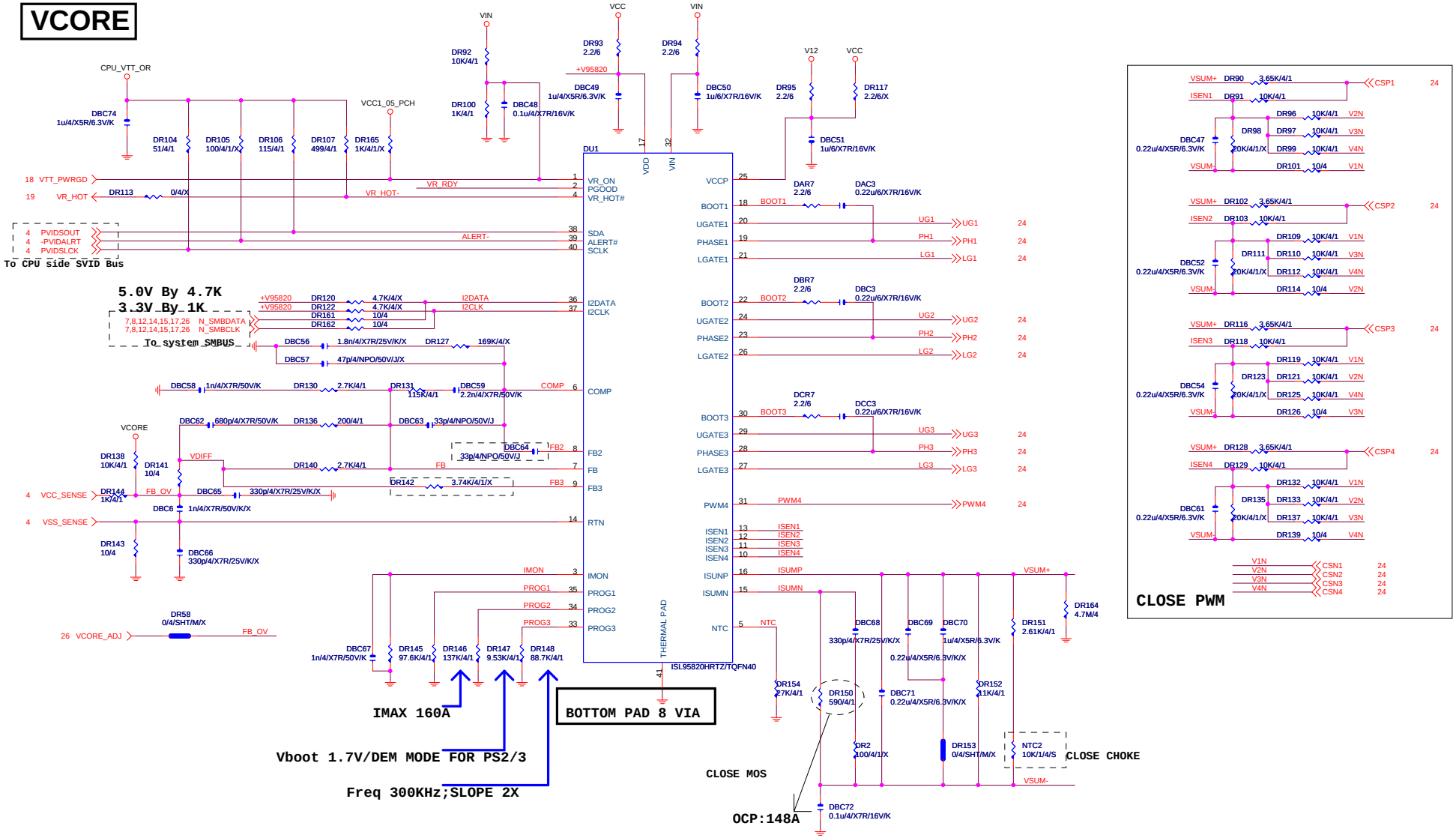
VCORE



Title	Gigabyte Technology
	VCORE_ ISL95820
Size	Custom
Document Number	GA-Z97-HD3
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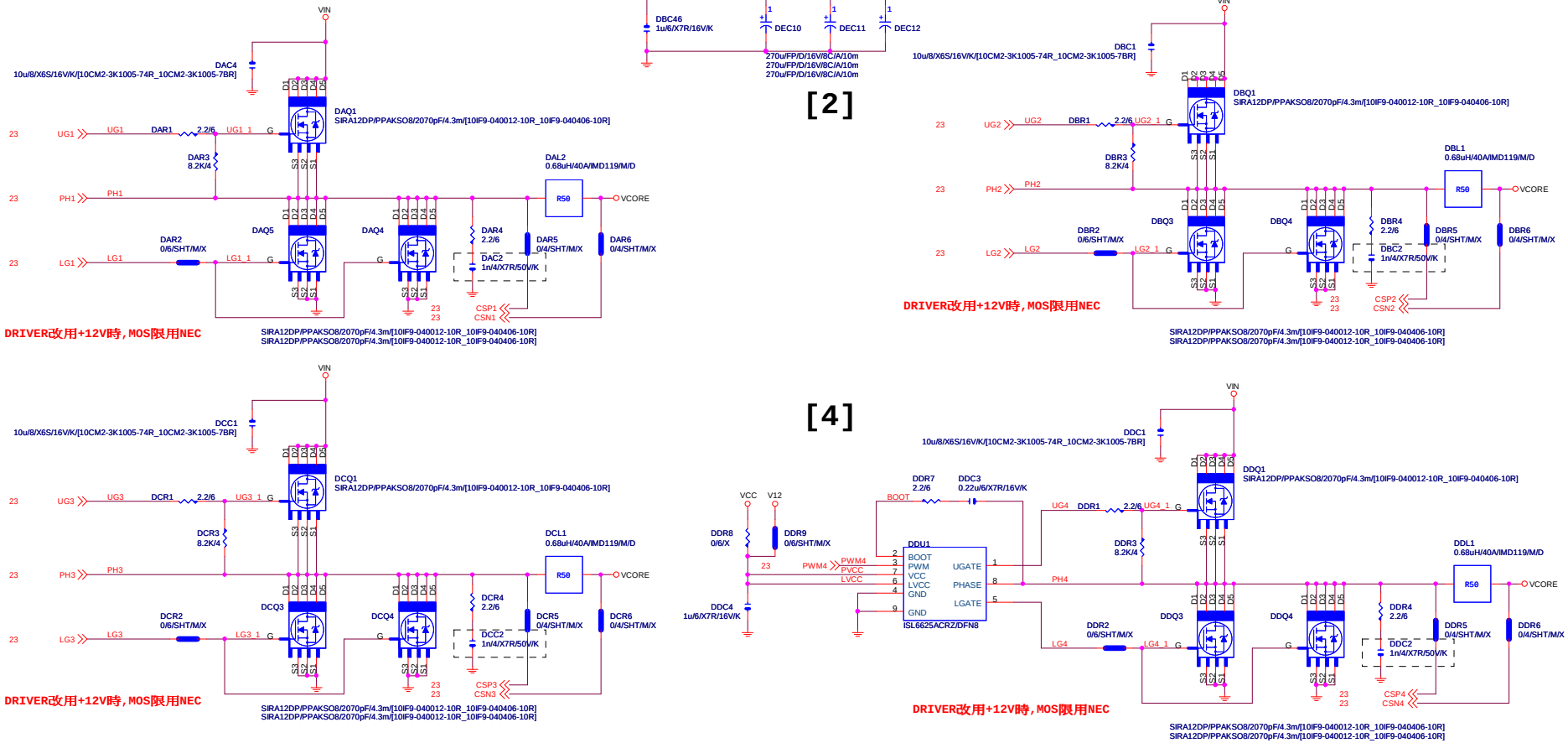
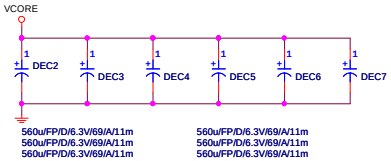
VCORE



MOSFET HEATSINK



Gigabyte Technology			
Title	ISL95820_2		
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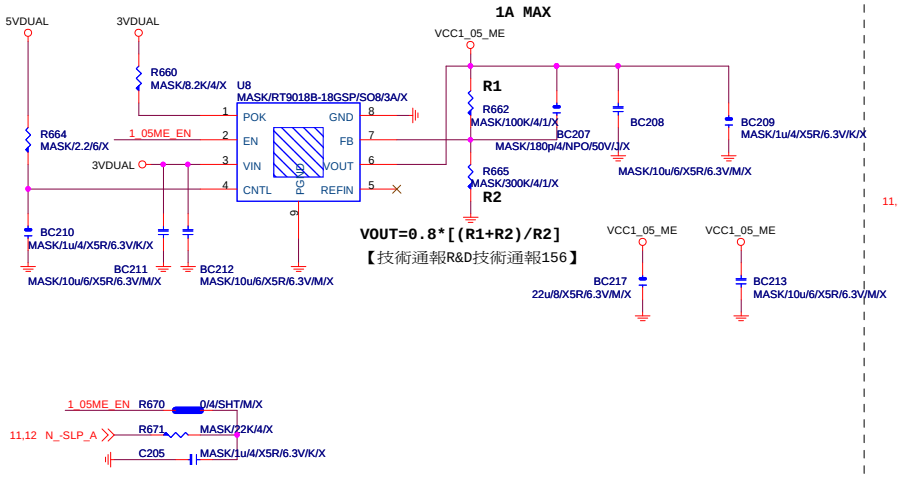
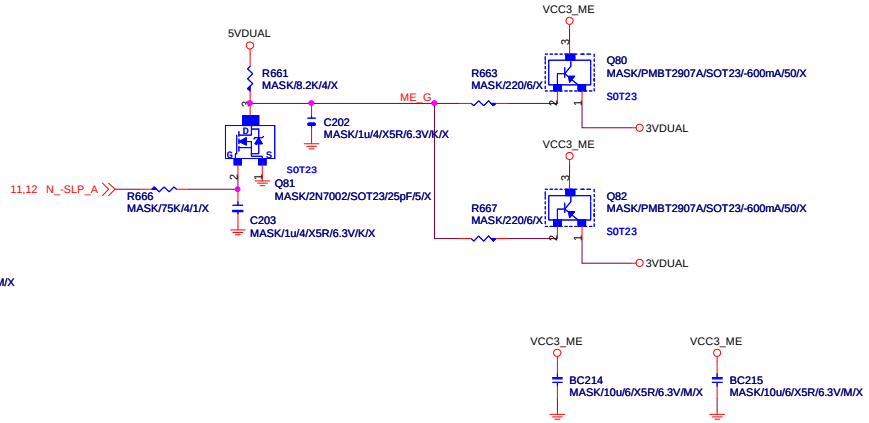
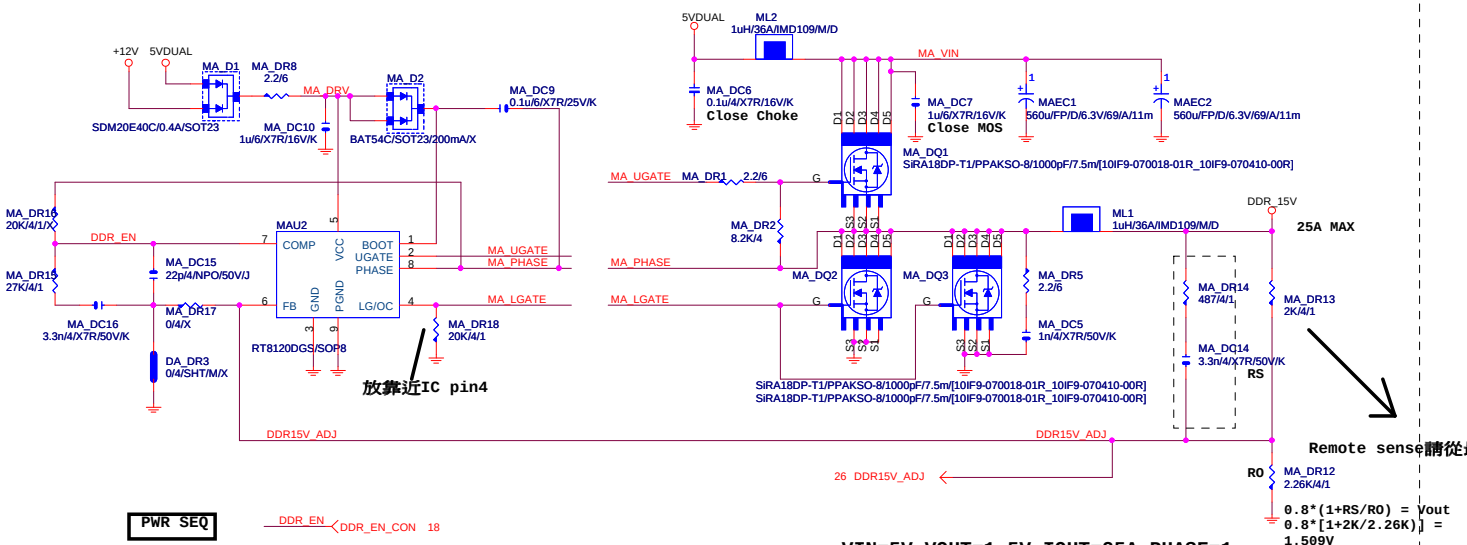
VCC1_05_ME



VCC3_ME



DDR_15V



PWR SEQ

DDR_EN DDR_EN_CON 18

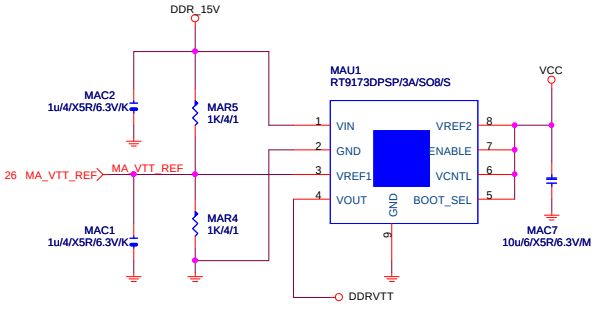
VIN=5V,VOUT=1.5V,IOUT=25A,PHASE=1
IRMS=11.45A

560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
Coefficient=1.7(85℃),1(105℃)

VIN Ripple current=4.7X1.7=7.99A(85℃)
-->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]

DDRVTT



GIGABYTE		
Title: DDR15V / M3 POWER		
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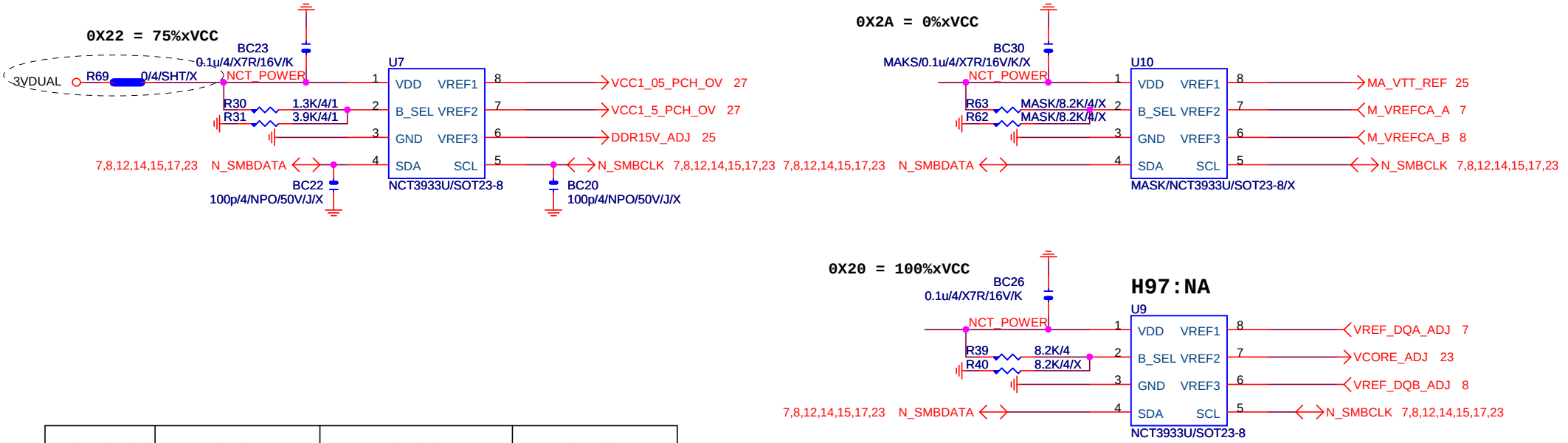
OVER VOLTAGE



NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

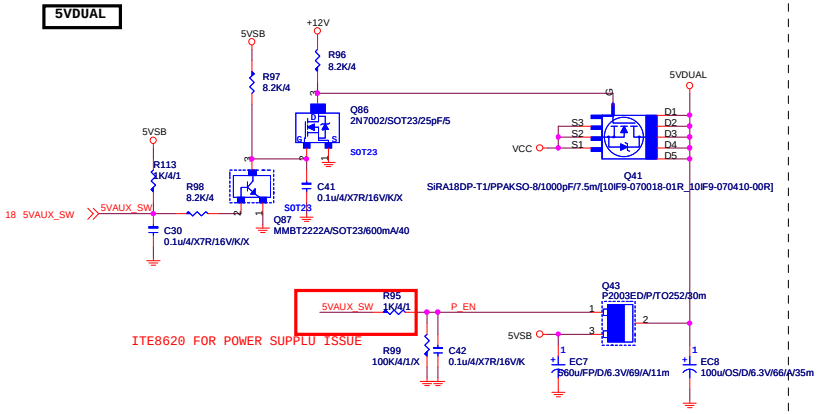
Gigabyte Technology

Title: CPU CORE VR-2

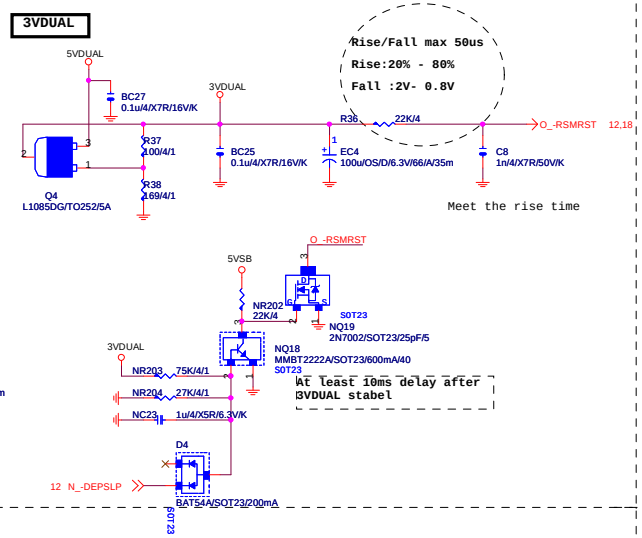
Size: Custom | Document Number: GA-Z97-HD3 | Rev: 1.0

Date: Wednesday, March 05, 2014 | Sheet 26 of 34

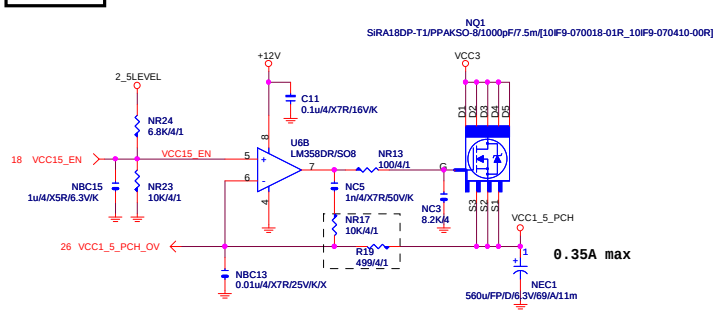
5VDUAL



3VDUAL



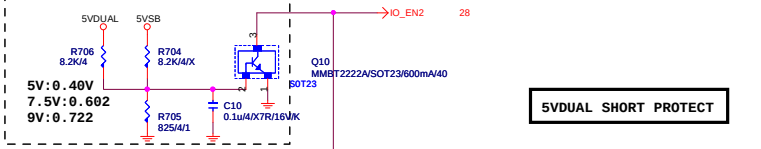
VCC1_5_PCH



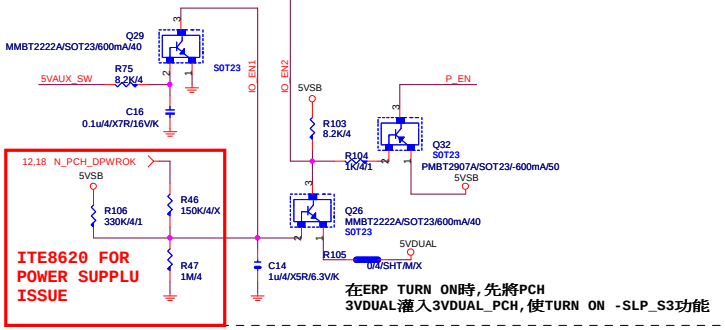
5VSB OVP:7.5V protection

NOTE 82:改5V DUAL,6v保護

5V:0.40V
7.5V:0.602
9V:0.722



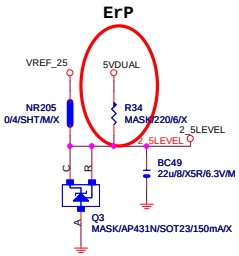
5VDUAL SHORT PROTECT



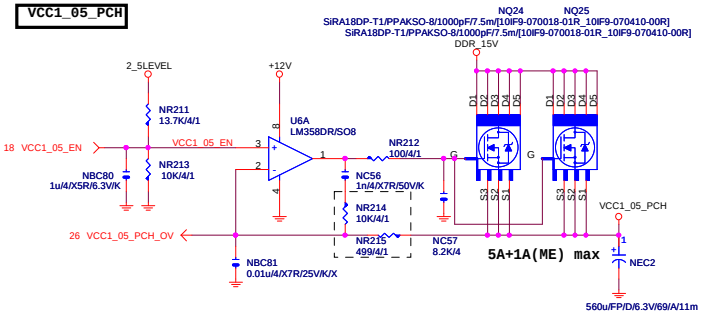
在ERP TURN ON時,先將PCH 3VDUAL灌入3VDUAL_PCH,使TURN ON -SLP_S3功能

PCH ERP

2_5LEVEL



VCC1_05_PCH



PWR SEQ

Gigabyte Technology			
Title: **DISCRETE POWER**			
Size: Custom	Document Number: **GA-Z97-HD3**		Rev: **1.0**
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Front USB3.0

F_USB30 REV=1

BH/2*10K20/BK/ON/2.0/VA/D/GF

F_USB30 PWR

UAFB1 SMD1206P350SLR/6V/S

UAEC3 100u/OS/D/6.3V/66/A/35m

F_USB30 ESD PROTECT

HCBE2 AZ1065-06Q/MSOP8L

Close to connector

HCBE1 AZ1065-06Q/MSOP8L

SATA LED

MMBT2222A/SOT23/600mA/40

SPKR

FPD1 CD4148WP/1206/300mA

To disable TCO timer

FPQ6 MMBT2222A/SOT23/600mA/40

FPQ5 MMBT2222A/SOT23/600mA/40

FPQ7 2N7002/SOT23/25pF/5

FRONT USB1

F_USB1

BH/2*5K9/BK/ON/2.54/VA/USB/PRT/TUR180

UAESD1 AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

Close to connector

UAF1 SPR-P200T/6V/8/S

UAEC1 100u/OS/D/6.3V/66/A/35m

FRONT USB2

F_USB2

BH/2*5K9/BK/ON/2.54/VA/USB/PRT/TUR180

UAESD2 AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

Close to connector

AMC099加強版

UAF3 SPR-P200T/6V/8/S

FRONT USB3

F_USB3

BH/2*5K9/BK/ON/2.54/VA/USB/PRT/TUR180

UAESD3 AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

AMC099加強版

UAF5 SPR-P200T/6V/8/S

INTEL FRONT PANEL

F_PANEL

BH/2*10K10,12,13/BK/2.54/VA/PA

FPESD1 AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

CASE OPEN

FPBC4 0.01u/4/X7R/25V/K

-USBOC_F

UAD1 BAT54A/SOT23/200mA

UAD2 BAT54A/SOT23/200mA

F_USB POWER PROTECT

UAD5 BAT54A/SOT23/200mA

USB2.0 Signal & power short protection

USB2.0 Signal > 4.85V

Enable --> 3VDUAL=3.5V

(開機短路保護)

(關機短路保護)

UAQ1 MASK/2N7002/SOT23/25pF/5/X

UAQ2 MASK/2N7002/SOT23/25pF/5/X

UAU1A MASK/LM358DR/SO8/X

UAU1B MASK/LM358DR/SO8/X

Gigabyte Technology	
Title	FP,F_USB,USB PWR,BZ
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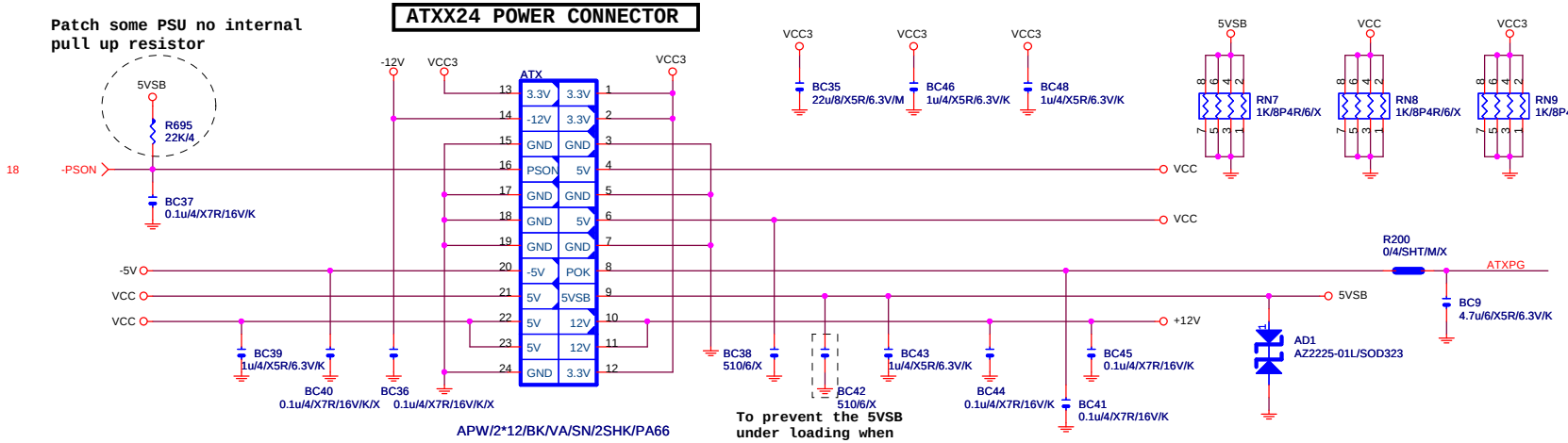
ATXX24 POWER CONNECTOR

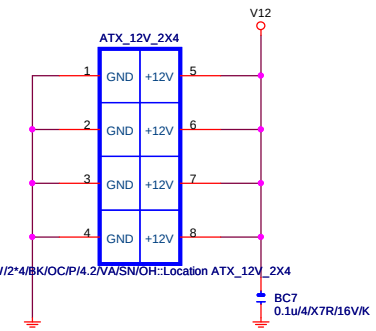
Patch some PSU no internal pull up resistor



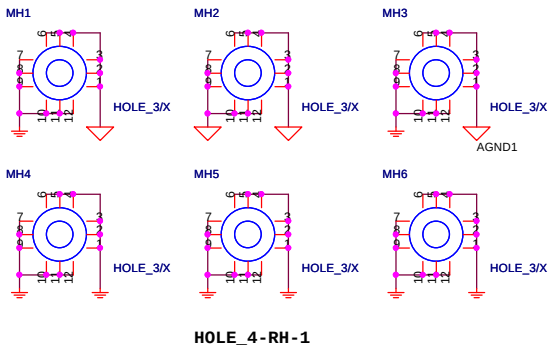
APW/2*12/BK/VA/SN/2SHK/PA66

To prevent the 5VSB under loading when boot

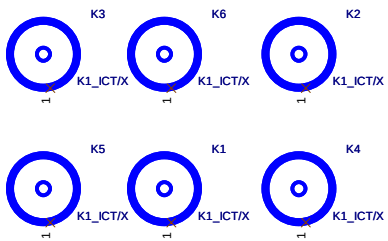
ATXX4 POWER CONNECTOR



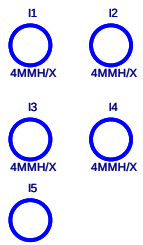
APW/2*4/BK/OC/P/4.2/VA/SN/OH::Location ATX_12V_2X4



HOLE_4-RH-1



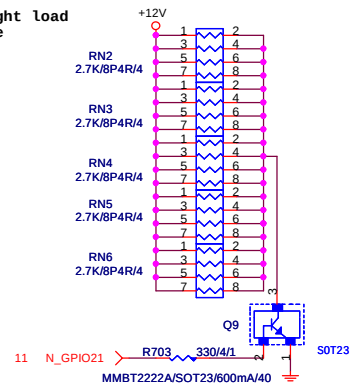
K1-ICT



4MMH

【技術通報R&D技術通報153】

To fix 12V light load abnromal issue



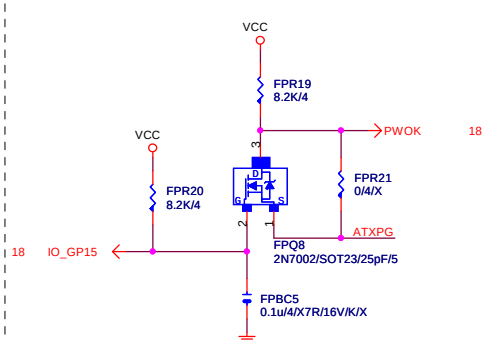
CLK GEN

CPU Frequency Selection

FSLB	FSLA	CPU
0	0	100M <Default>
0	1	133M
1	0	200M
1	1	166M

PWOK PATCH

【技術通報R&D技術通報154】



Gigabyte Technology

Title: ATX POWER CONNECTOR

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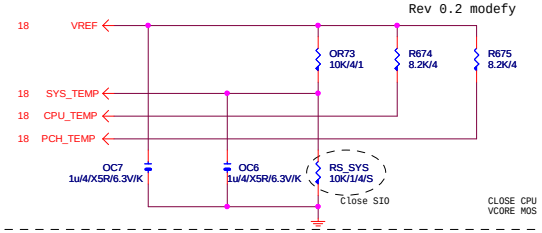
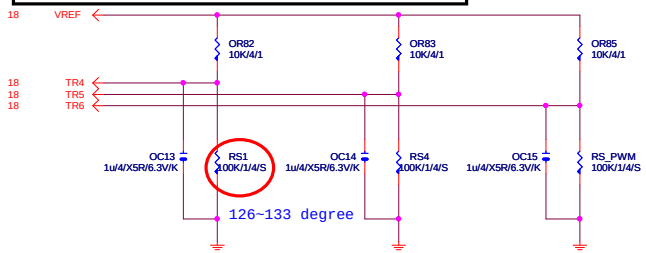
TEMP H/W MONITOR

Rev 0.2 modefy



-PROCHOT:有mos heartsink不用prochot function

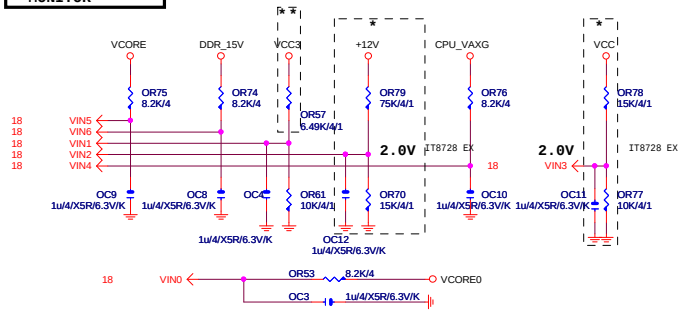


RS1、RS2、RS3 CLOSE CPU VR MOSFET

VOLTAGE-- H/W MONITOR

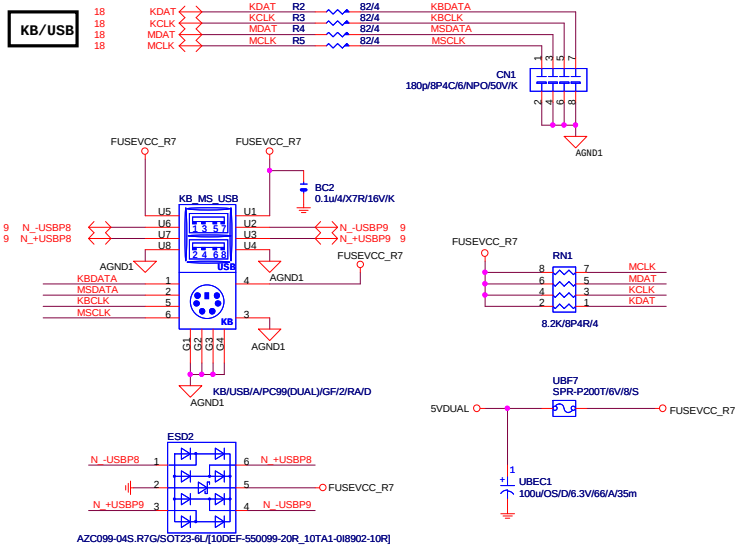
* IT8728 BX
* * IT8728 CX

VIN2 must +12V input
VIN3 must VCC input

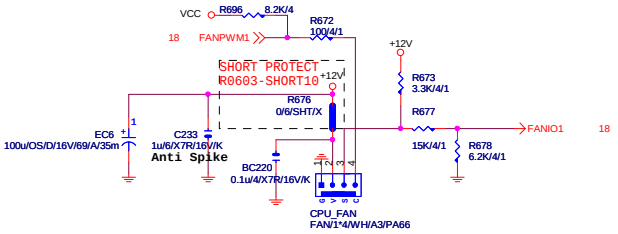


The division voltage of VIN2 & VIN3 must be around 2.9V

KB/USB



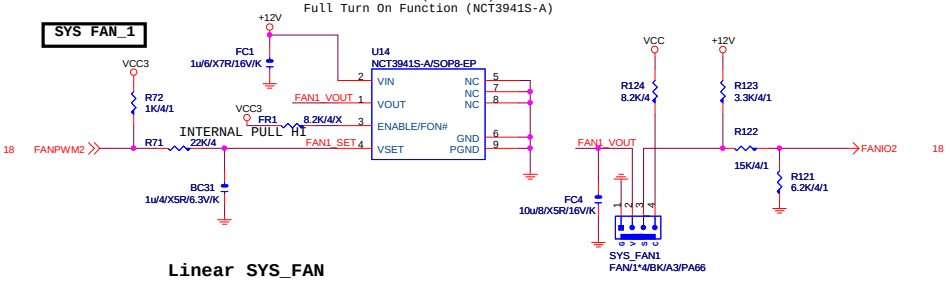
CPU SMART FAN



Linear SYS_FAN

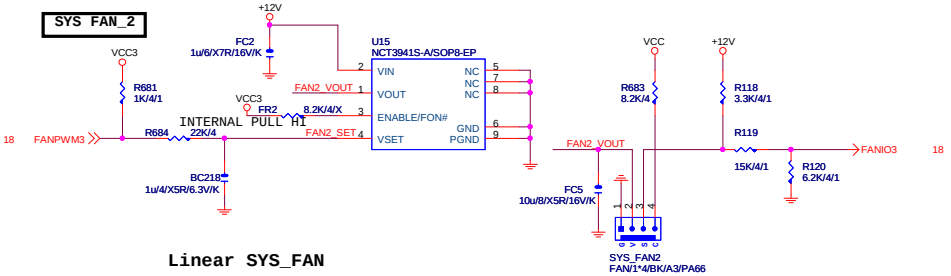
Enable Function (NCT3941S)
Full Turn On Function (NCT3941S-A)

SYS FAN_1



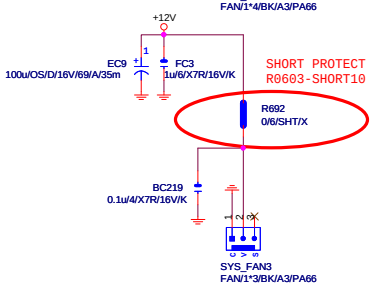
Linear SYS_FAN

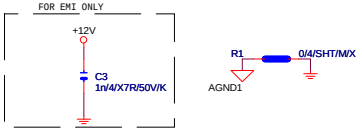
SYS FAN_2



Linear SYS_FAN

SYS FAN_3





Gigabyte Technology	
Title	HWM,KB/MS, FAN CTRL
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LAN:INTEL I217

VDD33
LR12 1K/4/1
LR18 2.49K/4/1
FOR DSM MODE
(DEEP SLUMBER MODE)
VDD33
LR16 0/6/SHT/M/X
ENABLE SW
ENSWREG

Dual Color LED
D4 D3 Green
D4 D3 Orange

Single Color LED
D2 D1 Yellow

LU1
100歐姆:[20/4/8/4/20]

GND
MDIP0 MDIN0 AVDD10 MDIP1 MDIN1 AVDD10(NC) MDIP2(NC) MDIN2(NC) AVDD10(NC) MDIP3(NC) MDIN3(NC) AVDD33(NC)
LB_MDI0+ LB_MDI0- DVDD10 LB_MDI1+ LB_MDI1- DVDD10 LB_MDI2+ LB_MDI2- DVDD10 LB_MDI3+ LB_MDI3- VDD33
REGOUT VDDREG VDDREG ENSWREG EEDI LED3/EEDO EECS DVDD10 LANWAKEB DVDD33 ISOLATEB PERSTB
REGOUT AVDD33_REG
ENSWREG
LR13 8.2K/4 LB_LED_LINK1000
LR6 8.2K/4
N_-PCIE_WAKE
VDD33
ISOLATEB
O_-PFMRST2
LR15 1/6
LBC23 0.1u/4/X7R/16V/K
LBC24 22u/8/X5R/6.3V/M
VCC3
LR4 1K/4/1
LR5 15K/4/1
LBC2 100p/4/NPO/50V/J
RTL8111F-VL-CG/QFN48

XTALI_P XTALO_P
LX1 25M/16p/30ppm/49US/20/D
LC3 20p/4/NPO/50V/J
LC4 20p/4/NPO/50V/J

80歐姆:[15/5/5/5/15]
LB_ML_OP LB_ML_ON LB_SRCCLK_LAN LB_-SRCCLK_LAN LB_ML_IP LB_ML_IN
LBC12 LBC16 LBC6 LBC8 0.1u/4/X7R/16V/K
LB_RP LB_RN LB_TP LB_TN
離IC近越好
SRCCLK 50歐姆:[18/4/10/4/18]

P35-152-19W9
U4 U3 U2 U1 U8 U7 U6 U5 (-,+)
L1 L3 L5 L7 L9 L2 L4 L6 L8 L10
D1 D2 D3 D4
YELLOW ORANGE GREEN

3VDUAL VDD33
LBC29 22u/8/X5R/6.3V/M
LBC7 LBC17 LBC15 LBC4 LBC22 0.1u/4/X7R/16V/K
LBC14 0.1u/4/X7R/16V/K
(CLOSE LU1)

DVDD10
LBC11 LBC10 LBC13 LBC5 LBC19 LBC18 0.1u/4/X7R/16V/K
LBC9 0.1u/4/X7R/16V/K
(PIN3,6,9,13,29,41,45)

LL1 4.7uH/1210/1250mA/0.1/S
REGOUT
CLOSE LL2
DVDD10
LBC20 22u/8/X5R/6.3V/M
LBC21 0.1u/4/X7R/16V/K
EVDD10
LFB1 0/6/SHT/M/X EVDD10
LBC3 1u/4/X5R/6.3V/K
LBC1 0.1u/4/X7R/16V/K
(PIN21)

USB30_LAN CONNECTOR

LBESD1 LB_LED_LINK100 LB_D2 LB_D2_1 LB_LED_LINK1000 LB_LED_ACT_TXRX
MASK/AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]/X

LBESD2 LB_MDI1- LB_MDI1+ LB_MDI0+ LB_MDI0- FUSEVCC_R1
AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

LBESD3 LB_MDI3- LB_MDI3+ LB_MDI2+ LB_MDI2- FUSEVCC_R1
AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

UBESD1 N_+USBP3 N_-USBP3 N_-USBP2 N_+USBP2 FUSEVCC_R1
AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

CLOSE USB30_LAN

100歐姆:[20/4/8/4/20]
USB30_LAN
USB3+LAN/1G/GO,Y/OS/RA/D/G30/[11NR6-702009-K1R_11NR6-702009-K4R]
1u/4/X5R/6.3V/K/X LBC25
LB_MDI0+ LB_MDI0- LB_MDI1+ LB_MDI1- LB_MDI2+ LB_MDI2- LB_MDI3+ LB_MDI3-
0.1u/4/X7R/16V/K LBC26
FUSEVCC_R1
N_-USBP2 N_+USBP2
PCH_USB3_RXN2 PCH_USB3_RXP2
PCH_USB3_TXN2 PCH_USB3_TXP2
UBC5 UBC6 0.1u/4/X7R/16V/K
PCH_USB3_TXN2C PCH_USB3_TXP2C
LB_LED_ACT_TXRX LB_D2 LB_LED_LINK100 LB_LED_LINK1000
3VDUAL
LR10 150/6/1 LB_D2_1
90歐姆:[15/4.5/7.5/4.5/15]
FUSEVCC_R1
LBC30 0.1u/4/X7R/16V/K
N_-USBP3 N_+USBP3
PCH_USB3_RXN3 PCH_USB3_RXP3
PCH_USB3_TXN3C PCH_USB3_TXP3C UBC8 UBC7 0.1u/4/X7R/16V/K
PCH_USB3_TXN3 PCH_USB3_TXP3
5VDUAL FUSEVCC_R1
UBF10 SMD1206P350SLR/6V/S

CLOSE USB30_LAN
PCH_USB3_RXP3 PCH_USB3_RXN3 PCH_USB3_TXN3C PCH_USB3_TXP3C
UBE1 AZ1045-04F/MSOP10
PCH_USB3_RXP2 PCH_USB3_RXN2 PCH_USB3_TXP2C PCH_USB3_TXN2C
UBE2 AZ1045-04F/MSOP10

-USBOC_R
SOT23
FUSEVCC_R1 FUSEVCC_R5
UBD1 BAT54A/SOT23/200mA
FUSEVCC_R7
UBR7 8.2K/4
N_-USBOC_R N_-USBOC_R 9,28
UBR9 15K/4/1

LR1 0/4/SHT/M/X LAN
RBR20 0/4/SHT/M/X USB_LAN <--> R_USB30_1

Gigabyte Technology
Title: INTEL LAN I217
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DVI:20/4/6/4/20
Impedance=85 +- 17.5%

DVI LEVEL SHIFT

HU2

HR37 1K/4/1

DVI_TX0 / DVI_TX0- — HC11 / HC12 0.1u/4/X7R/16V/K — DVI_DAT_P0 / DVI_DAT_N0
DVI_TXC / DVI_TXC- — HC9 / HC10 0.1u/4/X7R/16V/K — DVI_CLK_P / DVI_CLK_N
DVI_TX2- / DVI_TX2 — HC16 / HC15 0.1u/4/X7R/16V/K — DVI_DAT_N2 / DVI_DAT_P2
DVI_TX1- / DVI_TX1 — HC14 / HC13 0.1u/4/X7R/16V/K — DVI_DAT_N1 / DVI_DAT_P1

HU2			
OE*	25		
IN_D1+	39	OUT_D1+	22 → DVITX0+
IN_D1-	38	OUT_D1-	23 → DVITX0-
IN_D2+	42	OUT_D2+	19 → DVITXC+
IN_D2-	41	OUT_D2-	20 → DVITXC-
IN_D3+	45	OUT_D3+	16 → DVITX2-
IN_D3-	44	OUT_D3-	17 → DVITX2+
IN_D4+	48	OUT_D4+	13 → DVITX1-
IN_D4-	47	OUT_D4-	14 → DVITX1+
DVI_HP	30		
HPD_SINK		VCC3V	2, 11, 15, 21, 26, 33, 40, 46
DVI_HDP_F	7		10 N_DVI_HDP_F
N_DDPC_CTRLCLK	9	HPD_SOURCE	
N_DDPC_CTRLDATA	8	SCL_SOURCE / SDA_SOURCE	
DVI_SCL	28	SCL_SINK	
DVI_SDA	29	SDA_SINK	
DDC_EN	32		
OC_0	3	GND	1, 5, 12, 18, 24, 27, 31, 36, 37, 43, 49
OC_1	4		
OC_2(REXT)	6		
OC_3	10	THERMAL_PAD	
EQ_0	34		
EQ_1	35		

ASM1442/QFN48/[10TA1-051442-20R]

VCC3 — HBC7 0.1u/4/X7R/16V/K — HBC8 0.1u/4/X7R/16V/K — HBC9 0.1u/4/X7R/16V/K — HBC10 10u/6/X5R/6.3V/M

EMI

VCC3 — HR22 4.7K/4 — HR23 4.7K/4/X — HR24 4.7K/4/X
VCC3 — HR25 8.2K/4 — DVI_EN

HR27 10/4/X
HR28 10/4
HR29 3.3K/4/1
HR30 10/4

HR31 4.7K/4/X — VCC3
HR32 4.7K/4/X — VCC3
HR33 10/4
HR34 10/4

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VCC — 防漏電 — VD1 BAT54A/SOT23/200mA SOT23

VR11 2.2K/4/1 — DVI_SDA
VR12 2.2K/4/1 — DVI_SCL

10 N_DDPC_CTRLCLK — VR5 2.2K/4/1 — VCC3
10 N_DDPC_CTRLDATA — VR6 2.2K/4/1
VBC6 0.1u/4/Y5V/16V/Z/X

DVI

M1 SHIELD1

DVITX0-	17	TX0-
DVITX0+	18	TX0+
DVITX1-	9	TX1-
DVITX1+	10	TX1+
DVITX2-	1	TX2-
DVITX2+	2	TX2+
	3	SHLD24
	11	SHLD13
	19	SHLD05
	12	TX3-
	13	TX3+
	4	TX4-
	5	TX4+
	20	TX5-
	21	TX5+
DVI_SCL	6	DDCC
DVI_SDA	7	DDCD
	14	VDDC
	15	GND
	22	SHLDC
DVITXC-	24	TXC-
DVITXC+	23	TXC+
	8	VSYNC
DVI_HP	16	HPD

FUSEVCC_R7 — VBC10 0.1u/4/X7R/16V/K
VR15 20K/4/1

SHIELD2 — M5
SHIELD2 — M6
SHIELD2 — M7
SHIELD2 — M8
SHIELD2
M2

DVI-D/24P/SC/RA/D/SH

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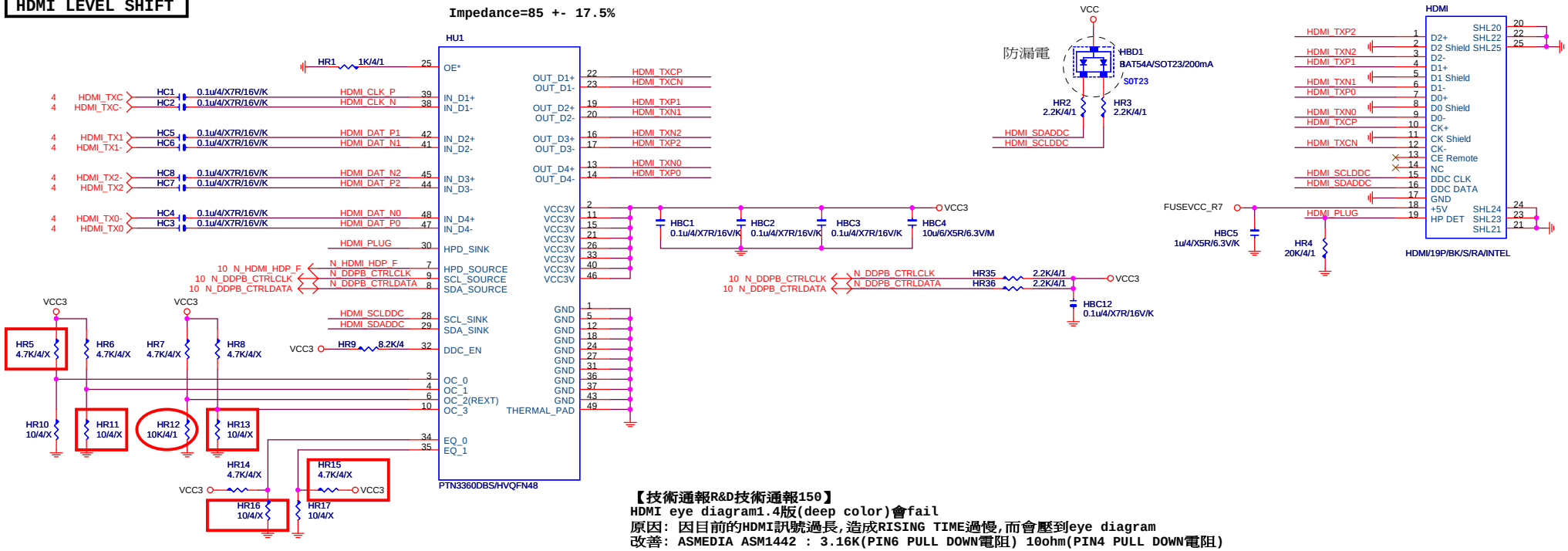
HDMI LEVEL SHIFT

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)

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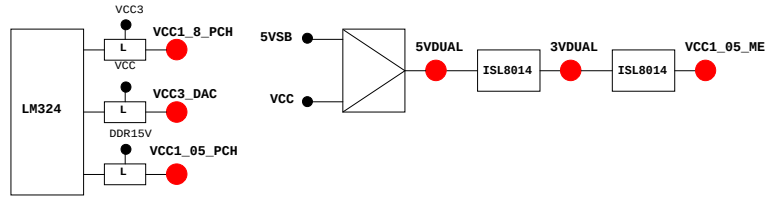
PCH GPIO LIST TABLE

PIN NAME	PWR	AFTER/PLTRST	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

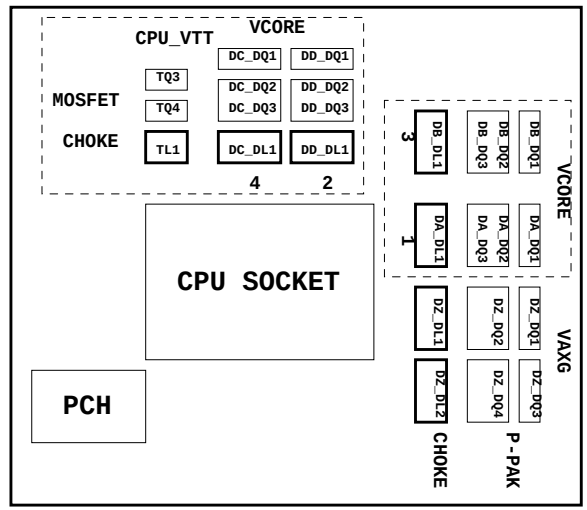
Super I/O ITE8720 GPIO Table

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/BUSSO0	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/BUSSI1	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/BUSSI0	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSBSW#/GP40	CSI_F0	BSEL166_1
SUSC#/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/BUSSO1	MB_ID3	
PD7/GP77/BUSSO2	MB_ID4	
AFD#/GP86/SMBC_R	空 PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_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/BUSSO0	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Terminatio
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號：

Z77-D3H :
PCH :
12SP2-S05511-01R/02R/03R
MOSFET :
12SP2-S08924-01R/02R/03R

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH

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