Model Name: GA-Z97X-GAMING 3

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
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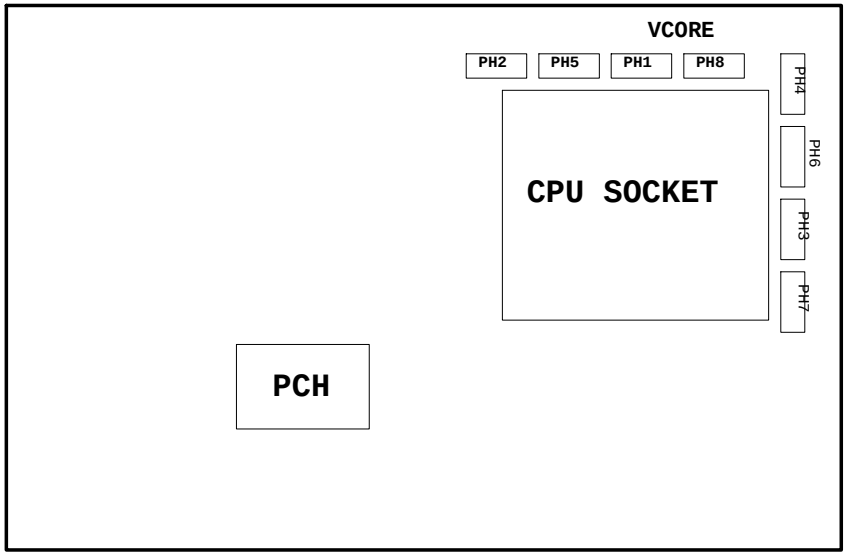
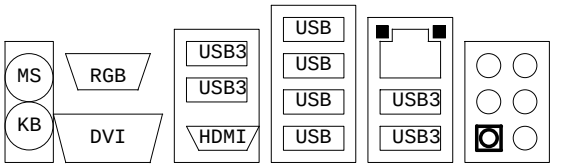
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_RGB,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS*8 SLOT
16	PCI EXPRESS*16 SWITCH
17	PCI EXPRESS*4 SLOT
18	PCI EXPRESS*1 1,2,3 SLOT
19	ITE8892E
20	PCI SLOT
21	ALC1150 CODEC
22	REAR AUDIO JACK
23	ITE8620
24	COM/KB_MS/R_USB/PROHOT/USB PROTECT
25	ISL95820
26	ISL95820 VCORE Phase 8
27	DDR POWER

SHEET	TITLE
28	DISCRETE POWER
29	DUAL BIOS
30	FP,F_USB,USB PWR,BZ
31	ATX POWER CONNECTOR
32	H/W MONITOR,FAN CTRL
33	DVI
34	HDMI_USB30
35	ARTHEROS E2201
36	M.2_SATA_EXPRESS
37	TABLE LIST
39	
40	





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Title: Cover Sheet

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GA-Z97X-GAMING3

Component value change history

Data	Change Item	Reason
2014/2/26 10A	PCB ：興英 精誠,全成信 1.GBC28 22P/4 REMOVE FOR Glitch 2. VCORE / Non-Vcore 指定用 VISHAY 3. VGA指定用 ： VGA/BK/SC/RA/D/2/HR/[11NR6-103015-12R]	
10B-0411	1. UPDATE Z97 料號:10HB1-030Z97-20R	
10C-0425	1. SATA EXPRESS CAP : SEC1~SEC8 CHANGE TO 0.1u/4/X7R/16V/K	
PCB:1.0A	CFB1 60/4/3A/S	

Circuit or PCB layout change

DATE	Change Item	Reason

Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

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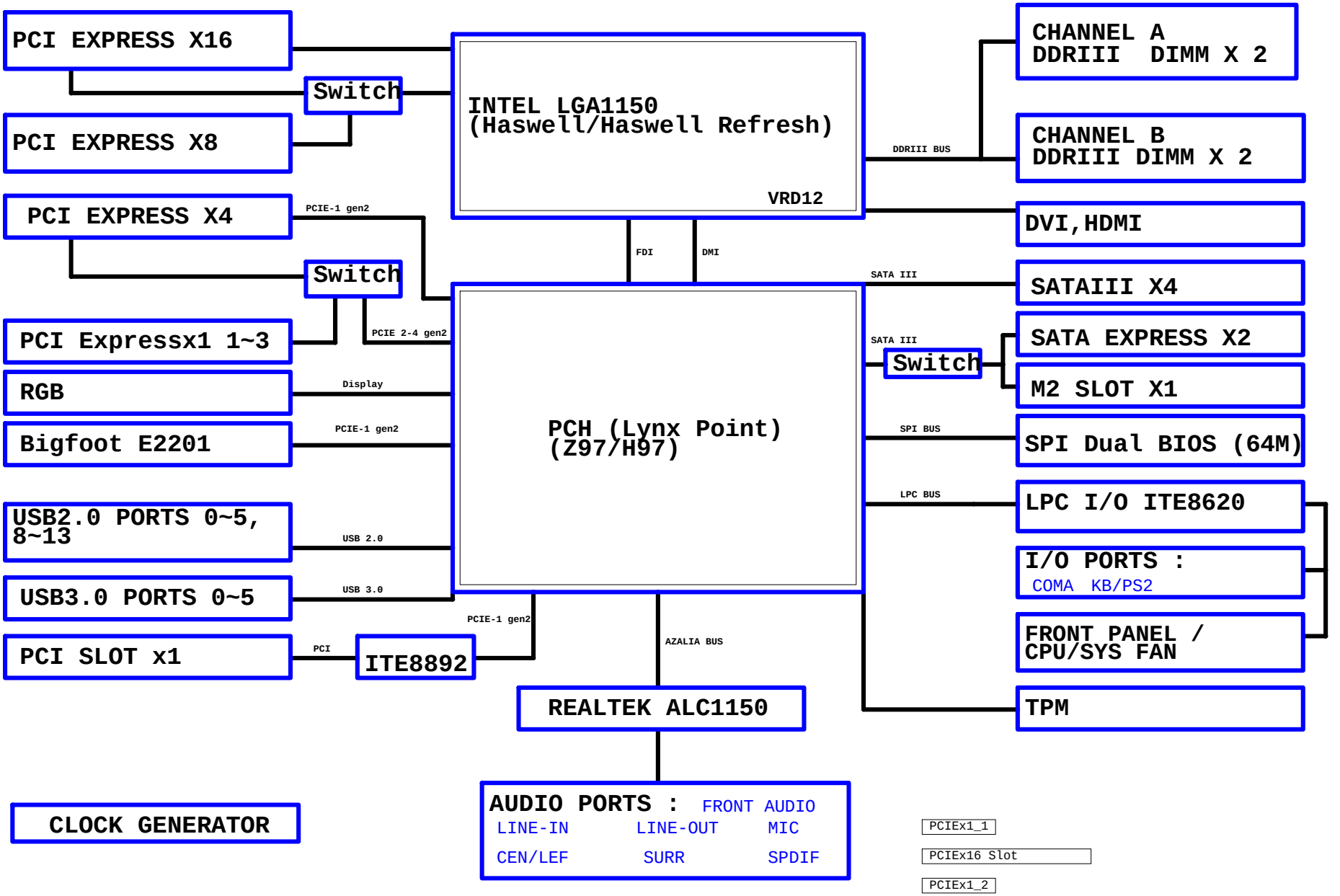
BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: C	Document Number: Z97X-Gaming3		Rev: 1.0
Date: Wednesday, May 07, 2014	Sheet 3 of 37		

LGA1150 (E)

W/S=4/12

LGA1150E

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

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

LGA1150 (D)

HDMI需接Port B for WHQL

LGA1150D

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)

LGA1150C

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

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

W=12 mil out of CPU
S=15 mil out of CPU

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

CPU SVID

CPU PU/PD

-CPURST

1.1V分壓

THRMTRIP DISABLE FOR Z87 OVERCLOCK

Gigabyte Technology			
Title: CPU LGA1150-A			
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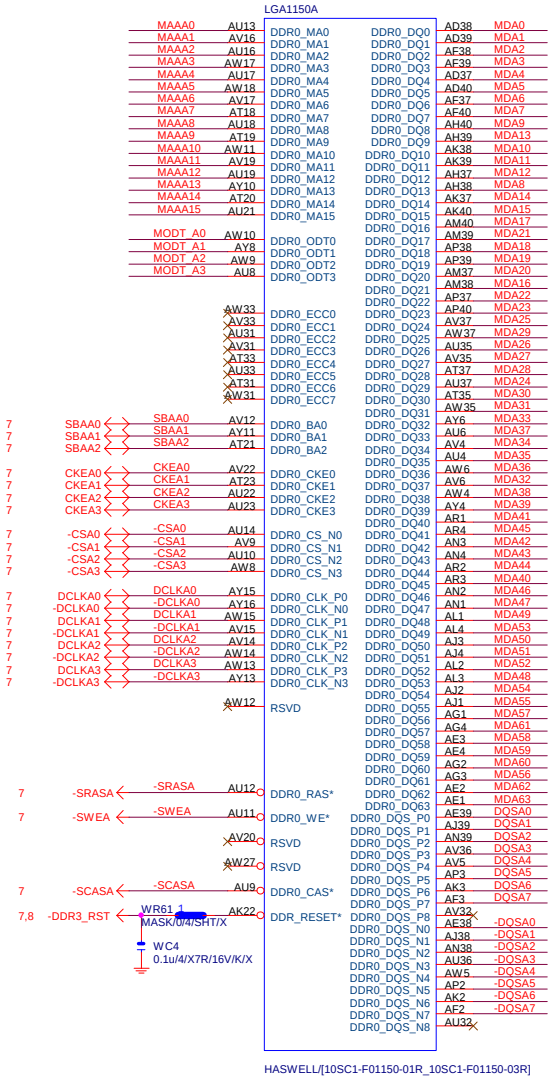
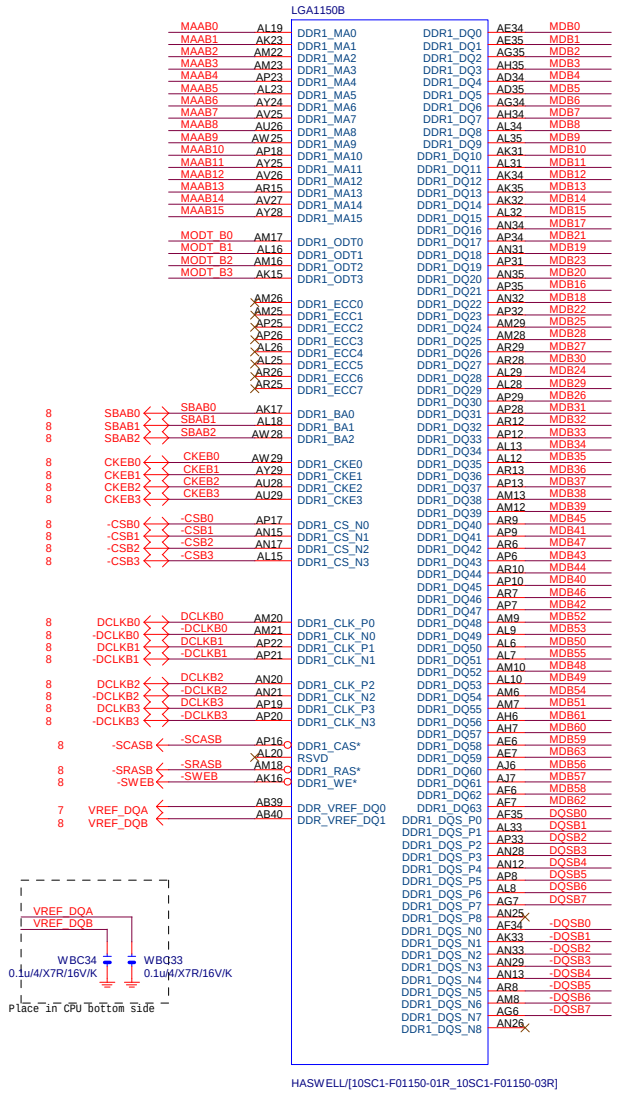
Date: Wednesday, May 07, 2014	Sheet 4 of 37		

LGA1150 (A)

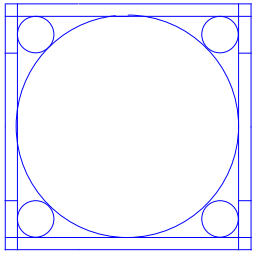


LGA1150 (B)



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			
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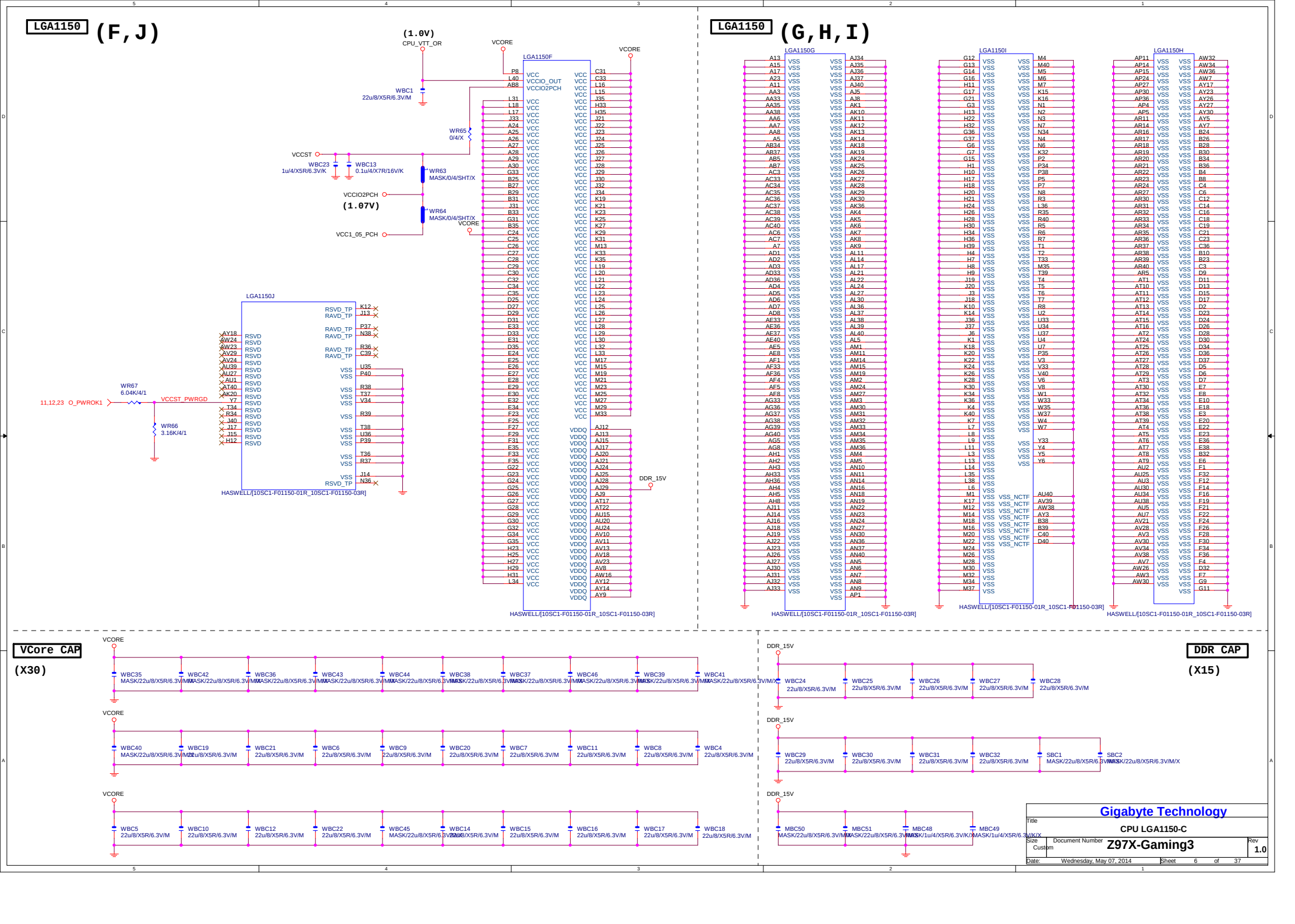
LGA1150 (F,J)
(1.0V)
CPU_VTT_OR
VCORE
LGA1150F
WBC1
22u/8/X5R/6.3V/M
WR65
0/4/X
VCCST
WBC23
1u/4/X5R/6.3V/K
WBC13
0.1u/4/X7R/16V/K
WR63
MASK/0/4/SHT/X
VCCIO2PCH
(1.07V)
WR64
MASK/0/4/SHT/X
VCC1_05_PCH
LGA1150J
WR67
6.04K/4/1
11,12,23_O_PWROK1
VCCST_PWRGD
WR66
3.16K/4/1
HASWELL/[10SC1-F01150-01R_10SC1-F01150-03R]
DDR_15V
LGA1150G
LGA1150I
LGA1150H
LGA1150 (G,H,I)
VCore CAP
(X30)
DDR CAP
(X15)
WBC35 MASK/22u/8/X5R/6.3V/M
WBC42 MASK/22u/8/X5R/6.3V/M
WBC36 MASK/22u/8/X5R/6.3V/M
WBC43 MASK/22u/8/X5R/6.3V/M
WBC44 MASK/22u/8/X5R/6.3V/M
WBC38 MASK/22u/8/X5R/6.3V/M
WBC37 MASK/22u/8/X5R/6.3V/M
WBC46 MASK/22u/8/X5R/6.3V/M
WBC39 MASK/22u/8/X5R/6.3V/M
WBC41 MASK/22u/8/X5R/6.3V/M
WBC40 MASK/22u/8/X5R/6.3V/M
WBC19 22u/8/X5R/6.3V/M
WBC21 22u/8/X5R/6.3V/M
WBC6 22u/8/X5R/6.3V/M
WBC9 22u/8/X5R/6.3V/M
WBC20 22u/8/X5R/6.3V/M
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 MASK/22u/8/X5R/6.3V/M
WBC14 22u/8/X5R/6.3V/M
WBC15 22u/8/X5R/6.3V/M
WBC16 22u/8/X5R/6.3V/M
WBC17 22u/8/X5R/6.3V/M
WBC18 22u/8/X5R/6.3V/M
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 MASK/22u/8/X5R/6.3V/M/X
SBC2 MASK/22u/8/X5R/6.3V/M/X
MBC50 MASK/22u/8/X5R/6.3V/M/X
MBC51 MASK/22u/8/X5R/6.3V/M/X
MBC48 MASK/1u/4/X5R/6.3V/K/X
MBC49 MASK/1u/4/X5R/6.3V/K/X
Gigabyte Technology
Title
CPU LGA1150-C
Size
Custom
Document Number
Z97X-Gaming3
Rev
1.0
Date: Wednesday, May 07, 2014
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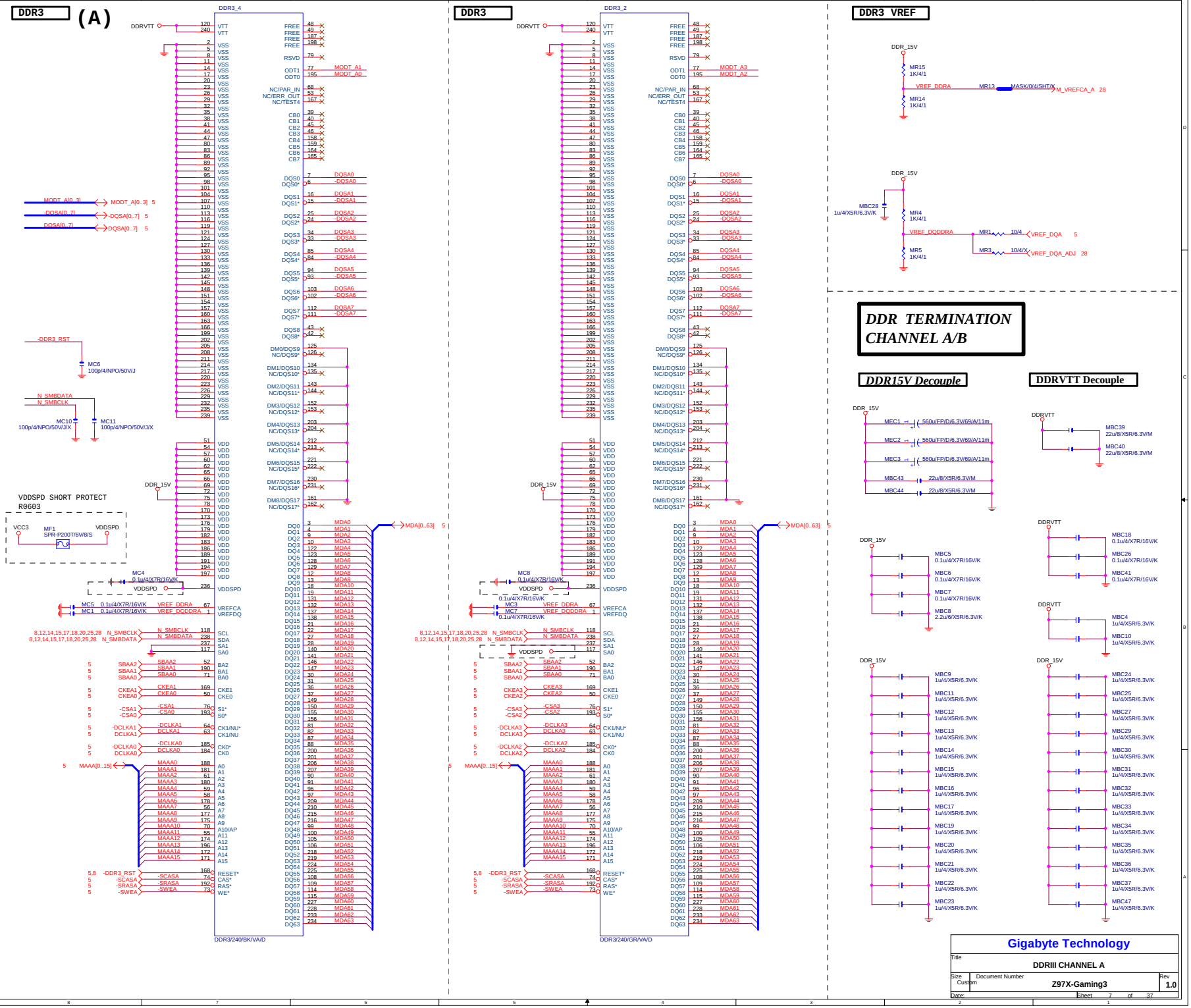
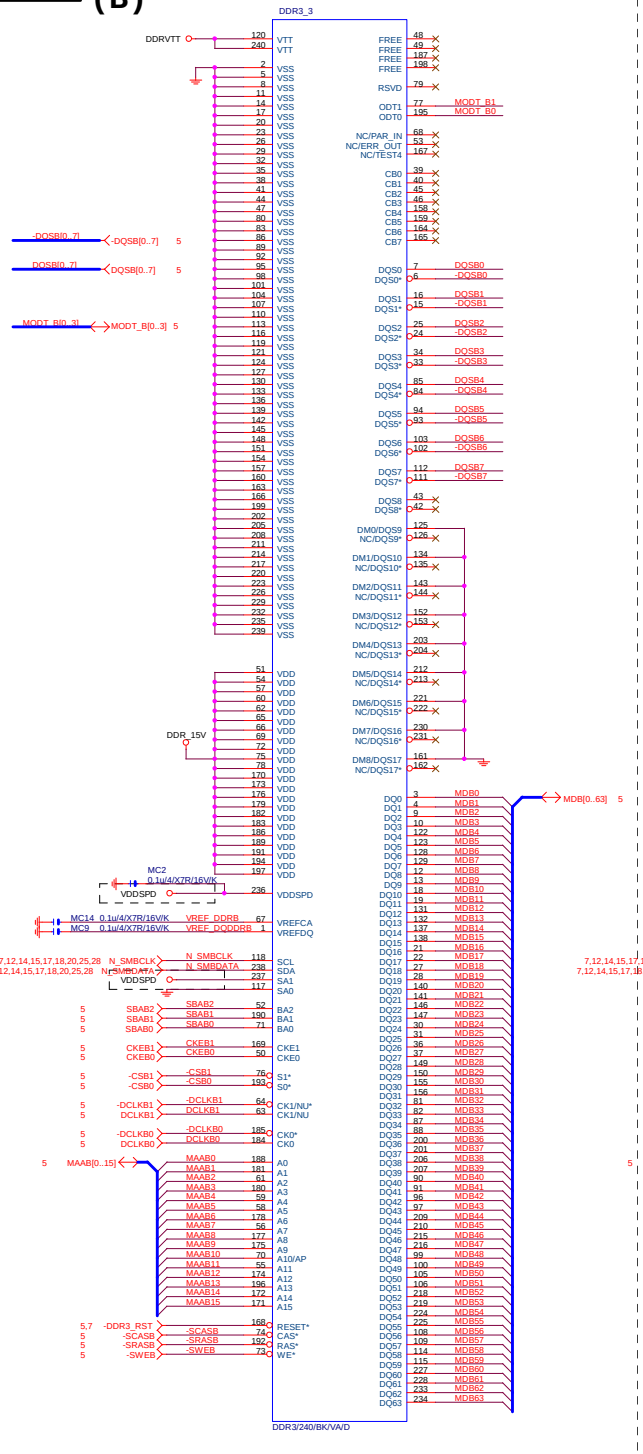
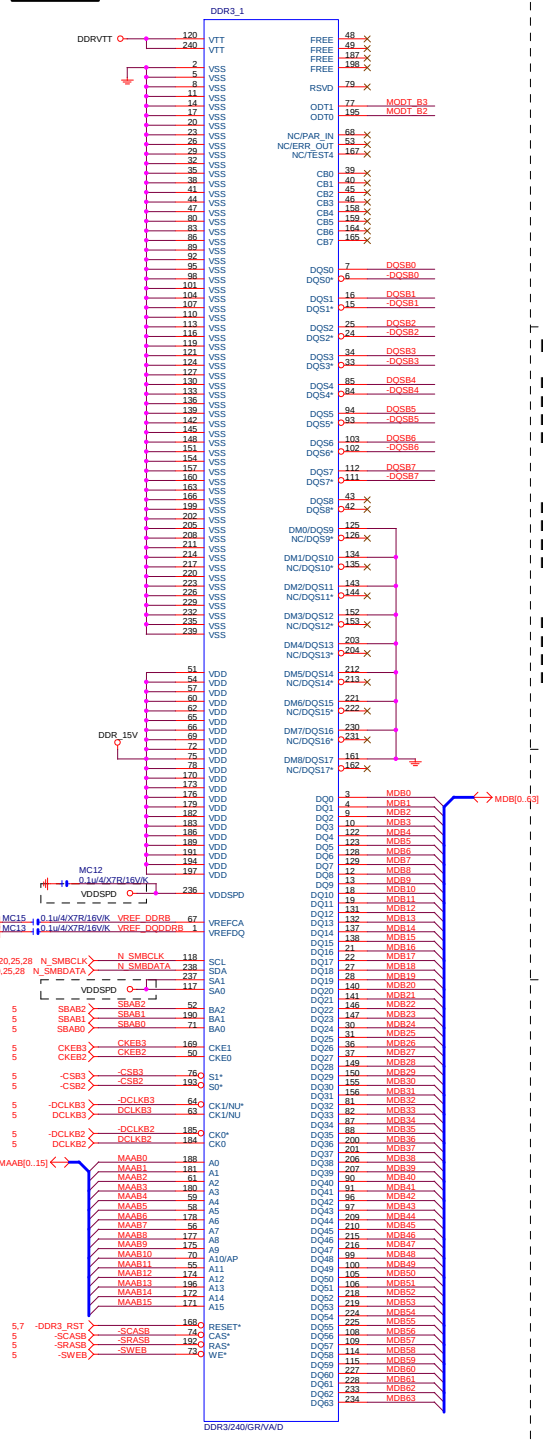
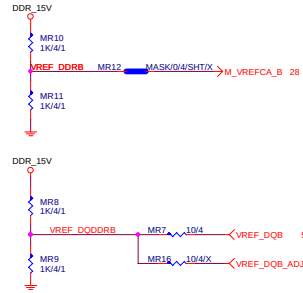

DDR3
(A)
DDR3_4
DDRVTT
DDR_15V
VDDSPD SHORT PROTECT
R0603
MF1
SPR-P200T/6V/8/S
MC6
100p/4/NPO/50V/J
MC10
100p/4/NPO/50V/J/X
MC11
100p/4/NPO/50V/J/X
MC4
0.1u/4/X7R/16V/K
MC5 0.1u/4/X7R/16V/K VREF_DDRA
MC1 0.1u/4/X7R/16V/K VREF_DQDDRA
DDR3/240/BK/VA/D
DDR3
DDR3_2
MC8
MC3
MC7
DDR3/240/GR/VA/D
DDR3 VREF
MR15 1K/4/1
MR14 1K/4/1
VREF_DDRA
MR13
MASK/0/4/SHT/X
M_VREFCA_A
MR4 1K/4/1
MR5 1K/4/1
MBC28 1u/4/X5R/6.3V/K
VREF_DQDDRA
MR1 10/4
MR3 10/4/X
VREF_DQA
VREF_DQA_ADJ
DDR TERMINATION
CHANNEL A/B
DDR15V Decouple
DDRVTT Decouple
MEC1 560u/FP/D/6.3V/69/A/11m
MEC2 560u/FP/D/6.3V/69/A/11m
MEC3 560u/FP/D/6.3V/69/A/11m
MBC43 22u/8/X5R/6.3V/M
MBC44 22u/8/X5R/6.3V/M
MBC39 22u/8/X5R/6.3V/M
MBC40 22u/8/X5R/6.3V/M
MBC5 0.1u/4/X7R/16V/K
MBC6 0.1u/4/X7R/16V/K
MBC7 0.1u/4/X7R/16V/K
MBC8 2.2u/6/X5R/6.3V/K
MBC18 0.1u/4/X7R/16V/K
MBC26 0.1u/4/X7R/16V/K
MBC41 0.1u/4/X7R/16V/K
MBC4 1u/4/X5R/6.3V/K
MBC10 1u/4/X5R/6.3V/K
MBC9 1u/4/X5R/6.3V/K
MBC11 1u/4/X5R/6.3V/K
MBC12 1u/4/X5R/6.3V/K
MBC13 1u/4/X5R/6.3V/K
MBC14 1u/4/X5R/6.3V/K
MBC15 1u/4/X5R/6.3V/K
MBC16 1u/4/X5R/6.3V/K
MBC17 1u/4/X5R/6.3V/K
MBC19 1u/4/X5R/6.3V/K
MBC20 1u/4/X5R/6.3V/K
MBC21 1u/4/X5R/6.3V/K
MBC22 1u/4/X5R/6.3V/K
MBC23 1u/4/X5R/6.3V/K
MBC24 1u/4/X5R/6.3V/K
MBC25 1u/4/X5R/6.3V/K
MBC27 1u/4/X5R/6.3V/K
MBC29 1u/4/X5R/6.3V/K
MBC30 1u/4/X5R/6.3V/K
MBC31 1u/4/X5R/6.3V/K
MBC32 1u/4/X5R/6.3V/K
MBC33 1u/4/X5R/6.3V/K
MBC34 1u/4/X5R/6.3V/K
MBC35 1u/4/X5R/6.3V/K
MBC36 1u/4/X5R/6.3V/K
MBC37 1u/4/X5R/6.3V/K
MBC47 1u/4/X5R/6.3V/K
Gigabyte Technology
DDRIII CHANNEL A
Z97X-Gaming3
1.0

DDR3 (B)





DDR3 VREF



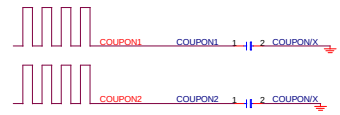
DDR3 1066,1333,1600MHZ BANDWIDTH

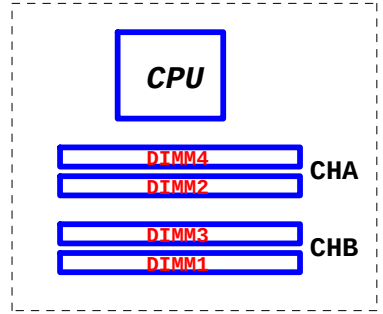
DDR3 1066MHZ
DDR3 clock=533MHZ
DDR3 single channel bandwidth=533x2x8Byte=8.5GB/s
DDR3 dual channel bandwidth=533x2x2x8Byte=17GB/s

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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Date:	Sheet 8 of 37	

PCH (B)

USB Port 1/9一定要接出來,For Debug port test (Logo)

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%

PCHB

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 E2201

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

DH82Z97/S/[10HB1-030Z97-10R]

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)

PCHF

Port1 & 9為Debug Port，
一定要拉到Connector。

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)

PCHJ

DH82Z97/S/[10HB1-030Z97-10R]

PCH H/S

PCH_HS

PCH_HS/Z97-Gaming 3/[12SP2-SG4554-01R_12SP2-SG4554-02R_12SP2-SG4554-03R]

USB TABLE

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

USB Usage & OC# Configure			
OC0#	USB0,1	F_USB30	FUSEVCC_F1_F2
OC1#	USB2,3	USB30_LAN	FUSEVCC_R7_R8
OC2#	USB4,5	HDMI & R_USB3	FUSEVCC_R1_R2
OC3#	USB6,7	4 Ports R_USB (Up)	FUSEVCC_R5_R6
OC4#	USB8,9	4 Ports R_USB (Down)	FUSEVCC_R3_R4
OC5#	USB10,11	F_USB2	FUSEVCC_F5_F6
OC6#	USB12,13	F_USB1	FUSEVCC_F3_F4
OC7#	Not Use		

Gigabyte Technology

Title: PCH FDI,DMI,USB ,PCIE

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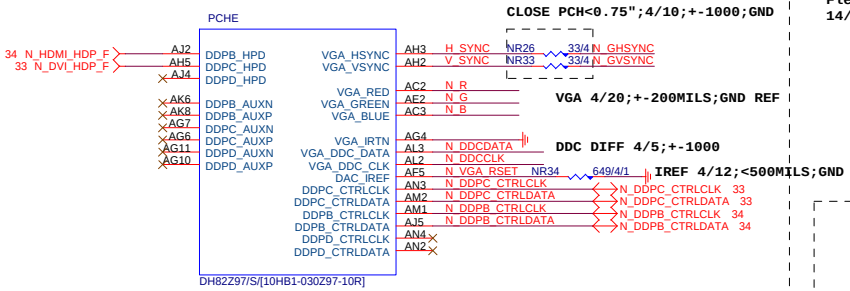
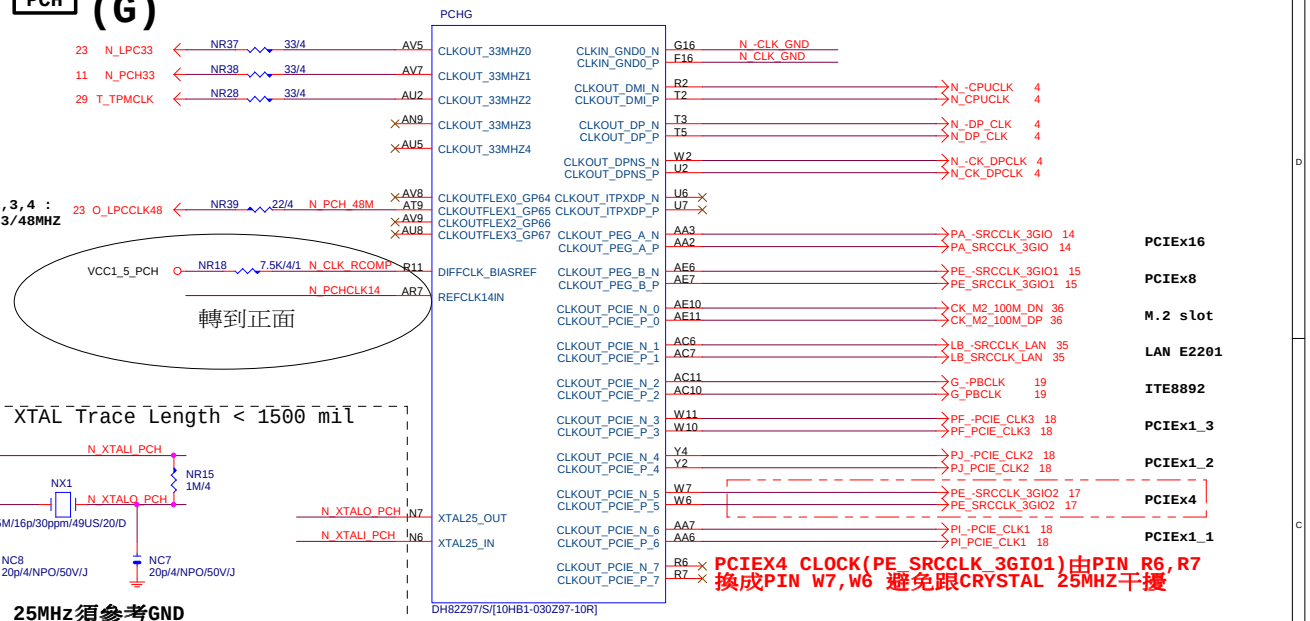
PCH (E)

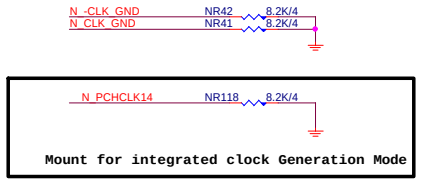


VGA DISABLE
R,G,B NC OR GND
IRTN / IREF GND
VGA_HSYNC, VGA_VSYNC,DDC_CLK, DDC_DATA NC
POWER VCCADAC(AF2), VCCADACBG(AE1) GND

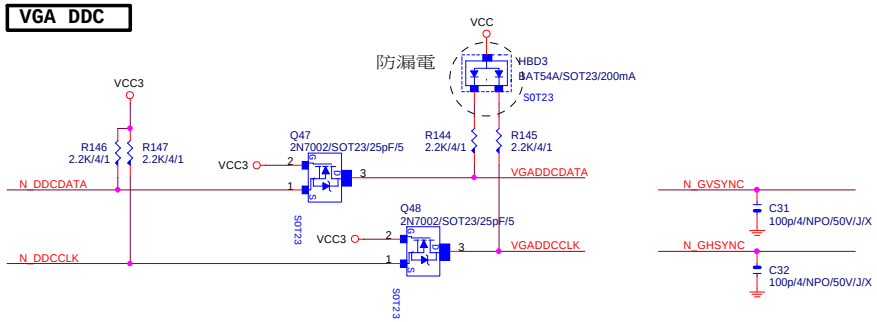
PCH (G)



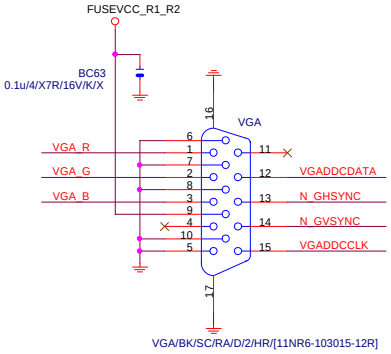
PCH CLK PD



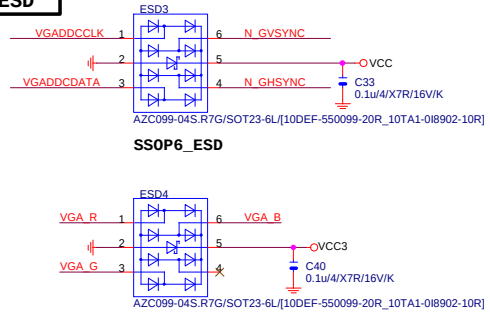
VGA DDC



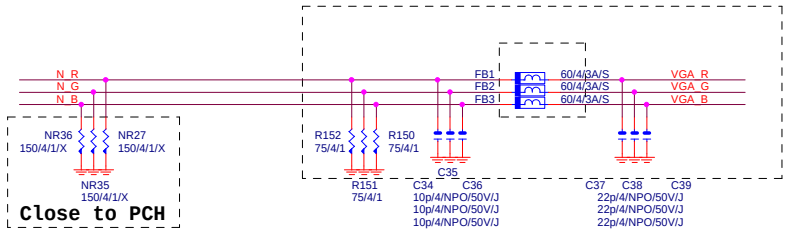
VGA CONNECTOR



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

FOR ME

PCHC

DH82Z97/S/[10HB1-030Z97-10R]

PCH (A)

PCHA

DH82Z97/S/[10HB1-030Z97-10R]

Default int pull up on GP51,
Default SPI boot devices

BOOT DEVICE	GP51	GP19
LPC	0	0
SPI	float	float

PCH CLK PD

Mount for integrated clock Generation Mode

PCH PU/PD

ME PWROK

TLS Setting enable for SBA

N_GPIO37 For H97/H87/B85

GPIO38 Ctrl

MFG Mode

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

SATA CONNECTOR

SATA3_0_1

SATA/14/BK/H/OP/RA/D/2

soft strap	GP16	GP49
0	pcie1	pcie2
1	sata4	sata5

Gigabyte Technology

Title: PCH HOST , SATA, PCI

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PCH (D)

PCHD

DH82Z97/S/[10HB1-030Z97-10R]

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:DPX test Mode

N_-IGC_EN:Low to over clock validation strap

SUSCLK: OD PLL VR Disable

close NR51

HSW_STRAP13

32.768KHZ

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

CLR_CMOS

BATTERY-DUAL-4

RB 必須放在BAT外

Gigabyte Technology	
Title	PCH GPIO , CTRL , AUDIO
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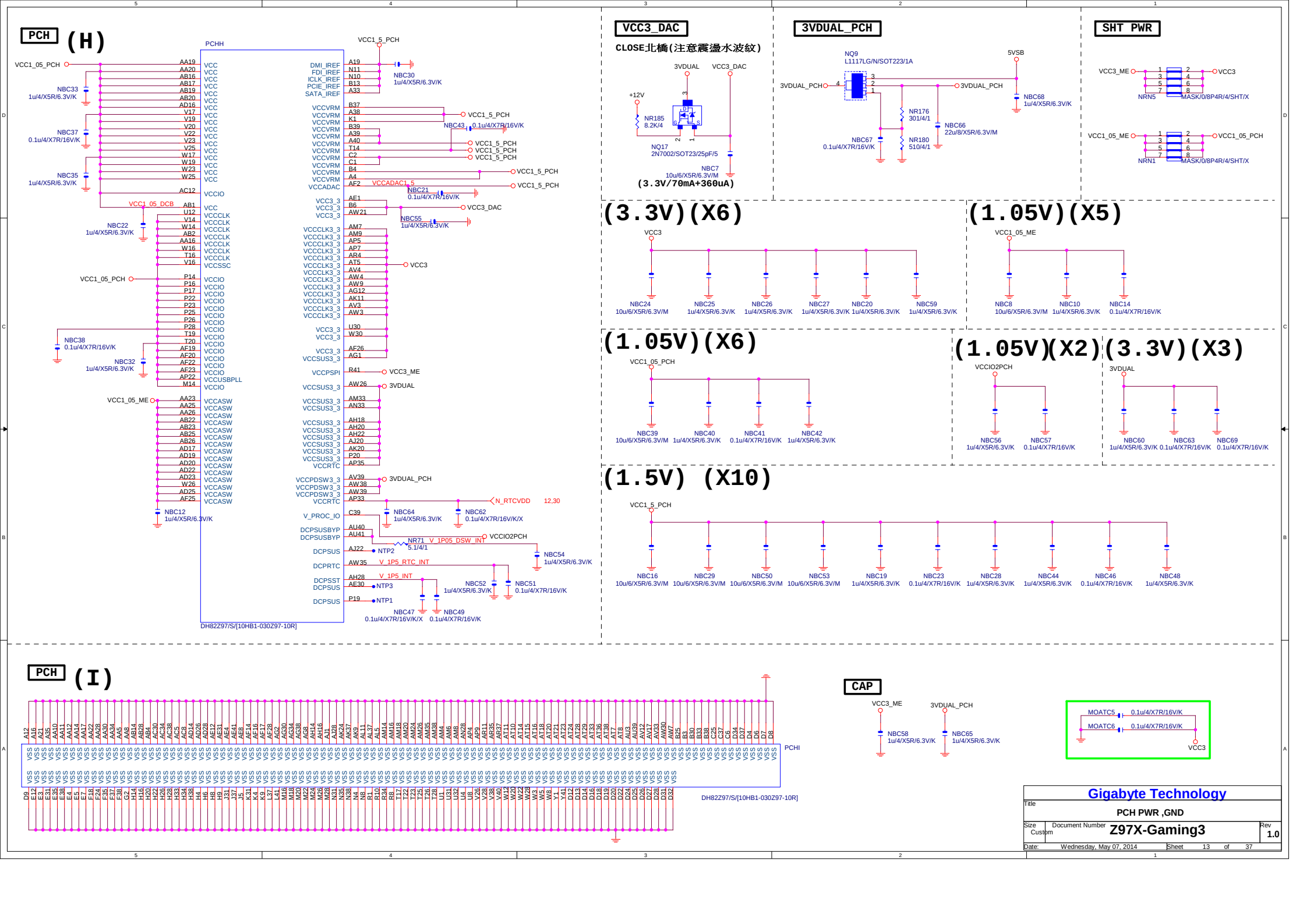
PCH (H)
PCHH
DH82Z97/S/[10HB1-030Z97-10R]
VCC3_DAC
CLOSE北橋(注意震盪水波紋)
(3.3V/70mA+360uA)
3VDUAL_PCH
SHT PWR
(3.3V)(X6)
(1.05V)(X5)
(1.05V)(X6)
(1.05V)(X2)
(3.3V)(X3)
(1.5V) (X10)
PCH (I)
CAP
Gigabyte Technology
PCH PWR ,GND
Z97X-Gaming3
Custom
Wednesday, May 07, 2014
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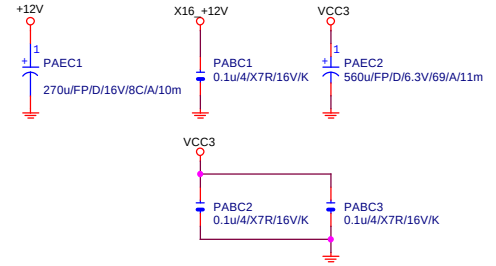
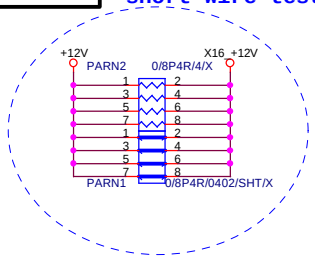
1.0

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	PAC18	0.22u/4/X5R/6.3V/K	PA_EXP_TXP7_C
PA_EXP_TXN7	PAC19	0.22u/4/X5R/6.3V/K	PA_EXP_TXN7_C
PA_EXP_SW_TXP8	PAC21	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXP8_C
PA_EXP_SW_TXN8	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXN8_C
PA_EXP_SW_TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXP9_C
PA_EXP_SW_TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXN9_C
PA_EXP_SW_TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXP10_C
PA_EXP_SW_TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXN10_C
PA_EXP_SW_TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXP11_C
PA_EXP_SW_TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXN11_C
PA_EXP_SW_TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXP12_C
PA_EXP_SW_TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXN12_C
PA_EXP_SW_TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXP13_C
PA_EXP_SW_TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXN13_C
PA_EXP_SW_TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXP14_C
PA_EXP_SW_TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXN14_C
PA_EXP_SW_TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA_EXP_SW_TXP15_C
PA_EXP_SW_TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA_EXP_SW_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

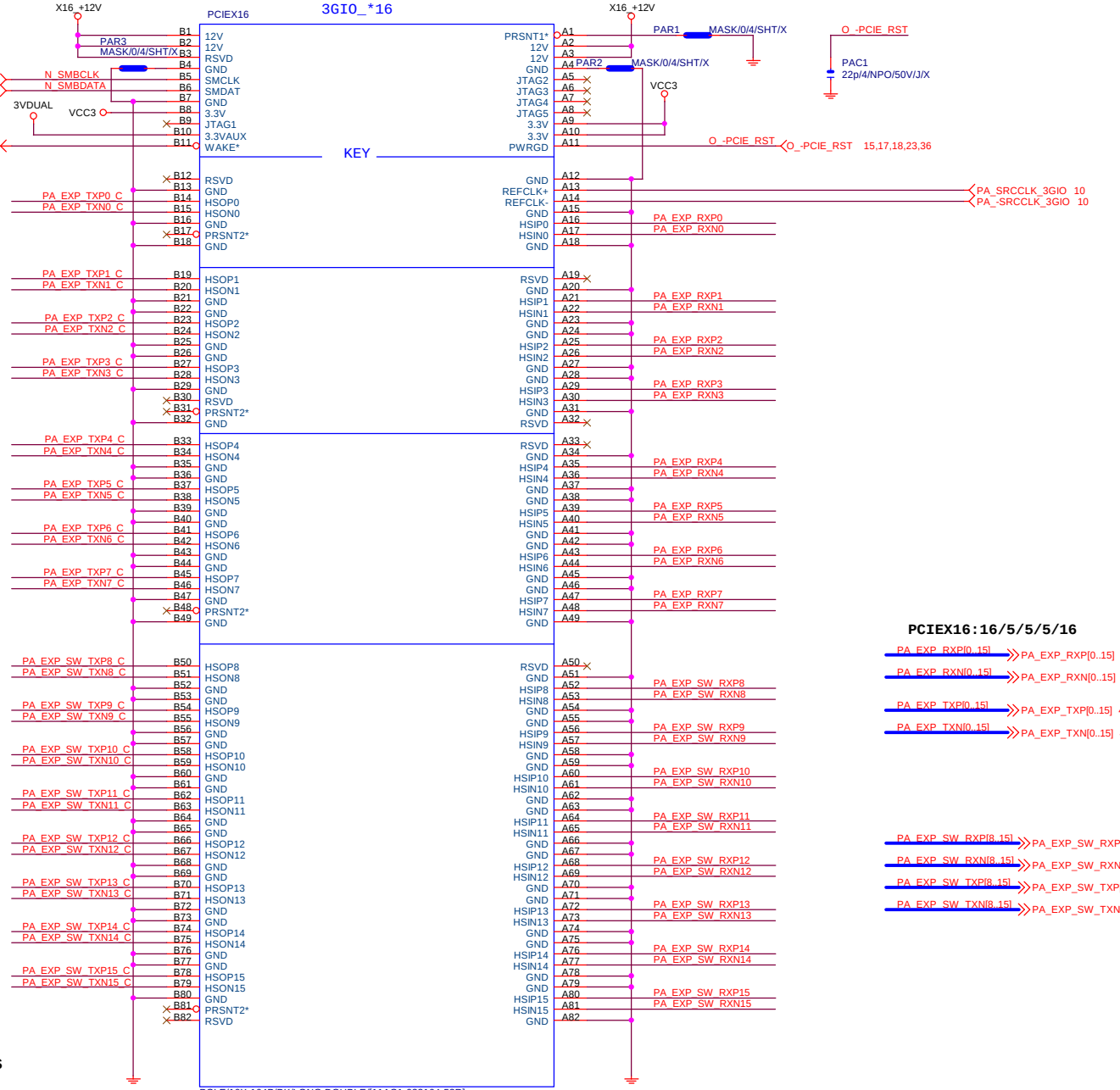
PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

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

PA_EXP_RXP[0..15] → PA_EXP_RXP[0..15] 4,16

PA_EXP_RXN[0..15] → PA_EXP_RXN[0..15] 4,16

PA_EXP_TXP[0..15] → PA_EXP_TXP[0..15] 4,16

PA_EXP_TXN[0..15] → PA_EXP_TXN[0..15] 4,16

PA_EXP_SW_RXP[8..15] → PA_EXP_SW_RXP[8..15] 16

PA_EXP_SW_RXN[8..15] → PA_EXP_SW_RXN[8..15] 16

PA_EXP_SW_TXP[8..15] → PA_EXP_SW_TXP[8..15] 16

PA_EXP_SW_TXN[8..15] → PA_EXP_SW_TXN[8..15] 16

Gigabyte Technology

Title	PCI EXPRESS * 16	
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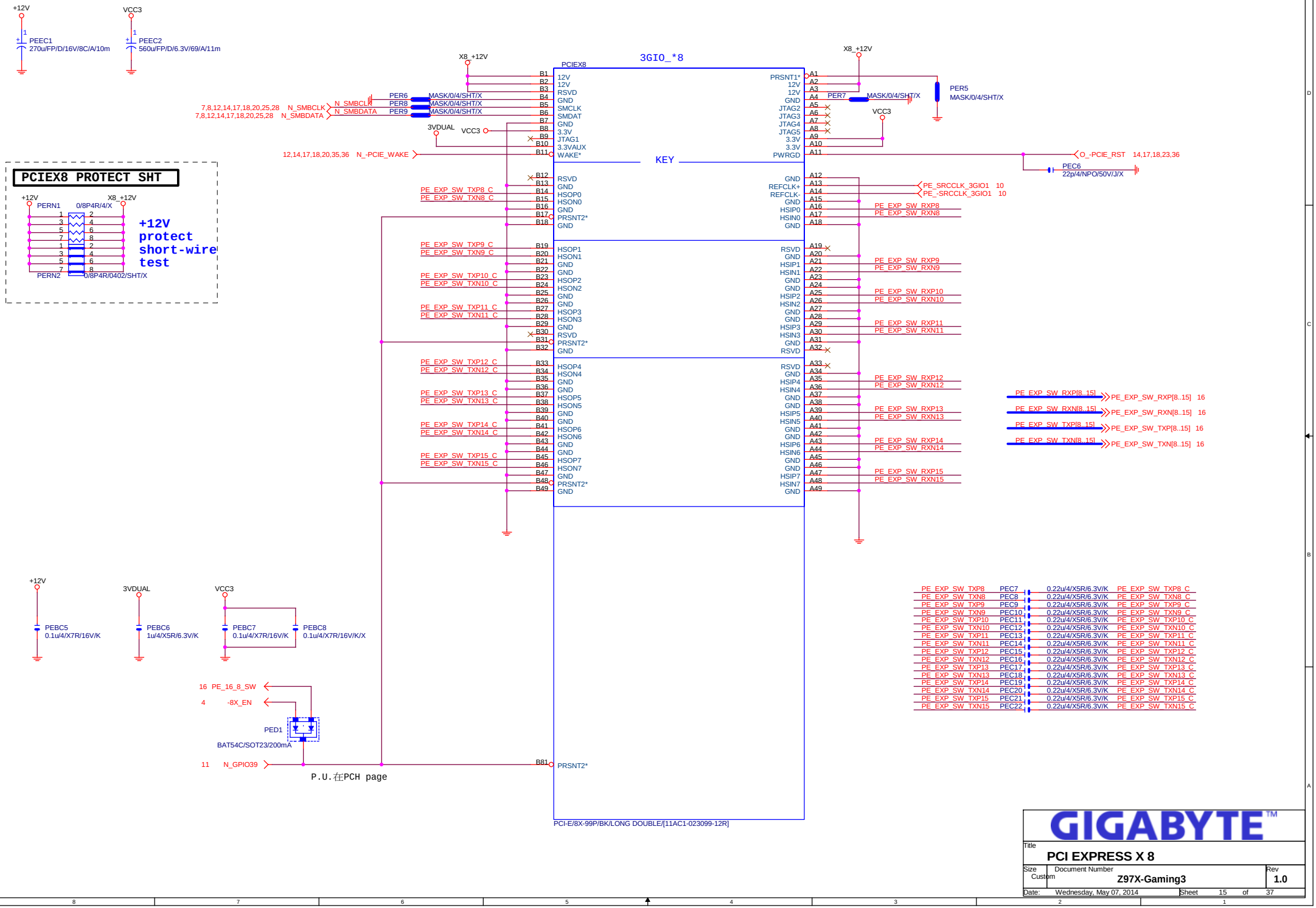
+12V
VCC3
PEEC1
270u/FP/D/16V/8C/A/10m
PEEC2
560u/FP/D/6.3V/69/A/11m
PCIEX8
3GIO_*8
X8_+12V
KEY
PCIEX8 PROTECT SHT
PERN1
PERN2
0/8P4R/4/X
0/8P4R/0402/SHT/X
+12V protect short-wire test
PER5
PER6
PER7
PER8
PER9
MASK/0/4/SHT/X
N_SMBCLK
N_SMBDATA
3VDUAL
N_-PCIE_WAKE
O_-PCIE_RST
PEC6
22p/4/NPO/50V/J/X
PE_SRCCLK_3GIO1
PE_-SRCCLK_3GIO1
PE_EXP_SW_RXP8
PE_EXP_SW_RXN8
PE_EXP_SW_TXP8_C
PE_EXP_SW_TXN8_C
PE_EXP_SW_RXP9
PE_EXP_SW_RXN9
PE_EXP_SW_TXP9_C
PE_EXP_SW_TXN9_C
PE_EXP_SW_RXP10
PE_EXP_SW_RXN10
PE_EXP_SW_TXP10_C
PE_EXP_SW_TXN10_C
PE_EXP_SW_RXP11
PE_EXP_SW_RXN11
PE_EXP_SW_TXP11_C
PE_EXP_SW_TXN11_C
PE_EXP_SW_RXP12
PE_EXP_SW_RXN12
PE_EXP_SW_TXP12_C
PE_EXP_SW_TXN12_C
PE_EXP_SW_RXP13
PE_EXP_SW_RXN13
PE_EXP_SW_TXP13_C
PE_EXP_SW_TXN13_C
PE_EXP_SW_RXP14
PE_EXP_SW_RXN14
PE_EXP_SW_TXP14_C
PE_EXP_SW_TXN14_C
PE_EXP_SW_RXP15
PE_EXP_SW_RXN15
PE_EXP_SW_TXP15_C
PE_EXP_SW_TXN15_C
PE_EXP_SW_RXP[8..15]
PE_EXP_SW_RXN[8..15]
PE_EXP_SW_TXP[8..15]
PE_EXP_SW_TXN[8..15]
PEBC5
PEBC6
PEBC7
PEBC8
0.1u/4/X7R/16V/K
1u/4/X5R/6.3V/K
0.22u/4/X5R/6.3V/K
16 PE_16_8_SW
4 -8X_EN
PED1
BAT54C/SOT23/200mA
11 N_GPIO39
P.U.在PCH page
PRSNT2*
PCI-E/8X-99P/BK/LONG DOUBLE/[11AC1-023099-12R]
GIGABYTE
Title
PCI EXPRESS X 8
Size
Custom
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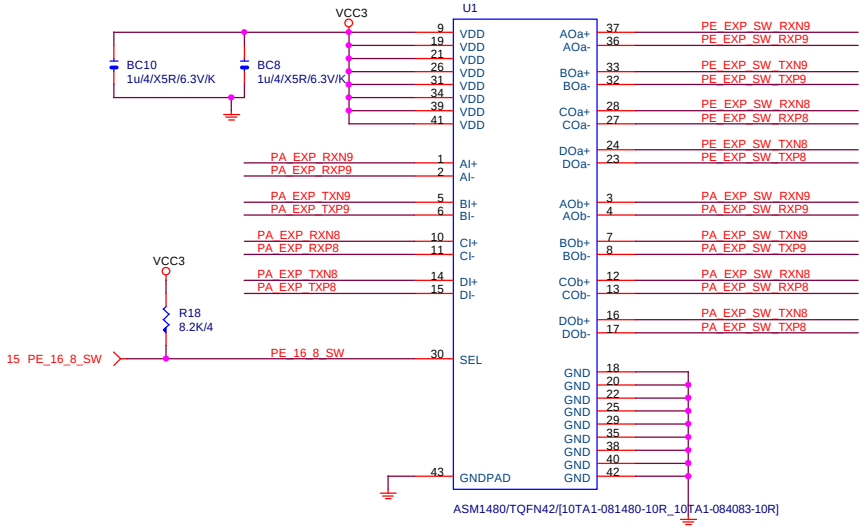
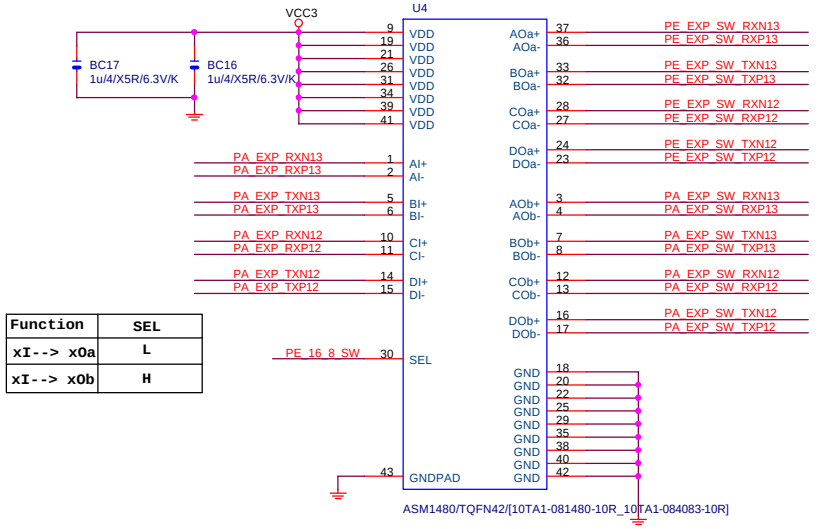
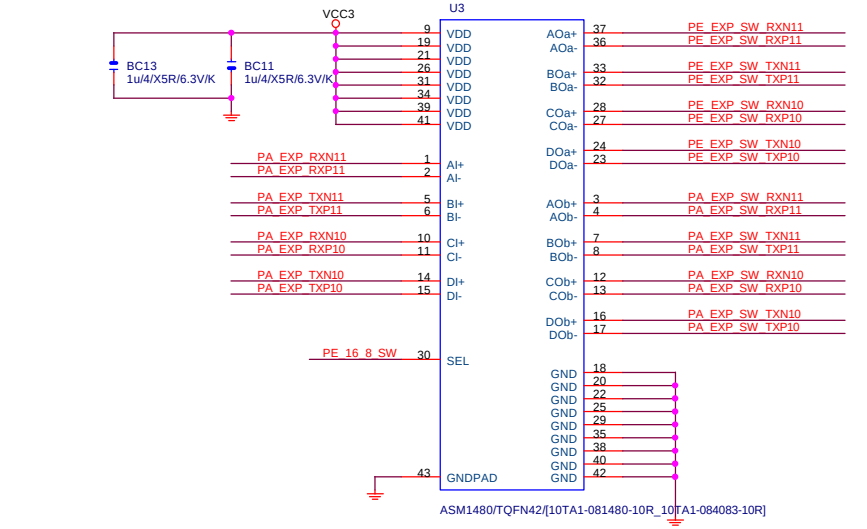
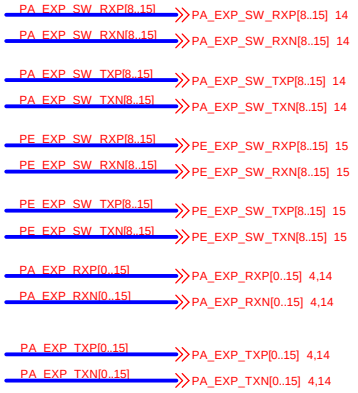
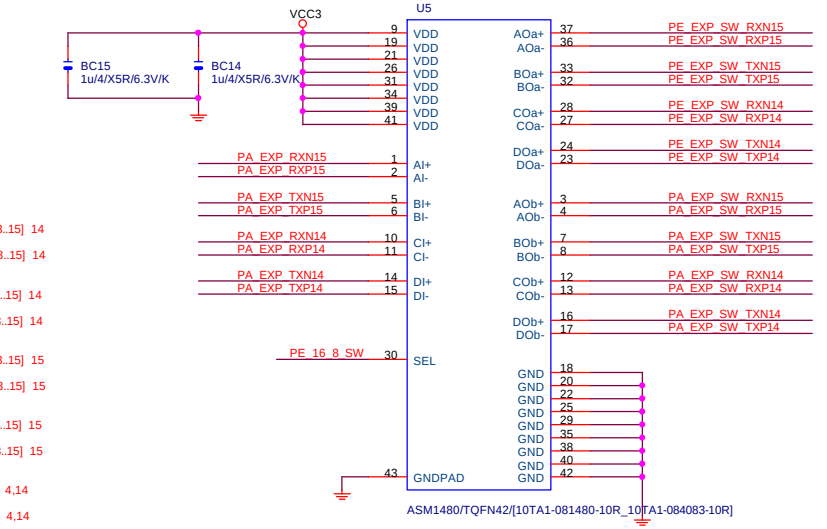




Function	SEL
xI--> xOa	L
xI--> xOb	H







GIGABYTE™

Title: PCI EXPRESS X16 SWITCH		
Size: Custom	Document Number: Z97X-Gaming3	Rev: 1.0
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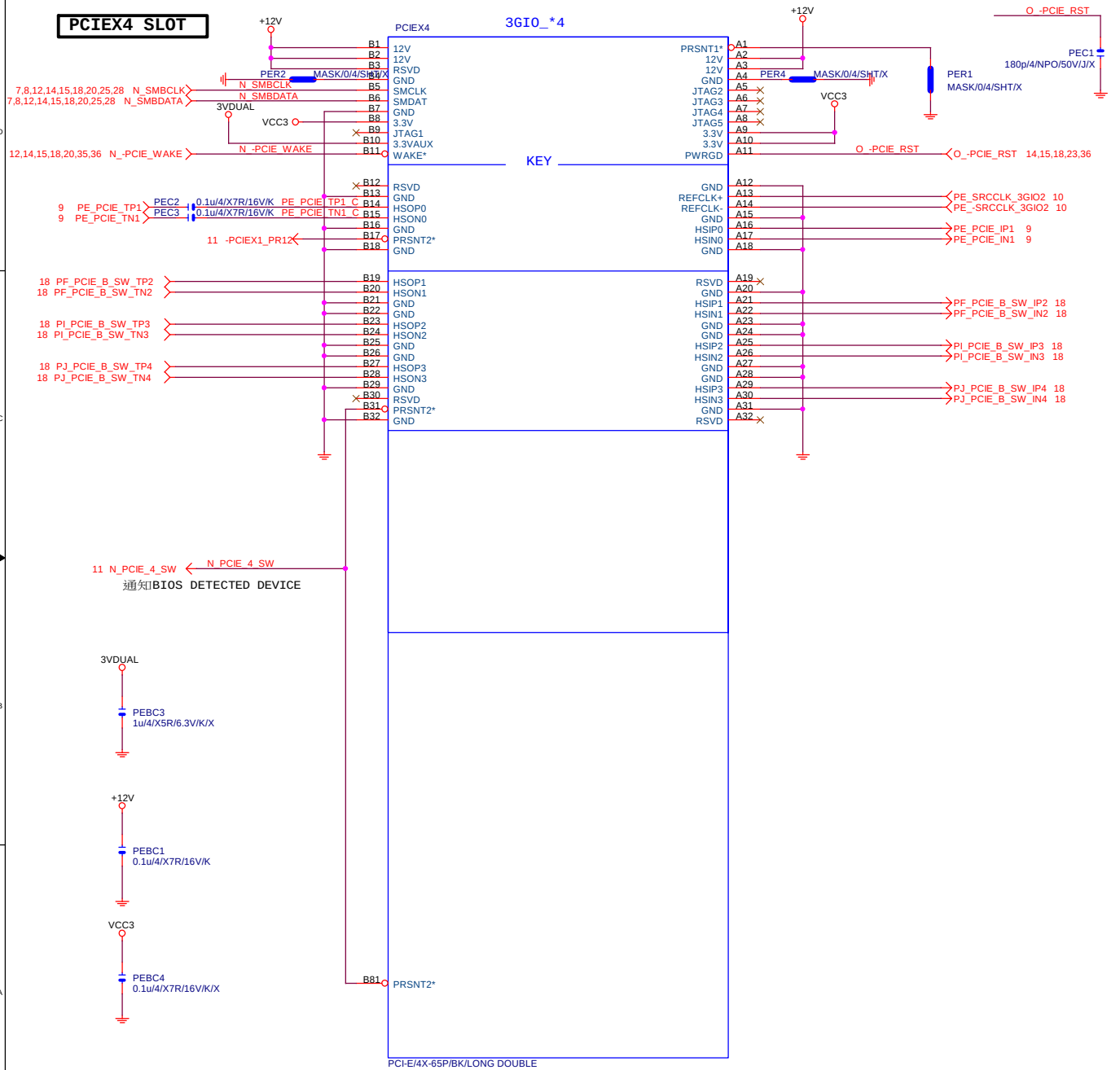

	N_PCIE_4_SW (PCH GPIO48)	PCIEX4_X1 (SIO_GPIO27)
P EX1,PCIEX4 --> X1 (Default)	H	H
PCIEX4 No devices PCIEX4 -> X1	H	H
PCIEX4 Have devices PCIEX4 -> X4 PCIEX1_1/2 --> N/A	L	L

Gigabyte Technology

Title	PCIE_X1 1,2	
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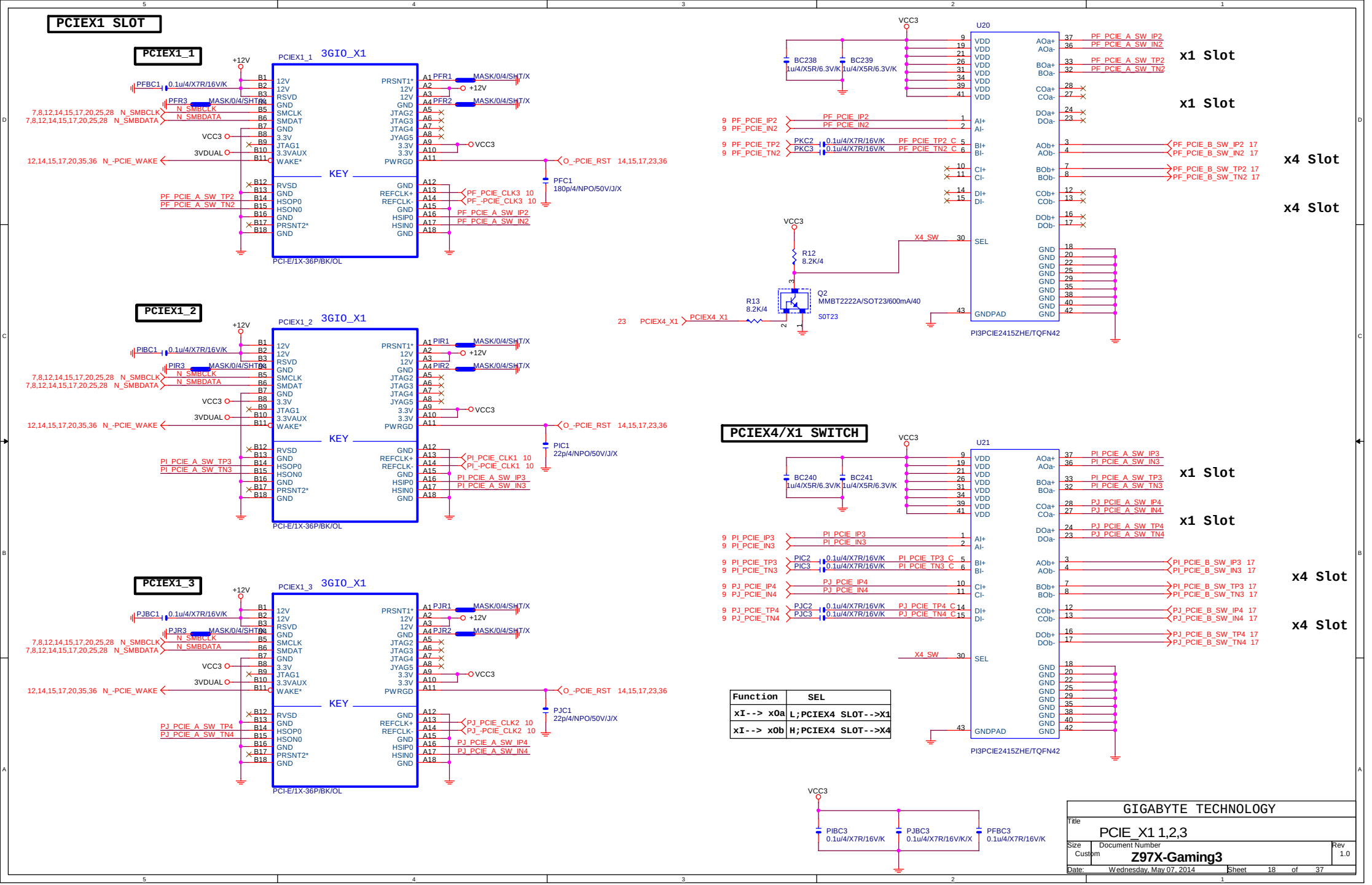
PCIEX1 SLOT
PCIEX1_1
PCIEX1_1 3GIO_X1
+12V
PFBC1 0.1u/4/X7R/16V/K
PFR3 MASK/0/4/SHT/X
N_SMBCLK
N_SMBDATA
7,8,12,14,15,17,20,25,28 N_SMBCLK
7,8,12,14,15,17,20,25,28 N_SMBDATA
VCC3
3VDUAL
12,14,15,17,20,35,36 N_-PCIE_WAKE
PF_PCIE_A_SW_TP2
PF_PCIE_A_SW_TN2
PF_PCIE_A_SW_IP2
PF_PCIE_A_SW_IN2
PFR1
PFR2
PF_PCIE_CLK3 10
PF_-PCIE_CLK3 10
O_-PCIE_RST 14,15,17,23,36
PFC1
180p/4/NPO/50V/J/X
KEY
PCI-E/1X-36P/BK/OL
PCIEX1_2
PIBC1 0.1u/4/X7R/16V/K
PIR3 MASK/0/4/SHT/X
PI_PCIE_A_SW_TP3
PI_PCIE_A_SW_TN3
PI_PCIE_A_SW_IP3
PI_PCIE_A_SW_IN3
PIR1
PIR2
PI_PCIE_CLK1 10
PI_-PCIE_CLK1 10
PIC1
22p/4/NPO/50V/J/X
PCIEX1_3
PJBC1 0.1u/4/X7R/16V/K
PJR3 MASK/0/4/SHT/X
PJ_PCIE_A_SW_TP4
PJ_PCIE_A_SW_TN4
PJ_PCIE_A_SW_IP4
PJ_PCIE_A_SW_IN4
PJR1
PJR2
PJ_PCIE_CLK2 10
PJ_-PCIE_CLK2 10
PJC1
22p/4/NPO/50V/J/X
U20
BC238 1u/4/X5R/6.3V/K
BC239 1u/4/X5R/6.3V/K
PF_PCIE_IP2
PF_PCIE_IN2
PF_PCIE_TP2
PF_PCIE_TN2
PKC2 0.1u/4/X7R/16V/K
PKC3 0.1u/4/X7R/16V/K
PF_PCIE_TP2_C
PF_PCIE_TN2_C
PF_PCIE_B_SW_IP2 17
PF_PCIE_B_SW_IN2 17
PF_PCIE_B_SW_TP2 17
PF_PCIE_B_SW_TN2 17
X4_SW
R12 8.2K/4
R13 8.2K/4
Q2 MMBT2222A/SOT23/600mA/40
S0T23
PCIEX4_X1
23 PCIEX4_X1
PI3PCIE2415ZHE/TQFN42
x1 Slot
x1 Slot
x4 Slot
x4 Slot
PCIEX4/X1 SWITCH
U21
BC240 1u/4/X5R/6.3V/K
BC241 1u/4/X5R/6.3V/K
PI_PCIE_IP3
PI_PCIE_IN3
PI_PCIE_TP3
PI_PCIE_TN3
PJ_PCIE_IP4
PJ_PCIE_IN4
PJ_PCIE_TP4
PJ_PCIE_TN4
PJC2 0.1u/4/X7R/16V/K
PJC3 0.1u/4/X7R/16V/K
PI_PCIE_TP3_C
PI_PCIE_TN3_C
PJ_PCIE_TP4_C
PJ_PCIE_TN4_C
PI_PCIE_B_SW_IP3 17
PI_PCIE_B_SW_IN3 17
PI_PCIE_B_SW_TP3 17
PI_PCIE_B_SW_TN3 17
PJ_PCIE_B_SW_IP4 17
PJ_PCIE_B_SW_IN4 17
PJ_PCIE_B_SW_TP4 17
PJ_PCIE_B_SW_TN4 17
Function | SEL
xI--> xOa | L;PCIEX4 SLOT-->X1
xI--> xOb | H;PCIEX4 SLOT-->X4
x1 Slot
x1 Slot
x4 Slot
x4 Slot
PIBC3 0.1u/4/X7R/16V/K
PJBC3 0.1u/4/X7R/16V/K/X
PFBC3 0.1u/4/X7R/16V/K
GIGABYTE TECHNOLOGY
Title
PCIE_X1 1,2,3
Size Custom
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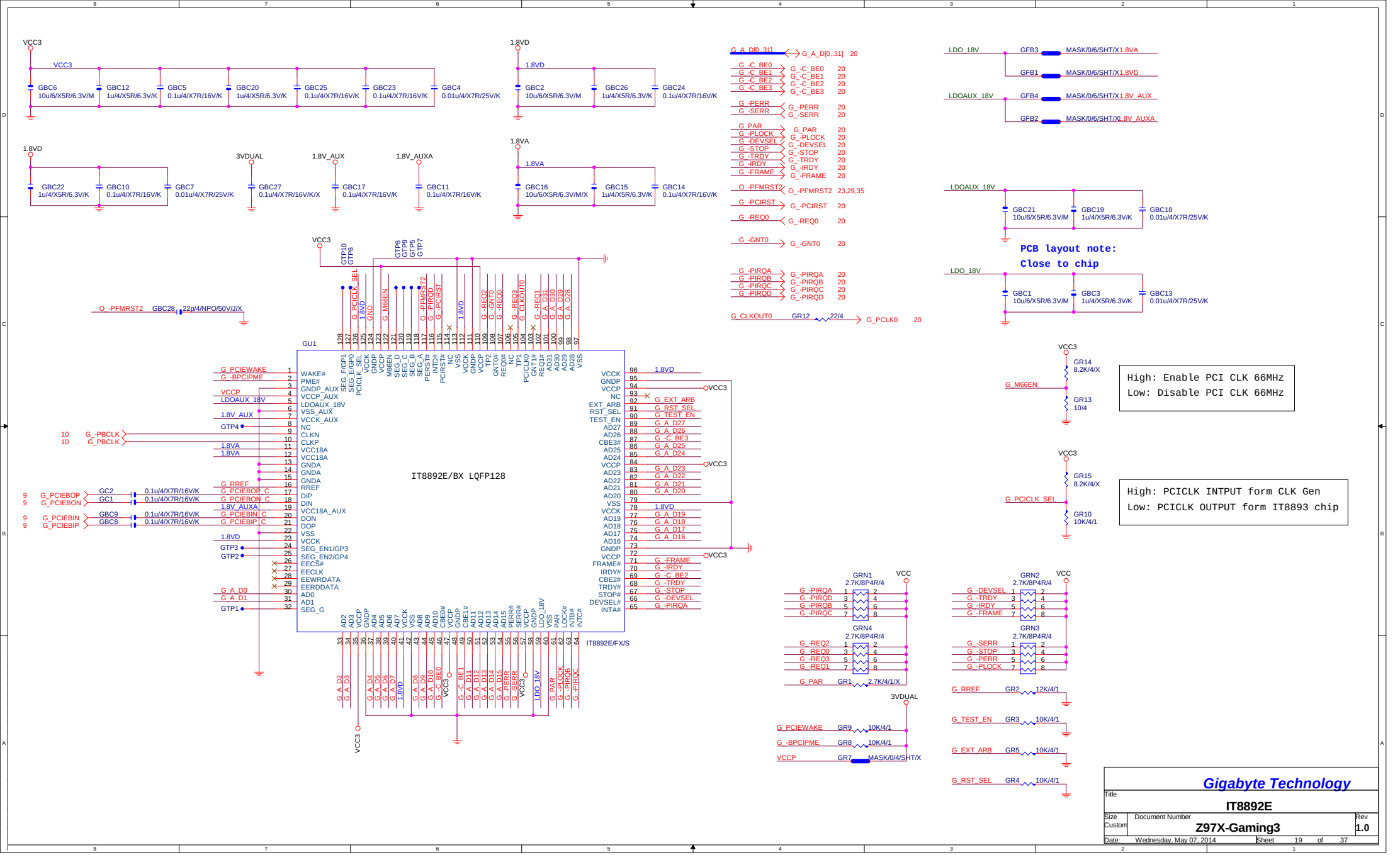
VCC3
GBC6 10u/6/X5R/6.3V/M
GBC12 1u/4/X5R/6.3V/K
GBC5 0.1u/4/X7R/16V/K
GBC20 1u/4/X5R/6.3V/K
GBC25 0.1u/4/X7R/16V/K
GBC23 0.1u/4/X7R/16V/K
GBC4 0.01u/4/X7R/25V/K
1.8VD
GBC2 10u/6/X5R/6.3V/M
GBC26 1u/4/X5R/6.3V/K
GBC24 0.1u/4/X7R/16V/K
GBC22 1u/4/X5R/6.3V/K
GBC10 0.1u/4/X7R/16V/K
GBC7 0.01u/4/X7R/25V/K
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/6/X5R/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_-GNT0
G_-PIRQA
G_-PIRQB
G_-PIRQC
G_-PIRQD
G_CLKOUT0
GR12 22/4
G_PCLK0
LDO_18V
GFB3 MASK/0/6/SHT/X1.8VA
GFB1 MASK/0/6/SHT/X1.8VD
LDOAUX_18V
GFB4 MASK/0/6/SHT/X1.8V_AUX
GFB2 MASK/0/6/SHT/X1.8V_AUXA
GBC21 10u/6/X5R/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/6/X5R/6.3V/M
GBC3 1u/4/X5R/6.3V/K
GBC13 0.01u/4/X7R/25V/K
GU1
IT8892E/BX LQFP128
IT8892E/FX/S
O_-PFMRST2 GBC28 22p/4/NPO/50V/J/X
G_PCIEWAKE
G_-BPCIPME
VCCP
LDOAUX_18V
1.8V_AUX
GTP4
10 G_-PBCLK
10 G_PBCLK
1.8VA
1.8VA
G_RREF
9 G_PCIEBOP
9 G_PCIEBON
GC2 0.1u/4/X7R/16V/K
GC1 0.1u/4/X7R/16V/K
1.8V_AUXA
9 G_PCIEBIN
9 G_PCIEBIP
GBC9 0.1u/4/X7R/16V/K
GBC8 0.1u/4/X7R/16V/K
1.8VD
GTP3
GTP2
G_A_D0
G_A_D1
GTP1
G_PCIECLK_SEL
1.8VD
GND
G_M66EN
G_-PIRQD
G_-PCIRST
G_-REQ2
G_-GNT0
G_-REQ0
G_-REQ3
G_CLKOUT0
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
GRN1 2.7K/8P4R/4
GRN2 2.7K/8P4R/4
GRN4 2.7K/8P4R/4
GRN3 2.7K/8P4R/4
G_PAR GR1 2.7K/4/1/X
G_PCIEWAKE GR9 10K/4/1
G_-BPCIPME GR8 10K/4/1
VCCP GR7 MASK/0/4/SHT/X
G_RREF GR2 12K/4/1
G_TEST_EN GR3 10K/4/1
G_EXT_ARB GR5 10K/4/1
G_RST_SEL GR4 10K/4/1
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
Gigabyte Technology
Title
IT8892E
Size Custom
Document Number
Z97X-Gaming3
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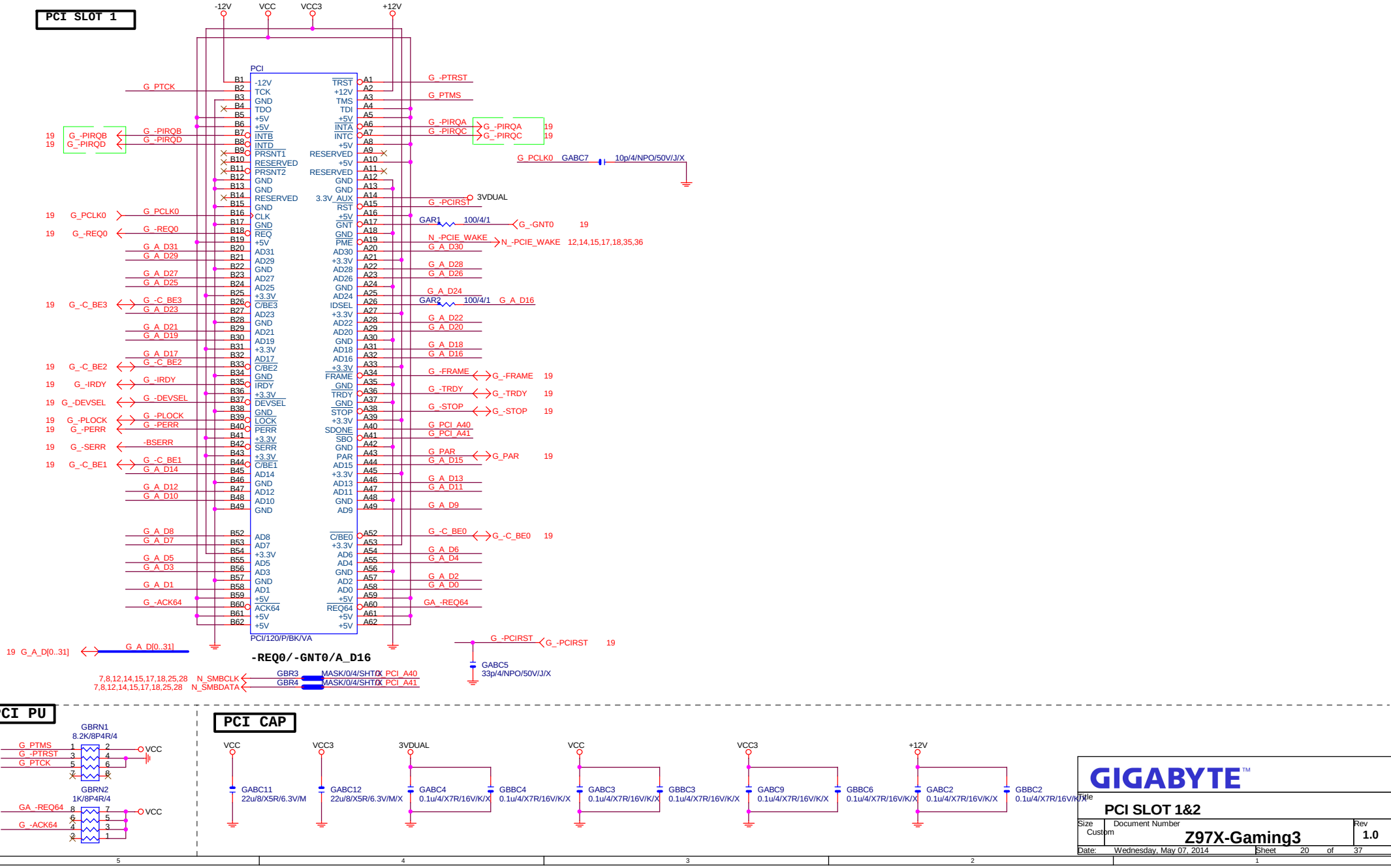
PCI SLOT 1
-12V
VCC
VCC3
+12V
PCI
PCI/120/P/BK/VA
-REQ0/-GNT0/A_D16
3VDUAL
G_PCLK0 GABC7 10p/4/NPO/50V/J/X
GAR1 100/4/1 G_-GNT0 19
GAR2 100/4/1 G_A_D16
N_-PCIE_WAKE 12,14,15,17,18,35,36
GABC5 33p/4/NPO/50V/J/X
GBR3 MASK/0/4/SHT/X N_PCI_A40
GBR4 MASK/0/4/SHT/X N_PCI_A41
7,8,12,14,15,17,18,25,28 N_SMBCLK
7,8,12,14,15,17,18,25,28 N_SMBDATA
19 G_A_D[0..31]
G_A_D[0..31]
PCI PU
GBRN1
8.2K/8P4R/4
GBRN2
1K/8P4R/4
PCI CAP
GABC11 22u/8/X5R/6.3V/M
GABC12 22u/8/X5R/6.3V/M/X
GABC4 0.1u/4/X7R/16V/K/X
GBBC4 0.1u/4/X7R/16V/K/X
GABC3 0.1u/4/X7R/16V/K/X
GBBC3 0.1u/4/X7R/16V/K/X
GABC9 0.1u/4/X7R/16V/K/X
GBBC6 0.1u/4/X7R/16V/K/X
GABC2 0.1u/4/X7R/16V/K/X
GBBC2 0.1u/4/X7R/16V/K/X
GIGABYTE
Title
PCI SLOT 1&2
Size Custom
Document Number
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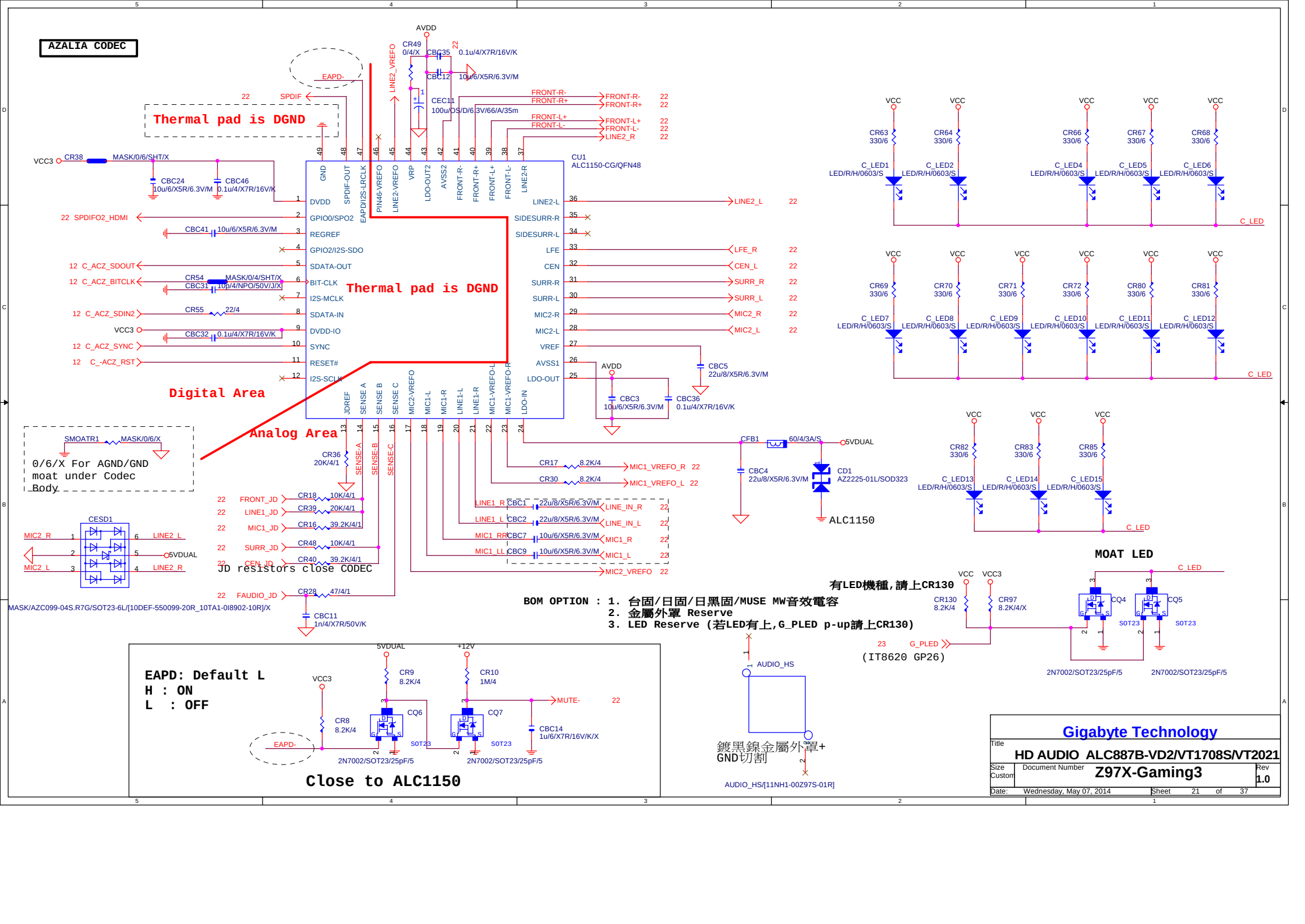
AZALIA CODEC
Thermal pad is DGND
Thermal pad is DGND
Digital Area
Analog Area
CU1
ALC1150-CG/QFN48
0/6/X For AGND/GND
moat under Codec
Body
JD resistors close CODEC
MASK/AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]/X
BOM OPTION : 1. 台固/日固/日黑固/MUSE MW音效電容
2. 金屬外罩 Reserve
3. LED Reserve (若LED有上,G_PLED p-up請上CR130)
有LED機種,請上CR130
MOAT LED
(IT8620 GP26)
EAPD: Default L
H : ON
L : OFF
Close to ALC1150
鍍黑鎳金屬外罩+
GND切割
AUDIO_HS/[11NH1-00Z97S-01R]
2N7002/SOT23/25pF/5
ALC1150
Gigabyte Technology
HD AUDIO ALC887B-VD2/VT1708S/VT2021
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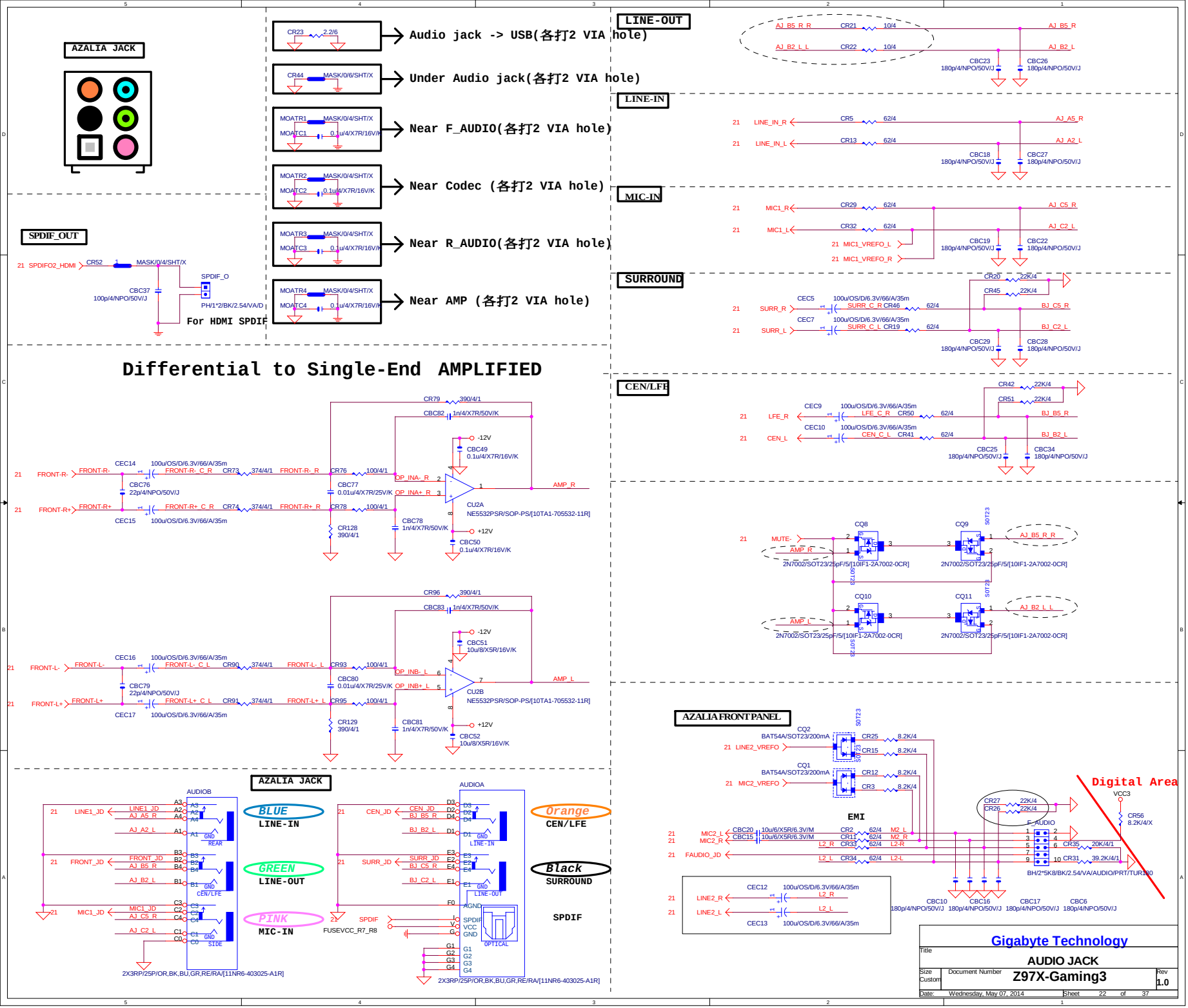
AZALIA JACK
SPDIF_OUT
21 SPDIFO2_HDMI
CR52
MASK/0/4/SHT/X
SPDIF_O
CBC37
100p/4/NPO/50V/J
PH/1*2/BK/2.54/VA/D
For HDMI SPDIF
CR23 2.2/6
Audio jack -> USB(各打2 VIA hole)
CR44 MASK/0/6/SHT/X
Under Audio jack(各打2 VIA hole)
MOATR1 MASK/0/4/SHT/X
MOATC1 0.1u/4/X7R/16V/K
Near F_AUDIO(各打2 VIA hole)
MOATR2 MASK/0/4/SHT/X
MOATC2 0.1u/4/X7R/16V/K
Near Codec (各打2 VIA hole)
MOATR3 MASK/0/4/SHT/X
MOATC3 0.1u/4/X7R/16V/K
Near R_AUDIO(各打2 VIA hole)
MOATR4 MASK/0/4/SHT/X
MOATC4 0.1u/4/X7R/16V/K
Near AMP (各打2 VIA hole)
LINE-OUT
AJ_B5_R_R
AJ_B2_L_L
CR21 10/4
CR22 10/4
AJ_B5_R
AJ_B2_L
CBC23 180p/4/NPO/50V/J
CBC26 180p/4/NPO/50V/J
LINE-IN
21 LINE_IN_R
21 LINE_IN_L
CR5 62/4
CR13 62/4
AJ_A5_R
AJ_A2_L
CBC18 180p/4/NPO/50V/J
CBC27 180p/4/NPO/50V/J
MIC-IN
21 MIC1_R
21 MIC1_L
CR29 62/4
CR32 62/4
AJ_C5_R
AJ_C2_L
21 MIC1_VREFO_L
21 MIC1_VREFO_R
CBC19 180p/4/NPO/50V/J
CBC22 180p/4/NPO/50V/J
SURROUND
21 SURR_R
21 SURR_L
CEC5 100u/OS/D/6.3V/66/A/35m
CEC7 100u/OS/D/6.3V/66/A/35m
SURR_C_R CR46 62/4
SURR_C_L CR19 62/4
CR20 22K/4
CR45 22K/4
BJ_C5_R
BJ_C2_L
CBC29 180p/4/NPO/50V/J
CBC28 180p/4/NPO/50V/J
CEN/LFE
21 LFE_R
21 CEN_L
CEC9 100u/OS/D/6.3V/66/A/35m
CEC10 100u/OS/D/6.3V/66/A/35m
LFE_C_R CR50 62/4
CEN_C_L CR41 62/4
CR42 22K/4
CR51 22K/4
BJ_B5_R
BJ_B2_L
CBC25 180p/4/NPO/50V/J
CBC34 180p/4/NPO/50V/J
Differential to Single-End AMPLIFIED
21 FRONT-R-
21 FRONT-R+
CEC14 100u/OS/D/6.3V/66/A/35m
CEC15 100u/OS/D/6.3V/66/A/35m
CBC76 22p/4/NPO/50V/J
CR79 390/4/1
CBC82 1n/4/X7R/50V/K
CR76 100/4/1
CR77 0.01u/4/X7R/25V/K
CR78 100/4/1
CR128 390/4/1
CBC78 1n/4/X7R/50V/K
CBC49 0.1u/4/X7R/16V/K
CBC50 0.1u/4/X7R/16V/K
-12V
+12V
OP_INA-_R
OP_INA+_R
AMP_R
CU2A
NE5532PSR/SOP-PS/[10TA1-705532-11R]
21 FRONT-L-
21 FRONT-L+
CEC16 100u/OS/D/6.3V/66/A/35m
CEC17 100u/OS/D/6.3V/66/A/35m
CBC79 22p/4/NPO/50V/J
CR96 390/4/1
CBC83 1n/4/X7R/50V/K
CR93 100/4/1
CR95 100/4/1
CR129 390/4/1
CBC81 1n/4/X7R/50V/K
CBC51 10u/8/X5R/16V/K
CBC52 10u/8/X5R/16V/K
OP_INB-_L
OP_INB+_L
AMP_L
CU2B
NE5532PSR/SOP-PS/[10TA1-705532-11R]
21 MUTE-
AMP_R
AMP_L
CQ8
CQ9
CQ10
CQ11
2N7002/SOT23/25pF/5/[10IF1-2A7002-0CR]
AJ_B5_R_R
AJ_B2_L_L
AZALIA FRONT PANEL
CQ2
CQ1
BAT54A/SOT23/200mA
21 LINE2_VREFO
21 MIC2_VREFO
CR25 8.2K/4
CR15 8.2K/4
CR12 8.2K/4
CR3 8.2K/4
EMI
21 MIC2_L
21 MIC2_R
21 FAUDIO_JD
CBC20 10u/6/X5R/6.3V/M
CBC15 10u/6/X5R/6.3V/M
CR2 62/4 M2_L
CR11 62/4 M2_R
CR33 62/4 L2-R
CR34 62/4 L2-L
L2_R
L2_L
F_AUDIO
CR27 22K/4
CR26 22K/4
CR35 20K/4/1
CR31 39.2K/4/1
CR56 8.2K/4/X
VCC3
Digital Area
BH/2*5K8/BK/2.54/VA/AUDIO/PRT/TURN90
21 LINE2_R
21 LINE2_L
CEC12 100u/OS/D/6.3V/66/A/35m
CEC13 100u/OS/D/6.3V/66/A/35m
CBC10 180p/4/NPO/50V/J
CBC16 180p/4/NPO/50V/J
CBC17 180p/4/NPO/50V/J
CBC6 180p/4/NPO/50V/J
AZALIA JACK
AUDIOB
AUDIOA
21 LINE1_JD
21 FRONT_JD
21 MIC1_JD
21 CEN_JD
21 SURR_JD
BLUE
LINE-IN
GREEN
LINE-OUT
PINK
MIC-IN
Orange
CEN/LFE
Black
SURROUND
SPDIF
SPDIF
FUSEVCC_R7_R8
2X3RP/25P/OR,BK,BU,GR,RE/RA/[11NR6-403025-A1R]
Gigabyte Technology
Title
AUDIO JACK
Size
Custom
Document Number
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SIO IT8728F

IT8620E_BX

CPU_OPT

CPU_FAN

SYS_FAN1

SYS_FAN2

SYS_FAN3

CPU_OPT

SYS_FAN3

EUP from PCH

PWR SHT

For 8728 EUP function

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

JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP3 JP5	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh
	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

Hi :Disable WDT
Lo :Enable WDT to rest PWROK

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

Power leakage

SIO_18V

internal power pin, max 22nF cap

DUAL BIOS OPT STRAP

SIO CAP

MB ID

Breath LED's GPIO :
GP14 : Disable
GP65 : Brightness

Gigabyte Technology

Title: ITE 8620CX LPC IO

Size: B | Document Number: Z97X-Gaming3 | Rev: 1.0

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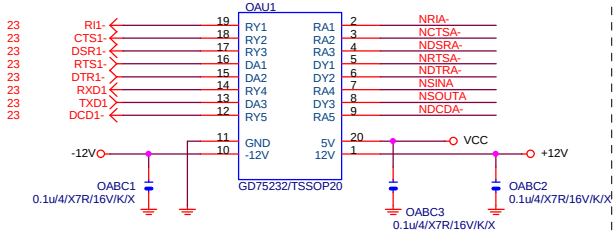
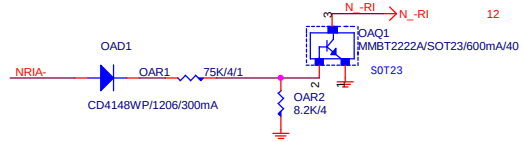
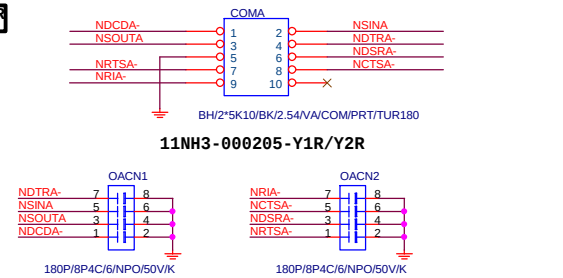
COMA



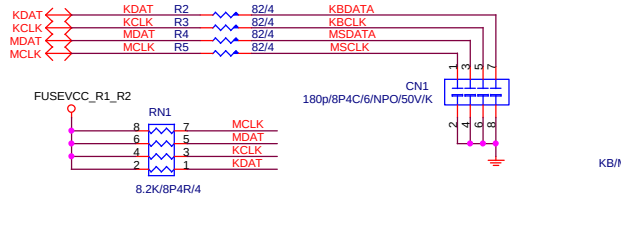
COM RI

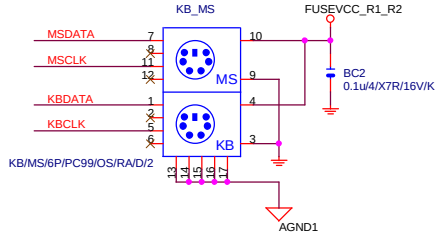


COM BUFFER

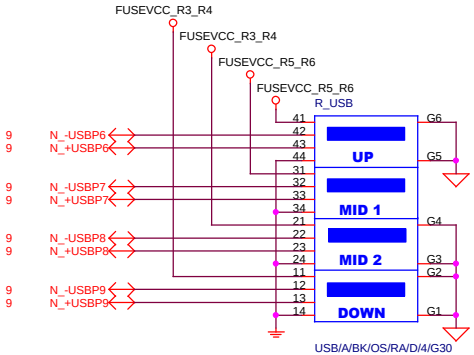


KB/USB

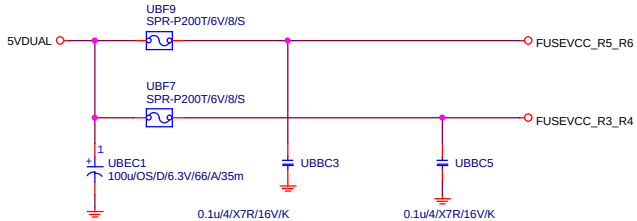




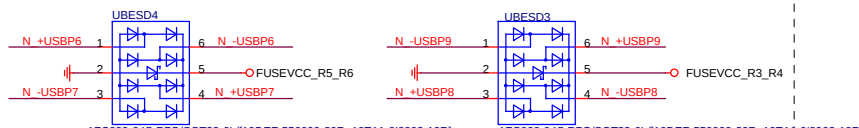
R_USB



USB20 FUSE



USB20 ESD PROCTECT



Gigabyte Technology		
Title: COM/ PROHOT/ R_USB		
Size: Custom	Document Number: Z97X-Gaming3	Rev: 1.0
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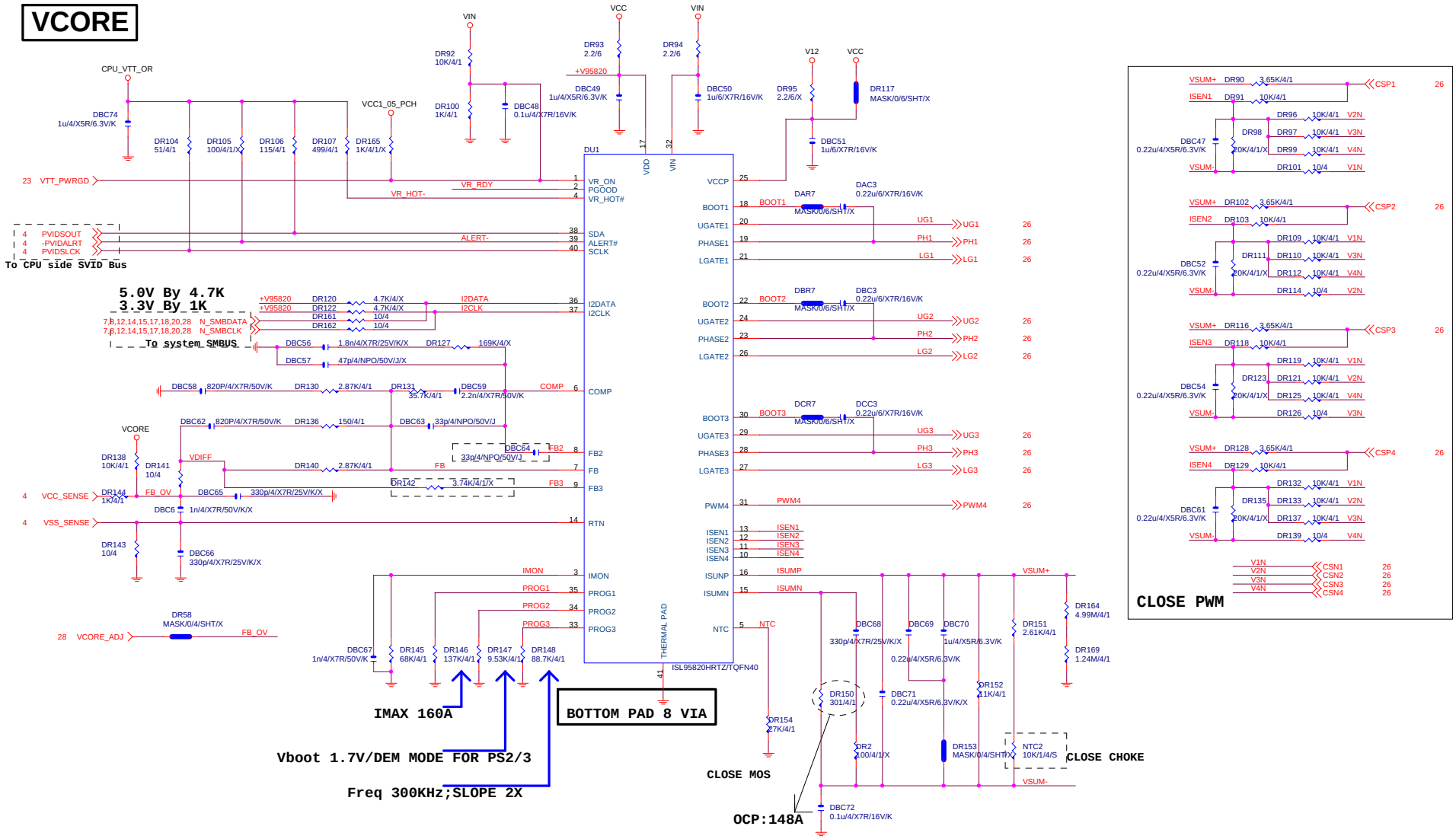
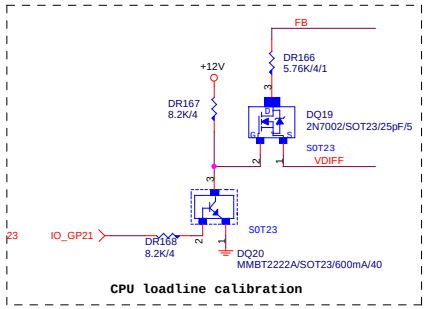
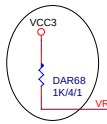
VCORE







VCORE各層切割

第一層:VCORE
第二層:VCORE
第三層:GND
第四層:VCORE

Gigabyte Technology			
Title: VCORE_ ISL95820			
Size: Custom	Document Number: Z97X-Gaming3		Rev: 1.0
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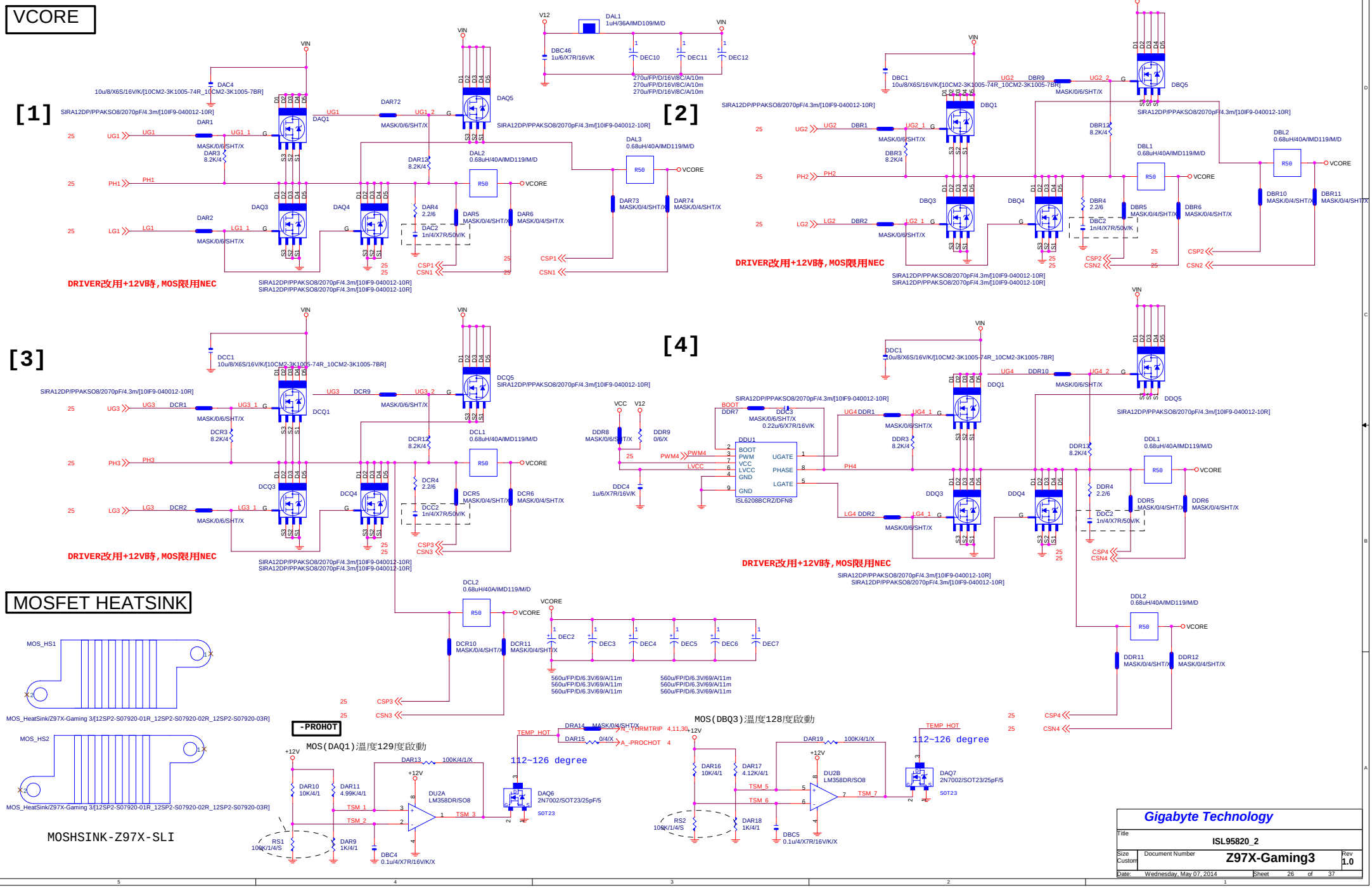
VCORE



MOSFET HEATSINK

MOSHSINK-Z97X-SLI

Gigabyte Technology			
Title	ISL95820_2		
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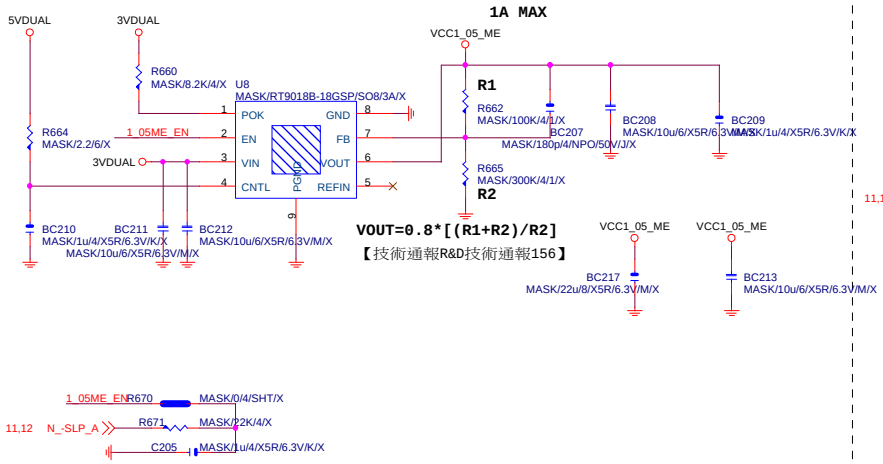
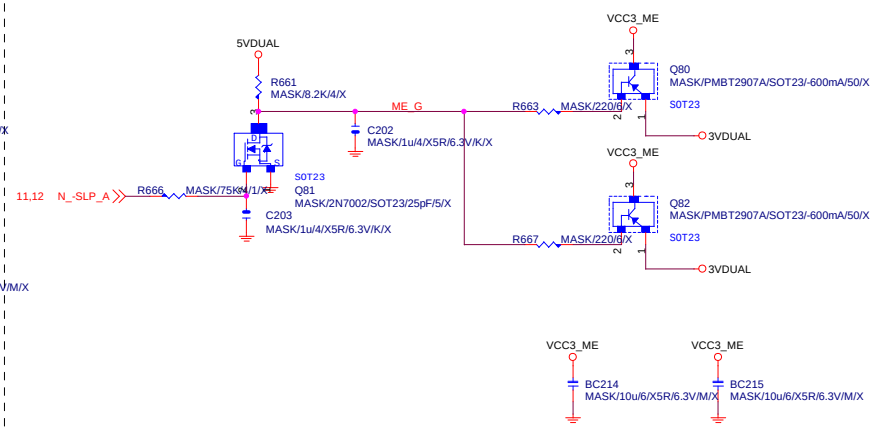
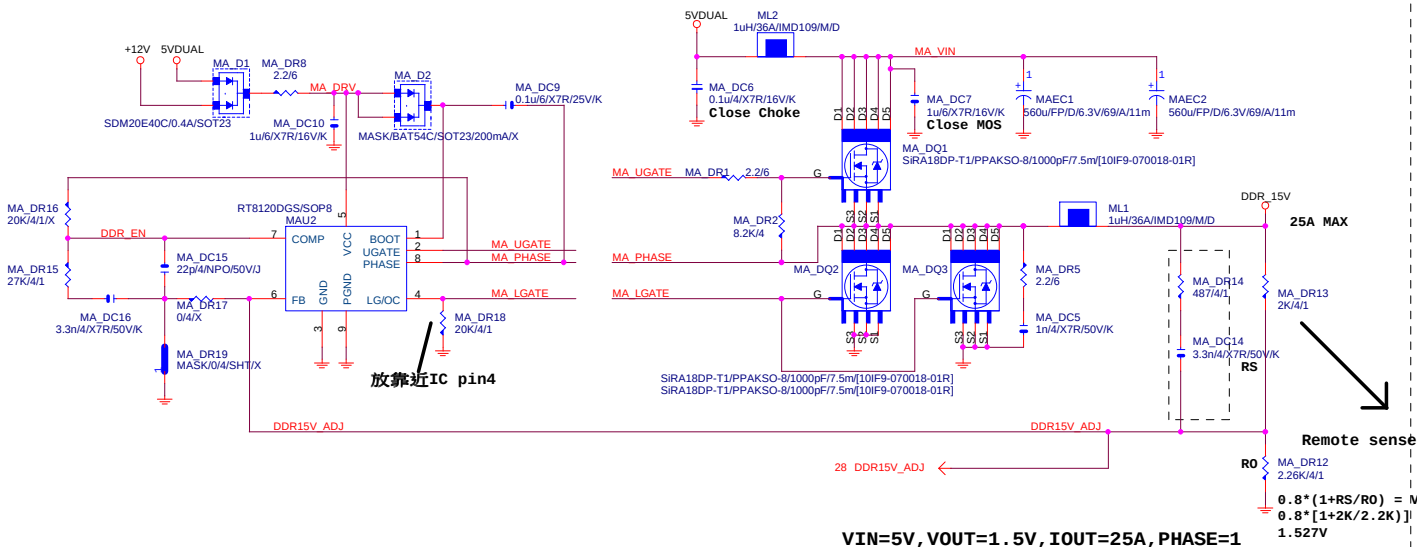
VCC1_05_ME



VCC3_ME



DDR_15V



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℃)

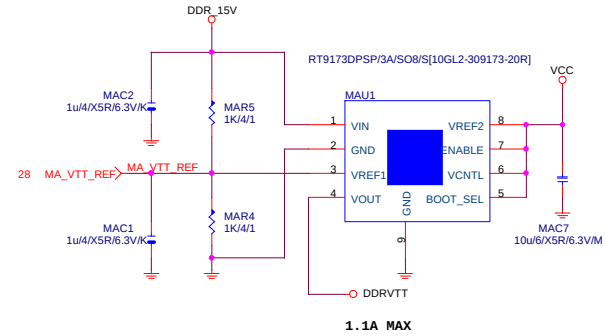
VIN Ripple current=4.7X1.7=7.99A(85℃)
-->故固態電容須2X7.99=15.98>11.45A

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]

PWR SEQ

DDR_EN → DDR_EN_CON 23

DDRVTT



Title	DDR15V / M3 POWER		
Size: Custom	Document Number: Z97X-Gaming3		Rev: 1.0
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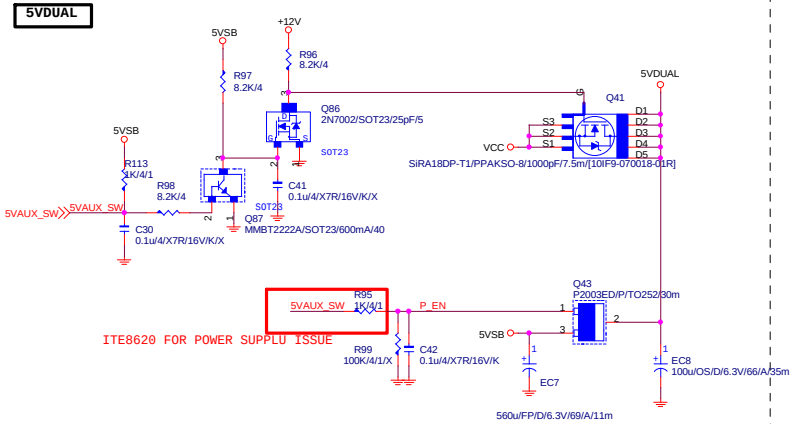
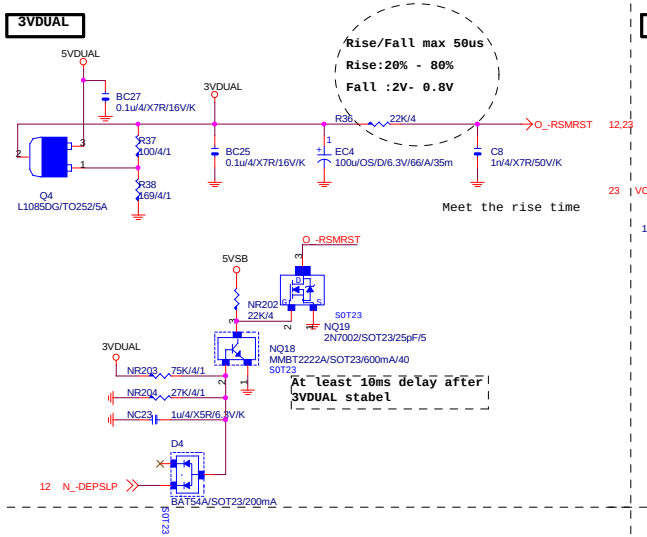
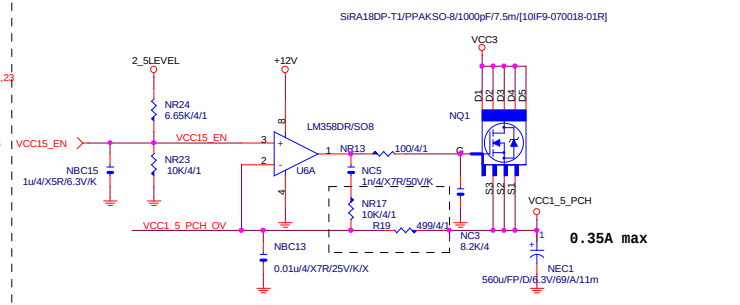
5VDUAL



3VDUAL

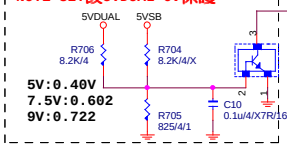


VCC1_5_PCH

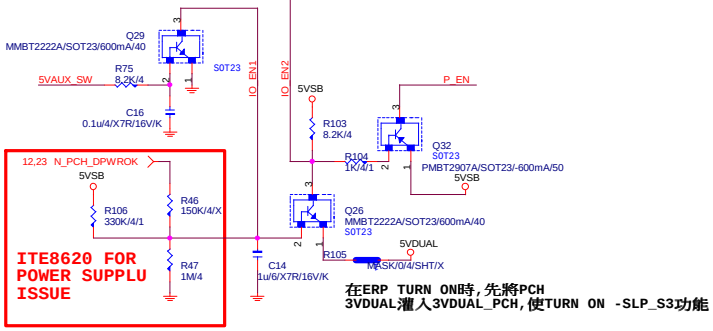


5VSB OVP:7.5V protection

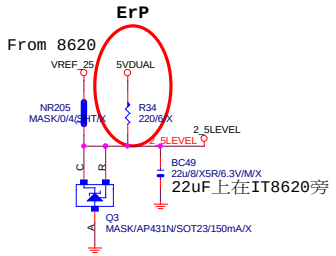
NOTE 82:改5VDUAL 6v保護



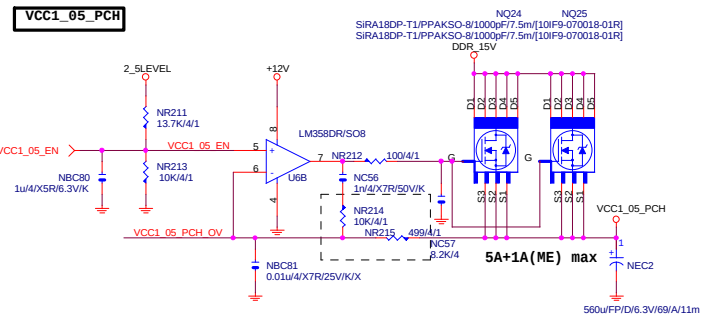
5VDUAL SHORT PROTECT



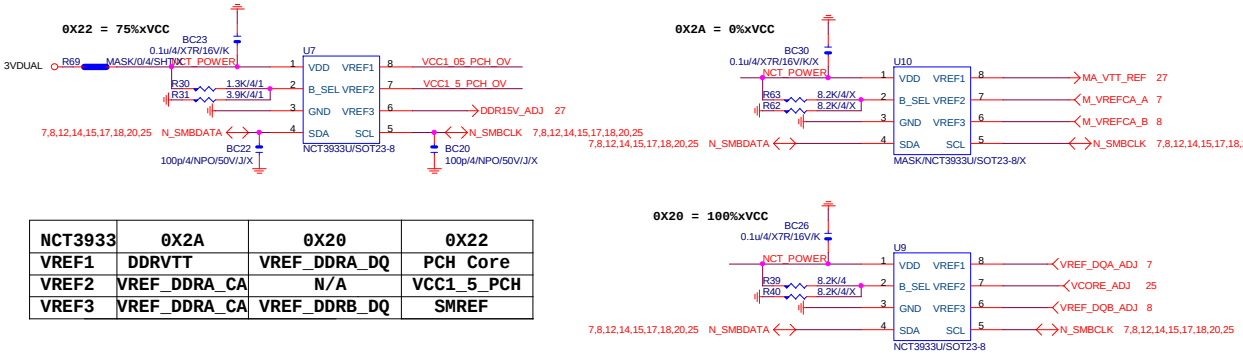
2_5LEVEL



VCC1_05_PCH



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

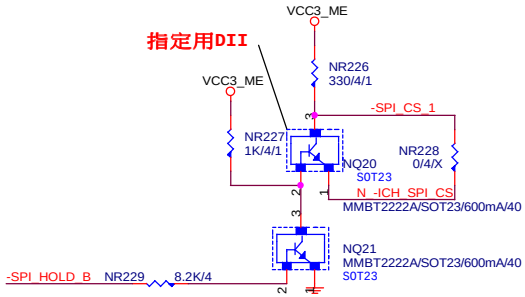
Gigabyte Technology

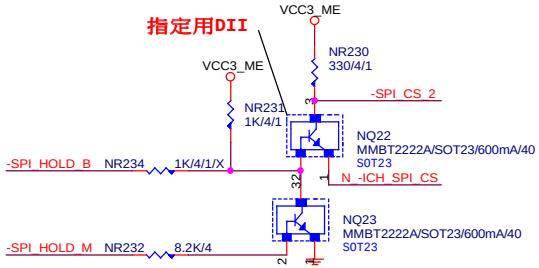
Title: DISCRETE POWER

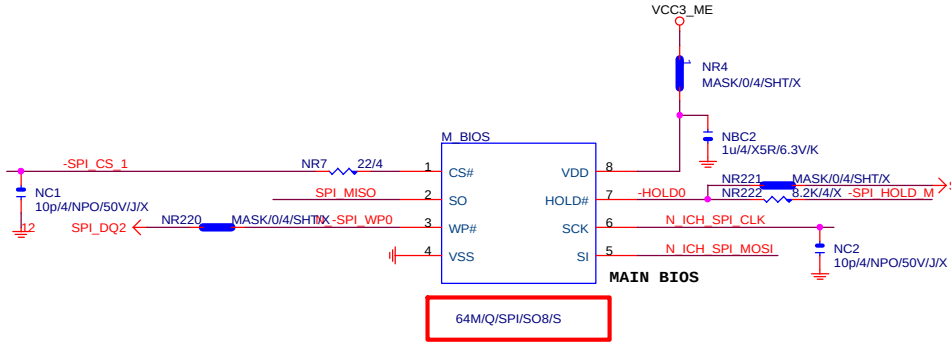
Size: Custom | Document Number: Z97X-Gaming3 | Rev: 1.0

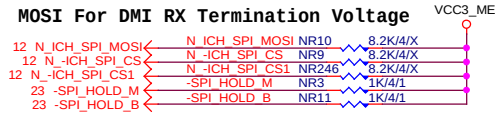
Date: Wednesday, May 07, 2014 | Sheet 28 of 37

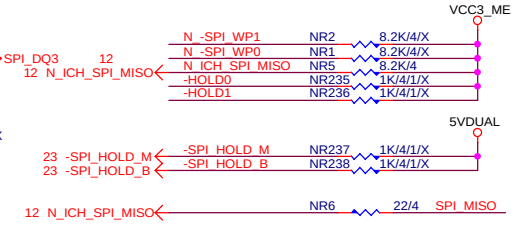
DUAL BIOS



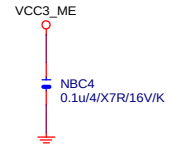






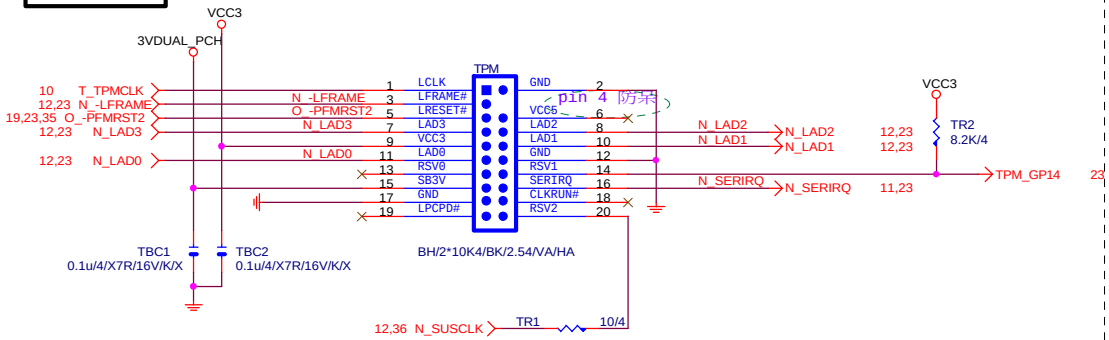


BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

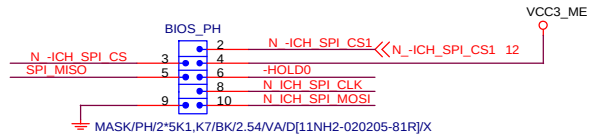


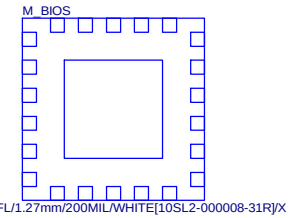
1 means floating
0 means PD 1K

TPM CONNECT



BIOS Debug port





Gigabyte Technology		
Title: BIOS		
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Front USB3.0

F_USB30 REV=1
BH/2*10K20/BK/ON/2.0/VA/D/GF

F_USB30 ESD PROTECT

UAE1 AZ1065-06Q/MSOP8L
UAE2 AZ1065-06Q/MSOP8L

Close to connector

F_USB30 PWR

SMD1206P350SLR/6V/S
UAEC3 100u/OS/D/6.3V/66/A/35m

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 560u/FP/D/6.3V/69/A/11m

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

UAF3 SPR-P200T/6V/8/S
共用一個560uF

-USBOC_R

UBD1 BAT54A/SOT23/200mA
UBD3 BAT54A/SOT23/200mA

-USBOC_F

BAT54A/SOT23/200mA

SATA LED

SATALED# signal open-collector,pull-up (8.2 kΩ to 10 kΩ) to Vcc3_3

FPD2 BAT54A/SOT23/200mA
FPQ9 MMBT2222A/SOT23/600mA/40
FPQ10 MMBT2222A/SOT23/600mA/40

SPKR

To disable TCO timer

FPQ6 MMBT2222A/SOT23/600mA/40
FPQ5 MMBT2222A/SOT23/600mA/40
FPQ7 2N7002/SOT23/25pF/5

CASE OPEN

F_USB POWER PROTECT

UAD5 BAT54A/SOT23/200mA

USB2.0 Signal & power short protection

USB2.0 Signal > 4.85V
Enable --> 3VDUAL=3.5V

UA1A MASK/LM358DR/SO8/X
UA1B MASK/LM358DR/SO8/X
UAQ1 MASK/2N7002/SOT23/25pF/5/X
UAQ2 MASK/2N7002/SOT23/25pF/5/X

(開機短路保護)
(開機短路保護)

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]

Gigabyte Technology

Title	FP,F_USB,USB PWR,FDD,BZ	
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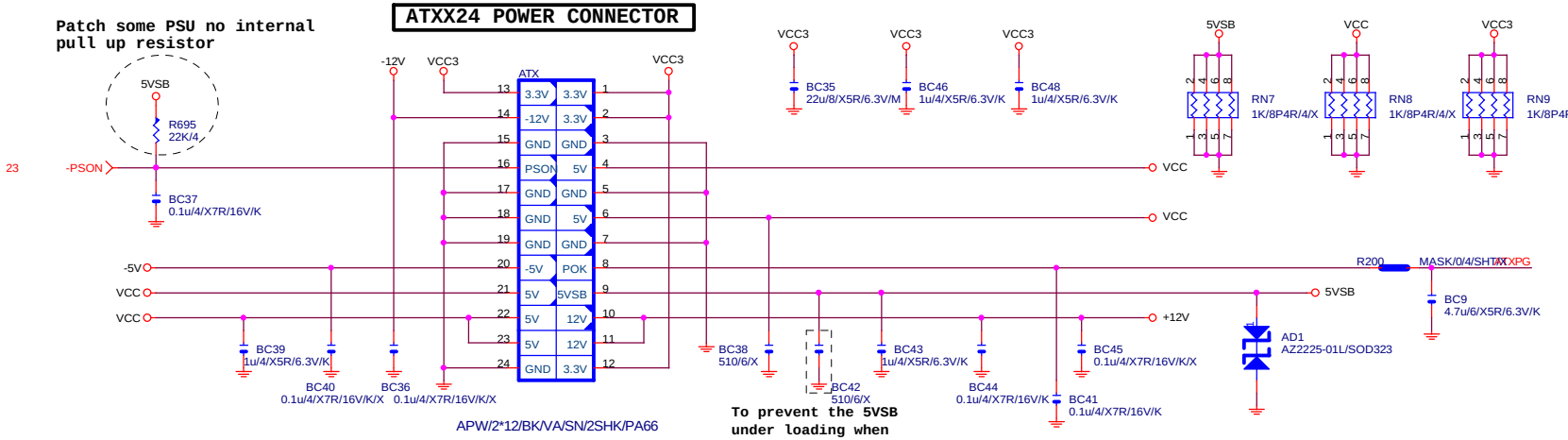
Patch some PSU no internal pull up resistor

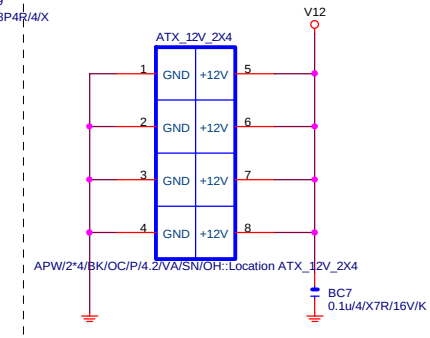
ATXX24 POWER CONNECTOR

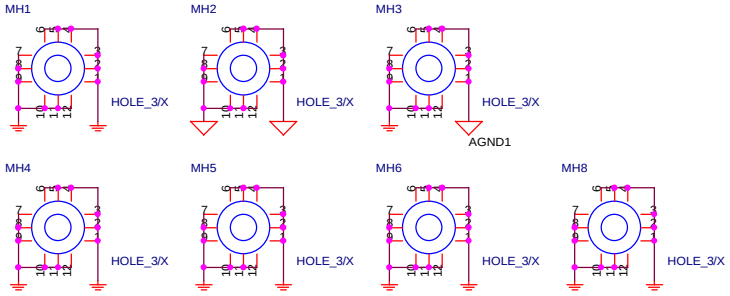


APW/2*12/BK/VA/SN/2SHK/PA66

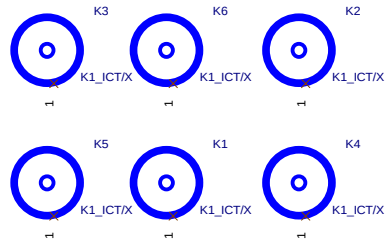
To prevent the 5VSB under loading when boot

ATXX4 POWER CONNECTOR

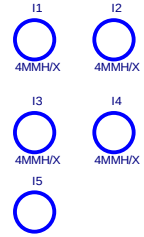




HOLE_4-RH-1



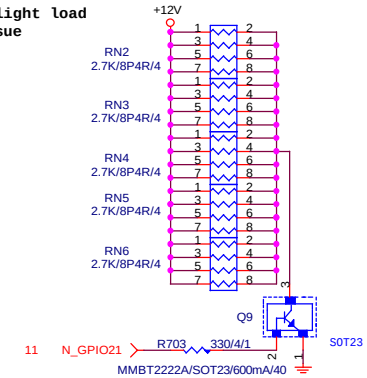
K1-ICT



4MMH

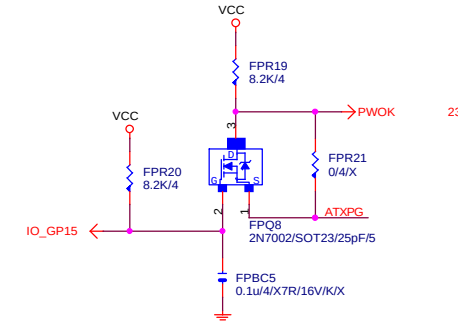
【技術通報R&D技術通報153】

To fix 12V light load abnromal issue



PWOK PATCH

【技術通報R&D技術通報154】



Gigabyte Technology		
Title: ATX POWER CONNECTOR		
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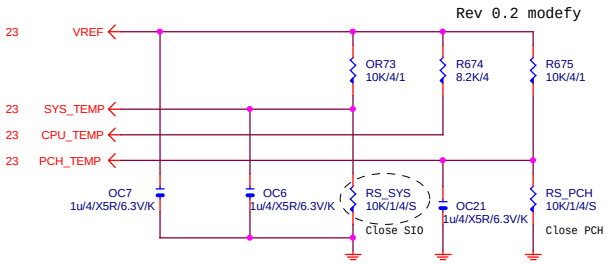
CLOSE CPU VCORE EN

TEMP H/W MONITOR

Rev 0.2 modefy

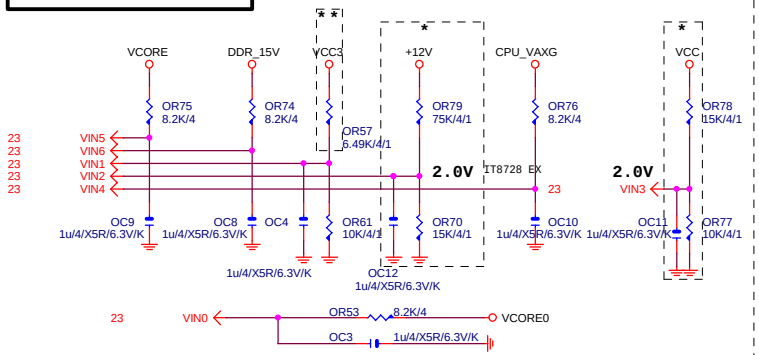


Thrmtrip#改用LM358做

VOLTAGE-- H/W MONITOR

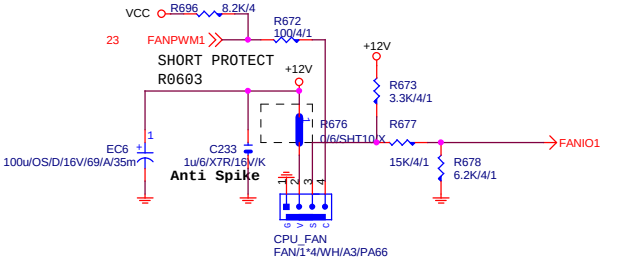
* IT8728 BX
** IT8728 CX

VIN2 must +12V input
VIN3 must VCC input



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

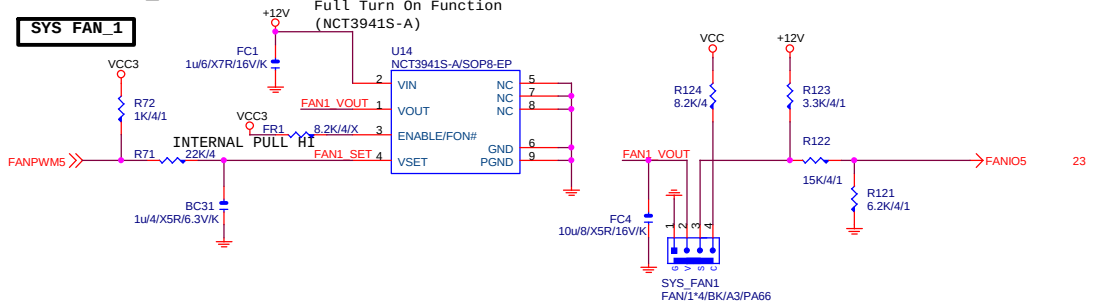
CPU SMART FAN



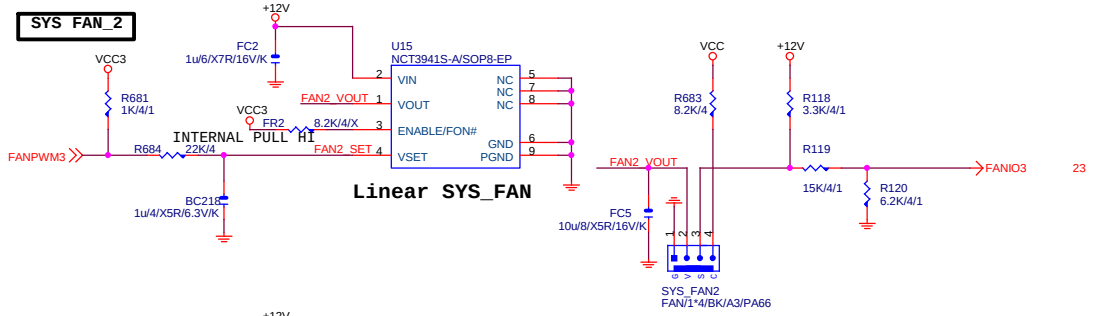
Linear SYS_FAN

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

SYS FAN_1

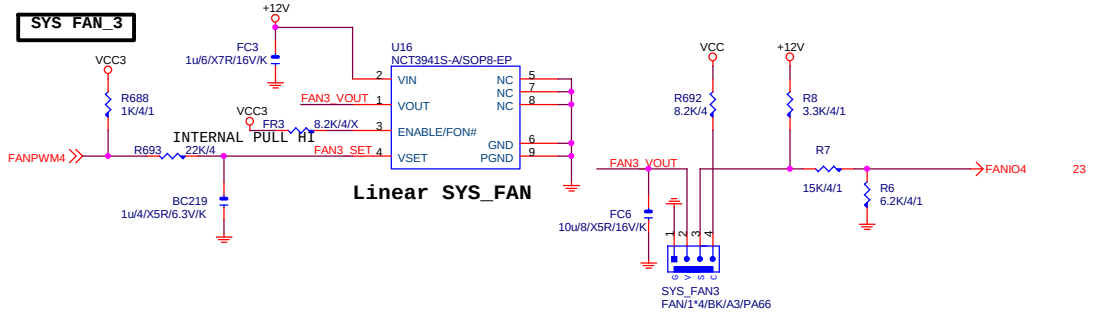


SYS FAN_2



Linear SYS_FAN

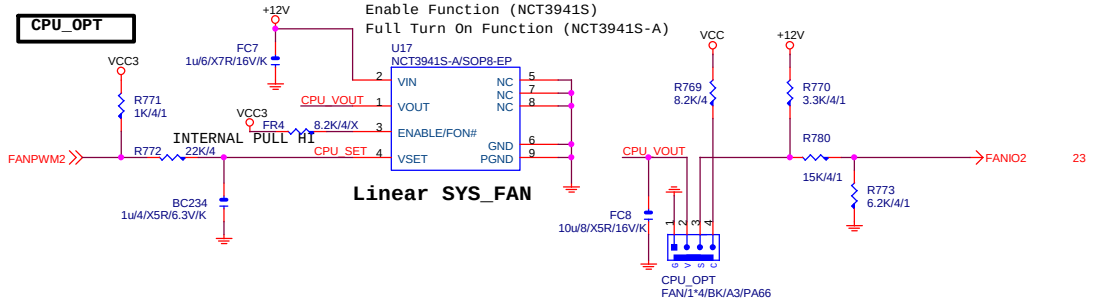
SYS FAN_3



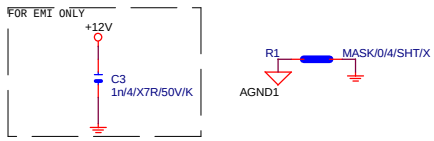
Linear SYS_FAN

CPU_OPT

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



Linear SYS_FAN



Gigabyte Technology

Title	HWM,KB/MS, FAN CTRL	
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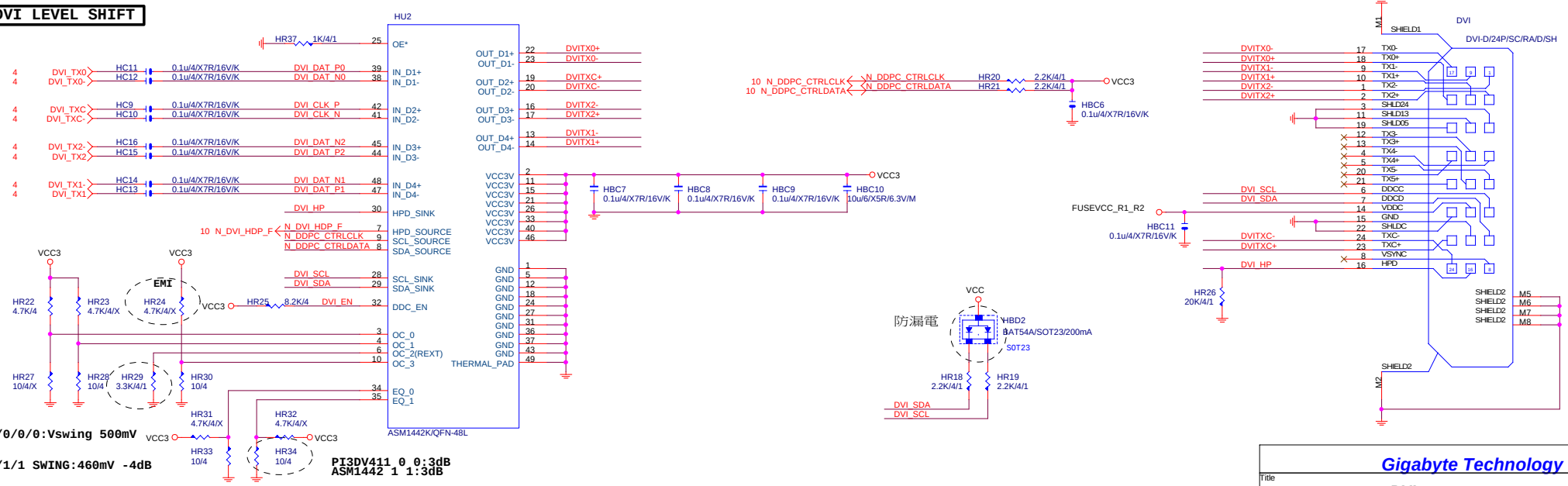
DVI:15/4/4/4/15

Impedance=85 +- 17.5%

DVI LEVEL SHIFT



PERICOM 0/0/0/0:Vswing 500mV

ASM1442

DEFAULT 0/1/1 SWING:460mV -4dB

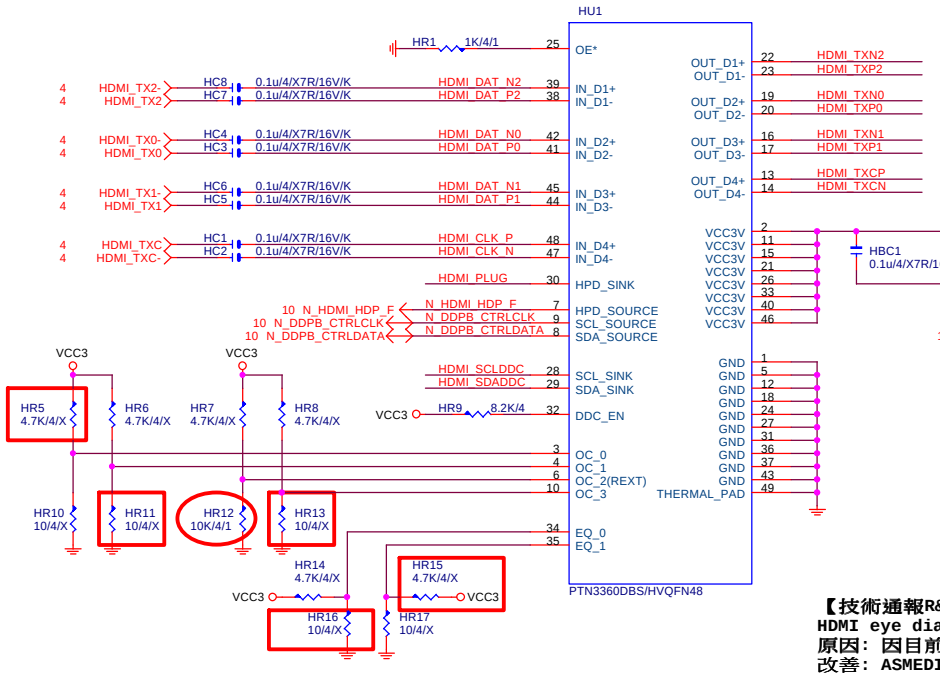
PI3DV411 0 0:3dB

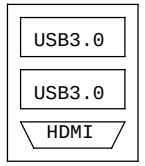
ASM1442 1 1:3dB

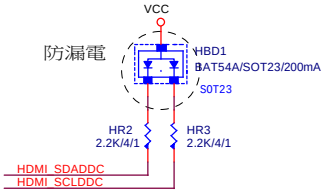
Gigabyte Technology		
Title: DVI		
Size: Custom	Document Number: Z97X-Gaming3	Rev: 1.0
Date: Wednesday, May 07, 2014	Sheet 33 of 37	

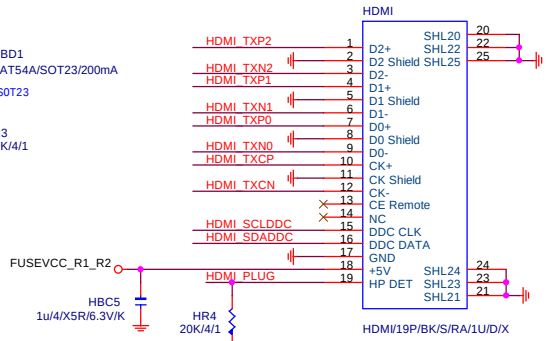
HDMI LEVEL SHIFT

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







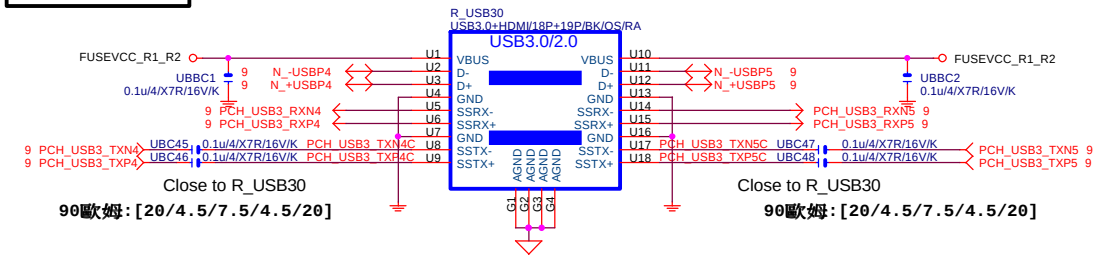


HDMI與R_USB共用一個料件

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)

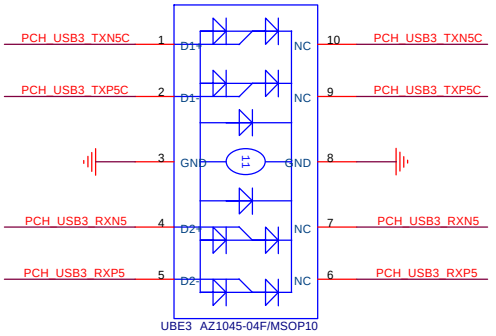
USB30_20 CONNECT

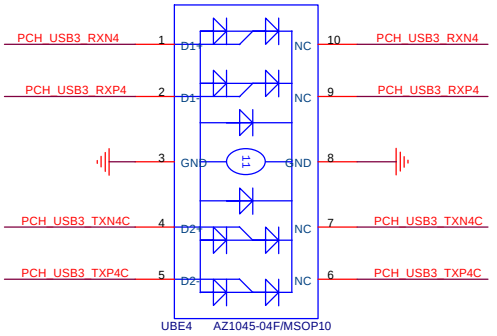


90歐姆:[20/4.5/7.5/4.5/20]

90歐姆:[20/4.5/7.5/4.5/20]

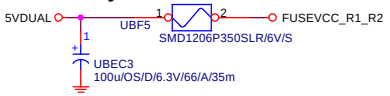
USB30 ESD PROCTECT



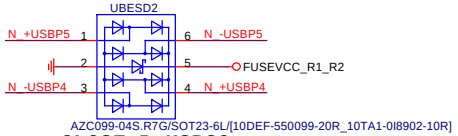


USB30 PWR

Polyswitch-1206



USB20 ESD PROCTECT



CLOSE R_USB30

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

Title: HDMI			
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LAN:AR8151/AR8161

離IC近越好

LAC1 0.1u/4/X7R/16V/K
LAC2 0.1u/4/X7R/16V/K

10 LB_-SRCCLK_LAN
10 LB_SRCCLK_LAN
9 LB_ML_OP
9 LB_ML_ON
LB_ML_OP_C
LB_ML_ON_C

LA_ ML-->80歐姆:[15/5/5/5/15]

SRCCLK-->50歐姆:[18/4/10/4/18]

LABC5 0.1u/4/X7R/16V/K
LABC4 1u/4/X5R/6.3V/K
LABC3 0.1u/4/X7R/16V/K
LABC6 0.1u/4/X7R/16V/K/X
AR8161-->N/A (LABC6)

LA_AVDDVCO
LABC7 0.1u/4/X7R/16V/K
LABC8 4.7u/6/X5R/6.3V/K
AR8161-->(0)

3VDUAL
LABC10 1u/4/X5R/6.3V/K
LABC11 0.1u/4/X7R/16V/K
LABC9 10u/6/X5R/6.3V/M

LAU1
EGND
VDD3V
PERST#
WAKE#
CLKREQ#
VDDCT/ISOLAT
AVDDL_REG
XTLO
XTLI
AVDDH_REG
RBIAS
LX
LED1
LED0
DVDDL_REG
RX_N
RX_P
AVDDL
REFCLKP
REFCLKN
AVDDL/NC
TX_P
TX_N
NC
TESTMODE
SMDATA
SMCLK
DVDDL/PPS
LED2
AVDDH
TRXN3
TRXP0
TRXN0
AVDDL/NC
TRXP1
TRXN1
AVDDH/AVDD33
TRXP2
TRXN2
AVDDL
TRXP3
Atheros
AR8151/AR8161
E2201-BL3A-R/S

LA_ ML-->80歐姆:[15/5/5/5/15]

離IC近越好

LB_ML_IP_C LAC12 0.1u/4/X7R/16V/K LB_ML_IP 9
LB_ML_IN_C LAC13 0.1u/4/X7R/16V/K LB_ML_IN 9

3VDUAL
LAC33 100p/4/NPO/50V/J/X
LAR6 8.2K/4
19,23,29 O_-PFMRST2
12,14,15,17,18,20,36 N_PCIE_WAKE
AR8161-->N/A (LABC12)
LA_-CLKREQ
LA_VDDCT
LA_AVDDL
LA_XTALO
LA_XTALI
LA_AVDDH
LA_VDD33
LABC12 1u/4/X5R/6.3V/K/X
LABC15 1u/4/X5R/6.3V/K
LABC16 0.1u/4/X7R/16V/K
LABC18 1u/4/X5R/6.3V/K
LABC19 0.1u/4/X7R/16V/K
LAR10 2.37K/4/1
LA_RBIAS

LAR9 0/4/X
LABC14 0.1u/4/X7R/16V/K/X
LA_DVDDL
AR8161-->N/A (LAR9,LABC14)
LA_PPS
LA_LED_LINK100
LA_AVDDH
LA_MDI3-
LABC17 0.1u/4/X7R/16V/K

LAX1 25M/16p/30ppm/49US/20/D
LA_XTALI
LA_XTALO
LAC31 20p/4/NPO/50V/J
LAC32 20p/4/NPO/50V/J

LABC20 0.1u/4/X7R/16V/K/X
AR8161-->N/A (LABC20)
LABC21 0.1u/4/X7R/16V/K
LAR8 MASK/0/4/SHT/X
LA_AVDDH
3VDUAL
LAR7 0/4/X
AR8151:LA_AVDDH(LAR20)
AR8161:3VDUAL(LAR19)
LABC22 1u/4/X5R/6.3V/K

LA_MDI0+ LA_MDI0- LA_MDI1+ LA_MDI1- LA_MDI2+ LA_MDI2- LA_MDI3+ LA_MDI3-

LAESD1
LA_MDI0+ 1
LA_MDI1- 3
6 LA_MDI0-
5 FUSEVCC_R7_R8
4 LA_MDI1+
MASK/AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]/X

LAESD3
LA_MDI2+ 1
LA_MDI3- 3
6 LA_MDI2-
5 FUSEVCC_R7_R8
4 LA_MDI3+
MASK/AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]/X

SCH BOM OPT:(二擇一使用)
-->(LAC30):M/B有CLK GEN 25M
-->(LAX1,LAC31,LAC32):M/B無CLK GEN 25M

LAN POWER

NEW DESIGN ONLY FOR INTERNAL SWR
AR8151:LAR3(O),LAR5(X)
AR8161:LAR5(O),LAR3/LAR4(X)

LAL1 4.7uH/0.8A/3225/S
LA_LX_OUT
LA_LX
LABC1 10u/6/X5R/6.3V/M
CLOSE
LA_LX 200mil
LABC2 0.1u/4/X7R/16V/K

LA_VDDCT
LAR3 0/4/X
AR8161-->N/A (LAR3,LAR4)
LA_AVDD_CEN
LAR4 0/4/X
AR8151 POWER

LA_DVDDL
LA_AVDDL
LA_AVDDVCO
LAR5 MASK/0/6/SHT/X
LAFB2 30/4/4A/S
LAFB3 30/4/4A/S
AR8161-->(0)
AR8161-->BEAD
AR8151-->N/A
AR8161-->BEAD
AR8151-->0/6
AR8161 POWER

AR8161-->(0)
LA_AVDDH
LA_LED_ACT_TXRX
LA_LED_LINK100
LAR7 8.2K/4
LAR8 8.2K/4

AR8161-->(0)
VCC3
LAR1 30K/4/1
LA_VDDCT
LAR2 MASK/0/4/SHT/X
ISOLATEB 23

Power domain chart

	AR8151	AR8161
AVDD33	N/A	3.3V
VDD33	3.3V	3.3V
AVDDH	2.7V	2.7V
AVDDL/DVDDL	1.1V	1.1V
VDDCT	1.7V	

MDI : AR8161-->N/A

LA_MDI0+ LA_MDI0-
LAR11 MASK/49.9/4/1/X
LAR12 MASK/49.9/4/1/X
LA_MDI_RC0
LAC26 MASK/0.1u/4/X7R/16V/K/X

LA_MDI1+ LA_MDI1-
LAR13 MASK/49.9/4/1/X
LAR14 MASK/49.9/4/1/X
LA_MDI_RC1
LAC27 MASK/0.1u/4/X7R/16V/K/X

LA_MDI2+ LA_MDI2-
LAR15 MASK/49.9/4/1/X
LAR16 MASK/49.9/4/1/X
LA_MDI_RC2
LAC28 MASK/0.1u/4/X7R/16V/K/X

LA_MDI3+ LA_MDI3-
LAR17 MASK/49.9/4/1/X
LAR18 MASK/49.9/4/1/X
LA_MDI_RC3
LAC29 MASK/0.1u/4/X7R/16V/K/X

CLOSE LAN CHIP

USB_LAN CONNECTOR

RMA ESD PROTECT

UBESD1
N_-USBP2 1
N_+USBP3 3
6 N_+USBP2
5 FUSEVCC_R7_R8
4 N_-USBP3
AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

USB X3 POWER

5VDUAL
LAFB4 1 2 FUSEVCC_R7_R8
SMD1206P350SLR/6V/S
UEC4 100u/OS/D/6.3V/66/A/35m

Close to connector

EMI SHORT PAD

PS:視EMI需求

LAR24 MASK/0/4/SHT/X

LAESD2
LA_LED_LINK100 1
LA_LED_LINK1000 3
6 LA_LED_ACT_TXRX
5 LAN_3VDUAL_LED
4 LA_LED_D2
MASK/AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]/X

LA_MDI-->100歐姆:[20/4/8/4/20]

USB30_LAN
LABC23 0.1u/4/X7R/16V/K
LA_AVDD_CEN
LA_MDI0+ LA_MDI0- LA_MDI1+ LA_MDI1- LA_MDI2+ LA_MDI2- LA_MDI3+ LA_MDI3-
GND_L10
LABC25 MASK/0/4/SHT/X
FUSEVCC_R7_R8
BC233 0.1u/4/X7R/16V/K
N_-USBP2 N_+USBP2
USB3.0
D1 LA_LED_ACT_TXRX
D2 LA_LED_D2 LAR21 150/4/1 LAN_3VDUAL_LED
D3 LA_LED_LINK100 LAR22 150/4/1
D4 LA_LED_LINK1000 LAR23 150/4/1
N_-USBP3 N_+USBP3
FUSEVCC_R7_R8
LBC26 0.1u/4/X7R/16V/K/X
9 PCH_USB3_RXN2
9 PCH_USB3_RXP2
9 PCH_USB3_TXN2
9 PCH_USB3_TXP2
LAC3 0.1u/4/X7R/16V/K PCH_USB3_TXN2C
LAC4 0.1u/4/X7R/16V/K PCH_USB3_TXP2C
PCH_USB3_RXN3 9
PCH_USB3_RXP3 9
LAC5 0.1u/4/X7R/16V/K PCH_USB3_TXN3 9
LAC6 0.1u/4/X7R/16V/K PCH_USB3_TXP3 9
USB3+RJ45/[11NR6-702009-K4R_11NR6-702009-K1R]

3VDUAL
LAFB1 MASK/0/6/SHT/X
LABC24 0.1u/4/X7R/16V/K/X

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

PCH_USB3_TXP2C PCH_USB3_TXN2C PCH_USB3_RXP2 PCH_USB3_RXN2
LAE1 AZ1045-04F/MSOP10

PCH_USB3_RXN3 PCH_USB3_RXP3 PCH_USB3_TXN3C PCH_USB3_TXP3C
LAE2 AZ1045-04F/MSOP10

Gigabyte Technology

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0 : PCIE M.2
1 : SATA M.2

SMD螺柱 (DIP階上件)

M2_42 CR/[11KS2-040002-01R]

M2_60 CR/[11KS2-040002-01R]

M2_80 CR/[11KS2-040002-01R]

DIP螺柱

M2_80A CR/[12KSF-F10303-01R]

螺絲

M2_80B CR/[12KS2-110202-01R]

M.2 CLK 限用
CLKOUT_PCIE_0

M2R12, M2R14改0/4/X

M2R13改0/4

M.2插卡時為LOW

鴻海:10NR5-130067-32R
M2 SLOT M KEY料號
嘉澤:10NR5-130067-31R

NGFF_M_SSD[10NR5-130067-31R_10NR5-130067-32R]

PCH

SATA EXPRESS

SATA_EXPRESS

SATA EXPRESS/36P/BK/H/RA/D/GF/2/[11NR6-C10236-02R]::Location SATA_EXPRESS

PCH

M2

0 : SATA EXPRESS
1 : SATA (Standard)

ASM1480/TQFN42/[10TA1-081480-10R_10TA1-084083-10R]

Function	SEL
xI--> x0a	L
xI--> x0b	H

連接PCH GPIO69
GPIO69 PU HI 要移除

SATA EXPRESS料號

單層:11NR6-C10118-01R

雙層:11NR6-C10236-01R

GIGABYTE

Title: M2_SATA_EXPRESS

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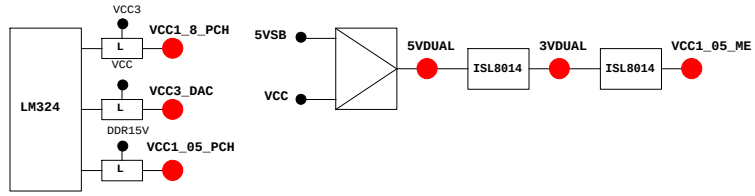
PCH GPIO LIST TABLE

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

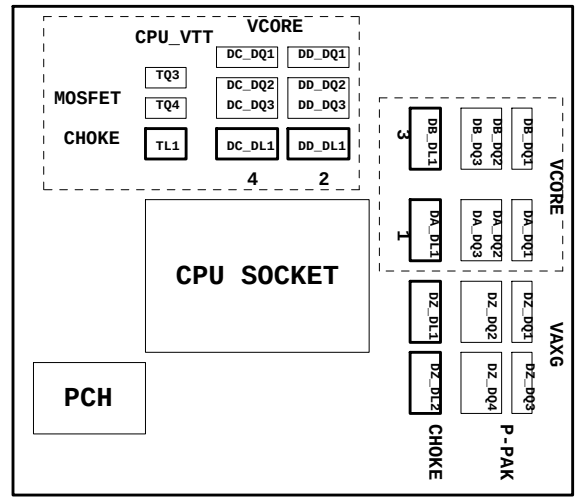
Super I/O ITE8720 GPIO Table

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

Gigabyte Technology

Title: TABLE LIST

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