Model Name: GA-Z97X-Gaming G1 *Rev 1.0*

SHEET	TITLE
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02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
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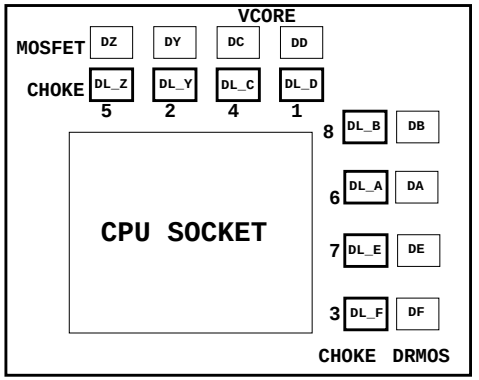
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	DVI / DP
15	R_USB3 / HDMI
16	PLX8605
17	PCI EXPRESS*1 SLOTs X3
18	Dual BIOS
19	CT9570 Audio
20	Audio Connect
21	Audio Power
22	IR3580 PWM
23	IR3598-VCORE
24	IR3570_DDR PWM
25	IR3598-DDR
26	DISCRETE POWER I
27	DISCRETE POWER II
28	I/O ITE8620
29	FP,F_USB,BZ
30	USB DAC-UP , PS2
31	ATX POWER
32	RST, PWR, CLR_CMOS, 80 PORT
33	LAN E2201
34	INTEL I217

SHEET	TITLE
35	RENESAS USB3 HUB-1
36	RENESAS USB3 HUB-1
37	F_USB3.0 , SATA EXPRESS
38	IT8790
39	FAN CTRL
40	PCIEx16(x8) REFCLK
41	PCI EXPRESS*16_2 SLOT
42	PCI EXPRESS X16 SWITCH_2
43	PCI EXPRESS*8_2 SLOT
44	PCI EXPRESS*16_1 SLOT
45	PCI EXPRESS X16 SWITCH_1
46	PCI EXPRESS*8_1 SLOT
47	PEX8747S UPSTREAM & MISC
48	PEX8747S DOWNSTREAM SLOTS
49	PEX8747S STRAP & CPLD INTF
50	PEX8747S POWER
51	PEX8747 POWER DESIGN
52	Marvell 9172 1
53	Marvell 9172 2
54	TABLE LIST



Gigabyte Technology

Title	Cover Sheet	
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GA-Z97X-Gaming G1

Component value change history

Data	Change Item	Reason
2014/03/06		First Release (BOM 10B)

Data	Change Item	Reason

Circuit or PCB layout change

DATE	Change Item	Reason
2014/03/06	REV1.0	

Gigabyte Technology			
Title	BOM & PCB MODIFY HISTORY		
Size Custom	Document Number GA-Z97X-Gaming G1		Rev 1.0
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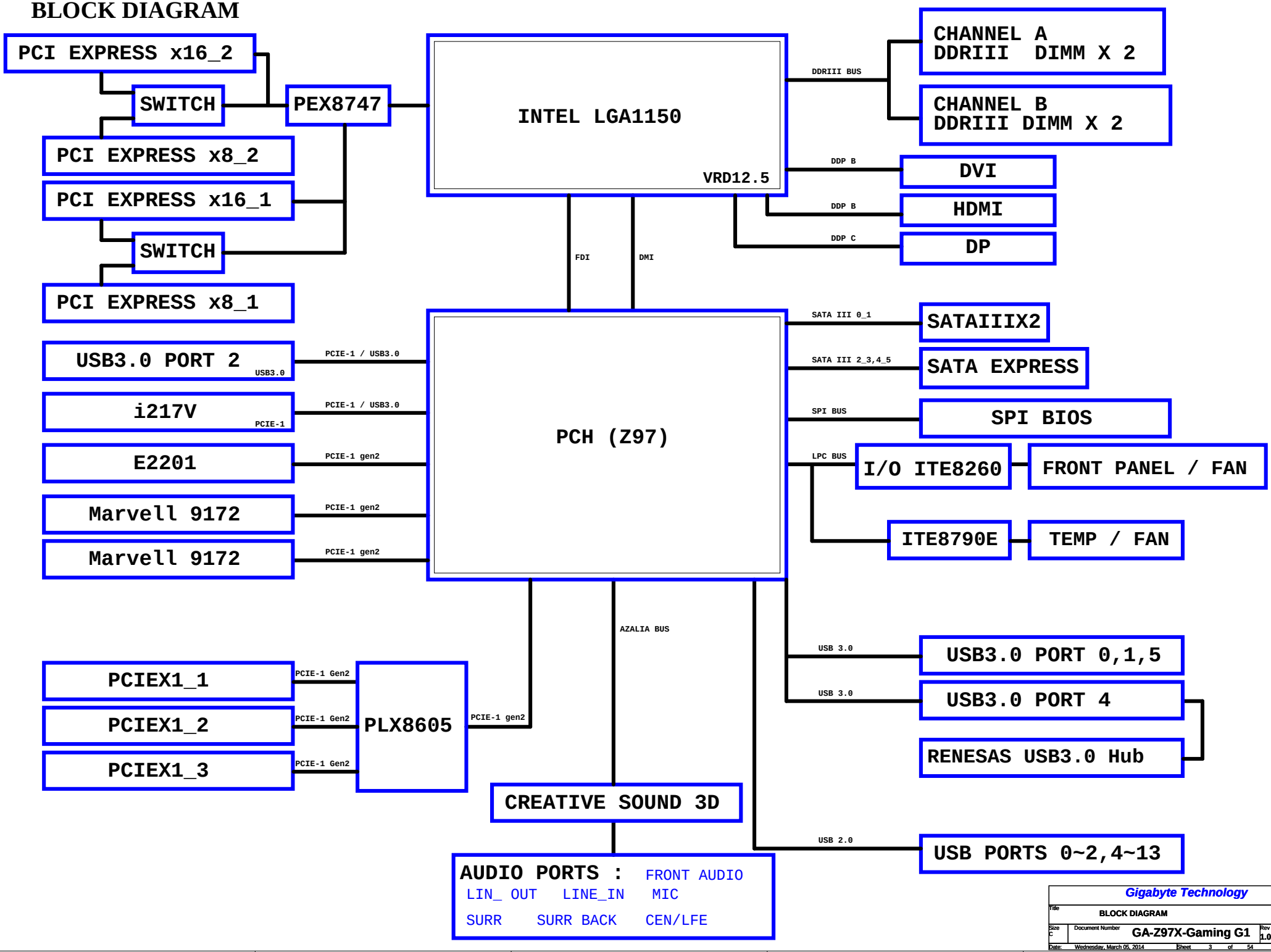
BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: C	Document Number: GA-Z97X-Gaming G1		Rev: 1.0
Date: Wednesday, March 05, 2014	Sheet 3 of 54		

LGA1150 (E)

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	RSVD	RSVD	RSVD
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)

LGA1150D

HASWELL/[10SC1-F01150-01R]

DDI B : DVI-I
DDI C : HDMI
DDI D : DP

LGA1150 (C)

LGA1150C

HASWELL/[10SC1-F01150-01R]

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

CPU SVID

CPU PU / PD

TDI EMPTY?

SM REF

THRMTRIP DISABLE

-CPURST

Gigabyte Technology

Title: CPU LGA1150-A

Size: Custom | Document Number: GA-Z97X-Gaming G1 | Rev: 1.0

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LGA1150 (A)

LGA1150A

MAAA0 AU13 MAAA1 AV16 MAAA2 AU16 MAAA3 AW17 MAAA4 AU17 MAAA5 AW18 MAAA6 AV17 MAAA7 AT18 MAAA8 AU18 MAAA9 AT19 MAAA10 AW11 MAAA11 AV19 MAAA12 AU19 MAAA13 AY10 MAAA14 AT20 MAAA15 AU21

MODT_A0 AW10 MODT_A1 AY8 MODT_A2 AW9 MODT_A3 AU8

AW33 AV33 AU31 AV31 AT33 AW33 AT31 AW31

[7] SBAA0 [7] SBAA1 [7] SBAA2

CKEA0 AV22 CKEA1 AT23 CKEA2 AU22 CKEA3 AU23

[7] CKEA0 [7] CKEA1 [7] CKEA2 [7] CKEA3

[7] -CSA0 [7] -CSA1 [7] -CSA2 [7] -CSA3

DCLKA0 AY15 -DCLKA0 AY16 DCLKA1 AW15 -DCLKA1 AV15 DCLKA2 AV14 -DCLKA2 AW14 DCLKA3 AW13 -DCLKA3 AY13

[7] DCLKA0 [7] -DCLKA0 [7] DCLKA1 [7] -DCLKA1 [7] DCLKA2 [7] -DCLKA2 [7] DCLKA3 [7] -DCLKA3

AW12

[7] -SRASA AU12

[7] -SWEA AU11

AV20 AW27

[7] -SCASA AU9

[7,8] -DDR3_RST WR61 0/4/SHT/M/X AK22

WC4 0.1u/4/X7R/16V/K/X

DDR0_MA0 DDR0_MA1 DDR0_MA2 DDR0_MA3 DDR0_MA4 DDR0_MA5 DDR0_MA6 DDR0_MA7 DDR0_MA8 DDR0_MA9 DDR0_MA10 DDR0_MA11 DDR0_MA12 DDR0_MA13 DDR0_MA14 DDR0_MA15

DDR0_ODT0 DDR0_ODT1 DDR0_ODT2 DDR0_ODT3

DDR0_ECC0 DDR0_ECC1 DDR0_ECC2 DDR0_ECC3 DDR0_ECC4 DDR0_ECC5 DDR0_ECC6 DDR0_ECC7

DDR0_BA0 DDR0_BA1 DDR0_BA2

DDR0_CKE0 DDR0_CKE1 DDR0_CKE2 DDR0_CKE3

DDR0_CS_N0 DDR0_CS_N1 DDR0_CS_N2 DDR0_CS_N3

DDR0_CLK_P0 DDR0_CLK_N0 DDR0_CLK_P1 DDR0_CLK_N1 DDR0_CLK_P2 DDR0_CLK_N2 DDR0_CLK_P3 DDR0_CLK_N3

RSVD

DDR0_RAS* DDR0_WE* RSVD RSVD DDR0_CAS* DDR_RESET*

DDR0_DQ0 DDR0_DQ1 DDR0_DQ2 DDR0_DQ3 DDR0_DQ4 DDR0_DQ5 DDR0_DQ6 DDR0_DQ7 DDR0_DQ8 DDR0_DQ9 DDR0_DQ10 DDR0_DQ11 DDR0_DQ12 DDR0_DQ13 DDR0_DQ14 DDR0_DQ15 DDR0_DQ16 DDR0_DQ17 DDR0_DQ18 DDR0_DQ19 DDR0_DQ20 DDR0_DQ21 DDR0_DQ22 DDR0_DQ23 DDR0_DQ24 DDR0_DQ25 DDR0_DQ26 DDR0_DQ27 DDR0_DQ28 DDR0_DQ29 DDR0_DQ30 DDR0_DQ31 DDR0_DQ32 DDR0_DQ33 DDR0_DQ34 DDR0_DQ35 DDR0_DQ36 DDR0_DQ37 DDR0_DQ38 DDR0_DQ39 DDR0_DQ40 DDR0_DQ41 DDR0_DQ42 DDR0_DQ43 DDR0_DQ44 DDR0_DQ45 DDR0_DQ46 DDR0_DQ47 DDR0_DQ48 DDR0_DQ49 DDR0_DQ50 DDR0_DQ51 DDR0_DQ52 DDR0_DQ53 DDR0_DQ54 DDR0_DQ55 DDR0_DQ56 DDR0_DQ57 DDR0_DQ58 DDR0_DQ59 DDR0_DQ60 DDR0_DQ61 DDR0_DQ62 DDR0_DQ63

DDR0_DQS_P0 DDR0_DQS_P1 DDR0_DQS_P2 DDR0_DQS_P3 DDR0_DQS_P4 DDR0_DQS_P5 DDR0_DQS_P6 DDR0_DQS_P7 DDR0_DQS_P8

DDR0_DQS_N0 DDR0_DQS_N1 DDR0_DQS_N2 DDR0_DQS_N3 DDR0_DQS_N4 DDR0_DQS_N5 DDR0_DQS_N6 DDR0_DQS_N7 DDR0_DQS_N8

AD38 AD39 AF38 AF39 AD37 AD40 AF37 AF40 AH40 AH39 AK38 AK39 AH37 AH38 AK37 AK40 AM40 AM39 AP38 AP39 AM37 AM38 AP37 AP40 AV37 AW37 AU35 AV35 AT37 AT35 AW35 AY6 AU6 AV4 AU4 AW6 AV6 AW4 AY4 AR1 AR4 AN3 AN4 AR2 AR3 AN2 AN1 AL1 AL4 AJ3 AJ4 AL2 AL3 AJ2 AJ1 AG1 AG4 AE3 AE4 AG2 AG3 AE2 AE1 AE39 AJ39 AN39 AV36 AV5 AP3 AK3 AF3 AV32 AE38 AJ38 AN38 AU36 AW5 AP2 AK2 AF2 AU32

MDA0 MDA1 MDA2 MDA3 MDA4 MDA5 MDA6 MDA7 MDA9 MDA13 MDA10 MDA11 MDA12 MDA14 MDA15 MDA17 MDA21 MDA18 MDA19 MDA20 MDA22 MDA23 MDA25 MDA29 MDA26 MDA27 MDA28 MDA24 MDA30 MDA31 MDA33 MDA37 MDA34 MDA35 MDA36 MDA32 MDA38 MDA39 MDA41 MDA45 MDA42 MDA43 MDA44 MDA40 MDA46 MDA47 MDA49 MDA53 MDA50 MDA51 MDA52 MDA48 MDA54 MDA55 MDA57 MDA61 MDA58 MDA59 MDA60 MDA56 MDA62 MDA63

DQSA0 DQSA1 DQSA2 DQSA3 DQSA4 DQSA5 DQSA6 DQSA7

-DQSA0 -DQSA1 -DQSA2 -DQSA3 -DQSA4 -DQSA5 -DQSA6 -DQSA7

HASWELL/[10SC1-F01150-01R]

LGA1150 (B)

LGA1150B

MAAB0 AL19 MAAB1 AK23 MAAB2 AM22 MAAB3 AM23 MAAB4 AP23 MAAB5 AL23 MAAB6 AY24 MAAB7 AV25 MAAB8 AU26 MAAB9 AW25 MAAB10 AP18 MAAB11 AY25 MAAB12 AV26 MAAB13 AR15 MAAB14 AV27 MAAB15 AY28

MODT_B0 AM17 MODT_B1 AL16 MODT_B2 AM16 MODT_B3 AK15

AM26 AM25 AP25 AP26 AL26 AL25 AR26 AR25

[8] SBAB0 [8] SBAB1 [8] SBAB2

CKEB0 AW29 CKEB1 AY29 CKEB2 AU28 CKEB3 AU29

[8] CKEB0 [8] CKEB1 [8] CKEB2 [8] CKEB3

-CSB0 AP17 -CSB1 AN15 -CSB2 AN17 -CSB3 AL15

[8] -CSB0 [8] -CSB1 [8] -CSB2 [8] -CSB3

DCLKB0 AM20 -DCLKB0 AM21 DCLKB1 AP22 -DCLKB1 AP21

[8] DCLKB0 [8] -DCLKB0 [8] DCLKB1 [8] -DCLKB1

DCLKB2 AN20 -DCLKB2 AN21 DCLKB3 AP19 -DCLKB3 AP20

[8] DCLKB2 [8] -DCLKB2 [8] DCLKB3 [8] -DCLKB3

[8] -SCASB AP16

AL20

[8] -SRASB AM18 [8] -SWEB AK16

AB39 AB40

[7] VREF_DQA [8] VREF_DQB

DDR1_MA0 DDR1_MA1 DDR1_MA2 DDR1_MA3 DDR1_MA4 DDR1_MA5 DDR1_MA6 DDR1_MA7 DDR1_MA8 DDR1_MA9 DDR1_MA10 DDR1_MA11 DDR1_MA12 DDR1_MA13 DDR1_MA14 DDR1_MA15

DDR1_ODT0 DDR1_ODT1 DDR1_ODT2 DDR1_ODT3

DDR1_ECC0 DDR1_ECC1 DDR1_ECC2 DDR1_ECC3 DDR1_ECC4 DDR1_ECC5 DDR1_ECC6 DDR1_ECC7

DDR1_BA0 DDR1_BA1 DDR1_BA2

DDR1_CKE0 DDR1_CKE1 DDR1_CKE2 DDR1_CKE3

DDR1_CS_N0 DDR1_CS_N1 DDR1_CS_N2 DDR1_CS_N3

DDR1_CLK_P0 DDR1_CLK_N0 DDR1_CLK_P1 DDR1_CLK_N1

DDR1_CLK_P2 DDR1_CLK_N2 DDR1_CLK_P3 DDR1_CLK_N3

DDR1_CAS* RSVD DDR1_RAS* DDR1_WE*

DDR_VREF_DQ0 DDR_VREF_DQ1

DDR1_DQ0 DDR1_DQ1 DDR1_DQ2 DDR1_DQ3 DDR1_DQ4 DDR1_DQ5 DDR1_DQ6 DDR1_DQ7 DDR1_DQ8 DDR1_DQ9 DDR1_DQ10 DDR1_DQ11 DDR1_DQ12 DDR1_DQ13 DDR1_DQ14 DDR1_DQ15 DDR1_DQ16 DDR1_DQ17 DDR1_DQ18 DDR1_DQ19 DDR1_DQ20 DDR1_DQ21 DDR1_DQ22 DDR1_DQ23 DDR1_DQ24 DDR1_DQ25 DDR1_DQ26 DDR1_DQ27 DDR1_DQ28 DDR1_DQ29 DDR1_DQ30 DDR1_DQ31 DDR1_DQ32 DDR1_DQ33 DDR1_DQ34 DDR1_DQ35 DDR1_DQ36 DDR1_DQ37 DDR1_DQ38 DDR1_DQ39 DDR1_DQ40 DDR1_DQ41 DDR1_DQ42 DDR1_DQ43 DDR1_DQ44 DDR1_DQ45 DDR1_DQ46 DDR1_DQ47 DDR1_DQ48 DDR1_DQ49 DDR1_DQ50 DDR1_DQ51 DDR1_DQ52 DDR1_DQ53 DDR1_DQ54 DDR1_DQ55 DDR1_DQ56 DDR1_DQ57 DDR1_DQ58 DDR1_DQ59 DDR1_DQ60 DDR1_DQ61 DDR1_DQ62 DDR1_DQ63

DDR1_DQS_P0 DDR1_DQS_P1 DDR1_DQS_P2 DDR1_DQS_P3 DDR1_DQS_P4 DDR1_DQS_P5 DDR1_DQS_P6 DDR1_DQS_P7 DDR1_DQS_P8

DDR1_DQS_N0 DDR1_DQS_N1 DDR1_DQS_N2 DDR1_DQS_N3 DDR1_DQS_N4 DDR1_DQS_N5 DDR1_DQS_N6 DDR1_DQS_N7 DDR1_DQS_N8

AE34 AE35 AG35 AH35 AD34 AD35 AG34 AH34 AL34 AL35 AK31 AL31 AK34 AK35 AK32 AL32 AN34 AP34 AN31 AP31 AN35 AP35 AN32 AP32 AM29 AM28 AR29 AR28 AL29 AL28 AP29 AP28 AR12 AP12 AL13 AL12 AR13 AP13 AM13 AM12 AR9 AP9 AR6 AP6 AR10 AP10 AR7 AP7 AM9 AL9 AL6 AL7 AM10 AL10 AM6 AM7 AH6 AH7 AE6 AE7 AJ6 AJ7 AF6 AF7 AF35 AL33 AP33 AN28 AN12 AP8 AL8 AG7 AN25 AF34 AK33 AN33 AN29 AN13 AR8 AM8 AG6 AN26

MDB0 MDB1 MDB2 MDB3 MDB4 MDB5 MDB6 MDB7 MDB8 MDB9 MDB10 MDB11 MDB12 MDB13 MDB14 MDB15 MDB17 MDB21 MDB19 MDB23 MDB20 MDB16 MDB18 MDB22 MDB25 MDB28 MDB27 MDB30 MDB24 MDB29 MDB26 MDB31 MDB32 MDB33 MDB34 MDB35 MDB36 MDB37 MDB38 MDB39 MDB45 MDB41 MDB47 MDB43 MDB44 MDB40 MDB46 MDB42 MDB52 MDB53 MDB50 MDB55 MDB48 MDB49 MDB54 MDB51 MDB61 MDB60 MDB59 MDB63 MDB56 MDB57 MDB58 DQSB0 DQSB1 DQSB2 DQSB3 DQSB4 DQSB5 DQSB6 DQSB7

-DQSB0 -DQSB1 -DQSB2 -DQSB3 -DQSB4 -DQSB5 -DQSB6 -DQSB7

VREF_DQA VREF_DQB

WBC34 0.1u/4/X7R/16V/K

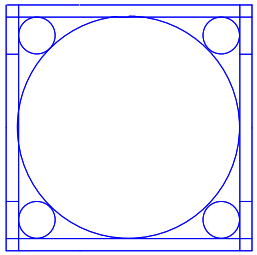
WBC33 0.1u/4/X7R/16V/K

Place in CPU bottom side

HASWELL/[10SC1-F01150-01R]

LGA1150 (CR)

LGA1150
ILM_BP/1156/BKNI/[12KRC-0F0001-61R]



Need check the new CPU ME

DDR BUS

[7] MODT_A[0..3] MODT_A[0..3]

[8] MODT_B[0..3] MODT_B[0..3]

[7] MDA[0..63] MDA[0..63]

[8] MDB[0..63] MDB[0..63]

[7] DQSA[0..7] DQSA[0..7]

[7] -DQSA[0..7] -DQSA[0..7]

[7] MAAA[0..15] MAAA[0..15]

[8] MAAB[0..15] MAAB[0..15]

[8] DQSB[0..7] DQSB[0..7]

[8] -DQSB[0..7] -DQSB[0..7]

Gigabyte Technology

Title: CPU LGA1150-B

Size: Custom | Document Number: GA-Z97X-Gaming G1 | Rev: 1.0

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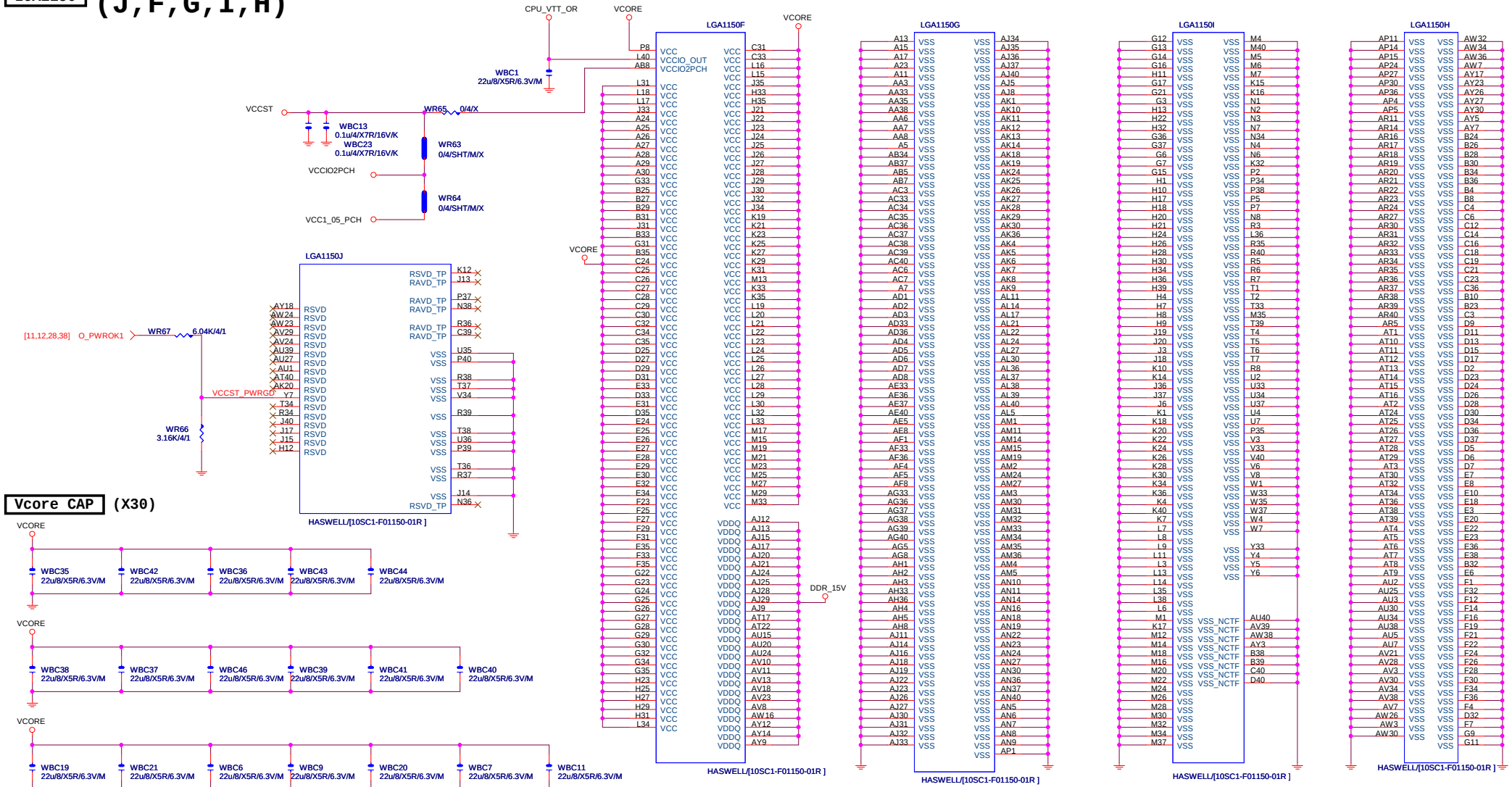
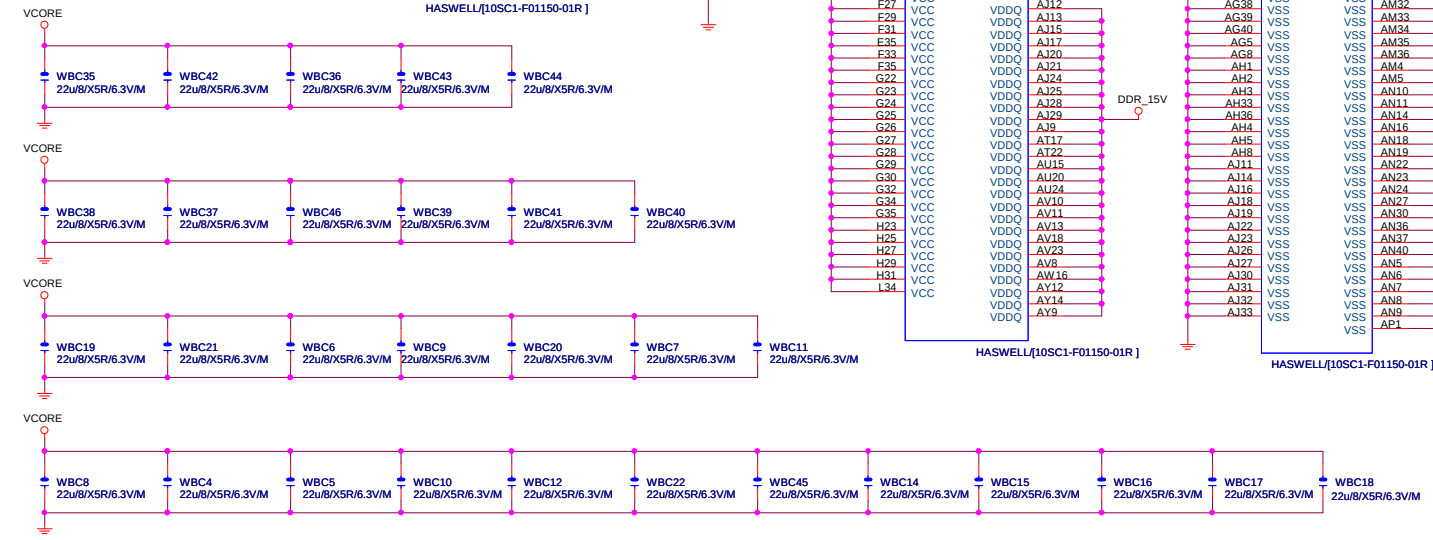
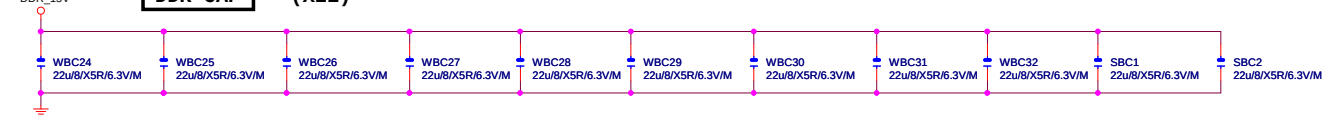
LGA1150 (J,F,G,I,H)



Vcore CAP (X30)



DDR CAP (X11)



Title	CPU LGA1150-C
Size	Custom
Document Number	GA-Z97X-Gaming G1
Rev	1.0
Date:	Wednesday, March 05, 2014
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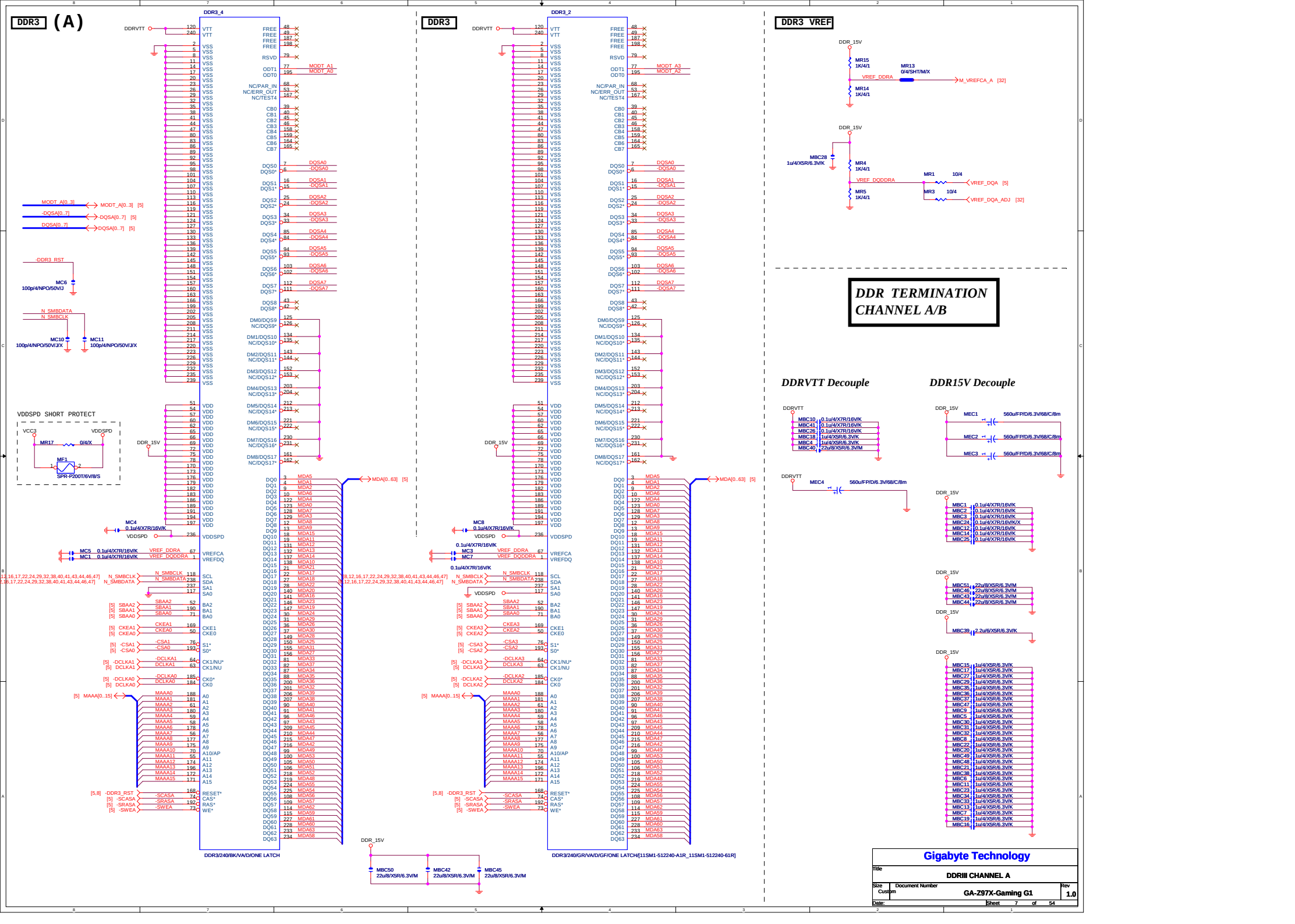
DDR3 (A)
DDR3_4
DDRVTT
VTT
VSS
RSVD
ODT1
ODT0
NC/PAR_IN
NC/ERR_OUT
NC/TEST4
CB0
CB1
CB2
CB3
CB4
CB5
CB6
CB7
DQS0
DQS0*
DQS1
DQS1*
DQS2
DQS2*
DQS3
DQS3*
DQS4
DQS4*
DQS5
DQS5*
DQS6
DQS6*
DQS7
DQS7*
DQS8
DQS8*
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NC/DQS10*
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NC/DQS11*
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NC/DQS13*
DM5/DQS14
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DM6/DQS15
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DM8/DQS17
NC/DQS17*
VDD
DQ0
DQ1
DQ2
DQ3
DQ4
DQ5
DQ6
DQ7
DQ8
DQ9
DQ10
DQ11
DQ12
DQ13
DQ14
DQ15
DQ16
DQ17
VDDSPD
VREFCA
VREFDQ
SCL
SDA
SA1
SA0
BA2
BA1
BA0
CKE1
CKE0
S1*
S0*
CK1/NU*
CK1/NU
CK0*
CK0
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10/AP
A11
A12
A13
A14
A15
RESET*
CAS*
RAS*
WE*
MODT_A[0..3]
-DQSA[0..7]
DQSA[0..7]
-DDR3_RST
N_SMBDATA
N_SMBCLK
VDDSPD SHORT PROTECT
VCC3
VDDSPD
MR17
0/4/X
MF1
SPR-P2007/6V/8/S
DDR_15V
MDA[0..63]
VREFCA
VREFDQ
DDR3/240/BK/VA/D/ONE LATCH
DDR3_2
DDR3/240/GR/VA/D/GF/ONE LATCH/[11SM1-512240-A1R_11SM1-512240-61R]
MBC50
22u/8/X5R/6.3V/M
MBC42
22u/8/X5R/6.3V/M
MBC45
22u/8/X5R/6.3V/M
DDR3 VREF
MR15
1K/4/1
MR13
0/4/SHT/M/X
MR14
1K/4/1
VREF_DDRA
M_VREFCA_A [32]
MBC28
1u/4/X5R/6.3V/K
MR4
1K/4/1
MR5
1K/4/1
VREF_DQDDRA
MR1
10/4
MR3
10/4
VREF_DQA [5]
VREF_DQA_ADJ [32]
DDR TERMINATION
CHANNEL A/B
DDRVTT Decouple
DDR15V Decouple
MBC10
MBC41
MBC26
MBC18
MBC4
MBC40
0.1u/4/X7R/16V/K
1u/4/X5R/6.3V/K
22u/8/X5R/6.3V/M
MEC1
MEC2
MEC3
MEC4
560u/FP/D/6.3V/68/C/8m
MBC1
MBC2
MBC3
MBC24
MBC12
MBC14
MBC25
0.1u/4/X7R/16V/K/X
MBC51
MBC46
MBC43
MBC44
22u/8/X5R/6.3V/M
MBC39
2.2u/6/X5R/6.3V/K
MBC15
MBC17
MBC27
MBC29
MBC35
MBC36
MBC37
MBC47
MBC9
MBC5
MBC30
MBC31
MBC32
MBC8
MBC22
MBC20
MBC49
MBC48
MBC21
MBC38
MBC6
MBC11
MBC23
MBC34
MBC33
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MBC7
MBC19
MBC16
1u/4/X5R/6.3V/K
Gigabyte Technology
Title
DDRIII CHANNEL A
Size
Custom
Document Number
GA-Z97X-Gaming G1
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1.0
Date:
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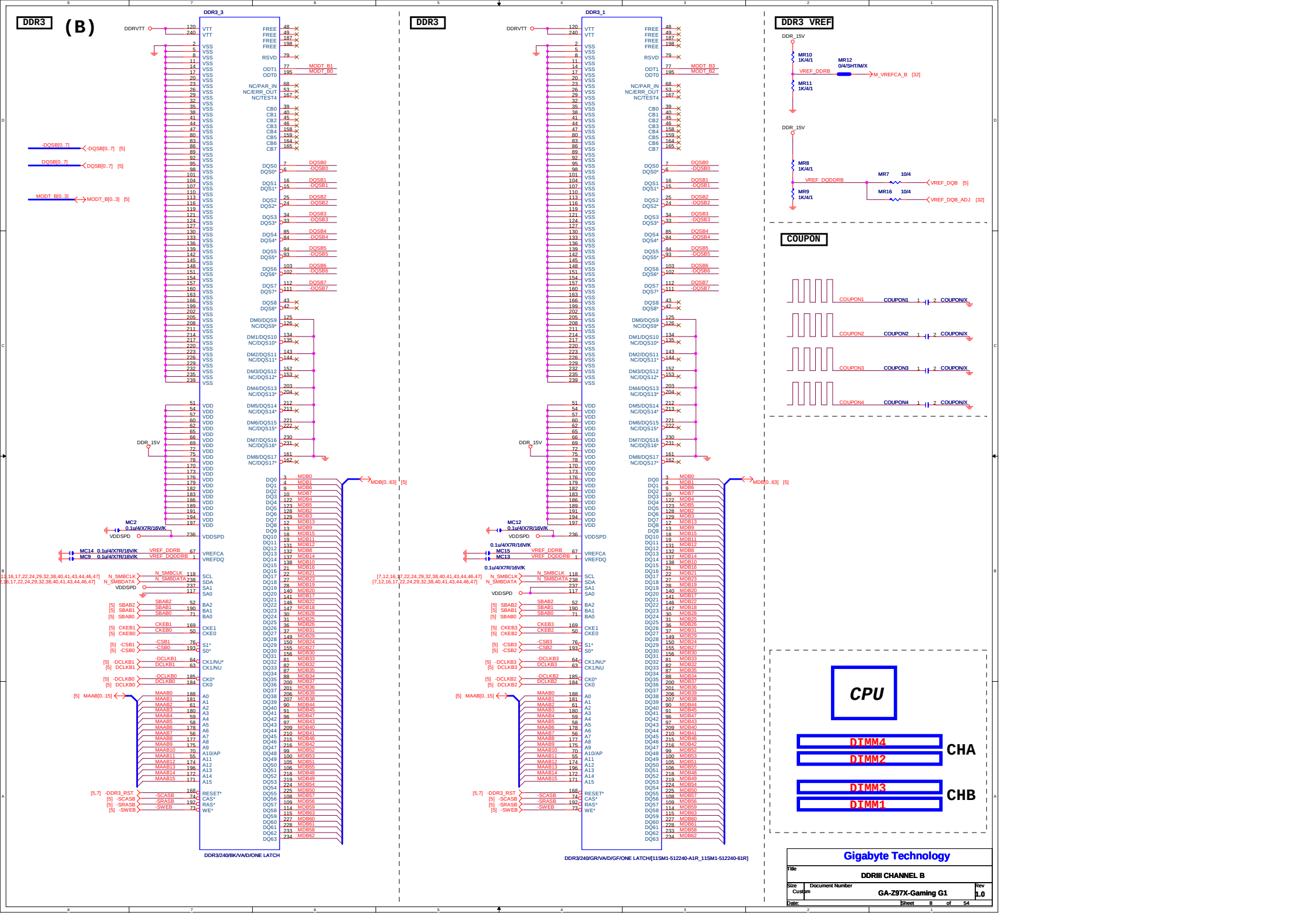
DDR3 (B)
DDR3_3
DDR3
DDR3_1
DDR3 VREF
COUPON
CPU
DIMM4
DIMM2
DIMM3
DIMM1
CHA
CHB
DDR3/240/BK/VA/D/ONE LATCH
DDR3/240/GR/VA/D/GF/ONE LATCH/[11SM1-512240-A1R_11SM1-512240-61R]
Gigabyte Technology
DDRIII CHANNEL B
GA-Z97X-Gaming G1
1.0
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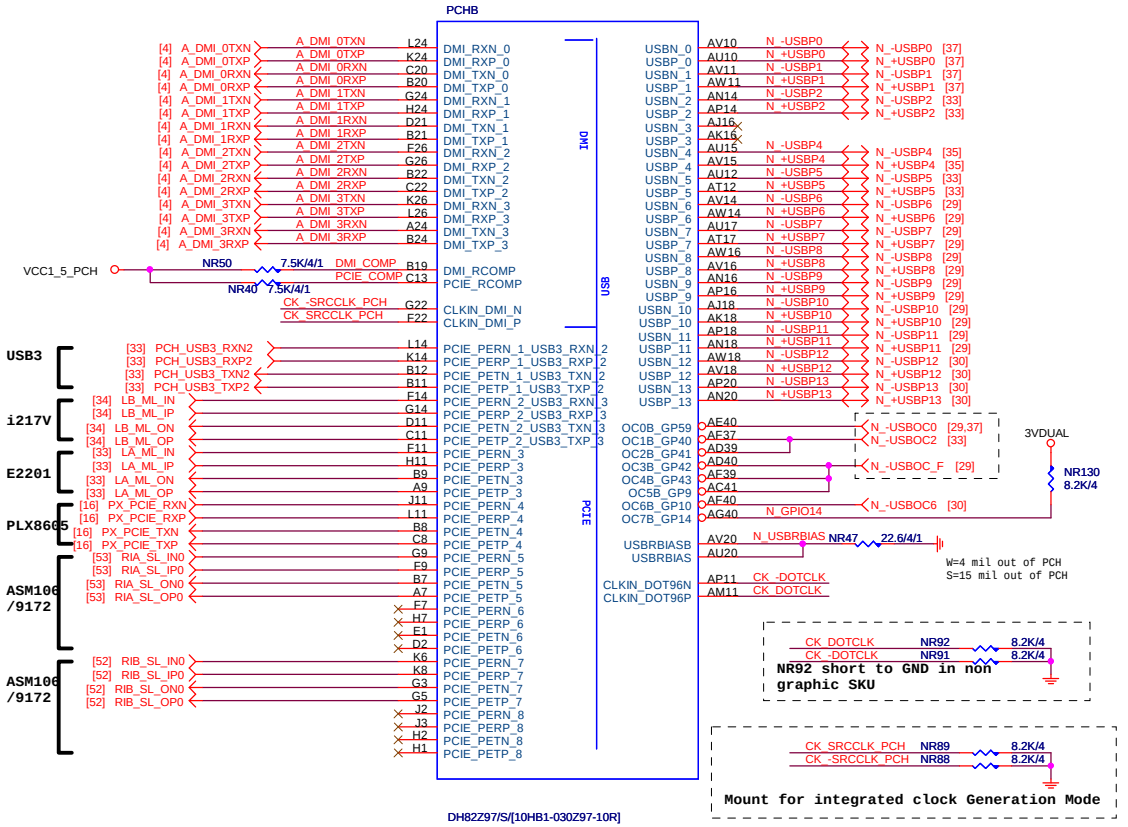
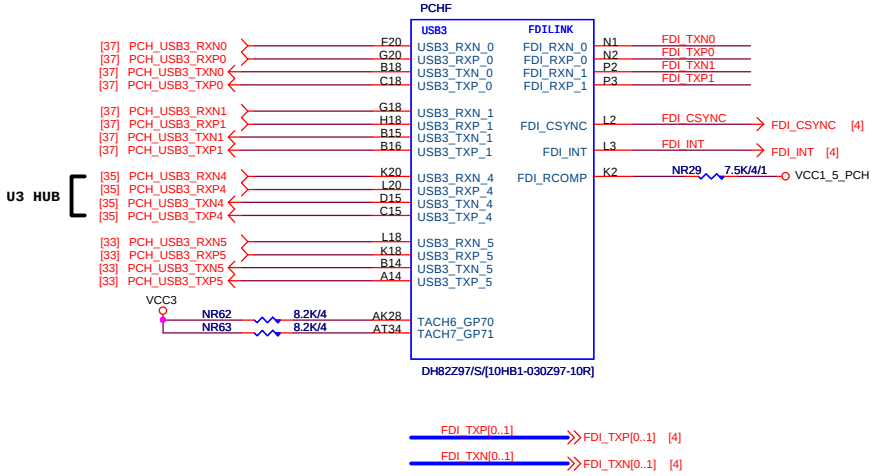
PCH (B)



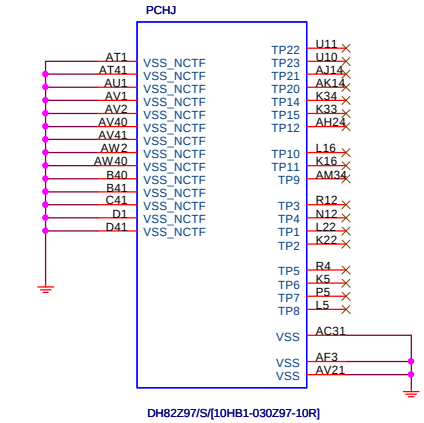
DH82Z97/S/[10HB1-030Z97-10R]

PCH (F)



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

PCH (J)



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

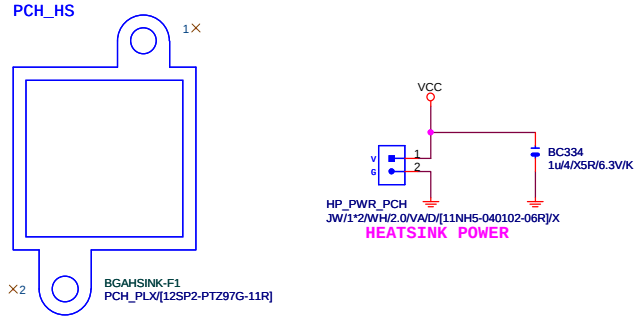
USB TABLE

OC[3:0]# for Device 29 (ports 0-7)

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

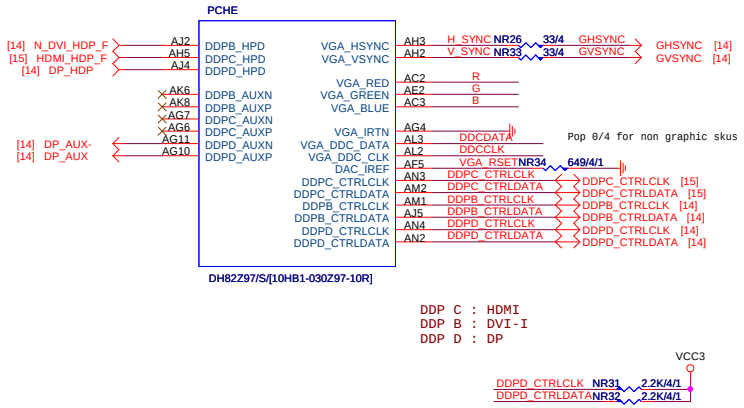
USB3	00 01	04	05	F_USB1 F_USB2
USB2	00 01	04	05	02 03 06 07
OC	OC0	D720210_Hub	D720210_Hub	OC_F

PCH Heatsink

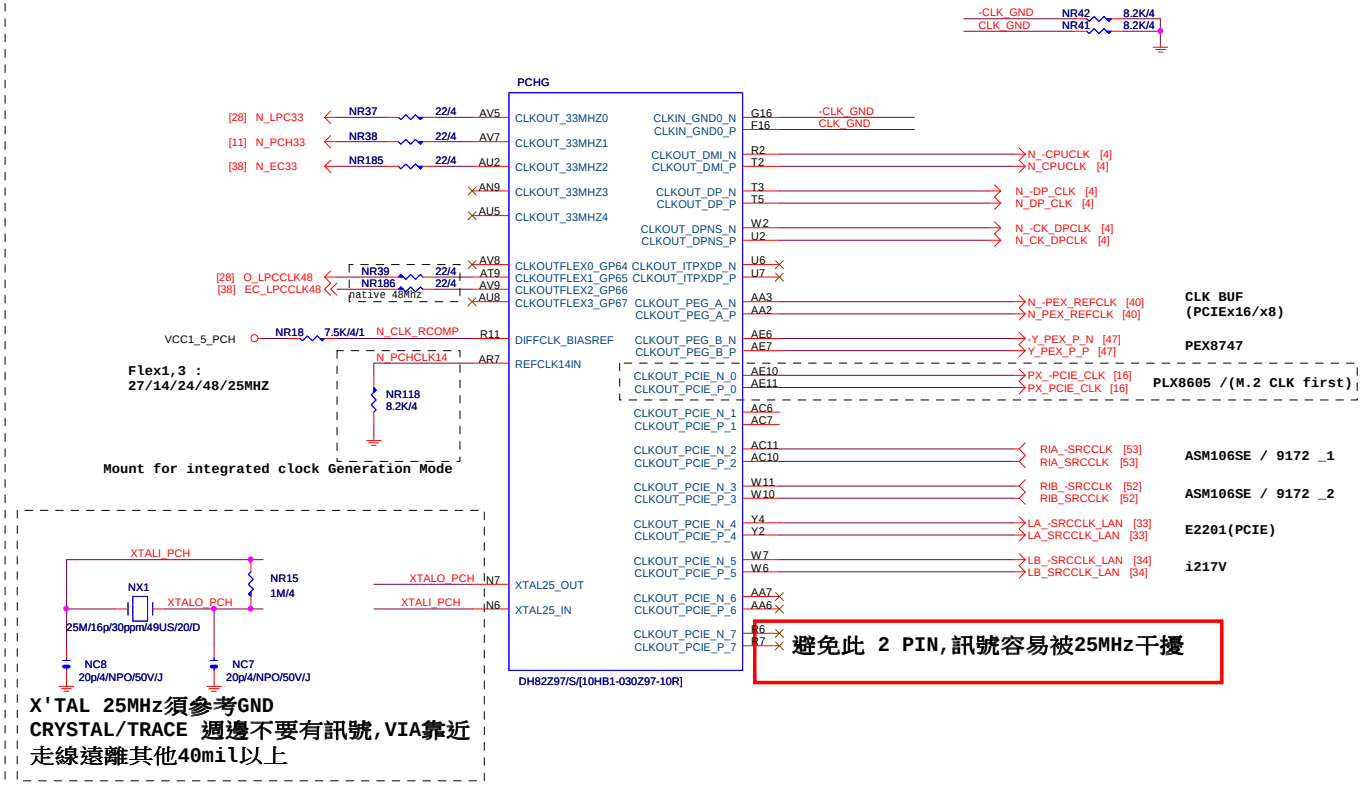


Gigabyte Technology		
Title: PCH FDI,DMI,USB ,PCIE,NVRAM		
Size: Custom	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
Date: Wednesday, March 05, 2014	Sheet 9 of 54	

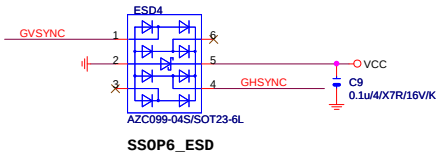
PCH (E)



PCH (G)

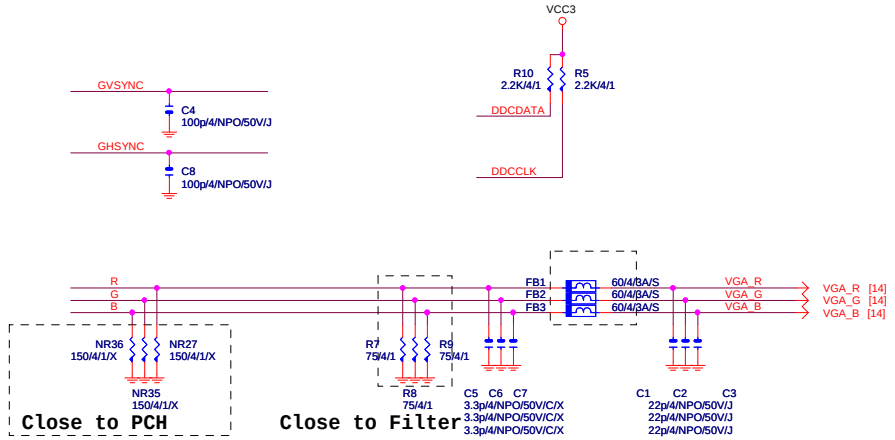


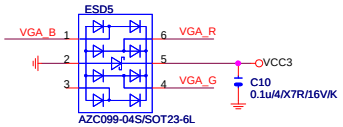
VGA ESD



SSOP6_ESD

VGA DDC





Gigabyte Technology		
Title: PCH DISPLAY ,CLK BUFFER		
Size: Custom	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
Date: Wednesday, March 05, 2014	Sheet 10 of 54	

PCH (C)

PCHC

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

PCH (A)

PCHA

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

PCH PU / PD

SATA3 CONNECTOR

SATA3_0_1

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

GPIO38 Ctrl

PCH CLK PD

ME PWROK

BOOT DEVICE	GP51	GP19
LPC	0	0
SPI	1	1

Default int pull up on GP51, Default SPI boot devices

soft strap	GP16	GP49
0	pcie1	pcie2
1	sata4	sata5

Mount for integrated clock Generation Mode

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

GPIO37 PU VCC3 ENABLE SBA
For H87&B85

Gigabyte Technology	
Title	PCH HOST , SATA, PCI
Size: Custom	Document Number: GA-Z97X-Gaming G1
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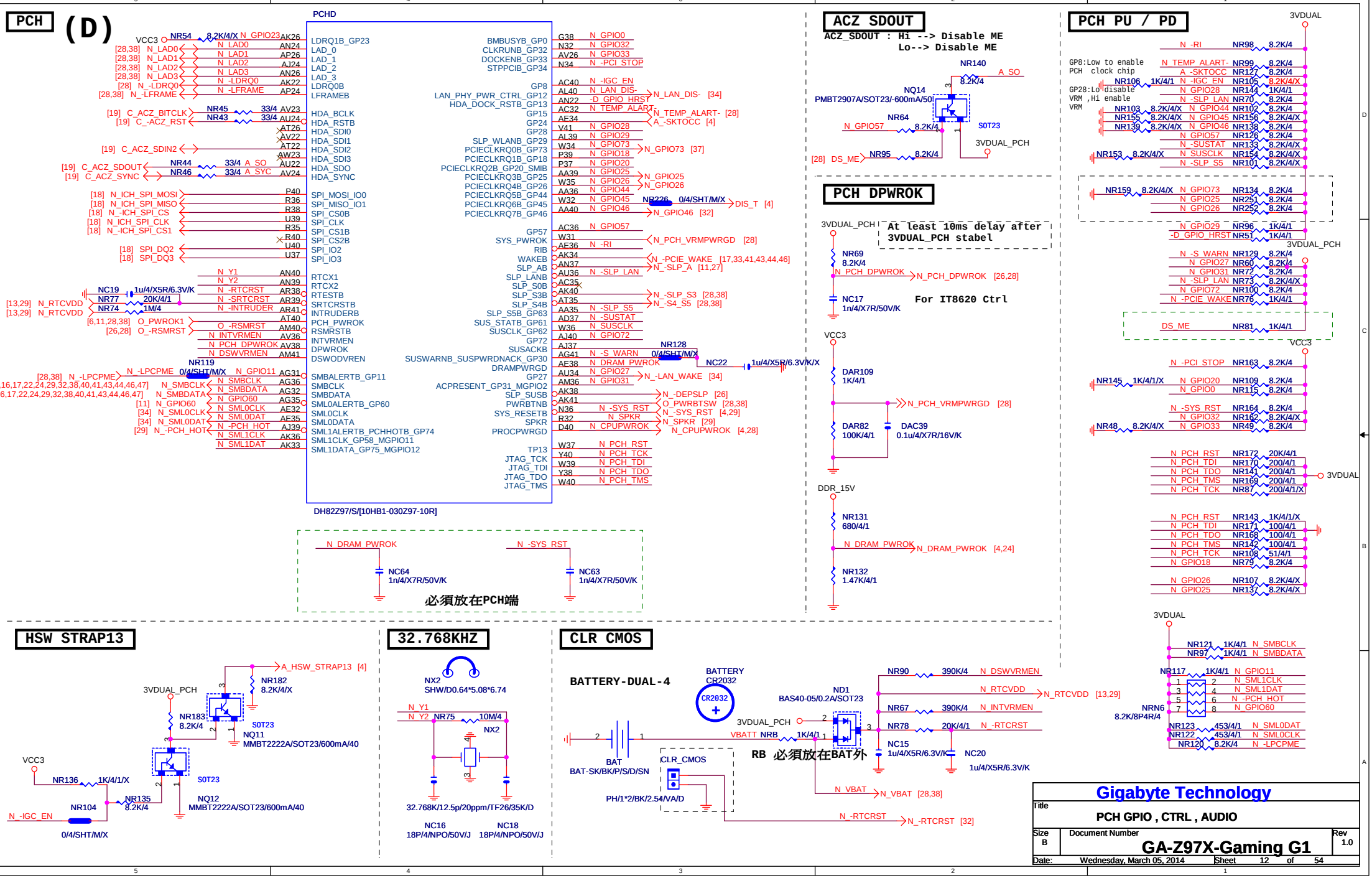
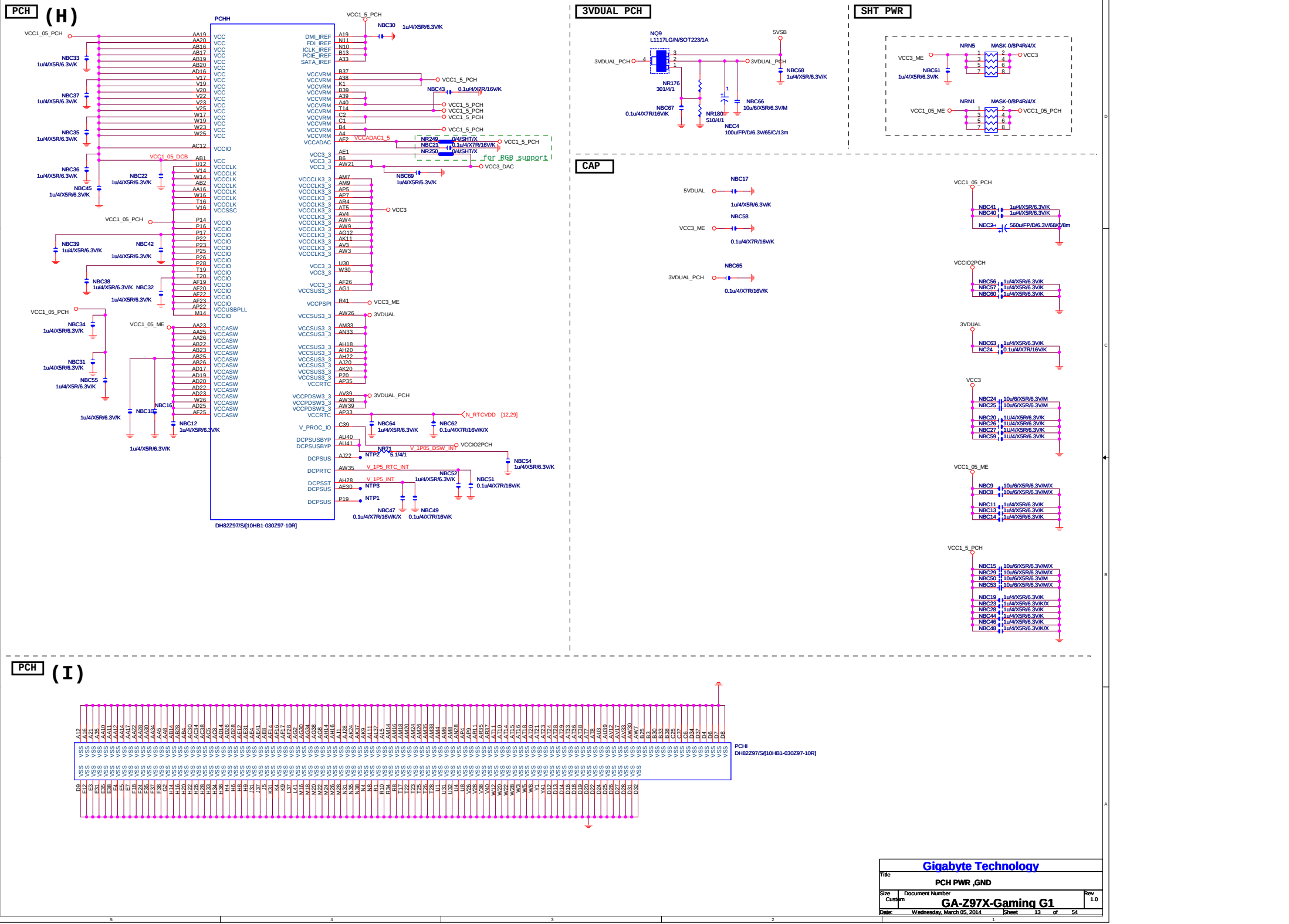
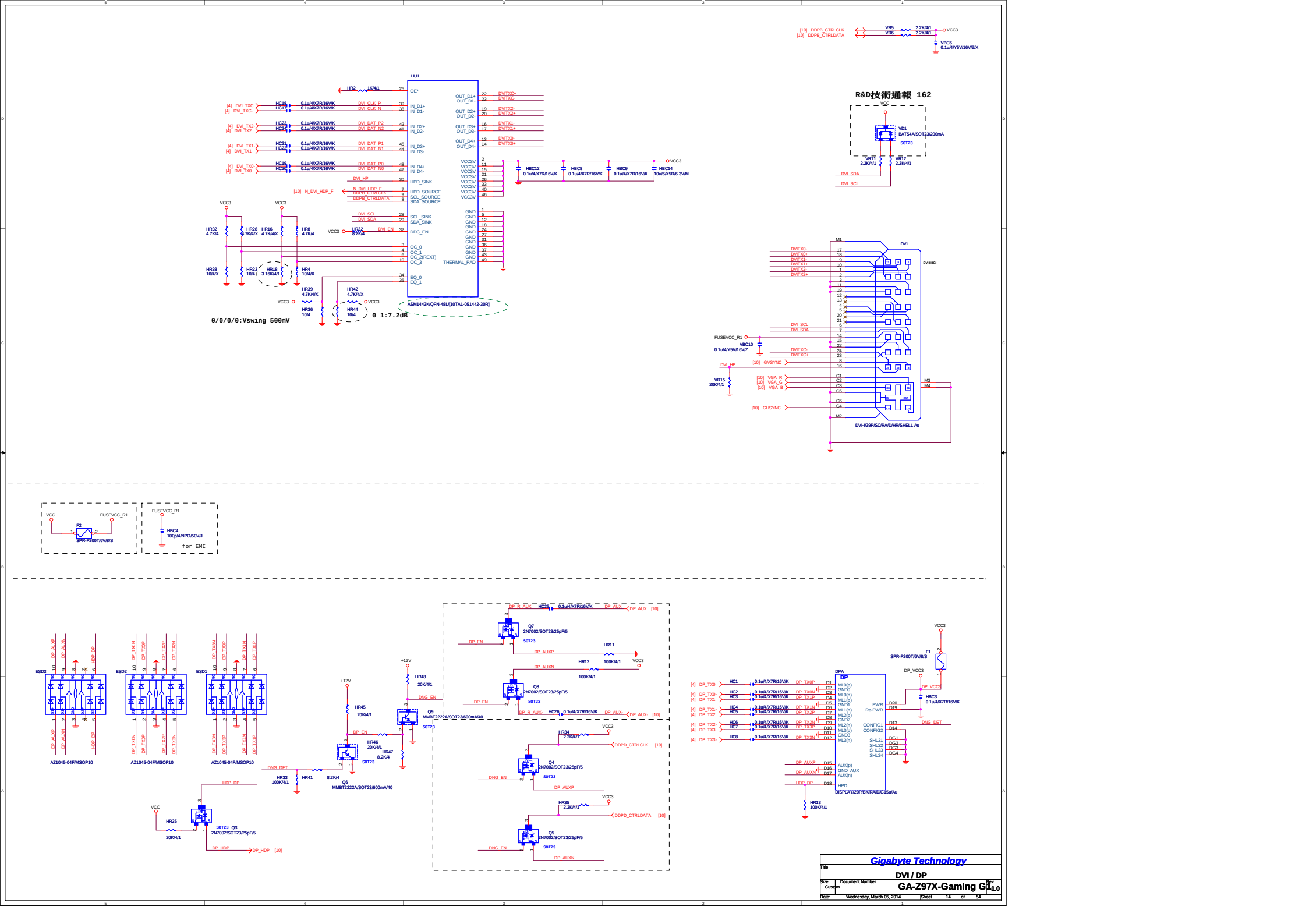
Date: Wednesday, March 05, 2014	Sheet 11 of 54


PCH (D)
PCHD
DH82Z97/S/[10HB1-030Z97-10R]
ACZ SDOUT
ACZ_SDOUT : Hi --> Disable ME
Lo--> Disable ME
PCH DPWROK
At least 10ms delay after
3VDUAL_PCH stabel
For IT8620 Ctrl
PCH PU / PD
必須放在PCH端
HSW STRAP13
32.768KHZ
CLR CMOS
BATTERY-DUAL-4
RB 必須放在BAT外
Gigabyte Technology
PCH GPIO , CTRL , AUDIO
GA-Z97X-Gaming G1
Wednesday, March 05, 2014


PCH (H)
PCHH
DH82Z97/S/[10HB1-030Z97-10R]
3VDUAL PCH
SHT PWR
CAP
for RGB support
PCH (I)
PCHI
DH82Z97/S/[10HB1-030Z97-10R]
Gigabyte Technology
PCH PWR ,GND
GA-Z97X-Gaming G1
Wednesday, March 05, 2014


R&D技術通報 162
HU1
ASM1442K/QFN-48L[10TA1-051442-30R]
0/0/0/0:Vswing 500mV
0 1:7.2dB
DVI-I/29P/SC/RA/D/HR/SHELL Au
for EMI
AZ1045-04F/MSOP10
Q7 2N7002/SOT23/25pF/5
Q8 2N7002/SOT23/25pF/5
Q9 MMBT222A/SOT23/600mA/40
Q6 MMBT222A/SOT23/600mA/40
Q4 2N7002/SOT23/25pF/5
Q5 2N7002/SOT23/25pF/5
Q3 2N7002/SOT23/25pF/5
DISPLAY/20PIBK/RA/D/G15u/Au
Gigabyte Technology
DVI / DP
GA-Z97X-Gaming G1
Wednesday, March 05, 2014
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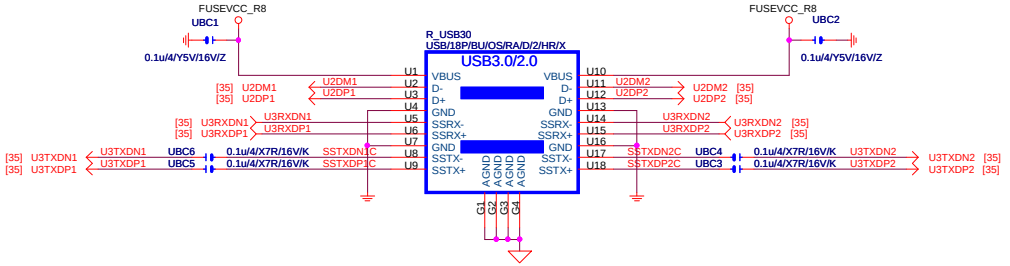
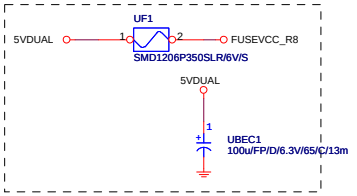
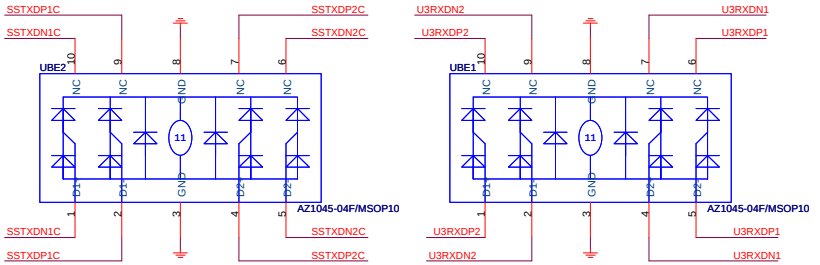
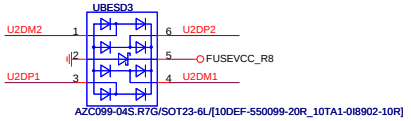
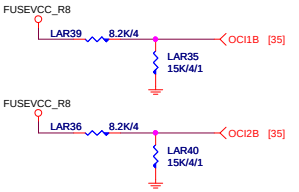


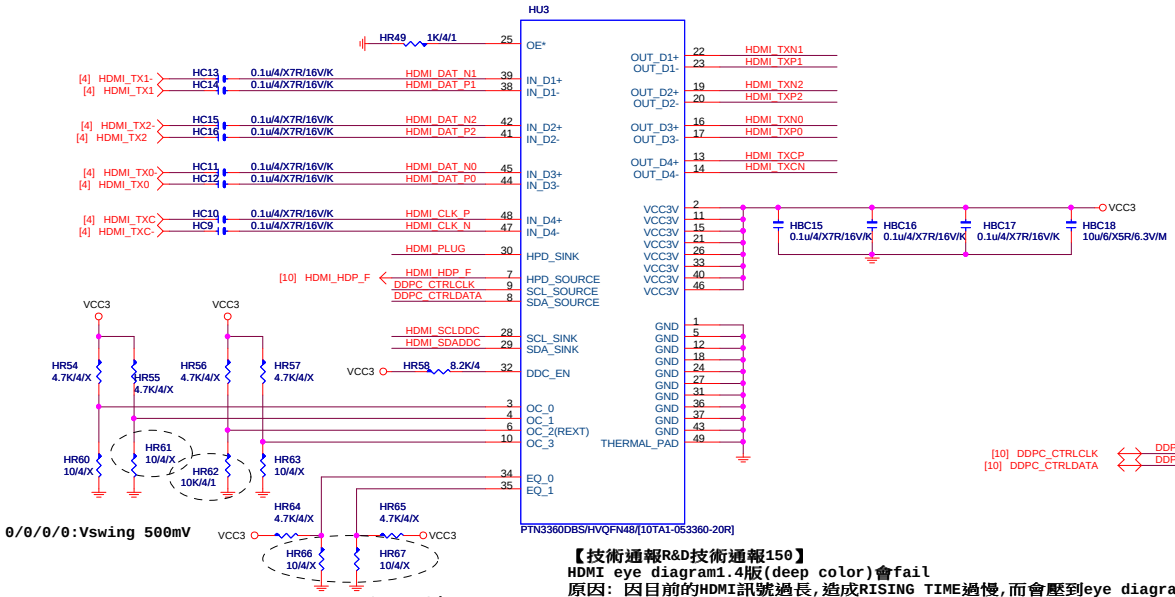


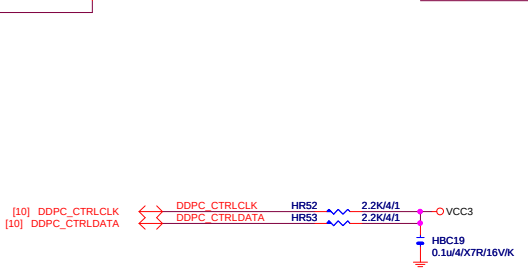


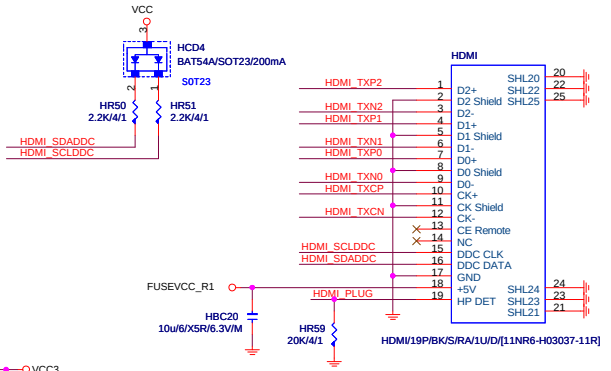


Close to connector









0/0/0/0:Vswing 500mV

0 1:7.2dB

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

Gigabyte Technology

Title: USB3 / HDMI

Size: Custom | Document Number: GA-Z97X-Gaming G1 | Rev: 1.0

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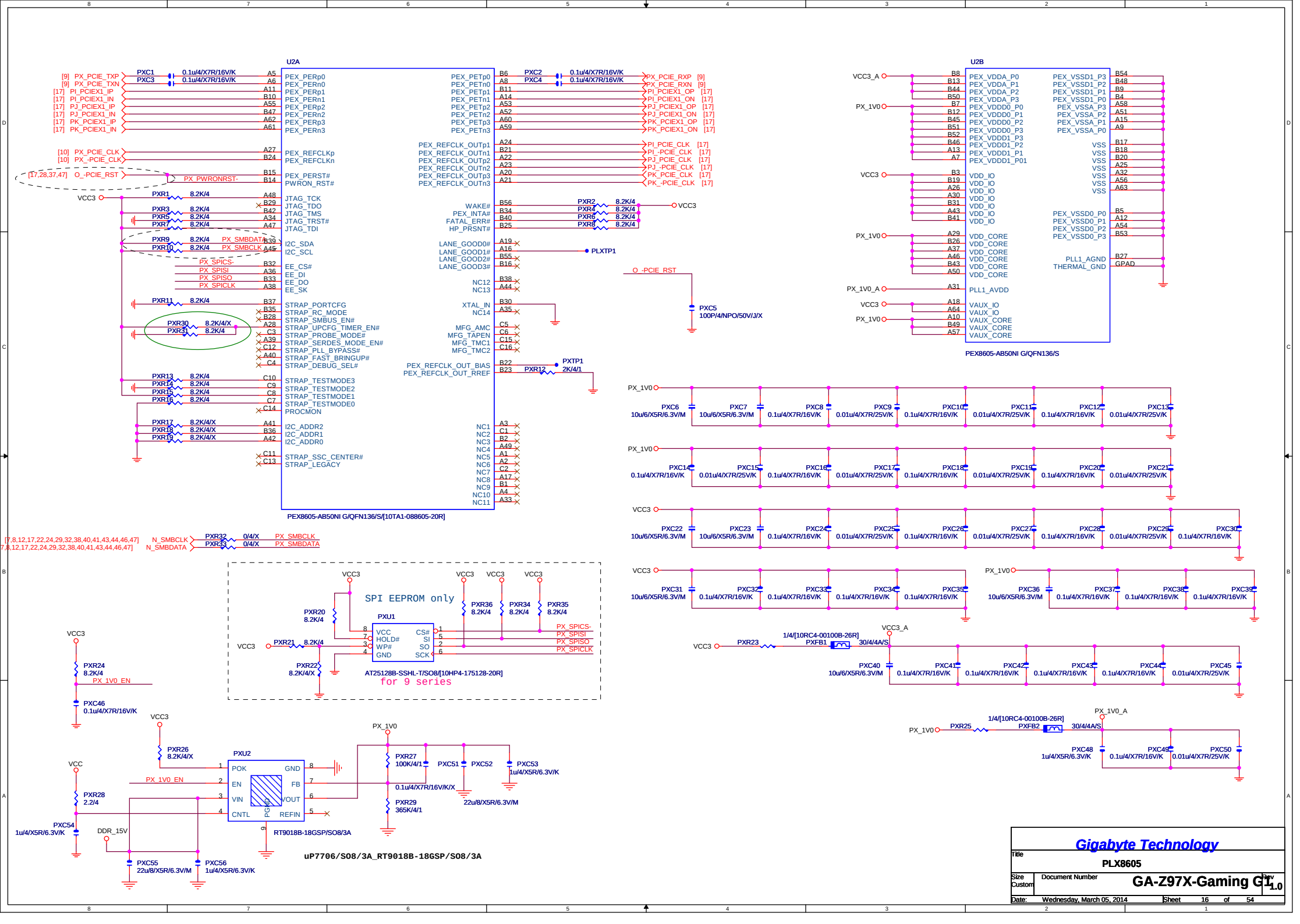
U2A
PEX8605-AB50NI G/QFN136/S/[10TA1-088605-20R]
U2B
PEX8605-AB50NI G/QFN136/S
SPI EEPROM only
AT25128B-SSHL-T/SO8/[10HP4-175128-20R]
for 9 series
uP7706/SO8/3A_RT9018B-18GSP/SO8/3A
Gigabyte Technology
PLX8605
GA-Z97X-Gaming G1
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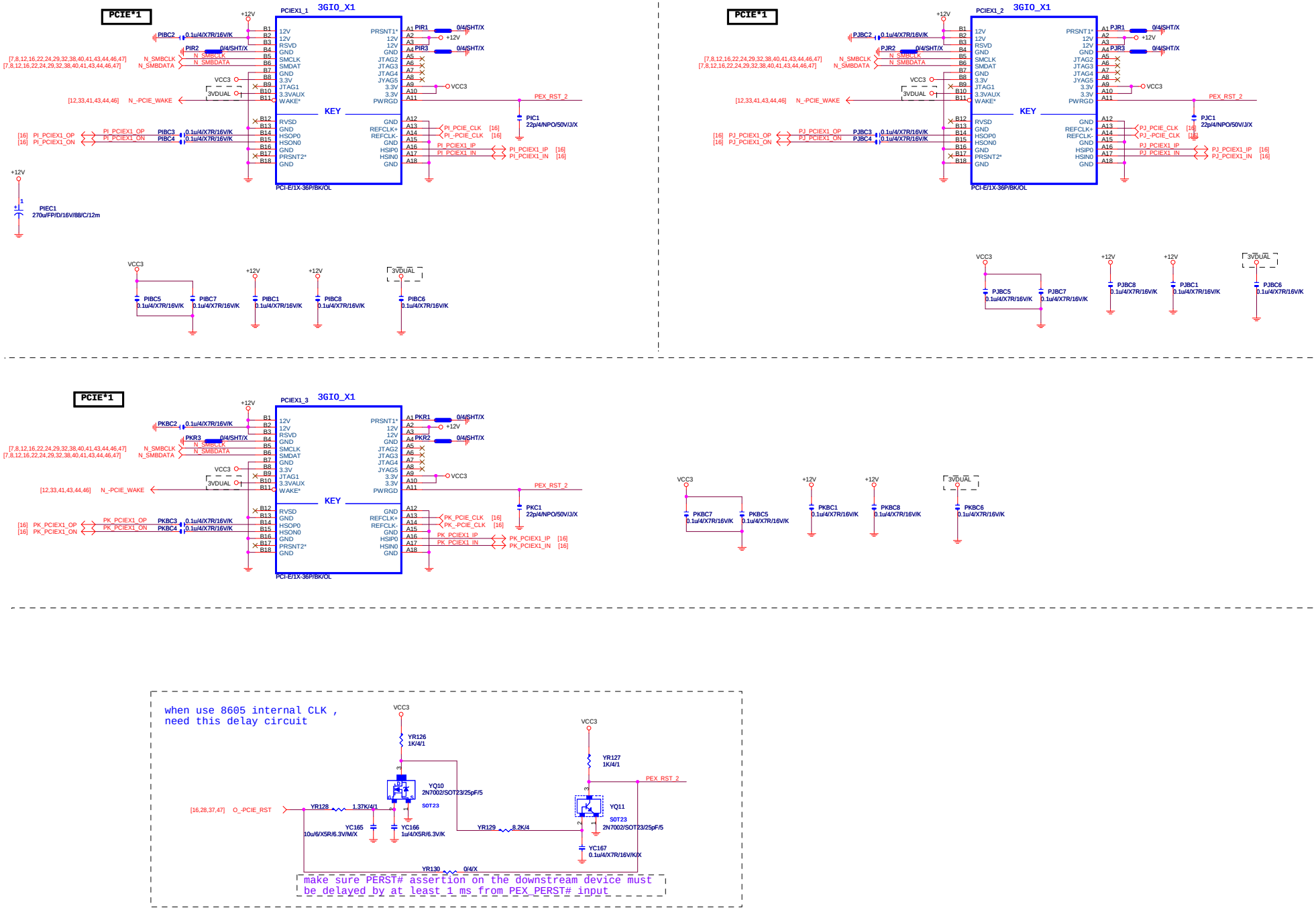
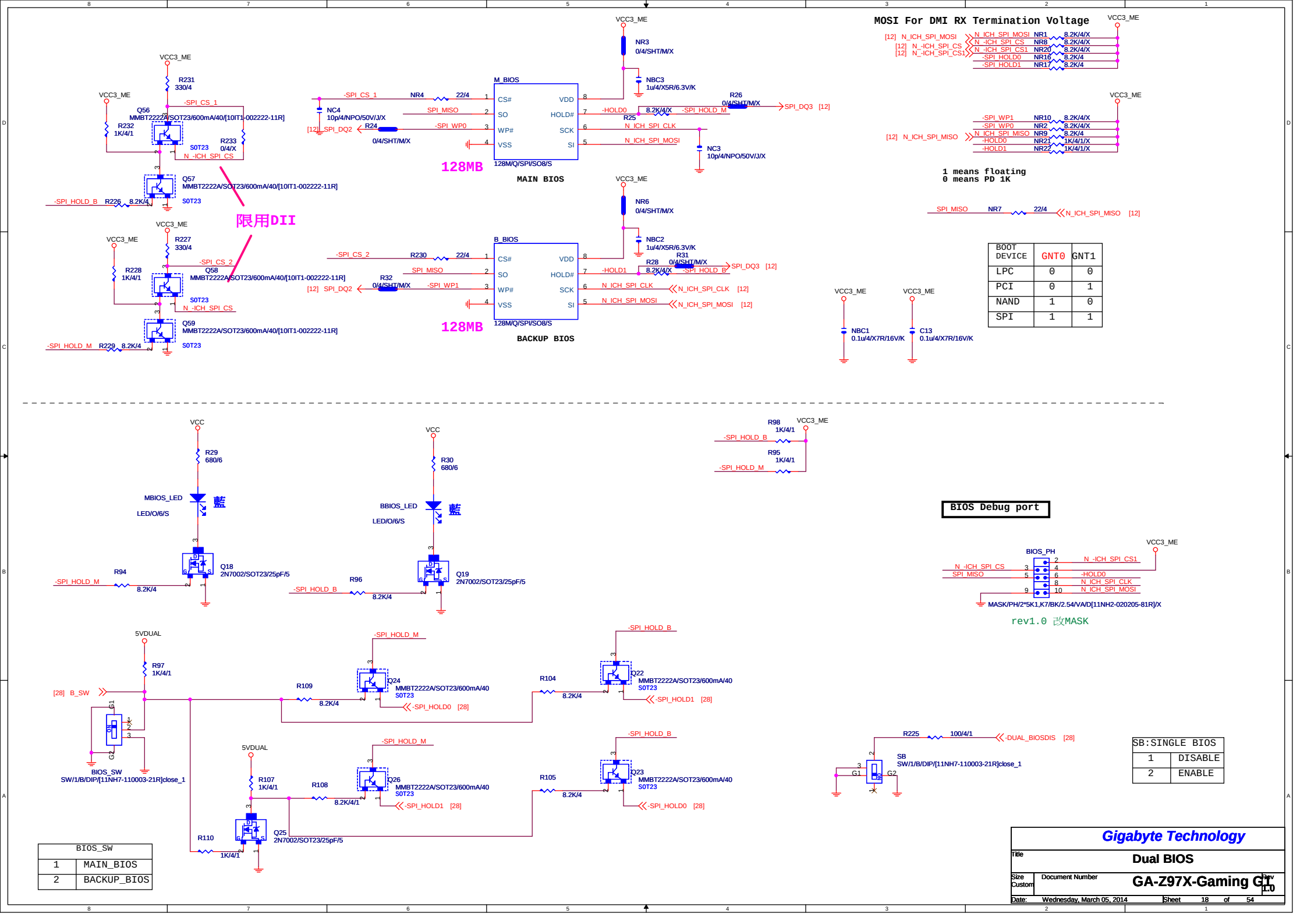


Gigabyte Technology		
Title	PCI EXPRESS X1 SLOT	
Size C	Document Number GA-Z97X-Gaming G1	Rev 1.0
Date: Wednesday, March 05, 2014	Sheet 17 of 54	


MOSI For DMI RX Termination Voltage
VCC3_ME
R231 330/4
R232 1K/4/1
R233 0/4/X
Q56 MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R]
Q57 MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R]
S0T23
-SPI_CS_1
N -ICH_SPI_CS
-SPI_HOLD_B
R226 8.2K/4
限用DII
R227 330/4
R228 1K/4/1
Q58 MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R]
Q59 MMBT2222A/SOT23/600mA/40/[10IT1-002222-11R]
-SPI_CS_2
-SPI_HOLD_M
R229 8.2K/4
M_BIOS
B_BIOS
128M/Q/SPI/SO8/S
128MB
MAIN BIOS
BACKUP BIOS
CS# SO WP# VSS VDD HOLD# SCK SI
NR3 0/4/SHT/M/X
NR6 0/4/SHT/M/X
NBC3 1u/4/X5R/6.3V/K
NBC2 1u/4/X5R/6.3V/K
NC4 10p/4/NPO/50V/J/X
NC3 10p/4/NPO/50V/J/X
NBC1 0.1u/4/X7R/16V/K
C13 0.1u/4/X7R/16V/K
R24 0/4/SHT/M/X
R25 8.2K/4/X
R26 0/4/SHT/M/X
R28 8.2K/4/X
R31 0/4/SHT/M/X
R32 0/4/SHT/M/X
R230 22/4
NR4 22/4
NR7 22/4
-SPI_MISO
-SPI_WP0
-SPI_WP1
-HOLD0
-HOLD1
SPI_DQ2
SPI_DQ3
N_ICH_SPI_CLK
N_ICH_SPI_MOSI
N_ICH_SPI_MISO
[12] N_ICH_SPI_MOSI
[12] N_ICH_SPI_CS
[12] N_ICH_SPI_CS1
N_ICH_SPI_MOSI NR1 8.2K/4/X
N -ICH_SPI_CS NR8 8.2K/4/X
N -ICH_SPI_CS1 NR20 8.2K/4/X
-SPI_HOLD0 NR16 8.2K/4
-SPI_HOLD1 NR17 8.2K/4
-SPI_WP1 NR10 8.2K/4/X
-SPI_WP0 NR2 8.2K/4/X
N_ICH_SPI_MISO NR9 8.2K/4
-HOLD0 NR21 1K/4/1/X
-HOLD1 NR22 1K/4/1/X
1 means floating
0 means PD 1K
BOOT DEVICE | GNT0 | GNT1
LPC | 0 | 0
PCI | 0 | 1
NAND | 1 | 0
SPI | 1 | 1
VCC
R29 680/6
R30 680/6
MBIOS_LED
BBIOS_LED
LED/O/6/S
藍
Q18 2N7002/SOT23/25pF/5
Q19 2N7002/SOT23/25pF/5
R94 8.2K/4
R96 8.2K/4
R98 1K/4/1
R95 1K/4/1
BIOS Debug port
BIOS_PH
MASK/PH/2*5K1,K7/BK/2.54/VA/D[11NH2-020205-81R]/X
rev1.0 改MASK
5VDUAL
R97 1K/4/1
R109 8.2K/4
R104 8.2K/4
R107 1K/4/1
R108 8.2K/4/1
R105 8.2K/4
R110 1K/4/1
Q24 MMBT2222A/SOT23/600mA/40
Q22 MMBT2222A/SOT23/600mA/40
Q26 MMBT2222A/SOT23/600mA/40
Q23 MMBT2222A/SOT23/600mA/40
Q25 2N7002/SOT23/25pF/5
[28] B_SW
-SPI_HOLD0 [28]
-SPI_HOLD1 [28]
BIOS_SW
SW/1/B/DIP/[11NH7-110003-21R]close_1
R225 100/4/1
-DUAL_BIOSDIS [28]
SB
SW/1/B/DIP/[11NH7-110003-21R]close_1
BIOS_SW
1 MAIN_BIOS
2 BACKUP_BIOS
SB:SINGLE BIOS
1 DISABLE
2 ENABLE
Gigabyte Technology
Title
Dual BIOS
Size Custom
Document Number
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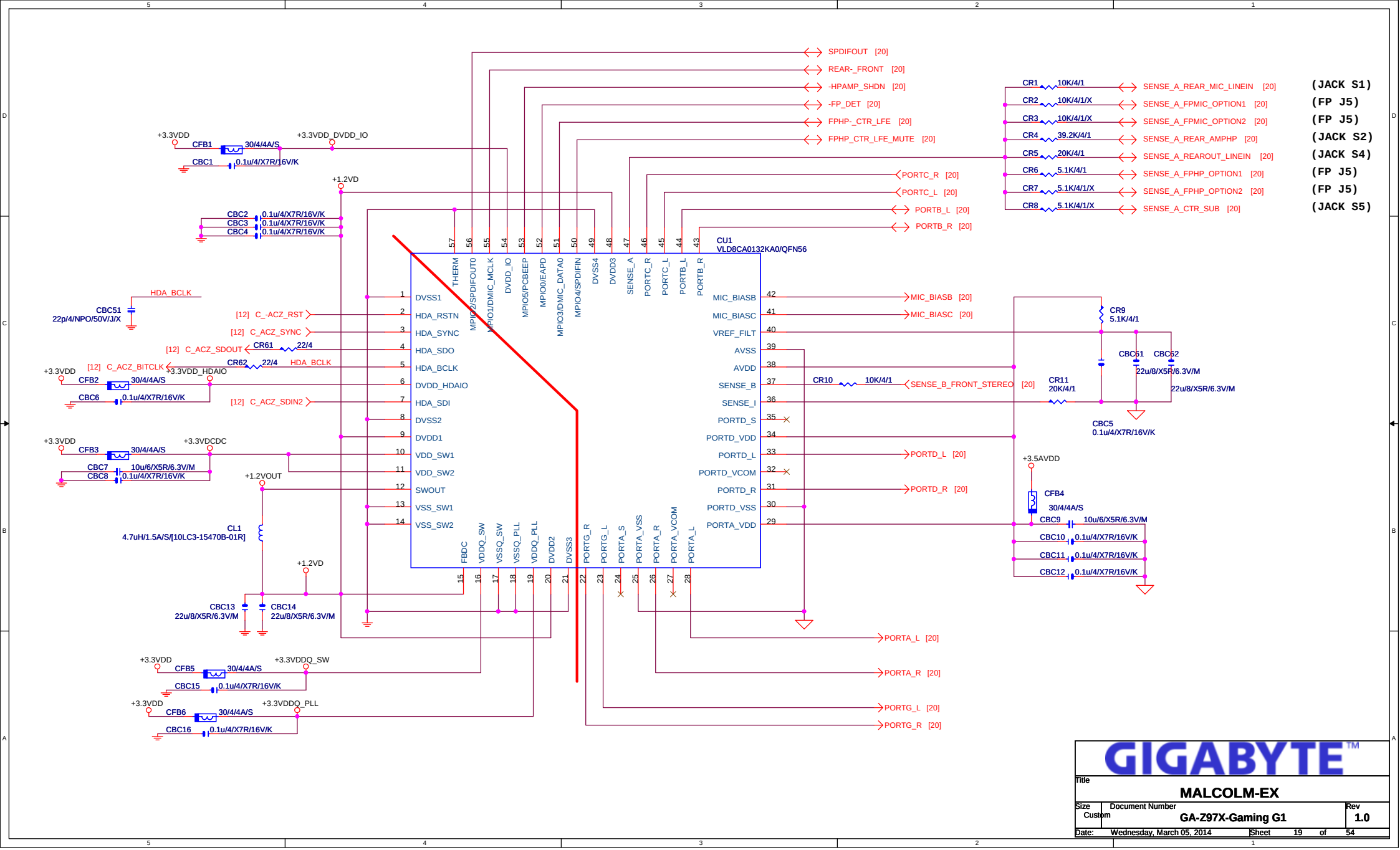

GIGABYTE™

Title	MALCOLM-EX	
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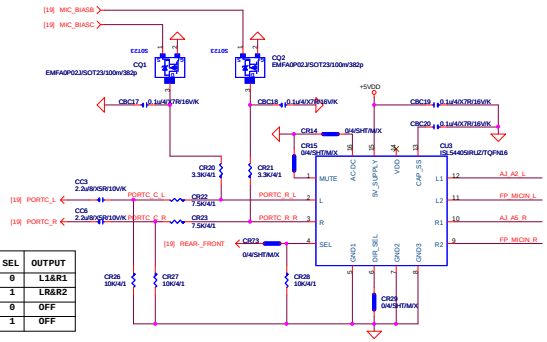
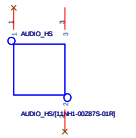
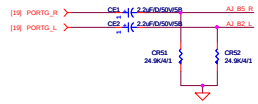
Rear MIC & FP MIC



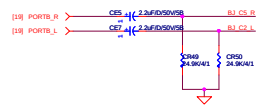
MUTE	SEL	OUTPUT
0	0	L1&R1
0	1	LR&R2
1	0	OFF
1	1	OFF

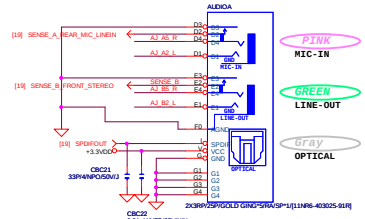


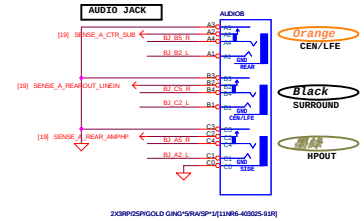
Line-Out



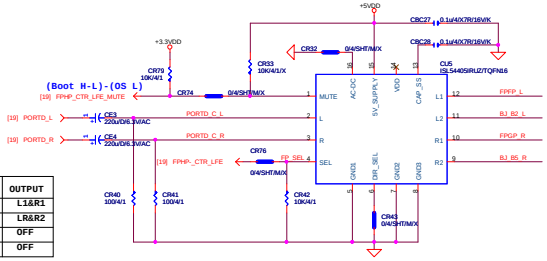
Rear SURROUND



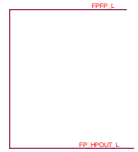


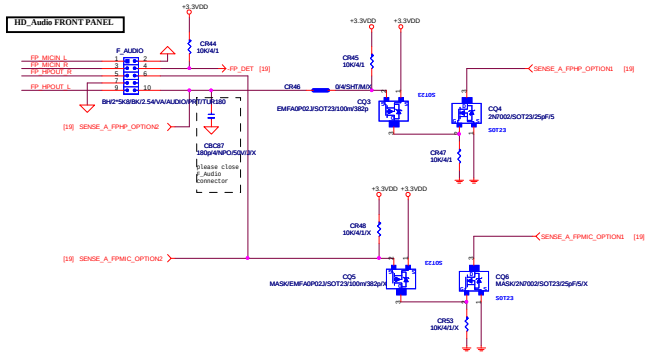


Rear CEN/LFE & FP HP-Out



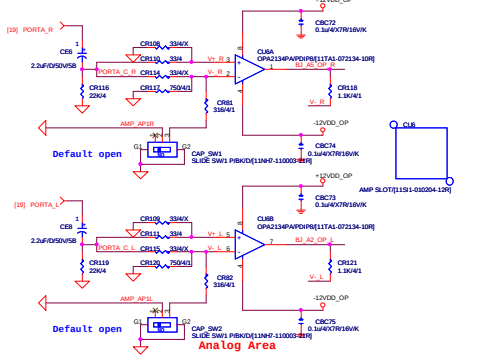
MUTE	SEL	OUTPUT
0	0	L1&R1
0	1	LR&R2
1	0	OFF
1	1	OFF

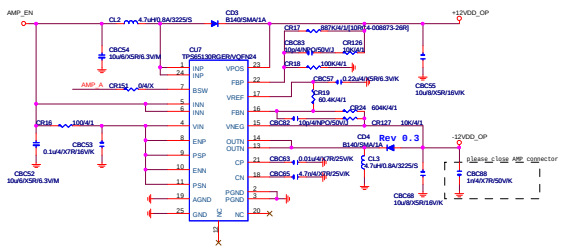


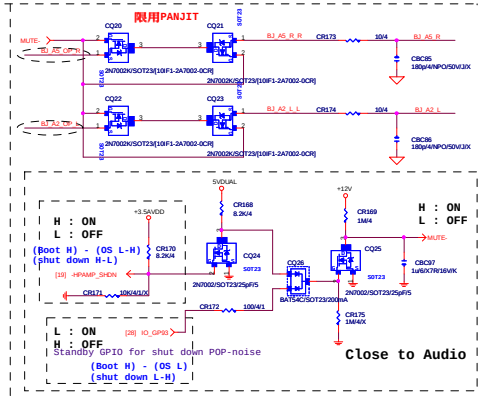


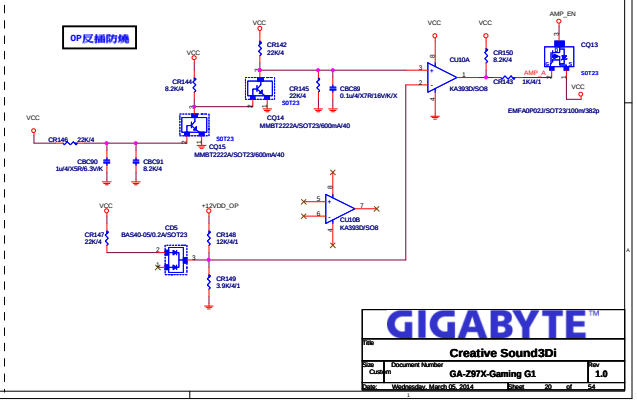
AMPLIFIED

OP AMP. Rate = (CR118/CR117)+1









GIGABYTE™

Title	Creative Sound3Di	
Size: Custom	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
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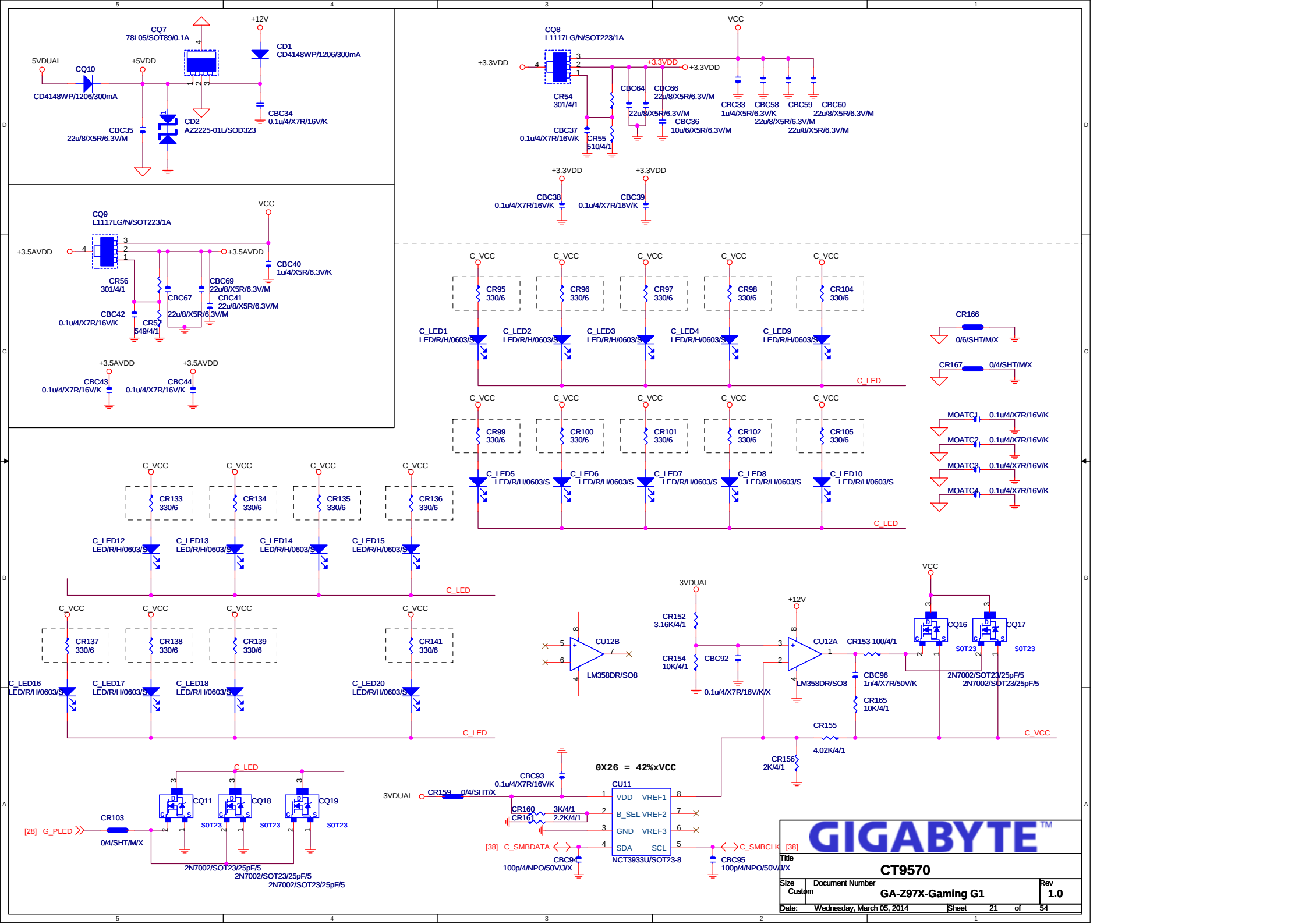
CQ7
78L05/SOT89/0.1A
+12V
CD1
CD4148WP/1206/300mA
5VDUAL
CQ10
+5VDD
CD4148WP/1206/300mA
CBC34
0.1u/4/X7R/16V/K
CBC35
22u/8/X5R/6.3V/M
CD2
AZ2225-01L/SOD323
CQ8
L1117LG/N/SOT223/1A
VCC
+3.3VDD
CR54
301/4/1
CBC64
CBC66
22u/8/X5R/6.3V/M
CBC33
1u/4/X5R/6.3V/K
CBC58
CBC59
CBC60
CBC37
0.1u/4/X7R/16V/K
CR55
510/4/1
CBC36
10u/6/X5R/6.3V/M
CBC38
CBC39
CQ9
L1117LG/N/SOT223/1A
+3.5AVDD
CBC40
1u/4/X5R/6.3V/K
CR56
301/4/1
CBC69
CBC67
CBC41
CBC42
0.1u/4/X7R/16V/K
CR57
549/4/1
CBC43
CBC44
C_VCC
C_LED1
LED/R/H/0603/S
C_LED2
C_LED3
C_LED4
C_LED9
C_LED
CR95
330/6
CR96
CR97
CR98
CR104
CR99
CR100
CR101
CR102
CR105
C_LED5
C_LED6
C_LED7
C_LED8
C_LED10
CR166
0/6/SHT/M/X
CR167
0/4/SHT/M/X
MOATC1
MOATC2
MOATC3
MOATC4
0.1u/4/X7R/16V/K
CR133
CR134
CR135
CR136
C_LED12
C_LED13
C_LED14
C_LED15
CR137
CR138
CR139
CR141
C_LED16
C_LED17
C_LED18
C_LED20
CU12B
LM358DR/SO8
3VDUAL
CR152
3.16K/4/1
CR154
10K/4/1
CBC92
0.1u/4/X7R/16V/K/X
CU12A
CR153 100/4/1
CBC96
1n/4/X7R/50V/K
CR165
10K/4/1
CQ16
CQ17
SOT23
2N7002/SOT23/25pF/5
CR155
4.02K/4/1
CR156
2K/4/1
C_VCC
CQ11
CQ18
CQ19
CR103
[28] G_PLED
0/4/SHT/M/X
0X26 = 42%xVCC
CBC93
0.1u/4/X7R/16V/K
CR159
0/4/SHT/X
CR160
3K/4/1
CR161
2.2K/4/1
CU11
VDD
VREF1
B_SEL
VREF2
GND
VREF3
SDA
SCL
NCT3933U/SOT23-8
[38] C_SMBDATA
[38] C_SMBCLK
CBC94
CBC95
100p/4/NPO/50V/J/X
GIGABYTE™
Title
CT9570
Size
Custom
Document Number
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1.0
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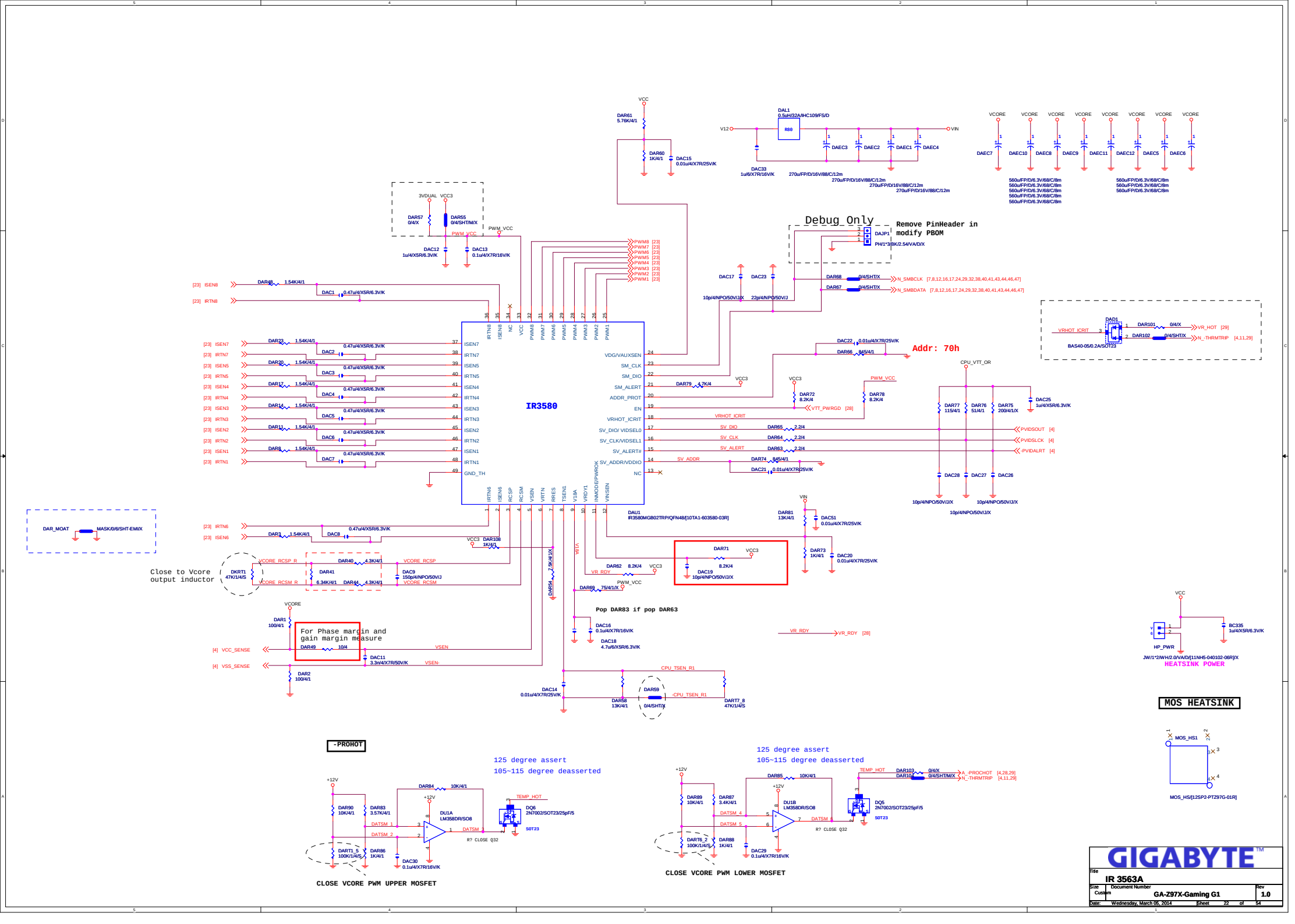
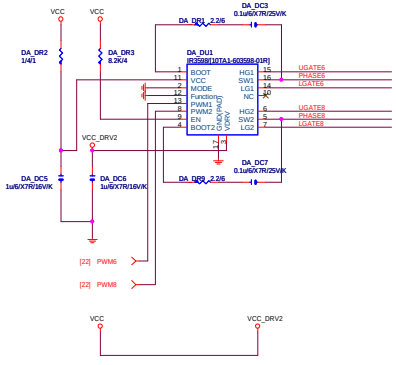
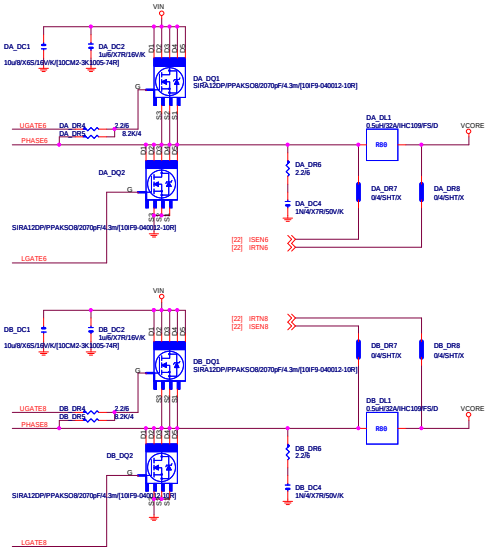

IR3580
DAU1
IR3580MGB02TRP/QFN48/[10TA1-603580-03R]
Debug Only
Remove PinHeader in modify PBOM
Addr: 70h
Close to Vcore output inductor
For Phase margin and gain margin measure
Pop DAR83 if pop DAR63
-PROHOT
125 degree assert
105~115 degree deasserted
CLOSE VCORE PWM UPPER MOSFET
CLOSE VCORE PWM LOWER MOSFET
MOS HEATSINK
HEATSINK POWER
GIGABYTE
IR 3563A
GA-Z97X-Gaming G1
1.0
Wednesday, March 05, 2014

VCORE Phase 6,8

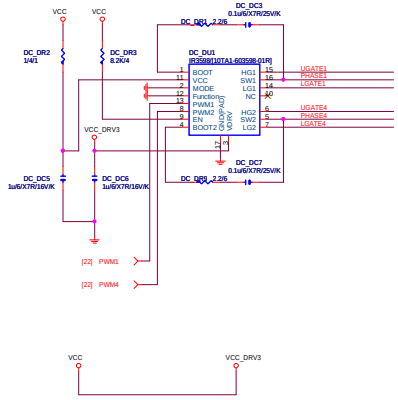


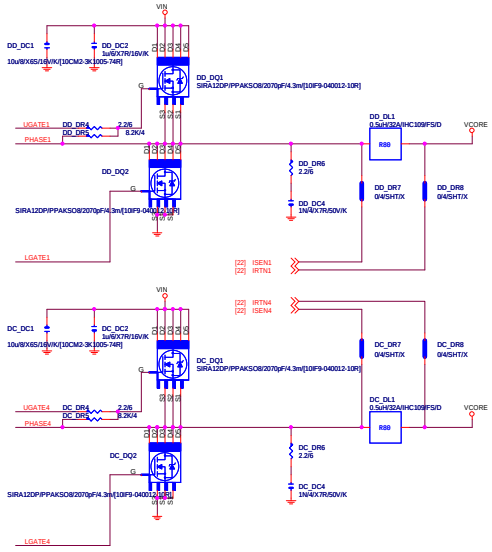
FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-State	DUAL
1	0	Tri-State	Doubler
OPEN	0	Tri-State	Quad
OPEN	1	IR ATL	Quad

In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU



VCORE Phase 1,4

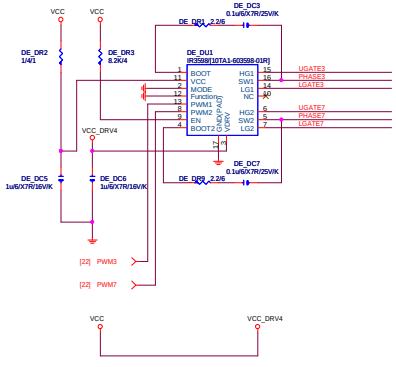


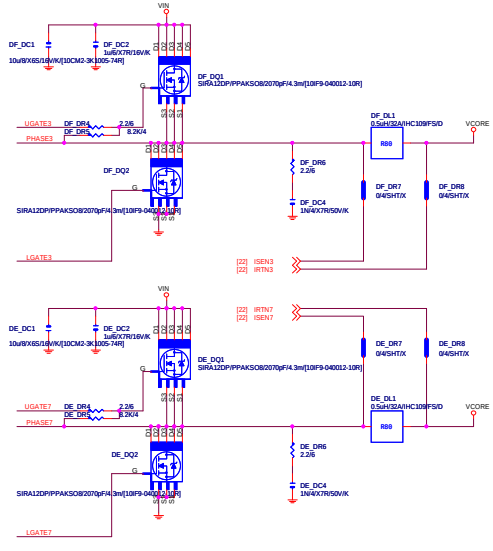


FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-State	DUAL
1	0	Tri-State	Doubler
OPEN	0	Tri-State	Quad
OPEN	1	IR ATL	Quad

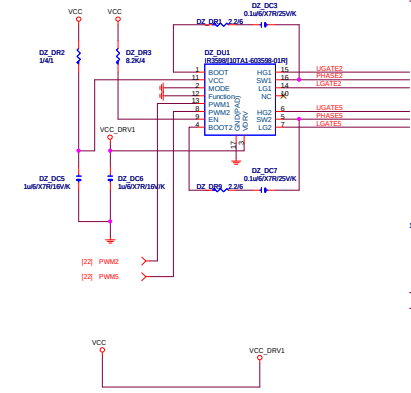
In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU

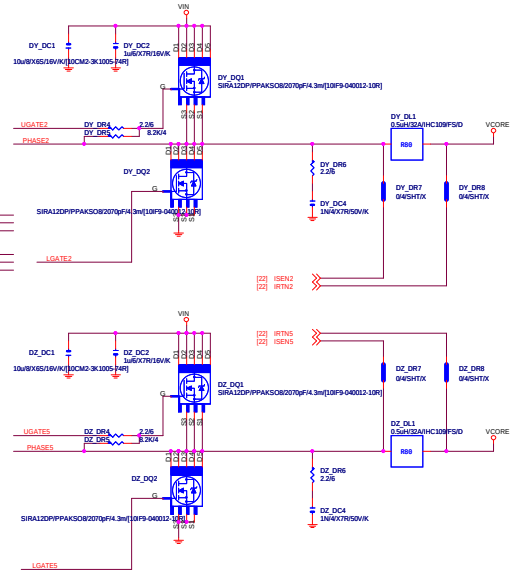
VCORE Phase 3,7





VCORE Phase 2,5





GIGABYTE™

Title	CPU CORE VR	
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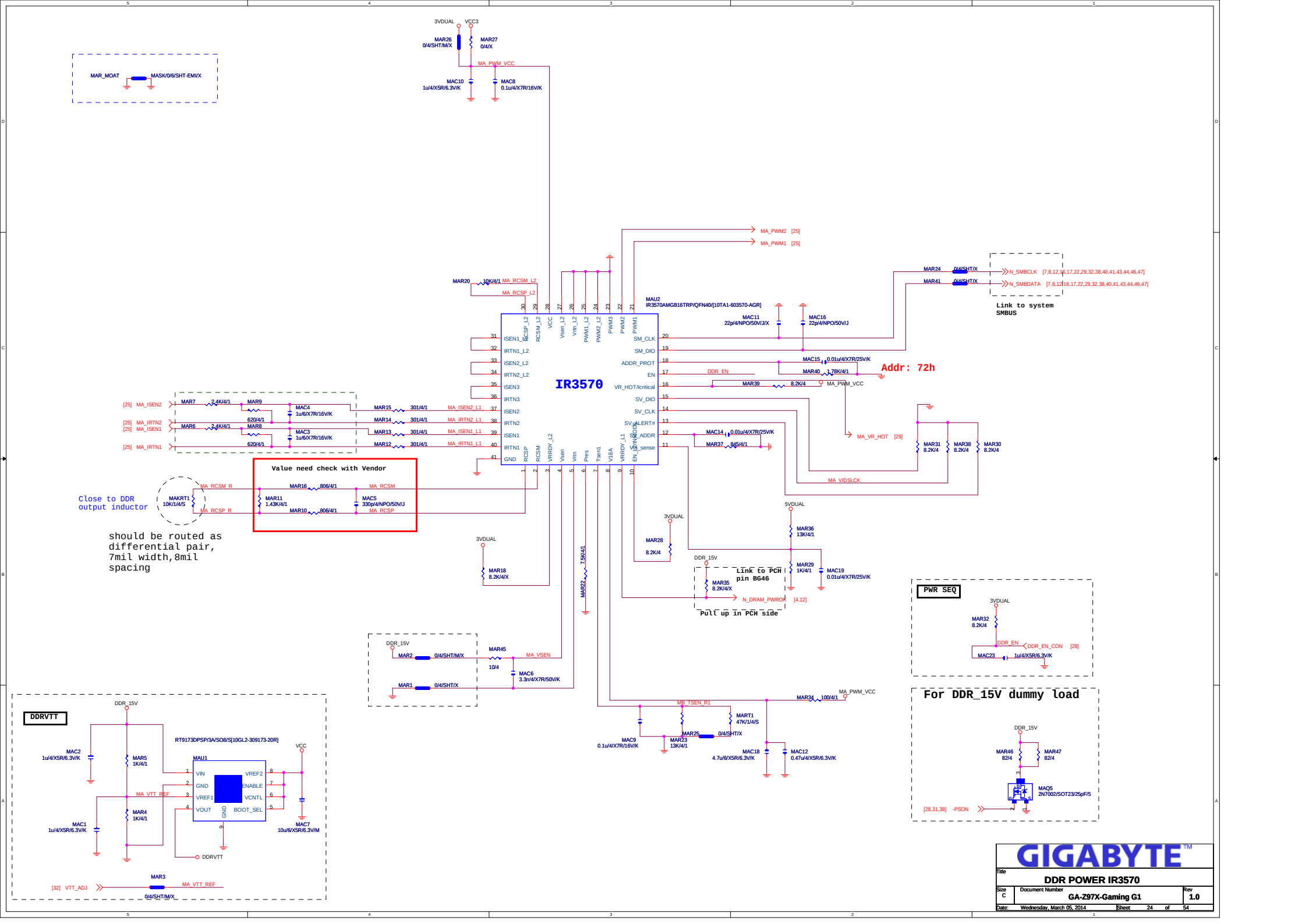

GIGABYTE™

Title	DDR POWER IR3570	
Size C	Document Number GA-Z97X-Gaming G1	Rev 1.0
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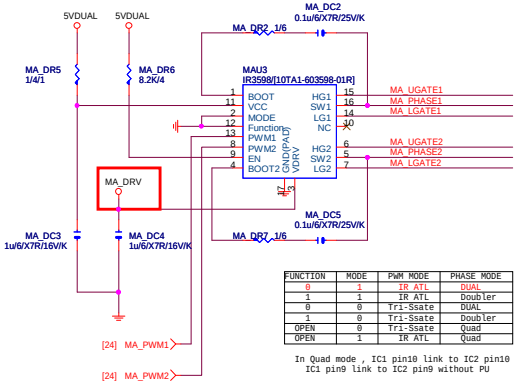
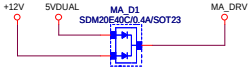
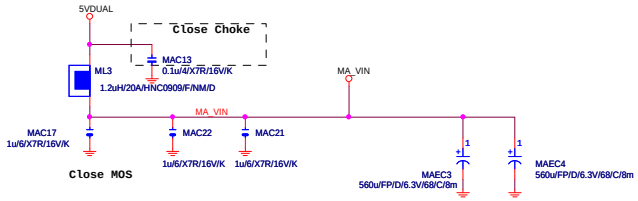
DDR_15V

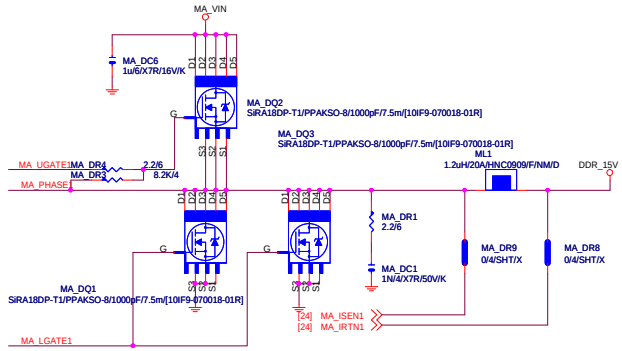


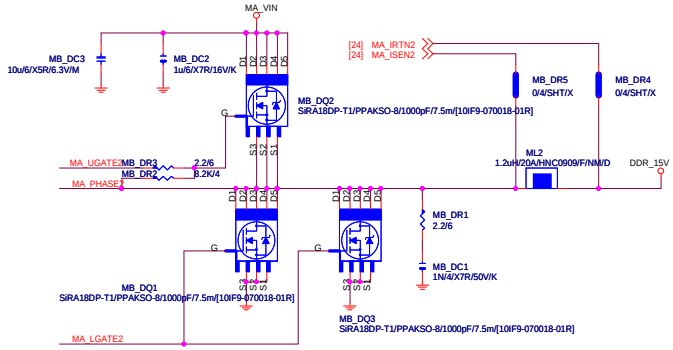
FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATL	DUAL
1	1	IR ATL	Doubler
0	0	Tri-Ssate	DUAL
1	0	Tri-Ssate	Doubler
OPEN	0	Tri-Ssate	Quad
OPEN	1	IR ATL	Quad

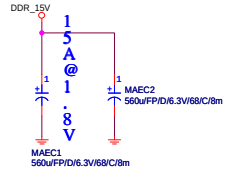
In Quad mode , IC1 pin10 link to IC2 pin10
IC1 pin9 link to IC2 pin9 without PU











Gigabyte Technology			
Title: IR3570			
Size: C	Document Number: GA-Z97X-Gaming G1		Rev: 1.0
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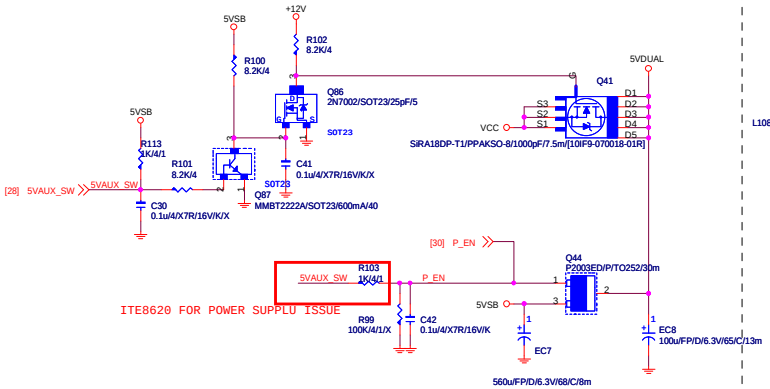
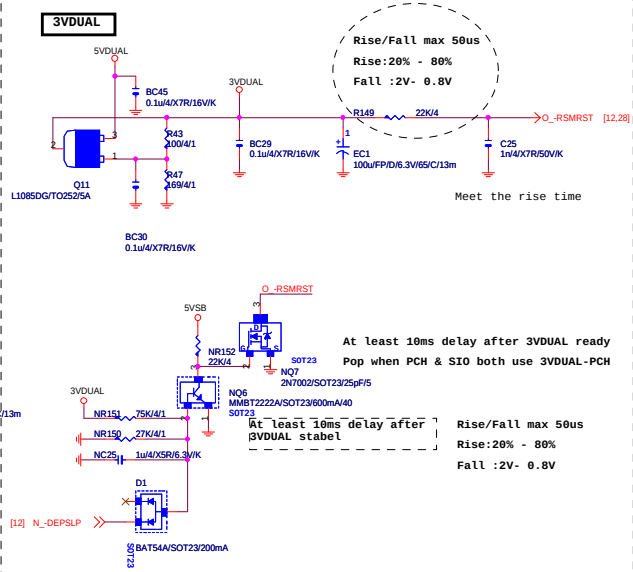
5VDUAL

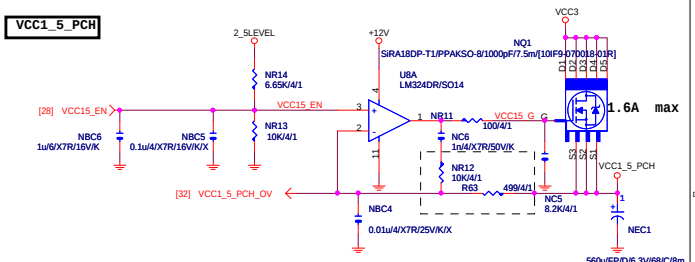


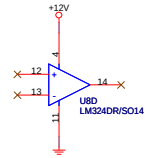
ITE8620 FOR POWER SUPPLU ISSUE

3VDUAL



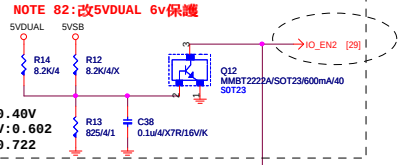
VCC1_5_PCH





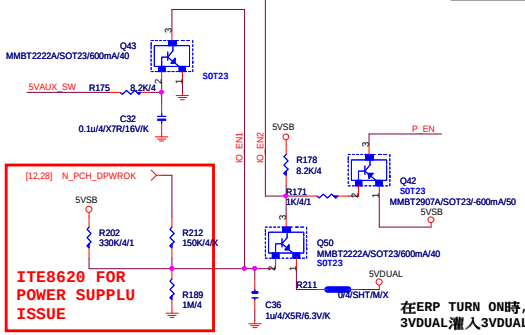
5VSB OVP:7.5V Protection

NOTE 82:改5VDUAL 6v保護



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

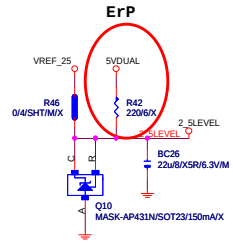
5VDUAL SHORT PROTECT



ITE8620 FOR POWER SUPPLU ISSUE

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

2_5LEVEL



Gigabyte Technology		
Title: DISCRETE POWER 1		
Size: C	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
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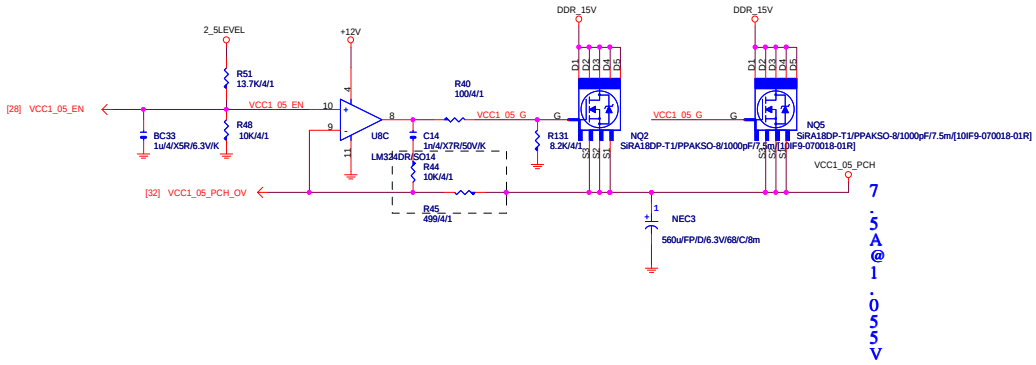
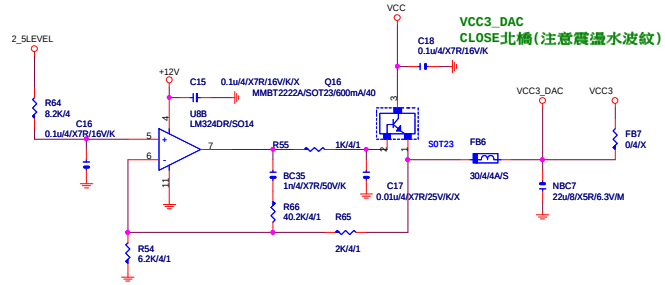
VCC1_05_PCH



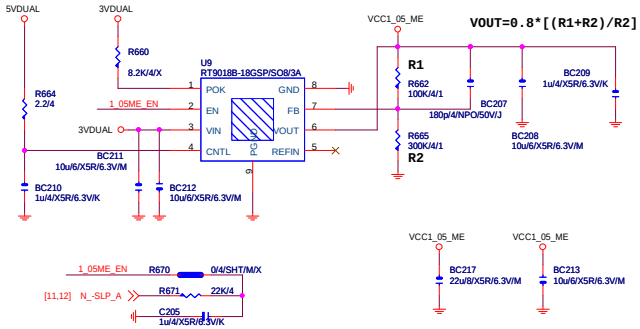
VCC3_DAC

(3.3V/70mA+360uA)

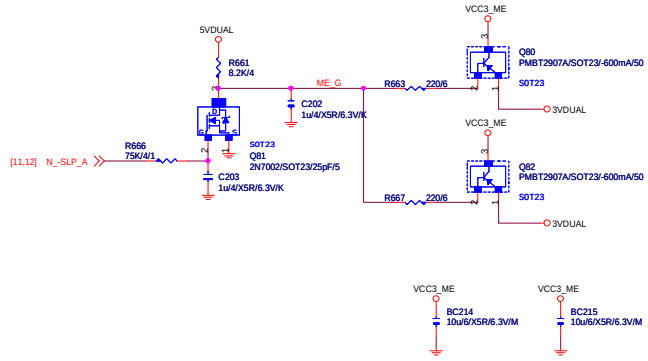


VCC1_05_ME

【技術通報R&D技術通報156】
(RICHTEK), (NUVOTON), (EMC)做共用
PIN7分壓阻值須做修改為100K以上電阻值



VCC3_ME



Gigabyte Technology		
Title: DISCRETE POWER 2		
Size: C	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
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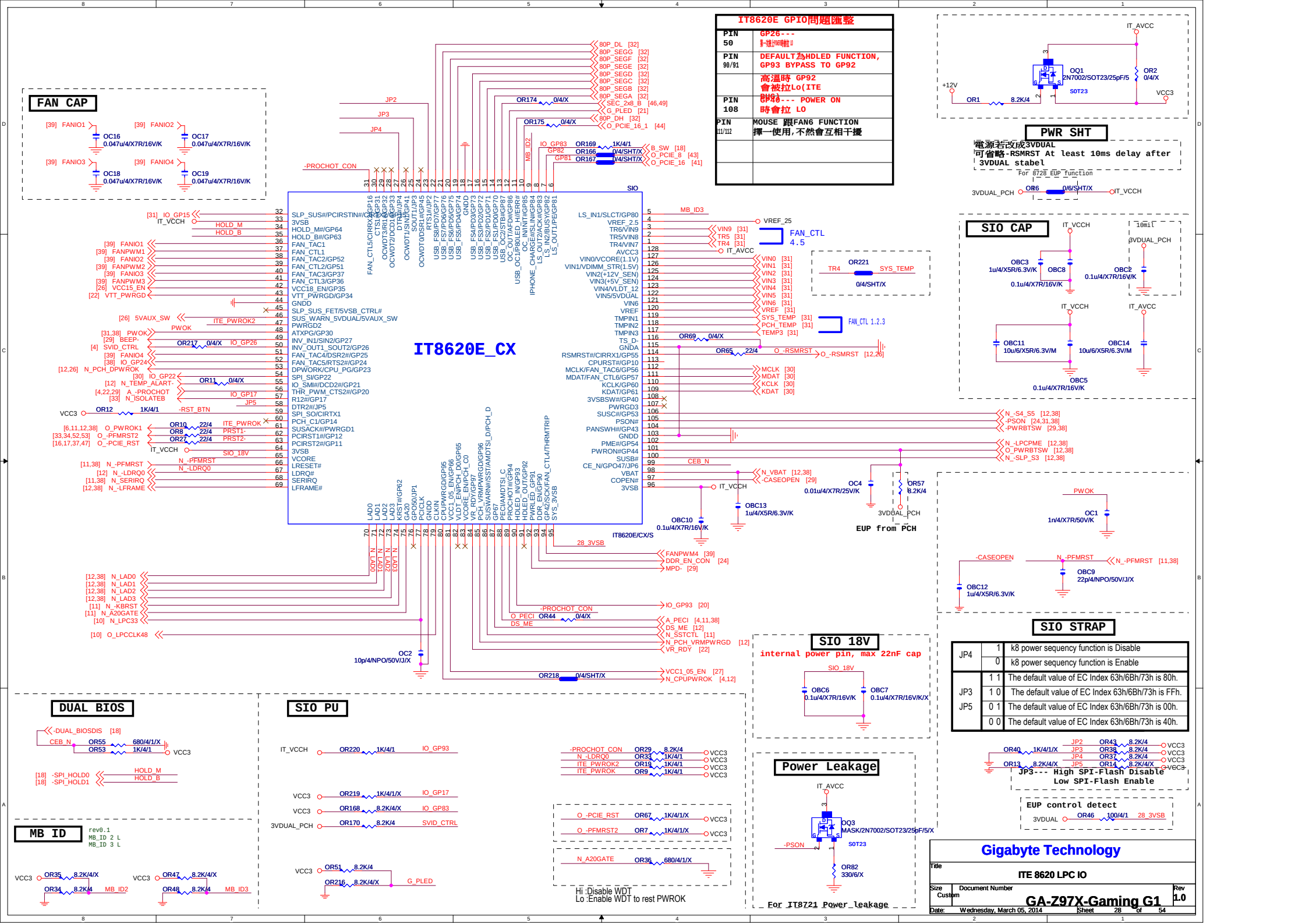
IT8620E GPIO問題匯整
PIN 50 GP26---
PIN 90/91 DEFAULT為HDLED FUNCTION, GP93 BYPASS TO GP92
高溫時 GP92 會被拉Lo(ITE BUG)
PIN 108 GP96--- POWER ON 時會拉 LO
PIN 111/112 MOUSE 跟FAN6 FUNCTION 擇一使用,不然會互相干擾
FAN CAP
SIO
IT8620E_CX
IT8620E/CX/S
SIO CAP
SIO STRAP
PWR SHT
電源若改成3VDUAL 可省略-RSMRST At least 10ms delay after 3VDUAL stabel
SIO 18V
internal power pin, max 22nF cap
DUAL BIOS
SIO PU
MB ID
Power Leakage
For IT8721 Power leakage
JP3--- High SPI-Flash Disable Low SPI-Flash Enable
EUP control detect
EUP from PCH
Hi :Disable WDT
Lo :Enable WDT to rest PWROK
Gigabyte Technology
ITE 8620 LPC IO
GA-Z97X-Gaming G1
Rev 1.0
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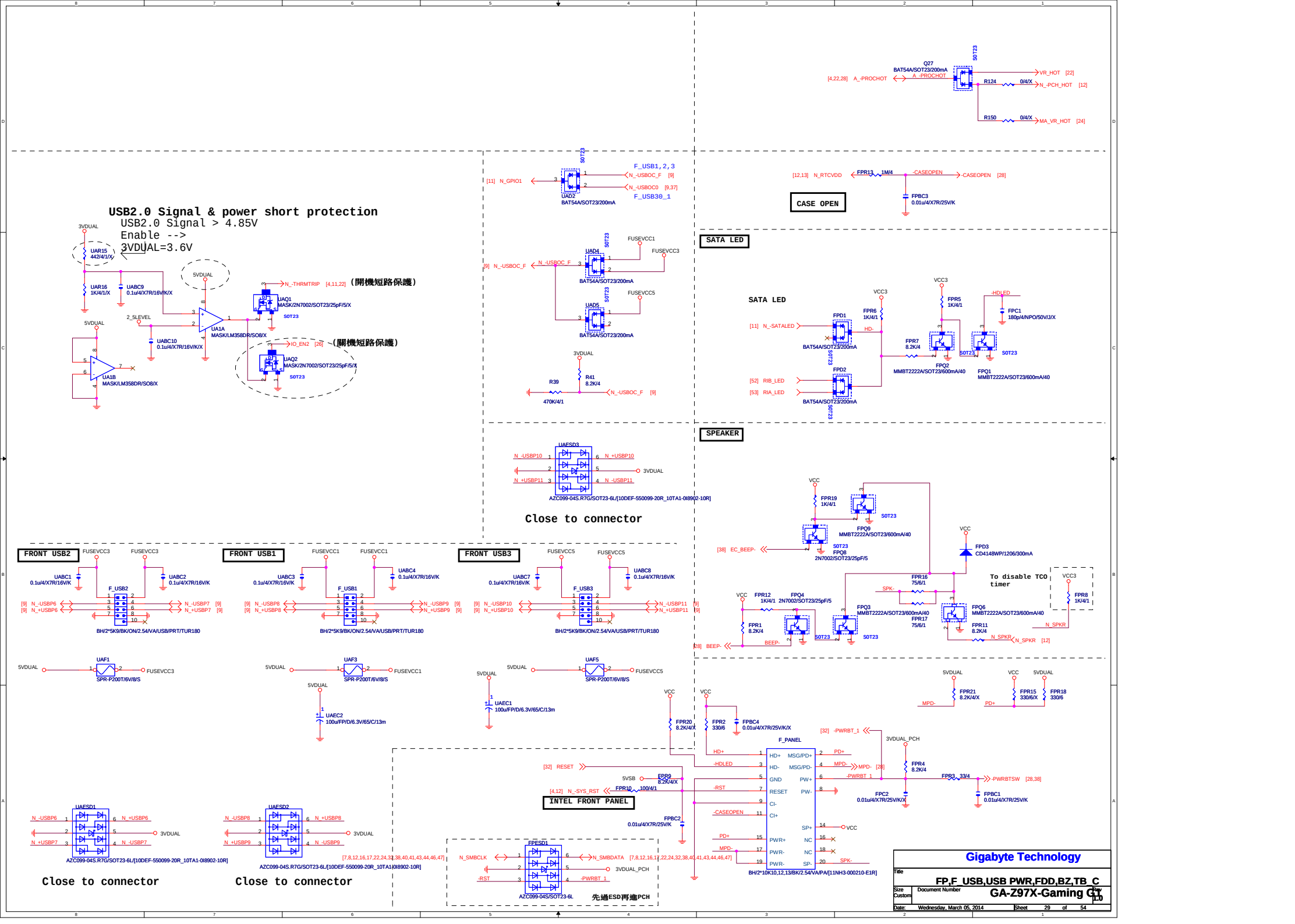
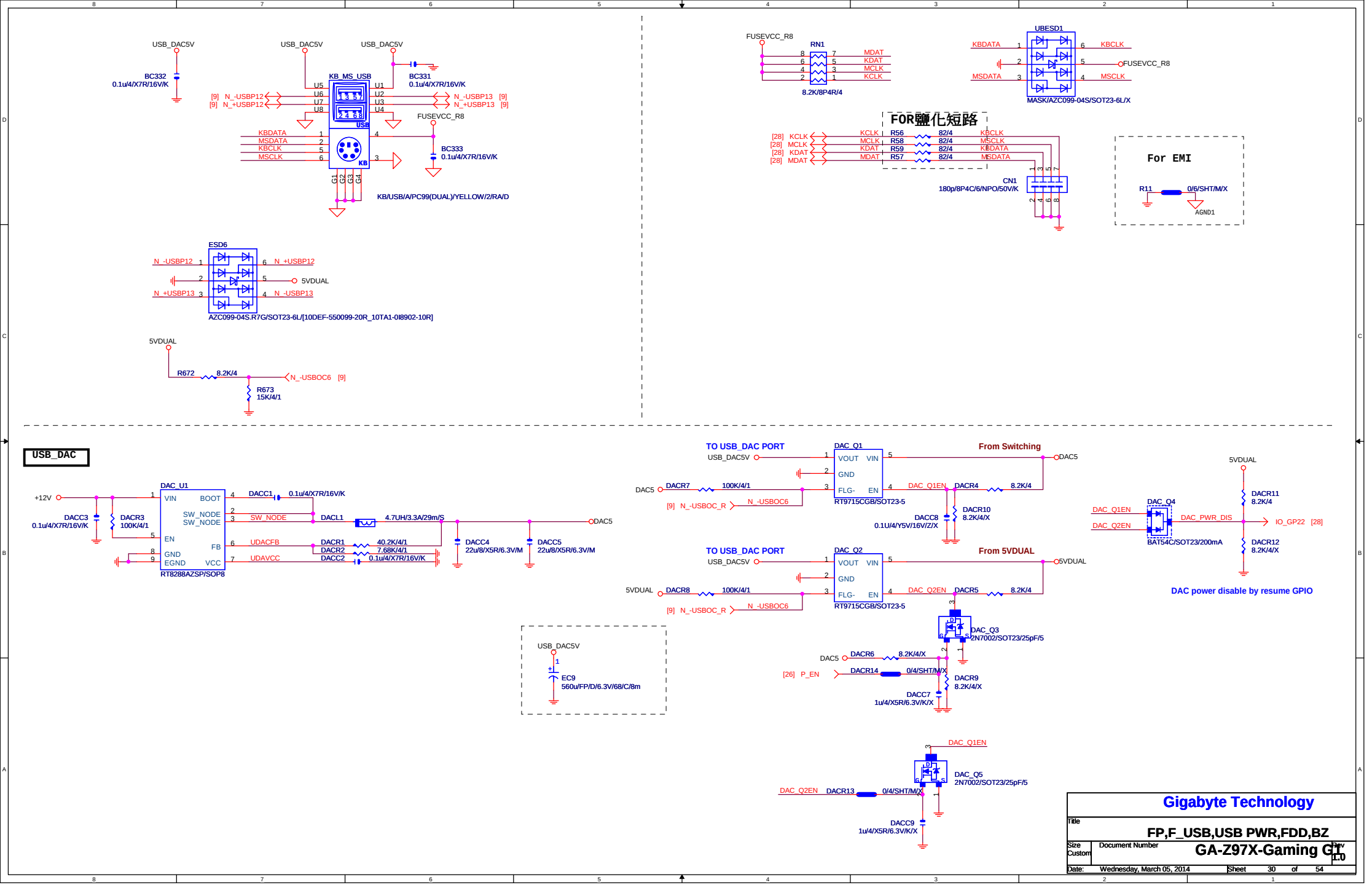

USB2.0 Signal & power short protection
USB2.0 Signal > 4.85V
Enable -->
3VDUAL=3.6V
CASE OPEN
SATA LED
SPEAKER
FRONT USB2
FRONT USB1
FRONT USB3
INTEL FRONT PANEL
Close to connector
Close to connector
Close to connector
To disable TCO timer
Gigabyte Technology
FP,F_USB,USB PWR,FDD,BZ,TB_C
GA-Z97X-Gaming G1
Wednesday, March 05, 2014


USB_DAC5V
BC332
0.1u/4/X7R/16V/K
KB_MS_USB
BC331
0.1u/4/X7R/16V/K
[9] N_-USBP12
[9] N_+USBP12
N_-USBP13 [9]
N_+USBP13 [9]
FUSEVCC_R8
BC333
0.1u/4/X7R/16V/K
KBDATA
MSDATA
KBCLK
MSCLK
KB/USB/A/PC99(DUAL)/YELLOW/2/RA/D
ESD6
N_-USBP12
N_+USBP12
N_+USBP13
N_-USBP13
5VDUAL
AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]
R672
8.2K/4
N_-USBOC6 [9]
R673
15K/4/1
FUSEVCC_R8
RN1
MDAT
KDAT
MCLK
KCLK
8.2K/8P4R/4
UBESD1
KBDATA
KBCLK
FUSEVCC_R8
MSDATA
MSCLK
MASK/AZC099-04S/SOT23-6L/X
FOR鹽化短路
[28] KCLK
[28] MCLK
[28] KDAT
[28] MDAT
R56 82/4
R58 82/4
R59 82/4
R57 82/4
CN1
180p/8P4C/6/NPO/50V/K
For EMI
R11
0/6/SHT/M/X
AGND1
USB_DAC
+12V
DACC3
0.1u/4/X7R/16V/K
DACR3
100K/4/1
DAC_U1
VIN
BOOT
SW_NODE
EN
FB
GND
EGND
VCC
RT8288AZSP/SOP8
DACC1
0.1u/4/X7R/16V/K
DACL1
4.7UH/3.3A/29m/S
UDACFB
UDAVCC
DACR1
40.2K/4/1
DACR2
7.68K/4/1
DACC2
0.1u/4/X7R/16V/K
DACC4
22u/8/X5R/6.3V/M
DACC5
22u/8/X5R/6.3V/M
DAC5
USB_DAC5V
EC9
560u/FP/D/6.3V/68/C/8m
TO USB_DAC PORT
DAC_Q1
VOUT
VIN
GND
FLG-
EN
RT9715CGB/SOT23-5
From Switching
DACR7
100K/4/1
N_-USBOC6
DAC_Q1EN
DACR4
8.2K/4
DACR10
8.2K/4/X
DACC8
0.1U/4/Y5V/16V/Z/X
TO USB_DAC PORT
DAC_Q2
From 5VDUAL
5VDUAL
DACR8
100K/4/1
DAC_Q2EN
DACR5
8.2K/4
DAC_Q3
2N7002/SOT23/25pF/5
DACR6
8.2K/4/X
DACR14
0/4/SHT/M/X
[26] P_EN
DACR9
8.2K/4/X
DACC7
1u/4/X5R/6.3V/K/X
DAC_Q1EN
DAC_Q5
2N7002/SOT23/25pF/5
DAC_Q2EN
DACR13
0/4/SHT/M/X
DACC9
1u/4/X5R/6.3V/K/X
5VDUAL
DACR11
8.2K/4
DAC_Q1EN
DAC_Q4
DAC_PWR_DIS
IO_GP22 [28]
DAC_Q2EN
BAT54C/SOT23/200mA
DACR12
8.2K/4/X
DAC power disable by resume GPIO
Gigabyte Technology
Title
FP,F_USB,USB PWR,FDD,BZ
Size
Custom
Document Number
GA-Z97X-Gaming G1
Rev
1.0
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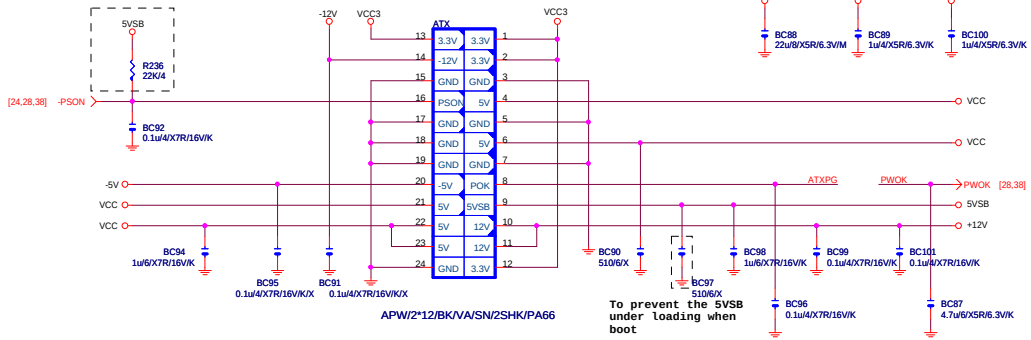
Sheet 30 of 54

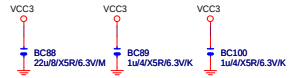
ATX POWER CONNECTOR

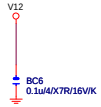
Title R&D 155

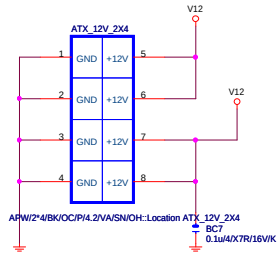


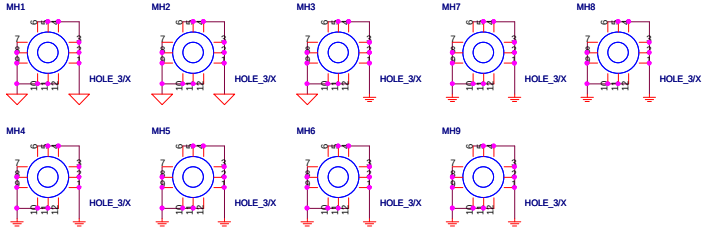
APW/2*12/BK/VA/SN/2SHK/PA66

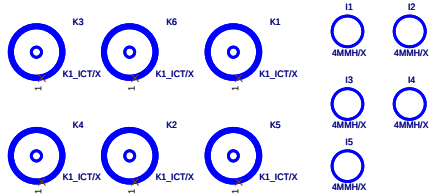
To prevent the 5VSB under loading when boot

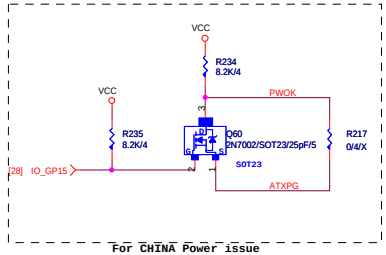


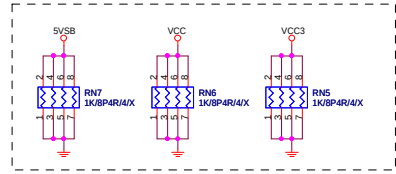




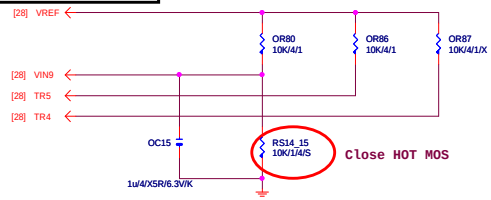


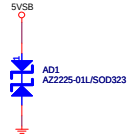


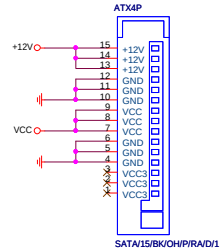


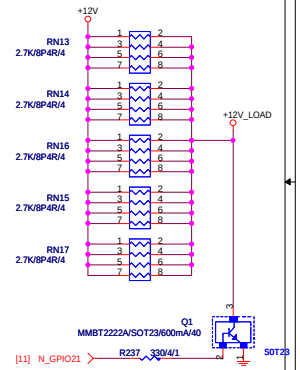


HOT MOS H/W MONITOR



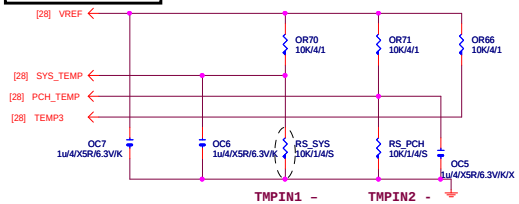






To fix 12V light load abnromal issue

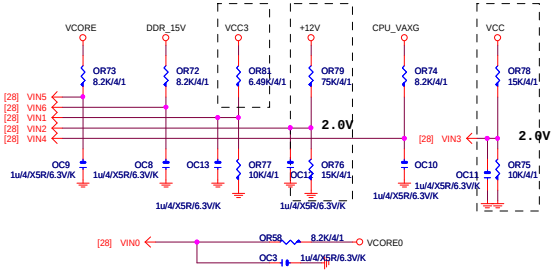
TEMP H/W MONITOR



TMPIN1 – System 2

TMPIN2 - Chipset

VOLTAGE-- H/W MONITOR



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

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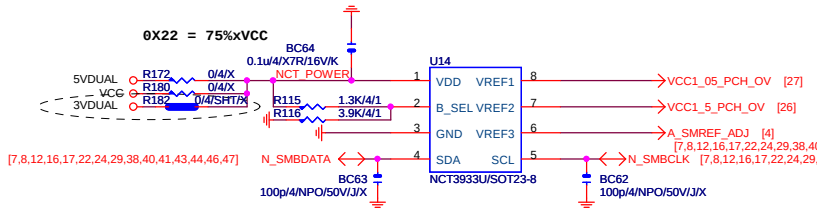
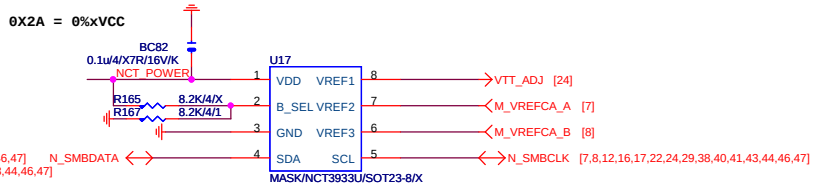
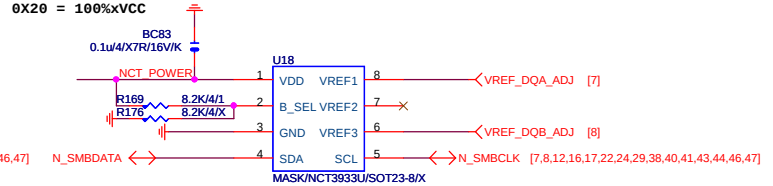
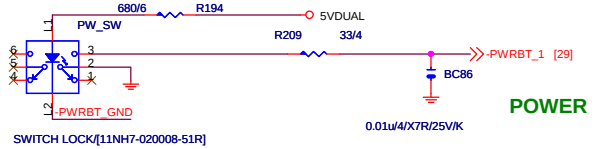
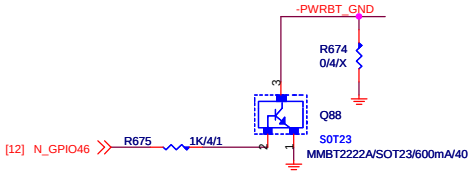
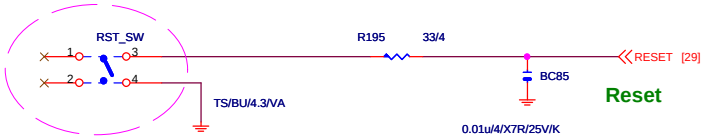


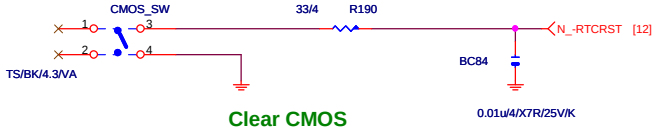


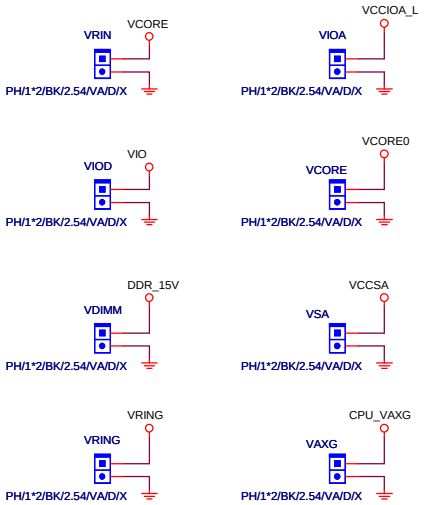




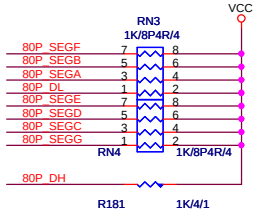


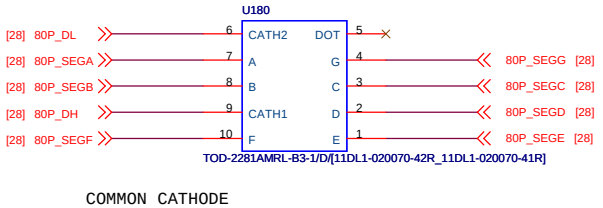




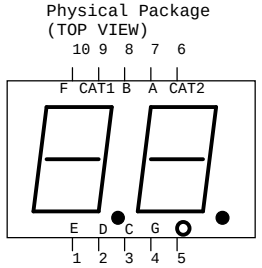


80 PORT





COMMON CATHODE



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Title: RST, PWR, CLR_CMOS		
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LAN:AR8151/AR8161

LAN POWER

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

LA_ ML-->80歐姆:[15/5/5/5/15]

SRCCLK-->50歐姆:[18/4/10/4/18]

雜IC近越好

AR8151 POWER

AR8161 POWER

AR8161-->N/A (LABC12)

AR8161-->N/A (LABC6)

AR8161-->(O)

AR8161-->N/A (LAR9,LABC14)

AR8161-->N/A (LABC20)

AR8151:LA_AVDDH(LAR20)
AR8161:3VDUAL(LAR19)

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

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

CLOSE LAN CHIP

EMI SHORT PAD

PS:視EMI需求

LA_MDI--->100歐姆:[20/4/8/4/20]

USB X3 POWER

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

Close to connector

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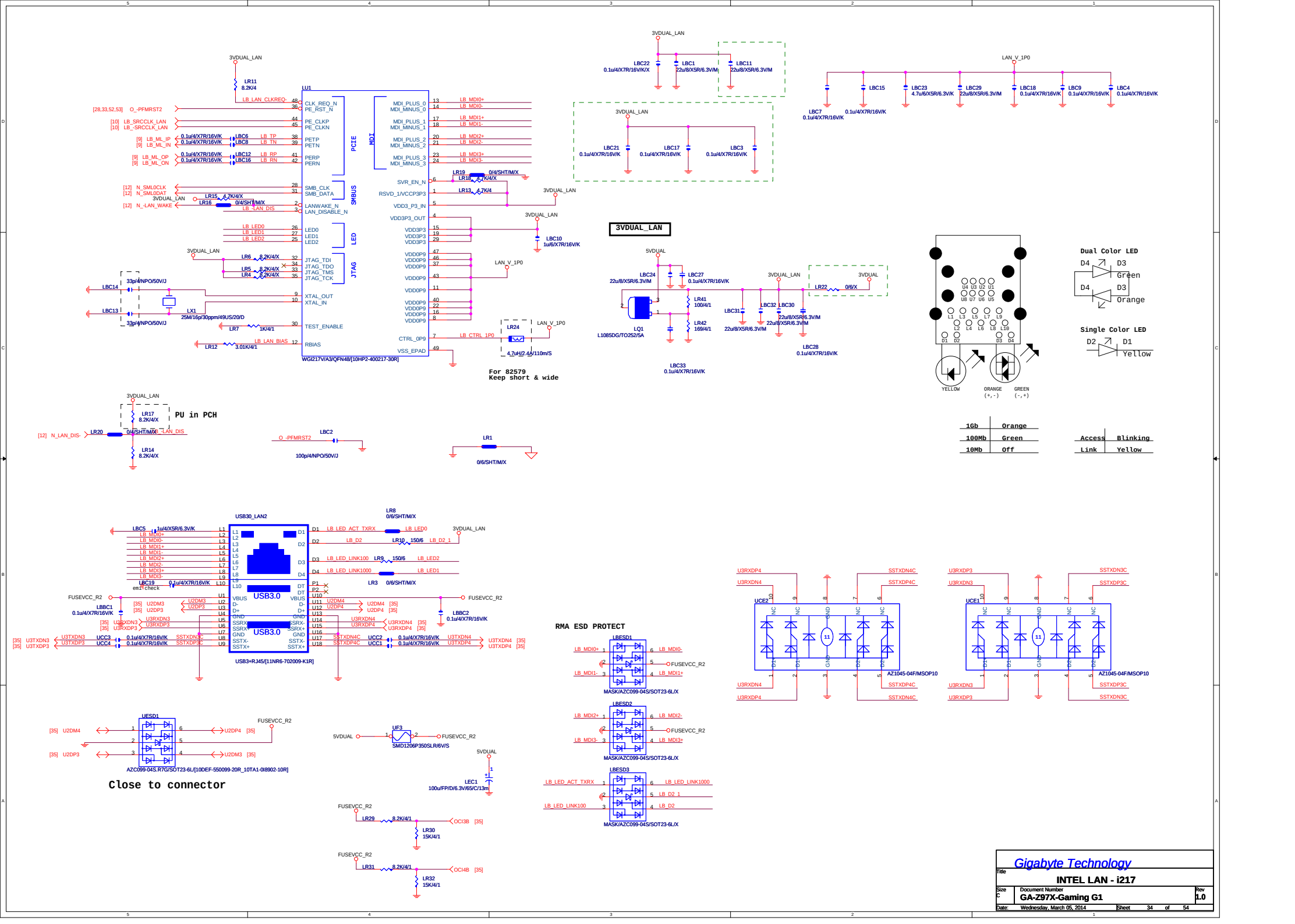
Gigabyte Technology


LU1
WGI217V/A3/QFN48/[10HP2-400217-30R]
PCIE
MDI
SMBUS
LED
JTAG
3VDUAL_LAN
LAN_V_1P0
5VDUAL
For 82579
Keep short & wide
3VDUAL_LAN
PU in PCH
Close to connector
RMA ESD PROTECT
USB30_LAN2
USB3+RJ45/[11NR6-702009-K1R]
AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]
MASK/AZC099-04S/SOT23-6L/X
AZ1045-04F/MSOP10
SMD1206P350SLR/6V/S
Dual Color LED
Single Color LED
YELLOW
ORANGE (+,-)
GREEN (-,+)
1Gb Orange
100Mb Green
10Mb Off
Access Blinking
Link Yellow
Gigabyte Technology
INTEL LAN - i217
GA-Z97X-Gaming G1
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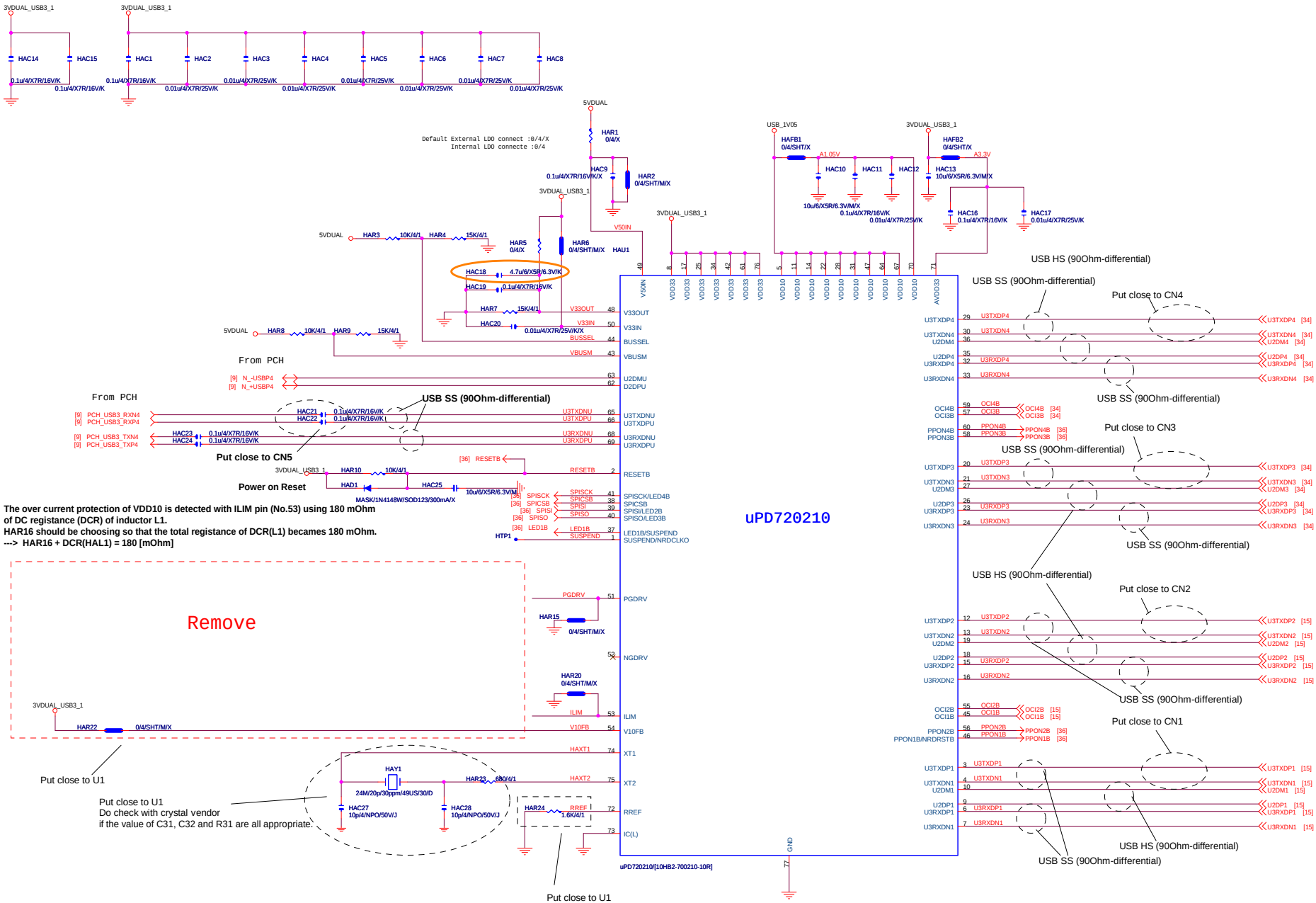

GIGABYTE™

Title	D720210 4port_Hub	
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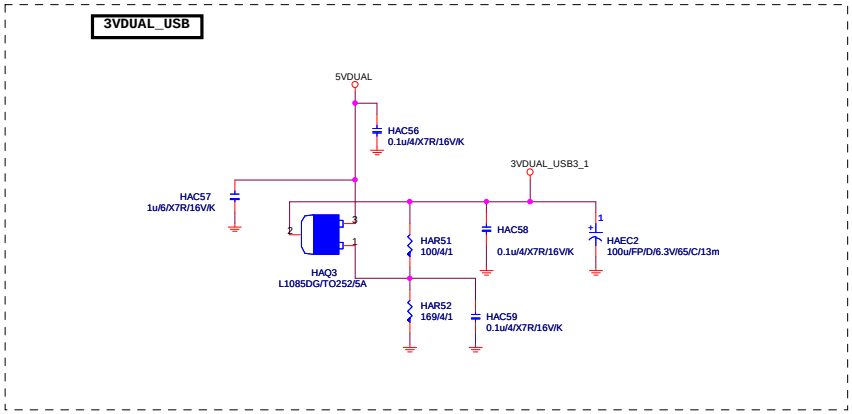
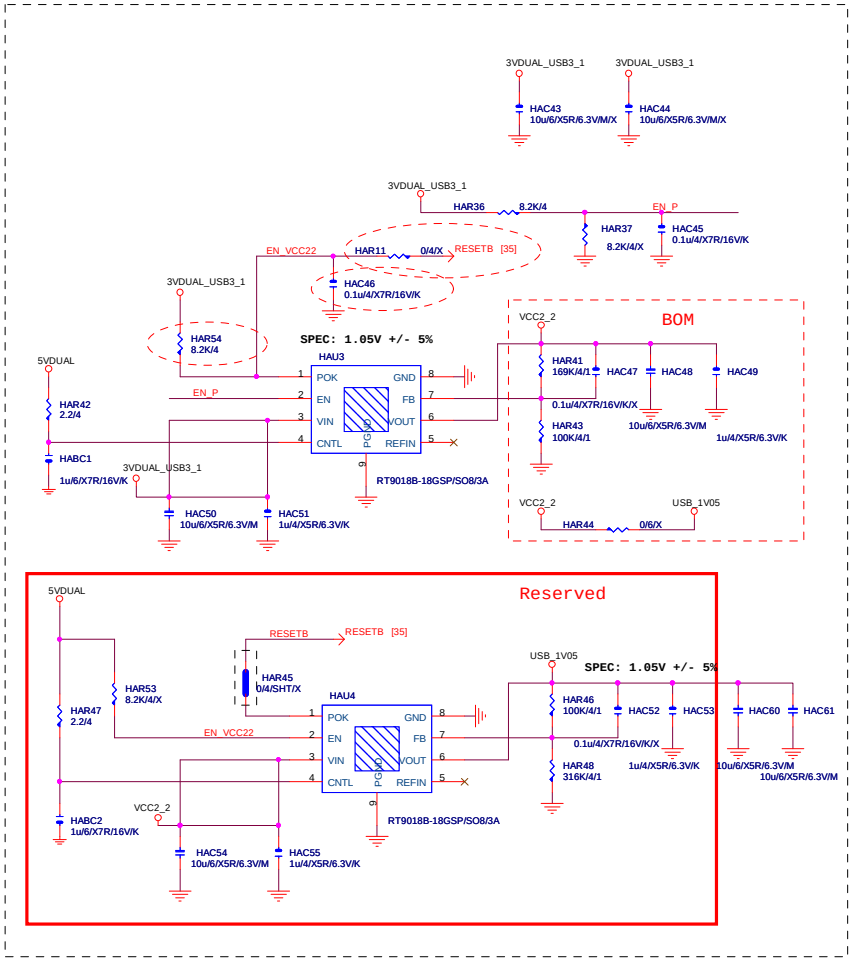
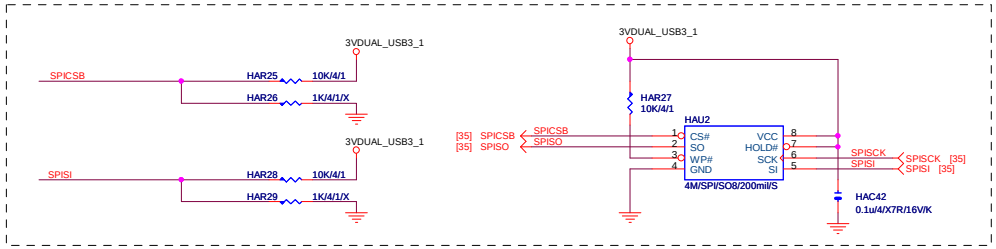
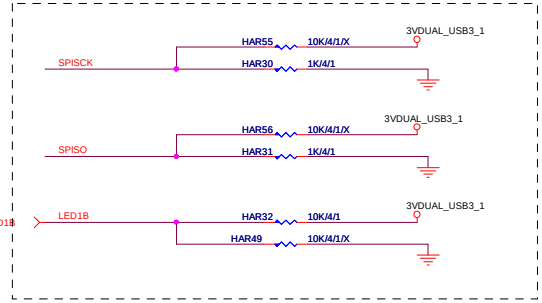




 # External SPI ROM ; SPI ROM attached mode

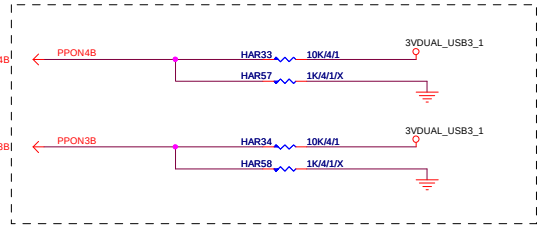


 # Battery Charging

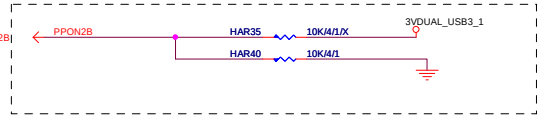


 # Number of Ports ; 4Ports mode

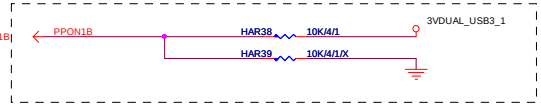
PPON3B / PPON4B : H / H (4 port)
PPON3B / PPON4B : L / L (2 port)



#5 VBUS Power Control ; Individual mode



 # PPON1B Pin Function ; Port1 PPONB mode



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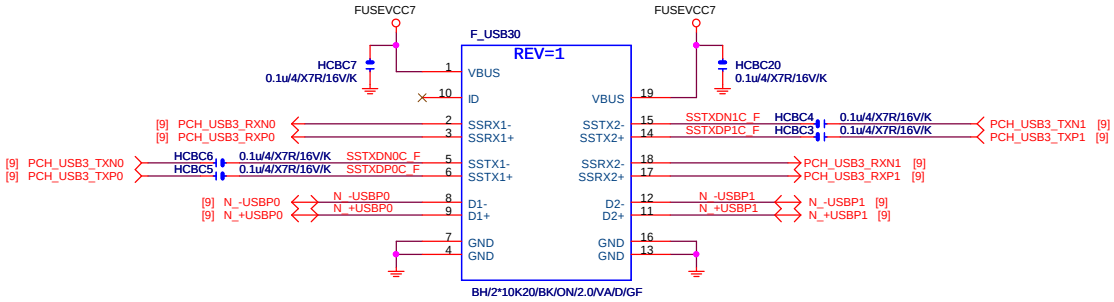
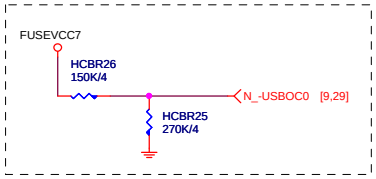
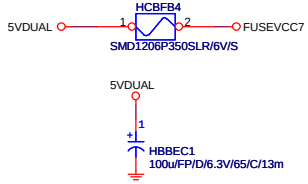
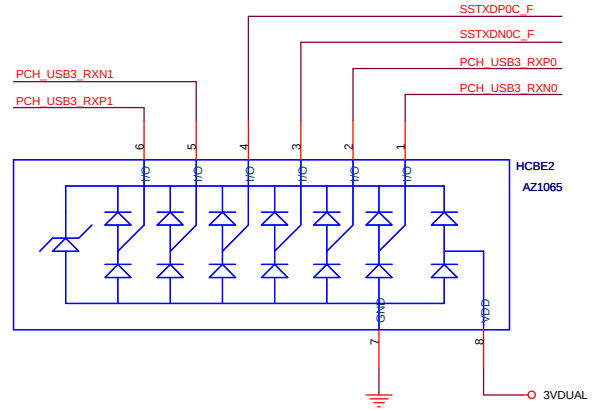
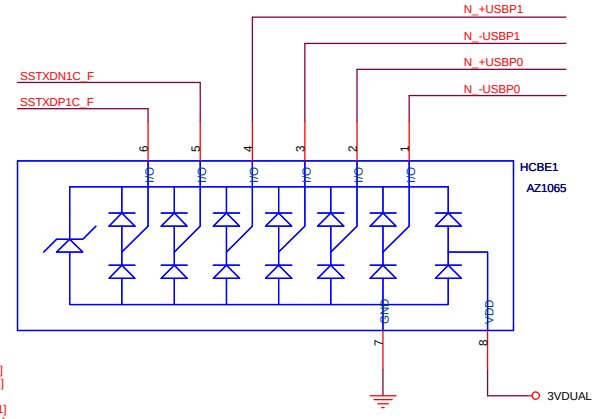
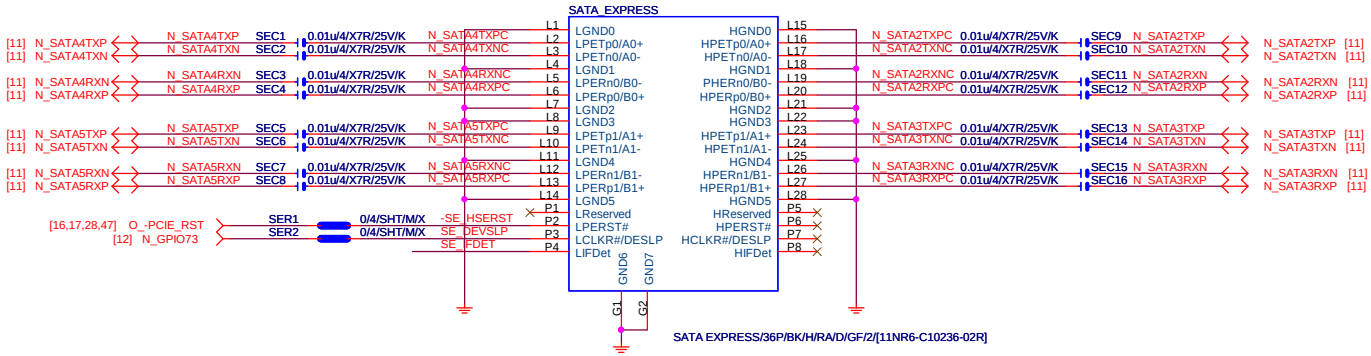








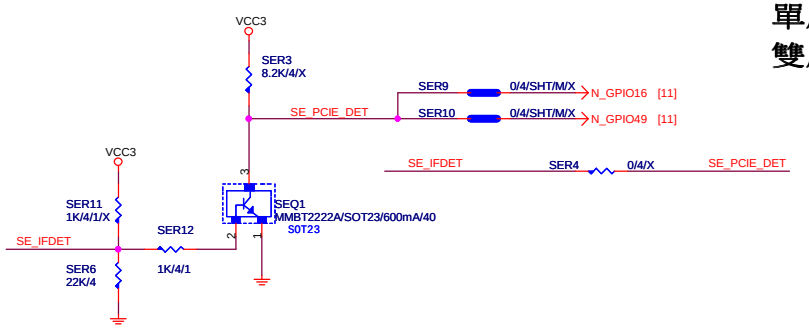




SATA EXPRESS料號

單層:11NR6-C10118-01R

雙層:11NR6-C10236-01R



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Title	Front USB3 CONN_B	
Size: Custom	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
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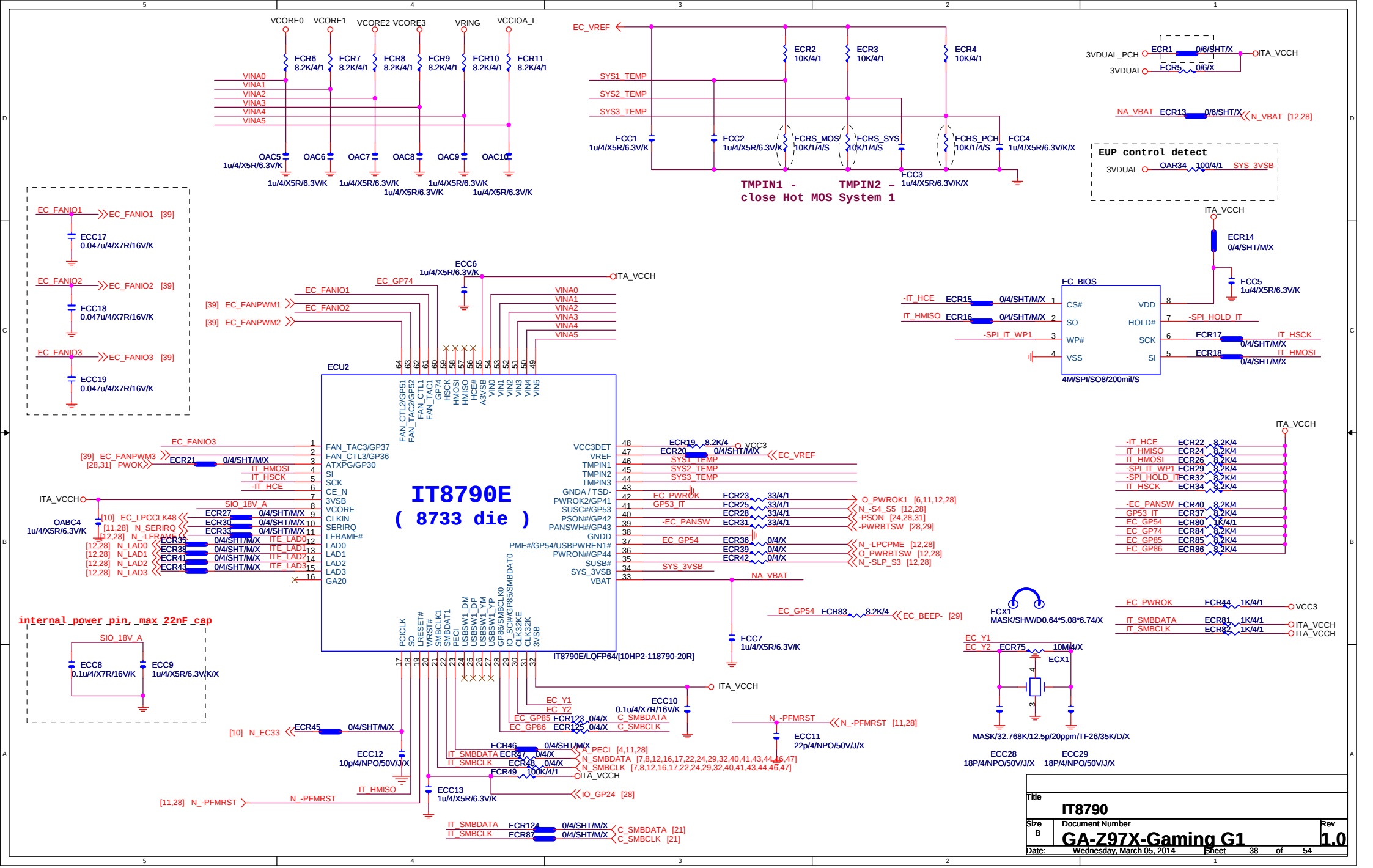
VCORE0 VCORE1 VCORE2 VCORE3 VRING VCCIOA_L
ECR6 8.2K/4/1
ECR7 8.2K/4/1
ECR8 8.2K/4/1
ECR9 8.2K/4/1
ECR10 8.2K/4/1
ECR11 8.2K/4/1
VINA0
VINA1
VINA2
VINA3
VINA4
VINA5
OAC5 1u/4/X5R/6.3V/K
OAC6
OAC7
OAC8
OAC9
OAC10
EC_VREF
ECR2 10K/4/1
ECR3 10K/4/1
ECR4 10K/4/1
SYS1_TEMP
SYS2_TEMP
SYS3_TEMP
ECC1 1u/4/X5R/6.3V/K
ECC2 1u/4/X5R/6.3V/K
ECRS_MOS 10K/1/4/S
ECRS_SYS 10K/1/4/S
ECRS_PCH 10K/1/4/S
ECC4 1u/4/X5R/6.3V/K/X
ECC3 1u/4/X5R/6.3V/K/X
TMPIN1 - close Hot MOS System 1
TMPIN2 -
3VDUAL_PCH
3VDUAL
ECR1 0/6/SHT/X
ECR5 0/6/X
ITA_VCCH
NA_VBAT ECR13 0/6/SHT/X N_VBAT [12,28]
EUP control detect
3VDUAL OAR34 100/4/1 SYS_3VSB
EC_FANIO1 [39]
EC_FANIO2 [39]
EC_FANIO3 [39]
ECC17 0.047u/4/X7R/16V/K
ECC18 0.047u/4/X7R/16V/K
ECC19 0.047u/4/X7R/16V/K
ECC6 1u/4/X5R/6.3V/K
EC_GP74
[39] EC_FANPWM1
[39] EC_FANPWM2
ECU2
FAN_CTL2/GP51
FAN_TAC2/GP52
FAN_CTL1
FAN_TAC1
GP74
HSCK
HMOSI
HMISO
HCE#
A3VSB
VIN0
VIN1
VIN2
VIN3
VIN4
VIN5
EC_BIOS
-IT_HCE ECR15 0/4/SHT/M/X
IT_HMISO ECR16 0/4/SHT/M/X
-SPI_IT_WP1
-SPI_HOLD_IT
ECR17 IT_HSCK 0/4/SHT/M/X
ECR18 IT_HMOSI 0/4/SHT/M/X
4M/SPI/SO8/200mil/S
ECR14 0/4/SHT/M/X
ECC5 1u/4/X5R/6.3V/K
IT8790E
(8733 die)
IT8790E/LQFP64/[10HP2-118790-20R]
FAN_TAC3/GP37
FAN_CTL3/GP36
ATXPG/GP30
SI
SCK
CE_N
3VSB
VCORE
CLKIN
SERIRQ
LFRAME#
LAD0
LAD1
LAD2
LAD3
GA20
VCC3DET
VREF
TMPIN1
TMPIN2
TMPIN3
GNDA / TSD-
PWROK2/GP41
SUSC#/GP53
PSON#/GP42
PANSWH#/GP43
GNDD
PME#/GP54/USBPWREN1#
PWRON#/GP44
SUSB#
SYS_3VSB
VBAT
EC_PWROK
GP53_IT
-EC_PANSW
EC_GP54
ECR19 8.2K/4
ECR20 0/4/SHT/M/X
ECR23 33/4/1
ECR25 33/4/1
ECR28 33/4/1
ECR31 33/4/1
ECR36 0/4/X
ECR39 0/4/X
ECR42 0/4/X
O_PWROK1 [6,11,12,28]
N_-S4_S5 [12,28]
-PSON [24,28,31]
-PWRBTSW [28,29]
N_-LPCPME [12,28]
O_PWRBTSW [12,28]
N_-SLP_S3 [12,28]
EC_FANIO3
[39] EC_FANPWM3
[28,31] PWOK
ECR21 0/4/SHT/M/X
IT_HMOSI
IT_HSCK
-IT_HCE
SIO_18V_A
ITA_VCCH
OABC4 1u/4/X5R/6.3V/K
[10] EC_LPCCLK48
[11,28] N_SERIRQ
[12,28] N_-LFRAME#
ECR27 0/4/SHT/M/X
ECR30 0/4/SHT/M/X
ECR33 0/4/SHT/M/X
ECR35 0/4/SHT/M/X ITE_LAD0
ECR38 0/4/SHT/M/X ITE_LAD1
ECR41 0/4/SHT/M/X ITE_LAD2
ECR43 0/4/SHT/M/X ITE_LAD3
[12,28] N_LAD0
[12,28] N_LAD1
[12,28] N_LAD2
[12,28] N_LAD3
NA_VBAT
ECC7 1u/4/X5R/6.3V/K
EC_GP54 ECR83 8.2K/4 EC_BEEP- [29]
-IT_HCE ECR22 8.2K/4
IT_HMISO ECR24 8.2K/4
IT_HMOSI ECR26 8.2K/4
-SPI_IT_WP1 ECR29 8.2K/4
-SPI_HOLD_IT ECR32 8.2K/4
IT_HSCK ECR34 8.2K/4
-EC_PANSW ECR40 8.2K/4
GP53_IT ECR37 8.2K/4
EC_GP54 ECR80 1K/4/1
EC_GP74 ECR84 8.2K/4
EC_GP85 ECR85 8.2K/4
EC_GP86 ECR86 8.2K/4
internal power pin, max 22nF cap
SIO_18V_A
ECC8 0.1u/4/X7R/16V/K
ECC9 1u/4/X5R/6.3V/K/X
PCICLK
SO
LRESET#
VWRST#
SMBCLK1
SMBDAT1
PECI
USBSW1_DM
USBSW1_DP
USBSW1_YM
USBSW1_YP
GP86/SMBCLK0
IO_SCI#/GP85/SMBDAT0
CLK32KE
CLK32K
3VSB
ITA_VCCH
EC_Y1
EC_Y2
EC_GP85 ECR123 0/4/X C_SMBDATA
EC_GP86 ECR125 0/4/X C_SMBCLK
ECC10 0.1u/4/X7R/16V/K
[10] N_EC33
ECR45 0/4/SHT/M/X
ECC12 10p/4/NPO/50V/J/X
ECR46 0/4/SHT/M/X
IT_SMBDATA ECR47 0/4/X
IT_SMBCLK ECR48 0/4/X
A_PECI [4,11,28]
N_SMBDATA [7,8,12,16,17,22,24,29,32,40,41,43,44,46,47]
N_SMBCLK [7,8,12,16,17,22,24,29,32,40,41,43,44,46,47]
ECR49 100K/4/1
IT_HMISO
ECC13 1u/4/X5R/6.3V/K
[11,28] N_-PFMRST
N_-PFMRST
IO_GP24 [28]
IT_SMBDATA ECR124 0/4/SHT/M/X C_SMBDATA [21]
IT_SMBCLK ECR87 0/4/SHT/M/X C_SMBCLK [21]
N_-PFMRST [11,28]
ECC11 22p/4/NPO/50V/J/X
ECX1 MASK/SHW/D0.64*5.08*6.74/X
EC_Y1
EC_Y2
ECR75 10M/4/X
ECX1
MASK/32.768K/12.5p/20ppm/TF26/35K/D/X
ECC28 18P/4/NPO/50V/J/X
ECC29 18P/4/NPO/50V/J/X
EC_PWROK ECR44 1K/4/1 VCC3
IT_SMBDATA ECR81 1K/4/1 ITA_VCCH
IT_SMBCLK ECR82 1K/4/1 ITA_VCCH
Title
IT8790
Size B
Document Number
GA-Z97X-Gaming G1
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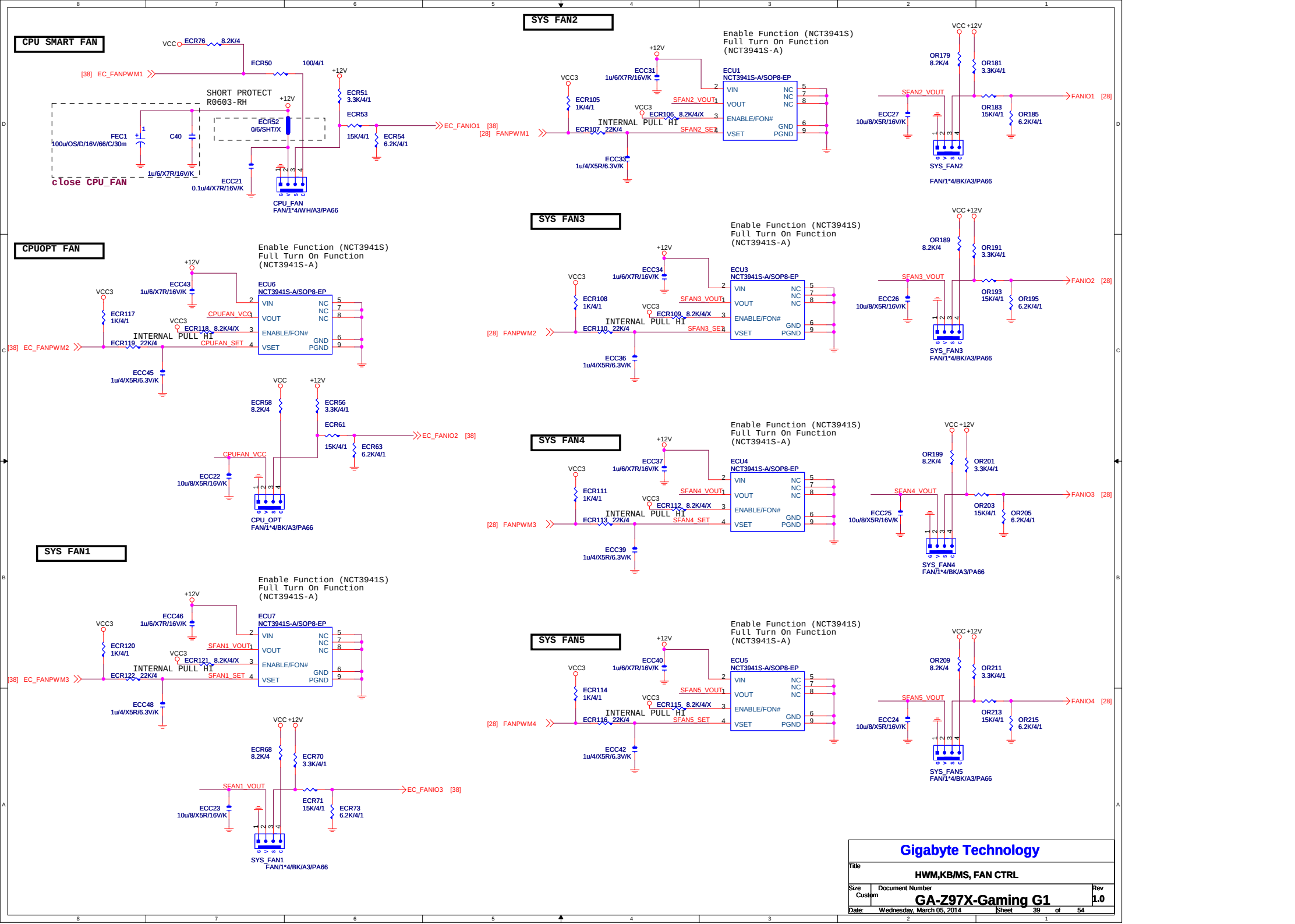
CPU SMART FAN
VCC
ECR76 8.2K/4
ECR50 100/4/1
[38] EC_FANPWM1
SHORT PROTECT
R0603-RH
+12V
ECR51 3.3K/4/1
ECR53
ECR52 0/6/SHT/X
15K/4/1
ECR54 6.2K/4/1
EC_FANIO1 [38]
FEC1 100u/OS/D/16V/66/C/30m
C40
1u/6/X7R/16V/K
ECC21 0.1u/4/X7R/16V/K
close CPU_FAN
CPU_FAN
FAN/1*4/WH/A3/PA66
SYS FAN2
Enable Function (NCT3941S)
Full Turn On Function
(NCT3941S-A)
ECC31 1u/6/X7R/16V/K
ECU1 NCT3941S-A/SOP8-EP
VIN
VOUT
ENABLE/FON#
VSET
NC
GND
PGND
VCC3
ECR105 1K/4/1
SFAN2_VOUT
ECR106 8.2K/4/X
INTERNAL PULL HI
ECR107 22K/4
SFAN2_SET
[28] FANPWM1
ECC33 1u/4/X5R/6.3V/K
OR179 8.2K/4
OR181 3.3K/4/1
OR183 15K/4/1
OR185 6.2K/4/1
FANIO1 [28]
ECC27 10u/8/X5R/16V/K
SYS_FAN2
FAN/1*4/BK/A3/PA66
CPUOPT FAN
ECC43 1u/6/X7R/16V/K
ECU6 NCT3941S-A/SOP8-EP
ECR117 1K/4/1
CPUFAN_VCC
ECR118 8.2K/4/X
ECR119 22K/4
CPUFAN_SET
[38] EC_FANPWM2
ECC45 1u/4/X5R/6.3V/K
ECR58 8.2K/4
ECR56 3.3K/4/1
ECR61
15K/4/1
ECR63 6.2K/4/1
EC_FANIO2 [38]
ECC22 10u/8/X5R/16V/K
CPU_OPT
FAN/1*4/BK/A3/PA66
SYS FAN3
ECC34 1u/6/X7R/16V/K
ECU3 NCT3941S-A/SOP8-EP
ECR108 1K/4/1
SFAN3_VOUT
ECR109 8.2K/4/X
ECR110 22K/4
SFAN3_SET
[28] FANPWM2
ECC36 1u/4/X5R/6.3V/K
OR189 8.2K/4
OR191 3.3K/4/1
OR193 15K/4/1
OR195 6.2K/4/1
FANIO2 [28]
ECC26 10u/8/X5R/16V/K
SYS_FAN3
FAN/1*4/BK/A3/PA66
SYS FAN4
ECC37 1u/6/X7R/16V/K
ECU4 NCT3941S-A/SOP8-EP
ECR111 1K/4/1
SFAN4_VOUT
ECR112 8.2K/4/X
ECR113 22K/4
SFAN4_SET
[28] FANPWM3
ECC39 1u/4/X5R/6.3V/K
OR199 8.2K/4
OR201 3.3K/4/1
OR203 15K/4/1
OR205 6.2K/4/1
FANIO3 [28]
ECC25 10u/8/X5R/16V/K
SYS_FAN4
FAN/1*4/BK/A3/PA66
SYS FAN1
ECC46 1u/6/X7R/16V/K
ECU7 NCT3941S-A/SOP8-EP
ECR120 1K/4/1
SFAN1_VOUT
ECR121 8.2K/4/X
ECR122 22K/4
SFAN1_SET
[38] EC_FANPWM3
ECC48 1u/4/X5R/6.3V/K
ECR68 8.2K/4
ECR70 3.3K/4/1
ECR71 15K/4/1
ECR73 6.2K/4/1
EC_FANIO3 [38]
ECC23 10u/8/X5R/16V/K
SYS_FAN1
FAN/1*4/BK/A3/PA66
SYS FAN5
ECC40 1u/6/X7R/16V/K
ECU5 NCT3941S-A/SOP8-EP
ECR114 1K/4/1
SFAN5_VOUT
ECR115 8.2K/4/X
ECR116 22K/4
SFAN5_SET
[28] FANPWM4
ECC42 1u/4/X5R/6.3V/K
OR209 8.2K/4
OR211 3.3K/4/1
OR213 15K/4/1
OR215 6.2K/4/1
FANIO4 [28]
ECC24 10u/8/X5R/16V/K
SYS_FAN5
FAN/1*4/BK/A3/PA66
Gigabyte Technology
Title
HWM,KB/MS, FAN CTRL
Size
Custom
Document Number
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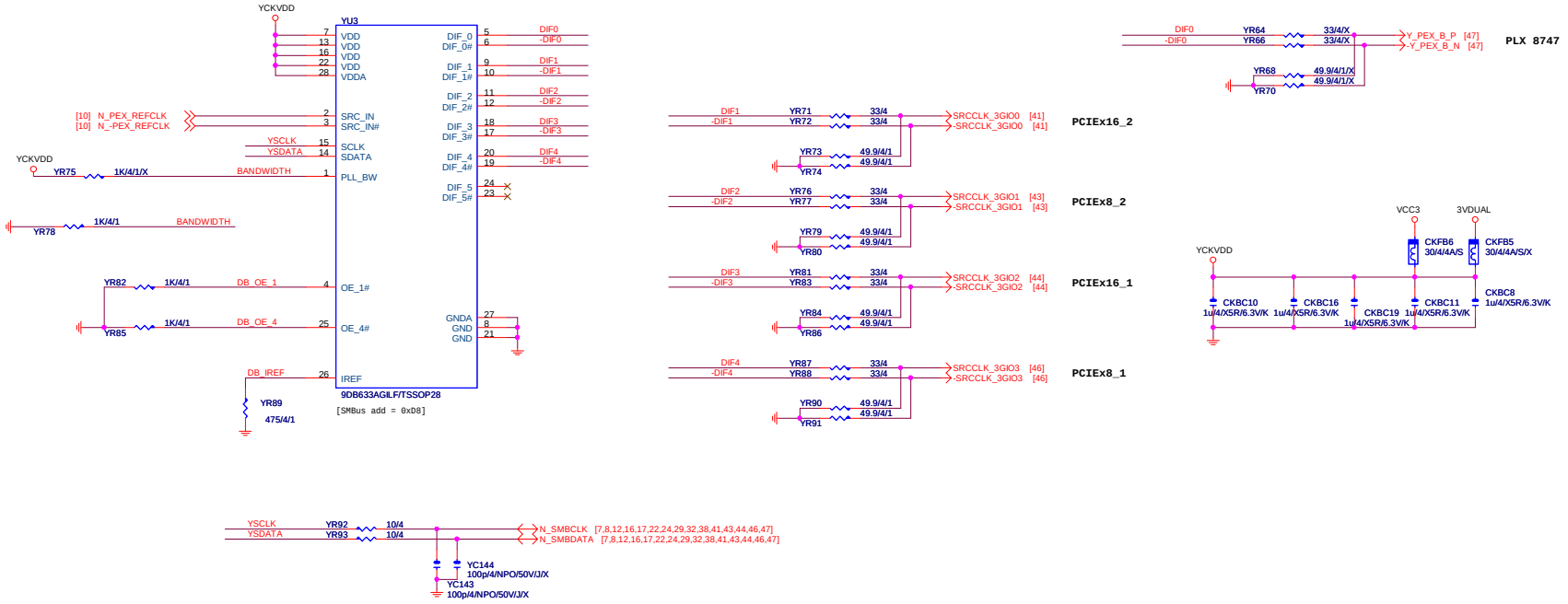

GIGABYTE™

Title: REFCLK		
Size: Custom	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
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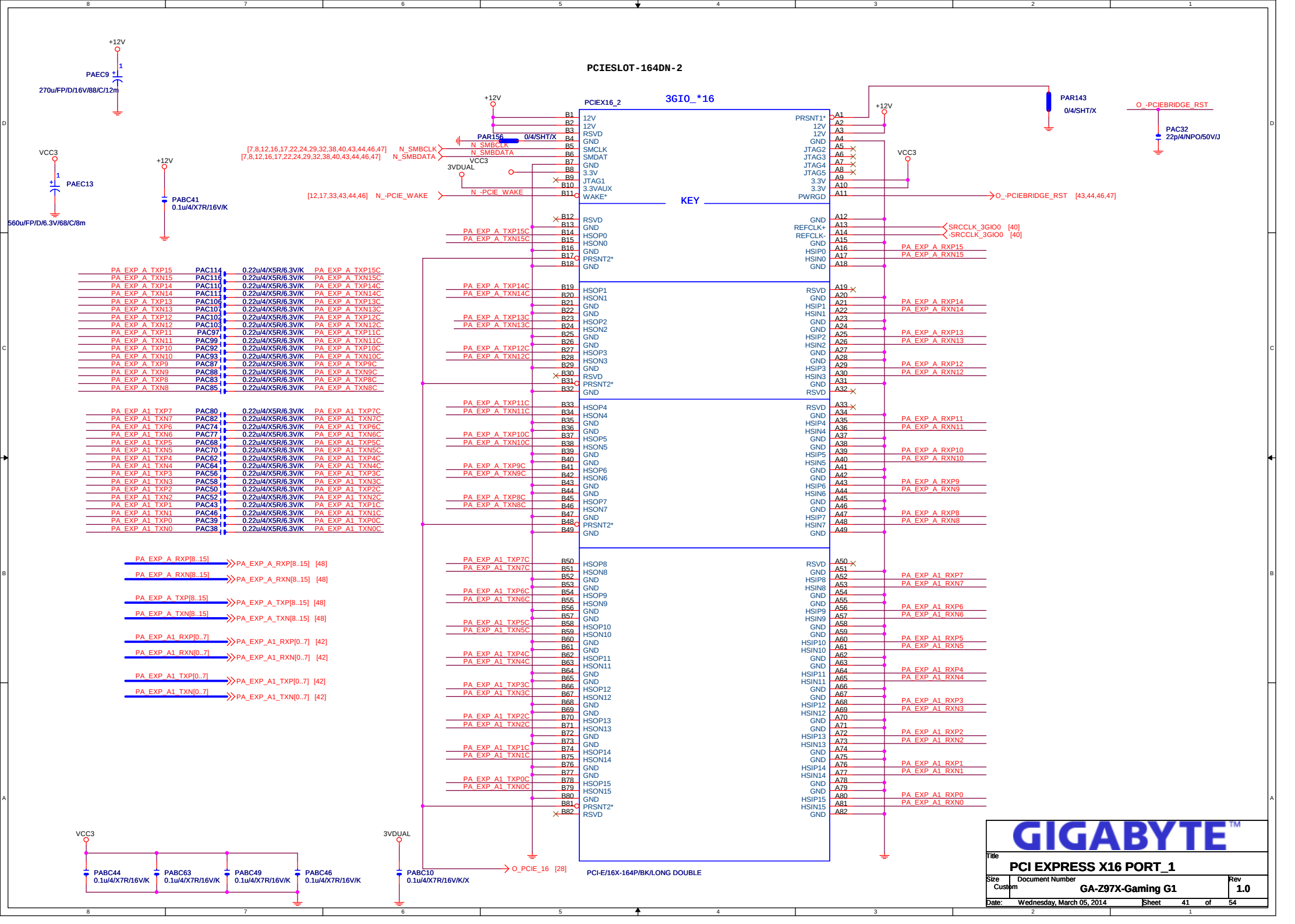
PCIESLOT-164DN-2
PCIEX16_2
3GIO_*16
KEY
PCI-E/16X-164P/BK/LONG DOUBLE
PAEC9
270u/FP/D/16V/88/C/12m
PAEC13
560u/FP/D/6.3V/68/C/8m
PABC41
0.1u/4/X7R/16V/K
PAR143
0/4/SHT/X
PAR156
0/4/SHT/X
PAC32
22p/4/NPO/50V/J
PABC44
PABC63
PABC49
PABC46
PABC10
0.1u/4/X7R/16V/K
0.1u/4/X7R/16V/K/X
O_-PCIEBRIDGE_RST
O_PCIE_16 [28]
N_SMBCLK
N_SMBDATA
N_-PCIE_WAKE
SRCCLK_3GIO0 [40]
-SRCCLK_3GIO0 [40]
GIGABYTE
Title
PCI EXPRESS X16 PORT_1
Size
Custom
Document Number
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1.0
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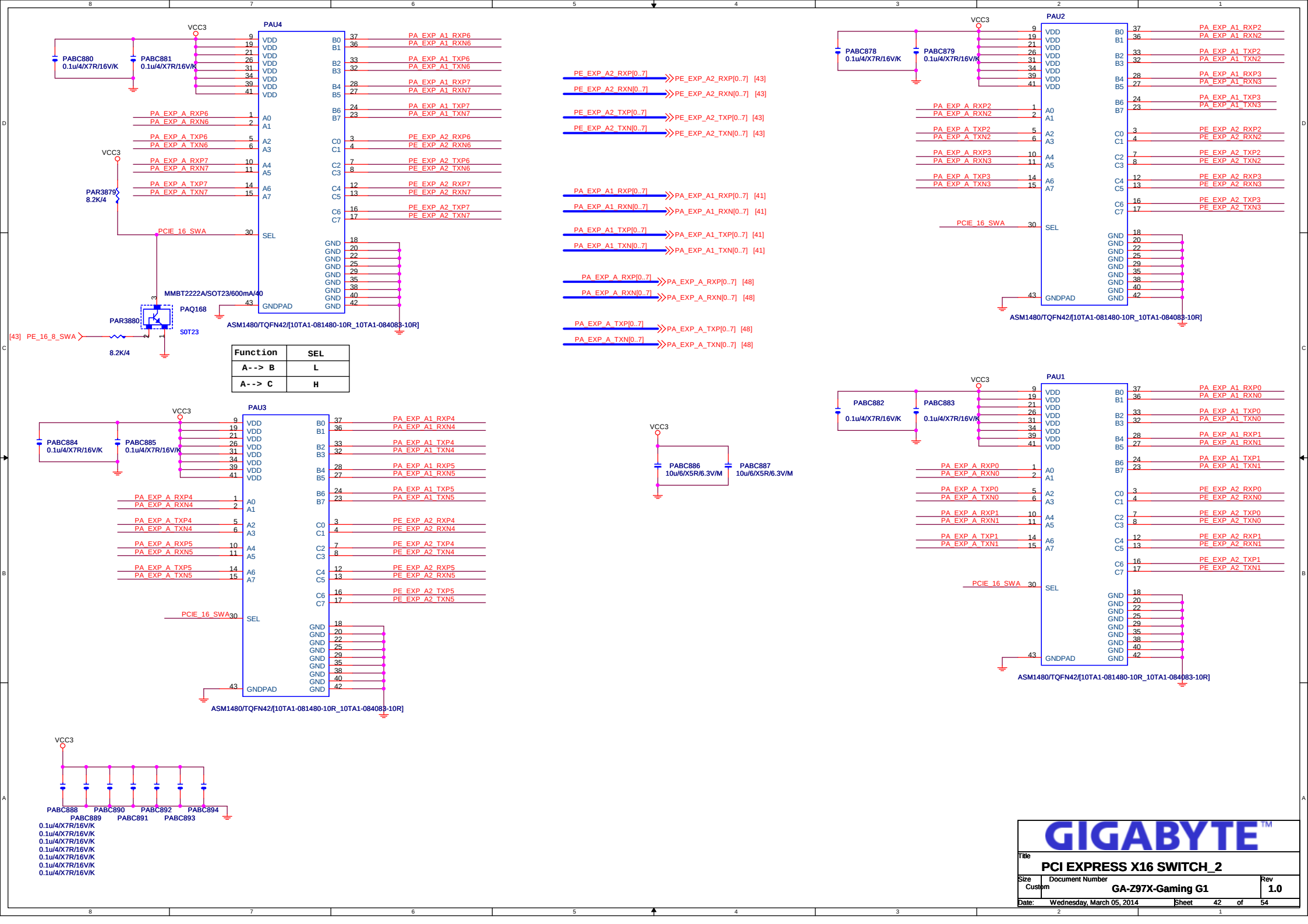

Function	SEL
A--> B	L
A--> C	H

GIGABYTE™

Title: PCI EXPRESS X16 SWITCH_2

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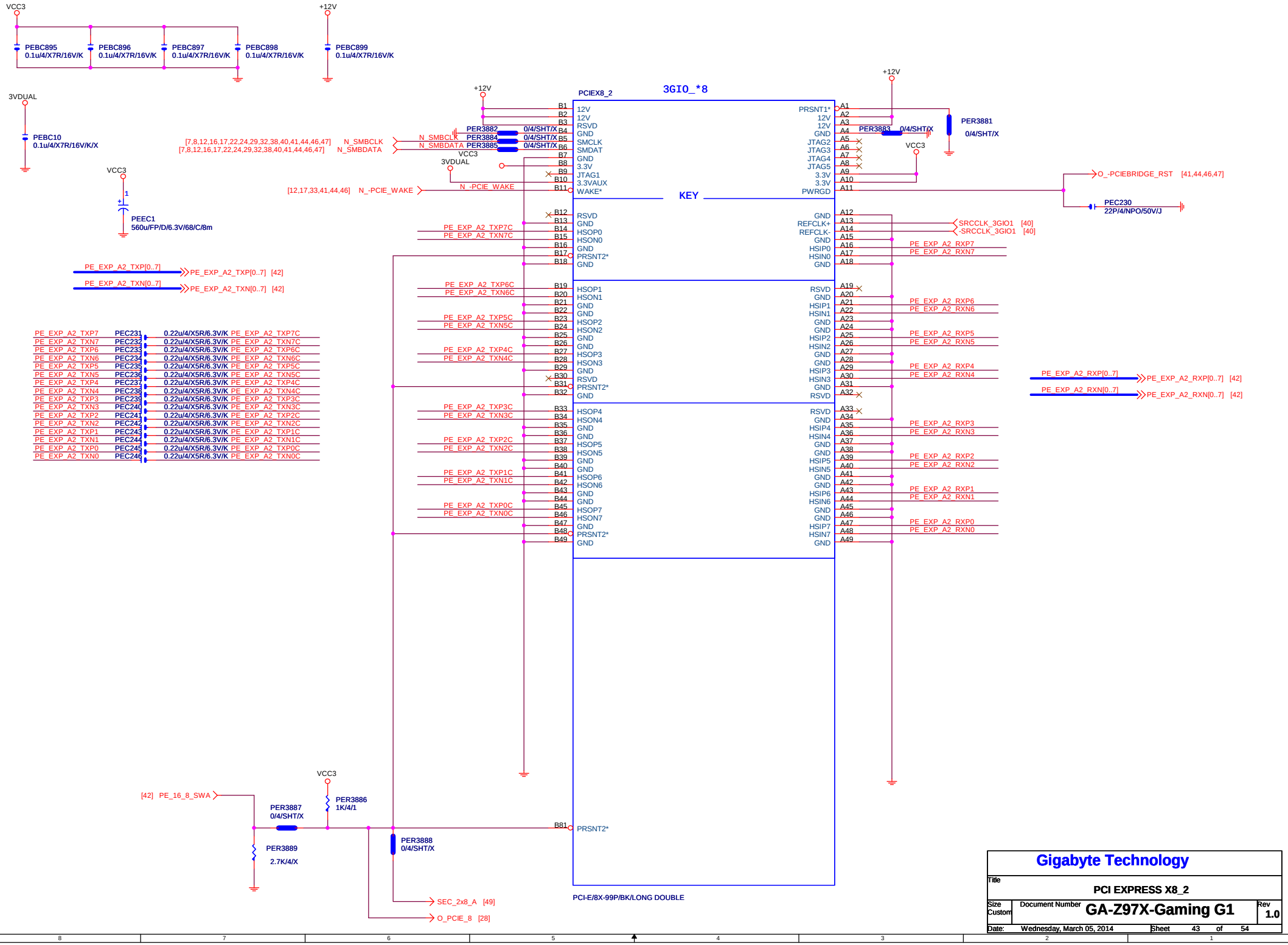
VCC3
PEBC895 0.1u/4/X7R/16V/K
PEBC896 0.1u/4/X7R/16V/K
PEBC897 0.1u/4/X7R/16V/K
PEBC898 0.1u/4/X7R/16V/K
+12V
PEBC899 0.1u/4/X7R/16V/K
3VDUAL
PEBC10 0.1u/4/X7R/16V/K/X
PEEC1 560u/FP/D/6.3V/68/C/8m
PCIEX8_2
3GIO_*8
KEY
PCI-E/8X-99P/BK/LONG DOUBLE
PER3882 0/4/SHT/X
PER3884 0/4/SHT/X
PER3885 0/4/SHT/X
PER3883 0/4/SHT/X
PER3881 0/4/SHT/X
PEC230 22P/4/NPO/50V/J
PER3887 0/4/SHT/X
PER3886 1K/4/1
PER3889 2.7K/4/X
PER3888 0/4/SHT/X
PE_EXP_A2_TXP[0..7]
PE_EXP_A2_TXN[0..7]
PE_EXP_A2_RXP[0..7]
PE_EXP_A2_RXN[0..7]
N_SMBCLK
N_SMBDATA
N_-PCIE_WAKE
O_-PCIEBRIDGE_RST
SRCCLK_3GIO1
-SRCCLK_3GIO1
PE_16_8_SWA
SEC_2x8_A
O_PCIE_8
Gigabyte Technology
PCI EXPRESS X8_2
GA-Z97X-Gaming G1
Rev 1.0
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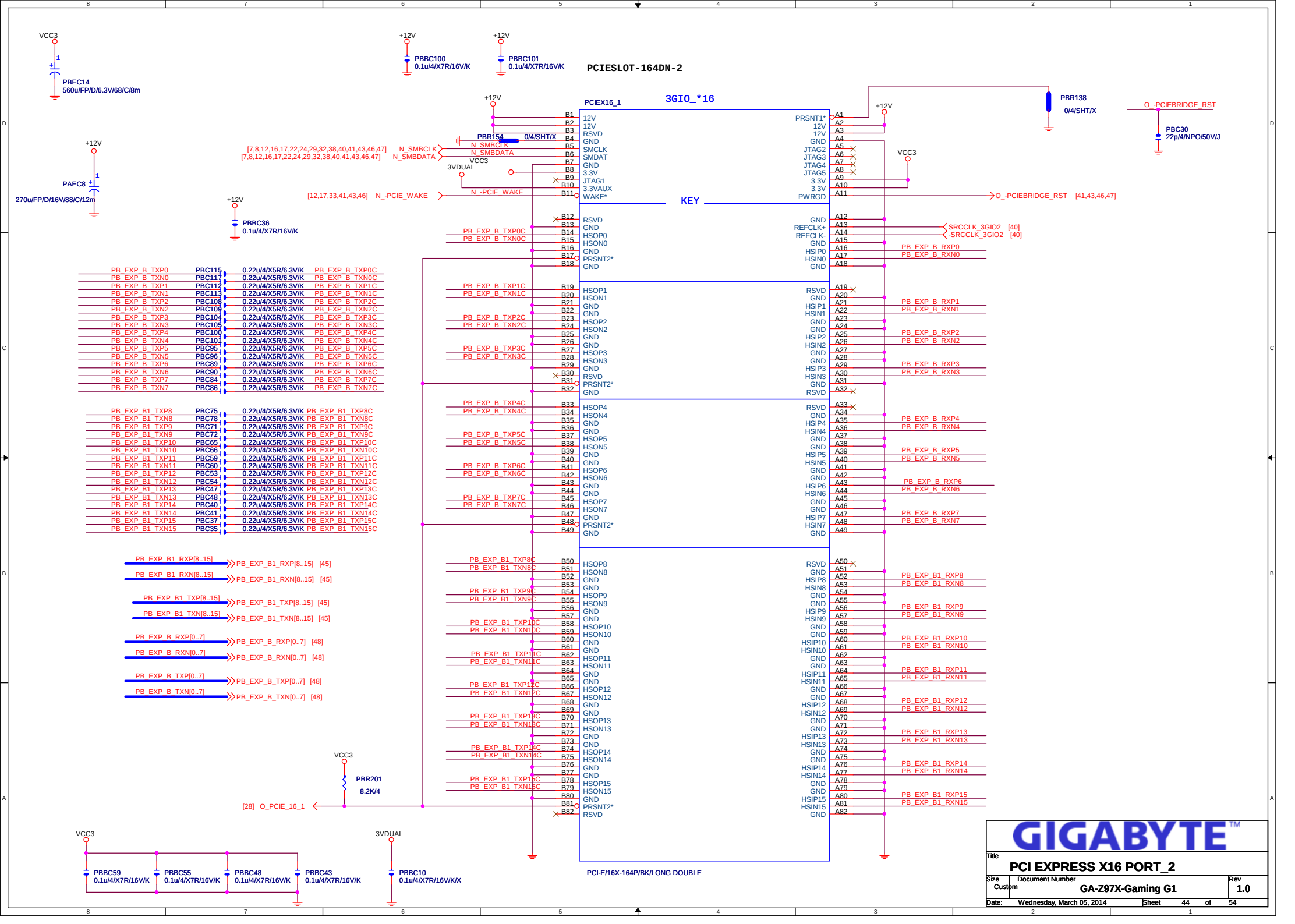
PCIESLOT-164DN-2
PCIEX16_1
3GIO_*16
KEY
PCI-E/16X-164P/BK/LONG DOUBLE
PBEC14 560u/FP/D/6.3V/68/C/8m
PAEC8 270u/FP/D/16V/88/C/12m
PBBC100 0.1u/4/X7R/16V/K
PBBC101 0.1u/4/X7R/16V/K
PBBC36 0.1u/4/X7R/16V/K
PBR154 0/4/SHT/X
PBR138 0/4/SHT/X
PBR201 8.2K/4
PBC30 22p/4/NPO/50V/J
PBBC59 0.1u/4/X7R/16V/K
PBBC55 0.1u/4/X7R/16V/K
PBBC48 0.1u/4/X7R/16V/K
PBBC43 0.1u/4/X7R/16V/K
PBBC10 0.1u/4/X7R/16V/K/X
GIGABYTE
Title
PCI EXPRESS X16 PORT_2
Size Custom
Document Number GA-Z97X-Gaming G1
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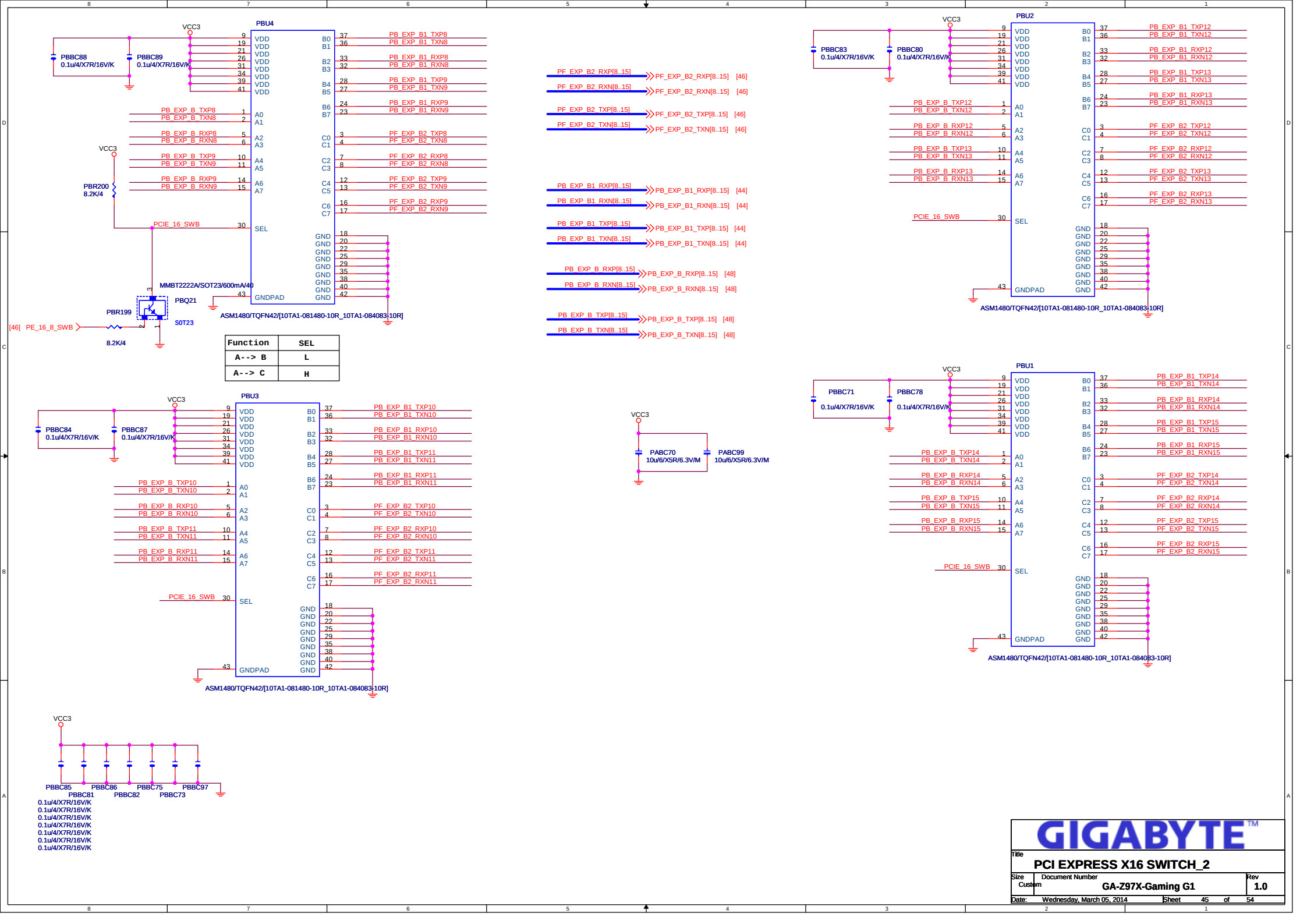
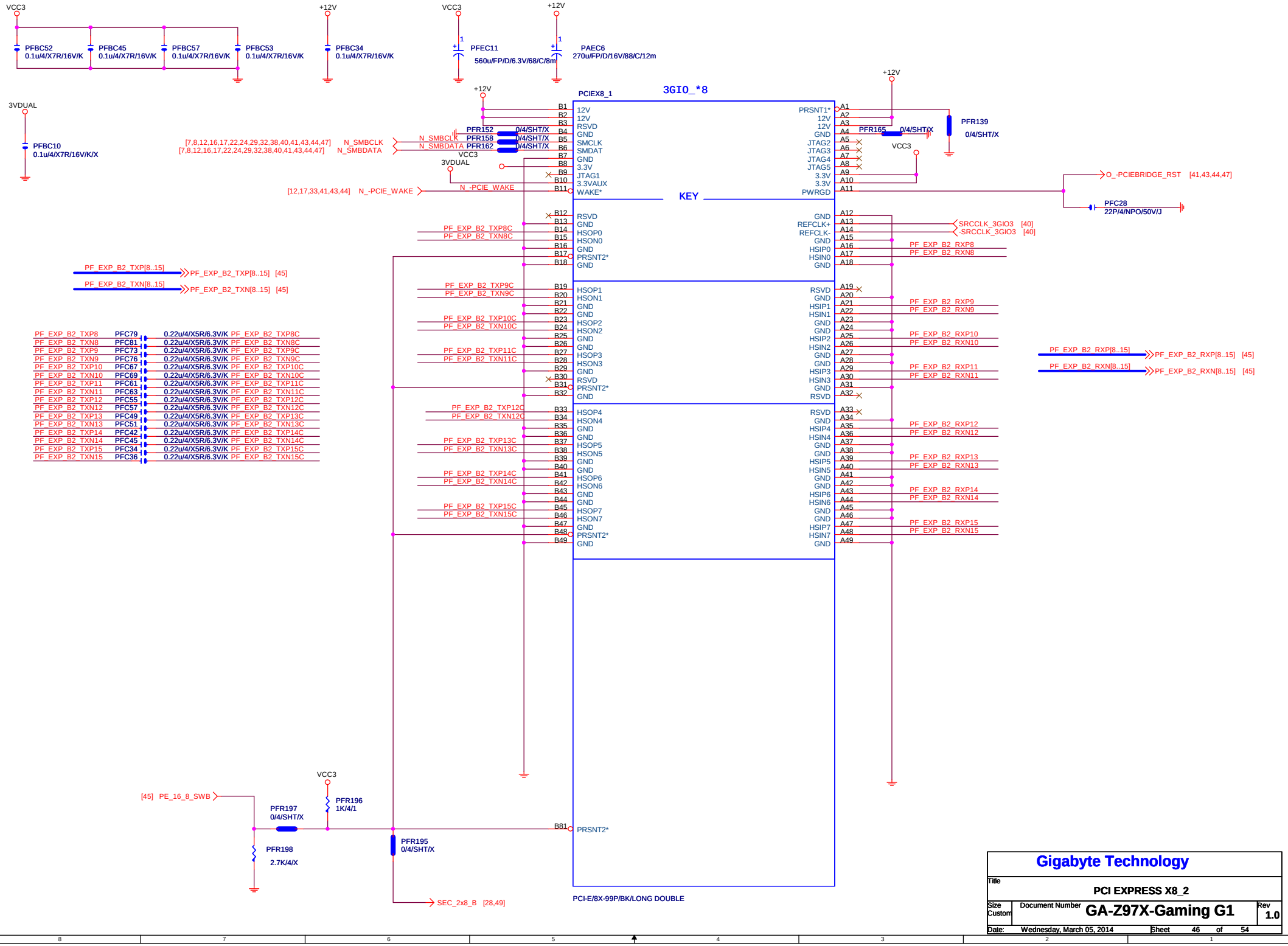


Function	SEL
A--> B	L
A--> C	H


PFBC52 0.1u/4/X7R/16V/K
PFBC45 0.1u/4/X7R/16V/K
PFBC57 0.1u/4/X7R/16V/K
PFBC53 0.1u/4/X7R/16V/K
PFBC34 0.1u/4/X7R/16V/K
PFEC11 560u/FP/D/6.3V/68/C/8m
PAEC6 270u/FP/D/16V/88/C/12m
PFBC10 0.1u/4/X7R/16V/K/X
PCIEX8_1
3GIO_*8
KEY
PFR152 0/4/SHT/X
PFR158 0/4/SHT/X
PFR162 0/4/SHT/X
PFR165 0/4/SHT/X
PFR139 0/4/SHT/X
PFC28 22P/4/NPO/50V/J
PFR197 0/4/SHT/X
PFR196 1K/4/1
PFR198 2.7K/4/X
PFR195 0/4/SHT/X
PCI-E/8X-99P/BK/LONG DOUBLE
Gigabyte Technology
PCI EXPRESS X8_2
GA-Z97X-Gaming G1
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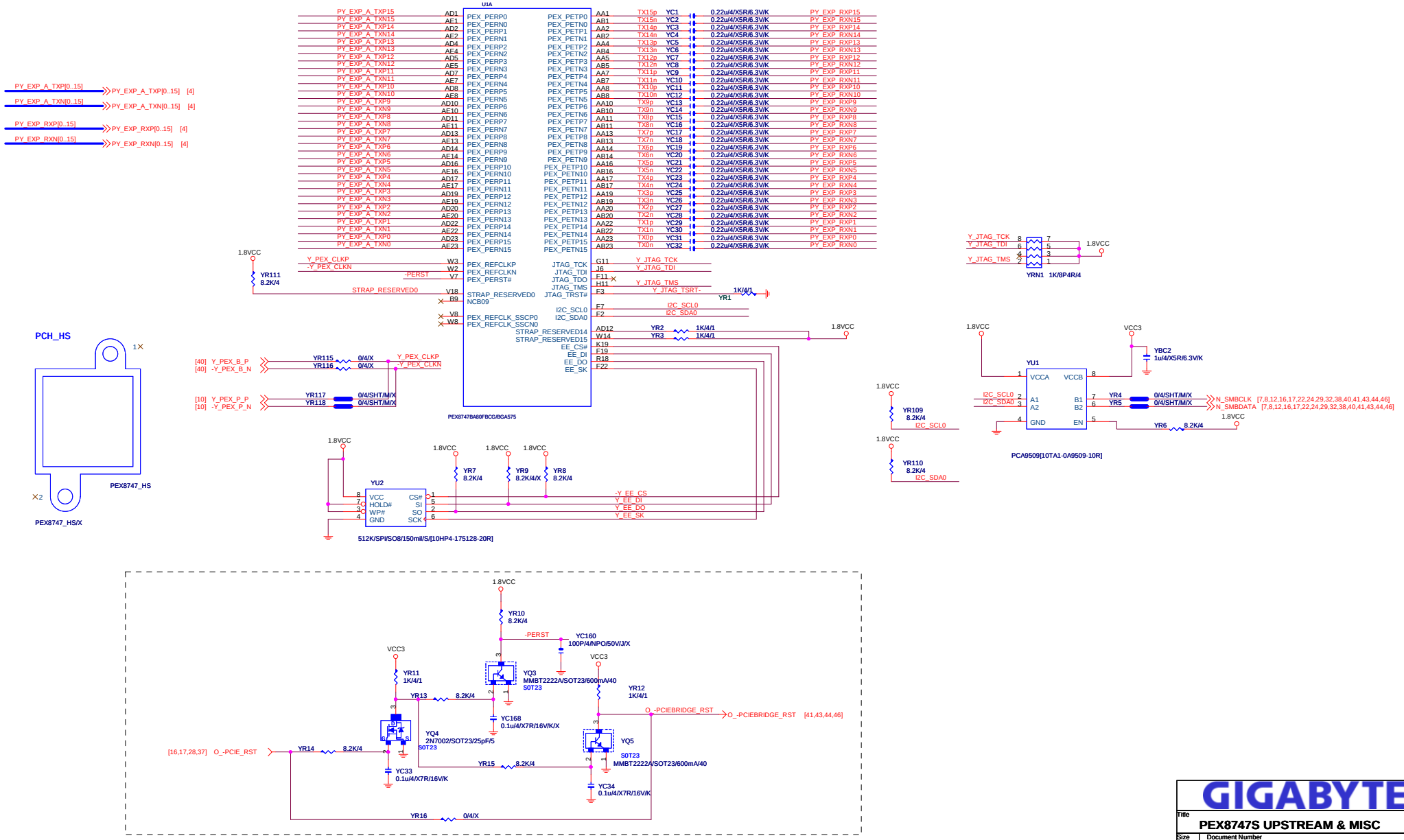

GIGABYTE			
Title	PEX8747S UPSTREAM & MISC		
Size: Custom	Document Number: GA-Z97X-Gaming G1		Rev: 1.0
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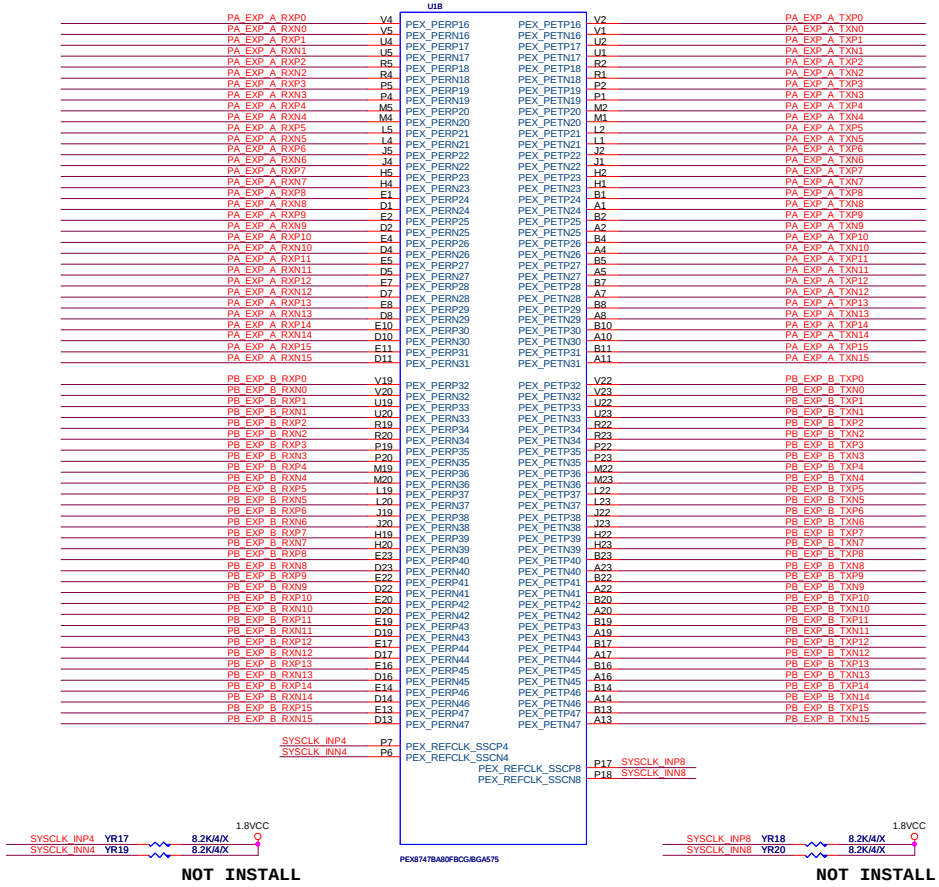

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Title	PEX8747S DOWNSTREAM SLOTS	
Size: Custom	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
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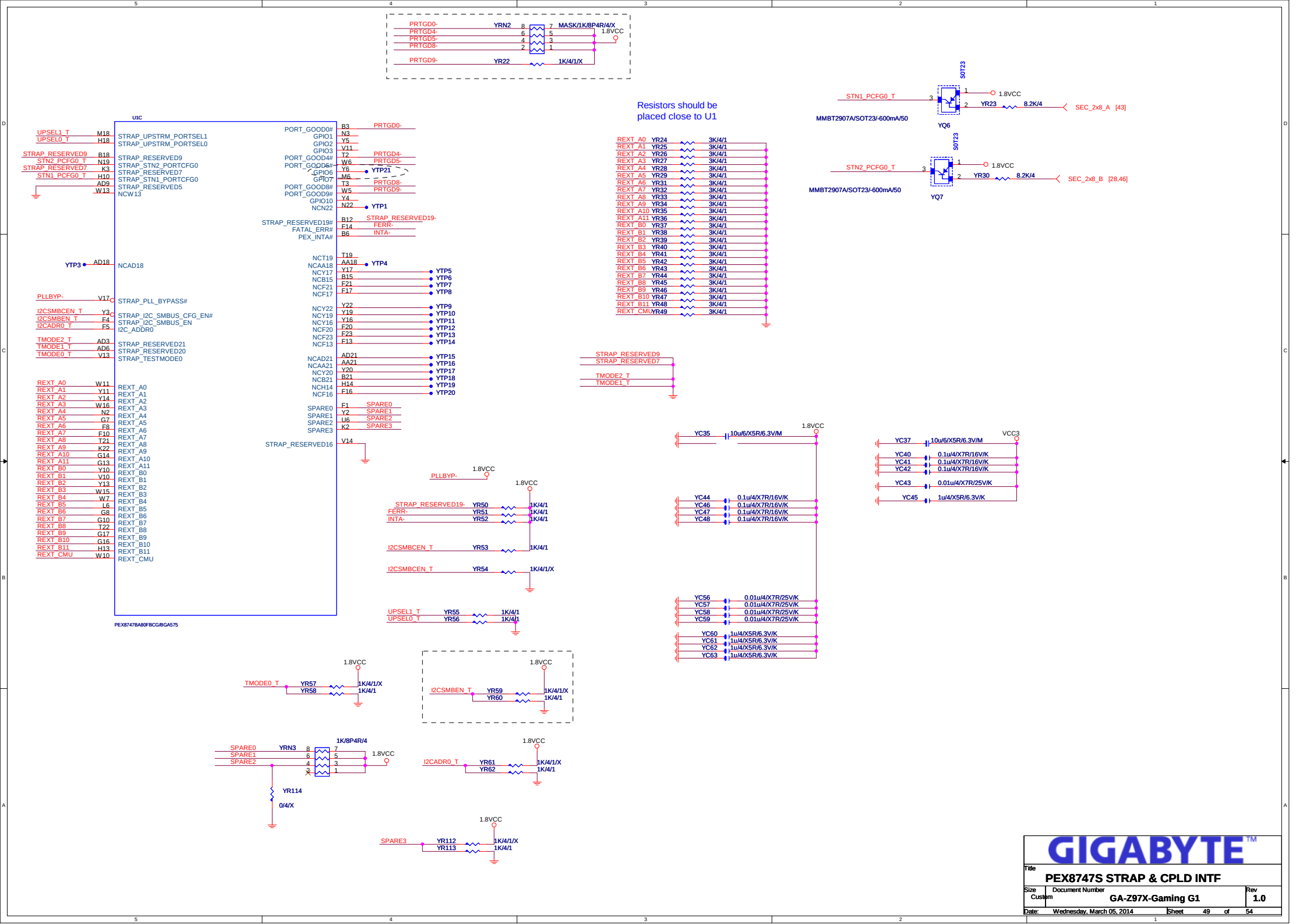
PRTGD0-
PRTGD4-
PRTGD5-
PRTGD8-
PRTGD9-
YRN2
MASK/1K/8P4R/4/X
1.8VCC
YR22
1K/4/1/X
Resistors should be placed close to U1
SOT23
STN1_PCFG0_T
YR23
8.2K/4
SEC_2x8_A [43]
MMBT2907A/SOT23/-600mA/50
YQ6
STN2_PCFG0_T
YR30
SEC_2x8_B [28,46]
YQ7
U1C
PEX8747BA80FBCG/BGA575
REXT_A0 YR24
REXT_A1 YR25
REXT_A2 YR26
REXT_A3 YR27
REXT_A4 YR28
REXT_A5 YR29
REXT_A6 YR31
REXT_A7 YR32
REXT_A8 YR33
REXT_A9 YR34
REXT_A10 YR35
REXT_A11 YR36
REXT_B0 YR37
REXT_B1 YR38
REXT_B2 YR39
REXT_B3 YR40
REXT_B4 YR41
REXT_B5 YR42
REXT_B6 YR43
REXT_B7 YR44
REXT_B8 YR45
REXT_B9 YR46
REXT_B10 YR47
REXT_B11 YR48
REXT_CMU YR49
3K/4/1
STRAP_RESERVED9
STRAP_RESERVED7
TMODE2_T
TMODE1_T
YC35
10u/6/X5R/6.3V/M
YC37
VCC3
YC40
YC41
YC42
0.1u/4/X7R/16V/K
YC43
0.01u/4/X7R/25V/K
YC45
1u/4/X5R/6.3V/K
YC44
YC46
YC47
YC48
YC56
YC57
YC58
YC59
YC60
YC61
YC62
YC63
PLLBYP-
STRAP_RESERVED19-
FERR-
INTA-
YR50
YR51
YR52
1K/4/1
I2CSMBCEN_T
YR53
YR54
1K/4/1/X
UPSEL1_T
UPSEL0_T
YR55
YR56
TMODE0_T
YR57
YR58
I2CSMBEN_T
YR59
YR60
SPARE0
SPARE1
SPARE2
YRN3
1K/8P4R/4
YR114
0/4/X
I2CADR0_T
YR61
YR62
SPARE3
YR112
YR113
GIGABYTE™
PEX8747S STRAP & CPLD INTF
Custom
GA-Z97X-Gaming G1
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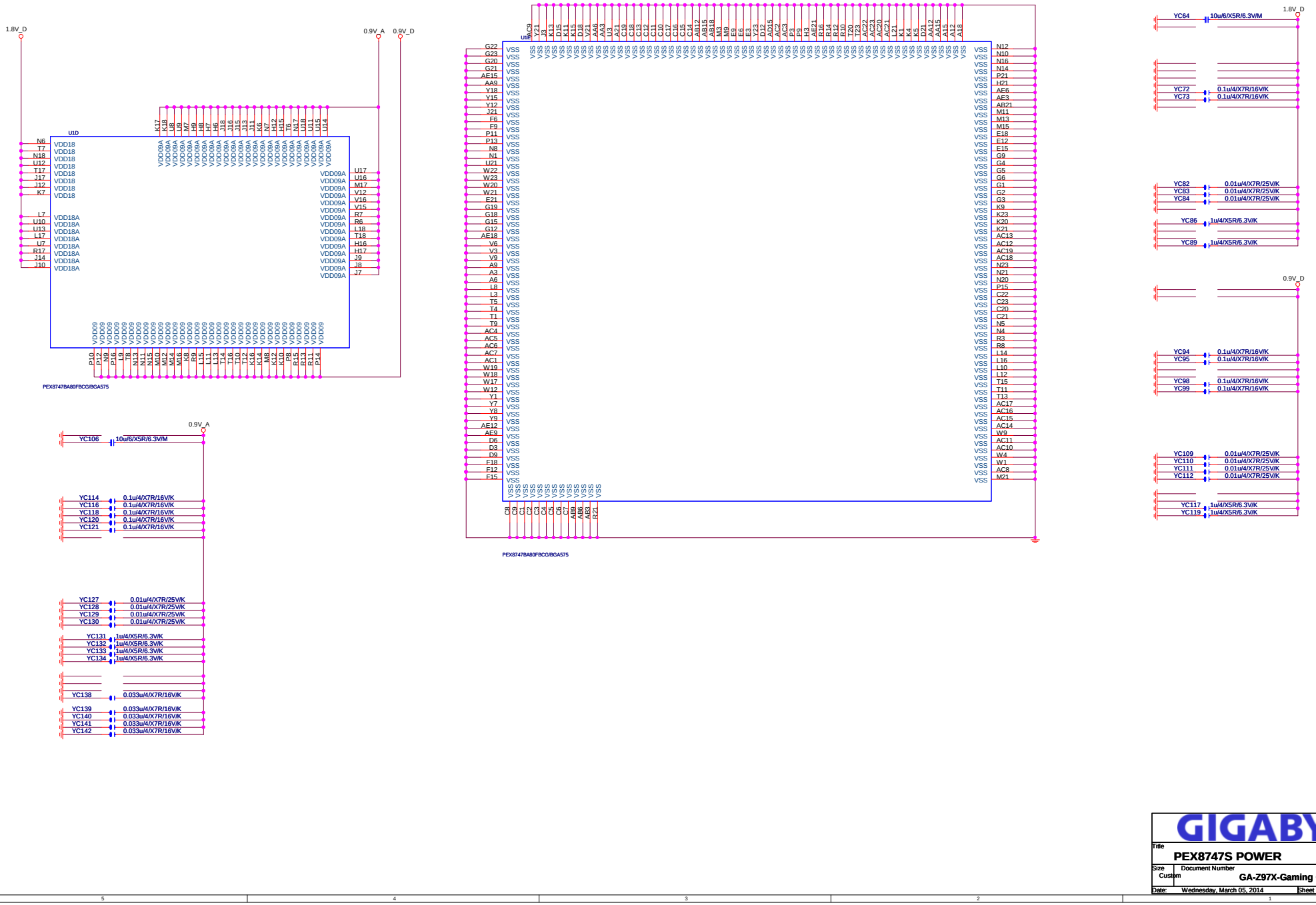
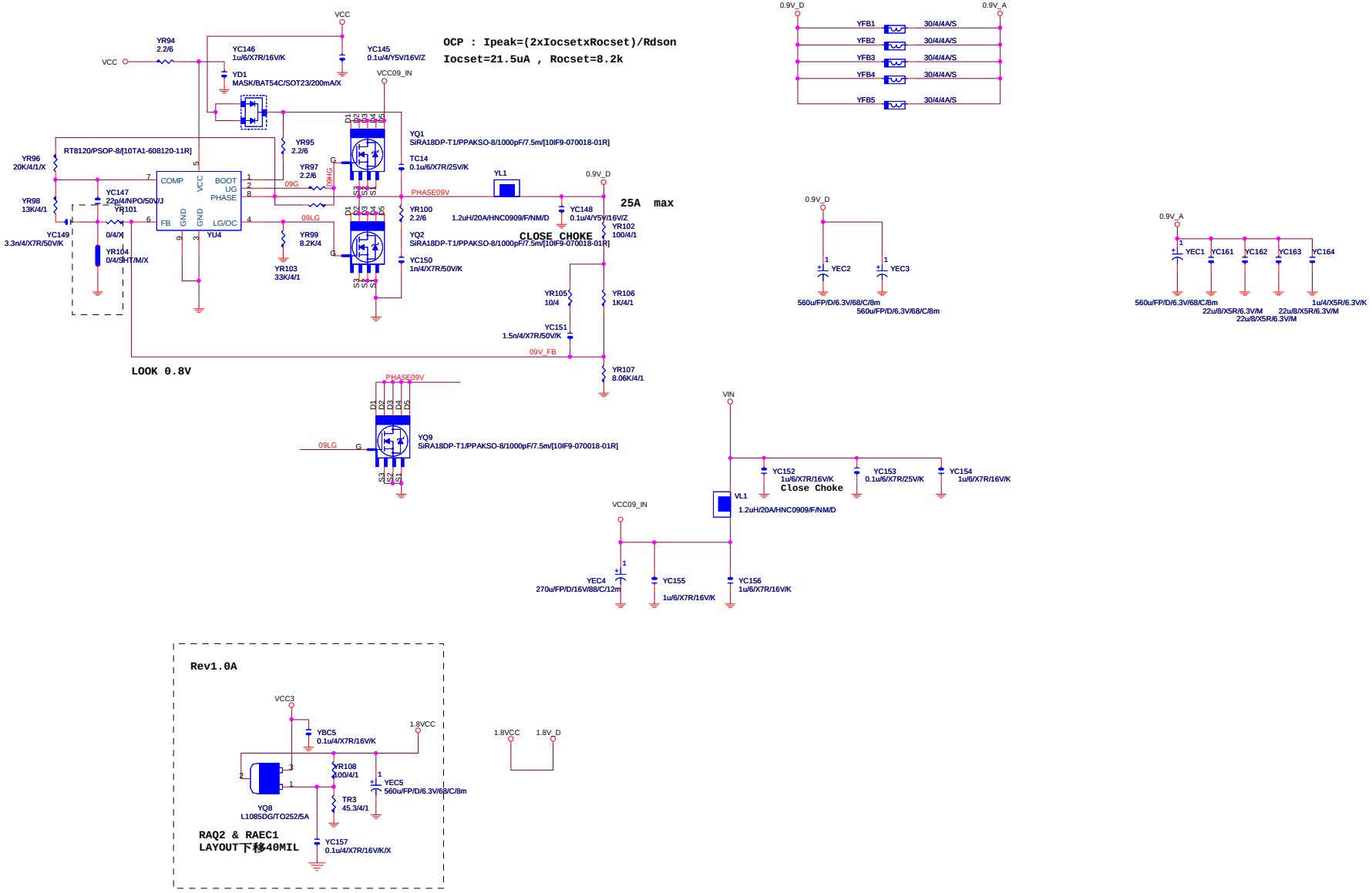


GIGABYTE™

Title	PEX8747S POWER	
Size: Custom	Document Number: GA-Z97X-Gaming G1	Rev: 1.0
Date: Wednesday, March 05, 2014	Sheet 50 of 54	



GIGABYTE™			
Title: PEX8747 POWER DESIGN			
Size: Custom	Document Number: GA-Z97X-Gaming G1		Rev: 1.0
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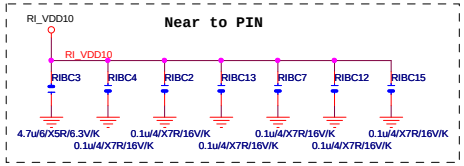
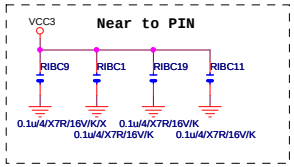
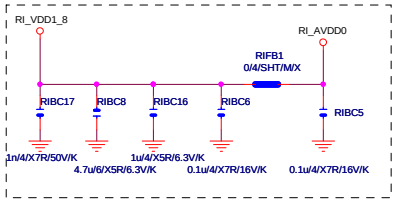
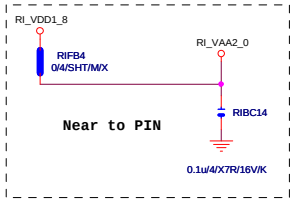
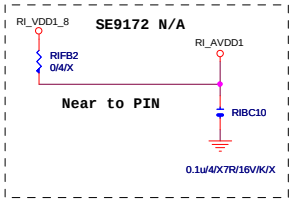
Close to Connect

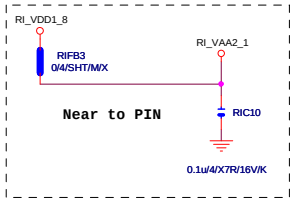


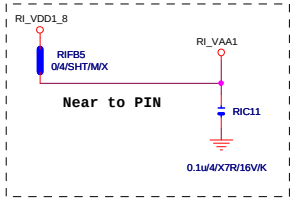


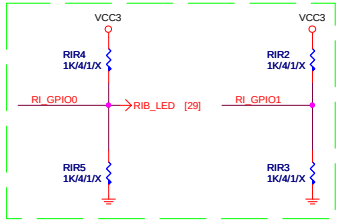


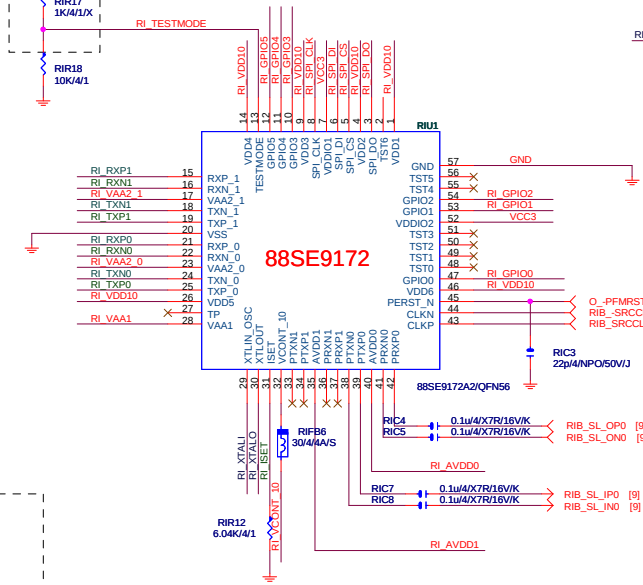


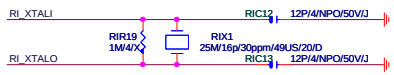


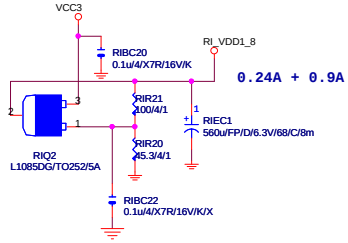


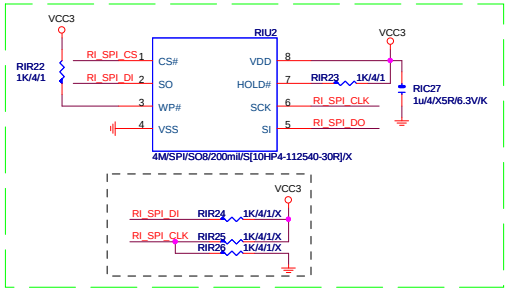


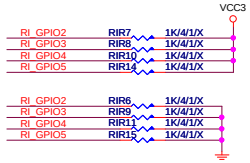


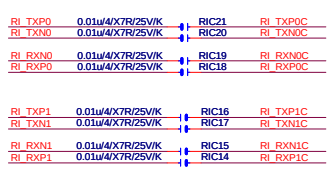


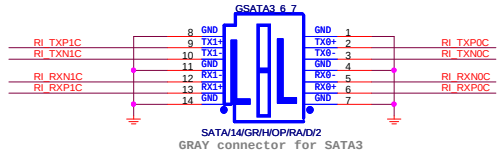












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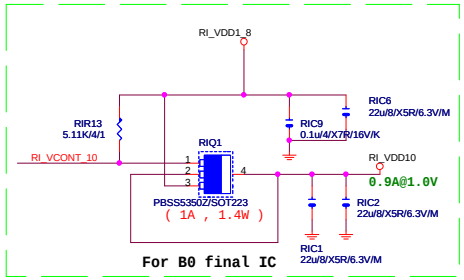

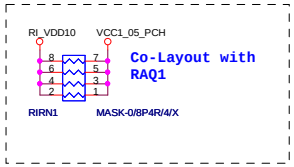

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Title: Marvell 9172 -2			
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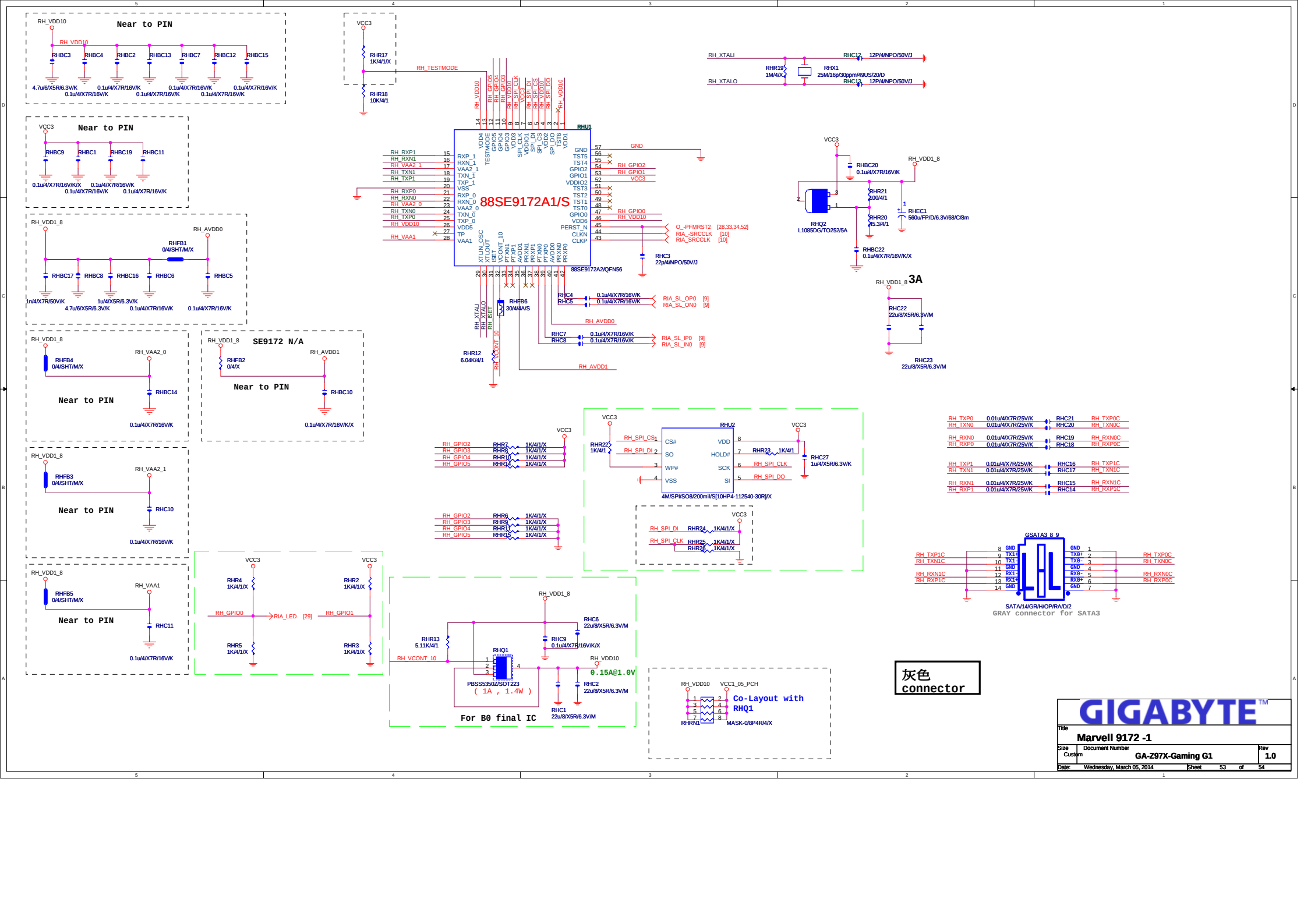
Near to PIN
RH_VDD10
RHBC3
RHBC4
RHBC2
RHBC13
RHBC7
RHBC12
RHBC15
4.7u/6/X5R/6.3V/K
0.1u/4/X7R/16V/K
VCC3
RHR17
1K/4/1/X
RH_TESTMODE
RHR18
10K/4/1
RH_XTALI
RH_XTALO
RHC12
12P/4/NPO/50V/J
RHR19
1M/4/X
RHX1
25M/16p/30ppm/49US/20/D
RHC13
RHBC9
RHBC1
RHBC19
RHBC11
RH_VDD1_8
RH_AVDD0
RHFB1
0/4/SHT/M/X
RHBC17
RHBC8
RHBC16
RHBC6
RHBC5
1u/4/X5R/6.3V/K
RHU1
88SE9172A1/S
88SE9172A2/QFN56
RH_RXP1
RH_RXN1
RH_VAA2_1
RH_TXN1
RH_TXP1
RH_RXP0
RH_RXN0
RH_VAA2_0
RH_TXN0
RH_TXP0
RH_VDD10
RH_VAA1
GND
RH_GPIO2
RH_GPIO1
RH_GPIO0
O_-PFMRST2 [28,33,34,52]
RIA_-SRCCLK [10]
RIA_SRCCLK [10]
RHC3
22p/4/NPO/50V/J
RHFB6
30/4/4A/S
RHC4
RHC5
0.1u/4/X7R/16V/K
RIA_SL_OP0 [9]
RIA_SL_ON0 [9]
RHC7
RHC8
RIA_SL_IP0 [9]
RIA_SL_IN0 [9]
RHR12
6.04K/4/1
RH_VCONT_10
RH_AVDD1
RHBC20
RHR21
100/4/1
RHQ2
L1085DG/TO252/5A
RHR20
45.3/4/1
RHEC1
560u/FP/D/6.3V/68/C/8m
RHBC22
RH_VDD1_8
3A
RHC22
22u/8/X5R/6.3V/M
RHC23
RHFB4
0/4/SHT/M/X
RH_VAA2_0
RHBC14
SE9172 N/A
RHFB2
0/4/X
RH_AVDD1
RHBC10
RHFB3
RH_VAA2_1
RHC10
RHFB5
RH_VAA1
RHC11
RHR7
RHR8
RHR10
RHR11
RHR6
RHR9
RHR15
1K/4/1/X
RHU2
4M/SPI/SO8/200mil/S[10HP4-112540-30R]/X
RH_SPI_CS
RH_SPI_DI
RH_SPI_CLK
RH_SPI_DO
RHR22
RHR23
RHC27
1u/4/X5R/6.3V/K
RHR24
RHR25
RHR26
RHR4
RHR5
RHR2
RHR3
RH_GPIO0
RIA_LED [29]
RH_GPIO1
RHR13
5.11K/4/1
RHQ1
PBSS5350Z/SOT223
(1A , 1.4W)
RHC6
22u/8/X5R/6.3V/M
RHC9
0.1u/4/X7R/16V/K/X
RHC2
RHC1
0.15A@1.0V
For B0 final IC
RHRN1
MASK-0/8P4R/4/X
VCC1_05_PCH
Co-Layout with RHQ1
灰色 connector
RH_TXP0
RH_TXN0
RH_RXN0
RH_RXP0
RH_TXP1
RH_TXN1
RH_RXN1
RH_RXP1
RHC21
RHC20
RHC19
RHC18
RHC16
RHC17
RHC15
RHC14
RH_TXP0C
RH_TXN0C
RH_RXN0C
RH_RXP0C
RH_TXP1C
RH_TXN1C
RH_RXN1C
RH_RXP1C
GSATA3_8_9
SATA/14/GR/H/OP/RA/D/2
GRAY connector for SATA3
GIGABYTE
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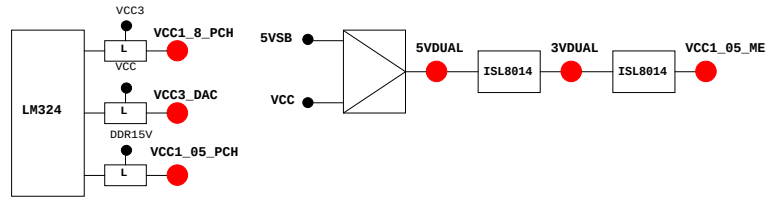
PCH GPIO LIST TABLE

PIN NAME	PWR	AFTER/PLTRST	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	-PECI_REQ	N/A
GP1/TACH1	MAIN		GPI	ICH_FAN_TACH1	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	ICH_FAN_TACH2	N/A
GP7/TACH3	MAIN		GPI	ICH_FAN_TACH3	N/A
GP8	STBY	H	GPO	GPIO8	P/U 8.2K 3VDUAL
GP9/OC5#	STBY		NATIVE	OC5#	N/A
GP10/OC6#	STBY		NATIVE	OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	-SMBALERT	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	LAN_PHY_PWR_CTRL	P/U 8.2K 3VDUAL
GP13	STBY	L	GPI	GPIO13	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	OC7#	N/A
GP15	STBY	L	GPO	GPIO15	N/A
GP16	MAIN		GPI	-SKTOCC	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	ICH_FAN_TACH0	N/A
GP18	MAIN		NATIVE	MB_ID0	P/D 8.2K GND
GP19	MAIN		GPI	-LAN1_ISO	P/U 8.2K VCC3
GP20	MAIN		NATIVE	LED_CTL	P/U 1K VCC3
GP21	MAIN		GPI	VCC18_PCH_OV2	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	VCORE_OV3	P/U 8.2K VCC3
GP23	MAIN		NATIVE	-LDRQ1	P/U 8.2K VCC3
GP24	STBY	L	GPO	TLS	P/U 8.2K 3VDUAL
GP25	STBY		NATIVE	-CPU_STOP	P/U 8.2K 3VDUAL
GP26	STBY		NATIVE	-ACZ_DET	P/U 8.2K 3VDUAL
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	GPIO28	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	S_PWR_ACK	P/U 100K 3VDUAL
GP31	STBY	H-Z	GPI	N/A(Reverse)	P/U 8.2K VCC3
GP32	MAIN	H	GPO	MB_ID1	P/D 8.2K GND
GP33	MAIN	H	GPO	LOAD-LINE	P/U 1K VCC3
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	GPIO35	P/U 8.2K VCC3
GP36	MAIN		GPI	-LAN1_DSM	P/U 8.2K VCC3
GP37	MAIN		GPI	N/A	P/U 8.2K VCC3
GP38	MAIN	H-Z	GPI	VCORE_OV2	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	-LAN_DSM	P/U 8.2K VCC3
GP40	STBY		NATIVE	OC1#	N/A
GP41	STBY		NATIVE	OC2#	N/A
GP42	STBY		NATIVE	OC3#	N/A
GP43	STBY		NATIVE	OC4#	N/A
GP44	STBY	L	NATIVE	N/A	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	-LPCPME	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	PWR_LED	P/U 8.2K 3VDUAL
GP47	STBY		NATIVE	PSI LED	P/U 8.2K 3VDUAL
GP48	MAIN	H-Z	IN	EN_PWM	P/U 8.2K VCC3
GP49	MAIN	H-Z	IN	VCC18_OV1	P/U 8.2K VCC3
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	N/A(Reverse)	P/U 8.2K 3VDUAL
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		NATIVE	1_05V_OV1	P/U 8.2K 3VDUAL
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

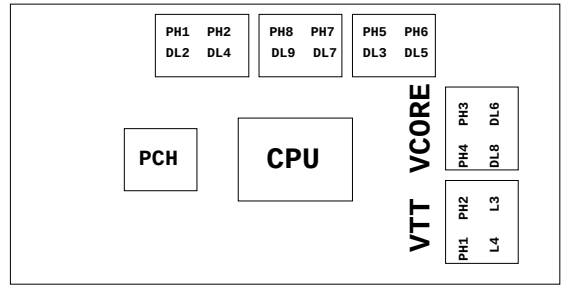
Super I/O ITE8720 GPIO Table

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:

8IBP:
1.12SP2-01A001-Y1R/Y2R
2.12SP2-01A001-Z1R/Z2R
(HIBRID模組)包材階

	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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Title: TABLE LIST

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