

SHEET

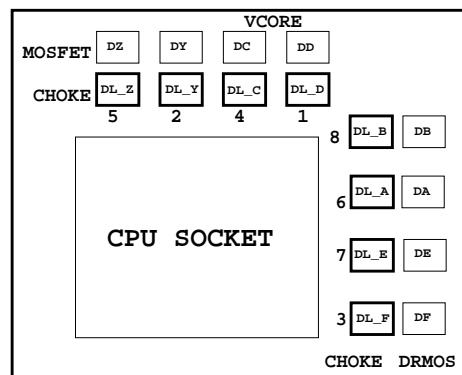
TITLE

01	COVER SHEET
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
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23	IR3598-VCORE
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30	USB DAC-UP , PS2
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32	RST, PWR, CLR_CMOS, 80 PORT
33	LAN E2201
34	INTEL I217

SHEET

TITLE

35	RENEASAS USB3 HUB-1
36	RENEASAS USB3 HUB-1
37	F_USB3.0 , SATA EXPRESS
38	IT8790
39	FAN CTRL
40	PCIEx16(x8) REFCLK
41	PCI EXPRESS*16_2 SLOT
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50	PEX8747S POWER
51	PEX8747 POWER DESIGN
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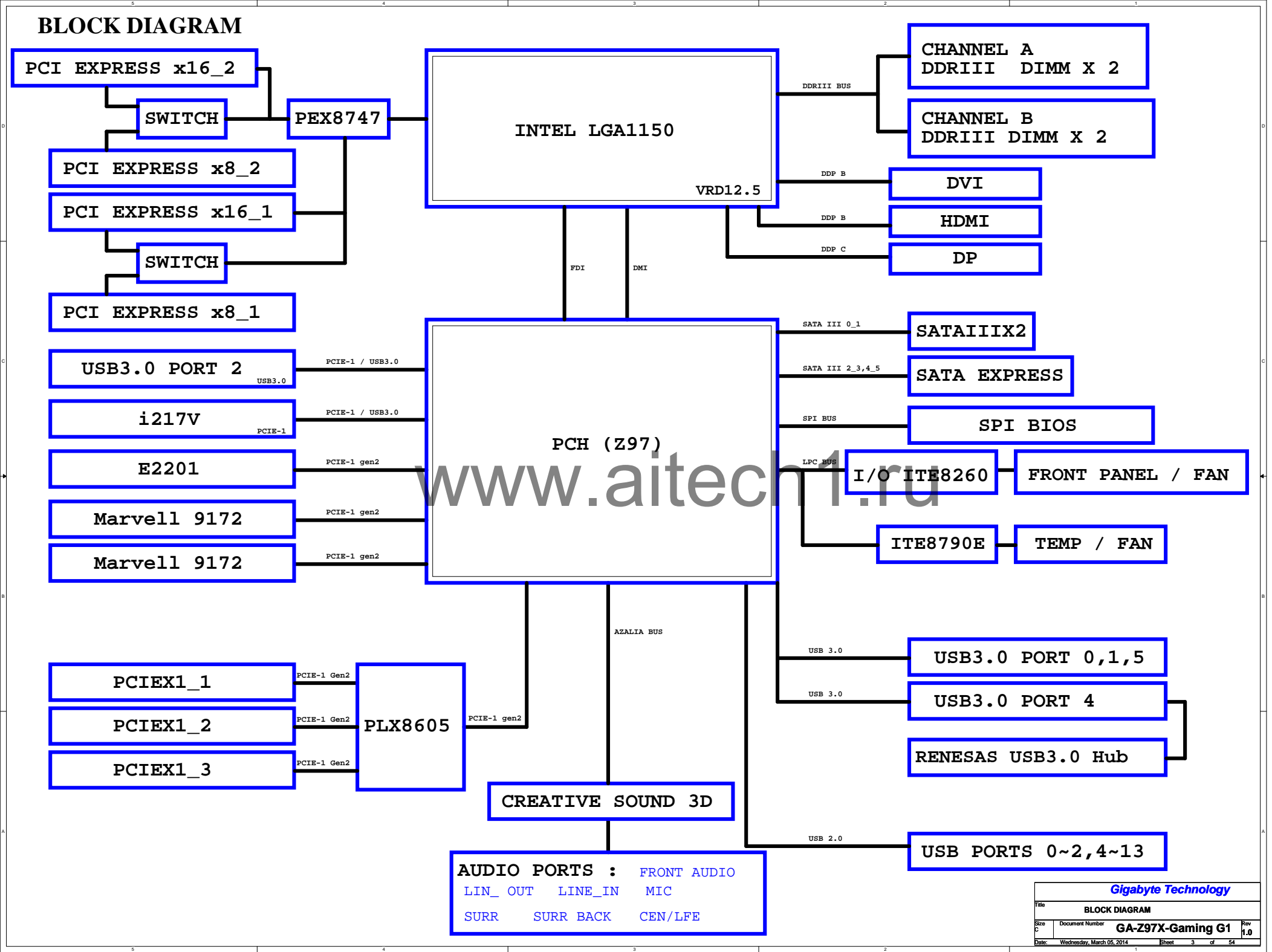


Gigabyte Technology

Component value change history

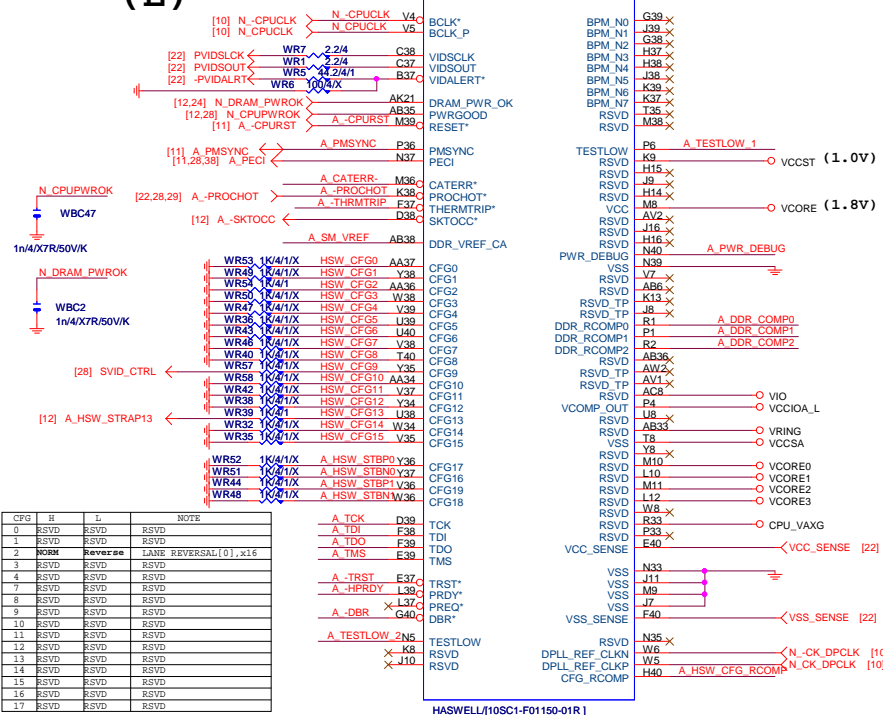
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BLOCK DIAGRAM



LGA1150

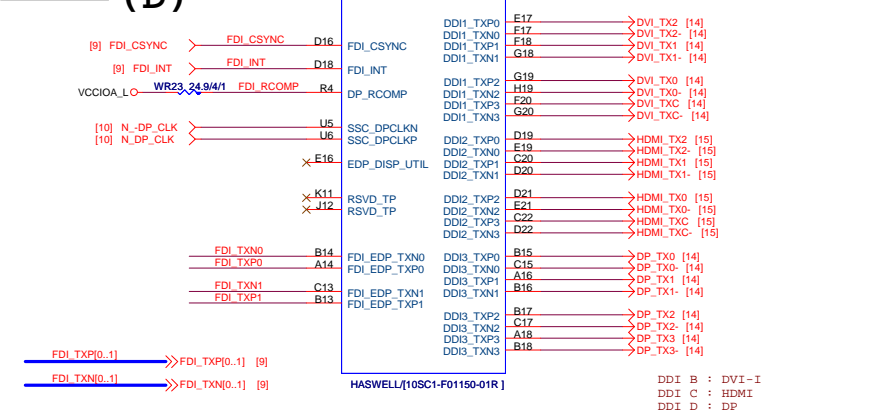
(E)



CFG 0-17 all internal FULL-UP

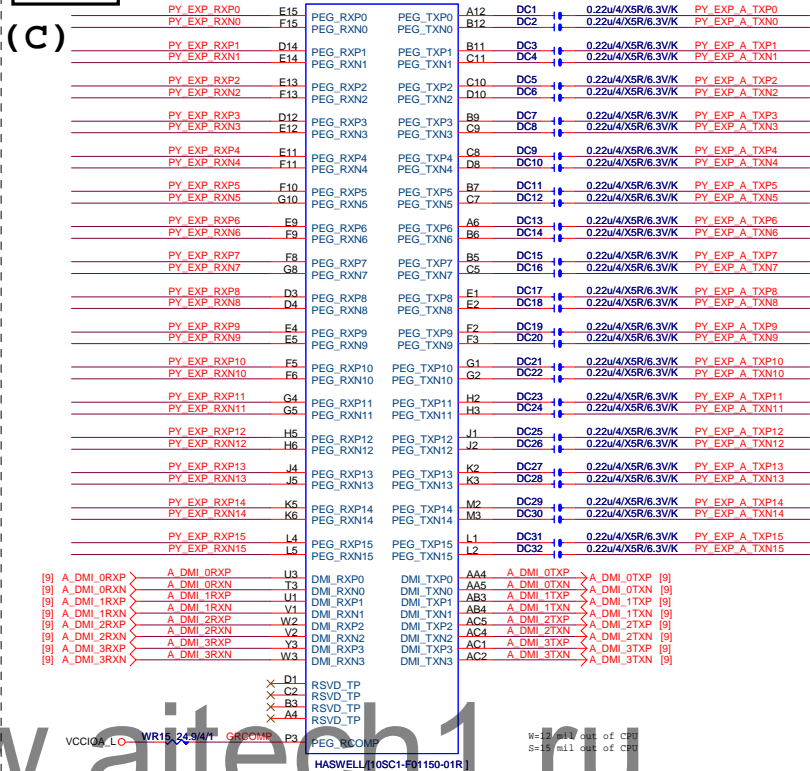
LGA1150

(D)

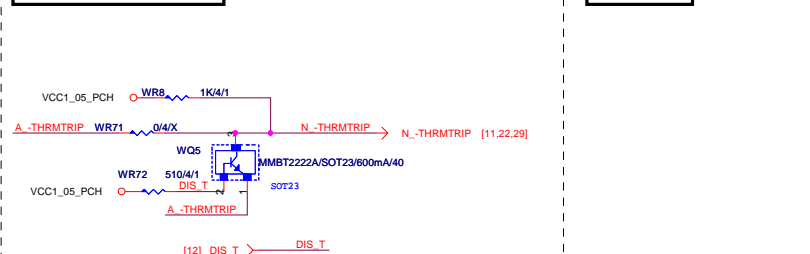


LGA1150

(C)



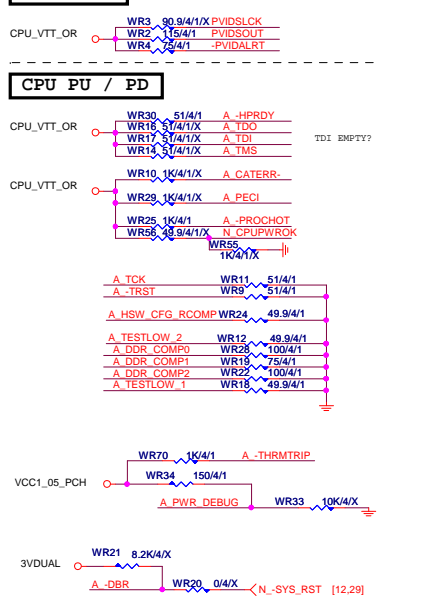
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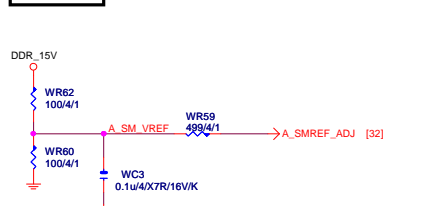
-CPURST



CPU SVID



SM REF



Gigabyte Technology			
CPU LGA1150-A			
Title	Document Number	Rev	
Size	Custom	GA-Z97X-Gaming G1	
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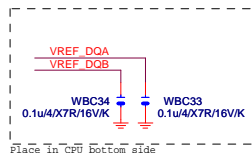
LGA1150A

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MAAA2	AU16	DDR0_MA2	DDR0_DQ2	AF38	MDA2
MAAA3	AW17	DDR0_MA3	DDR0_DQ3	AF39	MDA3
MAAA4	AU17	DDR0_MA3	DDR0_DQ3	AD37	MDA4
MAAA5	AW18	DDR0_MA4	DDR0_DQ4	AD40	MDA5
MAAA6	AV17	DDR0_MA5	DDR0_DQ5	AF37	MDA6
MAAA7	AT18	DDR0_MA6	DDR0_DQ6	AF40	MDA7
MAAA8	AU18	DDR0_MA7	DDR0_DQ7	AH40	MDA9
MAAA9	AT19	DDR0_MA8	DDR0_DQ8	AH39	MDA13
MAAA10	AW11	DDR0_MA10	DDR0_DQ10	AK38	MDA10
MAAA11	AV19	DDR0_MA11	DDR0_DQ11	AK39	MDA11
MAAA12	AU19	DDR0_MA12	DDR0_DQ12	AH37	MDA12
MAAA13	AT10	DDR0_MA13	DDR0_DQ13	AH38	MDA8
MAAA14	AT20	DDR0_MA14	DDR0_DQ14	AK37	MDA14
MAAA15	AU21	DDR0_MA15	DDR0_DQ15	AK40	MDA15
MODT_A0	AW10	DDR0_ODT0	DDR0_DQ16	AM40	MDA17
MODT_A1	AY8	DDR0_ODT1	DDR0_DQ17	AM39	MDA21
MODT_A2	AW9	DDR0_ODT2	DDR0_DQ18	AP38	MDA18
MODT_A3	AU8	DDR0_ODT3	DDR0_DQ19	AP39	MDA19
			DDR0_DQ20	AM37	MDA20
			DDR0_DQ21	AM38	MDA16
			DDR0_DQ22	AP37	MDA22
			DDR0_DQ23	AP40	MDA23
			DDR0_DQ24	AV37	MDA25
			DDR0_DQ25	AV32	MDA29
			DDR0_DQ26	AU35	MDA26
			DDR0_DQ27	AV35	MDA27
			DDR0_DQ28	AT37	MDA28
			DDR0_DQ29	MDA24	
			DDR0_DQ30	AT35	MDA30
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			DDR0_DQ32	AM38	MDA37
			DDR0_DQ33	AU6	MDA34
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			DDR0_DQ36	AV6	MDA32
			DDR0_DQ37	AW4	MDA38
			DDR0_DQ38	AY4	MDA39
			DDR0_DQ39	AR1	MDA41
			DDR0_DQ40	AR4	MDA45
			DDR0_DQ41	AN3	MDA42
			DDR0_DQ42	AN4	MDA43
			DDR0_DQ43	AR2	MDA44
			DDR0_DQ44	AR3	MDA40
			DDR0_DQ45	AN2	MDA46
			DDR0_DQ46	AN1	MDA47
			DDR0_DQ47	AL1	MDA49
			DDR0_DQ48	AL4	MDA53
			DDR0_DQ49	AL3	MDA50
			DDR0_DQ50	AL4	MDA51
			DDR0_DQ51	AL2	MDA52
			DDR0_DQ52	AJ3	MDA48
			DDR0_DQ53	AJ2	MDA54
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			DDR0_DQ56	AG4	MDA61
			DDR0_DQ57	AE3	MDA58
			DDR0_DQ58	AE4	MDA59
			DDR0_DQ59	AG2	MDA60
			DDR0_DQ60	AG3	MDA56
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			DDR0_DQ62	AE1	MDA63
			DDR0_DQ63	AE39	DQSA0
			DDR0_DQ64	AN39	DQSA2
			DDR0_DQ65	AV36	DQSA3
			DDR0_DQ66	AV5	DQSA4
			DDR0_DQ67	AP3	DQSA5
			DDR0_DQ68	AK3	DQSA6
			DDR0_DQ69	AF3	DQSA7
			DDR0_DQ70	AV32	DQSA0
			DDR0_DQ71	AJ38	DQSA1
			DDR0_DQ72	AN38	DQSA2
			DDR0_DQ73	AU36	DQSA3
			DDR0_DQ74	AW5	DQSA4
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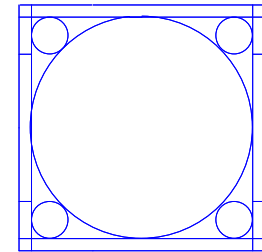
HASWELL[10SC1-F01150-01R]

LGA1150B

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MAAB2	AM22	DDR1_MA2	DDR1_DQ2	AG35	MDB2
MAAB3	AM23	DDR1_MA3	DDR1_DQ3	AH35	MDB3
MAAB4	AP23	DDR1_MA4	DDR1_DQ4	AD34	MDB4
MAAB5	AL23	DDR1_MA5	DDR1_DQ5	AD35	MDB5
MAAB6	AY24	DDR1_MA6	DDR1_DQ6	AG34	MDB6
MAAB7	AV25	DDR1_MA7	DDR1_DQ7	AH34	MDB7
MAAB8	AU25	DDR1_MA8	DDR1_DQ8	AL34	MDB8
MAAB9	AW25	DDR1_MA9	DDR1_DQ9	AL35	MDB9
MAAB10	AP18	DDR1_MA10	DDR1_DQ10	AK31	MDB10
MAAB11	AY25	DDR1_MA11	DDR1_DQ11	AL31	MDB11
MAAB12	AV26	DDR1_MA12	DDR1_DQ12	AK34	MDB12
MAAB13	AR15	DDR1_MA13	DDR1_DQ13	AK35	MDB13
MAAB14	AV27	DDR1_MA14	DDR1_DQ14	AK32	MDB14
MAAB15	AY28	DDR1_MA15	DDR1_DQ15	AL32	MDB15
			DDR1_DQ16	AN34	MDB17
			DDR1_DQ17	AP34	MDB21
			DDR1_DQ18	AN31	MDB19
			DDR1_DQ19	AP31	MDB23
			DDR1_DQ20	AN35	MDB20
			DDR1_DQ21	AP35	MDB18
			DDR1_DQ22	AN32	MDB16
			DDR1_DQ23	AP32	MDB22
			DDR1_DQ24	AM29	MDB25
			DDR1_DQ25	AM28	MDB28
			DDR1_DQ26	AR29	MDB27
			DDR1_DQ27	AR28	MDB30
			DDR1_DQ28	AL29	MDB24
			DDR1_DQ29	AL28	MDB29
			DDR1_DQ30	AP29	MDB26
			DDR1_DQ31	AP28	MDB31
			DDR1_DQ32	AR12	MDB32
			DDR1_DQ33	AP12	MDB33
			DDR1_DQ34	AL12	MDB35
			DDR1_DQ35	AR13	MDB36
			DDR1_DQ36	AP13	MDB37
			DDR1_DQ37	AM13	MDB38
			DDR1_DQ38	AM12	MDB39
			DDR1_DQ39	AR9	MDB45
			DDR1_DQ40	AP9	MDB41
			DDR1_DQ41	AR6	MDB47
			DDR1_DQ42	AP6	MDB43
			DDR1_DQ43	AR10	MDB44
			DDR1_DQ44	AP10	MDB40
			DDR1_DQ45	AR7	MDB46
			DDR1_DQ46	AP7	MDB42
			DDR1_DQ47	AM9	MDB52
			DDR1_DQ48	AL9	MDB53
			DDR1_DQ49	AL6	MDB50
			DDR1_DQ50	AL7	MDB55
			DDR1_DQ51	AM10	MDB48
			DDR1_DQ52	AL10	MDB49
			DDR1_DQ53	AM6	MDB54
			DDR1_DQ54	AM7	MDB51
			DDR1_DQ55	AR6	MDB60
			DDR1_DQ56	AR6	MDB59
			DDR1_DQ57	AE7	MDB63
			DDR1_DQ58	AJ8	MDB66
			DDR1_DQ59	AJ7	MDB57
			DDR1_DQ60	AF6	MDB58
			DDR1_DQ61	AF7	MDB62
			DDR1_DQ62	AF35	DQSB0
			DDR1_DQ63	AL33	DQSB1
			DDR1_DQ64	AN33	DQSB2
			DDR1_DQ65	AN29	DQSB3
			DDR1_DQ66	AN13	DQSB4
			DDR1_DQ67	AR8	DQSB5
			DDR1_DQ68	AM8	DQSB6
			DDR1_DQ69	AG8	DQSB7
			DDR1_DQ70	AN25	
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			DDR1_DQ72	AK33	DQSB1
			DDR1_DQ73	AN33	DQSB2
			DDR1_DQ74	AN29	DQSB3
			DDR1_DQ75	AN13	DQSB4
			DDR1_DQ76	AR8	DQSB5
			DDR1_DQ77	AM8	DQSB6
			DDR1_DQ78	AG8	DQSB7
			DDR1_DQ79	AN25	



HASWELL[10SC1-F01150-01R]

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

Need check the new CPU ME

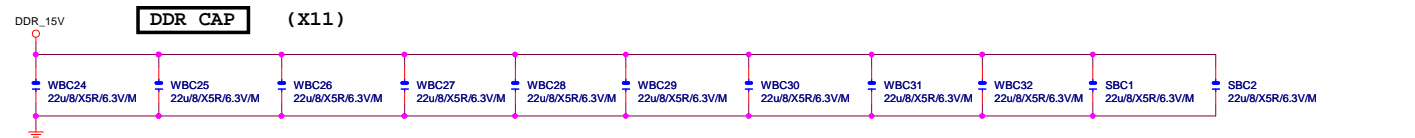
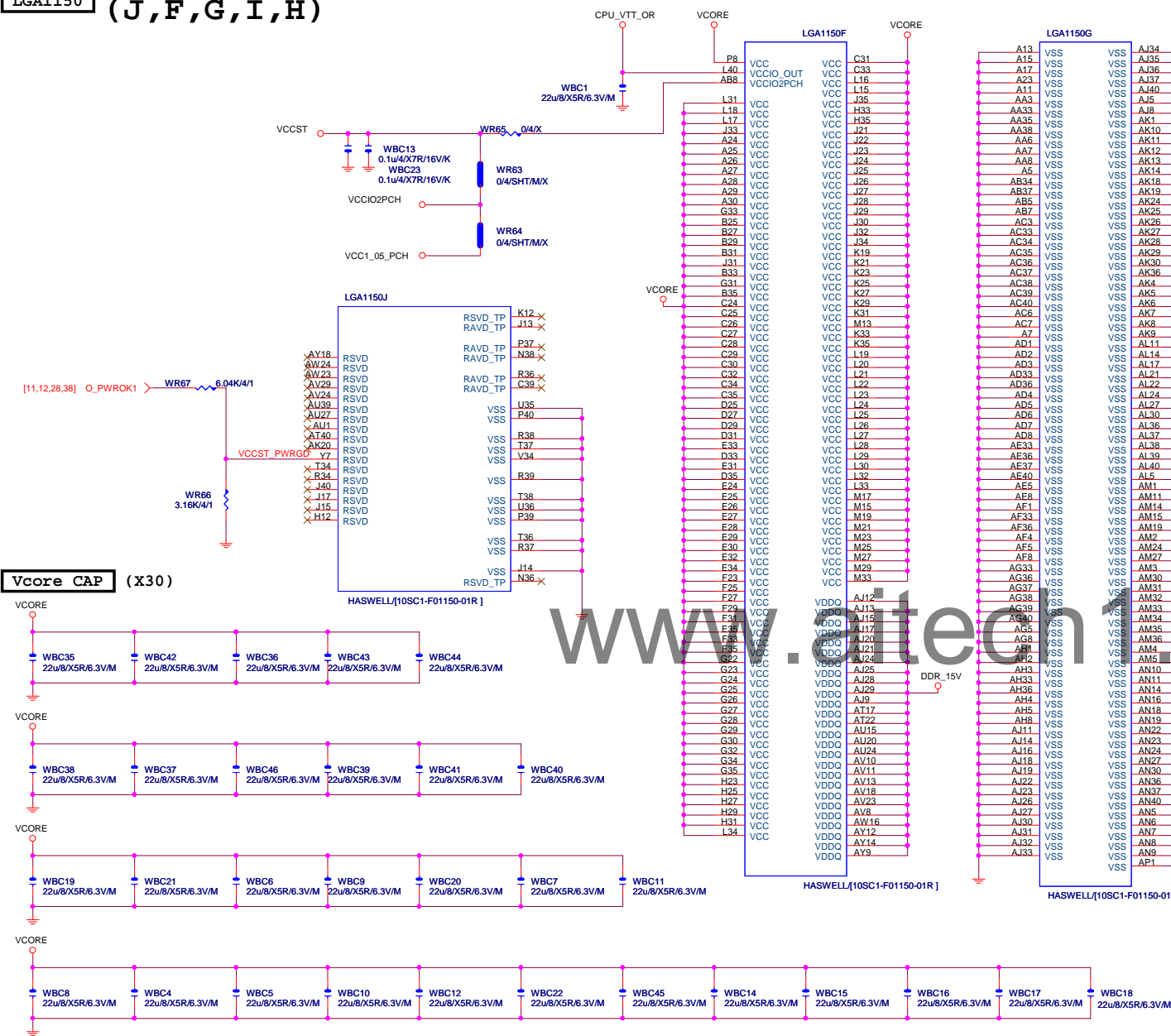
DDR BUS

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

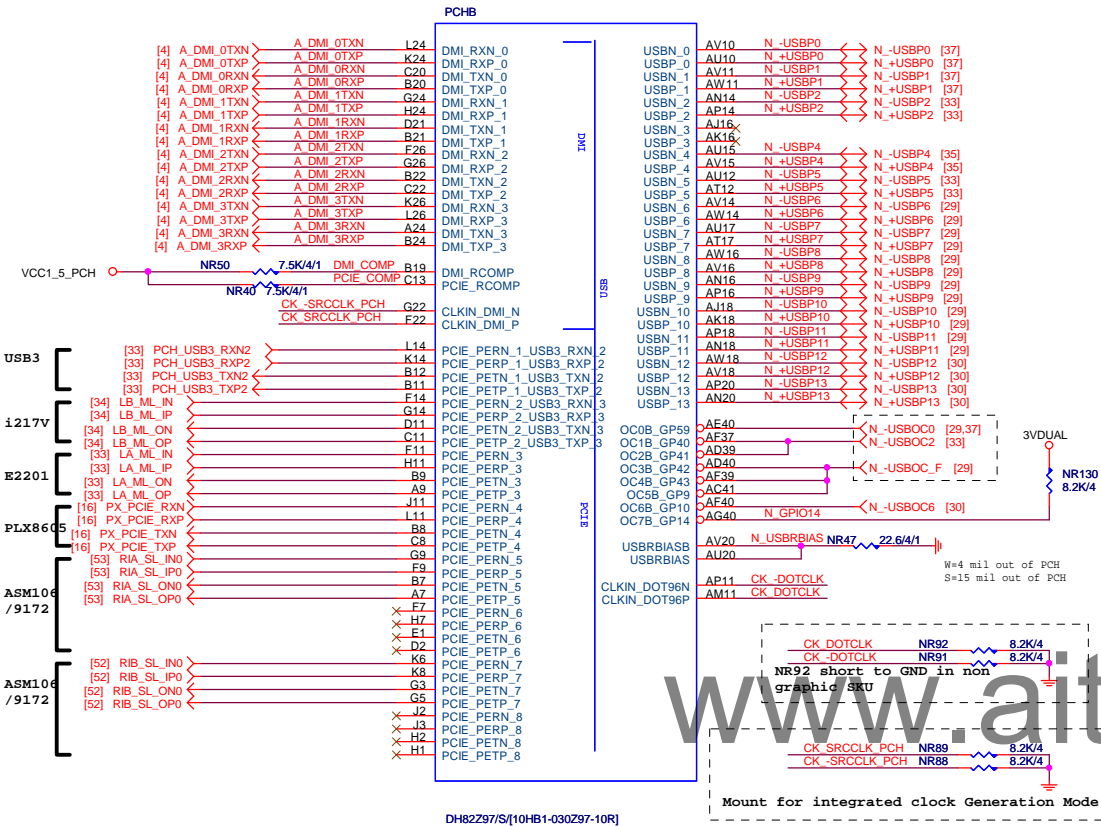
Gigabyte Technology

Title		CPU LGA1150-B	
Size	Document Number	Rev	
Custom		GA-Z97X-Gaming G1.0	
Date:	Wednesday, March 05, 2014	Sheet	5 of 54

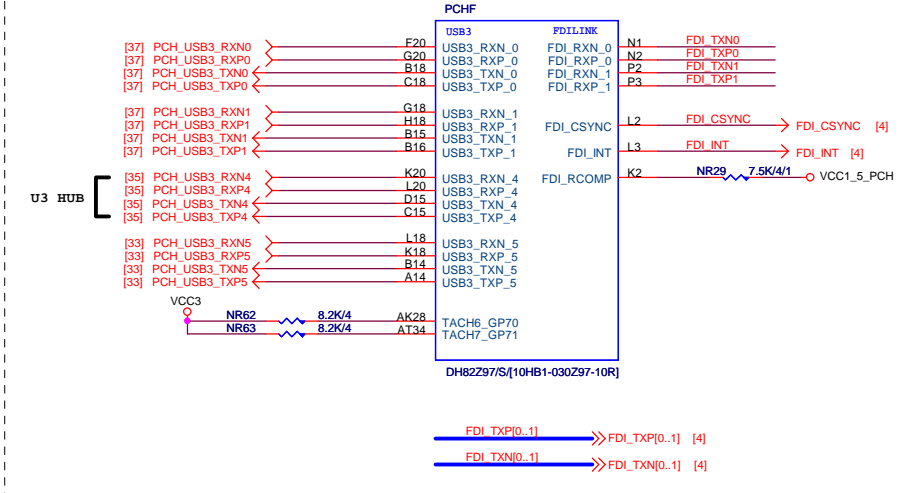
LGA1150 (J,F,G,I,H)



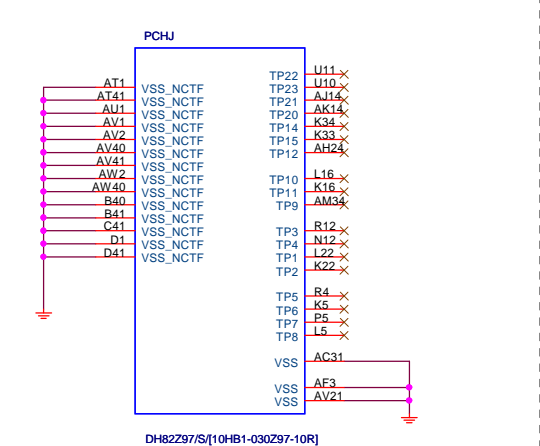
PCH (B)



PCH (F)



PCH (J)



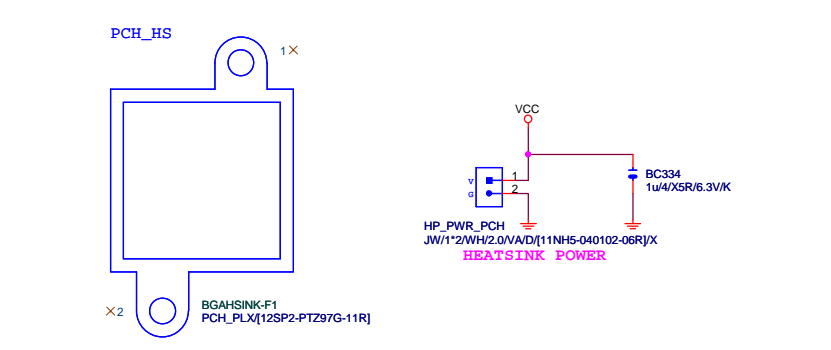
USB TABLE

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

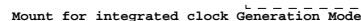
OC[7:4]# for Device 26 (ports 8-13)

USB3	00 01	04	05	F_USB1	F_USB2
USB2	00 01	04	05	02 03	06 07
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PCH Heatsink



(E)



(G)

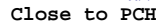


X'TAL 25MHz須參考GND
CRYSTAL/TRACE 週邊不要有訊號,VIA靠近
走線遠離其他40mil以上

VGA ESD



VGA DDC



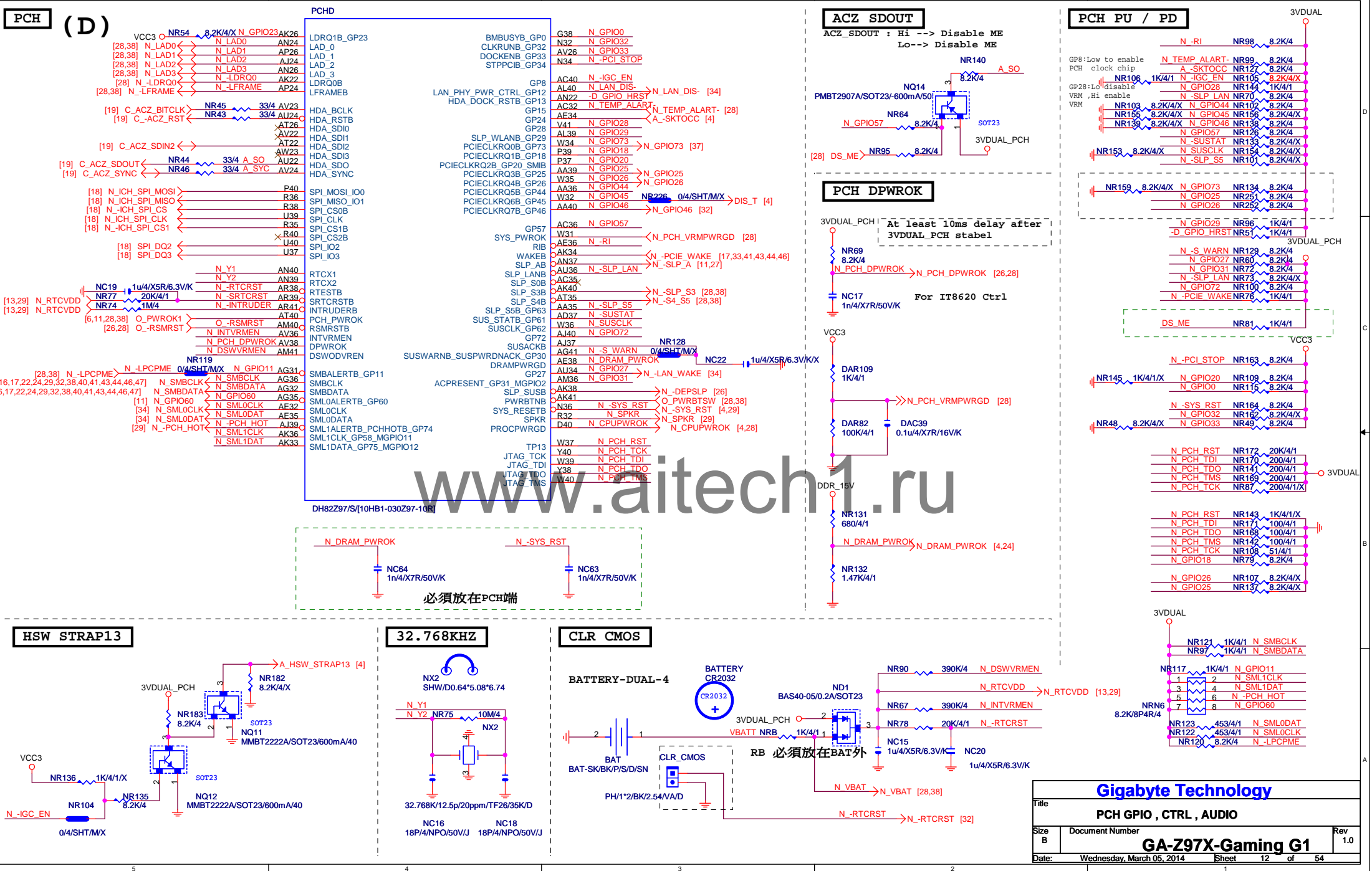
Close to Filter



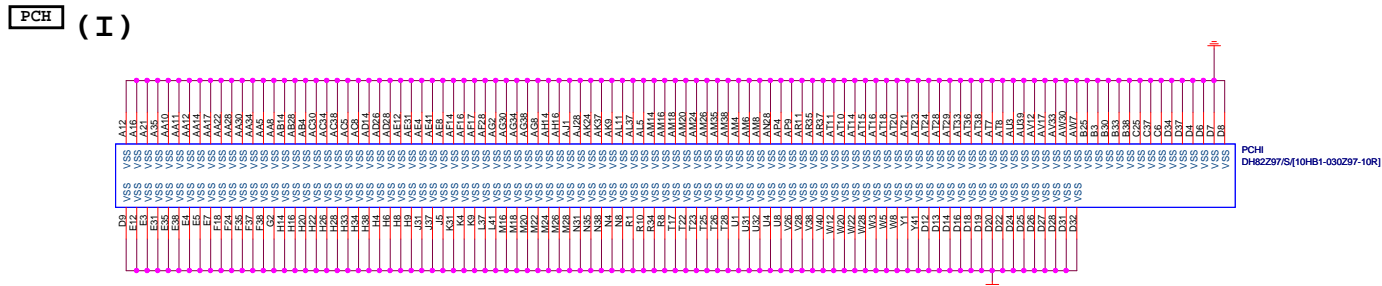
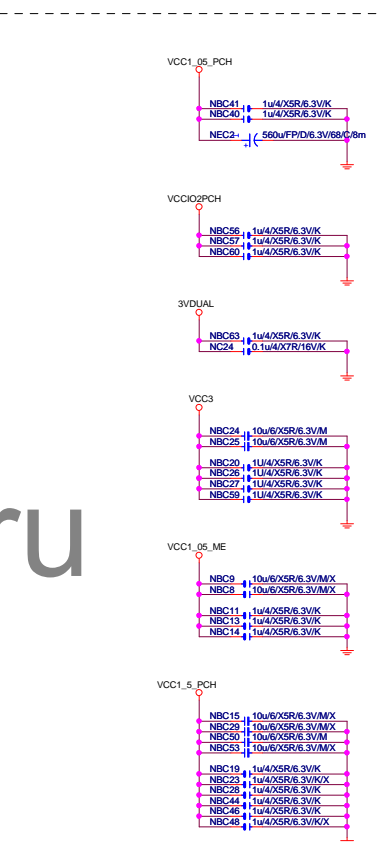
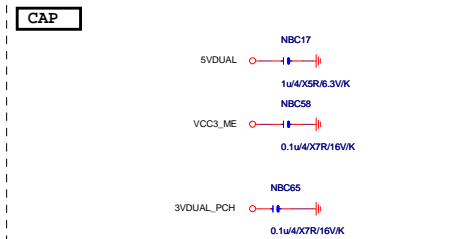
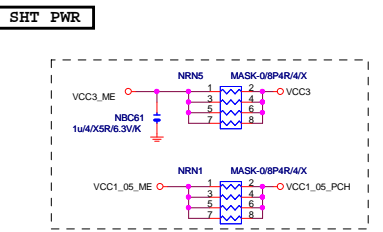
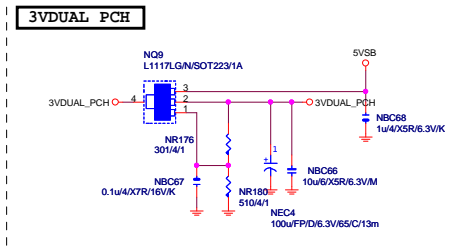
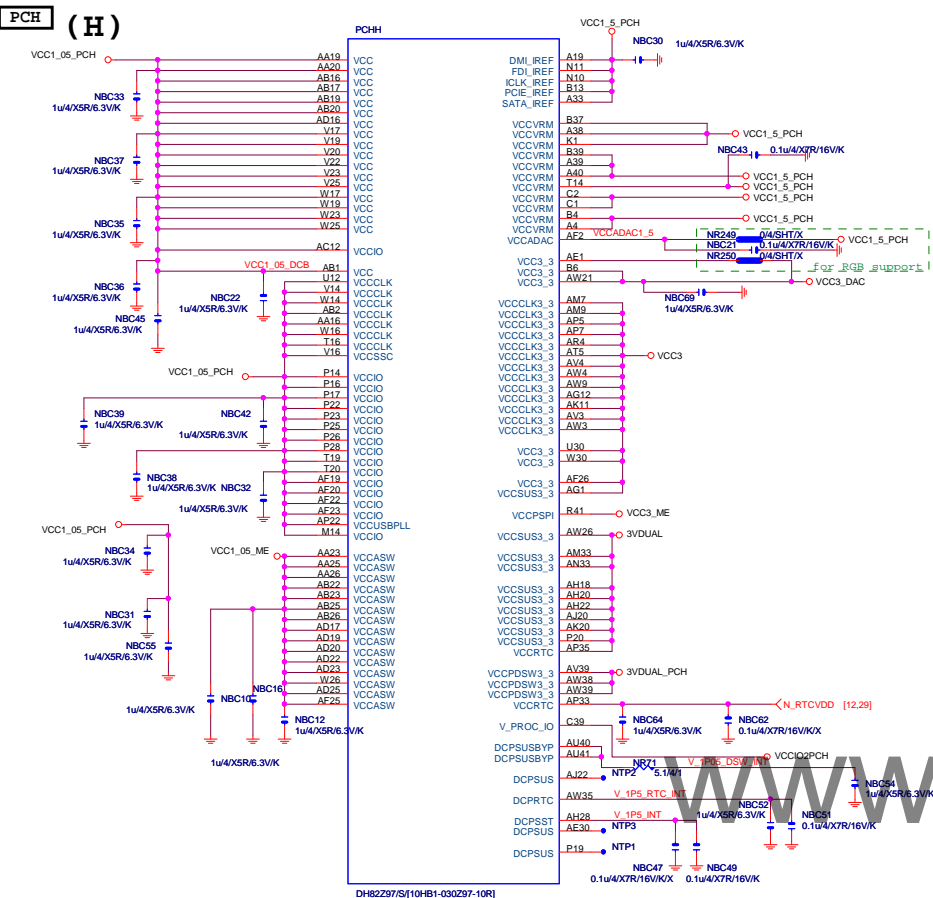
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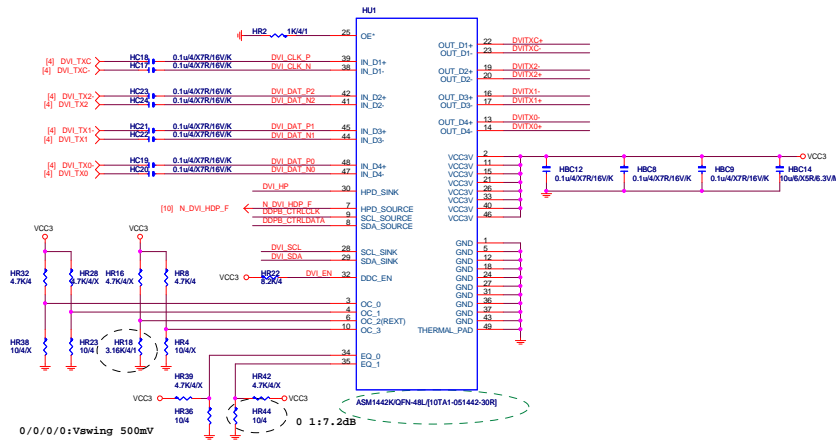


Title			
PCH HOST , SATA, PCI			
Size	Document Number	Rev	
Custom	GA-Z97X-Gaming G1	1.0	
Date:	Wednesday, March 05, 2014	Sheet	11 of 54

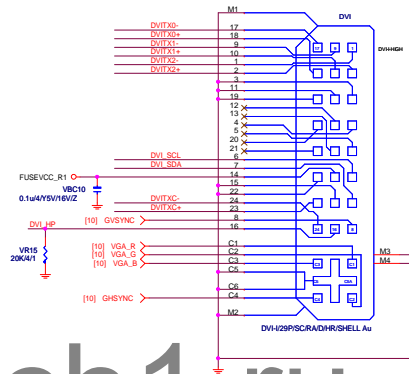
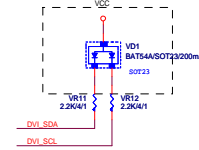


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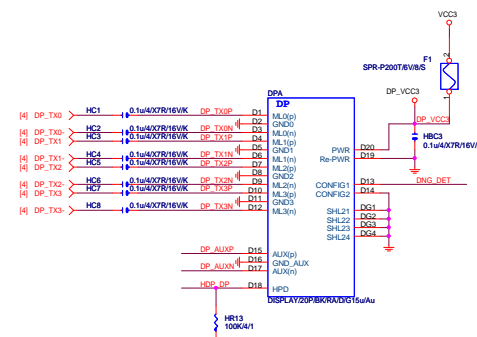
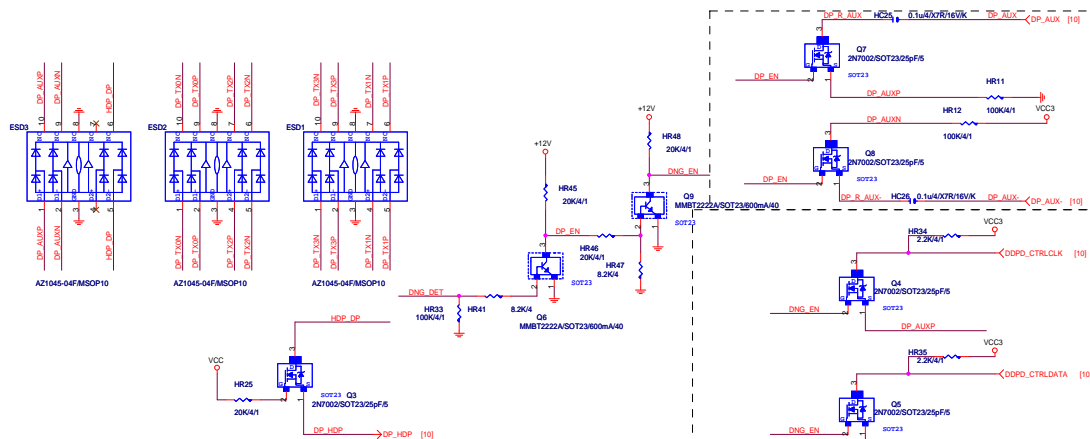
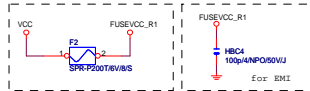


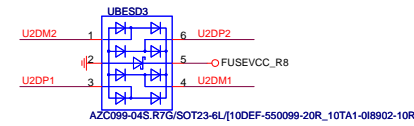
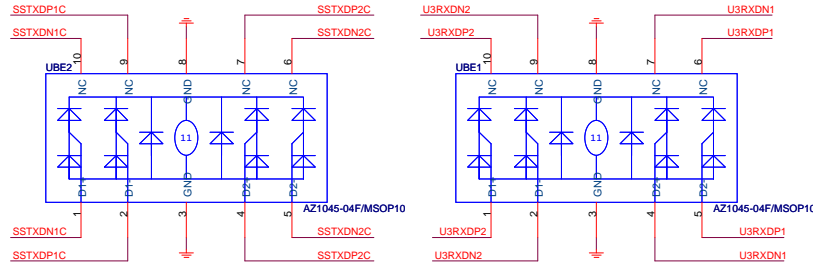
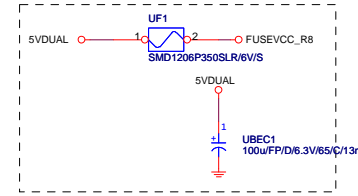
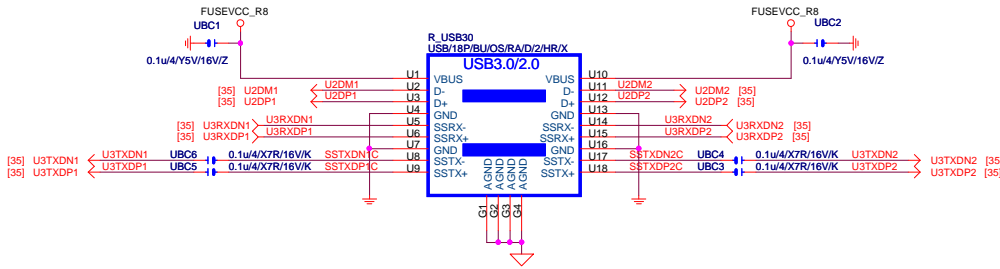


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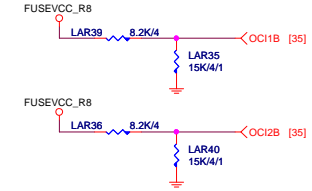


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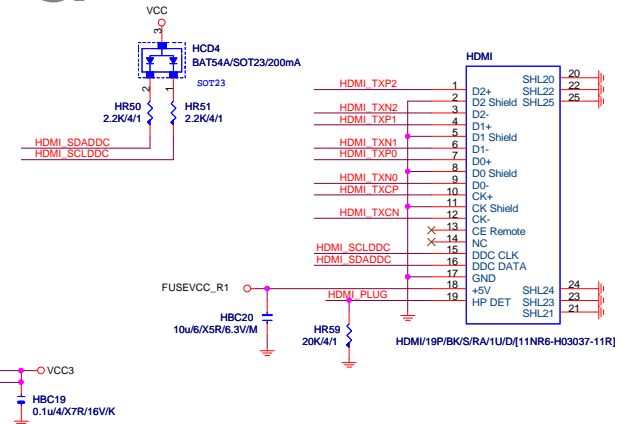
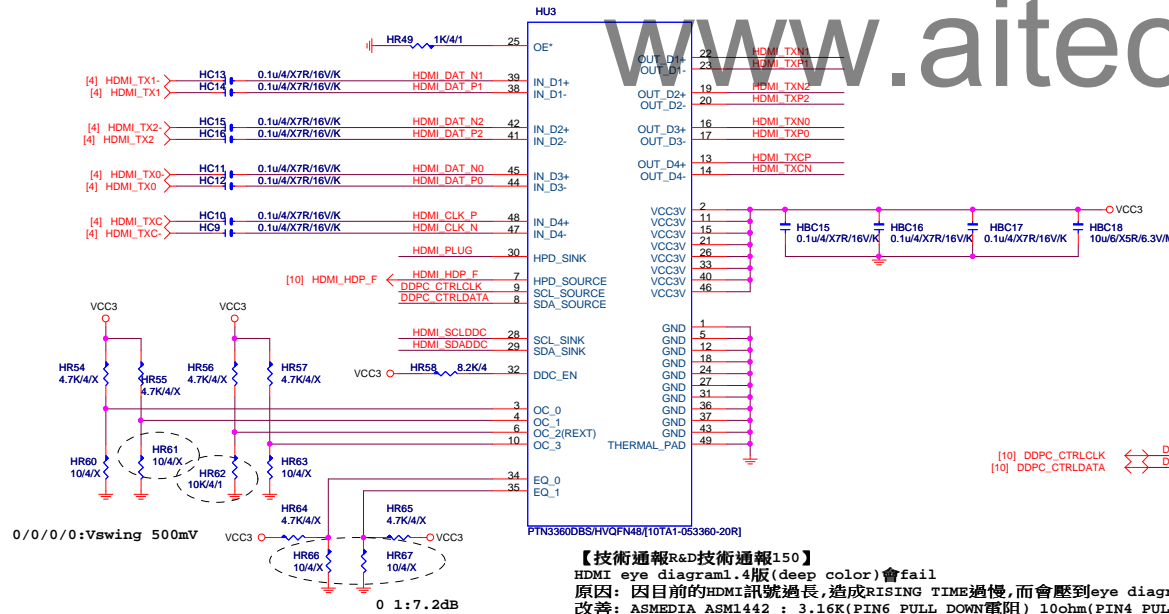




Close to connector



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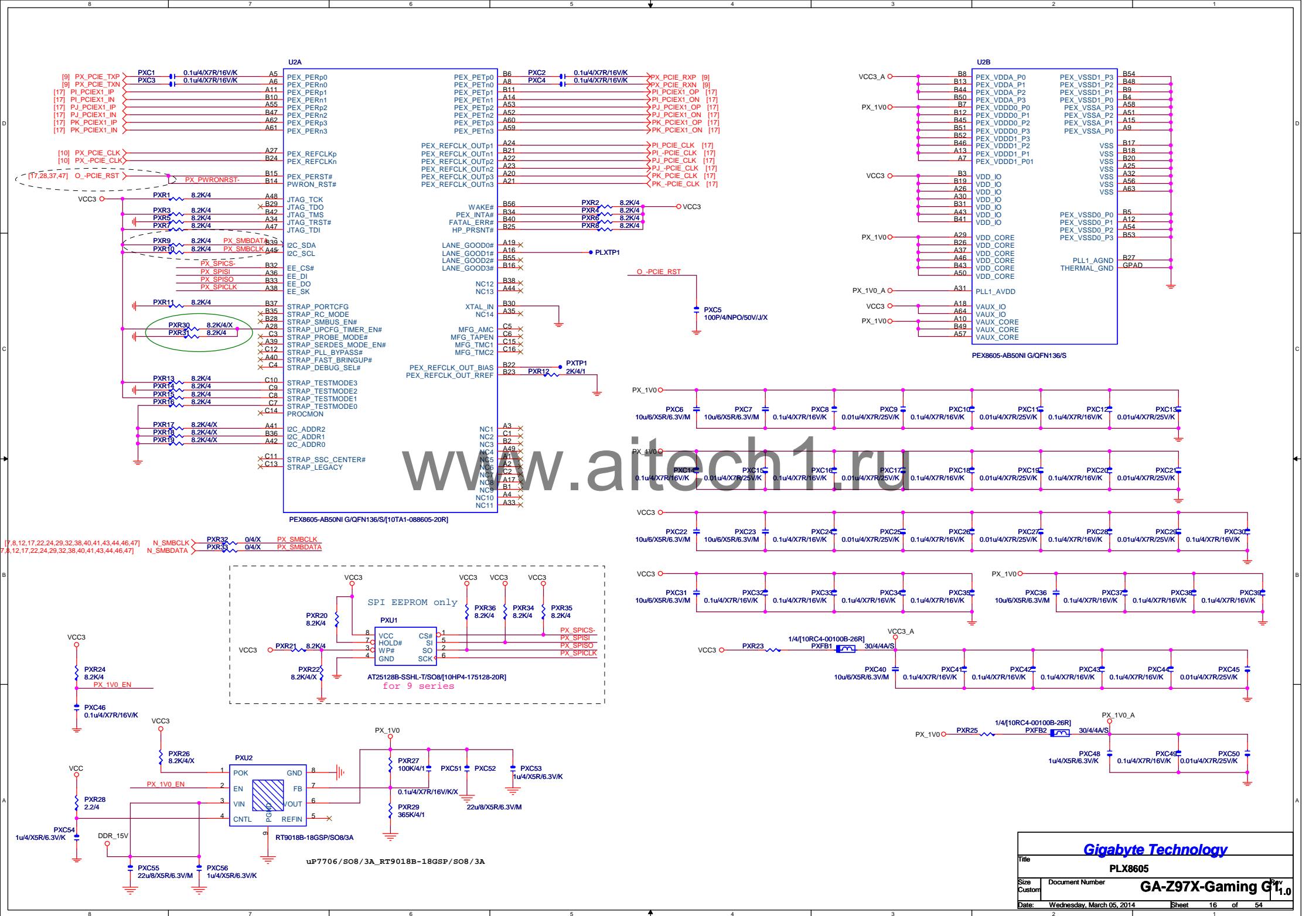
【技術通報R&D技術通報150】

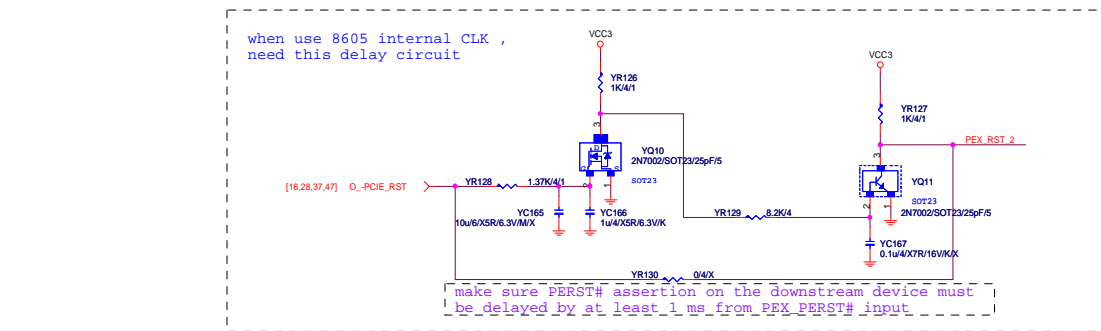
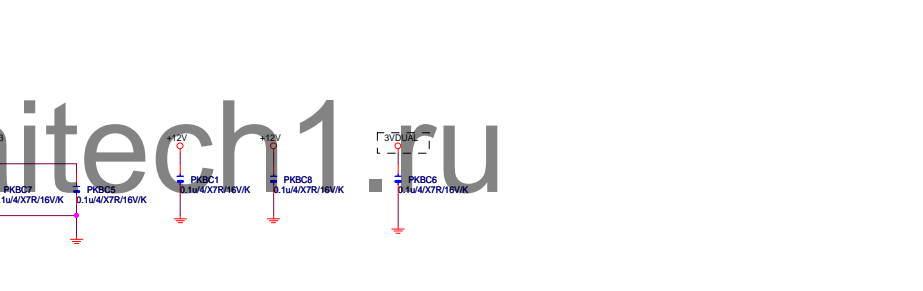
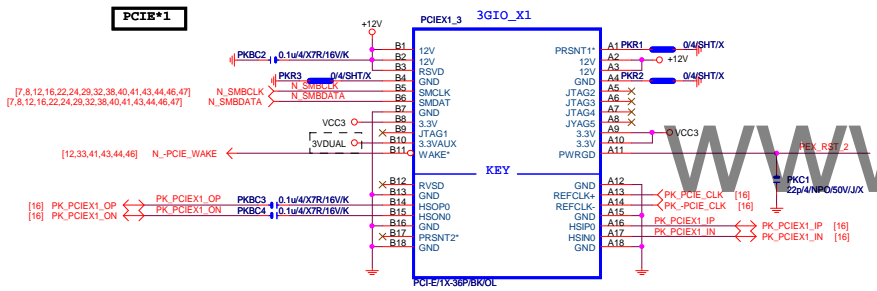
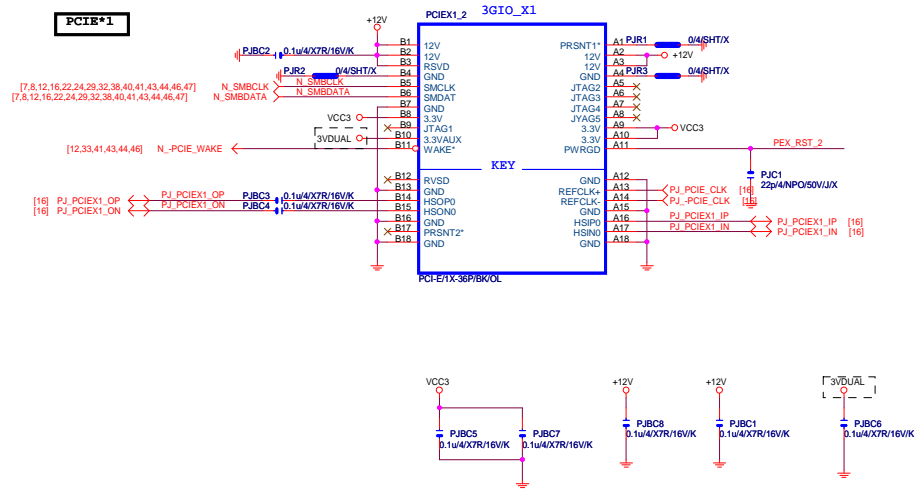
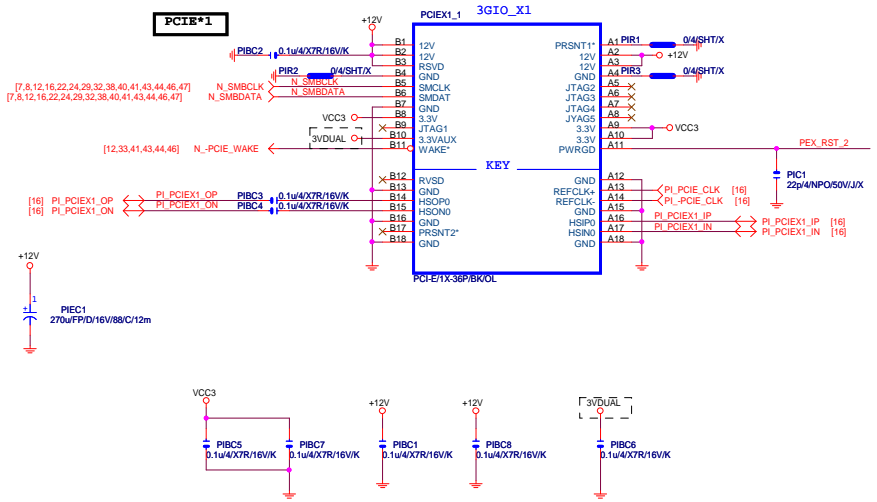
HDMI eye diagram 1.4版(deep color)會fail

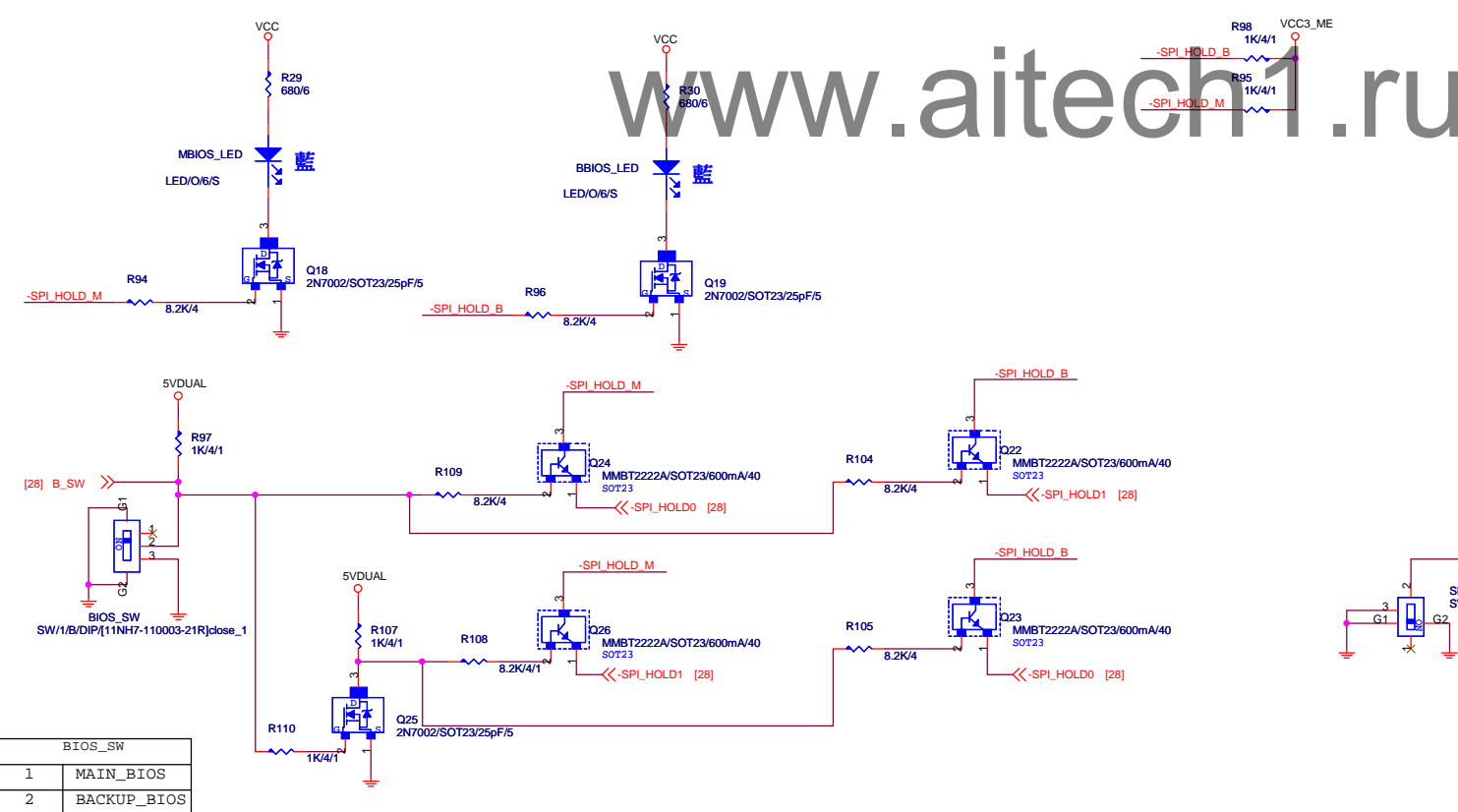
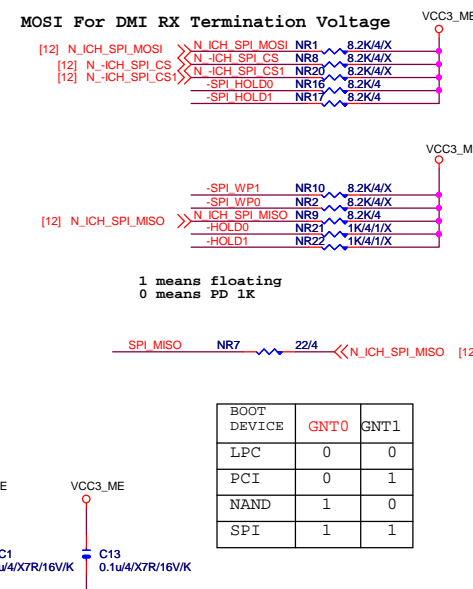
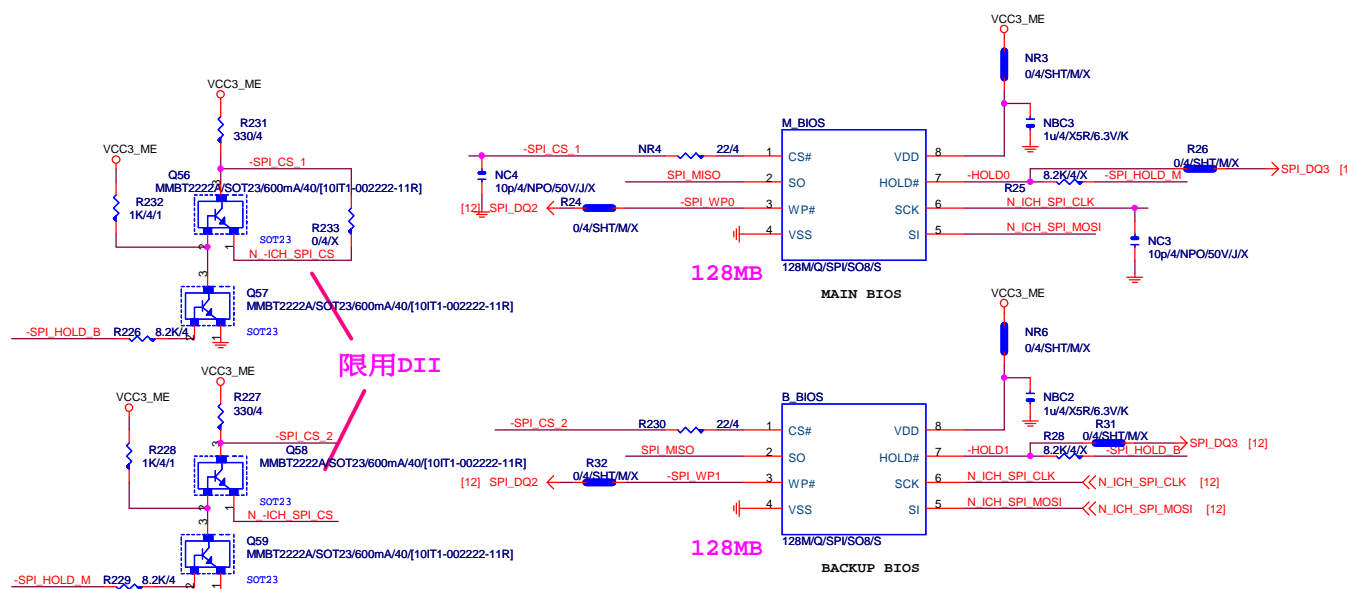
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram

改善: ASMEDIA ASML442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

Gigabyte Technology			
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BIOS Debug port

rev1.0 改MASK

SB: SINGLE BIOS

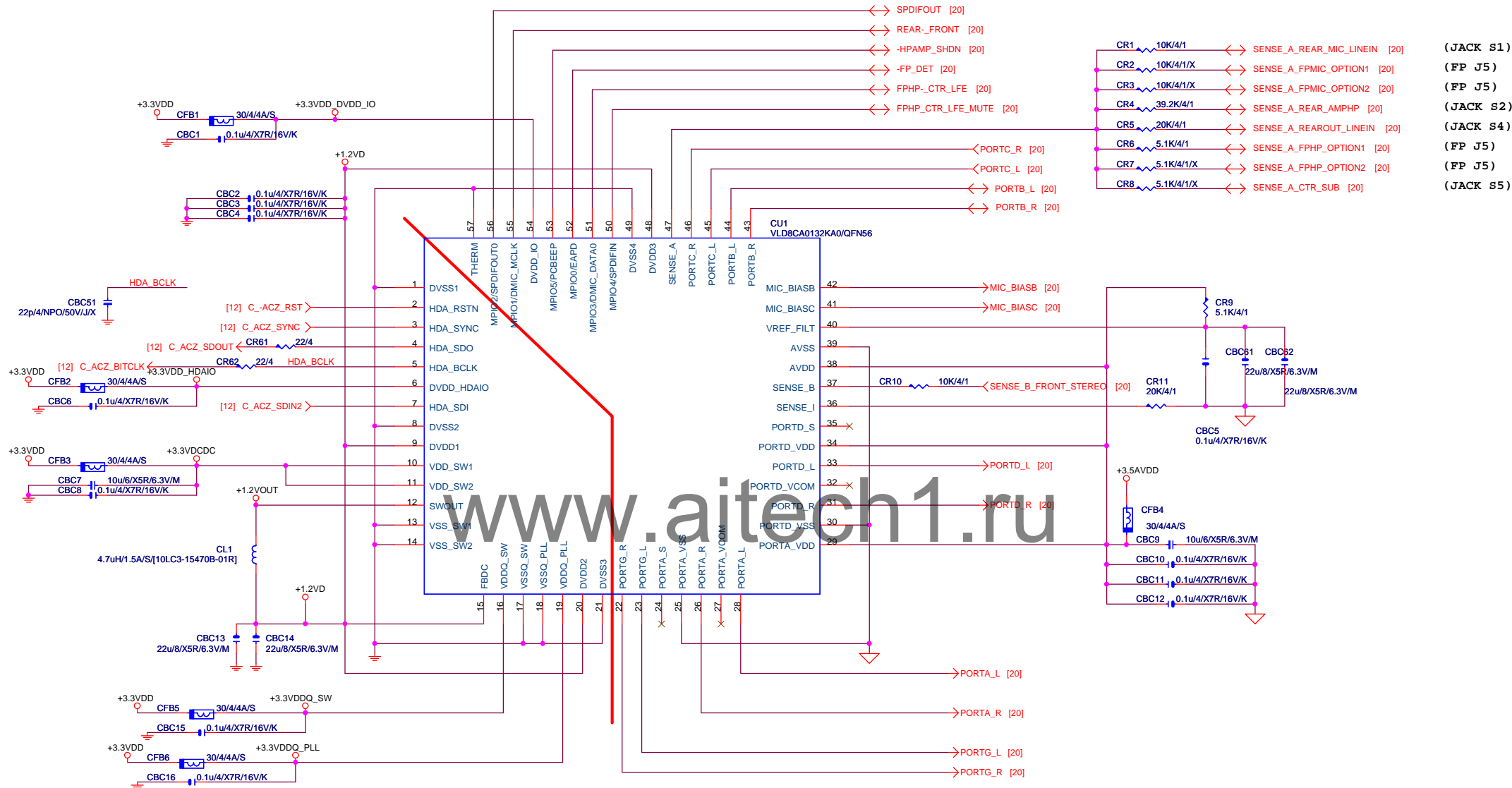
1	DISABLE
2	ENABLE

Gigabyte Technology

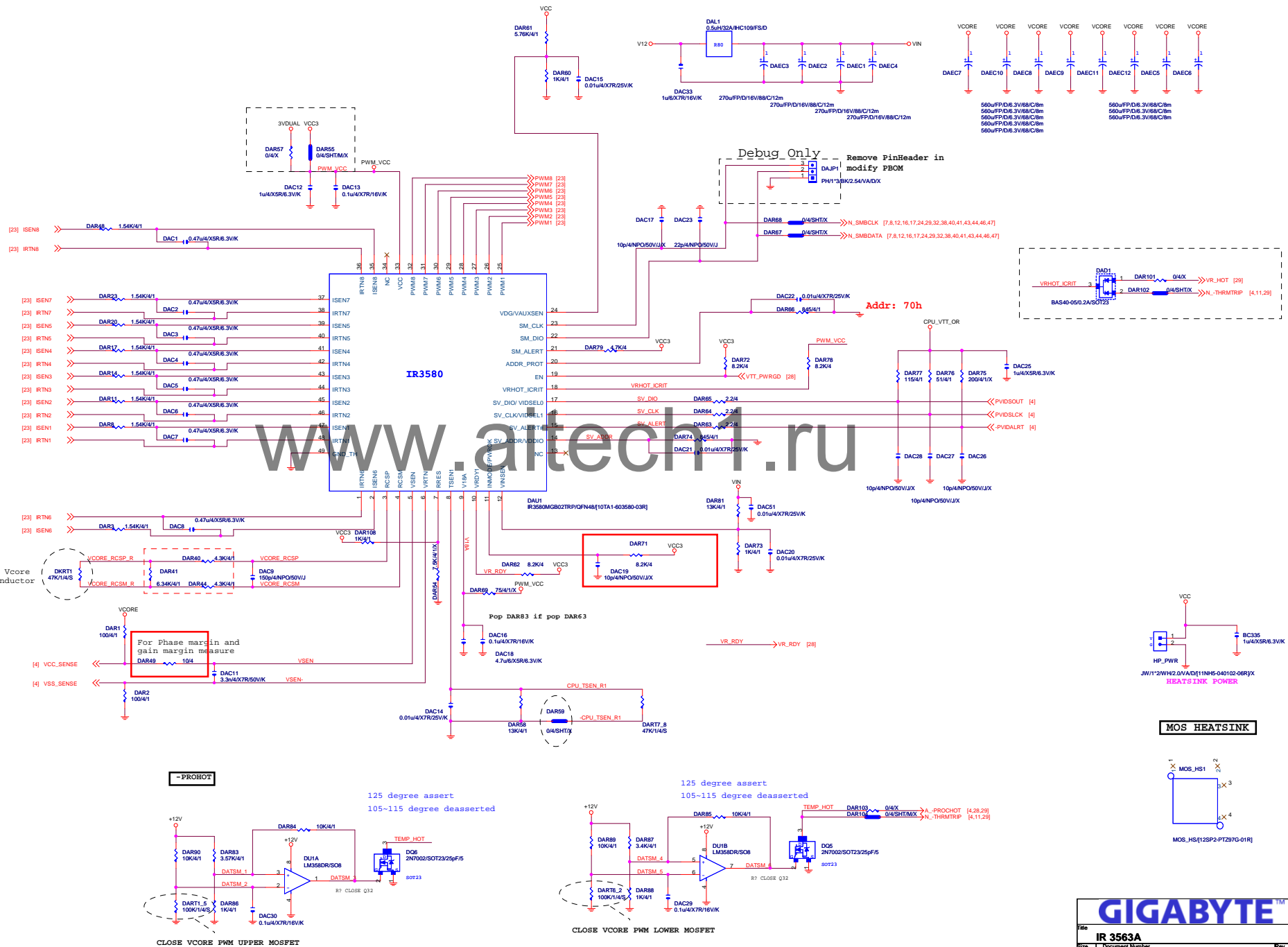
Dual BIOS

GA-Z97X-Gaming G1.0

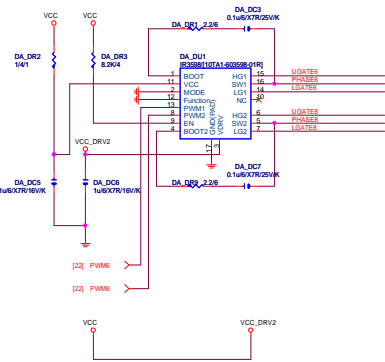
Date: Wednesday, March 05, 2014 Sheet 18 of 54



GIGABYTE™			
Title			
MALCOLM-EX			
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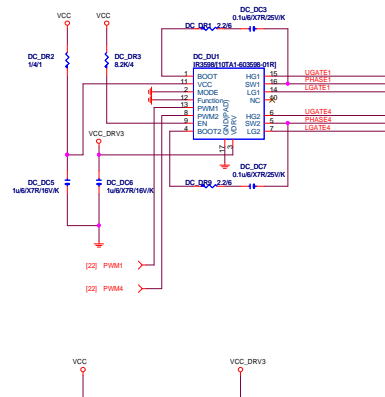
VCORE Phase 6,8



FUNCTION	MODE	PHASE	MODE
0	1	18	18
1	1	18	18
2	1	18	18
3	1	18	18
4	1	18	18
5	1	18	18
6	1	18	18
7	1	18	18
8	1	18	18
9	1	18	18
10	1	18	18
11	1	18	18
12	1	18	18
13	1	18	18
14	1	18	18
15	1	18	18
16	1	18	18
17	1	18	18
18	1	18	18
19	1	18	18
20	1	18	18
21	1	18	18
22	1	18	18
23	1	18	18
24	1	18	18
25	1	18	18
26	1	18	18
27	1	18	18
28	1	18	18
29	1	18	18
30	1	18	18
31	1	18	18

In Quad mode, IC1 pin10 link to IC2 pin10
IC1 pin1 link to IC2 pin1 without PS

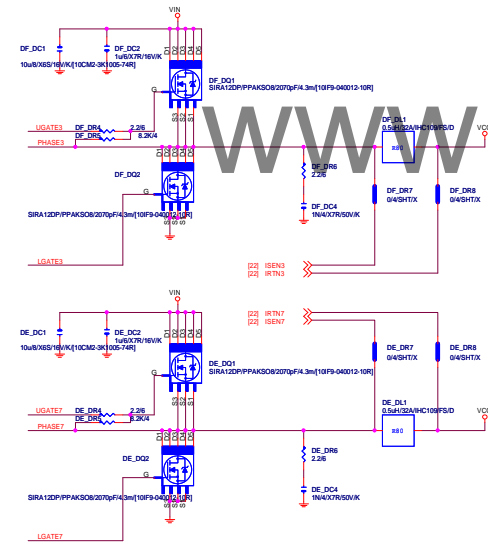
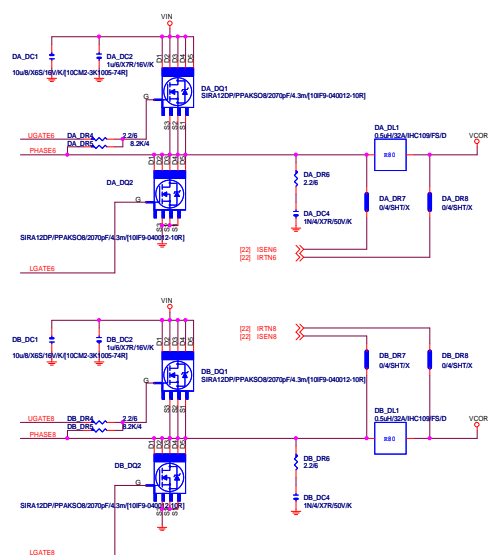
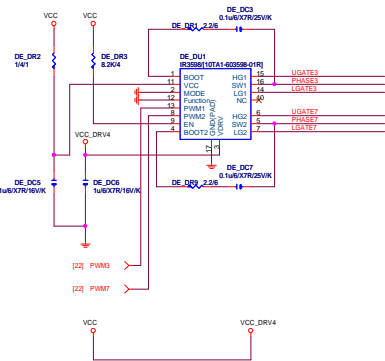
VCORE Phase 1,4



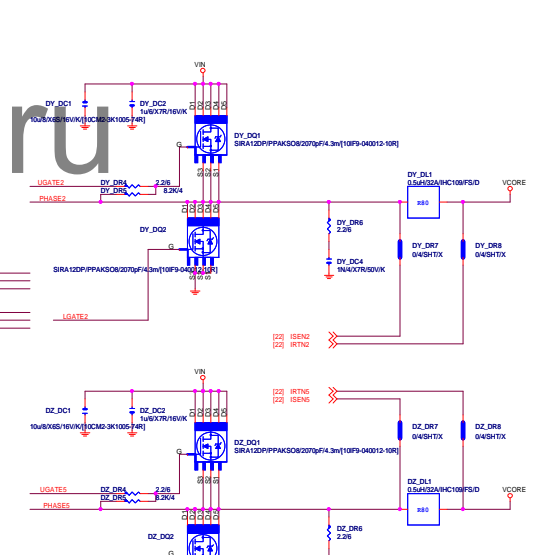
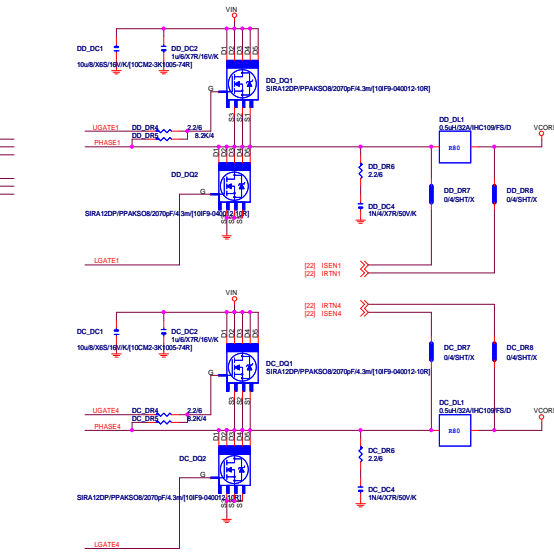
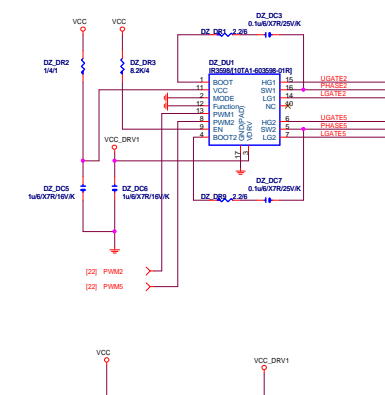
FUNCTION	MODE	PHASE	MODE
0	1	18	18
1	1	18	18
2	1	18	18
3	1	18	18
4	1	18	18
5	1	18	18
6	1	18	18
7	1	18	18
8	1	18	18
9	1	18	18
10	1	18	18
11	1	18	18
12	1	18	18
13	1	18	18
14	1	18	18
15	1	18	18
16	1	18	18
17	1	18	18
18	1	18	18
19	1	18	18
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24	1	18	18
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31	1	18	18

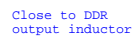
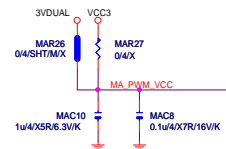
In Quad mode, IC1 pin10 link to IC2 pin10
IC1 pin1 link to IC2 pin1 without PS

VCORE Phase 3,7

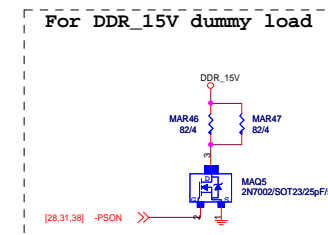
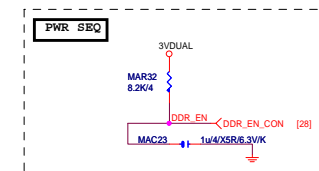
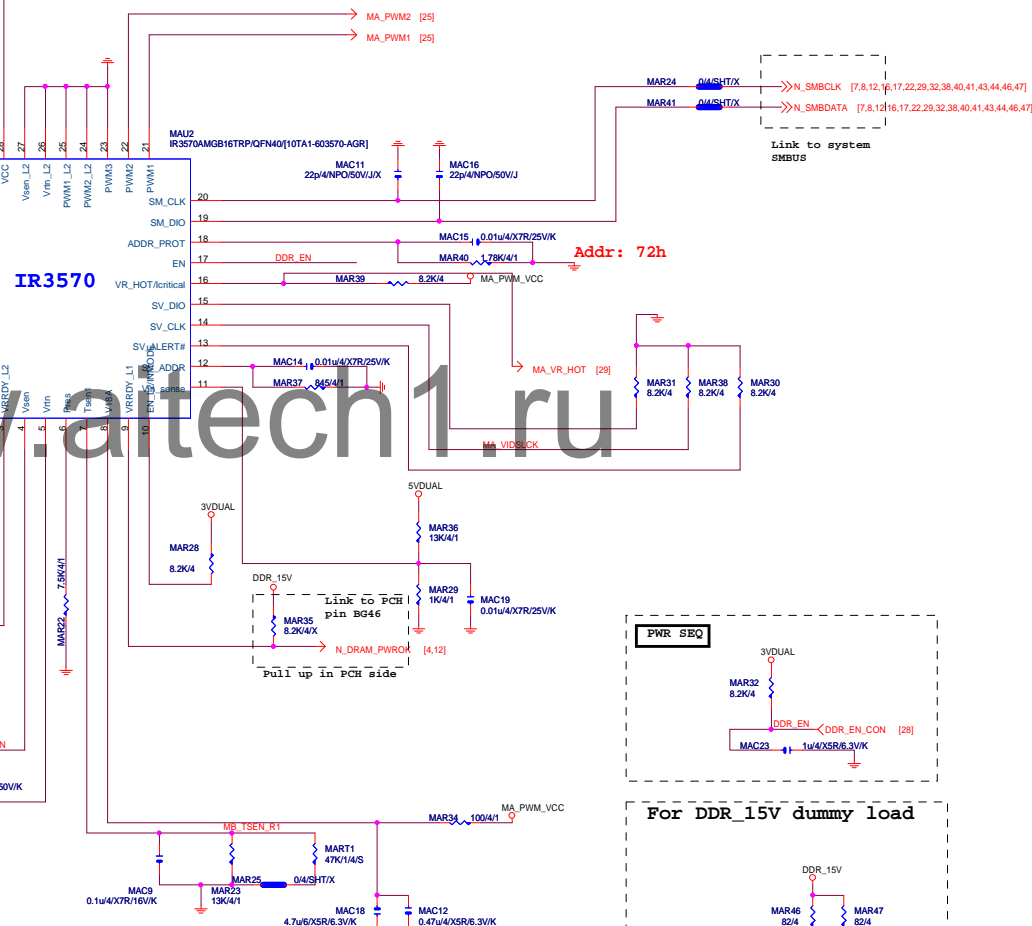
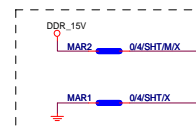


VCORE Phase 2,5

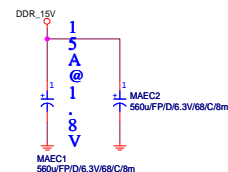
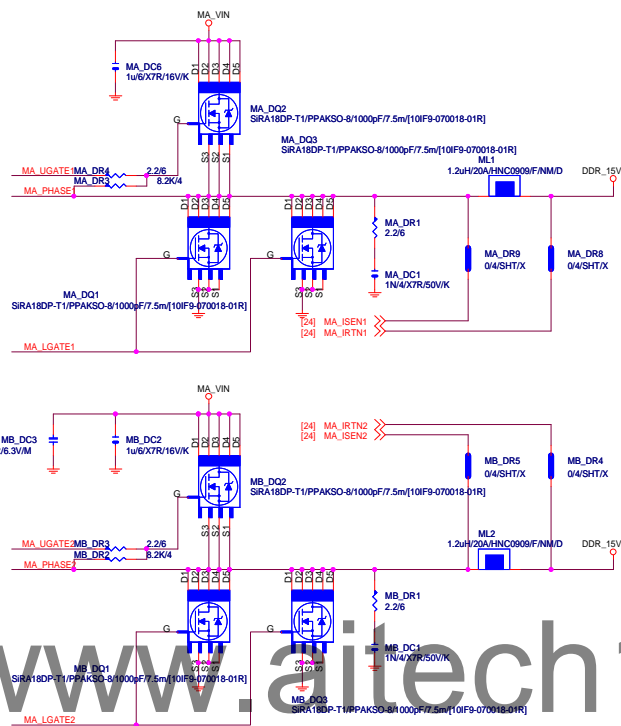
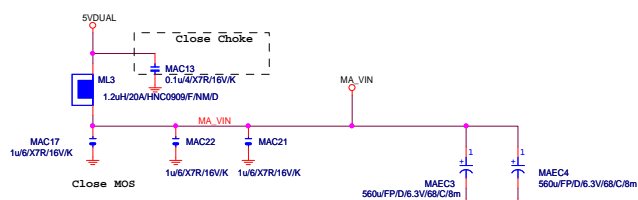
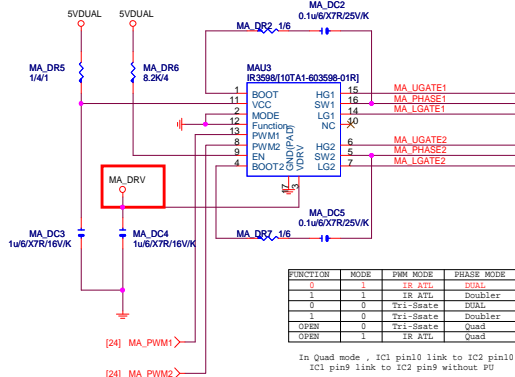


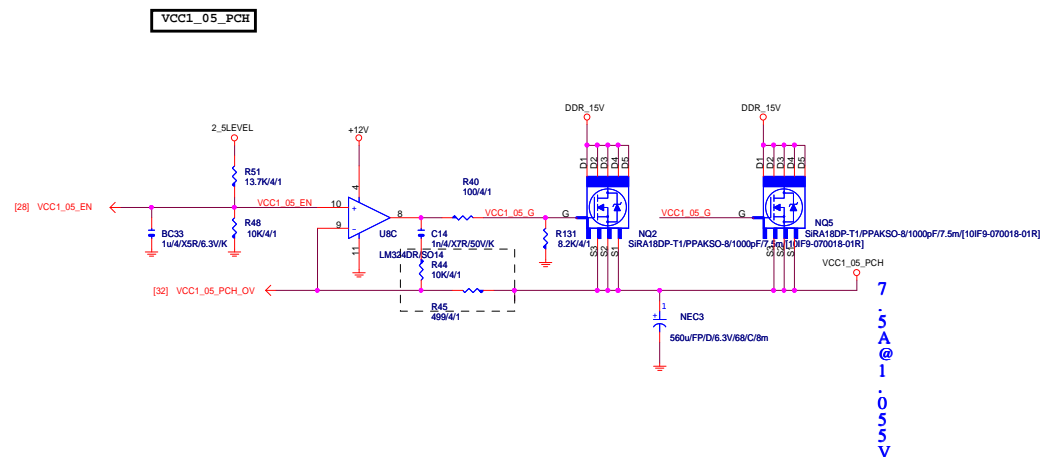


should be routed as
differential pair,
7mil width, 8mil
spacing

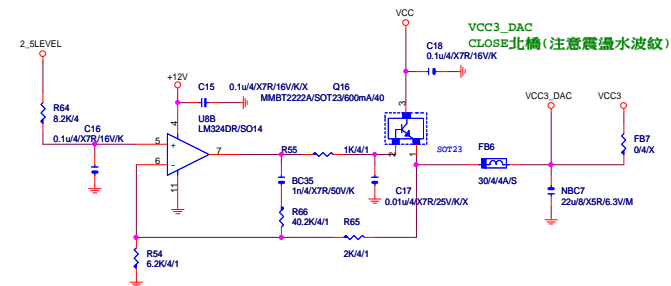


DDR_15V





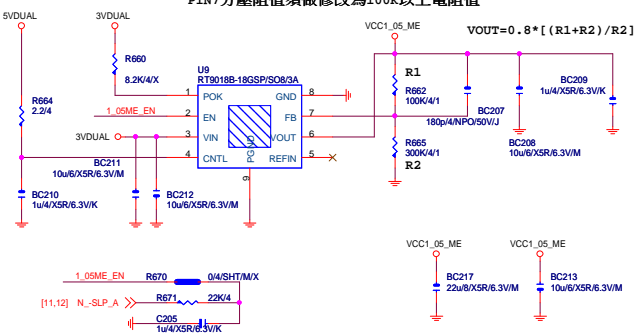
VCC3_DAC
(3.3V/70mA+360uA)



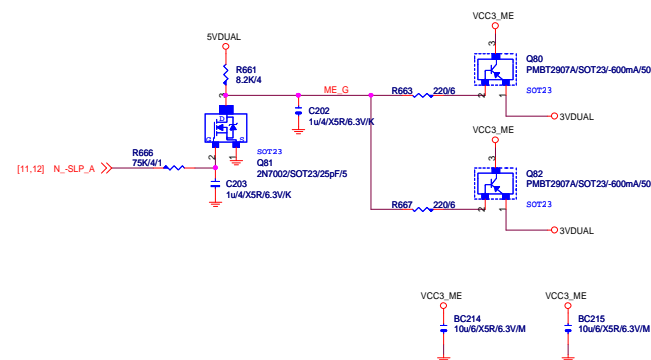
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VCC1_05_ME

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

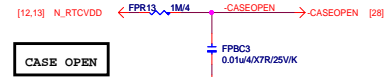
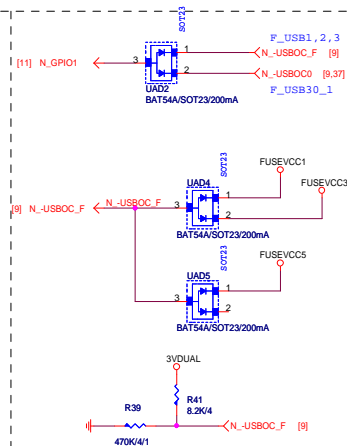
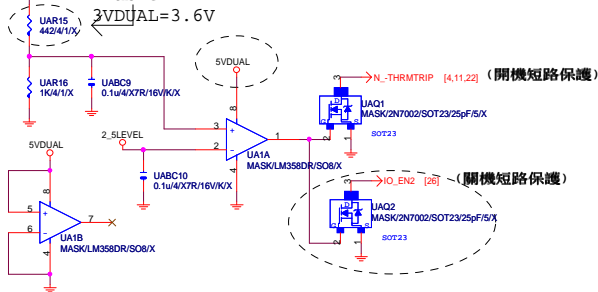


VCC3_ME

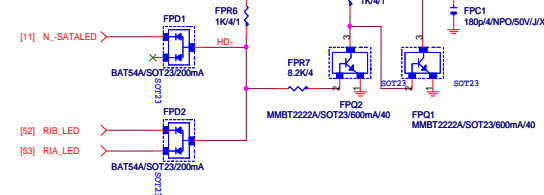


USB2.0 Signal & power short protection

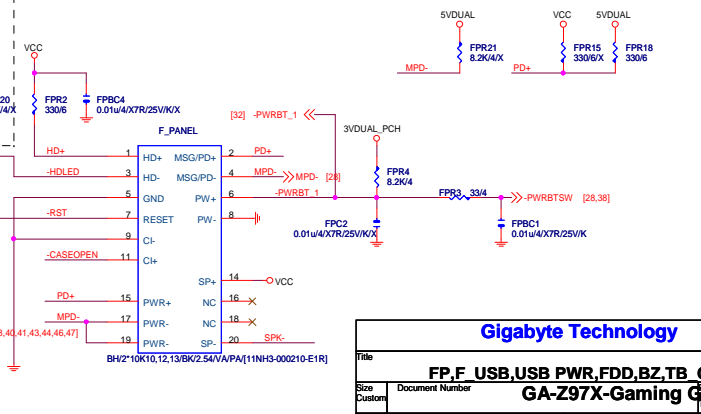
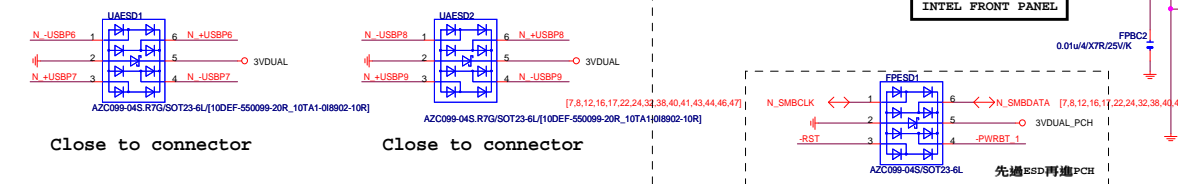
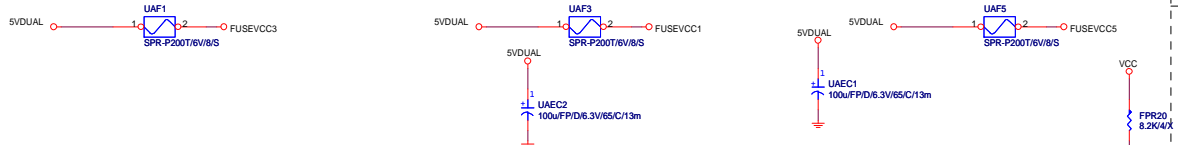
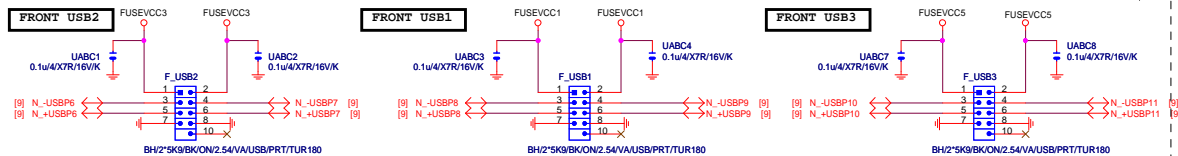
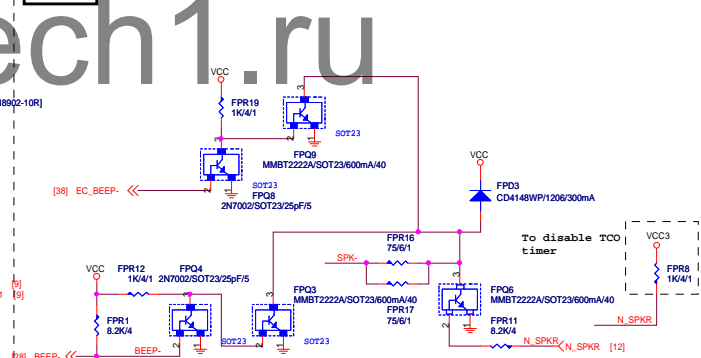
USB2.0 Signal > 4.85V
Enable -->
3VDUAL=3.6V

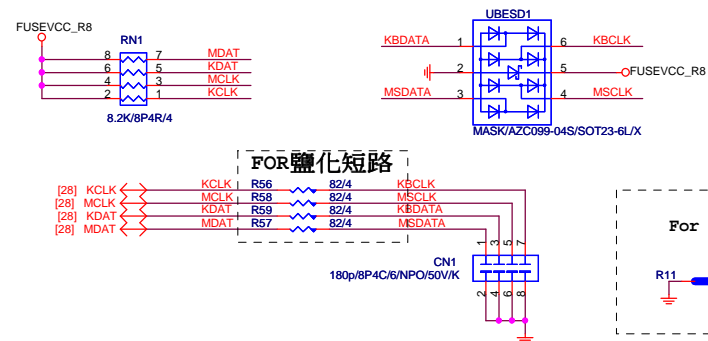
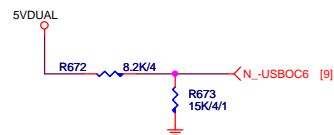
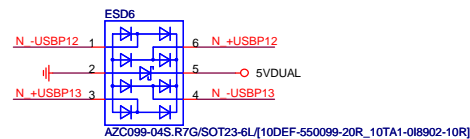
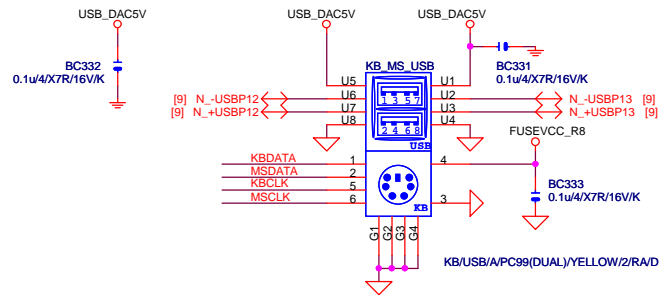


SATA LED

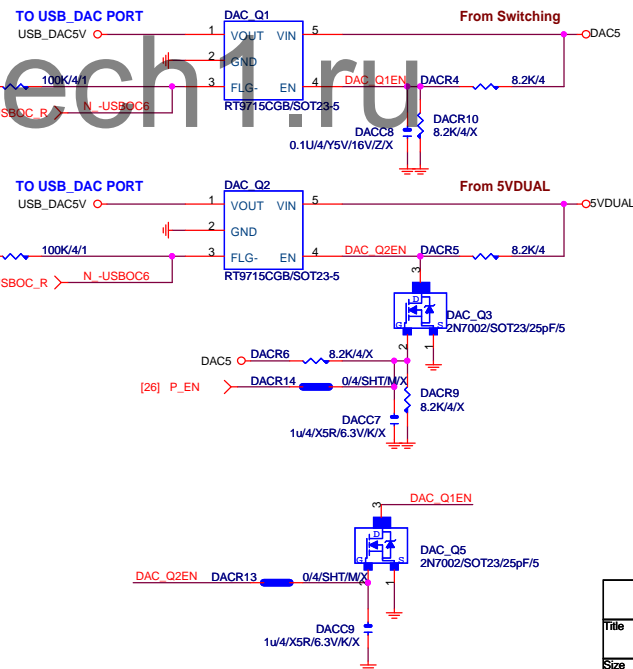
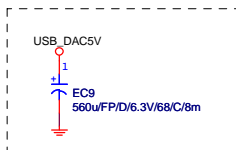
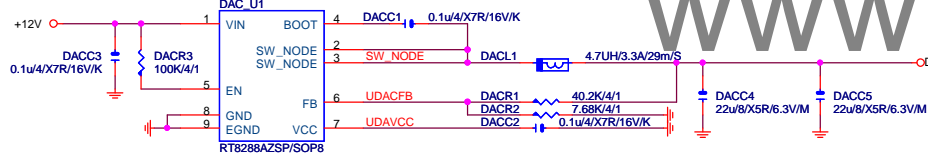


SPEAKER





USB_DAC

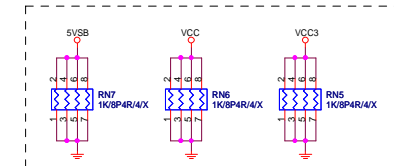
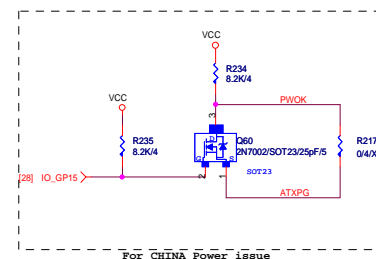
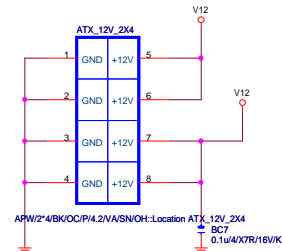


DAC power disable by resume GPIO

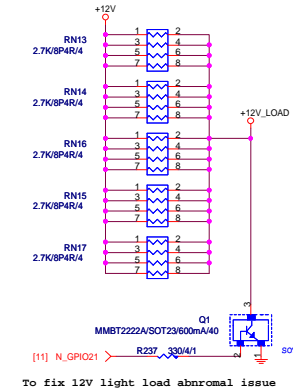
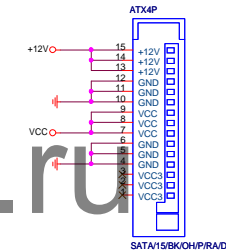
Gigabyte Technology

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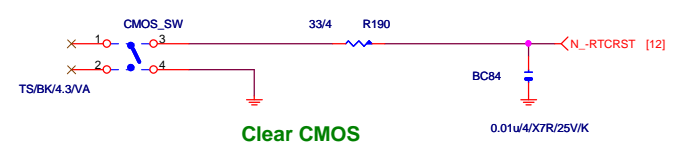
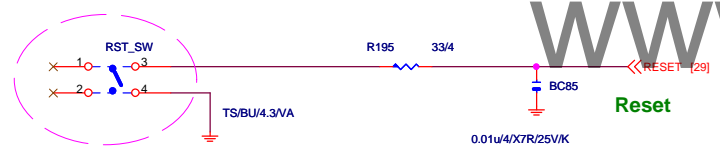
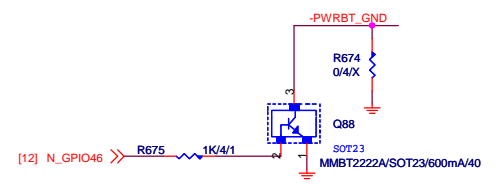
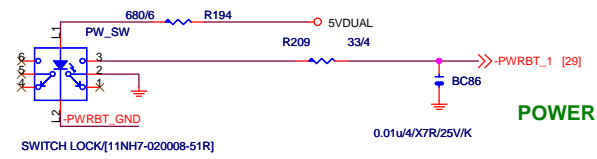
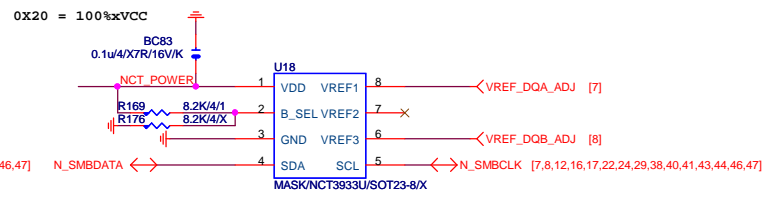
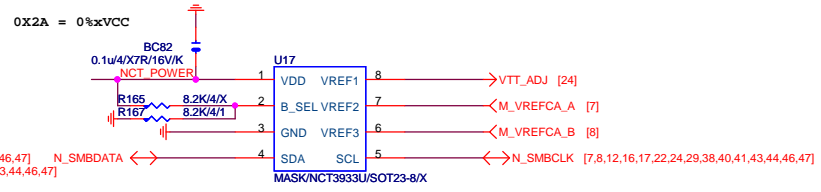
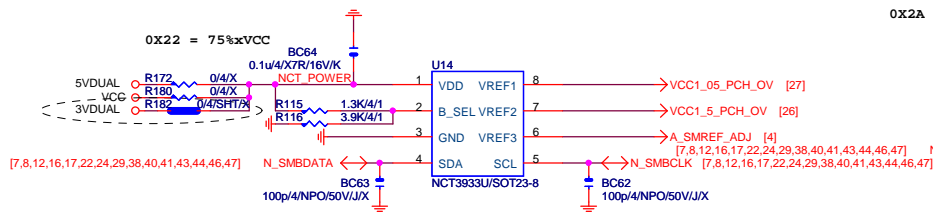


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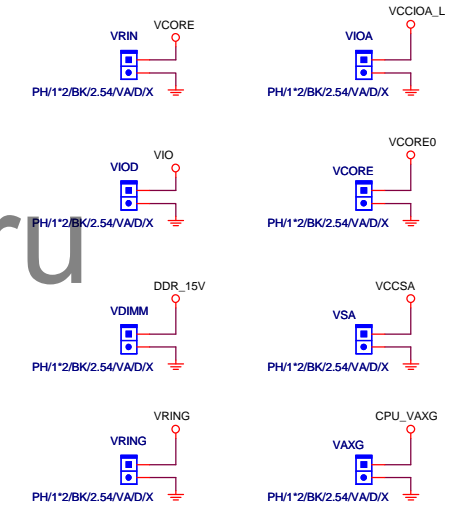
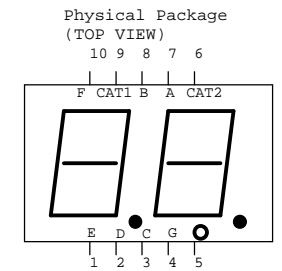
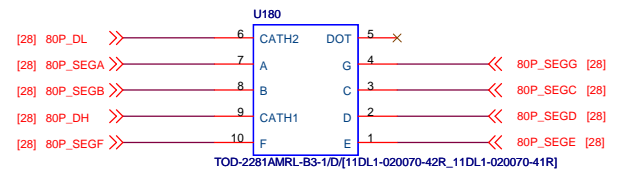
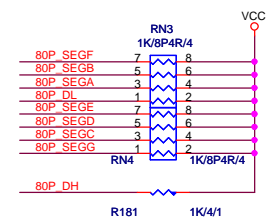


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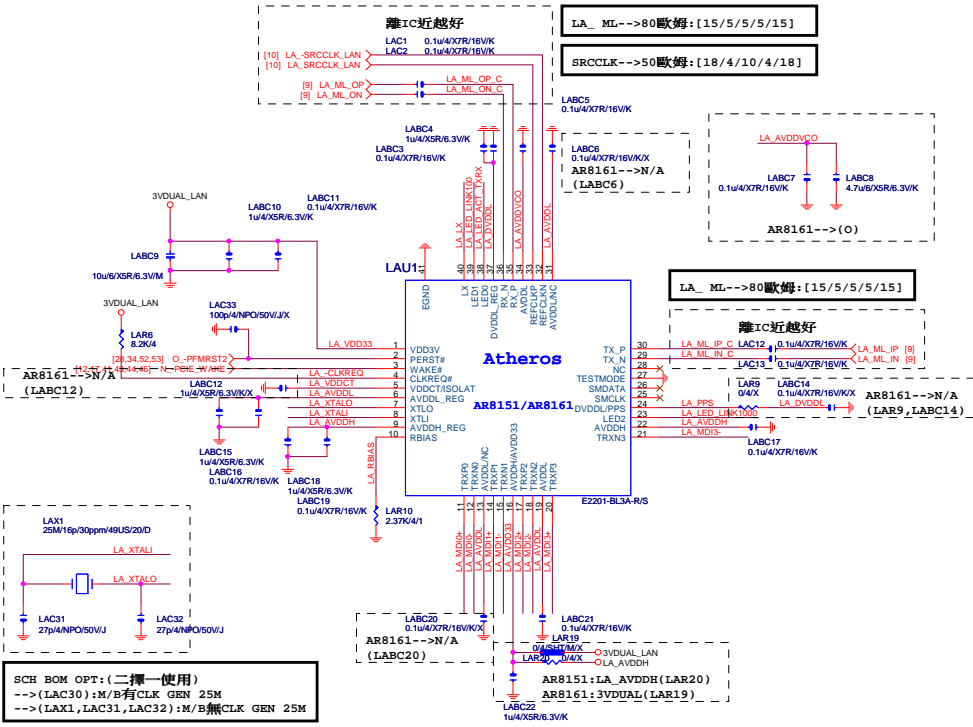


80 PORT

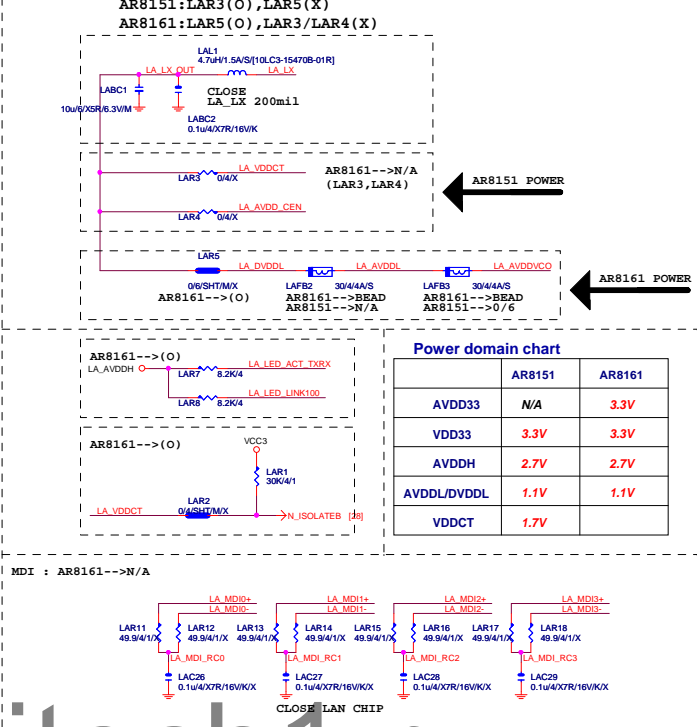


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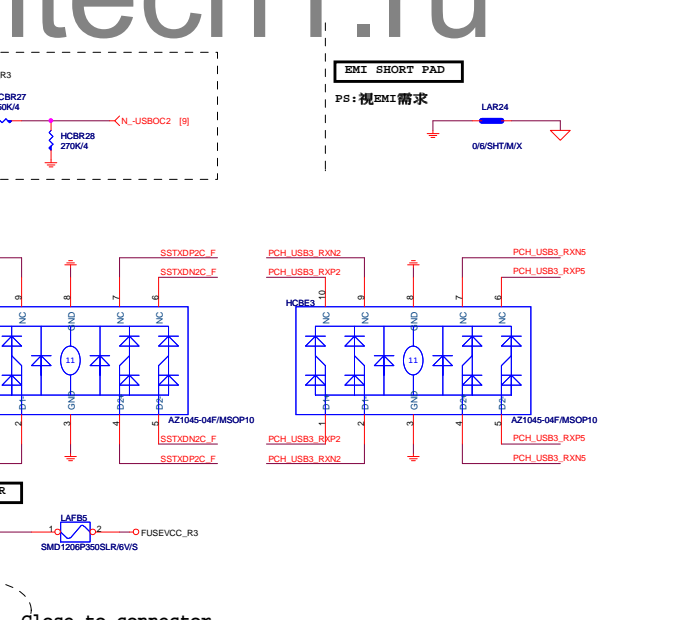
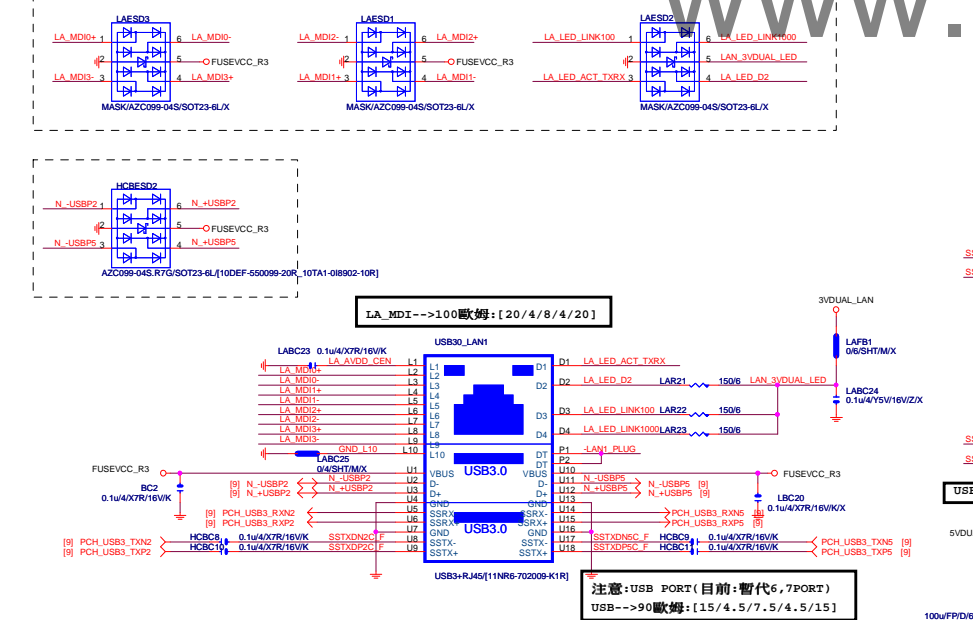
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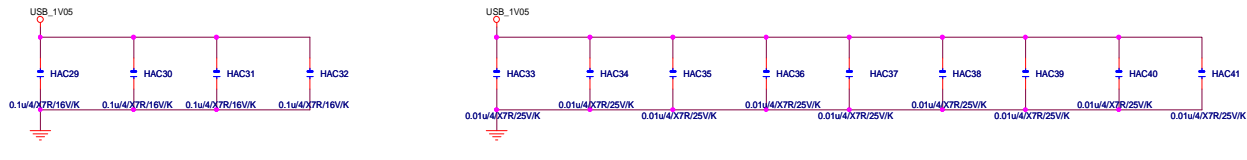
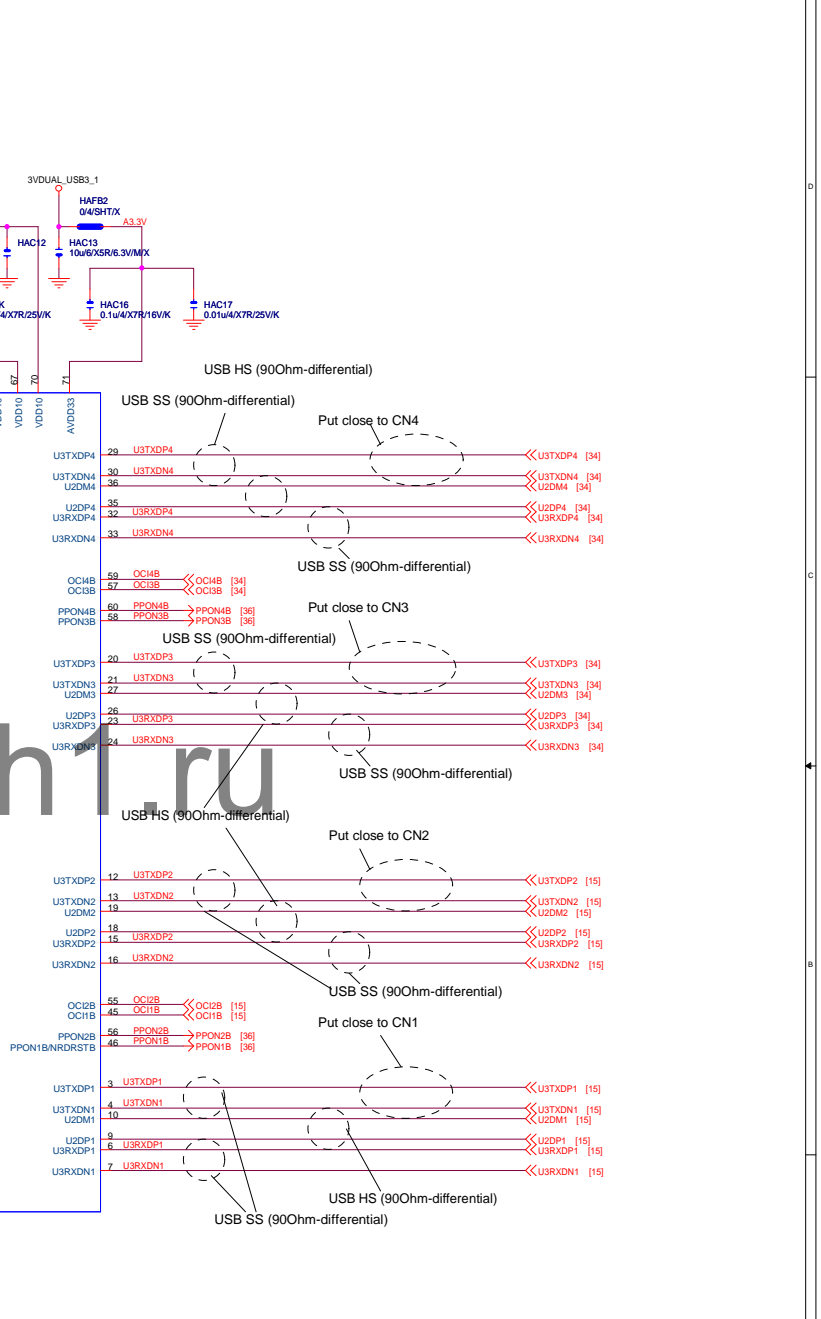
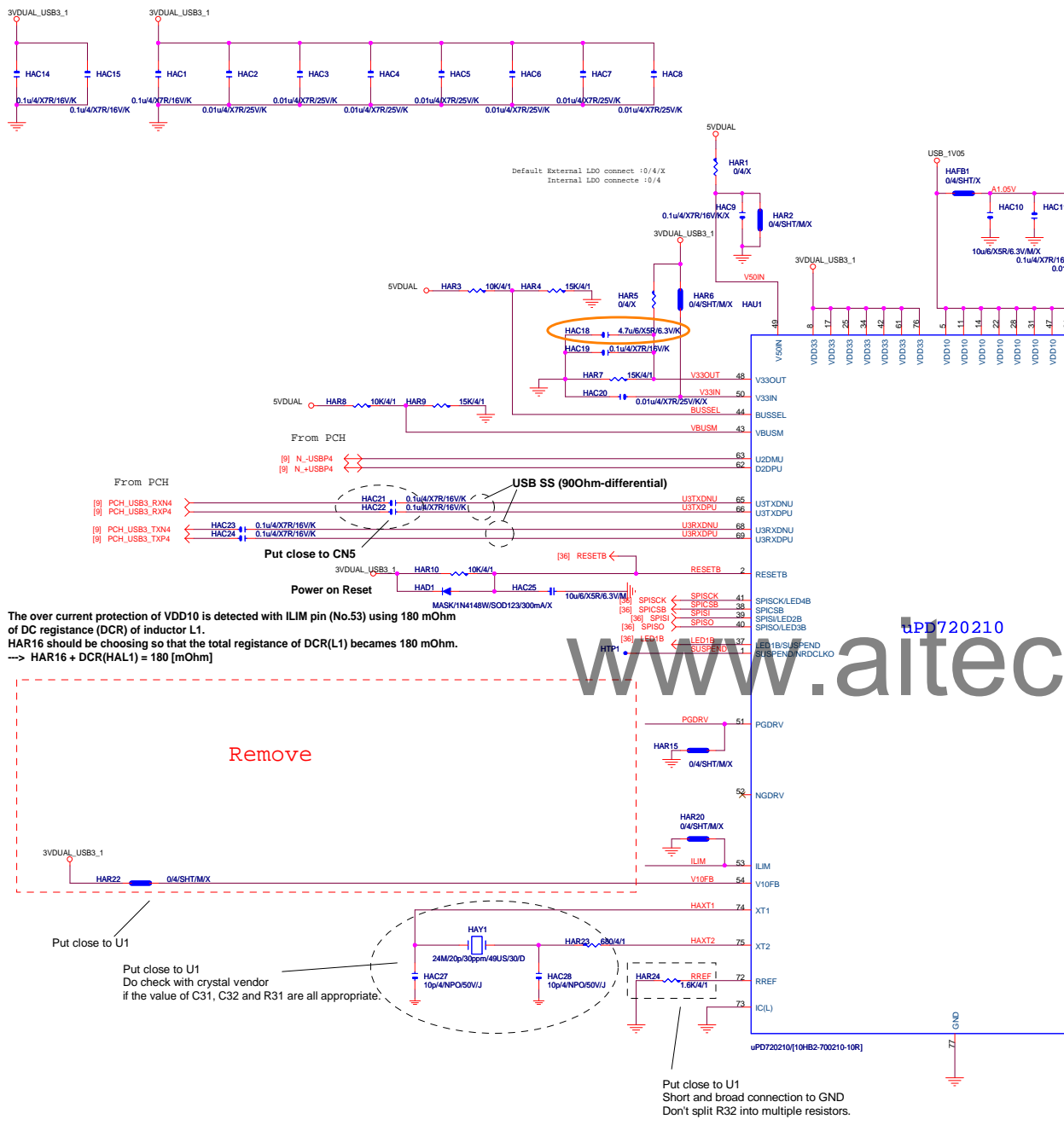


LAN POWER

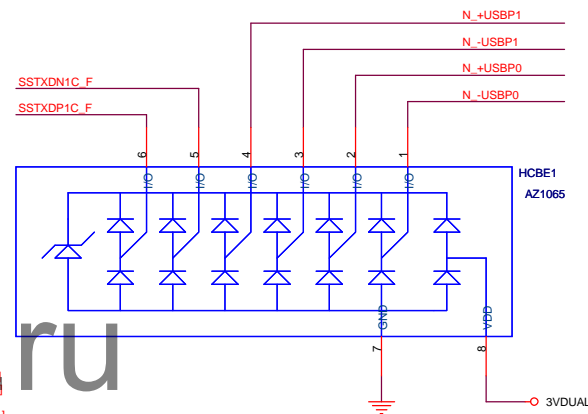
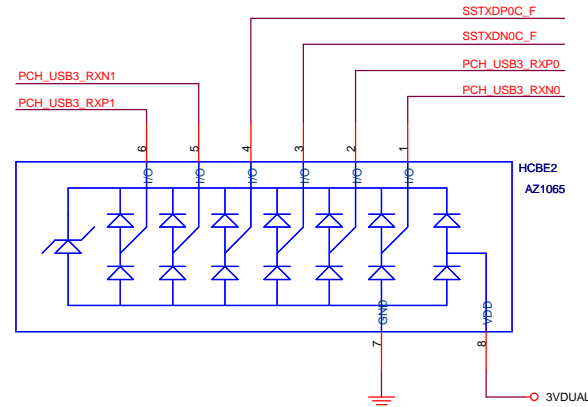
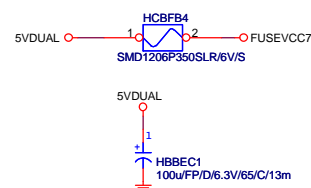


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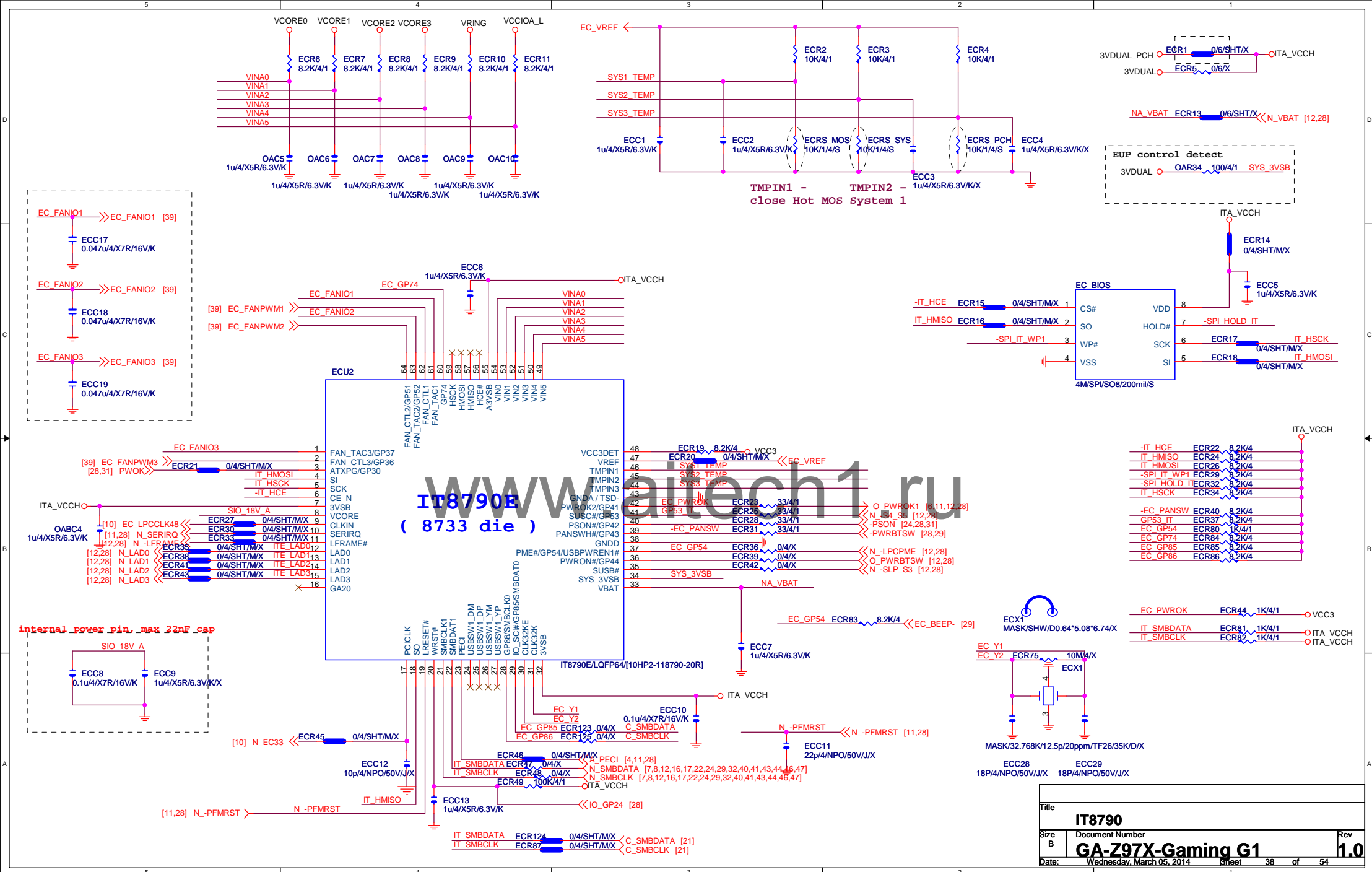


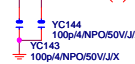
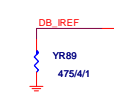
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D720210 4port_Hub			
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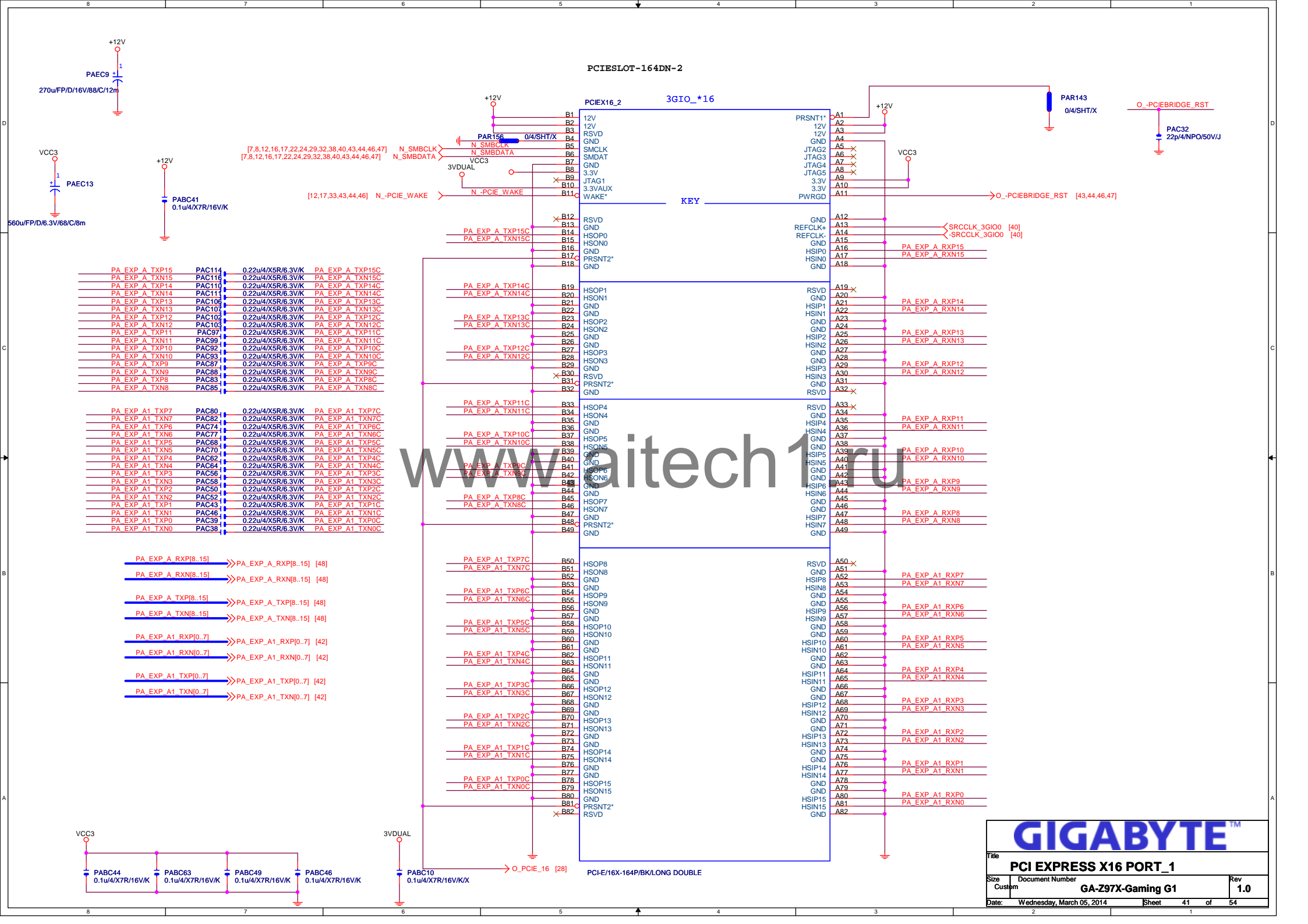
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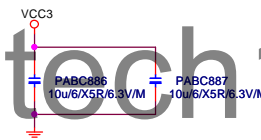
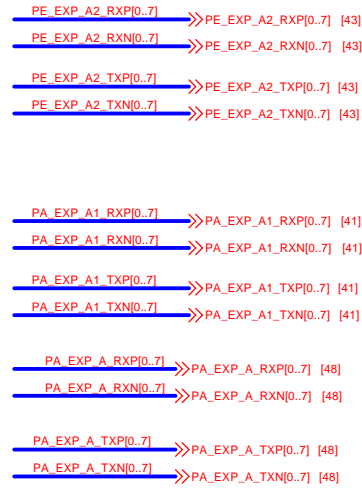


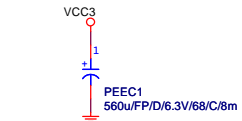
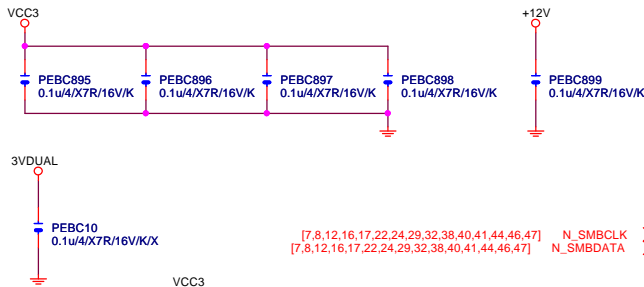




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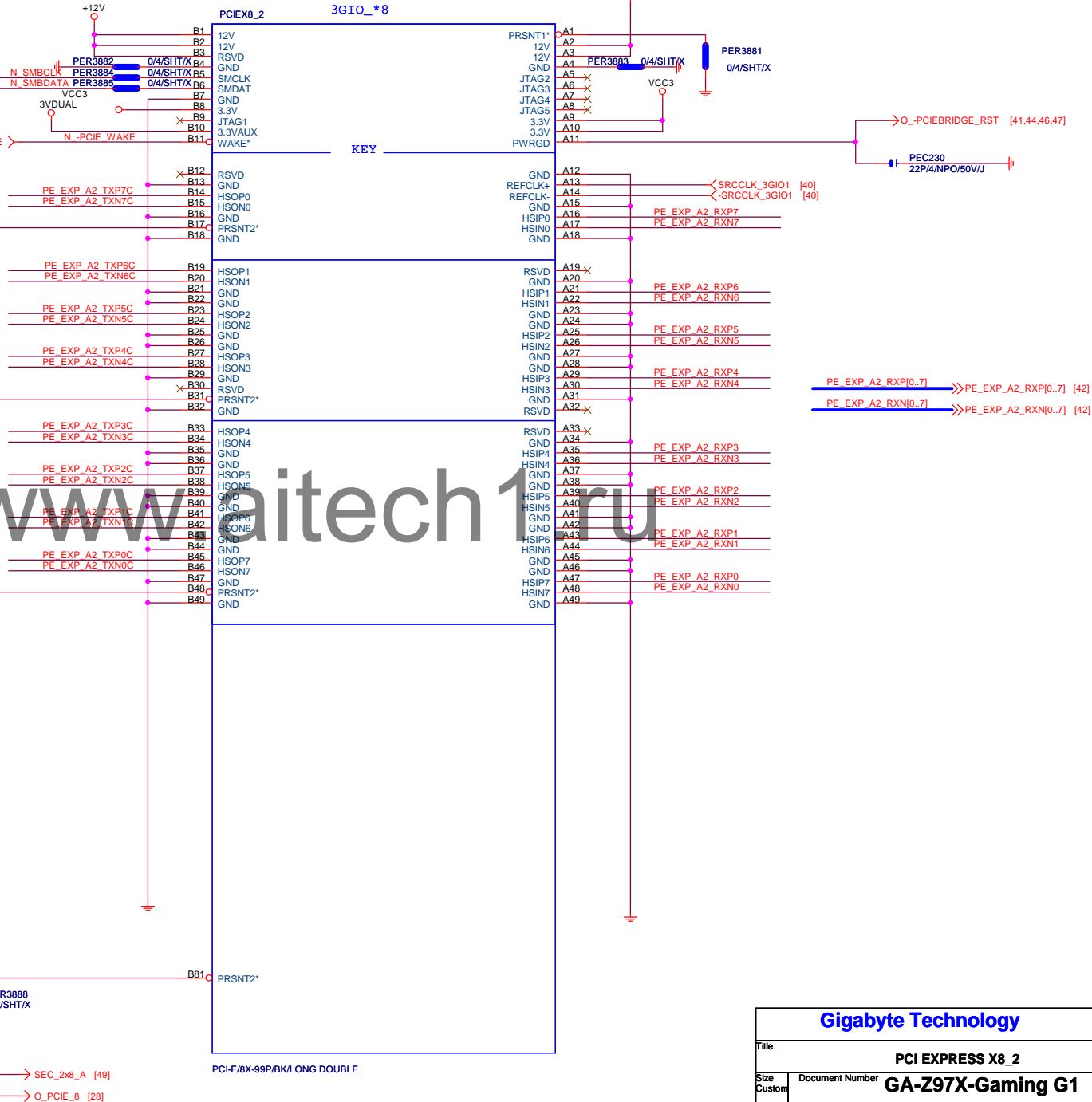
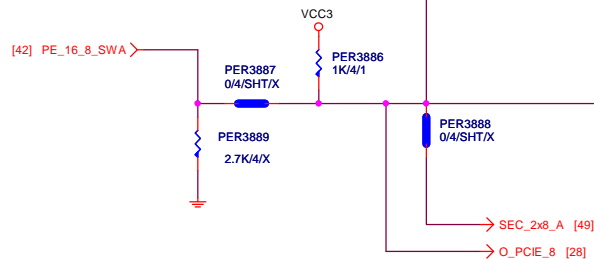


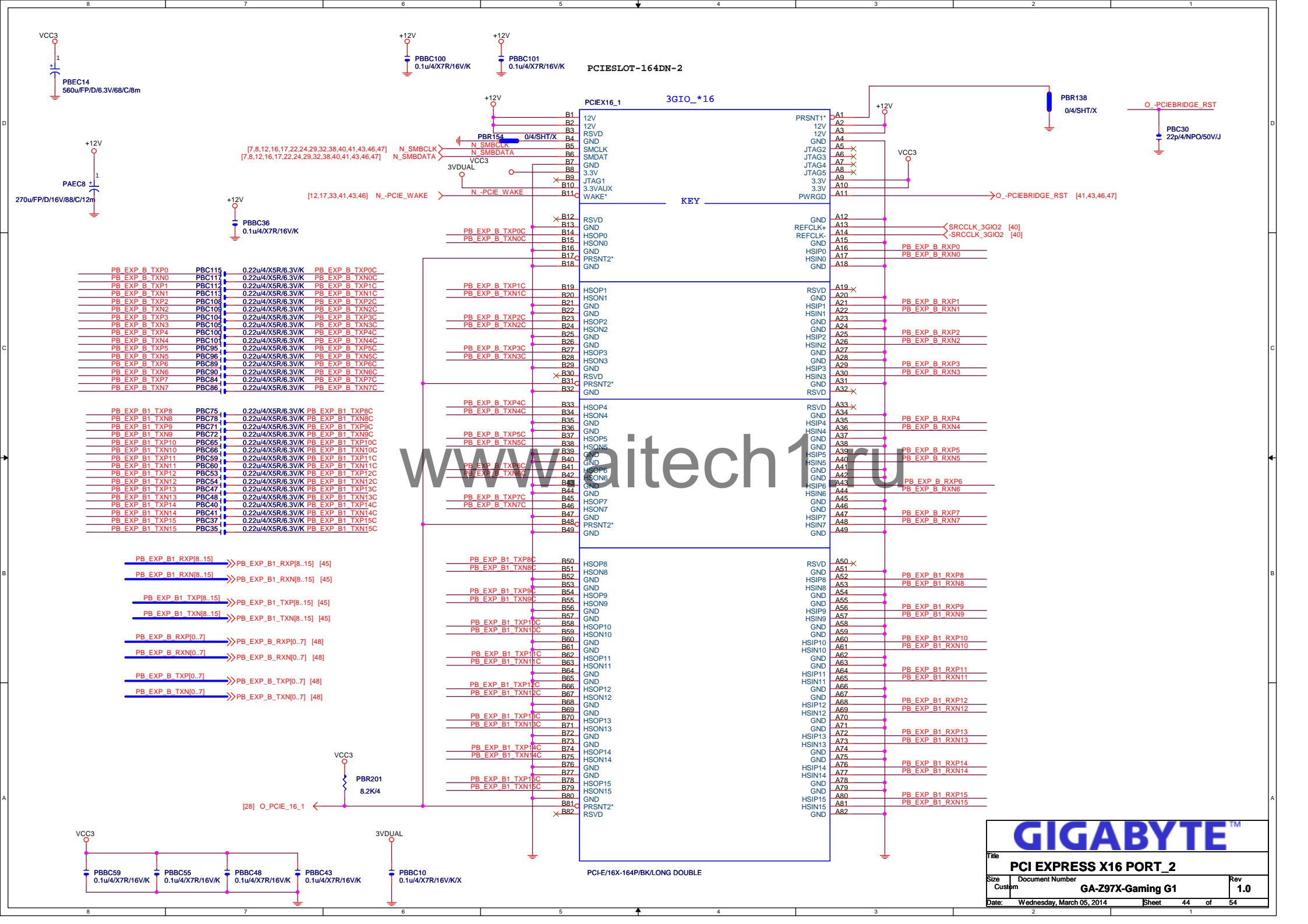


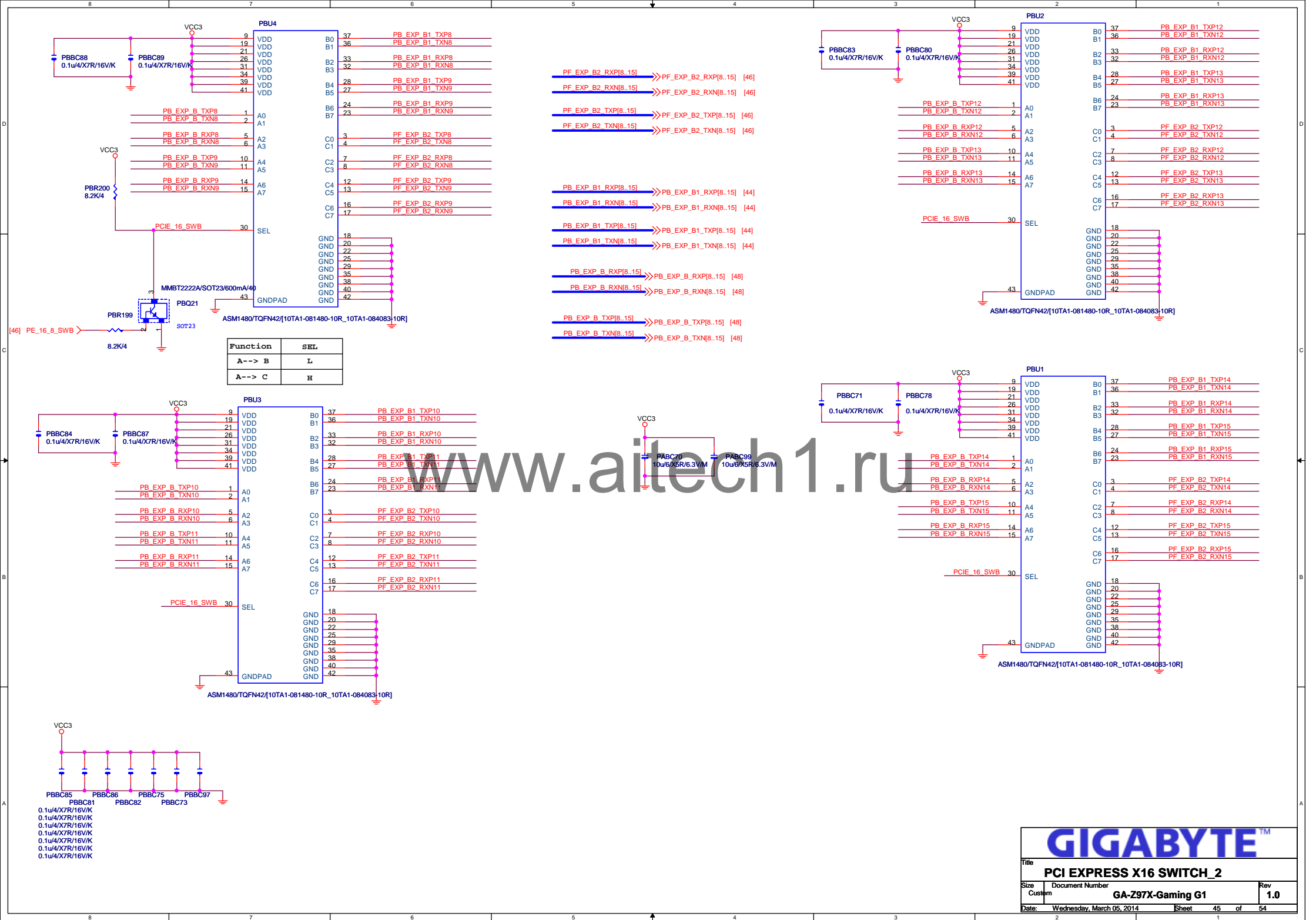


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PE_EXP_A2_TXN[0..7] >> PE_EXP_A2_TXN[0..7] [42]

PE_EXP_A2_TXP7	PEC231	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP7C
PE_EXP_A2_TXN7	PEC232	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN7C
PE_EXP_A2_TXP6	PEC233	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP6C
PE_EXP_A2_TXN6	PEC234	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN6C
PE_EXP_A2_TXP5	PEC235	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP5C
PE_EXP_A2_TXN5	PEC236	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN5C
PE_EXP_A2_TXP4	PEC237	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP4C
PE_EXP_A2_TXN4	PEC238	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN4C
PE_EXP_A2_TXP3	PEC239	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP3C
PE_EXP_A2_TXN3	PEC240	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN3C
PE_EXP_A2_TXP2	PEC241	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP2C
PE_EXP_A2_TXN2	PEC242	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN2C
PE_EXP_A2_TXP1	PEC243	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP1C
PE_EXP_A2_TXN1	PEC244	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN1C
PE_EXP_A2_TXP0	PEC245	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP0C
PE_EXP_A2_TXN0	PEC246	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN0C

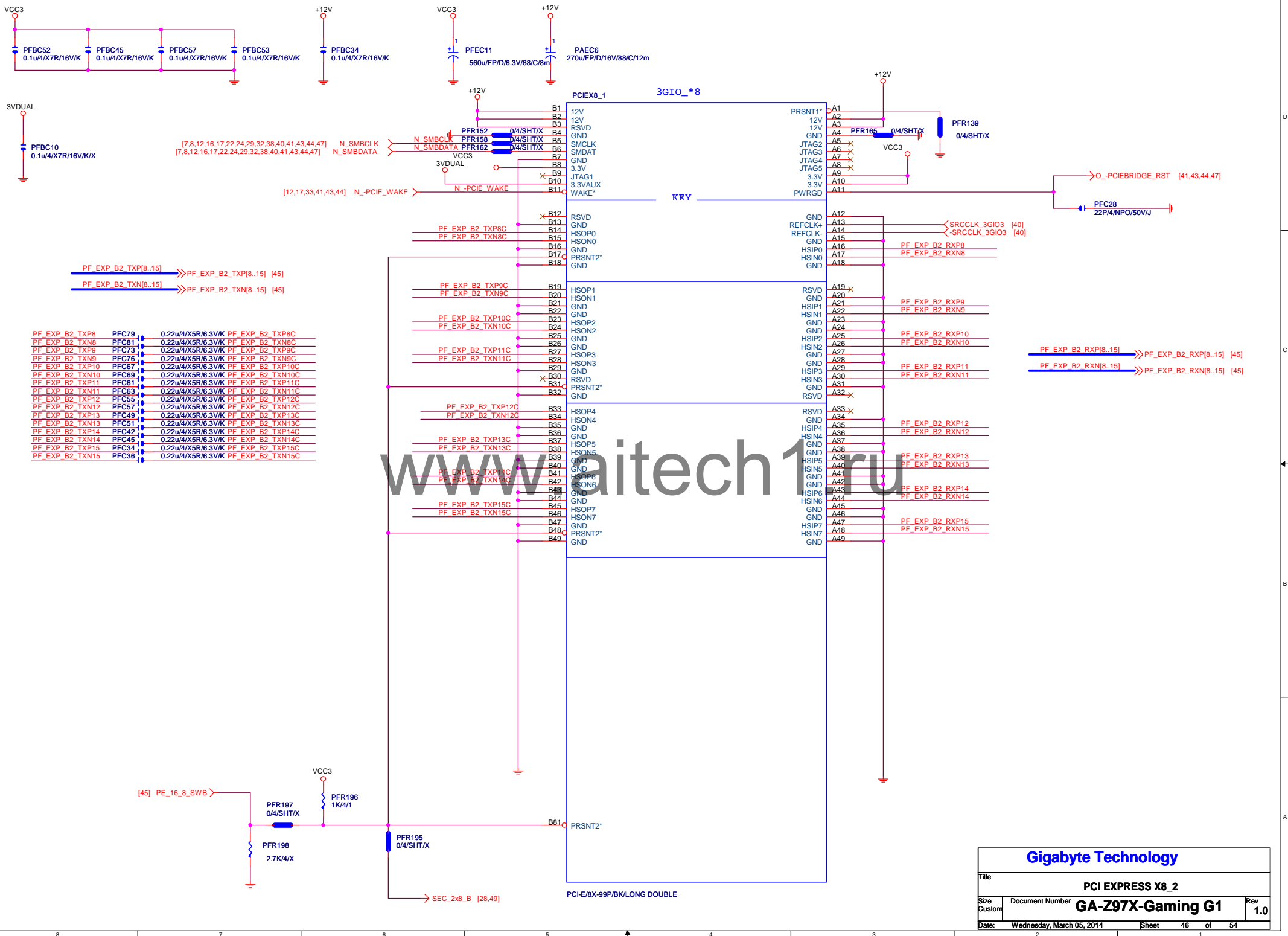




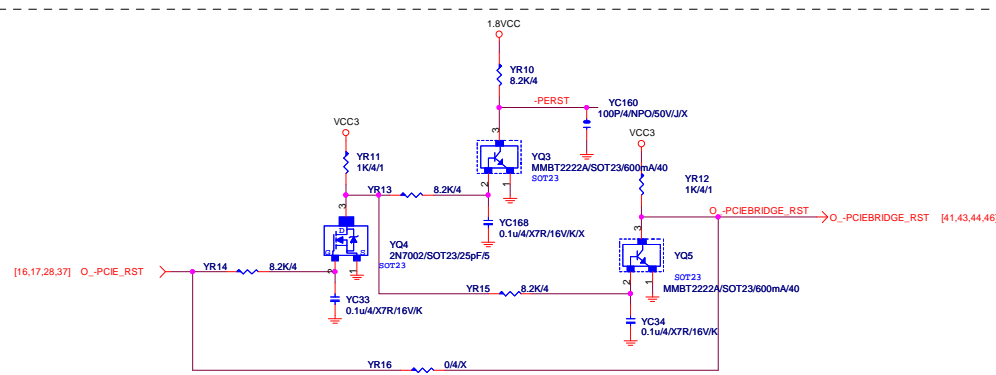
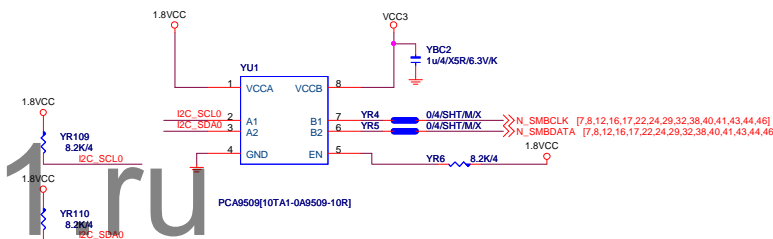
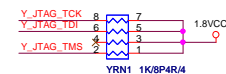
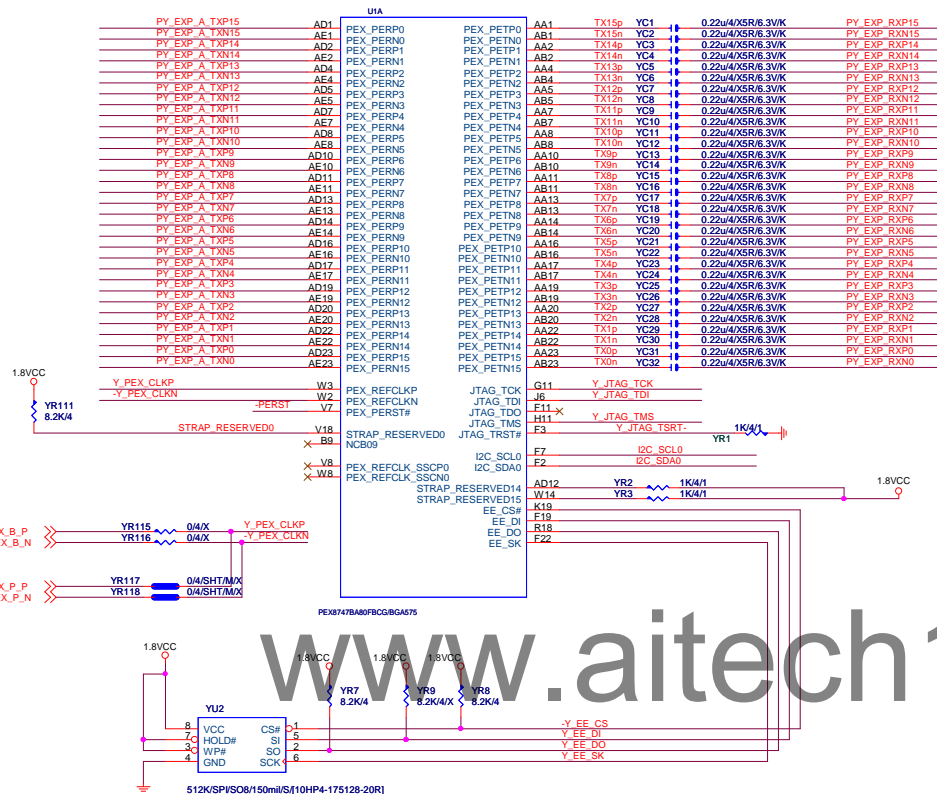
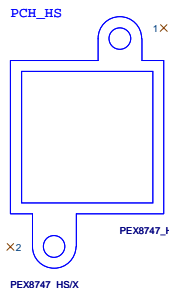


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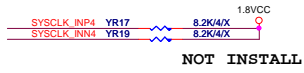
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PY_EXP_A_TXN0_15] >>> PY_EXP_A_TXN0_15] [4]
PY_EXP_RXP0_15] >>> PY_EXP_RXP0_15] [4]
PY_EXP_RXN0_15] >>> PY_EXP_RXN0_15] [4]



U1B			
PA_EXP_A_RXP0	V4	PEX_PETP16	V2
PA_EXP_A_RXN0	V5	PEX_PETN16	V1
PA_EXP_A_RXP1	U4	PEX_PETP17	U2
PA_EXP_A_RXN1	U5	PEX_PETN17	U1
PA_EXP_A_RXP2	R5	PEX_PETP18	R2
PA_EXP_A_RXN2	R4	PEX_PETN18	R1
PA_EXP_A_RXP3	P5	PEX_PETP19	P2
PA_EXP_A_RXN3	P4	PEX_PETN19	P1
PA_EXP_A_RXP4	M5	PEX_PETP20	M2
PA_EXP_A_RXN4	M4	PEX_PETN20	M1
PA_EXP_A_RXP5	L5	PEX_PETP21	L2
PA_EXP_A_RXN5	L4	PEX_PETN21	L1
PA_EXP_A_RXP6	J5	PEX_PETP22	J2
PA_EXP_A_RXN6	J4	PEX_PETN22	J1
PA_EXP_A_RXP7	H5	PEX_PETP23	H2
PA_EXP_A_RXN7	H4	PEX_PETN23	H1
PA_EXP_A_RXP8	D1	PEX_PETP24	A1
PA_EXP_A_RXN8	D2	PEX_PETN24	A2
PA_EXP_A_RXP9	D3	PEX_PETP25	B2
PA_EXP_A_RXN9	D4	PEX_PETN25	B4
PA_EXP_A_RXP10	E4	PEX_PETP26	A4
PA_EXP_A_RXN10	E5	PEX_PETN26	A6
PA_EXP_A_RXP11	D6	PEX_PETP27	A5
PA_EXP_A_RXN11	D7	PEX_PETN27	A7
PA_EXP_A_RXP12	E7	PEX_PETP28	B7
PA_EXP_A_RXN12	D7	PEX_PETN28	B8
PA_EXP_A_RXP13	E8	PEX_PETP29	A8
PA_EXP_A_RXN13	D8	PEX_PETN29	A10
PA_EXP_A_RXP14	E10	PEX_PETP30	B10
PA_EXP_A_RXN14	D10	PEX_PETN30	B11
PA_EXP_A_RXP15	E11	PEX_PETP31	A11
PA_EXP_A_RXN15	D11	PEX_PETN31	
PB_EXP_B_RXP0	V19	PEX_PETP32	V22
PB_EXP_B_RXN0	V20	PEX_PETN32	V23
PB_EXP_B_RXP1	U19	PEX_PETP33	U22
PB_EXP_B_RXN1	U20	PEX_PETN33	U23
PB_EXP_B_RXP2	R19	PEX_PETP34	R22
PB_EXP_B_RXN2	R20	PEX_PETN34	R23
PB_EXP_B_RXP3	P19	PEX_PETP35	P22
PB_EXP_B_RXN3	P20	PEX_PETN35	P23
PB_EXP_B_RXP4	M19	PEX_PETP36	M22
PB_EXP_B_RXN4	M20	PEX_PETN36	M23
PB_EXP_B_RXP5	L19	PEX_PETP37	L22
PB_EXP_B_RXN5	L20	PEX_PETN37	L23
PB_EXP_B_RXP6	J19	PEX_PETP38	J22
PB_EXP_B_RXN6	J20	PEX_PETN38	J23
PB_EXP_B_RXP7	H19	PEX_PETP39	H22
PB_EXP_B_RXN7	H20	PEX_PETN39	H23
PB_EXP_B_RXP8	E23	PEX_PETP40	B23
PB_EXP_B_RXN8	D23	PEX_PETN40	A23
PB_EXP_B_RXP9	E22	PEX_PETP41	B22
PB_EXP_B_RXN9	D22	PEX_PETN41	A22
PB_EXP_B_RXP10	E20	PEX_PETP42	B20
PB_EXP_B_RXN10	D20	PEX_PETN42	A20
PB_EXP_B_RXP11	E19	PEX_PETP43	B19
PB_EXP_B_RXN11	D19	PEX_PETN43	A19
PB_EXP_B_RXP12	E17	PEX_PETP44	B17
PB_EXP_B_RXN12	D17	PEX_PETN44	A17
PB_EXP_B_RXP13	E16	PEX_PETP45	B16
PB_EXP_B_RXN13	D16	PEX_PETN45	A16
PB_EXP_B_RXP14	E14	PEX_PETP46	B14
PB_EXP_B_RXN14	D14	PEX_PETN46	A14
PB_EXP_B_RXP15	E13	PEX_PETP47	B13
PB_EXP_B_RXN15	D13	PEX_PETN47	A13

SYSCLK_INP4 P7
SYSCLK_INN4 P6
PEX_REFCLK_SSCP4
PEX_REFCLK_SSCN4
PEX_REFCLK_SSCP8
PEX_REFCLK_SSCN8

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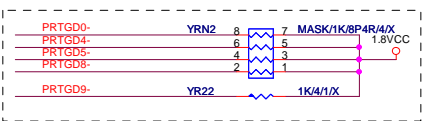
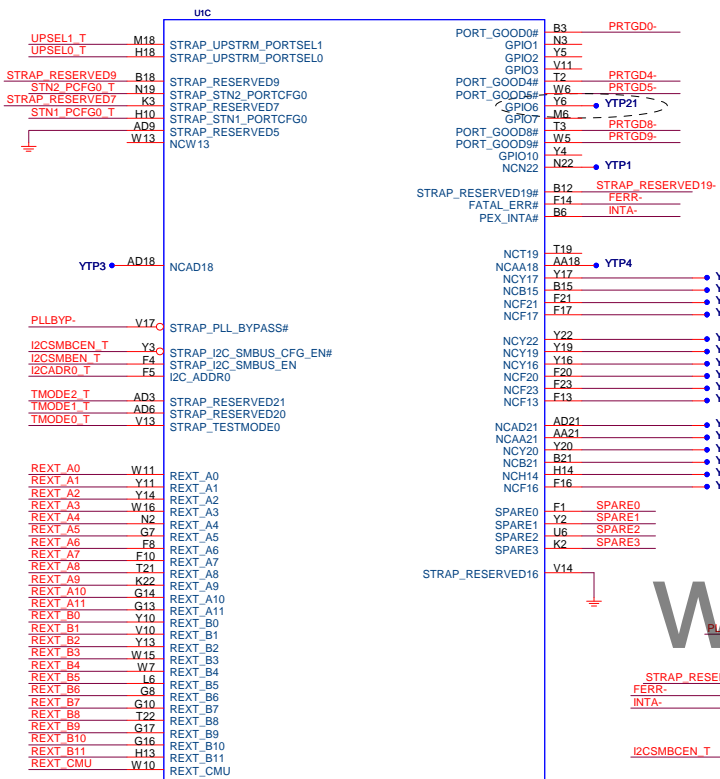


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- PA_EXP_A_RXN[0..7] >> PA_EXP_A_RXN[0..7] [42]
- PA_EXP_A_TXP[0..7] >> PA_EXP_A_TXP[0..7] [42]
- PA_EXP_A_TXN[0..7] >> PA_EXP_A_TXN[0..7] [42]
- PA_EXP_A_RXP[8..15] >> PA_EXP_A_RXP[8..15] [41]
- PA_EXP_A_RXN[8..15] >> PA_EXP_A_RXN[8..15] [41]
- PA_EXP_A_TXP[8..15] >> PA_EXP_A_TXP[8..15] [41]
- PA_EXP_A_TXN[8..15] >> PA_EXP_A_TXN[8..15] [41]
- PB_EXP_B_RXP[0..7] >> PB_EXP_B_RXP[0..7] [44]
- PB_EXP_B_RXN[0..7] >> PB_EXP_B_RXN[0..7] [44]
- PB_EXP_B_TXP[0..7] >> PB_EXP_B_TXP[0..7] [44]
- PB_EXP_B_TXN[0..7] >> PB_EXP_B_TXN[0..7] [44]
- PB_EXP_B_RXP[8..15] >> PB_EXP_B_RXP[8..15] [45]
- PB_EXP_B_RXN[8..15] >> PB_EXP_B_RXN[8..15] [45]
- PB_EXP_B_TXP[8..15] >> PB_EXP_B_TXP[8..15] [45]
- PB_EXP_B_TXN[8..15] >> PB_EXP_B_TXN[8..15] [45]

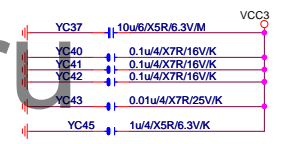
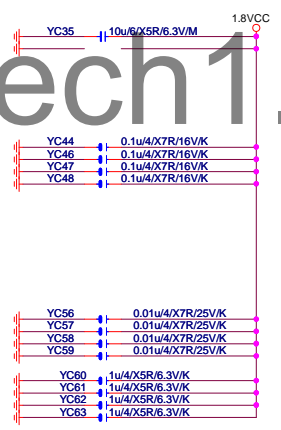
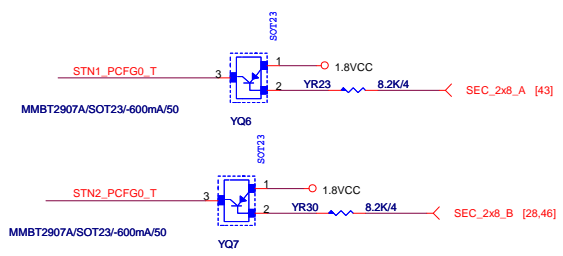
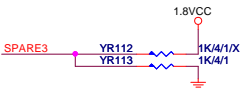
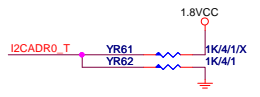
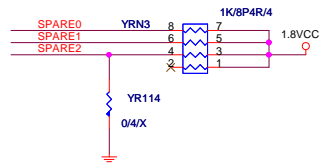
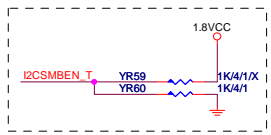
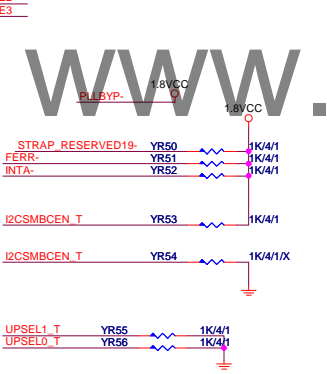
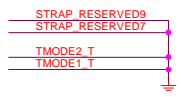
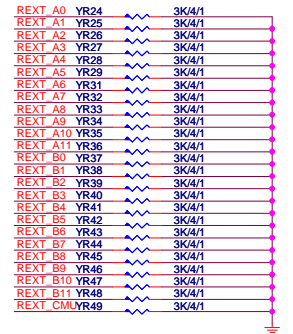
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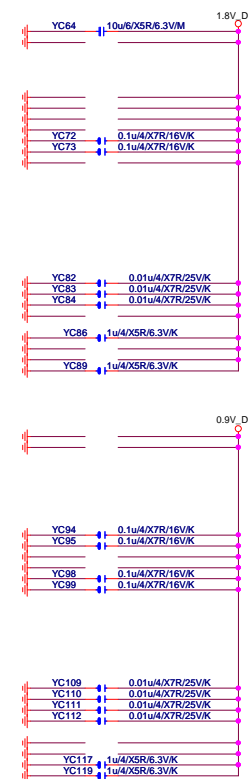
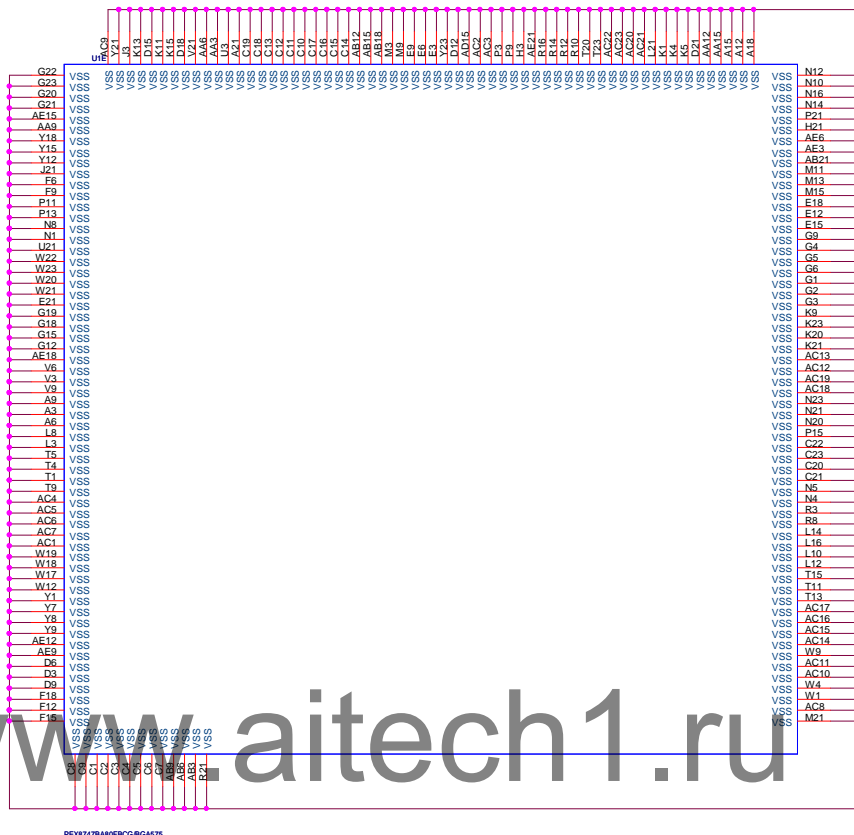
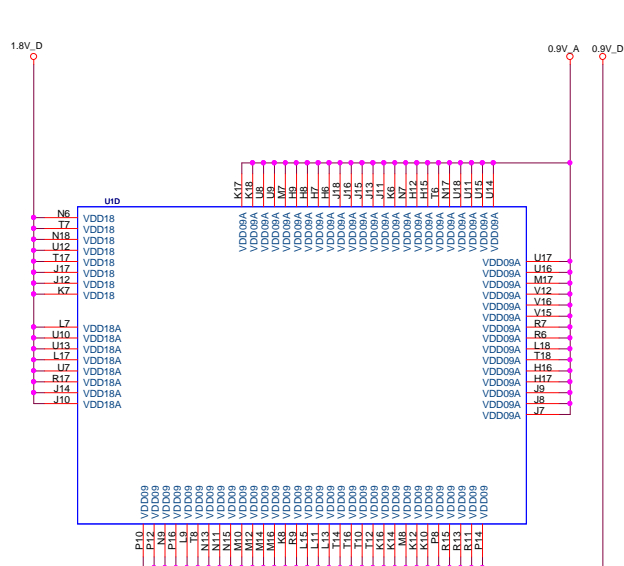
P6X8747S DOWNSTREAM SLOTS

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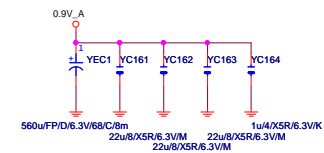


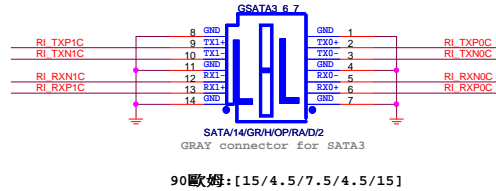
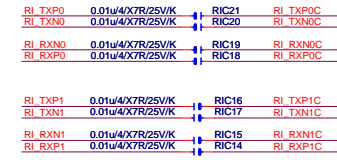
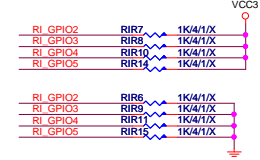
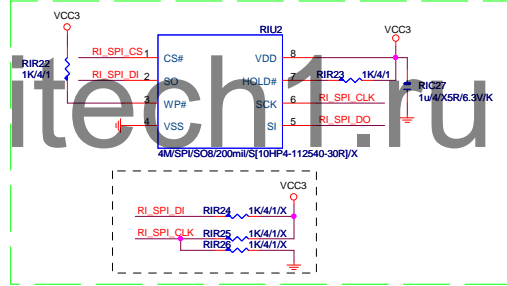
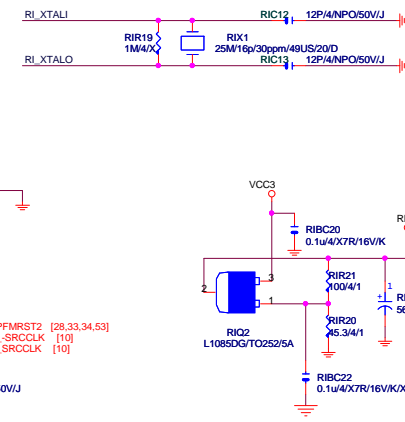
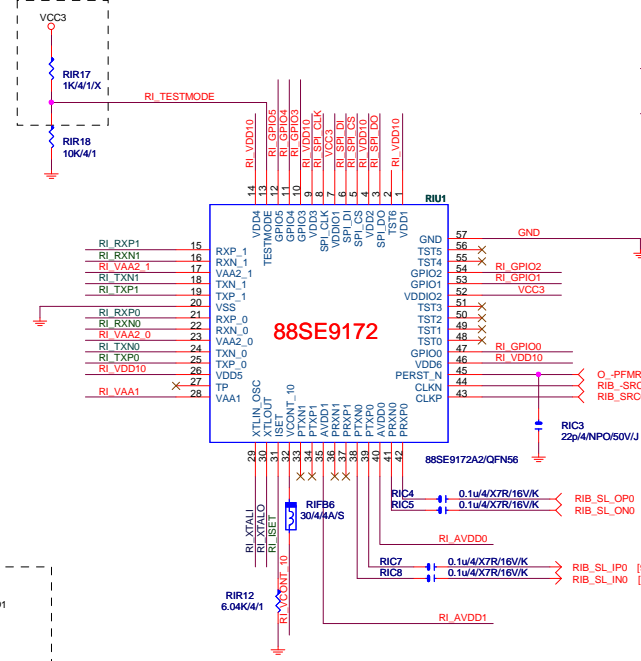
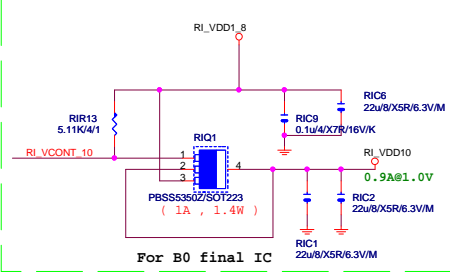
Resistors should be placed close to U1





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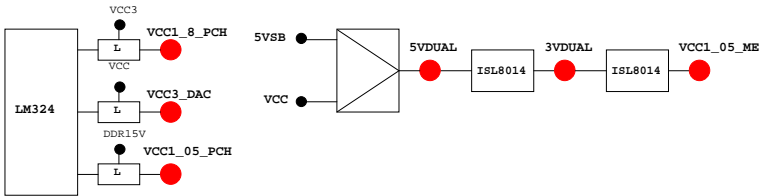


PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GP0	MAIN	H-Z	GPI	-PECI_REQ	N/A
GP1/TACH1	MAIN		GPI	ICH_FAN_TACH1	N/A
GP2/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	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	-AC2_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

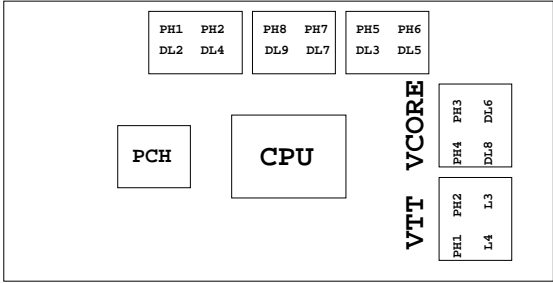
Super I/O ITE8720 GPIO Table

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/BUSS00	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSS11	SB_LED1_C	
PD4/GP74/BUSS12	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSS10	NB_LED3_C	
GP22/SEN	LOW_PWR_1	
VID05/GP27/SEN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSCH#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CsisBSL	
VID00/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMBC_R	W_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/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_CLT15/CIRRX2/GP16	-THERM	
VID04/GP26/SOUT2	DDR18V_PH2_EN	
VID02/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VID06/GP17/RI2#	1_1V_PH_EN	
VID07/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	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_AVREF_CA_B	DRAM Address Ref
VREF_DQ_AVREF_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

Gigabyte Technology			
TABLE LIST			
Size C	Document Number	Rev	
	GA-Z97X-Gaming G1	1.0	
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