

Model Name: GA-Z68M-D2H

Revision 1.01

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
07	DDR III CHANNEL A 1,2
08	DDR III CHANNEL B 1,2
09	PCH_FDI,DMI,USB,PCIE,NVRAM
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	PCI EXPRESS*16 SLOT
15	PCI EXPRESS*4 SLOT
16	PCI EXPRESS*1x2 SLOT
17	ITE 8728 LPC IO
18	COM,KB_USB,USB_ESATA,-PROCHOT
19	HWM,FAN CTRL
20	DUAL BIOS
21	FP,FUSB,SPK,SATALED
22	ALC889
23	REAR AUDIO JACK
24	REALTEK RTL8111E
25	HDMI/DVI
26	DISCRETE POWER
27	ATX,TPM

SHEET TITLE

28	ISL95870_CPU_VTT
29	VCORE ISL6364_1
30	VCORE ISL6364_2
31	VCORE ISL6364_3

Gigabyte Technology		
Cover Sheet		
Size Custom	Document Number GA-Z68M-D2H	Rev 1.01
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Revision 1.01

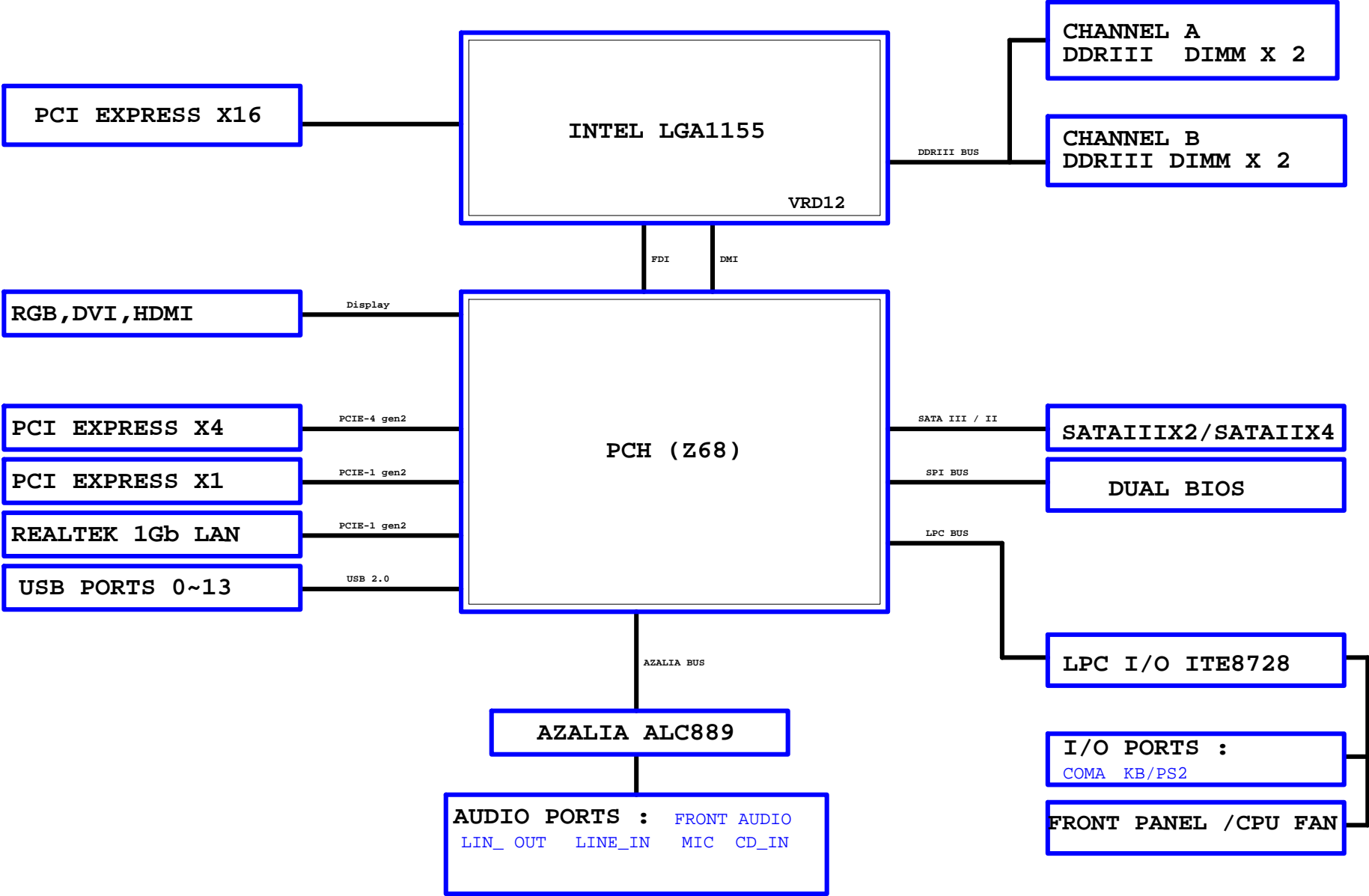
Circuit or PCB layout change

Component value change history

2011/05/31

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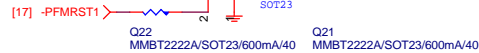
BLOCK DIAGRAM



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
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16	RSVD	RSVD	RSVD
17	RSVD	RSVD	RSVD

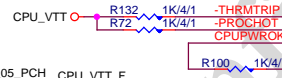
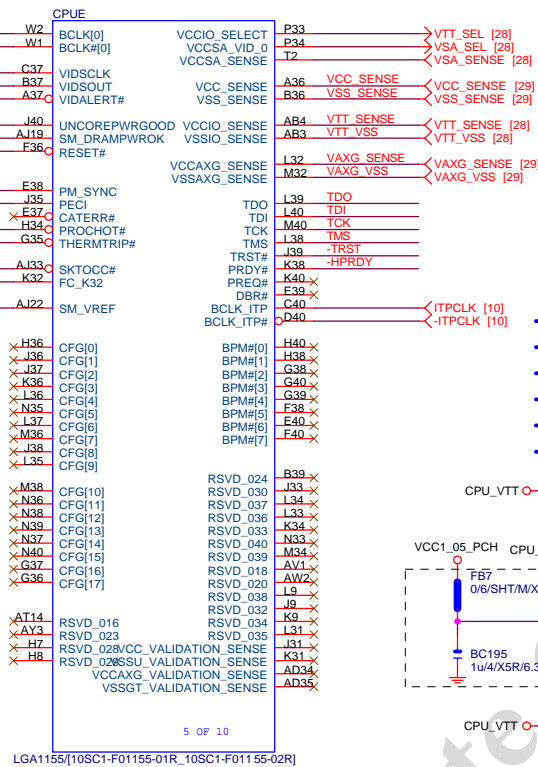
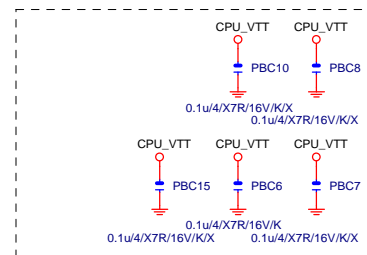
CFG6	CFG5	PCIE CONFIG
1	1	1x16, Default
1	0	2x8
0	1	RSVD
0	0	X8,X4,X4

CFG 0-17 all internal PULL-UP

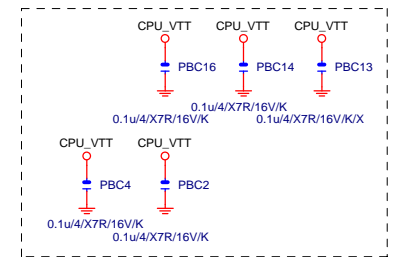
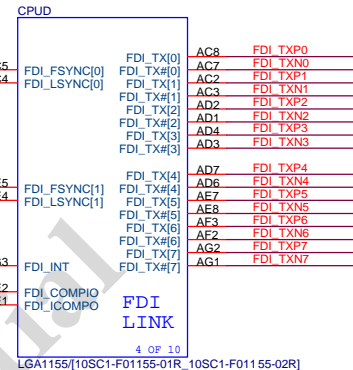
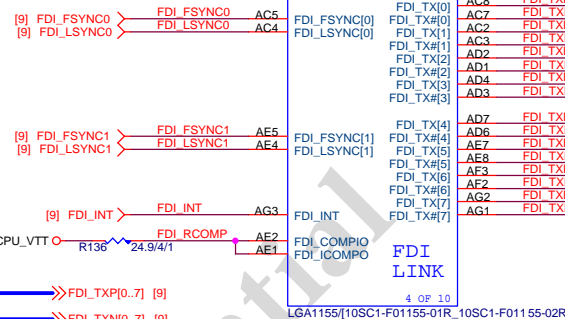
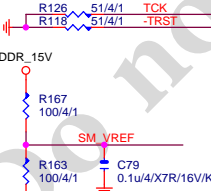


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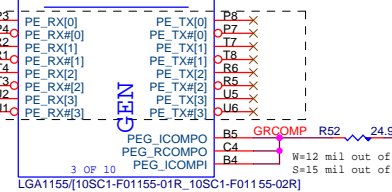
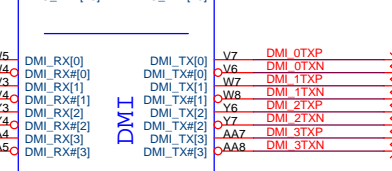
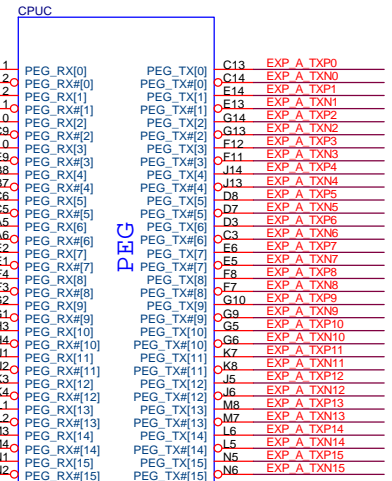
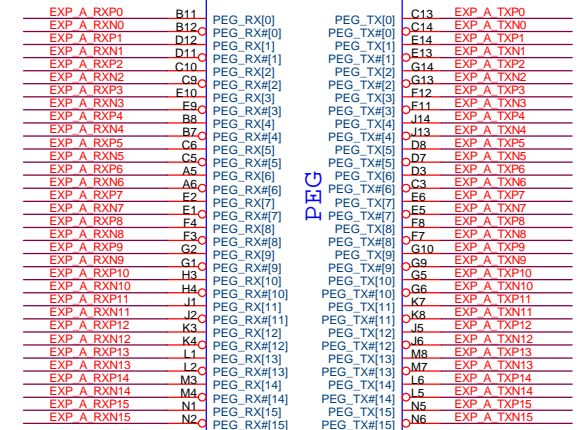
Stitching caps for PCIE,DMI,FDI bus



FOR CPU_VTT OV MARGIN



Stitching caps for PCIE,DMI,FDI bus



LGA1155[F01155-01R_10SC1-F01155-02R]

Gigabyte Technology

Title CPU LGA1155-A

Size Document Number GA-Z68M-D2H

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Rev 1.01

CPUA

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MAAA1	AY24	SA_MA[1]	SA_DQ[1]	AK2	-DQSA0
MAAA2	AW24	SA_MA[2]			
MAAA3	AV23	SA_MA[3]			
MAAA4	AV23	SA_MA[3]	SA_DQ[0]	AJ3	MDA0
MAAA5	AT24	SA_MA[4]	SA_DQ[1]	AJ4	MDA1
MAAA6	AT23	SA_MA[5]	SA_DQ[2]	AL3	MDA2
MAAA7	AV22	SA_MA[6]	SA_DQ[3]	AL4	MDA3
MAAA8	AU22	SA_MA[7]	SA_DQ[4]	AJ2	MDA4
MAAA9	AT22	SA_MA[8]	SA_DQ[5]	AJ1	MDA5
MAAA10	AV28	SA_MA[9]	SA_DQ[6]	AL2	MDA6
MAAA11	AU21	SA_MA[10]	SA_DQ[7]	AL1	MDA7
MAAA12	AT21	SA_MA[11]			
MAAA13	AW32	SA_MA[12]	SA_DQ[11]	AP3	DQSA1
MAAA14	AU20	SA_MA[13]	SA_DQ[11]	AP2	-DQSA1
MAAA15	AT20	SA_MA[14]			
		SA_MA[15]			
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			SA_DQ[11]	AR4	MDA12
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[7] SBAA1	AW28	SA_BS[1]	SA_DQ[13]	AN3	MDA13
[7] SBAA2	AV20	SA_BS[2]	SA_DQ[14]	AR2	MDA14
			SA_DQ[15]	AR1	MDA15
			SA_DQ[16]		
[7] -CSA0	AY29	SA_CS#	SA_DQ[17]	AW4	DQSA2
[7] -CSA1	AV32	SA_CS#	SA_DQ[18]	AW4	-DQSA2
[7] -CSA2	AW30	SA_CS#	SA_DQ[19]		
[7] -CSA3	AU33	SA_CS#	SA_DQ[20]		
			SA_DQ[21]		
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[7] CKEA3	AV18	SA_CKE[3]	SA_DQ[25]	AW5	MDA19
			SA_DQ[26]	AW5	MDA20
			SA_DQ[27]	AJ2	MDA21
			SA_DQ[28]	AJ3	MDA22
			SA_DQ[29]	AY5	MDA23
			SA_DQ[30]		
			SA_DQ[31]	AV8	DQSA3
			SA_DQ[32]	AW8	-DQSA3
			SA_DQ[33]		
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[7] -DCLKA0	AW25	SA_CK#	SA_DQ[35]	AJ7	MDA25
[7] DCLKA1	AU24	SA_CK[1]	SA_DQ[36]	AJ9	MDA26
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LGA1155[10SC1-F01155-01R_10SC1-F01155-02R]

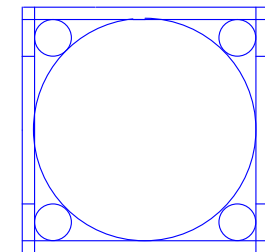
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MAAB2	AM19	SB_MA[2]			
MAAB3	AK18	SB_MA[3]			
MAAB4	AP19	SB_MA[4]	SB_DQ[0]	AG7	MDB0
MAAB5	AP18	SB_MA[5]	SB_DQ[1]	AG8	MDB1
MAAB6	AM18	SB_MA[6]	SB_DQ[2]	AJ9	MDB2
MAAB7	AL18	SB_MA[7]	SB_DQ[3]	AJ8	MDB3
MAAB8	AY17	SB_MA[8]	SB_DQ[4]	AG6	MDB4
MAAB9	AN18	SB_MA[9]	SB_DQ[5]	AG5	MDB5
MAAB10	AN23	SB_MA[10]	SB_DQ[6]	AJ6	MDB6
MAAB11	AU17	SB_MA[11]	SB_DQ[7]	AJ7	MDB7
MAAB12	AT18	SB_MA[12]			
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MAAB14	AY16	SB_MA[14]	SB_DQ[11]	AL8	-DQSB1
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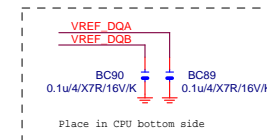
CR
CPU RETENTIONX

Need check the new CPU ME

CPU_P



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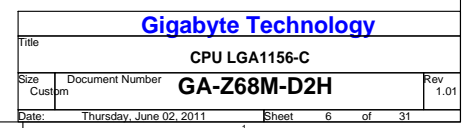


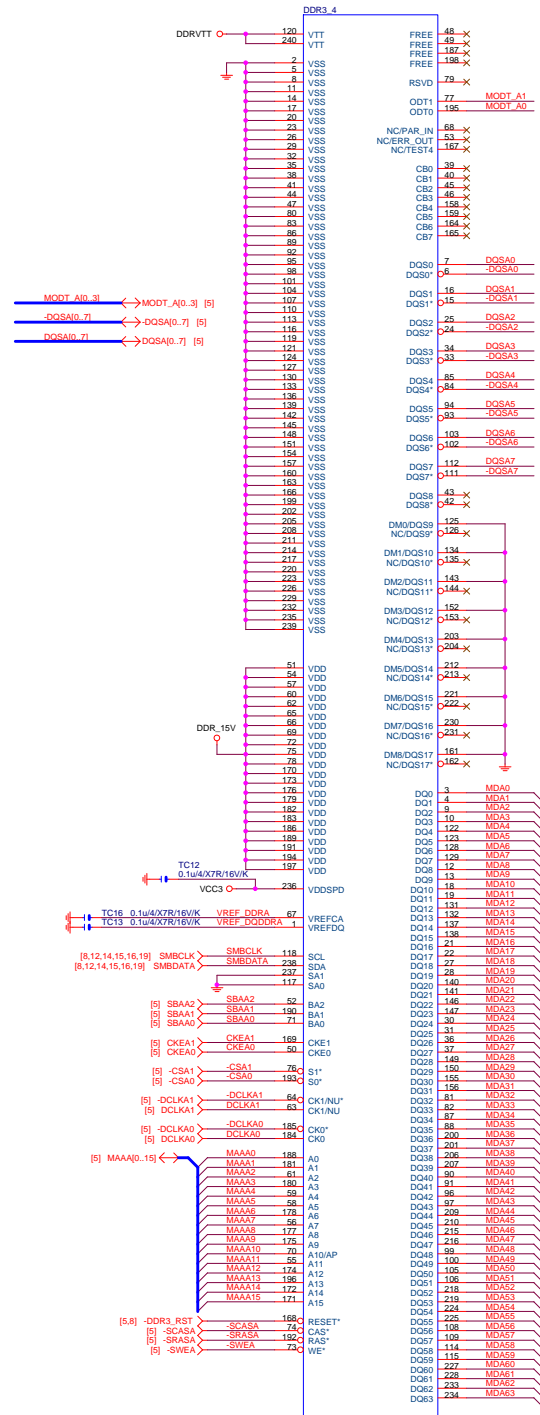
Gigabyte Technology

CPU LGA1156-B

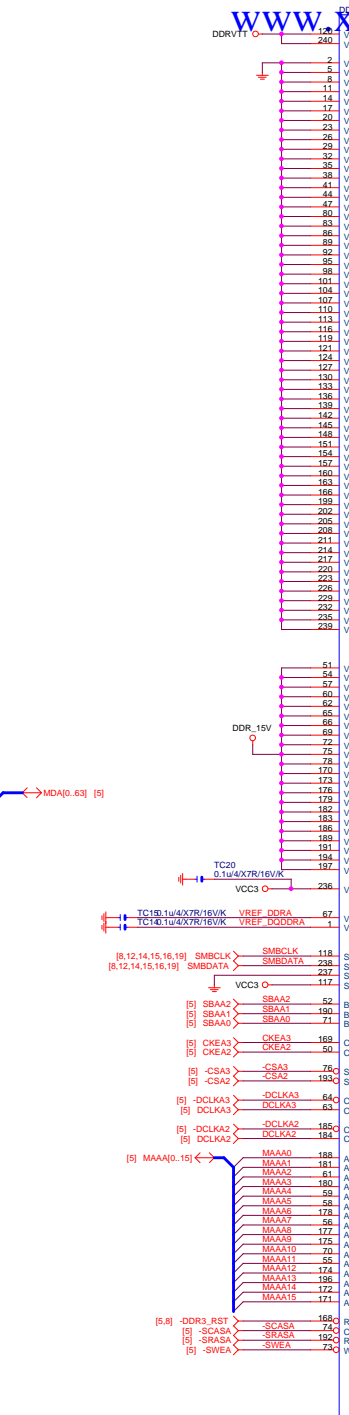
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Custom	GA-Z68M-D2H	1.01

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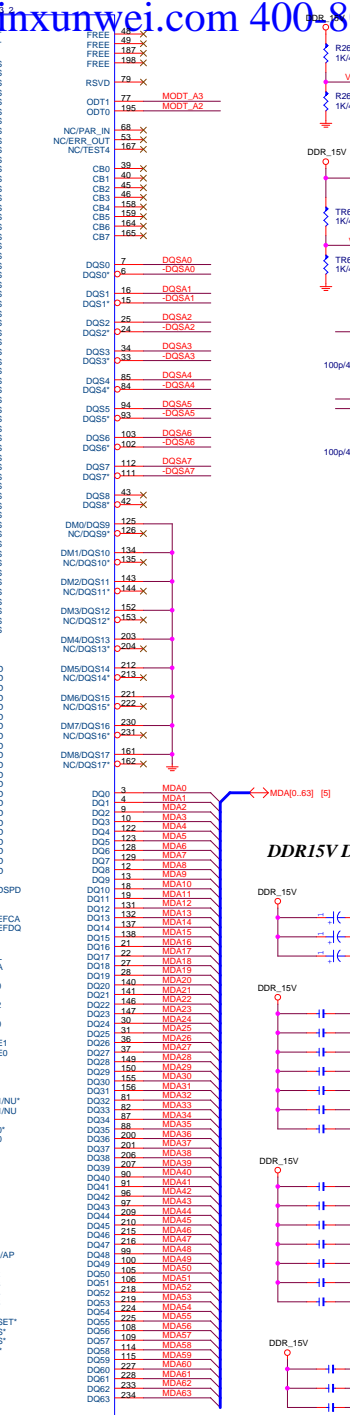




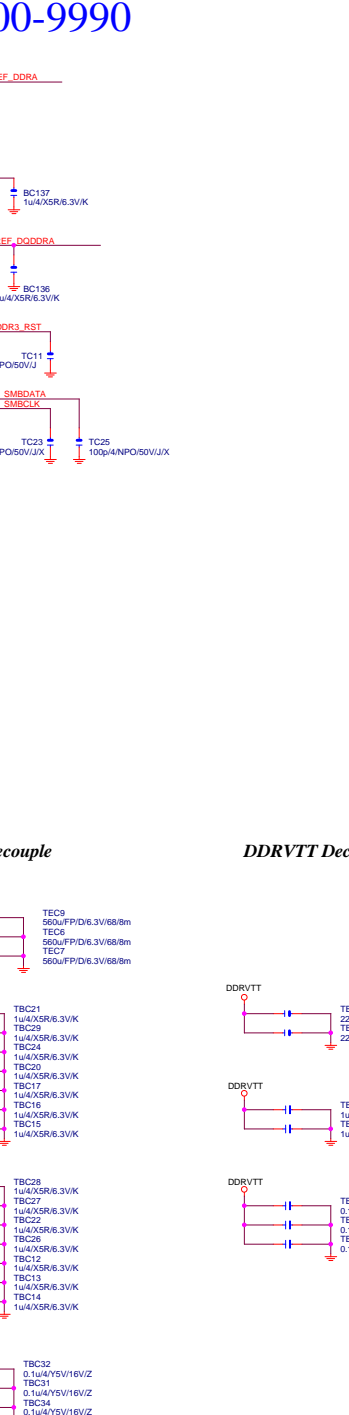
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DDR3-Intel-B



DDR3-240/WHVA/D
DDR3-Intel

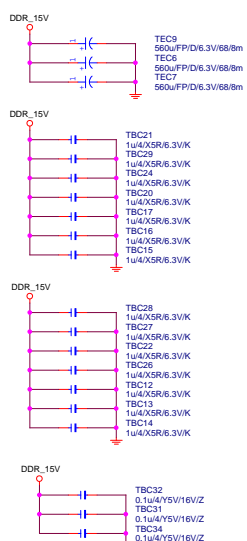


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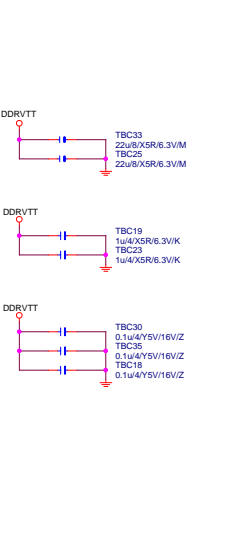


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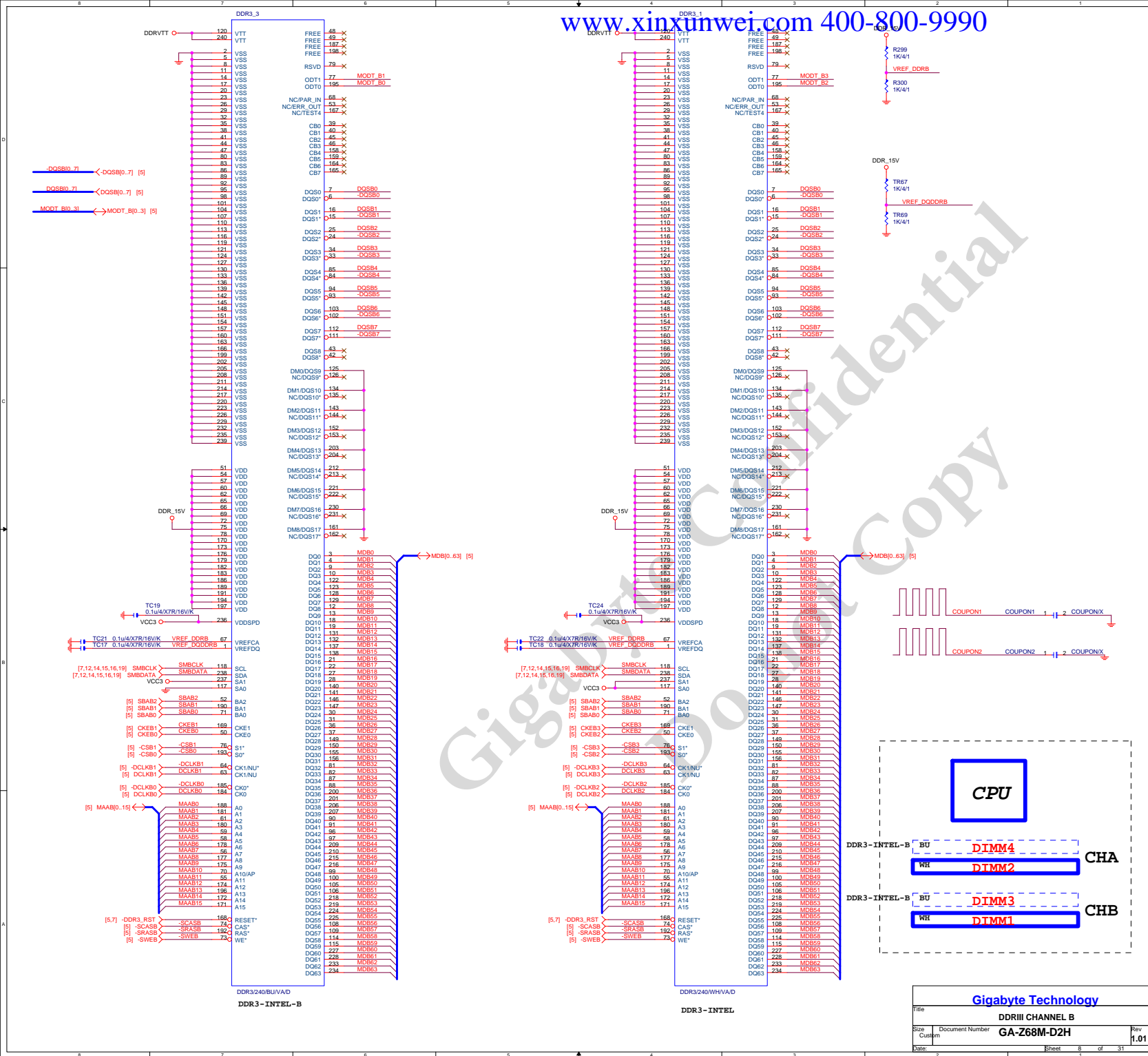
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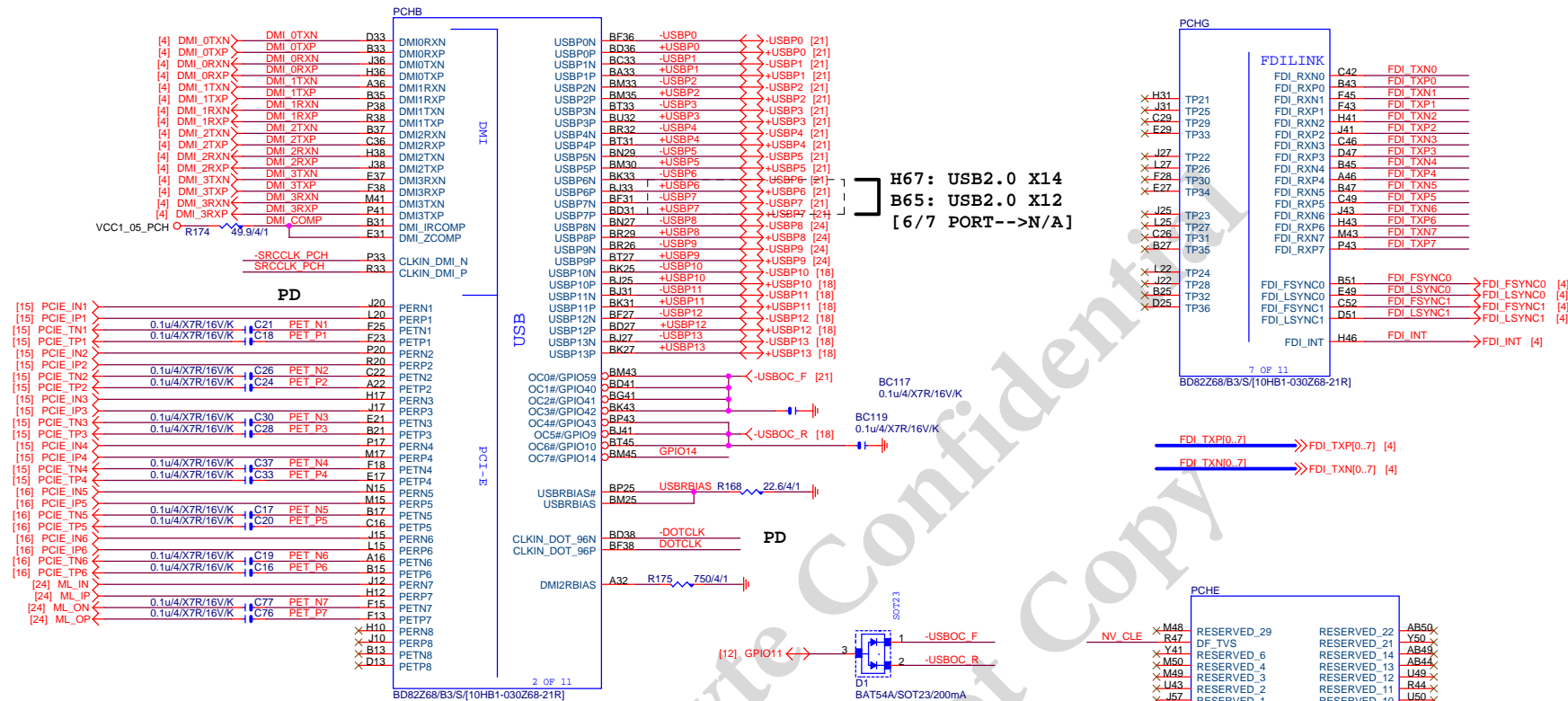


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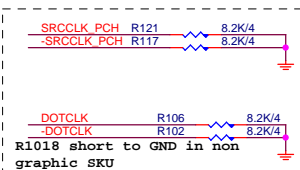


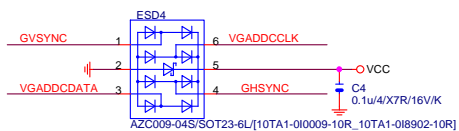
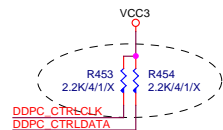
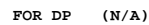
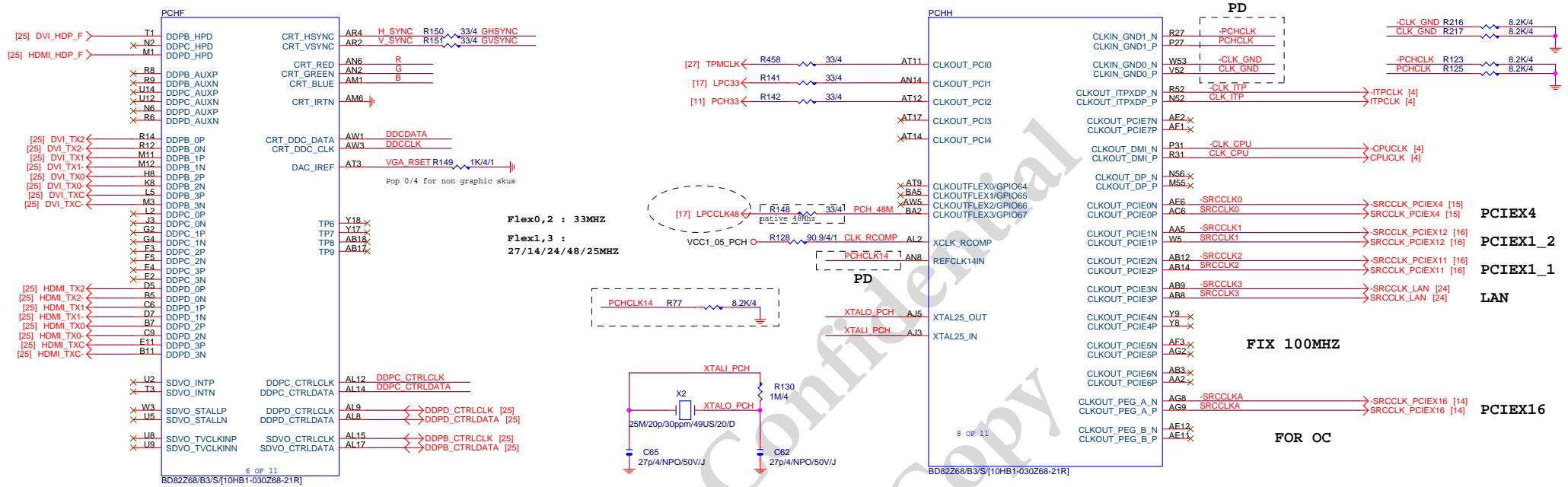
Gigabyte Technology			
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Size	Document Number	GA-Z68M-D2H	Rev
Custom			1.0
Date			



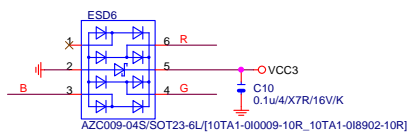


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OC0#	USB0,1 (F_USB1)
OC1#	USB2,3 (F_USB2)
OC2#	USB4,5 (F_USB3)
OC3#	USB6,7 (F_USB4)
OC4#	USB8,9 (F_USB_LAN)
OC5#	USB10~11 (F_USB30_20)
OC6#	USB12~13 (KB_USB)
OC7#	GPIO14

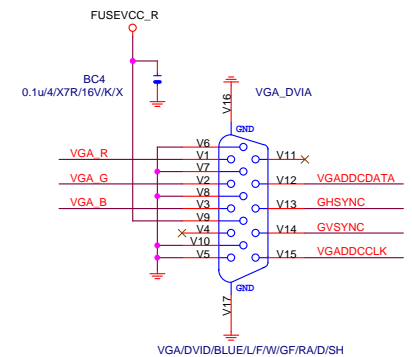
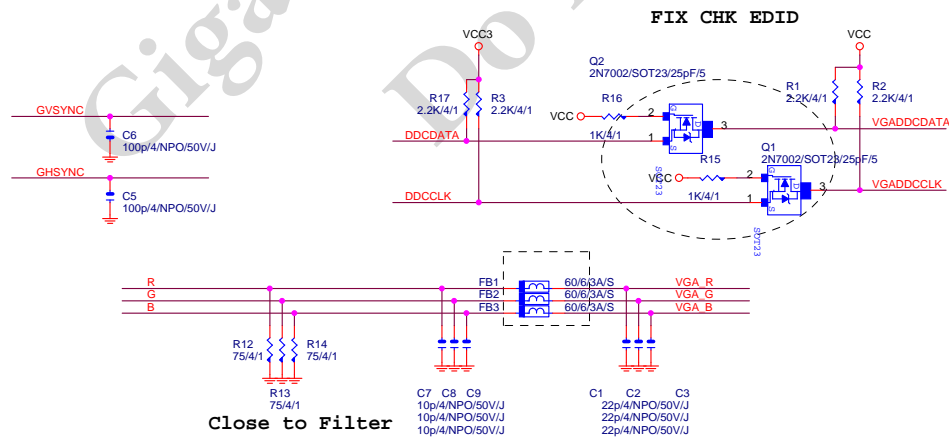


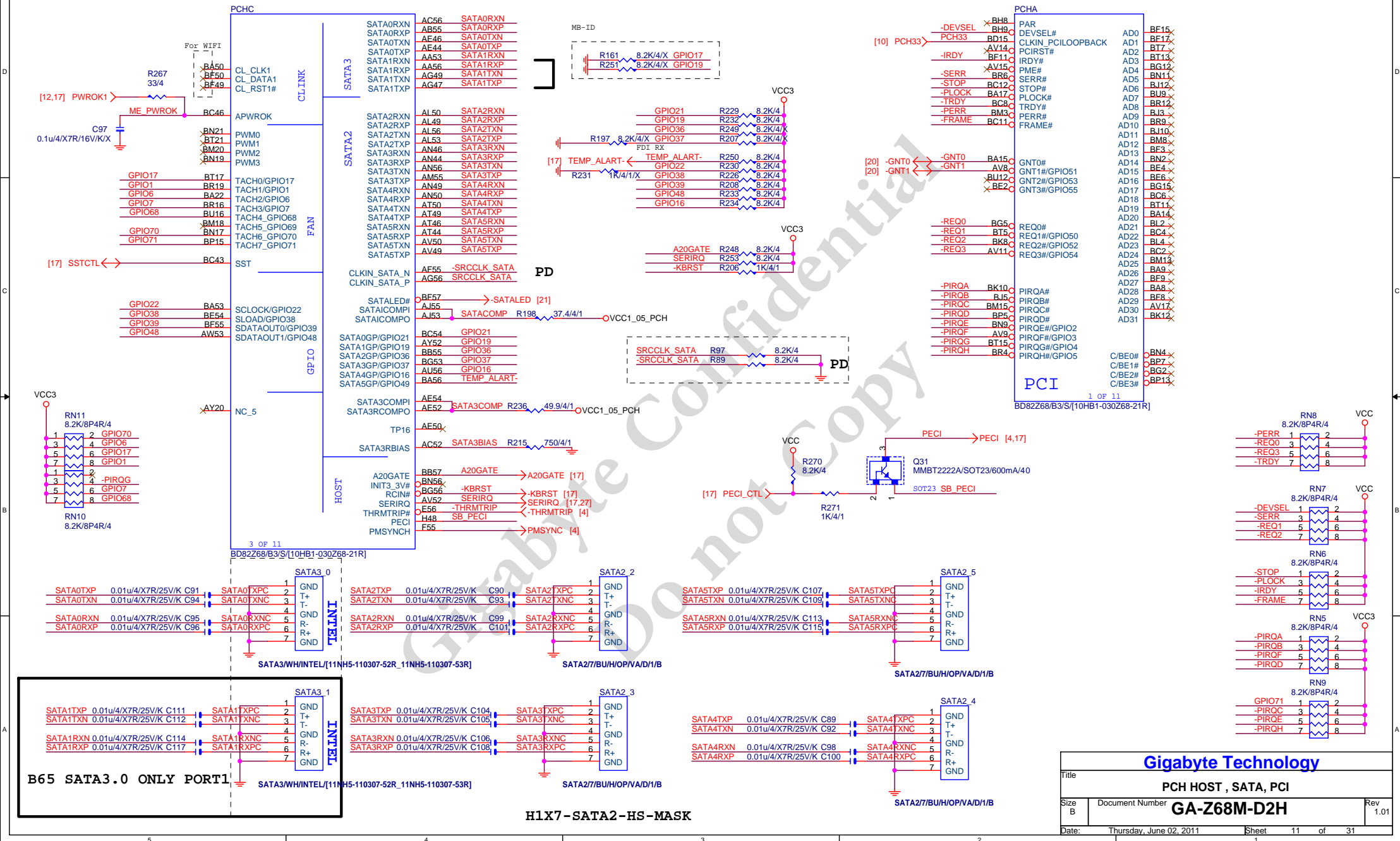


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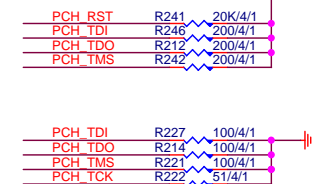
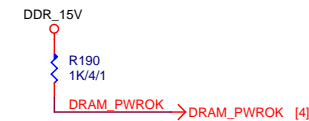
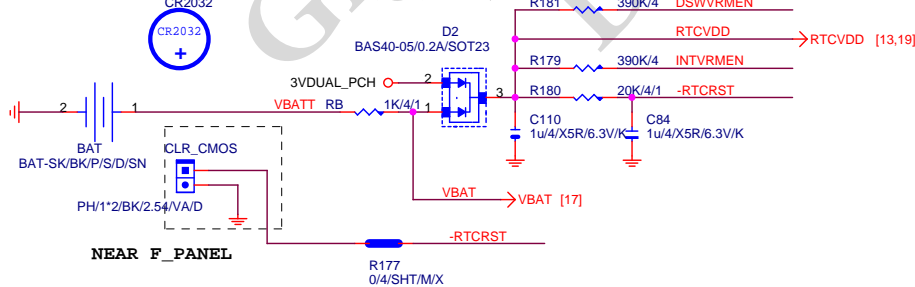
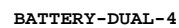
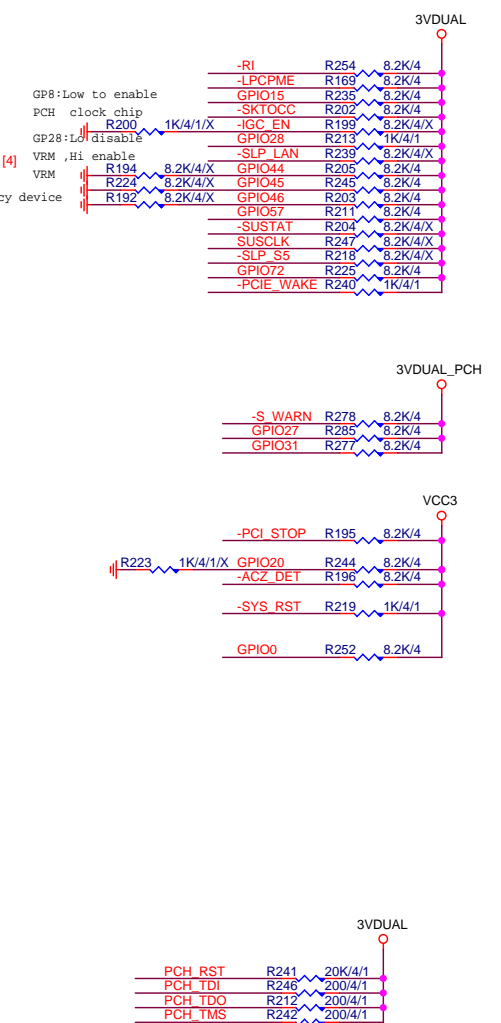
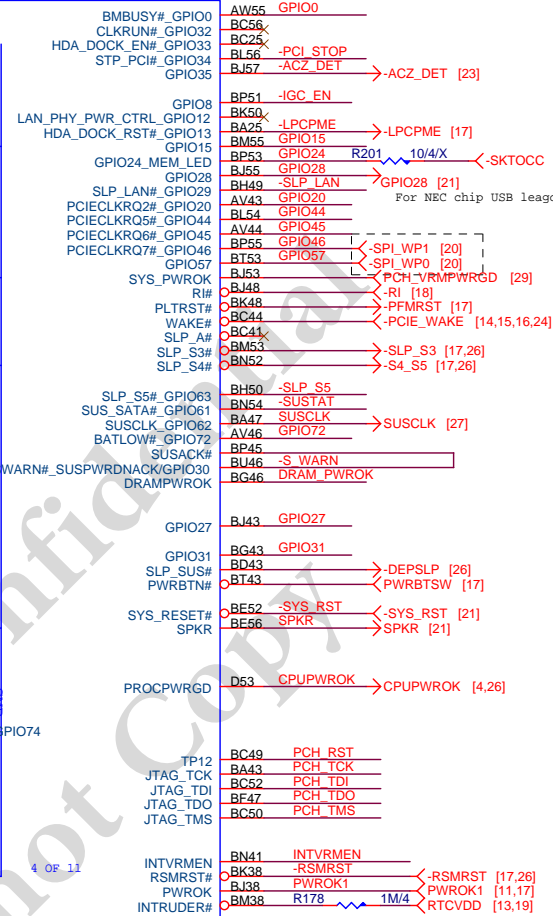
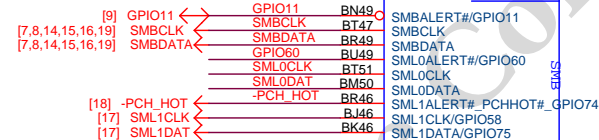
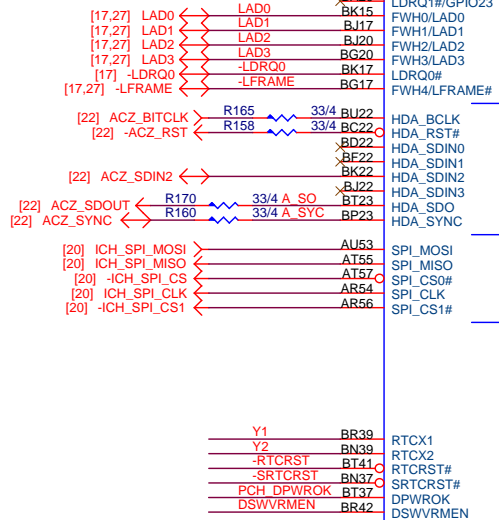
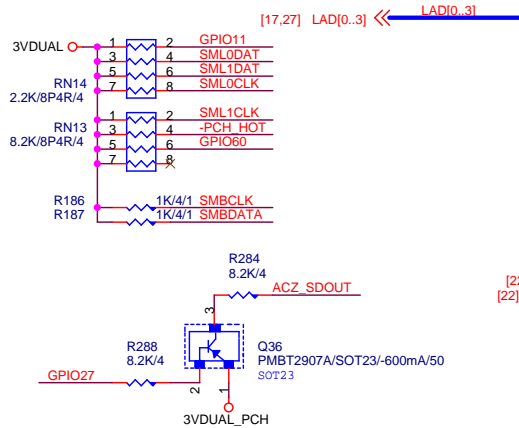
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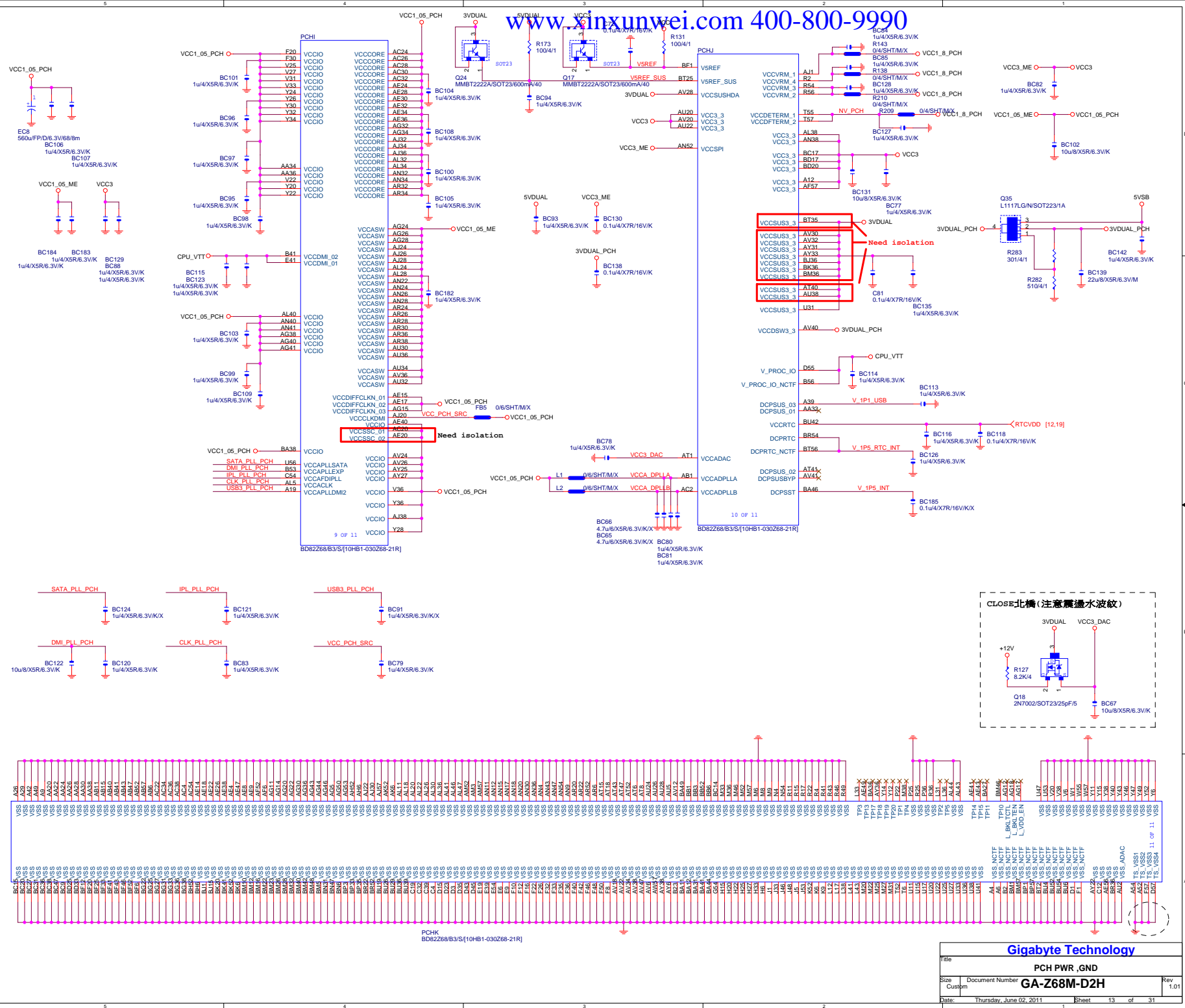


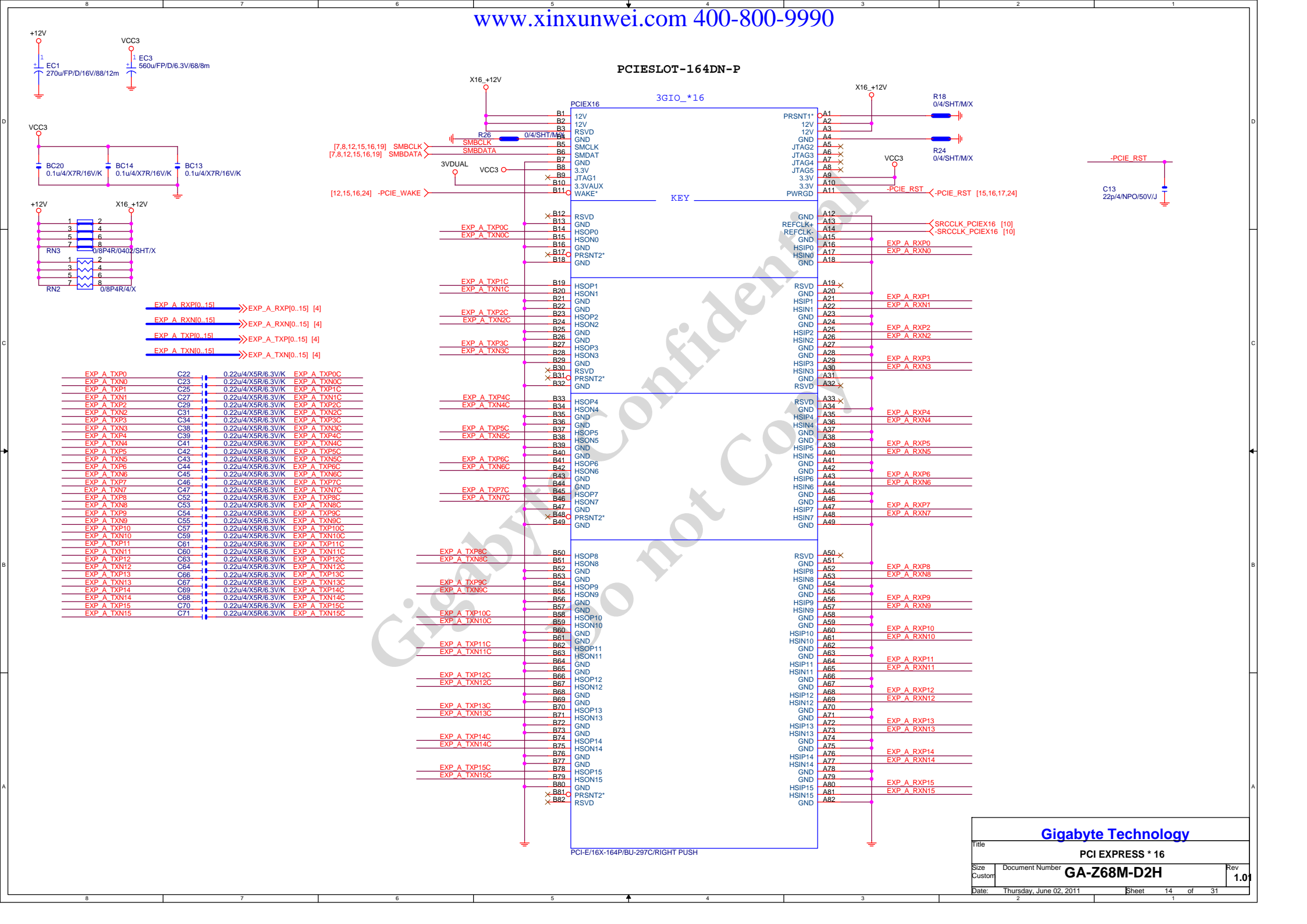


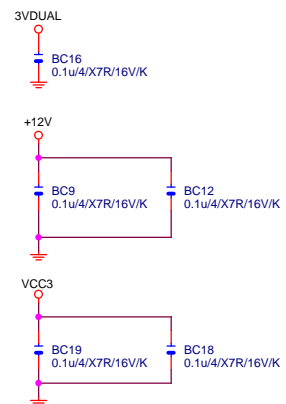
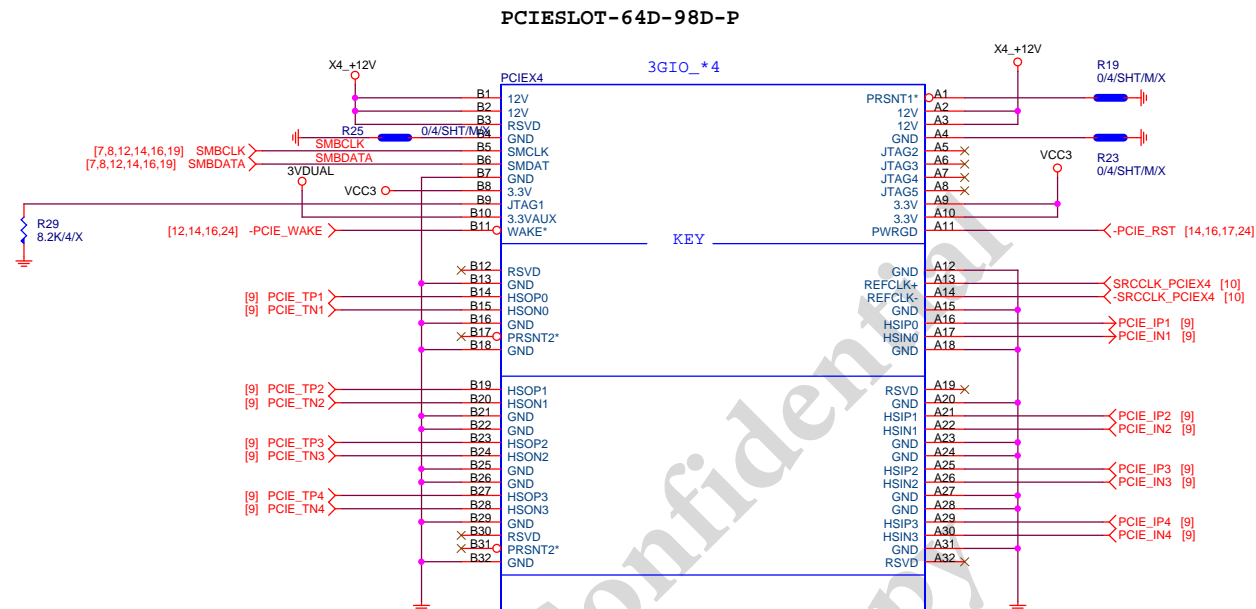
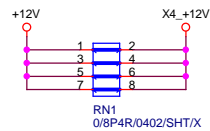
Gigabyte Technology

Title			PCH HOST , SATA, PCI
Size			Document Number
B			GA-Z68M-D2H
Date:			Thursday, June 02, 2011
Sheet			11 of 31
Rev			1.01









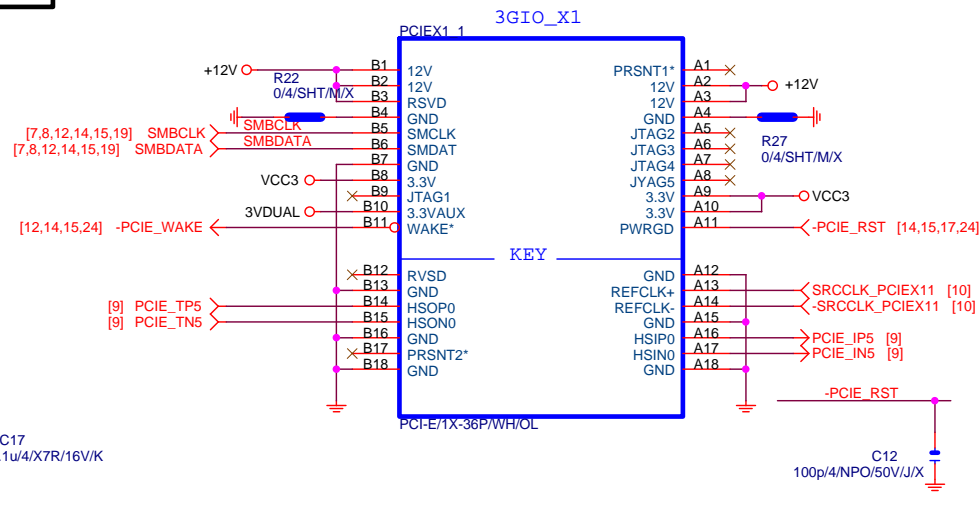
PCIESLOT-64D-98D-P

PCI-E/16X-65P/BU/RIGHT PUSH

Gigabyte Technology

Title		
PCI EXPRESS X 4 PORT		
Size	Document Number	Rev
Custom	GA-Z68M-D2H	1.01
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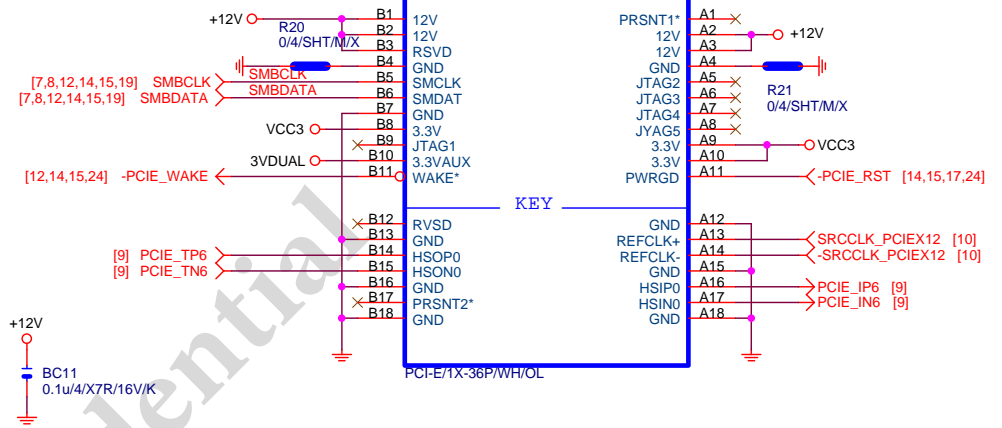
PCIEX1



CLK GEN CK505

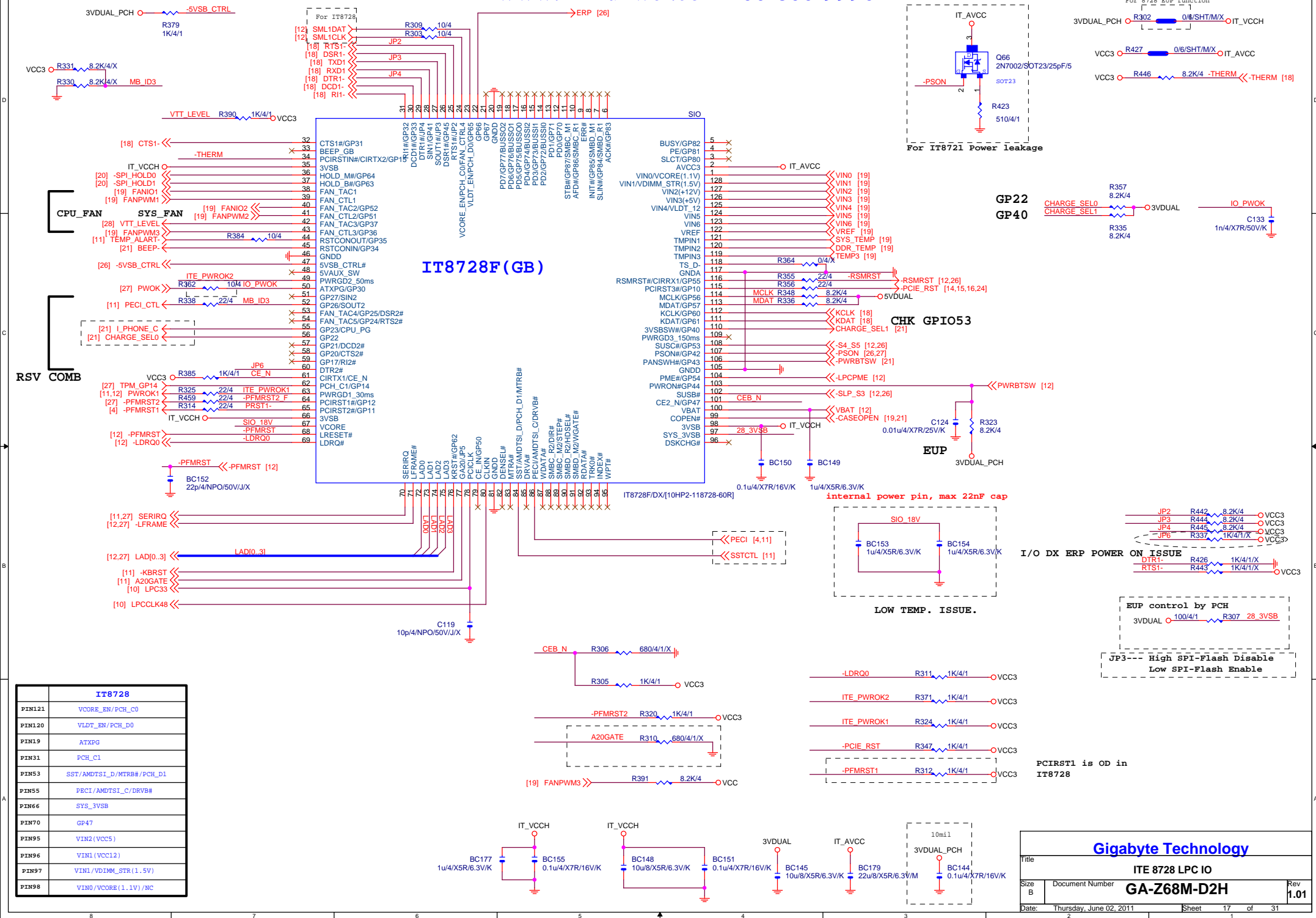
N/A

PCIEX1 2 3GIO_X1

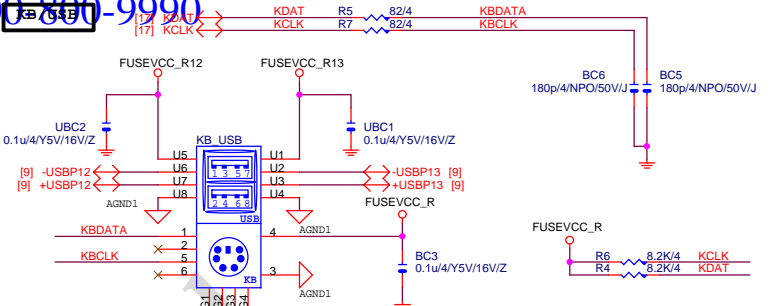
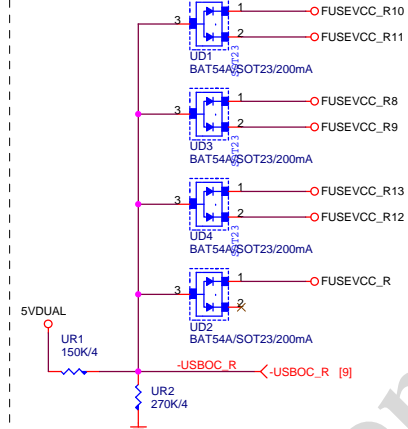
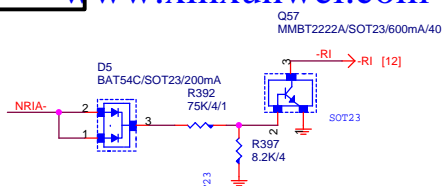
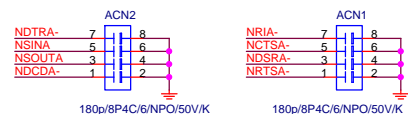


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Title			PCIEX1,X2
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	IT8728
PIN121	VCORE_EN/PCH_C0
PIN120	VLDT_EN/PCH_D0
PIN19	ATXPG
PIN31	PCH_C1
PIN53	SST/AMDTSI_D/MTRB#/PCH_D1
PIN55	PECI/AMDTSI_C/DRV#
PIN66	SYS_3VSB
PIN70	GP47
PIN95	VIN2(VCC5)
PIN96	VIN1(VCC12)
PIN97	VIN1/VDIMM_STR(1.5V)
PIN98	VING/VCORE(1.1V)/NC



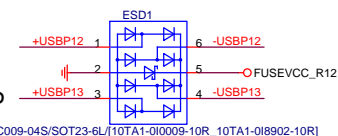
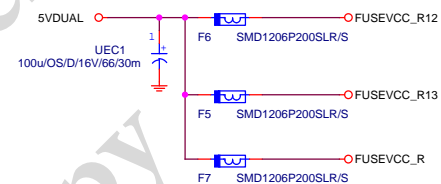
USB_LAN

KB/2USB/PC99(DUAL)/RED/RA/GF/[11NR6-804006-21R_11NR6-804006-22R]

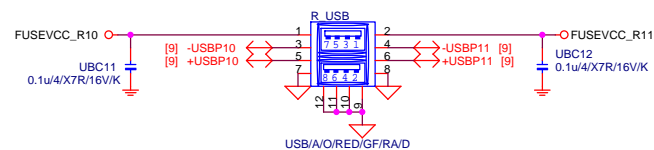
KB/2USB/PC99(DUAL)/RED/RA/GF:NEW RED

KB/VGA/DV

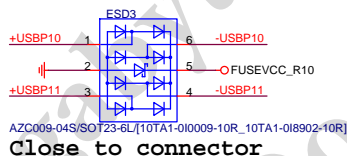
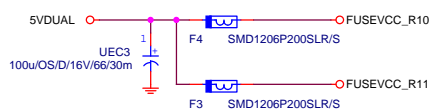
CLOSE KB USB



R_USB

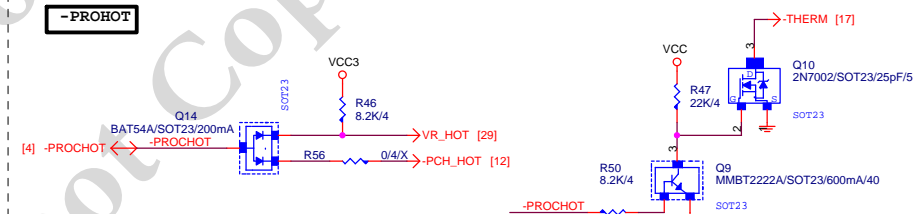


USB/A/O/RED/GF/RA/D

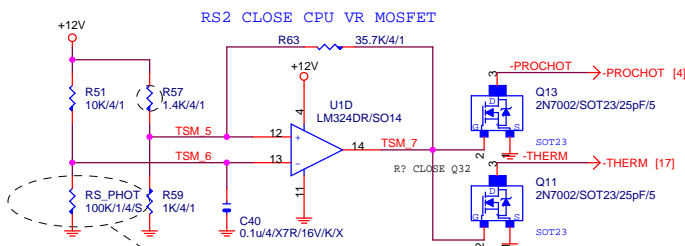


Close to connector

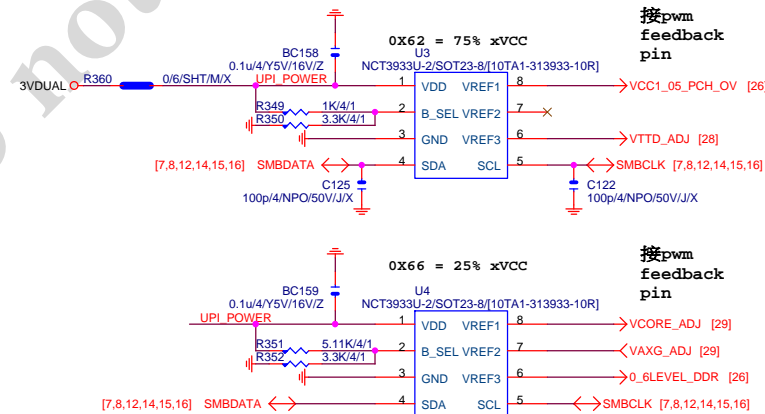
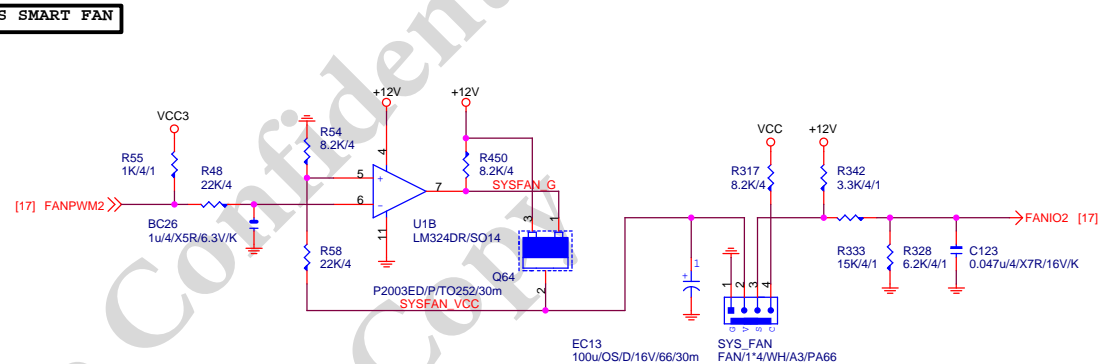
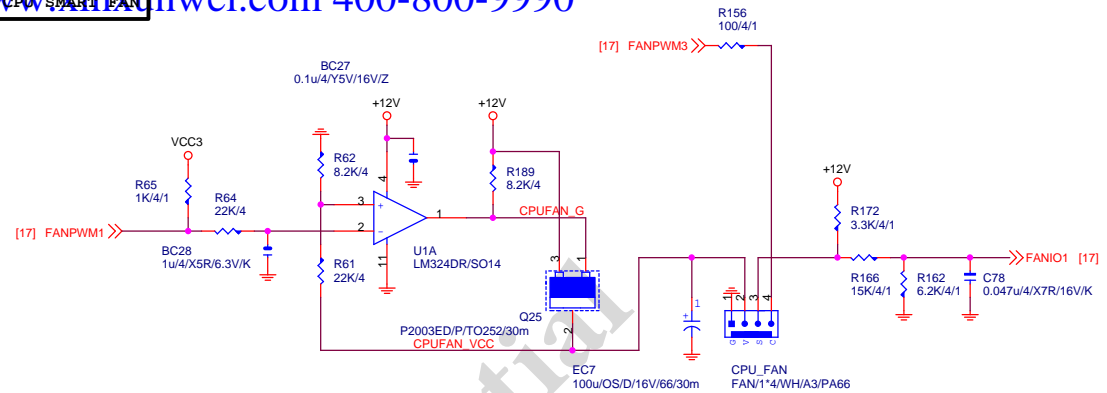
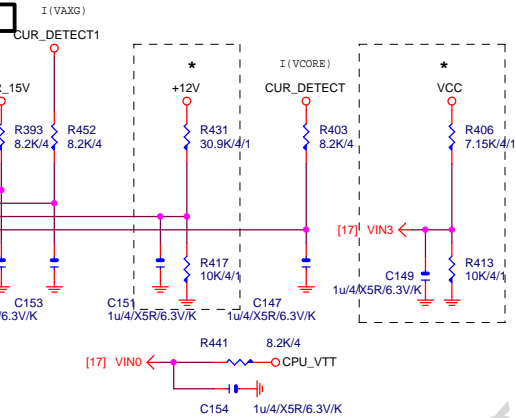
-PROHOT

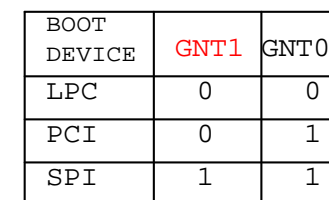


deasserted at 116 degree



CLOSE PWM HOT MOSFET





Gigabyte Technology

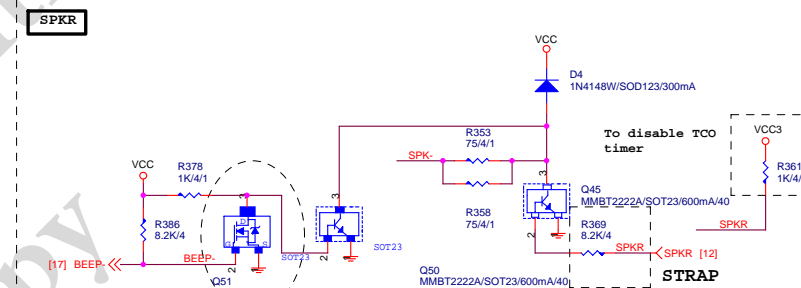
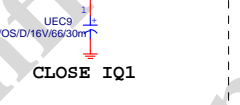
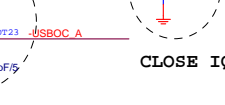
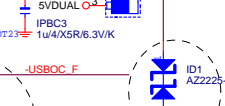
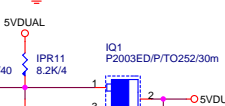
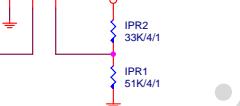
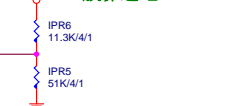
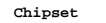
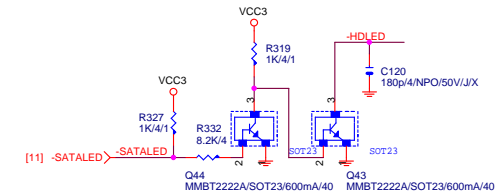
Size
A

GA-Z68M-D2H

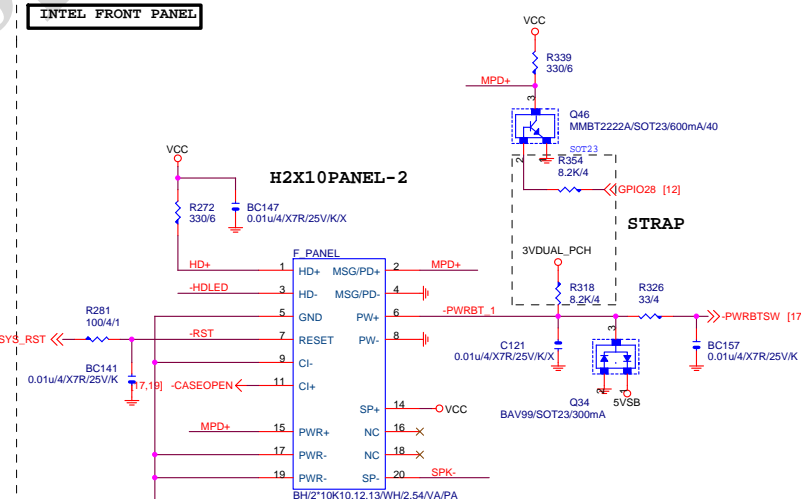
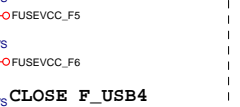
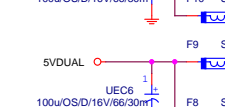
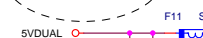
Rev	
1.01	

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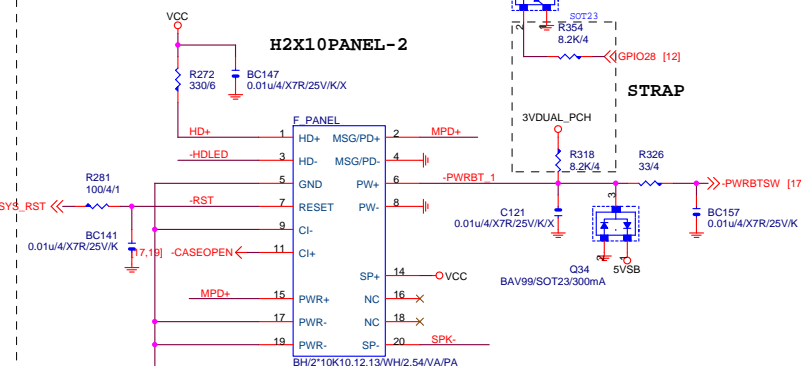
SATA LED



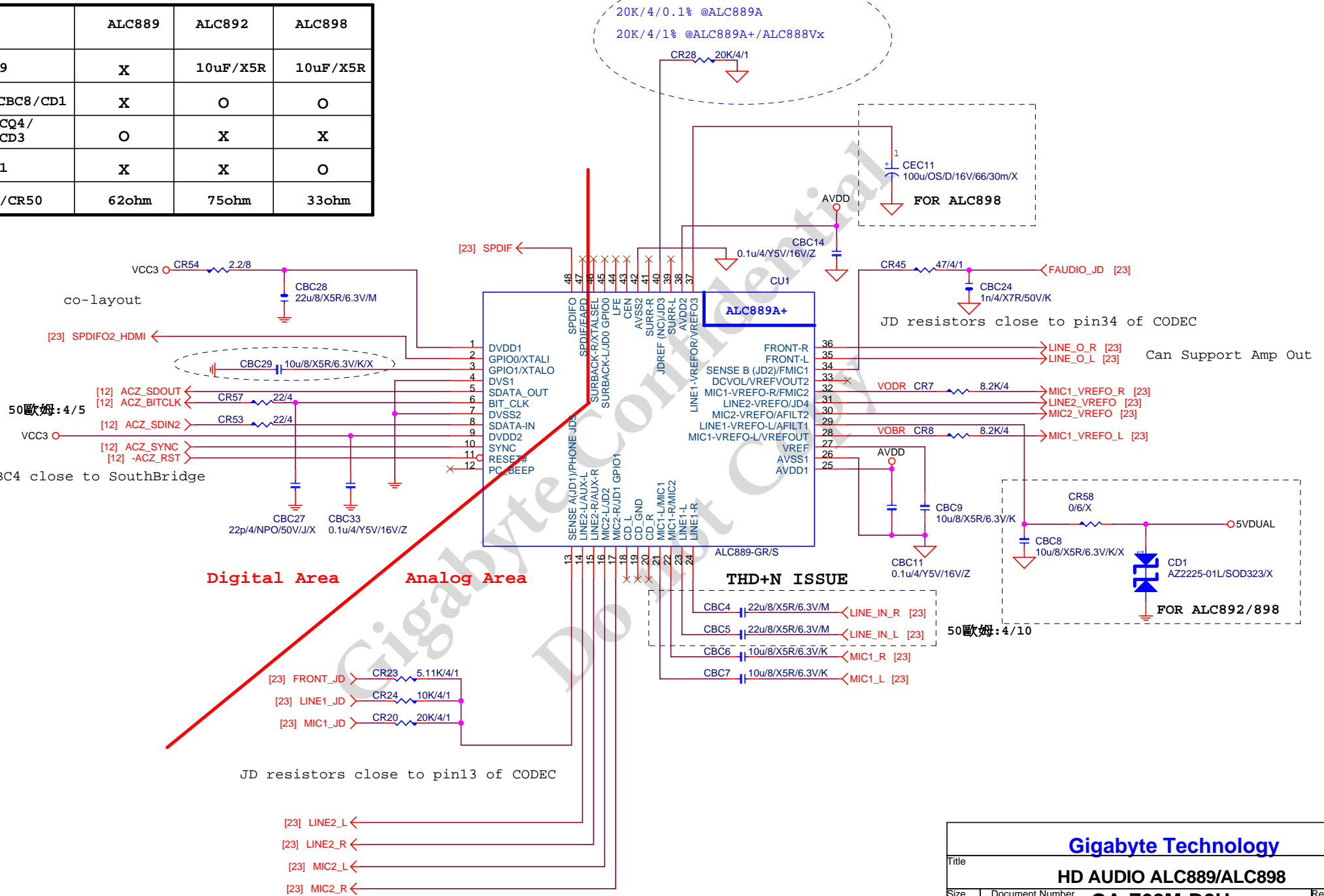
FRONT USB3



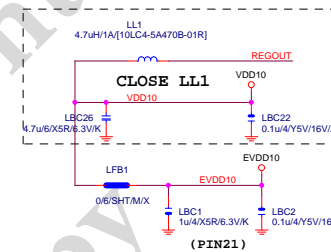
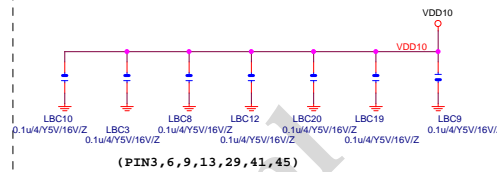
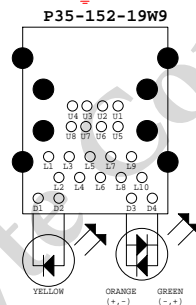
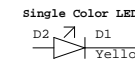
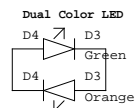
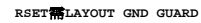
INTEL FRONT PANEL



	ALC889	ALC892	ALC898
CBC29	X	10uF/X5R	10uF/X5R
CR58/CBC8/CD1	X	O	O
CD2/CQ4/ CQ5/CD3	O	X	X
CEC11	X	X	O
CR27/CR50	62ohm	75ohm	33ohm

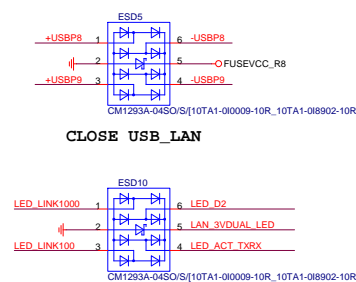


Can Support Amp Out



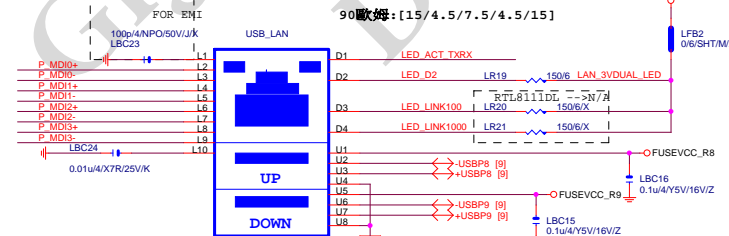
USB_LAN CONNECTOR

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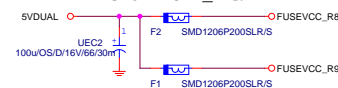
USB_LANDUAL-N

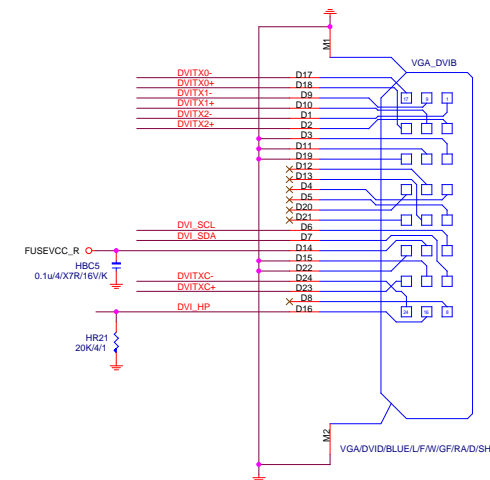
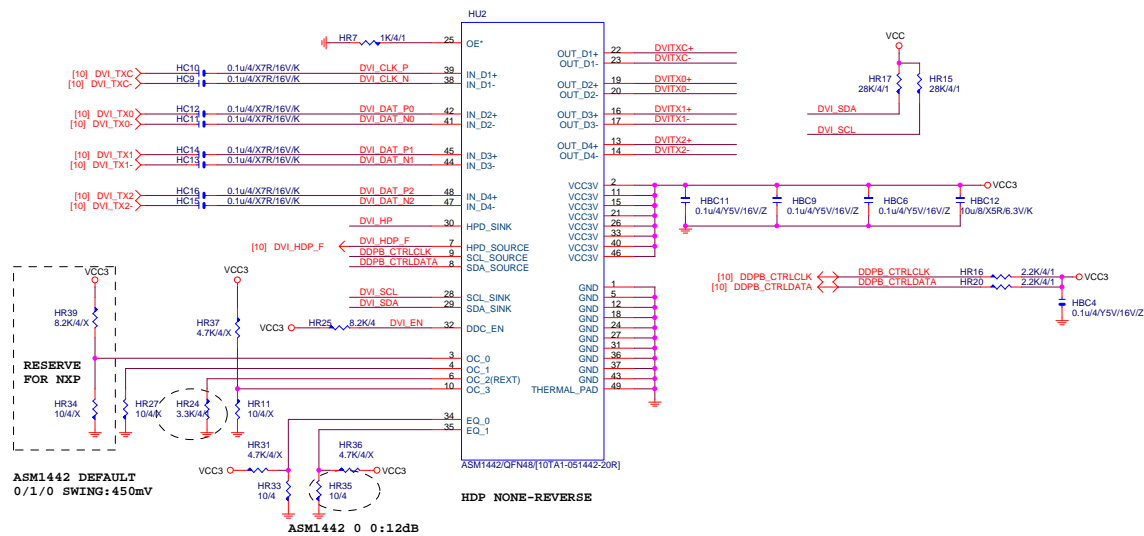
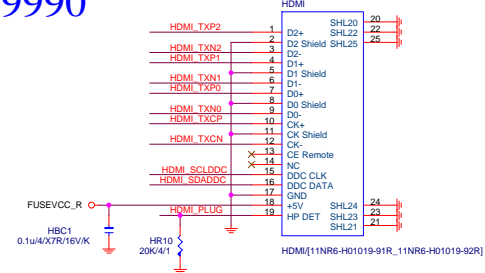
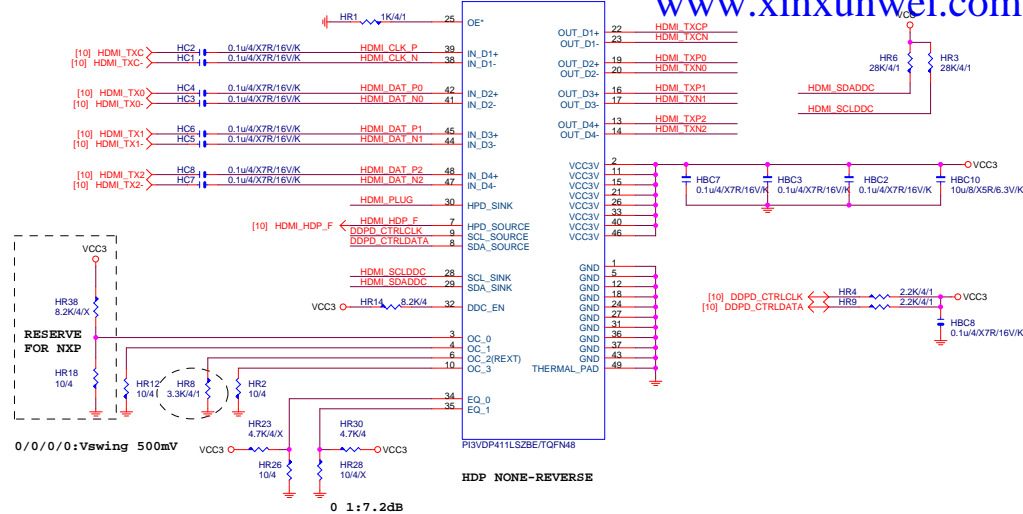
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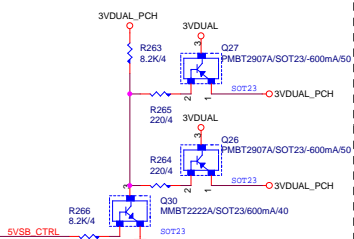
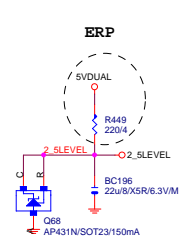
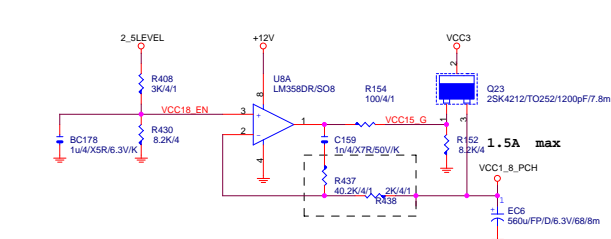


USB+LAN/1G/GO,Y/OS/RA/D/1/RED[11NR6-702009-11R]
RED 11NR6-702009-11R:1G/12CORE
11NR6-702009-41R:1G/8CORE

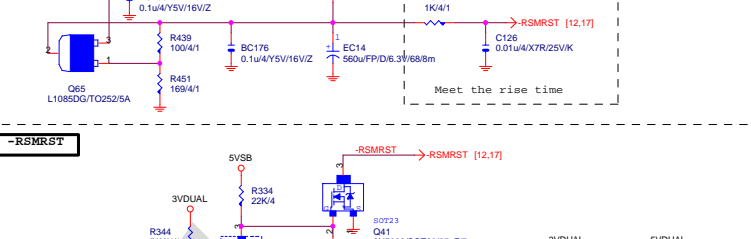
CLOSE USB_LAN



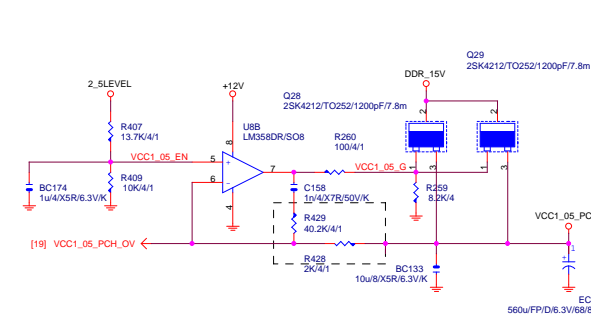




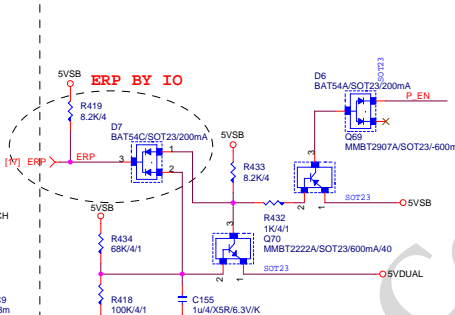
在ERP TURN ON時,先將PCH
3VDUAL灌入3VDUAL_PCH,使TURN ON
-SLP_S3功能



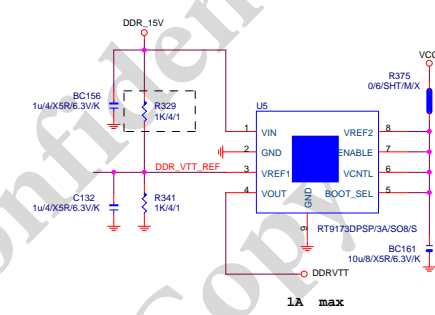
VCC1_05_PCH



5VDUAL SHORT PROTECT

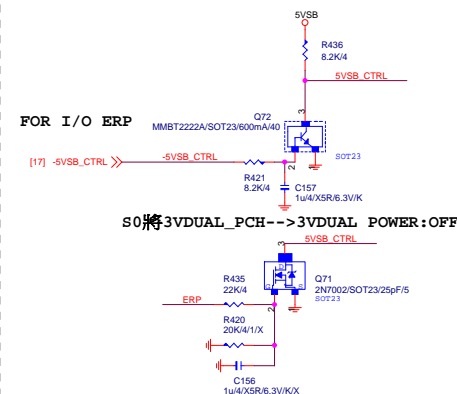


DDRVTT

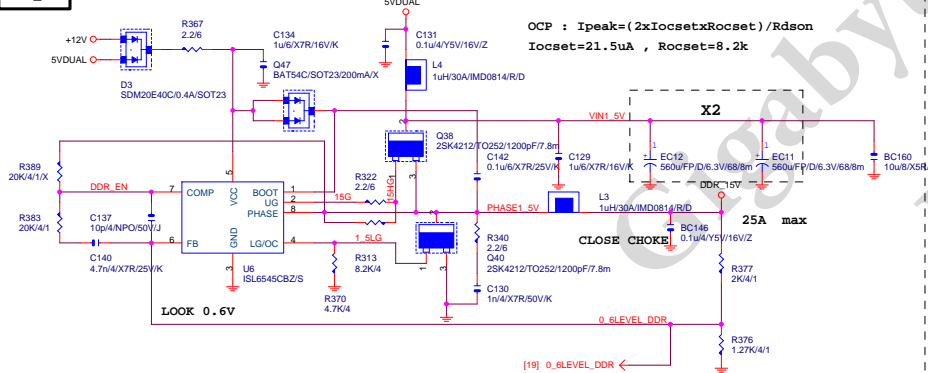


PWR SEQ

I/O 5VSB_CTRL反向

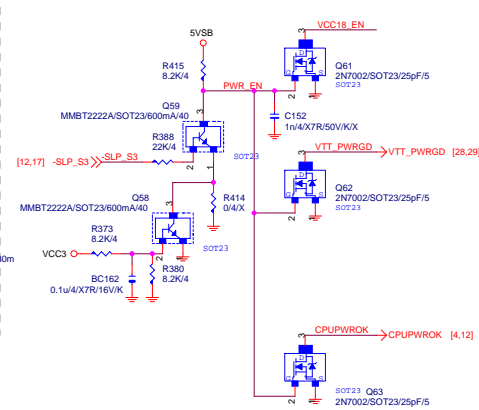
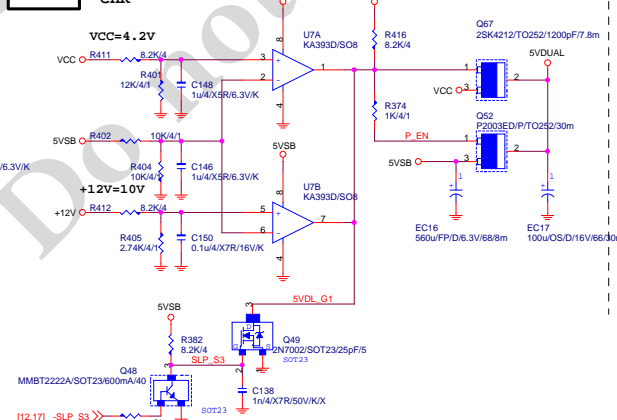


DDR_15V

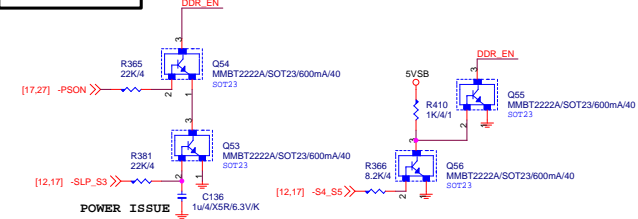


5VDUAL

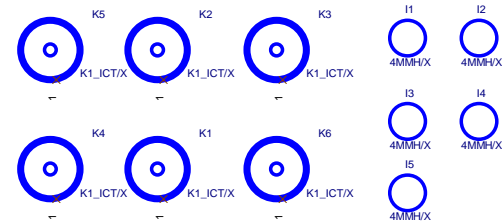
CHK



DDR_15V PWR SEQ



LOW SIDE RDS-ON同HI SIDE,否則太低,ISL6545過燙



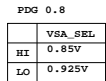
Title		ATX CONNECTOR,TPM
Size	Document Number	GA-Z68M-D2H
Custom		



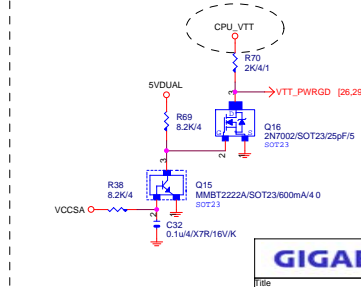
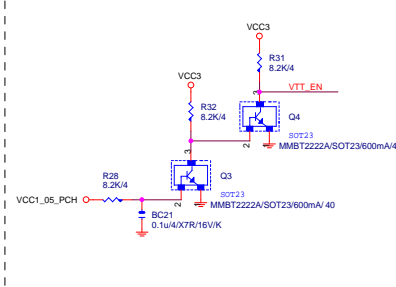
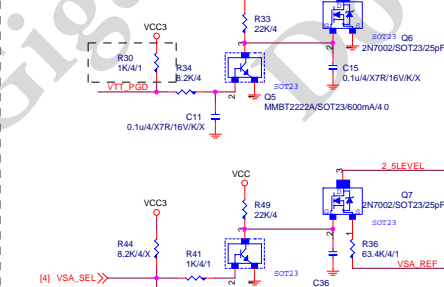
	F_SE
PU	1MHz
PD	600KH
NC	500KH
Short GND	300KH

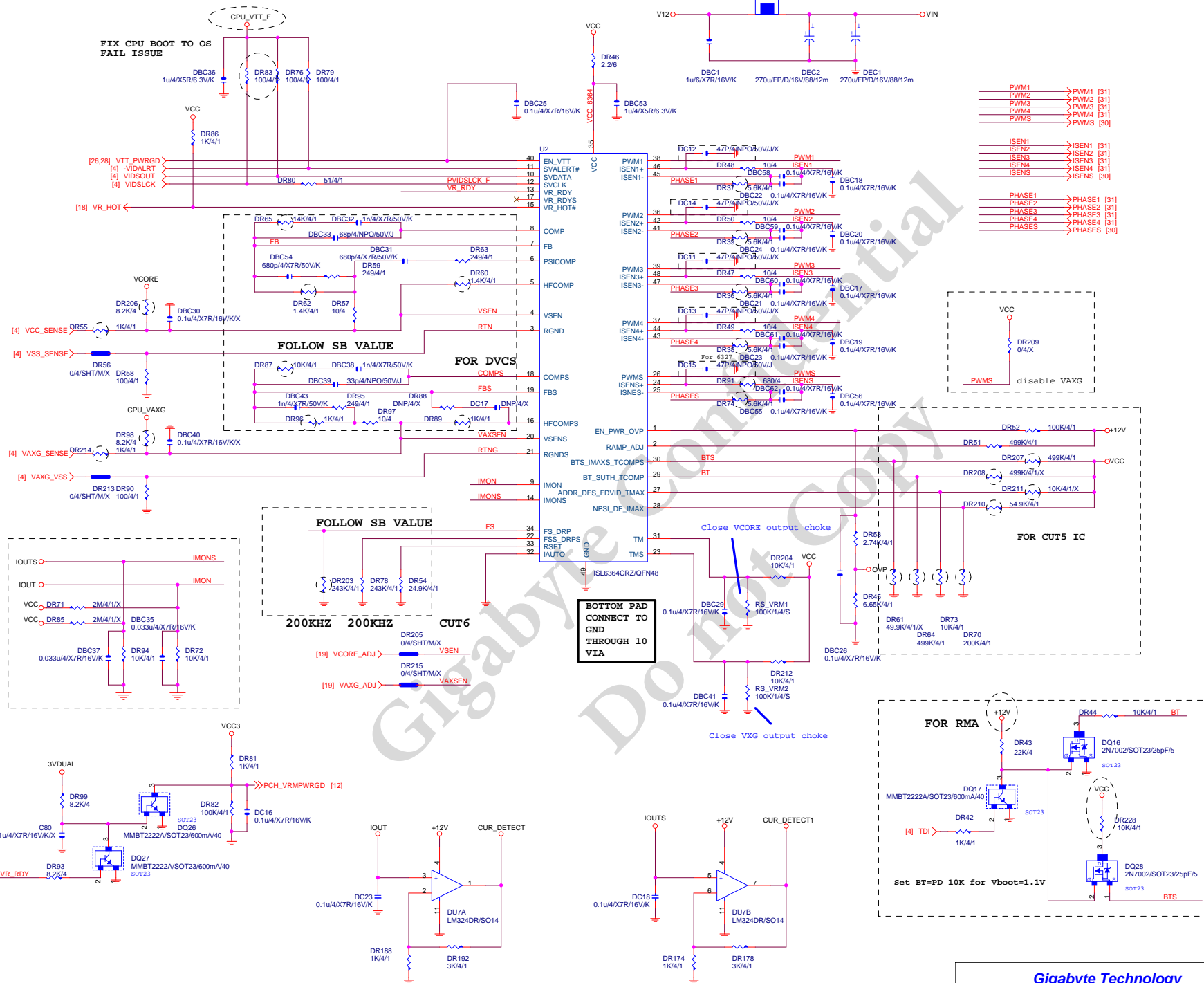
BOTTOM PAD
CONNECT TO GND
THROUGH 4 VIA

	VSA_SEL
HI	0.85V
LO	0.925V



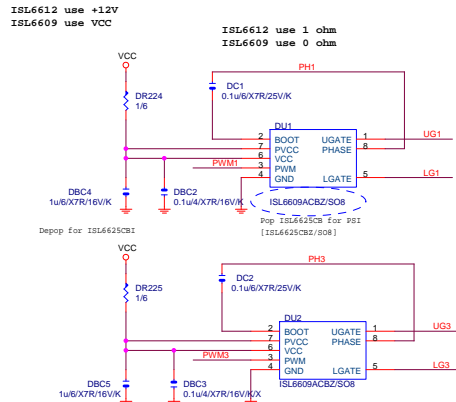
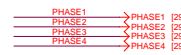
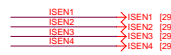
The schematic diagram illustrates the VSA_SEL input circuit. It features a differential input stage with two NMOS transistors, Q6 and Q7, and two PMOS load transistors, Q5 and Q8. The input signal VSA_SEL is connected to the gates of Q6 and Q7 through a resistor network consisting of R30 (1K/4/1), R34 (3.2K/4), R44 (8.2K/4/X), and R41 (1K/4/1). The gates of Q5 and Q8 are connected to VCC3 through resistors R33 (22K/4) and R49 (22K/4), respectively. The drains of Q6 and Q7 are connected to the gates of Q5 and Q8, respectively. The sources of Q6 and Q7 are connected to ground through capacitors C11 and C36. The sources of Q5 and Q8 are connected to VCC3 through capacitors C15 and C16. The output of the circuit is labeled VSA_REF.





MOS HEATSINK

<i>Gigabyte Technology</i>			
Title			
CPU CORE VR-2			
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[1]

[3]

[4]

[2]

