

# Model Name: GA-Z68XP-UD3

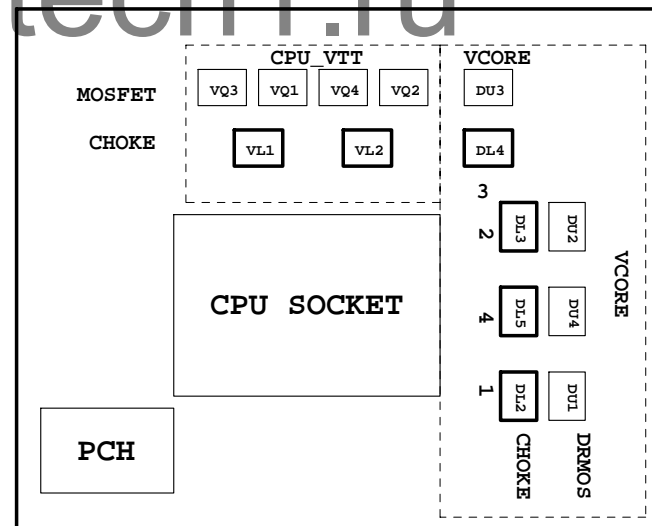
1.0

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
08	DDR III CHANNEL B
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*8 SLOT
16	PCI EXPRESS*16/*8 SWITCH
17	PCI EXPRESS*1 SLOTS X3
18	PI7C9X113SL
19	PI7C9X113SL POWER
20	PCI SLOT 1&2
21	I/O ITE8728
22	COM, -PROHOT, ESATA CONNECT
23	Dual BIOS , TPM SLB9635TT
24	ALC892
25	REAR AUDIO JACK
26	VCORE PWM_ISL6366CRZ-1
27	VCORE PWM_ISL6366CRZ-2

SHEET TITLE

28	VCORE PWM_ISL6366CRZ-3
29	DISCRETE POWER I
30	DDR_15V & VCC1_05_PCH PWM_ISL6545CBZ
31	CPU_VTT PWM_ISL6322G
32	VCCSA POWER
33	F_PANEL , F_USB , FDD
34	ATX POWER, CLOCK GEN
35	HWM,KB/MS , FAN CTRL
36	REALTEK RTL8111E
37	ESATA SE9128
38	FRONT NEC USB3.0
39	REAR NEC USB3.0
40	TABLE LIST



## Component value change history

[illegible]

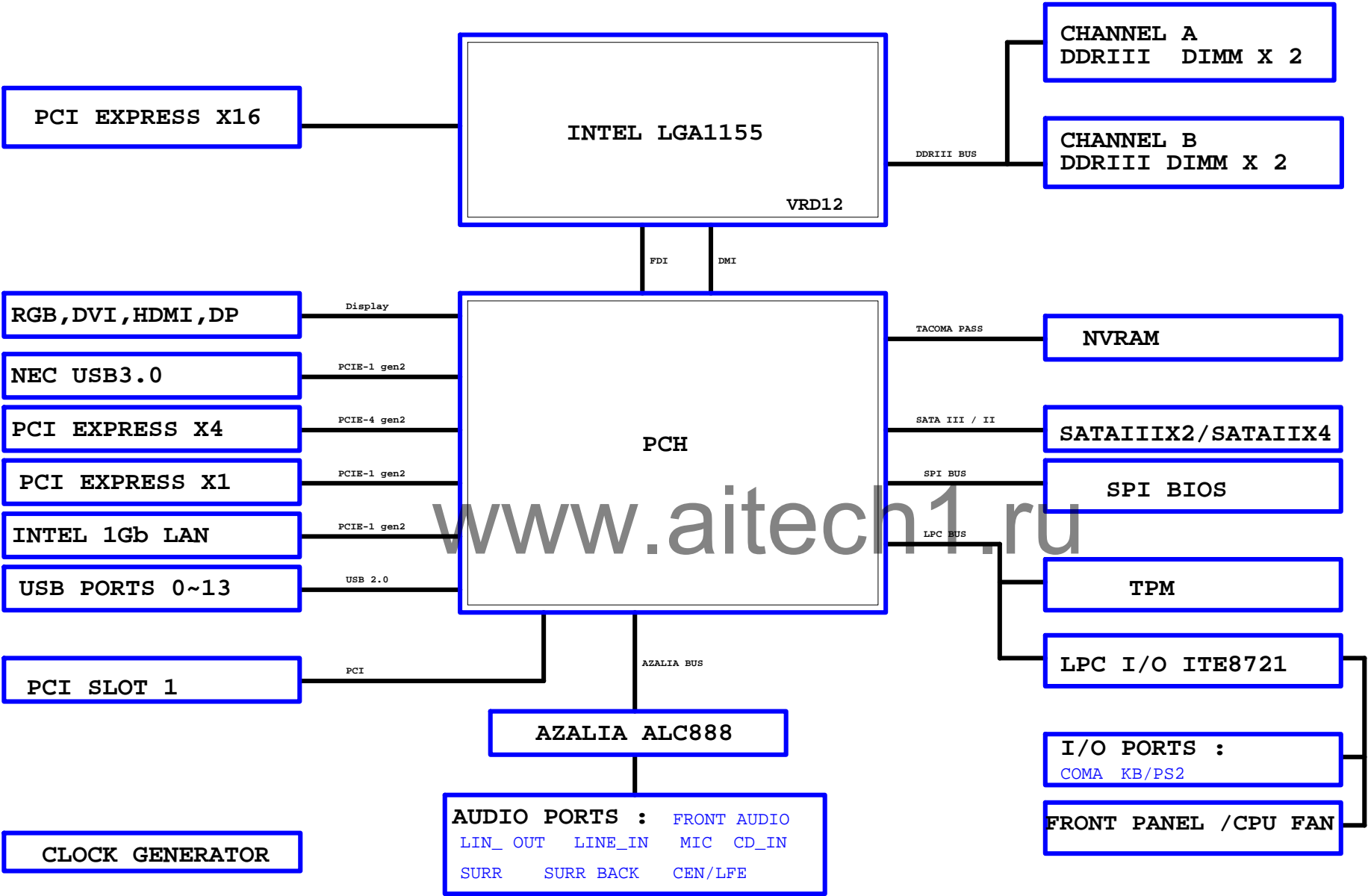
DATE	Change Item	Reason
P67X-UD3-B3 REV0.1	1. EVT Release	
	1. 移除LARI1 ,LARI4 , NR28 ,新增NTP11 2. 新增DR388,DR389,DR391 ; Remove DQ49,DR347,DR371 3. CR44改成R0603-RH 4. R1,LAR3,RBR20,LABC25 -->R0402-2-SHORT 5. RAQ1 --> Q_TO223-MASK 6. RARN1 --> R8P4R-0402-SHORT 7. CESD1-5 --> SSOP5 8. RAQ2,RAEC1一起往下移40mil 9. CESD2文字面要標pin1	
P67X-UD3-B3 1.0-0308	1. Add "Dolby" logo	
1.02	1. UAFB1,UAFB2,UBF1,UBF2 Footprint update 1206-->1812 2. Add "AD1" FOR 5VSB	
Z68X-UD3-B3 1.02	1. 文字面 : P67X-UD3-B3 --> Z68X-UD3-B3	
Z68X-UD3-B3-new 0.1	1. Add M-SATA , HDMI , GPU 2. Remove usb3 turbo 3. M-SATA SWITCH的預留電阻T型,注意走線	
Z68X-UD3-B3-new 1.0	1. 文字面 : Dolby change to DTS logo 2. 文字面 : SLOT部分全對齊 3. update MINI_PCIE footprint	

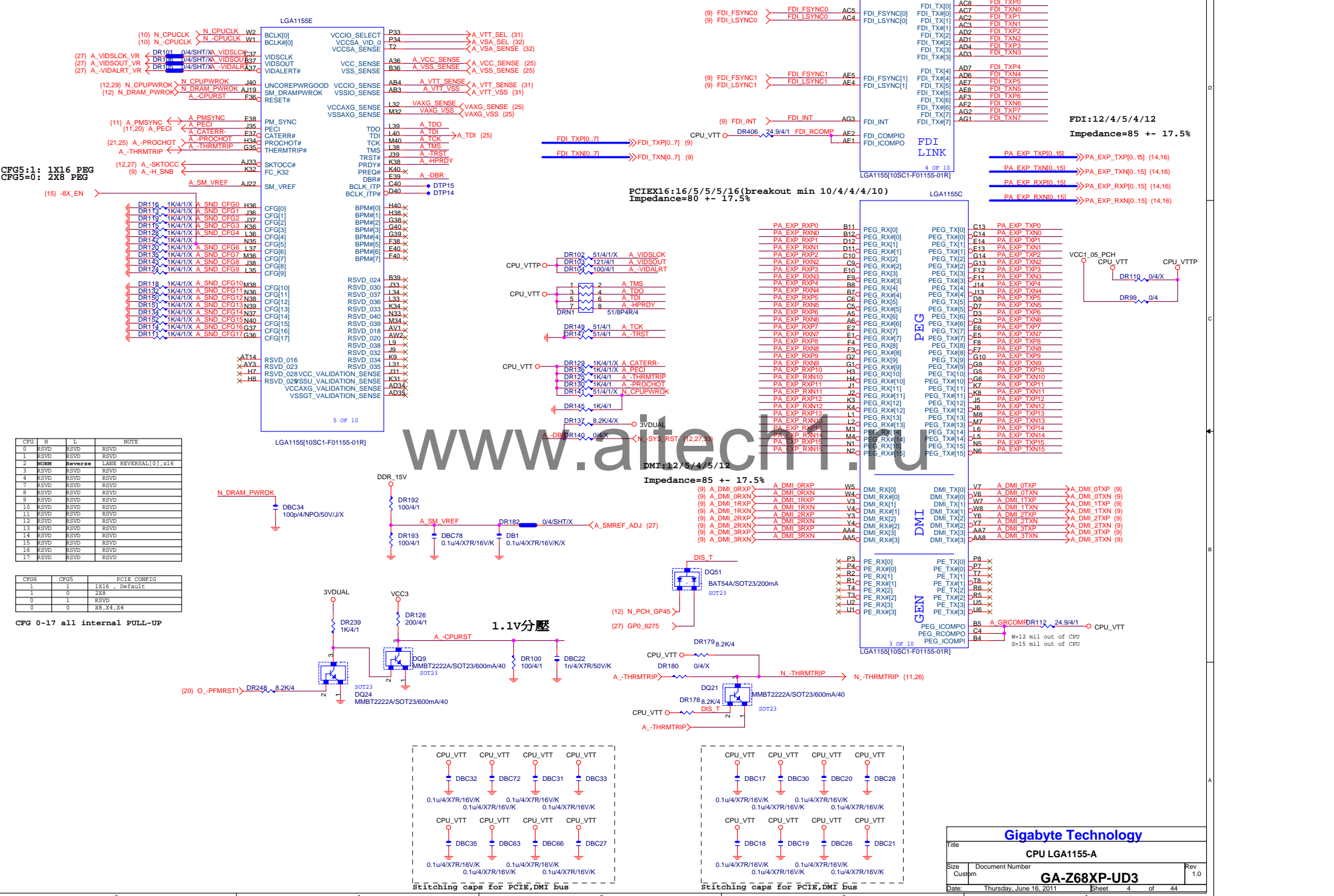
4. Add TM & TMS 0 ohm

5. ITE8275\_CLK CHANGE TO PCH.AW5

<b><i>Gigabyte Technology</i></b>			
Title <b>BOM &amp; PCB MODIFY HISTORY</b>			
Size Custom	Document Number <b>GA-Z68XP-UD3</b>	Rev <b>1.0</b>	
Date:	Thursday, June 16, 2011	Sheet	2 of 44

BLOCK DIAGRAM





CFG	H	L	NOTE
0	RSVD	RSVD	RSVD
1	RSVD	RSVD	RSVD
2	Reverse	Reverse	Reverse
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

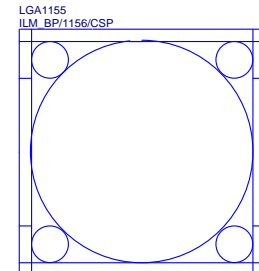
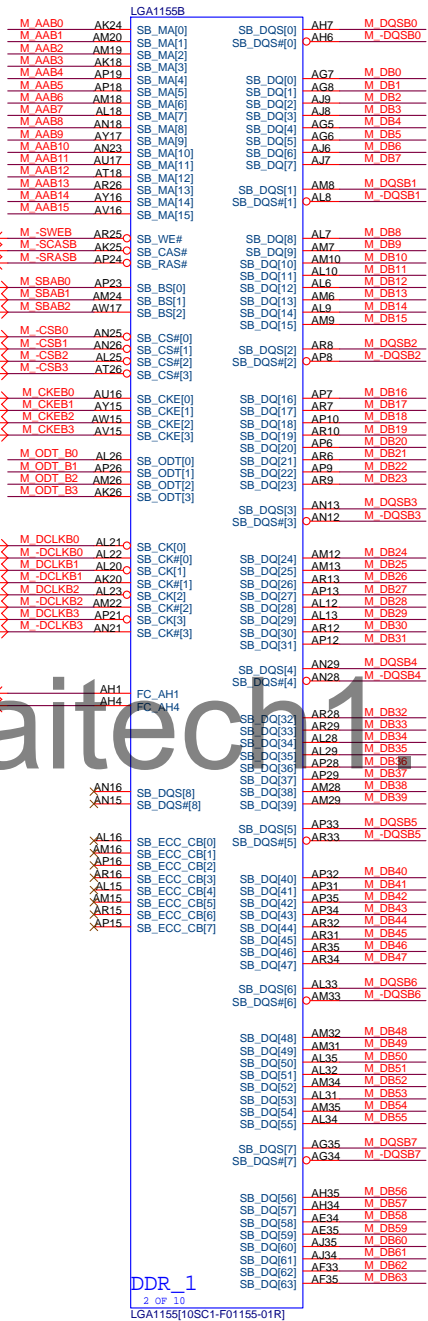
CFG6	CFG5	PCIE CONFIG
1	0	1X16, Default
0	1	2X8
0	0	RSVD
0	0	X8,X4,X4

CFG 0-17 all internal PULL-UP

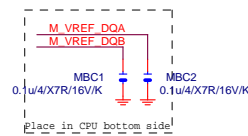




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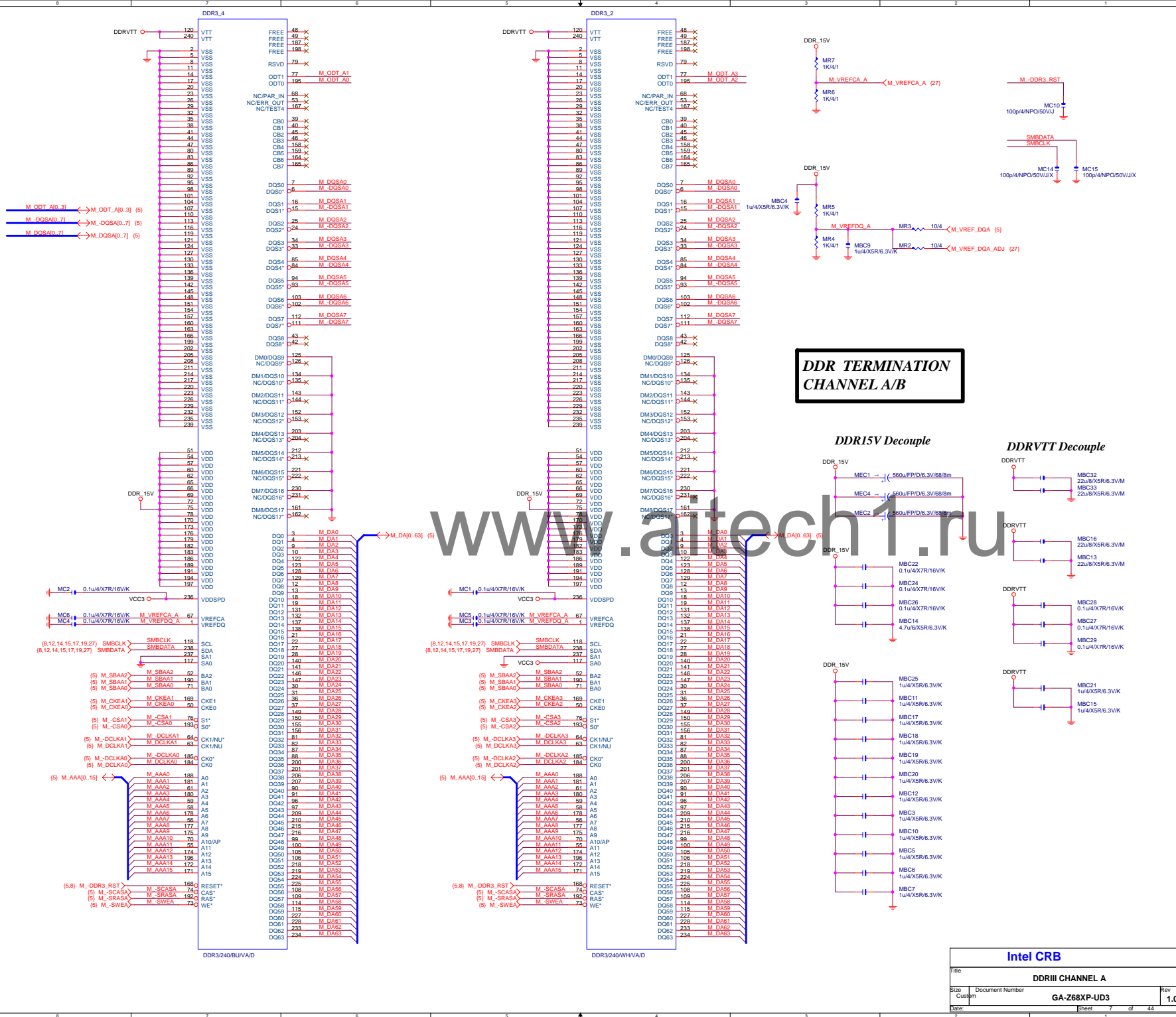


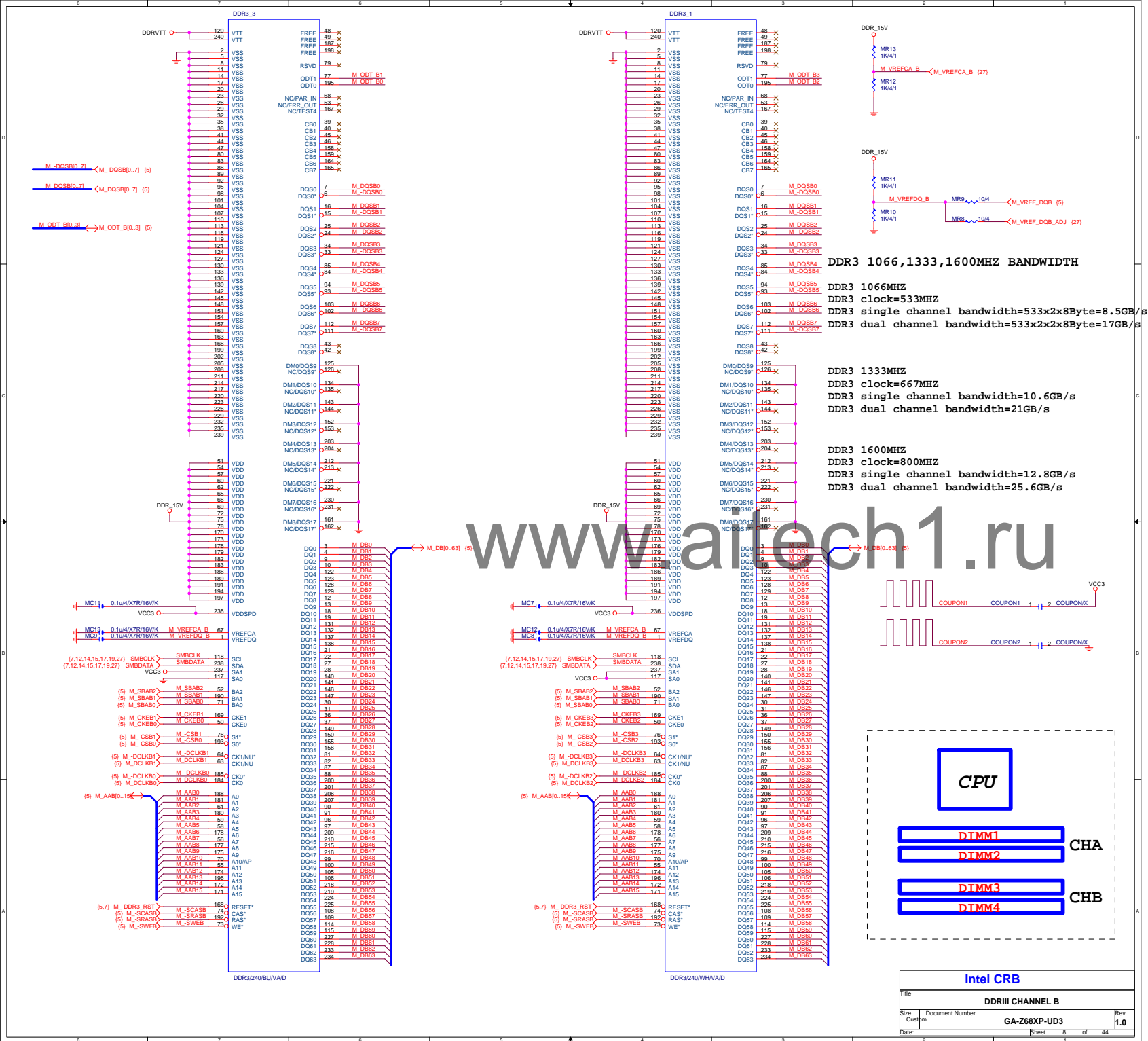
Need check the new CPU ME



Intel CRB		
Title		
CPU LGA1156-B		
Size	Document Number	Rev
Custom	GA-Z68XP-UD3	1.0
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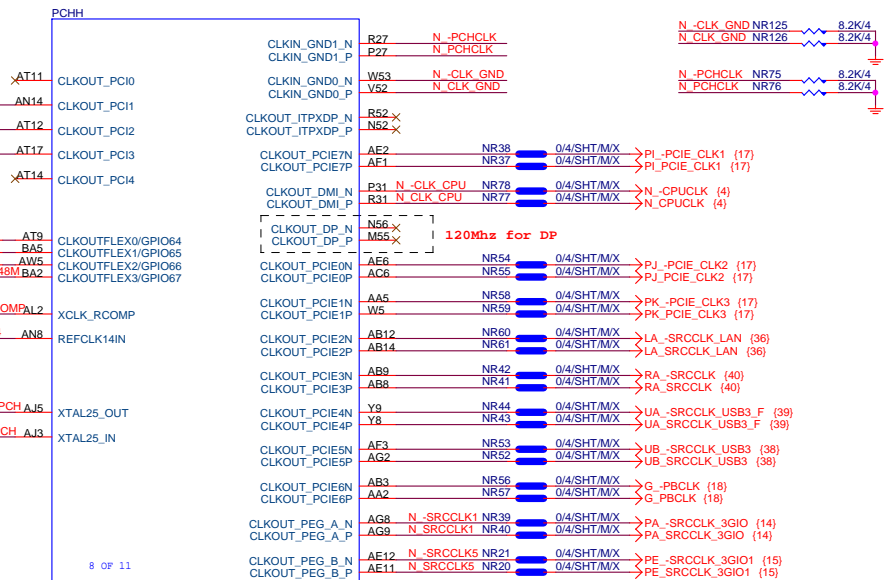
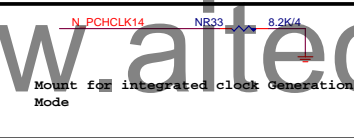
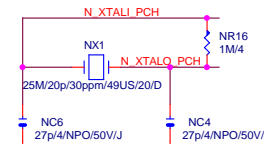
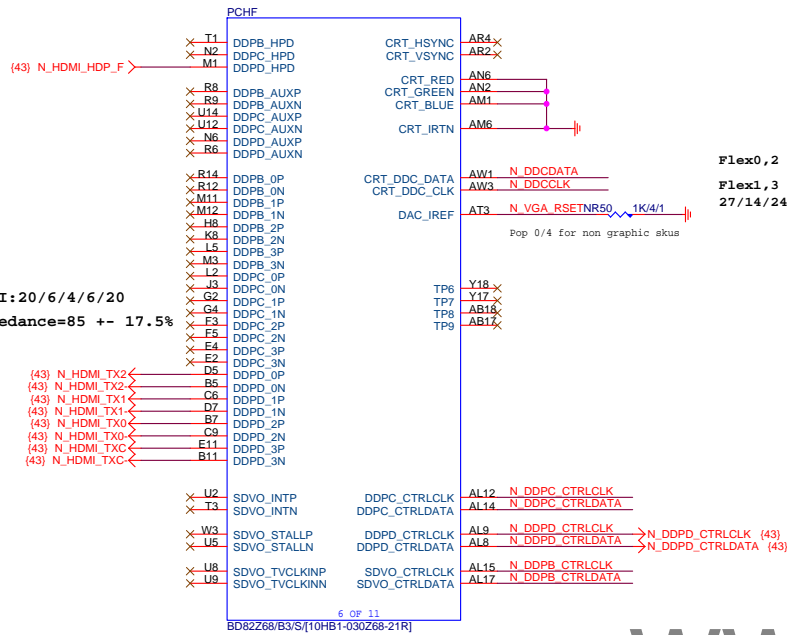












Name	Type	Recommendations	Reason/Impact
SPKR	I	<b>Default Mode:</b> Internal weak pull-down.  <b>No Reboot Mode with TCO Disabled:</b> Connect to Vcc3_3 with 8.2k-10k Ohm weak pull-down resistor.	
INT1#/GPIO5	I/O	Do not pull low.  <b>Default Mode:</b> Internal pull-up.  <b>Top Block Swap Mode:</b> Connect to ground with 4.7k Ohm weak pull-down resistor.	
SATA1GP/GPIO19, GNT1#	I/O	<b>Default (SPI)</b> Left both SATA1GP/GPIO19 and GNT1# floating. No pull up required.  <b>Boot from PCI</b> Connect SATA1GP/GPIO19 to ground with 1k Ohm pull-down resistor. Leave GNT1# Floating.  <b>Boot from LPC</b> Connect both SATA1GP/GPIO19 and GNT1# to ground with 1k Ohm pull-down resistor.	IF LPC is selected BIOS may still be placed on LPC, but all platforms with PCH require SPI flash connected directly to the PCH's SPI bus with a valid descriptor in order to boot.  Booting to PCI is intended for debug/testing only. Boot BIOS Destination Select to LPC/PCI by functional strap or via Boot BIOS Destination Bit will not affect SPI accesses initiated by Management Engine or Integrated GBE LAN.
GNT2#/GPIO53	I/O	Do not pull low.	ESI strap for server platform ONLY
HDA_SDO	I/O	<b>Default</b> Do not pull high.  <b>Disable ME in Manufacturing Mode</b> Connect to VccSusHDA with 1k Ohm pull-up resistor through a jumper.	Flash descriptor Override
SPI_MOSI	I/O	Internal weak pull down. Do not pull high.	DMI RX Termination Voltage
DF_TV5	I/O	Internal weak pull up. Do not pull low.	DMI termination voltage
HDA_SYNC	I/O	Internal weak pull down. Do not pull up.	On die PLL VR voltage selector
GPI015	I/O	<b>Enable TLS:</b> Pull up with 1k Ohm to VccSus3.3. <b>Default (Disable TLS):</b> Leave NC. Internal pull down.	TLS confidentiality
GPI08	I/O	<b>BTM</b> Leave floating. Do not pull low. <b>FCIM</b> Pull low with 1k Ohm to ground.	FCIM. Can be override by softstrap through ME.
GPI028	I/O	Internal weak pull up. Do not pull low.	On die PLL voltage regulator
SATA2GP/GPIO36	I/O	Internal weak pull down. Do not pull high.	
SATA3GP/GPIO37	I/O	Internal weak pull down. Do not pull high.	

SATA:20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)  
Impedance=90 +- 17.5%

PCHC

For WIFI  
NR177 0.4/SHT/M/X  
NR178 0.4/SHT/M/X  
NR179 0.4/SHT/M/X

APWROK  
NTP6  
NTP7  
NTP5  
NTP4

N GPIO17  
N GPIO1  
N GPIO6  
N PHASE\_CTRL  
N GPIO68  
N GPIO69  
N GPIO70  
N GPIO71

N\_SSTCTL

N GPIO22  
N GPIO38  
N GPIO39  
N GPIO48

NRN8 8.2K/8P4R/4  
NRN7 8.2K/8P4R/4  
NRN6 8.2K/8P4R/4  
NRN5 8.2K/8P4R/4  
NRN4 8.2K/8P4R/4  
NRN3 8.2K/8P4R/4  
NRN2 8.2K/8P4R/4

NR206 0.4/SHT/M/X  
NR205 0.4/SHT/M/X

N SATA1TXP  
N SATA1TXN  
N SATA1RXN  
N SATA1RXP

N SATA3TXP  
N SATA3TXN  
N SATA3RXN  
N SATA3RXP

N SATA2TXP  
N SATA2TXN  
N SATA2RXN  
N SATA2RXP

N SATA4TXP  
N SATA4TXN  
N SATA4RXN  
N SATA4RXP

SATA0RXN  
SATA0RXP  
SATA0TXN  
SATA0TXP  
SATA1RXN  
SATA1RXP  
SATA1TXN  
SATA1TXP

SATA2RXN  
SATA2RXP  
SATA2TXN  
SATA2TXP  
SATA3RXN  
SATA3RXP  
SATA3TXN  
SATA3TXP

SATA4RXN  
SATA4RXP  
SATA4TXN  
SATA4TXP  
SATA5RXN  
SATA5RXP  
SATA5TXN  
SATA5TXP

CLKIN\_SATA\_N  
CLKIN\_SATA\_P

SATALED#  
SATAICOMPI  
SATAICOMPO

SATA0GP/GPIO21  
SATA1GP/GPIO19  
SATA2GP/GPIO36  
SATA3GP/GPIO37  
SATA4GP/GPIO16  
SATA5GP/GPIO49

SATA3COMPI  
SATA3RCOMPO  
TP16  
SATA3RBIAS

A20GATE  
INIT3\_3V#  
RCIN#  
SERIRO  
THRMTTRIP#  
PECI  
PMSYNCH

N SATA0TXP  
N SATA0TXN  
N SATA0RXN  
N SATA0RXP

N SATA2TXP  
N SATA2TXN  
N SATA2RXN  
N SATA2RXP

N SATA4TXP  
N SATA4TXN  
N SATA4RXN  
N SATA4RXP

N SATA6TXP  
N SATA6TXN  
N SATA6RXN  
N SATA6RXP

N SATA8TXP  
N SATA8TXN  
N SATA8RXN  
N SATA8RXP

MB-ID  
NR64 8.2K/4/X N GPIO17  
NR173 8.2K/4/X N GPIO19

N GPIO21  
N GPIO19  
N GPIO36  
N GPIO37  
N GPIO38  
N GPIO39  
N GPIO48  
N GPIO49

N GPIO22  
N GPIO22  
N GPIO22  
N GPIO22  
N GPIO22  
N GPIO22  
N GPIO22  
N GPIO22

N A20GATE  
N SERIRO  
N KBRST  
N INIT\_3V  
N GNT2  
N GNT3

N SATA0TXP  
N SATA0TXN  
N SATA0RXN  
N SATA0RXP

N SATA2TXP  
N SATA2TXN  
N SATA2RXN  
N SATA2RXP

N SATA4TXP  
N SATA4TXN  
N SATA4RXN  
N SATA4RXP

N SATA6TXP  
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N SATA6RXN  
N SATA6RXP

N SATA8TXP  
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N SATA10TXP  
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N SATA12TXP  
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N SATA18TXP  
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N SATA14RXP

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N SATA16TXN  
N SATA16RXN  
N SATA16RXP

N SATA18TXP  
N SATA18TXN  
N SATA18RXN  
N SATA18RXP

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N\_PCH33  
N\_IRDY  
N\_STOP  
N\_PLOCK  
N\_TRDY  
N\_PERR  
N\_FRAME

N\_GPIO0  
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PCHA  
PAR  
DEVSEL#  
CLKIN\_PCILOOPBACK  
PCIRST#  
IRDY#  
PME#  
SERR#  
STOP#  
PLOCK#  
TRDY#  
PERR#  
FRAME#

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N\_TRDY  
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N\_FRAME

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N\_GPIO103

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5VSB  
NR68 8.2K/4/X  
NR67 1K/4/1/X  
NR66 8.2K/4/X  
NR65 8.2K/4/X  
NR64 8.2K/4/X  
NR63 8.2K/4/X  
NR62 8.2K/4/X  
NR61 8.2K/4/X  
NR60 8.2K/4/X  
NR59 8.2K/4/X  
NR58 8.2K/4/X  
NR57 8.2K/4/X  
NR56 8.2K/4/X  
NR55 8.2K/4/X  
NR54 8.2K/4/X  
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NR52 8.2K/4/X  
NR51 8.2K/4/X  
NR50 8.2K/4/X  
NR49 8.2K/4/X  
NR48 8.2K/4/X  
NR47 8.2K/4/X  
NR46 8.2K/4/X  
NR45 8.2K/4/X  
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NR41 8.2K/4/X  
NR40 8.2K/4/X  
NR39 8.2K/4/X  
NR38 8.2K/4/X  
NR37 8.2K/4/X  
NR36 8.2K/4/X  
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NR22 8.2K/4/X  
NR21 8.2K/4/X  
NR20 8.2K/4/X  
NR19 8.2K/4/X  
NR18 8.2K/4/X  
NR17 8.2K/4/X  
NR16 8.2K/4/X  
NR15 8.2K/4/X  
NR14 8.2K/4/X  
NR13 8.2K/4/X  
NR12 8.2K/4/X  
NR11 8.2K/4/X  
NR10 8.2K/4/X  
NR9 8.2K/4/X  
NR8 8.2K/4/X  
NR7 8.2K/4/X  
NR6 8.2K/4/X  
NR5 8.2K/4/X  
NR4 8.2K/4/X  
NR3 8.2K/4/X  
NR2 8.2K/4/X  
NR1 8.2K/4/X

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N\_STOP  
N\_PLOCK  
N\_TRDY  
N\_PERR  
N\_FRAME

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PAR  
DEVSEL#  
CLKIN\_PCILOOPBACK  
PCIRST#  
IRDY#  
PME#  
SERR#  
STOP#  
PLOCK#  
TRDY#  
PERR#  
FRAME#

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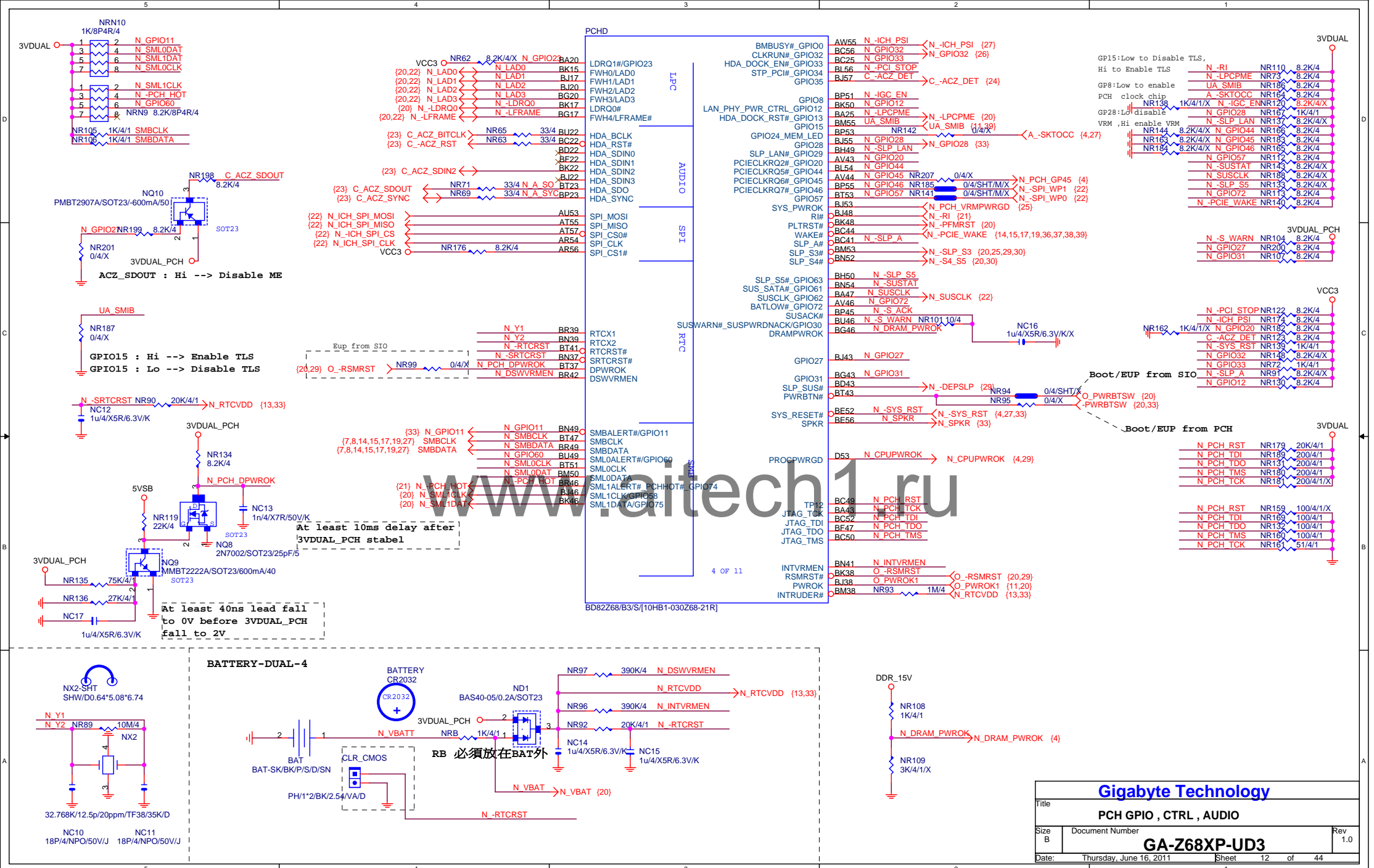
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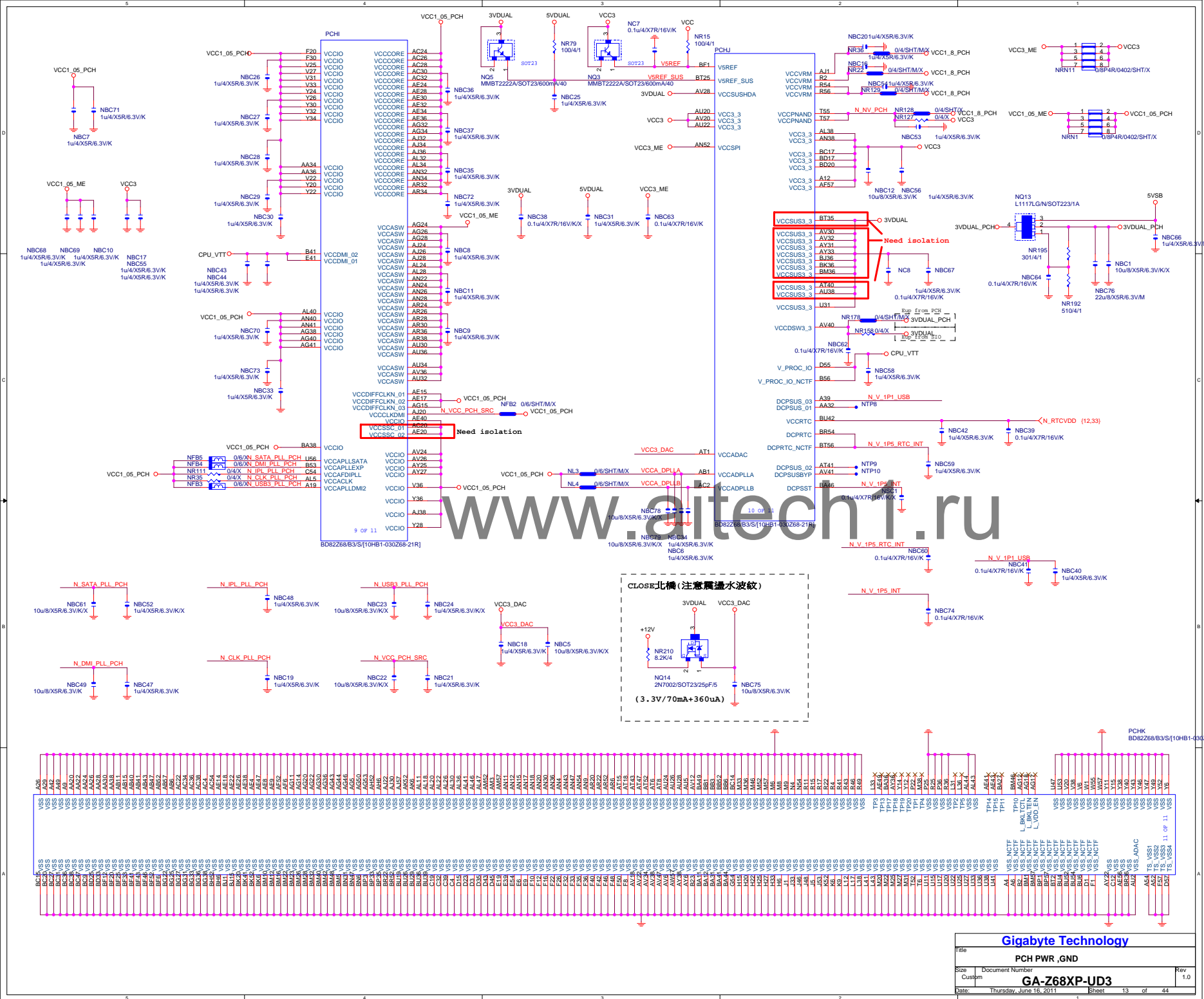
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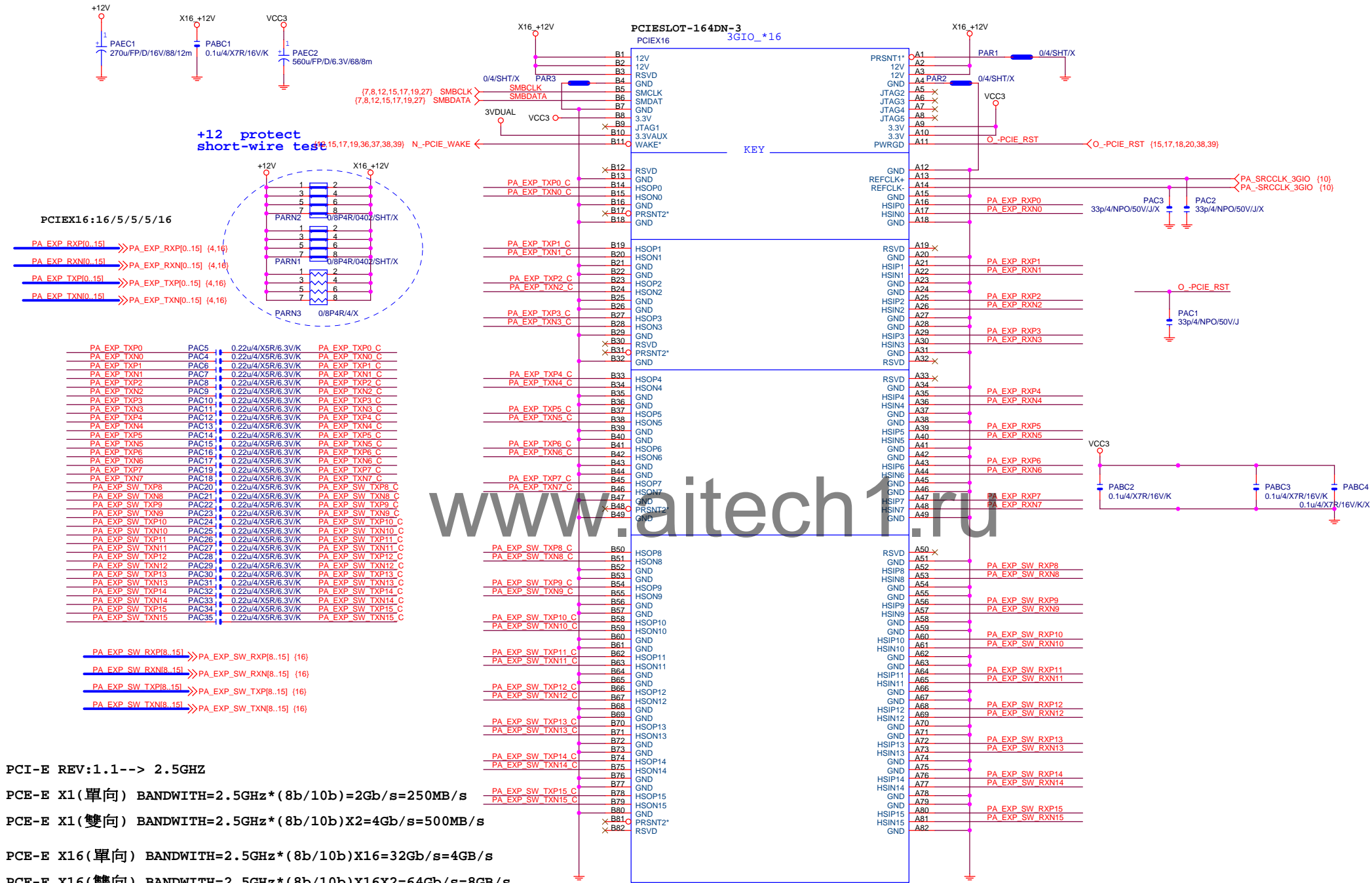
CK\_SRCCLK\_SATA NR157 8.2K/4  
CK\_SRCCLK\_SATA NR156 8.2K/4  
Mount for integrated clock Generation Mode

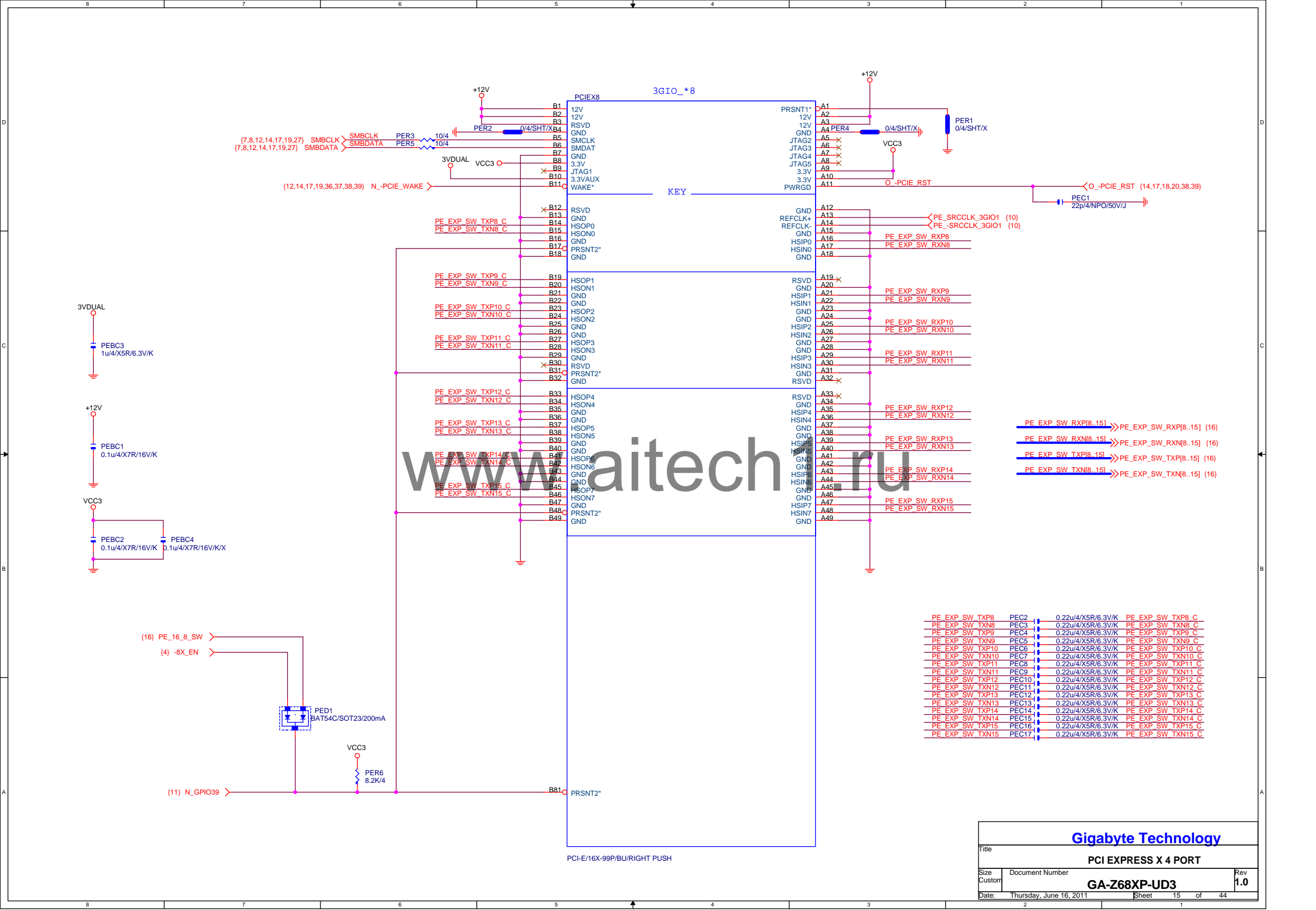
Gigabyte Technology  
Title  
PCH HOST , SATA, PCI  
Size B Document Number  
GA-Z68XP-UD3  
Date: Thursday, June 16, 2011 Sheet 11 of 44

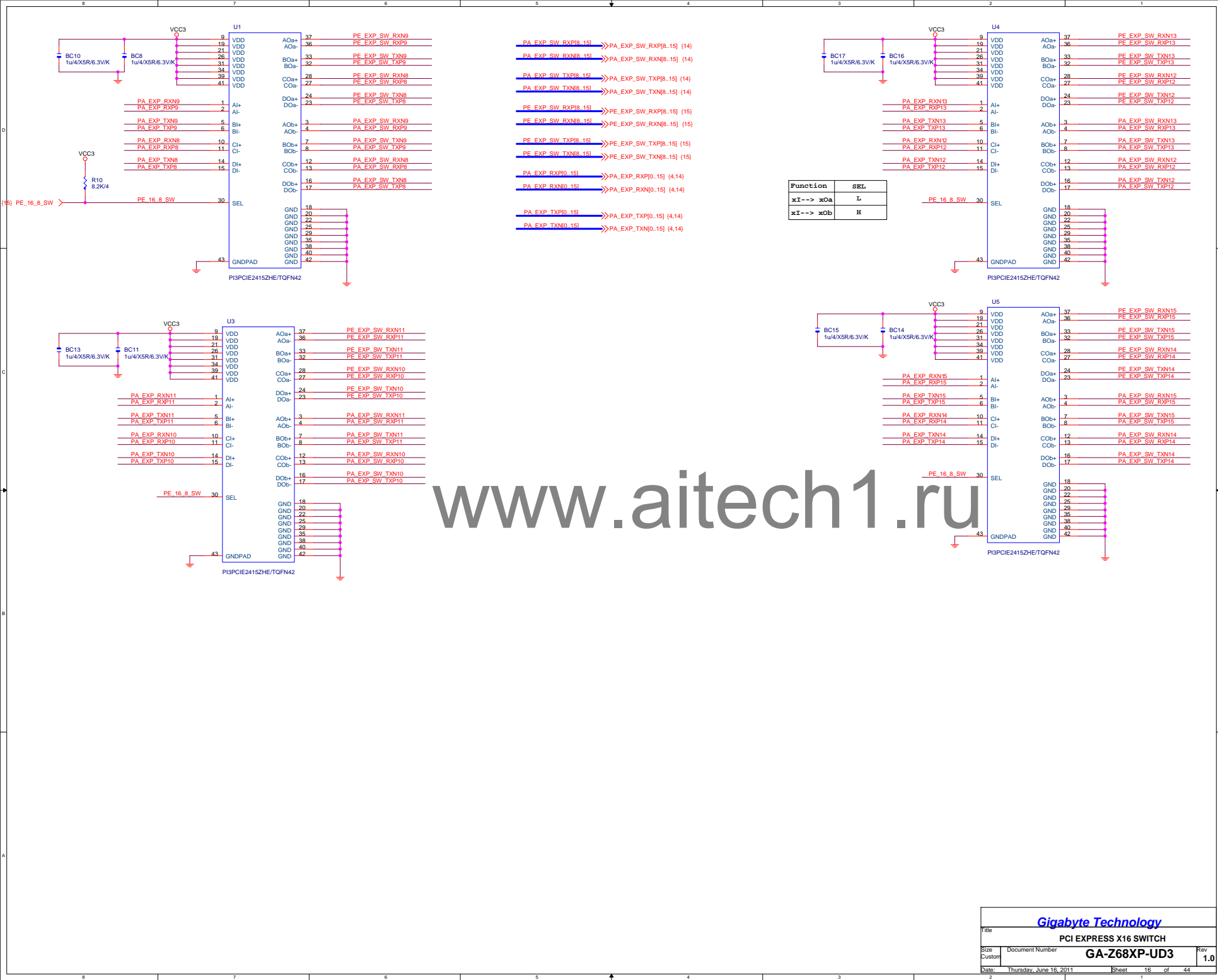




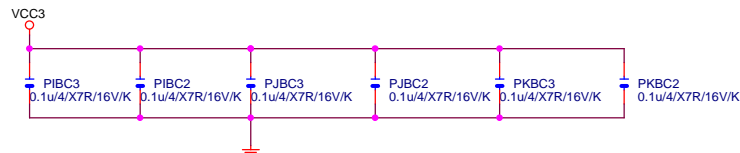
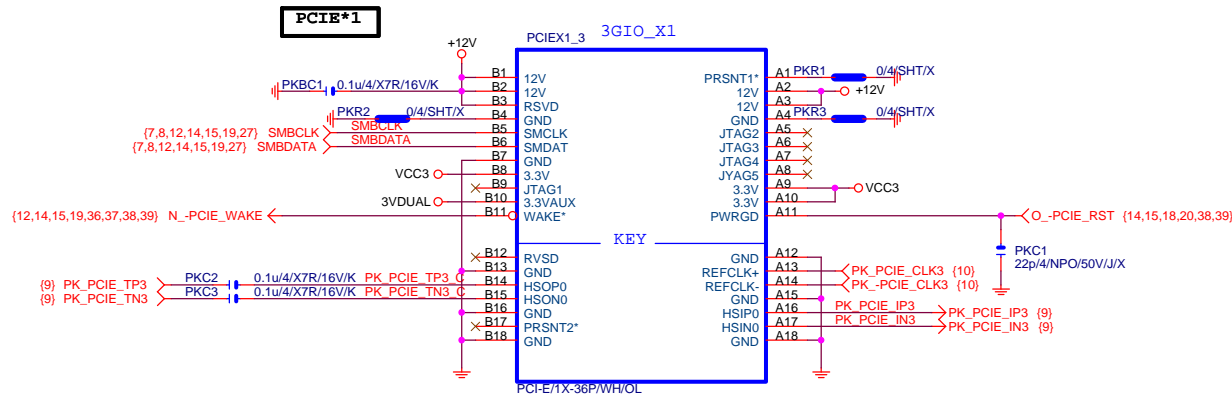
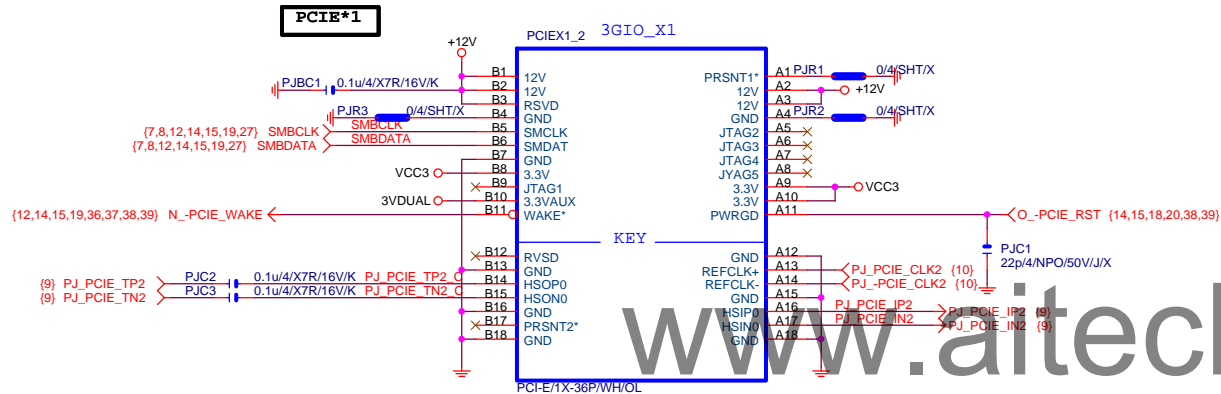
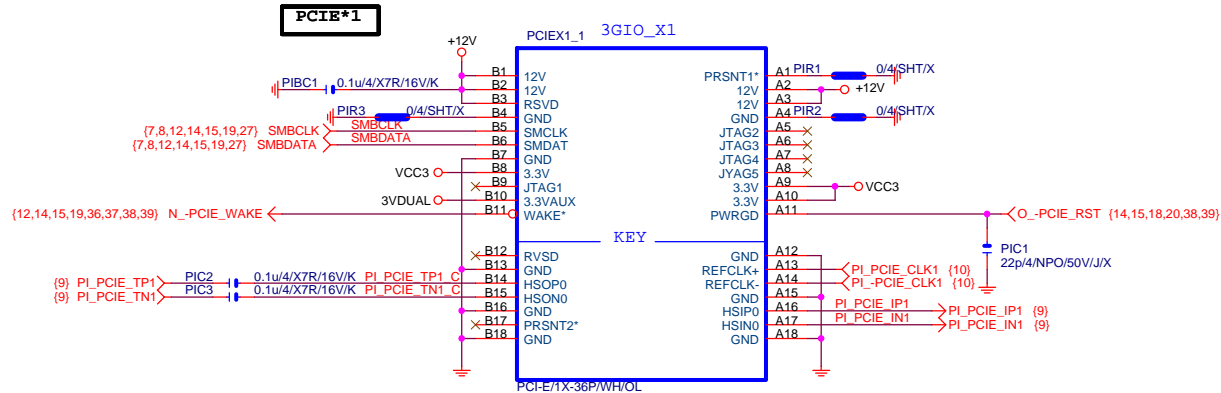






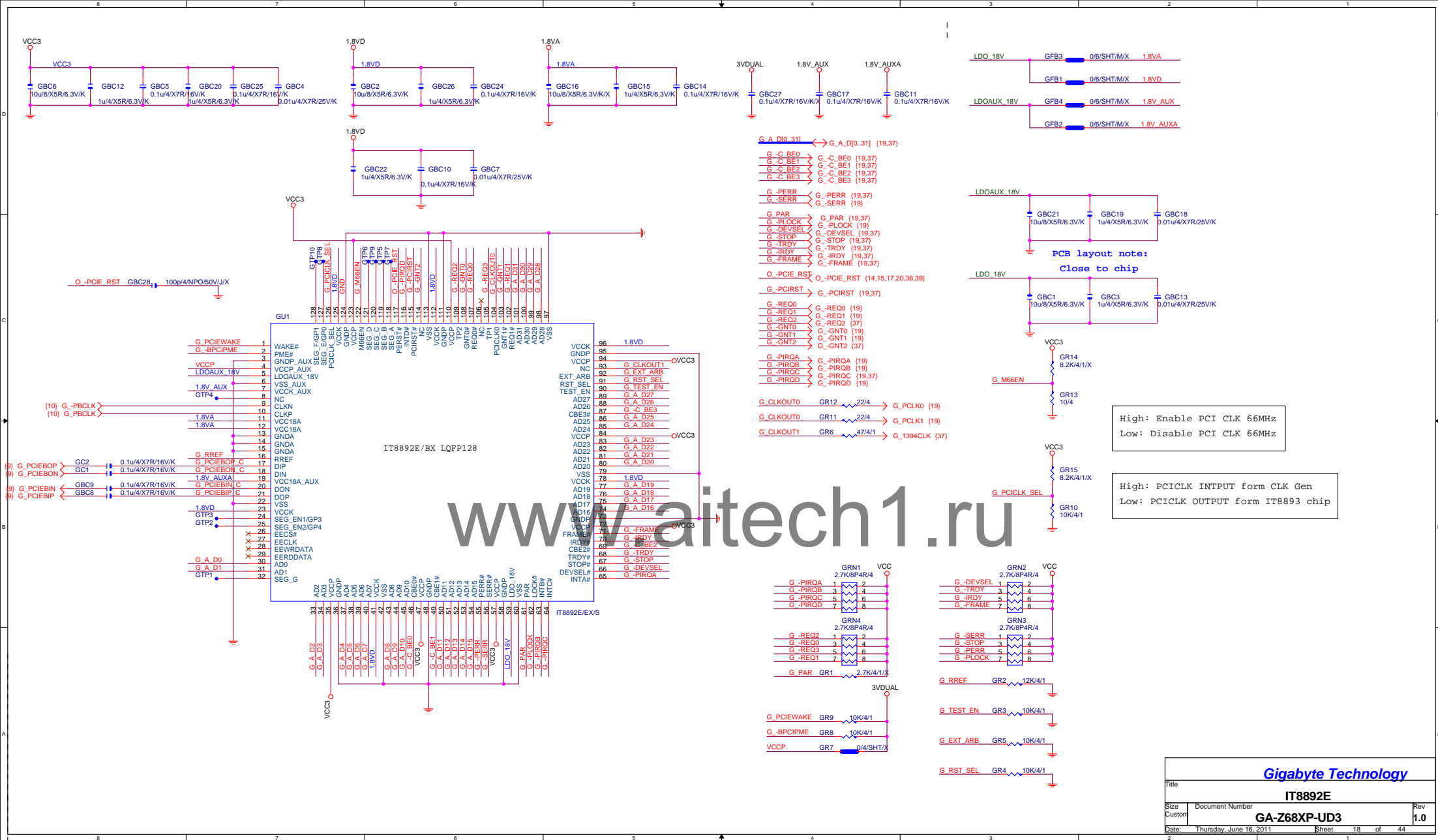


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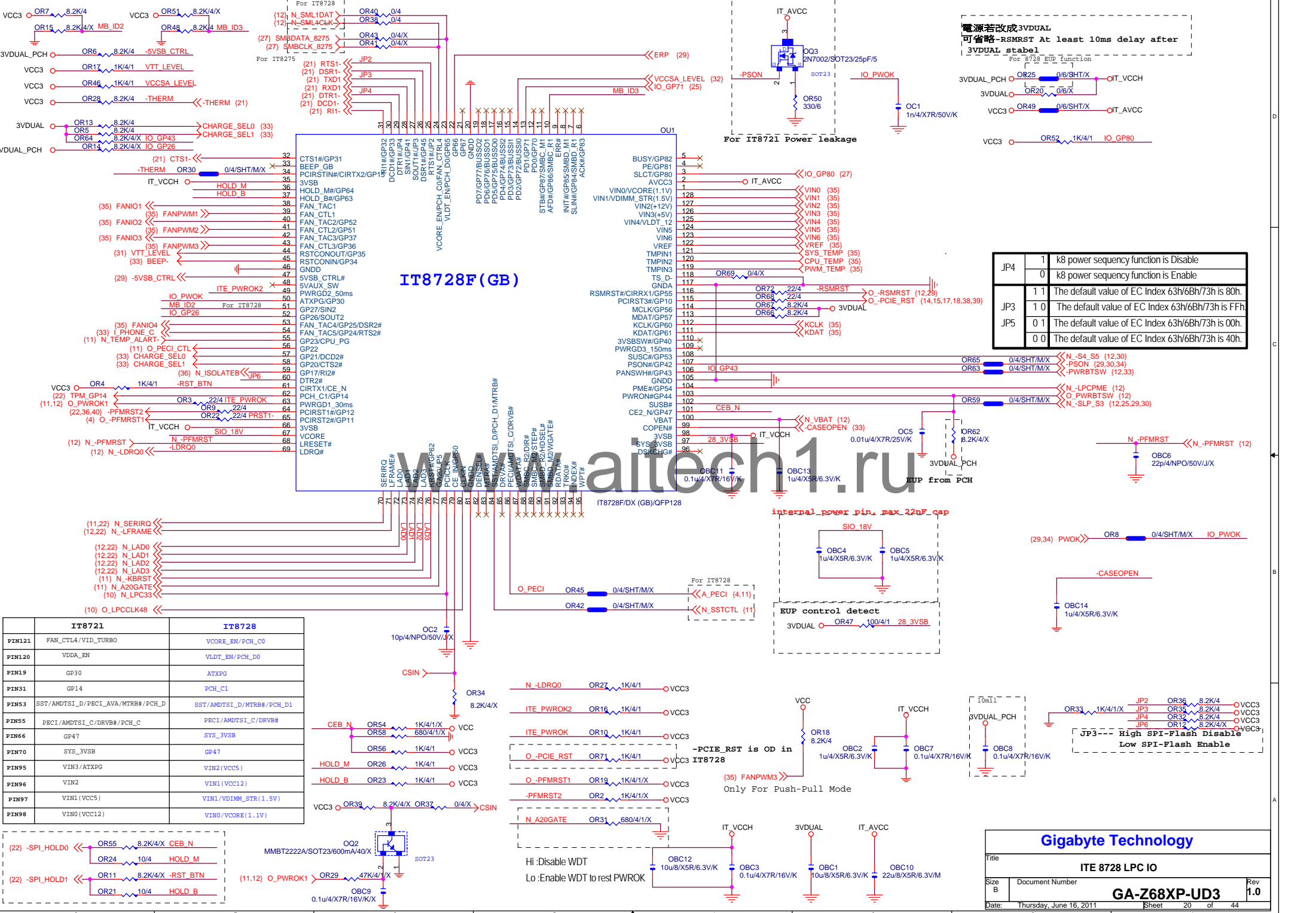
**Gigabyte Technology**

Title		
PCIE X1 1,2		
Size	Document Number	Rev
Custom	GA-Z68XP-UD3	1.0
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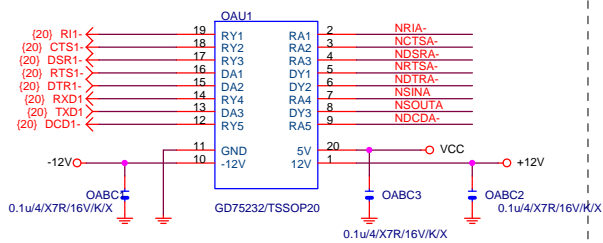
電源若改成3VDUAL  
可省略-RSMRST At least 10ms delay after  
3VDUAL stable

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

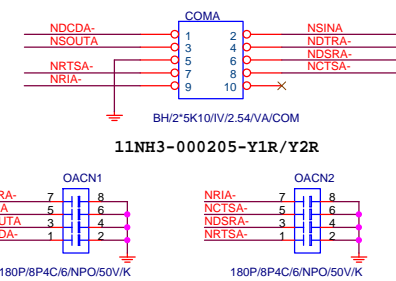
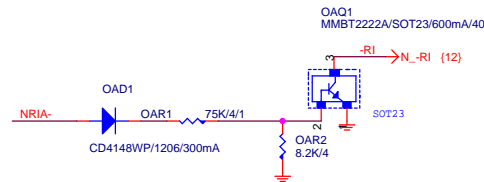
	IT8721	IT8728
PIN121	FAN_CTL4 / VID_TURBO	VCORE_EN / PCH_C0
PIN120	VDDA_EN	VLDOT_EN / PCH_D0
PIN19	GP30	ATXPG
PIN31	GP14	PCH_C1
PIN53	SST / AMDTSI_D / PCH_AVA / MTRB# / PCH_D	SST / AMDTSI_D / MTRB# / PCH_D1
PIN55	PECI / AMDTSI_C / DRVVB# / PCH_C	PECI / AMDTSI_C / DRVVB#
PIN66	GP47	SYS_3VSB
PIN70	SYS_3VSB	GP47
PIN95	VIN3 / ATXPG	VIN2 (VCC5)
PIN96	VIN2	VIN1 (VCC12)
PIN97	VIN1 (VCC5)	VIN1 / VDIMM_STR (1.5V)
PIN98	VIN0 (VCC12)	VIN0 / VCORE (1.1V)



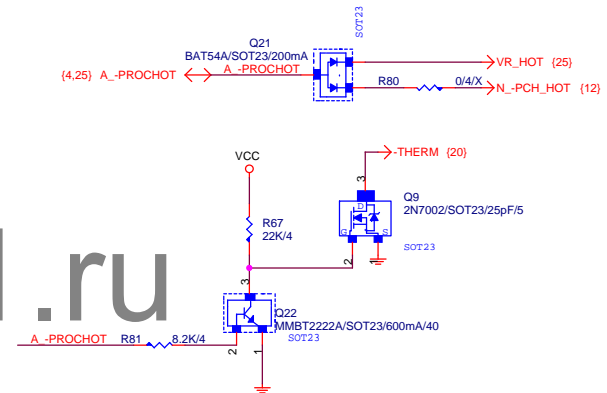
COMA



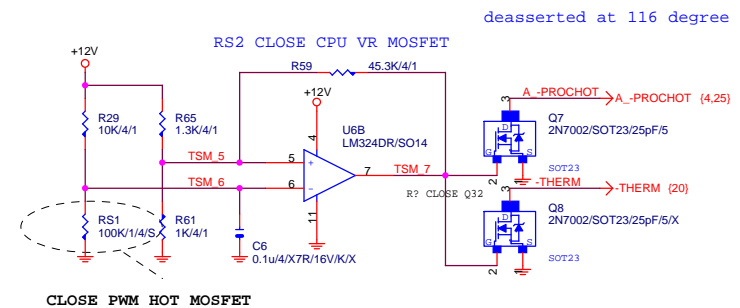
COM RI



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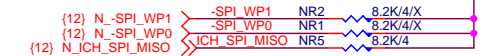
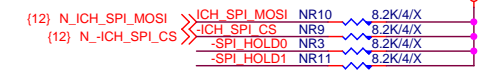
-PROHOT



Gigabyte Technology

Title			
COM & PROHOT/Dynamic O.C.			
Size	Document Number	Rev	
Custom		1.0	
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# MOSI For DMI RX Termination Voltage



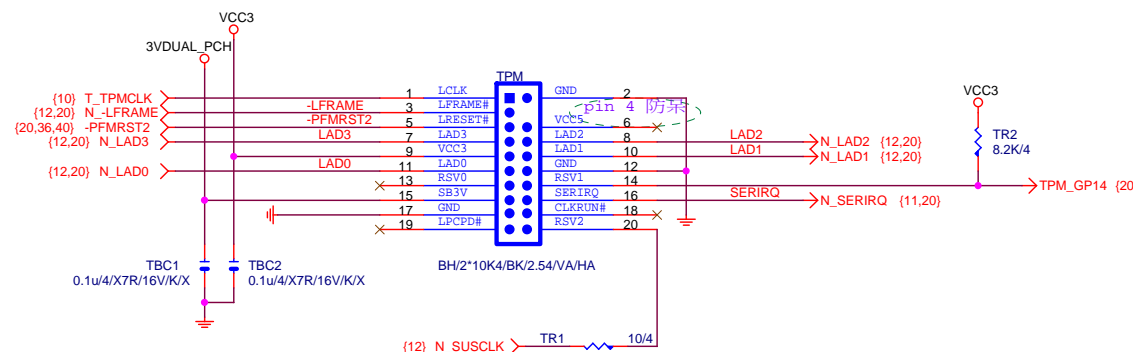
## Default int pull up



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

1 means floating  
0 means PD 1K

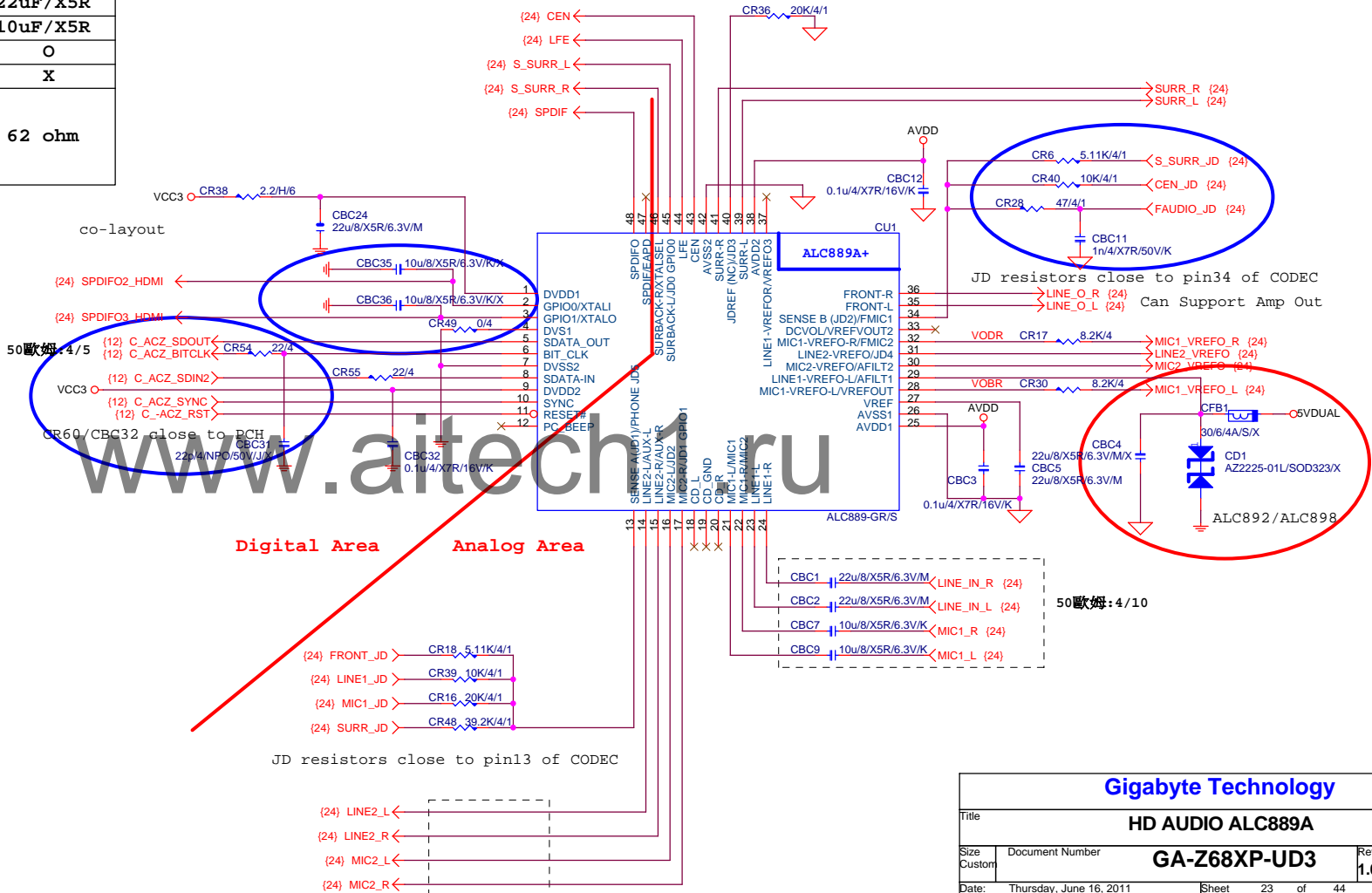
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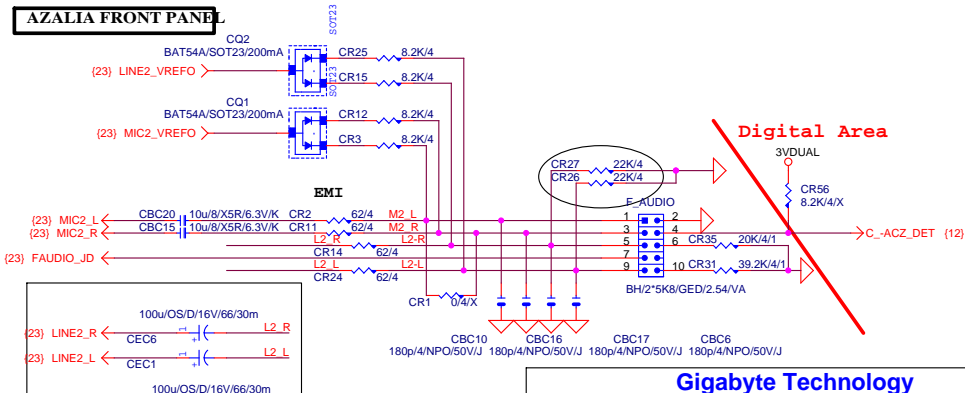
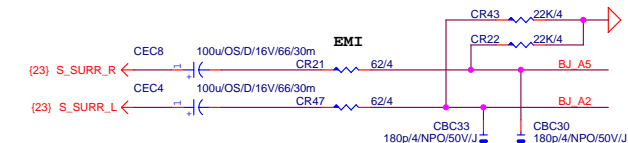
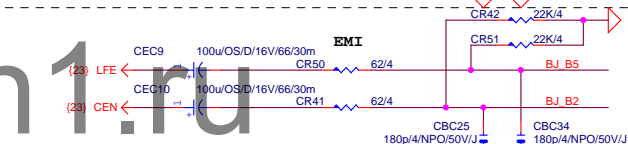
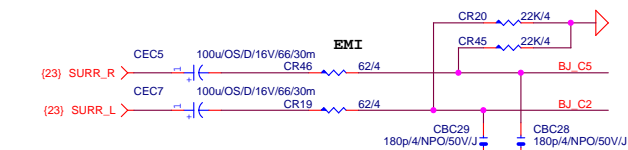
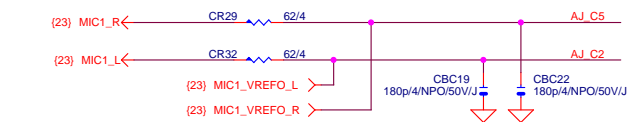
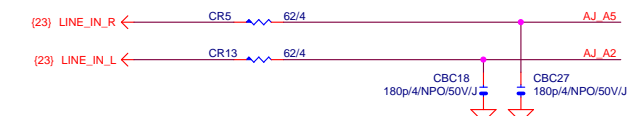
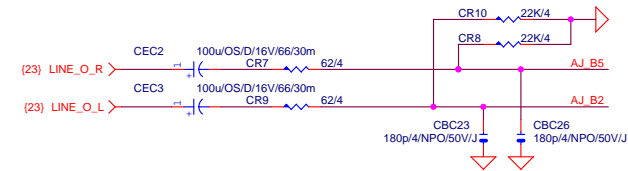
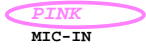
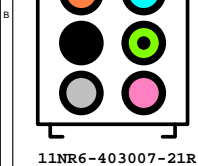


Gigabyte Technology

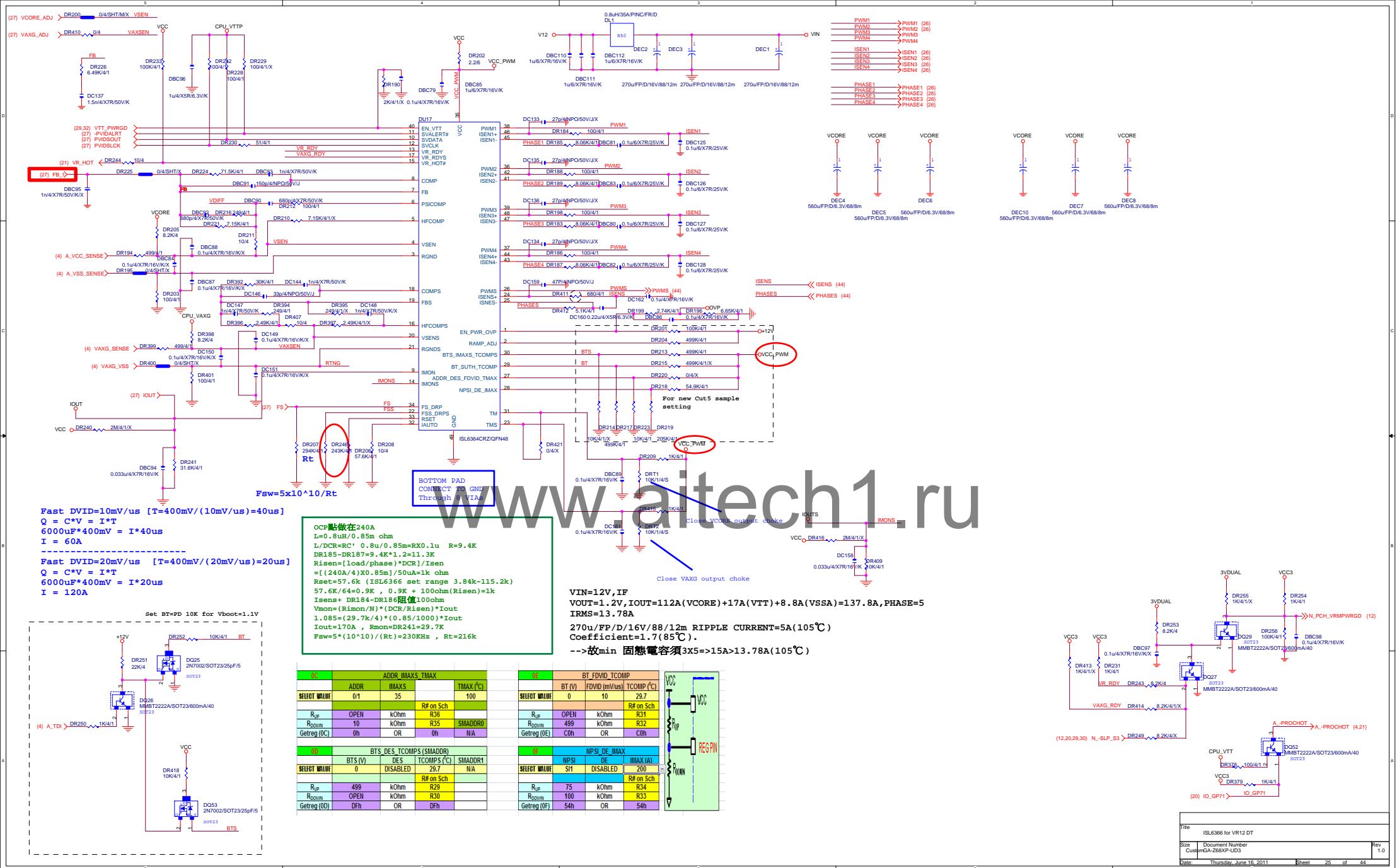
Title			BIOS
Size	Document Number	GA-Z68XP-UD3	
Custom		Rev 1.0	
Date:	Thursday, June 16, 2011	Sheet	22 of 44

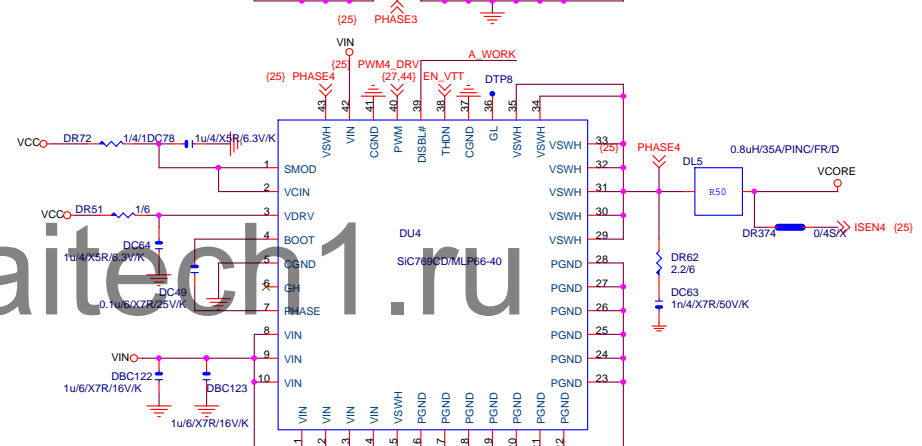
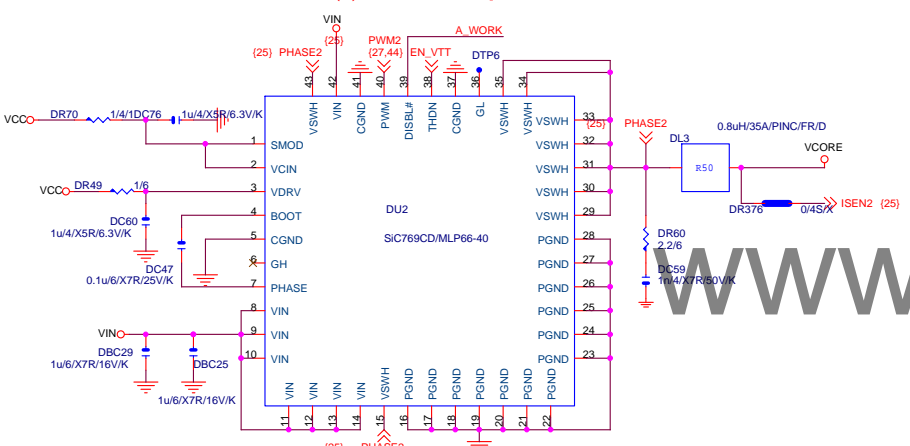
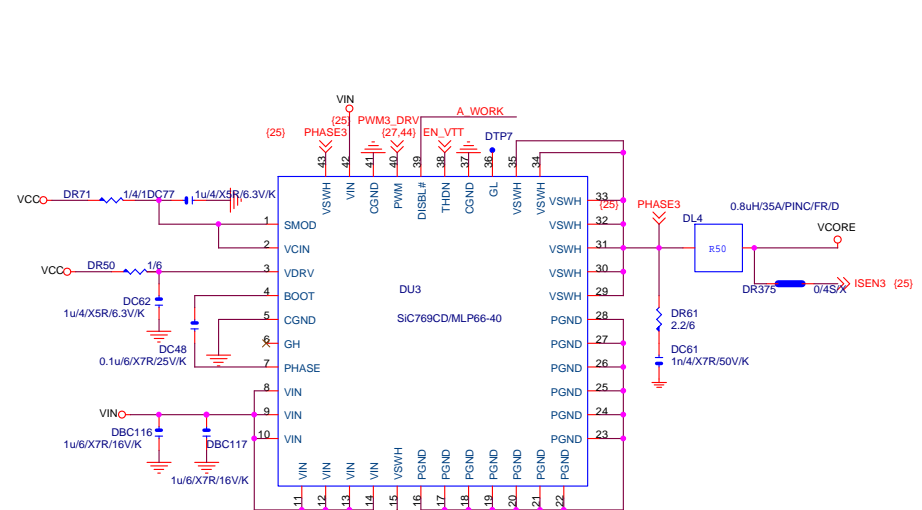
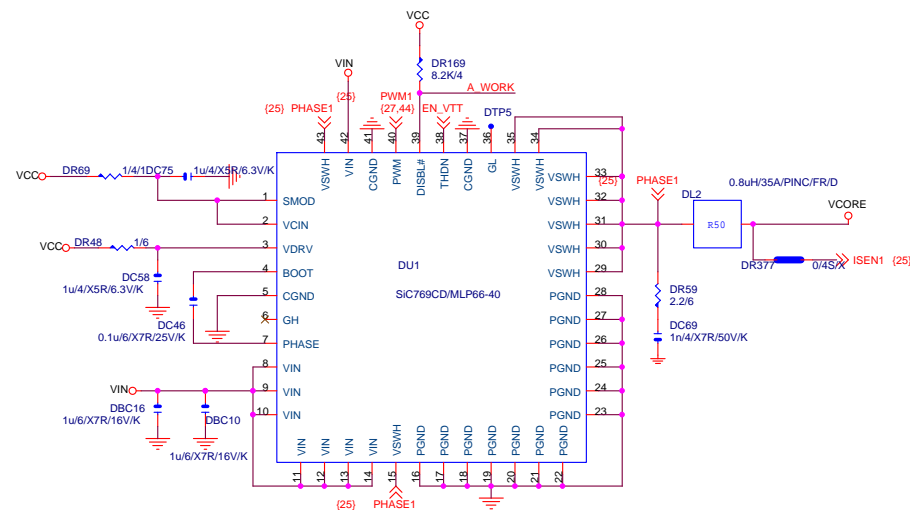
	ALC889	ALC889B	ALC898/ALC892
CR49	O	O	X
CBC36	X	X	10uF/X5R
CBC35	X	10uF/X5R	X
CR52	O	X	O
CR53	X	O	X
CBC1/CBC2	22uF/X5R	22uF/X5R	22uF/X5R
CBC7/CBC9/CBC20/CBC15	10uF/X5R	10uF/X5R	10uF/X5R
CFB1/CD1/CBC4	X	X	O
CD2/CD3/CQ3/CQ4	O	O	X
CR7/CR9/CR5/CR13/ CR29/CR32/CR46/CR19/ CR50/CR41/CR21/CR47/ CR2/CR11/CR14/CR24	62 ohm	62 ohm	62 ohm



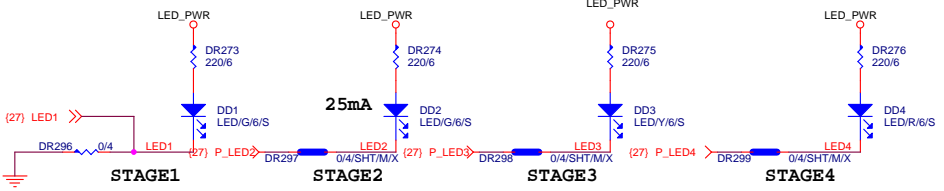


<b>Gigabyte Technology</b>			
Title			
<b>AUDIO JACK</b>			
Size Custom	Document Number	<b>GA-Z68XP-UD3</b>	Rev <b>1.0</b>
Date:	Thursday, June 16, 2011	Sheet	24 of 44

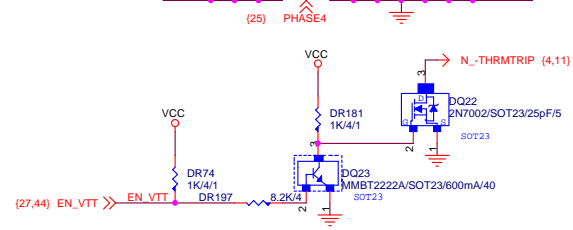
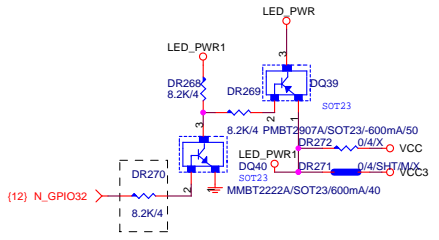




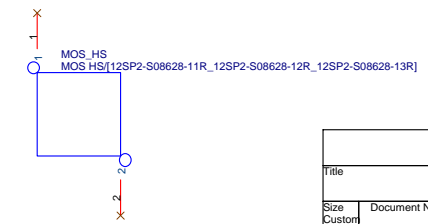
### PHASE LED

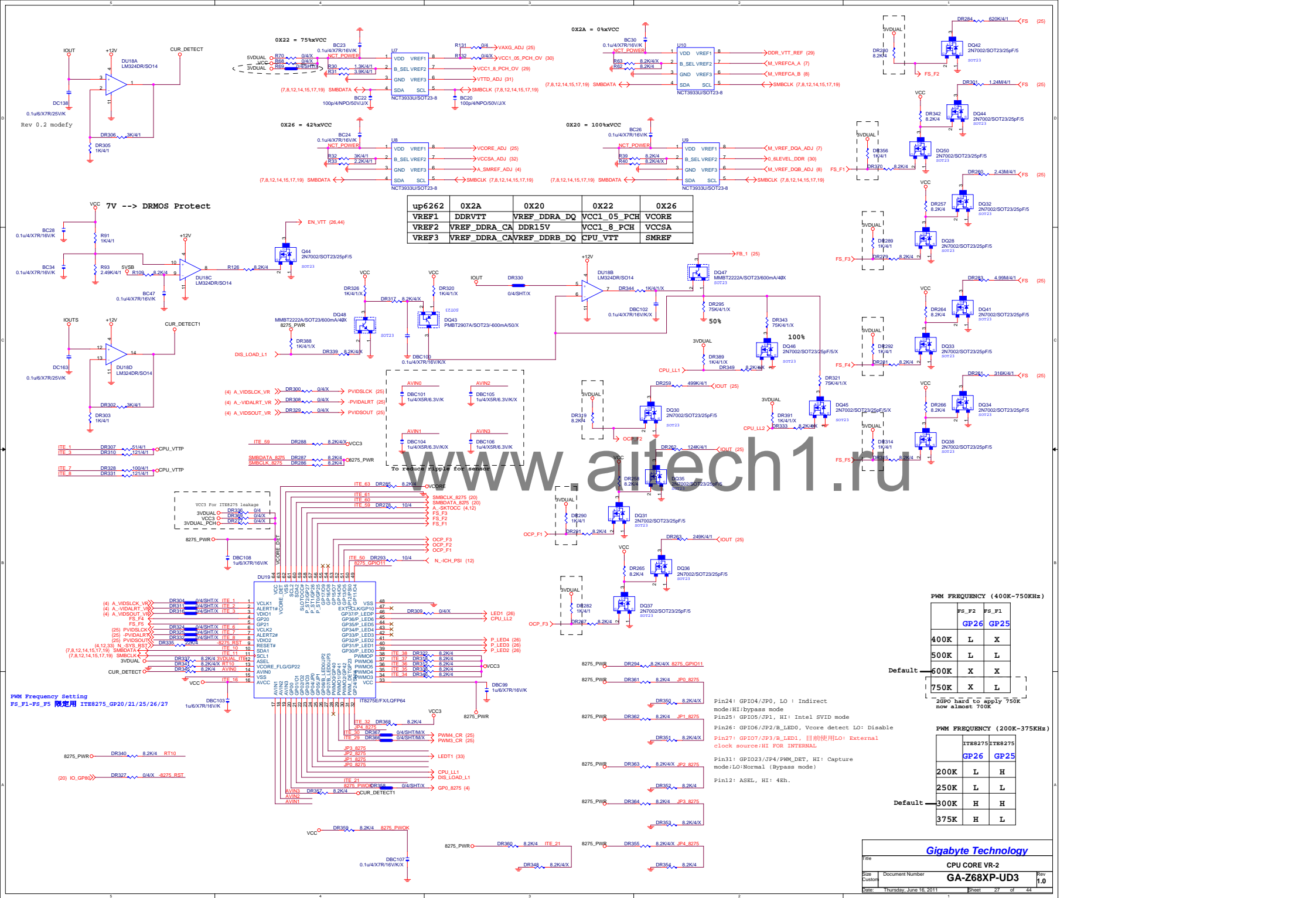


### LED POWER



### MOS HEATSINK





up6262	0X2A	0X20	0X22	0X26
VREF1	DDRVTT	VREF_DDRA_DQ	VCC1_05_PCH	VCORE
VREF2	VREF_DDRA_CA	DDR15V	VCC1_8_PCH	VCCSA
VREF3	VREF_DDRA_CAVREF_DDRB_DQ		CPU_VTT	SMREF

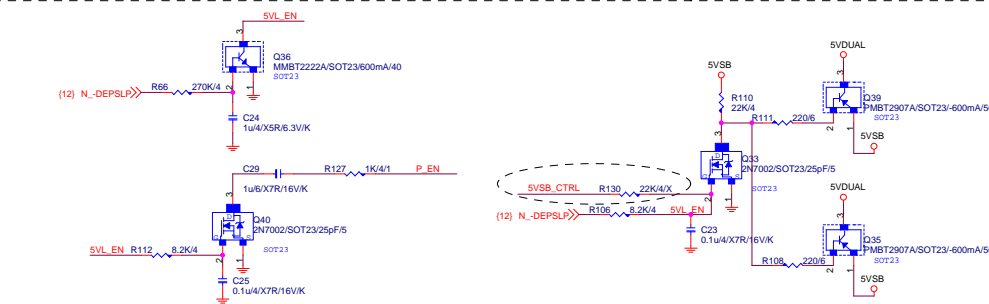
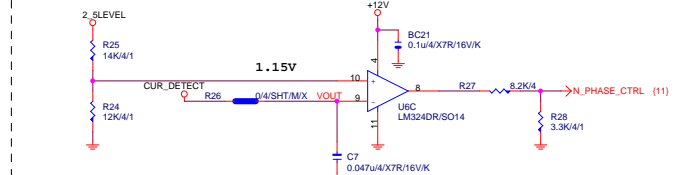
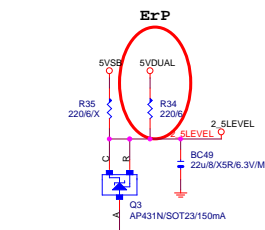
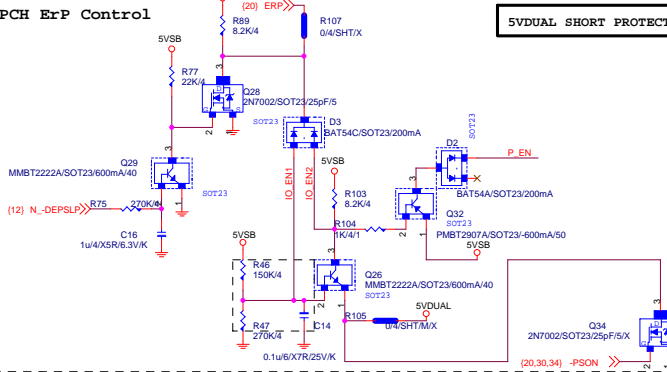
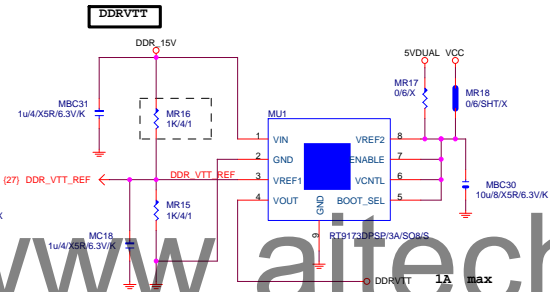
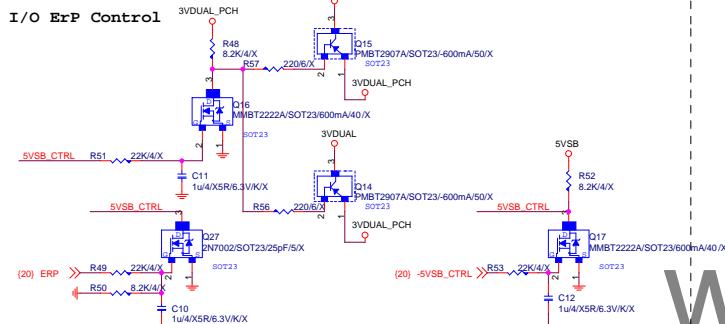
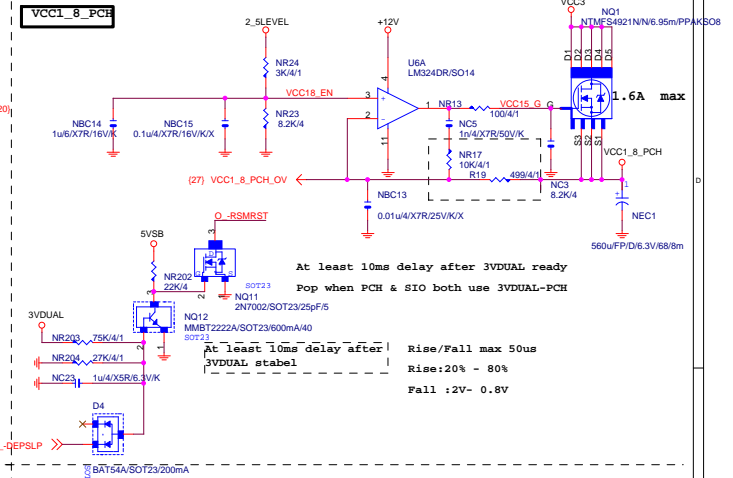
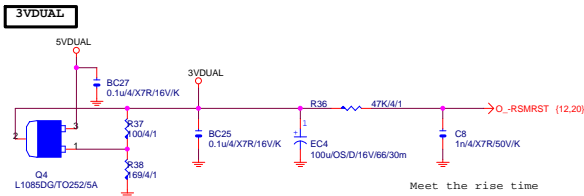
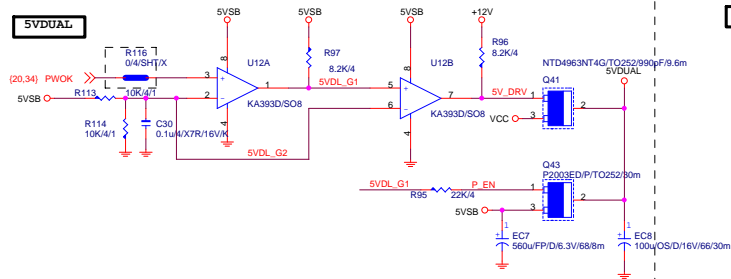
PWM FREQUENCY (400K-750KHz)		
	FS_F2	FS_F1
	GP26	GP25
400K	L	X
500K	L	L
600K	X	X
750K	X	L

PWM FREQUENCY (200K-375KHz)		
	ITE8275	ITE8275
	GP26	GP25
200K	L	H
250K	L	L
300K	H	H
375K	H	L

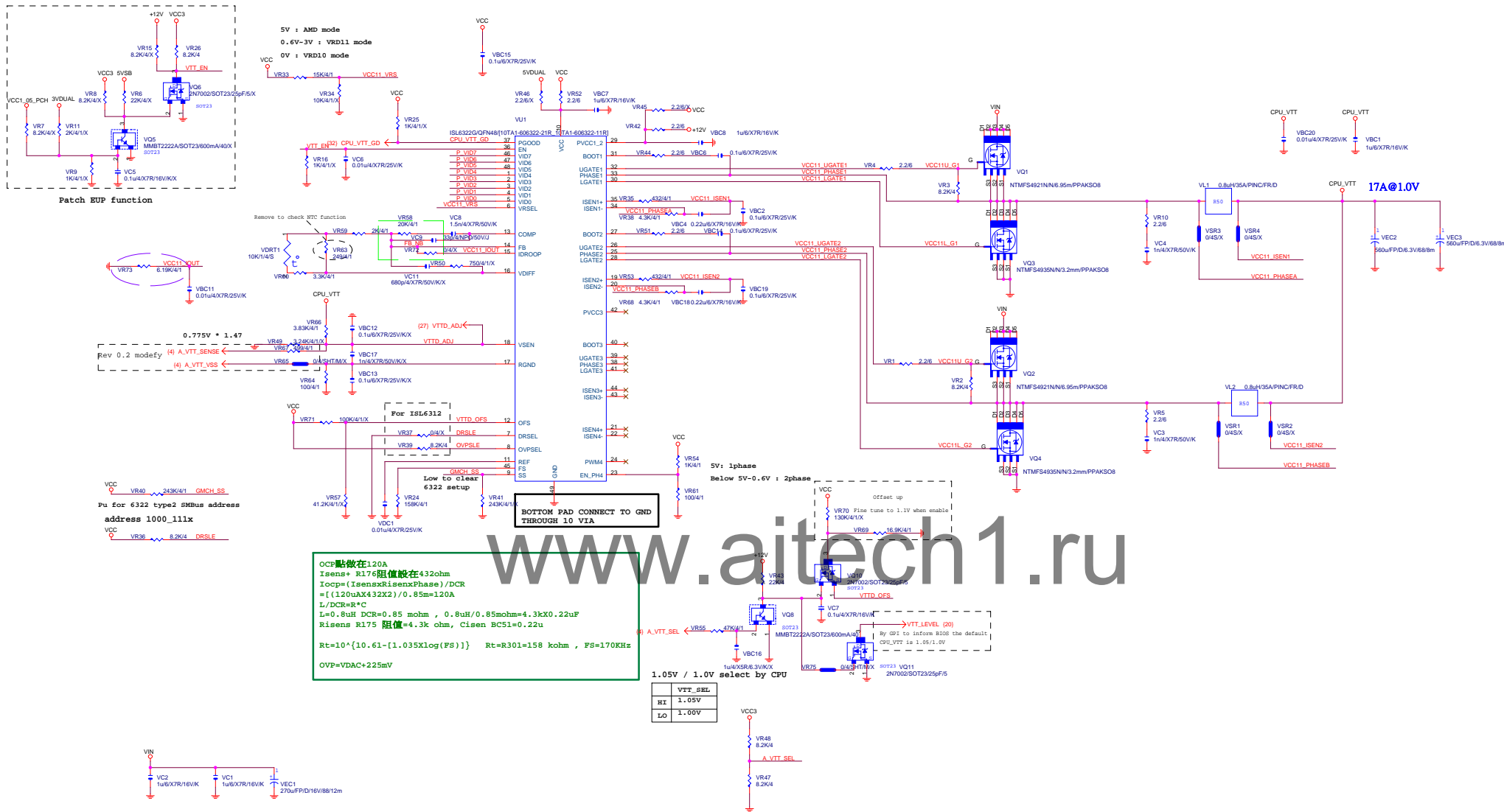
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<b>GIGABYTE™</b>			
Title <b>VCORE PHASE GEAR 4</b>			
Size	Document Number		Rev
Custom	<b>GA-Z68XP-UD3</b>		<b>1.0</b>
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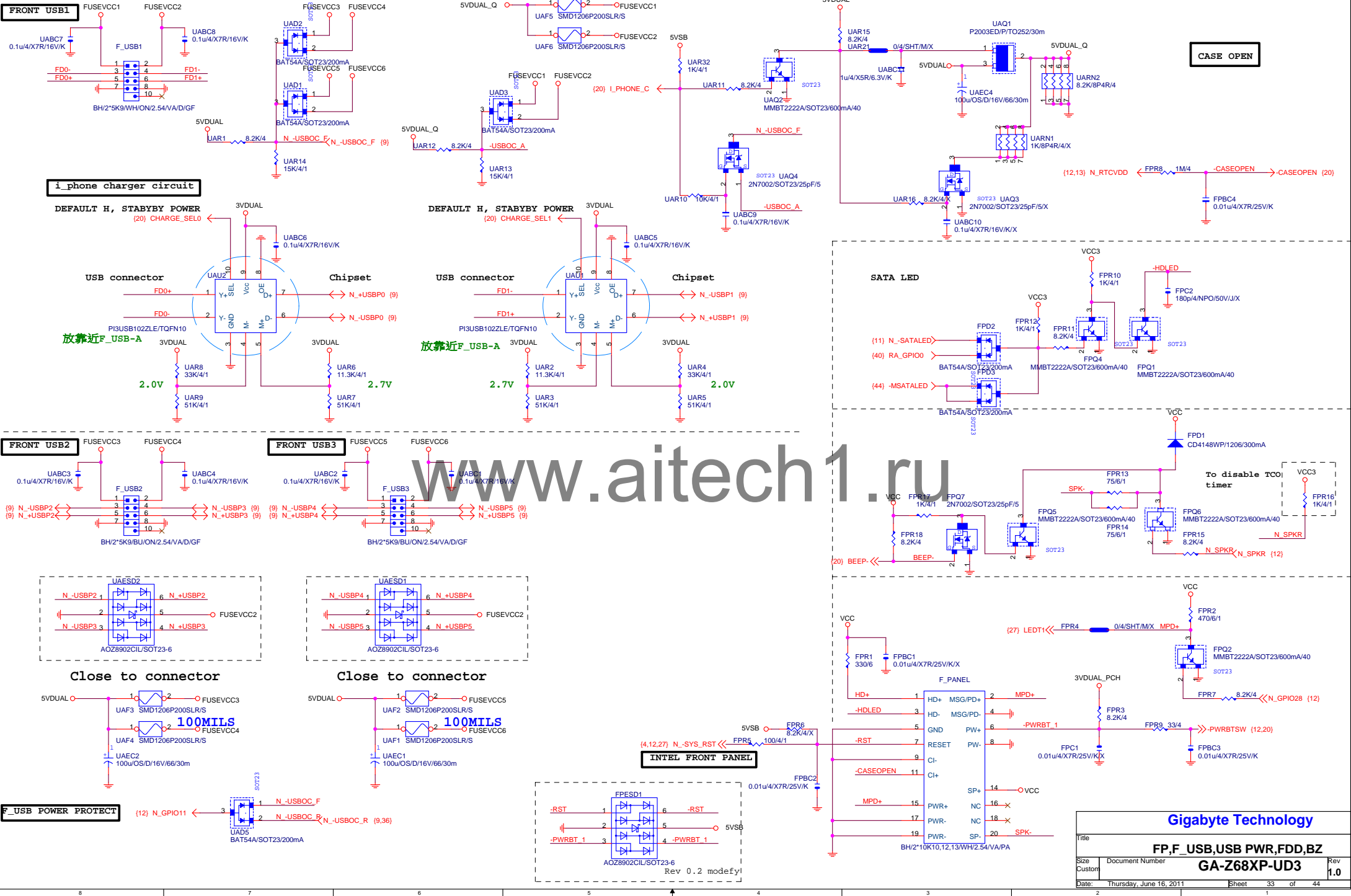




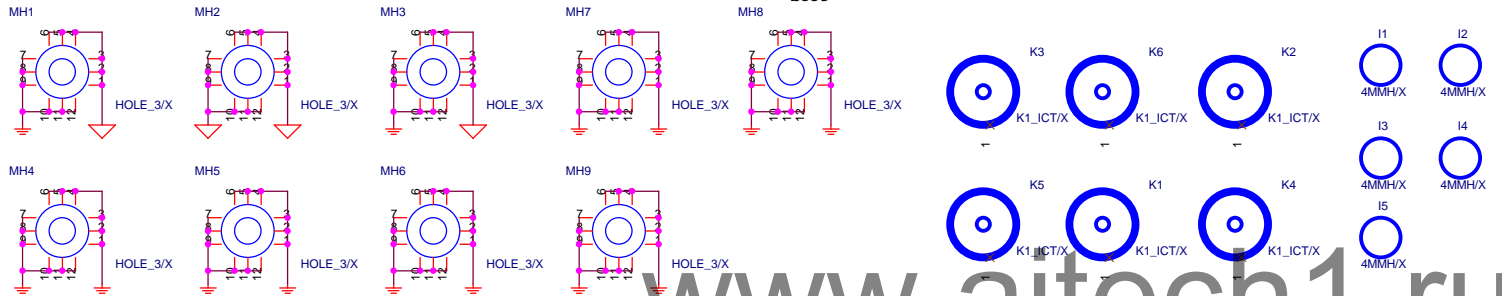
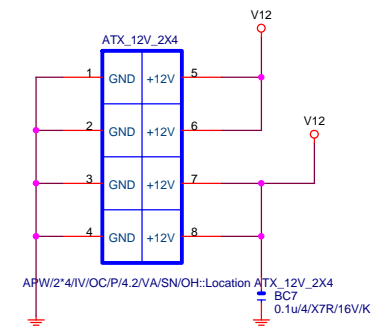
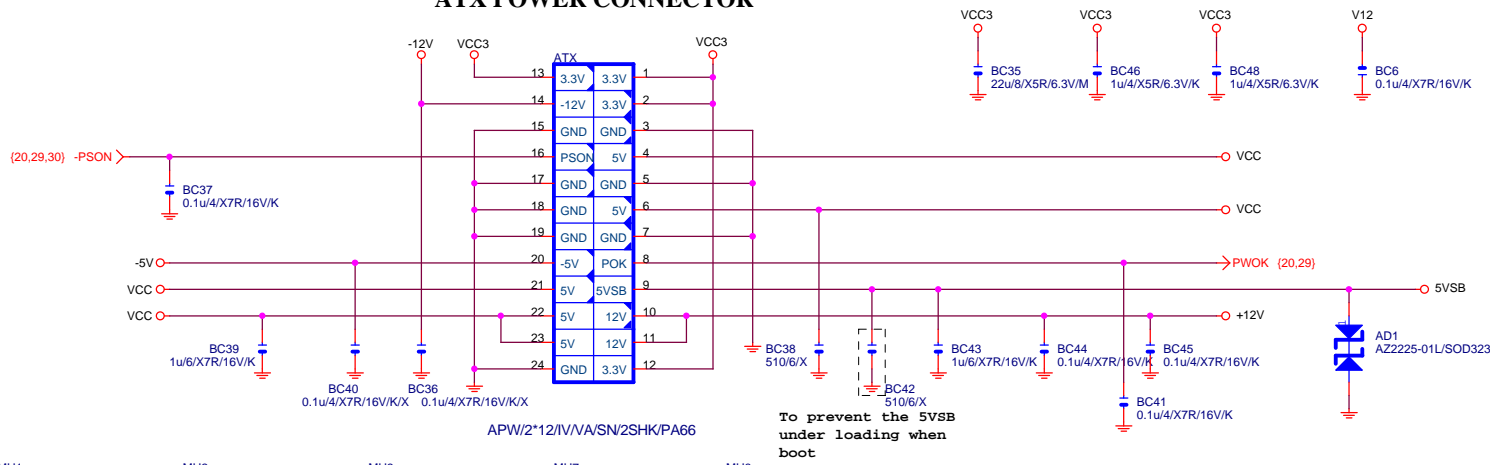


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# ATX POWER CONNECTOR

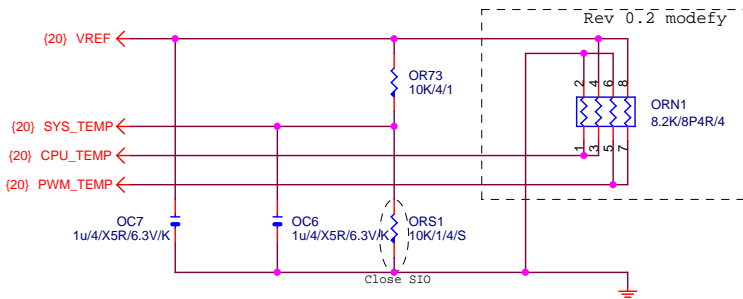


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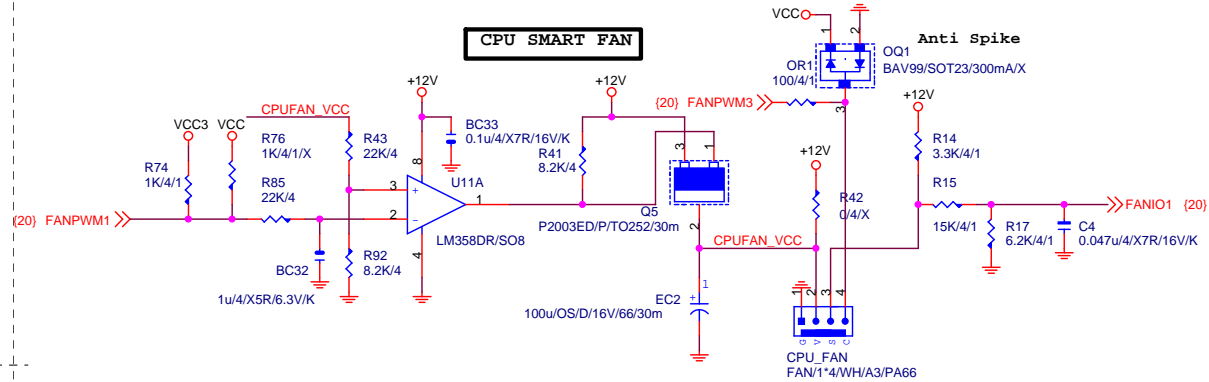
**Gigabyte Technology**

Title		
ATX POWER CONNECTOR		
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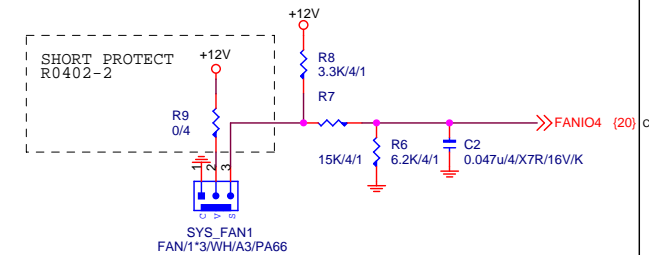
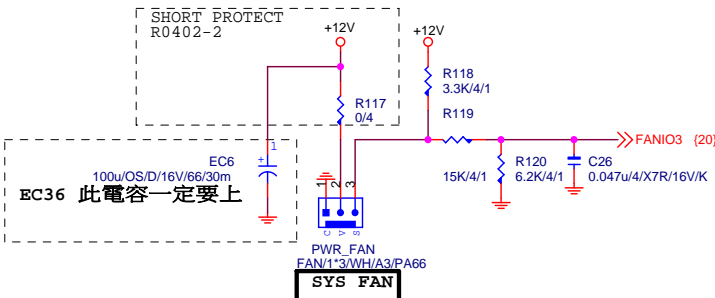
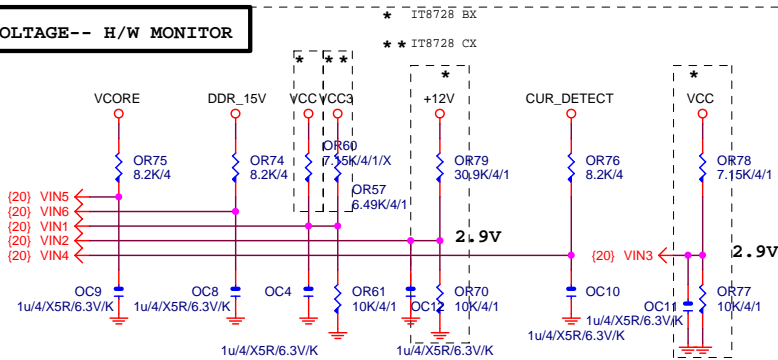
## TEMP H/W MONITOR



## CPU SMART FAN

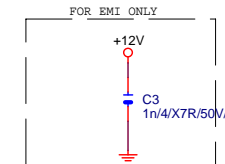
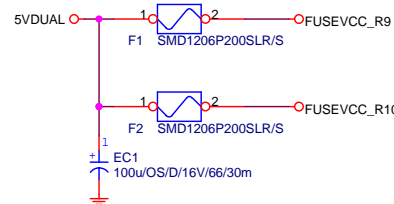
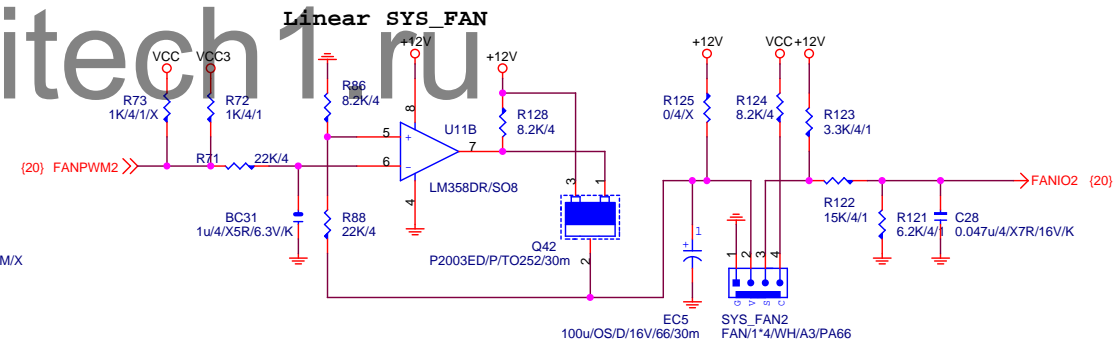
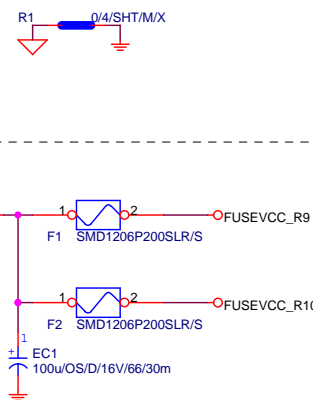
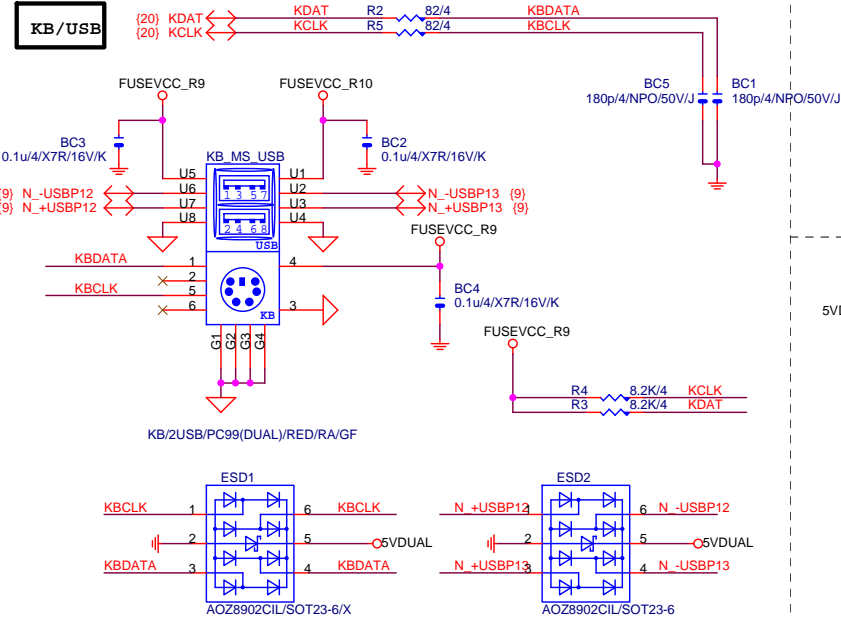


## VOLTAGE-- H/W MONITOR



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## KB/USB



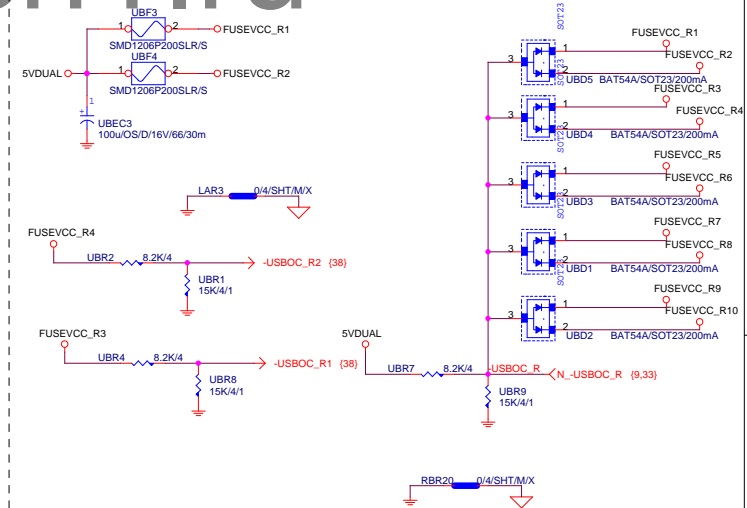
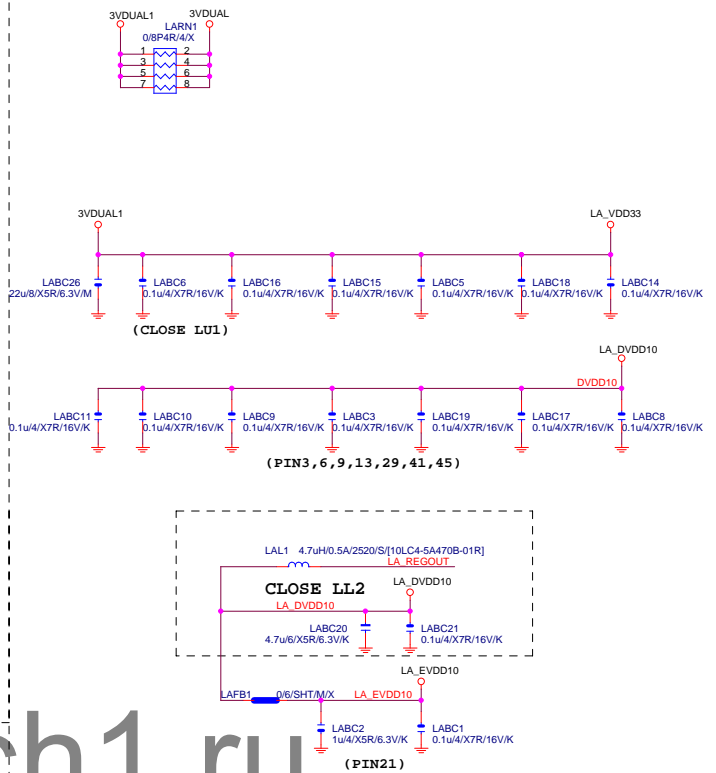
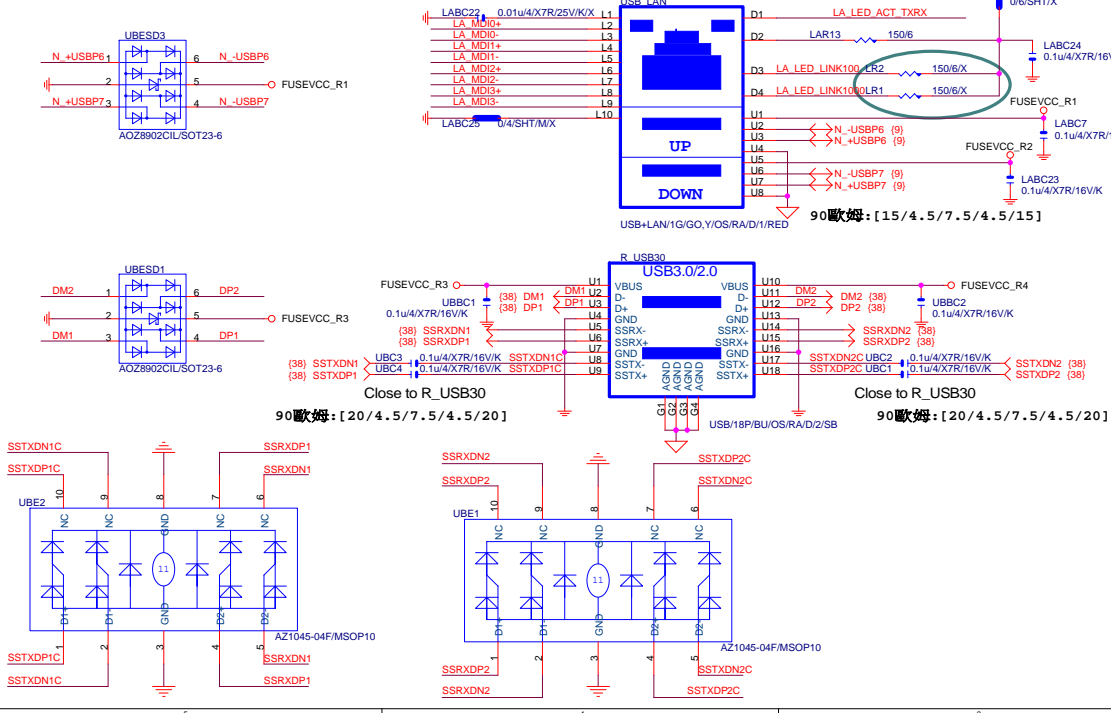
Gigabyte Technology

Title		
HWM,KB/MS, FAN CTRL		
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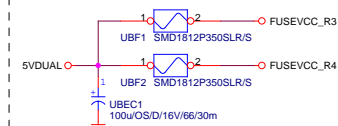
### Power domain chart

[illegible]

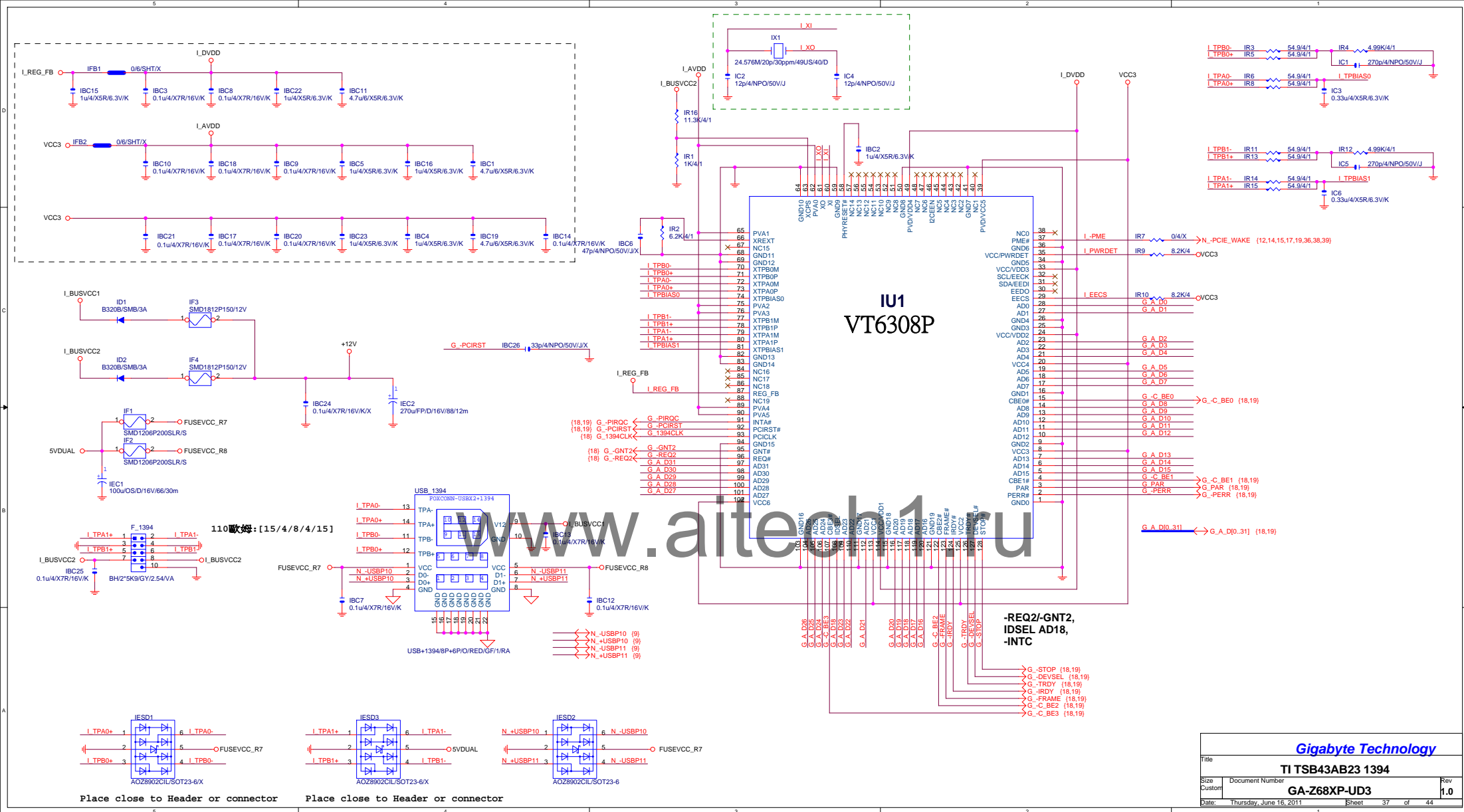
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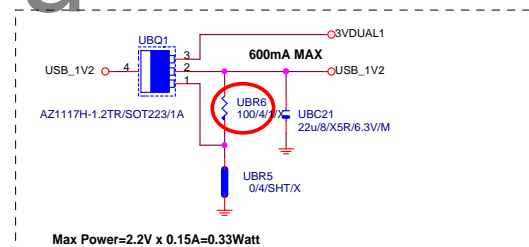
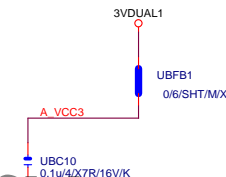
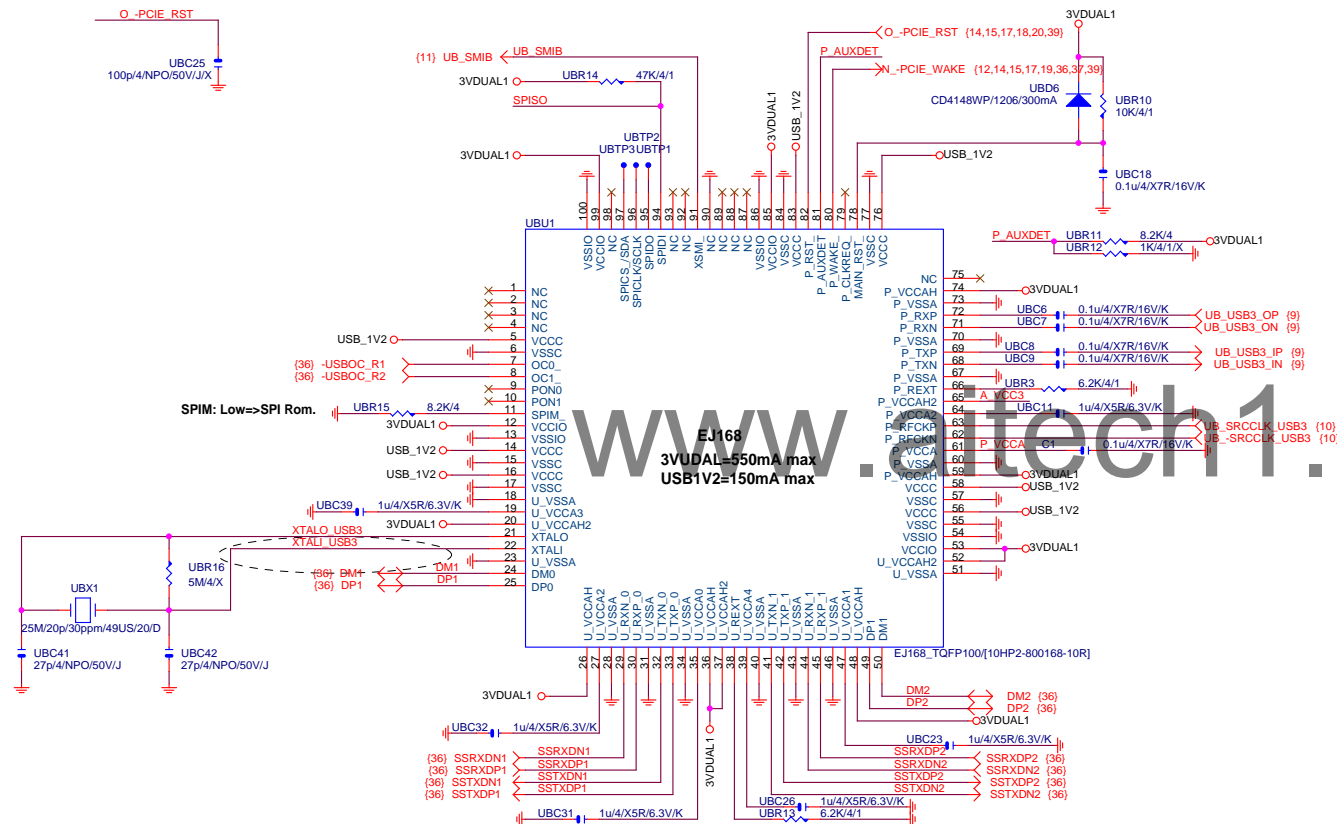
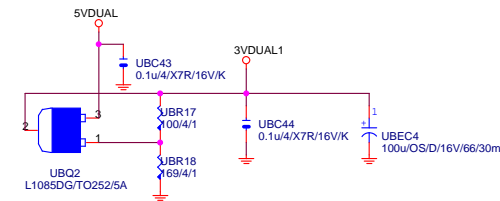
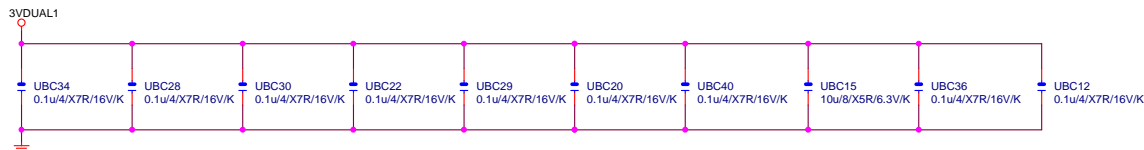


Close to connector





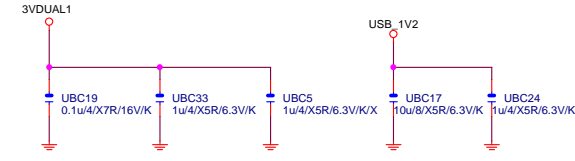
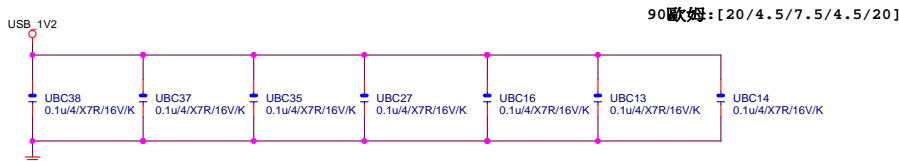




Max Power=2.2V x 0.15A=0.33Watt

AZ1117H-1.2TR/SOT223/1A-->UR17:0/4,UR16:N/A [1.2V]

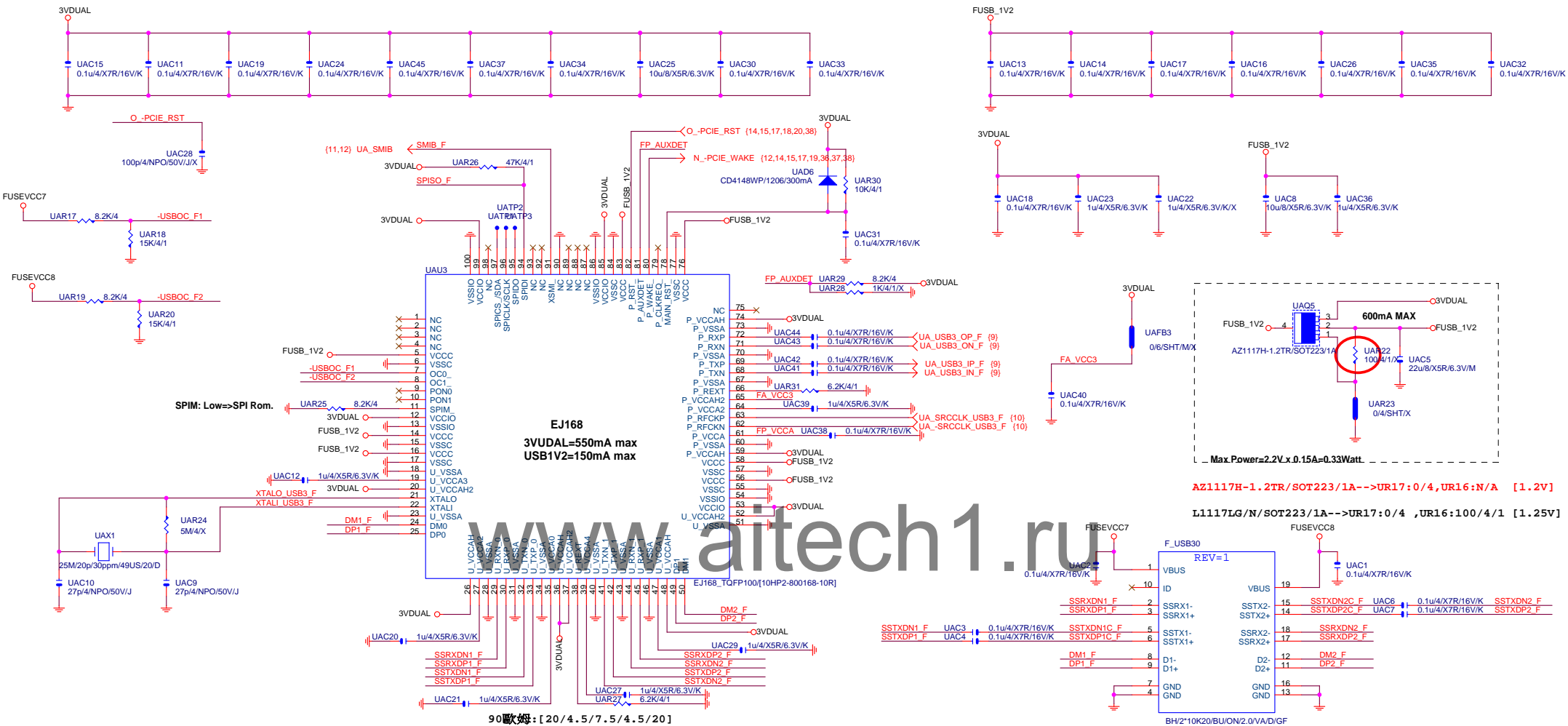
L1117LG/N/SOT223/1A-->UR17:0/4,UR16:100/4/1 [1.25V]

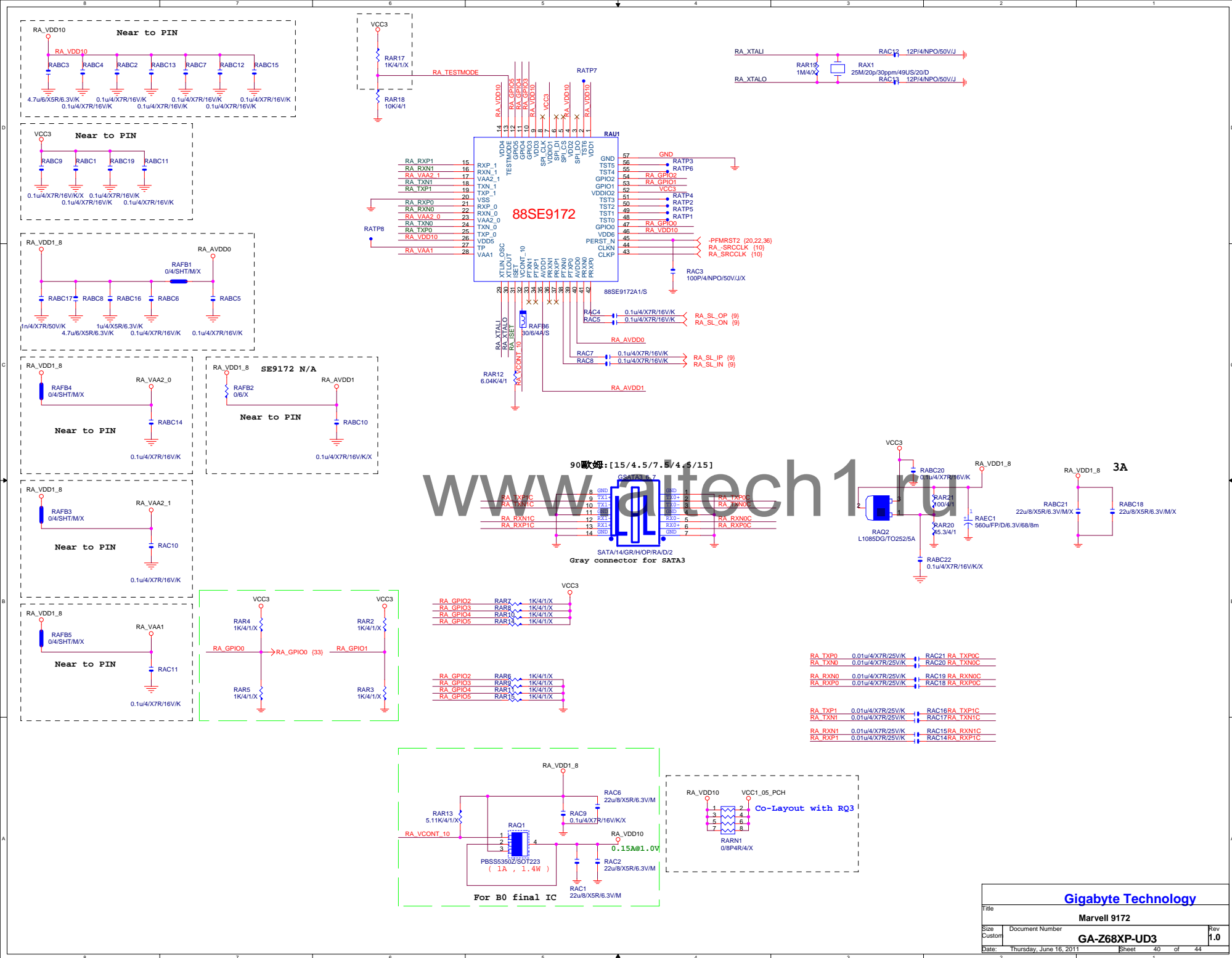


USB3.0 --> 5GHz

BANDWITH=5GHz\*(8b/10b)=4Gb/s=500MB/s

GIGABYTE™		
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E-TRON EJ168		
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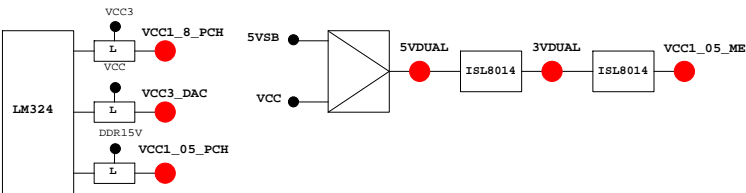
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Gigabyte Technology			
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Marvell 9172			
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2		1	

PIN GPIO LIST TABLE						
PIN NAME	PWR	AFTER RESET	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	-GNT2	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_OV		

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#CIRRXL/GP55	-RSMRST	
FME#/GP54	-LPCPME	
PD5/GP75/BUS00	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	TURB01	
VID2/GP32	TURB00	
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/SCK	LOW_PWR_1	
VID05/GP27/SEN2	LOW_PWR_2	
PCIRST2#/GP11	-PWRST1	
PCIRST1#/GP12	-PWRST2	
3VSBSW#/GP40	CSI_F0	BSEL166_1
SUSC#/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	2X PIN	FST_2X8
INIT#/GP85/SMBD_M	SEN_2x8	GT1REF_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_CLT5/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	



The diagram illustrates a 2D mesh network topology. It consists of 16 nodes arranged in a 4x4 grid. The nodes are labeled as follows:

- Top Row:** PH1, PH2, PH8, PH7
- Second Row:** DL2, DL4, DL9, DL7
- Third Row:** PH5, PH6, DL3, DL5
- Bottom Row:** PCH, CPU, VTT, VCORE

Each node is represented by a square box. The connections between nodes are represented by lines forming a grid. The connections are as follows:

- Horizontal Connections:** PH1-2, PH2-8, PH8-7, PH5-6, PH6-3, PH3-5, PH7-4, PH4-9, PH9-8, PH8-7, PH7-4, PH4-9, PH9-8, PH8-7, PH7-4, PH4-9, PH9-8.
- Vertical Connections:** PH1-2, PH2-8, PH8-7, PH5-6, PH6-3, PH3-5, PH7-4, PH4-9, PH9-8, PH8-7, PH7-4, PH4-9, PH9-8, PH8-7, PH7-4, PH4-9, PH9-8.

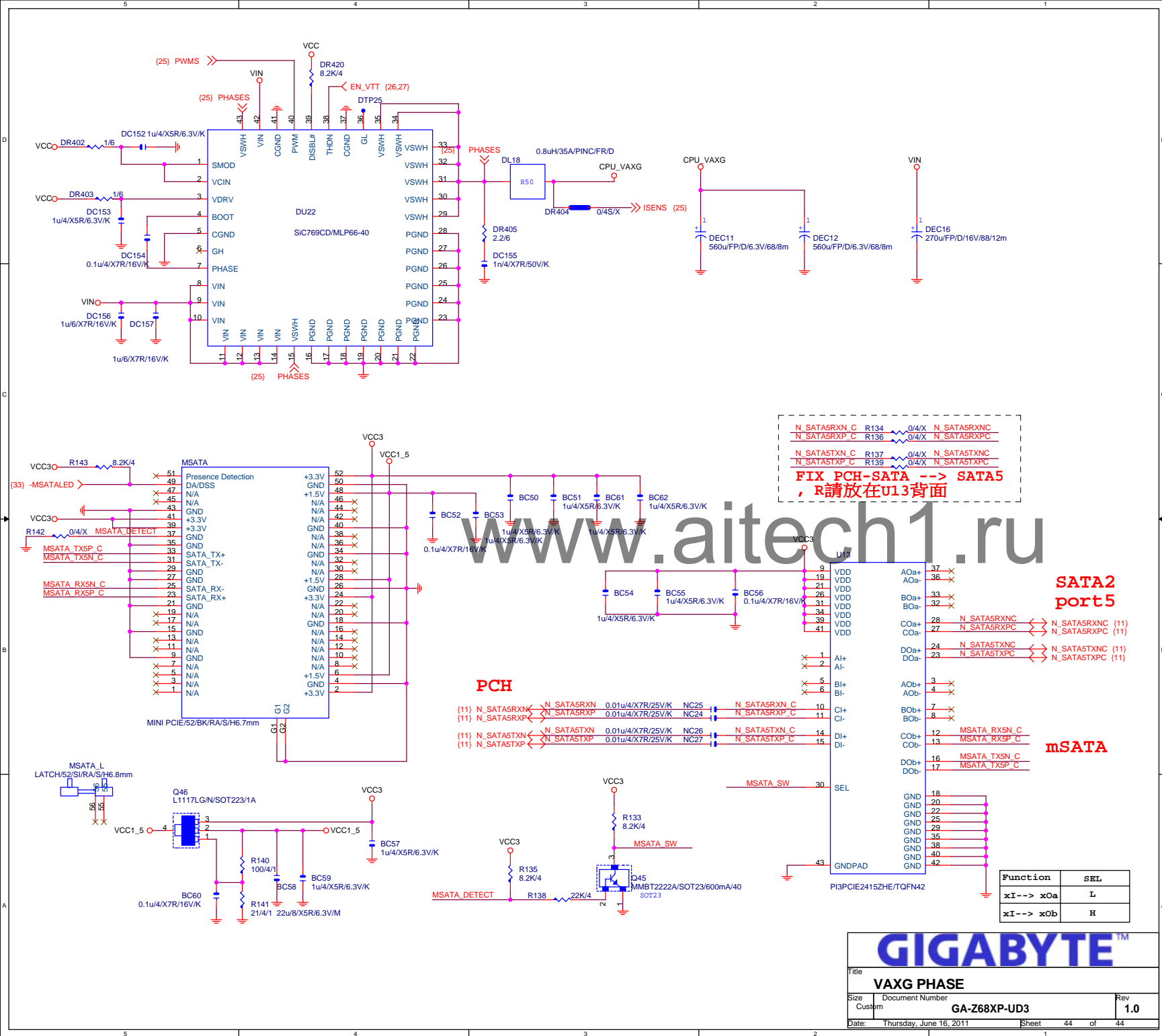
散熱模組料號：

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 Termination
VREF_CA_A/REF_CA_B	DRAM Address Ref
VREF_DQ_A/REF_DQ_B	DRAM Data Ref

	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







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

**GIGABYTE™**

TitleVAXG PHASE

SizeCustom

Document NumberGA-Z68XP-UD3

Rev1.0

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