

Model Name: GA-P55-UD3L 2.3

SHEET

TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU LGA1156-A
05	CPU LGA1156-B
06	CPU LGA1156-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	DDR III POWER CAP
10	PCH FDI,DMI,USB,PCIE,NVRAM
11	PCH DP,CLK BUFFER
12	PCH HOST,SATA,PCI
13	PCH GPIO,CTRL,AUDIO
14	PCH PWR,GND
15	PCI EXPRESS*16 SLOT
16	PCI EXPRESS*4 SLOT
17	PCI EXPRESS*1 SLOT
18	PCI SLOT X4
19	ITE 8720 LPC IO
20	COM, -PROHOT , DYNAMIC OC , LPT
21	Dual BIOS
22	ALC892R
23	REAR AUDIO JACK
24	CLOCK GEN ICS9LPRS914
25	VCORE PWM ISL6334CR
26	CPU VTT PWM ISL6322G
27	DDR 15V & VCC1 05 PCH PWM ISL6545CBZ

SHEET

TITLE

28	DISCRETE POWER
29	F PANEL ,USB , FDD
30	ATX POWER
31	J363
32	REALTEK RTL8111E
33	TPM SLB9635TT
34	HWM,KB/MS , FAN CTRL
35	TABLE LIST
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Gigabyte Technology

Title			Cover Sheet
Size	Document Number	GA-P55-UD3L	Rev
Custom			2.3
Date:	Thursday, June 24, 2010	Sheet 1 of 35	

GA-P55-UD3L Version: 2.3

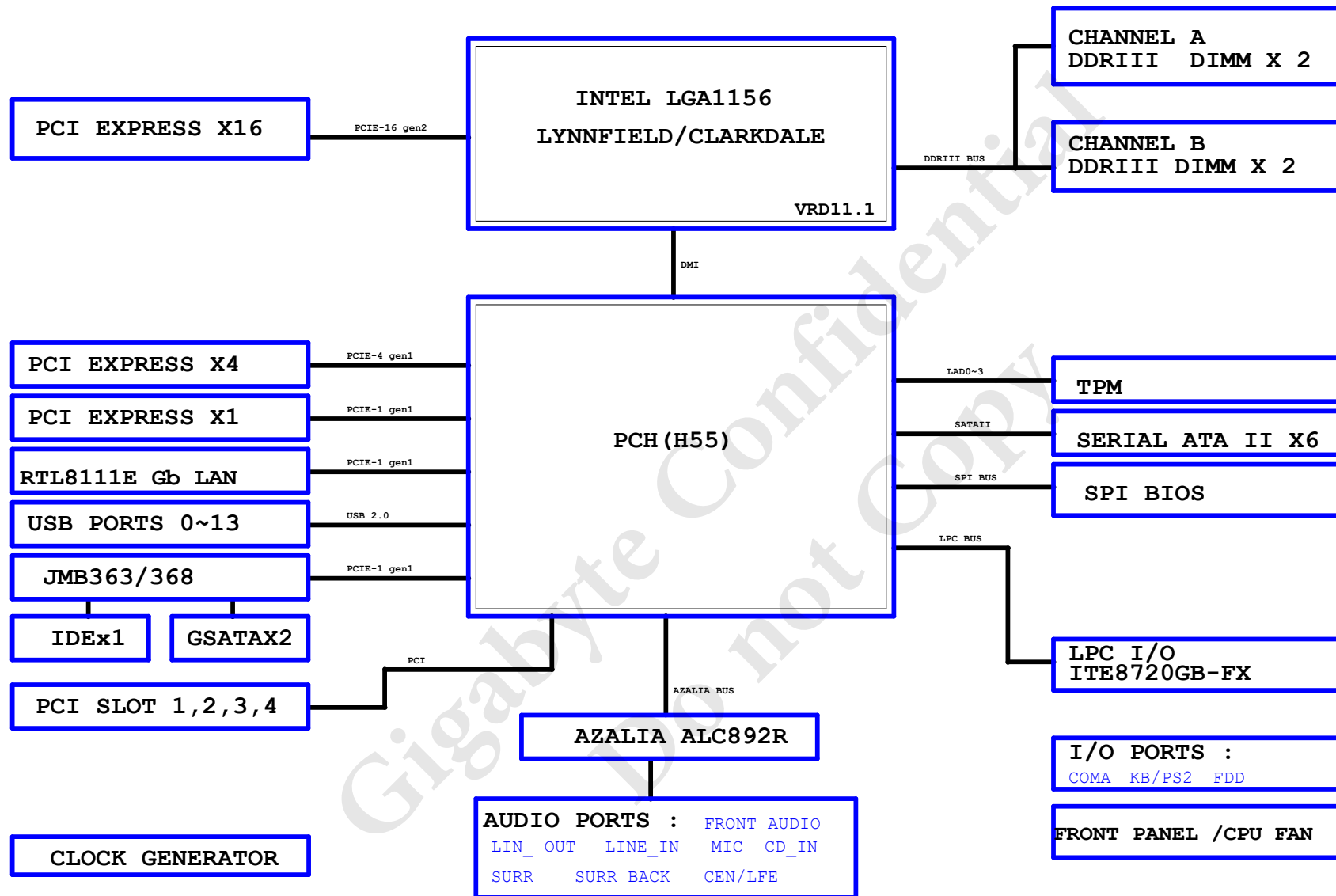
Component value change history

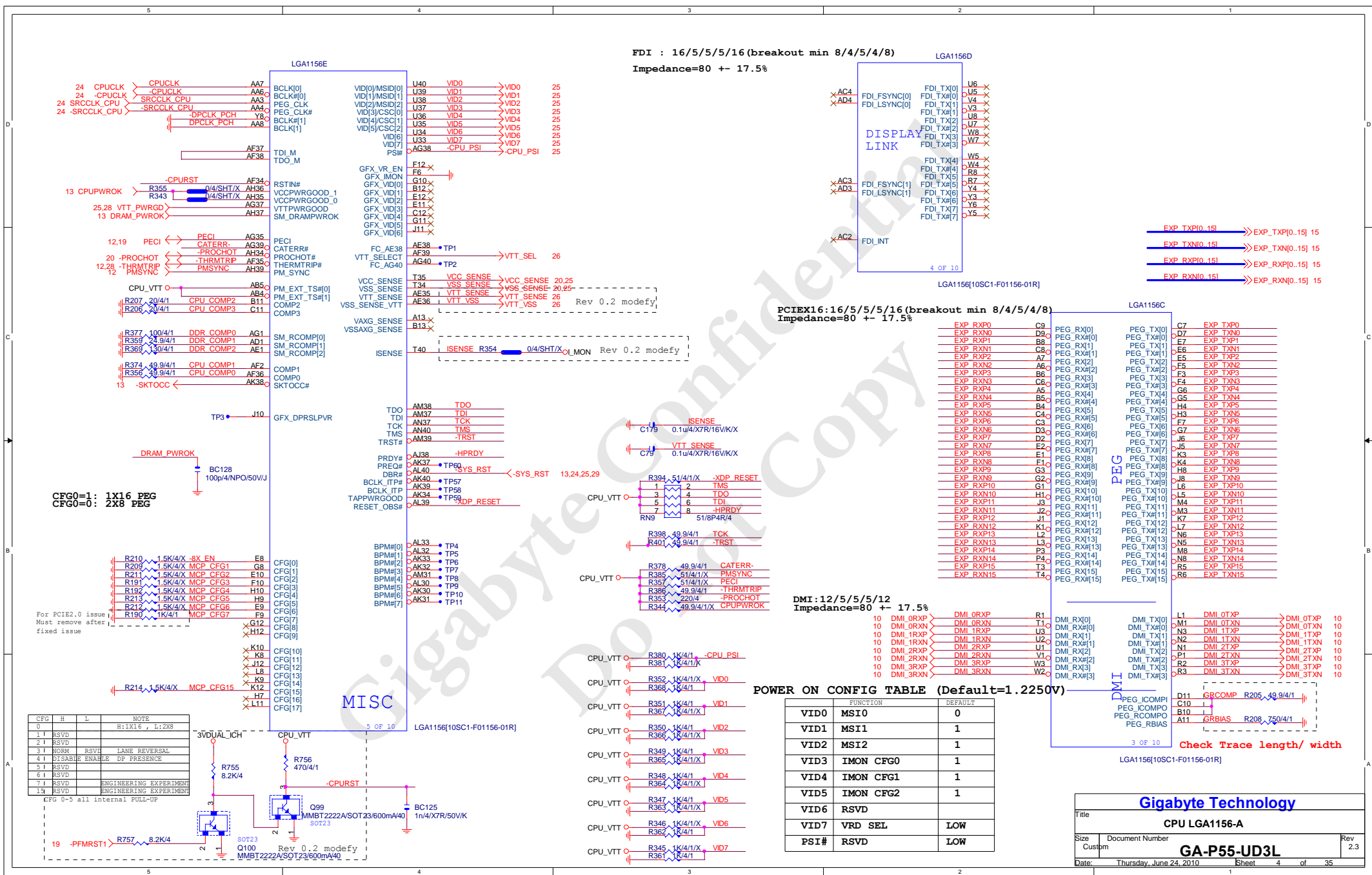
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Circuit or PCB layout change
for next version

[illegible]

BLOCK DIAGRAM





LGA1156A

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MAAA2 AW15
MAAA3 AU15
MAAA4 AW14
MAAA5 AW13
MAAA6 AW14
MAAA7 AW13
MAAA8 AU14
MAAA9 AW12
MAAA10 AT19
MAAA11 AU13
MAAA12 AW11
MAAA13 AU24
MAAA14 AT11
MAAA15 AR10

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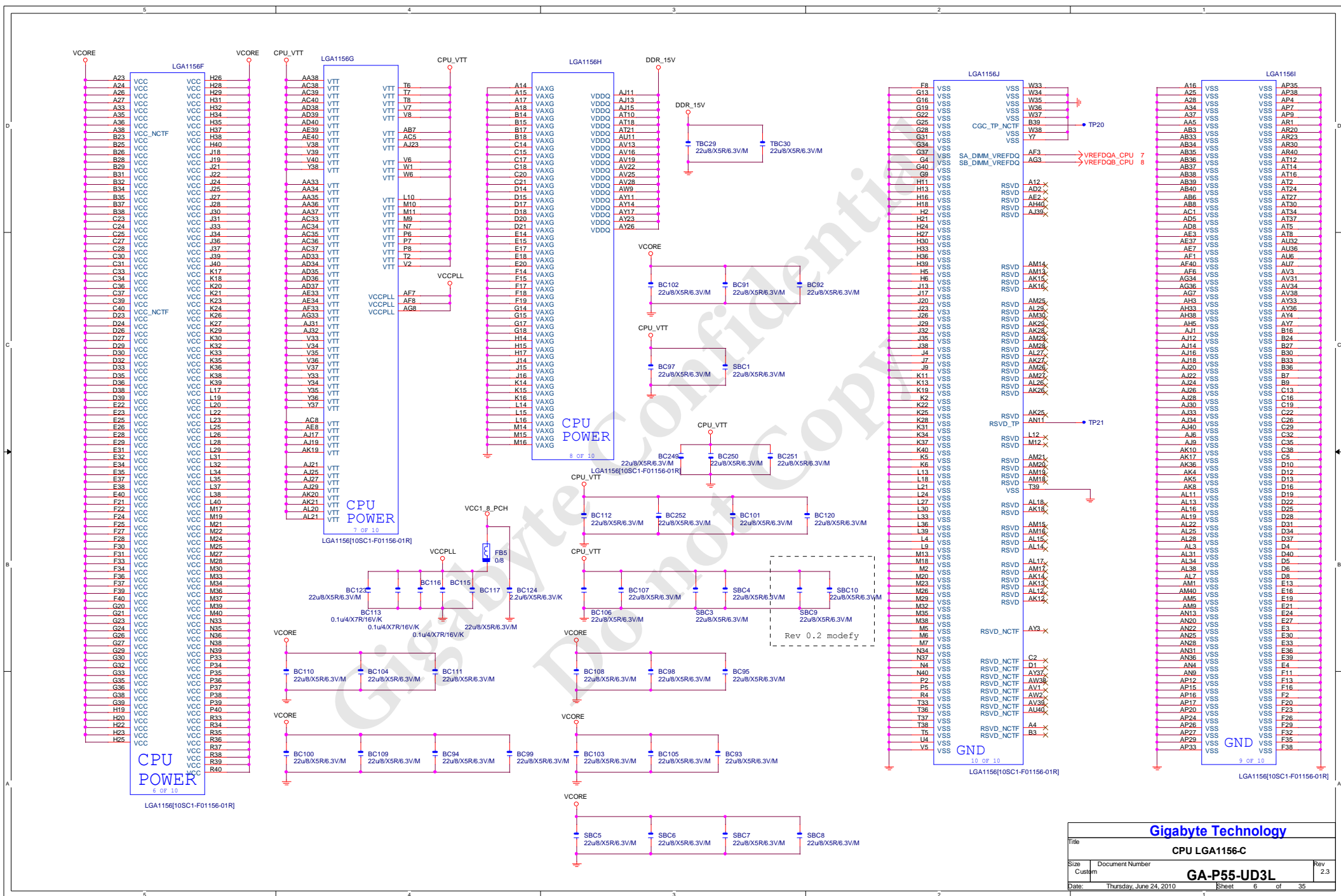
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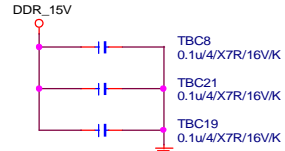
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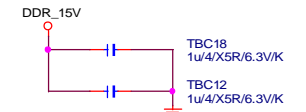
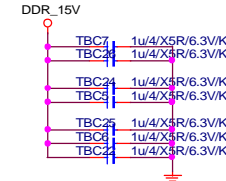
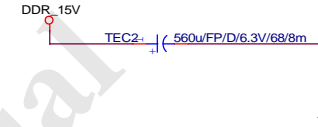
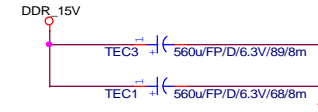
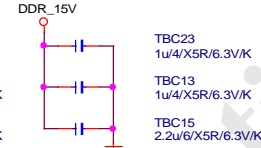
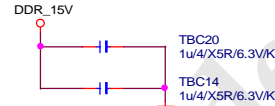
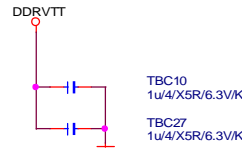
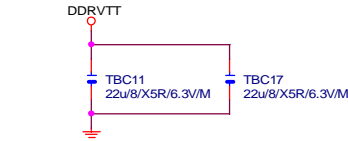
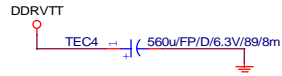
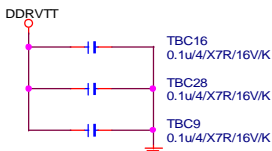


DDR TERMINATION CHANNEL A/B

DDR15V Decouple



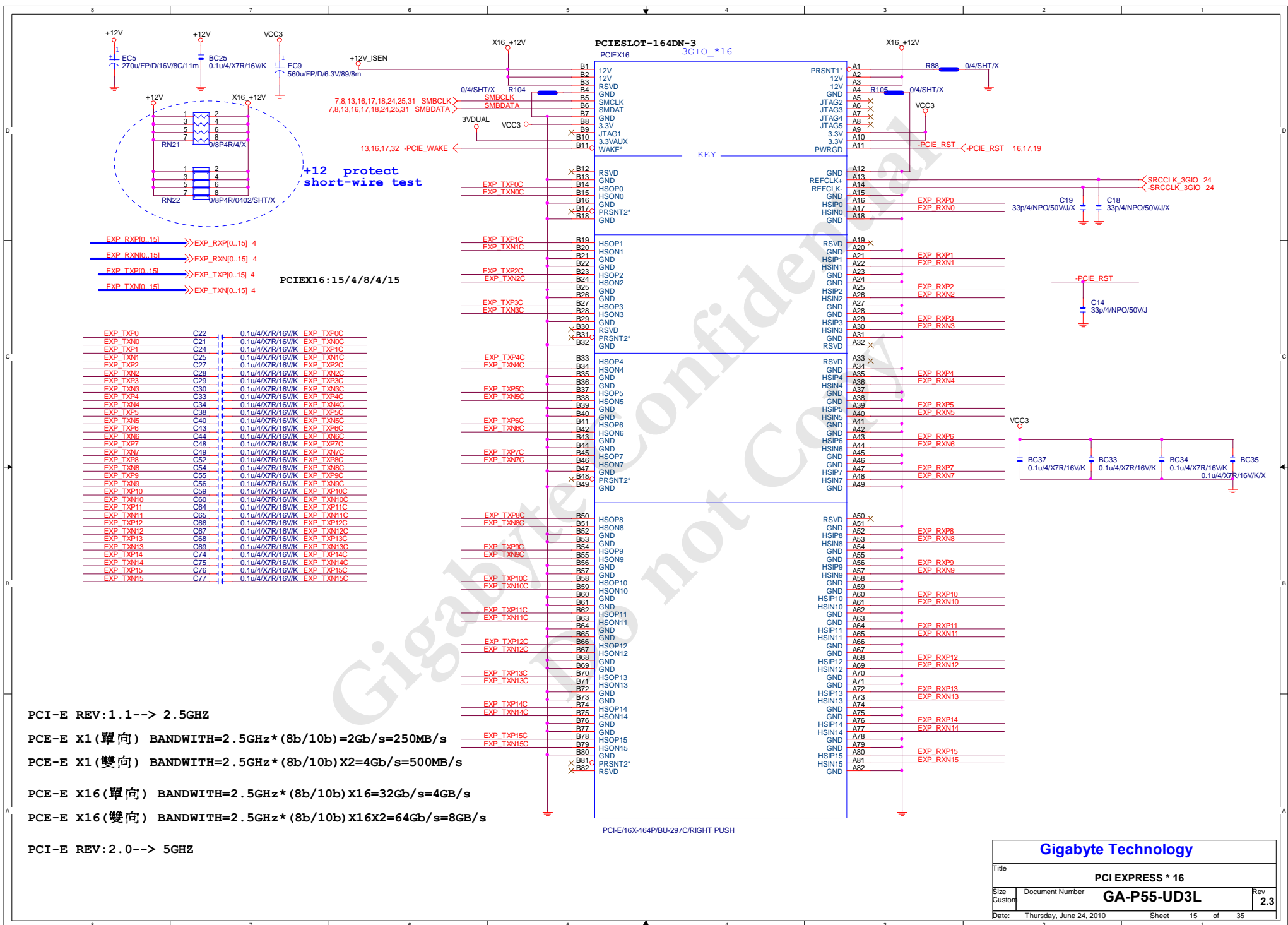
DDRVTT Decouple

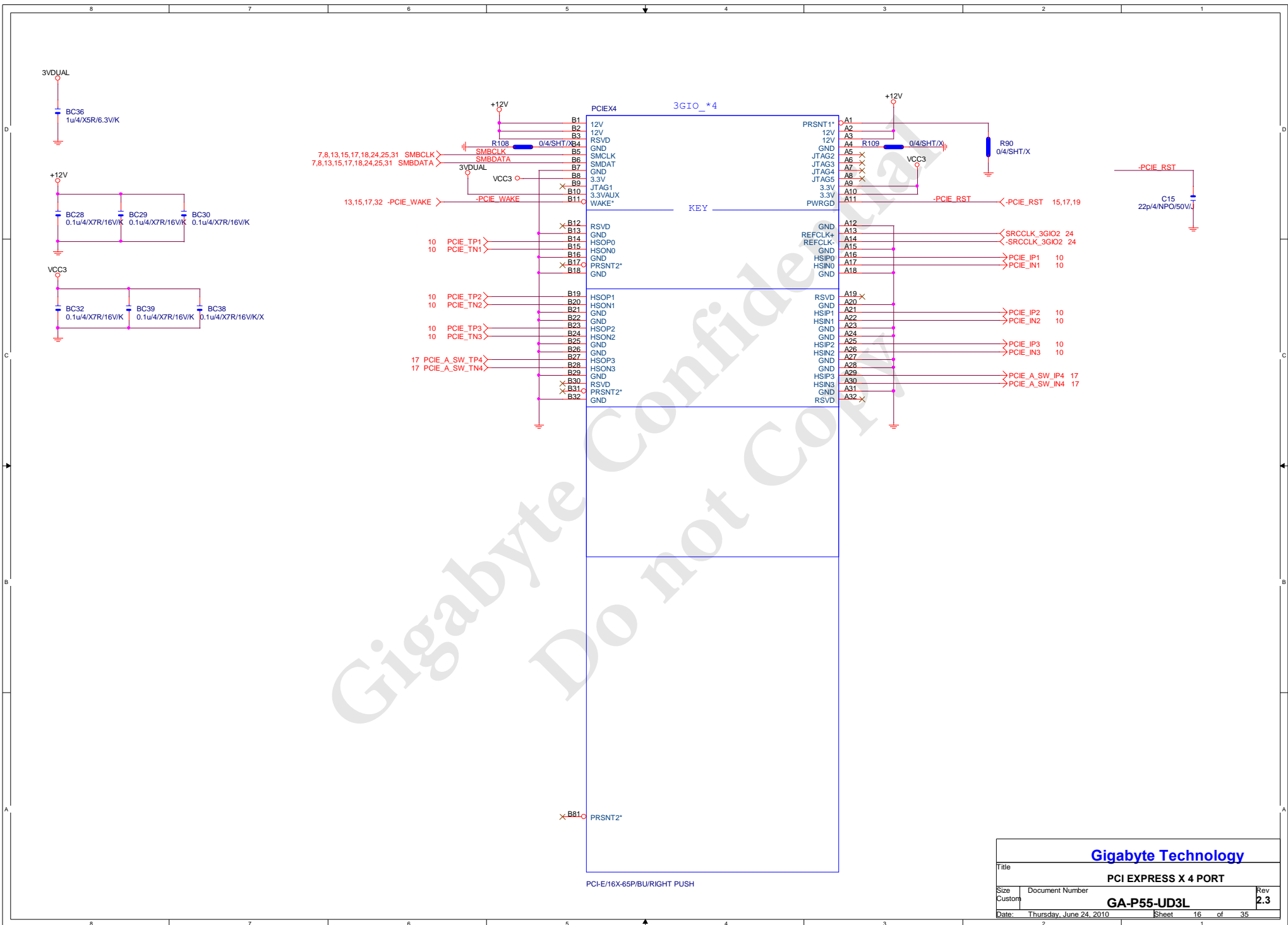


COUPON1 COUPON1 1 2 COUPONX VCC3

COUPON2 COUPON2 1 2 COUPONX

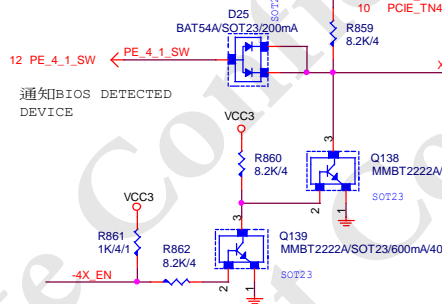
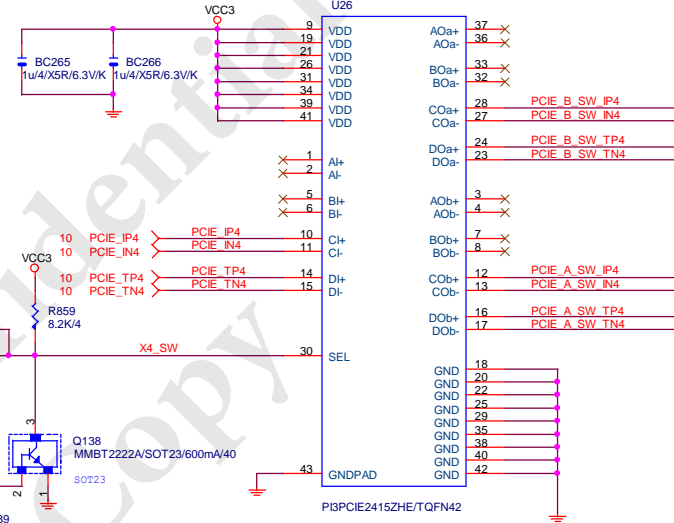
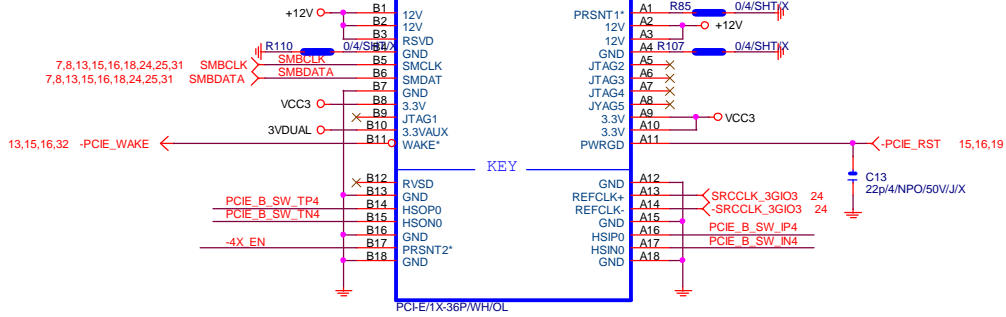
Gigabyte Technology			
Title			
DDRIII POWER CAP			
Size B	Document Number	GA-P55-UD3L	Rev 2.3
Date: Thursday, June 24, 2010	Sheet 9	of 35	



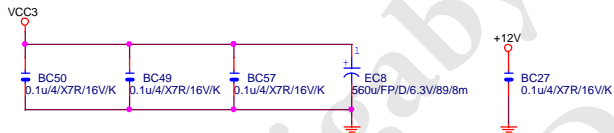


PCIE*1

PCIE_X1 3GIO_X1

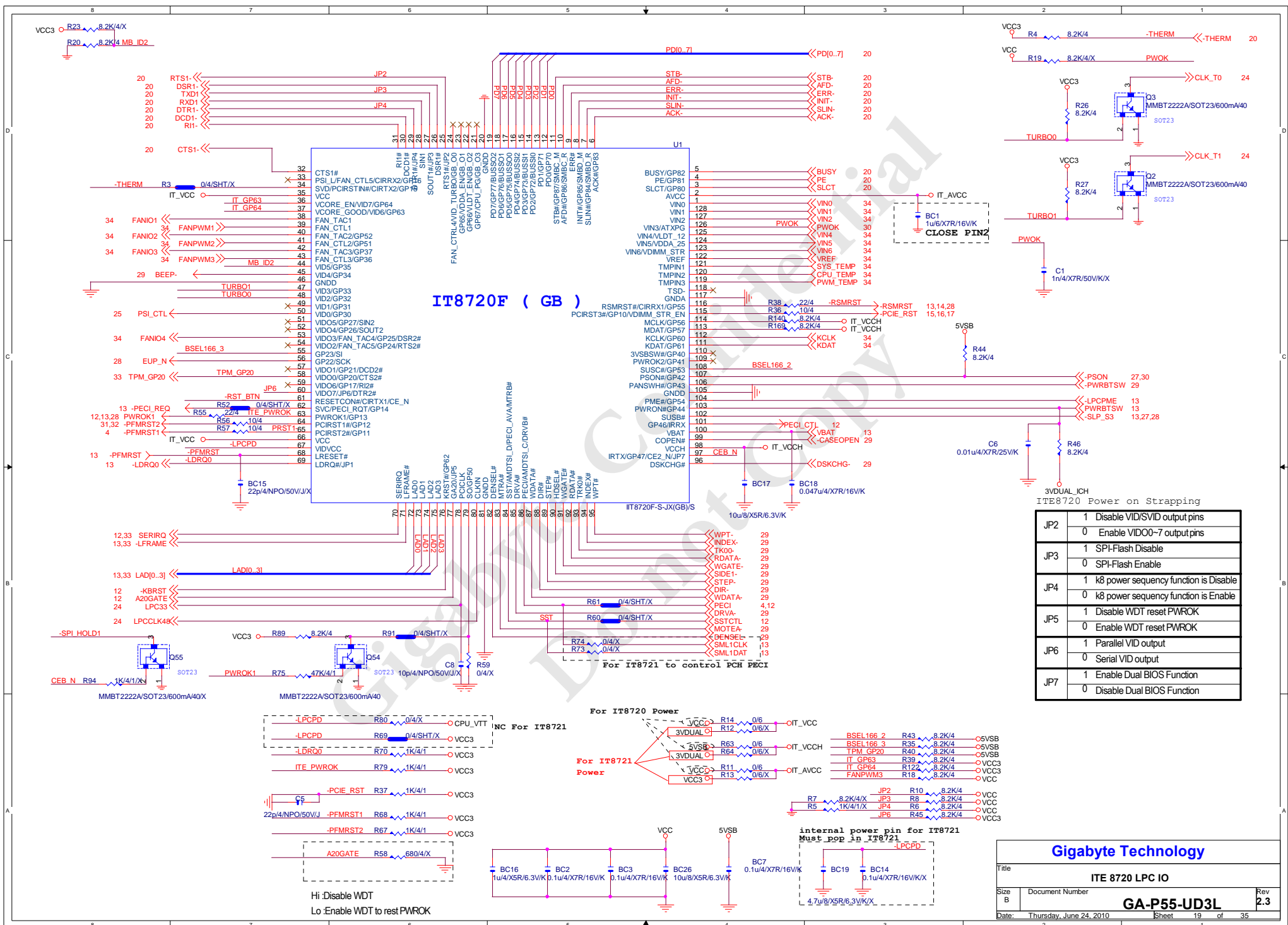


Function	SEL
xI--> xOa	L;PCIE_X4 SLOT-->X1
xI--> xOb	H;PCIE_X4 SLOT-->X4



Gigabyte Technology

Title		
PCIE_X1 1,2		
Size	Document Number	Rev
Custom	GA-P55-UD3L	2.3
Date:	Thursday, June 24, 2010	Sheet 17 of 35



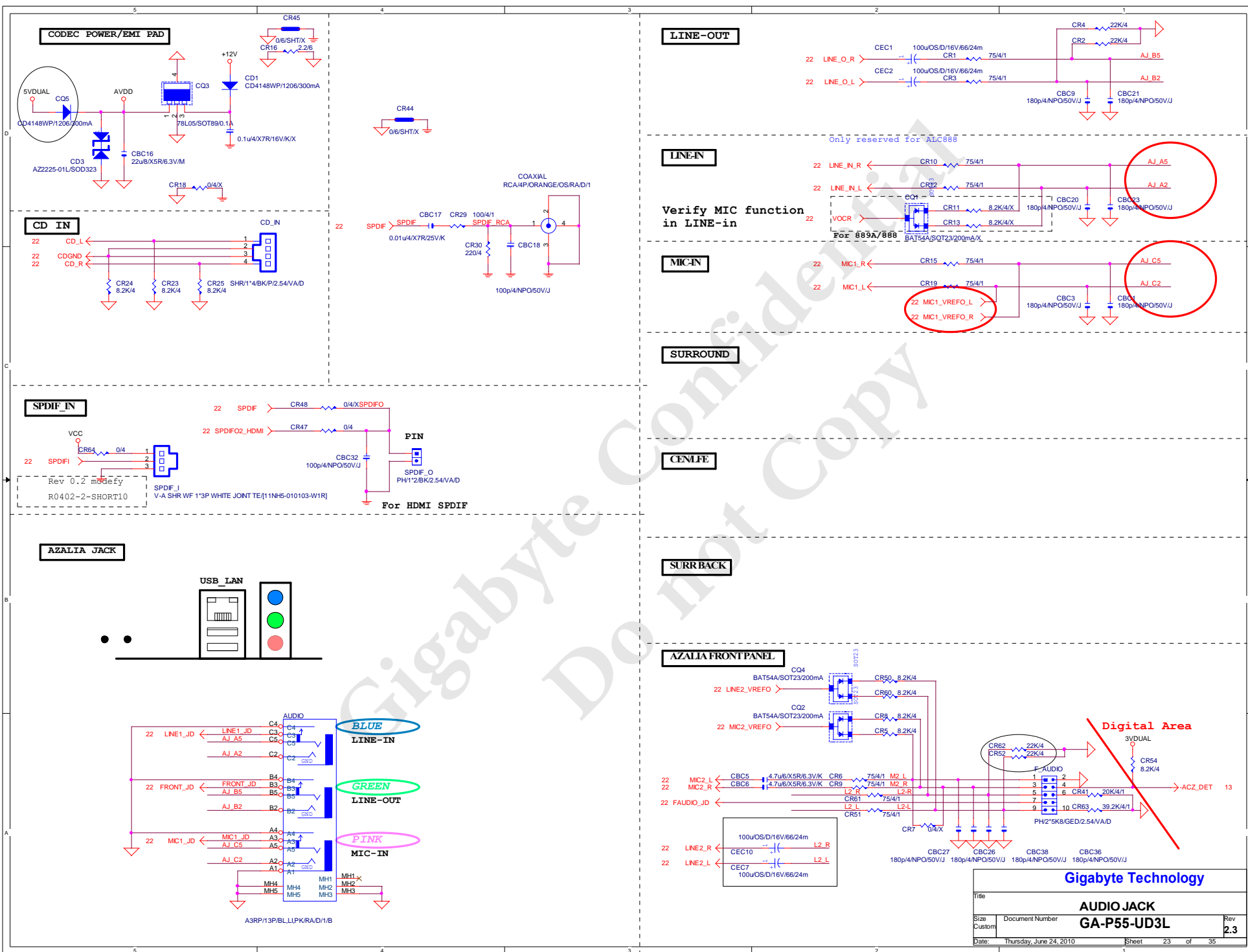
Gigabyte Confidential
Do not Copy

Gigabyte Technology			
Title		BIOS	
Size	Document Number	GA-P55-UD3L	Rev
Custom			2.3
Date: Thursday, June 24, 2010		Sheet	21 of 35

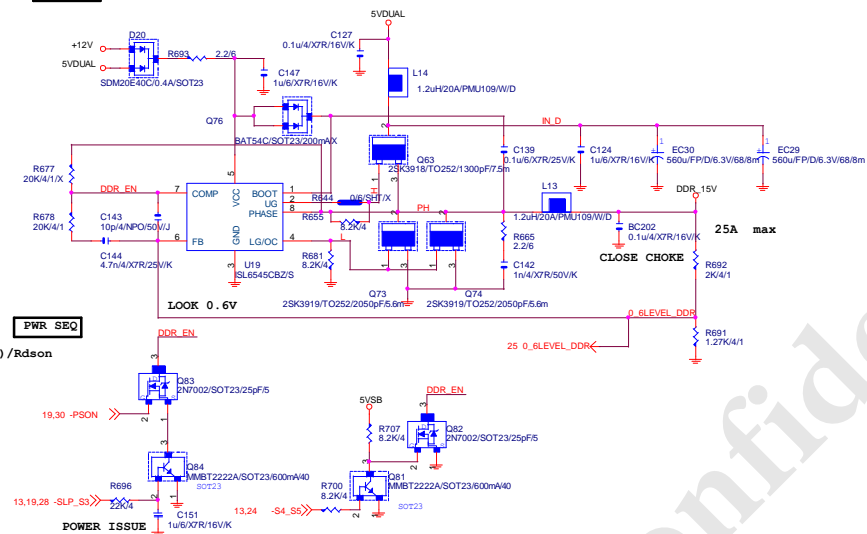
	ALC883	ALC888-VA	ALC888B	ALC888-VD	ALC892
CR46	X	X	X	X	X
CR57	X	X	X	X	X
CR49	O	O	X	X	X
CBC40	X	X	X	10uF/X5R	10uF/X5R
CR20	O	X	X	X	X
CR26	20K/1%	20K/1%	20K/1%	20K/1%	20K/1%
CR47	X	X	X	X	O
CR48	O	O	O	O	X
CBC2/CBC4/CBC5/ CBC6/CBC10/CBC11	4.7uF /X5R	4.7uF /X5R	4.7uF /X5R	4.7uF /X5R	4.7uF /X5R
CR1/CR3/CR10/CR12/CR15/CR19 /CR56/CR27/CR55/CR37/CR28/ CR34/CR6/CR9/CR51/CR61	75 ohm	75 ohm	75 ohm	75 ohm	75 ohm

[illegible]

Title				HD AUDIO ALC892R			
Size B	Document Number					GA-P55-UD3L	Rev 2.3
Date:	Thursday, June 24, 2010			Sheet	22	of	35

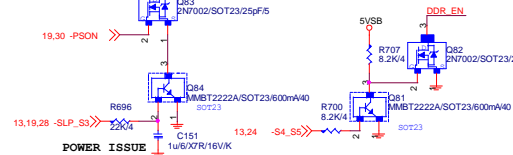


DDR18V

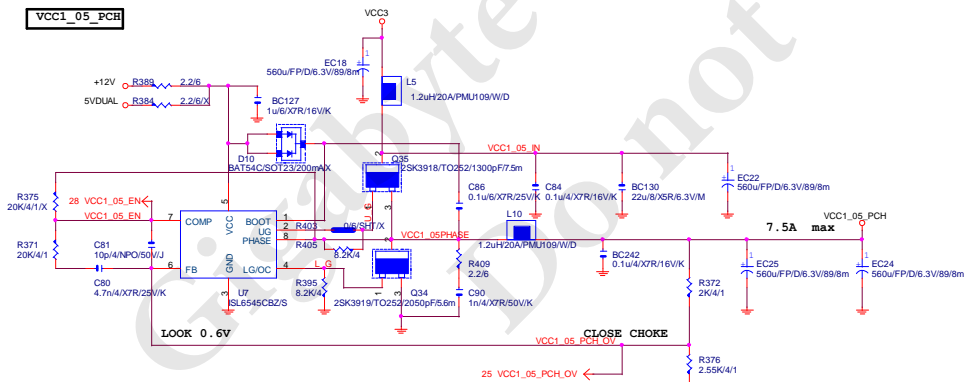


PWR SEQ

$OCP : I_{peak} = (2 \times I_{ocset} \times R_{ocset}) / R_{dson}$
 $I_{ocset} = 21.5\mu A$, $R_{ocset} = 8.2k$



VCC1_05_PCH



Gigabyte Technology

File	DDR_15V	Rev	2.3
Size	Document Number	GA-P55-UD3L	
Date	Thursday, June 24, 2010	Sheet	27 of 35

ATX POWER CONNECTOR

Diagram illustrating the ATX Power Connector circuit, showing the connection of various power rails and ground pins to the motherboard components.

Power Rails and Connections:

- 12V:** Connected to pin 13.
- VCC3:** Connected to pins 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24.
- 3.3V:** Connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.
- 5V:** Connected to pins 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24.
- 12V:** Connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.
- 5VSB:** Connected to pins 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24.
- POK:** Connected to pin 1.
- PWOK:** Connected to pin 2.
- 5VSB:** Connected to pin 3.
- +12V:** Connected to pin 4.

Capacitors and Diodes:

- BC228: 1uF/6.3V/16V/K
- BC231: 0.1uF/4.7V/16V/K
- BC232: 0.1uF/4.7V/16V/K/X
- BC233: 0.1uF/4.7V/16V/K
- BC234: 0.1uF/4.7V/16V/K
- BC235: 1uF/4.7V/16V/K
- BC227: 510/6/X
- BC229: 1uF/6.3V/16V/K
- BC230: 510/6/X
- C178: 0.1uF/4.7V/16V/K
- BC226: 22uF/8.3V/16V/K

APW/2*12IV/A/SN2SHKPA66

To prevent the 5VSB under loading when boot

ATX 12V Connector Detail:

- Pin 1: +12V
- Pin 2: GND
- Pin 3: +12V
- Pin 4: GND

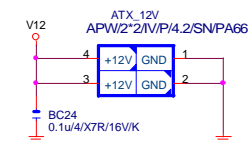
Mounting Holes (MH1-MH6):

- MH1, MH2, MH3, MH4, MH5, MH6: HOLE_3/X

Components (K1-K6):

- K1, K2, K3, K4, K5, K6: 4MMH/X

GA-P55-UD3L

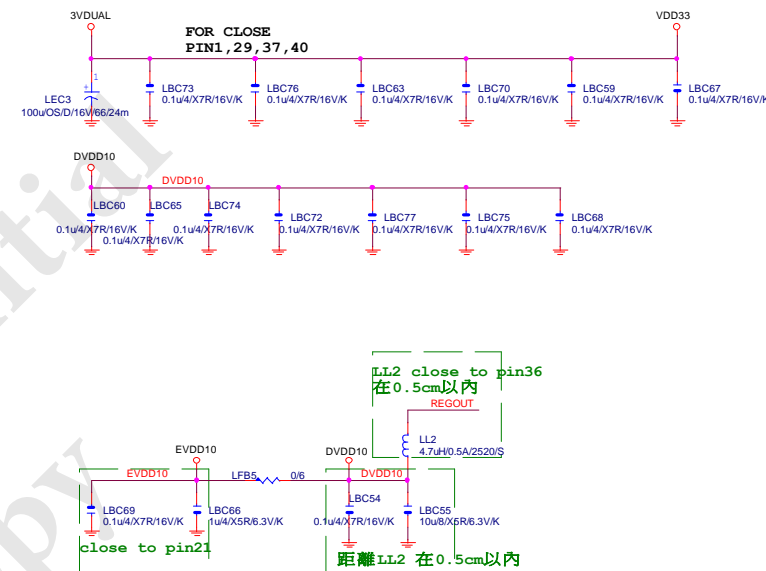
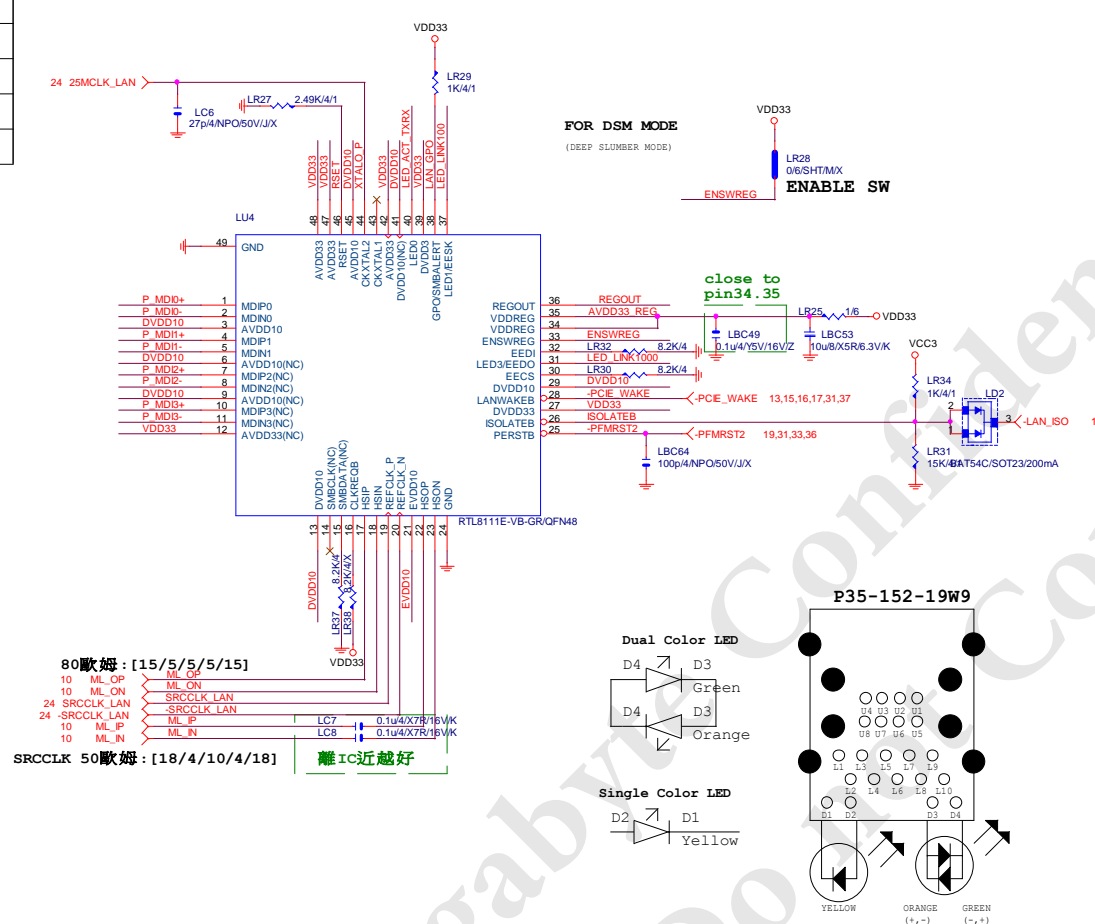


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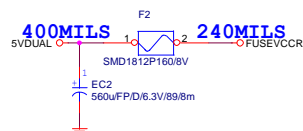
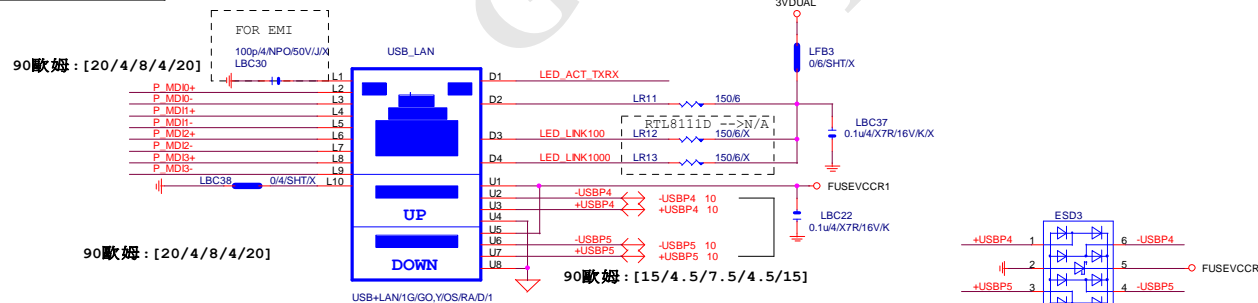
Title			
ATX POWER CONNECTOR			
Size B	Document Number	GA-P55-UD3L	Rev 2.3
Date:	Thursday, June 24, 2010	Sheet	30 of 35

Power domain chart

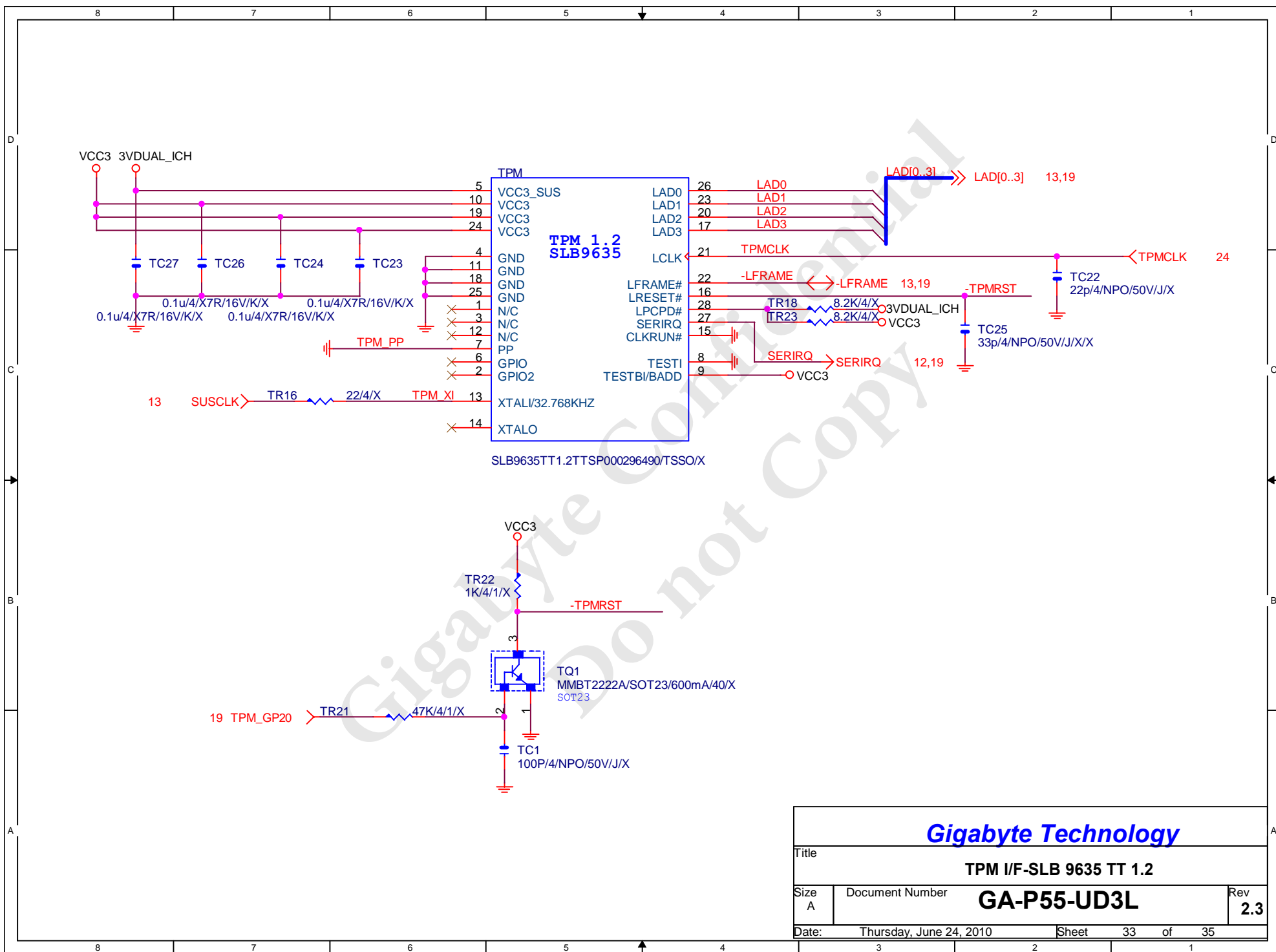
	RTL8111E
AVDD33	3.3V
DVDD33	3.3V
VDDREG	3.3V
DVDD10	1.05V



90歐姆：[20/4/8/4/20]

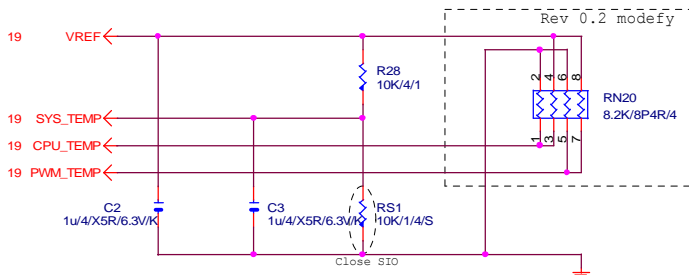


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Title					
Size	Document Number				Rev
Custom	<p align="center">GA-P55-UD3L</p>				2.
Date:	Thursday, June 24, 2010		Page	32	of 35

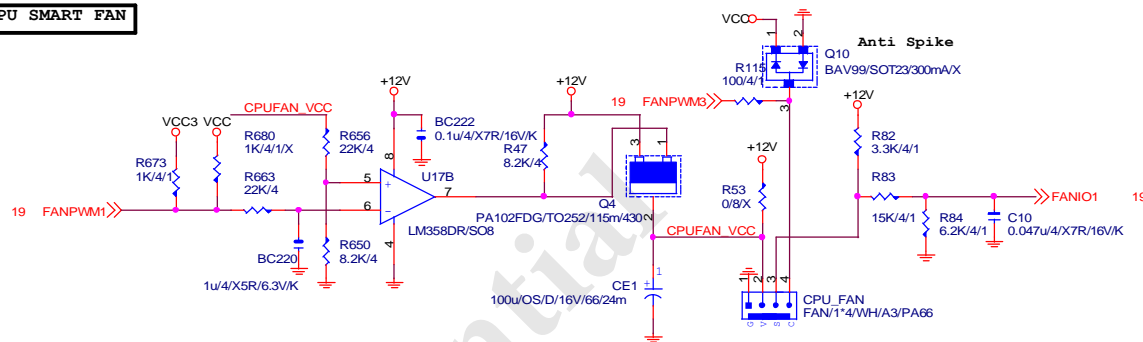


Gigabyte Technology		
Title		
TPM I/F-SLB 9635 TT 1.2		
Size A	Document Number	Rev
	GA-P55-UD3L	2.3
Date:	Thursday, June 24, 2010	Sheet 33 of 35

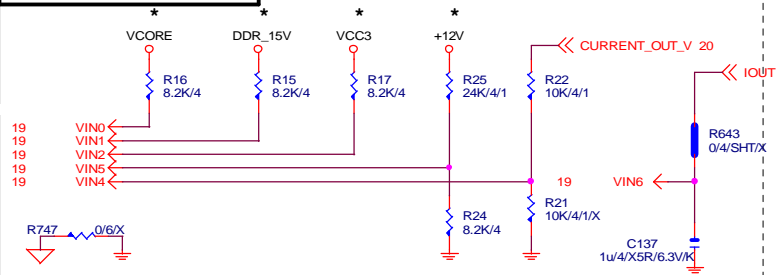
TEMP H/W MONITOR



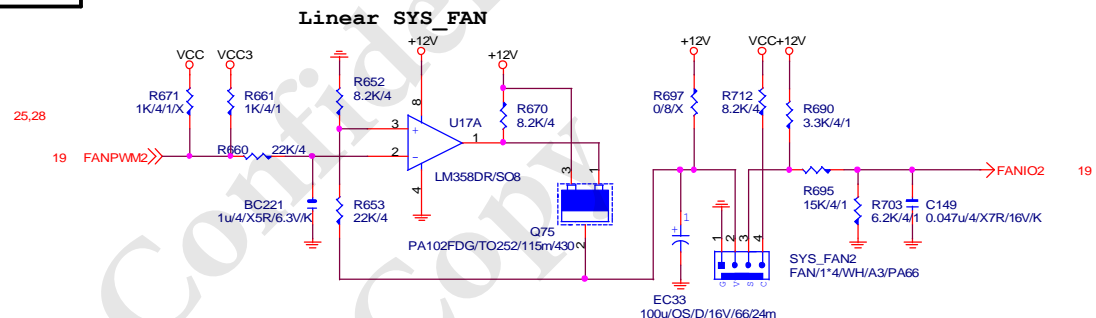
CPU SMART FAN



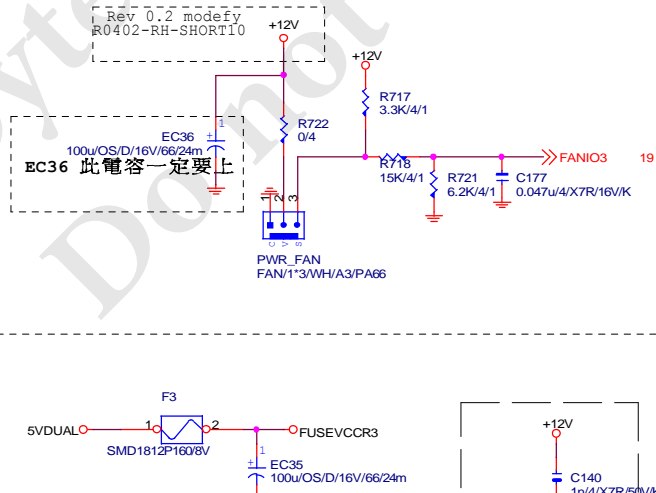
VOLTAGE-- H/W MONITOR



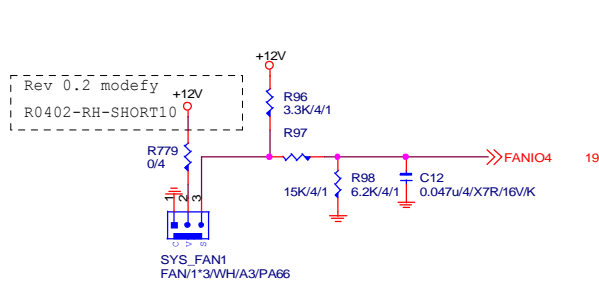
SYS FAN2



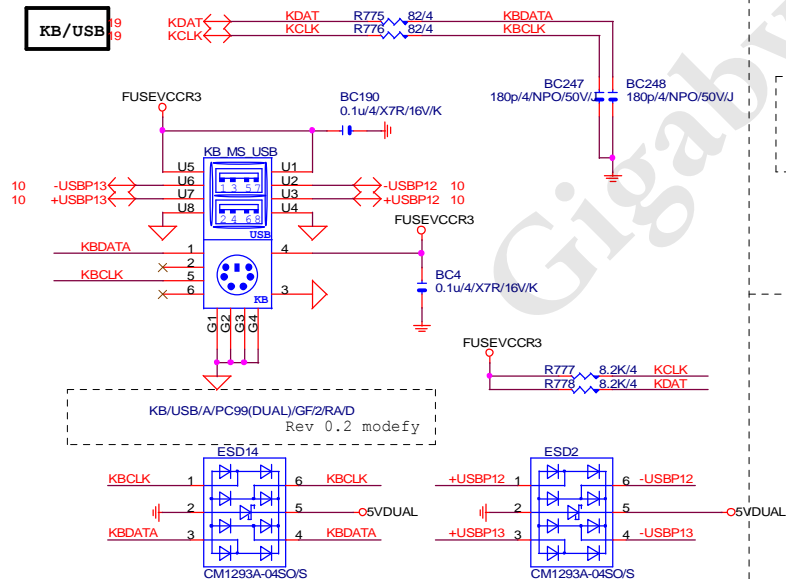
PWR FAN



SYS FAN1



KB/USB



Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom		GA-P55-UD3L 2.3	
Date:	Thursday, June 24, 2010	Sheet	34 of 35

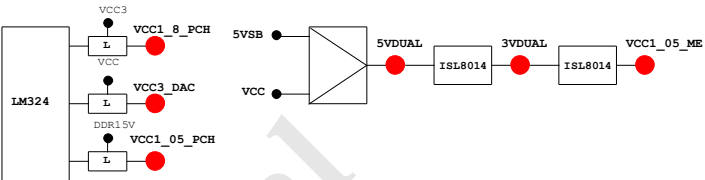
PCH GPIO LIST TABLE

PIN NAME	PWR	Default	USAG	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 OCL#	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_OCO#	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

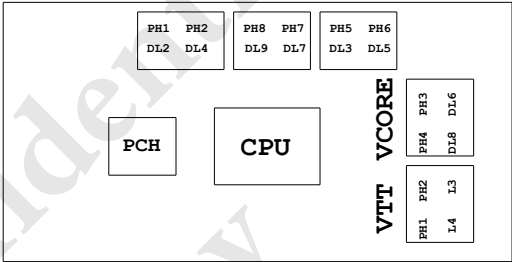
Super I/O ITE8720 GPIO Table

PIN NAME	USAG	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSSO0	N/A	

PIN NAME	USAG	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSIO	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VID05/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VBSBW#/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/BUSSO1	MB_ID3	
PD7/GP77/BUSSO2	MB_ID4	
AFD#/GP86/SMB_C_R	SEC_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMB_C_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#/CIRRX/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/BUSSO0	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Termination
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號：

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

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1 ICH_FAN_PWM2	FANPWM3 ICH_FAN_PWM0	FANIO1 ICH_FAN_TACH0	IT8720 PCH
SYS FAN	FANPWM2 ICH_FAN_PWM1	N/A	FANIO2 ICH_FAN_TACH1	IT8720 PCH
PWR FAN	N/A	N/A	FANIO3 ICH_FAN_TACH2	IT8720 PCH

Gigabyte Technology			
TABLE LIST			
Size C	Document Number	Rev	
	GA-P55-UD3L	2.3	
Date	Thursday, June 29, 2011	Sheet	35 of 35