Model Name: 945GME-DS2

Revision 3.0

SHEET	TITLE
01	COVER SHEET
02	BLOCK DIAGRAM
03	BOM & PCB MODIFY HISTORY
04	P4_LGA775_A
05	P4_LGA775_B
06	P4_LGA775_C
07	P4_LGA775_D,E,F,G
08	GMCH-LAKEPORT_HOST
09	GMCH-LAKEPORT_DDRII
10	GMCH-LAKEPORT_PCI_E, DMI
11	GMCH-LAKEPORT_INT VGA
12	GMCH-LAKEPORT_GND
13	GMCH-LAKEPORT_PWR
14	DDRII CHANNEL A 1
15	DDRII CHANNEL B 2
16	DDRII TERMINATION
17	PCI EXPRESS*16 SLOT
18	ICH7 PCI, USB, DMI, LAN
19	ICH7 IDE, GPIO, SATA, CTRL
20	ICH7 VCC, GND
21	GB/CK410M-OC CLOCK.
22	PCI SLOT 1,2,3
23	IDE/FLOPPY
24	ITE 8718 GBIX
25	COM LPT
26	BIOS,CI,HWM,KB/MS
27	AZALIA ALC888

SHEET	TITLE
28	REAR AUDIO JACK
29	DISCRETE POWER
30	VCORE PWM_ISL6312
31	ATX, OTHERS POWER
32	REALTEK RTL8110SC
33	FRONT PANEL

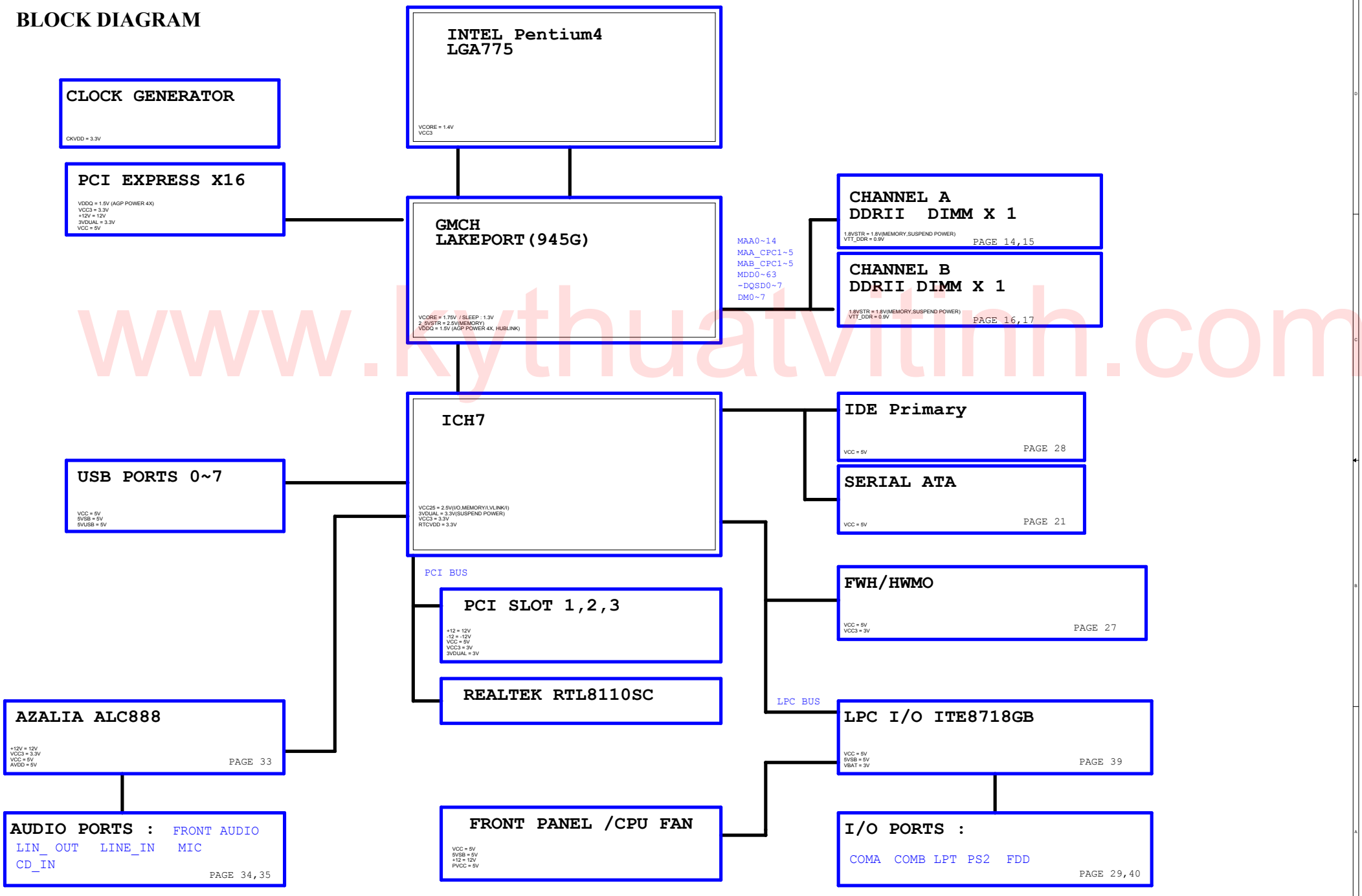
Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: 945GME-DS2 | Rev: 3.0

Date: Thursday, February 08, 2007 | Sheet 1 of 33

BLOCK DIAGRAM



Gigabyte Technology

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: 945GME-DS2 | Rev: 3.0

Date: Thursday, February 08, 2007 | Sheet 2 of 33

Model Name:945GME-DS2

Version: 3.0

Component value change history

2007/02/07

Data	Change Item	Reason
2006/04/14	1.RENAME 945ZM-S2-->8I945GZME-RH	(與8I945GZME SPEC完全不同,不可共用)
2006/04/17	SWAP NET	
2006/04/18	U87 ADD MASK GND PIN9	
2006/04/20	改BAT LIB/EMI	
2006/05/21	R1.0 LAYOUT	1. MODIFY EMI ISSUE
		2.MODIFY PWM+VCC1_5(S3)+RESET+-THRMTRIP
2006/06/06	PVT SCH SEND 工廠	
2006/07/03	COMP8 CHANGE 30/6/1	
	VTT_PWRGD# ADD RC DELAY TIME	BOM:9M945GZMER-00-10B
2006/08/29	PCB R2.0:AUDIO(VISTA)+SB_HS+SMD FUSE+VCORE(8C CAP)+方形CHOKE+螺絲孔	VCORE 5PCS E-CAP
2006/09/05	MODIFY AUDIO 1X3-->2X3 JACK.	
2006/09/18	MODIFY NAME:945GZM-S2	
2006/09/21	MODIFY CHOKE FOOTPRINT	
2006/09/22	MODIFY NAME:945PLM-DS2 R20	
2006/10/11	PBOM:9M945PLMDR-00-20B	
2006/10/16	MODIFY NAME:945GCM-DS2 R20 FROM 945PLM-DS2 R20	1.CHIPSET 945G SUPPORT FSB1066
2006/10/17	945GCM-DS2 R2.1 OC FSB1066(ICS954148)	
2006/10/20	945PLM-DS2 R2.1 OC FSB1066(ICS954148)	
2006/10/30	945GCM-S2 R2.1 OC FSB1066(ICS954148)	
2006/11/20	Dynamic O.C ISSUE REMOVE R1911,R1580	
	CHANG AP9T18GH LOW THRESOLD FIX MOS BURN OUT	
	R1707/R1905-->4.7/6	PBOM:9M945CMS2R-00-21B
2006/11/23	REV 2.11:MODIFY 方型CHOKE	
2006/12/13	R3.0 MODIFY LAN RTL8110SC	
2006/12/14	MODIFY 78L05 SMD	
2007/01/22	REMOVE R252 FOR DOTCLK	PBOM:9M945GMEDR-00-30A
2007/02/07	FIXE INTEL D STEPPING CPU	F_PBOM:9M945GMEDR-00-30B

Circuit or PCB layout change for next version

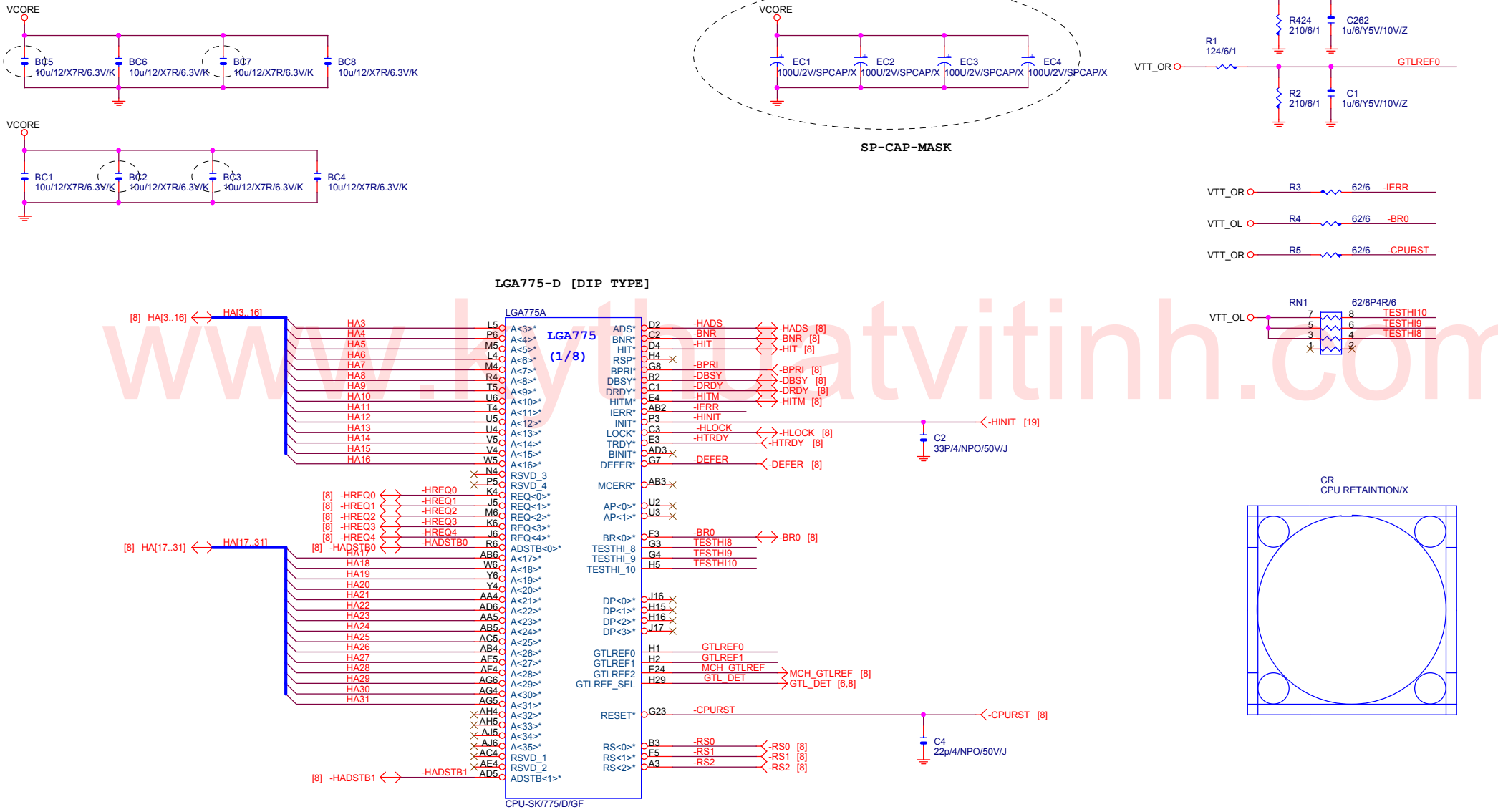
DATE	Change Item	Reason

Gigabyte Technology

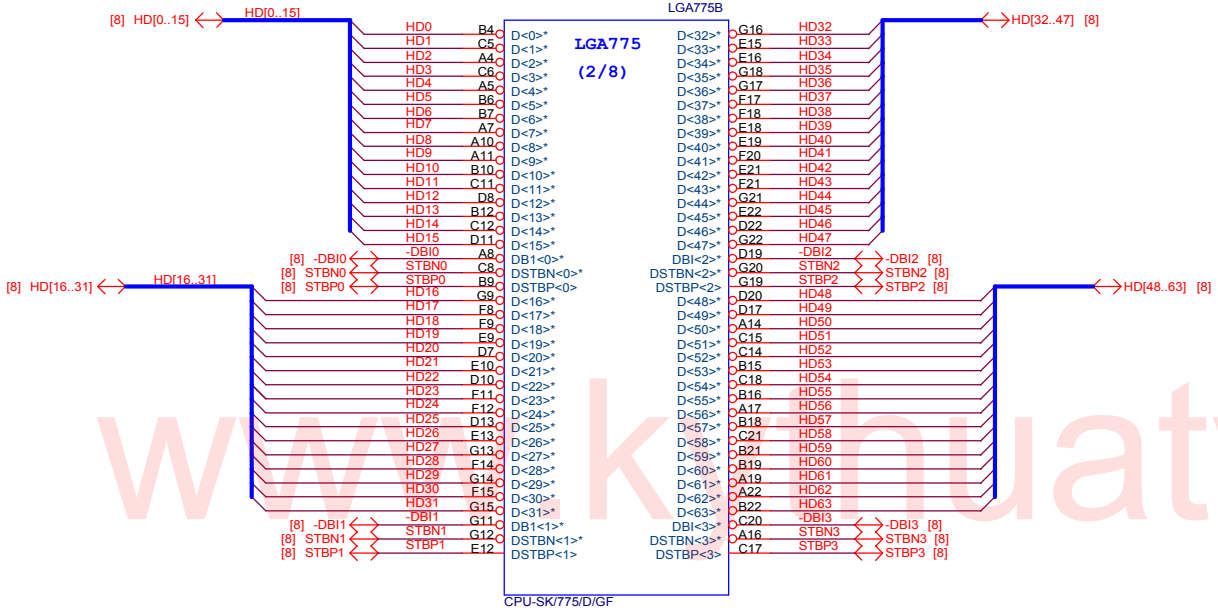
Title: BOM & PCB MODIFY HISTORY

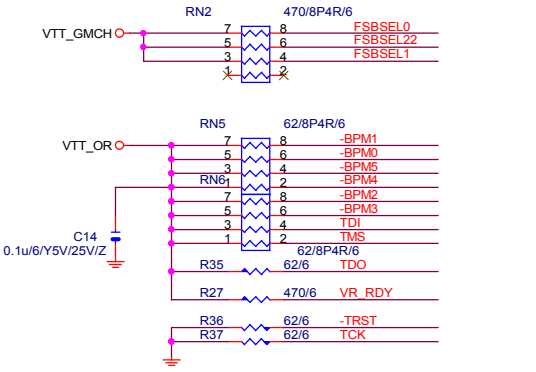
Size	Document Number	Rev
Custom	945GME-DS2	3.0

Date: Thursday, February 08, 2007 Sheet 3 of 33



Gigabyte Technology			
Title: P4_LGA775-A			
Size: B	Document Number: 945GME-DS2		Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 4 of 33		

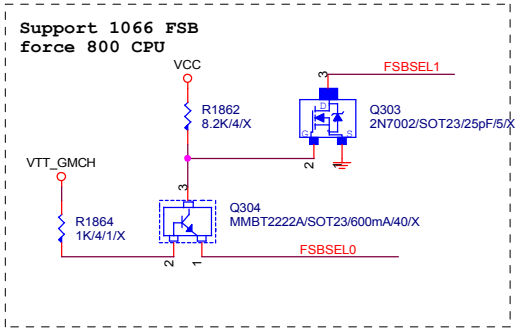


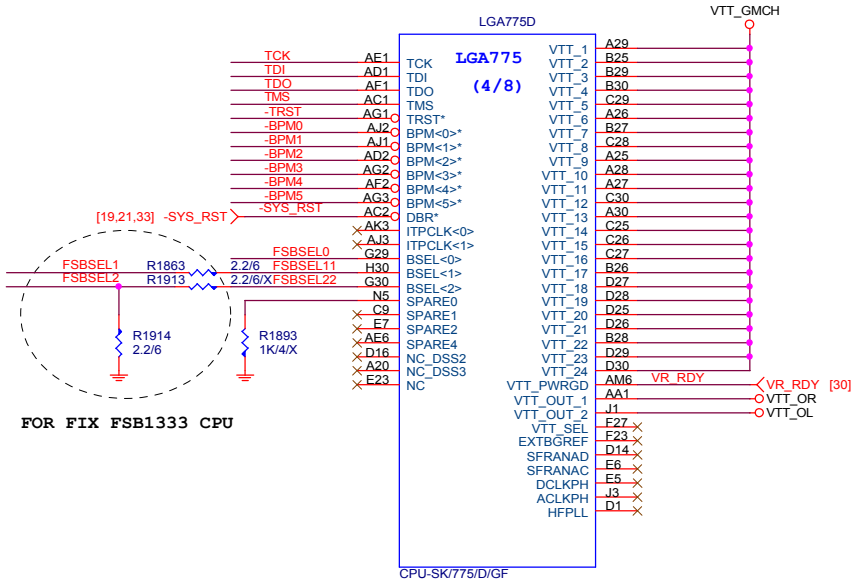


CPU

NA	FSB	FSA	
FSBSEL3	FSBSEL1	FSBSEL0	Clock
1	0	1	100MHz
0	0	1	133MHz
0	1	1	166MHz
0	1	0	200MHz
0	0	0	266MHz

X





FOR FIX FSB1333 CPU

Gigabyte Technology	
Title	P4_LGA775-B,D
Size: Custom	Document Number: 945GME-DS2
Rev	3.0
Date: Thursday, February 08, 2007	Sheet 5 of 33

Place outside of CPU socket

COMP8 CHANGE 30/6/1 FOR CONROE CPU

Note:
VCCA & VCOREPLL define doesn't same as old P4 design kit

VCCA:120~220mA

VCOREPLL:100mA

Trace width doesn't less than 12 Mil

As close as possible to CPU socket

support p4 extreme:1.5V

R1.0

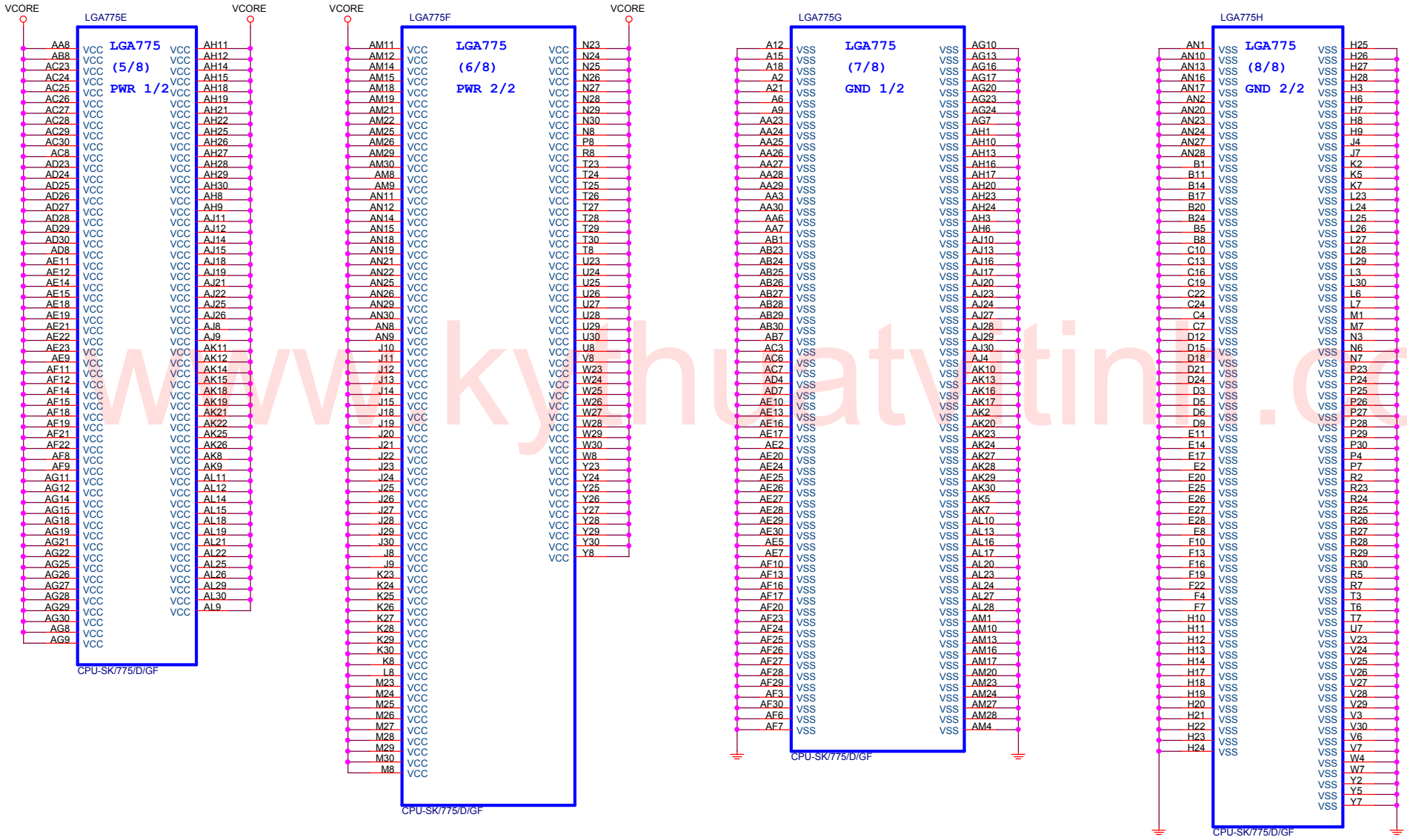
CPU

FSA	FSB	NA		
FSBSEL0	FSBSEL1	FSBSEL3	Clock	
1	0	1	100MHz	X
1	0	0	133MHz	
1	1	0	166MHz	RATIO
0	1	0	200MHz	2.66/3.33
0	0	0	266MHz	2.00/2.5

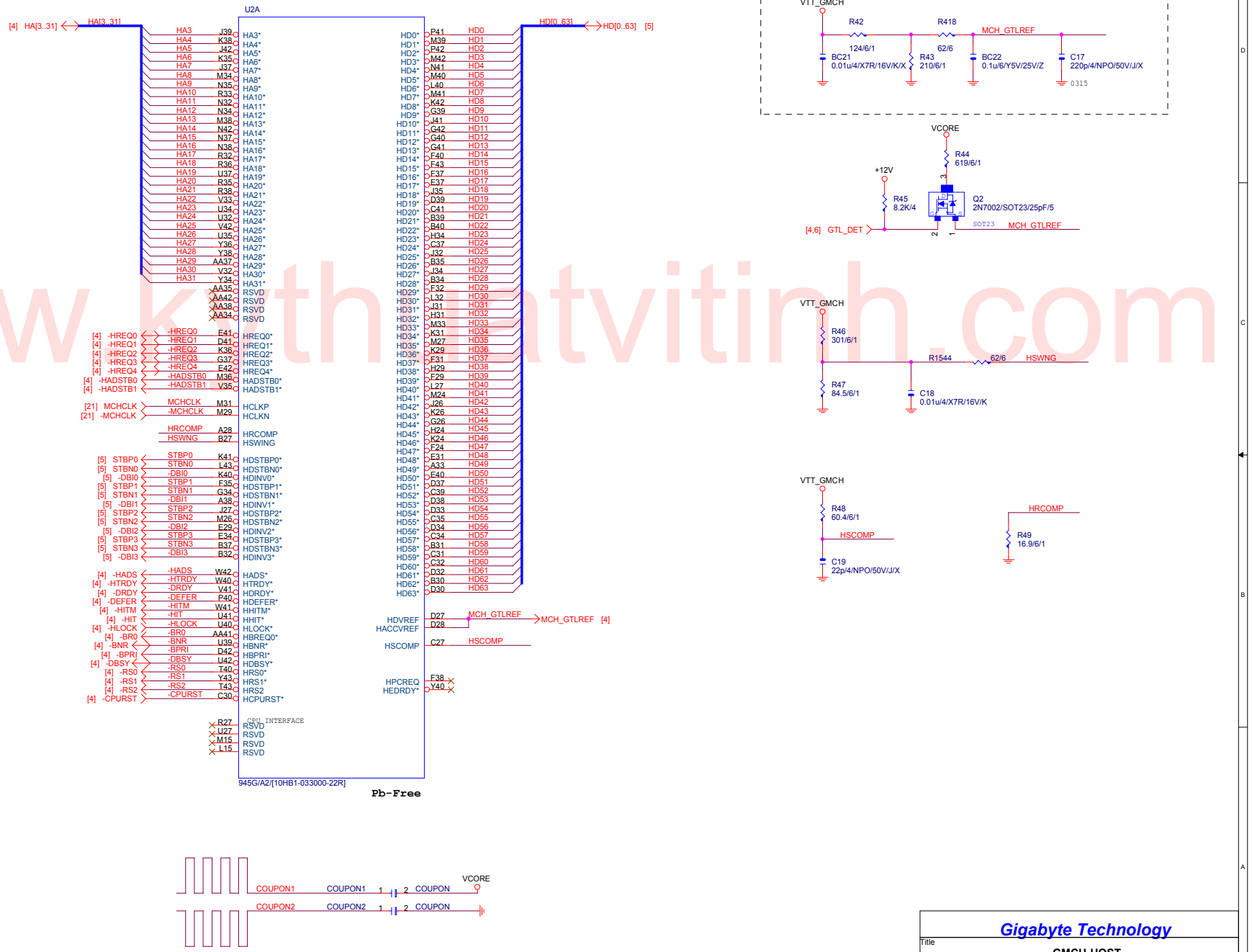
945 Design Guide rev1.5 spec.
VCCA=120~220mA
公板爲125mA

10LI2-12100A-13=INDUCTOR 10uH 300mA TAI-TECH
10LI2-12100A-02=INDUCTOR 10uH 155mA TAIYO
10LI2-12100A-01=INDUCTOR 10uH 120mA TDK
限用兩種

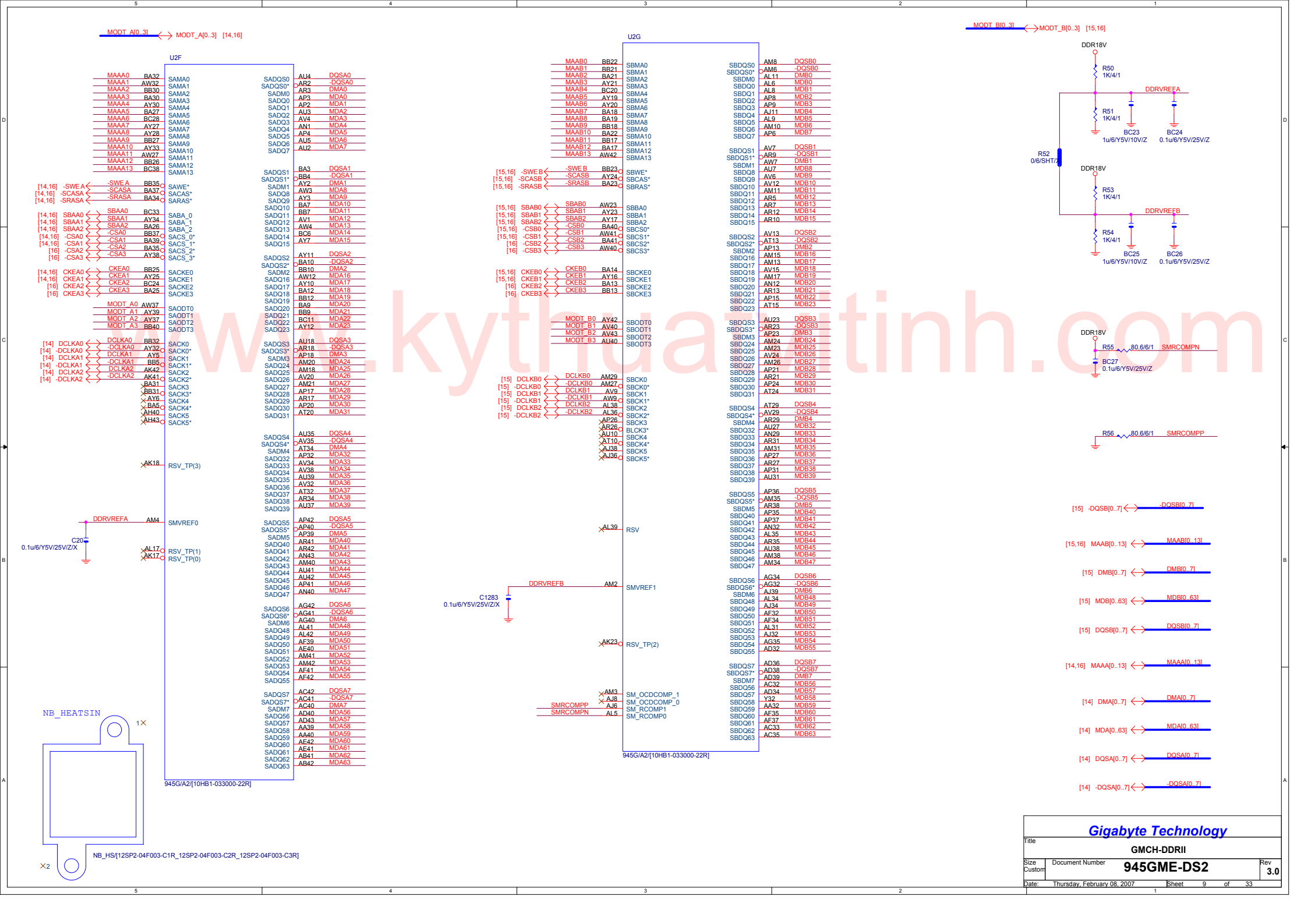
Gigabyte Technology		
Title	P4_LGA775-B	
Size: Custom	Document Number: 945GME-DS2	Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 6 of 33	

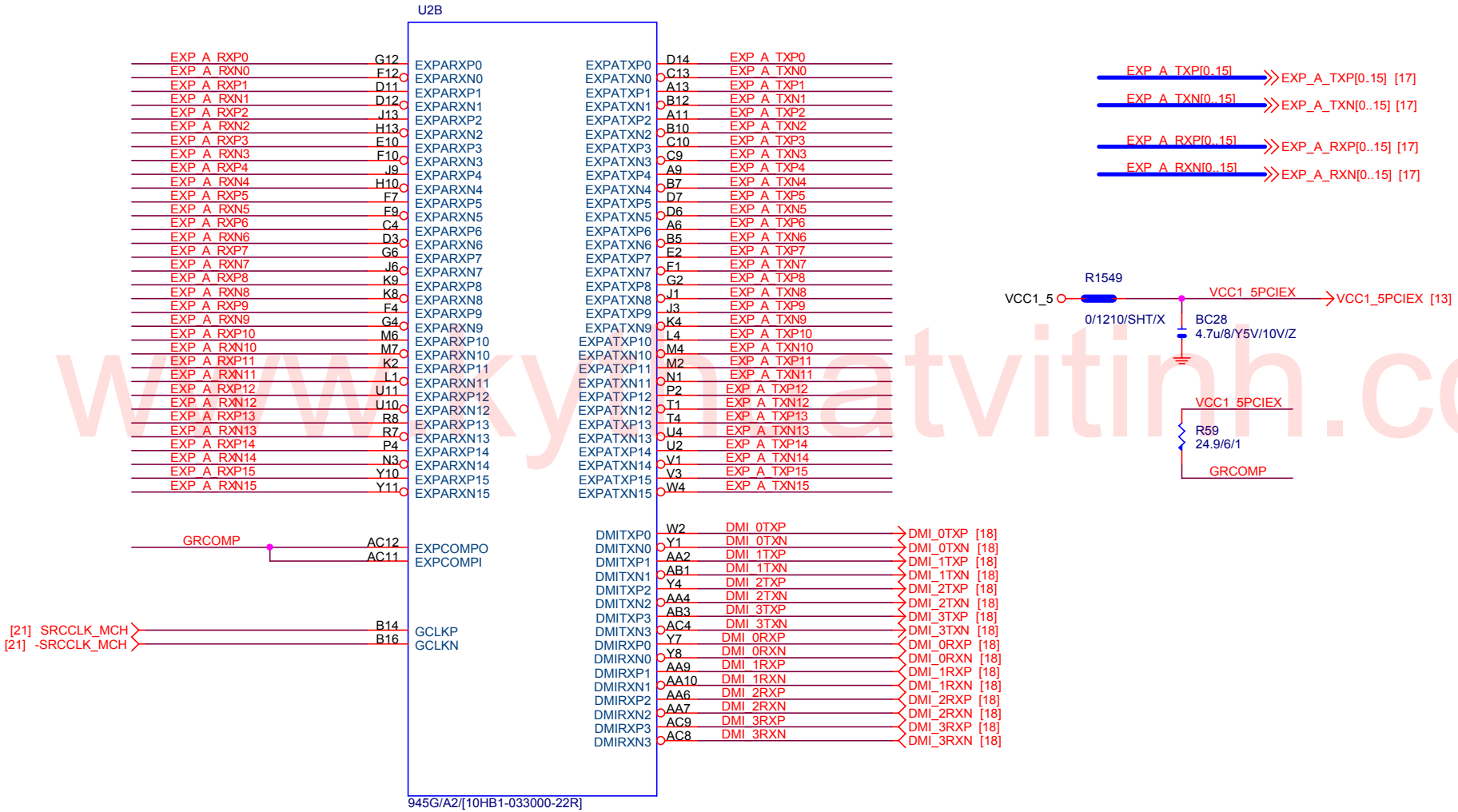


Gigabyte Technology			
Title: P4_LGA775-E,F,G,H			
Size: B	Document Number: 945GME-DS2		Rev: 3.0
Date: Thursday, February 08, 2007		Sheet 7 of 33	

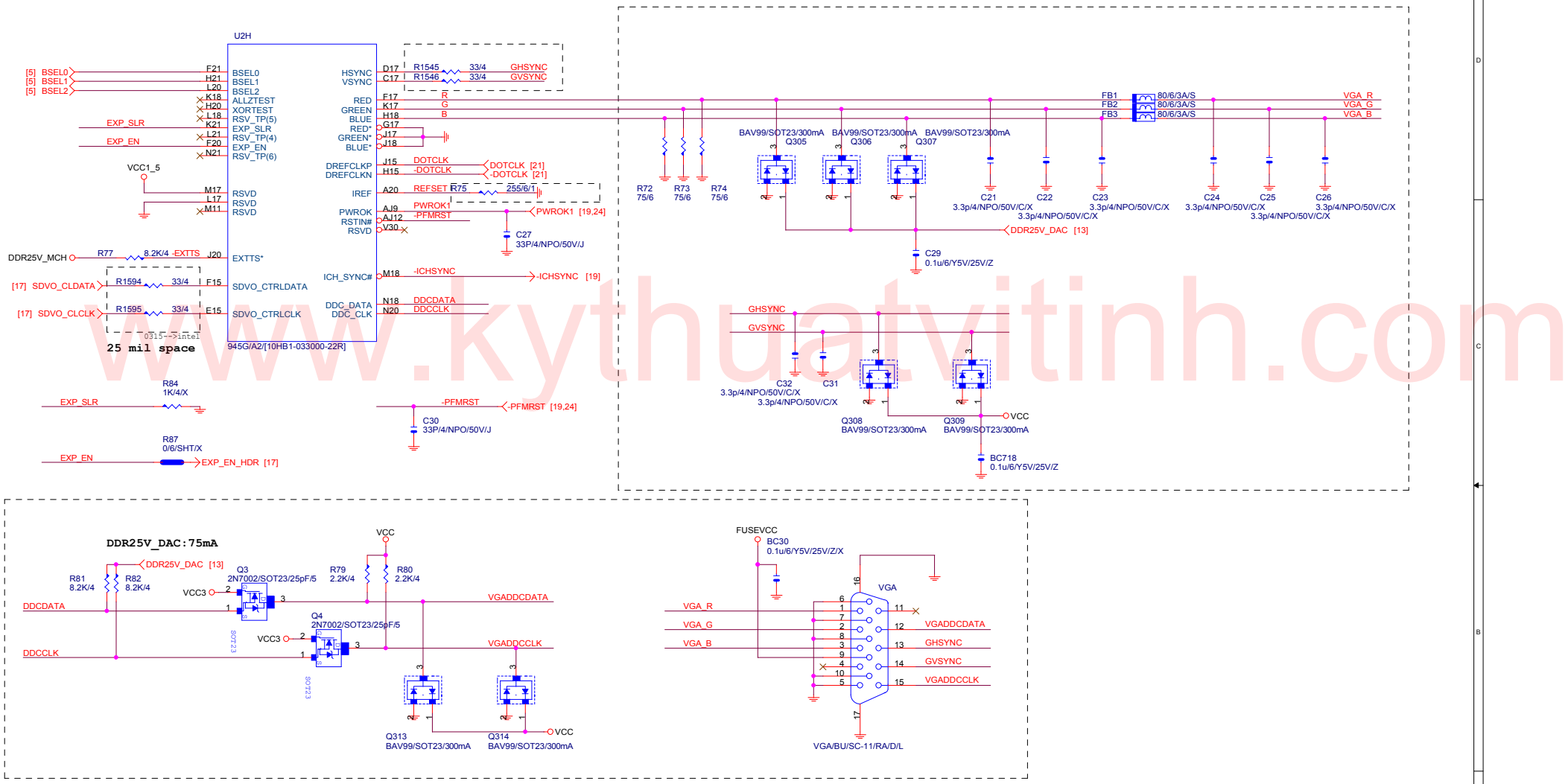


Gigabyte Technology			
Title: GMCH-HOST			
Size: Custom	Document Number: 945GME-DS2		Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 8 of 33		

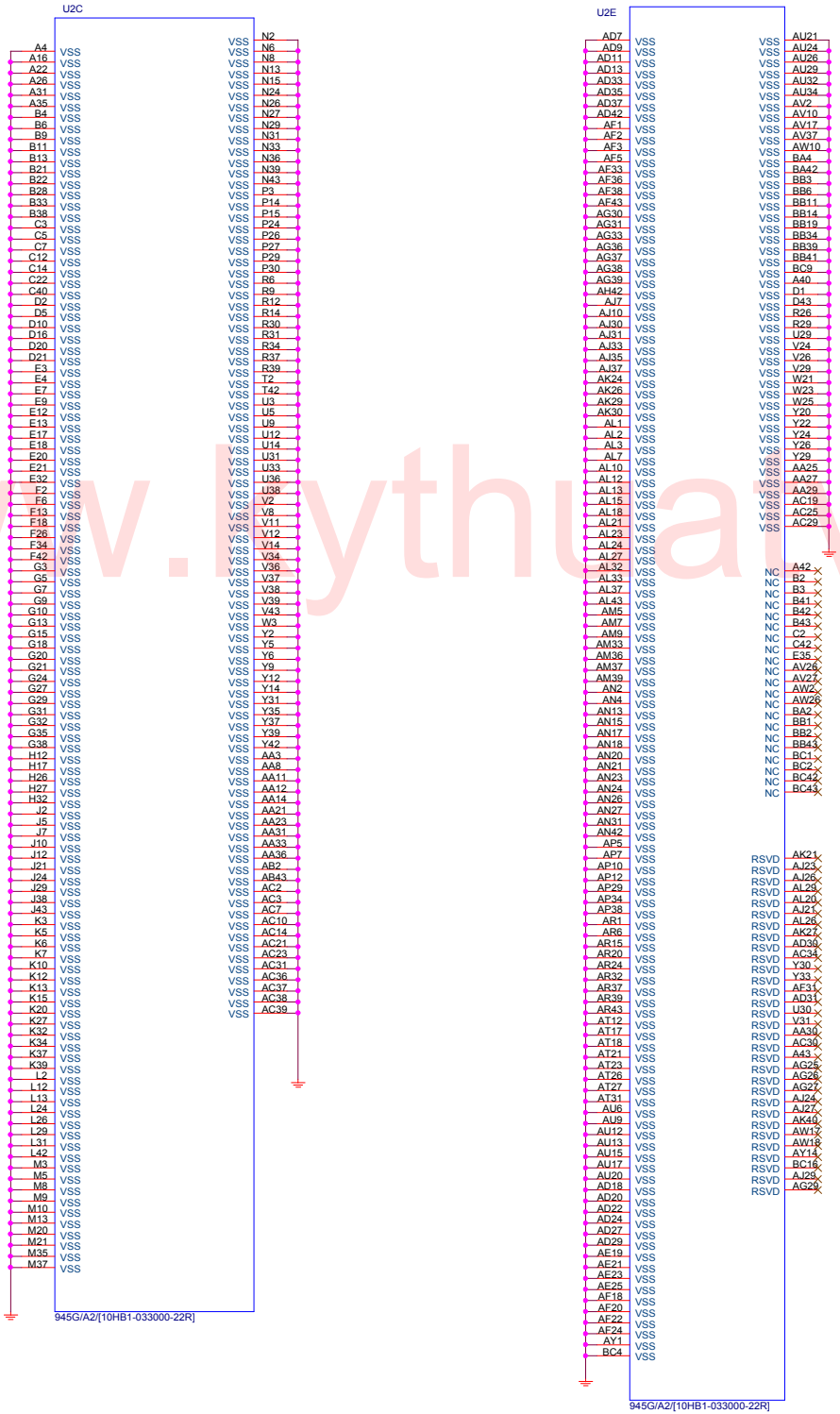




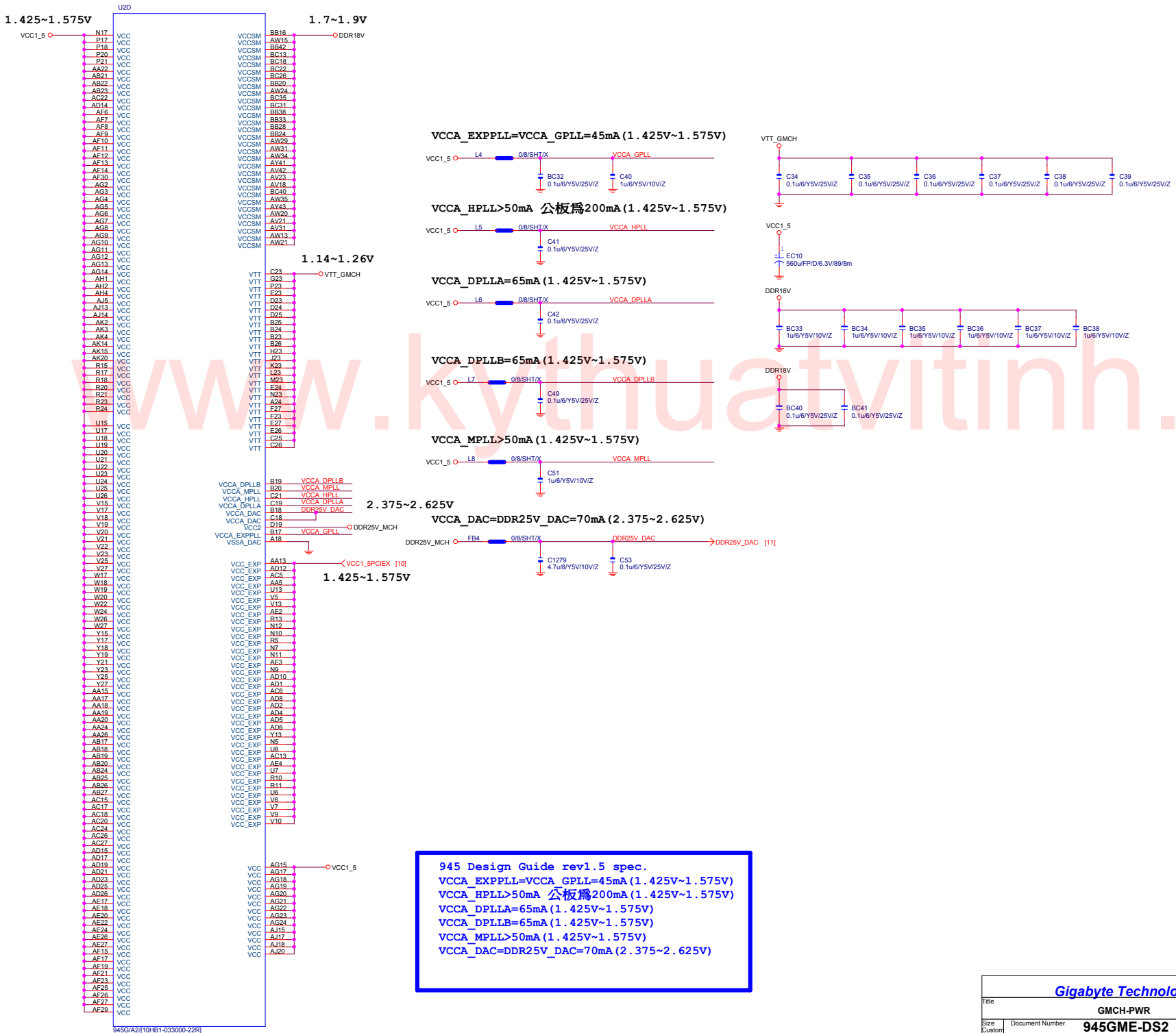
Gigabyte Technology		
Title: GMCH-PCI E & DMI		
Size: Custom	Document Number: 945GME-DS2	Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 10 of 33	



Gigabyte Technology		
Title	GMCH-INTERNAL VGA	
Size: Custom	Document Number: 945GME-DS2	Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 11 of 33	

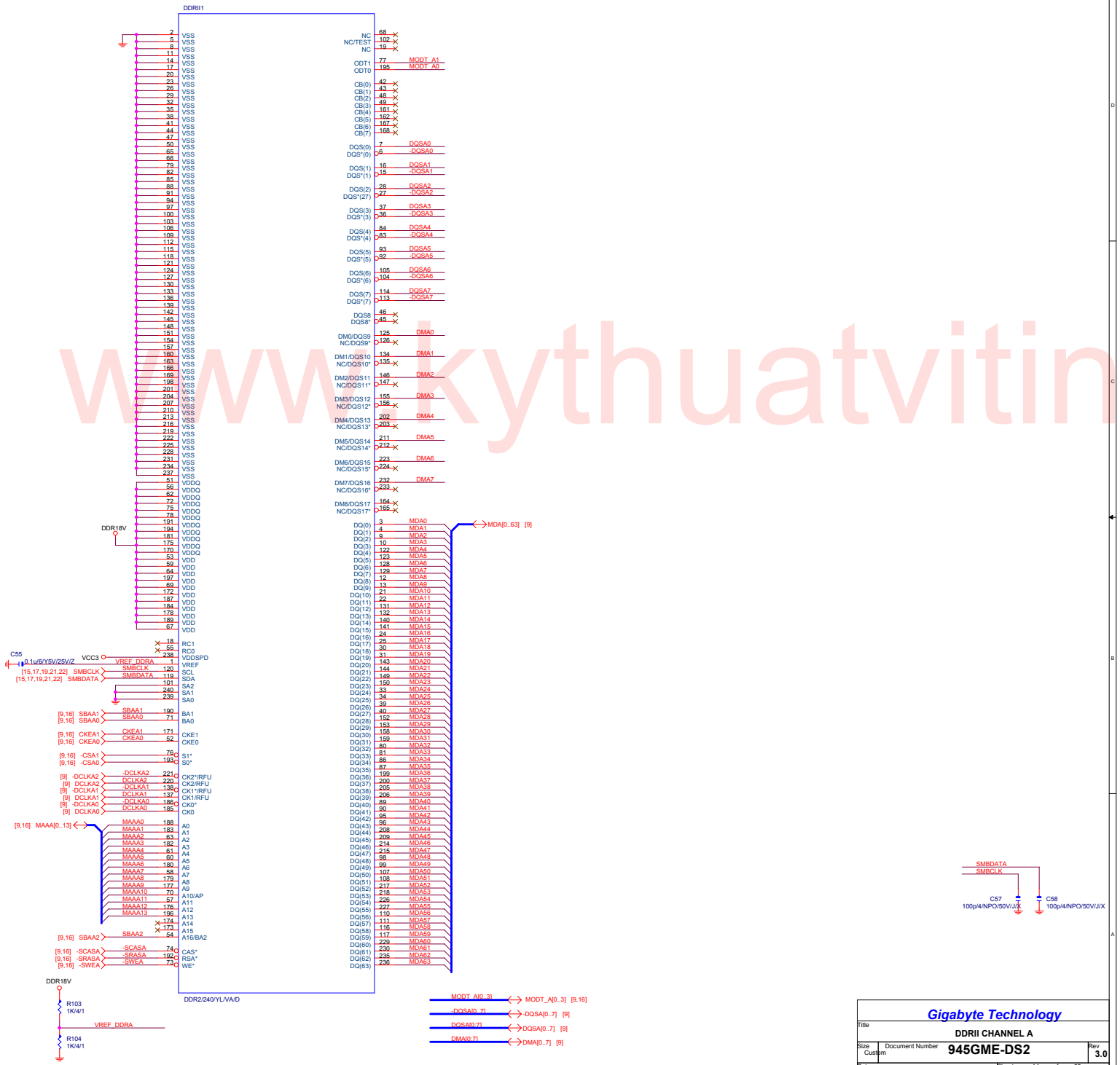


Gigabyte Technology			
Title: GMCH-GND			
Size: Custom	Document Number: 945GME-DS2		Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 12 of 33		

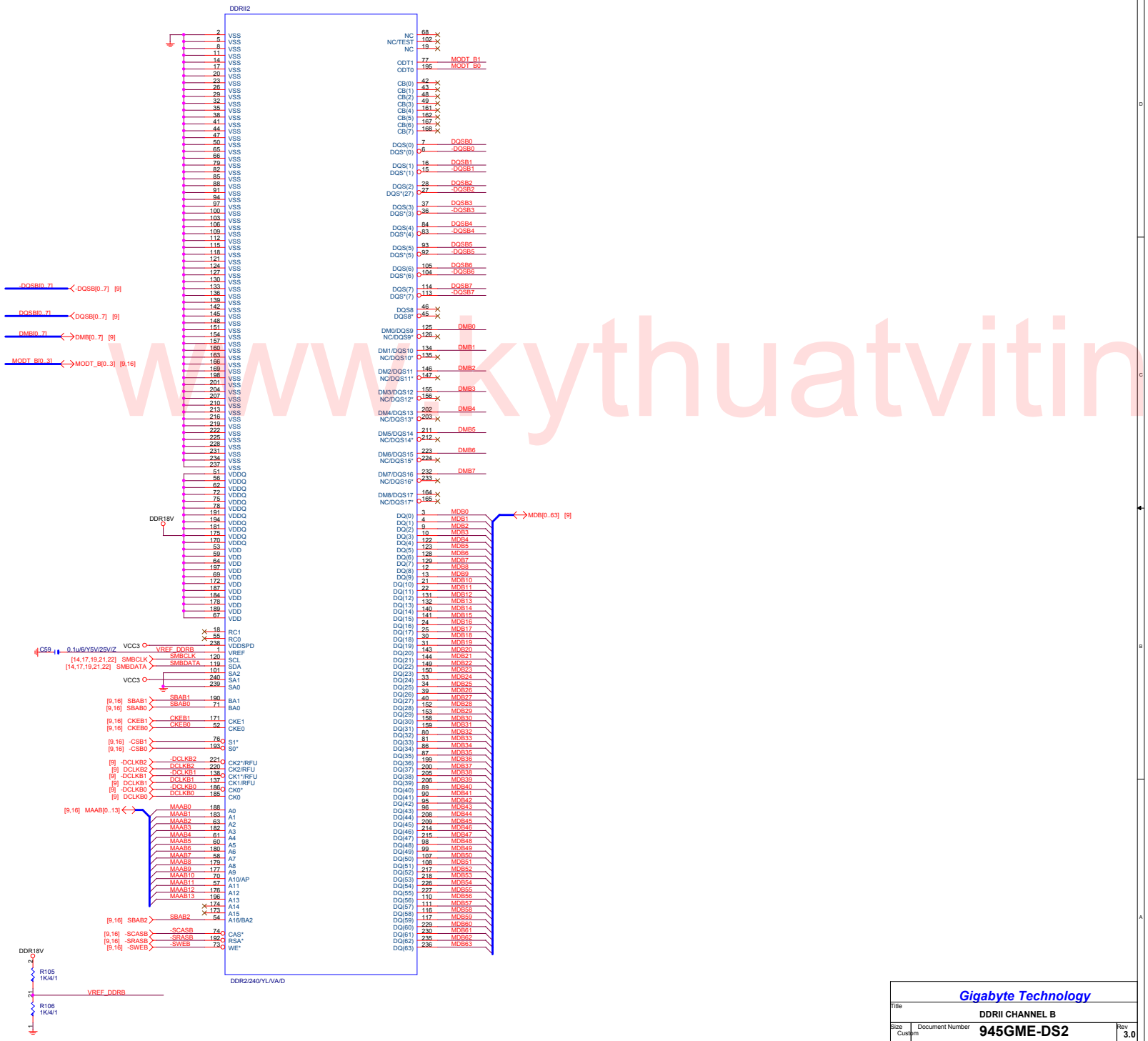


945 Design Guide rev1.5 spec.
VCCA_EXPPLL=VCCA_GPLL=45mA(1.425V~1.575V)
VCCA_HPLL>50mA 公板爲200mA(1.425V~1.575V)
VCCA_DPLLA=65mA(1.425V~1.575V)
VCCA_DPLLB=65mA(1.425V~1.575V)
VCCA_MPLL>50mA(1.425V~1.575V)
VCCA_DAC=DDR25V_DAC=70mA(2.375~2.625V)

Gigabyte Technology			
Title	GMCH-PWR		
Size: Custom	Document Number: 945GME-DS2		Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 13 of 33		



Gigabyte Technology		
Title: DDRII CHANNEL A		
Size: Custom	Document Number: 945GME-DS2	Rev: 3.0
Date:	Sheet 14 of 33	



Gigabyte Technology		
Title: DDRII CHANNEL B		
Size: Custom	Document Number: 945GME-DS2	Rev: 3.0
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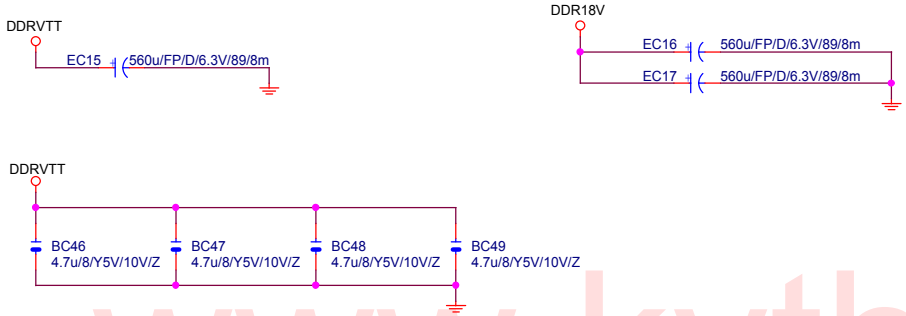
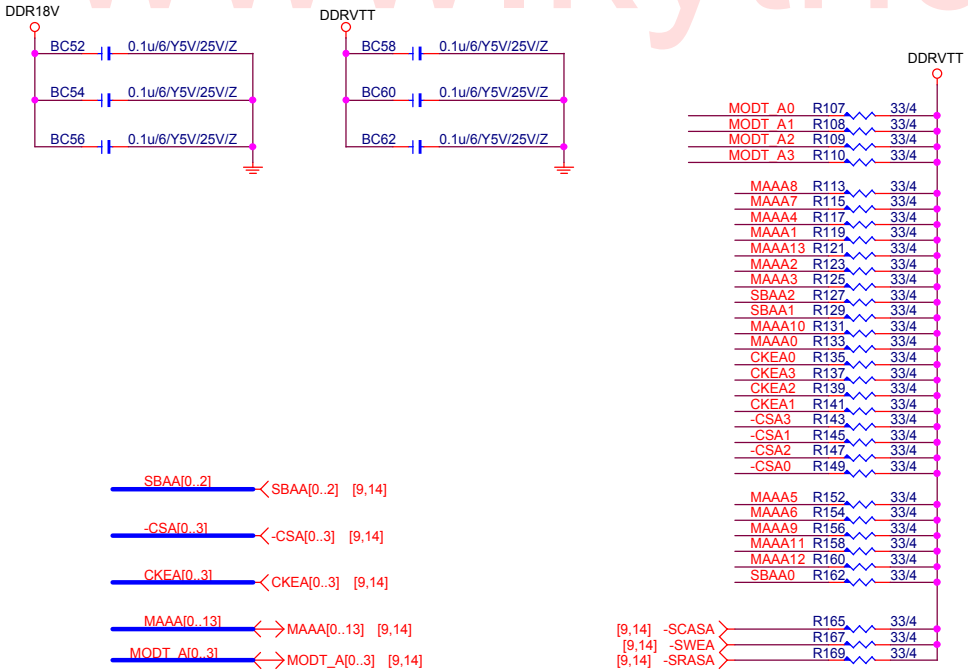
DDR TERMINATION CHANNEL A

DDRVTT Decouple



DDR18V Decouple

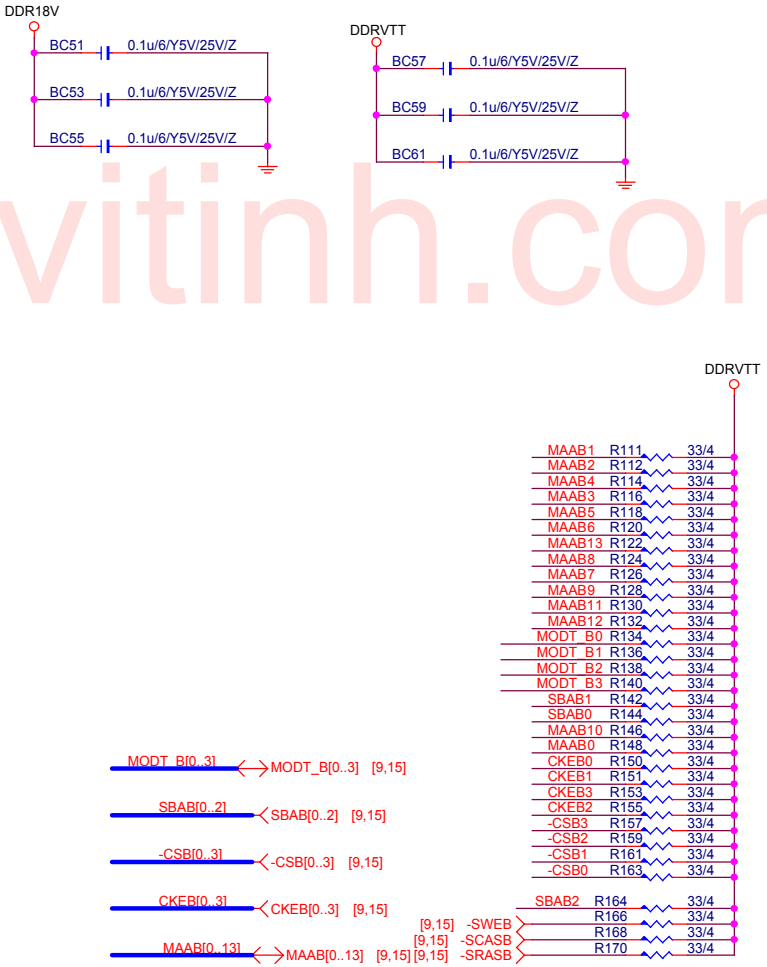
DDRVTT Decouple



DDR TERMINATION CHANNEL B

DDR18V Decouple

DDRVTT Decouple

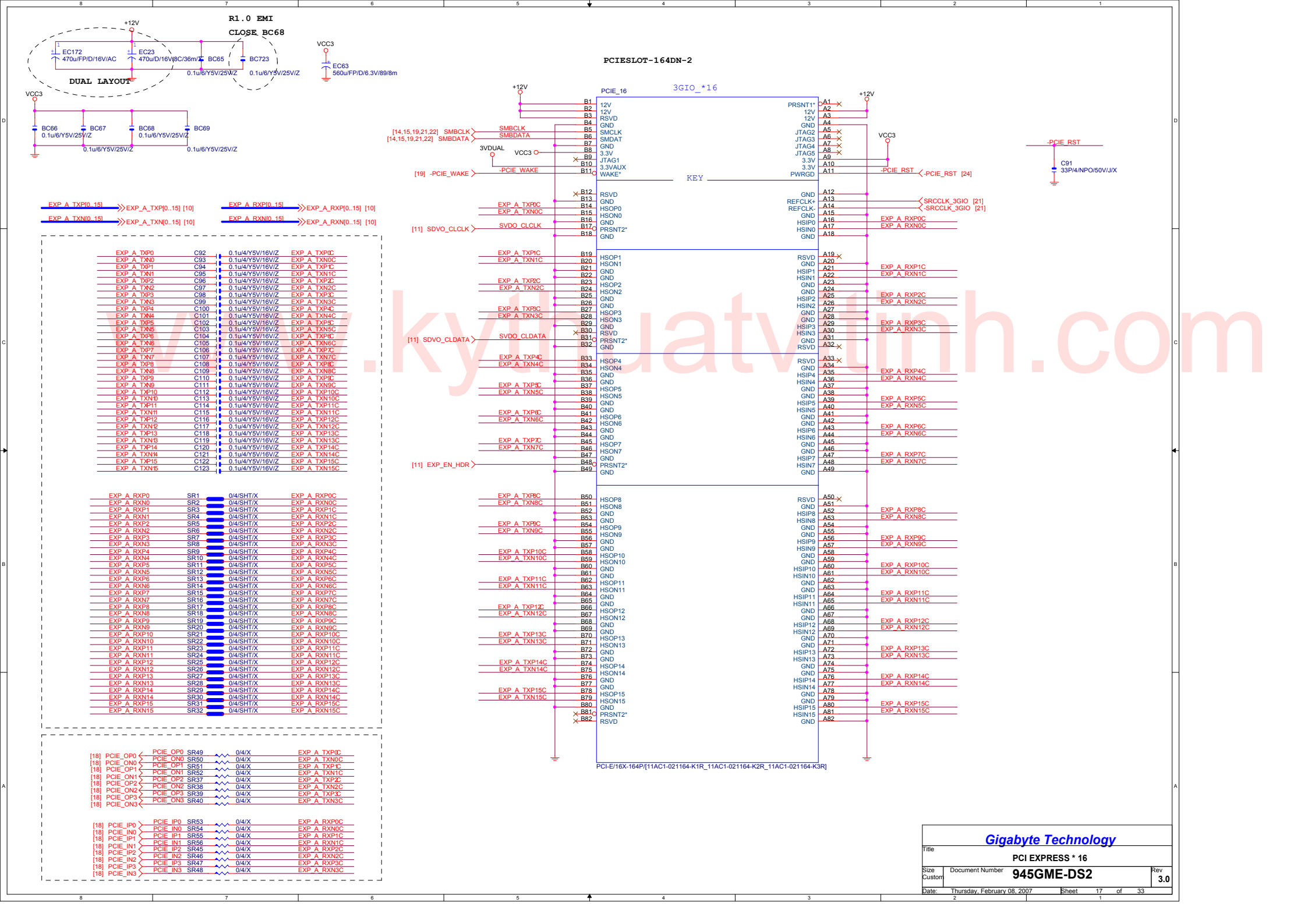


Gigabyte Technology

Title: DDRII TERMINATOR

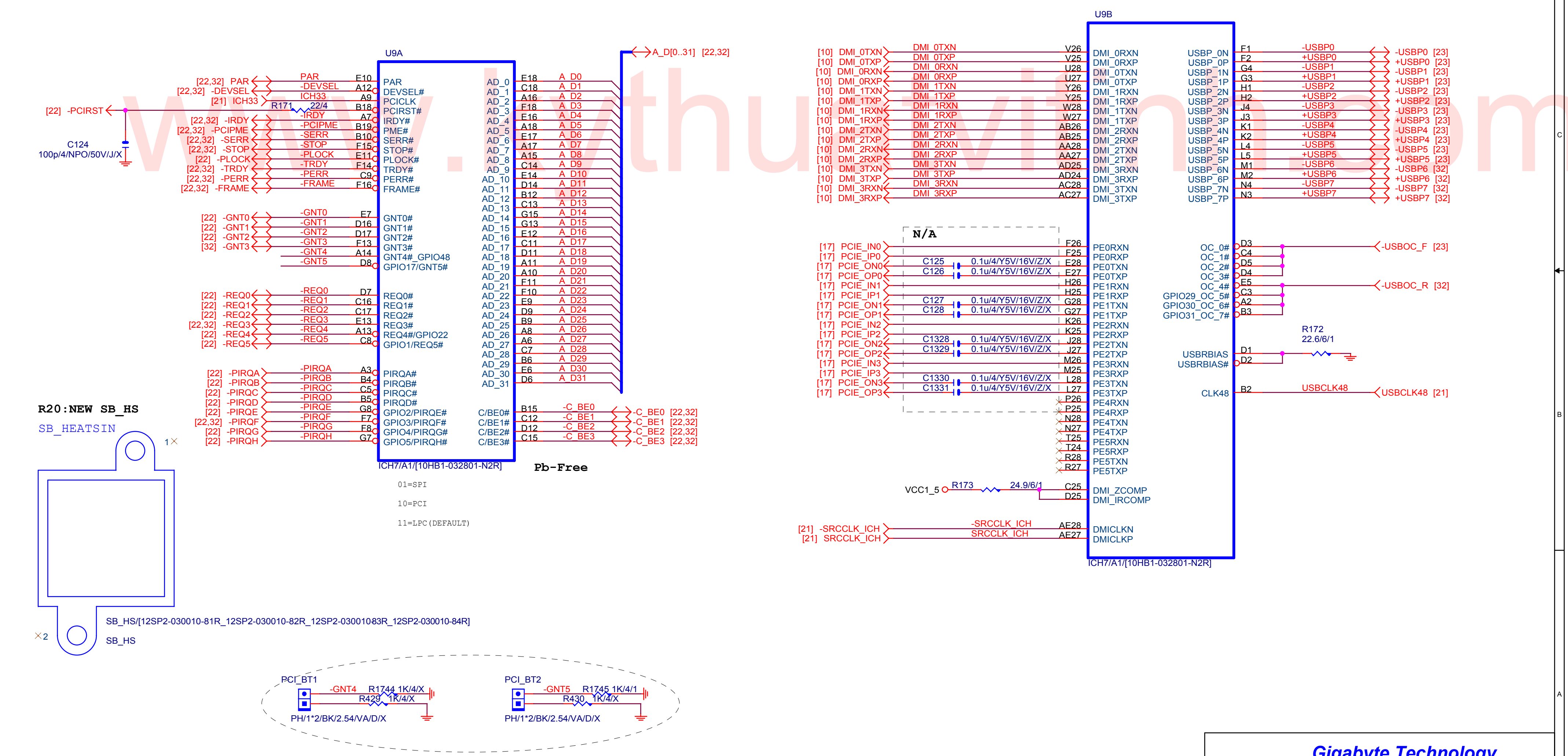
Size: Custom | Document Number: 945GME-DS2 | Rev: 3.0

Date: Thursday, February 08, 2007 | Sheet 16 of 33

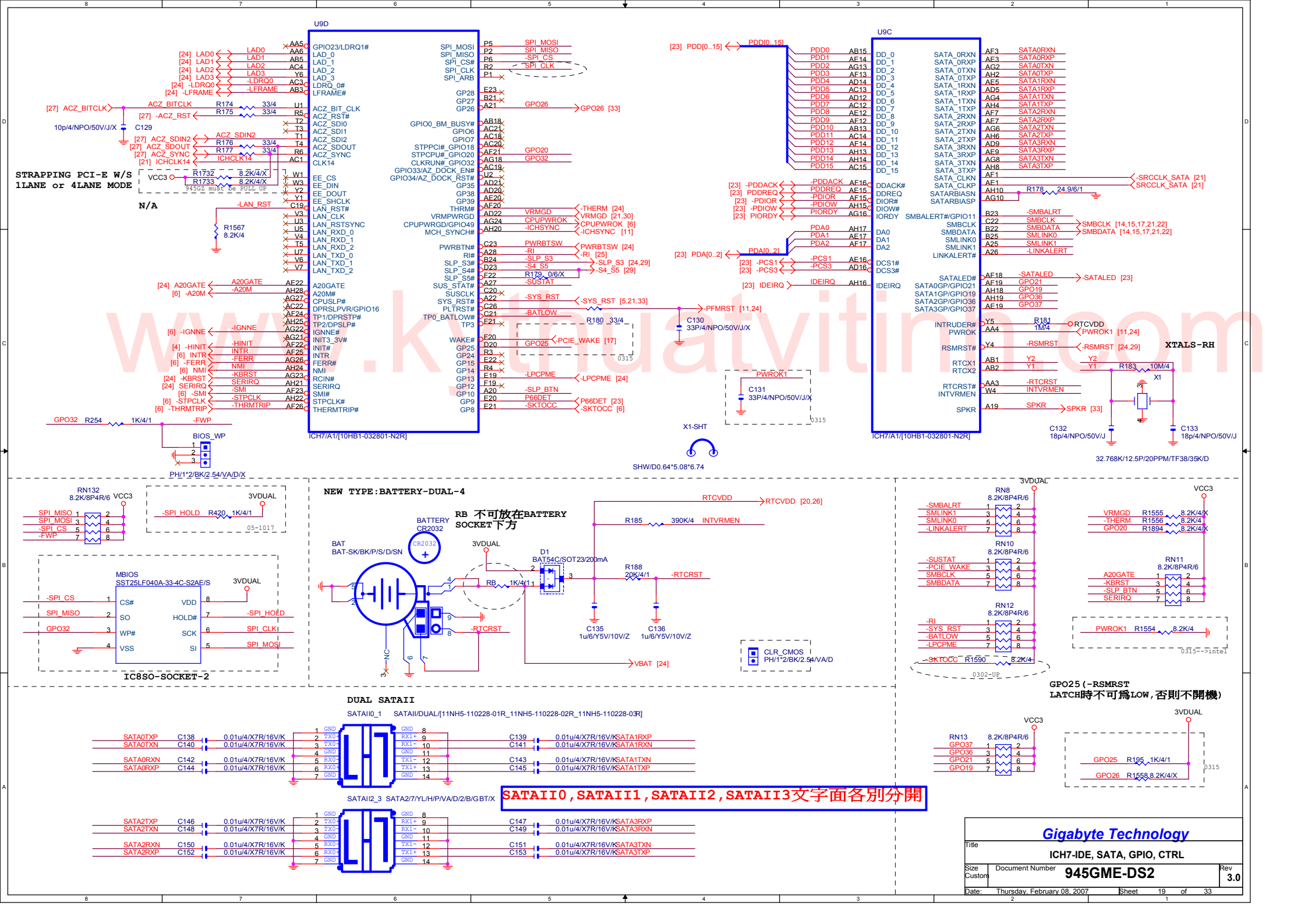


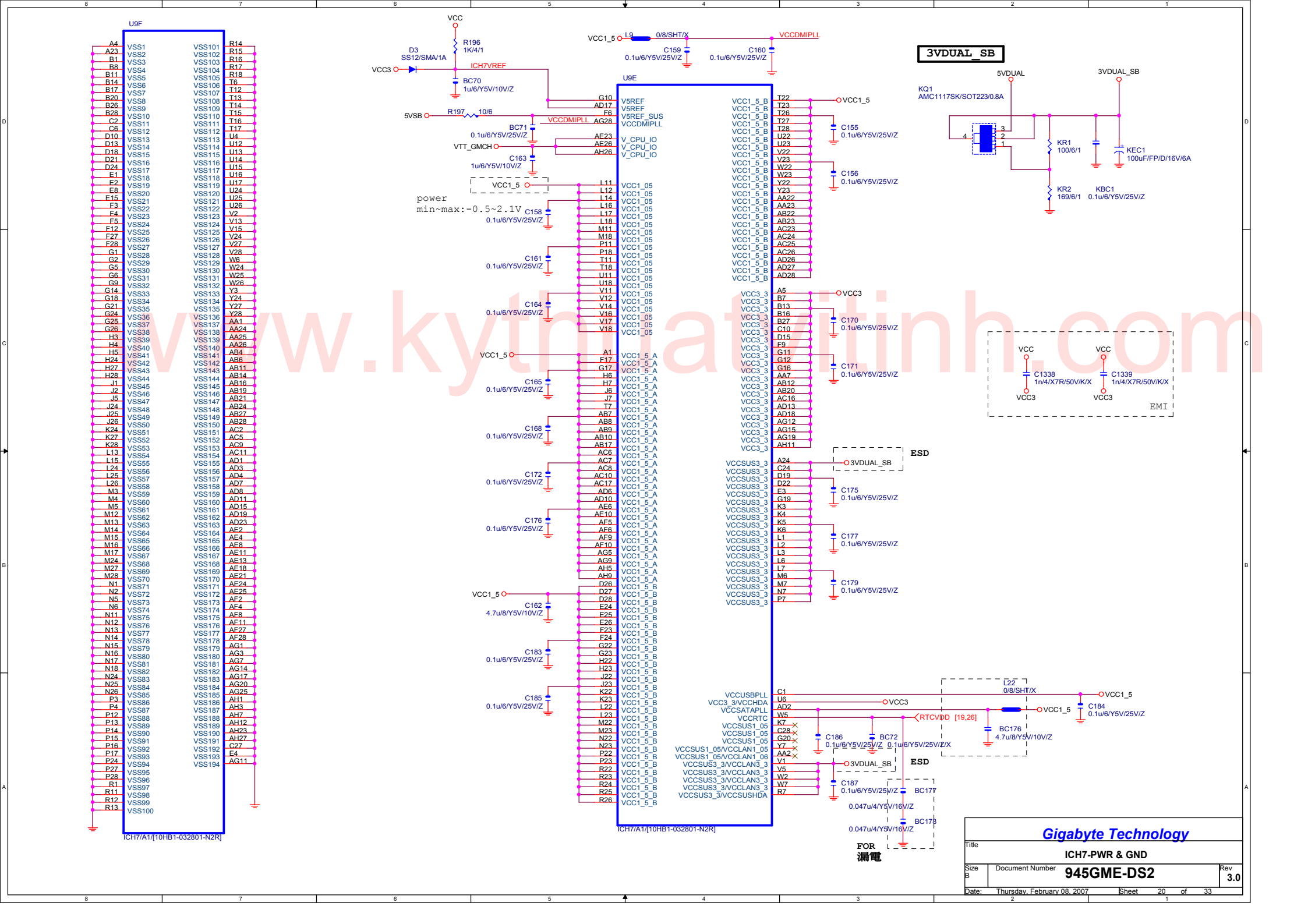
Title	PCI EXPRESS * 16
Size / Custom	Document Number 945GME-DS2
Rev	3.0
Date:	Thursday, February 08, 2007
Sheet	17 of 33

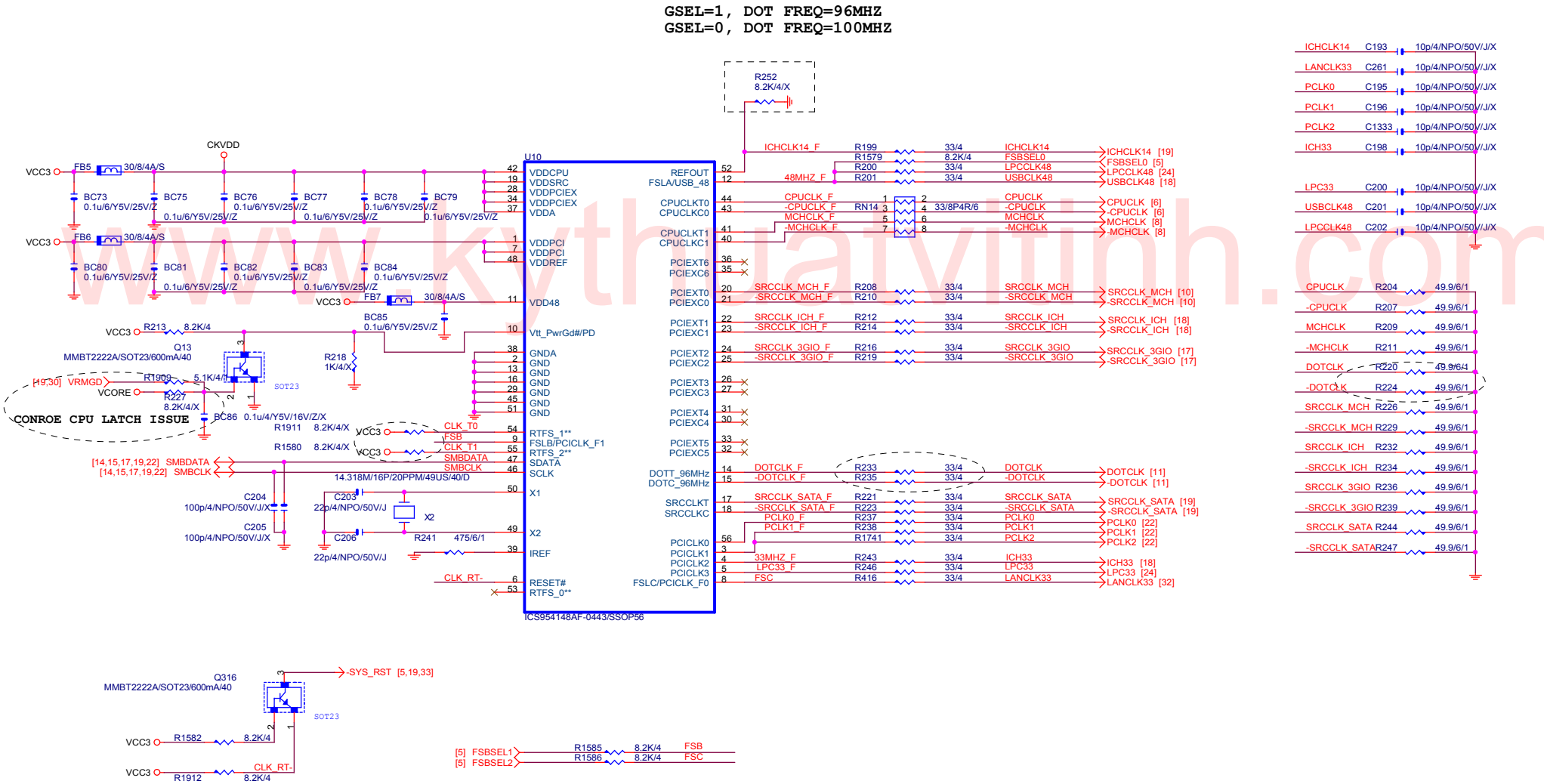
Gigabyte Technology



Gigabyte Technology		
Title	ICH7-PCI, DMI, LAN, USB	
Size B	Document Number 945GME-DS2	Rev 3.0
Date: Thursday, February 08, 2007	Sheet 18 of 33	

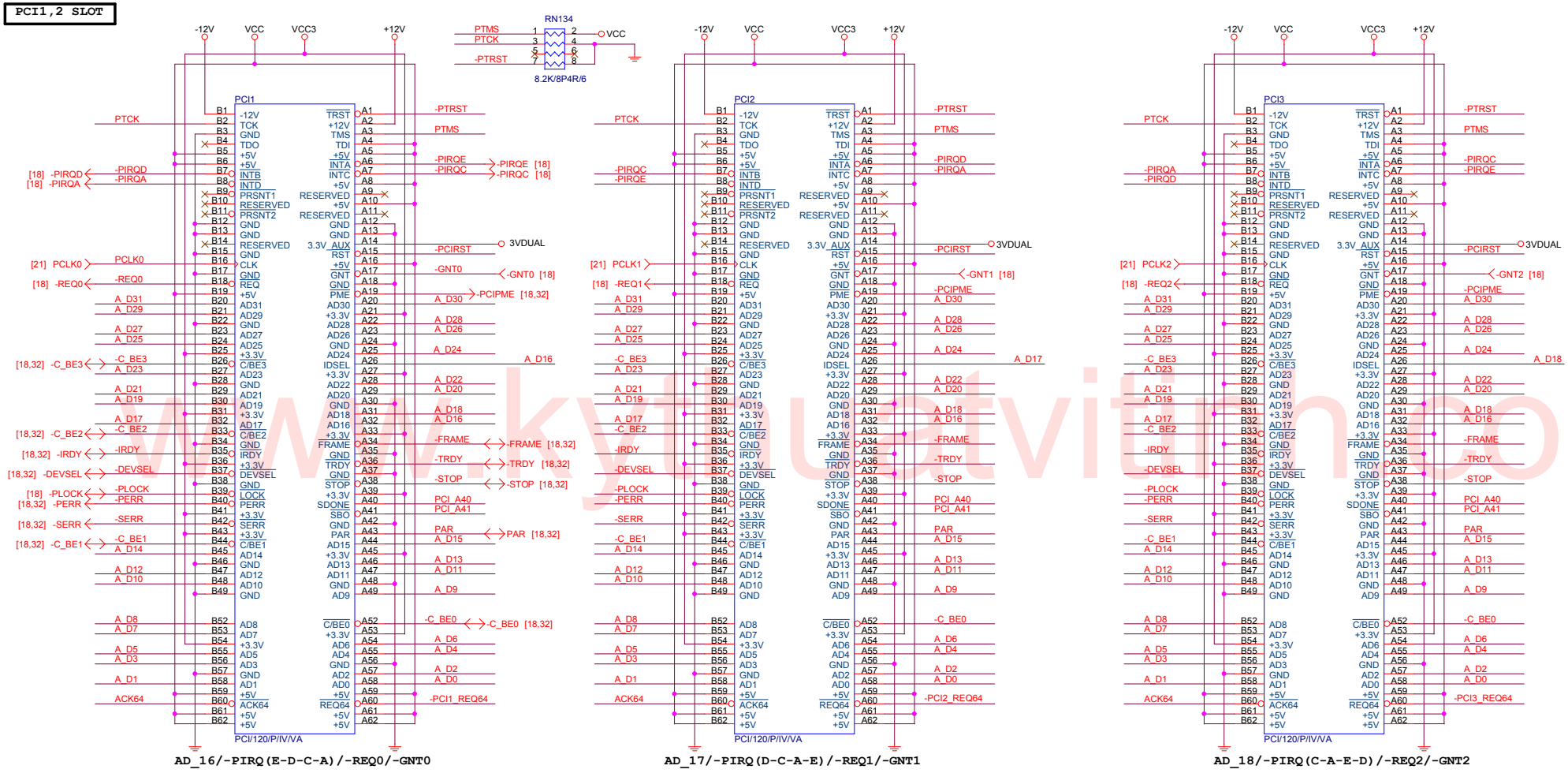


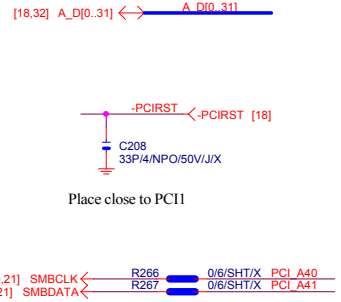


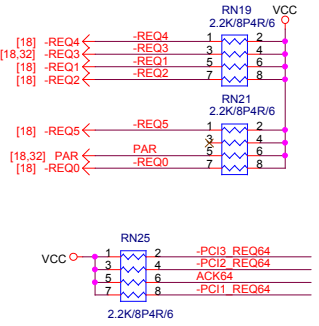


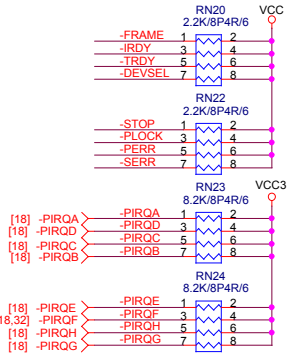
Gigabyte Technology		
Title: CK410M-OC		
Size: Custom	Document Number: 945GME-DS2	Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 21 of 33	

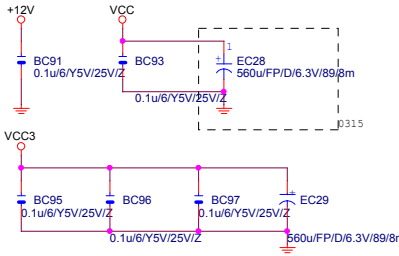
PCI1,2 SLOT





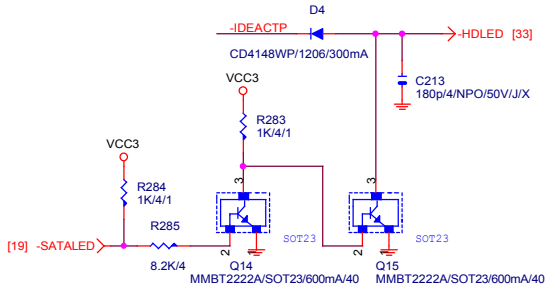




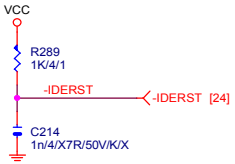


Gigabyte Technology			
Title	PCI SLOT 1, 2/PCIEX1		
Size: Custom	Document Number: 945GME-DS2		Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 22 of 33		

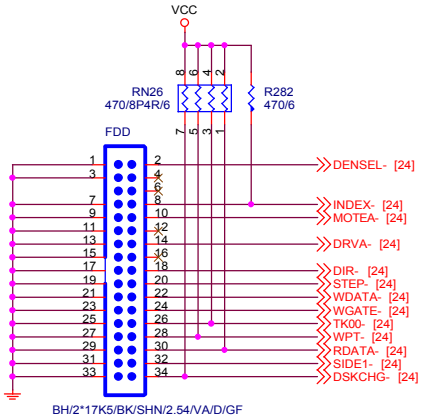
IDE/SATA LED



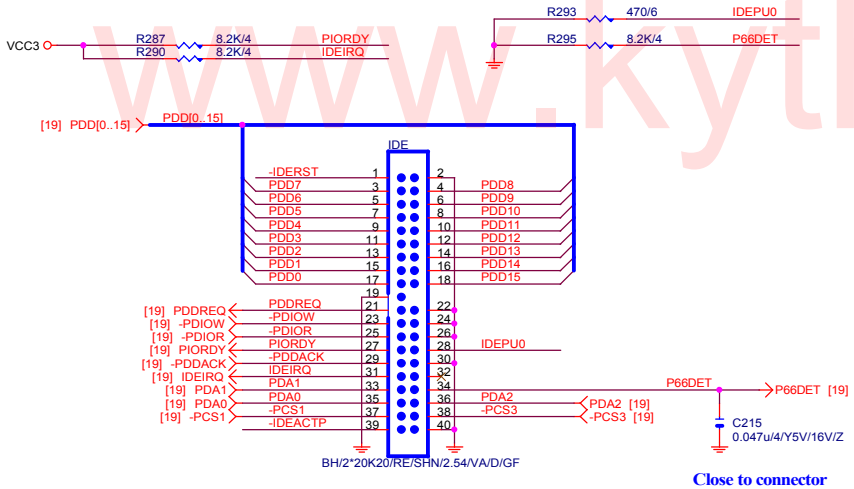
IDE RESET



FLOPPY



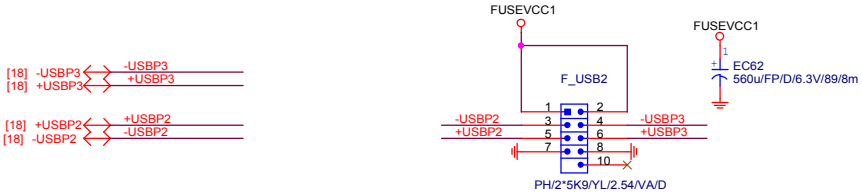
IDE

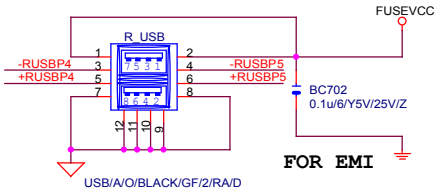


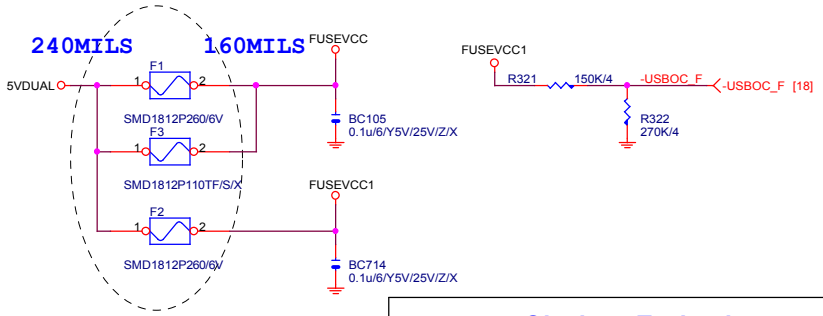
Close to connector

FRONT USB1

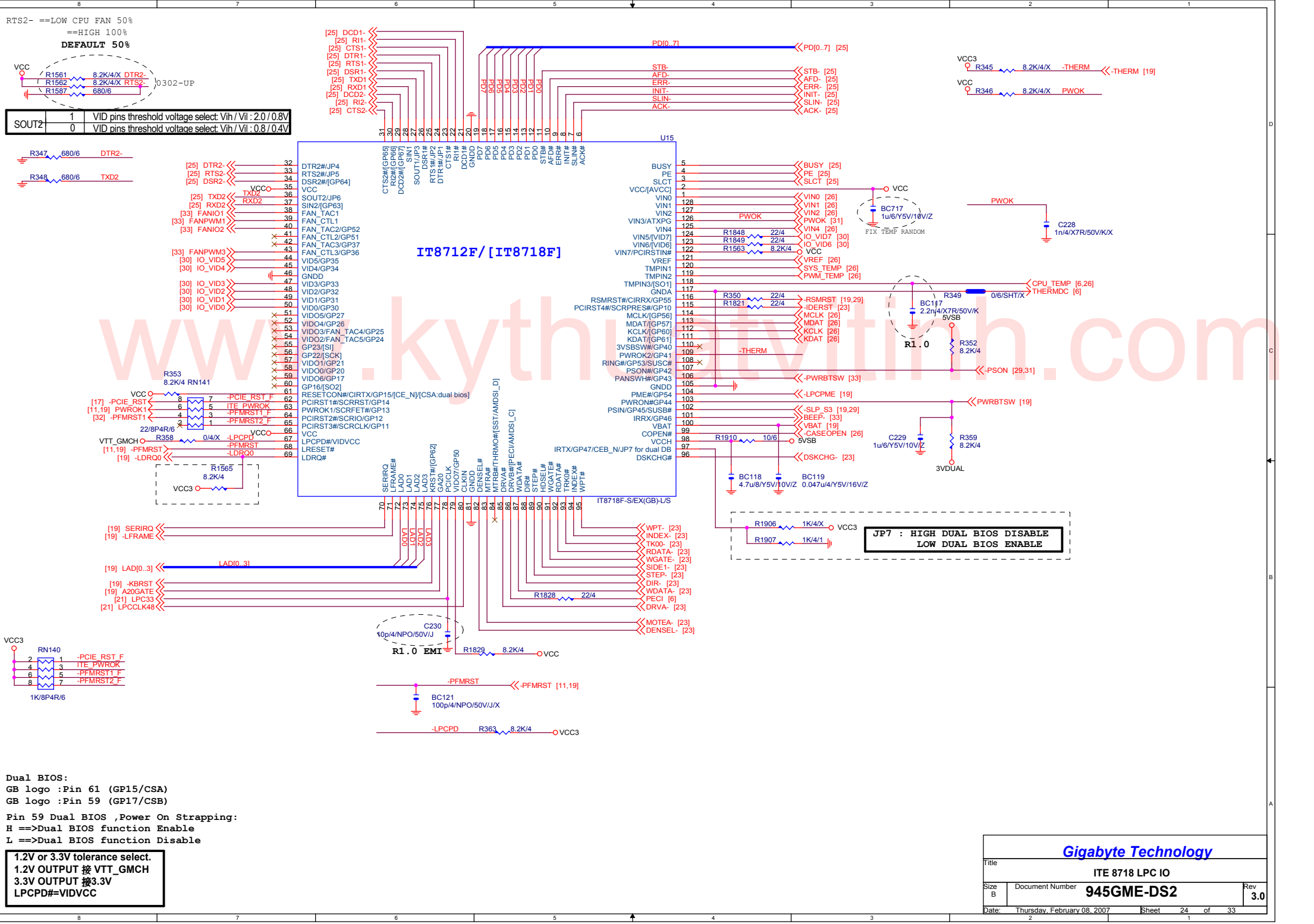
FRONT USB2

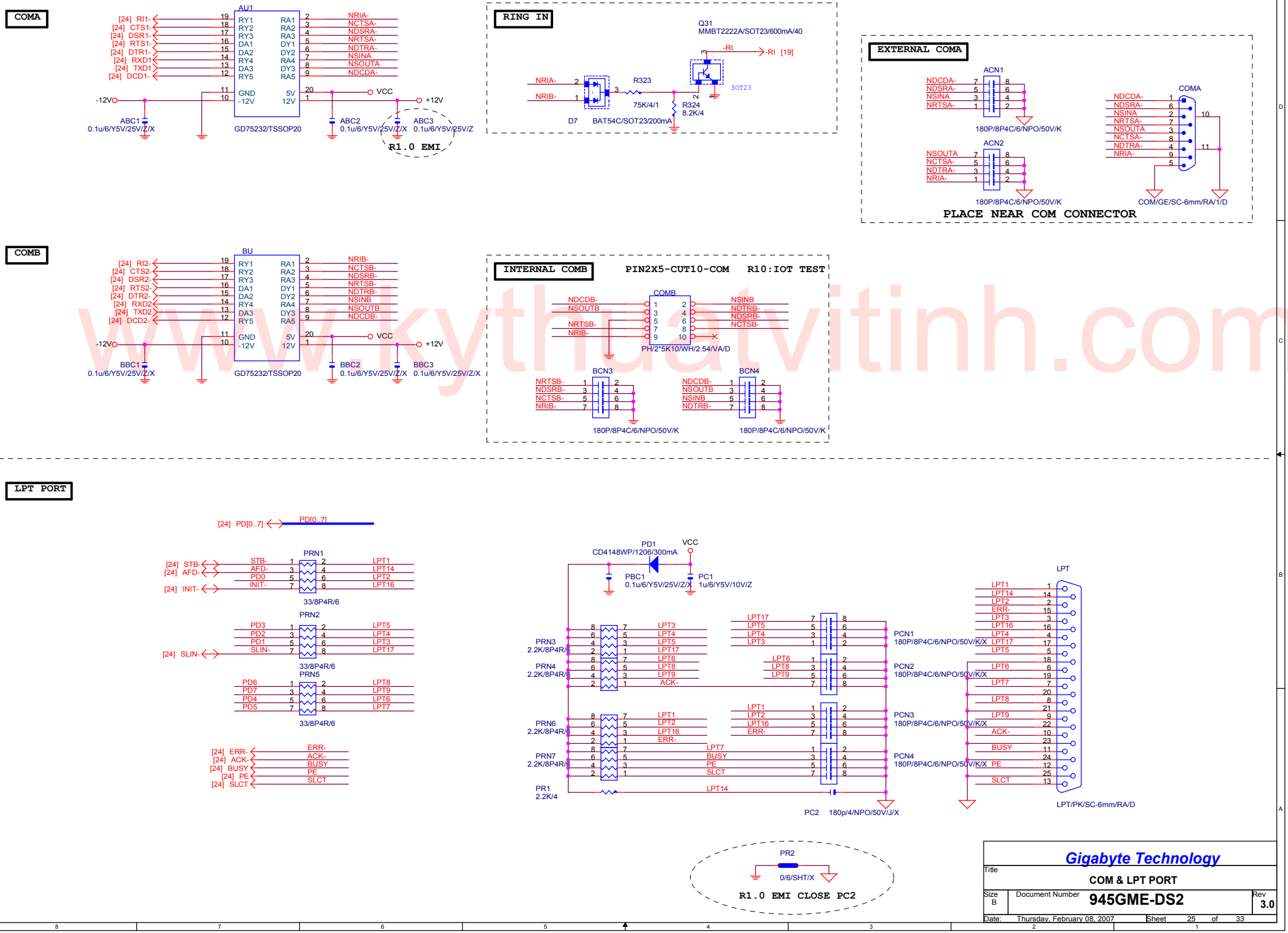




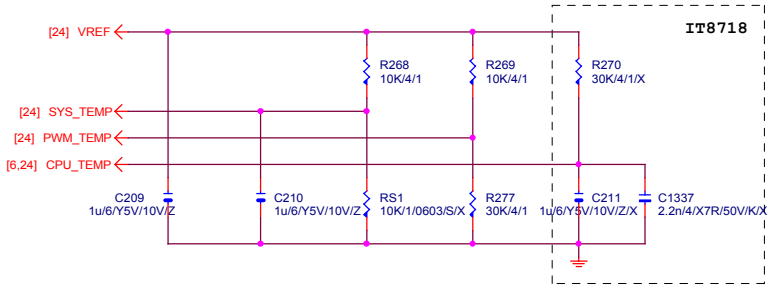


Gigabyte Technology		
Title: IDE,FDD,F_USB		
Size: B	Document Number: 945GME-DS2	Rev: 3.0
Date: Thursday, February 08, 2007	Sheet 23 of 33	

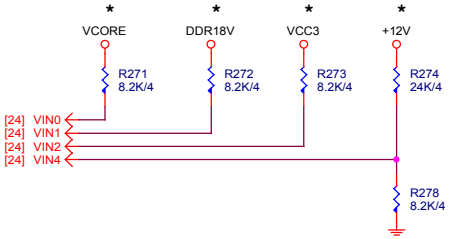




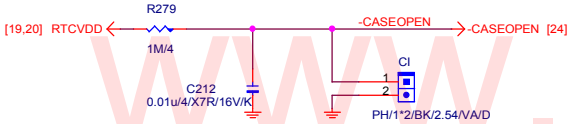
TEMP H/W MONITOR



VOLTAGE-- H/W MONITOR

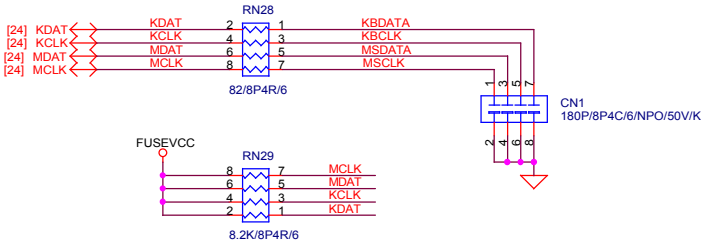


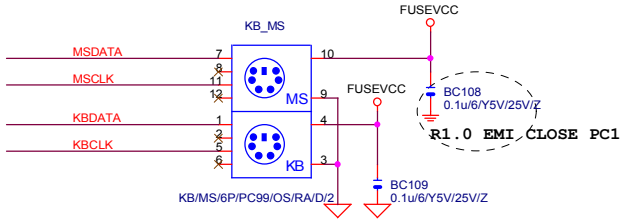
CASE OPEN



Case Open Circuits

KB/MS





Gigabyte Technology		
Title: BIOS/HW-MONITOR/CI/KB/MS		
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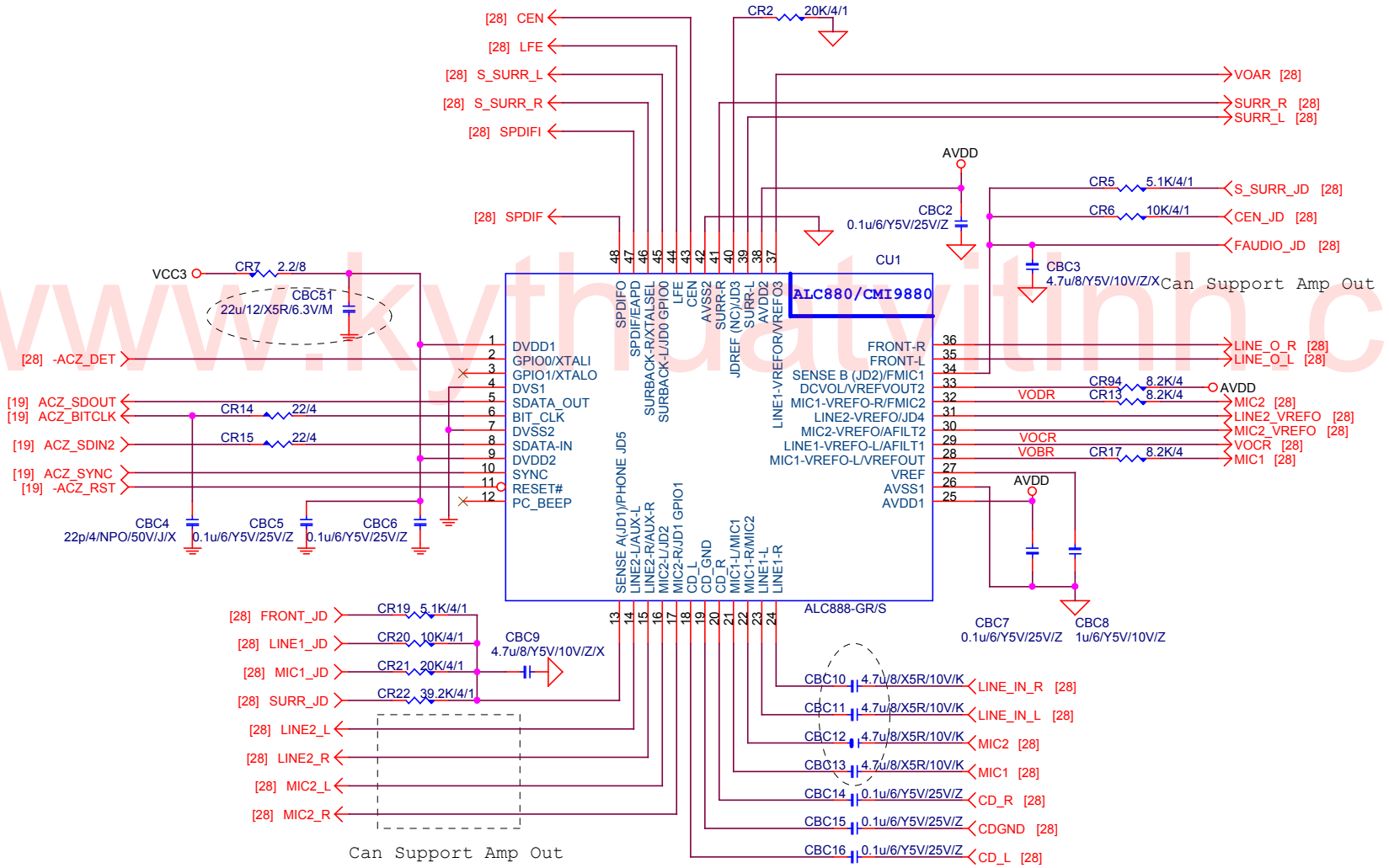
AZALIA CODEC



Gigabyte Technology		
Title: AZALIA ALC888		
Size: Custom	Document Number: 945GME-DS2	Rev: 3.0
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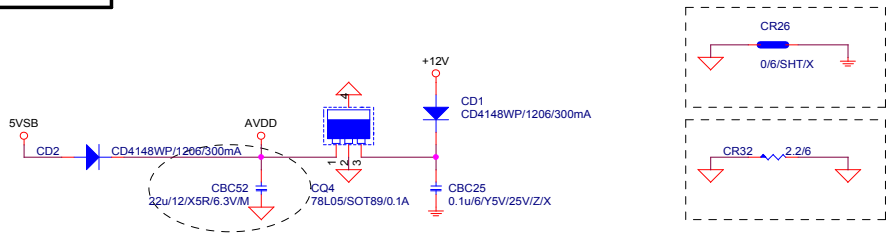
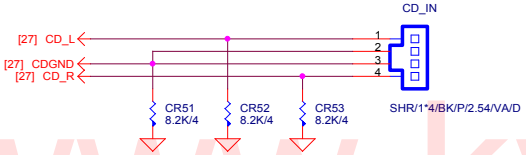
CODEC POWER/EMI PAD



CD IN



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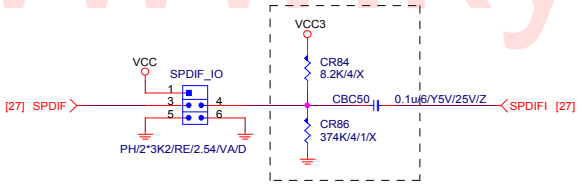
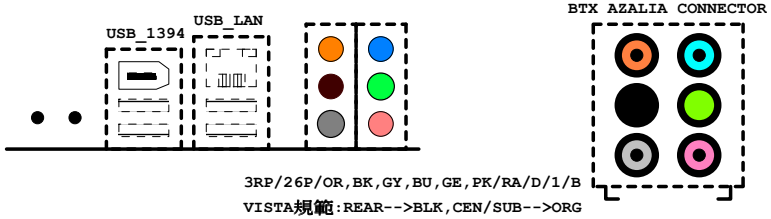
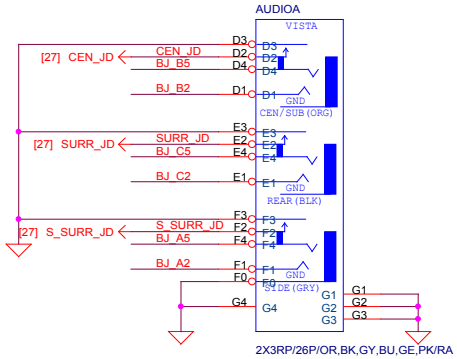
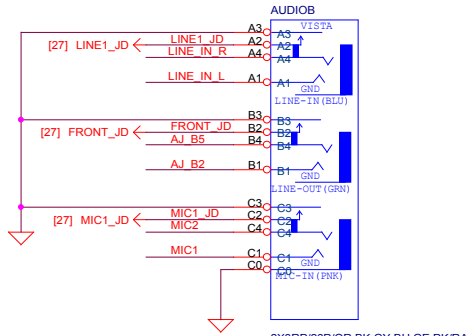


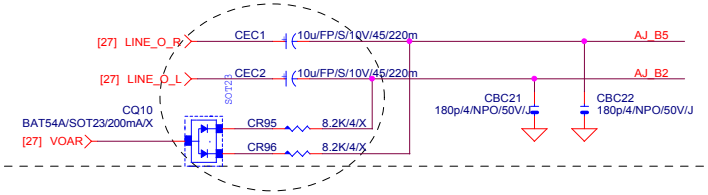
AZALIA JACK



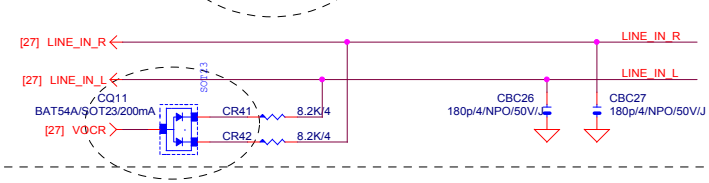




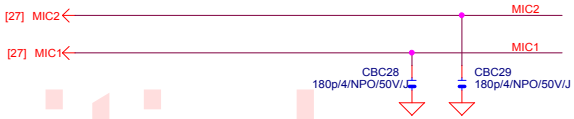
LINE-OUT



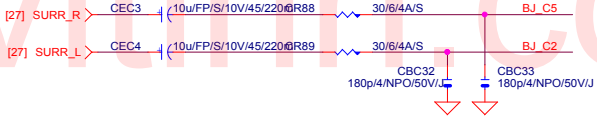
LINE-IN



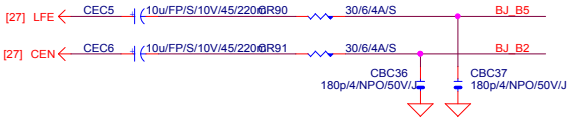
MIC-IN



SURROUND

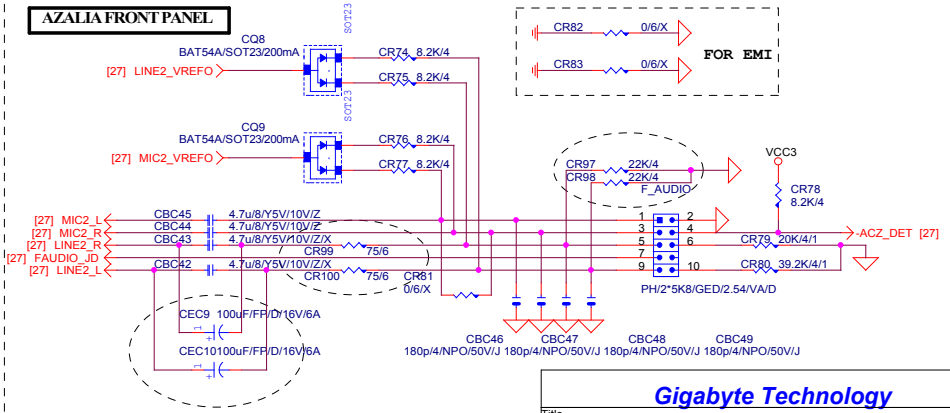


CEN/LFE



SURR BACK

AZALIA FRONT PANEL



Gigabyte Technology		
Title: AUDIO JACK		
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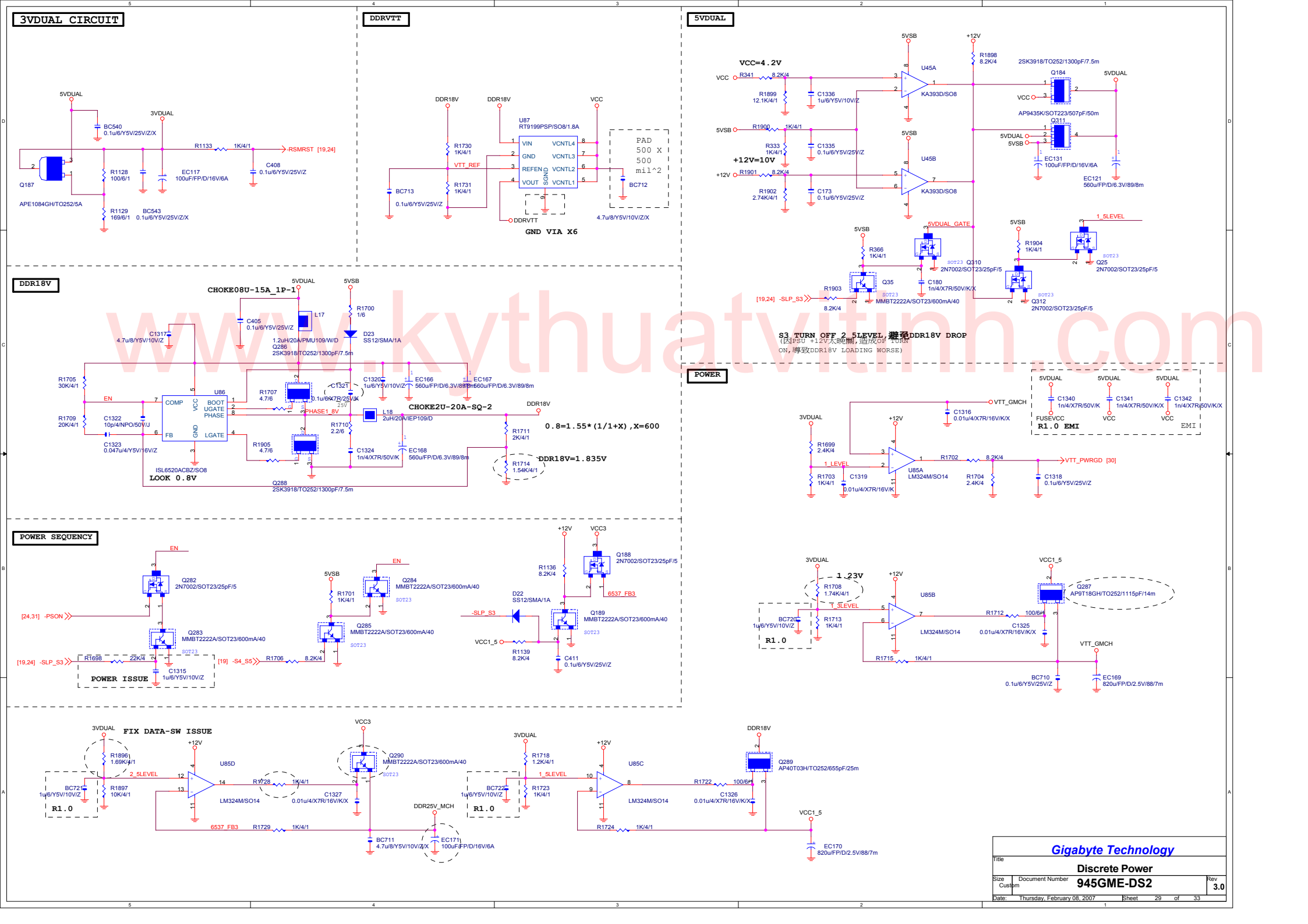

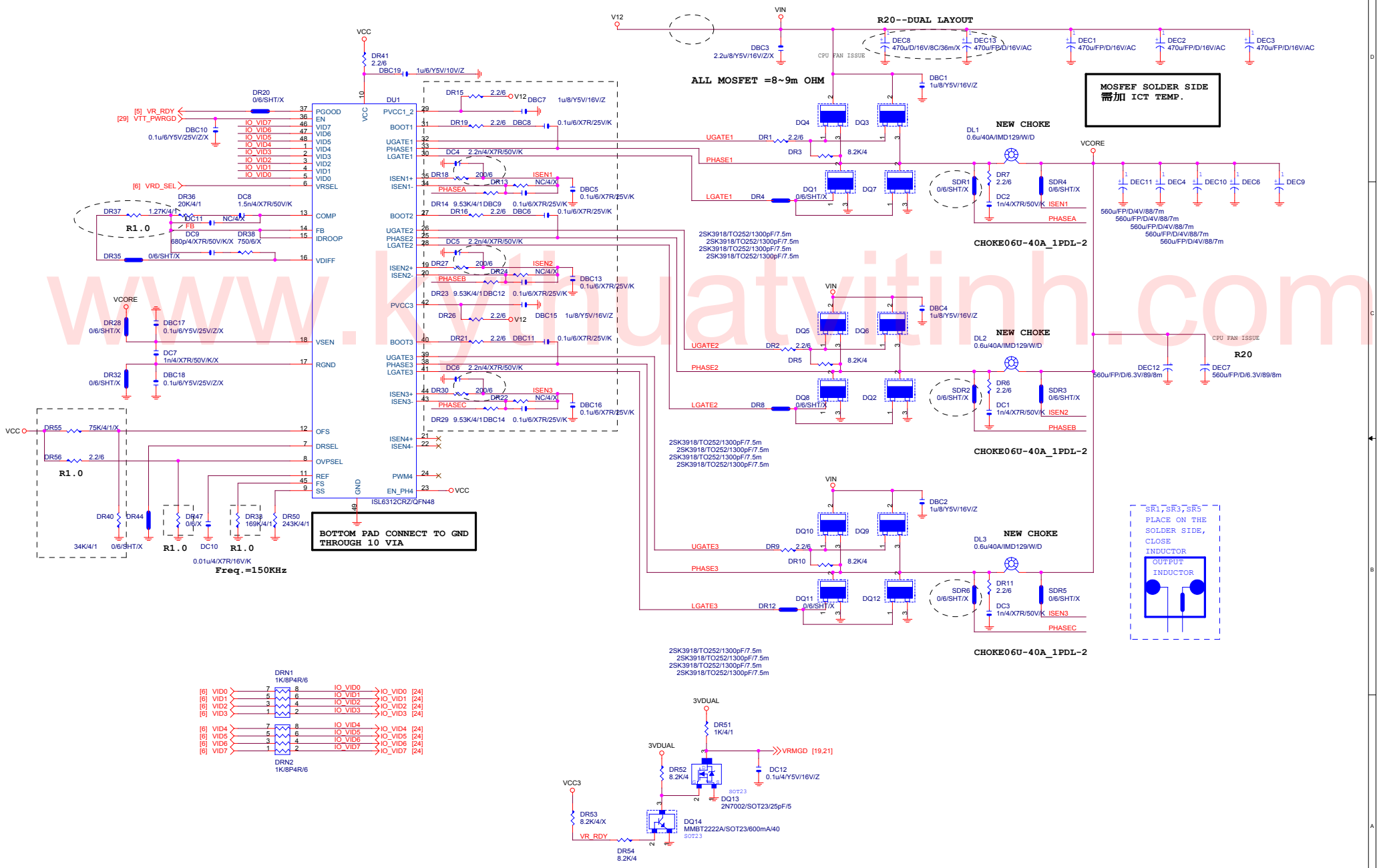

Gigabyte Technology		
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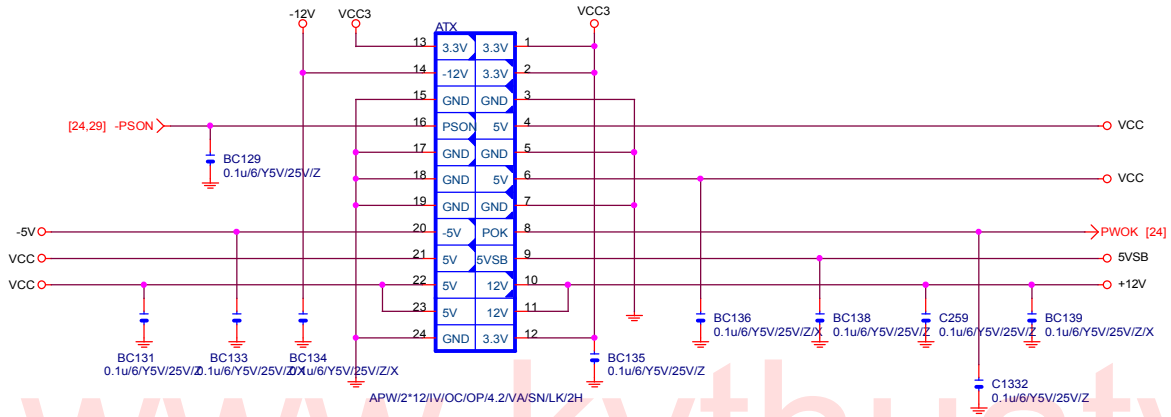
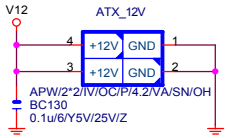
ATXPWR_24-2

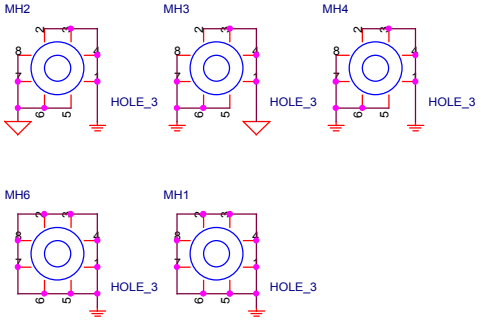
ATX POWER CONNECTOR

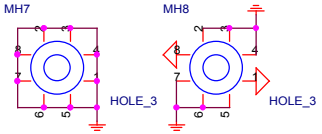


APW/2*12/IV/OC/OP/4.2/VA/SN/LK/2H:無蓋

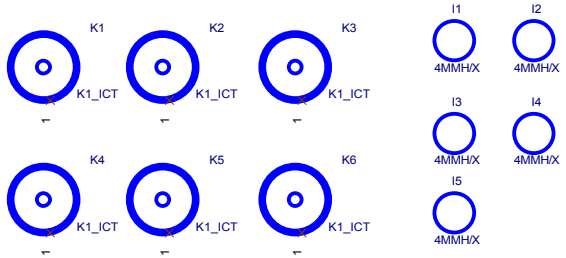


HOLE_3-RH-2





HOLE_3-RH-5MM



Gigabyte Technology		
Title: ATX POWER CONNECTOR		
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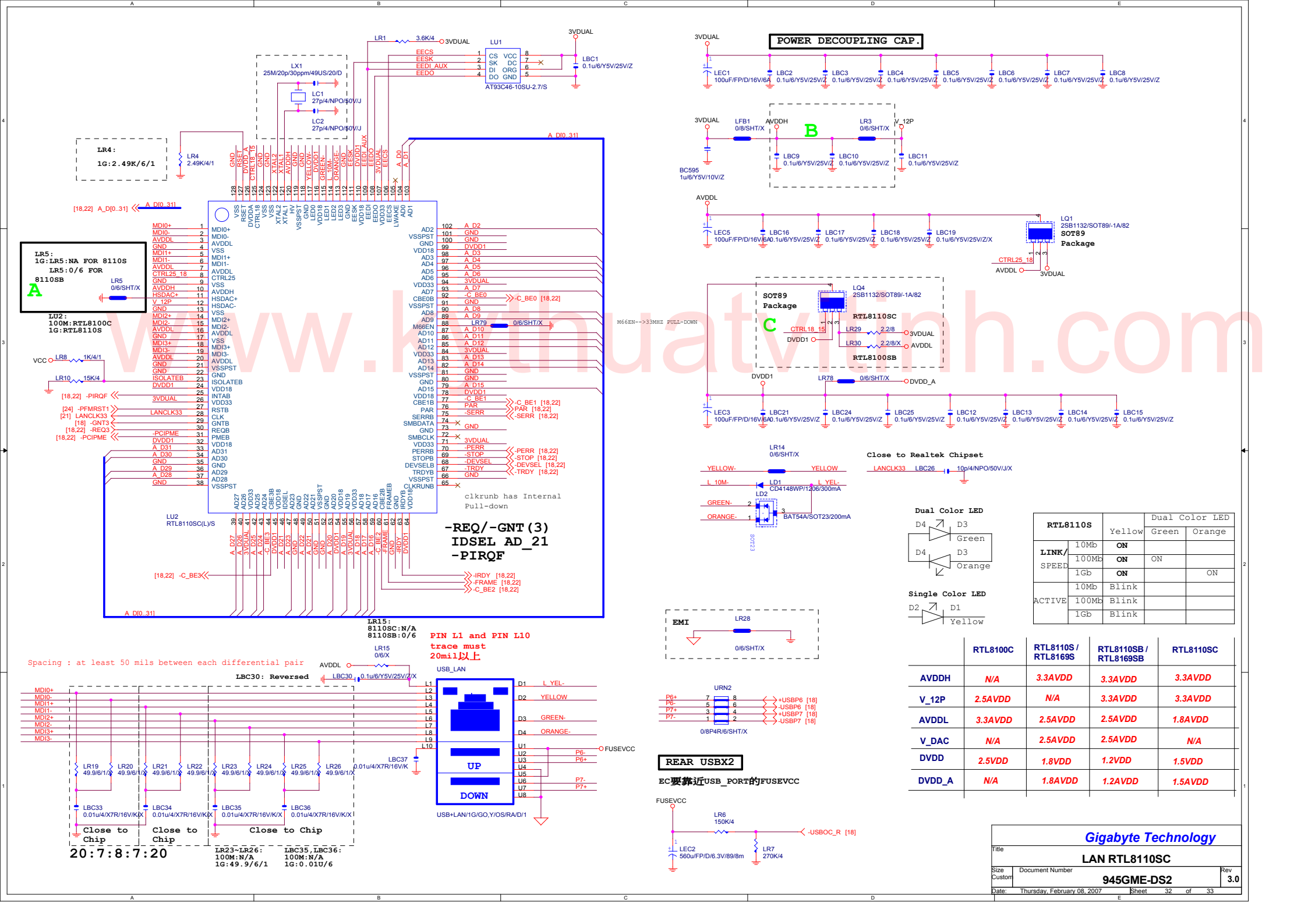
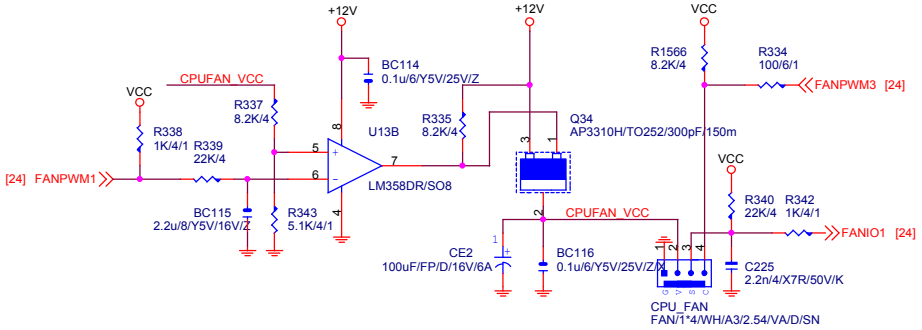


RTL8110S		Yellow	Dual Color LED	
			Green	Orange
LINK/SPEED	10Mb	ON		
	100Mb	ON	ON	
	1Gb	ON		ON
ACTIVE	10Mb	Blink		
	100Mb	Blink		
	1Gb	Blink		

	RTL8100C	RTL8110S / RTL8169S	RTL8110SB / RTL8169SB	RTL8110SC
AVDDH	N/A	3.3AVDD	3.3AVDD	3.3AVDD
V_12P	2.5AVDD	N/A	3.3AVDD	3.3AVDD
AVDDL	3.3AVDD	2.5AVDD	2.5AVDD	1.8AVDD
V_DAC	N/A	2.5AVDD	2.5AVDD	N/A
DVDD	2.5VDD	1.8VDD	1.2VDD	1.5VDD
DVDD_A	N/A	1.8AVDD	1.2AVDD	1.5AVDD

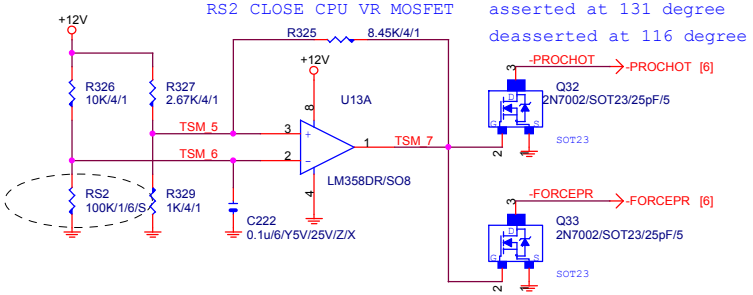
CPU SMART FAN

SMART FAN



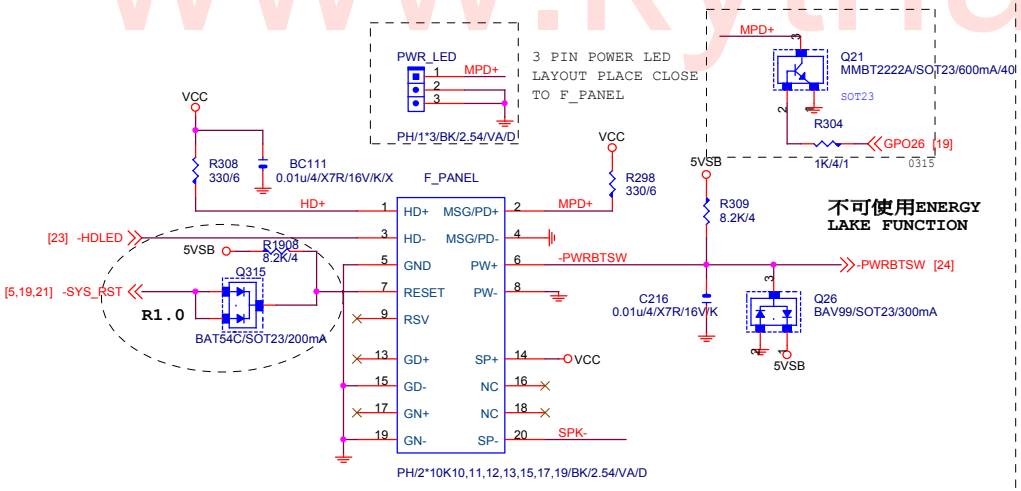
PROCESSOR HOT

RS2 CLOSE CPU VR MOSFET asserted at 131 degree
deasserted at 116 degree

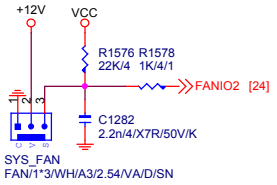


INTEL FRONT PANEL

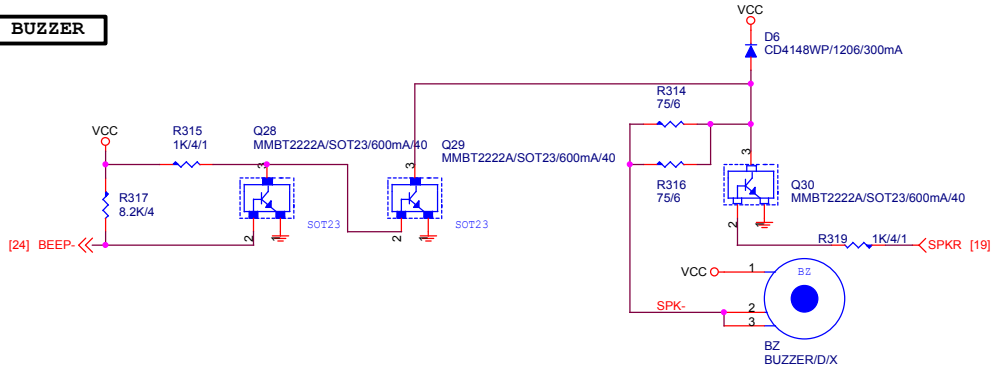
MPD-:(GPIO25--VCCSUS3+HI+HI+DEFINED(C3/C4/S/1/S3/S/4/S5))-->INTEL



SYS_FAN



BUZZER



Gigabyte Technology

Title: FRONT PANEL

Size: Custom | Document Number: 945GME-DS2 | Rev: 3.0

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