

Model Name: 965P-DS4

Revision 1.01G

SHEET

TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	POWER MAP
05	P4_LGA775_A
06	P4_LGA775_B
07	P4_LGA775_C
08	P4_LGA775_D
09	GMCH-BROADWATER_HOST
10	GMCH-BROADWATER_DDRII
11	GMCH-BROADWATER_PCI E, DMI
12	GMCH-BROADWATER_INT VGA
13	GMCH-BROADWATER_GND
14	GMCH-BROADWATER_PWR
15	DDRII CHANNEL A 1,2
16	DDRII CHANNEL B 1,2
17	DDRII TERMINATION
18	PCI EXPRESS*16 SLOT
19	ICH8 PCI, USB, DMI, LAN
20	ICH8 GPIO, CTRL
21	ICH8 SATA, FAN PWM
22	ICH8 VCC, GND
23	CLOCK GEN ICS9LPRS587
24	PCI EXPRESS X4 PORT1 SLOT
25	PCI SLOT 1, 2, 3
26	PCIE_1, SW
27	ITE 8718 CX

SHEET

TITLE

28	COM_LPT, -PROHOT, DYNAMIC OC
29	DUAL BIOS
30	ALC883
31	REAR AUDIO JACK
32	VCORE PWM_ISL6307-1
33	VCORE PWM_ISL6307-2
34	VCORE PWM_ISL6307-3
35	DISCRETE POWER
36	ATX, OTHERS POWER
37	MARVELL 88E8053
38	TI TSB43AB23 1394
39	FP, FUSB, FDD
40	JMB363
41	CI, HWM, KB/MS, FAN CTRL
42	
43	
44	

Gigabyte Technology

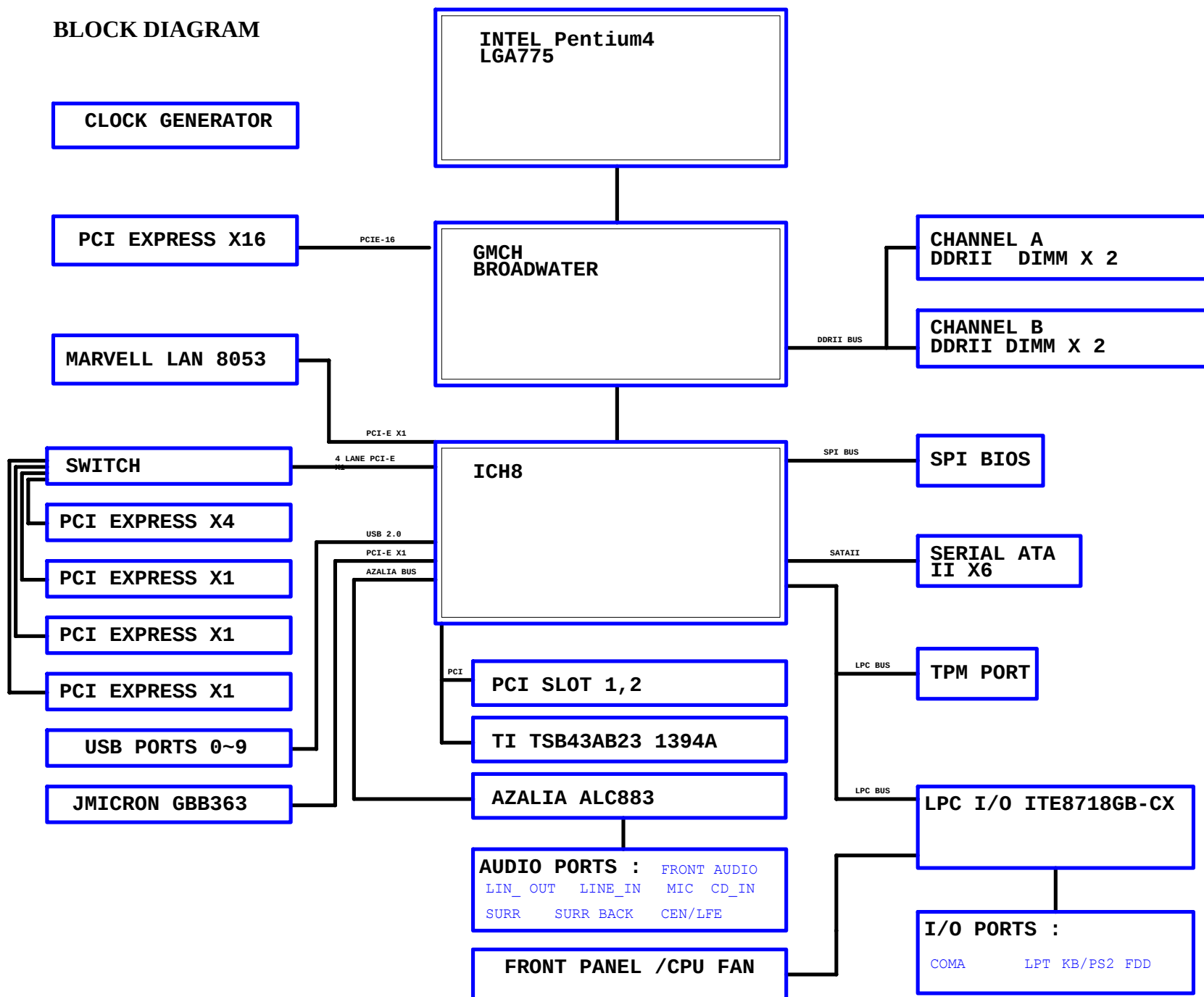
Title		
Cover Sheet		
Size	Document Number	Rev
Custom	965P-DS4	1.01G
Date:	Wednesday, August 09, 2006	Sheet 1 of 41

Circuit or PCB layout change for next version

[illegible]

<i>Gigabyte Technology</i>			
Title: BOM & PCB MODIFY HISTORY			
Size Custom	Document Number	965P-DS4	Rev 1.01G
Date:	Wednesday, August 09, 2006	Sheet 2 of 41	

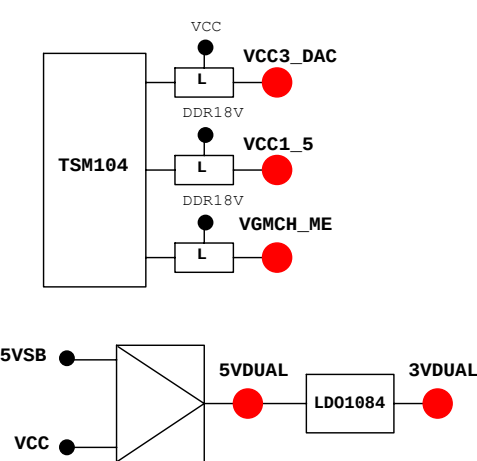
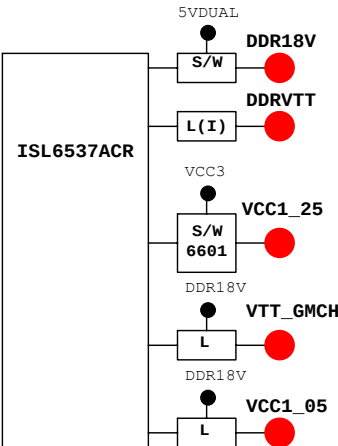
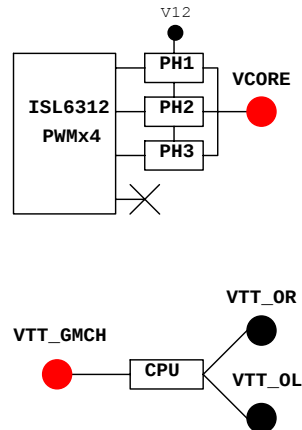
BLOCK DIAGRAM



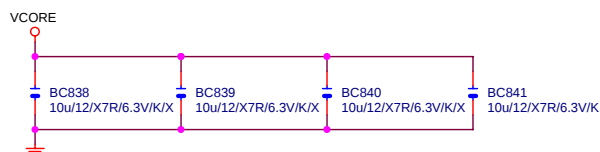
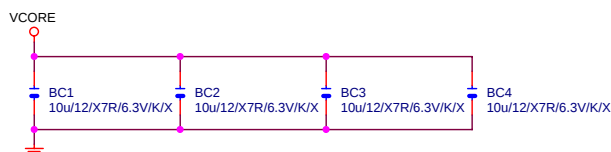
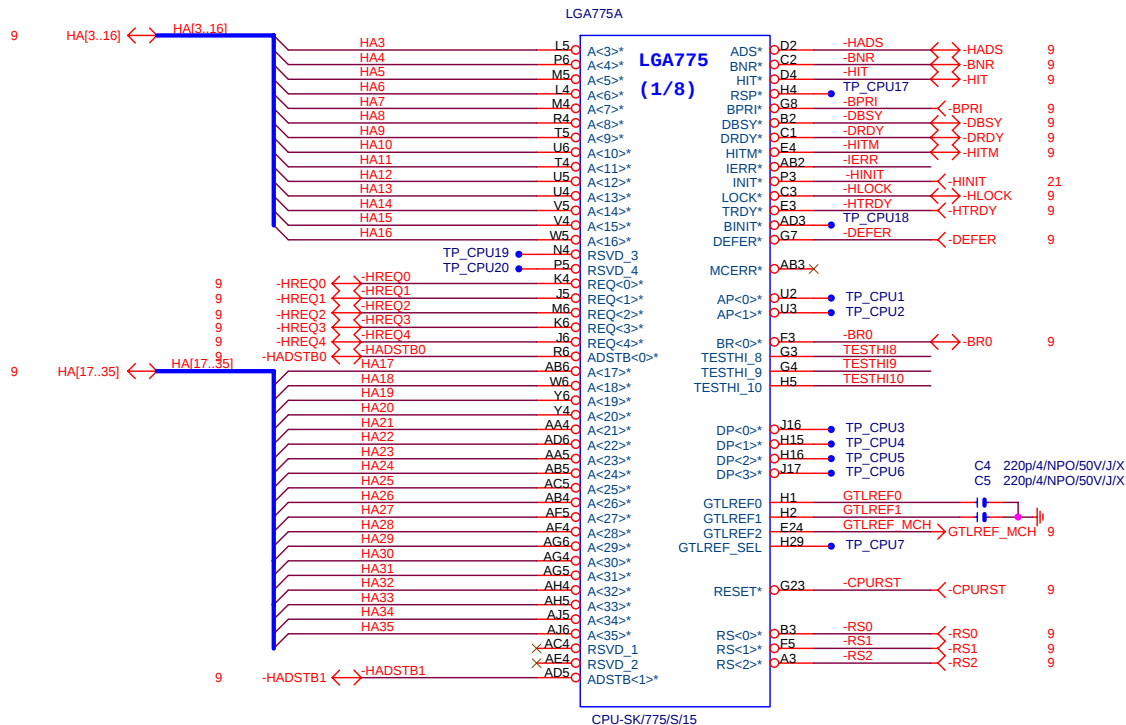
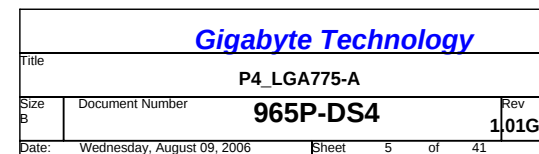
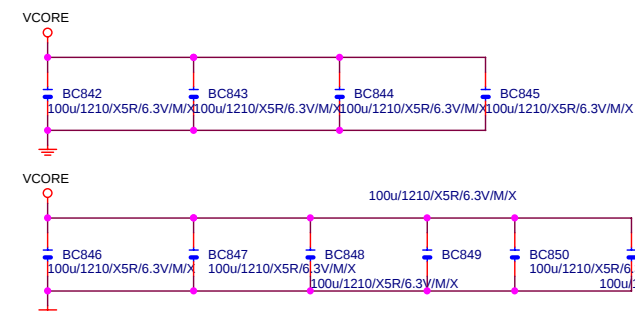
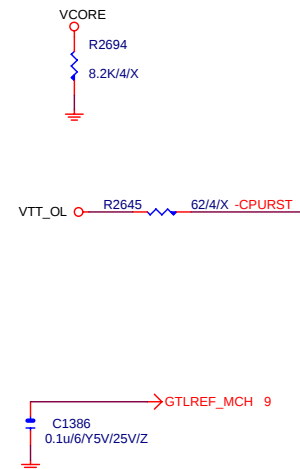
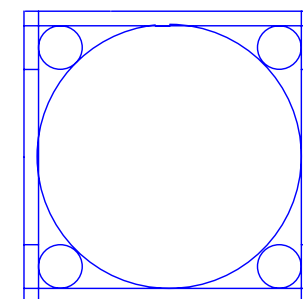
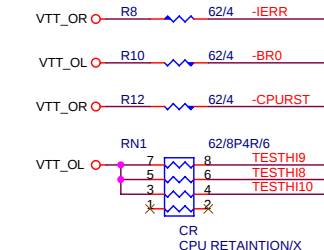
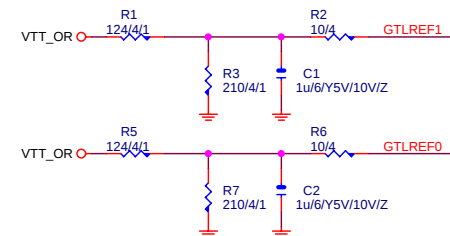
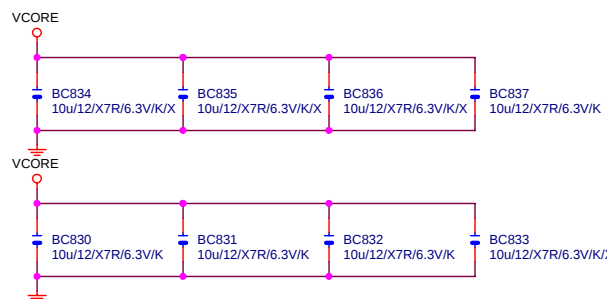
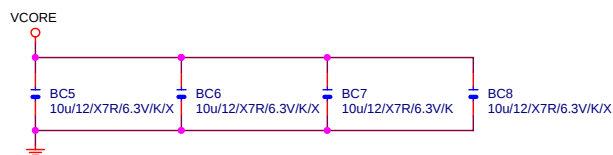
ICH8 GPIO LIST TABLE

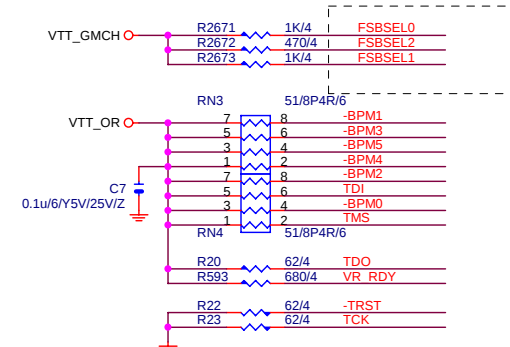
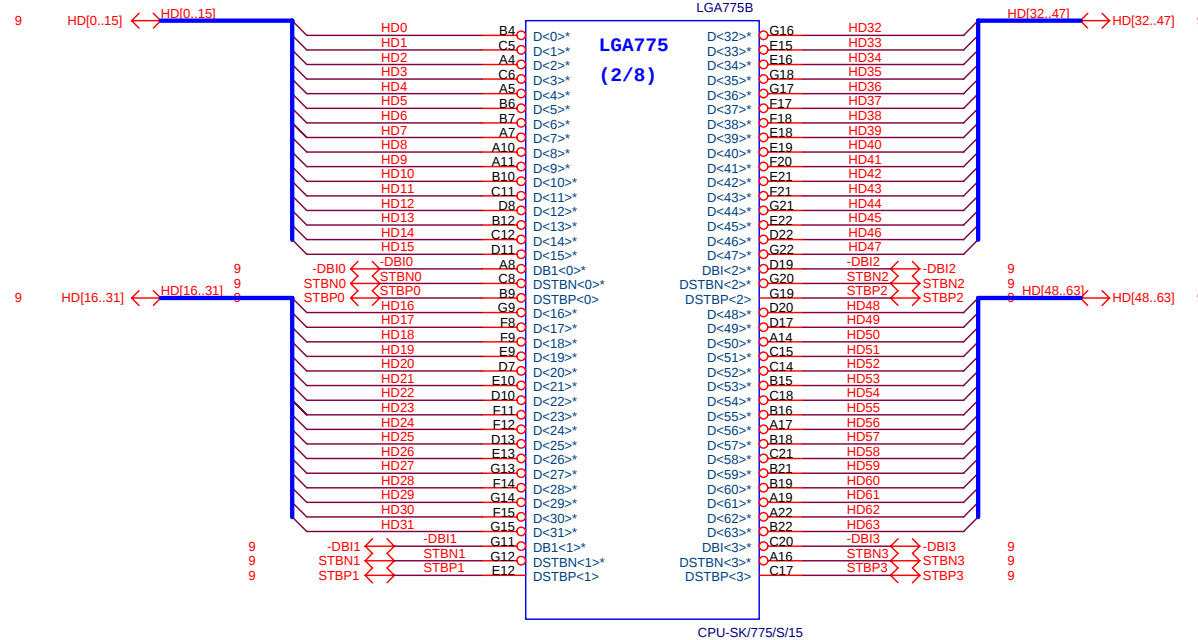
PIN	NAME	PWR WELL	AFTER/ ELTRST	USAGE	NOTE
GP0		MAIN	IN	-ACZ_DET	P/U 8.2K VCC3
GP1/TACH1		MAIN	IN	ICH_FAN_TACH1	P/U 8.2K VCC3
GP2/PIRQE#		MAIN	IN	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#		MAIN	IN	-PIRQF	P/U 8.2K VCC3
GP4/PIRQ6#		MAIN	IN	-PIRQ6	P/U 8.2K VCC3
GP5/PIRQH#		MAIN	IN	-PIRQH	P/U 8.2K VCC3
GP6/TACH2		MAIN	IN	ICH_FAN_TACH2	P/U 8.2K VCC3
GP7/TACH3		MAIN	IN	VTT_GMCH_OV3	P/U 8.2K VCC3
GP8		STBY	IN	GPI08(DUALBIOS_INPUT)	P/U 8.2K 3VDUAL
GP9		STBY	OUT	WOL_ONLY	P/D 100K GND
GP10		STBY	IN	CLGPIO1	P/U 8.2K 3VDUAL
GP11/SMBALERT#		STBY	OUT	-SMBALRT	P/U 8.2K 3VDUAL
GP12		STBY	IN	DDR18V_OV5	P/U 8.2K 3VDUAL
GP13		STBY	IN	-LPCPME	P/U 8.2K 3VDUAL
GP14		STBY	IN	CLGPIO2	P/U 8.2K 3VDUAL
GP15		STBY	OUT	RM	N/A
GP16		MAIN	OUT/LOW	RESET	N/A
GP17/TACH0		MAIN	IN	ICH_FAN_TACH0	P/U 8.2K VCC3
GP18		MAIN	OUT	MB_ID1	P/U 8.2K VCC3
GP19		MAIN	IN	VCC15_OV1	P/U 8.2K VCC3
GP20		MAIN	OUT	-SPI_WP0	P/U 1K 3VCL
GP21		MAIN	IN	VCC15_OV3	P/U 8.2K VCC3
GP22		MAIN	IN	VCORE_OV3	P/U 8.2K VCC3
GP23		MAIN	OUT	-LDRQ1	P/U 8.2K VCC3
GP24		STBY	OUT	TLS	P/U 8.2K 3VDUAL
GP25		STBY	IN	MB_ID2(STP_CPU-)	P/U 8.2K 3VDUAL
GP26/S4_STATE#		STBY	OUT	S4_STATE#	P/U 8.2K 3VDUAL
GP27		STBY	OUT/LOW	GPI027(EL_STATE0)	P/U 8.2K 3VDUAL
GP28		STBY	OUT/LOW	-SPI_WP0	N/A
GP29/OC5#		STBY	IN	-USB0C_R	P/U FUSEVCC
GP30/OC6#		STBY	IN	-USB0C_R	P/U FUSEVCC
GP31/OC7#		STBY	IN	-USB0C_R	P/U FUSEVCC
GP32		MAIN	OUT	DUAL_BIOS	P/U 100K+1M VCC3
GP33		MAIN	OUT	DUAL_BIOS	P/U 8.2K VCC3
GP34		MAIN	OUT/LOW	GPI034/SMB_RST	N/A
GP35		MAIN	OUT	VCC15_OV2	N/A
GP36		MAIN	IN	VCORE_OV4	P/U 8.2K VCC3
GP37		MAIN	IN	VCORE_OV5	P/U 8.2K VCC3
GP38		MAIN	IN	VCORE_OV2	P/U 8.2K VCC3
GP39		MAIN	IN	GPI039	P/D 8.2K GND
GP48		MAIN	IN	VCORE_OV1	P/U 8.2K VCC3
GP49		MAIN	IN	CPUPWROK	P/U 100 VTT_OL

VCORE:3 PHASE PWM--ISL6312

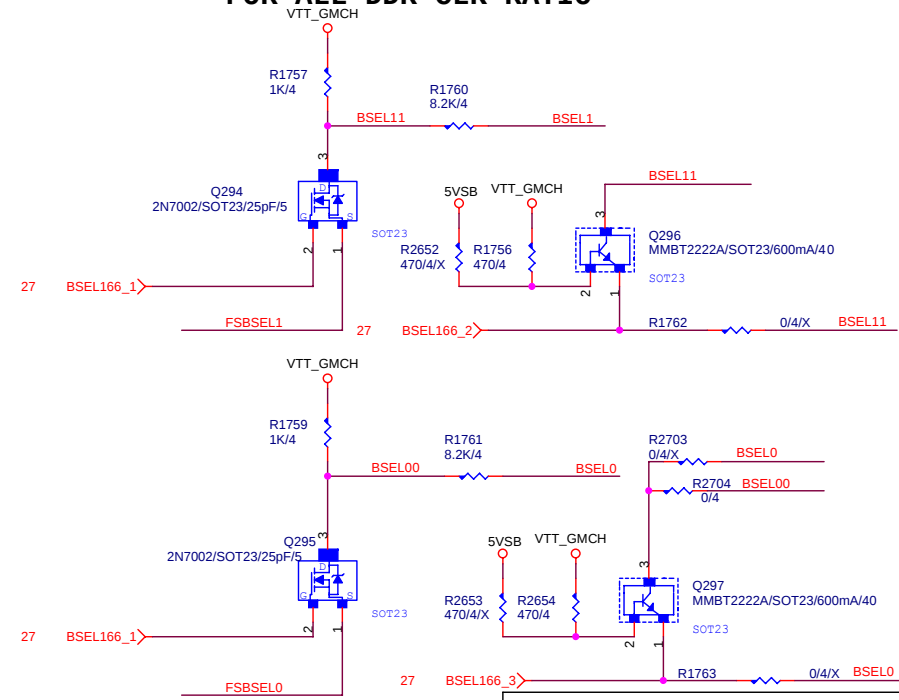


	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8718
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	ICH8
SYS FAN	FANPWM2	N/A	FANIO2	IT8718
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	ICH8
PWR FAN	N/A	N/A	FANIO3	IT8718
			ICH_FAN_TACH2	ICH8

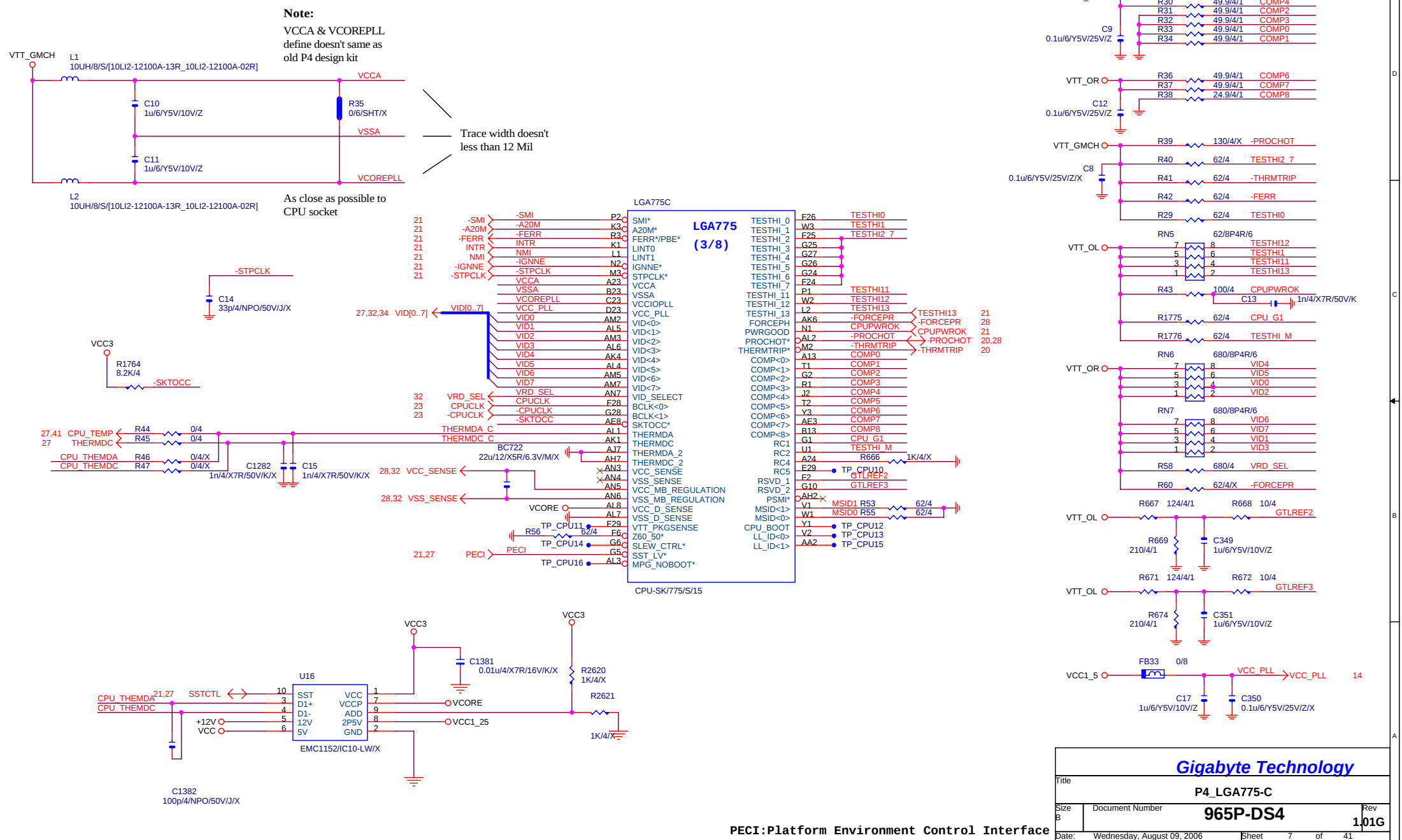


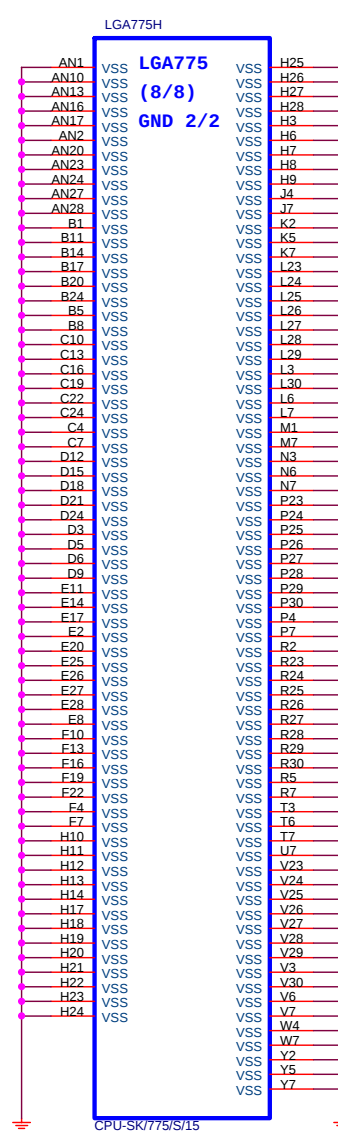
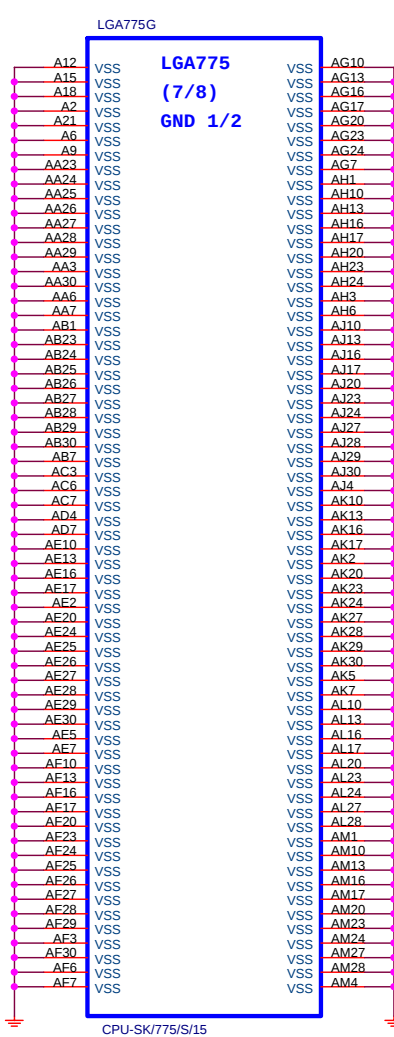
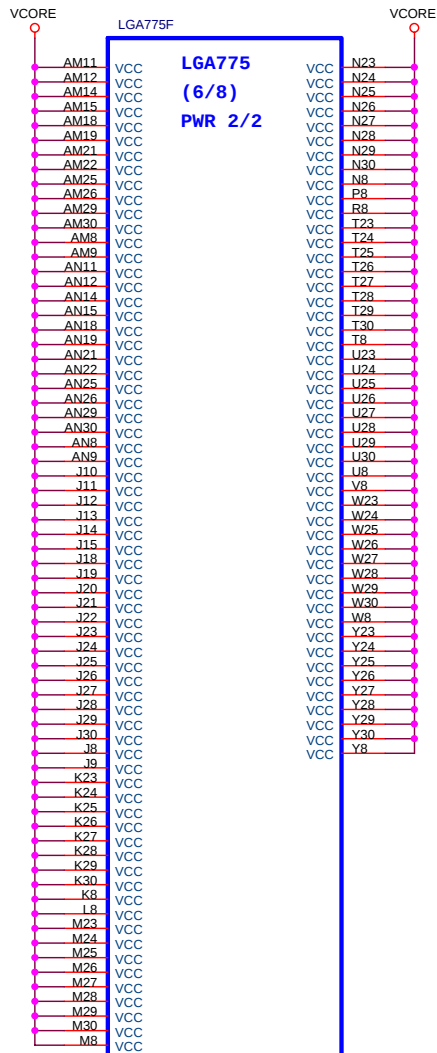
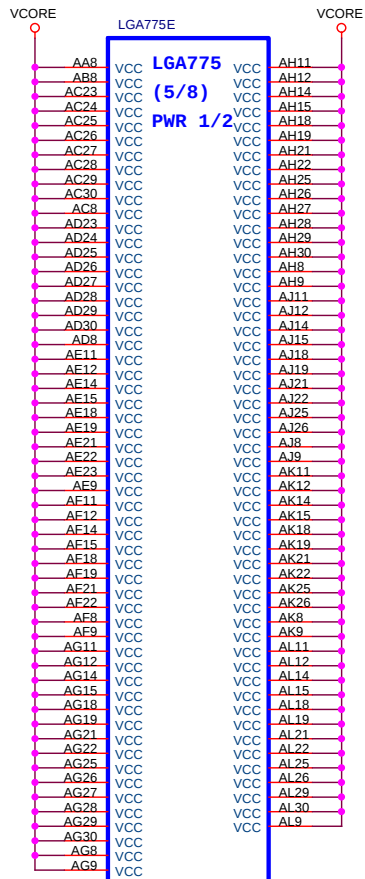


FOR ALL DDR CLK RATIO



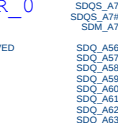
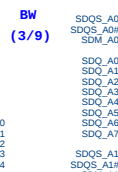
Gigabyte Technology		
Title		
P4_LGA775-B,D		
Size	Document Number	Rev
B	965P-DS4	1.01G
Date:	Wednesday, August 09, 2006	Sheet 6 of 41



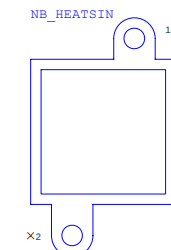
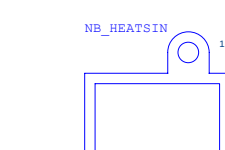
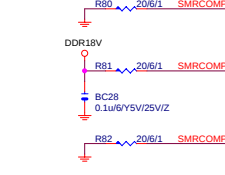
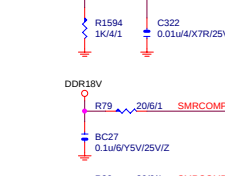
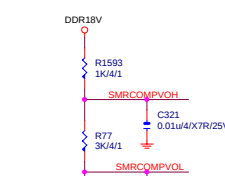
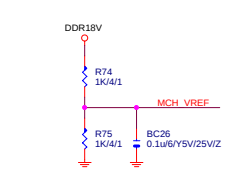
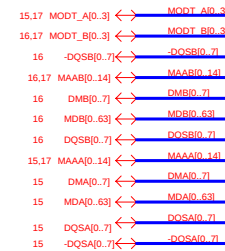
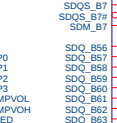
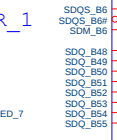
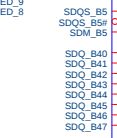
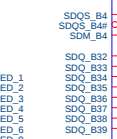
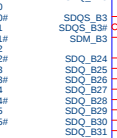
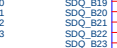
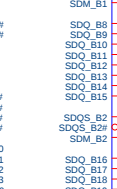
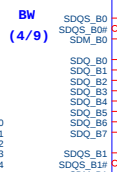


Gigabyte Technology

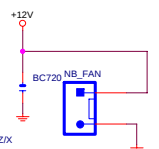
Title		P4_LGA775-E,F,G,H	
Size	Document Number	965P-DS4	Rev
B			1.01G
Date:	Wednesday, August 09, 2006	Sheet	8 of 41



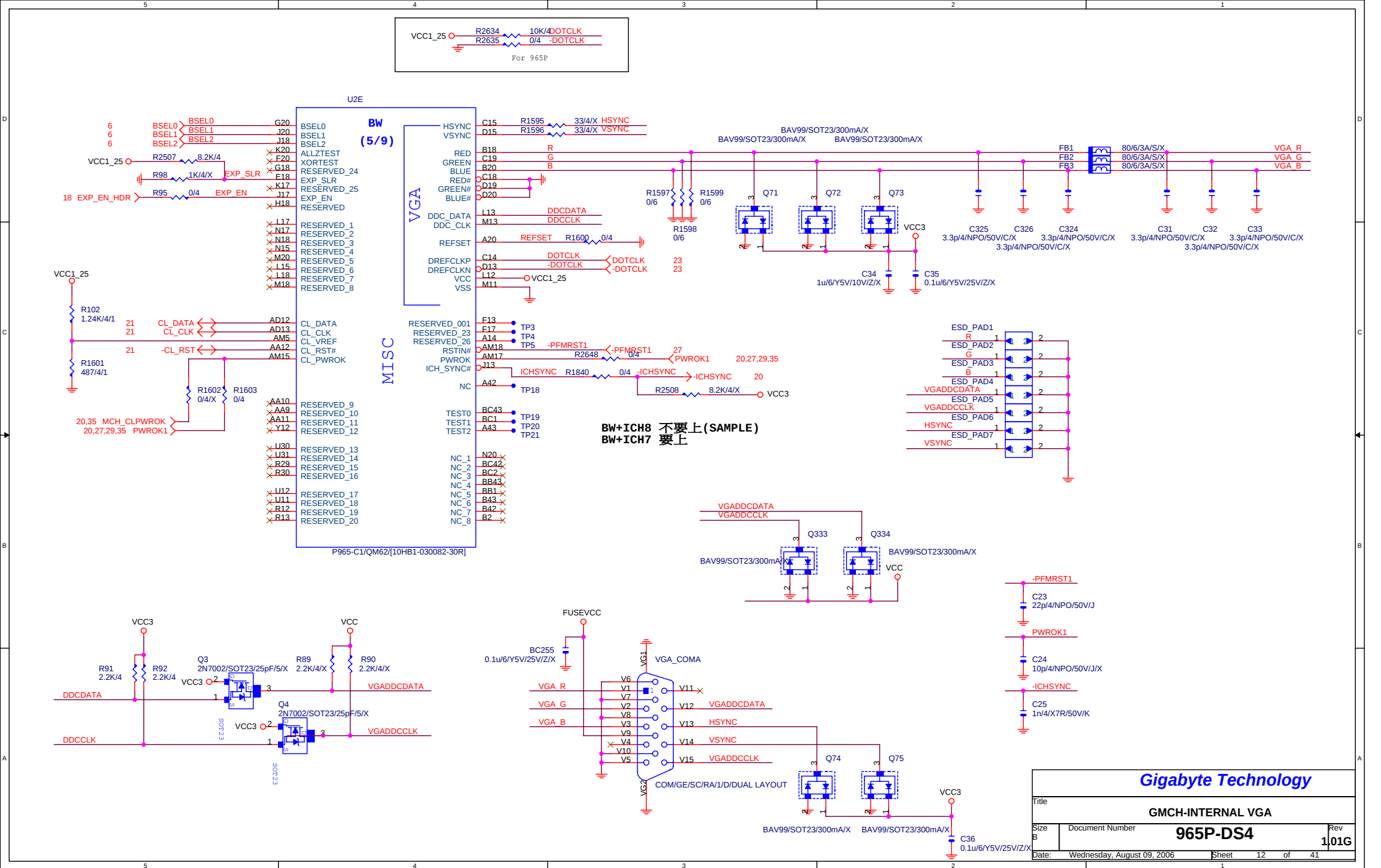
DDR INTERFACE

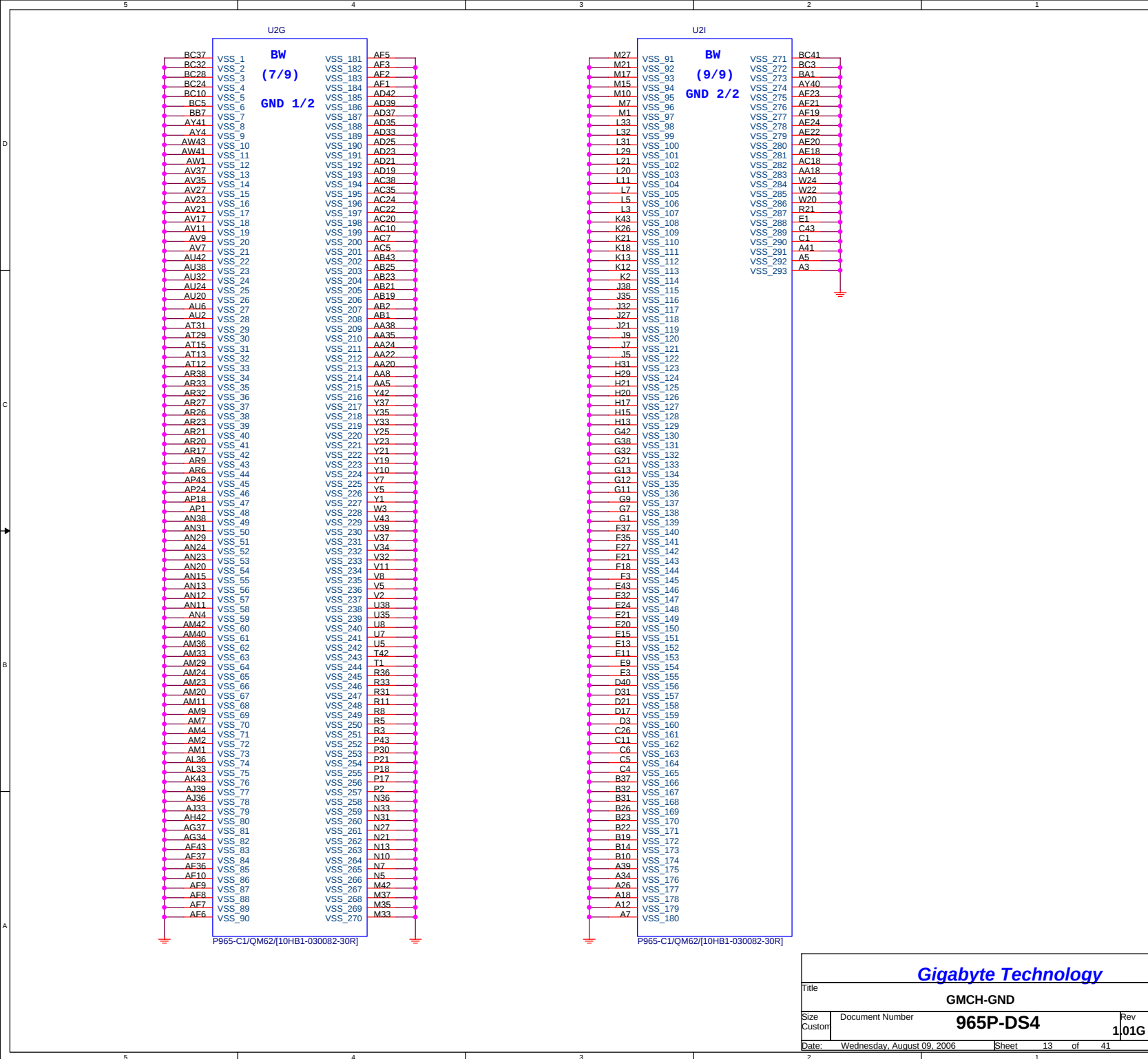


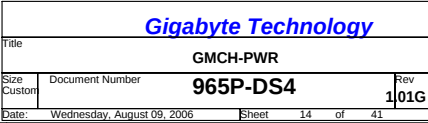
NB_HEATSINK/[12SP2-01A001-51R_12SP2-01A001-52R_12SP2-01A001-53R

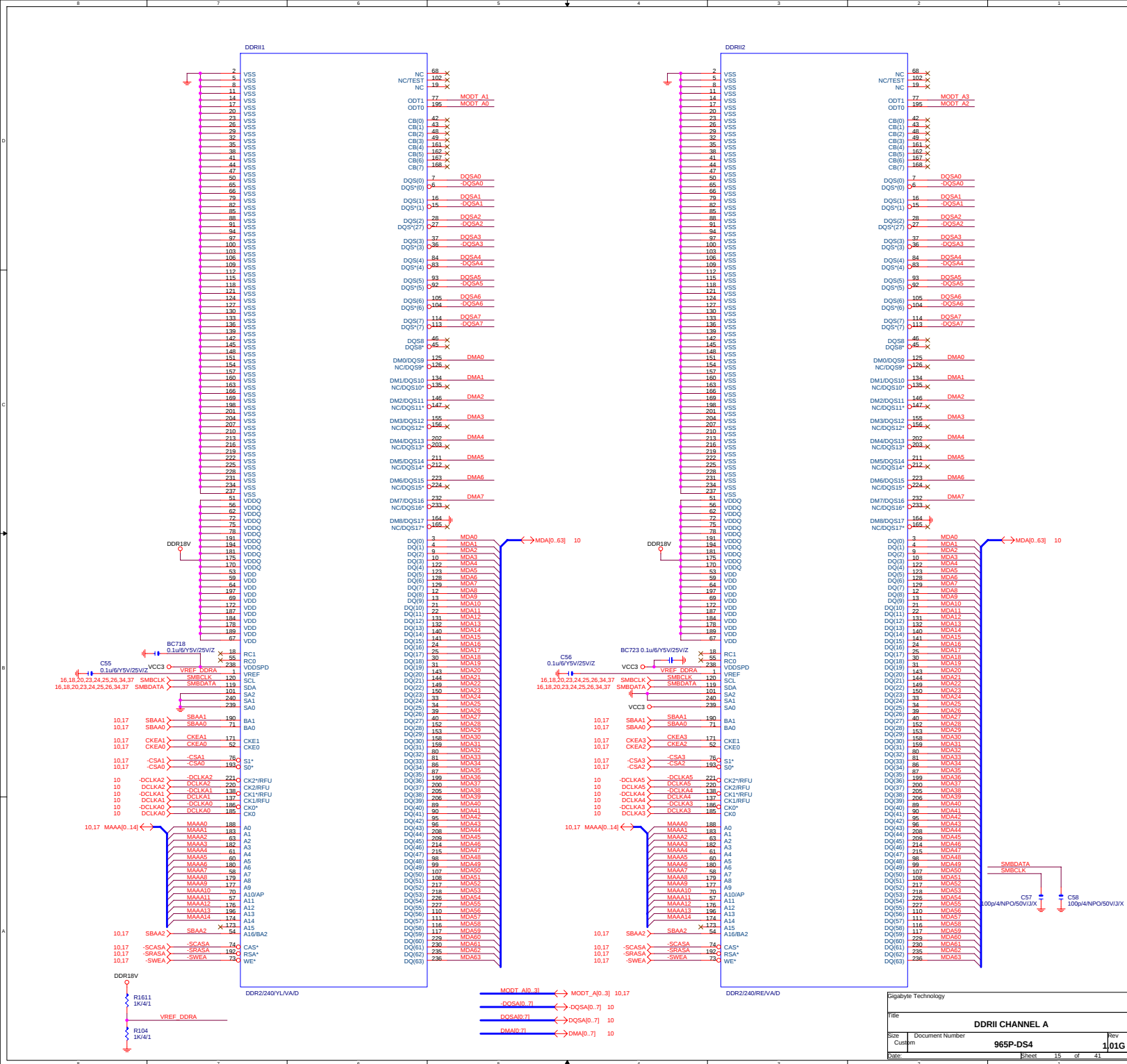


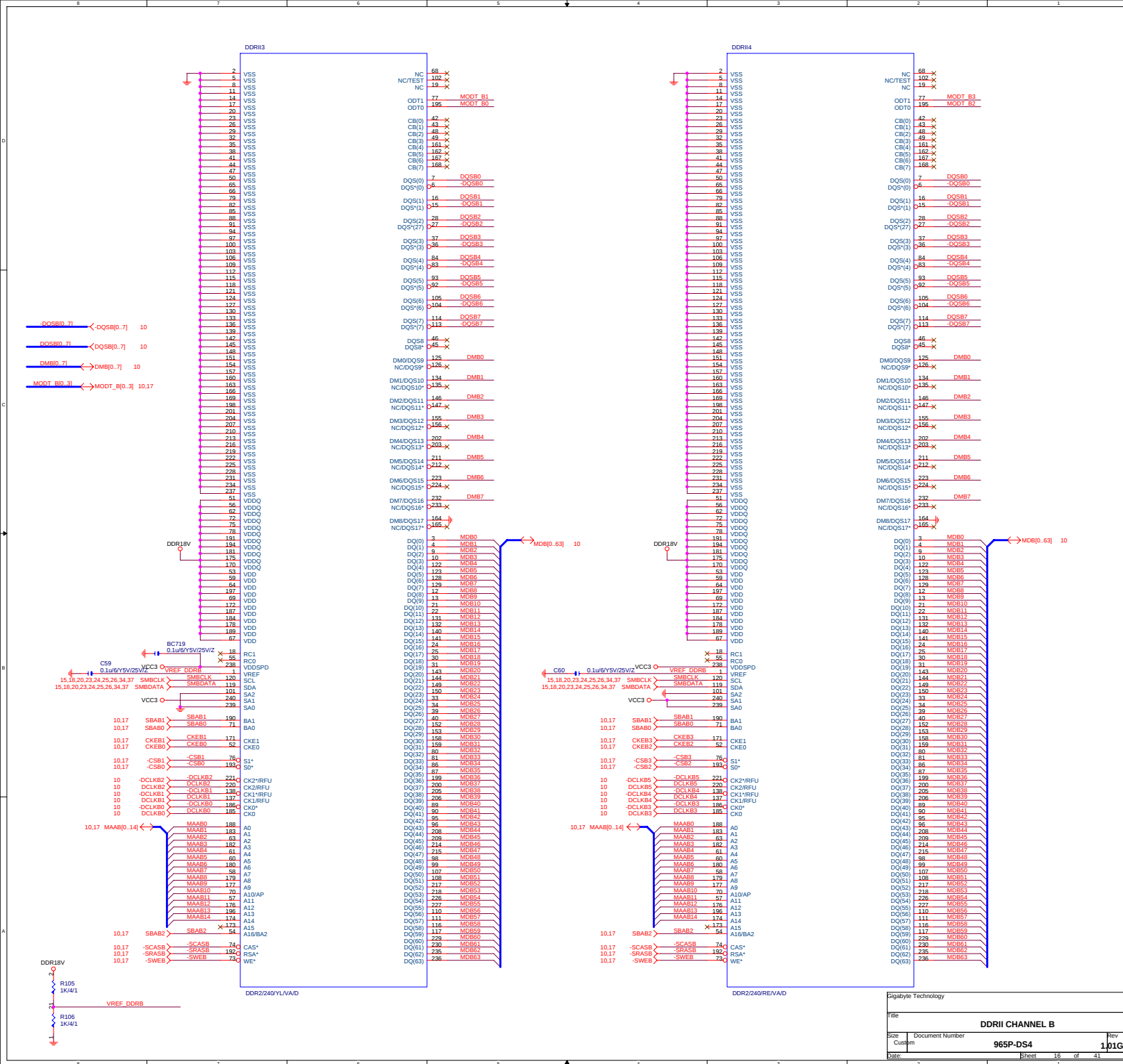
NB HEAT SINK FA





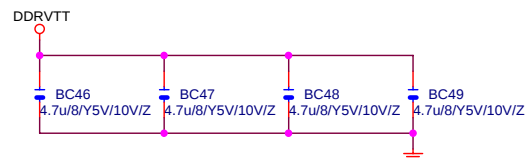




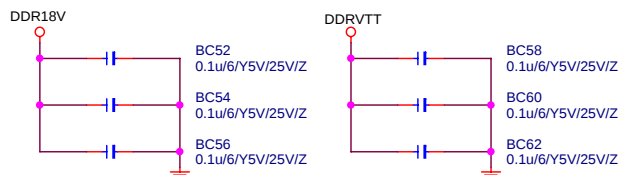


DDR TERMINATION CHANNEL A

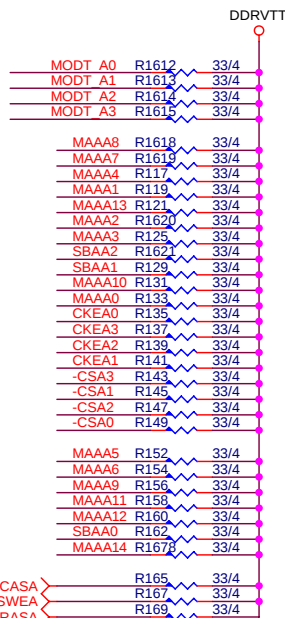
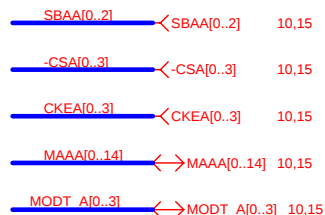
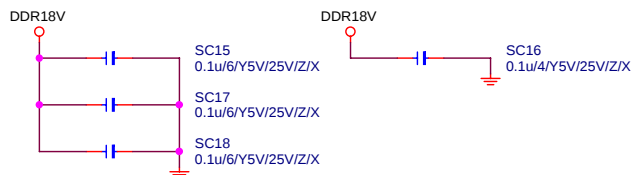
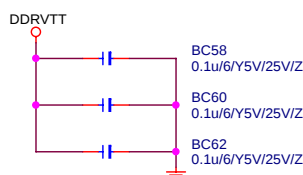
DDRVTT Decouple



DDR18V Decouple

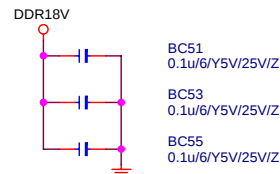


DDRVTT Decouple

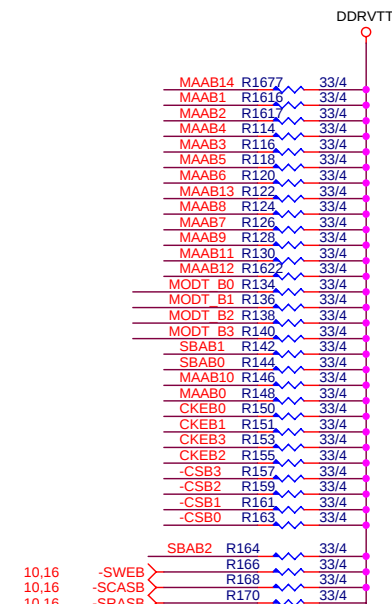
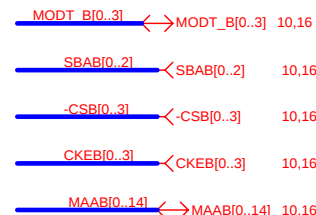
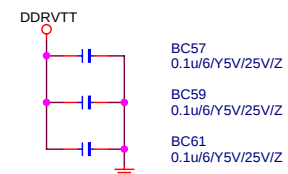


DDR TERMINATION CHANNEL B

DDR18V Decouple

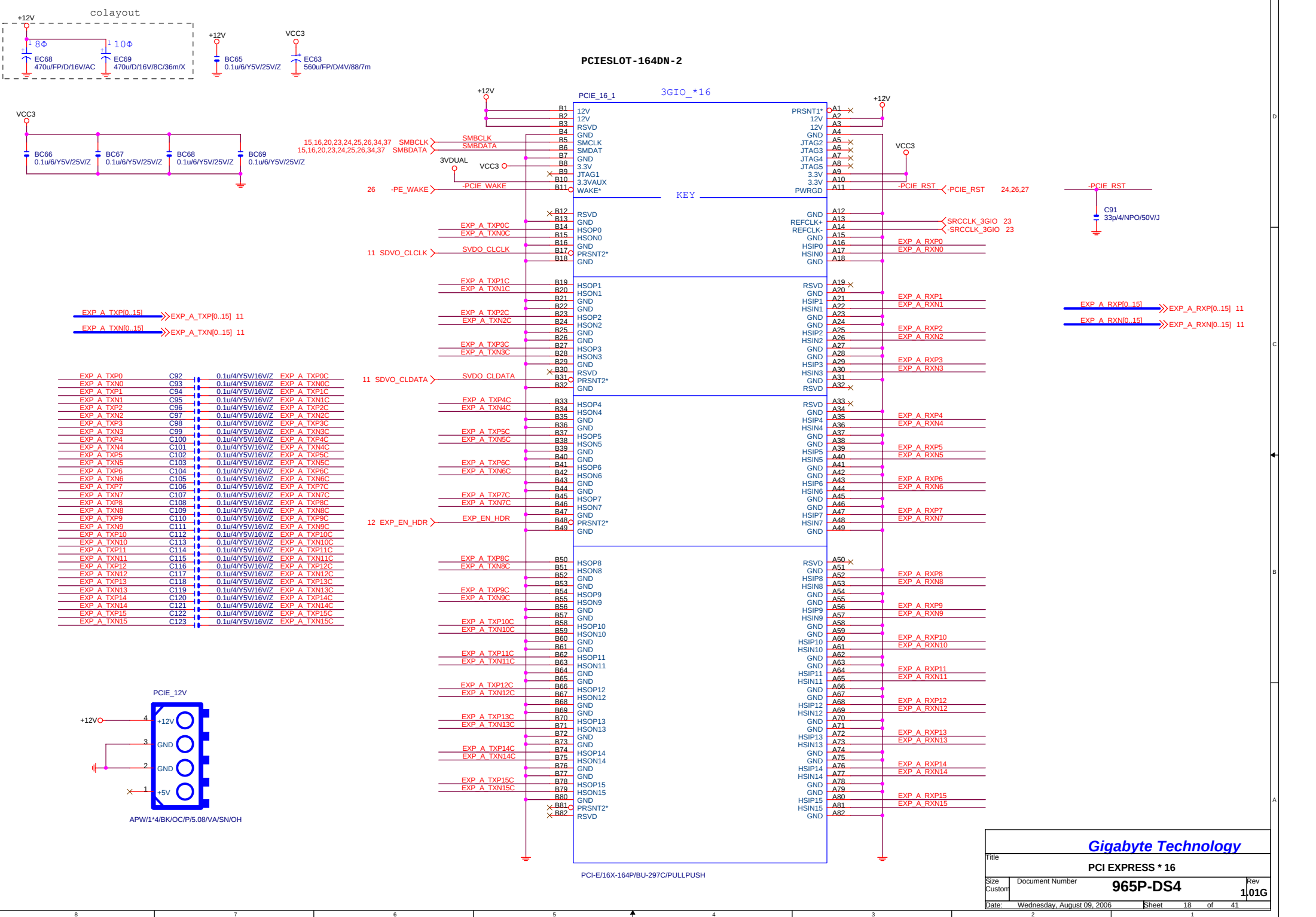


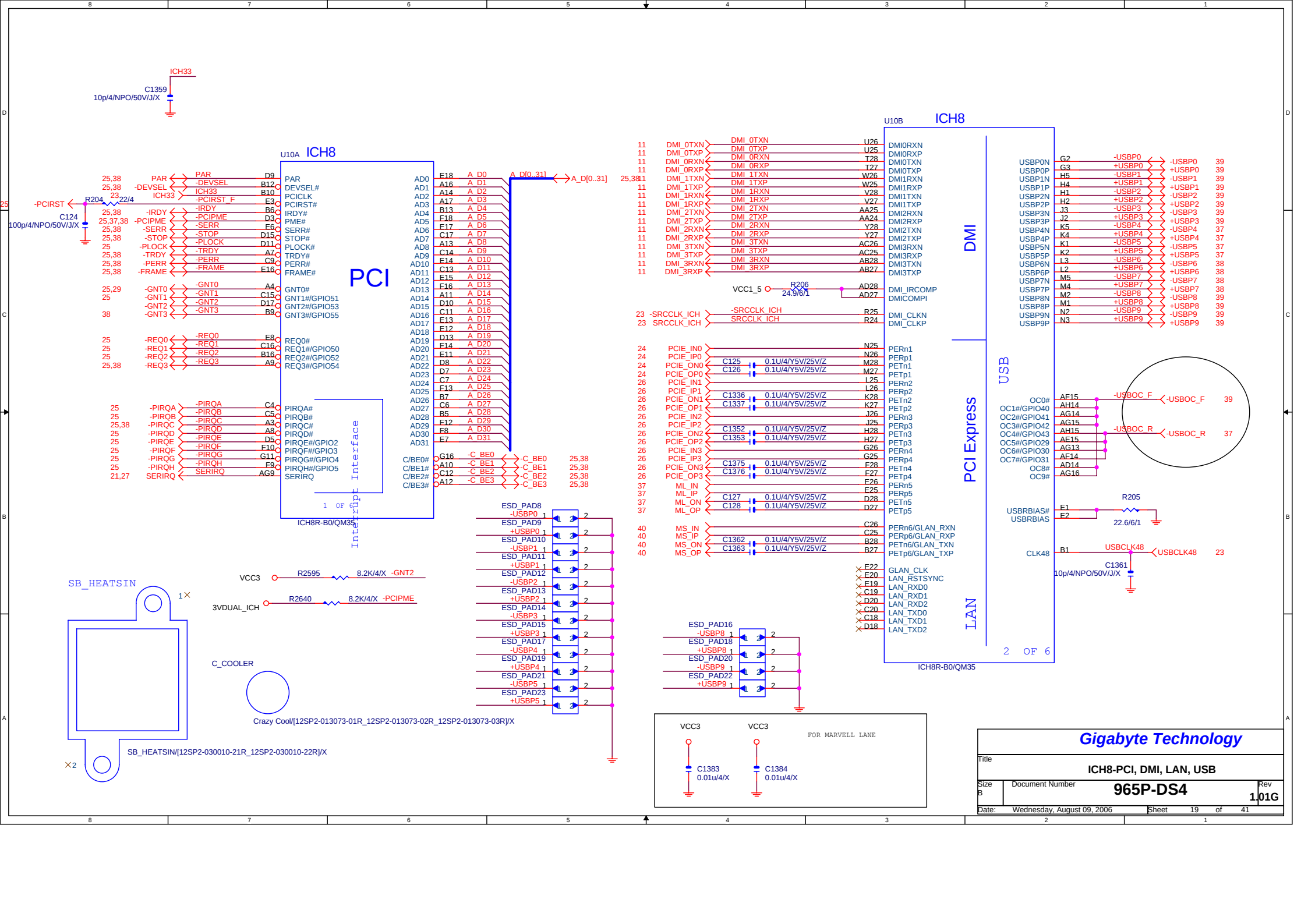
DDRVTT Decouple

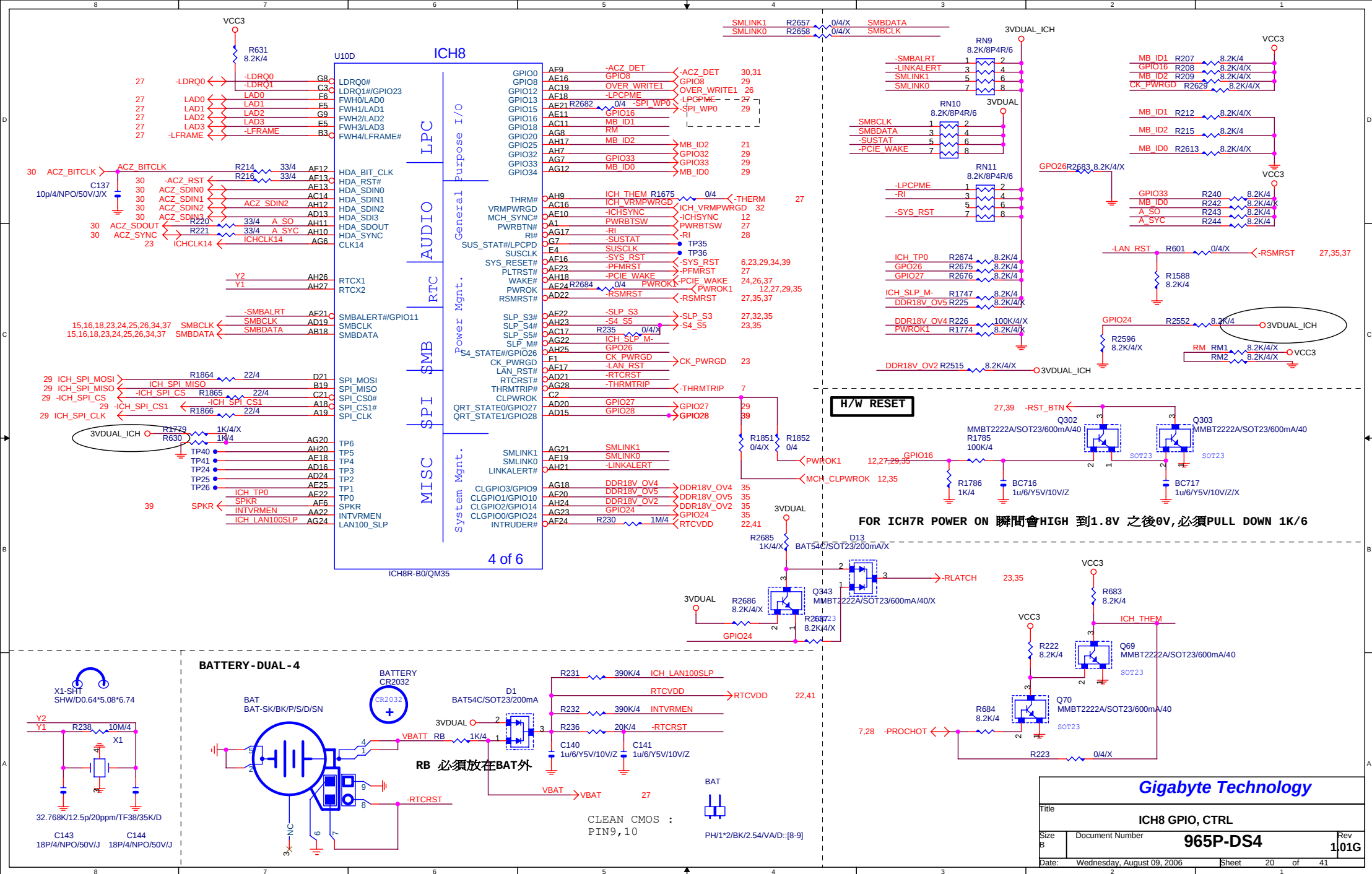


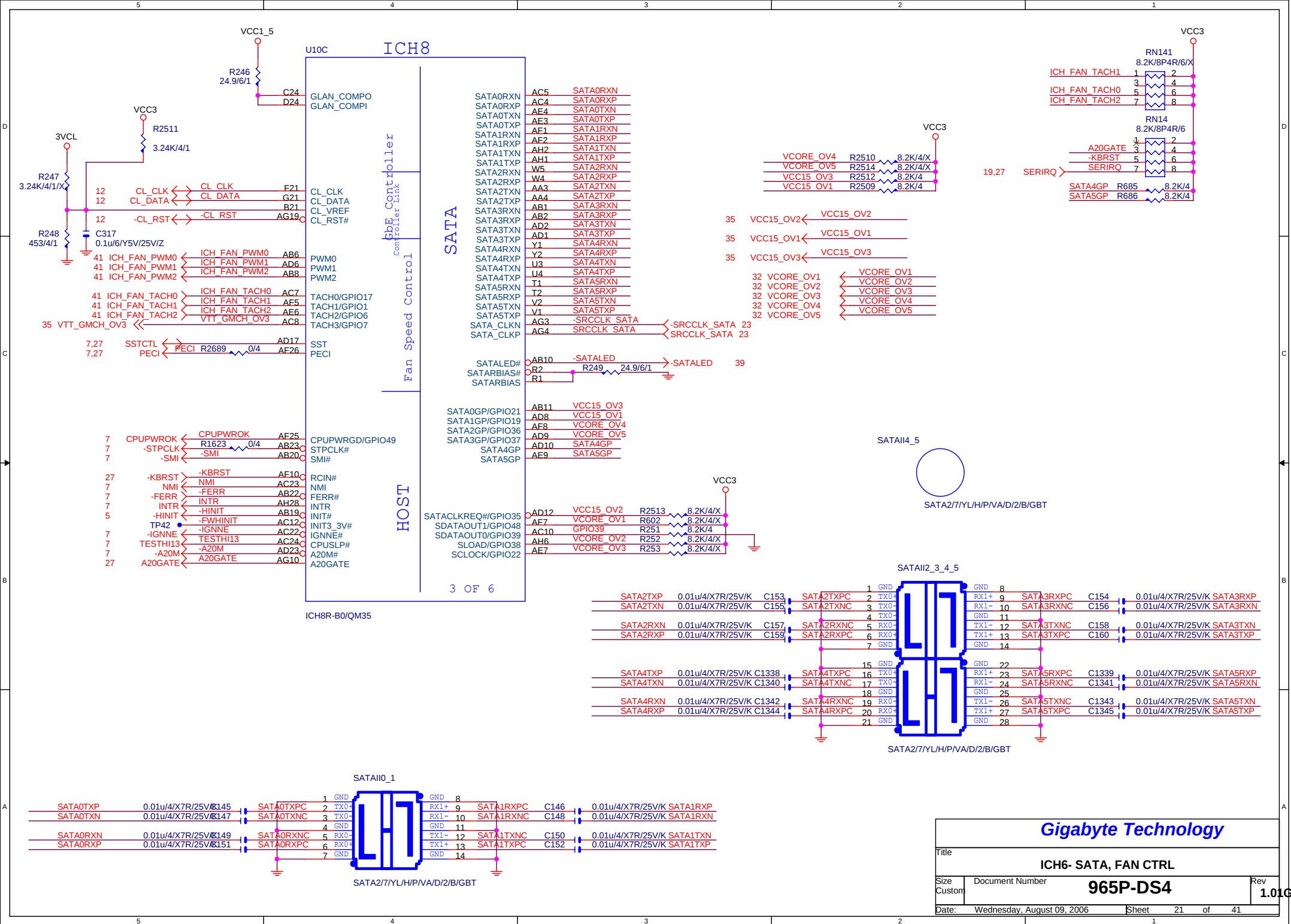
Gigabyte Technology

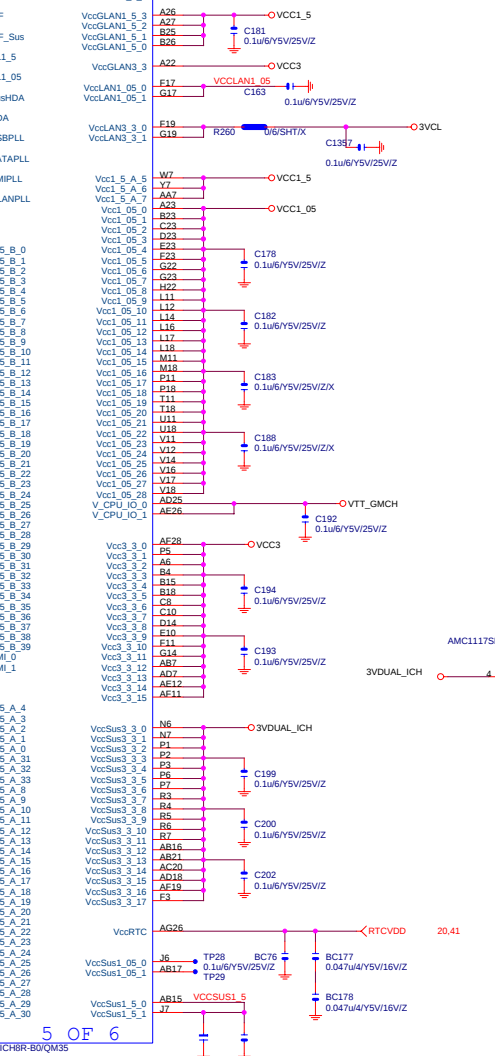
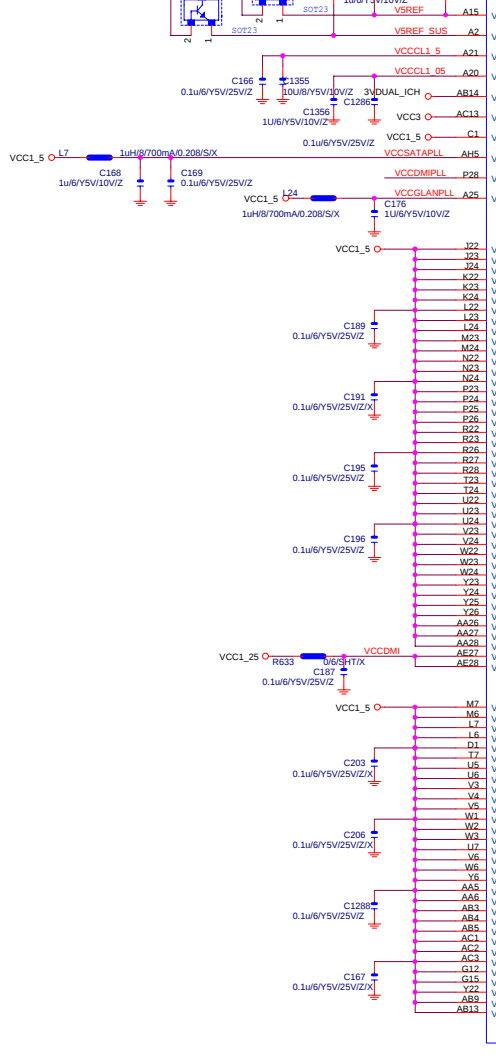
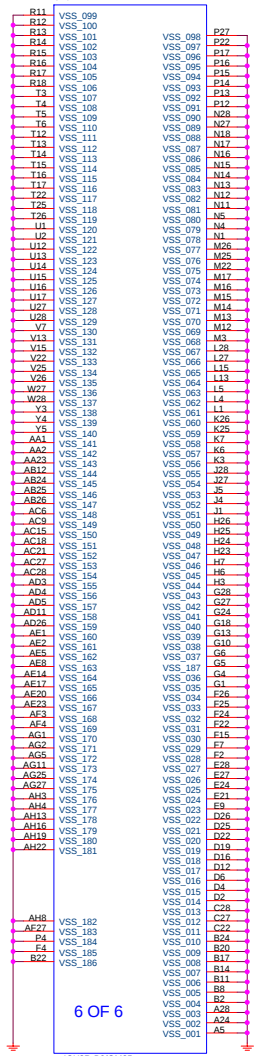
Title			DDRII TERMINATOR		
Size	Document Number	965P-DS4			Rev
Custom					101G
Date:	Wednesday, August 09, 2006	Sheet	17	of	41



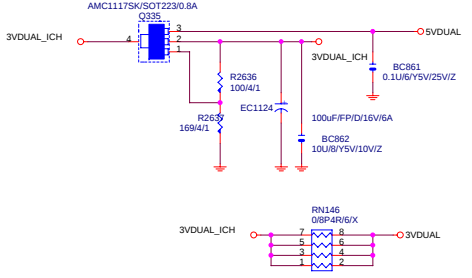
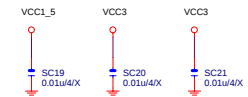




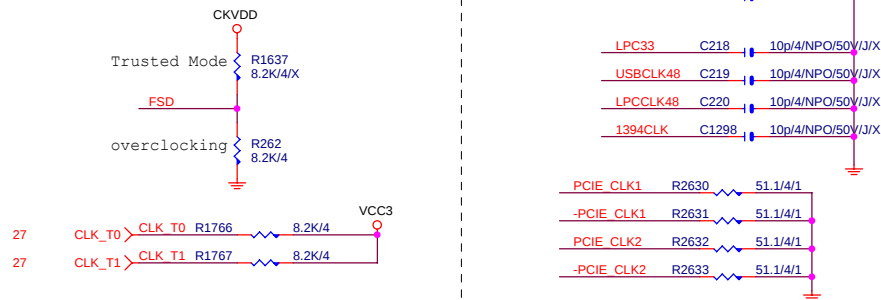
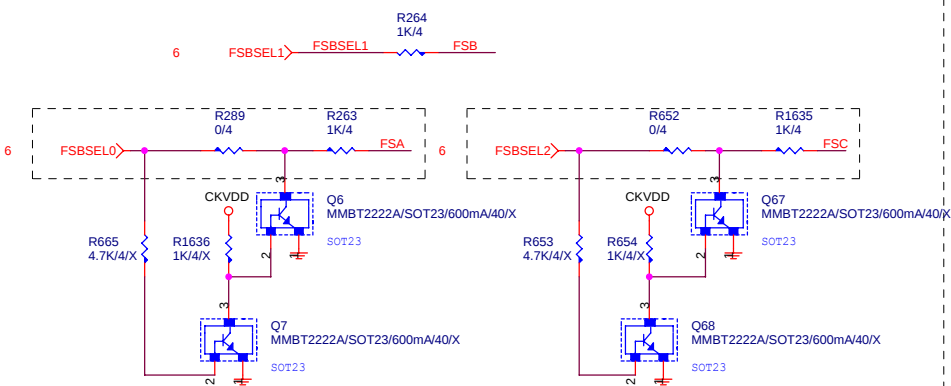
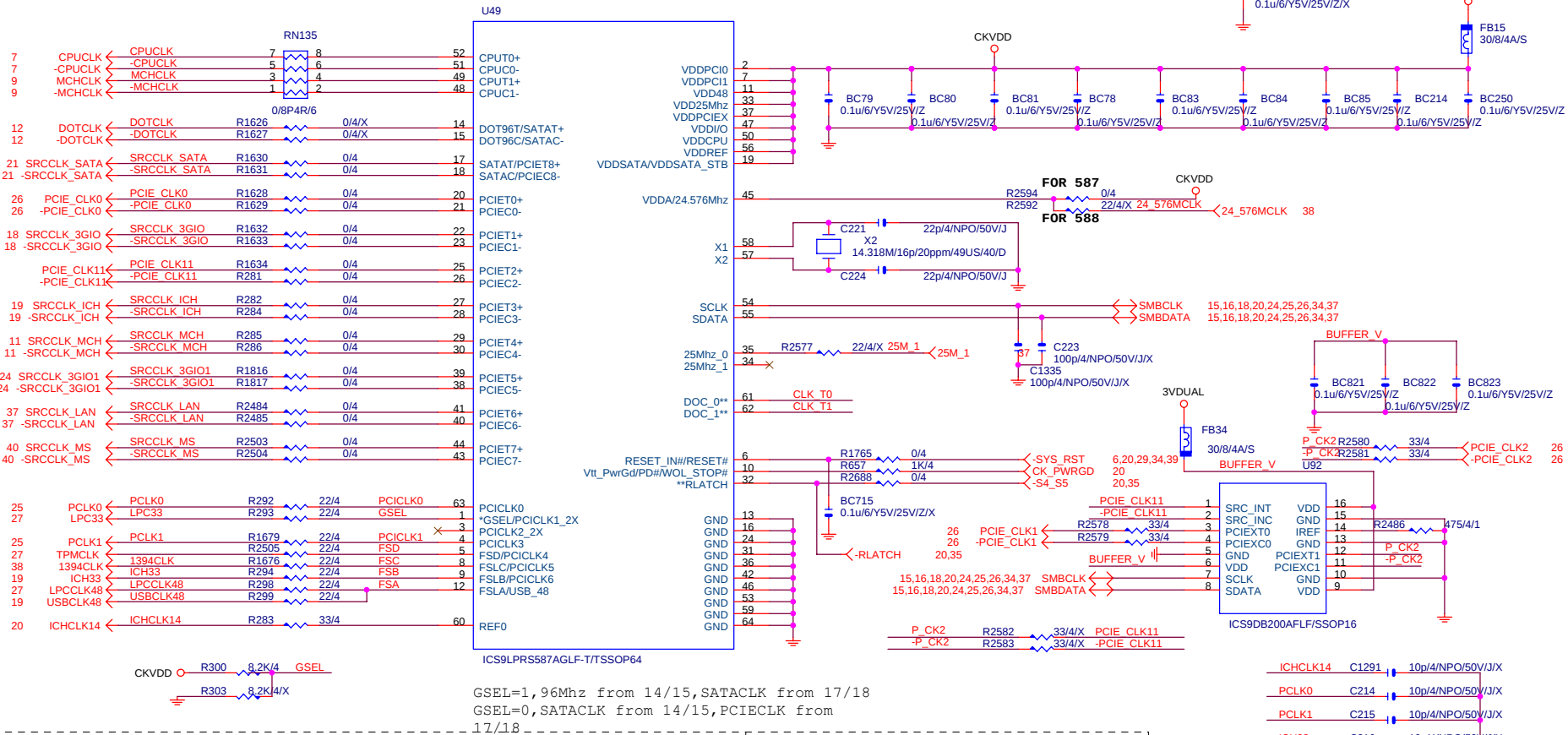




SIGNAL NAME	NO LAN
VccCL1_05	de-CAP
VccCL3_3	Vcc3_3
VccCL1_5	de-CAP
VccGLAN1_5	Vcc1_5
VccGLAN3_3	Vcc3_3
VccGLANPLL	Vcc1_5
VccLAN1_05	N/A
VccLAN3_3	VCC3

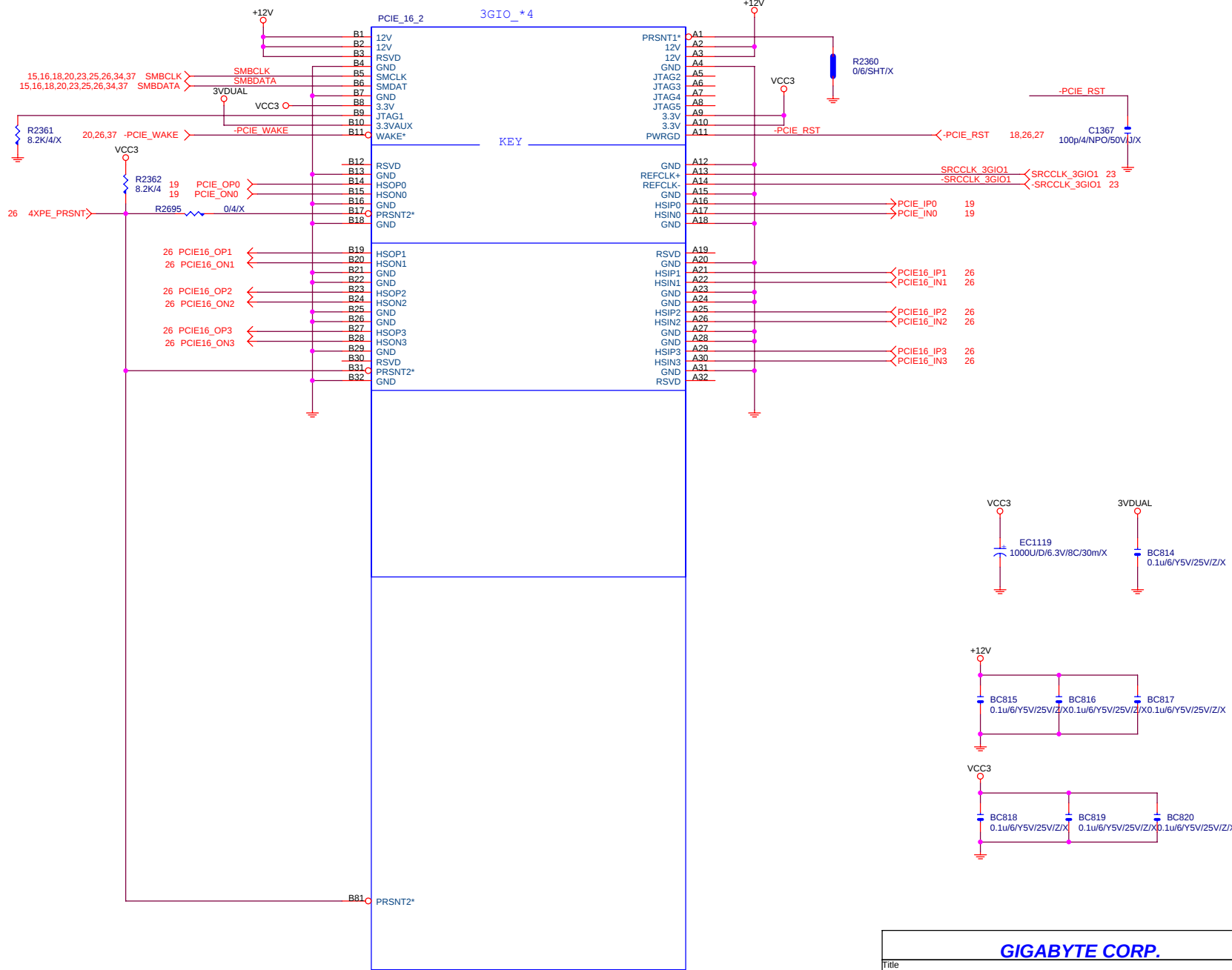


CLK GEN CK505



Gigabyte Technology

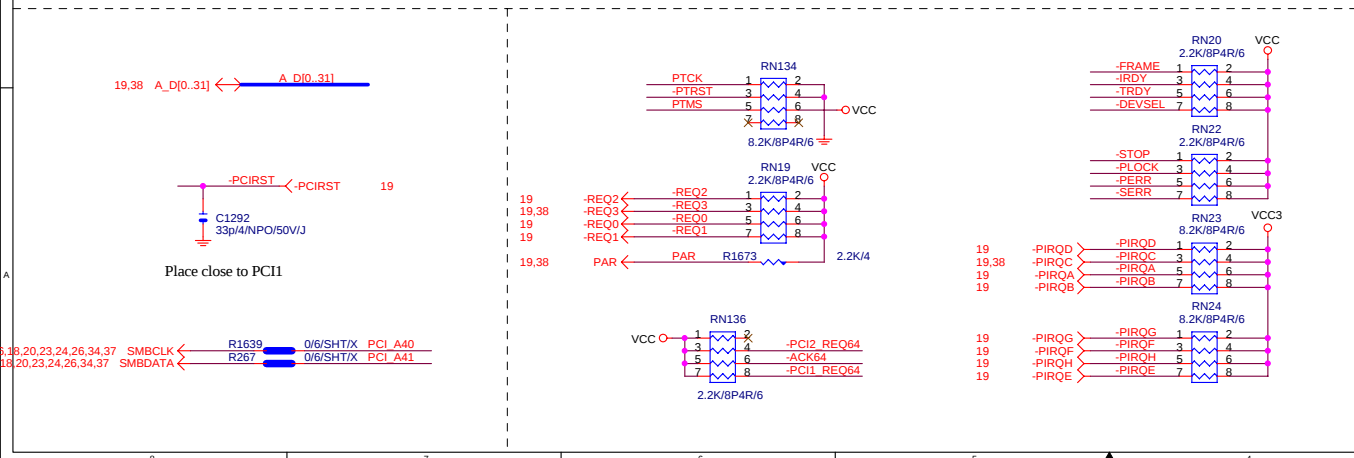
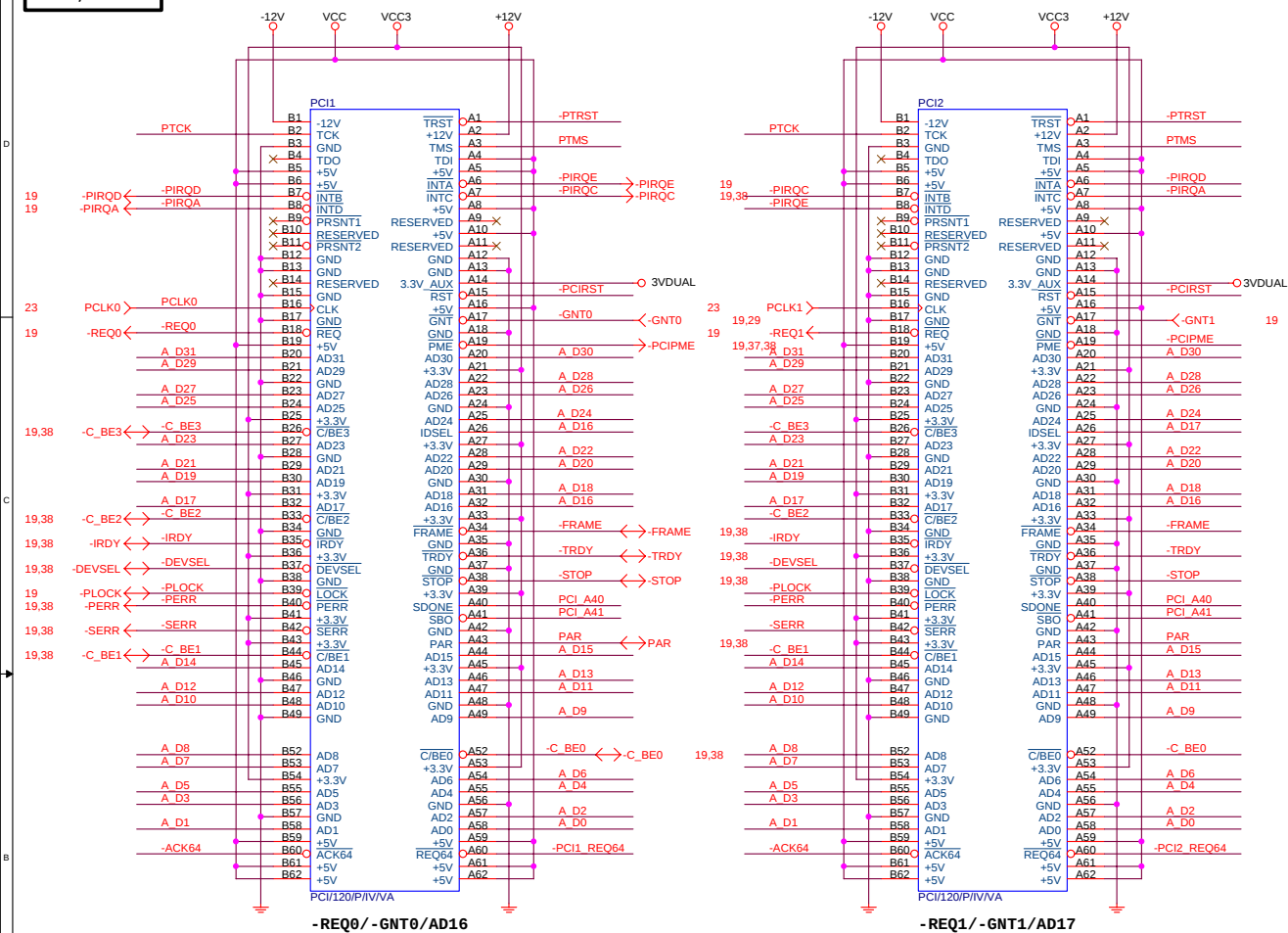
Title				CK505 CLK GEN			
Size	Document Number					Rev	
Custom	965P-DS4					1010	
Date:	Wednesday, August 09, 2006	Sheet	23	of	41		



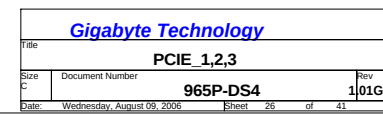
PCI-E/16X-65P/BU/RIGHT PUSH

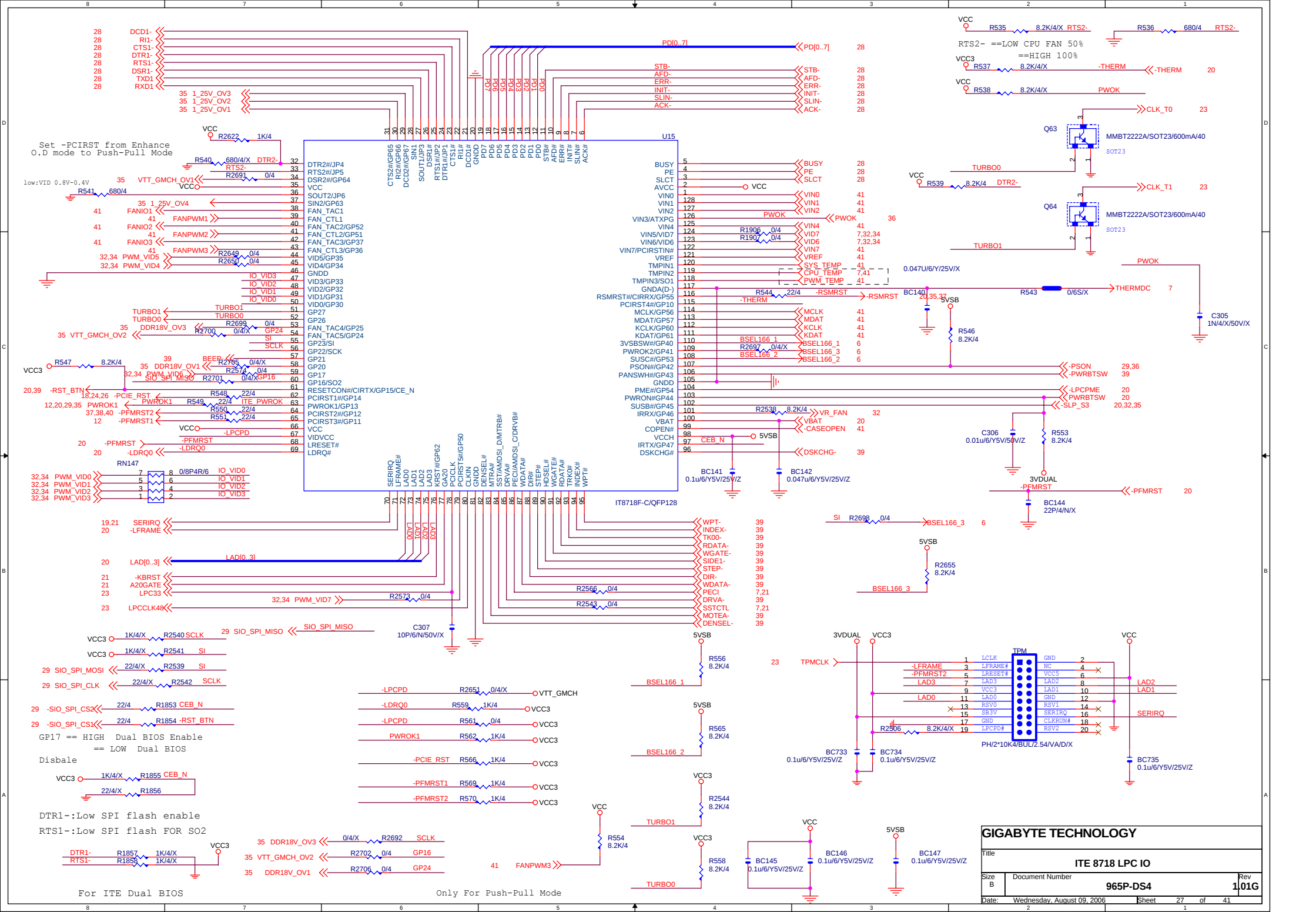
GIGABYTE CORP.			
Title			
PCI EXPRESS X 8 PORT 1			
Size	Document Number	Rev	
Custom	965P-DS4	1.01G	
Date:	Wednesday, August 09, 2006	Sheet	24 of 41

PCI1, 2 SLOT

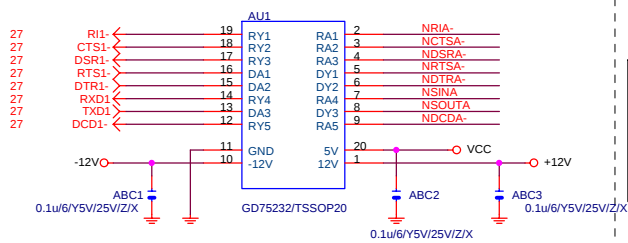


For Vih level consideration



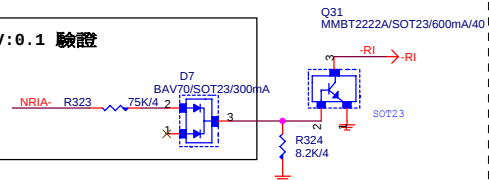


COMA

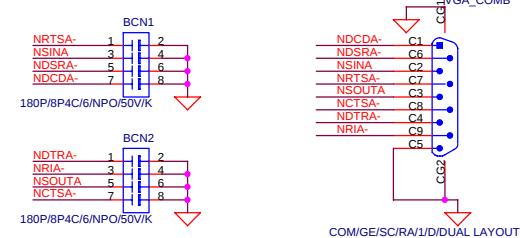


COM RI

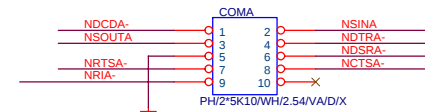
REV:0.1 驗證



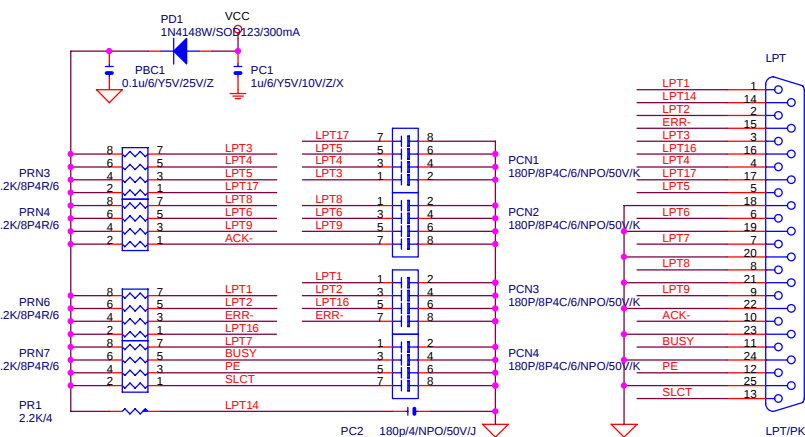
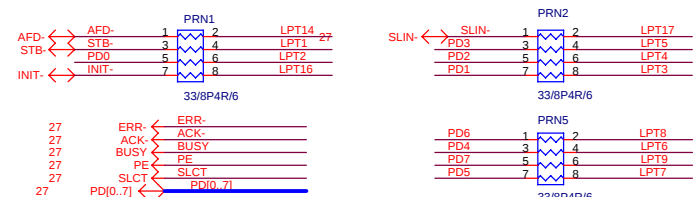
EXTERNAL COMB



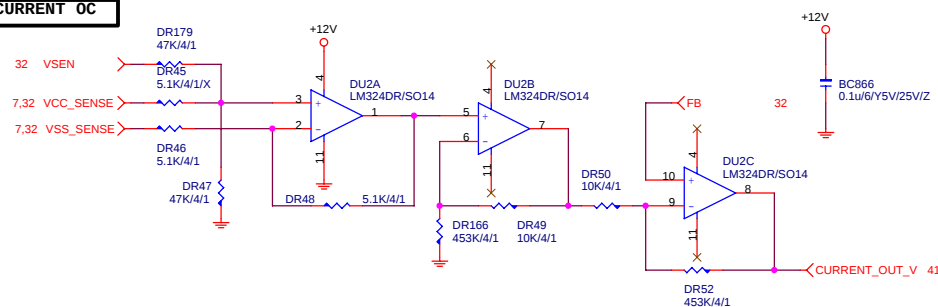
PLACE NEAR VGA_COM CONNECTOR



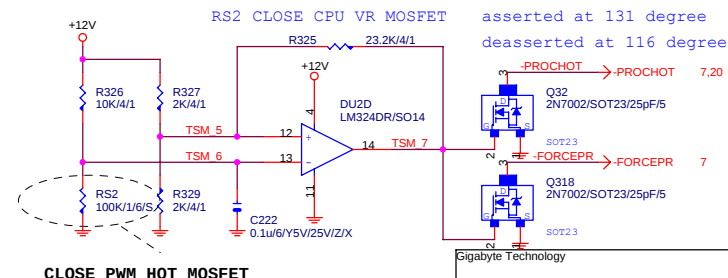
LPT PORT



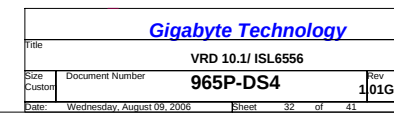
DYNAMIC CURRENT OC

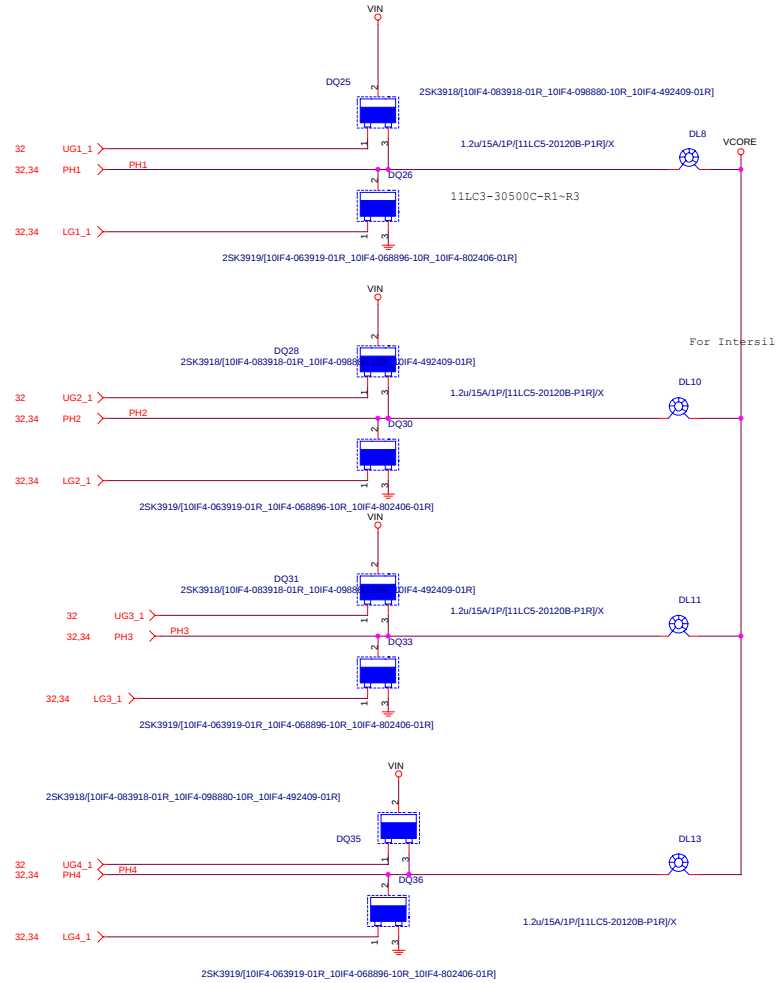


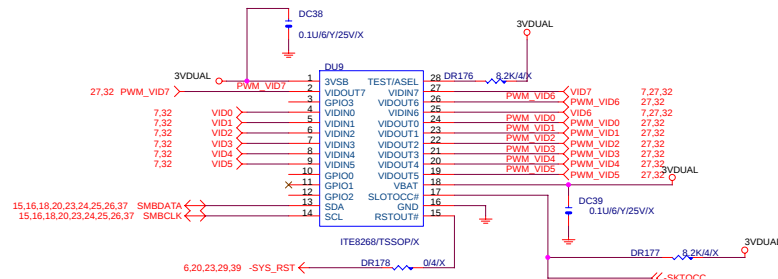
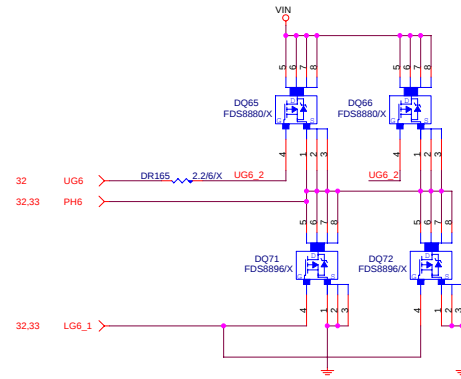
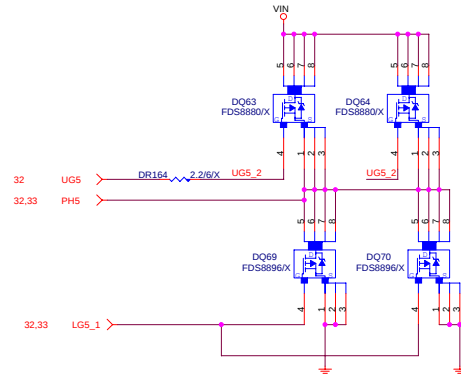
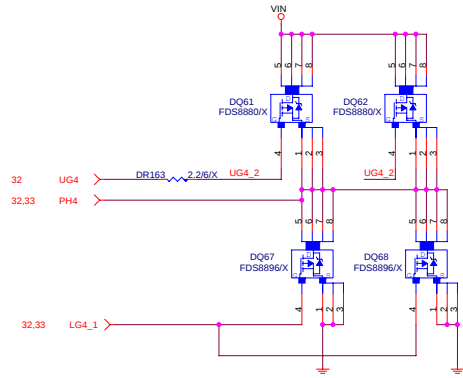
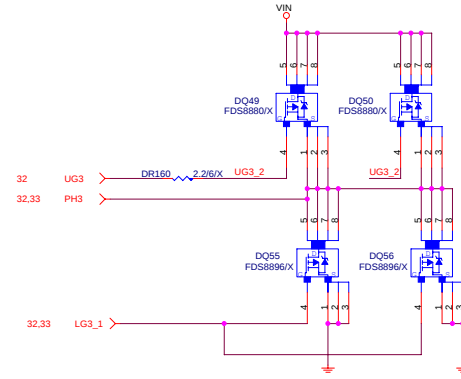
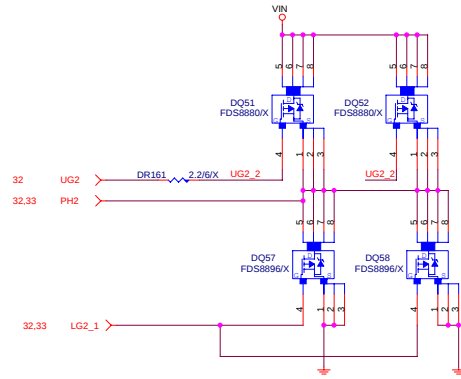
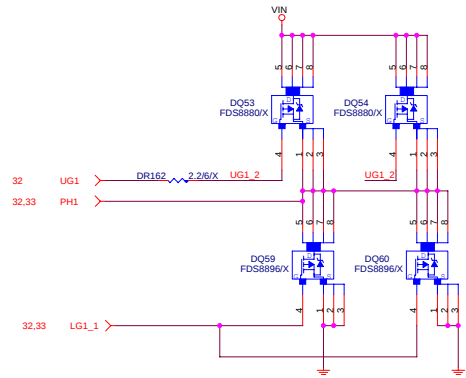
-PROHOT



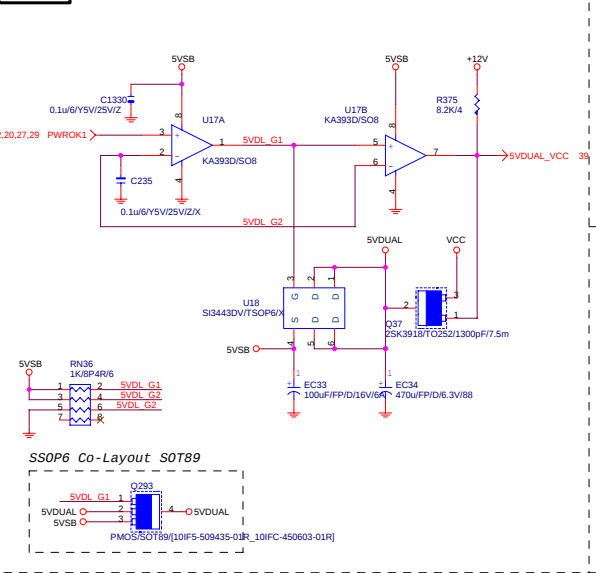
Gigabyte Technology			
Title			
COM & LPT PORT			
Size	Document Number	Rev	
Custom	965P-DS4	1.01G	
Date:	Wednesday, August 09, 2006	Sheet	28 of 41



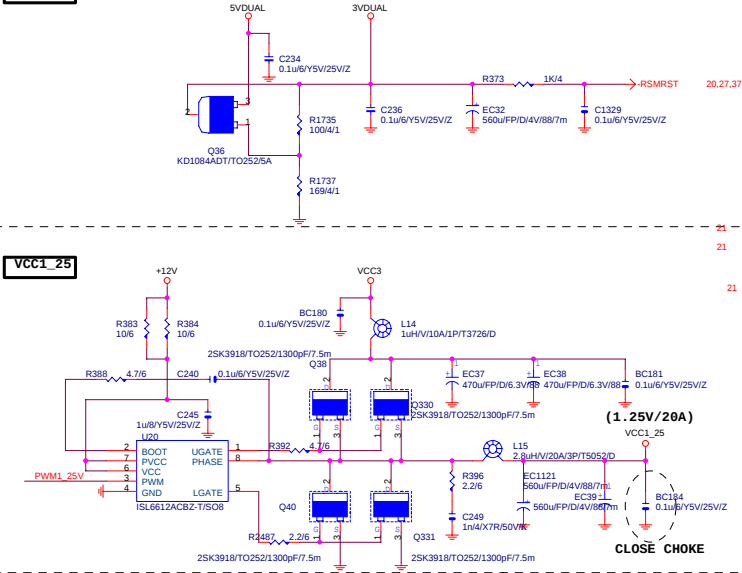




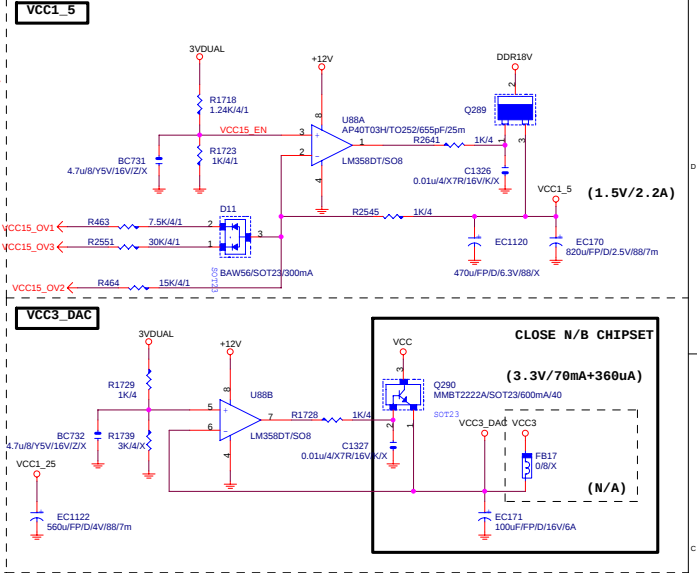
5VDUAL



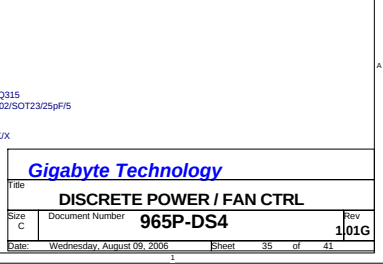
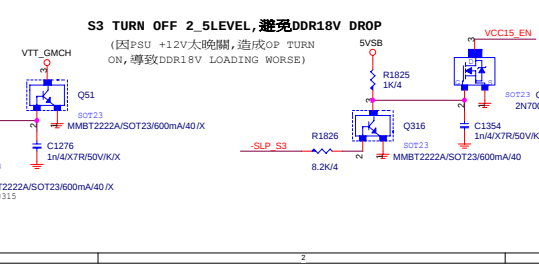
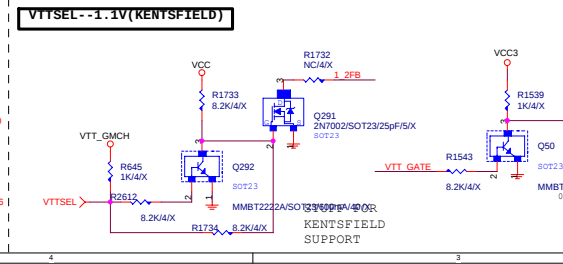
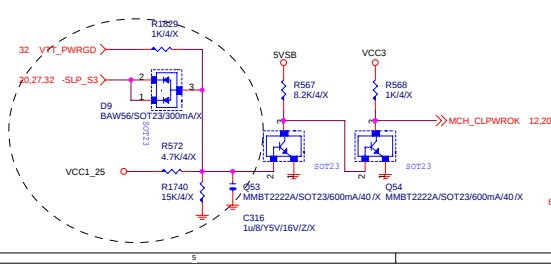
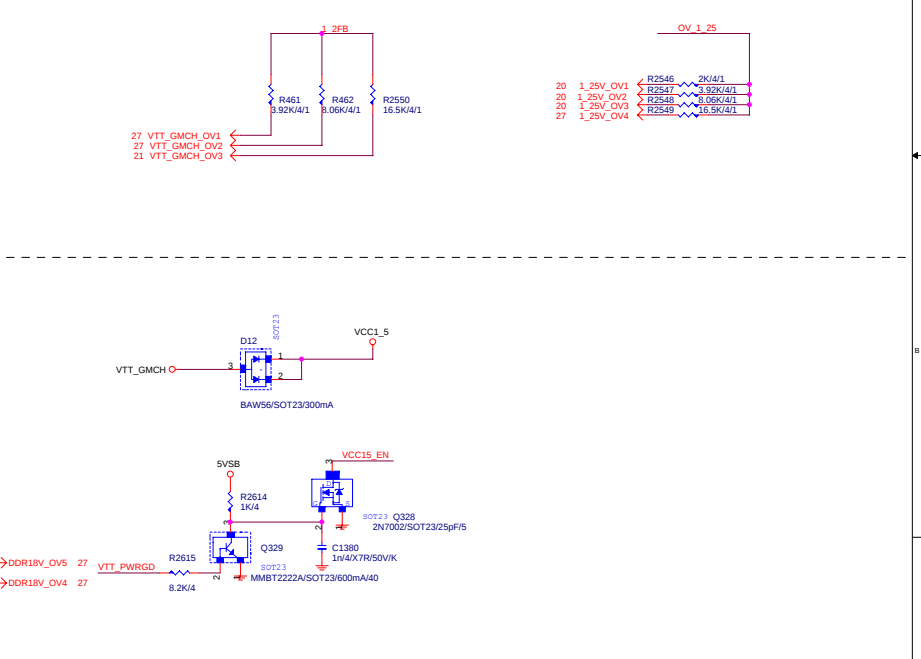
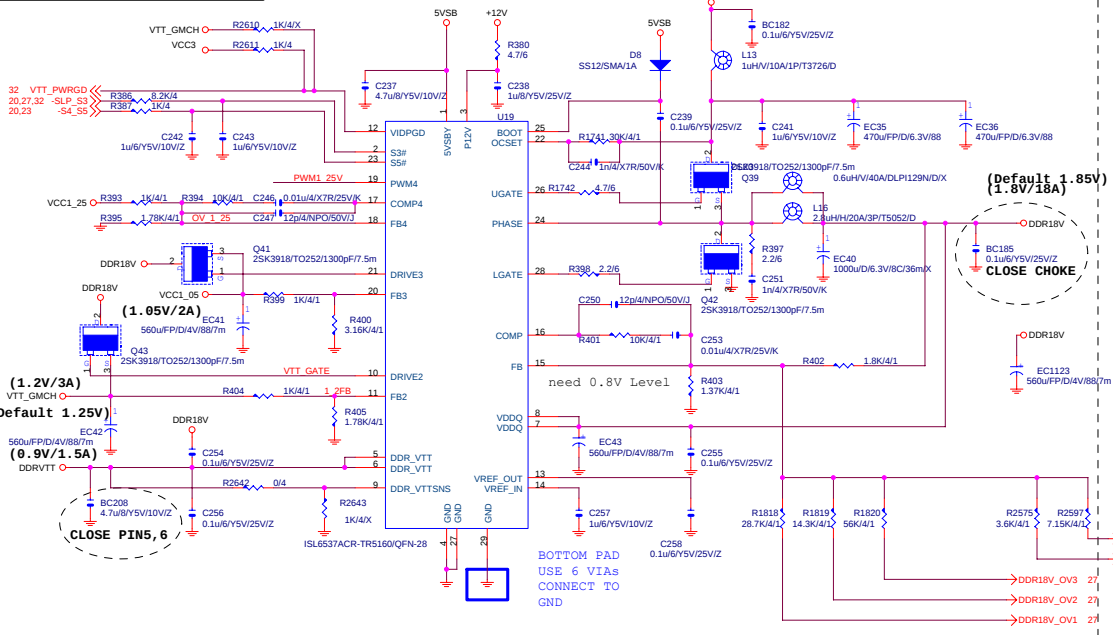
3VDUAL



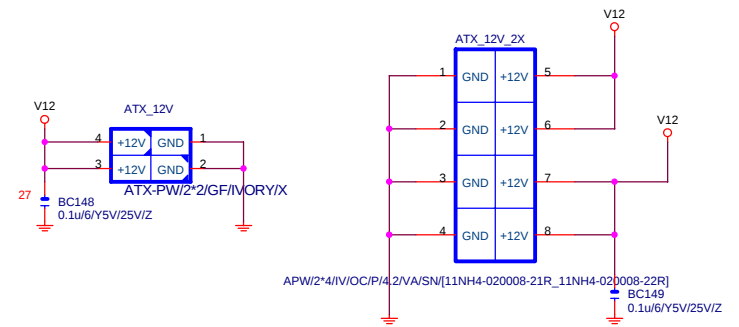
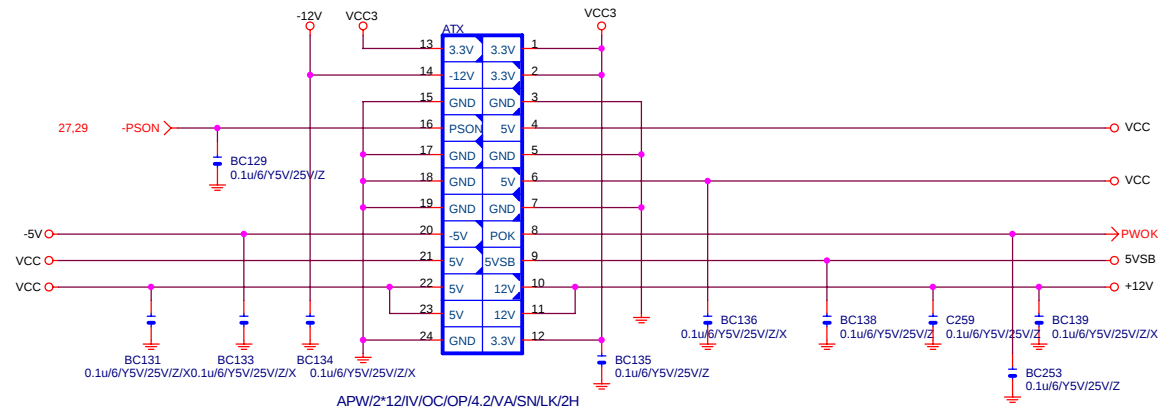
VCC1_5



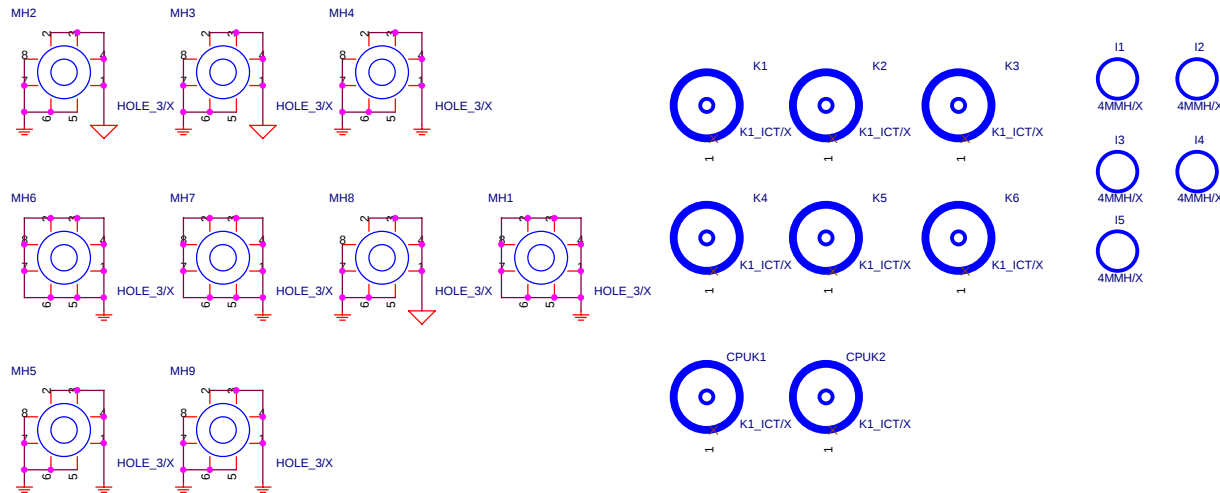
DDR18V/DDRVT/VCC1_05/VTT_GMCH



ATX POWER CONNECTOR



HOLE_3-2--->有鉛



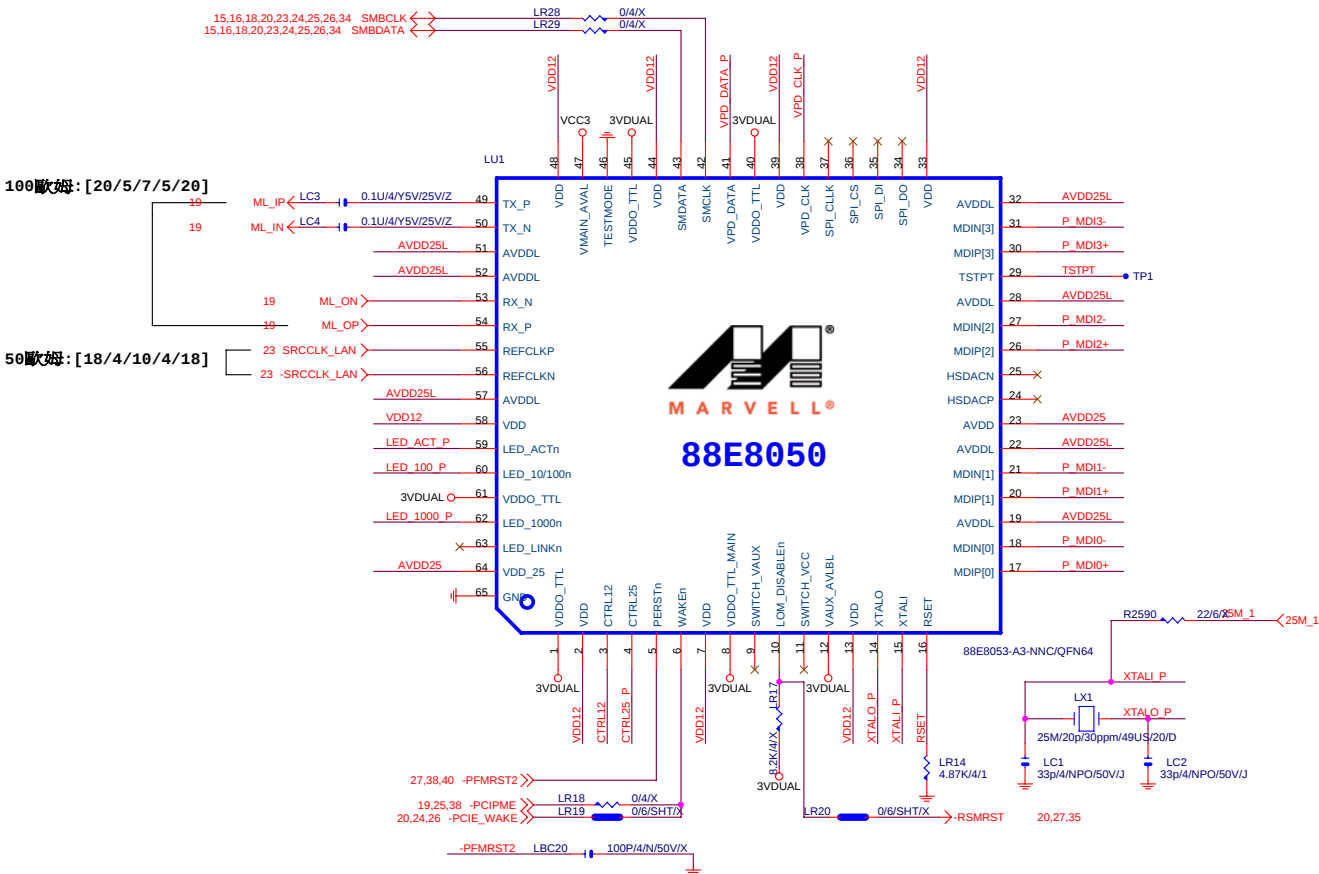
Gigabyte Technology

Title			
ATX POWER CONNECTOR			
Size	Document Number	965P-DS4	Rev 101G
Date:	Wednesday, August 09, 2006	Sheet 36	of 41

PCIE-1G LAN

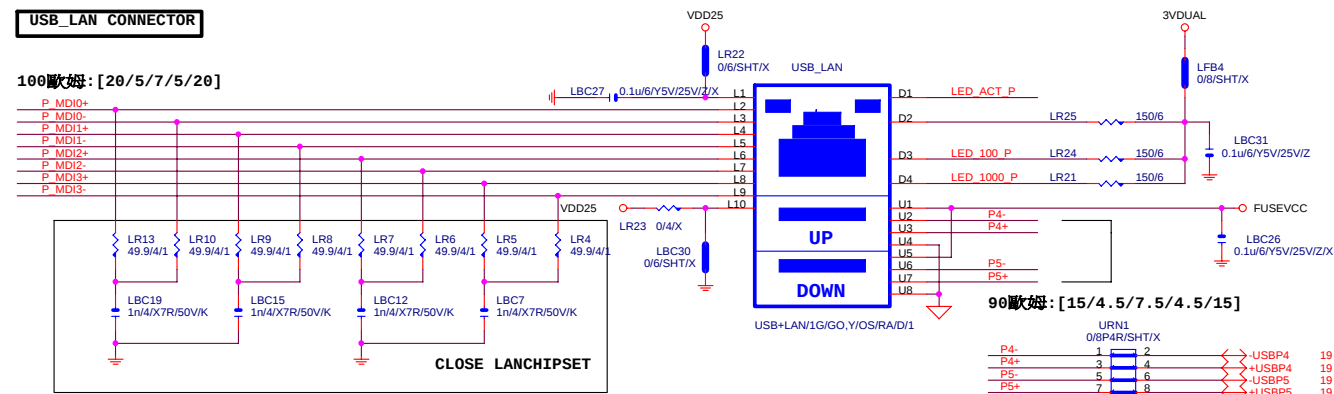
Layout Check 注意事項

1. LUL1 PIN65 需下內層GND,打 12 VIA
2. 3VDDUAL, VCC3, VDD15 L, AVDD25 L
至少下20mil寬,並且電容擺設每pin至少放一顆Bypass Cap.
3. X'TAL 25MHz 兩訊號線,TRACE 愈短愈好,線寬12mil
4. MDI正負0-3,TRACE 8:7:8, 每對之間保持 40mil

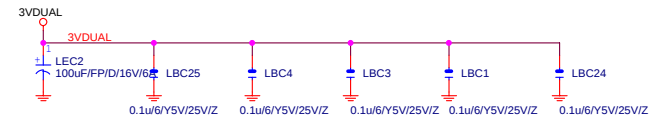


USB_LAN CONNECTOR

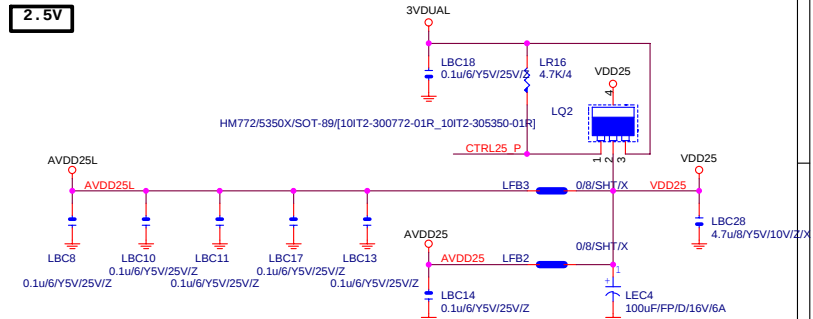
100歐姆:[20/5/7/5/20]



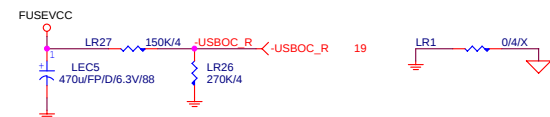
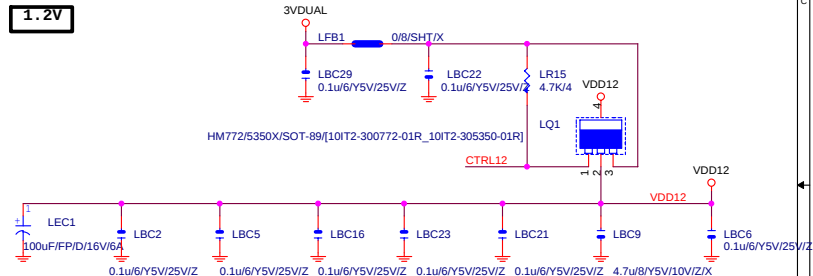
3VDUAL



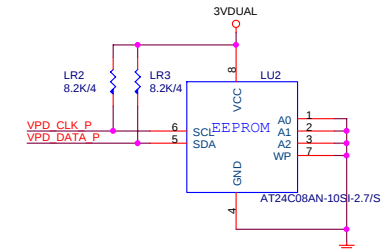
2.5V



1.2V

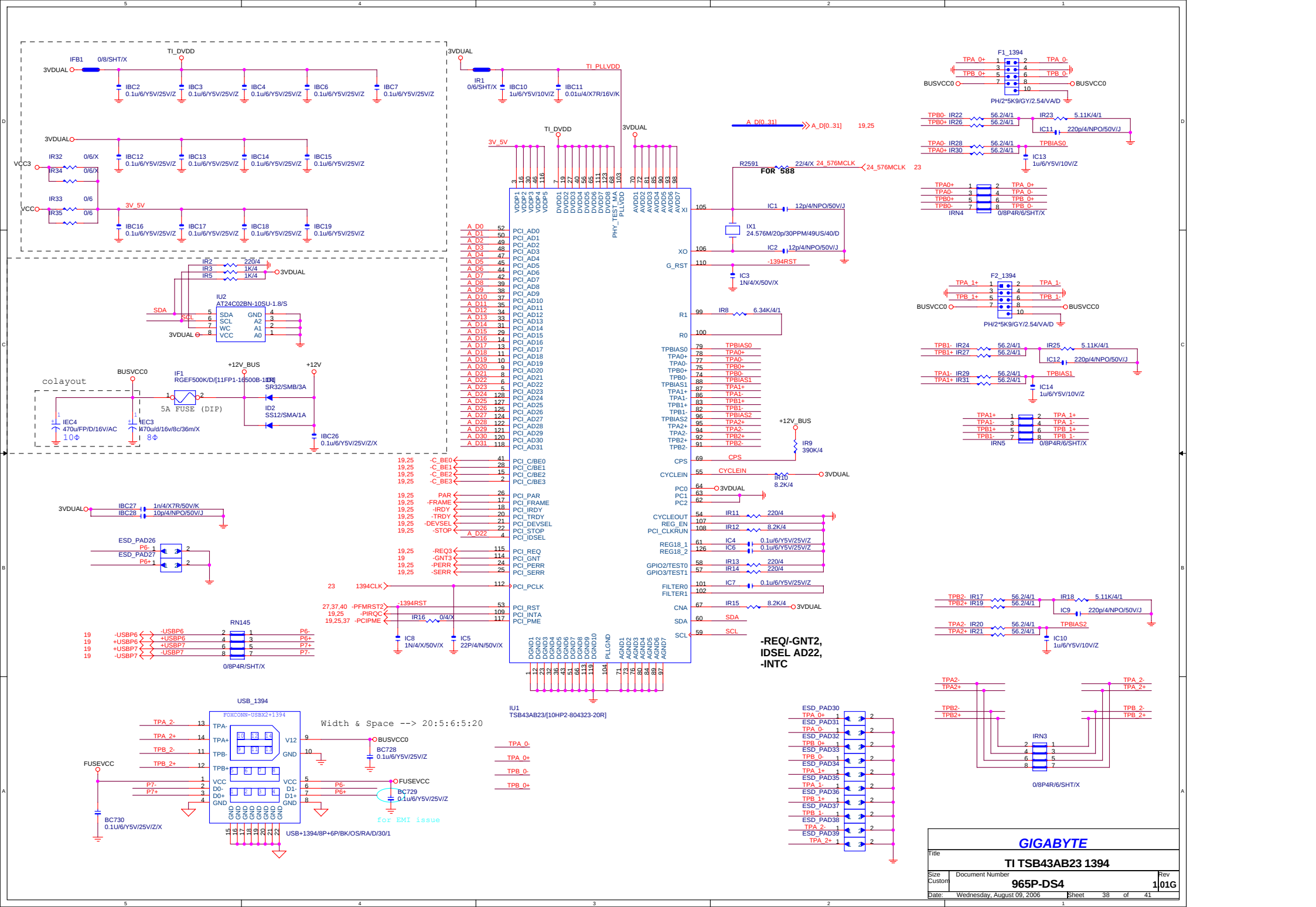


EEPROM

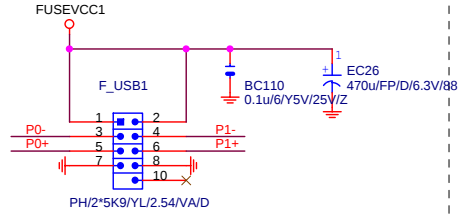
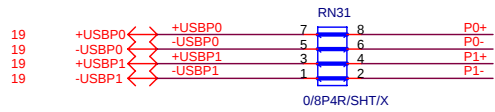


Gigabyte Technology

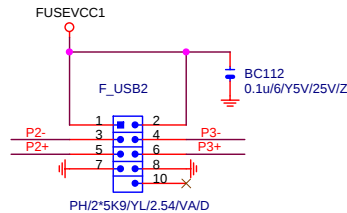
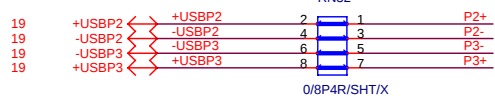
Title			
MARVELL 88E8001			
Size	Document Number		Rev
Custom	965P-DS4		101G
Date:	Wednesday, August 09, 2006	Sheet	37 of 41



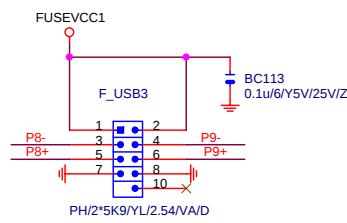
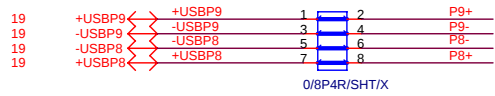
FRONT USB1



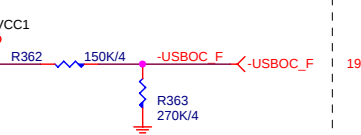
FRONT USB2



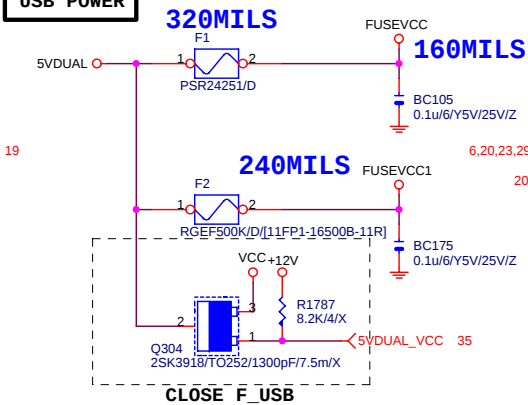
FRONT USB3



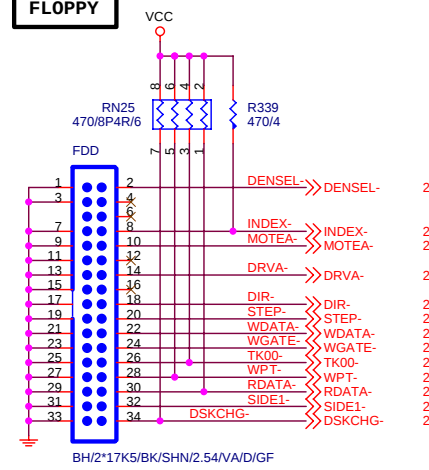
FRONT USB OC1



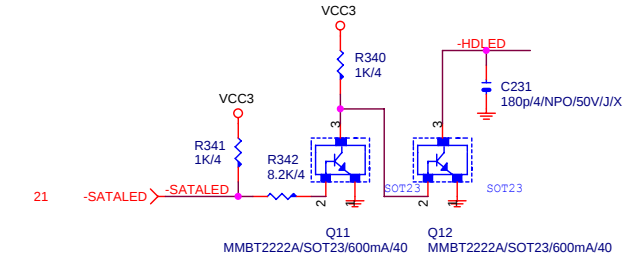
USB POWER



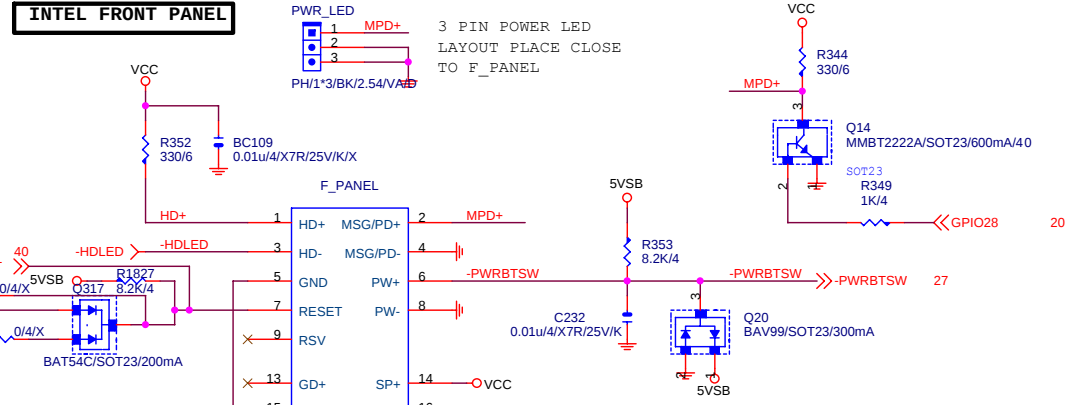
FLOPPY



SATA LED



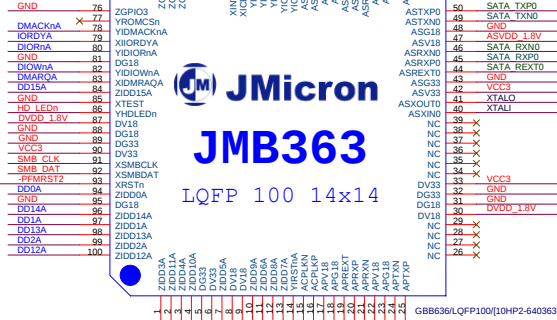
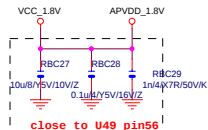
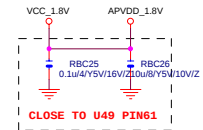
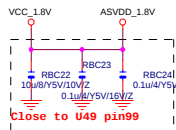
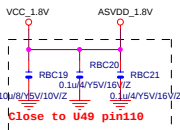
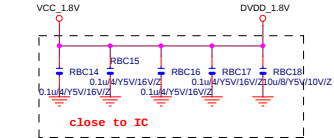
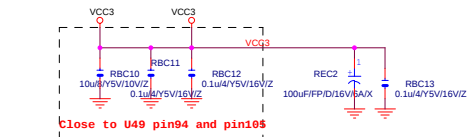
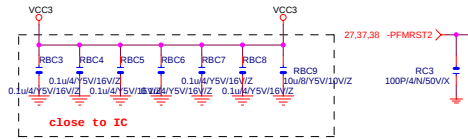
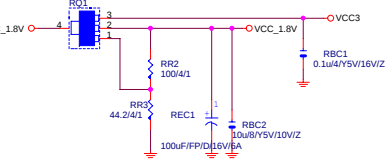
INTEL FRONT PANEL



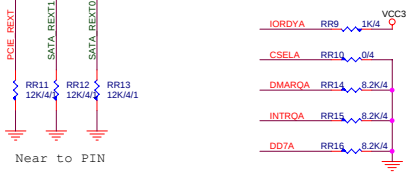
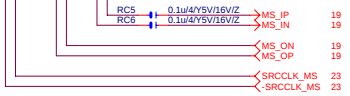
Gigabyte Technology			
Title			
FP,F_USB,USB PWR,FDD,BZ			
Size	Document Number	965P-DS4	
Custom		1.01G	
Date:	Wednesday, August 09, 2006	Sheet	39 of 41

3.3V to 1.8V Voltage Regulator

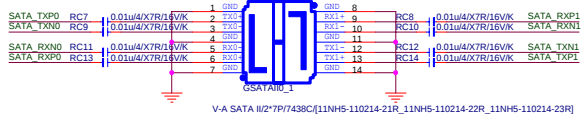
AMC11175V/SOT223/0.8A



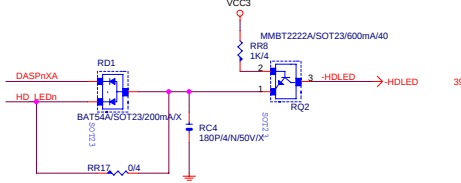
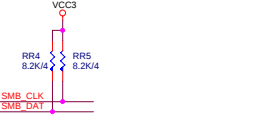
GBB836/LQFP100[10HP2-640363-20R]



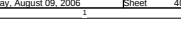
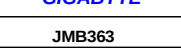
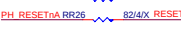
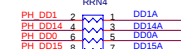
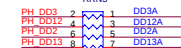
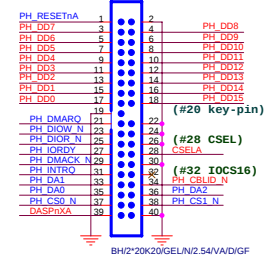
SATA Connector



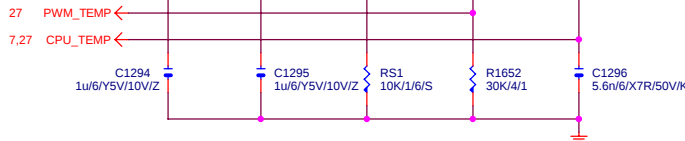
V-A SATA N2*7P/7438C[11NH5-110214-21R_11NH5-110214-22R_11NH5-110214-23R]



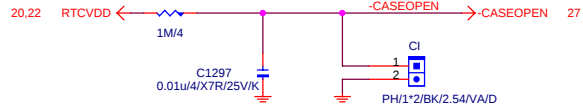
IDE Connector



TEMP H/W MONITOR

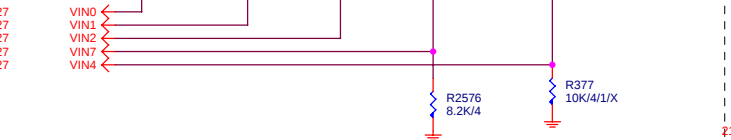


CASE OPEN

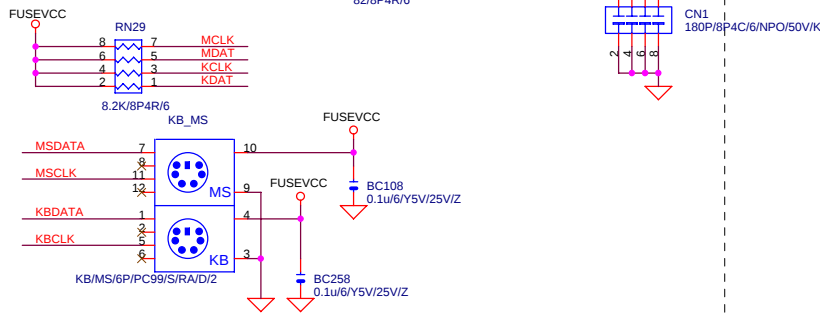


Case Open Circuits

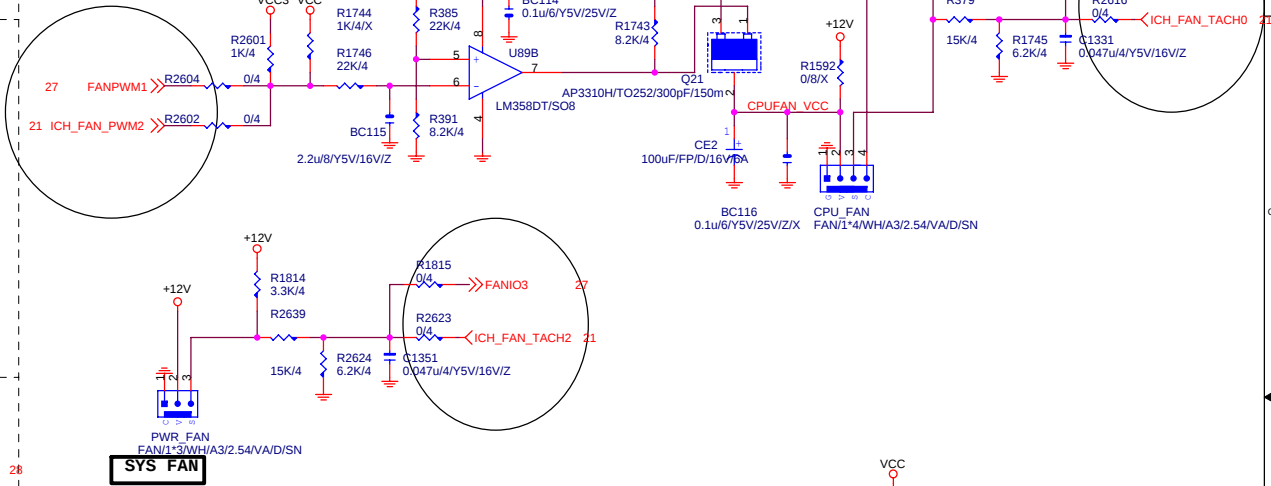
VOLTAGE-- H/W MONITOR



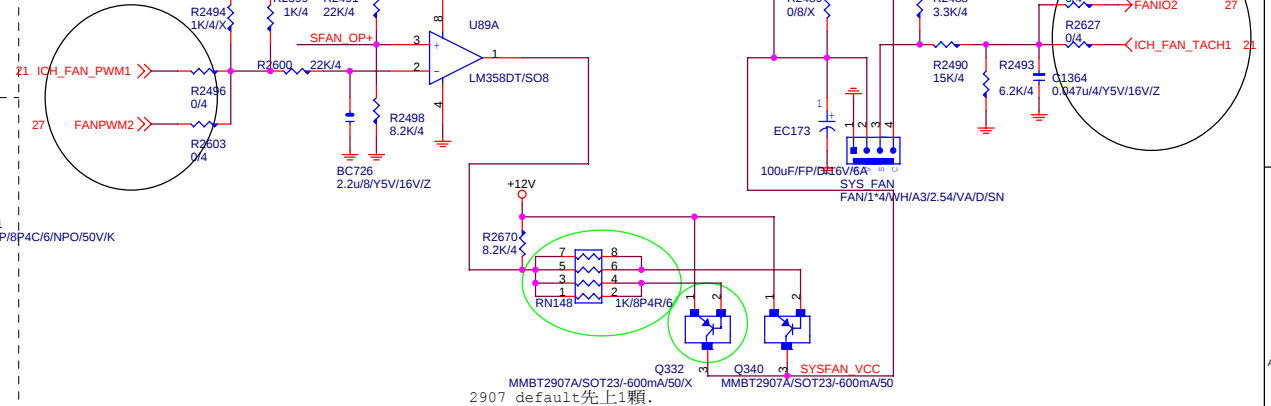
KB/MS



CPU SMART FAN



Linear SYS_FAN



Gigabyte Technology

Title

COM & LPT PORT

Size	1
Custom	

Document Number

965P-DS4

1.01G

Date: Wednesday, August 09, 2006

Sheet 41 of 41

1