

MODEL NAME: 8I865GME-775

Revision 1.0



SHEET TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04~07	CPU LGA775A
08	SPRINGDALE HOST
09	SPRINGDALE DDR
10	SPRINGDALE AGP, HUB, CSA, VGA
11	SPRINGDALE PWR
12	DDR1 CHANNEL A
13	DDR2 CHANNEL B
14	AGP 8X SLOT
15	ICH5 PCI, USB, HUB, LAN
16	ICH5 IDE, GPIO, SATA, CTRL
17	ICH5 VCC, GND
18	ICS952603 CLOCK GENERATOR
19	PCI SLOT1/SLOT2
20	PCI SLOT3,RESET
21	ITE8712(GX) LPC IO
22	IDE, BIOS
23	COM, LPT, FDD, FP, LED
24	KB, MS, F/R_USB, HM
25	AC97 ALC653

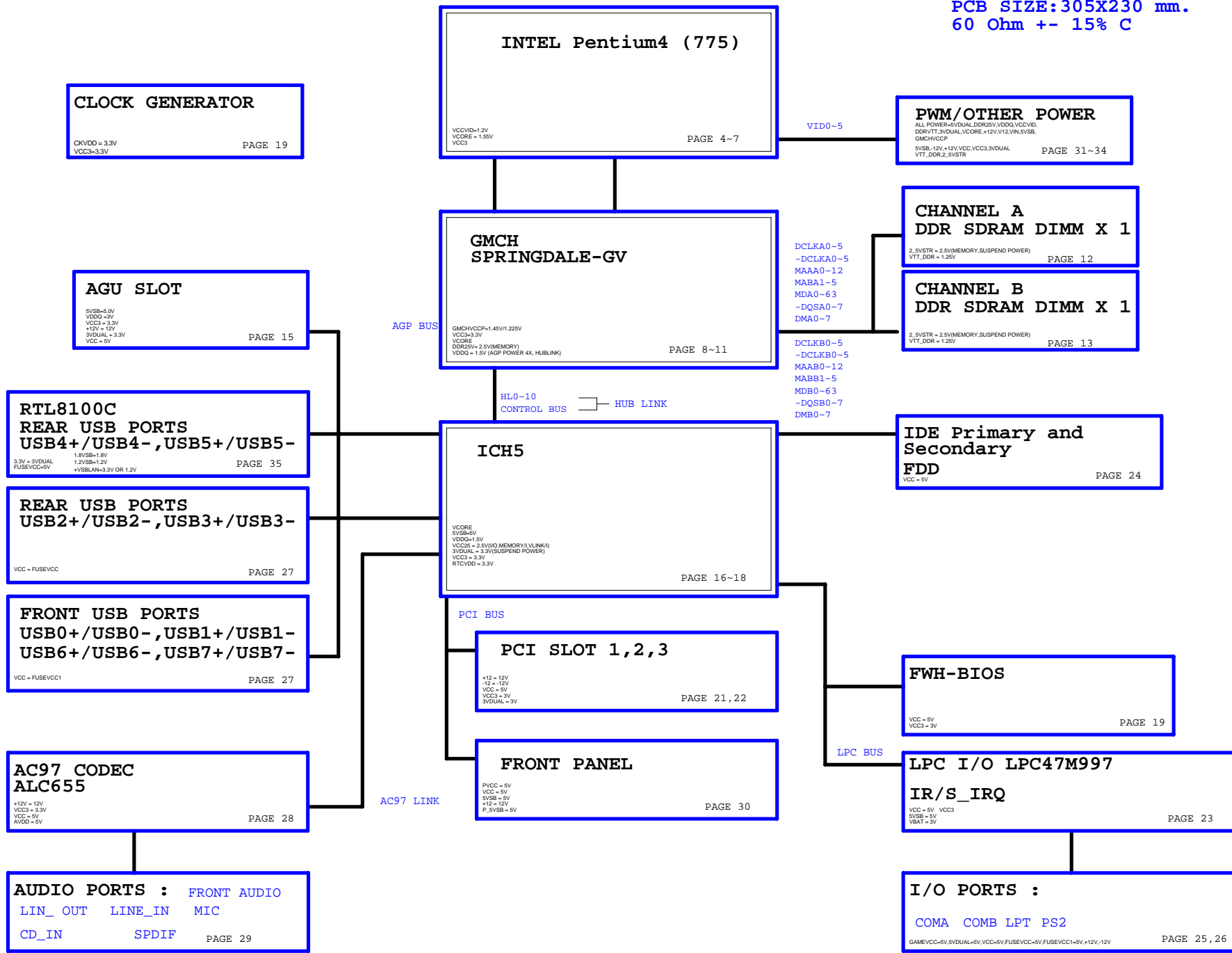
SHEET TITLE

26	AUDIO JACK
27	POWER,CPU_FAN
28	VCORE PWM
29	ATX POWER
30	DDR POWER
31	LAN RTL8100C

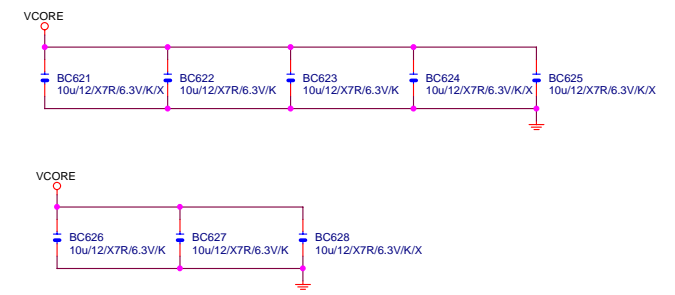
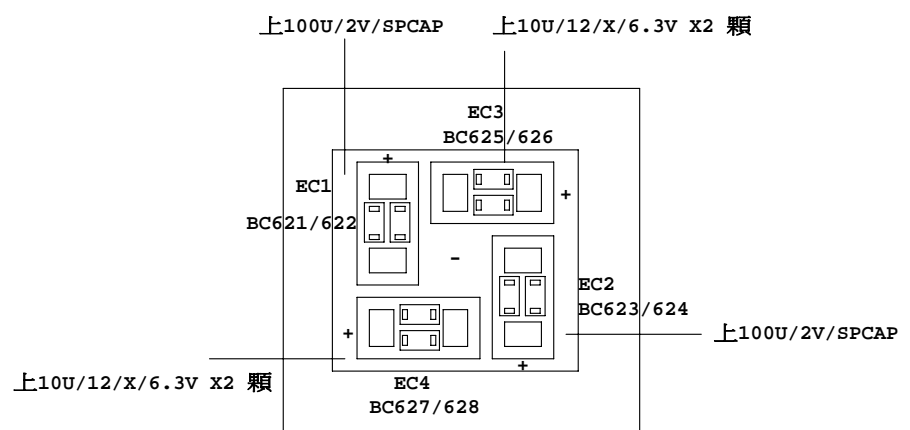
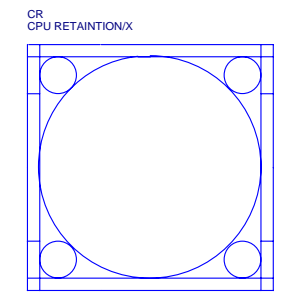
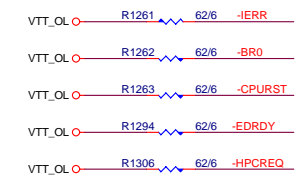
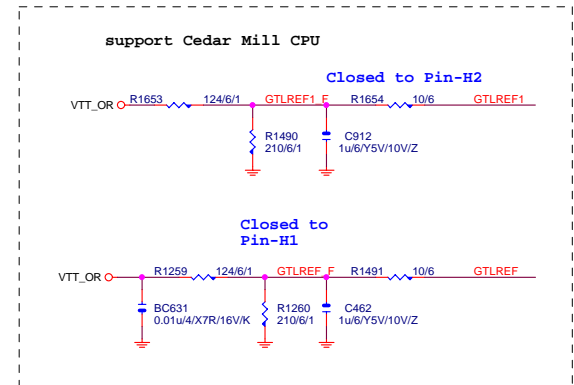
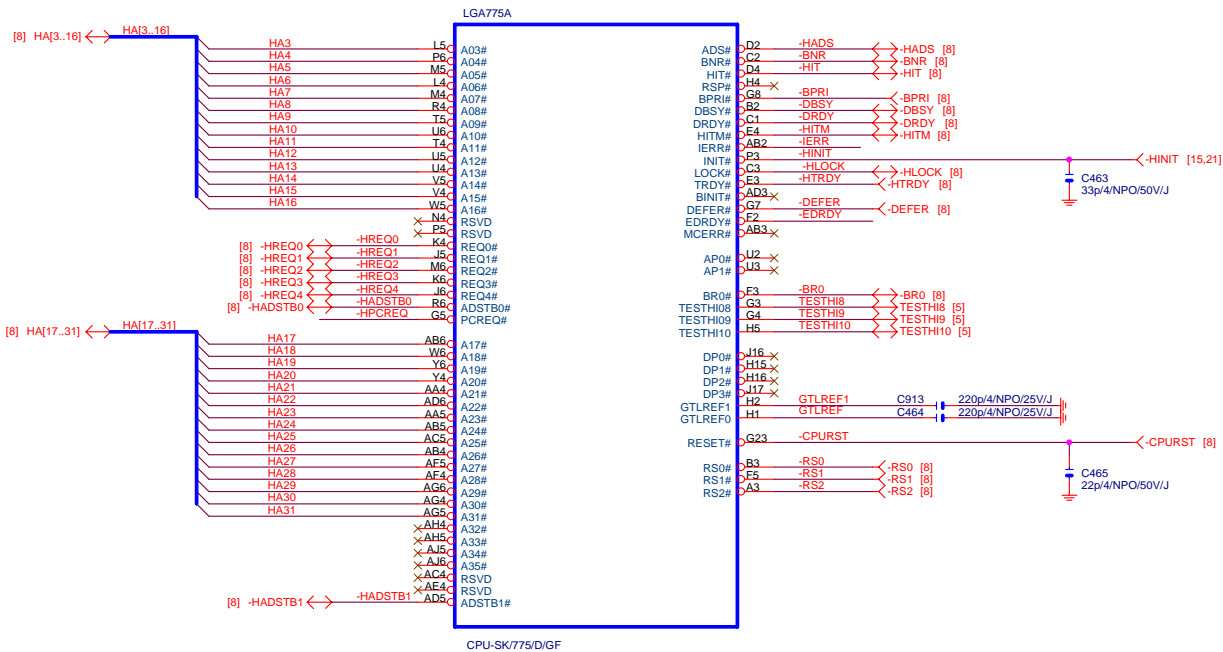
PROCESS: C			
COMPONENT SIDE			
VCC SIDE (0.5 oz. Copper)			
VCC SIDE (1 oz. Copper)			
GND SIDE (1 oz. Copper)			
SOLDER SIDE (0.5 oz. Copper)			
GIGABYTE			
Title: COVER SHEET			
Size: Custom	Document Number: 8I865GME-775		Rev: 1.0
Date:	Sheet	1 of 30	

BLOCK DIAGRAM

PCB SIZE: 305X230 mm.
60 Ohm +/- 15% C

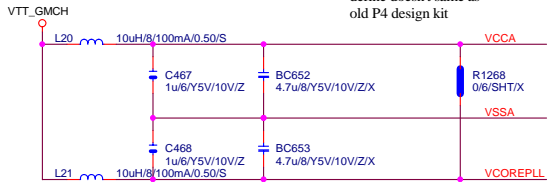


GIGABYTE			
BOM & PCB MODIFY HISTORY			
Title			
Size	Document Number	81865GME-775	Rev 1.0
Date	Page 3 of 30		



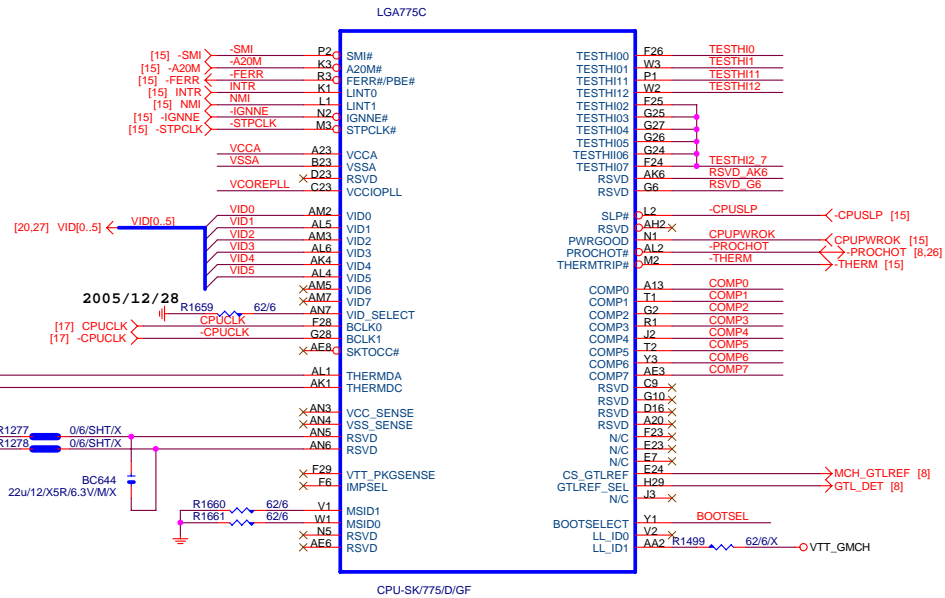
GIGABYTE		
Title P4_LGA775-A		
Size Custom	Document Number 81865GME-775	Rev 1.0
Date: Thursday, February 09, 2006	Sheet 4	of 30

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



Trace width doesn't
 less than 12 Mil

As close as possible to
 CPU socket



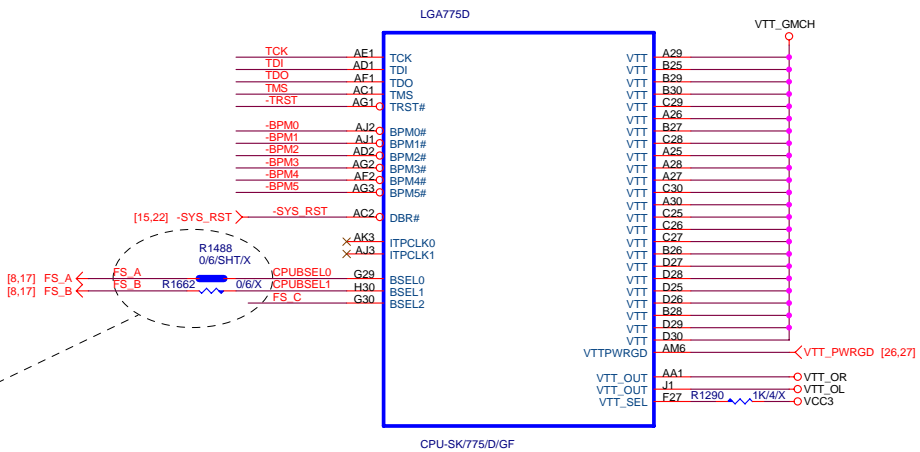
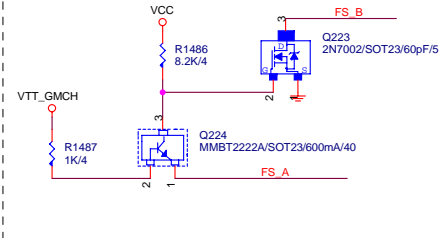
CPU

NA	FSB	FSA	FSBSEL3	FSBSEL1	FSBSEL0	Clock
			1	0	1	100MHz
			0	0	1	1.33MHz
			0	1	1	1.66MHz
			0	1	0	2.00MHz
			0	0	0	2.66MHz

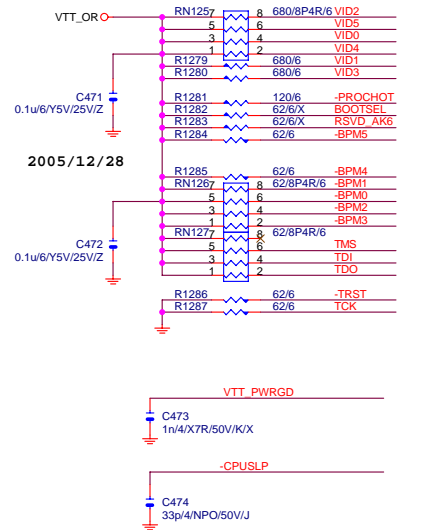
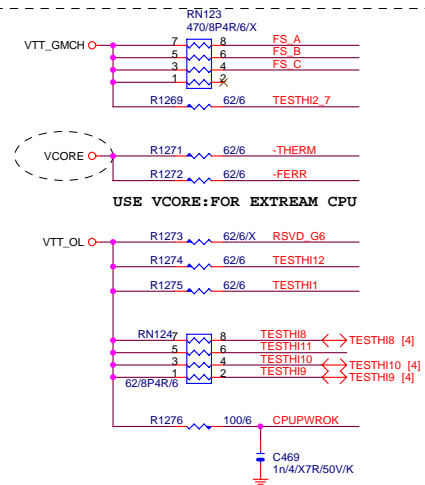
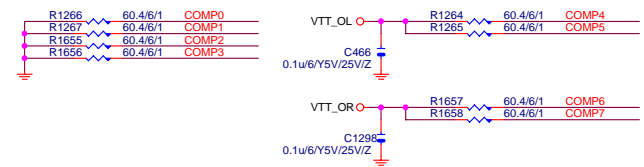
ICS952603

FS_E	FS_3	FS_C	FS_B	FS_A	Clock
1	0	0	0	0	100MHz
1	0	0	0	1	1.33MHz
1	0	0	1	1	1.66MHz
1	0	0	1	0	2.00MHz

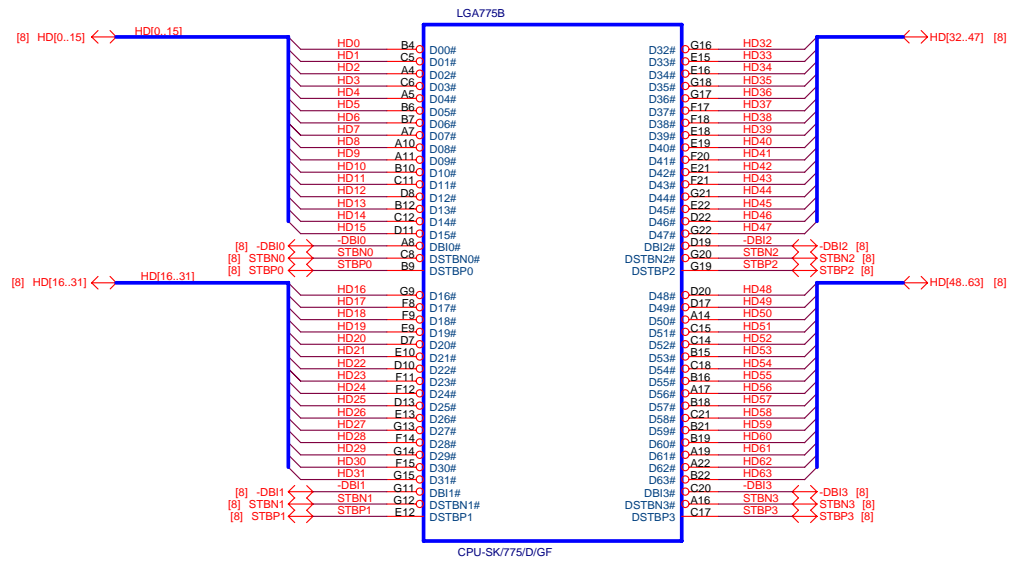
Support 1066 FSB force 800 CPU

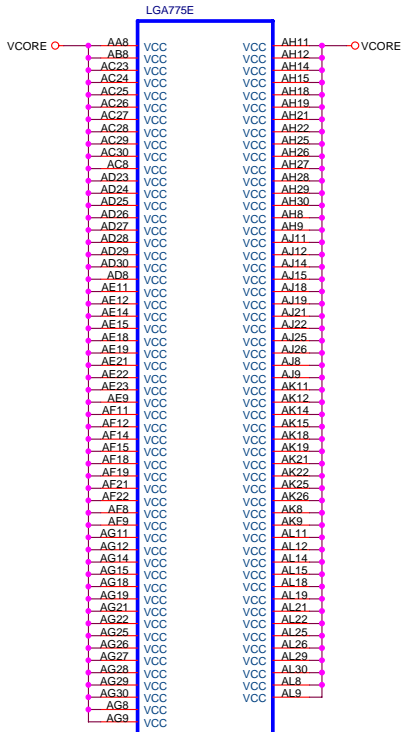


2005/11/18:REV1.1---->Support Cedar Mill CPU



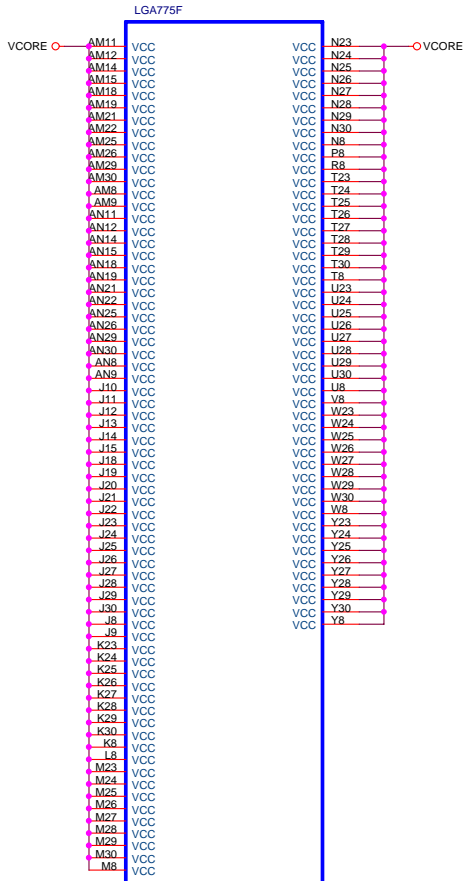
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Title P4_LGA775-B	
Size Custom	Document Number 81865GME-775
Date: Thursday, February 09, 2006	Rev 1.0
Sheet 5 of 30	





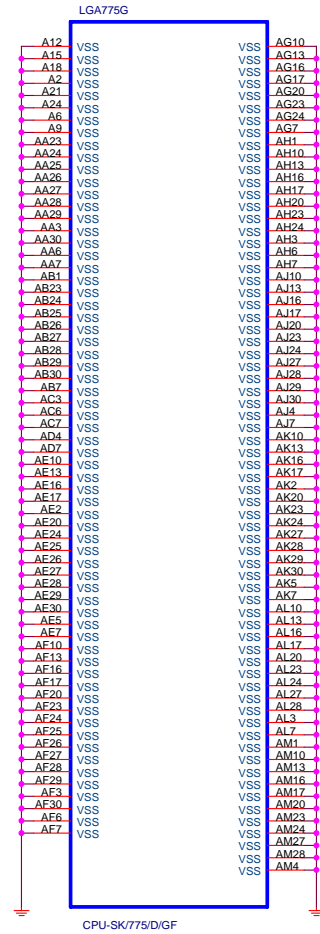
LGA775E

CPU-SK/775/D/G/F



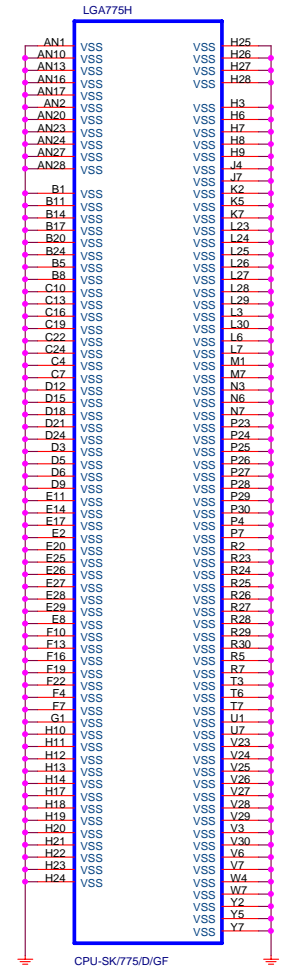
LGA775F

CPU-SK/775/D/G/F



LGA775G

CPU-SK/775/D/G/F

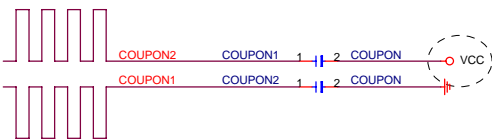
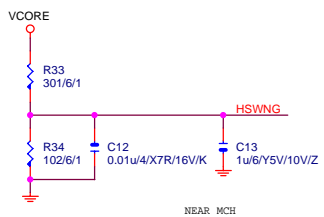
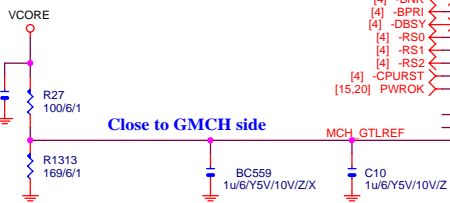
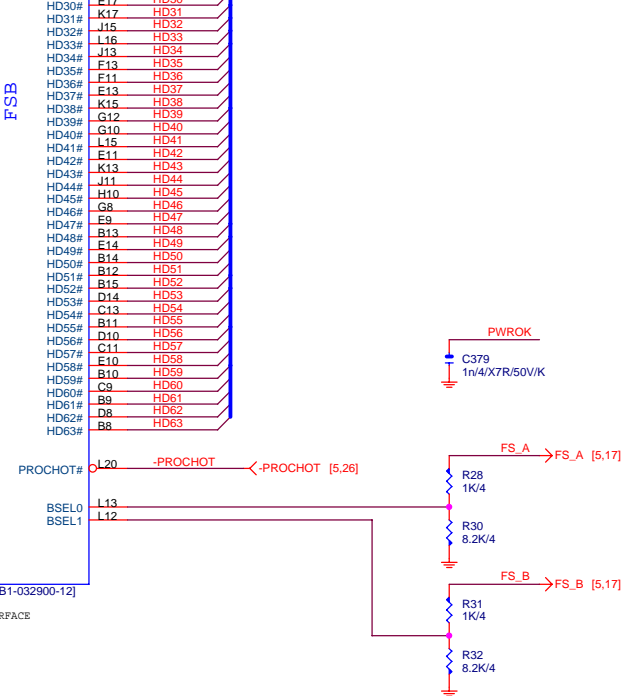
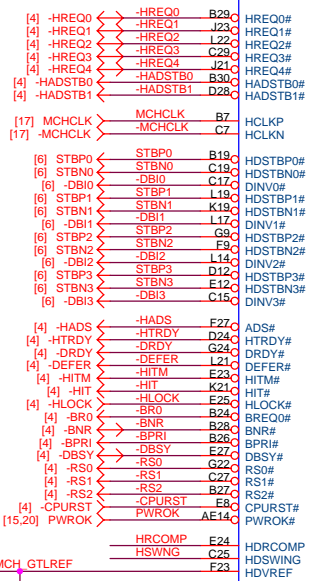
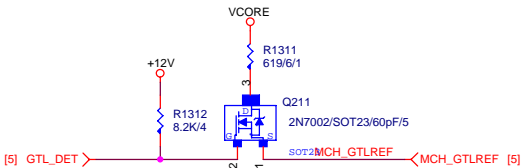
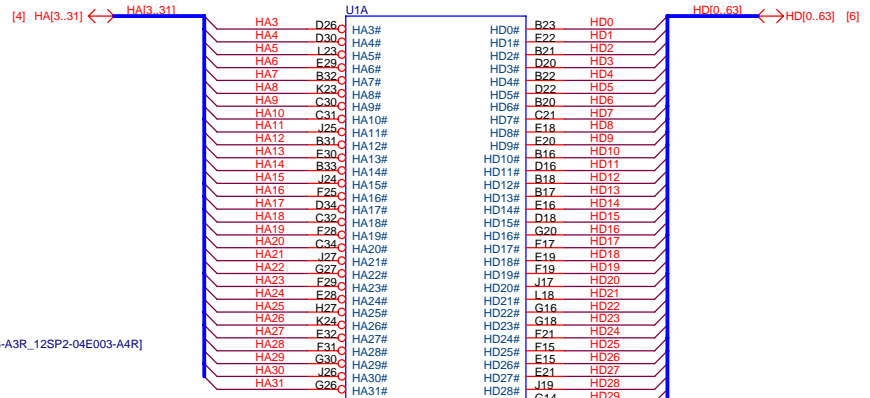
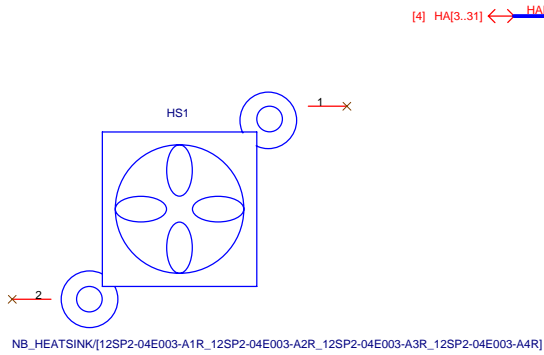


LGA775H

CPU-SK/775/D/G/F

GIGABYTE

Title			P4_LGA775-D	
Size	Document Number	81865GME-775		Rev
Custom				1.0
Date:	Thursday, February 09, 2006	Sheet	7	of 30



Title		
SPRINGDALE HOST		
Size	Document Number	Rev
Custom	81865GME-775	1.0
Date:	Sheet	8 of 30

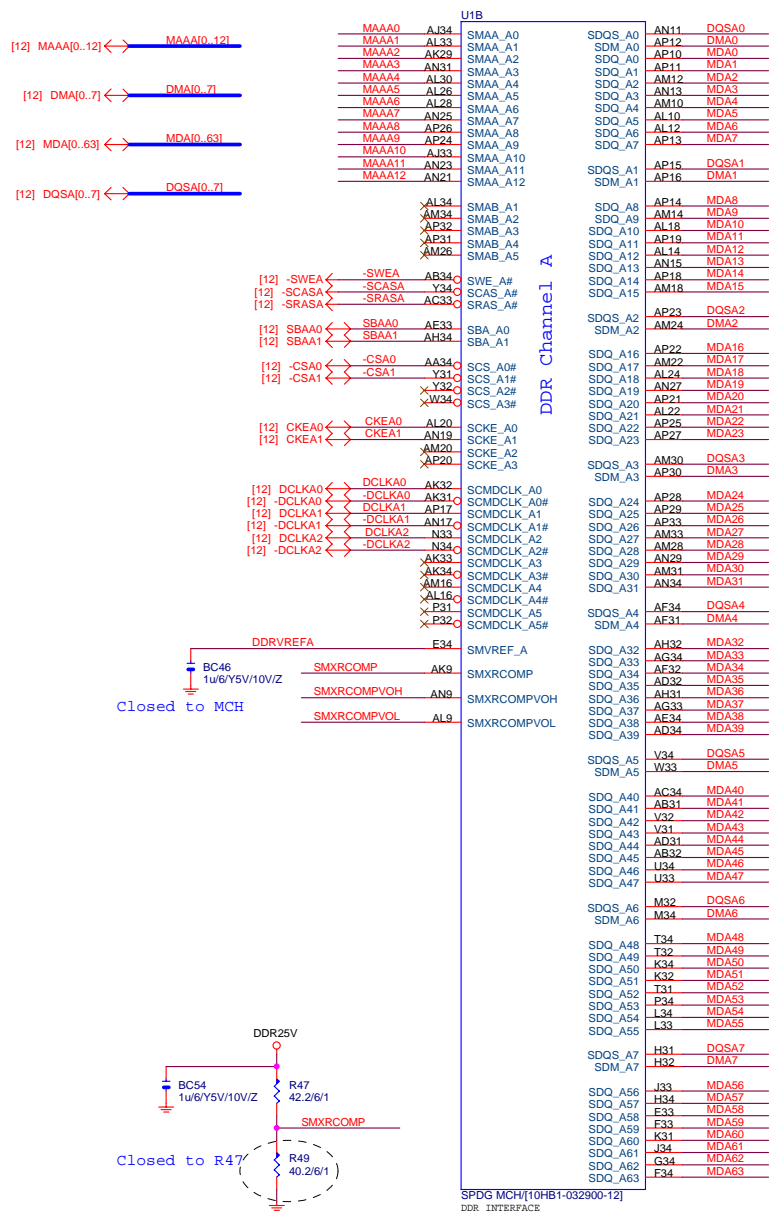


FIG 1.3V(PQI/TWINMOS DDR400)-->REV 1.0

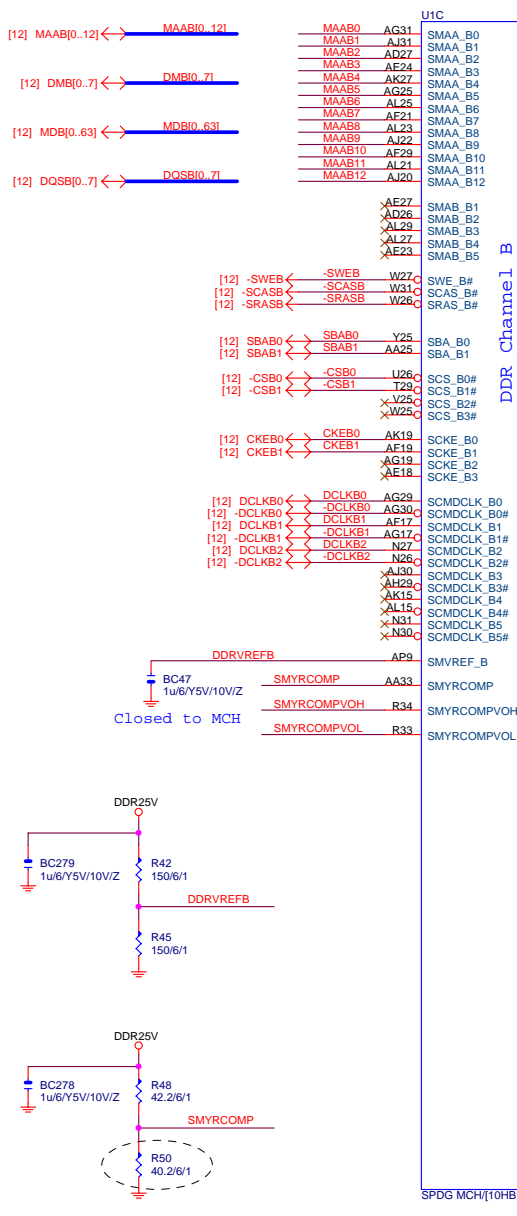
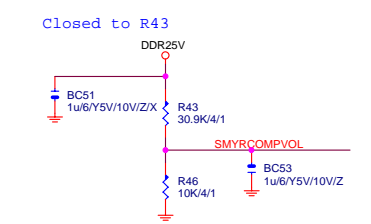
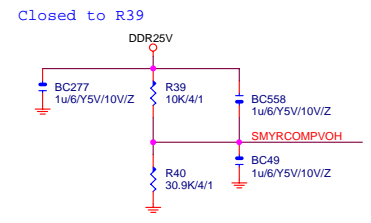
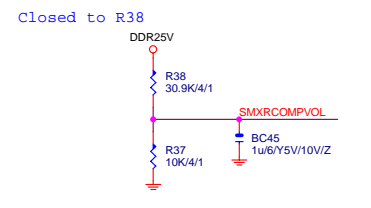
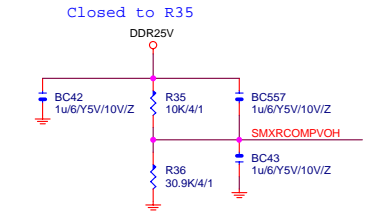


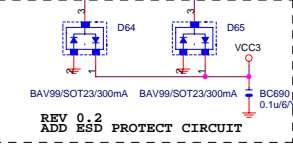
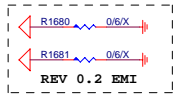
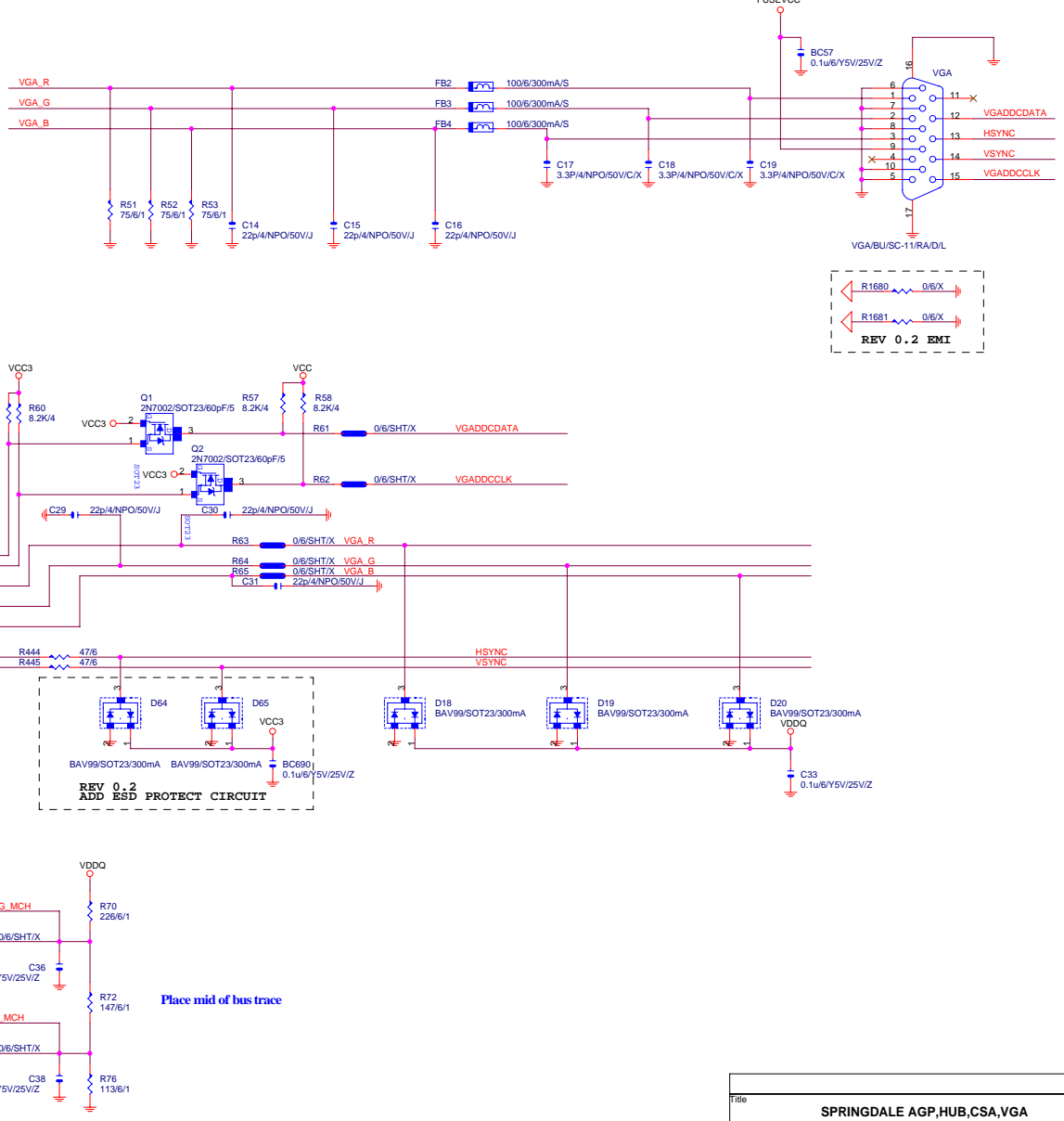
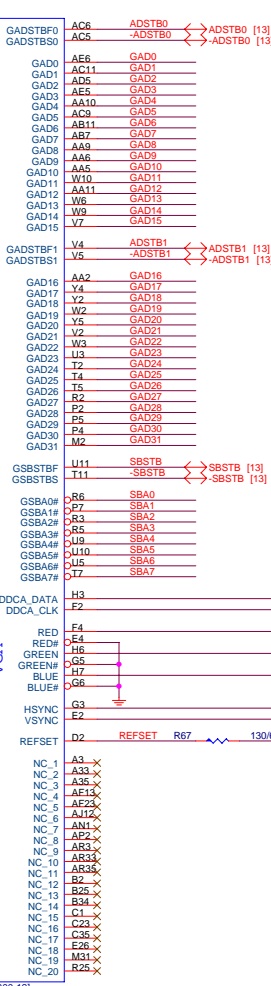
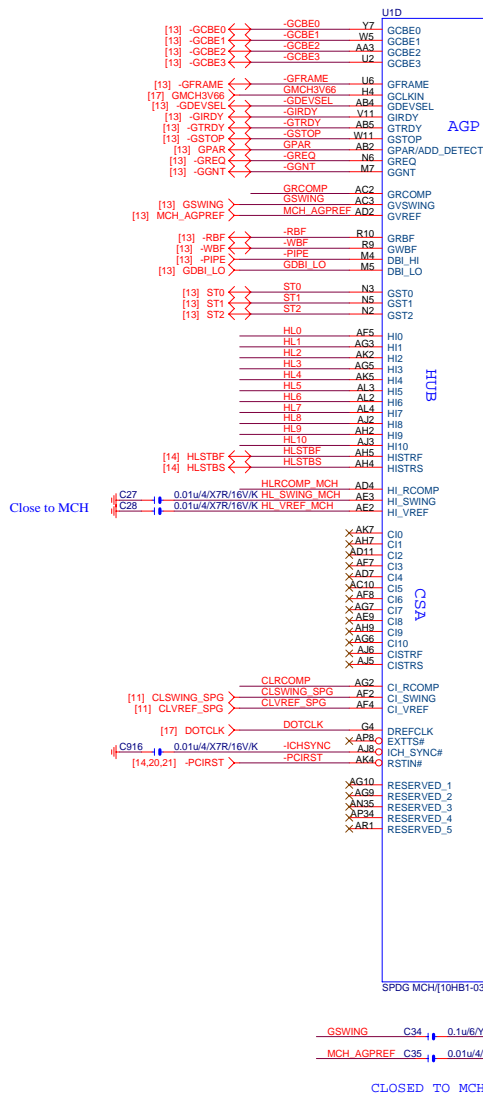
FIG 1.3V(PQI/TWINMOS DDR400)-->REV 1.0

DDR 400 1-2-3-4 CPC DISABLE
 DDR 333 SIGNAL 1 CPC ENABLE
 2 CPC DISABLE
 DUAL 2 CPC ENABLE
 DUAL 4 CPC DISABLE

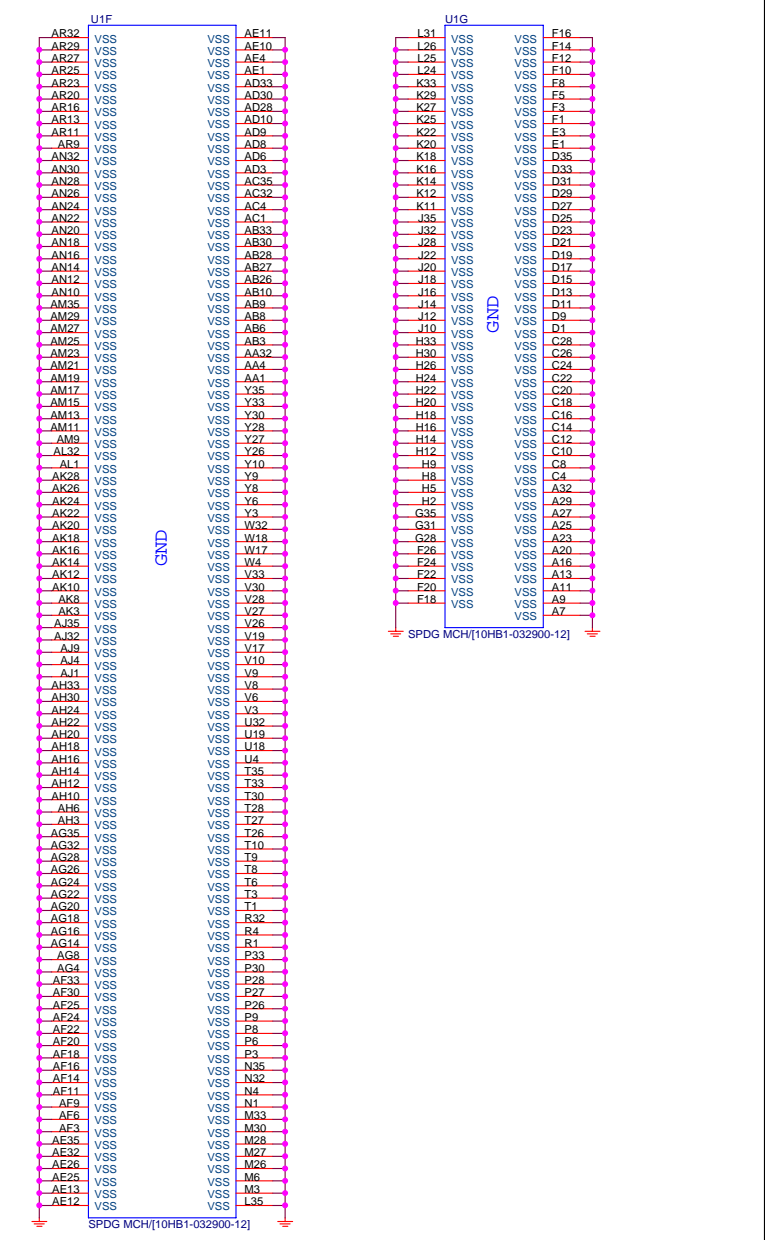
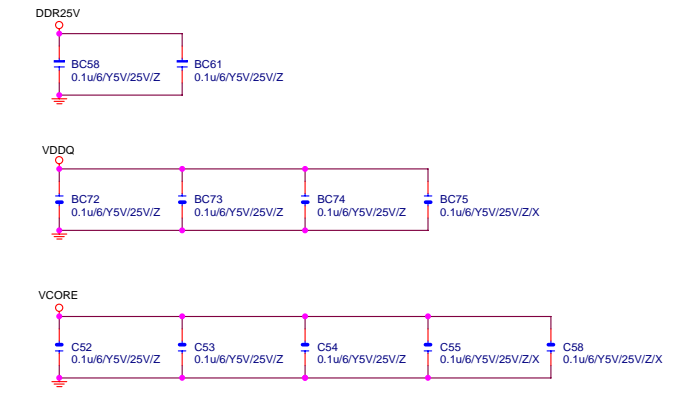
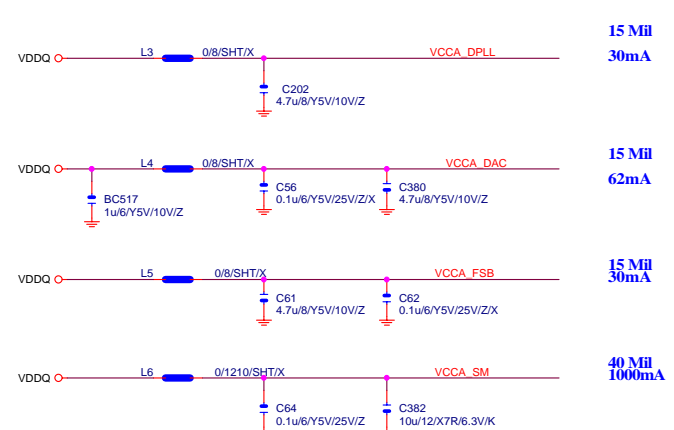
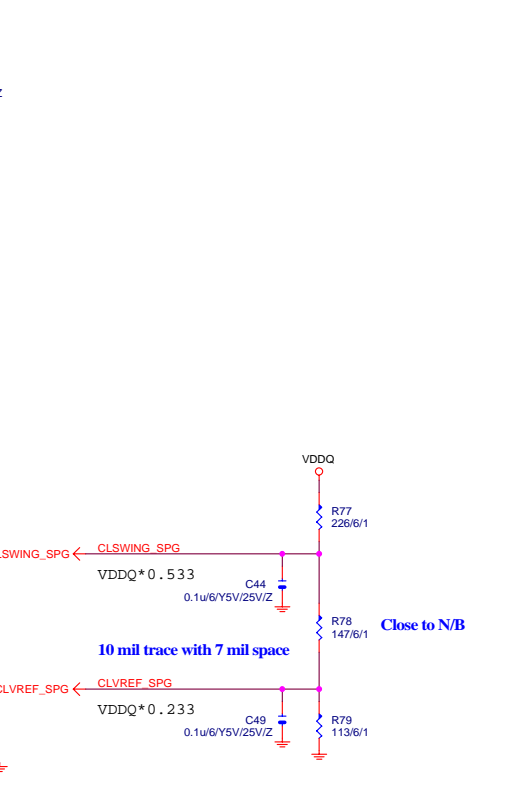
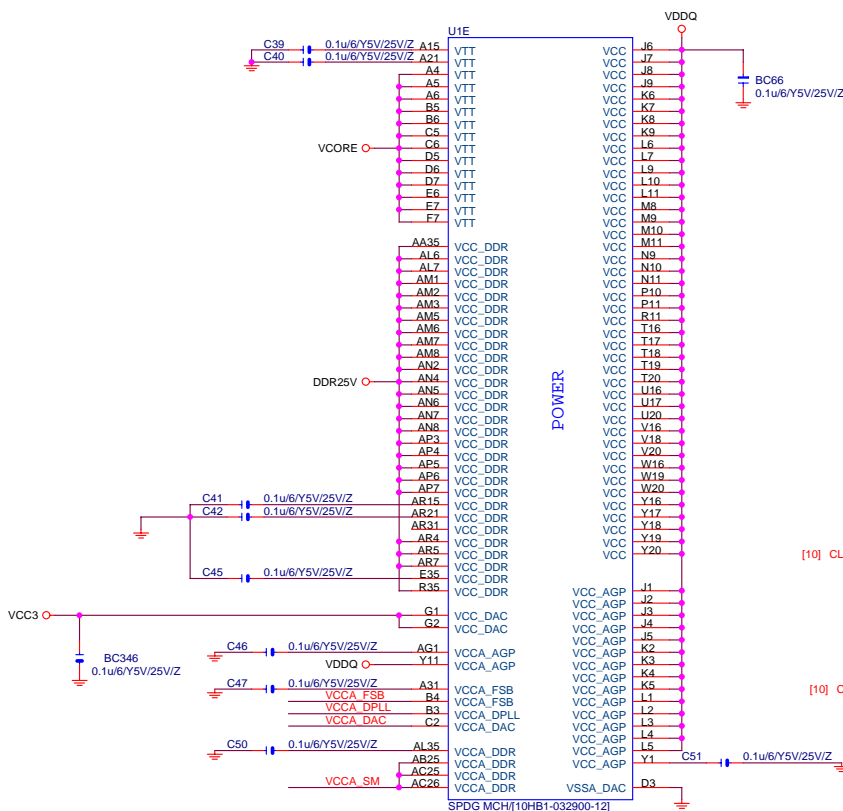


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Size	Document Number			Rev	
Custpm	81865GME-775			1.0	
Date:			Sheet	9	of 30

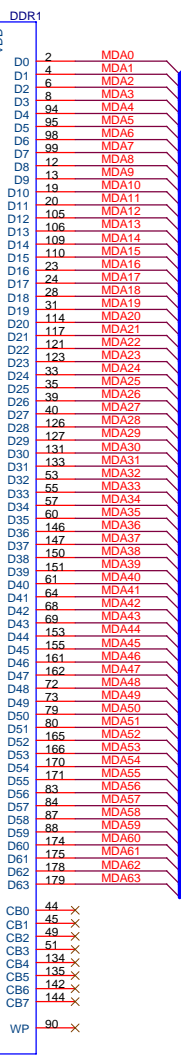
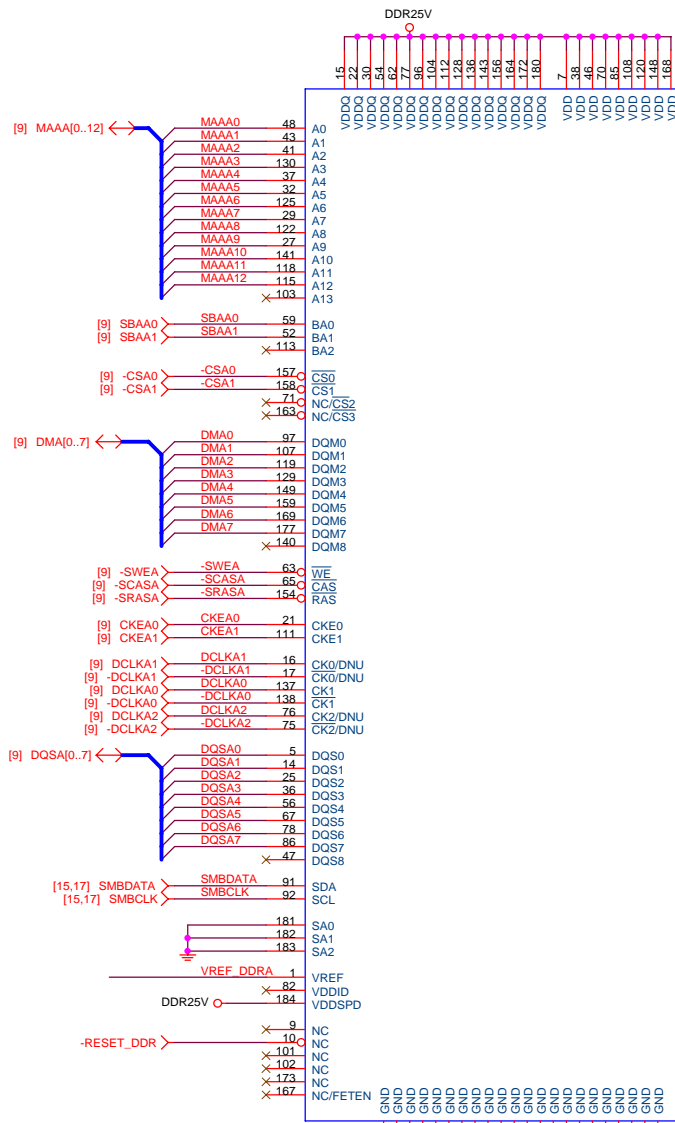
- [13] GAD[0..31] ← GAD[0..31]
- [13] SBA[0..7] ← SBA[0..7]
- [14] HL[0..10] ← HL[0..10]



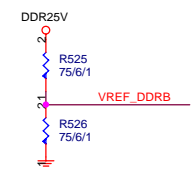
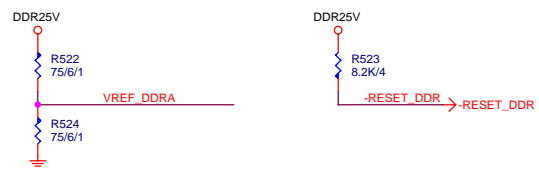
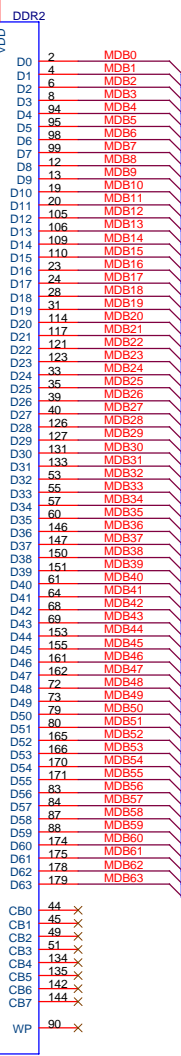
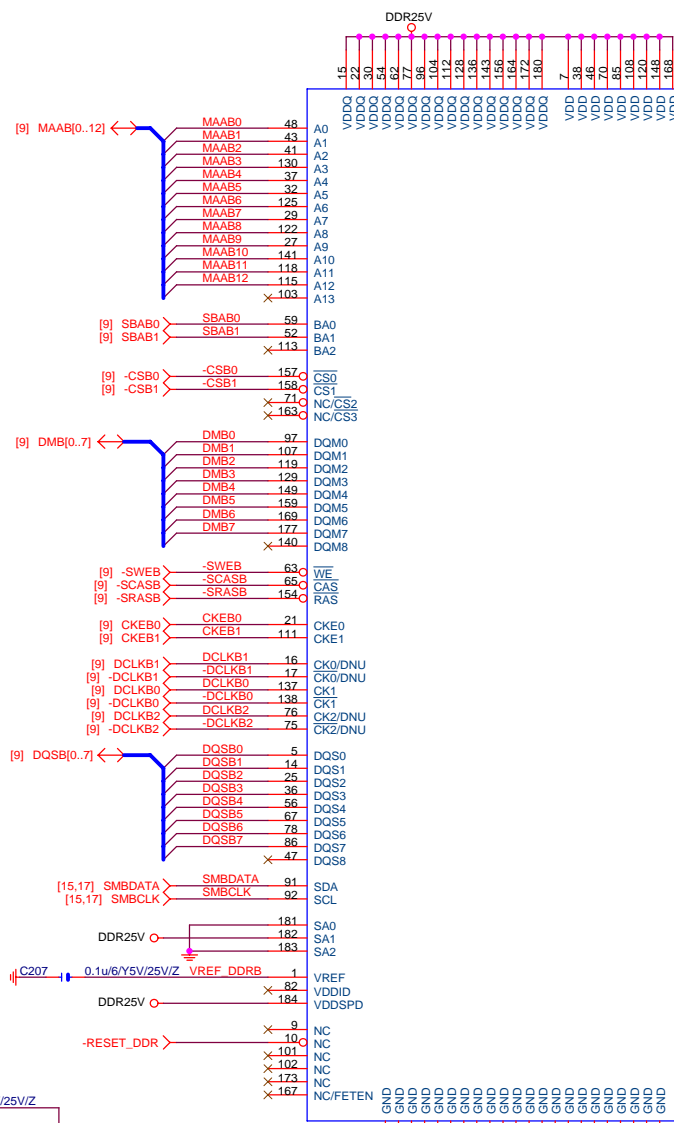
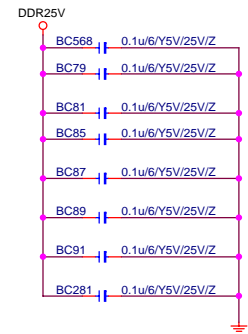
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Size	Document Number	81865GME-775	
Custom			Rev 1.0
Date:		Sheet	10 of 30



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Size	Document Number				Rev
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Date:	Sheet 11 of 30				



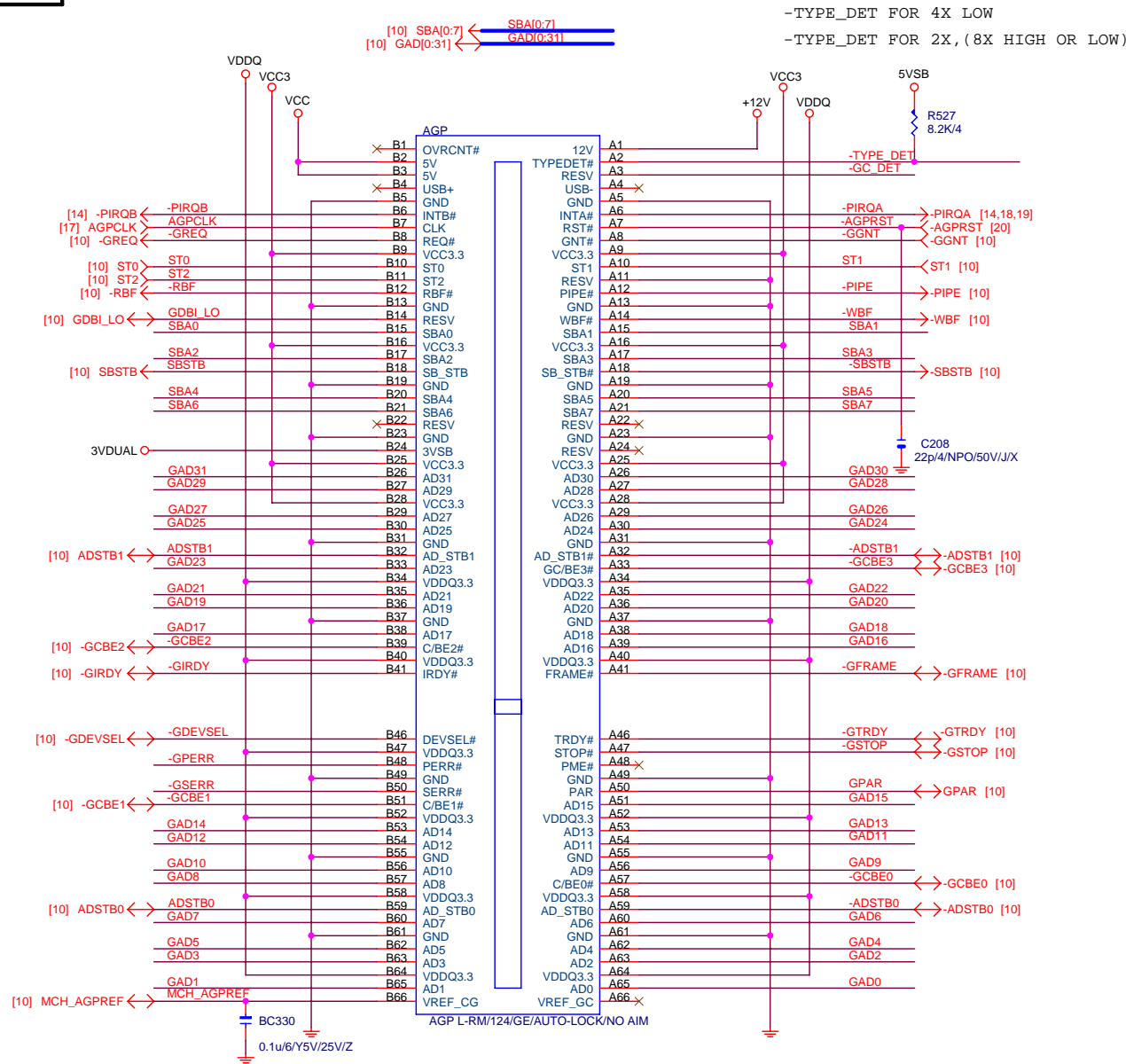
**DDR25V
Decouple**



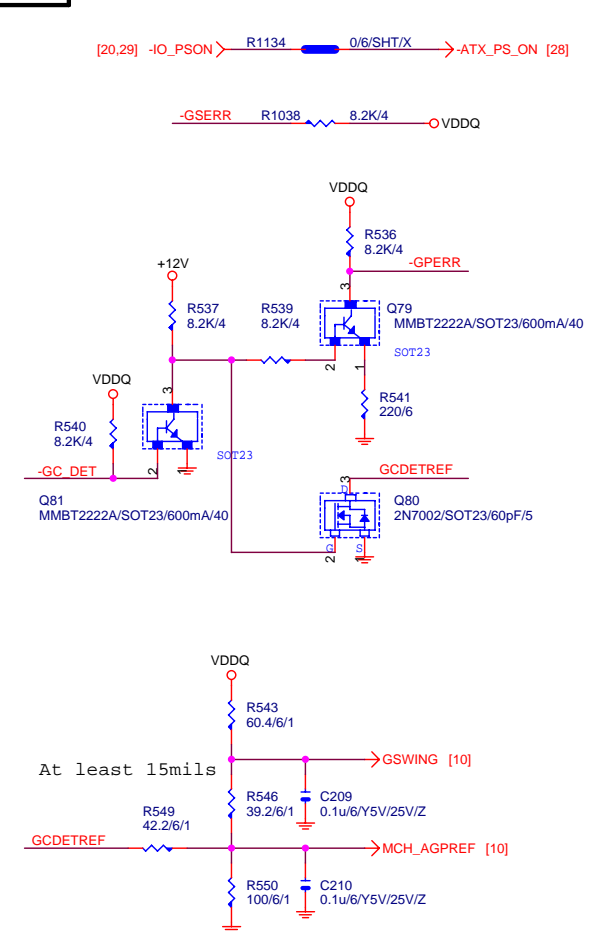
SIGABYTE			
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Size	Document Number	Rev	
Custpm	81865GME-775	1.0	
Date	Sheet 12 of 30		

For Register DDR Support

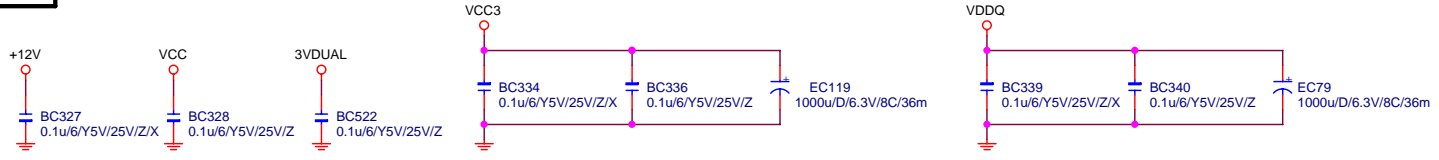
AGP SLOT



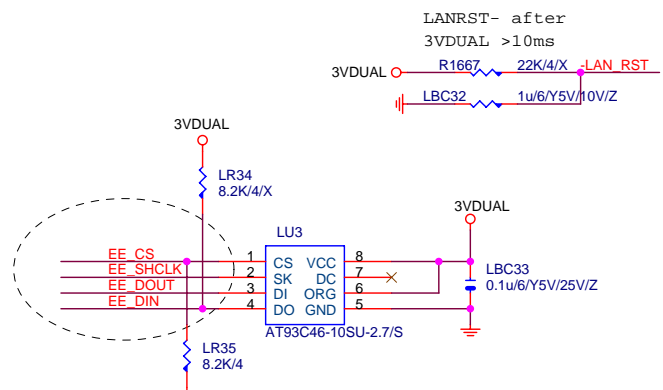
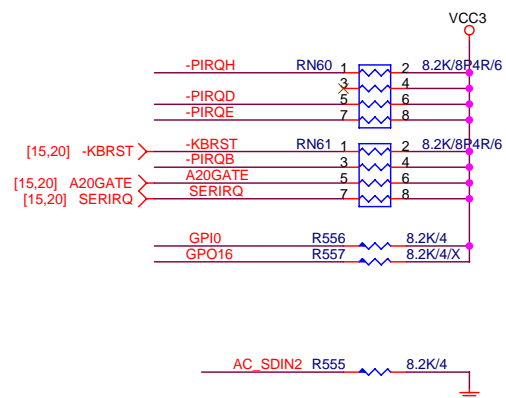
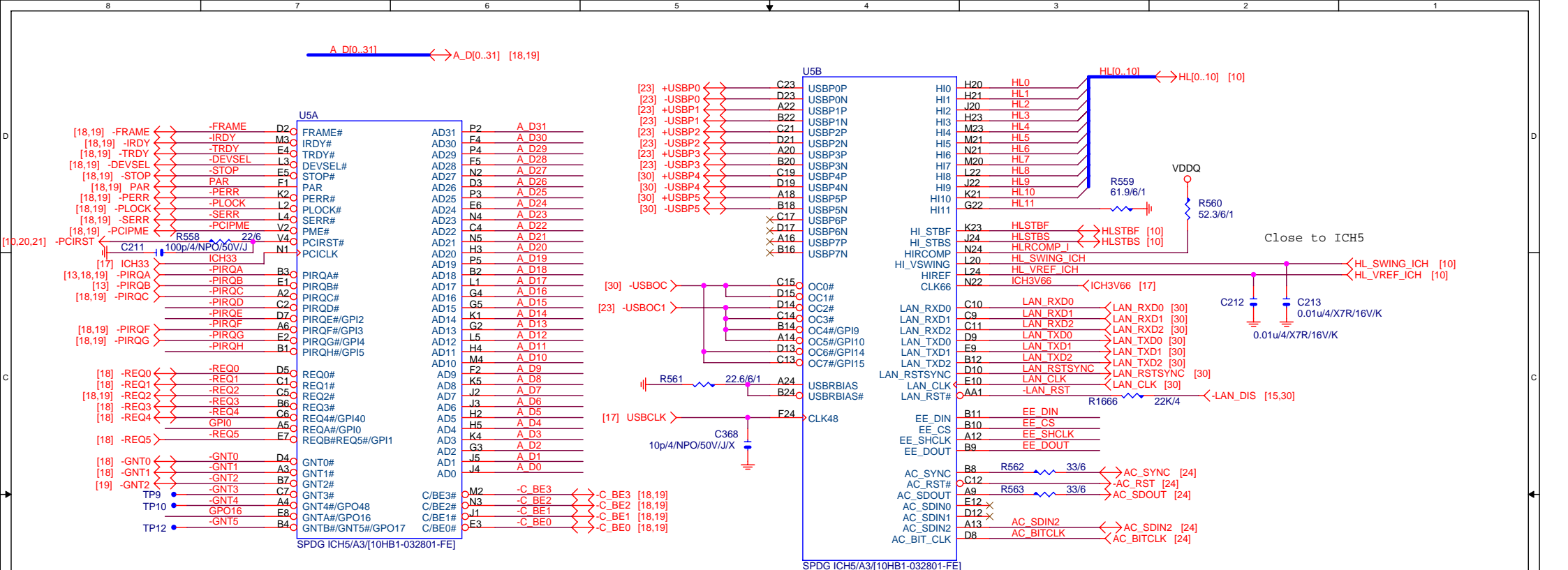
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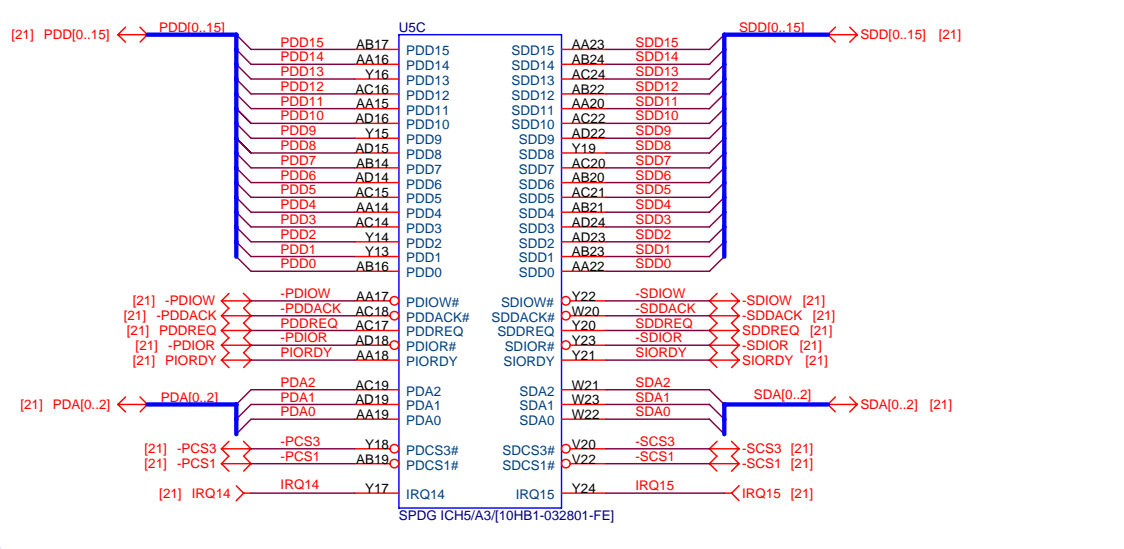
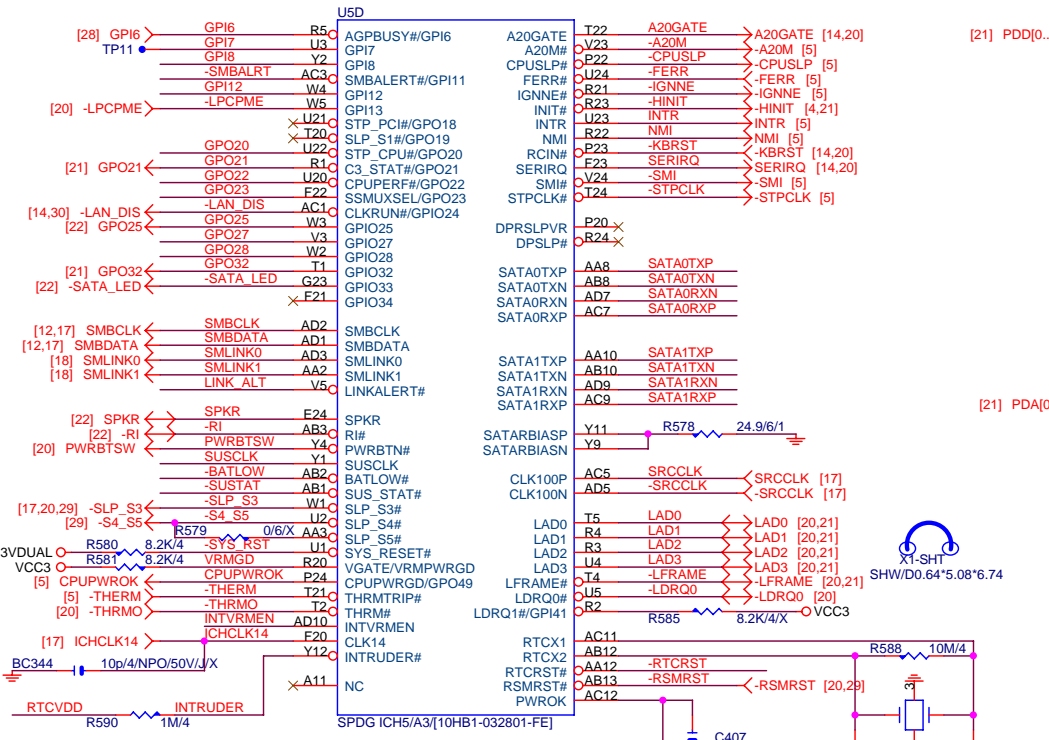
DE-CAP



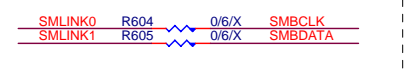
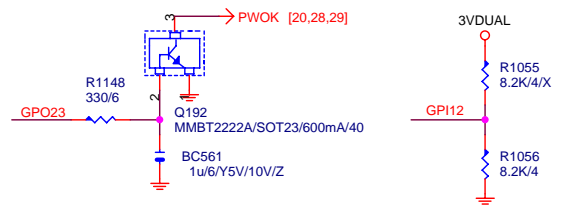
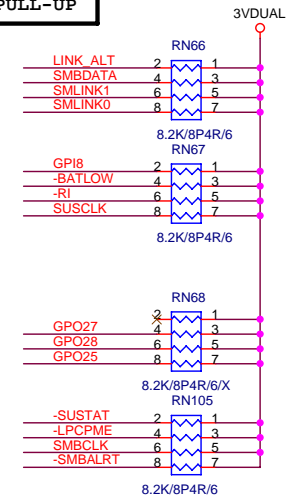
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AGP SLOT		
Title		Rev
81865GME-775		1.0
Size	Document Number	Date:
Custom	81865GME-775	Thursday, February 09, 2006
Date:		Sheet
Thursday, February 09, 2006		13 of 30



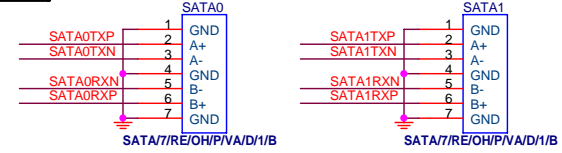
GIGABYTE		
Title		
ICH5 PCI, USB, HUB, LAN		
Size	Document Number	Rev
Custom	81865GME-775	1.0
Date:	Sheet	14 of 30



PULL-UP



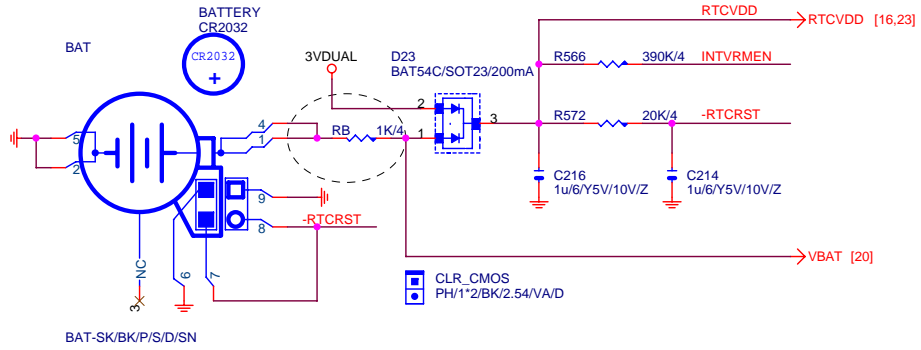
SATA1



BATTERY

NEW TYPE: BATTERY-DUAL-4
 RB 不可放在 BATTERY SOCKET 下方

CLR_CMOS:	
SHORT	CLEAR CMOS
OPEN	NORMAL

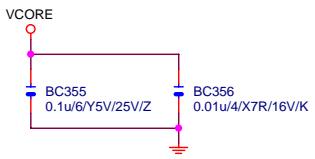
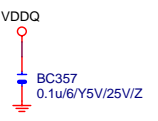
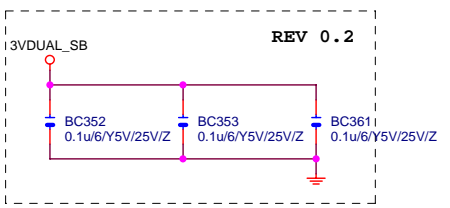
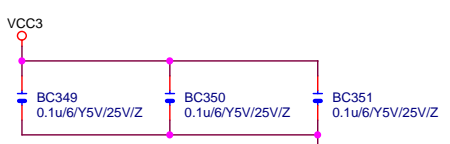
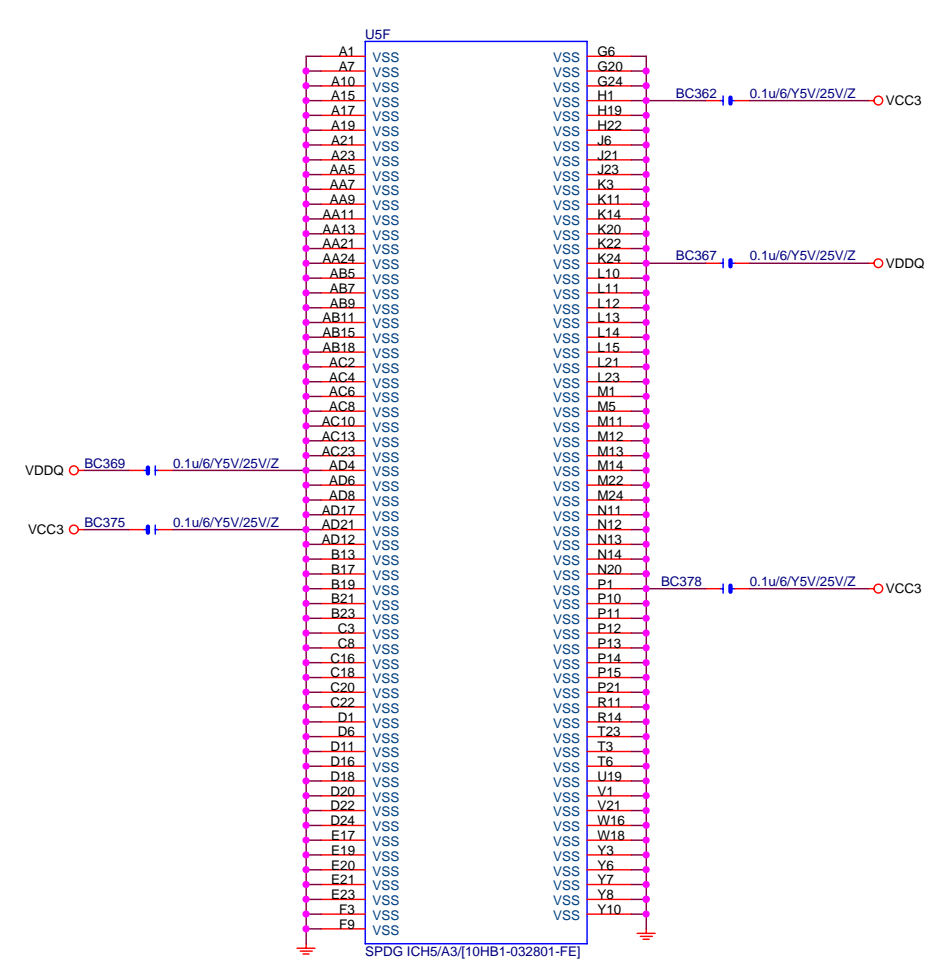
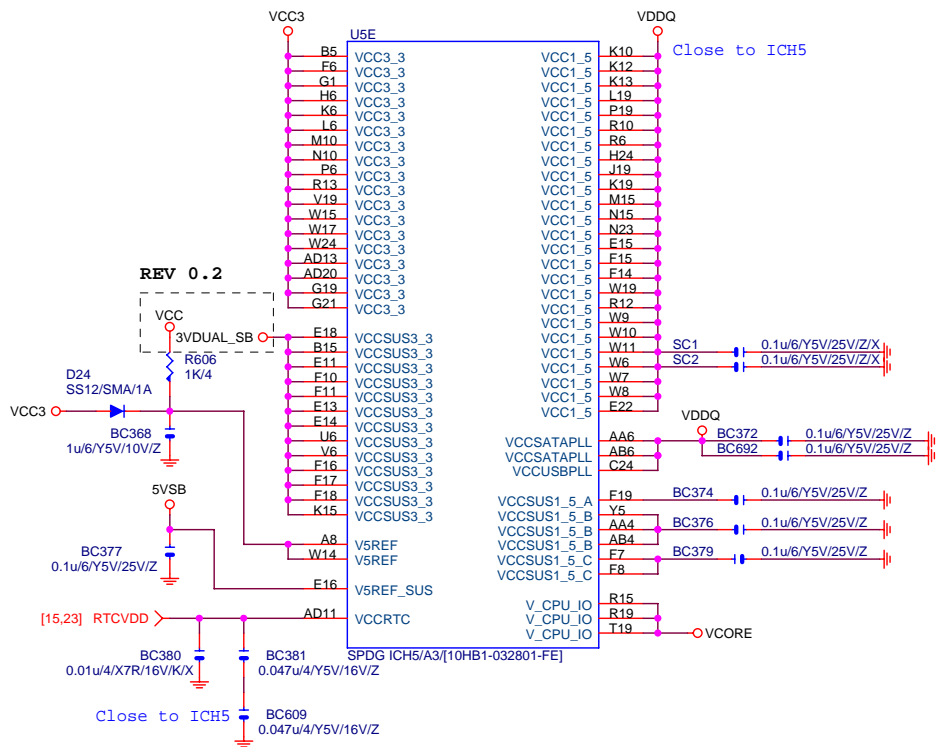


GIGABYTE

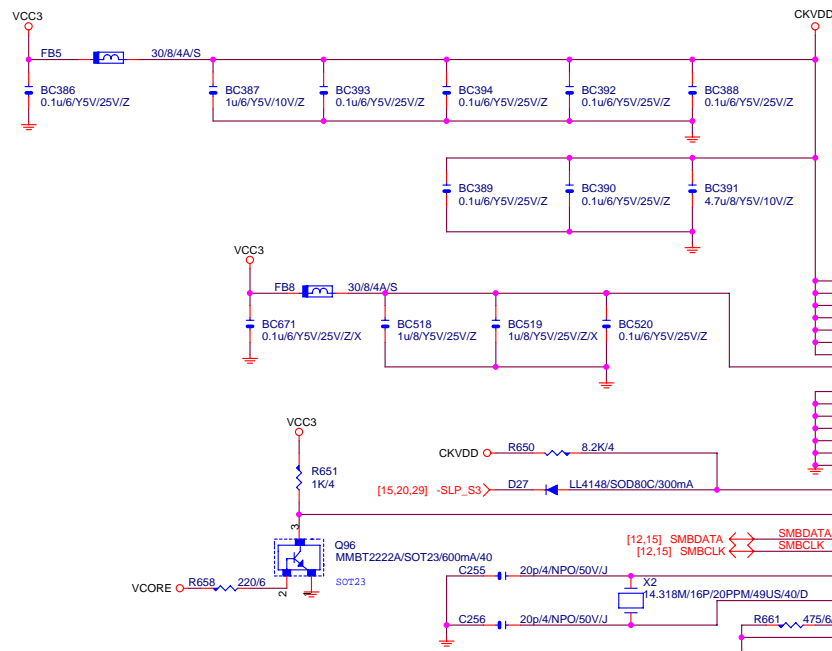
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Size: Custom	Document Number: 81865GME-775	Rev: 1.0
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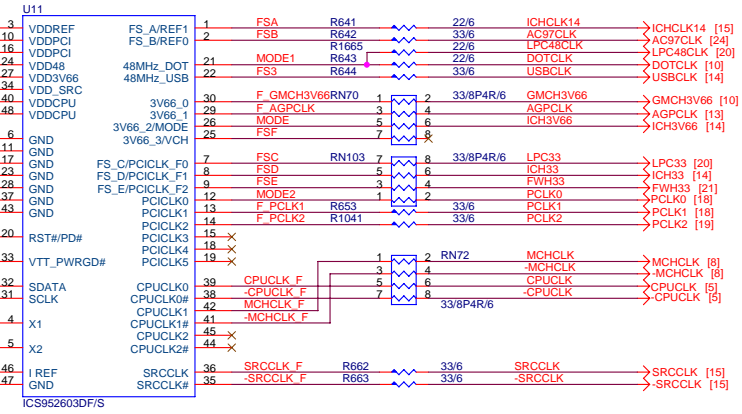
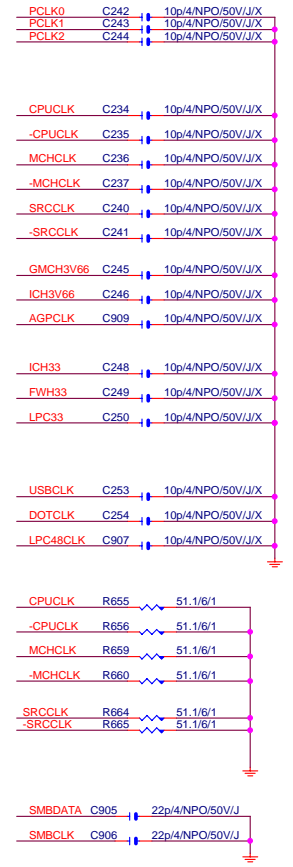
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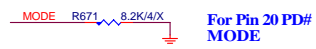
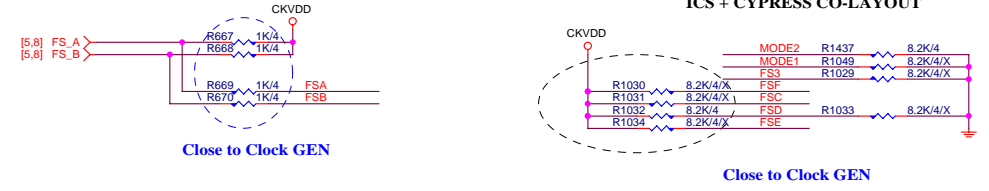
GIGABYTE			
Title			
ICH5 VCC, GND			
Size	Document Number		Rev
Custom	81865GME-775		1.0
Date:	Sheet 16 of 30		



For P/PE only
Un-POP R643
POP C254 -> 0 Ohm (0402)



ICS + CYPRESS CO-LAYOUT

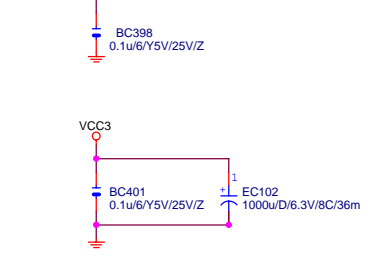
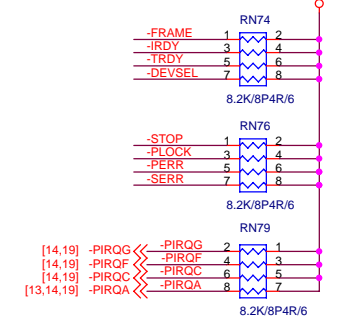
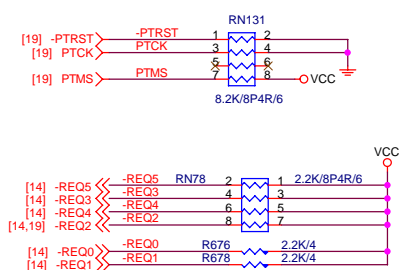
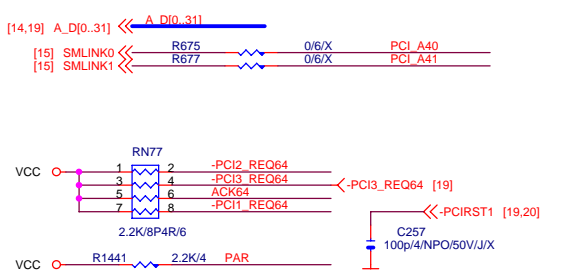
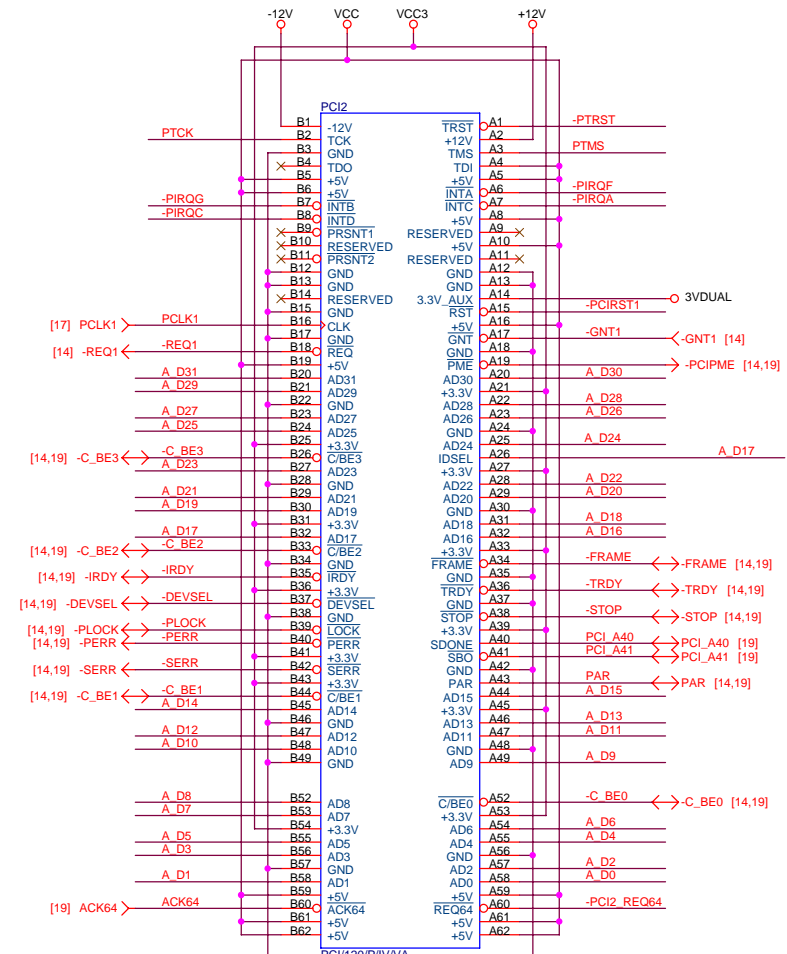
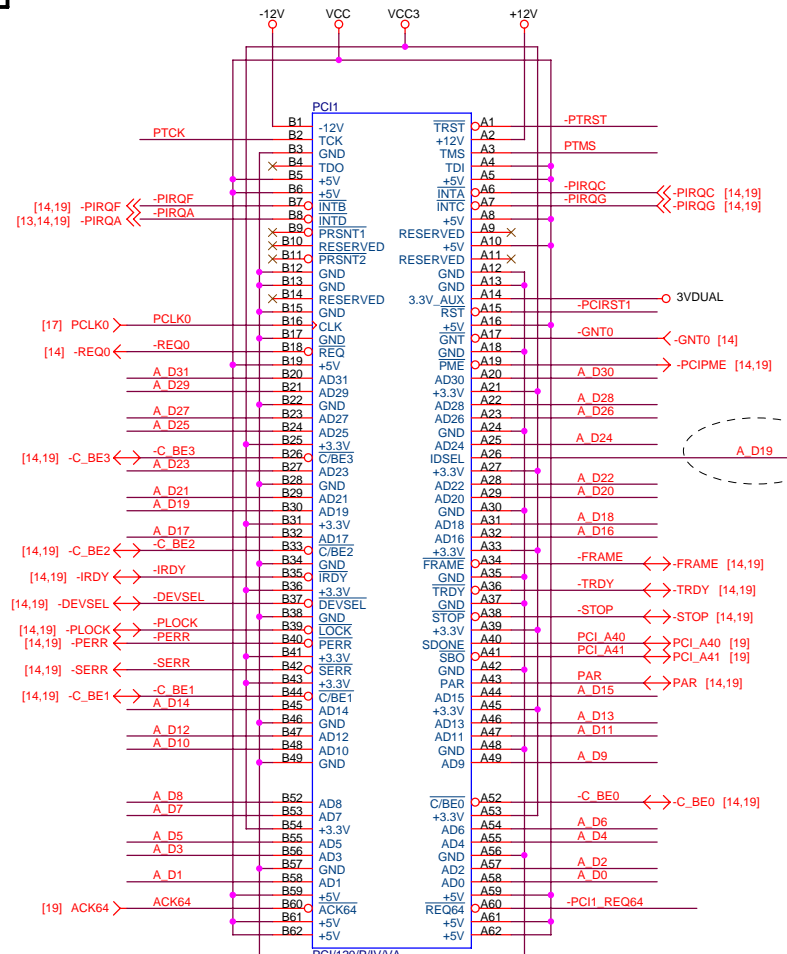


ICS952603/RTM363-205

FS_E	FS_3	FS_C	FS_B	FS_A	Clock
1	0	0	0	0	100MHz
1	0	0	0	1	133MHz
1	0	0	1	1	166MHz
1	0	0	1	0	200MHz

GIGABYTE			
Title			
CLOCK GENERATOR			
Size	Document Number	Rev	
Custom	81865GME-775	1.0	
Date:	Thursday, February 09, 2006	Sheet	17 of 30

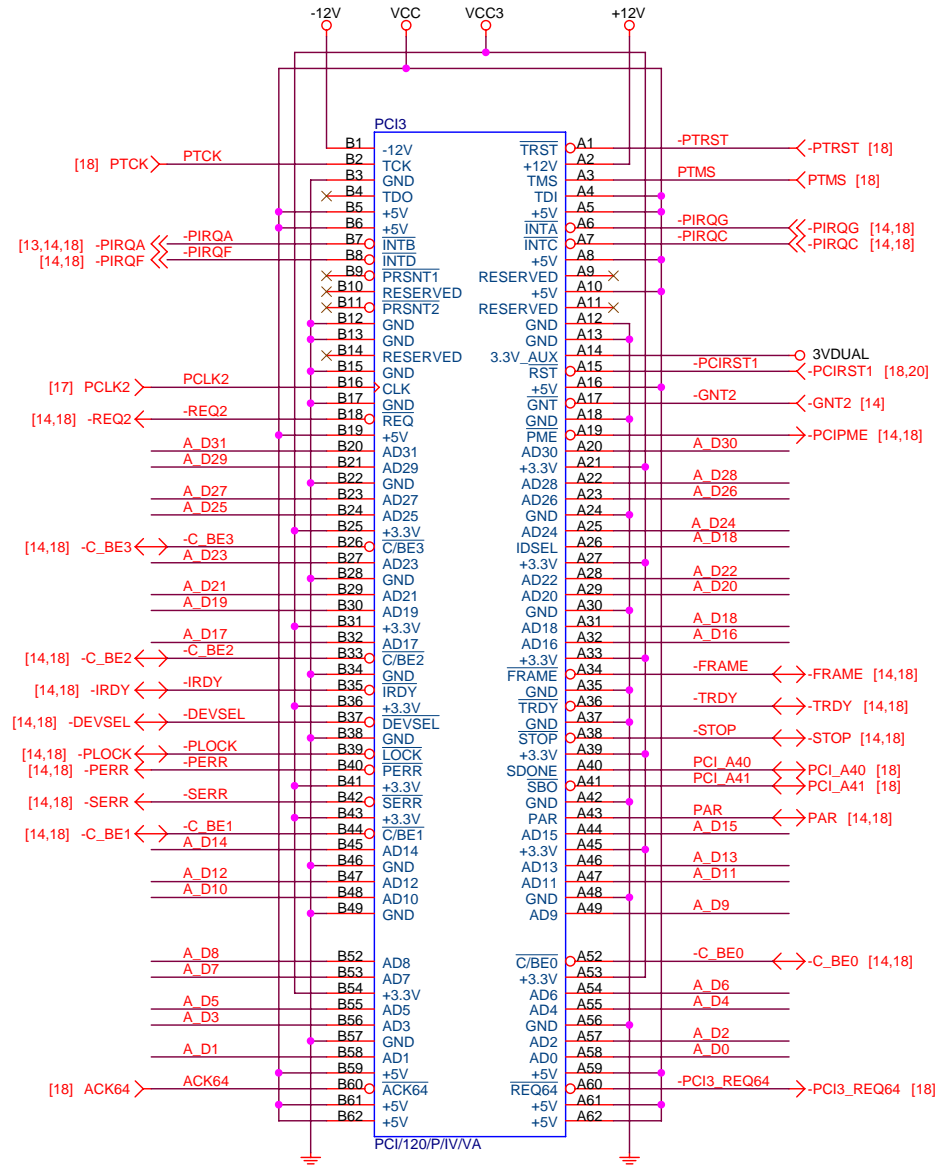
PCI1,2



GIGABYTE		
Title		
PCI SLOT 1/2		
Size	Document Number	Rev
Custom	81865GME-775	1.0
Date:	Thursday, February 09, 2006	Sheet 18 of 30

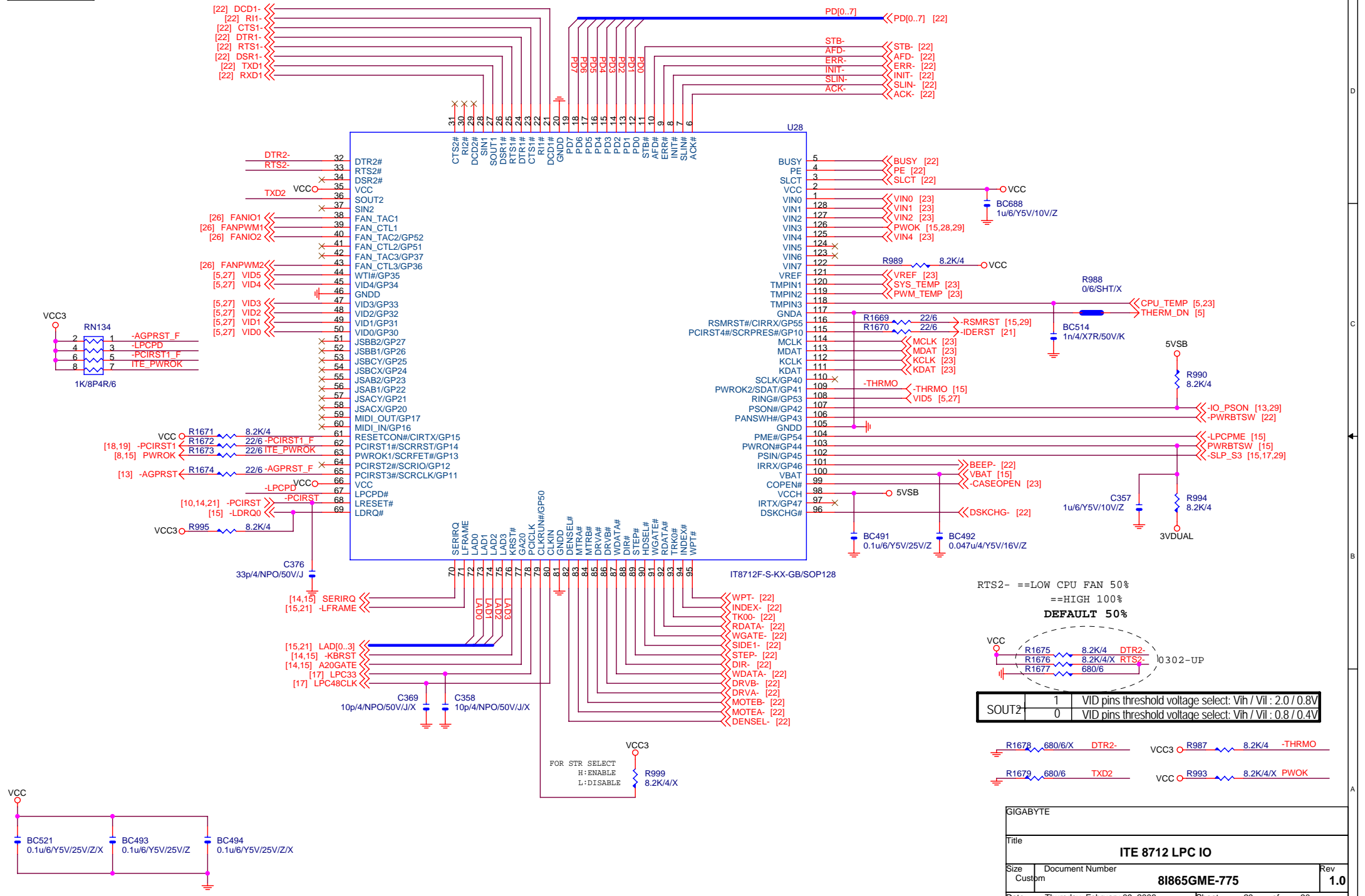
PCI3

[14,18] A_D[0..31] << A D[0..31]



AD_18 / -REQ2, -GNT2 / -PIRQG, A, C, F

GIGABYTE		
Title		
PCI SLOT 3		
Size	Document Number	Rev
Custom	81865GME-775	1.0
Date:	Thursday, February 09, 2006	Sheet 19 of 30



RTS2- ==LOW CPU FAN 50%
 ==HIGH 100%
DEFAULT 50%

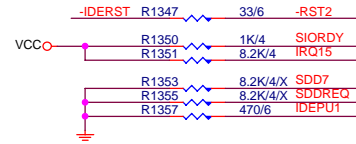
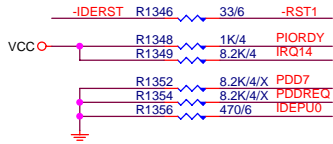
VCC
 R1675 8.2K/4 DTR2-
 R1676 8.2K/4X RTS2-
 R1677 680/6

SOUT2	1	VID pins threshold voltage select: Vih / Vil : 2.0 / 0.8V
	0	VID pins threshold voltage select: Vih / Vil : 0.8 / 0.4V

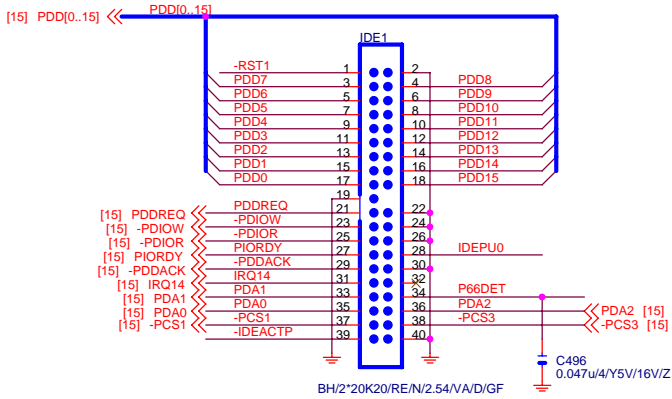


GIGABYTE		
Title		
ITE 8712 LPC IO		
Size	Document Number	Rev
Custom	81865GME-775	1.0
Date:	Thursday, February 09, 2006	Sheet 20 of 30

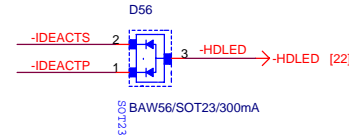
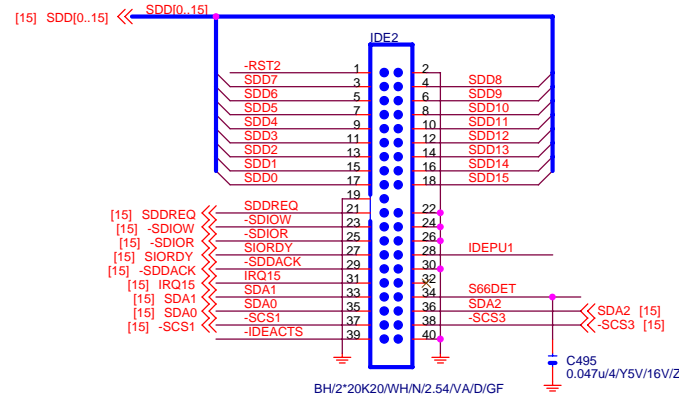
IDE



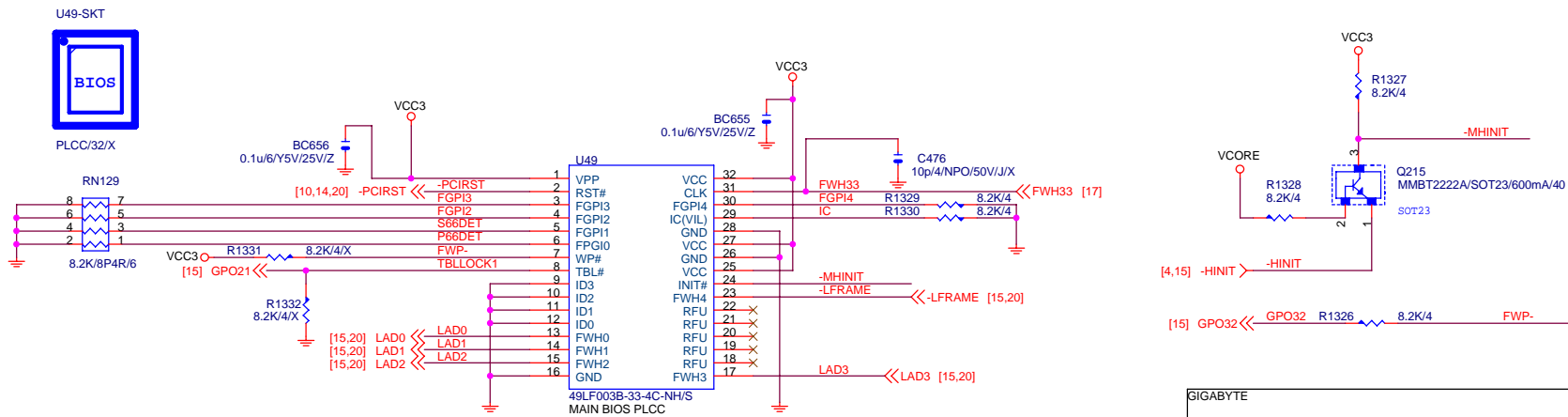
PRIMARY IDE CONNECTOR



SECONDARY IDE CONNECTOR



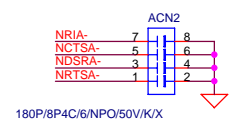
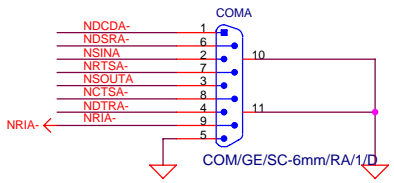
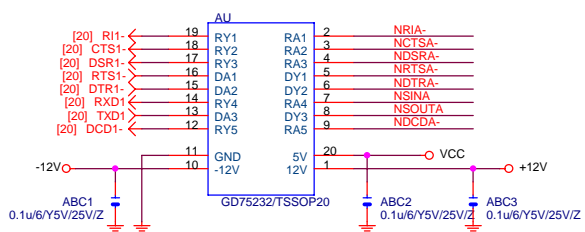
BIOS



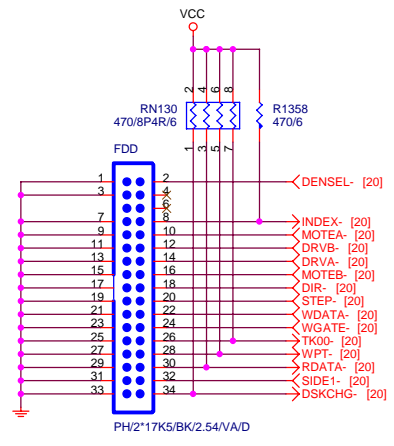
GIGABYTE			
Title			
IDE/BIOS			
Size	Document Number	Rev	
Custom	81865GME-775	1.0	
Date:	Thursday, February 09, 2006	Sheet	21 of 30

REV 1.0

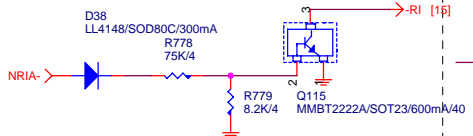
COMA



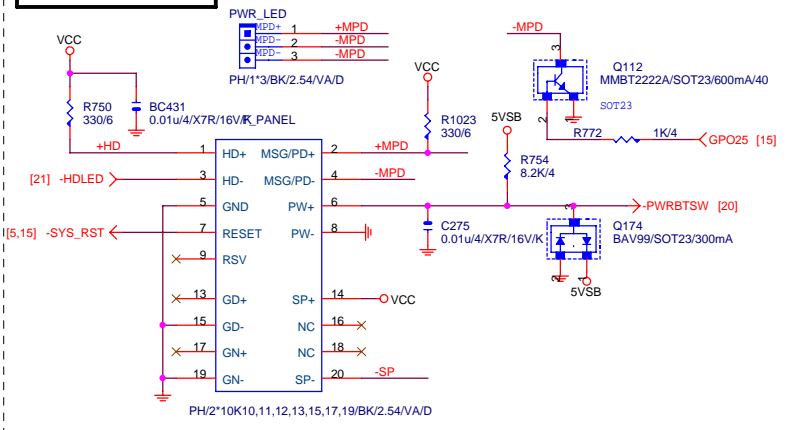
FLOPPY



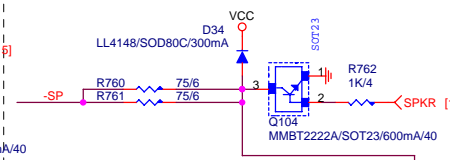
RI



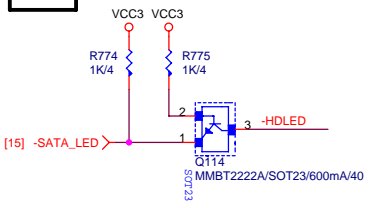
INTEL FRONT PANEL



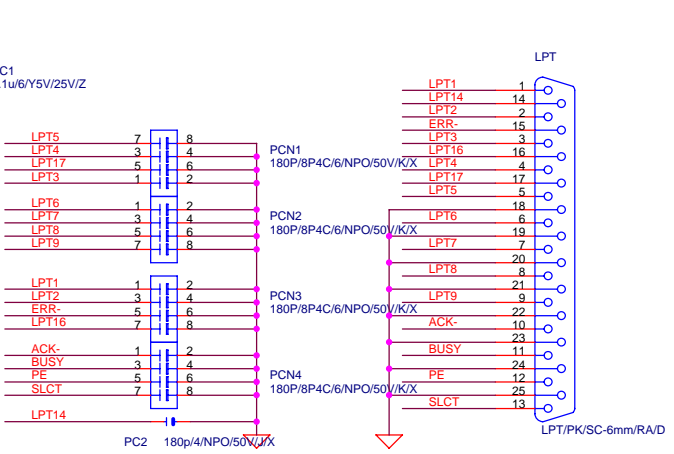
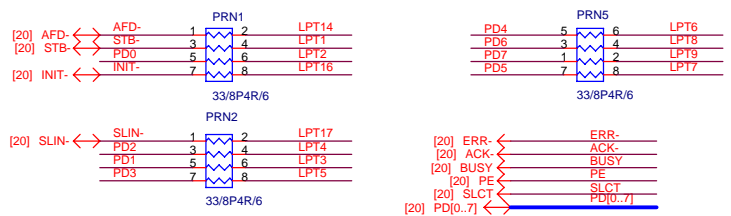
SPKR



LED-

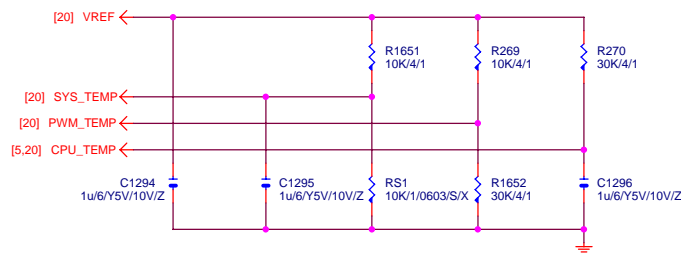


PRT PORT

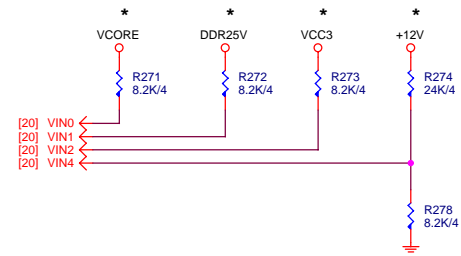


GIGABYTE			
Title			
FP/COMA/FDD/LPT/SPK			
Size	Document Number	Rev	
Custom	81865GME-775	1.0	
Date:	Thursday, February 09, 2006	Sheet	22 of 30

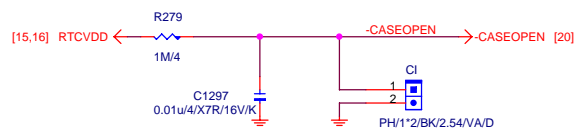
TEMP H/W MONITOR



VOLTAGE-- H/W MONITOR



CASE OPEN

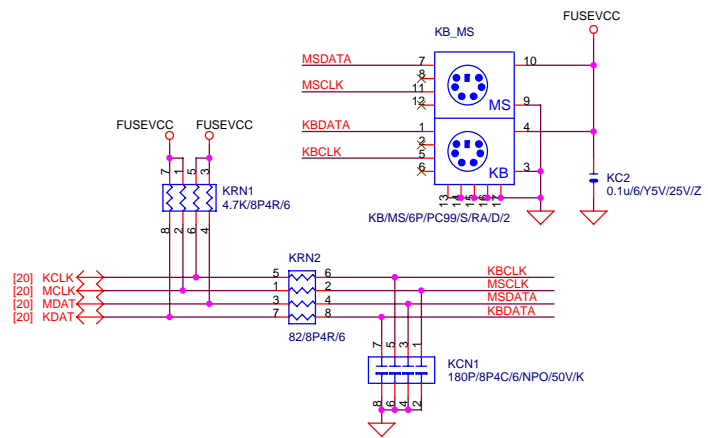


Case Open Circuits

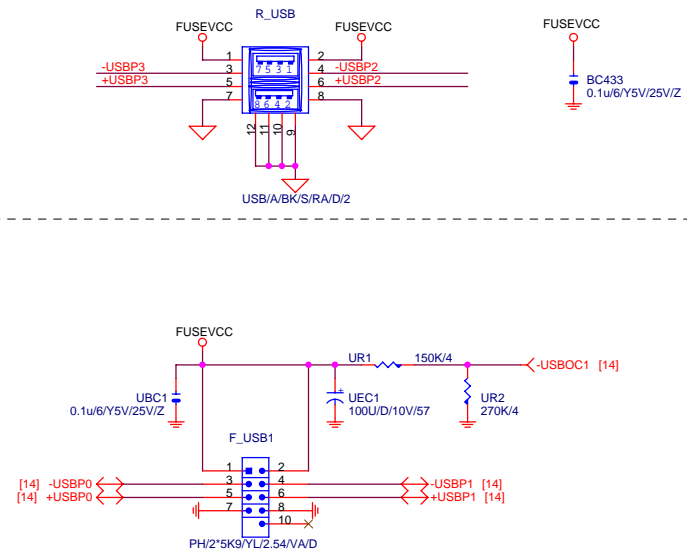
REAR USB



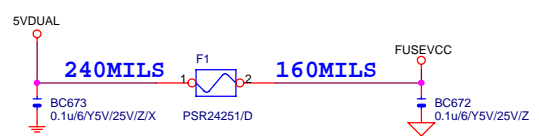
KB/MS



FRONT SIDE USB1

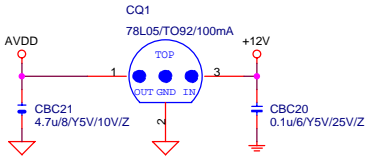
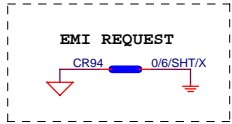
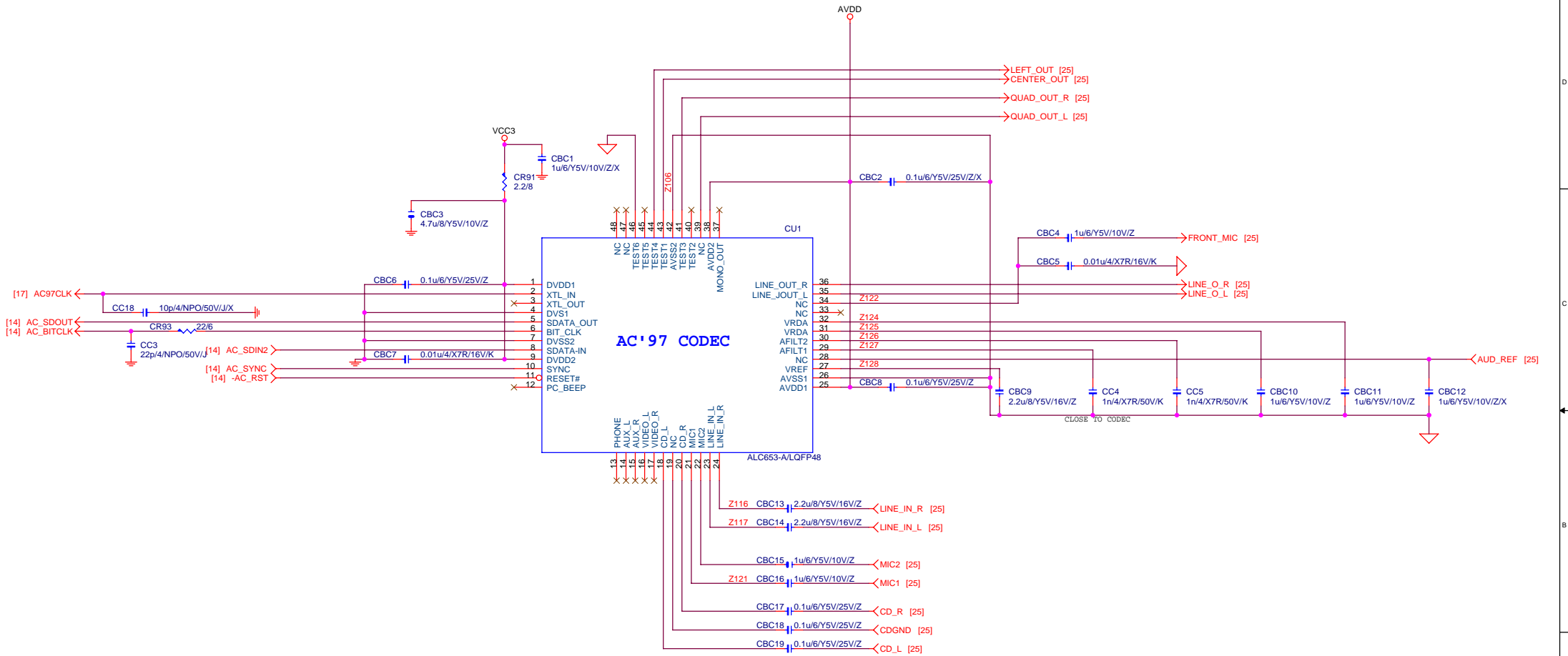


FUSEVCC, GAMEVCC



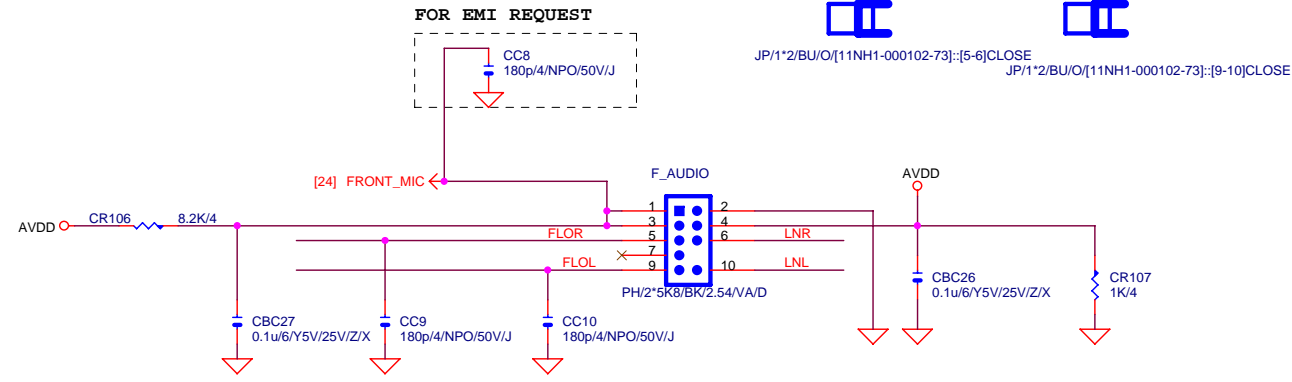
GIGABYTE			
Title KB/MS/F_USB/R_USB/H/W-MONITOR			
Size B	Document Number 81865GME-775	Rev 1.0	
Date: Thursday, February 09, 2006	Sheet 23	of 30	

AC97 CODEC

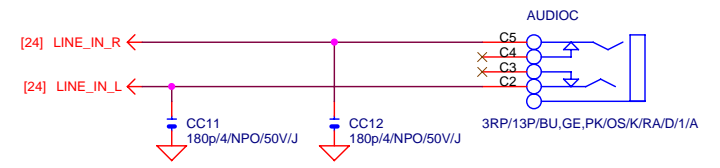


GIGABYTE		
AUDIO (ALC653)		
Title		
Size	Document Number	Rev
Custom	81865GME-775	1.0
Date:	Thursday, February 09, 2006	Sheet 24 of 30

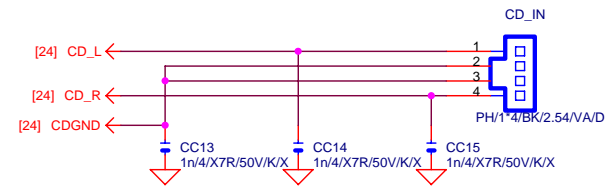
INTEL FRONT AUDIO



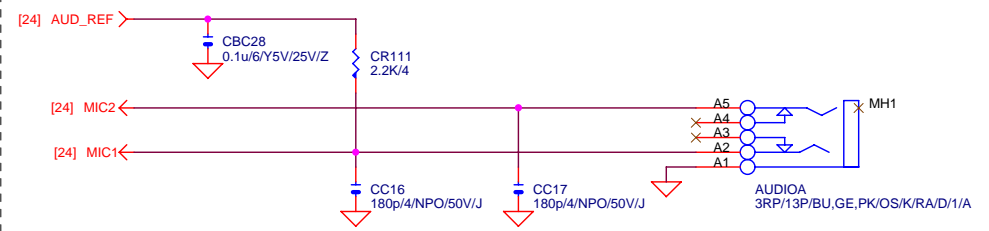
LINE-IN



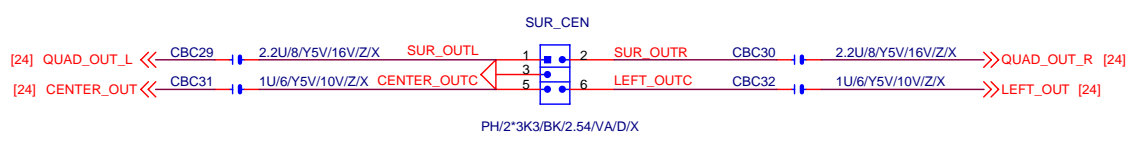
CD IN



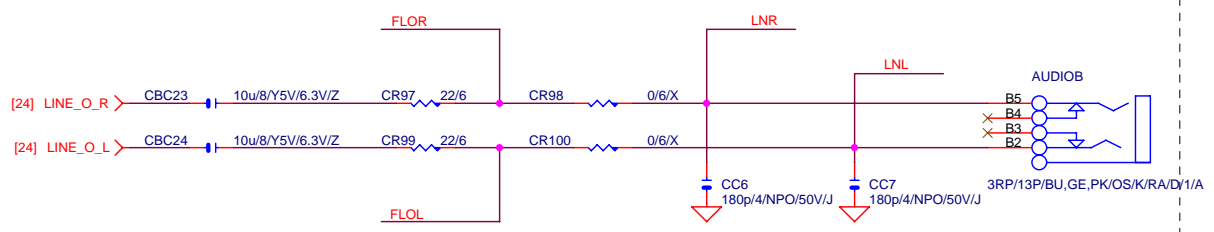
MIC



SUR_CEN



LINE OUT

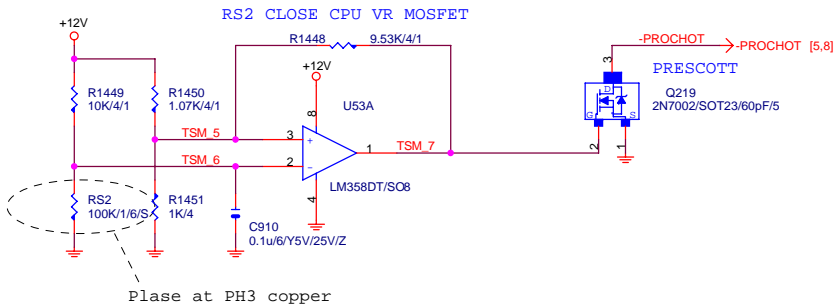


GIGABYTE		
AUDIO OUTPUT		
Title	Document Number	
Size Custom	81865GME-775	
Date:	Thursday, February 09, 2006	Sheet 25 of 30
		Rev 1.0

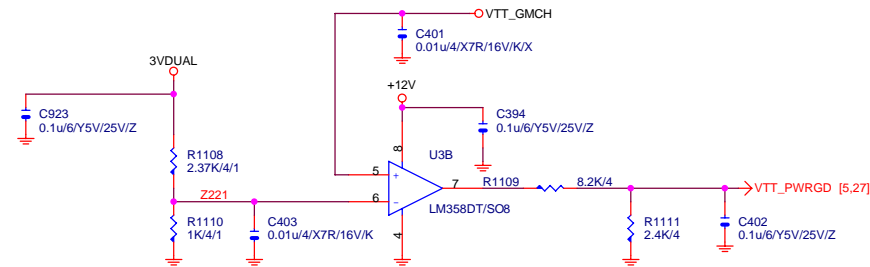
PROCESSOR HOT

asserted at 130 degree (RS2=720 ohm)
deasserted at 115 degree (RS2=1270 ohm)

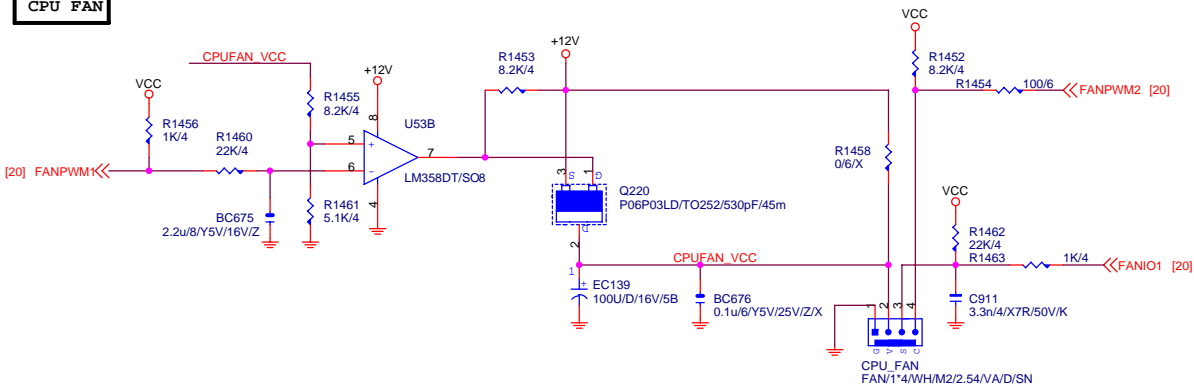
VTT_PWRGD



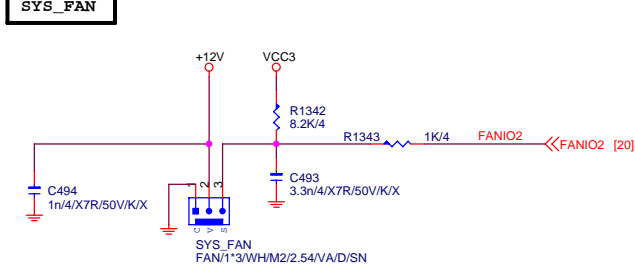
ThermalTake FAN Power Consumption: 0.82A
Intel FAN Power Consumption Spec: 1.1A



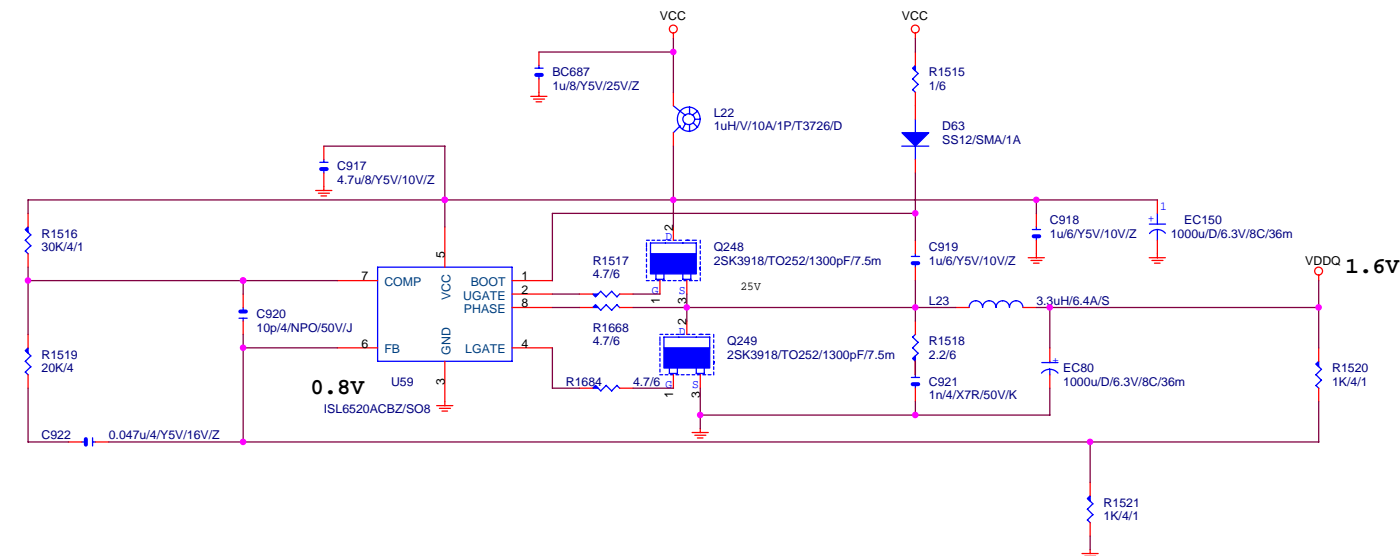
CPU_FAN



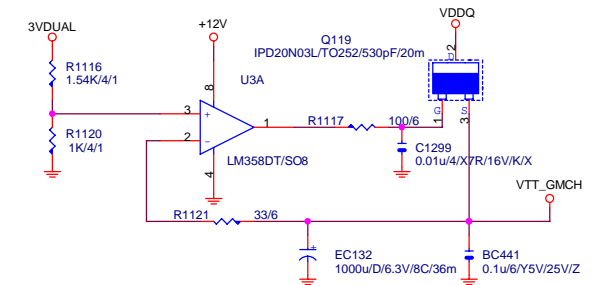
SYS_FAN



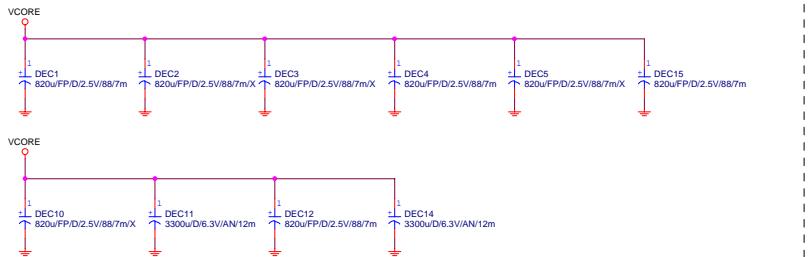
VDDQ(1.6V)



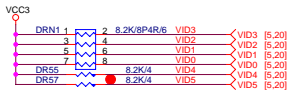
VTT_GMCH



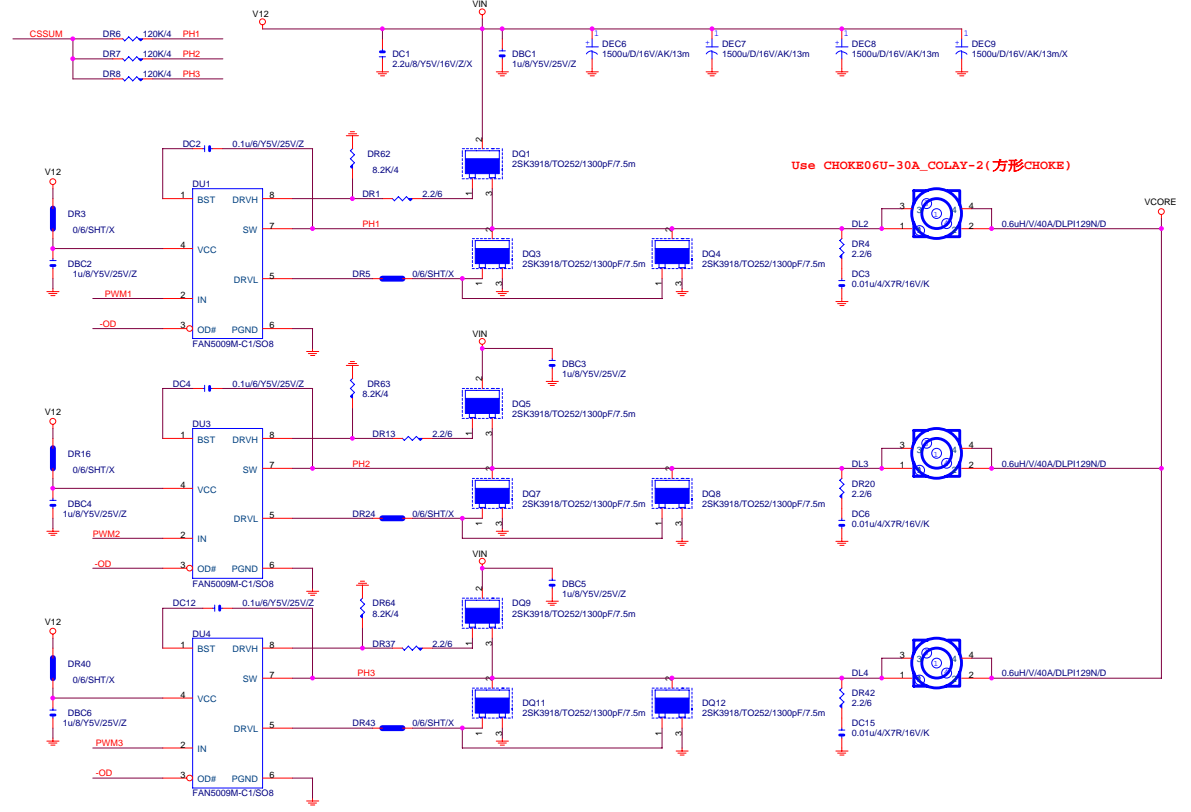
Title		
POWER,CPU_FAN,PROCHOT		
Size	Document Number	Rev
	81865GME-775	1.0
Date:	Thursday, February 09, 2006	Sheet 26 of 30



DD1 : 在HIGH SIDE 發生S-D SHORT 時(OVP), LOW SIDE MOSFET TURN ON, 讓VCCORE 降壓, 同時V12 也會下降6-7V以下時, 造成PWM 無法提供POWER TO LOW SIDE TURN ON, 所以加DD1 延長PWM POWER 提供給LOW SIDE MOSFET TURN ON 保護CPU VOLTAGE 過高
 DC5 FOR V12 OVER 19V 以上, SPEC (18V)



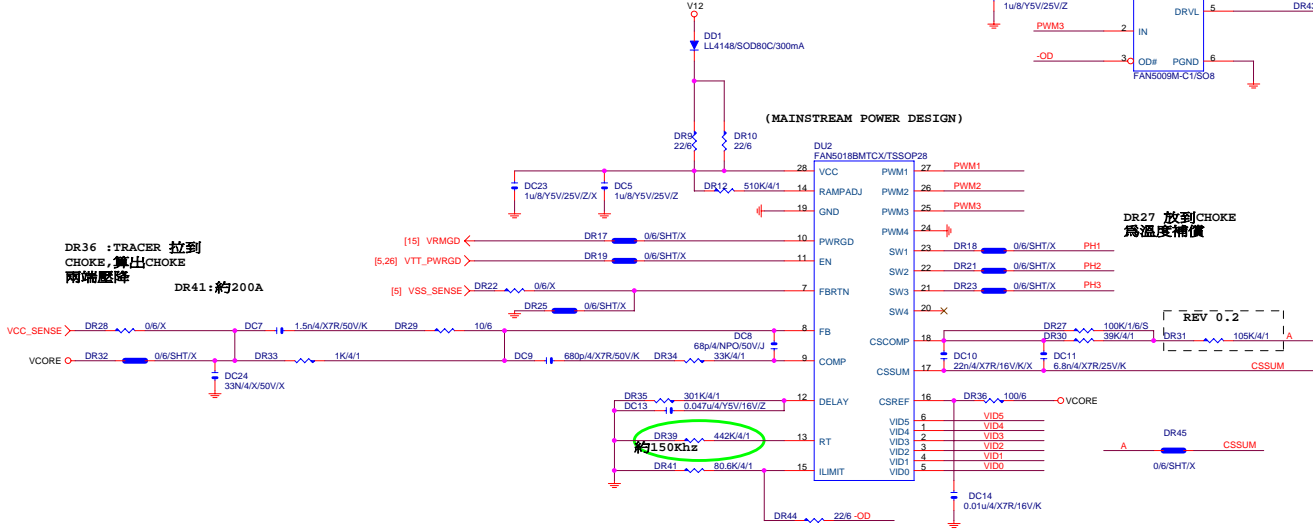
DR12 為一個 CYCLE的DUTY (50%)
 DELAY : 讓限流時間DELAY (DR35, DC13) 才啟動.
 DR39 : 240K
 工作頻率=720KHZ / 4PHASE=180K (1 PHASE)



Use CHOKE06U-30A_COLAY-2 (方形CHOKE)

DR27 放到CHOKE 為溫度補償

(MAINSTREAM POWER DESIGN)

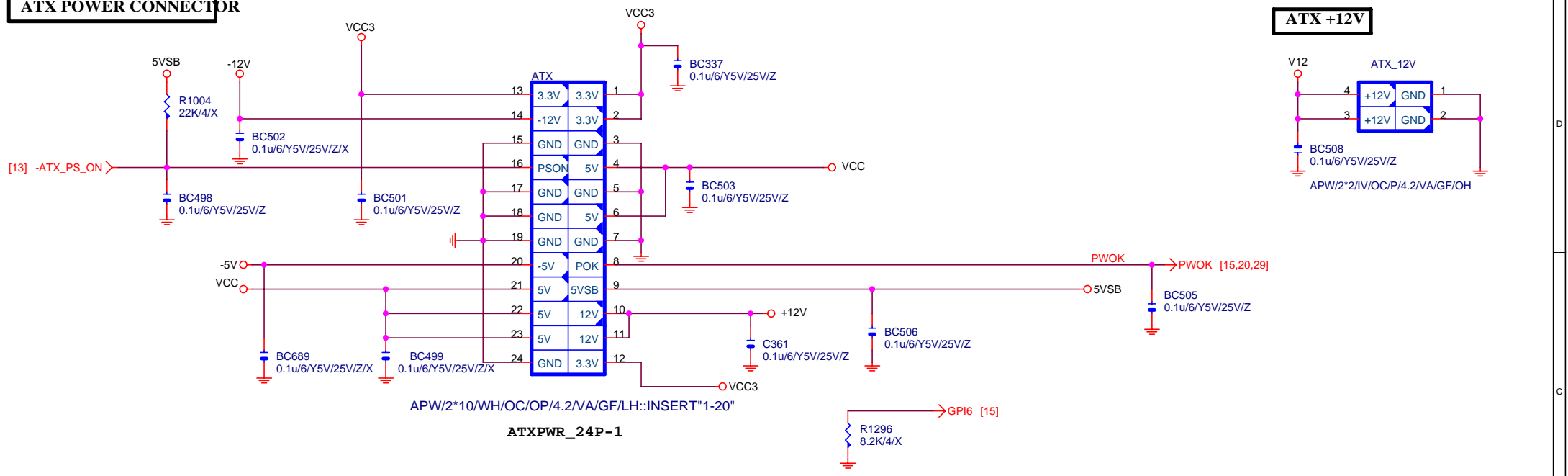


DR36 : TRACER 拉到 CHOKE, 算出CHOKE 兩端壓降
 DR41 : 約200A

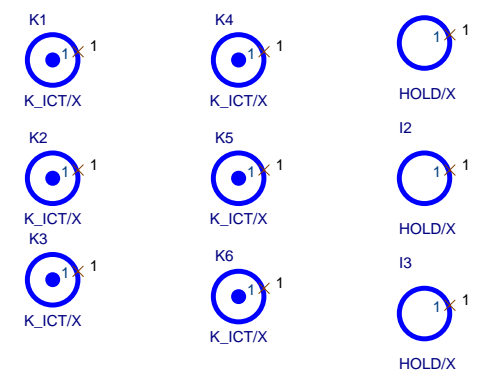
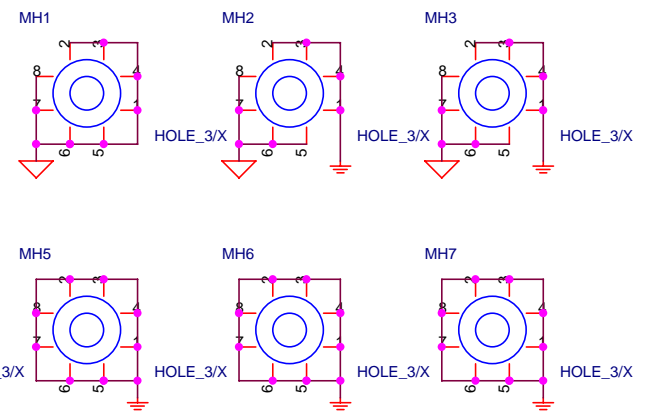
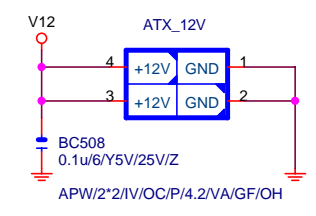
約150kHz

GIGABYTE		
Title: VRD 10.1		
Size: Custom	Document Number: 81865GME-775	Rev: 1.0
Date: Thursday, February 09, 2006	Sheet: 27	of 30

ATX POWER CONNECTOR

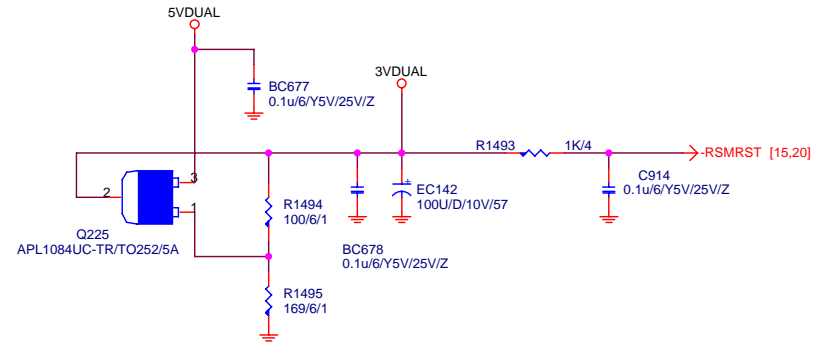


ATX +12V

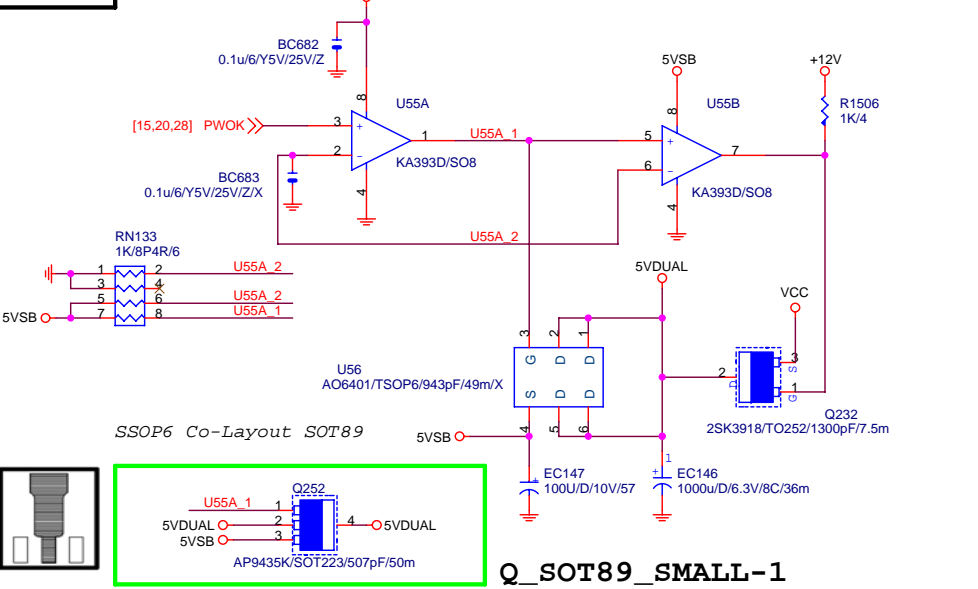


GIGABYTE		
Title		
Misc. PWR & ATX CONN.		
Size	Document Number	Rev
Custom	81865GME-775	1.0
Date:	Sheet 28 of 30	

3VDUAL



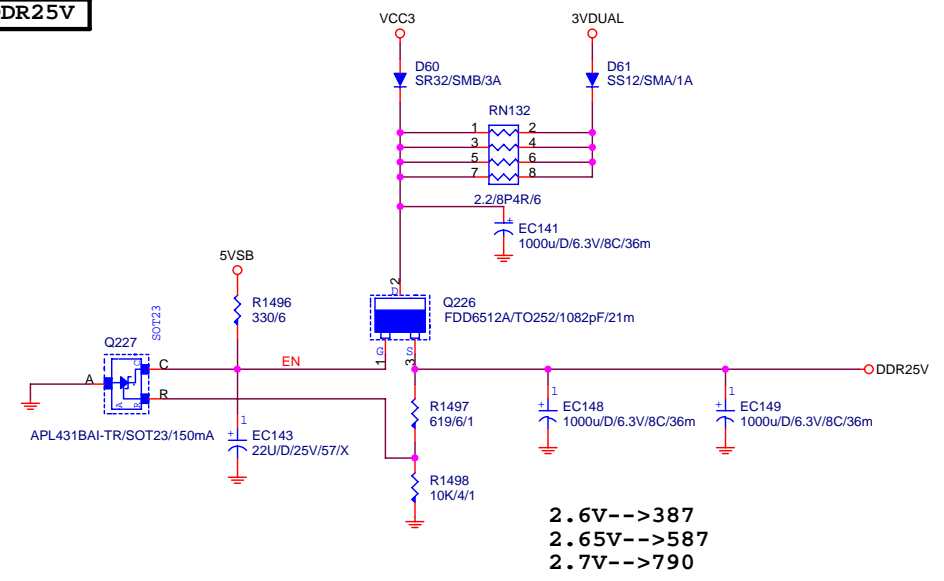
5VSB



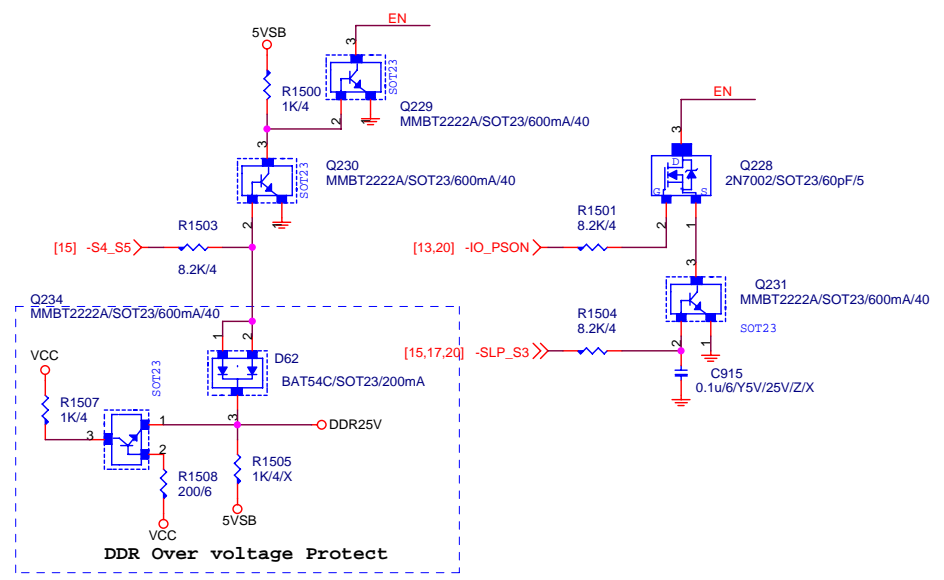
3VDUAL_SB



DDR25V

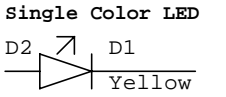
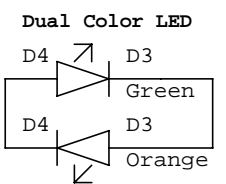
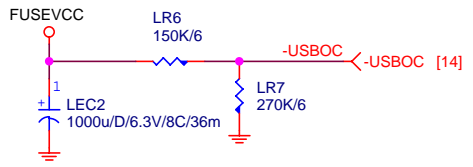
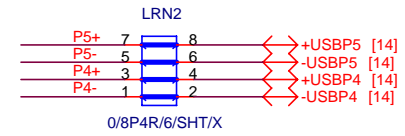
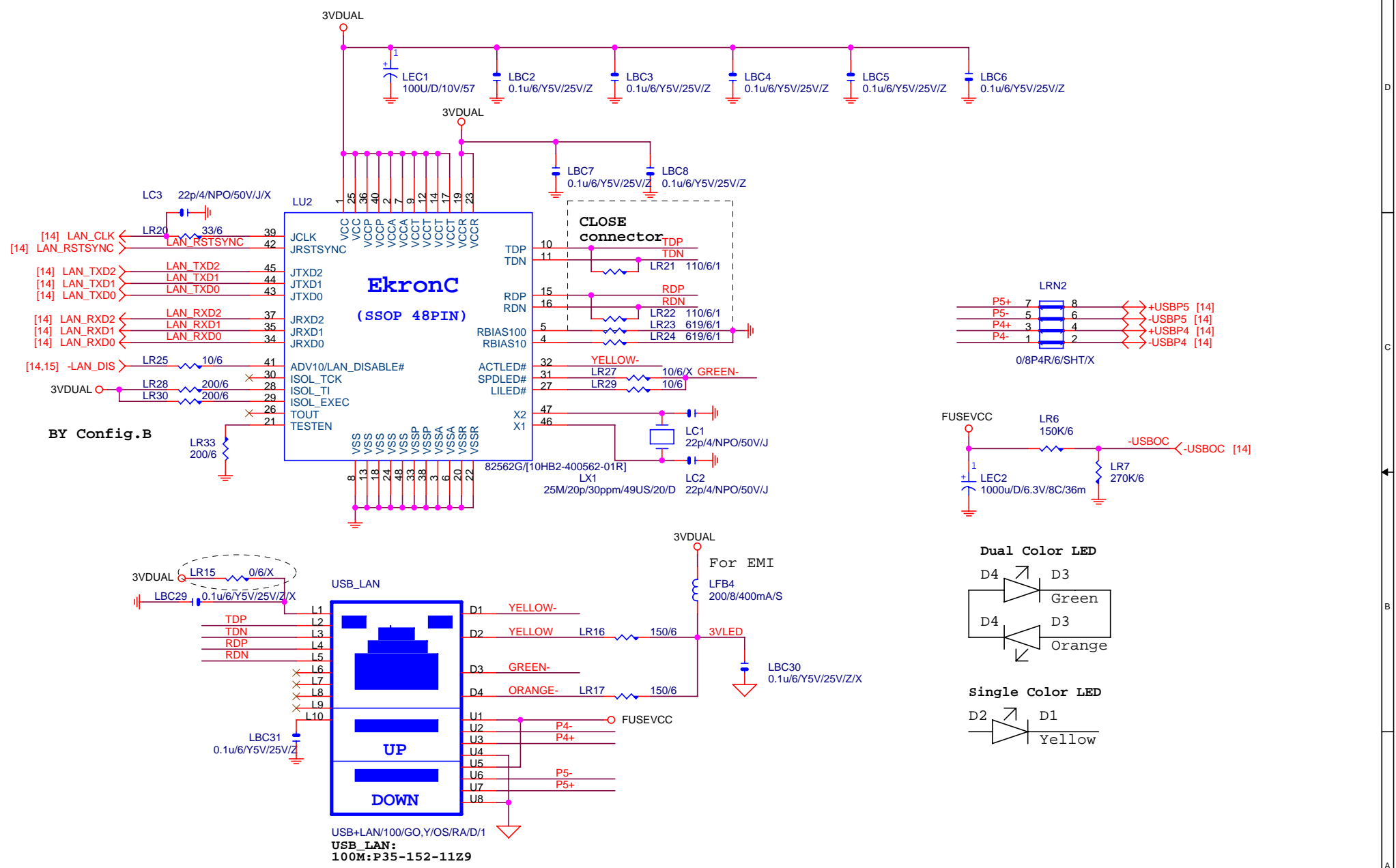


2.6V-->387
2.65V-->587
2.7V-->790



DDR Over voltage Protect

GIGABYTE		
Title	DDR POWER	
Size	Document Number	Rev
Custom	81865GME-775	1.0
Date:	Thursday, February 09, 2006	Sheet 29 of 30



GIGABYTE

INTEL 82562G

Title	Document Number		Rev
	GA-8I865GME-775		1.0
Date:	Thursday, February 09, 2006	Sheet	30 of 30