

# GIGABYTE GA-8I865GVMK Schematics

Revision 1.0

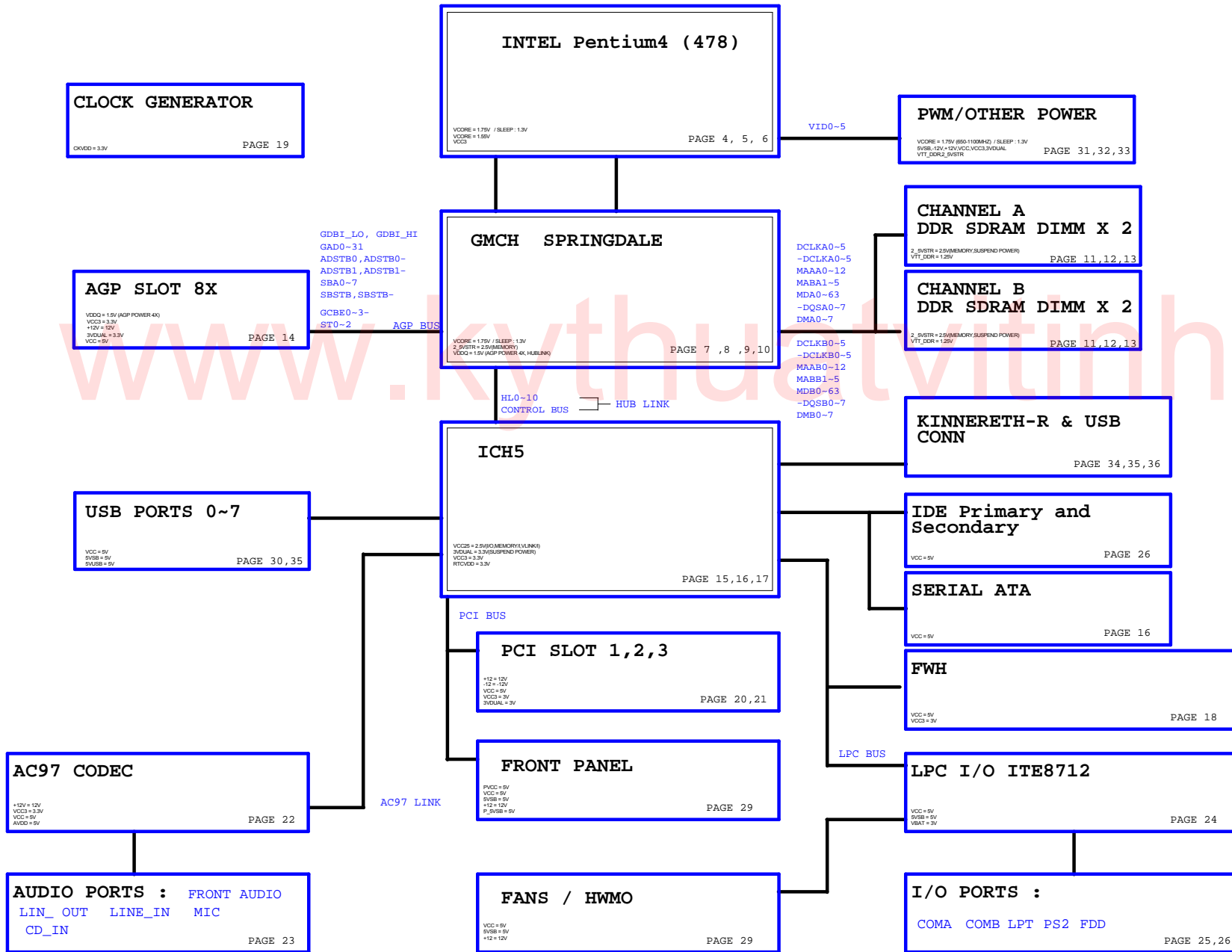
SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	P4_478A
05	P4_478B
06	P4_478C
07	SPRINGDALE HOST
08	SPRINGDALE DDR
09	SPRINGDALE AGP, HUB, CSA, VGA
10	SPRINGDALE PWR
11	DDR1,2 CHANNEL A
12	DDR3,4 CHANNEL B
13	DDR TERMINATION
14	AGP 8X
15	ICH5 PCI, USB, HUB, LAN
16	ICH5 IDE, GPIO, SATA, CTRL
17	ICH5 VCC, GND
18	FWH
19	CLOCK GEN
20	PCI1_2
21	PCI3
22	CODEC

SHEET	TITLE
23	AUDIO JACK, L_OUT, F_AUDIO
24	ITE 8712
25	COM_LPT
26	IDE
27	FAN/HWMO
28	KB_PS2
29	FPANEL
30	USB CONN
31	DDR POWER
32	VCORE POWER
33	ATX, OTHERS POWER
34	KINNERETH-R LNA(CSA-1)
35	KINNERETH-R LNA(CSA-2)
36	KINNERETH-R LNA(CSA-3)
37	

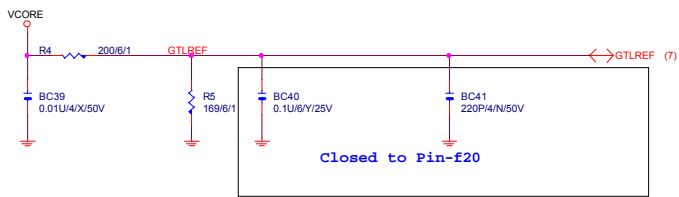
<b>GIGABYTE CORP.</b>	
Title: COVER SHEET	
Size: Custom	Document Number: GA-8I865GVMK
Date: 星期二, 九月 23, 2003	Rev: 1.0
Sheet 1 of 36	



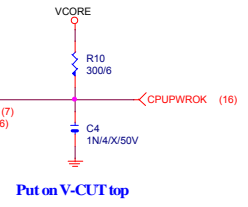
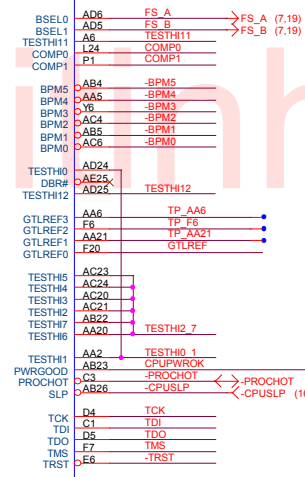
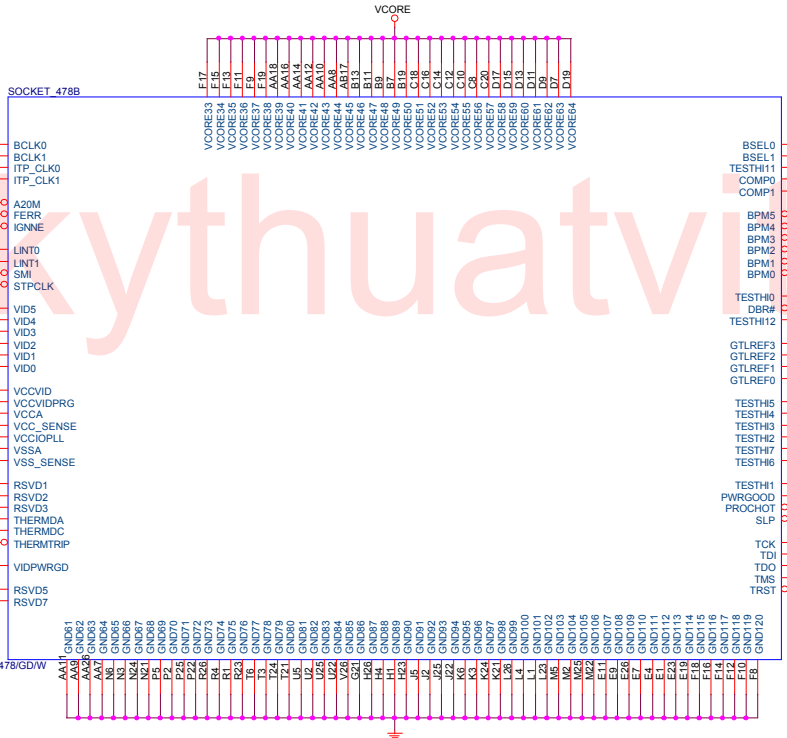
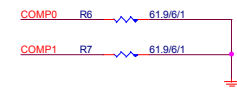
# BLOCK DIAGRAM



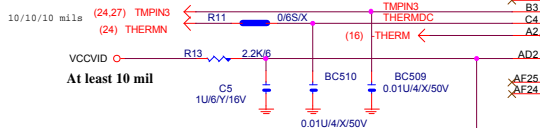
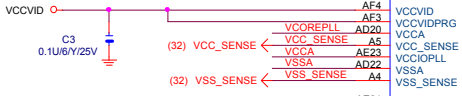




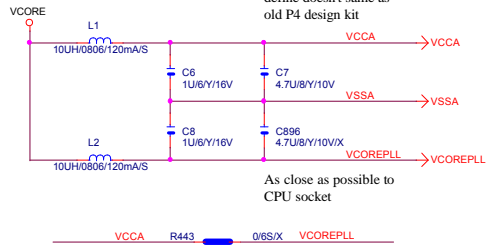
Place outside of CPU socket



Put on V-CUT top

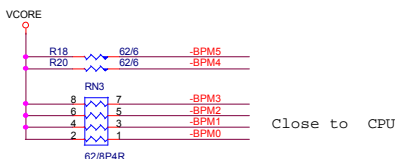
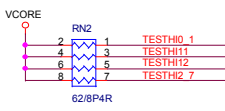


Note:  
VCCA & VCOREPLL  
define doesn't same as  
old P4 design kit

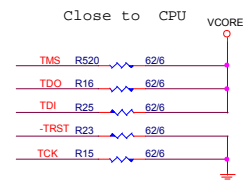


As close as possible to CPU socket

Trace width doesn't less than 12 Mil



Close to CPU

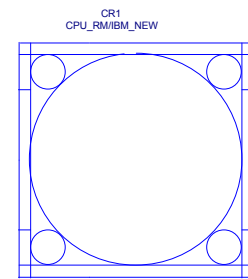
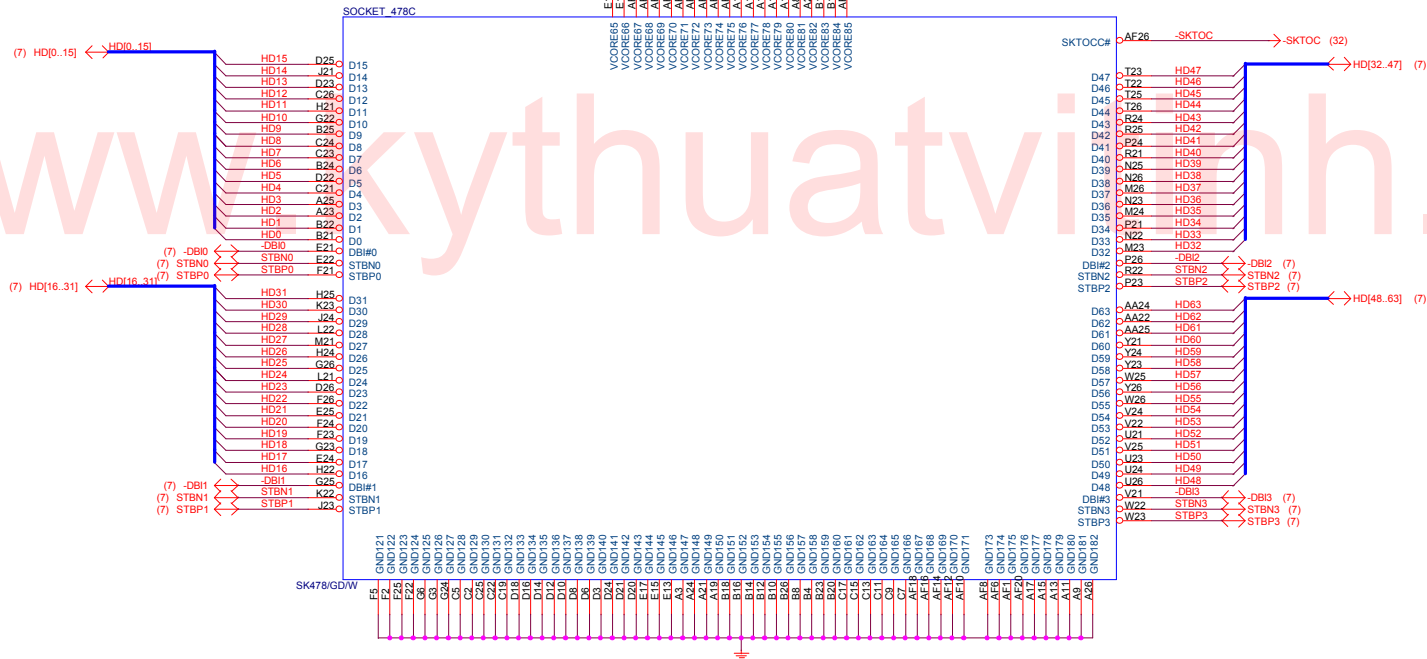
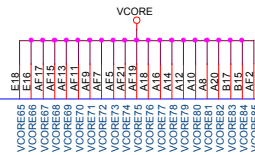
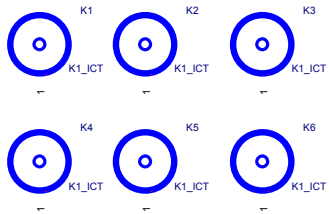


Close to CPU



Pull up must place end of route

Title			P4 478B		
Size	Document Number				Rev
Custom	GA-81865GVMK				1.0
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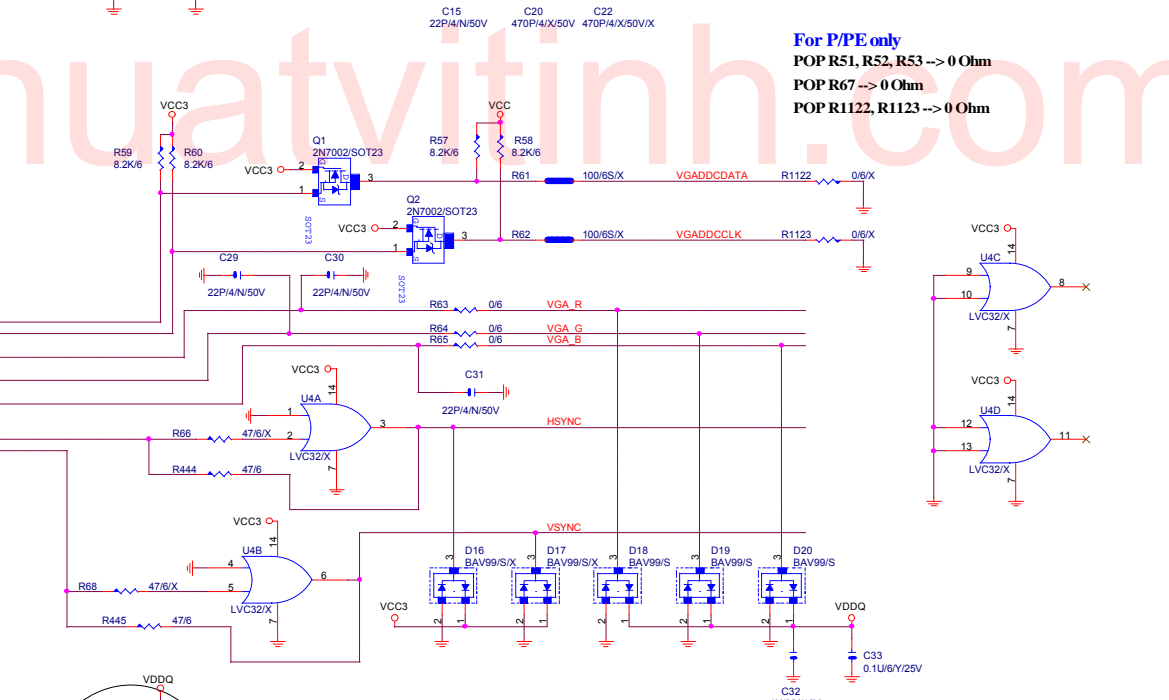
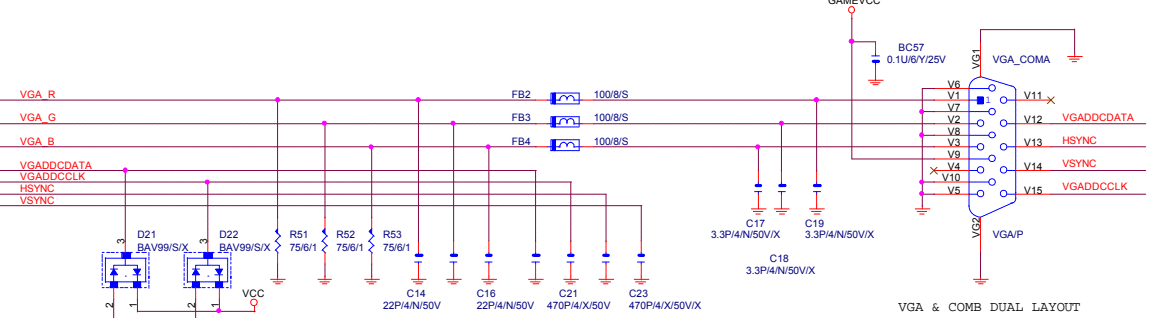
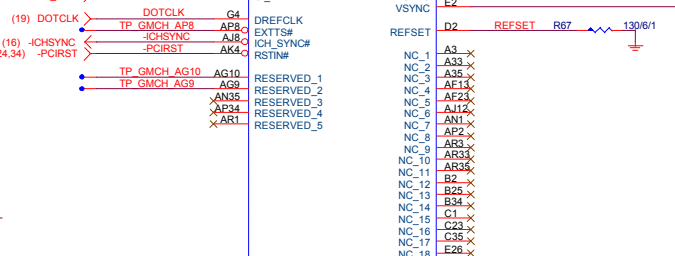
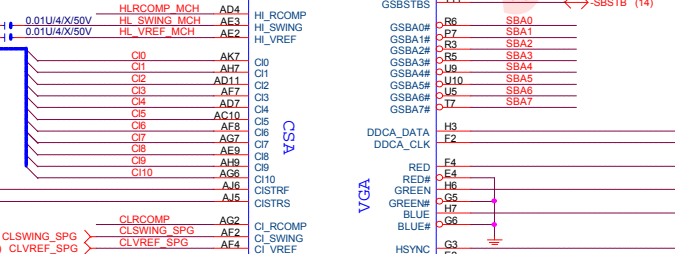
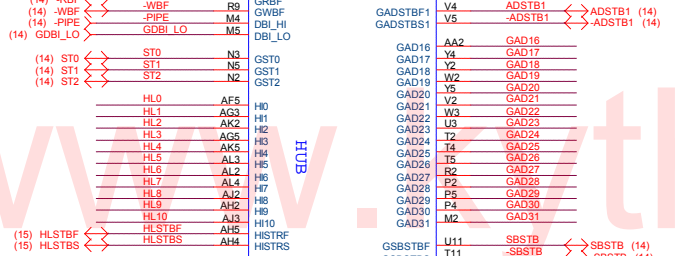
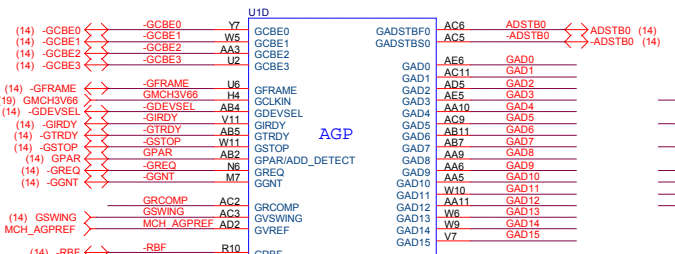


Title		
<b>P4 478C</b>		
Size	Document Number	Rev
Custom	<b>GA-81865GVMK</b>	<b>1.0</b>
Date	星期三, 九月 23, 2003	Sheet 6 of 36

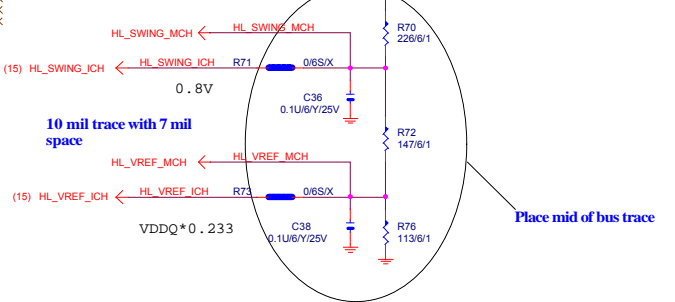




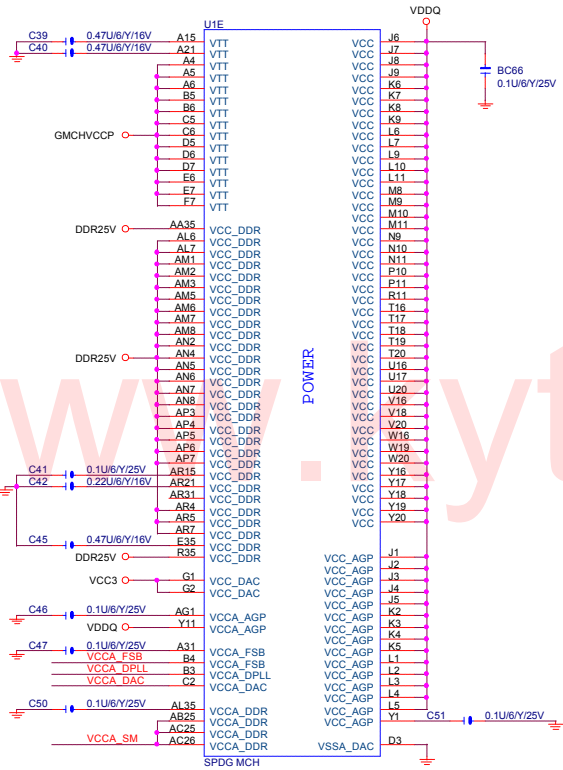
(14) GAD[0..31] <-> GAD[0..31]  
 (14) SBA[0..7] <-> SBA[0..7]  
 (15) HL[0..10] <-> HL[0..10]



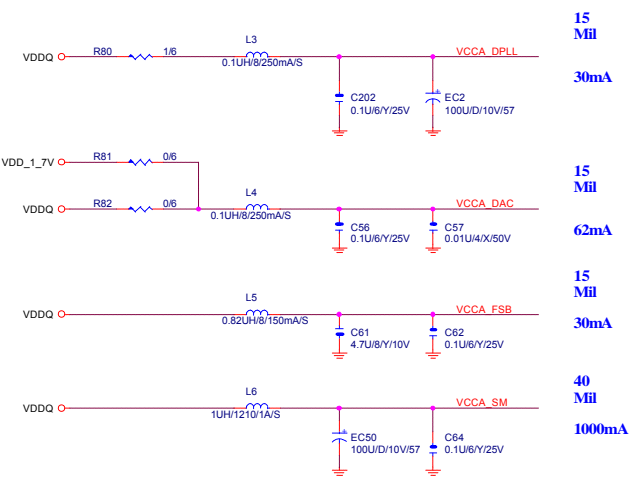
For P/P/E only  
 POP R51, R52, R53 --> 0 Ohm  
 POP R67 --> 0 Ohm  
 POP R1122, R1123 --> 0 Ohm



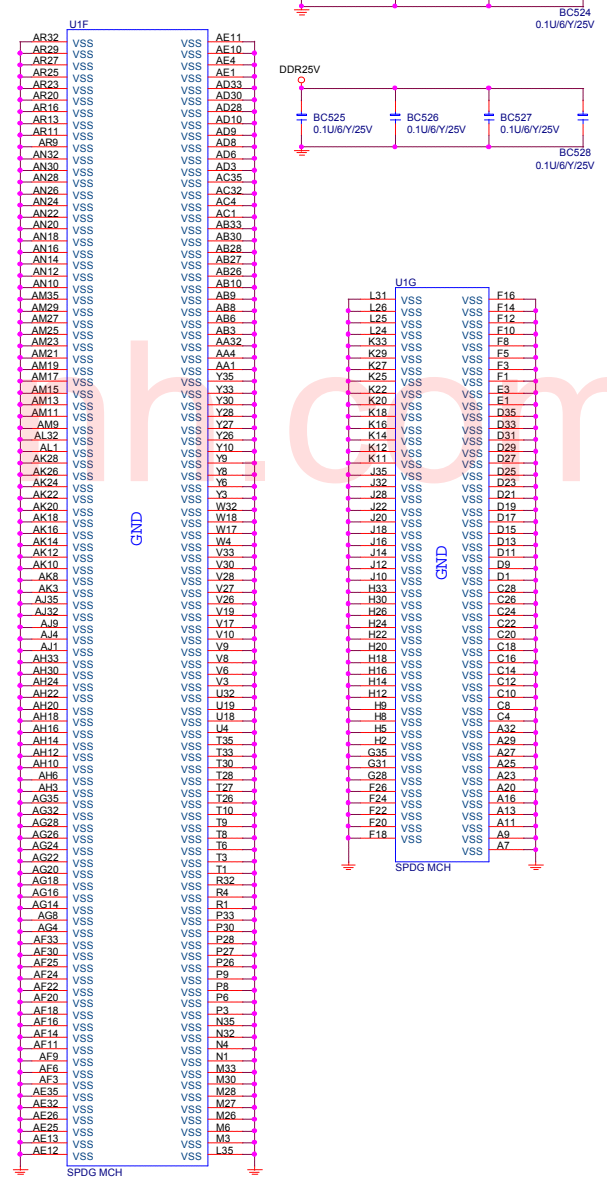
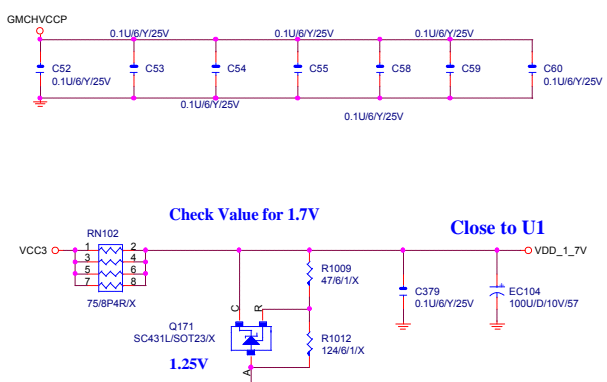
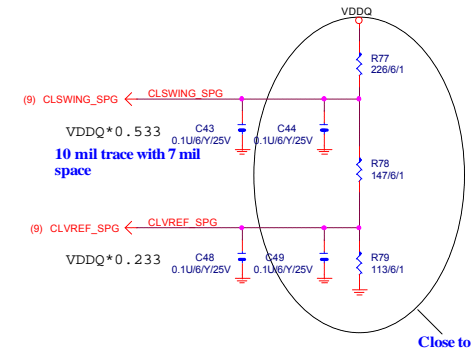
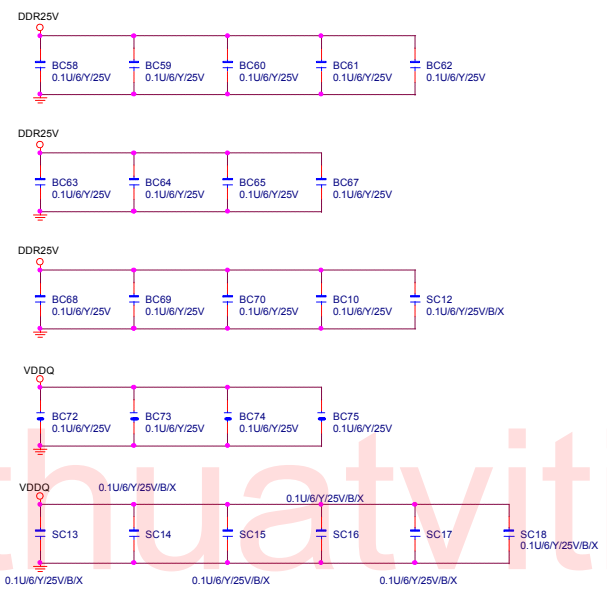
Title		
SPRINGDALE AGP,HUB,CSA,VGA		
Size	Document Number	Rev
Custom	GA-81865GMVK	1.0
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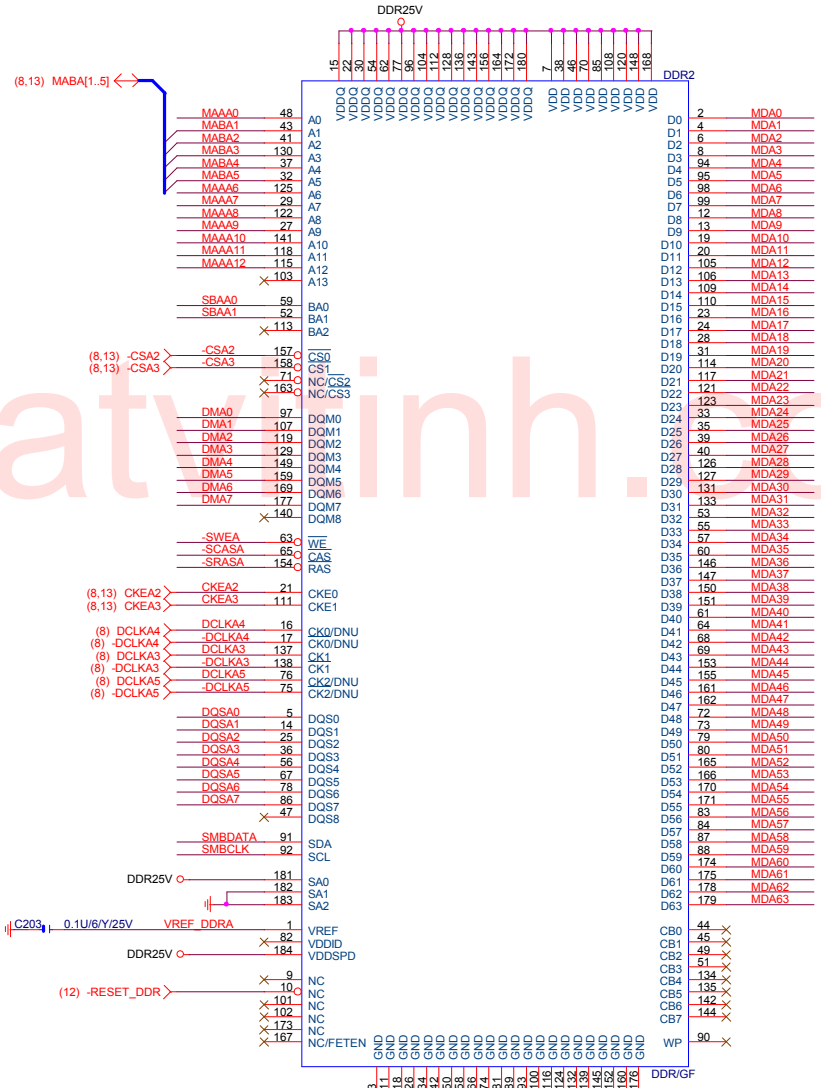
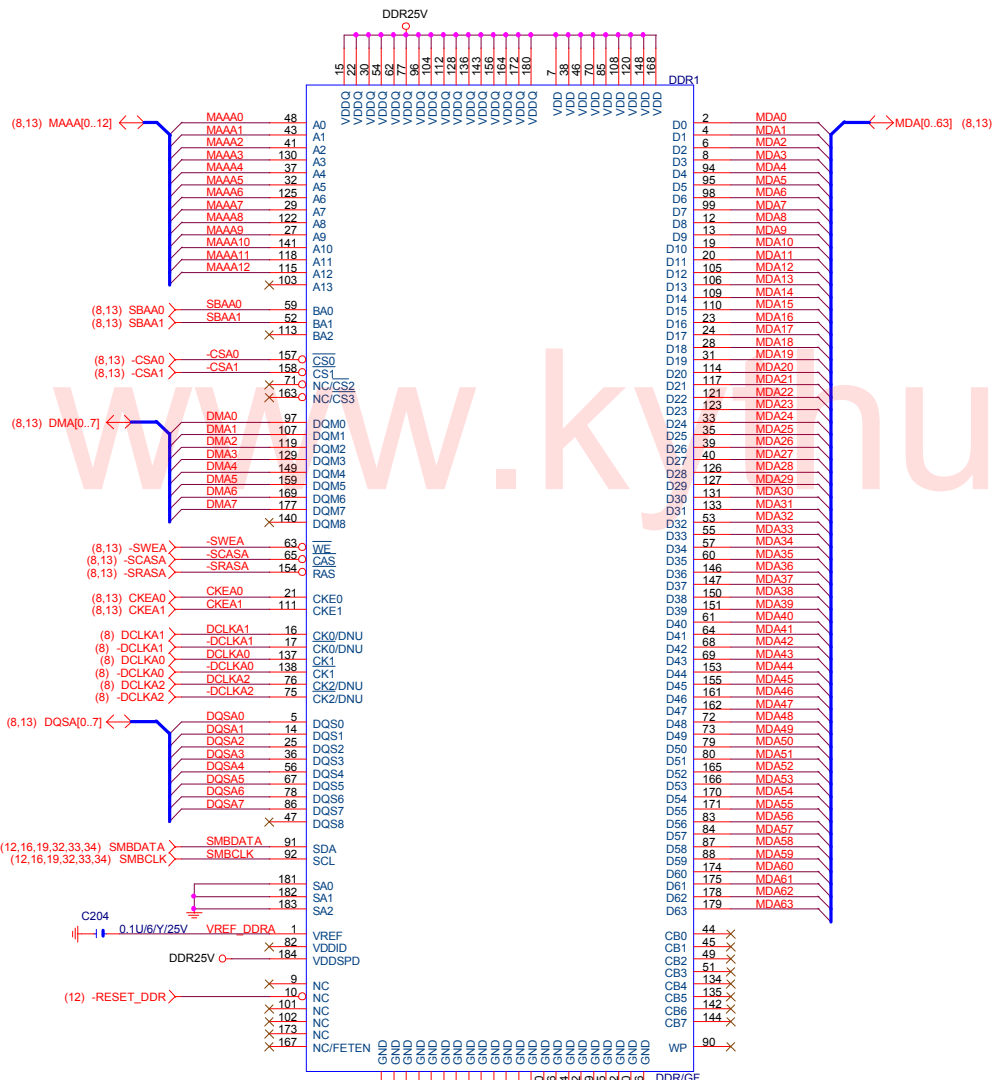
For P/PE only  
 Un-POP R80,L3,EC2  
 POP C202 --> 0 Ohm  
 Un-POP R81, R82, L4, C57  
 POP C56 --> 0 Ohm



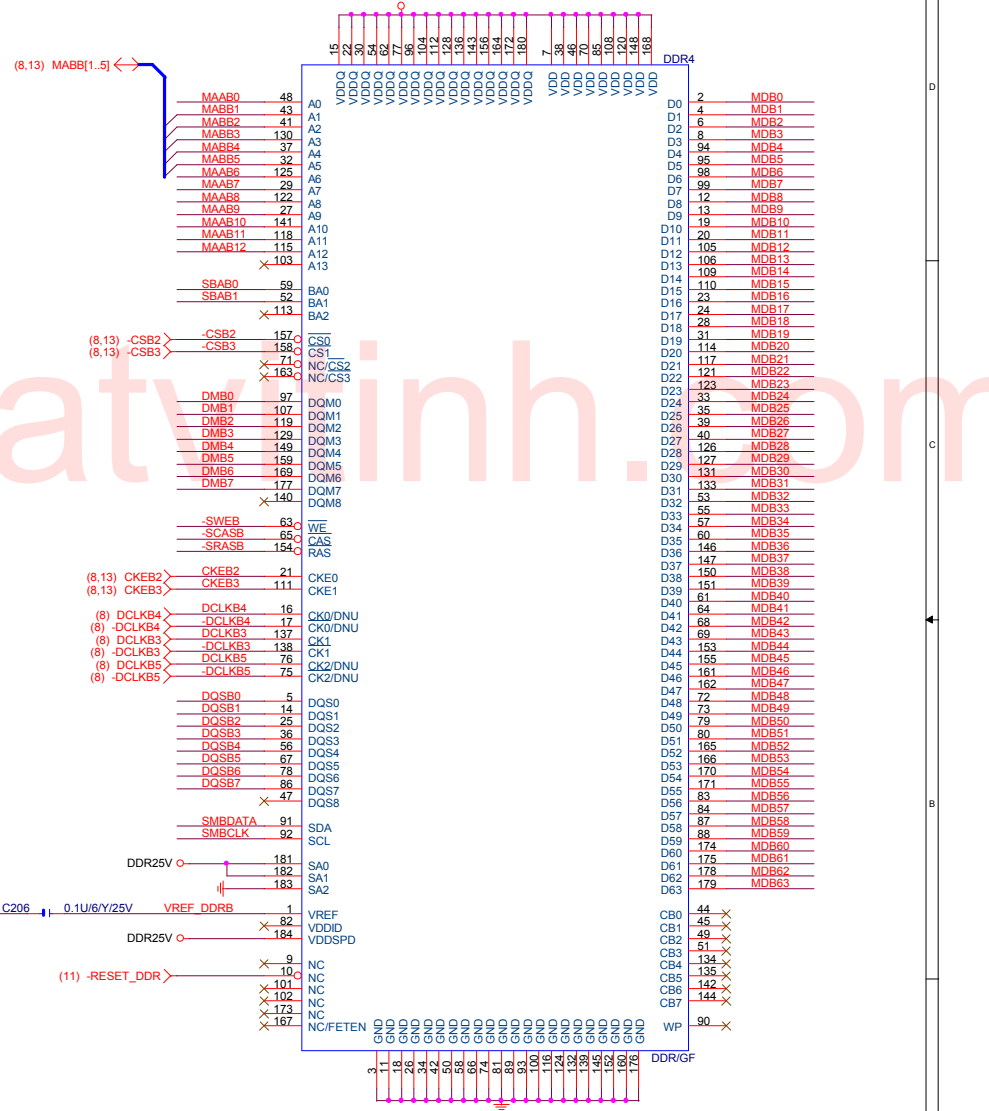
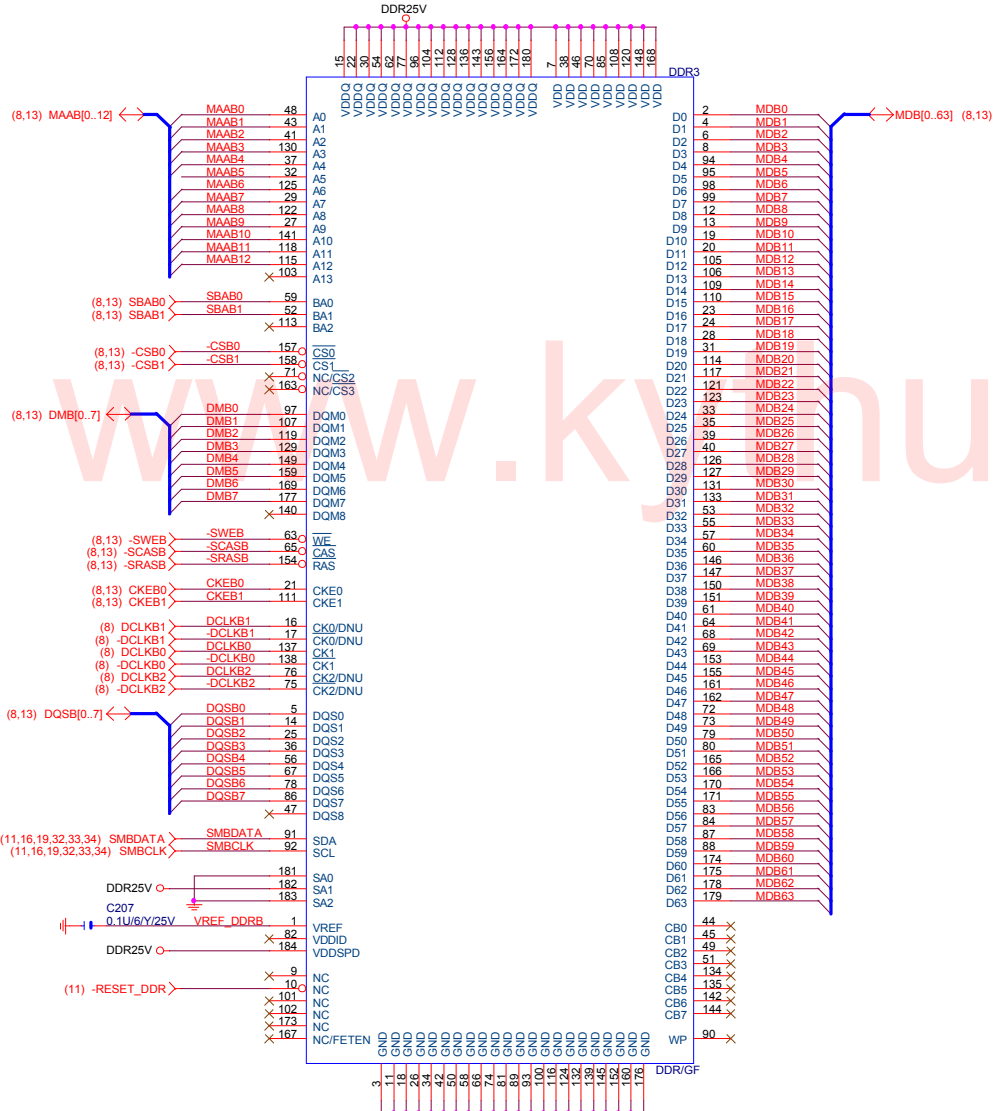
15 Mh  
 30mA  
 15 Mh  
 62mA  
 15 Mh  
 30mA  
 40 Mh  
 1000mA



Title			
SPRINGDALE PWR			
Size	Document Number	Rev	
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GIGABYTE CORP.		
Title		
<b>DDR1,2 CHANNEL A</b>		
Size	Document Number	Rev
B	<b>GA-8I865GVMK</b>	<b>1.0</b>
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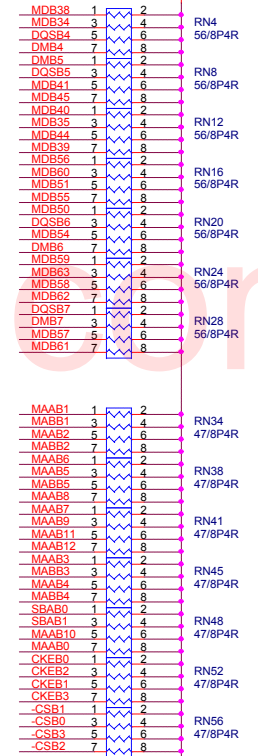
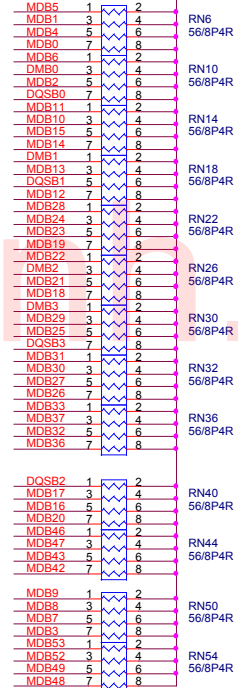
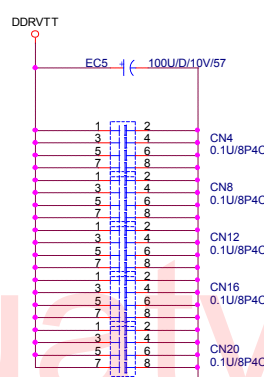
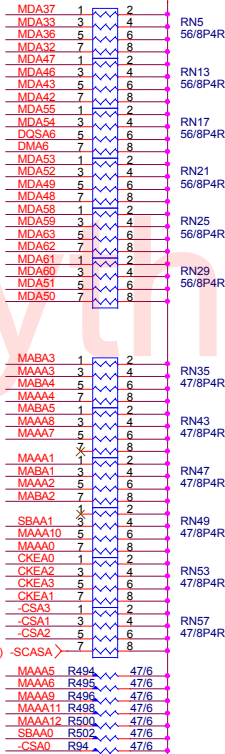
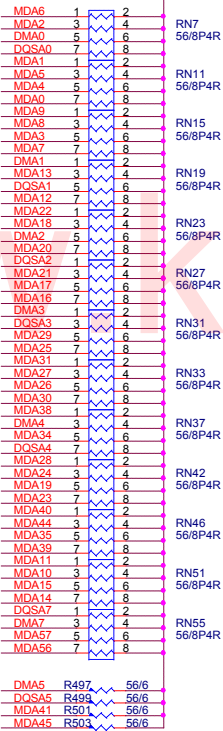
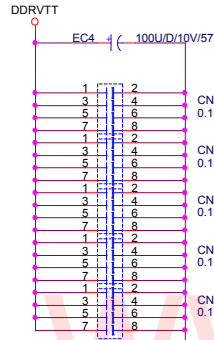
GIGABYTE CORP.		
Title: <b>DDR3,4 CHANNEL B</b>		
Size: B	Document Number: <b>GA-8I865GVMK</b>	Rev: <b>1.0</b>
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DDRVTT Decouple

DDR TERMINATION CHANNEL A

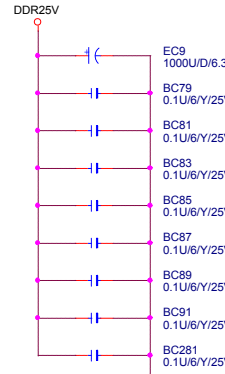
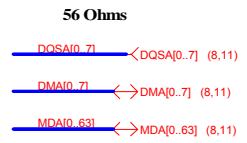
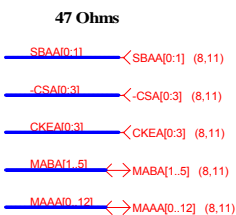
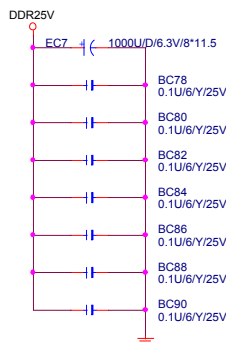
DDRVTT Decouple

CHANNEL B



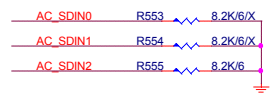
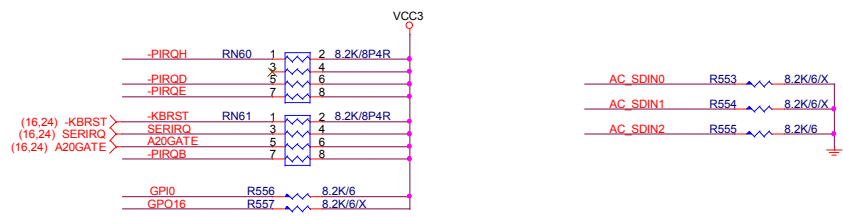
DDR25V Decouple

DDR25V Decouple

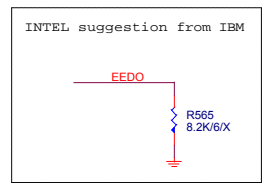
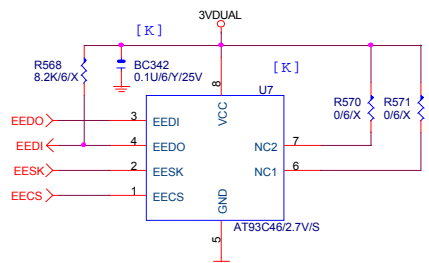
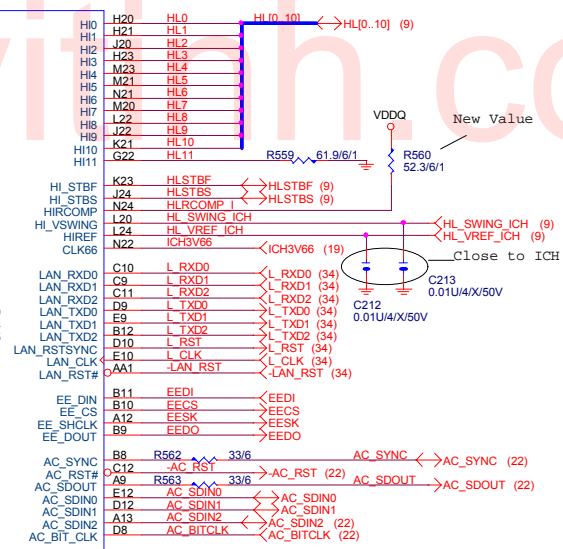
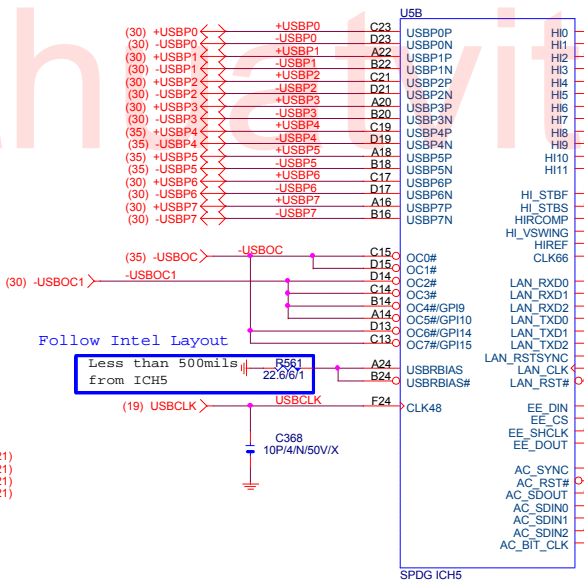
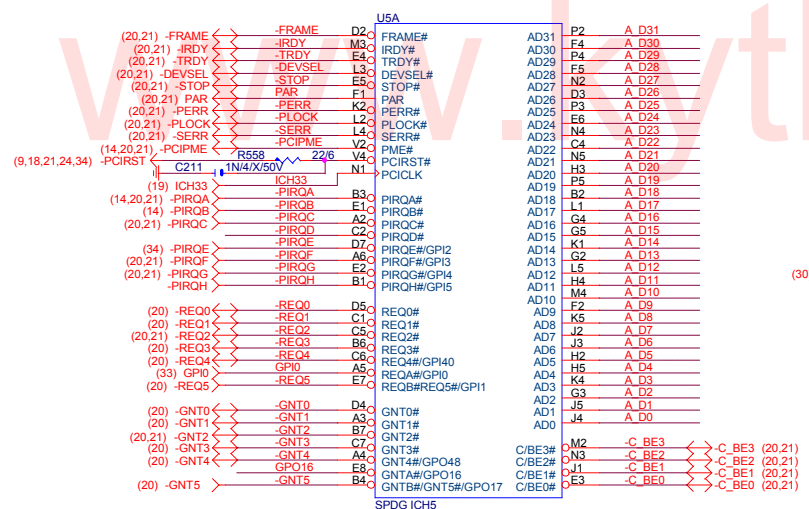


GIGABYTE CORP.		
Title		
<b>DDR TERMINATION</b>		
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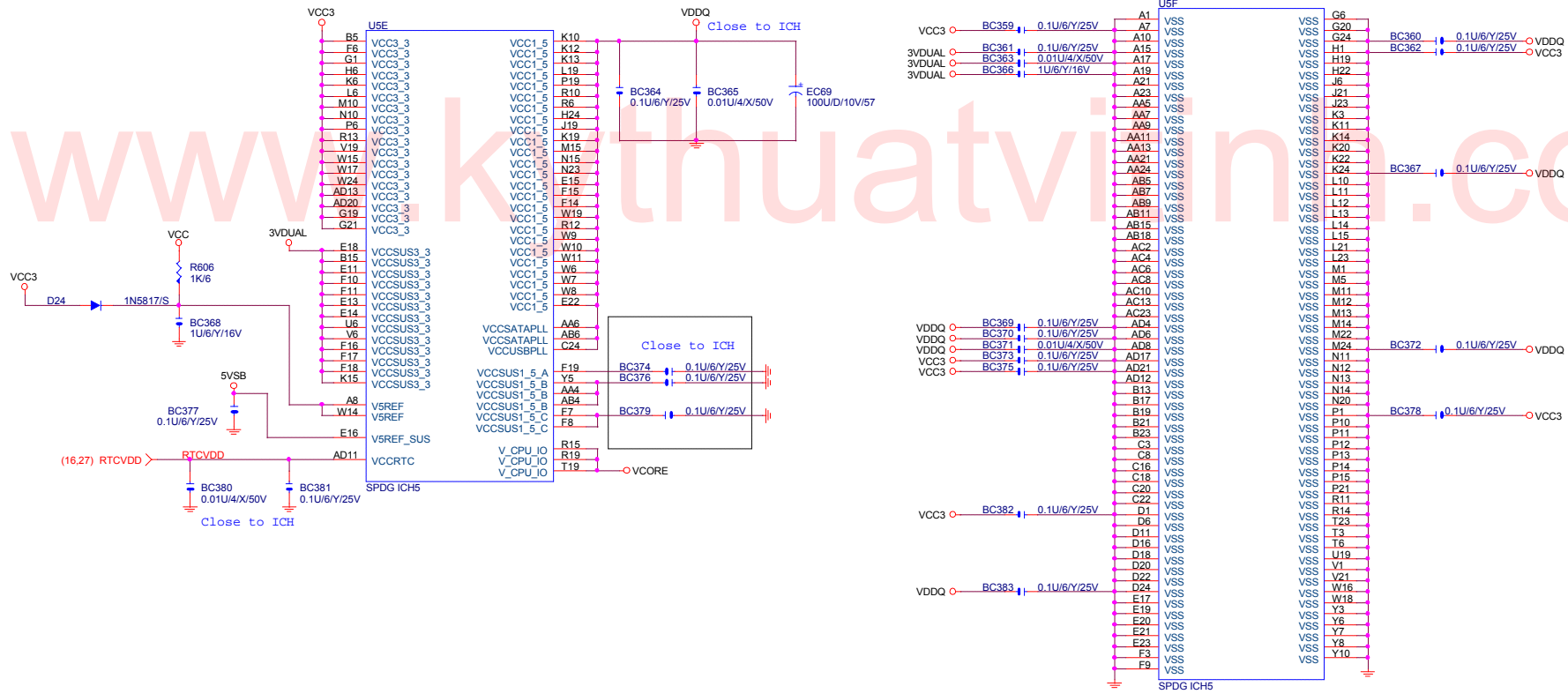
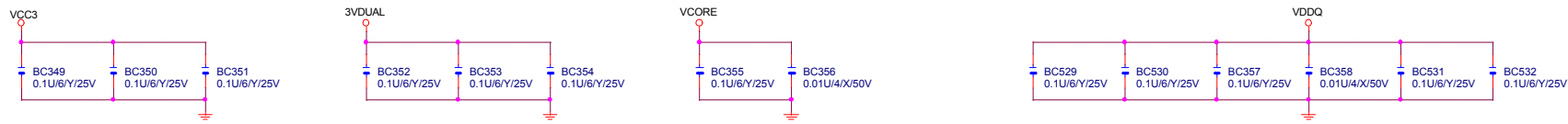


A\_D[0..31] <-> A\_D[0..31] (20.21)



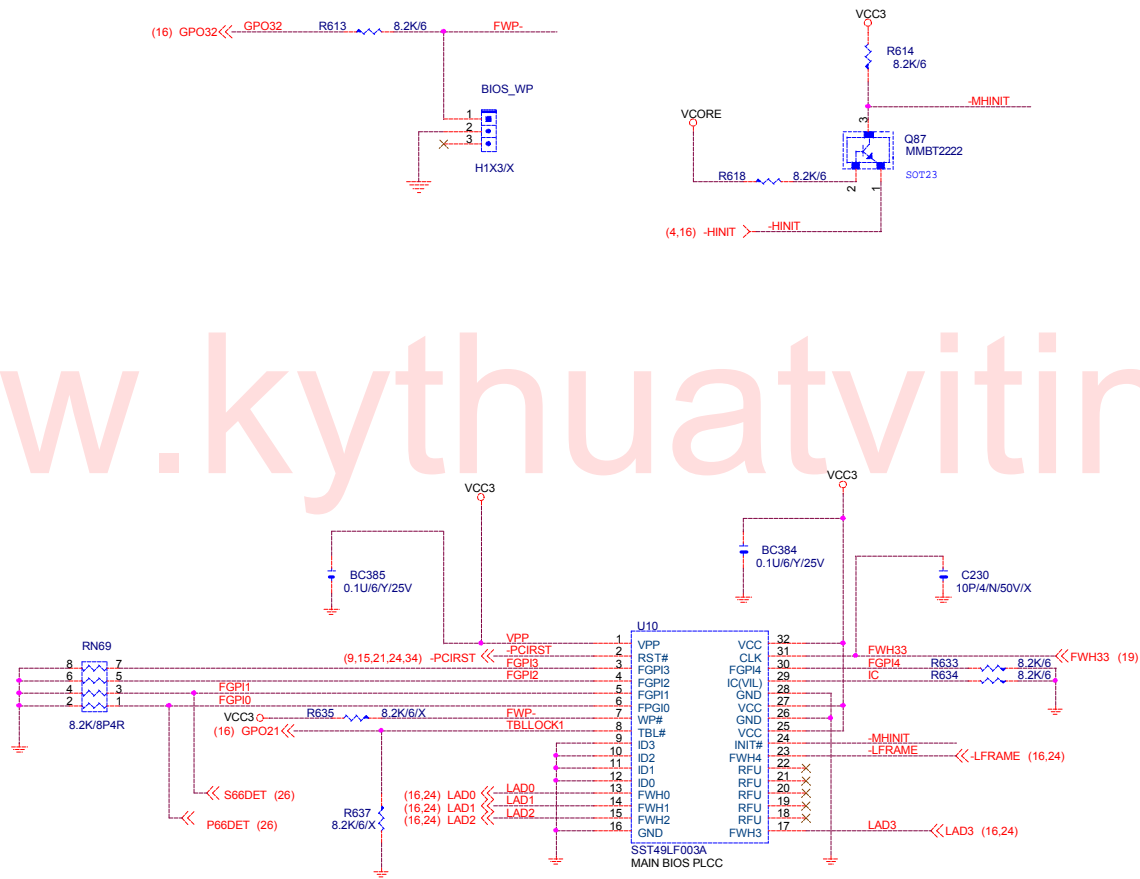
GIGABYTE CORP.			
Title			
<b>ICH5 PCI, USB, HUB, LAN</b>			
Size	Document Number	GA-81865GVMK	Rev
B			1.0
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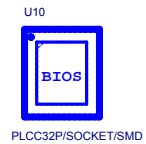


GIGABYTE CORP.		
Title		
<b>ICH5 VCC, GND</b>		
Size B	Document Number	Rev
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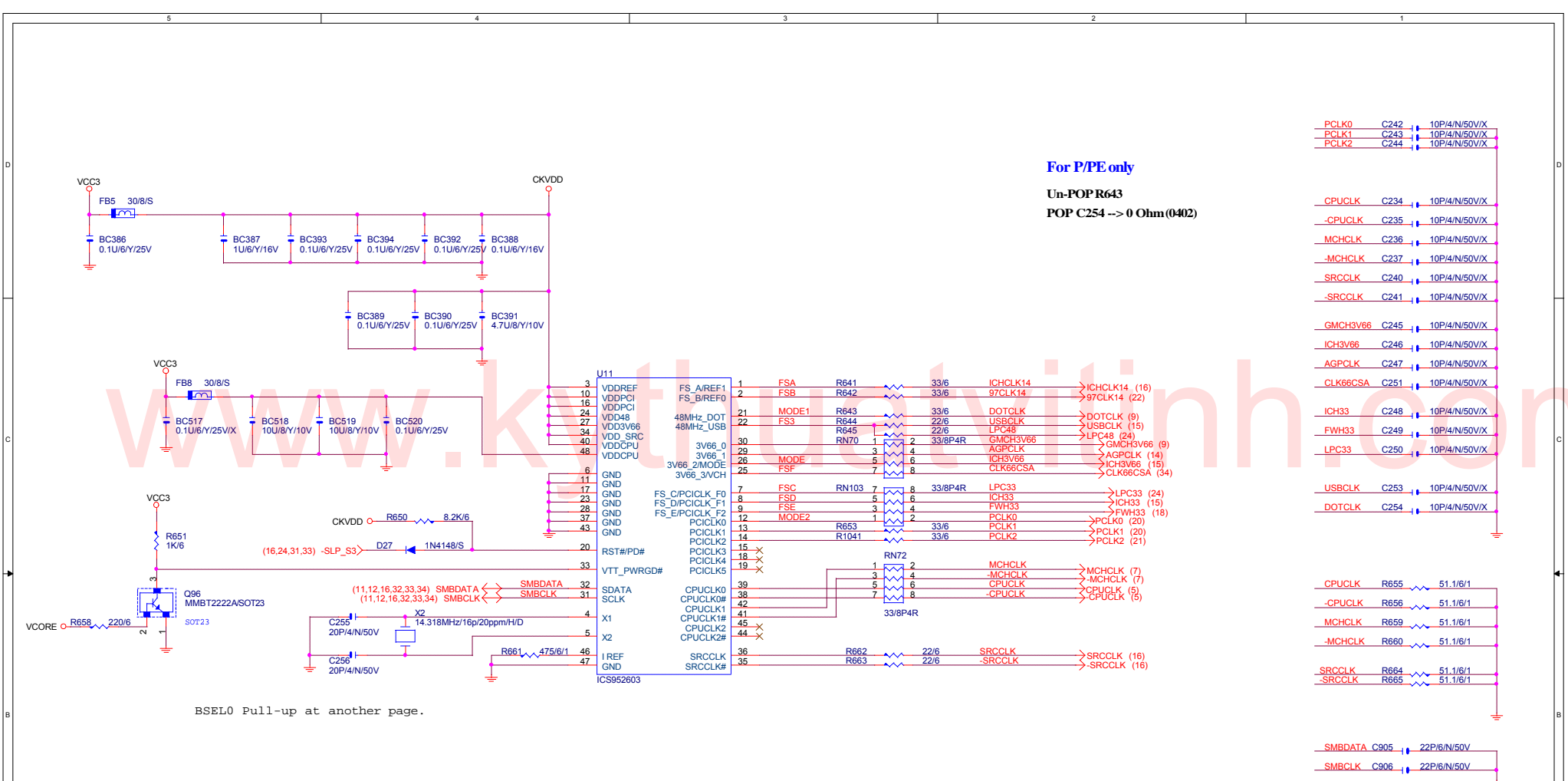


ADD WINBOUD FWH SEC. SOURCE



PLCC32P/SOCKET/SMD

GIGABYTE CORP.		
Title		
<b>FWH</b>		
Size B	Document Number	Rev
	<b>GA-81865GVMK</b>	<b>1.0</b>
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BSEL0 Pull-up at another page.

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

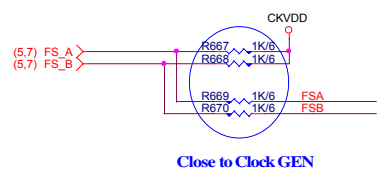
- PCLK0 C242 10P/4/N/50V/X
- PCLK1 C243 10P/4/N/50V/X
- PCLK2 C244 10P/4/N/50V/X
- CPUCLK R655 51.1/6/1
- CPUCLK R656 51.1/6/1
- MCHCLK R659 51.1/6/1
- MCHCLK R660 51.1/6/1
- SRCLK R664 51.1/6/1
- SRCLK R665 51.1/6/1
- SMBDATA C905 22P/6/N/50V
- SMBCLK C906 22P/6/N/50V

**CYPRESS CY28405**

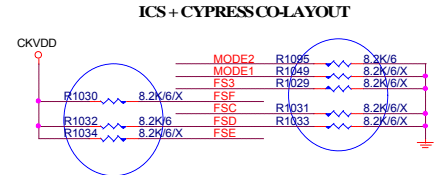
FS_E	FS_D	FS_C	FS_B	FS_A	Clock
1	1	0	0	0	100.9MHz
1	1	0	0	1	133.9MHz
1	1	0	1	1	166.9MHz
1	1	0	1	0	200.9MHz

**ICS952603**

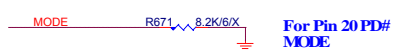
FS_E	FS_3	FS_C	FS_B	FS_A	Clock
1	0	0	0	0	100MHz
1	0	0	0	1	133MHz
1	0	0	1	1	166MHz
1	0	0	1	0	200MHz



Close to Clock GEN



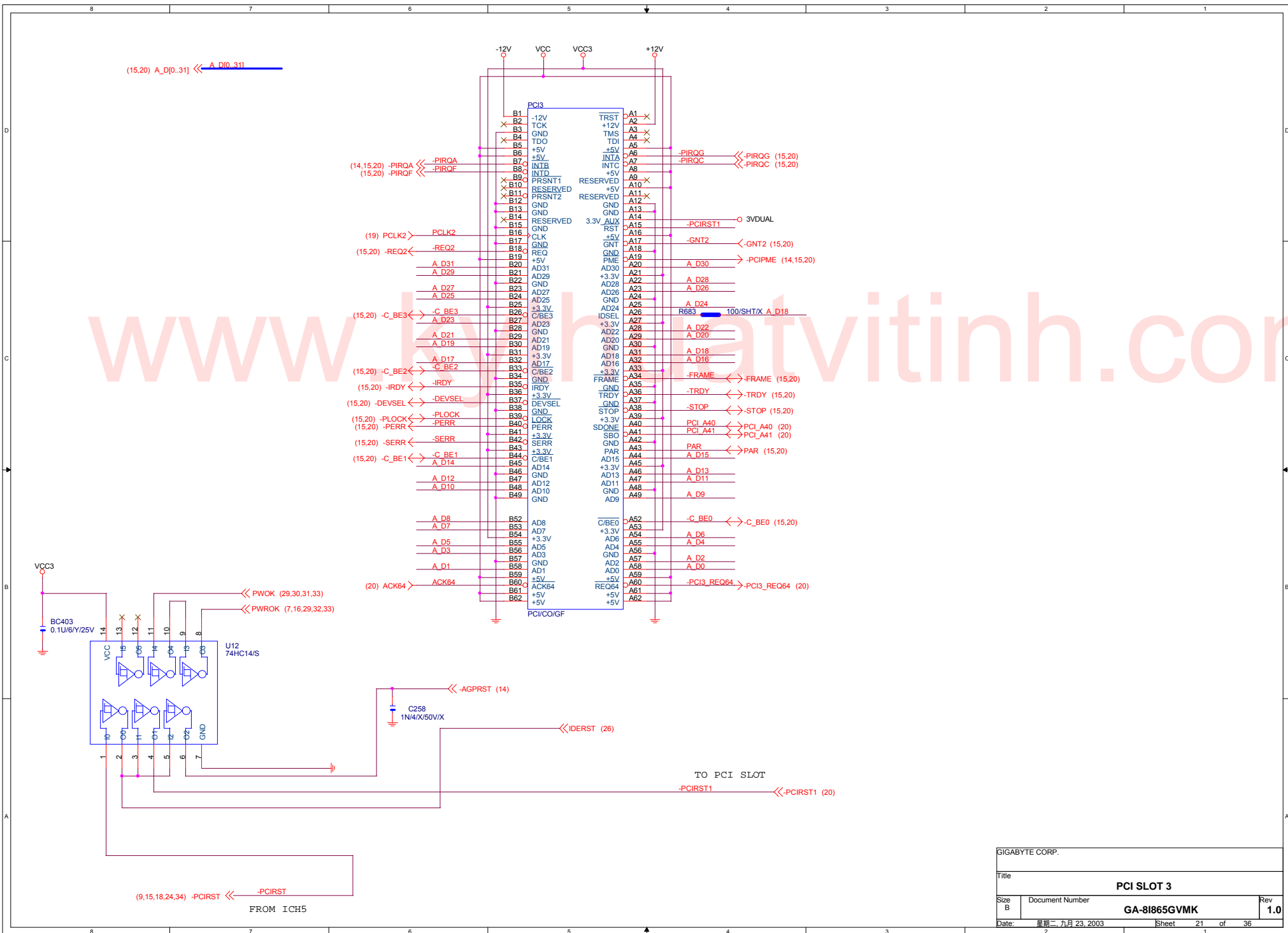
Close to Clock GEN



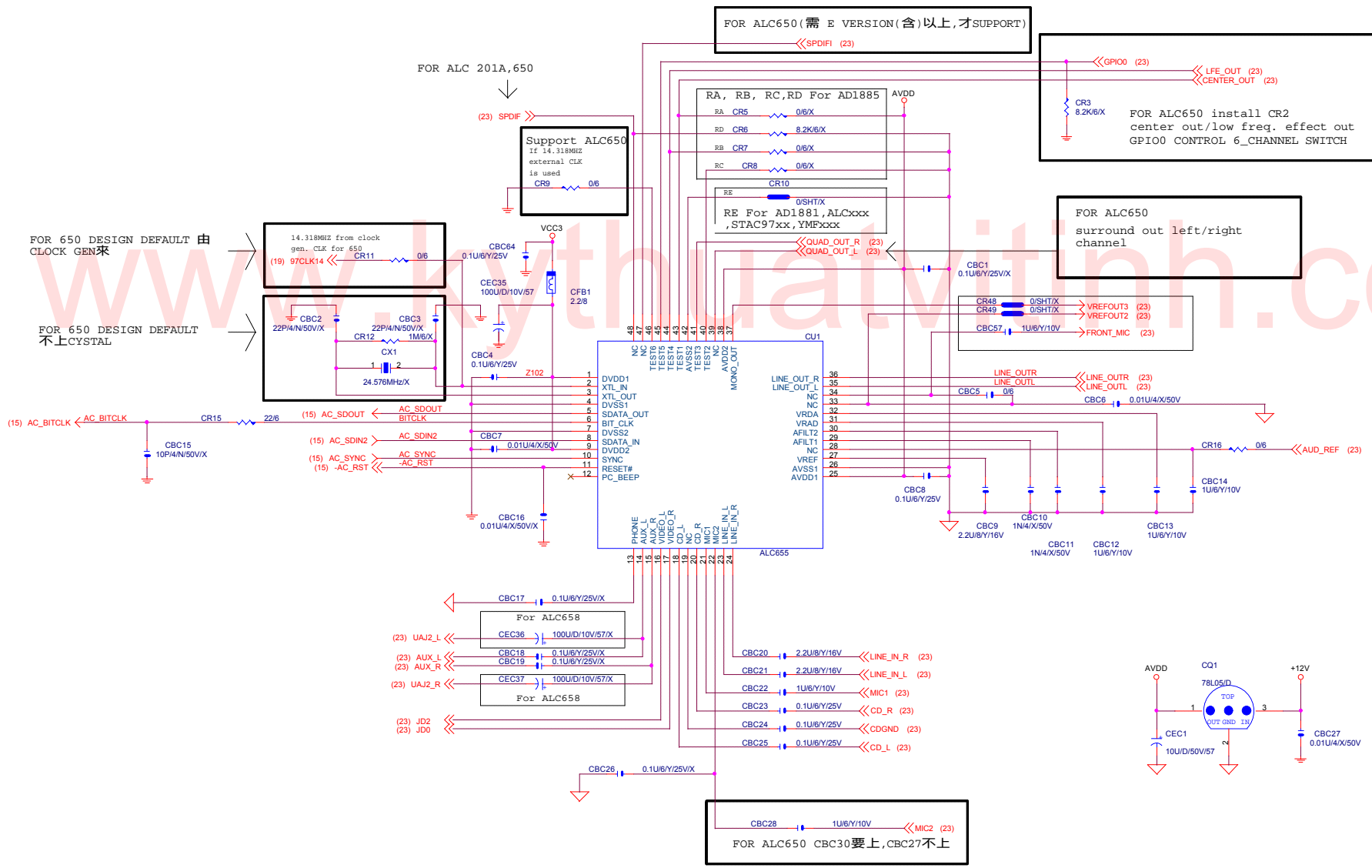
For Pin 20 PD#  
MODE

GIGABYTE CORP.		
Title		
<b>CLOCK GENERATOR</b>		
Size	Document Number	Rev
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GIGABYTE CORP.		
Title		
<b>PCI SLOT 3</b>		
Size B	Document Number	Rev
	<b>GA-81865GVMK</b>	<b>1.0</b>
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FOR 650 DESIGN DEFAULT 由  
CLOCK GEN來

FOR 650 DESIGN DEFAULT  
不上CRYSTAL

FOR ALC650 (需 E VERSION(含)以上,才SUPPORT)

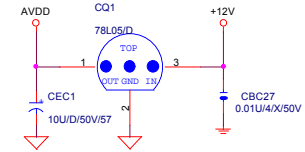
FOR ALC 201A,650

Support ALC650  
If 14.318MHz  
external CLK  
is used  
CR9 0.6

FOR ALC650 install CR2  
center out/low freq. effect out  
GPIO0 CONTROL 6\_CHANNEL SWITCH

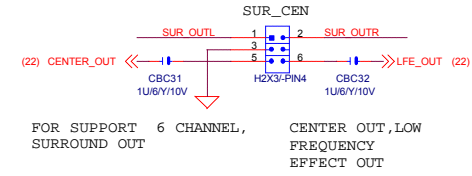
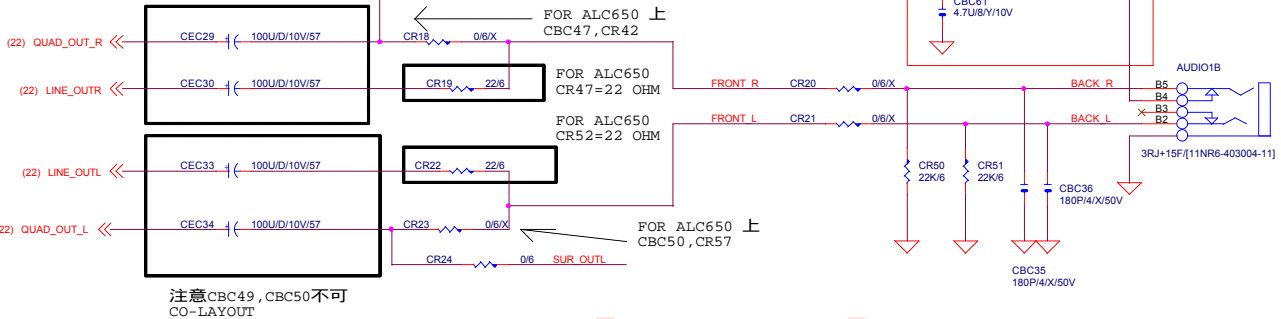
FOR ALC650  
surround out left/right  
channel

FOR ALC650 CBC30要上, CBC27不上

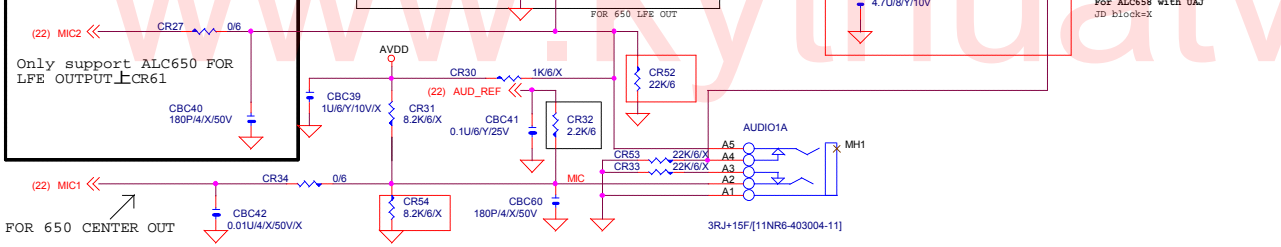


SIGABYTE CORP.			
Title			
<b>CODEC</b>			
Size	Document Number	<b>GA-81865GVMK</b>	Rev
Custom			<b>1.0</b>
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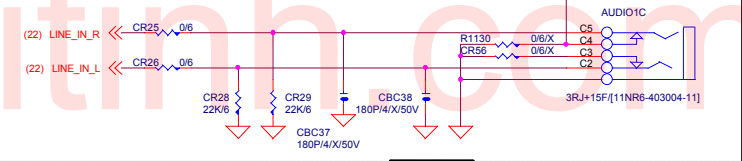
**LINE OUT**



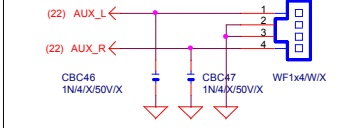
**MIC**



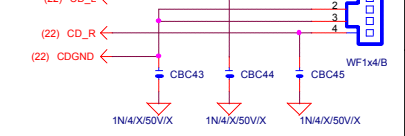
**LINE-IN**



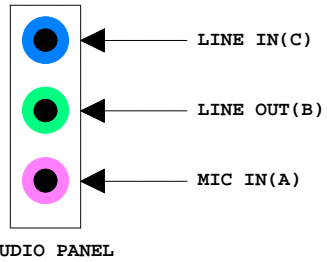
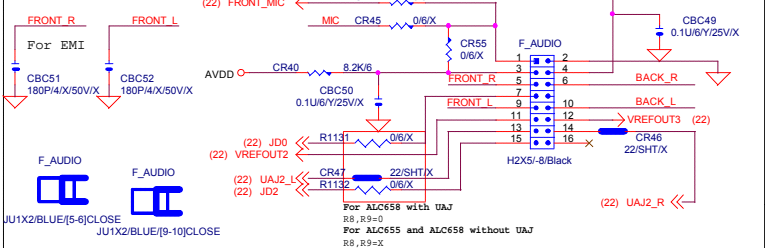
**AUX IN DEFAULT NO POP**



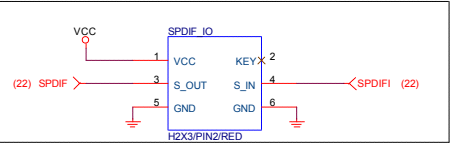
**CD IN**



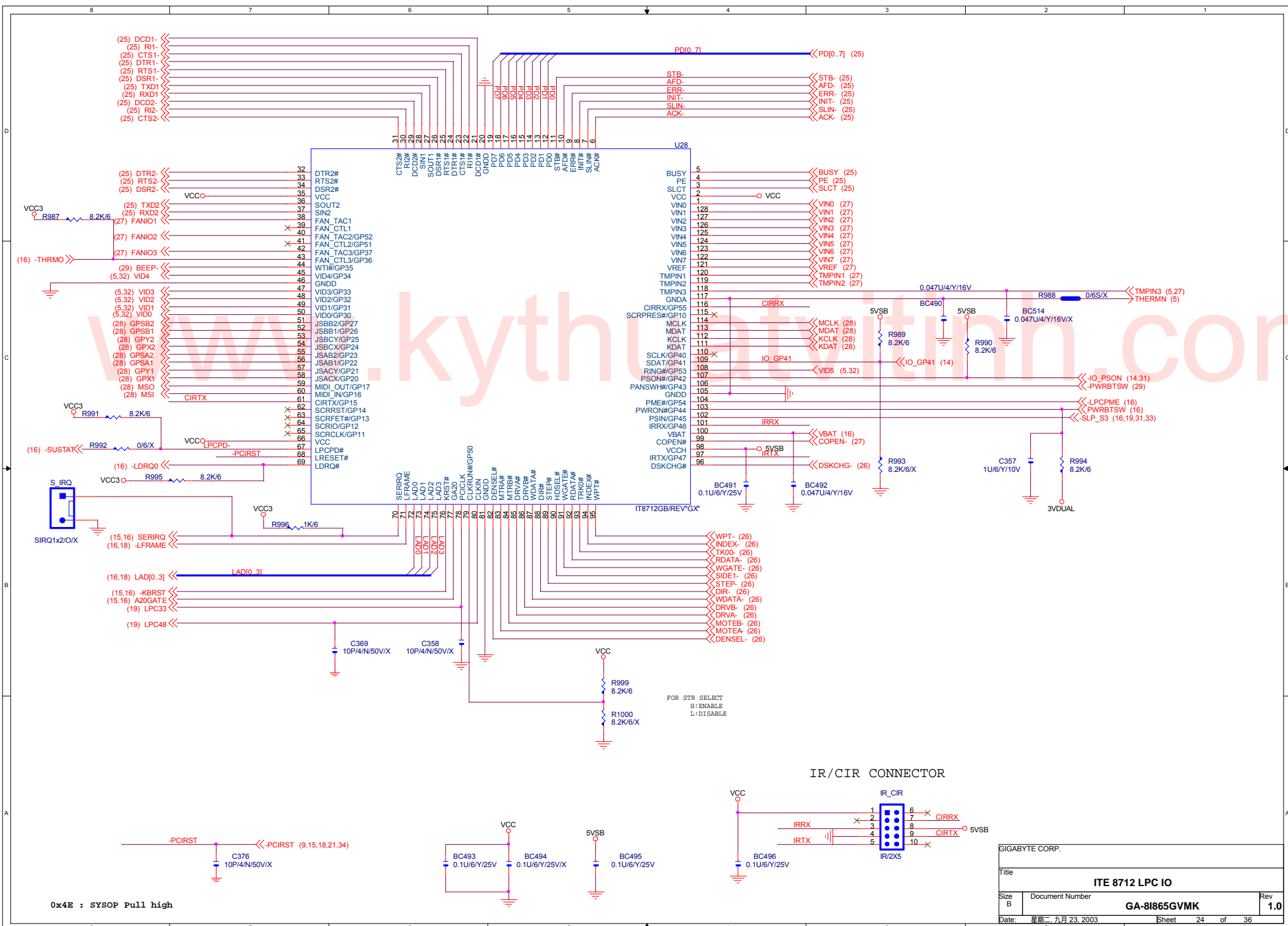
**INTEL FRONT AUDIO**



**SPDIF**

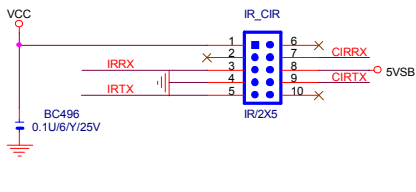


<b>GIGABYTE CORP.</b>			
<b>AUDIO OUTPUT, GAME PORT</b>			
Title	Document Number		Rev
	<b>GA-81865GVMK</b>		<b>1.0</b>
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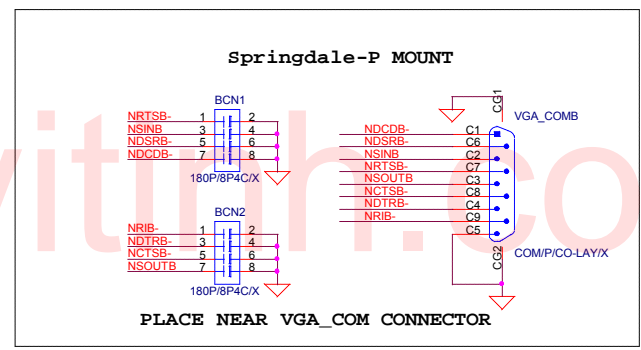
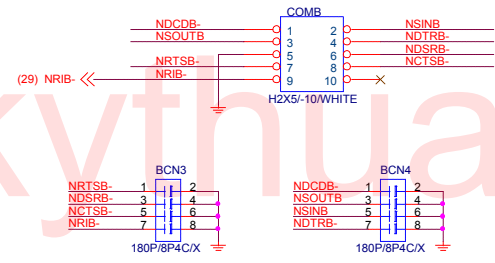
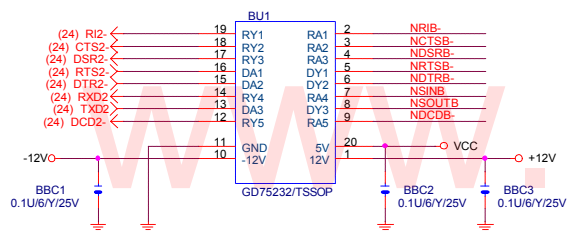
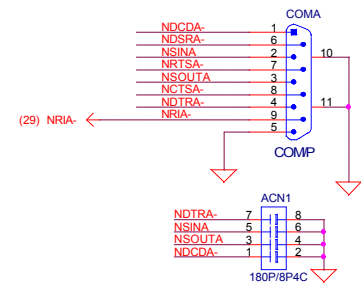
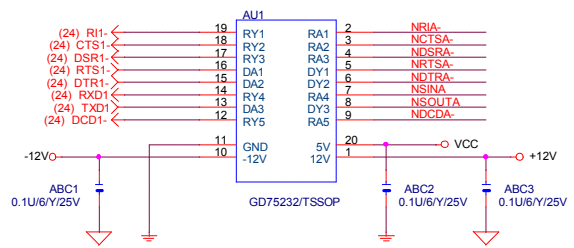


0x4E : SYSOP Pull high

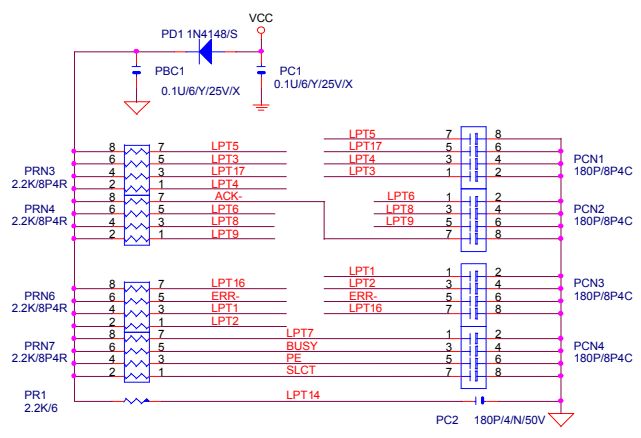
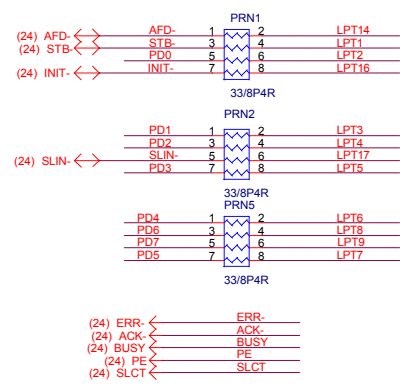
IR/CIR CONNECTOR



GIGABYTE CORP.		
Title		
<b>ITE 8712 LPC IO</b>		
Size	Document Number	Rev
B	<b>GA-81865GVMK</b>	<b>1.0</b>
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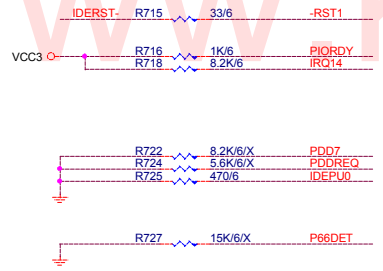
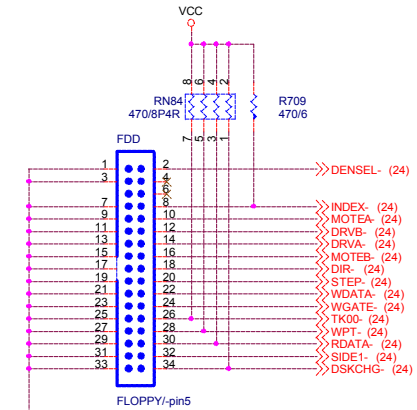
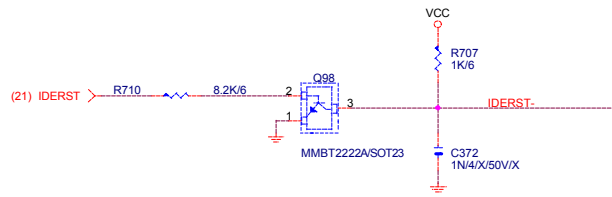


(24) PD[0..7] ↔ PD[0..7]

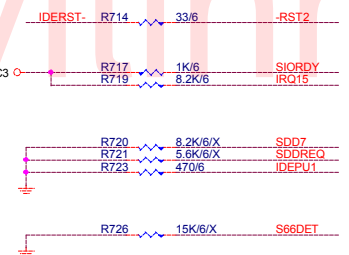


GIGABYTE CORP.

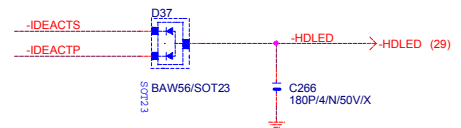
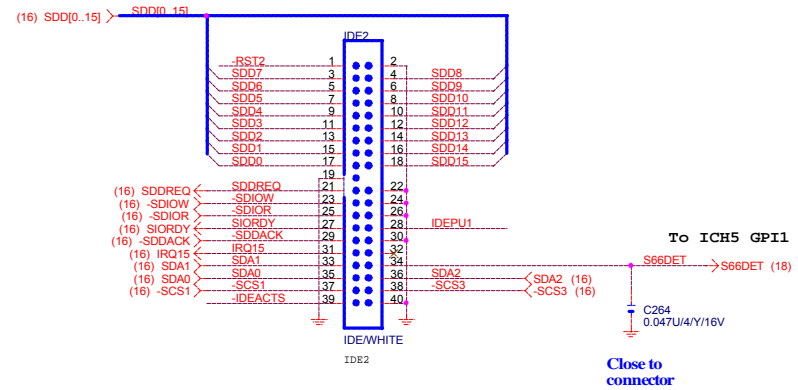
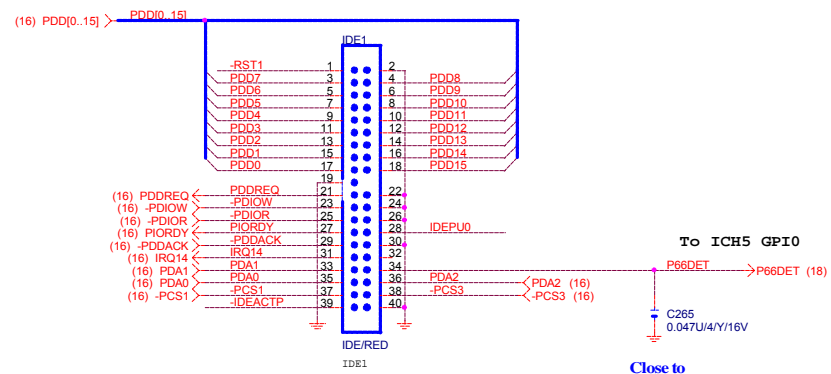
Title		
<b>COM &amp; IR &amp; LPT PORT &amp; FLOOPY</b>		
Size B	Document Number	Rev
	<b>GA-81865GVMK</b>	<b>1.0</b>
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PRIMARY IDE CONNECTOR

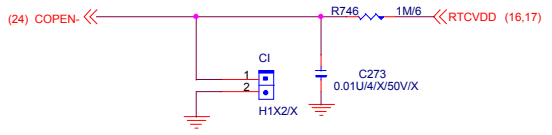
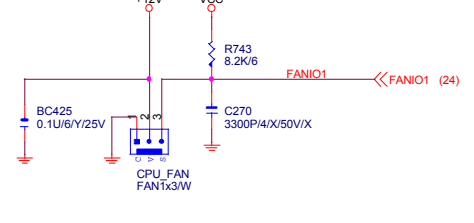
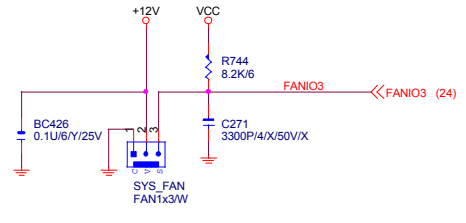
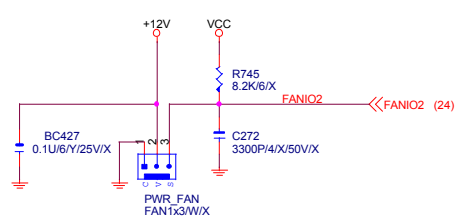
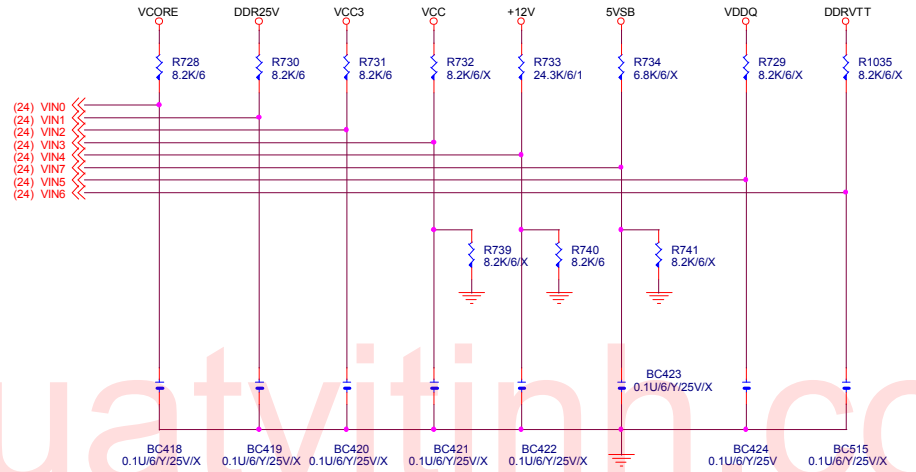
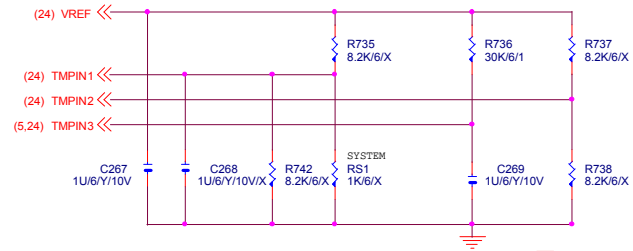


SECONDARY IDE CONNECTOR

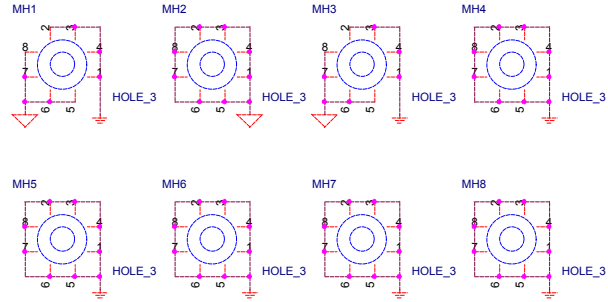
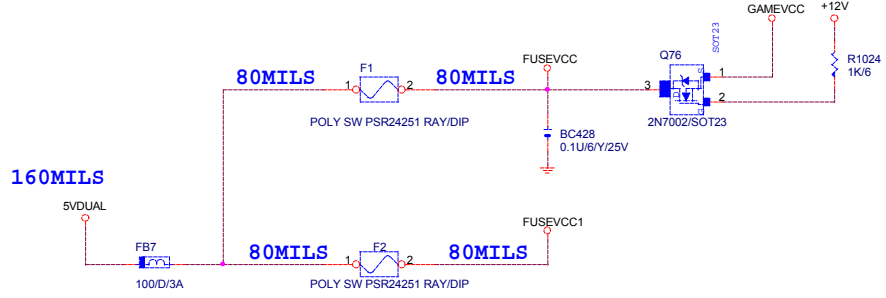


GIGABYTE CORP.		
Title		
<b>IDE CONNECTOR</b>		
Size B	Document Number	Rev
	<b>GA-81865GVMK</b>	<b>1.0</b>
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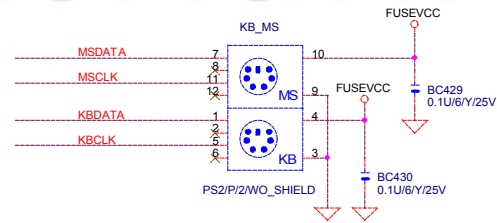
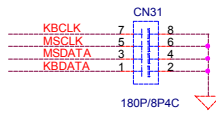
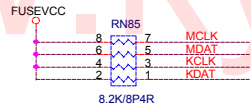
# Hardware Monitor circuits



GIGABYTE CORP.		
Title		
<b>FAN/HWMO</b>		
Size	Document Number	Rev
B	<b>GA-8I865GVMK</b>	<b>1.0</b>
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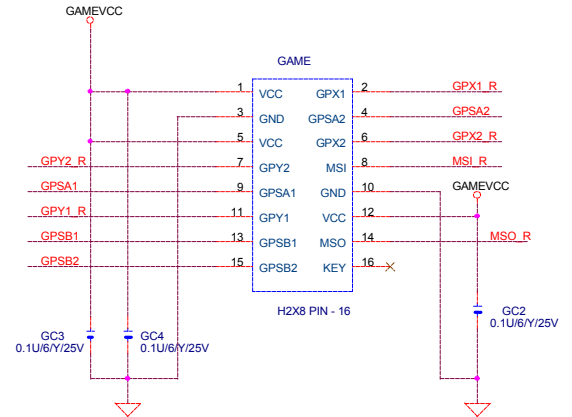
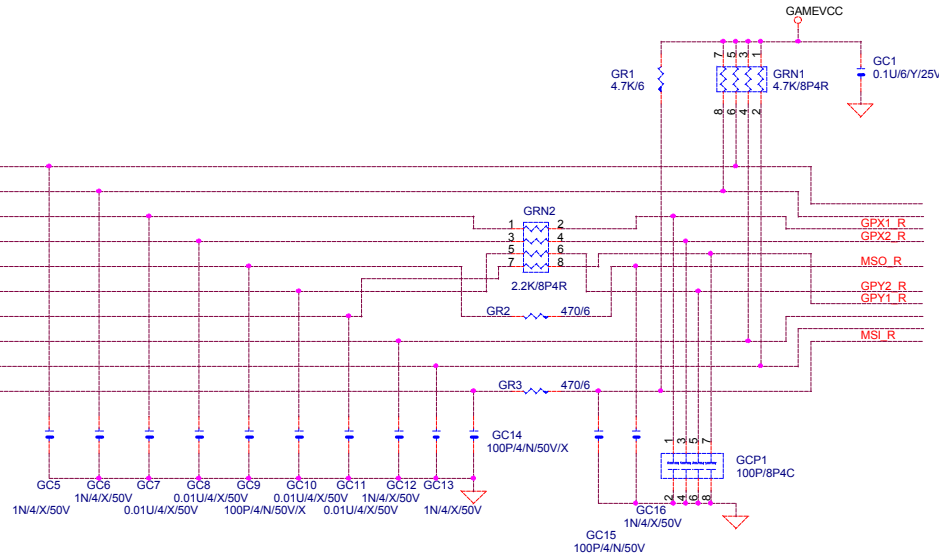


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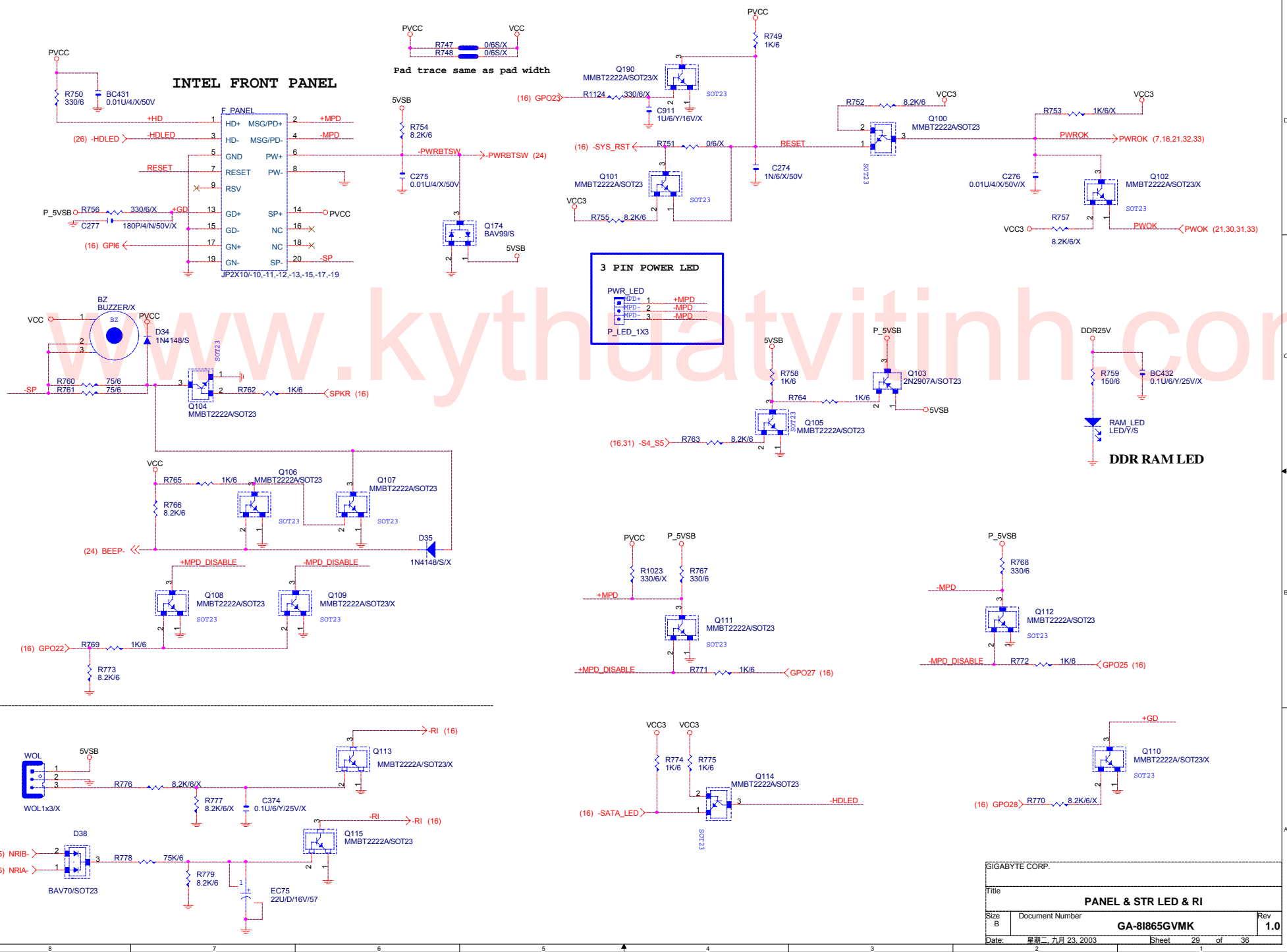
**GAME\_PORT**

- (24) GPSA1 ← GPSA1
- (24) GPSB1 ← GPSB1
- (24) GPX1 ← GPX1
- (24) GPX2 ← GPX2
- (24) MSO ← MSO
- (24) GPY2 ← GPY2
- (24) GPY1 ← GPY1
- (24) GPSB2 ← GPSB2
- (24) GPSA2 ← GPSA2
- (24) MSI ← MSI



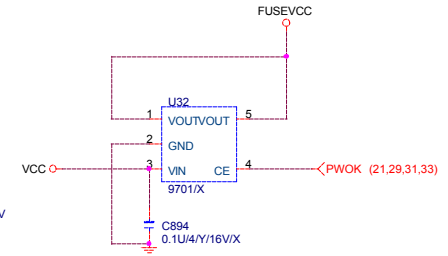
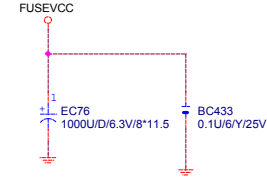
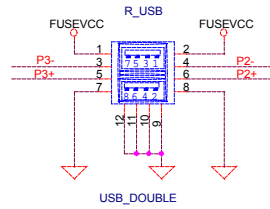
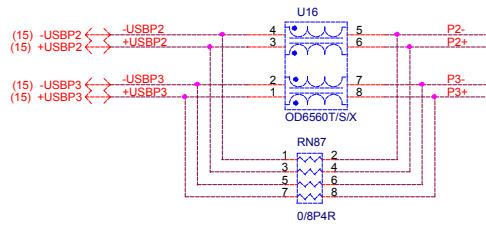
GIGABYTE CORP.		
Title <b>KB &amp; PS2 MOUSE &amp; IR</b>		
Size B	Document Number <b>GA-81865GVMK</b>	Rev <b>1.0</b>
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### INTEL FRONT PANEL

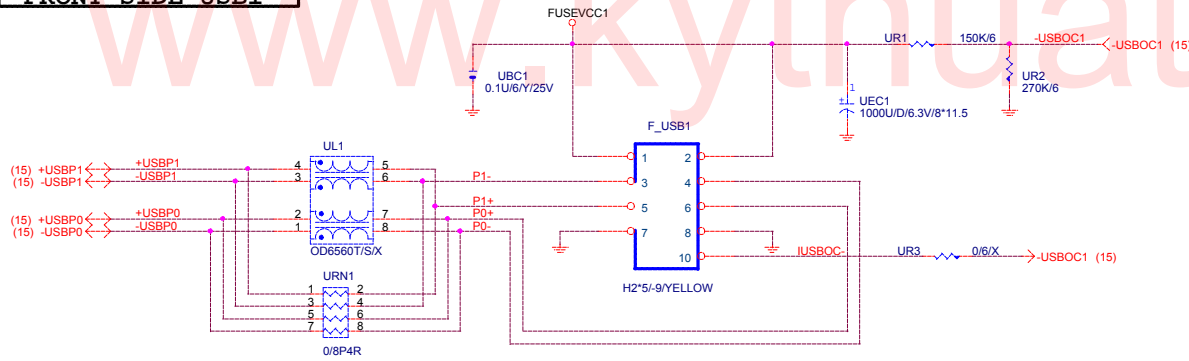


GIGABYTE CORP.		
Title		
<b>PANEL &amp; STR LED &amp; RI</b>		
Size B	Document Number	Rev
	<b>GA-81865GVMK</b>	<b>1.0</b>
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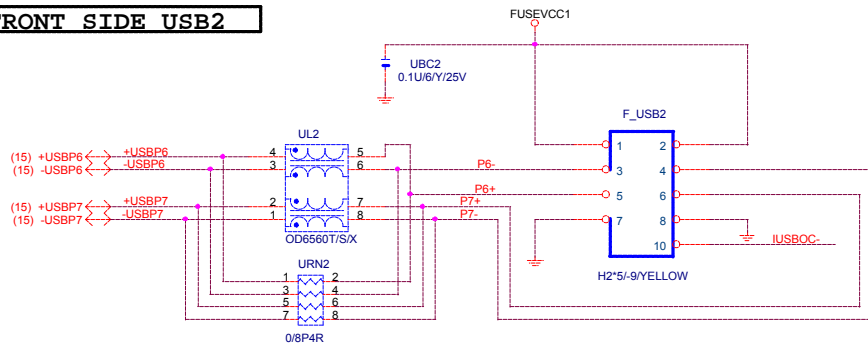
# REAR USB



## FRONT SIDE USB1

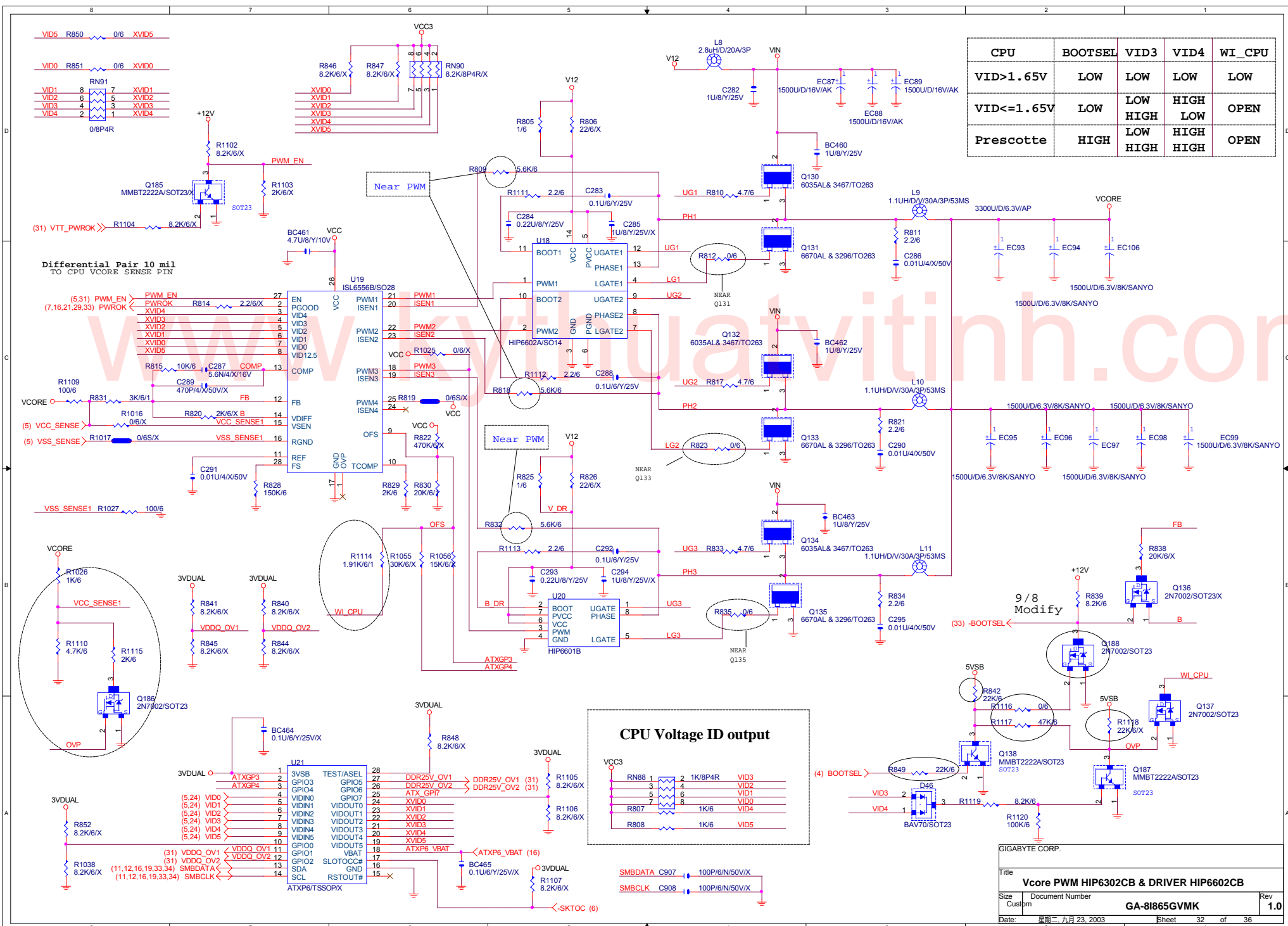


## FRONT SIDE USB2



GIGABYTE CORP.		
Title		
<b>ICH USB PORT</b>		
Size B	Document Number	Rev
	<b>GA-81865GVMK</b>	<b>1.0</b>
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CPU	BOOTSEL	VID3	VID4	WI_CPU
VID>1.65V	LOW	LOW	LOW	LOW
VID<=1.65V	LOW	LOW	HIGH	LOW
Prescotte	HIGH	HIGH	HIGH	OPEN

### CPU Voltage ID output

Pin	Signal	Value
1	VID3	1K/8P4R
2	VID2	1K/6
3	VID1	1K/6
4	VID0	1K/6
5	VID5	1K/6

GIGABYTE CORP.

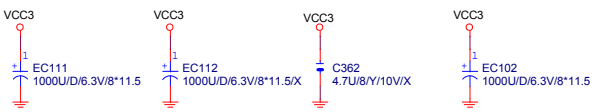
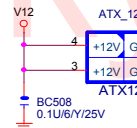
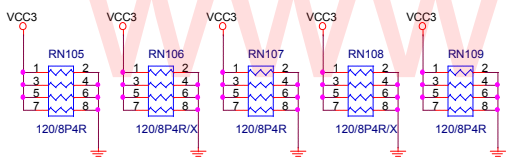
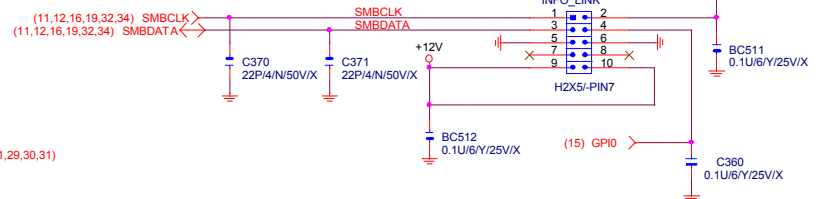
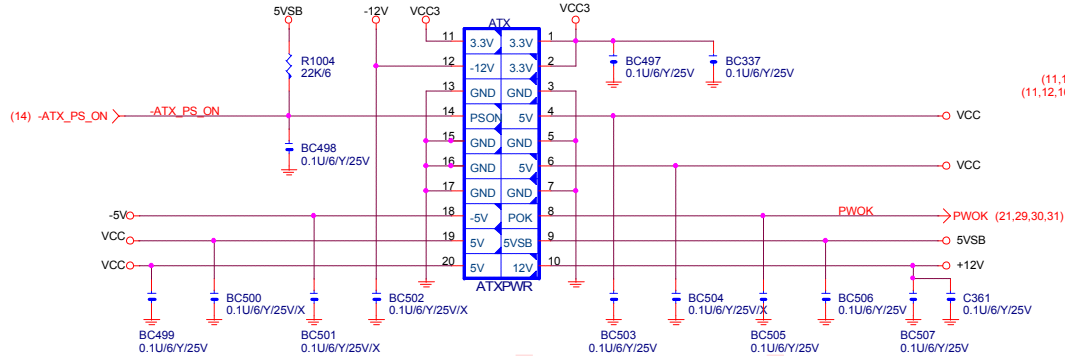
Title: **Vcore PWM HIP6302CB & DRIVER HIP6602CB**

Size: Custom      Document Number: **GA-81865GVMK**      Rev: **1.0**

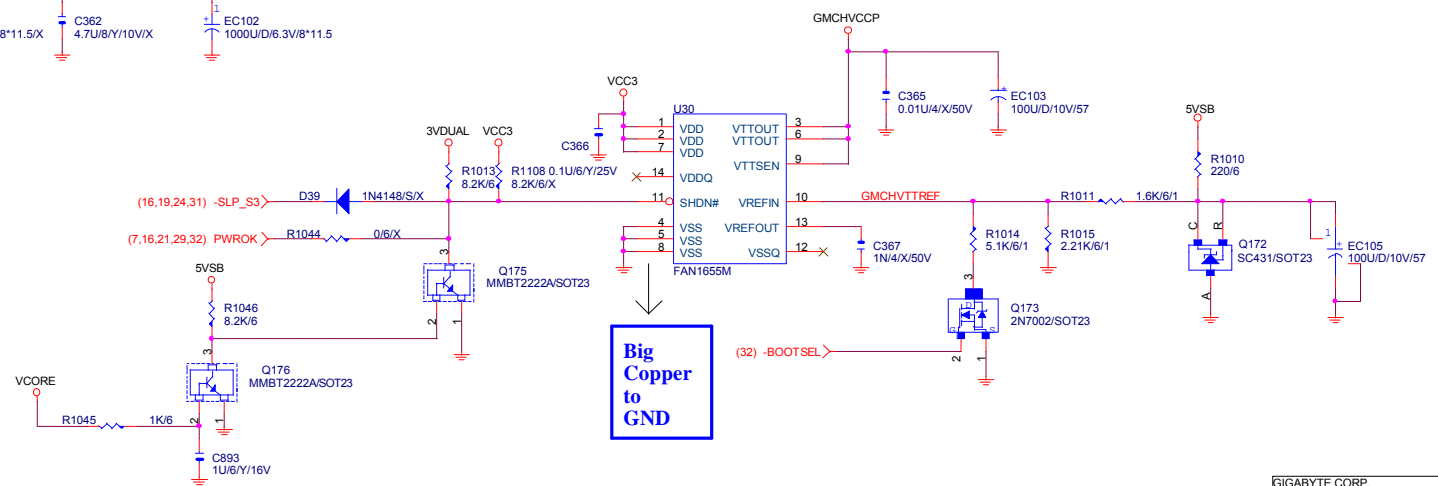
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# ATX POWER CONNECTOR

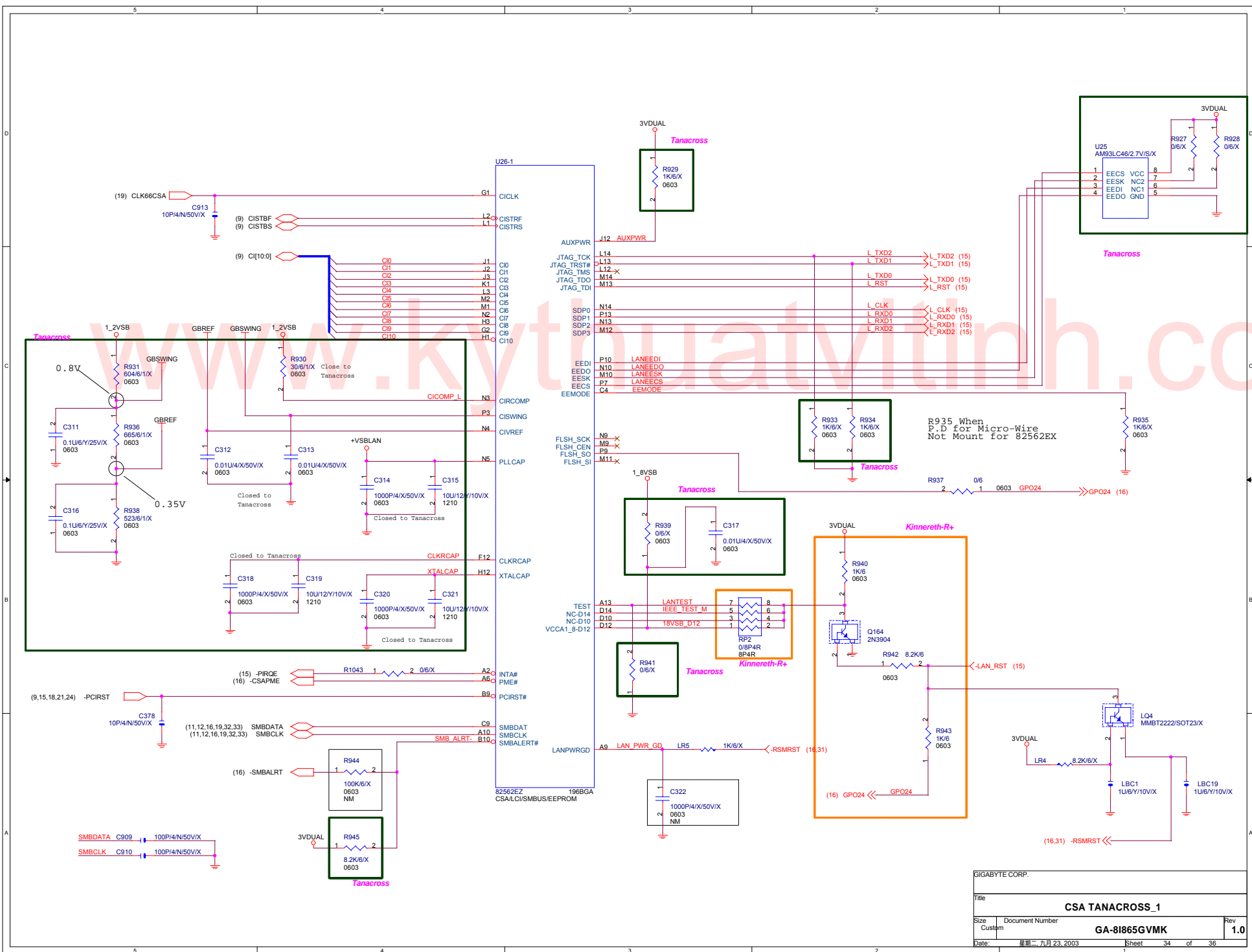
# SMBUS CONN.



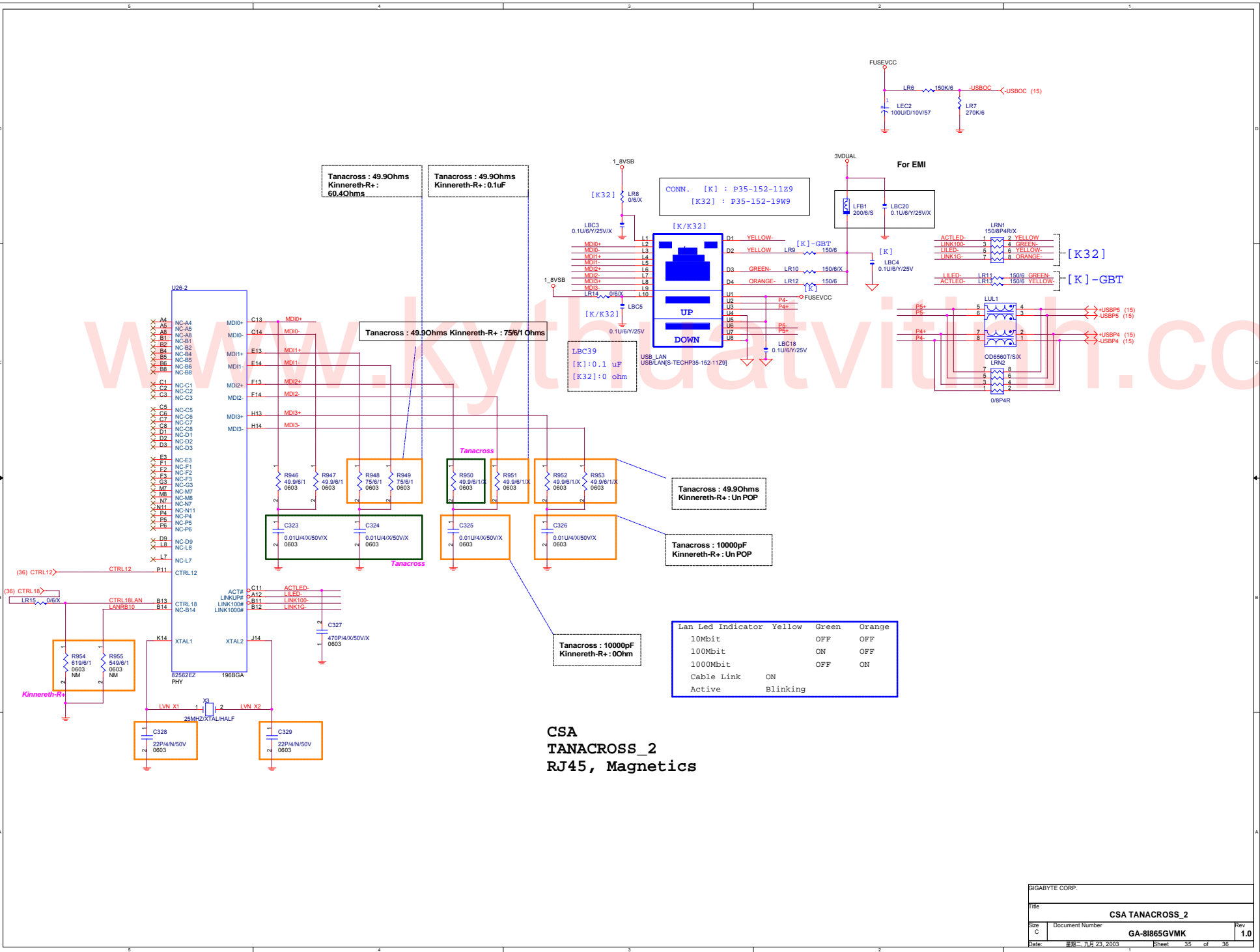
Northwood:+1.45V  
Prescott:+1.225V



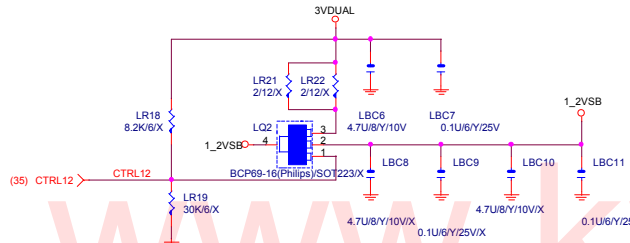
GIGABYTE CORP.		
Title		
<b>Misc. PWR &amp; ATX CONN.</b>		
Size B	Document Number	Rev
	<b>GA-81865GVMK</b>	<b>1.0</b>
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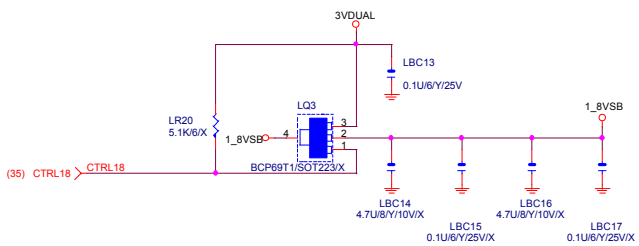
SISGABYTE CORP.			
Title			
<b>CSA TANACROSS_1</b>			
Size	Document Number	Rev	
Custom	<b>GA-81865VMK</b>	<b>1.0</b>	
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**+1.2VSB**  
Max800mA Typ500mA

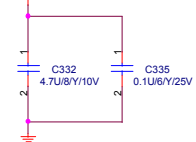


**+1.8VSB**  
Max500mA Typ250mA

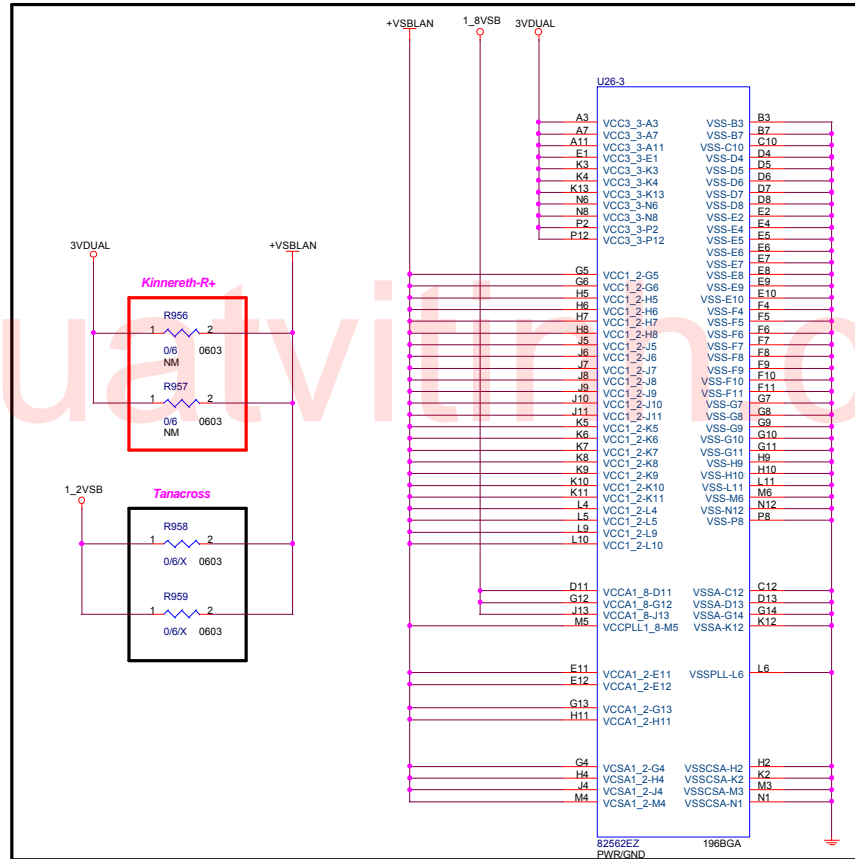
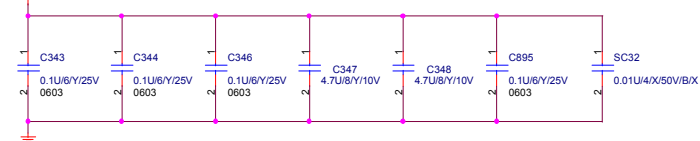


Tanacross

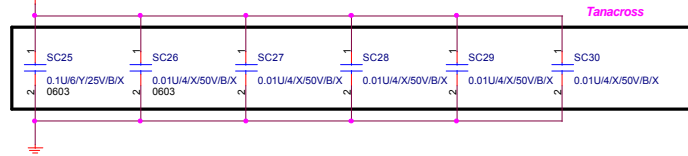
**BYPASS Cap.**



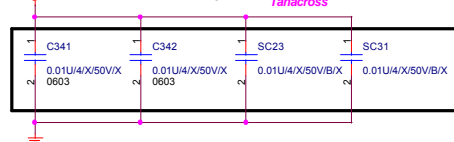
**BYPASS Cap.**



**BYPASS Cap.**



**BYPASS Cap.**



SIGABYTE CORP.			
Title			
<b>CSA TANACROSS_3</b>			
Size	Document Number	Rev	
Custom	<b>GA-81865VMK</b>	<b>1.0</b>	
Date:	星期二, 九月 23, 2003	Sheet	36 of 36