

GIGABYTE GA-8I848P-L Schematics

Revision
1.0

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02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	P4_478A
05	P4_478B
06	P4_478C
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08	SPRINGDALE DDR
09	SPRINGDALE AGP, HUB, CSA, VGA
10	SPRINGDALE PWR
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12	DDR3 CHANNEL A
13	DDR TERMINATION
14	AGP
15	ICH5 PCI, USB, HUB, LAN
16	ICH5 IDE, GPIO, SATA, CTRL
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SHEET TITLE

23	CODEC
24	AUDIO JACK, L_OUT, F_AUDIO
25	ITE 8712
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27	IDE
28	FAN/HWMO
29	KB_PS2
30	FPANEL
31	USB CONN
32	DDR POWER
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35	KINNERETH-R LNA(CSA-1)
36	KINNERETH-R LNA(CSA-2)
37	KINNERETH-R LNA(CSA-3)

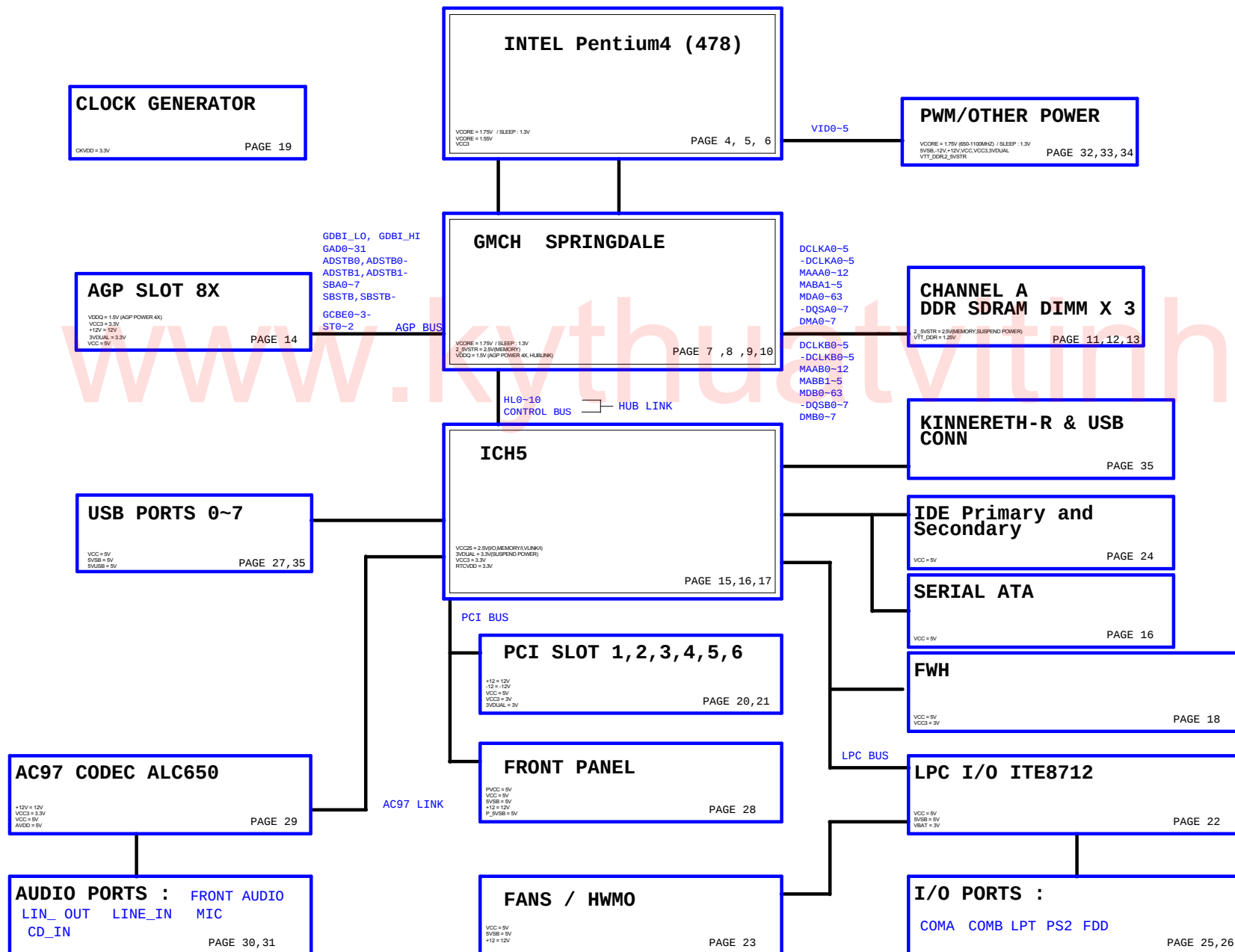
		COMPONENT SIDE (1 oz. Copper) VCC SIDE (1 oz. Copper) GND SIDE (1 oz. Copper) SOLDER SIDE (1 oz. Copper)
GIGABYTE CORP.		
Title COVER SHEET		
Size Custom	Document Number GA-8I848P-L	Rev 1.0
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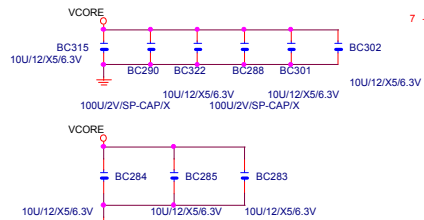
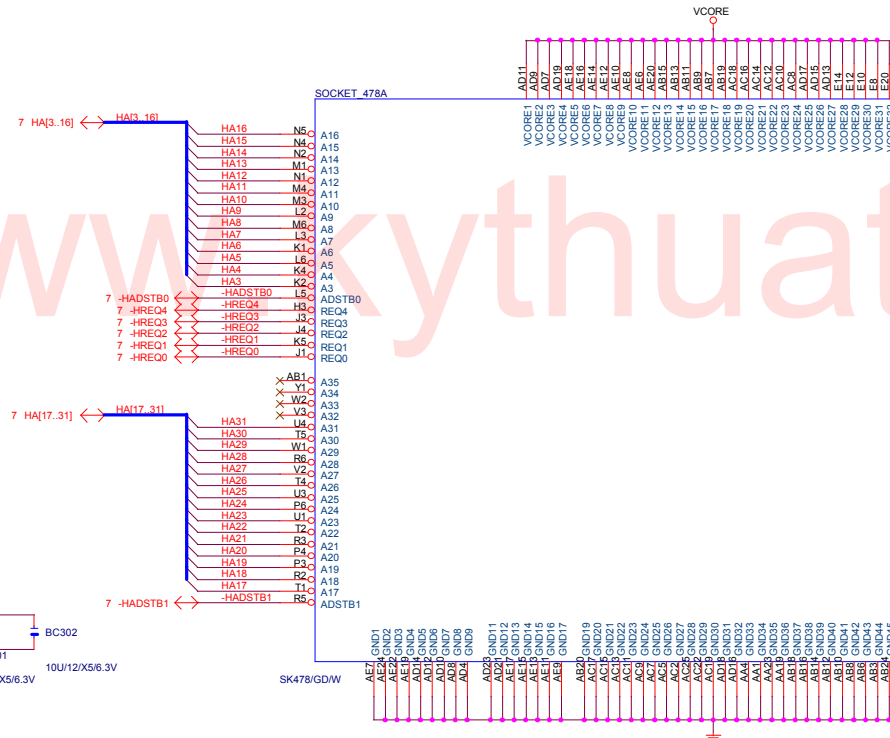
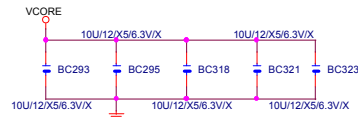
Version :1.0

Circuit or PCB layout history

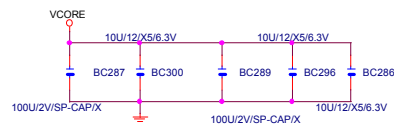
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BLOCK DIAGRAM

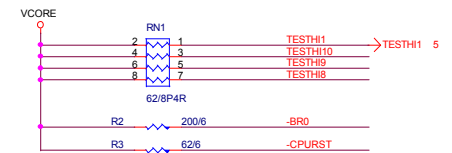
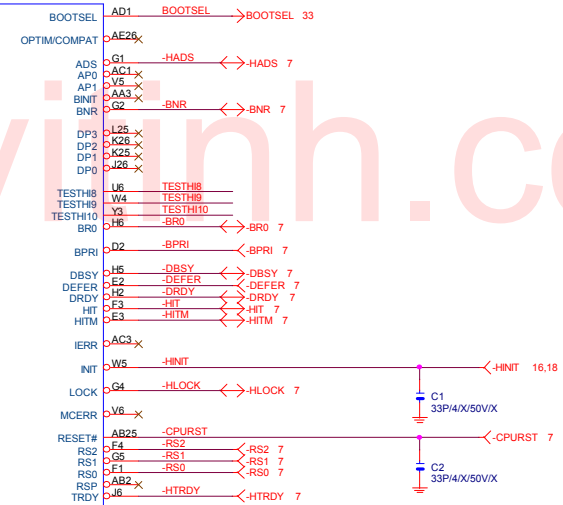
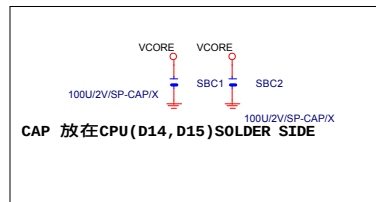




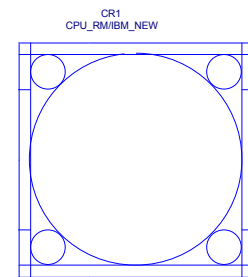
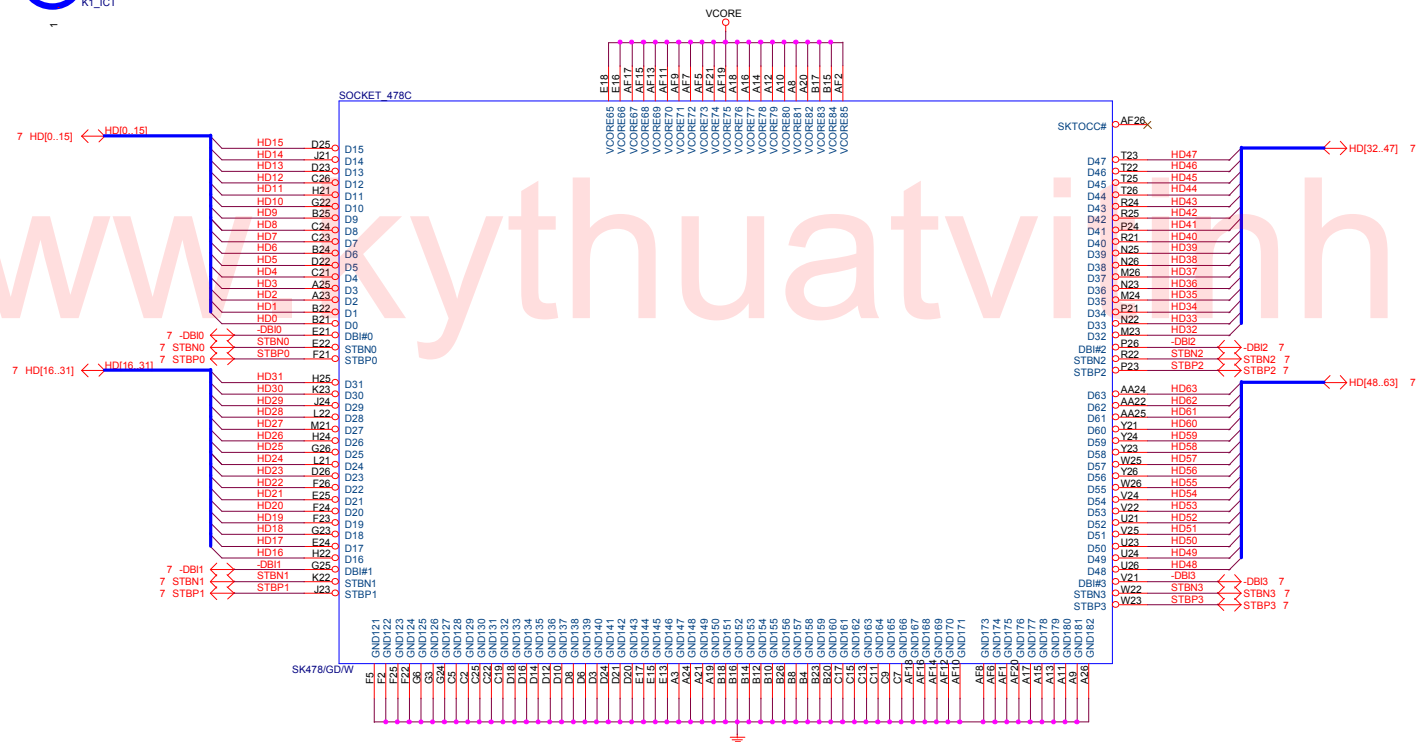
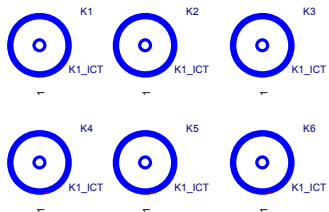
CPU SOCKET



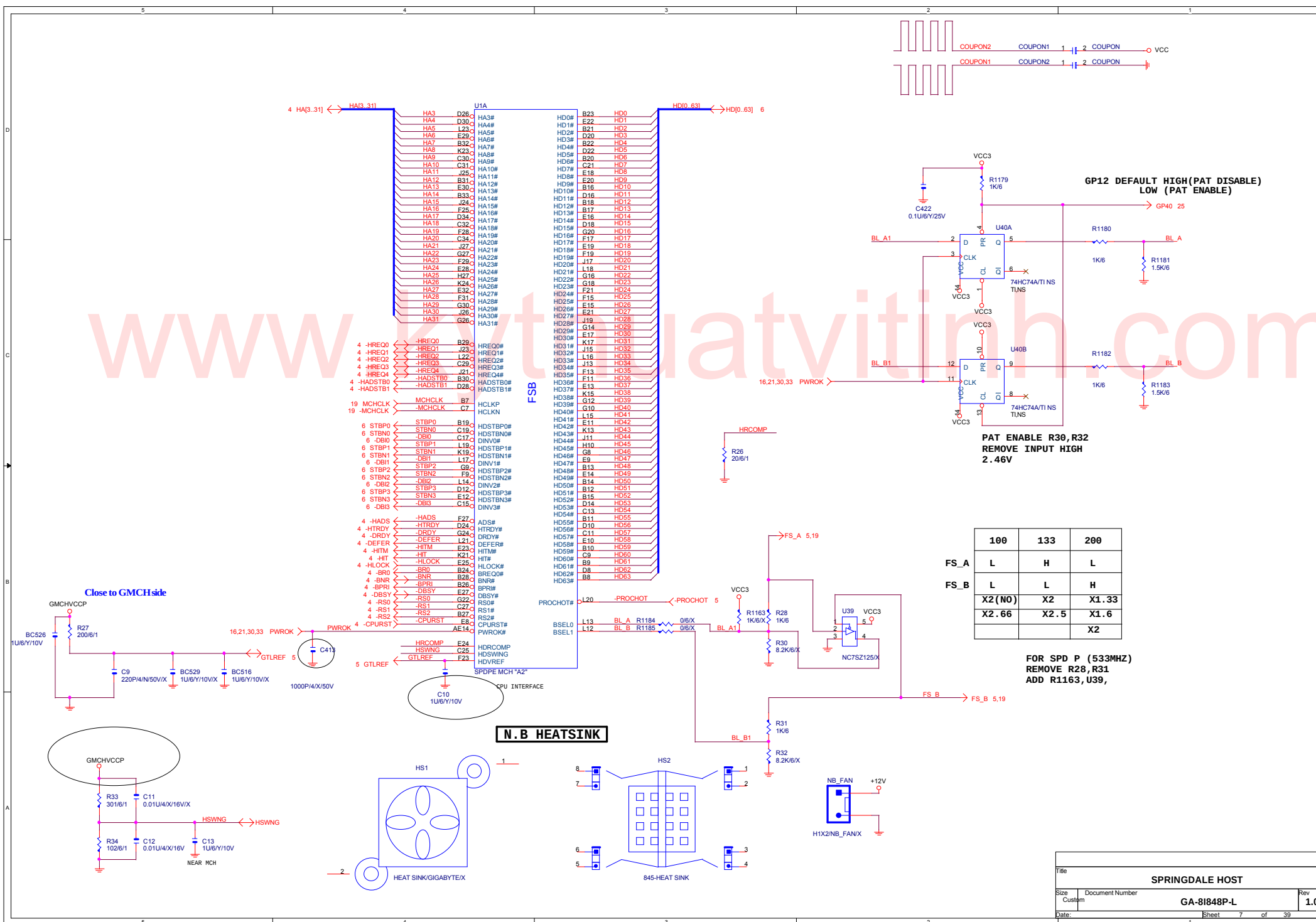
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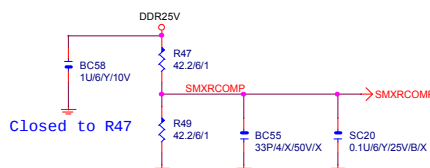
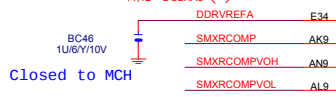
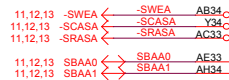
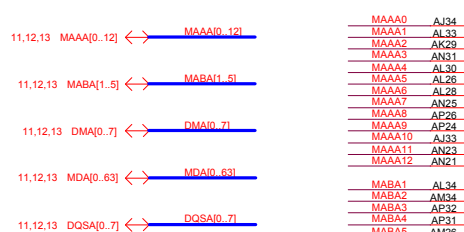


Title				
P4 478A				
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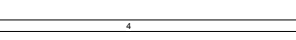
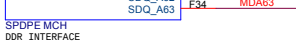
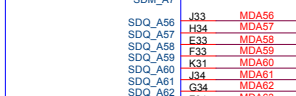
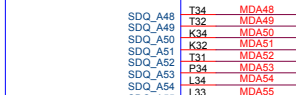
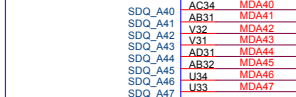
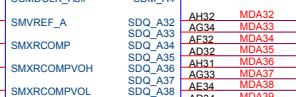
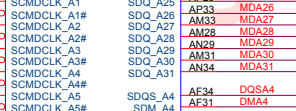
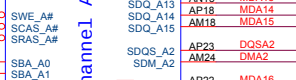
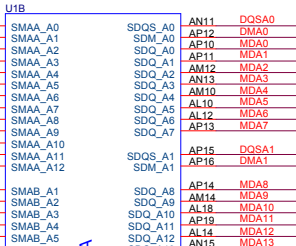


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U1B

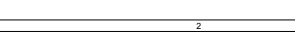
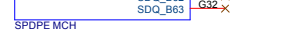
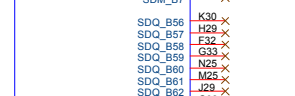
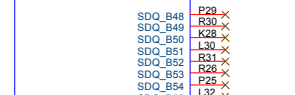
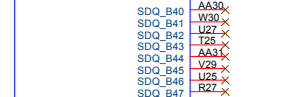
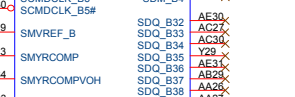
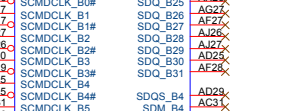
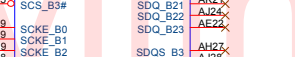
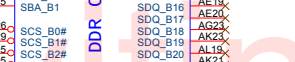
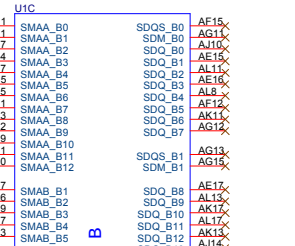


DDR Channel A

SDPDE MCH

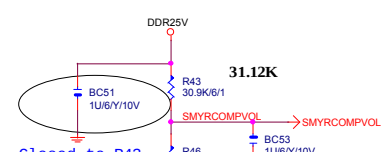
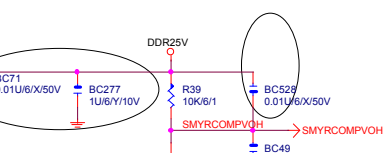
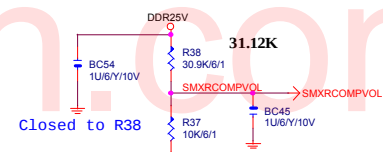
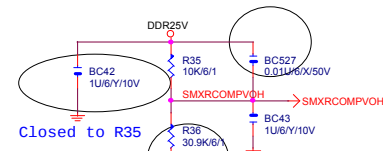
DDR INTERFACE

U1C

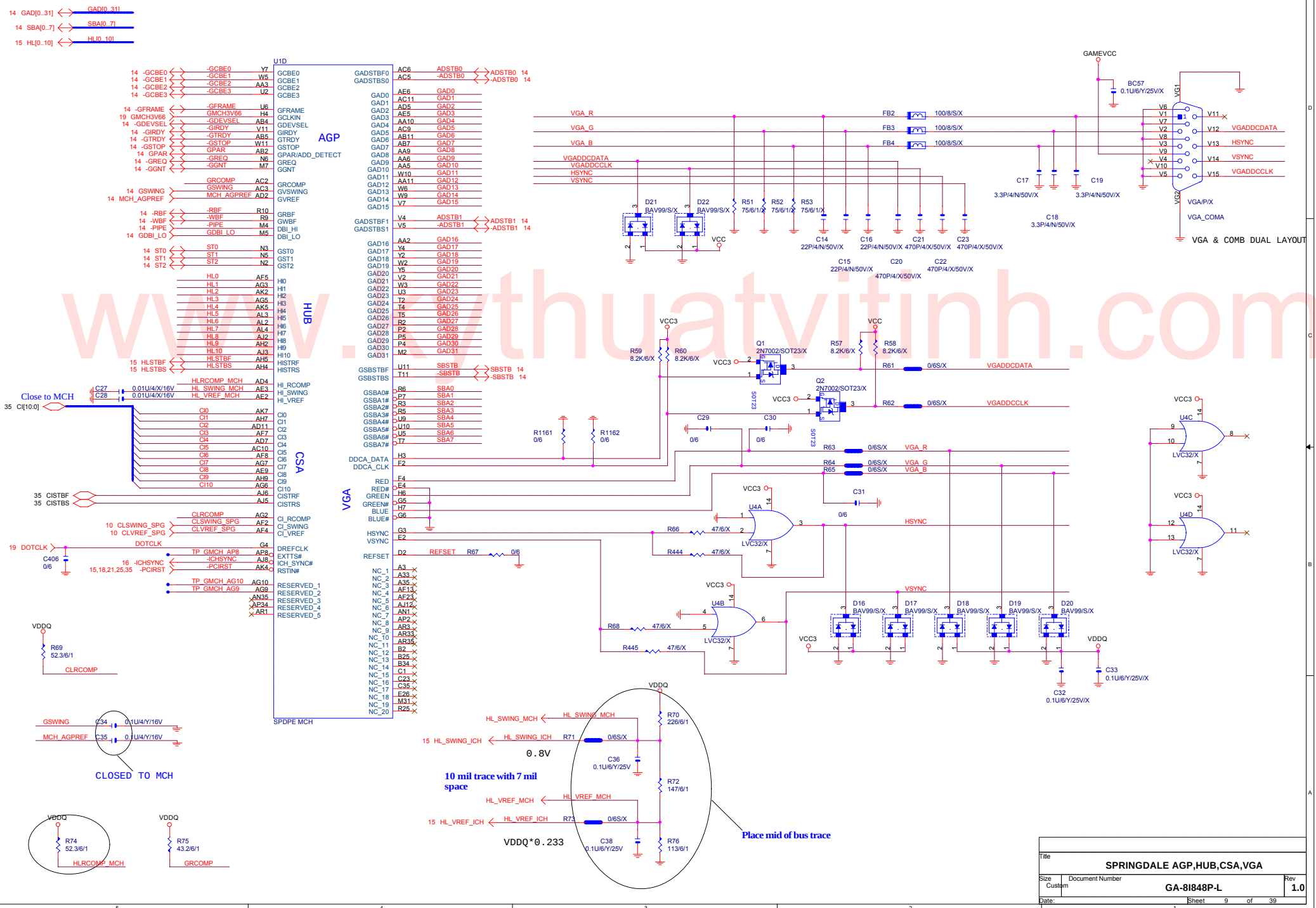


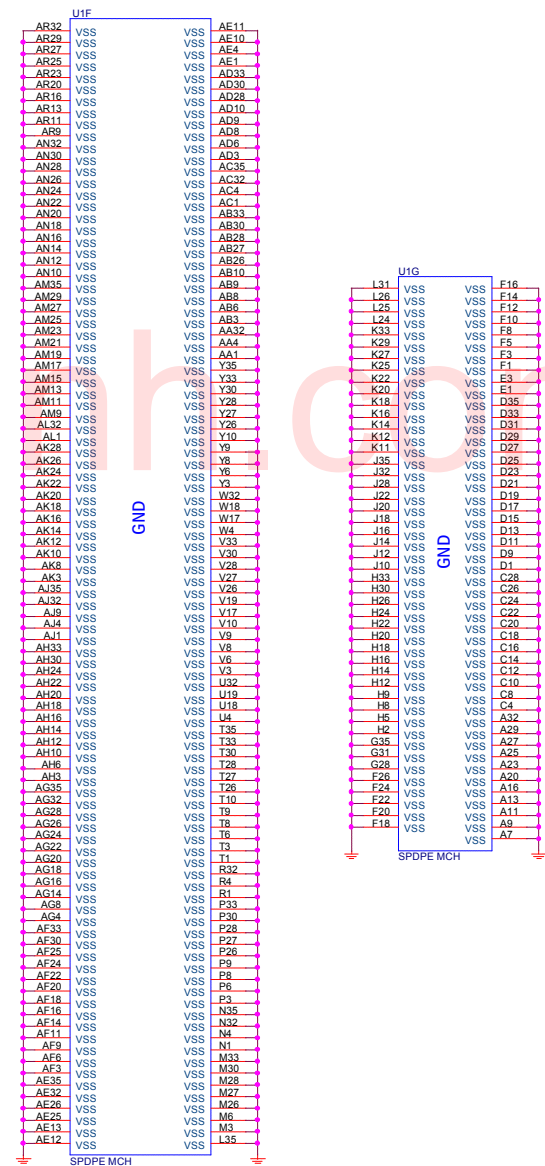
DDR Channel B

SDPDE MCH

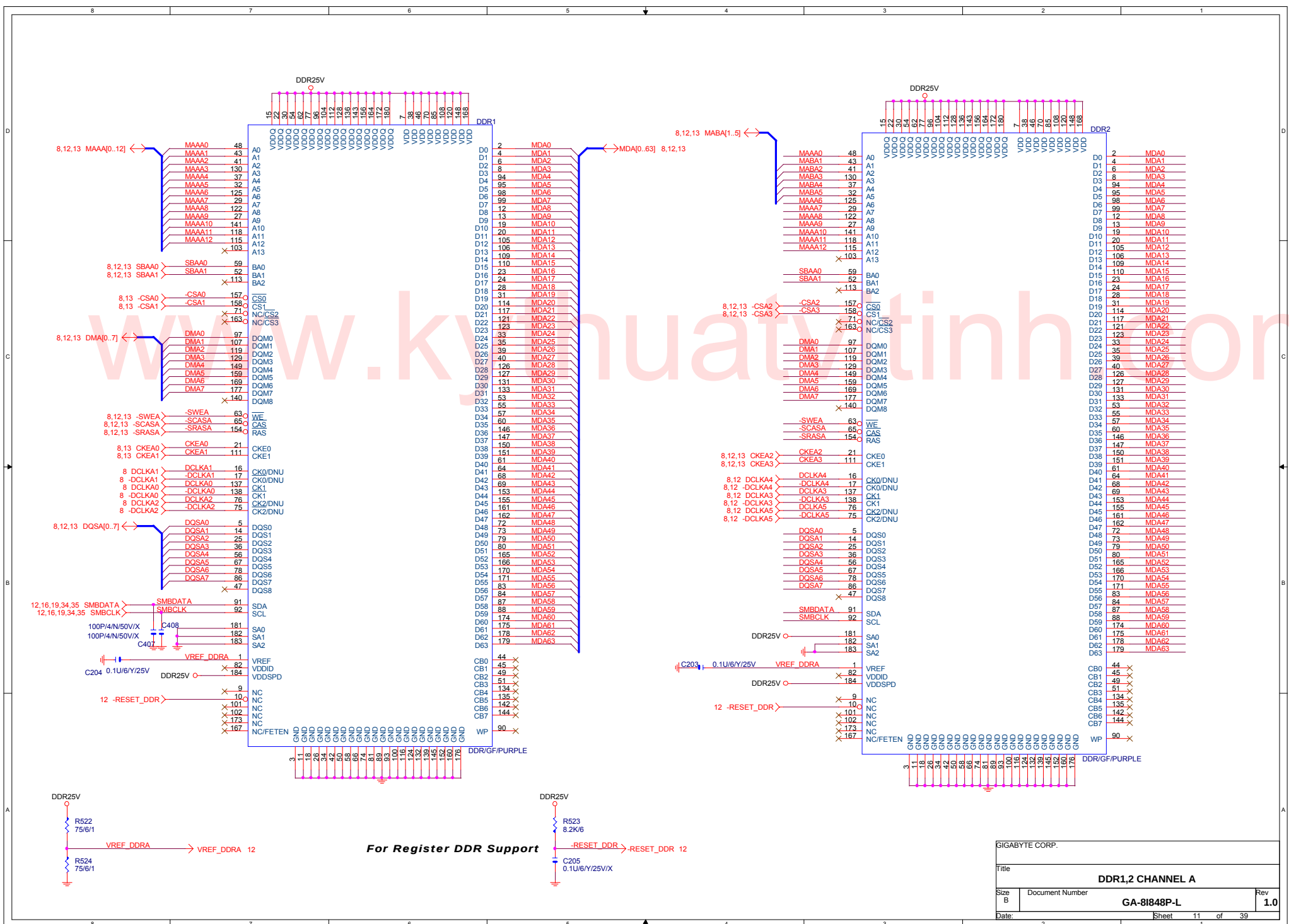


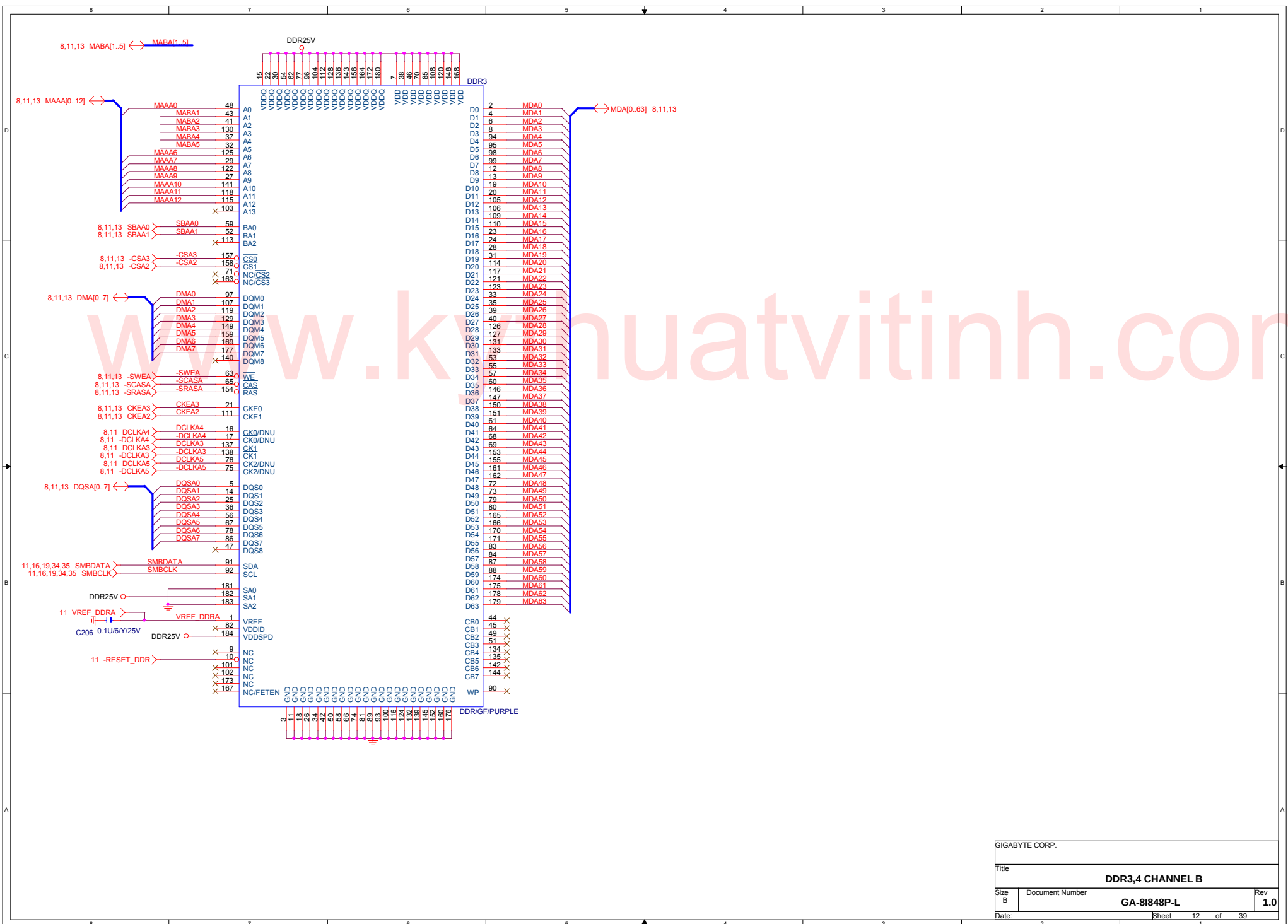
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SPRINGDALE DDR			
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Title				
SPRINGDALE PWR				
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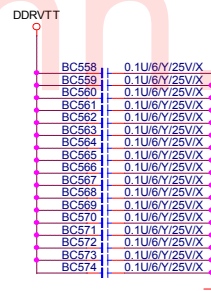
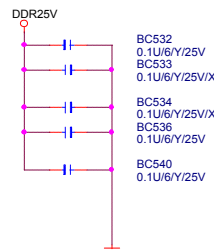
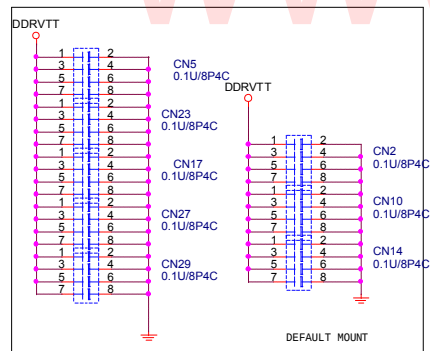
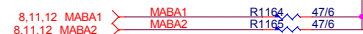
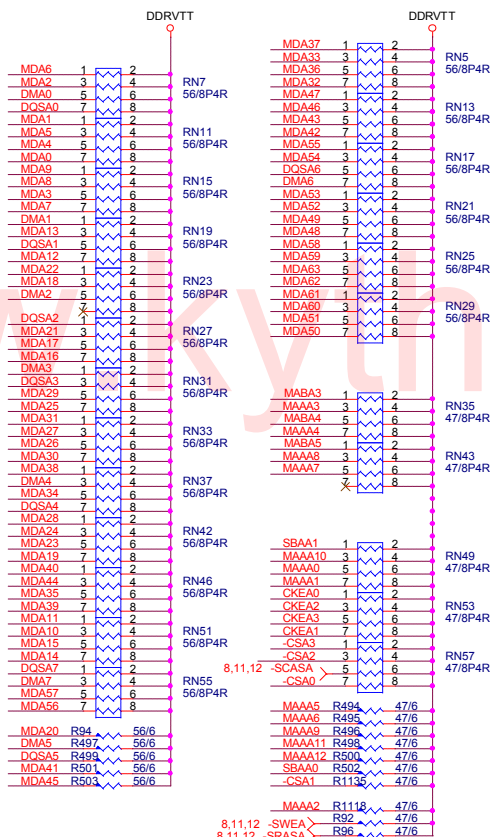
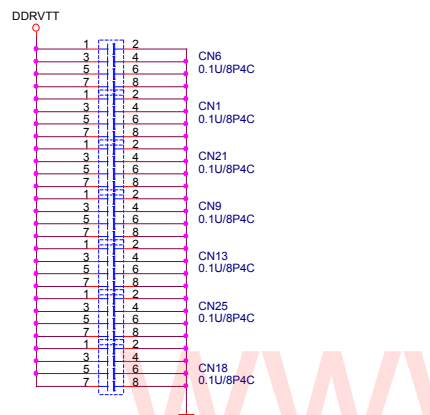


DDRVTT Decouple

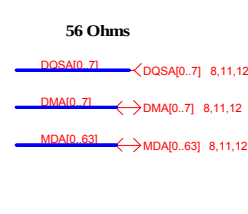
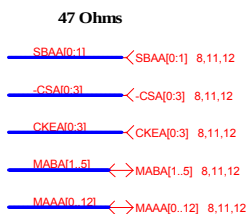
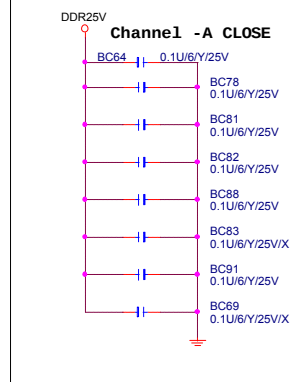
DDR TERMINATION CHANNEL A

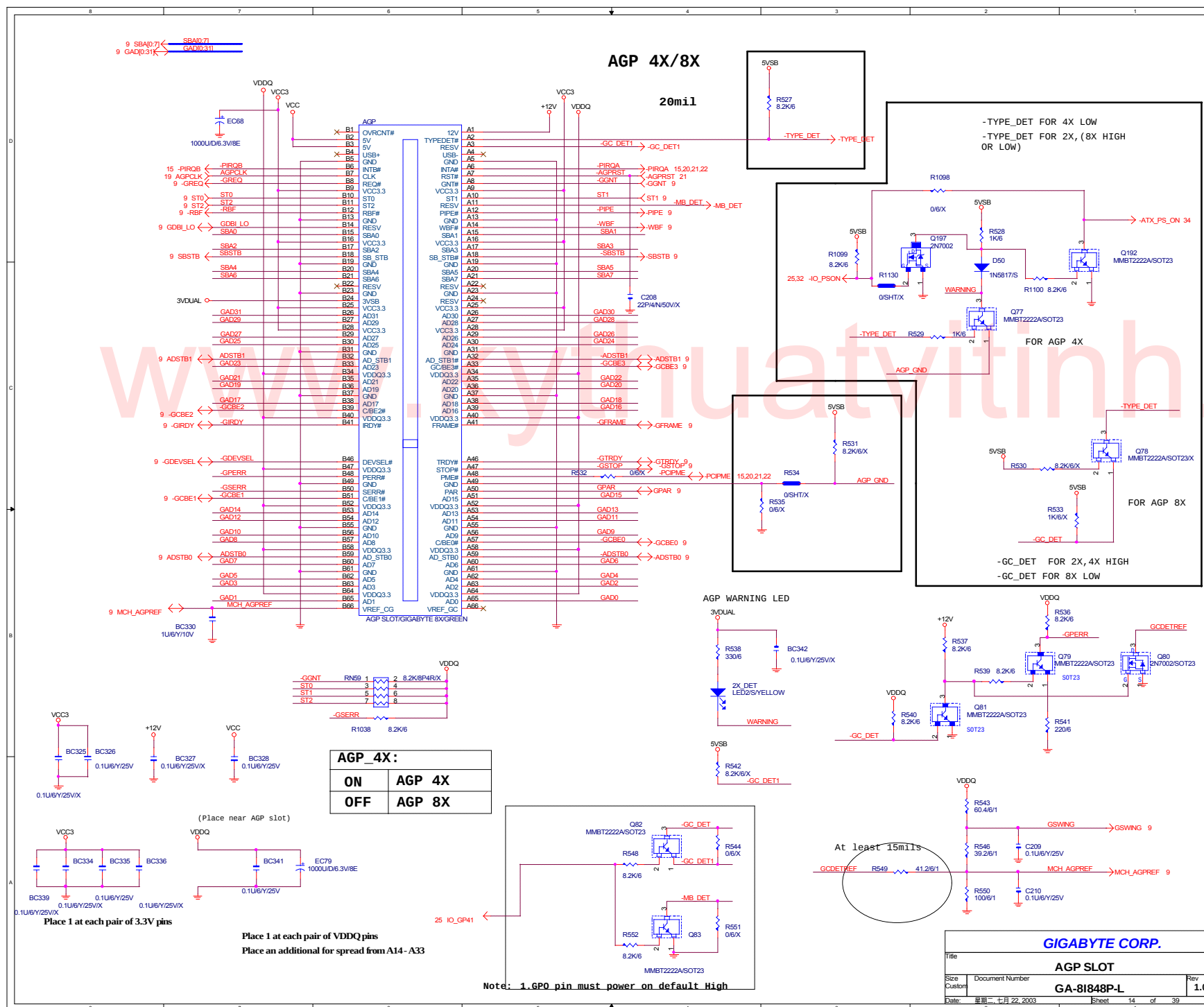
DDRVTT Decouple

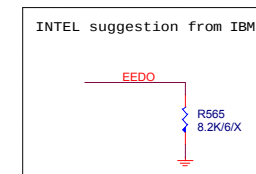
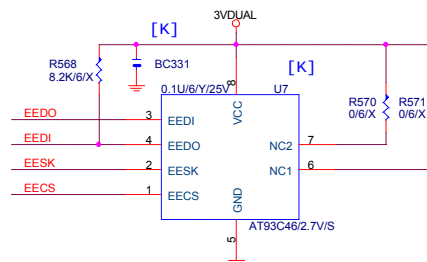
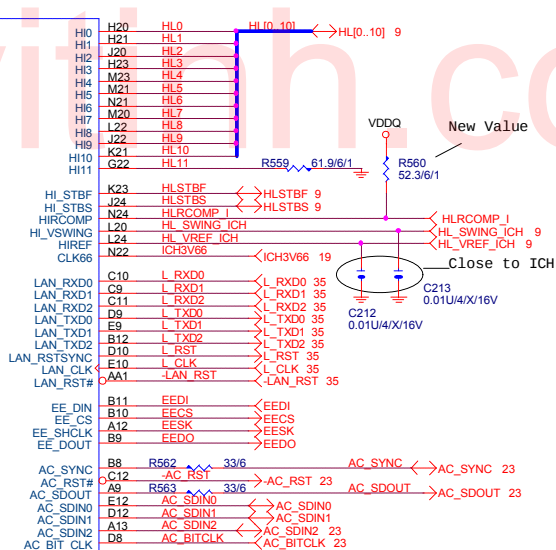
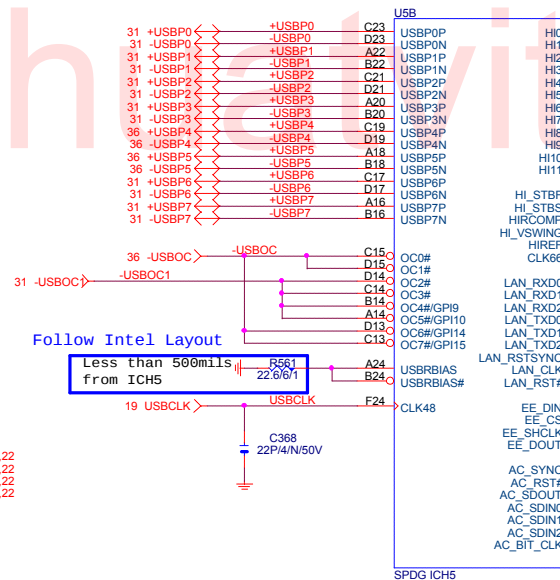
CHANNEL B

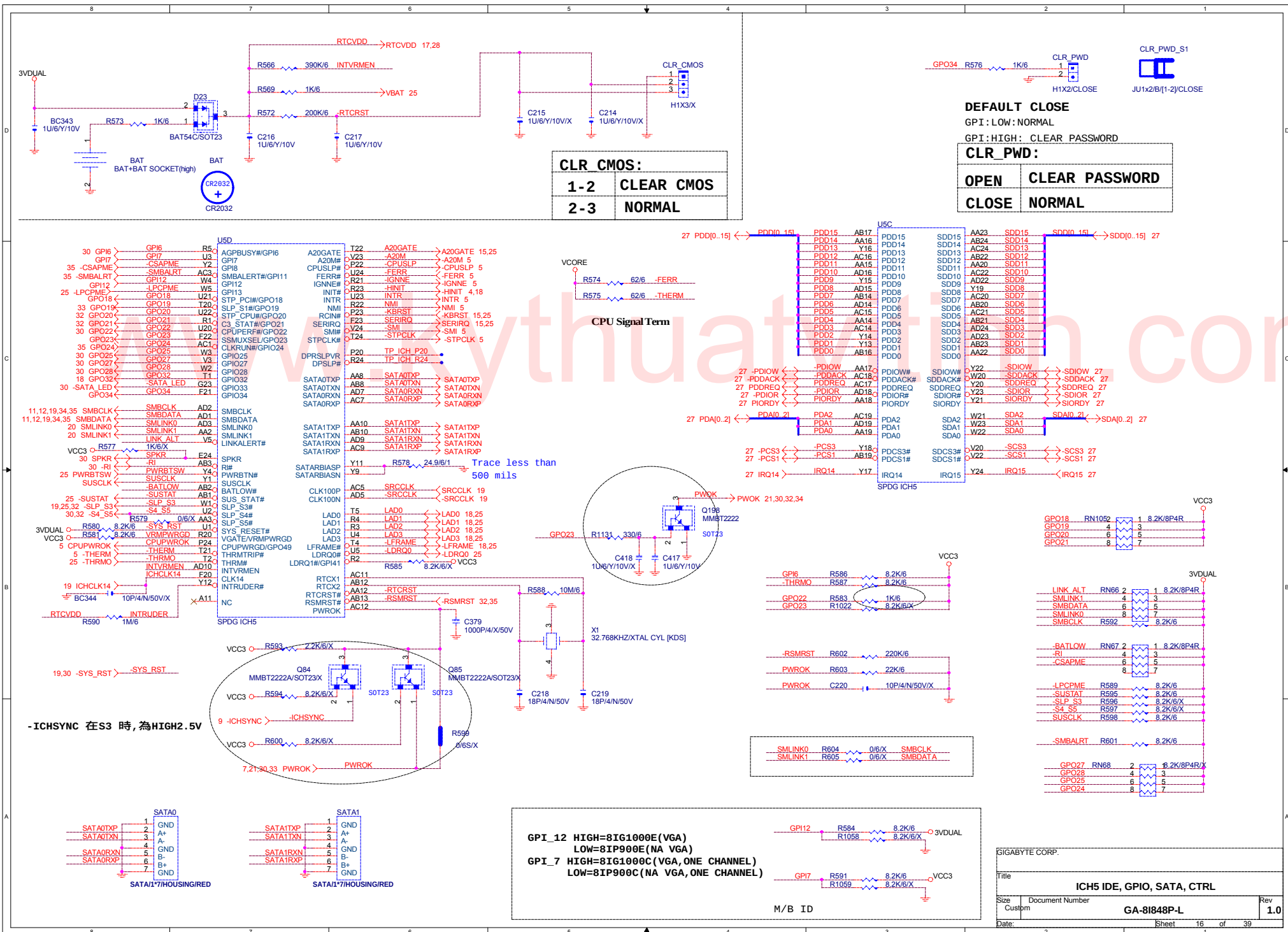


DDR25V Decouple







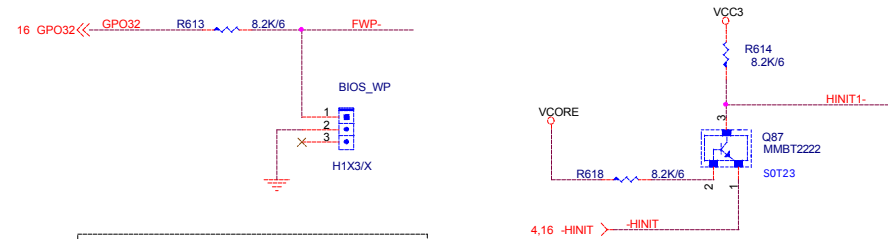


GIGABYTE CORP.

Title ICH5 IDE, GPIO, SATA, CTRL

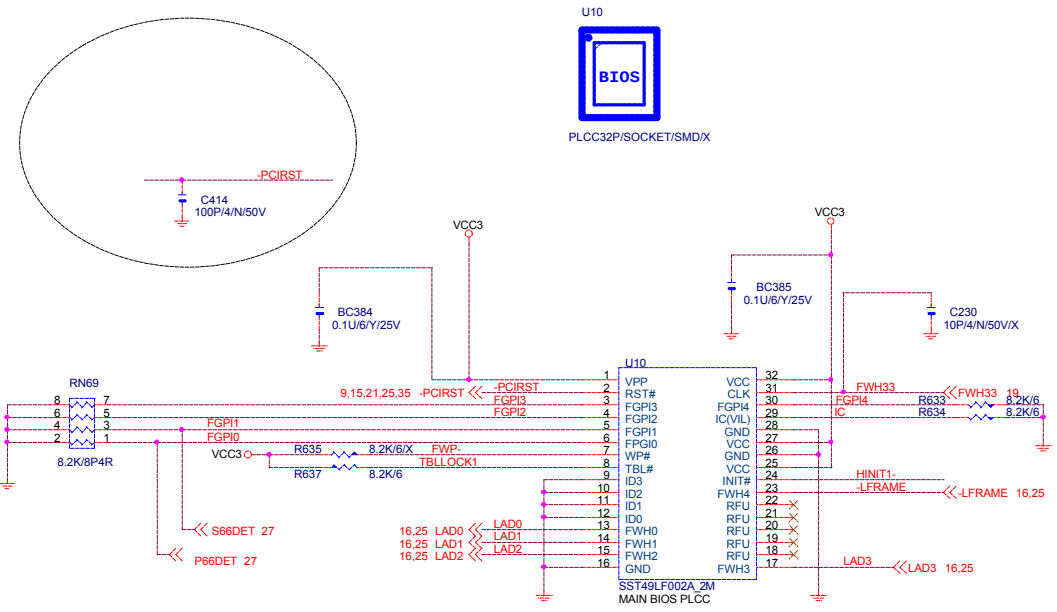
Size Custom Document Number GA-81848P-L Rev 1.0

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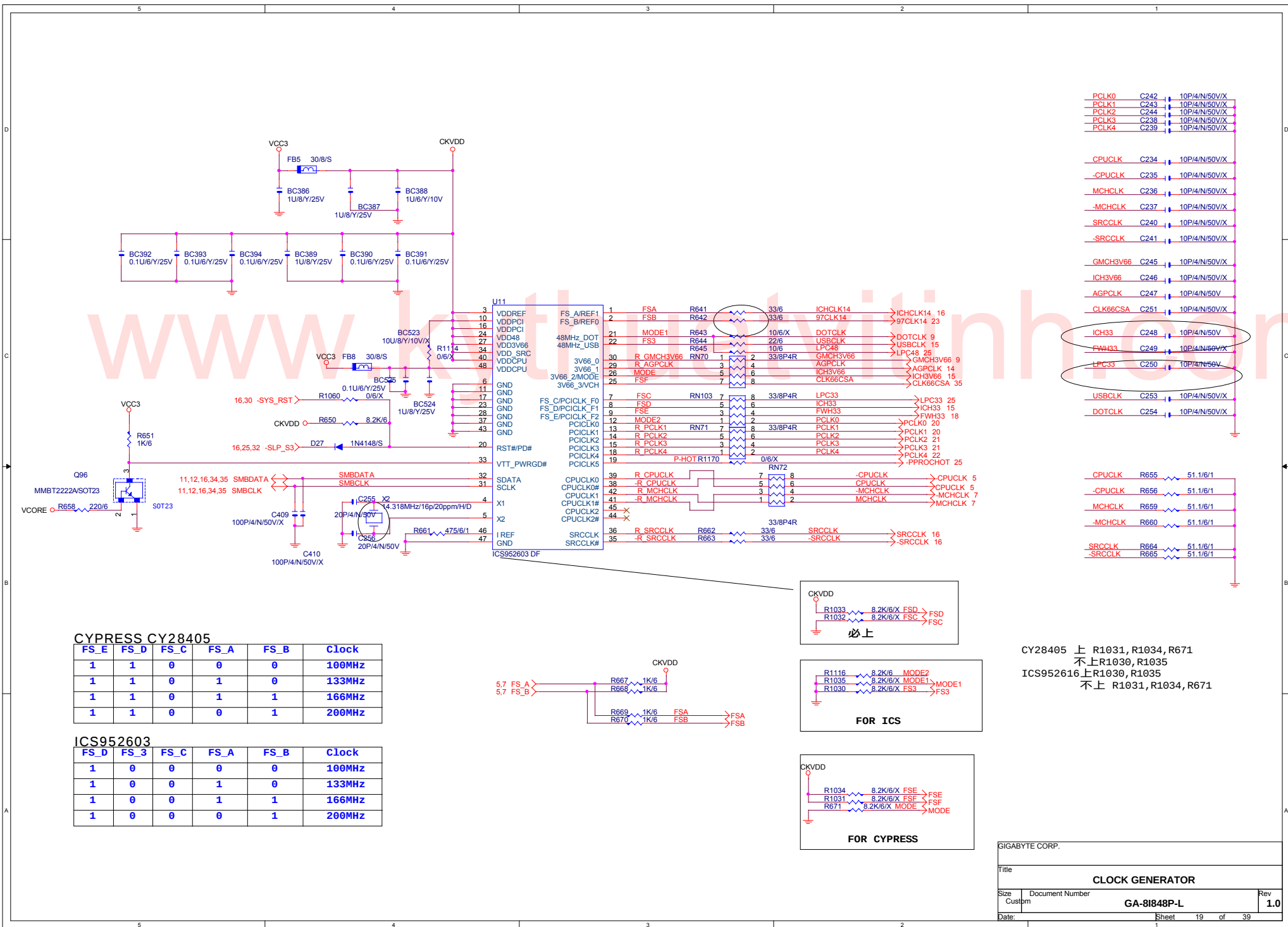
BIOS_WP:	
1-2	WRITE PROTECT
2-3	DISABLE

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ADD WINBOUD FWH SEC. SOURCE

GIGABYTE CORP.		
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PCLK0 C242 10P/4/N/50V/X
PCLK1 C243 10P/4/N/50V/X
PCLK2 C244 10P/4/N/50V/X
PCLK3 C238 10P/4/N/50V/X
PCLK4 C239 10P/4/N/50V/X

CPUCCLK C234 10P/4/N/50V/X
-CPUCCLK C235 10P/4/N/50V/X
MCHCLK C236 10P/4/N/50V/X
-MCHCLK C237 10P/4/N/50V/X
SRCCCLK C240 10P/4/N/50V/X
-SRCCCLK C241 10P/4/N/50V/X

GMCH3V66 C245 10P/4/N/50V/X
ICH3V66 C246 10P/4/N/50V/X
AGPCLK C247 10P/4/N/50V/X
CLK66CSA C251 10P/4/N/50V/X

ICH33 C248 10P/4/N/50V/X
FWH33 C249 10P/4/N/50V/X
LPC33 C250 10P/4/N/50V/X

USBCCLK C253 10P/4/N/50V/X
DOTCLK C254 10P/4/N/50V/X

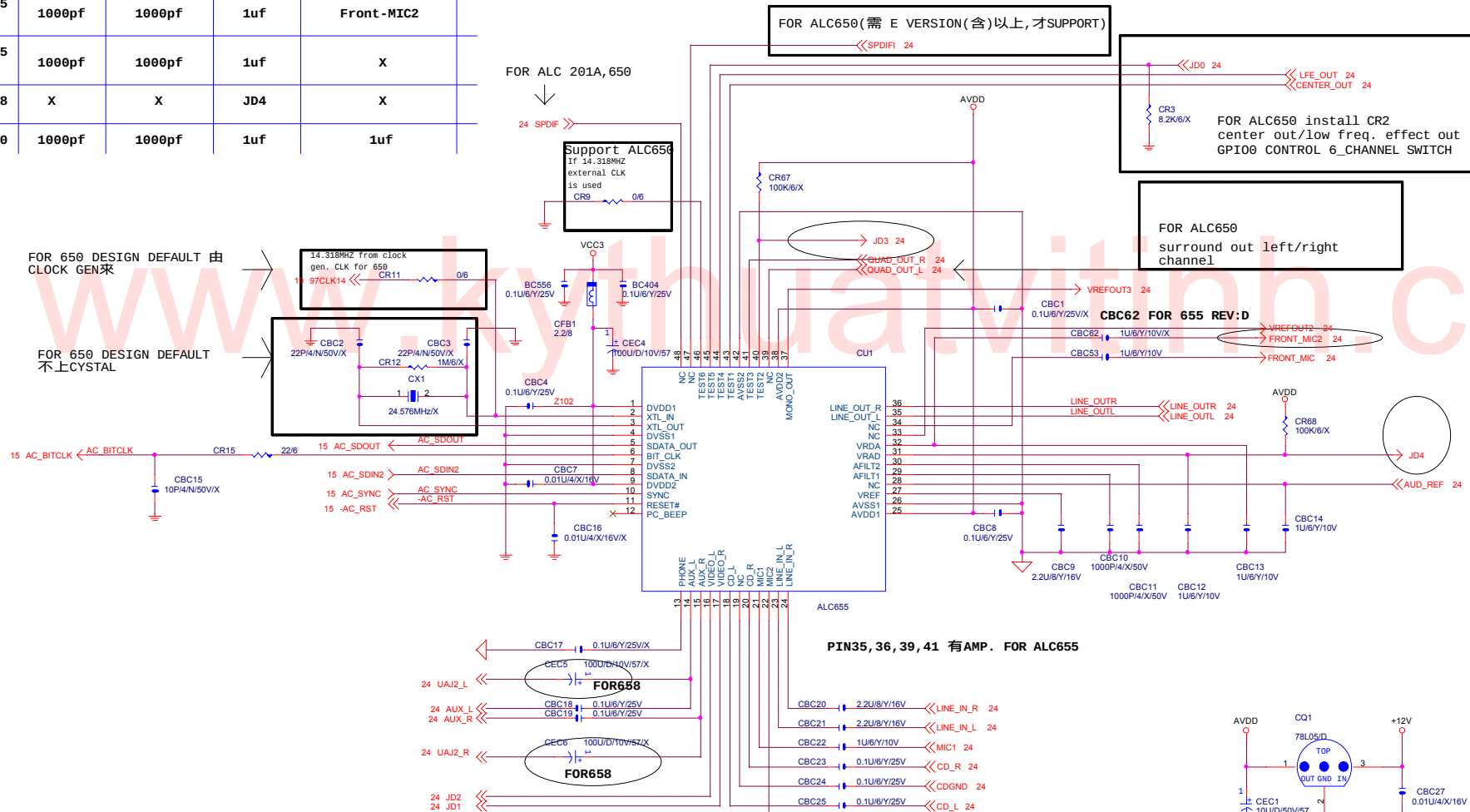
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MCHCLK R659 51.1/6/1
-MCHCLK R660 51.1/6/1
SRCCCLK R664 51.1/6/1
-SRCCCLK R665 51.1/6/1

CY28405 上 R1031,R1034,R671
不上R1030,R1035
ICS952616上R1030,R1035
不上 R1031,R1034,R671



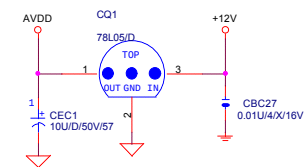
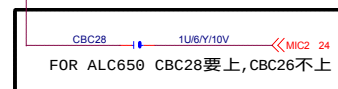
Filter Cap design:

	Pin-29	Pin-30	Pin-31	Pin-32	
ALC655 Rev D	1000pf	1000pf	1uf	Front-MIC2	
ALC655 Rev C	1000pf	1000pf	1uf	X	
ALC658	X	X	JD4	X	
ALC650	1000pf	1000pf	1uf	1uf	



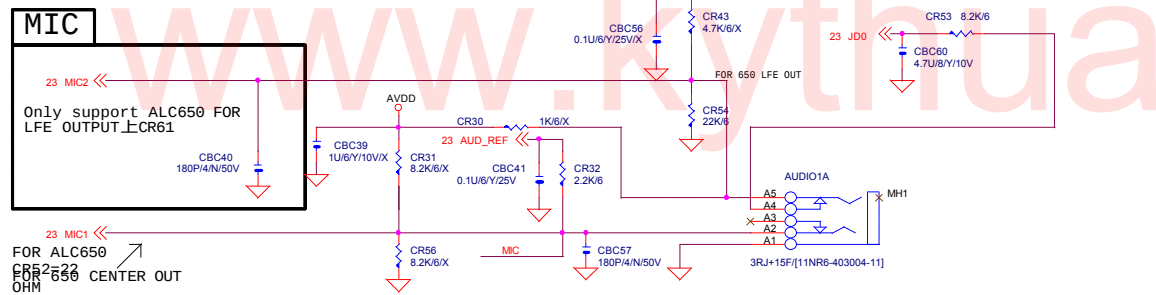
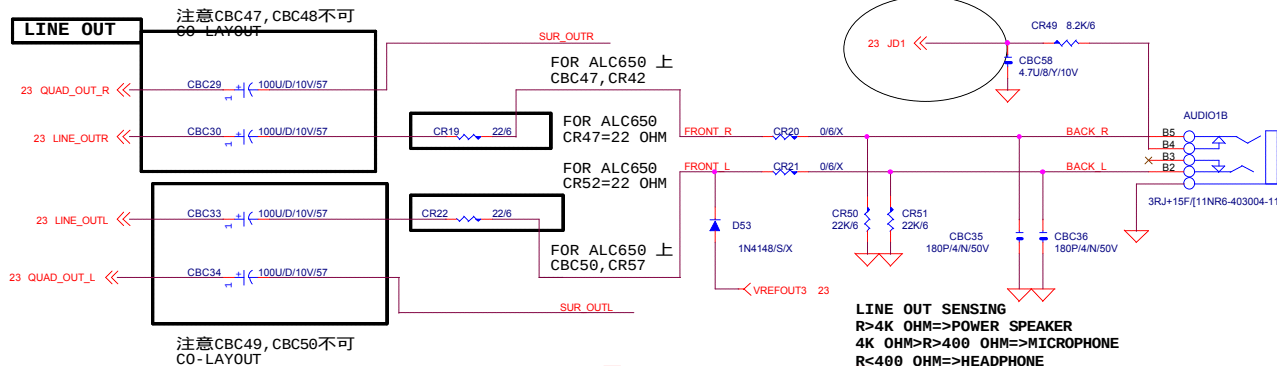
Arrangement of Jack detection Pin:

	Pin-45(JD0)	Pin-17(JD1)	Pin-16(JD2)	Pin-40(JD3)	Pin-31(JD4)
ALC655	for MIC-IN	for FRONT-OUT	for LINE-IN		
ALC658	for MIC-IN	for UAJ1	for UAJ2	for FRONT-OUT External pull high is needed	for LINE-IN External pull high is needed



JDO, JD2, GPIO0 為偵測DEVICE INPUT 時由LOW TO HIGH Edge trigger(pop manual)

1/2(3.14)RC=1/2(3.14)8.2K*4.7U=4.3HZ以上AC 信號全部衰減 TO 0V 不會造成JDO 誤動作(無device 時play wav)

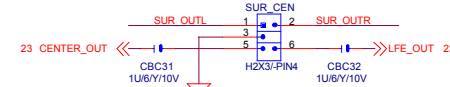


**MICROPHONE IN SENSING(當INPUT)(利用vref 偏壓
與CR43, CR32 並聯求出阻抗)**
7.1k ohm>R>2.3k ohm==>microphone in
R<2.3k ohm or R>7.1k ohm==>unknown device

MICROPHONE IN SENSING(當OUTPUT)
R>4K OHM=>POWER SPEAKER
4K OHM>R>400 OHM=>MICROPHONE
R<400 OHM=>HEADPHONE

FOR SUPPORT 6 CHANNEL,
SURROUND OUT

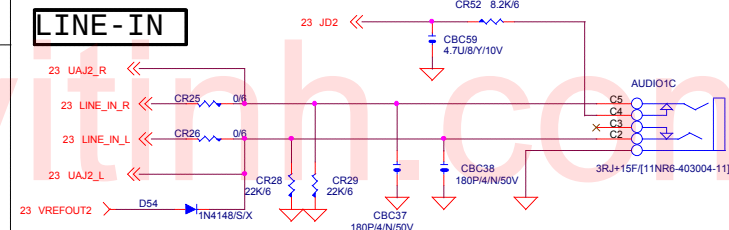
CENTER OUT, LOW
FREQUENCY EFFECT OUT



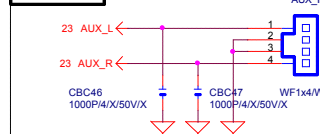
LINE IN SENSING(當OUTPUT)
R>4K OHM=>POWER SPEAKER
4K OHM>R>400 OHM=>MICROPHONE
R<400 OHM=>HEADPHONE

LINE IN SENSING(當INPUT)
swing of input signal>-40dbv(10mv)====>line in
device active
swing of input signal<-40dbv(10mv)====>unknown
line in device

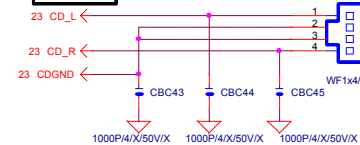
LINE-IN



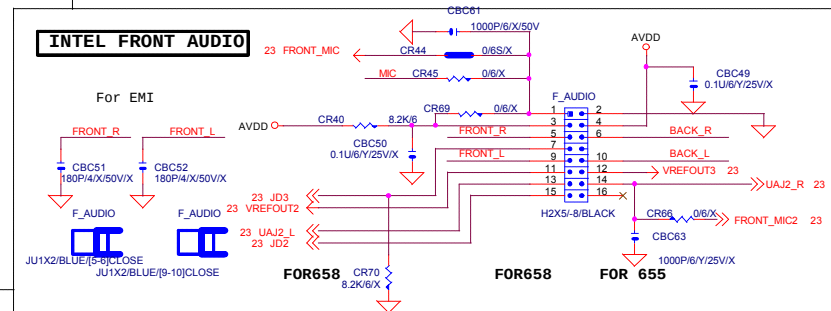
AUX IN DEFAULT NO POP



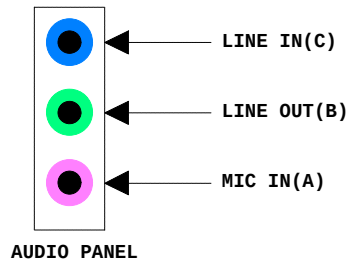
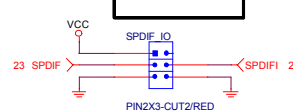
CD IN



INTEL FRONT AUDIO

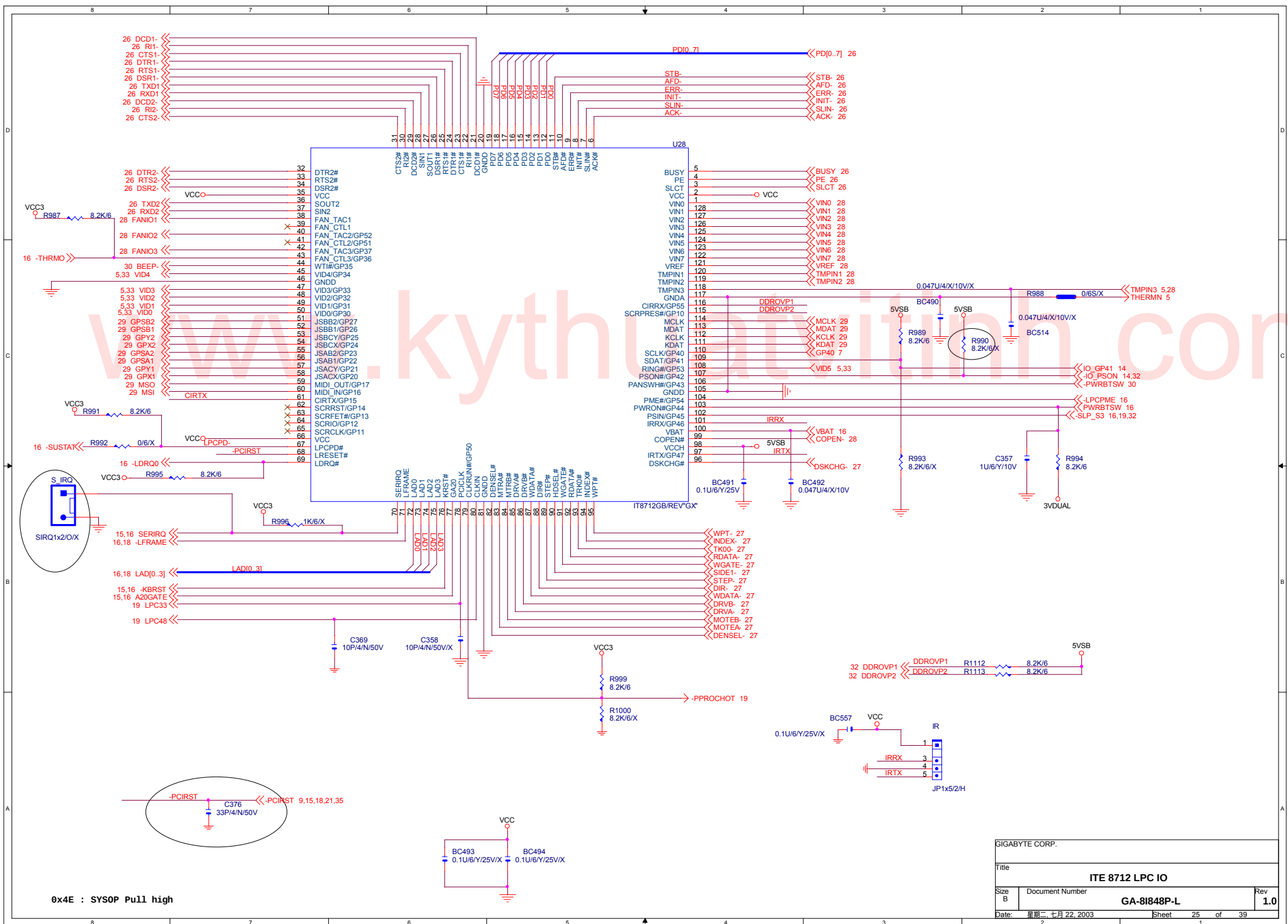


SPDIF_IO

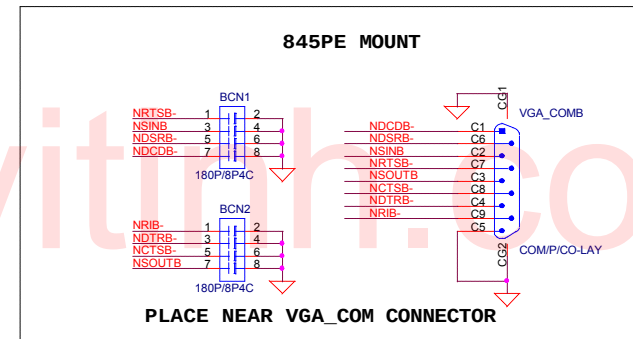
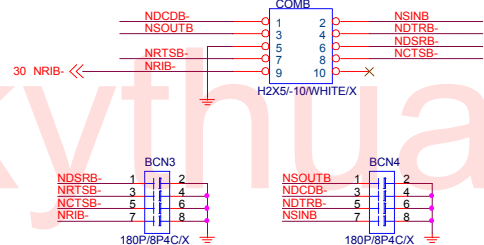
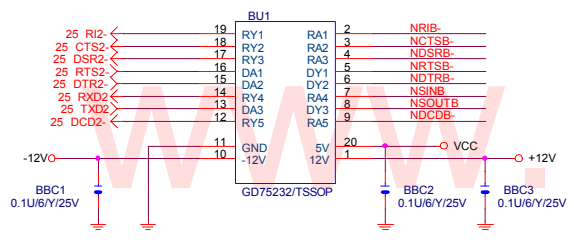
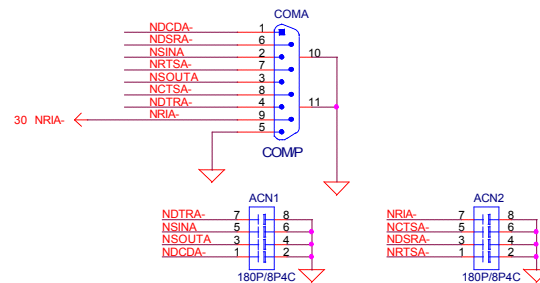
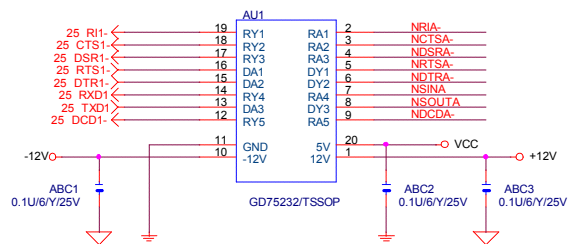


GIGABYTE CORP.

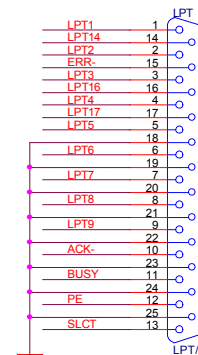
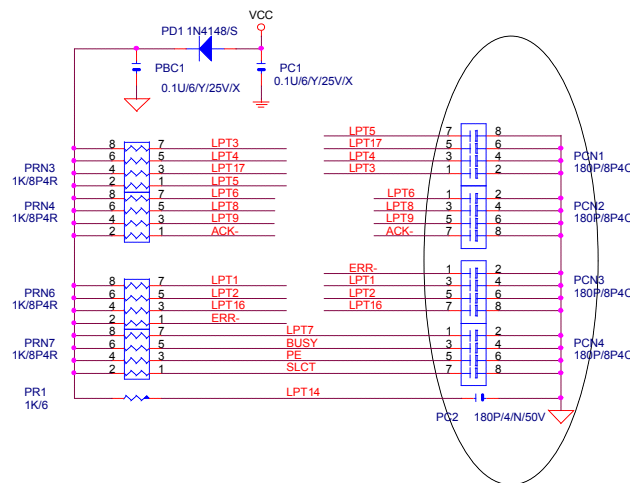
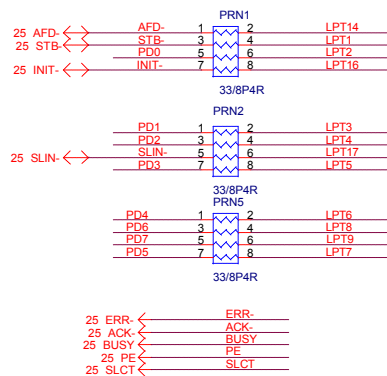
Title		
AUDIO OUTPUT, GAME PORT		
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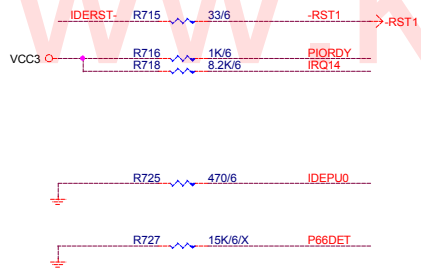
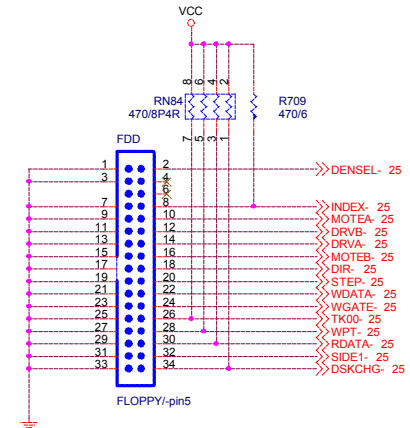
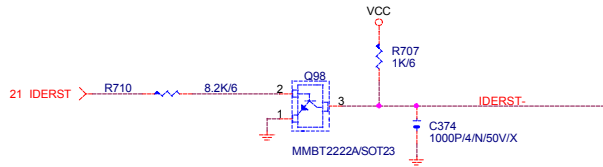
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Title			
ITE 8712 LPC IO			
Size B	Document Number		Rev
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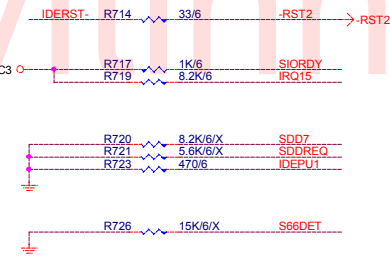
25 PD[0..7] ↔ PD[0..7]



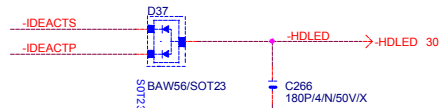
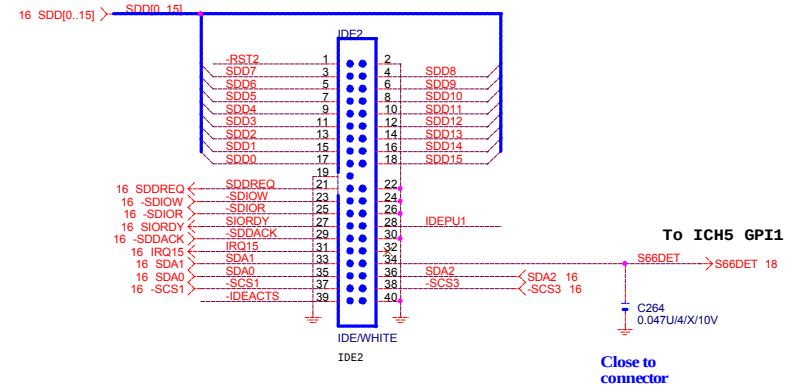
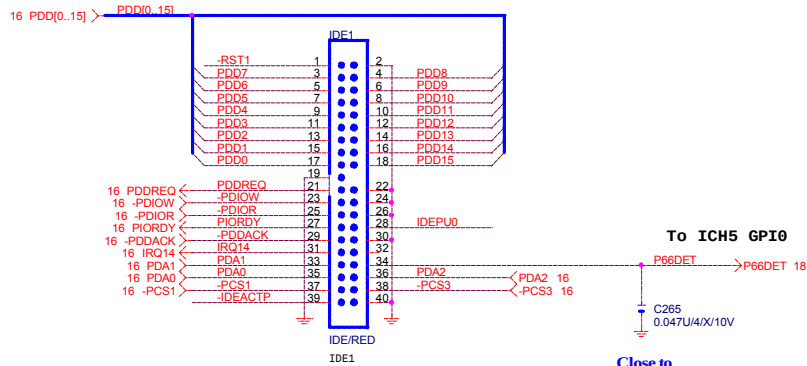
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Title			
COM & IR & LPT PORT & FLOOPY			
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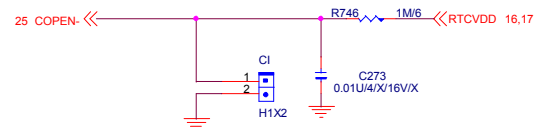
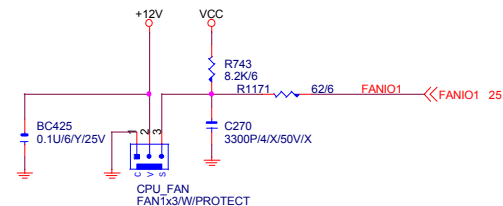
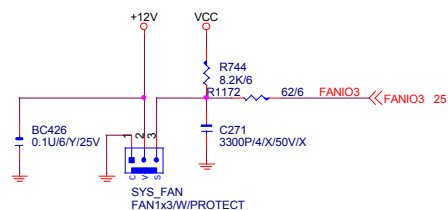
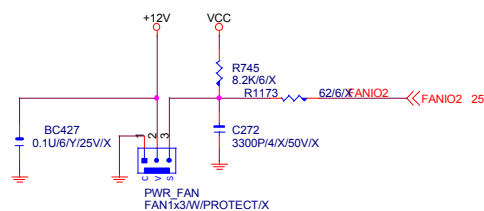
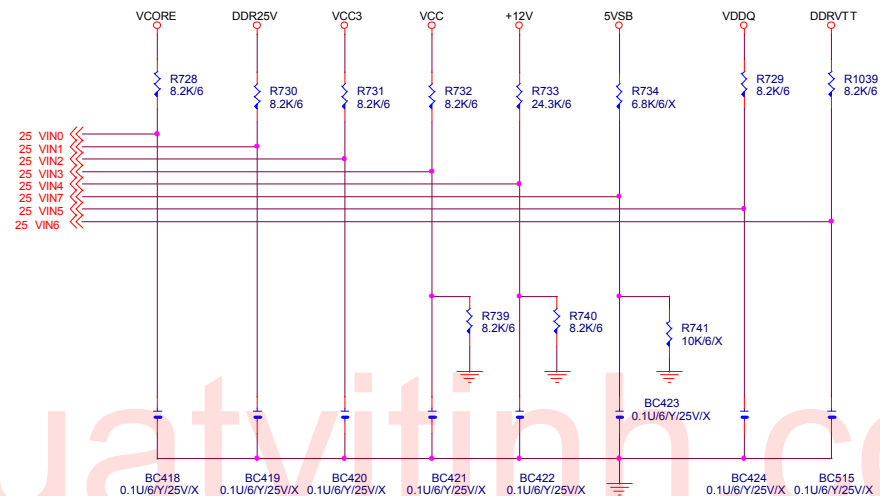
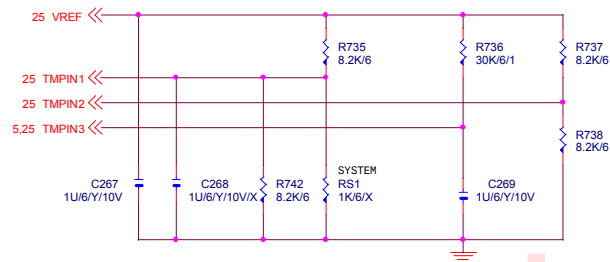
PRIMARY IDE CONNECTOR



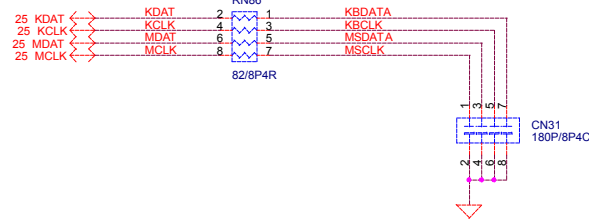
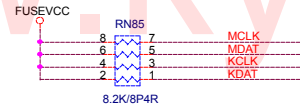
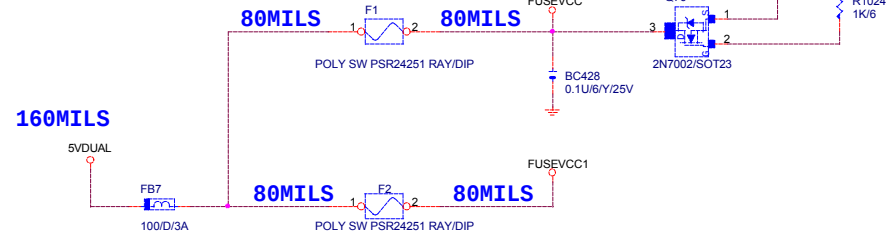
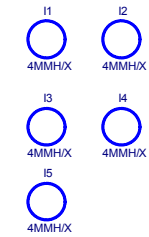
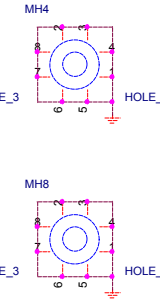
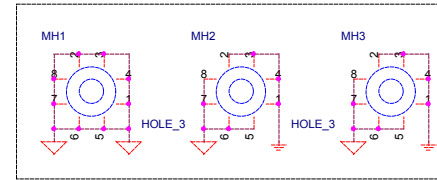
SECONDARY IDE CONNECTOR



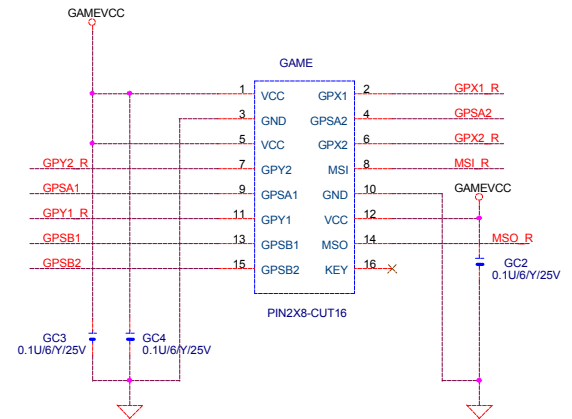
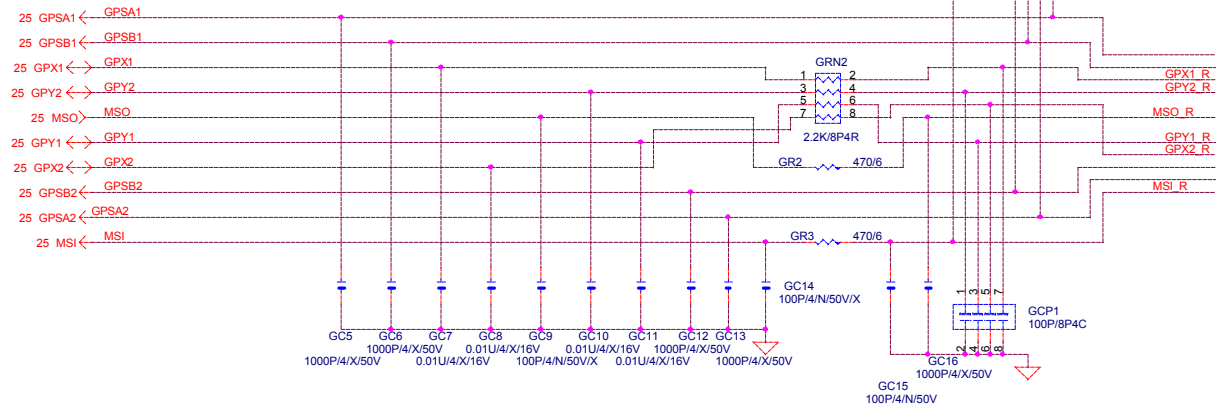
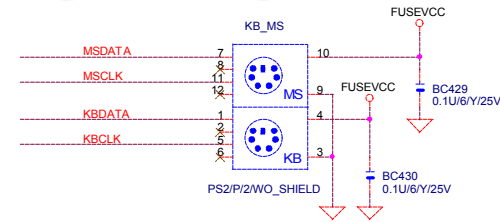
Hardware Monitor circuits



ATX AGND 與 GND 切割必須有三個

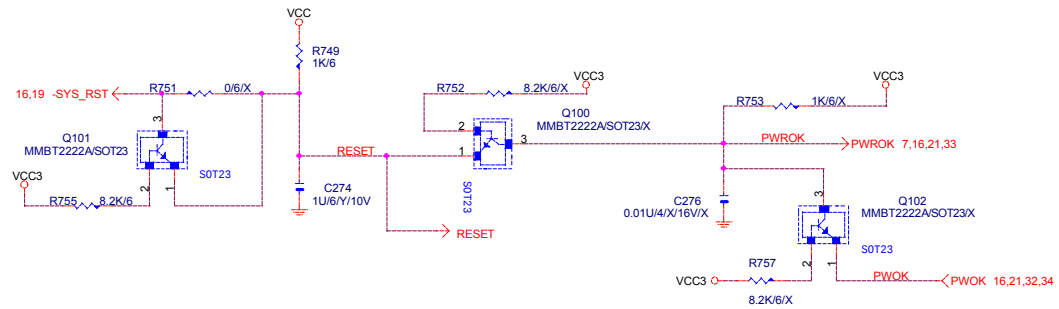
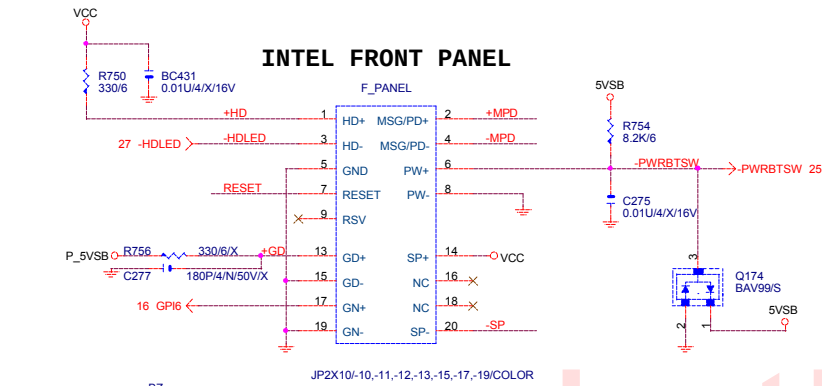


GAME_PORT

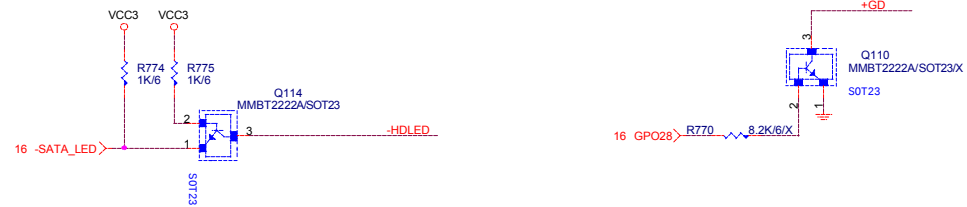
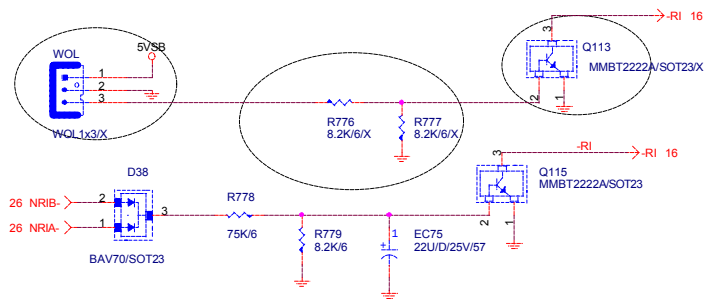
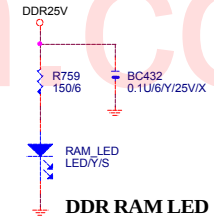
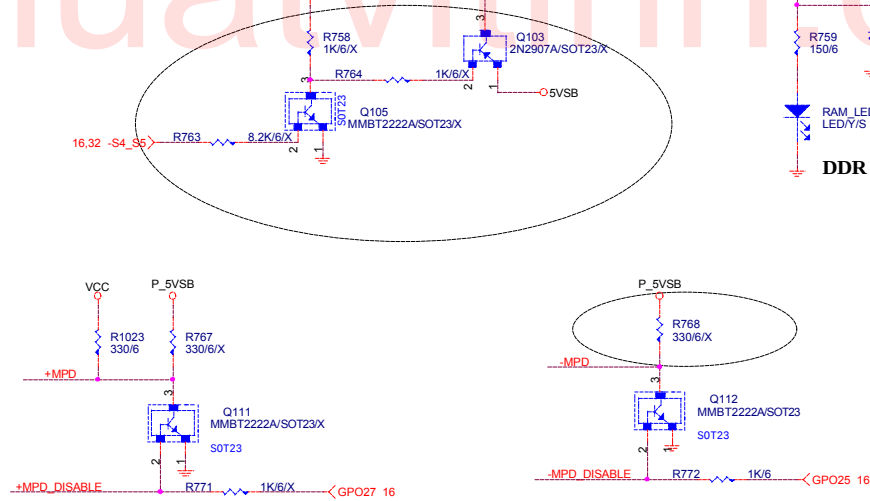
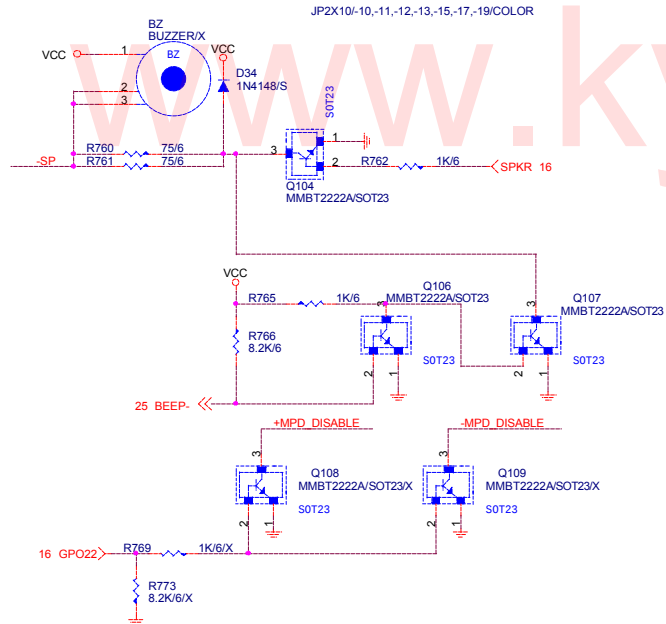
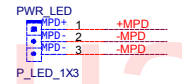


GIGABYTE CORP.			
Title			
KB & PS2 MOUSE & IR			
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INTEL FRONT PANEL

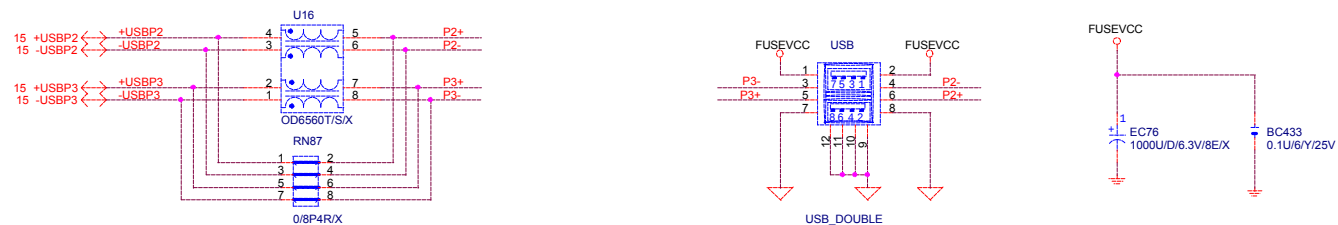


3 PIN POWER LED

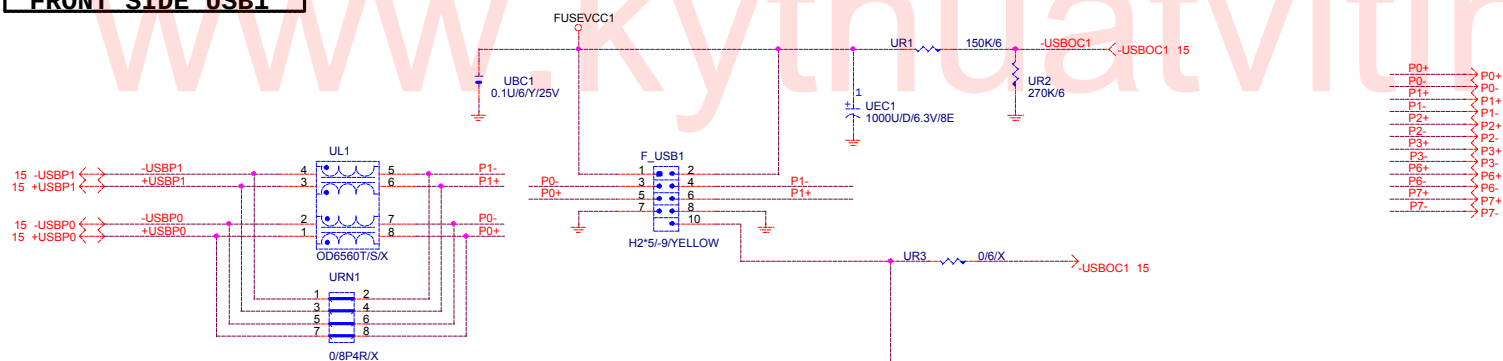


GIGABYTE CORP.			
Title			
PANEL & STR LED & RI			
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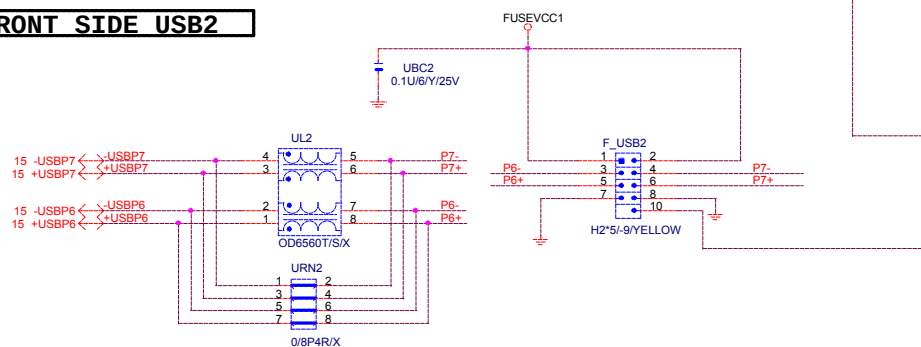
REAR USB



FRONT SIDE USB1

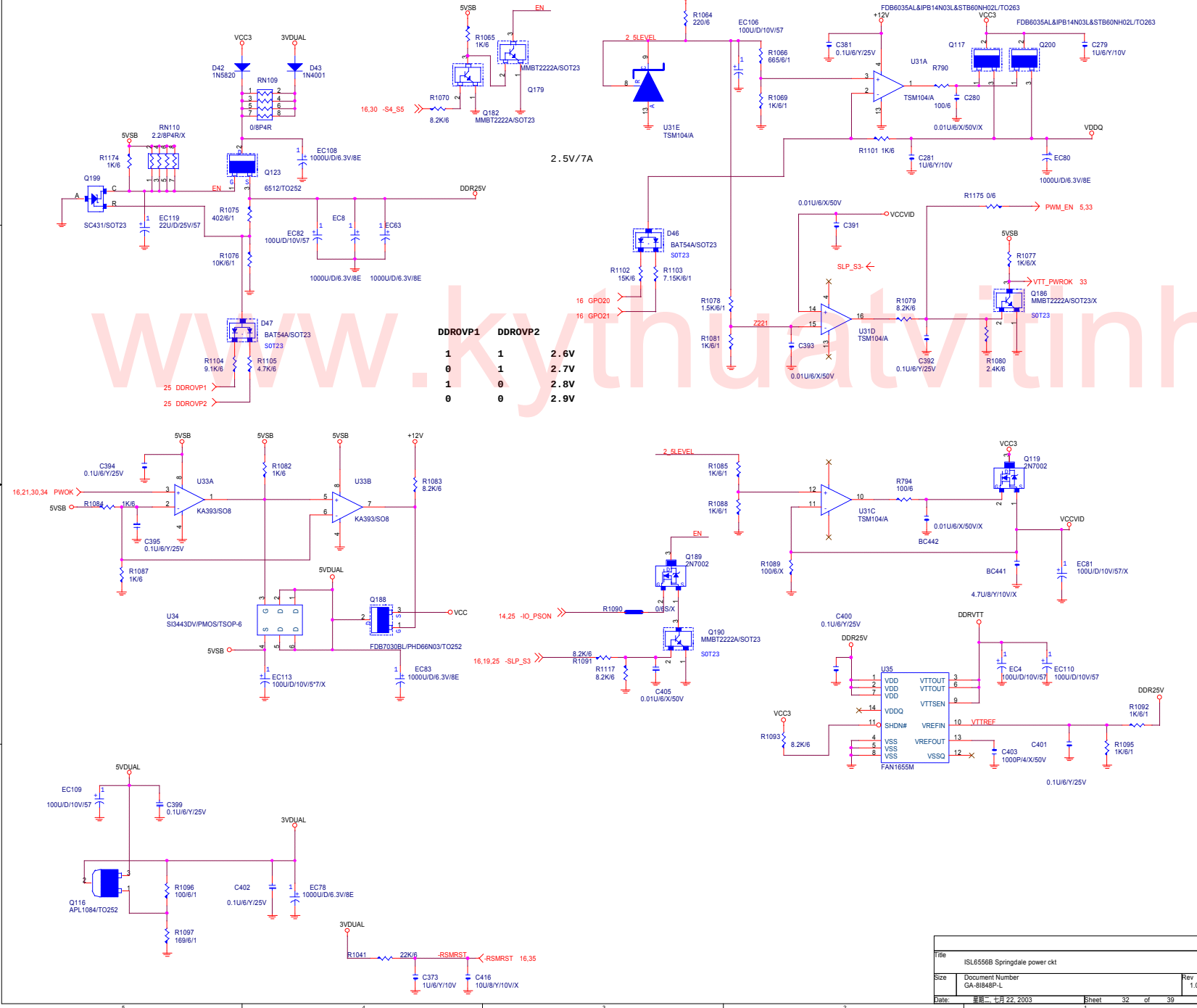


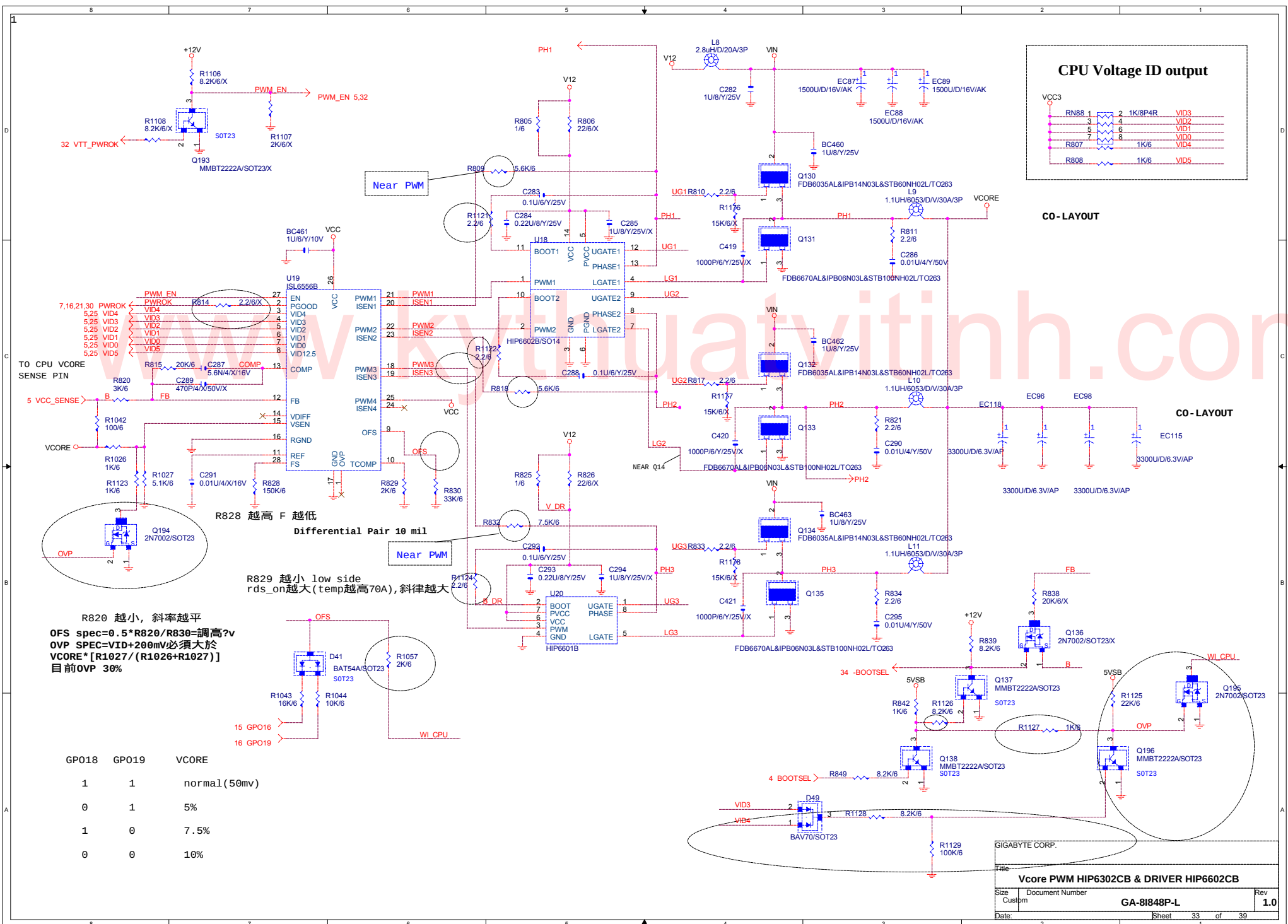
FRONT SIDE USB2



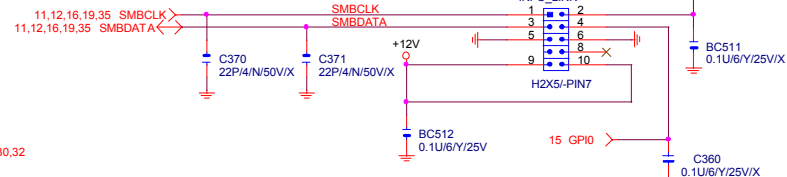
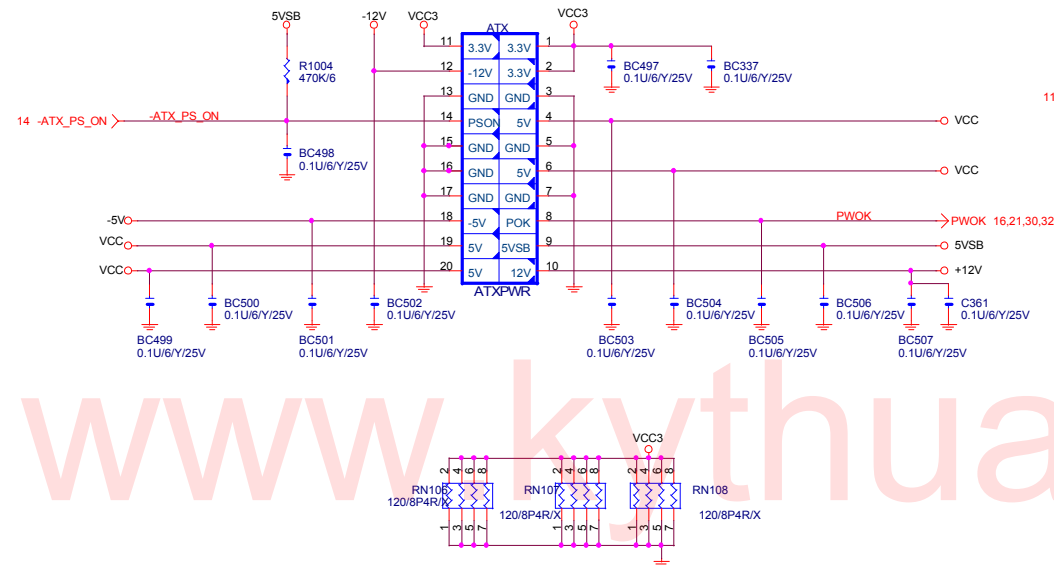
DDR25V FOR DDR DIMM & NB

VDDQ FOR AGP 4X/8X

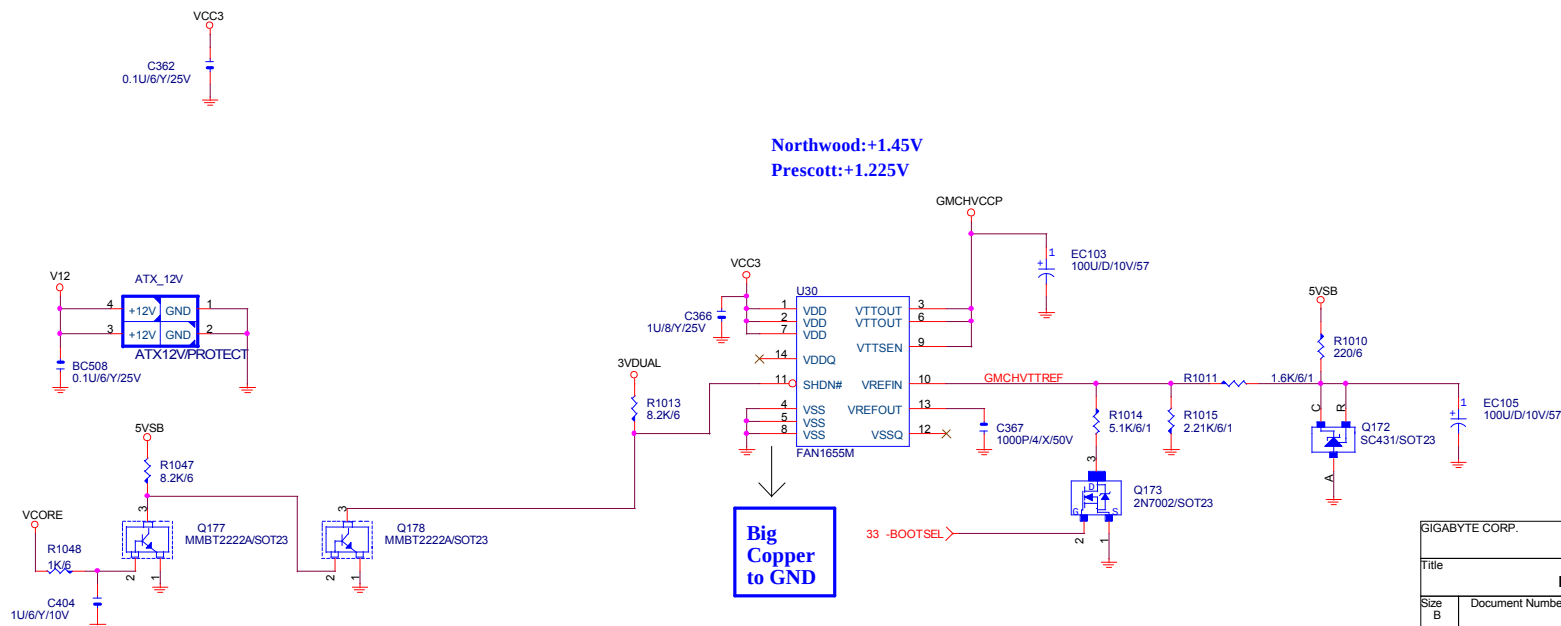




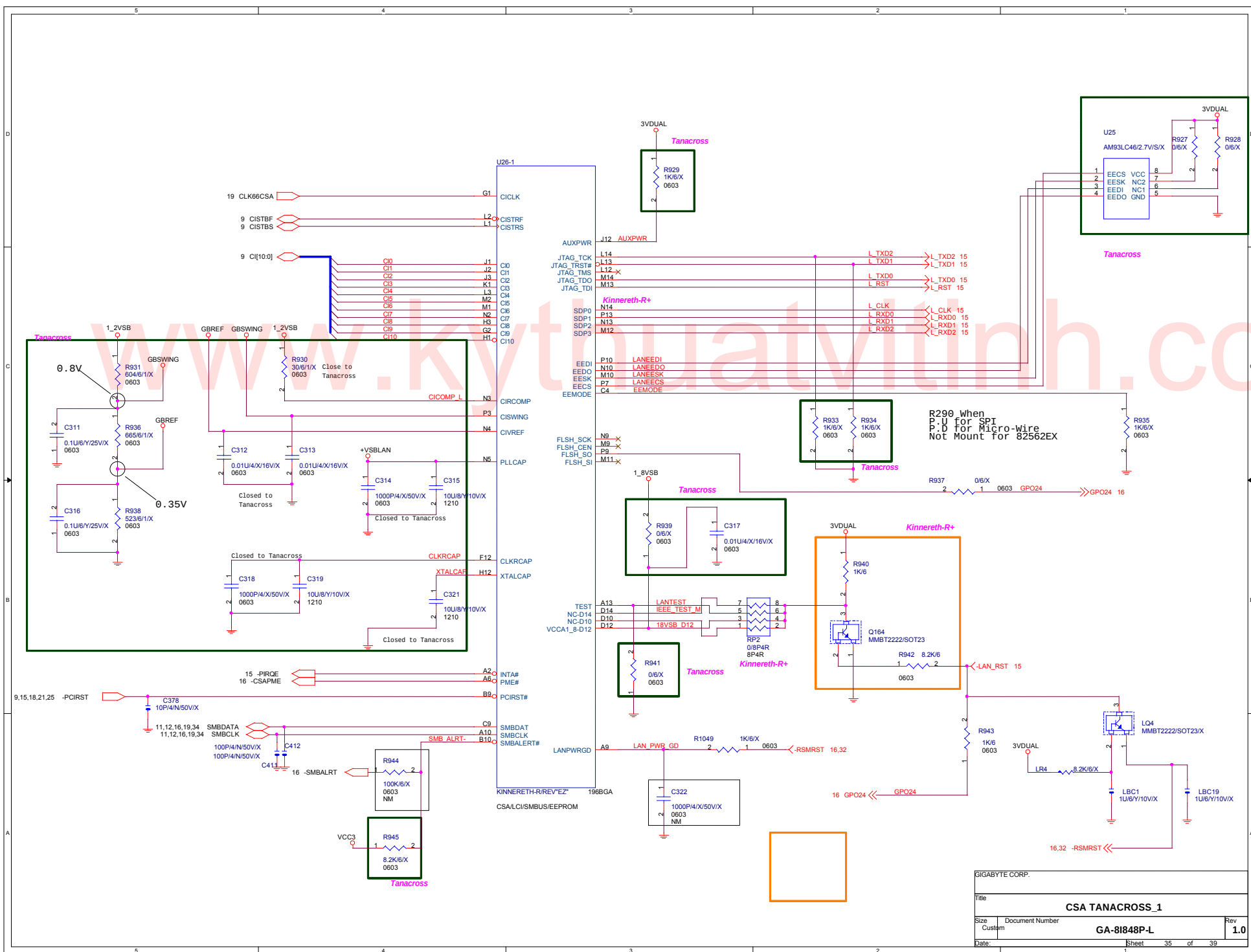
ATX POWER CONNECTOR

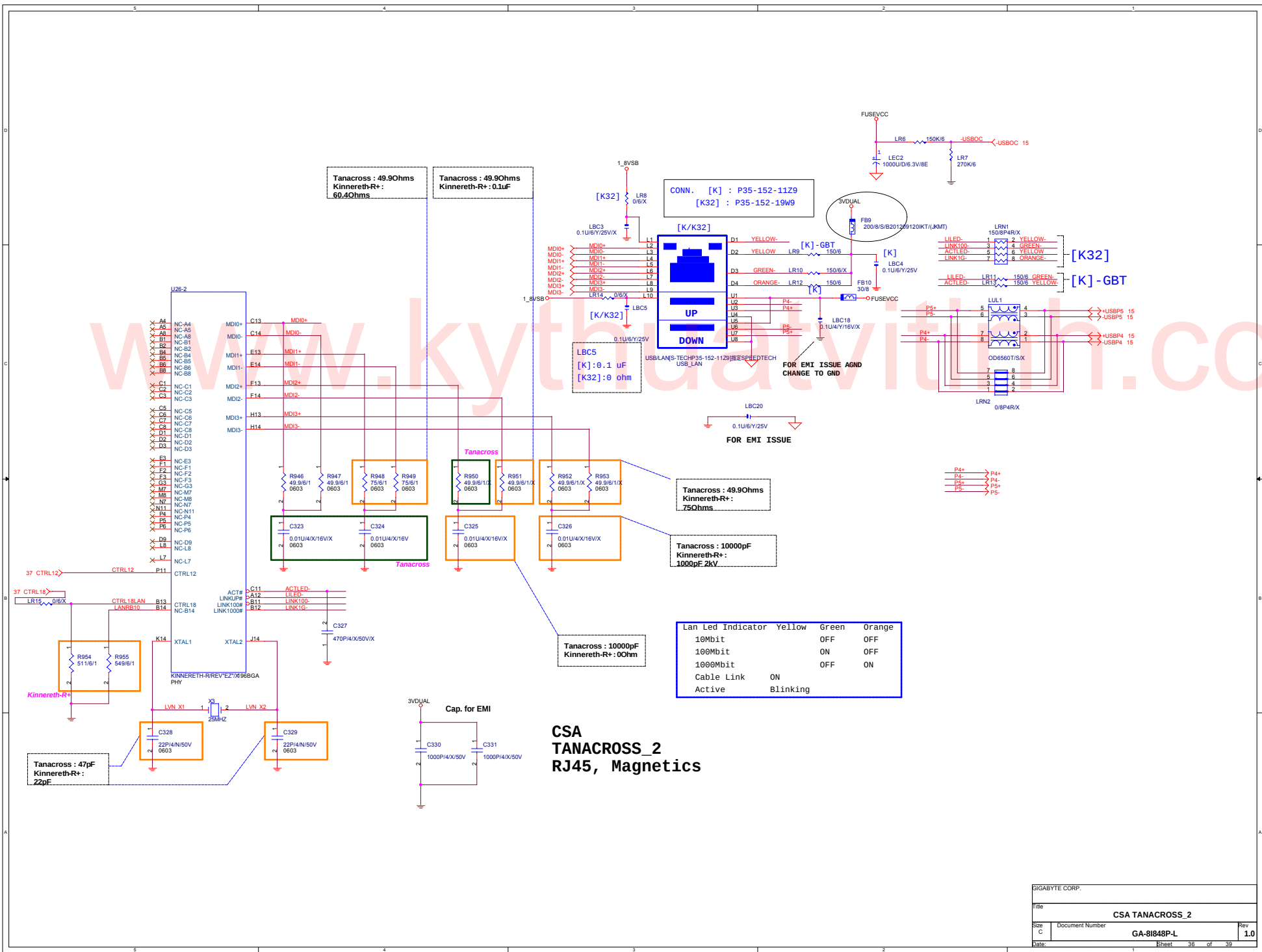


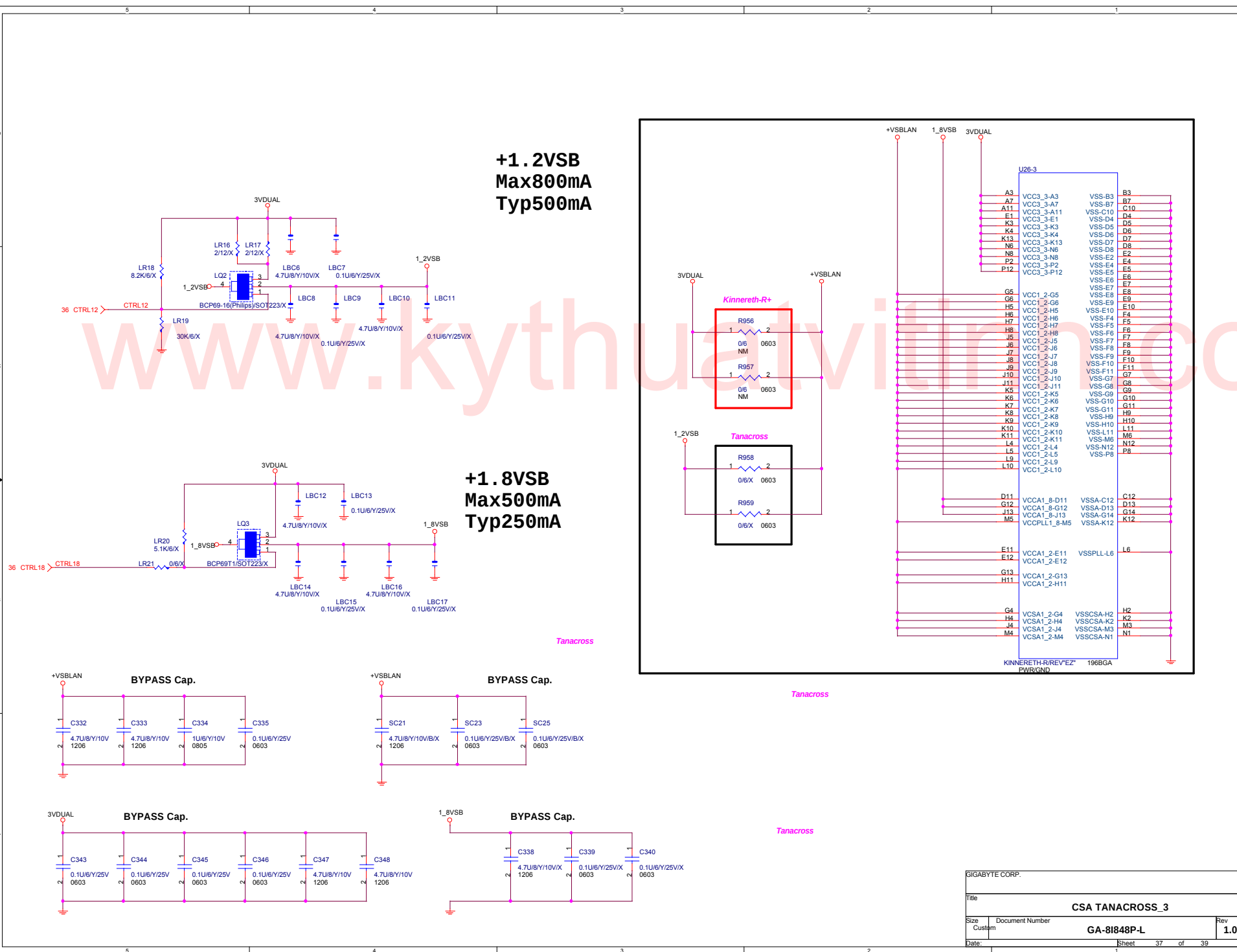
Northwood: +1.45V
Prescott: +1.225V



GIGABYTE CORP.		
Title		
Misc. PWR & ATX CONN.		
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PCI ROUNTING LIST

PCI DEVICE	IDSEL	INT	CLOCK	REQ	GNT	
PCI SLOT1	16	C, F, G, A	PCLK0	REQ0 -	GNT0 -	
PCI SLOT2	17	F, G, A, C	PCLK1	REQ1 -	GNT1 -	
PCI SLOT3	18	G, A, C, F	PCLK2	REQ2 -	GNT2 -	
PCI SLOT4	19	A, C, F, G	PCLK3	REQ3 -	GNT3 -	
PCI SLOT5	20	C, F, G, A	PCLK4	REQ4 -	GNT4 -	

GIGABYTE GA-8I848P-L GPIO LIST

SHEET

TITLE

GPIP	I/O	FUNCTION
GPI0/REQA-	I	PULL HIGH 8.2K to VCC3, SMB connector.
GPI1/REQ5-		PULL HIGH 8.2K to VCC, REQ5-.
GPI2/PIRQE-		PULL HIGH 8.2K to VCC3, PIRQE-.
GPI3/PIRQF-		PULL HIGH 8.2K to VCC3, PIRQF-.
GPI4/PIRQG-		PULL HIGH 8.2K to VCC, PIRQG-.
GPI5/PIRQH-	NA	PULL HIGH 8.2K to VCC
GPI6/AGPBUSY-	I	PULL 8.2K TO VCC3, PANEL GREEN_BUTTON
GPI7	I	DUAL BIOS FIRST BOOT SELECT.
GPI8	I	PULL 8.2K TO 3VDUAL, -CASPM.
GPI9/OC4-	NA	USB OC4-.
GPI10/OC5-	NA	USB OC5-.
GPI11/-SMBALRT	NA	PULL 8.2K TO 3VDUAL, -SMBALERT.
GPI12	I	PULL 8.2K TO VCC3,M/B REVERSION ID.
GPI13	I	LPC PME.
GPI14/OC6-	NA	USB OC6-.
GPI15/OC7-	NA	USB OC7-.
GP016/GNTA-	NA	GP016.
GP017/GNT5-		GNT5-.
GP018/STP_PCI-	NA	GP018.
GP019/SLP_S1-	0	DUAL BIOS.
GP020/SLP_CPU-	0	DUAL BIOS.
GP021/C3_SATA-	0	BLOCK TOP TABLE.
GP022/CPUPERF-	0	PULL 8.2K TO VCC3,PANEL S3 POWER LED.

SHEET

TITLE

GPIP	I/O	FUNCTION
GP016		PULL 8.2K TO VCC3
GP017		PULL 8.2K TO VCC3 (GNT5-)
GP018		PULL 8.2K TO VCC3
GP019		PULL 8.2K TO VCC3
GP020		PULL 8.2K TO VCC3
GP021		PULL 8.2K TO VCC3
GP022		PULL 8.2K TO VCC3
GP023		PULL 8.2K TO VCC3
GP024		PULL 1K TO 3VDUAL (TOP BLOCK)
GP025		PULL 4.7K TO 3VDUAL, LAN 100/10 DETECT.
GP026		NOT IMPLEMENTED
GP027		PULL 8.2K TO 3VDUAL, BIOS WRITE PROTECT.
GP028		PULL 8.2K TO 3VDUAL

GIGABYTE CORP.

Title			GPIO LIST	
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