

SHEET

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Gigabyte Technology

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Component value change history

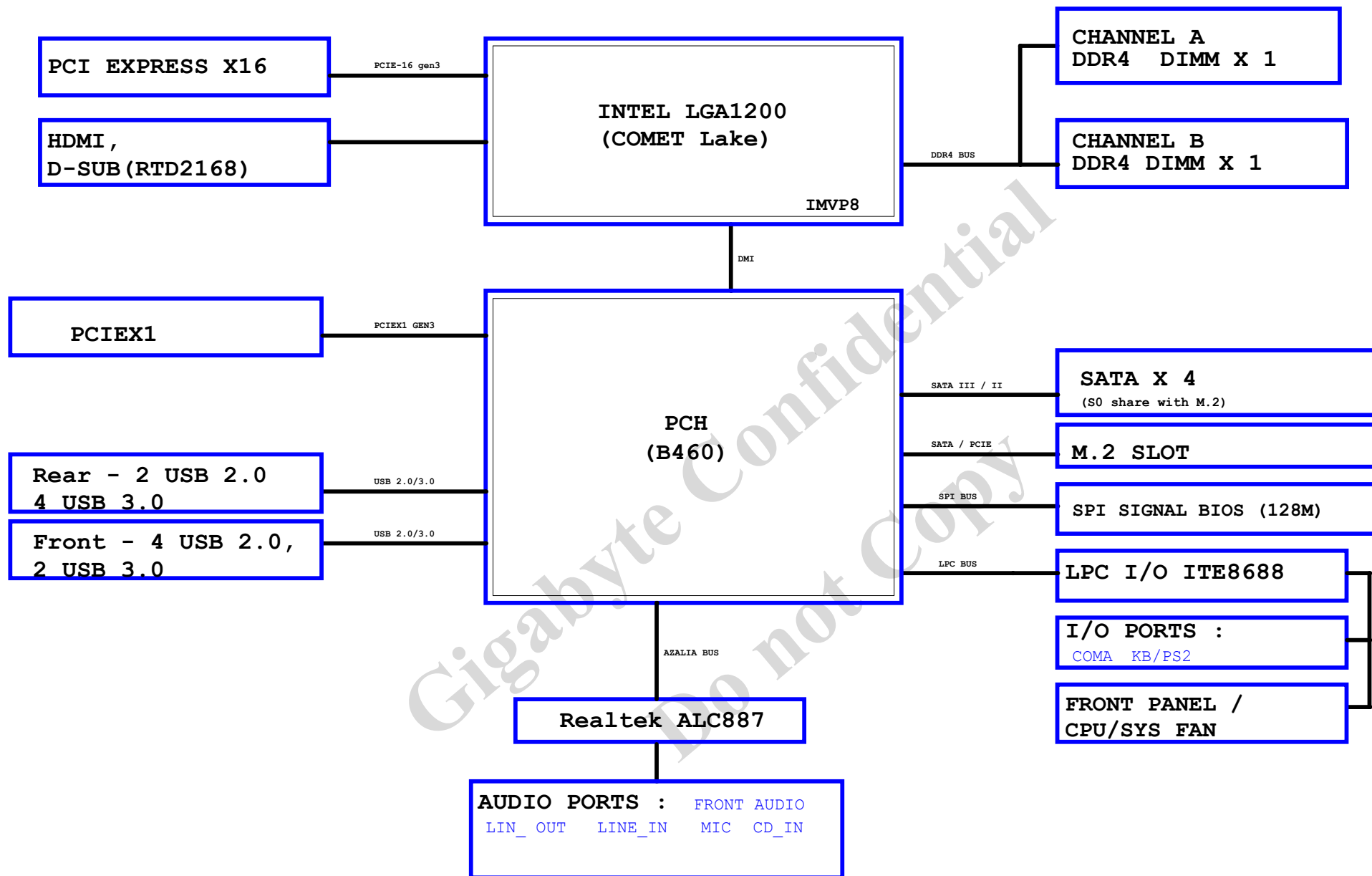
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2020/03/24	1. W_OVR14 change to 1.69K/4/1 2. NR22 change to 1K/4/1 3. DAR41 change to 7.5K/4/1 4. DAR52 change to 82.5K/4/1 5. DAR47 change to 14K/4/1 6. NR21 change to 0/4 7. DAR44 change to 698/4/1 8. DAR126 change to 11K/4/1 9. DAR67 change to 12.7K/4/1 10. remove LGA1151.NR138.LEDR1.DGR8.DDQ4.DGQ4.DGR5.DDR13 11. ADD NR10.NR122.NR9.LEDR9.W_OVC8.W_OVC9.DDR14.WR6.DGR6.MR23.MR25	BOM=10A

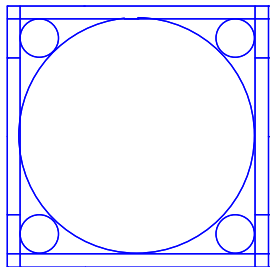
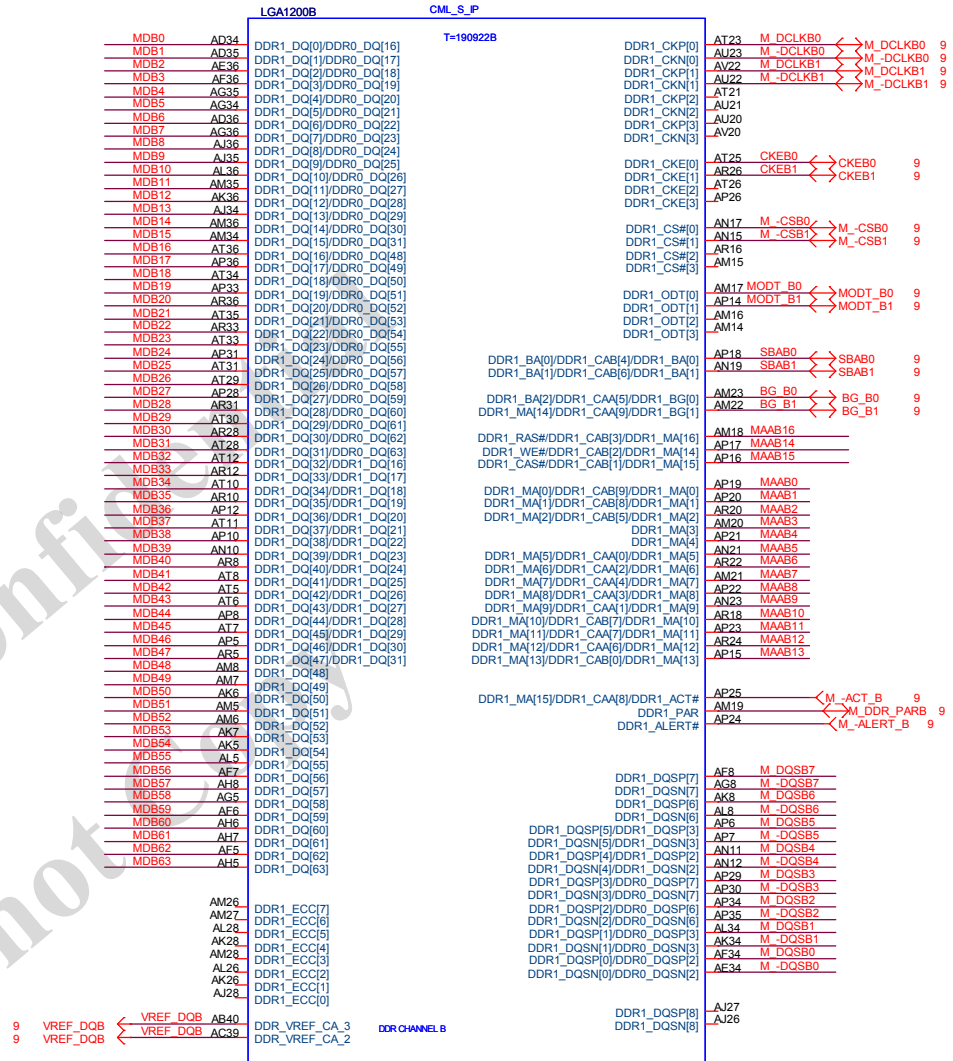
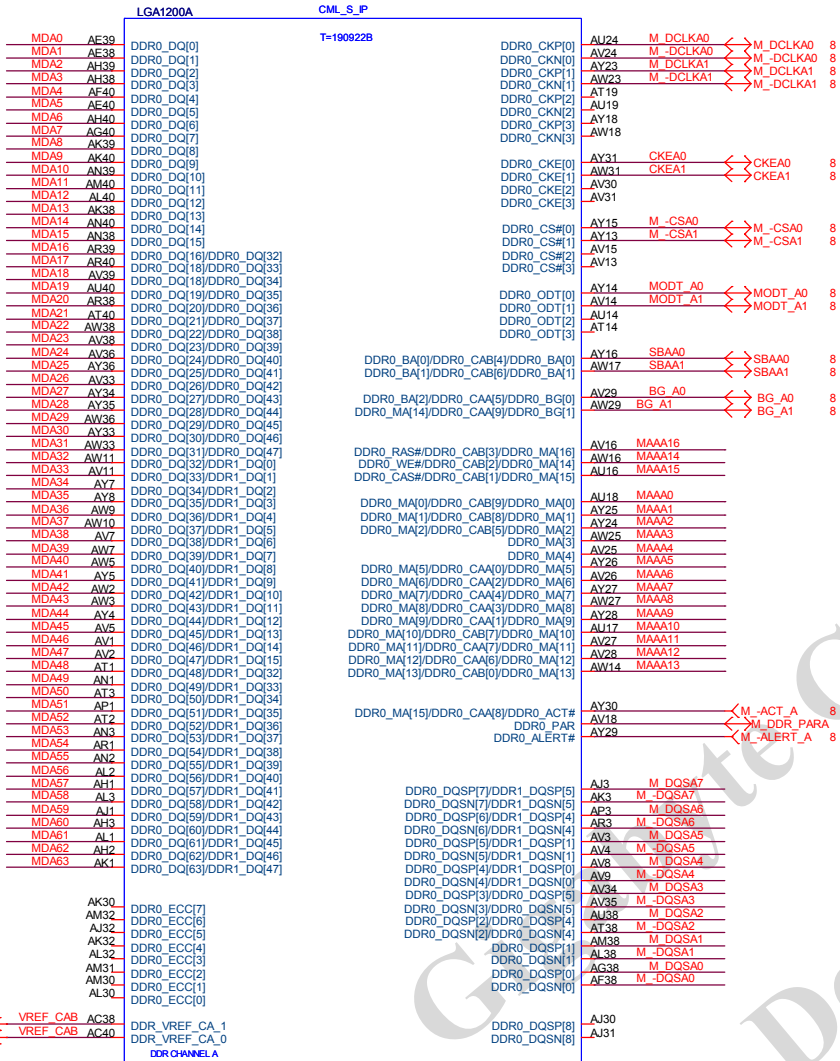
Circuit or PCB layout change

DATE	Change Item	Reason
2020/02/21	由B460M D2V 修改 1. remove DVI.PCIEX1_1.SATA4.SATA5 2. VGA改平鋪 3. PCIEX1_2 rename PCIEX1	Rev 0.1
2020/03/24	1. ADD W_OVC8. W_OVC9.WR6 2. WBC77修改net 為VCCSFR_OC 3. Add VRM_TEMP2 4. modify ME lock 線路	Rev 1.0

			
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BOM & PCB MODIFY HISTORY			
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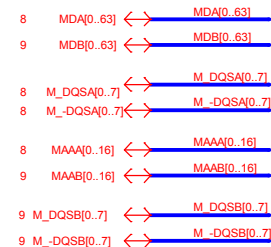
BLOCK DIAGRAM



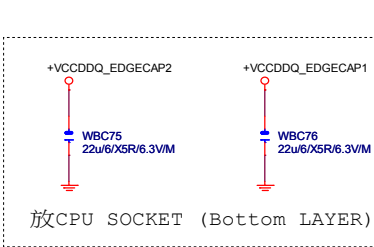
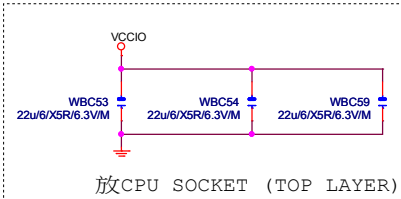
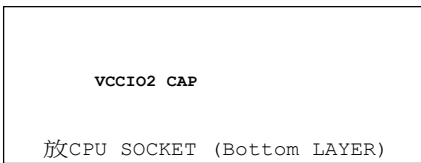
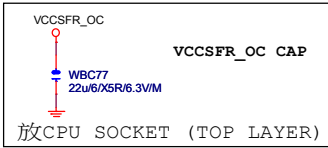
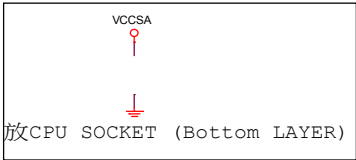
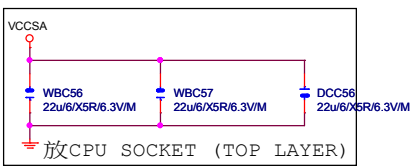


黑色cover

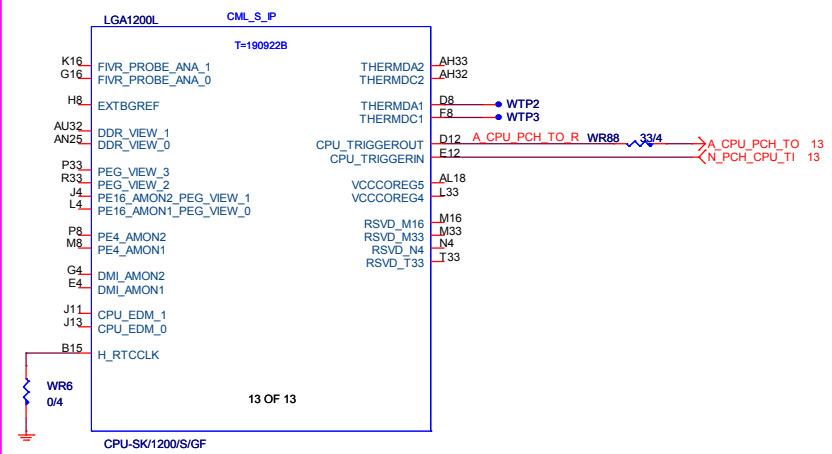
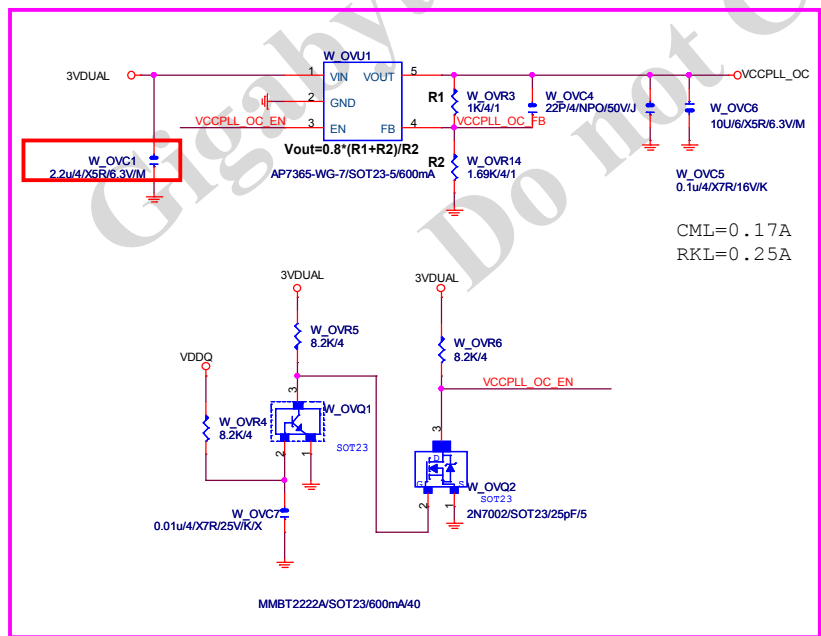
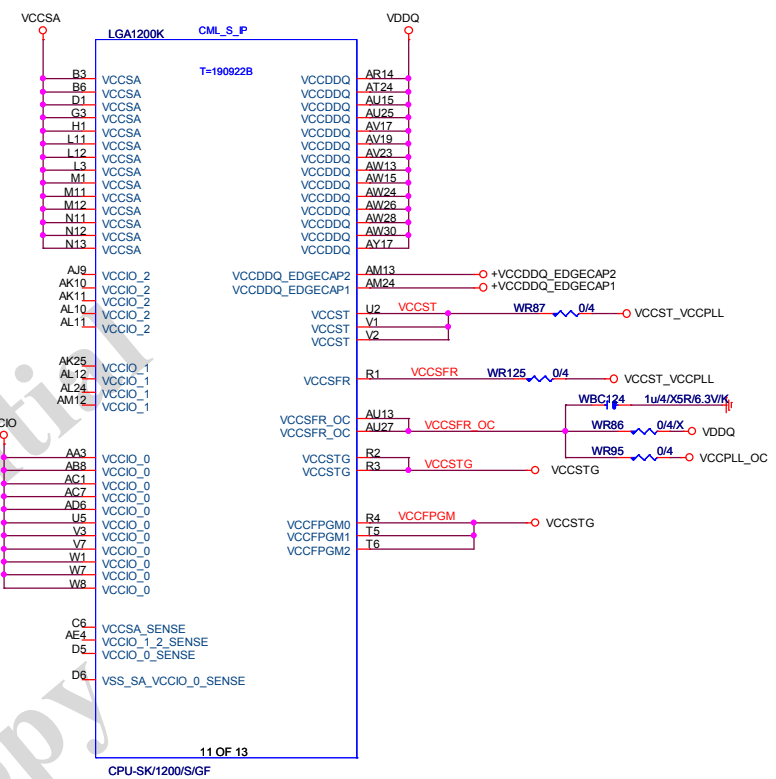
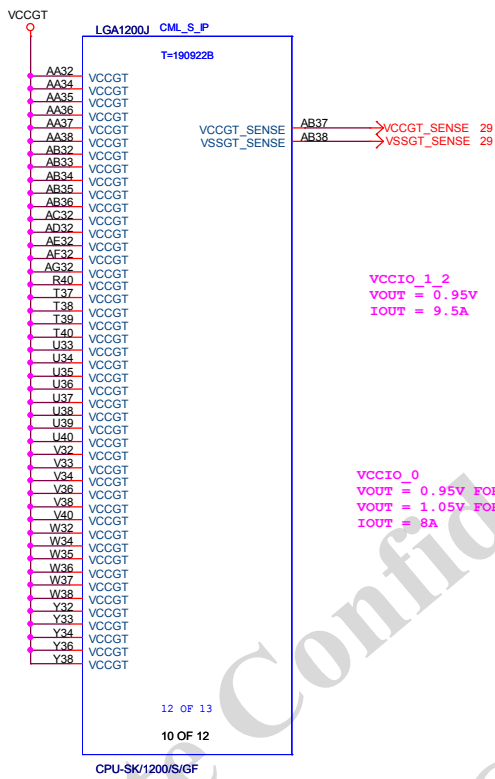
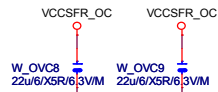
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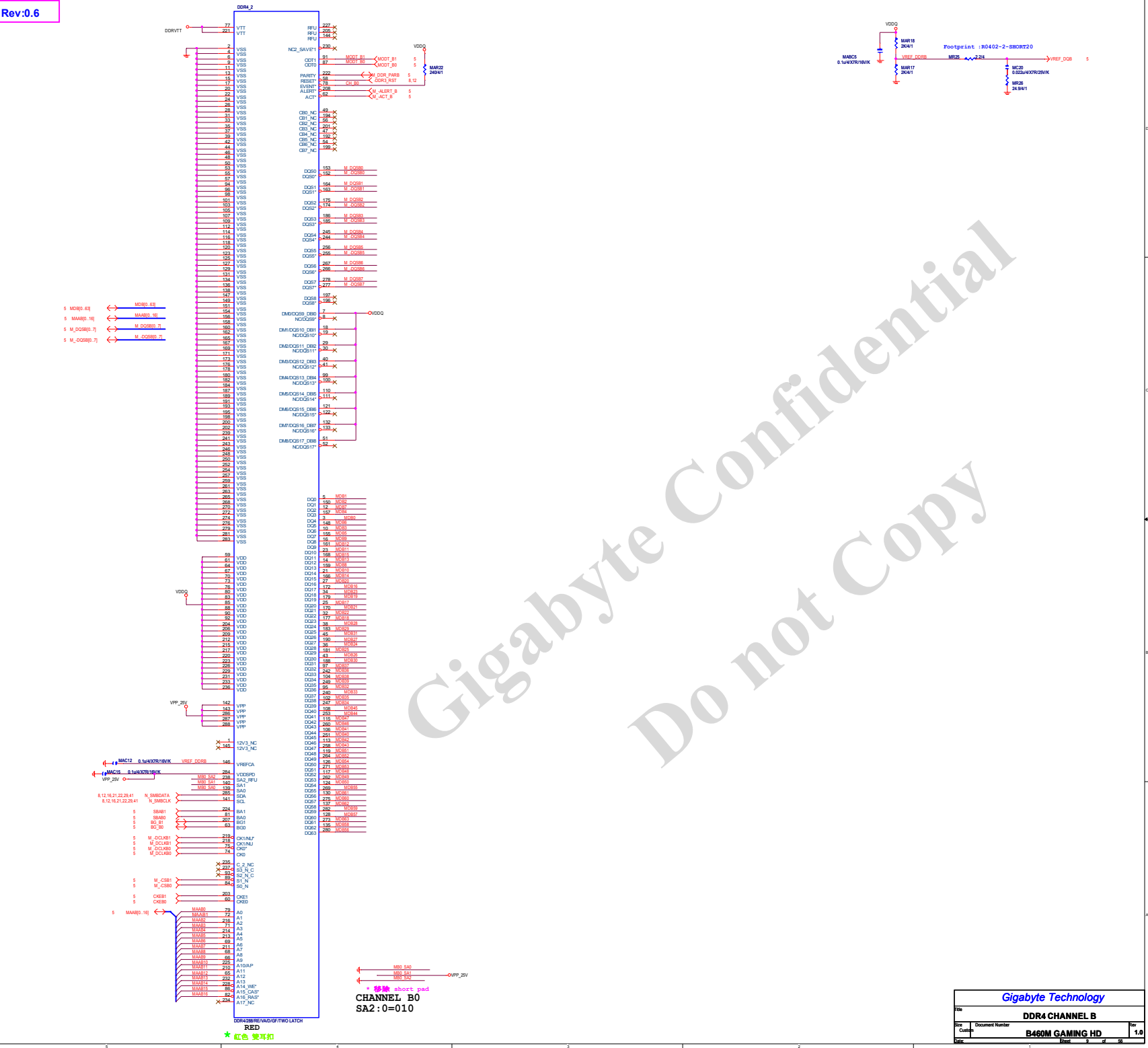


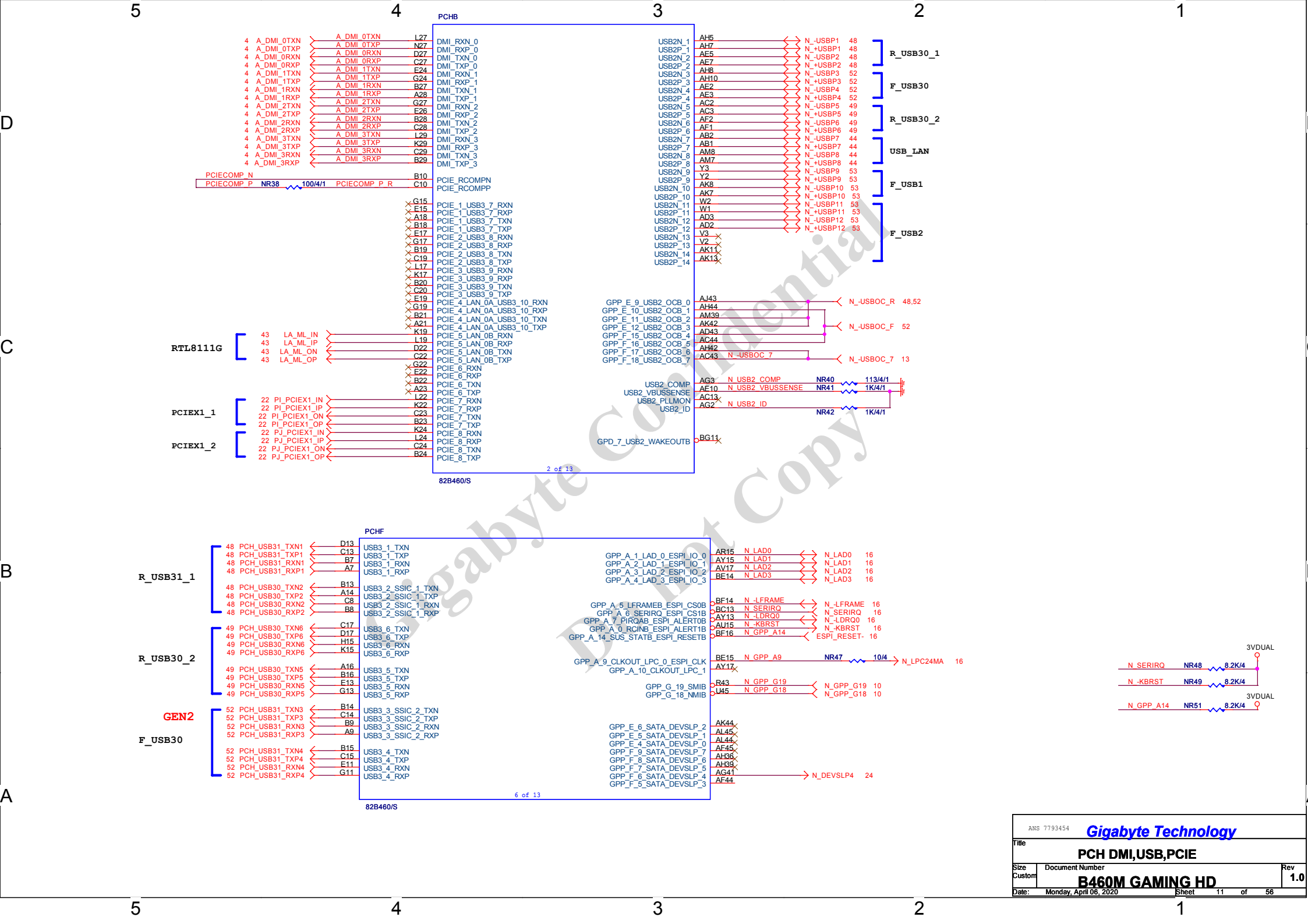
Gigabyte Technology		
CPU LGA1200-B		
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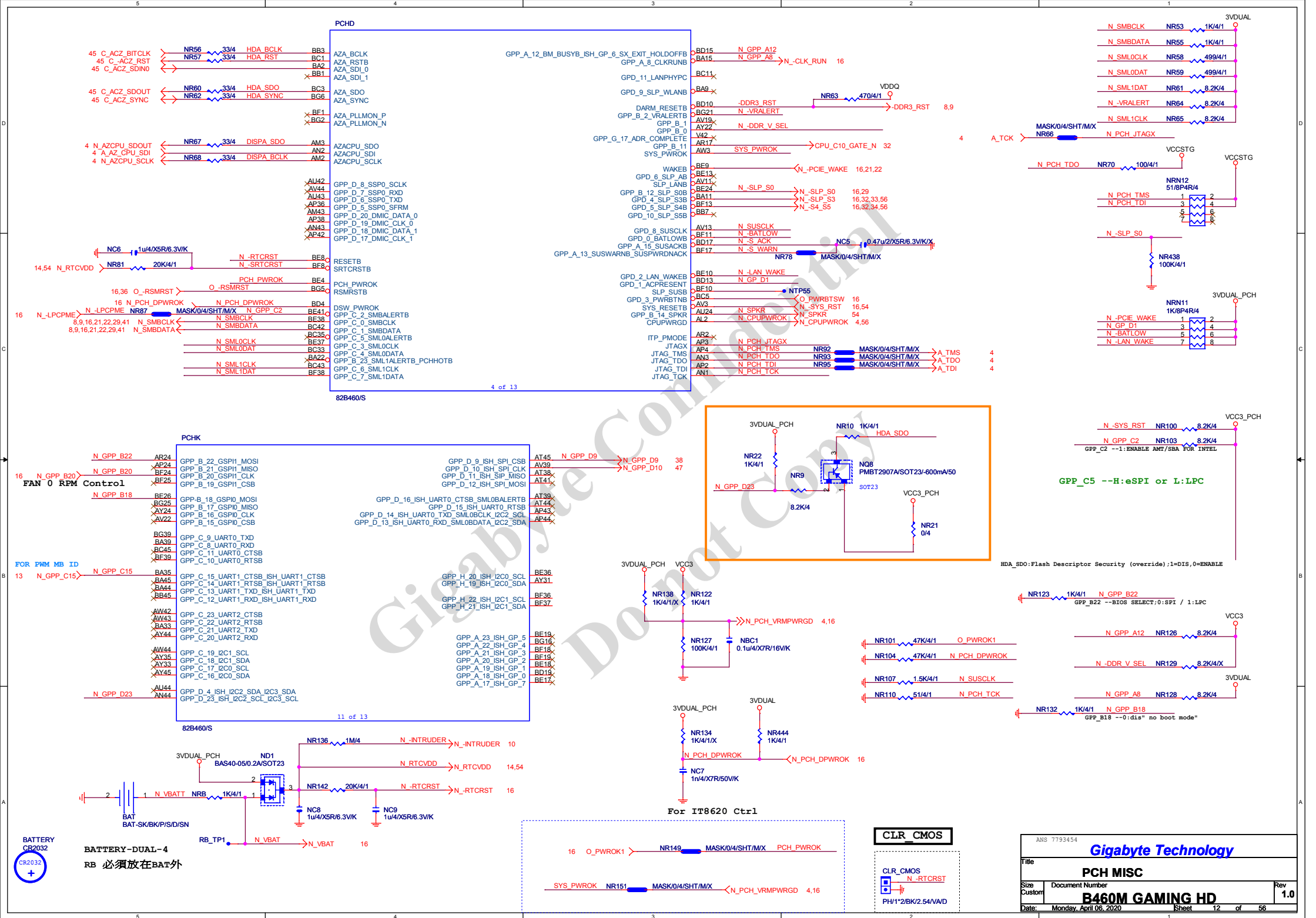


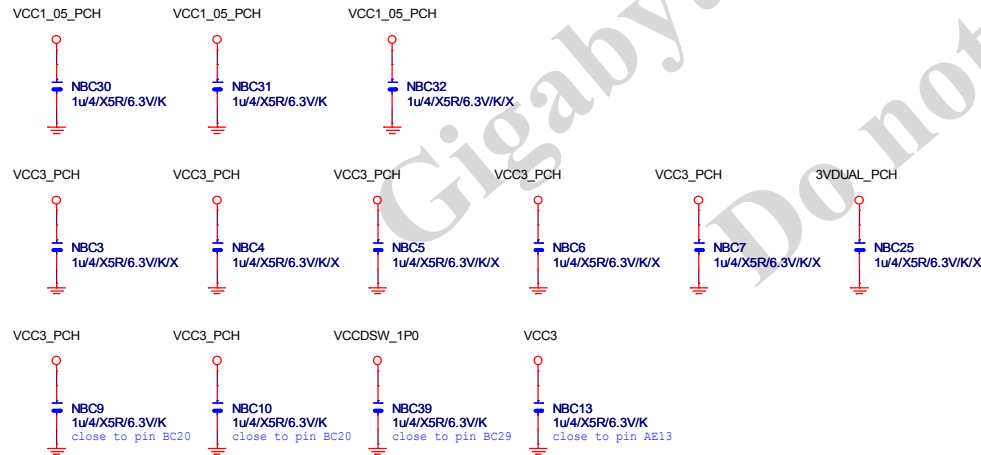
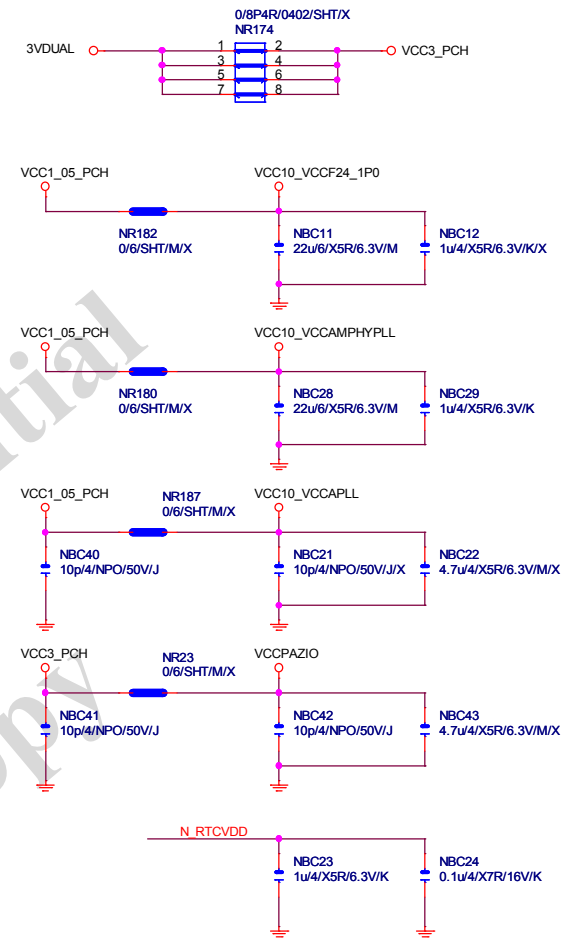
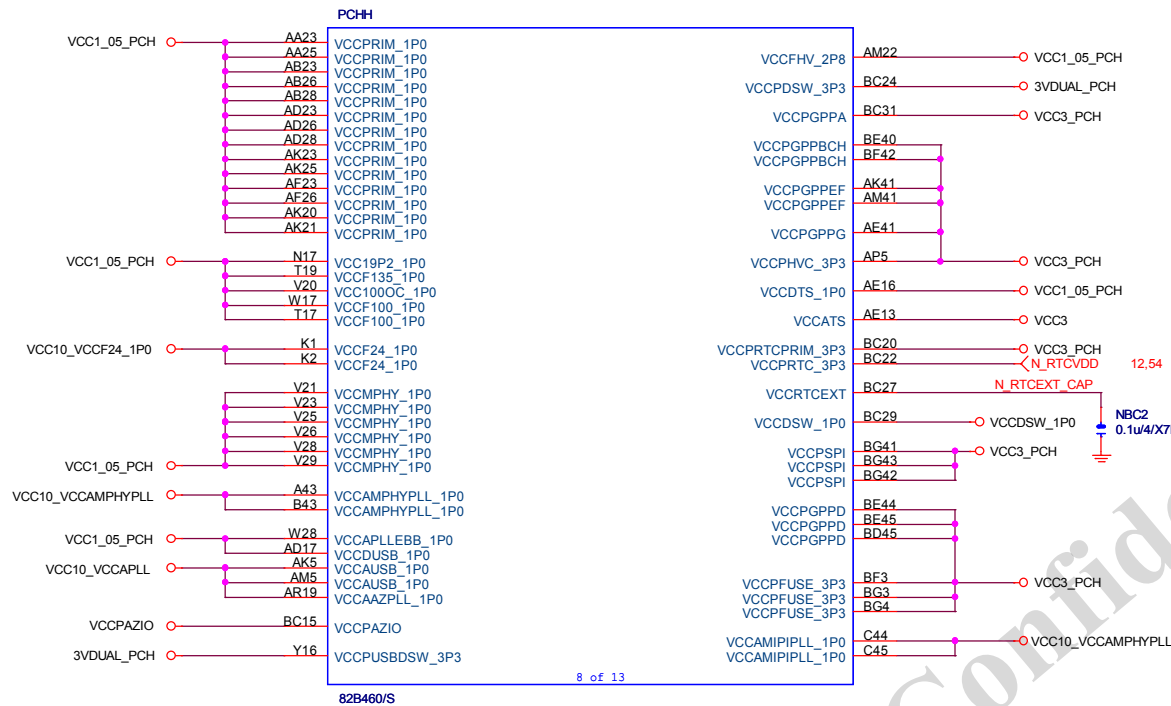
***CML增加, RKL才會用到**











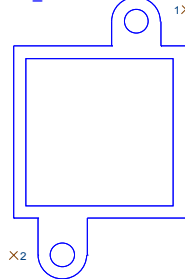
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A30	VSS	D45
P22	VSS	B344
AV38	VSS	BF44
AV45	VSS	BF45
AV8	VSS	BF2
AY11	VSS	VY29
AY19	VSS	A35
AY37	VSS	A40
AY4	VSS	A41
AY8	VSS	AA17
B25	VSS	AA18
B3	VSS	AA20
B30	VSS	AA21
B38	VSS	AA26
B4	VSS	AA28
B41	VSS	AA29
BA13	VSS	AB17
BA17	VSS	AC32
BA29	VSS	A4
BA31	VSS	A44
BA37	VSS	A8
B44	VSS	AF18
BB40	VSS	AF20
BC38	VSS	AF21
BC40	VSS	AF25
BC9	VSS	AF28
BD11	VSS	AF29
BD16	VSS	AF4
BD2	VSS	AF42
BD21	VSS	AG18
BD25	VSS	AG20
F2	VSS	AG21
E31	VSS	AG23
E8	VSS	AG25
F39	VSS	AG26
F43	VSS	AG28
G4	VSS	AG29
G42	VSS	AH11
F6	VSS	AH13
G9	VSS	AH30
H11	VSS	AH32
H13	VSS	AH33
H17	VSS	AH38
H19	VSS	AJ1
H22	VSS	AJ17
H24	VSS	AJ18
H27	VSS	AJ20
H29	VSS	AJ21
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H35	VSS	AJ25
H38	VSS	AJ26
H4	VSS	AJ28
H42	VSS	AJ29
H45	VSS	AJ45
H48	VSS	AK10
H4	VSS	AK14
H42	VSS	AK16
H45	VSS	AK17
H48	VSS	AK18
J4	VSS	AK26
M36	VSS	AK28
M38	VSS	AM14
M4	VSS	AN14
M8	VSS	AP19
M9	VSS	AR22
N13	VSS	AR27
N15	VSS	AL29
N19	VSS	AL33
N22	VSS	AV1
N24	VSS	AV10
N31	VSS	AV15
N42	VSS	AV24
P10	VSS	AV27
P12	VSS	AV33
AV35	VSS	

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PCHL		
BD34	VSS[70]	VSS[1]
BD39	VSS[71]	VSS[2]
BE2	VSS[72]	VSS[3]
BF43	VSS[73]	VSS[4]
BF45	VSS[74]	VSS[5]
BF5	VSS[75]	VSS[6]
BG18	VSS[76]	VSS[7]
BG23	VSS[77]	VSS[8]
BG28	VSS[78]	VSS[9]
BG32	VSS[79]	VSS[10]
BG37	VSS[80]	VSS[11]
BG40	VSS[81]	VSS[12]
BG9	VSS[82]	VSS[13]
C1	VSS[84]	VSS[14]
A12	VSS[85]	VSS[15]
A28	VSS[86]	VSS[16]
C37	VSS[87]	VSS[17]
A6	VSS[88]	VSS[18]
C9	VSS[89]	VSS[19]
D1	VSS[90]	VSS[20]
D10	VSS[91]	VSS[21]
D12	VSS[92]	VSS[22]
D15	VSS[93]	VSS[23]
D16	VSS[94]	VSS[24]
B12	VSS[95]	VSS[25]
D19	VSS[96]	VSS[26]
D21	VSS[97]	VSS[27]
D24	VSS[98]	VSS[28]
D25	VSS[99]	VSS[29]
D29	VSS[100]	VSS[30]
D30	VSS[101]	VSS[31]
D33	VSS[102]	VSS[32]
D35	VSS[103]	VSS[33]
D36	VSS[104]	VSS[34]
D39	VSS[105]	VSS[35]
D44	VSS[106]	VSS[36]
D7	VSS[107]	VSS[37]
P13	VSS[108]	VSS[38]
P15	VSS[109]	VSS[39]
P17	VSS[110]	VSS[40]
P19	VSS[111]	VSS[41]
P21	VSS[112]	VSS[42]
P33	VSS[113]	VSS[43]
P35	VSS[114]	VSS[44]
P4	VSS[115]	VSS[45]
P42	VSS[116]	VSS[46]
P8	VSS[117]	VSS[47]
R1	VSS[118]	VSS[48]
R32	VSS[119]	VSS[49]
T10	VSS[120]	VSS[50]
T14	VSS[121]	VSS[51]
T22	VSS[122]	VSS[52]
T29	VSS[123]	VSS[53]
T32	VSS[124]	VSS[54]
T36	VSS[125]	VSS[55]
T38	VSS[126]	VSS[56]
Y38	VSS[127]	VSS[57]
Y4	VSS[128]	VSS[58]
Y8	VSS[129]	VSS[59]
T42	VSS[130]	VSS[60]
T5	VSS[131]	VSS[61]
U4	VSS[132]	VSS[62]
U42	VSS[133]	VSS[63]
V10	VSS[134]	VSS[64]
V14	VSS[135]	VSS[65]
W3	VSS[136]	VSS[66]
AR13	VSS[137]	VSS[67]
AR31	VSS[138]	VSS[68]
AR33	VSS[139]	VSS[69]
AR4	VSS[140]	VSS[70]
AT10	VSS[141]	VSS[71]
AT13	VSS[142]	VSS[72]
AT36	VSS[143]	VSS[73]
AT37	VSS[144]	VSS[74]
AT42	VSS[145]	VSS[75]
AU11	VSS[146]	VSS[76]
AU17	VSS[147]	VSS[77]
BD30	VSS[148]	VSS[78]
V45	VSS[149]	VSS[79]
Y13	VSS[150]	VSS[80]
Y14	VSS[151]	VSS[81]
Y30	VSS[152]	VSS[82]
Y32	VSS[153]	VSS[83]
Y33	VSS[154]	VSS[84]
BG14	VSS[155]	VSS[85]

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SB_HEATSIN



業務指定使用B150M-EVO Heatsink

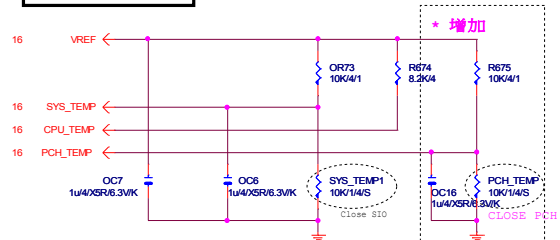
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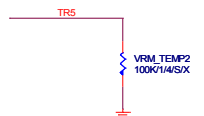
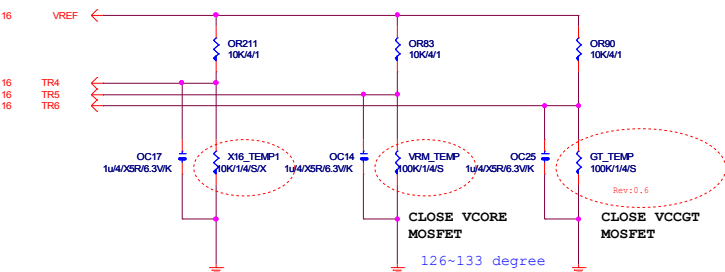
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Title			
PCH GND			
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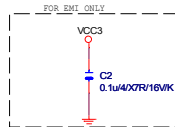
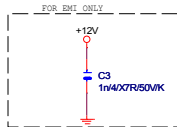
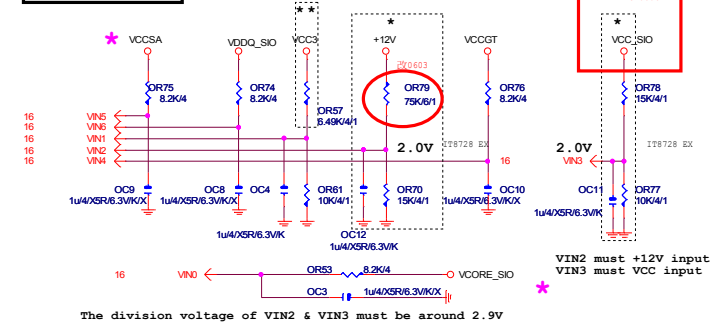
TEMP H/W MONITOR



低階機種: 3個FAN時使用



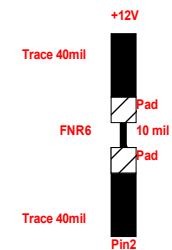
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★Update 2015-04.24

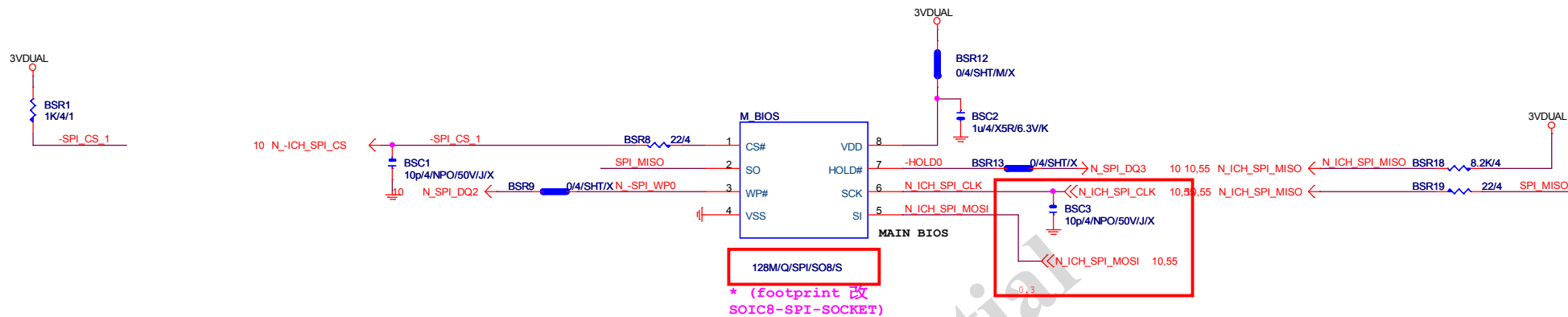
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Title			
HWM,KB/MS, FAN CTRL			
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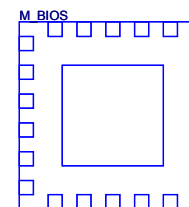
Gigabyte Technology

Title			
FAN CTRL			
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BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K



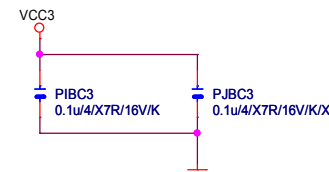
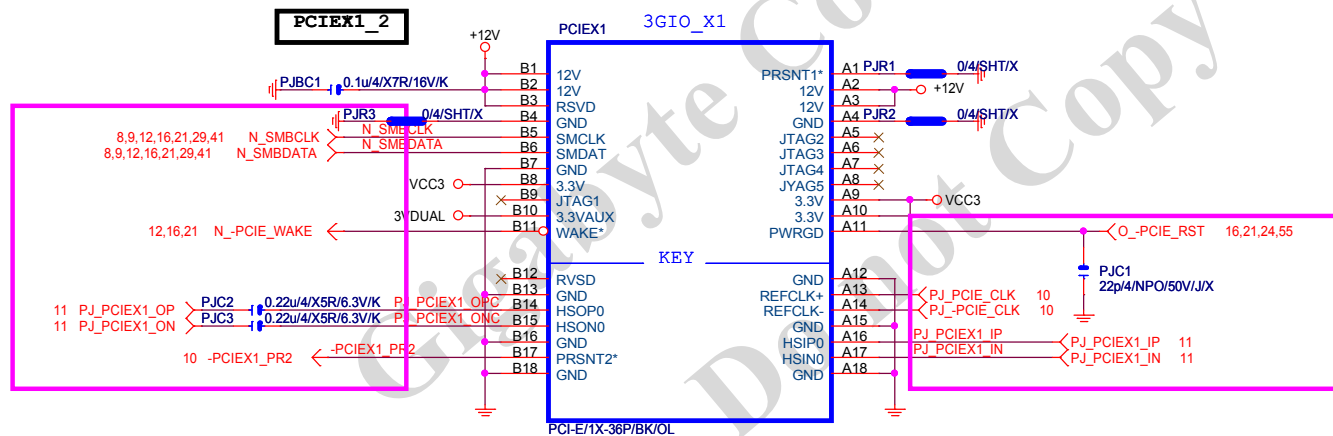
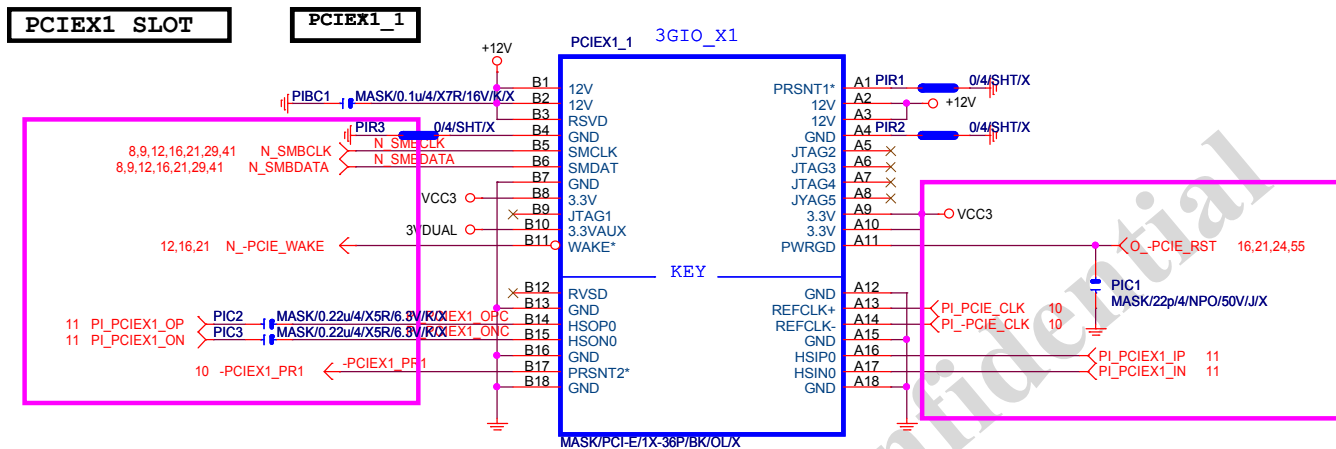
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* 試産先上, PVT 移除

Gigabyte Technology

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BIOS			
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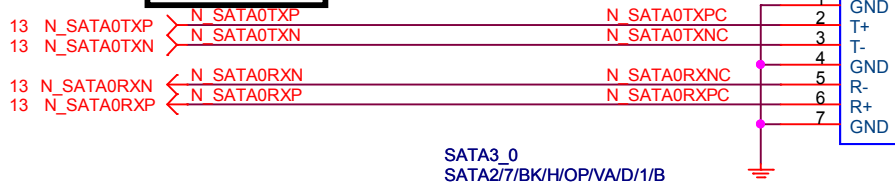
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SATA3 0/1

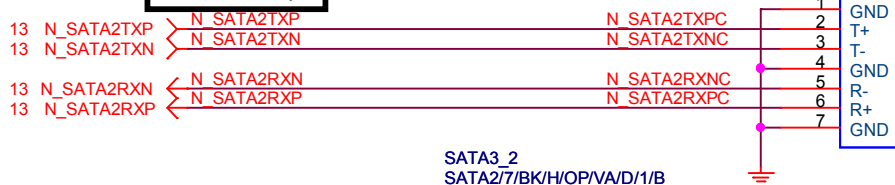


BLACK CONNECTOR

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SATA2/7/BK/H/OP/VA/D/1/B

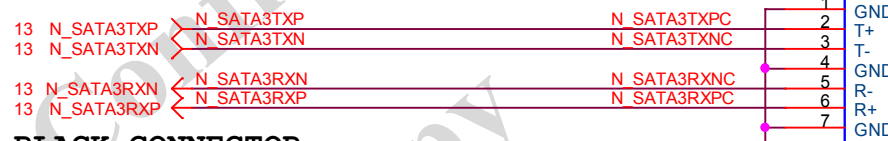


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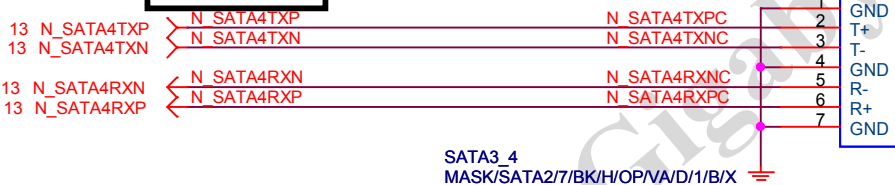


BLACK CONNECTOR

SATA3_3
SATA2/7/BK/H/OP/VA/D/1/B



SATA3 4/5



BLACK CONNECTOR

SATA3_5
MASK/SATA2/7/BK/H/OP/VA/D/1/B/X



Gigabyte Technology

Title

SATA

Size
Custom

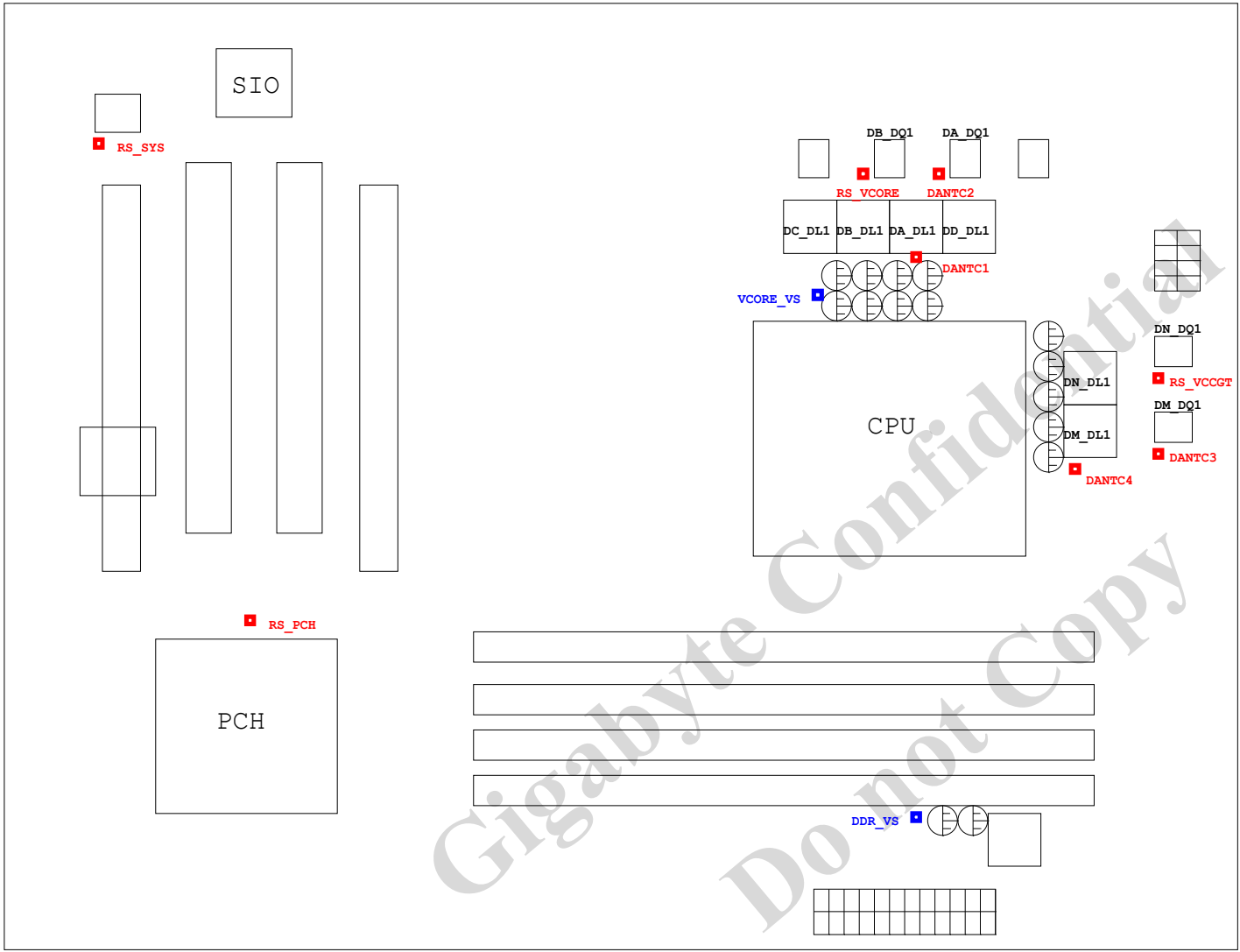
Document Number

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熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL1	N/A
DANTC2	DA_DQ1	Differential
DANTC3	DM_DQ1	N/A
DANTC4	DM_DL1	Differential
RS_VCORE	DB_DQ1	N/A
RS_VCCGT	DN_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A

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File		
IT8892E		
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GIGABYTE™			
Title PCI SLOT 1&2			
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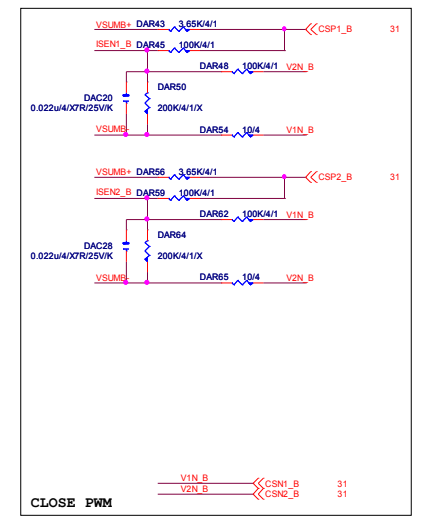
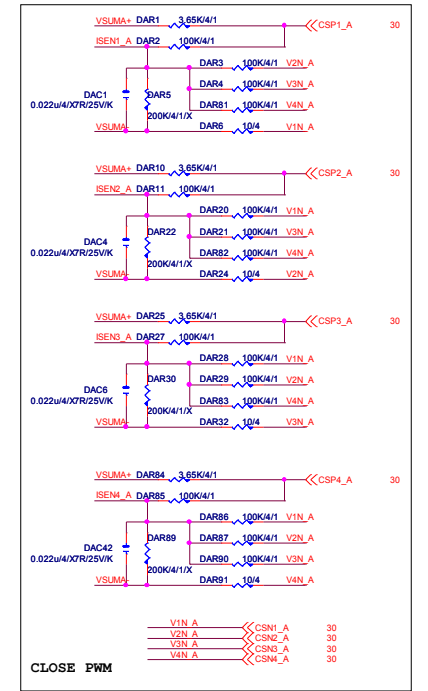
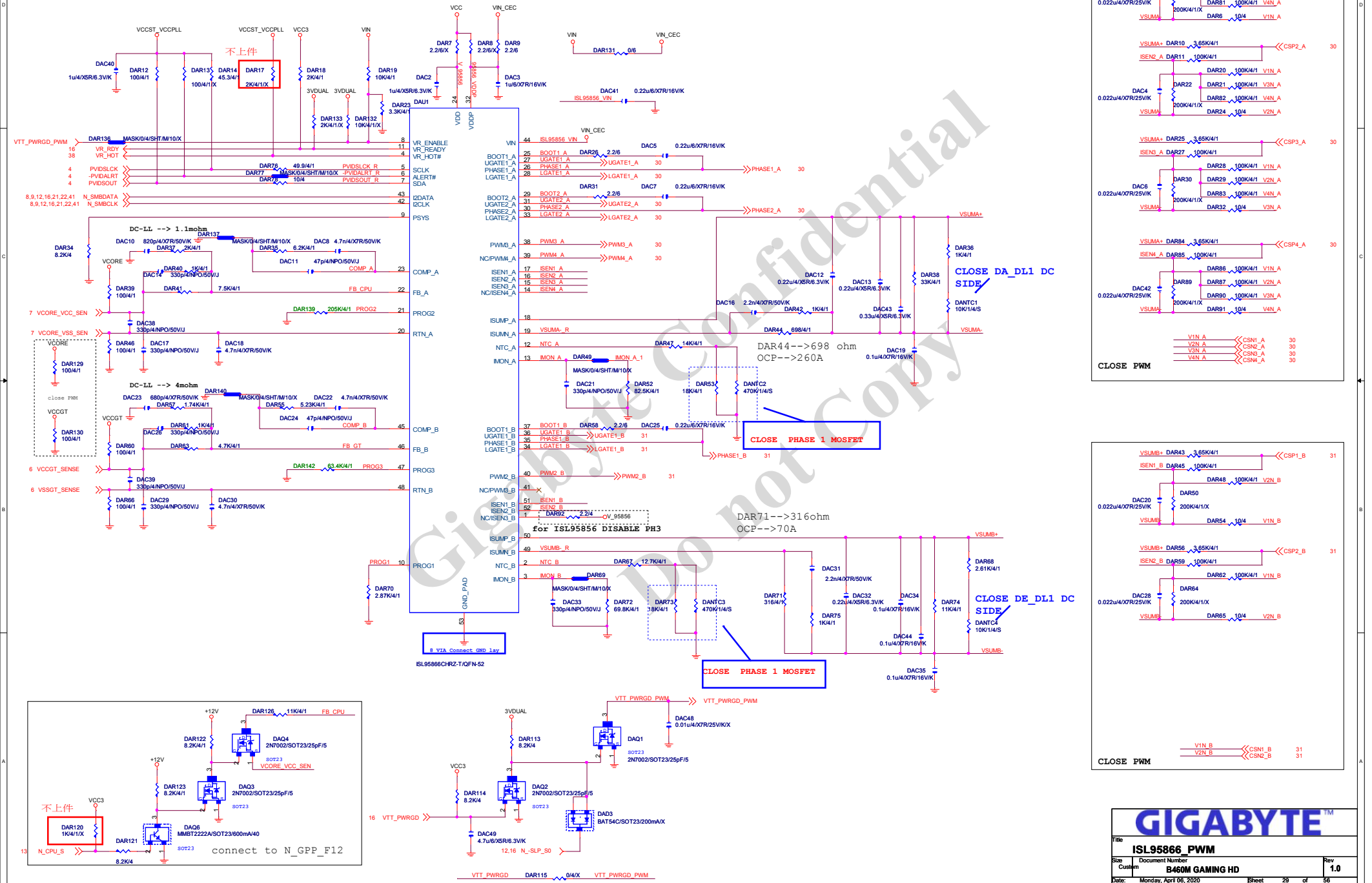
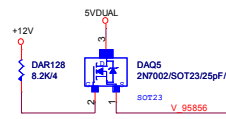
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Title ASM1085 POWER			
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VCORE_SIO VCORE

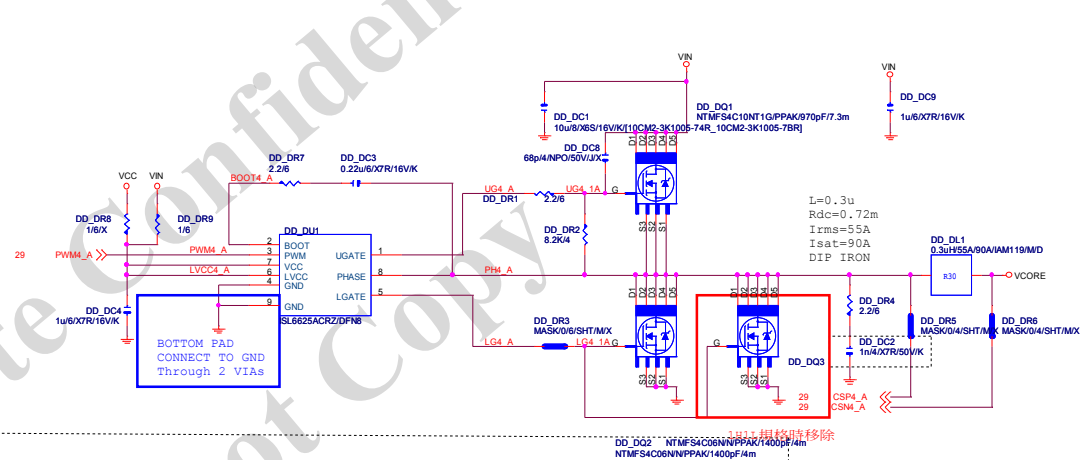
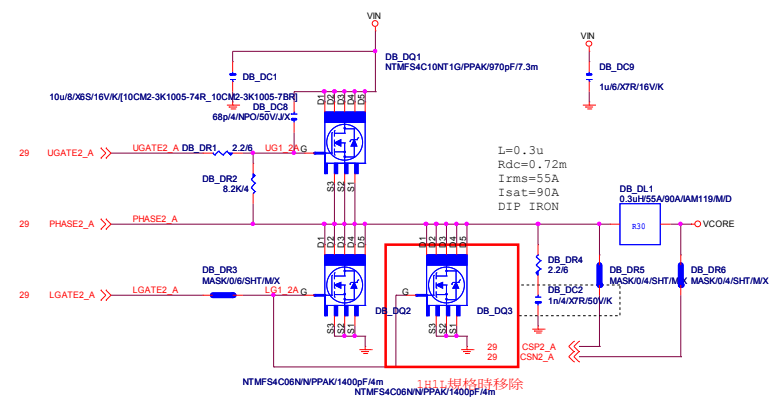
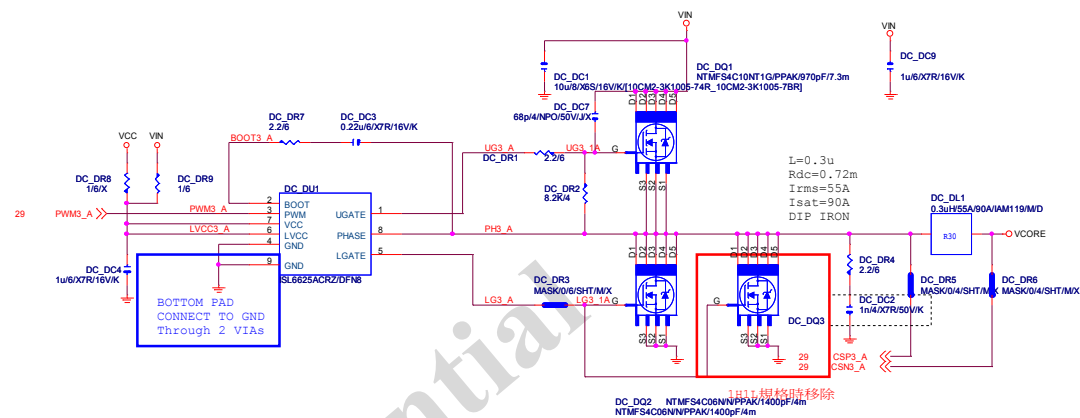
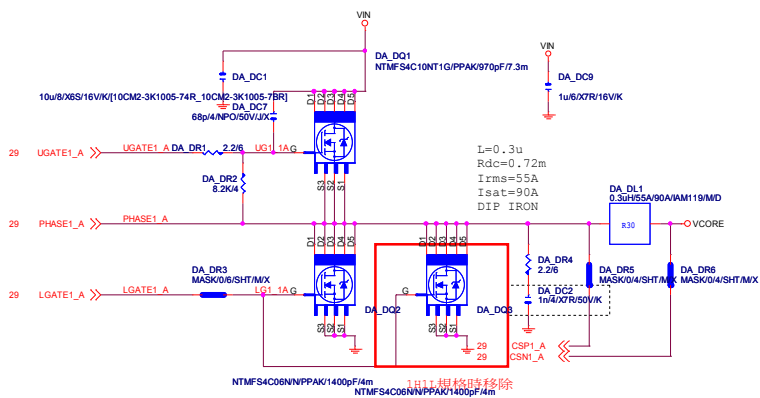
VCORE_VS
MASK/0/4/SH/T/M/X

請注意擺放位置

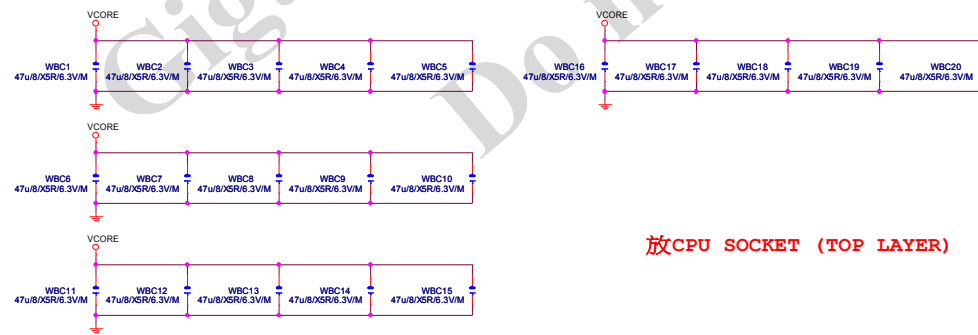
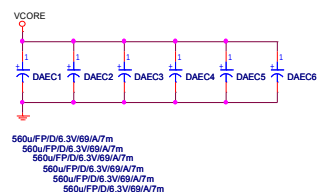
DAR131 short pad footprint:R0603-RH-SHORT30-MASK



VCORE

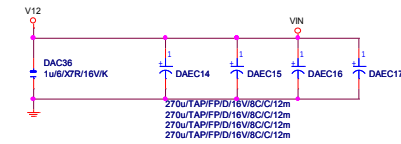


```
VCORE  CAP  560u*6PCS
          22u*20PCS
```

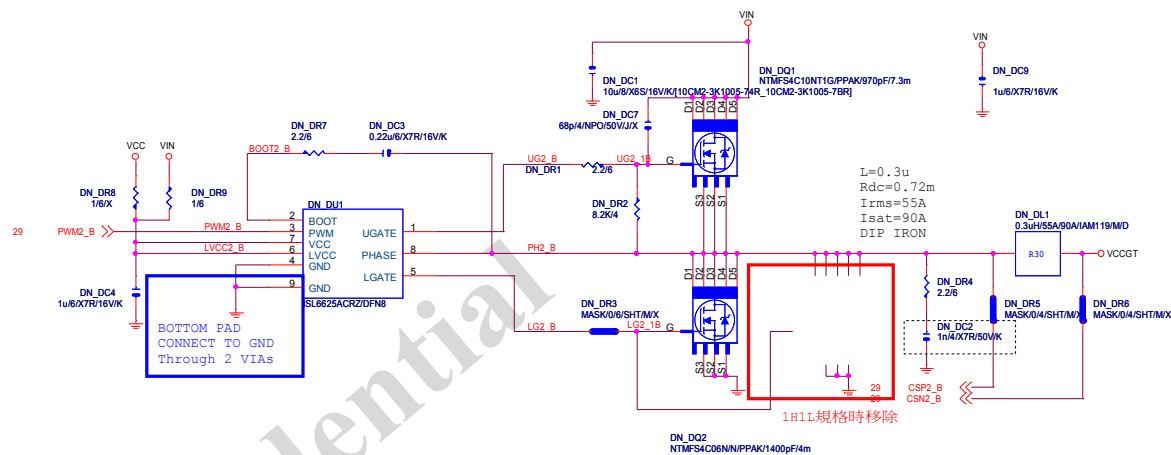
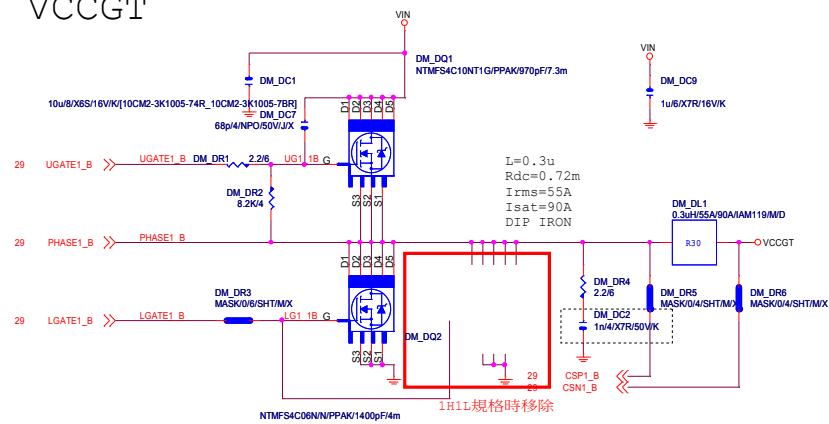


放CPU SOCKET (TOP LAYER)

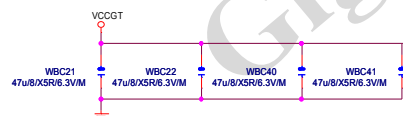
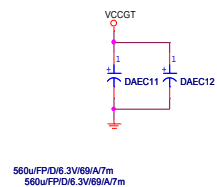
VIN CAP 270u*4PCS

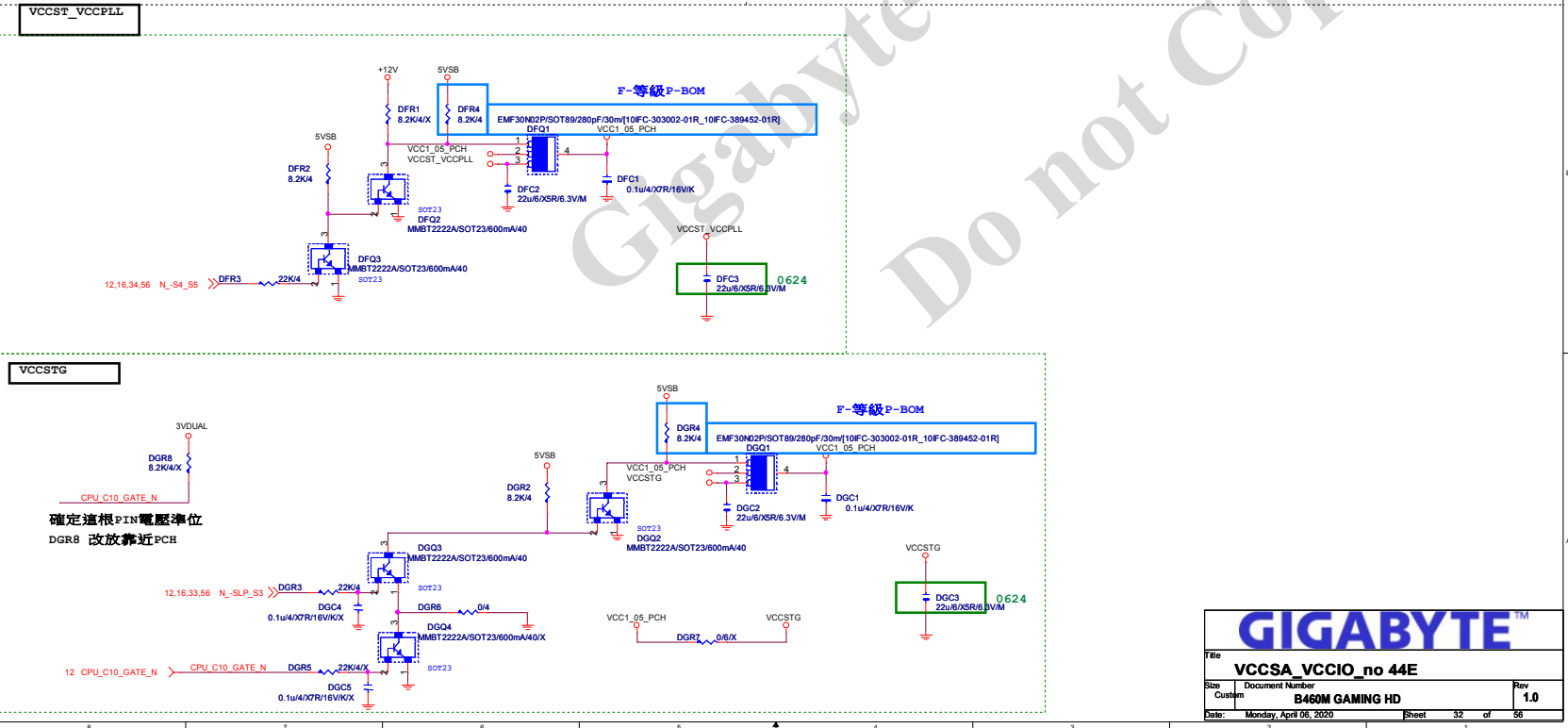
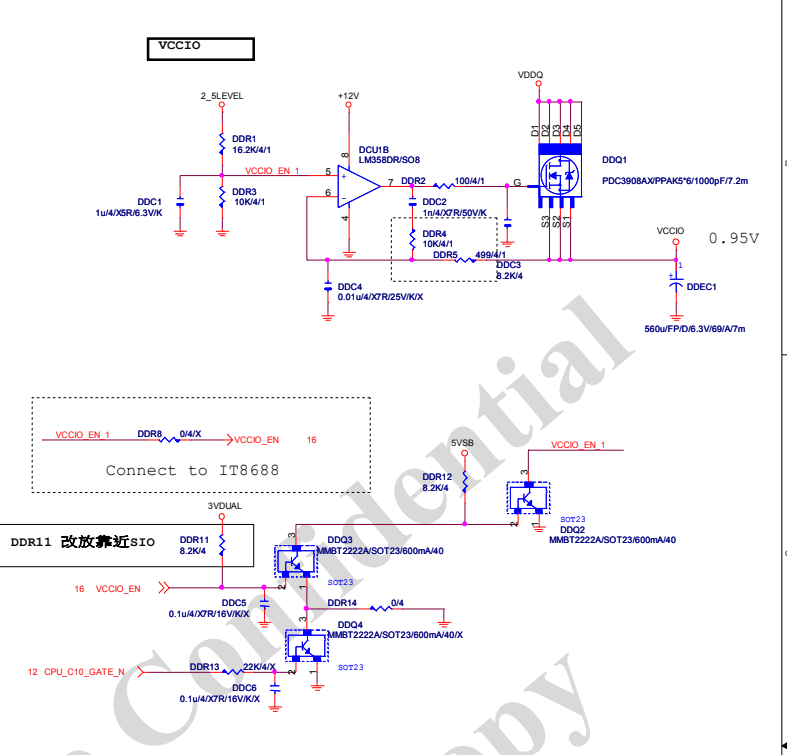
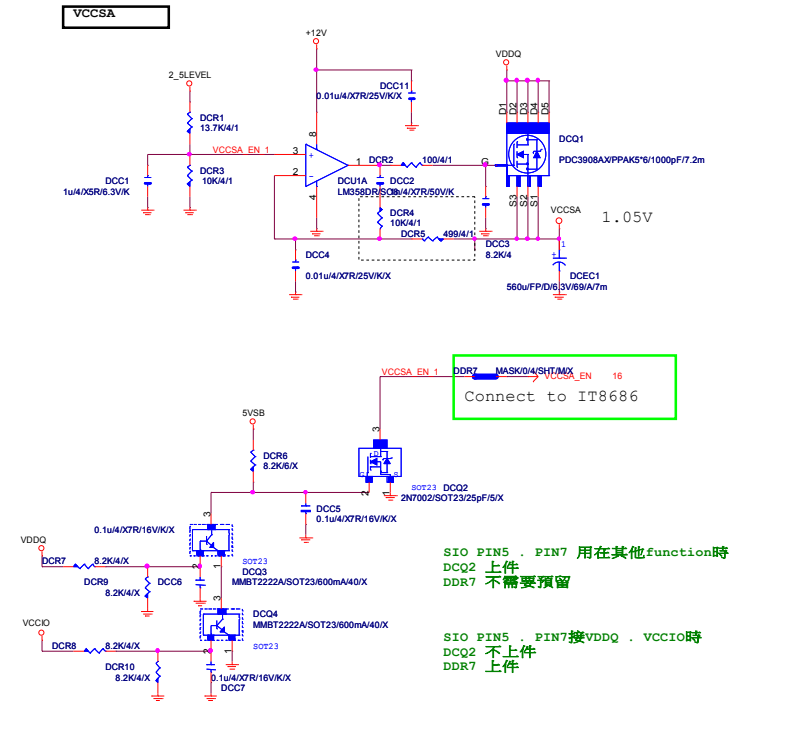


VCCGT



VCCGT	CAP	560u*2PCS
		22u*4PCS

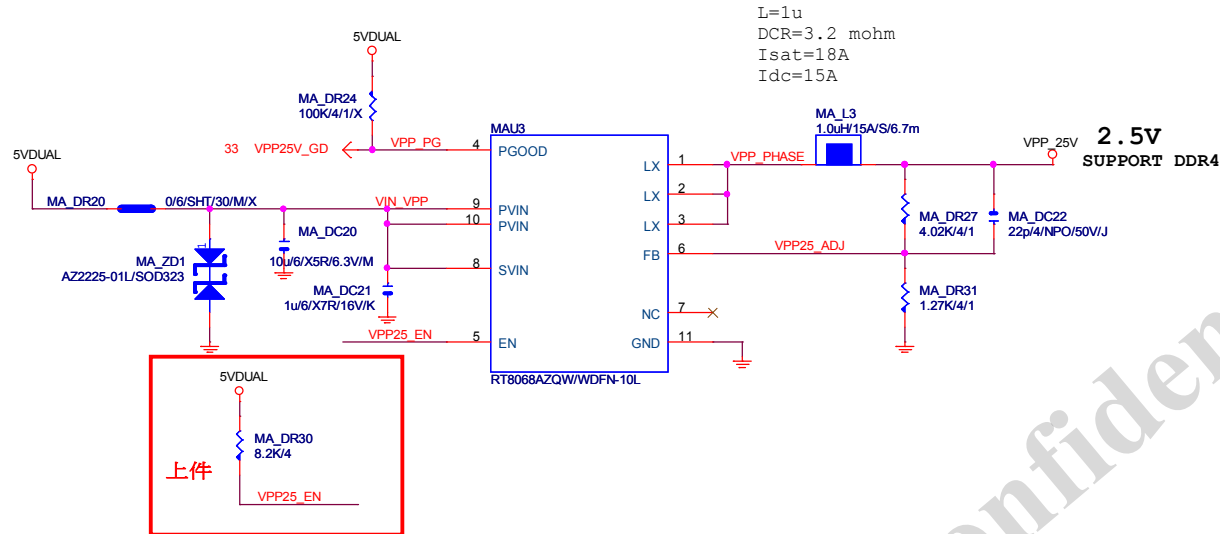




REV:0.1

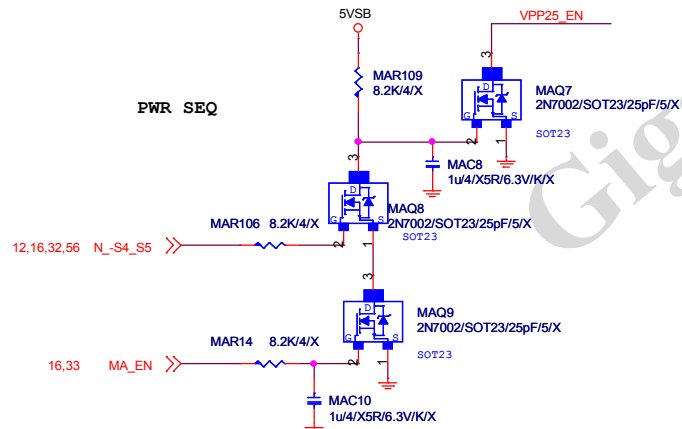
VPP_25V

CHOKE與CAP料號可變



PWR_SEQ

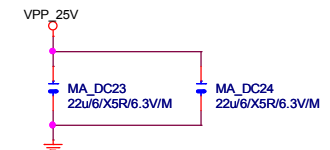
* 刪 MA_DR32



16 VPP25_EN_IO >> MASK/0/4/SHT/M/X MAR114 >> VPP25_EN

VPP CAP 22u*1PCS

* 大電容 x0

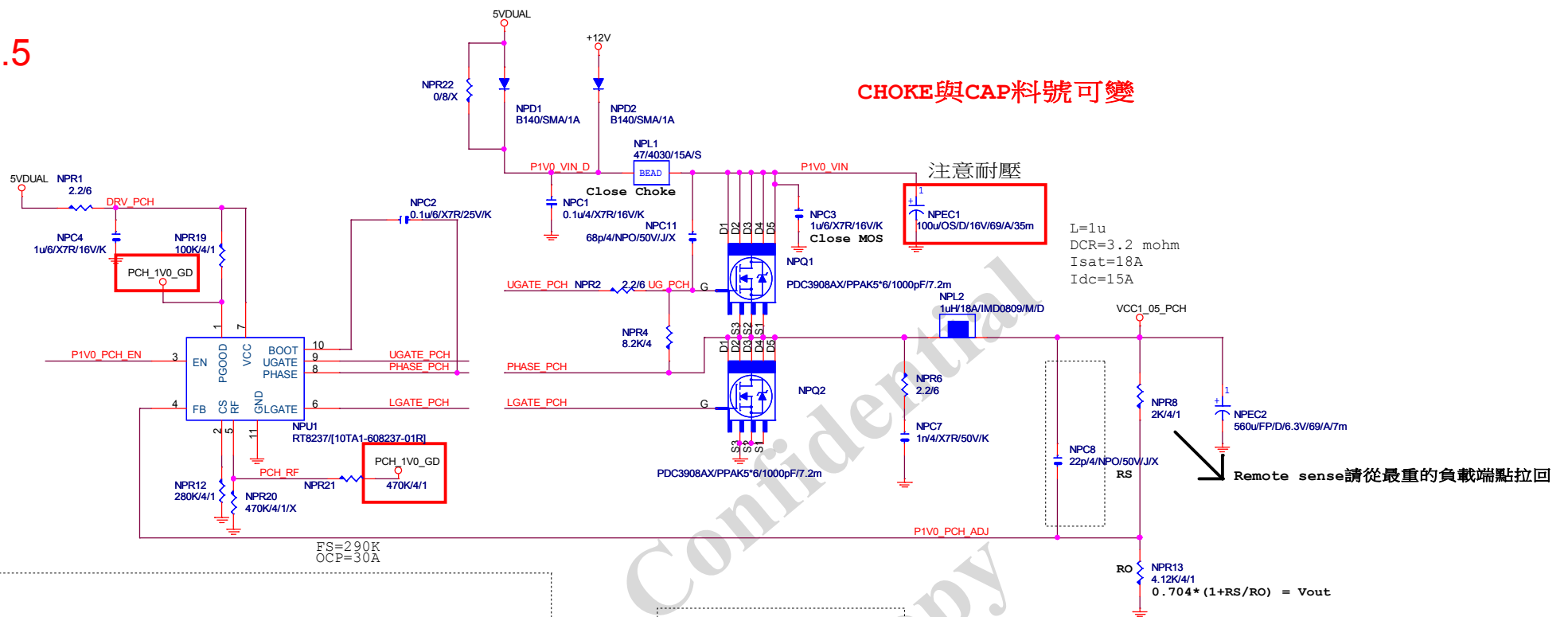


GIGABYTE™

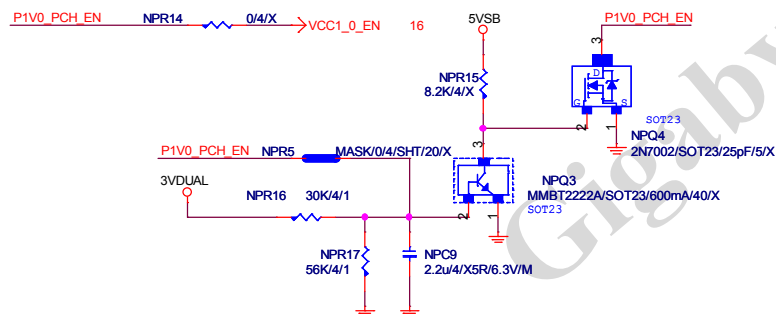
Title		
RT8068A_VPP25 POWER		
Size	Document Number	Rev
Custom	B460M GAMING HD	1.0
Date:	Monday, April 06, 2020	Sheet 34 of 56

REV:0.5

CHOKE與CAP料號可變



PWR SEQ



請放置CHOKE一出來的地方

GIGABYTE™

Title			
RT8237_PCH POWER			
Size	Document Number	Rev	
Custom	B460M GAMING HD	1.0	
Date:	Monday, April 06, 2020	Sheet	35 of 56

REV: 0.51

16 5VAUX_SW

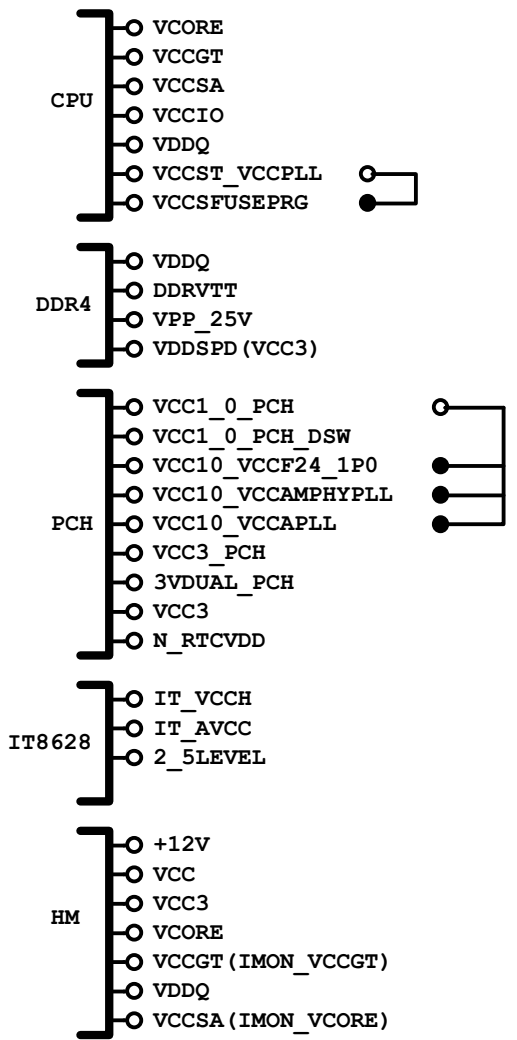


3VDUAL PCH

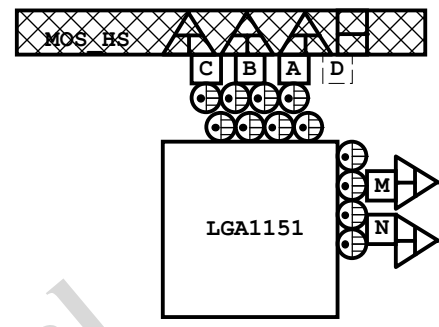
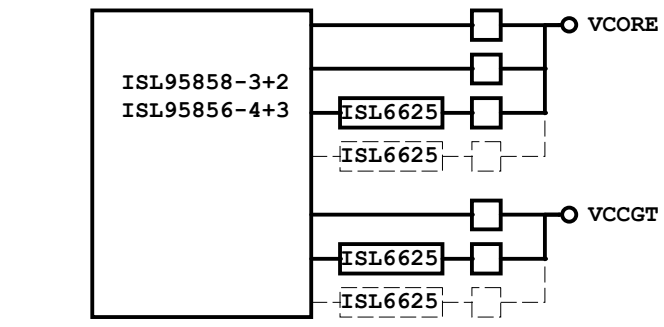


Gigabyte Technology			
Title			
DISCRETE POWER			
Size	Document Number	B460M GAMING HD	Rev
Custom			1.0
Date:	Monday, April 06, 2020	Sheet	36 of 56

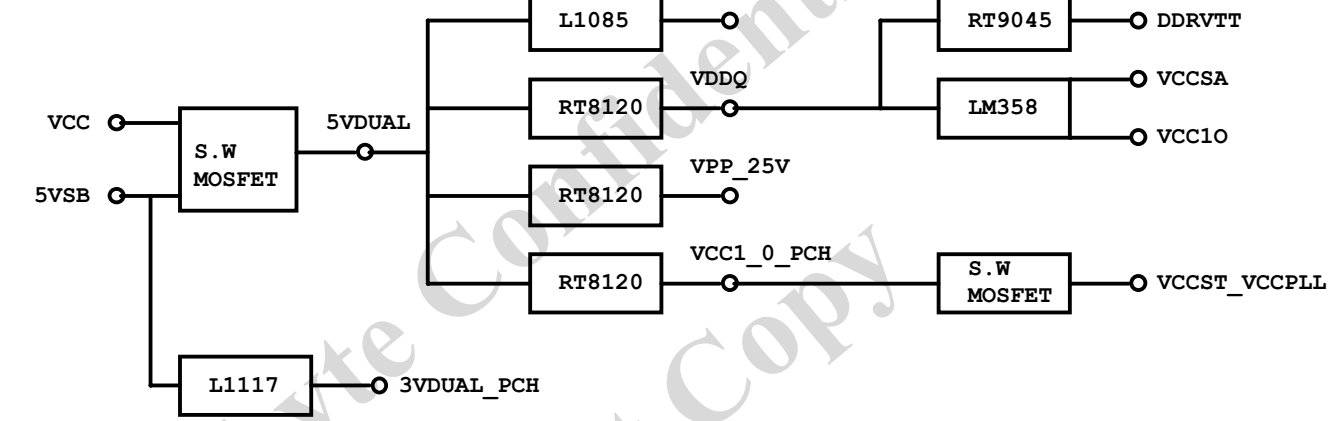
POWER BLOCK MAP



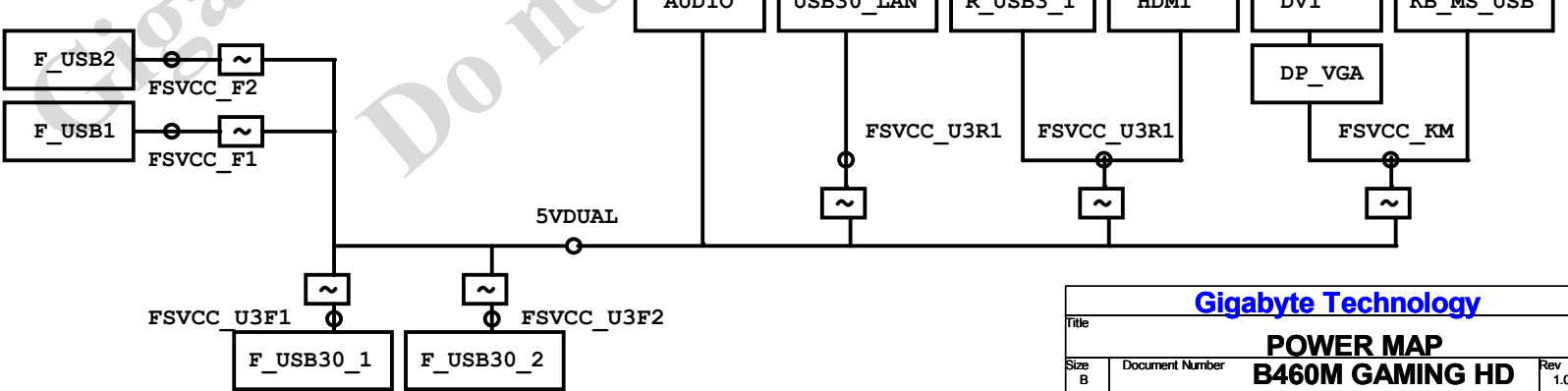
VCORE/VCCGT



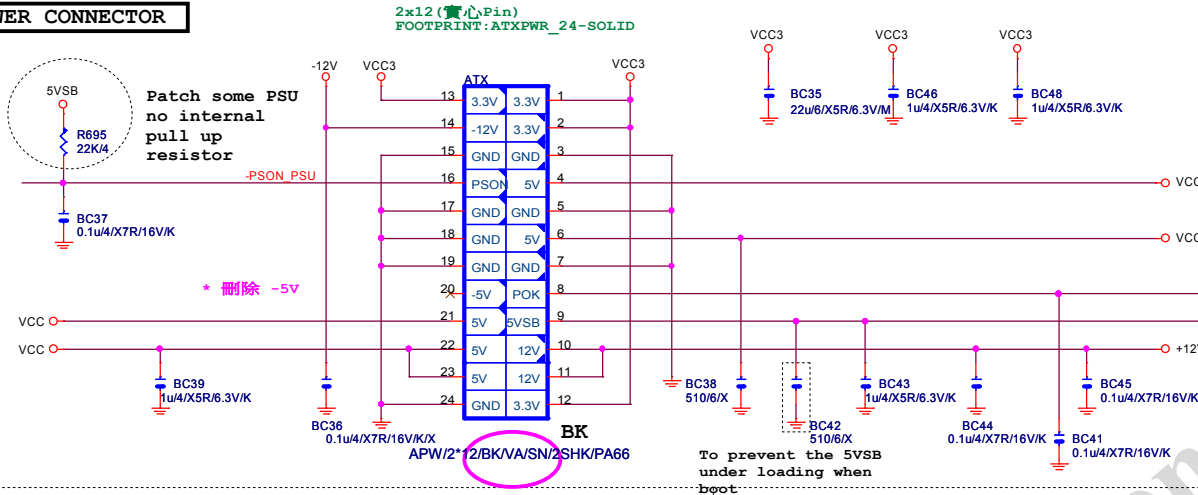
POWER



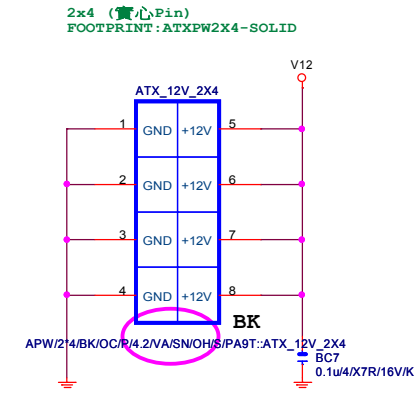
FUSE POWER F/R



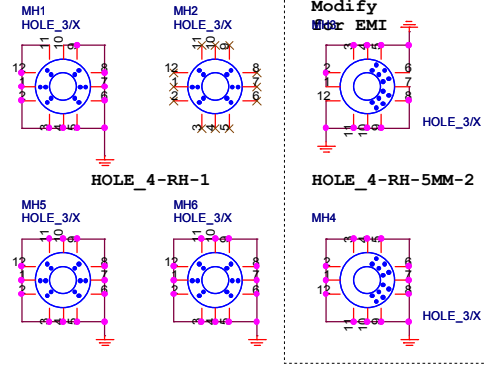
ATXX24 POWER CONNECTOR



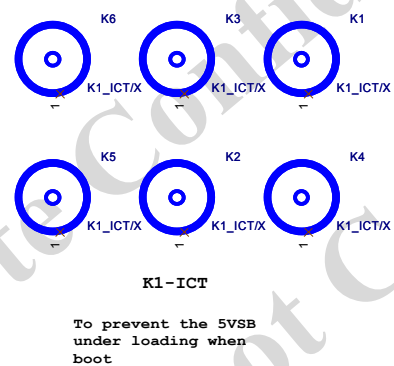
ATXX4 POWER CONNECTOR



螺絲孔



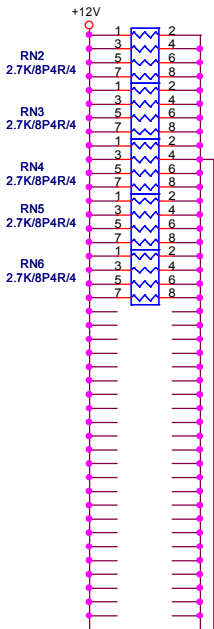
固定孔/光學點



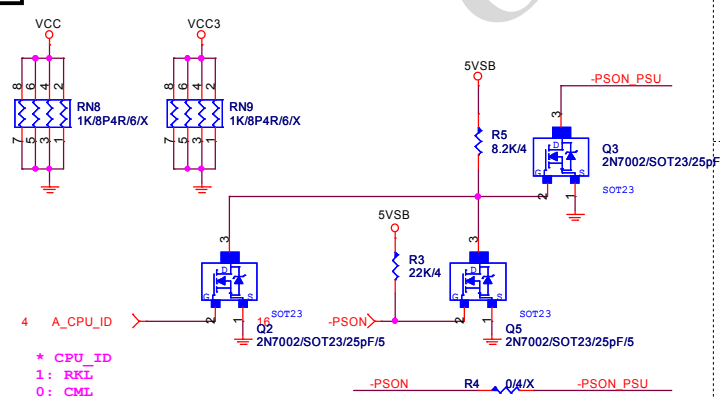
+12V DUMMY LOAD

【技術通報R&D技術通報153】

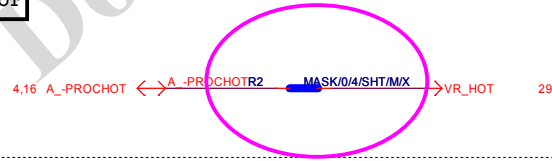
To fix 12V light load
abnormal issue



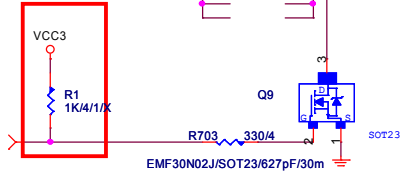
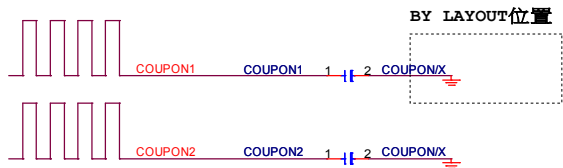
DUMMY LOAD



-PROHOT

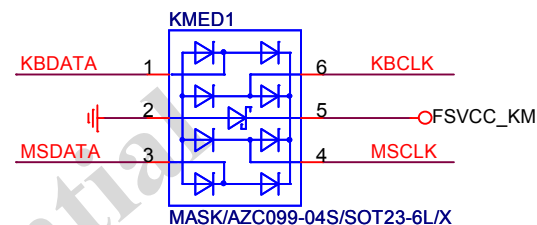
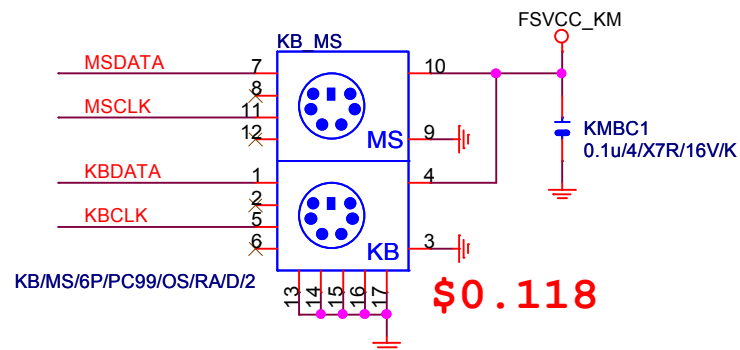


COUPON

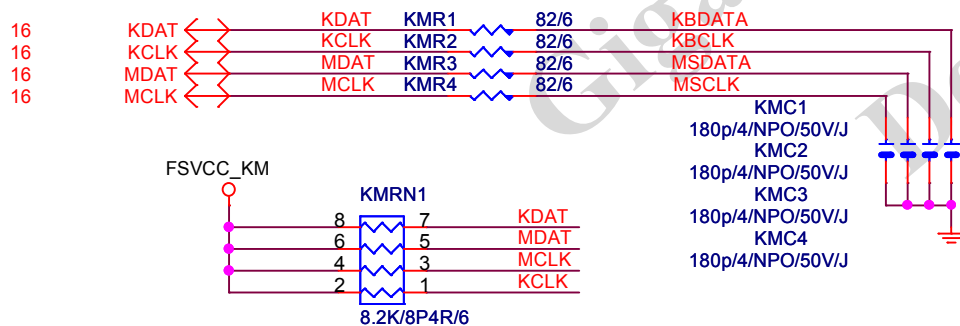


Gigabyte Technology

ATX POWER CONNECTOR		
Title	Document Number	Rev
Size	Custom	1.0
Date:	Monday, April 06, 2020	Sheet 38 of 56

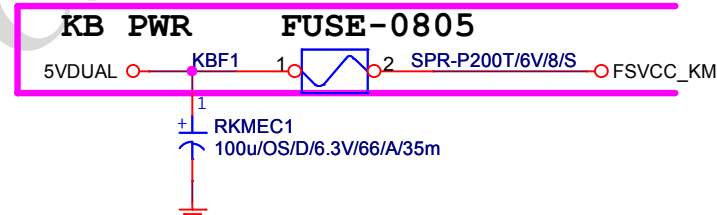


KB_MS_USB DAMPING/PU

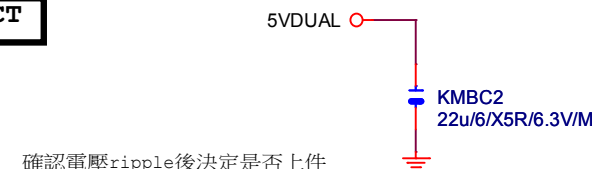


KB_MS_USB PWR

NET 可變, 與其他USB SHARE



USB OC PROTECT



Gigabyte Technology

Title

KB_MS

Size
A

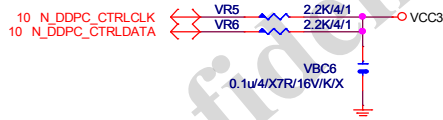
Document Number

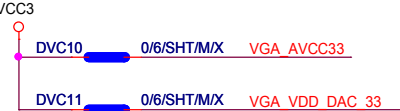
B460M GAMING HD

Rev
1.0

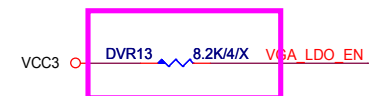
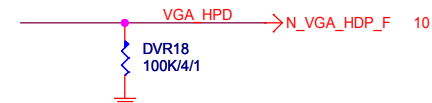
Date: Monday, April 06, 2020

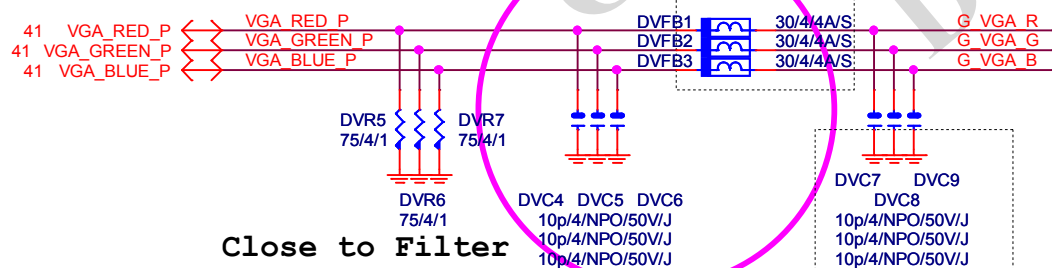
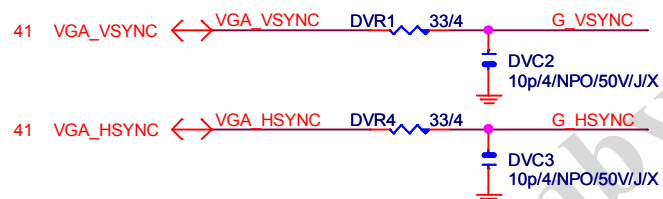
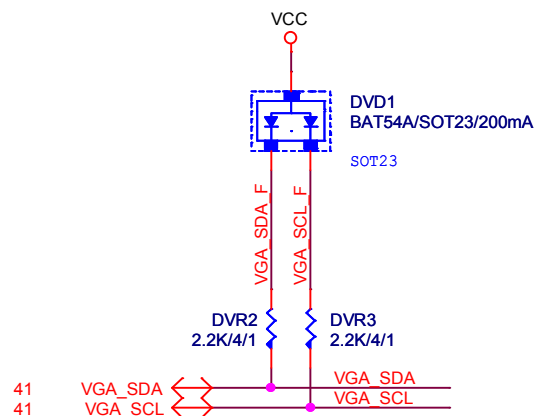
Sheet 39 of 56





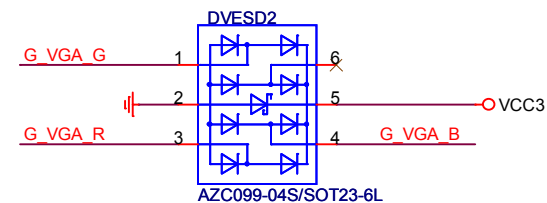
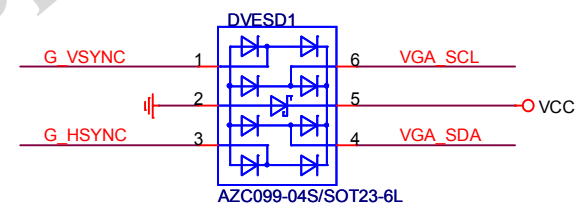
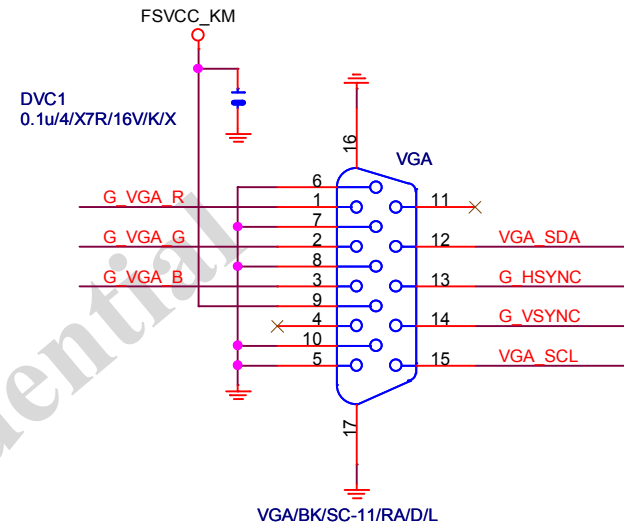
Embedded LDO

DP HPD



Close to Filter

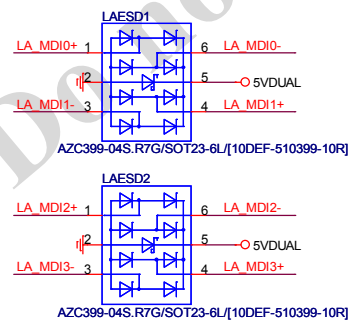
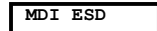
FOR EMI



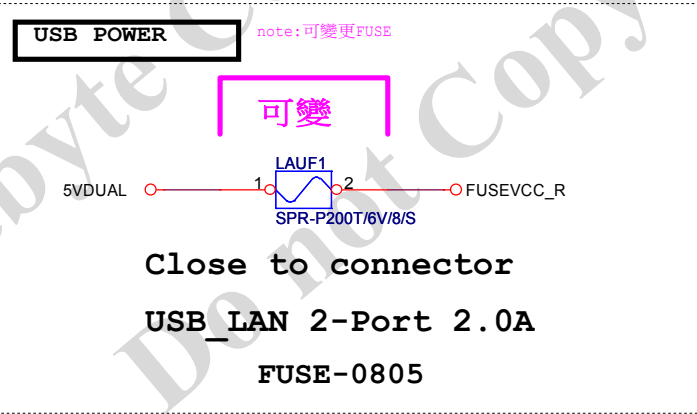
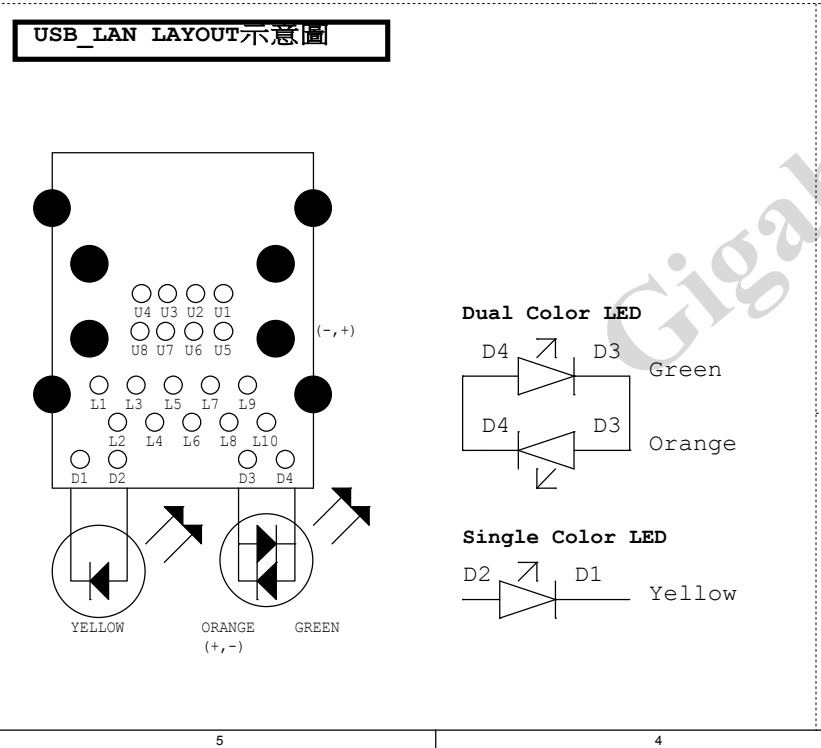
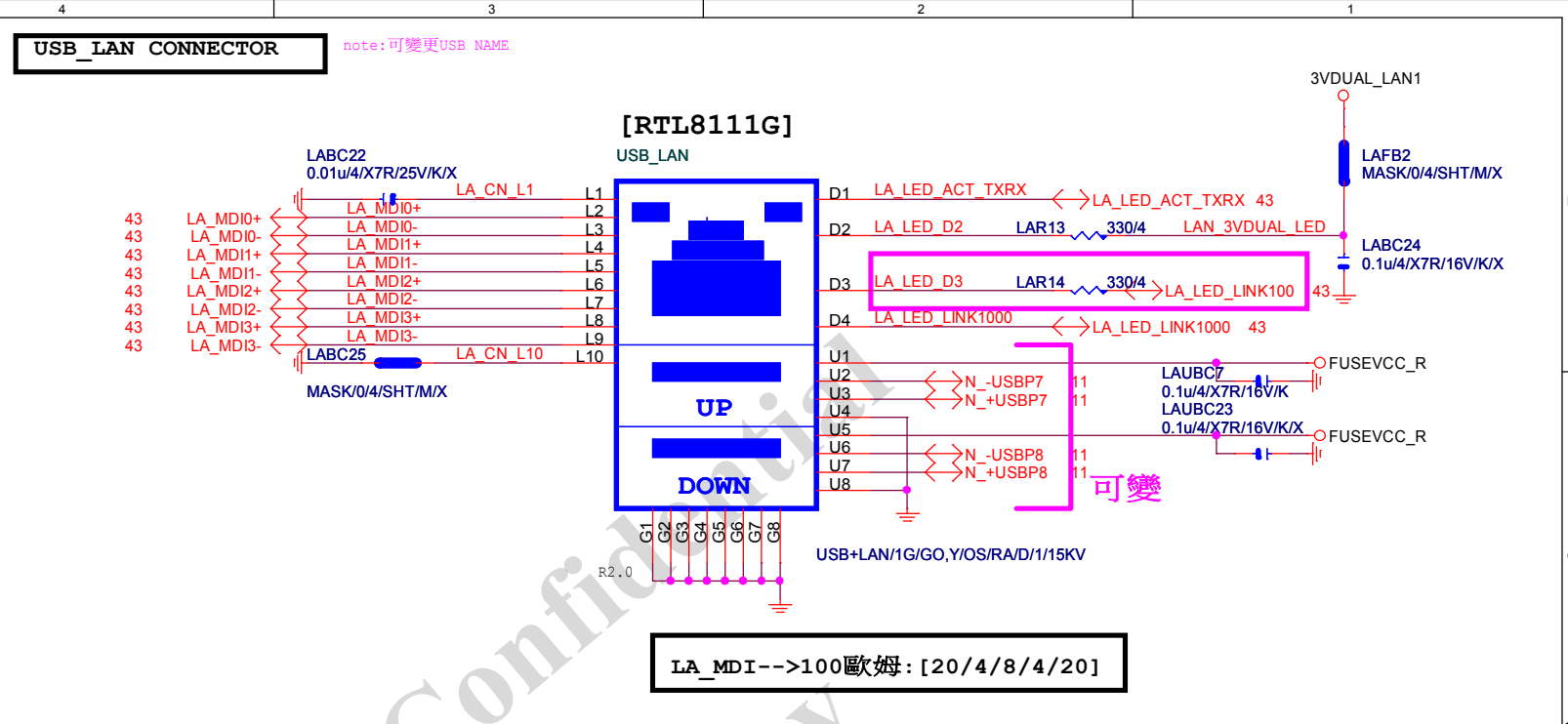
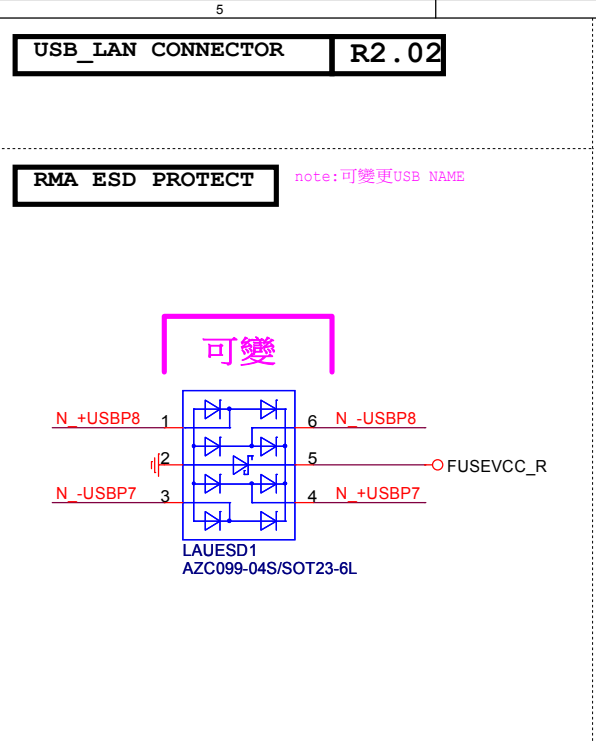
Gigabyte Technology
Title DP-VGA RTD2168

Size Custom Document Number B460M GAMING HD Rev 1.0

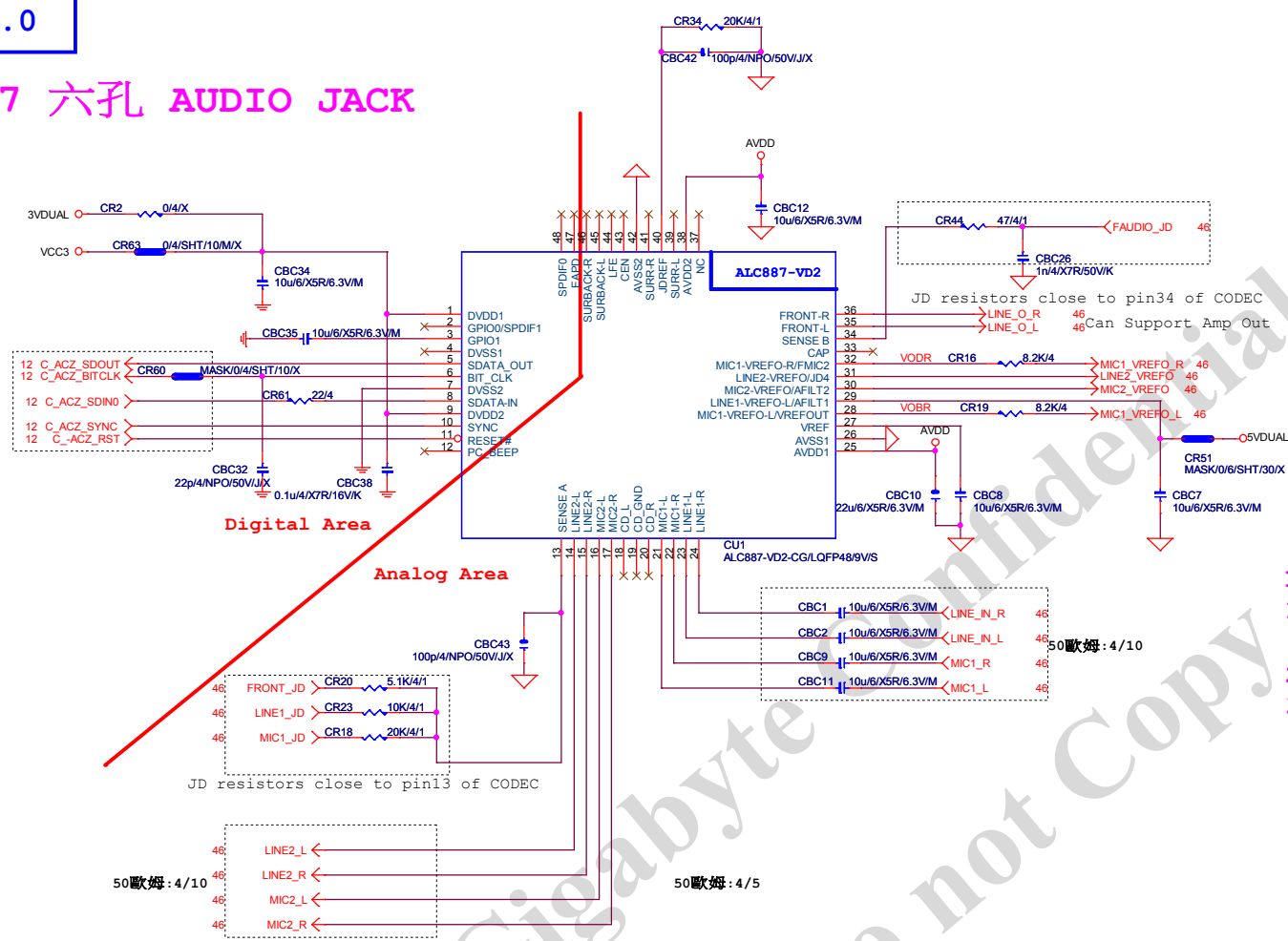
Date: Monday, April 06, 2020 Sheet 42 of 56

[illegible]

Title			
<p align="center">Signature Technology Realtek RTL8111G</p>			
Size Custom	Document Number		Rev
	<p align="center">B460M GAMING HD</p>		1.0
Date:	Monday, April 06, 2020	Sheet 43 of 56	



ALC887 六孔 AUDIO JACK



LAYOUT注意:螺絲孔下GND方式
1. MH1空間夠,下DGND
空間不夠,才改為Isolate
2. MH2一律改為Isolate
3. Codec下方,第二層必須參考GND

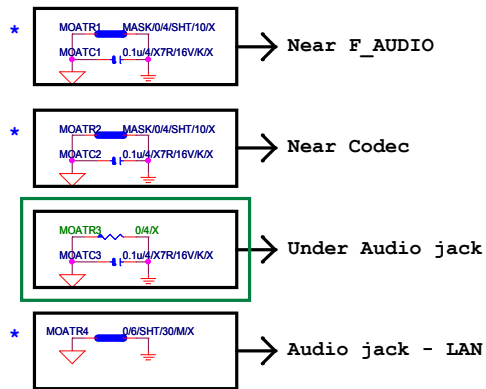
<input type="radio"/> MH1	<input type="radio"/> MH2
DGND	Isolate

LAYOUT注意:要加
GND切割線

音效區域印刷

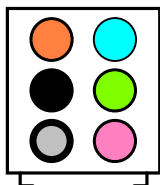
BOM OPTION : 1. Chemicon音效電容
2. 金屬外罩 Reserve (LAYOUT上件與否,依照各Model spec)
3. LED Reserve (上件與否和LED顏色,依照各Model spec)

Rev 6.0



*量産前,MOATR1/MOATR2/MOATR40ohm改short pad

AZALIA JACK

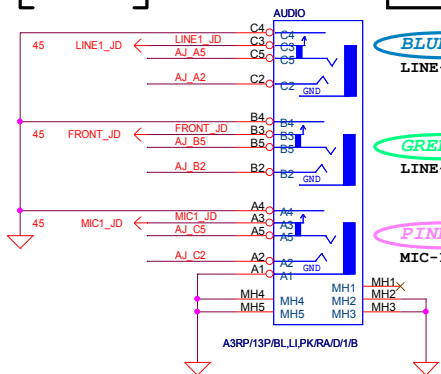


AZALIA JACK

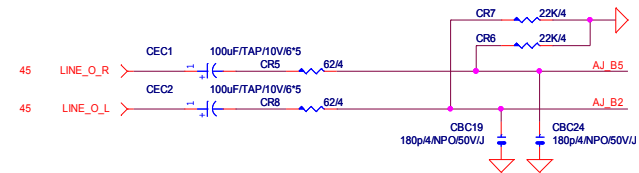
BLUE
LINE-IN

GREEN
LINE-OUT

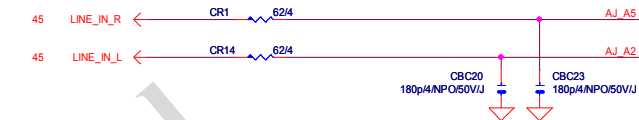
PINK
MIC-IN



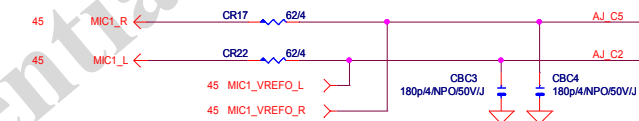
LINE-OUT



LINE-IN



MIC-IN

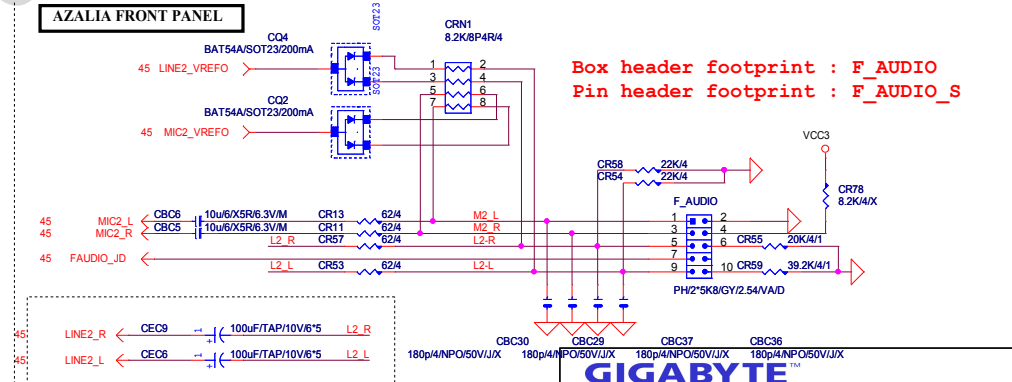


SURROUND

CEN/LFE

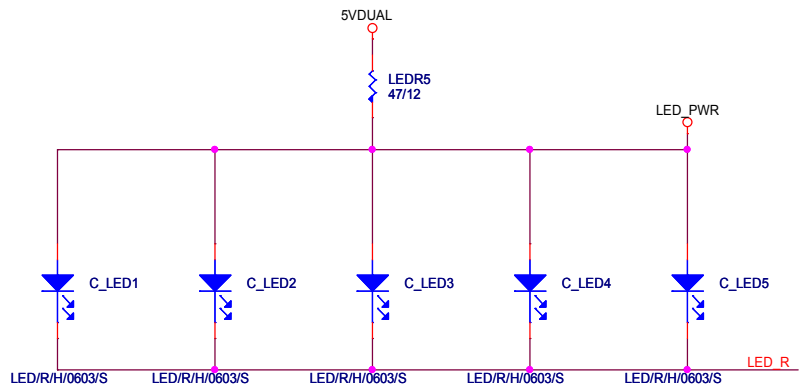
SURR BACK

AZALIA FRONT PANEL

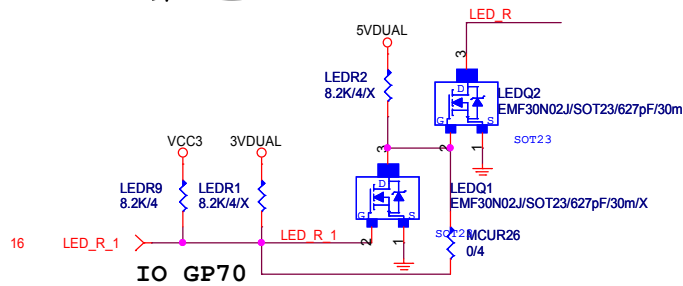


GIGABYTE

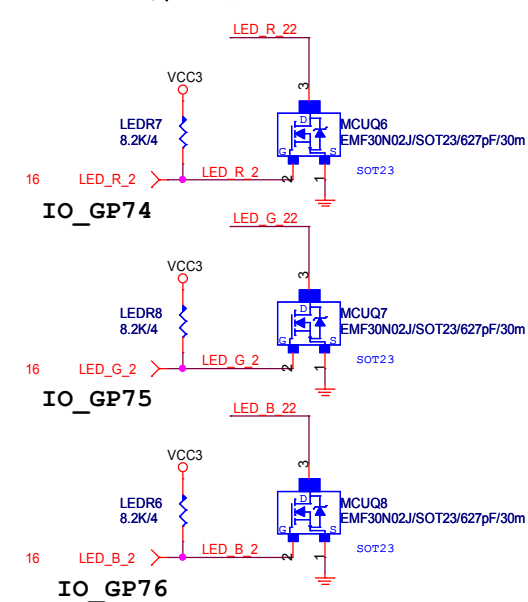
Title		
AUDIO JACK		
Size	Document Number	Rev
Custom	B460M GAMING HD	1.0
Date	Monday, April 06, 2020	Sheet 46 of 56



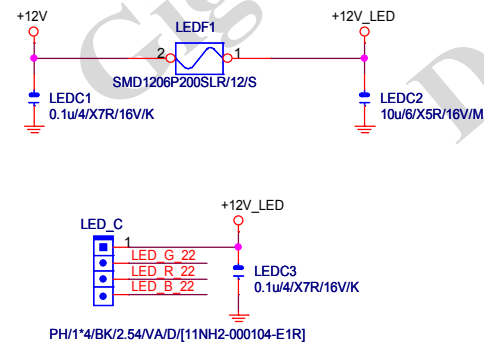
第一區 LED CONTROL



第二區 LED CONTROL



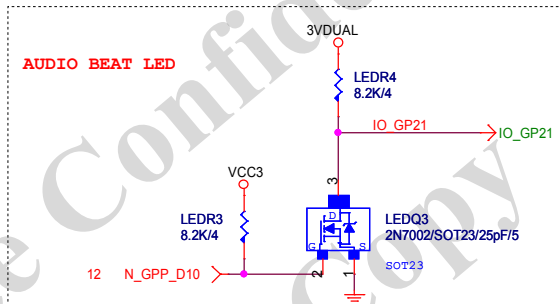
燈條 LED (LED_C放在PCB左邊板邊位置)

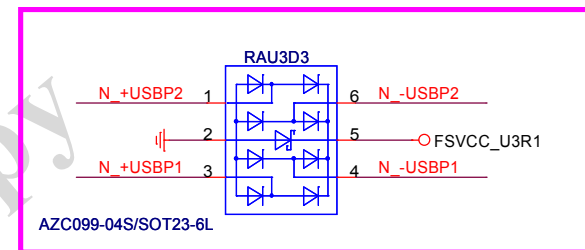


Footprint "PH1X4-ROW-L"

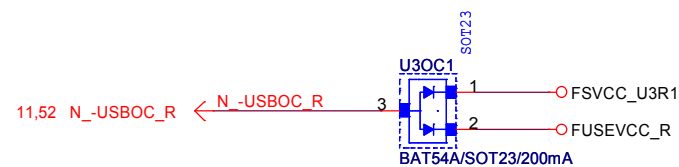
BOM OPTION :

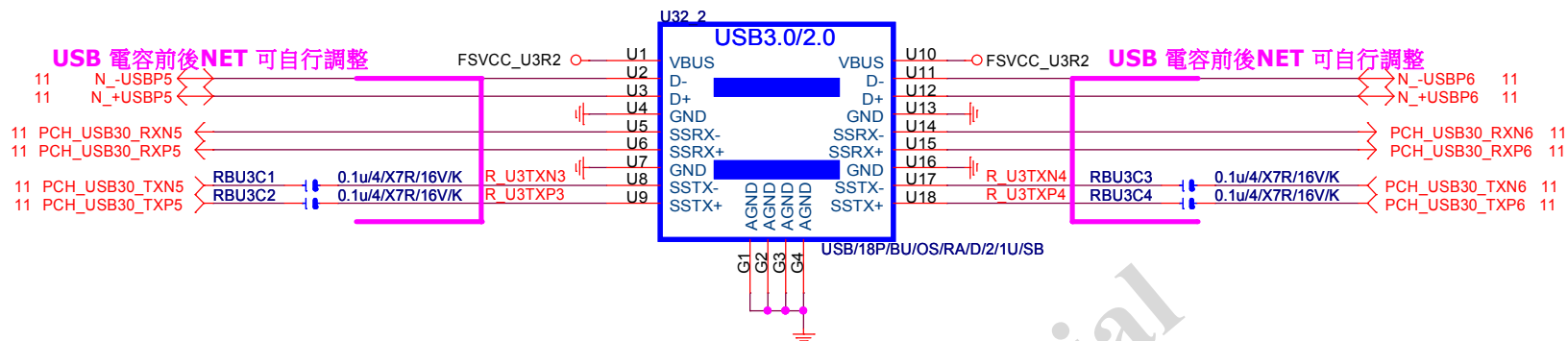
1. YELLOW LED : LED/Y/6/S
2. RED LED : LED/R/H/0603/S
3. BLUE LED : LED/B/6/S





FUSE



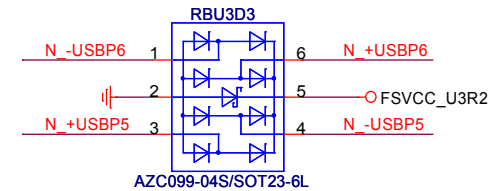


ESD

ESD 可自行SWAP PIN

ESD 可自行SWAP PIN

ESD 可自行SWAP PIN

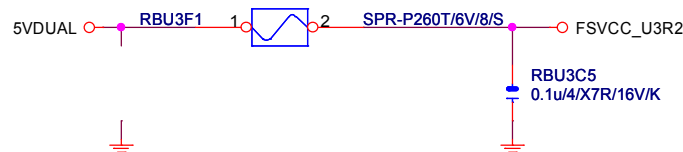


AZ1045-04F/MSOP10/[10DE2-140174-10R/10DE2-360148-10R]

AZ1045-04F/MSOP10/[10DE2-140174-10R/10DE2-360148-10R]

FUSE

FUSE 2 Port 1 Fuse 2.6A

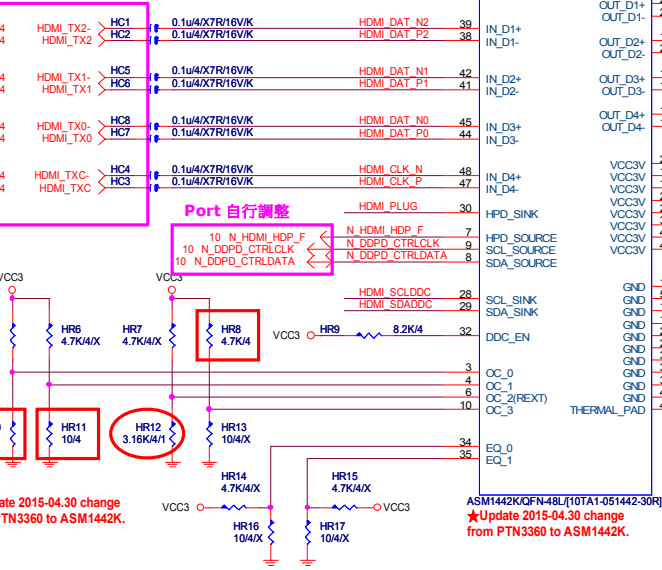


Gigabyte Technology

Title		R_USB30,USB_OC	
Size	Document Number	B460M GAMING HD	
Custom		Rev 1.0	
Date:	Monday, April 06, 2020	Sheet	49 of 56

HDMI LEVEL SHIFT

NET 可變



Port 自行調整

10 N_HDMI_HDP_F
10 N_DDPD_CTRLCLK
10 N_DDPD_CTRLDATA

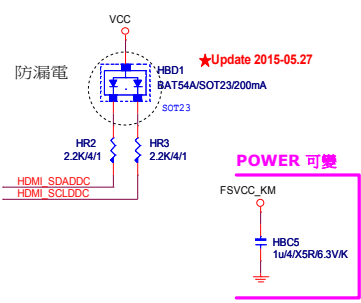
Port 自行調整

N_DDPD_CTRLCLK
N_DDPD_CTRLDATA

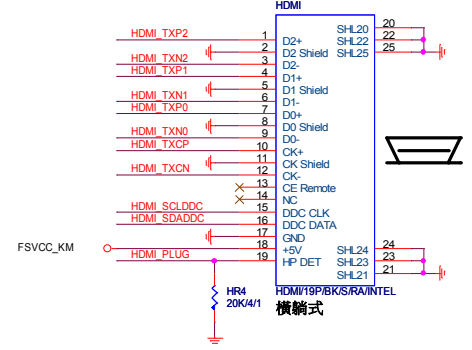
【技術通報R&D技術通報150】
HDMI eye diagram 1.4版 (deep color) 會 fail
原因: 因目前的HDMI訊號過長, 造成 RISING TIME 過慢, 而會壓到 eye diagram
改善: ASMEDIA ASM1442 : 3.16K (PIN6 PULL DOWN 電阻) 10ohm (PIN4 PULL DOWN 電阻)

★Update 2015-04.30 change from PTN3360 to ASM1442K.

PTN3360: PIN 4/10/34/35 NC PIN, 都不上值; 只上 HR12: 10K
ASM1442: 紅色框要上, HR12: 3.16K

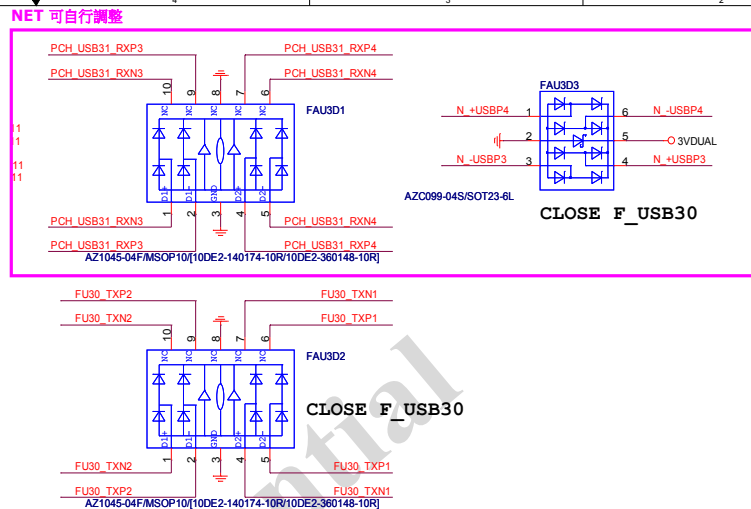


★Update 2015-05.27

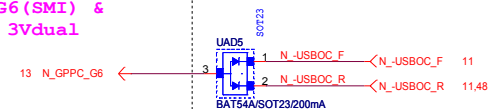


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GIGABYTE™			
Title PI3EQX1002B Redriver/DC-J			
Size Custom	Document Number B460M GAMING HD		Rev 1.0
Date:	Monday, April 06, 2020		Sheet 51 of 56

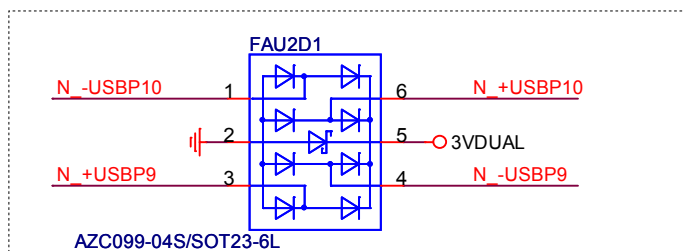
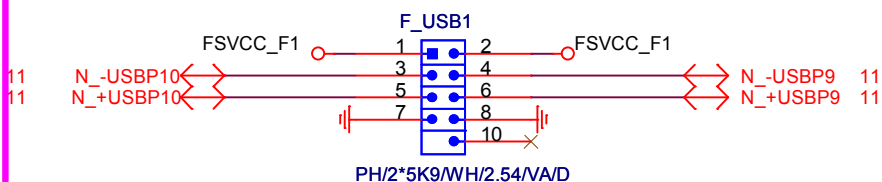


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* 接 PCH
N_GPP_G6(SMI) &
PCH PU 3Vdual
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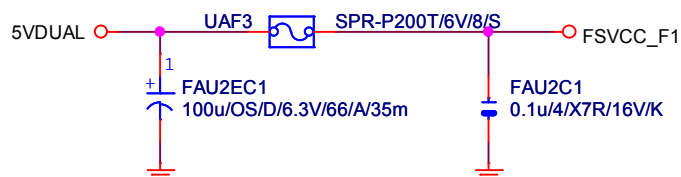
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FUSB2X5-HS



Close to connector

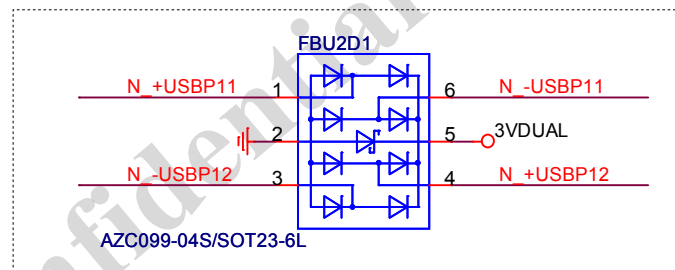
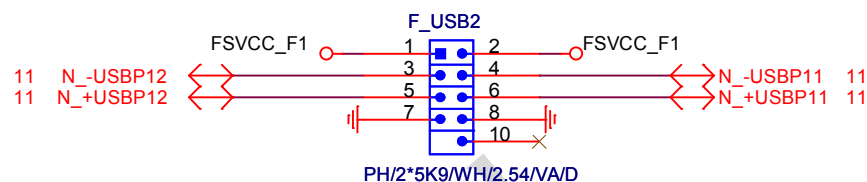
FUSE 2 Port 1 Fuse 2A



F_USB 2.0 OC SIGNAL

NET 可變

FUSB2X5-HS



Close to connector

FUSE 2 Port 1 Fuse 2A

Gigabyte Technology

Title

USB2.0

Size
A

Document Number

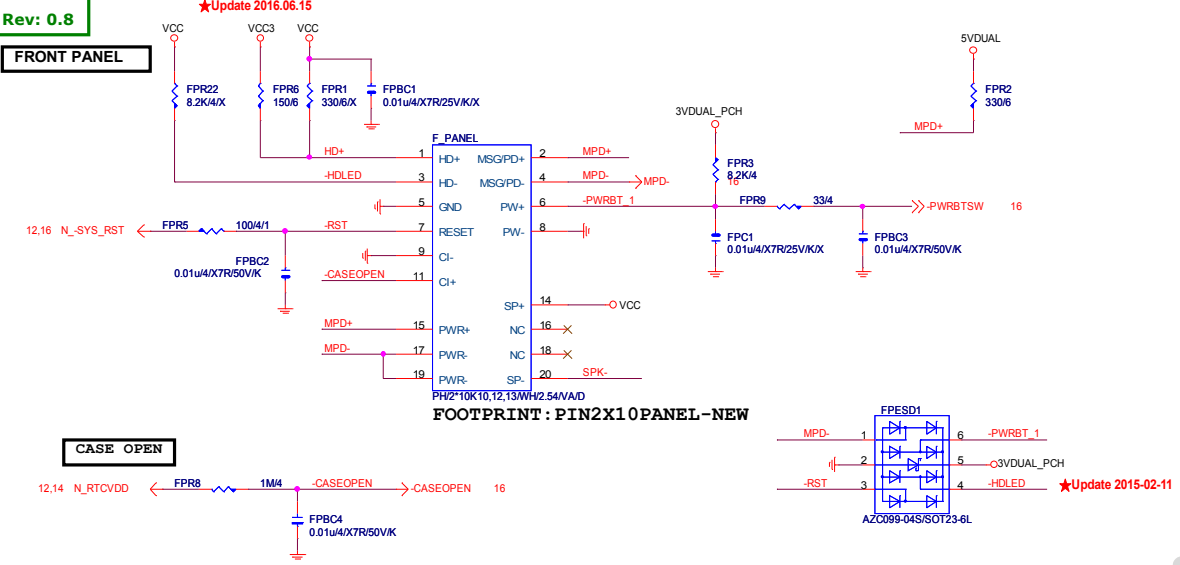
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1.0

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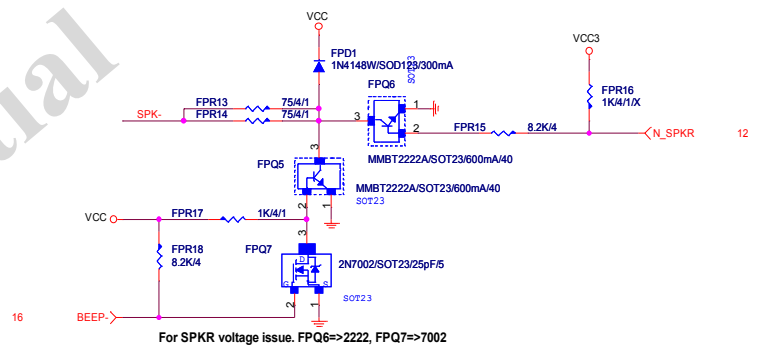
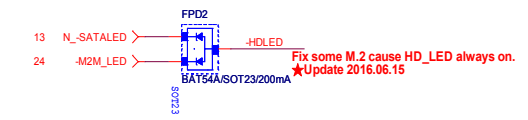
FRONT PANEL



FRONT PANEL SHORT

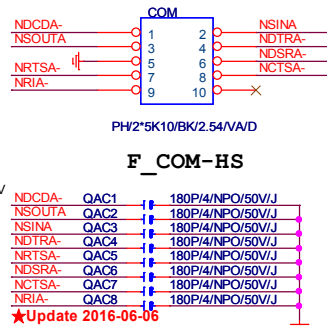
SATA/M.2 LED

SPKR



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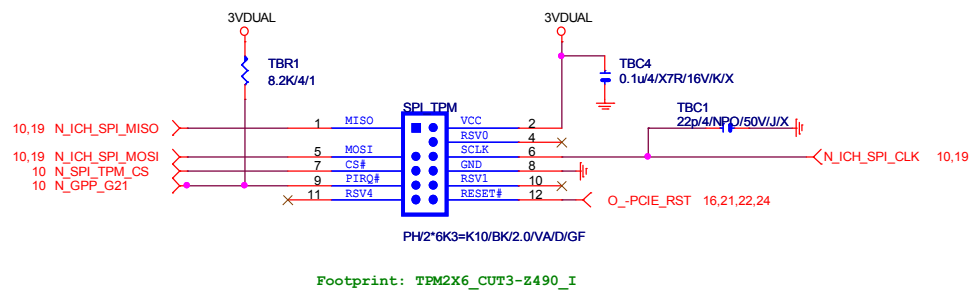
Rev: 0.7



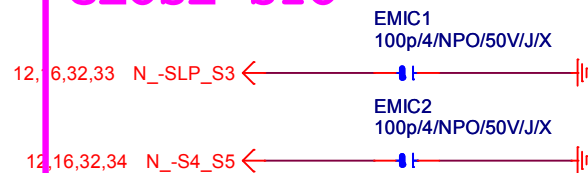
COM RI

N/A

TPM CONNECT



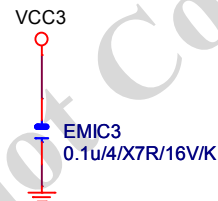
CLOSE SIO



CLOSE PCH



CLOSE NR47

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