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Model Name: GA-Z170X-GAMING 7

Component value change history

Data	Change Item	Reason
2014/11/28 PCB:0.1	1.PCB first release	
	2. AUDIO_COVER 料號UPDATE	
2015/01/26 PCB:0.2	1. F_USB30_1 , F_USB30_2 & M2A_32G , M2B_32G改為紅色料號?	
	2. 注意三色LED上件方向	
	3. SATA_EXPRESS的顏色確認,SATA_EXPRESS1要做塞孔	
	4. CLK BUFFER IDT6V41510 (含蓋子) 不上件	
	5. M_BIOS , B_BIOS 改成128M	
	6. ASMI061 eeprom 改成不上件 (確認BIOS OK後移除)	
	7. PCB製程修改 : B2 --> B	
2015/01/26 PCB:1.0	1. 高速訊號測點移除	
	2. 0 OHM SHORT PAD	
	3. M_BIOS SOCKET移除	
	4. CR197/CR198是否修改FOR THD+N -> 200/4/1	
	5. 注意裝甲(X3)&AUDIO_HS螺絲數量(X2)	
	6. BIOS_PH 改 MASK (3VDUAL再加強)	
	7. Update KILLER E2400 logo	
	8. SWPU2 pin30 net update PCIE_X4_M2 --> PCIE_X4_M2S	
	9. Add MAC10	
PCB:1.01	1. M_BIOS SOCKET移除	
	2. 注意裝甲(X3)&AUDIO_HS螺絲數量(X2)	
	3. Add THR124,THR125,THR126	
	4. Remove JTAG	

- 9.0
1. Add OC1,OC LED 1x2 pin
2. Add NPR22,NPC10 靠近CPU
3. Add MA_DR9,MA_DR10
4. PCIE_X4 switch change "IO_GP20
5. WR94 CHANGE NET to VCCSA ? VCC_T_VCCPLL
6. Add DFC3 靠近CPU
- 1.0
1. BIOS_PH footprint update "BIOS2X5-RH-1-MASK"
2. SWPU2 pin30 net update PCIE_X4_M2 --> PCIE_X4_M2S
3. Add "MAC10"
- 1.01
1. Add THR124,THR125,THR126
2. OC_LED & OC_BT swap

Circuit or PCB layout change

DATE	Change Item	Reason
2014/11/28 PCB:0.1	1.PCB first release 2.線路由GA-Z1704-SLI-01-1128B.DSN來修改	
2015/01/26 PCB:0.2	1. Update TYPEC footprint "USB-TYPEC-1"	
	1、增加IDT6V41510/IDT6V41520 co-lay 線路。 2、增加co-lay 電阻 table。 3、原CKR16改接CKU1 PIN 16。	
	3. 測試點位置偏移M2 CLK (CK_M2D_100M_DN/DP) 4. DDRVTT ADD MAR110,MAR111 5. OC,ECO BUTTON change footprint 7. Remove VGA : DVI-I --> DVI-D (加強5VDUAL鋪銅) 8. Update BIOS_PH footprint & Add BIOS_PH pin7 9. LED到南橋的走線可縮減,加強+12V走線 , N_GPPD0_R加粗 10. VIN COMP SIDE需補強在DAL1下方的部分(DAL1要打VIA 4顆),DABCL4移至DAL1左邊 (DAR9兩邊走線加至20mils), 注意PWM附近走線遠離40mils以上 11. DAC POWER DACC11,DACC12 --> DACEC1 12. PCIE_X4 "N_GPP_G3" --> N_GPP_G4" 13. DHL1 & LAL1 和 MOS_HS太近,要移開 14. ASMI061 O_-PCIE_RST" --> "O_-PEMRST2" 15. N_GPP_E0-E2 F0_F4 --> PULL UP "3VDUAL" 16. M2A_32G & M2B_32G 的螺絲孔請加A/B辨識 (42A/42B , 60A/60B , 80A/80B) 17. CLR_CMOS & RST BUTTON 位置交換 18. CPU_OPT change to PWM2, SYS_FAN1 change to PWM4. 19. HD_LED cost down, DEL:FPC2, FPR24, FPR25, FPR26, FPQ9, FPQ10. Connect net -HDLED to FPESD1 pin4. 20. RHU2 pin5,6 遠離NET "RH_EXTL" 21. Add R1, CR143 Power Change to 5VDUAL 22. Add TCAR13,TCAR15 For TypeC 1.1 Spec 23. Audio切割線延伸至Codec 24. HDMI2.0 移除 DHESD1,DHESD2 ,DHESD3,DHR16 ; DHR5改Short-pad 25. SWAP TTRT2 & RS_VCCGT , TTRT1 & RS_VCORE 26. Add DDR_VS & VCORE_VS 須擺放在靠近OUTPUT電容 27. 注意三色LED方向性是否正確 28. SWAP IO_GP17 & IO_GP27 29. CBC106,109,110,111 DGND --> AGND 30. PCB文字放大 (參考Z1704X-GAMING5) 31. CHANGE 3VDUAL & 3VDUAL_PCH & LAN POWER 32. DDR4 VDDSPD需加粗,MR22兩端至少也要50mils 33. AUDIO走線要1:2 , OUTPUT load電阻放在connect端 PORTG_R有鉤切割,請移開,MH1 & CUI第二層改GND 34. USB3.0 ESD IC GND VIA要打2個 35. CPU_FAN short pad兩端和走線同粗 36. Add OR95 37. Remove ASMI061 EEPROM & RH_VDD1_2 POWER 38. Remove BIOS_SW 39. Add Alpine Ridge 40. Add SEAR40/41/42 for USB3.1 小卡power 41. Add DDR4 ECC Function 1. MR23/MR25 0ohm short 2. INTEL i219V FOR ERP WAKE patch (Add LBQ1 & LBQR1) 3. 修改線路,只保留IDT6V41530線路。 4. VDDQ int2的GND plane移除 5. VPPSPD int2可補強 6. VCORE_VS 零件請放在CPU下方(黃色框框位置) 7. USB_DAC power phase內層要挖 8. TYPEC的ESD IC的GND參考層不用挖空 9. HDMI2.0 ADD Daming電阻 10. U6 --> DB_PORT (文字面加大) 11.VCORE_VS 零件請放在CPU下方(黃色框框位置) 12. 3VDUAL_LAN --> 3VDUAL (注意走線寬度) 13. CE5,6,13,14,15,16 change to "2.2uF/D/50V/5*5/[11CE6-5220B-01R]"	
0.2	14. ADD ASMI061 EEPROM 15. RN12,RN13 --> RBP4R-0402 16. Add THR130/131 (AR B0 issue) 17. Add THR123 and THR47/48 to VCC3_B0 18. X'TAL 24MHz layout rule 修正 19. Update IDT41530 clk-buffer 禁組線路 (Remove 20. NR294,NR295 刪除, NR555 禁組 21. DBHD3,THD3 For HDMI diode 1. Add NR3 FOR X'TAL 24MHz 2. ATX_12V_2X4在GND層切割層往上移	
0.3		

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BOM & PCB MODIFY HISTORY

Size

Document Number

Rev

GA-Z170X-GAMING 7

1.01

Date

Friday, July 10, 2015

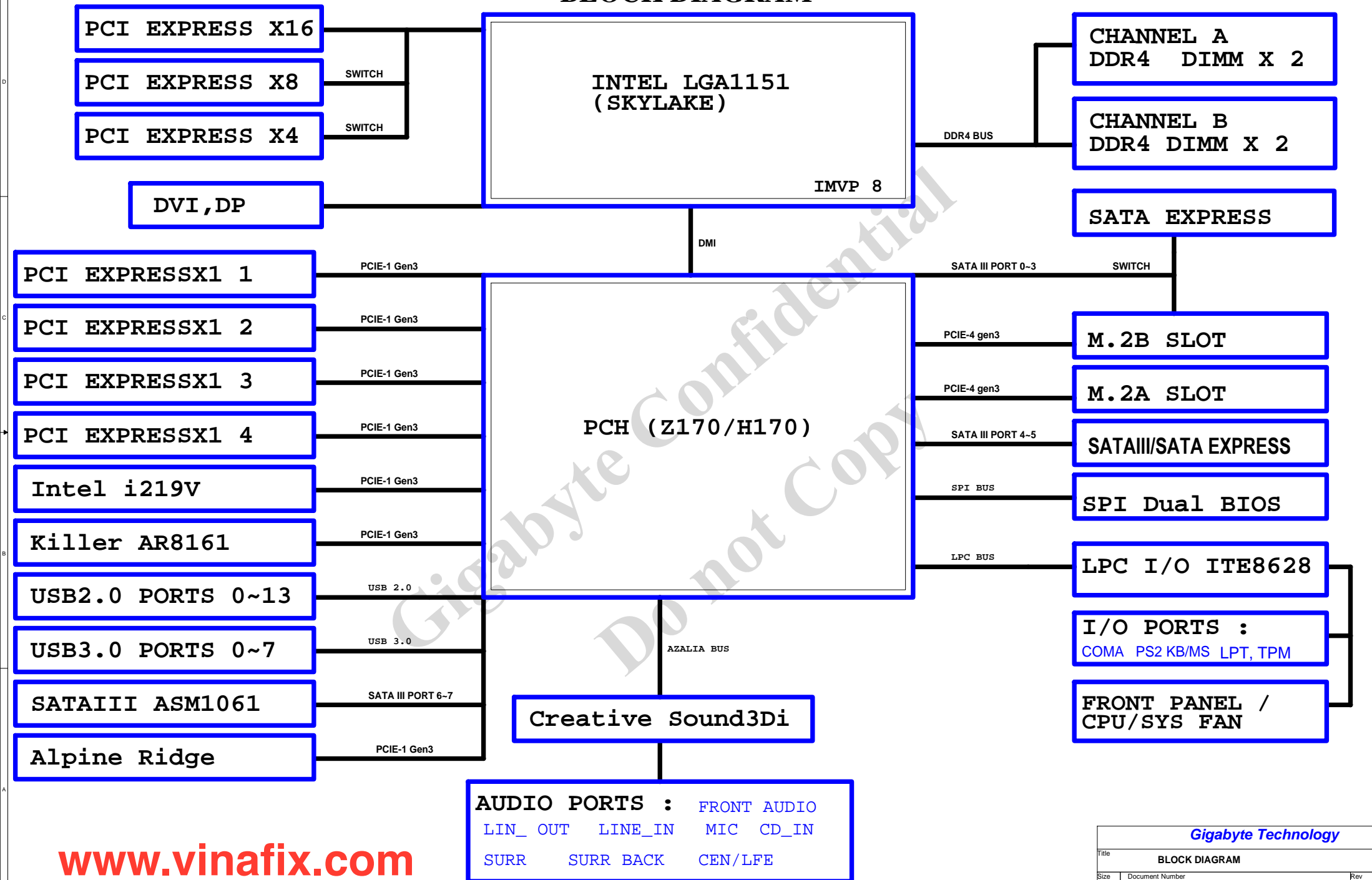
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2

of

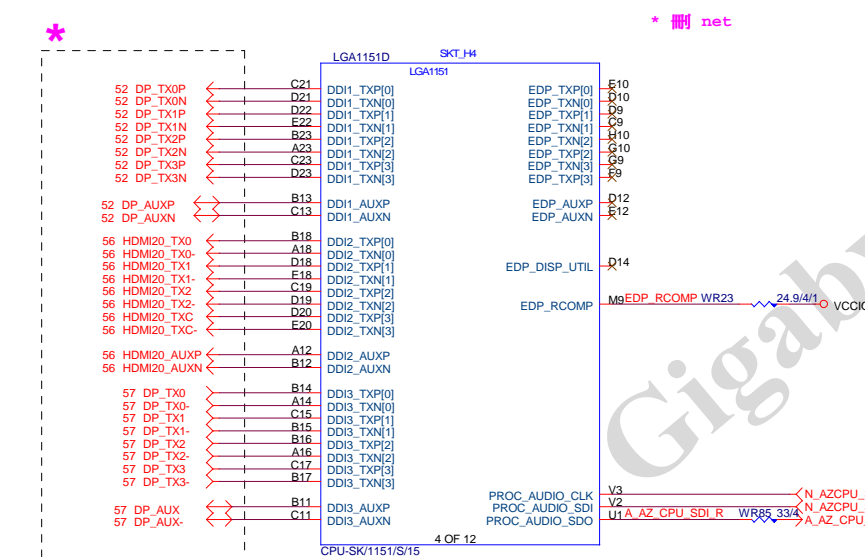
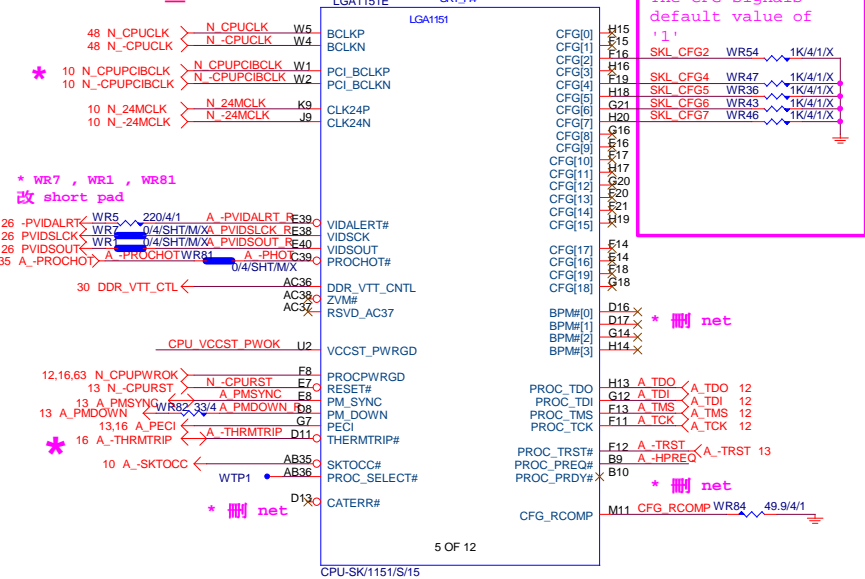
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BLOCK DIAGRAM

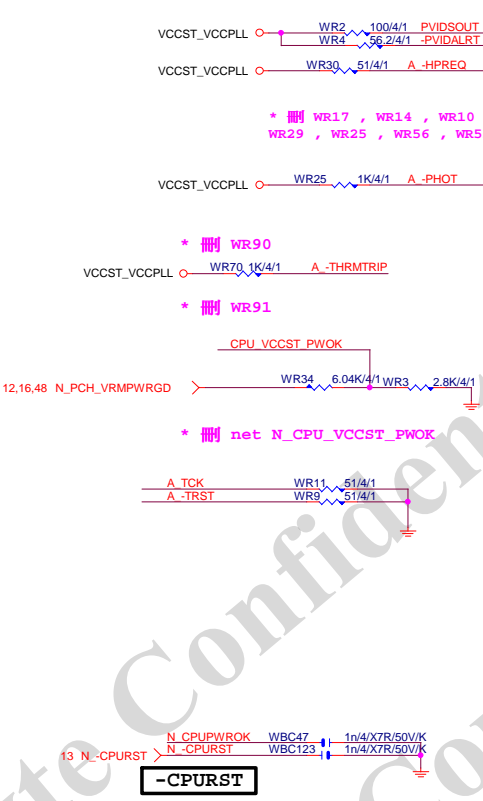


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From SKL_0.2B

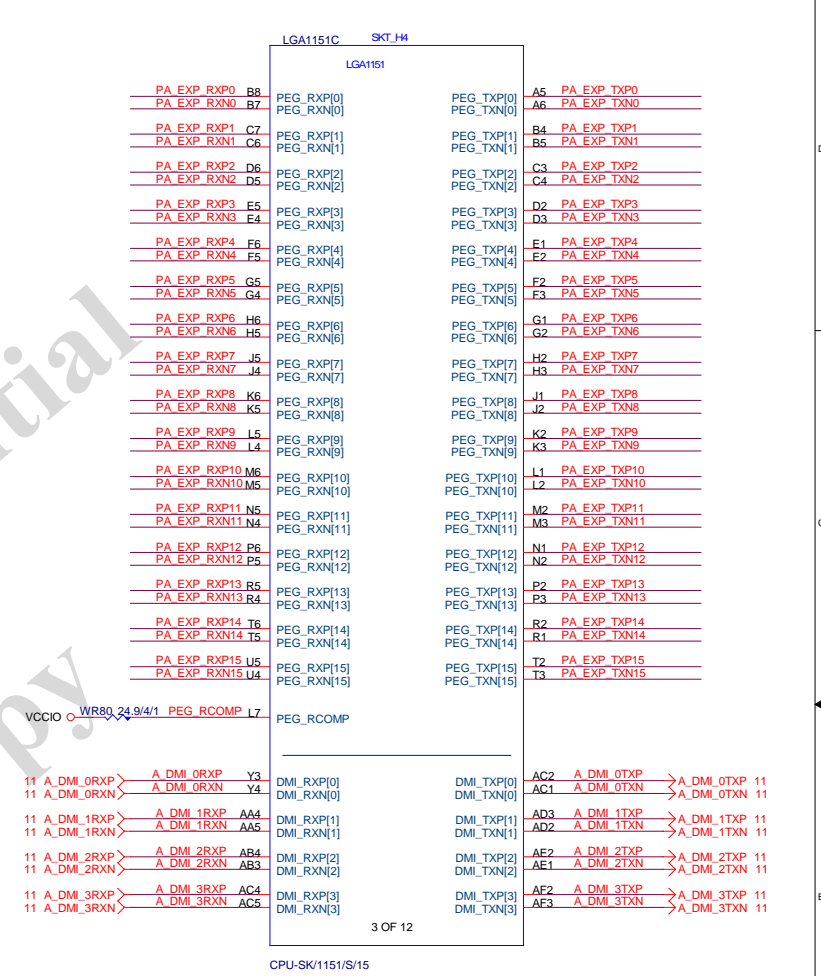


```
G-15u : (CPU-SK/1151/S/15)
10SC1-F01151-11R / 10SC1-F01151-12R
G-FL : (CPU-SK/1151/S/GF)
10SC1-F01151-21R / 10SC1-F01151-22R
```




```
CFG[2]:x16 Lane Numbering
Reversal. 1=
NORMAL;0=reversal
CFG[4]: eDP
enable;1=disable/0=enable
CFG[6:5]:PCI Express* Bifurcation; 11=
1 x16 PCI Express;10=2x8 PCI Express
CFG[7]: PEG Training;1=(default) PEG Train
immediately following RESET#;0=PEG Wait
for BIOS
```

Bifurcation Config.	Signals Lanes		
	CFG[6]	CFG[5]	CFG[2]
1x16	1	1	1
1x16 Reversed	1	1	0
2x8	1	0	1
2x8 Reversed	1	0	0
1x8+2x4	0	0	1
1x8+2x4 Reversed	0	0	0

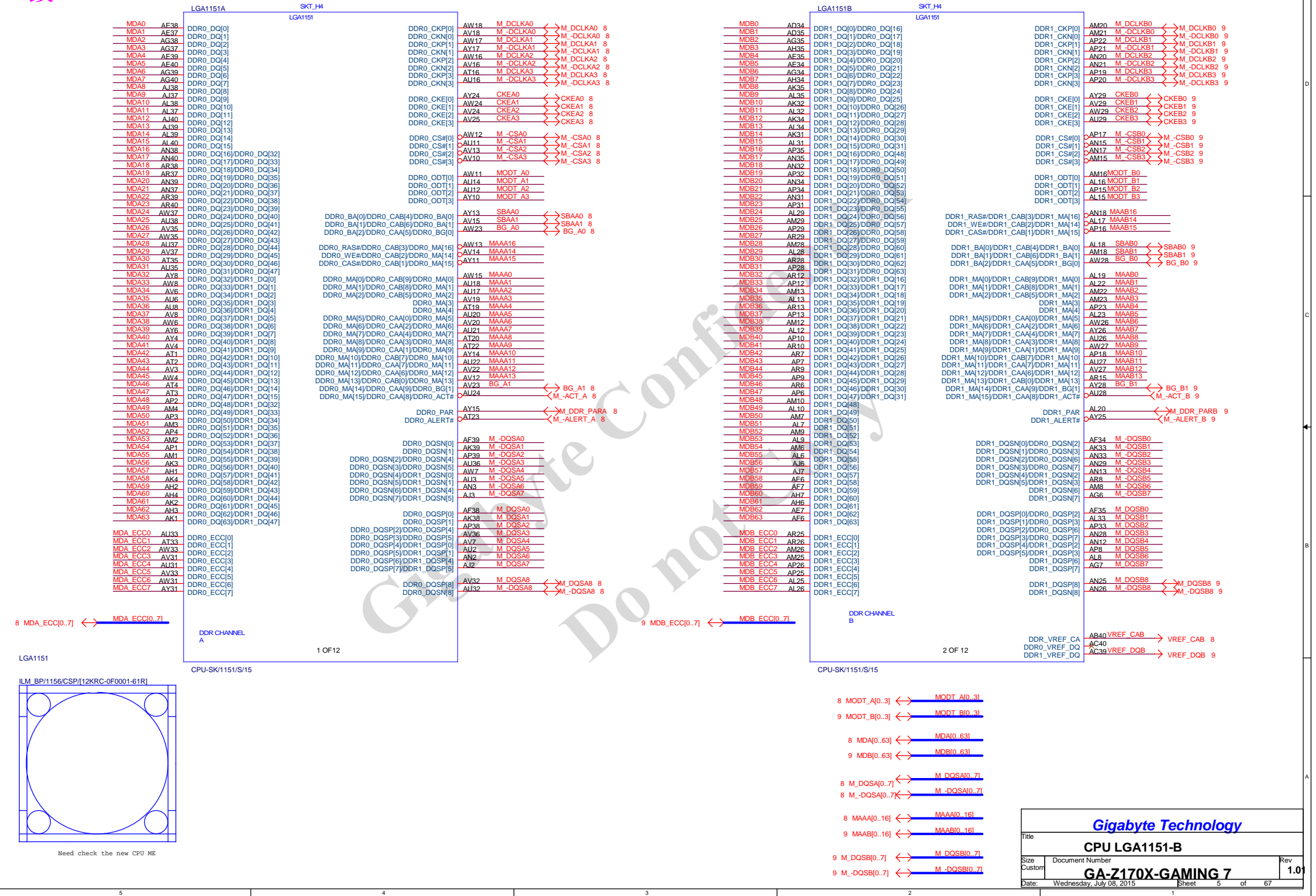


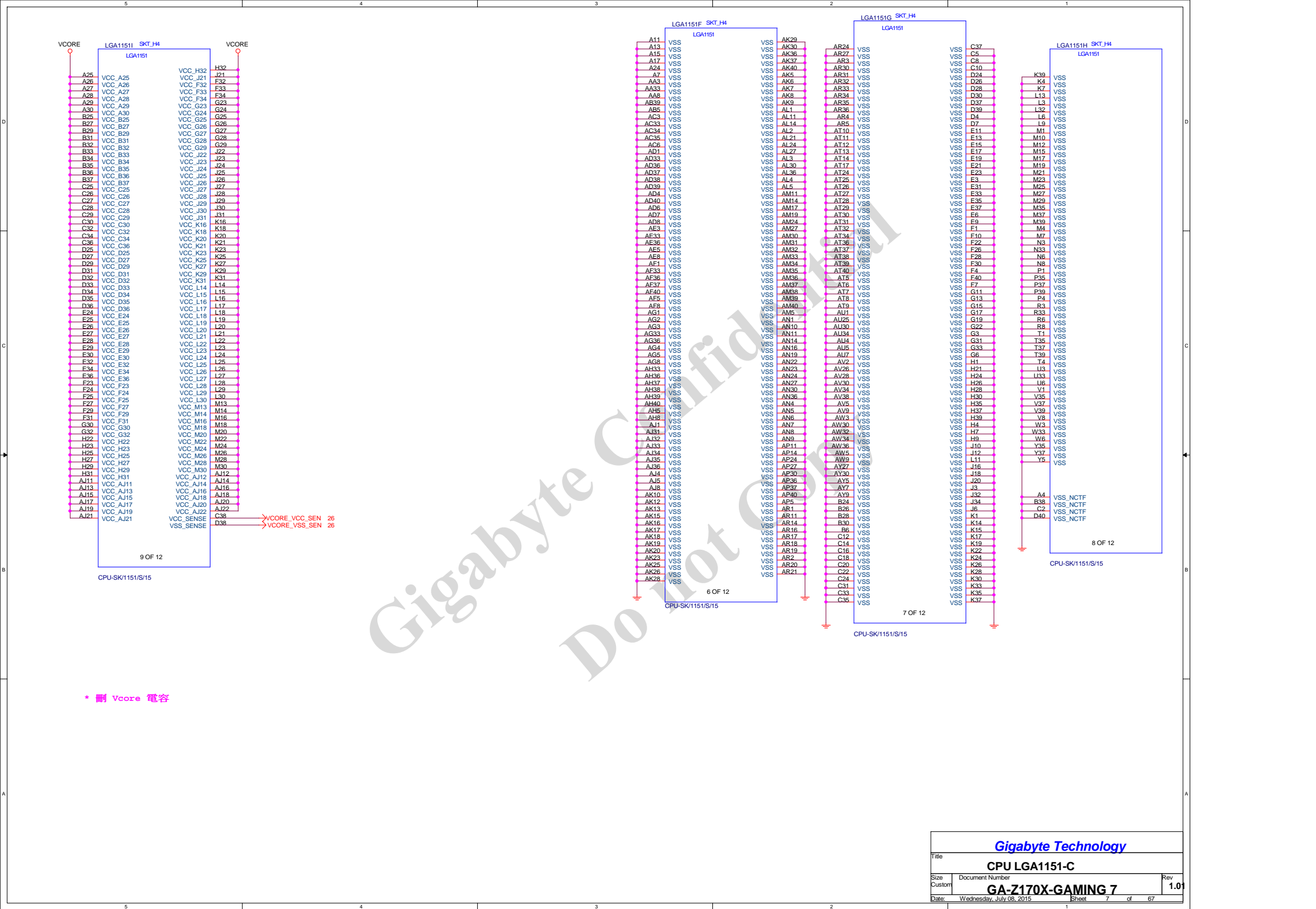
```
PA_EXP_TXP[0..15] >> PA_EXP_TXP[0..15] 19,23
PA_EXP_TXN[0..15] >> PA_EXP_TXN[0..15] 19,23
PA_EXP_RXP[0..15] >> PA_EXP_RXP[0..15] 19,23
PA_EXP_RXN[0..15] >> PA_EXP_RXN[0..15] 19,23
```

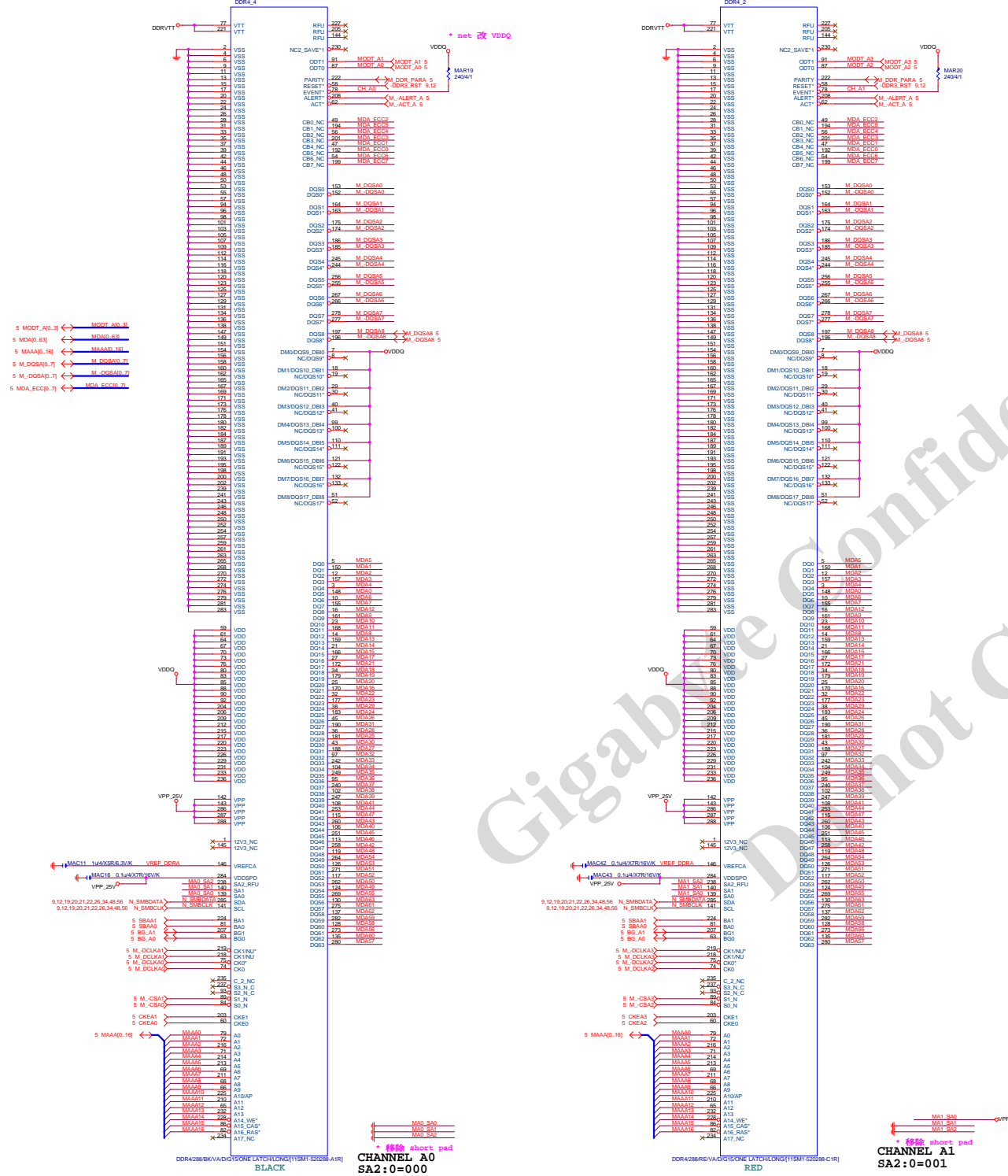
W=12 mil out of CPU
S=15 mil out of CPU

			
Title			
CPU LGA1151-A			
Size Custom	Document Number		Rev
	GA-Z170X-GAMING 7		1.01
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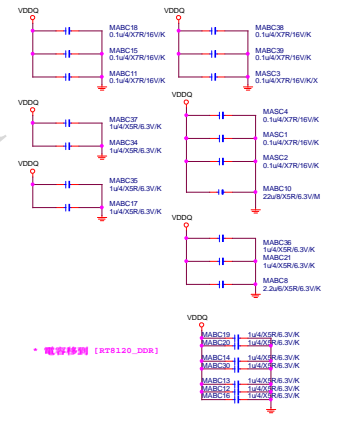
* 改DDR4 net







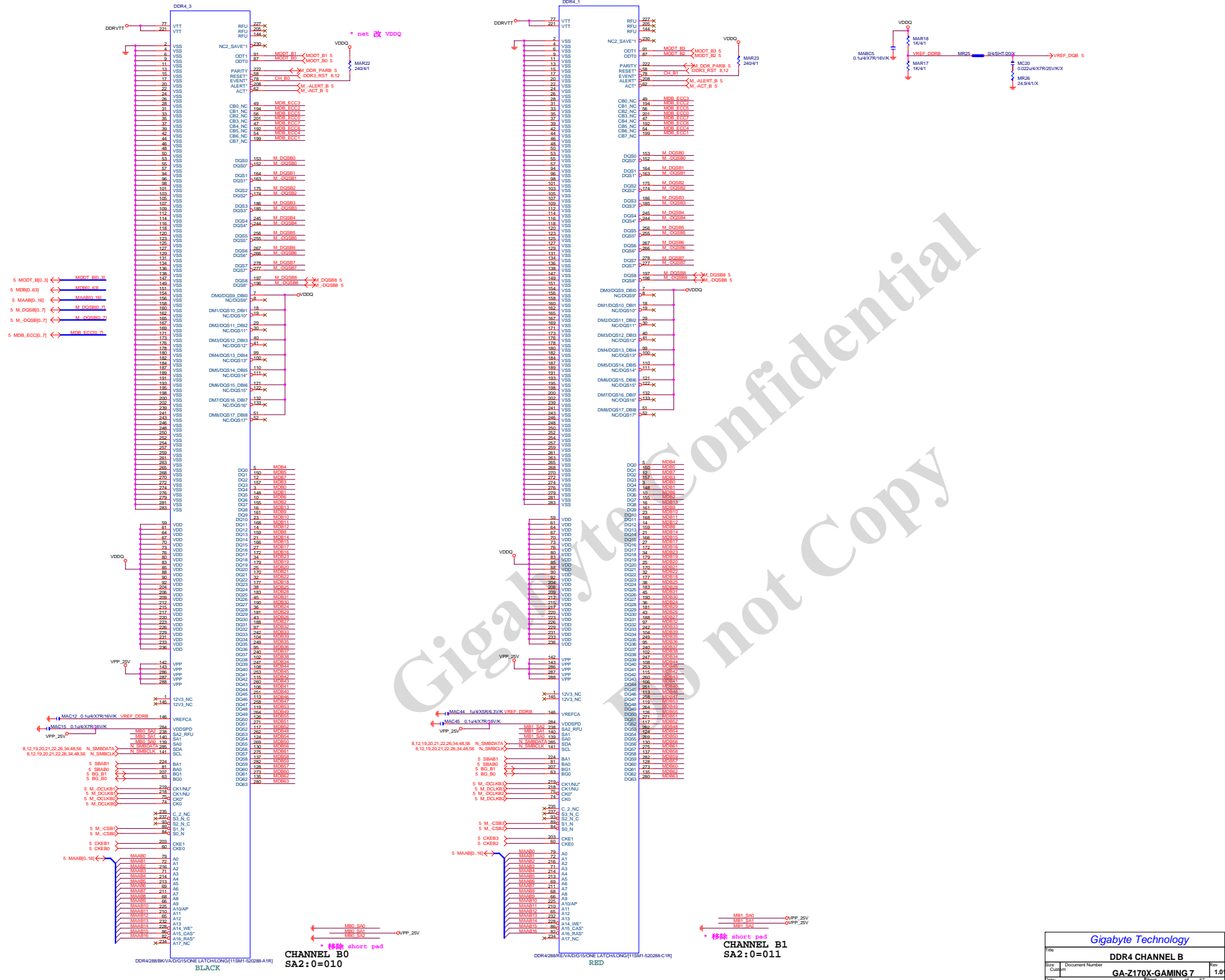
DDR12V Decouple



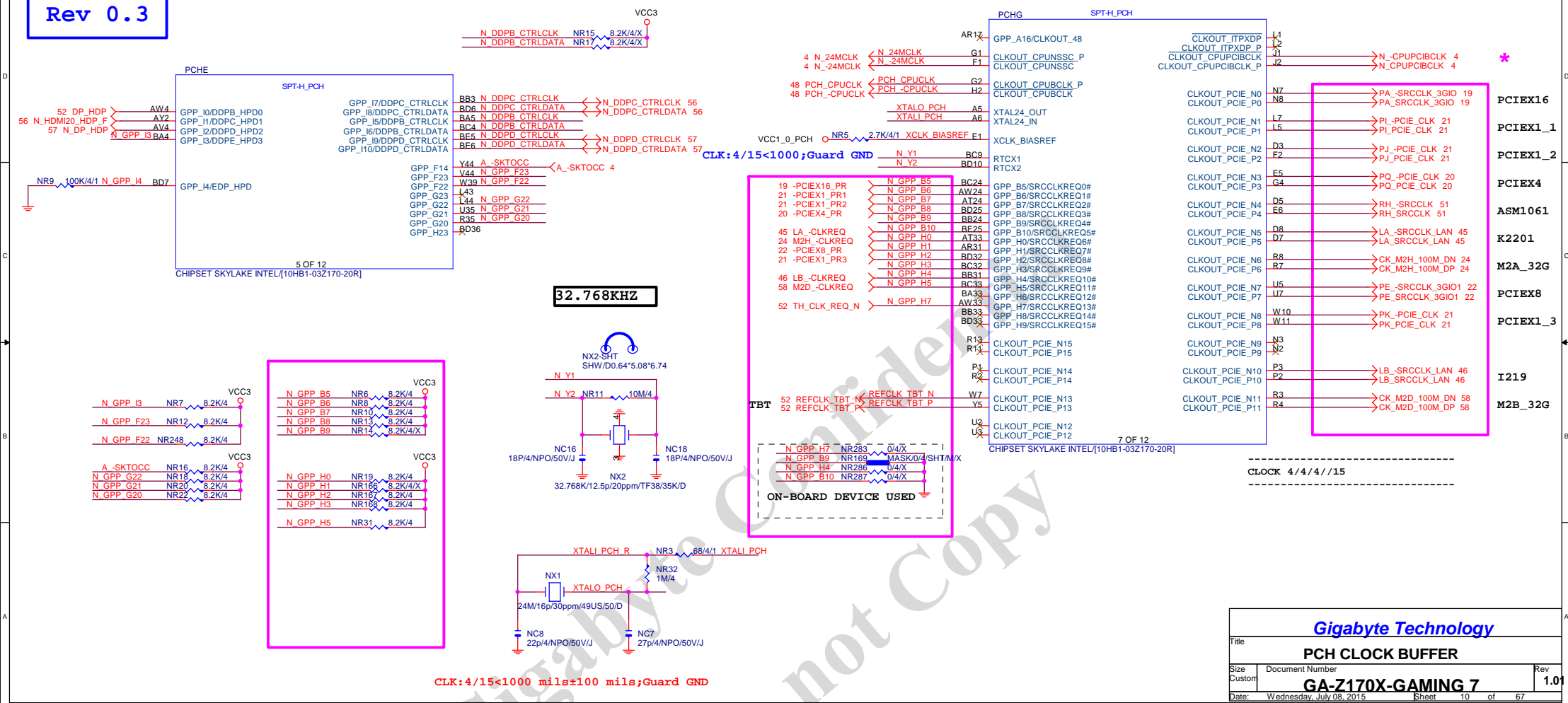
DDRVT Decouple



DDR4		Capture Value
SOC series	黑色	DDR4/288/BK/VA/S/G15/4ROW/LONG
UD series	黑色	DDR4/288/OR/VA/S/G15/4ROW/LONG
Gaming series	黑色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG
GL.Sniper	黑色	DDR4/288/KE/VA/D/G15/ONE LATCH/LONG



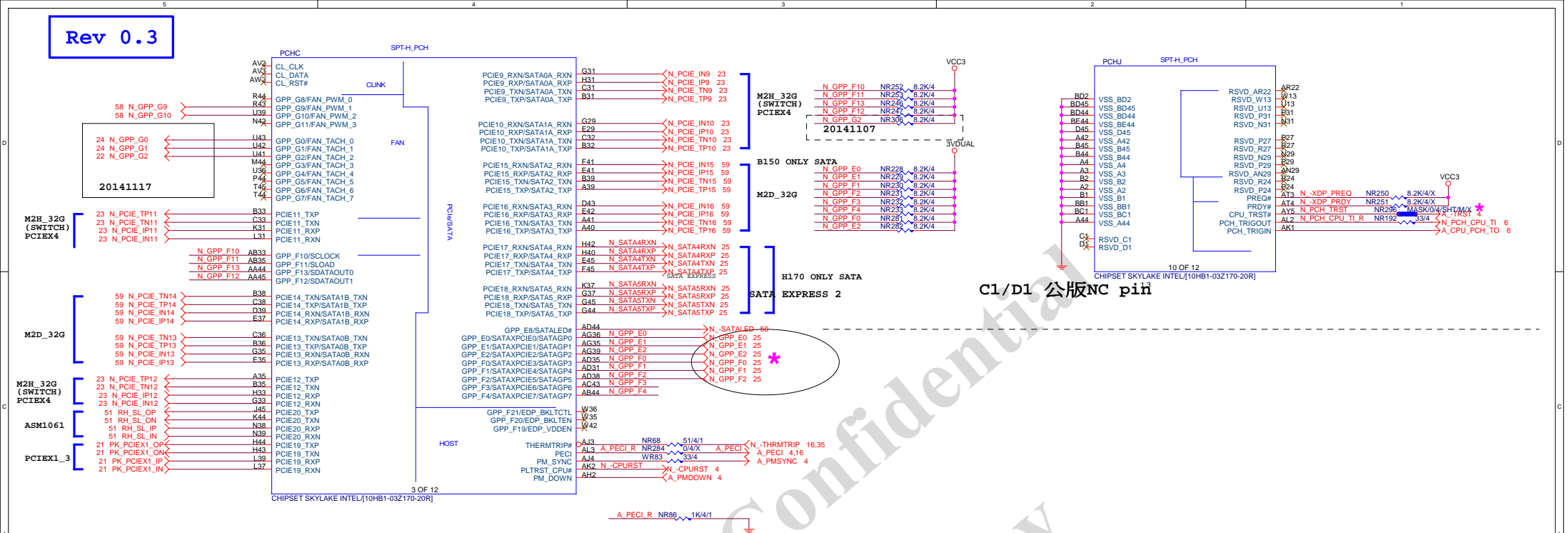
Rev 0.3





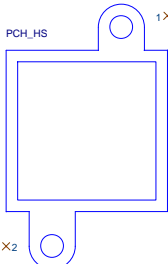
A

Rev 0.3



裝甲HEATSINK 分成五大部份

PCH_HS 1X

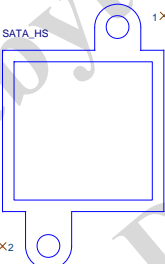


Footprint :
BGAHSINK-Z1704X-GAMING7

X2

HEAT SINK[12SP2-PT17G7-01R_12SP2-PT17G7-02R_12SP2-PT17G7-03R]

SATA_HS 1X

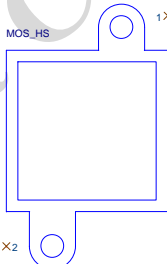


Footprint :
1704-GAMING7-SATA_ARMOR

X2

HEAT SINK/X

MOS_HS 1X

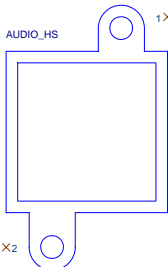


Footprint :
MOSHINK-Z1704X-GAMING7

X2

HEAT SINK/X

AUDIO_HS 1X

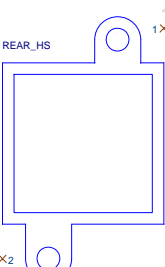


Footprint :
1704-GAMING-ARMOR_AUDIO

X2

HEAT SINK[12KRC-0H0002-01R]

REAR_HS 1X

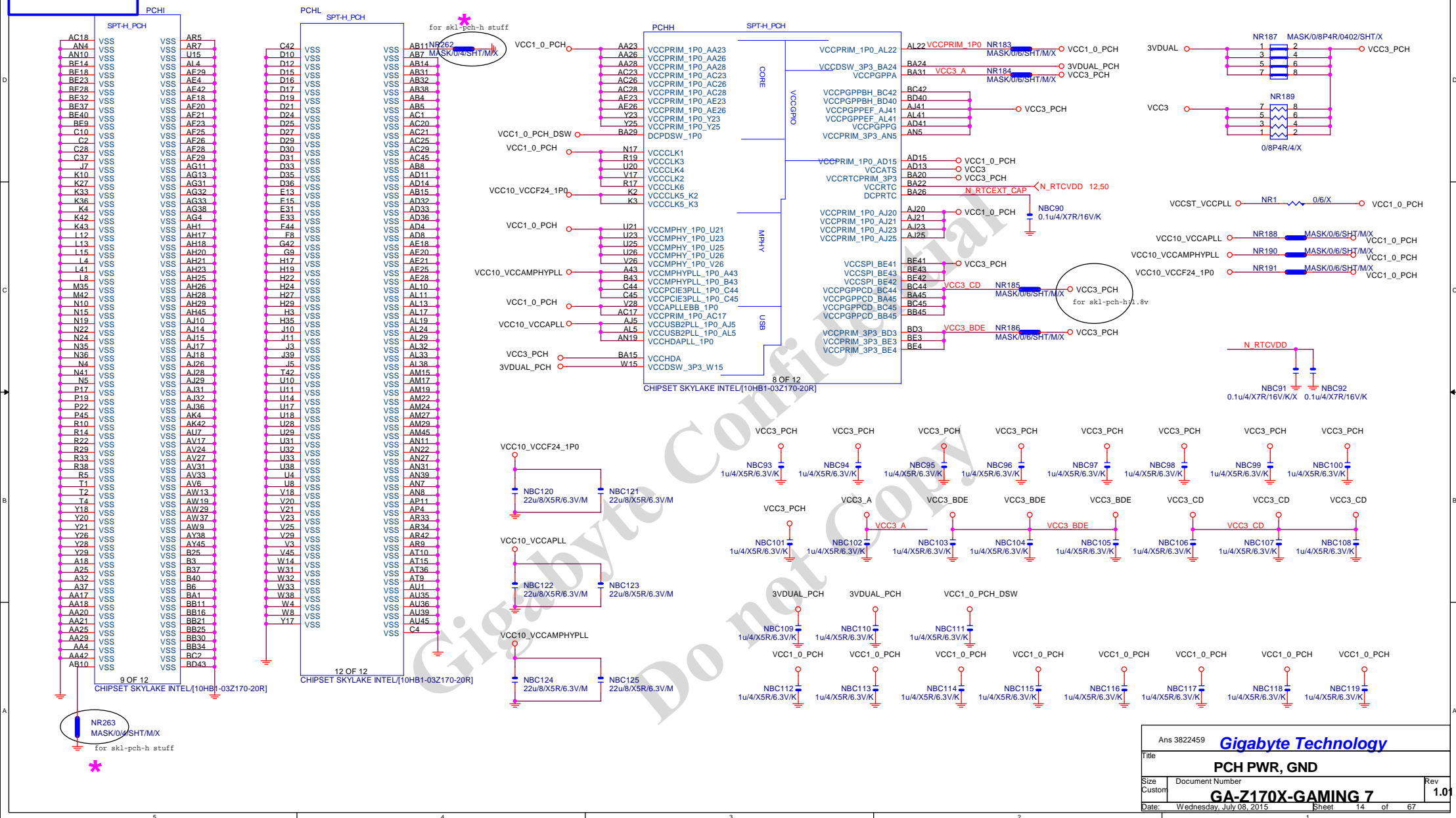


Footprint :
1704-GAMING-ARMOR_REAR

X2

HEAT SINK[12KRC-0H0001-01R]

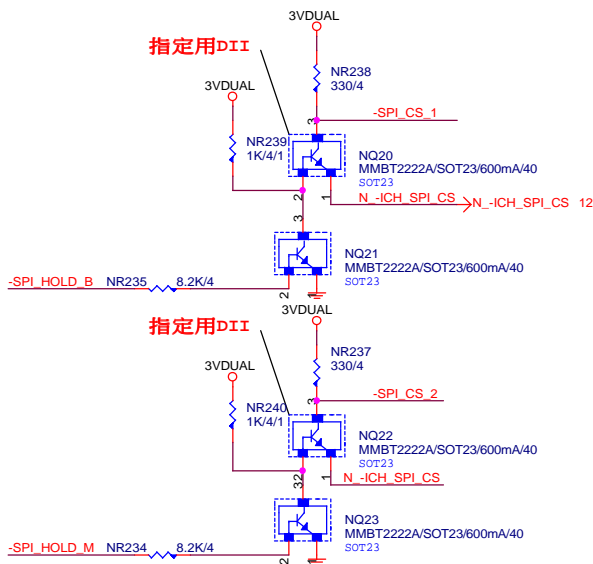




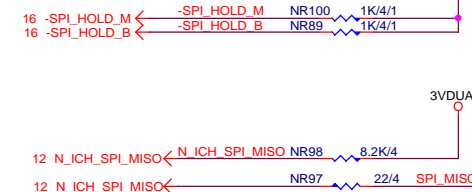
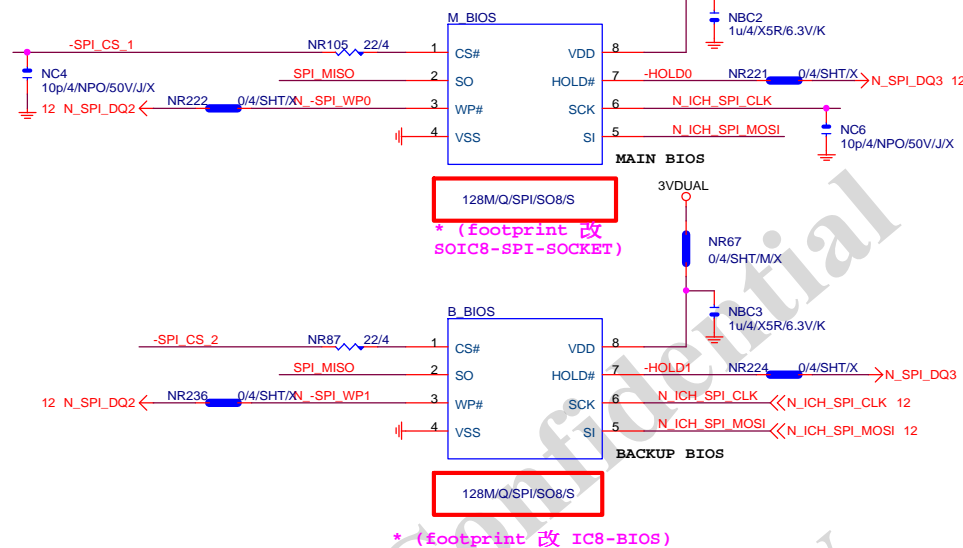
DUAL BIOS

MOSI For DMI RX Termination Voltage

指定用DII

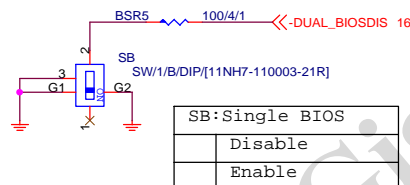


指定用DII

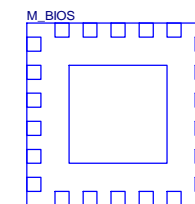


BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K



SB: Single BIOS
Disable
Enable

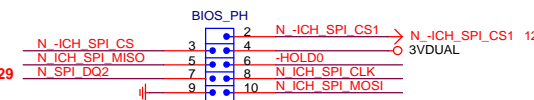


LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]X

* 試産先上, PVT 移除

BIOS_PH

★Update 2015-01.29



MASK/PH/2*5K10/BK/2.54/VA/D/X

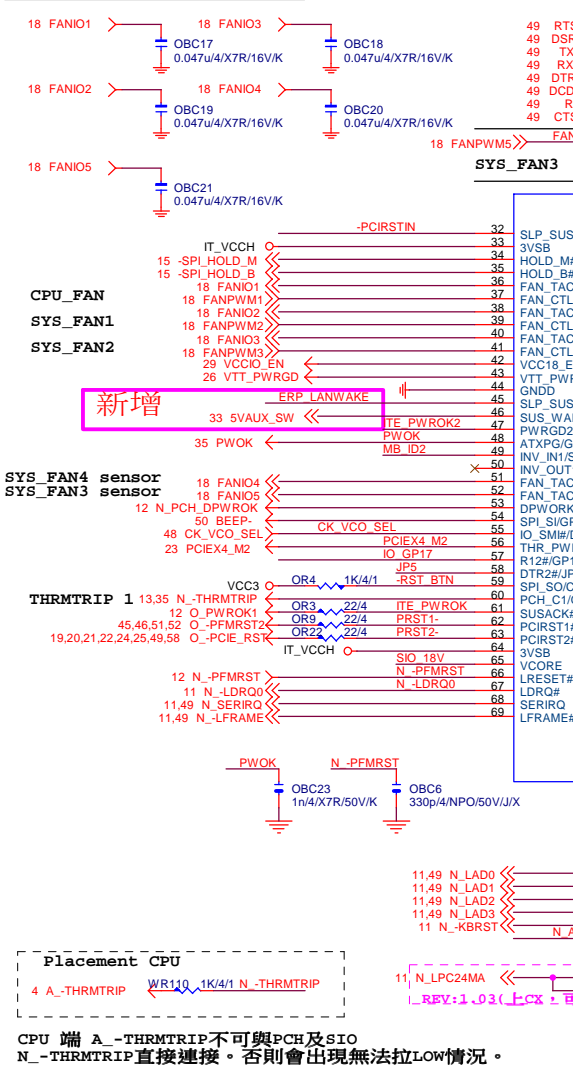
Footprint the same, confirmed by Graceing.

Use COM port pin header part.

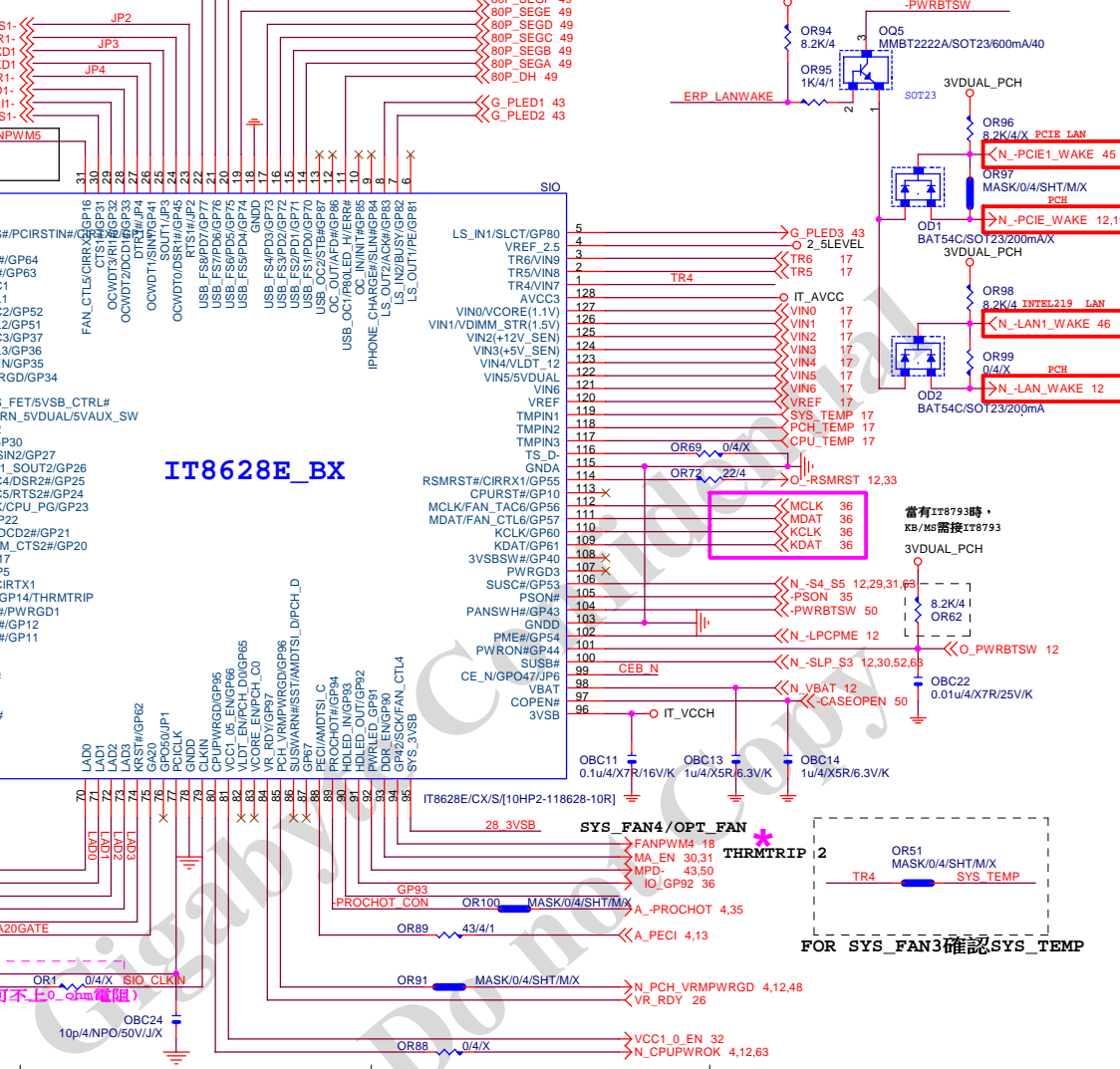
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Title		BIOS
Size	Document Number	GA-Z170X-GAMING 7.1
Custom		
Date:	Wednesday, July 08, 2015	Sheet 15 of 67

SIO IT8628BX REV:1.05



IT8628E_BX



PWR SHT

For 8728 BUP function

3VDUAL_PCH OR25 0/6/SHT/X IT_VCCH

SIO PU

新增

PCIRSTIN OR26 8.2K/4 VCC3

IO GP17 OR84 1K/4/1X 3VDUAL_PCH

N_LDRQ0 OR27 1K/4/1 VCC3

ITE_PWROK2 OR16 1K/4/1 VCC3

ITE_PWROK OR10 1K/4/1 VCC3

PROCHOT_CON OR29 8.2K/4X VCC3

N_A20GATE OR31 8.2K/4

GP93 OR171 8.2K/4 VCC3

SIO STRAP

JP2 OR36 8.2K/4 VCC3

JP3 OR35 8.2K/4 VCC3

JP4 OR32 8.2K/4 VCC3

JP5 OR12 8.2K/4 VCC3

EUP control detect

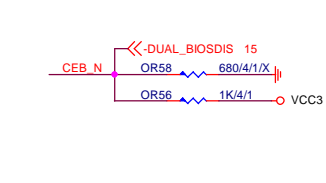
3VDUAL OR47 100/4/1 28 3VSB

JP2	1	Disable WDT
0	0	Enable WDT to rest PWROK
JP3	1	Dual BIOS CS PIN Disable
0	0	Dual BIOS CS PIN Enable
JP4	1	k8 power sequency function is Disable
0	0 <th>k8 power sequency function is Enable</th>	k8 power sequency function is Enable
JP5	1	anti-surge Disable
0	0 <th>anti-surge Enable</th>	anti-surge Enable
JP3	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
1 0	1 0	The default value of EC Index 63h/6Bh/73h is FFh.
JP5	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
0 0	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

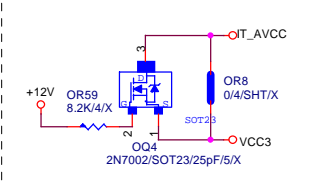
FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL4 FAN_TAC4
OPT FAN or SYS_FAN4	FAN_CTL5 FAN_TAC5
THRMTRIP1	YES PIN56

IT8620E GPIO問題調整	
PIN 50	GP26-第一次接上POWER時 會拉 LO
PIN 90/91	DEFAULT為HIDLED FUNCTION, GP93 BYPASS TO GP92 高時 GP92 會被拉Lo(ITE BUG)
PIN 108	GP40--- POWER ON 時會拉 LO
PIN 111/112	MOUSE 跟FAN6 FUNCTION 擇一使用,不然會互相干擾
PIN 22	PIN22, 需高於3V, 若低於 格部分COM PORT及LPT裝置 蜂鳴器會異常動作。

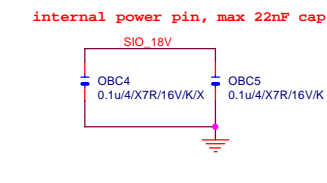
DUAL BIOS OPT STRAP



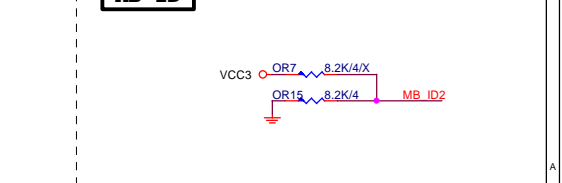
Power leakage



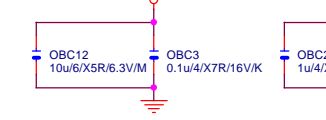
SIO_18V



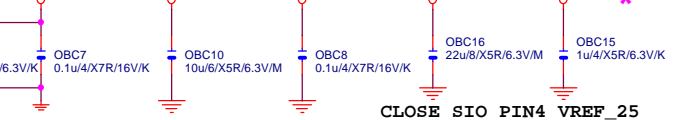
MB ID



SIO CAP



Power leakage



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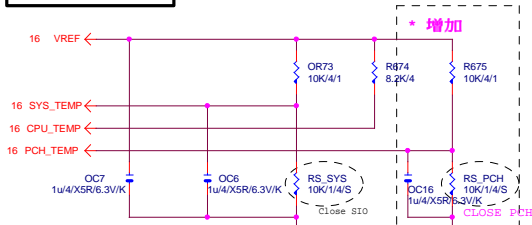
ITE 8620 LPC IO

Size Document Number Rev

Custom GA-Z170X-GAMING 9

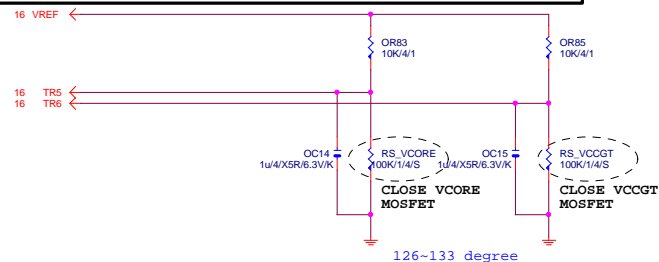
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TEMP H/W MONITOR

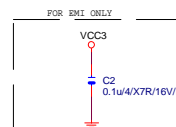
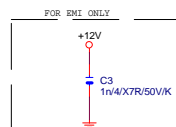
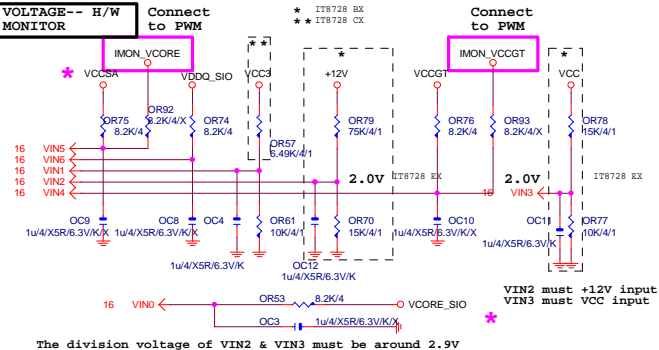


RS_VCORE、RS_VCCGT、CLOSE CPU_VCORE & VCCGT MOSFET

-PROCHOT:有mos meartsink不用prochot function



VOLTAGE-- H/W MONITOR

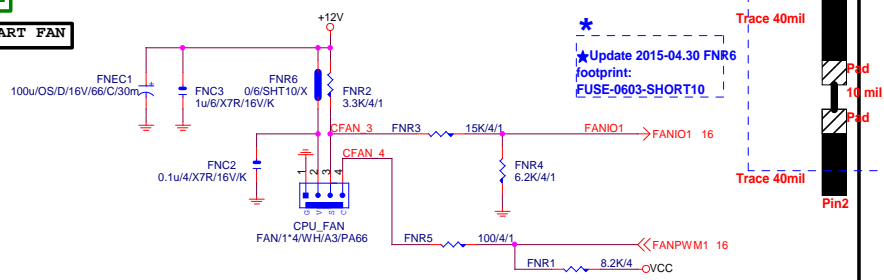


★Update 2015-04.24

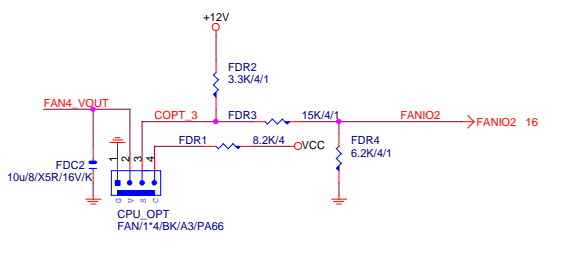
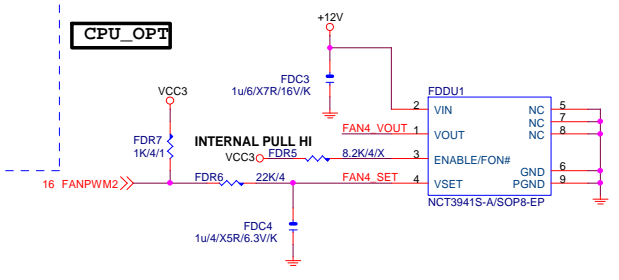
Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
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CPU SMART FAN

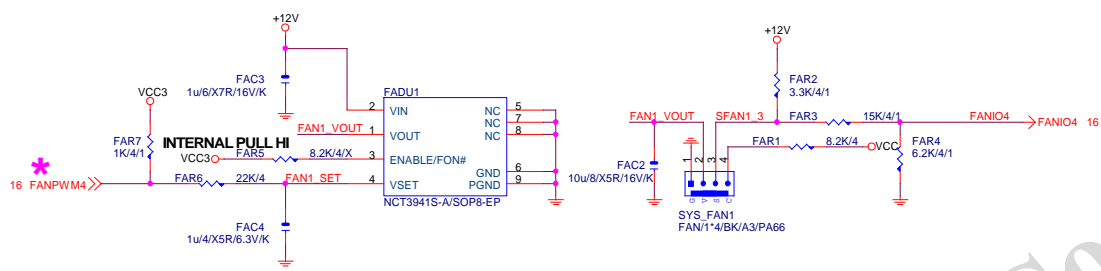


CPU_OPT

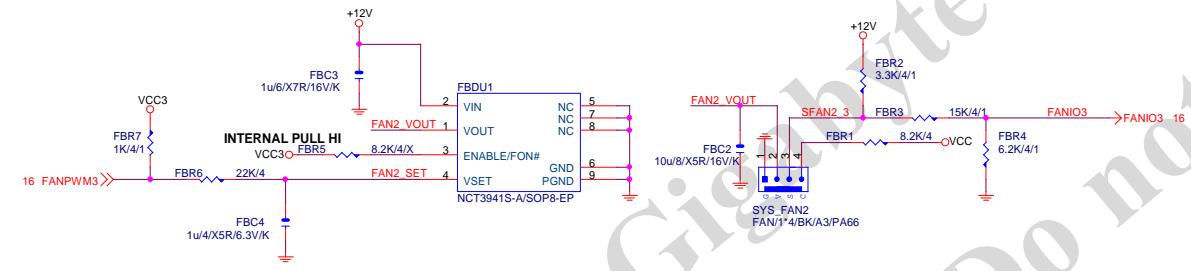


SYSTEM FAN1

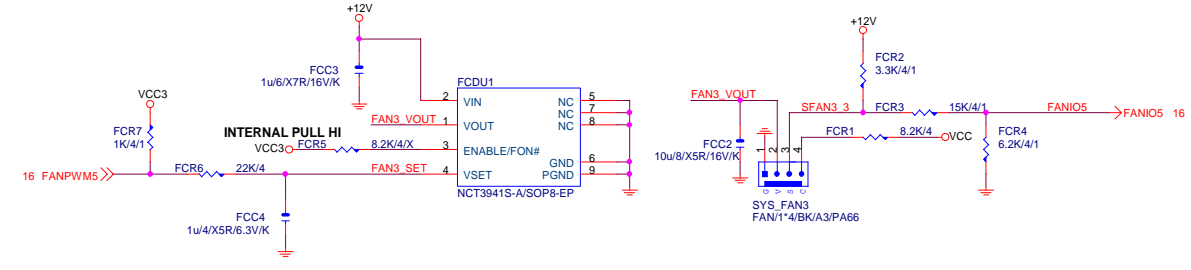
Linear SYS_FAN
Enable Function (NCT3941S)
Full Turn On Function (NCT3941S-A)



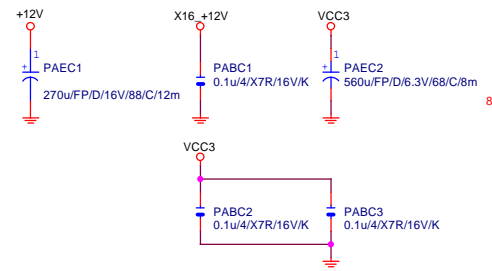
SYSTEM FAN2



SYSTEM FAN3

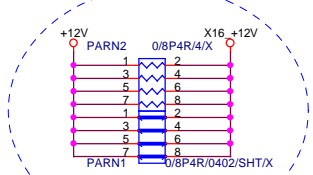


PCIEX16 CAP



PCIEX16 PROTECT SHT

+12 protect short-wire test



PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u/4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u/4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP SW TXP8	PAC20	0.22u/4/X5R/6.3V/K	PA EXP SW TXP8 C
PA EXP SW TXN8	PAC21	0.22u/4/X5R/6.3V/K	PA EXP SW TXN8 C
PA EXP SW TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA EXP SW TXP9 C
PA EXP SW TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA EXP SW TXN9 C
PA EXP SW TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA EXP SW TXP10 C
PA EXP SW TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA EXP SW TXN10 C
PA EXP SW TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA EXP SW TXP11 C
PA EXP SW TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA EXP SW TXN11 C
PA EXP SW TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA EXP SW TXN12 C
PA EXP SW TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA EXP SW TXN13 C
PA EXP SW TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA EXP SW TXP14 C
PA EXP SW TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA EXP SW TXN14 C
PA EXP SW TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA EXP SW TXP15 C
PA EXP SW TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA EXP SW TXN15 C

PCI-E REV:1.1--> 2.5GHZ

PCE-E X1(單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s

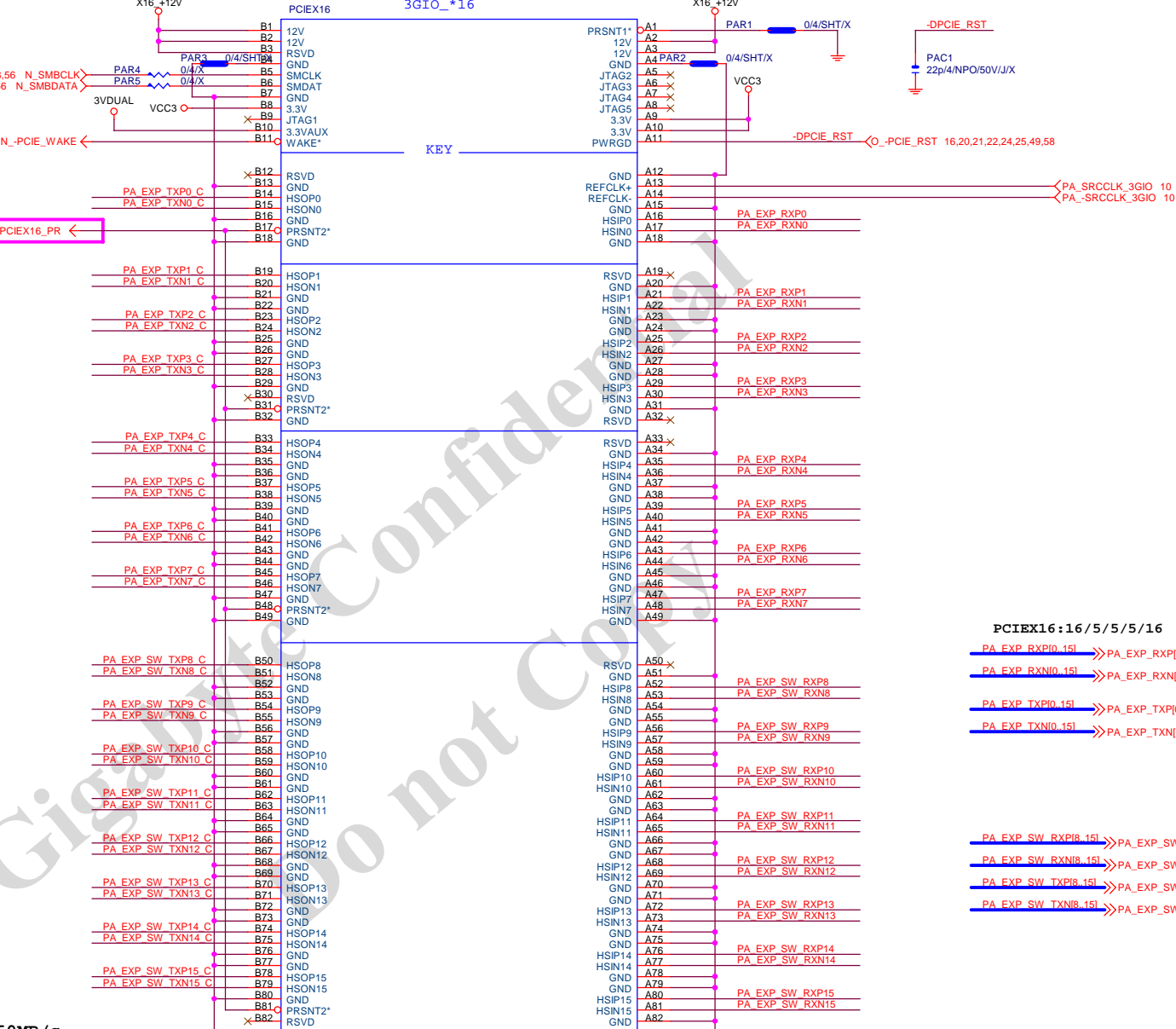
PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

PCIEX16 SLOT



PCI-E/16X-164P/RE/LONG DOUBLE/HK*2/SHELL(11AC1-023164-E1R)

紅色

PCIEX16:16/5/5/5/16

PA EXP RXP0.15] >>>PA_EXP_RXP0[8..15] 4,23

PA EXP RXN0.15] >>>PA_EXP_RXN0[0..15] 4,23

PA EXP TXP0.15] >>>PA_EXP_TXP0[0..15] 4,23

PA EXP TXN0.15] >>>PA_EXP_TXN0[0..15] 4,23

PA EXP SW RXP8.15] >>>PA_EXP_SW_RXP8[8..15] 23

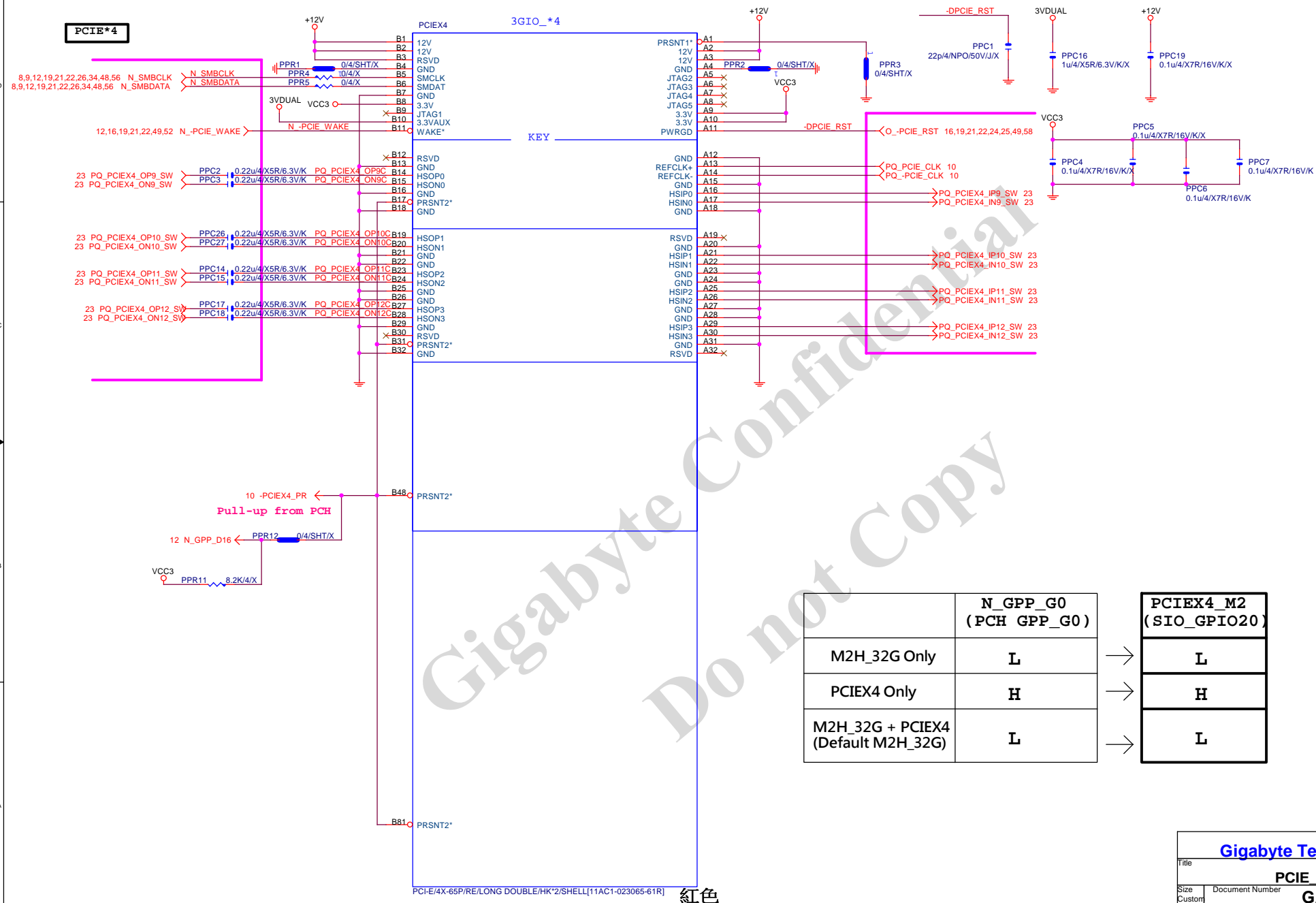
PA EXP SW RXN8.15] >>>PA_EXP_SW_RXN8[8..15] 23

PA EXP SW TXP8.15] >>>PA_EXP_SW_TXP8[8..15] 23

PA EXP SW TXN8.15] >>>PA_EXP_SW_TXN8[8..15] 23

Gigabyte Technology			
Title PCI EXPRESS * 16			
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Footprint "PCIESLOT-64STH-1"

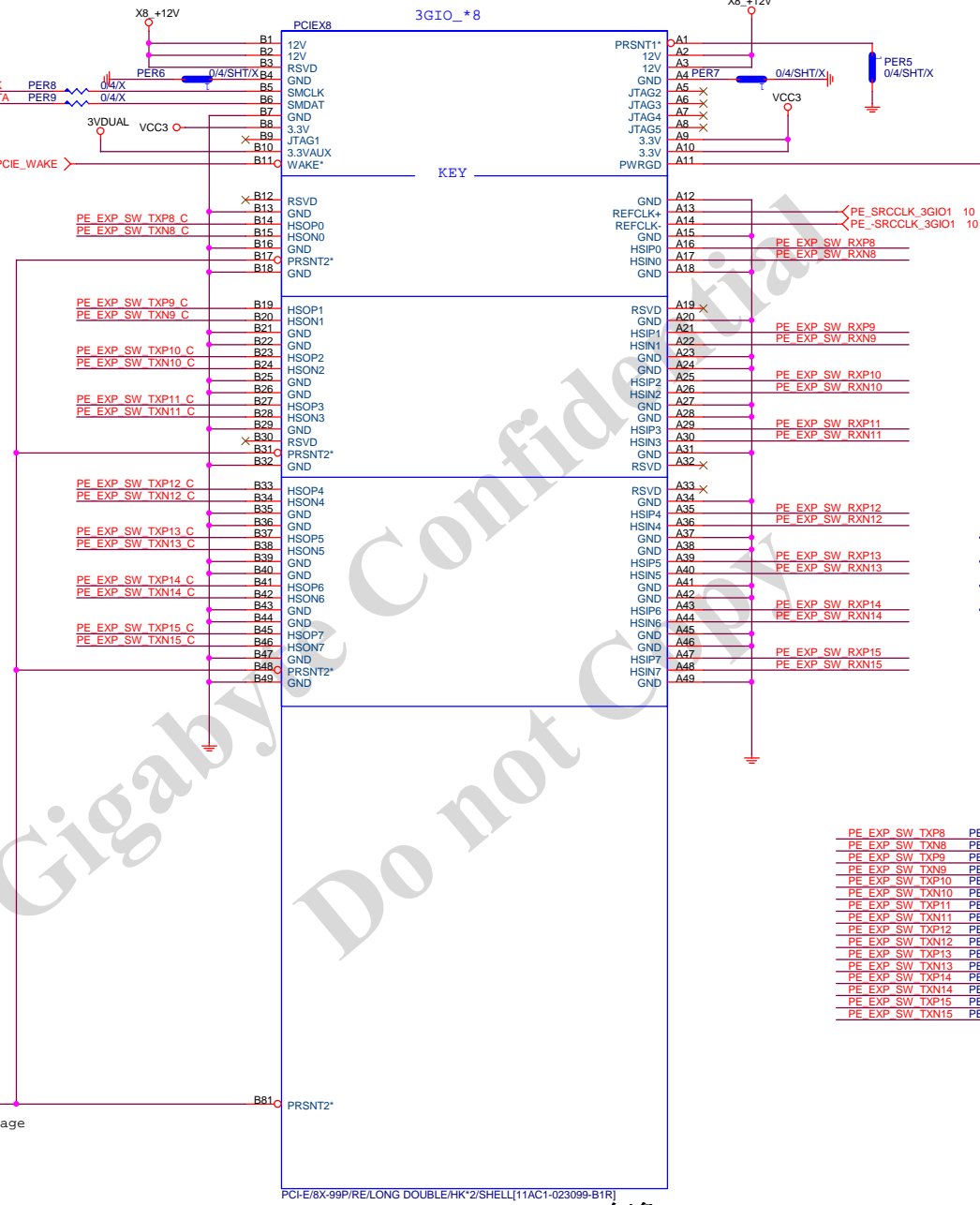
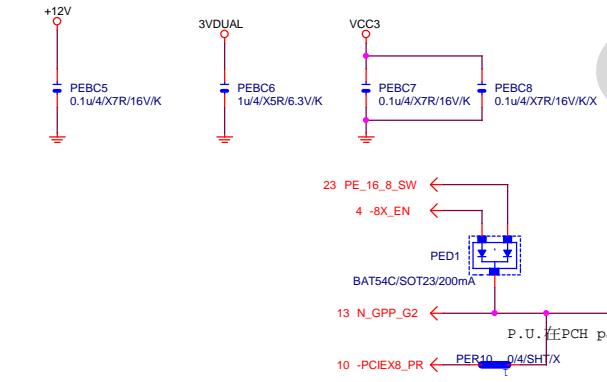
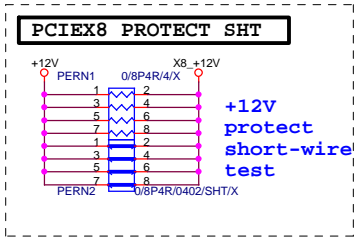
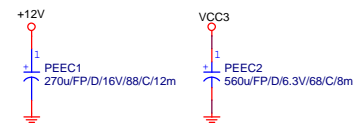


	N_GPP_G0 (PCH GPP_G0)	PCIEX4_M2 (SIO_GPIO20)
M2H_32G Only	L	L
PCIEX4 Only	H	H
M2H_32G + PCIEX4 (Default M2H_32G)	L	L

Gigabyte Technology

Title		PCIE X1 1.2	
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1.01



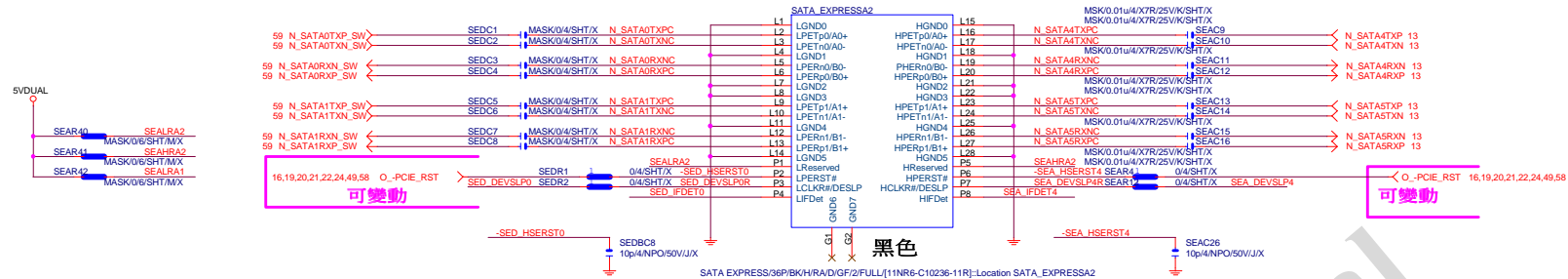
PE_EXP_SW_RXP[8..15] >> PE_EXP_SW_RXP[8..15] 23
PE_EXP_SW_RXN[8..15] >> PE_EXP_SW_RXN[8..15] 23
PE_EXP_SW_TXP[8..15] >> PE_EXP_SW_TXP[8..15] 23
PE_EXP_SW_TXN[8..15] >> PE_EXP_SW_TXN[8..15] 23

PE_EXP_SW_TXP8	PEC7	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXP8_C
PE_EXP_SW_TXN8	PEC8	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXN8_C
PE_EXP_SW_TXP9	PEC9	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXP9_C
PE_EXP_SW_TXN9	PEC10	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXN9_C
PE_EXP_SW_TXP10	PEC11	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXP10_C
PE_EXP_SW_TXN10	PEC12	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXN10_C
PE_EXP_SW_TXP11	PEC13	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXP11_C
PE_EXP_SW_TXN11	PEC14	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXN11_C
PE_EXP_SW_TXP12	PEC15	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXP12_C
PE_EXP_SW_TXN12	PEC16	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXN12_C
PE_EXP_SW_TXP13	PEC17	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXP13_C
PE_EXP_SW_TXN13	PEC18	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXN13_C
PE_EXP_SW_TXP14	PEC19	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXP14_C
PE_EXP_SW_TXN14	PEC20	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXN14_C
PE_EXP_SW_TXP15	PEC21	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXP15_C
PE_EXP_SW_TXN15	PEC22	0.22u/4/X5R/6.3V/K	PE_EXP_SW_TXN15_C

PCI-E/8X-99P/RE/LONG DOUBLE/HK*2/SHELL[11AC1-023099-B1R]
RED 紅色

SATA EXPRESS 下層 To SATA3
port0/1

SATA EXPRESS 上層 To SATA3
port4/5



Rev 0.5

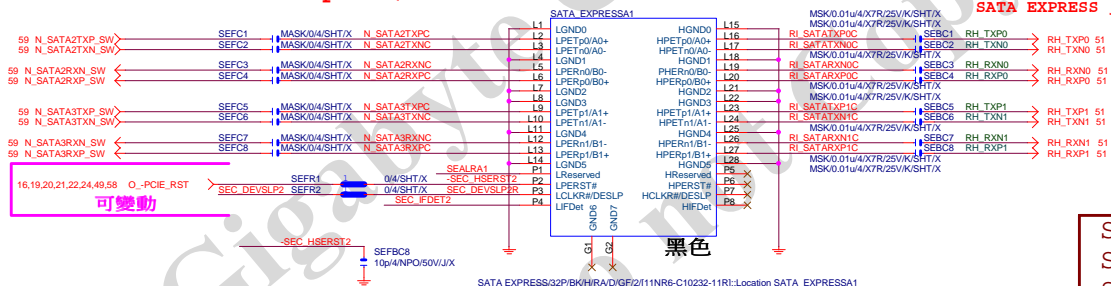
* check
文字面 01/23/45
NET
(45/23/01)

SATA EXPRESS料號
雙層:TBD

單層+2SATA:11NR6-C10236-03R
單層:11NR6-C10118-03R

SATA EXPRESS 下層 To SATA3
port2/3

SATA EXPRESS 上層 To SATA3 port6/7
ASM1061

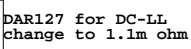
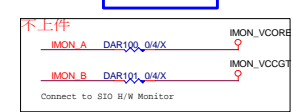
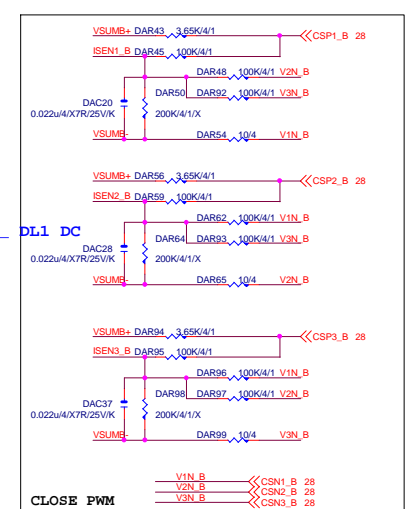


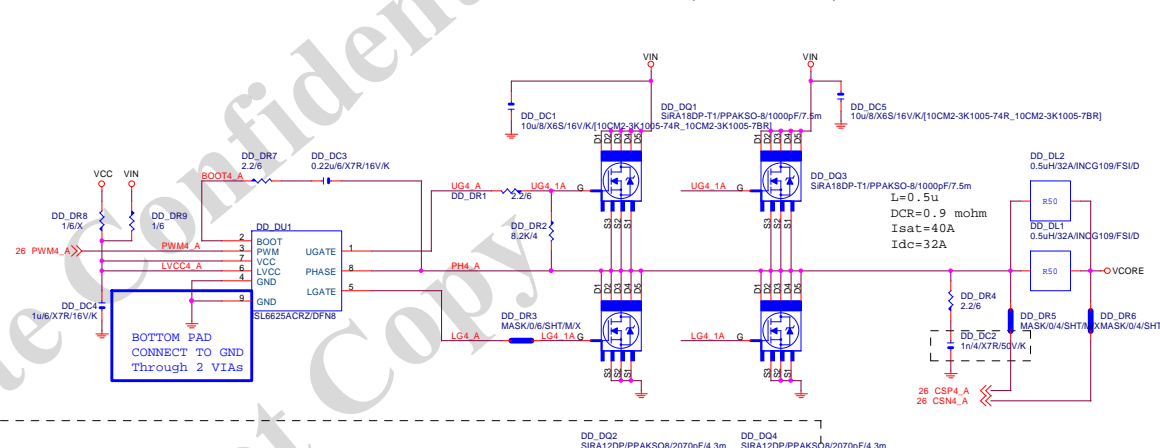
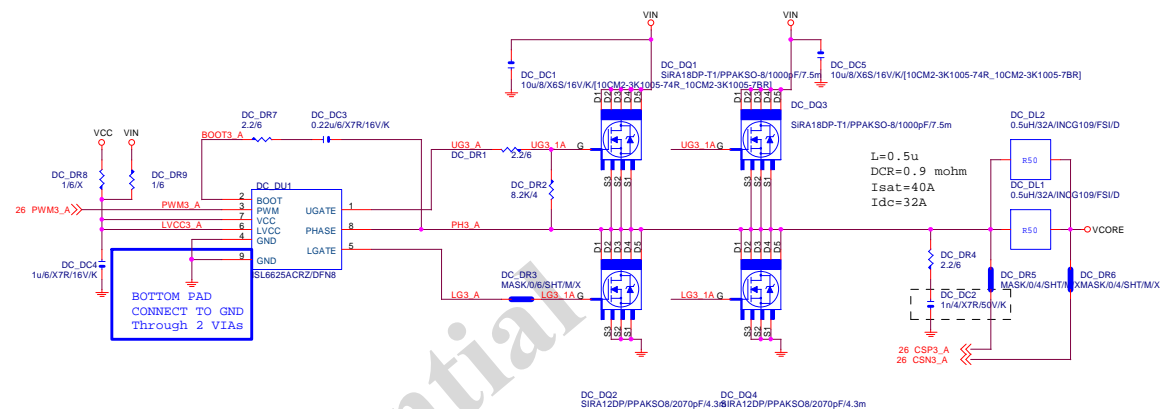
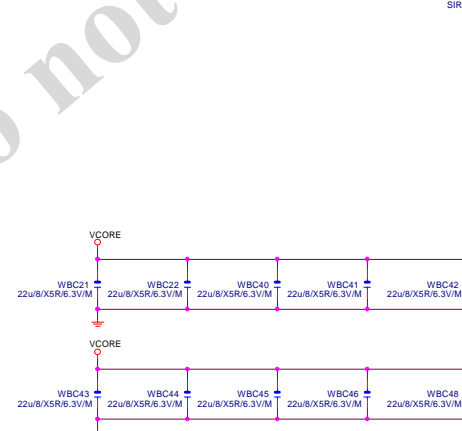
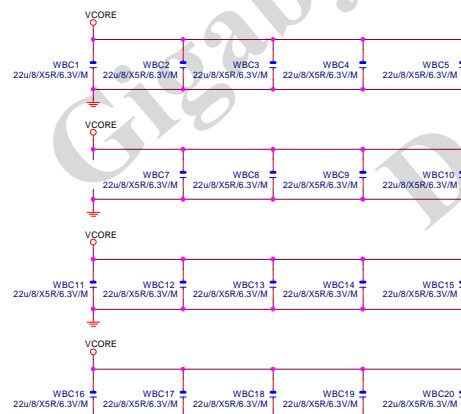
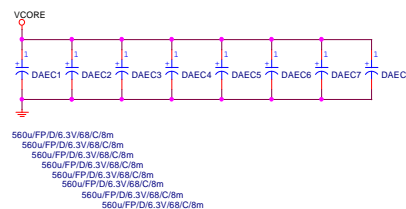
SATA 5 (文字面寫SATA 1)
SATA 4 (文字面寫SATA 0)
SATA 3
SATA 2
SATA 1 (文字面寫SATA 5)
SATA 0 (文字面寫SATA 4)

Gigabyte Technology

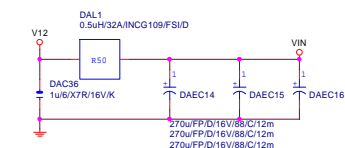
SATA EXPRESS

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VCORE CAP 560u*8PCS
22u*29PCS

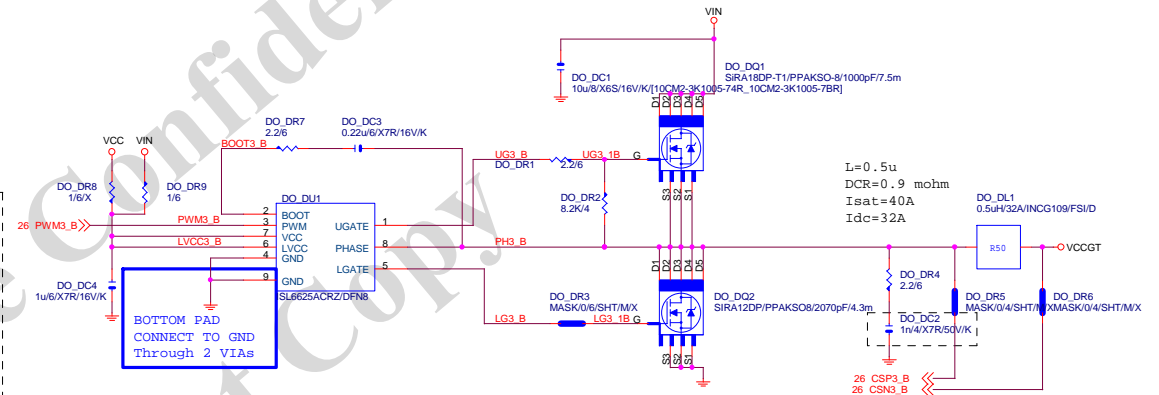
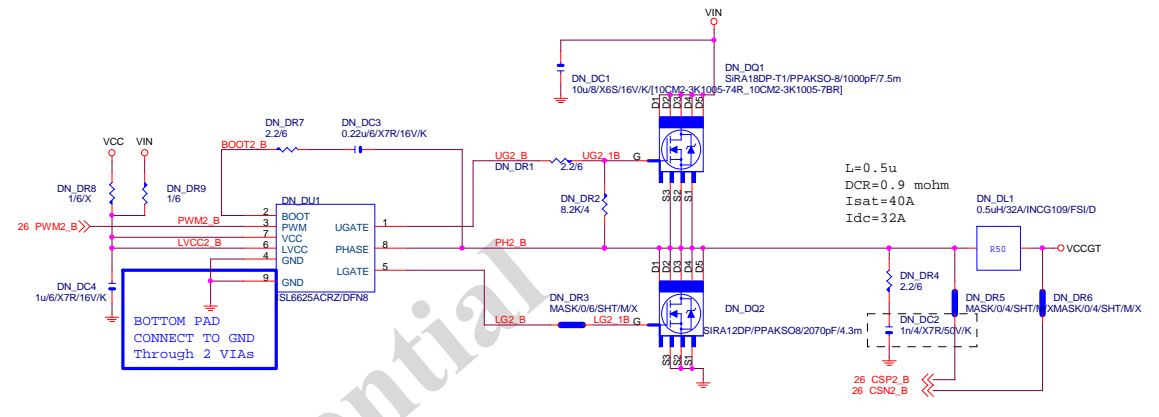
VIN CAP 270u*3PCS



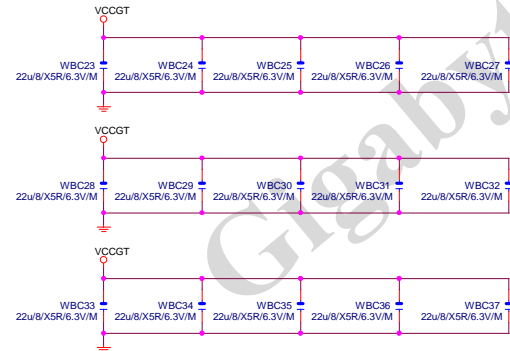
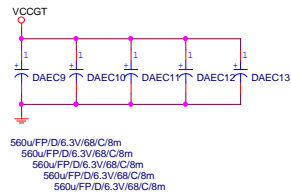
GIGABYTE

Title			
ISL95856_MOS			
Size	Document Number	Rev	
Custom	GA-2170X-GAMING 7	1.01	
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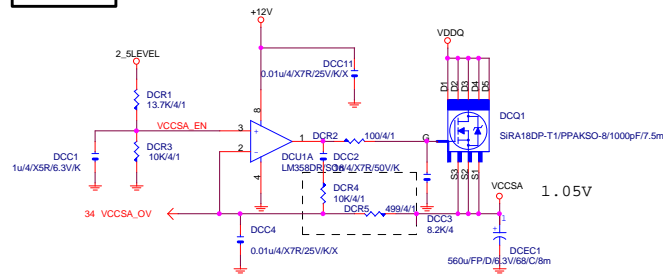
26 LGATE1_B >> LG



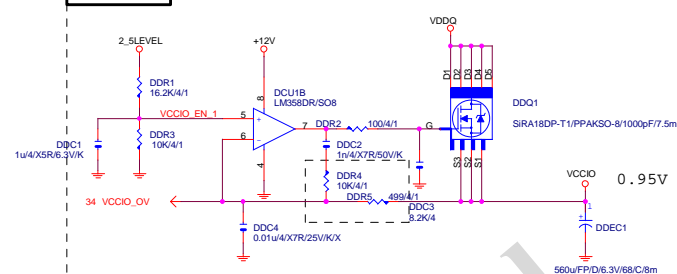
DAEC9 DAEC10 DAEC11 DAEC12 DAEC13



VCCSA



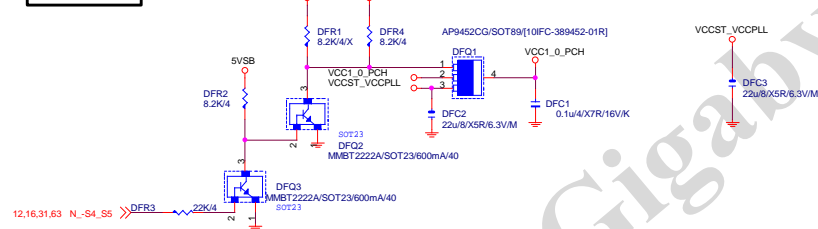
VCCIO



Connect to IT8620

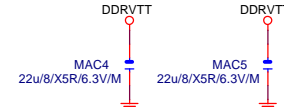
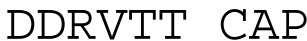
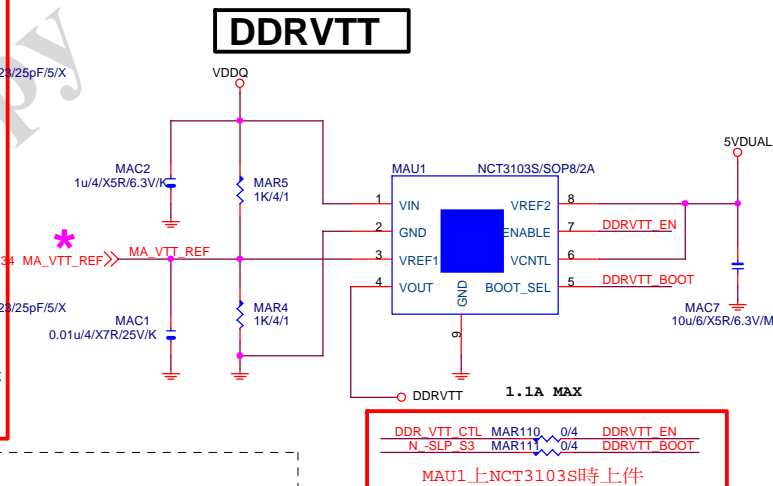
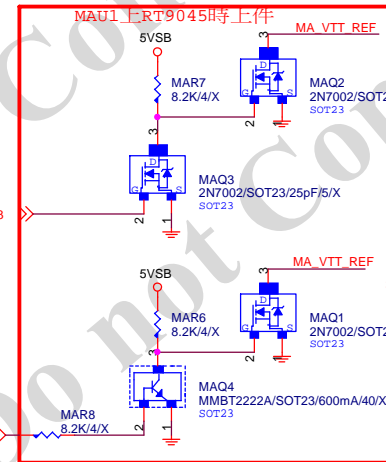
放CPU端.

VCCST_VCCPLL



GIGABYTE

Title			VCCSA_VCCIO_no 44E
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VPP 25V

CHOKE與CAP料號可變




VPP, 25V

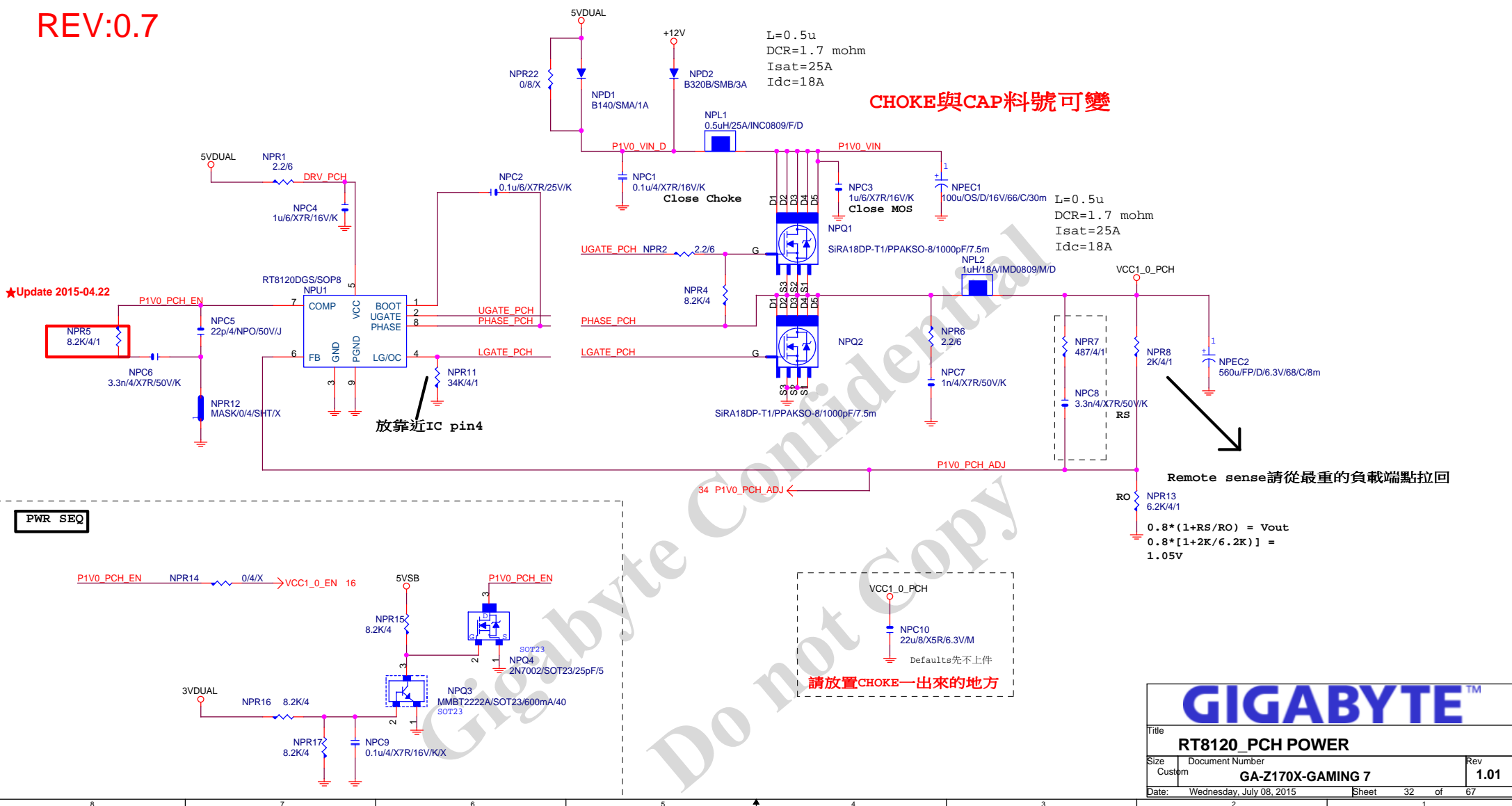
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MAEC11
560u/FP/D/6.3V/68/C/8m

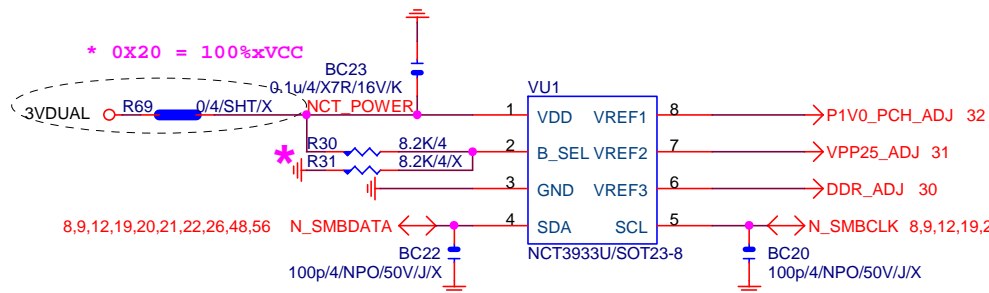


			
Title			
RT8120_VPP25 POWER			
Size	Document Number		Rev
Custom	GA-Z170X-GAMING 7		1.01
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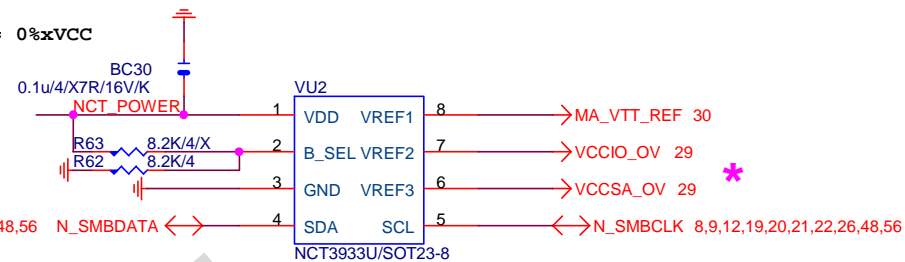
REV:0.7



OVER VOLTAGE



0X2A = 0%xVCC



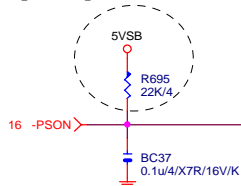
0X22 = 75%xVCC

* 删除 OVU3

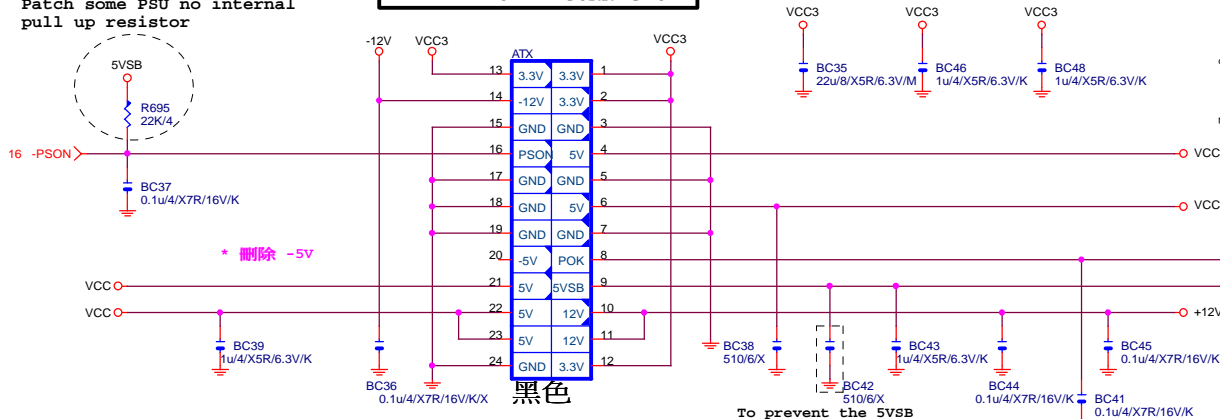
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology			
Title CPU CORE VR-2			
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Patch some PSU no internal pull up resistor



ATXX24 POWER CONNECTOR

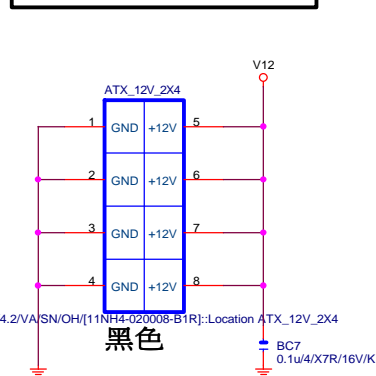


黑色

APW/2*12/BK/VA/SN/2SHK/PA66/[11NH4-020024-11R]

To prevent the 5VSB under loading when boot

ATXX4 POWER CONNECTOR

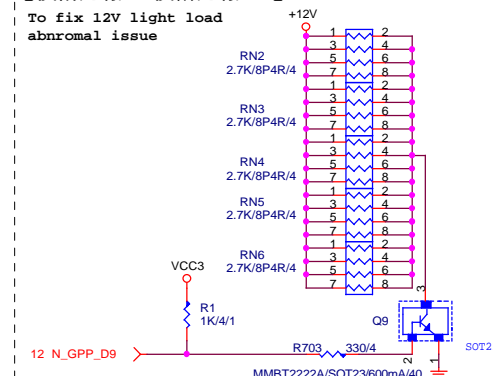


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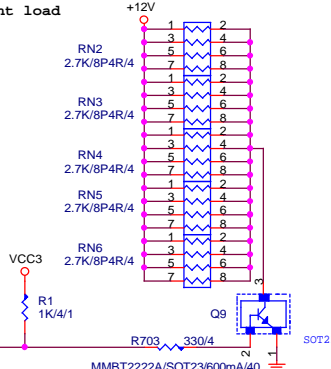
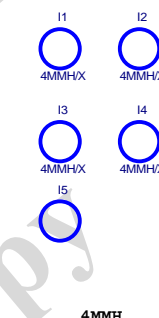
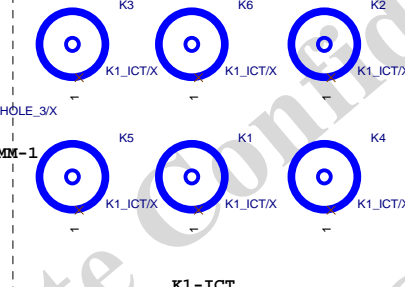
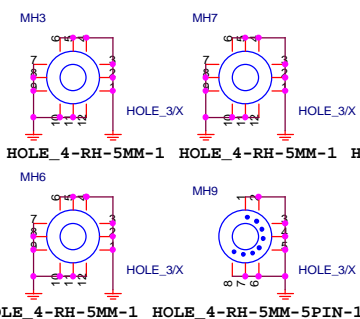
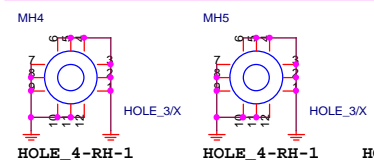
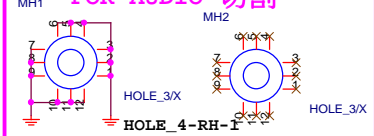
APW/2*4/BK/QC/P/4.2/VA/SN/OH/[11NH4-020008-B1R]:Location ATX_12V_2X4

【技術通報R&D技術通報153】

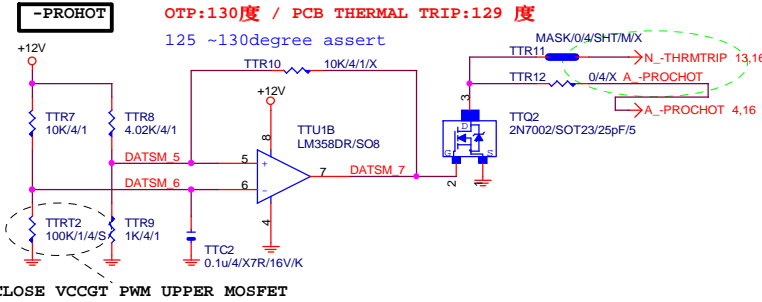
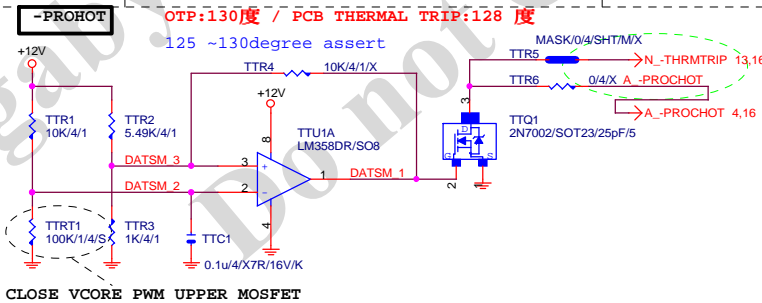
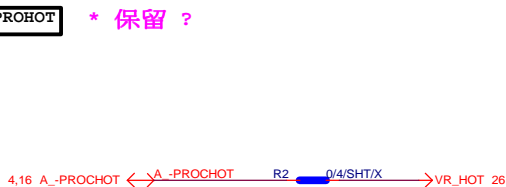
To fix 12V light load abnormal issue



FOR AUDIO 切割

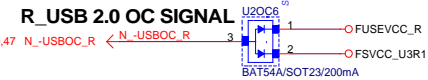
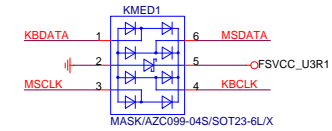
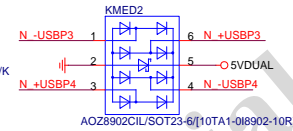
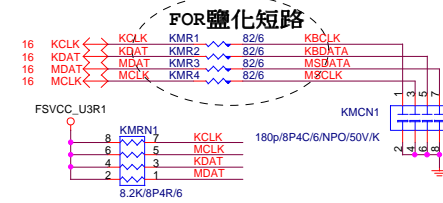
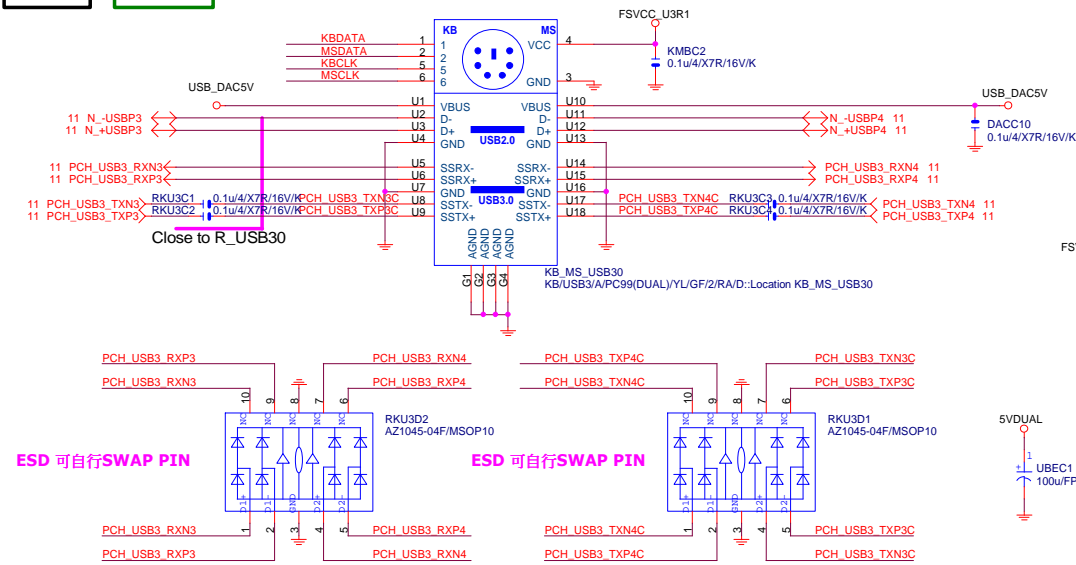


-PROHOT * 保留 ?

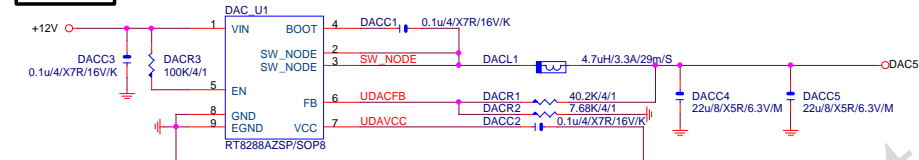


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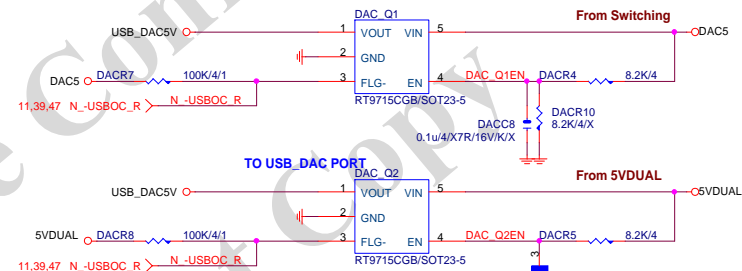
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Size	Document Number	GA-Z170X-GAMING 7	
Custom		Rev 1.01	
Date:	Wednesday, July 08, 2015	Sheet	35 of 67



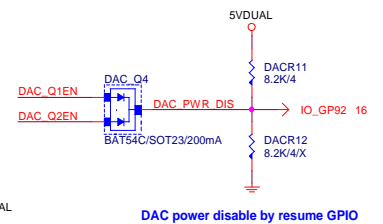
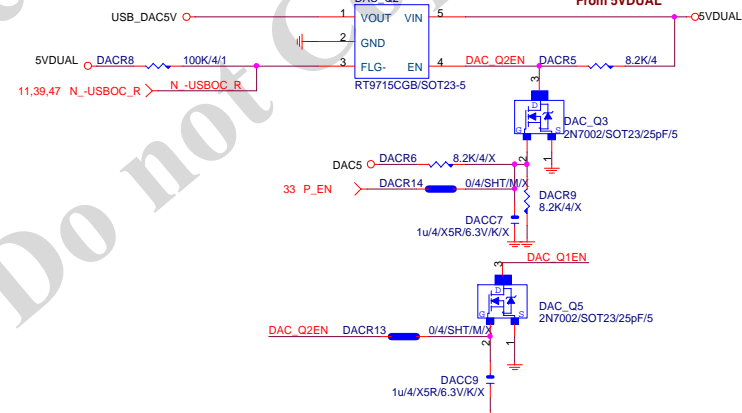
USB_DAC



TO USB_DAC PORT



TO USB_DAC PORT

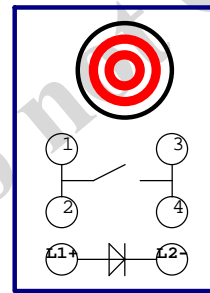
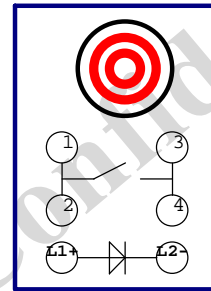
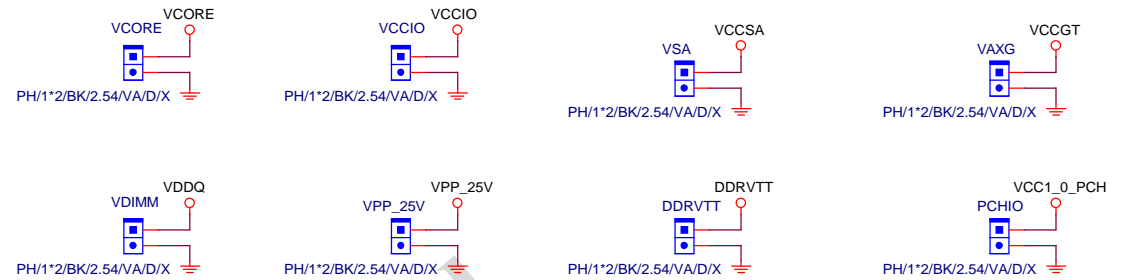


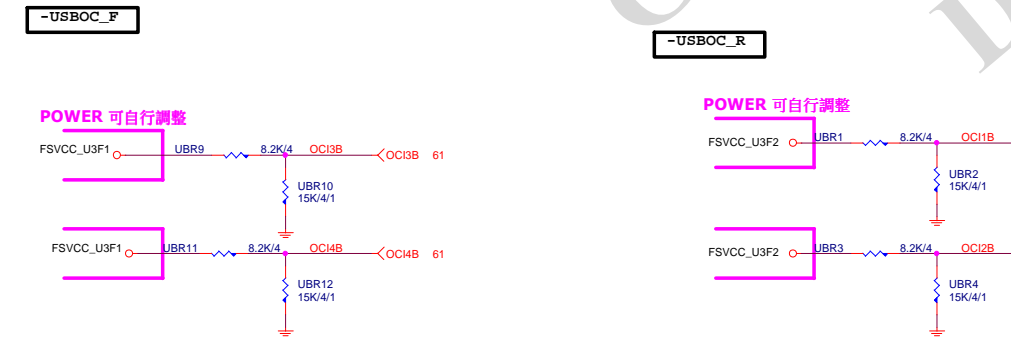
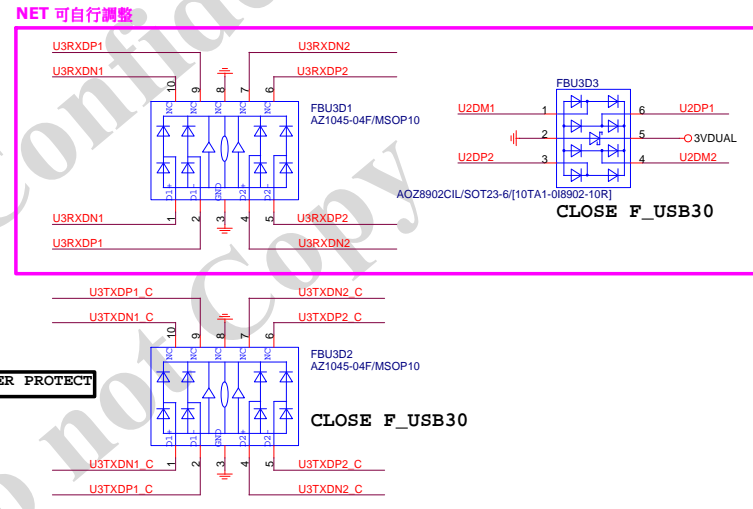
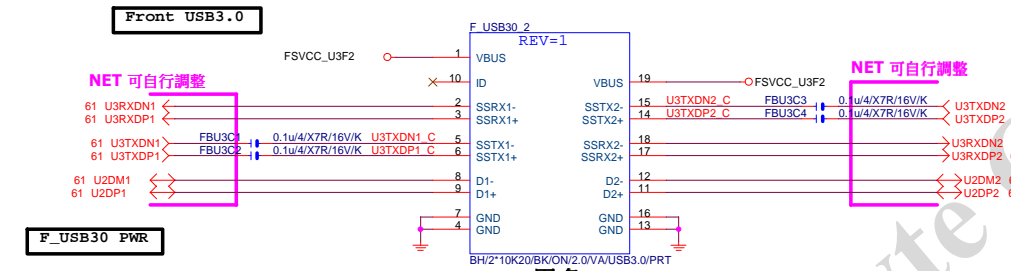
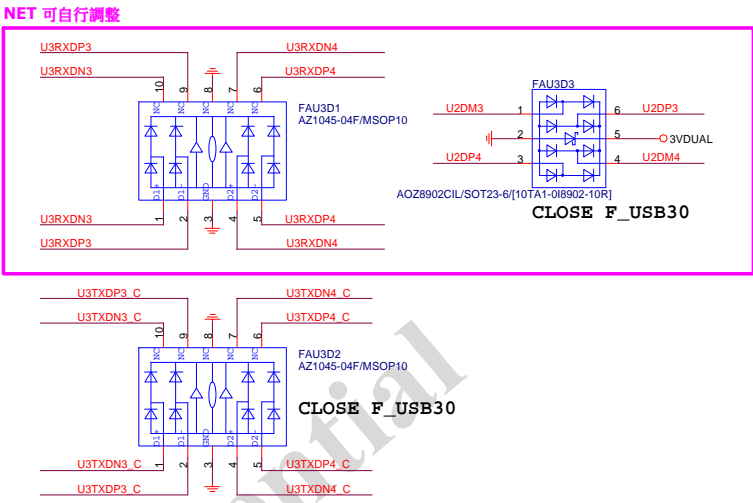
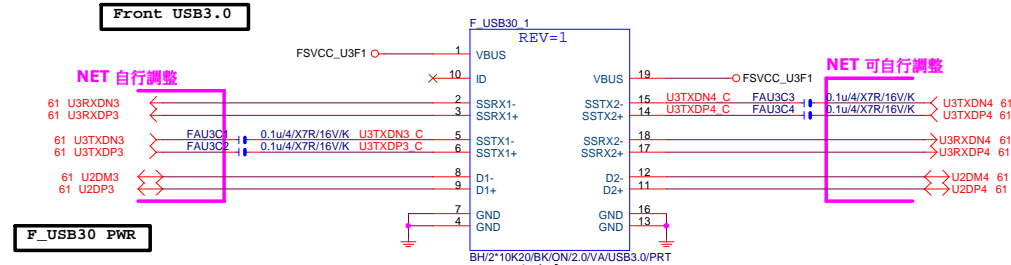
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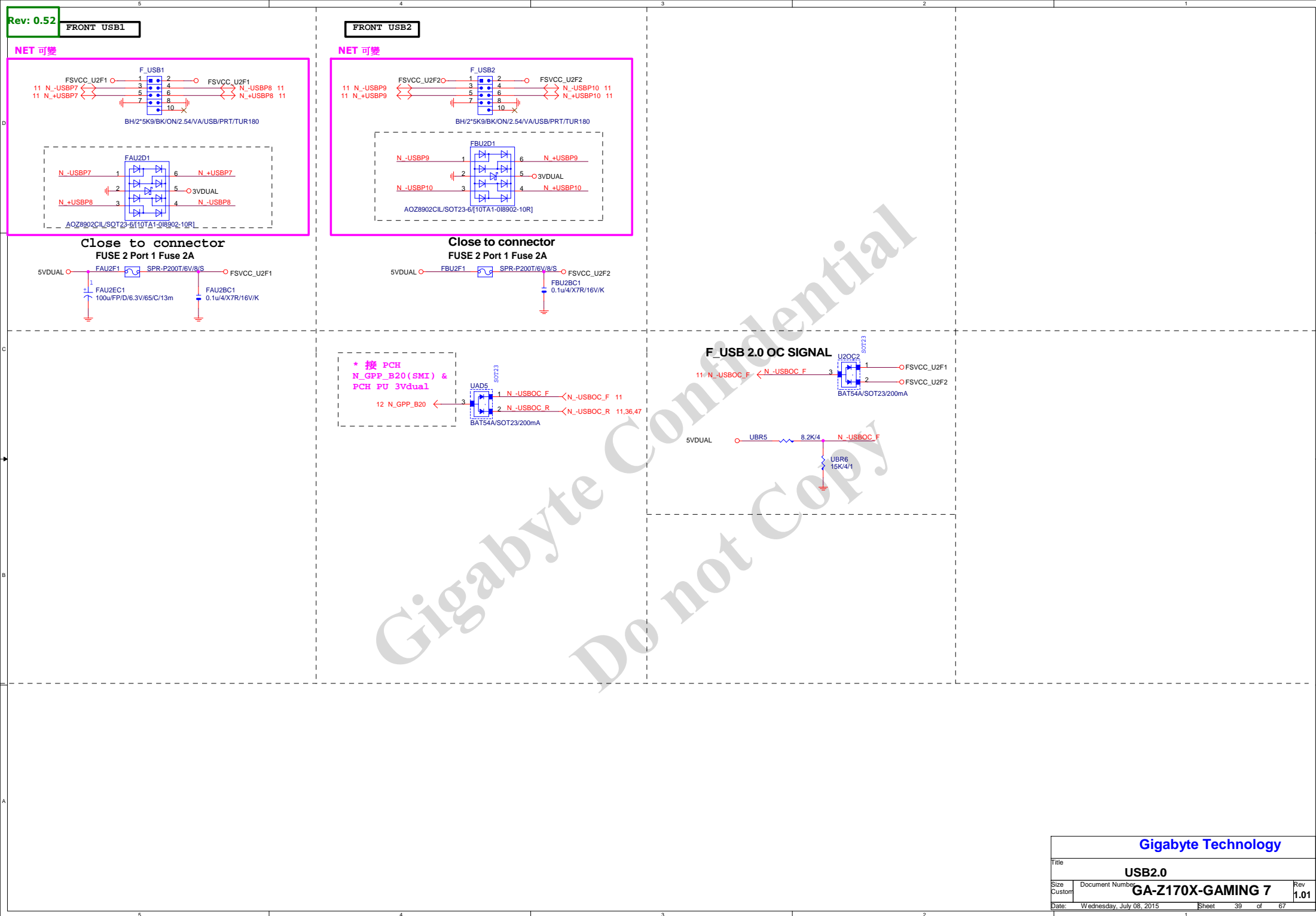
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AUDIO JACK

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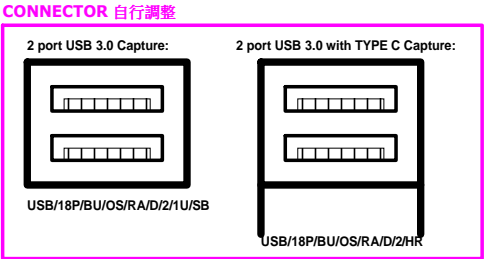
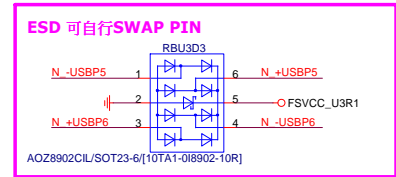
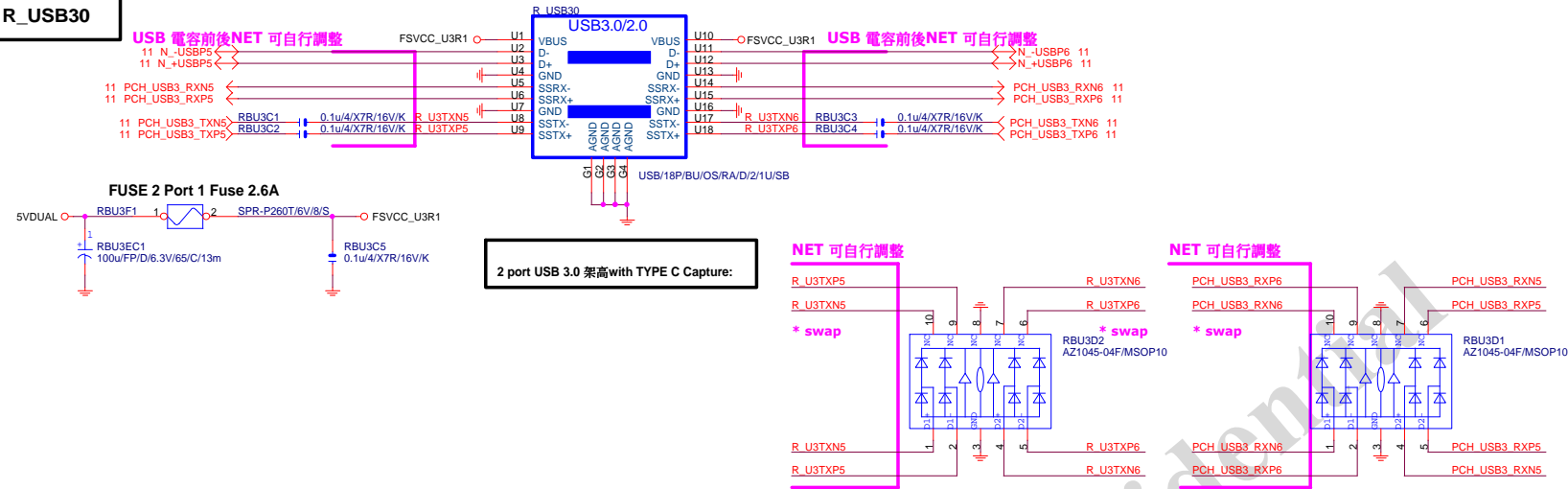


Gigabyte Technology

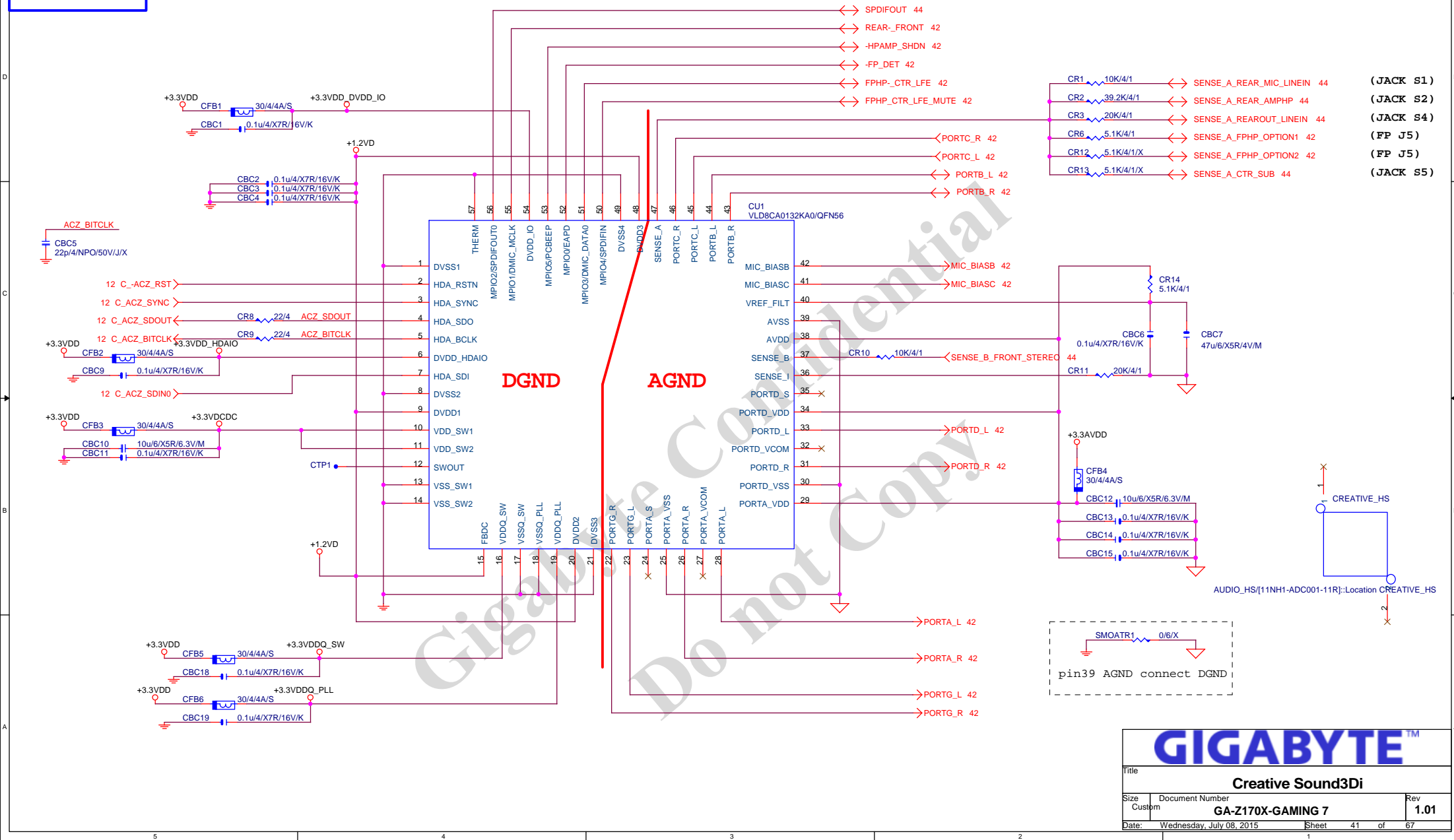
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Size	Document Number	GA-Z170X-GAMING 7	
Custom	Date	Wednesday, July 08, 2015	Sheet 39 of 67

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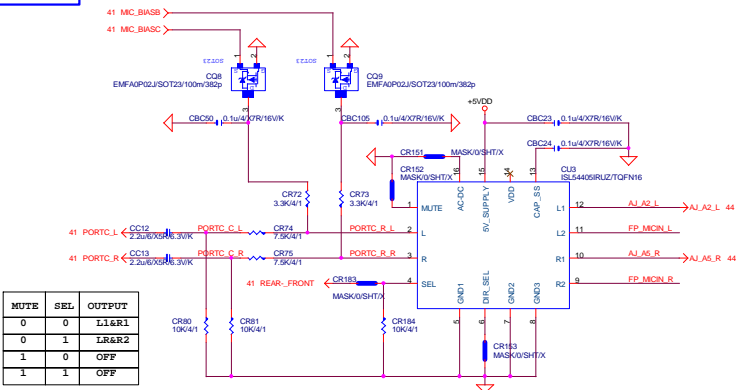
R_USB30



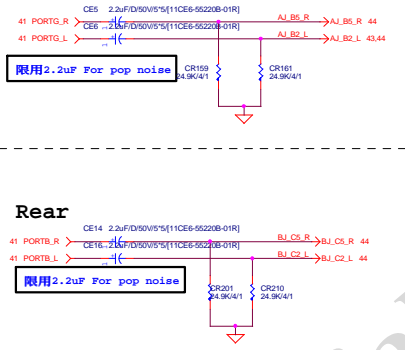
Gigabyte Technology			
Title			
KB_MS_USB3, R_USB30			
Size	Document Number		Rev
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2		1	



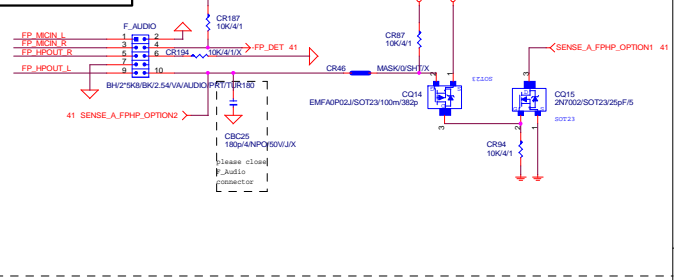
Rear MIC & FP MIC



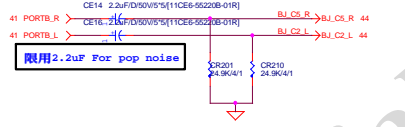
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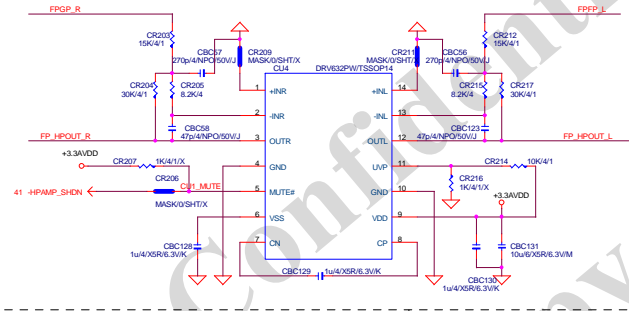
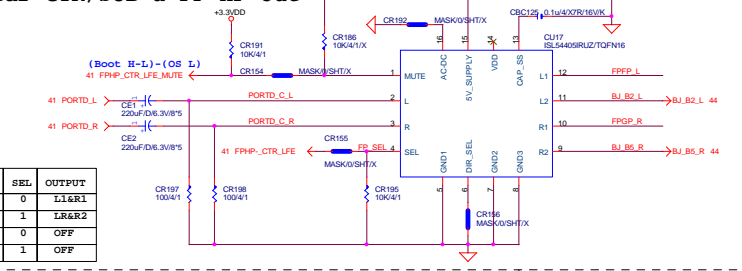
HD Audio FRONT PANEL



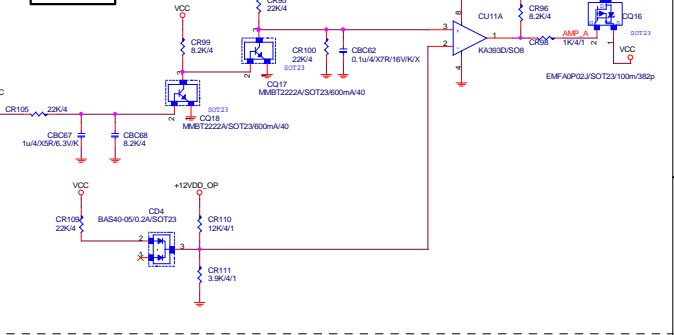
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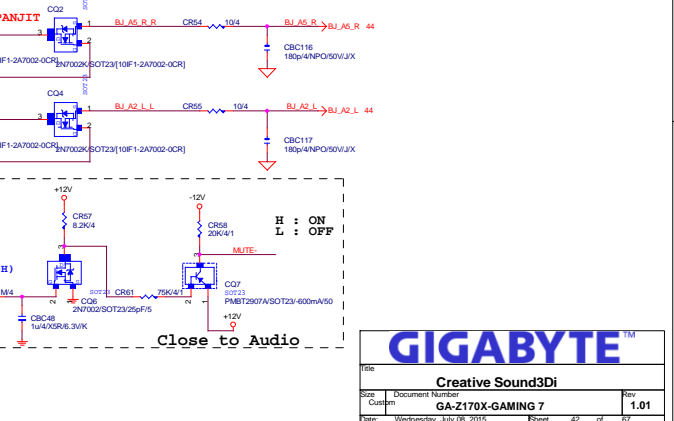
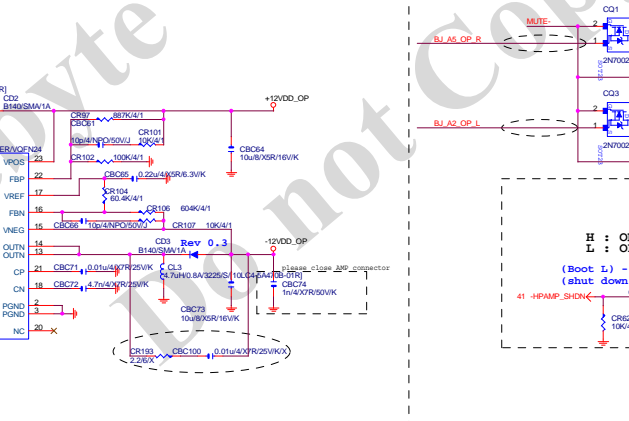
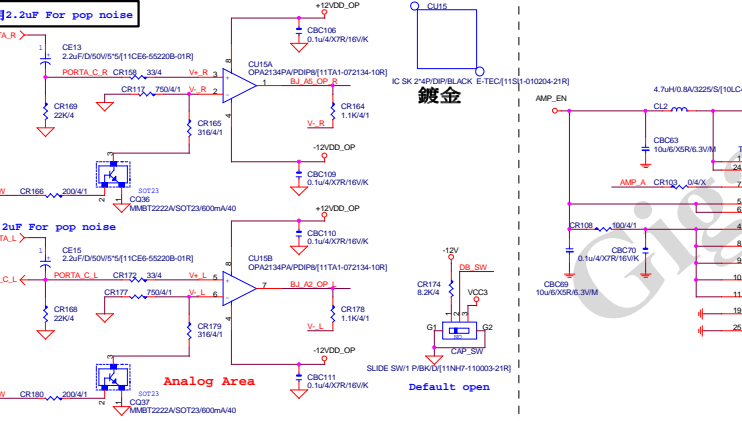
Rear CTR/SUB & FP HP-Out

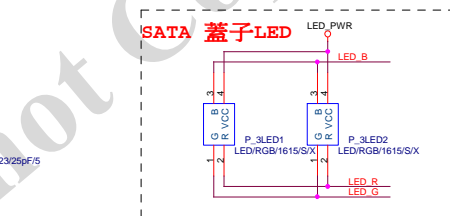
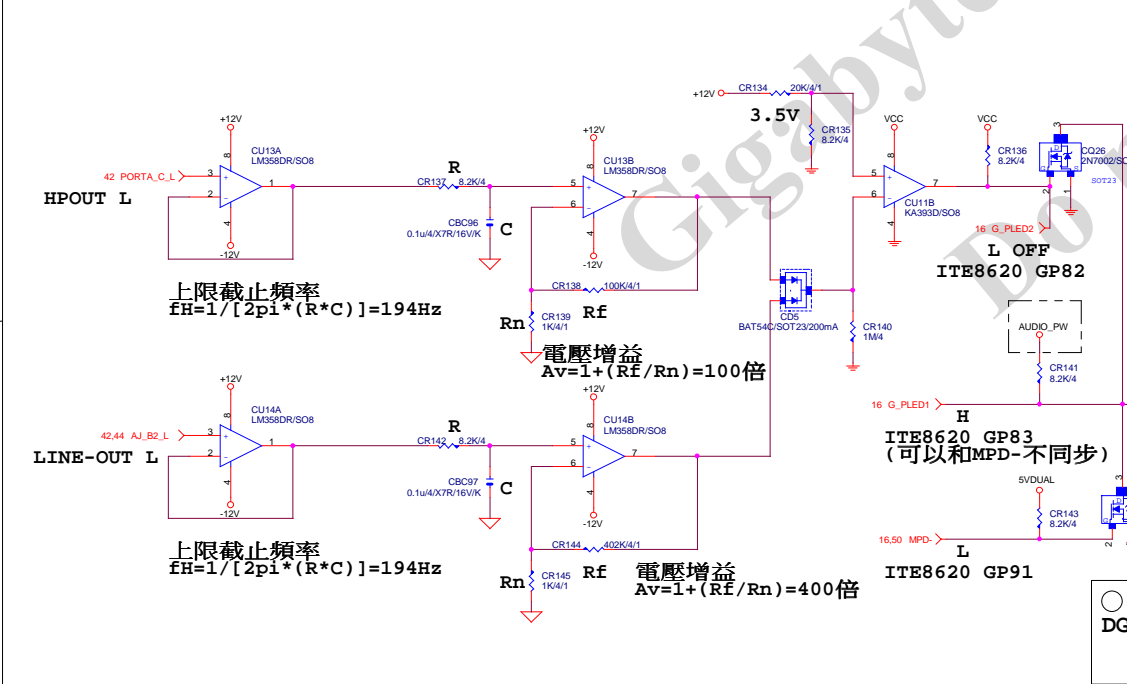
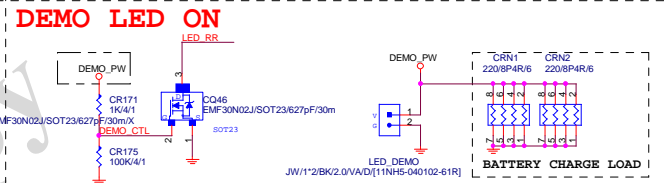
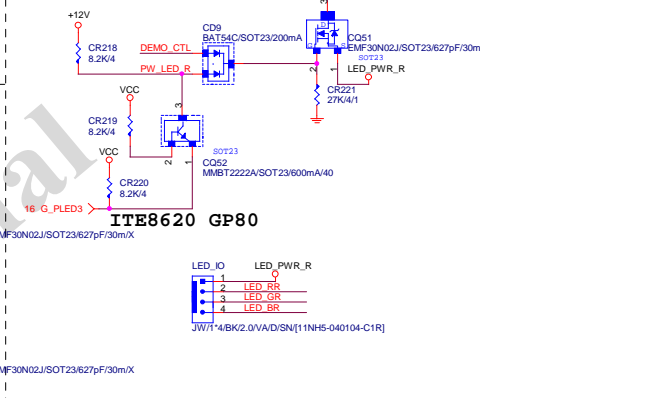
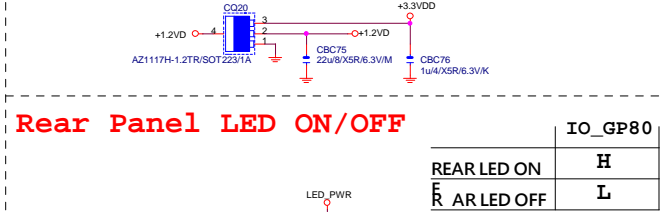
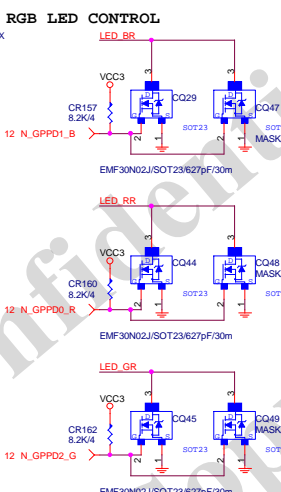
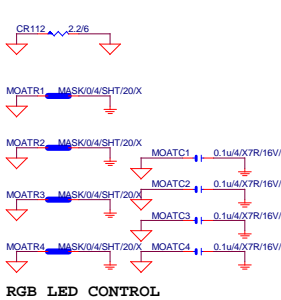
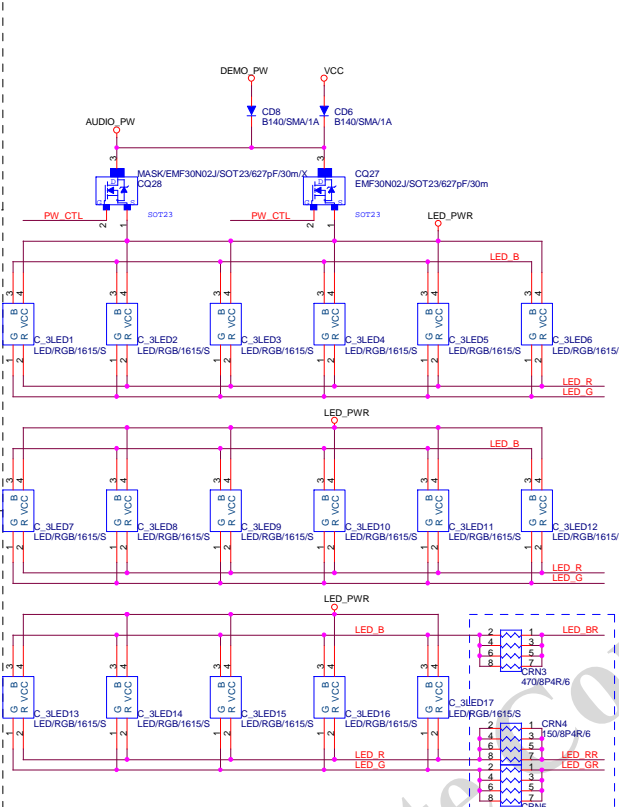
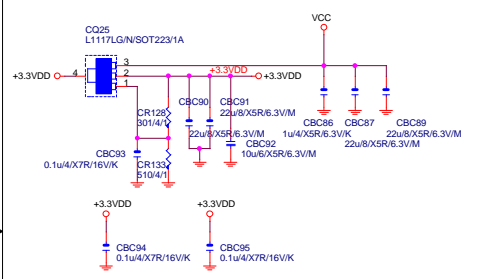
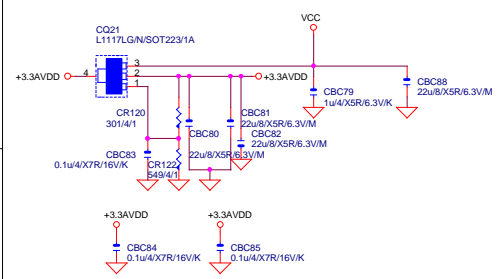
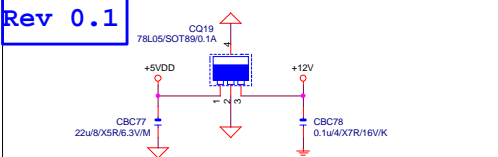


OP反接防燒

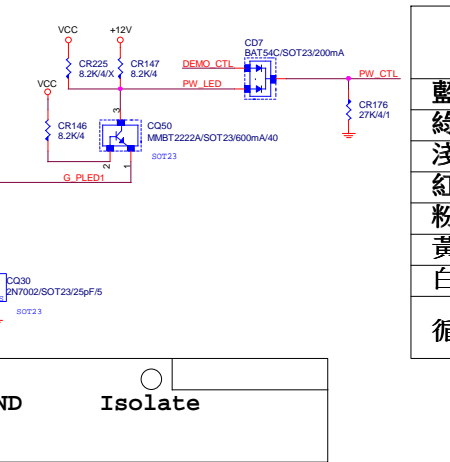


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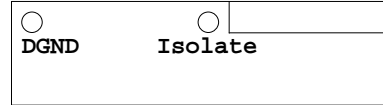


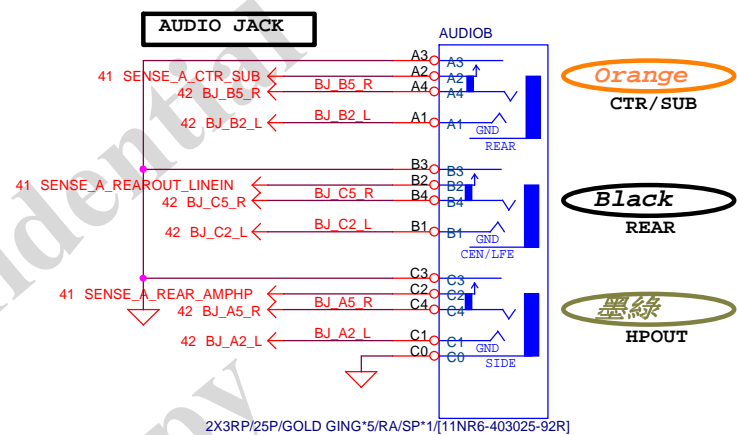
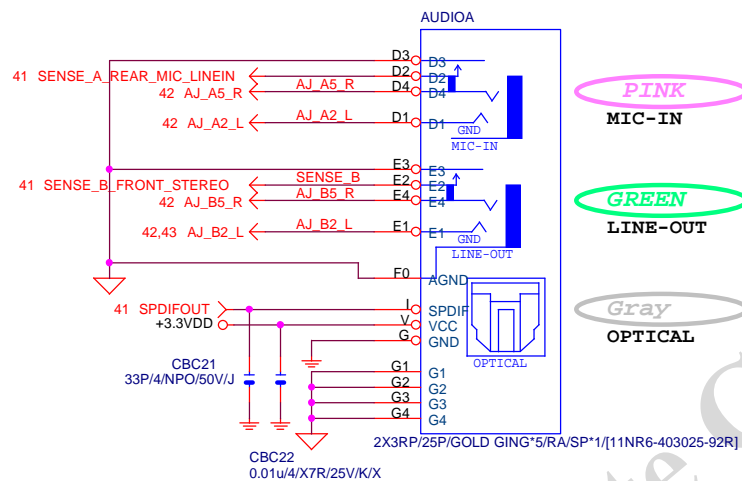


AUDIO LED Control			
	IO GP82	IO GP83	IO GP91
Still Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L



三色 LED Control			
	PCH_GPP_D0(R)	PCH_GPP_D2(G)	PCH_GPP_D1(B)
藍	L	L	H
綠	L	H	L
淺綠	L	H	H
紅	H	L	L
粉紅	H	L	H
黃	H	H	L
白光	H	H	H
循環	順序: 藍-綠-淺綠-紅-粉紅-黃-白光切換間隔時間為 1 秒		



**Gigabyte Technology**

Title

Creative Sound3Di ZxRSize
Custom

Document Number

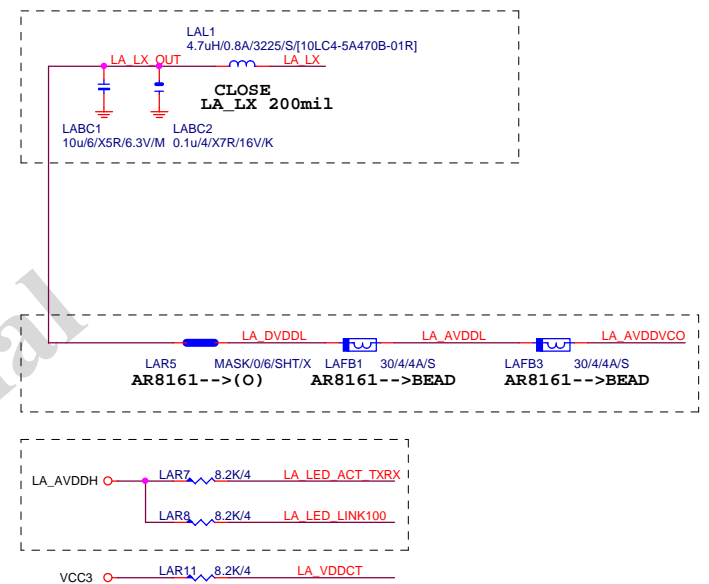
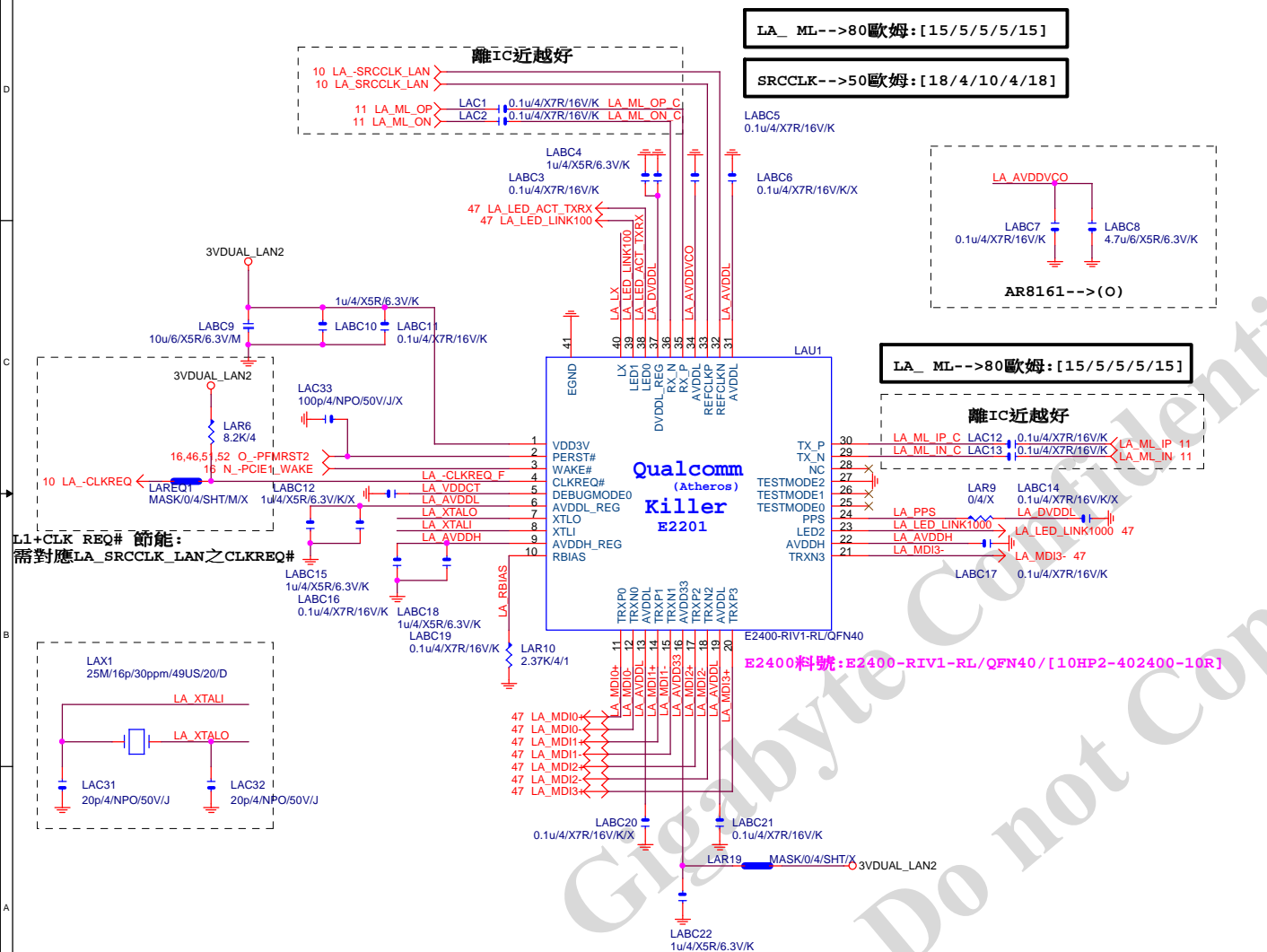
GA-Z170X-GAMING 7

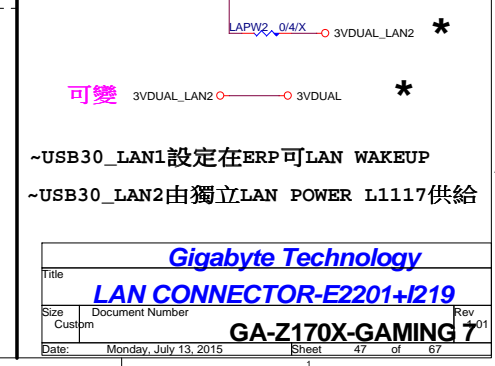
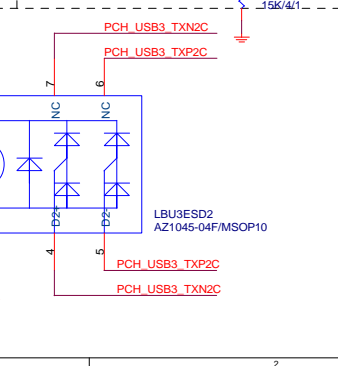
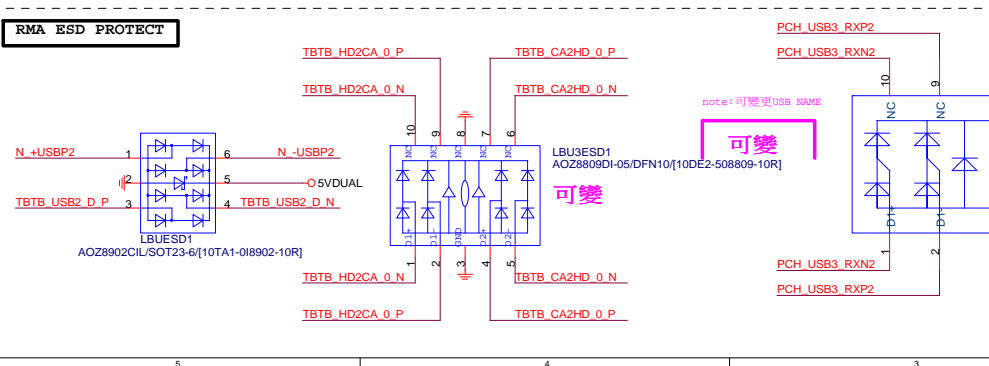
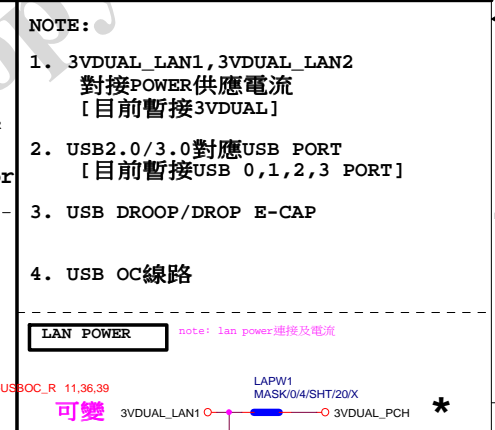
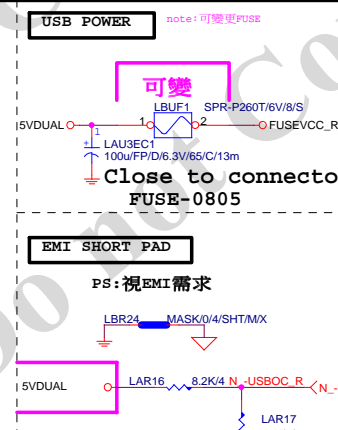
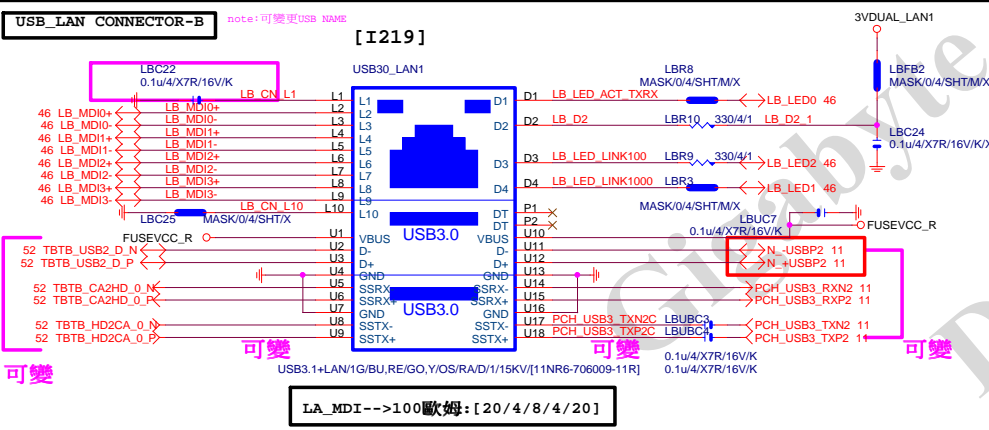
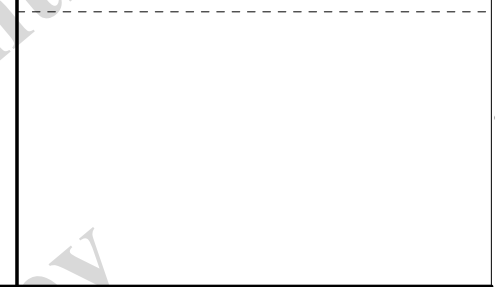
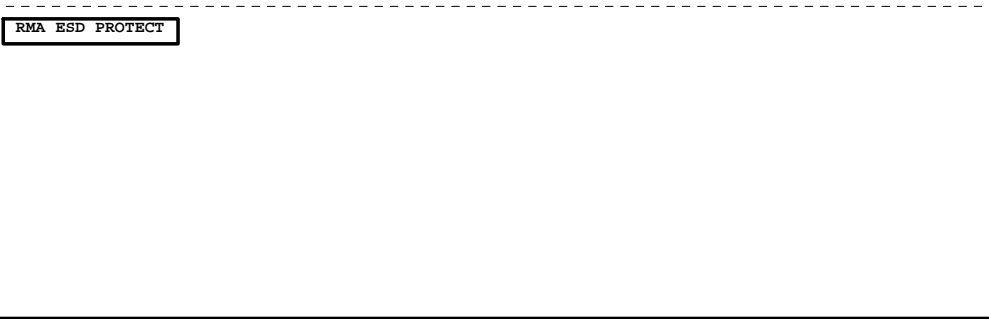
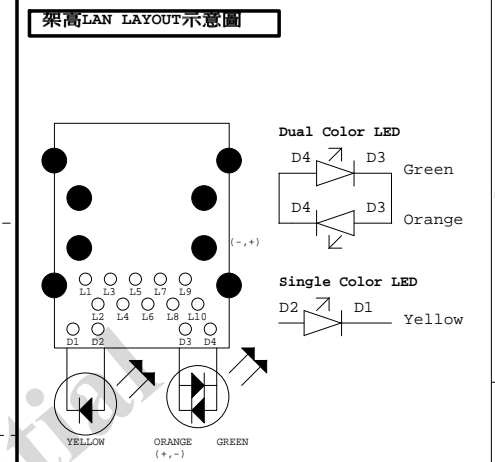
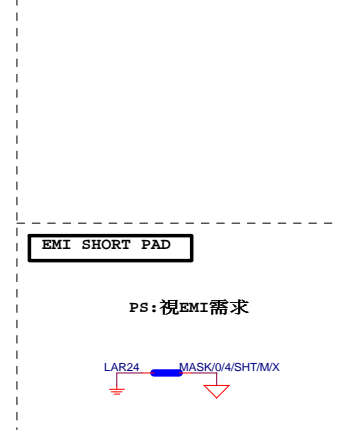
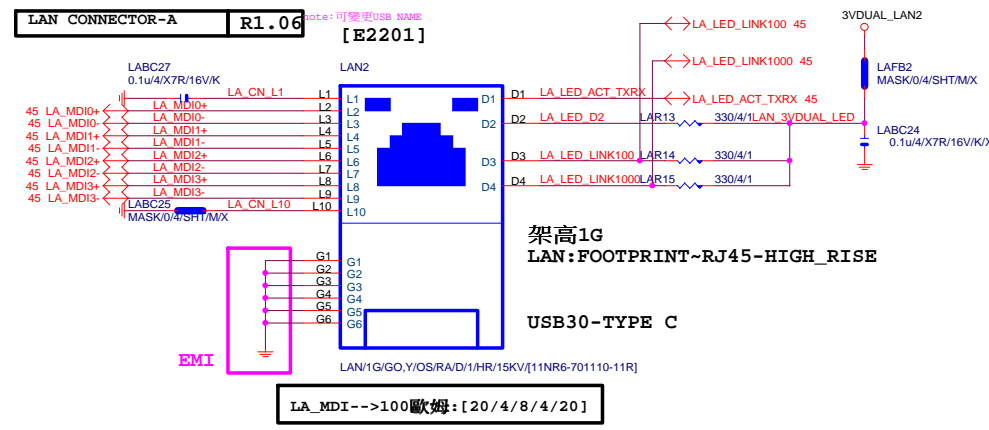
Rev

1.01

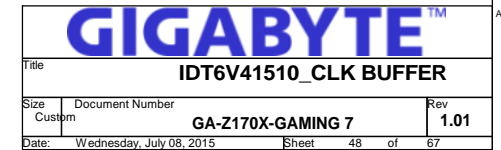
Date: Wednesday, July 08, 2015

Sheet 44 of 67

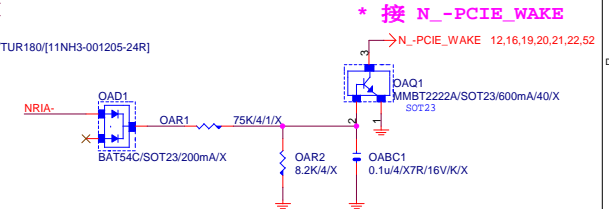
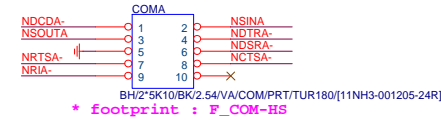
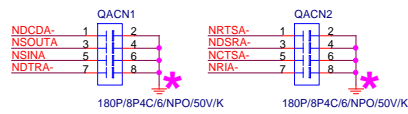
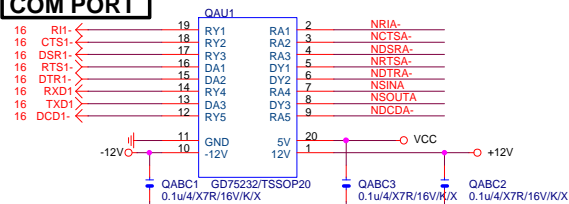




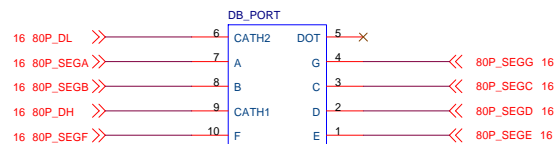
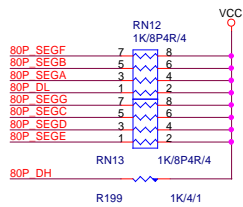
電容共用GND,降低JITTER



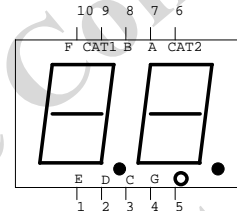
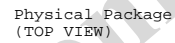
COM PORT



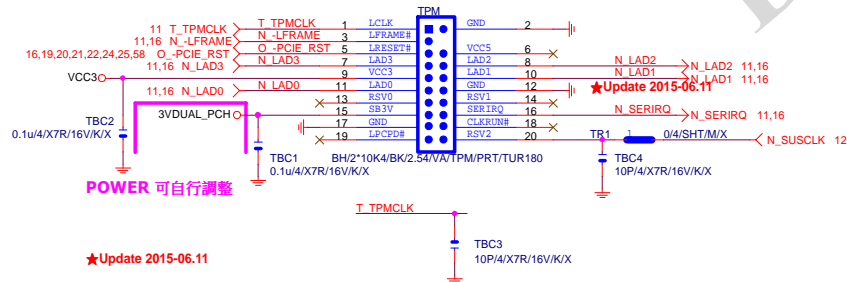
80 PORT



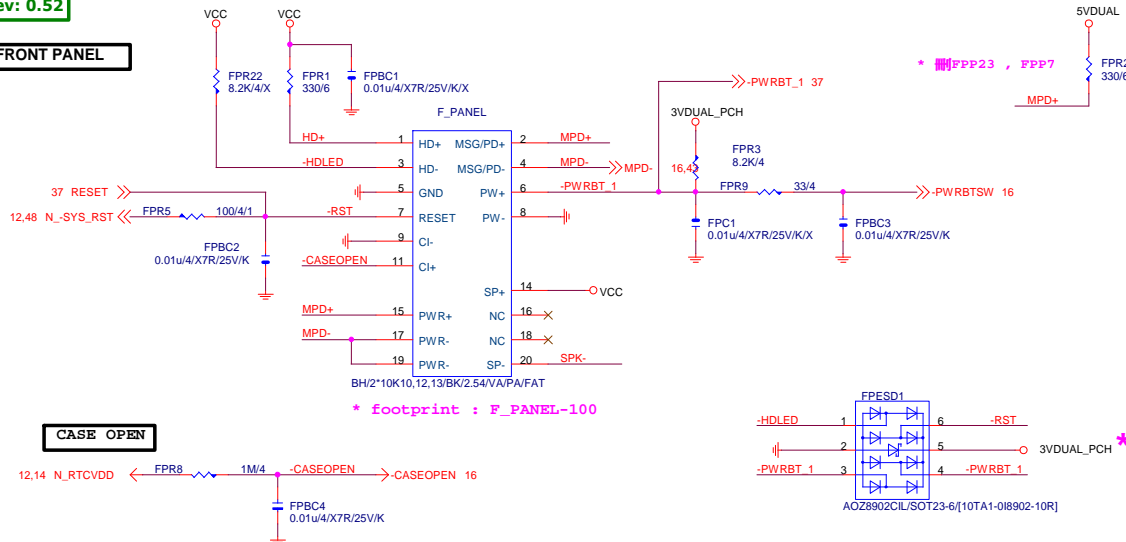
COMMON CATHODE



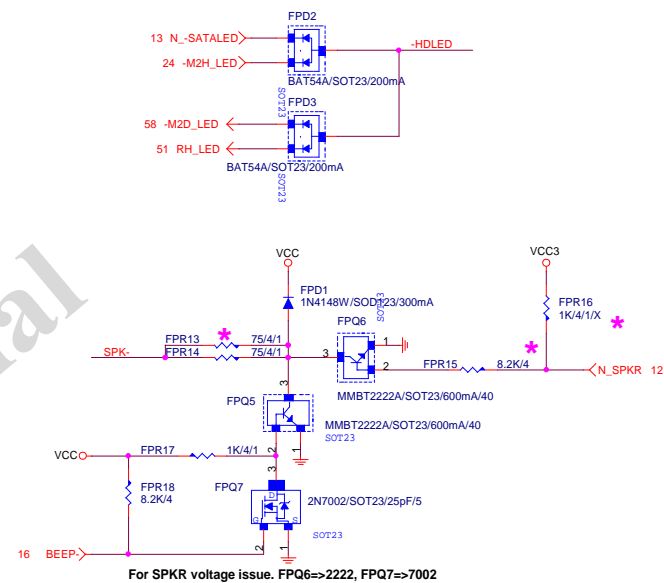
TPM CONNECT



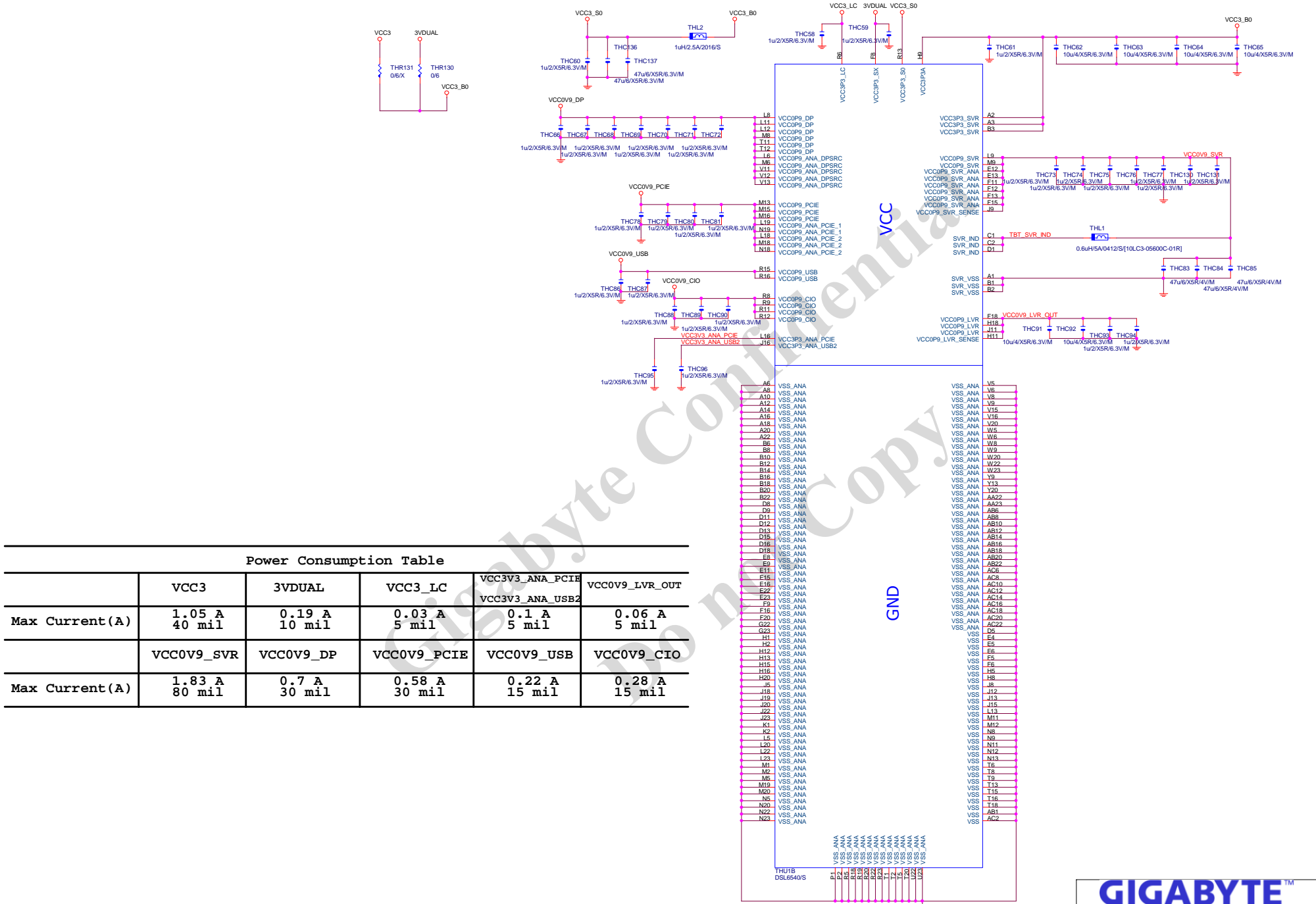
FRONT PANEL



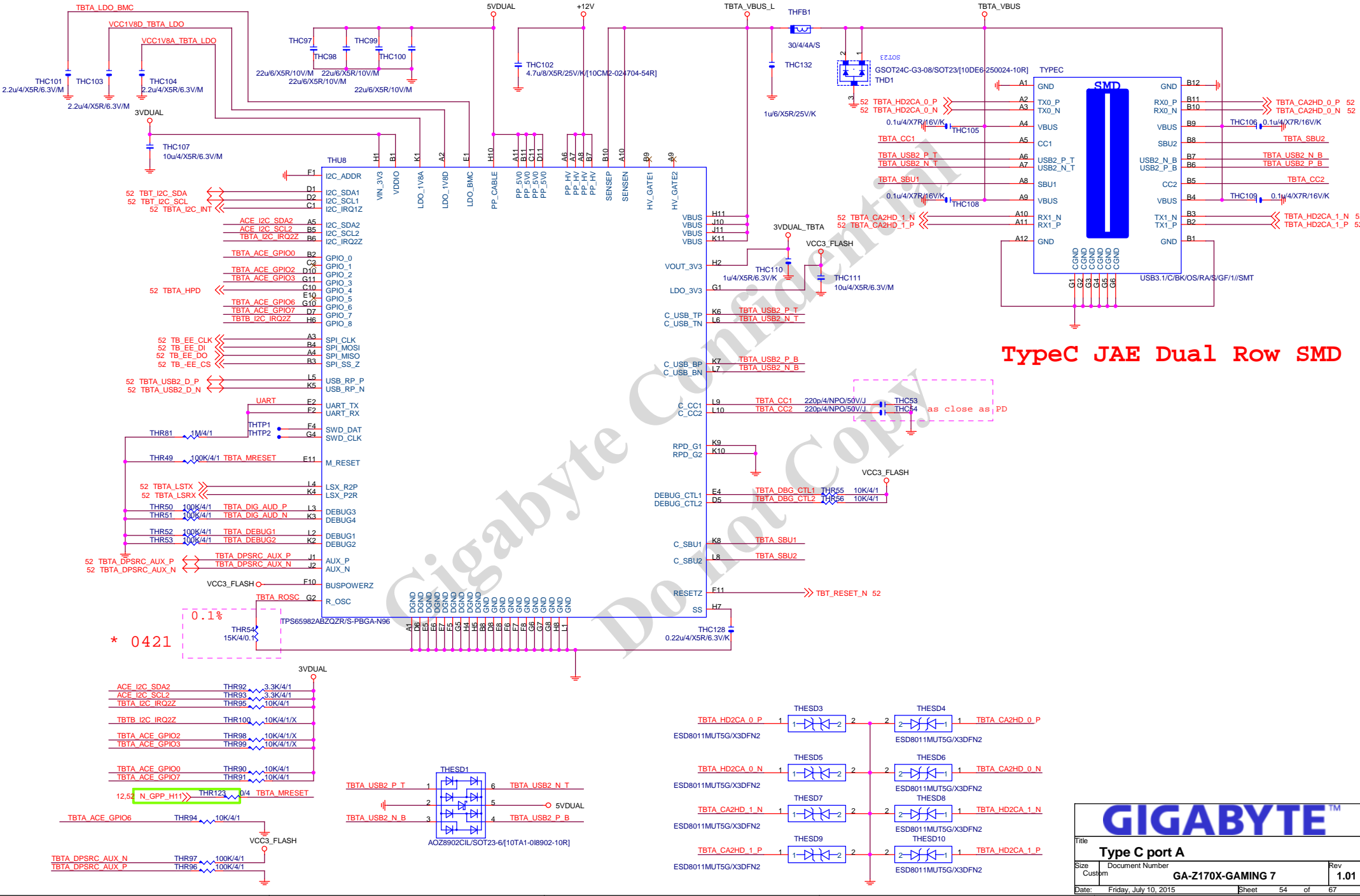
SATA LED SATALED# signal open-collector, pull-up (8.2 kΩ to 10 kΩ) to Vcc3_3





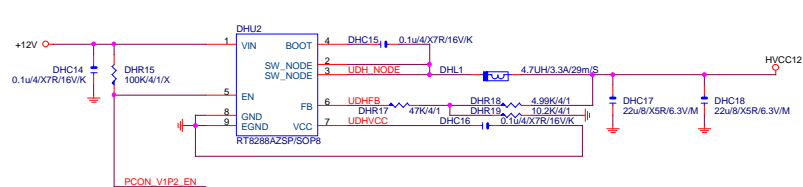


Power Consumption Table					
	VCC3	3VDUAL	VCC3_LC	VCC3V3_ANA_PCIE VCC3V3_ANA_USB2	VCC0V9_LVR_OUT
Max Current(A)	1.05 A 40 mil	0.19 A 10 mil	0.03 A 5 mil	0.1 A 5 mil	0.06 A 5 mil
	VCC0V9_SVR	VCC0V9_DP	VCC0V9_PCIE	VCC0V9_USB	VCC0V9_CIO
Max Current(A)	1.83 A 80 mil	0.7 A 30 mil	0.58 A 30 mil	0.22 A 15 mil	0.28 A 15 mil

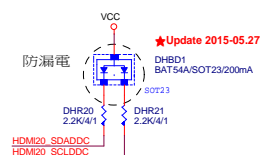


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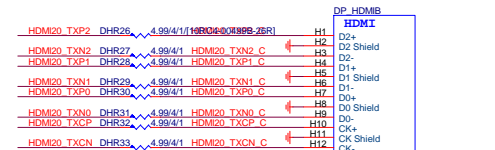
GIGABYTE™		
Title TBT _ HDMI 2.0		
Size Custom	Document Number GA-Z170X-GAMING 7	Rev 1.01
Date: Wednesday, July 08, 2015	Sheet 55 of	67



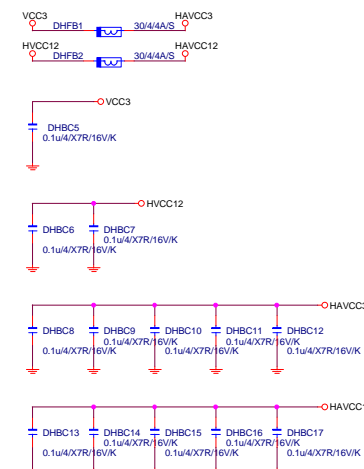
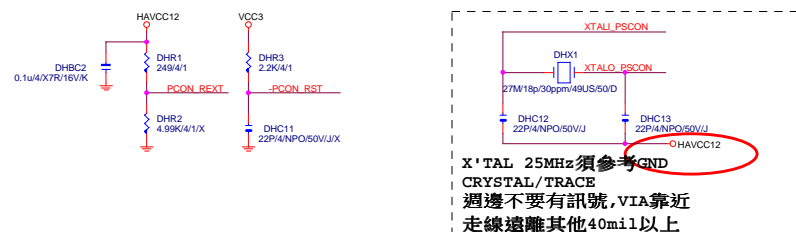
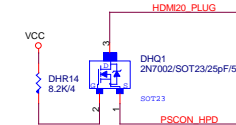
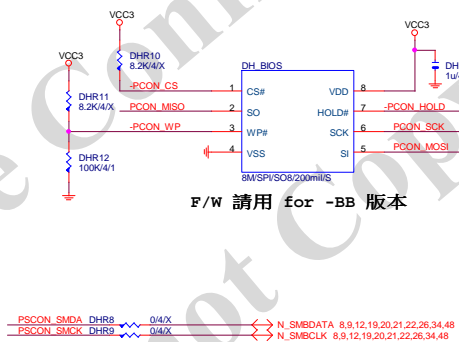
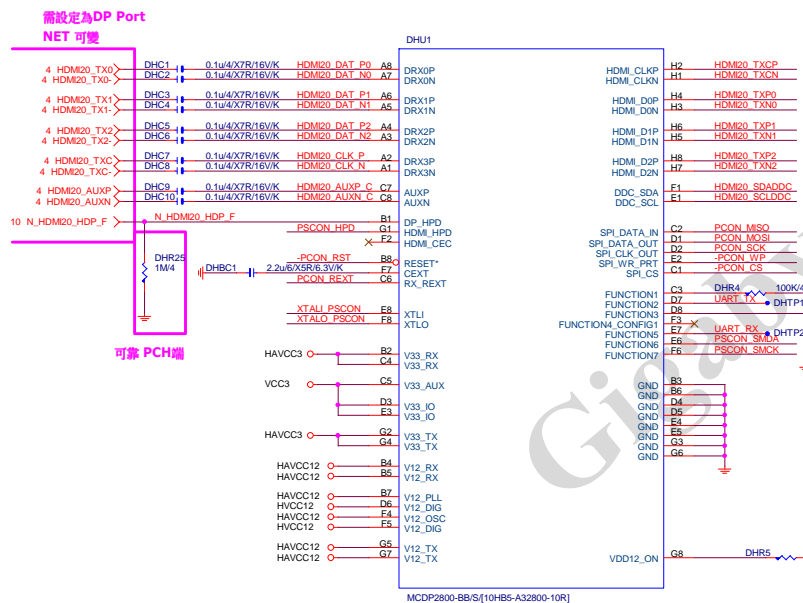
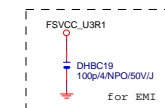
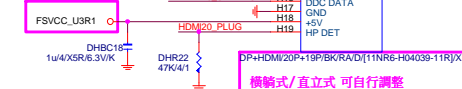
PCH端



Display Port with HDMI, or HDMI only.



Power 可變



M.2 Lane2 from PCH port19

59 M2_PCIE_TN13 < 0.22u/4/X5R/6.3V/K M2DC15 M2_PCIE_TN13_C
59 M2_PCIE_TP13 < 0.22u/4/X5R/6.3V/K M2DC16 M2_PCIE_TP13_C

M.2 Lane2 from PCH port20

59 M2_PCIE_TN14 < 0.22u/4/X5R/6.3V/K M2DC9 M2_PCIE_TN14_C
59 M2_PCIE_TP14 < 0.22u/4/X5R/6.3V/K M2DC10 M2_PCIE_TP14_C

M.2 Lane3 from PCH port21

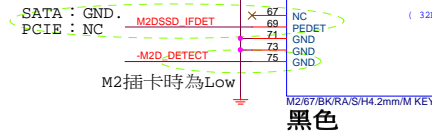
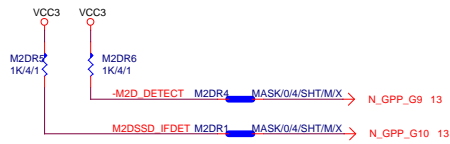
59 M2_PCIE_IN15 < 0.22u/4/X5R/6.3V/K M2DC35 M2_PCIE_TN15_C
59 M2_PCIE_IP15 < 0.22u/4/X5R/6.3V/K M2DC36 M2_PCIE_TP15_C

M.2 Lane4 from PCH port22

59 M2_PCIE_IP16 < 0.22u/4/X5R/6.3V/K M2DC33 M2_PCIE_TN16_C
59 M2_PCIE_TP16 < 0.22u/4/X5R/6.3V/K M2DC34 M2_PCIE_TP16_C

需與M2_-CLKREQ對應

支援SATA and M.2 function



黑色

M.2 有插卡 / 沒插卡	M.2插卡插卡? GPP_G9	SATA Express 插卡插卡? GPP_E0/E1/E2/F0	IO19 (S0)	IO20 (S1)	IO21 (S2)	IO22 (S3)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA	SATA	SATA	SATA (For M2)
		SATA Express (Low)	SATA Express (For S.E.0)	SATA	SATA	SATA (For M2)
	PCIe Mode (Hi)	SATA (Hi)		PCIEx4 (For M.2)		
		SATA Express (Low)		PCIEx4 (For M.2)		
沒插卡 (Hi)	Don't Care (Hi)	SATA (Hi)	SATA (S0)	SATA (S1)	SATA (S2)	SATA (S3)
		SATA Express (Low)	SATA Express (For S.E.0)	SATA Express (For S.E.1)		

M.2-SATA(S3)+SATA S0&S1&S2

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G9	L	GPP_C20	L
GPP_G10	L	GPP_C19	L
GPP_E0/E1/E2/F0	H (SATA)	GPP_C21	H

M.2-SATA(S3)+S.E.D(S0+S1)

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G9	L	GPP_C20	L
GPP_G10	L	GPP_C19	L
GPP_E0/E1/E2/F0	L (S.E.)	GPP_C21	H

M.2X4

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G9	L	GPP_C20	H
GPP_G10	H	GPP_C19	H
GPP_E0/E1/E2/F0	N/A	GPP_C21	H

M.2X2+S.E.D(S0+S1)

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G9	L	GPP_C20	L
GPP_G10	H	GPP_C19	H
GPP_E0/E1/E2/F0	L	GPP_C21	H

M.2X2+SATA S0&S1

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G9	L	GPP_C20	L
GPP_G10	H	GPP_C19	H
GPP_E0/E1/E2/F0	H	GPP_C21	H

M.2沒插卡+SATA S0~S3

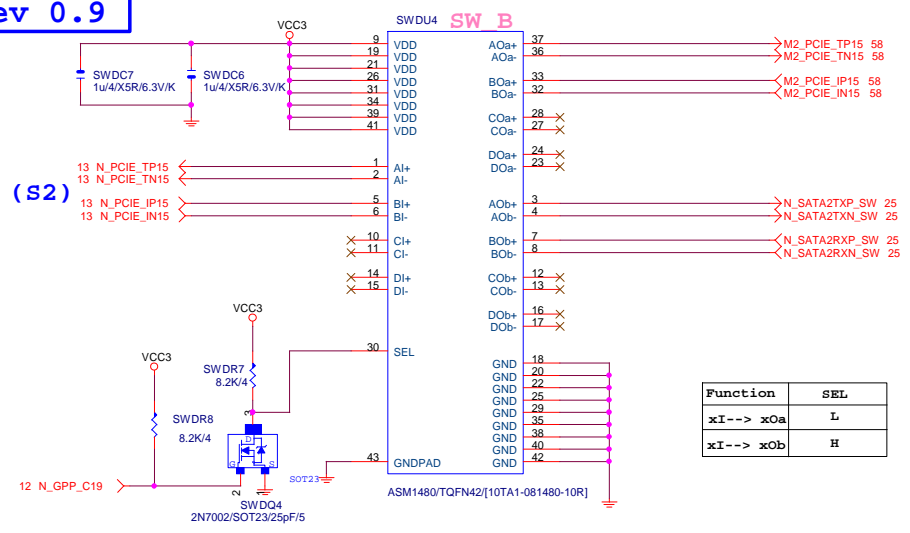
WHEN	PCH GPIO	SETUP	SWITCH
GPP_G9	H	GPP_C20	L
GPP_G10	H	GPP_C19	L
GPP_E0/E1/E2/F0	H	GPP_C21	L

M.2沒插卡+S.E.C&S.E.D

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G9	H	GPP_C20	L
GPP_G10	H	GPP_C19	L
GPP_E0/E1/E2/F0	L	GPP_C21	L

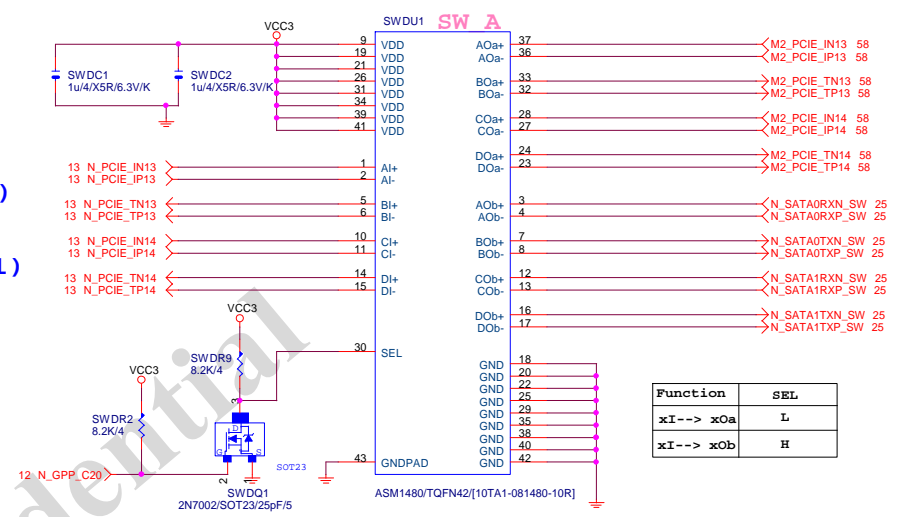
GIGABYTE Technology			
Title	M.2 X4		
Size	Document Number	Rev	
Custom	GA-Z170X-GAMING 7	1.01	
Date:	Wednesday, July 08, 2015	Sheet	58 of 67

PCH (S2)

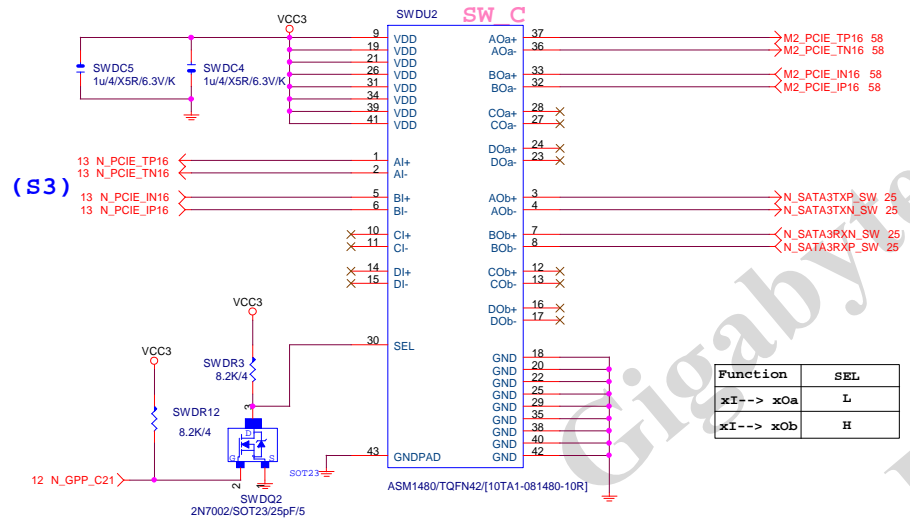


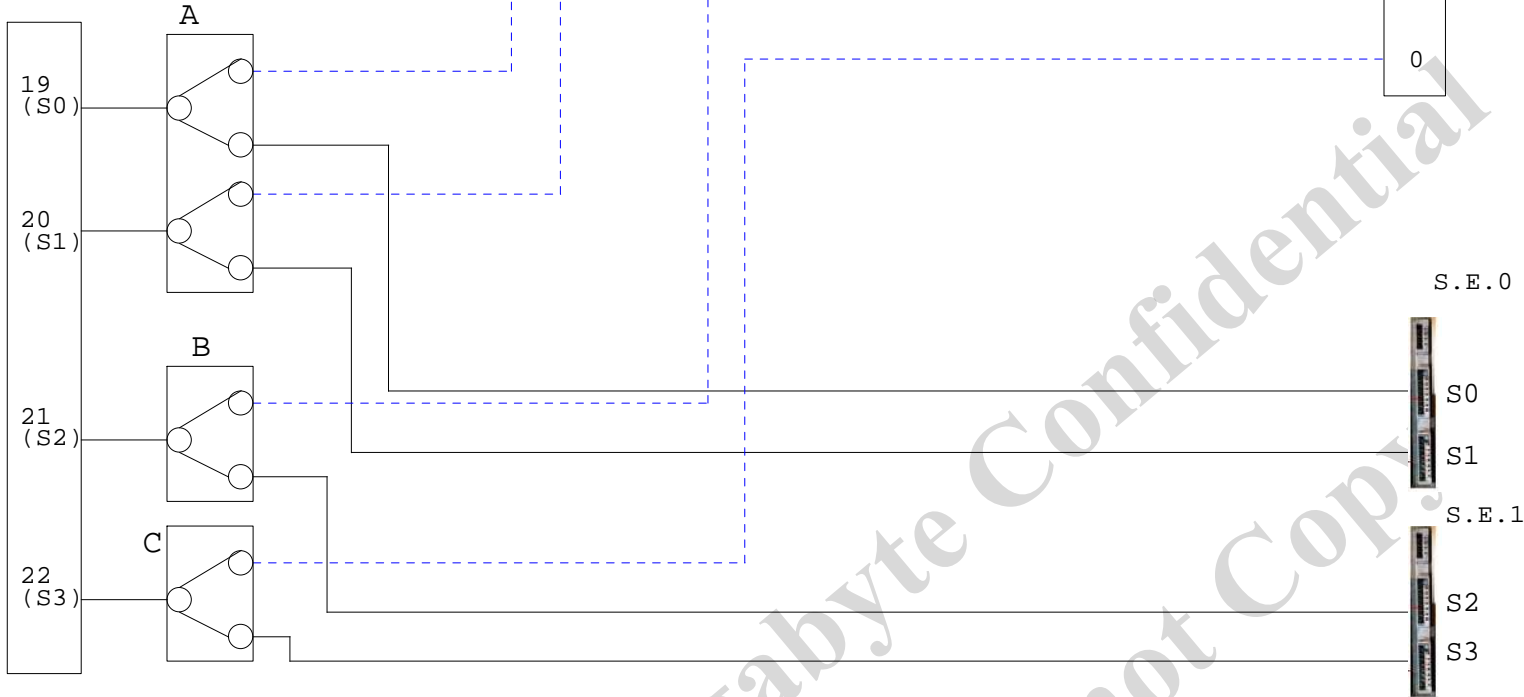
PCH (S0)

PCH (S1)



PCH (S3)





3顆SW IC,

當使用M.2 (X2),
EXPRESS只可限定使用 S0&S1

ABC的切換方式:

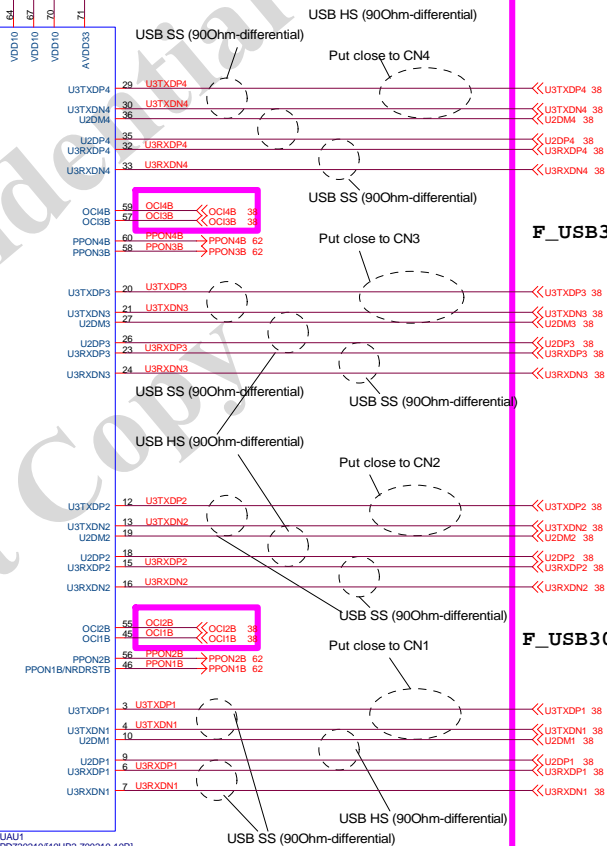
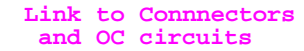
下下下 : SE1+SE0

上上上 : M.2 X4

下上上 : M.2x2 + SE S0/S1

下下下上 : M.2 X1 + SE
S0/S1/S2

Title			
BLOCK DIAGRAM			
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	3	2	1



F_USB30_1

F_USB30_2

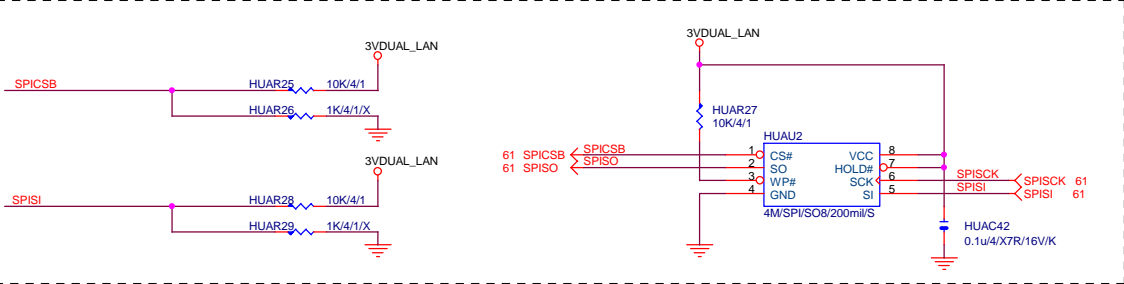
The over current protection of VDD10 is detected with ILIM pin (No.53) using 180 mOhm of DC resistance (DCR) of inductor L1.
HAR16 should be choosing so that the total resistance of DCR(L1) becomes 180 mOhm.
----> $HAR16 + DCR(HAL1) = 180 \text{ [mOhm]}$

uPD720210

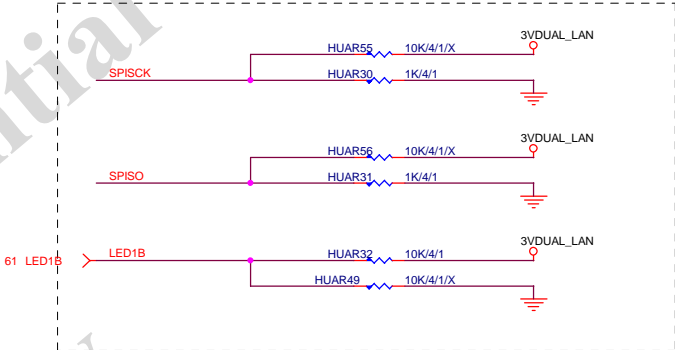
- Put close to U1
- Short and broad connection to GND
- Don't split R32 into multiple resistors.

Single USB3 HUB used

External SPI ROM ; SPI ROM attached mode

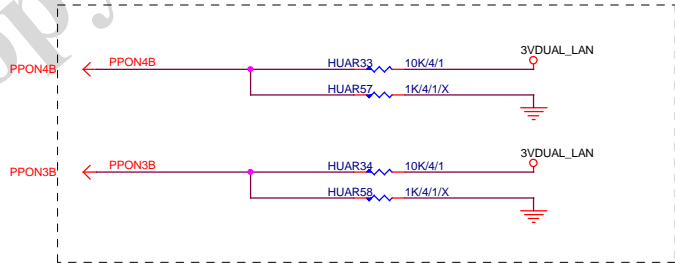


Battery Charging

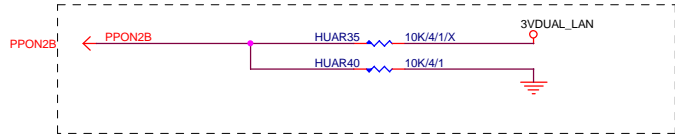


Number of Ports ; 4Ports mode

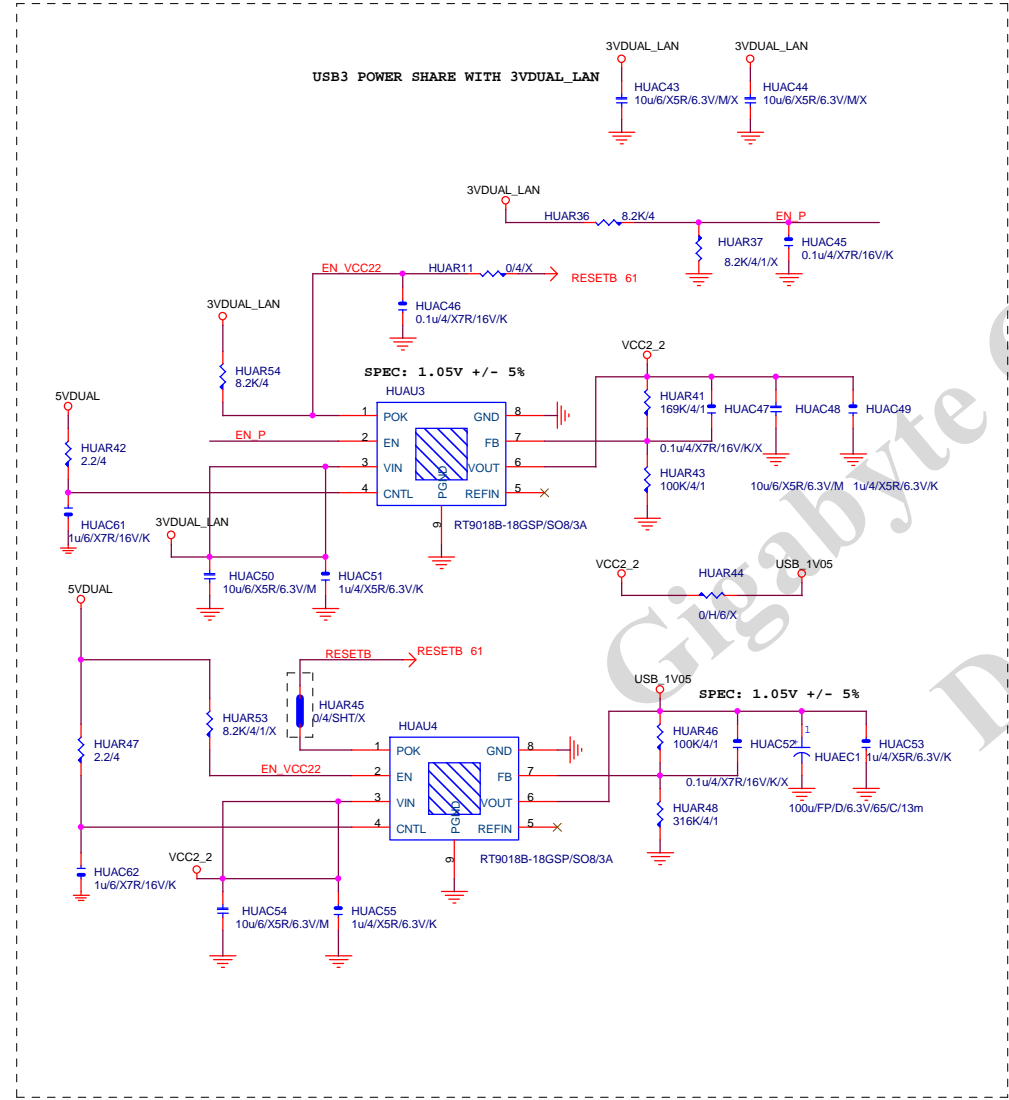
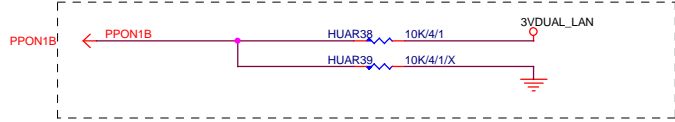
PPON3B / PPN4B : H / H (4 port)
PPON3B / PPN4B : L / L (2 port)



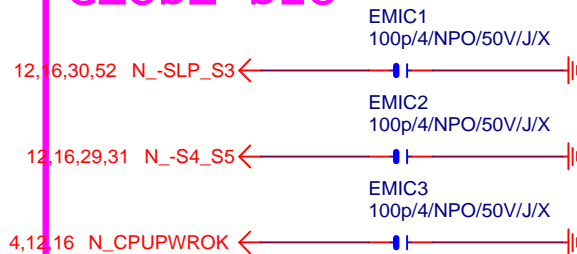
#5 VBUS Power Control ; Individual mode



PPON1B Pin Function ; Port1 PPONB mode



CLOSE SIO

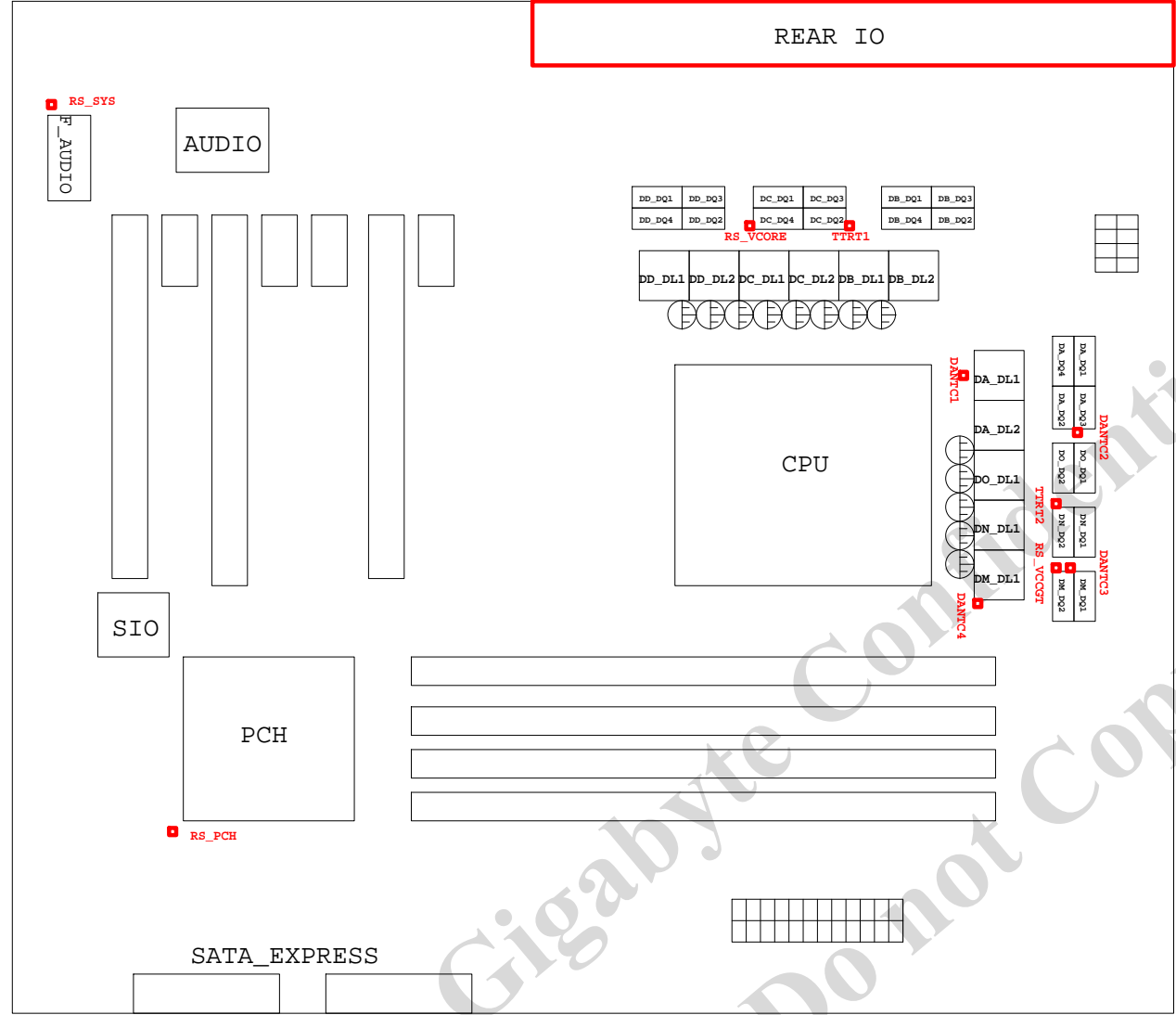


CLOSE PCH



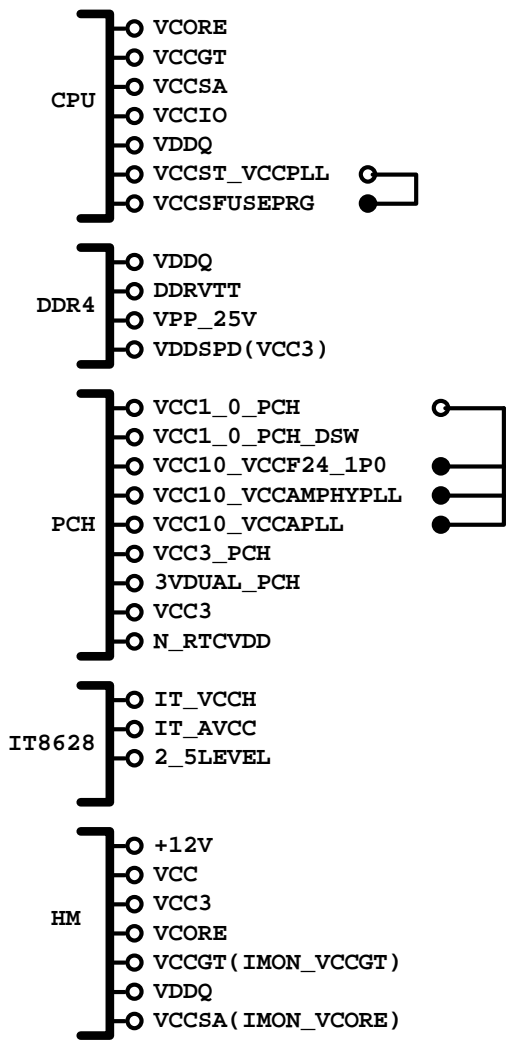
GIGABYTE™

Title			EM/ESD		
Size	Document Number				Rev
A	GA-Z170X-GAMING 7				1.01
Date:		Wednesday, July 08, 2015		Sheet	63 of 67

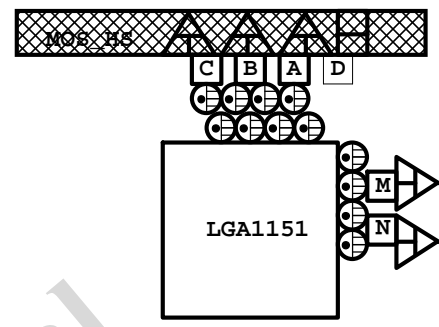
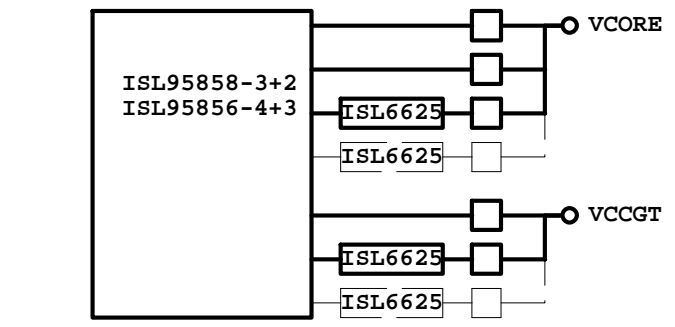


熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL2	Differential
DANTC2	DA_DQ3	Differential
DANTC3	DM_DQ2	Differential
DANTC4	DM_DL1	Differential
RS_VCORE	DC_DQ4	N/A
RS_VCCGT	DM_DQ2	N/A
TTRT1	DC_DQ2	N/A
TTRT2	DN_DQ2	N/A
RS_PCH	PCH	N/A
RS_SYS	F_AUDIO	N/A

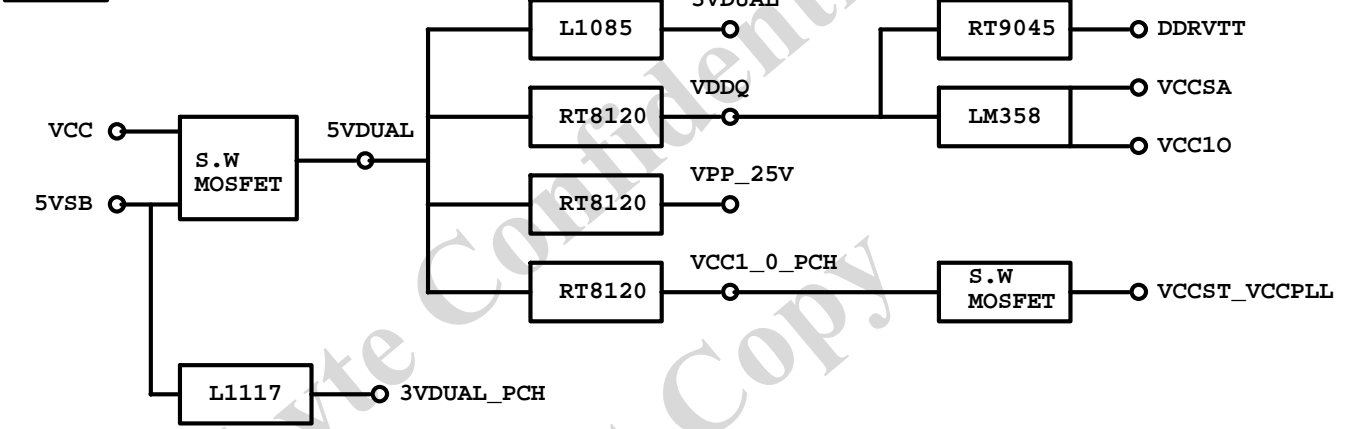
POWER BLOCK MAP



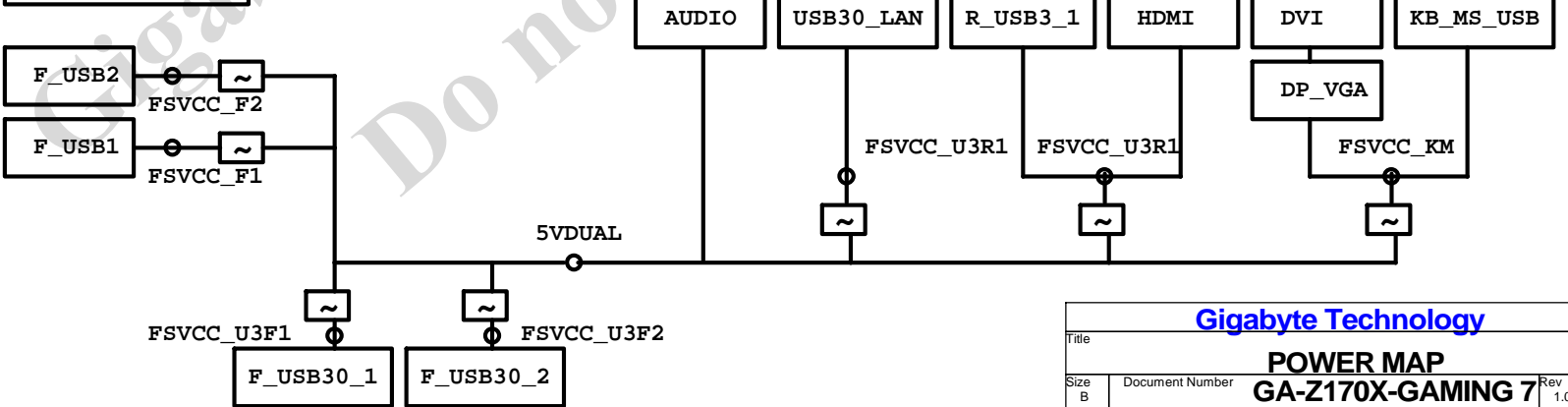
VCORE/VCCGT



POWER



FUSE POWER F/R



固態電容料號.請自行修改

日系黑色固態	Capture Value
11C02-C85600-01R	560u/FP/D/6.3V/68/C/8m
11C05-C82700-01R	270u/FP/D/16V/88/C/12m
11C05-C61000-01R	100u/OS/D/16V/66/C/30m
11C02-C51000-01R	100u/FP/D/6.3V/65/C/13m

日系一般固態	Capture Value
11C02-685600-01R	560u/FP/D/6.3V/68/8m
11C05-882700-01R	270u/FP/D/16V/88/12m
11C05-661000-03R	100u/OS/D/16V/66/30m
11C02-651000-02R	100u/OS/D/6.3V/66/30m

台系固態	Capture Value
11C02-661000-09R	100u/OS/D/6.3V/66/A/35m
11C05-691000-09R	100u/OS/D/16V/69/A/35m
11C05-8C2700-09R	270u/FP/D/16V/8C/A/10m
11C02-695600-09R	560u/FP/D/6.3V/69/A/11m

IRON CHOKE

	料號	Capture Value	SIZE	Footprint	
DIP	11LC5-M4500C-01R	0.5uH/40A/IMD109/M/D	10*10	CHOKE05U-40A-1PQ-3	閃電P
DIP	11LC5-M4500C-11R	0.5uH/40A/IMD109/M/NP/D	10*10	CHOKE05U-40A-1PQ-3	無閃電P
DIP	11LC5-M2500C-01R	0.5uH/20A/IMD0809/M/D	8*8	CHOKE1U-R50M-IF	

Skylake Iron Choke閃電P導入機種如下:
[1] Z170/H170 機種全部導入
[2] B150/H110Gaming機種導入, 其餘不導入

Ferrite

	料號	Capture Value	SIZE	Footprint
DIP	11LC5-F3500C-11R	0.5uH/32A/INCG109/FSI/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-F2500C-11R	0.5uH/25A/INC0809/F/D	8*8	CHOKE1U-R50M-IF
SMD	10LC5-F4300C-01R	0.3uH/40A/SIUC/FR/S	10*7	CHOKE11X8MM-SMD

BEAD

	料號	Capture Value	SIZE	Footprint
DIP	10LFB-15470A-01R	47/4030/15A/S	4*3	BEADC8B-BPH_SMD

PWM料號

		料號	Capture Value	Footprint
PWM	ISL95856	10TA1-695856-01R		IC52QFN-6x6-G
PWM	ISL95858	10TA1-695858-01R		IC52QFN-6x6-G
PWM	IR35201	10TA1-635201-00R		IC56QFN-9VRS4339
PWM	IR3570	10TA1-603570-00R		IC40MLFP-ISL95835
PWM	RT8237C/D	10TA1-608237-01R		IC10DFN-NIS5132

REGULATOR

		料號	Capture Value	Footprint
	NCT3103S	10GL2-203103-01R	NCT3103S/SOP8/2A	IC8-EP50IC

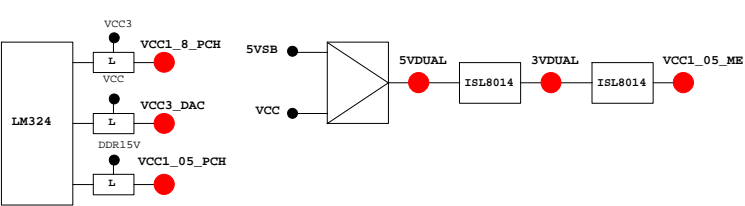
GIGABYTE™			
Title RT8120_DDR4 POWER			
Size Custom	Document Number GA-Z170X-GAMING 7		Rev 1.01
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PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	N/A
GP2/PIRQ#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	PCIEX1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN		GPI	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	GPI	GPIO8	N/A
GP9/OC5#	STBY		NATIVE	USB OC5#	N/A
GP10/OC6#	STBY		NATIVE	USB OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	USB PWR protect	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	GPIO12	N/A
GP13	STBY	L	GPI	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(TLS Enable)	P/U 8.2K 3VDUAL
GP16	MAIN		GPI	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	GPIO17	P/U 8.2K VCC3
GP18	MAIN		GPI	Mobile Only	N/A
GP19	MAIN		GPI	GPIO19	P/U 8.2K VCC3
GP20	MAIN		GPI	GPIO20	P/U 8.2K VCC3
GP21	MAIN		GPI	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	GPIO22	P/U 8.2K VCC3
GP23	MAIN		GPI	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#	N/A
GP25	STBY			Mobile Only	N/A
GP26	STBY			Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	PWR LED	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	Mobile Only	N/A
GP31	STBY	H-Z	GPI	Mobile Only	N/A
GP32	MAIN	H	GPO	N/A	N/A
GP33	MAIN	H	GPO	N/A	N/A
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	-ACZ_DET	P/U 8.2K VCC3
GP36	MAIN		GPI	N/A	N/A
GP37	MAIN		GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	GPIO39	P/U 8.2K VCC3
GP40	STBY		NATIVE	USB OC1#	N/A
GP41	STBY		NATIVE	USB OC2#	N/A
GP42	STBY		NATIVE	USB OC3#	N/A
GP43	STBY		NATIVE	USB OC4#	N/A
GP44	STBY	L	NATIVE	GPIO44	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46	P/U 8.2K 3VDUAL
GP47	STBY			Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48	P/U 8.2K 3VDUAL
GP49	MAIN	H-Z	IN	GPIO49	P/U 8.2K 3VDUAL
GP50	MAIN		NATIVE	-REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	-GNT1	N/A
GP52	MAIN		NATIVE	-REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	-GNT2	N/A
GP54	MAIN		NATIVE	-REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	-GNT3	N/A
GP56	STBY		NATIVE	Mobile Only	N/A
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY		NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE	-SUSTAT	N/A
GP62	STBY	L	NATIVE	SUSCLK	N/A
GP63	STBY	L	NATIVE	GPIO63	N/A
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY			Mobile Only	N/A
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL

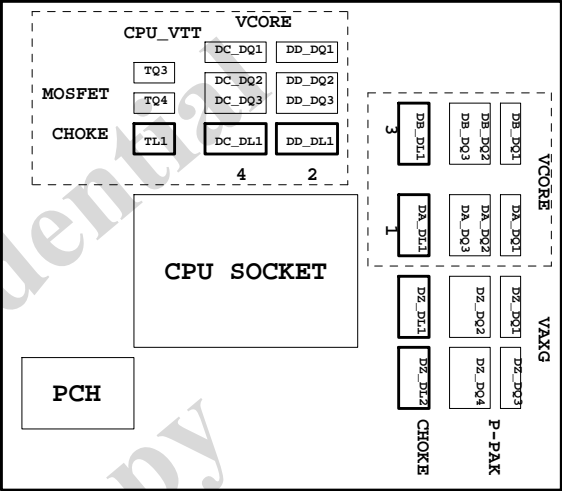
Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRXL/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSIO	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSBSW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSSO1	MB_ID3	
PD7/GP77/BUSSO2	MB_ID4	
AFD#/GP86/SMBC_R	SEC_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRXL2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Terminatio
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號：

Z77-D3H :
PCH :
12SP2-S05511-01R/02R/03R
MOSFET :
12SP2-S08924-01R/02R/03R

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH