

Model Name: GA-Z270X-GAMING 7 MG  
SHEET TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B_DDR4
06	CPU_LGA1151-C
07	CPU_LGA1151-D
08	DDR4 CHANNEL A 1,2
09	DDR4 CHANNEL B 1,2
10	PCH_RGB,CLK BUFFER
11	PCH DMI,USB,PCIE
12	PCH MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH_PWR,GND
15	PCH_GND
16	ITE 8686 LPC IO
17	HMW
18	FAN CTRL--SIO
19	PCI EXPRESS X16 SLOT
20	PCI EXPRESS X8 SLOT
21	PCI EXPRESS X16 SWITCH
22	PCI EXPRESS X4 SLOT(CPU)
23	M2P_32G & PCIEX4 SWITCH
24	PCI EXPRESS X1 SLOTS (SATA1 SWITCH)
25	SATA EXPRESS
26	ISL95856 PWM
27	ISL95856 MOS_VCORE
28	ISL95856 MOS_VCCGT
29	VCCSA_VCCIO_VCCPLL
30	RT8120_DDR
31	RT8120_VPP
32	RT8120_PCH
33	DISCRETE POWER1
34	NCT3933
35	ATX POWER , A_-PROCHOT

Rev 1.01  
SHEET TITLE

36	KB_MS_USB
37	OC , ECO , POWER BUTTON
38	F_USB30
39	F_USB20
40	R_USB30, KB_MS_USB3
41-44	Creative Sound3Di
45	DUAL LAN-A~KILLER E2500
46	DUAL LAN-B~I219
47	DUAL USB30_LAN-I219_E2500
48	IDT6V41630_CLK BUFFER
49	COM , TPM , 80 port , THB_C
50	F_PANEL
51~54	ALPINE RIDGE
55	DP_IN SWITCH
56	HDMI CONN
57	DP_OUT
58	M2M_32G
59	M2M_32G & STA4/5 SWITCH
60	M2P_32G
61	Realtek RTS5411 4port Hub-FRONT
62	N/A
63	EMI/ESD
64	NTC MAP
65	POWER MAP
66	POWER零件使用表
67	TABLE LIST
68	DUAL BIOS
69	U2_32G
70	N/A
71	EC ITE8792
72~74	MCU LED
75	USB_DAC POWER
76	VCCPLL , VCCPLL_OC , VCCST_VCCPLL

Gigabyte Technology	
Cover Sheet	
Size	Document Number
Current	GA-Z270X-GAMING 7 MG
Date:	Tuesday, December 09, 2016
Sheet	1 of 76
Rev	01

**Model Name:** GA-Z270X-GAMING 7 MG

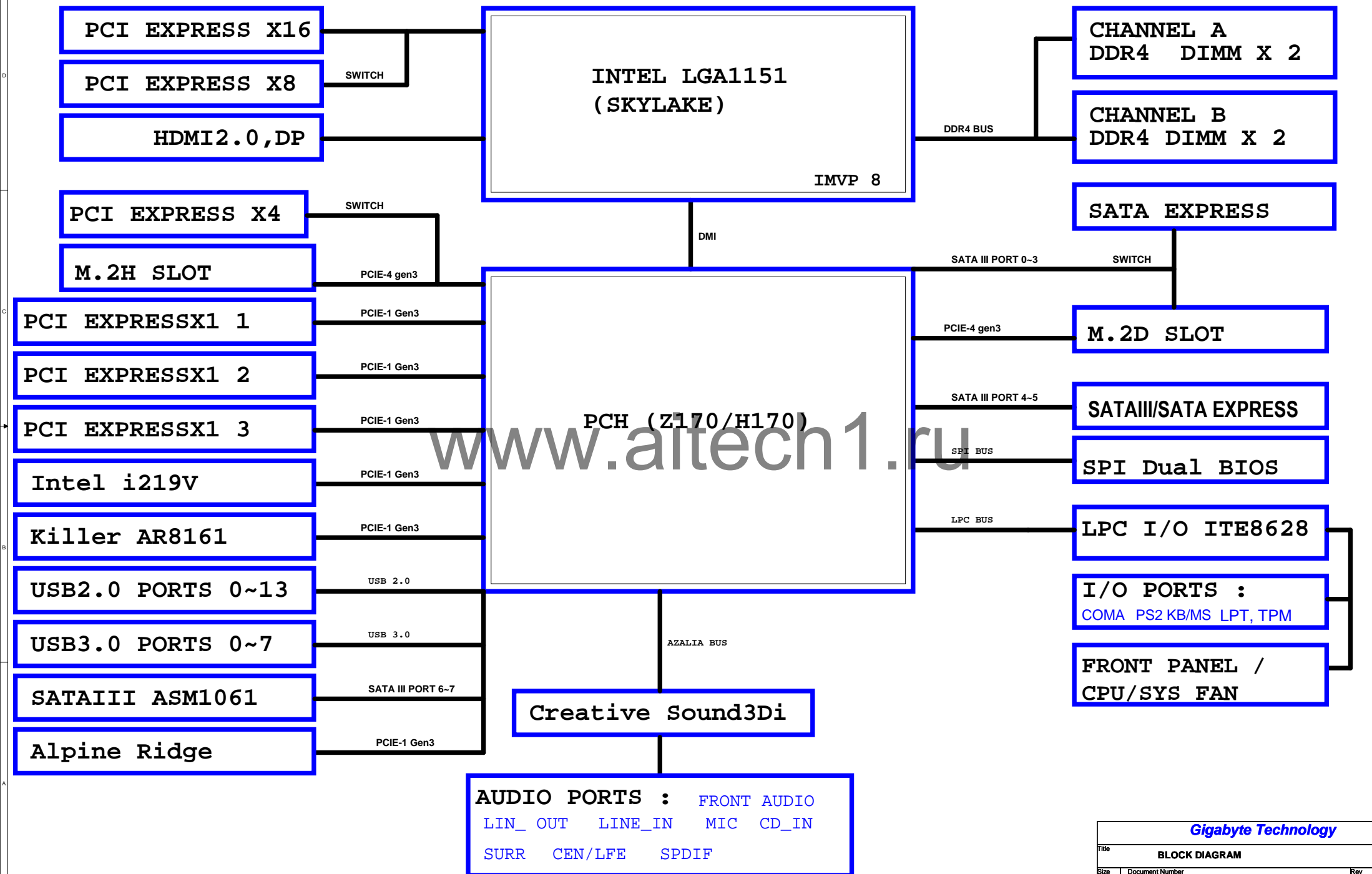
## Component value change history

Data	Change Item	Reason
2014/11/28 PCB:0.1	1.PCB first release	
	1. 高週訊號測試點移除	
	2. 0 OHM SHORT PAD	
	3. M_BIOS SOCKET移除	
	4. Remove JTAG	
0.2	1. 移除抗疏電阻替料 (重新轉NEW BOM for 抗疏電阻)	
	2. Update PCH_HS,MOS_HS,AUDIO_HS,REAR_HS	
	3. BTL1 UPDATE to "2.2uH/40A/CINCL310/FW/D"	
	4. 80P螺柱改12KSF-F10303-11R	
	5. LED_C 料號:11NH2-000105-81R	
	6. CC12,CC13改10uF For LINE-IN Thd+N	
	7. NC2 27p --> 22p	
	8. ISL95856 load-line修改組值	
1.0A	1. 移除抗疏電阻替料 (重新轉NEW BOM for 抗疏電阻)	
	2. Update PCH_HS,MOS_HS,AUDIO_HS,REAR_HS	
	3. MCU_PH1不上或移除	
	4. SMD CHOKE改合金料號	
	5. 改ISL95866(包含R/C修改)	
	6. 背板PCB LED是否移除?	
	7. THU8上TPS65982 Rev.D (MOSFET要上件)	
	8. VCC1_0_PCH POWER SEQUENCY	
	9. Remove IO_LED CONTROL	
	10. M_BIOS SOCKET移除	
1.0B-0929	1. ECR31要上33/4/1	
	2. Modify VCC1_0_PCH POWER SEQUENCY	
1.0C	1. PCH 改量產料號:10HB1-03Z270-20R	
1.0D	1. Change MOSFET vendor Vishay --> ON	
	2. THESD3, THESD5, THESD7, THESD9,THESD4, THESD6, THESD8, THESD10 change to "10DET-510501-10R / NXP/PESD5VOH1BSF"	

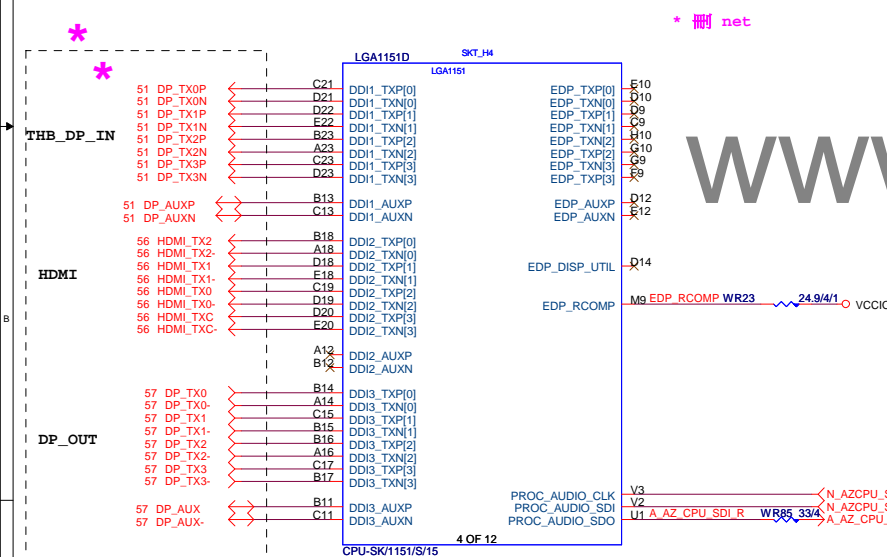
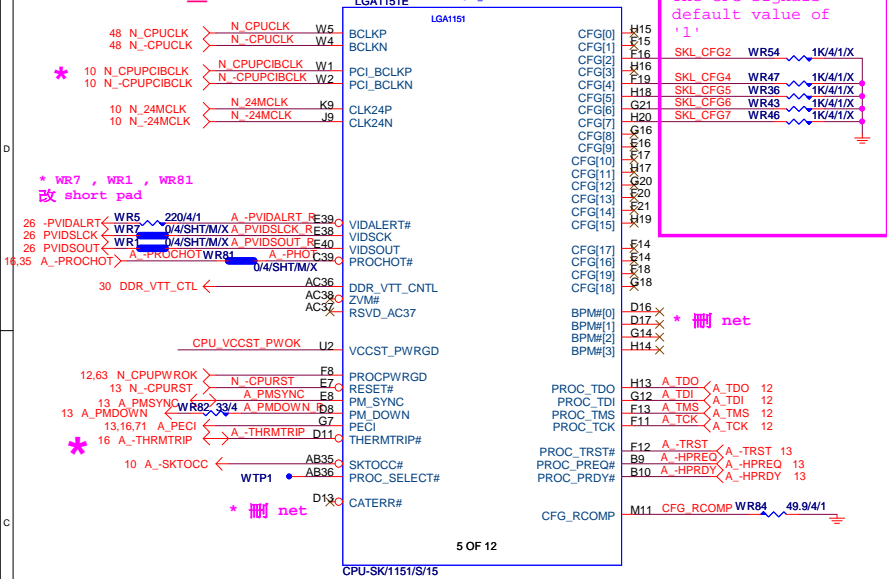
## Circuit or PCB layout change

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	
2016/08/02 PCB:0.2	1. MCU_PH1 移除 2. Add logo "KILLER 2500" 3. BIOS_SW & SB 文字說明對調位置 4. Add NR85,NR86 for N_SUSCLK 5. SWFU3 SWAP pin 6. U2_32G pin.D6 connect "GND" 7. +12V切割線再往左移,增加+12V通道 8. DDR POWER INT1 remove DDR_VIN", "DDR_PHASE", "DDR_GND" 9. DDR POWER VCC 層 DDR_VIN", "DDR_PHASE", "DDR_GND"改空的 10. DAC_POWER CHOKE PHASE 改內層DUMMY (包含F_USB/R_USB) 11. 需要增加邊條測發光LEDx2pcs? (兩個定位孔請參考G1擺放) 12. DUAL BIOS模組線路修改 13. Debug LED位置請參考Note 14. BTBC16,18,19,20,THC146 改footprint "C0805" 15. 移除"PCB圖騰" 16. BSR21,BSR22對調 17. UPDATE LED CONTROL 18. DAR9 改走20mils , DAR39 從OUTPUT VCORE回來 , 19. A.R ADD N_GPP_H11 20. HUAL7,29 SWAP , HAXT1,HAXT2 走等長 21. TTRT2移至DN_DQ2 22. 移除HDMI 2.0, DP-IN for Thunderbolt, PD 100W -> 27W 23. DD_DUL在POWER層包GND , DD_DC3的PH4_A VIA遠離DP訊號	
2016/08/04 PCB:0.3	1. MCU_PH1 移除 2. ADD LED MCUCD10-13 3. Update MCU LED control 4. 邊條LED是否有文字面擋住 5. UPDATE DUAL BIOS CONTROL (IO_GP84 --> B_SW) 6. PCB短路,MCU_LED和GND 7. 文字面修改:取消亮白和USB3_1_GEN2文字修改 8. REAR & AUDIO 裝甲UPDATE footprint 9. THFB1 footprint update "FB0402-RH" 10. Update REAR_HS , AUDIO_HS footprint 11. Add VPP_25V ECR161 , MABC8 change "R0402-2" 12. Remove LED_PCH 13. Add "THB3" logo 14. ECO pin "N_GPP_C8 --> N_GPP_B20" , PUMP2 "N_GPP_B20--> N_GPP_B11" 15. 0 OHM change to short pad 16. Remove NR86 , TFM pin20 change to N.C.	
2016/09/14 PCB:1.0	1. 0 ohm short pad (R0402/R0603/排阻) 2. WR59,WR60,WR61 改"R0402-2" 3. PUMP1 --> SYS_FAN5_PUMP , PUMP2 --> SYS_FAN6_PUMP 4. PCB圖騰增加斜紋灰色 5. OC/ECO/PW_SW文字面擺設修改 (變小) 6. EC_TEMP2/CLR_CMOS文字面修改, 7. LED_C pin1說明 8. AMP +12V / -12V disable save mode 9. LED Beat ADD "N_GPP_D10" , Remove PCIE SLOT CONTROL	
2016/ PCB:1.01	1. RST_SW & CMOS_SW 文字位置調整 2. ITE8792 GP73 add "N_-RSMRST" 3. Add VIN CAP DCC1,DCC2,DCC3,DCC51,DCC52,DCC53,DCC54,DCC55 4. DDR 的T型訊號請由4mils改成4.5mils 線?	

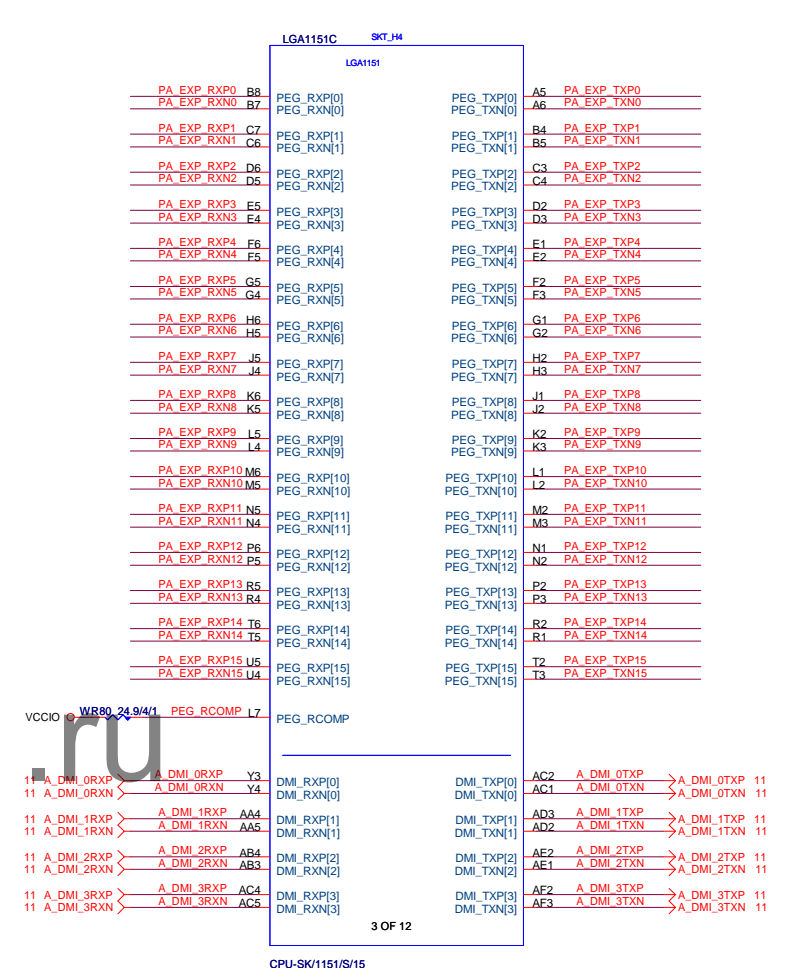
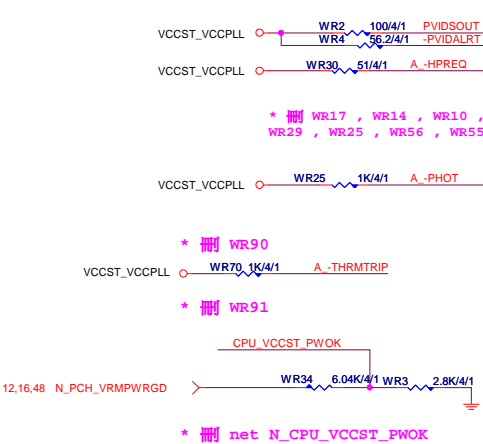
# BLOCK DIAGRAM



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

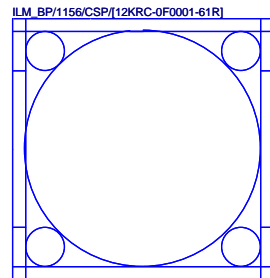
CFG[7]: PEG Training:1=(default) PEG Train
immediately following RESET#;0=PEG Wait
for BIOS
```

20 -8X\_EN ← WR37 MASK/0/4/SHT/X SKL\_CFG5

Bifurcation Config.	Signals Lanes CFG[6] CFG[5] CFG[2]		
2x16	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

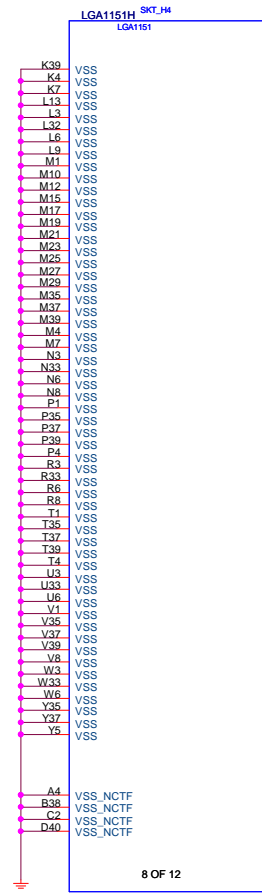
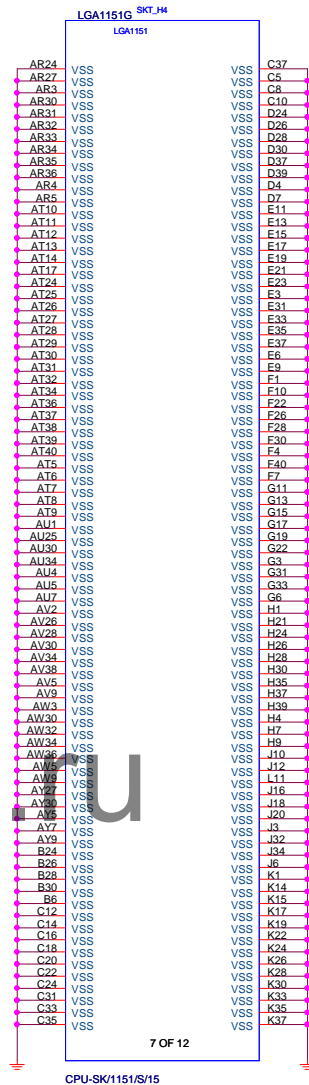
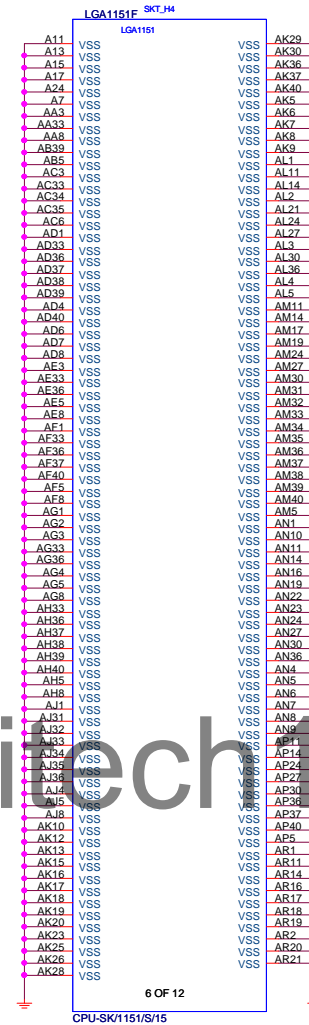
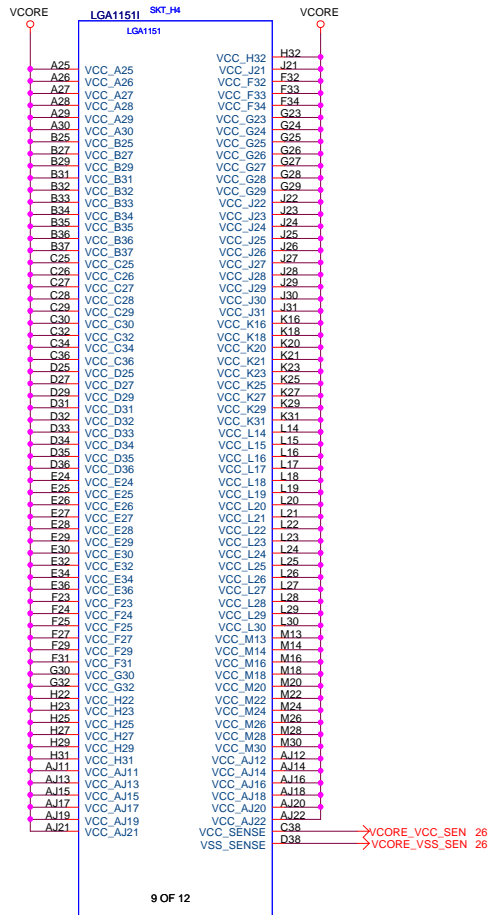


\* 改DDR4 net

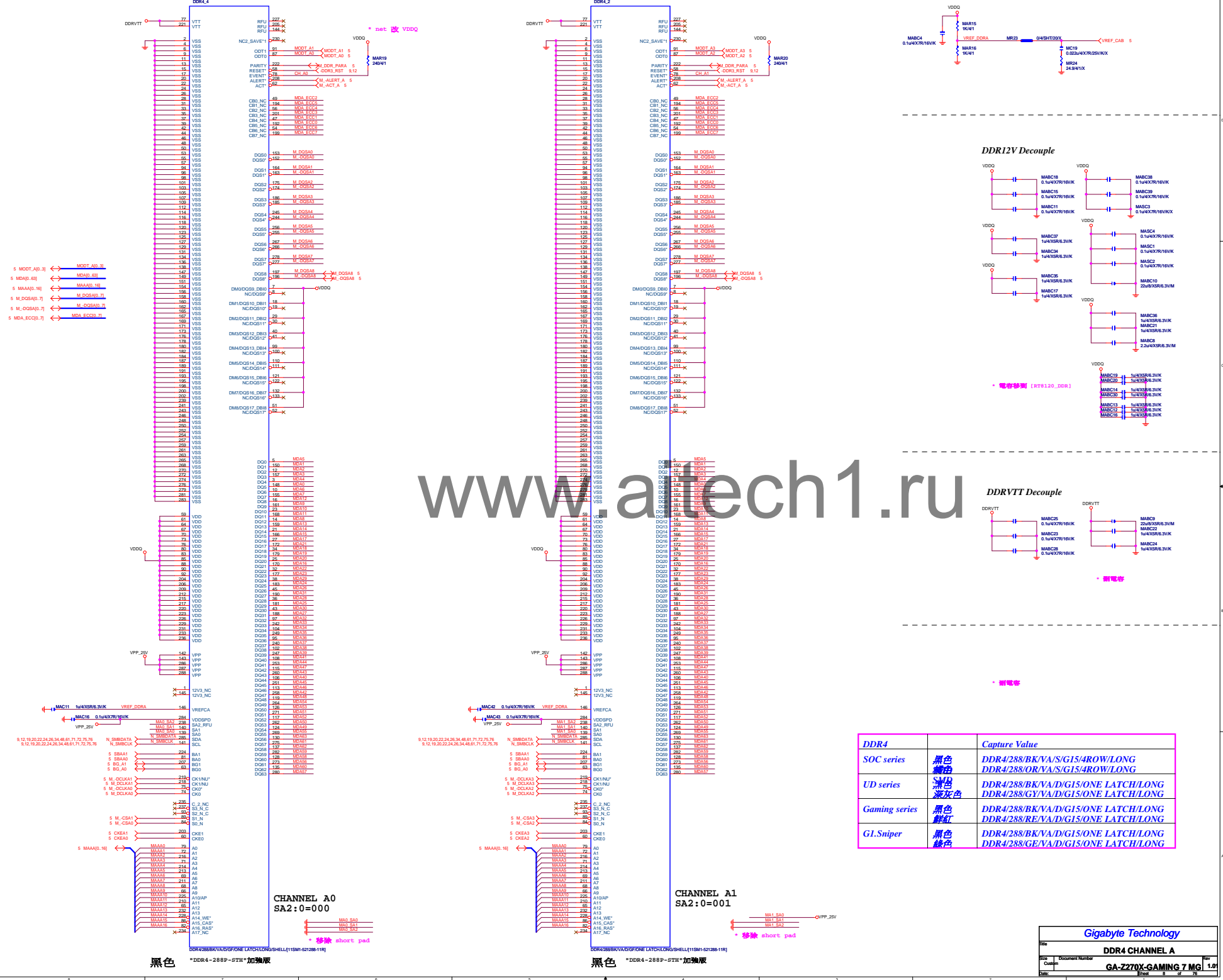


Need check the new CPU ME





\* 刪 Vcore 電容



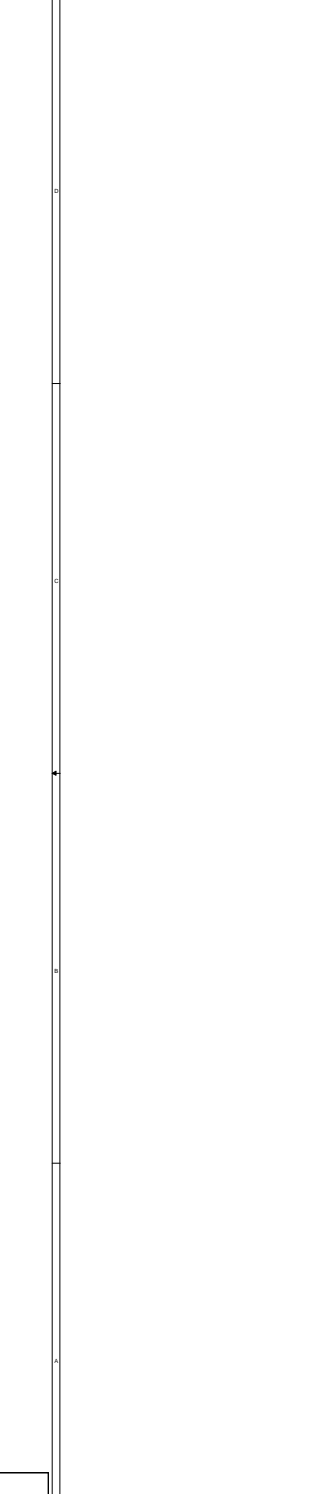
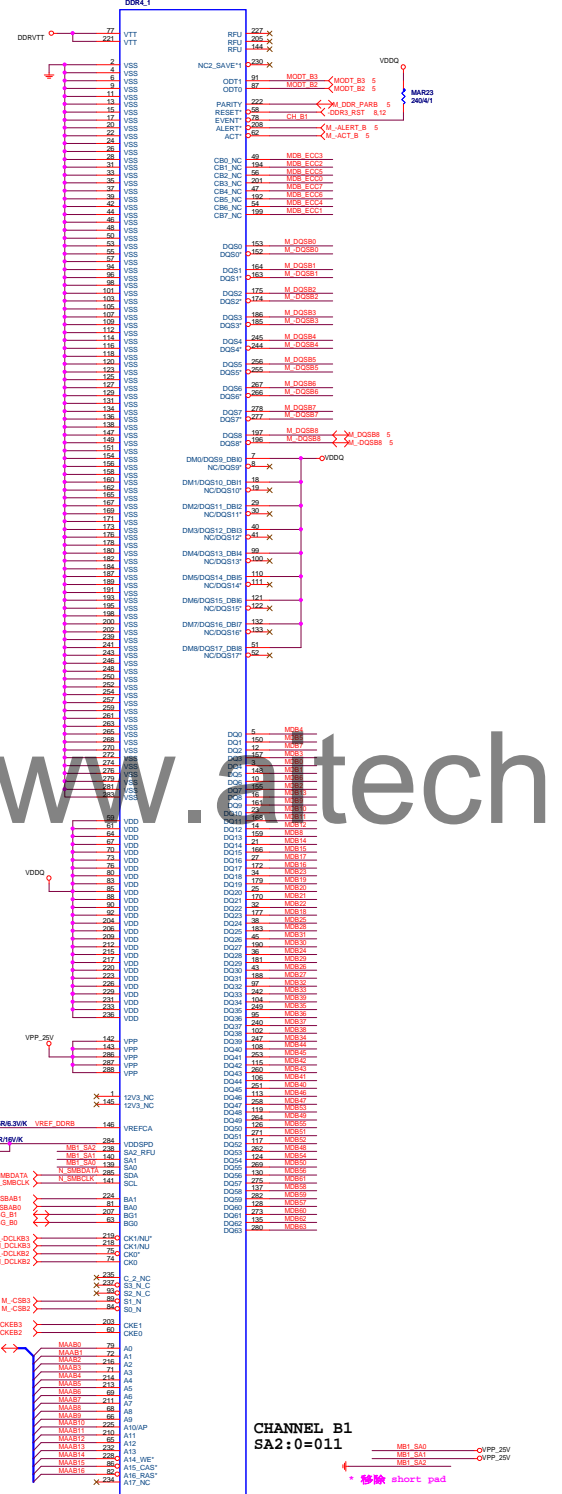
DDR4	Capture Value
SOC series	黑色 DDR4/288/BK/VA/S/G15/4ROW/LONG DDR4/288/OR/VA/S/G15/4ROW/LONG
UD series	黑色 DDR4/288/BK/D/G15/ONE LATCH/LONG DDR4/288/GY/VA/D/G15/ONE LATCH/LONG
Gaming series	黑色 DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/RE/VA/D/G15/ONE LATCH/LONG
GI.Sniper	黑色 DDR4/288/GY/VA/D/G15/ONE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

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DDR4 CHANNEL A

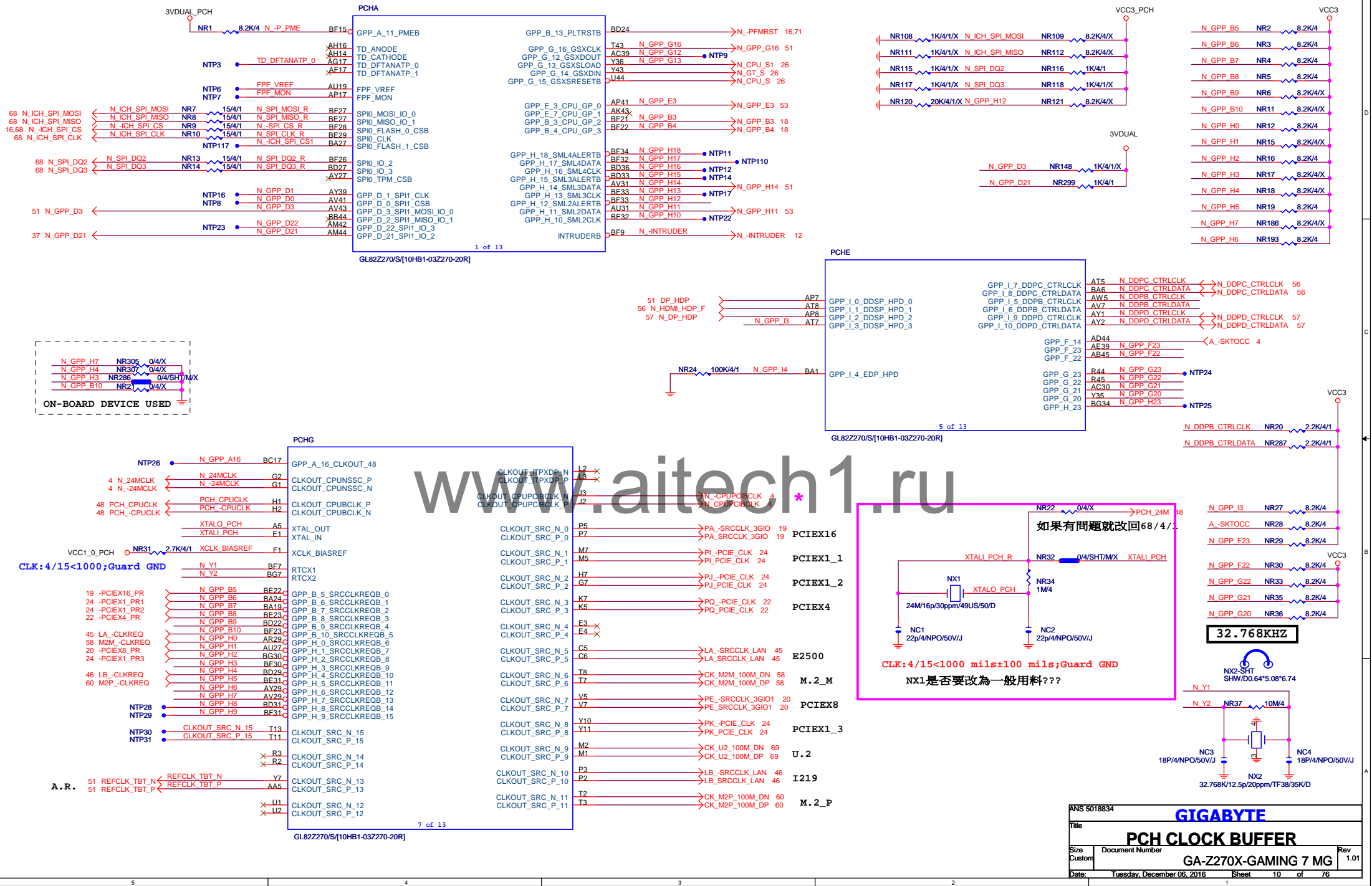
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<i>Gigabyte Technology</i>			
Title: <b>DDR4 CHANNEL B</b>			
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如果有問題就改回68/4/1

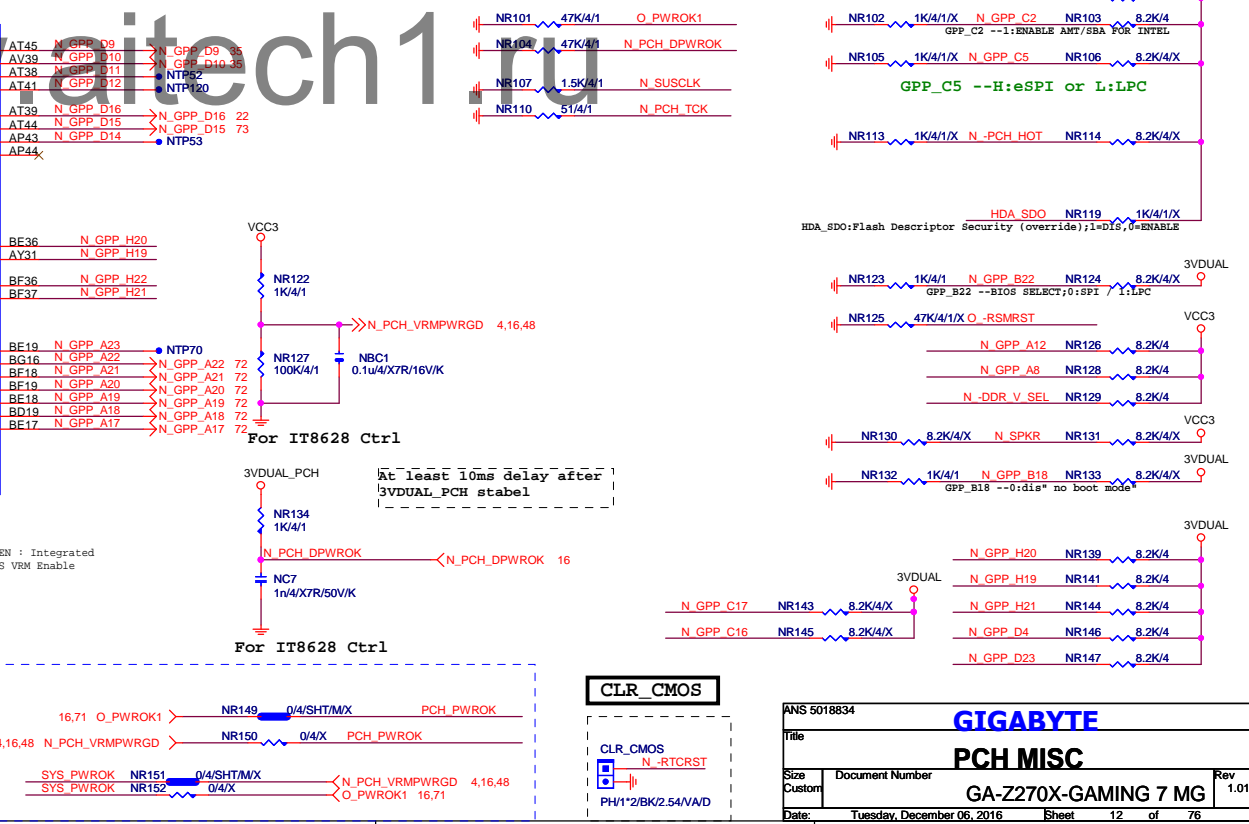
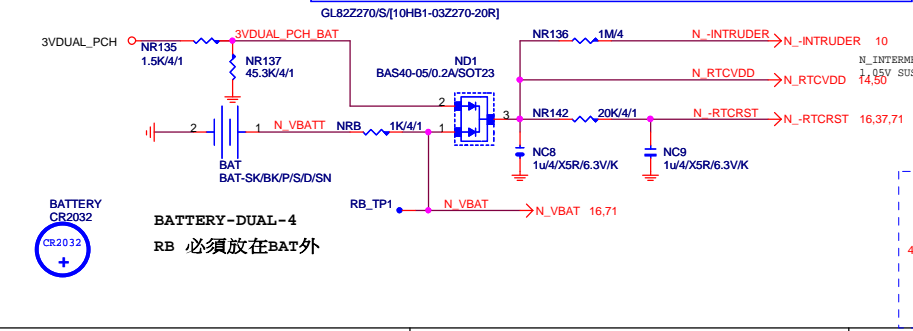
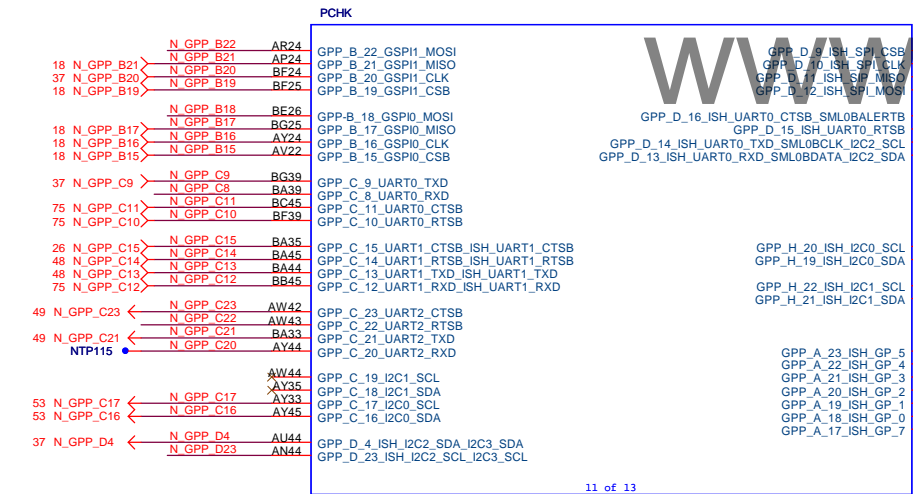
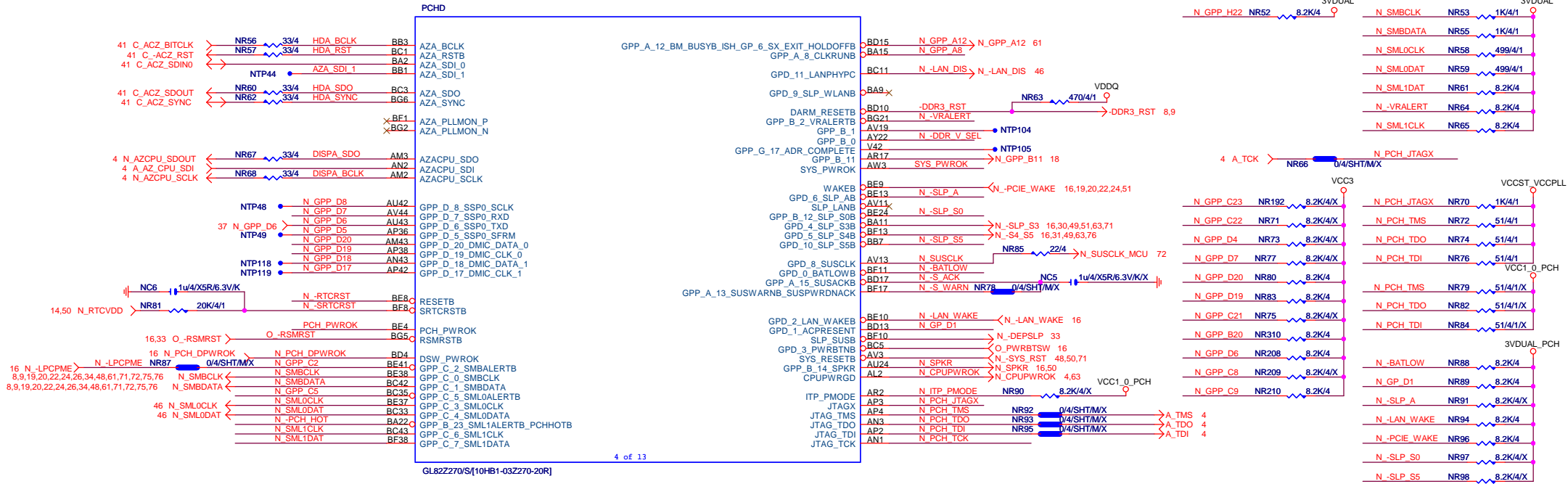
CLK:4/15<1000 mils±100 mils;Guard GND

NX1是否要改為一般用料???

ANS 5018834			
GIGABYTE			
Title			
PCH CLOCK BUFFER			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 7 MG	1.01	
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ANS 5018834

**GIGABYTE**

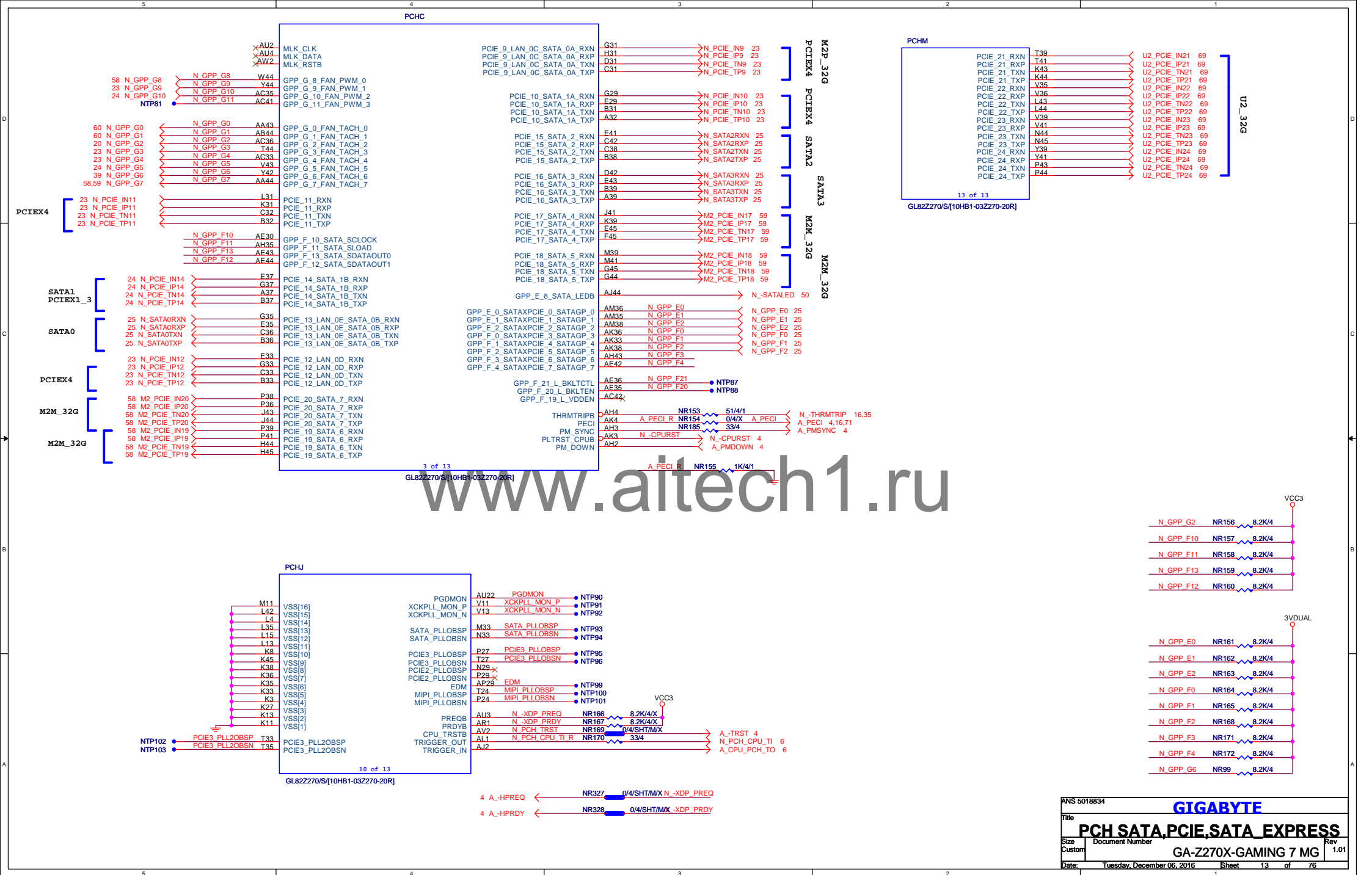
**PCH MISC**

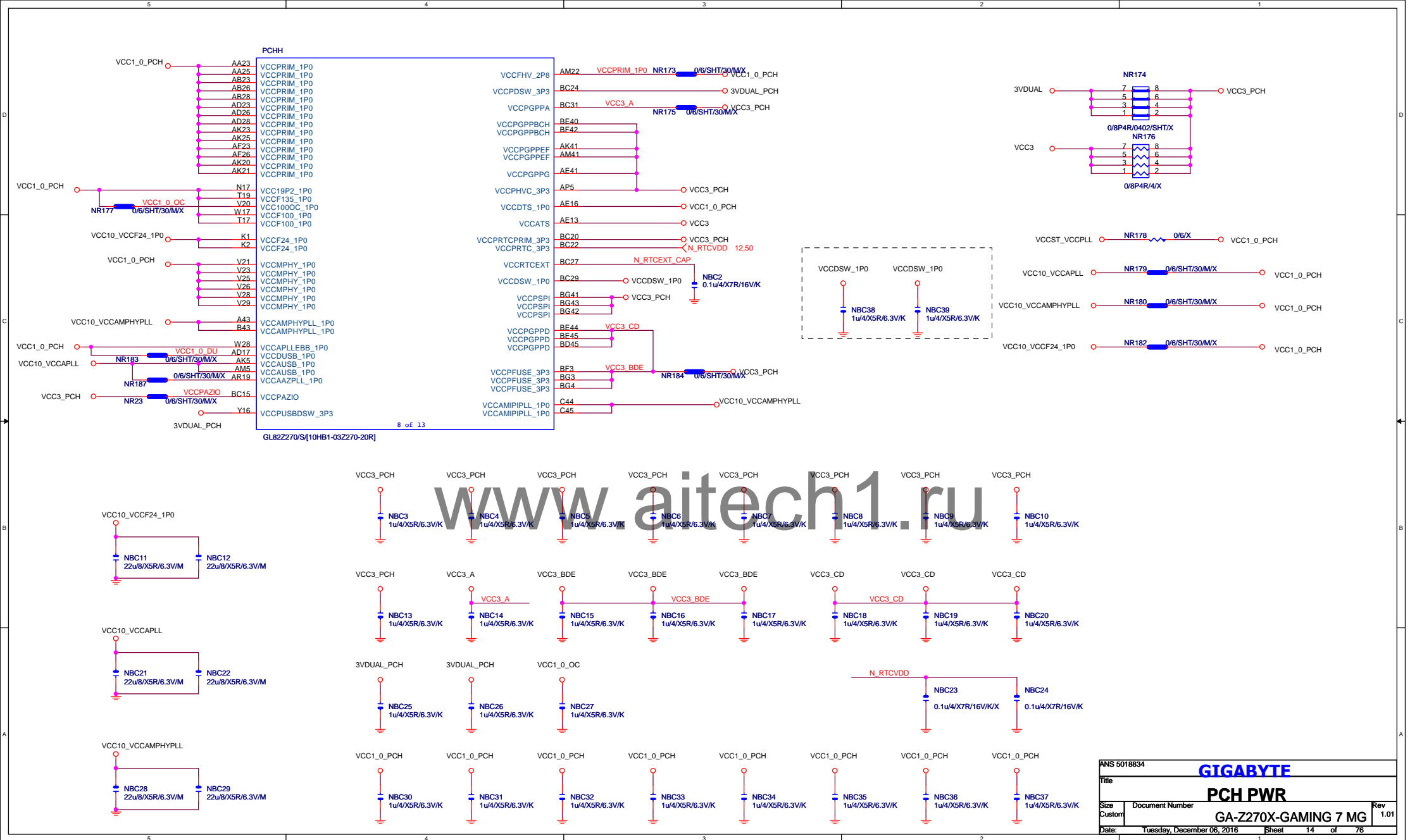
GA-Z270X-GAMING 7 MG

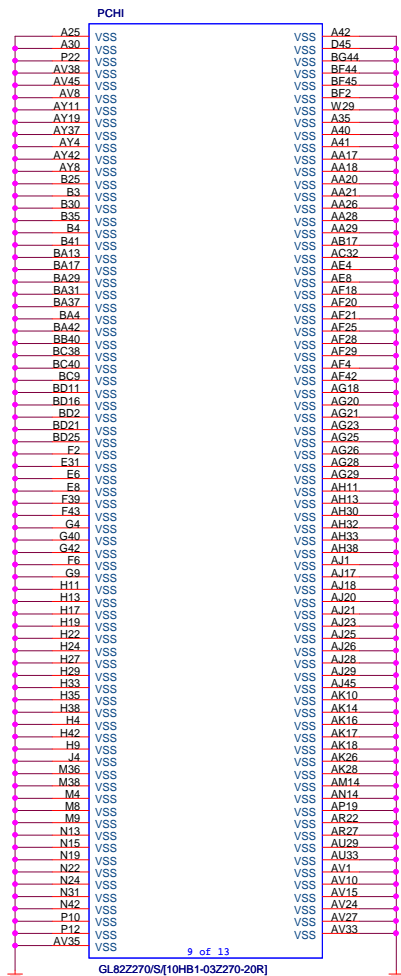
Rev 1.01

Date: Tuesday, December 06, 2016

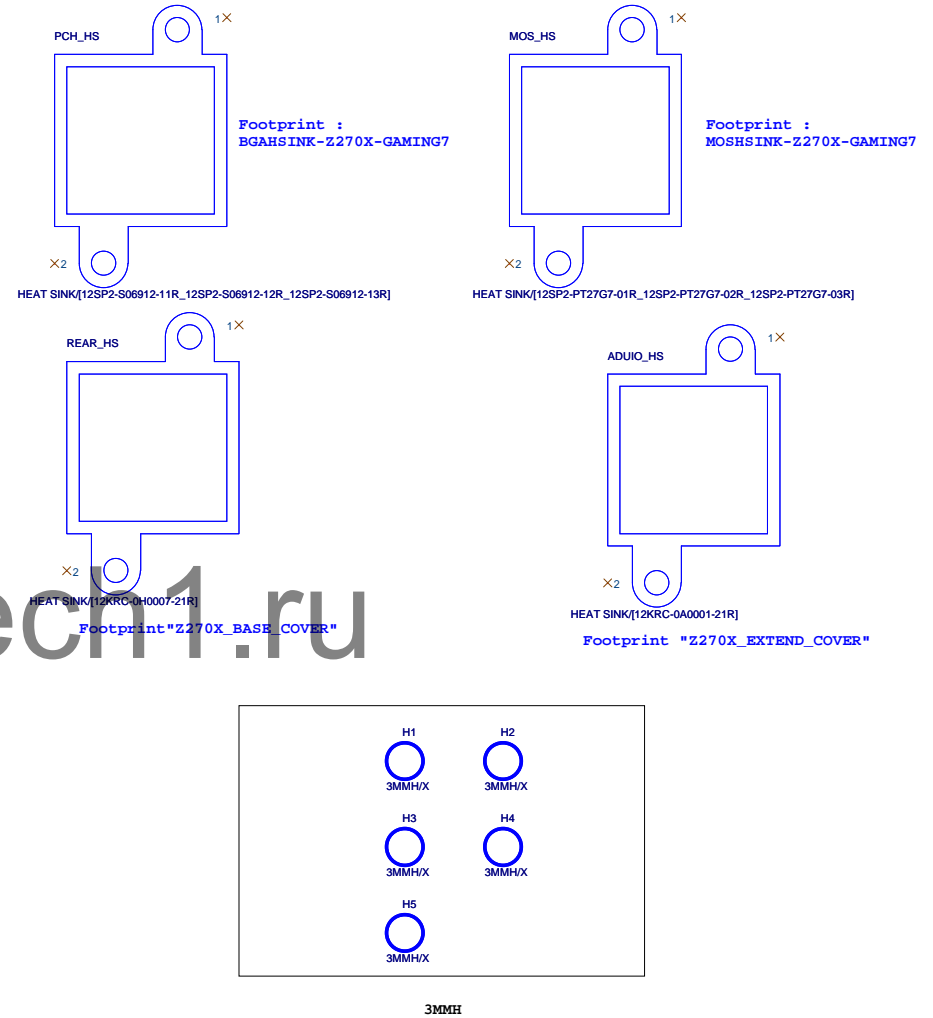
Sheet 12 of 76







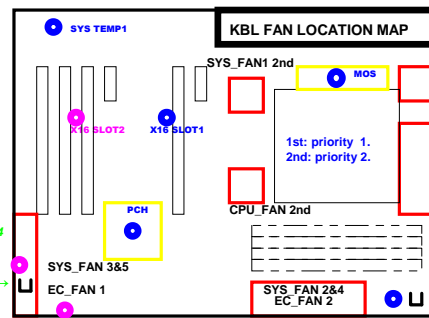
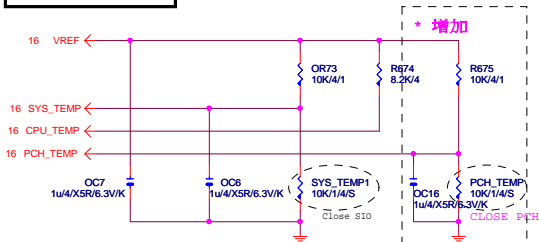
## 装甲HEATSINK 分成四大部份



ANS 5018834		GIGABYTE	
Title		PCH GND	
Size	Document Number	GA-Z270X-GAMING 7 MG	
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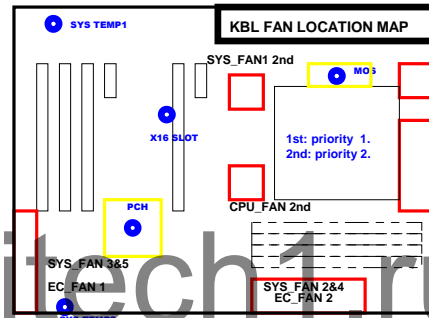


# TEMP H/W MONITOR



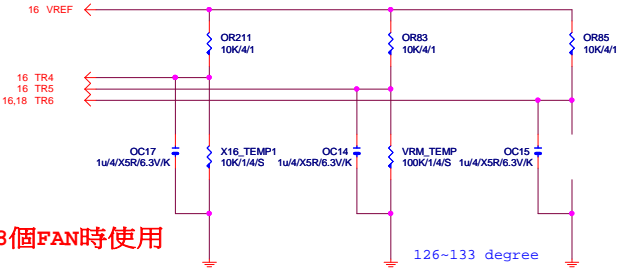
8 FAN from IO & EC

EC TEMP SENSE  
IO TEMP SENSE



5 FAN from IO

TEMP SENSE

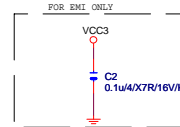
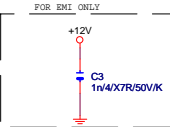
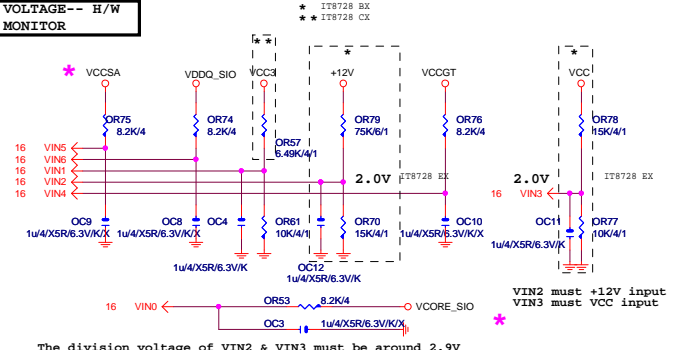


8個FAN時使用

126~133 degree

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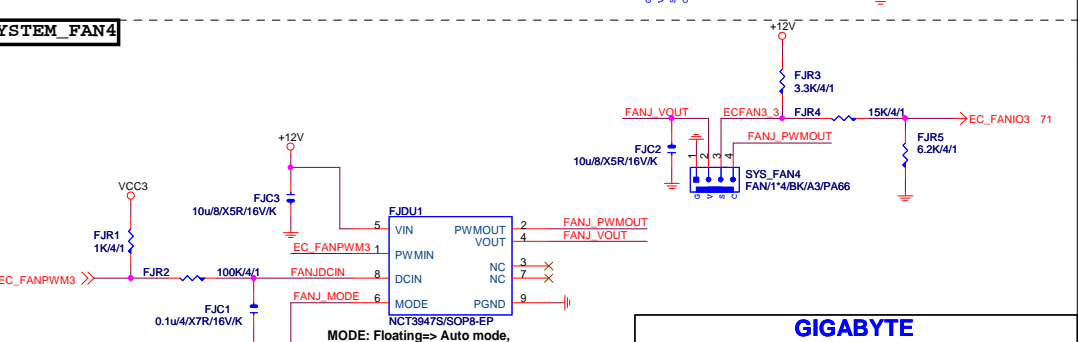
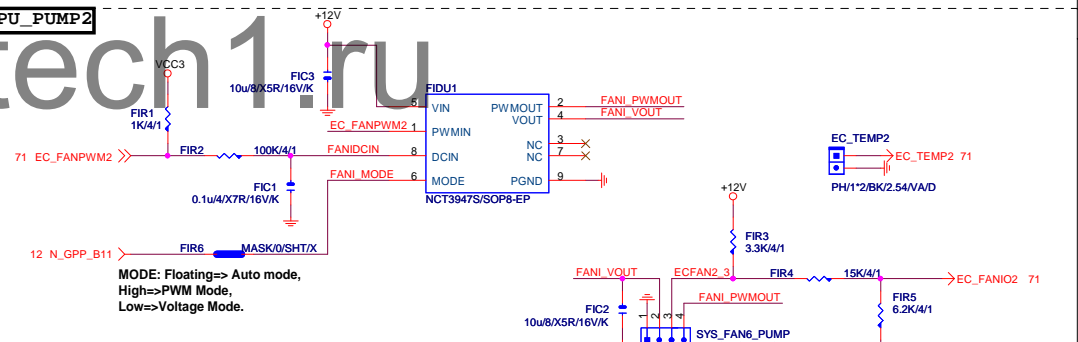
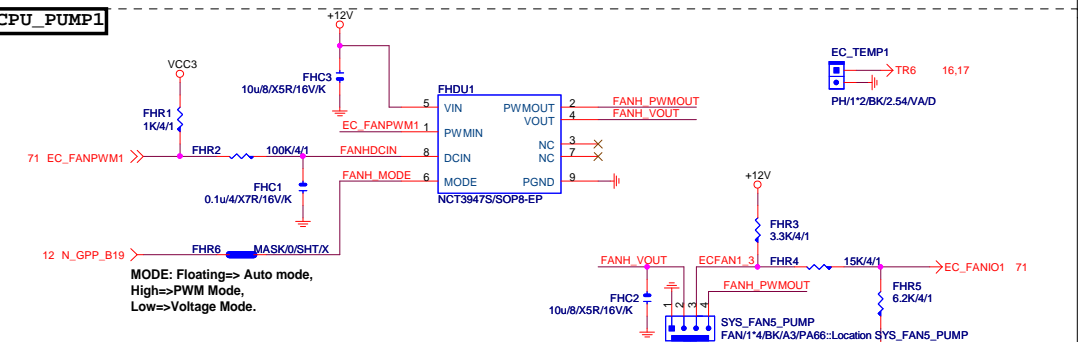
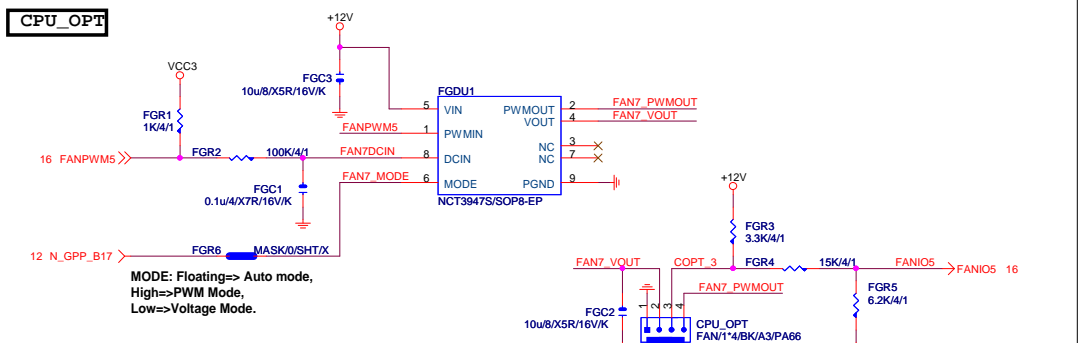
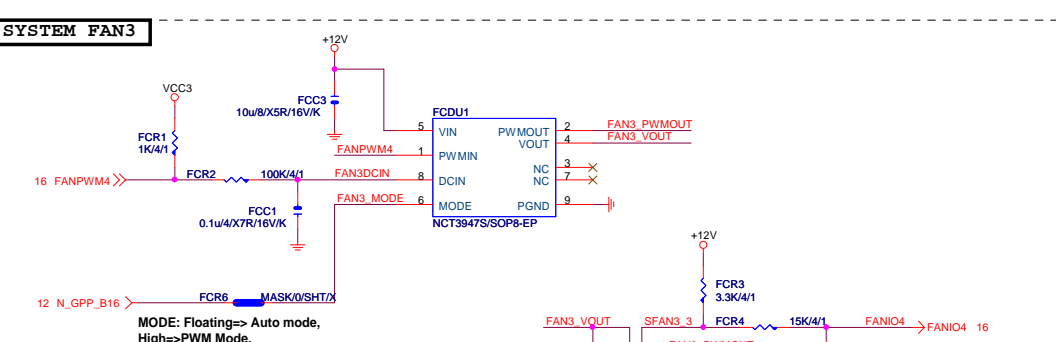
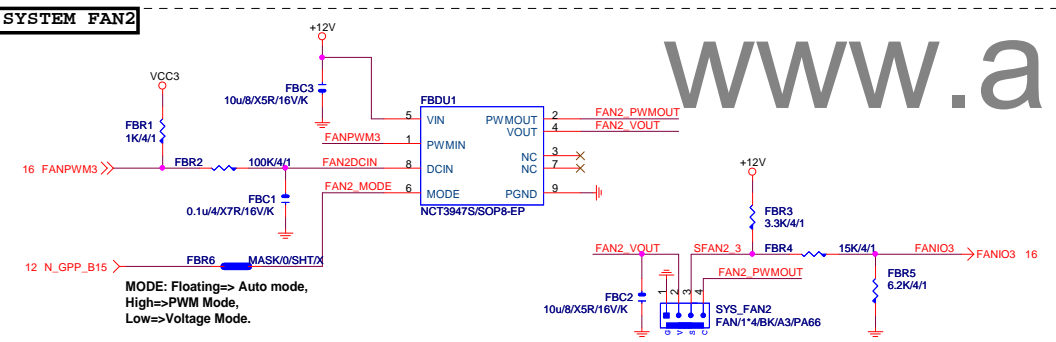
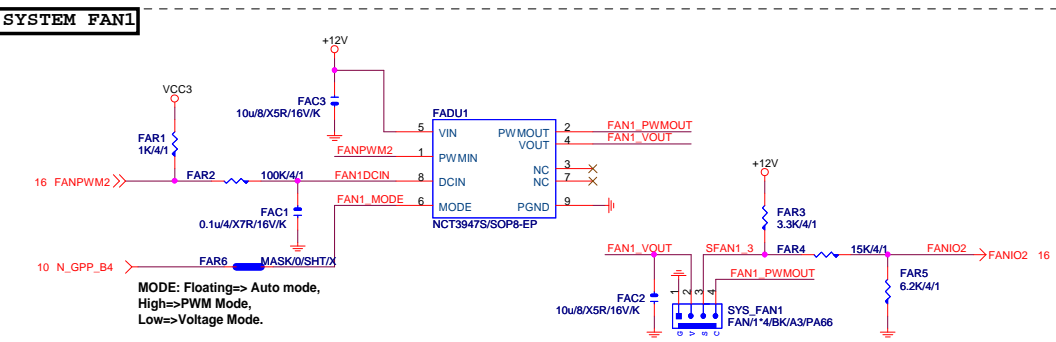
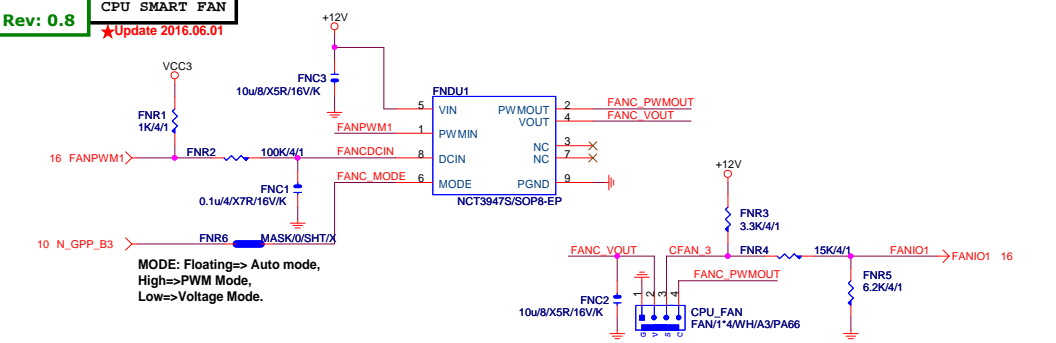
# VOLTAGE-- H/W MONITOR



★Update 2015-04.24

Gigabyte Technology			
Title HWM,KB/MS, FAN CTRL			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 7 MG	1.01	
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KBL FAN LOCATION MAP REFER TO PAGE.27



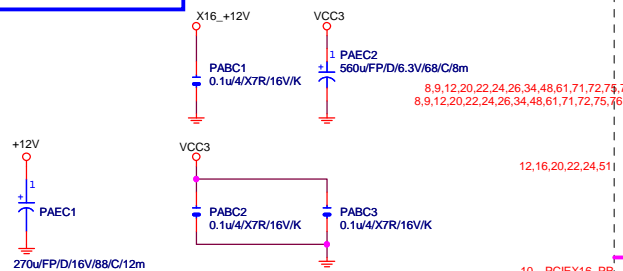
Rev 0.3

PCIEX16 CAP

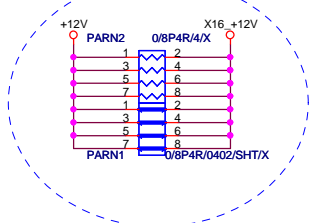
PCIEX16 SLOT

PCIESLOT-1645TH

3GIO\_\*16



PCIEX16 PROTECT SHT

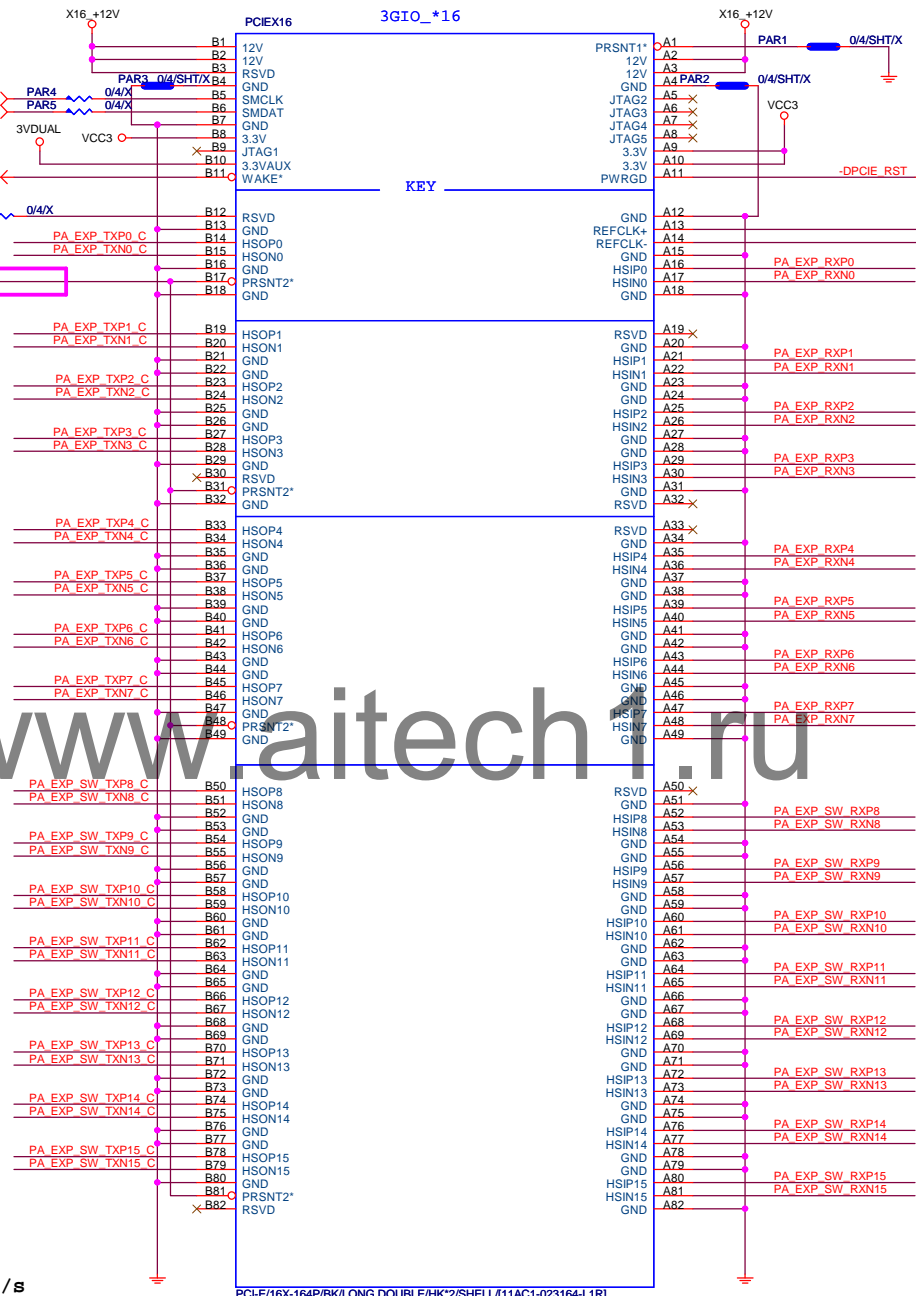
+12 protect  
short-wire test

PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u4/X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u4/X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u4/X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u4/X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u4/X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u4/X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u4/X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u4/X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u4/X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u4/X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u4/X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u4/X5R/6.3V/K	PA EXP TXN7 C
PA EXP SW TXP8	PAC21	0.22u4/X5R/6.3V/K	PA EXP SW TXP8 C
PA EXP SW TXN8	PAC20	0.22u4/X5R/6.3V/K	PA EXP SW TXN8 C
PA EXP SW TXP9	PAC22	0.22u4/X5R/6.3V/K	PA EXP SW TXP9 C
PA EXP SW TXN9	PAC23	0.22u4/X5R/6.3V/K	PA EXP SW TXN9 C
PA EXP SW TXP10	PAC24	0.22u4/X5R/6.3V/K	PA EXP SW TXP10 C
PA EXP SW TXN10	PAC25	0.22u4/X5R/6.3V/K	PA EXP SW TXN10 C
PA EXP SW TXP11	PAC26	0.22u4/X5R/6.3V/K	PA EXP SW TXP11 C
PA EXP SW TXN11	PAC27	0.22u4/X5R/6.3V/K	PA EXP SW TXN11 C
PA EXP SW TXP12	PAC28	0.22u4/X5R/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXN12	PAC29	0.22u4/X5R/6.3V/K	PA EXP SW TXN12 C
PA EXP SW TXP13	PAC30	0.22u4/X5R/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXN13	PAC31	0.22u4/X5R/6.3V/K	PA EXP SW TXN13 C
PA EXP SW TXP14	PAC32	0.22u4/X5R/6.3V/K	PA EXP SW TXP14 C
PA EXP SW TXN14	PAC33	0.22u4/X5R/6.3V/K	PA EXP SW TXN14 C
PA EXP SW TXP15	PAC34	0.22u4/X5R/6.3V/K	PA EXP SW TXP15 C
PA EXP SW TXN15	PAC35	0.22u4/X5R/6.3V/K	PA EXP SW TXN15 C

12,16,20,22,24,51

10 -PCIEX16\_PR



PCI-E/16X-164P/BK/LONG DOUBLE/HK\*2/SHELL(11AC1-023164-L1R)

黑色金屬加強

PCIEX16:16/5/5/5/16

PA EXP RXP[0..15]	>>>PA_EXP_RXP[0..15]	4,21
PA EXP RXN[0..15]	>>>PA_EXP_RXN[0..15]	4,21
PA EXP TXP[0..15]	>>>PA_EXP_TXP[0..15]	4,21
PA EXP TXN[0..15]	>>>PA_EXP_TXN[0..15]	4,21
PA EXP SW RXP[8..15]	>>>PA_EXP_SW_RXP[8..15]	21
PA EXP SW RXN[8..15]	>>>PA_EXP_SW_RXN[8..15]	21
PA EXP SW TXP[8..15]	>>>PA_EXP_SW_TXP[8..15]	21
PA EXP SW TXN[8..15]	>>>PA_EXP_SW_TXN[8..15]	21

PCI-E REV:1.1--&gt; 2.5GHZ

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

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

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

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

PCI-E REV:2.0--&gt; 5GHZ

PCE-E X1(單向) BANDWIDTH=5GHz\*(8b/10b)=4Gb/s=500MB/s

PCI-E REV:3.0--&gt; 8GHZ

PCE-E X1(單向) BANDWIDTH=8GHz\*(128b/130b)=8Gb/s=1GB/s

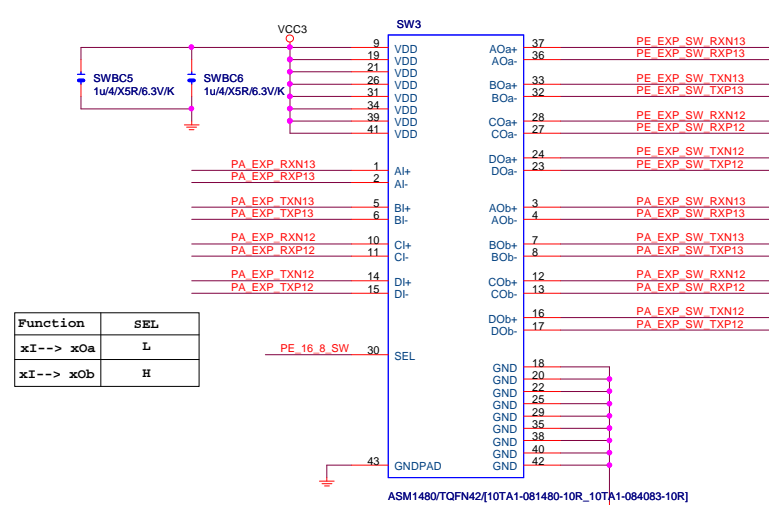
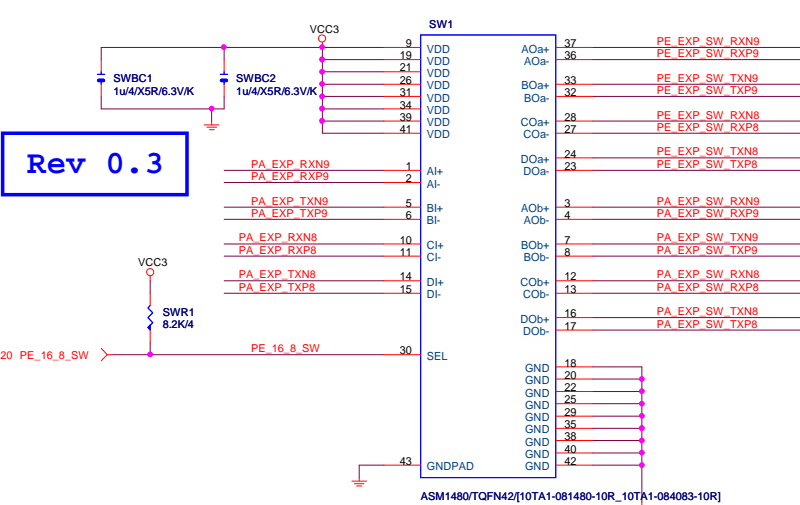
Gigabyte Technology

PCI EXPRESS \* 16

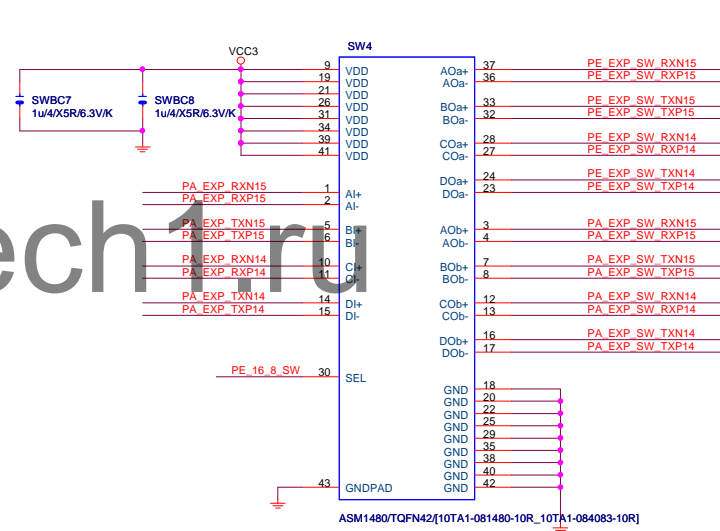
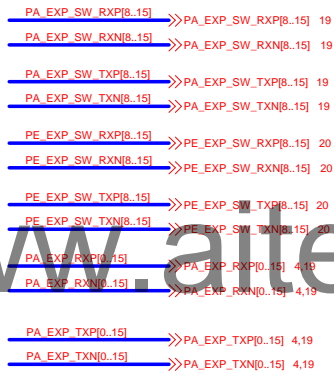
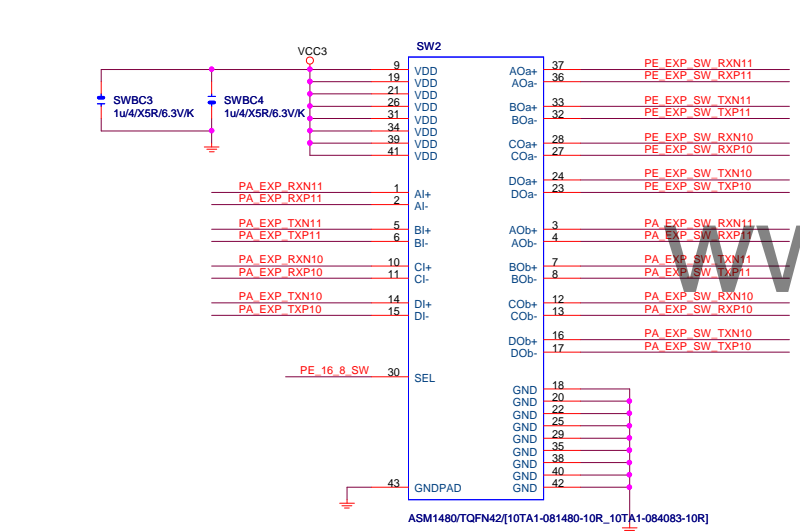
Size	Document Number	GA-Z270X-GAMING 7
Custom		
Date:	Monday, September 12, 2016	Sheet 19 of 76

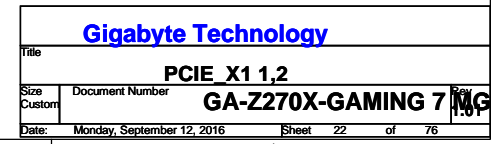


Rev 0.3

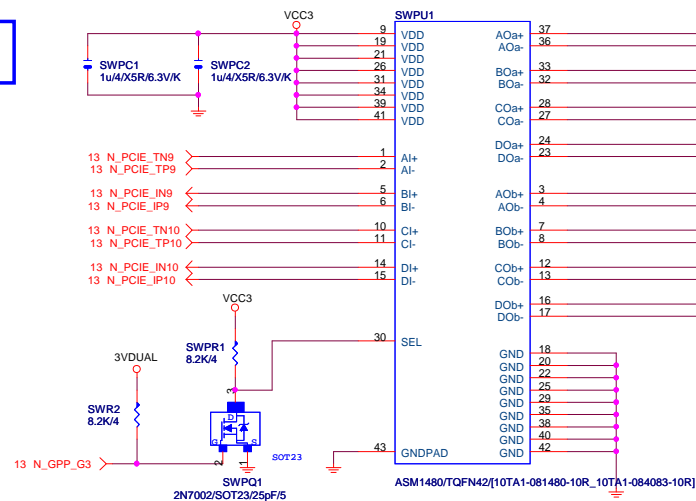


Function	SEL
xI--> xOa	L
xI--> xOb	H

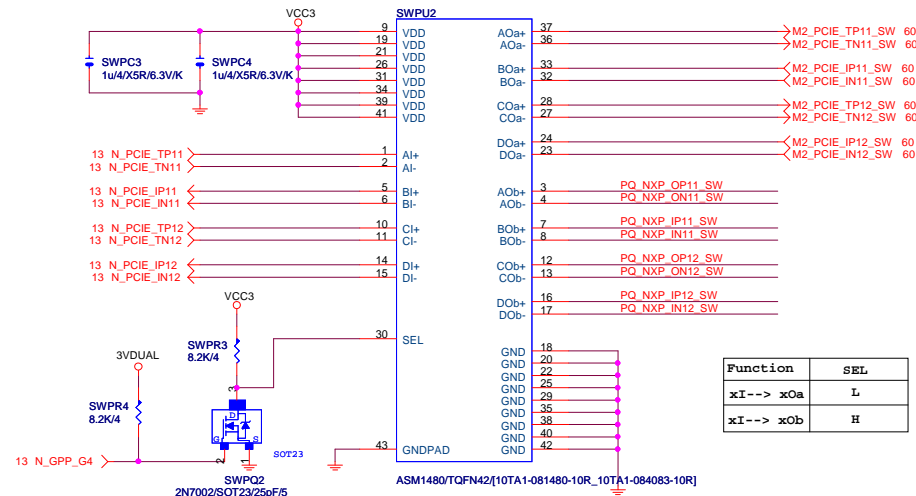




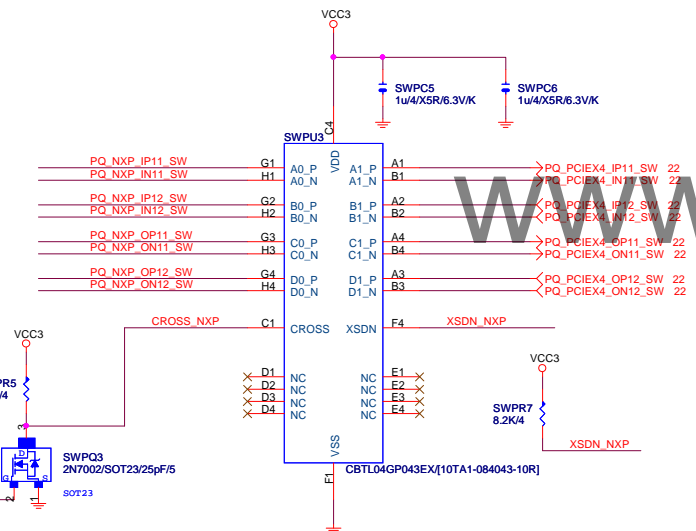
Rev 0.1



Function	SEL
xI--> xOa	L
xI--> xOb	H



Function	SEL
xI--> xOa	L
xI--> xOb	H



When CROSS = HIGH, selects cross function  
When CROSS = LOW, selects pass-through function.

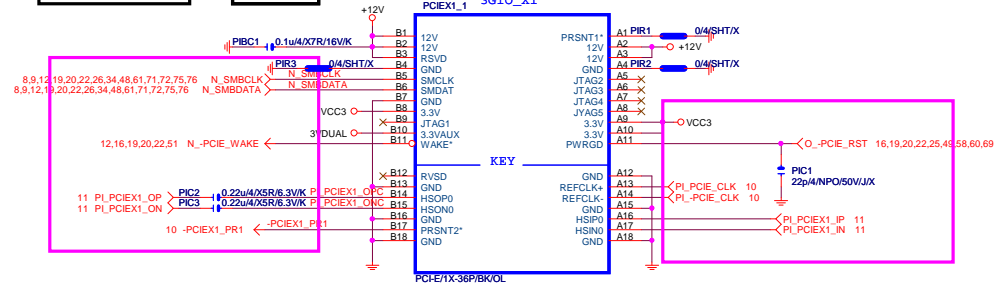
Flex IO priority	N_GPP_G0 (PCH GPP_G0)	N_GPP_D16 (PCH GPP_D16)
M2P_32G Only	L	H
PCIEX4 Only (PCIe Reverse)	H	L
M2P_32G + PCIEX4 (M2P_32Gx2 + PCIEX4_x2)	L	L

N_GPP_G3 (PCH GPP_G3)	N_GPP_G4 (PCH GPP_G4)	N_GPP_G9 (PCH GPP_G9)
H	H	H
L	L	H
H	L	L

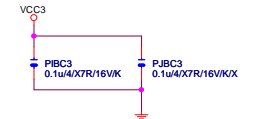
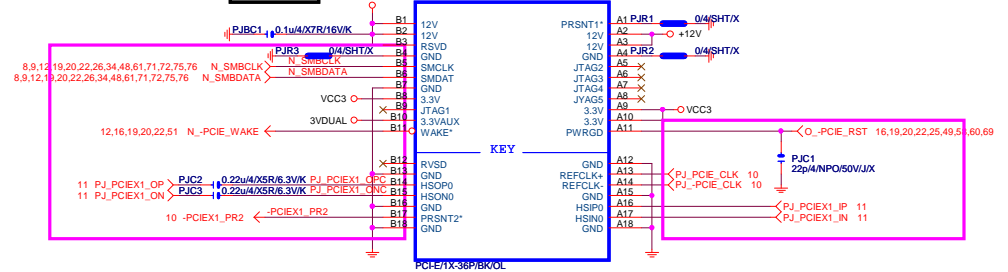
Gigabyte Technology SWITCH		
Title	Document Number	GA-Z270X-GAMING 7 MG
Size	Custom	
Date	Monday, September 12, 2016	Sheet 23 of 76

PCIE1 SLOT

PCIE1\_1

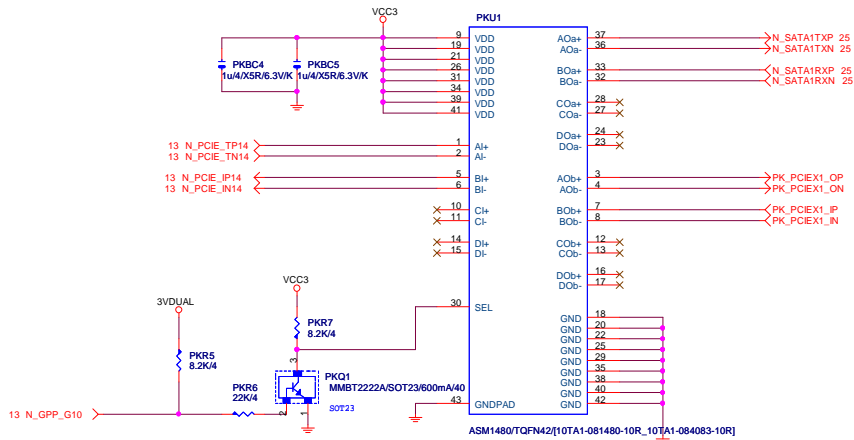
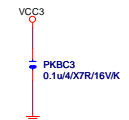
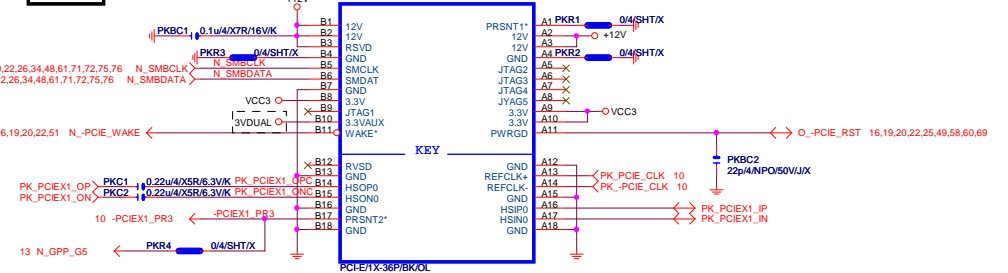


PCIE1\_2



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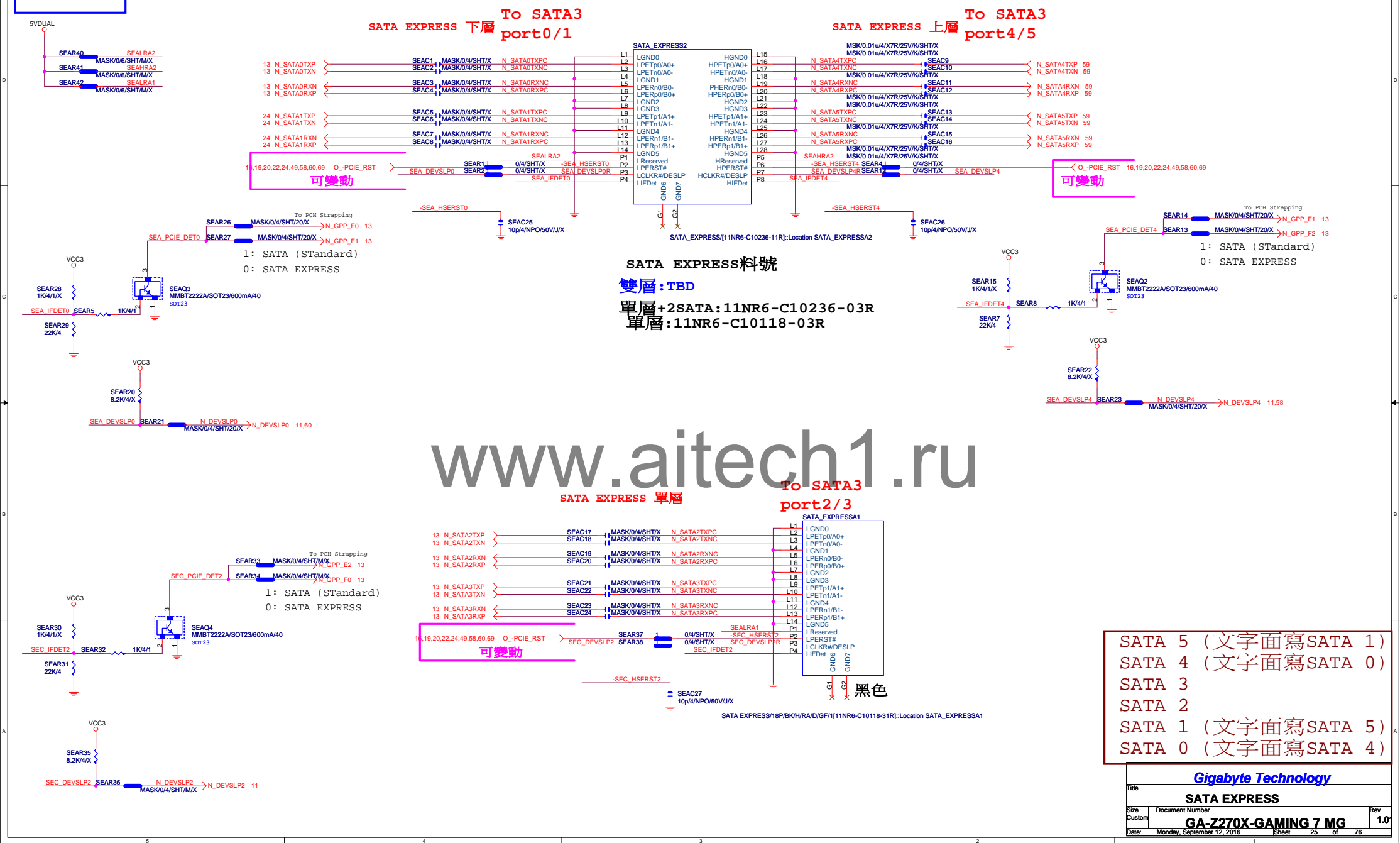
PCIE\*1



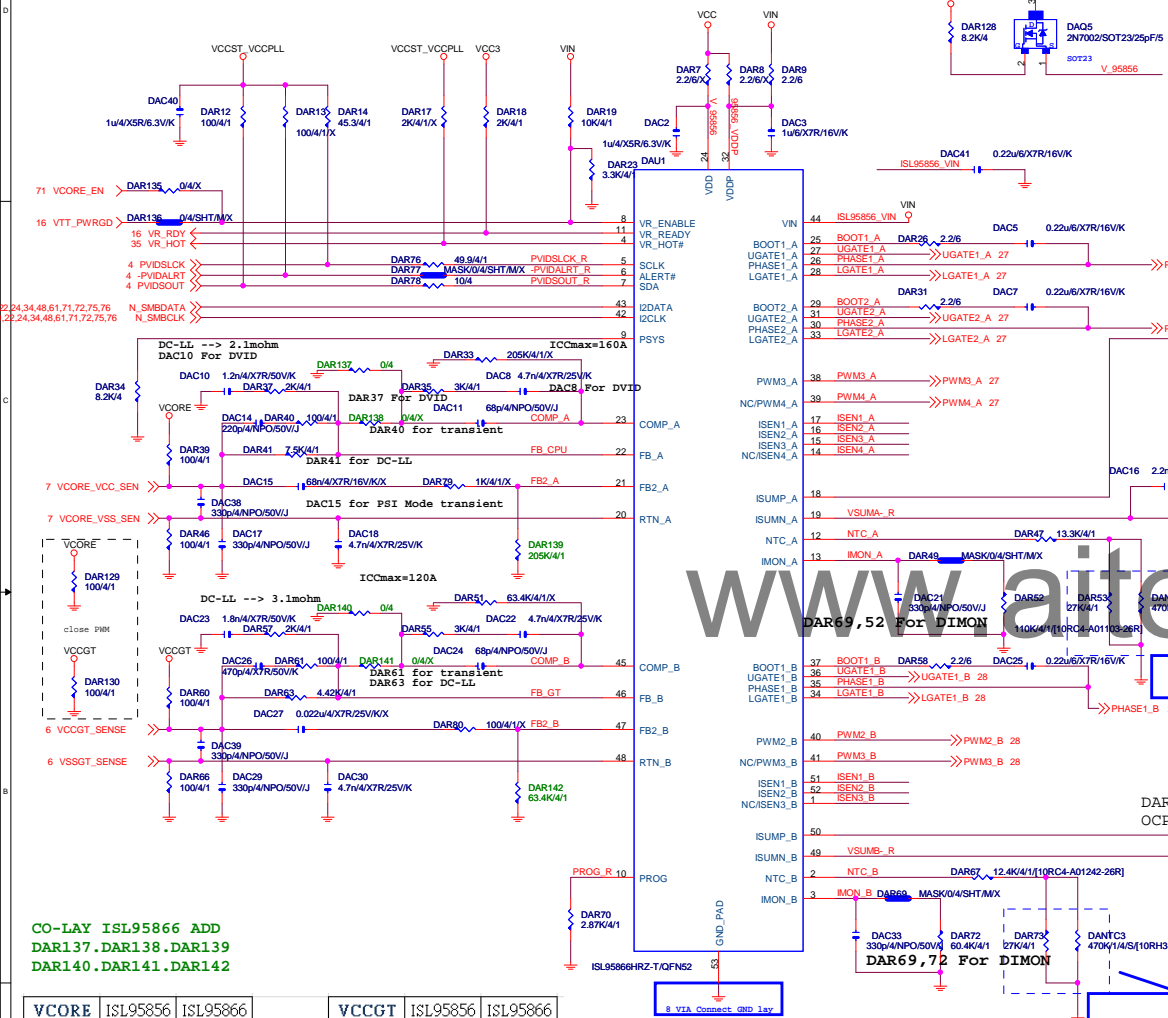
Function	SEL
xI--> xOa	L
xI--> xOb	H

## Gigabyte Technology

Title	PCIE X1 1,2	Rev
Size	Document Number	GA-Z770X-GAMING 7 M2P1
Customer	Date	Tuesday, October 04, 2016
Sheet	24	of 76





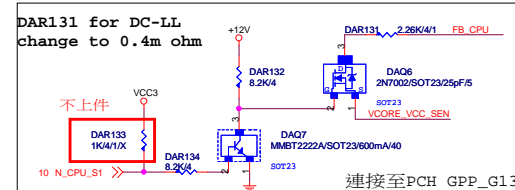
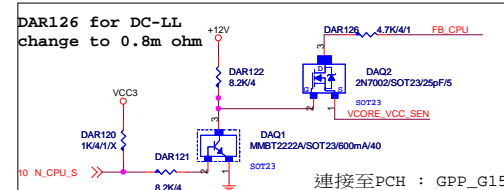
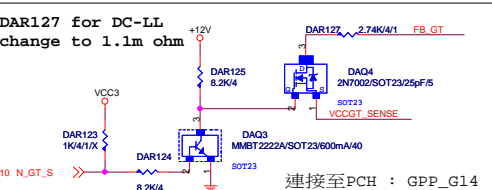
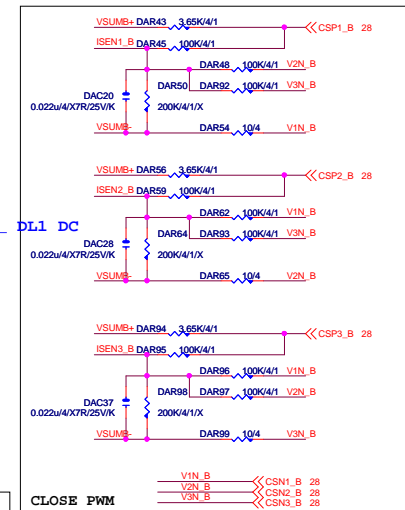
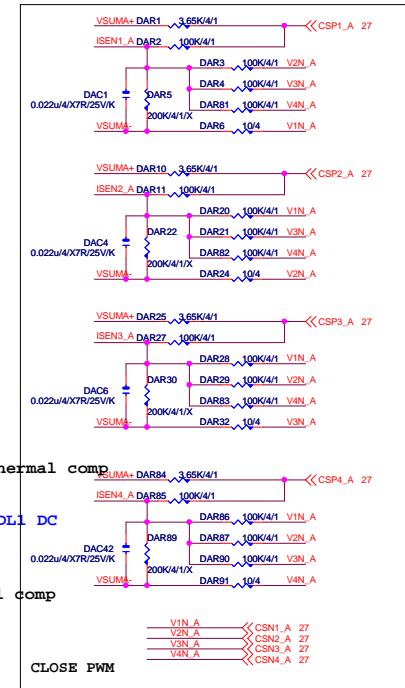
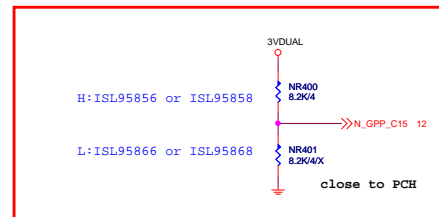


CO-LAY ISL95866 ADD  
DAR137.DAR138.DAR139  
DAR140.DAR141.DAR142

Vcore	ISL95856	ISL95866	VCCGT	ISL95856	ISL95866
DAR137	X	V	DAR140	X	V
DAR138	V	X	DAR141	V	X
DAR139	X	V	DAR142	X	V
DAC15	V	X	DAC27	V	X
DAR79	V	X	DAR80	V	X
DAR33	V	X	DAR51	V	X

VXG Loadline	N_GPP_G14
Auto	High
Standard	High
High	Lo

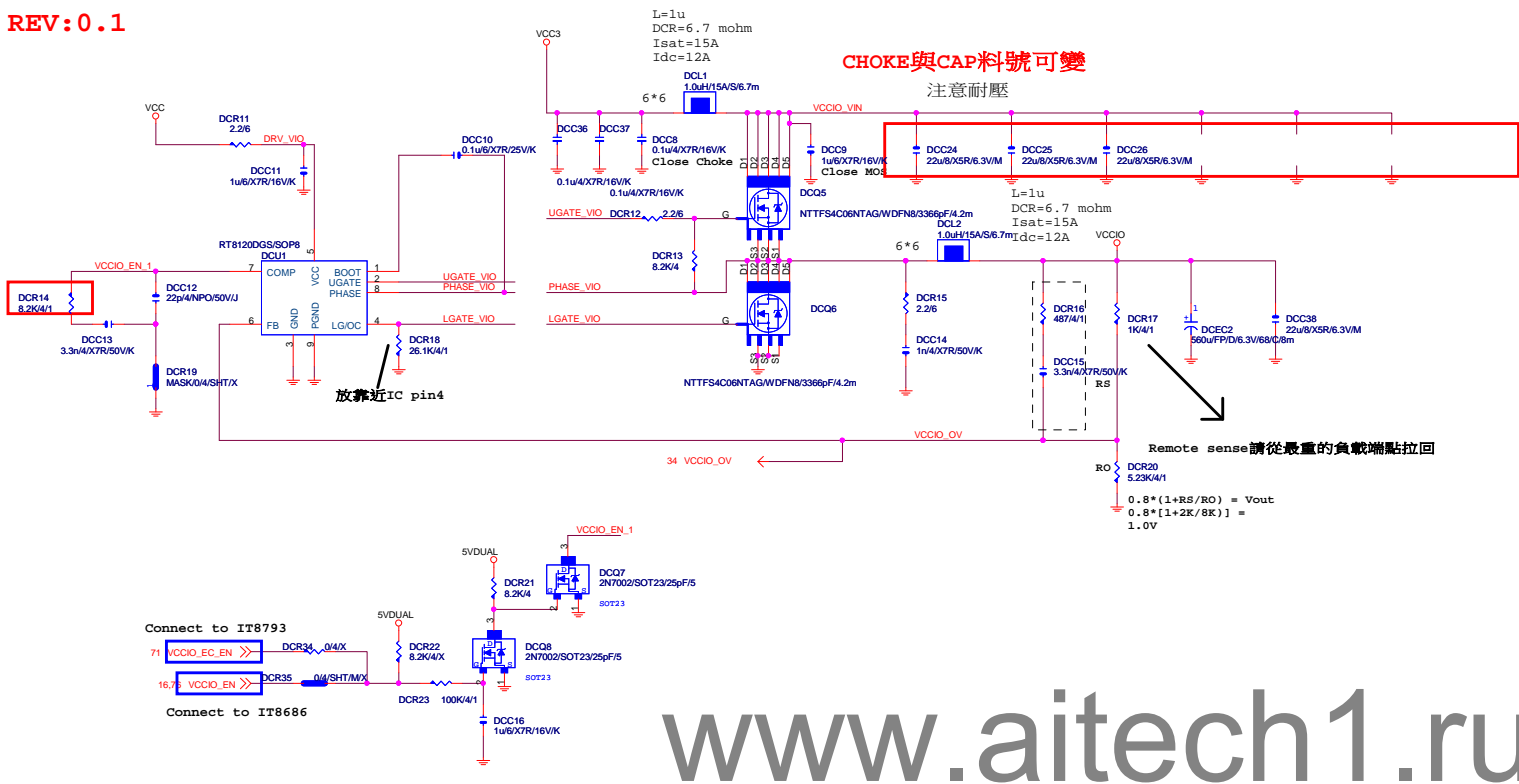
Vcore Loadline	N_GPP_G15	N_GPP_G13
Auto	High	High
Standard	High	High
High	Lo	High
Turbo	High	Lo







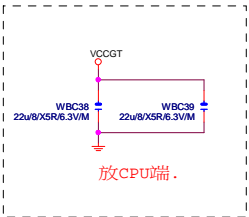
REV: 0.1



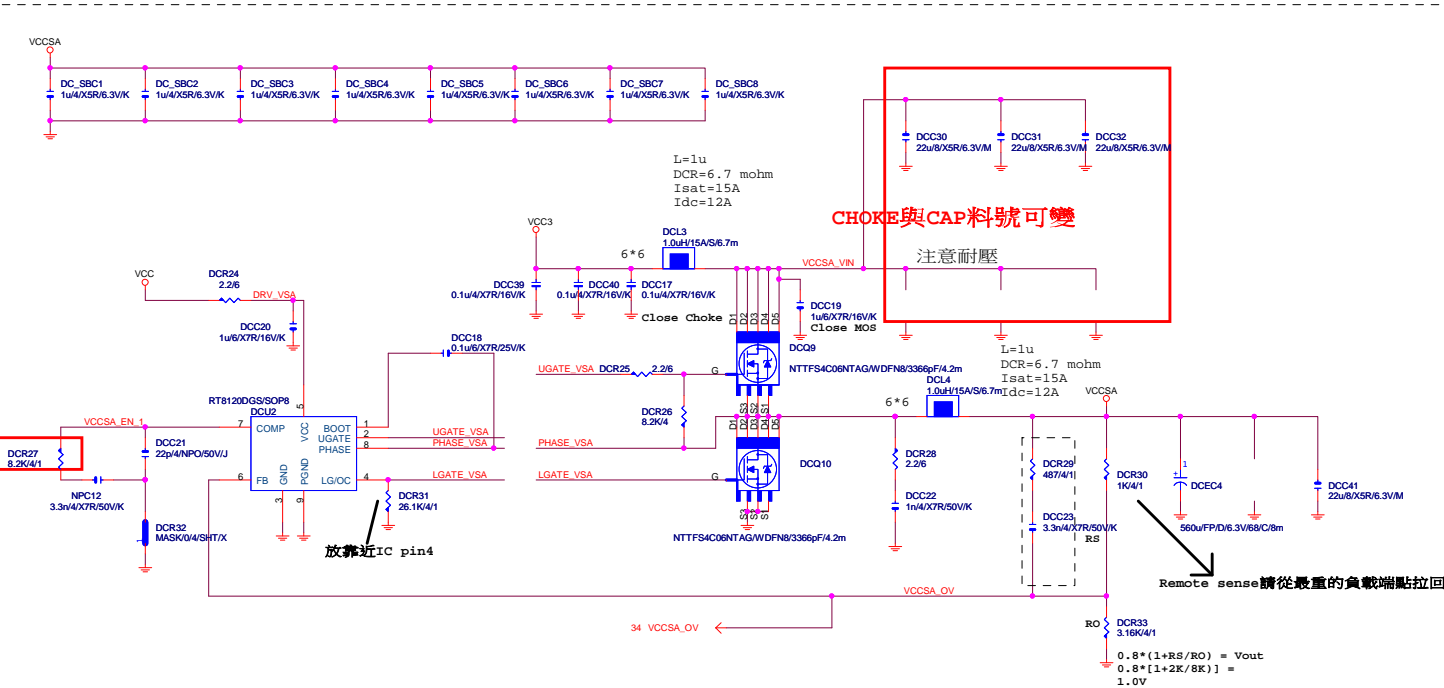
$V_{(BR)DSS}$	$R_{DS(on)} \text{ MAX}$	$I_D \text{ MAX}$
30 V	4.2 mΩ @ 10 V	67 A
	6.1 mΩ @ 4.5 V	

Remote sense請從最重的負載端點拉回

$$\begin{aligned} 0.8 \cdot (1 + R_S/R_O) &= V_{out} \\ 0.8 \cdot [1 + 2K/8K] &= \\ 1.0V \end{aligned}$$

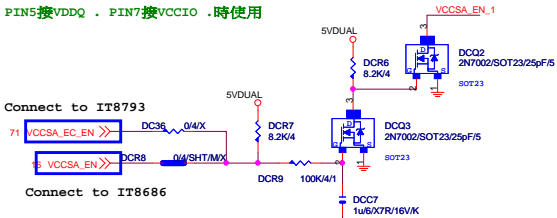


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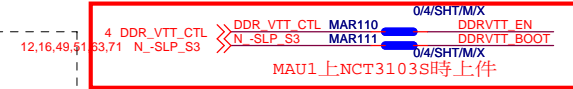


SIO PIN5 . PIN7 用在其他function時使用

SIO PIN5接VDDQ . PIN7接VCCIO .時使用



## DDR4

**DDRVTT**

# GIGABYTE™

## RT8120\_DDR4 POWER

Size Custom	Document Number <b>GA-Z270X-GAMING 7 MG</b>	Rev <b>1.01</b>
Date: Monday, September 12, 2016	Sheet 30 of 76	

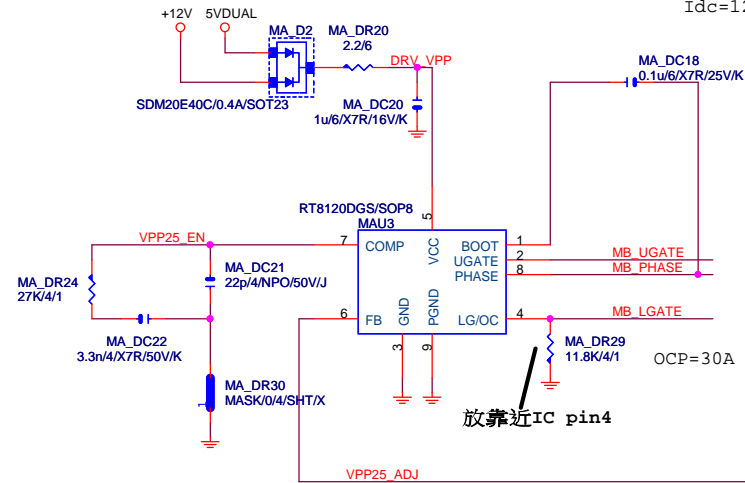
Date: Monday, September 12, 2016	Sheet 30 of 76
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REV:0.1

VPP\_25V

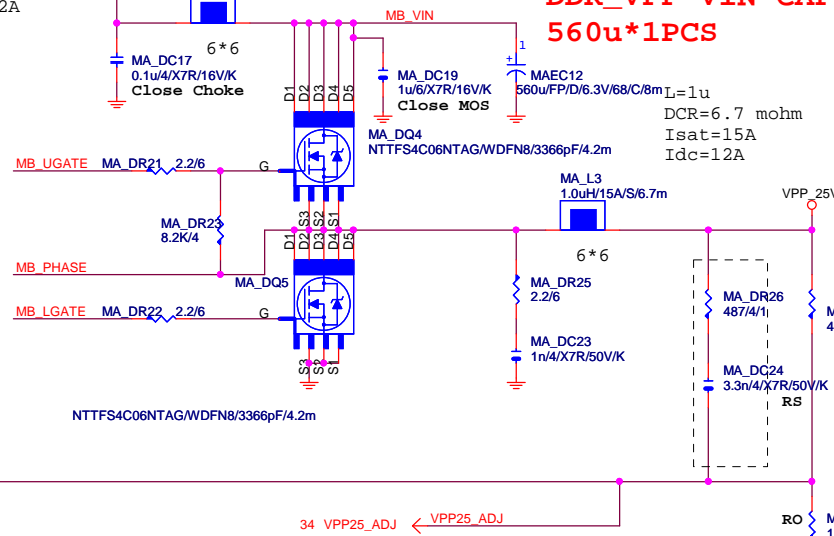
$L=1\mu$   
 $DCR=6.7\text{ mohm}$   
 $Isat=15A$   
 $I_{dc}=12A$

CHOKE與CAP料號可變



放靠近IC pin4

OCP=30A



$V_{(BR)DSS}$	$R_{DS(on) MAX}$	$I_D MAX$
30 V	4.2 mΩ @ 10 V	67 A
	6.1 mΩ @ 4.5 V	

SUPPORT DDR4 2.5V

25A MAX



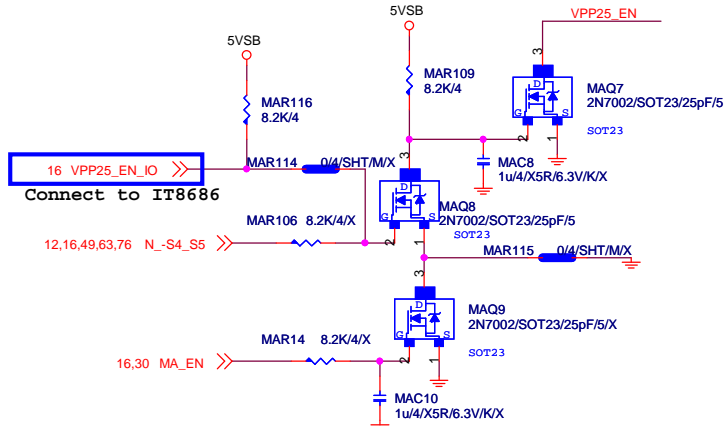
請放置CHOKE一出來位置.先預留.請自行確認ripple後再決定是否上件

Remote sense請從最重的負載端點拉回

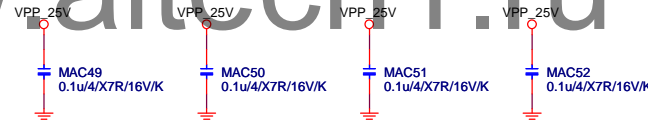
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PWR\_SEQ

\* 刪 MA\_DR32

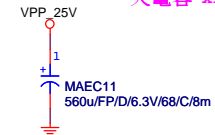


Connect to IT8686



VPP CAP 560u\*1PCS

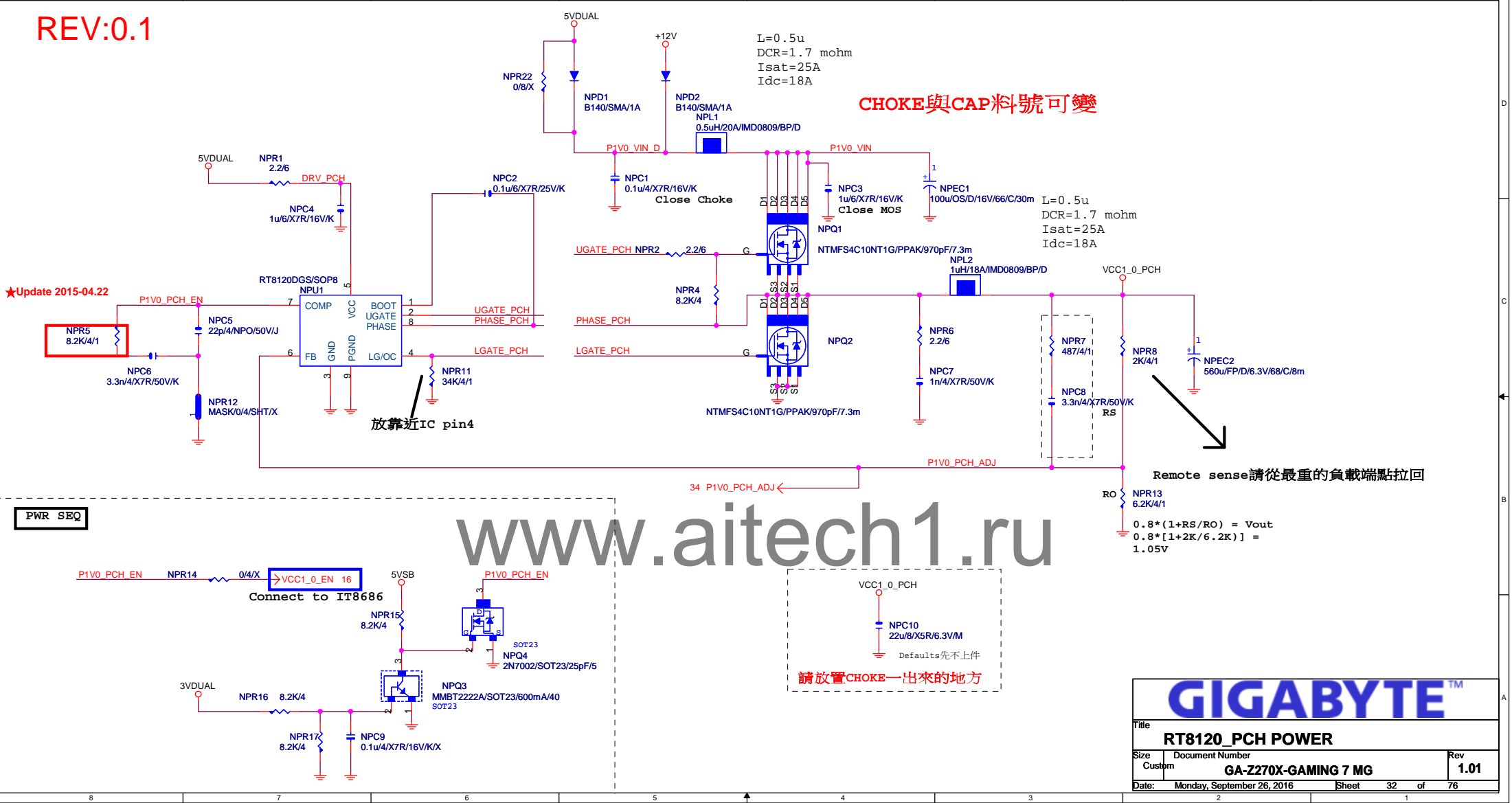
\* 大電容 x1



GIGABYTE™

Title	RT8120_VPP25 POWER	
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 7 MG	1.01
Date:	Monday, September 12, 2016	Sheet 31 of 76

REV:0.1

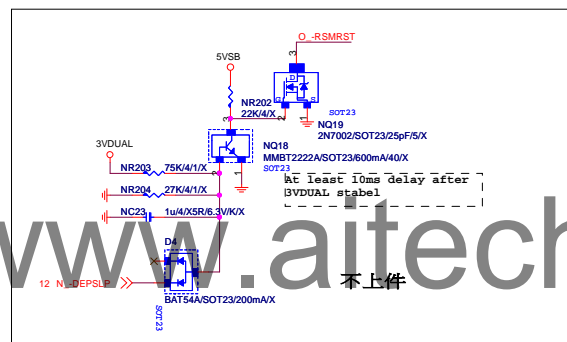
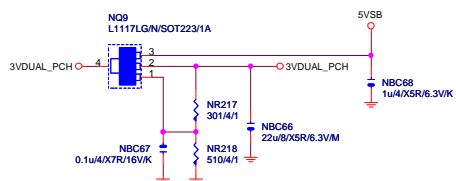
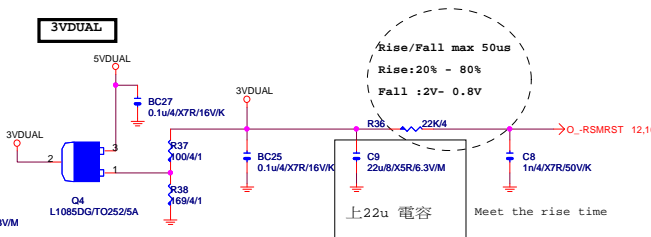
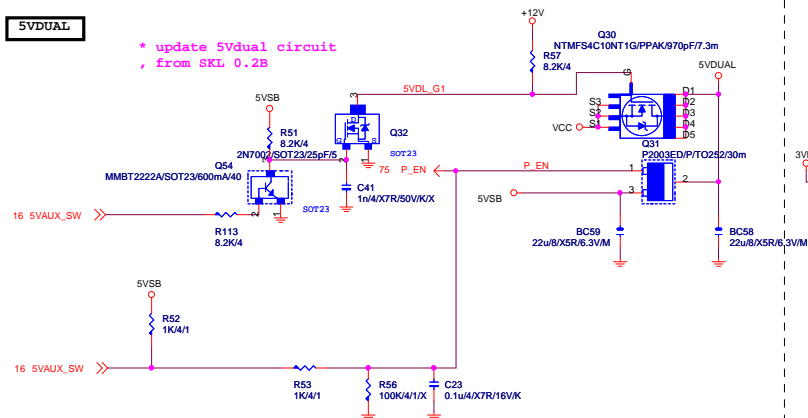


GIGABYTE™			
Title			
RT8120_PCH POWER			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 7 MG	1.01	
Date:	Monday, September 26, 2016	Sheet	32 of 76

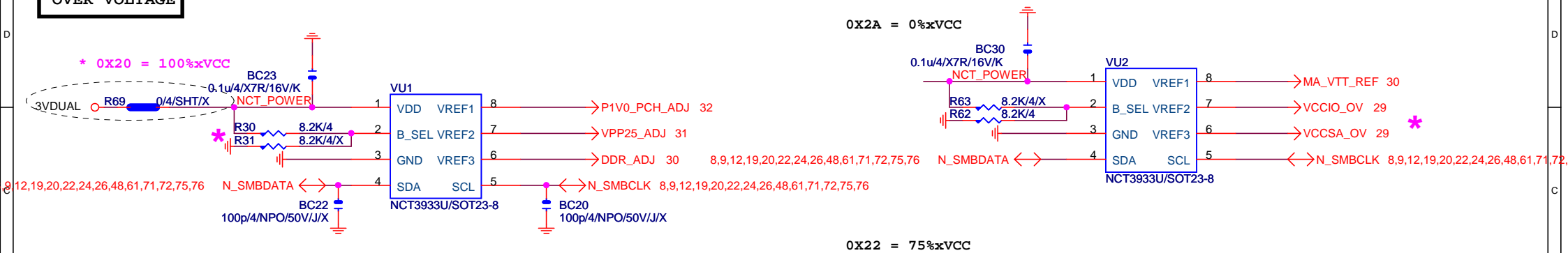




```
* update 5Vdual circuit
, from SKL 0.2B
```



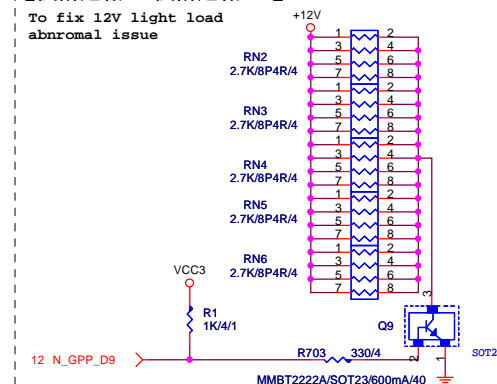
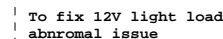
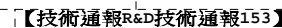
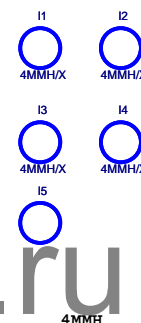
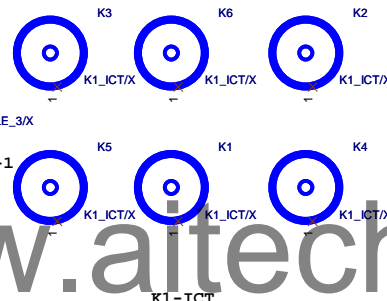
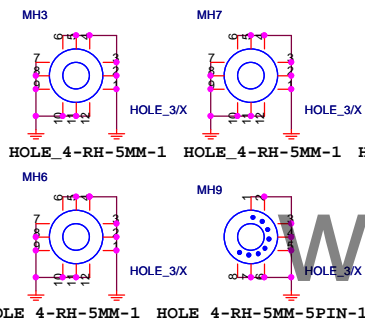
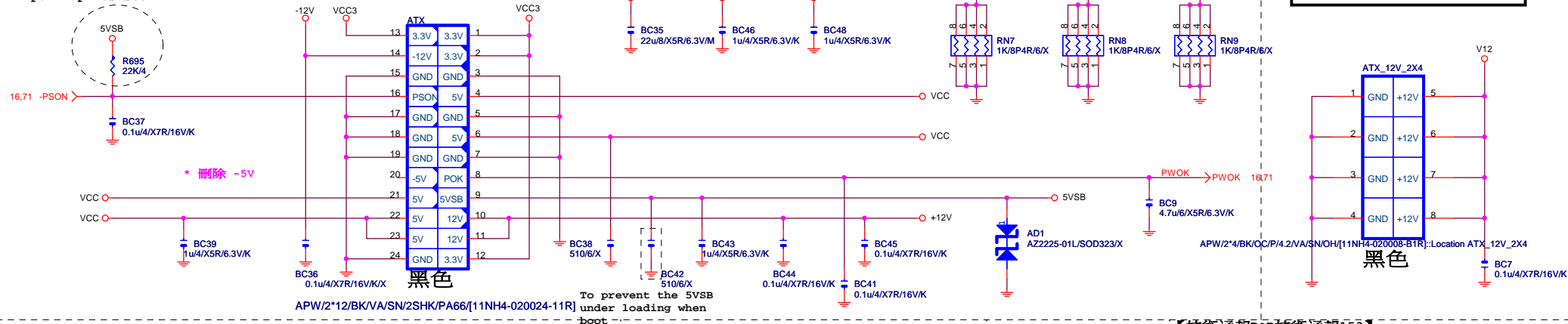
OVER VOLTAGE



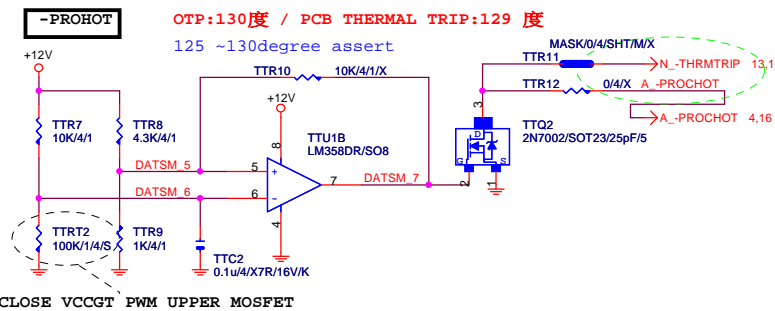
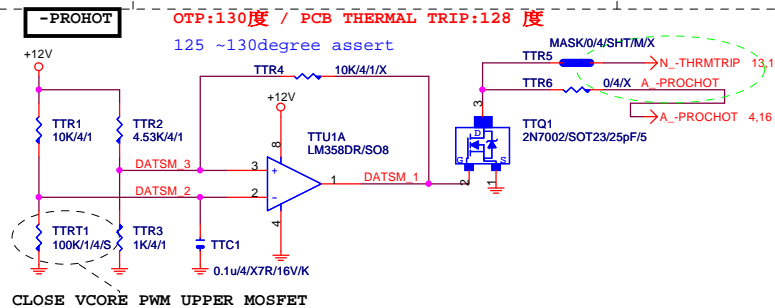
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

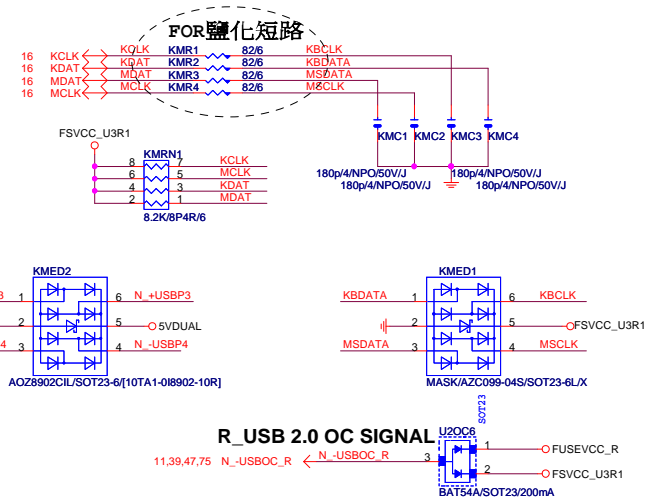
Gigabyte Technology		
CPU CORE VR-2		
Title	Document Number	Rev
	GA-Z270X-GAMING 7 MG	1.01
Size Custom		
Date:	Monday, September 12, 2016	Sheet 34 of 76

ATXX4 POWER CONNECTOR



**-PROHOT** \* 保留 ?

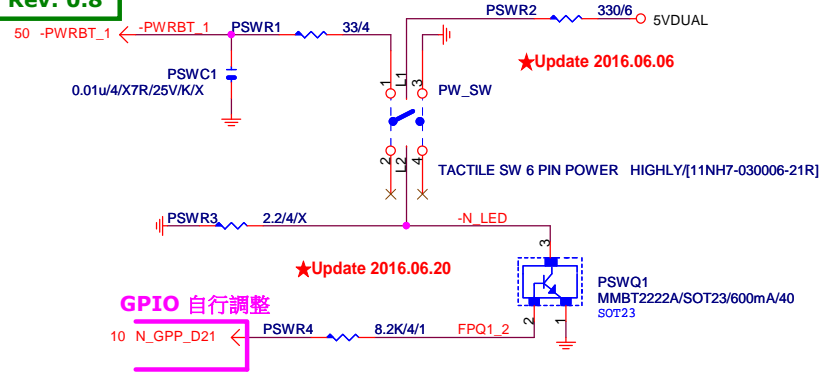




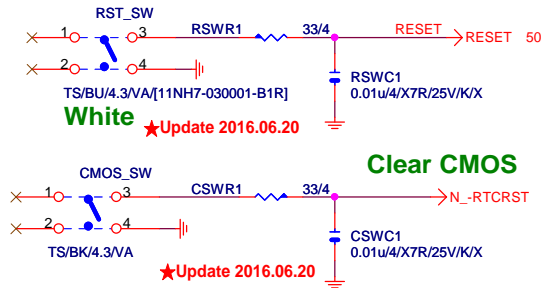
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Rev: 0.8

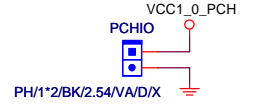
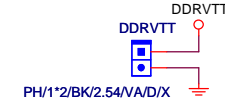
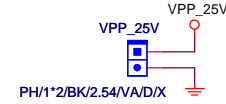
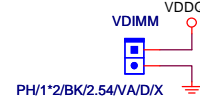
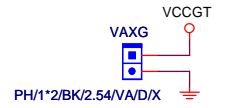
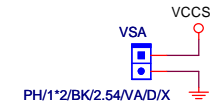
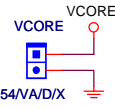
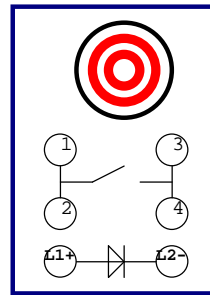
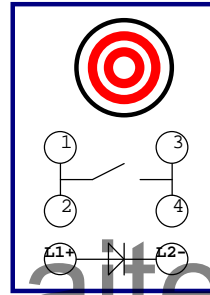
## POWER



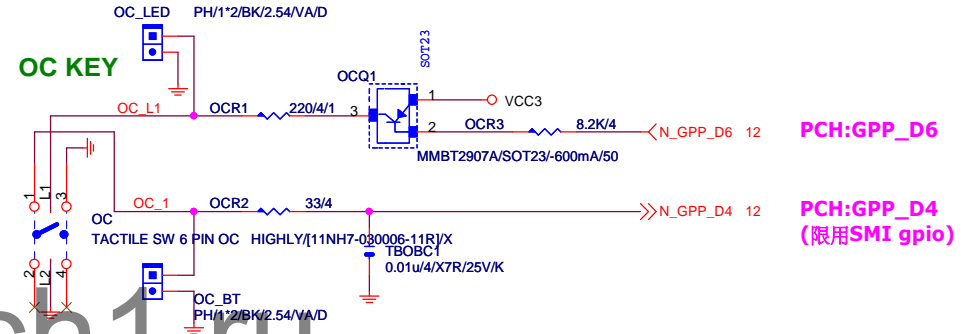
## Reset



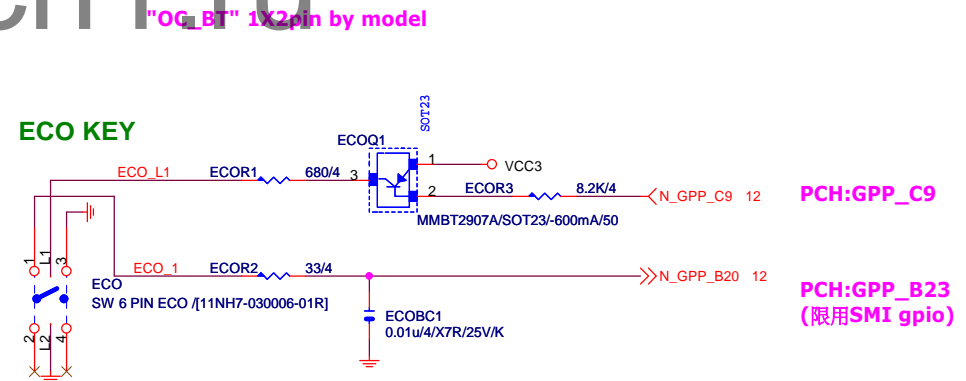
## Clear CMOS



## "OC\_LED" 1X2pin by model

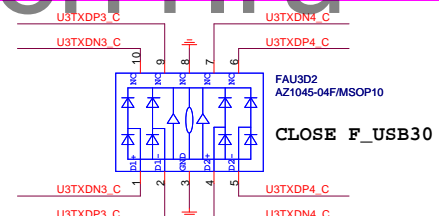


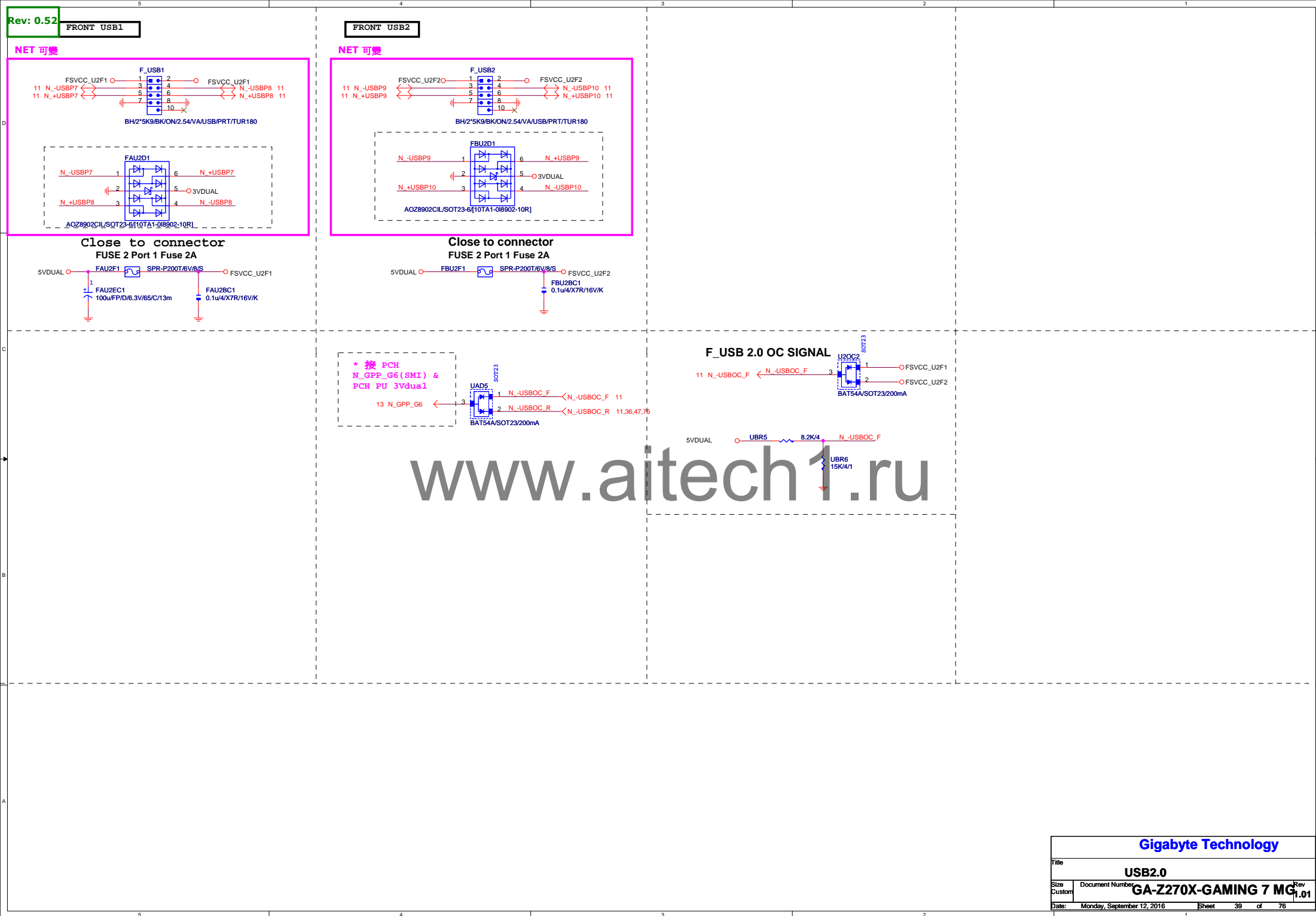
## "OC\_BT" 1X2pin by model



Gigabyte Technology

Title			
OC BOTTOM			
Size	Document Number	GA-Z270X-GAMING 7 MG	
Custom			
Date:	Wednesday, November 23, 2016	Sheet	37 of 76



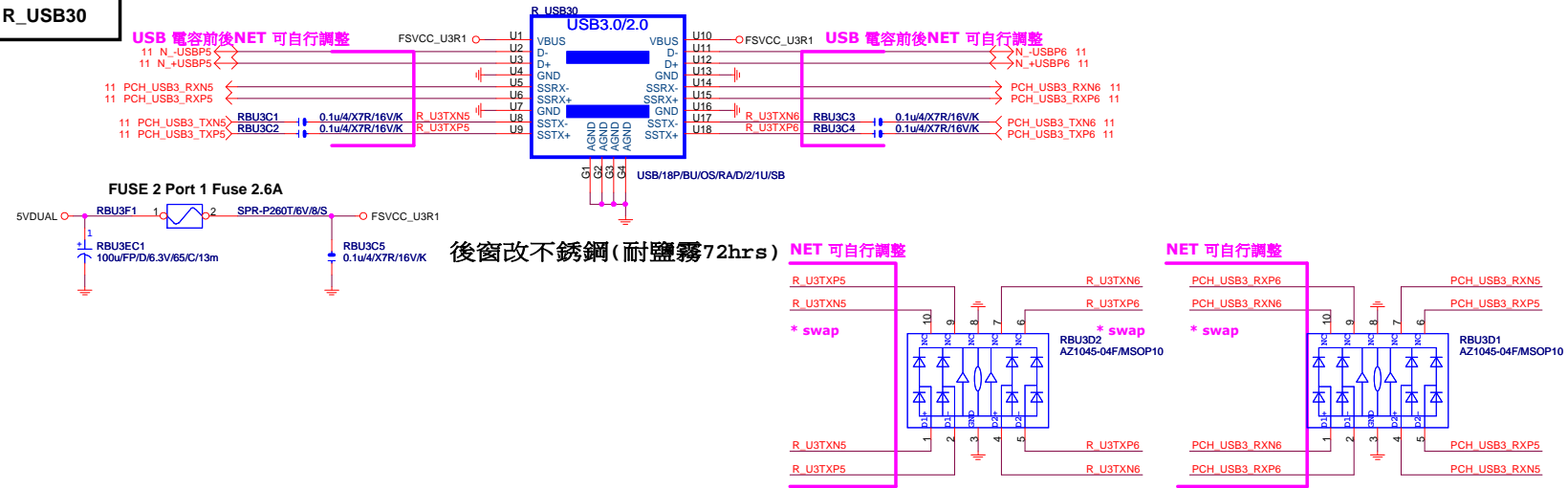


Gigabyte Technology

Title		USB2.0	
Size	Document Number	GA-Z270X-GAMING 7 MG	Rev 1.01
Custom	Date	Monday, September 12, 2016	Sheet 39 of 76



R\_USB30

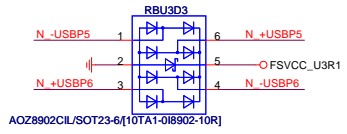


後窗改不銹鋼(耐鹽霧72hrs)

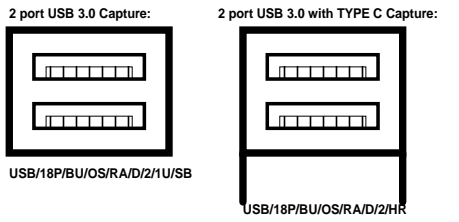
NET 可自行調整

NET 可自行調整

ESD 可自行SWAP PIN



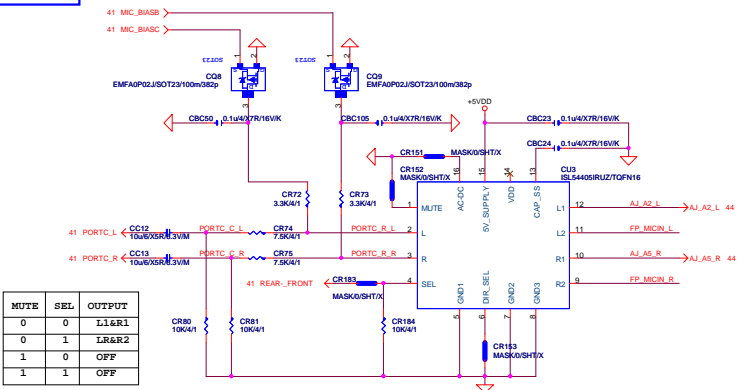
CONNECTOR 自行調整



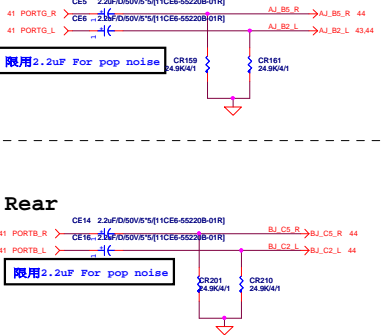
Gigabyte Technology			
Title			
KB_MS_USB3, R_USB30			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 7 MG	1.01	
Date:	Monday, September 12, 2016	Sheet	40 of 76



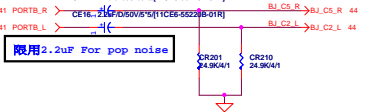
Rear MIC & FP MIC



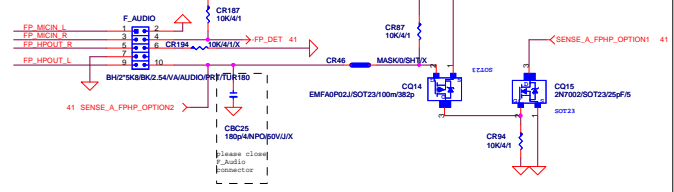
Line-Out



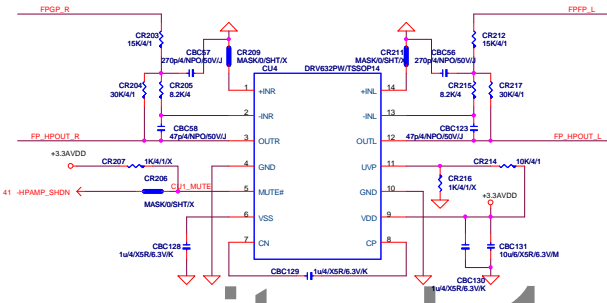
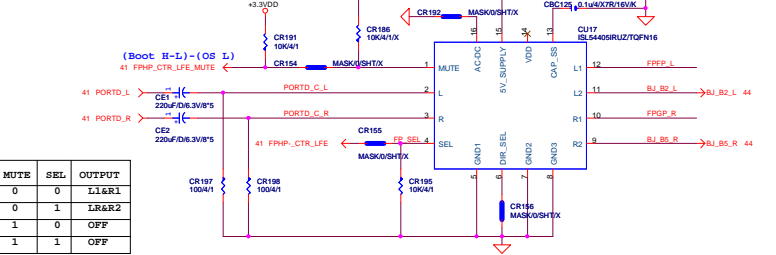
Rear



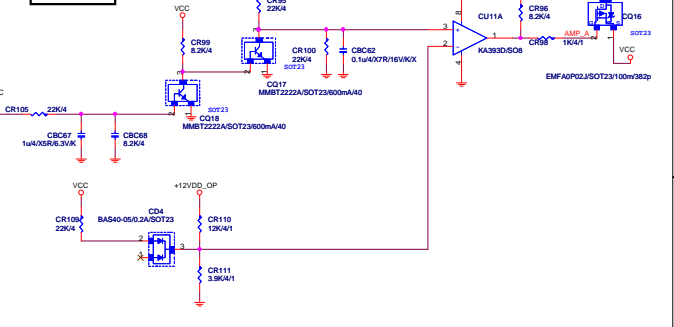
HD Audio FRONT PANE



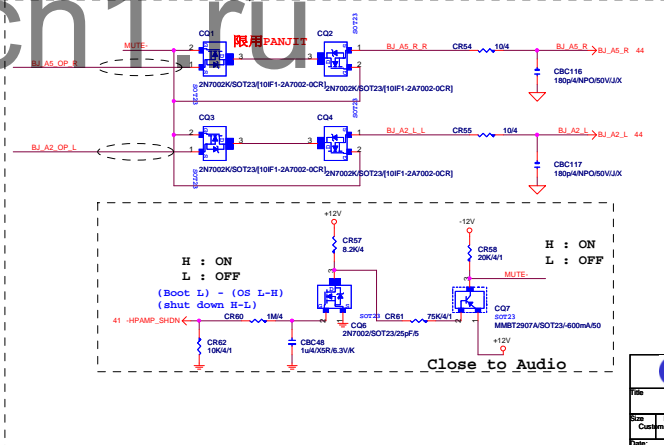
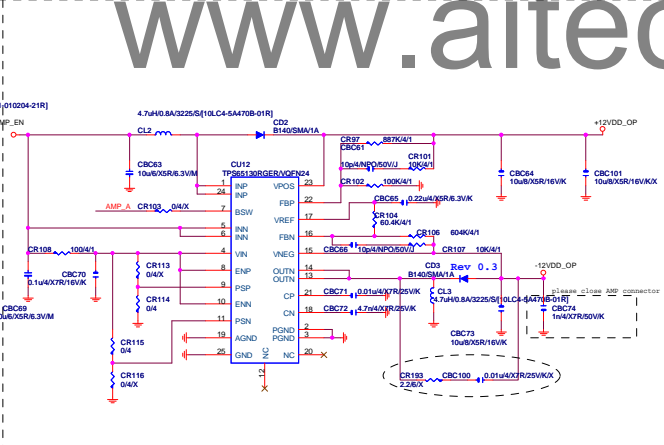
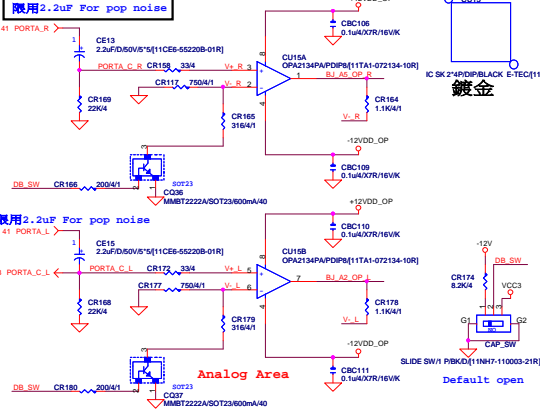
Rear CTR/SUB & FP HP-Out



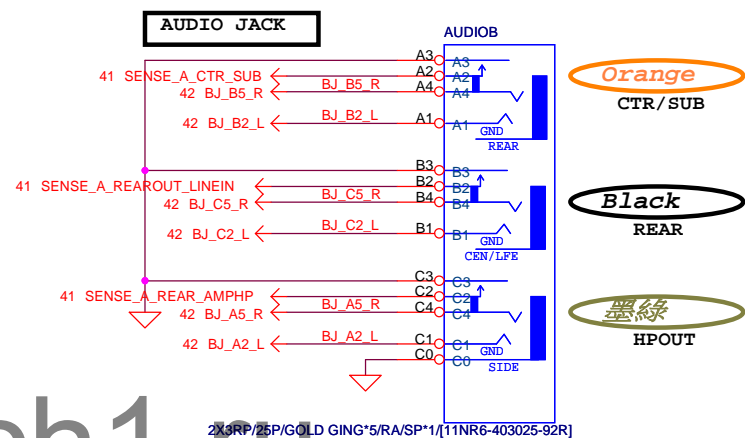
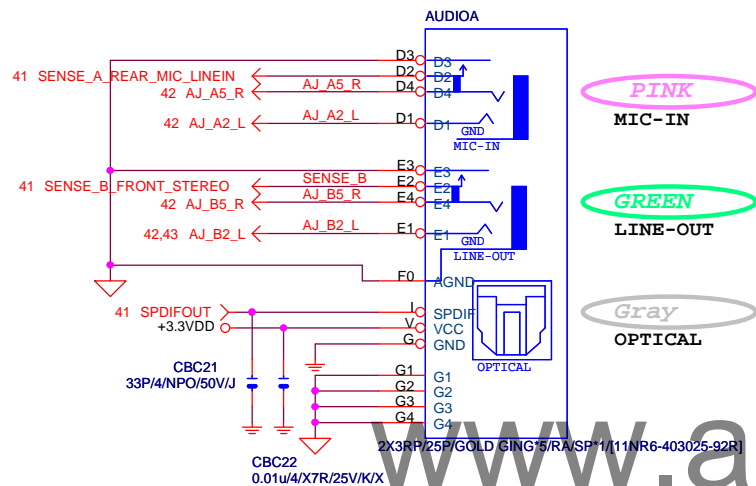
OP 反相防漏



AMPLIFIED





**Gigabyte Technology**

Title

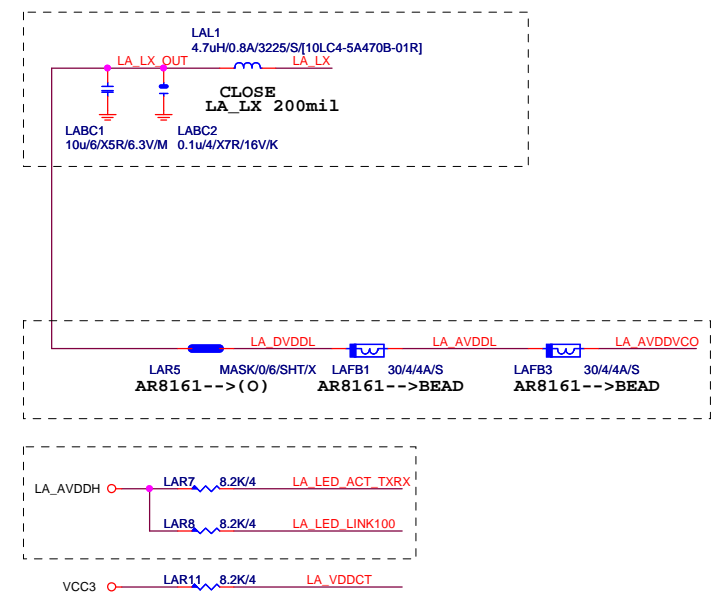
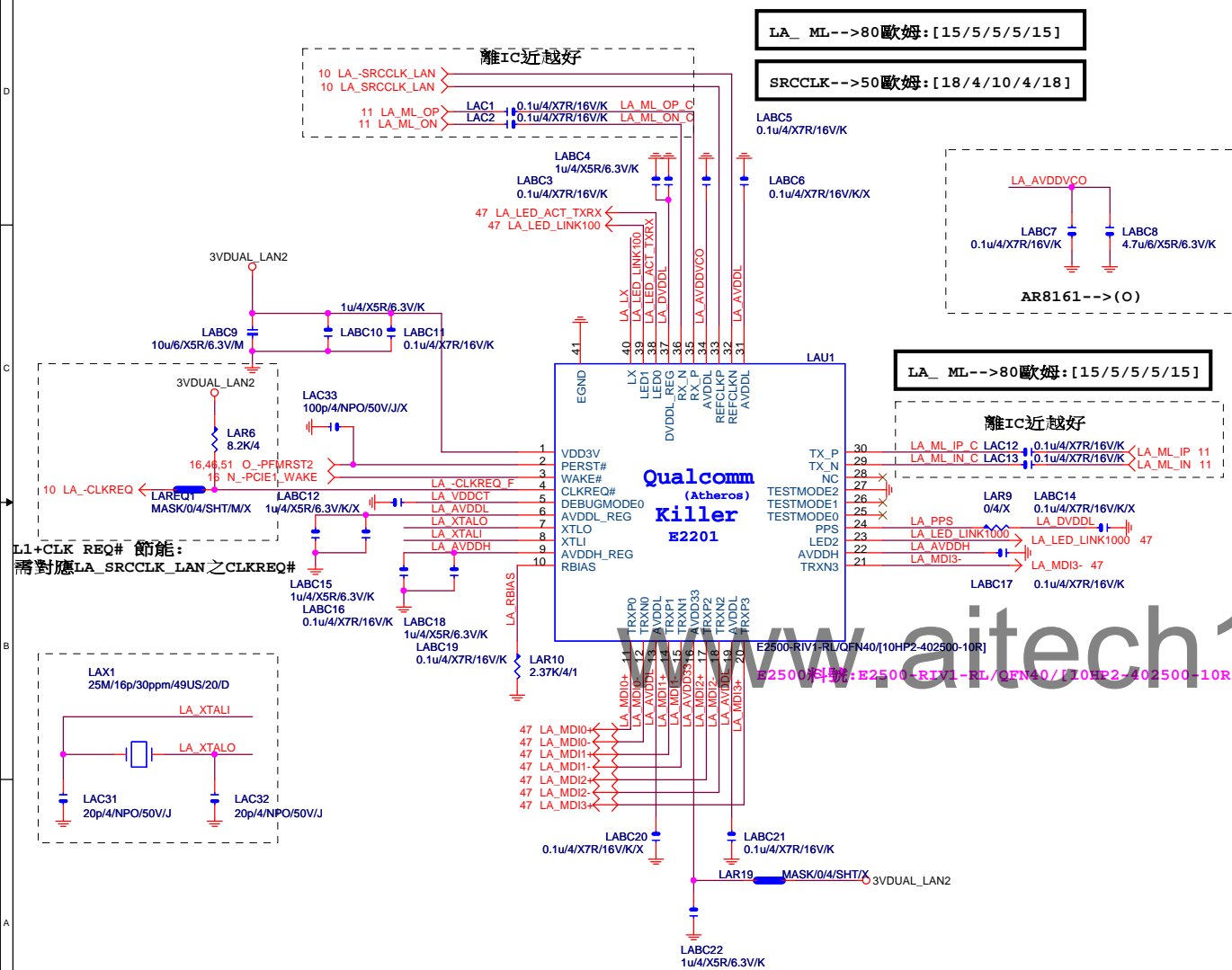
**Creative Sound3Di ZxR**Size  
Custom

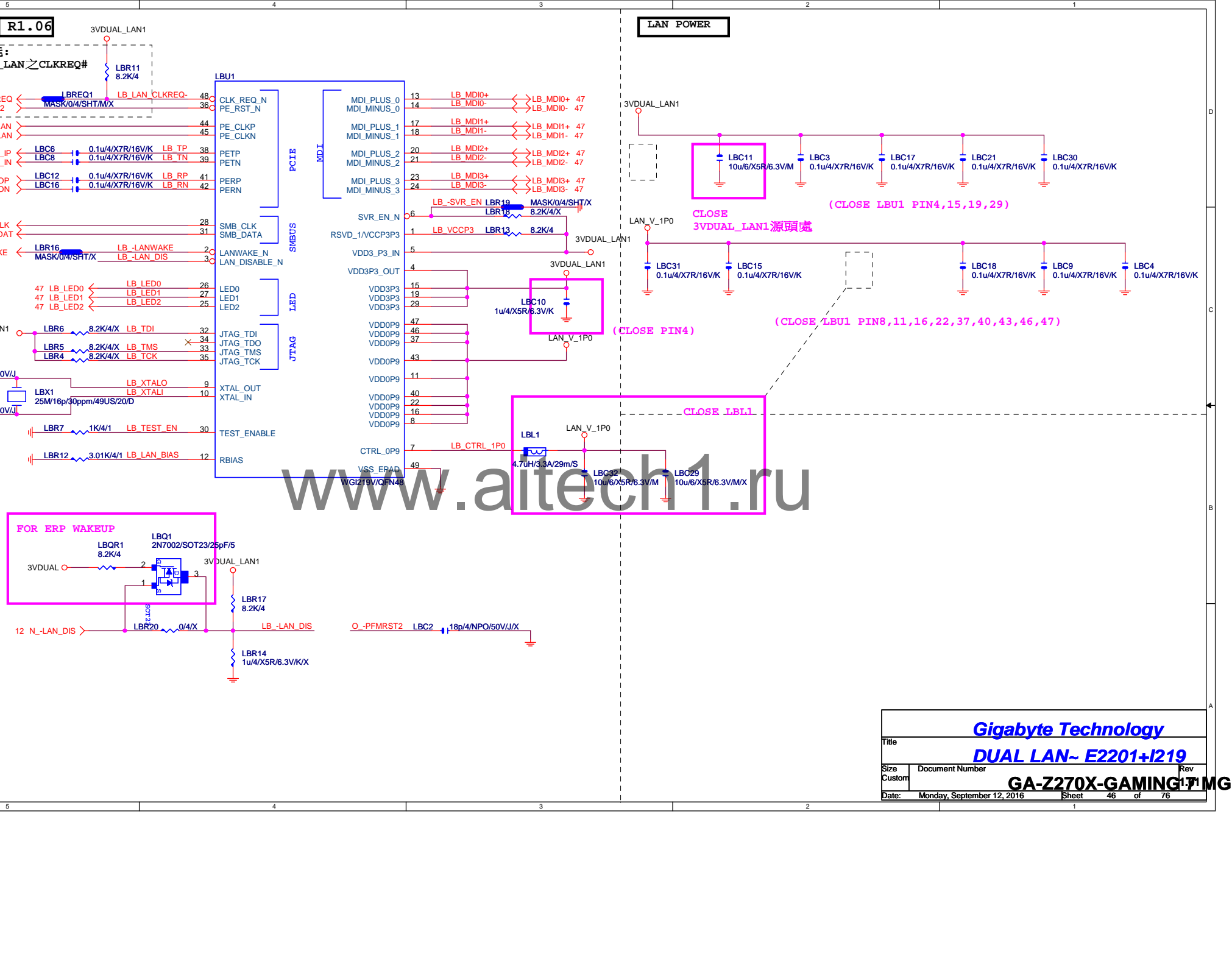
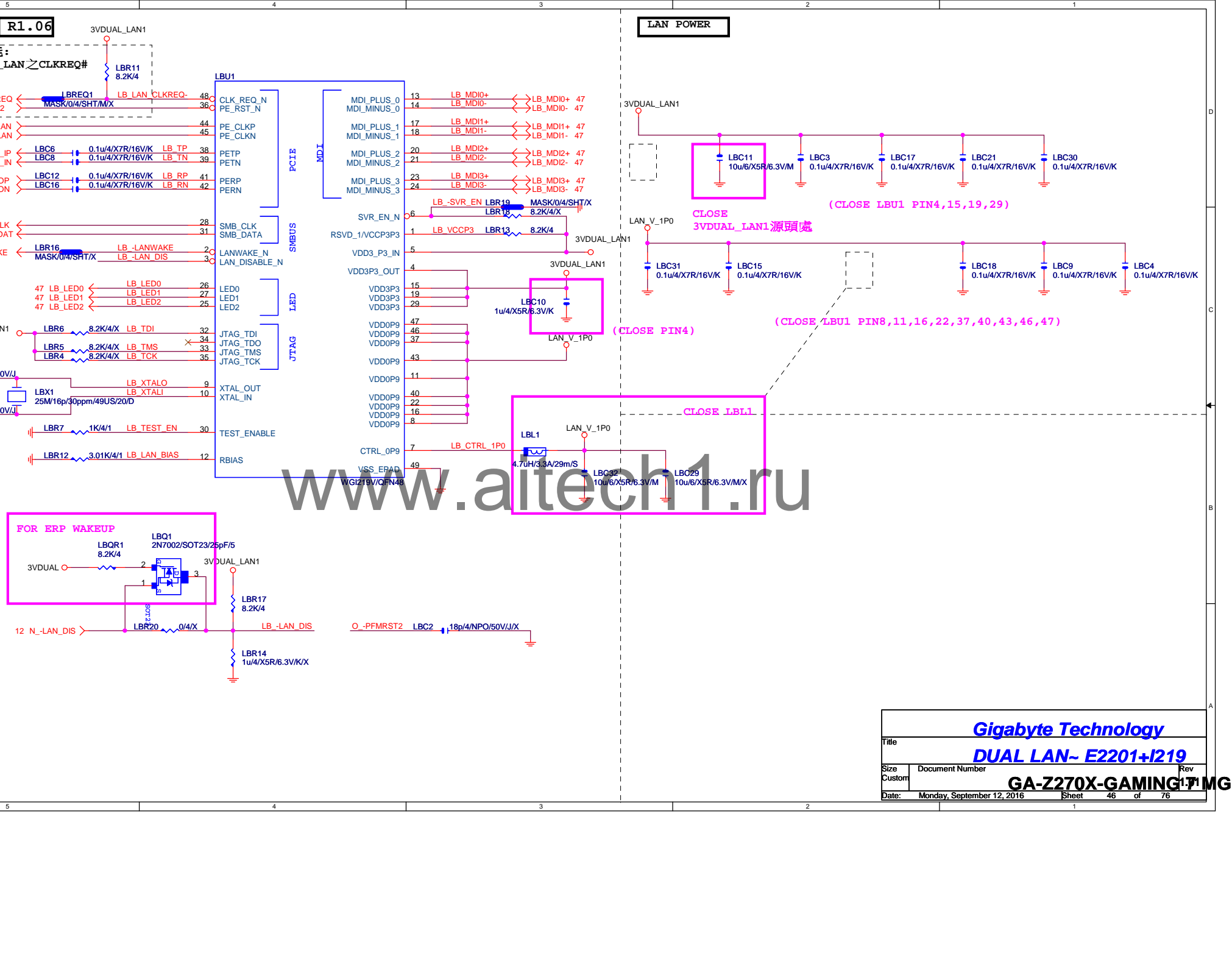
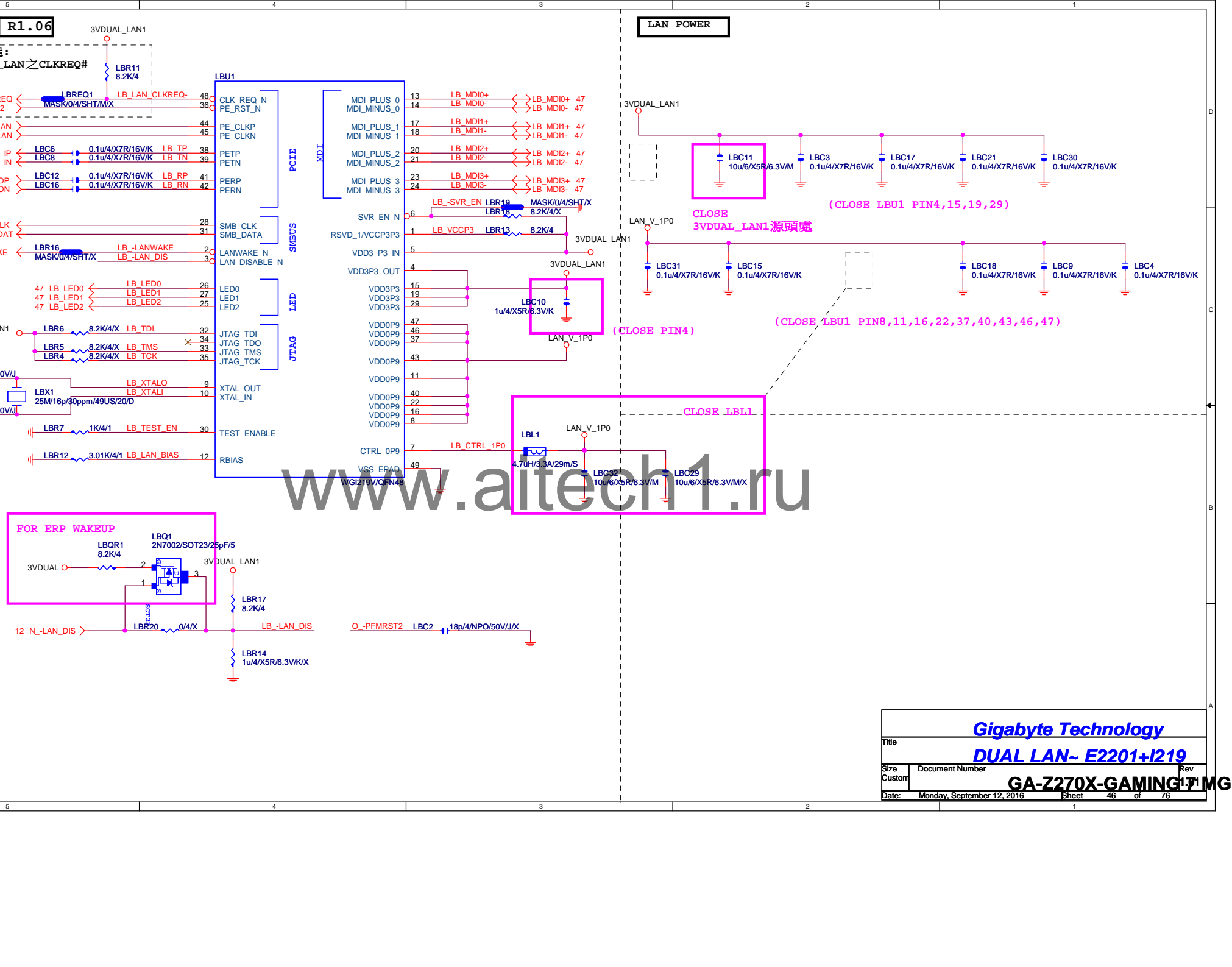
Document Number

**GA-Z270X-GAMING 7 MG**Rev  
1.01

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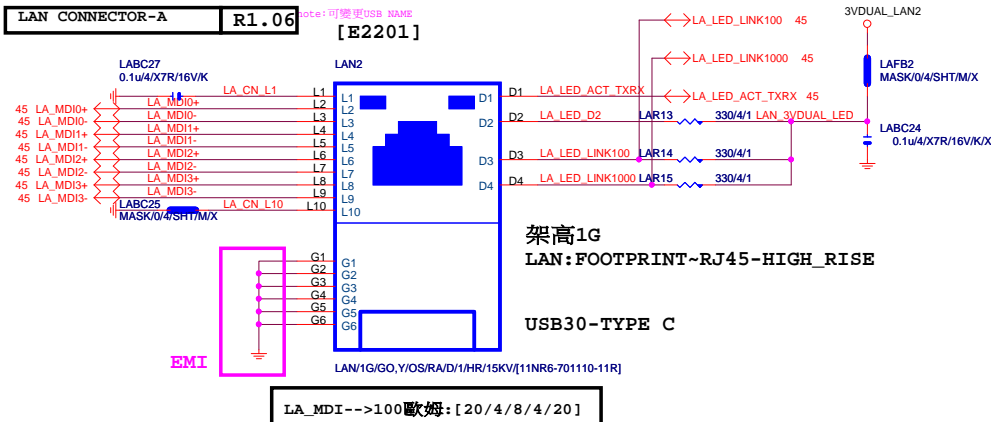
[illegible]



# LAN CONNECTOR-A R1.06

note:可變更USB NAME

[E2201]

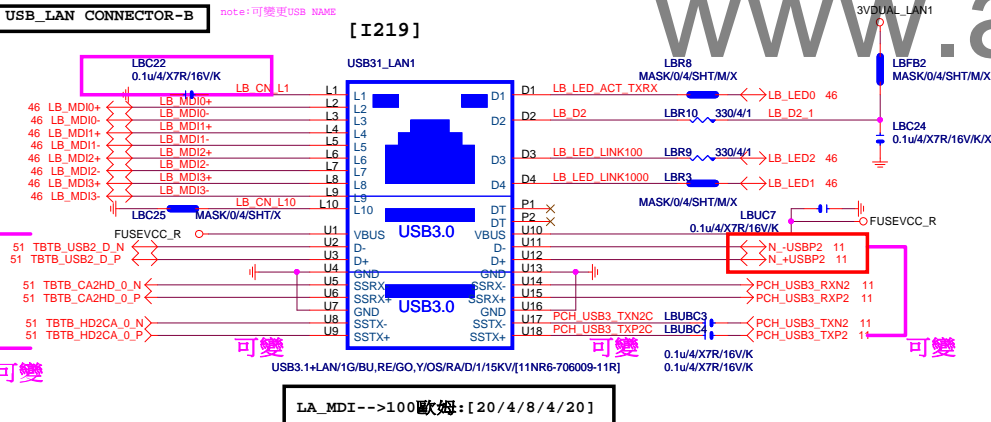


## RMA ESD PROTECT

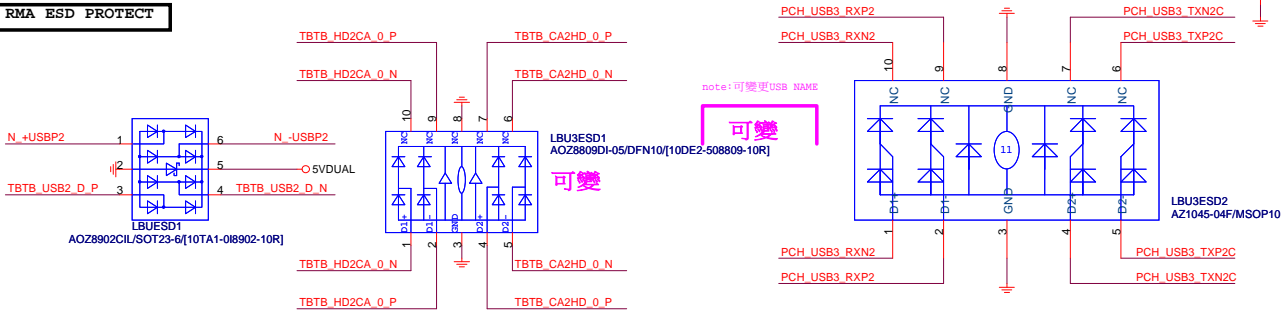
## USB LAN CONNECTOR-B

note:可變更USB NAME

[I219]

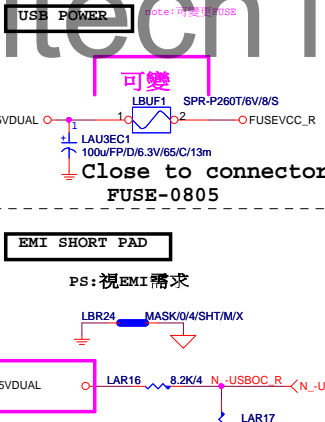


## RMA ESD PROTECT

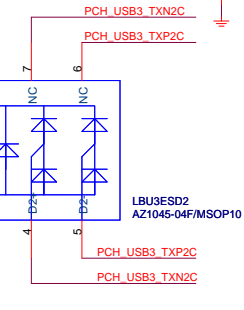


## USB POWER

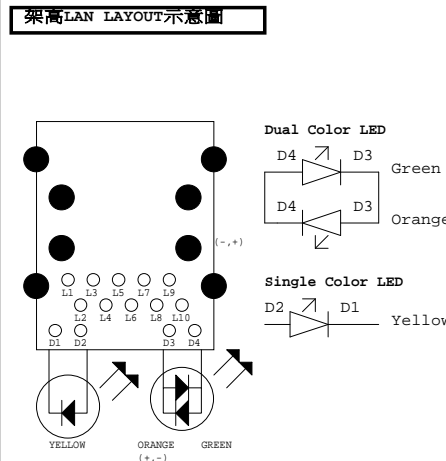
note:可變更USB



## RMA ESD PROTECT



## 架高LAN LAYOUT示意圖

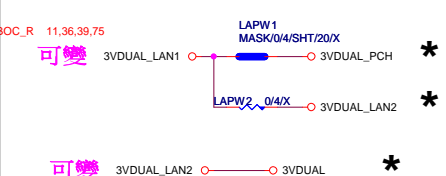


## NOTE:

- 3VDUAL\_LAN1, 3VDUAL\_LAN2 對接POWER供應電流 [目前暫接3VDUAL]
- USB2.0/3.0對應USB PORT [目前暫接USB 0,1,2,3 PORT]
- USB DROOP/DROP E-CAP
- USB OC線路

## LAN POWER

note: lan power連接及電流

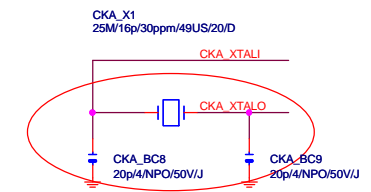
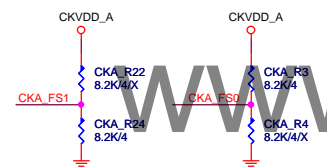
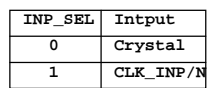
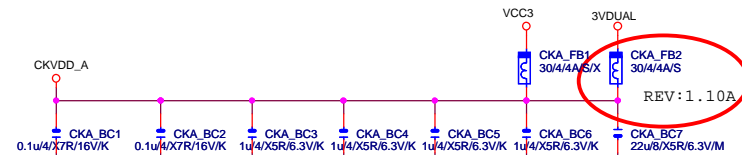


~USB30\_LAN1設定在ERP可LAN WAKEUP  
~USB30\_LAN2由獨立LAN POWER L1117供給

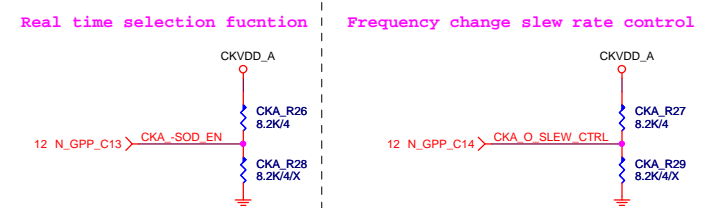
Gigabyte Technology			
Title	LAN CONNECTOR-E2201+I219		
Size	Custom	Document Number	Rev
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GA-Z270X-GAMING 17 MG

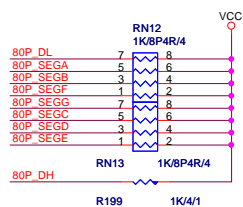
IDT6V41630



CKA_XTALO	CKA_R18	0/4/SHT/MO	CKA_X1
CKA_XTALI	CKA_R19	0/4/SHT/MO	CKA_X2
CKA_PEX_REFCLK	CKA_R30	0/4/X	CKA_X1
CKA_-PEX_REFCLK	CKA_R31	0/4/X	CKA_X2

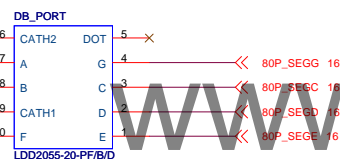
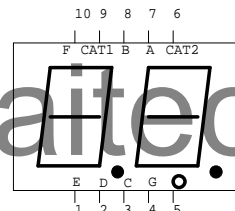


80 PORT

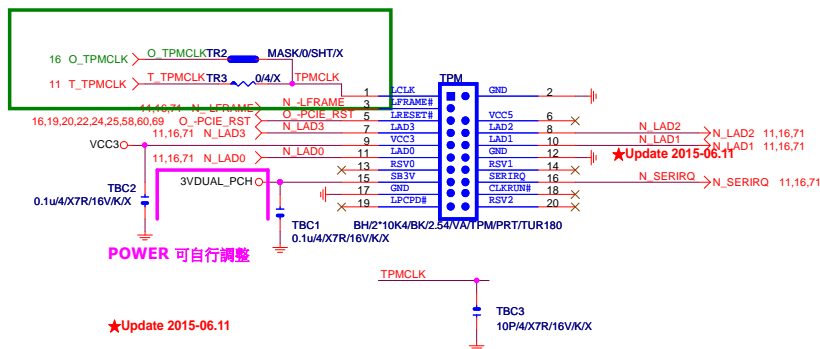


16 80P\_DL >>-----1  
16 80P\_SEGA >>-----1  
16 80P\_SEGB >>-----1  
16 80P\_DH >>-----1  
16 80P\_SEGF >>-----1

COMMON CATHODE

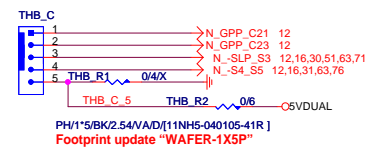
Physical Package  
(TOP VIEW)

TPM CONNECT

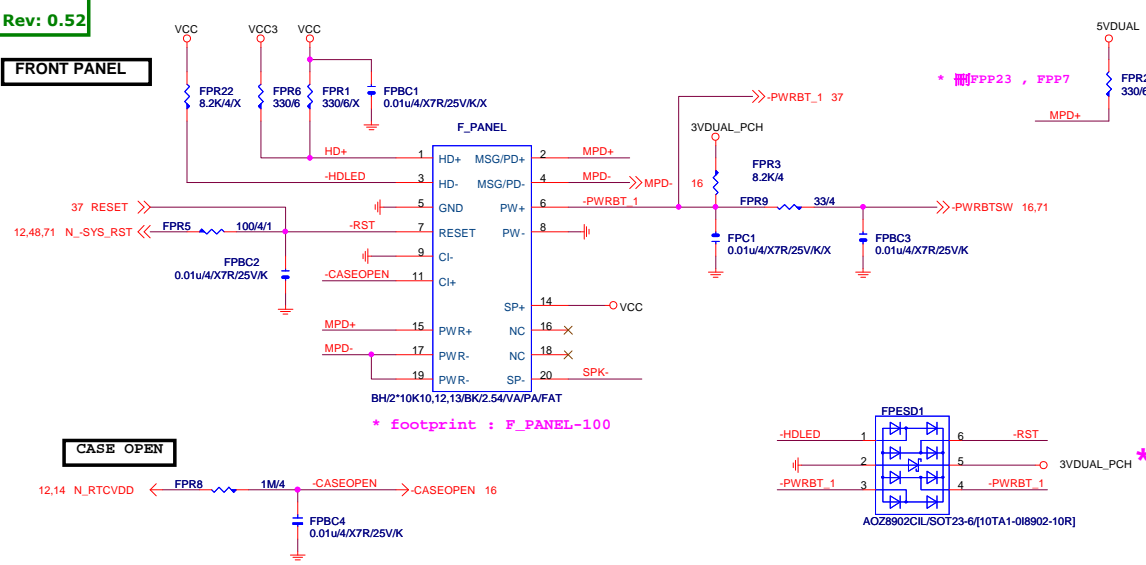


## Thunderbolt

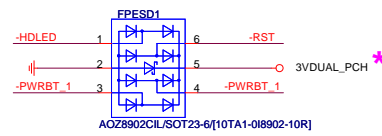
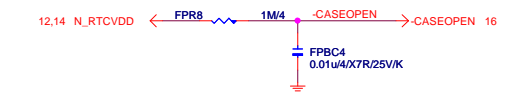
★Update 2015-12-29



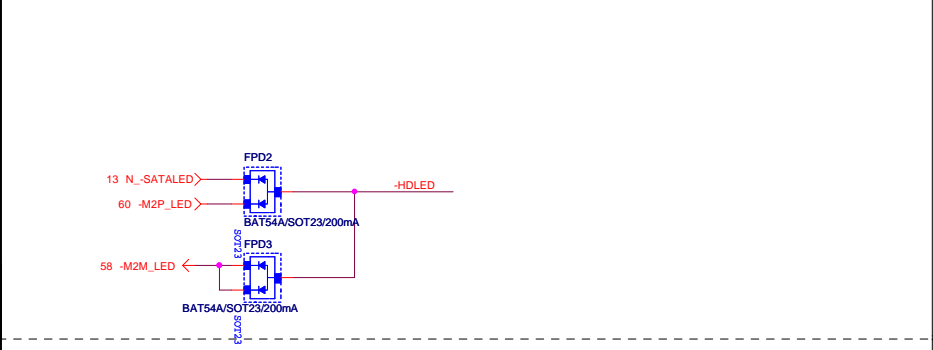
FRONT PANEL



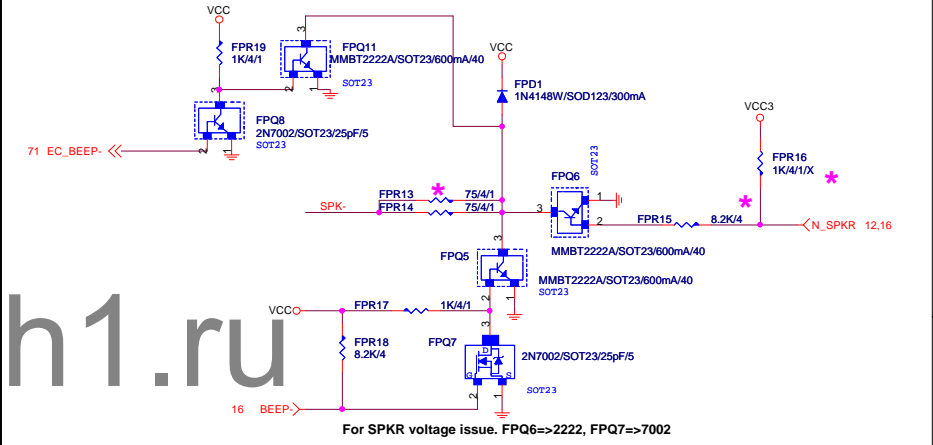
CASE OPEN



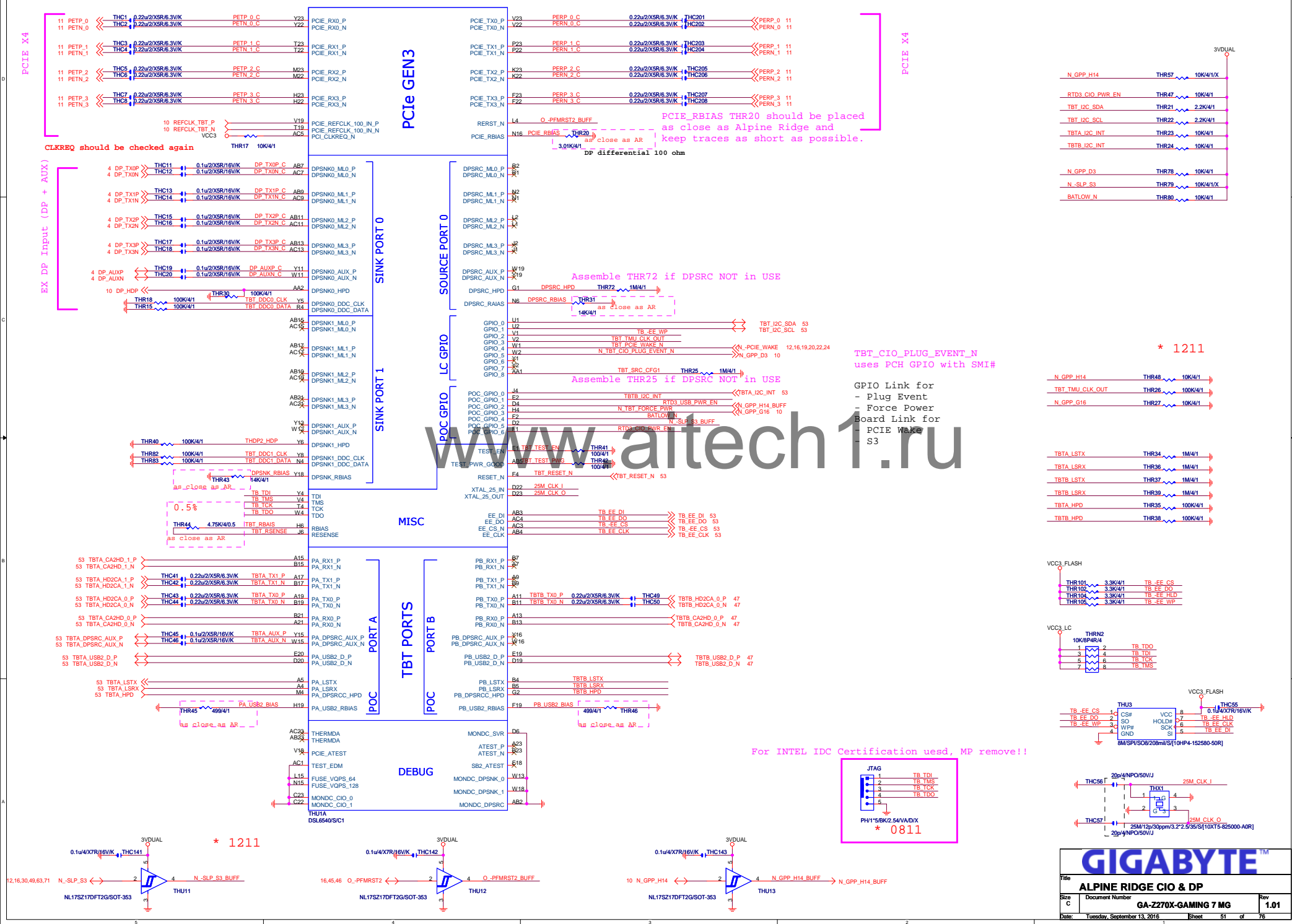
SATA LED SATALED# signal open-collector, pull-up (8.2 kΩ to 10 kΩ) to Vcc3\_3



SPEAKER

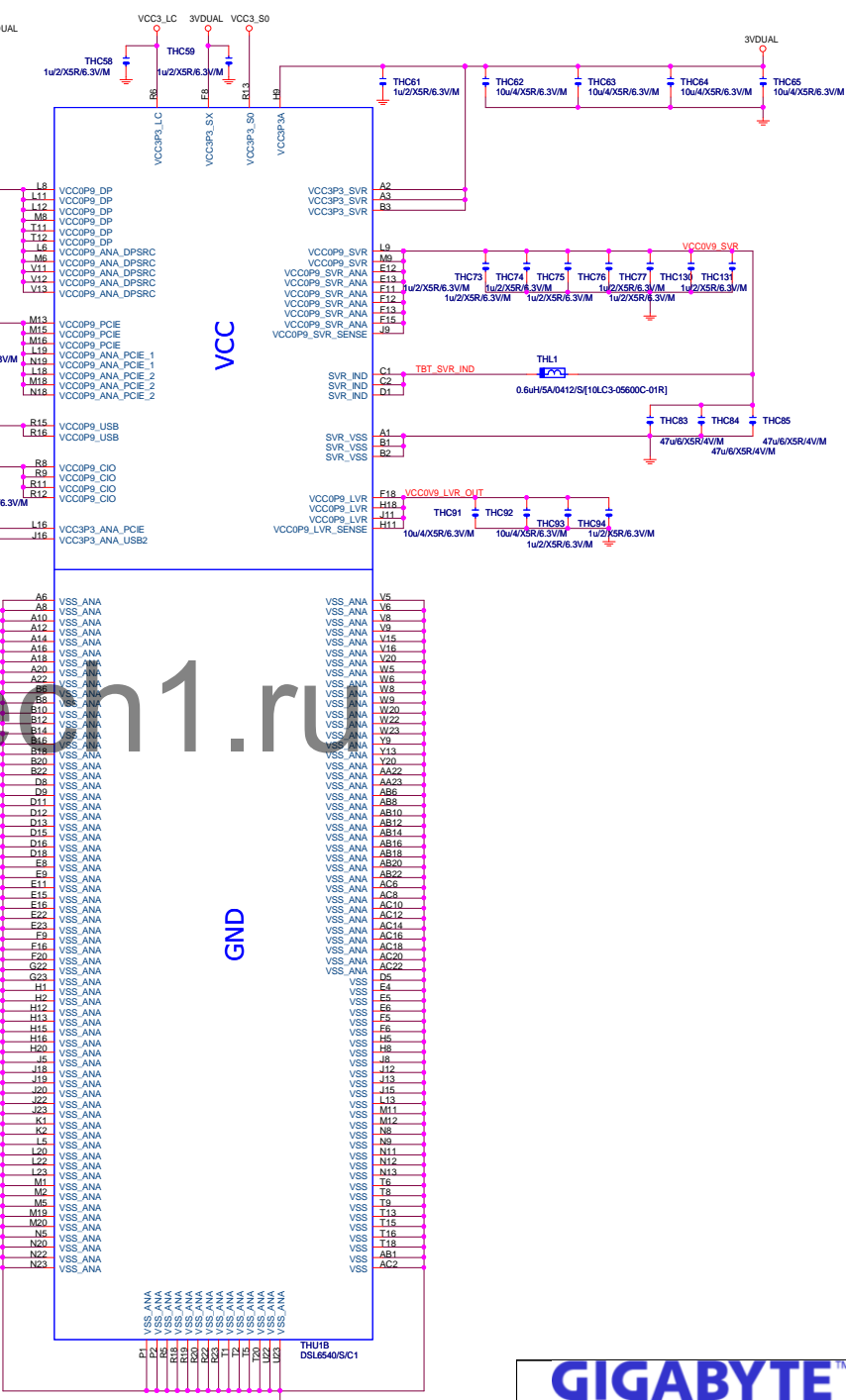


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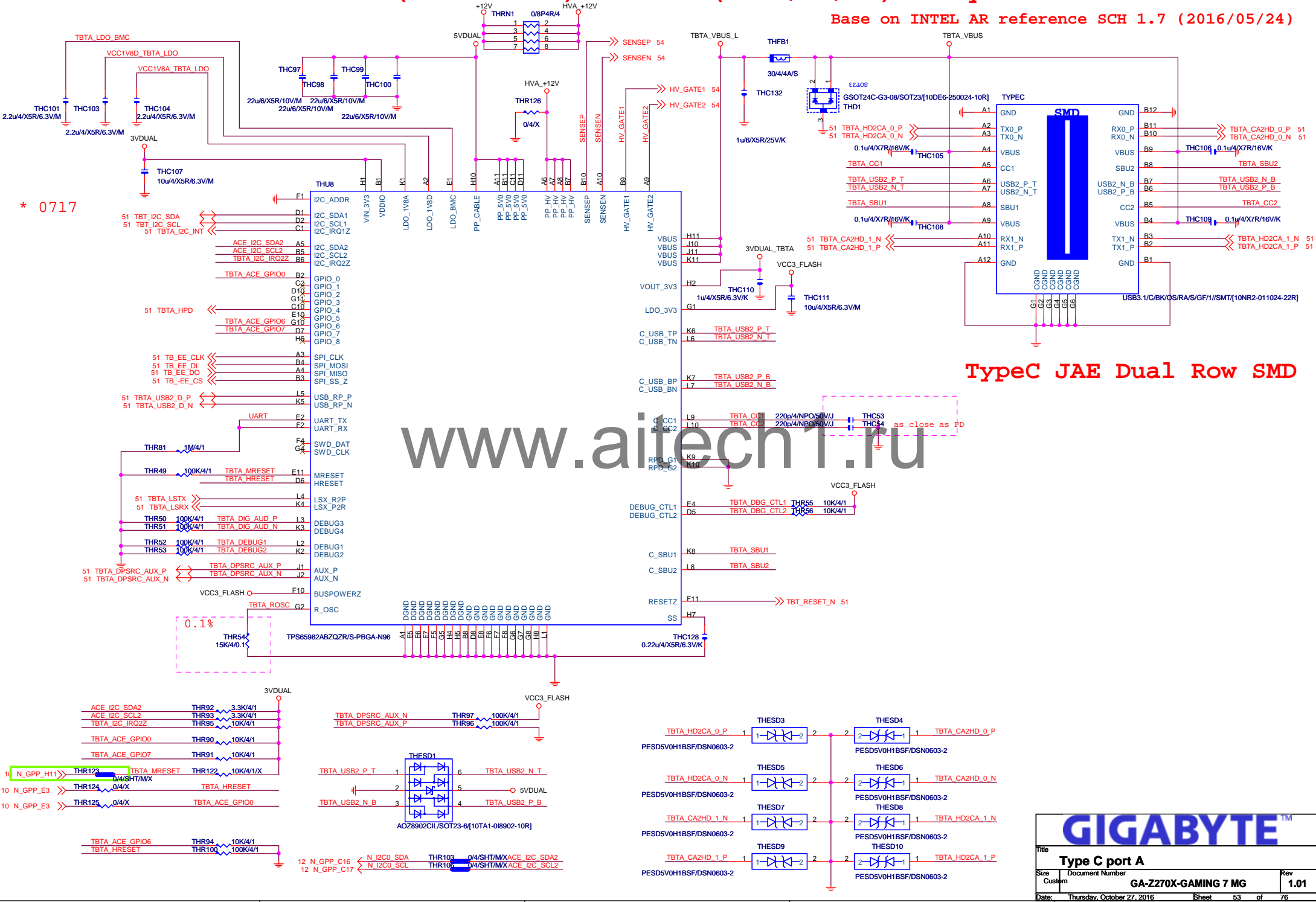
www.aiteon1.ru

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



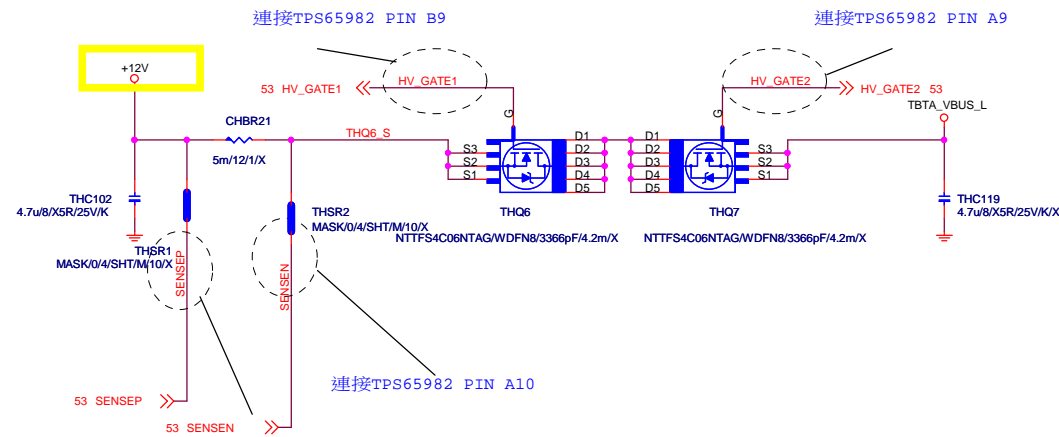
INTEL AR C version module (TBT + U31A) SCH 0.3 (2016/07/17) 4 Layers

Base on INTEL AR reference SCH 1.7 (2016/05/24)



GIGABYTE™			
Title			
Type C port A			
Size	Document Number	Rev	
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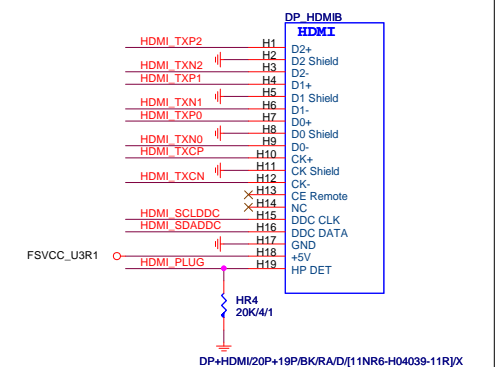




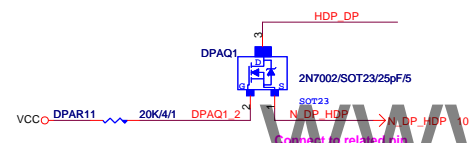
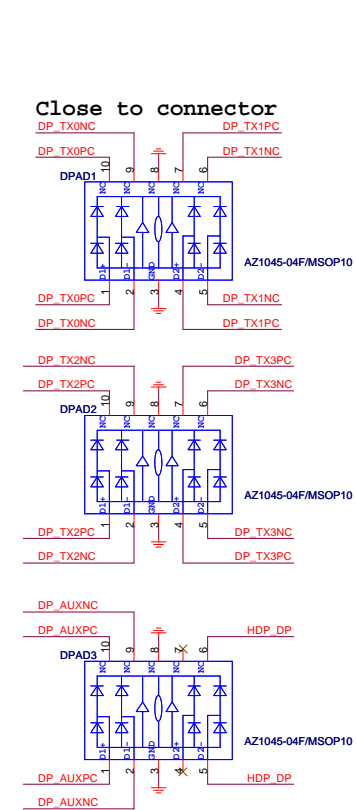
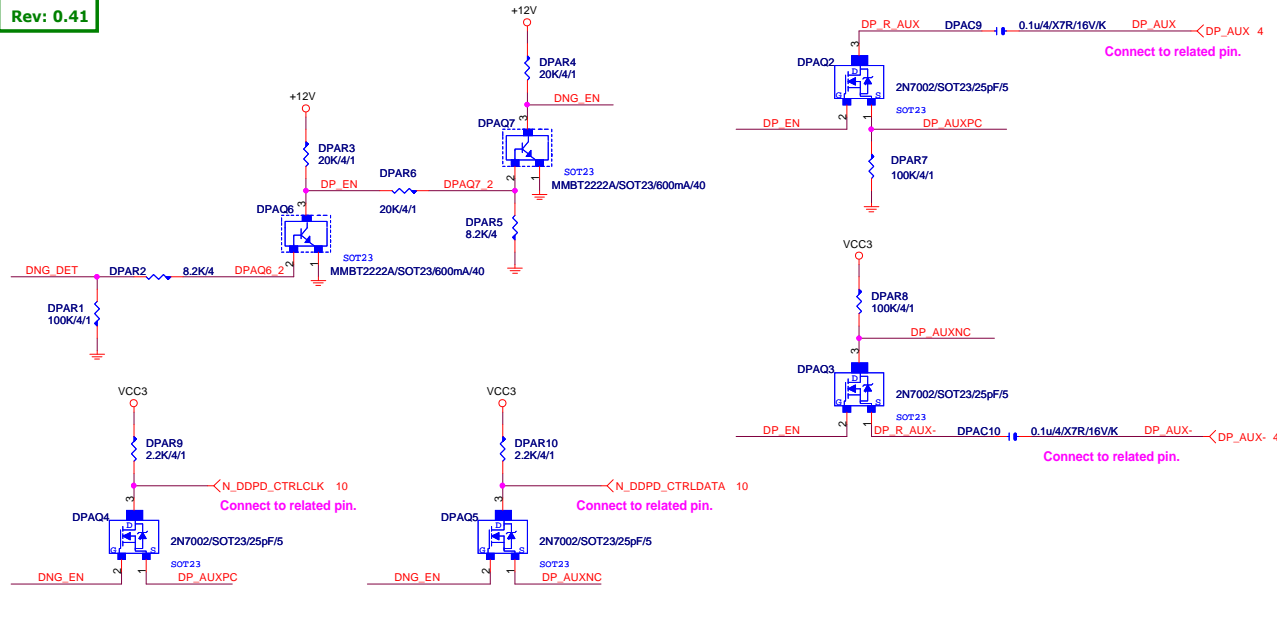
www.aitech1.ru

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GIGABYTE™			
Title DISPLAY PORT IN			
Size Custom	Document Number GA-Z270X-GAMING 7 MG		Rev 1.01
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【技術通報R&D技術通報150】  
HDMI eye diagram 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)



2N7002/SOT23/25pF/5

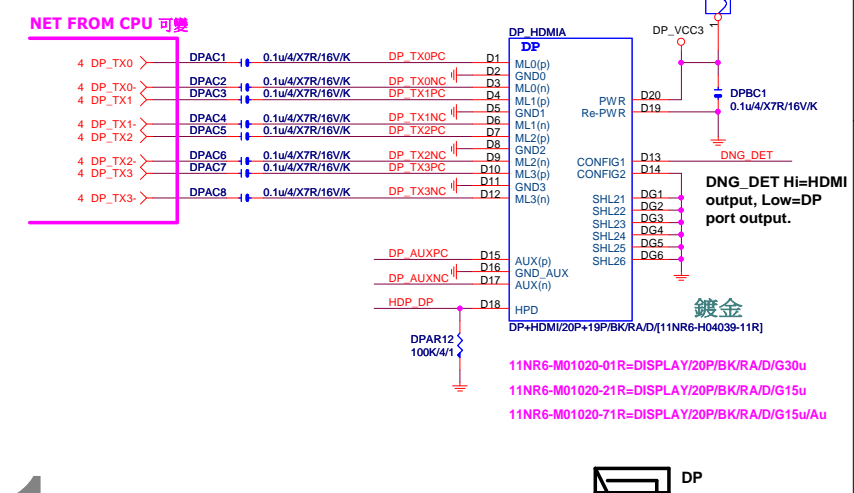
SOT23

N DP\_HUP → DP\_HUP 10

Connect to related pins

## SINGLE Display Port

**Display Port with HDMI, or HDMI only.**



Rev 0.1

M.2 Lane4 from PCH port26

M.2 Lane3 from PCH port25

M.2 Lane2 from PCH port24

M.2 Lane2 from PCH port23

支援SATA and M.2 function

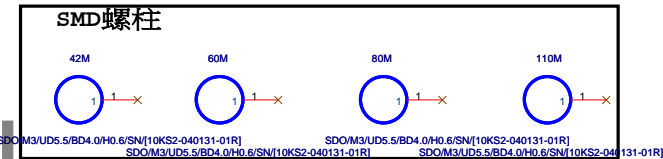
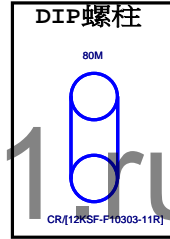
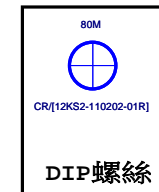
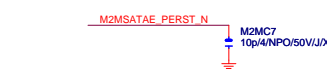
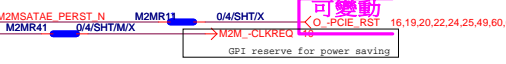
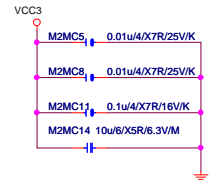
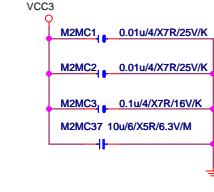
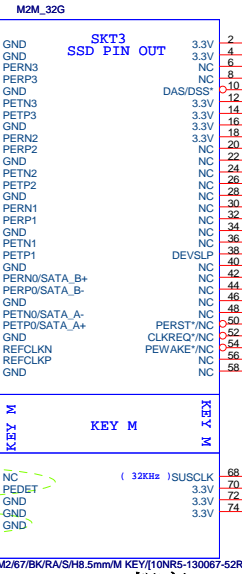
需與M2\_-CLKREQ對應

SATA : GND.  
PCIe : HIGH

M2插卡時為Low

架高

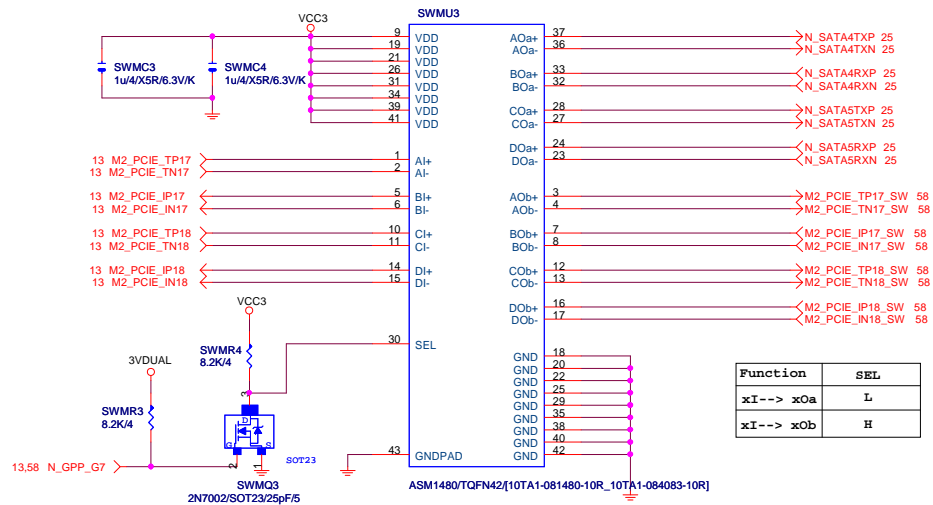
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Gigabyte Technology			
Title			
M.2 X4			
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Rev 0.1

(M)TYPE



M.2 Detect N_GPP_G7	M.2 MODE N_GPP_G8	PCIE17	PCIE18	PCIE19	PCIE20
HIGH	X	切回 SATA4	切回 SATA5	N\A	N\A
LOW	HIGH(PCIE)	PCIEX4 FOR M.2(最優先)			
LOW	LOW(SATA)	SATA FOR M.2	N\A	N\A	N\A

Gigabyte Technology			
M.2X4_S4~S5 SWITCH			
Size	Document Number	GA-Z270X-GAMING 7 MG	
Custom			
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<b>GIGABYTE™</b>			
Title <b>Renesas uPD720210_1</b>			
Size Custom	Document Number <b>GA-Z270X-GAMING 7 MG</b>		Rev <b>1.01</b>
Date: Friday, September 02, 2016	Sheet 1	62 of	76

## CLOSE SIO

EMIC1  
100p/4/NPO/50V/J/X

12,16,30,49,51,71 N\_-SLP\_S3 &lt;

EMIC2  
100p/4/NPO/50V/J/X

12,16,31,49,76 N\_-S4\_S5 &lt;

## CLOSE PCH

EMIC3  
100p/4/NPO/50V/J/X

4,12 N\_CPUPWROK &lt;

[www.aitech1.ru](http://www.aitech1.ru)**GIGABYTE™**

Title

**EMI/ESD**Size  
A

Document Number

**GA-Z270X-GAMING 7 MG**

Rev

**1.01**

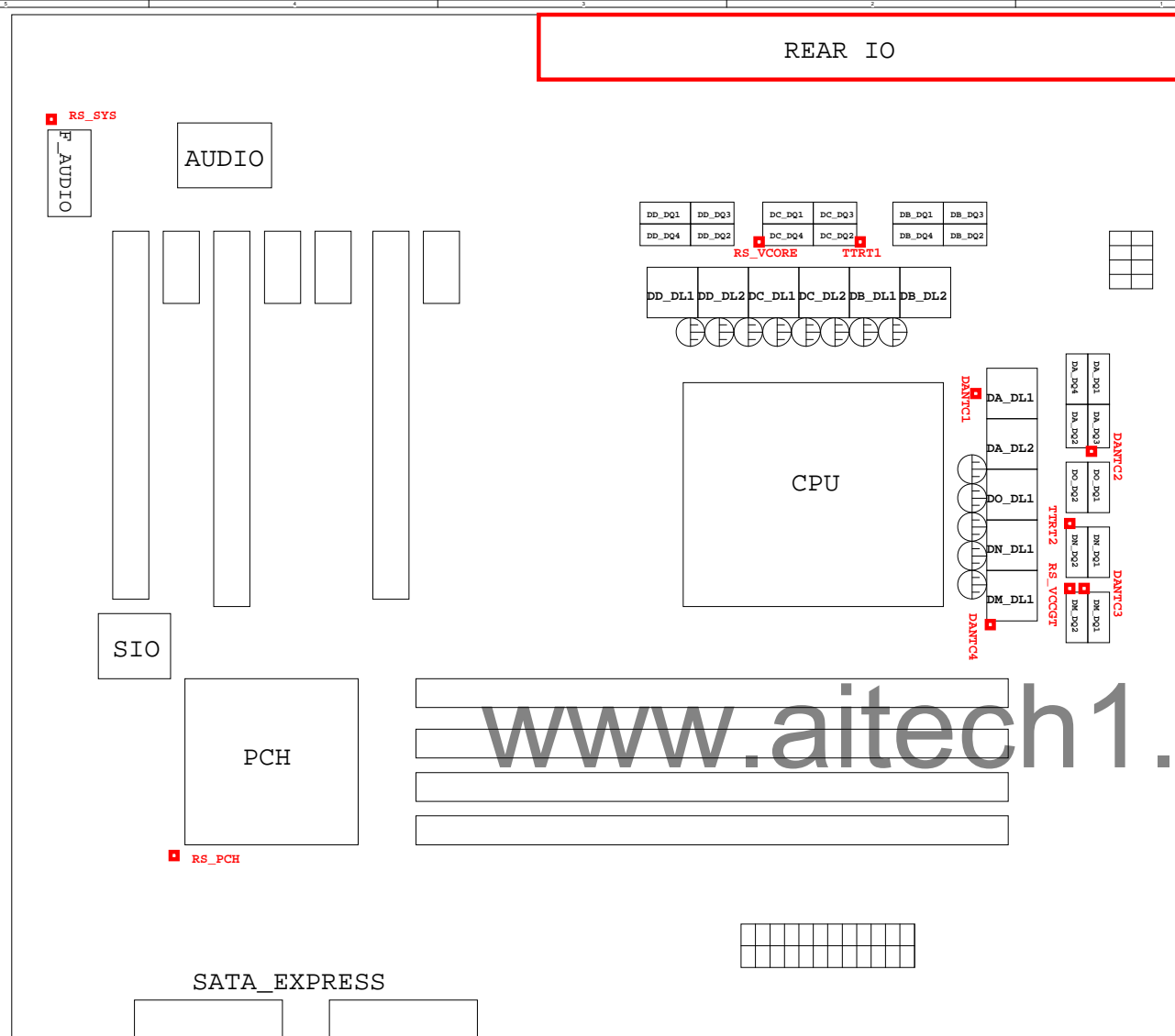
Date: Monday, September 12, 2016

Sheet

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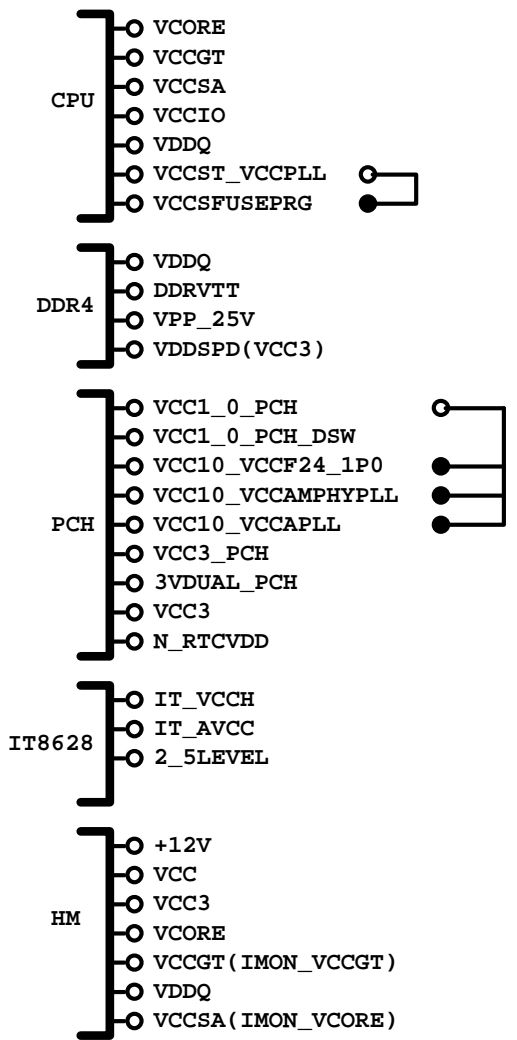
of

76

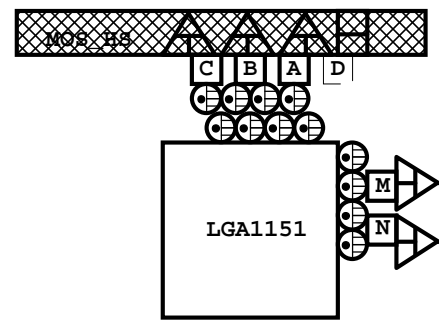
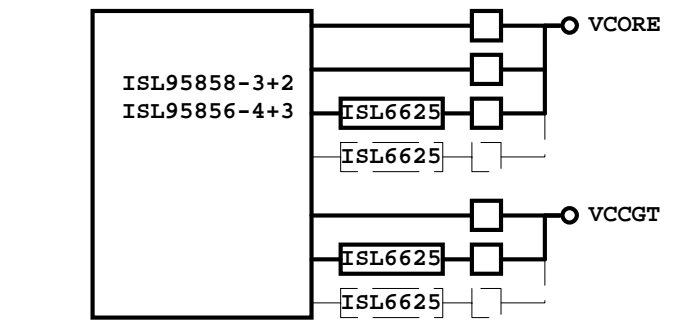


熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL2	Differential
DANTC2	DA_DQ3	Differential
DANTC3	DM_DQ2	Differential
DANTC4	DM_DL1	Differential
RS_VCORE	DC_DQ4	N/A
RS_VCCGT	DM_DQ2	N/A
TTT1	DC_DQ2	N/A
TTT2	DN_DQ2	N/A
RS_PCH	PCH	N/A
RS_SYS	F_AUDIO	N/A

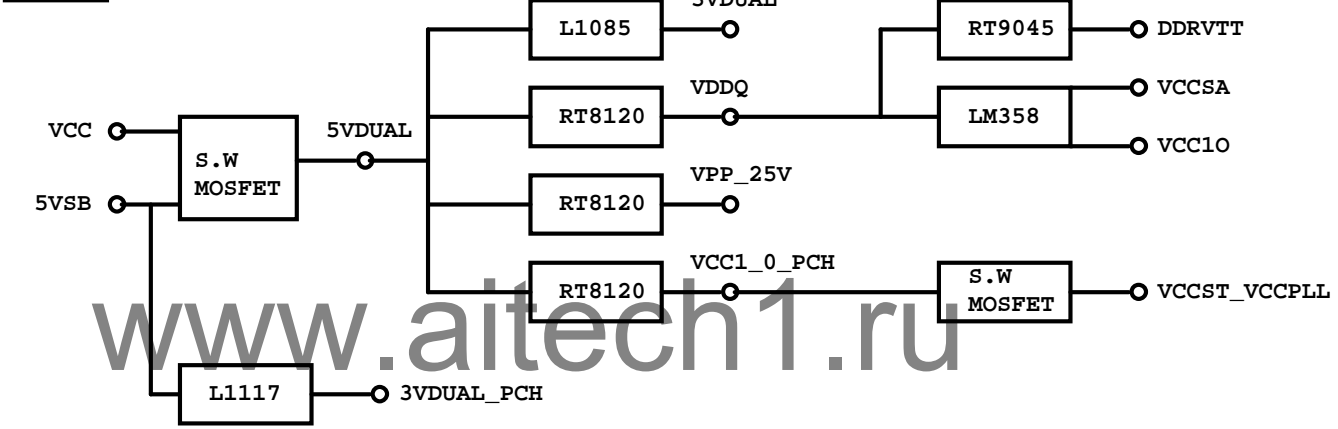
POWER BLOCK MAP



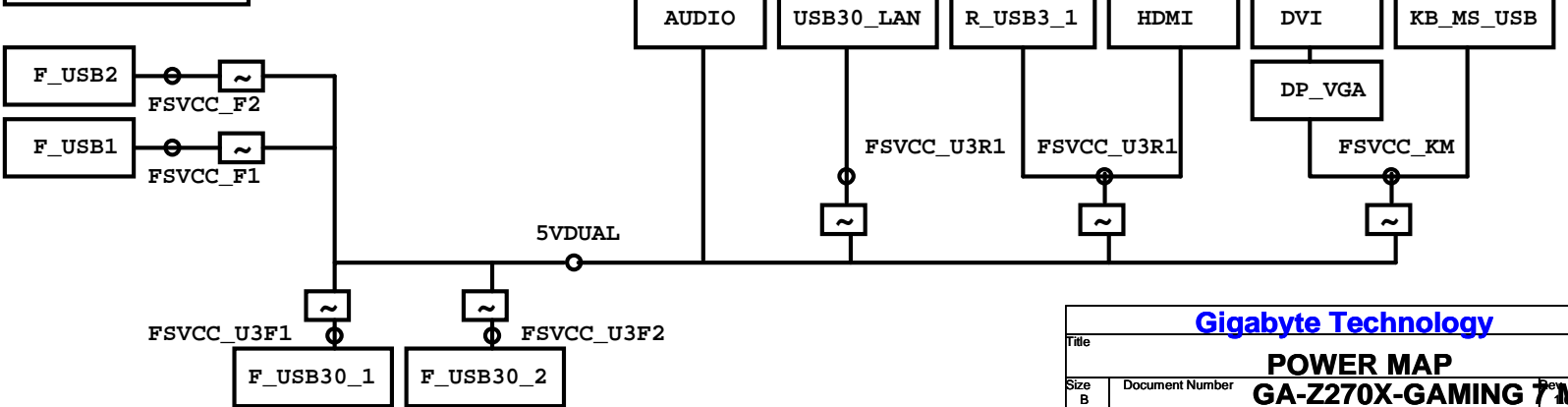
VCORE/VCCGT



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-EPSOIC

<b>GIGABYTE™</b>			
Title <b>RT8120_DDR4 POWER</b>			
Size Custom	Document Number <b>GA-Z270X-GAMING 7 MG</b>		Rev <b>1.01</b>
Date: Friday, September 02, 2016	Sheet 66	of 76	

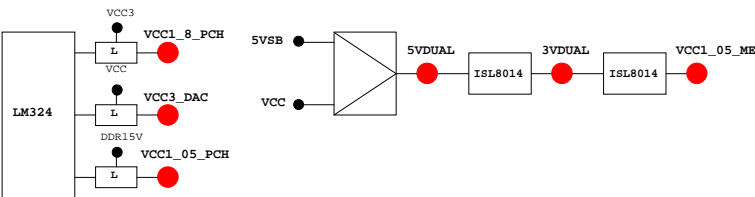
PCB GPIO LIST TABLE

PIN NAME	PWR	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPIO0	N/A
GP1/TACH1	MAIN	GPI	GPIO1	N/A
GP2/PIRQE#	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	PCIE1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN	MAIN	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	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
GP13	STBY	L	GPI	LPCPME#
GP14/OC7#	STBY	NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(TLS Enable)
GP16	MAIN	MAIN	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN	MAIN	GPIO17	P/U 8.2K VCC3
GP18	MAIN	MAIN	GPIO18	Mobile Only
GP19	MAIN	MAIN	GPIO19	P/U 8.2K VCC3
GP20	MAIN	MAIN	GPIO20	P/U 8.2K VCC3
GP21	MAIN	MAIN	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPIO22	P/U 8.2K VCC3
GP23	MAIN	MAIN	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#
GP25	STBY		Mobile Only	N/A
GP26	STBY		Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27
GP28	STBY	H	GPO	PWR LED
GP29	STBY	L	GPI	GPIO29
GP30	STBY	H-Z	GPI	Mobile Only
GP31	STBY	H-Z	GPI	Mobile Only
GP32	MAIN	H	GPO	N/A
GP33	MAIN	H	GPO	N/A
GP34	MAIN	H-Z	GPI	-PCI_STOP
GP35	MAIN	L	GPO	-ACZ_DET
GP36	MAIN	MAIN	GPI	N/A
GP37	MAIN	MAIN	GPI	N/A
GP38	MAIN	H-Z	GPI	PCIE4 Detect
GP39	MAIN	H-Z	GPI	GPIO39
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
GP45	STBY	NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46
GP47	STBY		Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48
GP49	MAIN	H-Z	IN	GPIO49
GP50	MAIN	NATIVE	-REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	-GNT1
GP52	MAIN	NATIVE	-REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	-GNT2
GP54	MAIN	NATIVE	-REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	-GNT3
GP56	STBY	NATIVE	Mobile Only	N/A
GP57	STBY	H-Z	IN	VCORE_OV1
GP58	STBY	H-Z	NATIVE	F_USB_OC
GP59	STBY	NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)
GP61	STBY	L	NATIVE	-SUSTAT
GP62	STBY	L	NATIVE	SUSCLK
GP63	STBY	L	NATIVE	GPIO63
GP64	MAIN	L	NATIVE	CLKOUTFLEX0
GP65	MAIN	L	NATIVE	CLKOUTFLEX1
GP66	MAIN	L	NATIVE	CLKOUTFLEX2
GP67	MAIN	L	NATIVE	CLKOUTFLEX3
GP72	STBY	H-Z	NATIVE	VCORE_OV4
GP73	STBY		Mobile Only	N/A
GP74	STBY	H-Z	NATIVE	1_05V_OV2
GP75	STBY	H-Z	NATIVE	N/A(Reverse)

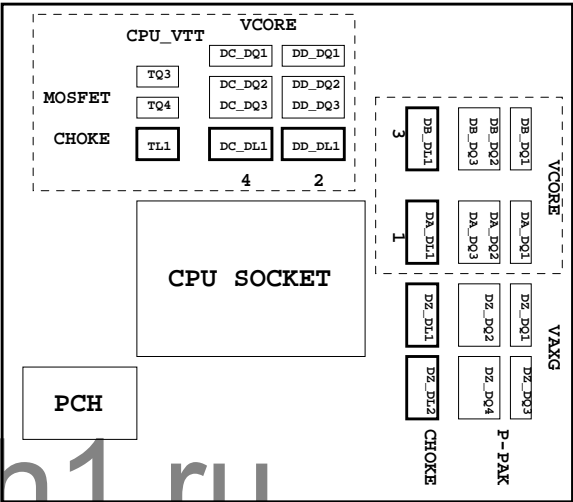
Super I/O ITE8720 GPIO Table

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#CIRRX1/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/BUSS11	SB_LED1_C	
PD4/GP74/BUSS12	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSS10	NB_LED3_C	
GP22/SEN	LOW_PWR_1	
VIDO5/GP27/SEN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSCH#/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/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMBC_R	SE 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/CIRRX2/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 Termination
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

	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

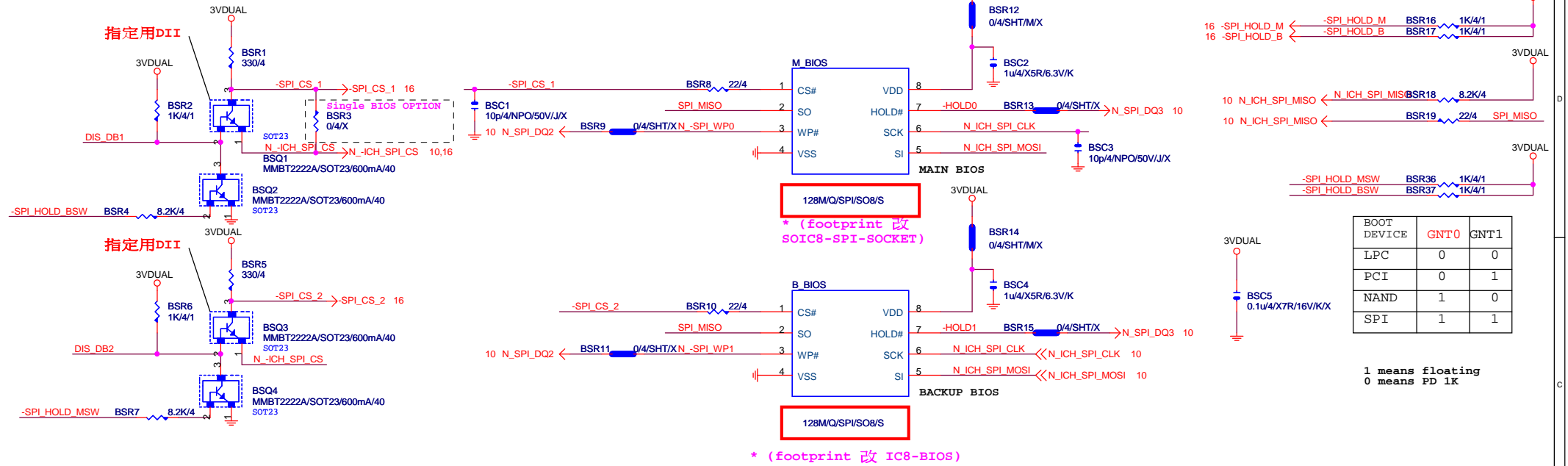
散熱模組料號：

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

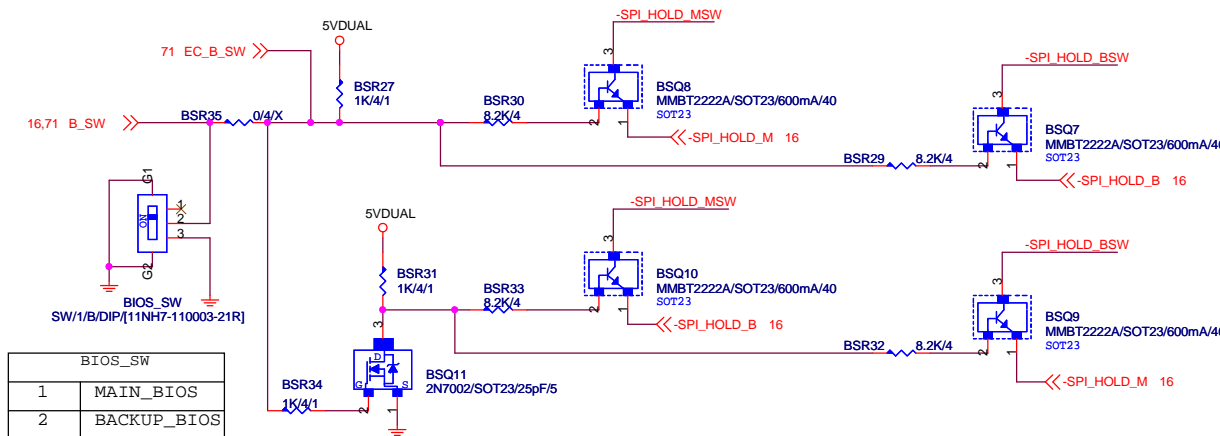
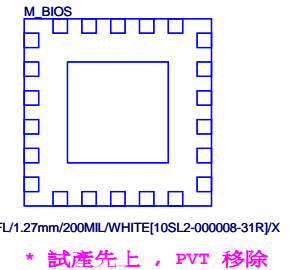
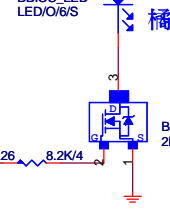
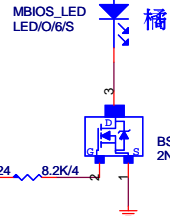
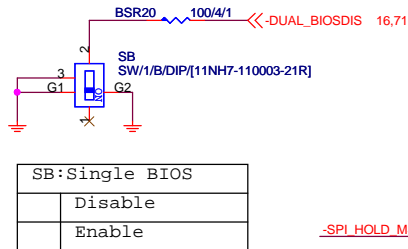
Gigabyte Technology			
TABLE LIST			
Size	Document Number	Rev	
C	GA-Z270X-GAMING 7 M6	91	
Date:	Fri, Sep 02, 2016	Sheet	67 of 76

# DUAL BIOS

# MOSI For DMI RX Termination Voltage

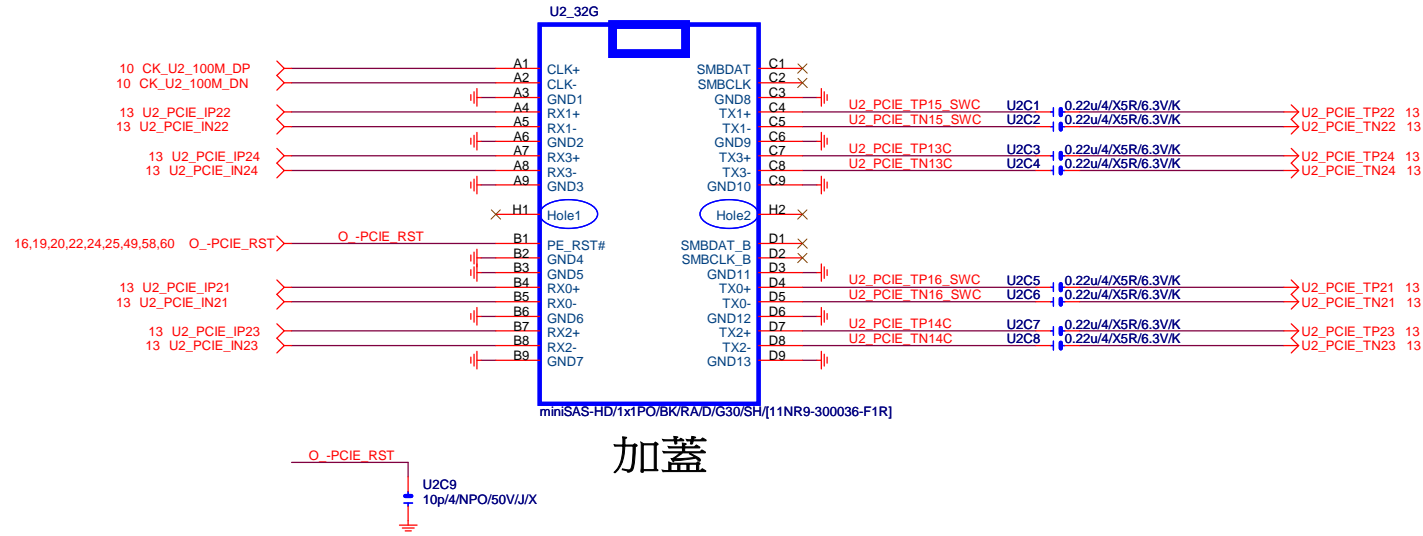


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Rev 0.3



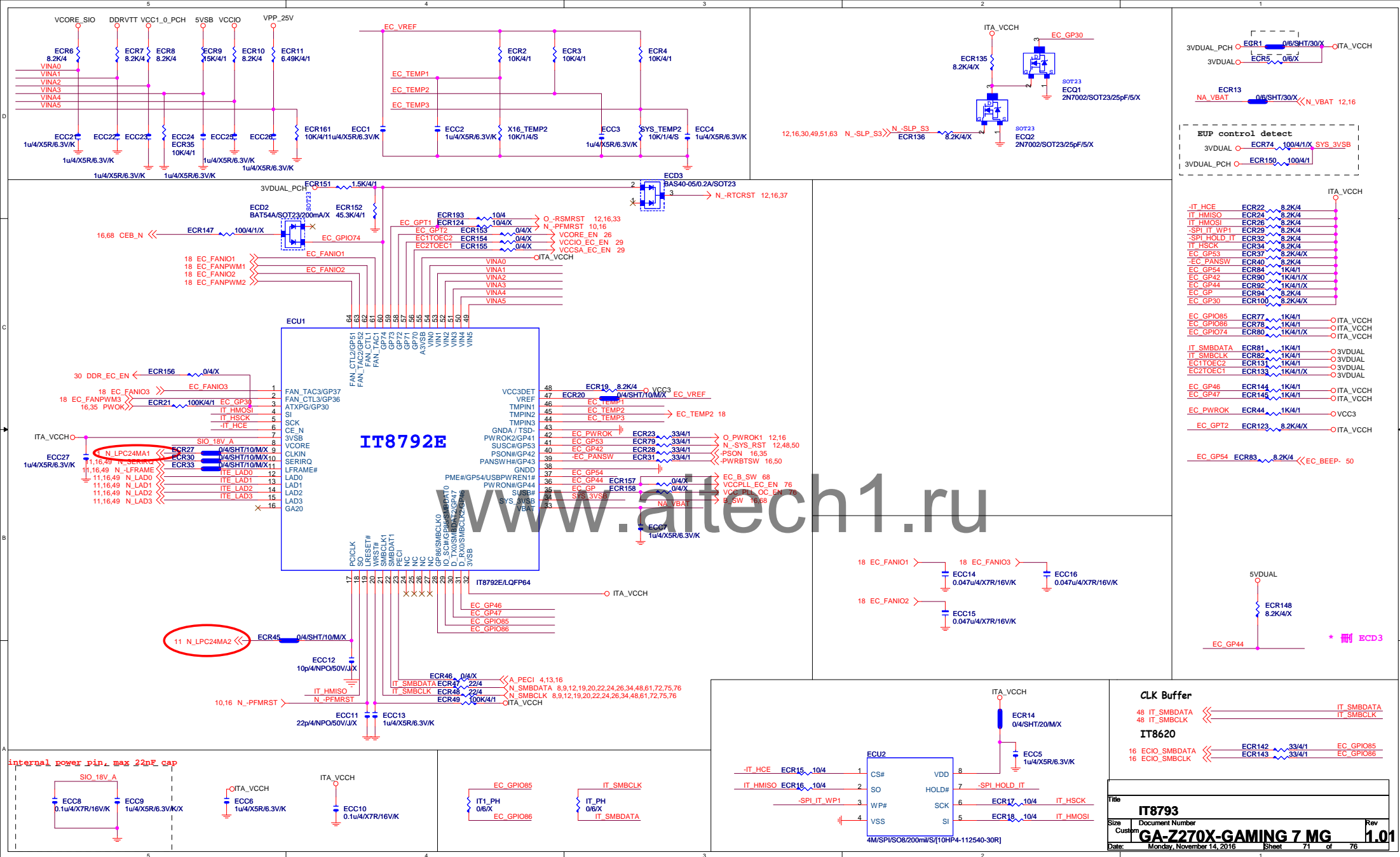
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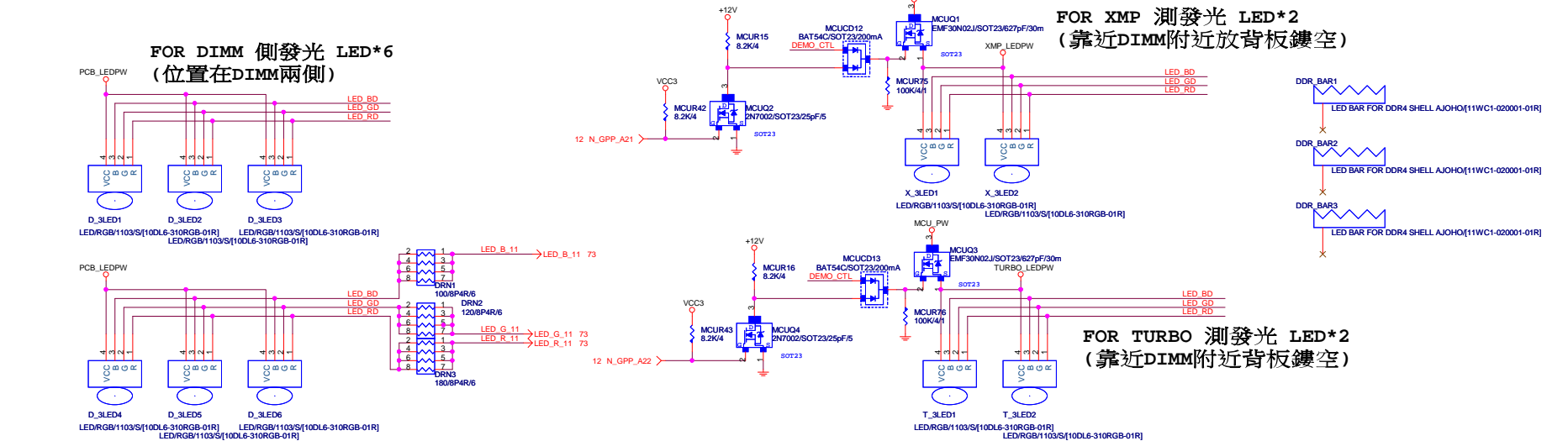
Title		
M.2 to MINISAS		
Size	Document Number	Rev
B	GA-Z270X-GAMING 7 MG	1.01
Date:	Monday, September 12, 2016	Sheet 69 of 76

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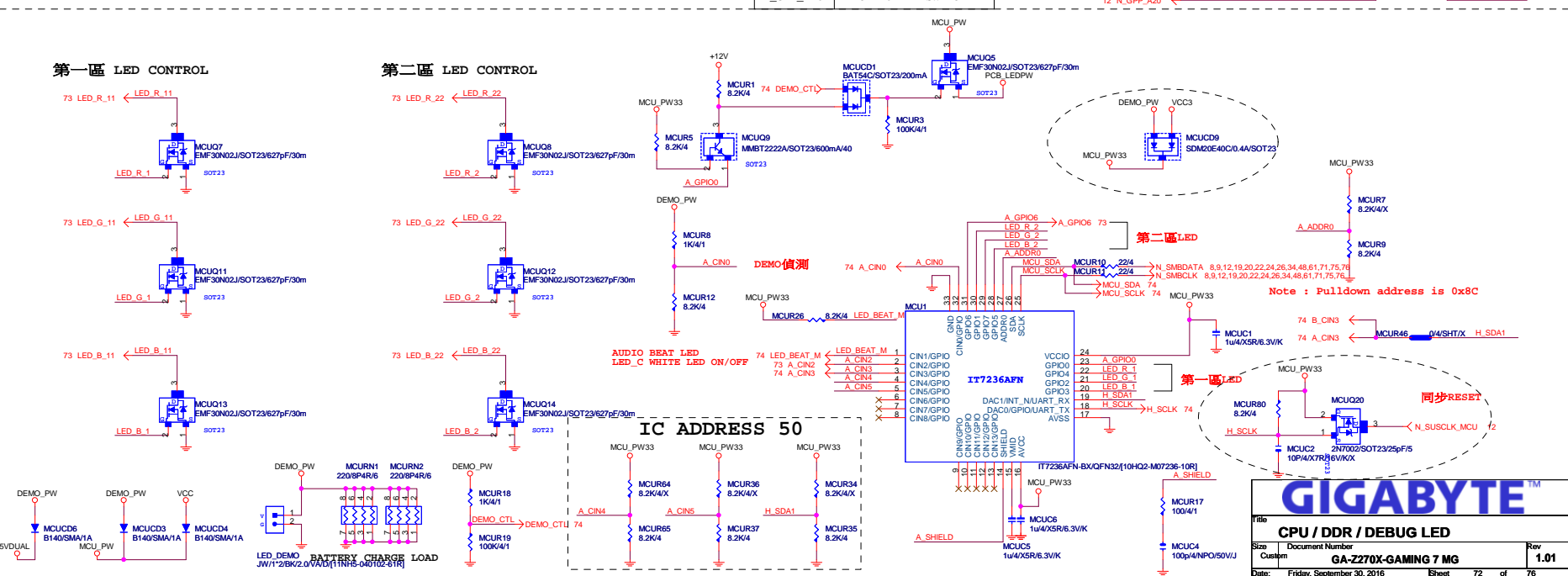
GIGABYTE			
Title			
PCH PWR-VCC18_PCH			
Size	Document Number		Rev
A	GA-Z270X-GAMING 7 MG		1.01
Date:	Friday, September 02, 2016	Sheet	70 of 76



第一區 LED

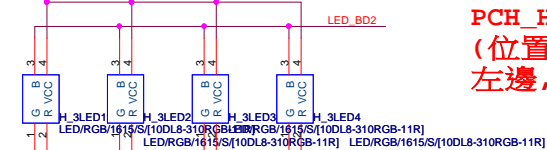


N_GPP_A17	CPU DEBUG
N_GPP_A18	DDR DEBUG
N_GPP_A19	VGA DEBUG
N_GPP_A20	BOOT DEBUG
N_GPP_A21	XMP LED SWITCH
N_GPP_A22	TURBO LED SWITCH
N_GPP_D12	LED_I/O LED SWITCH
N_GPP_D15	LED_C LED SWITCH
N_GPP_D17	PCIEX16 LED SWITCH
N_GPP_D18	PCIEX8 LED SWITCH



## 第一區 LED

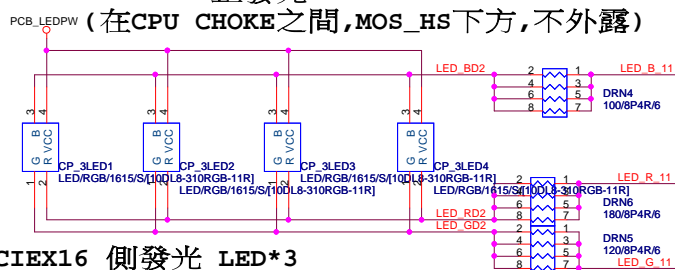
FOR PCH 正發光 LED\*4 (依據PCH\_HS設計擺放)



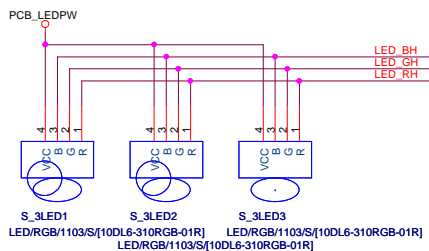
**PCH\_HS LED**  
(位置靠近PCH\_HS  
左邊,放在PCH\_HS外面)

FOR CPU 正發光 LED\*4

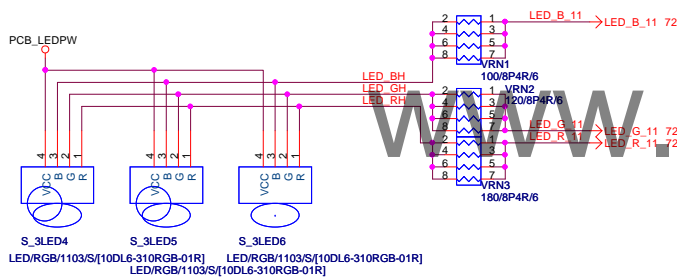
(在CPU CHOKE之間,MOS\_HS下方,不外露)



FOR PCIEX16 側發光 LED\*3  
(位置在PCIEX16 SLOT)

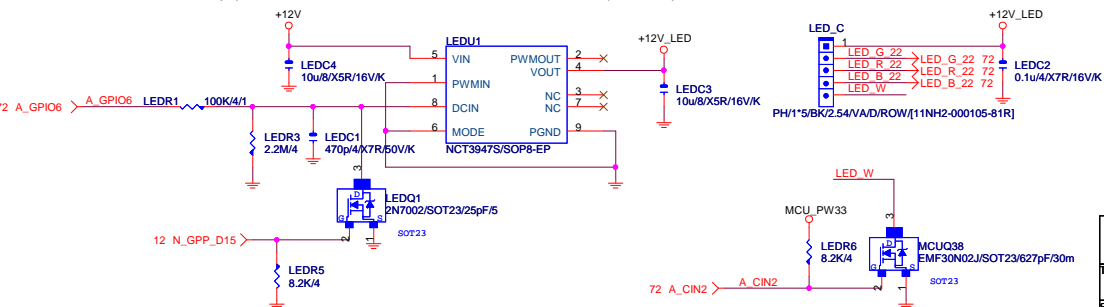


FOR PCIEX8 側發光 LED\*3  
(位置在PCIEX8 SLOT)



## 第二區 LED

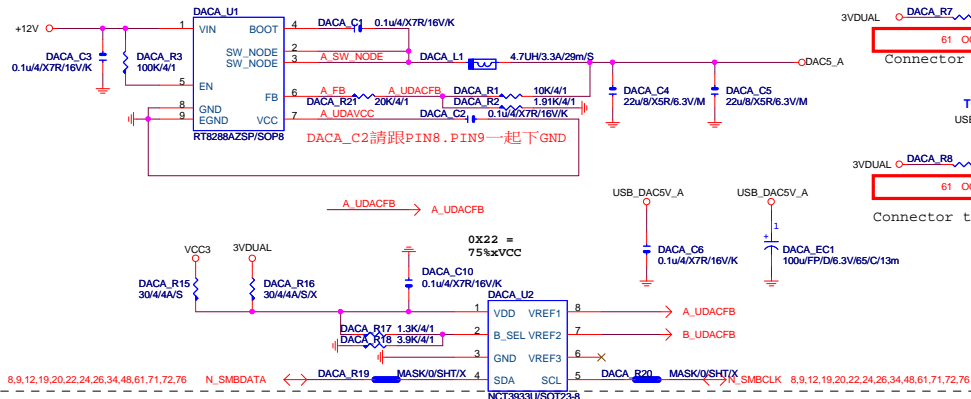
FOR 燈條 LED (LED\_C放在PCB左邊板邊位置)



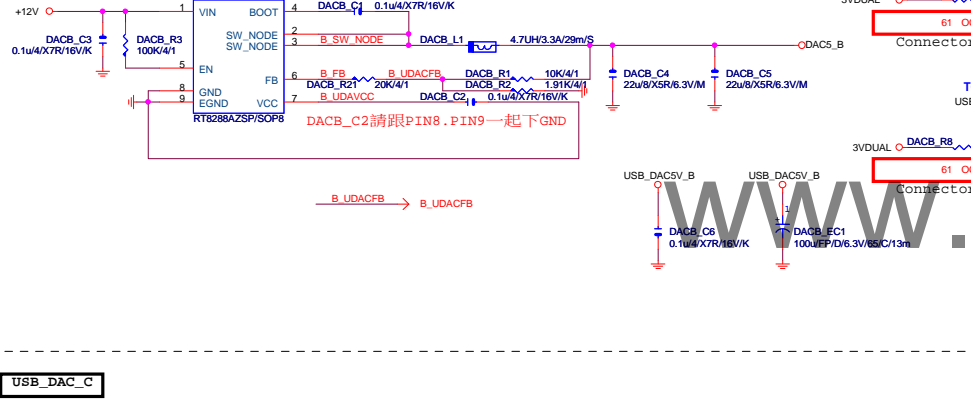
GIGABYTE™			
MODEL / PCB / AUDIO / PCIE LED			
Title	Document Number	Rev	
Custom	GA-Z270X-GAMING 7 MG	1.01	
Date:	Wednesday, September 14, 2016	Sheet	73 of 76



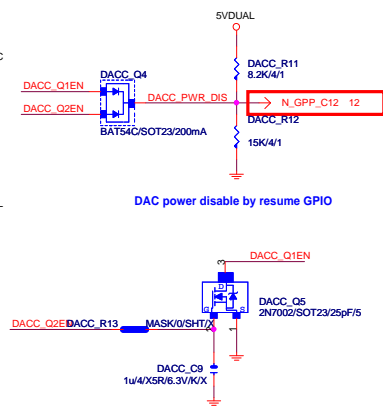
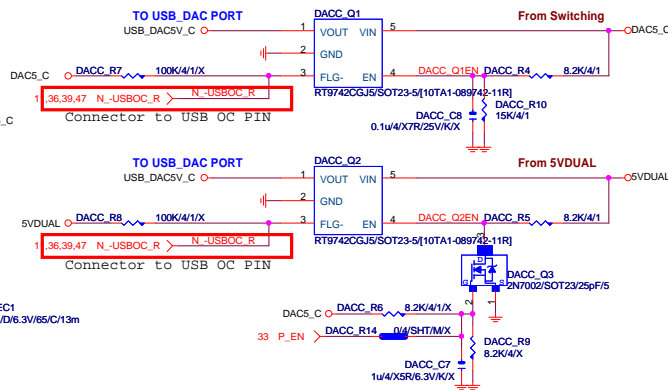
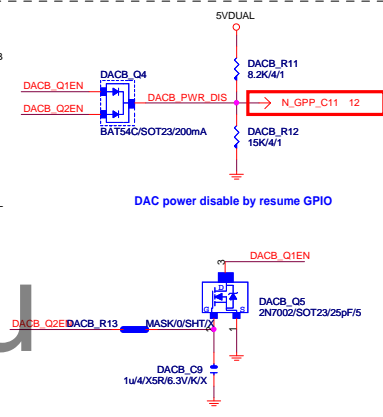
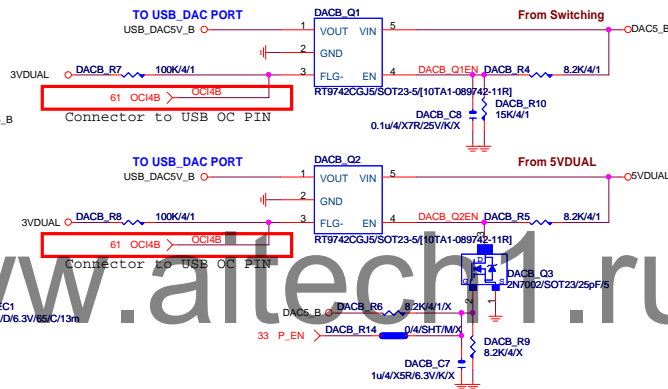
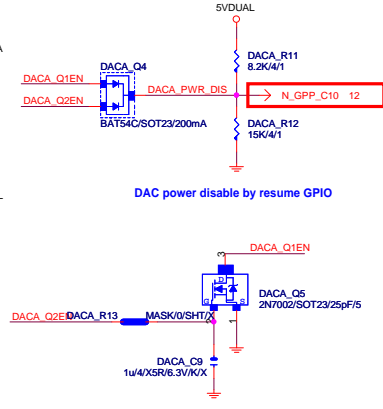
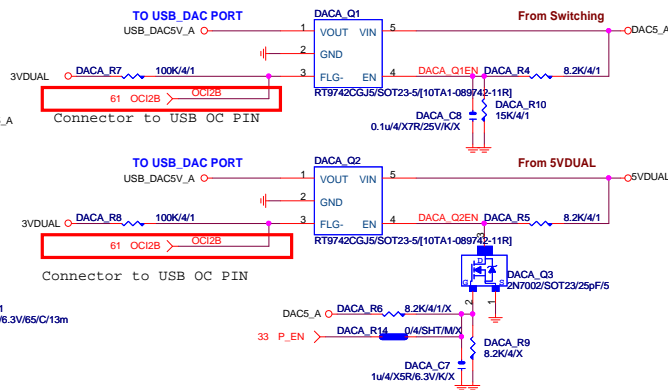
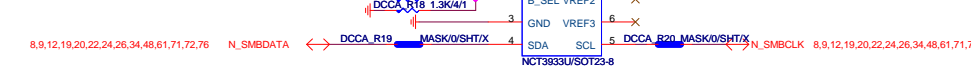
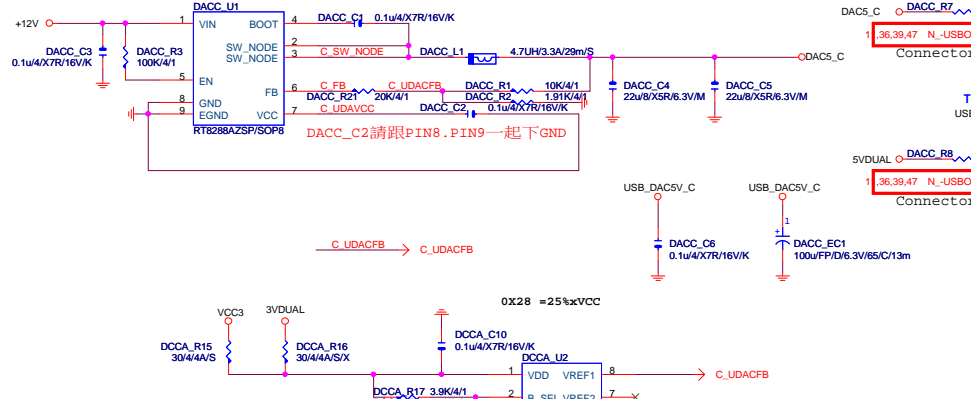
## REV:0.1



## F\_USB30\_2

+12V  —————

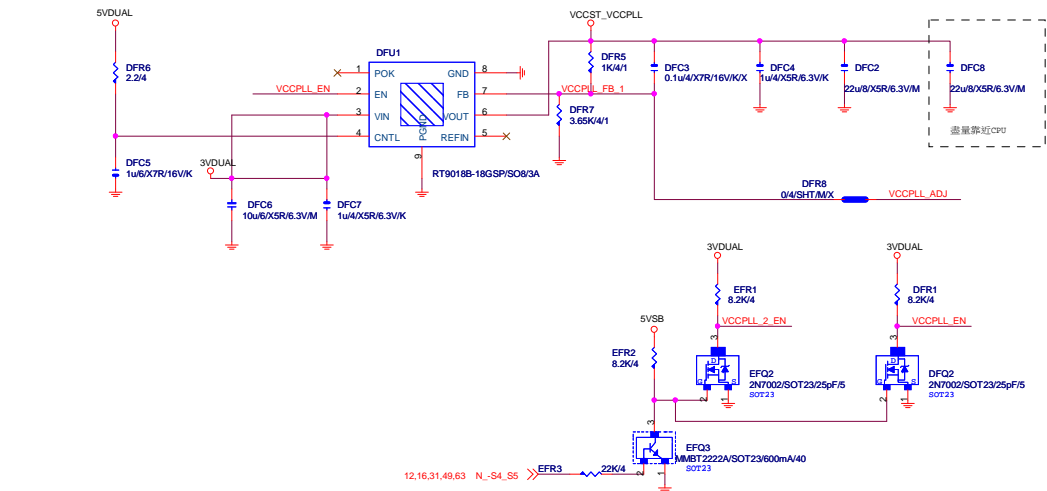
## KB MS USB3



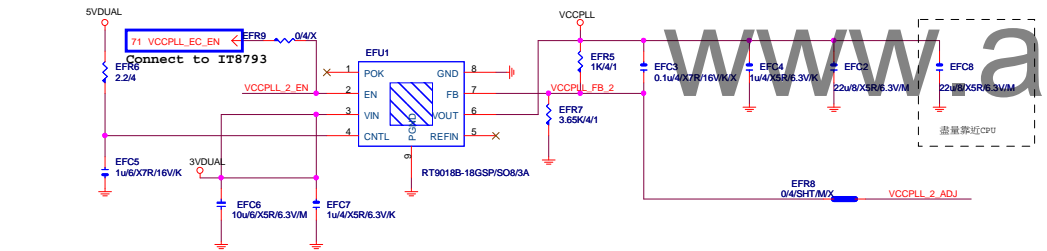
# GIGABYTE™

Title			
<b>DAC POWER</b>			
Size	Document Number	Rev	
Custom	<b>GA-Z270X-GAMING 7 MG</b>	<b>1.01</b>	
Date:	Monday, September 12, 2016	Sheet	75 of 76

VCCST\_VCCPLL 替換原先MOS開關線路



VCCPLL



VCCPLL\_OC

