

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	PCIEX4_S0~S1 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
30	RT8120_DDR
31	RT8120_VPP
32	RT8120_PCH
33	DISCRETE POWER1
34	NCT3933
35	ATX POWER , A_-PROCHOT

36	KB_MS_USB
37	OC , ECO , POWER BUTTON
38	F_USB30
39	F_USB20
40	N/A
41~44	ALC1220
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
51~53	ASM2142
54~55	N/A
56	HDMI CONN
57	DP_OUT
58	M2M_32G
59	M2M_32G & STA4/5 SWITCH
60	M2P_32G
61	Realtek RTS5411 4port Hub-FRONT(N/A)
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

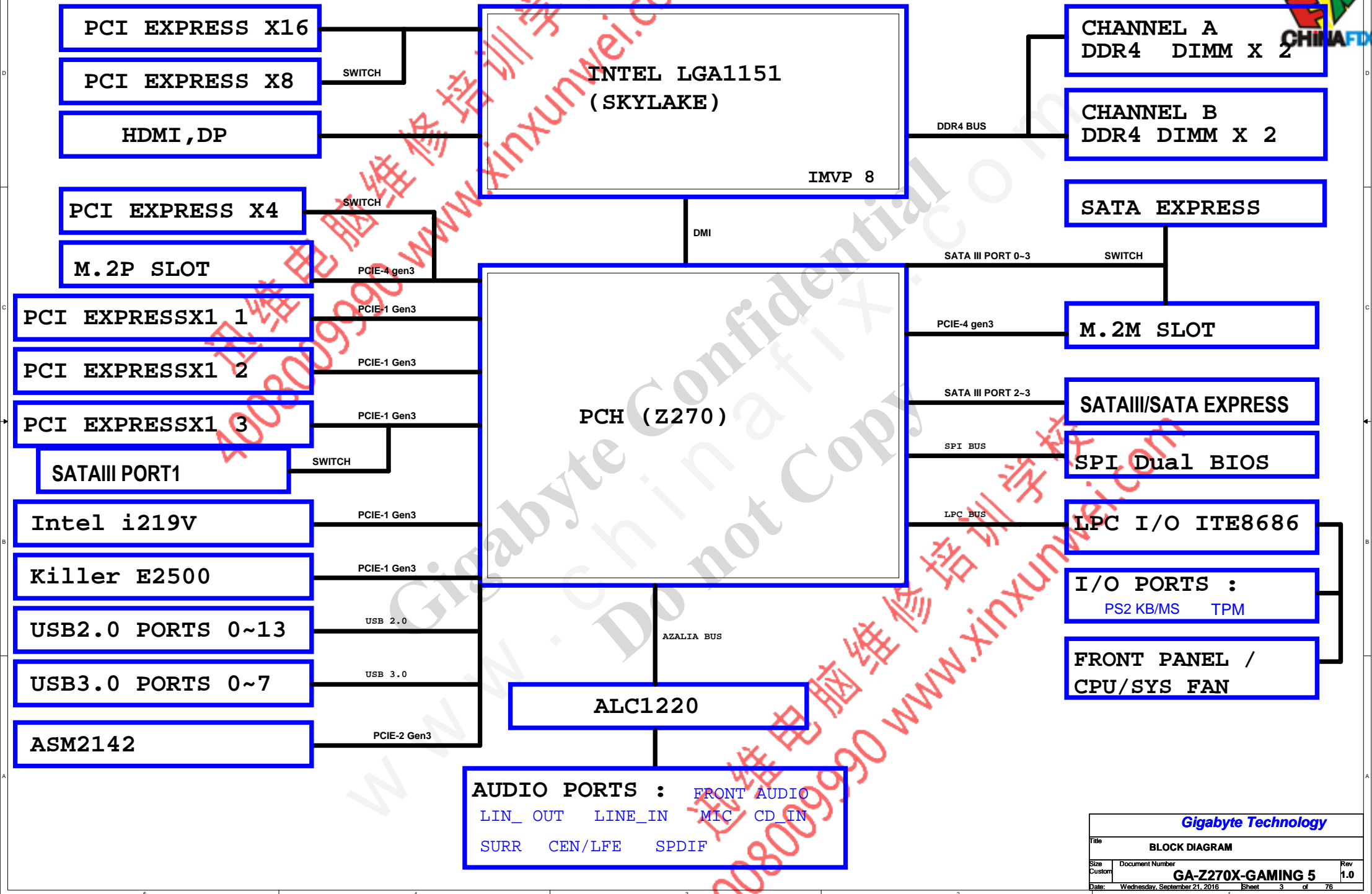
Cover Sheet		
Size	Document Number	Rev
Constant	GA-Z270X-GAMING 5	1.0
Date:	Wednesday, September 21, 2016	Sheet 1 of 76



## Component value change history

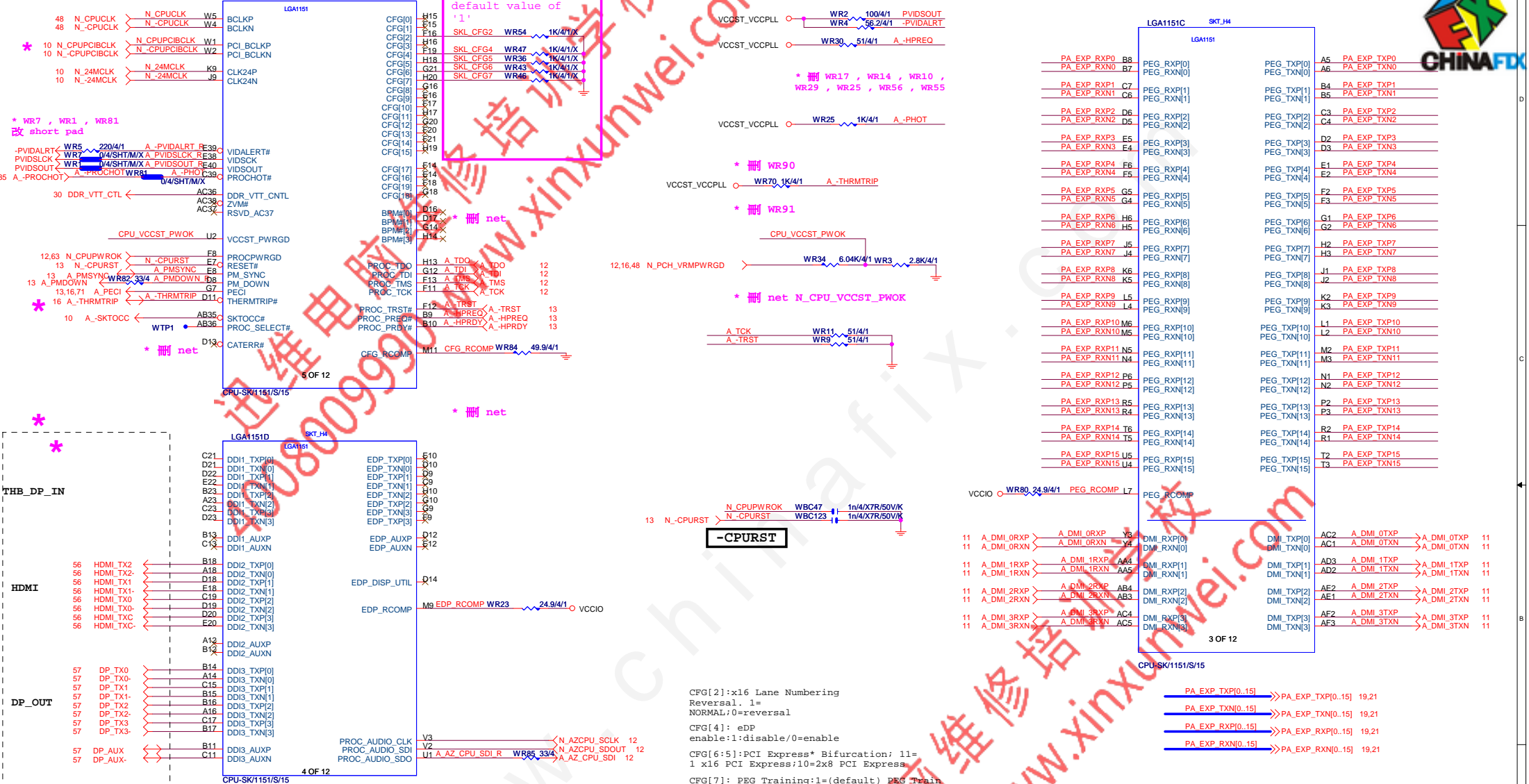
[illegible][illegible]

## BLOCK DIAGRAM



Gigabyte Technology

BLOCK DIAGRAM		
Title	Document Number	Rev
	GA-Z270X-GAMING 5	1.0
Date:	Wednesday, September 21, 2016	Sheet 3 of 76



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

Bifurcation Config.		Signals Lanes	
CFG[4]	CFG[5]	CFG[2]	
1x16	1	1	0
1x16 Reversed	1	1	0
2x8	1	0	1
2x8 Reversed	1	0	1
1x8+2x4	0	1	0
1x8+2x4 Reversed	0	0	0

Gigabyte Technology

CPU LGA1151-A

GA-Z270X-GAMING 5

Size

Document Number

Date

Rev

1.0

Friday, October 28, 2016

Sheet 4 of 76

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

- PA EXP TXP[0..15] >>> PA\_EXP\_TXP[0..15] 19,21
- PA EXP TXN[0..15] >>> PA\_EXP\_TXN[0..15] 19,21
- PA EXP RXP[0..15] >>> PA\_EXP\_RXP[0..15] 19,21
- PA EXP RXN[0..15] >>> PA\_EXP\_RXN[0..15] 19,21

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



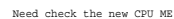
SKT\_H4

MD80	AD34	DDR1_DQ[0]DDR0_DQ[16]	DDR1_CK[P0]	AM20 M_DCLKB0	M_DCLKB0	9
MD81	AD35	DDR1_DQ[1]DDR0_DQ[17]	DDR1_CK[N0]	AM21 M_DCLKB0	M_DCLKB0	9
MD82	AG35	DDR1_DQ[2]DDR0_DQ[18]	DDR1_CK[P1]	AP22 M_DCLKB1	M_DCLKB1	9
MD83	AH35	DDR1_DQ[3]DDR0_DQ[19]	DDR1_CK[N1]	AP21 M_DCLKB1	M_DCLKB1	9
MD84	AE35	DDR1_DQ[4]DDR0_DQ[20]	DDR1_CK[P2]	AN20 M_DCLKB2	M_DCLKB2	9
MD85	AE34	DDR1_DQ[5]DDR0_DQ[21]	DDR1_CK[N2]	AN21 M_DCLKB2	M_DCLKB2	9
MD86	AG34	DDR1_DQ[6]DDR0_DQ[22]	DDR1_CK[P3]	AP19 M_DCLKB2	M_DCLKB2	9
MD87	AH34	DDR1_DQ[7]DDR0_DQ[23]	DDR1_CK[N3]	AP20 M_DCLKB3	M_DCLKB3	9
MD88	AK35	DDR1_DQ[8]DDR0_DQ[24]	DDR1_CK[P3]		M_DCLKB3	9
MD89	AL35	DDR1_DQ[9]DDR0_DQ[25]	DDR1_CK[E0]	AY29 CKEB0	CKEB0	9
MD810	AK32	DDR1_DQ[10]DDR0_DQ[26]	DDR1_CK[E1]	AV29 CKEB1	CKEB1	9
MD811	AL32	DDR1_DQ[11]DDR0_DQ[27]	DDR1_CK[E2]	AU29 CKEB2	CKEB2	9
MD812	AK34	DDR1_DQ[12]DDR0_DQ[28]	DDR1_CK[E3]	AU29 CKEB3	CKEB3	9
MD813	AL34	DDR1_DQ[13]DDR0_DQ[29]				
MD814	AK31	DDR1_DQ[14]DDR0_DQ[30]	DDR1_CS[M0]	AP17 M_CS80	M_CS80	9
MD815	AL31	DDR1_DQ[15]DDR0_DQ[31]	DDR1_CS[N1]	AN15 M_CS81	M_CS81	9
MD816	AP35	DDR1_DQ[16]DDR0_DQ[48]	DDR1_CS[M2]	AN17 M_CS82	M_CS82	9
MD817	AN35	DDR1_DQ[17]DDR0_DQ[49]	DDR1_CS[N3]	AM15 M_CS83	M_CS83	9
MD818	AN32	DDR1_DQ[18]DDR0_DQ[50]				
MD819	AP32	DDR1_DQ[19]DDR0_DQ[51]	DDR1_ODT[0]	AM16 M_ODT_B0		
MD820	AN34	DDR1_DQ[20]DDR0_DQ[52]	DDR1_ODT[1]	AL16 M_ODT_B1		
MD821	AP34	DDR1_DQ[21]DDR0_DQ[53]	DDR1_ODT[2]	AP15 M_ODT_B2		
MD822	AN31	DDR1_DQ[22]DDR0_DQ[54]	DDR1_ODT[3]	AL15 M_ODT_B3		
MD823	AP34	DDR1_DQ[23]DDR0_DQ[55]				
MD824	AL29	DDR1_DQ[24]DDR0_DQ[56]	DDR1_RAS#/DDR1_CAB[3]DDR1_MAJ[6]	AN18 MAAB16		
MD825	AM29	DDR1_DQ[25]DDR0_DQ[57]	DDR1_WE#/DDR1_CAB[2]DDR1_MAJ[4]	AL17 MAAB14		
MD826	AP29	DDR1_DQ[26]DDR0_DQ[58]	DDR1_CAS#/DDR1_CAB[1]DDR1_MAJ[5]	AP16 MAAB15		
MD827	AR29	DDR1_DQ[27]DDR0_DQ[59]				
MD828	AM28	DDR1_DQ[28]DDR0_DQ[60]	DDR1_BA[0]DDR1_CAB[4]DDR1_BA[0]	AL18 SBAB0	SBAB0	9
MD829	AR28	DDR1_DQ[29]DDR0_DQ[61]	DDR1_BA[1]DDR1_CAB[5]DDR1_BA[1]	AM18 SBAB1	SBAB1	9
MD830	AP28	DDR1_DQ[30]DDR0_DQ[62]	DDR1_BA[2]DDR1_CAB[5]DDR1_BA[0]	AV28 BG_B0	BG_B0	9
MD831	AP28	DDR1_DQ[31]DDR0_DQ[63]				
MD832	AR12	DDR1_DQ[32]DDR0_DQ[64]	DDR1_MAJ[0]DDR1_CAB[9]DDR1_MAJ[0]	AL19 MAAB0		
MD833	AP12	DDR1_DQ[33]DDR1_DQ[17]	DDR1_MAJ[1]DDR1_CAB[8]DDR1_MAJ[1]	AL22 MAAB1		
MD834	AM13	DDR1_DQ[34]DDR1_DQ[18]	DDR1_MAJ[2]DDR1_CAB[5]DDR1_MAJ[2]	AM22 MAAB2		
MD835	AL13	DDR1_DQ[35]DDR1_DQ[19]	DDR1_MAJ[3]DDR1_CAB[5]DDR1_MAJ[3]	AM23 MAAB3		
MD836	AE13	DDR1_DQ[36]DDR1_DQ[20]	DDR1_MAJ[4]	AM23 MAAB4		
MD837	AP13	DDR1_DQ[37]DDR1_DQ[21]	DDR1_MAJ[5]	AL23 MAAB5		
MD838	AM12	DDR1_DQ[38]DDR1_DQ[22]	DDR1_MAJ[5]DDR1_CAA[0]DDR1_MAJ[5]	AV26 MAAB6		
MD839	AL12	DDR1_DQ[39]DDR1_DQ[23]	DDR1_MAJ[7]DDR1_CAA[4]DDR1_MAJ[7]	AM26 MAAB7		
MD840	AP10	DDR1_DQ[40]DDR1_DQ[24]	DDR1_MAJ[8]DDR1_CAA[3]DDR1_MAJ[8]	AL26 MAAB8		
MD841	AR10	DDR1_DQ[41]DDR1_DQ[25]	DDR1_MAJ[9]DDR1_CAA[1]DDR1_MAJ[9]	AM27 MAAB9		
MD842	AE10	DDR1_DQ[42]DDR1_DQ[26]	DDR1_MAJ[10]DDR1_CAB[7]DDR1_MAJ[10]	AL27 MAAB11		
MD843	AP7	DDR1_DQ[43]DDR1_DQ[27]	DDR1_MAJ[11]DDR1_CAA[7]DDR1_MAJ[11]	AV27 MAAB12		
MD844	AR9	DDR1_DQ[44]DDR1_DQ[28]	DDR1_MAJ[12]DDR1_CAA[6]DDR1_MAJ[12]	AL15 MAAB13		
MD845	AP9	DDR1_DQ[45]DDR1_DQ[29]	DDR1_MAJ[13]DDR1_CAB[9]DDR1_MAJ[13]	AY28 BG_B1	BG_B1	9
MD846	AR6	DDR1_DQ[46]DDR1_DQ[30]	DDR1_MAJ[14]DDR1_CAA[9]DDR1_BG[1]	AO28	M_ACT_B	9
MD847	AP6	DDR1_DQ[47]DDR1_DQ[31]	DDR1_MAJ[15]DDR1_CAA[8]DDR1_ACT_A			
MD848	AM10	DDR1_DQ[48]				
MD849	AL10	DDR1_DQ[49]				
MD850	AM7	DDR1_DQ[50]	DDR1_PAR	M_DDR_PARB		9
MD851	AL7	DDR1_DQ[51]	DDR1_ALERTA	M_ALERT_B		9
MD852	AM9	DDR1_DQ[52]				
MD853	AL9	DDR1_DQ[53]	DDR1_DQS[N0]DDR0_DQS[N2]	AF34 M_DQS80		
MD854	AM9	DDR1_DQ[54]	DDR1_DQS[N1]DDR0_DQS[N3]	AK33 M_DQS81		
MD855	AM9	DDR1_DQ[55]	DDR1_DQS[N2]DDR0_DQS[N5]	AN23 M_DQS83		
MD856	AJ6	DDR1_DQ[56]	DDR1_DQS[N3]DDR0_DQS[N7]	AN29 M_DQS84		
MD857	AJ7	DDR1_DQ[57]	DDR1_DQS[N4]DDR1_DQS[N2]	AN13 M_DQS84		
MD858	AE6	DDR1_DQ[58]	DDR1_DQS[N5]DDR1_DQS[N6]	AR8 M_DQS85		
MD859	AE7	DDR1_DQ[59]	DDR1_DQS[N6]	AM8 M_DQS86		
MD860	AH7	DDR1_DQ[60]	DDR1_DQS[N7]	AG6 M_DQS87		
MD861	AH6	DDR1_DQ[61]				
MD862	AE7	DDR1_DQ[62]	DDR1_DQSP[0]DDR0_DQSP[2]	AF35 M_DQS80		
MD863	AF6	DDR1_DQ[63]	DDR1_DQSP[1]DDR0_DQSP[3]	AL33 M_DQS81		
			DDR1_DQSP[2]DDR0_DQSP[6]	AP33 M_DQS82		
			DDR1_DQSP[3]DDR0_DQSP[7]	AN28 M_DQS83		
			DDR1_DQSP[4]DDR1_DQSP[2]	AN12 M_DQS84		
			DDR1_DQSP[5]DDR1_DQSP[3]	AL8 M_DQS85		
			DDR1_DQSP[6]	AL8 M_DQS86		
			DDR1_DQSP[7]	AG7 M_DQS87		
MD8 ECC0	AR25	DDR1_ECC[0]	DDR1_DQSP[8]	AN25 M_DQS88	M_DQS88	9
MD8 ECC1	AR26	DDR1_ECC[1]	DDR1_DQSP[9]	AN26 M_DQS88	M_DQS88	9
MD8 ECC2	AN25	DDR1_ECC[2]				
MD8 ECC3	AM25	DDR1_ECC[3]				
MD8 ECC4	AP26	DDR1_ECC[4]				
MD8 ECC5	AP25	DDR1_ECC[5]				
MD8 ECC6	AL25	DDR1_ECC[6]				
MD8 ECC7	AL26	DDR1_ECC[7]				

DDR CHANNEL B

2 OF 12

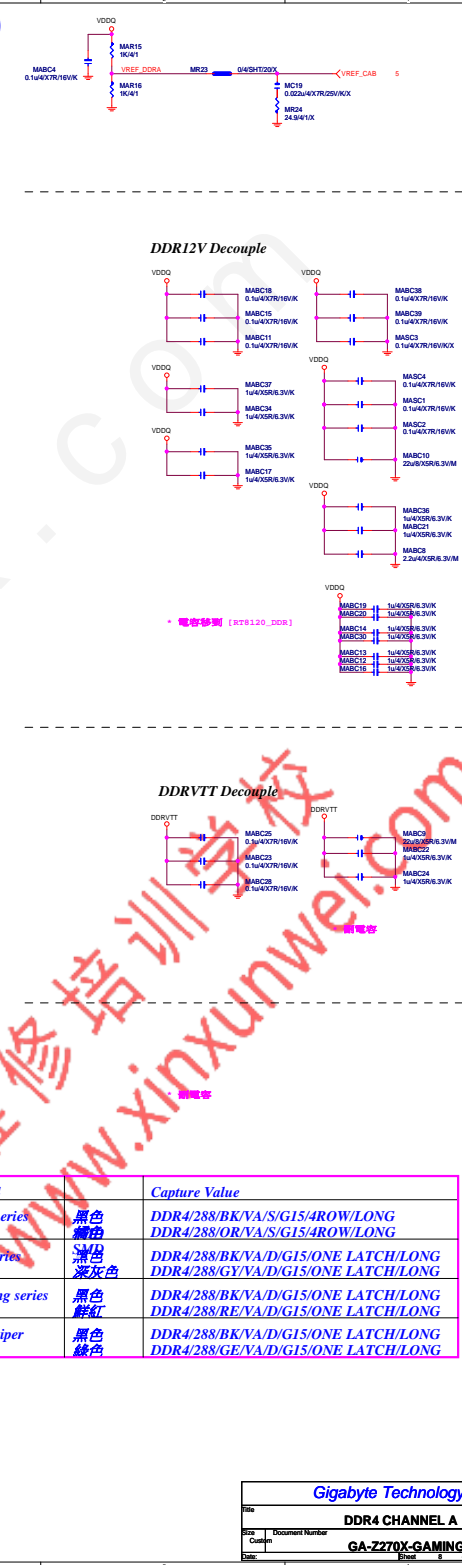
CPU-SK/1151/S/15



<b>Gigabyte Technology</b>			
Title			
<b>CPU LGA1151-C</b>			
Size	Document Number		Rev
Custom	<b>GA-Z270X-GAMING 5</b>		<b>1.0</b>
Date:	Friday, October 28, 2016	Sheet 6 of 76	

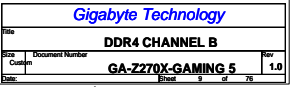


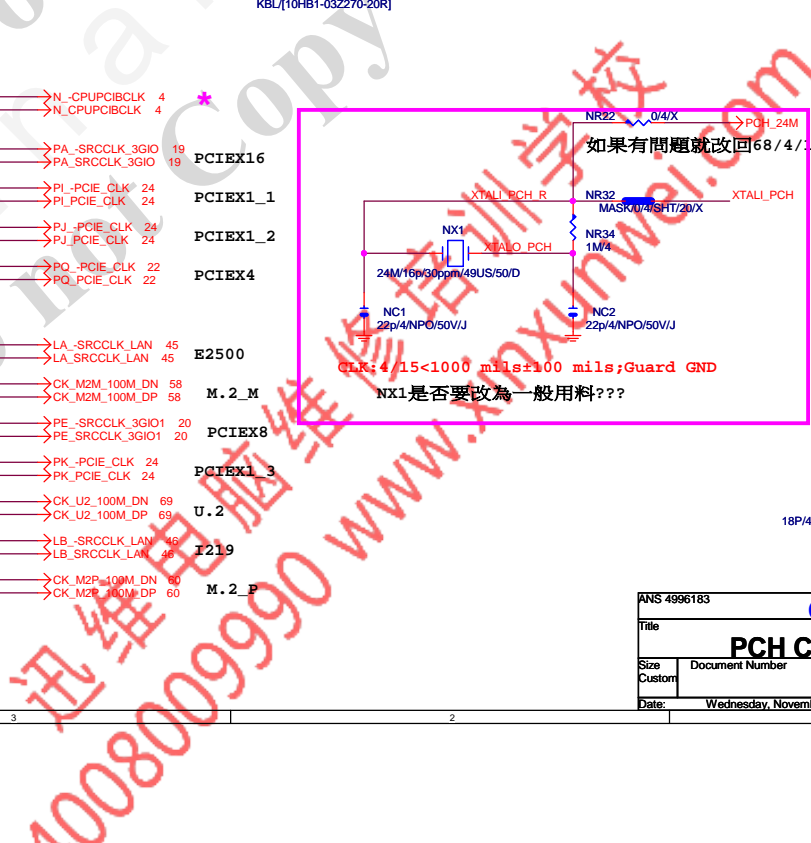


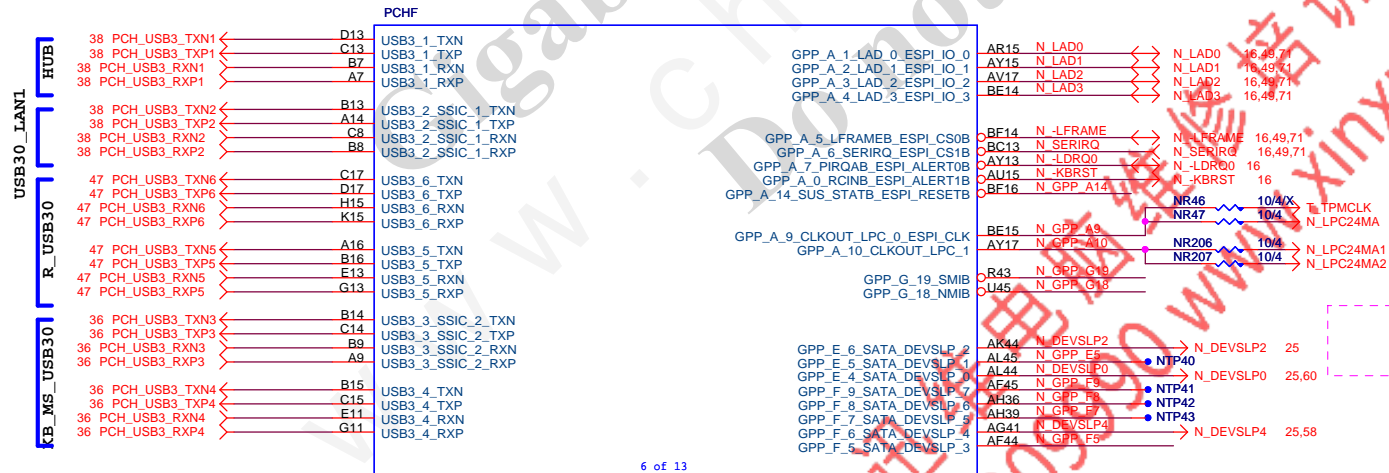
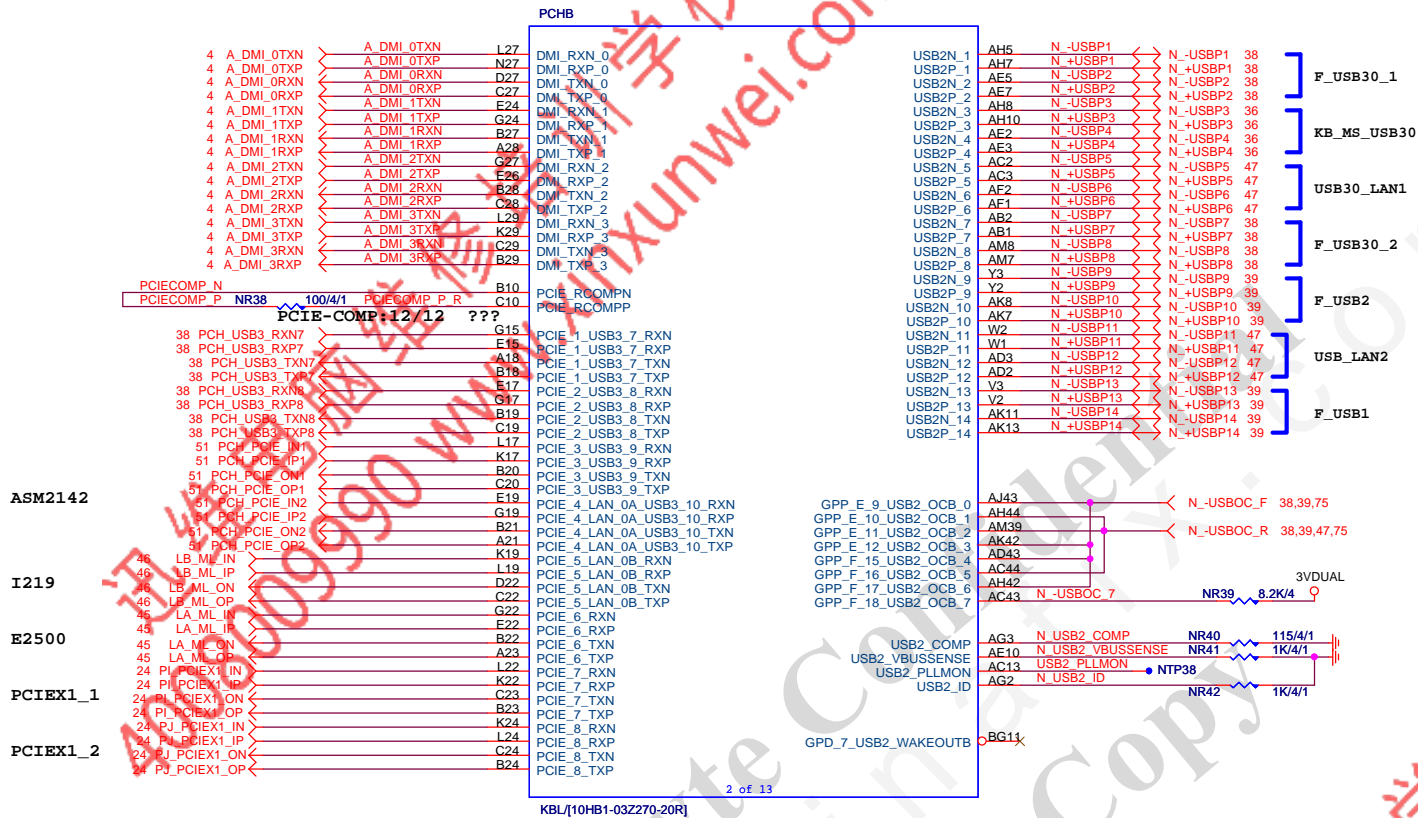


DDR4		Capture Value
SOC series	黑色 黑色	DDR4/288/BK/VA/S/G15/4ROW/LONG DDR4/288/ORVA/S/G15/4ROW/LONG
UD series	SMD 黑色 深灰色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GY/VA/D/G15/ONE LATCH/LONG
Gaming series	黑色 鮮紅	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/RE/VA/D/G15/ONE LATCH/LONG
GL Sniper	黑色 綠色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GV/VA/D/G15/ONE LATCH/LONG







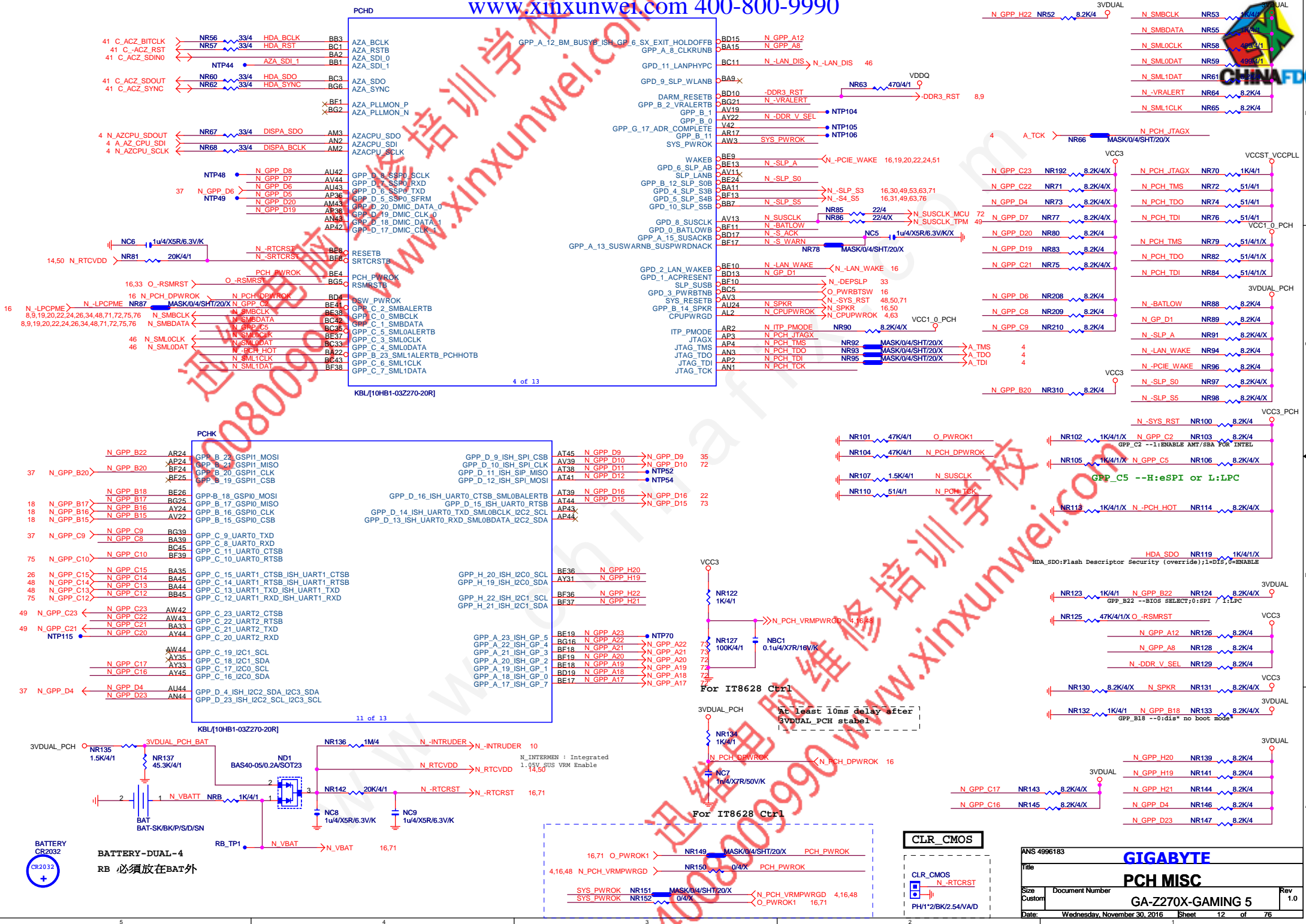


ANS 4996183

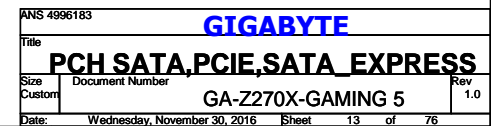
GIGABYTE

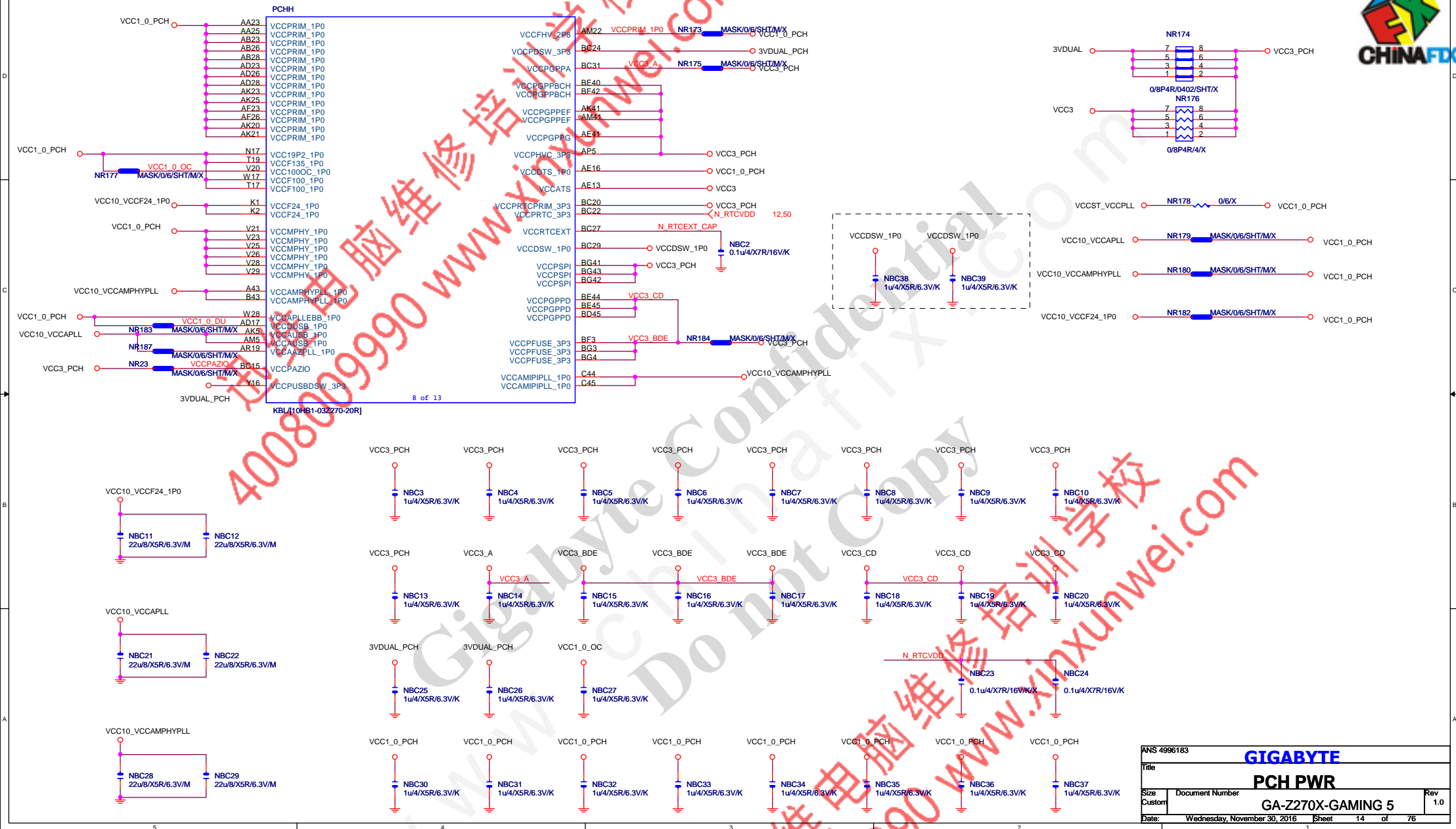
Title		PCH DMI,USB,PCIE	
Size	Document Number	GA-Z270X-GAMING 5	
Custom			Rev 1.0
Date:	Wednesday, November 30, 2016	Sheet 11	of 76











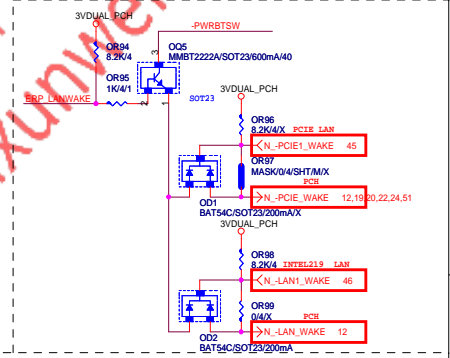
PCHL

A25	VSS	A42	VSS
A30	VSS	D45	VSS
P22	VSS	BG44	VSS
AV38	VSS	BE44	VSS
AV45	VSS	BF43	VSS
AV8	VSS	BF2	VSS
AY11	VSS	W29	VSS
AY19	VSS	A35	VSS
AY37	VSS	AG23	VSS
AY4	VSS	A40	VSS
AY42	VSS	AA1	VSS
AY8	VSS	AA17	VSS
B25	VSS	AA18	VSS
B3	VSS	AA20	VSS
B30	VSS	AA21	VSS
B35	VSS	AA26	VSS
B4	VSS	AA28	VSS
B41	VSS	AA29	VSS
BA13	VSS	AB17	VSS
BA17	VSS	AC32	VSS
BA29	VSS	AE4	VSS
BA31	VSS	AE8	VSS
BA37	VSS	AF18	VSS
BA4	VSS	AF20	VSS
BA42	VSS	AF21	VSS
BB40	VSS	AF25	VSS
BC38	VSS	AF28	VSS
BC40	VSS	AF29	VSS
BC9	VSS	AF4	VSS
BD11	VSS	AF42	VSS
BD16	VSS	AG18	VSS
BD2	VSS	AG20	VSS
BD21	VSS	AG21	VSS
BD25	VSS	AG23	VSS
F2	VSS	AG25	VSS
F31	VSS	AG26	VSS
E6	VSS	AG28	VSS
E8	VSS	AG29	VSS
F39	VSS	AH11	VSS
F43	VSS	AH13	VSS
G4	VSS	AH15	VSS
G40	VSS	AH17	VSS
G42	VSS	AH19	VSS
F6	VSS	AH38	VSS
G9	VSS	AH33	VSS
H11	VSS	AH3	VSS
H19	VSS	AJ1	VSS
H22	VSS	AJ17	VSS
H24	VSS	AJ18	VSS
H27	VSS	AJ20	VSS
H29	VSS	AJ21	VSS
H33	VSS	AJ23	VSS
H35	VSS	AJ25	VSS
H38	VSS	AJ26	VSS
H4	VSS	AJ28	VSS
H42	VSS	AJ29	VSS
H9	VSS	AJ45	VSS
J4	VSS	AK10	VSS
M36	VSS	AK14	VSS
M38	VSS	AK16	VSS
M4	VSS	AK17	VSS
M8	VSS	AK18	VSS
M9	VSS	AK26	VSS
N13	VSS	AK28	VSS
N15	VSS	AM14	VSS
N19	VSS	AM14	VSS
N22	VSS	AM14	VSS
N24	VSS	AM14	VSS
N31	VSS	AM14	VSS
N42	VSS	AM14	VSS
P10	VSS	AM14	VSS
P12	VSS	AM14	VSS
AV35	VSS	AM14	VSS

PCHL		
BD34	VSS[70]	AB18
BD39	VSS[71]	AB20
BD7	VSS[72]	AB21
BE2	VSS[73]	AB25
BF43	VSS[74]	AB29
BF2	VSS[75]	AB4
BG18	VSS[76]	AB42
BG23	VSS[77]	AC10
BG28	VSS[78]	AC14
BG32	VSS[79]	AC16
BG37	VSS[80]	AC18
BG40	VSS[81]	AC4
BG9	VSS[82]	AC5
C1	VSS[83]	AC7
A12	VSS[84]	AC8
C2	VSS[85]	AD1
AG1	VSS[86]	AD18
AG2	VSS[87]	AD20
AG3	VSS[88]	AD21
D1	VSS[89]	AD22
D10	VSS[91]	AD25
D12	VSS[92]	AD29
D15	VSS[93]	AD45
D16	VSS[94]	AE11
D19	VSS[95]	AE14
D21	VSS[96]	AE32
D24	VSS[97]	AE33
D25	VSS[98]	AK29
D29	VSS[100]	AK30
D30	VSS[101]	AK32
D33	VSS[102]	AK35
D35	VSS[103]	AK39
D36	VSS[104]	AL4
D39	VSS[105]	AL42
D44	VSS[106]	AM10
D7	VSS[107]	AM11
P13	VSS[108]	AM13
P15	VSS[109]	AM17
P17	VSS[110]	AM19
P19	VSS[111]	AM24
P31	VSS[112]	AM27
P33	VSS[113]	AM29
P35	VSS[114]	AM32
P4	VSS[115]	AM33
P42	VSS[116]	AM4
P8	VSS[117]	AN45
R1	VSS[118]	AP10
R32	VSS[119]	AP11
T10	VSS[120]	AP13
T14	VSS[121]	AP15
T22	VSS[122]	AP22
T29	VSS[123]	AP27
T32	VSS[124]	AP31
T36	VSS[125]	AP33
T38	VSS[126]	AP34
Y38	VSS[127]	AP39
Y4	VSS[128]	T4
Y8	VSS[129]	W26
Y8	VSS[130]	V16
Y8	VSS[131]	V17
Y8	VSS[132]	V18
Y8	VSS[133]	V30
Y8	VSS[134]	V32
Y8	VSS[135]	V33
Y8	VSS[136]	V38
Y8	VSS[137]	V4
Y8	VSS[138]	V8
W18	VSS[139]	W18
W20	VSS[140]	W20
W21	VSS[141]	W21
W23	VSS[142]	W23
W25	VSS[143]	W25
VSS_1	VSS_1	A44
VSS_10	VSS_10	BE1
VSS_11	VSS_11	B1
VSS_14	VSS_14	B2
VSS_15	VSS_15	B2
VSS_16	VSS_16	A3
VSS_17	VSS_17	A4
VSS_18	VSS_18	B44
VSS_2	VSS_2	B45
VSS_3	VSS_3	

12 of 13

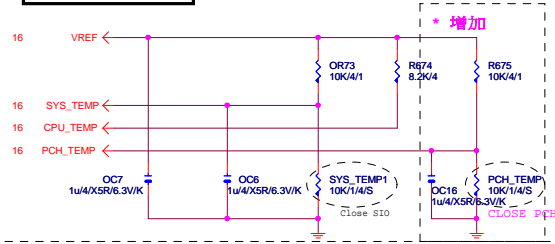
KBL[10HB1-032270-20R]



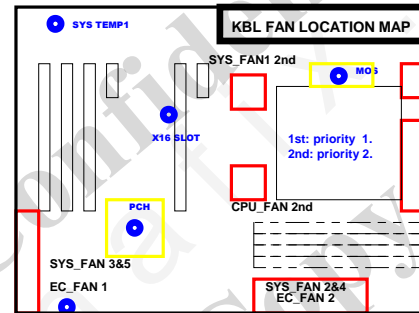
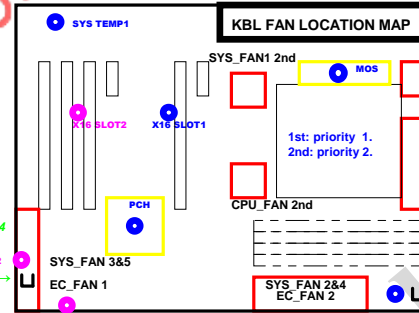
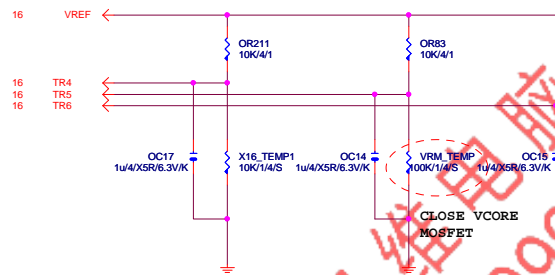
Title				IT8686			
Size	Document Number						Rev
C	GA-Z270X-GAMING 5						1.0
Date:	Friday, October 28, 2016			Sheet	16	of	76



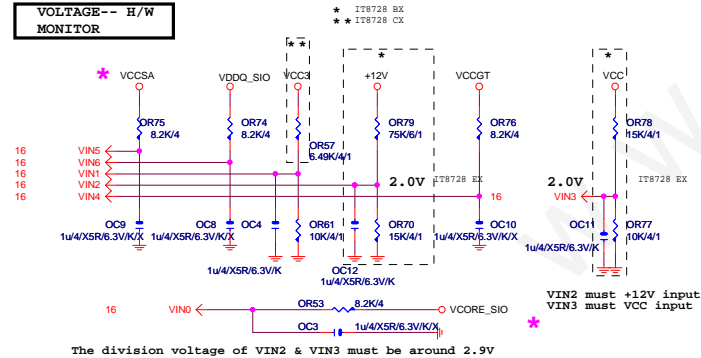
# TEMP H/W MONITOR



## 5個FAN時使用



# VOLTAGE-- H/W MONITOR



★Update 2015-04.24

## Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5	1.0	
Date:	Friday, October 28, 2016	Sheet	17 of 76

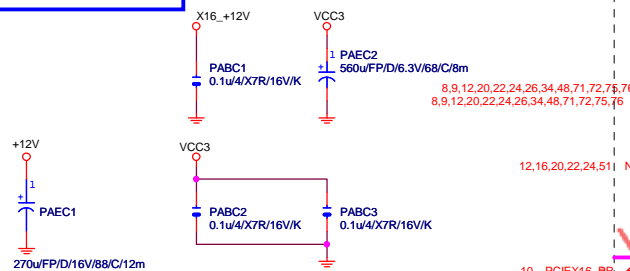
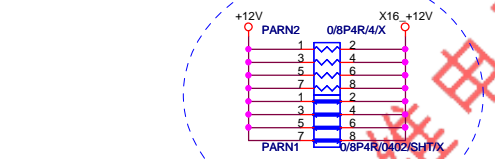


Rev 0.3

PCIEX16 CAP

PCIEX16 SLOT

www.xinxiunwei.com 400-800-9990

PCIEX16 PROTECT SHT  
+12 protect short-wire test

PCIEX16 AC CAP

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

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

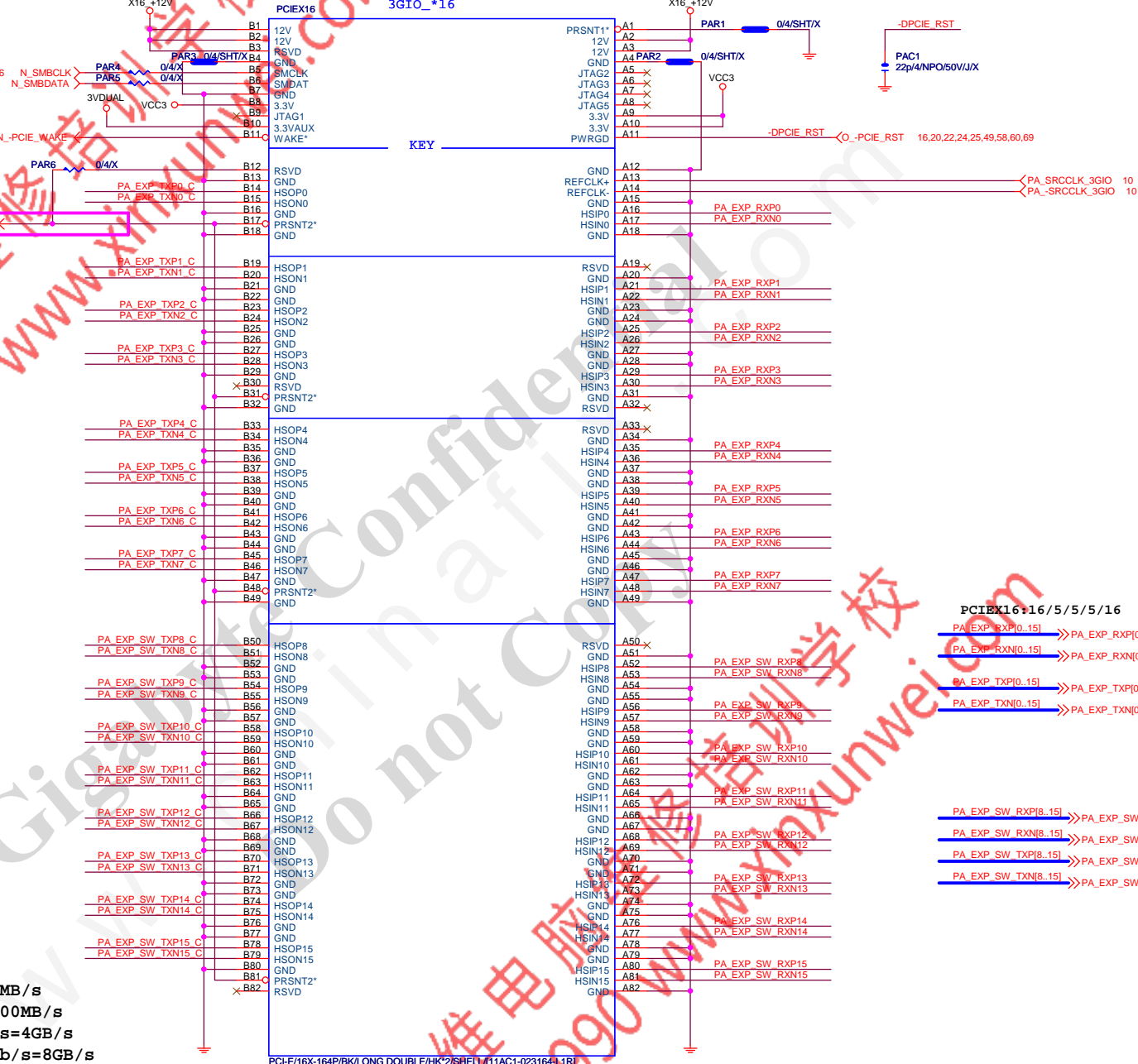
PCE-E X16(雙向) BANDWIDTH=2.5GHz\*(8b/10b)X16X2=64Gb/s=8GB/s

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



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

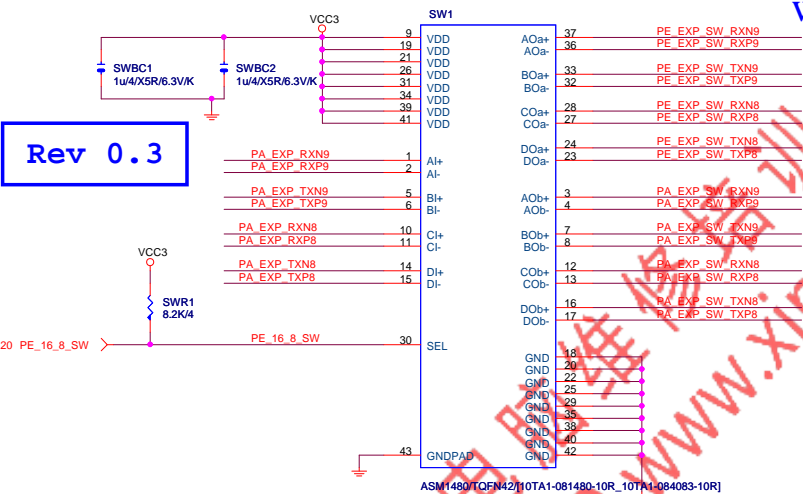
Gigabyte Technology			
PCI EXPRESS * 16			
Size	Document Number	GA-Z270X-GAMING 5	
Custom			Rev 1.0
Date:	Friday, October 28, 2016	Sheet	19 of 76



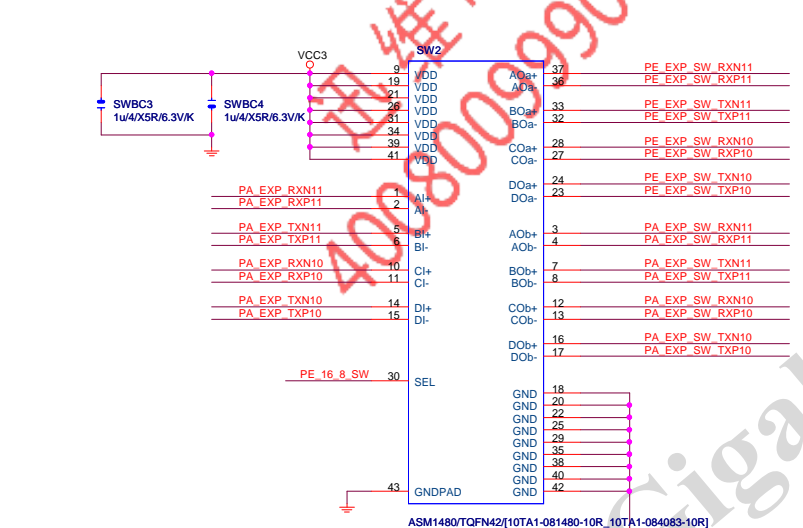
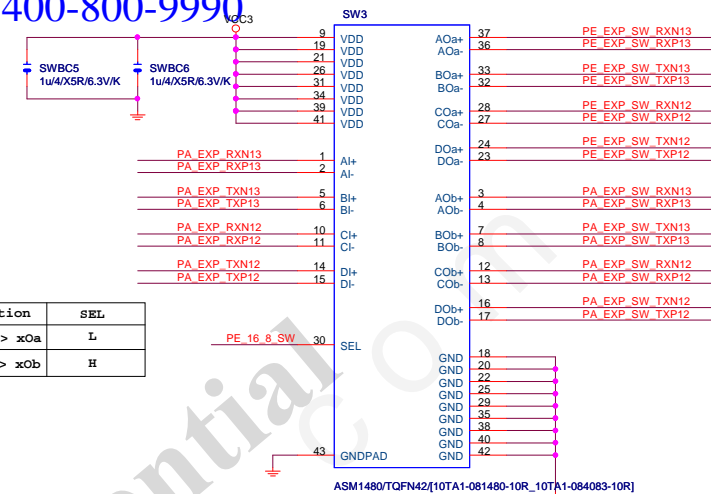




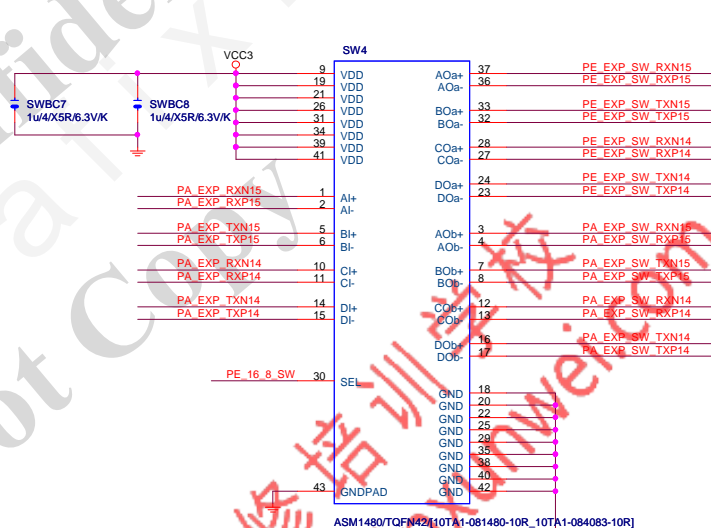
Rev 0.3



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



PA\_EXP\_SW\_RXP[8..15] >>> PA\_EXP\_SW\_RXP[8..15] 19  
PA\_EXP\_SW\_RXN[8..15] >>> PA\_EXP\_SW\_RXN[8..15] 19  
PA\_EXP\_SW\_TXP[8..15] >>> PA\_EXP\_SW\_TXP[8..15] 19  
PA\_EXP\_SW\_TXN[8..15] >>> PA\_EXP\_SW\_TXN[8..15] 19  
PE\_EXP\_SW\_RXP[8..15] >>> PE\_EXP\_SW\_RXP[8..15] 20  
PE\_EXP\_SW\_RXN[8..15] >>> PE\_EXP\_SW\_RXN[8..15] 20  
PE\_EXP\_SW\_TXP[8..15] >>> PE\_EXP\_SW\_TXP[8..15] 20  
PE\_EXP\_SW\_TXN[8..15] >>> PE\_EXP\_SW\_TXN[8..15] 20  
PA\_EXP\_RXP[0..15] >>> PA\_EXP\_RXP[0..15] 4,19  
PA\_EXP\_RXN[0..15] >>> PA\_EXP\_RXN[0..15] 4,19  
PA\_EXP\_TXP[0..15] >>> PA\_EXP\_TXP[0..15] 4,19  
PA\_EXP\_TXN[0..15] >>> PA\_EXP\_TXN[0..15] 4,19



Gigabyte Technology

PCI EXPRESS X16 SWITCH

Title	Document Number	Rev
Size	Custom	1.0
Date:	Friday, October 28, 2016	Sheet 21 of 76

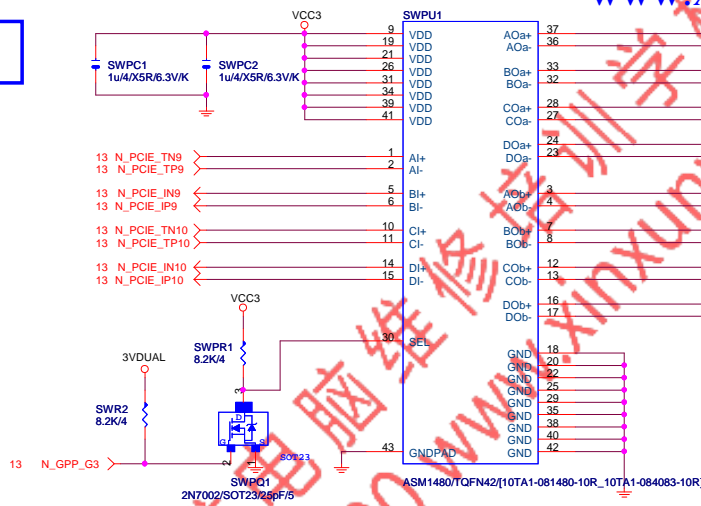


## Gigabyte Technology

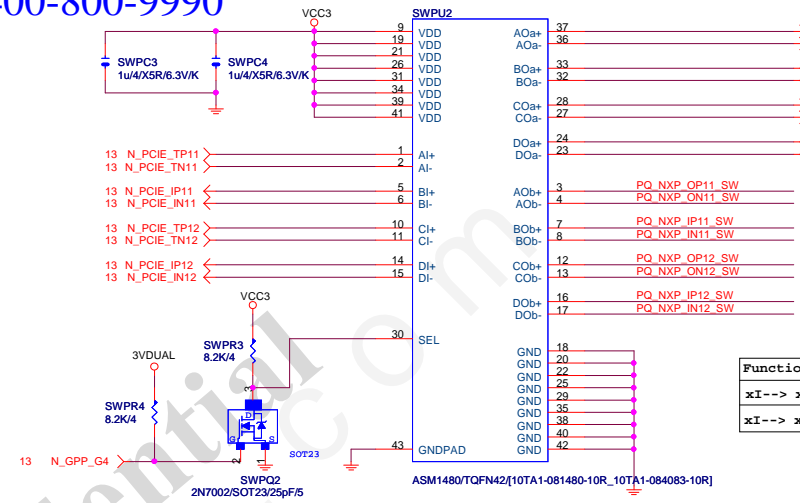
Title			
PCIE_X1 1,2			
Size	Document Number		Rev
Custom	GA-Z270X-GAMING 5		1.0
Date:	Friday, October 28, 2016	Sheet	22 of 76

Rev 0.1

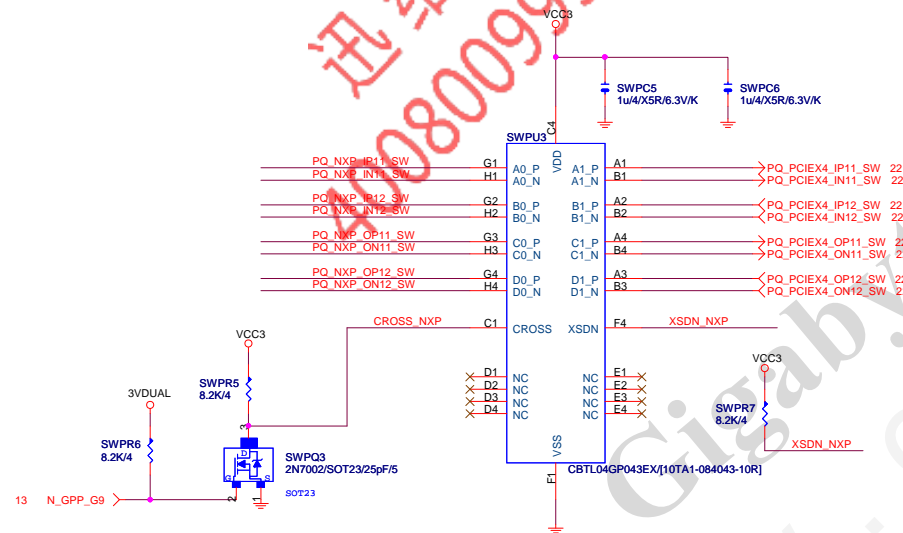
www.xinxunwei.com 400-800-9990



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



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

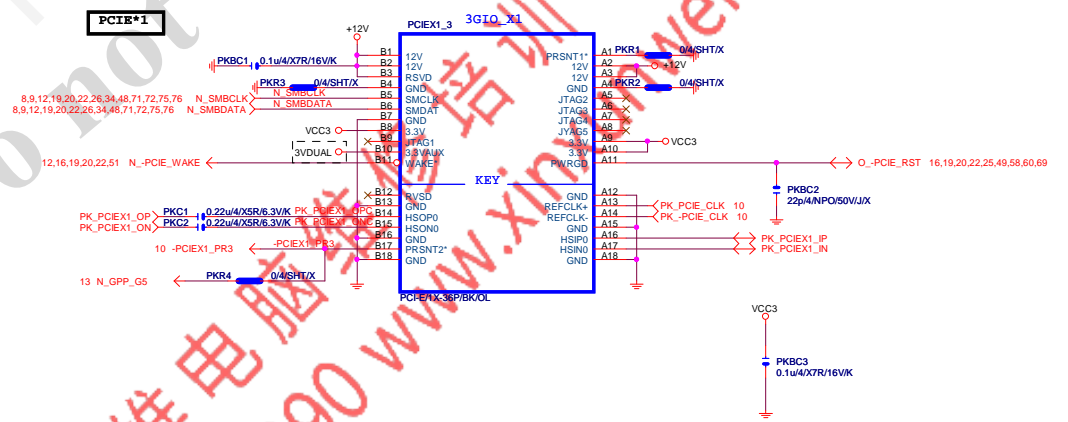
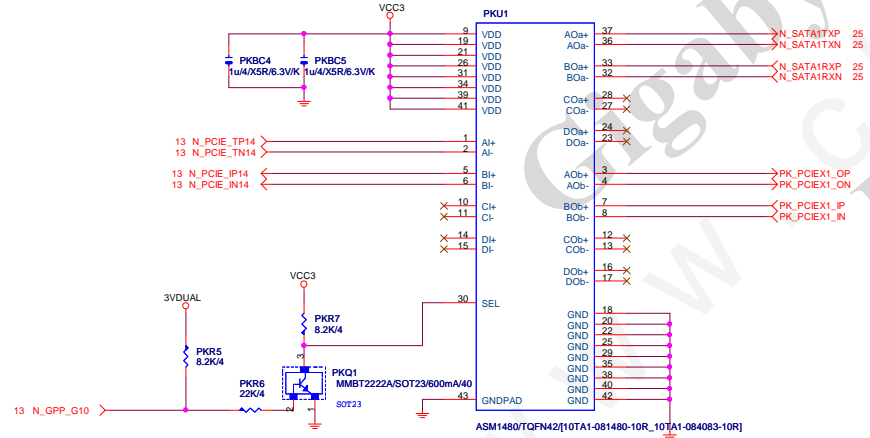
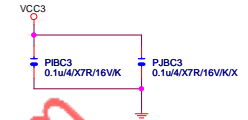
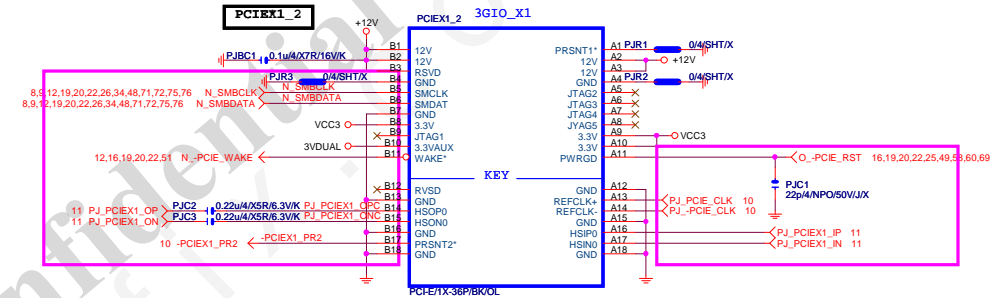
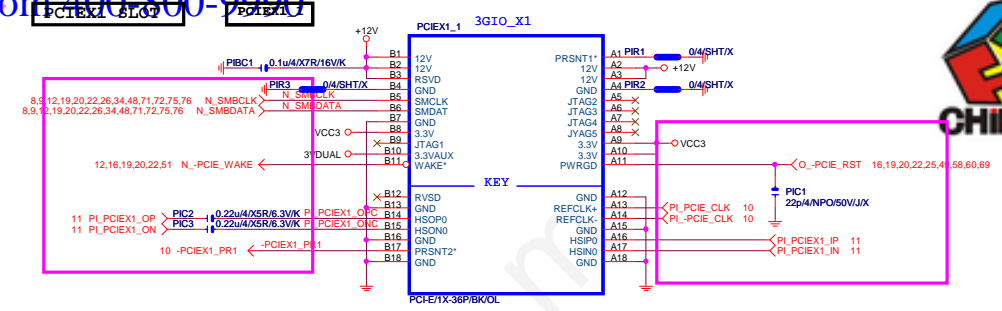


When CROSS = HIGH, selects cross function  
When CROSS = LOW, selects pass-through function.

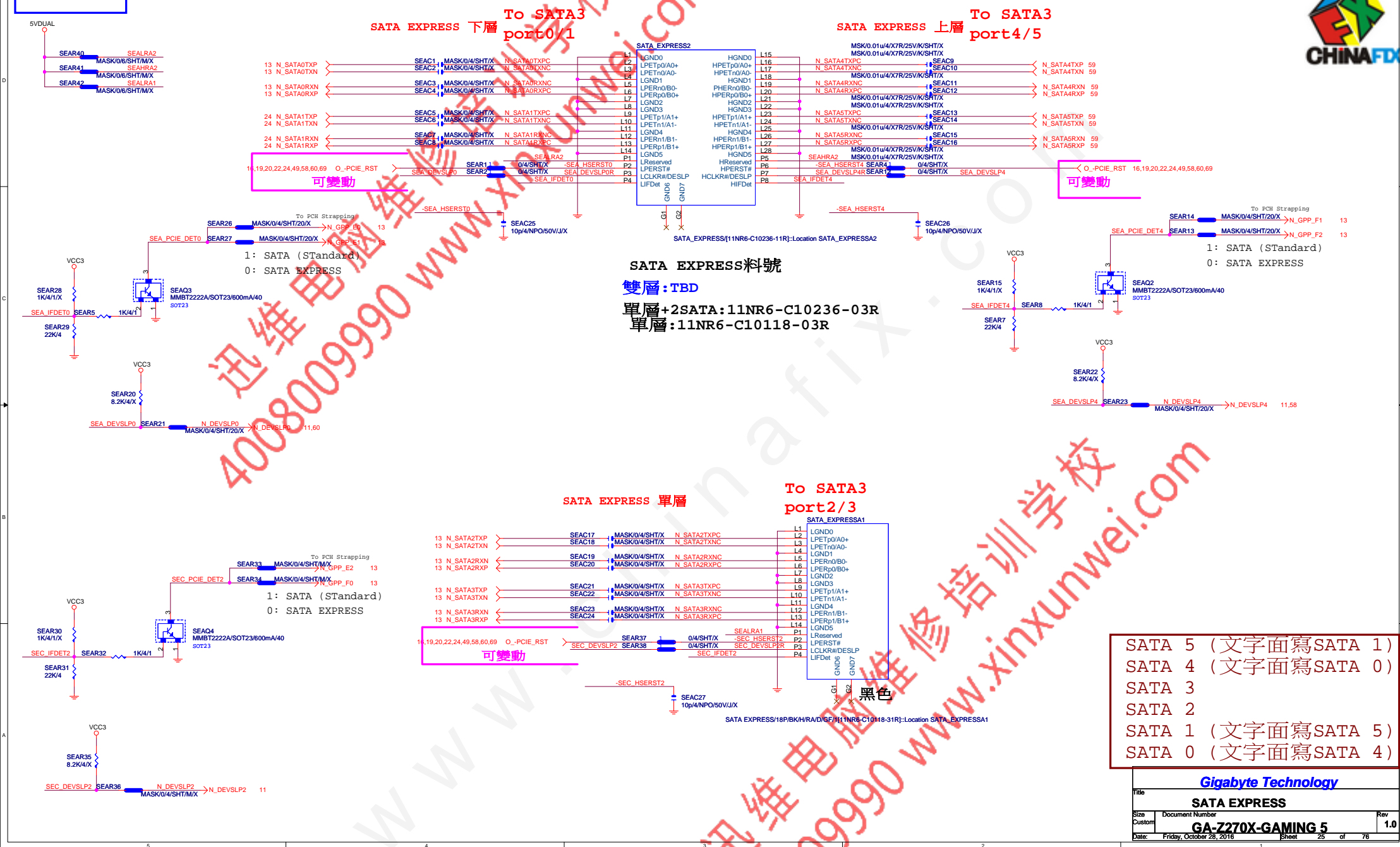
Flex IO priority	N_GPP_G0 (PCH GPP_G0)	N_GPP_D16 (PCH GPP_D16)
M2P_32G Only	L	H
PCIEX4 Only (PCIe Reverse)	H	L
M2P_32G + PCIEX4 (M2P_32Gx2 + PCIEX4_x2)	L	L

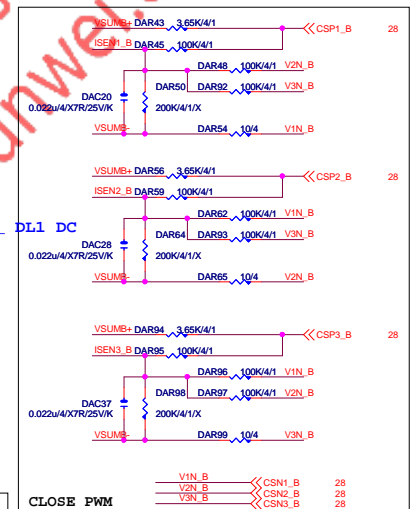
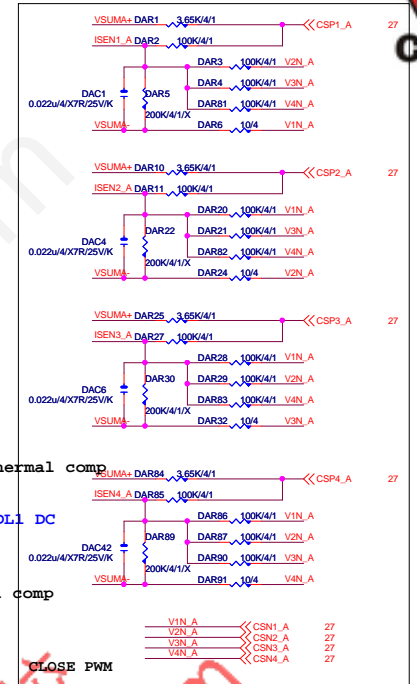
N_GPP_G3 (PCH GPP_G3)	N_GPP_G4 (PCH GPP_G4)	N_GPP_G9 (PCH GPP_G9)
H	H	H
L	L	H
H	L	L

Gigabyte Technology SWITCH			
Title	Document Number	GA-Z270X-GAMING 5	Rev 1.0
Size	Custom		
Date:	Friday, October 28, 2016	Sheet 23 of 76	

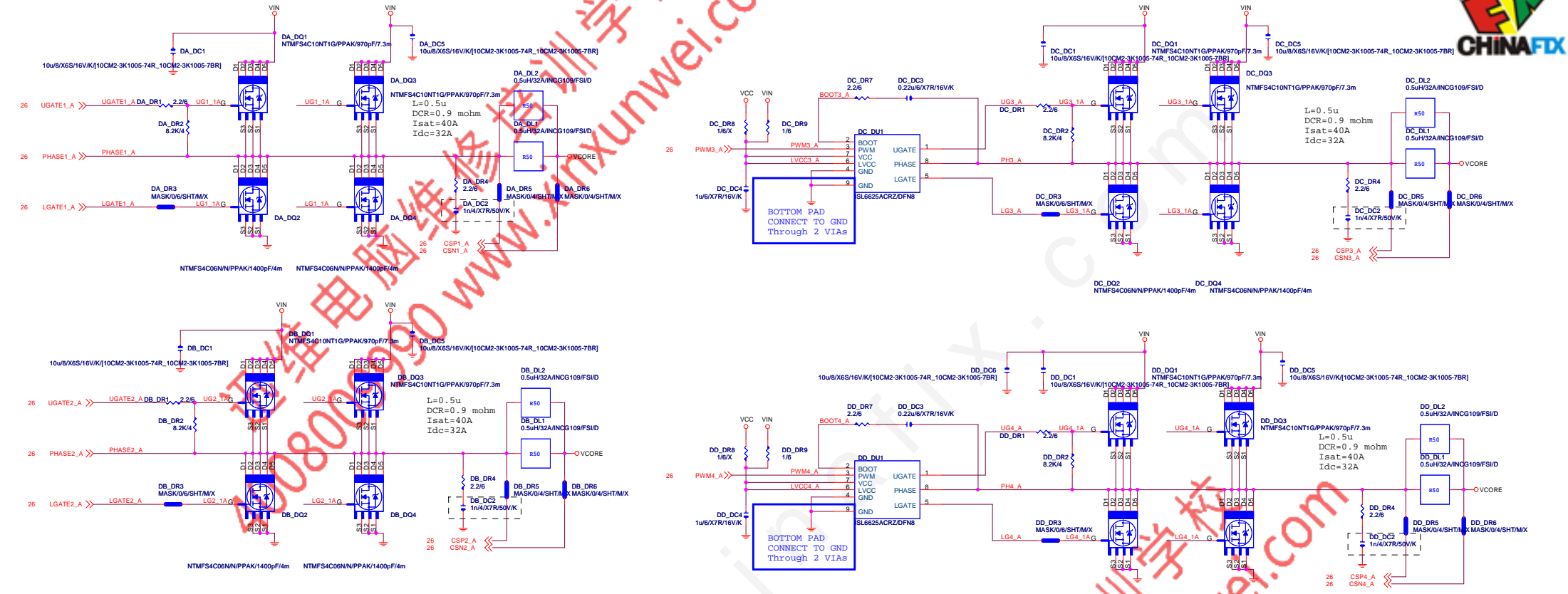




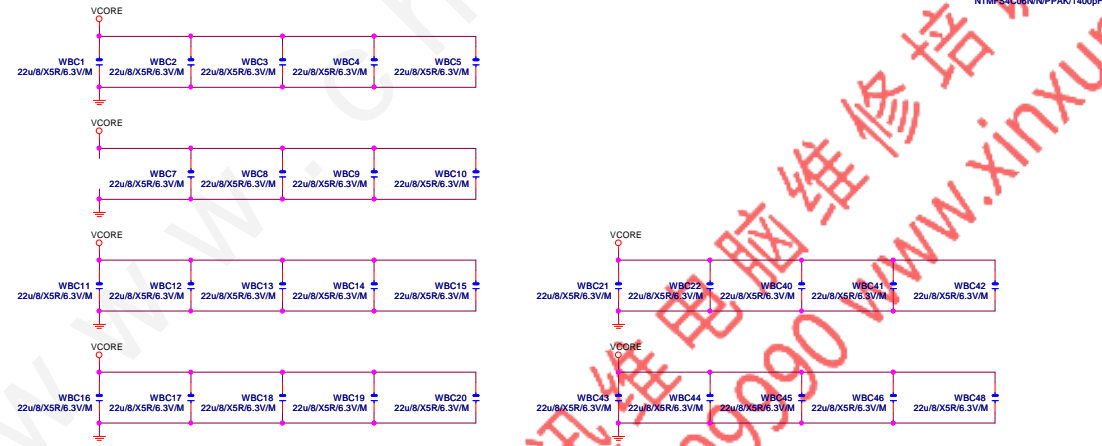
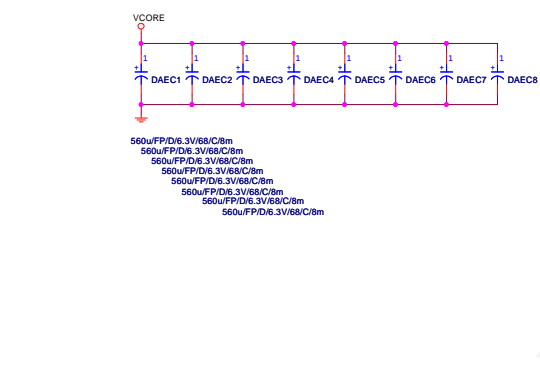


[illegible]

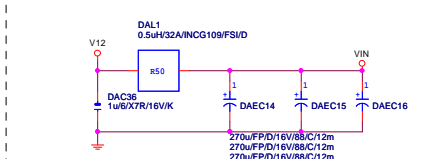
VCORE



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



VIN CAP 270u\*3PCS

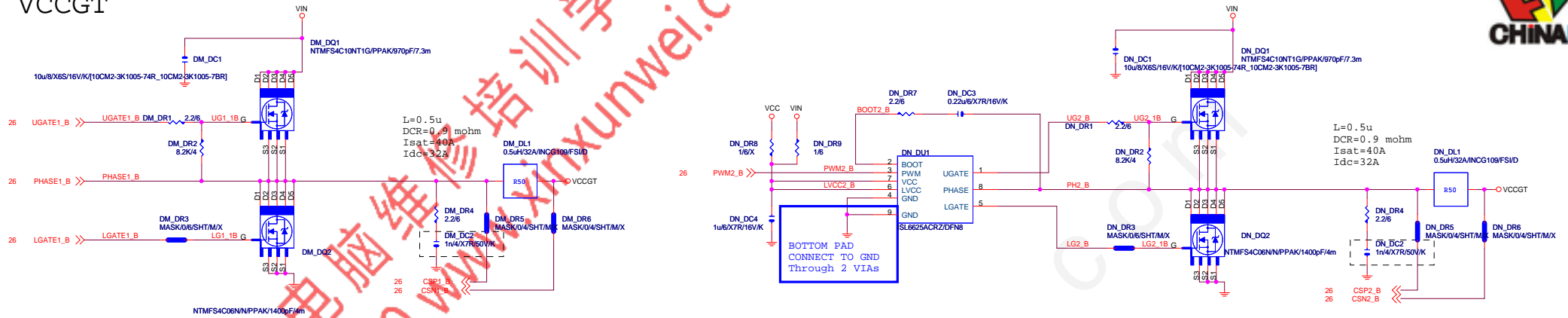
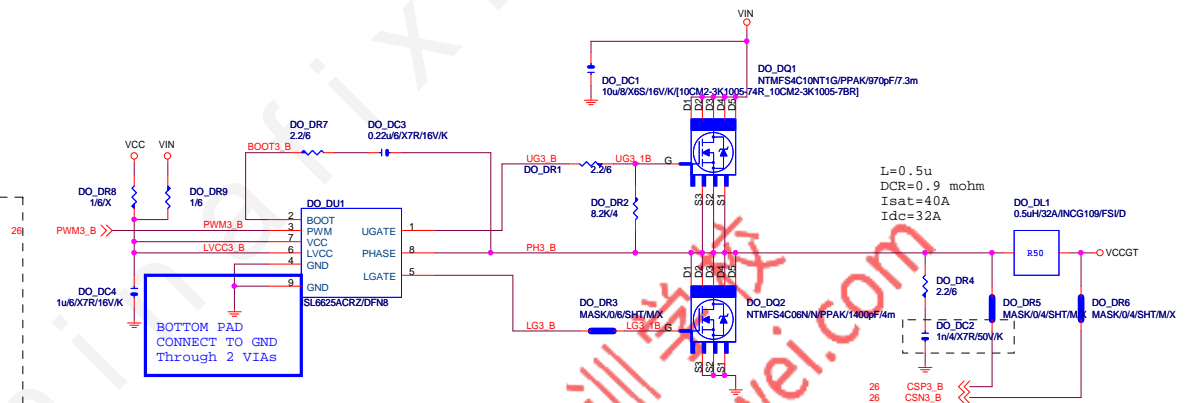
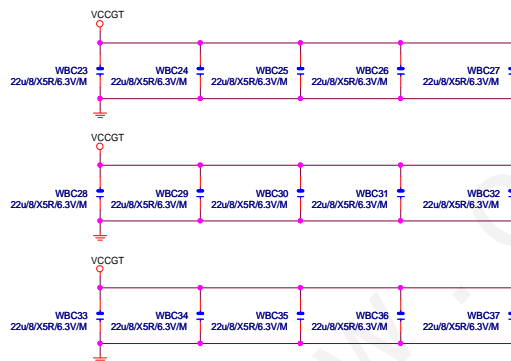
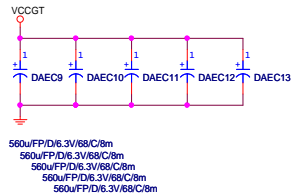


**GIGABYTE**

ISL95856 MOS		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.0
Date:	Friday, October 28, 2016	Sheet 27 of 76



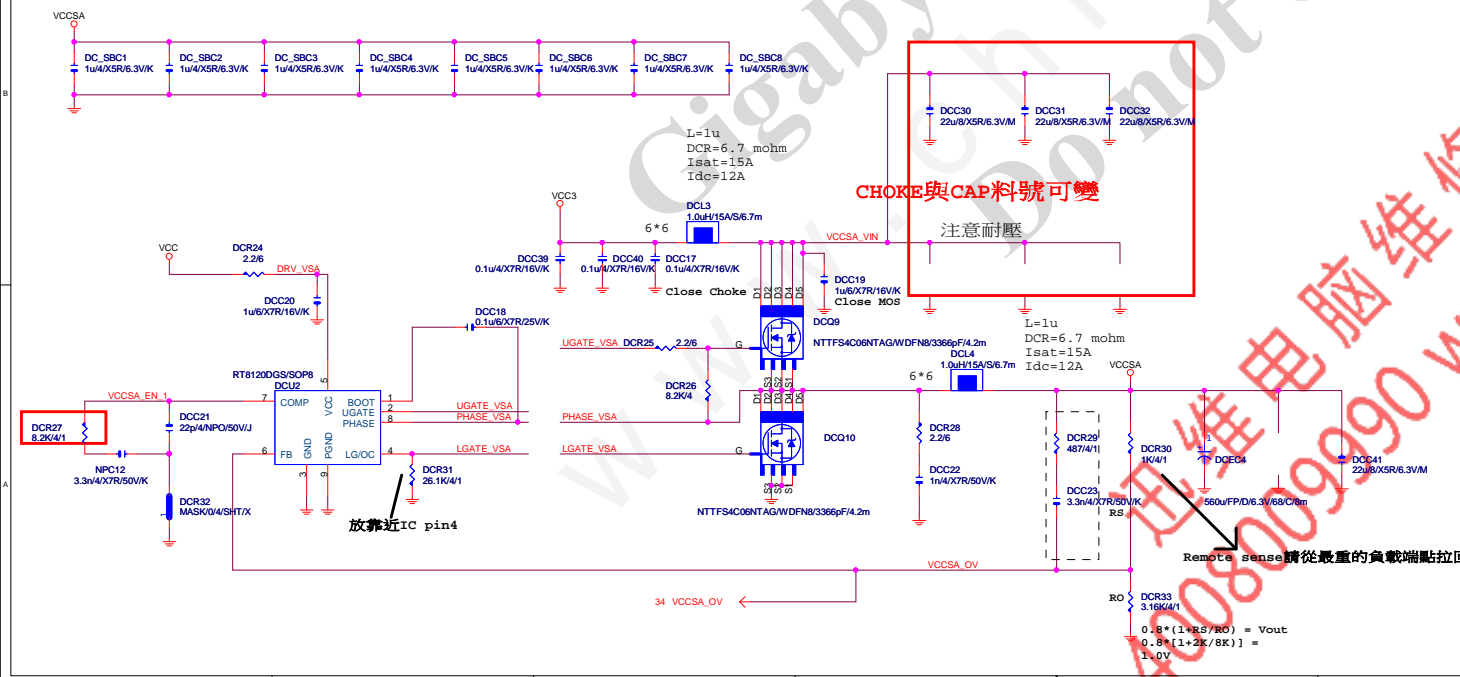
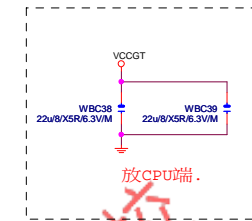
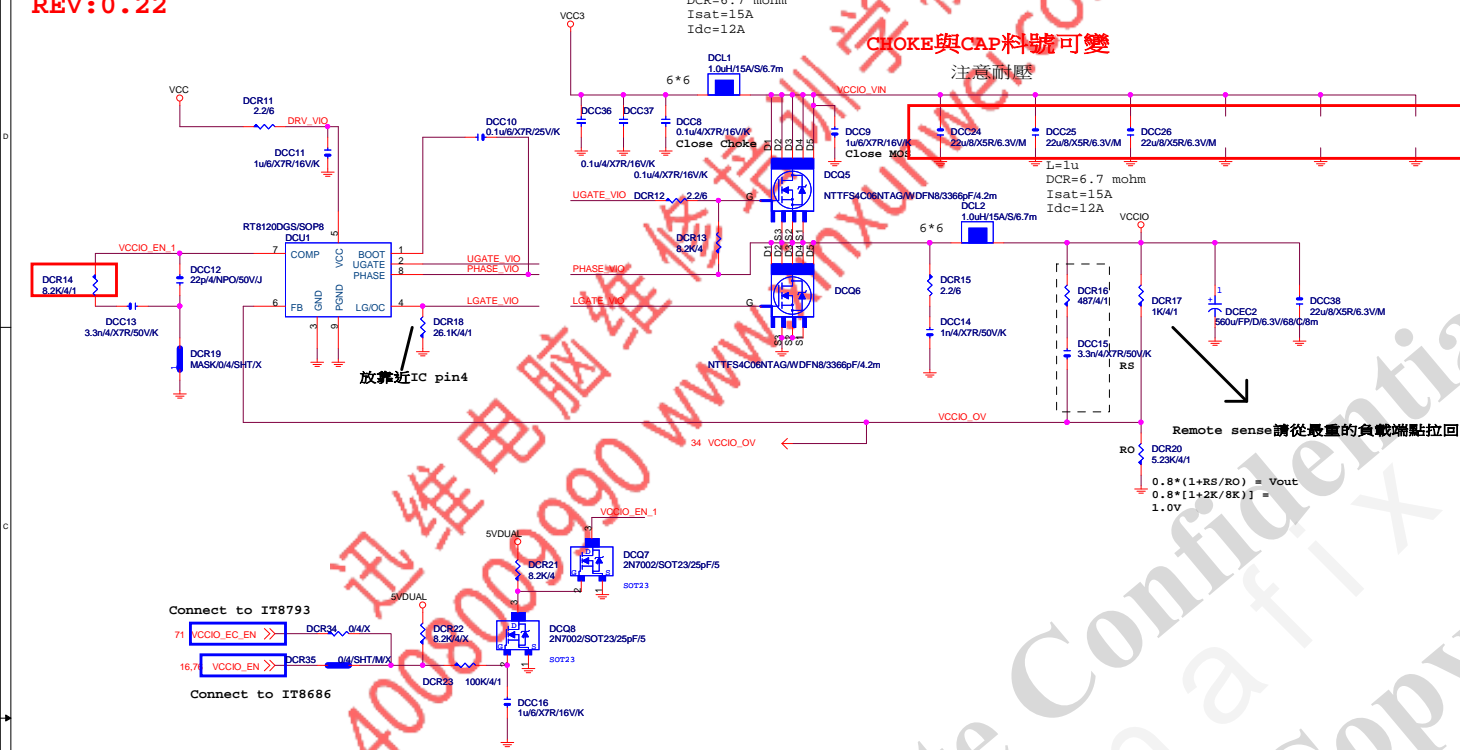
## VCCGT

VCCGT CAP 560u\*5PCS  
22u\*15PCS

GIGABYTE™			
Title	IS195856_MOS		
Size	Document Number	Rev	
Custkm	GA-Z270X-GAMING 5	1.0	
Date:	Friday, October 28, 2016	Sheet	28 of 76

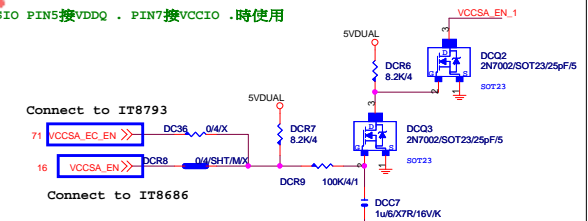


REV: 0.22

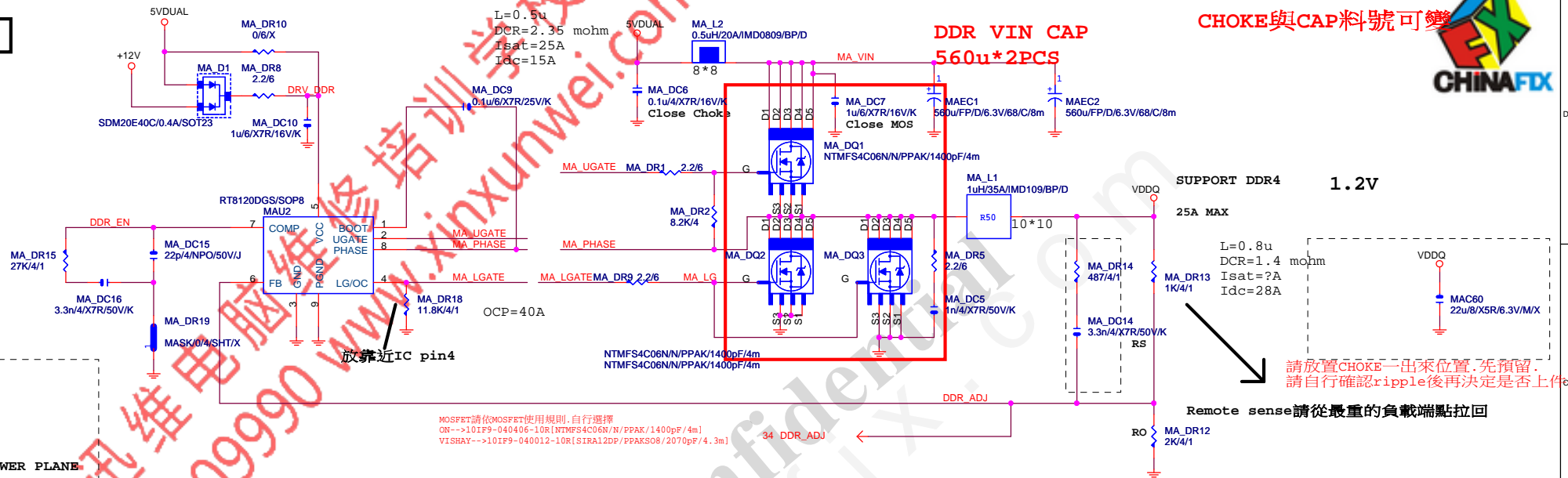


SIO PIN5 . PIN7 用在其他function時使用

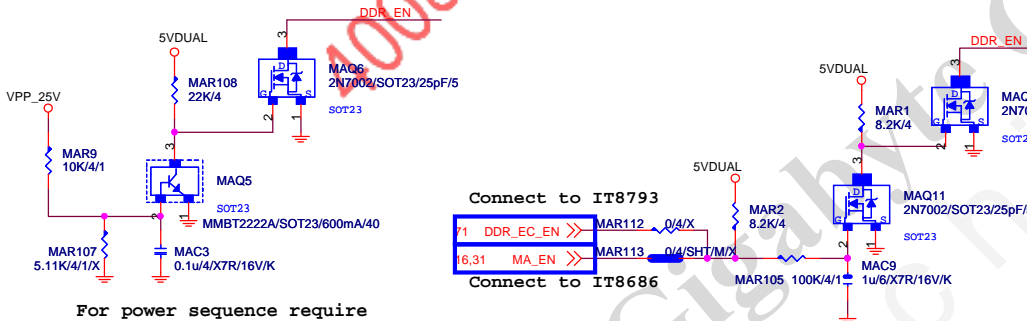
SIO PIN5接VDDQ . PIN7接VCCIO .時使用



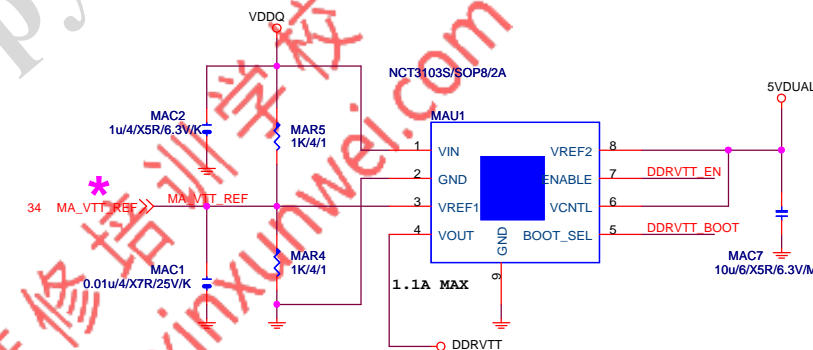
## DDR4



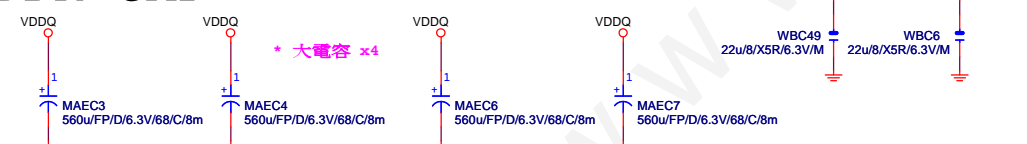
## PWR SEQ



## DDRVTT



## DDR CAP 560u\*4PCS 22u\*2PCS



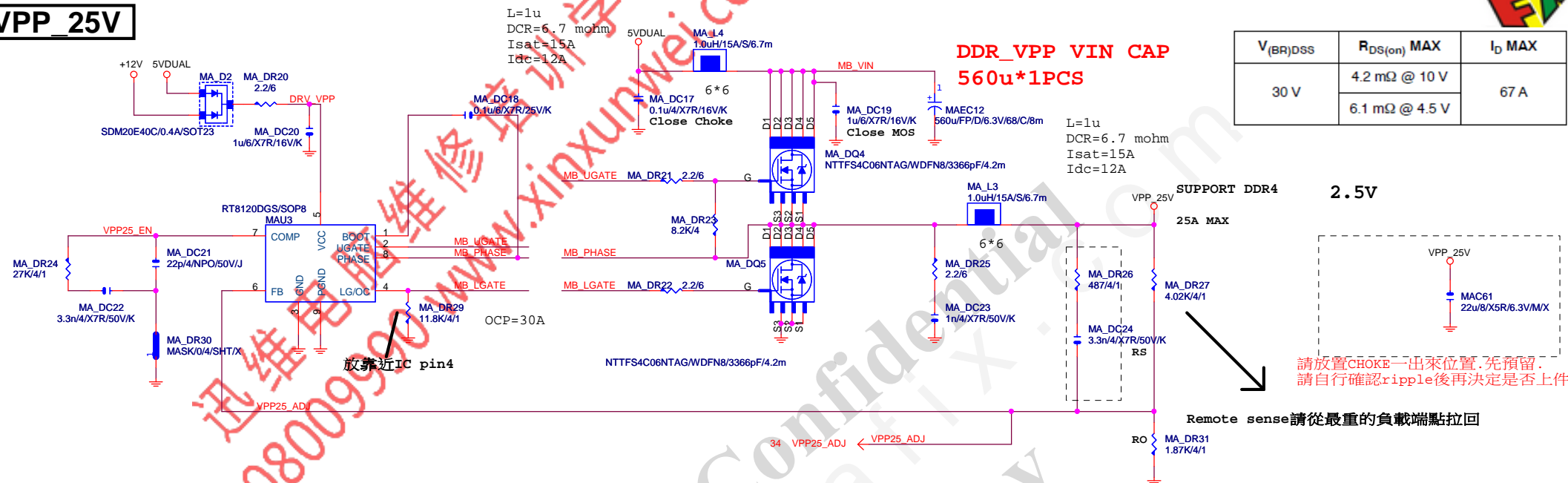
## DDRVTT CAP



**4 DDR\_VTT\_CTL MAR110 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR111 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR112 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR113 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR114 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR115 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR116 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR117 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR118 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR119 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR120 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR121 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR122 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR123 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR124 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR125 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR126 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR127 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR128 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR129 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR130 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR131 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR132 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR133 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR134 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR135 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR136 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR137 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR138 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR139 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR140 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR141 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR142 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR143 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR144 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR145 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR146 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR147 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR148 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR149 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR150 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR151 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR152 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR153 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR154 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR155 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR156 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR157 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR158 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR159 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR160 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR161 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR162 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR163 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR164 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR165 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR166 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR167 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR168 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR169 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR170 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR171 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR172 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR173 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR174 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR175 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR176 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR177 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR178 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR179 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR180 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR181 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR182 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR183 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR184 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR185 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR186 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR187 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR188 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR189 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR190 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR191 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR192 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR193 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR194 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR195 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR196 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR197 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR198 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR199 0/4/SHT/M/X**  
**4 DDR\_VTT\_CTL MAR200 0/4/SHT/M/X**

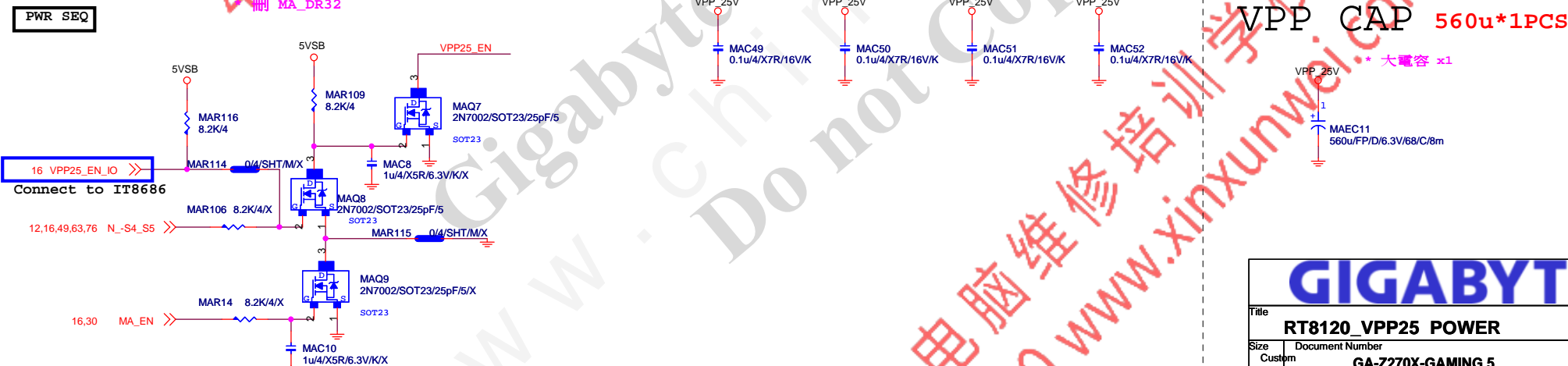
GIGABYTE™			
Title			
RT8120_DDR4 POWER			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5	1.0	
Date:	Friday, October 28, 2016	Sheet	30 of 76

VPP\_25V



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

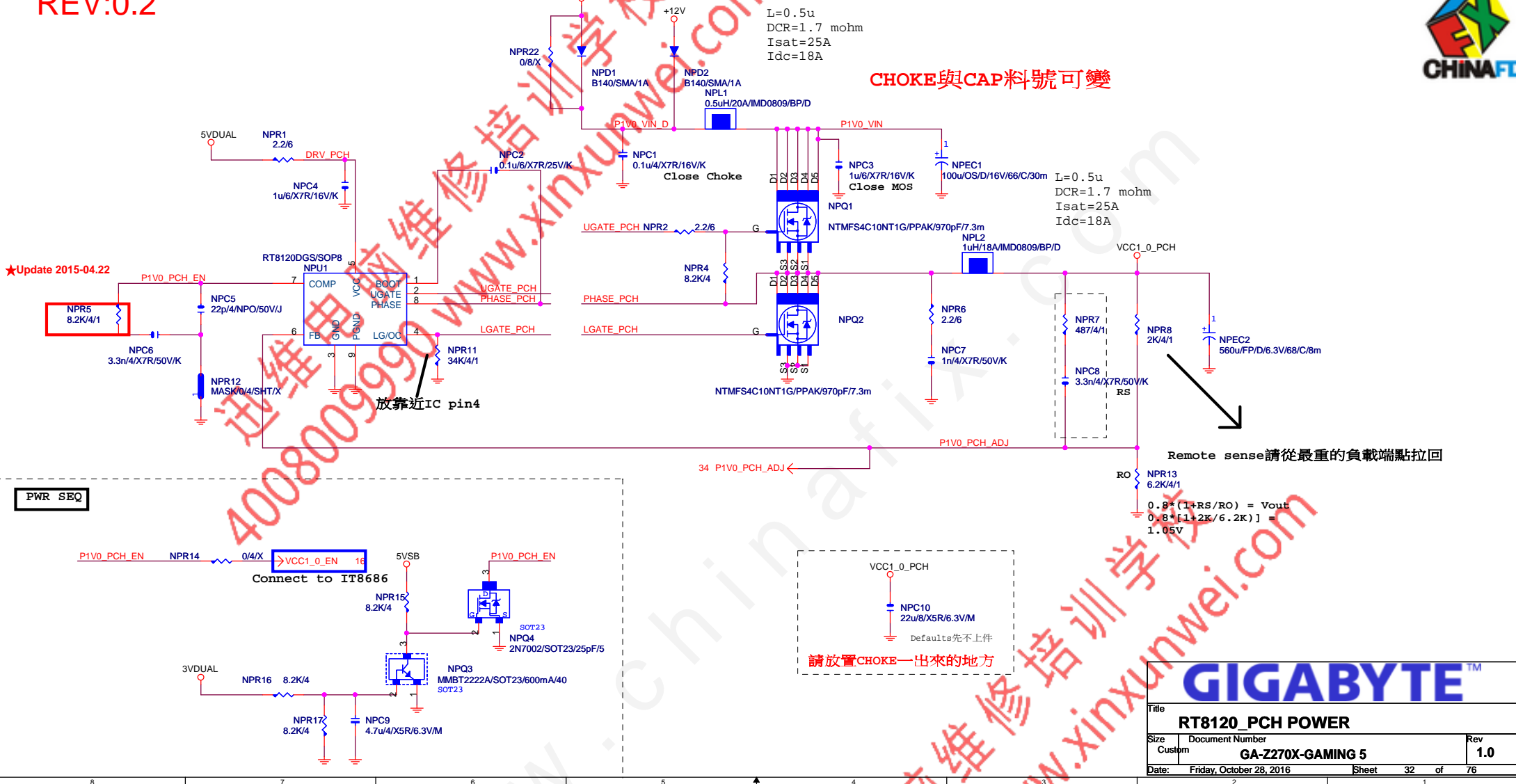


VPP CAP 560u\*1PCS

\* 大電容 x1

# GIGABYTE

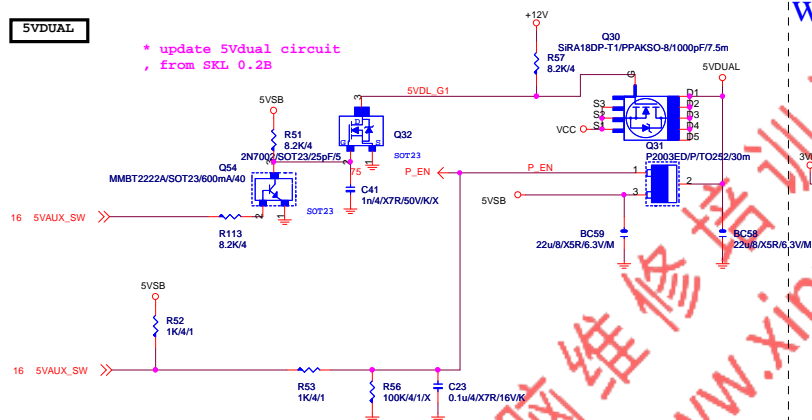
Title			
RT8120_VPP25 POWER			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5	1.0	
Date:	Friday, October 28, 2016	Sheet	31 of 76



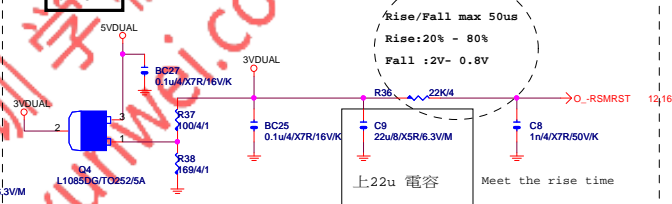


### 5VDUAL

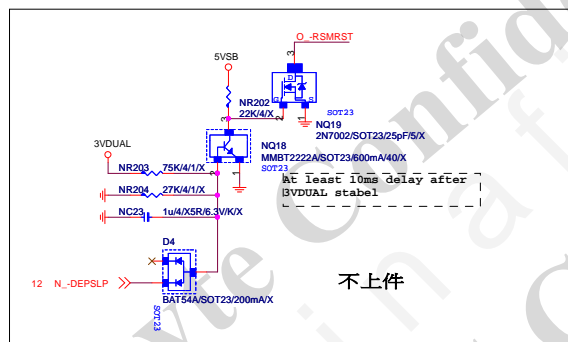
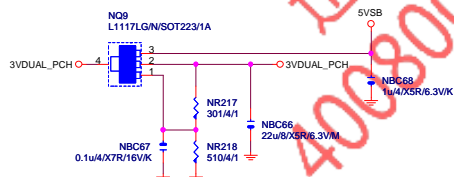
\* update 5Vdual circuit  
from SKL 0.2B



### 3VDUAL



### 3VDUAL\_PCH



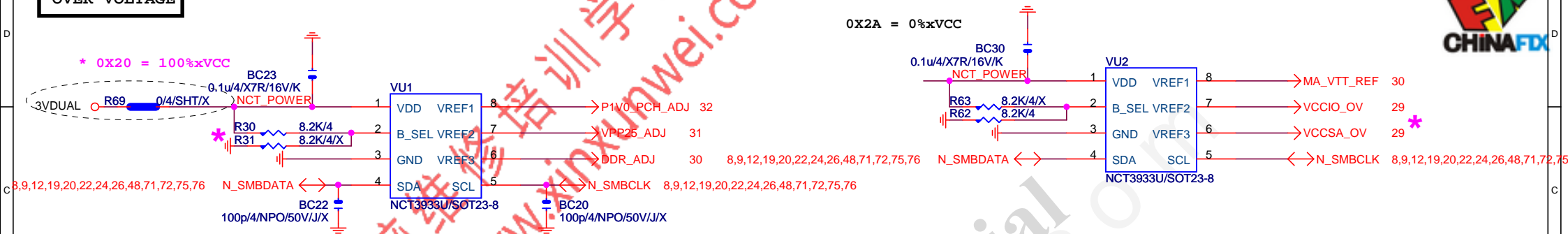
不上件

Gigabyte Technology

Title			
DISCRETE POWER			
Size	Document Number	GA-Z270X-GAMING 5	
Custom		Rev 1.0	
Date:	Friday, October 28, 2016	Sheet	33 of 76



## 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			
Size Custom	Document Number		Rev
	GA-Z270X-GAMING 5		1.0
Date:	Friday, October 28, 2016		Sheet 34 of 76

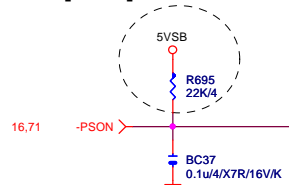
# ATXX24 POWER CONNECTOR

www.xinxunwei.com 400-800-9990

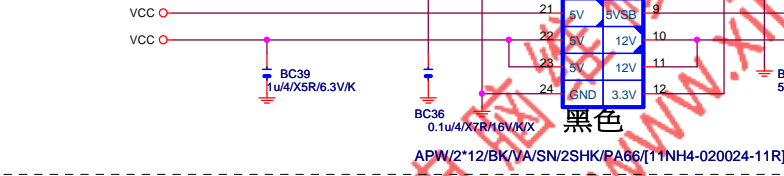
# ATXX4 POWER CONNECTOR



Patch some PSU no internal pull up resistor



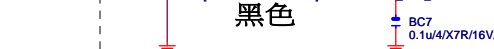
\* 删除 -5V



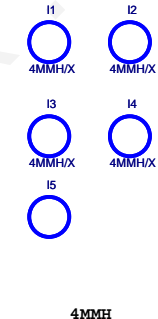
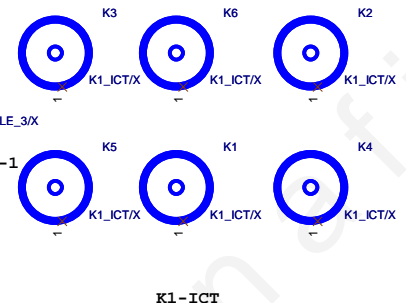
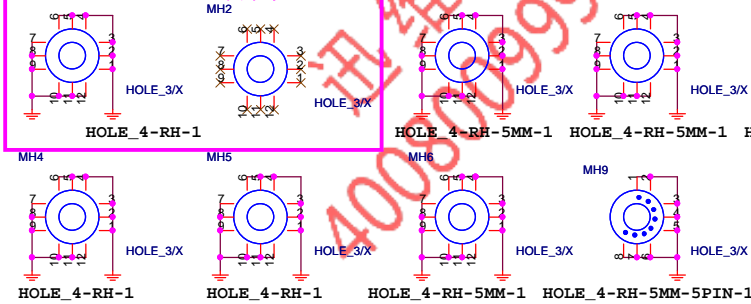
APW/2\*12/BK/VA/SN/2SHK/PA66/[11NH4-020024-11R]

To prevent the 5VSB under loading when boot

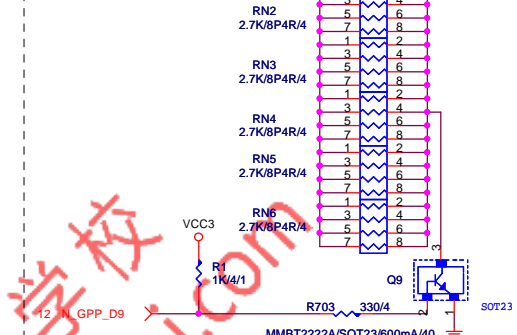
APW/2\*4/BK/QC/PI/4.2/VA/SN/OH/[11NH4-020008-81R]:Location ATX\_12V\_2X4



## FOR AUDIO 切割



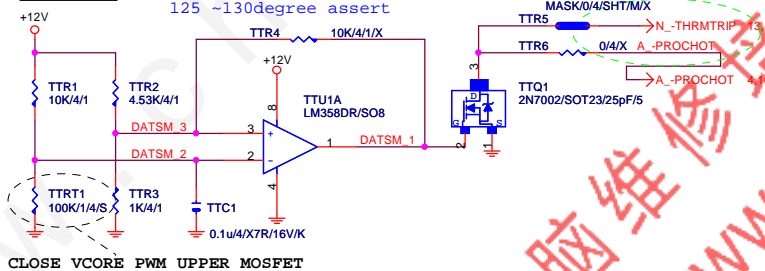
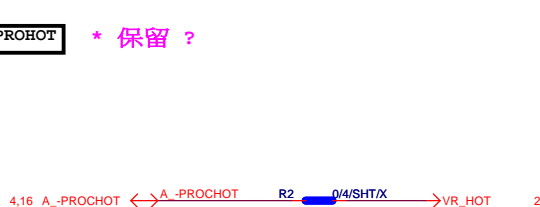
【技術通報R&D技術通報153】  
To fix 12V light load abnormal issue



-PROHOT \* 保留 ?

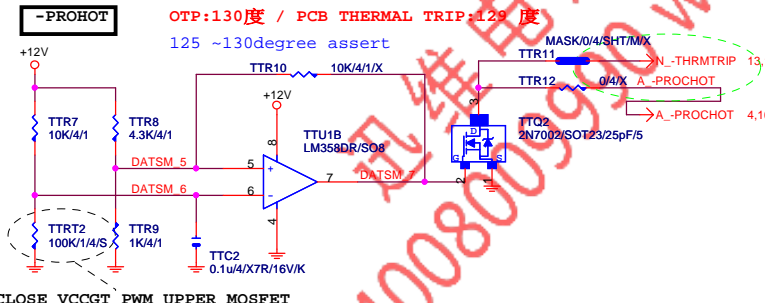
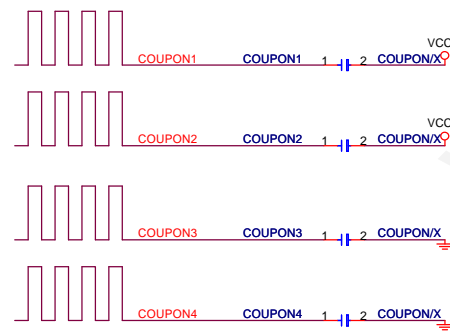
-PROHOT

OTP:130度 / PCB THERMAL TRIP:128 度  
125 ~130degree assert

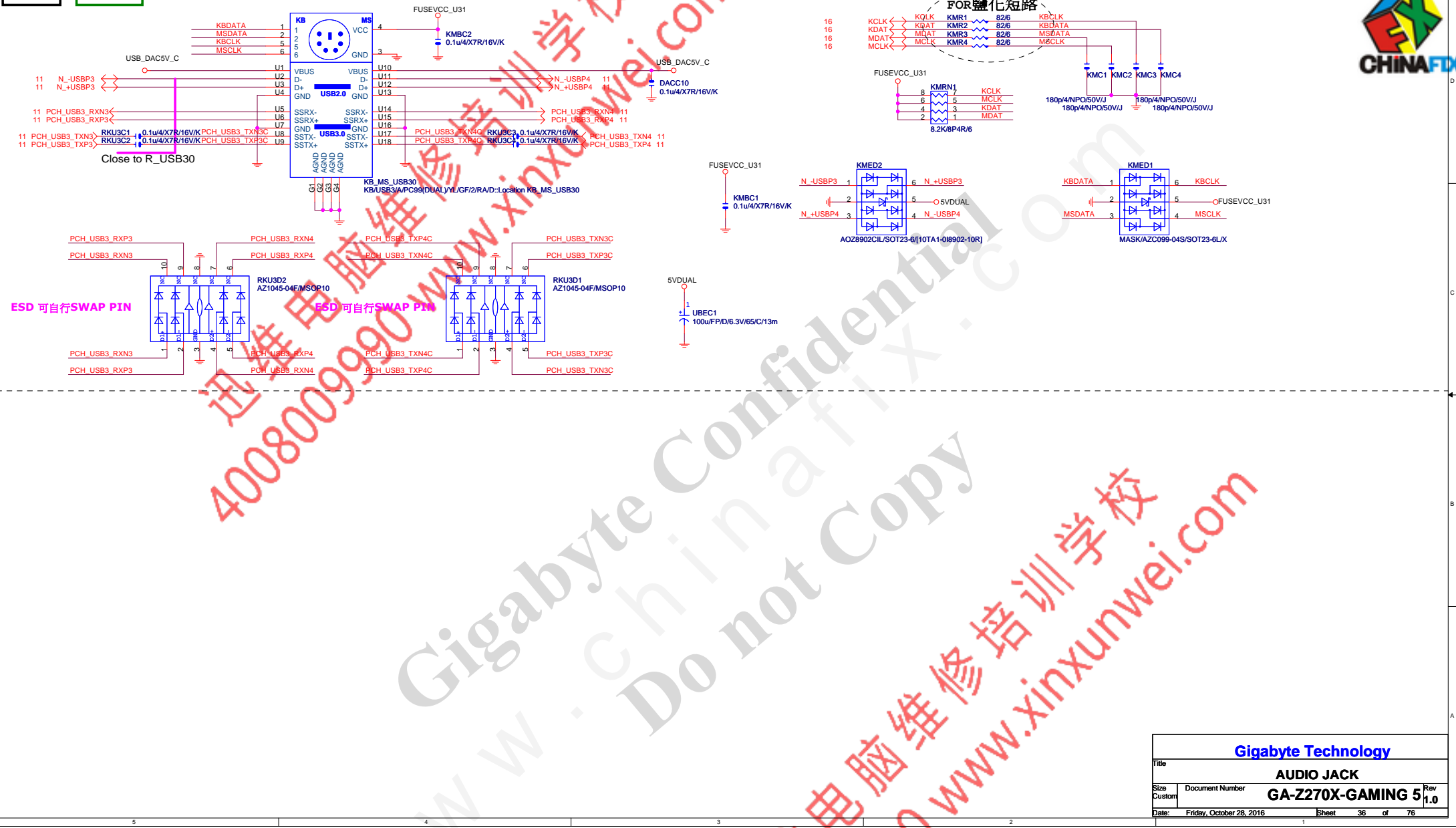


-PROHOT

OTP:130度 / PCB THERMAL TRIP:129 度  
125 ~130degree assert



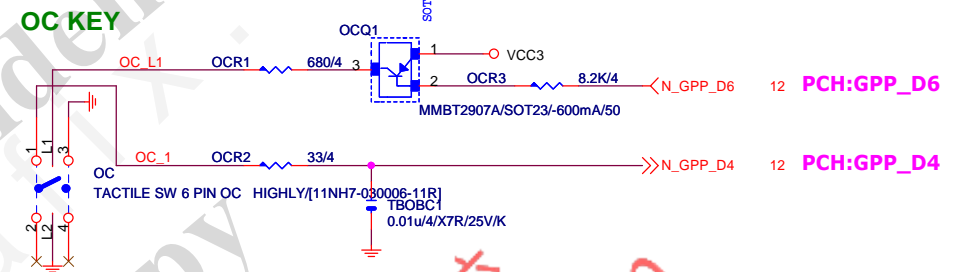
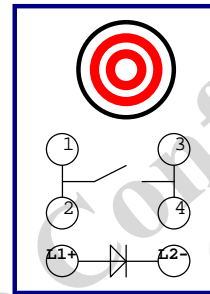
Gigabyte Technology			
Title			
ATX POWER CONNECTOR			
Size	Document Number	GA-Z270X-GAMING 5	
Custom		Rev 1.0	
Date:	Friday, October 28, 2016	Sheet	35 of 76



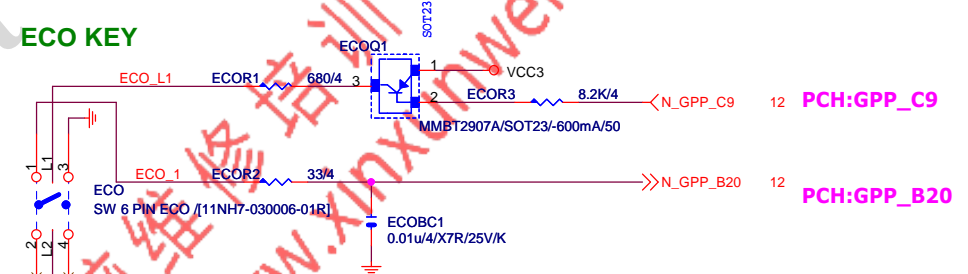
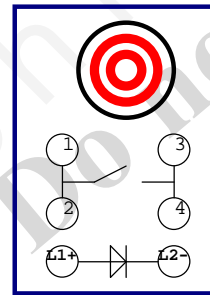
Gigabyte Technology			
Title			
AUDIO JACK			
Size	Document Number	GA-Z270X-GAMING 5	Rev 1.0
Custom			
Date:	Friday, October 28, 2016	Sheet	36 of 76



"OC\_LED" 1X2pin only for Z270X-GAMING 7

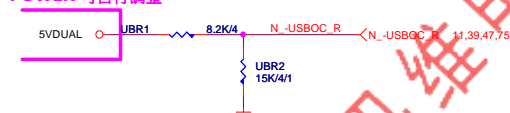


"OC\_BT" 1X2pin only for Z270X-GAMING 7

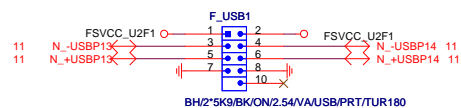


**Gigabyte Technology**

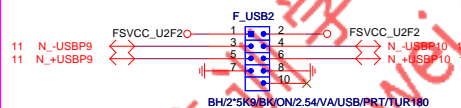
Title			
OC BUTTOM			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5	1.0	
Date:	Friday, October 28, 2016	Sheet	37 of 76



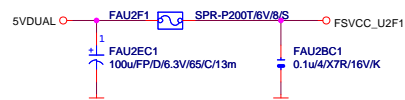
NET 可變



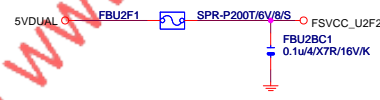
NET 可變



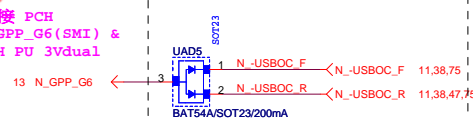
Close to connector  
FUSE 2 Port 1 Fuse 2A



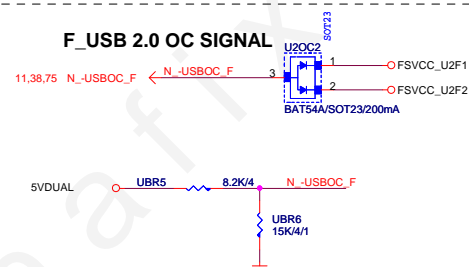
Close to connector  
FUSE 2 Port 1 Fuse 2A



\* 接 PCH  
N\_GPP\_G6(SMI) &  
PCH PU 3Vdual



F\_USB 2.0 OC SIGNAL



Gigabyte Technology

Title				USB2.0
Size	Document Number	GA-Z270X-GAMING 5		Rev 1.0
Custom	Date: Friday, October 28, 2016	Sheet 39	of 76	



Gigabyte Technology		
Title		
KB_MS_USB3, R_USB30		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.0
Date	Wednesday, September 21, 2016	Sheet 40 of 76

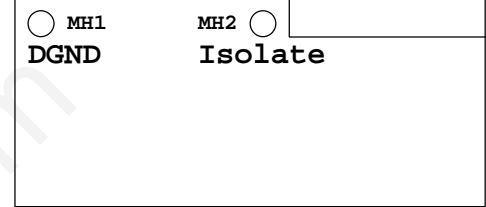


## ALC1220 5H+1S+AMP

Default不上,如因layout  
空間問題,可移除

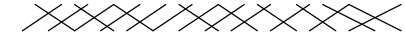
LAYOUT注意:螺絲孔下GND方式

1. MH1下DGND
2. MH2一律改為Isolate



LAYOUT注意:是否要加?  
AGND切割線

音效區域印刷



Analog

Digital

Spilt by DGND

BOM OPTION :

1. AUDIO CONNECT

不銹鋼料號:11NR6-403025-A2R

鍍金料號:11NR6-403025-92R

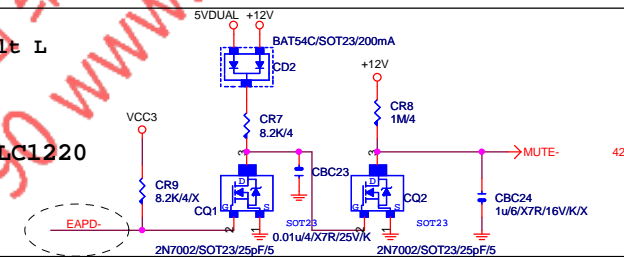
2. AUDIO CAP

Richicon MW音效電容 : 11CE1-651000-12R

Chemicon 音效電容 : 11CE2-651000-05R

EAPD: Default L  
H : ON  
L : OFF

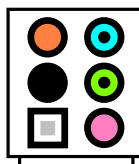
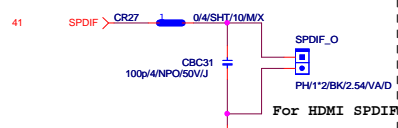
Close to ALC1220



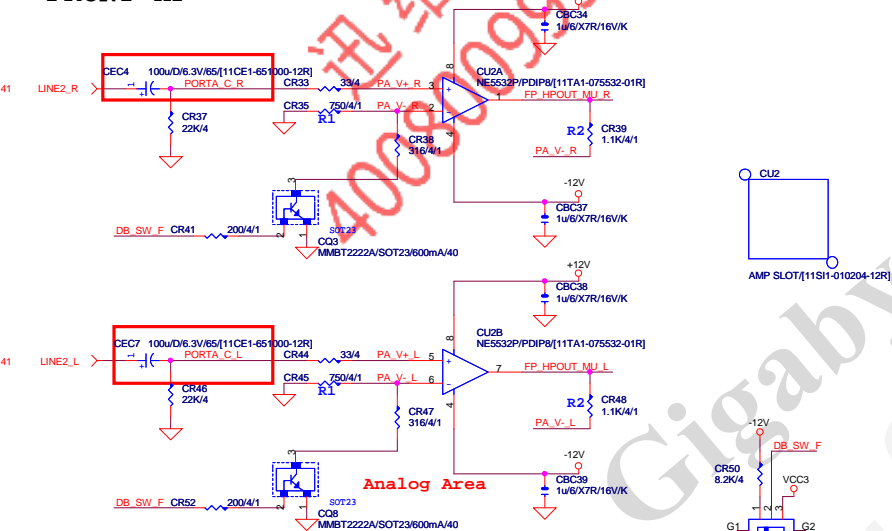
Gigabyte Technology

Title		
ALC1220		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.0
Date:	Friday, October 28, 2016	Sheet 41 of 76

**AZALIA JACK**

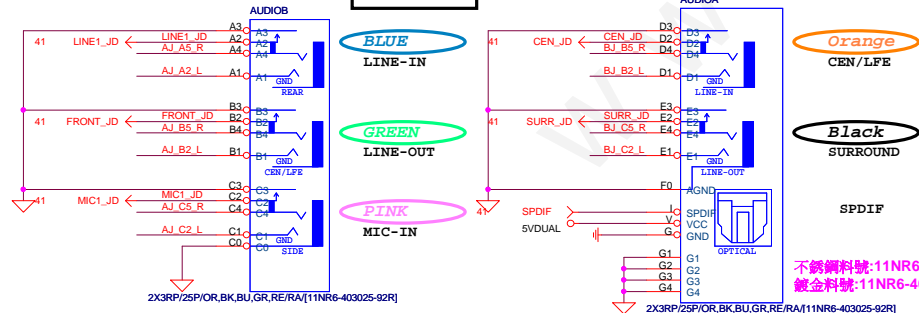
**SPDIF\_OUT**

FRONT HP



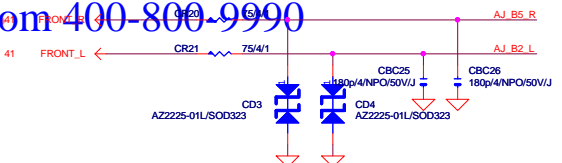
**AMPLIFIED** OP AMP. Rate =  $(R2/R1)+1$

**AZALIA JACK**

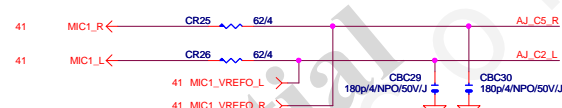


不銹鋼料號:11NR6-403025-A2R  
鍍金料號:11NR6-403025-92R

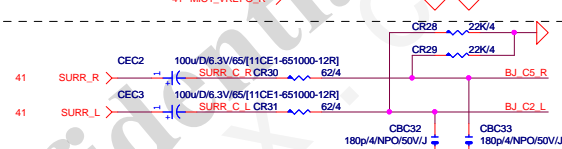
**LINE-IN**



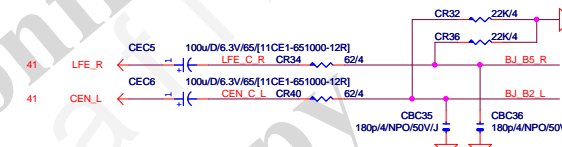
## MIC-IN



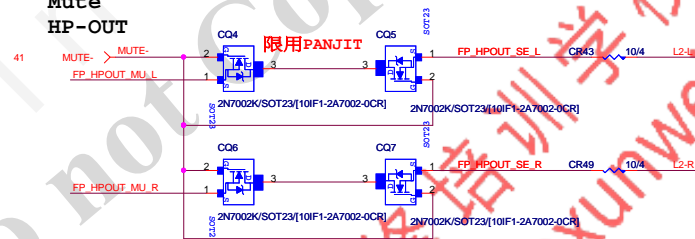
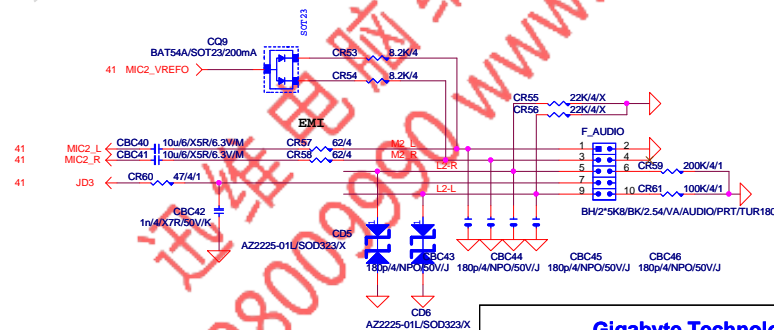
**SURROUND**



## CEN/LFE



Mute  
HP-OUT

**AZALIA FRONT PANE**

## Gigabyte Technology

Title			
AUDIO JACK			
Size Custom	Document Number		Rev
GA-Z270X-GAMING 5			1.0
Date:	Friday, October 26, 2016	Sheet 42 of 76	



迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

Gigabyte Confidential  
www.chinafix.com  
Do not Copy

迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

GIGABYTE™		
Title Renesas uPD720210_1		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.0
Date: Wednesday, September 21, 2016	Sheet 43	of 76



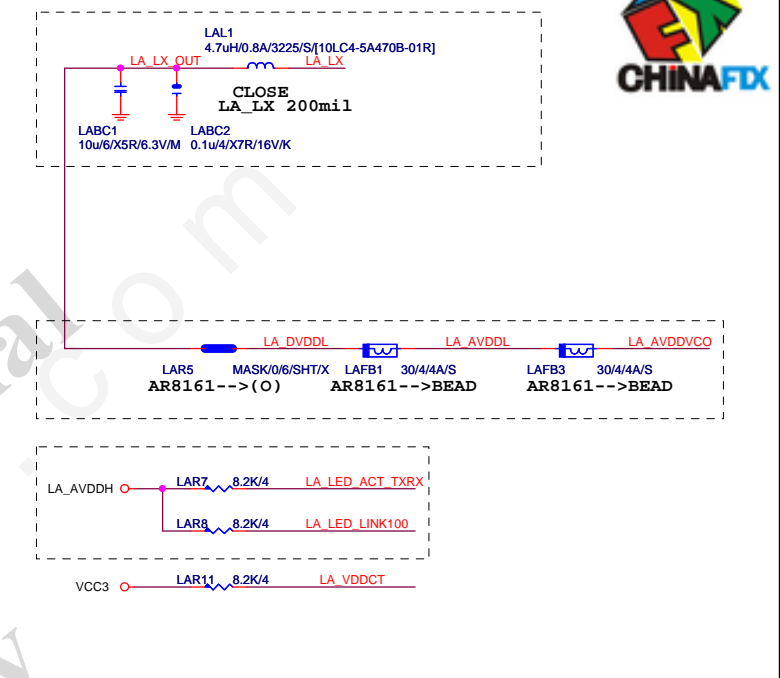
迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

Gigabyte Confidential  
www.chinafix.com  
Do not Copy

迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

GIGABYTE™		
Title Renesas uPD720210_1		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.0
Date: Wednesday, September 21, 2016	Sheet 44	of 76



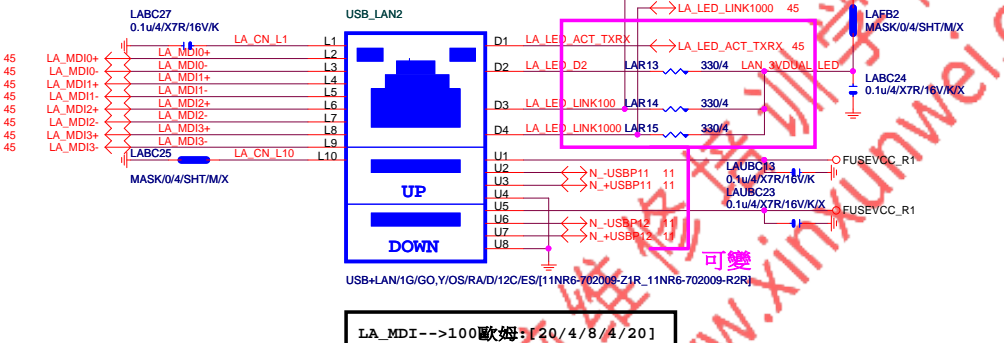


<p align="center"><b>Gigabyte Technology</b></p> <p align="center"><b>DUAL LAN~ E2201+I219</b></p>			
<p>Title</p>			
Size Custom	Document Number		Rev
<p align="center"><b>GA-Z270X-GAMING 5</b></p>		<p align="center"><b>1.0</b></p>	
Date:	Friday, October 28, 2016	Sheet	45 of 76



# USB\_LAN CONNECTOR-A R1.07

[E2500]



LA\_MDI-->100歐姆:[20/4/8/4/20]

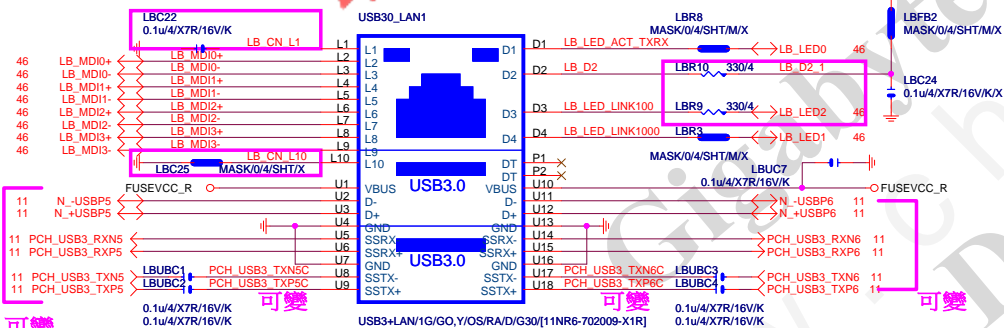
## RMA ESD PROTECT



R\_USB 2.0 OC SIGNAL

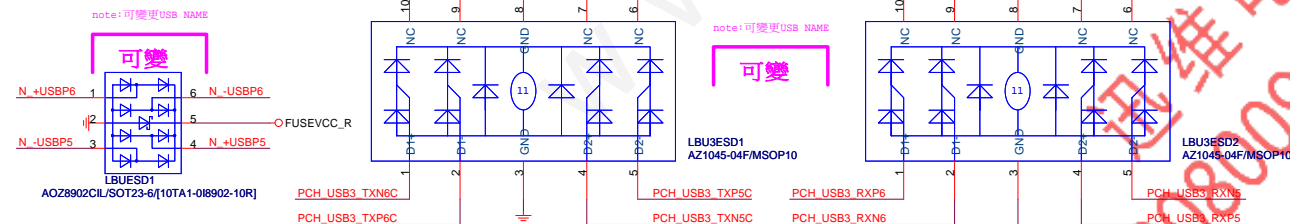
## USB\_LAN CONNECTOR-B

[I219]

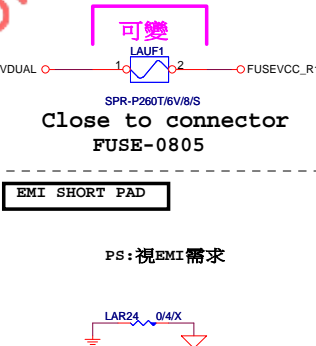


LA\_MDI-->100歐姆:[20/4/8/4/20]

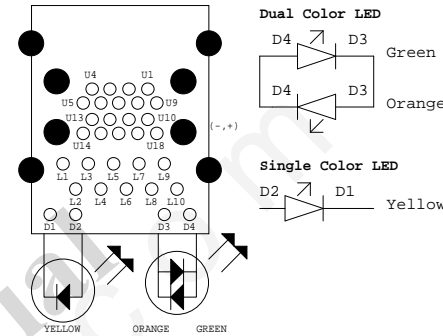
## RMA ESD PROTECT



## USB POWER



## USB30\_LAN LAYOUT示意图



## LAN COVER

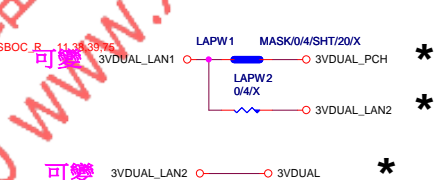
INTEL KILLER

FOOT PRINT:LAN COVER

## 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]
- USE DROOP/DROP E-CAP
- USB OC線路

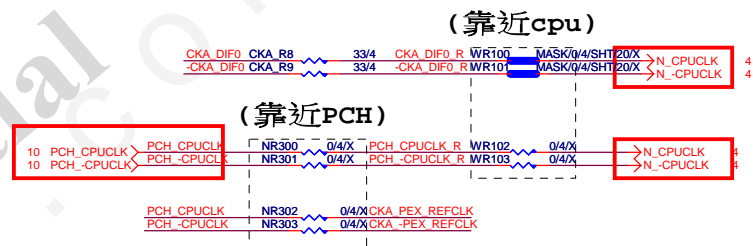
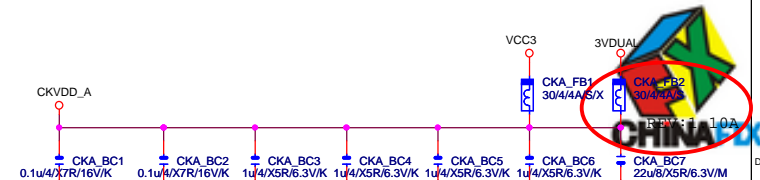
## LAN POWER



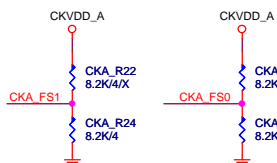
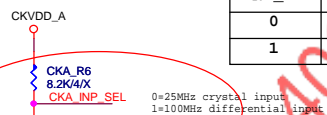
~USB30\_LAN1設定在ERP可LAN WAKEUP

~USB30\_LAN2由獨立LAN POWER L1117供給

Gigabyte Technology			
Title	LAN CONNECTOR-E2201+I219		
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5		
Date:	Friday, October 28, 2016	Sheet	47 of 76

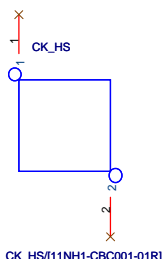
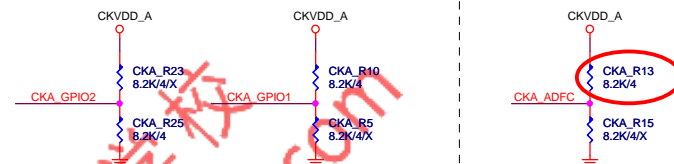


INP_SEL	Input
0	Crystal
1	CLK_INP/N

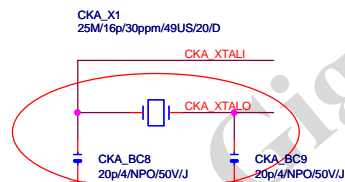


### CPU Frequency Selection and output Divider Table

B53b1(FS1)	B53b0(FS0)	VCO (MHz)	CPU Divider	CPU (MHz)	Typ SS%	Typ SS ON/OFF
0	0	200.00	2.00	100.00	-	OFF
0	1	400.00	4.00	100.00	-	OFF
1	0	1000.00	10.00	100.00	-0.50%	ON
1	1	100.00	1.00	100.00	-	OFF



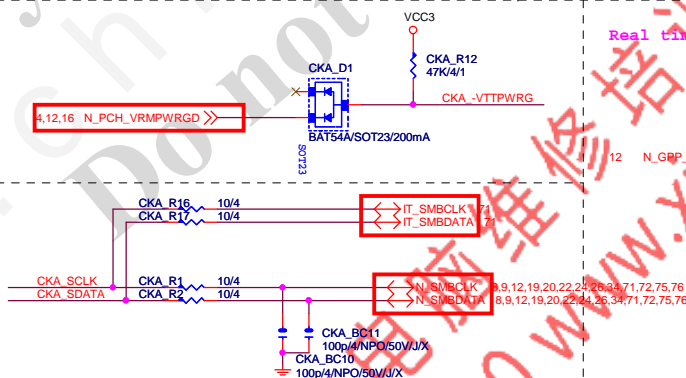
CK\_HS/[11NH1-CBC001-01R]



Defaults  
CKX1.CKBC8.CKBC9.CKR18.CKR19 上件  
CKR30.CKR31 不上件

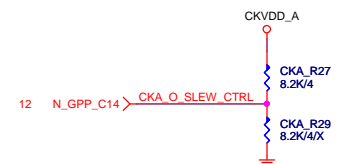


## SMBUS



### Real time selection function

### Frequency change slew rate control



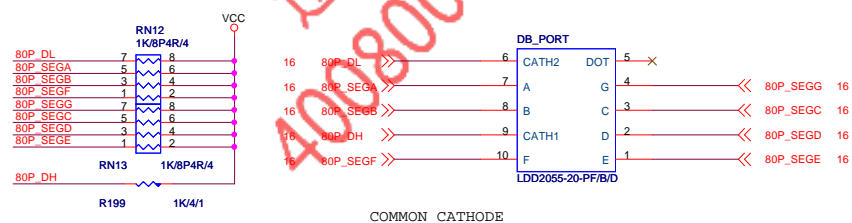
# GIGABYTE

Title	IDT6V41530 CLK BUFFER
-------	-----------------------

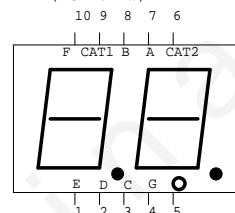
Size Custom	Document Number <b>GA-Z270X-GAMING 5</b>	Rev <b>1.0</b>
Date: Friday, October 28, 2016	Sheet 48 of 76	



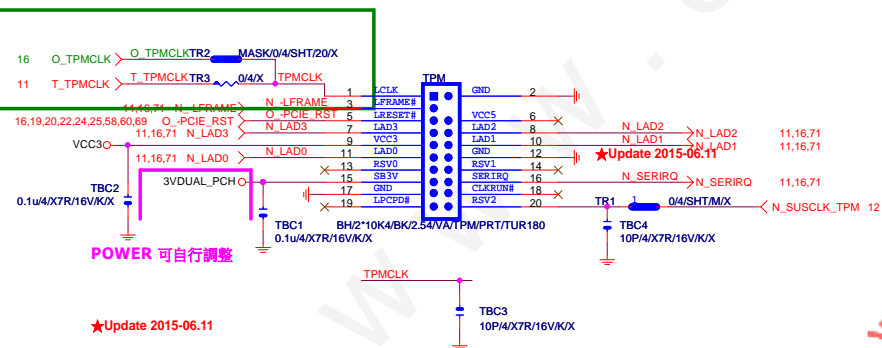
## 80 PORT



COMMON CATHODE

Physical Package  
(TOP VIEW)

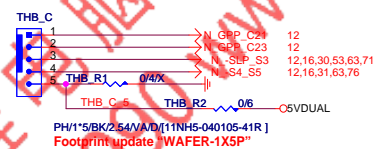
## TPM CONNECT



★Update 2015-06.11

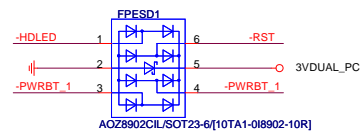
## Thunderbolt

★Update 2015-12-29

PH1\*5/BK/2.54VAD (11NH5-040105-41R)  
Footprint update "WAFER-1X5P"

Gigabyte Technology

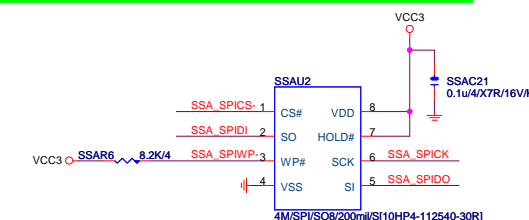
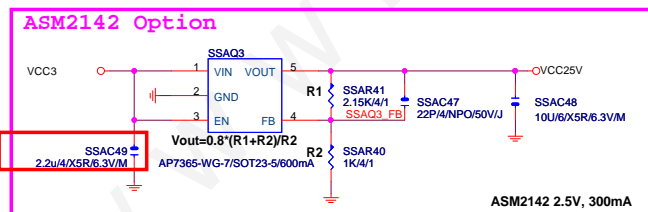
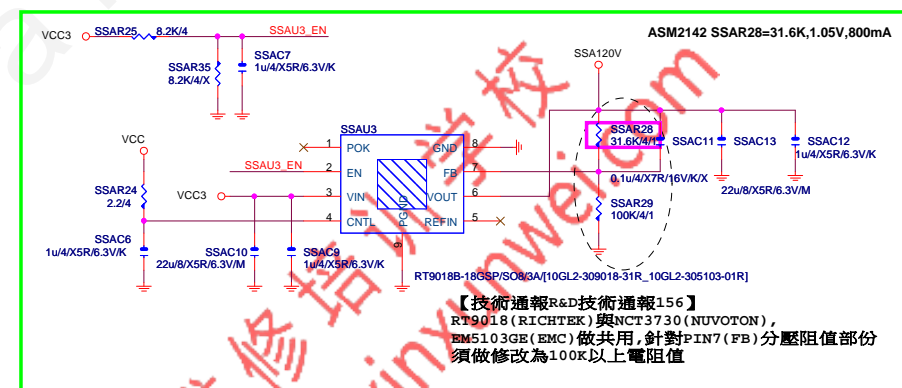
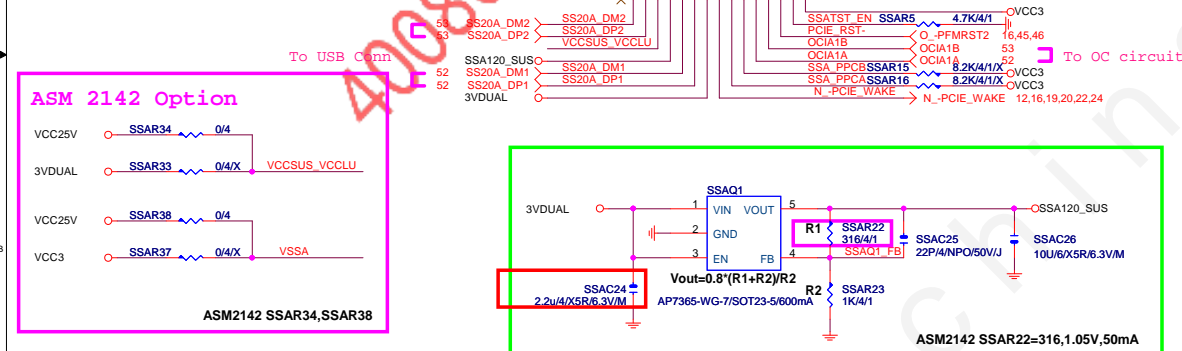
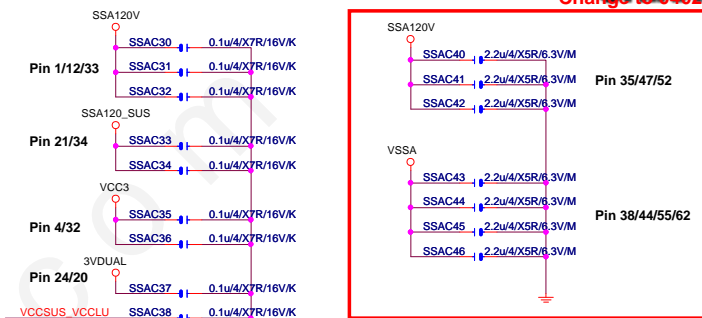
Title		FP,F_USB,USB PWR,BZ	
Document Number		GA-Z270X-GAMING	
Date		Friday, October 28, 2016	
Sheet		49 of 76	




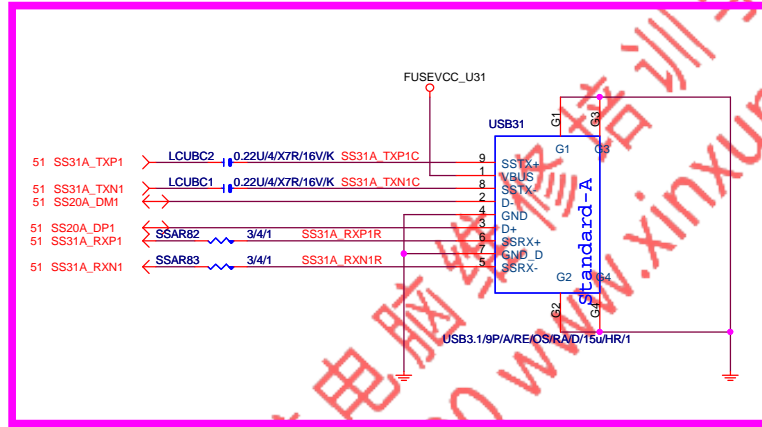
Color markers can be changed by model

**Base on ASM2142 0.1 Reference SCH**

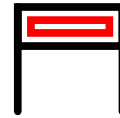
Change to 0402



				
Title				
<div style="text-align: center;"> <b>ASM2142</b> </div>				
Size	Document Number			Rev
Custom	<b>GA-Z270X-GAMING 5</b>			<b>1.0</b>
Date:	Friday, October 26, 2016		Sheet	64 of 76

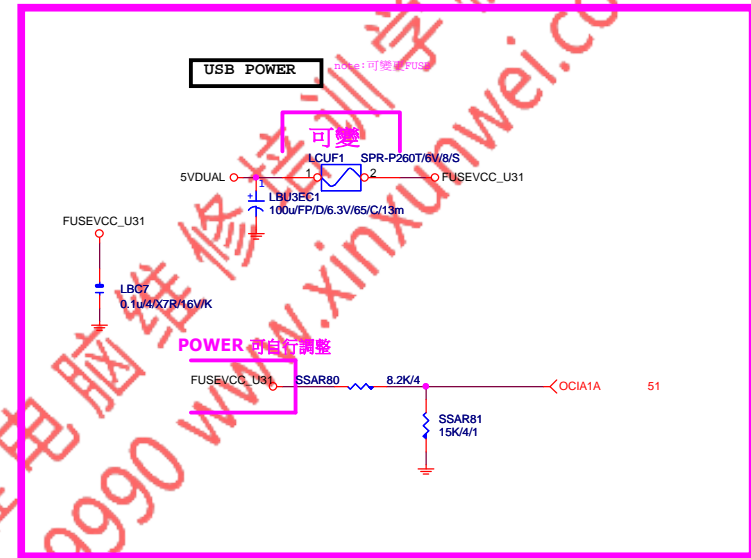
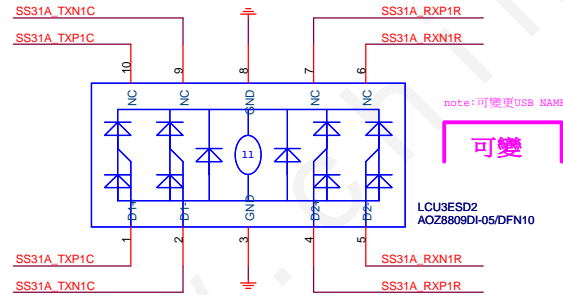
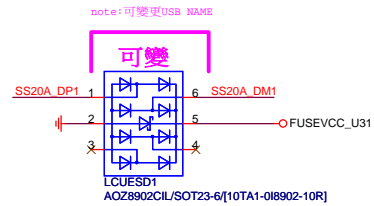


USB 3.1 Red  
架高



USB31 TYPE A Connector which chooses for project demand

後窗Rule : (後窗由左至右)  
DIP電容 : REC1, REC3, REC2  
FUSE : RFUS1, RFUS2, RFUS3, RFUS4...





www.xinxunwei.com 400-800-9990

51 SS31A\_RXP2 SS31A\_RXP2  
51 SS31A\_RXN2 SS31A\_RXN2

51 SS31A\_TXP2 SS31A\_TXP2 TCAC20 0.22u/4X/TR/16V/K SS31A\_TXP2 C  
51 SS31A\_TXN2 SS31A\_TXN2 TCAC21 0.22u/4X/TR/16V/K SS31A\_TXN2 C

16 IQ\_GP21

TCAR30 94/K 3220\_CUR

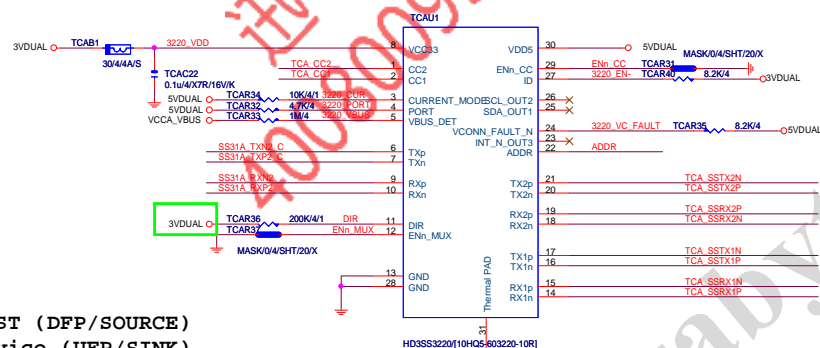
5V/DUAL

3.2K/4 TCAR26

TCQA10 2N7002/SOT23/25pF/5

TCQA9 2N7002/SOT23/25pF/5

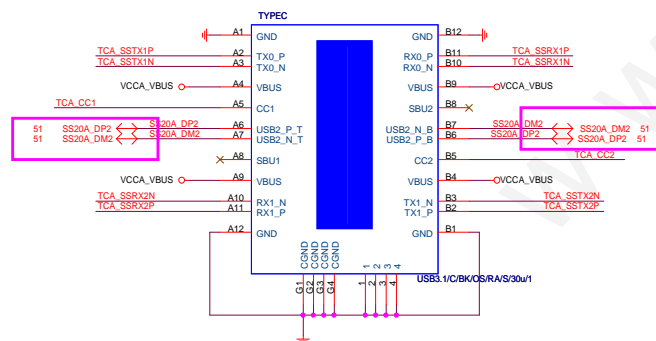
N\_SLP\_S3

[illegible]

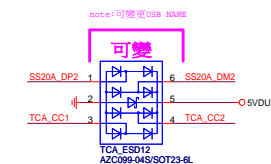
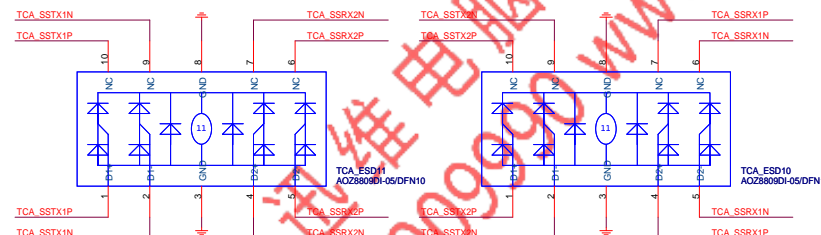
H - HOST (DFP/SOURCE)  
L - Device (UFP/SINK)  
NC - Dual Role (DRP)


L - Default (900mA) / Pull down to GND or NC  
M - Medium (1.5A) / Pull up to VDD 500K  
H - High (3.0A) / Pull up to VDD 10K

## Color markers can be changed by model



## USB2.0 can be used the same source



				
Title				
<b>TI HD3SS3212</b>				
Size	Document Number			Rev
C	GA-Z270X-GAMING 5			1.0
Date	Friday, October 28, 2016	Sheet	53 of	76



迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

www.chinafix.com

迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

GIGABYTE™		
Title Renesas uPD720210_1		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.0
Date: Wednesday, September 21, 2016	Sheet 54	of 76



迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

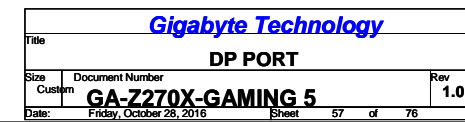
www.chinafix.com

迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

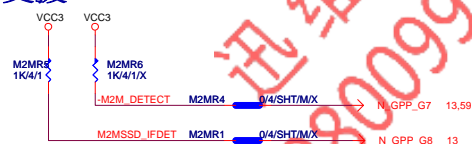
GIGABYTE™		
Title Renesas uPD720210_1		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.0
Date: Wednesday, September 21, 2016	Sheet 55	of 76







M.2 Lane2 from PCH port23

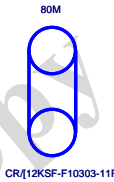


需與M2\_-CLKREQ對應

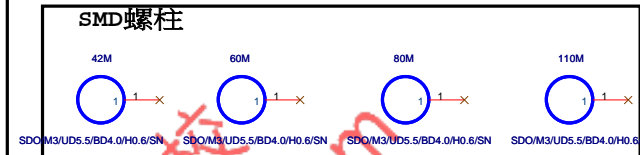
```
SATA : GND.
PCIE : HIGH
```

架高

DIP螺柱



## SMD螺柱



## DIP螺絲

80M

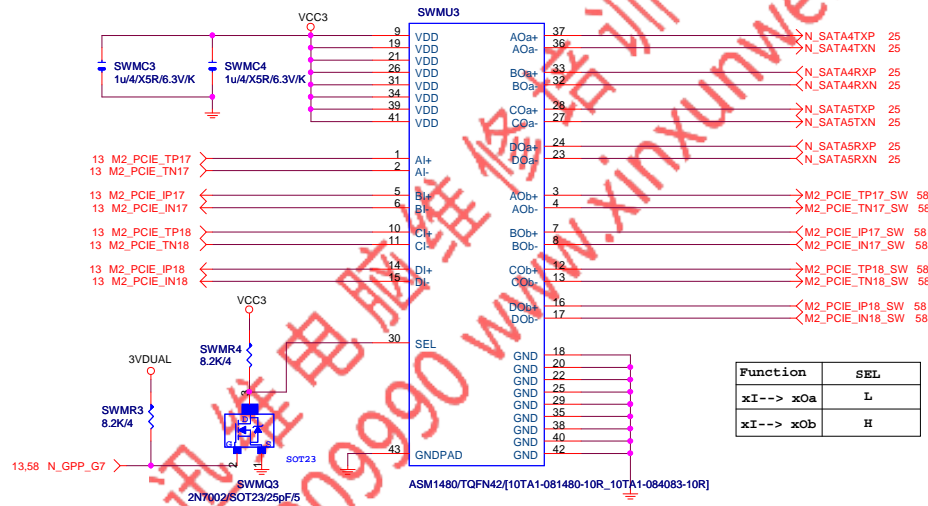


R/[12KS2-110202-01R]

DIP螺絲

Rev 0.1

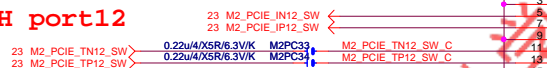
(M) TYPE



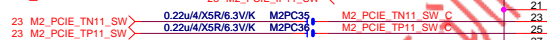
M.2 Detect N_GPP_G7	M.2 MODE N_GPP_G8	PCIE17	PCIE18	PCIE19	PCIE20
HIGH	X	切回 SATA4	切回 SATA5	N\A	N\A
LOW	HIGH(PCIE)	PCIEX4 FOR M.2(最優先)			
LOW	LOW(SATA)	SATA FOR M.2	N\A	N\A	N\A

Gigabyte Technology			
M.2X4_S4~S5 SWITCH			
Title	Document Number	GA-Z270X-GAMING 5	Rev 1.0
Size Custom			
Date: Friday, October 28, 2016	Sheet	59	of 76

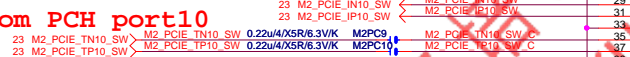
## M.2 Lane4 from PCH port12



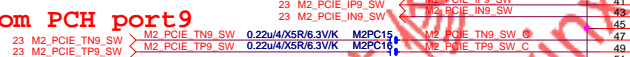
## M.2 Lane3 from PCH port11



## M.2 Lane2 from PCH port10

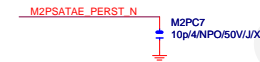
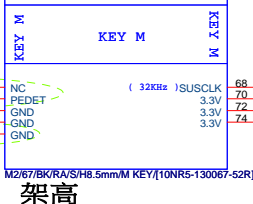


## M.2 Lane2 from PCH port9

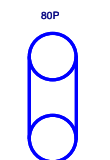


需與M2\_CLKREQ對應

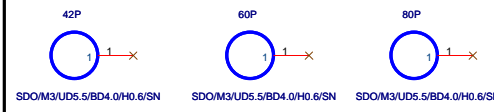
## 支援SATA and M.2 function



## DIP螺柱



## SMD螺柱







迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

Gigabyte Confidential  
www.chinafix.com  
Do not Copy

迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

GIGABYTE™		
Title REALTEK RTS5411		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.0
Date: Wednesday, September 21, 2016	Sheet 61	of 76

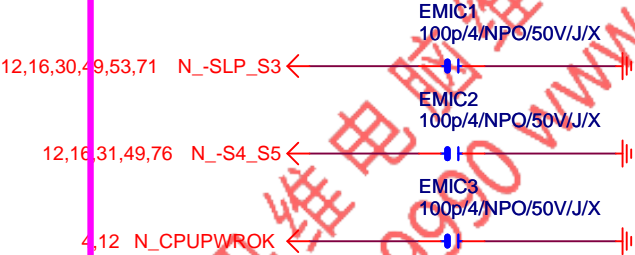
迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

Gigabyte Confidential  
www.chinafix.com  
Do not Copy

迅维电脑维修培训学校  
4008009990 www.xinxunwei.com



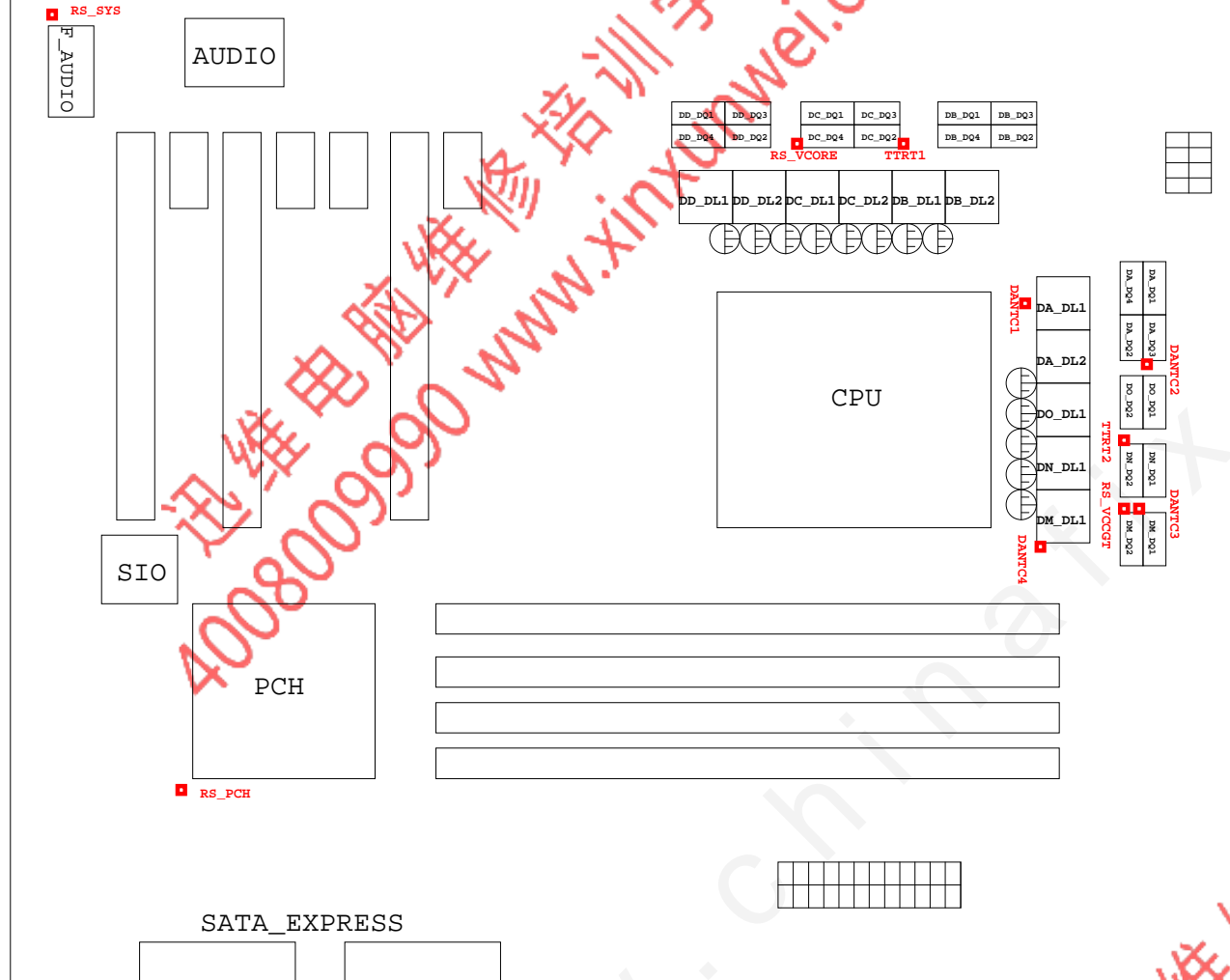
CLOSE SIO



CLOSE PCH



Title			
EMI/ESD			
Size A	Document Number		Rev
	GA-Z270X-GAMING 5		1.0
Date:	Friday, October 28, 2016	Sheet 63 of 76	



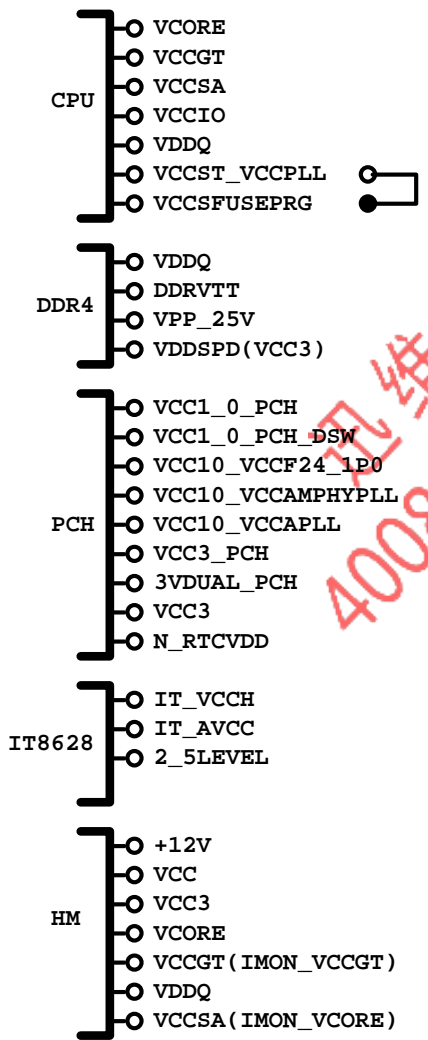
熱敏電阻	擺放靠近位置	走線方式
DANTEC1	DA_DL2	Differential
DANTEC2	DA_DQ3	Differential
DANTEC3	DM_DQ2	Differential
DANTEC4	DM_DL1	Differential
RS_VCORE	DC_DQ4	N/A
RS_VCCGT	DM_DQ2	N/A
TTRT1	DC_DQ2	N/A
TTRT2	DN_DQ2	N/A
RS_PCH	PCH	N/A
RS_SYS	F_AUDIO	N/A



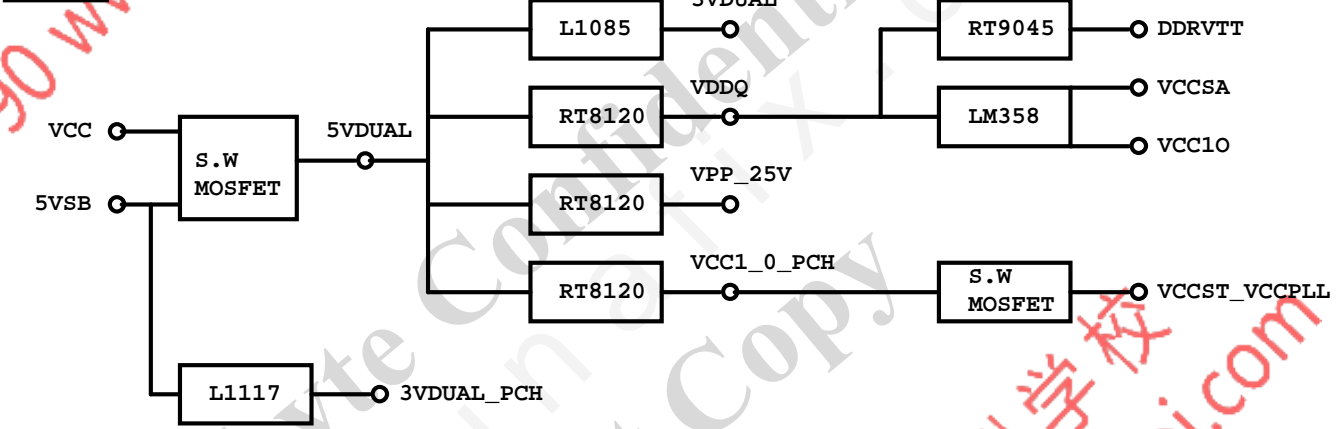
POWER BLOCK MAP

VCORE/VCCGT

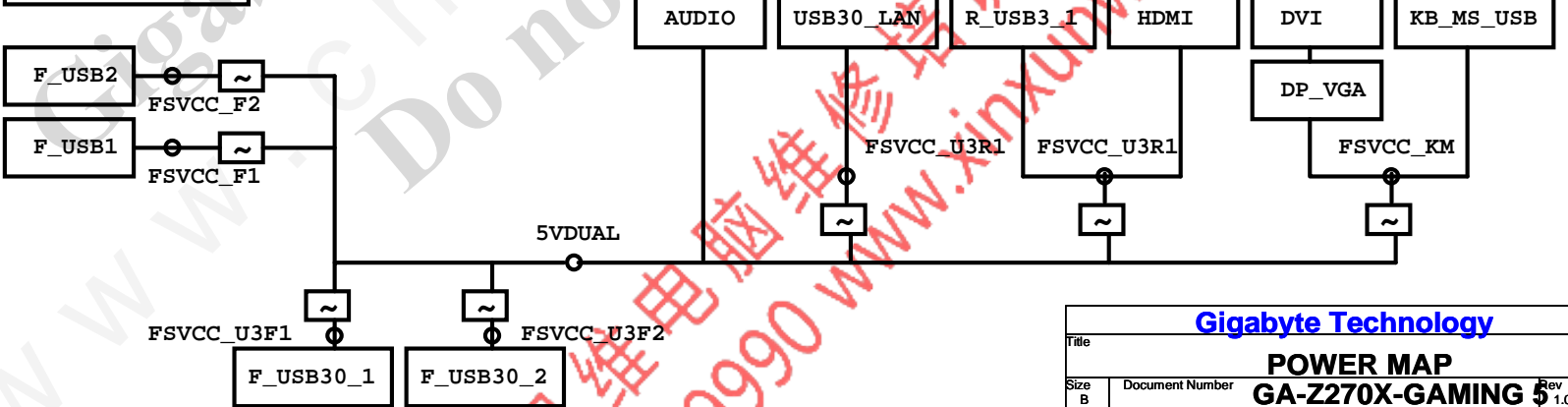
www.xinxunwei.com 400-800-9990



POWER



FUSE POWER F/R



Gigabyte Technology			
Title			
POWER MAP			
Size	Document Number	Rev	
B	GA-Z270X-GAMING 5	1.0	
Date:	Wednesday, September 21, 2016	Sheet	65 of 76



## 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

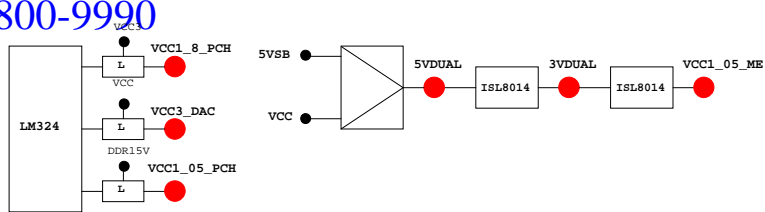
## PWM料號

		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

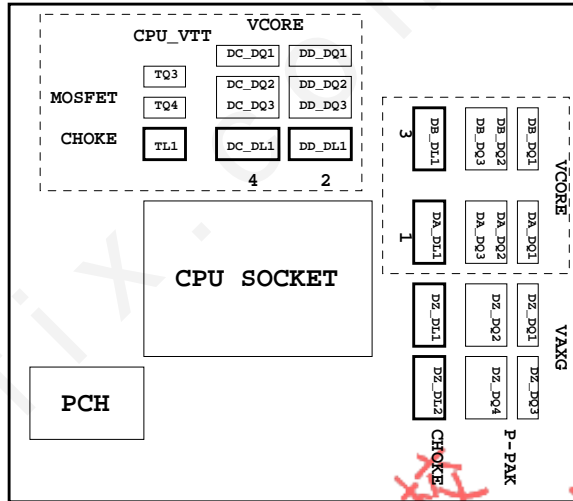
## REGULATOR

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

GIGABYTE™			
Title <b>RT8120_DDR4 POWER</b>			
Size Custom	Document Number <b>GA-Z270X-GAMING 5</b>		Rev <b>1.0</b>
Date:	Wednesday, September 21, 2016	Sheet	66 of 76



PWM各相位的擺法如下：



BIOS超電壓對應表：

散熱模組料號：

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

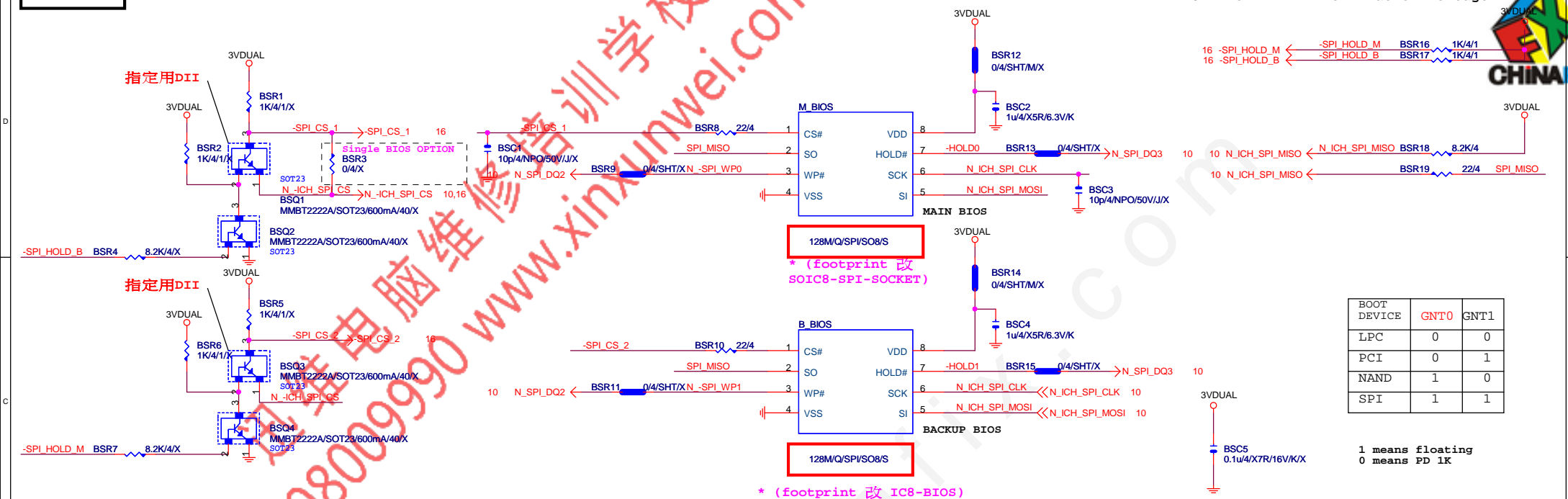
Gigabyte Technology			
TABLE LIST			
Size C	Document Number	Rev	
		1.0	
Date:	Wednesday, September 21, 2016	Sheet	67 of 76

Super I/O ITE8720 Chipset Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_NA0P7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PMR#/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/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	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/SMBC_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/PCIRST1N#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBC_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	

PIN GPIO LIST TABLE					
PIN NAME	PWR	AFTER PLUG/DET	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	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	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	GPI044	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPI045	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPI046	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



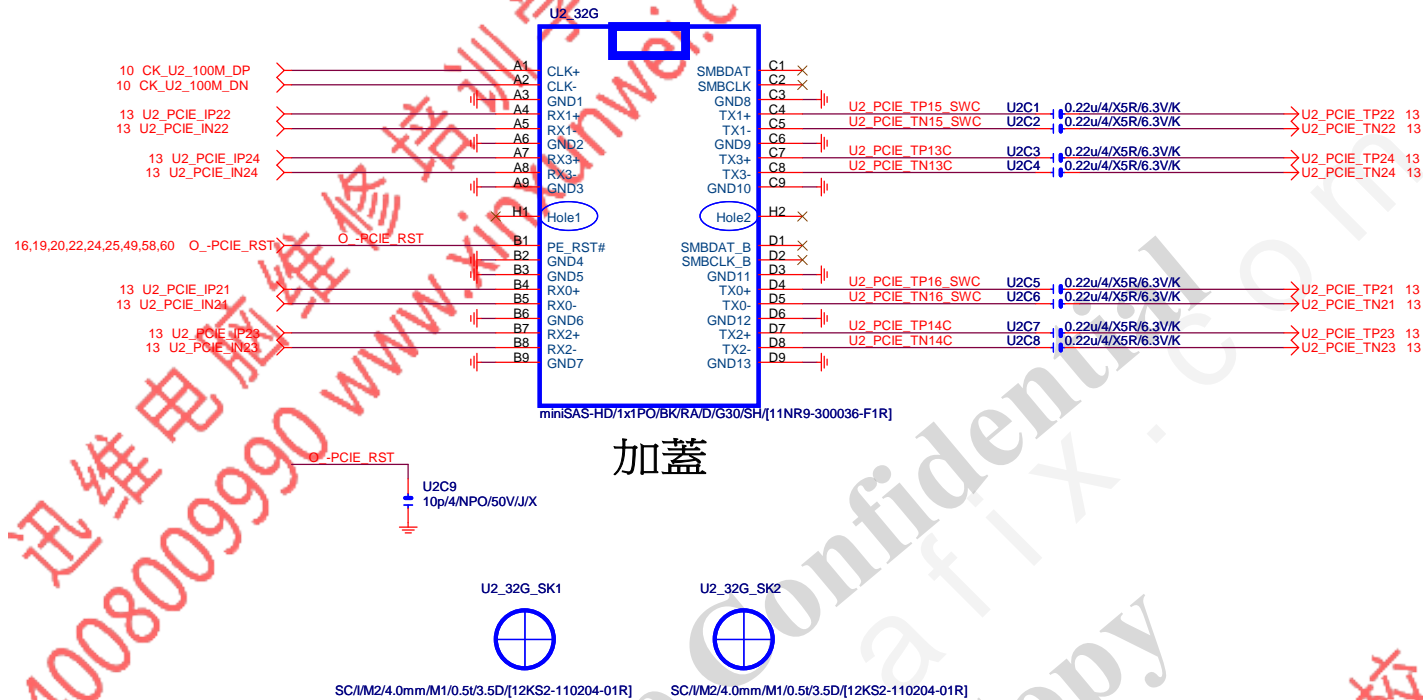
Gigabyte Technology

Title		BIOS
Size	Document Number	GA-Z270X-GAMING
Custom		1.3
Date:	Friday, October 28, 2016	Sheet 68 of 76



Rev 0.3

www.xinxunwei.com 400-800-9990



**GIGABYTE™**

Title		
M.2 to MINISAS		
Size	Document Number	Rev
B	GA-Z270X-GAMING 5	1.0
Date:	Friday, October 28, 2016	Sheet 69 of 76

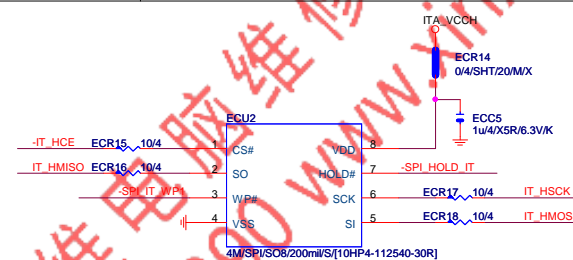
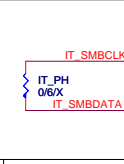
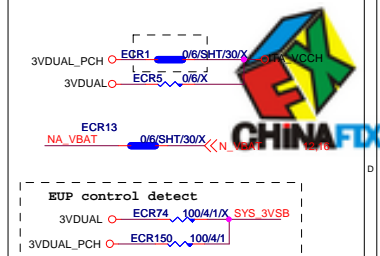
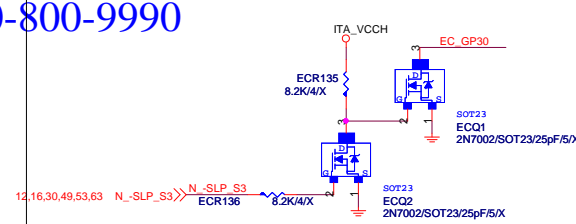


迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

Gigabyte Confidential  
www.chinafix.com  
Do not Copy

迅维电脑维修培训学校  
4008009990 www.xinxunwei.com

GIGABYTE			
Title			
PCH PWR-VCC18_PCH			
Size	Document Number		Rev
A	GA-Z270X-GAMING 5		1.0
Date:	Wednesday, September 21, 2016	Sheet	70 of 76



48	IT_SMBDATA	IT_SMBDATA
48	IT_SMBCLK	IT_SMBCLK

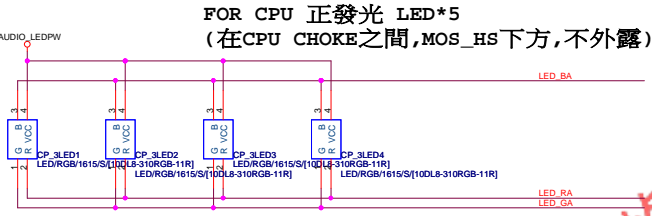
16 ECIO\_SMBDATA <<< ECR142 33/4/1 EC\_GPIO85  
16 ECIO\_SMBCLK <<< ECR143 33/4/1 EC\_GPIO86

Title			
5FAN			
Size	Document Number		Rev
Custom	GA-Z270X-GAMING 5		1.0
Date:	Friday, October 28, 2016	Sheet 71 of 76	



第一區 LED

Rev 0.63

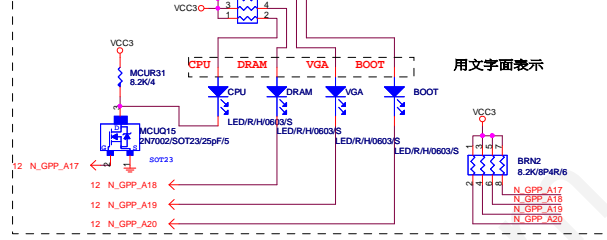


www.xinxunwei.com 400-800-9990

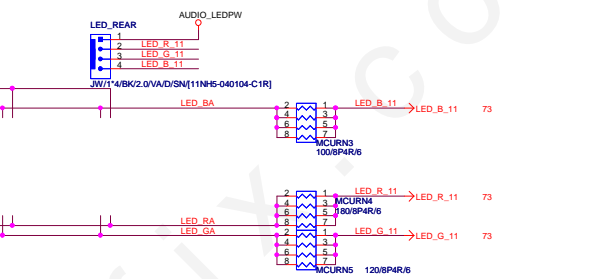
LED GPIO PIN DEFINE

N_GPP_A1	CPU DEBUG
N_GPP_A16	DDR DEBUG
N_GPP_A18	VGA DEBUG
N_GPP_A20	BOOT DEBUG
N_GPP_A21	XMP LED SWITCH
N_GPP_A22	TURBO LED SWITCH
N_GPP_D16	LED_C LED SWITCH
N_GPP_D17	PCIEX16 LED SWITCH
N_GPP_D18	PCIEX8 LED SWITCH

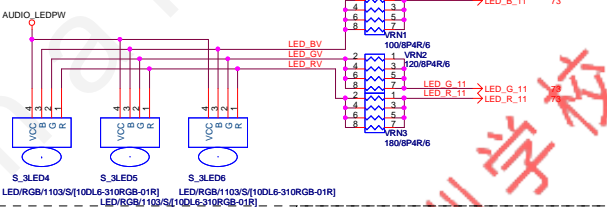
DEBUG PORT LED \*4  
(位置需擺放在一起)



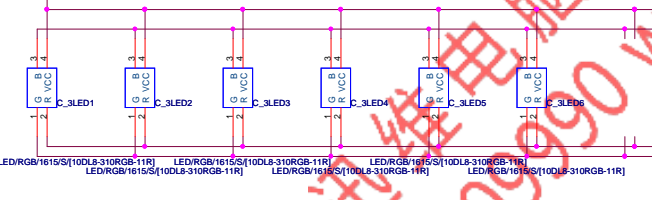
REAR 裝甲LED  
(位置在後窗裝甲內)



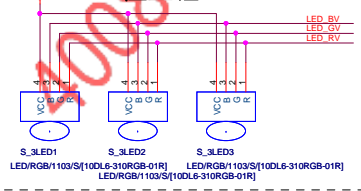
FOR PCIEX8 側發光 LED\*3  
(位置在PCIEX8 SLOT)



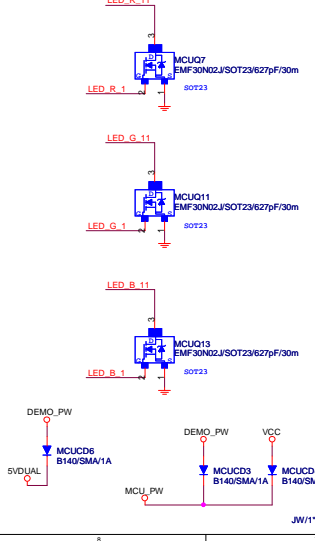
FOR AUDIO 正發光 LED\*6  
(位置在AUDIO切割線)



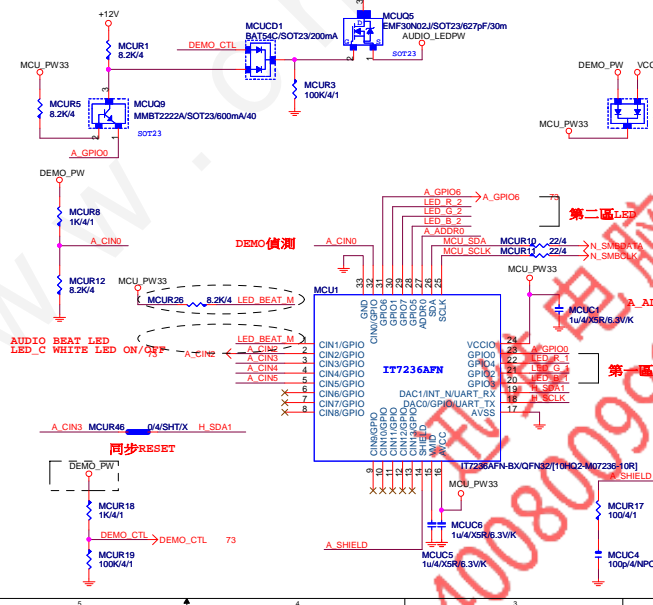
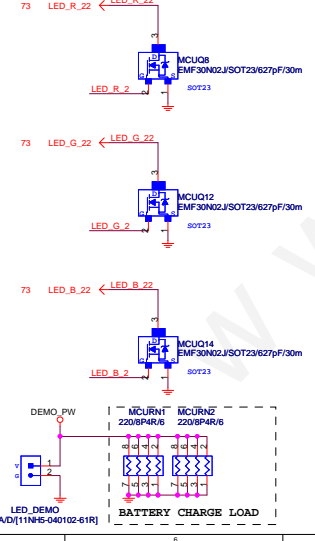
FOR PCIEX16 側發光 LED\*3  
(位置在PCIEX16 SLOT)



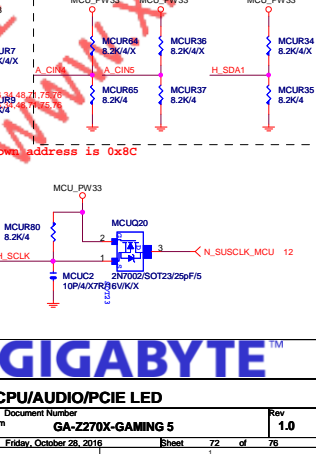
第一區 LED CONTROL



第二區 LED CONTROL



IC ADDRESS : 50



GIGABYTE™

File CPU/AUDIO/PCIEX LED

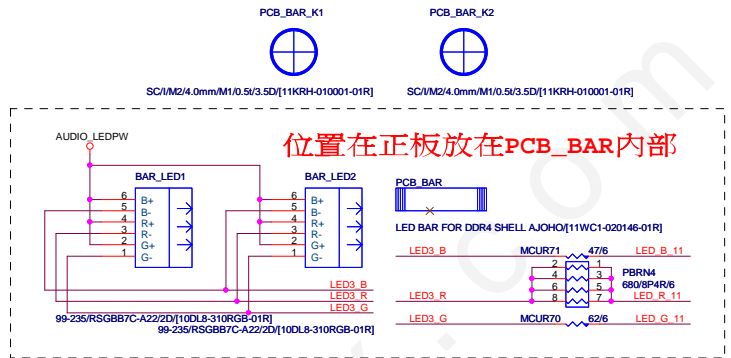
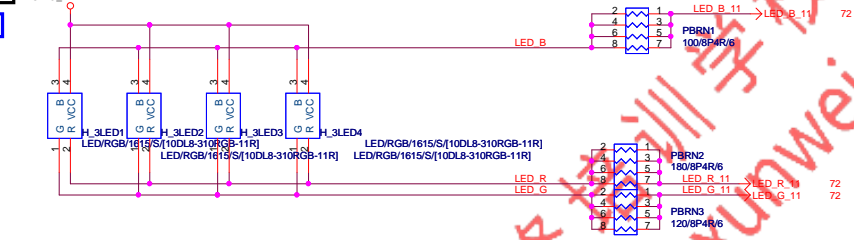
Size Document Number

Custom GA-Z770X-GAMING 5

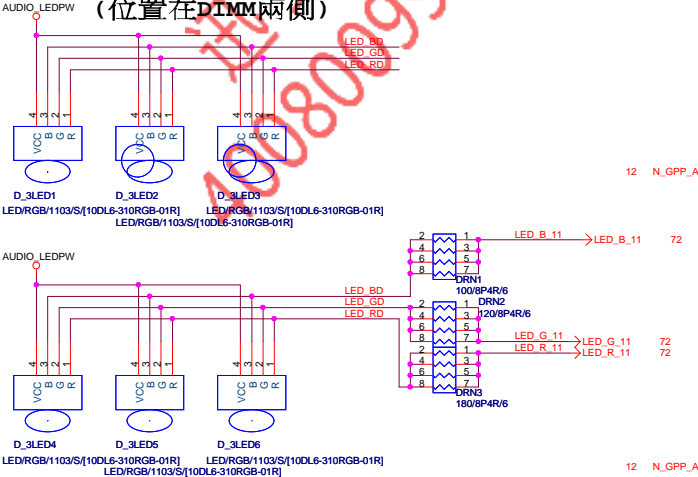
Date: Friday, October 28, 2016 Sheet 72 of 76



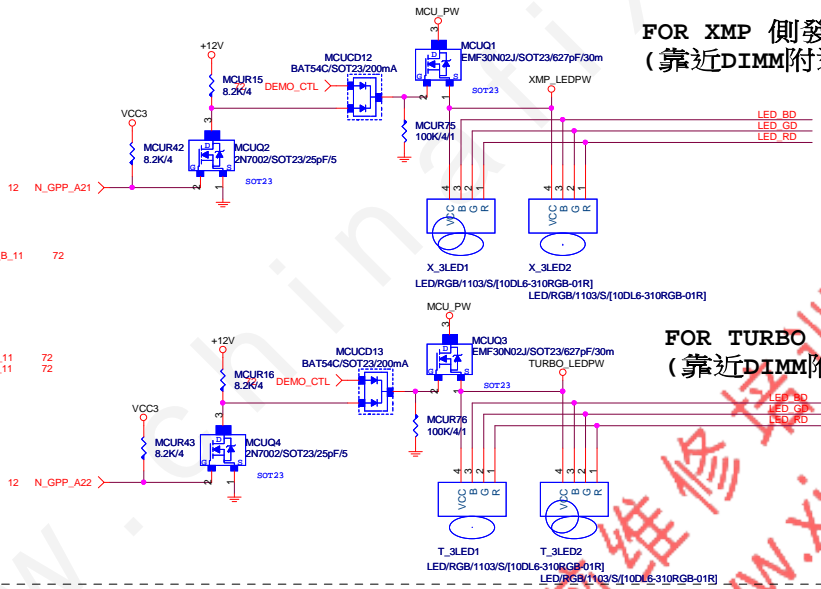
Rev 0.63



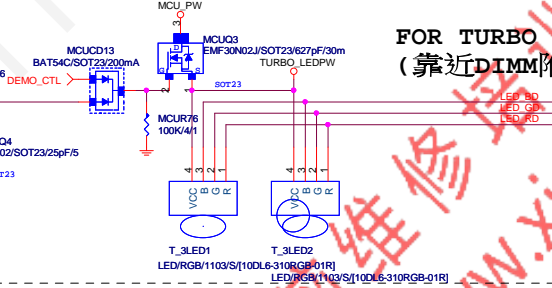
FOR DIMM 側發光 LED\*6 (位置在DIMM兩側)



FOR XMP 側發光 LED\*2 (靠近DIMM附近放背板鑲空)

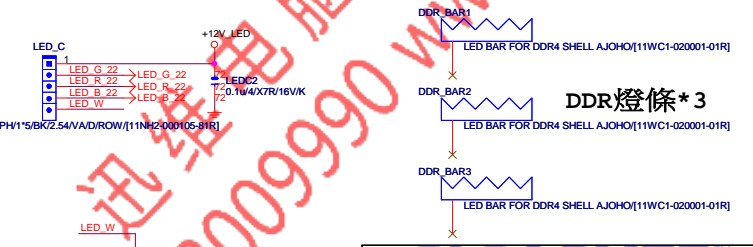
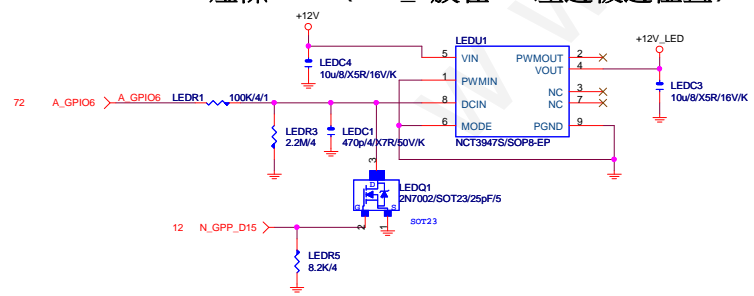


FOR TURBO 側發光 LED\*2 (靠近DIMM附近背板鑲空)



第二區

FOR 燈條 LED (LED\_C放在PCB左邊板邊位置)



DDR燈條\*3

GIGABYTE™			
PCH/MODEL/DDR LED			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5	1.0	
Date	Friday, October 28, 2016	Sheet	73 of 76

## RGB LED LAYOUT 注意事項：

www.xinxunwei.com 400-800-9990

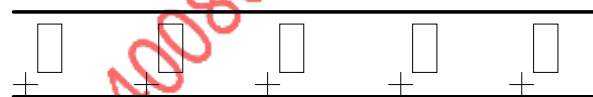


1. Debug LED 文字面表示如右所示 (LED請擺在一起)
2. 背板 RGB LED 方向整板請統一如下  
(整板正極可統一朝下或朝上)
3. 正板 RGB LED 統一方向即可
4. LED RGB 10PCS 以上走20mils  
LED RGB 10PCS 以下空間問題可以走10mils  
LED電源一律走20mils
5. MCU LED 出pin的走線4mils,如:LED\_R\_1,LED\_G\_1,LED\_B\_1 .....  
過晶體的走線20mils,包含過排組到LED的走線如:LED\_R\_11,LED\_G\_11,LED\_B\_11..
6. XMP/TURBO/G1.GAMING 側發光 LED 位置如下

VGA CPU

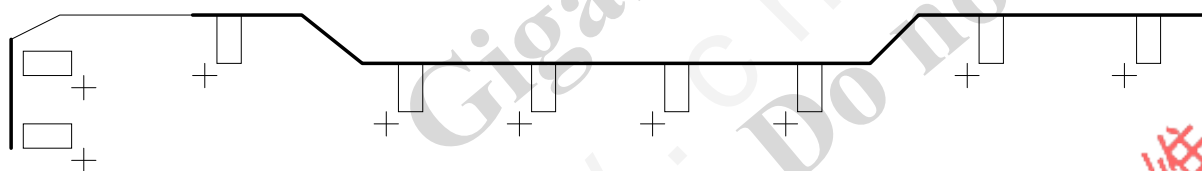
BOOT DRAM

PCB板邊透光model name鏤空+背面 RGB LED



LED間距160mil  
**G1 GAMING**

Audio Ground切割線+背面 RGB LED



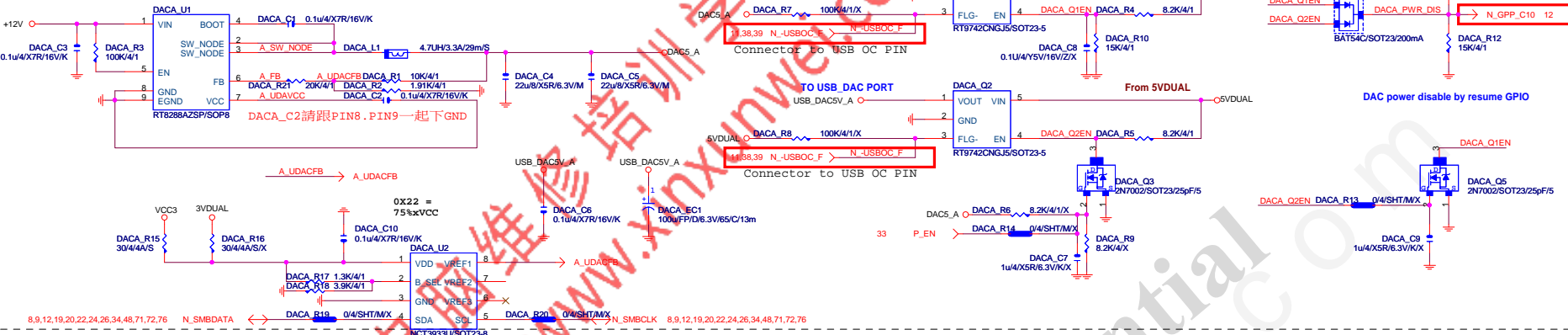
"Turbo", "XMP"字樣(分開控制) 鏤空+背面 RGB側發光 LED

LED間距200mil  
**TURBO**  
LED間距200mil  
**XMP**

<b>GIGABYTE™</b>			
Title <b>MODEL/PCB LED</b>			
Size	Document Number	Rev	
Custom	<b>GA-Z270X-GAMING 5</b>	<b>1.0</b>	
Date:	Wednesday, September 21, 2016	Sheet	74 of 76



USB\_DAC\_A REV:0.13

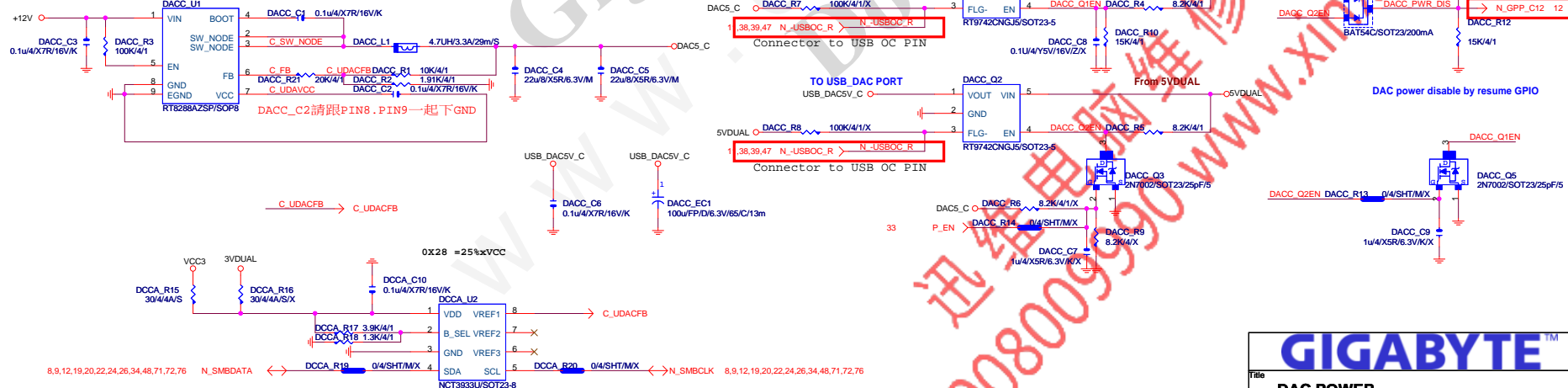


USB\_DAC\_B

F\_USB30\_2

USB\_DAC\_C

KB\_MS\_USB0

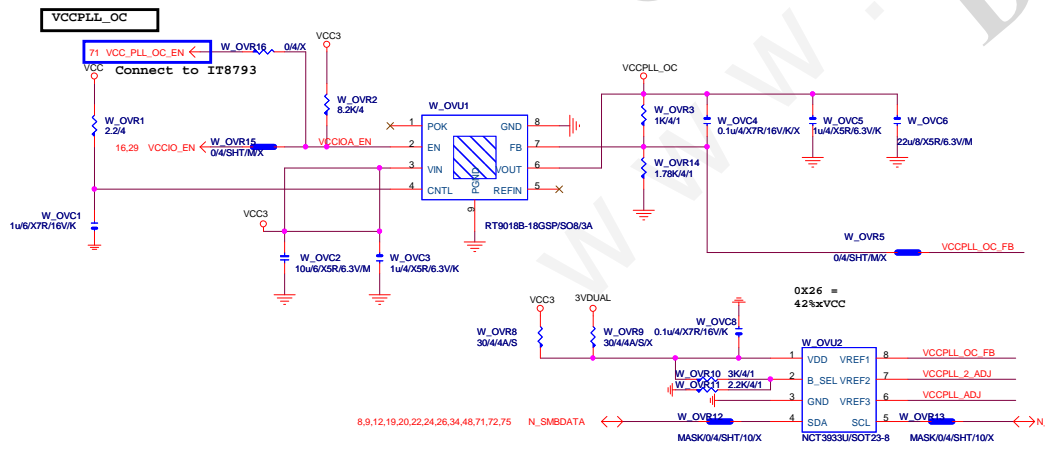
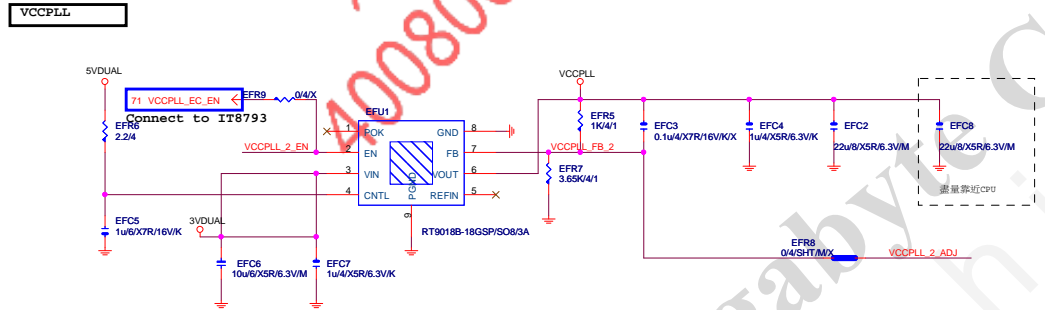
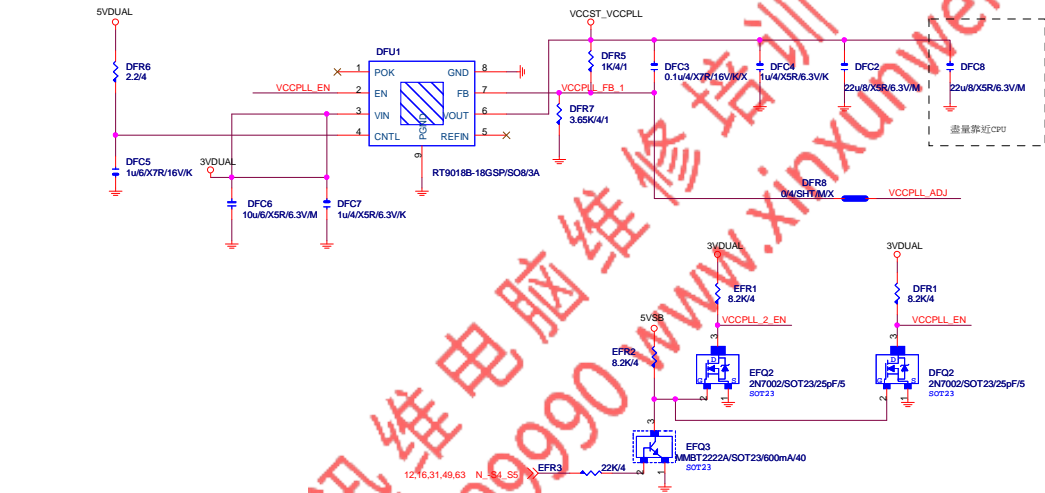


GIGABYTE™			
Title			
DAC POWER			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5	1.0	
Date:	Friday, October 28, 2016	Sheet	75 of 76



VCCST\_VCCPLL

替換原先MOS開關線路



File

VCCSA\_VCCIO

Size

Document Number

GA-Z770X-GAMING 5

Rev

1.0

Date

Friday, October 28, 2016

Sheet

76 of 76