

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1150-A
05	CPU_LGA1150-B_DDR4
06	CPU_LGA1150-C
07	CPU_LGA1150-D
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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	DUAL BIOS
16	ITE 8620 LPC IO
17	HMW
18	FAN CTRL--SIO
19	PCI EXPRESS X16 SLOT
20	PCI EXPRESS X4 SLOT(CPU)
21	PCI EXPRESS X1 SLOTS
22	PCI EXPRESS X8 SLOT
23	PCI EXPRESS X16 SWITCH
24	M2A_32G
25	SATA EXPRESS 1/2
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
36	KB_MS_USB
37	OC/ECO BUTTON
38	F_USB30
39	F_USB20
40	R_USB30
41	ALC1150
42	Audio Amp
43	Audio Power
44	N/A
45	DUAL LAN-A~KILLER E2201
46	DUAL LAN-B~I219
47	DUAL USB30 LAN-I219 E2201
48	Etron EJ179V A SW&CC (From AR)
49	IDT6V41510_CLK BUFFER
50	COM , LPT , TPM , THB , 80 port
51	F_PANEL
52	N/A
53	N/A
54,55	ALPINE RIDGE
56	HDMI 1.4 (From Alpine Ridge)
57	GENESYS GL850S (F_USB1)
58	DP
59~61	M2B_32G
62	EMI/ESD
63	POWER MAP
64	POWER零件使用表
65	TABLE LIST
66	NTC MAP

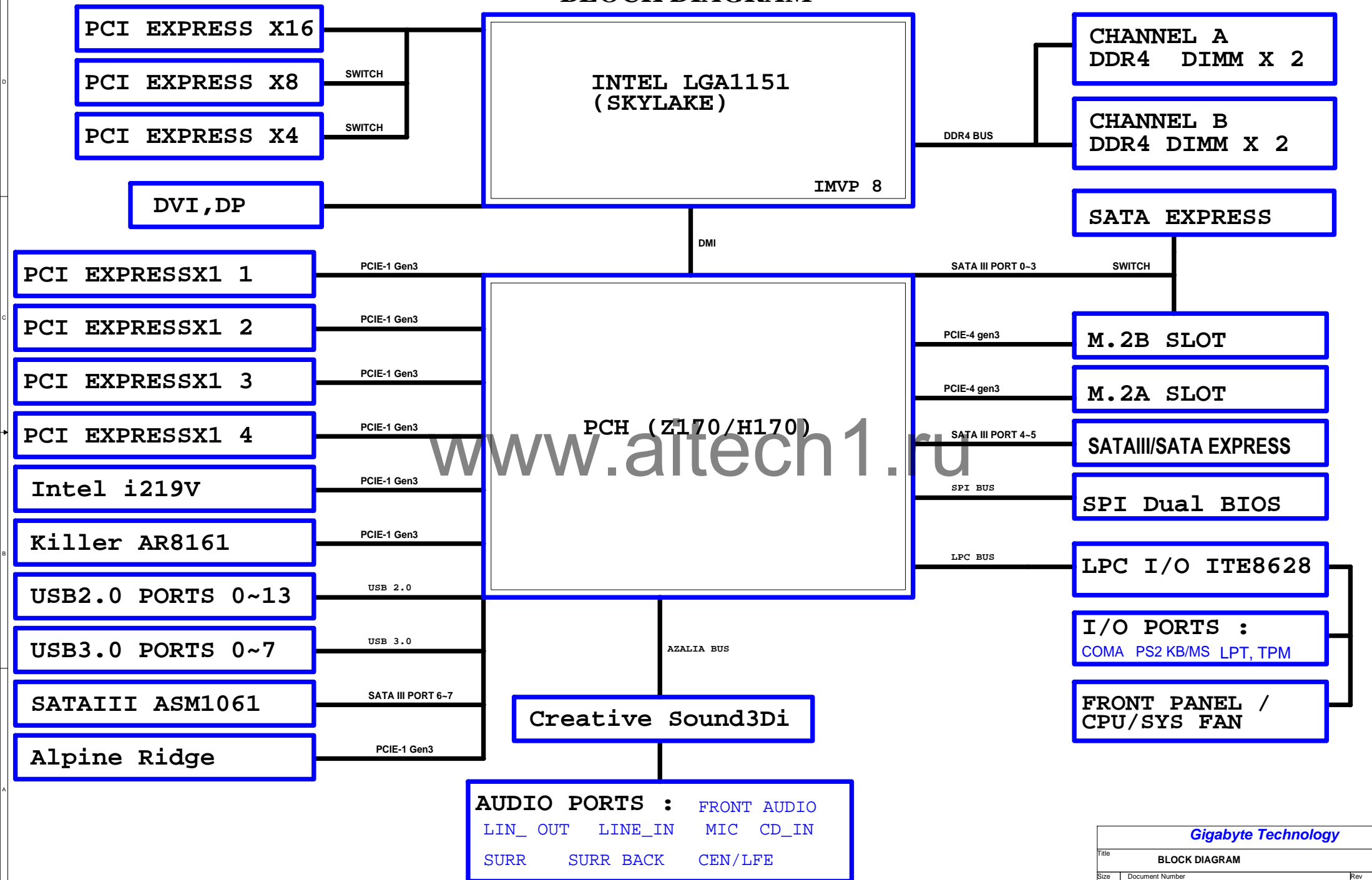
## Component value change history

Data	Change Item	Reason
2014/11/28 PCB:0.1	1. PCB first release	
	2. AUDIO_COVER 料號UPDATE	
2015/01/26 PCB:0.2	1. F_USB30_1 , F_USB30_2 & M2A_32G , M2B_32G改為紅色料號?	
	2. 注意三色LED上件方向	
	3. SATA_EXPRESS的顏色確認,SATA_EXPRESS1要做塞孔	
	4. CLK BUFFER IDT6V41510 (含蓋子) 不上件	
	5. M_BIOS , B_BIOS 改成128M	
	6. ASML061 eeprom 改成不上件 (確認BIOS OK後移除)	
	7. PCB製程修改 : B2 --> B	
2015/01/26 PCB:1.0	1. 高速訊號測點移除	
	2. 0 OHM SHORT PAD	
	3. M_BIOS SOCKET移除	
	4. CLK BUFFER不上的BOM	
	5. BIOS_PH 改 MASK (3VDUAL再加強)	
	6. THR114 --> THR113	
	7. PCH/VPP25V out choke --> 0.8uH/18A/INC0809/F/D, DDR out choke --> 0.8uH/28A/INC1	
	8. NC7改成27pF	
	9. PCIE4_M2 pull-up改成3vdual (GPIO17 --> GPIO20)	
	10. TPM pin3/4 --> N.C	
	11. VCCPLL改使用RT9018	
	12. Remove "MR22" , VDDSPD --> VPP25V	
	13. SWPU2 pin30 PCIE4_M2 --> PCIE4_M2S	
	14. THR77不上	
1.0C	1. DFQ1 : 10IFC-212103-01R --> 10IFC-389452-01R	
	2. THR15/18/82/83 Changed to 100K	
1.0D	1. Remove LER14=1u/4	
9MZ17XGE6-00-10A	1. REAR_HS : 12KRC-0H0001-11R , MOS_HS : 12SP2-PT17G5-11R/12R/13R	

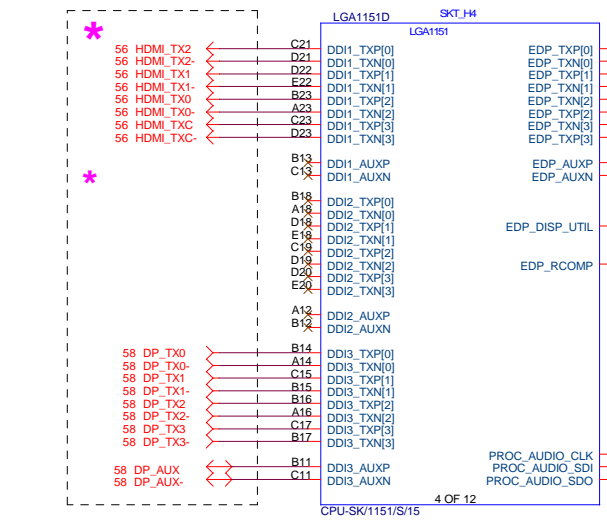
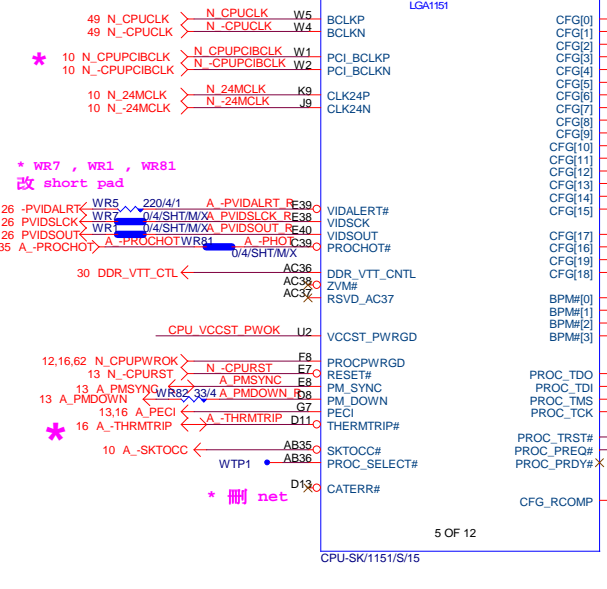
## Circuit or PCB layout change

[illegible]

# BLOCK DIAGRAM

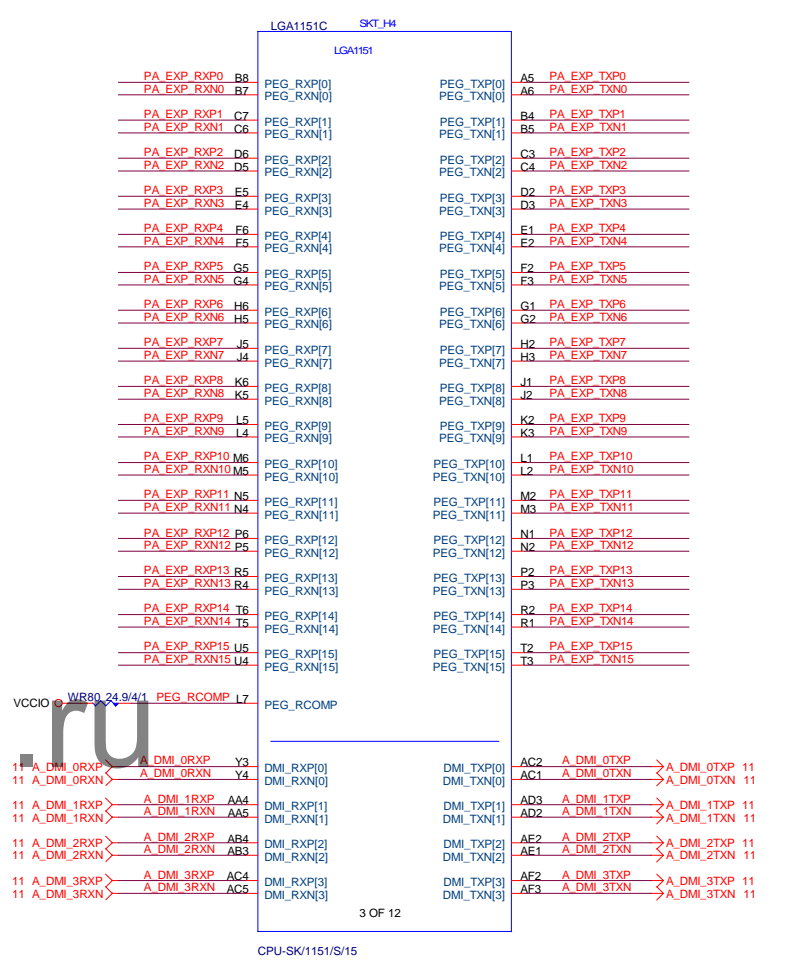
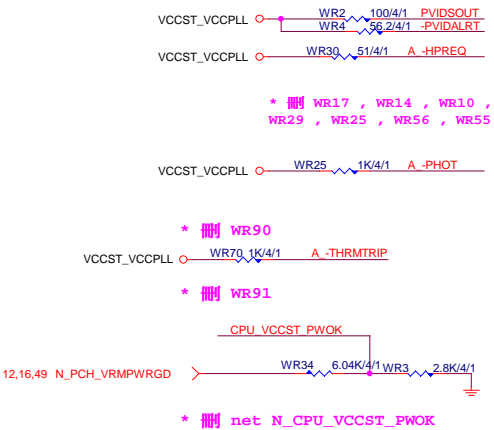


From SKL\_0.2B



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

檢查組態調整線路  
The CFG signals  
default value of  
'1'



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

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

PA\_EXP\_TXP[0..15] >>> PA\_EXP\_TXP[0..15] 19,23  
PA\_EXP\_TXN[0..15] >>> PA\_EXP\_TXN[0..15] 19,23  
PA\_EXP\_RXP[0..15] >>> PA\_EXP\_RXP[0..15] 19,23  
PA\_EXP\_RXN[0..15] >>> PA\_EXP\_RXN[0..15] 19,23

Gigabyte Technology

CPU LGA1151-A

Size Custom

Document Number

GA-2170X-GAMING 6

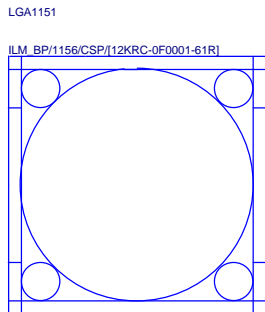
Date: Wednesday, October 28, 2015

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Rev 1.0



\* 改DDR4 net



Need check the new CPU ME

8 MODT\_A[0..3]  $\longleftrightarrow$  MODT\_A[0..3]  
9 MODT\_B[0..3]  $\longleftrightarrow$  MODT\_B[0..3]  
  
8 MDA[0..63]  $\longleftrightarrow$  MDA[0..63]  
9 MDB[0..63]  $\longleftrightarrow$  MDB[0..63]

8 M\_DQSA[0..7] ↔ M\_DQSA[0..7]  
8 M\_-DQSA[0..7] ↔ M\_-DQSA[0..7]

8 MAAA[0..16]  $\longleftrightarrow$  MAAA[0..16]  
9 MAAB[0..16]  $\longleftrightarrow$  MAAB[0..16]

9 M\_DQSB[0..7] ↔ M\_DQSB[0..7]  
9 M\_-DQSB[0..7] ↔ M\_-DQSB[0..7]

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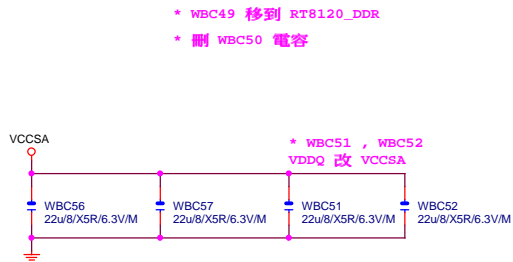
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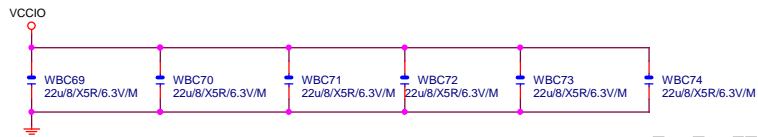
**Gigabyte Technology**

Title			
CPU LGA1151-B			
Size Custom	Document Number		Rev
	GA-Z170X-GAMING 6		1.0
Date:	Wednesday, October 28, 2015	Sheet	5 of 66

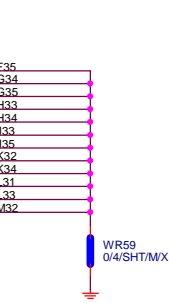
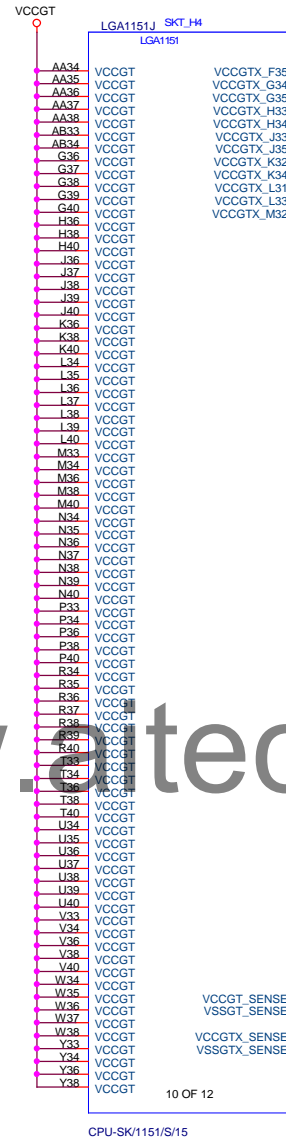


\* 刪 WBC124, WBC125, WBC126, WBC127 電容

\* WR94, WR59, WR86, WR60, WR61, WR62, WR63 改 short pad

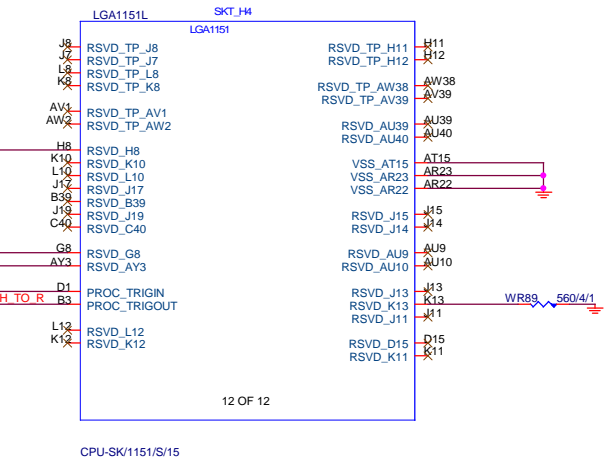
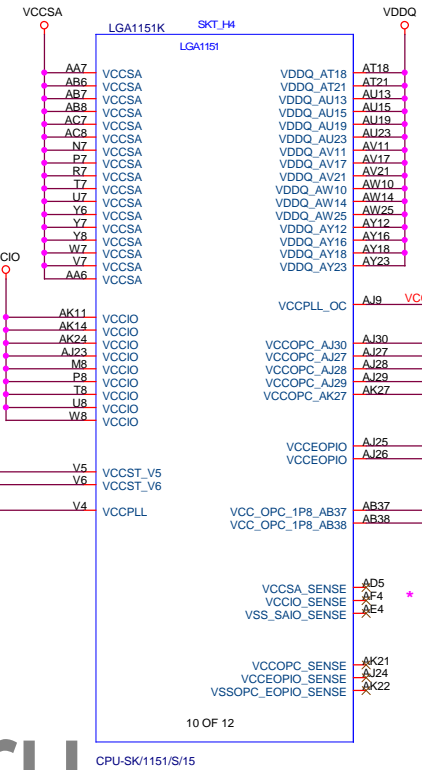


\* 刪 VCCGT 電容

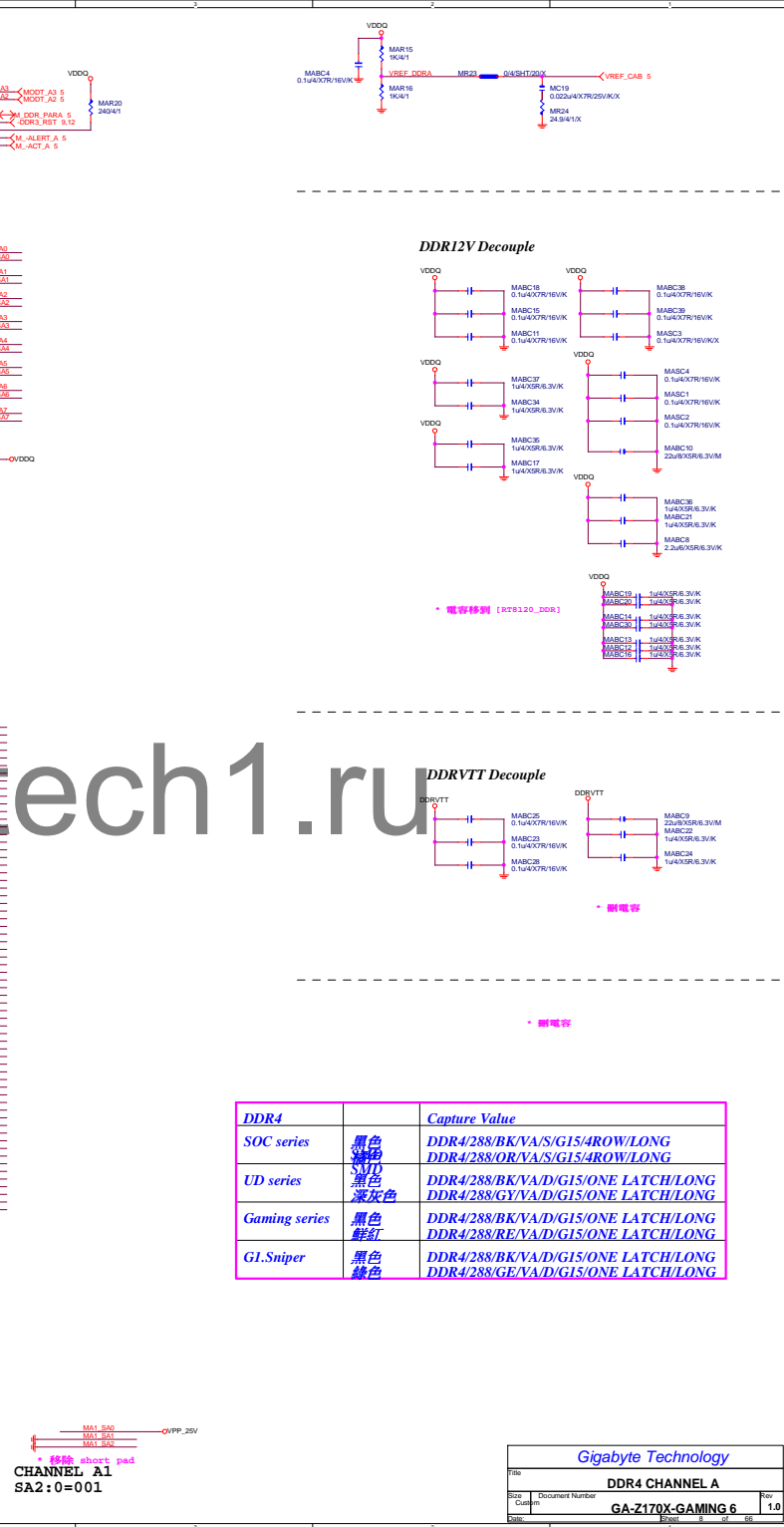
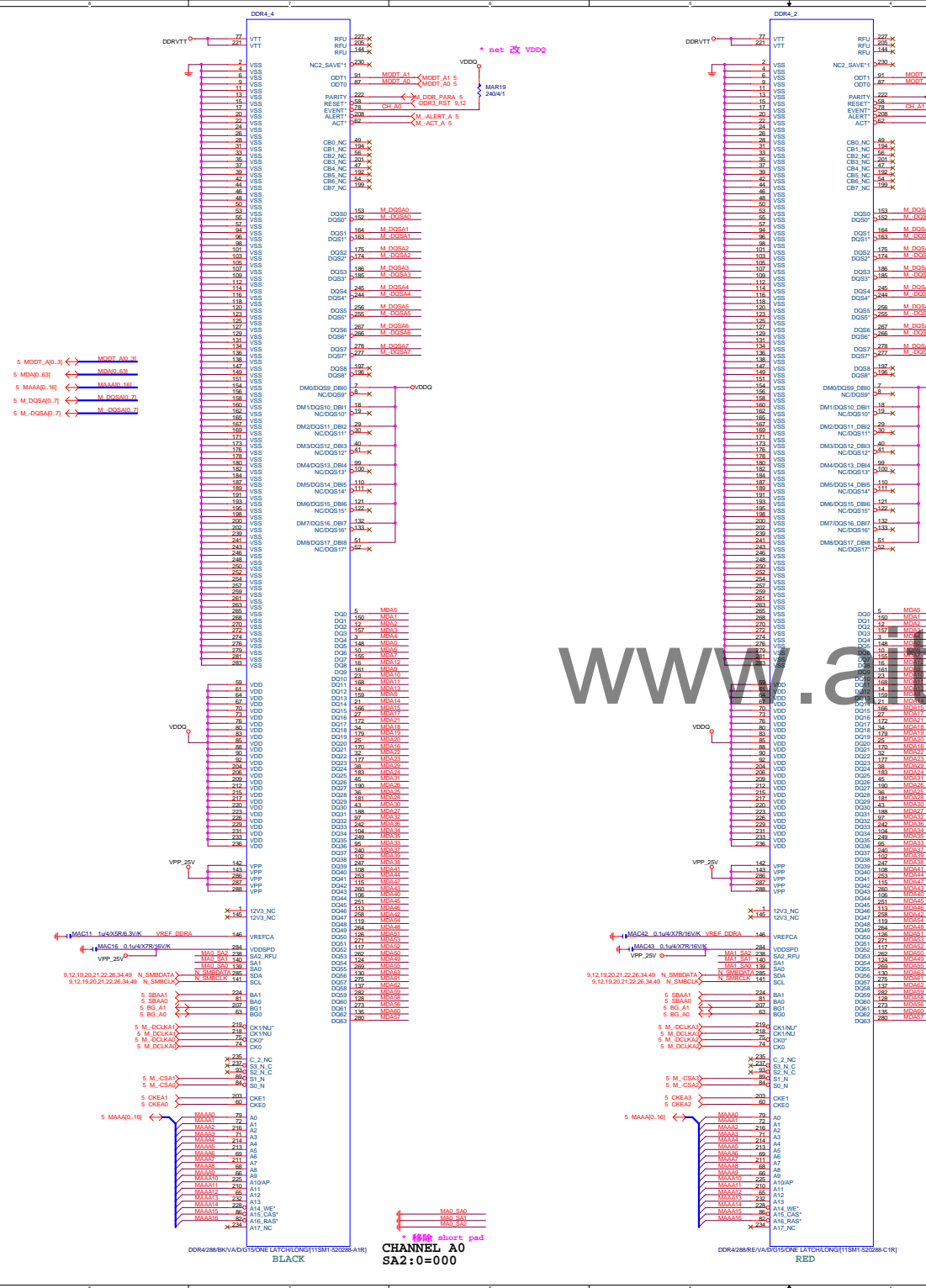


VCCST\_VCCPLL  
VCCSFUSEPRG  
VCCST\_VCCPLL

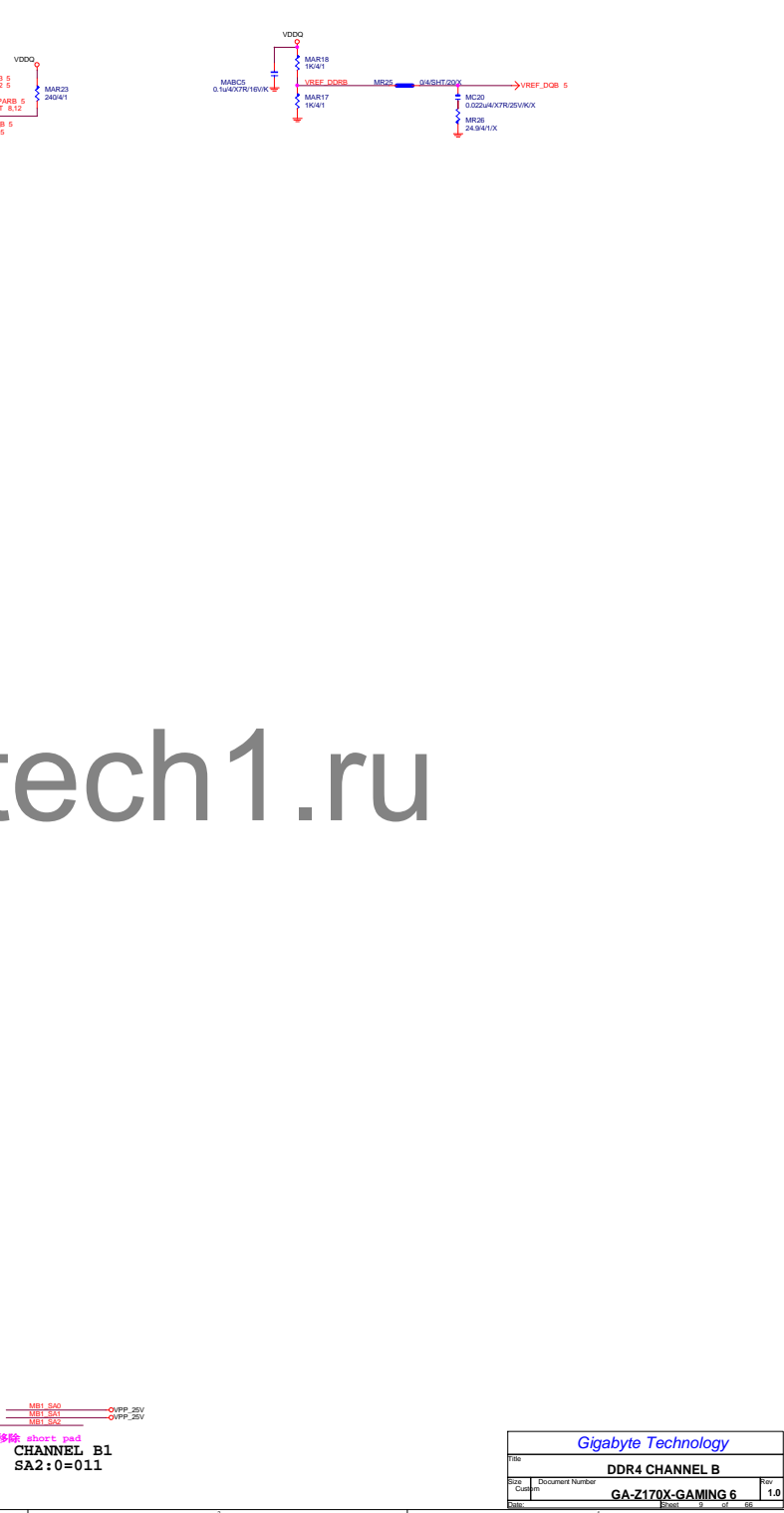
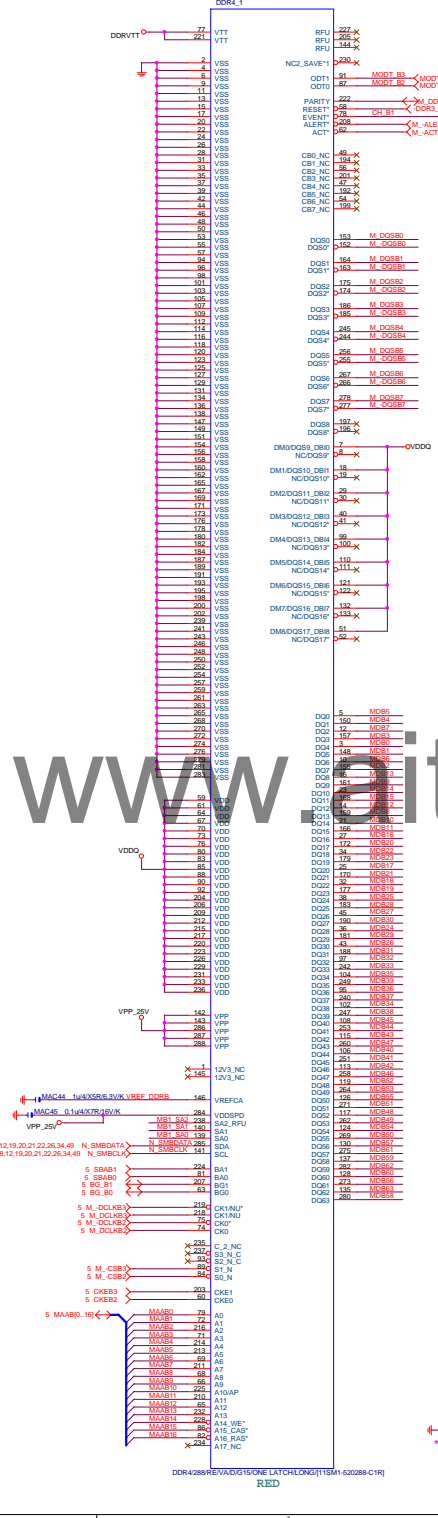
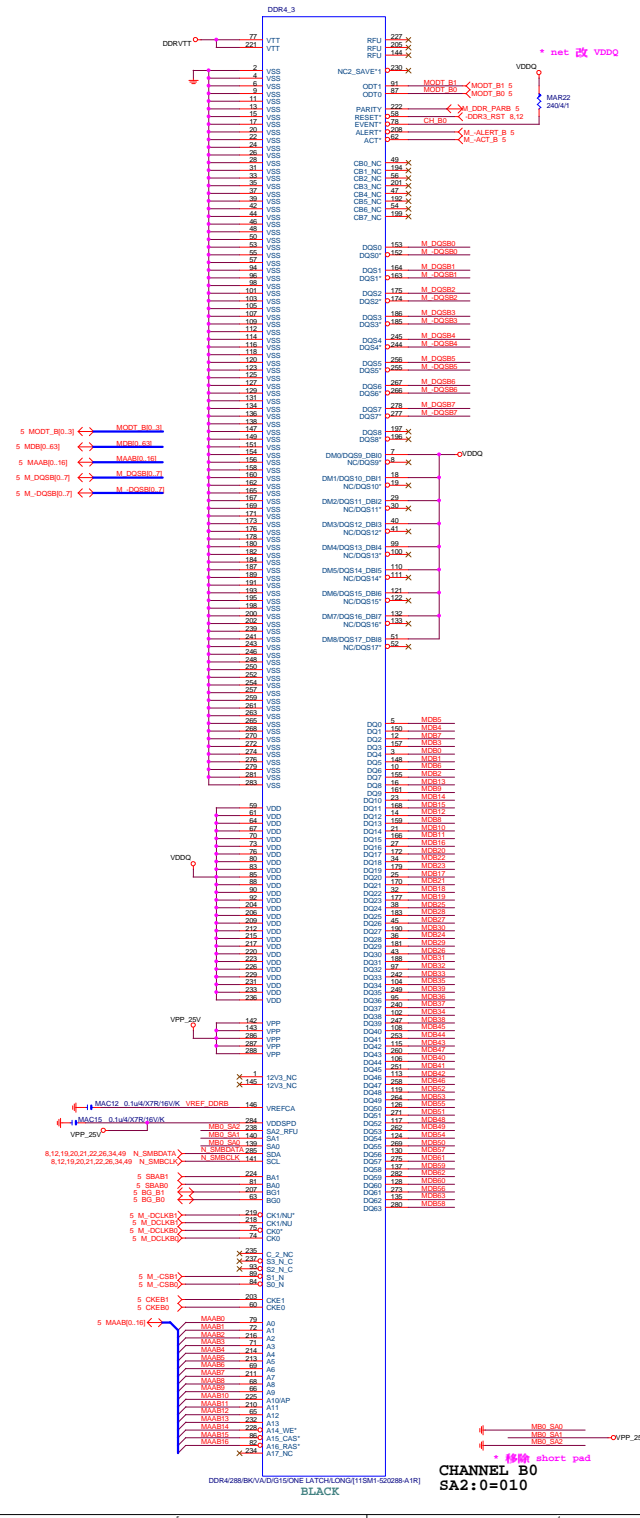
F39 → VCCGT\_SENSE 26  
F38 → VSSGT\_SENSE 26  
F37  
F36  
13 N\_PCH\_CPU\_T1 → WR88  
13 A\_CPU\_PCH\_TO → WR88



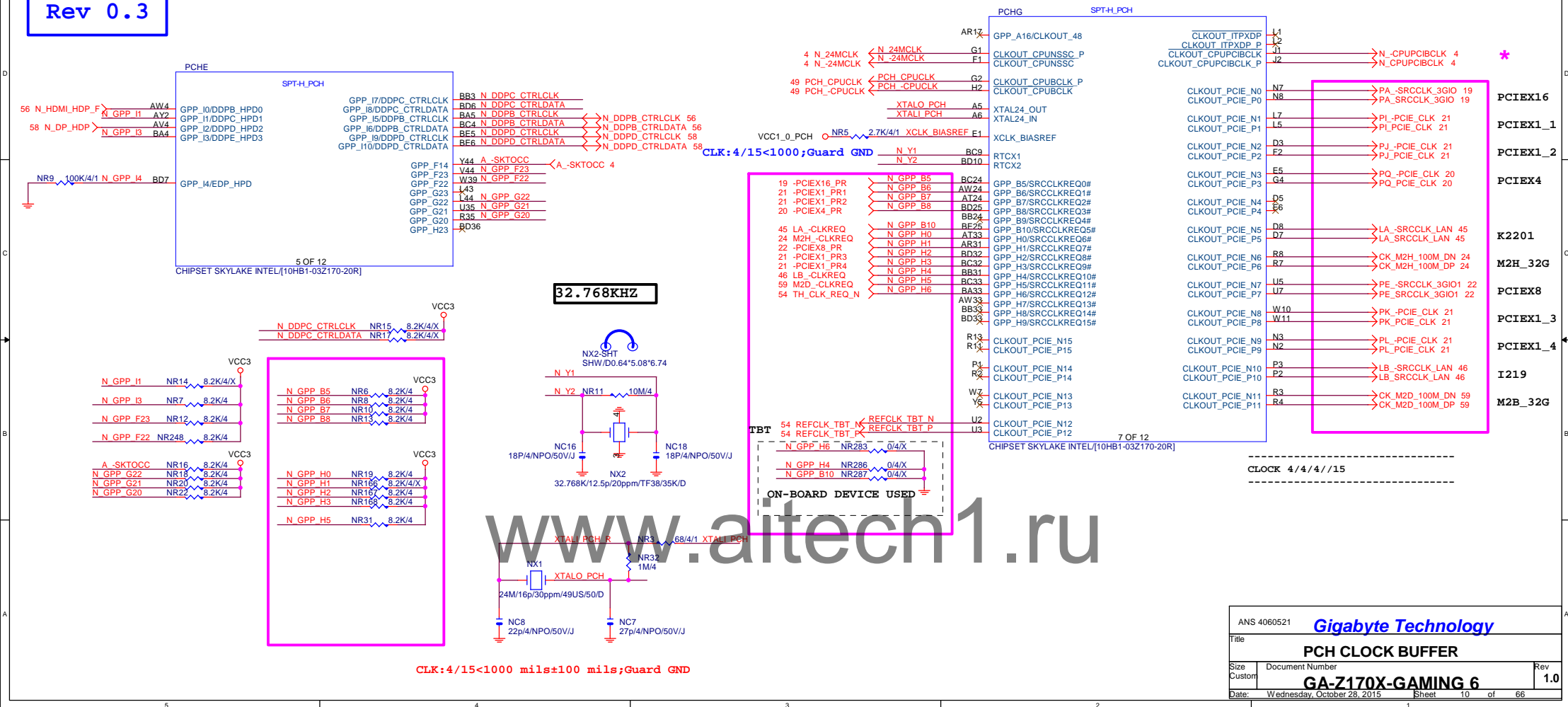




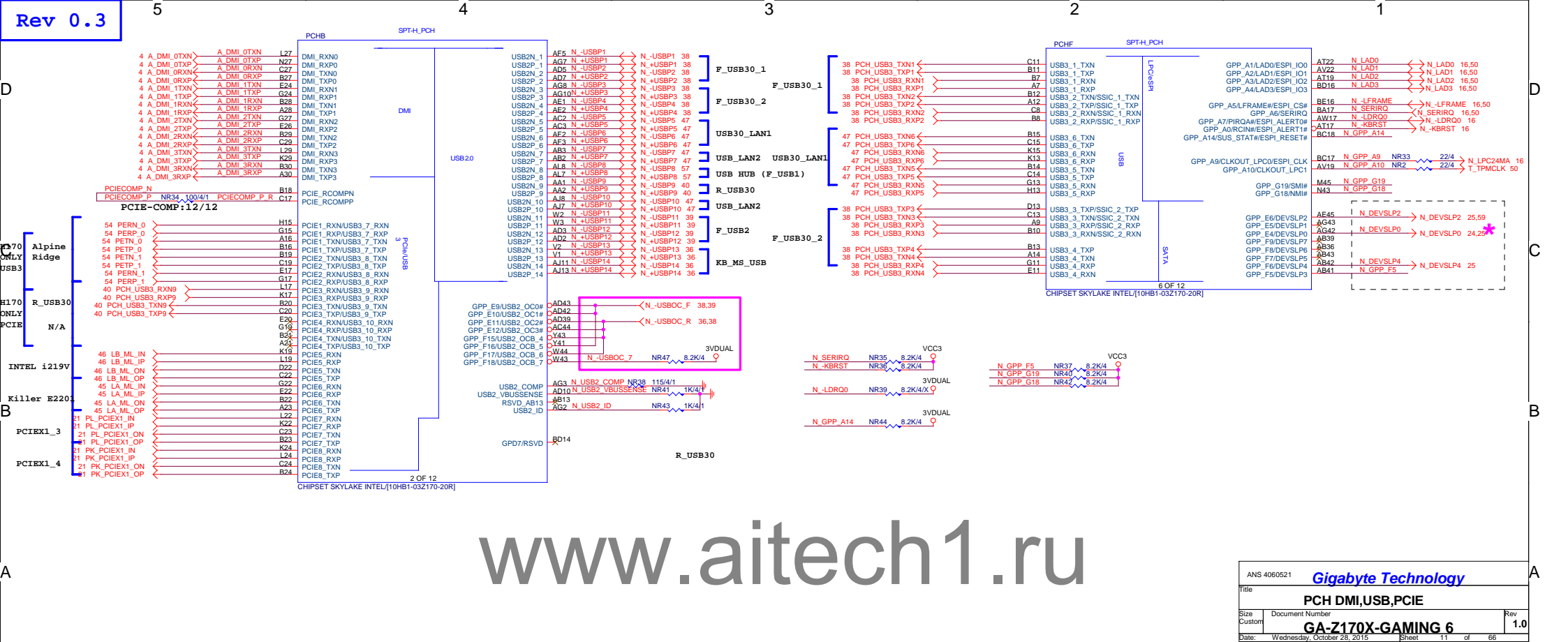
DDR4		Capture Value
SOC series	黑色	DDR4/288/BK/VA/S/G15/4ROW/LONG
	褐色	DDR4/288/OR/VA/S/G15/4ROW/LONG
UD series	黑色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG
	深灰色	DDR4/288/GY/VA/D/G15/ONE LATCH/LONG
Gaming series	黑色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG
	鲜红	DDR4/288/RE/VA/D/G15/ONE LATCH/LONG
Gl.Sniper	黑色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG
	绿色	DDR4/288/GY/VA/D/G15/ONE LATCH/LONG



Rev 0.3

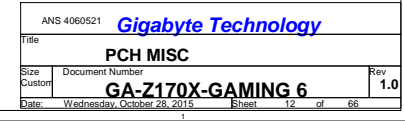






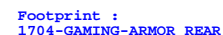
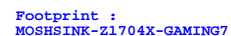
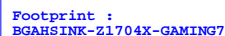
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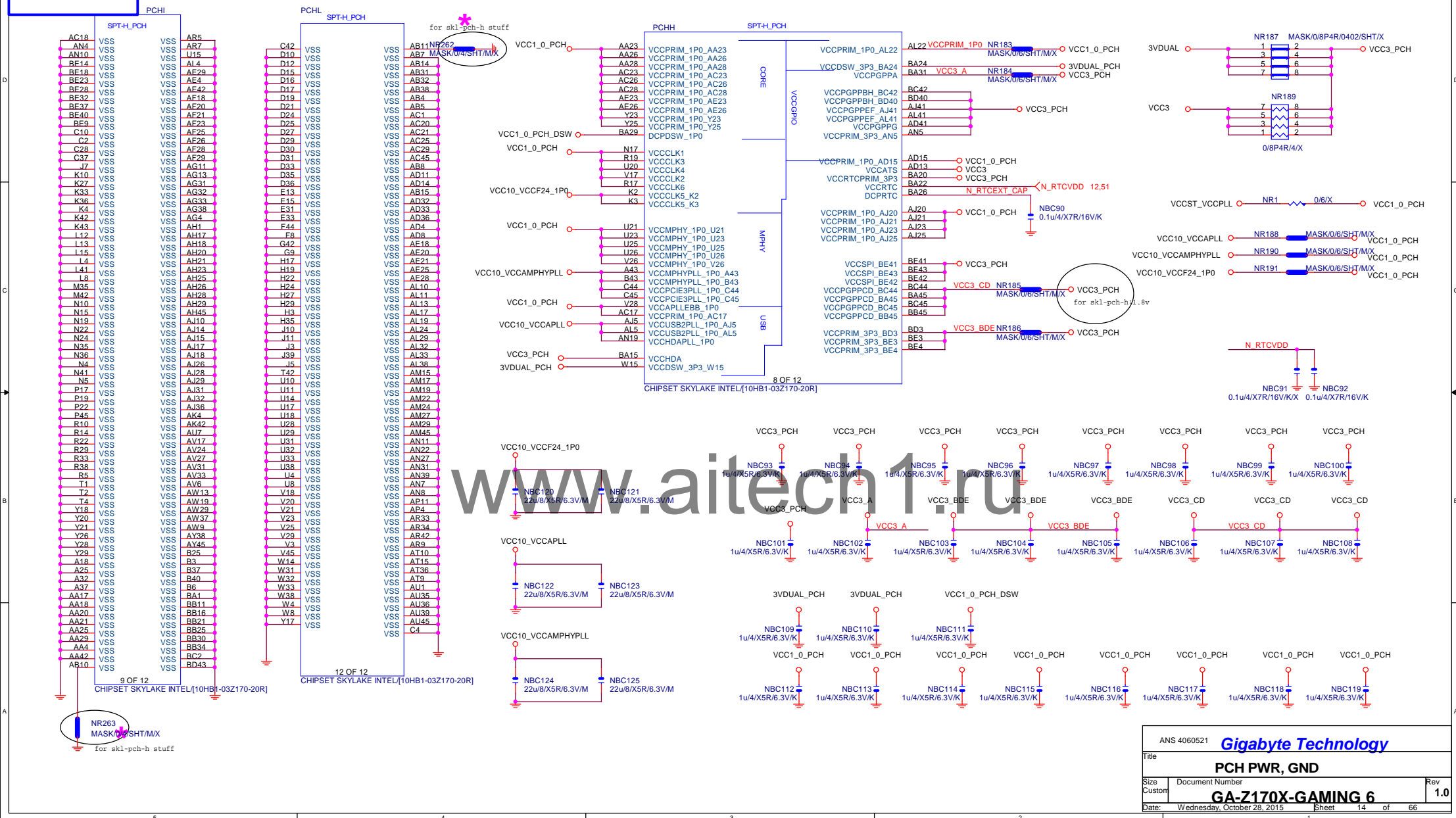
ANS 4060521		Gigabyte Technology	
Title		PCH DMI,USB,PCIE	
Size		Document Number	
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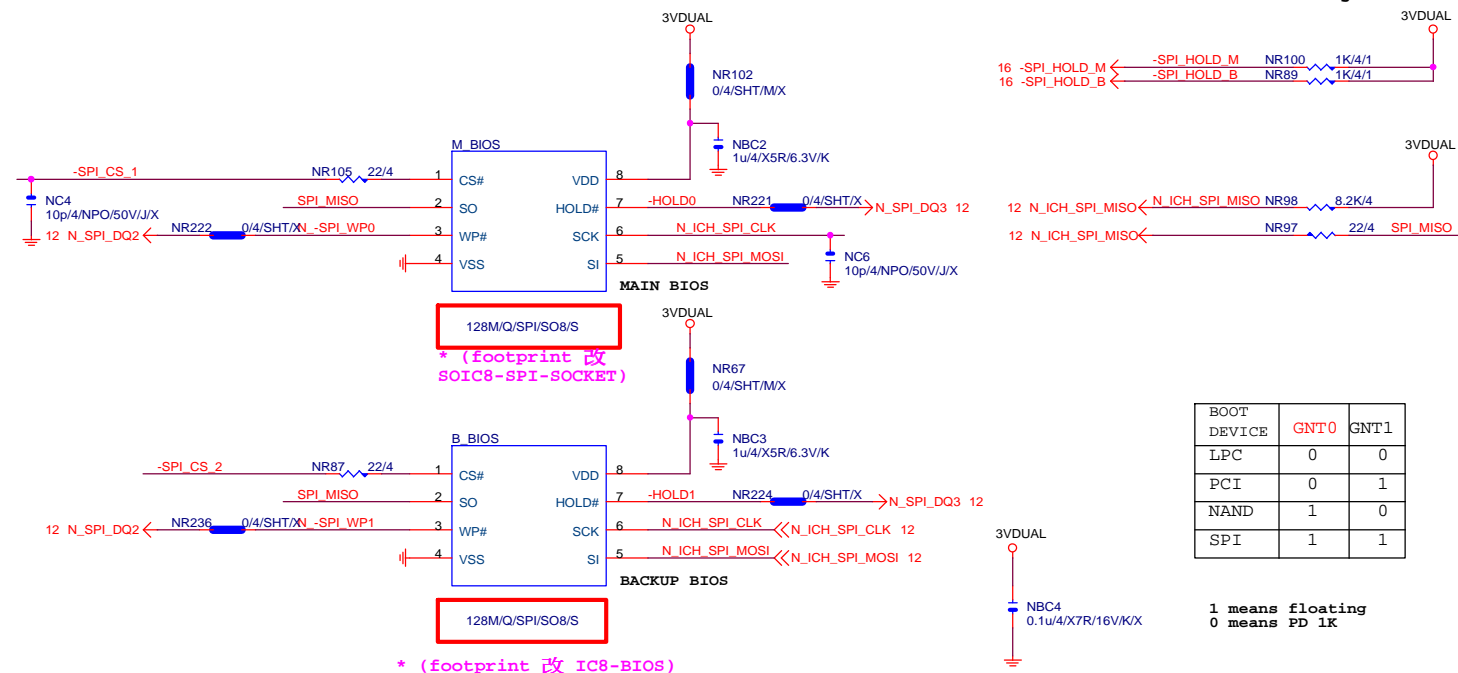


## DUAL BIOS

## MOSI For DMI RX Termination Voltage

指定用DII

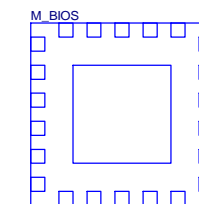
指定用DII



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

1 means floating  
0 means PD 1K

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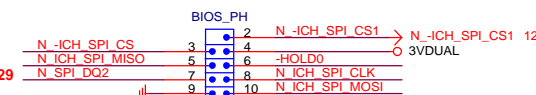


LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]X

\* 試産先上, PVT 移除

## BIOS\_PH

★Update 2015-01.29



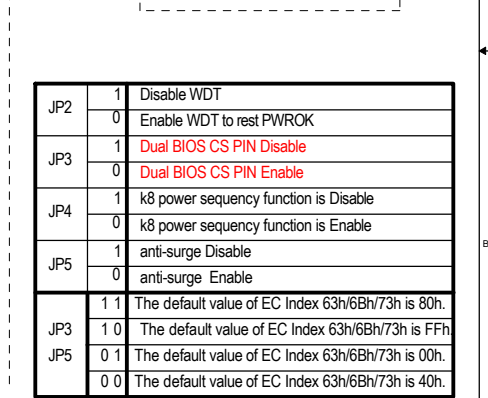
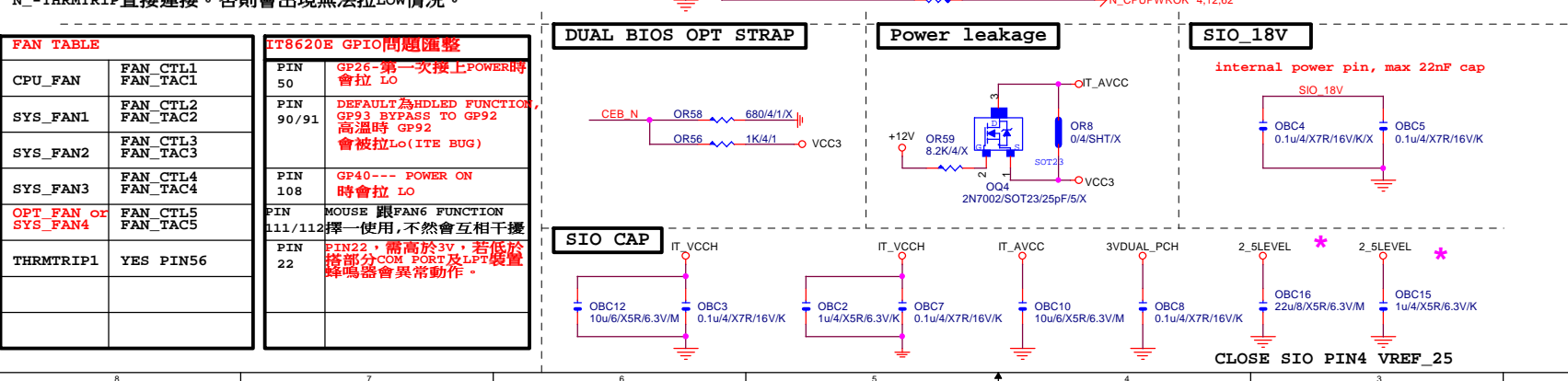
MASK/PH/2\*5K10/BK/2.54/VA/D/X

Footprint the same, confirmed by Graceing.

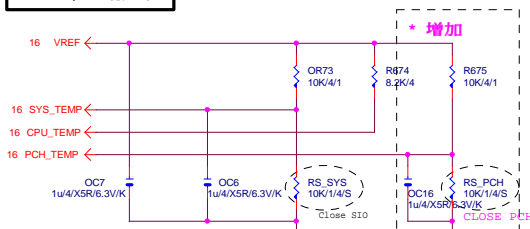
Use COM port pin header part.

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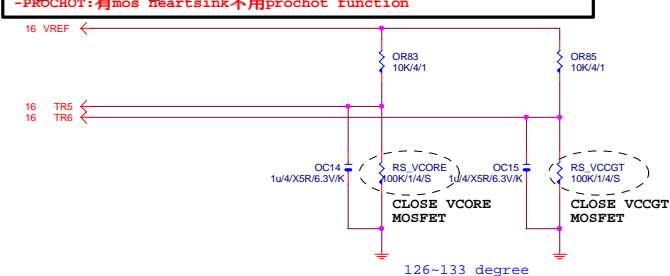
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Size	Custom
Document Number	GA-Z170X-GAMING 6
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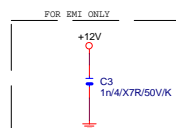
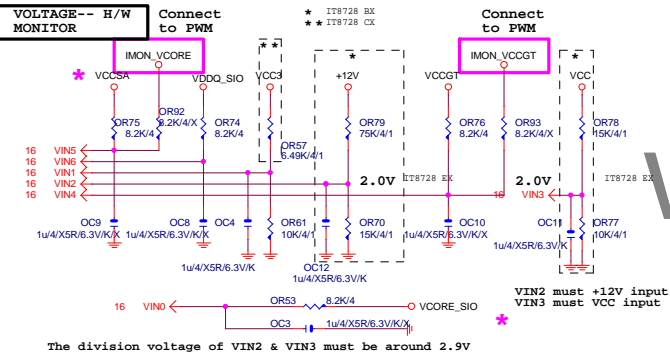
# TEMP H/W MONITOR



# RS\_VCORE、RS\_VCCGT、CLOSE CPU\_VCORE & VCCGT MOSFET



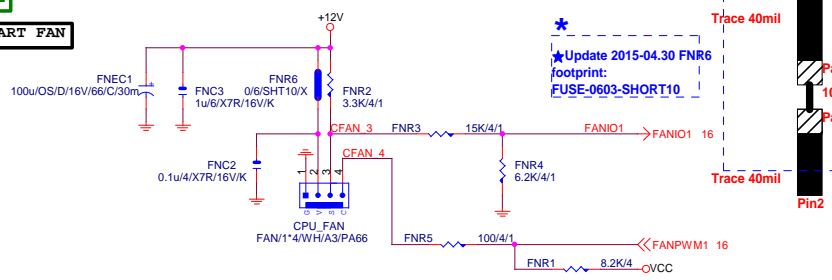
# VOLTAGE-- H/W MONITOR



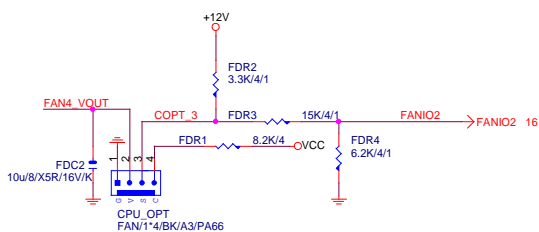
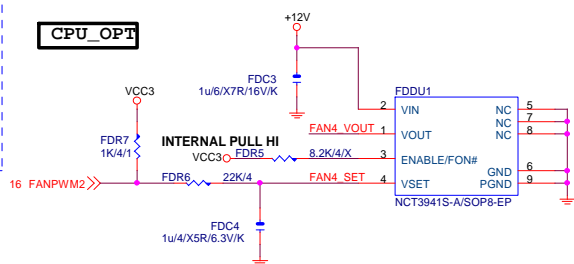
Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	GA-Z170X-GAMING 6	1.0	
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CPU SMART FAN



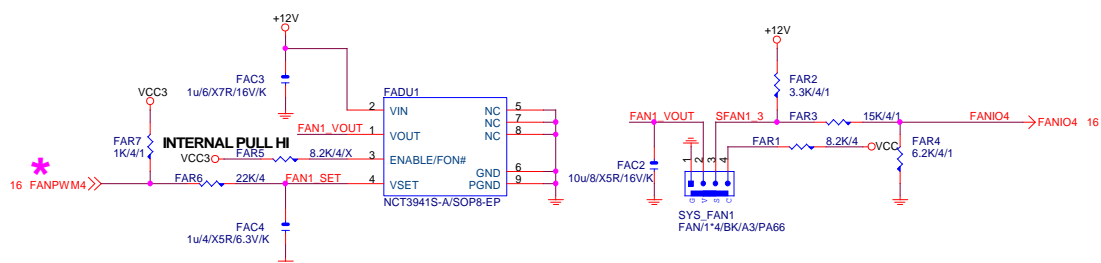
CPU\_OPT



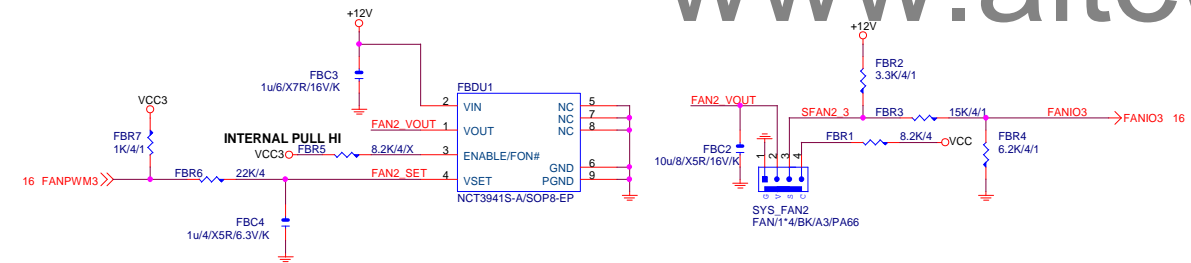
SYSTEM FAN1

Linear SYS\_FAN

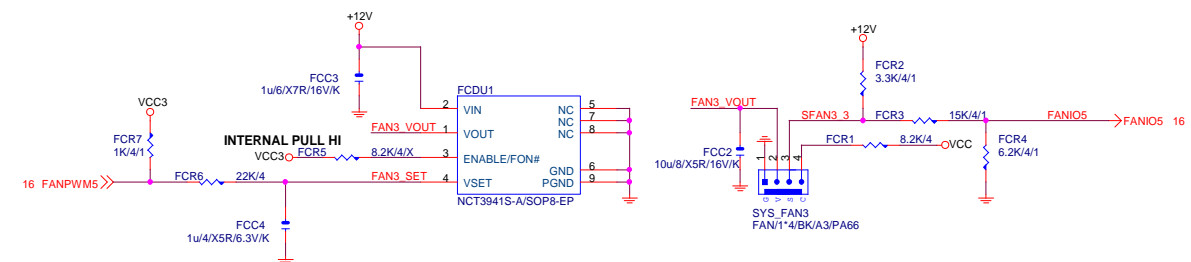
Enable Function (NCT3941S)  
Full Turn On Function (NCT3941S-A)



SYSTEM FAN2



SYSTEM FAN3

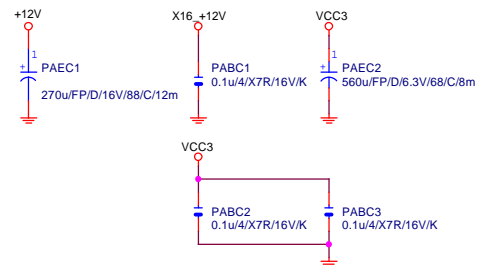


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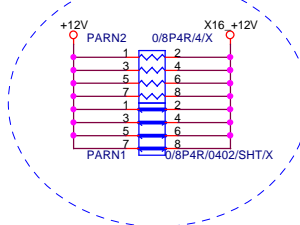
Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	GA-Z170X-GAMING 6	1.0	
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PCIEX16 CAP
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PCIEX16	PROTECT	SHT
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```
+12 protect
short-wire test
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PCIEX16	AC	CAP
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PA EXP TXP0	PA C5	0.22u4X5R5/6.3V/K	PA EXP TXP0 C
PA EXP TXP1	PA C6	0.22u4X5R5/6.3V/K	PA EXP TXP0 C
PA EXP TXP1	PA C6	0.22u4X5R5/6.3V/K	PA EXP TXP1 C
PA EXP TXP1	PA C7	0.22u4X5R5/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PA C8	0.22u4X5R5/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PA C9	0.22u4X5R5/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PA C10	0.22u4X5R5/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PA C11	0.22u4X5R5/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PA C12	0.22u4X5R5/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PA C13	0.22u4X5R5/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PA C14	0.22u4X5R5/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PA C15	0.22u4X5R5/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PA C16	0.22u4X5R5/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PA C17	0.22u4X5R5/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PA C18	0.22u4X5R5/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PA C19	0.22u4X5R5/6.3V/K	PA EXP TXN7 C
PA EXP SW TPX8	PA C21	0.22u4X5R5/6.3V/K	PA EXP SW TPX8 C
PA EXP SW TXN8	PA C20	0.22u4X5R5/6.3V/K	PA EXP SW TXN8 C
PA EXP SW TPX9	PA C22	0.22u4X5R5/6.3V/K	PA EXP SW TPX9 C
PA EXP SW TXN9	PA C23	0.22u4X5R5/6.3V/K	PA EXP SW TXN9 C
PA EXP SW TPX10	PA C24	0.22u4X5R5/6.3V/K	PA EXP SW TPX10 C
PA EXP SW TXN10	PA C25	0.22u4X5R5/6.3V/K	PA EXP SW TXN10 C
PA EXP SW TPX11	PA C26	0.22u4X5R5/6.3V/K	PA EXP SW TPX11 C
PA EXP SW TXP12	PA C27	0.22u4X5R5/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXP12	PA C28	0.22u4X5R5/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXP13	PA C30	0.22u4X5R5/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXP13	PA C31	0.22u4X5R5/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXP14	PA C32	0.22u4X5R5/6.3V/K	PA EXP SW TXP14 C
PA EXP SW TXN14	PA C33	0.22u4X5R5/6.3V/K	PA EXP SW TXN14 C
PA EXP SW TXP15	PA C34	0.22u4X5R5/6.3V/K	PA EXP SW TXP15 C
PA EXP SW TXN15	PA C35	0.22u4X5R5/6.3V/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

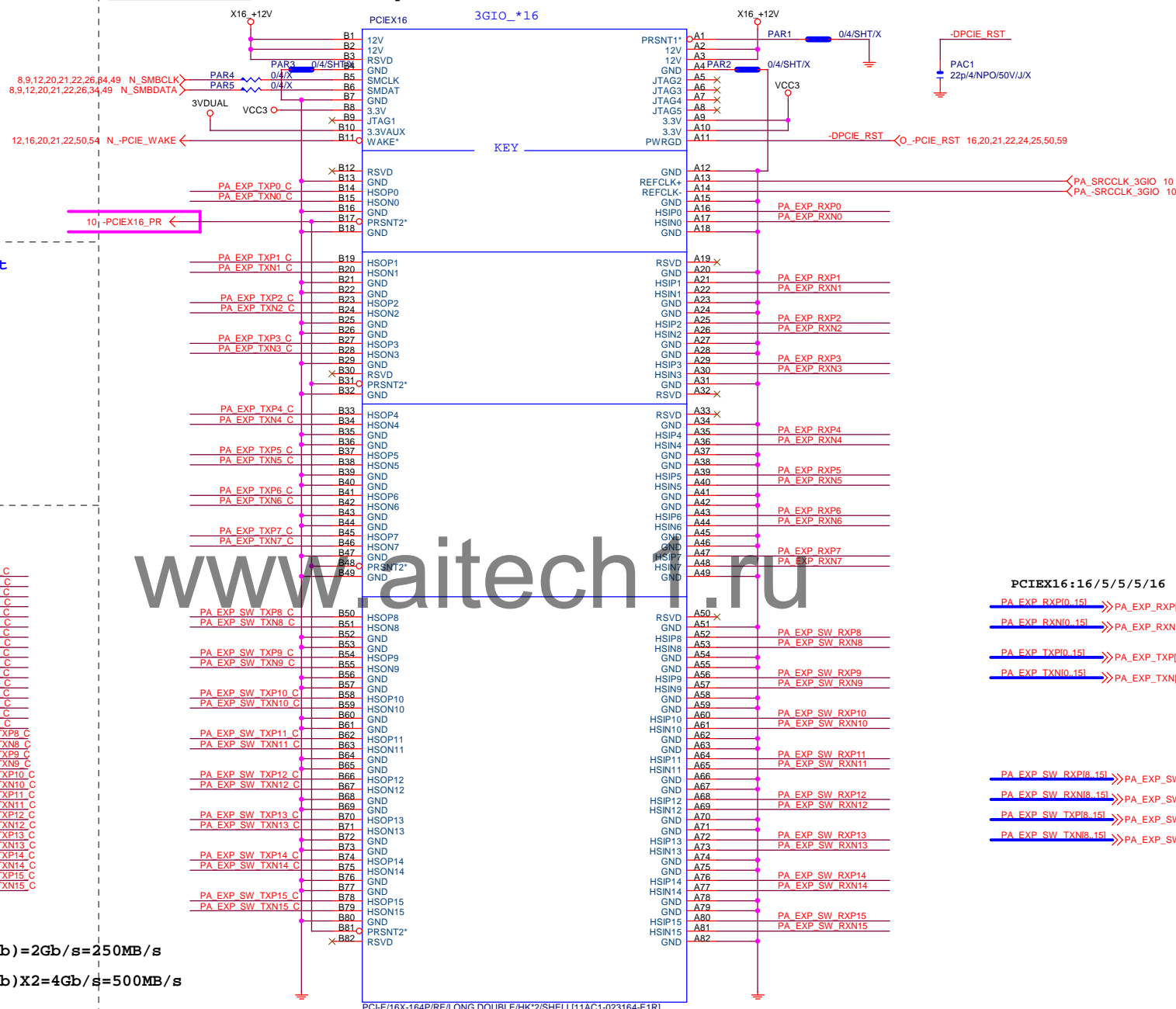
PCE-E X16(單向) BANDWIDTH=2.5GHz\*(8b/10b)X16=32Gb/s=4GB/s

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

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

## PCIEX16 SLOT

Footprint "PCIESLOT-164STH"



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

紅色

PCIEX16:16/5/5/5/16

PA EXP RXP[0..15] >> PA EXP RXP[0..15] 4.23

PA\_EXP\_RXN[0..15] >> PA\_EXP\_RXN[0..15] 4,23

PA\_EXP\_TXP[0..15] >> PA\_EXP\_TXP[0..15] 4,23

PA\_EXP\_TXN[0..15] >> PA\_EXP\_TXN[0..15] 4,23

PA\_EXP\_SW\_RXP[8..15] >> PA\_EXP\_SW\_RXP[8..15] 23

PA\_EXP\_SW\_RXN[8..15] >> PA\_EXP\_SW\_RXN[8..15] 23

PA\_EXP\_SW\_TXP[8..15] >> PA\_EXP\_SW\_TXP[8..15] 23

PA\_EXP\_SW\_TXN[8..15] >> PA\_EXP\_SW\_TXN[8..15] 23

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4060521 **Gigabyte Technology**

DCI EXPRESS \* 16

Document Number

GA-Z170X-GAMING 6

Wednesday, October 28, 2015 Sheet 19 of 2

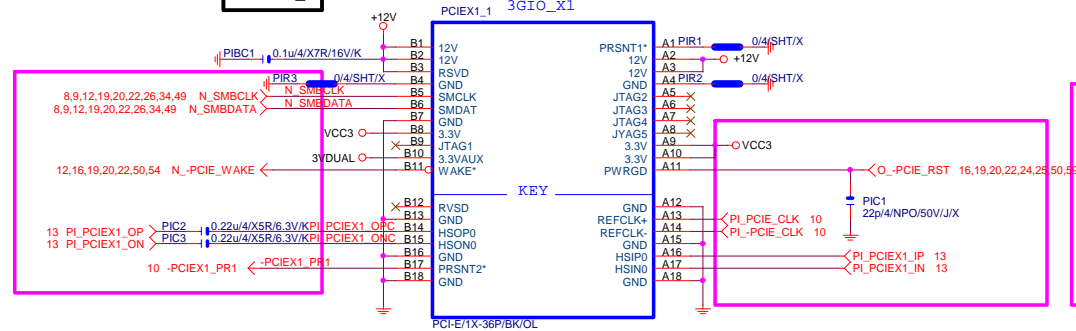






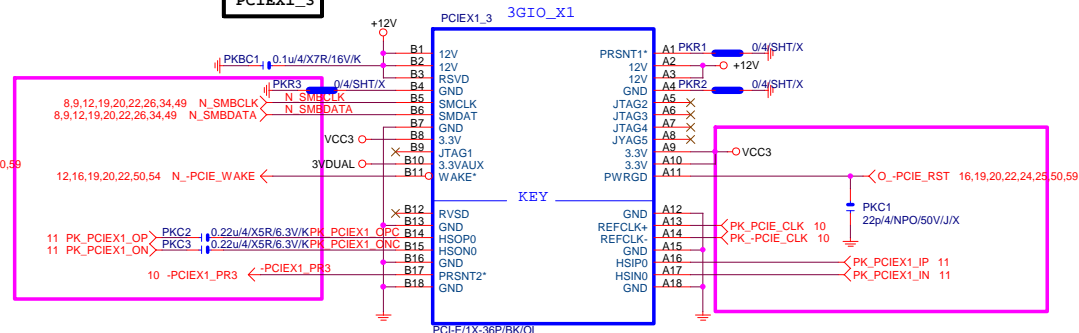
PCIE1\_1

PCIE1\_1 3GIO\_X1



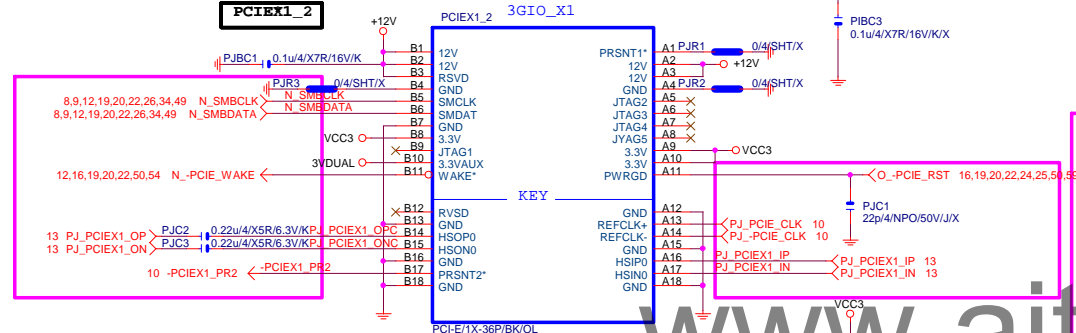
PCIE1\_3

PCIE1\_3 3GIO\_X1



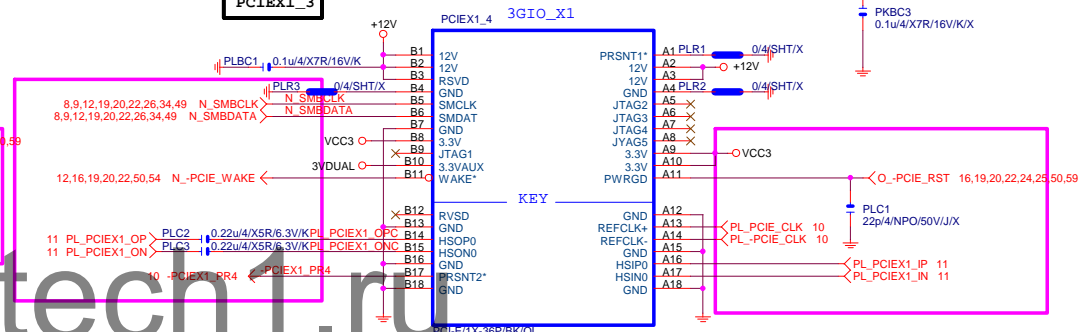
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PCIE1\_2 3GIO\_X1

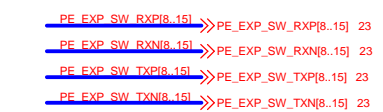
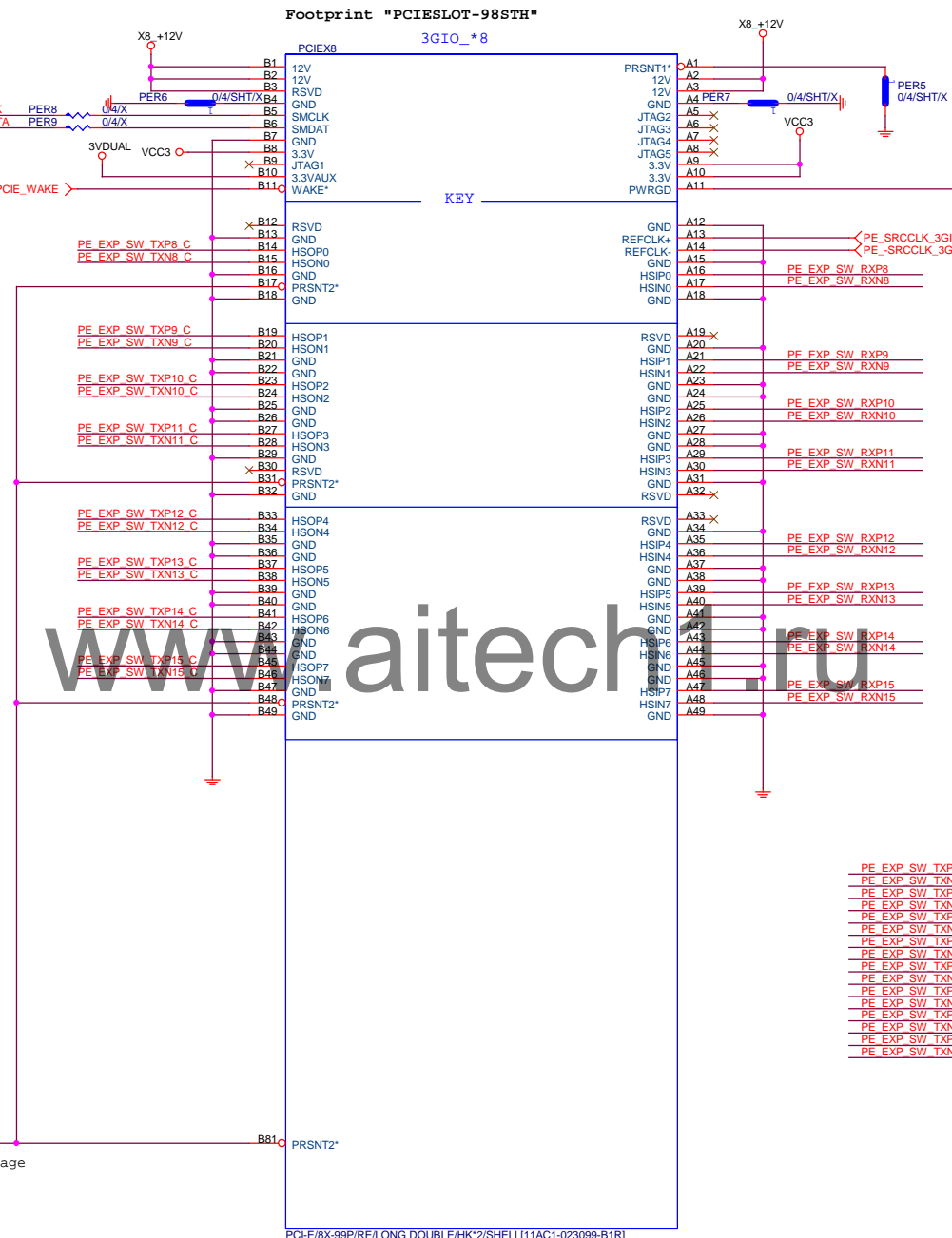
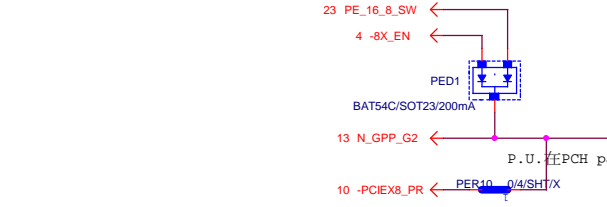
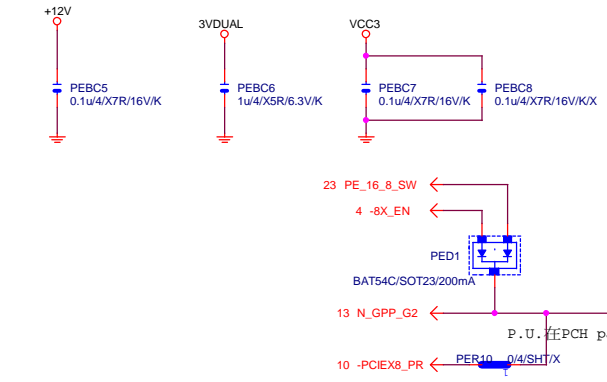
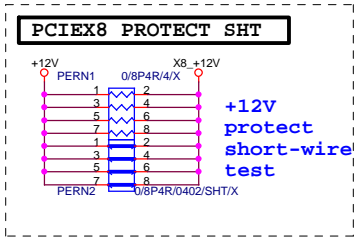
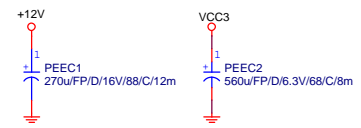


PCIE1\_3

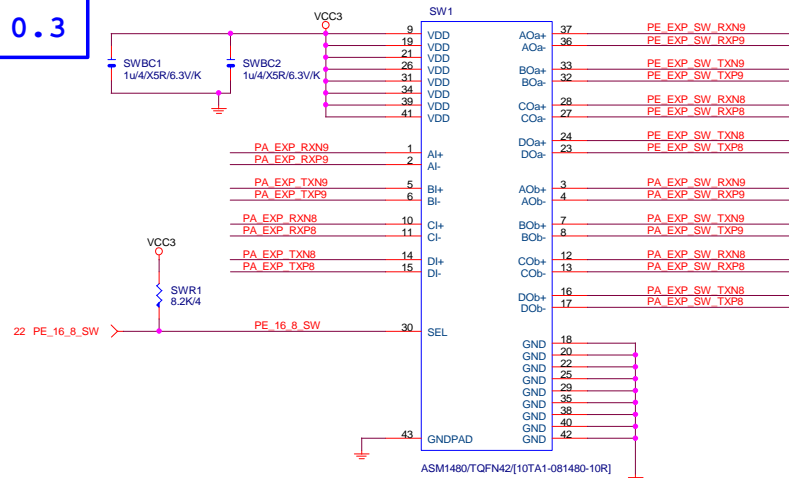
PCIE1\_4 3GIO\_X1



ANS 4060521		<b>Gigabyte Technology</b>	
Title		PCIE X1 1,2	
Size	Document Number	Rev	
Custom		1.0	
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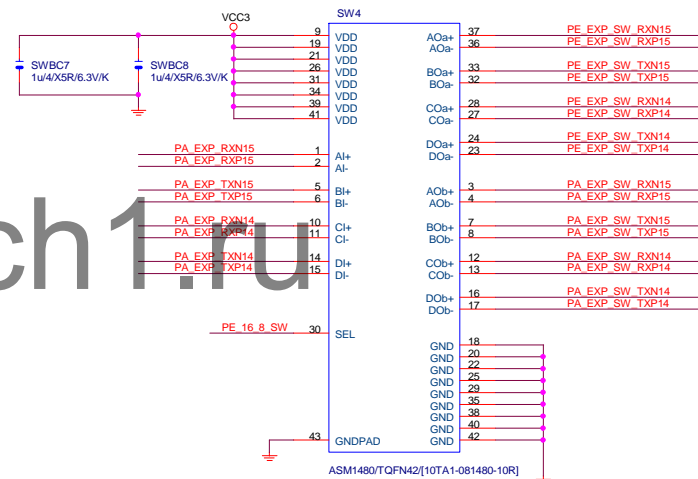


PE_EXP_SW_TXP8	PEC7	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXP8_C
PE_EXP_SW_TXN8	PEC8	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXN8_C
PE_EXP_SW_TXP9	PEC9	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXP9_C
PE_EXP_SW_TXN9	PEC10	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXN9_C
PE_EXP_SW_TXP10	PEC11	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXP10_C
PE_EXP_SW_TXN10	PEC12	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXN10_C
PE_EXP_SW_TXP11	PEC13	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXP11_C
PE_EXP_SW_TXN11	PEC14	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXN11_C
PE_EXP_SW_TXP12	PEC15	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXP12_C
PE_EXP_SW_TXN12	PEC16	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXN12_C
PE_EXP_SW_TXP13	PEC17	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXP13_C
PE_EXP_SW_TXN13	PEC18	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXN13_C
PE_EXP_SW_TXP14	PEC19	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXP14_C
PE_EXP_SW_TXN14	PEC20	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXN14_C
PE_EXP_SW_TXP15	PEC21	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXP15_C
PE_EXP_SW_TXN15	PEC22	0.22u4/X5R/6.3V/K	PE_EXP_SW_TXN15_C



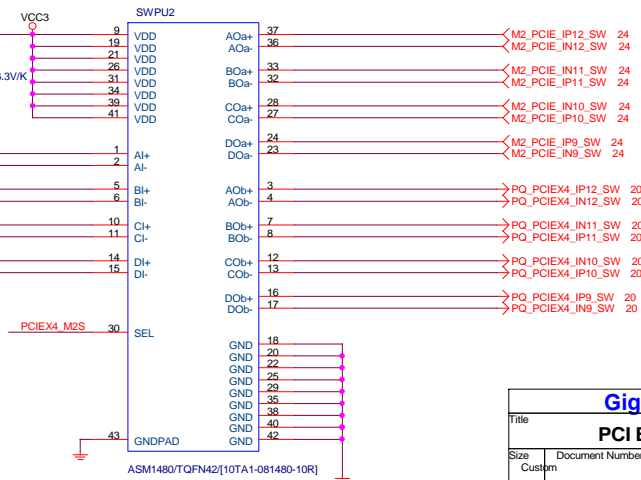
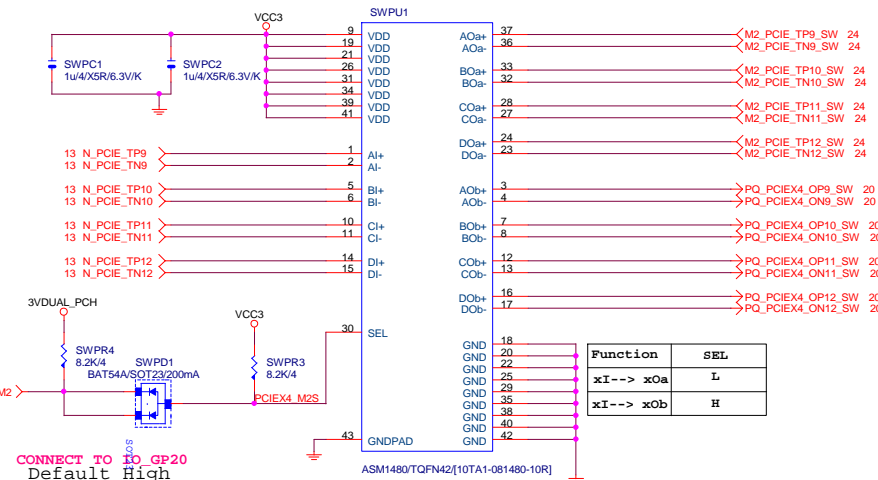
Function	SEL
xI--> xOa	L
xI--> xOb	H

PA\_EXP\_SW\_RXP18\_15] >> PA\_EXP\_SW\_RXP18\_15] 19  
 PA\_EXP\_SW\_RXN18\_15] >> PA\_EXP\_SW\_RXN18\_15] 19  
 PA\_EXP\_SW\_TXP18\_15] >> PA\_EXP\_SW\_TXP18\_15] 19  
 PA\_EXP\_SW\_TXN18\_15] >> PA\_EXP\_SW\_TXN18\_15] 19  
 PE\_EXP\_SW\_RXP18\_15] >> PE\_EXP\_SW\_RXP18\_15] 22  
 PE\_EXP\_SW\_RXN18\_15] >> PE\_EXP\_SW\_RXN18\_15] 22  
 PE\_EXP\_SW\_TXP18\_15] >> PE\_EXP\_SW\_TXP18\_15] 22  
 PE\_EXP\_SW\_TXN18\_15] >> PE\_EXP\_SW\_TXN18\_15] 22  
 PA\_EXP\_RXP10\_15] >> PA\_EXP\_RXP10\_15] 4,19  
 PA\_EXP\_TXN10\_15] >> PA\_EXP\_TXN10\_15] 4,19  
 PA\_EXP\_TXP10\_15] >> PA\_EXP\_TXP10\_15] 4,19  
 PA\_EXP\_TXN10\_15] >> PA\_EXP\_TXN10\_15] 4,19



M2\_PCIE\_TP9\_SW 24  
 M2\_PCIE\_TN9\_SW 24  
 M2\_PCIE\_TP10\_SW 24  
 M2\_PCIE\_TN10\_SW 24  
 M2\_PCIE\_TP11\_SW 24  
 M2\_PCIE\_TN11\_SW 24  
 M2\_PCIE\_TP12\_SW 24  
 M2\_PCIE\_TN12\_SW 24  
 M2\_PCIE\_IP9\_SW 24  
 M2\_PCIE\_IN9\_SW 24  
 PQ\_PCIE4\_OP9\_SW 20  
 PQ\_PCIE4\_ON9\_SW 20  
 PQ\_PCIE4\_OP10\_SW 20  
 PQ\_PCIE4\_ON10\_SW 20  
 PQ\_PCIE4\_OP11\_SW 20  
 PQ\_PCIE4\_ON11\_SW 20  
 PQ\_PCIE4\_OP12\_SW 20  
 PQ\_PCIE4\_ON12\_SW 20

PCIE4\_M2S



Gigabyte Technology

PCI EXPRESS X16 SWITCH

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1.0

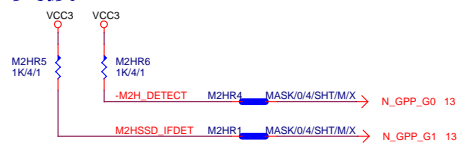
## M.2 Lane4 from PCH port18

## M.2 Lane3 from PCH port17

## M.2 Lane2 from PCH port16

## M.2 Lane2 from PCH port15

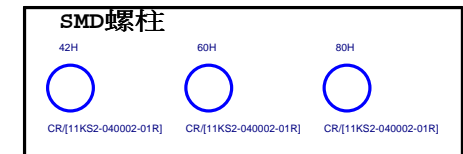
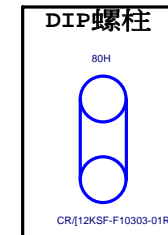
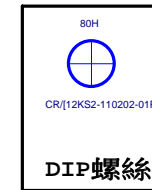
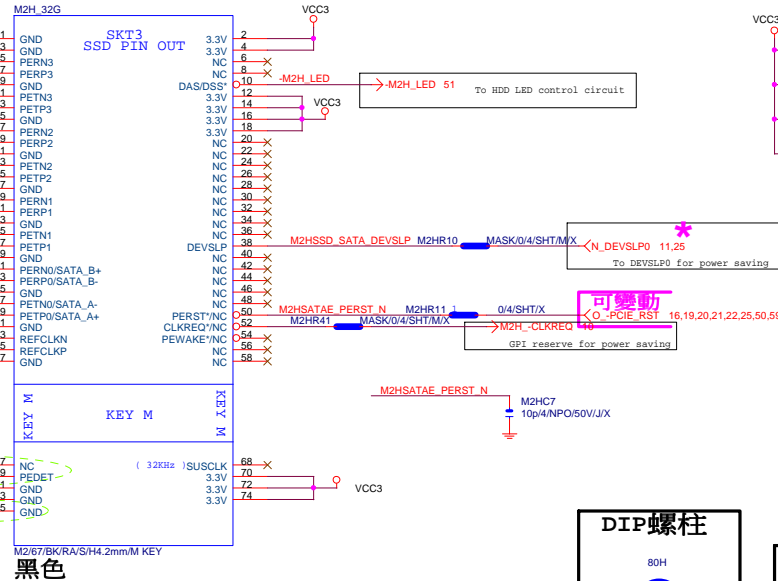
## 支援SATA and M.2 function



需與M2\_-CLKREQ對應

黑色

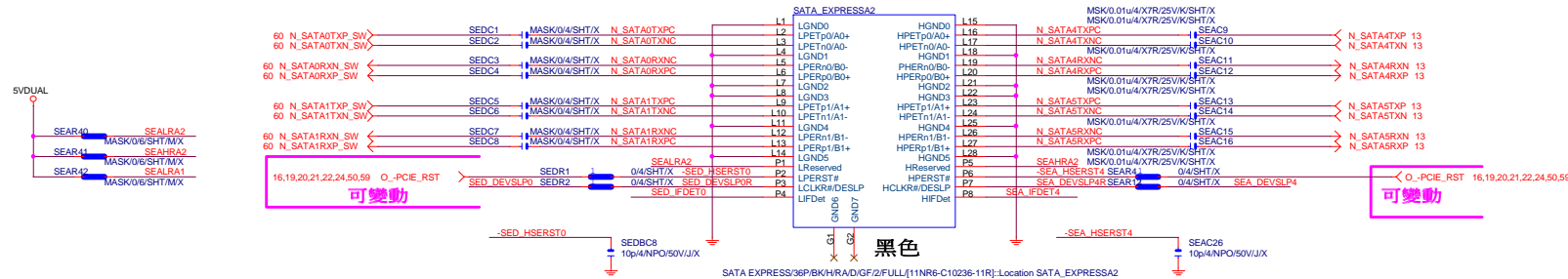
M.2 有插卡 /沒插卡 GPP_G0	M.2插何種卡? GPP_G1	SATA Express 插何種硬碟? GPP_E0/E2/F1	IO15 (S0)	IO16 (S1)	IO17	IO18	IO19 (S0)	IP20 (S1)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	PCIE x1	SATA
		SATA Express (Low)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	SATA Express	
	PCIE Mode (Hi)	SATA (Hi)		PCIE x4 (For M.2)			SATA	SATA
		SATA Express (Low)		PCIE x4 (For M.2)			SATA Express	
沒插卡 (Hi)	Don't Care (Hi)	SATA (Hi)		PCIE x4			SATA	SATA
		SATA Express (Low)		PCIE x4			SATA Express	



Rev 0.5

SATA EXPRESS 下層 To SATA3  
port0/1

SATA EXPRESS 上層 To SATA3  
port4/5



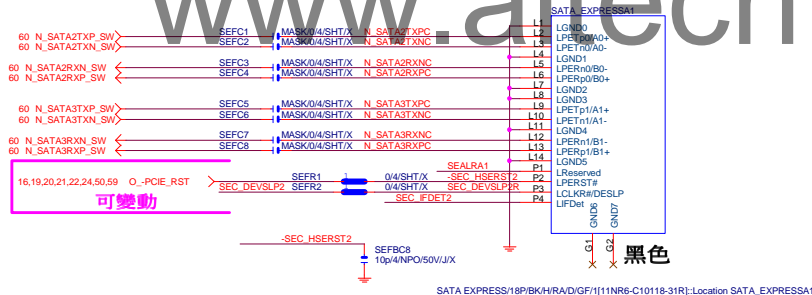
Rev 0.5

\* check  
文字面 01/23/45  
NET  
(45/23/01)

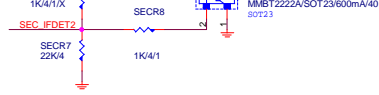
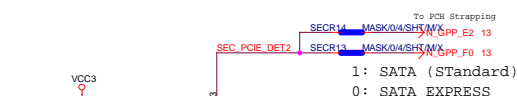
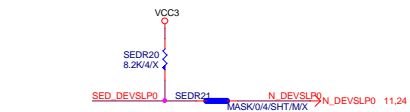
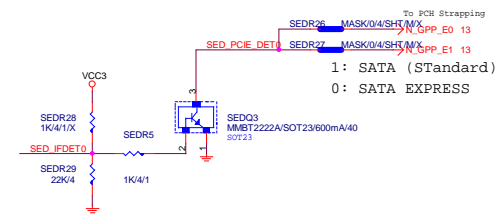
SATA EXPRESS料號  
雙層:TBD

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

SATA EXPRESS 下層 To SATA3  
port2/3

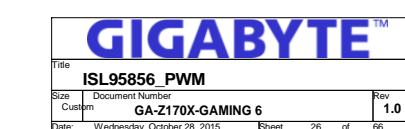
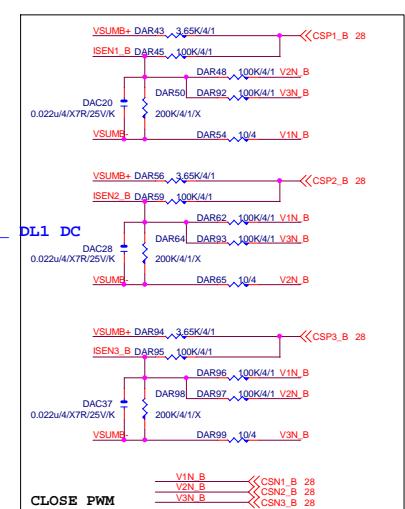


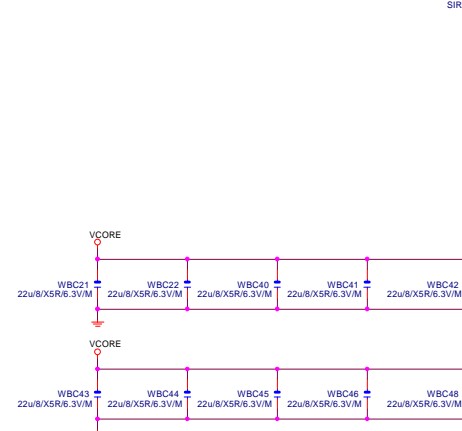
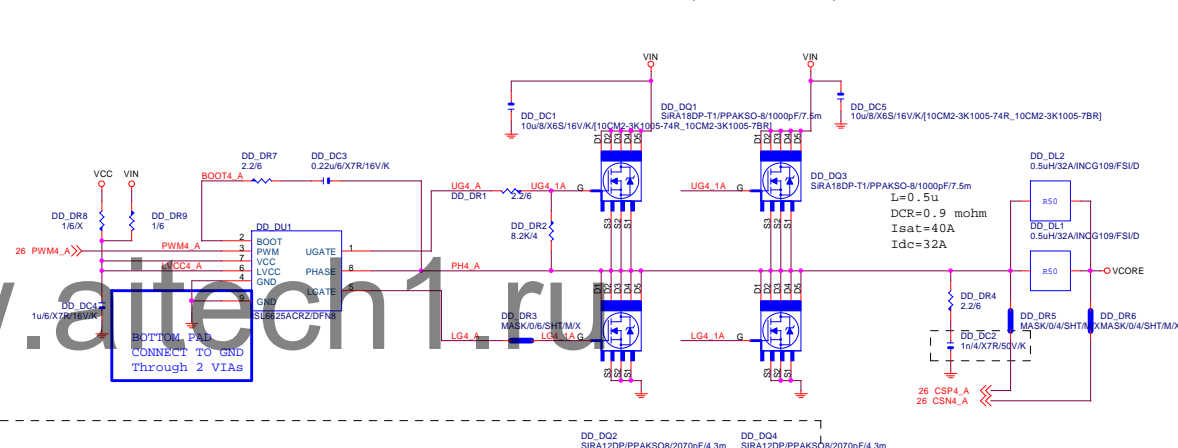
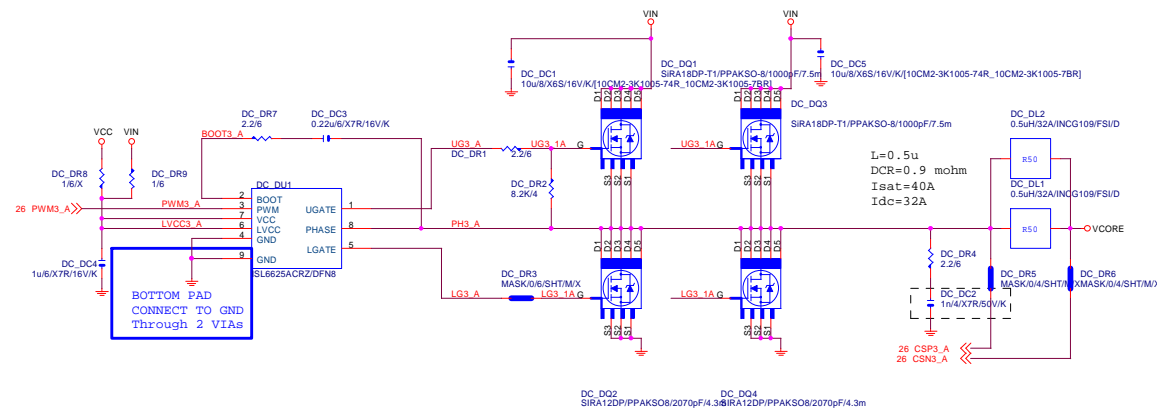
SATA 5 (文字面寫SATA 1)  
SATA 4 (文字面寫SATA 0)  
SATA 3  
SATA 2  
SATA 1 (文字面寫SATA 5)  
SATA 0 (文字面寫SATA 4)



Gigabyte Technology

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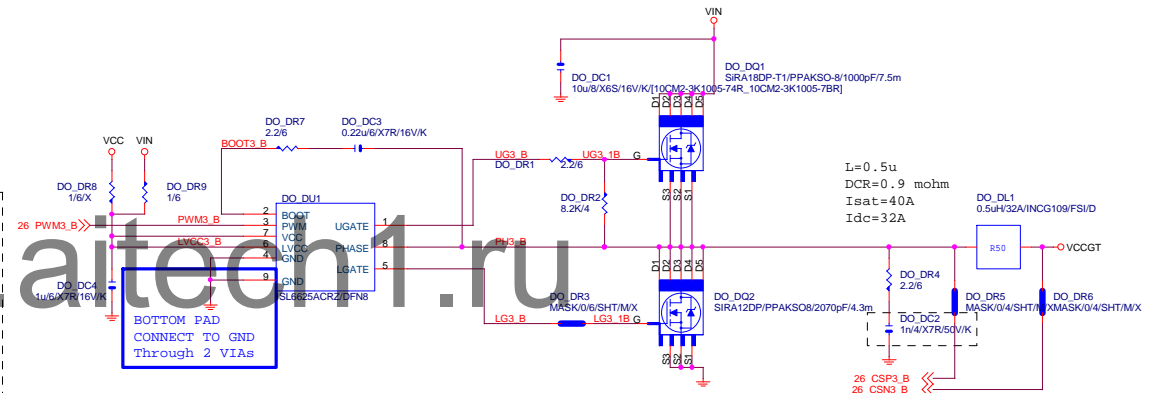
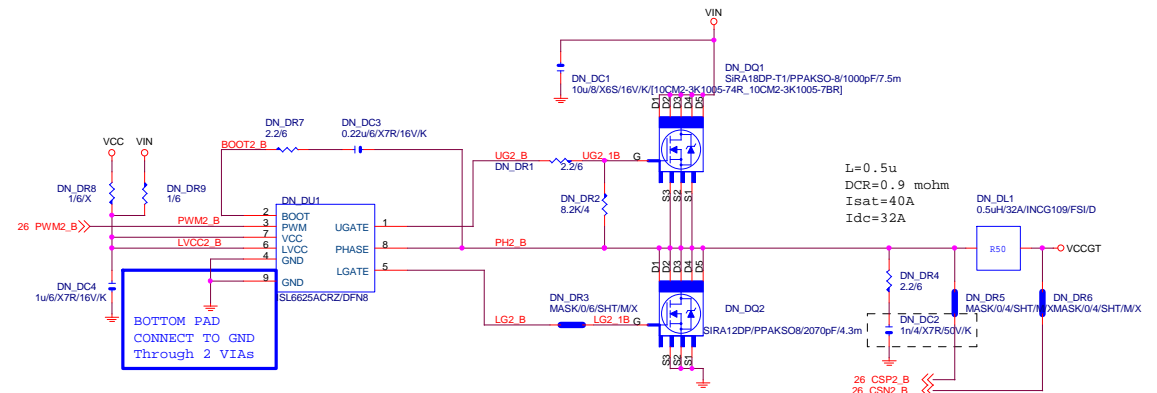
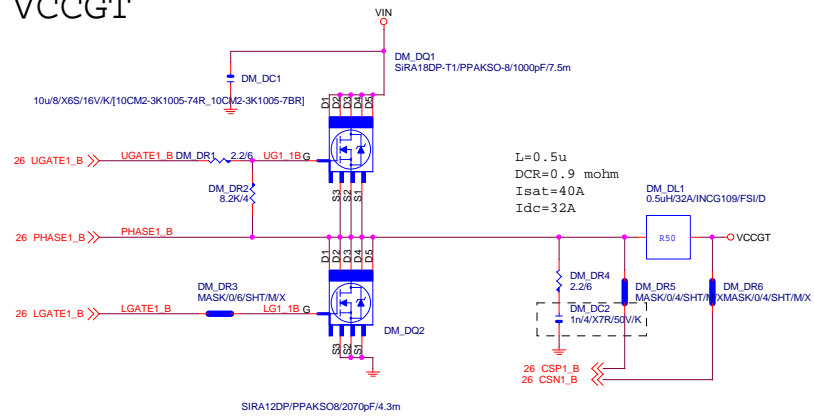
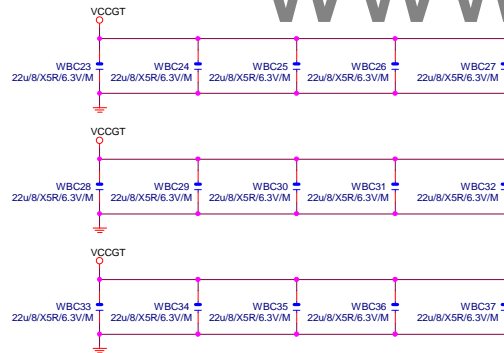
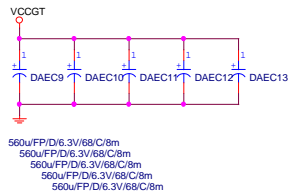




# GIGABYTE™



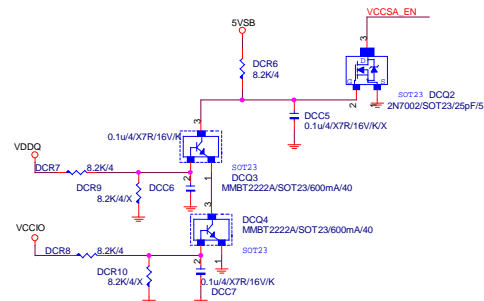
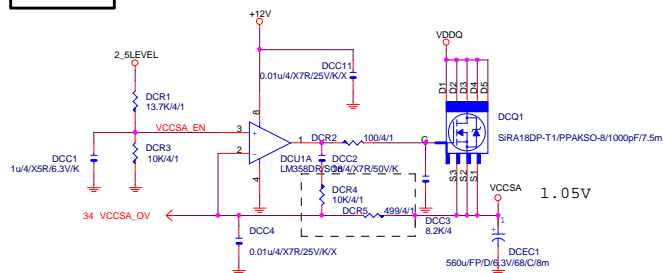
## VCCGT

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

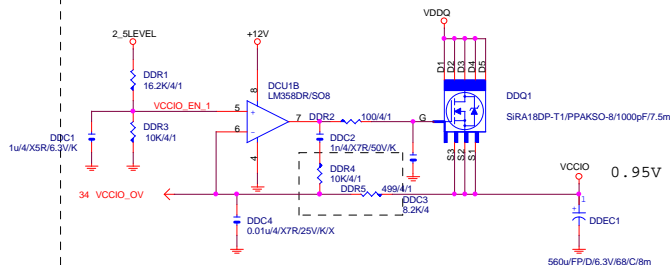
GIGABYTE™			
Title			
ISL95856 MOS			
Size	Document Number	Rev	
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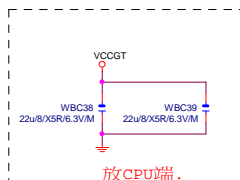
# VCCSA



# VCCIO

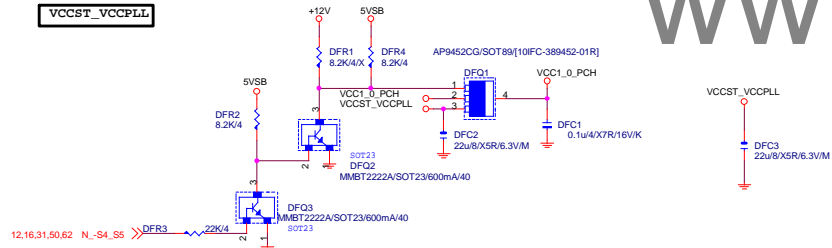


VCCIO\_EN 1 DDR10 MASK0/4/SHT4/MX  
Connect to IT8620

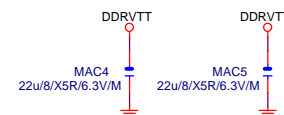
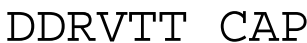
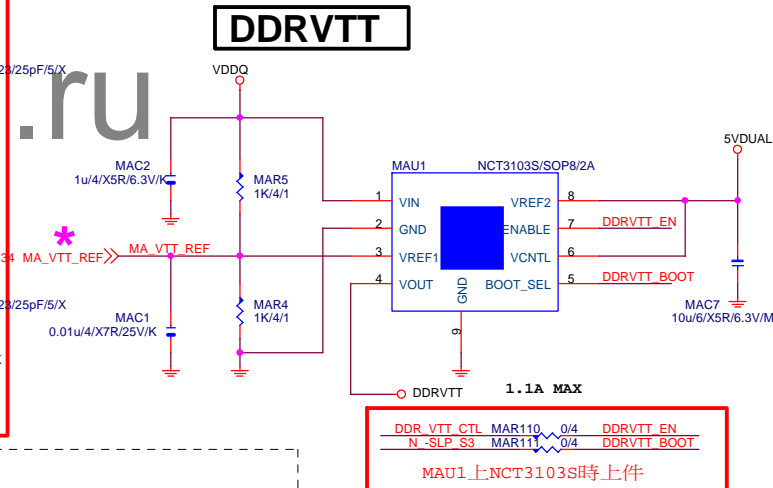
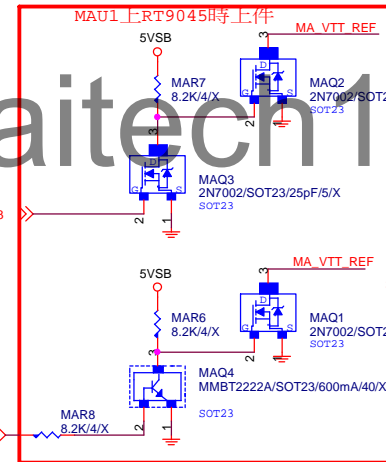


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# VCCST\_VCCPLL



## DDR4

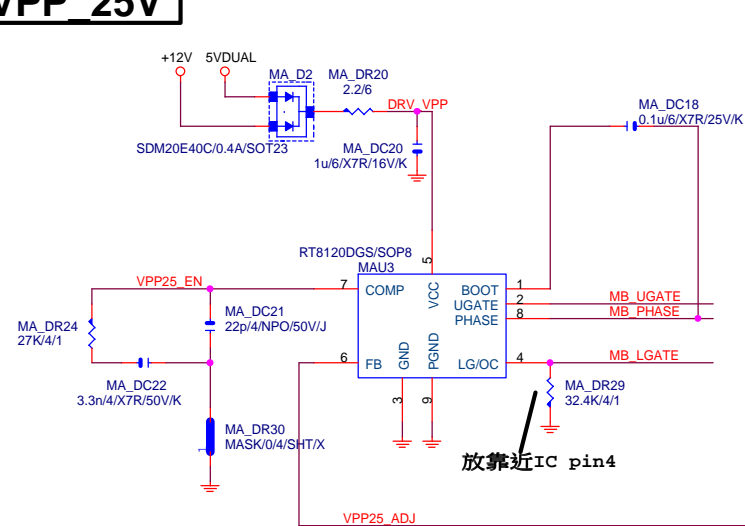


# GIGABYTE™

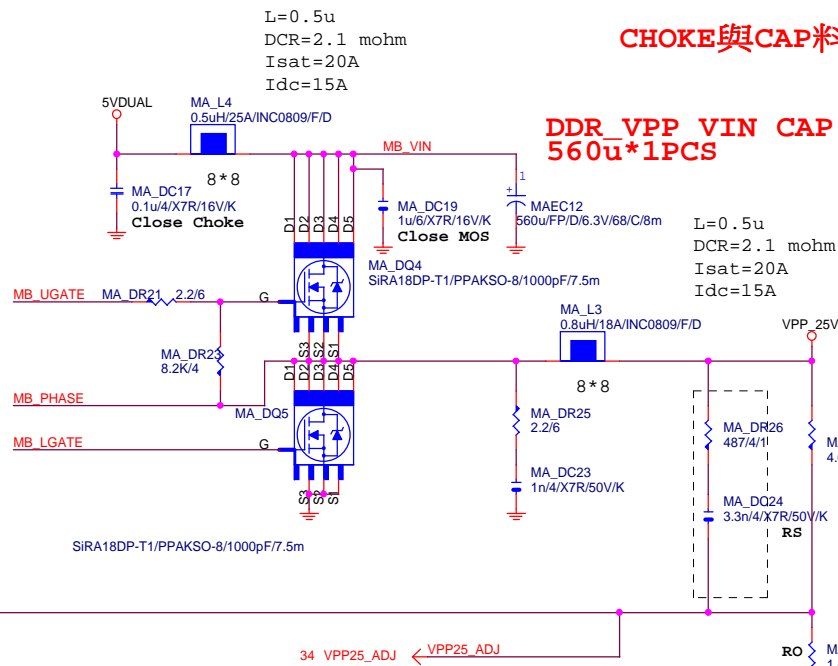
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<b>RT8120_DDR4 POWER</b>			
Size	Document Number	Rev	
Custom	<b>GA-Z170X-GAMING 6</b>	<b>1.0</b>	
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REV:0.7

VPP\_25V



放靠近IC pin4



CHOKE與CAP料號可變

DDR\_VPP VIN CAP  
560u\*1PCS

L=0.5u  
DCR=2.1 mohm  
Isat=20A  
Idc=15A

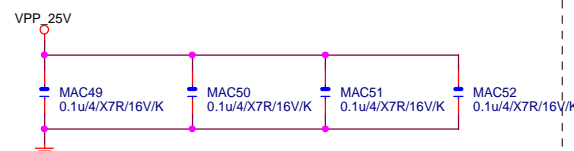
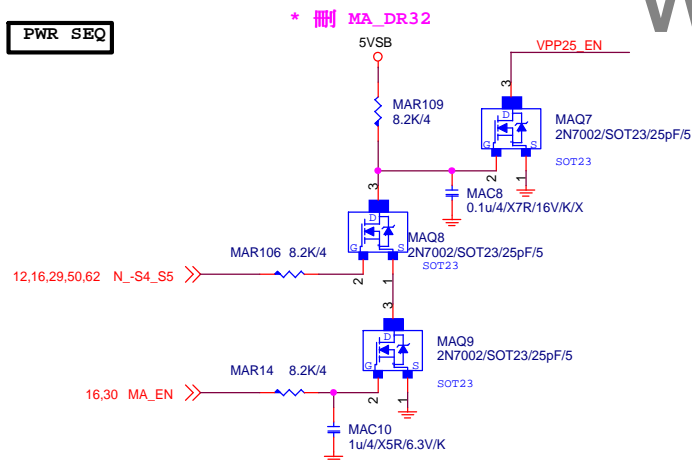
SUPPORT DDR4 2.5V

25A MAX

Remote sense請從最重的負載端點拉回

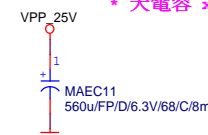
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PWR\_SEQ



VPP CAP 560u\*1PCS

\* 大電容 x1

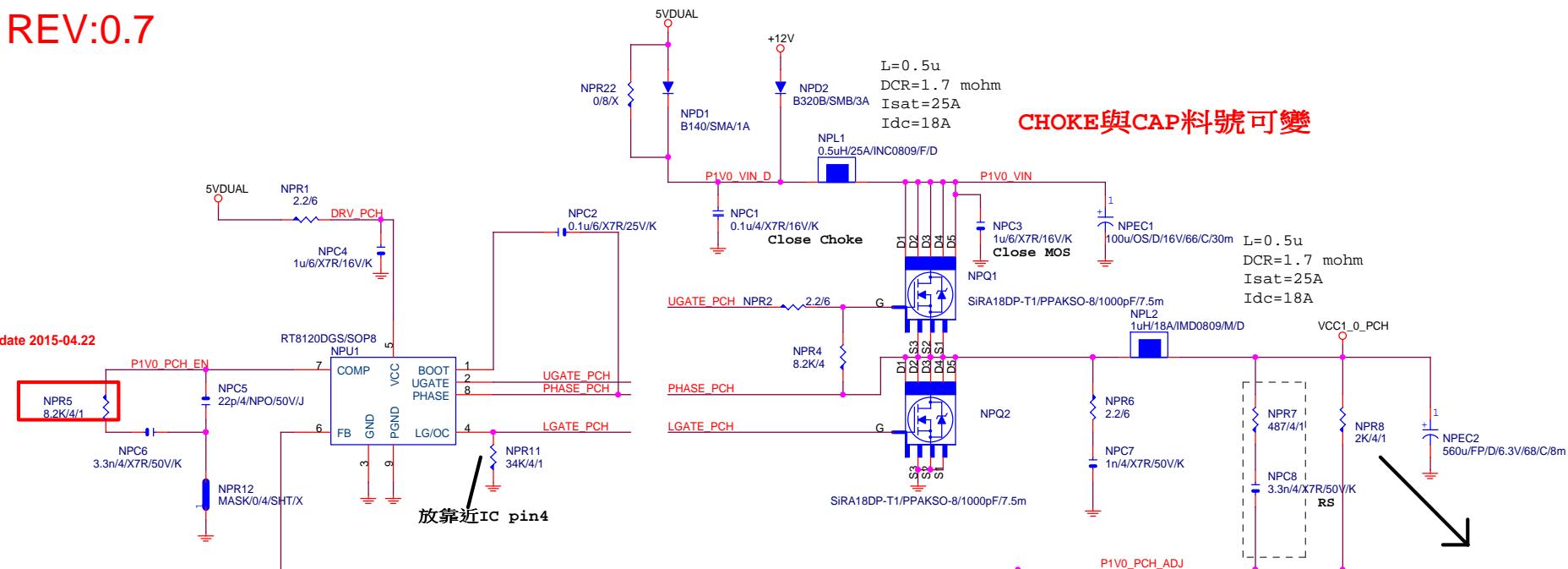


GIGABYTE™

Title		
RT8120_VPP25 POWER		
Size	Document Number	Rev
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REV:0.7

★Update 2015-04.22



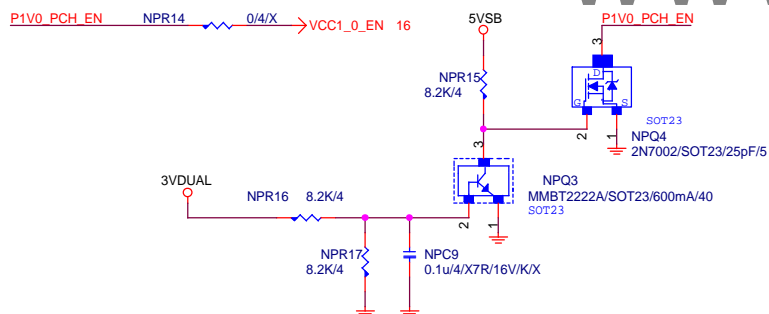
放靠近IC pin4

34 P1V0\_PCH\_ADJ

請放置CHOKES一出來的地方

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PWR\_SEQ

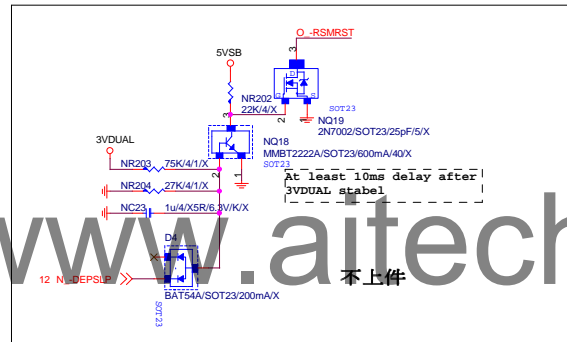
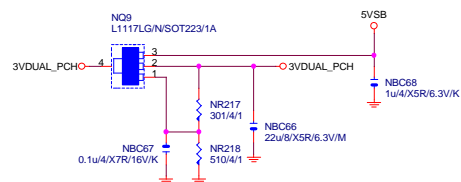
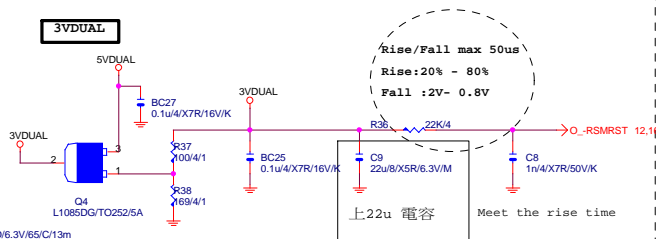
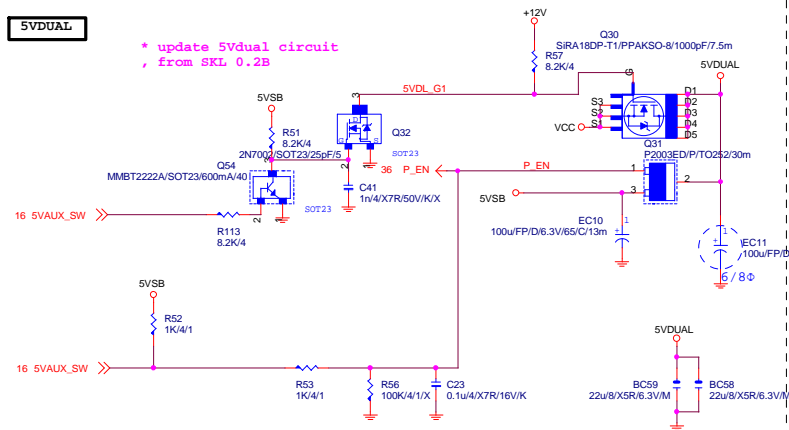


GIGABYTE™

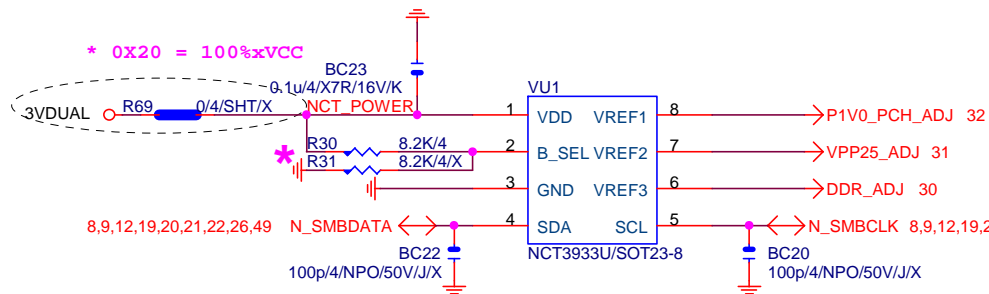
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Size	Document Number	Rev
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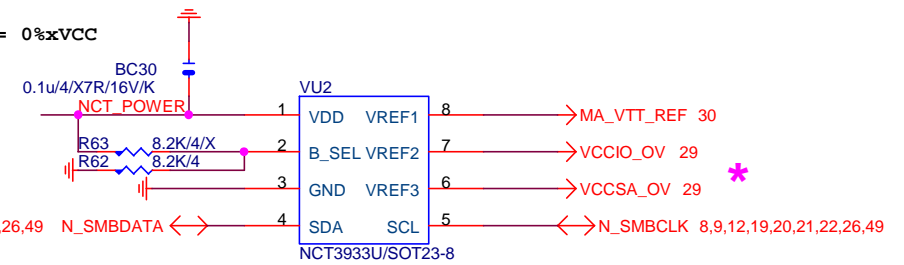
```
* update 5Vdual circuit
, from SKL 0.2B
```



# OVER VOLTAGE



0X2A = 0%xVCC



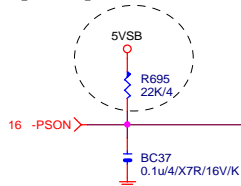
0X22 = 75%xVCC

\* 删除 OVU3

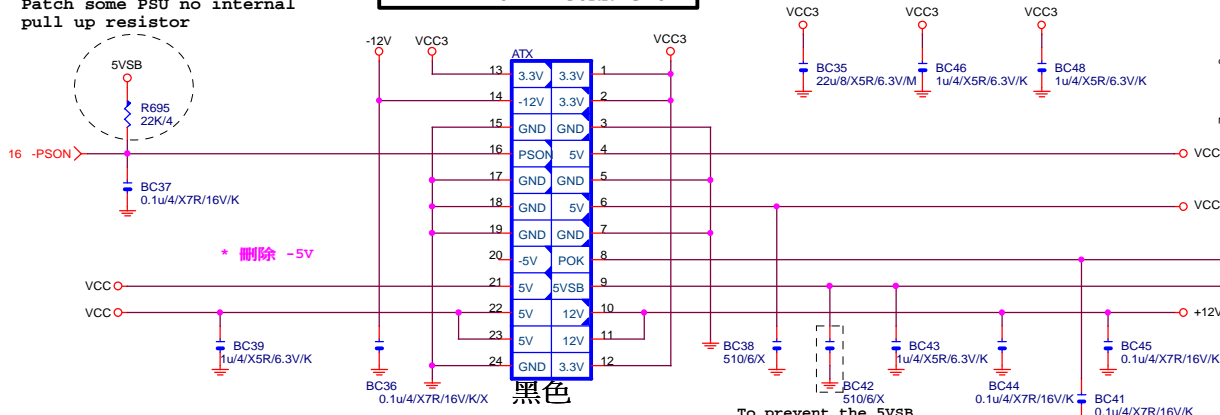
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCCL_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

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CPU CORE VR-2			
Size Custom	Document Number	GA-Z170X-GAMING 6	
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			Rev 1.0

Patch some PSU no internal pull up resistor



## ATXX24 POWER CONNECTOR

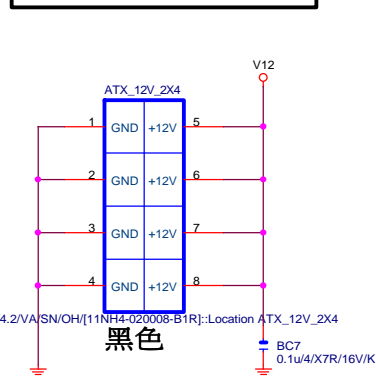


黑色

APW/2\*12/BK/VA/SN2SHK/PA66/[11NH4-020024-11R]

To prevent the 5VSB under loading when boot

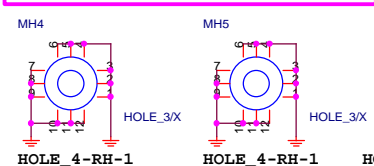
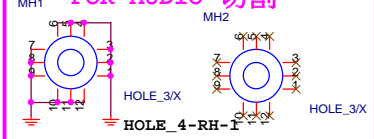
## ATXX4 POWER CONNECTOR



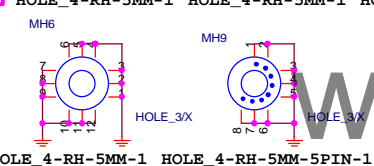
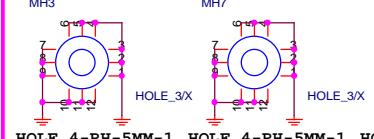
黑色

APW/2\*4/BK/QC/P/4.2/VA/SN/OH/[11NH4-020008-B1R]:Location ATX\_12V\_2X4

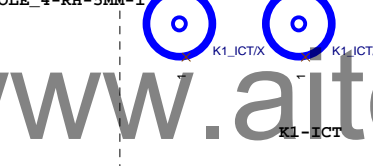
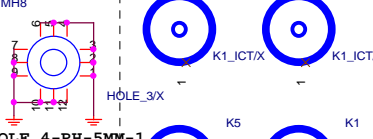
## FOR AUDIO 切割

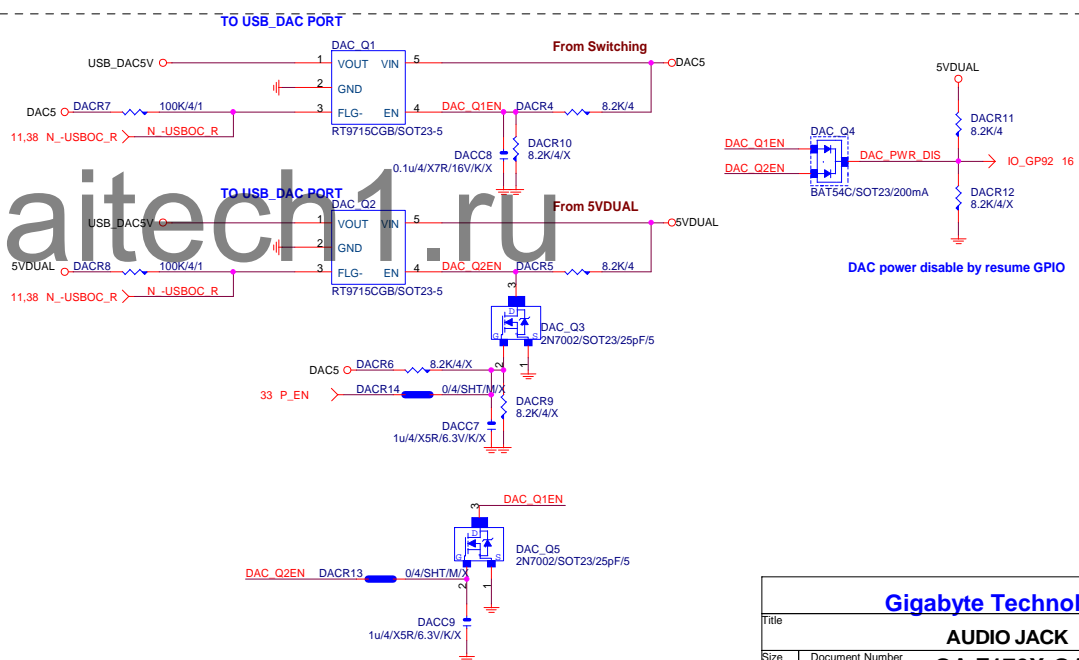
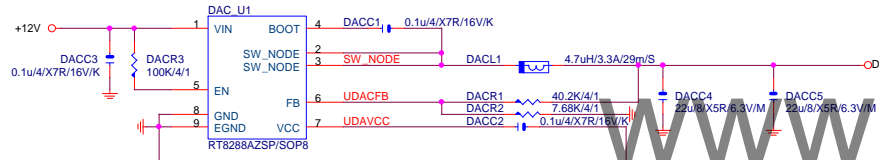
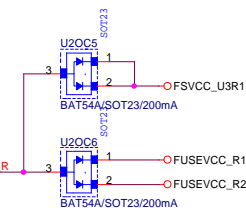
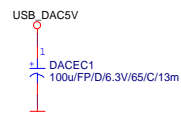
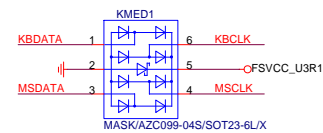


## FOR AUDIO 切割

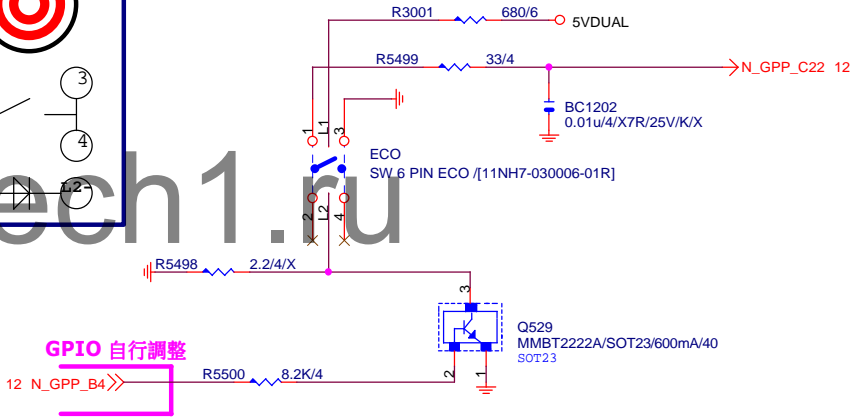
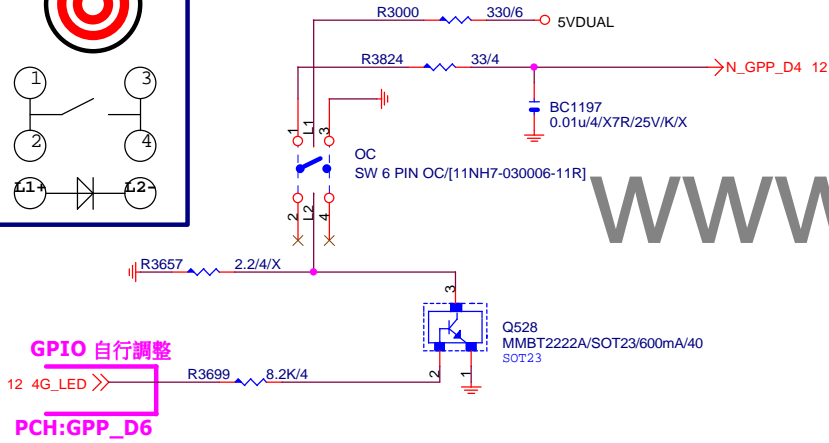
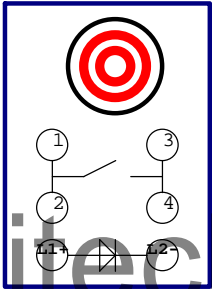
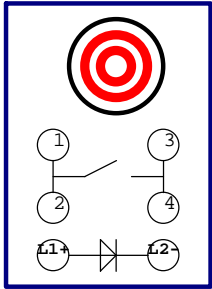


## FOR AUDIO 切割

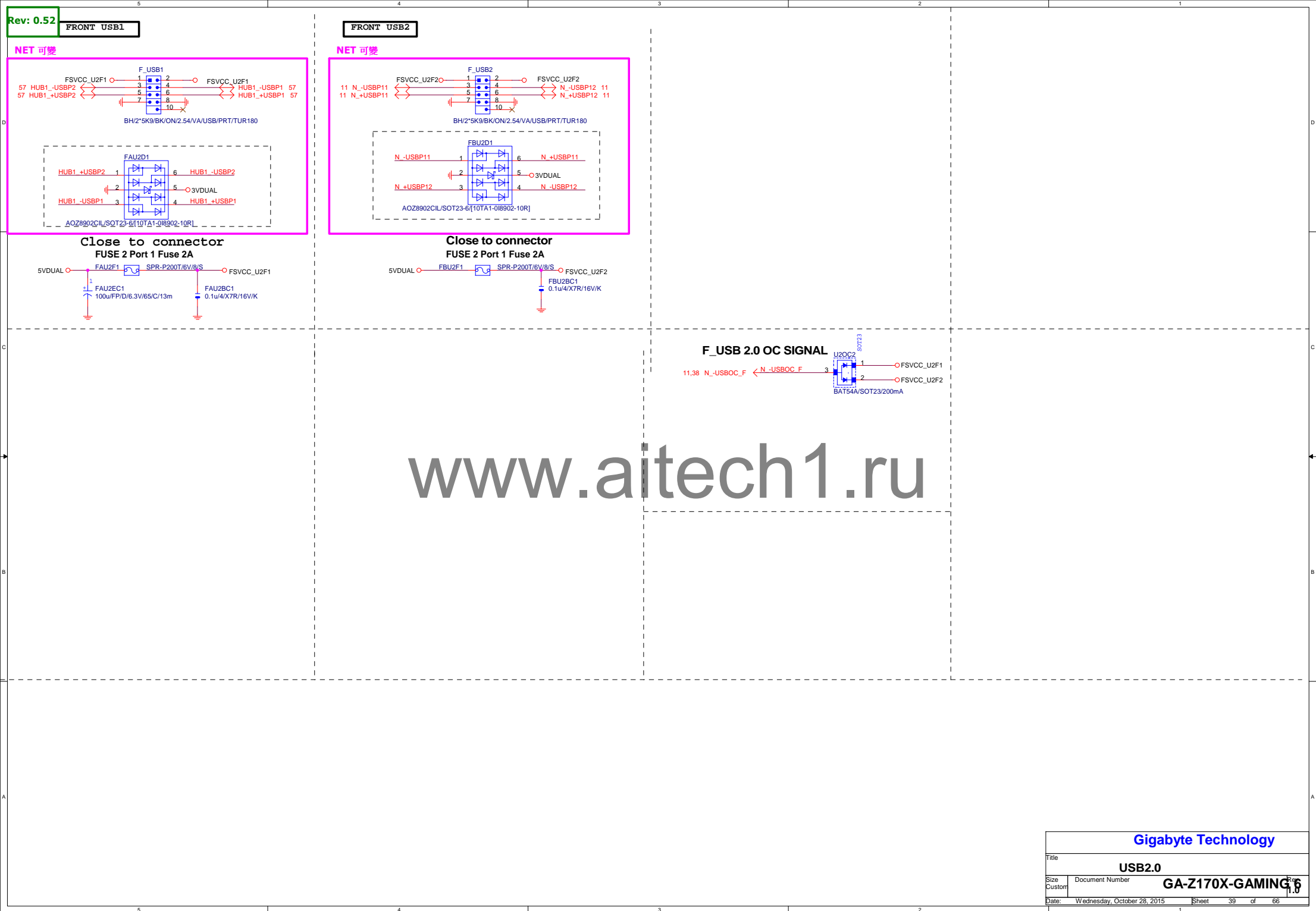






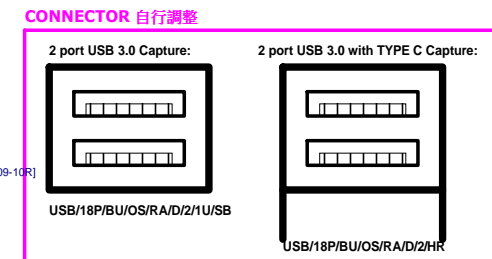
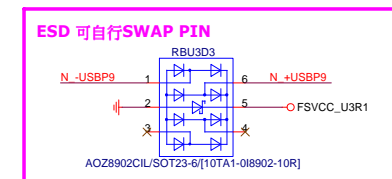






Gigabyte Technology

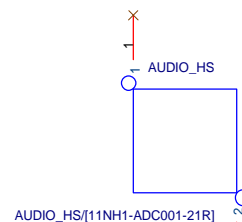
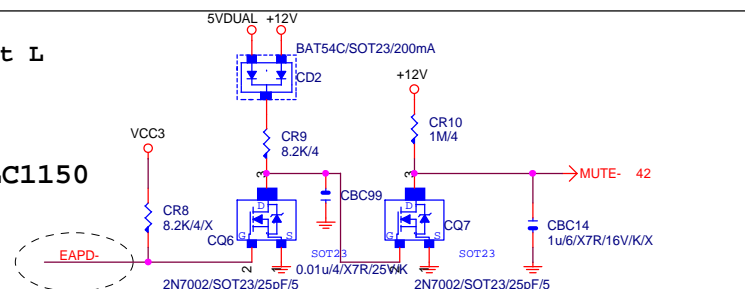
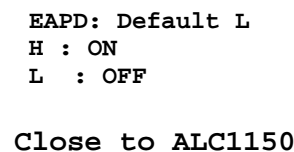
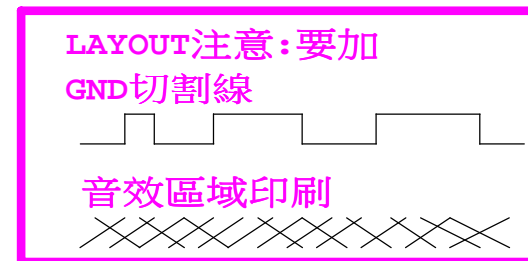
Title		USB2.0	
Size	Document Number	GA-Z170X-GAMING	
Custom		Rev 1.0	
Date:	Wednesday, October 28, 2015	Sheet	39 of 66



				<b>Gigabyte Technology</b>			
Title							
<b>KB_MS_USB3, R_USB30</b>							
Size Custom	Document Number			<b>GA-Z170X-GAMING</b>			
Date:	Wednesday, October 28, 2015			Sheet	40	of	66

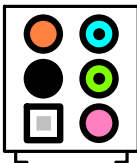
ALC1150 五孔+SPDIF  
AUDIO JACK

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



Rev 0.92

AZALIA JACK



LINE-OUT

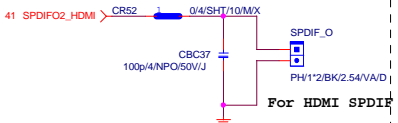
LINE-IN

MIC-IN

SURROUND

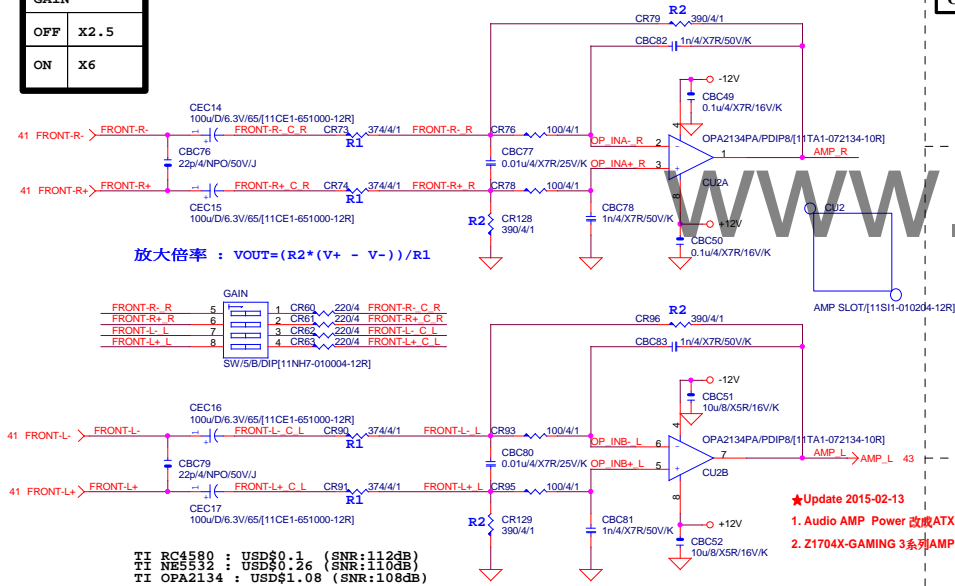
CEN/LFE

SPDIF OUT

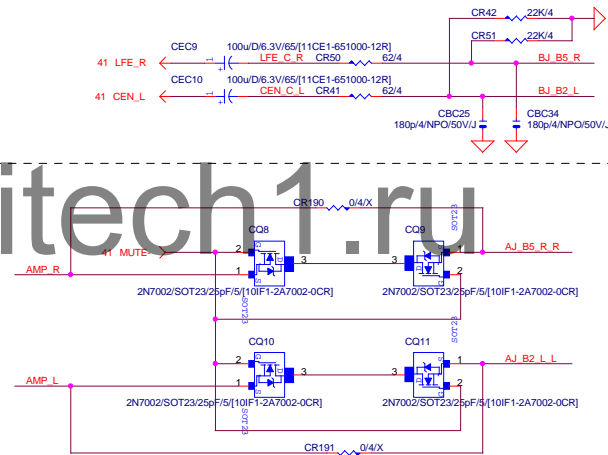
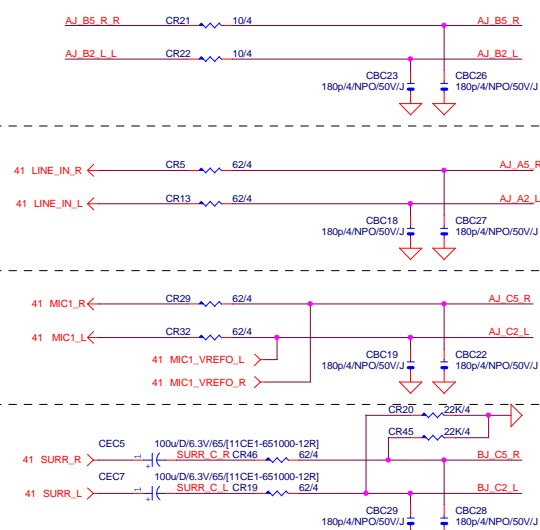
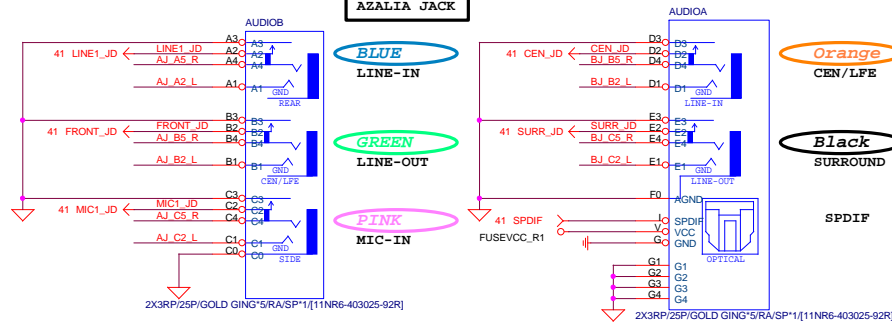


GAIN	
OFF	X2.5
ON	X6

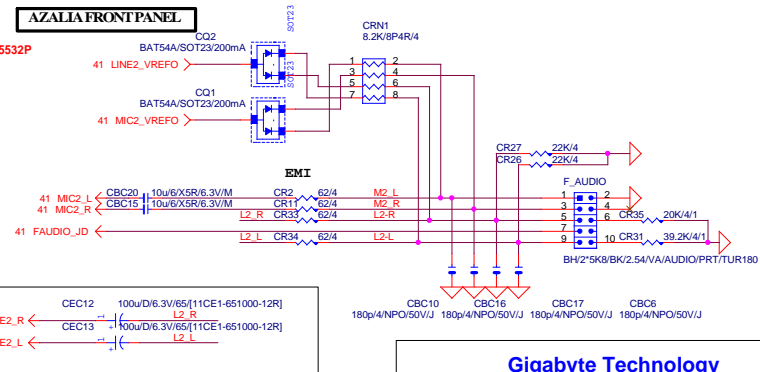
## Differential to Single-End AMPLIFIED



AZALIA JACK

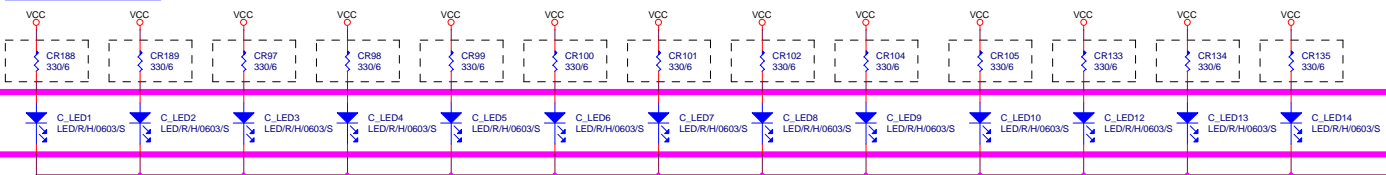


AZALIA FRONT PANEL



Gigabyte Technology

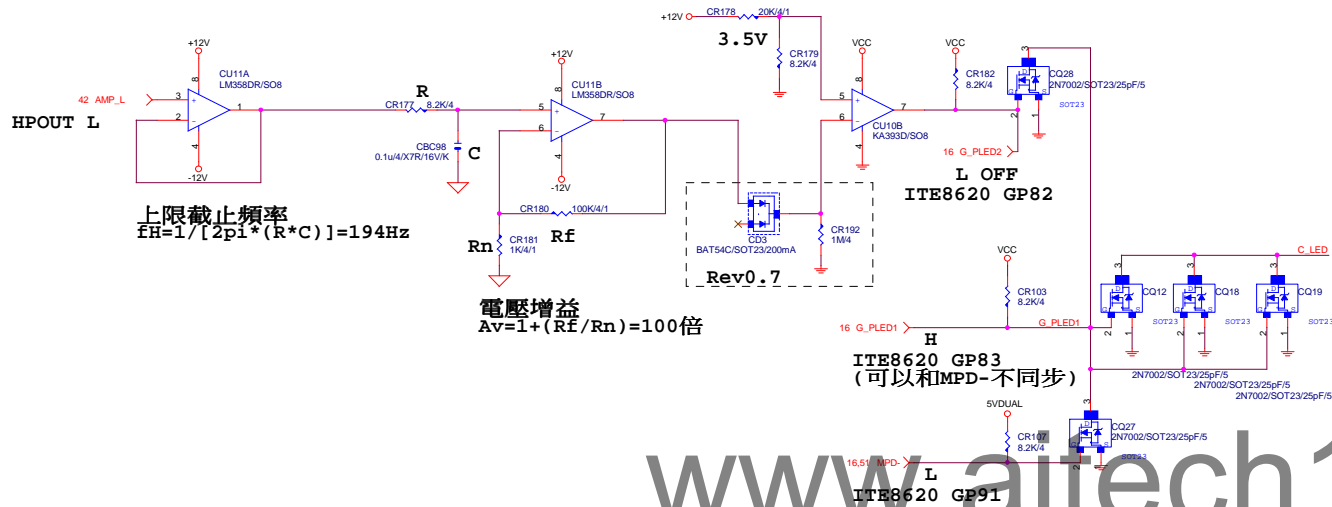
File		AUDIO JACK	
Size	Document Number	GA-Z170X-GAMING 6	
Custom		Rev 1.0	
Date:	Wednesday, October 28, 2015	Sheet	42 of 66



VALUE可變,LED顏色請自行修改

[UD/SOC系列--> 白光LED(黃色):LED/W/6/S]

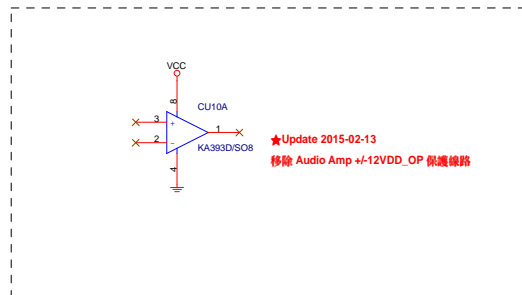
[GAMING系列--> 紅光LED(紅色):LED/R/H/0603/S]



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### AUDIO LED Control

	IO_GP82	IO_GP83	IO_GP91
Fill Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L



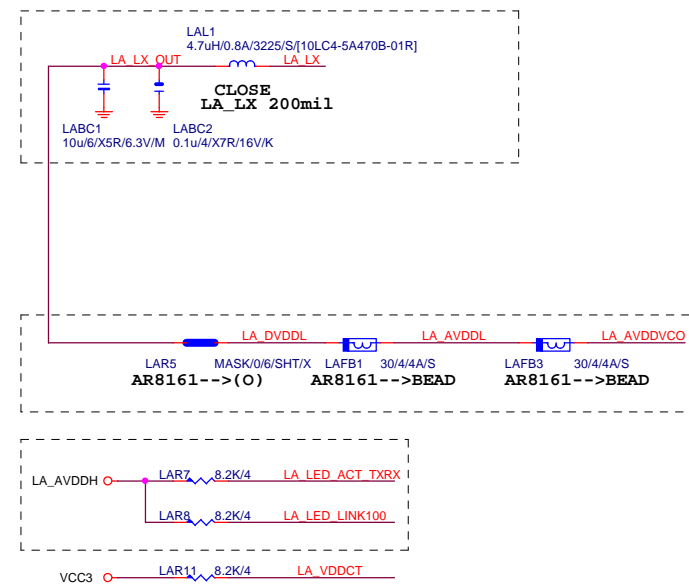
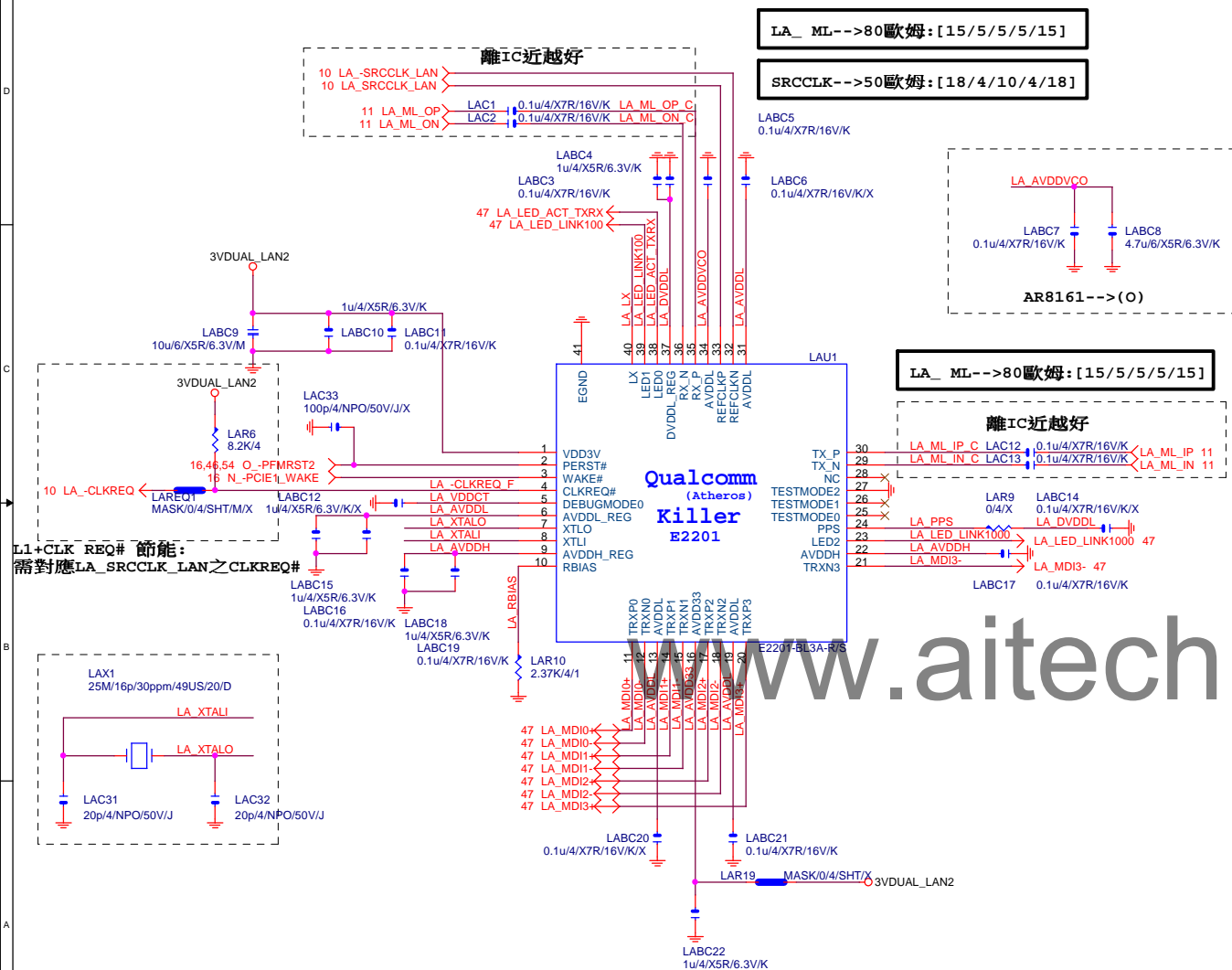
**GIGABYTE™**

Title	AUDIO LED	
Size	Document Number	Rev
Custom	GA-Z170X-GAMING 6	1.0
Date:	Wednesday, October 28, 2015	Sheet 43 of 66



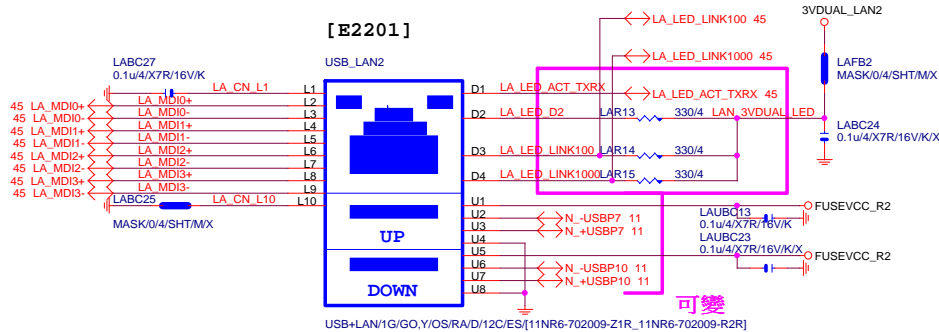
www.aitech1.ru

Gigabyte Technology		
Title		
Creative Sound3Di ZxR		
Size	Document Number	Rev
Custom	GA-Z170X-GAMING 6	1.0
Date:	Wednesday, October 28, 2015	Sheet 44 of 66





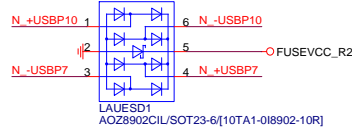
# [E2201]



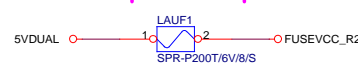
LA\_MDI-->100歐姆:[20/4/8/4/20]

RMA ESD PROTECT

可變

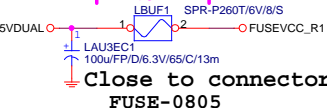


可變



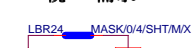
## USB POWER

可變

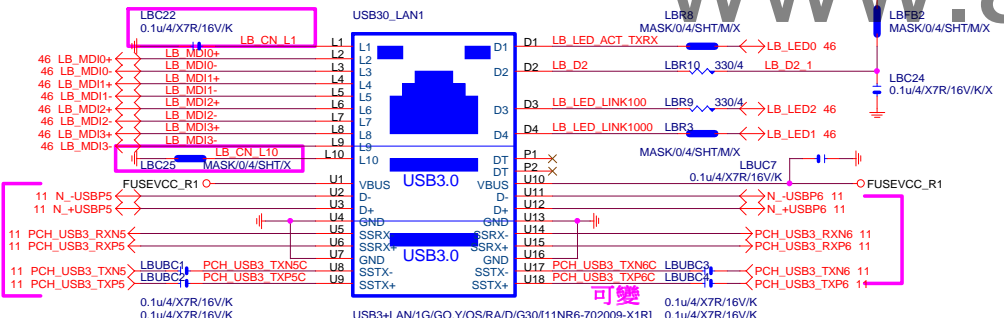


EMI SHORT PAD

PS:視EMI需求

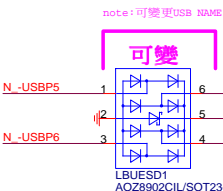


## [I219]

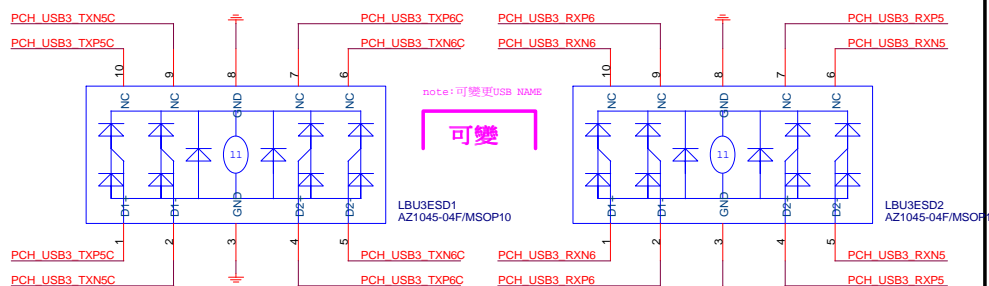


LA\_MDI-->100歐姆:[20/4/8/4/20]

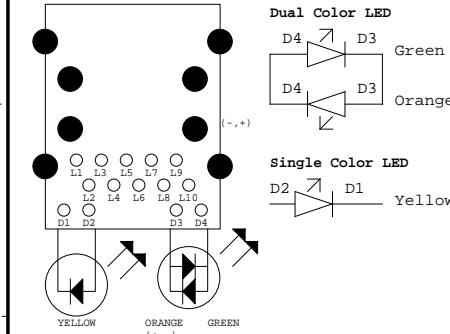
RMA ESD PROTECT



可變



## 架高LAN LAYOUT示意图

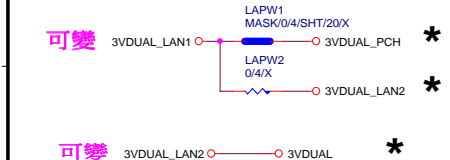


NOTE:

- 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

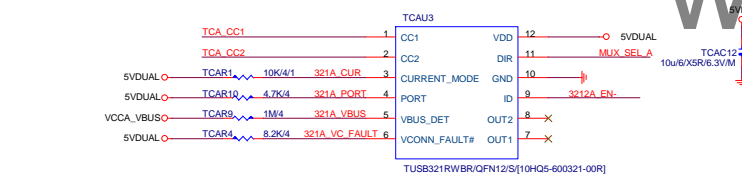
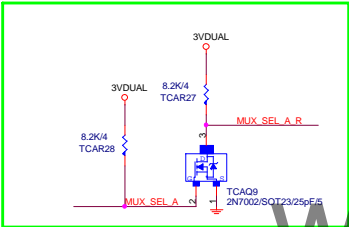
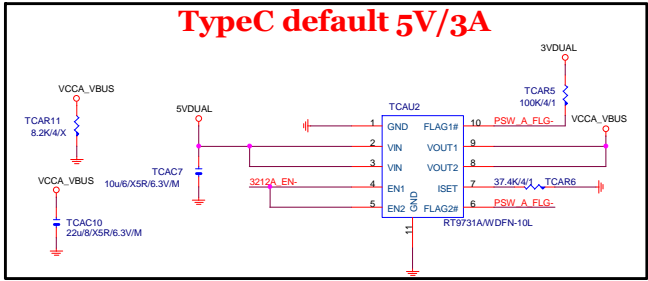
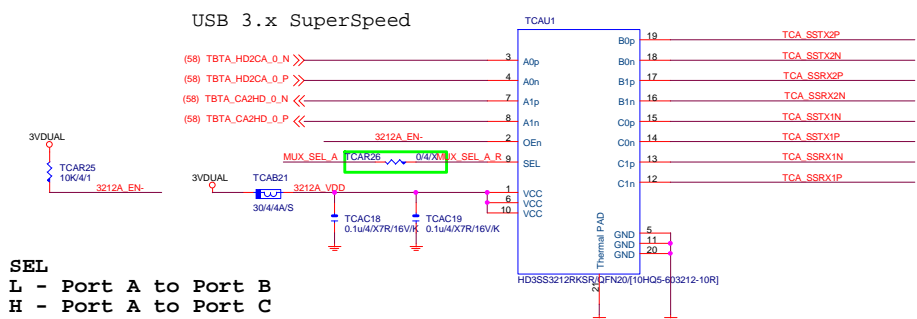
note: lan power連接及電流



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

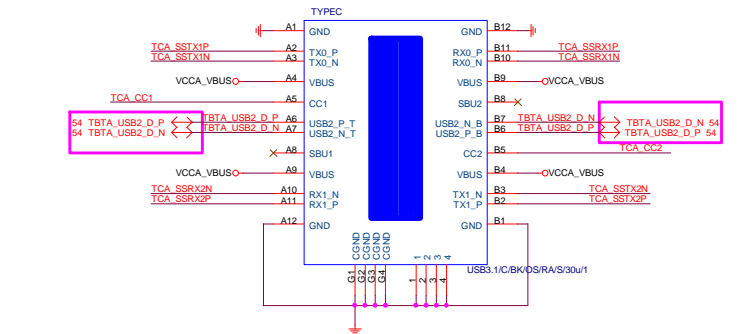
Gigabyte Technology			
LAN CONNECTOR-E2201+I219			
Size	Document Number	Rev	
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INTEL AR USB31 module SCH o.6 (2015/06/12)

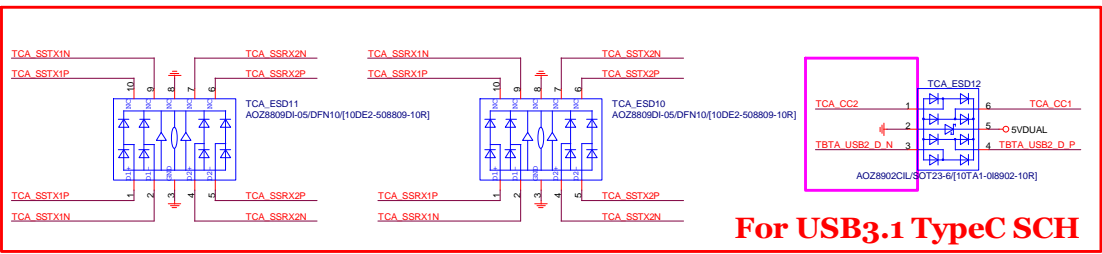


MUX\_SEL  
H - TypeC plug position 2  
L - TypeC plug position 1

CURRENT MODE  
L - Default current / Pull down to GND or NC  
M - Medium (1.5A) current / Pull up to VDD 500K  
H - High (3.0A) current / Pull up to VDD 10K  
PORT  
H - HOST  
L - Device  
NC - Dual Role



USB2.o can be used the same source

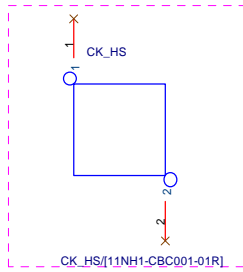


For USB3.1 TypeC SCH

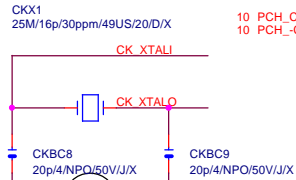
Color markers can be changed by model

GIGABYTE™			
Etron EJ179S&C			
Size C	Document Number	GA-Z170X-GAMING 6	Rev 1.0
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REV:1.07A



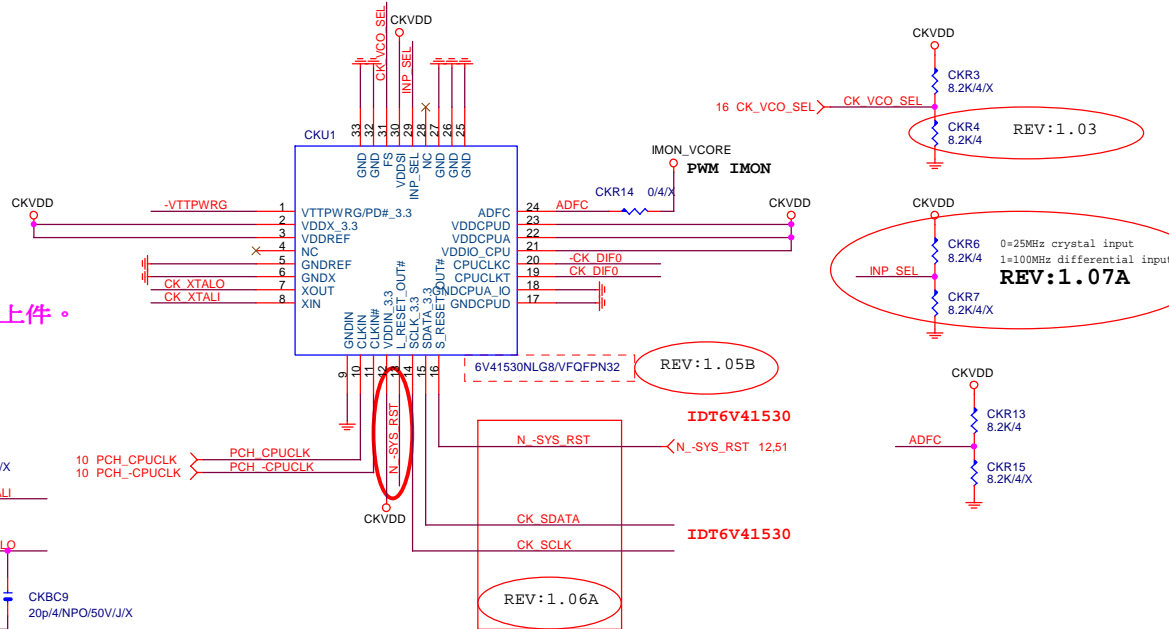
\*可變，依需求上件不上件。



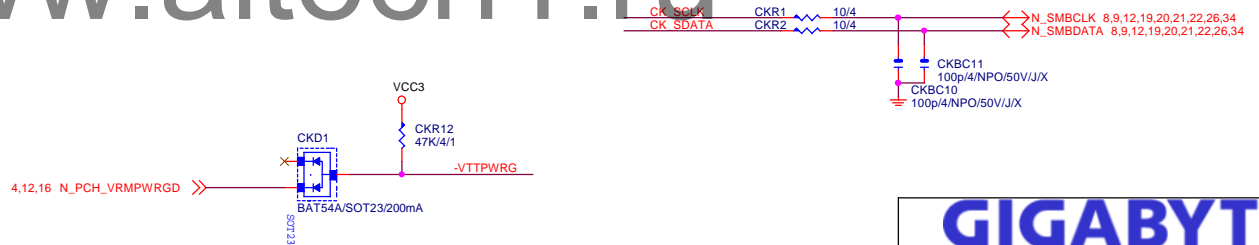
電容共用GND,降低JITTER

INP_SEL	Input
0	Crystal
1	CLK_INP/N

CK_VCO_SEL	VCO
0	400M
1	1200M

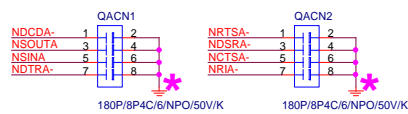
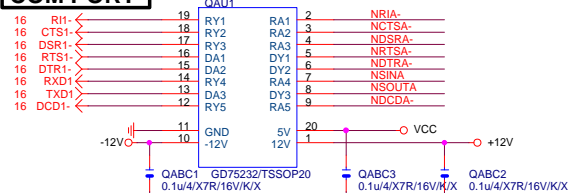


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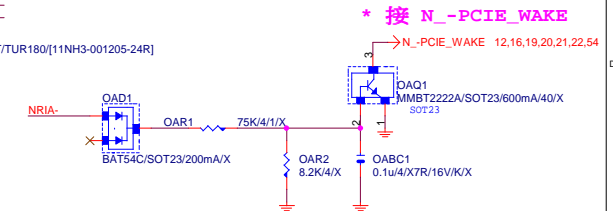
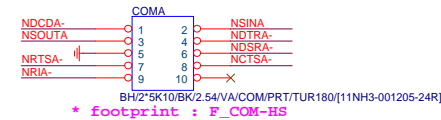


GIGABYTE™			
Title			
IDT6V41510_CLK BUFFER			
Size	Document Number	Rev	
Custom	GA-Z170X-GAMING 6	1.0	
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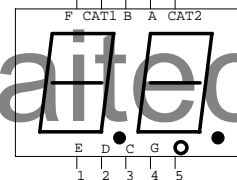
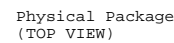
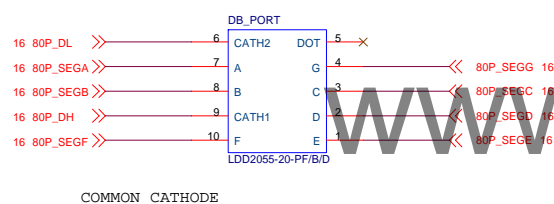
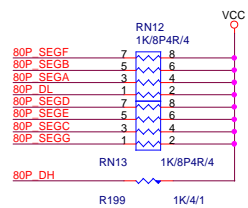
**COM PORT**



**COMA**

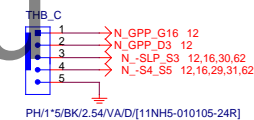


## 80 PORT

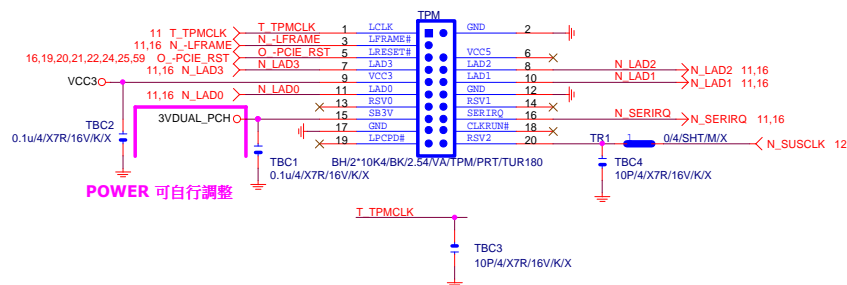


## Thunderbolt

★Update 12-19

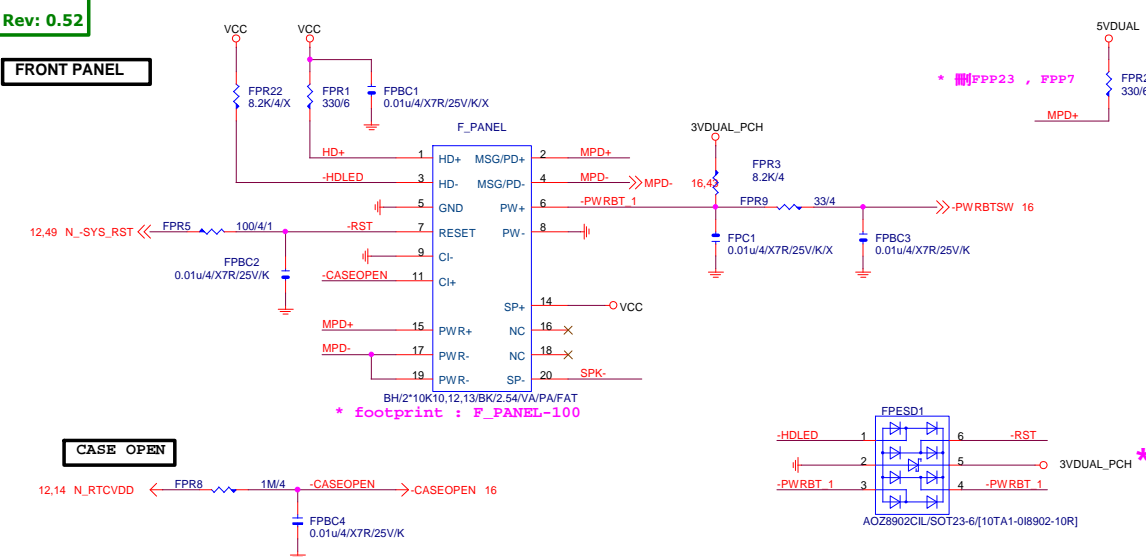


## TPM CONNECT

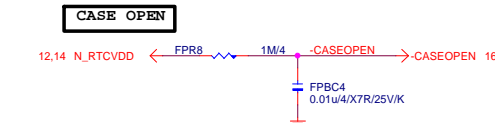




FRONT PANEL

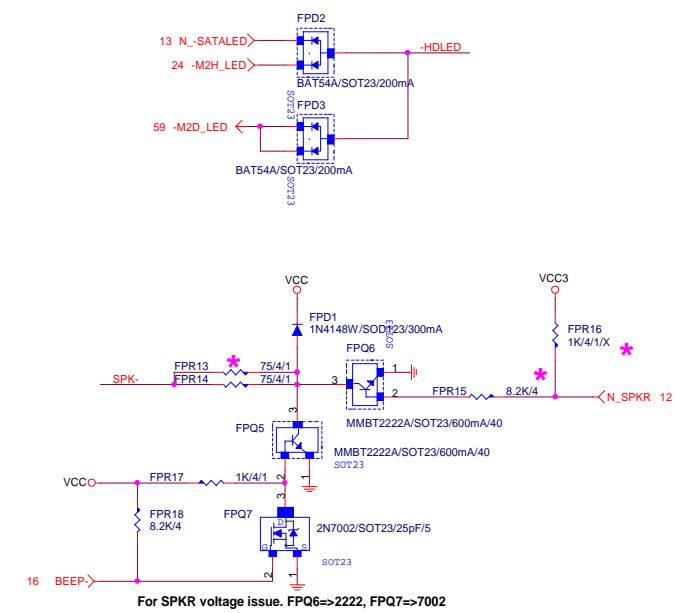


CASE OPEN



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

SPKR



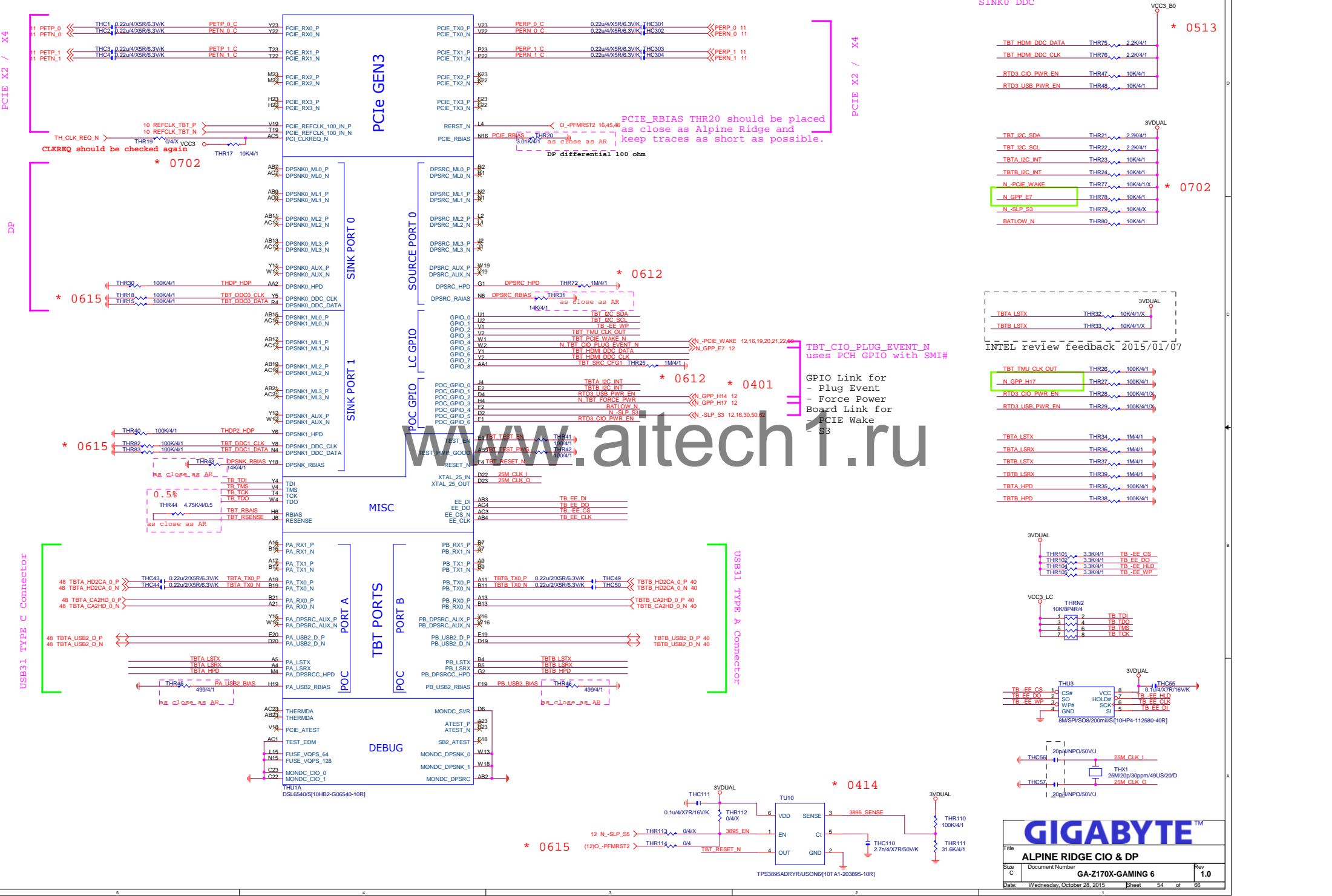
www.aitech1.ru

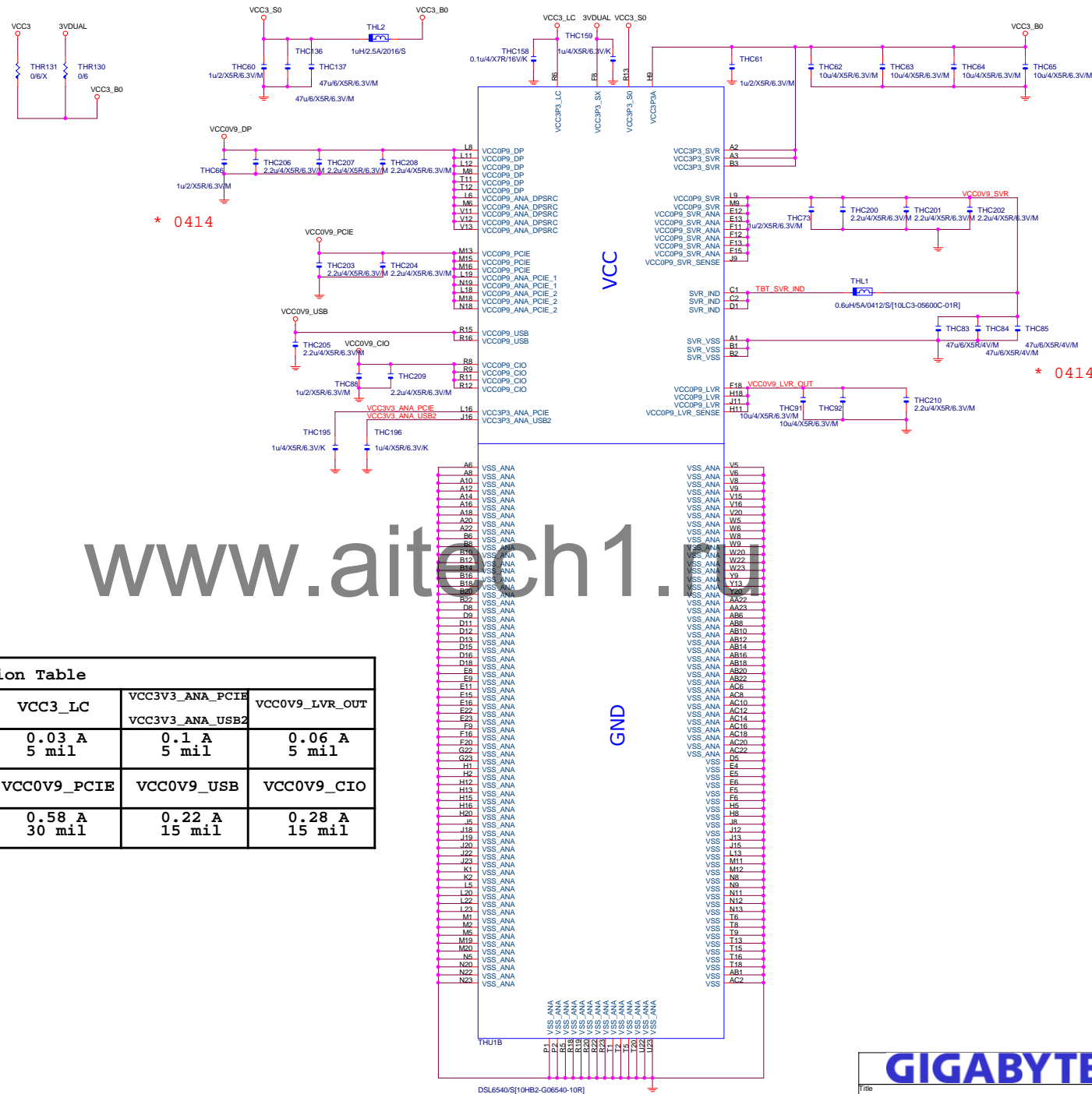
www.aitech1.ru

<b>GIGABYTE™</b>		
Title		
<b>ASM1061</b>		
Size	Document Number	Rev
Custom	<b>GA-Z170X-GAMING 6</b>	<b>1.0</b>
Date:	Wednesday, October 28, 2015	Sheet 52 of 66

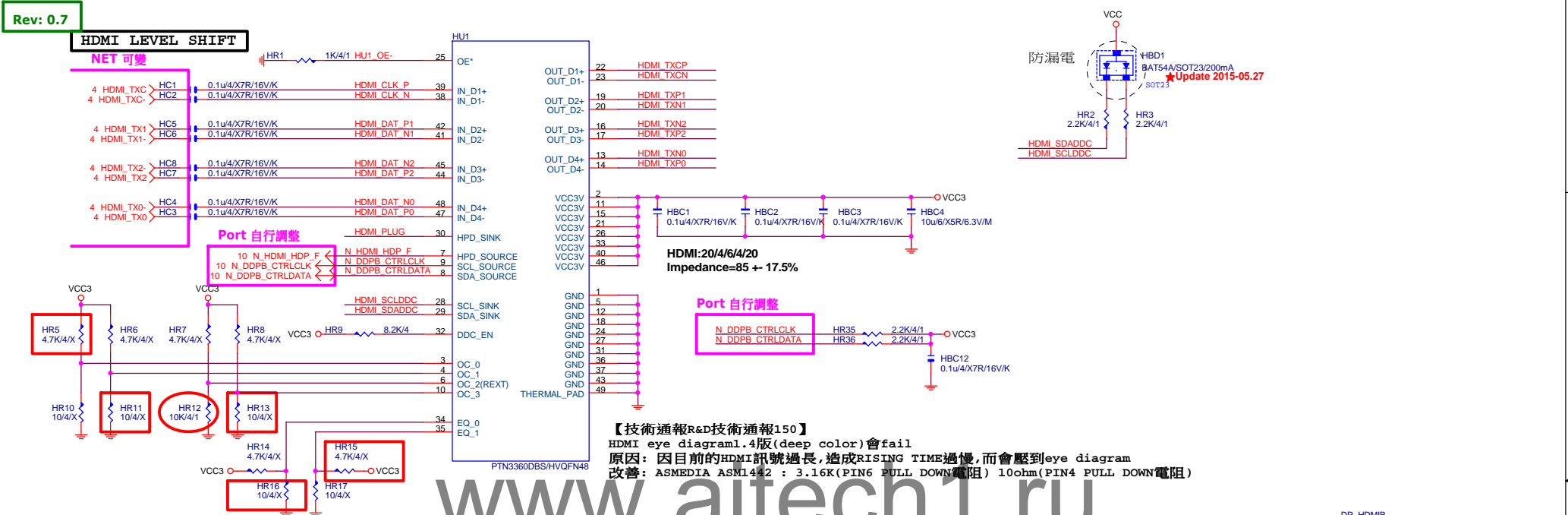
www.aitech1.ru

Gigabyte Technology			
Title			
FP,F_USB,USB PWR,BZ			
Size	Document Number		
Custom	GA-Z170X-GAMING		
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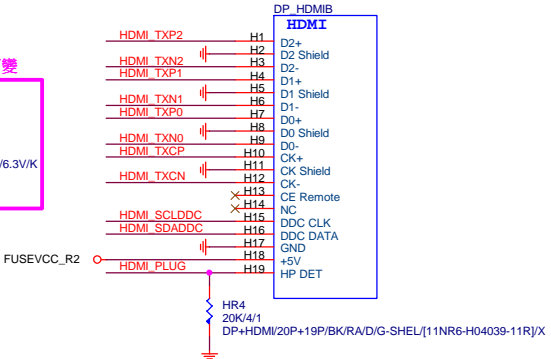


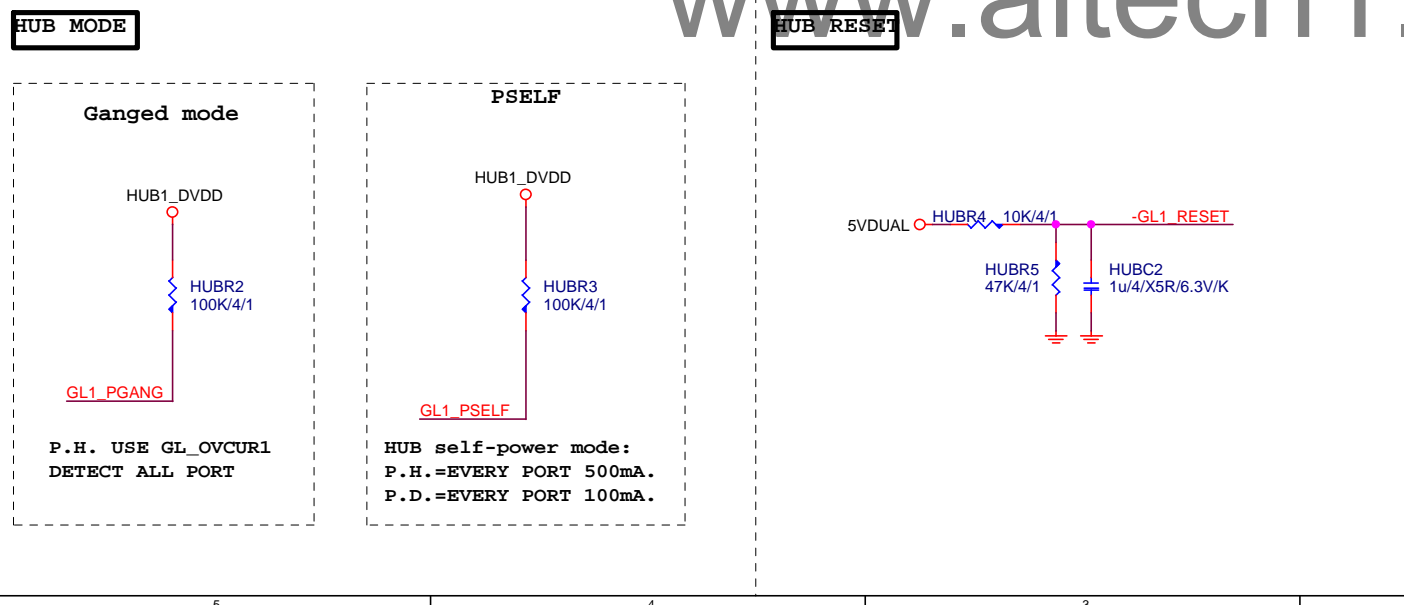
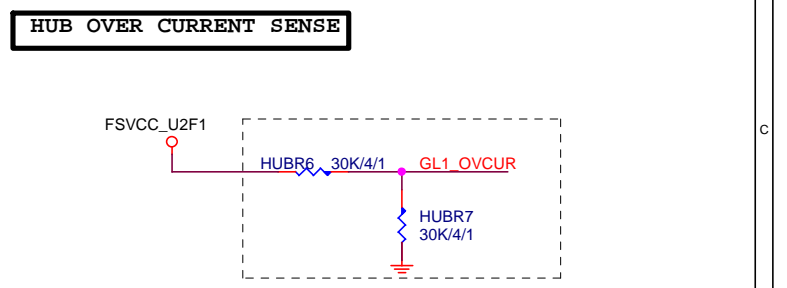
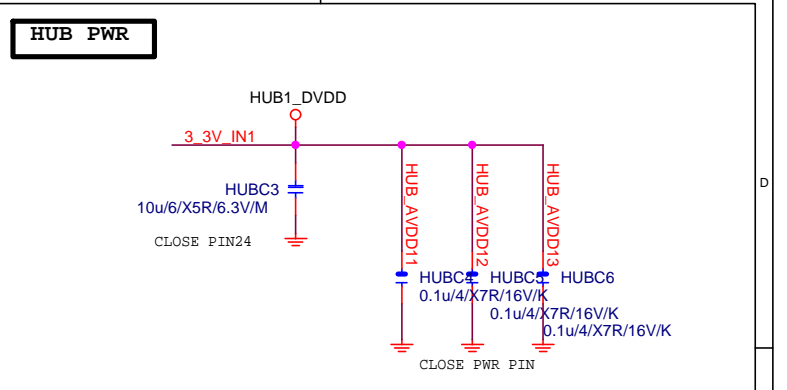
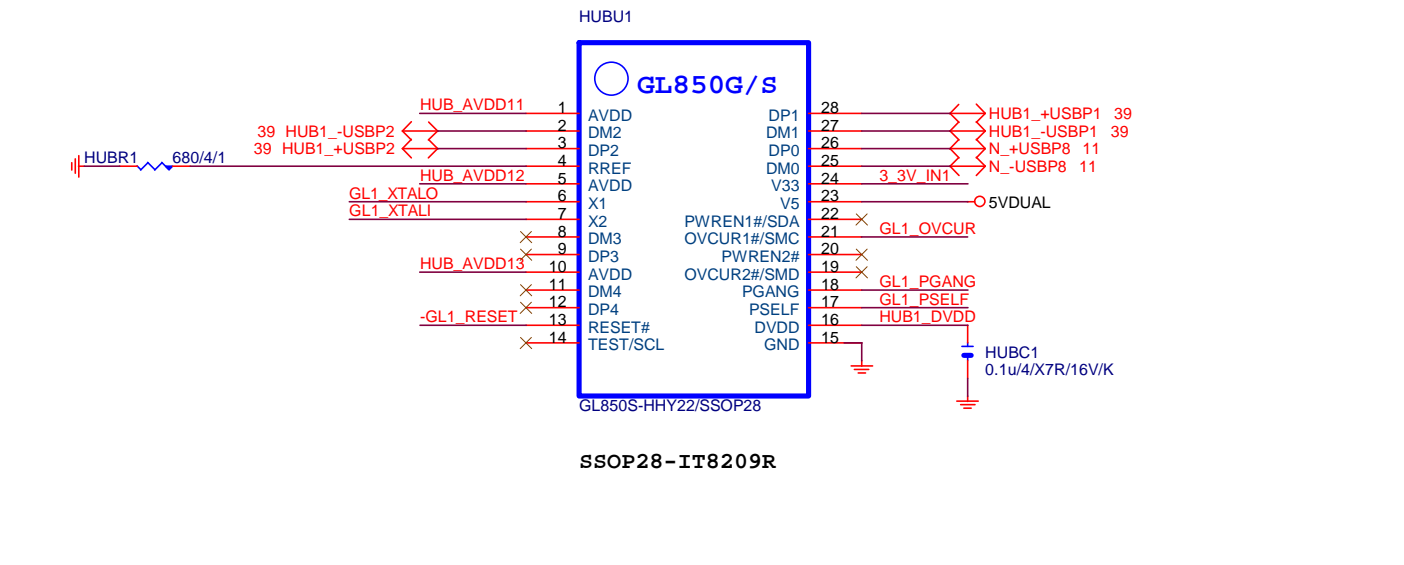


Power Consumption Table					
	VCC3	3VDUAL	VCC3_LC	VCC3V3_ANA_PCIE VCC3V3_ANA_USB2	VCC0V9_LVR_OUT
Max Current(A)	1.05 A 40 mil	0.19 A 10 mil	0.03 A 5 mil	0.1 A 5 mil	0.06 A 5 mil
	VCC0V9_SVR	VCC0V9_DP	VCC0V9_PCIE	VCC0V9_USB	VCC0V9_CIO
Max Current(A)	1.83 A 80 mil	0.7 A 30 mil	0.58 A 30 mil	0.22 A 15 mil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



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



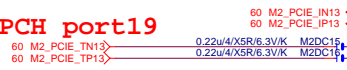


<b>Gigabyte Technology</b>		
Title		
<b>HUB GL850GS_1</b>		
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## M.2 Lane2 from PCH port19



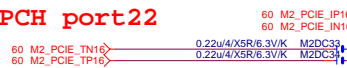
## M.2 Lane2 from PCH port20



## M.2 Lane3 from PCH port21

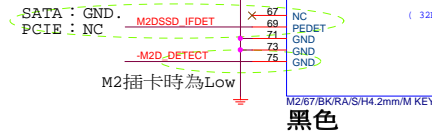
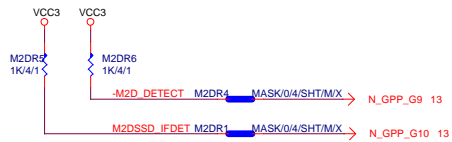


## M.2 Lane4 from PCH port22



需與M2-CLKREQ對應

## 支援SATA and M.2 function



黑色

M2/67/BK/RA/SH4.2mm/M KEY

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

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

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

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

## M.2X4

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

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

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

## M.2X2+SATA S0&amp;S1

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

## M.2沒插卡+SATA S0~S3

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

## M.2沒插卡+S.E.C&amp;S.E.D

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

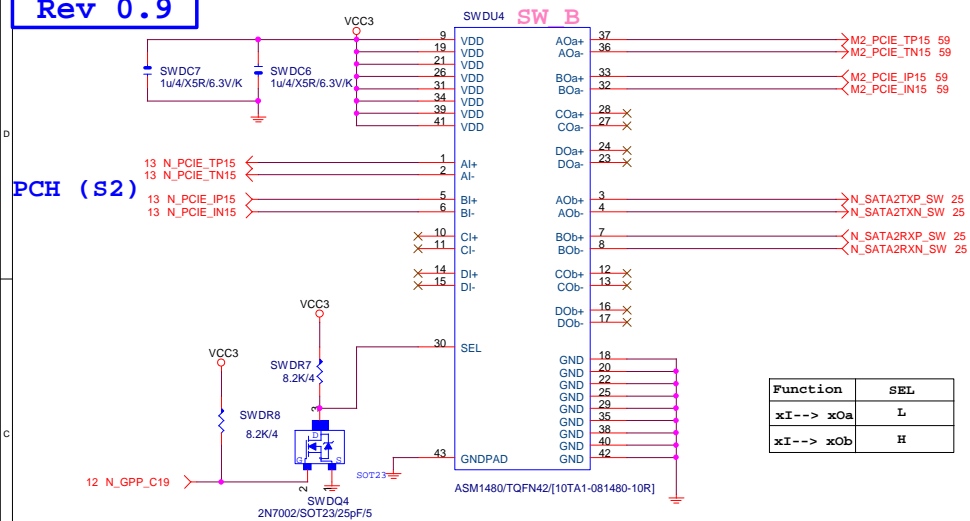
GIGABYTE Technology

M.2 X4

GA-Z170X-GAMING 6

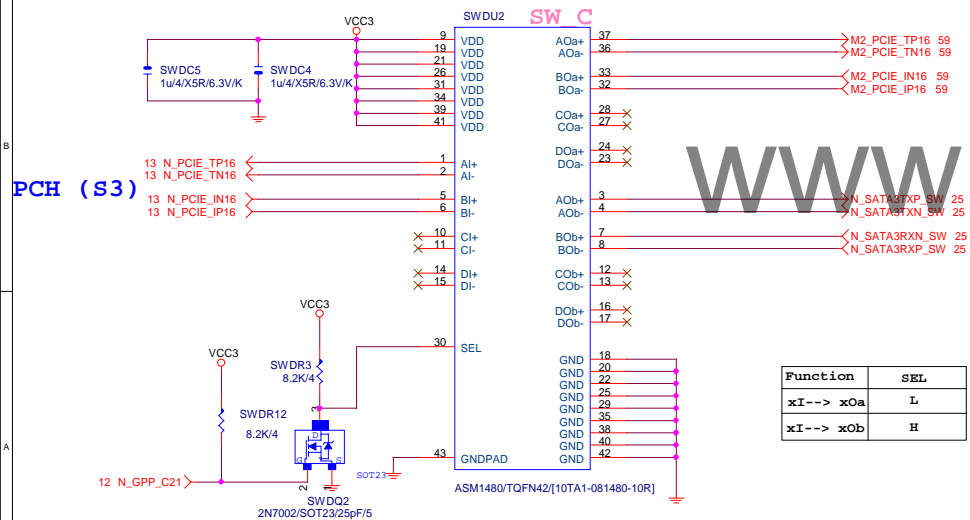
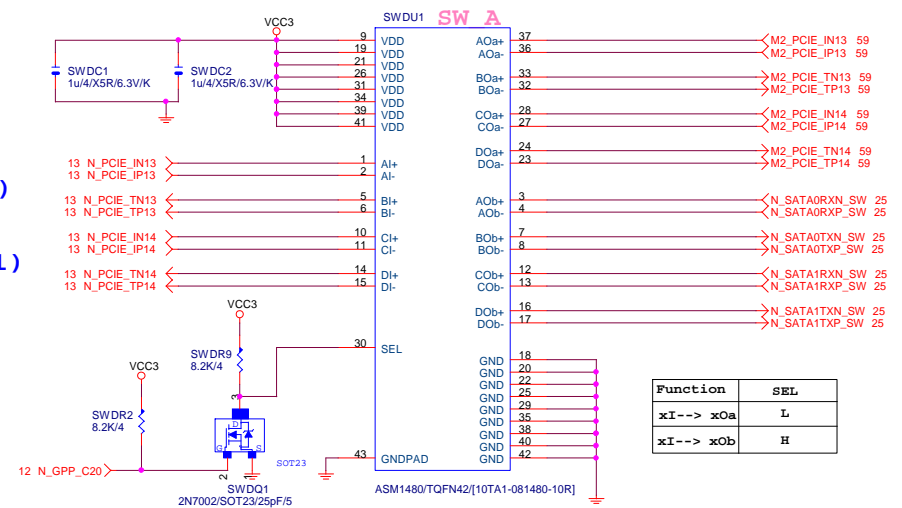
1.0

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PCH (S0)

PCH (S1)



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**Gigabyte Technology**  
**NXP-PTN3356**

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				1	

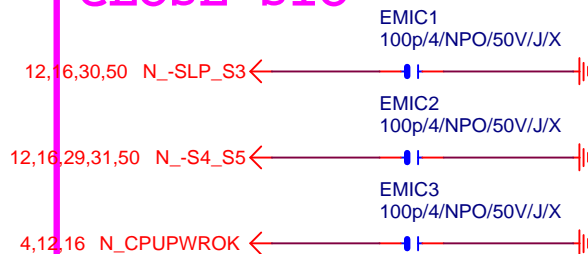


3顆SW IC,  
當使用M.2 (X2),  
EXPRESS只可限定使用 S0&S1

ABC的切換方式:  
下下下 : SE1+SE0  
上上上 : M.2 X4  
下上上 : M.2x2 + SE S0/S1  
下下下上 : M.2 X1 + SE  
S0/S1/S2

Title			
BLOCK DIAGRAM			
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	3	2	1

CLOSE SIO



CLOSE PCH



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Title

**EMI/ESD**

Size  
A

Document Number

**GA-Z170X-GAMING 6**

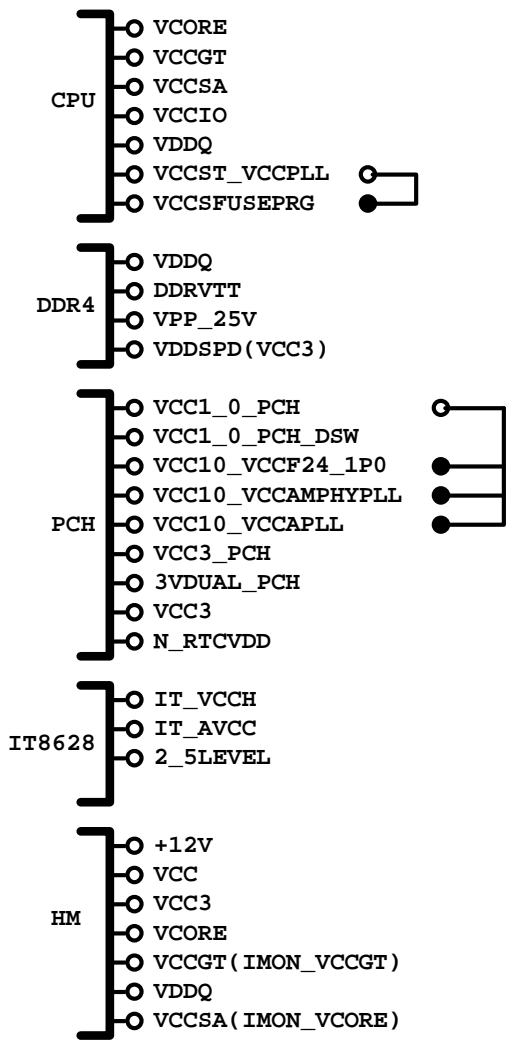
Rev

**1.0**

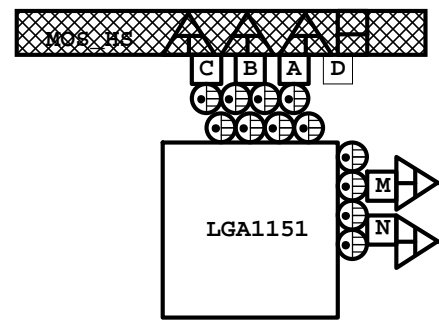
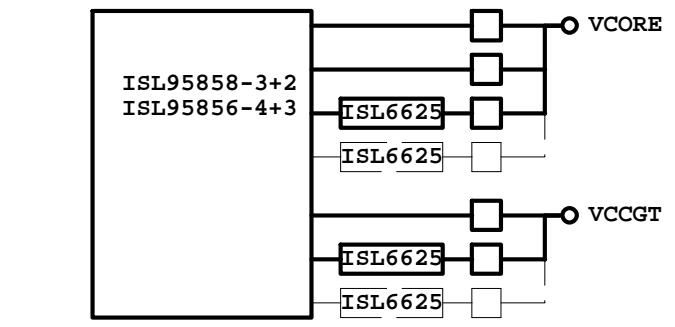
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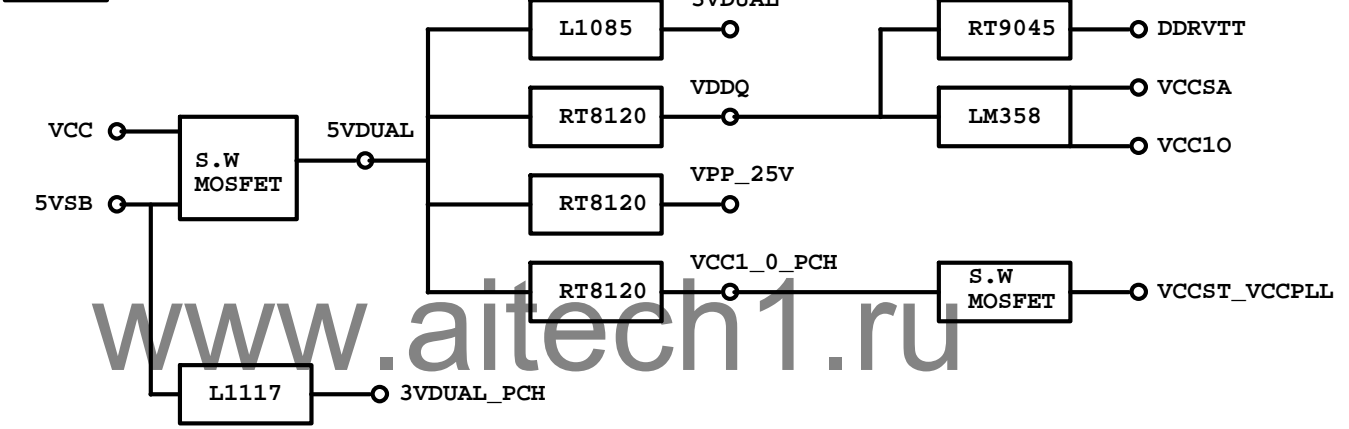
POWER BLOCK MAP



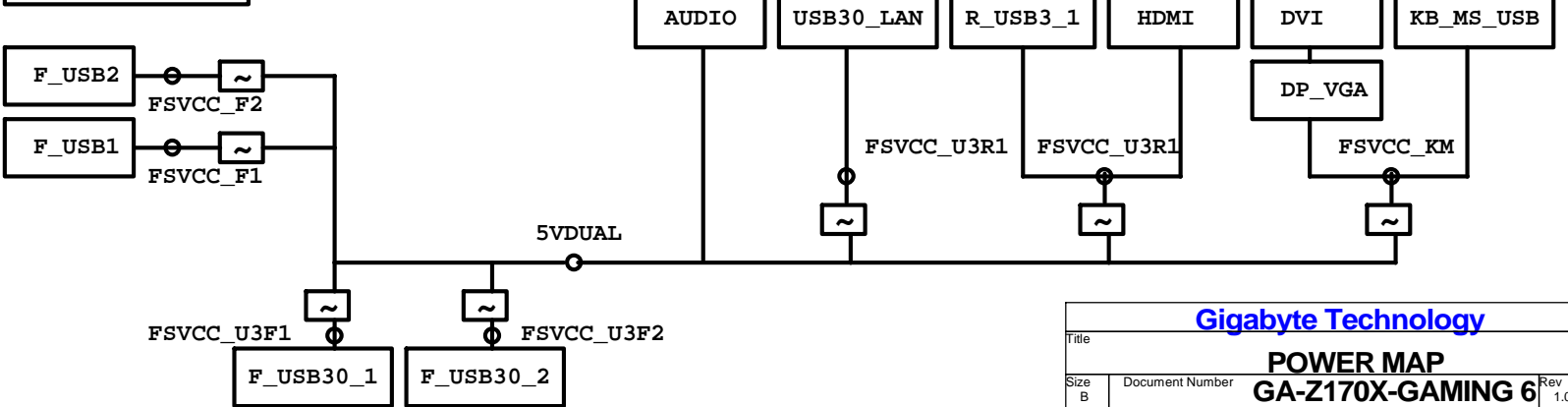
VCORE/VCCGT



POWER



FUSE POWER F/R



## 固態電容料號.請自行修改

日系黑色固態	Capture Value
11CO2-C85600-01R	560u/FP/D/6.3V/68/C/8m
11CO5-C82700-01R	270u/FP/D/16V/88/C/12m
11CO5-C61000-01R	100u/OS/D/16V/66/C/30m
11CO2-C51000-01R	100u/FP/D/6.3V/65/C/13m

日系一般固態	Capture Value
11CO2-685600-01R	560u/FP/D/6.3V/68/8m
11CO5-882700-01R	270u/FP/D/16V/88/12m
11CO5-661000-03R	100u/OS/D/16V/66/30m
11CO2-651000-02R	100u/OS/D/6.3V/66/30m

台系固態	Capture Value
11CO2-661000-09R	100u/OS/D/6.3V/66/A/35m
11CO5-691000-09R	100u/OS/D/16V/69/A/35m
11CO5-8C2700-09R	270u/FP/D/16V/8C/A/10m
11CO2-695600-09R	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/INC109/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-EPISOIC

GIGABYTE™			
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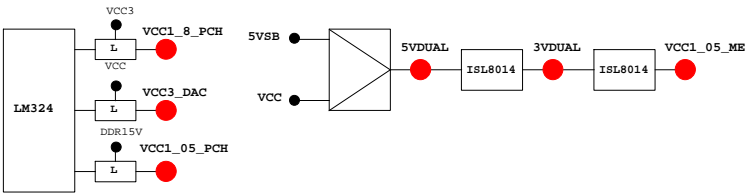


PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	N/A
GP2/PIRQ#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI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

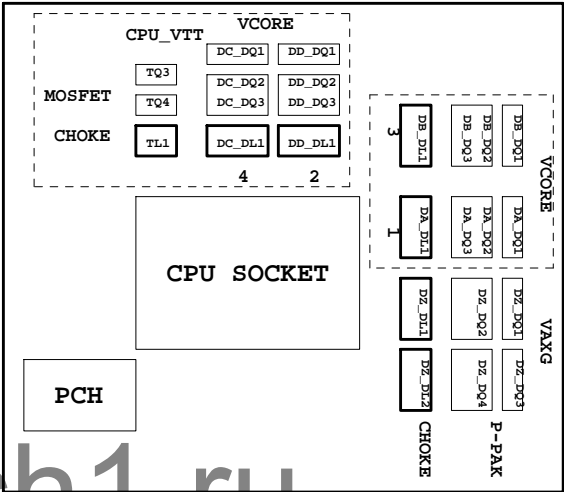
Super I/O ITE8720 GPIO Table

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

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSI0	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VID05/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PWRST1	
PCIRST1#/GP12	-PWRST2	
3VBSBW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VID00/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	SEC_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#/GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRXL2/GP16	-THERM	
VID04/GP26/SOUT2	DDR18V_PH2_EN	
VID02/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VID06/GP17/RI2#	1_1V_PH_EN	
VID07/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



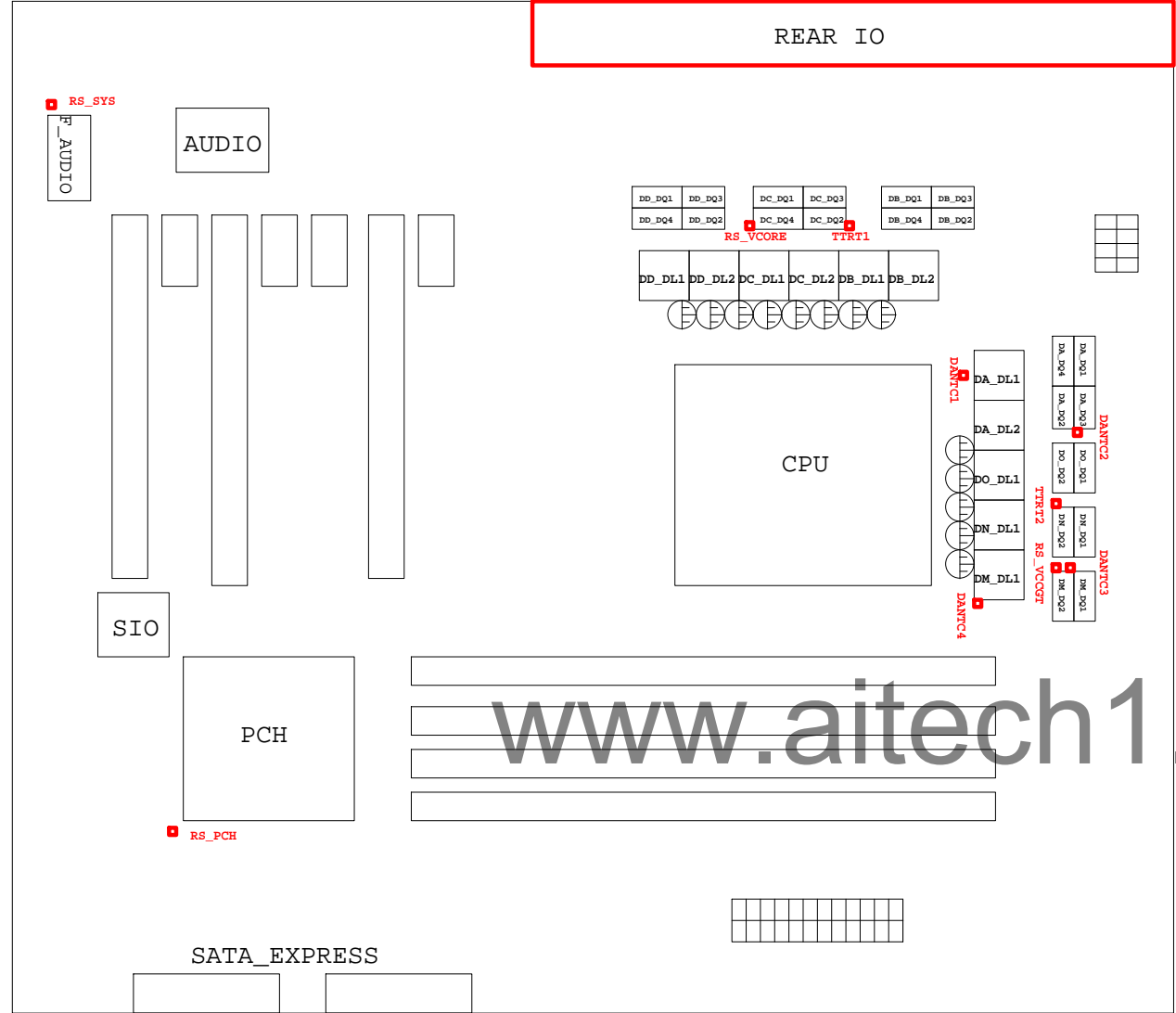
BIOS超電壓對應表：

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 Terminatio
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

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

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



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