

Model Name: GA-Z170X-Gaming 3

SHEET TITLE Rev 1.01

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
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	DUAL BIOS
16	ITE 8628 LPC IO
17	HMW
18	FAN CTRL--SIO
19	PCI EXPRESS X16 SLOT
20	PCI EXPRESS X4 SLOT(PCH)
21	PCI EXPRESS X1 SLOTS
22	M.2 X4
23	SATA EXPRESS
24	ISL95856 PWM
25	ISL95856 MOS_VCORE
26	ISL95856 MOS_VCCGT
27	VCCSA_VCCIO_VCCPLL
28	RT8120_DDR

SHEET

TITLE

29	RT8120_VPP
30	RT8120_PCH
31	DISCRETE POWER1
32	NCT3933
33	ATX POWER , A_-PROCHOT
34	KB_MS_USB
35	DVI CONN
36	PTN3356 - DP to VGA - IC
37	PTN3356 - DP to VGA - Conn
38	HDMI CONN_170
39	R_USB30
40	KILLER E2201
41	USB30 LAN CONNECTOR-E2201
42	Realtek ALC1150
43	REAR AUDIO JACK
44	Audio Power
45	F_USB30
46	F_USB BOX Header
47	COM,TPM,THB
48	F_PANEL
49	PCI EXPRESS X8 SLOT
50	PCI EXPRESS X16 SWITCH
51	IDT6V41530_CLK BUFFER
52	ALPINE RIDGE CIO & DP
53	ALPINE RIDGE POWER
54	HD3SS3212&TUSB321_A
55	EMI ESD
56	2nd M.2 X4
57	M.2 SWITCH
58	TABLE LIST

Gigabyte Technology

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Cover Sheet		
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Rev 1.01

Component value change history

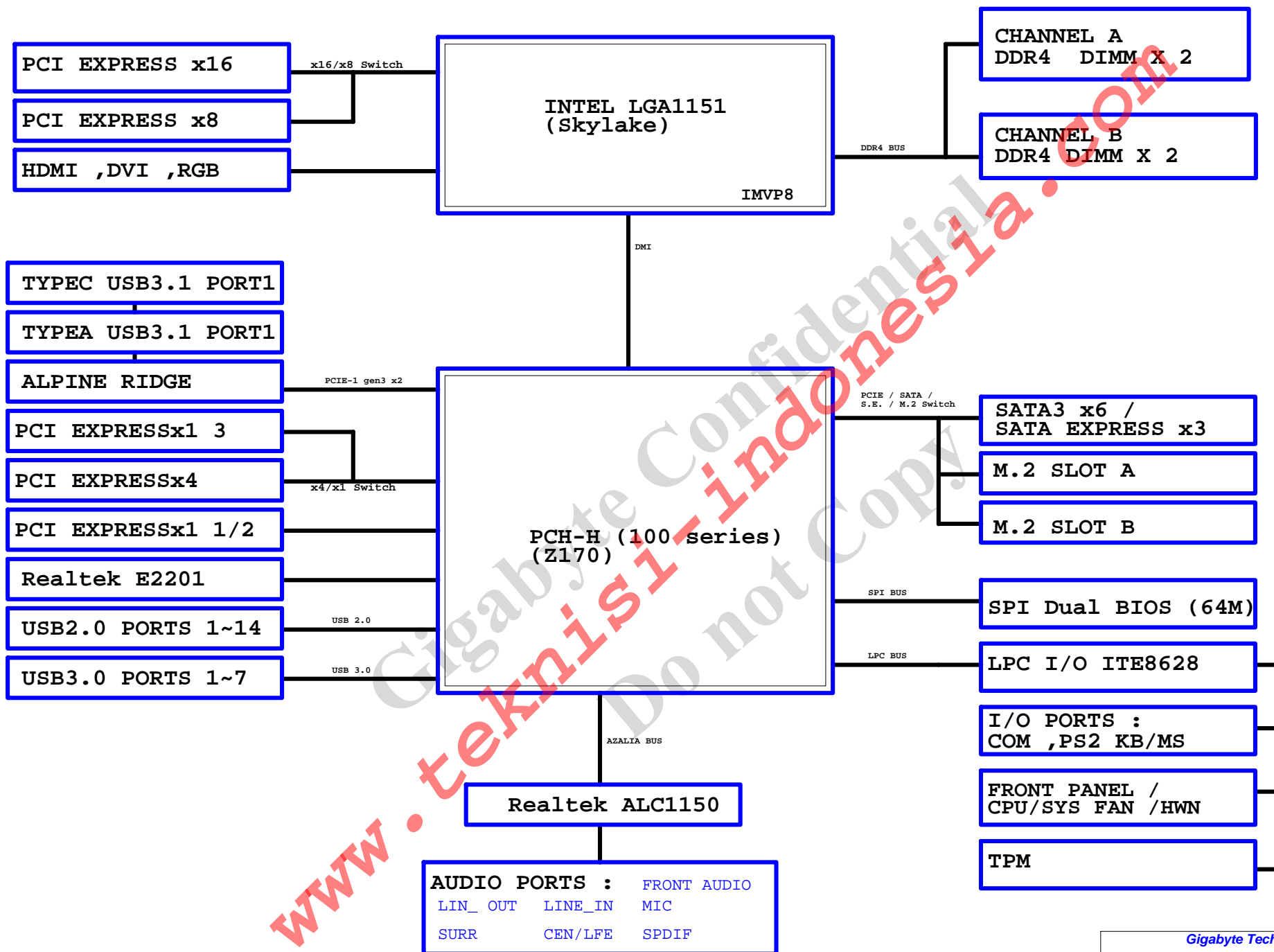
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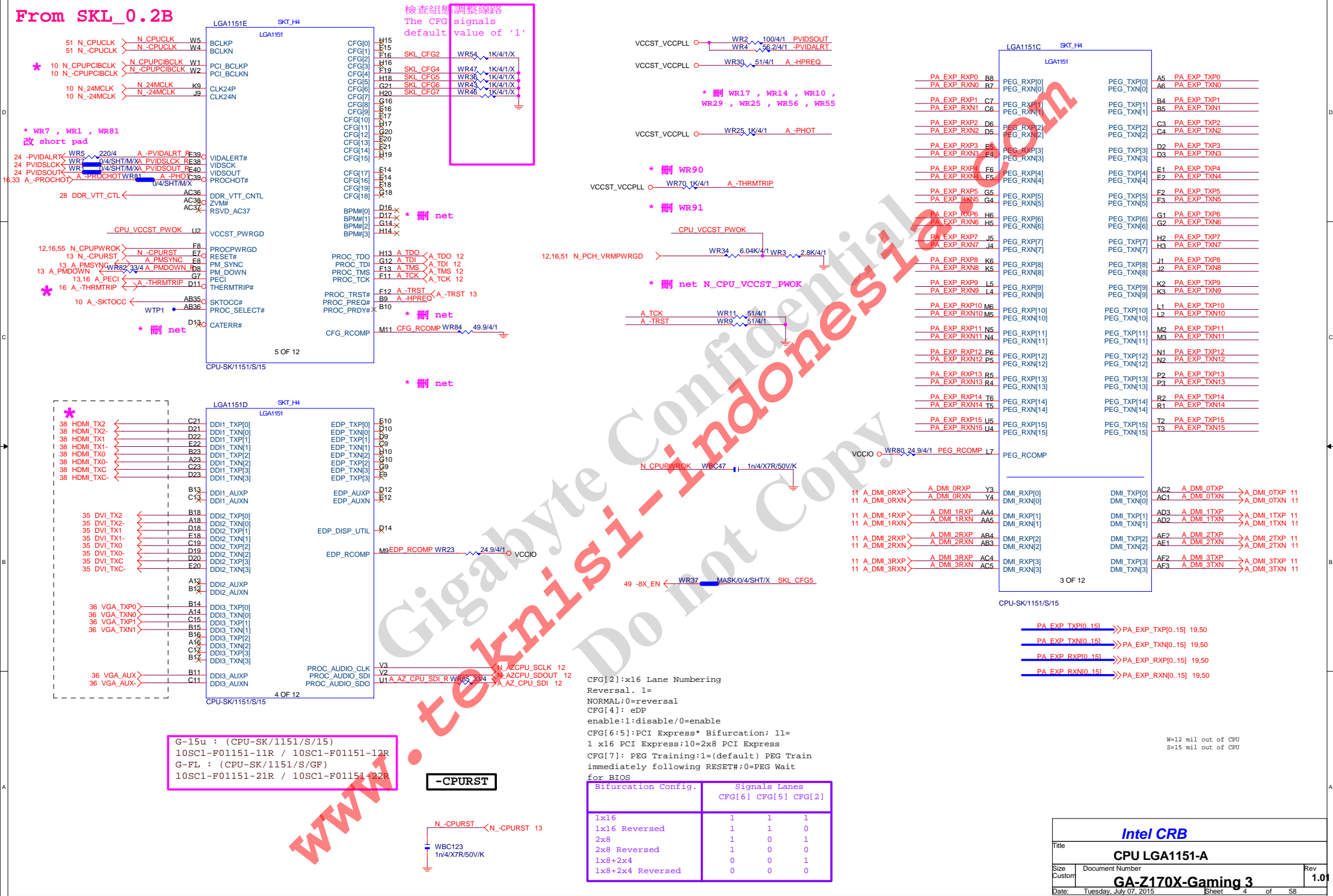
Circuit or PCB layout change

[illegible]

BLOCK DIAGRAM



From SKL_0.2B



* 改DDR4 net

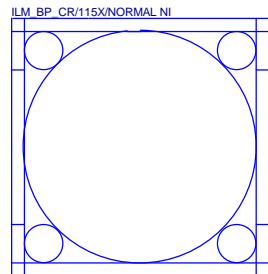
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MDA1 AE37	DDR0_DQ[1]	DDR0_CK[1]
MDA2 AG38	DDR0_DQ[2]	DDR0_CK[2]
MDA3 AG37	DDR0_DQ[3]	DDR0_CK[3]
MDA4 AE38	DDR0_DQ[4]	DDR0_CK[4]
MDA5 AE40	DDR0_DQ[5]	DDR0_CK[5]
MDA6 AG38	DDR0_DQ[6]	DDR0_CK[6]
MDA7 AG40	DDR0_DQ[7]	DDR0_CK[7]
MDA8 AJ38	DDR0_DQ[8]	DDR0_CK[8]
MDA9 AJ37	DDR0_DQ[9]	DDR0_CK[9]
MDA10 AL38	DDR0_DQ[10]	DDR0_CK[10]
MDA11 AL37	DDR0_DQ[11]	DDR0_CK[11]
MDA12 AL40	DDR0_DQ[12]	DDR0_CK[12]
MDA13 AL39	DDR0_DQ[13]	DDR0_CK[13]
MDA14 AL39	DDR0_DQ[14]	DDR0_CK[14]
MDA15 AL40	DDR0_DQ[15]	DDR0_CK[15]
MDA16 AX38	DDR0_DQ[16]	DDR0_CK[16]
MDA17 AN40	DDR0_DQ[17]	DDR0_CK[17]
MDA18 AR38	DDR0_DQ[18]	DDR0_CK[18]
MDA19 AR37	DDR0_DQ[19]	DDR0_CK[19]
MDA20 AN39	DDR0_DQ[20]	DDR0_CK[20]
MDA21 AN37	DDR0_DQ[21]	DDR0_CK[21]
MDA22 AR39	DDR0_DQ[22]	DDR0_CK[22]
MDA23 AR40	DDR0_DQ[23]	DDR0_CK[23]
MDA24 AW37	DDR0_DQ[24]	DDR0_CK[24]
MDA25 AJ38	DDR0_DQ[25]	DDR0_CK[25]
MDA26 AV38	DDR0_DQ[26]	DDR0_CK[26]
MDA27 AW36	DDR0_DQ[27]	DDR0_CK[27]
MDA28 AJ37	DDR0_DQ[28]	DDR0_CK[28]
MDA29 AV37	DDR0_DQ[29]	DDR0_CK[29]
MDA30 AT36	DDR0_DQ[30]	DDR0_CK[30]
MDA31 AU38	DDR0_DQ[31]	DDR0_CK[31]
MDA32 AY38	DDR0_DQ[32]	DDR0_CK[32]
MDA33 AW8	DDR0_DQ[33]	DDR0_CK[33]
MDA34 AV6	DDR0_DQ[34]	DDR0_CK[34]
MDA35 AU6	DDR0_DQ[35]	DDR0_CK[35]
MDA36 AU8	DDR0_DQ[36]	DDR0_CK[36]
MDA37 AV8	DDR0_DQ[37]	DDR0_CK[37]
MDA38 AW8	DDR0_DQ[38]	DDR0_CK[38]
MDA39 AV6	DDR0_DQ[39]	DDR0_CK[39]
MDA40 AY4	DDR0_DQ[40]	DDR0_CK[40]
MDA41 AV4	DDR0_DQ[41]	DDR0_CK[41]
MDA42 AT4	DDR0_DQ[42]	DDR0_CK[42]
MDA43 AT2	DDR0_DQ[43]	DDR0_CK[43]
MDA44 AV3	DDR0_DQ[44]	DDR0_CK[44]
MDA45 AW4	DDR0_DQ[45]	DDR0_CK[45]
MDA46 AT4	DDR0_DQ[46]	DDR0_CK[46]
MDA47 AT3	DDR0_DQ[47]	DDR0_CK[47]
MDA48 AP2	DDR0_DQ[48]	DDR0_CK[48]
MDA49 AM4	DDR0_DQ[49]	DDR0_CK[49]
MDA50 AP3	DDR0_DQ[50]	DDR0_CK[50]
MDA51 AM3	DDR0_DQ[51]	DDR0_CK[51]
MDA52 AP4	DDR0_DQ[52]	DDR0_CK[52]
MDA53 AM2	DDR0_DQ[53]	DDR0_CK[53]
MDA54 AP1	DDR0_DQ[54]	DDR0_CK[54]
MDA55 AM1	DDR0_DQ[55]	DDR0_CK[55]
MDA56 AK3	DDR0_DQ[56]	DDR0_CK[56]
MDA57 AH1	DDR0_DQ[57]	DDR0_CK[57]
MDA58 AK4	DDR0_DQ[58]	DDR0_CK[58]
MDA59 AH2	DDR0_DQ[59]	DDR0_CK[59]
MDA60 AH4	DDR0_DQ[60]	DDR0_CK[60]
MDA61 AK2	DDR0_DQ[61]	DDR0_CK[61]
MDA62 AH3	DDR0_DQ[62]	DDR0_CK[62]
MDA63 AK1	DDR0_DQ[63]	DDR0_CK[63]
AU33	DDR0_ECC[0]	DDR0_CK[0]
AT33	DDR0_ECC[1]	DDR0_CK[1]
AW33	DDR0_ECC[2]	DDR0_CK[2]
AV33	DDR0_ECC[3]	DDR0_CK[3]
AU33	DDR0_ECC[4]	DDR0_CK[4]
AV33	DDR0_ECC[5]	DDR0_CK[5]
AW33	DDR0_ECC[6]	DDR0_CK[6]
AV33	DDR0_ECC[7]	DDR0_CK[7]

DDR CHANNEL
A

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CPU-SK/1151/S/15

LGA1151



Need check the new CPU MB

LGA1151B	SKT_H4	LGA1151
MD80 AD34	DDR1_DQ[0]	DDR1_CK[0]
MD81 AD35	DDR1_DQ[1]	DDR1_CK[1]
MD82 AG35	DDR1_DQ[2]	DDR1_CK[2]
MD83 AH35	DDR1_DQ[3]	DDR1_CK[3]
MD84 AE35	DDR1_DQ[4]	DDR1_CK[4]
MD85 AG34	DDR1_DQ[5]	DDR1_CK[5]
MD86 AG34	DDR1_DQ[6]	DDR1_CK[6]
MD87 AH34	DDR1_DQ[7]	DDR1_CK[7]
MD88 AK35	DDR1_DQ[8]	DDR1_CK[8]
MD89 AL35	DDR1_DQ[9]	DDR1_CK[9]
MD810 AL32	DDR1_DQ[10]	DDR1_CK[10]
MD811 AL32	DDR1_DQ[11]	DDR1_CK[11]
MD812 AK34	DDR1_DQ[12]	DDR1_CK[12]
MD813 AL34	DDR1_DQ[13]	DDR1_CK[13]
MD814 AK31	DDR1_DQ[14]	DDR1_CK[14]
MD815 AL31	DDR1_DQ[15]	DDR1_CK[15]
MD816 AP35	DDR1_DQ[16]	DDR1_CK[16]
MD817 AN35	DDR1_DQ[17]	DDR1_CK[17]
MD818 AN32	DDR1_DQ[18]	DDR1_CK[18]
MD819 AP32	DDR1_DQ[19]	DDR1_CK[19]
MD820 AN34	DDR1_DQ[20]	DDR1_CK[20]
MD821 AP34	DDR1_DQ[21]	DDR1_CK[21]
MD822 AN31	DDR1_DQ[22]	DDR1_CK[22]
MD823 AP31	DDR1_DQ[23]	DDR1_CK[23]
MD824 AL29	DDR1_DQ[24]	DDR1_CK[24]
MD825 AM29	DDR1_DQ[25]	DDR1_CK[25]
MD826 AP29	DDR1_DQ[26]	DDR1_CK[26]
MD827 AR29	DDR1_DQ[27]	DDR1_CK[27]
MD828 AM28	DDR1_DQ[28]	DDR1_CK[28]
MD829 AL28	DDR1_DQ[29]	DDR1_CK[29]
MD830 AR28	DDR1_DQ[30]	DDR1_CK[30]
MD831 AP28	DDR1_DQ[31]	DDR1_CK[31]
MD832 AR12	DDR1_DQ[32]	DDR1_CK[32]
MD833 AP12	DDR1_DQ[33]	DDR1_CK[33]
MD834 AM13	DDR1_DQ[34]	DDR1_CK[34]
MD835 AL13	DDR1_DQ[35]	DDR1_CK[35]
MD836 AR13	DDR1_DQ[36]	DDR1_CK[36]
MD837 AP13	DDR1_DQ[37]	DDR1_CK[37]
MD838 AM12	DDR1_DQ[38]	DDR1_CK[38]
MD839 AL12	DDR1_DQ[39]	DDR1_CK[39]
MD840 AP10	DDR1_DQ[40]	DDR1_CK[40]
MD841 AR10	DDR1_DQ[41]	DDR1_CK[41]
MD842 AP7	DDR1_DQ[42]	DDR1_CK[42]
MD843 AR7	DDR1_DQ[43]	DDR1_CK[43]
MD844 AR9	DDR1_DQ[44]	DDR1_CK[44]
MD845 AP9	DDR1_DQ[45]	DDR1_CK[45]
MD846 AR6	DDR1_DQ[46]	DDR1_CK[46]
MD847 AP6	DDR1_DQ[47]	DDR1_CK[47]
MD848 AM10	DDR1_DQ[48]	DDR1_CK[48]
MD849 AL10	DDR1_DQ[49]	DDR1_CK[49]
MD850 AM7	DDR1_DQ[50]	DDR1_CK[50]
MD851 AL7	DDR1_DQ[51]	DDR1_CK[51]
MD852 AM8	DDR1_DQ[52]	DDR1_CK[52]
MD853 AL9	DDR1_DQ[53]	DDR1_CK[53]
MD854 AM6	DDR1_DQ[54]	DDR1_CK[54]
MD855 AL6	DDR1_DQ[55]	DDR1_CK[55]
MD856 AL6	DDR1_DQ[56]	DDR1_CK[56]
MD857 AJ7	DDR1_DQ[57]	DDR1_CK[57]
MD858 AE6	DDR1_DQ[58]	DDR1_CK[58]
MD859 AE7	DDR1_DQ[59]	DDR1_CK[59]
MD860 AH7	DDR1_DQ[60]	DDR1_CK[60]
MD861 AH6	DDR1_DQ[61]	DDR1_CK[61]
MD862 AE7	DDR1_DQ[62]	DDR1_CK[62]
MD863 AE6	DDR1_DQ[63]	DDR1_CK[63]
AR25	DDR1_ECC[0]	DDR1_CK[0]
AR26	DDR1_ECC[1]	DDR1_CK[1]
AM26	DDR1_ECC[2]	DDR1_CK[2]
AM25	DDR1_ECC[3]	DDR1_CK[3]
AP26	DDR1_ECC[4]	DDR1_CK[4]
AL25	DDR1_ECC[5]	DDR1_CK[5]
AL26	DDR1_ECC[6]	DDR1_CK[6]
AL26	DDR1_ECC[7]	DDR1_CK[7]

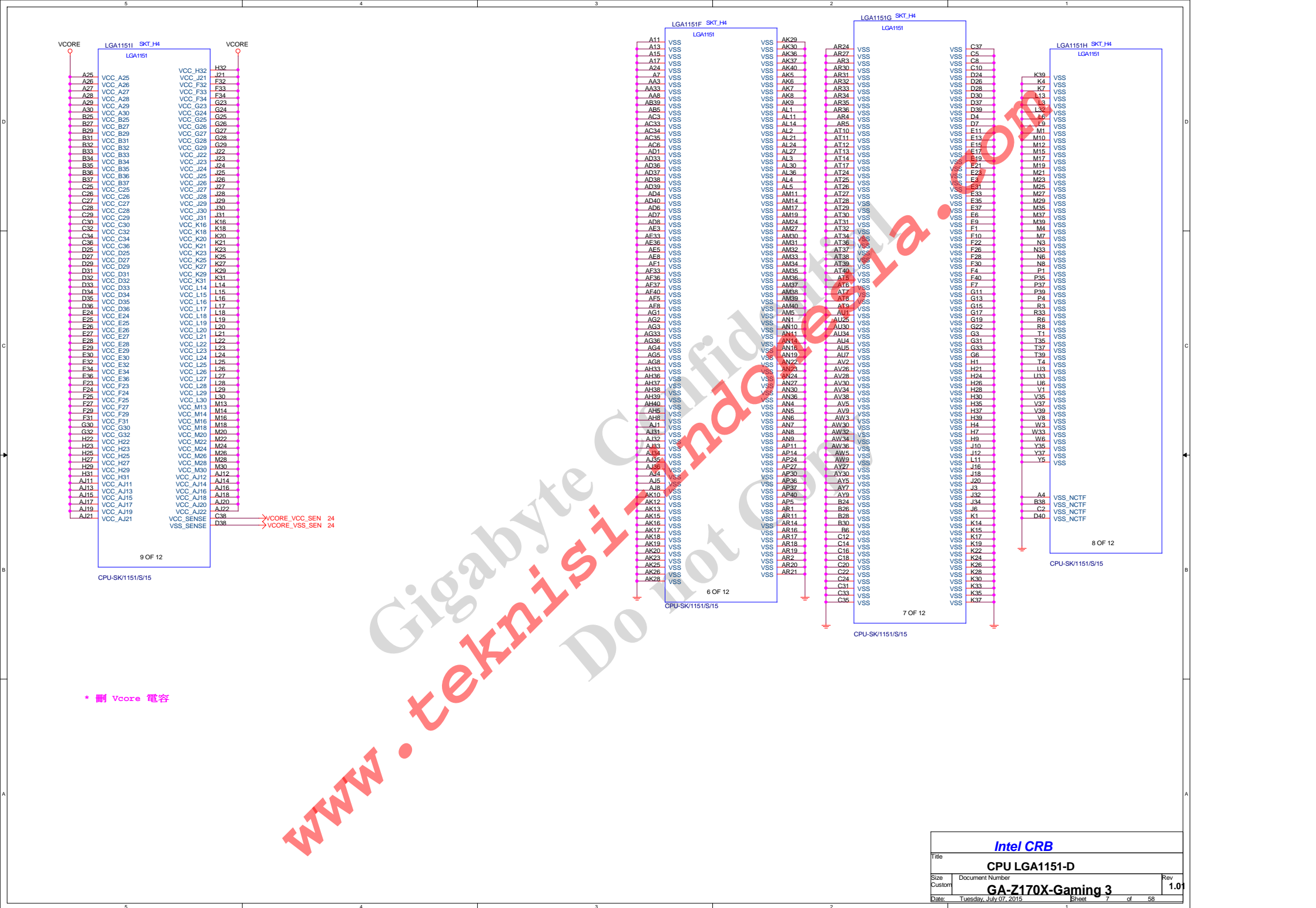
DDR CHANNEL
B

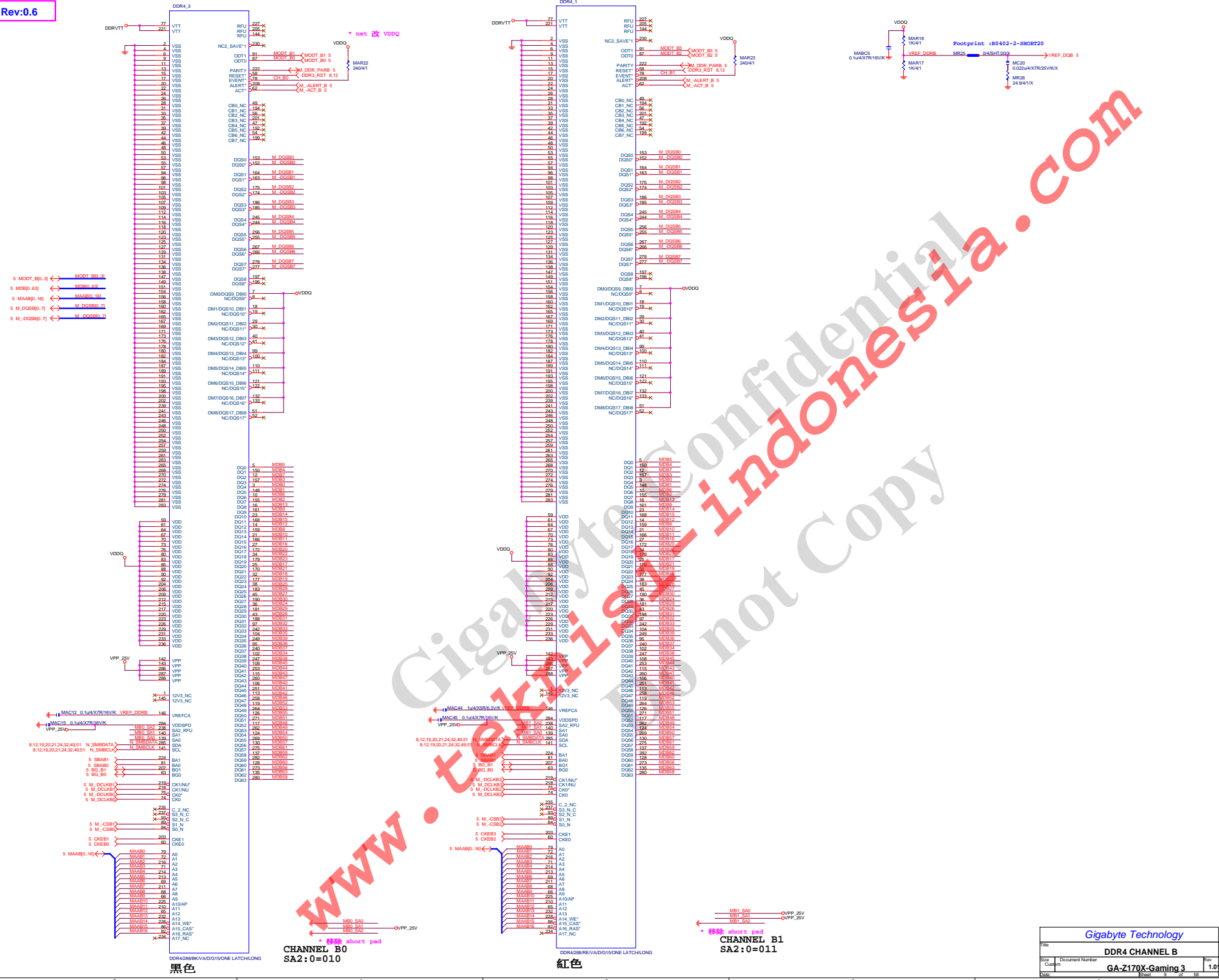
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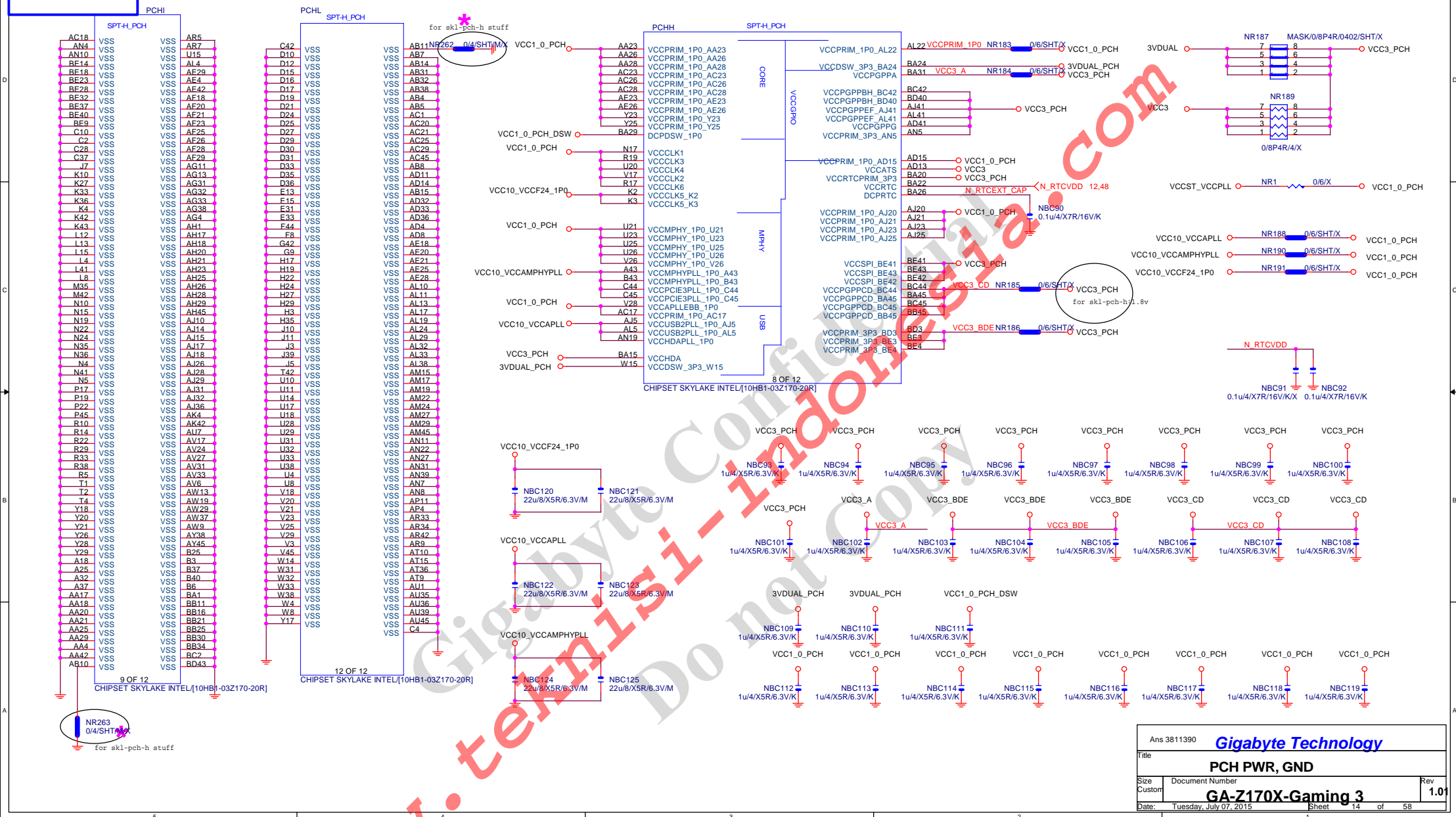
CPU-SK/1151/S/15

8 MODT_A[0..3]	MODT_A0..3
9 MODT_B[0..3]	MODT_B0..3
8 MDA[0..63]	MDA0..63
9 MDB[0..63]	MDB0..63
8 M_DQSA[0..7]	M_DQSA0..7
8 M_-DQSA[0..7]	M_-DQSA0..7
8 MAAA[0..16]	MAAA0..16
9 MAAAB[0..16]	MAAAB0..16
9 M_DQSB[0..7]	M_DQSB0..7
9 M_-DQSB[0..7]	M_-DQSB0..7

Intel CRB		
CPU LGA1151-B		
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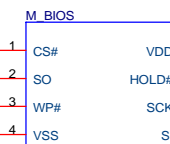


DUAL BIOS

MOSI For DMI RX Termination Voltage

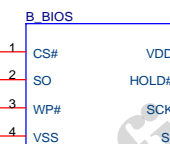
指定用DII

指定用DII



64M/Q/SPI/SO8/S

*(footprint 改 SOIC8-SPI-SOCKET)



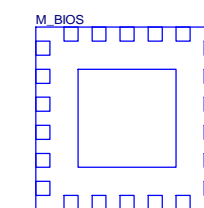
64M/Q/SPI/SO8/S

*(footprint 改 IC8-BIOS)

Rev: 0.42

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

1 means floating
0 means PD 1K

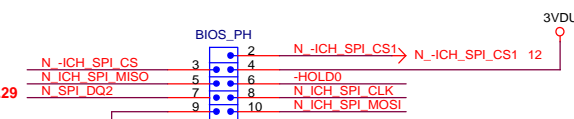


LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]X

* 試産先上, PVT 移除

BIOS_PH

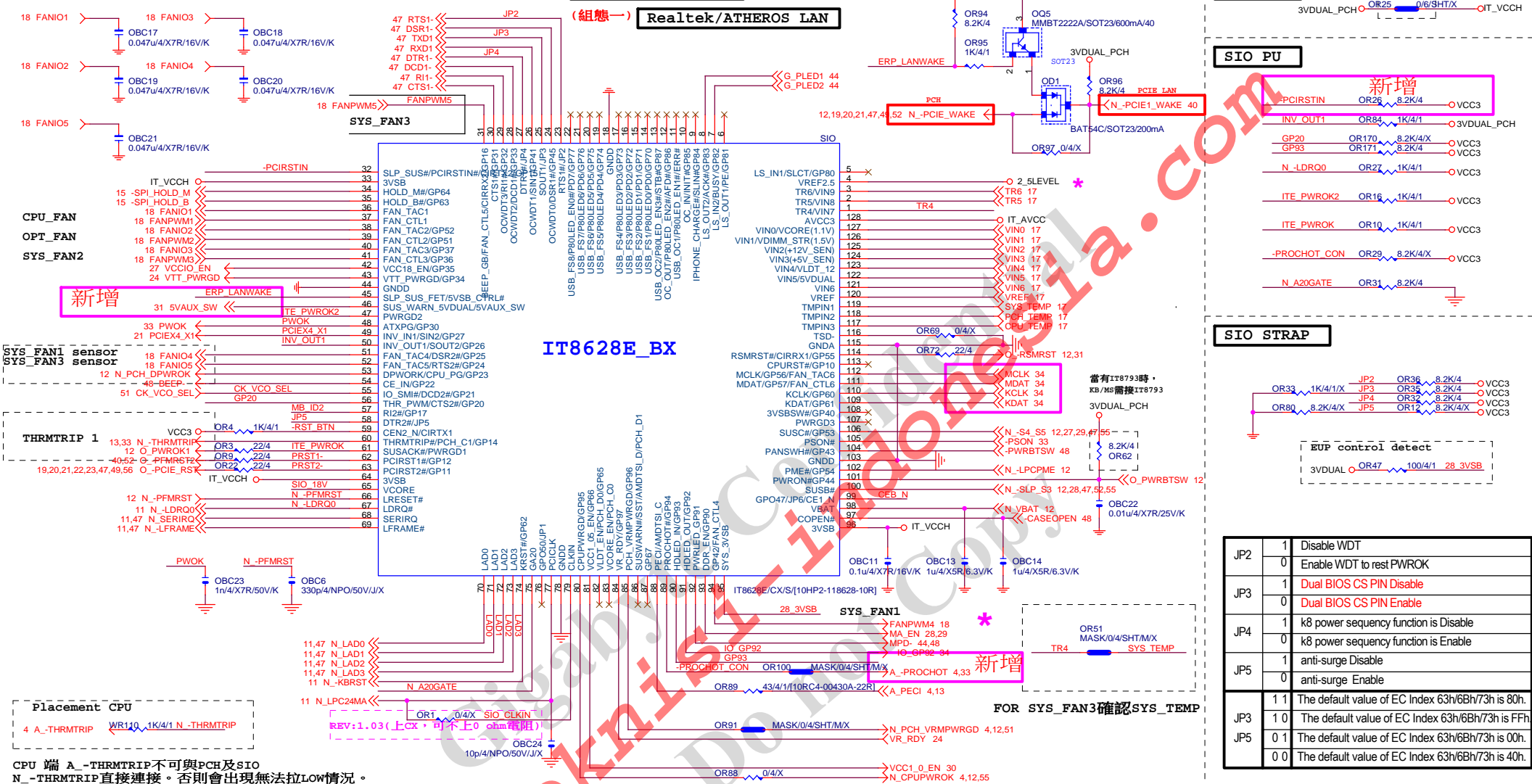
★Update 2015-01-29



Footprint the same, confirmed by Graceing.
Use COM port pin header part.

Gigabyte Technology

Title		BIOS	
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FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL4 FAN_TAC4
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL5 FAN_TAC5
OPT_FAN	FAN_CTL2 FAN_TAC2
THRMTRIP1	YES PIN60

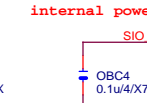
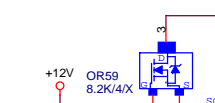
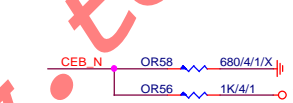
IT8620E GPIO問題匯整	
PIN 50	GP26-第一次接上POWER時會拉 Lo
PIN 90/91	DEFAULT為HDLLED FUNCTION, GP93 BYPASS TO GP92 高溫時 GP92 會被拉Lo(ITE BUG)
PIN 108	GP40--- POWER ON 時會拉 Lo
PIN 111/112	MOUSE 跟FAN6 FUNCTION 擇一使用,不然會互相干擾
PIN 22	PIN22, 需高於3V, 若低於 接部分COM PORT或PT裝置 蜂鳴器會異常動作

DUAL BIOS OPT STRAP

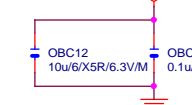
Power leakage

SIO_18V

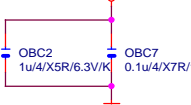
MB ID



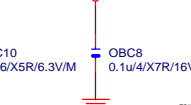
SIO CAP



IT_VCCH



IT_AVCC



3VDUAL_PCH



Gigabyte Technology

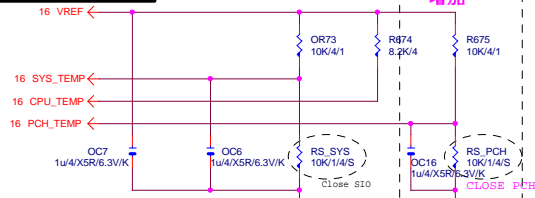
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Size B Document Number: GA-Z170X-Gaming 3

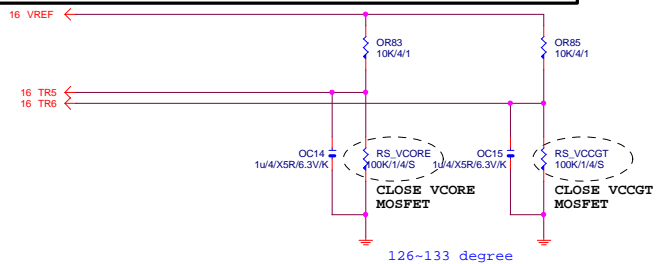
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REV:1.08

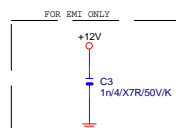
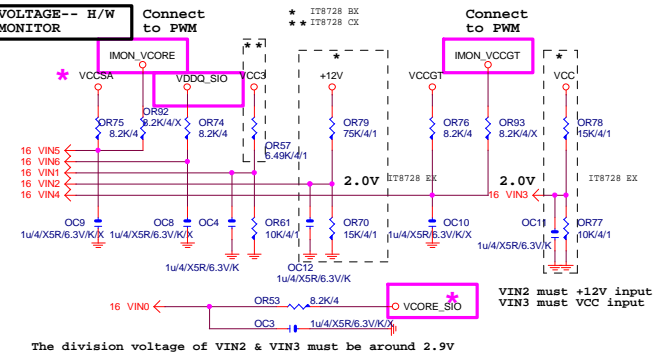
TEMP H/W MONITOR



RS_VCORE、RS_VCCGT、CLOSE CPU_VCORE & VCCGT MOSFET

~~-PROCHOT:有mos meartsink不用prochot function~~

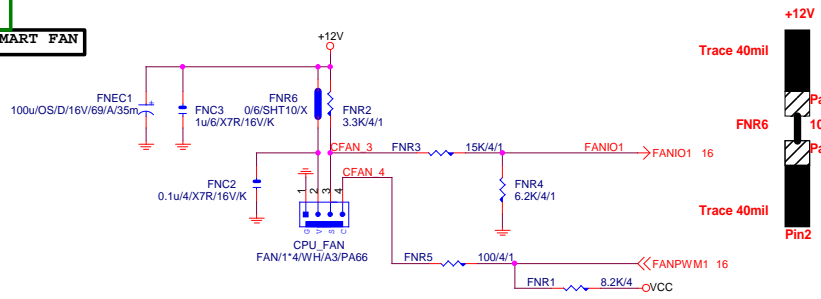
VOLTAGE-- H/W MONITOR



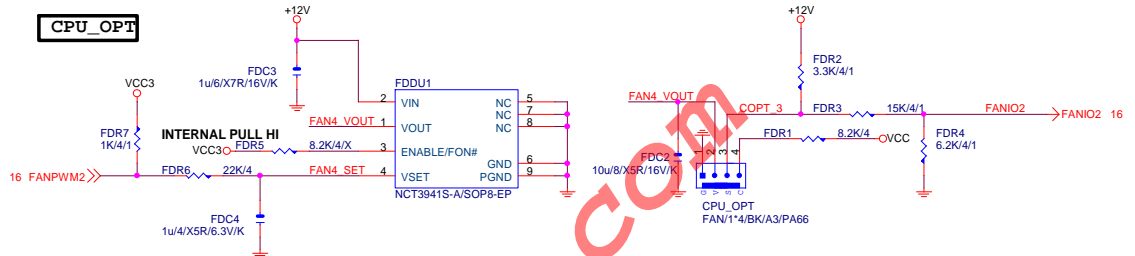
Gigabyte Technology

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CPU SMART FAN

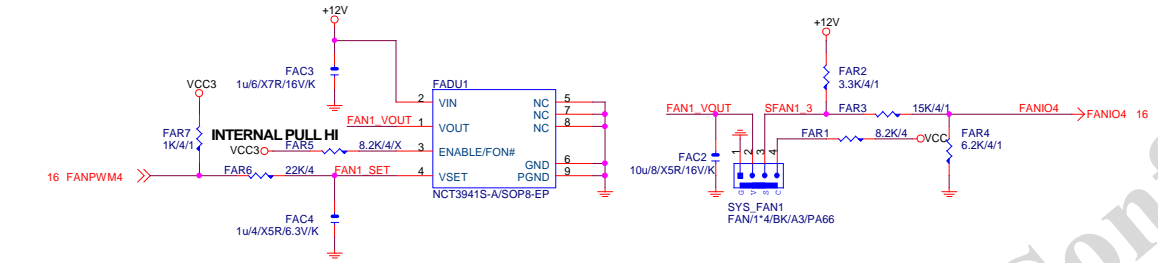


CPU_OPT

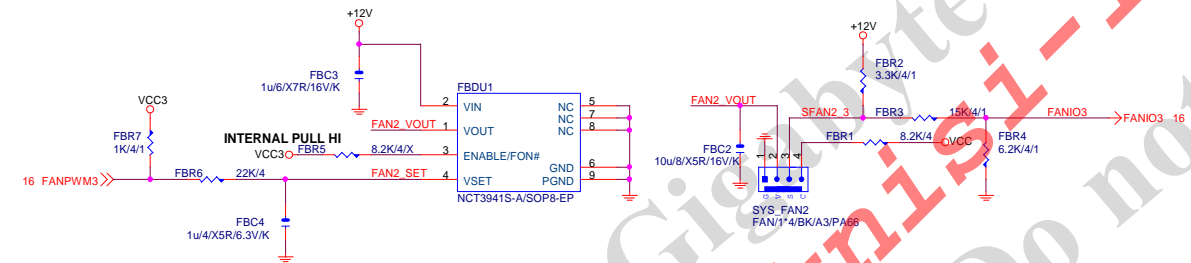


SYSTEM FAN1

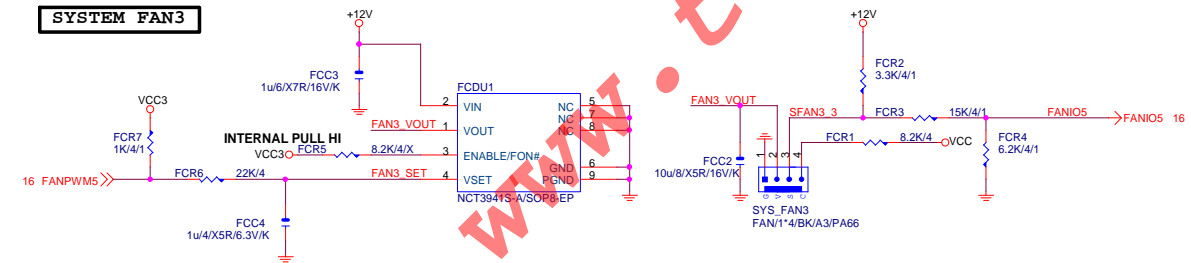
Linear SYS_FAN
Enable Function (NCT3941S)
Full Turn On Function (NCT3941S-A)



SYSTEM FAN2



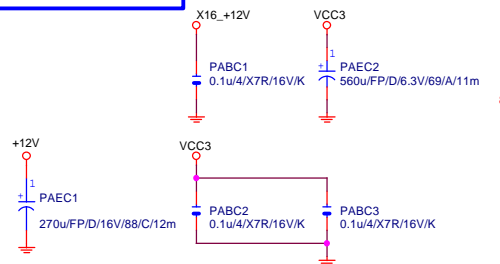
SYSTEM FAN3



GIGABYTE			
Title			
FAN CTRL			
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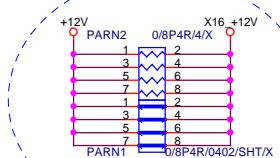
Rev 0.3

PCIEX16 CAP



PCIEX16 PROTECT SHT

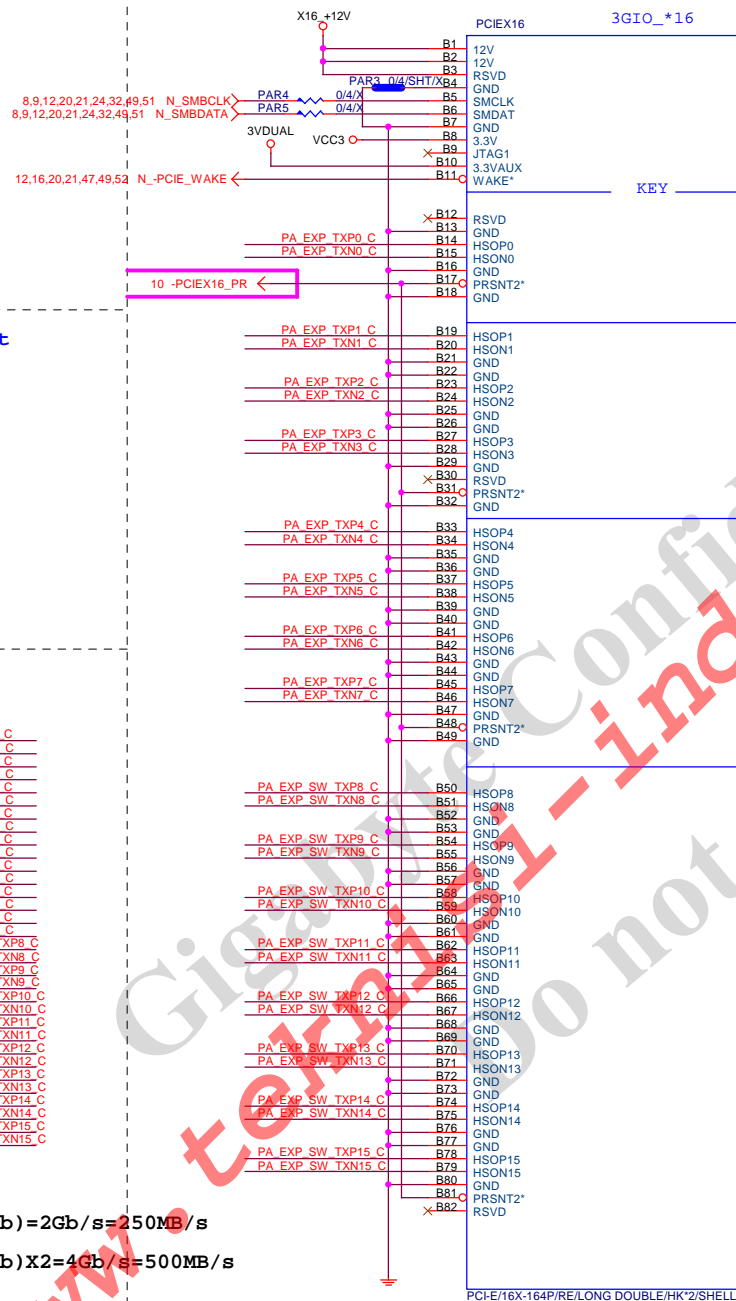
+12 protect short-wire test



PCIEX16 AC CAP

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

PCIEX16 SLOT



PCI-E/16X-164P/RE/LONG DOUBLE/HK*2/SHELL

紅色

PCI-E REV:1.1--> 2.5GHZ

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

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

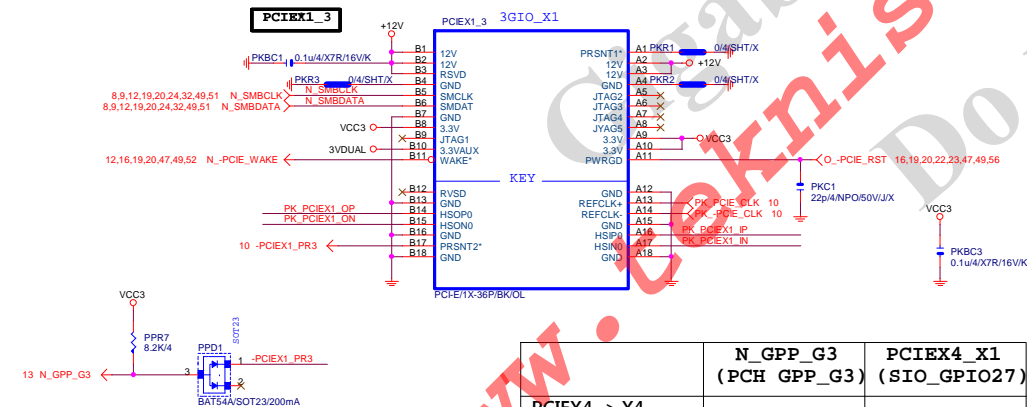
PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

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

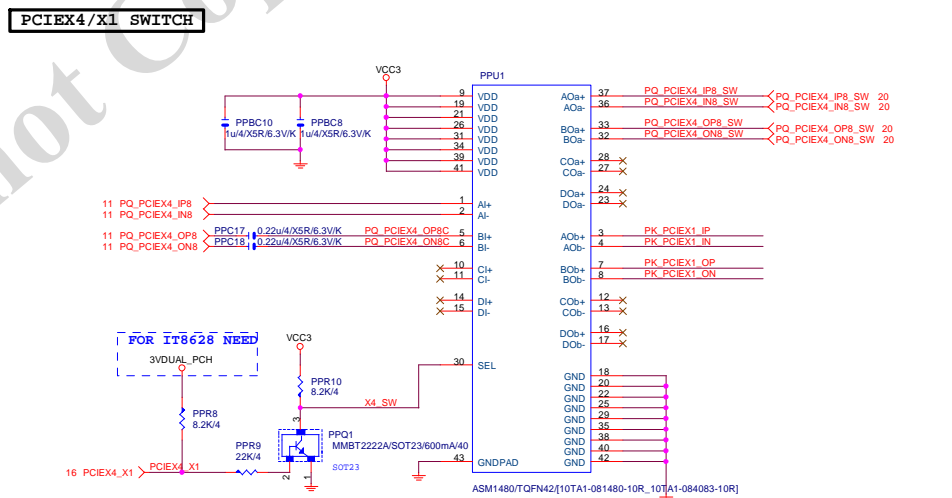
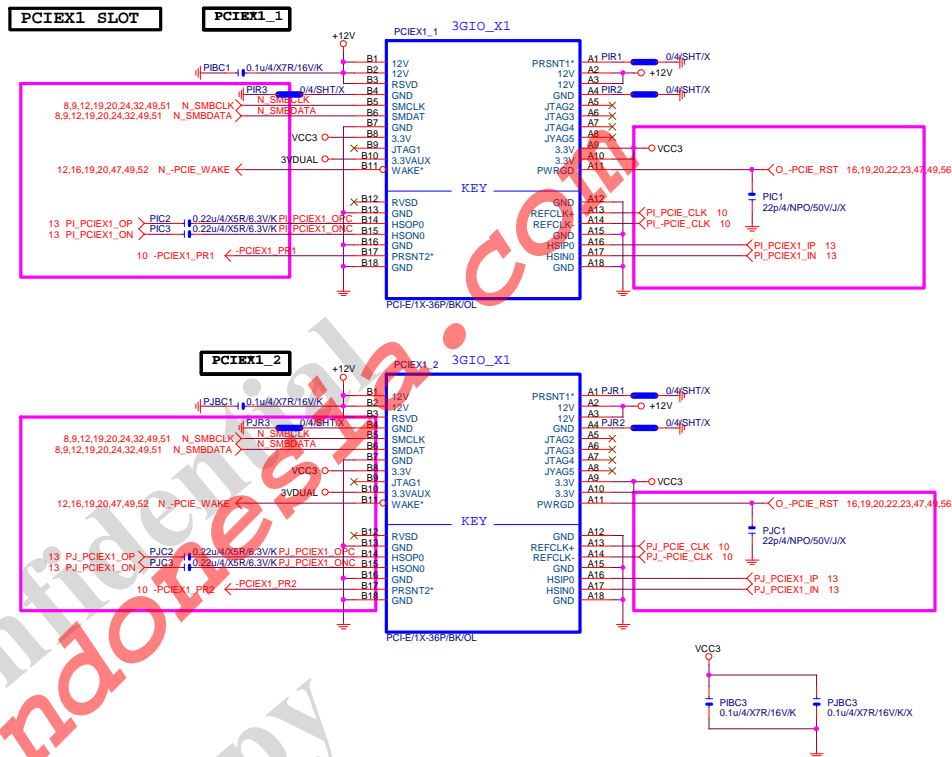
PCI-E REV:2.0--> 5GHZ

Gigabyte Technology

Title			PCI EXPRESS * 16
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	N_GPP_G3 (PCH_GPP_G3)	PCIEX4_X1 (SIO_GPIO27)
PCIEX4 -> X4 M2_WIFI -> N/A PCIEX1 --> N/A (Default)	H	H
PCIEX4 -> X1 M2_WIFI -> X1 PCIEX1 --> X1	L	L



Function	SEL
xI--> x0a	L;PCIEX4 SLOT-->X
xI--> x0b	H;PCIEX4 SLOT-->X

M.2 Lane4 from PCH port18

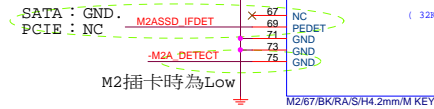
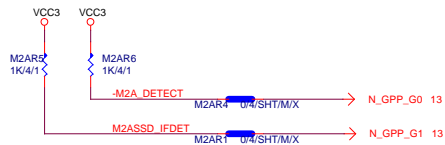
M.2 Lane3 from PCH port17

M.2 Lane2 from PCH port16

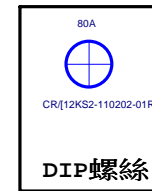
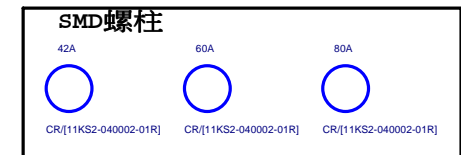
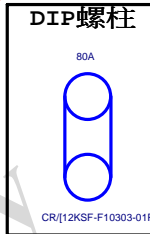
M.2 Lane2 from PCH port15

需與M2-CLKREQ對應

支援SATA and M.2 function

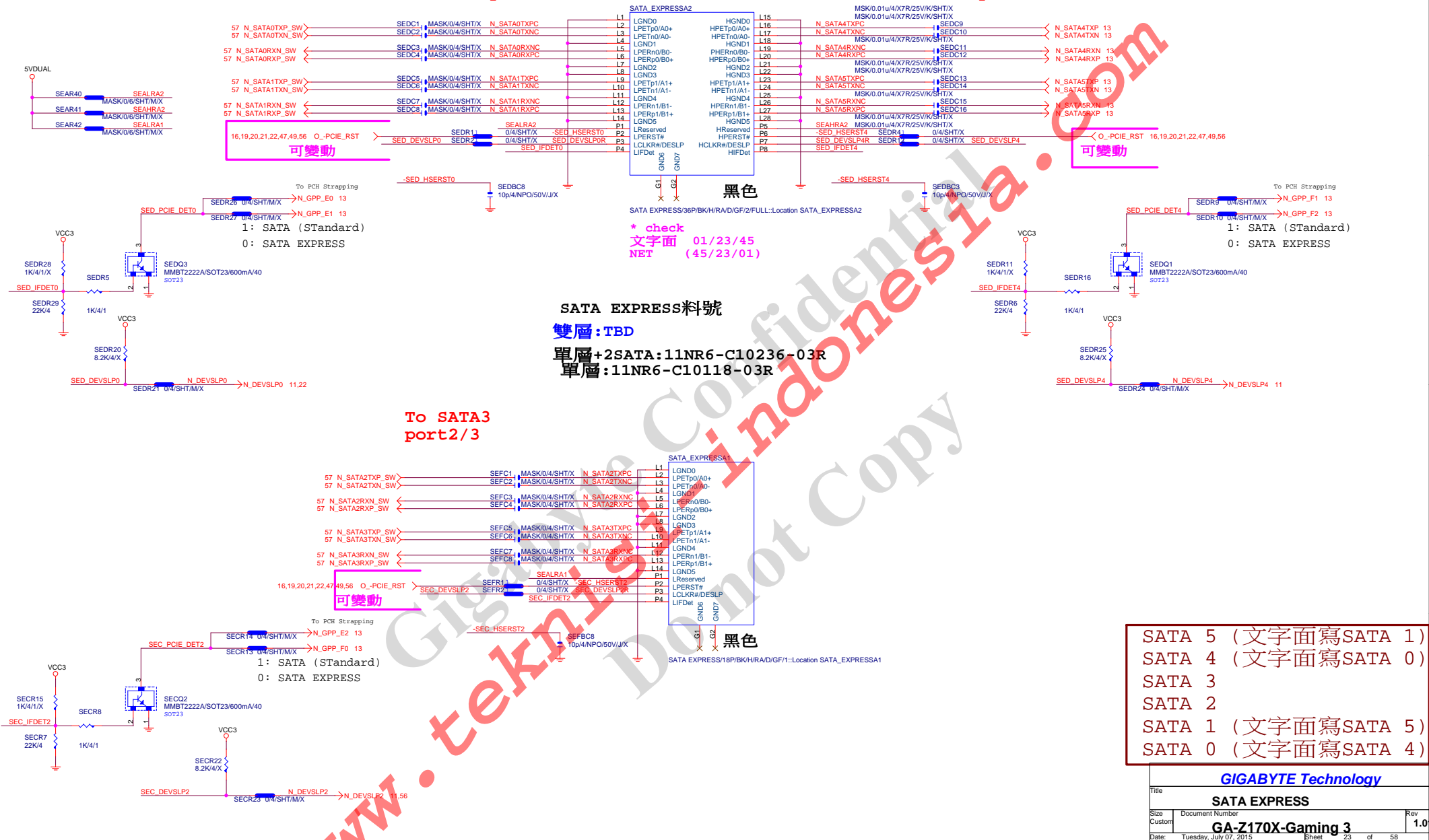


M.2 有插卡 /沒插卡 GPP_G0	M.2插何種卡? GPP_G1	SATA Express 插何種硬碟? GPP_E0/E2/F1	IO15 (S0)	IO16 (S1)	IO17	IO18	IO19 (S0)	IP20 (S1)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	PCIE x1	SATA
		SATA Express (Low)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	SATA Express	
	PCIE Mode (Hi)	SATA (Hi)	PCIE 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	

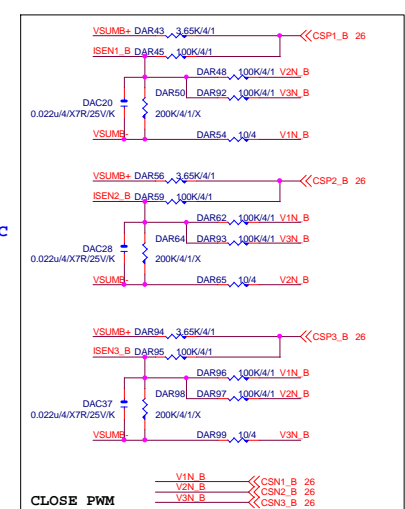
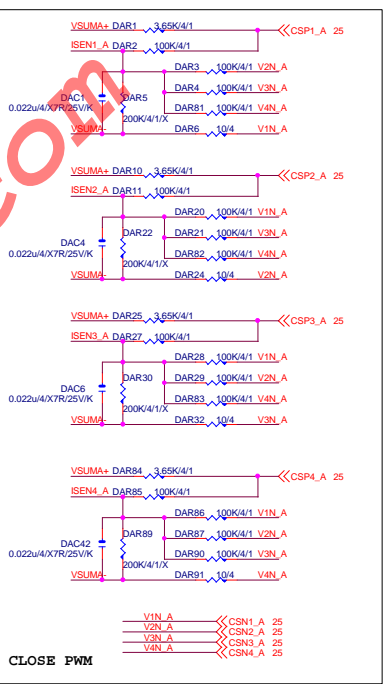


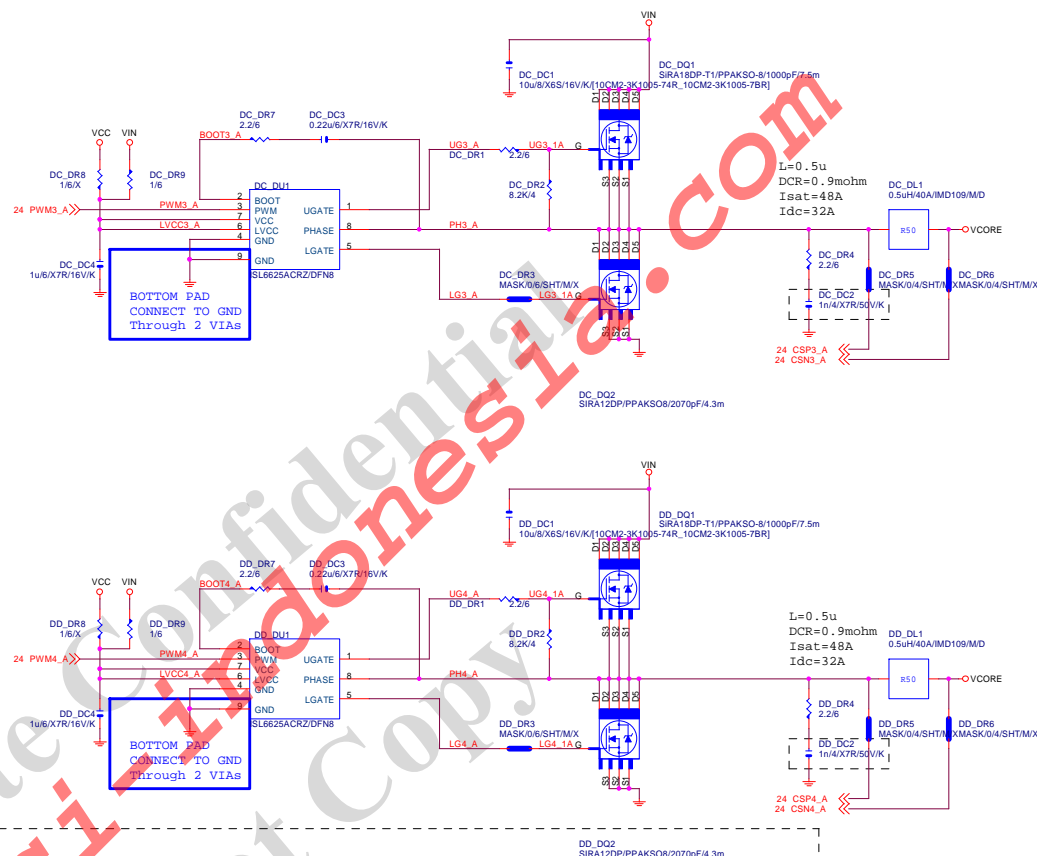
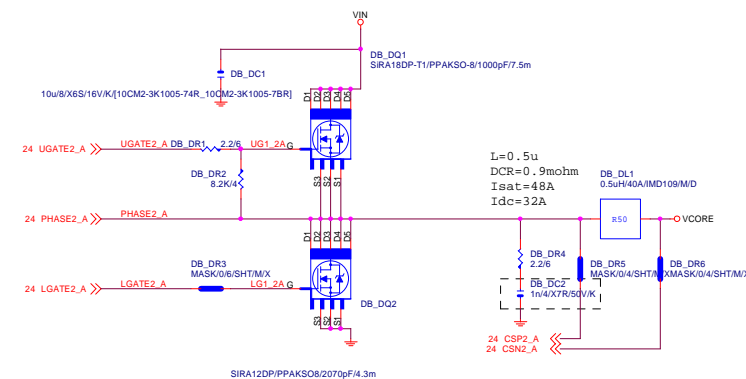
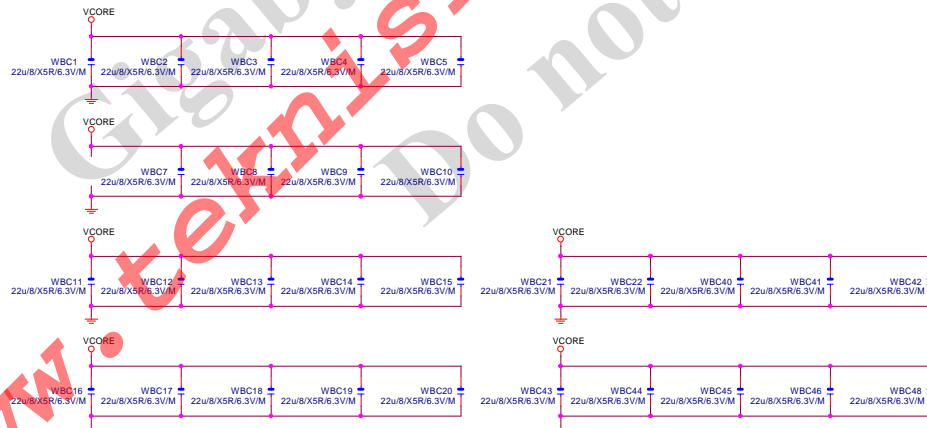
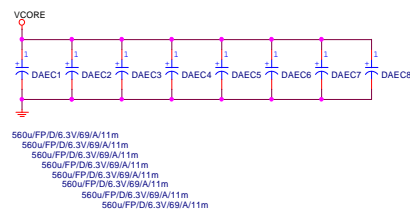
SATA EXPRESS 下層 To SATA3
port0/1

SATA EXPRESS 上層 To SATA3 port4/5

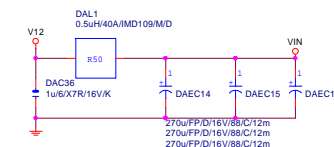


SATA 5	(文字面寫SATA 1)
SATA 4	(文字面寫SATA 0)
SATA 3	
SATA 2	
SATA 1	(文字面寫SATA 5)
SATA 0	(文字面寫SATA 4)



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

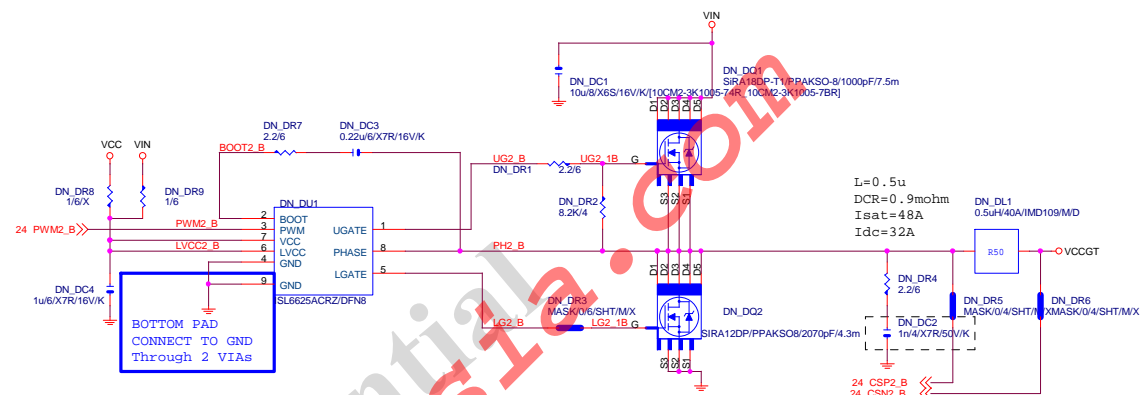
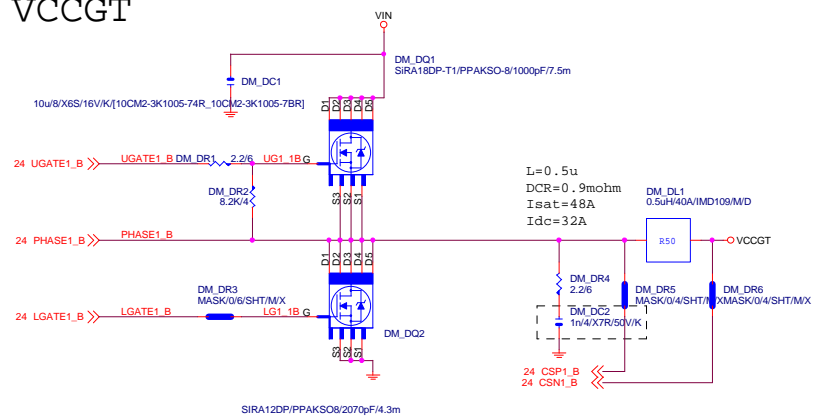
VIN	CAP	270u*3PCS
-----	-----	-----------



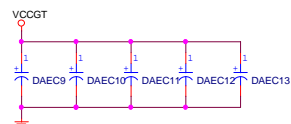
GIGABYTE

Title			
ISL95856_MOS			
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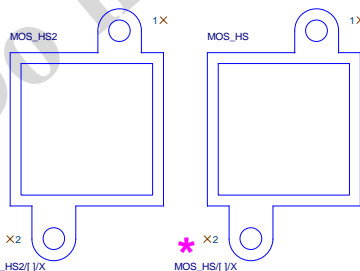
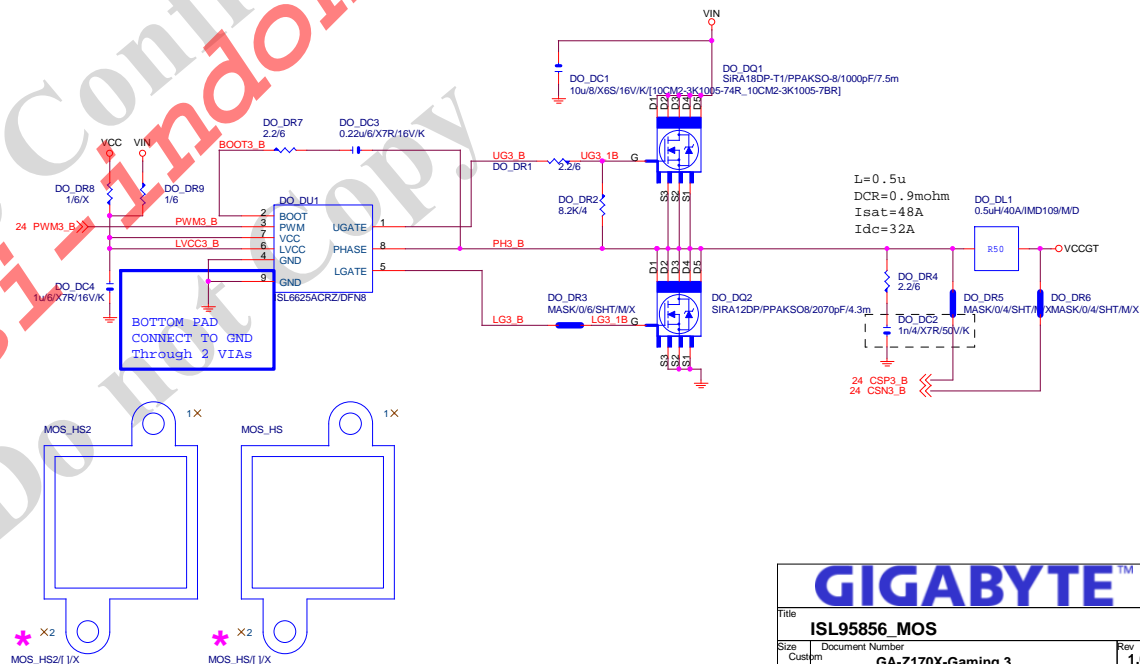
VCCGT



VCCGT	CAP	560u*5PCS 22u*15PCS
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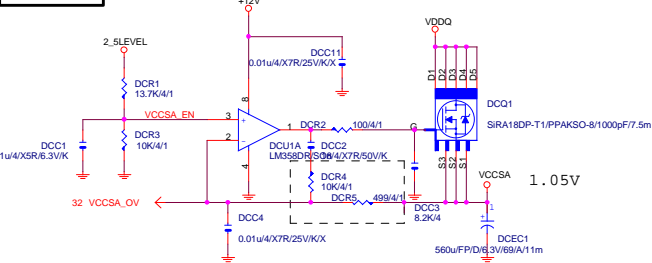
560u/FP/D/6.3V/69/A/11m
560u/FP/D/6.3V/69/A/11m
560u/FP/D/6.3V/69/A/11m
560u/FP/D/6.3V/69/A/11m
560u/FP/D/6.3V/69/A/11m

**GIGABYTE™**

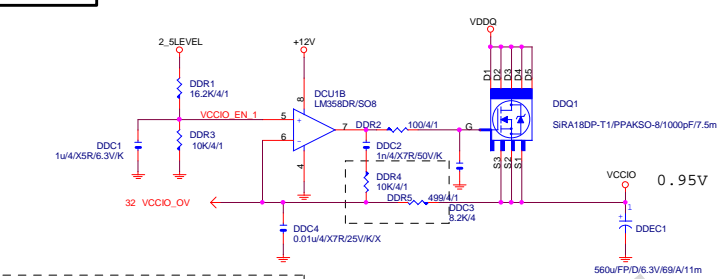
Title			
ISL95856_MOS			
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REV:0.4

VCCSA



VCCIO



VCCIO_EN 1 DDR10 04 SHT/MX VCCIO_EN 16

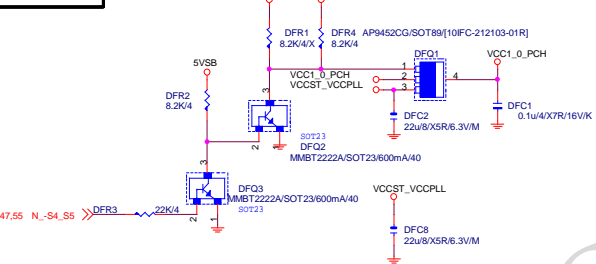
Connect to IT8620

VCCGT



放CPU端.

VCCST_VCCPLL



DDR4

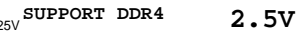


RT8120_DDR4 POWER

Size	Document Number	Rev
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VPP 25V

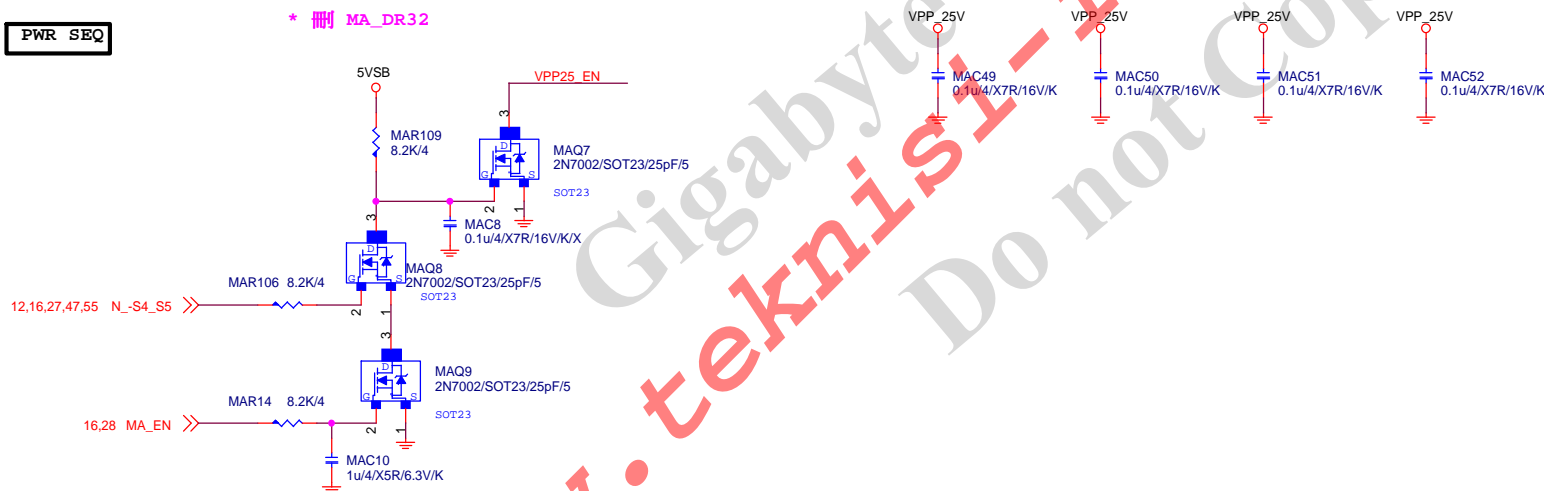
DDR_VPP VIN CAP
560u*1PCS



Remote sense請從最重的負載端點拉回

PWR SEQ

* 删除 MA_DR32



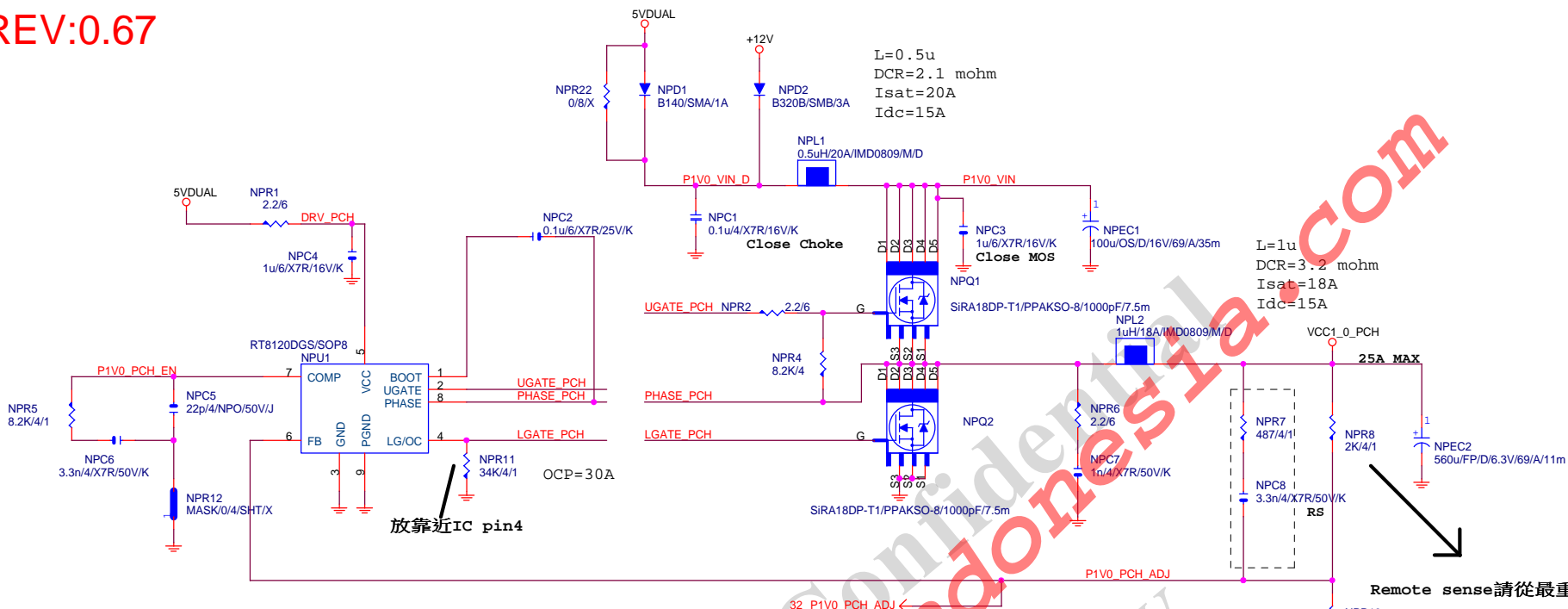
VPP CAP 560u*1PCS

* 大電容 x1

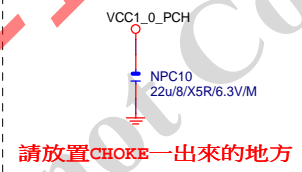
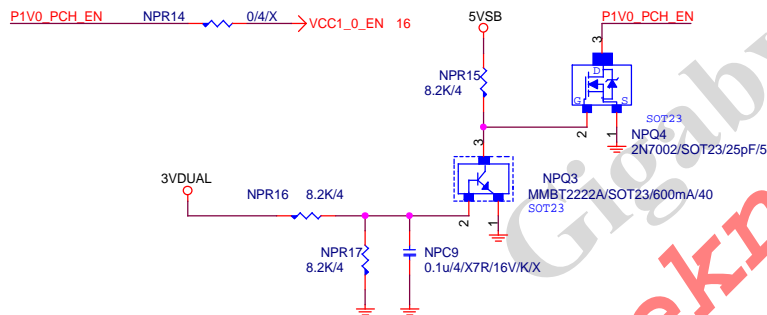
**GIGABYTE™**

Title			
RT8120_VPP25 POWER			
Size	Document Number	Rev	
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REV:0.67



PWR_SEQ

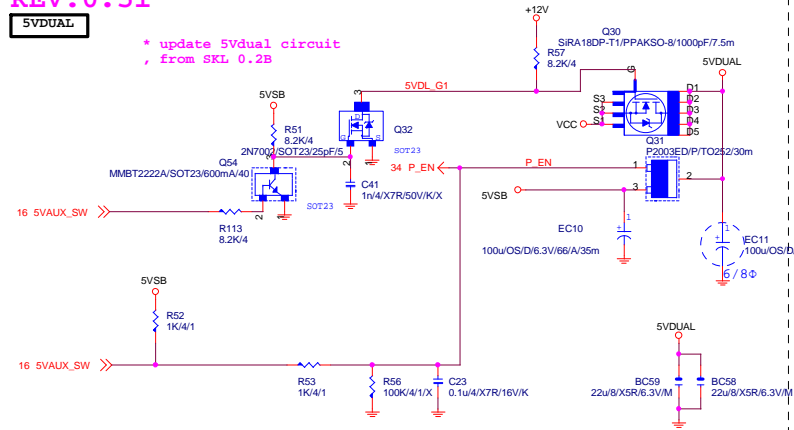


GIGABYTE™			
Title			
RT8120_PCH POWER			
Size	Document Number	Rev	
Custom	GA-Z170X-Gaming 3	1.01	
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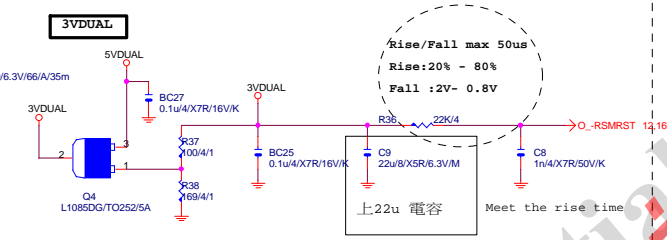
REV:0.51

5VDUAL

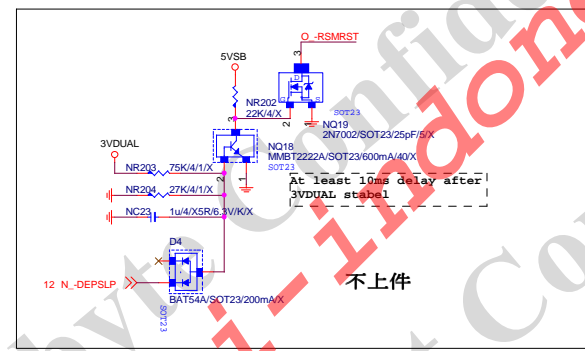
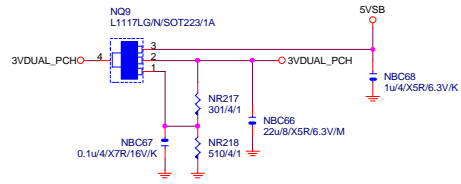
* update 5VDual circuit
from SKL 0.2B



3VDUAL



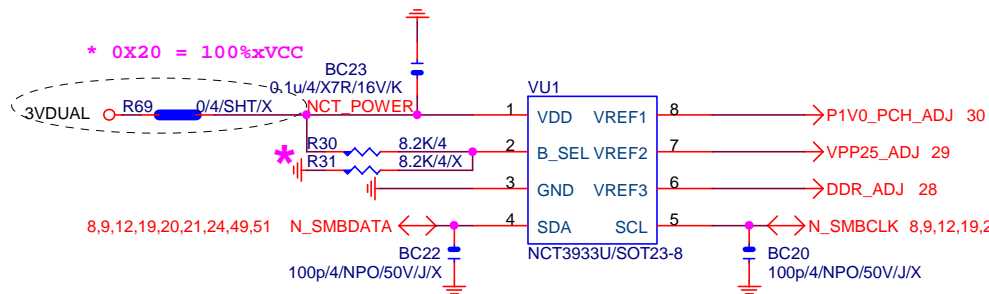
3VDUAL_PCH



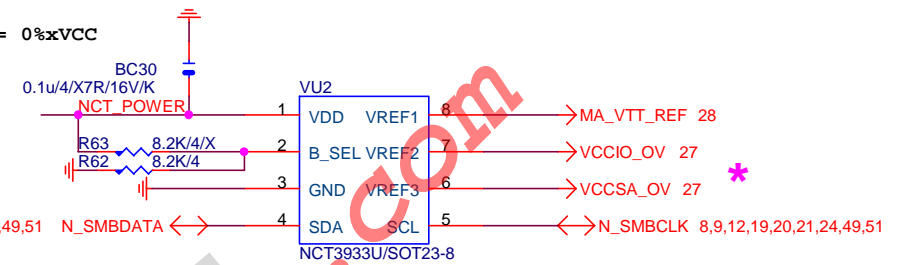
Gigabyte Technology

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OVER VOLTAGE



0X2A = 0%xVCC



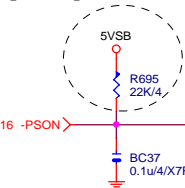
0X22 = 75%xVCC

* 删除 OVU3

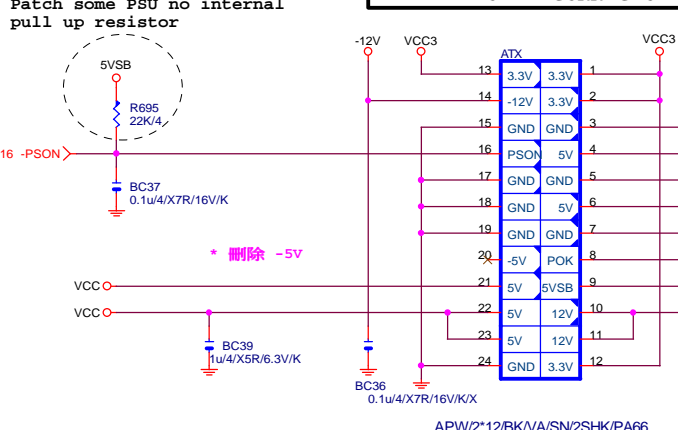
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology		
Title		
NCT3933		
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Patch some PSU no internal pull up resistor

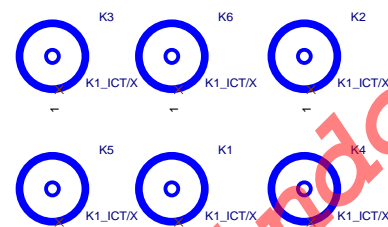
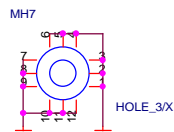
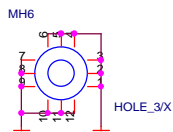
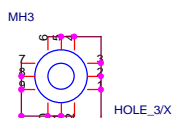
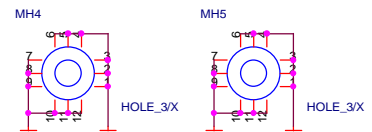
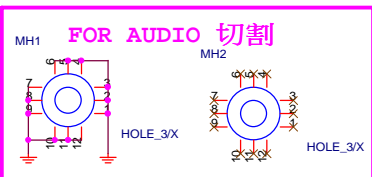
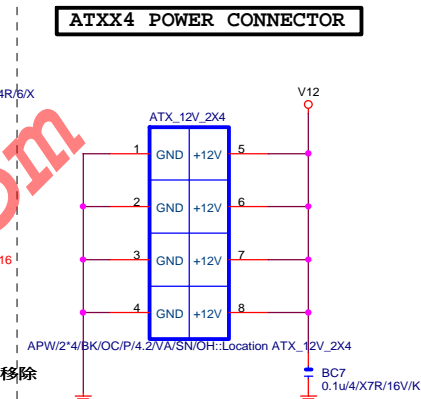


ATXX24 POWER CONNECTOR



To prevent the 5VSB under loading when boot

ATXX4 POWER CONNECTOR



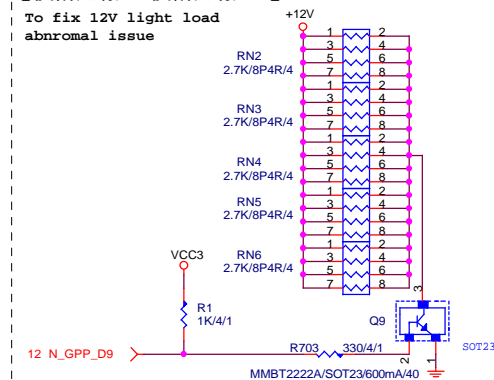
K1-ICT



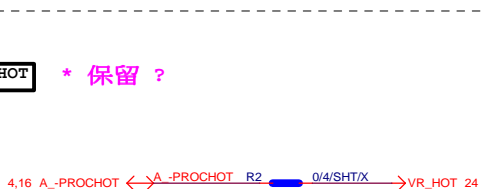
4MMH

【技術通報R&D技術通報153】

To fix 12V light load abnormal issue

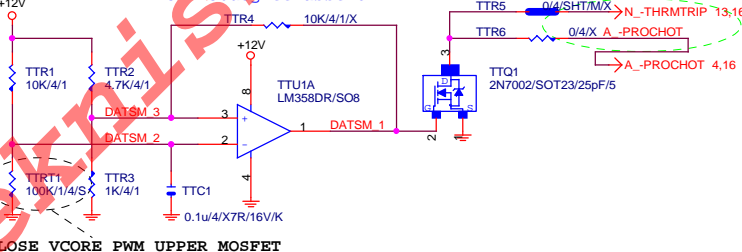


-PROHOT * 保留 ?



-PROHOT

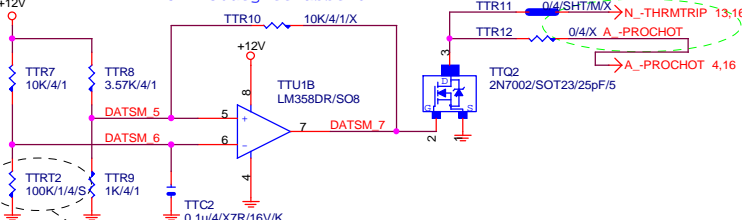
OTP:132度 / PCB THERMAL TRIP:122 度
125 ~130degree assert



CLOSE VCORE PWM UPPER MOSFET

-PROHOT

OTP:132度 / PCB THERMAL TRIP:122 度
125 ~130degree assert

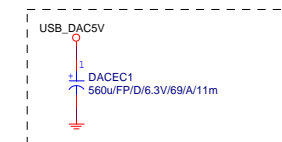
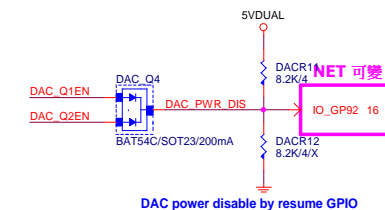
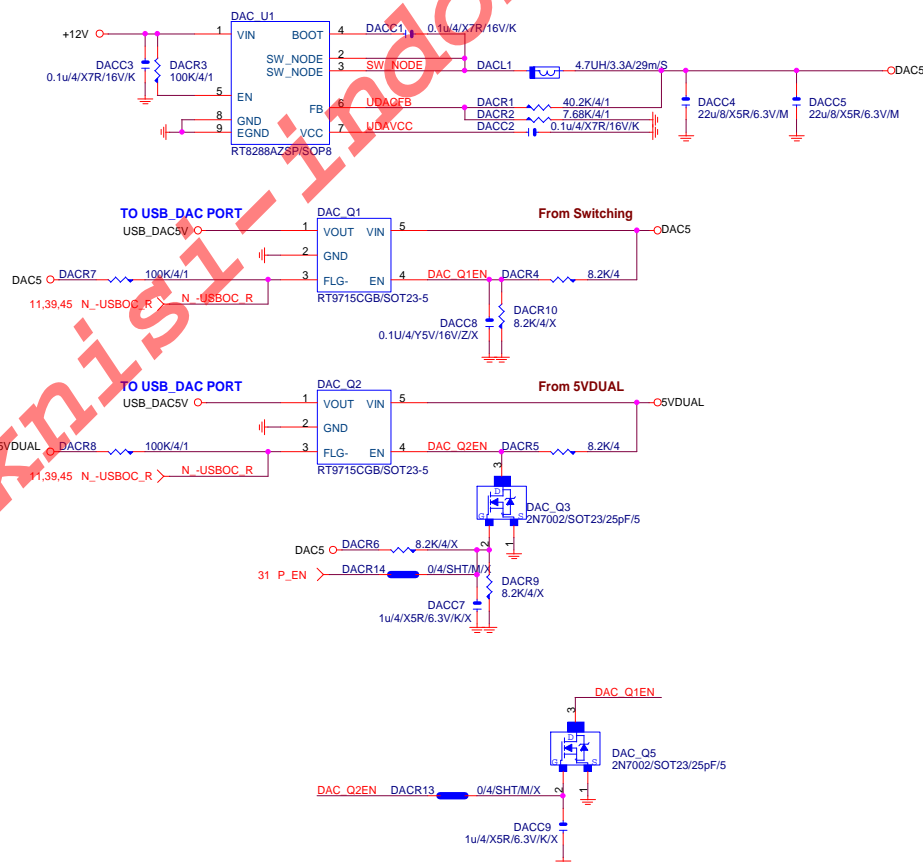
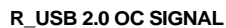


CLOSE VCCGT PWM UPPER MOSFET



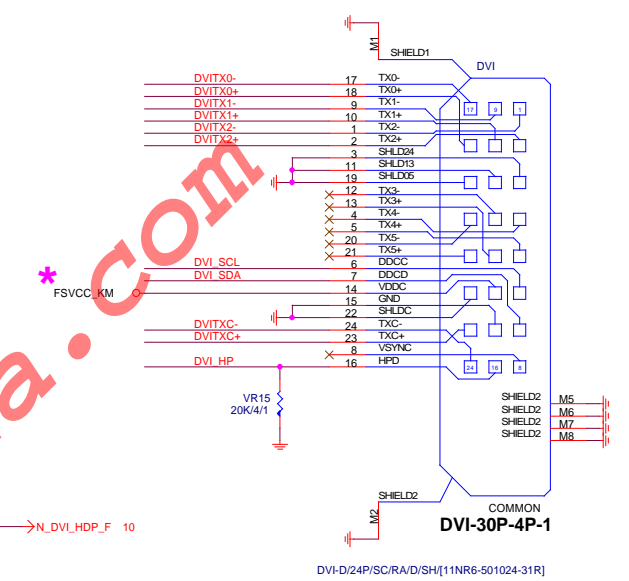
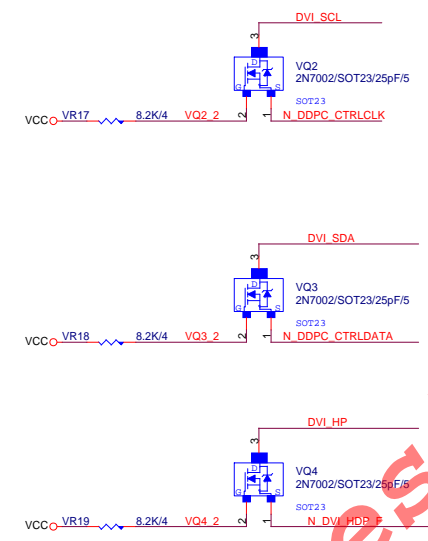
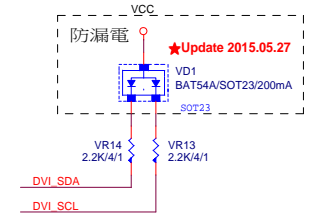
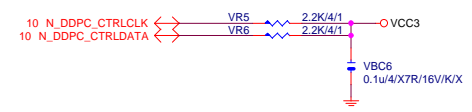
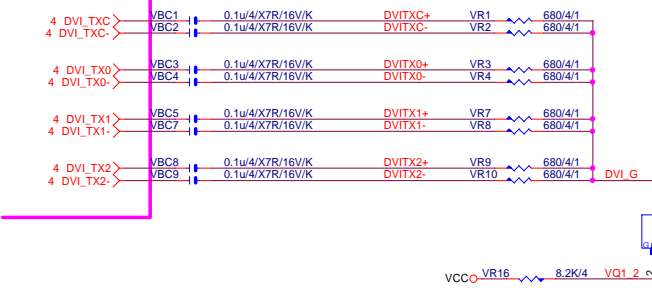
Gigabyte Technology

Title				
ATX POWER CONNECTOR				
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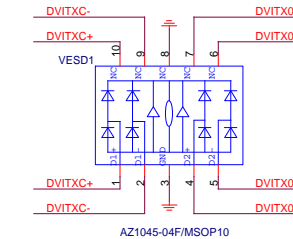
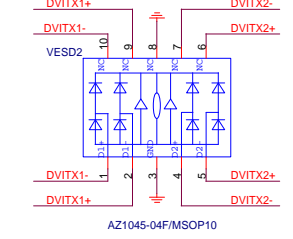


DVI:20/4/6/4/20
Impedance=85 +- 17.5%

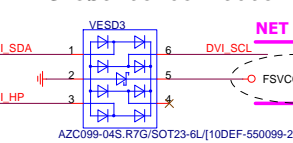
NET 可變



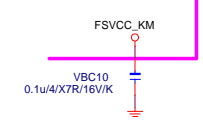
Close to connector



Close to connector



NET 可變



NET 可變

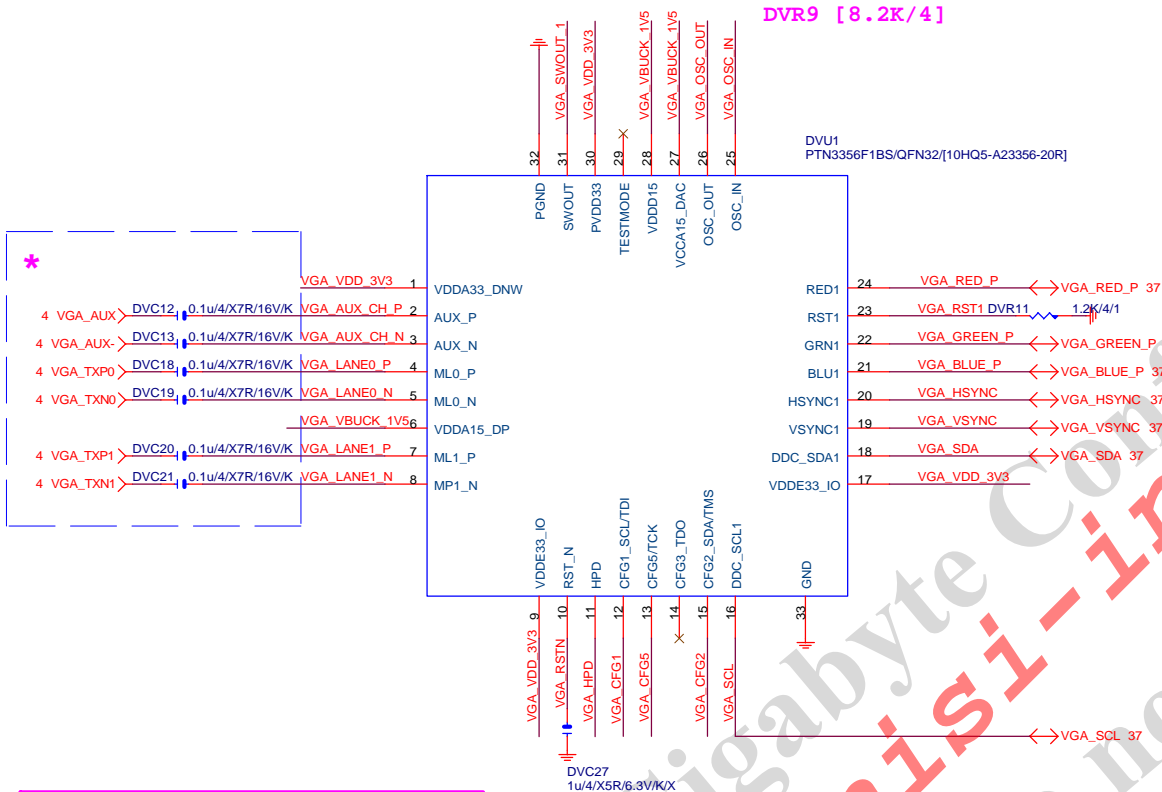
Gigabyte Technology			
Title			
DVI CONN			
Size	Document Number	Rev	
Custom	GA-Z170X-Gaming 3	1.01	
Date:	Tuesday, July 07, 2015	Sheet	35 of 58

```

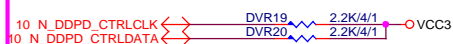
1. 上件:
DVC28 [10p/4/NPO/50V/J]
DVC11 [10p/4/NPO/50V/J]~修改值
DVR10 [8.2K/4]

2. 删除:
DVX1 [25M/16p/30ppm/49US/20/D]
DVC10 [20p/4/NPO/50V/J]
DVR9 [8.2K/4]

```



放置PCH端



VCC3

DV14 0.6SHT/MX

VGA_VDD_3V3

DVC14 4.7uF/6X5R6.3V/K

DVC15 0.1uF/4X7R/16V/K

DVC16 0.1uF/4X7R/16V/K

DVC17 0.1uF/4X7R/16V/K

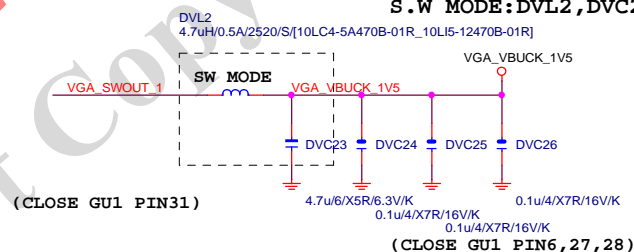
DVC22 0.1uF/4X7R/16V/K

(CLOSE GU1 PIN1,9,17,30)

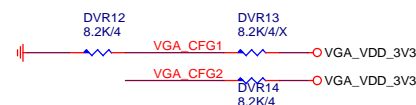
```

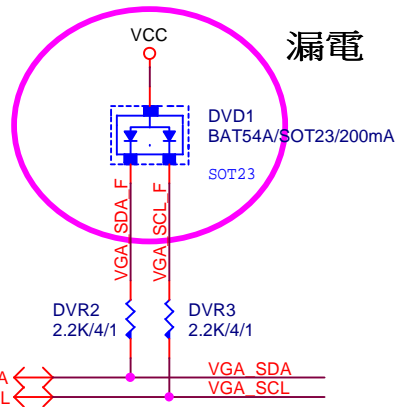
LDO  MODE:DVL2,DVC23-->X
S.W  MODE:DVL2,DVC23-->O

```

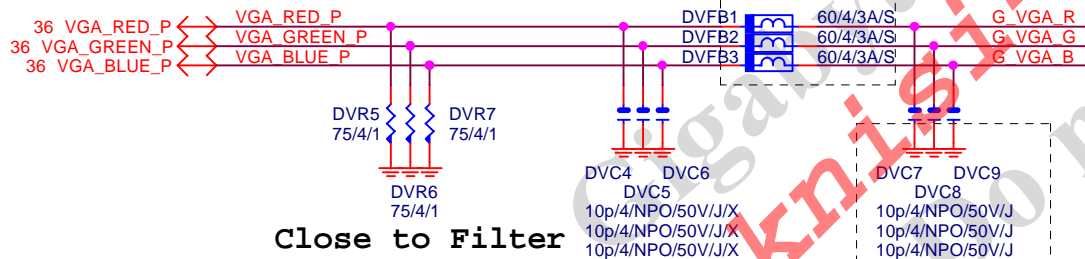
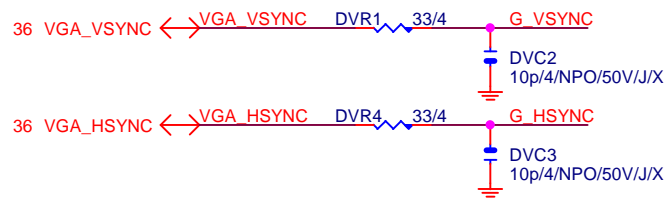


Non-Compliant



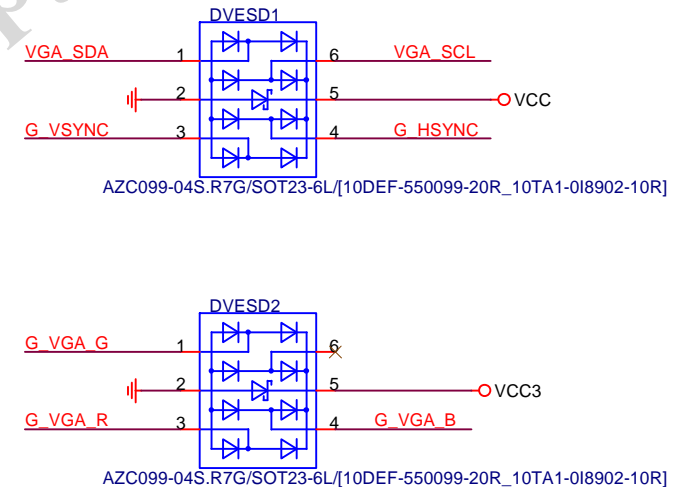
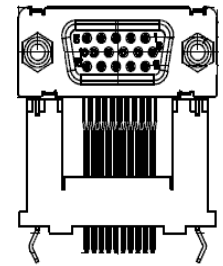
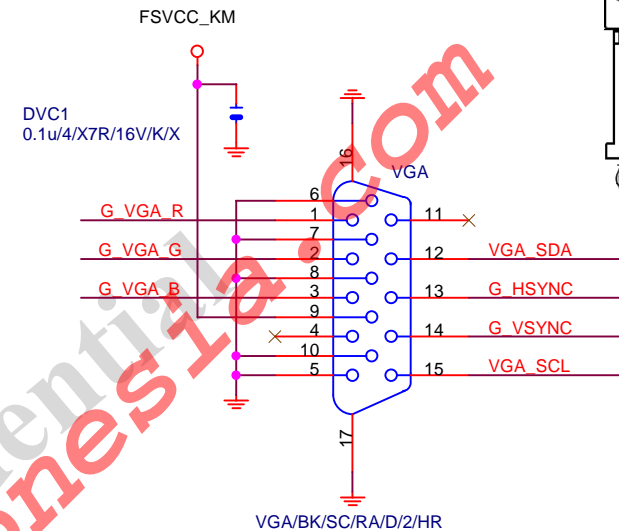


漏電



Close to Filter

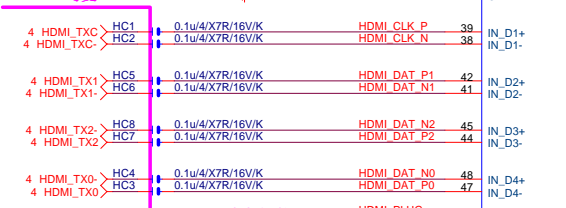
FOR EMI



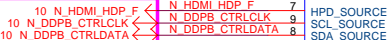
Gigabyte Technology			
NXP-PTN3356			
Title	GA-Z170X-Gaming 3		
Size	Document Number	Rev	1.01
Custom			
Date:	Tuesday, July 07, 2015	Sheet	37 of 58

HDMI LEVEL SHIFT

NET 可變

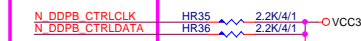


Port 自行調整



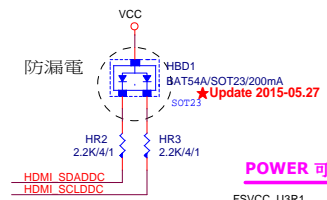
HDMI:20/4/6/4/20
Impedance=85 ± 17.5%

Port 自行調整

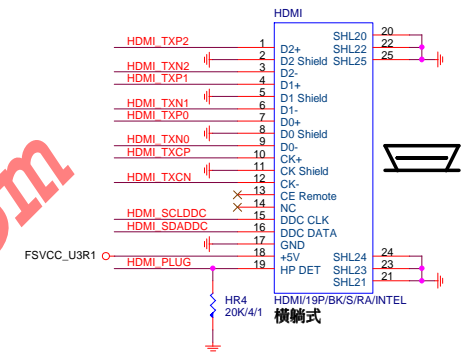
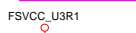


【技術通報R&D技術通報150】
HDMI eye diagram 1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

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



POWER 可變



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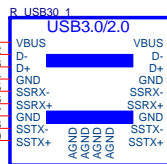
Rev: 0.31

R_USB30_1

NET 可自行調整

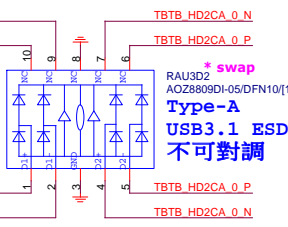
52 TBTB_USB2_D_N
52 TBTB_USB2_D_P
52 TBTB_CA2HD_0_N
52 TBTB_CA2HD_0_P
52 TBTB_HD2CA_0_N
52 TBTB_HD2CA_0_P

下 port for
Type-A USB3.1



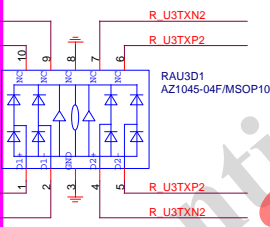
NET 可自行調整

TBTB_CA2HD_0_P
TBTB_CA2HD_0_N
* swap

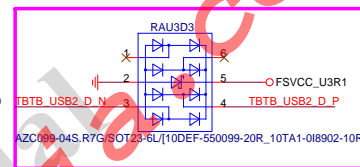


NET 可自行調整

PCH_USB3_RXN9
PCH_USB3_RXP9
* swap

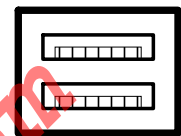


NET 可自行調整



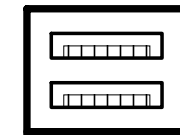
CONNECTOR 自行調整

2 port USB 3.0 Capture:
USB/18P/BU/OS/RA/D/2/1U/SB



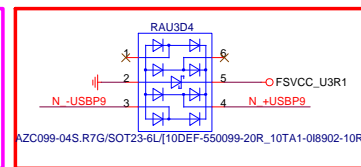
Footprint:USB30_20

2 port USB 3.0 with TYPE C Capture:
USB/18P/BU/OS/RA/D/2/HR

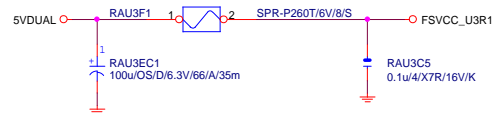


架高

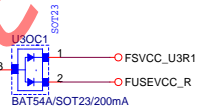
Footprint:USB30_H



FUSE 2 Port 1 Fuse 2.6A

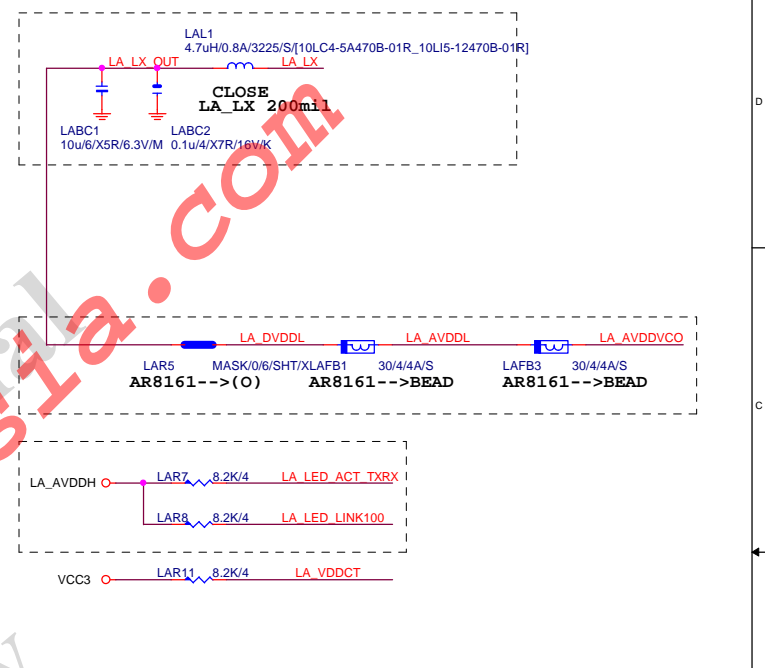
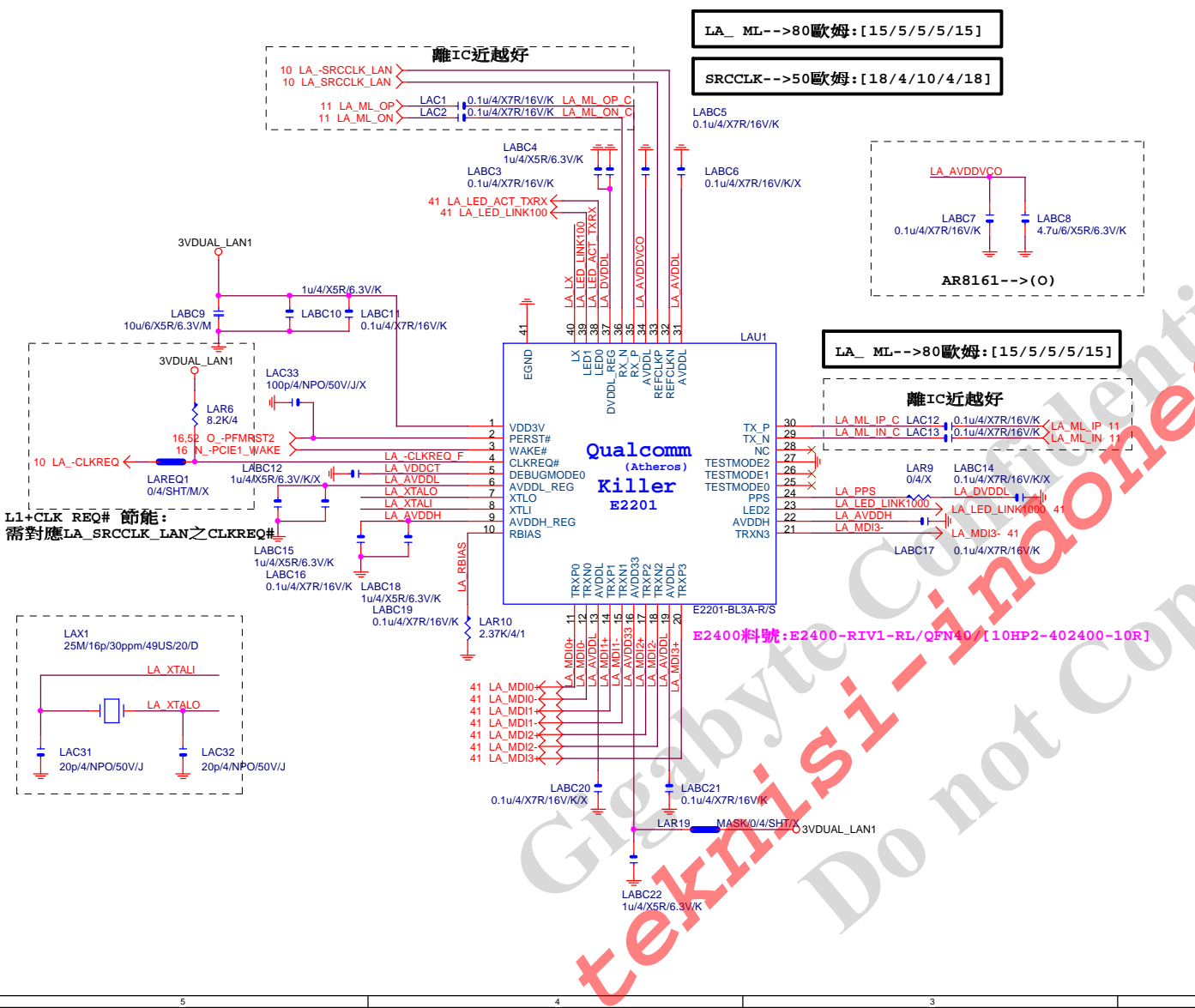


11,34,45 N_-USBOC_R
N_-USBOC_R
FUSEVCC_R



Gigabyte Technology

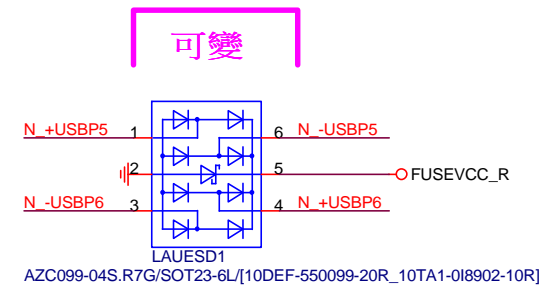
Title		R_USB30,F_USB30, USB OC	
Document Number		GA-Z170X-Gaming 3	
Size	Custom	Date	Tuesday, July 07, 2015
Sheet		39 of 58	
Rev		1.01	



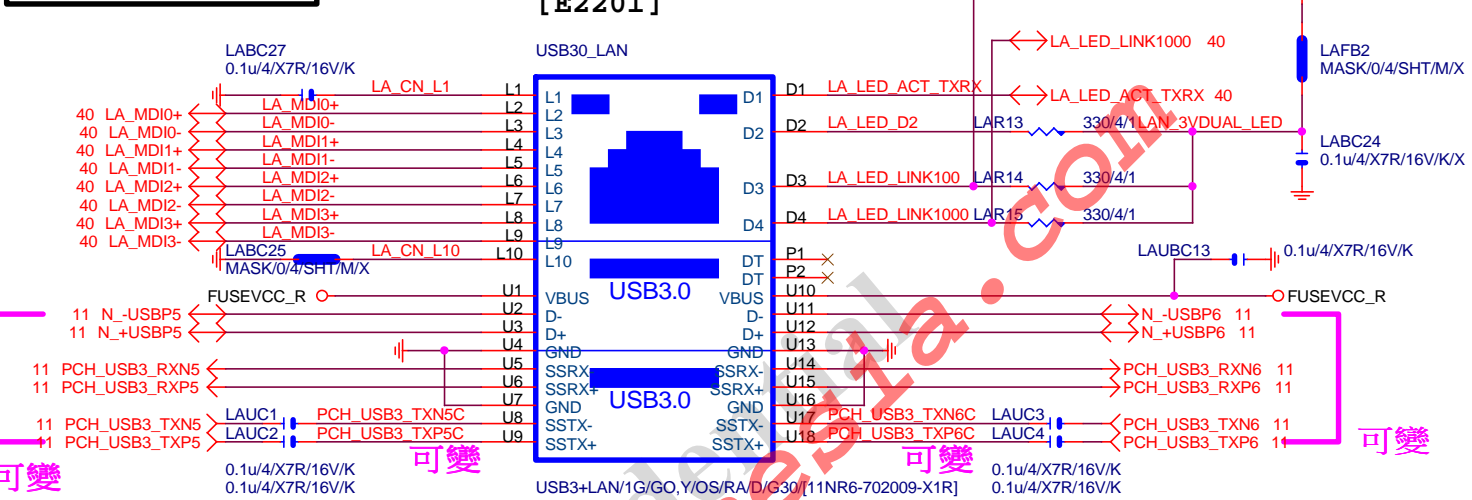
Gigabyte Technology			
KILLER E2201			
Title			
Size Custom	Document Number		Rev 1.01
GA-Z170X-Gaming 3			
Date: Tuesday, July 07, 2015	Sheet 40 of 58		
		1	

USB_LAN CONNECTOR R1.04

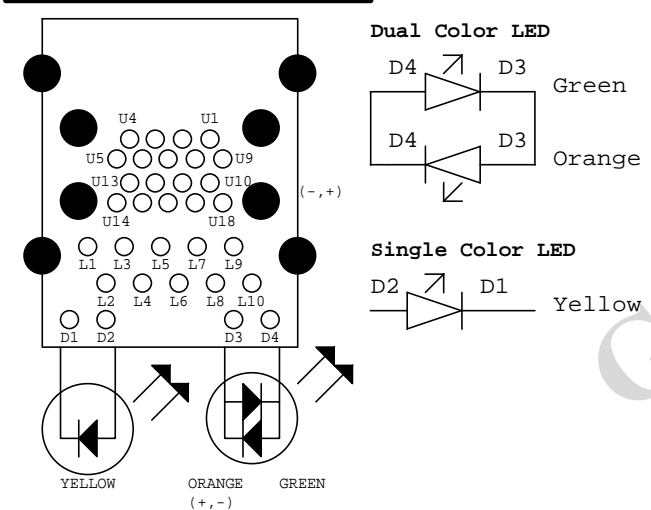
RMA ESD PROTECT note:可變更USB NAME



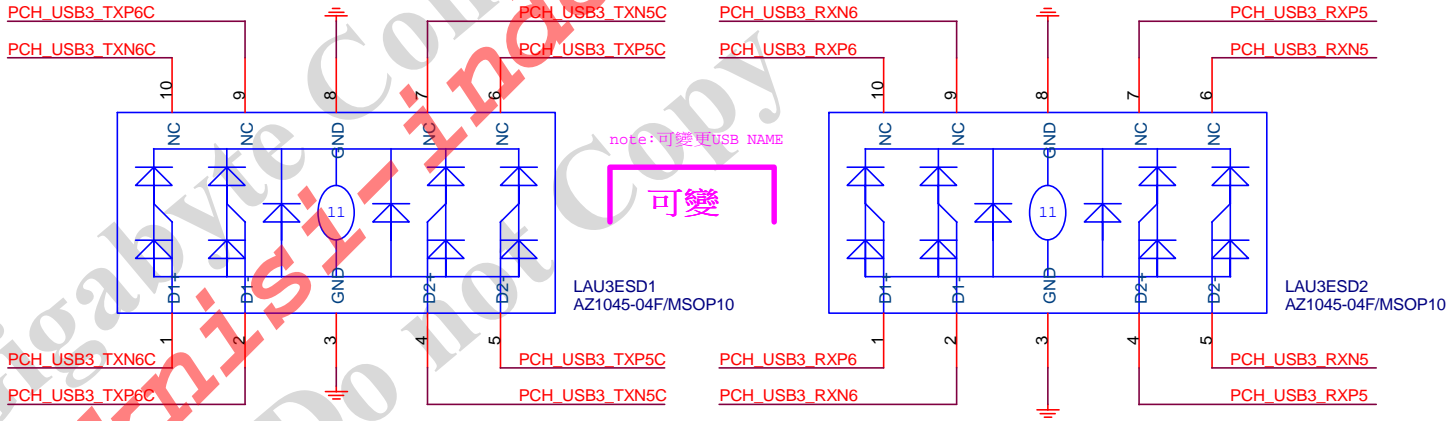
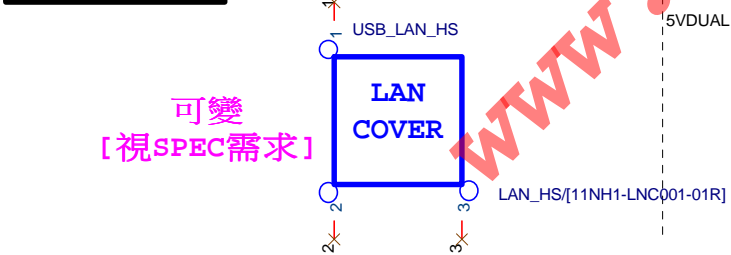
USB_LAN CONNECTOR [E2201] note:可變更USB NAME



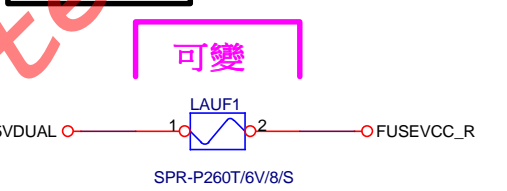
USB30 LAN LAYOUT示意圖



LAN COVER FOOT PRINT:LAN COVER

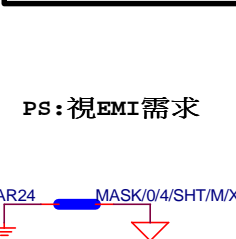


USB POWER note:可變更FUSE

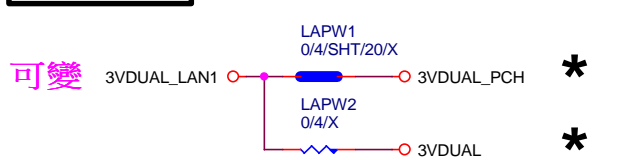


Close to connector
FUSE-0805

EMI SHORT PAD



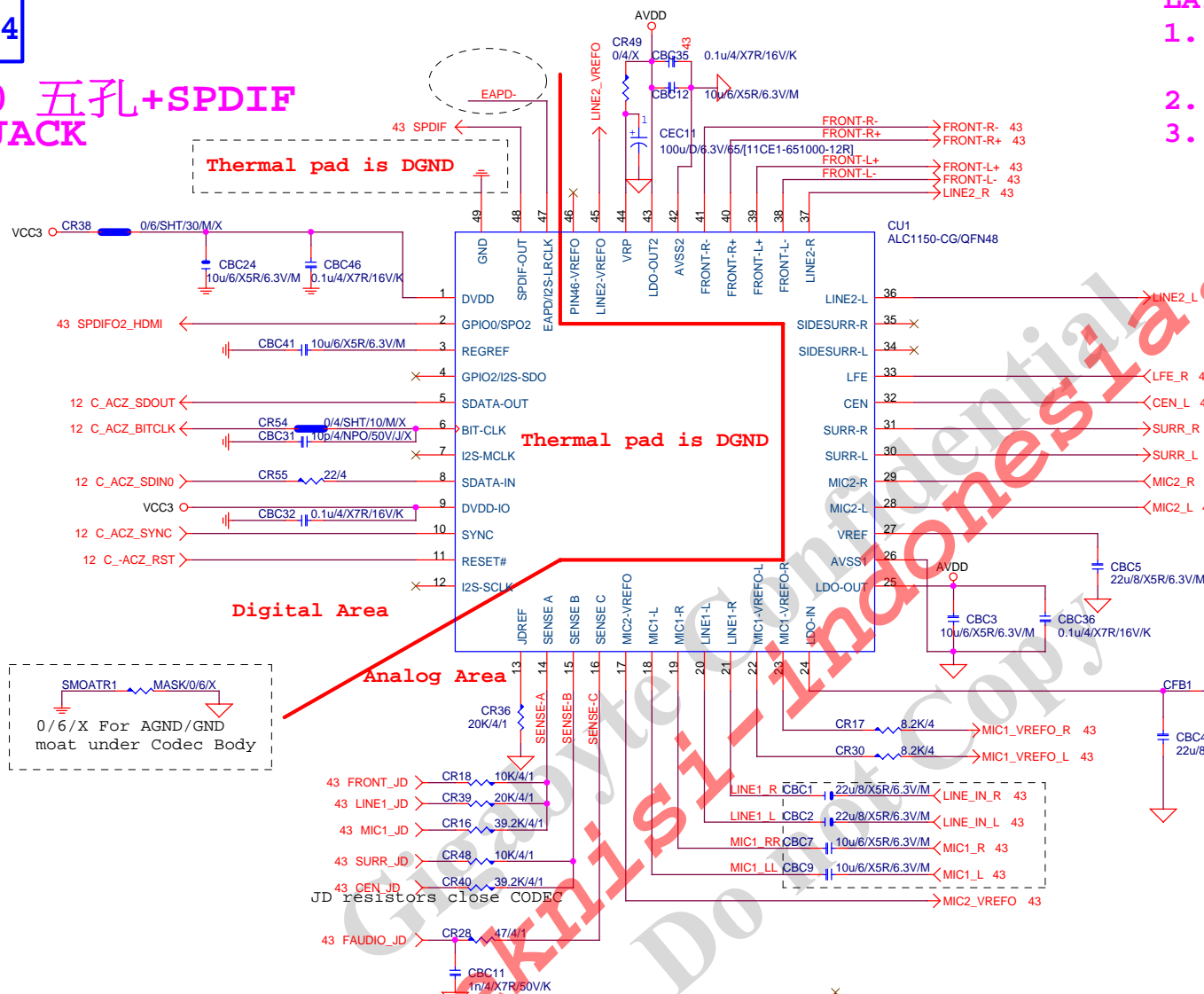
LAN POWER



Gigabyte Technology			
LAN CONNECTOR-E2201			
Size	Document Number	Rev	1.01
Custom	GA-Z170X-Gaming 3		
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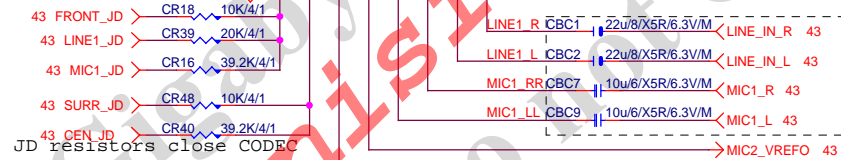
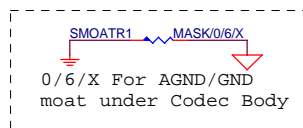
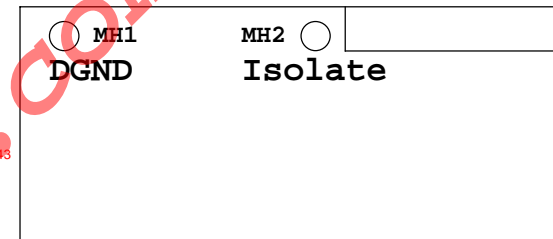
Rev 0.94

ALC1150 五孔+SPDIF AUDIO JACK



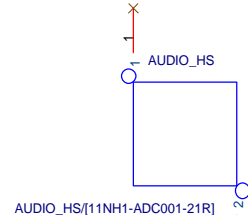
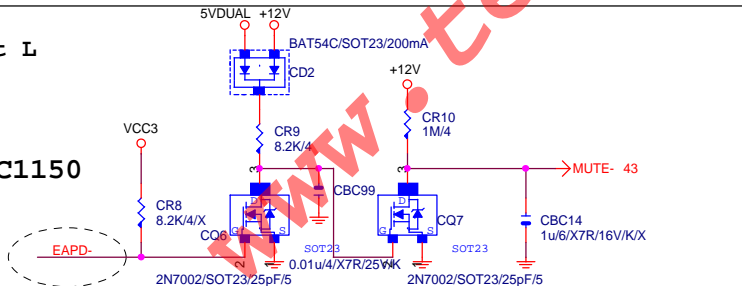
LAYOUT注意:螺絲孔下GND方式

1. MH1空間夠,下DGND
空間不夠,改為Isolate
2. MH2一律改為Isolate
3. Codec下方,第二層必須參考GND



EAPD: Default L
H : ON
L : OFF

Close to ALC1150



LAYOUT注意:要加

GND切割線

音效區域印刷

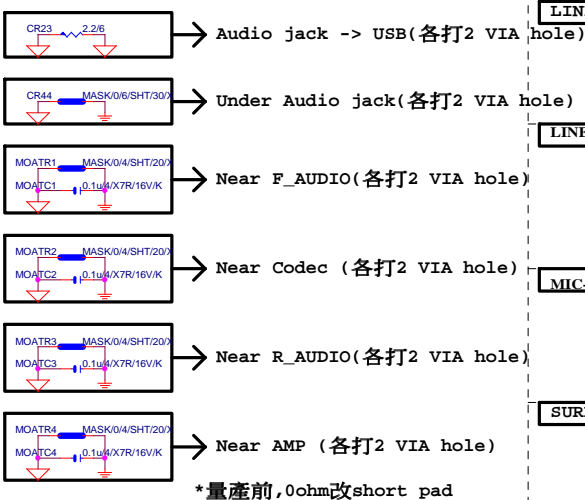
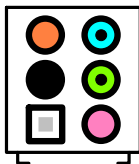


Gigabyte Technology

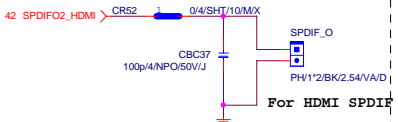
Title				
ALC1150				
Size	Document Number			Rev
Custom	GA-Z170X-Gaming 3			1.01
Date:	Tuesday, July 07, 2015		Sheet	42 of 58

Rev 0.94

AZALIA JACK

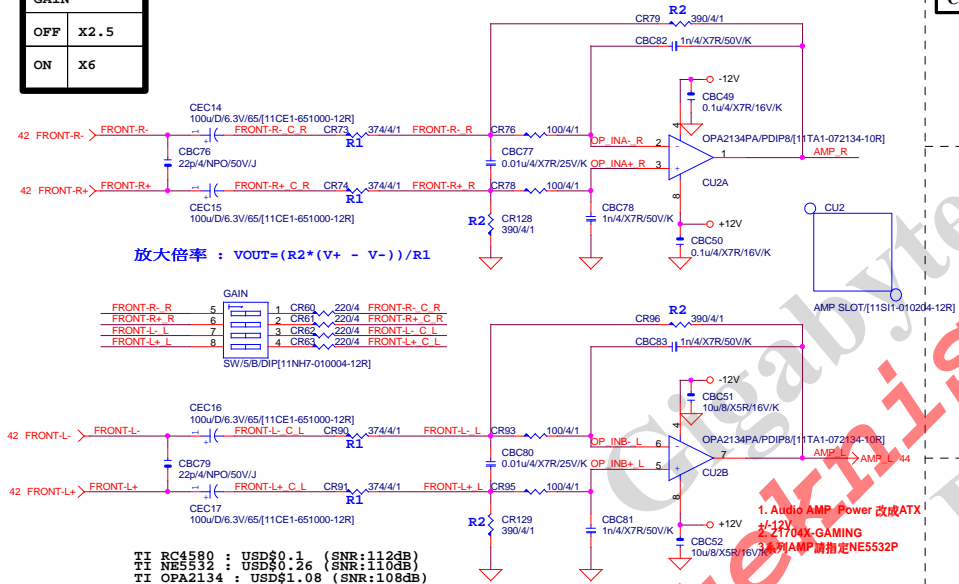


SPDIF OUT

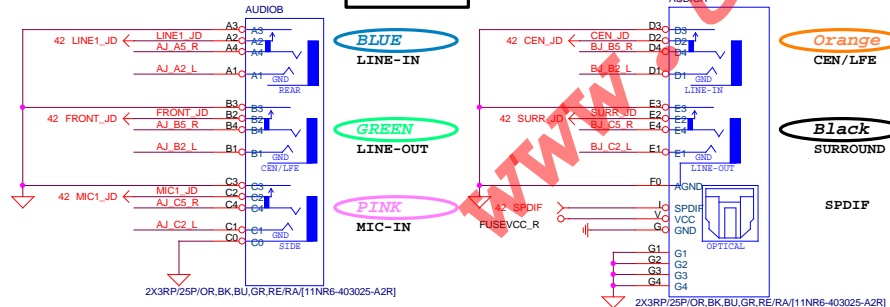


GAIN	
OFF	X2.5
ON	X6

Differential to Single-End AMPLIFIED



AZALIA JACK



LINE-OUT

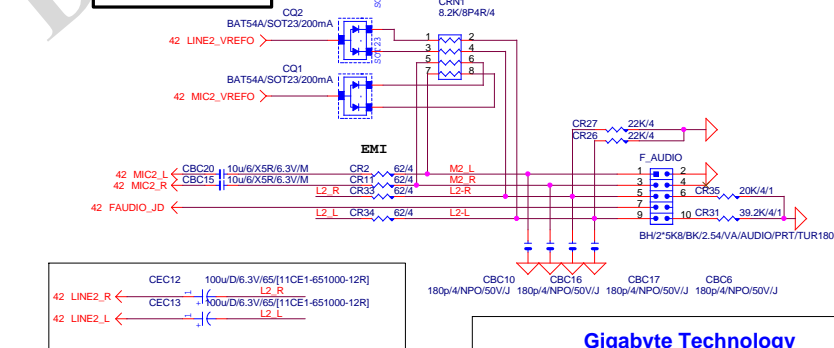
LINE-IN

MIC-IN

SURROUND

CEN/LFE

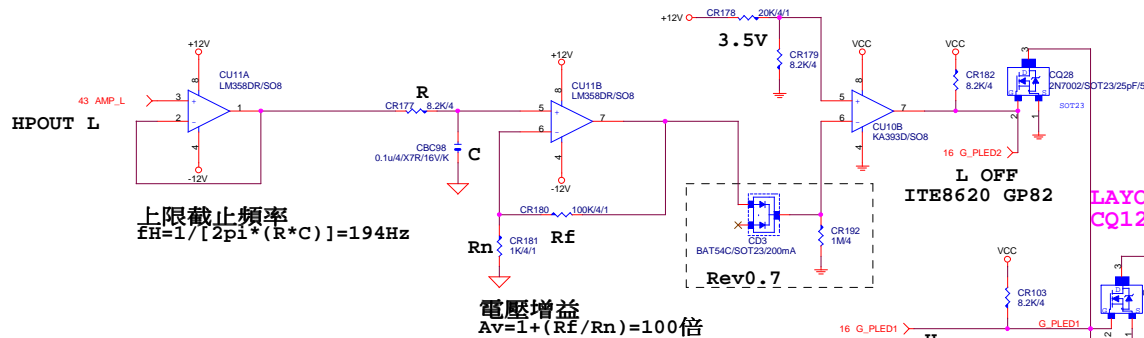
AZALIA FRONT PANEL



Gigabyte Technology

File	AUDIO JACK		Rev
Size	Document Number	GA-Z170X-Gaming 3	1.01
Custom	Date	Tuesday, July 07, 2015	Sheet 43 of 58

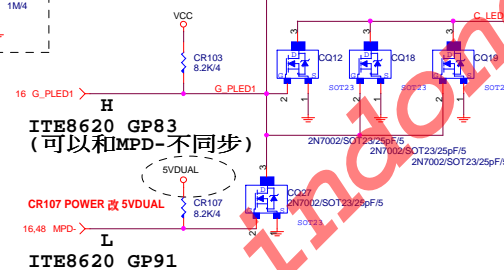
[GAMING系列--> 紅光LED(紅色):LED/R/H/0603/S]



LAYOUT注意:
CQ12,CQ18,CQ19必須擺放在一起

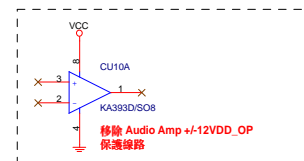
	IO_GP80
BAR LED ON	H
BAR LED OFF	L

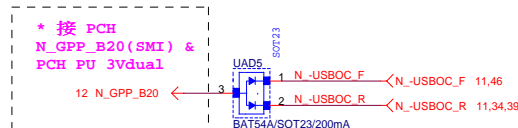
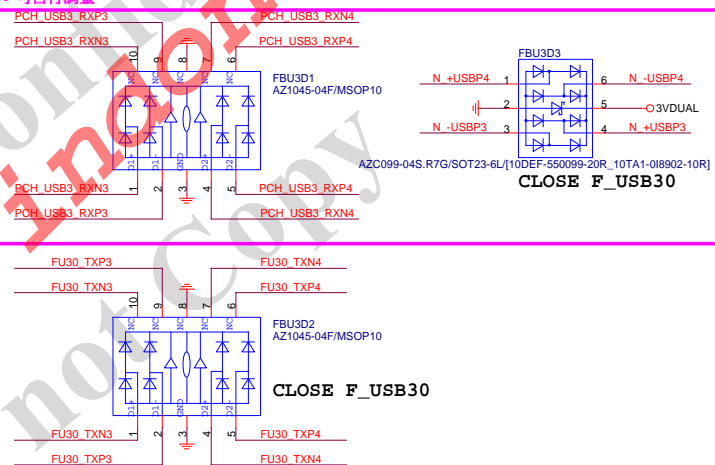
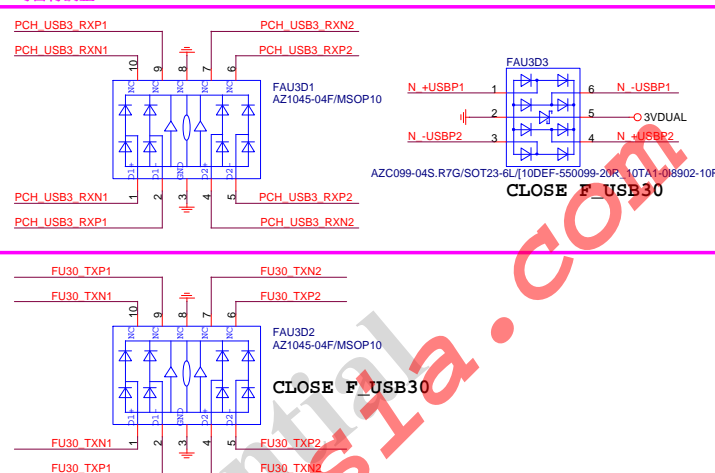
LAYOUT OPTION : 除了GAMING3系列和Z1704N-GAMING5不要LAYOUT, 其餘GAMING系列機種都要留LAYOUT



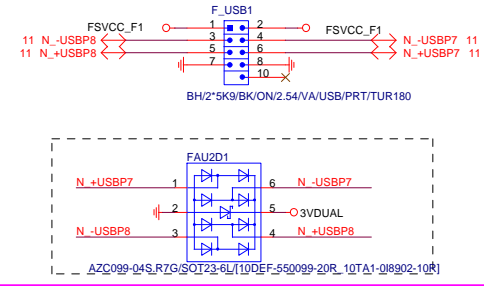
AUDIO LED Control (沒有LPT model)

	IO GP82	IO GP83	IO GP91
Sleep Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L

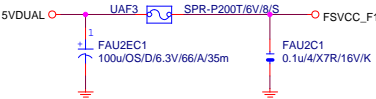




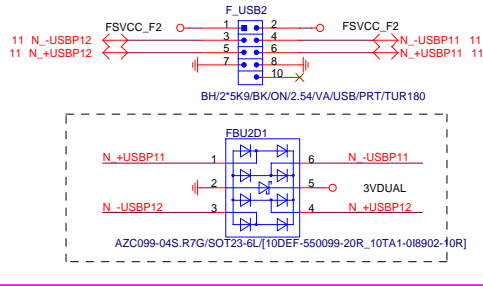
NET 可變



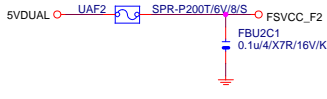
Close to connector
FUSE 2 Port 1 Fuse 2A



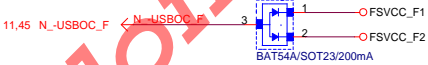
NET 可變



Close to connector
FUSE 2 Port 1 Fuse 2A

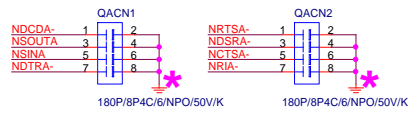


F_USB 2.0 OC SIGNAL



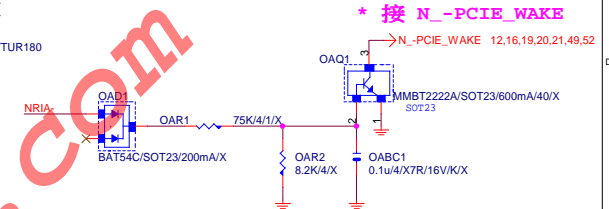
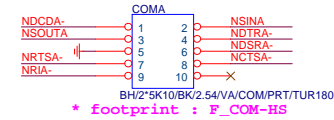
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COM PORT

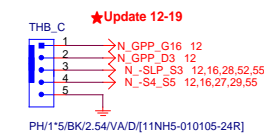
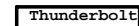
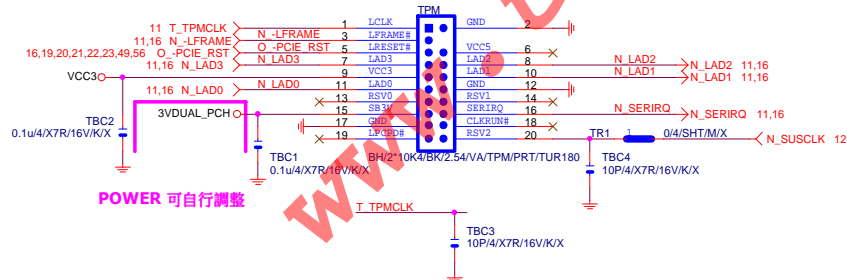
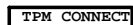


Rev: 0.3

TURBO KEY



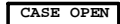
LPT PORT



Gigabyte Technology

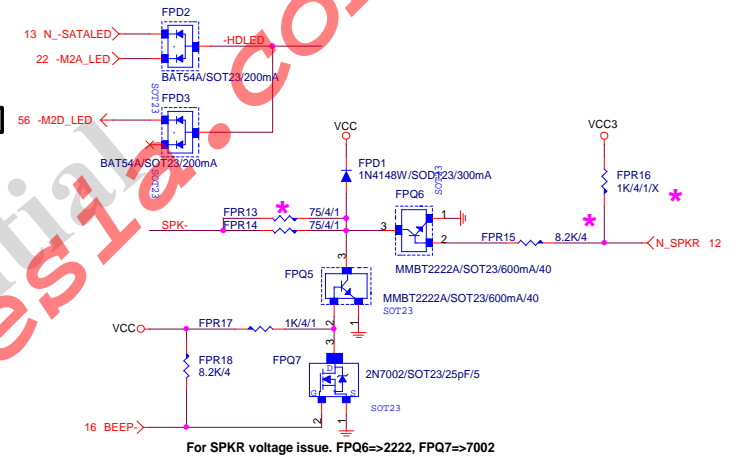
Title			
COM,TPM,THB			
Size Custom	Document Number	GA-Z170X-Gaming 3	Rev 1.01
Date:	Tuesday, July 07, 2015	Sheet 47 of 58	

FRONT PANEL



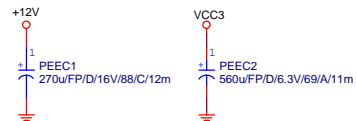
Update 2015.01.08
Footprint=F_PANEL-100

SPKR



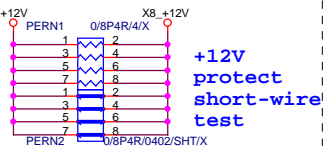
For SPKR voltage issue. FPQ6=>2222, FPQ7=>7002

Rev 0.3



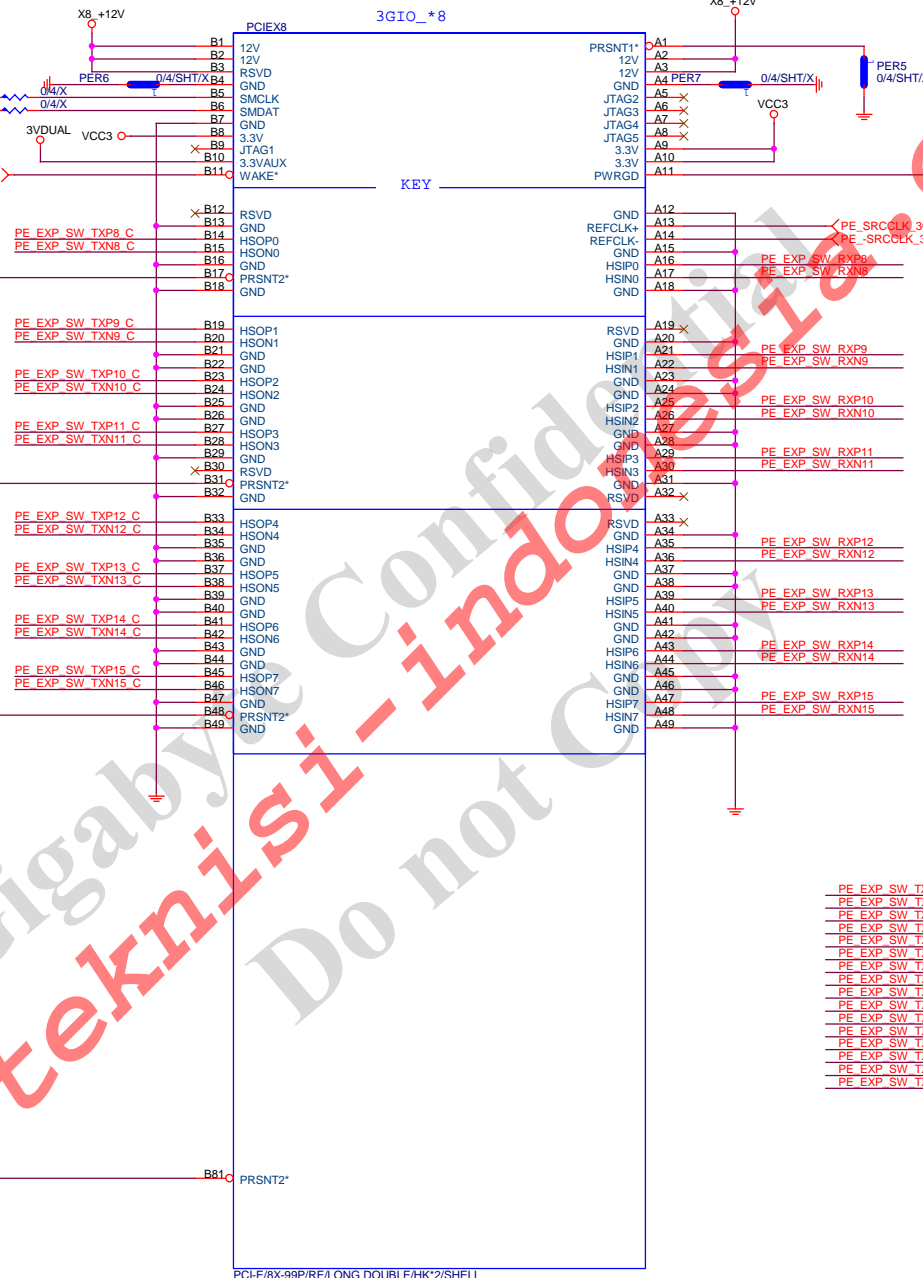
8,9,12,19,20,21,24,32,51
8,9,12,19,20,21,24,32,51

PCIEX8 PROTECT SHT



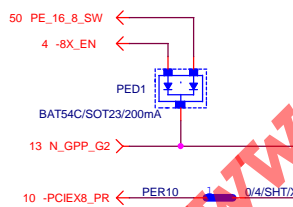
+12V
protect
short-wire
test

12,16,19,20,21,47,52 N_-PCIE_WAKE



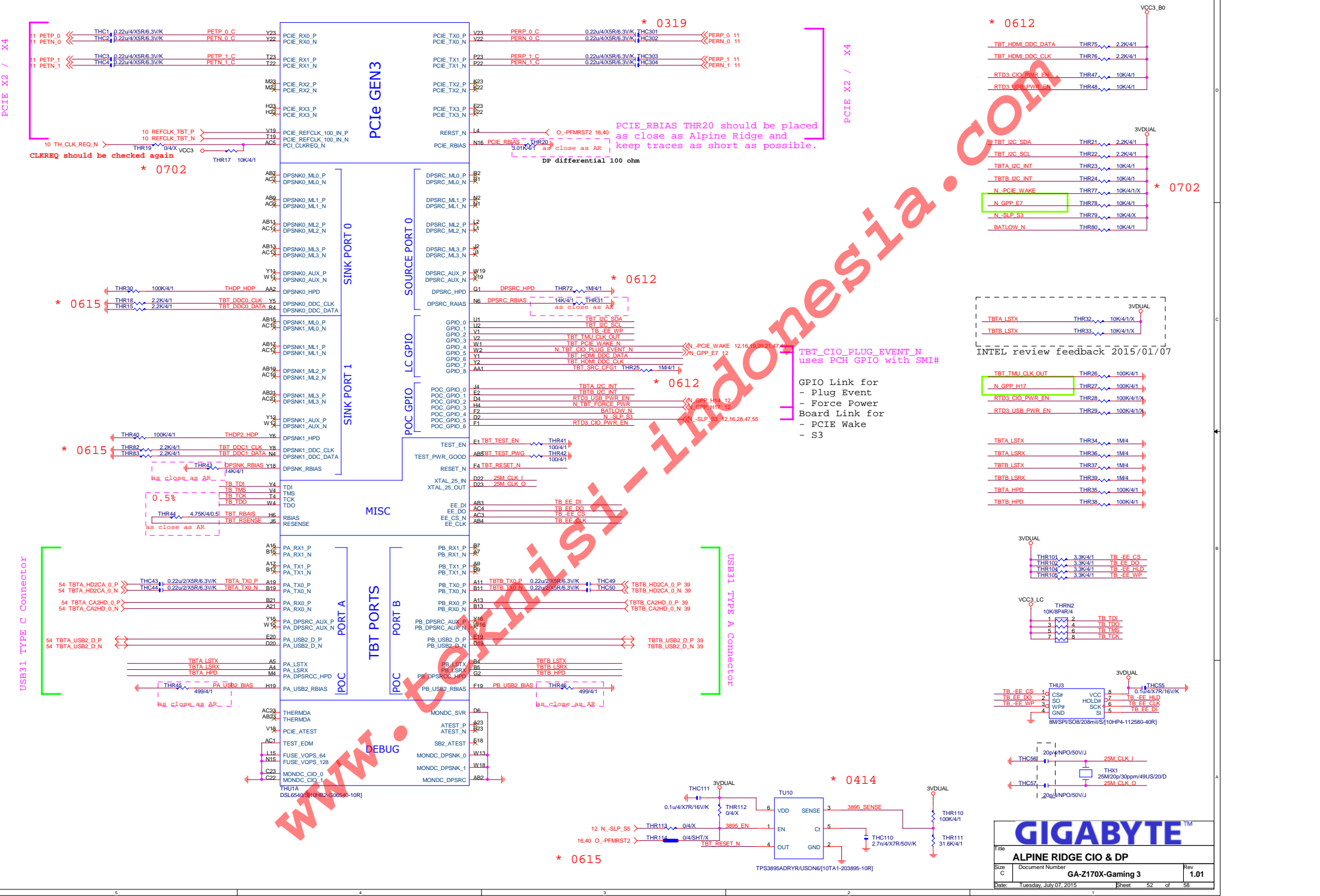
PE EXP SW RXP8.15] >>> PE_EXP_SW_RXP[8..15] 50
PE EXP SW RXN8.15] >>> PE_EXP_SW_RXN[8..15] 50
PE EXP SW TXP8.15] >>> PE_EXP_SW_TXP[8..15] 50
PE EXP SW TXN8.15] >>> PE_EXP_SW_TXN[8..15] 50

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



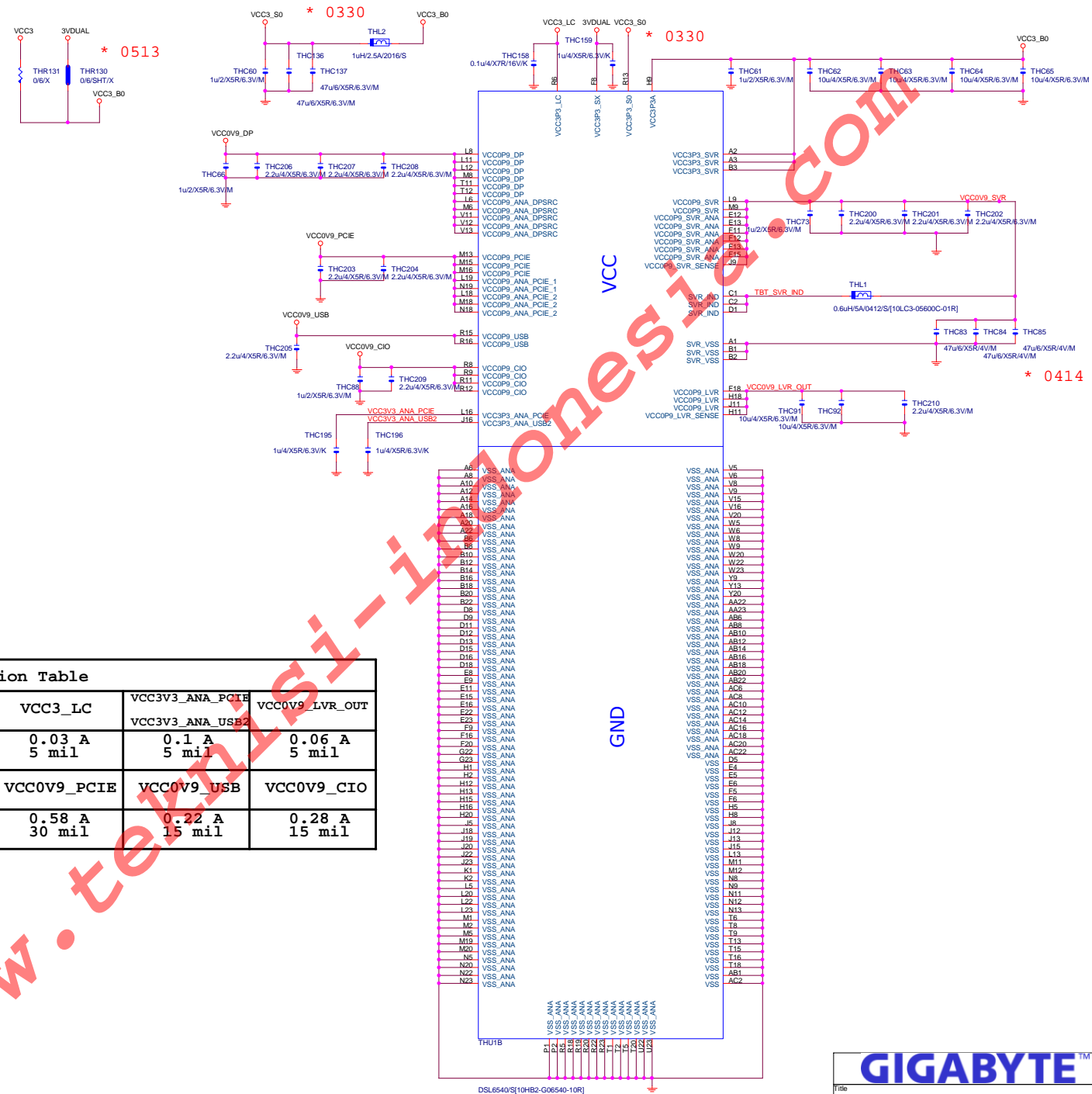
PCI-E/8X-99P/RE/LONG DOUBLE/HK*2/SHELL

紅色



GIGABYTE TM			
File ALPINE RIDGE CIO & DP			
Size C	Document Number	GA-Z170X-Gaming 3	Rev 1.01
Date:	Tuesday, July 07, 2015	Sheet	52 of 58

INTEL AR USB31 module SCH 0.62 (2015/07/02)



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

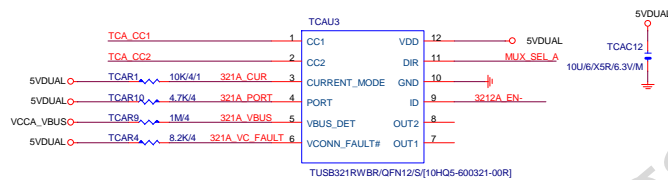
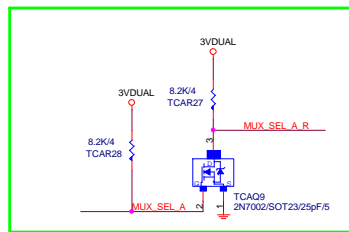
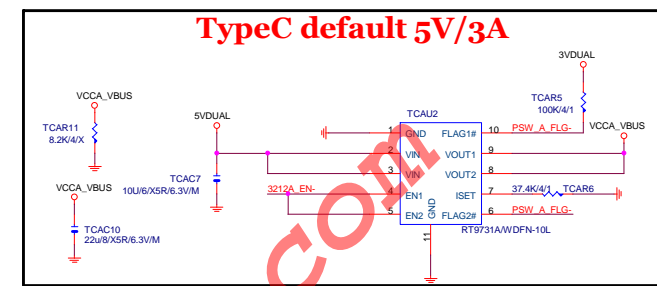
GIGABYTE™

ALPINE RIDGE POWER

Document Number
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Rev
1.01

Date: Tuesday, July 07, 2015 Sheet 53 of 58

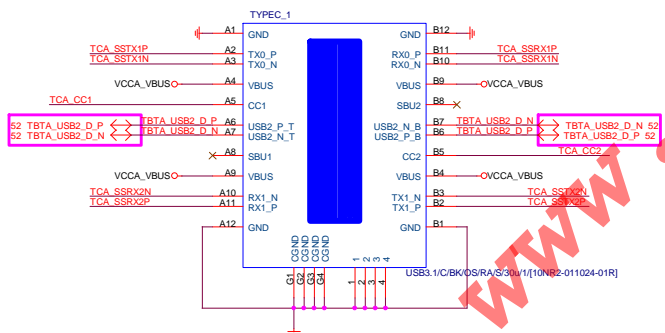
* 0612



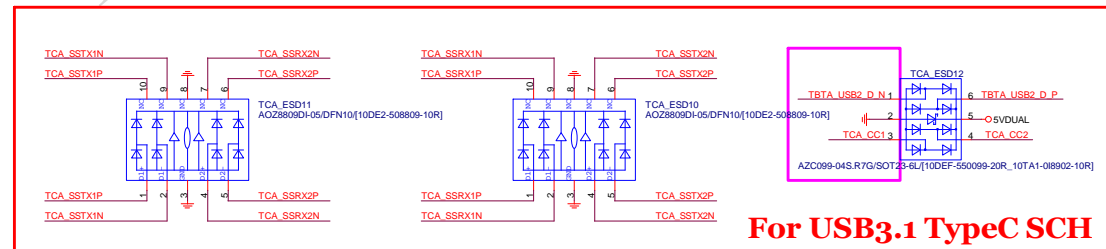
MUX_SEL
H - TypeC plug position 2
L - TypeC plug position 1

PORT

H - HOST
L - Device
NC - Dual Role



USB2.0 can be used the same source

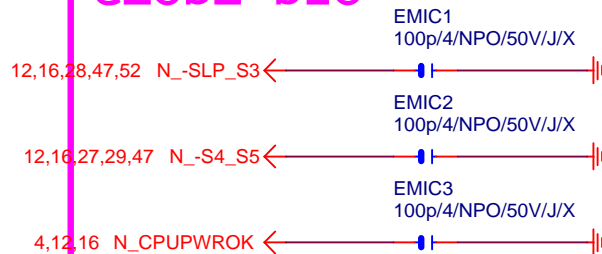


For USB3.1 TypeC SCH

Color markers can be changed by model

				
Title				
<p align="center">TI TUSB321</p>				
Size C	Document Number GA-Z170X-Gaming 3			Rev 1.01
Date:	Tuesday, July 07, 2015	Sheet	54 of	58

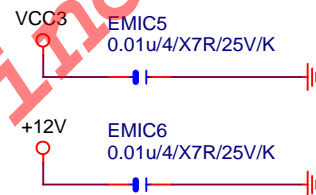
CLOSE SIO



CLOSE PCH



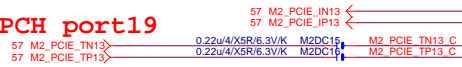
EMI Alain 2015/03/04 modify



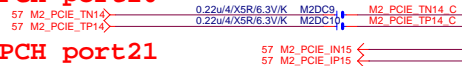
GIGABYTE™

Title			EM/ESD	
Size A	Document Number		GA-Z170X-Gaming 3	Rev 1.01
Date: Tuesday, July 07, 2015		Sheet	55 of 58	

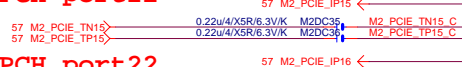
M.2 Lane2 from PCH port19



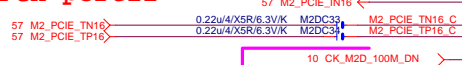
M.2 Lane2 from PCH port20



M.2 Lane3 from PCH port21

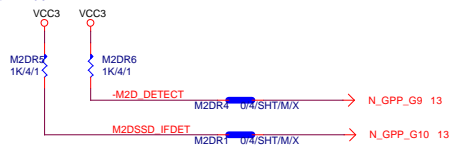


M.2 Lane4 from PCH port22



需與M2-CLKREQ對應

支援SATA and M.2 function



M.2 有插卡 / 沒插卡	M.2插何種卡? GPP_G10	SATA Express 插何種硬碟? GPP_E0/E1/E2/F0	IO19 (S0)	IO20 (S1)	IO21 (S2)	IO22 (S3)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA	SATA	SATA	SATA (For M2)
		SATA Express (Low)	SATA	SATA	SATA	SATA (For M2)
	PCIe Mode (Hi)	SATA (Hi)	PCIEx4 (For M.2)			
		SATA Express (Low)	PCIEx4 (For M.2)			
沒插卡 (Hi)	Don't Care (Hi)	SATA (Hi)	SATA (S0)	SATA (S1)	SATA (S2)	SATA (S3)
		SATA Express (Low)	SATA Express (For S.E.0)		SATA Express (For S.E.1)	

M.2-SATA+SATA S0~2

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	L
GPP_G8	L	GPP_C19	L
GPP_F1/F2	H (SATA)	GPP_C21	H

M.2-SATA+S.E.D

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	L
GPP_G8	L	GPP_C19	L
GPP_F1/F2	L (S.E.)	GPP_C21	H

M.2X4

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	H
GPP_G8	H	GPP_C19	H
GPP_F1/F2	H	GPP_C21	H

M.2X2+S.E.

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	H
GPP_G8	H	GPP_C19	H
GPP_F1/F2	L	GPP_C21	H

M.2沒插卡+SATA S0~3

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	H	GPP_C20	L
GPP_G8	H	GPP_C19	L
GPP_F1/F2	H	GPP_C21	L

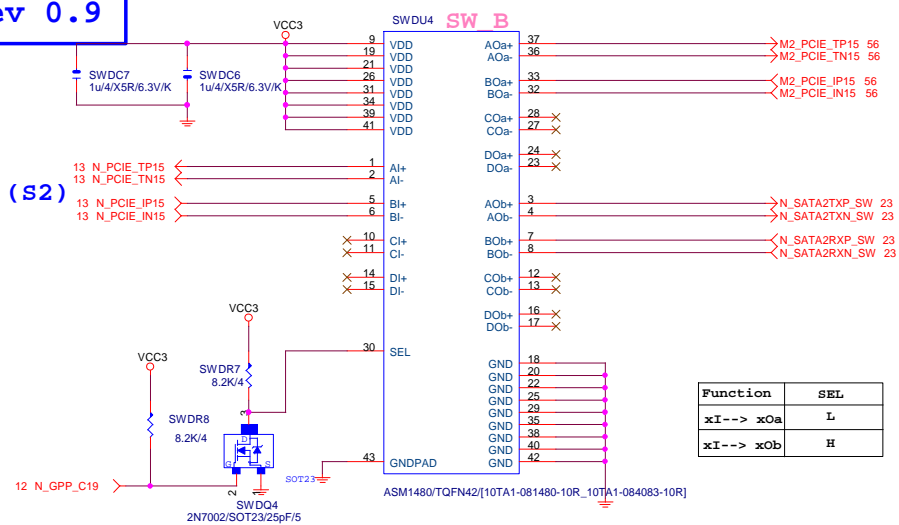
M.2沒插卡+S.E.C&S.E.D

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	H	GPP_C20	L
GPP_G8	H	GPP_C19	L
GPP_F1/F2	L	GPP_C21	L

GIGABYTE Technology			
Title	M.2 X4		
Size	Document Number	Rev	1.01
Custom	GA-Z170X-Gaming 3		
Date:	Tuesday, July 07, 2015	Sheet	55 of 58

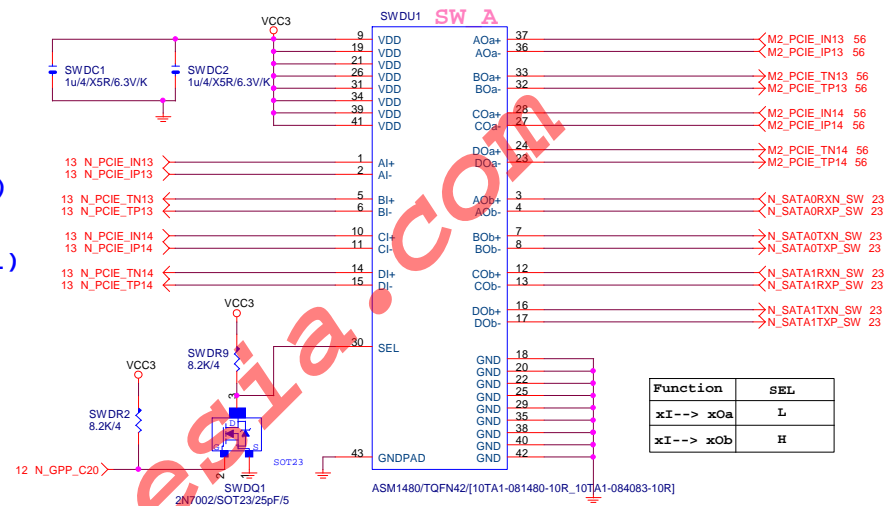
Rev 0.9

PCH (S2)

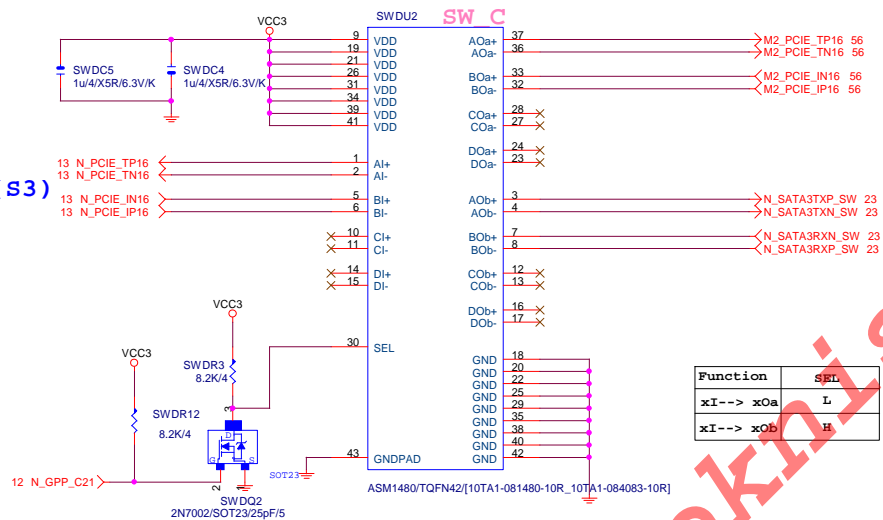


PCH (S0)

PCH (S1)



PCH (S3)



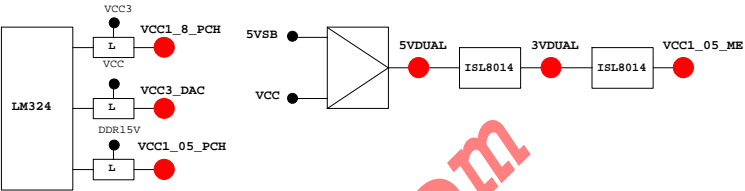
Gigabyte Technology			
M.2 SWITCH			
Title			
Size	Document Number	GA-Z170X-Gaming 3	Rev 1.01
Date:	Tuesday, July 07, 2015	Sheet 57	of 58

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/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	PCIE1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN		GPI	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	GPI	GPIO8	N/A
GP9/OC5#	STBY		NATIVE	USB OC5#	N/A
GP10/OC6#	STBY		NATIVE	USB OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	USB PWR protect	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	GPIO12	N/A
GP13	STBY	L	GPI	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPIO15(TLS Enable)	P/U 8.2K 3VDUAL
GP16	MAIN		GPI	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	GPIO17	P/U 8.2K VCC3
GP18	MAIN		GPI	Mobile Only	N/A
GP19	MAIN		GPI	GPIO19	P/U 8.2K VCC3
GP20	MAIN		GPI	GPIO20	P/U 8.2K VCC3
GP21	MAIN		GPI	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	GPIO22	P/U 8.2K VCC3
GP23	MAIN		GPI	GPIO23	N/A
GP24	STBY	L	GPI	SKTOCC#	N/A
GP25	STBY			Mobile Only	N/A
GP26	STBY			Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	PWR LED	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	Mobile Only	N/A
GP31	STBY	H-Z	GPI	Mobile Only	N/A
GP32	MAIN	H	GPO	N/A	N/A
GP33	MAIN	H	GPO	N/A	N/A
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	-ACZ_DET	P/U 8.2K VCC3
GP36	MAIN		GPI	N/A	N/A
GP37	MAIN		GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	GPIO39	P/U 8.2K VCC3
GP40	STBY		NATIVE	USB OC1#	N/A
GP41	STBY		NATIVE	USB OC2#	N/A
GP42	STBY		NATIVE	USB OC3#	N/A
GP43	STBY		NATIVE	USB OC4#	N/A
GP44	STBY	L	NATIVE	GPIO44	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46	P/U 8.2K 3VDUAL
GP47	STBY			Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48	P/U 8.2K 3VDUAL
GP49	MAIN	H-Z	IN	GPIO49	P/U 8.2K 3VDUAL
GP50	MAIN		NATIVE	-REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	-GNT1	N/A
GP52	MAIN		NATIVE	-REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	-GNT2	N/A
GP54	MAIN		NATIVE	-REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	-GNT3	N/A
GP56	STBY		NATIVE	Mobile Only	N/A
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY		NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE	-SUSTAT	N/A
GP62	STBY	L	NATIVE	SUSCLK	N/A
GP63	STBY	L	NATIVE	GPIO63	N/A
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY			Mobile Only	N/A
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL

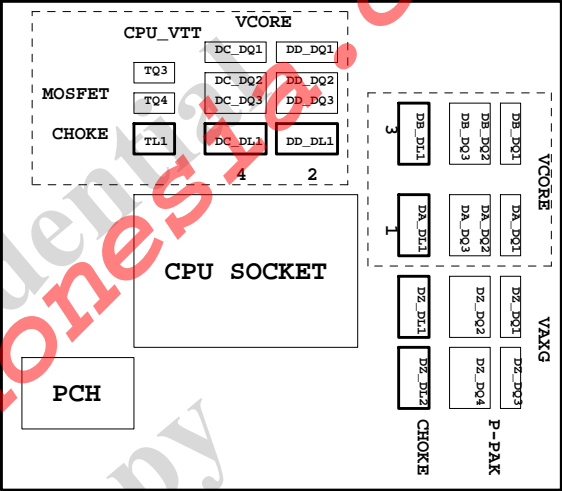
Super I/O ITE8720 GPIO Table

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

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSIO	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VBSBW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSSO1	MB_ID3	
PD7/GP77/BUSSO2	MB_ID4	
AFD#/GP86/SMB_C_R	2x8	FST_2X8
INIT#/GP85/SMB_D_M	SRC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMB_C_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDIT_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/SMB_D_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRXL2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

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

散熱模組料號：

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

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