

SHEET

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05	CPU_LGA1150-B_DDR4
06	CPU_LGA1150-C
07	CPU_LGA1150-D
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09	DDR4 CHANNEL B 1,2
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29	ISL95856 PWM
30	ISL95856 MOS_VCORE
31	ISL95856 MOS_VCCGT
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SHEET

TITLE

33	RT8120_DDR
34	RT8120_VPP
35	RT8120_PCH
36	DISCRETE POWER
37	NCT3933
38	ATX POWER , A_-PROCHOT
39	KB_MS_USB
40	DVI CONN
41	PTN3356 - DP to VGA - IC
42	PTN3356 - DP to VGA - Conn
43	NA
44	R_USB30
45	INTEL I219
46	USB30_LAN CONNECTOR-I219
47	Realtek ALC1150
48	REAR AUDIO JACK
49	Audio Power
50	F_USB30
51	F_USB BOX Header
52	COM,LPT,TPM ,THB
53	F_PANEL
54	TABLE LIST
55	IDT6V41510_CLK BUFFER
56	NA
57	NA
58	NA
59	EMI-ESD
60	POWER零件使用表
61	NTC MAP
62	ALPINE RIDGE CIO & DP
63	ALPINE RIDGE POWER
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65	TBT HDMI 2.0

Gigabyte Technology

Title			
Cover Sheet			
Size	Document Number	GA-Z170XP-SLI	Rev
Custom			1.0
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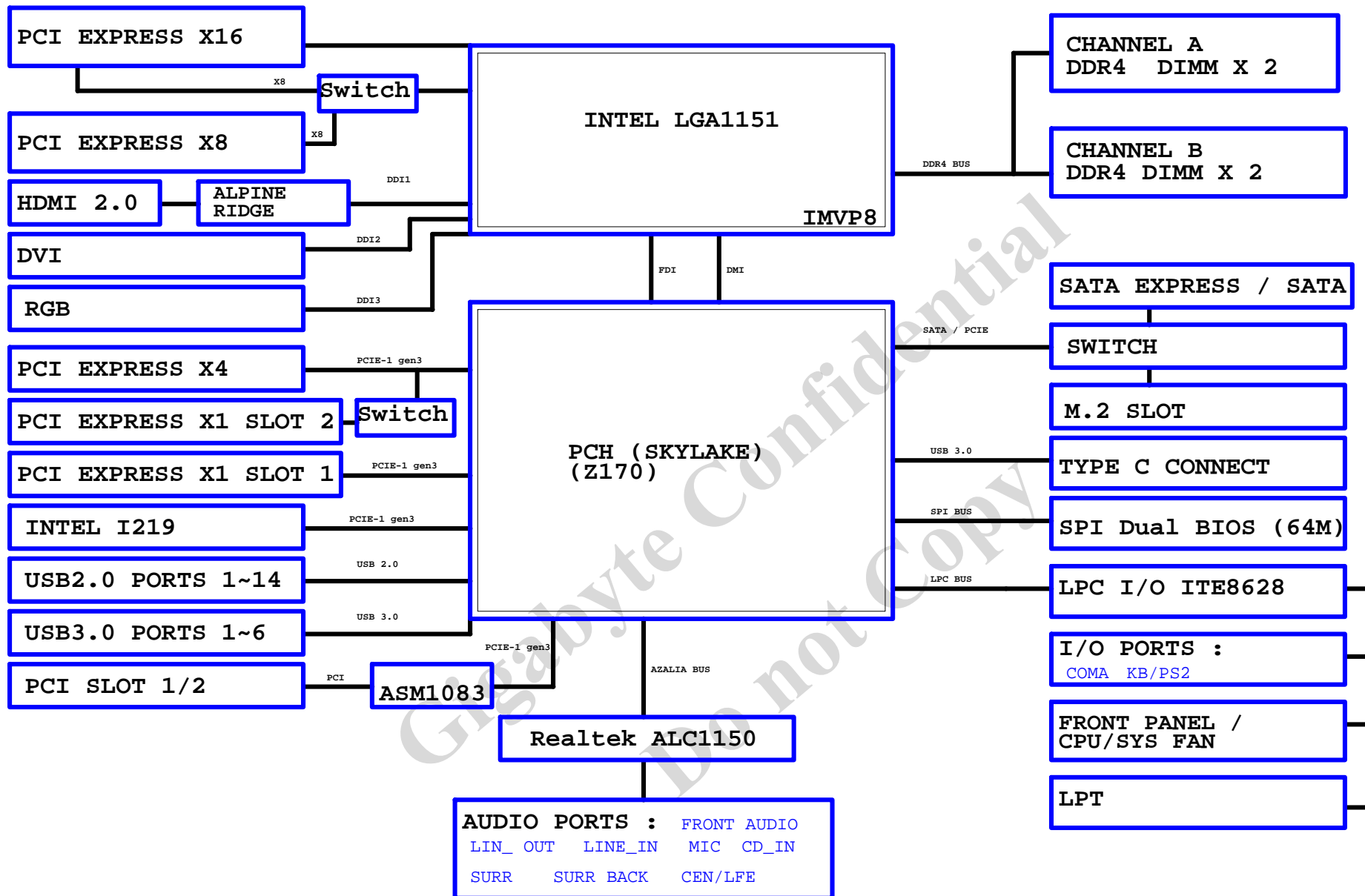
GIGABYTE

Component value change history

[illegible]

DATE	Change Item	Reason
2014/10/28	1.PCB first release 2.線路由GA-Z1704-HD3-01-1027_1700.DSN來修改	REV 0.1
2015/01/19	1. Remove NR61 2. SIO 更正pin name 3. SIO add TPM_GP93 4. PCIE4 PRSNT circuit update 5. PWM add DAR129,DAR130 6. DCR6改接5VSB 7. Update DDR power sequency MAR105 改100K/4,add MAC9 1u/6 8. UAR1改接5VDUAL 9. TPM add pin13 TPM_GP93 10. F_PANEL change to F_PANEL-100 11. CKU1 add 0ohm at RESET pin 12. TYPE C修改CC_EN跟OC線路 13. 工廠DFM修改 a. QAUI, CKU1, OVU1極性標示▲與周圍零件文字框 重疊無法辨識, 建議移至空位處標示	REV 0.2
2015/03/23	1. 由GA-Z1704X-SLI_R02_0323A.DSN來修改 2. Model Name改為Z1704X-D3H REV 0.1 3. 加入TBT	REV 0.1
2015/06/03	1.由Z170X-D3H REV 0.1來修改 2.TYPEC 線路改為EJ179S+D 3.PCH POWER 改為+12V 輸入 4.Remove NR294 & NR295 5.M.2 文字面42,60,80改為42A,60A,80A 6.Add VD1,DVD1 7.刪除NR300、NR301、NR302、NR303 8.線路統一,刪RAU3EC1,把LAEC1放在現在RAU3EC1的位置 9.Remove USB_LAN_HS 10.NX1 依照最新LAYOUT RULE 11.Model name rename to Z170XP-SLI	REV 0.2
2015/06/26	1.Remove A.R. 2.Add ASML142 3.Remove MR22,Net VDDSPD change to VPP_25V 4.Add NPC10 close to choke 5.NPR22改為0805 6.WR94改為0 ohm 7.Add MA_DR9 close to MA_DQ3 8.Add MA_DR10 close to MAU2 9.Remove RAU3D4 10.Add NFC3	REV 0.3
2015/07/03	1. 0 ohm 改0 ohm short pad 2. BIOS_PH改mask 3. DO_DUI極性標示▲不易辨識, 建議移至空位處標示 4. Add DFR4 5. Add MAC10	GA-Z170XP-SLI Rev 1.0

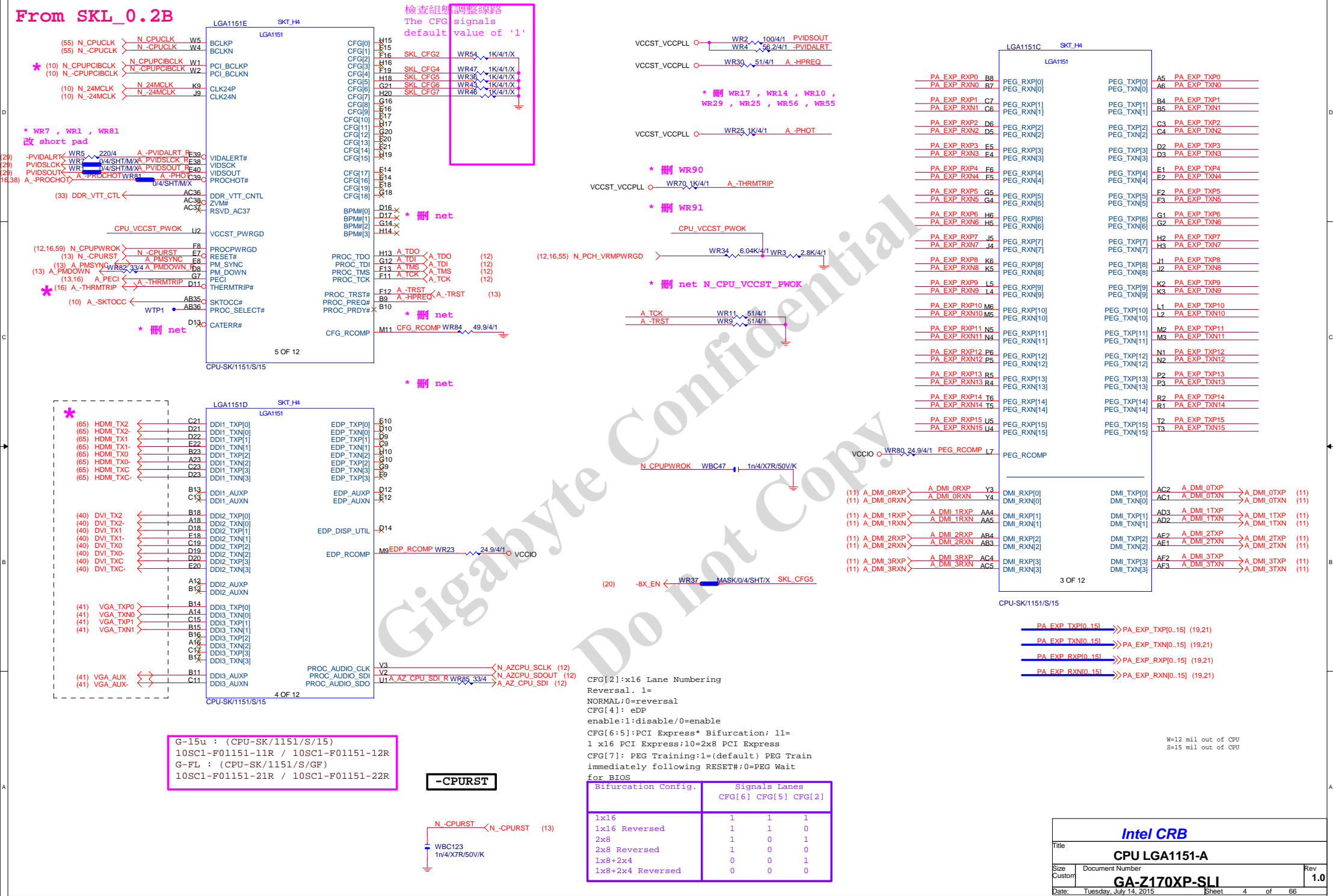
BLOCK DIAGRAM



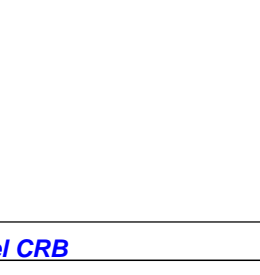
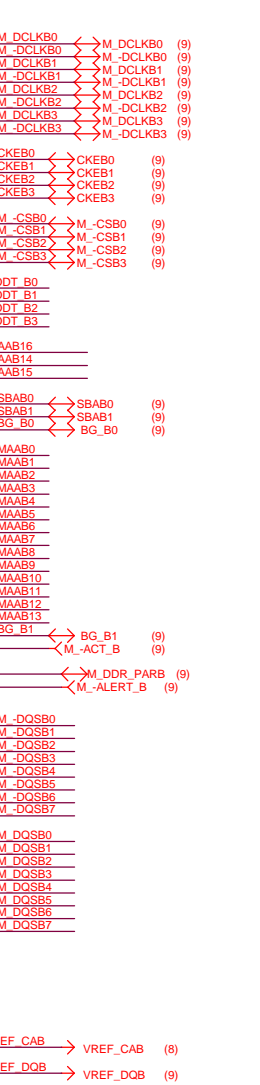
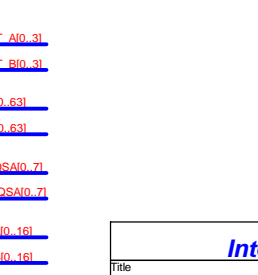
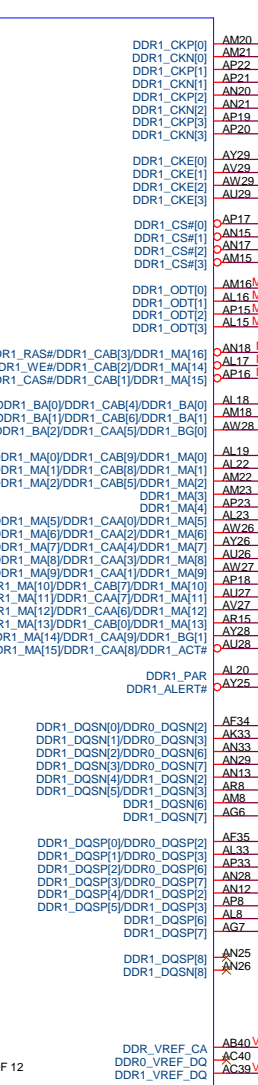
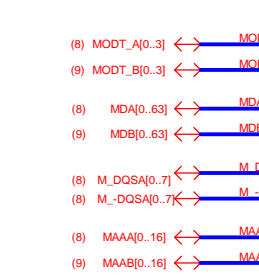
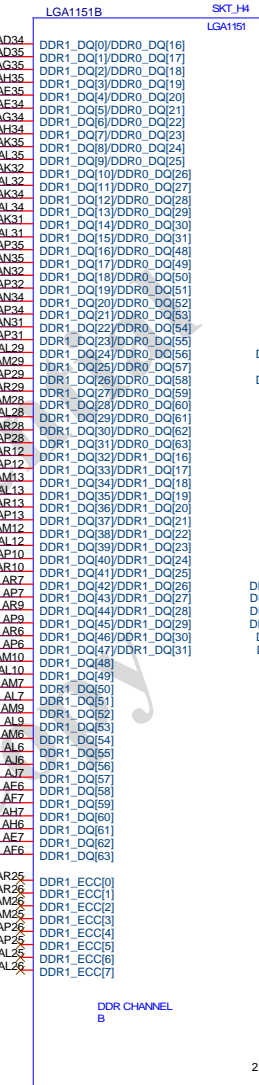
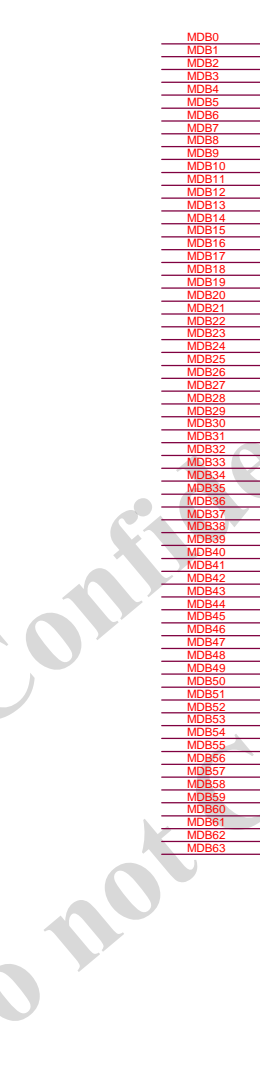
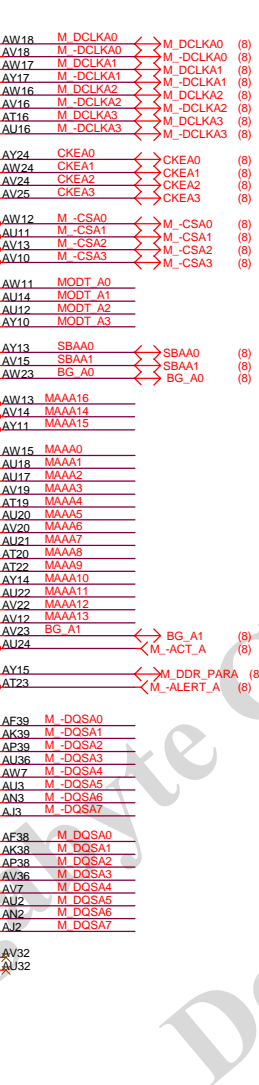
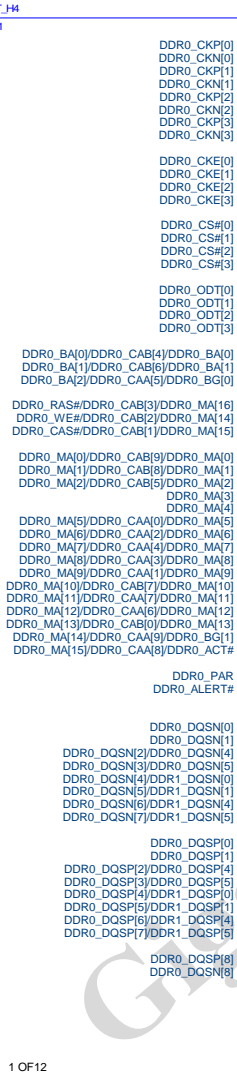
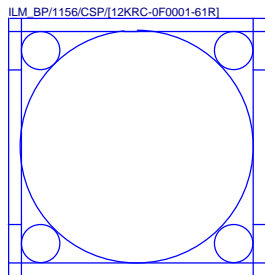
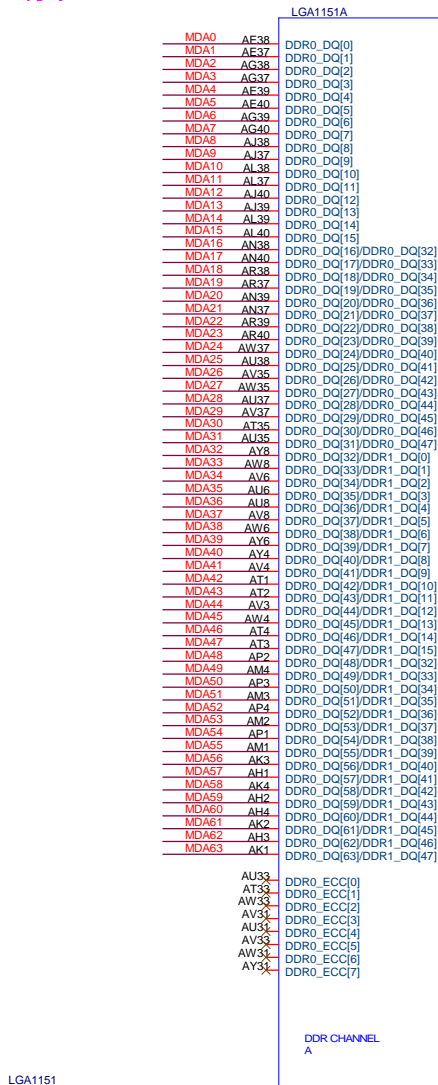
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BLOCK DIAGRAM			
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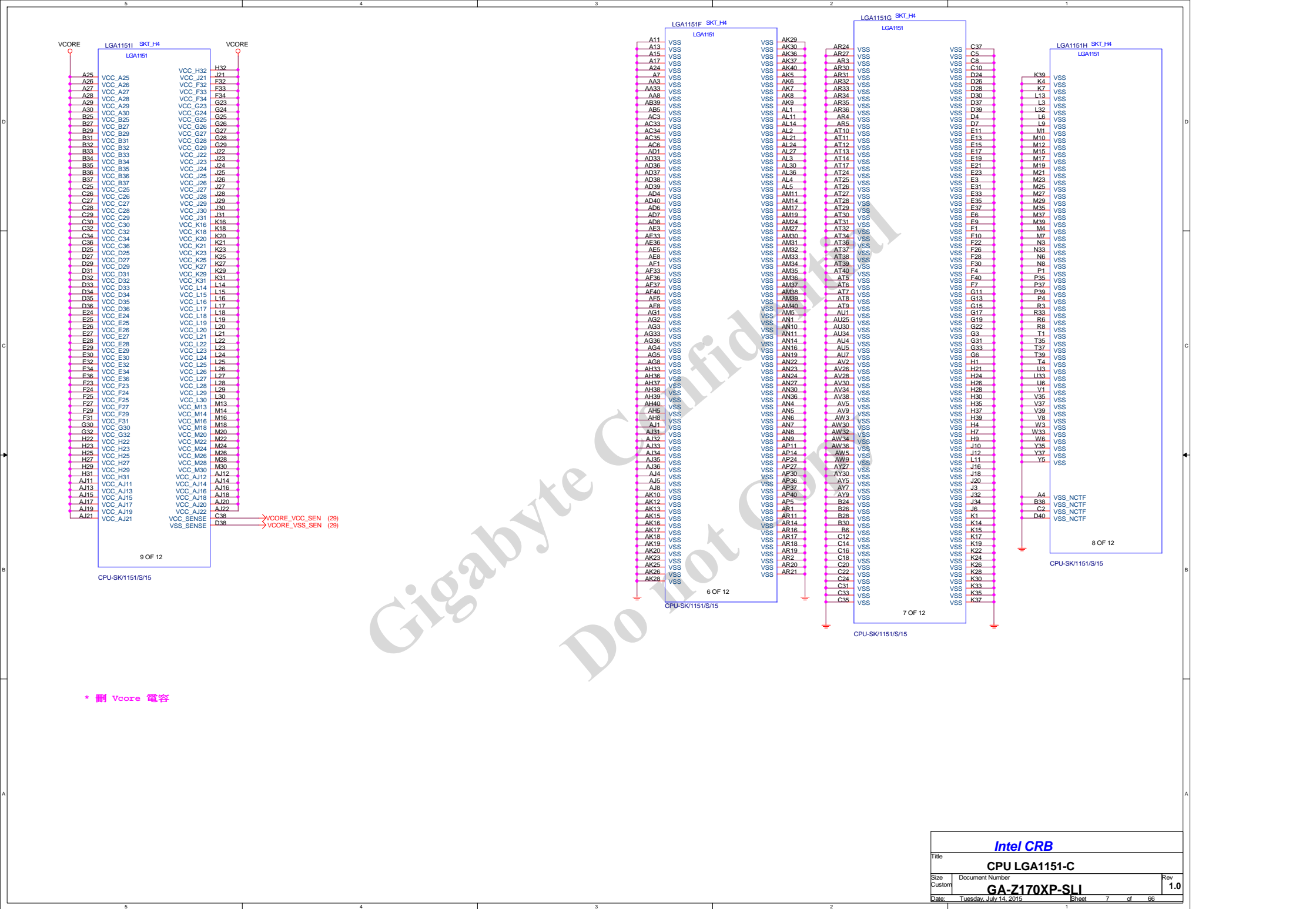
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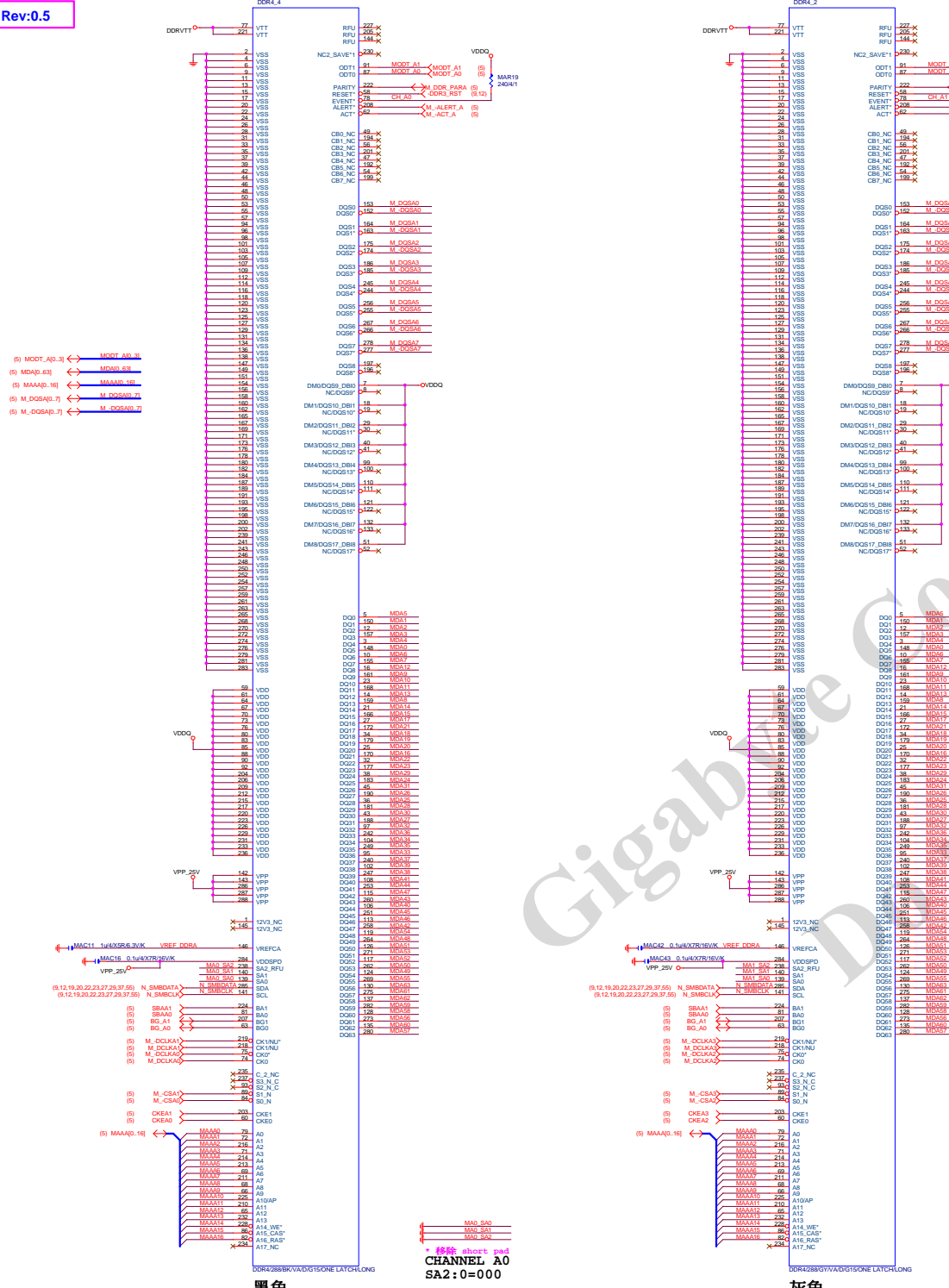


* 改DDR4 net

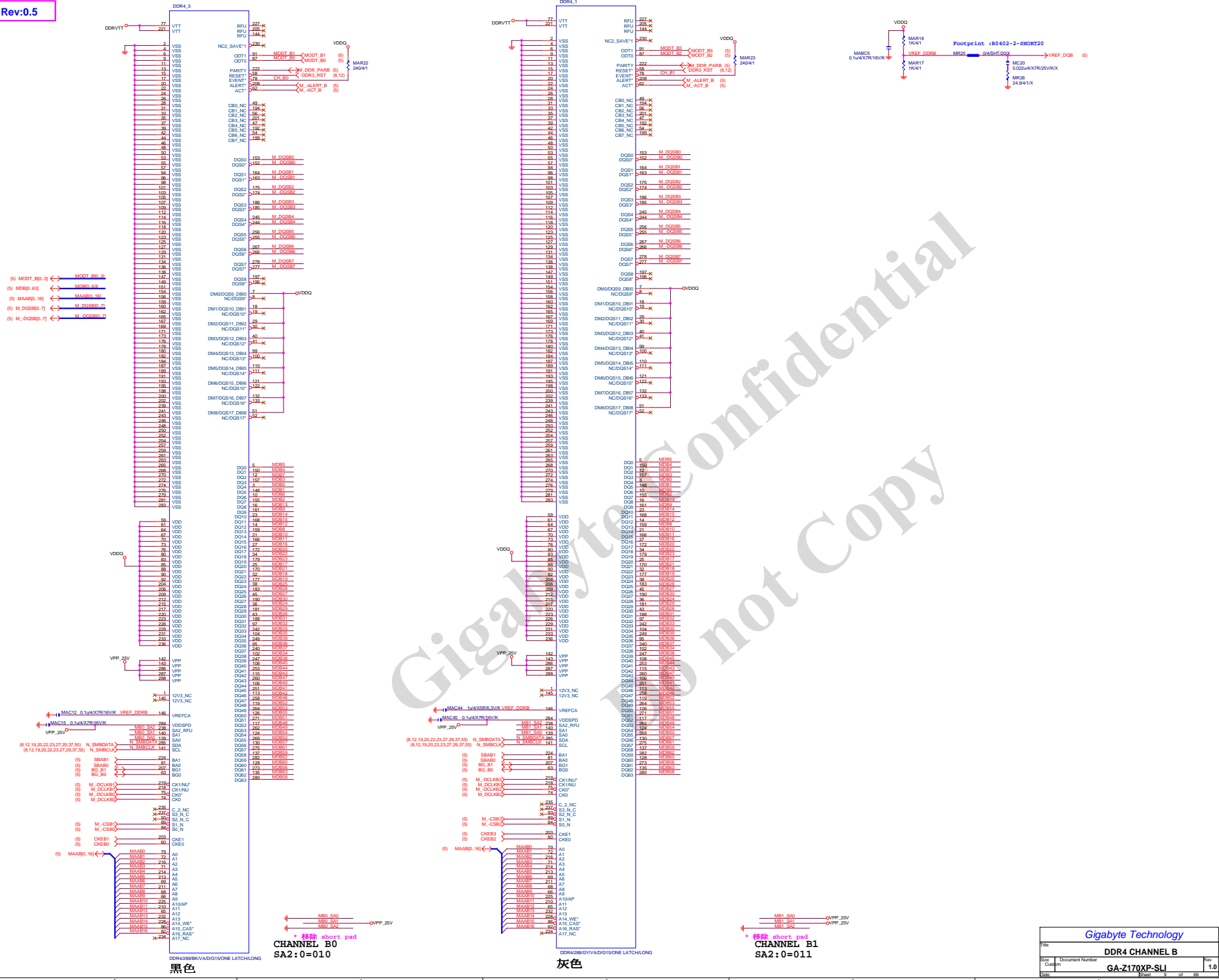


Intel CRB CPU LGA1151-B		
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DDR4	Capture Value
SOC series	DDR4/288/BK/VA/S/G15/4ROW/LONG DDR4/288/OR/VA/S/G15/4ROW/LONG
UD series	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GY/VA/D/G15/ONE LATCH/LONG
Gaming series	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/RE/VA/D/G15/ONE LATCH/LONG
GI.Sniper	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GE/VA/D/G15/ONE LATCH/LONG



黑色

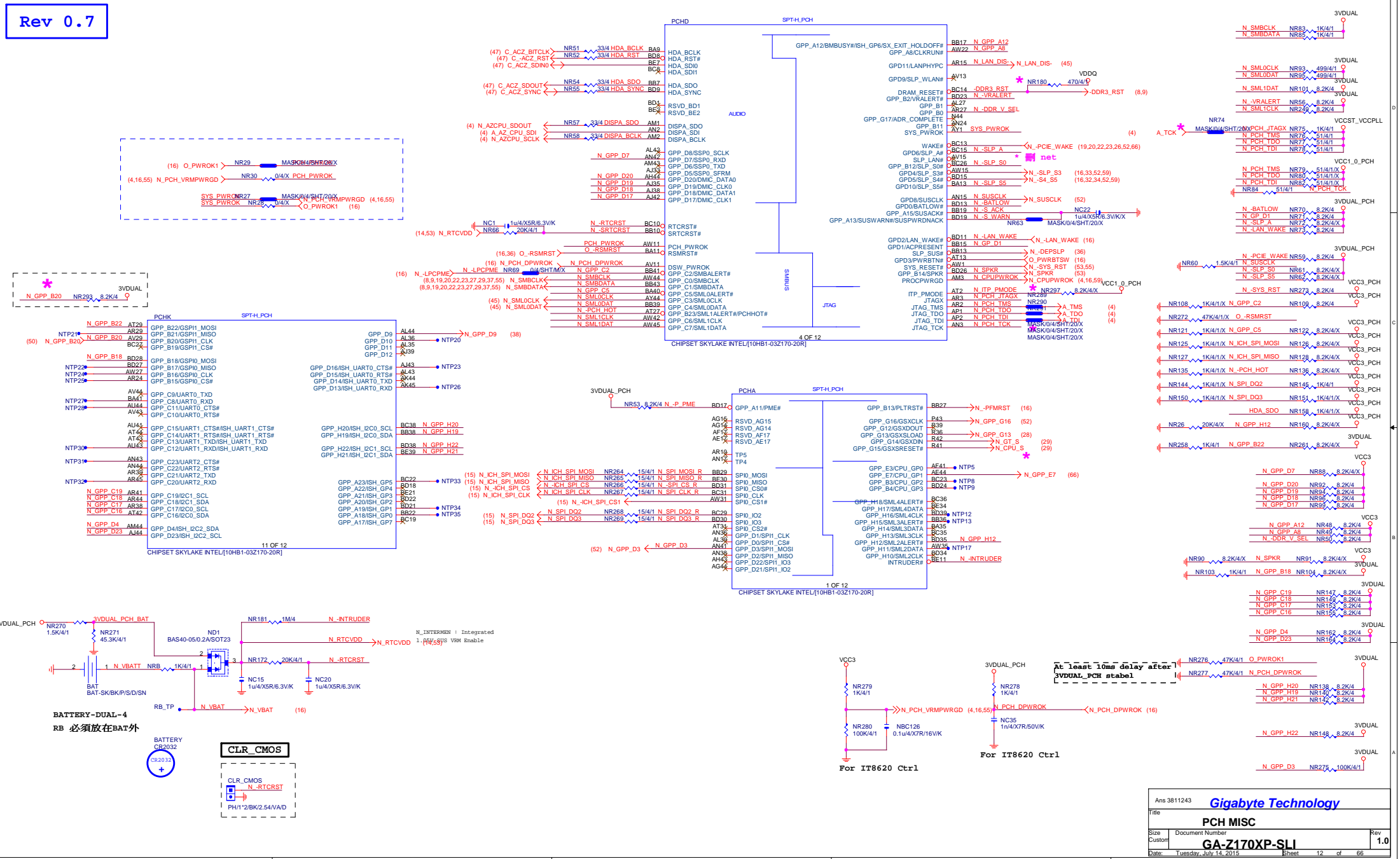
灰色

Gigabyte Technology

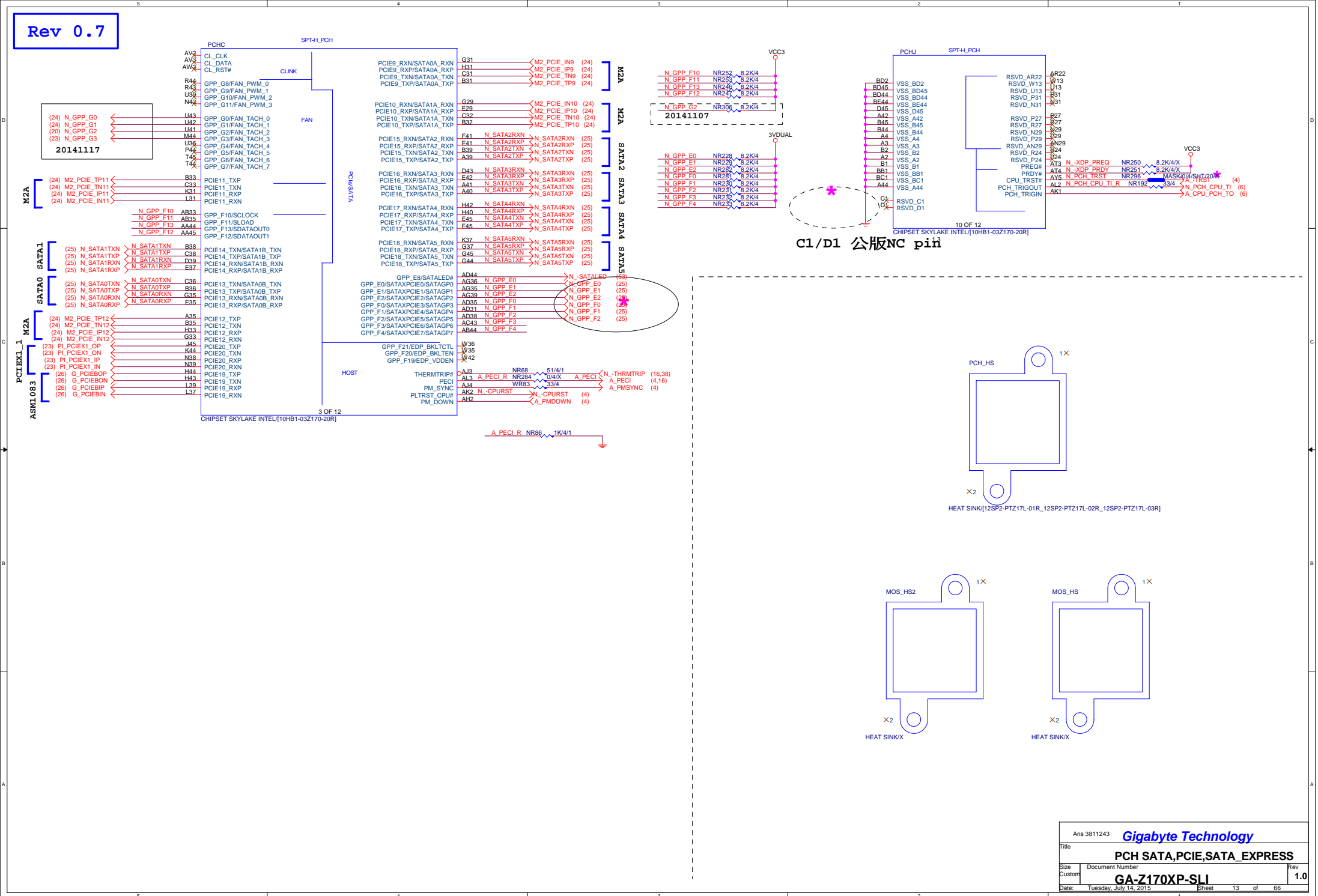
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Doc: GA-Z170XP-SLI



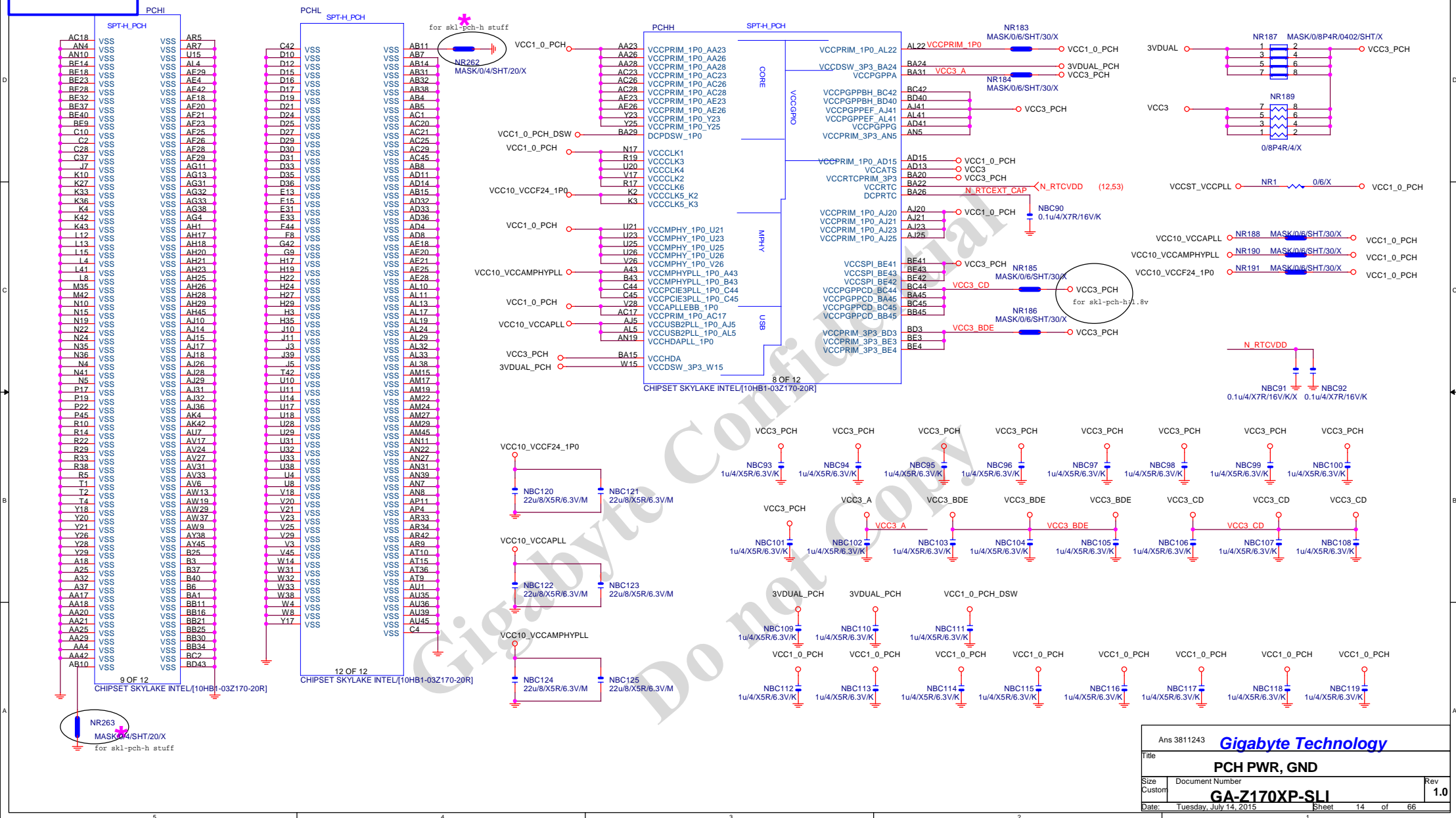
Rev 0.7



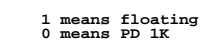
Gigabyte Technology

Size Custom	Document Number GA-Z170XP-SLI	Rev 1.0
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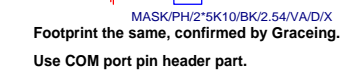
Date: Tuesday, July 14, 2015 Sheet 13 of 66

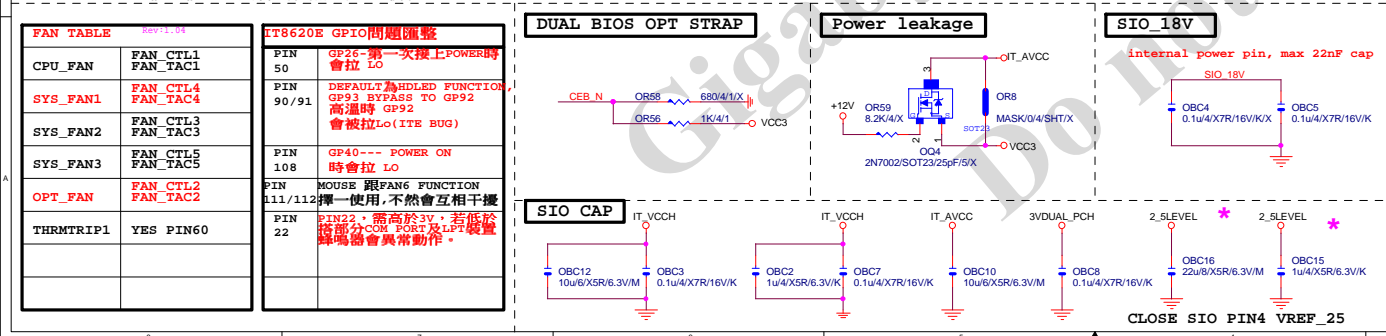
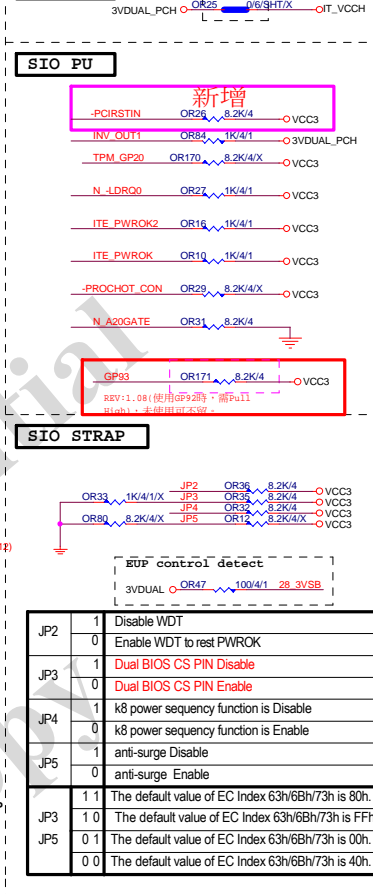


MOSI For DMI RX Termination Voltage



★Update
2015-01.29

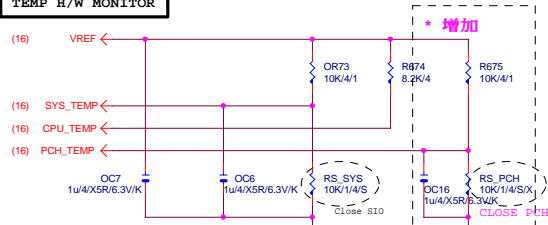




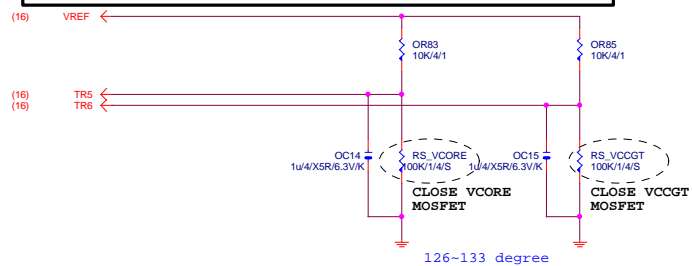
Dual LAN	Intel 219	組態二
	Atheros+Atheros	組態一
	Intel 219+Atheros	組態三
Intel 219+Intel 210		
No Support ERP	BOM不上	N/A

<h2 style="margin: 0;">Gigabyte Technology</h2>		
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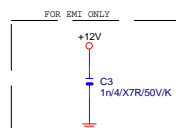
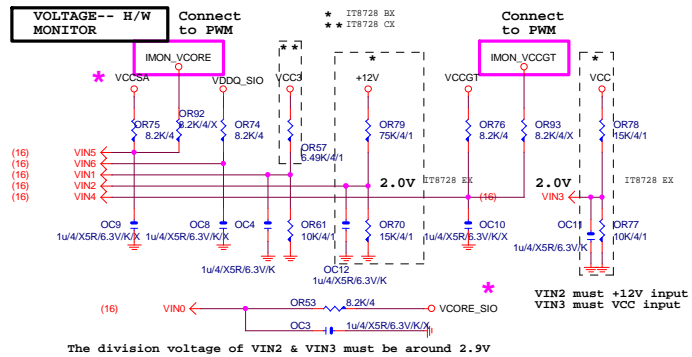
TEMP H/W MONITOR



RS_VCORE、RS_VCCGT、CLOSE CPU_VCORE & VCCGT MOSFET

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

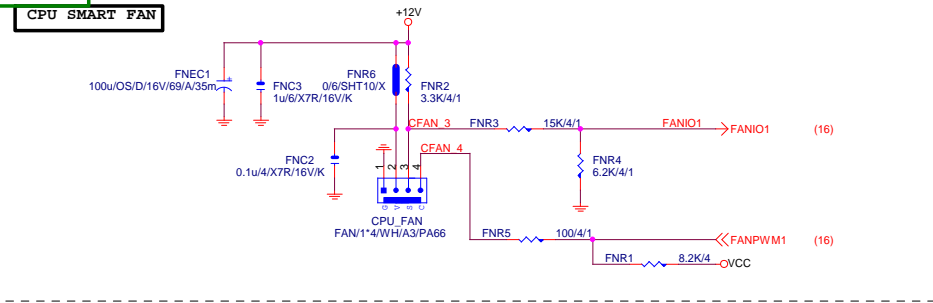
VOLTAGE-- H/W MONITOR



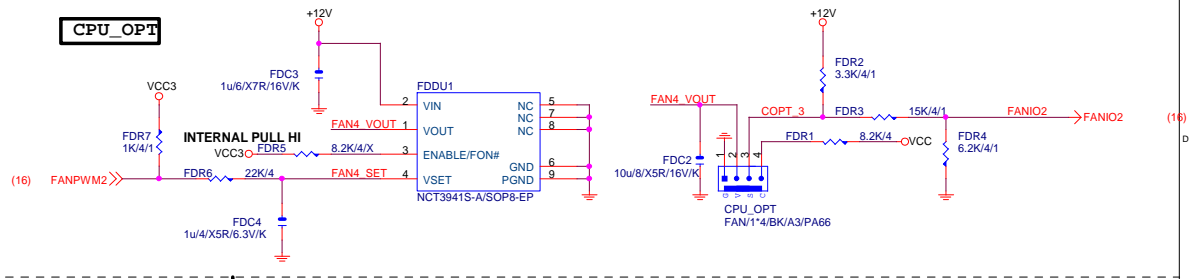
Gigabyte Technology

Title				HWM,KB/MS, FAN CTRL			
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CPU SMART FAN



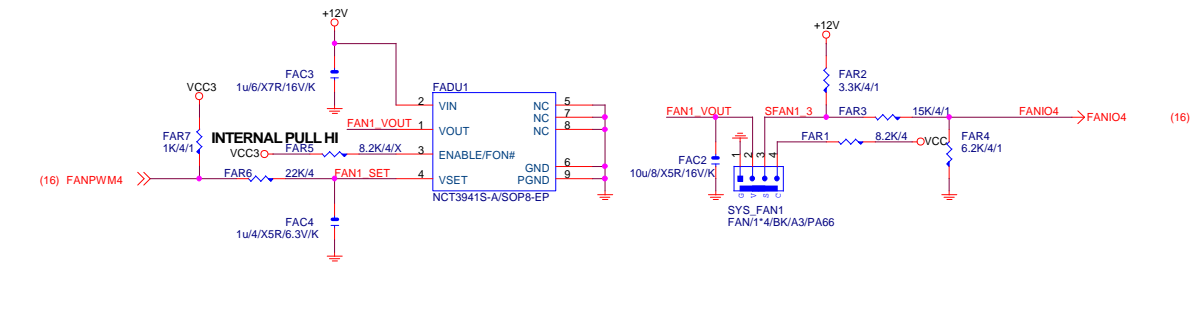
CPU_OPT



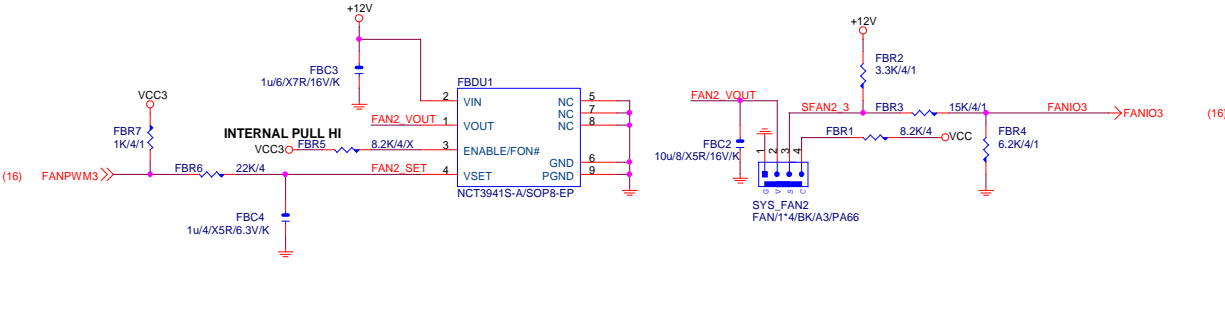
SYSTEM FAN1

Linear SYS_FAN

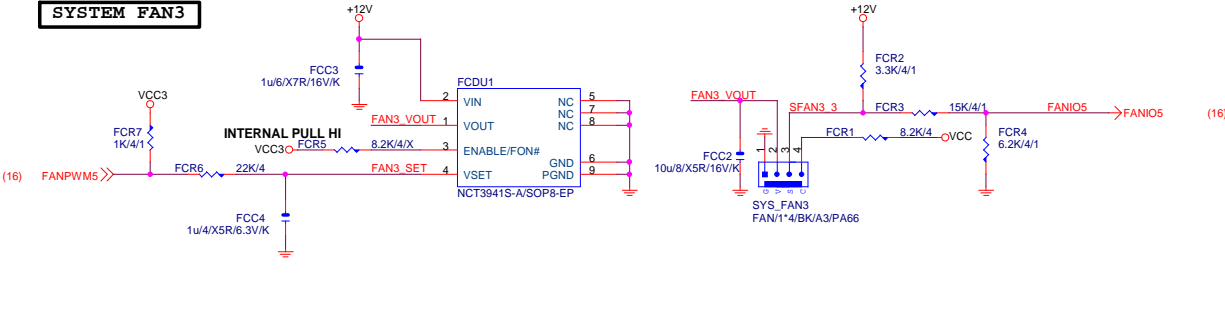
Enable Function (NCT3941S)
Full Turn On Function (NCT3941S-A)



SYSTEM FAN2



SYSTEM FAN3

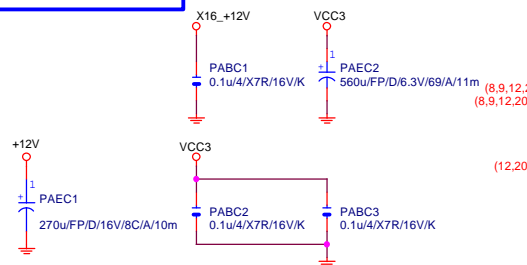


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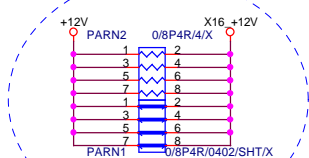
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Rev 0.3

PCIEX16 AC 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
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PA EXP SW TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA EXP SW TXP11 C
PA EXP SW TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA EXP SW TXN11 C
PA EXP SW TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA EXP SW TXN12 C
PA EXP SW TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA EXP SW TXN13 C
PA EXP SW TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA EXP SW TXP14 C
PA EXP SW TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA EXP SW TXN14 C
PA EXP SW TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA EXP SW TXP15 C
PA EXP SW TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA EXP SW TXN15 C

PCI-E REV:1.1--> 2.5GHZ

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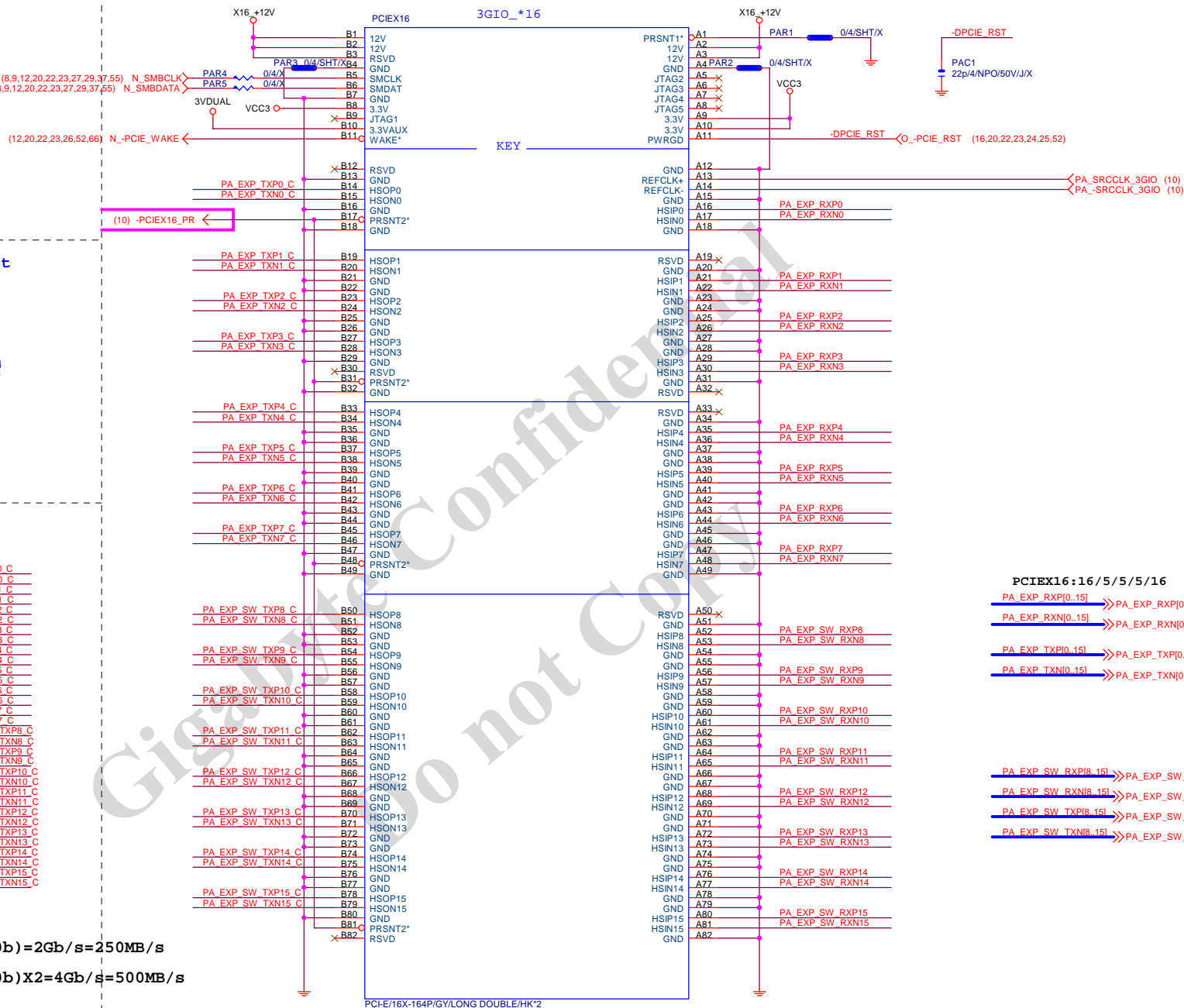
PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

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

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

PCI-E REV:2.0--> 5GHZ

PCIEX16 SLOT



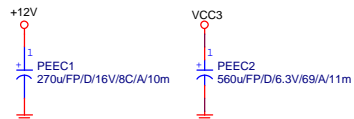
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PA EXP RXP[0..15]	>>>PA_EXP_RXP[0..15] (4,21)
PA EXP RXN[0..15]	>>>PA_EXP_RXN[0..15] (4,21)
PA EXP TXP[0..15]	>>>PA_EXP_TXP[0..15] (4,21)
PA EXP TXN[0..15]	>>>PA_EXP_TXN[0..15] (4,21)
PA EXP SW RXP[8..15]	>>>PA_EXP_SW_RXP[8..15] (21)
PA EXP SW RXN[8..15]	>>>PA_EXP_SW_RXN[8..15] (21)
PA EXP SW TXP[8..15]	>>>PA_EXP_SW_TXP[8..15] (21)
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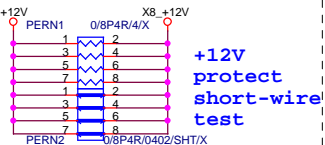
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Rev 0.3



PCIEX8 PROTECT SHT



(8,9,12,19,22,23,27,29,37,55) N_SMBCLK N_SMBCLK PER8 0/4/X
(8,9,12,19,22,23,27,29,37,55) N_SMBDATA N_SMBDATA PER9 0/4/X

(12,19,22,23,26,52,66) N_-PCIE_WAKE

PE_EXP_SW_TXP8_C
PE_EXP_SW_TXN8_C

PE_EXP_SW_TXP9_C
PE_EXP_SW_TXN9_C

PE_EXP_SW_TXP10_C
PE_EXP_SW_TXN10_C

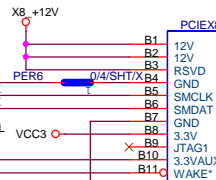
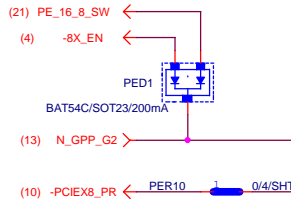
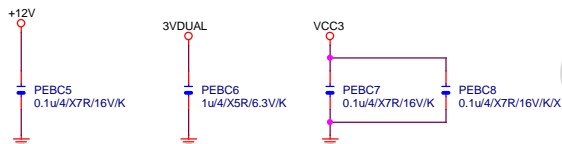
PE_EXP_SW_TXP11_C
PE_EXP_SW_TXN11_C

PE_EXP_SW_TXP12_C
PE_EXP_SW_TXN12_C

PE_EXP_SW_TXP13_C
PE_EXP_SW_TXN13_C

PE_EXP_SW_TXP14_C
PE_EXP_SW_TXN14_C

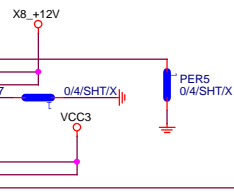
PE_EXP_SW_TXP15_C
PE_EXP_SW_TXN15_C



3GIO_*8

KEY

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



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

Gigabyte Technology			
Title			
PCI EXPRESS X8			
Size	Document Number	Rev	
Custom	GA-Z170XP-SLI	1.0	
Date:	Tuesday, July 14, 2015	Sheet	21 of 66

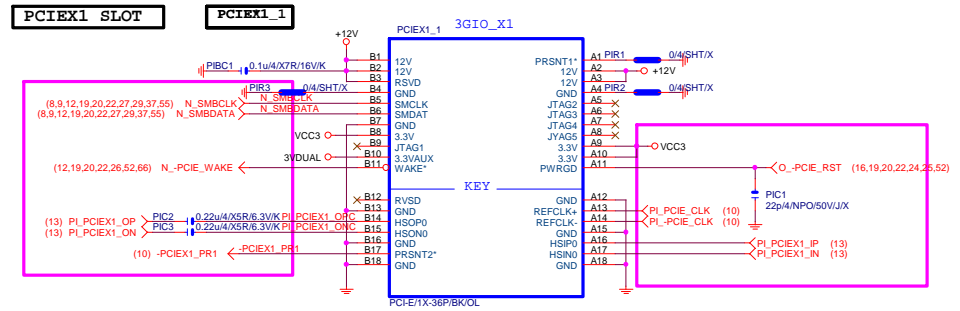
20) PE_16_8_SW



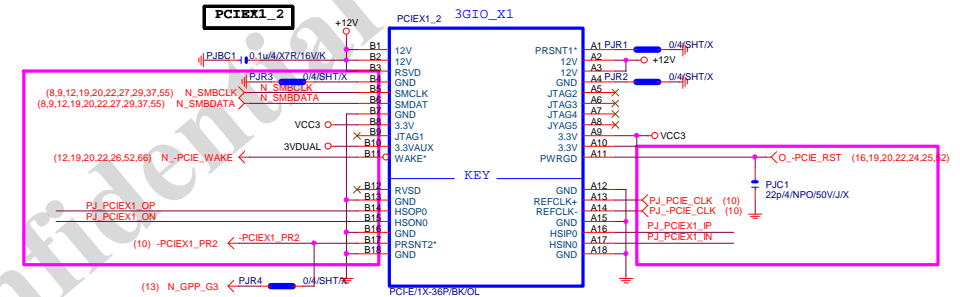
20) PE_16_8_SW



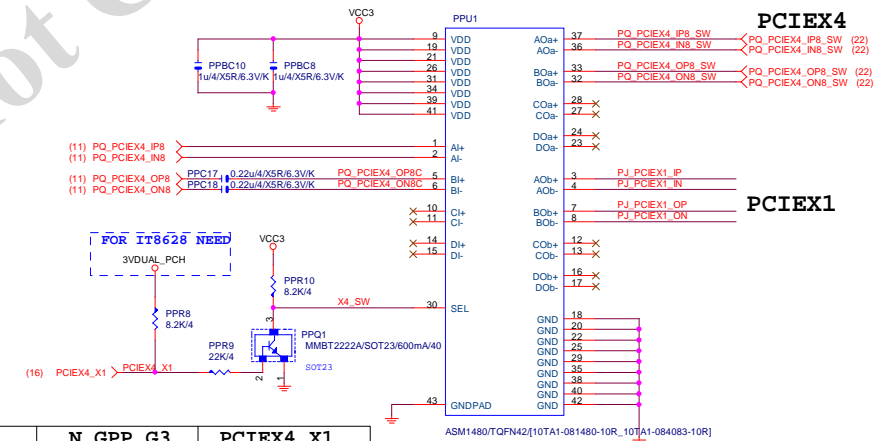
PCIE1 SLOT



PCIE1_2



PCIE4/X1 SWITCH



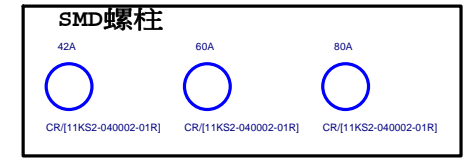
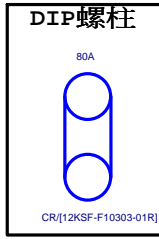
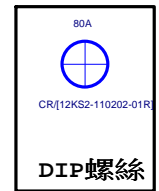
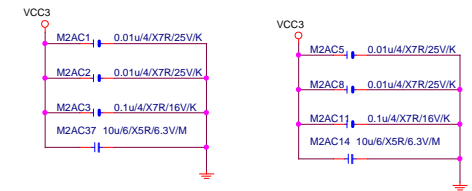
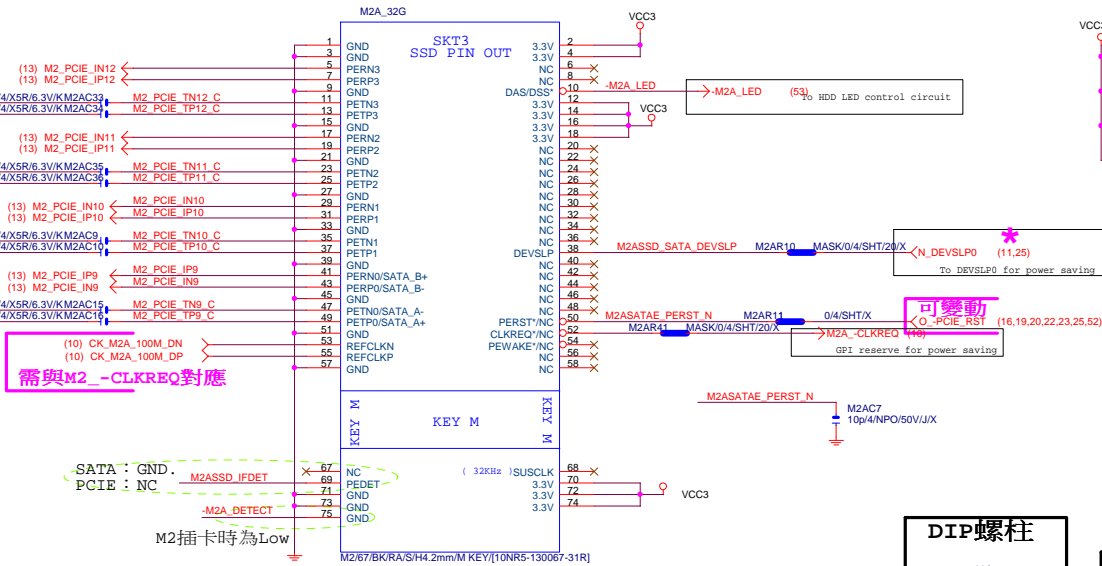
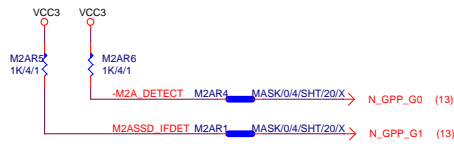
	N_GPP_G3 (PCH_GPP_G3)	PCIE4_X1 (SIO_GPIO27)
PCIE4 -> X4 M2_WIFI -> N/A PCIE1_1/2 -> N/A (Default)	H	H
PCIE4 -> X1 M2_WIFI -> X1 PCIE1_1/2 -> X1	L	L

Function	SEL
XI--> x0h	L; PCIE4_SLOT-->X4
XI--> x0h	H; PCIE4_SLOT-->X1

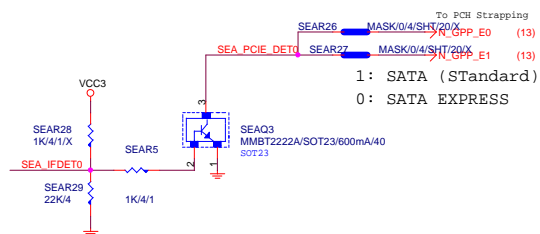
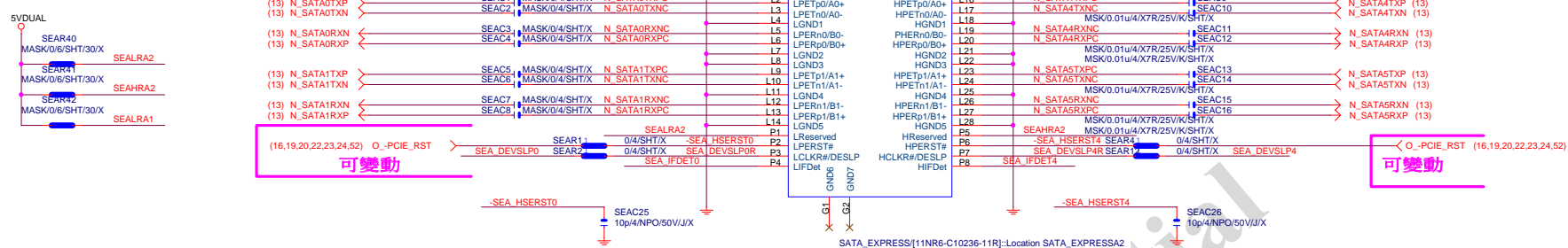
Gigabyte Technology

File	PCIE_X1_1,2	Rev	1.0
Size	Document Number	GA-Z170XP-SLI	
Custom			
Date:	Tuesday, July 14, 2015	Sheet	23 of 66

支援SATA and M.2 function



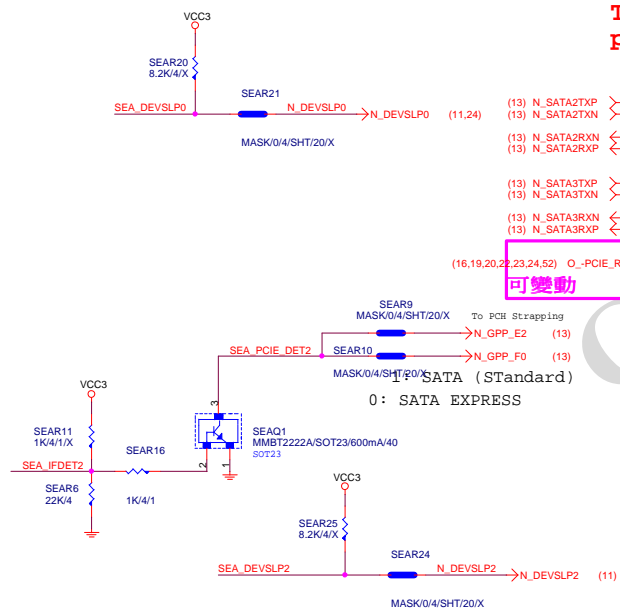
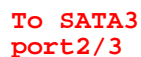
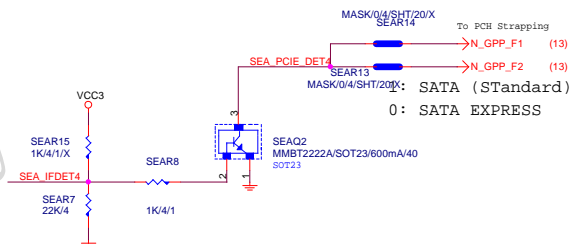
M.2 有插卡 /沒插卡 GPP_G0	M.2插何種卡？ GPP_G1	SATA Express 插何種硬碟？ GPP_E0/E2/F1	I015 (S0)	I016 (S1)	I017	I018	I019 (S0)	IP20 (S1)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA (M.2)	PCIE x1	PCIE x1	PCIE X1	PCIE x1	SATA
		SATA Express (Low)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	SATA Express	
	PCIE Mode (Hi)	SATA (Hi)	PCIE 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	



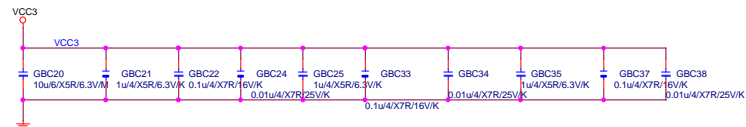
雙層：TBD

單層+2SATA:11NR6-C10236-03R

單層: 11NR6-C10118-03R



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)



BA D10_311 → BA_D[0:31] (27)

-BC_BE0 -BC_BE0 (27)

-BC_BE1 -BC_BE1 (27)

-BC_BE2 -BC_BE2 (27)

-BC_BE3 -BC_BE3 (27)

-BPERR -BPERR (27)

-BSERR -BSERR (27)

-BPAR -BPAR (27)

-BPLCK -BPLCK (27)

-BDEVEL -BDEVEL (27)

-BSTOP -BSTOP (27)

-BTRDY -BTRDY (27)

-BIRDY -BIRDY (27)

-BFRAME -BFRAME (27)

O_PFMIRST2 O_PFMIRST2 (16,45,66)

-BPCIRST -BPCIRST (27)

-BREQ0 -BREQ0 (27)

-BREQ1 -BREQ1 (27)

-BGNT0 -BGNT0 (27)

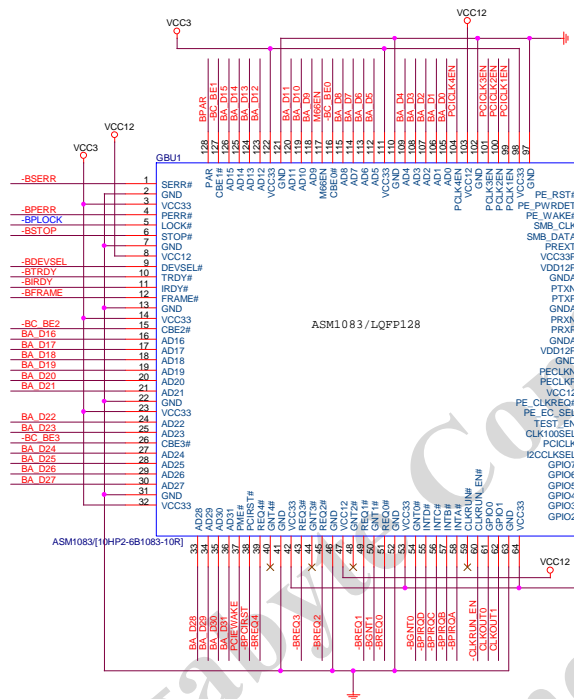
-BGNT1 -BGNT1 (27)

-BPIRQA -BPIRQA (27)

-BPIRQB -BPIRQB (27)

-BPIROC -BPIROC (27)

-BPIROD -BPIROD (27)



CLK100SEL Strapping Set

CLK100SEL	H	L
PCIe CLK	100M +/-N%	100M +/-N%
PCICLK_IN	X	33M
PCICLK_O	33M +/-N%	33M

PE_EC_SEL-

"H" for Express Card mode

"L" for PCIe Riser Card mode

CLK100SEL-

"H" for PECLK input only

"L" for PECLK & PCICLK input

TEST_EN-

"H" for Test Mode Enable

"L" for Test Mode Disable

-CLKRUN_EN-

"H" for CLKRUN Mode Disable

"L" for CLKRUN Mode Enable

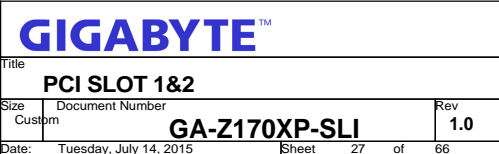
I2CCLKSEL-

"H" is 135KHz I2CCLK

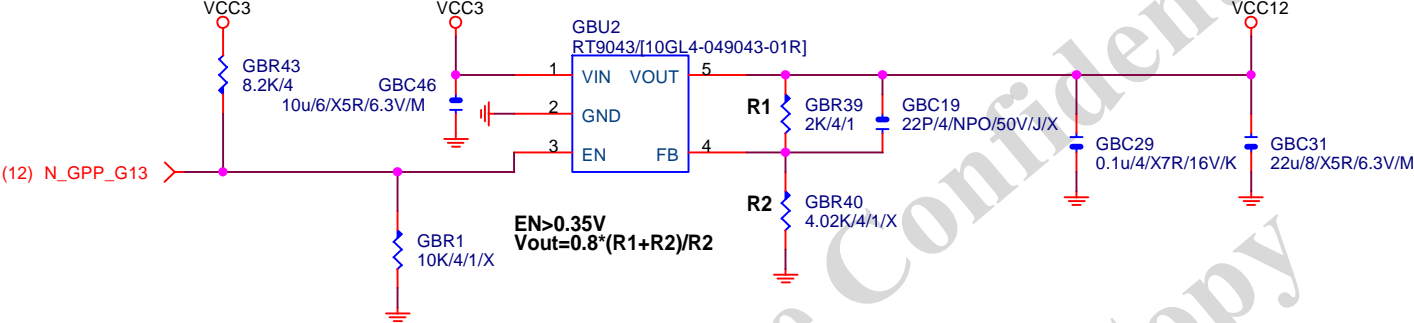
"L" is

PCI SLOT 1

PCI SLOT 2

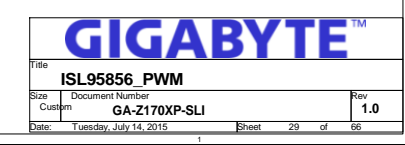


Rev 0.8

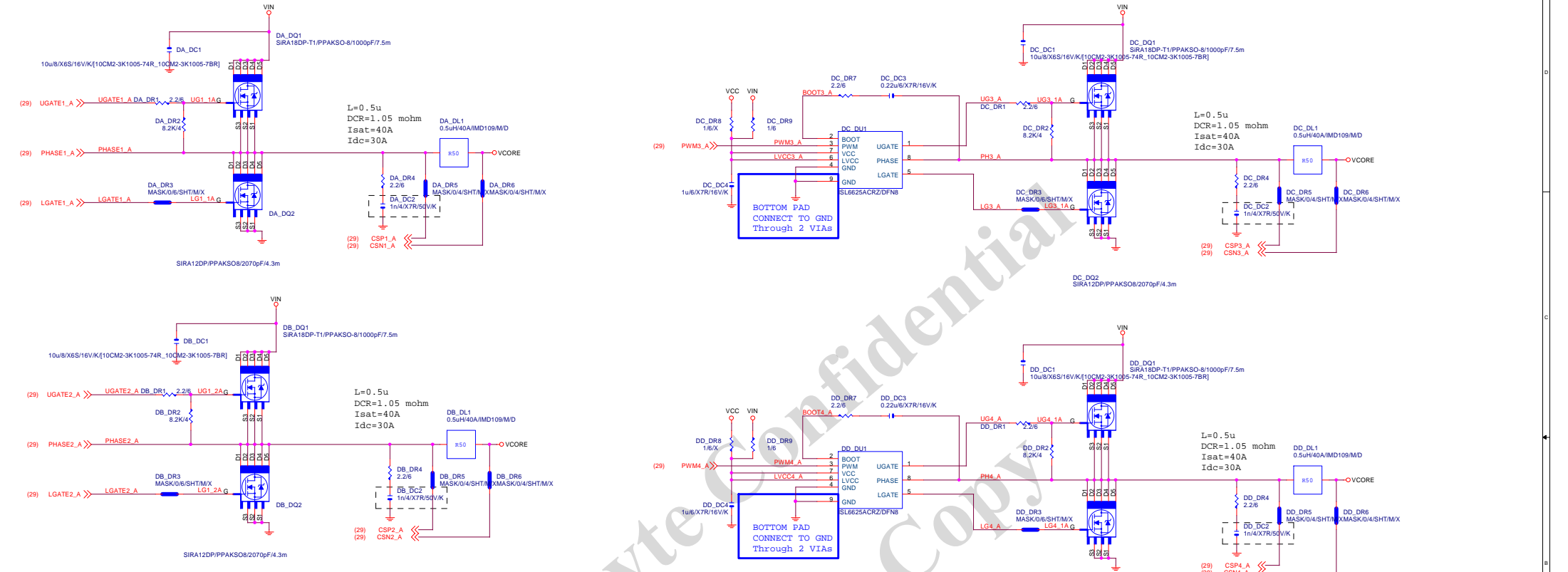


Gigabyte Technology

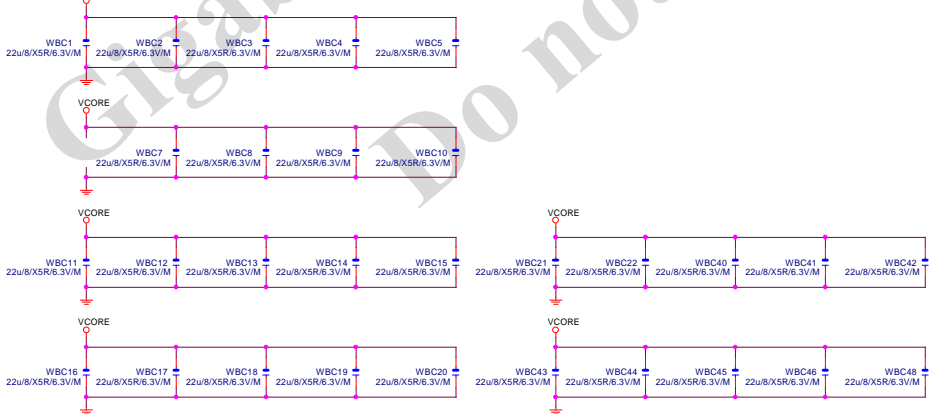
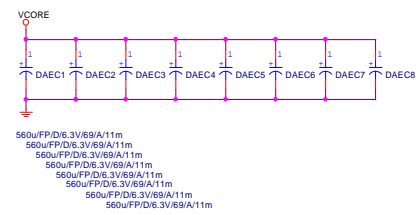
Title			ASM1085 POWER		
Size	Document Number				Rev
Custom	GA-Z170XP-SLI				1.0
Date:		Tuesday, July 14, 2015		Sheet	28 of 66



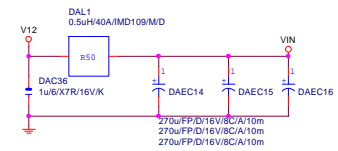
VCORE



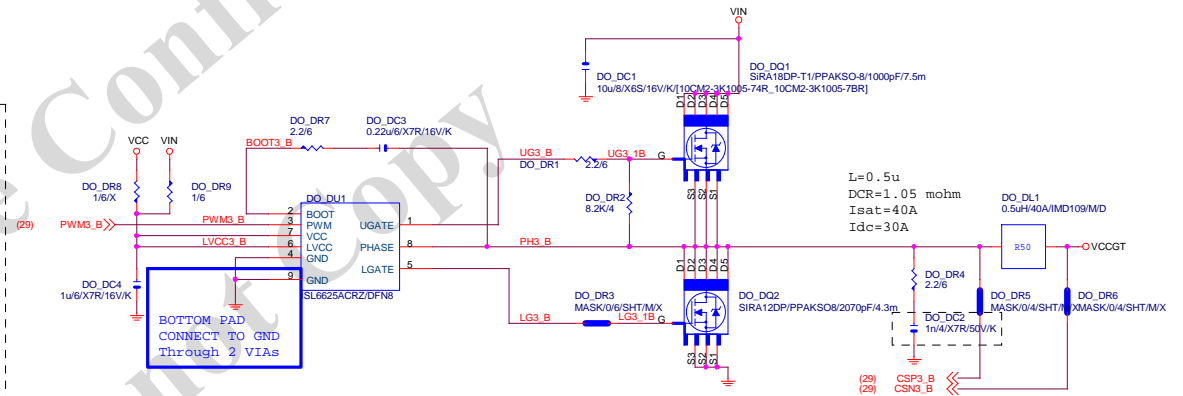
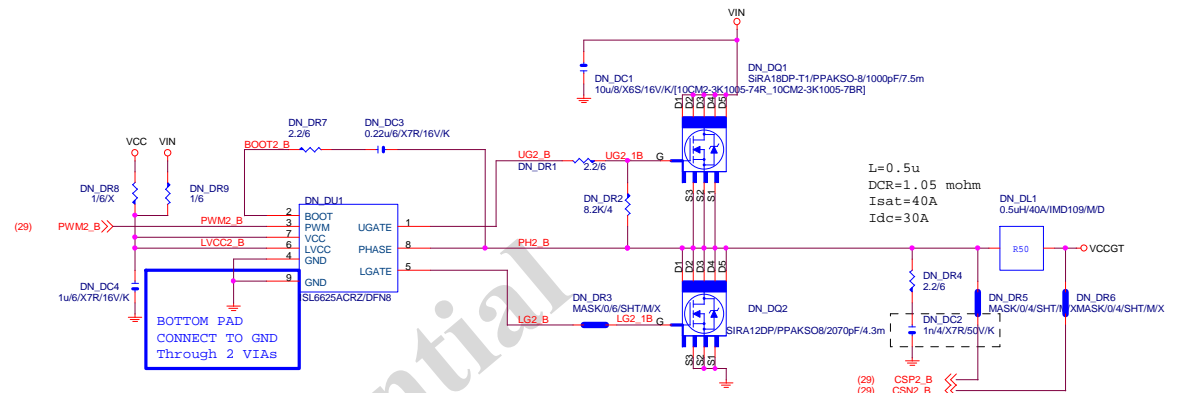
VCORE CAP 560u*8PCS
22u*29PCS



VIN CAP 270u*3PCS



ISL95856_MOS		
Size	Document Number	Rev
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VCCGT

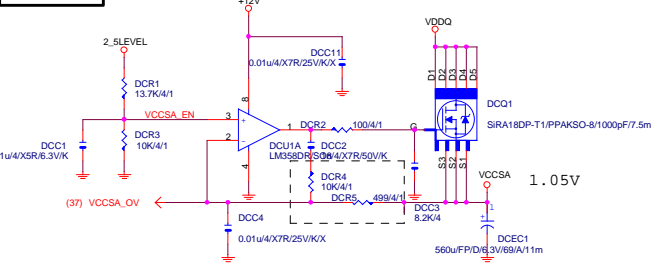
DAEC9 DAEC10 DAEC11 DAEC12 DAEC13

560uA
560uA
560uA
560uA
560uA

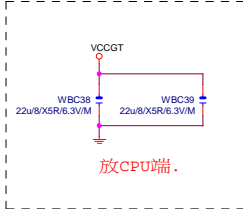
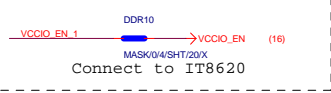
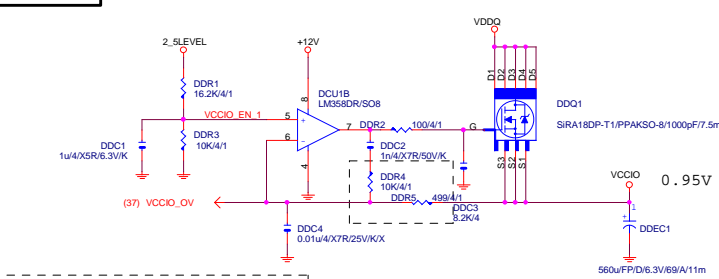
GIGABYTE™			
Title ISL95856_MOS			
Size Custom	Document Number GA-Z170XP-SLI		Rev 1.0
Date:	Tuesday, July 14, 2015	Sheet 31 of	66

REV:0.4

VCCSA

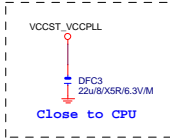
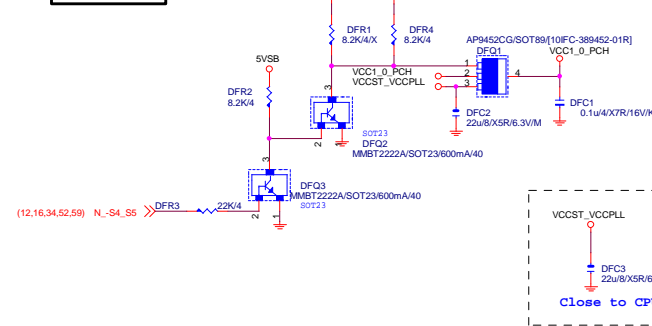


VCCIO

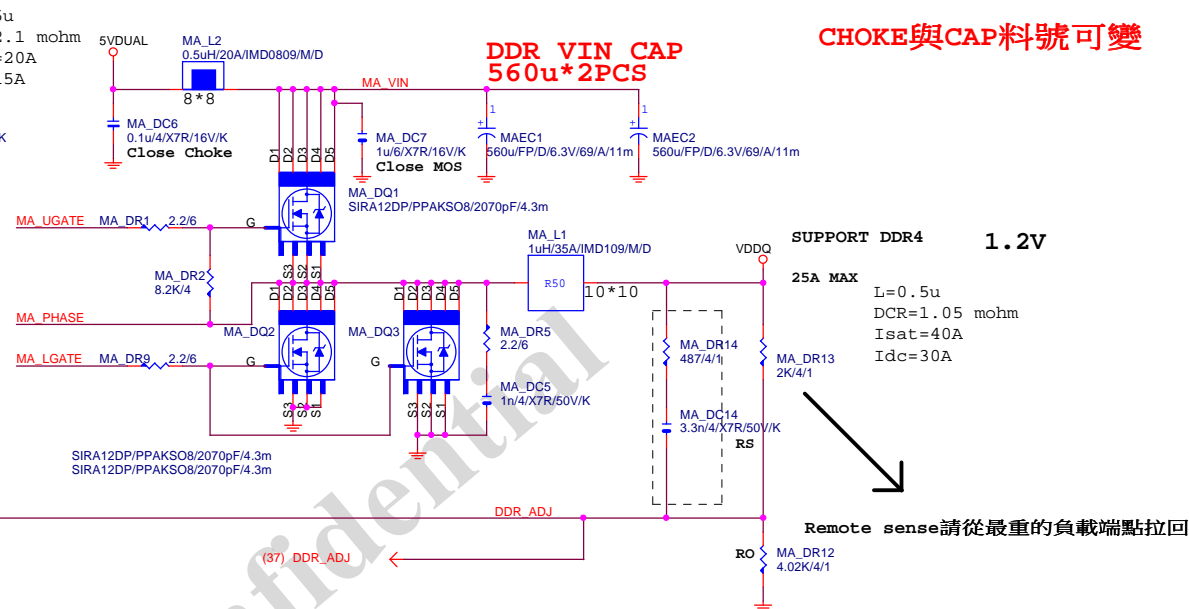
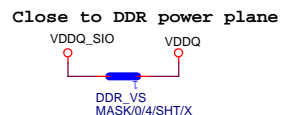
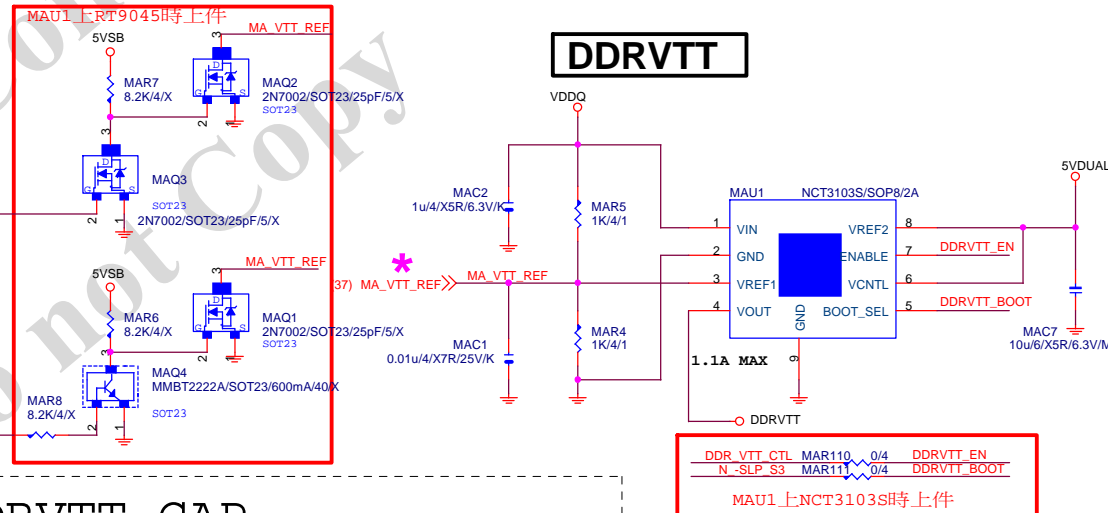


VCCST_VCCPLL

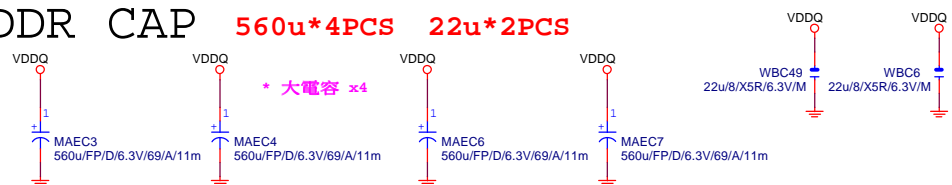
10IFC-389452-01R



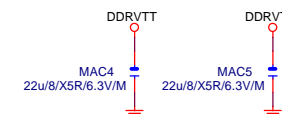
DDR4

[illegible]

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

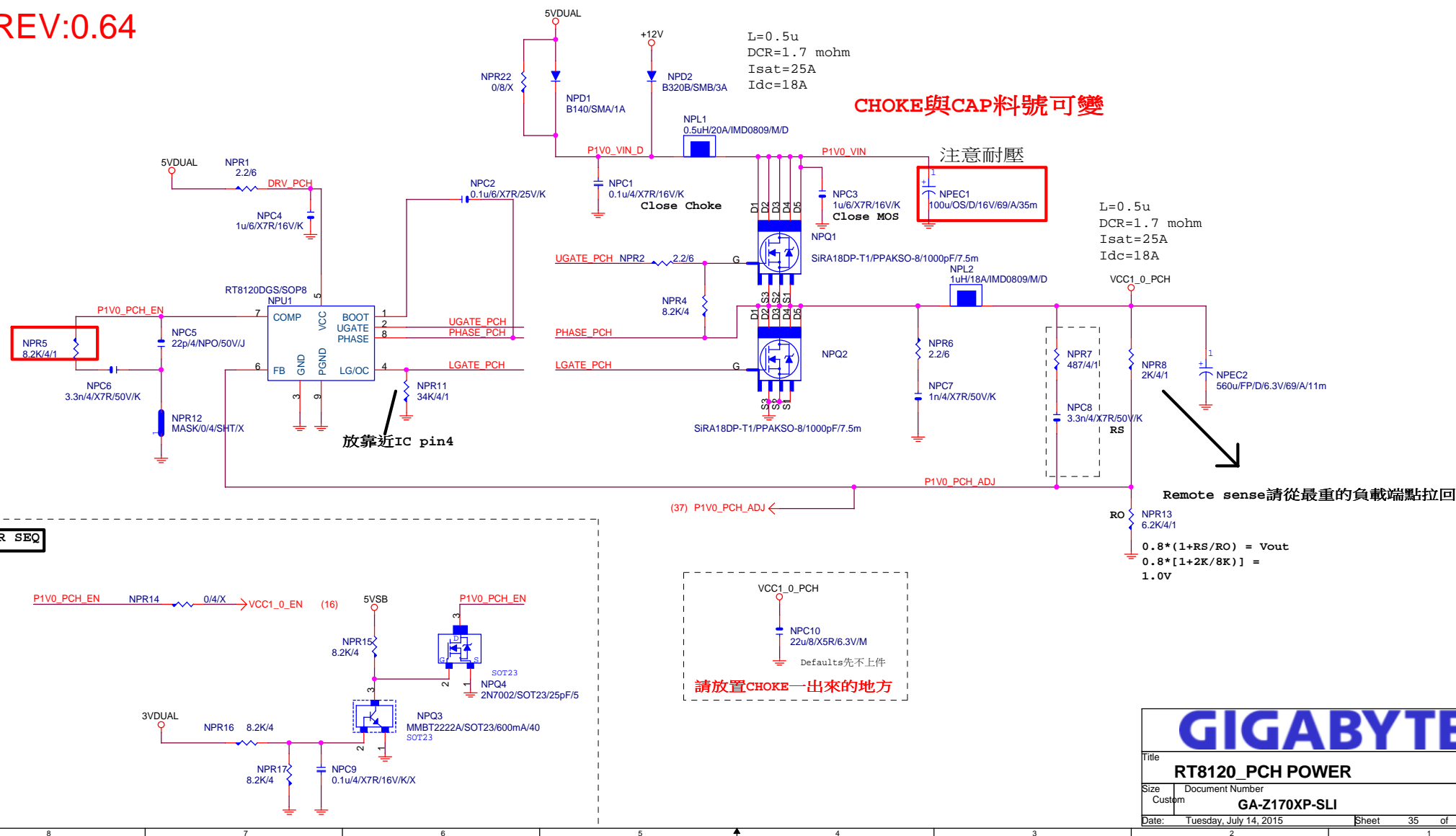


DDRVTT CAP

**GIGABYTE™**

Title			
RT8120_DDR4 POWER			
Size	Document Number	Rev	
Custom	GA-Z170XP-SLI	1.0	
Date:	Tuesday, July 14, 2015	Sheet	33 of 66

REV:0.64

**GIGABYTE™**

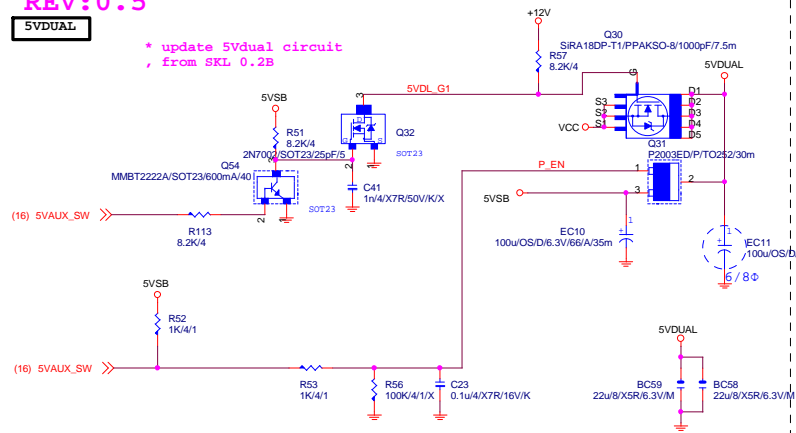
RT8120_PCH POWER

Size	Document Number	Rev
Custom	GA-7170YB-S11	1.0

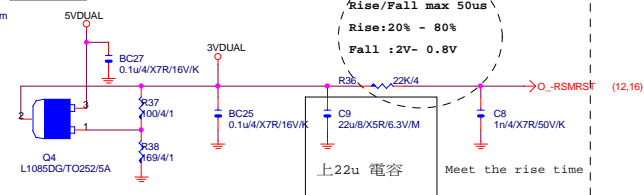
GA-Z170XP-SLI		1.0	
Date:	Tuesday, July 14, 2015	Sheet	35 of 66

5VDUAL

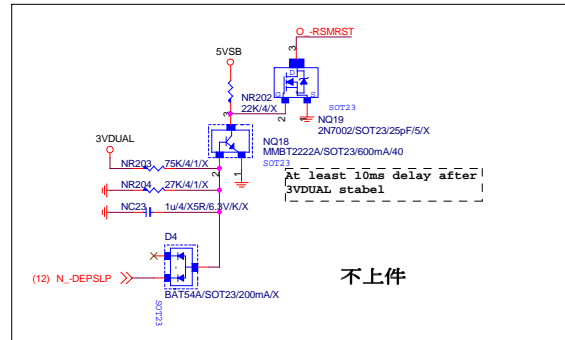
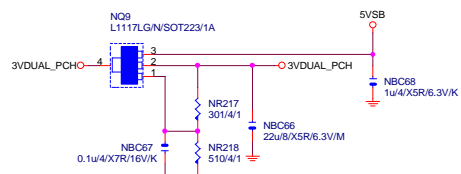
```
* update 5Vdual circuit
, from SKL 0.2B
```



3VDUAL

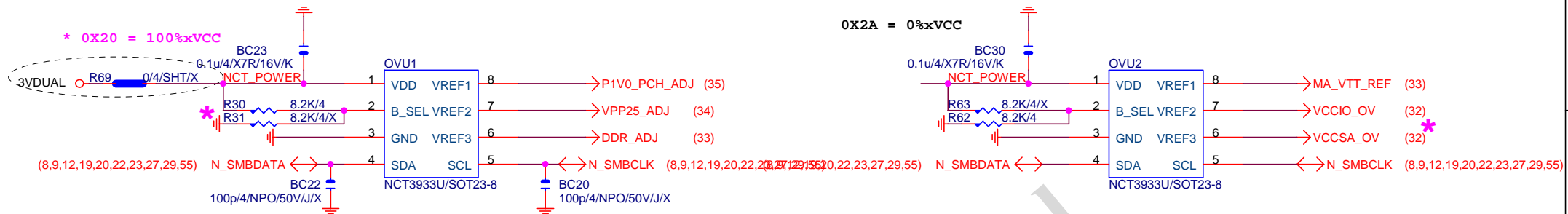


3VDUAL_PCH



不上件

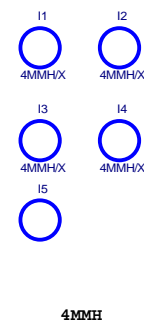
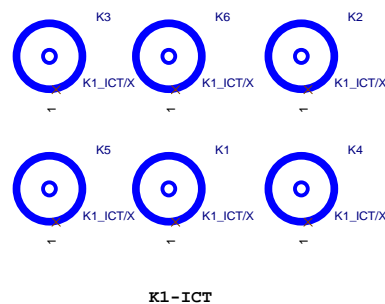
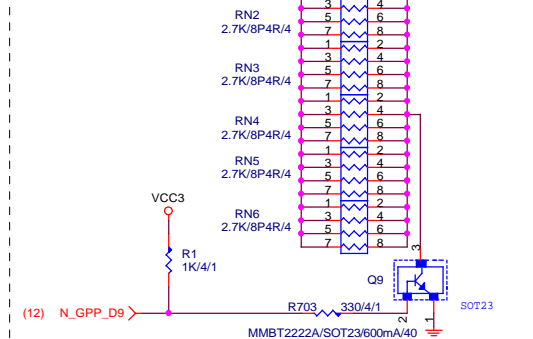
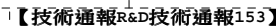
OVER VOLTAGE



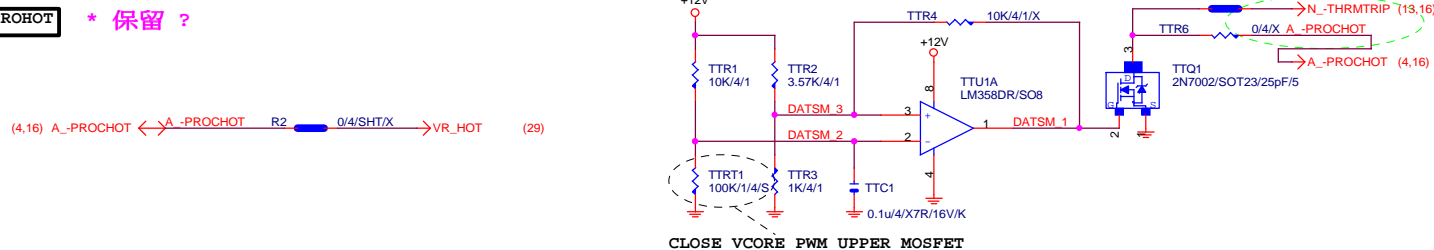
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology			
Title			
CPU CORE VR-2			
Size	Document Number	GA-Z170XP-SLI	
Custom		Rev	1.0
Date:	Tuesday, July 14, 2015	Sheet	37 of 66

ATXX4 POWER CONNECTOR

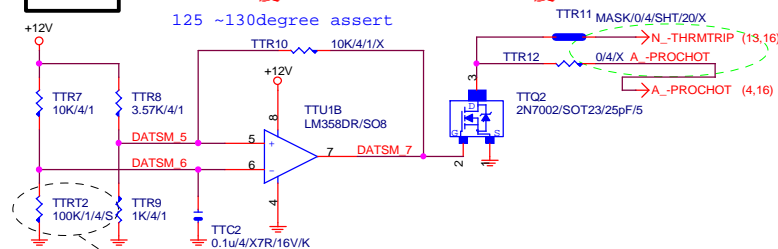


OTP:132度 / PCB THERMAL TRIP:122 度
125 ~130degree assert



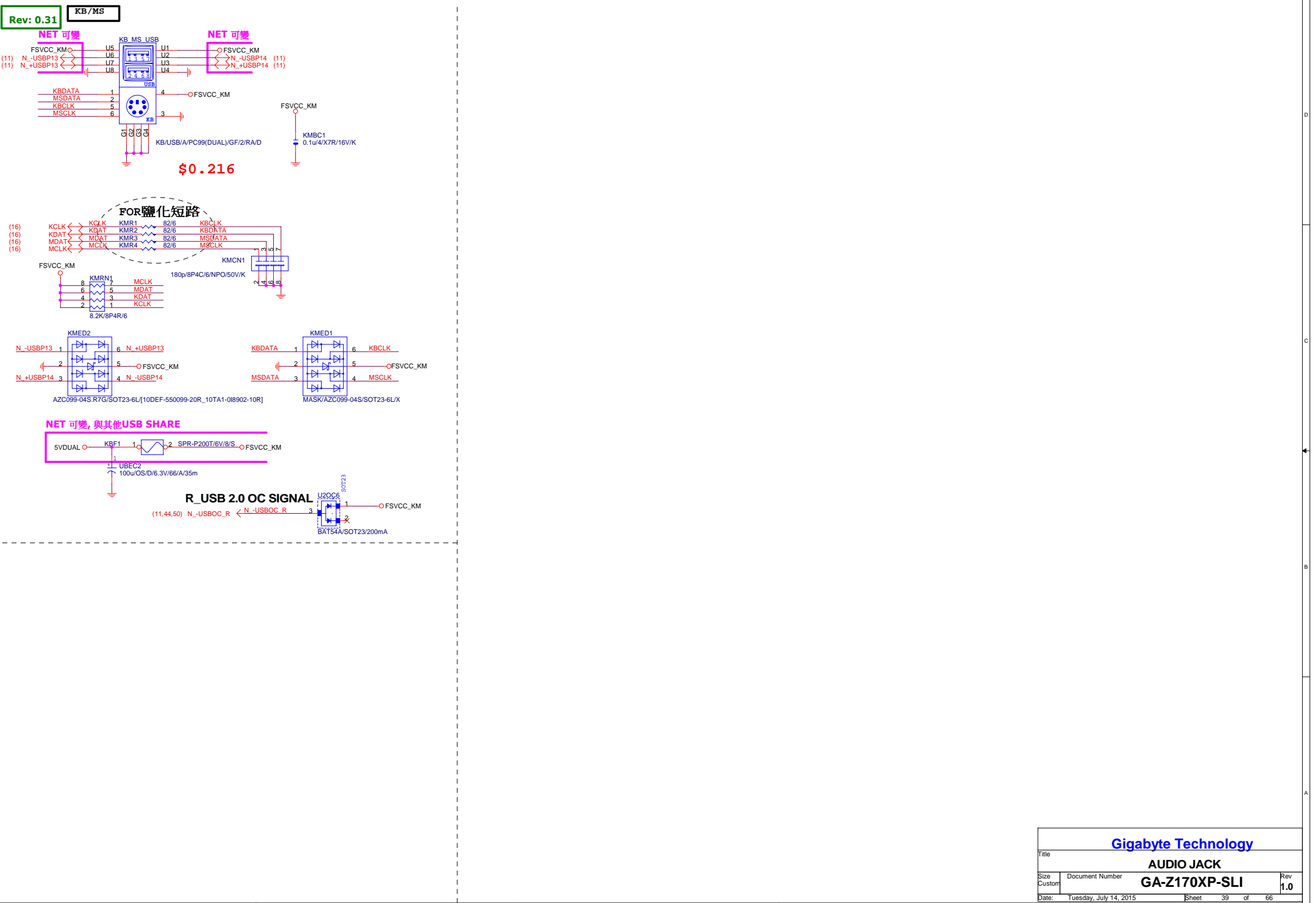
CLOSE VCORE PWM UPPER MOSFET

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



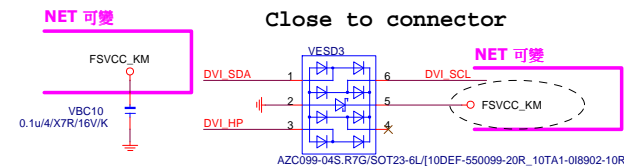
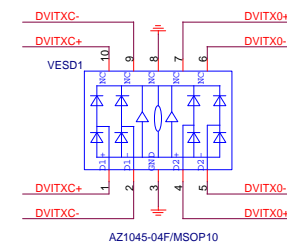
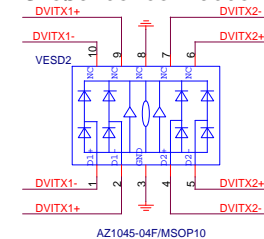
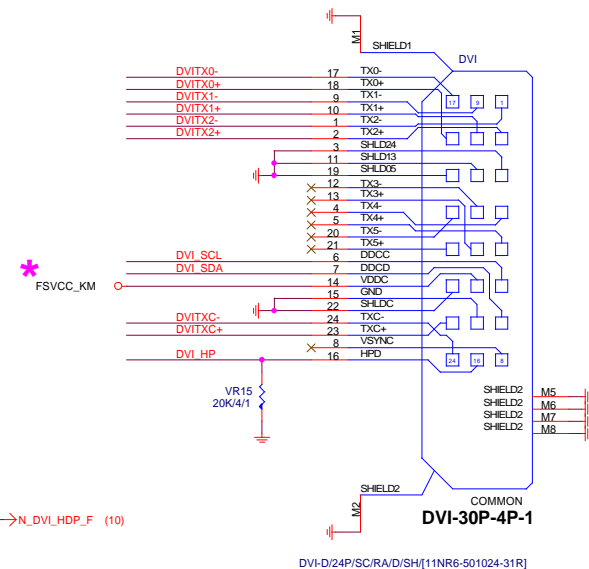
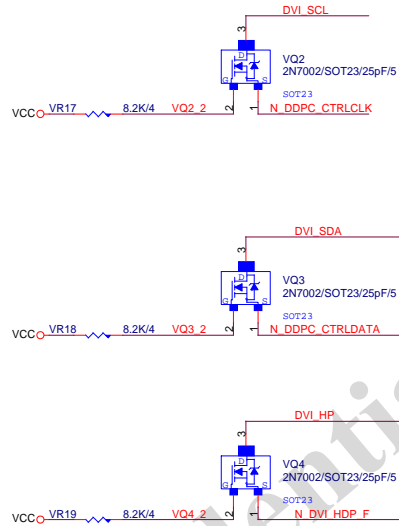
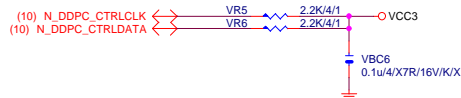
CLOSE VCCGT PWM UPPER MOSFET





DVI CONN

NET 可變



Gigabyte Technology

Title			
FP,F_USB,USB PWR,BZ			
Size Custom	Document Number	GA-Z170XP-SLI	Rev 1.0
Date:	Tuesday, July 14, 2015	Sheet 40 of 66	

ROM PART: PTN3356R1BS/[10HQ5-A23356-10R]
FLASH PART: PTN3356F1BS/[10HQ5-A23356-20R]

省X'TAL COST DOWN:

1. 上件:

DVC28 [10p/4/NPO/50V/J]

DVC11 [10p/4/NPO/50V/J]~修改值

DVR10 [8.2K/4]

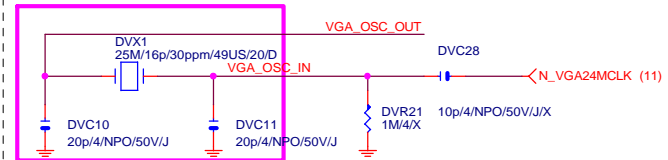
2. 删除:

DVX1 [25M/16p/30ppm/49US/20/D]

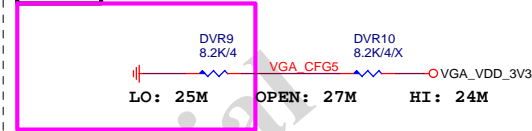
DVC10 [20p/4/NPO/50V/J]

DVR9 [8.2K/4]

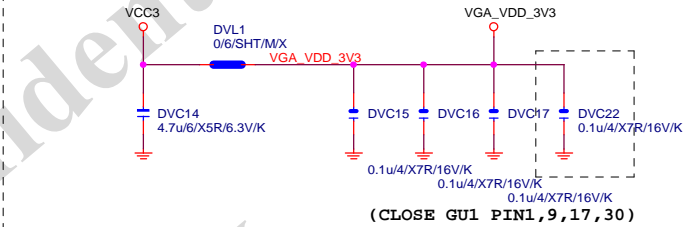
25M Crystal FROM PCH 24MHZ ISSUE



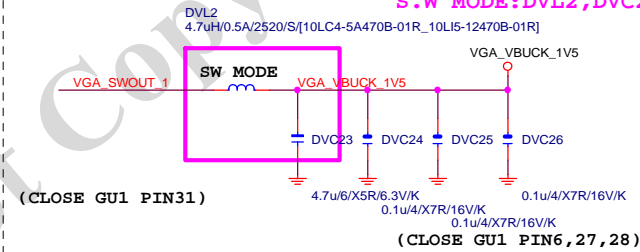
CFG5 For Crystal Less



ADAPTER POWER



(CLOSE GU1 PIN1,9,17,30)
LDO MODE: DVL2, DVC23-->X
S.W MODE: DVL2, DVC23-->O

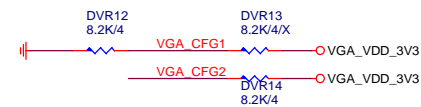


(CLOSE GU1 PIN31)

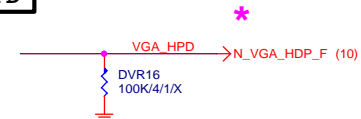
(CLOSE GU1 PIN6,27,28)

CFG1&2

Non-Compliant



HPD

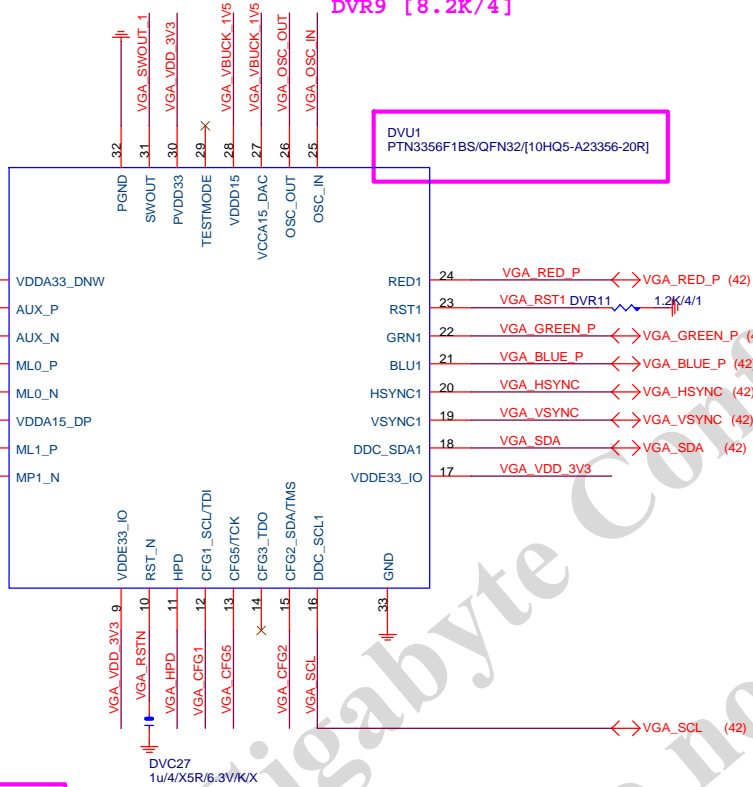


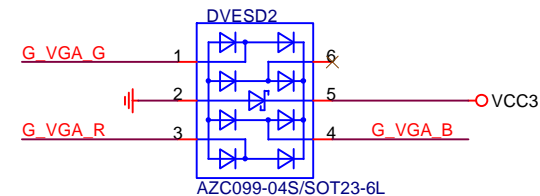
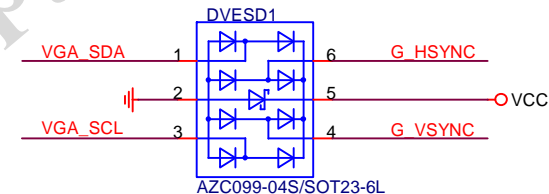
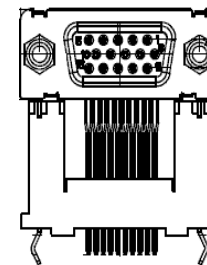
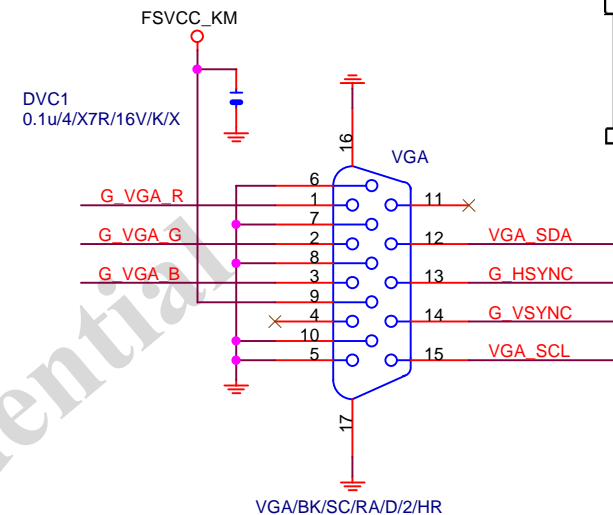
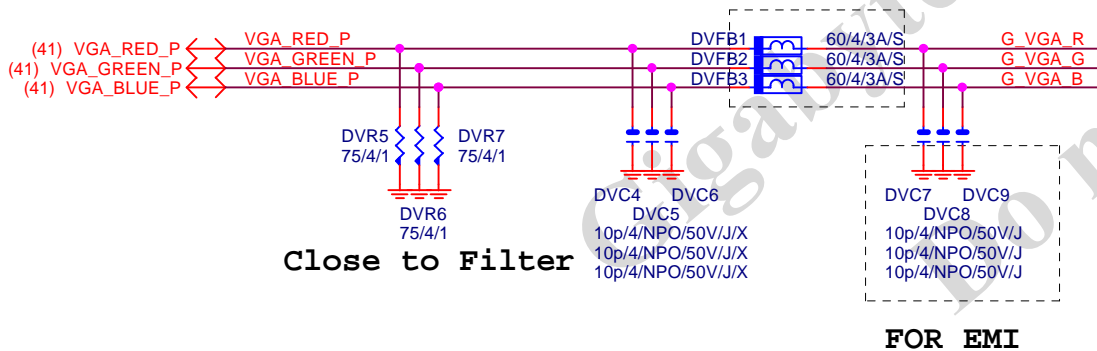
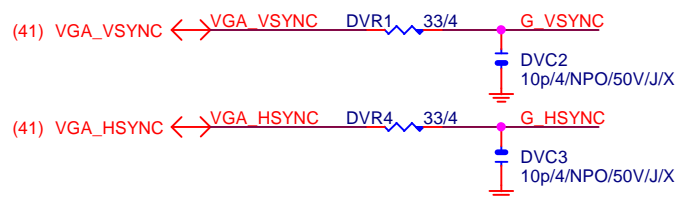
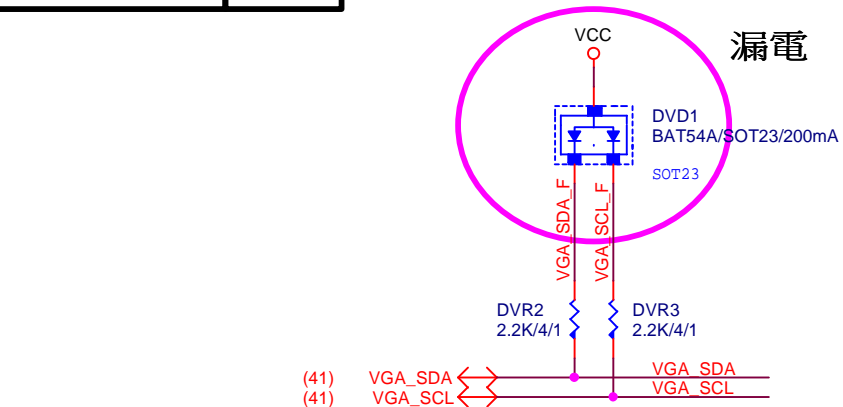
Gigabyte Technology
NXP-PTN3356

Title	
Size	Document Number
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放置PCH端

(10) N_DDPD_CTRLCLK <-> DVR19 2.2K/4/1 <-> VCC3
(10) N_DDPD_CTRLDATA <-> DVR20 2.2K/4/1 <-> VCC3





Gigabyte Technology
NXP-PTN3356

Size Custom Document Number GA-Z170XP-SLI

Rev 1.0

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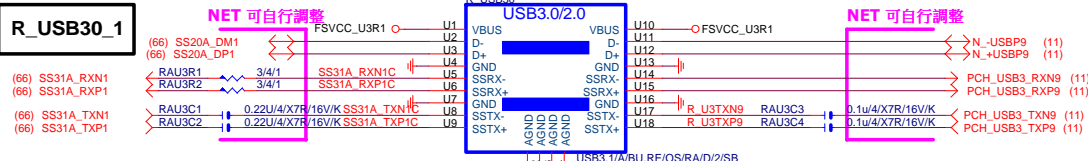
Gigabyte Confidential
Do not Copy

Gigabyte Technology		
Title		
HDMI20 MCDP2800-BA		
Size	Document Number	Rev
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R_USB30_1

NET 可自行調整

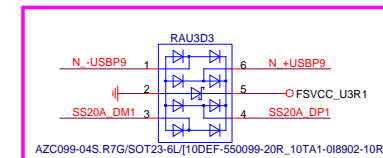
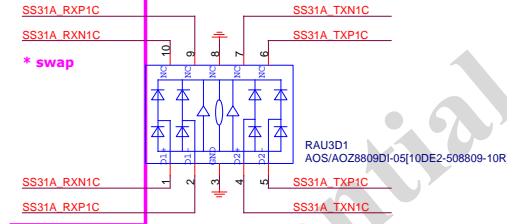
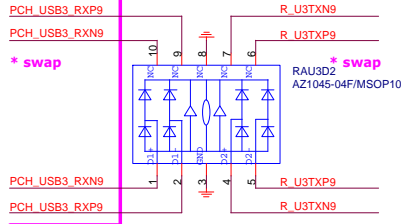
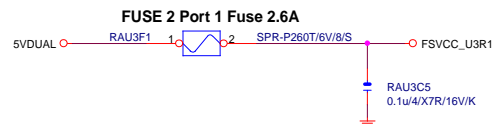


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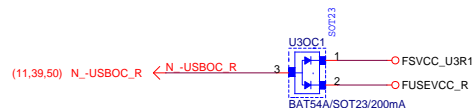
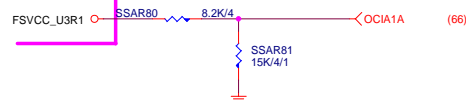
NET 可自行調整

NET 可自行調整

NET 可自行調整



POWER 可自行調整



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Do not Copy

Gigabyte Technology			
Title		R_USB30,F_USB30, USB OC	
Size	Document Number	GA-Z170XP-SLI	
Custom		Rev 1.0	
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R1.08

LAN POWER

3VDUAL_LAN1

LAU1

MDI

SMBUS

LED

JTAG

TEST_ENABLE

RBIAS

WGI219V/QFN48

LAN V_1P0

CLOSE 3VDUAL_LAN1源頭處

(CLOSE PIN4)

CLOSE LAL1

Gigabyte Technology

Do not Copy

Title		Gigabyte Technology	
		INTEL I219	
Size Custom	Document Number	Rev GA-Z170XP-SLI 1.0	
Date:	Tuesday, July 14, 2015	Sheet	45 of 66

[illegible][illegible][illegible][illegible]

R1.08

LAN POWER

Gigabyte Technology

INTEL I219

GA-Z170XP-SLI

Date: Tuesday, July 14, 2015 Sheet 45 of 66 Rev 1.0

R1.08

LAN POWER

OR ERP WAKEUP

Gigabyte Technology

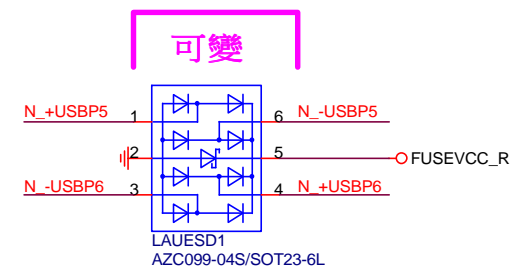
INTEL I219

GA-Z170XP-SLI

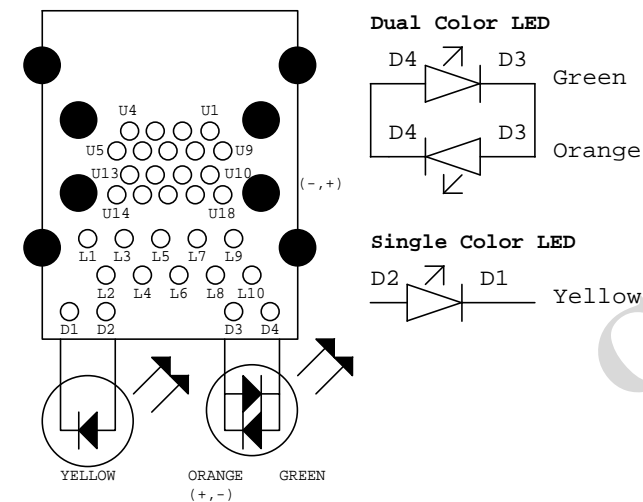
Date: Tuesday, July 14, 2015 Sheet 45 of 66 Rev 1.0

USB_LAN CONNECTOR R1.08

RMA ESD PROTECT note:可變更USB NAME



USB30 LAN LAYOUT示意圖

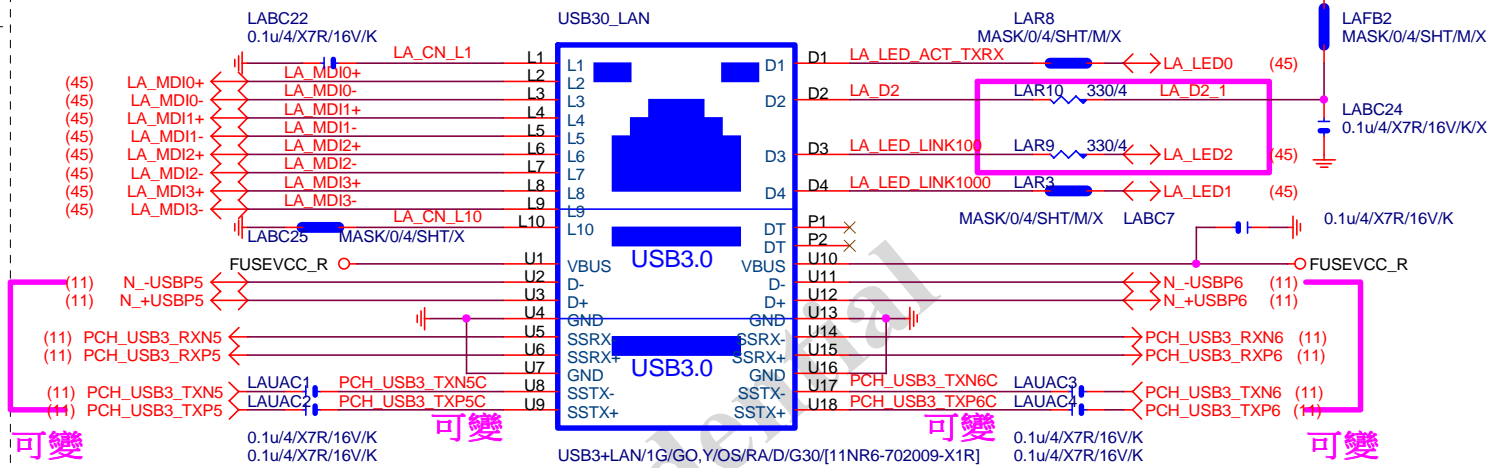


LAN_COVER FOOT PRINT:LAN_COVER

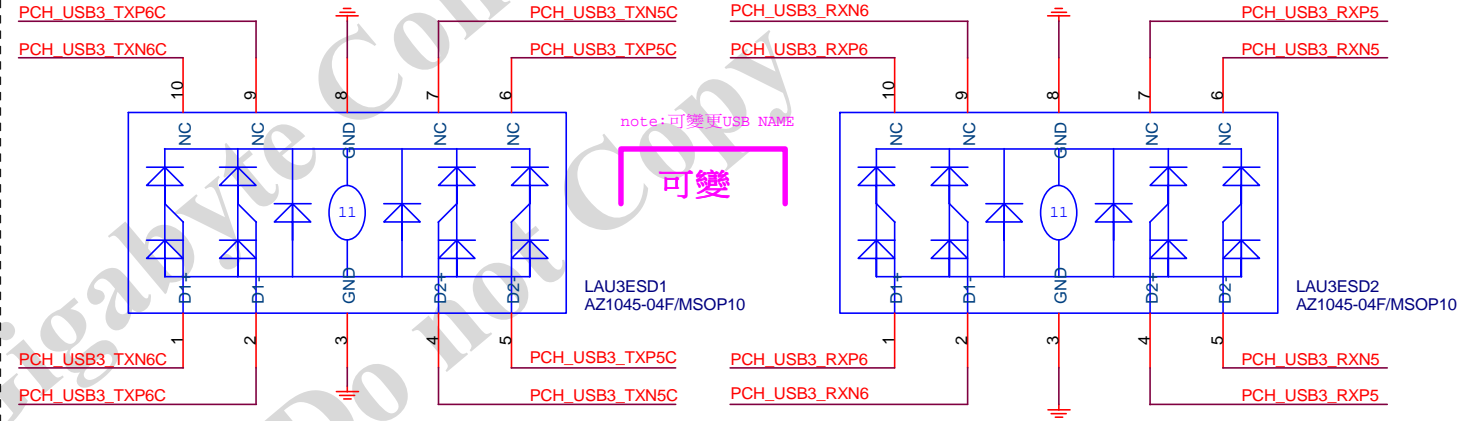
可變
[視SPEC需求]

USB_LAN CONNECTOR note:可變更USB NAME

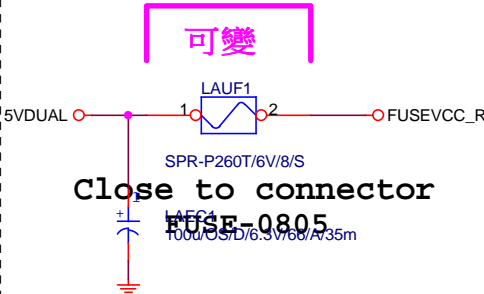
[I219]



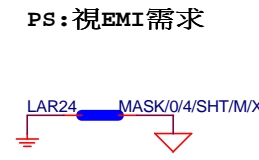
LA MDI--->100歐姆:[20/4/8/4/20]



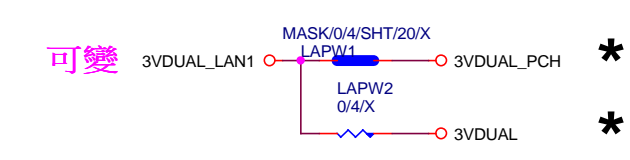
USB POWER note:可變更FUSE



EMI SHORT PAD PS:視EMI需求



LAN POWER note:lan power連接及電流



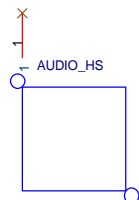
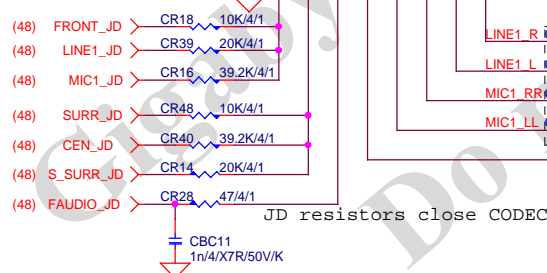
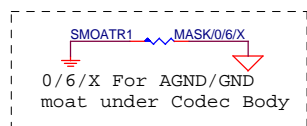
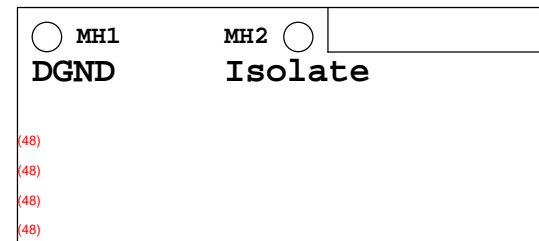
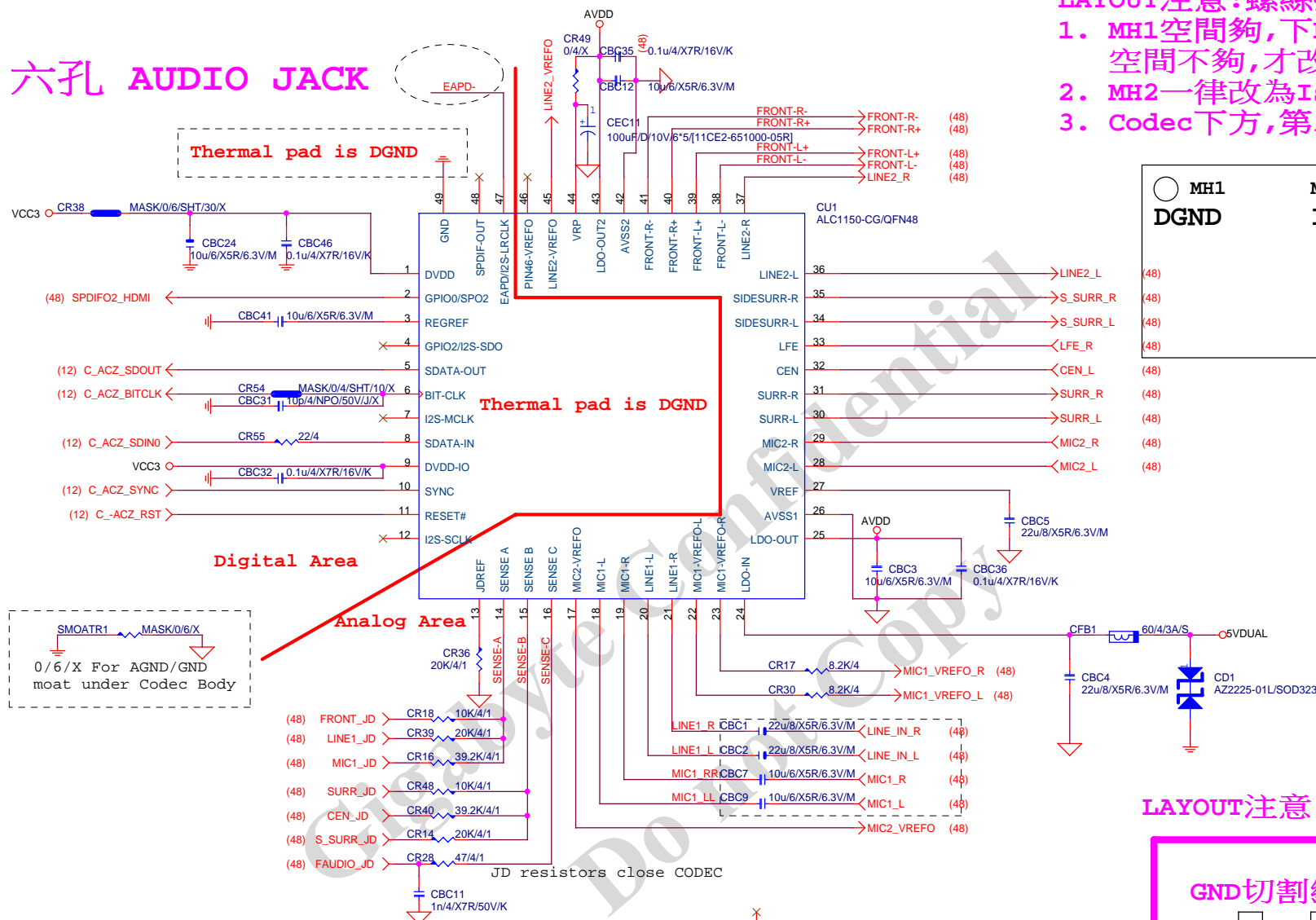
Gigabyte Technology		
LAN CONNECTOR-I219		
GA-Z170XP-SLI		
Title	Document Number	Rev
Size	Custom	1.0
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Rev 0.93

ALC1150 六孔 AUDIO JACK

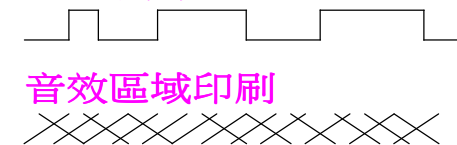
LAYOUT注意:螺絲孔下GND方式

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

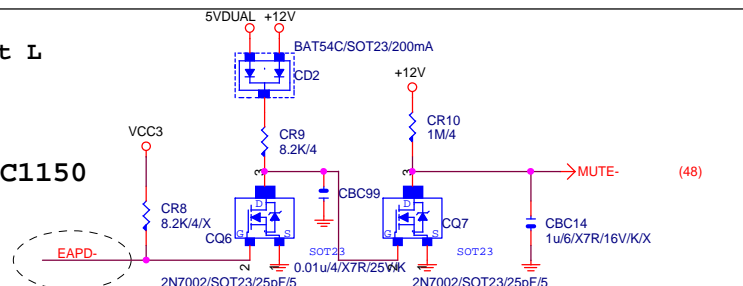


LAYOUT注意:要加

GND切割線



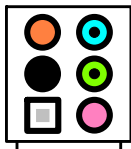
EAPD: Default L
H : ON
L : OFF
Close to ALC1150



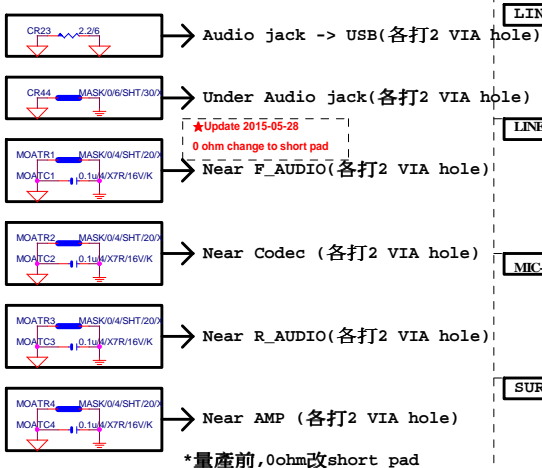
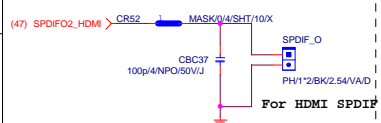
Gigabyte Technology

Title				
ALC1150				
Size Custom	Document Number			Rev
	GA-Z170XP-SLI			1.0
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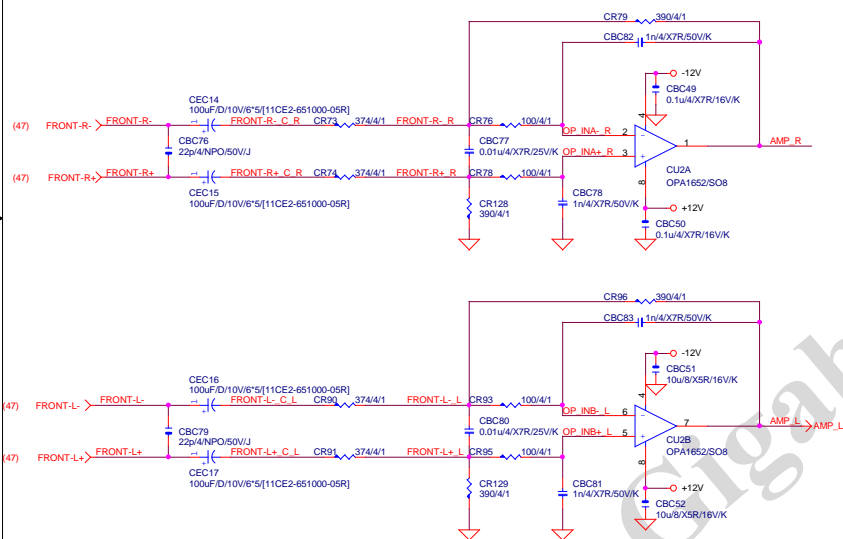
AZALIA JACK



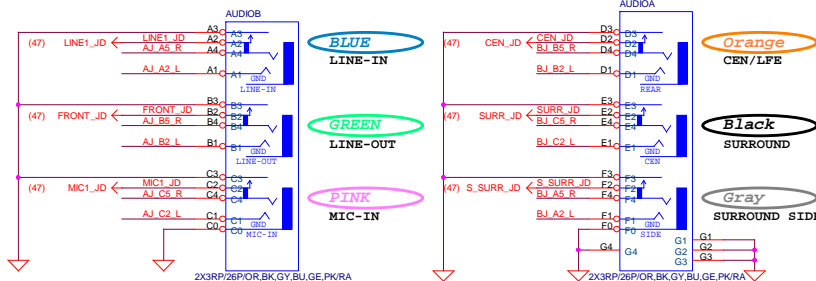
SPDIF_OUT



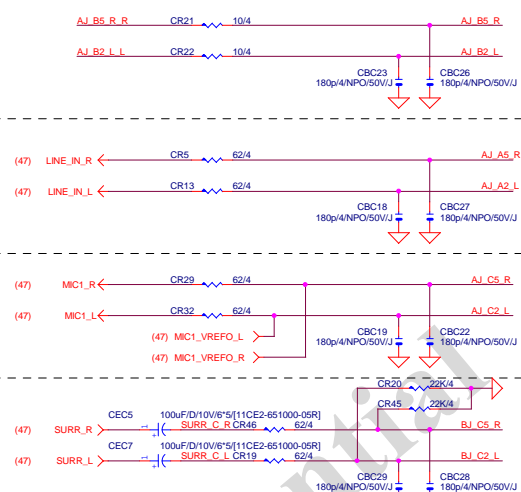
Differential to Single-End AMPLIFIED



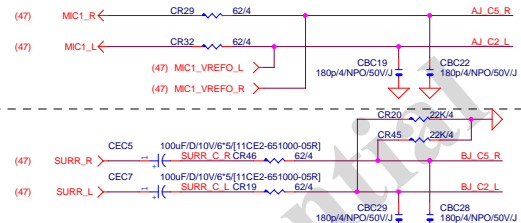
AZALIA JACK



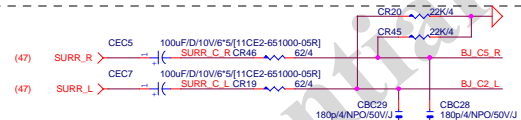
LINE-OUT



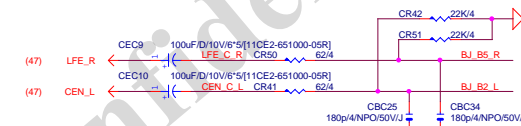
MIC-IN



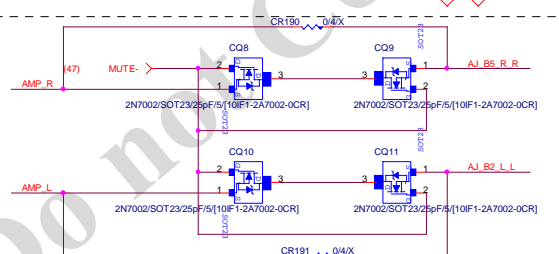
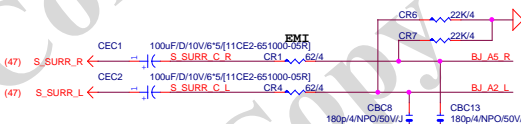
SURROUND



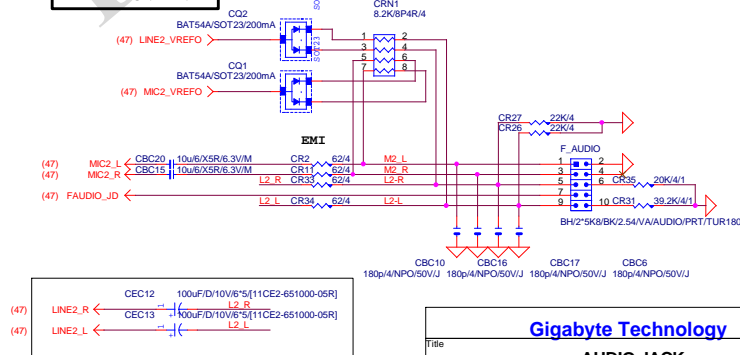
CEN/LFE

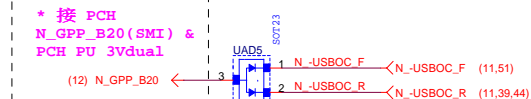


SURR BACK



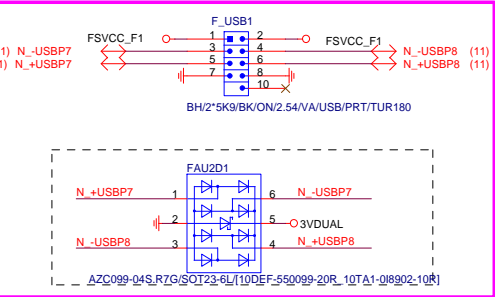
AZALIA FRONT PANEL



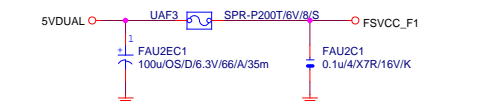


FRONT USB1

NET 可變

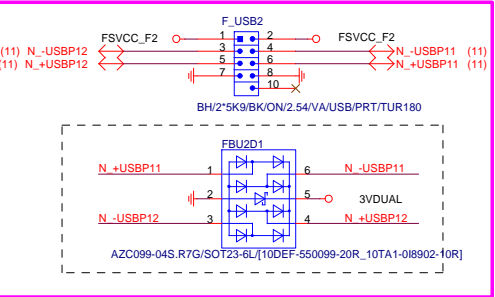


Close to connector
FUSE 2 Port 1 Fuse 2A

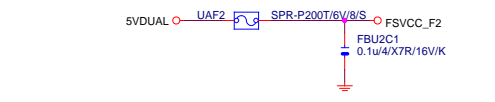


FRONT USB2

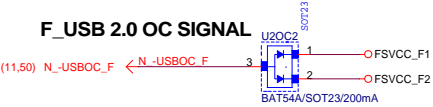
NET 可變

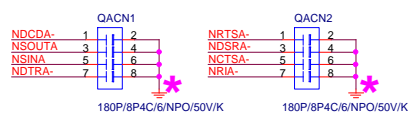


Close to connector
FUSE 2 Port 1 Fuse 2A

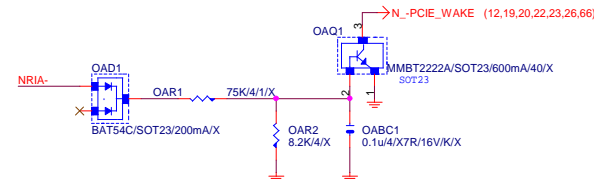
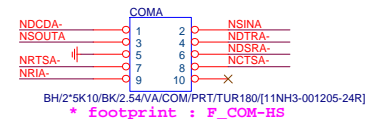


F_USB 2.0 OC SIGNAL

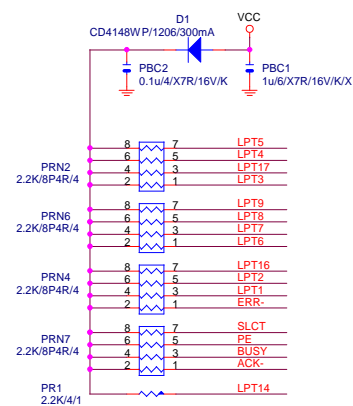
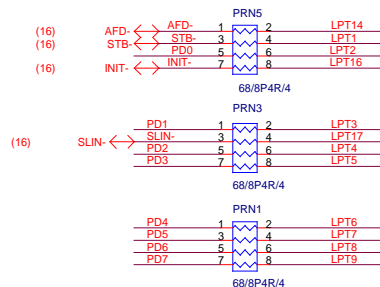




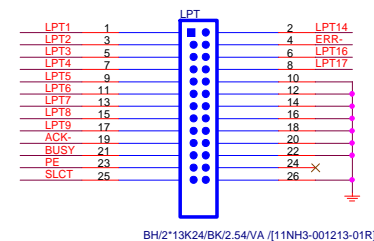
* 接 N_-PCIE_WAKE



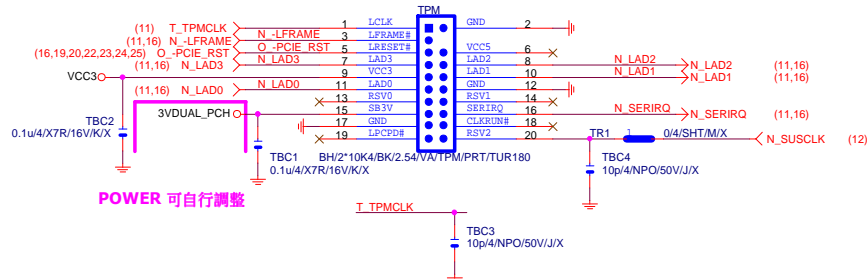
LPT PORT



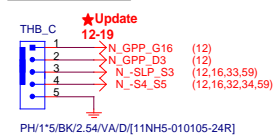
R&D技術通報151 有使用PRINT PORT的
MODEL，需使用新料號：10HP2-118728-72R。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。串電阻33 ohm改為68 ohm。



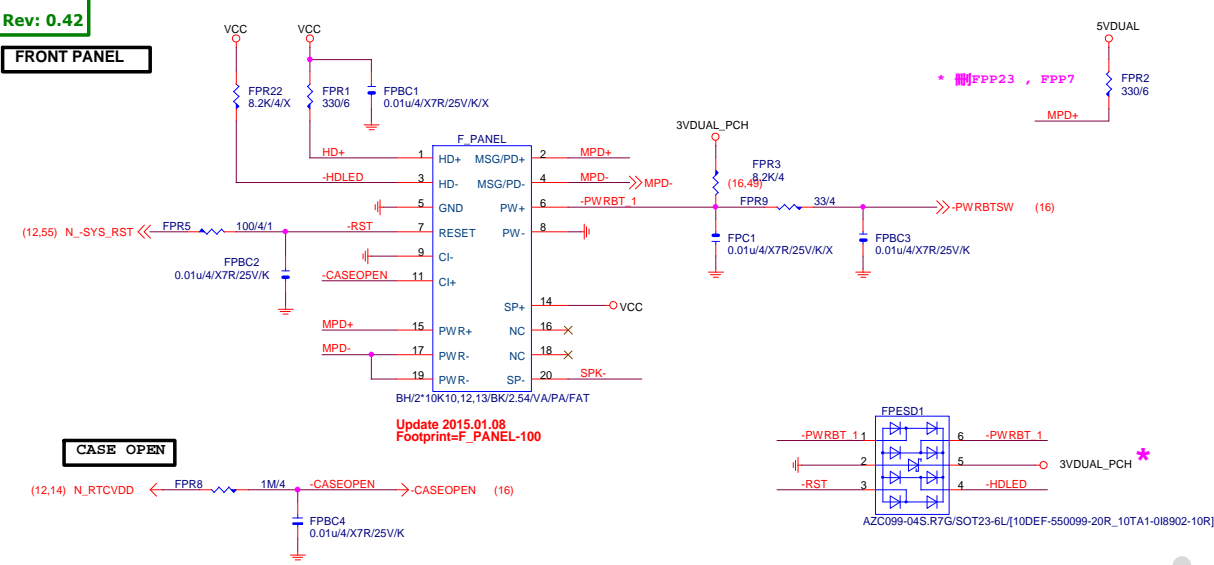
TPM CONNECT



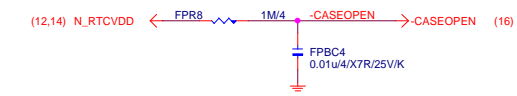
Thunderbolt



FRONT PANEL

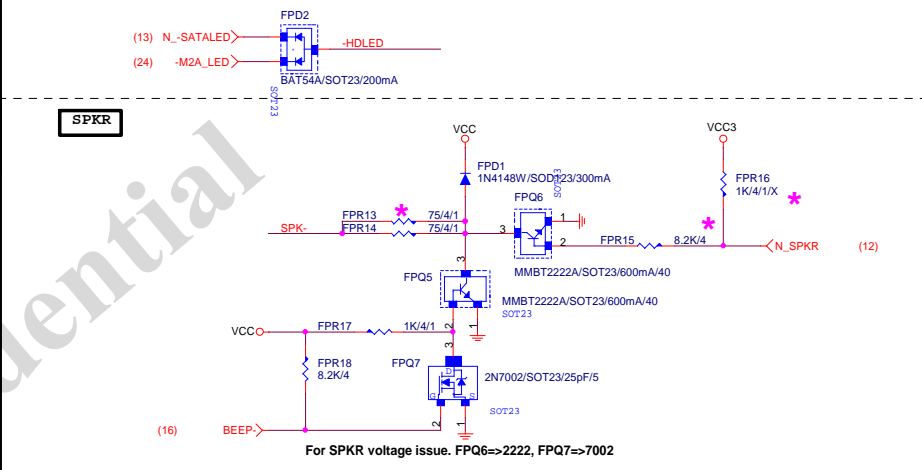


CASE OPEN



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

SPKR



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5

2

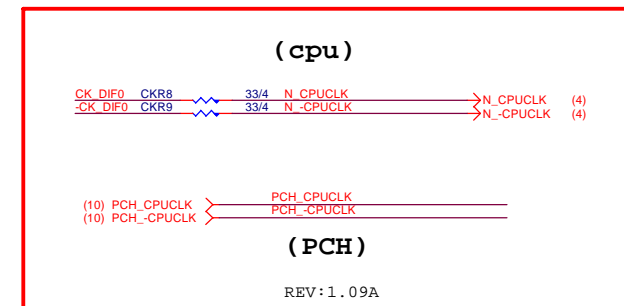
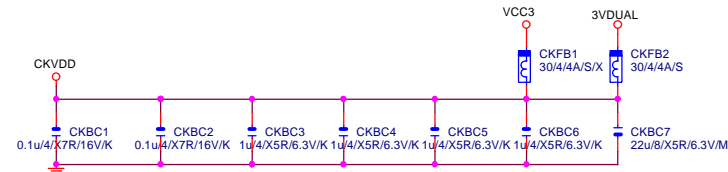
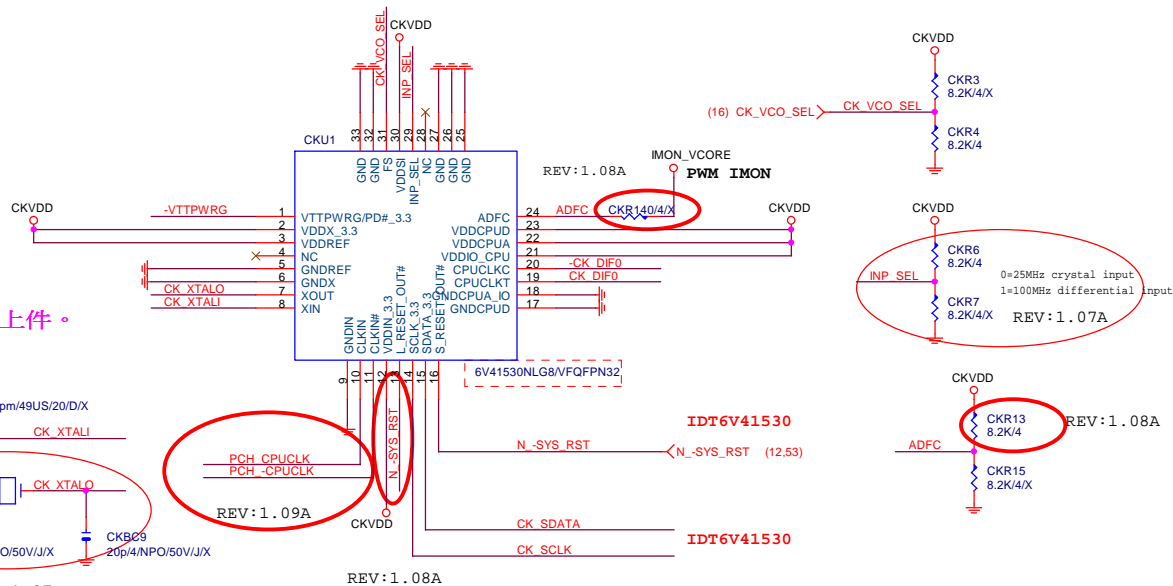
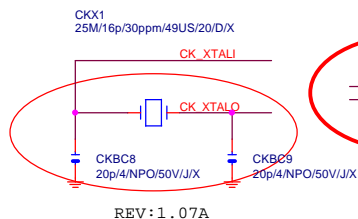


散熱模組料號:

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

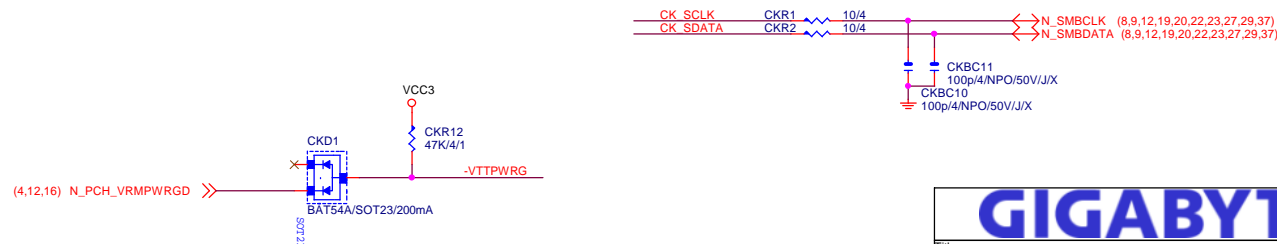
<i>Gigabyte Technology</i>			
TABLE LIST			
Document Number	GA-Z170XP-SLI		Rev 1.0
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IDT6V41530



INP_SEL	Input
0	Crystal
1	CLK_INP/M

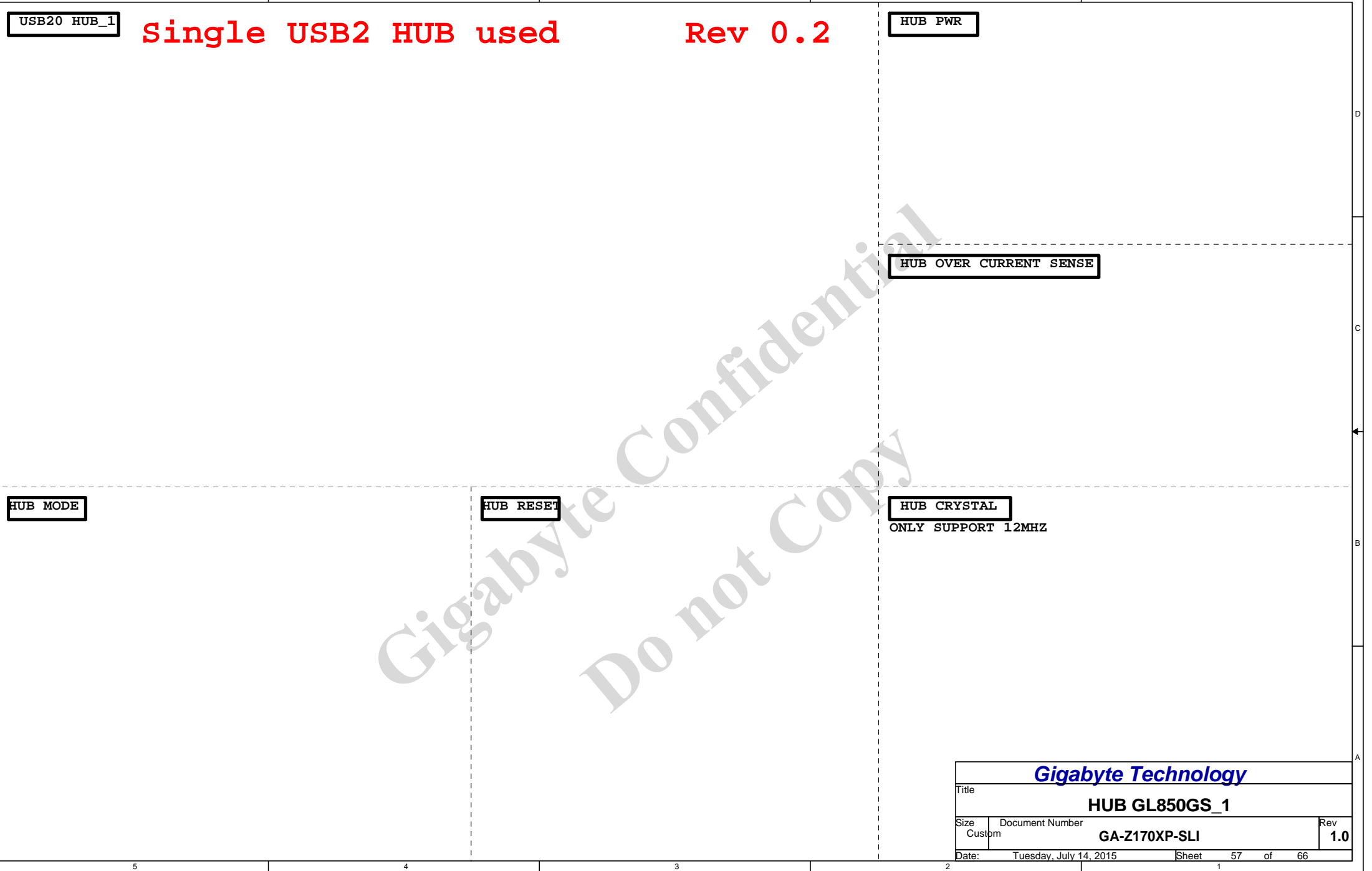
CK_VCO_SEL	VCO
0	400M
1	1200M



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GIGABYTE™

Title			Etron EJ179V		
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5 4 3 2 1

USB20 HUB_1

Single USB2 HUB used

Rev 0.2

HUB PWR

HUB OVER CURRENT SENSE

HUB MODE

HUB RESET

HUB CRYSTAL

ONLY SUPPORT 12MHZ

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Gigabyte Technology			
Title			
HUB GL850GS_1			
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SINGLE Display Port

Display Port with HDMI, or HDMI only.



DP
HDMI

Footprint: DP_HDMI-2,
P/N: 11NR6-H04039-02R

OR

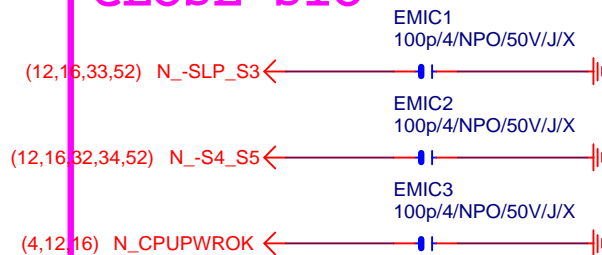


HDMI only

Footprint: DP_HDMI-2, Capture
Value: HDMI/19P/BK/S/RA/INTEL

GIGABYTE			
Title			
DP PORT			
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CLOSE SIO



CLOSE PCH



CLOSE AUDIO



GIGABYTE™

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Size	Document Number				Rev
A	GA-Z170XP-SLI				1.0
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固態電容料號.請自行修改

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

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

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

IRON CHOKE

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

Ferrite

	料號	Capture Value	SIZE	Footprint
DIP	11LC5-F3500C-11R	0.5uH/32A/INCG109/FSI/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-F2500C-11R	0.5uH/25A/INC0809/F/D	8*8	CHOKE1U-R50M-IF
SMD	未建(SIUC1007-R30M-JJ1W)		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

GIGABYTE™

Title

RT8120_DDR4 POWER

Size Custom

Document Number

GA-Z170XP-SLI

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Rev

1.0

REAR IO

RS_SYS

F_AUDIO

AUDIO

DD_DQ2 DD_DQ1 DC_DQ2 DC_DQ1 DB_DQ2 DB_DQ1

RS_VCORE

TTRT1

DD_DL1 DC_DL1 DB_DL1

CPU

DA_DL1
DO_DL1
DN_DL1
DM_DL1

DA_DQ1 DA_DQ2
DO_DQ1 DO_DQ2
DN_DQ1 DN_DQ2
DM_DQ1 DM_DQ2

DANTC2

RS_VCCGT

TTRT2

DANTC4

SIO

PCH

RS_PCH

SATA_EXPRESS

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

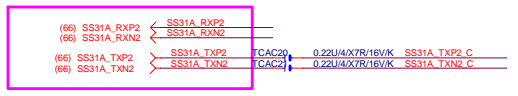
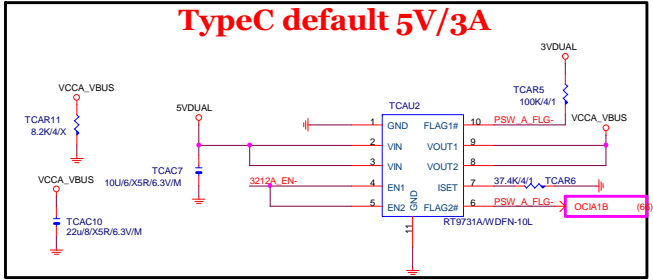
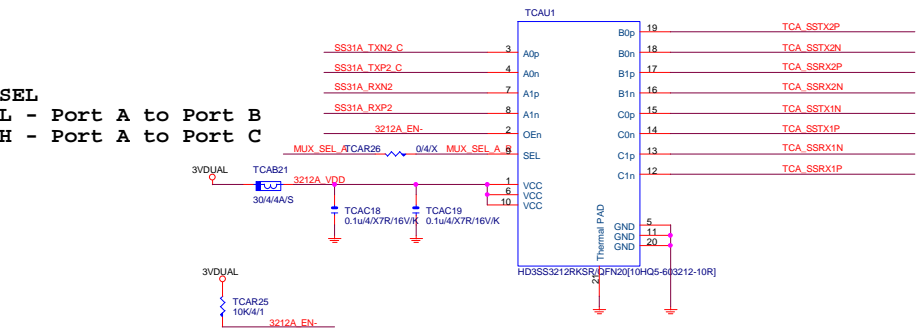
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Title ALPINE RIDGE CIO & DP		
Size C	Document Number GA-Z170XP-SLI	Rev 1.0
Date: Tuesday, July 14, 2015	Sheet 62	of 66

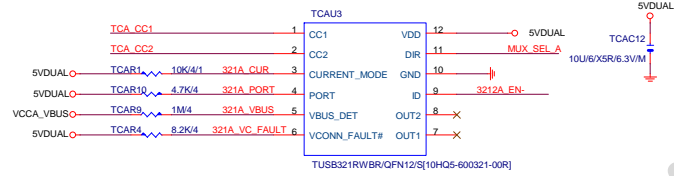
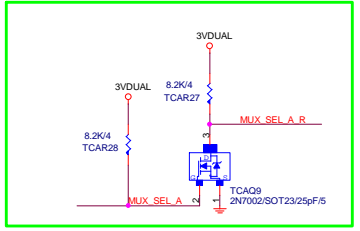
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Title ALPINE RIDGE POWER		
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SEL
L - Port A to Port B
H - Port A to Port C



USB 3.x SuperSpeed

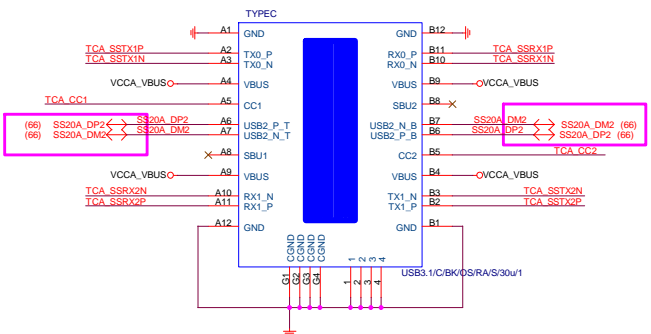


MUX_SEL
H - TypeC plug position 2
L - TypeC plug position 1

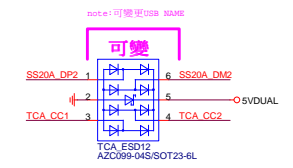
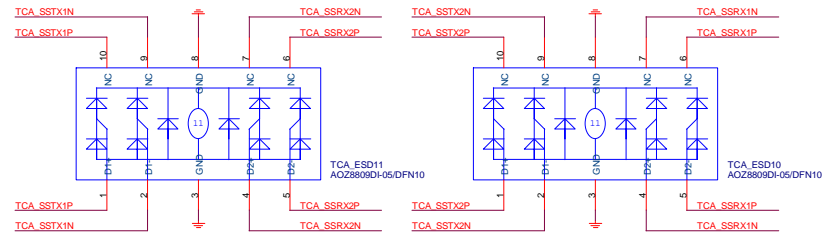
CURRENT MODE
L - Default current / Pull down to GND or NC
M - Medium (1.5A) current / Pull up to VDD 500K
H - High (3.0A) current / Pull up to VDD 10K

PORT
H - HOST
L - Device
NC - Dual Role

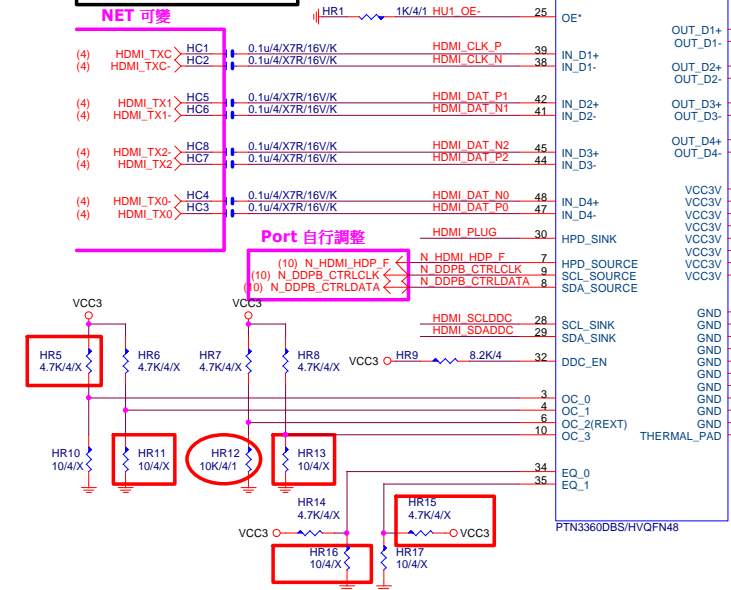
Color markers can be changed by model



USB2.o can be used the same source

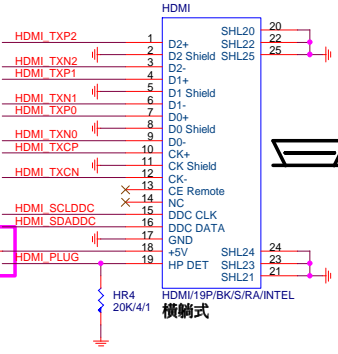
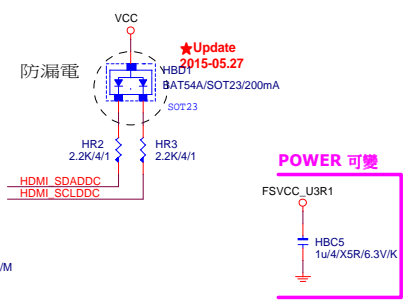


HDMI LEVEL SHIFT



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

【技術通報R&D技術通報150】
HDMI eye diagram1.4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)



直立式
P/N:11NR6-H01019-K1R

