

## Model Name: Z390 GAMING SLI rev 1.01

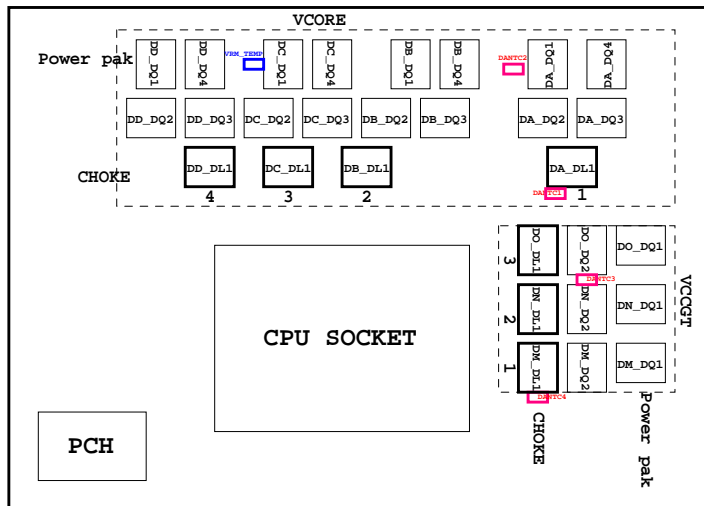
SHEET TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A (CFL_R0.5)
05	CPU_LGA1151-B-DDR4 (CFL_R0.5)
06	CPU_LGA1151-C (CFL_R0.5)
07	CPU_LGA1151-D (CFL_R0.5)
08	DDR 4 CHANNEL A (REV0.12)
09	DDR 4 CHANNEL B (REV0.12)
10	PCH CLOCK/DDC/BIOS (CNP_R1.03)
11	PCH DMI,USB,PCIE (CNP_R1.03)
12	PCH MISC (CNP_R1.03)
13	PCH SATA,PCIE,CNVI (CNP_R1.03)
14	PCH PWR (CNP_R1.03)
15	PCH GND,Heatsink (CNP_R1.03)
16	ITE ITE8628 (CFL_R1.02)
17	HWM (CFL_R1.02)
18	FAN CTRL-CFL-SIO_5 FAN (CFL_R0.6)
19	Dual BIOS for CS mode (CFL_R1.02)
20	CEC Logic (CFL_R1.02)
21	PCI EXPRESS X16 SLOT (REV0.2)
22	PCI EXPRESS X16 SWITCH (REV0.51)
23	PCI EXPRESS X8 SLOT (REV0.51)
24	PCI EXPRESS X4 SLOT(PCH)
25	PCI EXPRESS X1 *3 (REV0.1)
26	SATA (REV0.1)
27	M.2 x4 (A) (CFL_R0.4)
28	M.2 x2 (P) (CFL_R0.64)
29	COM,LPT,TPM, THB (CFL_R0.64)
30	ISL69138 (CFL_R0.64)
31	VCORE_PPAK-1 (CFL_R0.6)
32	VCORE_PPAK-2 (REV0.1)
33	VCCGT_PPAK (REV0.1)
34	CPU POWER-Z系列 (REV0.11)
35	VCCSA VCCIO-IRON-Z系列 (REV0.1)
36	RT8120_DDR_CHOKE-IRON-2L
37	RT8120_VPP_CHOKE-IRON-合金

SHEET

TITLE

38	RT8120_PCH-CHOKE-IRON (CFL_R0.6)
39	DISCRETE POWER (CFL_R0.6)
40	ATX POWER , A_-PROCHOT (CFL_R0.6)
41	NCT3933 (CFL_R0.6)
42	KB_MS_USB3 (CFL_R0.1)
43	HDMI_NO_LS /R_USB30
44	CNVi_M2_WIFI (CFL_R2.02)
45	Type- A/B USB3.1 (CFL_R2.02)
46	Redriver-Type- A/B (CFL_R2.06)
47	INTEL I219 (CFL_R2.06)
48	USB_LAN CONNECTOR-I219 (CFL_R0.6)
49	Realtek ALC1220 (CFL_R0.6)
50	EAR AUDIO JACK (CFL_R0.6)
51	F_USB30 (CFL_R2.01)
52	F_USB (CFL_R2.0)
53	F_PANEL (CFL_R2.0)
54	IO / XMP/ AUDIOLED / C_LED (REV0.1)
55	EMI-ESD
56	POWER MAP
57	NTC MAP (REV0.3)
58	LED LAYOUT RULE (REV0.3)

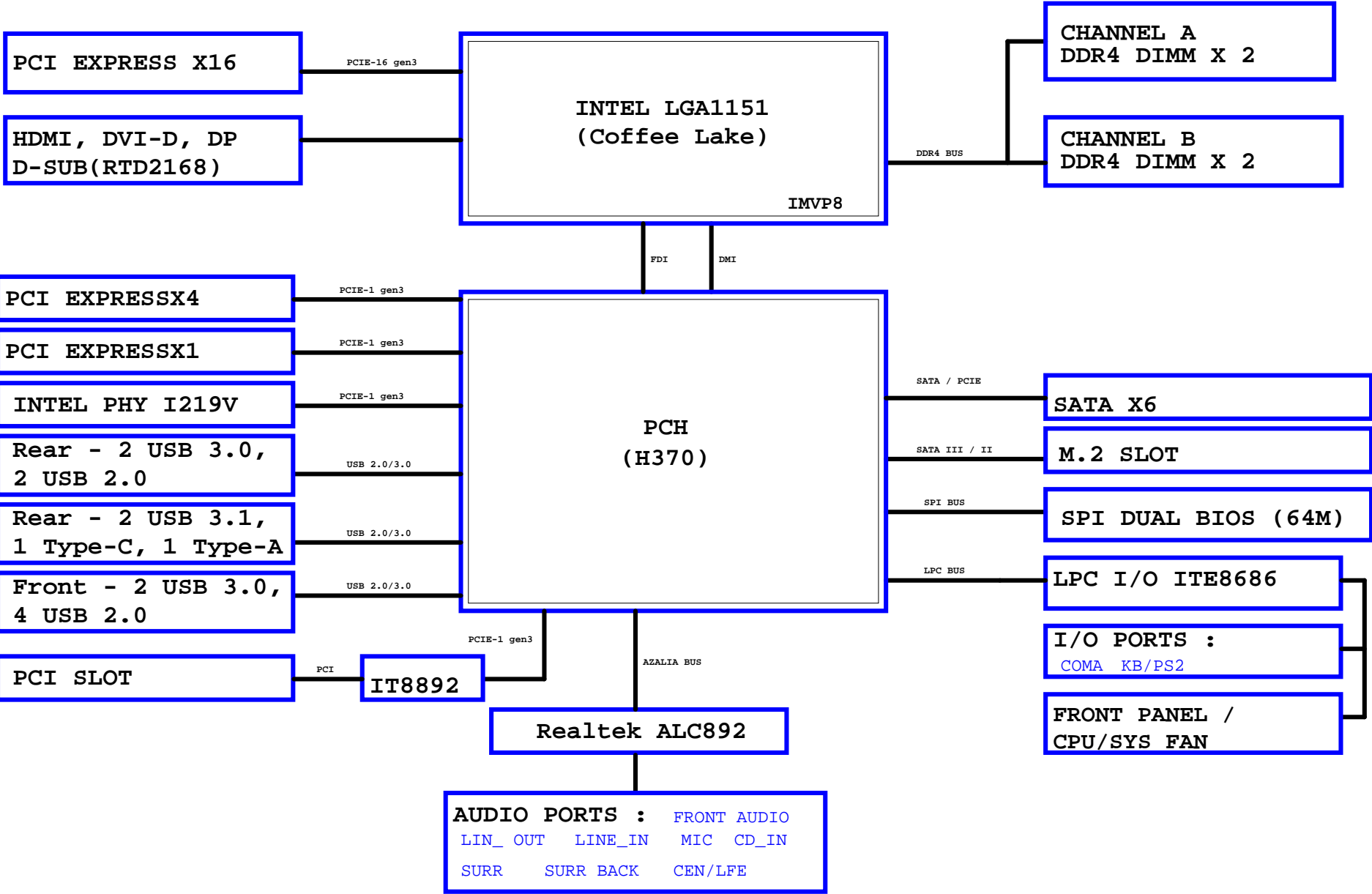


rev1.01 Circuit or PCB layout change

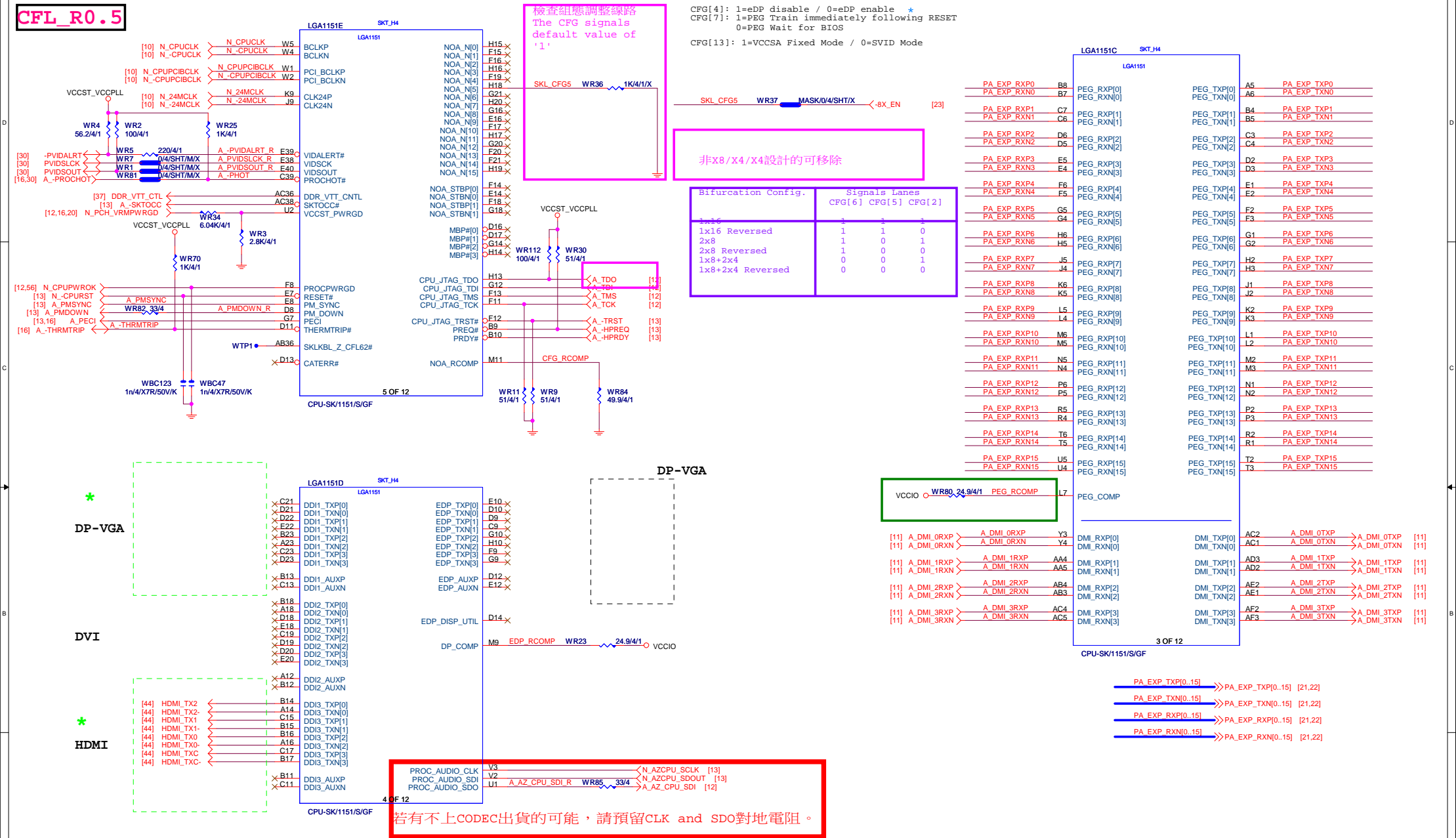
## 2017/07/19

[illegible]

BLOCK DIAGRAM



## CFL\_R0.5



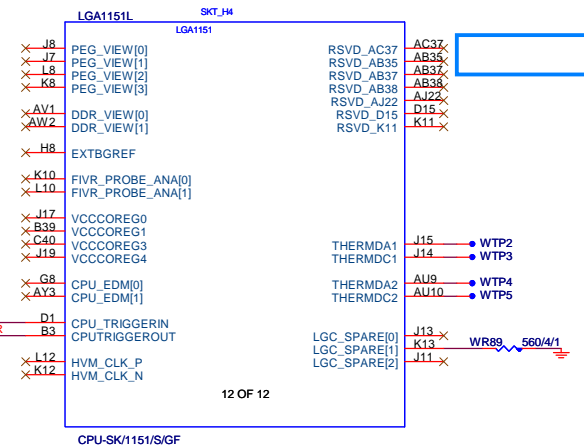
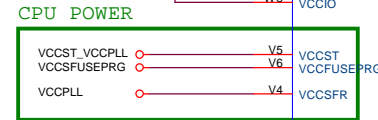
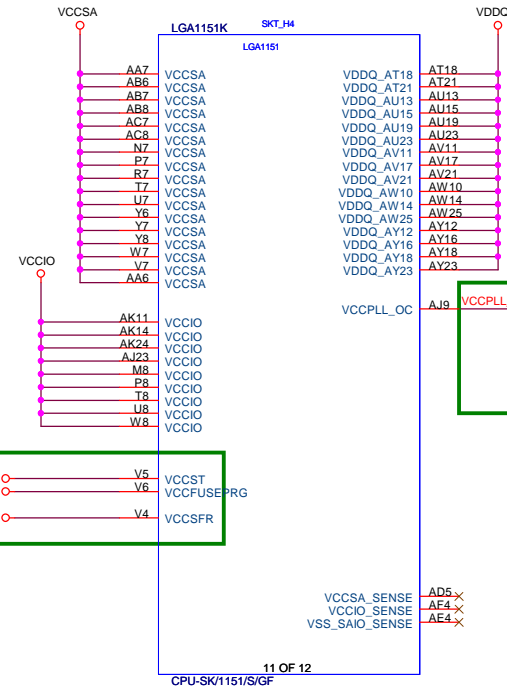
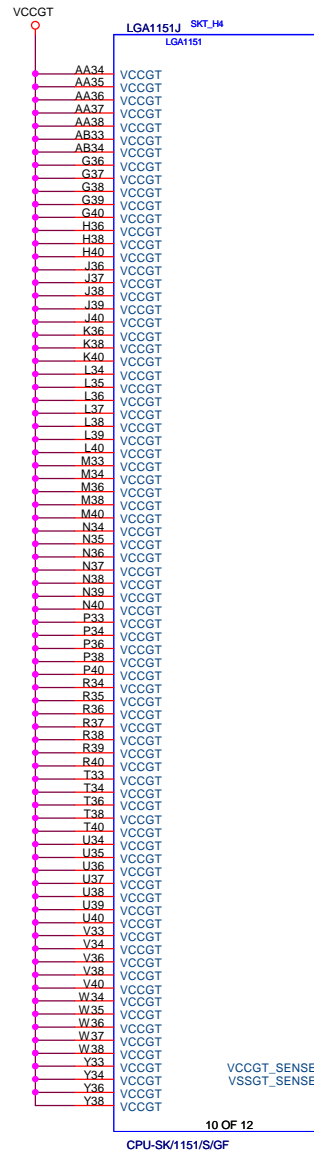
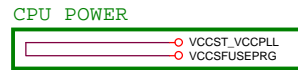
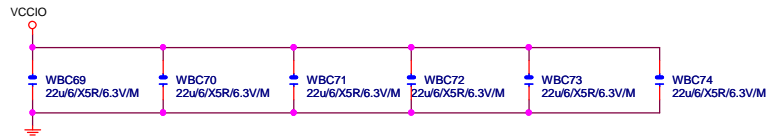
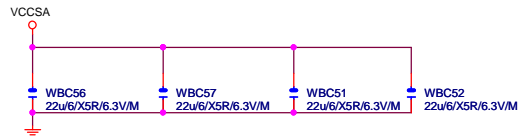
```
G-15u : (CPU-SK/1151/S/15)
10SC1-F01151-11R / 10SC1-F01151-12R
G-FL : (CPU-SK/1151/S/GF)
10SC1-F01151-21R / 10SC1-F01151-22R
```

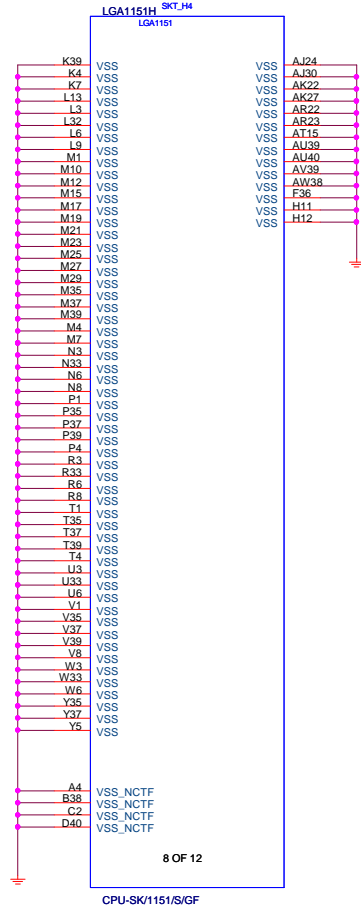
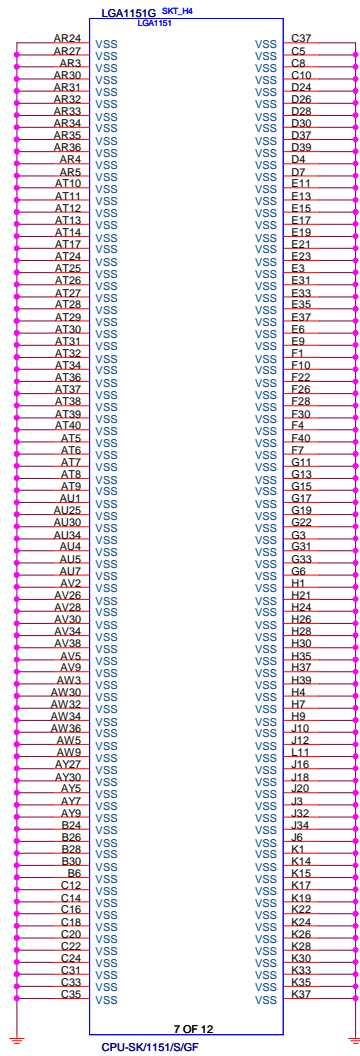
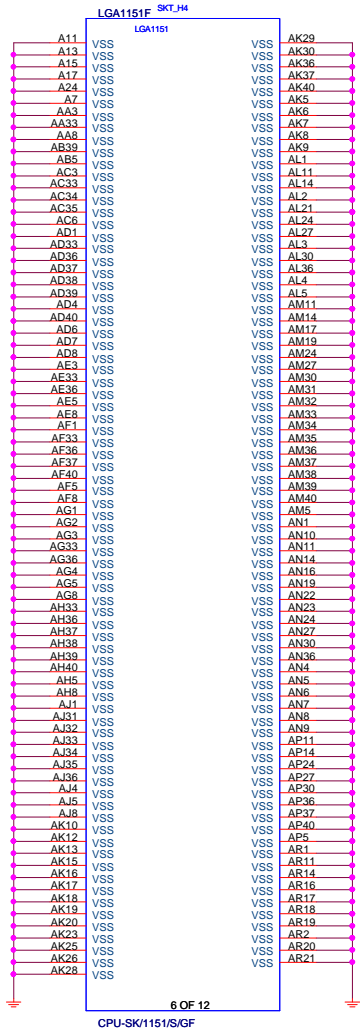
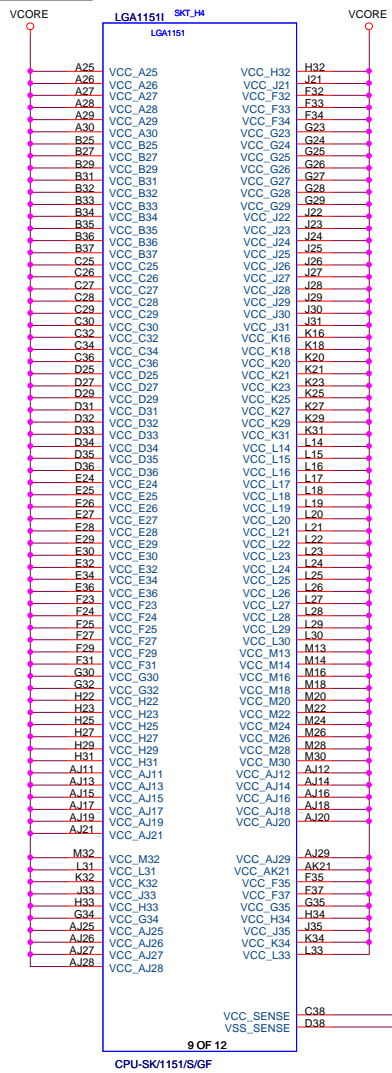
CPU-SK/1151/S/GFCPU-SK/1151/S/GF

[8] MODT\_A[0..3] ↔ MODT\_A[0..3]  
 [9] MODT\_B[0..3] ↔ MODT\_B[0..3]  
 [8] MDA[0..63] ↔ MDA[0..63]  
 [9] MDB[0..63] ↔ MDB[0..63]  
 [8] M\_DQSA[0..7] ↔ M\_DQSA[0..7]  
 [8] M\_-DQSA[0..7] ↔ M\_-DQSA[0..7]  
 [8] MAAA[0..16] ↔ MAAA[0..16]  
 [9] MAAB[0..16] ↔ MAAB[0..16]  
 [9] M\_DQSB[0..7] ↔ M\_DQSB[0..7]  
 [9] M\_-DQSB[0..7] ↔ M\_-DQSB[0..7]

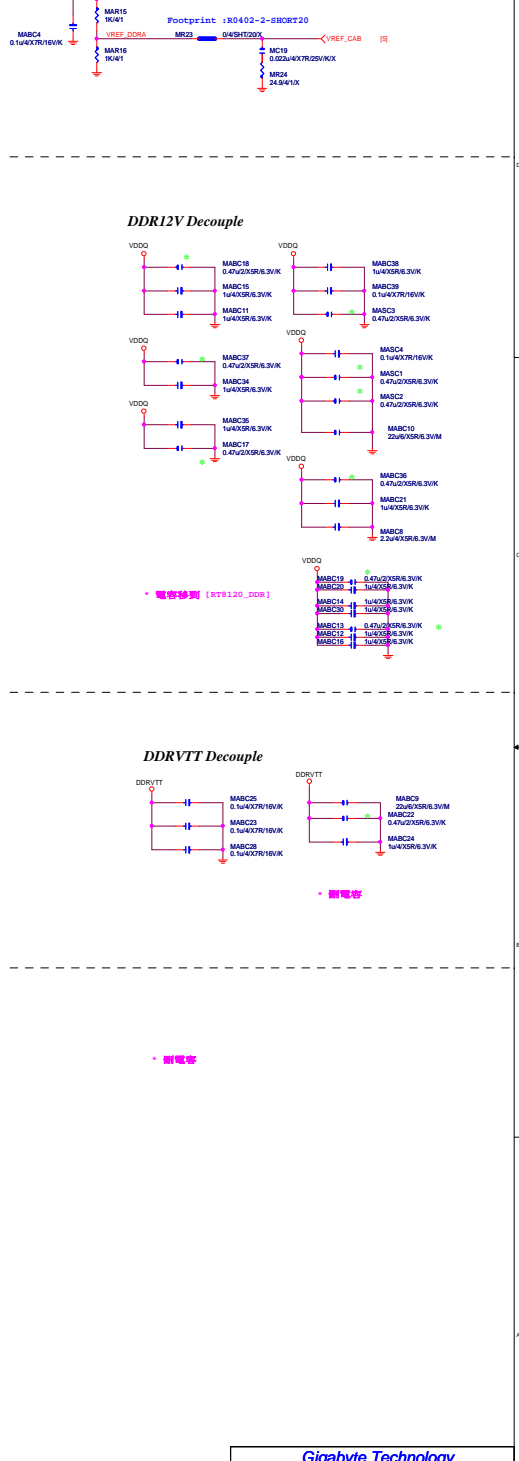
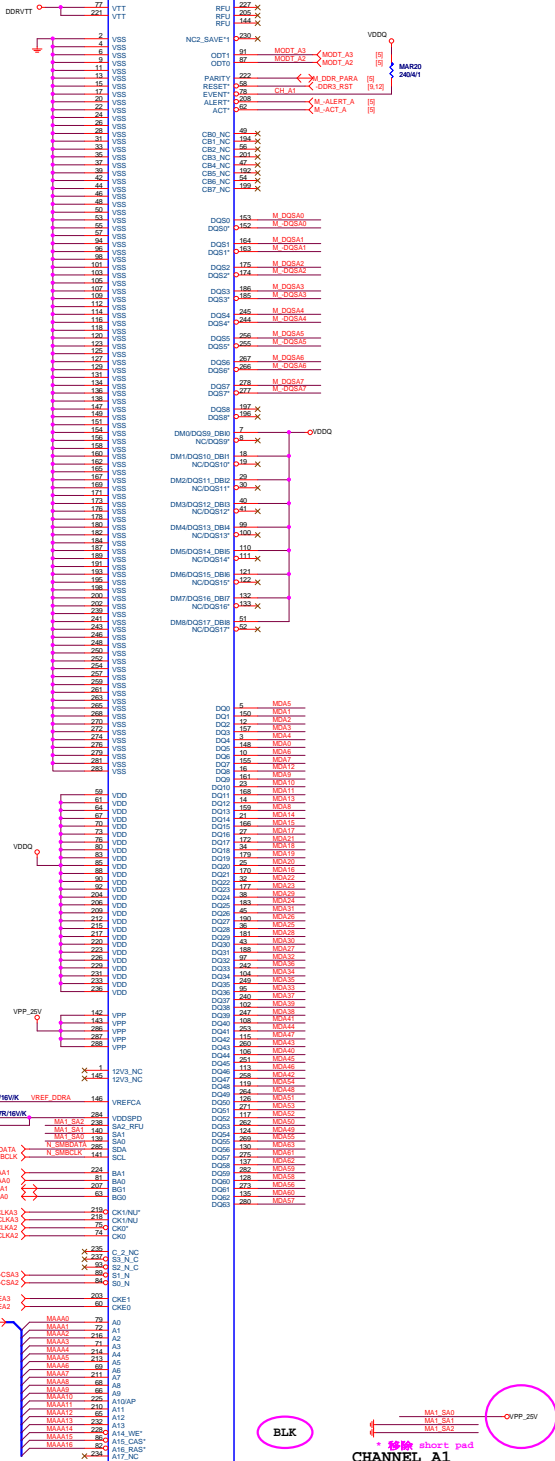
DDR_VREF_CA	AB40	VREF CAB	VREF_CAB	[8]
DDR0_VREF_DQ	AC40	VREF DQB	VREF_DQB	[9]
DDR1_VREF_DQ	AC39	VREF DQB	VREF_DQB	[9]

**CFL\_R0.4**

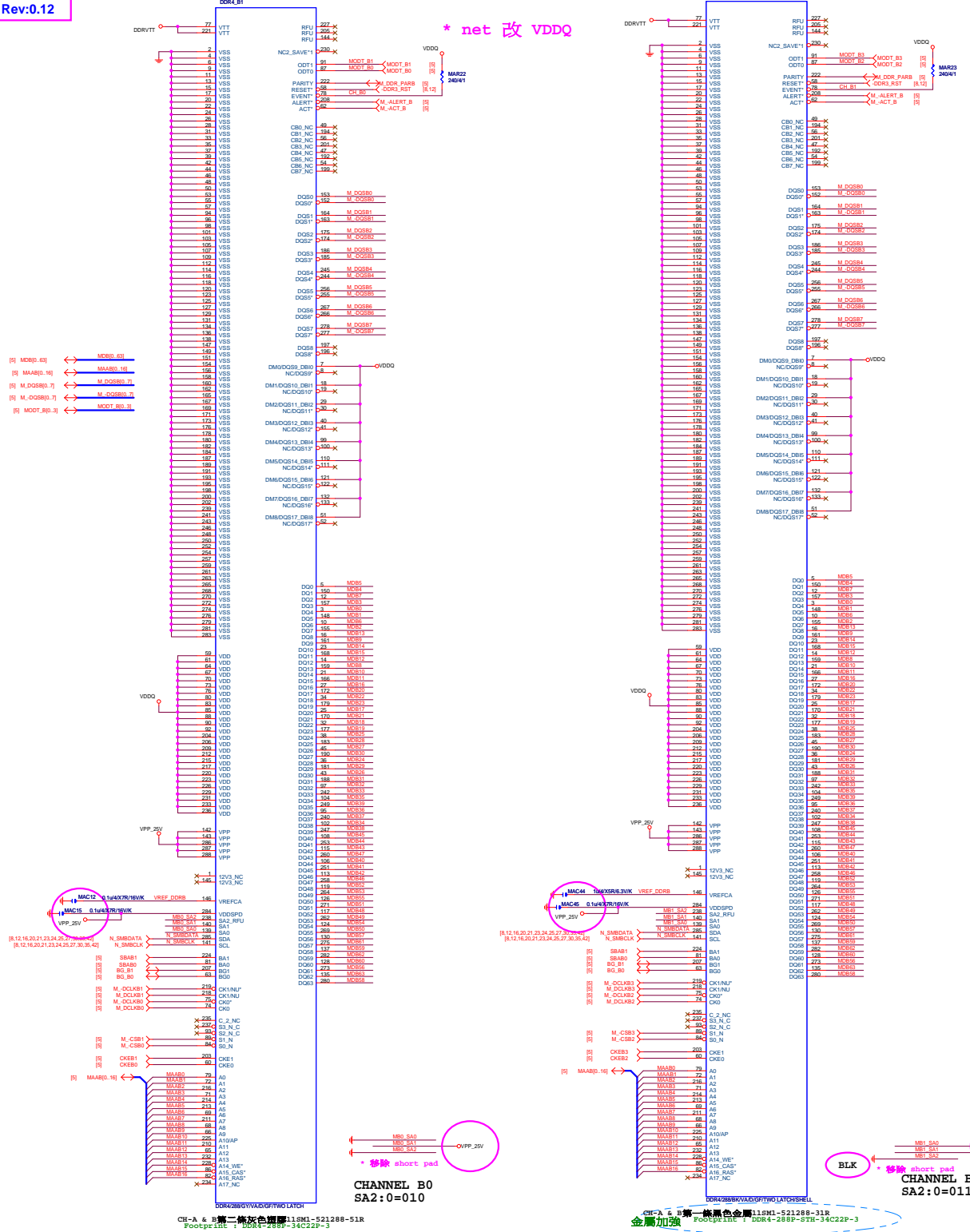




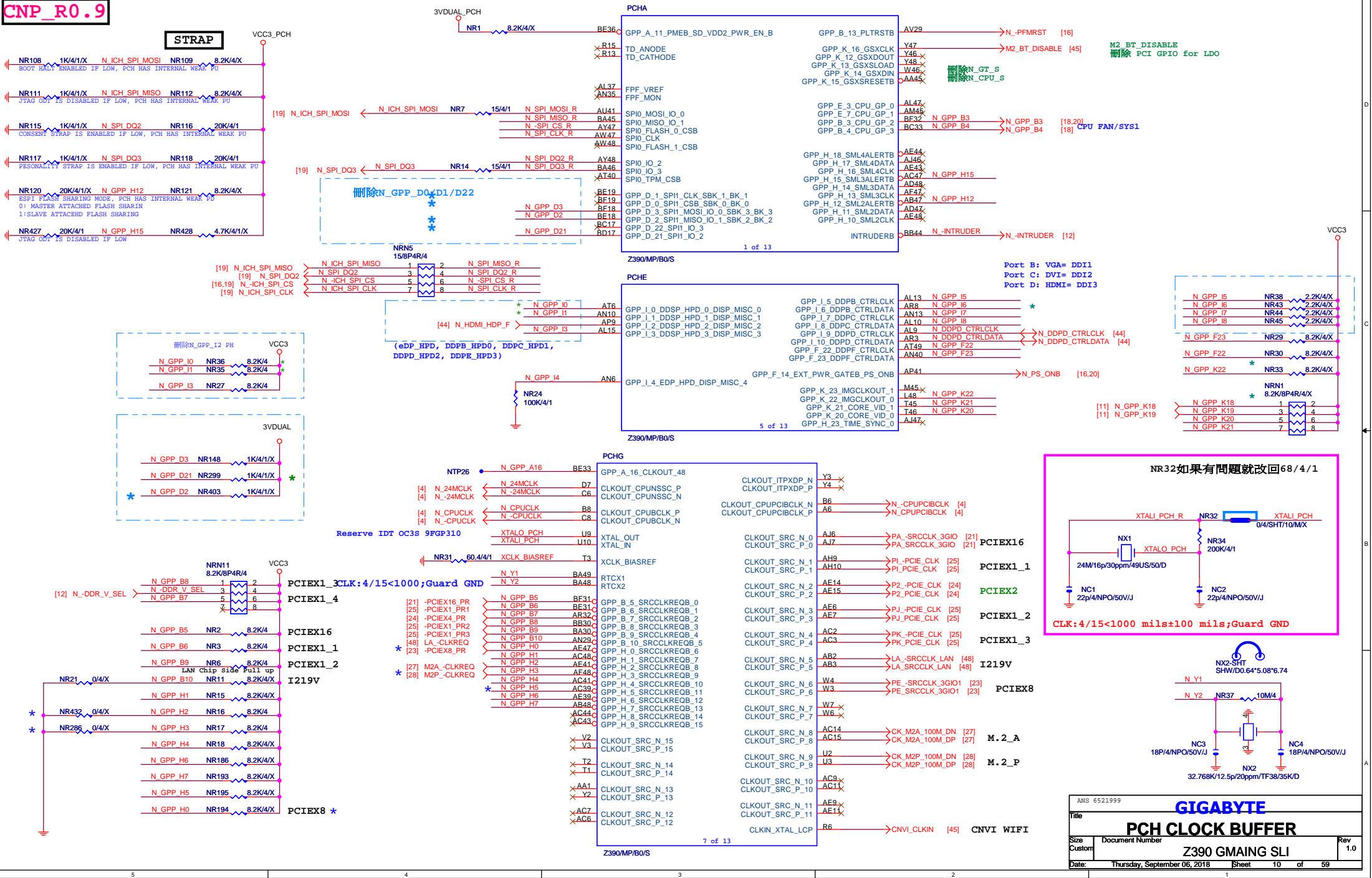








CNP\_R0.9



## CNP\_R0.9

注意左側Table及下方訊號名稱改USB31

Item	USB P1	USB P2	USB P3	USB P4	USB P5	USB P6	USB P7 PCIE P1	USB P8 PCIE P2	USB P9 PCIE P3	USB P10 PCIE P4
H310	USB3.0	USB3.0	USB3.0	USB3.0	NA	NA	NA	NA	NA	NA
B350	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	NA	NA	NA	NA
Q350	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	USB3.0	USB3.0	NA	NA
H370	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	USB3.0	USB3.0	PCIE	PCIE
Z370	USB3.1	USB3.1	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	PCIE	PCIE
Q370	USB3.1	USB3.1	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	PCIE	PCIE

USB pin out map

USB31\_1  
USB31\_2  
USB31\_3  
USB31\_4  
USB31\_5  
USB31\_6  
USB30\_7  
USB30\_8  
USB30\_9  
USB30\_10

PCH

DMI need to reverse

		PCHB
[4] A_DMI_3TXN	A_DMI_3TXN	K34
[4] A_DMI_3TXP	A_DMI_3TXP	J35
[4] A_DMI_3RXN	A_DMI_3RXN	C33
[4] A_DMI_3RXP	A_DMI_3RXP	B33
[4] A_DMI_2TXN	A_DMI_2TXN	G33
[4] A_DMI_2TXP	A_DMI_2TXP	F34
[4] A_DMI_2RXN	A_DMI_2RXN	C32
[4] A_DMI_2RXP	A_DMI_2RXP	B32
[4] A_DMI_1TXN	A_DMI_1TXN	K32
[4] A_DMI_1TXP	A_DMI_1TXP	J32
[4] A_DMI_1RXN	A_DMI_1RXN	C31
[4] A_DMI_1RXP	A_DMI_1RXP	B31
[4] A_DMI_0TXN	A_DMI_0TXN	G30
[4] A_DMI_0TXP	A_DMI_0TXP	F30
[4] A_DMI_0RXN	A_DMI_0RXN	C29
[4] A_DMI_0RXP	A_DMI_0RXP	B29
		XK29
		XK29
		XE28
		D29
		XM26
		L26
		C27
		B27
		G26
		F26
		B26
		C26
		R24
		P24
		B25
		A25

H370 USB  
onlyH370 PCIE  
only

F\_USB30

KB\_MS\_USB

I219V

PCIEX1\_1

PCIEX1\_2

PCIEX1\_3

TYPE-A  
GEN2TYPE-A  
GEN2

LAN\_USB30

R\_USB30  
GEN2

[47] PCH_USB31_RXN1	D11	USB31_1_RXN	GPP_A_1_LAD_0_ESPI_IO_0	BB39	N_LAD0	N_LAD0	[16,29]
[47] PCH_USB31_RXP1	C11	USB31_1_RXP	GPP_A_2_LAD_1_ESPI_IO_1	AV37	N_LAD1	N_LAD1	[16,29]
[47] PCH_USB31_TXN1	F9	USB31_1_TXN	GPP_A_3_LAD_2_ESPI_IO_2	AV37	N_LAD2	N_LAD2	[16,29]
[47] PCH_USB31_TXP1	F7	USB31_1_TXP	GPP_A_4_LAD_3_ESPI_IO_3	BA38	N_LAD3	N_LAD3	[16,29]
[47] PCH_USB31_RXN2	B9	USB31_2_RXN	GPP_A_5_LFRAMEB_ESPI_CS0B	BE38	N_LFRAME	N_LFRAME	[16,29]
[47] PCH_USB31_RXP2	C9	USB31_2_RXP	GPP_A_6_SERIRQ_ESPI_CS1B	AW35	N_SERIRQ	N_SERIRQ	[16,29]
[47] PCH_USB31_TXN2	C3	USB31_2_TXN	GPP_A_7_PIRQAB_ESPI_ALERT0B	BA38	N_LDRQ0	N_LDRQ0	[16]
[47] PCH_USB31_TXP2	D4	USB31_2_TXP	GPP_A_8_RCINB_ESPI_ALERT1B	BE39	N_KBRST	N_KBRST	[16]
[49] PCH_USB30_RXN3	B10	USB31_3_RXN	GPP_A_14_SUS_STATB_ESPI_RESETB	BF38	N_GPP_A14	ESPI_RESET	[16] *
[49] PCH_USB30_RXP3	C10	USB31_3_RXP	GPP_A_9_CLKOUT_LPC_0_ESPI_CLK	BB36	N_GPP_A9	NR47	10/4
[49] PCH_USB30_TXN3	F11	USB31_3_TXN	GPP_A_10_CLKOUT_LPC_1	BB34	N_GPP_A10	NR206	10/4
[49] PCH_USB30_TXP3	G12	USB31_3_TXP					N_LPC24M0 [16]
[49] PCH_USB30_RXN4	K16	USB31_4_RXN					T_TPMCLK [29]
[49] PCH_USB30_RXP4	J16	USB31_4_RXP					
[49] PCH_USB30_TXN4	C14	USB31_4_TXN	GPP_K_19_SMIB	T48	N_GPP_K19	N_GPP_K19	[10]
[49] PCH_USB30_TXP4	C14	USB31_4_TXP	GPP_K_18_SMIB	T47	N_GPP_K18	N_GPP_K18	[10]
[44] PCH_USB30_RXN5	J13	USB31_5_RXN					
[44] PCH_USB30_RXP5	K13	USB31_5_RXP	GPP_E_6_SATA_DEVS_LP_2	AH40			
[44] PCH_USB30_TXN5	C15	USB31_5_TXN	GPP_E_5_SATA_DEVS_LP_1	AH38			
[44] PCH_USB30_TXP5	B15	USB31_5_TXP	GPP_E_4_SATA_DEVS_LP_0	AL48			N_DEVSLP0 [27]
			GPP_F_9_SATA_DEVS_LP_7	AP47			
			GPP_F_8_SATA_DEVS_LP_6	AN37			
			GPP_F_7_SATA_DEVS_LP_5	AN46			
			GPP_F_6_SATA_DEVS_LP_4	AR47			
			GPP_F_5_SATA_DEVS_LP_3	AP48	N_GPP_F5	N_DEVSLP4 [28]	
						N_GPP_F5 [13]	

Z390/MP/B0/S

USB2N_1	J3	N_USB2P1	[46]	TYPE-A
USB2P_1	J2	N_USB2P1	[46]	TYPE-A
USB2N_2	N13	N_USB2P2	[46]	TYPE-A
USB2P_2	N15	N_USB2P2	[46]	TYPE-A
USB2N_3	K4	N_USB2P3	[49]	TYPE-A
USB2P_3	K3	N_USB2P3	[49]	TYPE-A
USB2N_4	M10	N_USB2P4	[49]	TYPE-A
USB2P_4	L9	N_USB2P4	[49]	TYPE-A
USB2N_5	M1	N_USB2P5	[44]	TYPE-A
USB2P_5	L2	N_USB2P5	[44]	TYPE-A
USB2N_6	K7	N_USB2P6	[44]	TYPE-A
USB2P_6	K6	N_USB2P6	[44]	TYPE-A
USB2N_7	L4	N_USB2P7	[52]	TYPE-A
USB2P_7	L3	N_USB2P7	[52]	TYPE-A
USB2N_8	G4	N_USB2P8	[52]	TYPE-A
USB2P_8	G5	N_USB2P8	[52]	TYPE-A
USB2N_9	M6	N_USB2P9	[43]	TYPE-A
USB2P_9	N8	N_USB2P9	[43]	TYPE-A
USB2N_10	H2	N_USB2P10	[43]	TYPE-A
USB2P_10	M26	N_USB2P10	[43]	TYPE-A
USB2N_11	P9	N_USB2P11	[53]	TYPE-A
USB2P_11	G1	N_USB2P11	[53]	TYPE-A
USB2N_12	G2	N_USB2P12	[53]	TYPE-A
USB2P_12	G2	N_USB2P12	[53]	TYPE-A
USB2N_13	N3	N_USB2P12	[53]	TYPE-A
USB2P_13	N2	N_USB2P12	[53]	TYPE-A
USB2N_14	E5	N_USB2P12	[53]	TYPE-A
USB2P_14	F6	N_USB2P12	[53]	TYPE-A

GPP_E_9_USB2_OCB_0	AH36	N_USB2P12	[53]	TYPE-A
GPP_E_10_USB2_OCB_1	AL40	N_USB2P12	[53]	TYPE-A
GPP_E_11_USB2_OCB_2	AJ44	N_USB2P12	[53]	TYPE-A
GPP_E_12_USB2_OCB_3	AL41	N_USB2P12	[53]	TYPE-A
GPP_F_15_USB2_OCB_4	AV47	N_USB2P12	[53]	TYPE-A
GPP_F_16_USB2_OCB_5	AR35	N_USB2P12	[53]	TYPE-A
GPP_F_17_USB2_OCB_6	AV43	N_USB2P12	[53]	TYPE-A
GPP_F_18_USB2_OCB_7	AV43	N_USB2P12	[53]	TYPE-A

USB2_COMP	F4	N_USB2_COMP	NR40	115/4/1
USB2_VBUSSENSE	F3	N_USB2_VBUSSENSE	NR41	10K/4/1
USB2_PLLMON	U13	N_USB2_PLLMON	NTP38	
USB2_ID	G3	N_USB2_ID	NR42	10K/4/1X
GPD_7	BE41	N_GPD_7		
PCIE_21_RXN	T43	M2_PCIE_IN21	[28]	M.2 2280
PCIE_21_RXP	R44	M2_PCIE_IP21	[28]	M.2 2280
PCIE_21_TXN	G47	M2_PCIE_TN21	[28]	M.2 2280
PCIE_21_TXP	F46	M2_PCIE_TP21	[28]	M.2 2280
PCIE_22_RXN	U40	M2_PCIE_IN22	[28]	M.2 2280
PCIE_22_RXP	U41	M2_PCIE_IP22	[28]	M.2 2280
PCIE_22_TXN	H47	M2_PCIE_TN22	[28]	M.2 2280
PCIE_22_TXP	W43	M2_PCIE_TP22	[28]	M.2 2280
PCIE_23_RXN	W44	M2_PCIE_IN23	[28]	M.2 2280
PCIE_23_RXP	G49	M2_PCIE_IP23	[28]	M.2 2280
PCIE_23_TXN	G48	M2_PCIE_TN23	[28]	M.2 2280
PCIE_23_TXP	Y40	M2_PCIE_TP23	[28]	M.2 2280
PCIE_24_RXN	Y41	M2_PCIE_IN24	[28]	M.2 2280
PCIE_24_RXP	G46	M2_PCIE_IP24	[28]	M.2 2280
PCIE_24_TXN	G45	M2_PCIE_TN24	[28]	M.2 2280
PCIE_24_TXP	G45	M2_PCIE_TP24	[28]	M.2 2280

CNVI的BT功能enable時  
PCH的USB2.0 port14會被disable

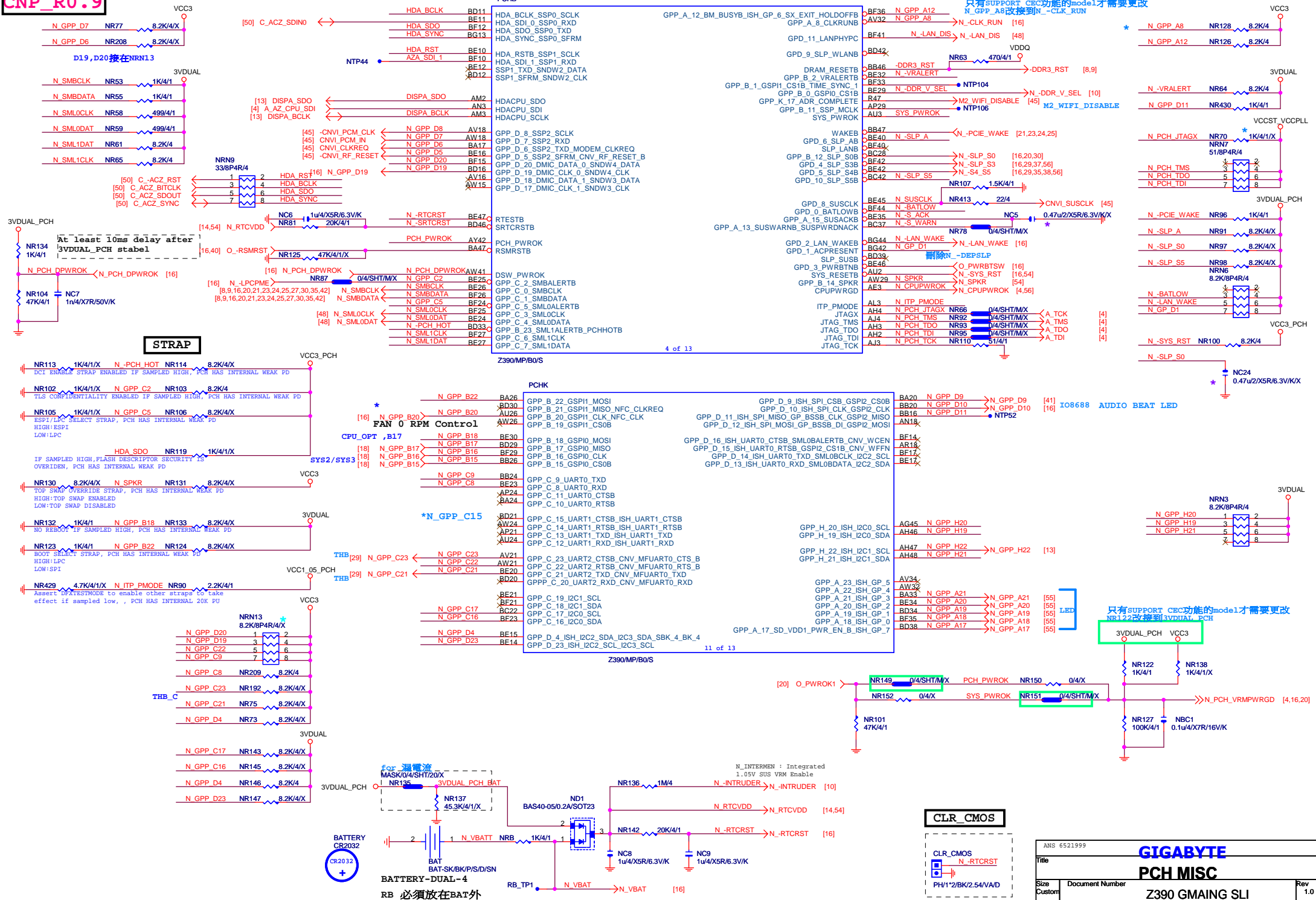
STRAP

NR411 1K/4/1X N\_GPD\_7 NR412 1K/4/1

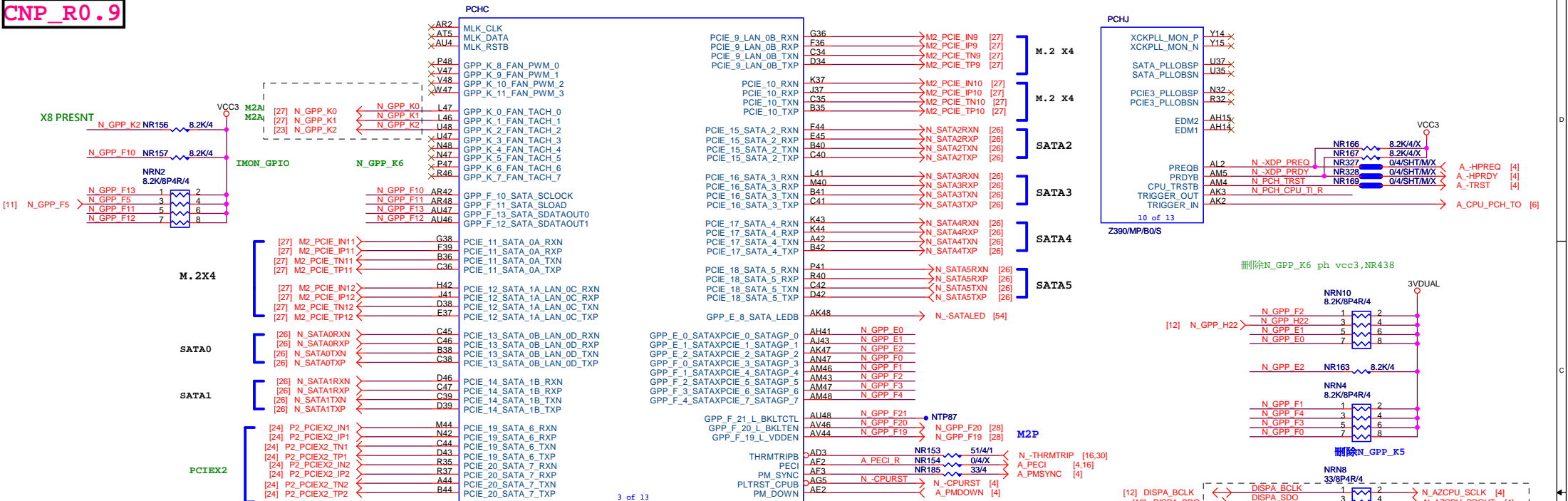
XTAL INPUT MODE, PCH HAS INTERNAL 20K PD  
HIGH:XTAL INPUT IS DIFFERENTIAL  
LOW:XTAL INPUT IS SINGLE-ENDED

ANS 6521999		GIGABYTE	
Title		PCH DMI,USB,PCIE	
Size	Document Number	Z390 GMAING SLI	
Custom			
Date:	Thursday, September 06, 2018	Sheet	11 of 59
			Rev 1.0

## CNP\_R0.9

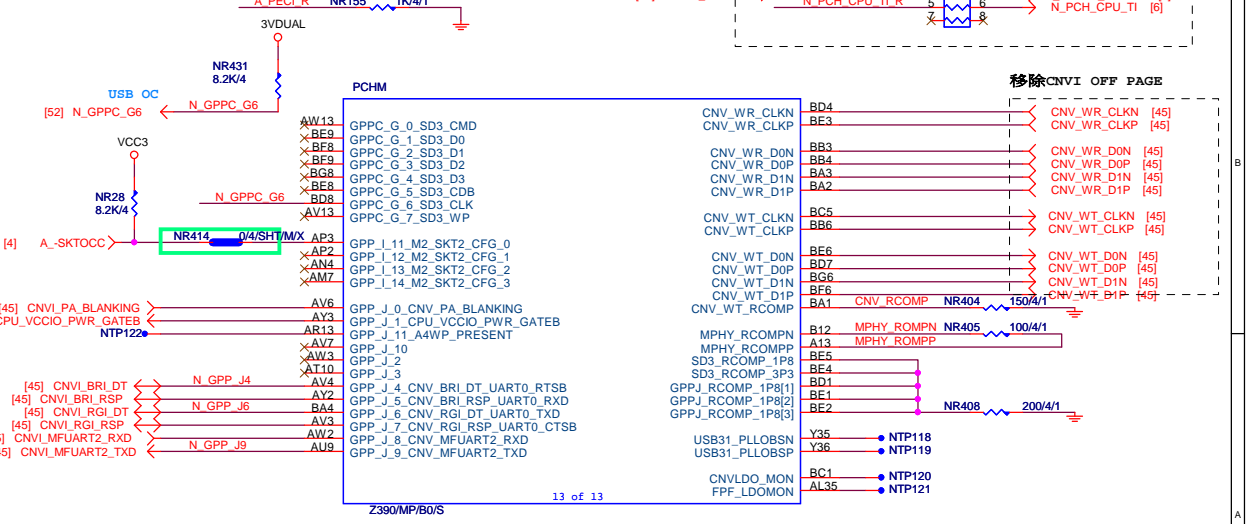
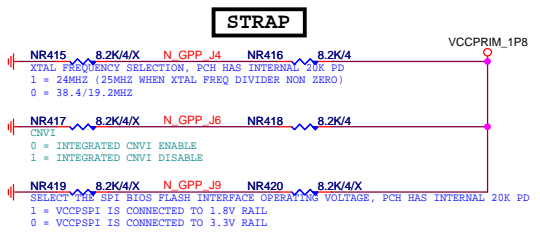


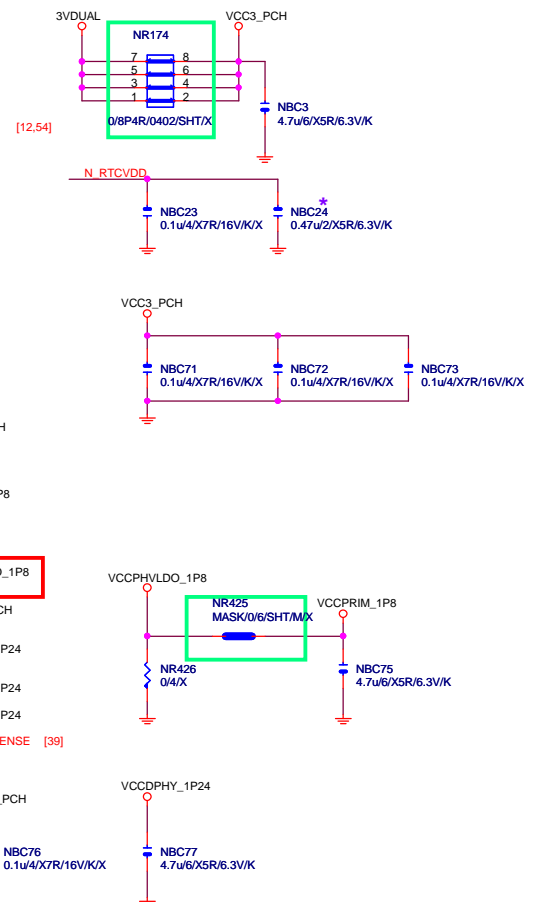
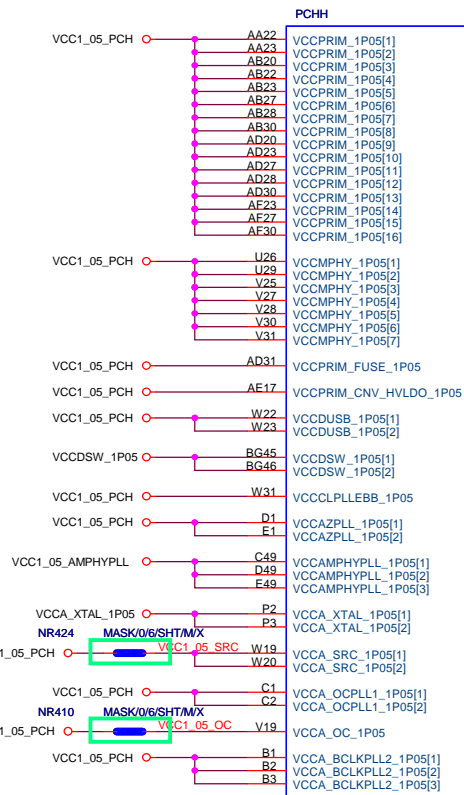
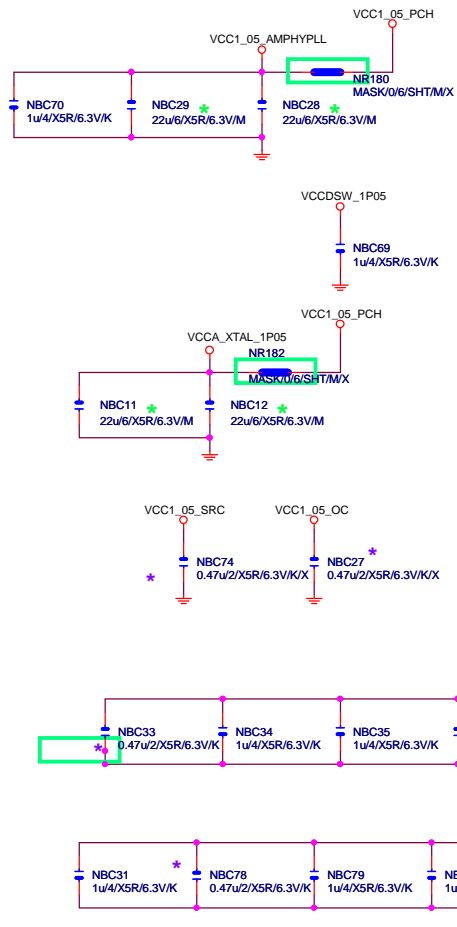


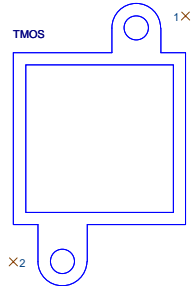
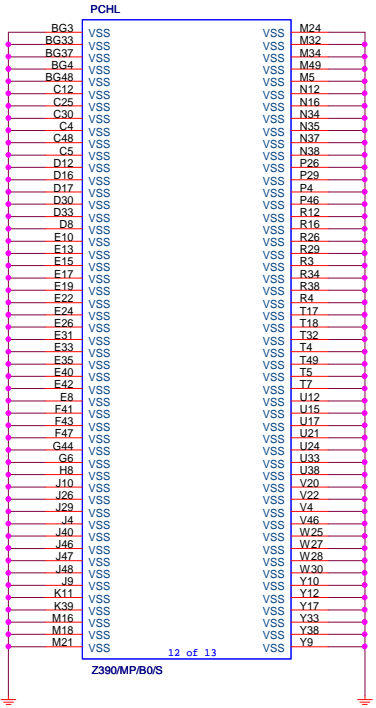
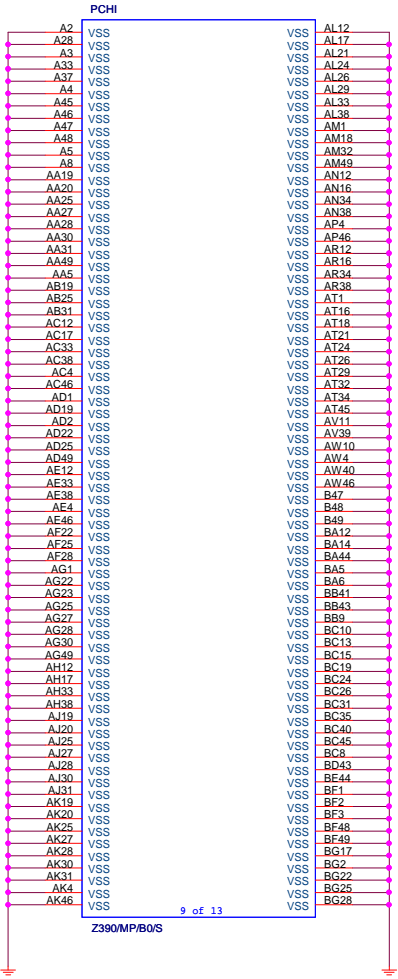


ITEM	PCIE P9	PCIE P10	PCIE P11	PCIE P12	PCIE P13	PCIE P14	PCIE P15	PCIE P16	PCIE P17	PCIE P18	PCIE P19	PCIE P20
H310	GbE	N/A	PCIE	PCIE GbE	GbE SATA 0	SATA 1	SATA2	SATA 3	N/A	N/A	N/A	N/A
B360	PCIE GbE	PCIE SATA 0A	PCIE SATA 1A	PCIE GbE SATA 0B	SATA 1B	SATA2	SATA 3	SATA4	SATA5	N/A	N/A	N/A
Q360	PCIE GbE	PCIE SATA 0A	PCIE SATA 1A	PCIE GbE SATA 0B	SATA 1B	SATA2	SATA 3	SATA4	SATA5	N/A	N/A	N/A
H370	PCIE GbE	PCIE SATA 0A	PCIE SATA 1A	PCIE GbE SATA 0B	SATA 1B	SATA 2	SATA 3	SATA4	SATA5	PCIE	PCIE	PCIE
Z390	PCIE GbE	PCIE SATA 0A	PCIE SATA 1A	PCIE GbE SATA 0B	SATA 1B	SATA 2	SATA 3	SATA 4	SATA 5	PCIE	PCIE	PCIE
Q370	PCIE GbE	PCIE SATA 0A	PCIE SATA 1A	PCIE GbE SATA 0B	SATA 1B	SATA 2	SATA 3	SATA 4	SATA 5	PCIE	PCIE	PCIE

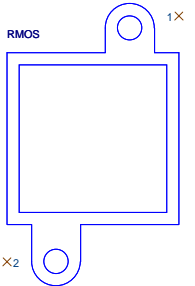
teknisi-indonesia.com





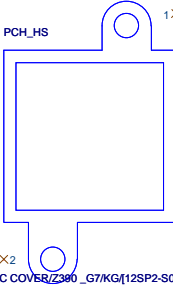
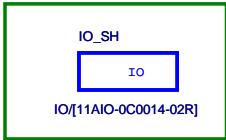


TMOS HS/BLACK/Z390\_G7/KG[12SP2-S09426-B1R\_12SP2-S09426-B3R\_12SP2-S09426-B4R]  
Footprint :SINK\_Z390\_G7-T  
PN: 12SP2-S09426-B1R/B3R/B4R

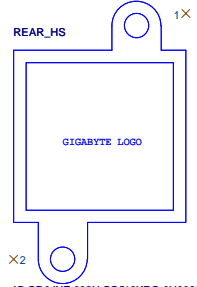


RMOS HS/BLACK/Z390\_G7/KG[12SP2-S08026-B1R\_12SP2-S08026-B3R\_12SP2-S08026-B4R]  
Footprint :SINK\_Z390\_G7-R  
PN: 12SP2-S08026-B1R/B3R/B4R

一體式IO料號  
Z390 GAMING SLI?11AIO-0C0014-02R  
Z390 GAMING X?11AIO-0C0015-02R  
Z370 GAMING X?11AIO-0C0015-04R

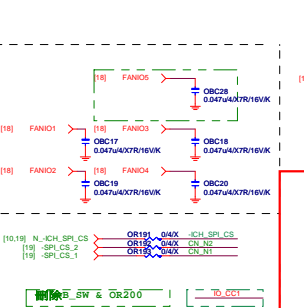
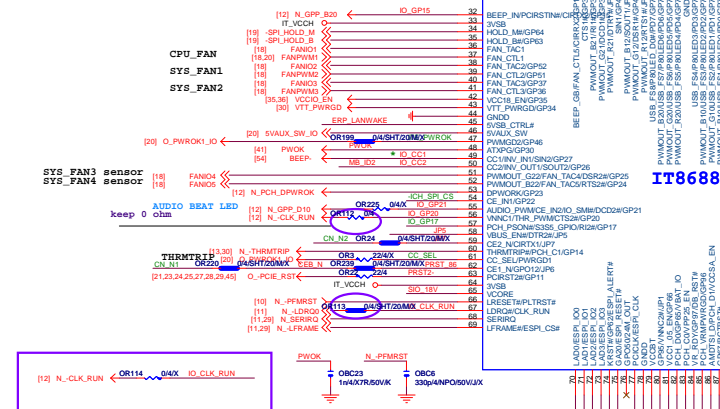
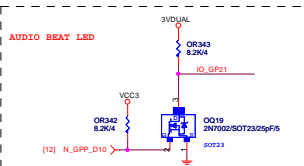


PCH HS/BK/PC COVER/Z390\_G7/KG[12SP2-S09010-01R\_12SP2-S09010-03R\_12SP2-S09010-04R]  
Footprint :SINK\_Z390\_G7\_PCH  
PN:12SP2-S09010-01R/03R/04R

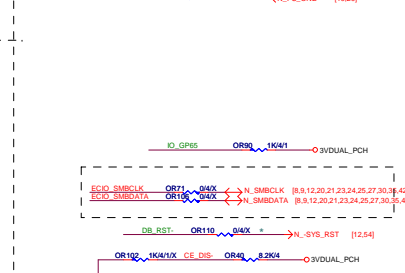
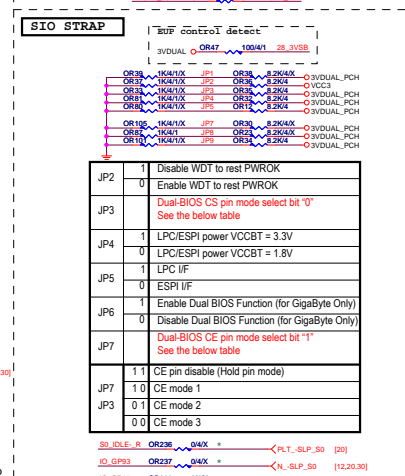
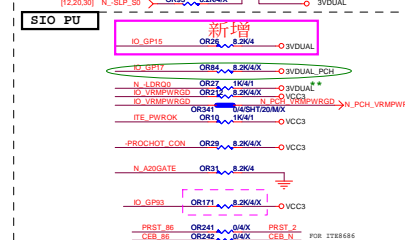
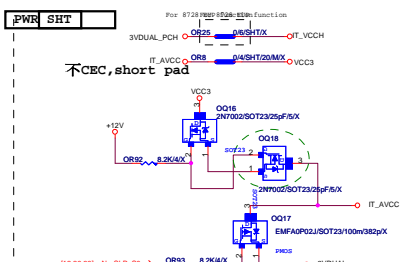
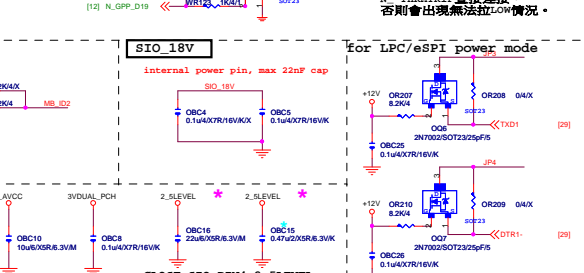
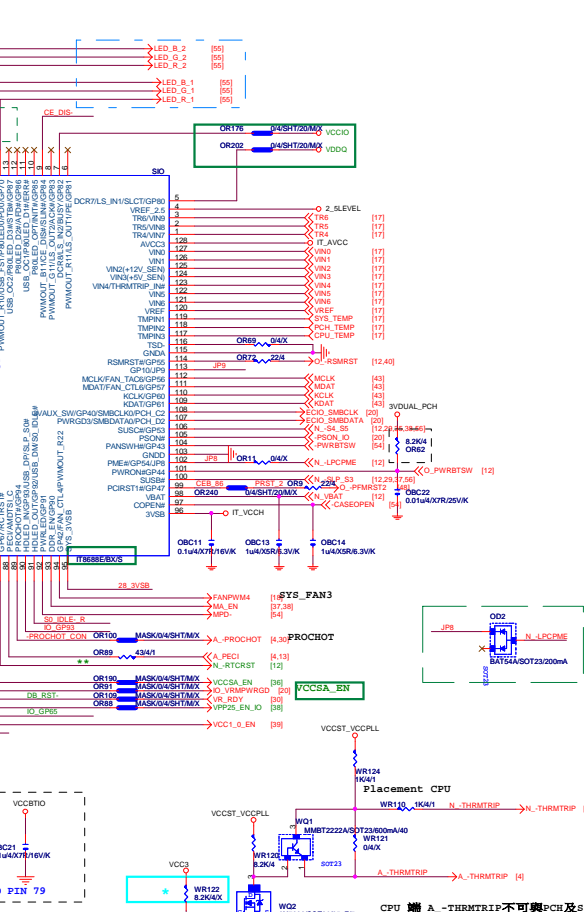
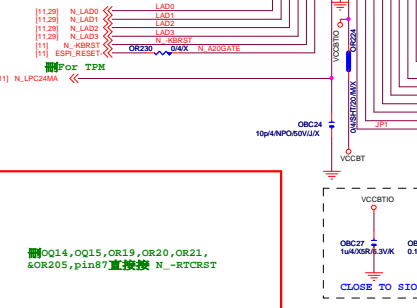
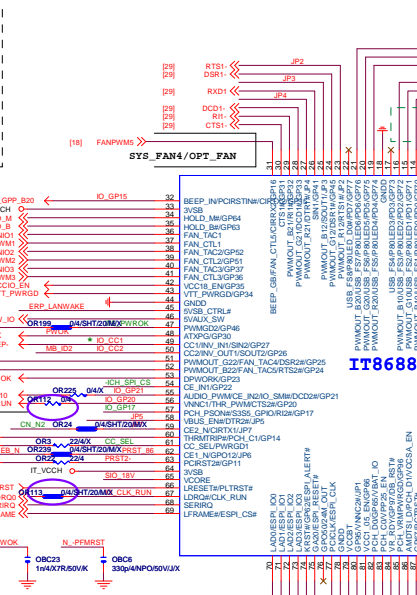


IO CR/LINE 032U CS[12KRC-0H0022-01R]  
Footprint :  
Z390\_AORUS\_G7\_IO\_COVER  
PN: 12KRC-0H0022-01R

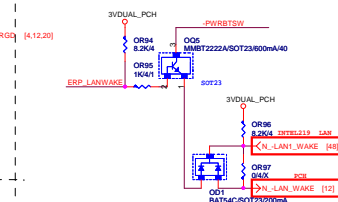




FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL4 FAN_TAC4
OPT_FAN OR SYS_FAN4	FAN_CTL5 FAN_TAC5
THRMTRIP	PIN56
PROCHOT	PIN89



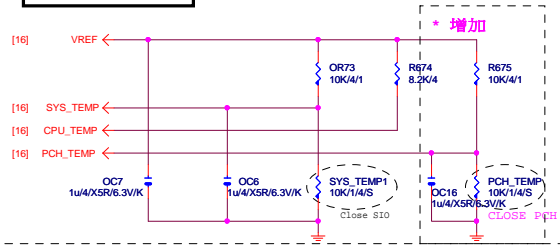
(組態二) INTEL219 LAN( Single LAN)



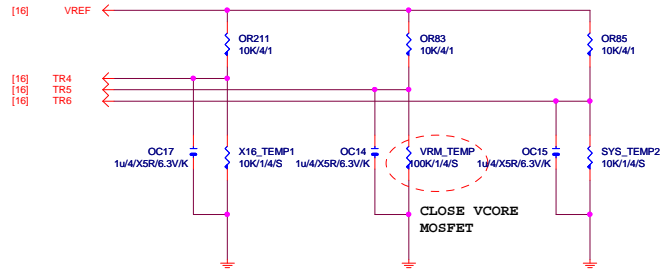
JP2	1	Disable WDT to rest PWROK
	0	Enable WDT to rest PWROK
JP3	1	Dual-BIOS CS pin mode select bit "0"
	0	See the below table
JP4	1	LPC/ESPI power VCCBT = 3.3V
	0	LPC/ESPI power VCCBT = 1.8V
JP5	1	LPC I/F
	0	ESPI I/F
JP6	1	Enable Dual BIOS Function (for GigaByte Only)
	0	Disable Dual BIOS Function (for GigaByte Only)
JP7	1	Dual-BIOS CE pin mode select bit "1"
	0	See the below table
JP3	1 1	CE pin disable (Hold pin mode)
	1 0	CE mode 1
	0 1	CE mode 2
	0 0	CE mode 3

ERP Wake on LAN		
Single LAN	Realtek	組態-
	Atheros	
	Intel 219	組態二
Dual LAN (只留一個 LAN支援 ERP下 WAKE UP)	Atheros+Atheros	組態一
	Intel 219+Atheros	
	Intel 219+Intel 219	組態三
No Support ERP	Single LAN BOM只OR97 + Dual LAN BOM只上OR97 + OR99 +	

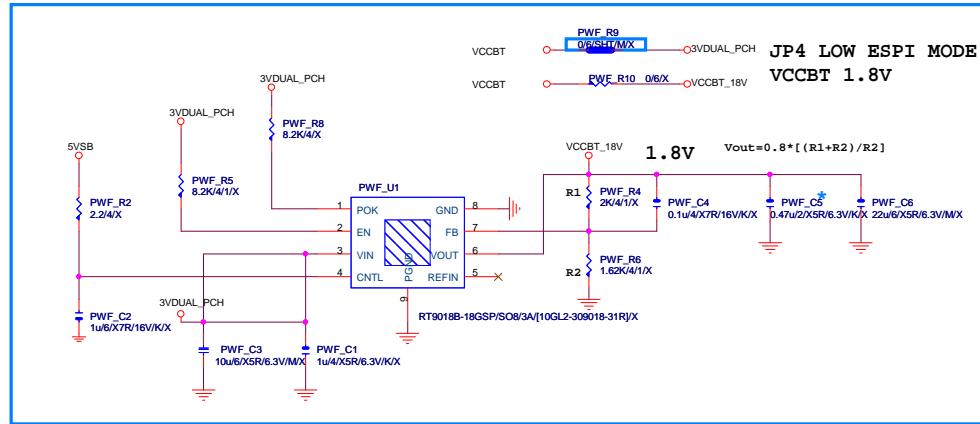
# TEMP H/W MONITOR



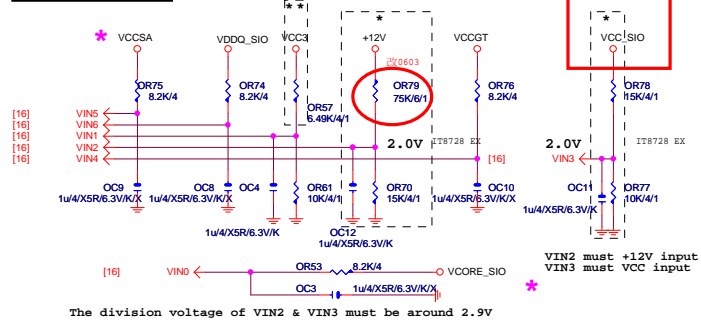
## 5個FAN時使用



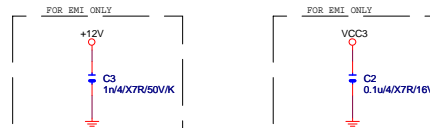
# VCCBT\_18V



# VOLTAGE-- H/W MONITOR



## (靠近ATX CONNECTOR)

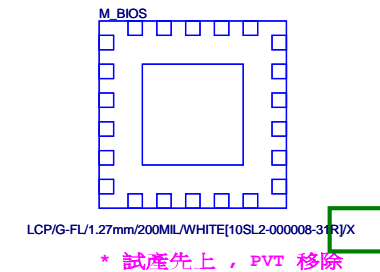
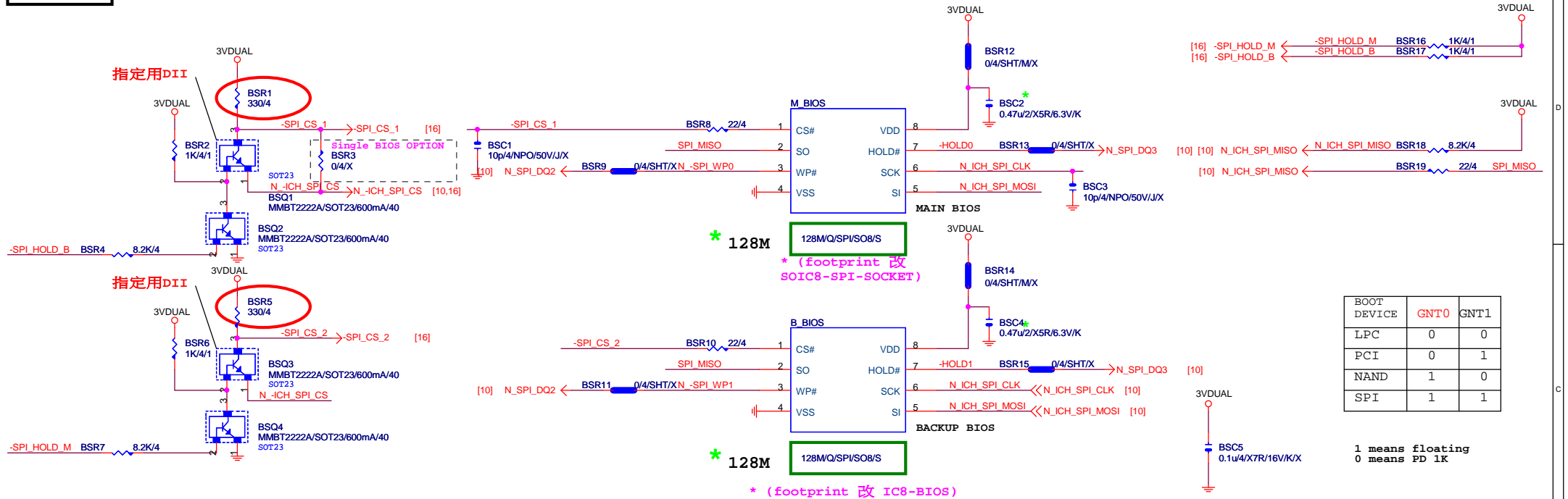


# Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	Z390 GMAING SLI	1.0	
Date:	Thursday, August 30, 2018	Sheet	17 of 59

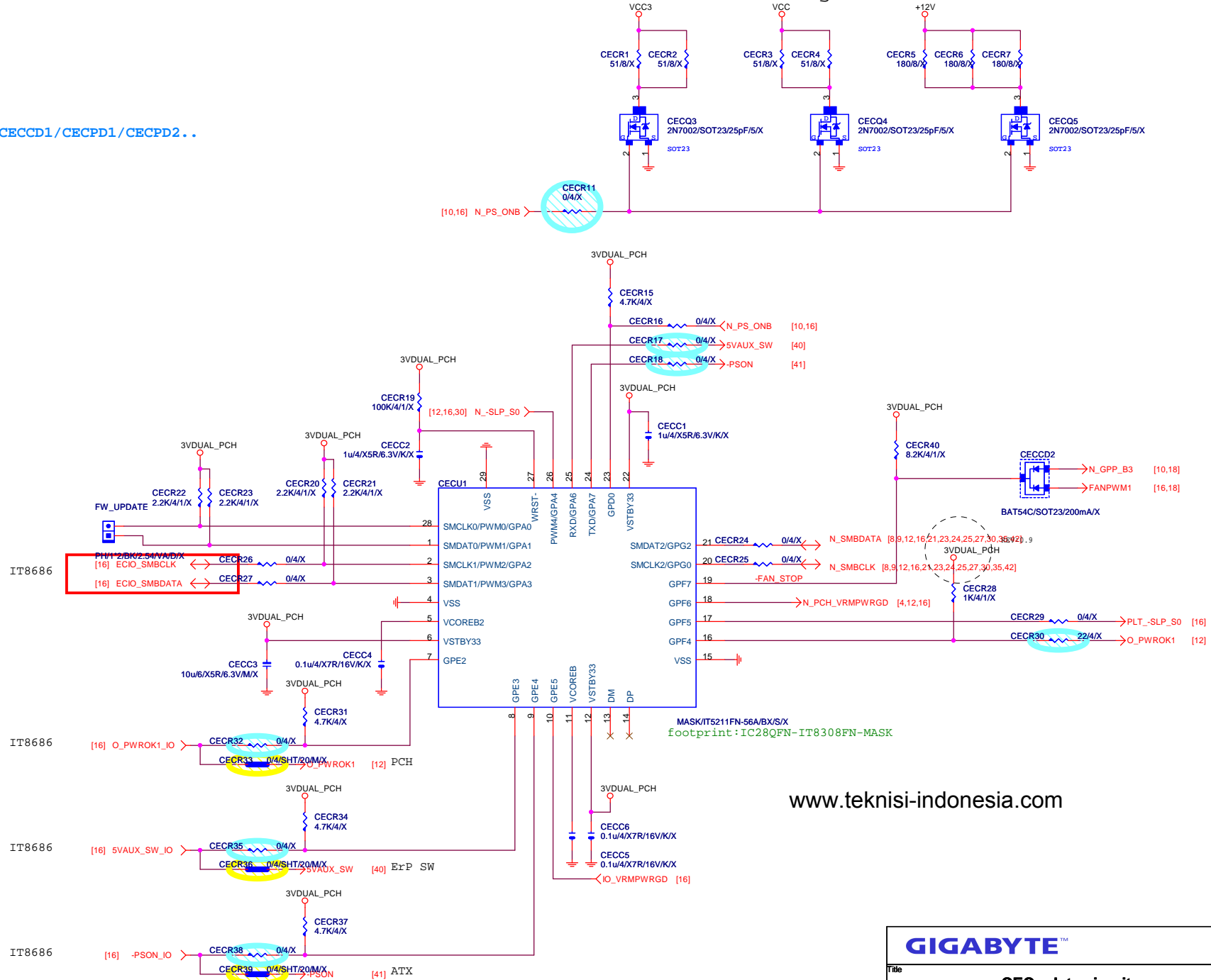


**DUAL BIOS**



删除POWER  
CECU2/CECQ7/CECQ6/CECQ2/CECCD1/CECPD1/CECPD2..

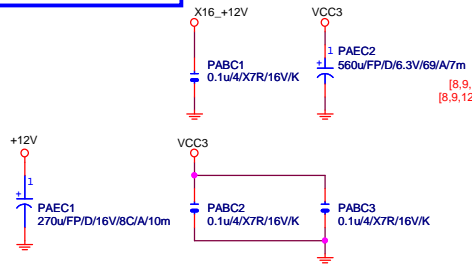
ATX Power Discharge



www.teknisi-indonesia.com

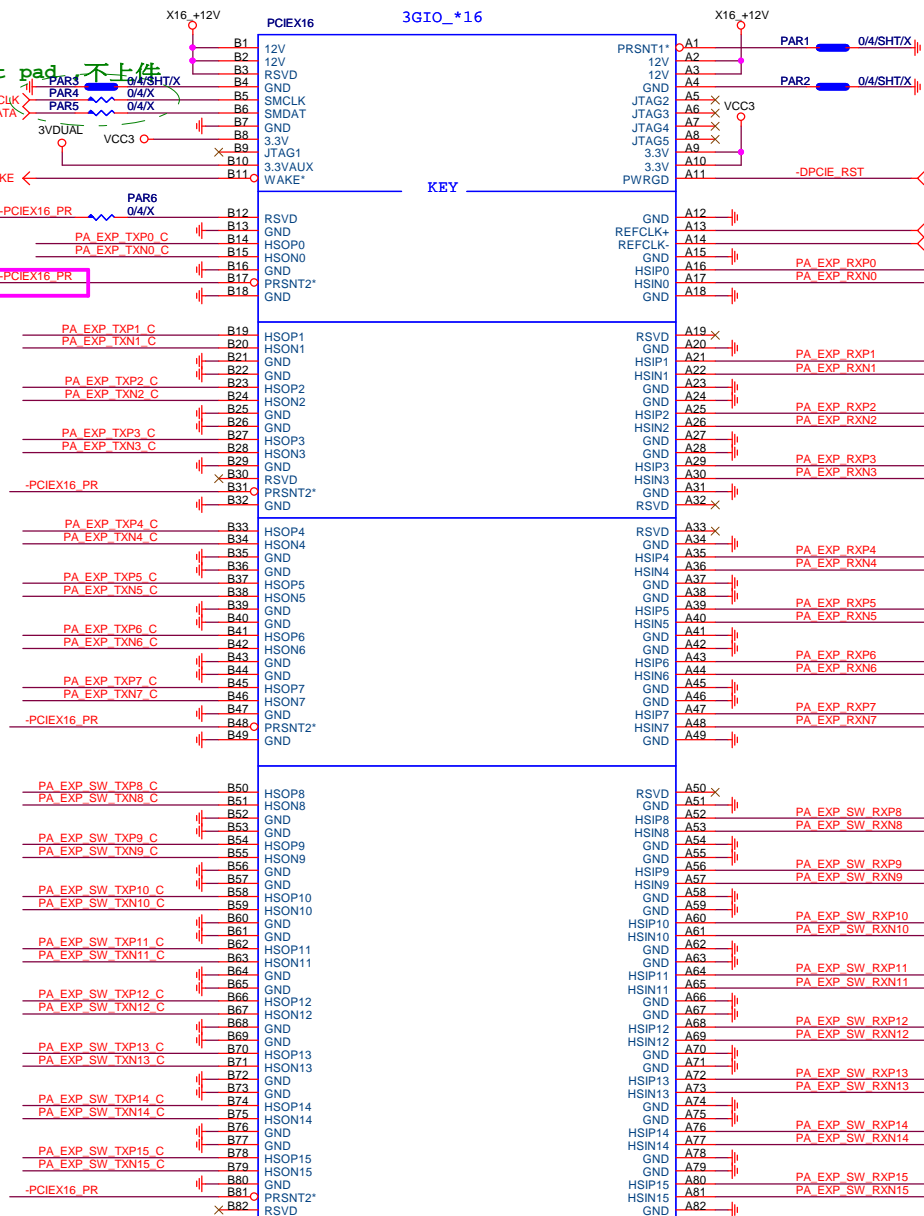
Rev 0.3

## PCIEX16 CAP



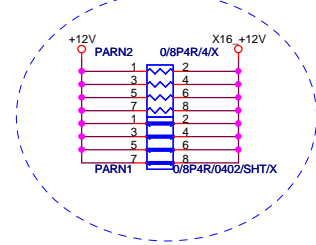
## PCIEX16 SLOT

PCIESLOT-164STH



## PCIEX16 PROTECT SHT

+12 protect short-wire test



## PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u4/XSR/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u4/XSR/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u4/XSR/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u4/XSR/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u4/XSR/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u4/XSR/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u4/XSR/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u4/XSR/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u4/XSR/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u4/XSR/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u4/XSR/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u4/XSR/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u4/XSR/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u4/XSR/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u4/XSR/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u4/XSR/6.3V/K	PA EXP TXN7 C
PA EXP SW_TXP8	PAC21	0.22u4/XSR/6.3V/K	PA EXP SW_TXP8 C
PA EXP SW_TXN8	PAC20	0.22u4/XSR/6.3V/K	PA EXP SW_TXN8 C
PA EXP SW_TXP9	PAC22	0.22u4/XSR/6.3V/K	PA EXP SW_TXP9 C
PA EXP SW_TXN9	PAC23	0.22u4/XSR/6.3V/K	PA EXP SW_TXN9 C
PA EXP SW_TXP10	PAC24	0.22u4/XSR/6.3V/K	PA EXP SW_TXP10 C
PA EXP SW_TXN10	PAC25	0.22u4/XSR/6.3V/K	PA EXP SW_TXN10 C
PA EXP SW_TXP11	PAC26	0.22u4/XSR/6.3V/K	PA EXP SW_TXP11 C
PA EXP SW_TXN11	PAC27	0.22u4/XSR/6.3V/K	PA EXP SW_TXN11 C
PA EXP SW_TXP12	PAC28	0.22u4/XSR/6.3V/K	PA EXP SW_TXP12 C
PA EXP SW_TXN12	PAC29	0.22u4/XSR/6.3V/K	PA EXP SW_TXN12 C
PA EXP SW_TXP13	PAC30	0.22u4/XSR/6.3V/K	PA EXP SW_TXP13 C
PA EXP SW_TXN13	PAC31	0.22u4/XSR/6.3V/K	PA EXP SW_TXN13 C
PA EXP SW_TXP14	PAC32	0.22u4/XSR/6.3V/K	PA EXP SW_TXP14 C
PA EXP SW_TXN14	PAC33	0.22u4/XSR/6.3V/K	PA EXP SW_TXN14 C
PA EXP SW_TXP15	PAC34	0.22u4/XSR/6.3V/K	PA EXP SW_TXP15 C
PA EXP SW_TXN15	PAC35	0.22u4/XSR/6.3V/K	PA EXP SW_TXN15 C

PCI-E REV:1.1--&gt; 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--&gt; 5GHZ

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

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

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

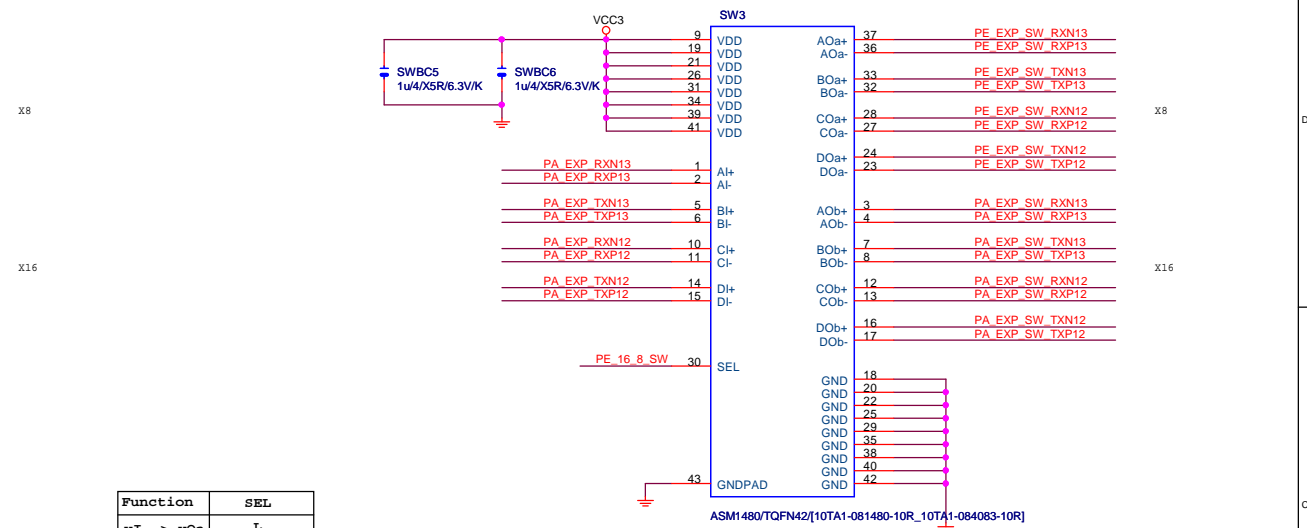
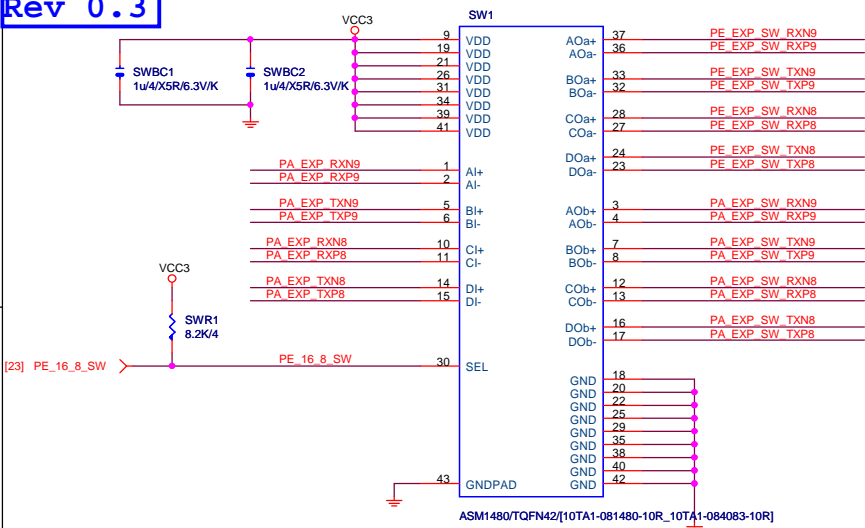
PCIE/16X-164P/BK/LONG DOUBLE/HK\*2/SHELL

黑色金屬加強

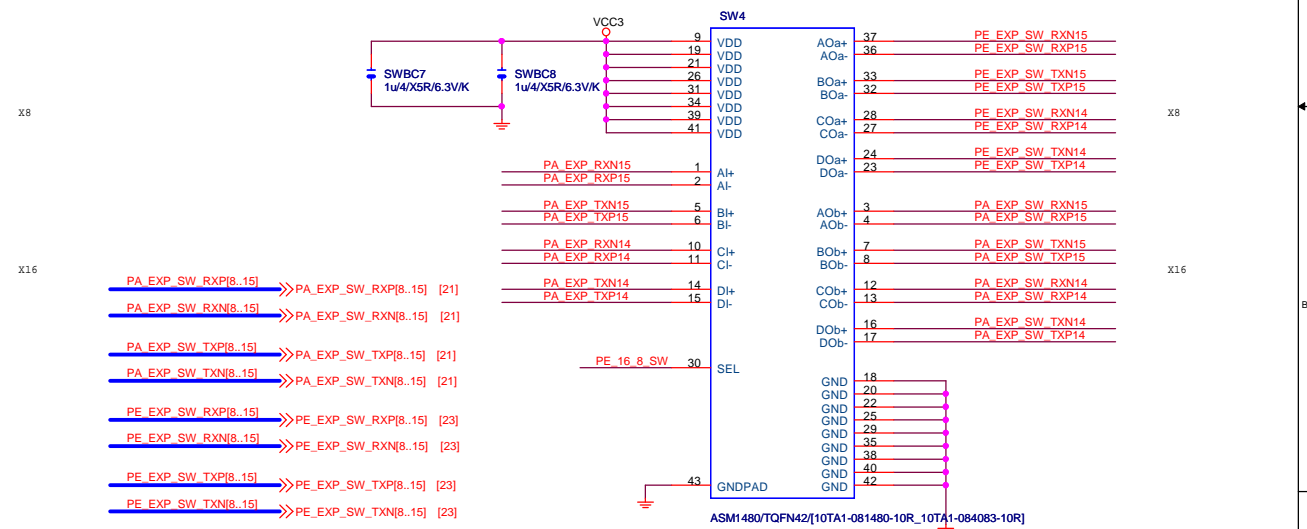
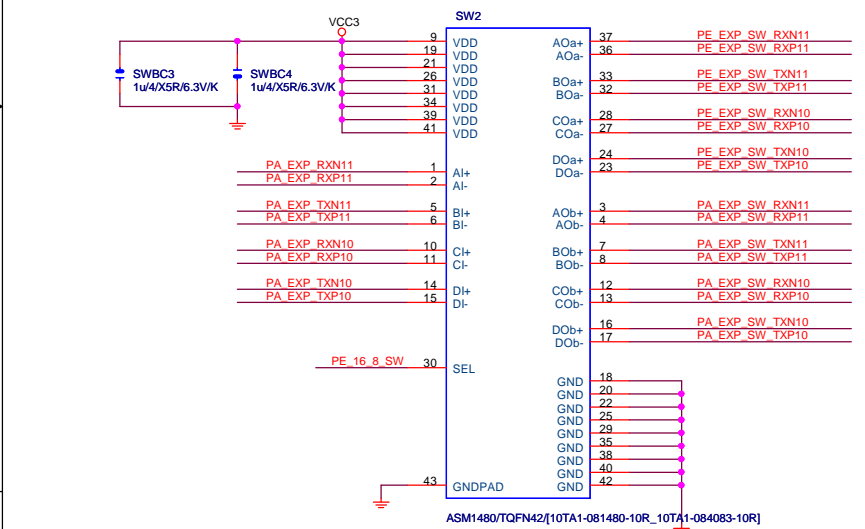
Gigabyte Technology

Title			PCI EXPRESS * 16
Size			Document Number
Custom			Z390 GMAING SLI
Date:			Thursday, August 30, 2018
Sheet			21 of 59
Rev			1.0

Rev 0.3



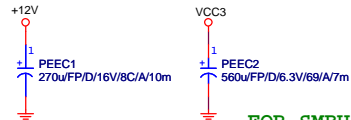
Function	SEL
xI--> xOa	L
xI--> xOb	H



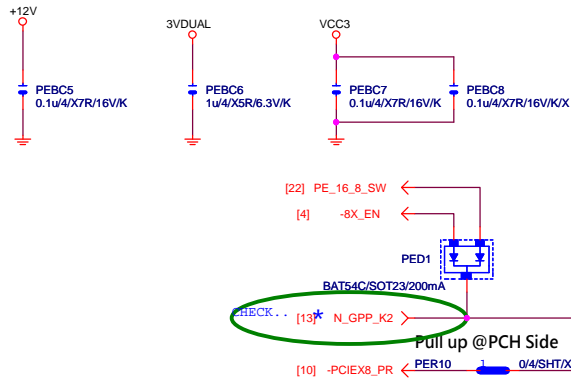
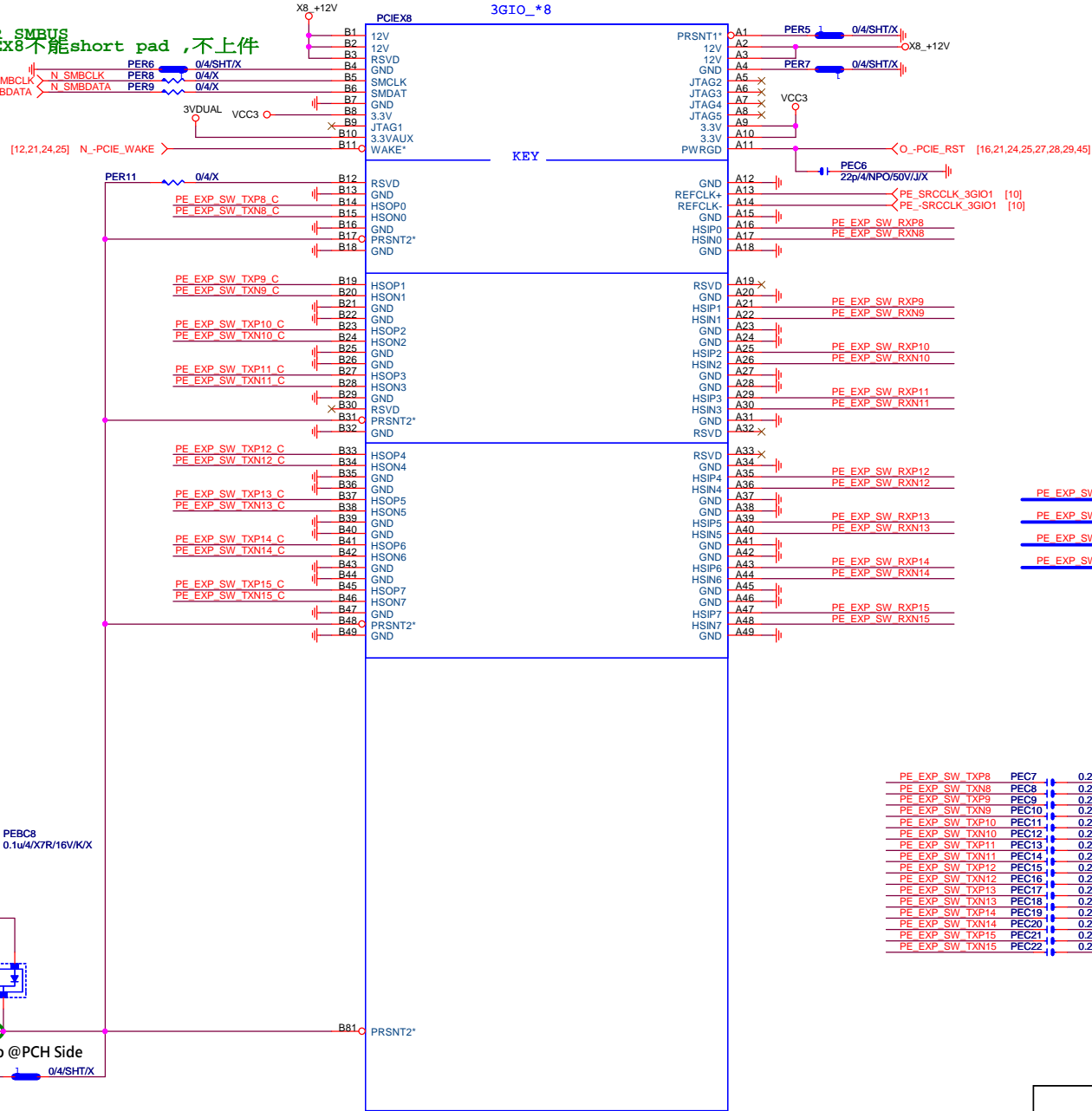
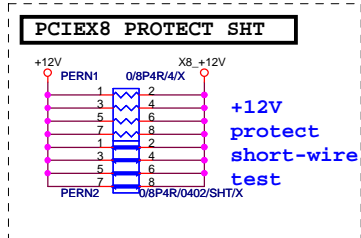
PA_EXP_SW_RXP[8..15]	PA_EXP_SW_RXP[8..15]	[21]
PA_EXP_SW_RXN[8..15]	PA_EXP_SW_RXN[8..15]	[21]
PA_EXP_SW_TXP[8..15]	PA_EXP_SW_TXP[8..15]	[21]
PA_EXP_SW_TXN[8..15]	PA_EXP_SW_TXN[8..15]	[21]
PE_EXP_SW_RXP[8..15]	PE_EXP_SW_RXP[8..15]	[23]
PE_EXP_SW_RXN[8..15]	PE_EXP_SW_RXN[8..15]	[23]
PE_EXP_SW_TXP[8..15]	PE_EXP_SW_TXP[8..15]	[23]
PE_EXP_SW_TXN[8..15]	PE_EXP_SW_TXN[8..15]	[23]
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]



Rev 0.3



FOR SMBUS  
PCIEX8不能short pad ,不上件



PE EXP SW TXN8	PEC7	0.22u4/45R6/3V/K	PE EXP SW TXN8_C
PE EXP SW TXN8	PEC8	0.22u4/45R6/3V/K	PE EXP SW TXN8_C
PE EXP SW TXP9	PEC9	0.22u4/45R6/3V/K	PE EXP SW TXP9_C
PE EXP SW TXN9	PEC10	0.22u4/45R6/3V/K	PE EXP SW TXN9_C
PE EXP SW TXP10	PEC11	0.22u4/45R6/3V/K	PE EXP SW TXP10_C
PE EXP SW TXN10	PEC12	0.22u4/45R6/3V/K	PE EXP SW TXN10_C
PE EXP SW TXP11	PEC13	0.22u4/45R6/3V/K	PE EXP SW TXP11_C
PE EXP SW TXN11	PEC14	0.22u4/45R6/3V/K	PE EXP SW TXN11_C
PE EXP SW TXP12	PEC15	0.22u4/45R6/3V/K	PE EXP SW TXP12_C
PE EXP SW TXN12	PEC16	0.22u4/45R6/3V/K	PE EXP SW TXN12_C
PE EXP SW TXP13	PEC17	0.22u4/45R6/3V/K	PE EXP SW TXP13_C
PE EXP SW TXN13	PEC18	0.22u4/45R6/3V/K	PE EXP SW TXN13_C
PE EXP SW TXP14	PEC19	0.22u4/45R6/3V/K	PE EXP SW TXP14_C
PE EXP SW TXN14	PEC20	0.22u4/45R6/3V/K	PE EXP SW TXN14_C
PE EXP SW TXP15	PEC21	0.22u4/45R6/3V/K	PE EXP SW TXP15_C
PE EXP SW TXN15	PEC22	0.22u4/45R6/3V/K	PE EXP SW TXN15_C

PCI-E/8X-99P/BK/LONG DOUBLE/HK\*2/SHELL  
黑色金屬加強版

用PCIE\*4 SLOT, 只接X2 CHECK footprint?  
Footprint "PCIESLOT-64P-1"

FOR SMBUS

PCIE\*4 SM Bus電阻layout 改0 ohm  
上件

[8,9,12,16,20,21,23,25,27,30,35,42]

N\_SMBCLK

[8,9,12,16,20,21,23,25,27,30,35,42]

N\_SMBDATA

[12,21,23,25] N\_-PCIE\_WAKE

net name 要check 模組-

[13] P2\_PCIE2\_TP1

[13] P2\_PCIE2\_TN1

[13] P2\_PCIE2\_TP2

[13] P2\_PCIE2\_TN2

[10] -PCIE4\_PR

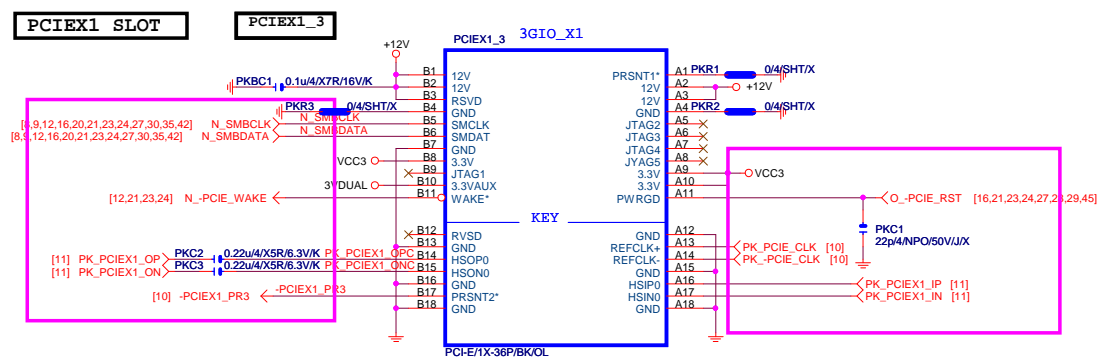
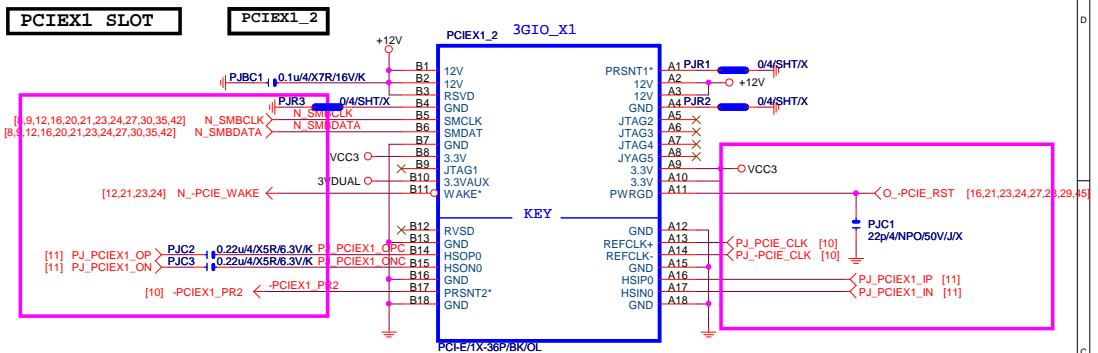
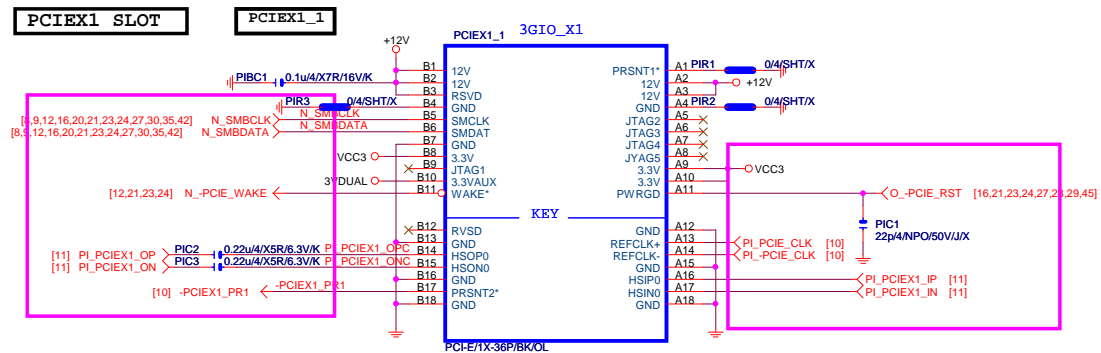
通知BIOS DETECTED DEVICE

PCIE/4X-66P/BK/LONG DOUBLE

11A11-023065-17R: 黑色

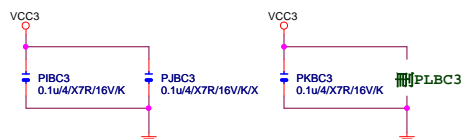
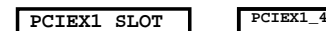
Gigabyte Technology			
Title			
PCIE_X4			
Size	Document Number		Rev
Custom	Z390 GMAING SLI		1.0
Date:	Thursday, August 30, 2018		Sheet 24 of 59

Rev 0.51



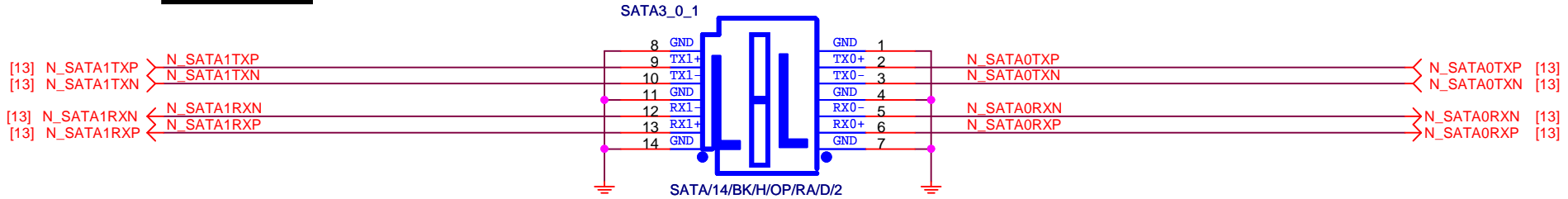
www.teknisi-indonesia.com

删除PCIEX1\_4



IO18/IO19 To SATA3 port0/1 (90度R-A, 180度V-A)  
上 Port (8~14) 下 Port (1~7) 6 SATA3 from Z390 (90度R-A)

SATA3 0/1



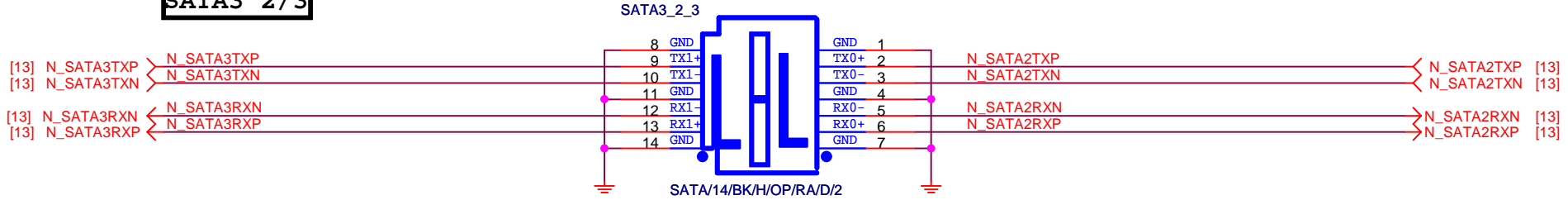
SATA/14/BK/H/OP/RA/D/2  
BLACK

Footprint : H2X7-SATA2-D90

IO20/IO21 To SATA3 port2/3

上 Port (8~14) 下 Port (1~7)

SATA3 2/3



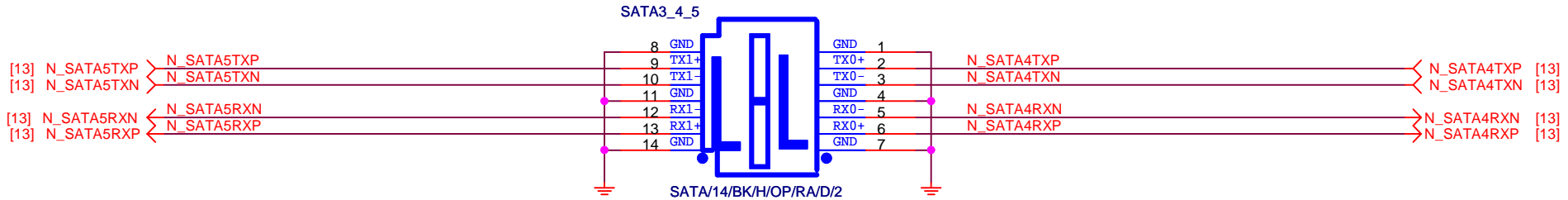
SATA/14/BK/H/OP/RA/D/2  
BLACK

Footprint : H2X7-SATA2-D90

IO22/IO23 To SATA3 port4/5

上 Port (8~14) 下 Port (1~7)

SATA3 4/5



SATA/14/BK/H/OP/RA/D/2  
BLACK

Footprint : H2X7-SATA2-D90

Gigabyte Technology

Title		
SATA		
Size	Document Number	Rev
Custom	Z390 GMAING SLI	1.0
Date:	Thursday, August 30, 2018	Sheet 26 of 59

M.2 Lane4 from PCH port24

M.2 Lane3 from PCH port23

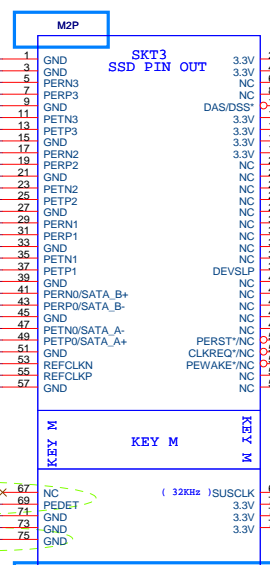
M.2 Lane2 from PCH port22

M.2 Lane2 from PCH port21

x4 2280 M.2 slot (no SATA mode)

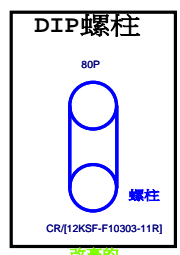
支援SATA and M.2 function

需與M2\_-CLKREQ對應

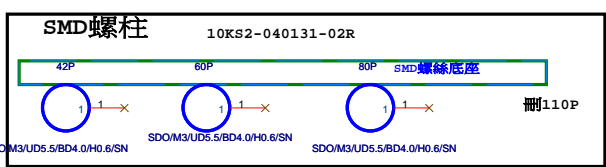


架高 \*

金屬加強 Footprint : M2 80  
預留金屬加強不上件:M2/67/BK/RA/S/H8.5mm/M  
KEY/[10NR5-130067-52R]  
金屬加強 (10NR5-130M67-31R) (M.2鐵殼DIP款)



刪除SMD螺柱文字面 "P" ,不要show 出在PCB文字面上







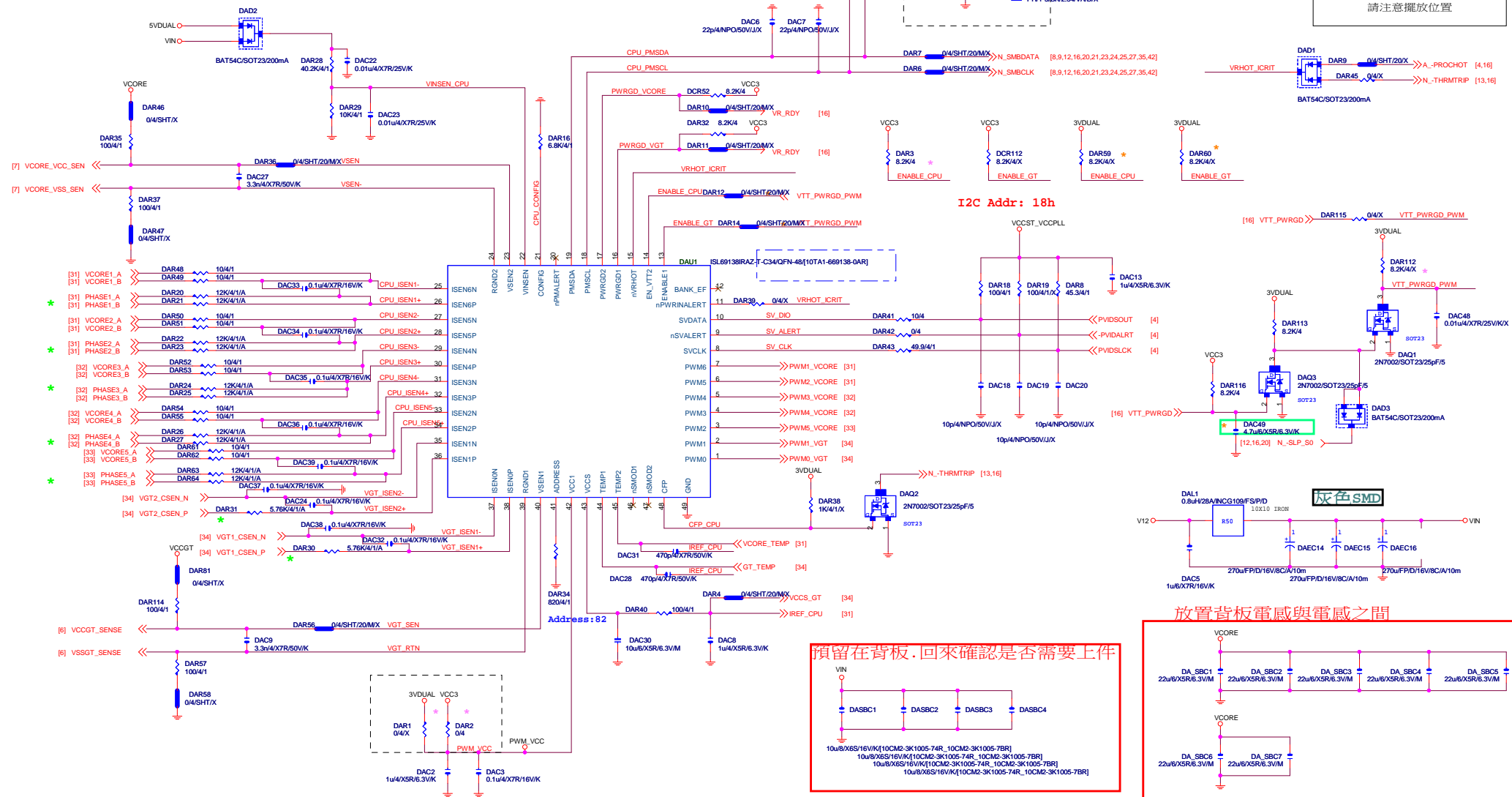


Debug Only

Remove PinHeader in modify PBOM

PH1\*3BK/2.5A/VAD/X

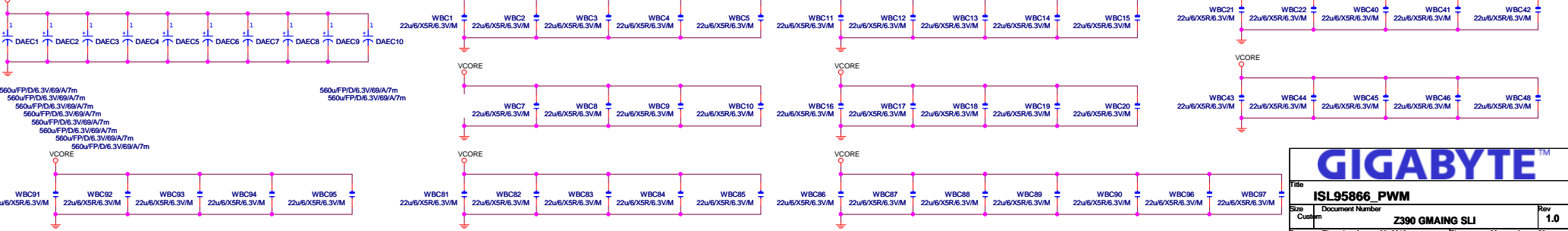
VCORE\_SIO  
VCORE  
VCORE VS  
MASK0/4/SHT/AMX  
請注意擺放位置



預留在背板. 回來確認是否需要上件

放置背板電感與電感之間

VCORE CAP 560u\*10PCS  
22u\*46PCS



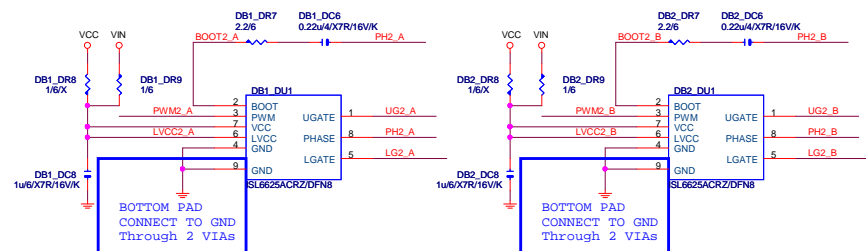
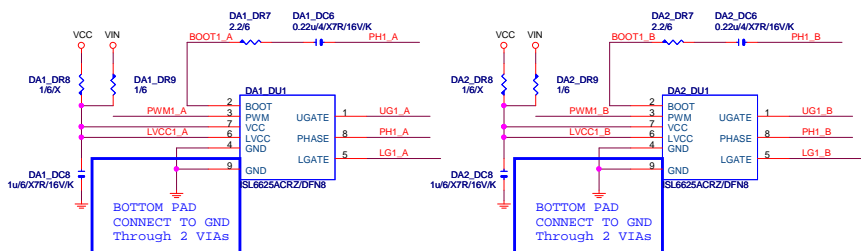
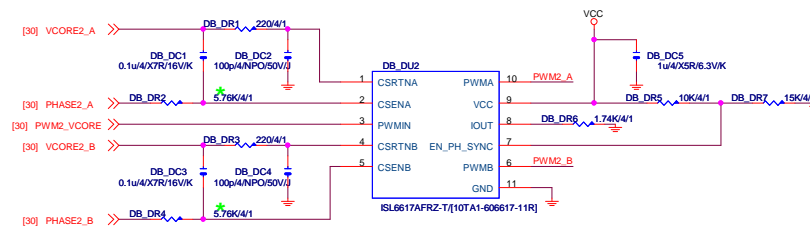
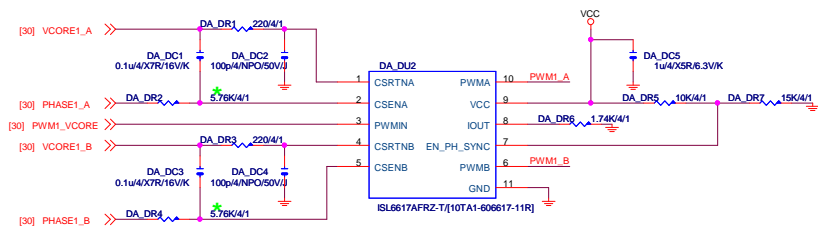
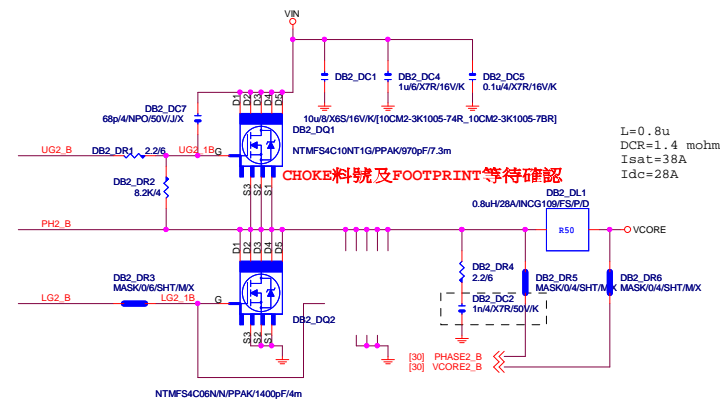
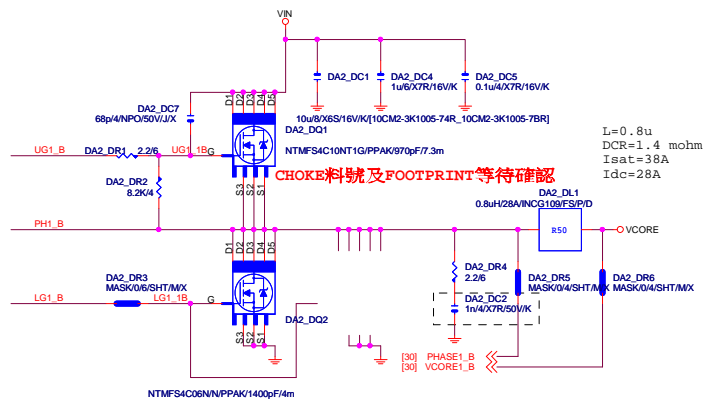
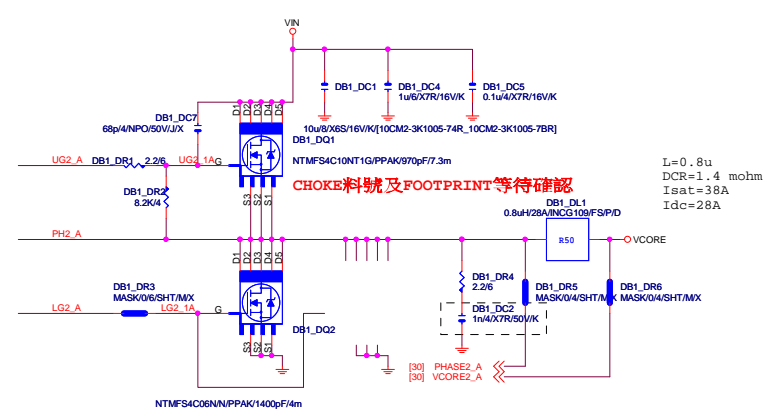
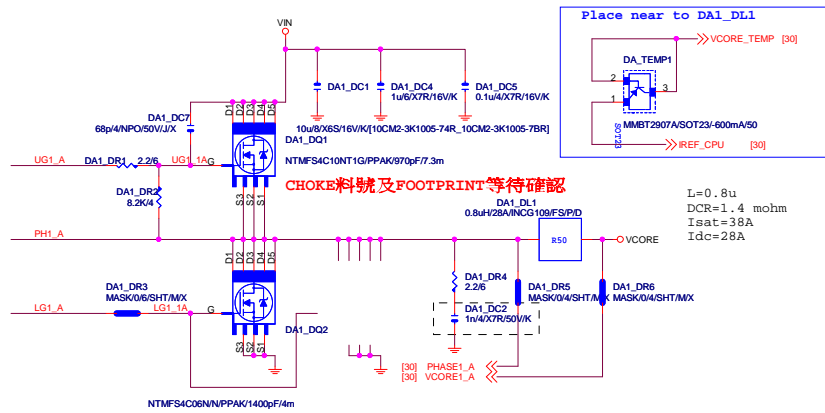
**GIGABYTE**

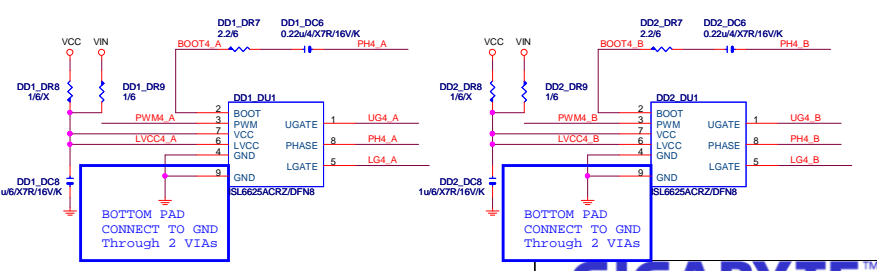
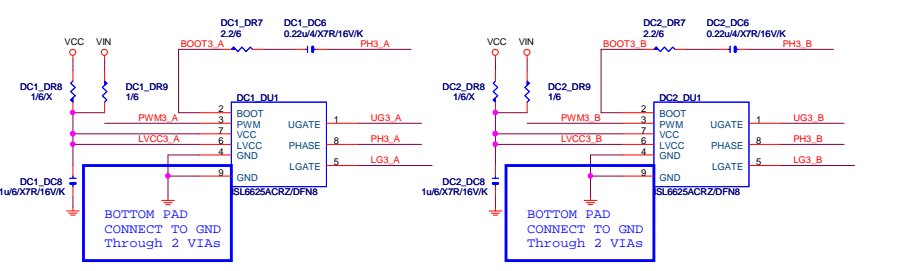
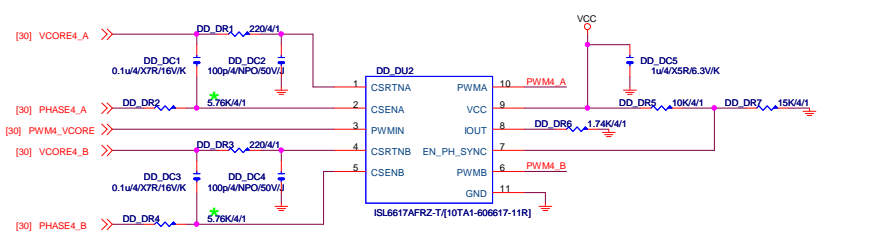
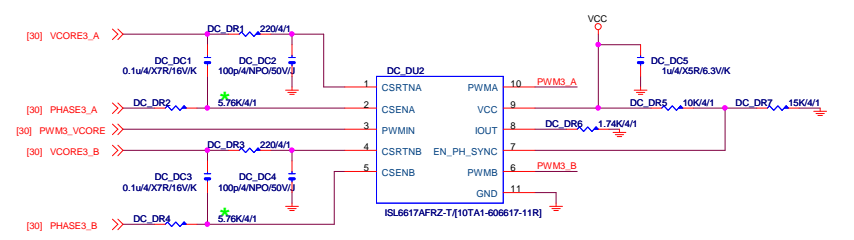
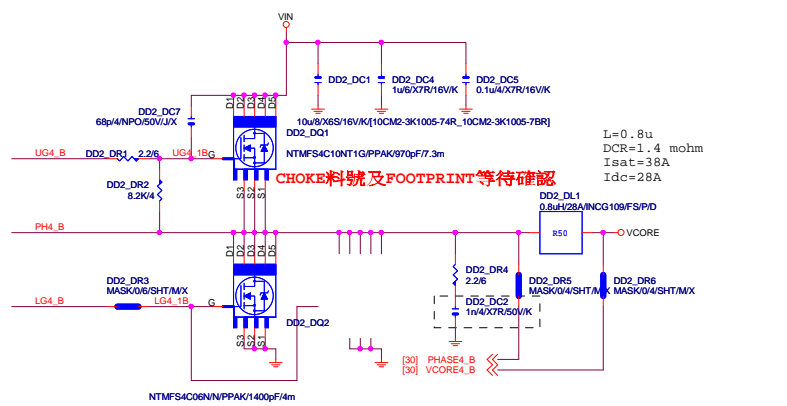
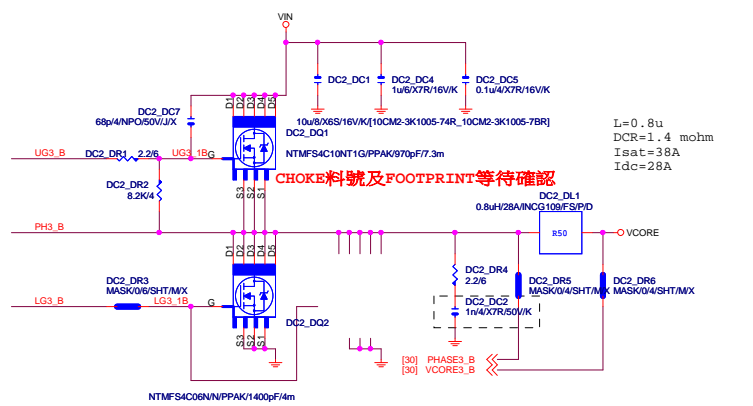
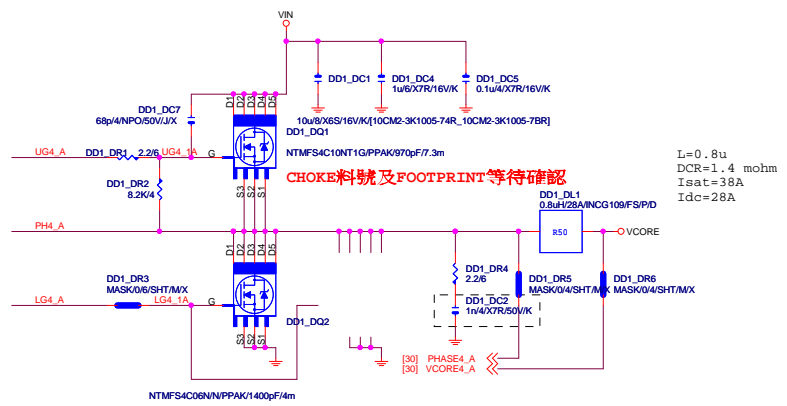
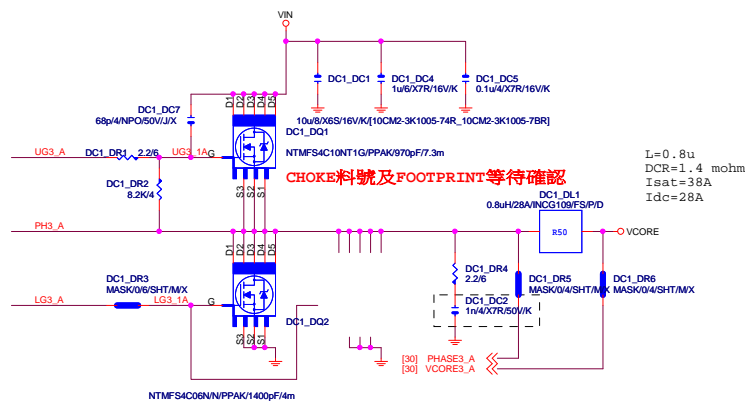
File: **ISL9586\_PWM**

Size: Custom Document Number: **Z390 GMAING SLI** Rev: **1.0**

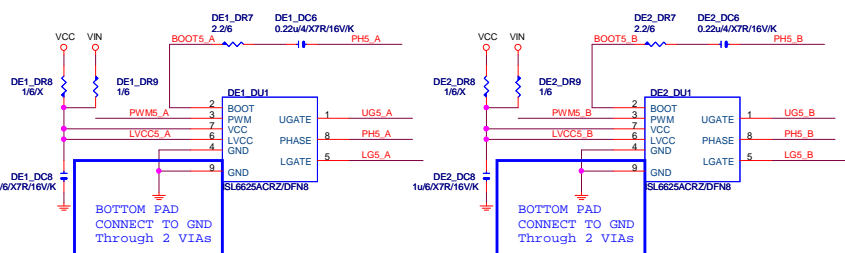
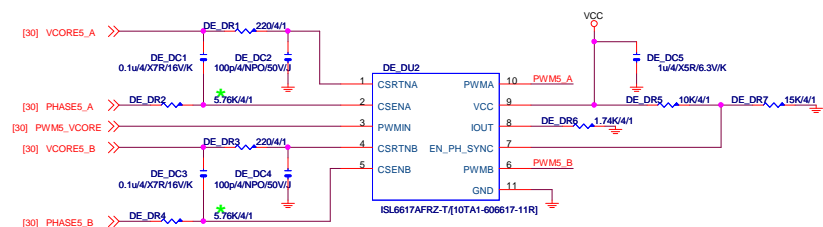
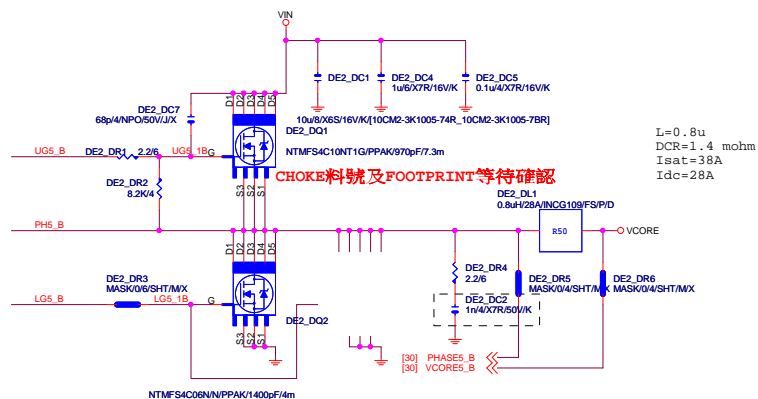
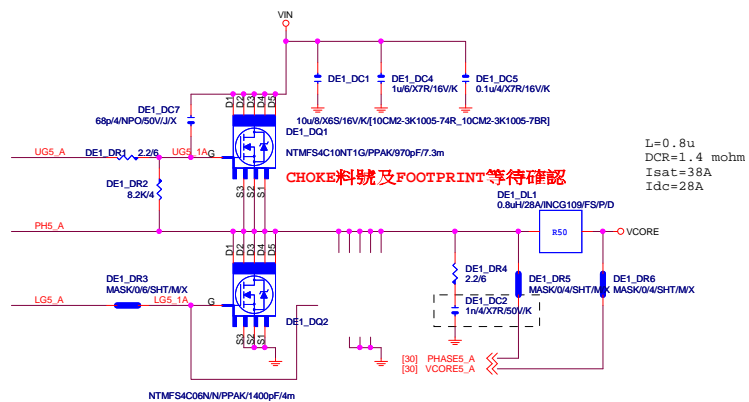
Date: Thursday, August 30, 2018 Sheet: 30 of 50

REV:0.1

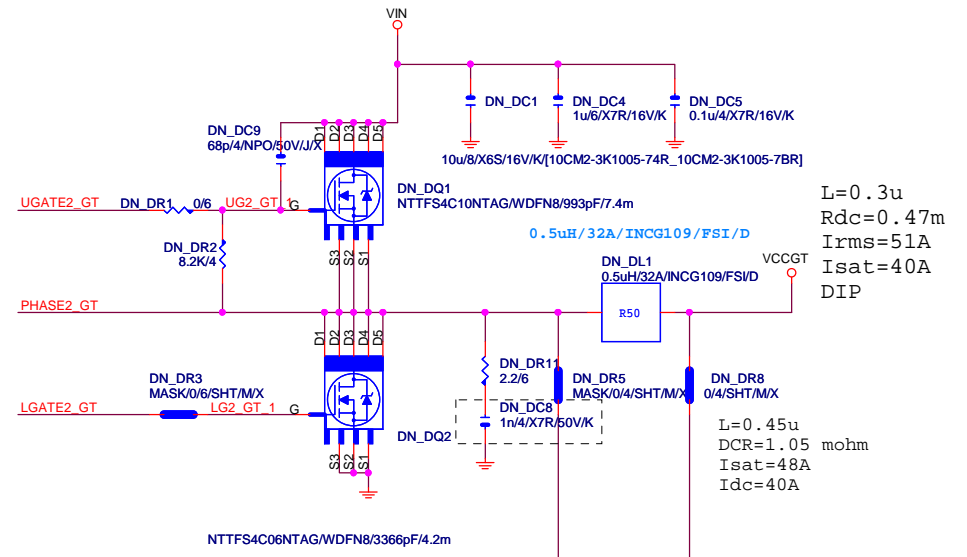
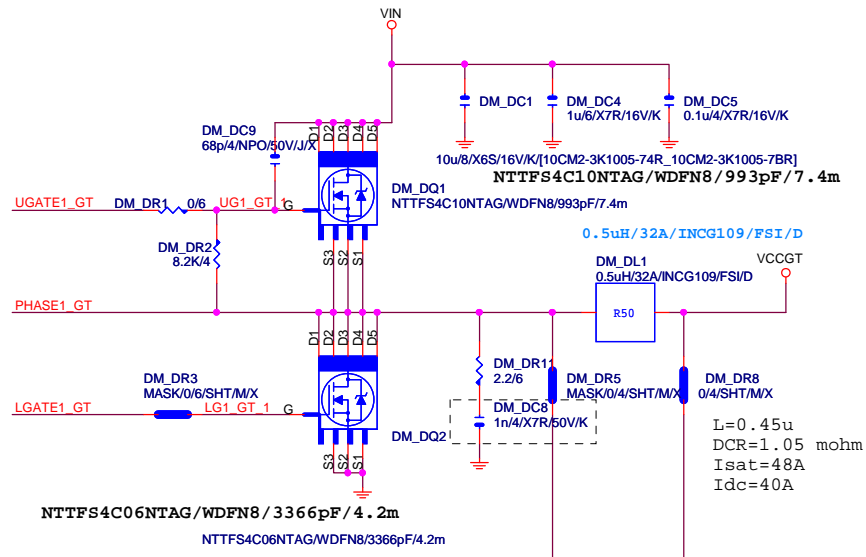




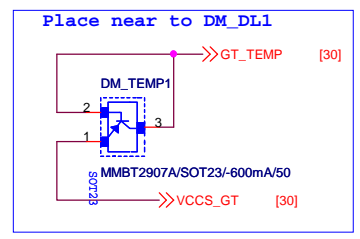
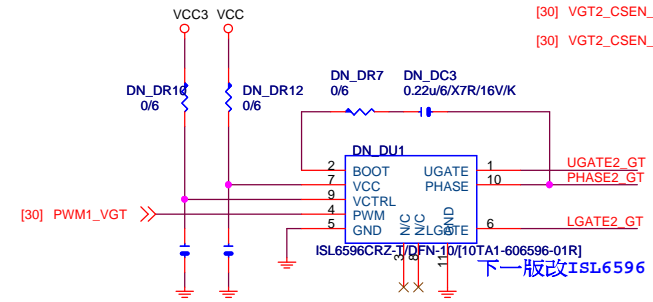
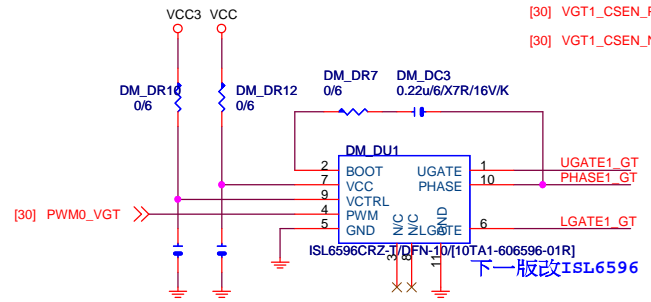
REV:0.1



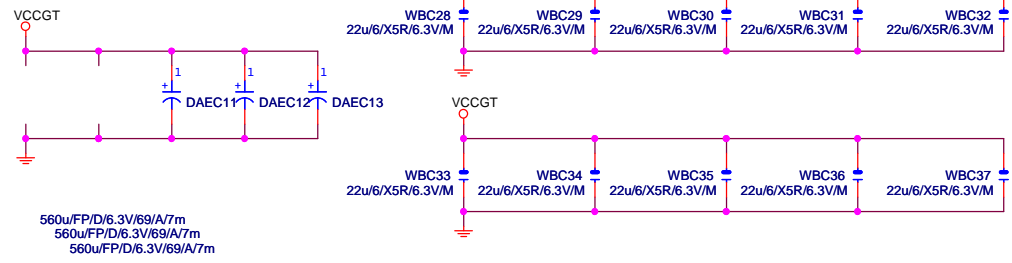
VCCGT



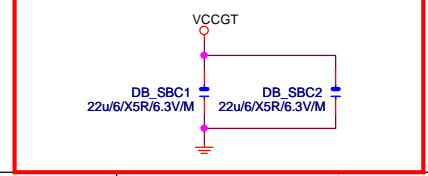
L=0.3u  
Rdc=0.47m  
Irms=51A  
Isat=40A  
DIP



VCCGT CAP 560u\*3PCS  
22u\*15PCS



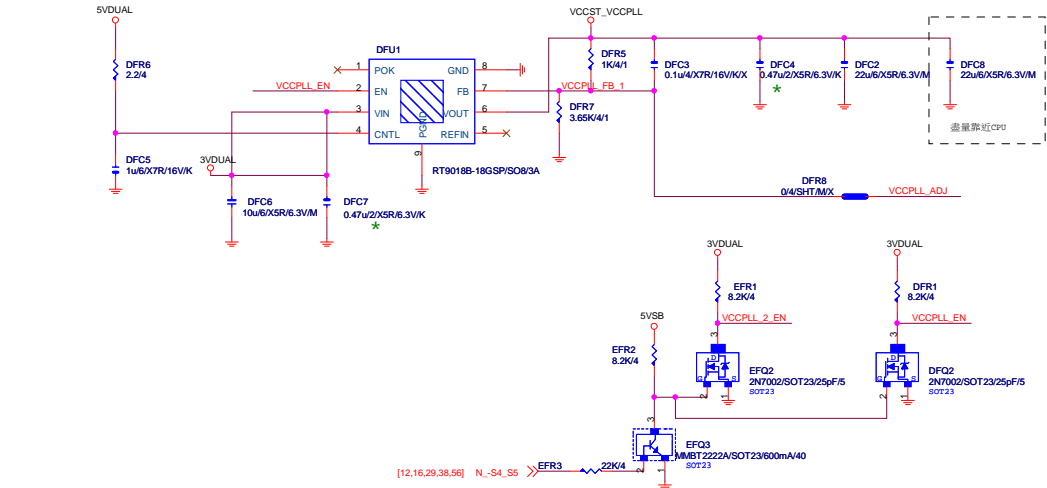
放置背板電感與電感之間



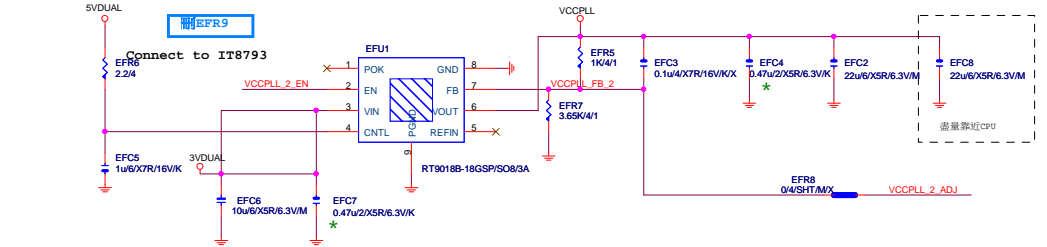
teknisi-indonesia.com

GIGABYTE™			
Title ISL9586_MOS			
Size B	Document Number		Rev 1.0
Z390 GMAING SLI		Date: Thursday, August 30, 2018	
Sheet 34		of 59	

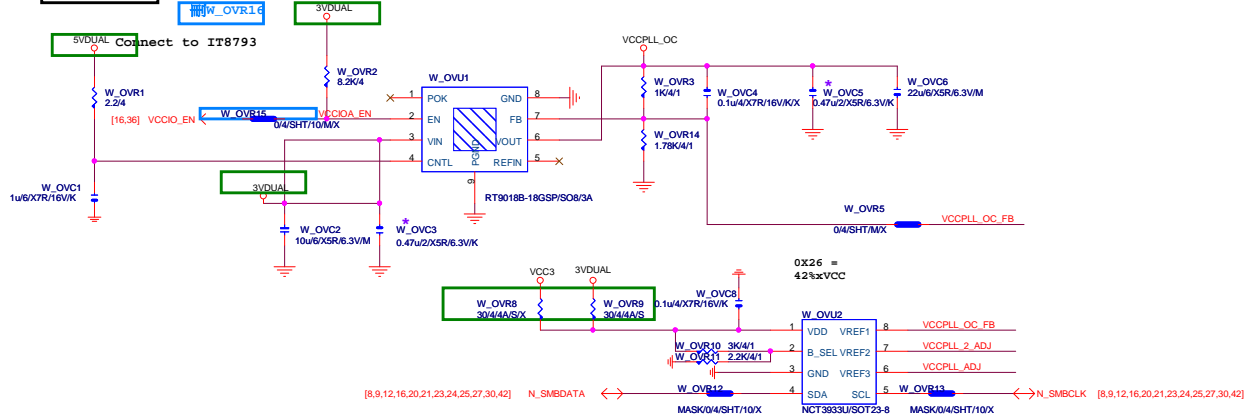
VCCST\_VCCPLL 替換原先MOS開關線路



VCCPLL



VCCPLL\_OC



VCCIO

SMD Molding(合金)  
10LC4-15100B-01R CORE 1.0uH 15A  
TAI-TECH SMD TMPA0603S-1R0MN-D  
DCR=6.7m

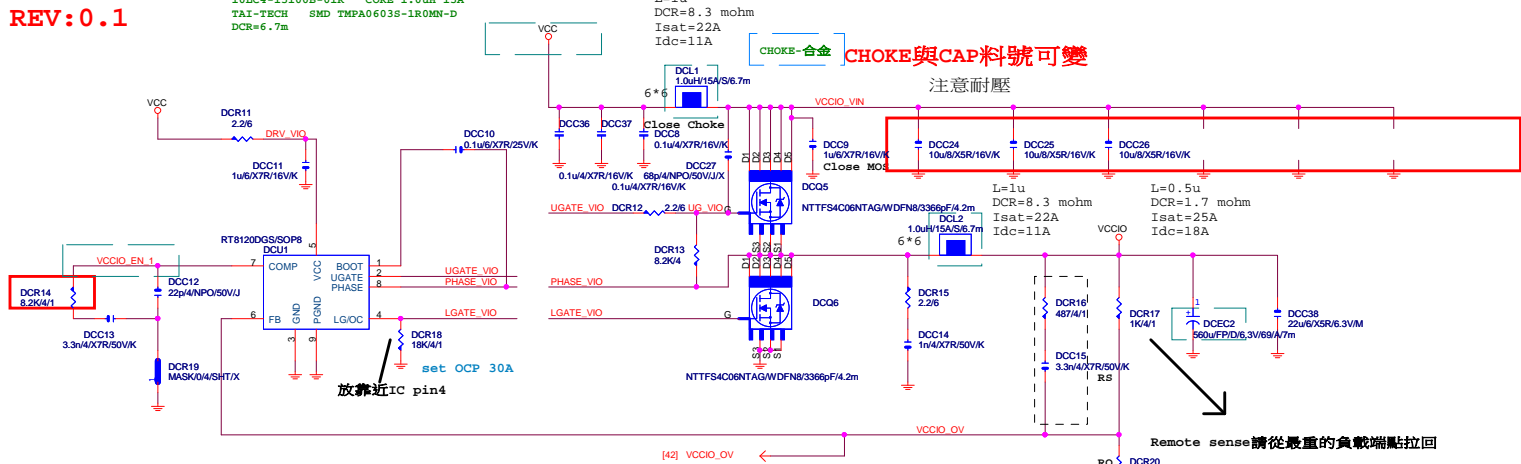
CHECK???

L=1u  
 DCR=8.3 mohm  
 Isat=22A  
 Idc=11A

CHOKE-合金 CHOKE與CAP料號可變

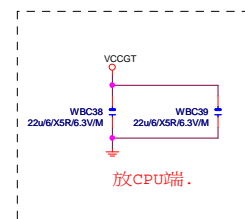
注意耐摩

### CHOKE與CAP料號可變

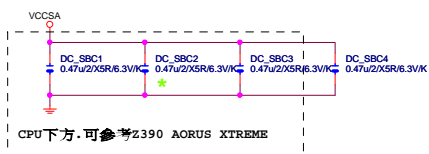
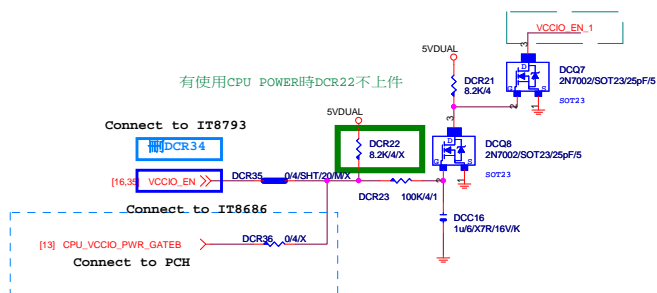


Remote sense請從最重的負載端點拉回

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

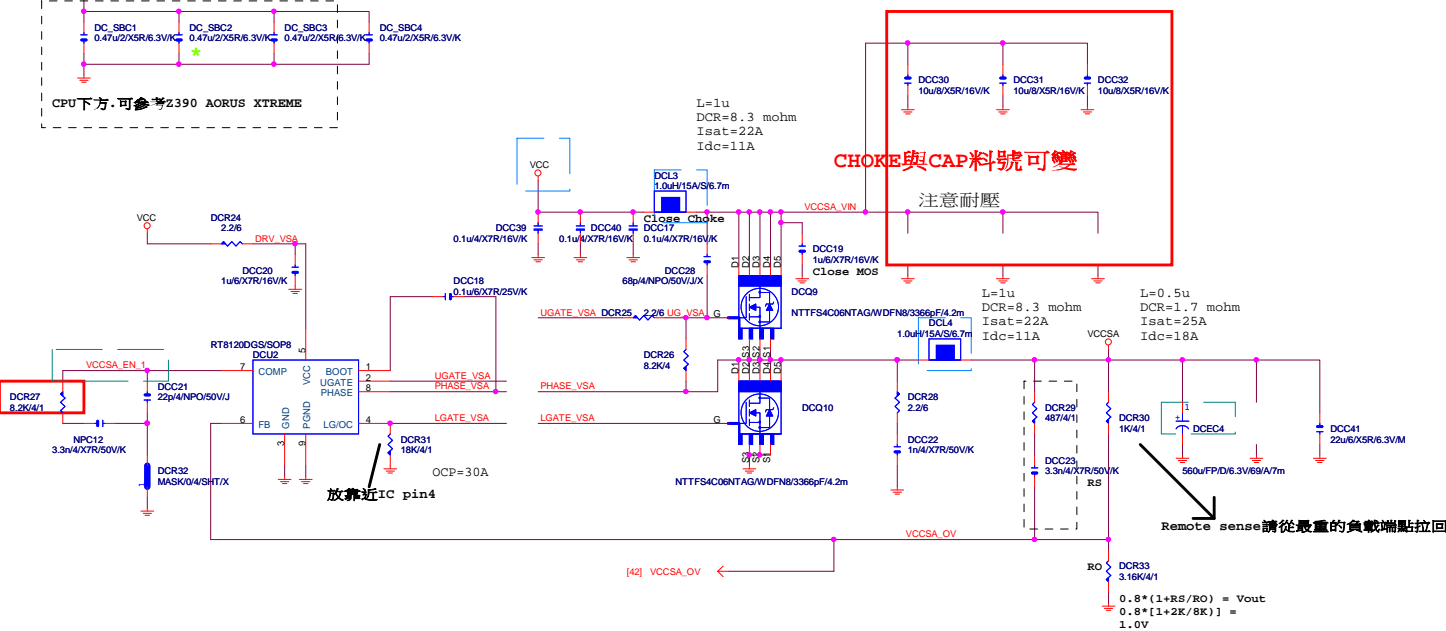


有使用CPU POWER時DCR22不上件



CHOKER與CAP料號可變

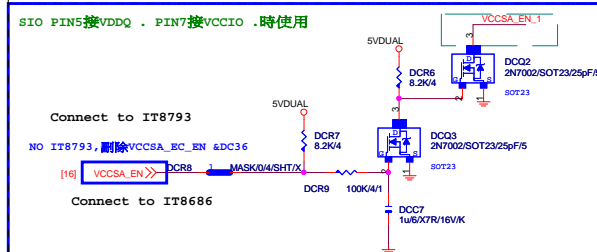
### 注意耐壓



Remote sense請從最重的負載端點拉回

$$0.8 \cdot [1 + 2K/8K] = 1.0V$$

SIO PIN5接VDDQ . PIN7接VCCIO .時使用



# GIGABYTE

Title \_\_\_\_\_

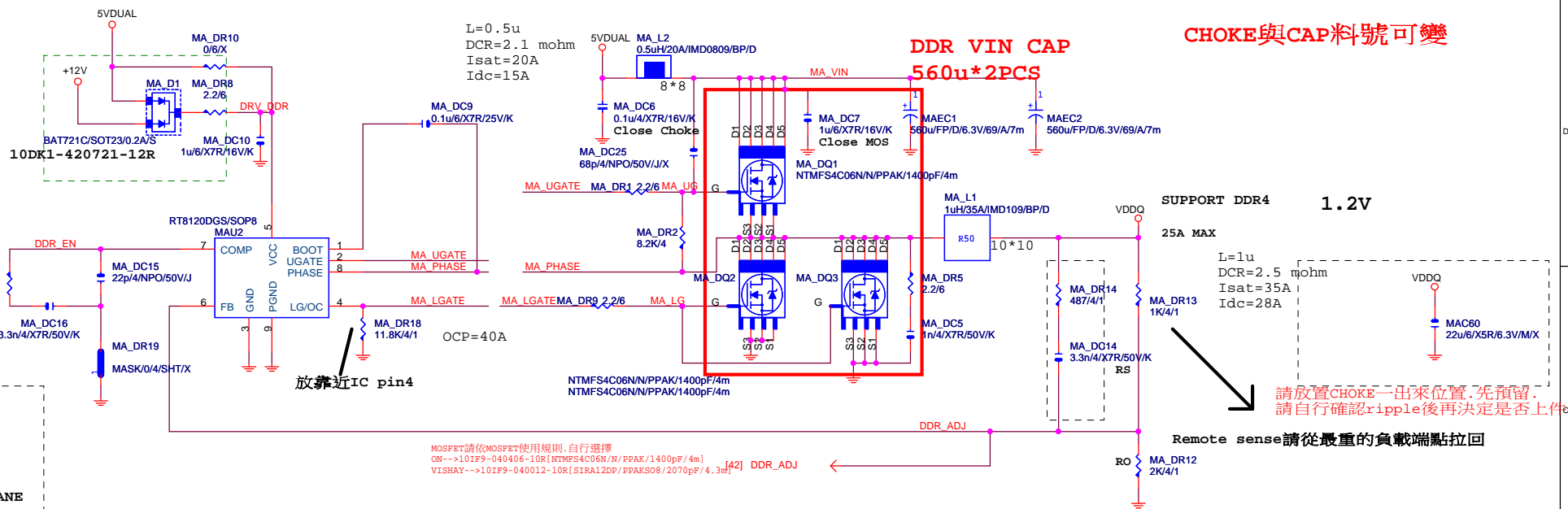
VCCIO\_VCCSA

Size	Document Number	Rev
Custom	7000-0000-0000	1

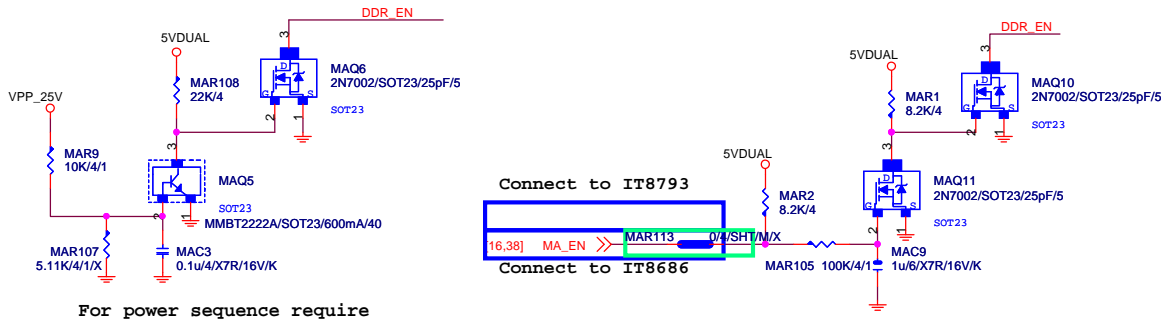


REV:0.1

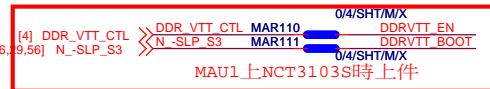
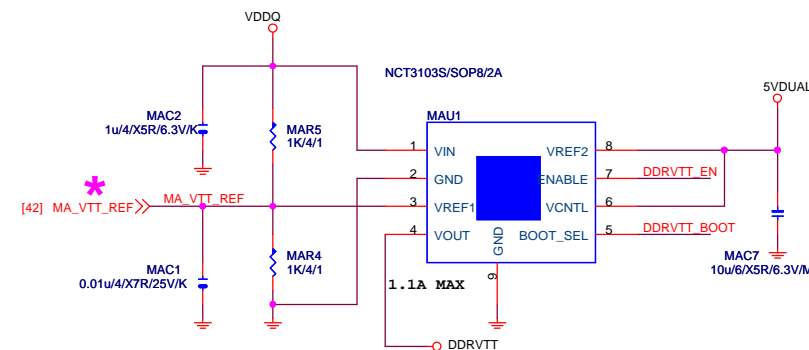
DDR4



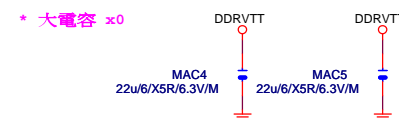
PWR SEQ



DDRVTT



DDRVTT CAP



GIGABYTE™

RT8120\_DDR4 POWER

Title	Document Number	Rev
Size	Custom	1.0
Date:	Thursday, August 30, 2018	Sheet 37 of 59

**VPP\_25V**

## CHOKE-合金

## CHOKES與CAP料號可變

#### 4. VPP\_25V CHOKE footprint 改CHOKE6X6mm\_SMD-1

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

DDR\_VPP VIN CAP  
560u\*1PCS

L=1u  
DCR=6.7 mohm  
Isat=15A  
Idc=12A

SUPPORT DDR4 2.5V

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

Remote sense請從最重的負載端點拉回

[42] VPP25\_ADJ ← VPP25\_ADJ

PWR SEQ

\* 删除 MA\_DR32

VPP CAP 560u\*1PCS

\* 大電容 x1

**GIGABYTE™**

Title **RT8120 VPP25 POWER**

Size	Document Number
Custom	<b>Z390 GMAING SLI</b>

Rev  
1.0

Date: Thursday, August 30, 2018

Sheet 38 of 59



## REV:0.1

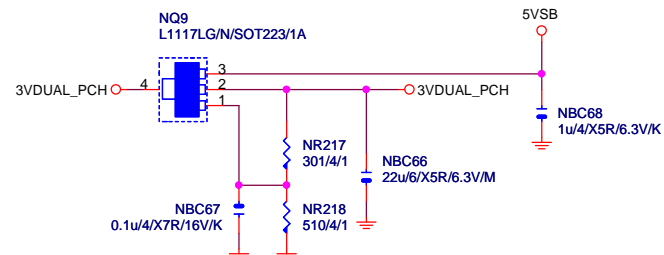
[20] 5VAUX SW



下列零件,請使用尼克森  
101F9-070606-01R為替料  
5VDUAL'Q30  
VCCIO'DCQ5,DCQ6  
VCCSA'DCQ9,DCQ10  
VCC1\_05\_PCH'NPQ1.NPQ2



NQ9  
L1117LG/N/SOT223/1A

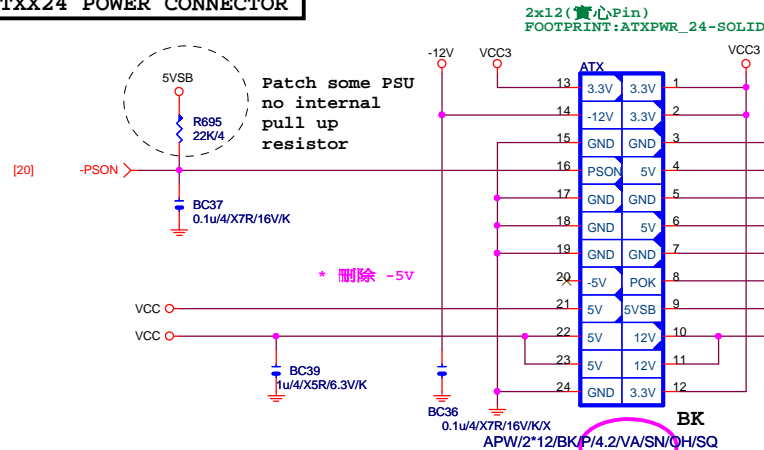


www.teknisi-indonesia.com

(REMOVE NR203.NR204.NC23.D4.NR202.NQ18.NQ19)

<b>Gigabyte Technology</b>			
Title			
<b>DISCRETE POWER</b>			
Size	Document Number		Rev
Custom	<b>Z390 GMAING SLI</b>		<b>1.0</b>
Date:	Thursday, August 30, 2018	Sheet	40 of 59

## ATXX24 POWER CONNECTOR

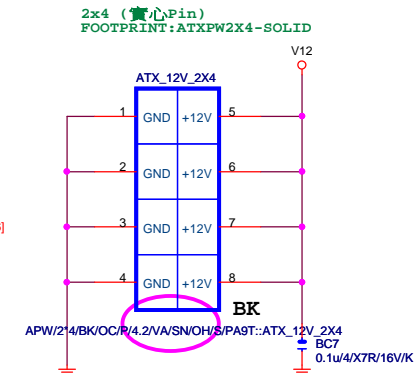


To prevent the 5VSB  
under loading when  
boot

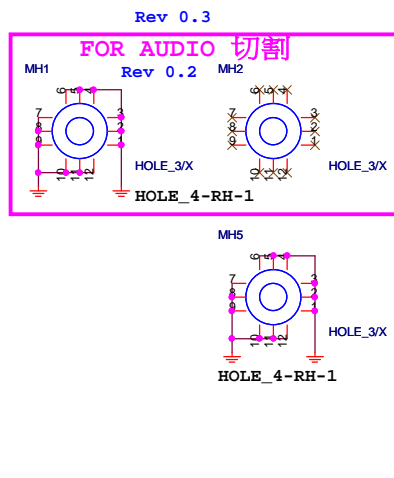
## Z390

11NH4-020004-P1R/P2R '實心4P耐高溫+鍍錫料號  
11NH4-020108-21R/22R '實心8P耐高溫+鍍錫料號  
11NH4-020024-Z1R/Z2R '實心24P耐高溫+鍍錫料號

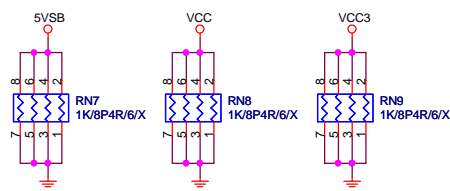
## ATXX4 POWER CONNECTOR



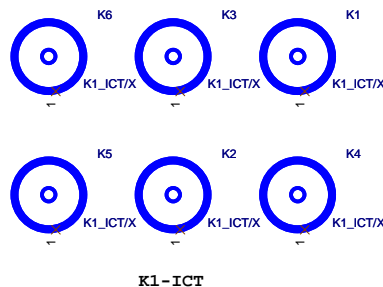
## 螺絲孔



## DUMMY LOAD



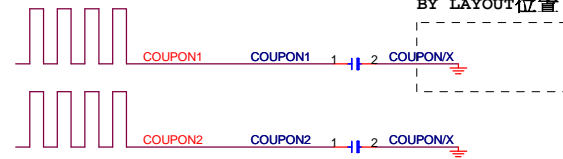
## 固定孔/光學點



## -PROHOT

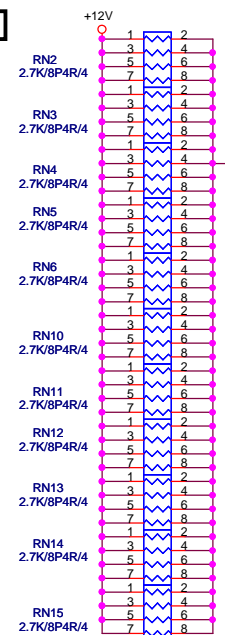
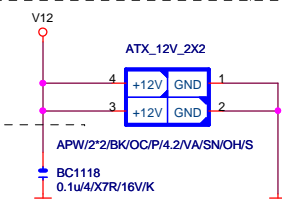
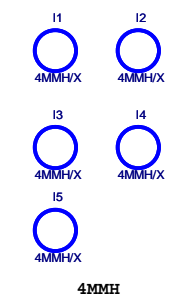


## COUPON

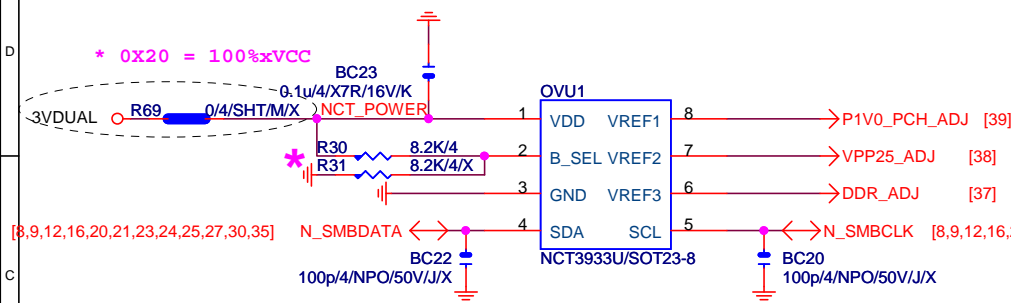


## +12V DUMMY LOAD

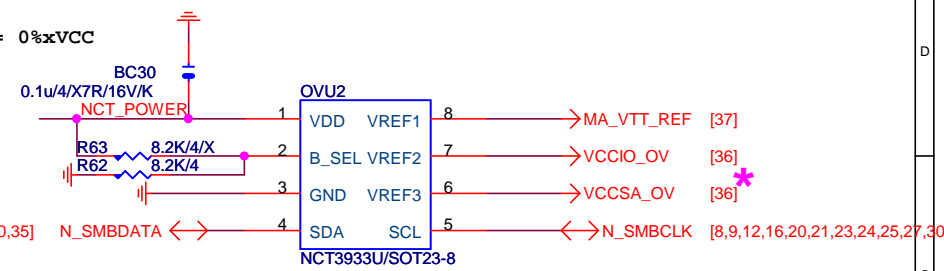
To fix 12V light load  
abnormal issue



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**

TitleCPU CORE VR-2

Size Custom

Document Number

Rev1.0

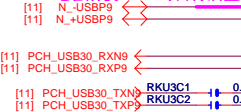
Date: Thursday, August 30, 2018

Sheet 42 of 59

Rev: 0.6

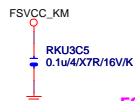
# KB\_MS\_USB3

USB 電容前後NET 可自行調整



FSVCC\_KM 請確認是否要用 USB\_DAC(Page.12) power.

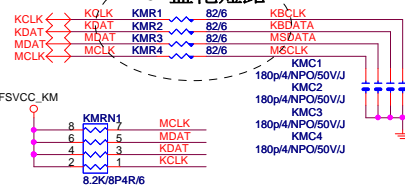
USB 電容前後NET 可自行調整



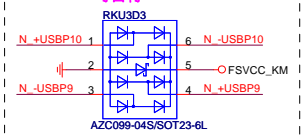
ESD 可自行SWAP PIN

ESD 可自行SWAP PIN

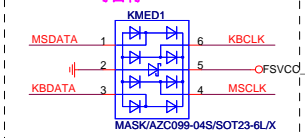
FOR 鹽化短路



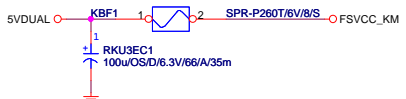
ESD 可自行SWAP PIN



ESD 可自行SWAP PIN



FUSE 2 Port 1 Fuse 2.6A



Gigabyte Technology

KB\_MS\_USB

Title			KB_MS_USB
Size	Document Number	Rev	1.0
Custom	Z390 GMAING SLI		
Date:	Thursday, August 30, 2018	Sheet	43 of 59



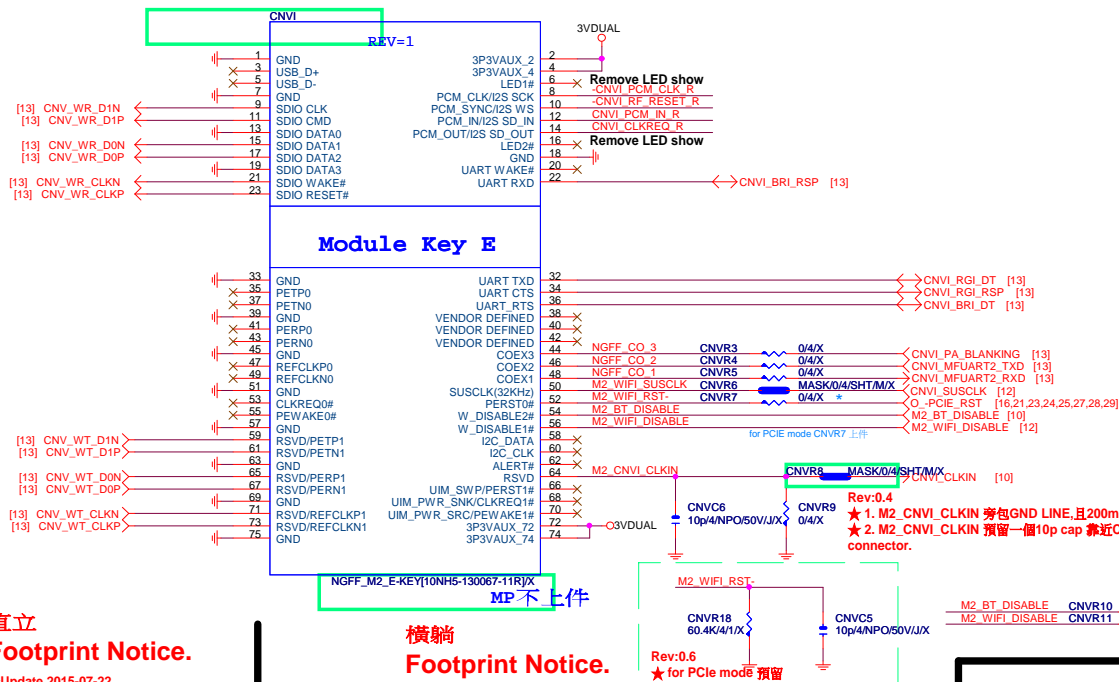


Rev: 0.4

不支援PCIE介面WIFI及USB介面BT

CNVi\_M2\_WIFI

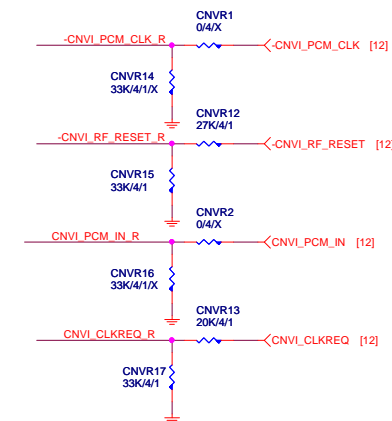
MP不上件,不Mask

直立  
Footprint Notice.

★Update 2015-07-22

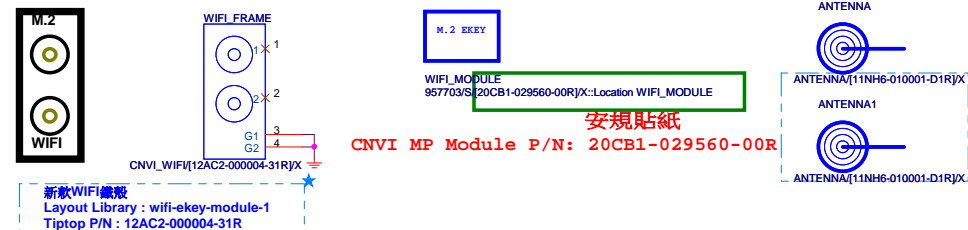
★Footprint for 直立式 SMD:  
WIFI-EKEY★SMD P/N: 直立式  
10NH5-130067-11R.橫躺  
Footprint Notice.

★Update 2015-07-22

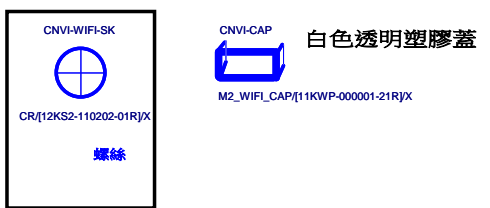
★Footprint for 橫躺式高:  
NGFF-E-75P-3★Footprint for 橫躺式矮:  
CNVi★橫躺式高SMD  
P/N:10NR5-130067-61R  
★橫躺式矮SMD  
P/N:10NR5-130067-22RRev:0.6  
★ 1. 將PCH吐出的3.3V 經分壓為1.8V 才連到CNVi

量產不附

## 一套WIFI MODULE包含外框+WIFI CARD+天線



Footprint WIFI-EKEY+ WIFI-EKEY-MODULE should be a package.



GIGABYTE™			
Title			
CNVi_M2_WIFI			
Size	Document Number	Rev	
Custom	Z390 GMAING SLI	1.0	
Date:	Thursday, August 30, 2018	Sheet	45 of 59

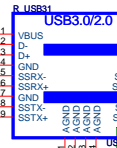
Rev: 0.6 接Pericom redriver 不用接電阻電容

R\_USB31\_1

下PORT

Footprint :USB30\_20

上PORT



USB 3.1 Red

USB 3.1 Red

USB 3.1/1A/RE/OS/RAD2/SB

ESD 可自行SWAP PIN

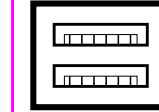
ESD 可自行SWAP PIN

ESD 可自行SWAP PIN

CONNECTOR 自行調整

2 port USB 3.0 Capture:

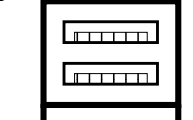
USB/18P/BU/OS/RA/D/2/1U/SB



Footprint:USB30\_20

2 port USB 3.0 with TYPE C Capture:

USB/18P/BU/OS/RA/D/2/HR



Footprint:USB30\_H-1

Gigabyte Technology

Title			
R_USB30,USB_OC			
Size	Document Number	Z390 GMAING SLI	Rev
C			1.0
Date:	Thursday, August 30, 2018	Sheet	46 of 59

[11] PCH\_USB31\_TXP1

[11] PCH\_USB31\_TXN1

[11] PCH\_USB31\_RXN1

[11] PCH\_USB31\_RXP1

[illegible]

U31AR1

U31AR2

1M2/1

1M2/1

J2/K5R/6.3V/K

J2/K5R/6.3V/K

J4/K5R/6.3V/K

J4/K5R/6.3V/K

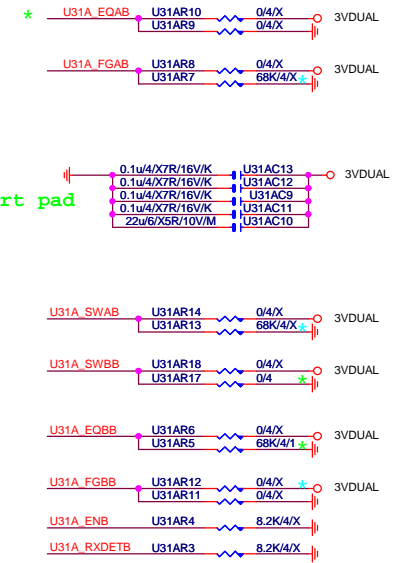
PCH\_USB31\_TXP1\_R [46]

PCH\_USB31\_TXN1\_R [46]

PCH\_USB31\_RXN1\_R [46]

PCH\_USB31\_RXP1\_R [46]

H370 HD3 REV:0.2 TYPE A RX 量測 PASS 組態



1. Differential Pair can't be swaped
2. Redriver to Connector Length min. 500mil

Diagram illustrating the USB31 TX and RX signal pairs:

- TXP2 (Transmit Pair 2)
- TXN2 (Transmit Pair 2)
- RXN2 (Receive Pair 2)
- RXP2 (Receive Pair 2)

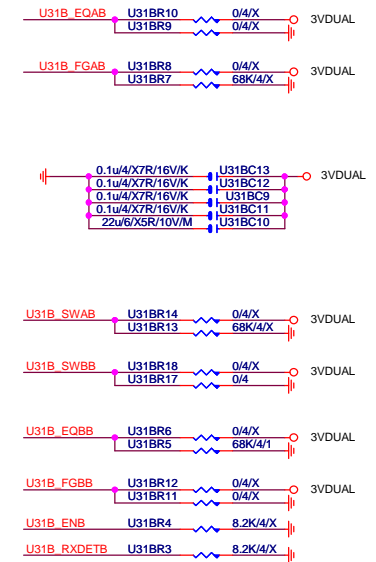
Pin 1 to 20 connection diagram for the P13EXQ1002B module. The diagram shows the module's pins (1-20) connected to various power and signal lines. Pin 1 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 2 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 3 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 4 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 5 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 6 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 7 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 8 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 9 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 10 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 11 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 12 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 13 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 14 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 15 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 16 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 17 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 18 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 19 is connected to U31B SWAB, U31B ENB, and U31B SWBB. Pin 20 is connected to U31B SWAB, U31B ENB, and U31B SWBB.

U31BR1 1M2/1 100pF

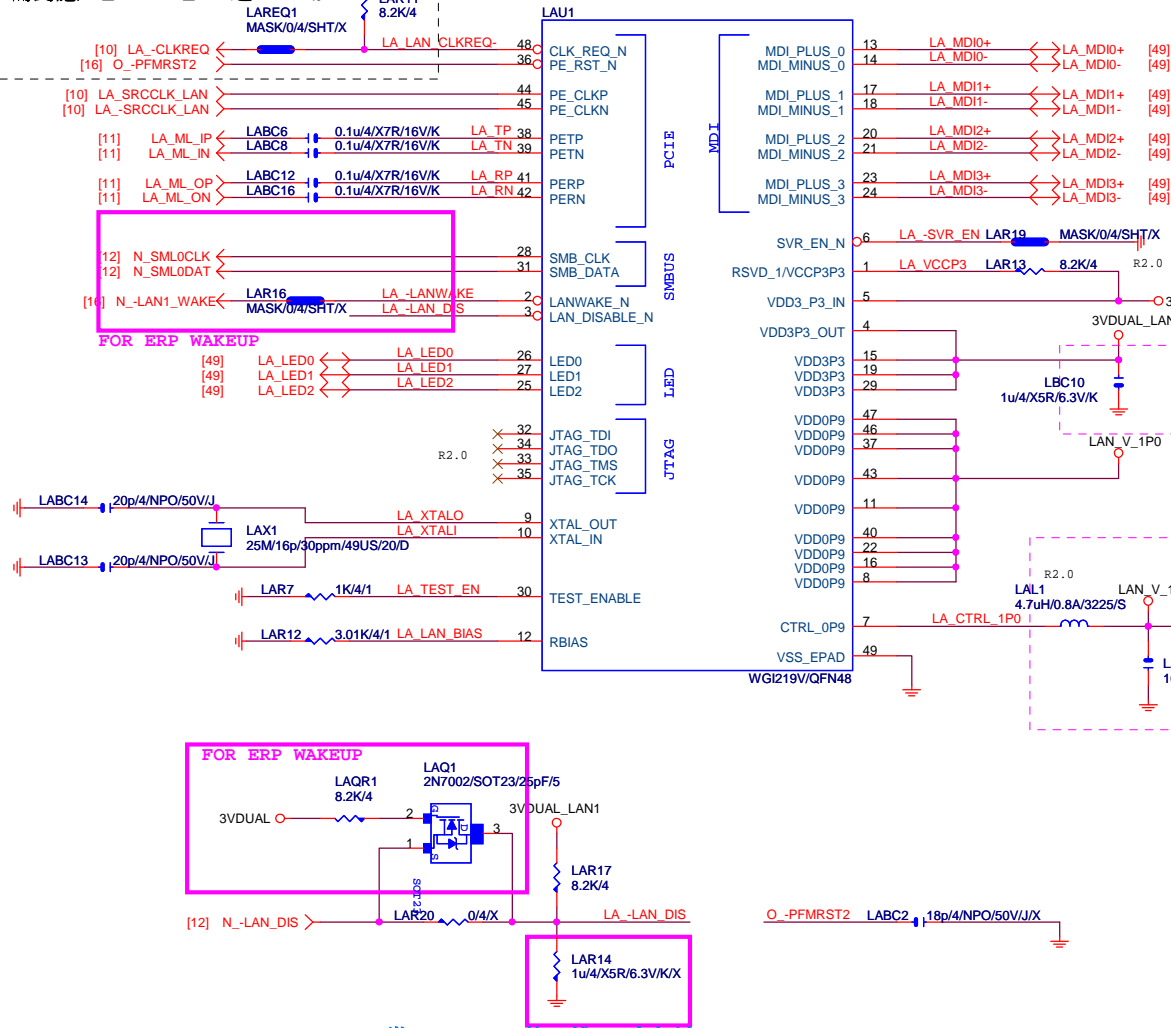
U31BR2 1M2/1 100pF

PCH\_USB31\_TXP2\_R [46]  
PCH\_USB31\_TXN2\_R [46]

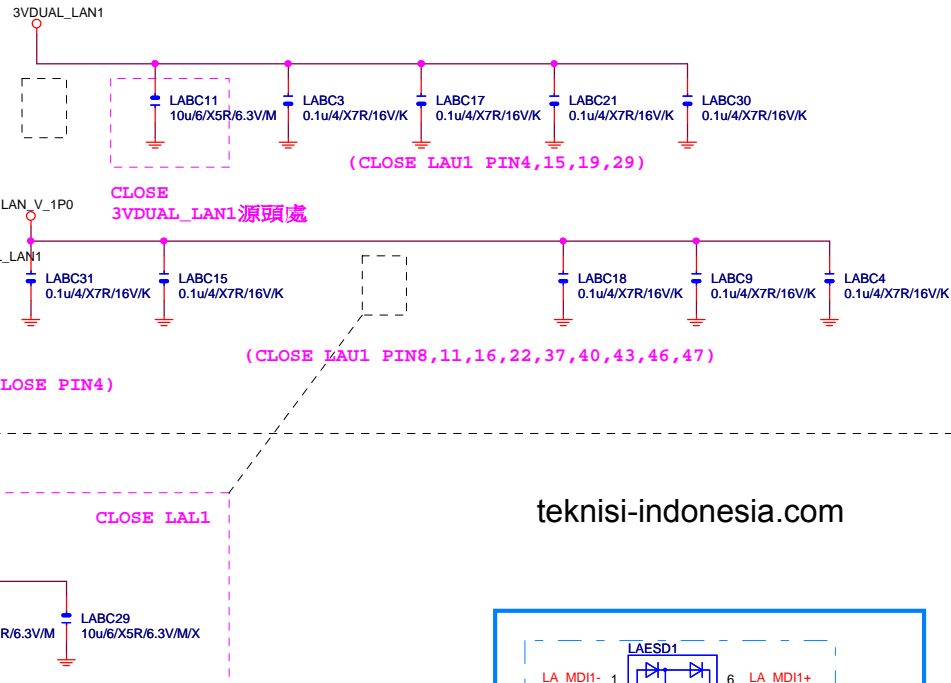
PCH\_USB31\_RXN2\_R [46]  
PCH\_USB31\_RXP2\_R [46]



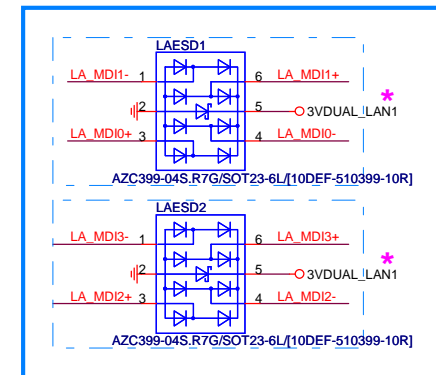
L1+CLK REQ# 節能:  
需對應LA\_SRCCLK\_LAN之CLKREQ#



For當ErP enable後，挑PSU會無法LAN Wake-up

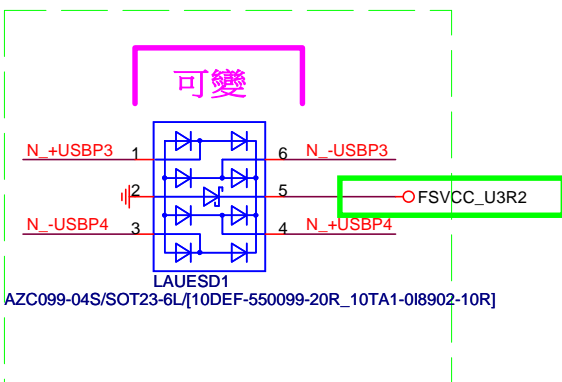


teknsi-indonesia.com

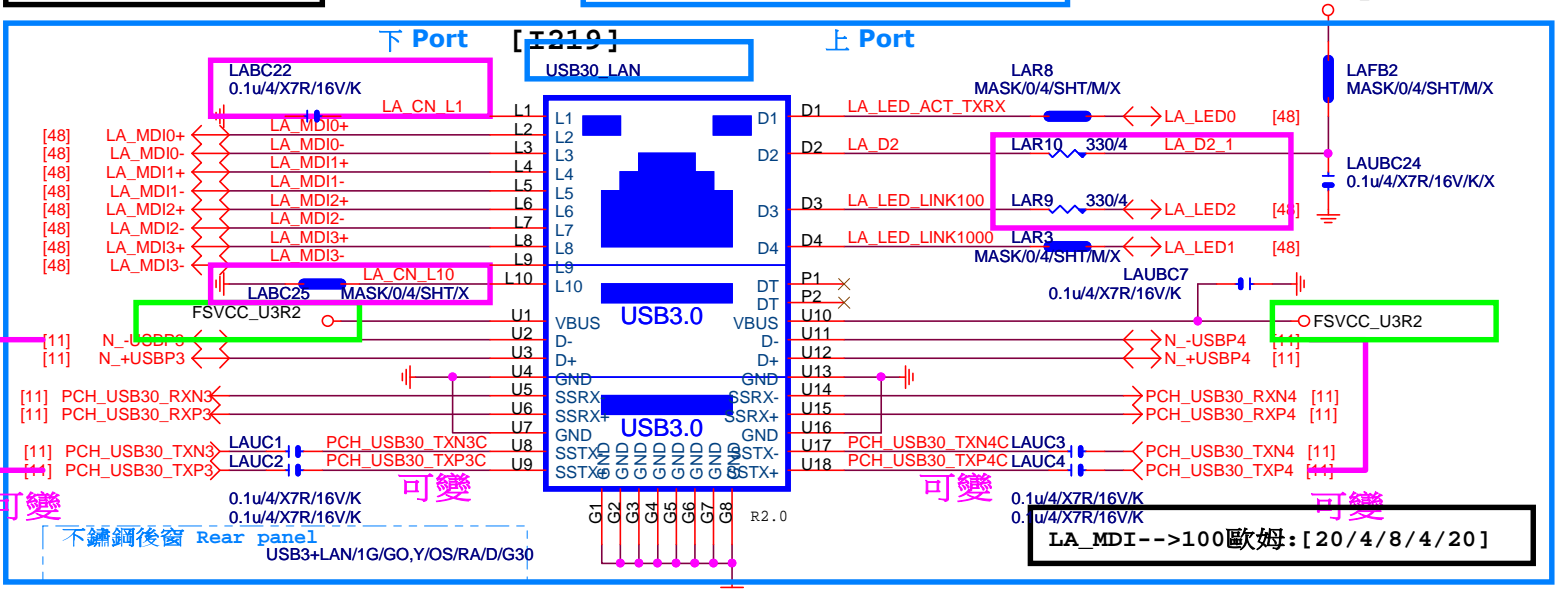


USB30\_LAN CONNECTOR R2.02

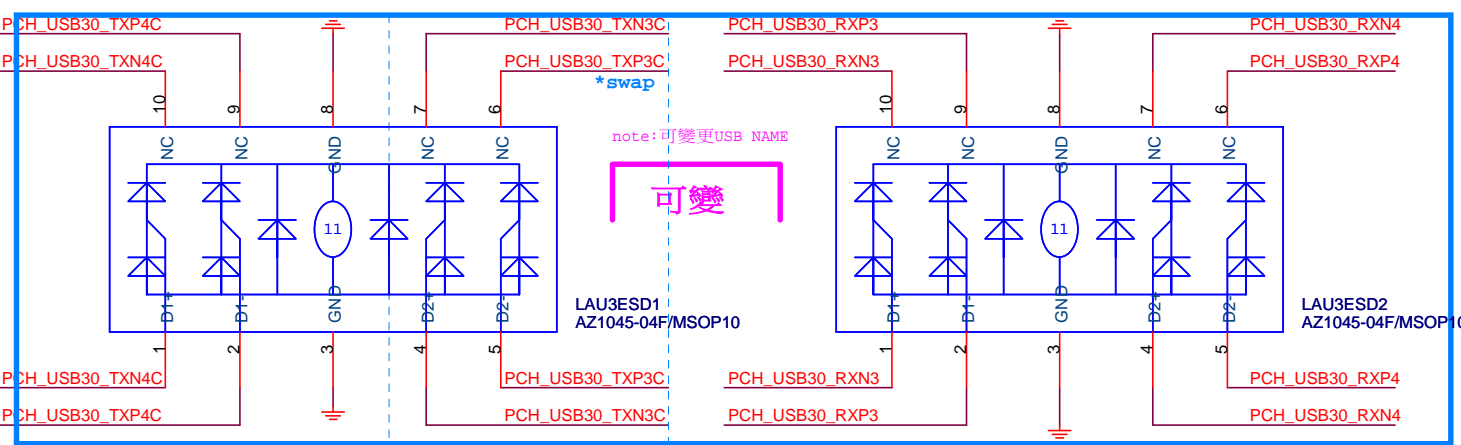
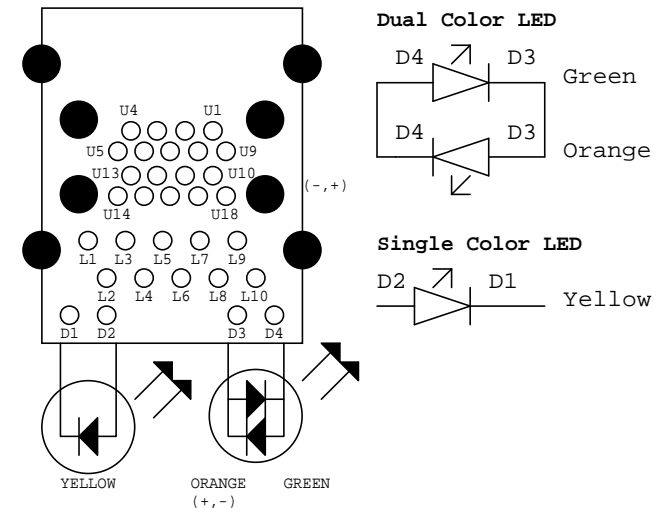
RMA ESD PROTECT note:可變更USB NAME



USB\_LAN CONNECTOR note:可變更USB NAME from usb3\_9/10 for Flex IO 不可改



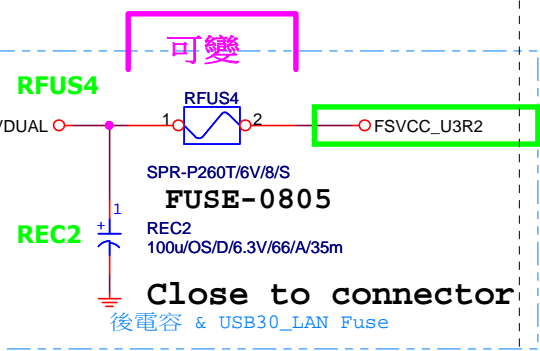
USB30\_LAN LAYOUT示意圖



LAN\_COVER FOOT PRINT:LAN\_COVER

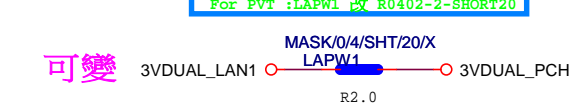
可變 [視SPEC需求] \*Del USB\_LAN\_HS

USB POWER note:可變更FUSE



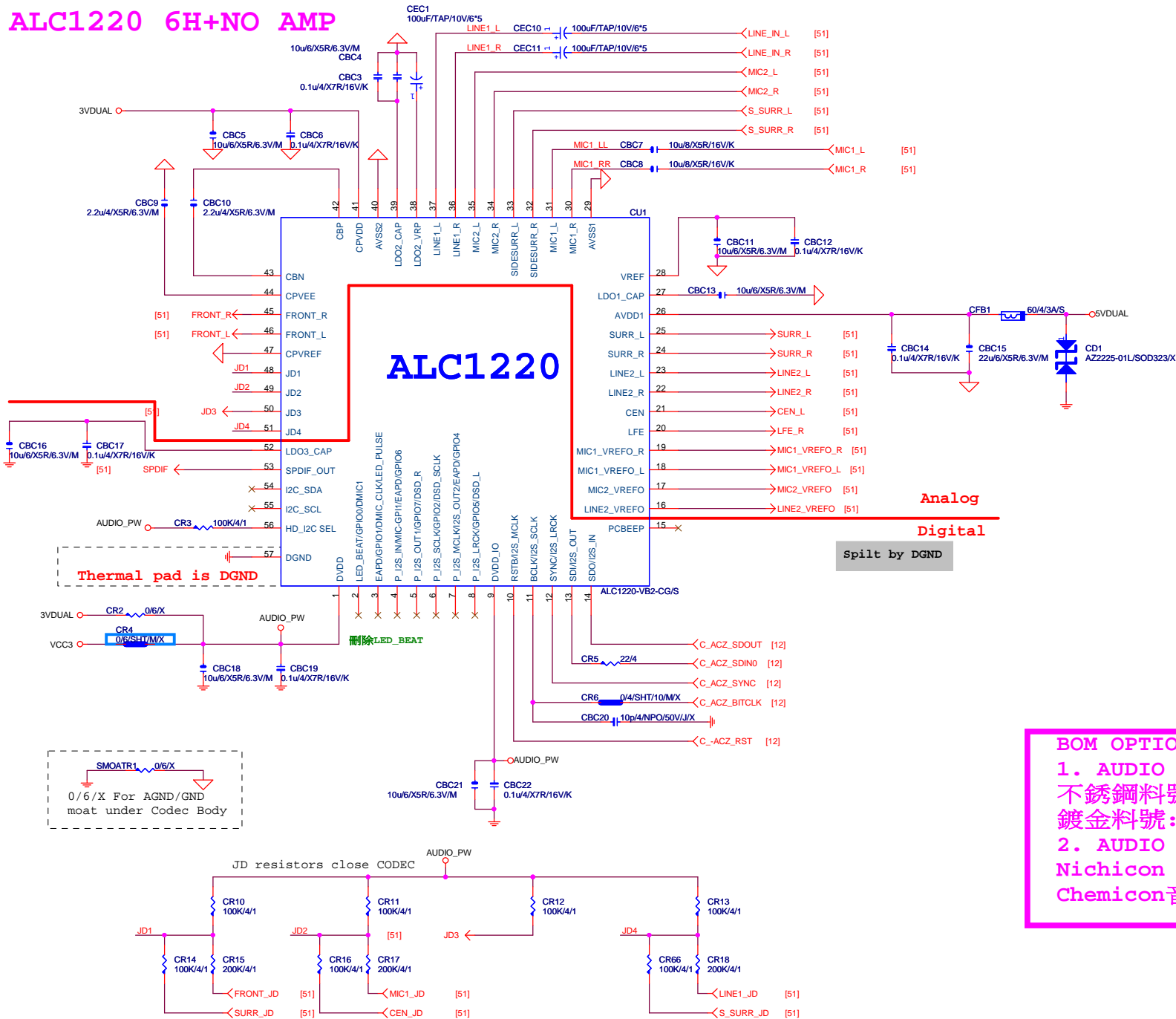
EMI SHORT PAD PS:視EMI需求

LAN POWER note: lan power連接及電流



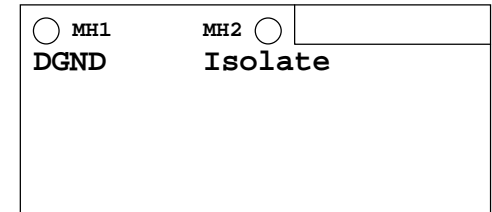
Rev 3.0

## ALC1220 6H+NO AMP



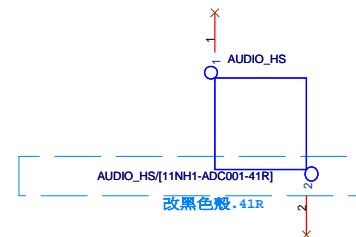
LAYOUT注意: 螺絲孔下GND方式

1. MH1下DGND
2. MH2一律改為Isolate



LAYOUT注意: 是否要加?  
AGND切割線

音效區域印刷



BOM OPTION :

1. AUDIO CONNECT

不銹鋼料號: 11NR6-403025-A3R

鍍金料號: 11NR6-403025-92R

2. AUDIO CAP

Nichicon MW音效電容 : 100u/TAP/6.3V/65

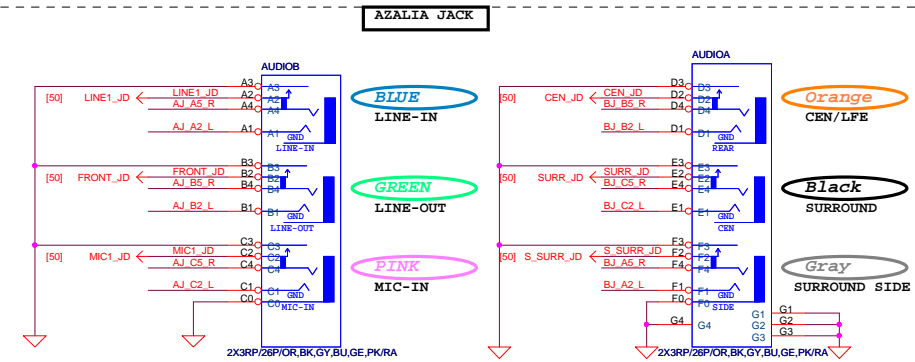
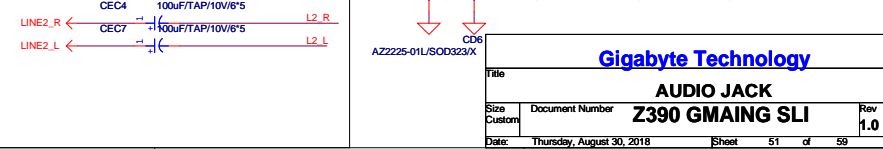
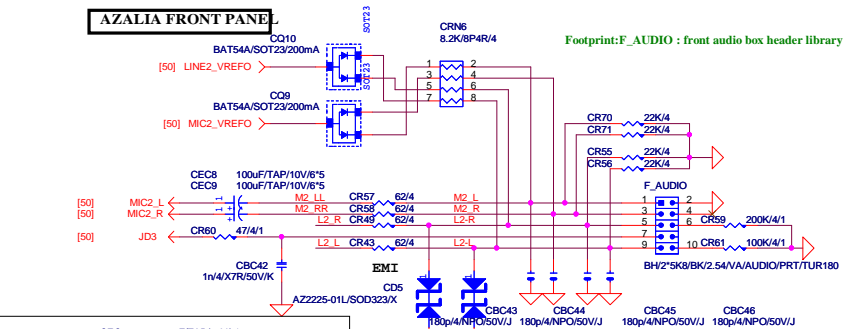
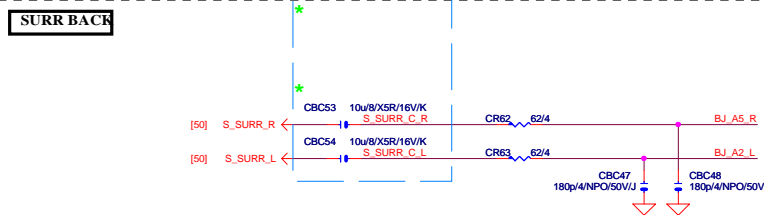
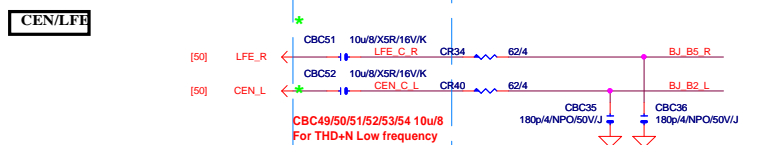
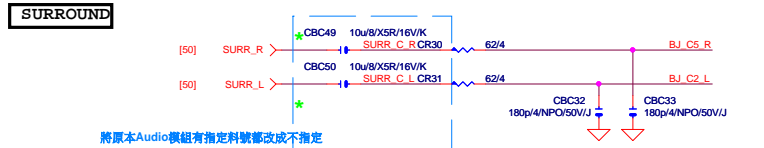
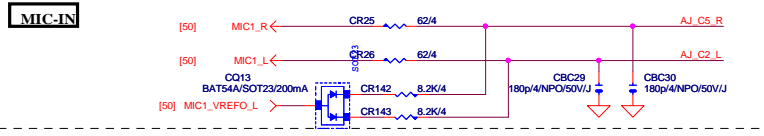
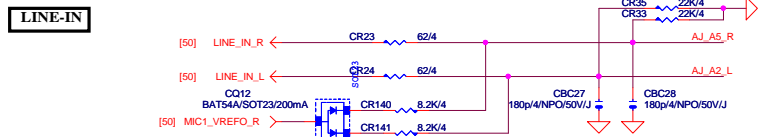
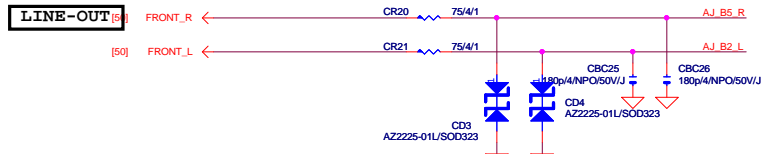
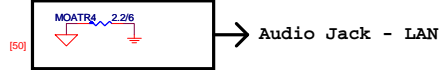
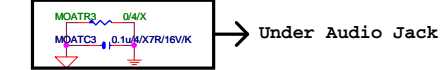
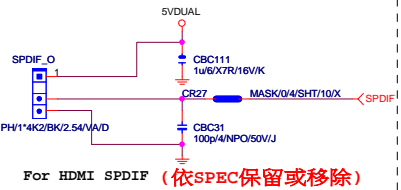
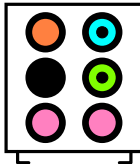
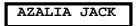
Chemicon音效電容 : 100uF/TAP/10V/6\*5

Gigabyte Technology

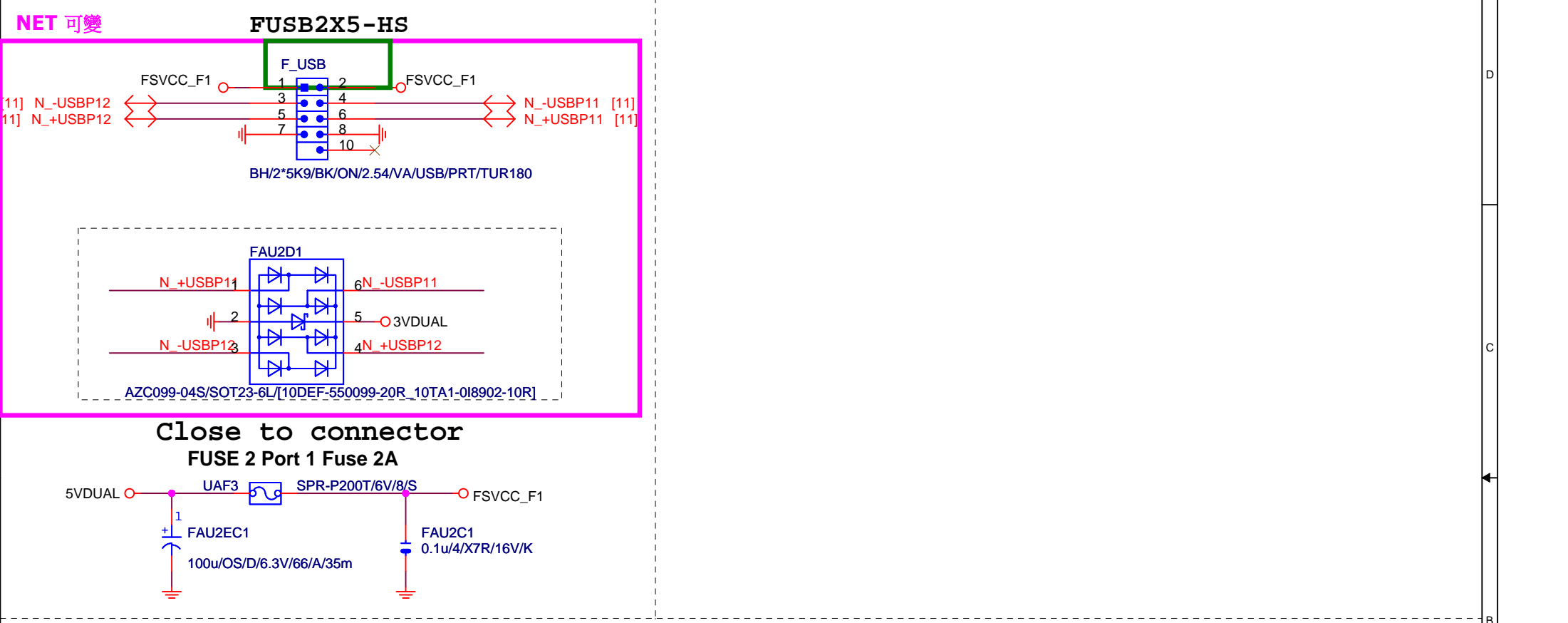
Title			HD AUDIO ALC887
Size	Document Number	Z390 GMAING SLI	
Custom			Rev 1.0
Date:	Thursday, August 30, 2018	Sheet	50 of 59



Rev 3.0







Close to connector

FUSE 2 Port 1 Fuse 2A

5VDUAL

FAU2EC1 100u/OS/D/6.3V/66/A/35m

UAF3

SPR-P200T/6V/8/S

FSVCC\_F1

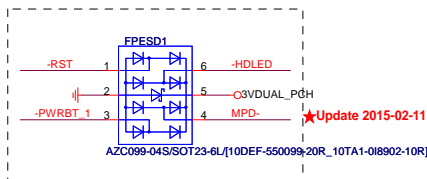
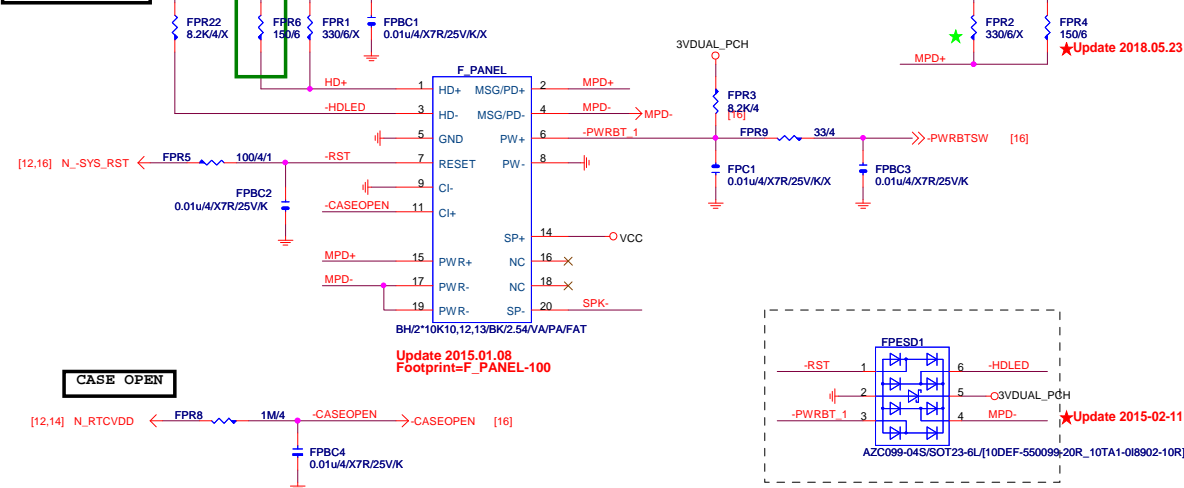
FAU2C1 0.1u/4/X7R/16V/K

F\_USB 2.0 OC SIGNAL

刪除U2OC1 ,移至與U3OC3接

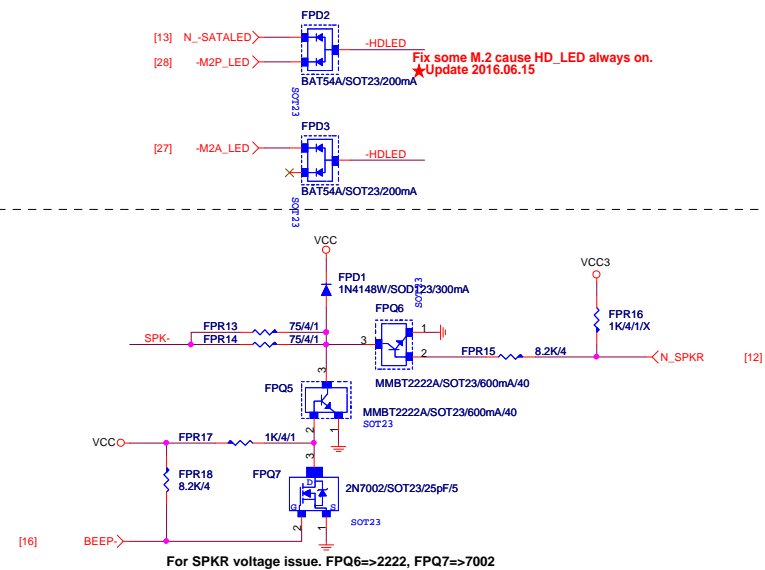
刪除U2OC1 , FRONT USB2

Rev: 0.6

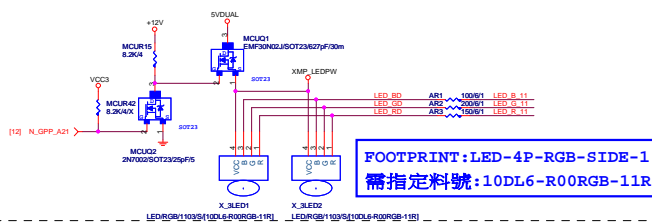


## FRONT PANEL SHORT

SATA/M.2 LED
--------------

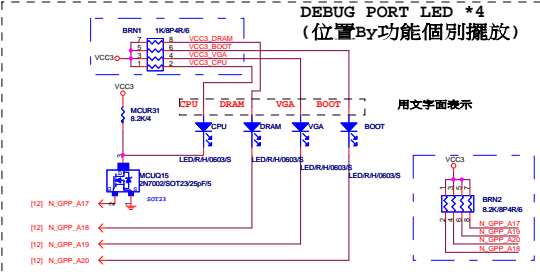


FOR XMP 測發光 LED\*2  
(靠近DIMM附近放背板鑲空)



FOOTPRINT:LED-4P-RGB-SIDE-1  
需指定料號:10DL6-R00RGB-11R

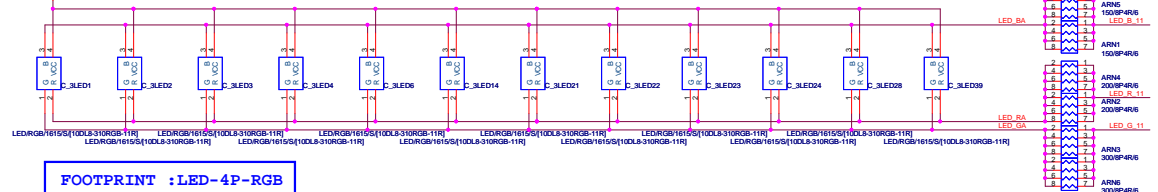
DEBUG PORT LED \*4  
(位置By功能個別擺放)



N_GPP_A17	CPU DEBUG
N_GPP_A18	DDR DEBUG
N_GPP_A19	VGA DEBUG
N_GPP_A20	BOOT DEVICE DEBUG
N_GPP_A21	XMP LED SWITCH
N_GPP_A22	TURBO LED SWITCH
N_GPP_D12	LED_IO LED SWITCH

第一區 LED

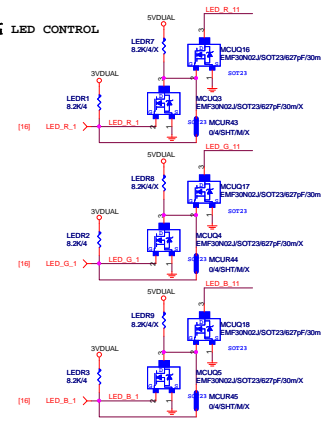
FOR AUDIO 正發光 LED\*13  
(位置在背板AUDIO切割線)



FOOTPRINT :LED-4P-RGB

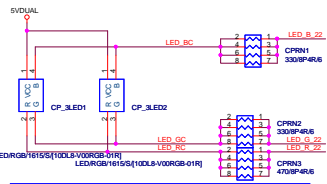
FOOTPRINT:LED-4P-RGB

第一區 LED CONTROL



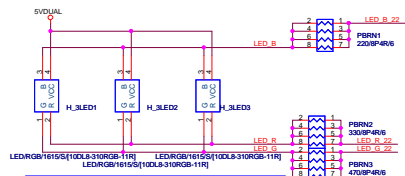
第二區 LED

FOR 裝甲高亮度 正發光 LED\*2 (位置在正板,依據裝甲設計擺放)



FOOTPRINT:LED\_4P\_RGB 高亮度

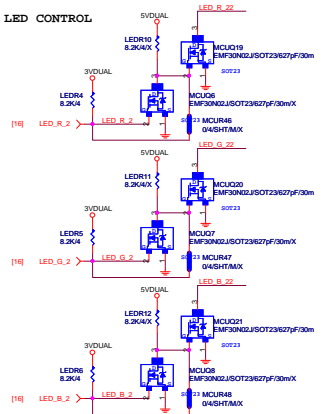
FOR PCH 正發光 LED\*3 (位置在正板,依據PCH\_HS設計擺放)



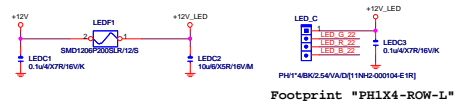
FOOTPRINT :LED-4P-RGB

www.teknisi-indonesia.com

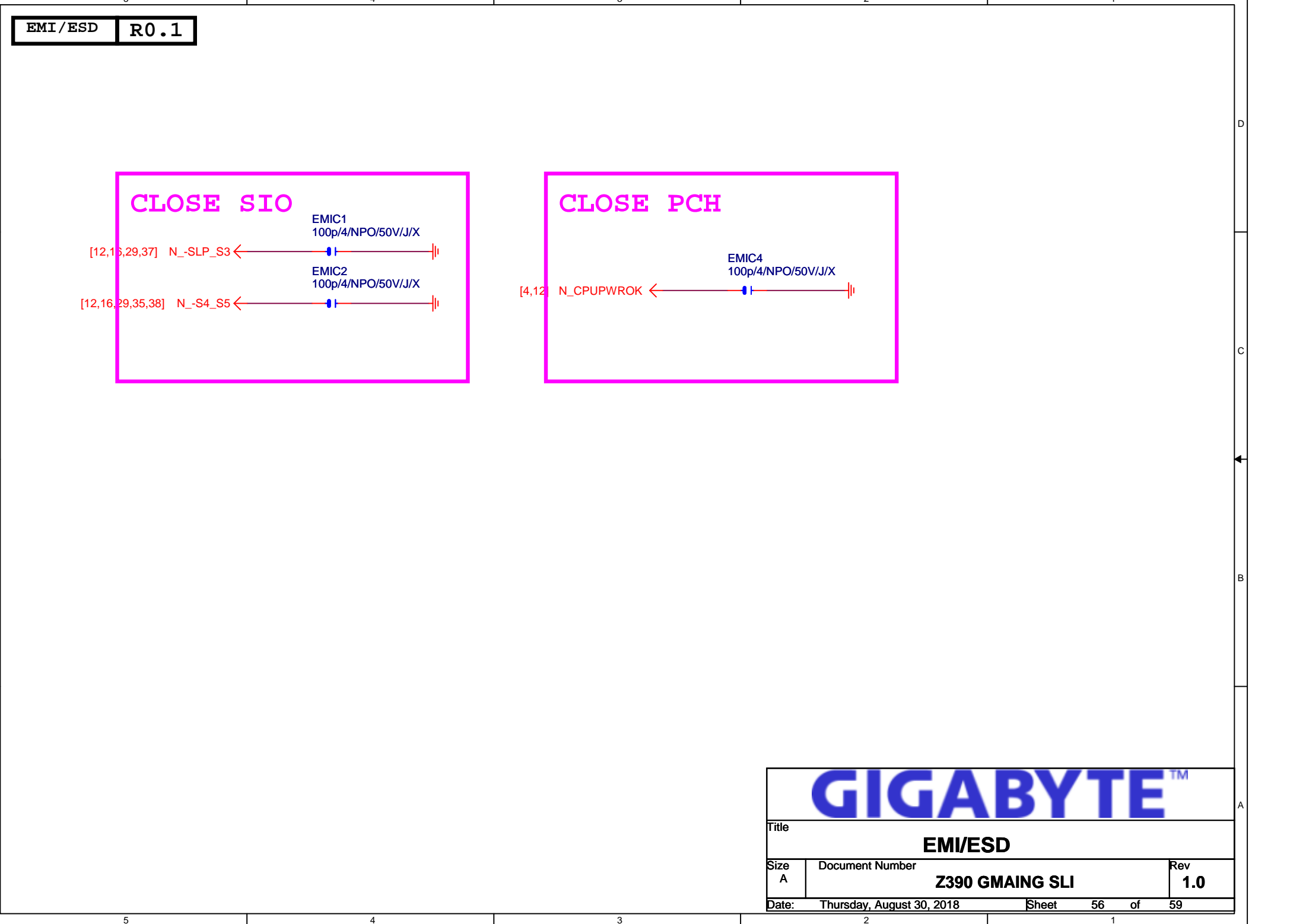
第二區 LED CONTROL



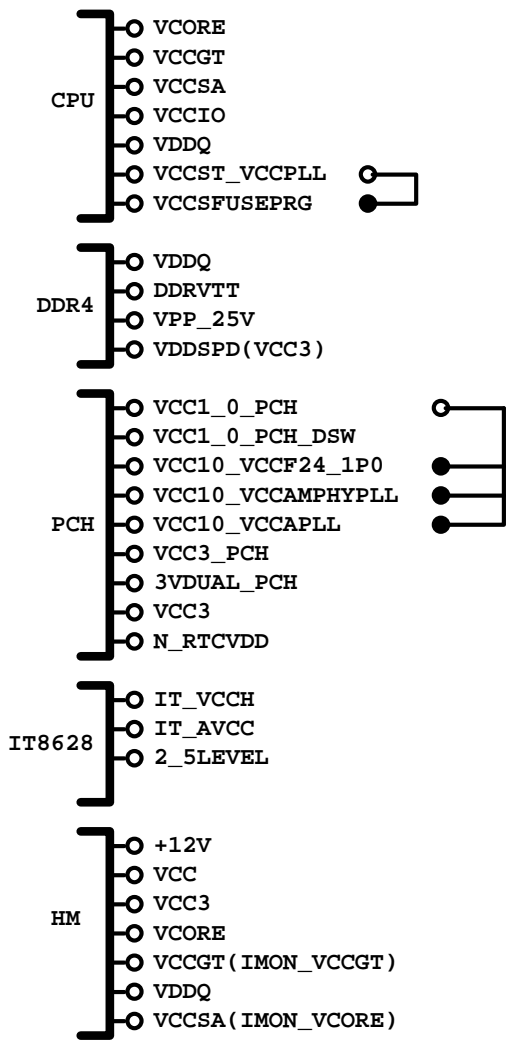
燈條 LED (LED\_C放在PCB左邊板邊位置)



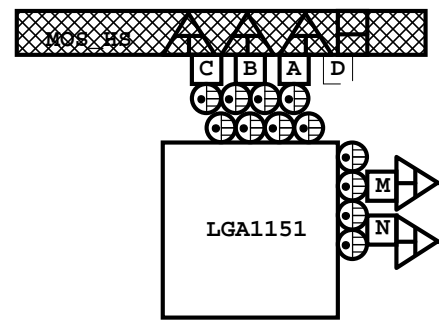
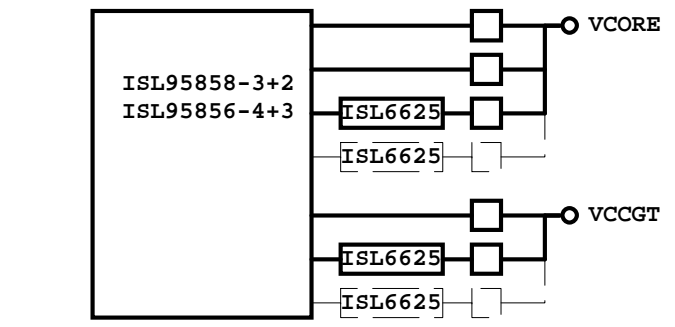
Footprint "PH1X4-ROW-L"



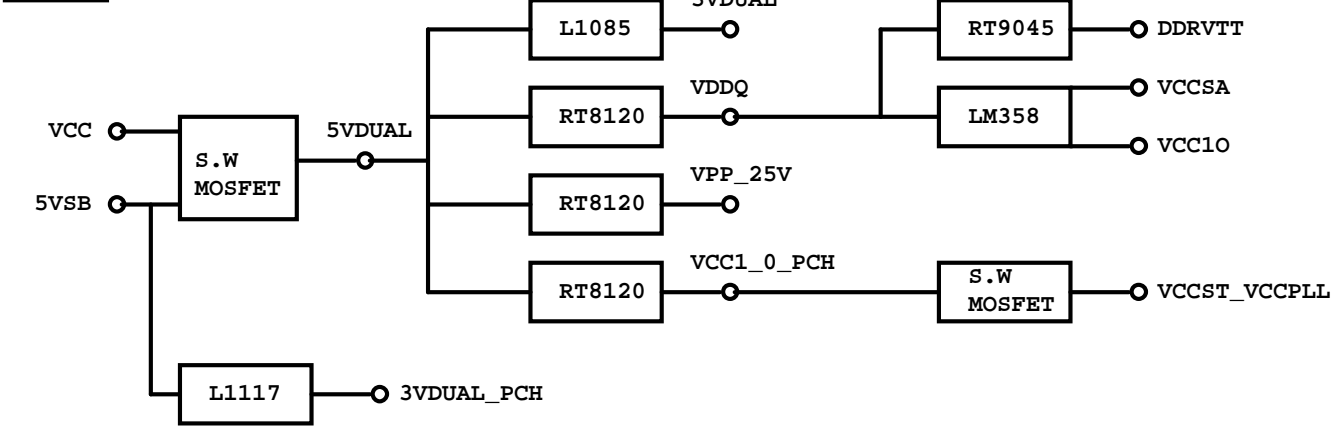
POWER BLOCK MAP



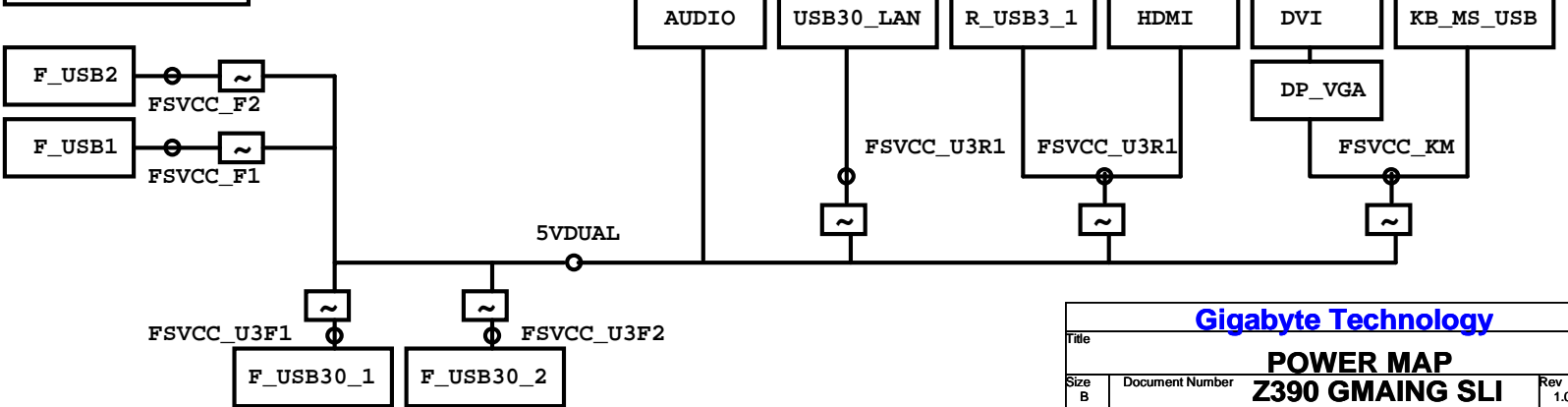
VCORE/VCCGT



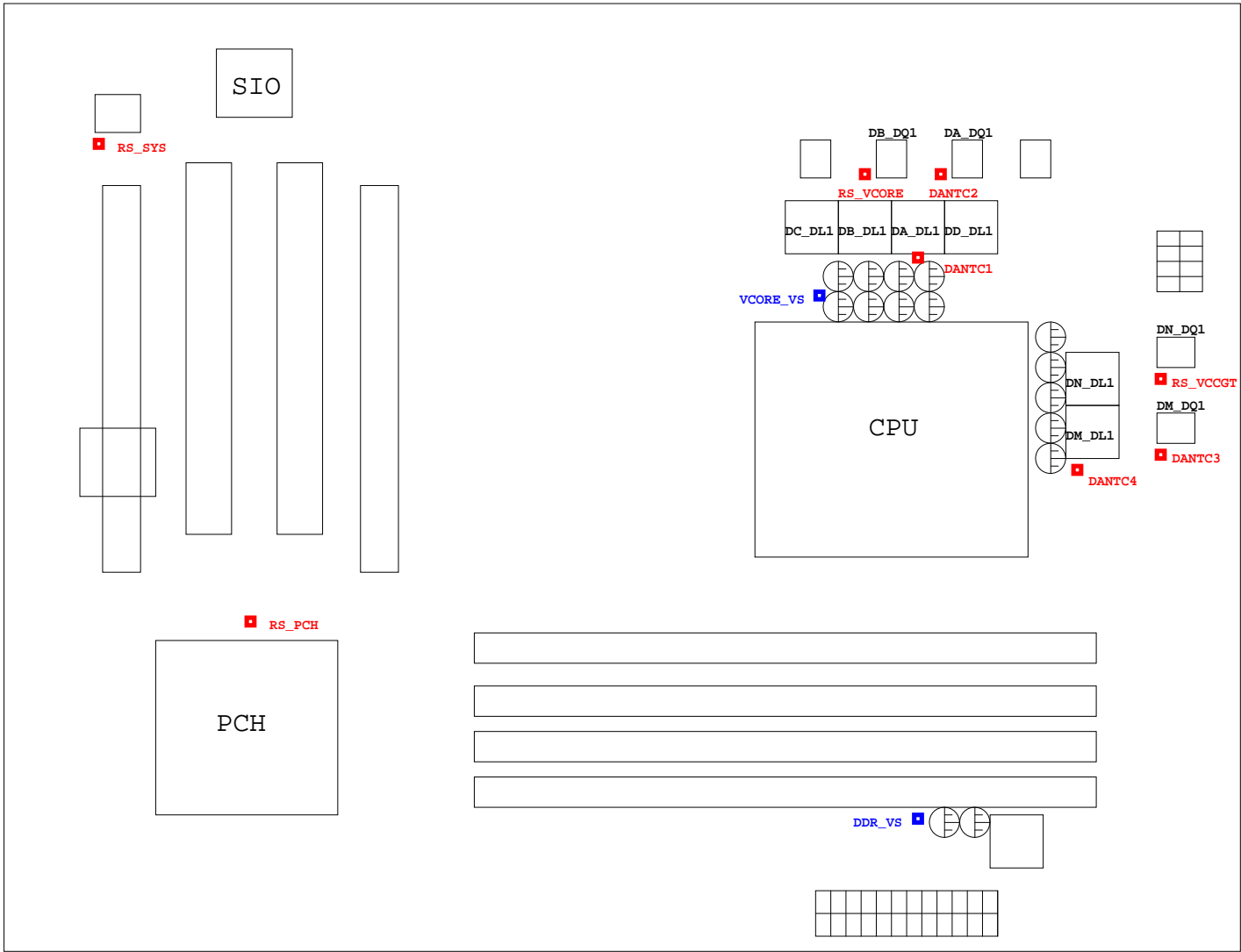
POWER



FUSE POWER F/R





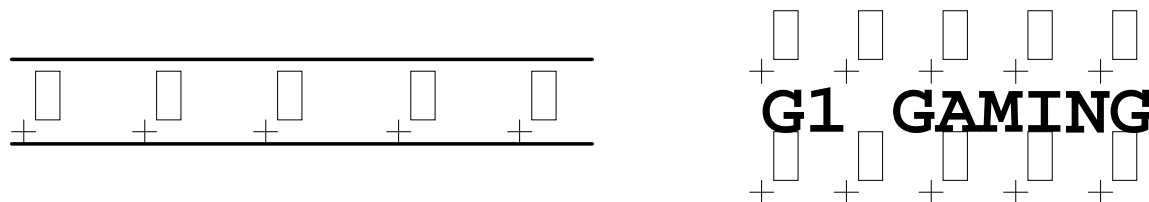


熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL1	N/A
DANTC2	DA_DQ1	Differential
DANTC3	DM_DQ1	N/A
DANTC4	DM_DL1	Differential
RS_VCORE	DB_DQ1	N/A
RS_VCCGT	DN_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A

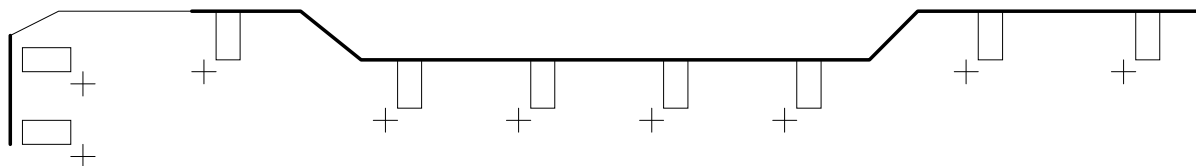
## RGB LED LAYOUT 注意事項：

1. Debug LED (各LED依CPU/DRAM/VGA/BOOT個別位置擺放)
2. 背板 RGB LED 方向整板請統一如下  
(整板正極可統一朝下或朝上)
3. 正板 RGB LED 統一方向即可
4. MCU\_PW & MCU\_PW33電源一律走20mils
5. ECF1,ECF2,ECF3,ECF5 兩端電源走80mils或用鋪銅方式加粗
6. MCU LED 出pin的走線4mils,如:LED\_R\_1,LED\_G\_1,LED\_B\_1 .....
7. LED RGBW rule :W/S=10/5 mils 如:LED\_R\_11,LED\_G\_11,LED\_B\_11..  
(包含從晶體到排阻到LED的net)
8. Digital LED NET rule W/S=4/8 mils  
GPD0\_SDA\_B,GPD0\_SDA\_BB,GPD0\_SDA\_C,GPD0\_SDA\_CC

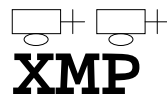
PCB板邊透光model name鏤空+背面 RGB LED



Audio Ground切割線+背面 RGB LED



"XMP"字樣鏤空+背面 RGB測發光 LED



Gigabyte Technology		
Title		
NTC MAP		
Size	Document Number	Rev
Custom	Z390 GMAING SLI	1.0
Date:	Thursday, August 30, 2018	Sheet 59 of 59