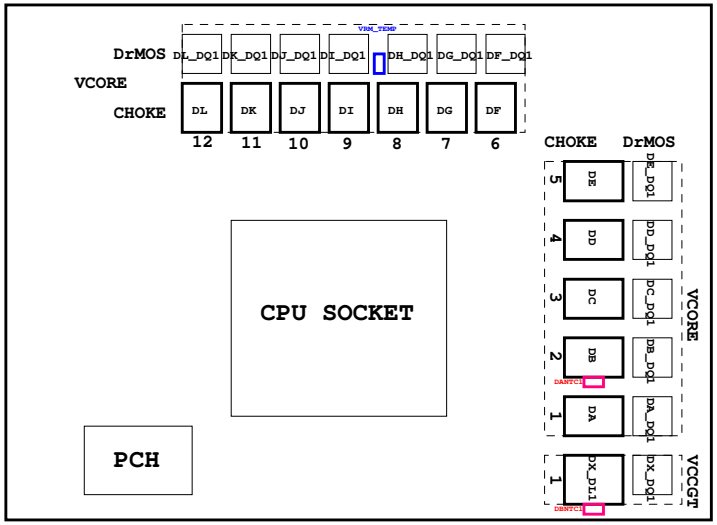
Model Name: B560M AORUS ELITE

Rev 1.03

SHEET	TITLE	
01	COVER SHEET	
02	BOM & PCB MODIFY HISTORY	
03	BLOCK DIAGRAM	
04	CPU_LGA1200-A	(RKL_R0.1)
05	CPU_LGA1200-B-DDR4	(RKL_R0.1)
06	CPU_LGA1200-C	(RKL_R0.1)
07	CPU_LGA1200-D	(RKL_R0.1)
08	DDR 4 CHANNEL A	(CML_R0.1)
09	DDR 4 CHANNEL B	(CML_R0.1)
10	PCH CLK,DMI,CNVI	(RKL_R0.1)
11	PCH SPI,USB	(RKL_R0.1)
12	PCH PCIE,SATA	(RKL_R0.1)
13	PCH ESPI,MISC	(RKL_R0.1)
14	PCH GPP,HDA	(RKL_R0.1)
15	PCH PWR, GND	(RKL_R0.1)
16	Heatsink	
17	ITE ITE8689	(RKL_R0.1)
18	HWM	(RKL_R0.1)
19	FAN CTRL-CFL-SIO_5 FAN	(RKL_R0.1)
20	Single BIOS for CS mode	(RKL_R0.1)
21	PCI EXPRESS X16 SLOT	(REV0.3)
22	PCI EXPRESS X4 SLOT(PCH)	(REV0.51)
23	PCI EXPRESS X1	(REV0.51)
24	SATA	
25	M.2 x4 (A)_SB	(RKL_R0.1)
26		(RKL_R0.1)
27	POSCAP_0+0_H570_Q570	(RKL_R0.1)
28	M.2 x4 (P)_CPU	(RKL_R0.1)
29	COM,LPT,TPM, THB	(CML_R0.94)
30	ISL69269_L=0.15u	(RKL_R0.1)
31	RAA229001_L=0.15u	(RKL_R0.1)
32	VCORE_PSTAGE-1_L=0.15u	(RKL_R0.1)
33	VCORE_PSTAGE-2_L=0.15u	(RKL_R0.1)
34	VCORE_PSTAGE-3_L=0.15u	(RKL_R0.1)
35	VCCGT_PSTAGE_L=0.15u	(RKL_R0.1)
36	VCCSA_MOS	(RKL_R0.1)
37	VCCIO-Ferrite-Z系列	(RKL_R0.1)
38	VCCIO2-Ferrite-Z系列	(RKL_R0.1)
39	RT8237_DDR_B560	(RKL_R0.1)
40	RT8068A_VPP_B560	
41	NCP81269_VCC18_PCH	
42	RT8068_VCC1V8_PRIM	
43	DISCRETE POWER	(REV0.1)
44	ATX POWER , A_-PROCHOT	
45	GL850S_1_Rear USB20 X4	(CML_R0.94)
46	CNVi_M2_WIFI	(CML_R0.94)
47	HDMI / DP	(RKL_R0.1)
48	U32G2	(RKL_R0.1)
49		(RKL_R0.1)

SHEET	TITLE	
50	GL850S_2_ Fornt USB20 X4	(CML_R0.94)
51	ITE5201_G_Type-C	(RKL_R0.1)
52	RTS5411 4port Hub (Chip)	(RKL_R0.1)
53	Front Type-C	(CML_R0.94)
54	F_U32	(CML_R0.94)
55	KB_MS_USB	(CML_R0.94)
56	Redriver_A_Type-A	(RKL_R0.1)
57	REALTEK RTL8125BS	(CML_R0.3)
58	USB30_LAN CONNECTOR-8125	(CML_R0.3)
59	Realtek ALC897	(RKL_R0.6)
60	REAR AUDIO JACK	(RKL_R0.6)
61	CPU POWER-1	(RKL_R0.1)
62	CPU POWER-1	(RKL_R0.1)
63	NCT3933	
64	F_PANEL	
65	IT5702	(RKL_R1.0)
66	PCH/AUDIO/DEBUG/C_LED1/2	(RKL_R1.0)
67	D_LED1/D_LED2	
68	SMBUS SWITCH	(RKL_R0.1)
69		(RKL_R0.1)
70	EMI-ESD	
71	POWER MAP	
72	NTC MAP	



Gigabyte Technology

Title: Cover Sheet

Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.03

Date: Wednesday, February 24, 2021 | Sheet 1 of 72

Model Name : B560M AORUS ELITE

Component value change history

2021/02/18

Data	Change Item	Reason
2020/09/28	1.由B560M AORUS PRO Rev 0.1來修改 2.修改PWM VCORE/VCCGT/VCCSA 3.修改LAN to RTL8125 4.修改IT5702 LED 5.修改AUDIO 6.新增power output電容NPA_C21,NPA_C22, FGC2,FGC3 改0805 7.HU2AX1,U2BX1改SMD 8.Remove USBG2X2 9.USB port已經完成 10.CNVI改平躺	Rev:0.1
2020/12/01	1.Remove NR23 2.Remove NR54 3.Remove NR176	Rev:0.2
2020/12/14	1.DP Add DPAQ8,DPAQ9	Rev:0.2
2021/01/12	1.VCCIO,VCCIO2改TI TPS51215A	Rev:1.02

Circuit or PCB layout change

DATE	Change Item	Reason
2020/09/28	B560M AORUS ELITE Rev 0.1 Layout Request	Rev:0.1
2020/12/01	1.由B560M AORUS ELITE Rev 0.1來修改 2.F_U32C 改CC MUX 3.HDMI改Level shift 4.Remove DMI 4~7 5.0 ohm 改short pad, WR87/WR125/WR104/WR95/NR169/NR32/NR167/NR166/NR9/NR66/NR93/NR95/NR92/NR224/DGR36 6.MABC19,MABC13, OBC15, OBC2,BC46,BC48改0201 7.NR25改接3vdual 8.Add CNVR22,close PCH 9.CNVI_BRI_DT與週邊線隔10mils	Rev:0.2
2020/12/28	1.由B560M AORUS ELITE Rev 0.2來修改 2.TMOS footprint change to SINK_B560M_AORUS_ELITE-T	Rev:1.0
2021/01/07	1.由B560M AORUS ELITE Rev 1.0來修改 2.PVID space均調整20mils	Rev:1.01
2021/01/12	1.由B560M AORUS ELITE Rev 1.01來修改 2.VCCIO,VCCIO2改TI TPS51215A	Rev:1.02
2021/02/18	1.由B560M AORUS ELITE Rev 1.02來修改 2.文字面加UKCA	Rev:1.03

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Title	BOM & PCB MODIFY HISTORY	
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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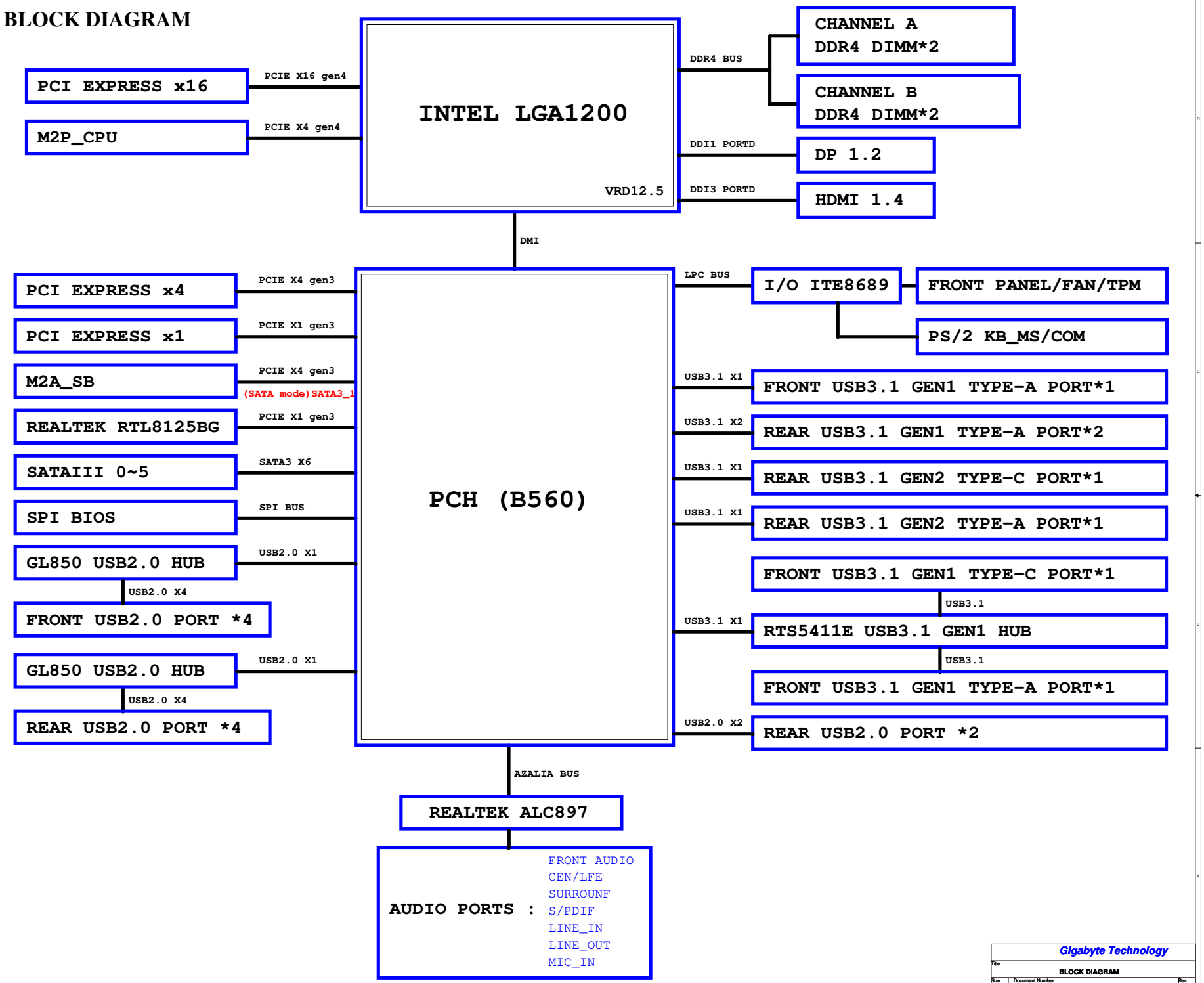
BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: Custom	Document Number: B560M AORUS ELITE		Rev: 1.03
Date: Wednesday, February 24, 2021	Sheet 3 of 72		

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

CFG[4]: 1=eDP enable / 0=eDP disable
CFG[7]: 1=PEG Train immediately following RESET
0=PEG Wait for BIOS

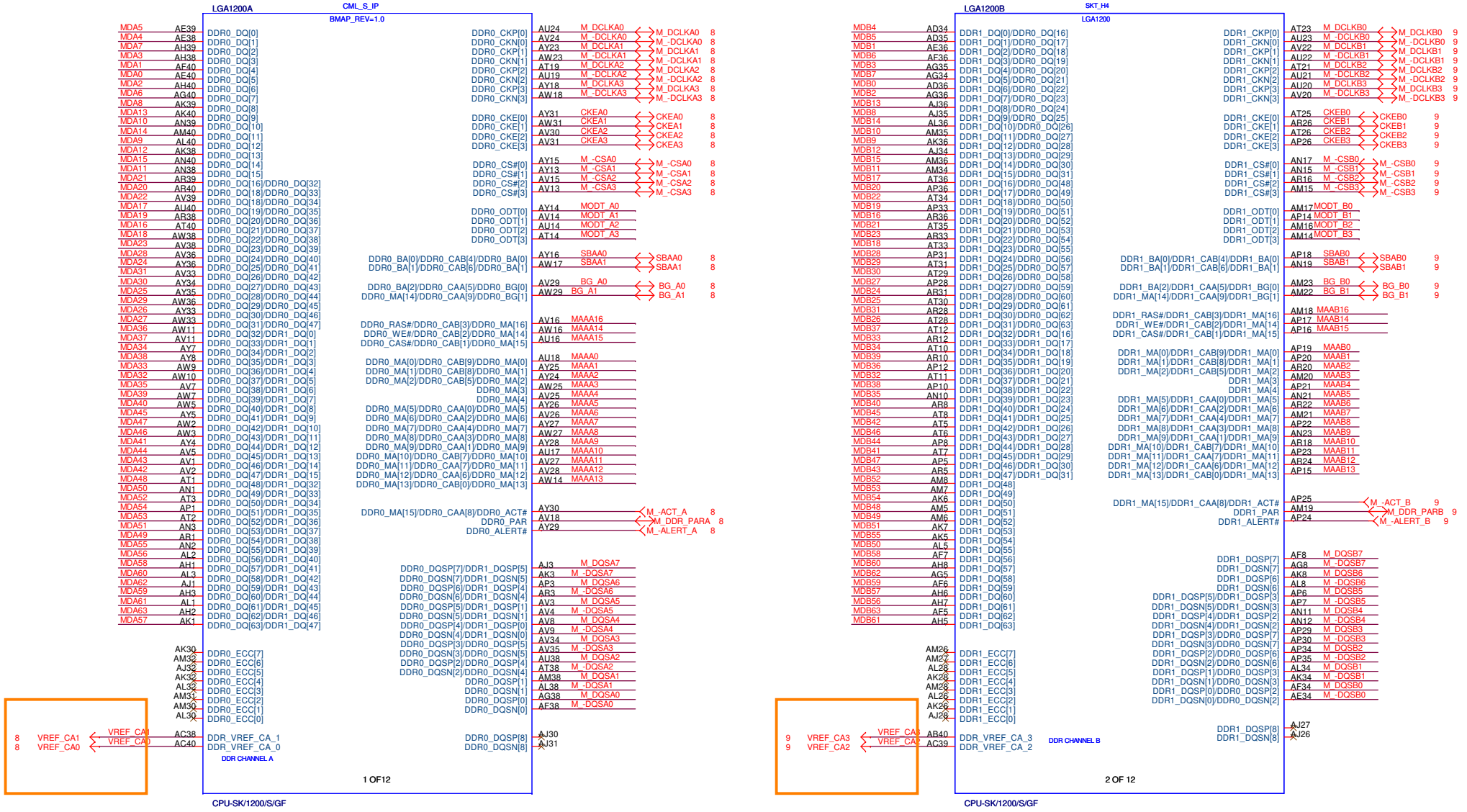
CFG[13]: 1=VCCSA Fixed Mode / 0=SVID Mode

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

* CPU_ID
1: RKL -->VCCIO=1.0V
0: CML -->VCCIO=0V

若有不上CODEC出貨的可能，請預留CLK and SDO對地電阻。

Gigabyte Technology	
Title	CPU LGA1200-A
Size: Custom	Document Number: B560M AORUS ELITE
Rev	1.03
Date: Wednesday, February 24, 2021	Sheet 4 of 72



黑色cover

LGA1200
ILM_BP_CR/1200/BKNI/[12KRC-SF0001-83R_12KRC-SF0001-84R]

Gigabyte Technology

Title	CPU LGA1200-B	
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
Date: Wednesday, February 24, 2021	Sheet 5 of 72	

VCCSA
WBC56 22u/6/X5R/6.3V/M
WBC57 22u/6/X5R/6.3V/M
DCC56 22u/6/X5R/6.3V/M
放CPU SOCKET (TOP LAYER)

VCCSA
WBC52 47u/8/X5R/6.3V/M/X
放CPU SOCKET (Bottom LAYER)
change footprint to C0805-L-1

VCCIO2
WBC77 22u/6/X5R/6.3V/M
WBC78 22u/6/X5R/6.3V/M
放CPU SOCKET (TOP LAYER)

VCCIO2
WBC70 22u/6/X5R/6.3V/M/X
WBC71 22u/6/X5R/6.3V/M/X
WBC72 22u/6/X5R/6.3V/M
放CPU SOCKET (Bottom LAYER)

VCCIO
WBC53 22u/6/X5R/6.3V/M
WBC54 22u/6/X5R/6.3V/M
WBC59 22u/6/X5R/6.3V/M
放CPU SOCKET (TOP LAYER)

+VCCDDQ_EDGECAP2
+VCCDDQ_EDGECAP1
WBC75 22u/6/X5R/6.3V/M
WBC76 22u/6/X5R/6.3V/M
放CPU SOCKET (Bottom LAYER)

3VDUAL_PCH
VCCST_VCCPLL
WR107 0/4/X
WR106 0/4/X
U4
10 A_SUSCLK
A_SUSCLK
VCCB VCCA
B A
GND DIR
WR114 0/4/X A_RTCCLK
74AVC1T45GW/SC70/S/[10TA1-150145-00R]/X
*CML增加,RKL才會用到

VCCGT
LGA1200J SKT_H4
LGA1200
VCCGT_SENSE AB37
VSSGT_SENSE AB38
VCCGT_SENSE 31
VSSGT_SENSE 31
CPU-SK/1200/S/GF
10 OF 12

VCCIO_1_2
VOUT = 0.95V
IOUT = 9.5A

VCCIO_0
VOUT = 0.95V FOR CML
VOUT = 1.05V FOR RKL
IOUT = 8A

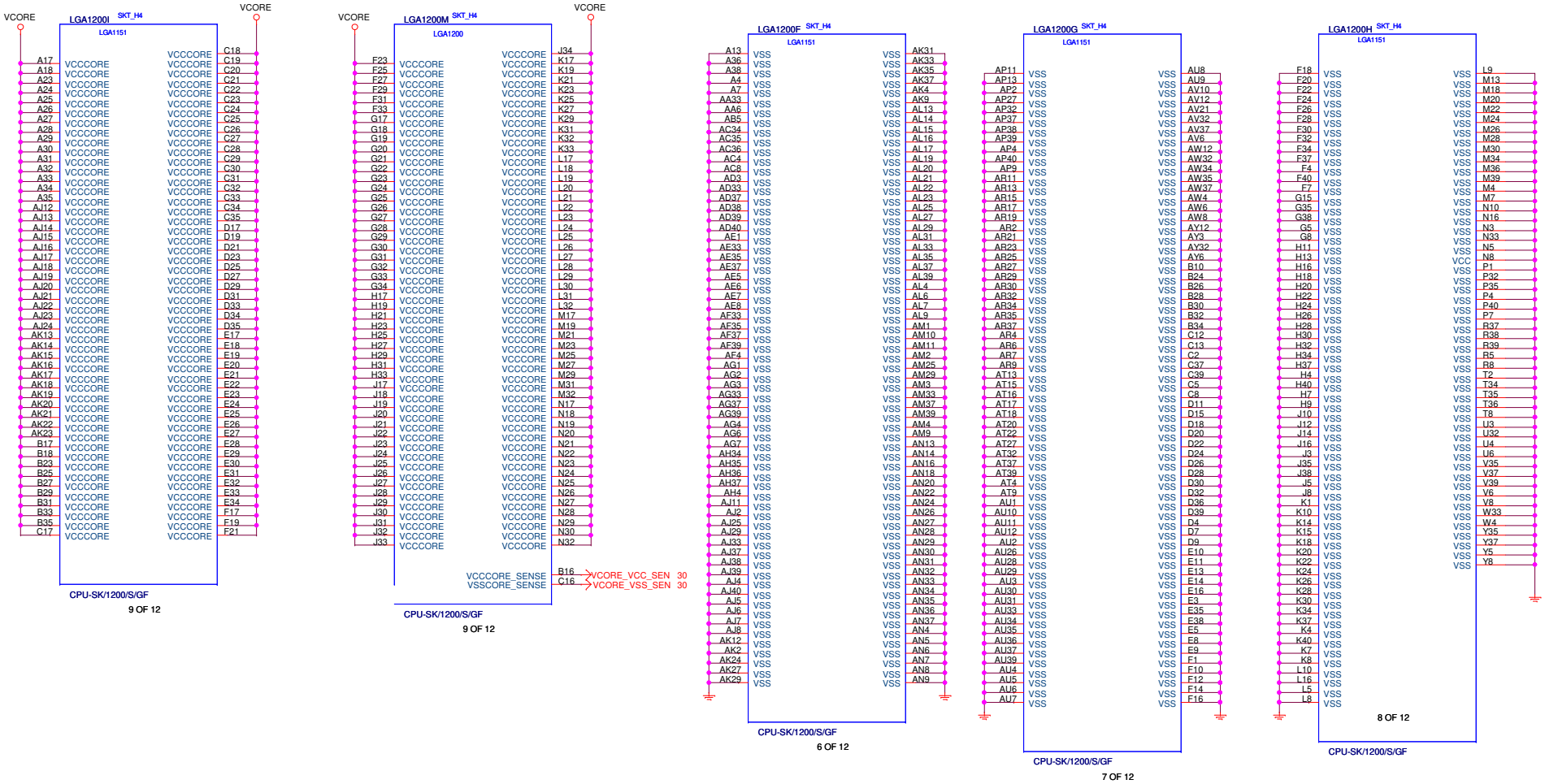
31 VCCSA_SENSE
38 VCCIO2_SENSE
37 VCCIO_SENSE
31,37 VSSSA_VIO_SENSE

VCCSA
LGA1200K SKT_H4
LGA1200
VCCIO2
VCCIO
VDDQ
VCCDDQ_EDGECAP2
VCCDDQ_EDGECAP1
+VCCDDQ_EDGECAP2
+VCCDDQ_EDGECAP1
VCCST_VCCPLL
VCCSFR
VCCSFR_OC
VCCSTG
VCCFPGM
VCCFPGM0
VCCFPGM1
VCCFPGM2
WR87 0/4/SHT/20/M/X
WR125 0/4/SHT/20/M/X
WR104 0/4/SHT/20/M/X
WR86 0/4/X
WR95 0/4/SHT/20/M/X
WBC124 1u/4/X5R/6.3V/K
WBC96 47u/8/X5R/6.3V/M
C6 VCCSA_SENSE
AE4 VCCIO_1_2_SENSE
D5 VCCIO_0_SENSE
D6 VSS_SA_VCCIO_0_SENSE
10 OF 12
CPU-SK/1200/S/GF

LGA1200L SKT_H4
LGA1200
FIVR_PROBE_ANA_1
FIVR_PROBE_ANA_0
EXTBGREF
DDR_VIEW_1
DDR_VIEW_0
PEG_VIEW_3
PEG_VIEW_2
PE16_AMON2_PEG_VIEW_1
PE16_AMON1_PEG_VIEW_0
PE4_AMON2
PE4_AMON1
DMI_AMON2
DMI_AMON1
CPU_EDM_1
CPU_EDM_0
H_RTCCLK
A_RTCCLK
THERMDA2
THERMDC2
THERMDA1
THERMDC1
CPU_TRIGGEROUT
CPU_TRIGGERIN
VCCCOREG5
VCCCOREG4
RSVD_M16
RSVD_M33
RSVD_N4
RSVD_T33
WTP3
WR88 33/4
A_CPU_PCH_TO_R
A_CPU_PCH_TO 11
N_PCH_CPU_TI 11
12 OF 12
CPU-SK/1200/S/GF

10 N_CPURTCCLK
WR113 0/4 A_RTCCLK

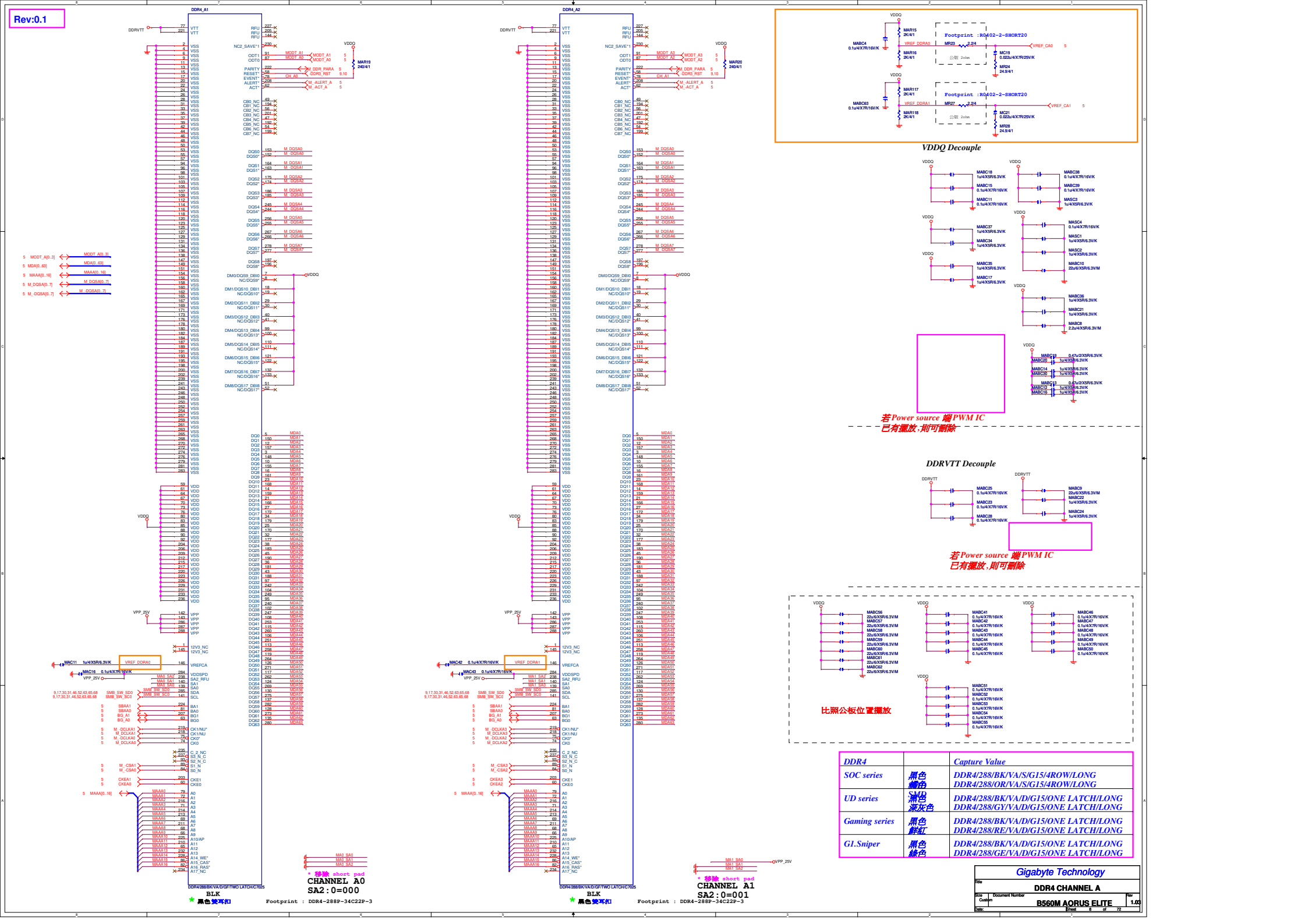
Gigabyte Technology		
Title: CPU LGA1200-C		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
Date: Wednesday, February 24, 2021	Sheet 6 of 72	



* 刪 Vcore 電容

Gigabyte Technology		
Title: CPU LGA1200-D		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
Date: Wednesday, February 24, 2021	Sheet 7 of 72	

Rev:0.1



DDR4		Capture Value
SOC series	黑色 橘色	DDR4/288/BK/VA/S/G15/4ROW/LONG DDR4/288/OR/VA/S/G15/4ROW/LONG
UD series	SMD 黑色 深灰色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GY/VA/D/G15/ONE LATCH/LONG
Gaming series	黑色 鮮紅	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/RE/VA/D/G15/ONE LATCH/LONG
G1.Sniper	黑色 綠色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GE/VA/D/G15/ONE LATCH/LONG

Gigabyte Technology

Title: DDR4 CHANNEL A

Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.03

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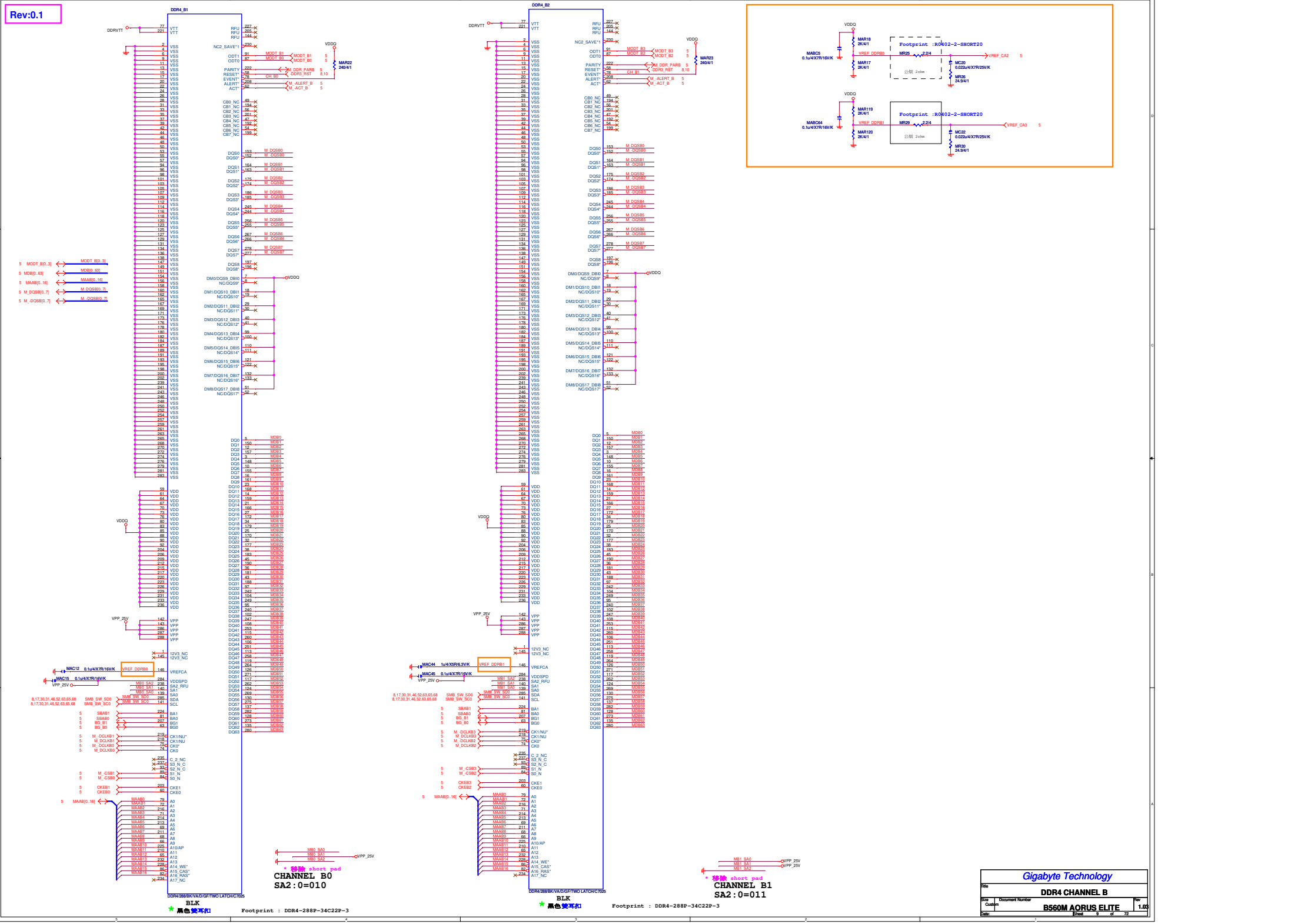
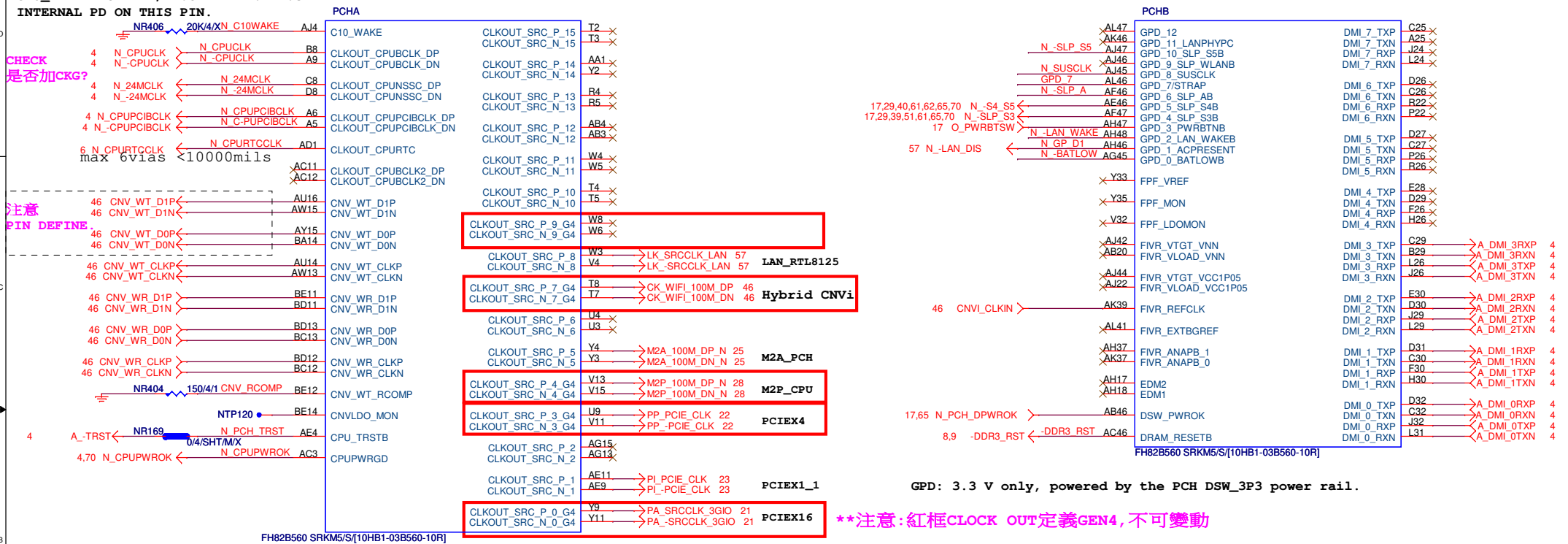
Rev:0.1



Gigabyte Technology	
Title	DDR4 CHANNEL B
Size: Custom	Document Number: B560M AORUS ELITE
Rev: 1.03	
Date:	Sheet 9 of 72

RKL_TGP_PCH-H R0.1

C10_WAKE RESERVED/BIOS NEED TO PROGRAM INTERNAL PD ON THIS PIN.

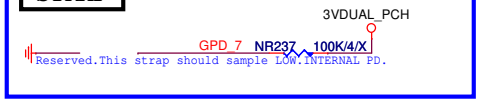


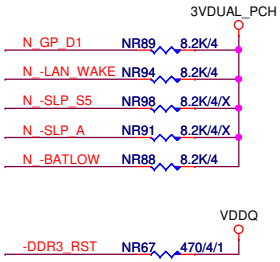
GPD: 3.3 V only, powered by the PCH DSW_3P3 power rail.

**注意:紅框CLOCK OUT定義GEN4,不可變動

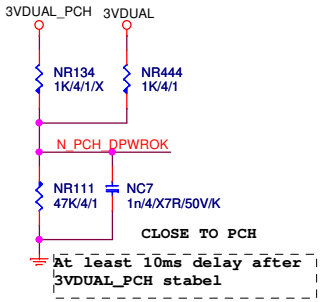
CLKOUT_PCIE_P/N [9, 7, 4, 3, 0] = Must be used for PCIe* Gen4 support

STRAP





N_SUSCLK MAX 2 LOADS SUPPORTED



ANS 8684535

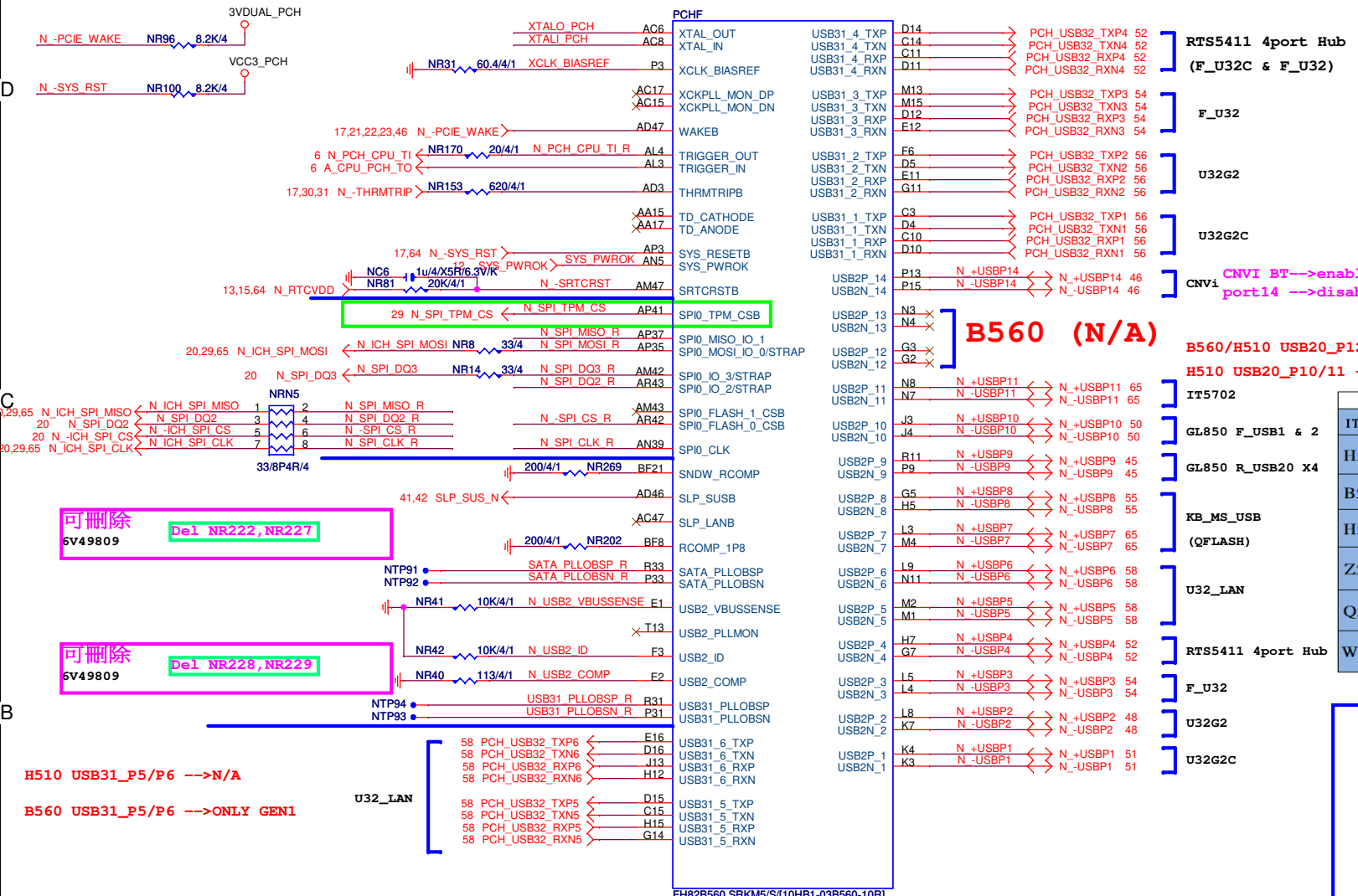
Gigabyte Technology

Title: PCH CLK,DMI,CNVI

Size: B | Document Number: B560M AORUS ELITE | Rev: 1.03

Date: Wednesday, February 24, 2021 | Sheet 10 of 72

RKL_TGP_PCH-H R0.1



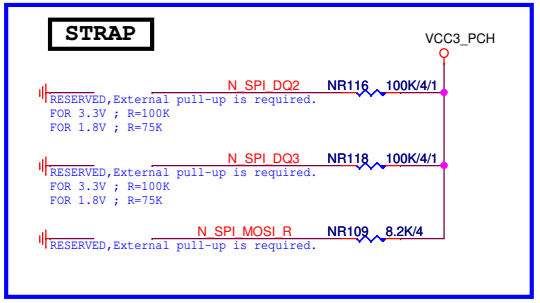
Intel 500 series PCH USB configration P1~P6

ITEM	USB P1	USB P2	USB P3	USB P4	USB P5	USB P6
H510	U3.2 Gen1x1	U3.2 Gen1x1	U3.2 Gen1x1	U3.2 Gen1x1	NA	NA
B560	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen1x1	U3.2 Gen1x1
H570	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen1x1	U3.2 Gen1x1
Z590	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1
Q570	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1
W580	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1
	Gen2x2		Gen2x2		Gen2x2	

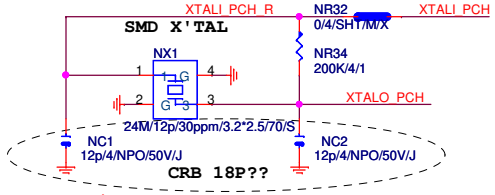
Intel 500 series PCH USB20 configration

ITEM	USB P1~9	USB P10	USB P11	USB P12	USB P13	USB P14
H510	USB2	NA	NA	NA	NA	For Intel® Wireless-AC
B560	USB2	USB2	USB2	NA	NA	
H570	USB2	USB2	USB2	USB2	USB2	
Z590	USB2	USB2	USB2	USB2	USB2	
Q570	USB2	USB2	USB2	USB2	USB2	
W580	USB2	USB2	USB2	USB2	USB2	

STRAP



CLK 24MHZ



CLK:4/15<1000 mils±100 mils;Guard GND

PCH Signal Glitch Free

ANS 8684535

Gigabyte Technology

Title: PCH SPI,USB

Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.03

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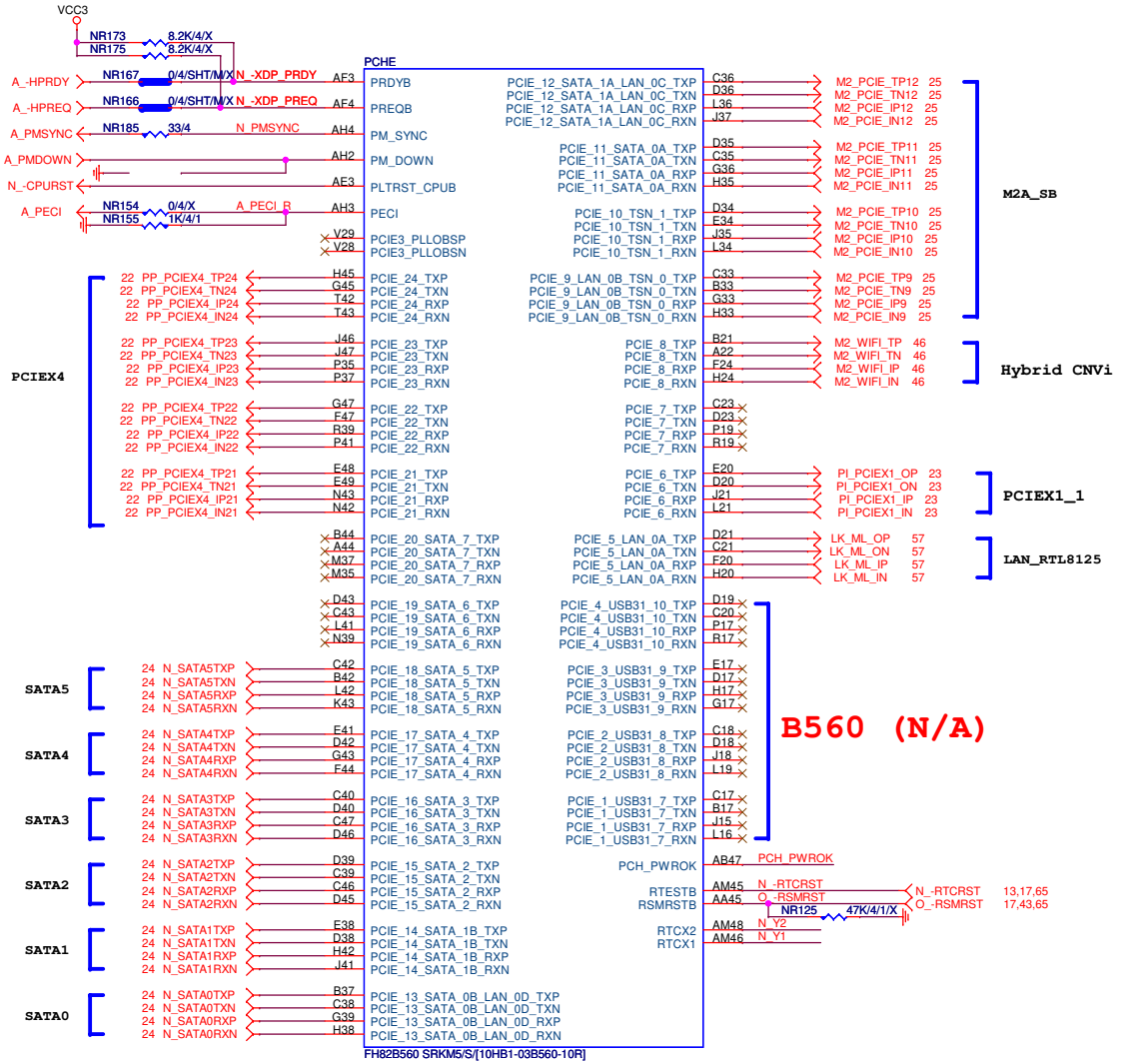
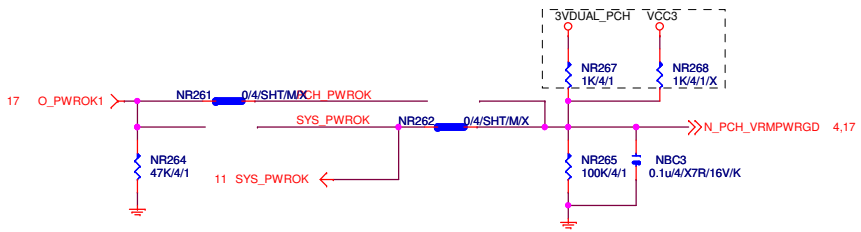
RKL_TGP_PCH-H R0.1





Intel 500 series PCH PCIE P5~P12								
ITEM	PCIE P5	PCIE P6	PCIE P7	PCIE P8	PCIE P9	PCIE P10	PCIE P11	PCIE P12
H510	PCIE /GbE	PCIE	PCIE	PCIE	GbE ONLY	N/A	PCIE	PCIE /GbE
B560	PCIE /GbE	PCIE	PCIE	PCIE	PCIE /GbE	PCIE	PCIE SATA_0'	PCIE SATA_1' GbE
H570	PCIE /GbE	PCIE	PCIE	PCIE	PCIE /GbE	PCIE	PCIE SATA_0'	PCIE SATA_1' GbE
Z590	PCIE /GbE	PCIE	PCIE	PCIE	PCIE /GbE	PCIE	PCIE SATA_0'	PCIE SATA_1' GbE
Q570	PCIE /GbE	PCIE	PCIE	PCIE	PCIE /GbE	PCIE	PCIE SATA_0'	PCIE SATA_1' GbE
W580	PCIE /GbE	PCIE	PCIE	PCIE	PCIE /GbE	PCIE	PCIE SATA_0'	PCIE SATA_1' GbE
					Intel® RST for x2/x4 M.2			

Intel 500 series PCH PCIE P13~P24												
ITEM	PCIE P13	PCIE P14	PCIE P15	PCIE P16	PCIE P17	PCIE P18	PCIE P19	PCIE P20	PCIE P21	PCIE P22	PCIE P23	PCIE P24
H510	SATA_0 /GbE	SATA_1	SATA_2	SATA_3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B560	SATA_0 /GbE	SATA_1	SATA_2	SATA_3	SATA_4	SATA_5	N/A	N/A	PCIE	PCIE	PCIE	PCIE
H570	PCIE SATA_0 GbE	PCIE SATA_1	PCIE SATA_2	PCIE SATA_3	PCIE SATA_4	PCIE SATA_5	PCIE	PCIE	PCIE	PCIE	PCIE	PCIE
Z590	PCIE SATA_0 GbE	PCIE SATA_1	PCIE SATA_2	PCIE SATA_3	PCIE SATA_4	PCIE SATA_5	PCIE	PCIE	PCIE	PCIE	PCIE	PCIE
Q570	PCIE SATA_0 GbE	PCIE SATA_1	PCIE SATA_2	PCIE SATA_3	PCIE SATA_4	PCIE SATA_5	PCIE	PCIE	PCIE	PCIE	PCIE	PCIE
W580	PCIE SATA_0 GbE	PCIE SATA_1	PCIE SATA_2	PCIE SATA_3	PCIE SATA_4	PCIE SATA_5	PCIE SATA_6	PCIE SATA_7	PCIE	PCIE	PCIE	PCIE
					Intel® RST for x2/x4 M.2				Intel® RST for x2/x4 M.2			

Intel 500 series PCH USB P7~P10				
ITEM	USB P7	USB P8	USB P9	USB P10
H510	NA	NA	NA	NA
B560	NA	NA	NA	NA
H570	U3.2 Gen1x1	U3.2 Gen1x1	PCIE	PCIE
Z590	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1
	PCIE	PCIE	PCIE	PCIE
Q570	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen1x1	U3.2 Gen1x1
	PCIE	PCIE	PCIE	PCIE
W580	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1	U3.2 Gen2x1
	PCIE	PCIE	PCIE	PCIE

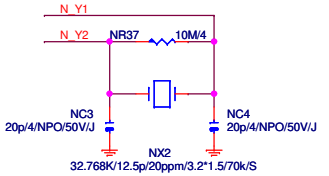
RTC 32.768KHZ

DIP X'TAL

Del DIP NX1

OPTION

SMD X'TAL



(09/21)intel 500 note item 6

ANS 8684535

Gigabyte Technology

Title: **PCH PCIE,SATA**

Size: Custom | Document Number: **B560M AORUS ELITE** | Rev: 1.03

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RKL_TGP_PCH-H R0.1

GPP_D PU/PD

GPP_B PU/PD

3VDUAL
NR296 8.2K/4 N_-VRALERT
N_-SLP_S0 NR438 100K/4/1

3VDUAL
CLKREQ
NR2 8.2K/4 N_GPP_B5 PCIEX16
NR3 8.2K/4 N_GPP_B6 PCIEX1_1
NR5 8.2K/4 N_GPP_B8 PCIEX4
NR6 8.2K/4 N_GPP_B9 M2P_CPU
NR11 8.2K/4 N_GPP_B10 M2A_SB
ON-BOARD DEVICE PULL DOWN
N_GPP_B9 NR13 8.2K/4/X
N_GPP_B10 NR17 8.2K/4/X

PCHD

14 N_GPP_D23 N_GPP_D23 AU29
*W_BUTTON LED
AUDIO
AUDIO beat mode
U32GEN2*2
PCIEX4_PRSNT
PCIEX4_PRSNT
MINI LOAD
N_SML1DAT BB30
44 N_GPP_D11 BD32
57 N_SML0DAT BC33
57 N_SML0CLK BE32
46 -CNVI_PCM_CLK BD36
46 CNVI_PCM_IN BE36
46 CNVI_CLKREQ AY33
46 -CNVI_RF_RESET BA33
N_SML1CLK BF33
U32GEN2*2
FOR OC BUTTON
BD33
BE33
AW32
AU31

THB_C 29 N_GPP_C23 BB26
PCIEX16 BIFURCATION
THB_C 29 N_GPP_C21 AU26
PCIEX16 BIFURCATION
RTS5411 HUB2
RTS5411 HUB1 52 N_GPP_C18 AW26
ENC
ENC
PCIEX8 BIFURCATION
PCIEX16 BIFURCATION
PCIEX16 BIFURCATION
SMBUS_SW 68 N_GPP_C10 BD20
QFLASH+/CLR_MOS_LED
BIOS_LED
USB_DAC_Q2_DISABLE
USB_DAC_Q1_DISABLE
N_GPP_C5 BE21
BD21
BC22
BF23
BD24
BD23
BC28
BD29
BF29
BE29
BE27
BB24
AY24
BD27
BE25
BE24
17 N_-LPCPME NR9 0/4/SHT/M/X N_GPP_C2 BD26
68 N_SMBDATA N_SMBDATA BD25
68 N_SMBCLK N_SMBCLK BE26

N_-PCH_HOT BD42
N_GPP_B22 AW41
17 N_GPP_B20 N_GPP_B20 BE46
N_GPP_B18 BB42
N_GPP_B17 BD45
CPU_OPT MODE 19 N_GPP_B17 AU36
SYS_FAN3 MODE 19 N_GPP_B16 BA36
SYS_FAN2 MODE 19 N_GPP_B15 AY38
64 N_SPKR N_SPKR BA39
17,65 N_-PFMRST N_-PFMRST BD40
17,30 N_-SLP_S0 N_-SLP_S0 BD39
BE40
BE39
M2A_SB 25 M2A_-CLKREQ N_GPP_B10 BD38
M2P_CPU 28 M2P_-CLKREQ N_GPP_B9 BE38
PCIEX4 22 -PCIEX4_PR N_GPP_B8 BF37
BD37
PCIEX1 23 -PCIEX1_PR1 N_GPP_B6 BC38
PCIEX16 21 -PCIEX16_PR N_GPP_B5 BC37
SYS_FAN1 MODE 19 N_GPP_B4 AU34
CPU_FAN MODE 19 N_GPP_B3 AW35
N_-VRALERT AY35
AY42
REMOVE N_-DDR_V_SEL AW37

GPP_D_23_UART3_CTSB_THC1_SPI2_INTB
GPP_D_22_UART3_RTSB_THC1_SPI2_RSTB
GPP_D_21_UART3_TXD_THC1_SPI2_IO_3
GPP_D_20_UART3_RXD_THC1_SPI2_IO_2
GPP_D_19_GSPI3_MOSI_THC1_SPI2_IO_1
GPP_D_18_GSPI3_MISO_THC1_SPI2_IO_0
GPP_D_17_GSPI3_CLK_THC1_SPI2_CLK
GPP_D_16_GSPI3_CS0B_THC1_SPI2_CSB
GPP_D_15_SML1DATA
GPP_D_14_SPI1_IO_3_THC0_SPI1_IO_3
GPP_D_13_SPI1_IO_2_THC0_SPI1_IO_2
GPP_D_12_ISH_UART0_CTSB_SML0BALERTB
GPP_D_11
GPP_D_10_SML0DATA
GPP_D_9_SML0CLK
GPP_D_8_I2S2_SCLK_THC0_SPI1_INTB
GPP_D_7_I2S2_RXD_THC0_SPI1_RSTB
GPP_D_6_I2S2_TXD_MODEM_CLKREQ_CRF_XTAL_CLKREQ
GPP_D_5_I2S2_SFRM_CNV_RF_RESET_B
GPP_D_4_SML1CLK
GPP_D_3_SPI1_MOSI_IO_0_THC0_SPI1_IO_0_SBK_3_BK_3
GPP_D_2_SPI1_MISO_IO_1_THC0_SPI1_IO_1_SBK_2_BK_2
GPP_D_1_SPI1_CLK_THC0_SPI1_CLK_SBK_1_BK_1
GPP_D_0_SPI1_CSB_THC0_SPI1_CSB_SBK_0_BK_0

GPP_C_23_UART2_CTSB_CNV_MFUART0_CTS_B
GPP_C_22_UART2_RTSB_CNV_MFUART0_RTS_B
GPP_C_21_UART2_TXD_CNV_MFUART0_TXD
GPP_C_20_UART2_RXD_CNV_MFUART0_RXD
GPP_C_19_I2C1_SCL
GPP_C_18_I2C1_SDA
GPP_C_17_I2C0_SCL
GPP_C_16_I2C0_SDA
GPP_C_15_UART1_CTSB_ISH_UART1_CTSB
GPP_C_14_UART1_RTSB_ISH_UART1_RTSB
GPP_C_13_UART1_TXD_ISH_UART1_TXD
GPP_C_12_UART1_RXD_ISH_UART1_RXD
GPP_C_11_UART0_CTSB
GPP_C_10_UART0_RTSB
GPP_C_9_UART0_TXD
GPP_C_8_UART0_RXD
GPP_C_7_ISH_I2C2_SCL_I2C3_SCL
GPP_C_6_ISH_I2C2_SDA_I2C3_SDA_SBK_4_BK_4
GPP_C_5_SML0ALERTB/STRAP
GPP_C_4_ISH_UART0_TXD_SML0BCLK_I2C2_SCL
GPP_C_3_ISH_UART0_RXD_SML0BDATA_I2C2_SDA
GPP_C_2_SMBALERTB/STRAP
GPP_C_1_SMBDATA
GPP_C_0_SMBCLK

GPP_B_23_SML1ALERTB_PCHHOTB/STRAP
GPP_B_22_GSPI1_MOSI/STRAP
GPP_B_21_GSPI1_MISO_NFC_CLKREQ
GPP_B_20_GSPI1_CLK_NFC_CLK
GPP_B_19_GSPI1_CS0B
GPP_B_18_GSPI0_MOSI/STRAP
GPP_B_17_GSPI0_MISO
GPP_B_16_GSPI0_CLK
GPP_B_15_GSPI0_CS0B
GPP_B_14_SPKR/STRAP
GPP_B_13_PLTRSTB
GPP_B_12_SLP_S0B
GPP_B_11_I2S_MCLK
GPP_B_10_SRCCLKREQB_5
GPP_B_9_SRCCLKREQB_4
GPP_B_8_SRCCLKREQB_3
GPP_B_7_SRCCLKREQB_2
GPP_B_6_SRCCLKREQB_1
GPP_B_5_SRCCLKREQB_0
GPP_B_4_CPU_GP_3
GPP_B_3_CPU_GP_2
GPP_B_2_VRALERTB
GPP_B_1_GSPI1_CS1B_TIME_SYNC_1
GPP_B_0_GSPI0_CS1B

FH82B560 SRKM5/S/[10HB1-03B560-10R]

GPPC_A_14 AW46
GPPC_A_13_ESPI_ALERT3B AV46
GPPC_A_12_ESPI_ALERT2B AV47
GPPC_A_11_ESPI_ALERT1B AU45
GPPC_A_10_ESPI_ALERT0B AU46 ESPI_ALERT ESPI_ALERT 17
GPPC_A_9_ESPI_CS3B AU47
GPPC_A_8_ESPI_CS2B AT48
GPPC_A_7_ESPI_CS1B AT46
GPPC_A_6_ESPI_RESETB AT45 ESPI_RESET- ESPI_RESET- 17
GPPC_A_5_ESPI_CLK AR47 N_GPP_A5 NR46 22/4 ESPI_CLK 17
GPPC_A_4_ESPI_CS0B AR46 ESPI_CS- ESPI_CS- 17
GPPC_A_3_ESPI_IO_3_SUSACKB AP46 N_ESPI_IO3
GPPC_A_2_ESPI_IO_2_SUSWARNB_SUSPWRDNACK AP47 N_ESPI_IO2
GPPC_A_1_ESPI_IO_1 AN45 N_ESPI_IO1
GPPC_A_0_ESPI_IO_0 AN46 N_ESPI_IO0

N_ESPI_IO1 1 2 ESPI_IO1 17
N_ESPI_IO0 3 4 ESPI_IO0 17
N_ESPI_IO2 5 6 ESPI_IO2 17
N_ESPI_IO3 7 8 ESPI_IO3 17
10/8P4R/4/A
NRN6

NR46/NR47/NR48/NR50/NR57 CLOSE TO PCH<500mil

STRAP/GPPC_G_15_DDP2_CTRLDATA_TBT_LSX1_B AL21 N_DDP2_CTRLDATA N_DDP2_CTRLDATA 47
GPPC_G_14_DDP2_CTRLCLK_TBT_LSX1_A AN21 N_DDP2_CTRLCLK N_DDP2_CTRLCLK 47
STRAP/GPPC_G_13_DDP1_CTRLDATA_TBT_LSX0_B AU19 N_GPP_G13
GPPC_G_12_DDP1_CTRLCLK_TBT_LSX0_A AW18 N_GPP_G12
STRAP/GPPC_G_11_ISH_SPI_MOSI_DDP4_CTRLDATA_GSPI2_MOSI_TBT_LSX3_B AY17 N_GPP_G11
GPPC_G_10_ISH_SPI_MISO_DDP4_CTRLCLK_GSPI2_MISO_TBT_LSX3_A BA17
STRAP/GPPC_G_9_ISH_SPI_CLK_DDP3_CTRLDATA_GSPI2_CLK_TBT_LSX2_B BC17 N_GPP_G9
GPPC_G_8_ISH_SPI_CSB_DDP3_CTRLCLK_GSPI2_CS0B_TBT_LSX2_A BE18

TCP* pins can be routed to USB-C* connector or DP/HDMI native connector

BF17 N_GPPC_G7 N_GPPC_G7 54 USB_OC
BD17 N_GPPC_G6 N_GPPC_G6 29 SPI_TPM

GPPC_G_7 BE17
GPPC_G_6 BD16
GPPC_G_5_SLP_DRAMB BC16
GPPC_G_4_GMII_MDIO_0 BE15
GPPC_G_3_GMII_MDC_0 BD15
GPPC_G_2_DNX_FORCE_RELOAD BD14
GPPC_G_1_DDPA_CTRLDATA
GPPC_G_0_DDPA_CTRLCLK

DDPB/C -->CHIPSET U3C

GPPC_RCOMP BG13 GPPC_RCOMP 200/4/1 NR45
MPHY_RCOMPP B13 PCIECOMP_P_R 100/4/1 NR38 PCIECOMP_P
MPHY_RCOMPN A13 PCIECOMP_N
MLK_RSTB AR3
MLK_DATA AR4
MLK_CLK AP4

JTAGX AM2 N_PCH_JTAGX NR66 0/4/SHT/M/X A_TCK 4
JTAG_TMS AM4 N_PCH_TMS NR92 0/4/SHT/M/X A_TMS 4
JTAG_TDO AM3 N_PCH_TDO NR93 0/4/SHT/M/X A_TDO 4
JTAG_TDI AN4 N_PCH_TDI NR95 0/4/SHT/M/X A_TDI 4
JTAG_TCK AM5 N_PCH_TCK NR110 51/4/1/X

PLACE 51OHM PD WITHIN 1.1INCH OF PCH

STRAP/DBG_PMODE AG5 N_ITP_PMODE
INTRUDERB AE47 N_-INTRUDER

HDACPU_SDO AJ5 DISPA_SDO NR298 33/4 N_AZCPU_SDOUT 4
HDACPU_SDI AK4 A_AZ_CPU_SDI 4
IN HDACPU_BCLK AJ3 DISPA_BCLK NR68 33/4 N_AZCPU_SCLK 4

VCCSTG
N_PCH_TMS NR79 51/4/1
N_PCH_TDO NR82 100/4/1
N_PCH_TDI NR84 51/4/1
N_PCH_JTAGX

GPPC_A/GPPC_G (VCCPRIM_3P3 or VCCPRIM_1P8): each pin voltage is selected by setting the corresponding voltage select soft strap of the pin.

VCC3 3VDUAL
N_GPP_G12 NR275 3.3K/4/1
N_SMBCLK NR53 1K/4/1
N_SMBDATA NR55 1K/4/1
N_SML0CLK NR58 499/4/1
N_SML0DAT NR59 499/4/1
N_SML1DAT NR61 8.2K/4
N_SML1CLK NR29 8.2K/4
N_GPPC_G7 NR71 8.2K/4

BATTERY

3VDUAL_PCH
ND1
BAS40-05/0.2A/SOT23
NR136 1M/4/1 N_-INTRUDER
N_RTCVDD N_RTCVDD 11,15,64
NR142 20K/4/1 N_-RTCRST N_-RTCRST 12,17,65
NC8 1u/4/X5R/6.3V/K
NC9 1u/4/X5R/6.3V/K
NRB1 必須放在BAT外
N_VBATT NRB1 1K/4/1
BAT
BAT-SK/BK/P/S/D/SN
DIP款式矮的電池座
BATTERY-DN-1
RB_TP1
N_VBAT N_VBAT 17
BATTERY
CR2032

CLR_CMOS

CLR_CMOS
N_-RTCRST
PH/1*2/BK/2.54/VA/D

PCH Signal Glitch Free

STRAP

VCC3
N_SPKR NR131 8.2K/4/X
TOP SWAP OVERRIDE STRAP, PCH HAS INTERNAL WEAK PD
HIGH:TOP SWAP ENABLED
LOW:TOP SWAP DISABLED

3VDUAL
N_GPP_B18 NR133 8.2K/4/X
NO REBOOT IF SAMPLED HIGH, PCH HAS INTERNAL WEAK PD
N_GPP_B22 NR124 8.2K/4/X
Boot BIOS Strap (BBS),PCH HAS INTERNAL WEAK PD.
1 : ESPI PERIPHERAL CHANNEL
0 : SPI(MAF) OR ESPI FLASH CHANNEL(SAF)

VCC3_PCH
NR102 1K/4/1/X N_GPP_C2 NR103 8.2K/4
TLS Confidentiality IF SAMPLED HIGH,
CH HAS INTERNAL WEAK PD
NR105 1K/4/1/X N_GPP_C5
ESPI DISABLE STRAP PCH HAS INTERNAL WEAK PD
HIGH:DISABLE
LOW:ENABLE(DEFAULT)
For eSPI

VCC3_PCH
N_-PCH_HOT NR114 8.2K/4/X
CPUNSSC Clock Frequency, PCH HAS INTERNAL 20K PD
0 = 38.4 MHz clock (direct from crystal) (default)
1 = 19.2 MHz clock (derived from 38.4 MHz crystal)

3VDUAL
V1P05A
NR249 1K/4/1/X N_ITP_PMODE
Reserved.INTERNAL WEAK PH.

* RKL
3VDUAL_PCH
NR247
N_DDP2_CTRLDATA 2.2K/4/X
NR248
N_GPP_G13 2.2K/4/X
NR241
N_GPP_G11 2.2K/4/X
NR242
N_GPP_G9 2.2K/4/X
TBT VCCIO CONFIGURATION,PCH HAS INTERNAL WEAK PD
HIGH:3.3V
LOW:1.8V

For eSPI
VCCBT
ESPI_ALERT NR49 8.2K/4/X
ESPI_RESET- NR51 8.2K/4/X
ESPI_CS- NR52 8.2K/4/X
ESPI_RESET- NR137 75K/4/1
ESPI_CS- NR138 75K/4/1

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PCHC

FH82B560 SRKM5/S/[10HB1-03B560-10R]

Fixed voltage on certain GPIO groups: GPD (3.3 V), GPP_J and GPP_S (1.8 V/VCCPRIM_1P8)

STRAP

HDA_SDO:Flash Descriptor Security (override);
1=DIS,0=ENABLE
PCH INTERNAL PD

ESPI FLASH SHARING MODE,INTERNAL 20K PD
0: MASTER ATTACHED FLASH SHARIN
1: SLAVE ATTACEHD FLASH SHARING

XTAL Frequency Selection,INTERNAL 20K PD
0 = 38.4 MHz (default)
1 = 24 MHz

Reserved.INTERNAL 20K PD.
0=> JTAG ODT is disabled
1=> JTAG ODT is enabled

M.2 CNVi Mode Select,external PU is required.
0=>Integrated CNVi enabled.
1=>Integrated CNVi disabled.
Note: When connected to the PCH CNVi interface, the device internal PD resistor will pull the strap low to enable CNVi interface

SPI FLASH INTERFACE VOLTAGE, INTERNAL 20K PD
0=> VCCSPI at 3.3 V (Default)
1=> VCCSPI at 1.8 V

Display Port DDC/HOT PLUG SIGNAL		
CPU PORT	PCH DDC	PCH HPD
DDI_A/EDP	GPP_G0/G1	GPP_K6
DDI_1/B	GPP_I5/I6	GPP_K7
DDI_2/C	GPP G12/G13	GPP_I1
DDI_3/D	GPP_G14/G15	GPP_I2

PCH Signal Glitch Free

**
HPD: DDI*. PULL HI IF NO USE.

A N_GPP_K6 NR233 8.2K/4
B N_GPP_K7 NR236 8.2K/4/X DP
N_GPP_K10 NR273 8.2K/4
C N_GPP_I1 NR238 8.2K/4
D N_GPP_I2 NR270 8.2K/4//X HDMI
N_GPP_I3 NR272 8.2K/4
N_GPP_I4 NR271 8.2K/4

CLKREQ
3VDUAL
WIFI N_GPP_H1 NR15 8.2K/4
I219V N_GPP_H2 NR16 8.2K/4/X
N_GPP_H2 NR324 8.2K/4/X
ON-BOARD DEVICE

注意:PWM SIDE PD 100K.
3VDUAL
N_GPP_F22 NR30 8.2K/4/X
N_GPP_F23 NR29 8.2K/4/X

VCC3
N_GPP_H21 NR43 8.2K/4
N_GPP_H22 NR44 8.2K/4

VCC3
NRN10 8.2K/8P4R/4/X
N_GPP_F13 N_GPP_F12 N_GPP_F11 N_GPP_F10

VCC3
A_SKTOCC NR231 8.2K/4

3VDUAL
NR257 20K/4/X N_GPP_E9
NR256 20K/4/X N_GPP_E10
NR255 20K/4/X N_GPP_E11
RESERVED STRAP

LAN RTL8125
CNVI
VCCIO VID
M2A_PCH IFDET
M2A_PCH DETECT
CNVI WIFI/BT DISABLE
PCIEX8 PRESENT
M2P_CPU DETECT
DDPA -->CHIPSET U3D

strap pin

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Title	PCH GPP,HDA		
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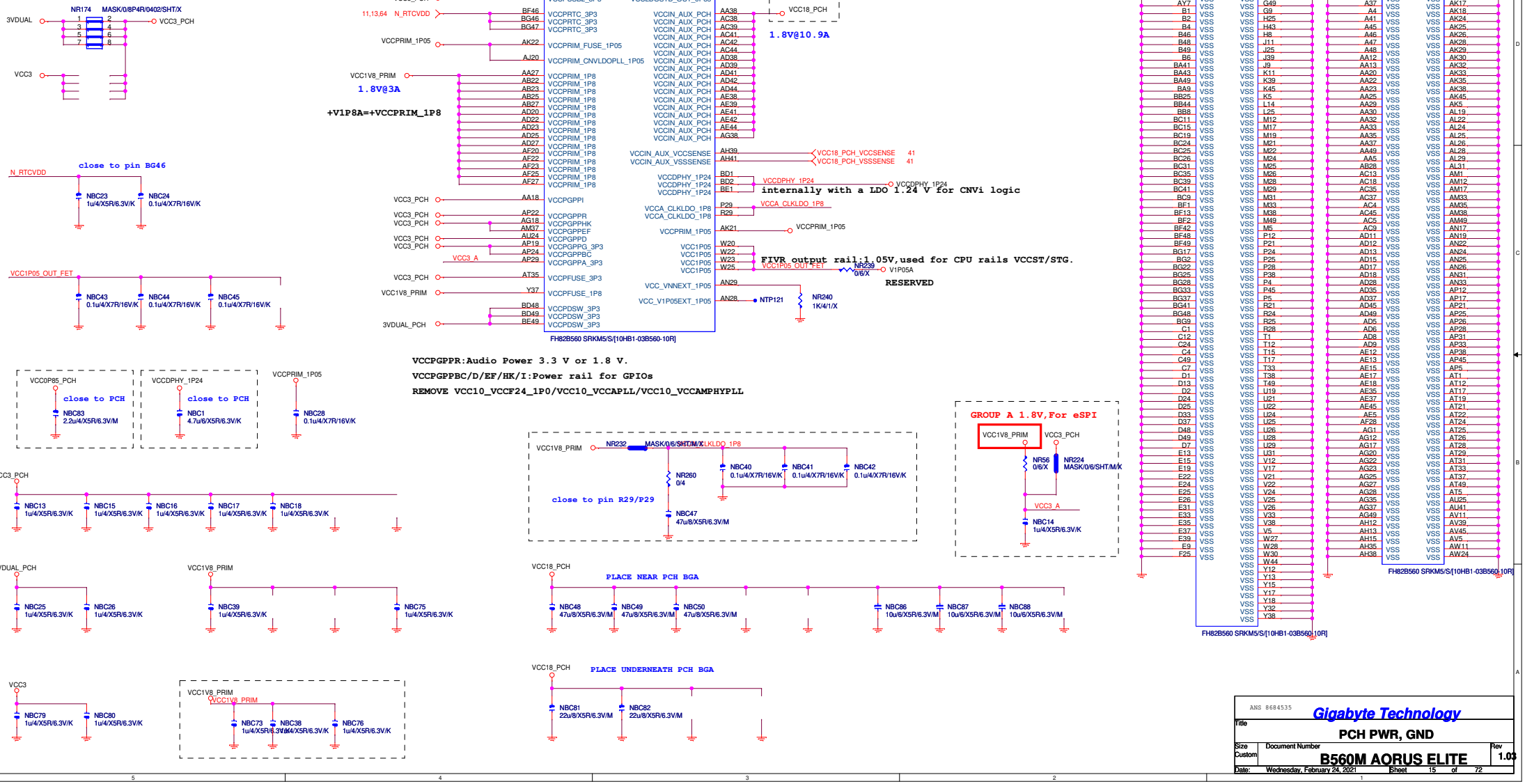
RKL_TGP_PCH-H R0.1



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Gigabyte Technology

Title: PCH PWR, GND

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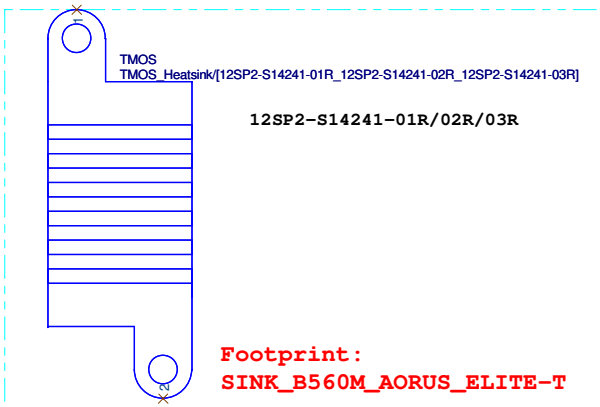
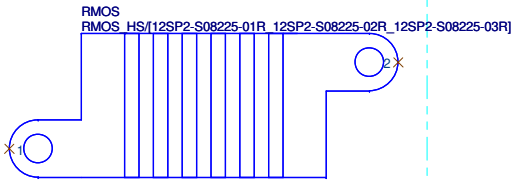
裝甲HEATSINK 分成四大部份

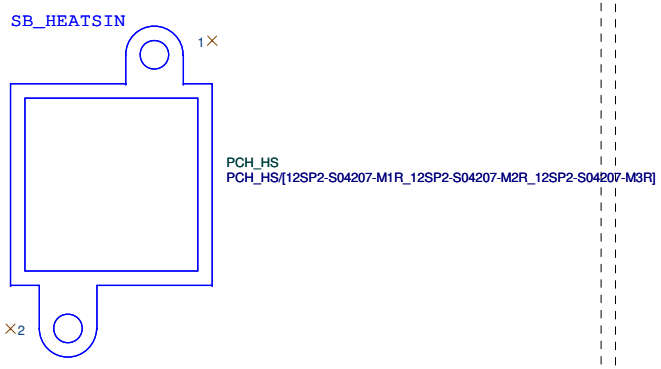
MOS_HS





PCH_HS

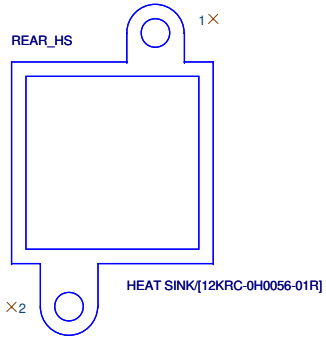
Location: PCH_HS 12SP2-S04207-J2R/J4R



FOOTPRINTS :
sink_b550m_aorus_pro_pch

裝甲

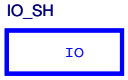
Location: REAR_HS 12KRC-0H0044-01R



Footprint :
Z590_AORUS_ELITE_AX_IO_COVER

後窗鐵片

Location: IO_SH 11AIO-0C0015-22R



- PCB顏色 ： 咖啡黑
- 文字面 ： 灰色
- 疊構 ： E
- 圖騰:ID設計Z590版GIGABYTE GAMING

Gigabyte Technology		
Title: Heatsink		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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REV:0.1

PCIE slot 需支援 PCIE M2 Card
PCIEX16.A19 接 IO_GP81
PCIEX16.B30 接 IO_GP83
PCIEX8.A19 接 IO_GP85
PCIEX8.B30 接 IO_GP86

IT8689E

IT8689E/AX/S

CPU_FAN
SYS_FAN1
SYS_FAN2

SYS_FAN3 sensor
SYS_FAN4 sensor

keep 0 ohm
AUDIO BEAT LED

THRMTRIP
PROCHOT

SYS_FAN3

PWR SHT

SIO PU

新增

SIO STRAP

for eSPI

JP2	1	Disable WDT to rest PWROK
	0	Enable WDT to rest PWROK
JP3		Dual-BIOS CS pin mode select bit "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		Dual-BIOS CE pin mode select bit "1" See the below table
JP7 JP3	1 1	CE pin disable (Hold pin mode)
	1 0	CE mode 1
	0 1	CE mode 2
	0 0	CE mode 3

請依開案規格，選擇Support Erp下 LAN Wake up組態。

(組態一) PCIE LAN(Single & Dual LAN)

(組態二) INTEL219 LAN(Single LAN)

INTEL219 LAN組態上件

(組態三) INTEL LAN+PCIE LAN(Dual LAN)

ERP Wake on LAN		
Single LAN	Realtek	組態一
	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	組態三
	Intel 219+Intel 210	
No Support ERP	Single LAN BOM只上OR97。 Dual LAN BOM只上OR97、OR99。	

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

DUAL BIOS OPT STRAP

OR58 上件/OR56 不上件 SINGLE BIOS
OR58 不上件/OR56 上件 DUAL BIOS

MB ID

SIO_18V

internal power pin, max 22nF cap

SIO CAP

CLOSE SIO PIN4 2_5LEVEL

for LPC/eSPI power mode

CLOSE TO SIO PIN 79

Single BIOS Setting

CEC ONLY

Gigabyte Technology

Title	IT8688	
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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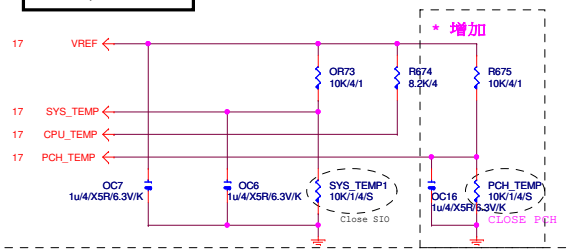
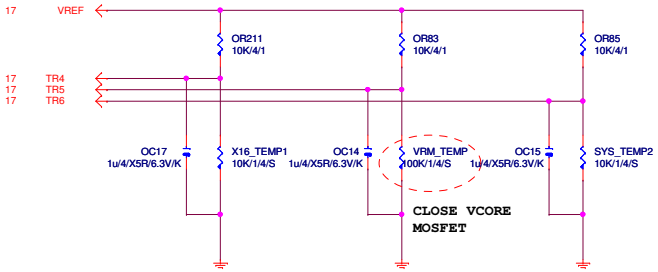
TEMP H/W MONITOR

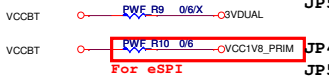


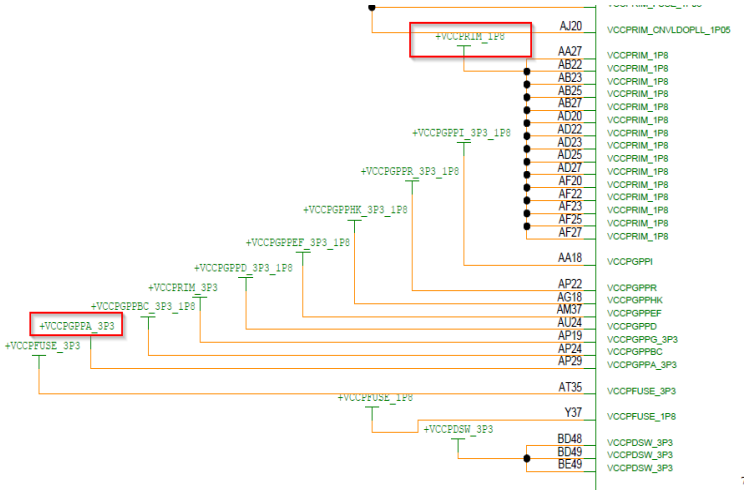
5個FAN時使用



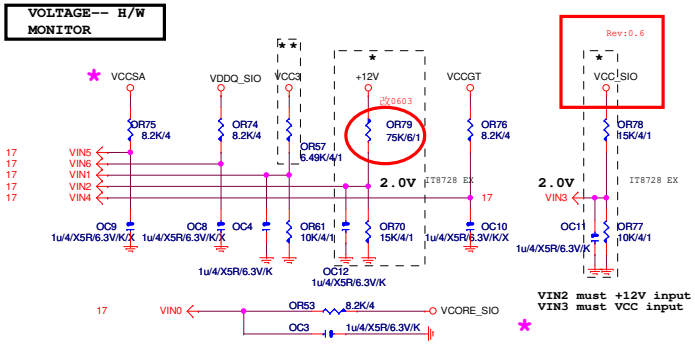
JP4 HI ESPI MODE VCCBT 3.3V
JP5 HI ESPI MODE LPC I/F

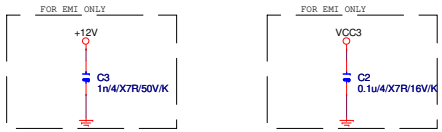
JP4 LO ESPI MODE VCCBT 1.8V
JP5 LO ESPI MODE ESPI I/F





VOLTAGE-- H/W MONITOR





★Update 2015-04.24

Gigabyte Technology		
Title: HWM,KB/MS, FAN CTRL		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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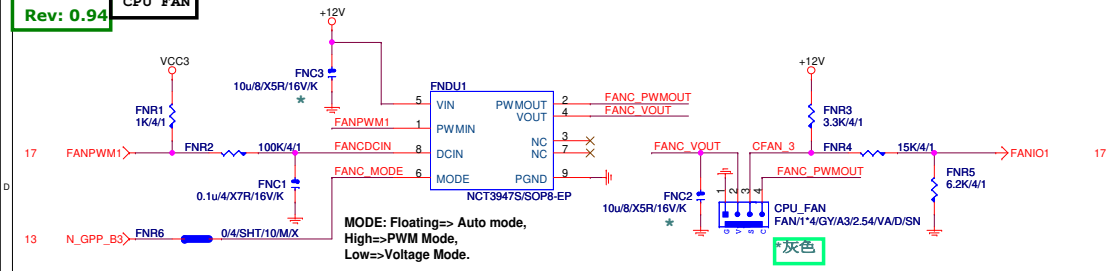
Rev: 0.94

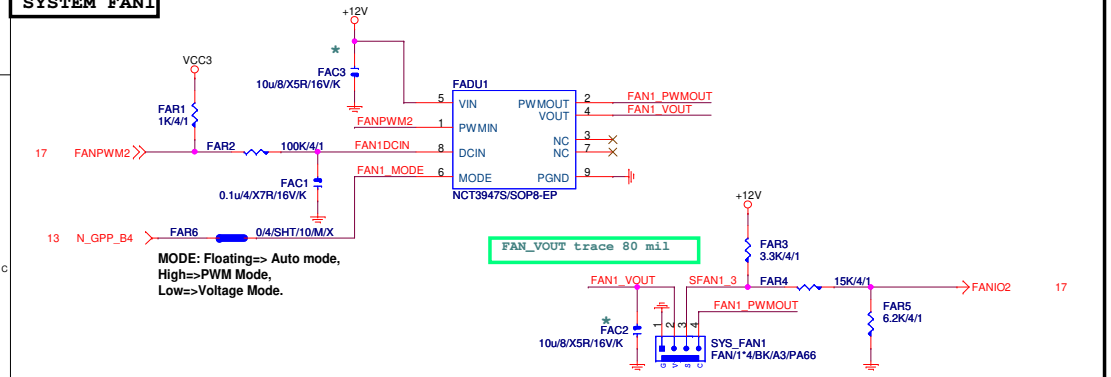
CPU FAN



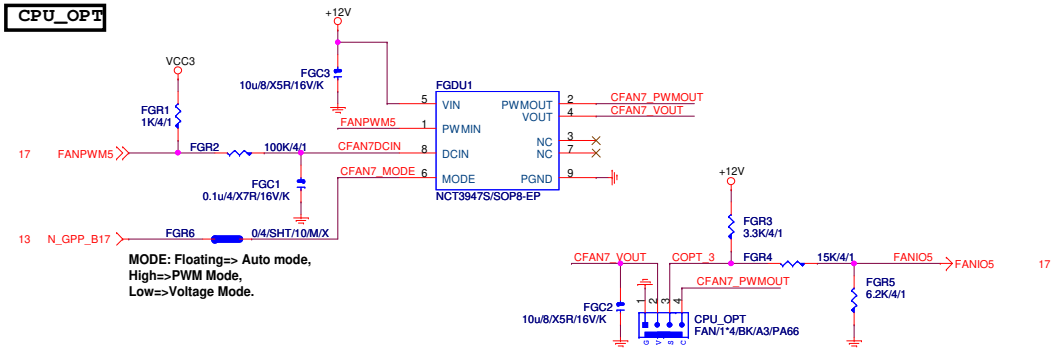
IO 5 FAN

CPU_FAN
CPU_OPT
SYS_FAN1
SYS_FAN2
SYS_FAN3

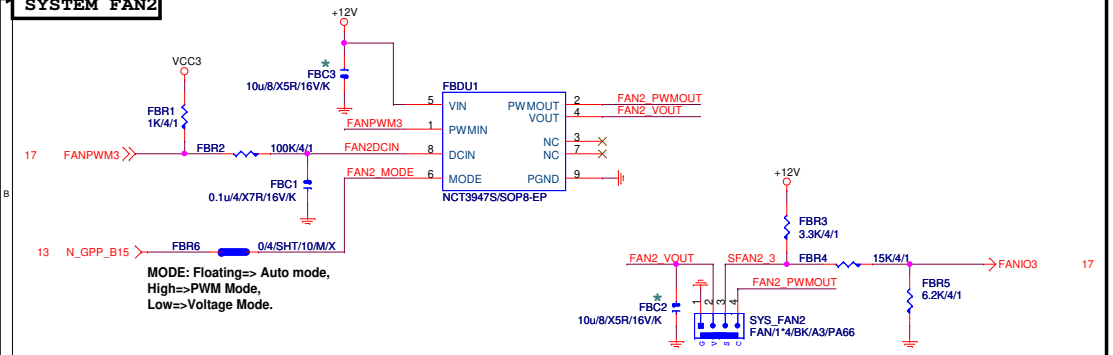
SYSTEM FAN1



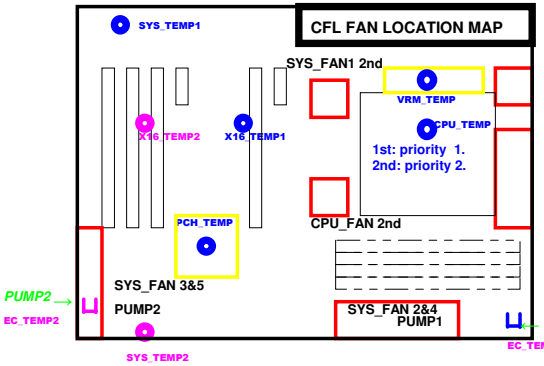
CPU_OPT



SYSTEM FAN2



CFL FAN LOCATION MAP



8 FAN from IO & EC

EC TEMP SENSE 879X

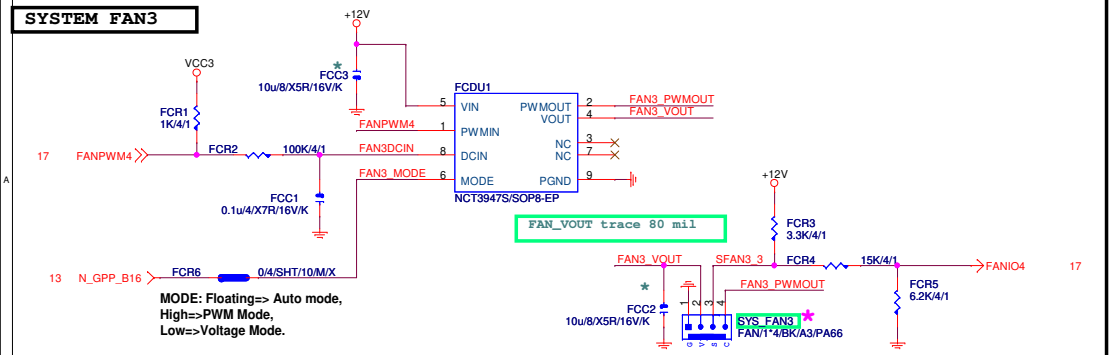
IO TEMP SENSE 8686

SYS_FAN1 1st

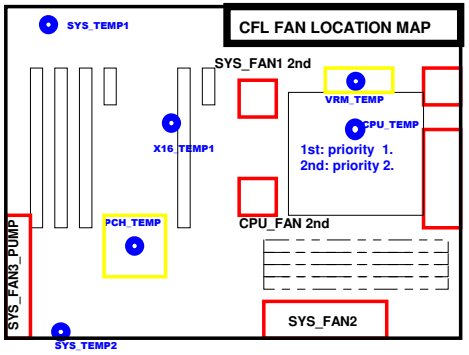
CPU_FAN 1st

OPT_FAN

SYSTEM FAN3



CFL FAN LOCATION MAP



5 FAN from IO

IO TEMP SENSE 8686

SYS_FAN1 1st

CPU_FAN 1st

OPT_FAN

Gigabyte Technology

Title: HWM,KB/MS, FAN CTRL

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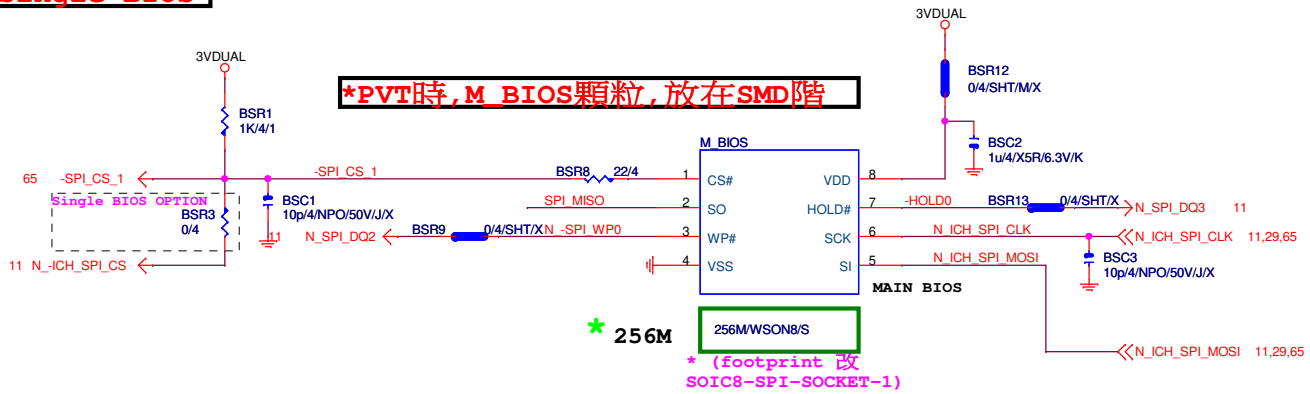
DUAL BIOS

*Single BIOS

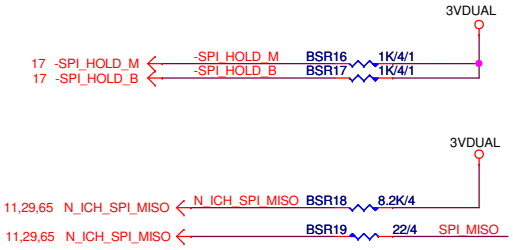
*PVT時,M_BIOS顆粒,放在SMD階



* 256M

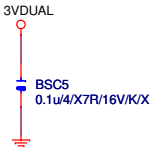
* (footprint 改 SOIC8-SPI-SOCKET-1)

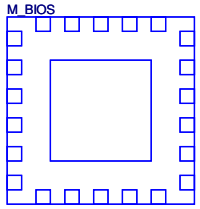
MOSI For DMI RX Termination Voltage



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

1 means floating
0 means PD 1K





LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-71R]/X

* 試產先上 , PVT 移除

Gigabyte Technology

Title: BIOS

Size	Document Number	Rev
Custom	B560M AORUS ELITE	1.03

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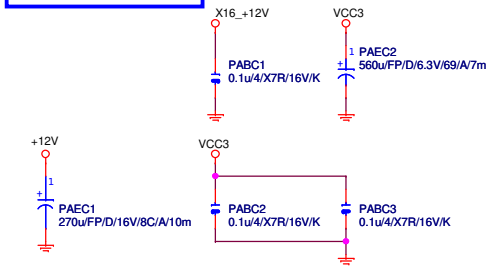
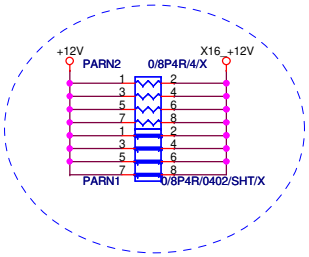
Rev 0.3

PCIEX16 CAP



PCIEX16 PROTECT SHT

+12 protect
short-wire test



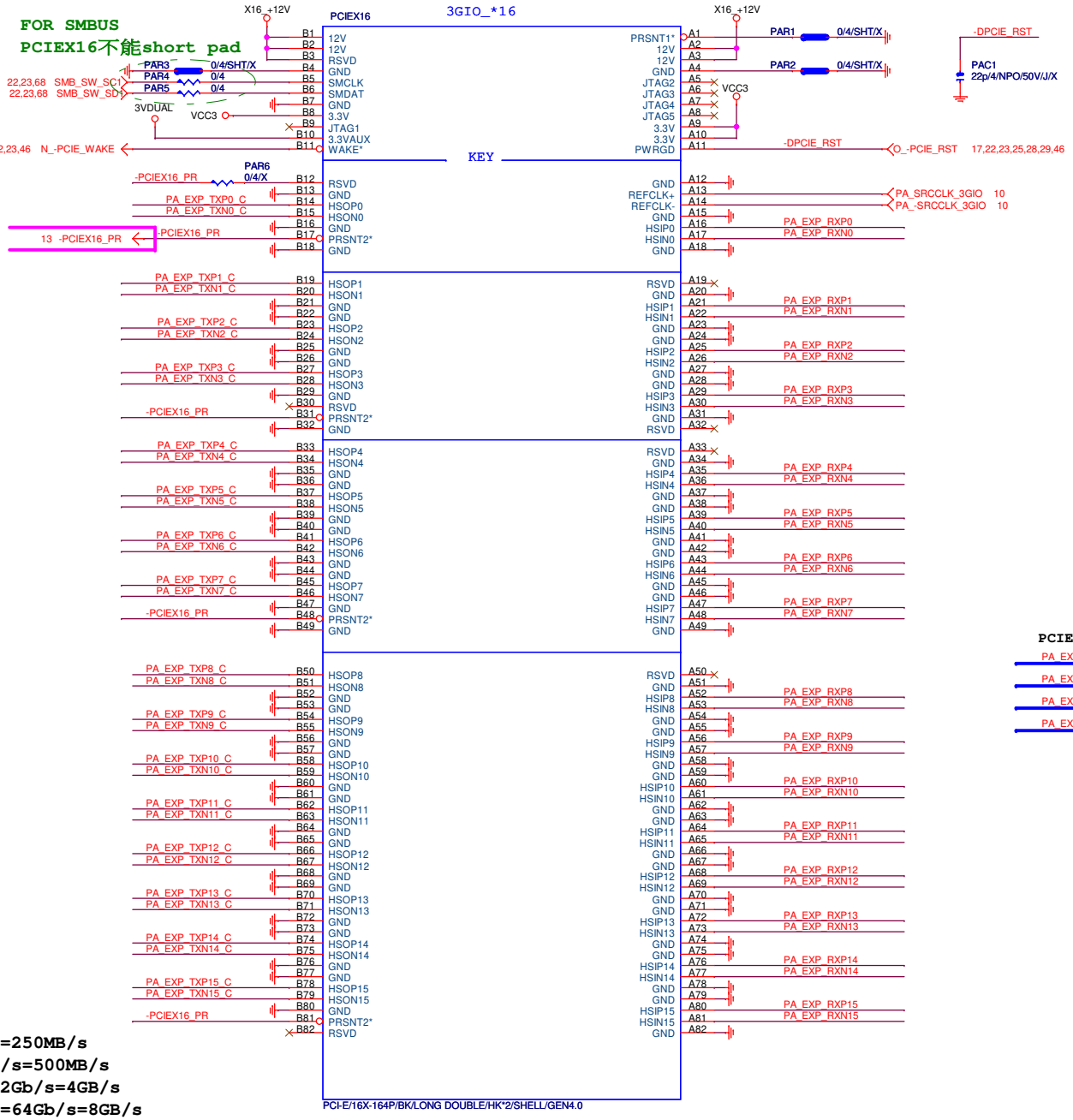
PCIEX16 AC CAP

PA_EXP_TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA_EXP_TXP0_C
PA_EXP_TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA_EXP_TXN0_C
PA_EXP_TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA_EXP_TXP1_C
PA_EXP_TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA_EXP_TXN1_C
PA_EXP_TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA_EXP_TXP2_C
PA_EXP_TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA_EXP_TXN2_C
PA_EXP_TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA_EXP_TXP3_C
PA_EXP_TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA_EXP_TXN3_C
PA_EXP_TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA_EXP_TXP4_C
PA_EXP_TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA_EXP_TXN4_C
PA_EXP_TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA_EXP_TXP5_C
PA_EXP_TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA_EXP_TXN5_C
PA_EXP_TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA_EXP_TXP6_C
PA_EXP_TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA_EXP_TXN6_C
PA_EXP_TXP7	PAC18	0.22u/4/X5R/6.3V/K	PA_EXP_TXP7_C
PA_EXP_TXN7	PAC19	0.22u/4/X5R/6.3V/K	PA_EXP_TXN7_C
PA_EXP_TXP8	PAC21	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8_C
PA_EXP_TXN8	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXN8_C
PA_EXP_TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA_EXP_TXP9_C
PA_EXP_TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA_EXP_TXN9_C
PA_EXP_TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA_EXP_TXP10_C
PA_EXP_TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA_EXP_TXN10_C
PA_EXP_TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA_EXP_TXP11_C
PA_EXP_TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA_EXP_TXN11_C
PA_EXP_TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA_EXP_TXP12_C
PA_EXP_TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA_EXP_TXN12_C
PA_EXP_TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA_EXP_TXP13_C
PA_EXP_TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA_EXP_TXN13_C
PA_EXP_TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA_EXP_TXP14_C
PA_EXP_TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA_EXP_TXN14_C
PA_EXP_TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA_EXP_TXP15_C
PA_EXP_TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA_EXP_TXN15_C

PCIEX16 SLOT

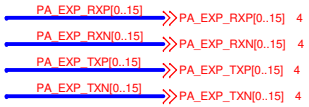
PCIESLOT-164STH

FOR SMBUS
PCIEX16不能short pad



黑色 金屬 加強

PCIEX16:16/5/5/5/16



PCI-E REV:1.1--> 2.5GHZ
PCE-E X1(單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s
PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s
PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s
PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ
PCE-E X1(單向) BANDWITH=5GHz*(8b/10b)=4Gb/s=500MB/s

PCI-E REV:3.0--> 8GHZ
PCE-E X1(單向) BANDWITH=8GHz*(128b/130b)=8Gb/s=1GB/s

Gigabyte Technology

Title	PCI EXPRESS * 16	
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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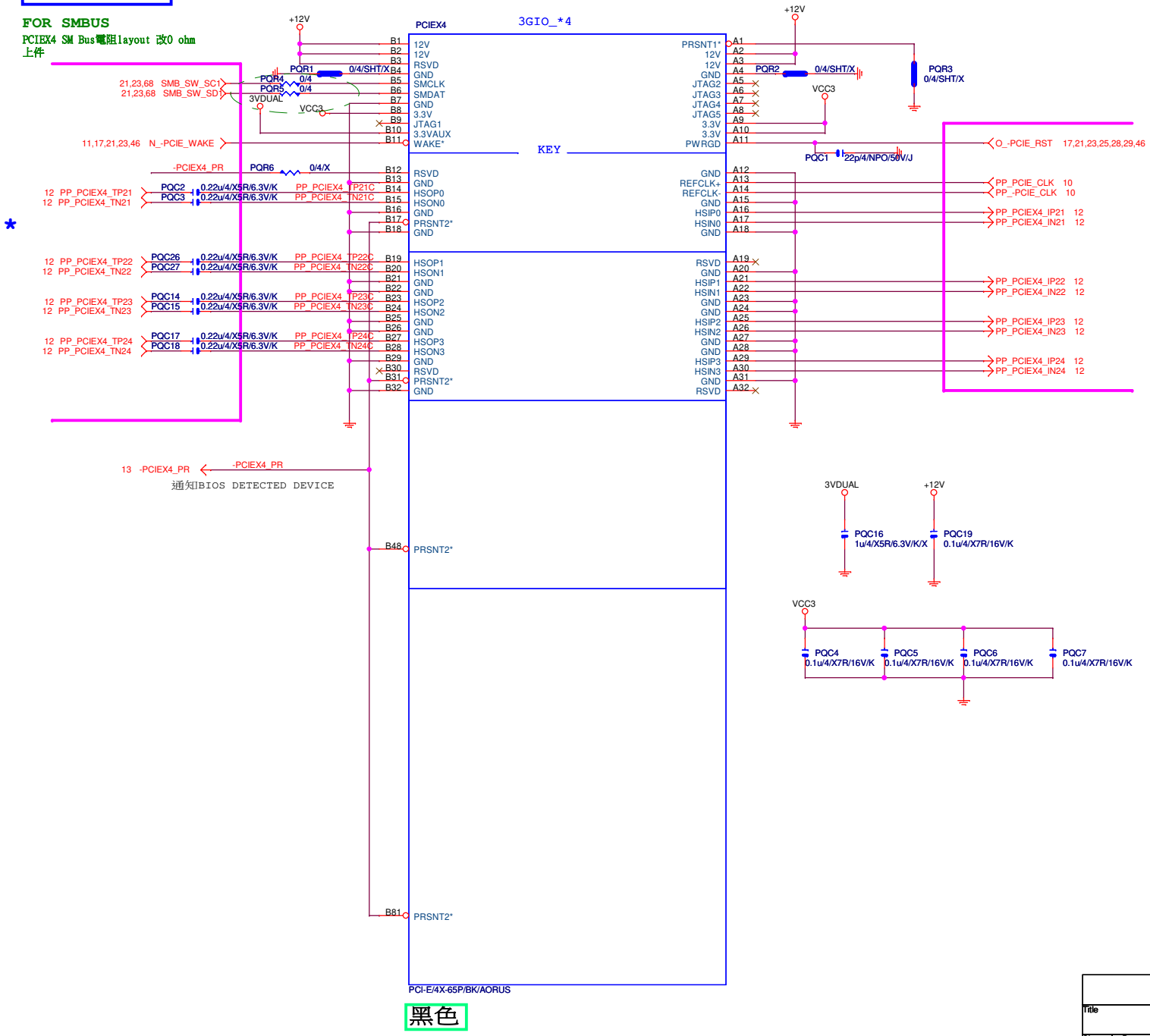
Rev 0.51

PCIE*4

* Footprint "PCIESLOT-64P-1"

FOR SMBUS

PCIEX4 SM Bus電阻layout 改0 ohm 上件



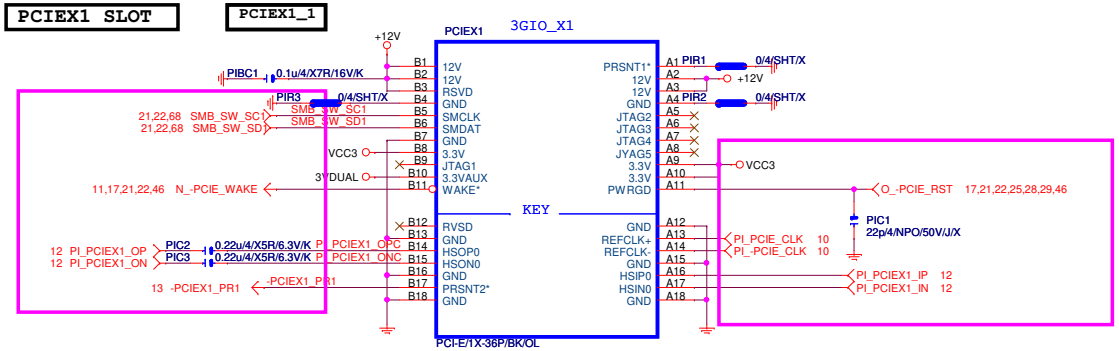
黑色

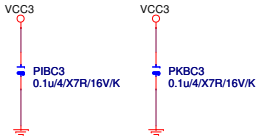
Gigabyte Technology			
Title: PCIE_X4			
Size: Custom	Document Number: B560M AORUS ELITE		Rev: 1.03
Date: Wednesday, February 24, 2021	Sheet 22 of 72		

Rev 0.51

PCIEX1 SLOT

PCIEX1_1





Gigabyte Technology

Title: PCIE X1 *3

Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.03

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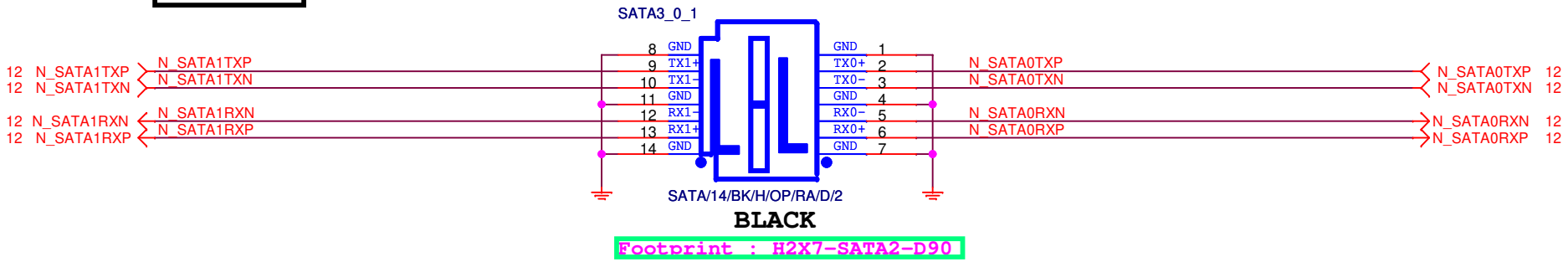
IO18/IO19 To SATA3 port0/1

6 SATA3 from Z490 (90度R-A)

SATA3 0/1

上 Port (8~14)　　下 Port (1~7)

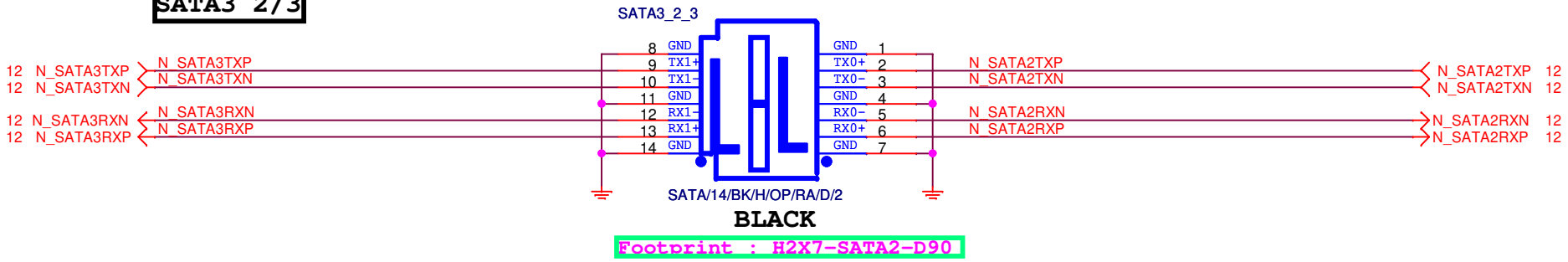


Footprint : H2X7-SATA2-D90

IO20/IO21 To SATA3 port2/3

SATA3 2/3

上 Port (8~14)　　下 Port (1~7)

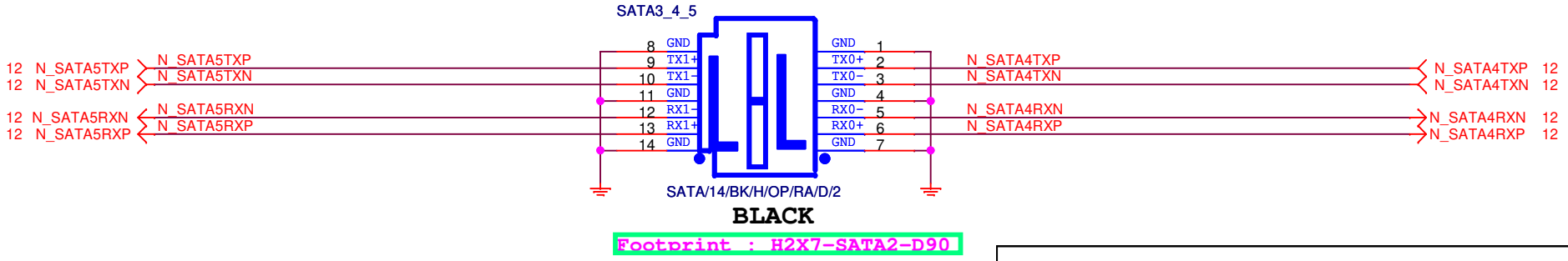


Footprint : H2X7-SATA2-D90

IO22/IO23 To SATA3 port4/5

SATA3 4/5

上 Port (8~14)　　下 Port (1~7)



Footprint : H2X7-SATA2-D90

Gigabyte Technology

Title: SATA		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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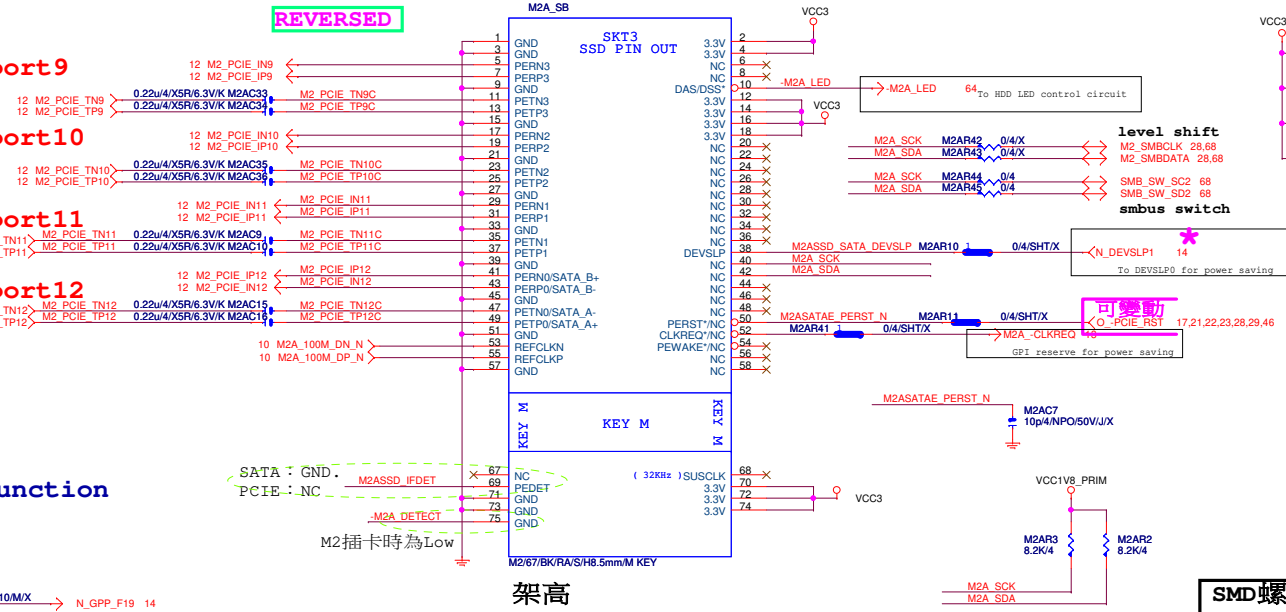
Rev 0.1

M.2 Lane4 from PCH port9

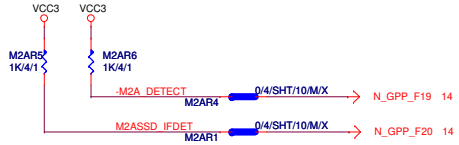
M.2 Lane3 from PCH port10

M.2 Lane2 from PCH port11

M.2 Lane1 from PCH port12

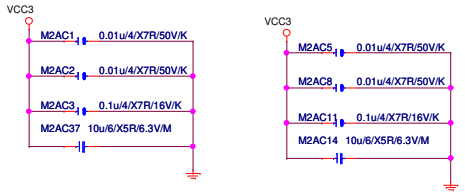


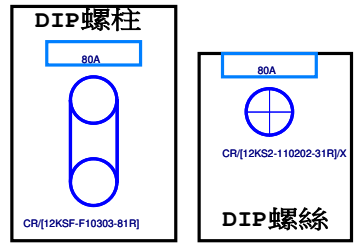
支援SATA and M.2 function

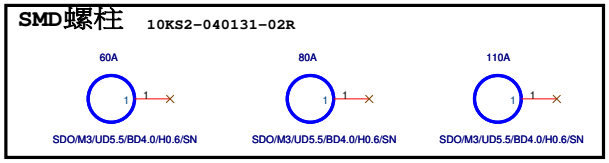


架高

Footprint : M2_110_H2MM8W







★ Footprint : HOLE_C236D165-A
10KS2-040131-02R:SDO/M3/UD5.5/BD4.0/H0.6/SN

Flex IO priority	N_GPP_K1	IO14 PCIe#9	IO15 PCIe#10	IO16 PCIe#11	IO17 PCIe#12
M2A SATA	L	PCIE	PCIE	SATA 0	SATA 1
M2A PCIE (PCIE Reverse)	H	PCIE	PCIE	PCIE	PCIE

Gigabyte Technology

Title: M.2 X4

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Title

AQC113C

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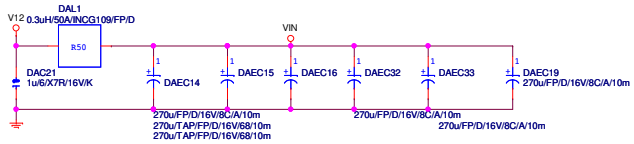
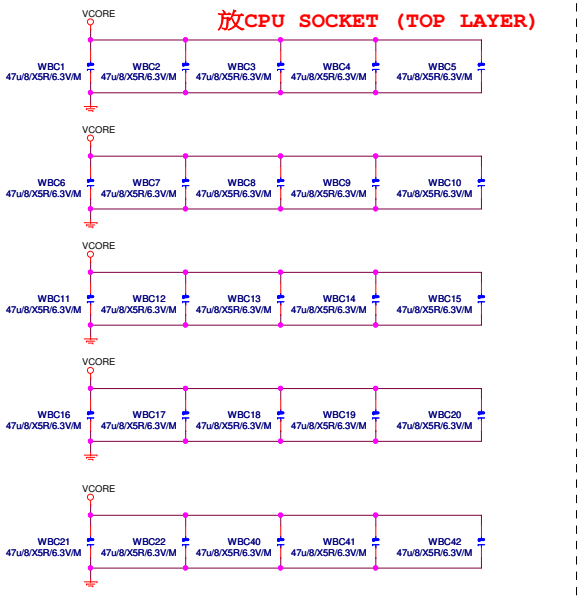
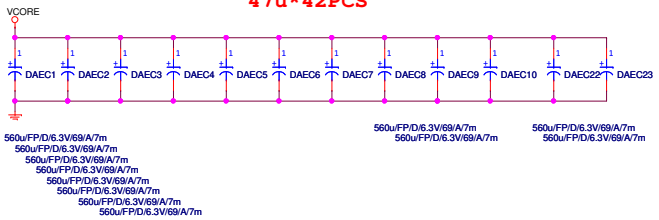
VIN CAP 270u*6PCS

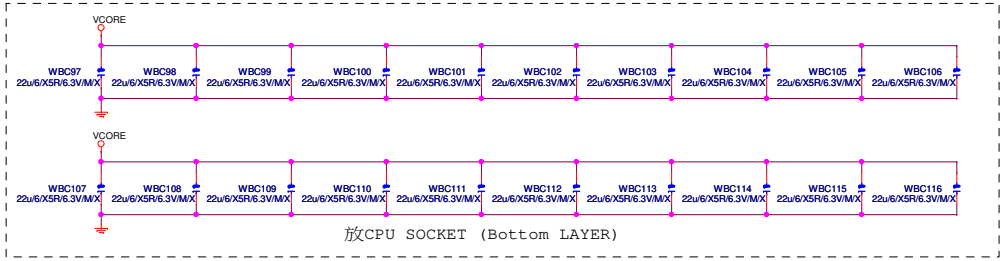


放CPU SOCKET (TOP LAYER)



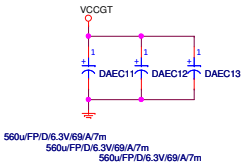
VCORE CAP 560u*12PCS 47u*42PCS

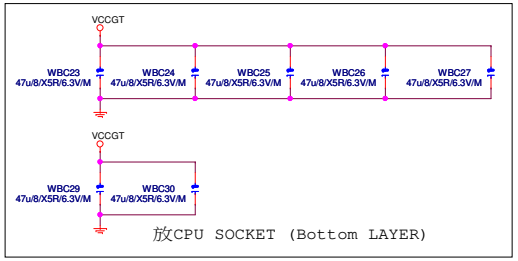




放CPU SOCKET (Bottom LAYER)

VCCGT CAP 560u*3PCS 47u*7PCS





放CPU SOCKET (Bottom LAYER)

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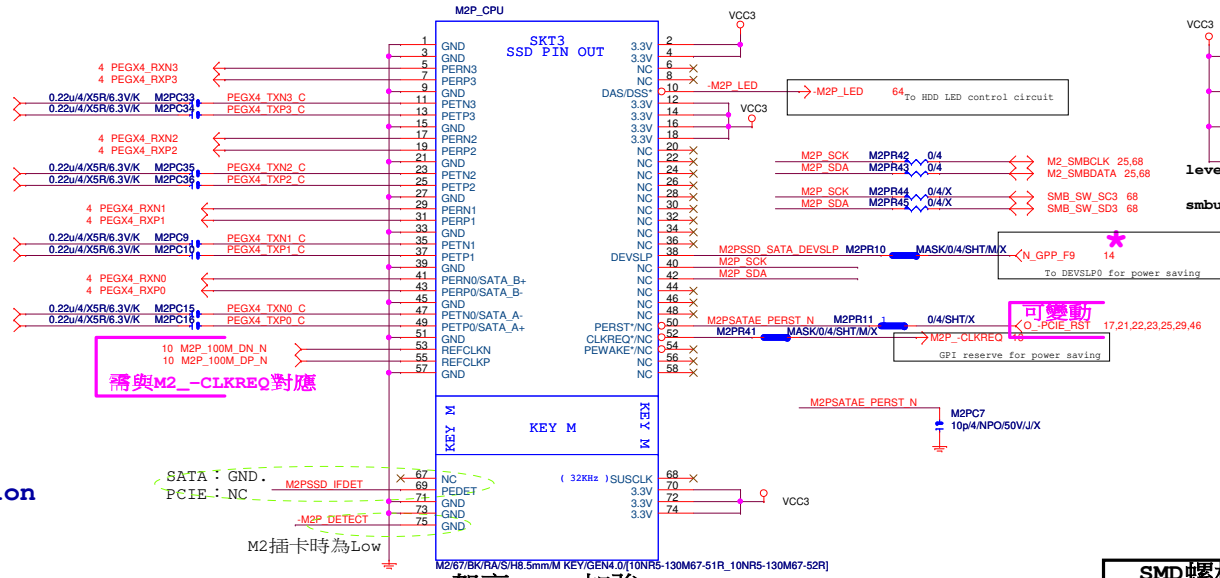
Rev 0.1

M.2 Lane4 from CPU port4

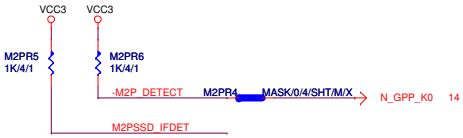
M.2 Lane3 from CPU port3

M.2 Lane2 from CPU port2

M.2 Lane1 from CPU port1

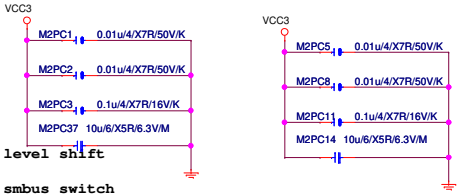


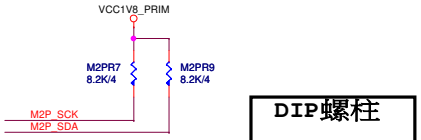
支援SATA and M.2 function

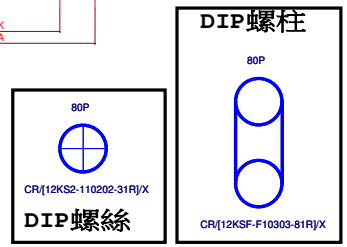


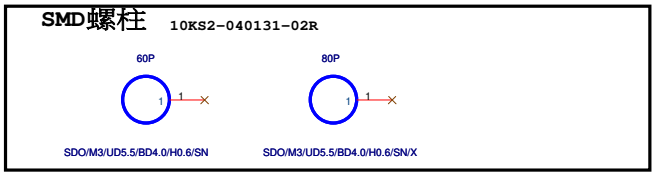
架高 加強

Footprint : m2_80_h2mm8w

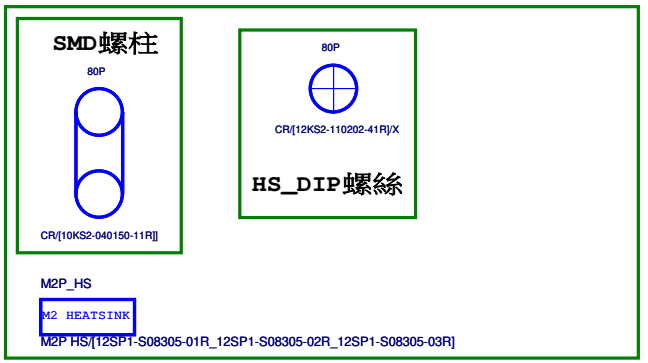








Footprint : HOLE_C236D165-A



Gigabyte Technology		
Title: M.2 X4 (P)		
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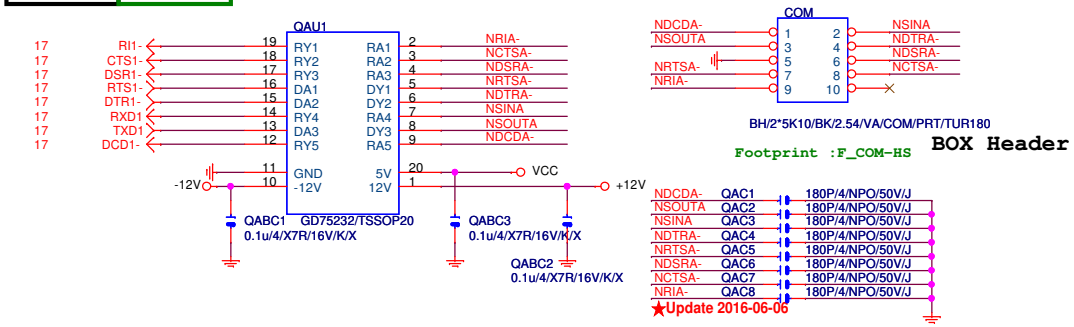
COM PORT

Rev: 0.94

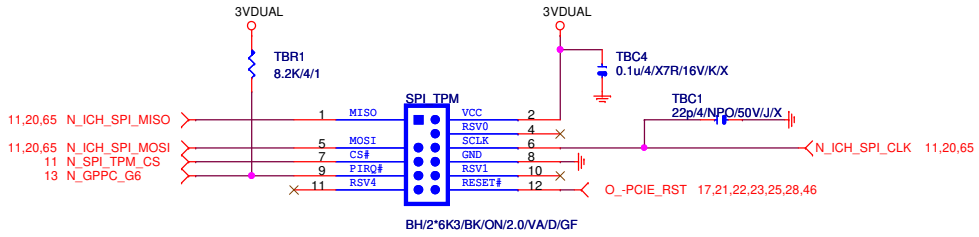


LPT PORT

RTD3 GPIO refer by Intel RVP

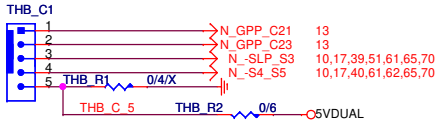
GPIO	CFL-S	CML-U	CML-H	CML-S
TBT_PERST_N	GPP_F_2	GPPC_C15_SLOT1_RST_N	GPP_F4_SATAPCIE7	GPP_F2
TBT_Wake_N	GPP_H_15	GPPC_D11_SLOT1_WAKE_N	GPPK_18	GPP_H15
RTD3_PWN_EN	GPP_I_5	GPPC_D15	GPP_H_16_SML4_CLK	GPP_K23

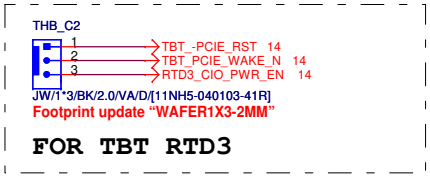
TPM CONNECT



Thunderbolt

★Update 2015-12-29





Z490系列使用

TBT_-PCIE_RST : CFL connector to GPP_F_2
TBT_PCIE_WAKE_N : CFL connector to GPP_H_15
RTD3_CIO_PWR_EN : CFL connector to GPP_K_23

Gigabyte Technology		
Title: FP,F_USB,USB PWR,BZ		
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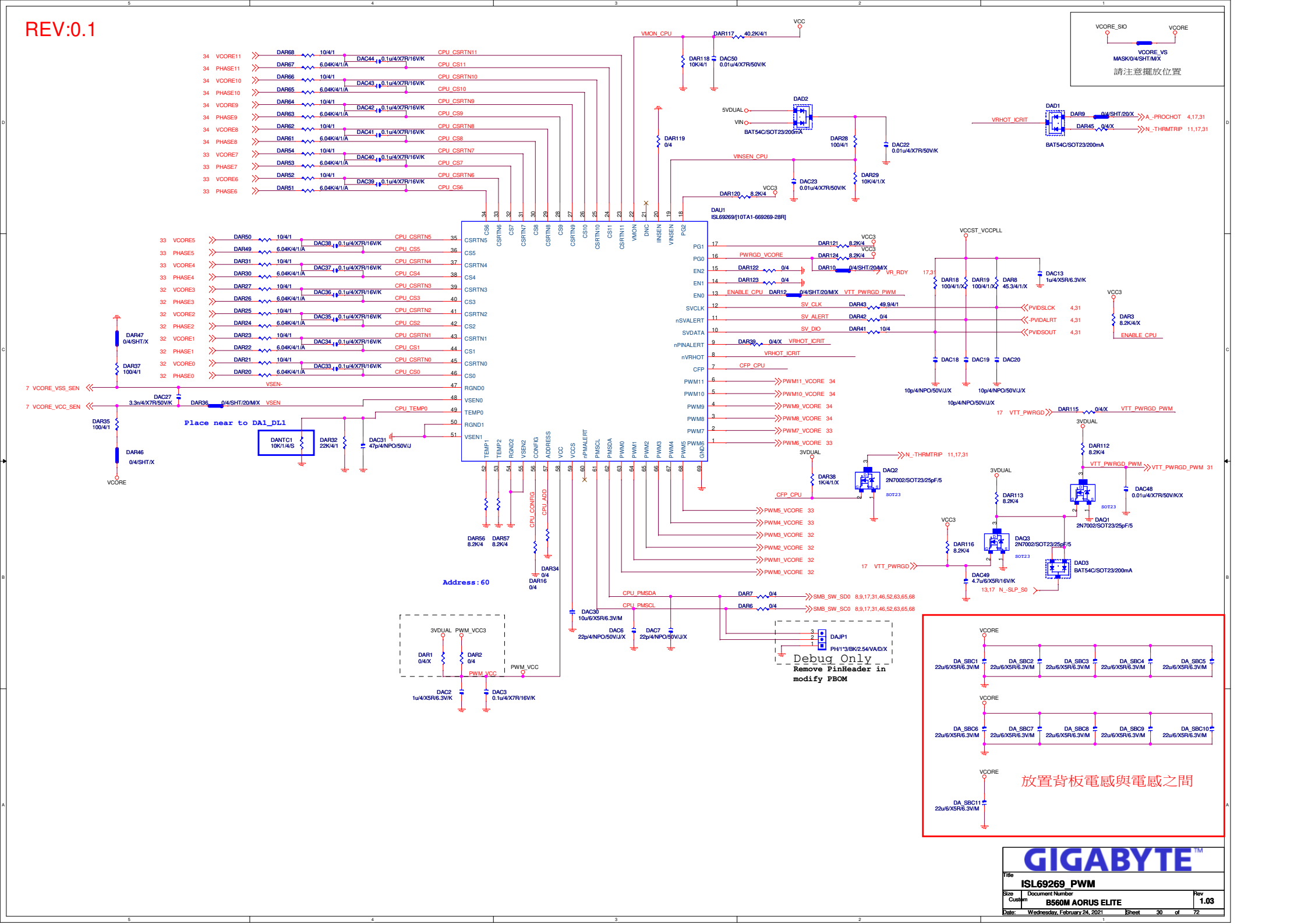
VCORE_SIO
VCORE
VCORE_VS
MASK/0/4/SHT/M/X
請注意擺放位置
VMON_CPU
DAR117 40.2K/4/1
DAR118 10K/4/1
DAC50 0.01u/4/X7R/50V/K
DAU1
ISL69269/[10TA1-669269-28R]
DAD2
BAT54C/SOT23/200mA
DAD1
BAT54C/SOT23/200mA
DAR119 0/4
DAR28 100/4/1
DAC22 0.01u/4/X7R/50V/K
DAR29 10K/4/1/X
DAC23 0.01u/4/X7R/50V/K
DAR120 8.2K/4
VINSEN_CPU
VRHOT_ICRIT
A_-PROCHOT 4,17,31
N_-THRMTRIP 11,17,31
CPU_CSRTN11
CPU_CS11
CPU_CSRTN10
CPU_CS10
CPU_CSRTN9
CPU_CS9
CPU_CSRTN8
CPU_CS8
CPU_CSRTN7
CPU_CS7
CPU_CSRTN6
CPU_CS6
CPU_CSRTN5
CPU_CS5
CPU_CSRTN4
CPU_CS4
CPU_CSRTN3
CPU_CS3
CPU_CSRTN2
CPU_CS2
CPU_CSRTN1
CPU_CS1
CPU_CSRTN0
CPU_CS0
VSEN-
VSEN
CPU_TEMP0
VCORE_VSS_SEN
VCORE_VCC_SEN
Place near to DA1_DL1
DANTC1 10K/1/4/S
DAR32 22K/4/1
DAC31 47p/4/NPO/50V/J
DAR47 0/4/SHT/X
DAR37 100/4/1
DAR35 100/4/1
DAR46 0/4/SHT/X
DAC27 3.3n/4/X7R/50V/K
DAR36 0/4/SHT/20/M/X
VCORE
PWM11_VCORE 34
PWM10_VCORE 34
PWM9_VCORE 34
PWM8_VCORE 34
PWM7_VCORE 33
PWM6_VCORE 33
PWM5_VCORE 33
PWM4_VCORE 33
PWM3_VCORE 32
PWM2_VCORE 32
PWM1_VCORE 32
PWM0_VCORE 32
DAR56 8.2K/4
DAR57 8.2K/4
CPU_CONFIG
CPU_ADD
DAR34 0/4
DAR16 0/4
Address : 60
CPU_PMSDA
CPU_PMSCL
DAR7 0/4
DAR6 0/4
SMB_SW_SD0 8,9,17,31,46,52,63,65,68
SMB_SW_SC0 8,9,17,31,46,52,63,65,68
DAC30 10u/6/X5R/6.3V/M
DAC6 22p/4/NPO/50V/J/X
DAC7 22p/4/NPO/50V/J/X
DAJP1
PH/1*3/BK/2.54/VA/D/X
Debug Only
Remove PinHeader in modify PBOM
3VDUAL PWM_VCC3
DAR1 0/4/X
DAR2 0/4
PWM_VCC
DAC2 1u/4/X5R/6.3V/K
DAC3 0.1u/4/X7R/16V/K
VCCST_VCCPLL
DAR18 100/4/1/X
DAR19 100/4/1/X
DAR8 45.3/4/1/X
DAC13 1u/4/X5R/6.3V/K
DAC18
DAC19
DAC20
10p/4/NPO/50V/J/X
DAR3 8.2K/4/X
ENABLE_CPU
VR_RDY 17,31
PVIDSLCK 4,31
-PVIDALRT 4,31
PVIDSOUT 4,31
VTT_PWRGD_PWM
DAR115 0/4/X
VTT_PWRGD 17
DAR112 8.2K/4
DAR113 8.2K/4
DAR116 8.2K/4
DAC48 0.01u/4/X7R/50V/K/X
DAQ1 2N7002/SOT23/25pF/5
DAQ2 2N7002/SOT23/25pF/5
DAQ3 2N7002/SOT23/25pF/5
DAD3 BAT54C/SOT23/200mA
DAC49 4.7u/6/X5R/16V/K
N_-SLP_S0 13,17
DA_SBC1 22u/6/X5R/6.3V/M
DA_SBC2 22u/6/X5R/6.3V/M
DA_SBC3 22u/6/X5R/6.3V/M
DA_SBC4 22u/6/X5R/6.3V/M
DA_SBC5 22u/6/X5R/6.3V/M
DA_SBC6 22u/6/X5R/6.3V/M
DA_SBC7 22u/6/X5R/6.3V/M
DA_SBC8 22u/6/X5R/6.3V/M
DA_SBC9 22u/6/X5R/6.3V/M
DA_SBC10 22u/6/X5R/6.3V/M
DA_SBC11 22u/6/X5R/6.3V/M
放置背板電感與電感之間
GIGABYTE
Title
ISL69269_PWM
Size Custom
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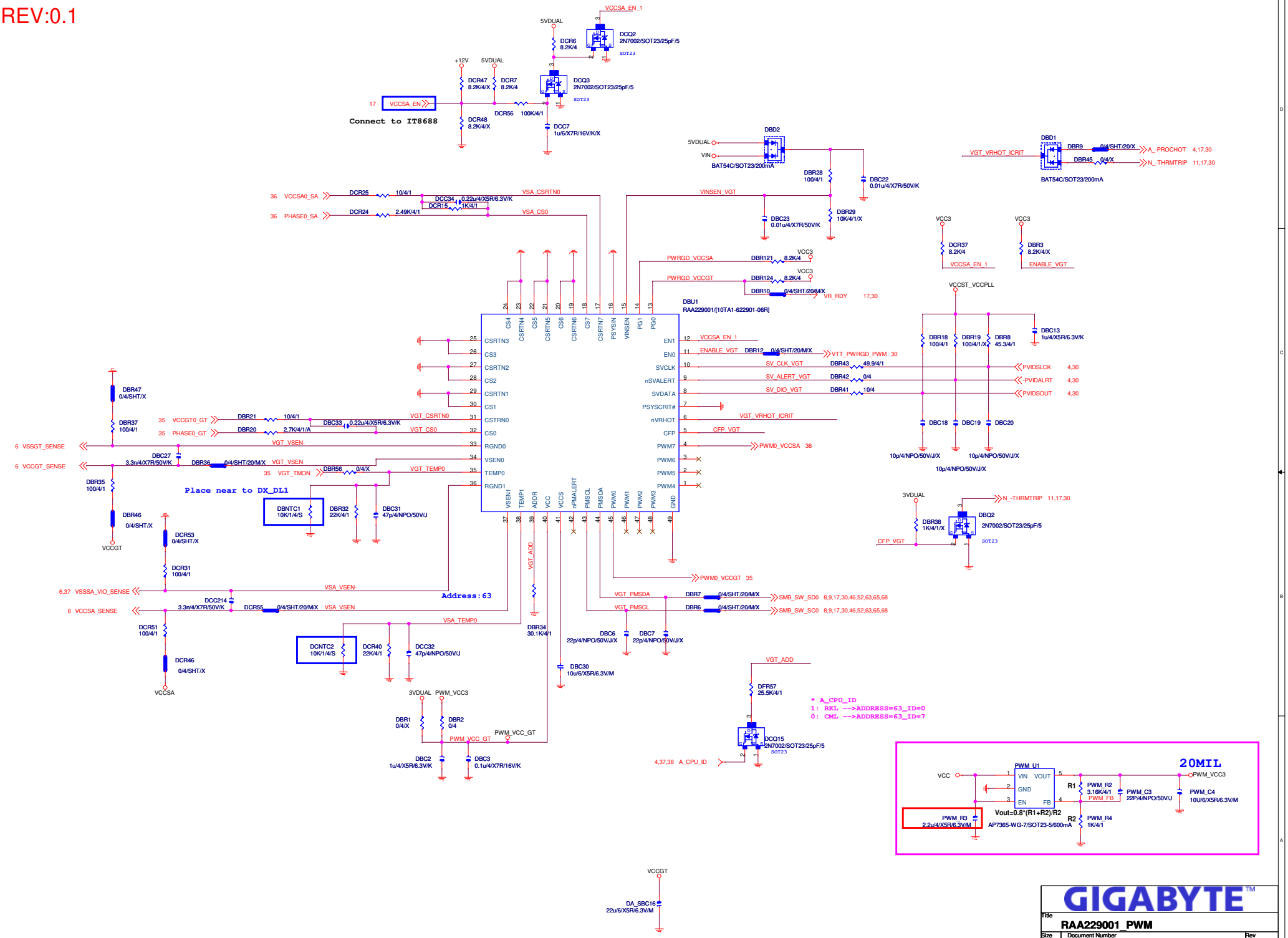
REV:0.1



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Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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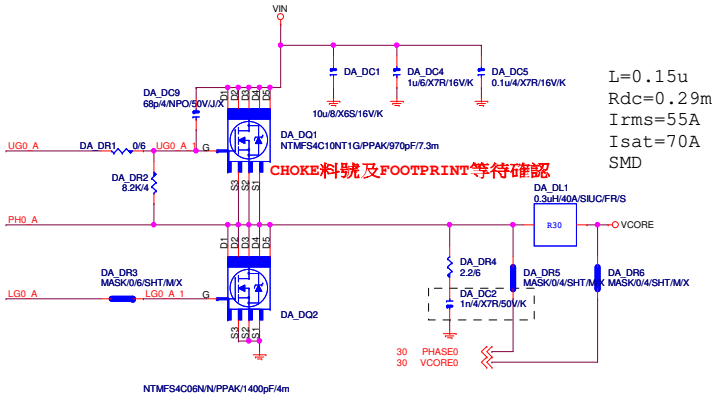
REV:0.1



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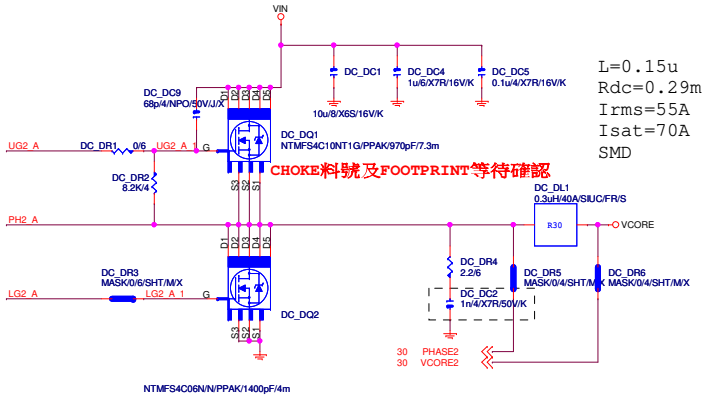
Irms=55A
Isat=70A
SMD



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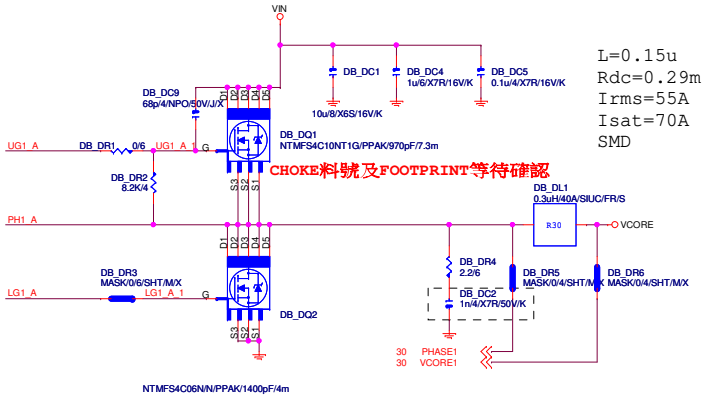
Irms=55A
Isat=70A
SMD



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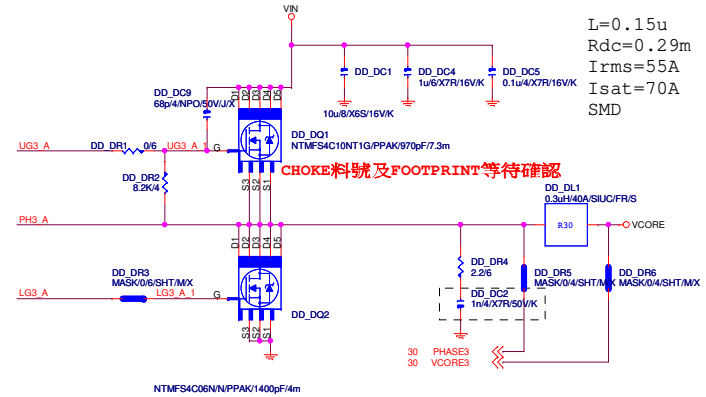

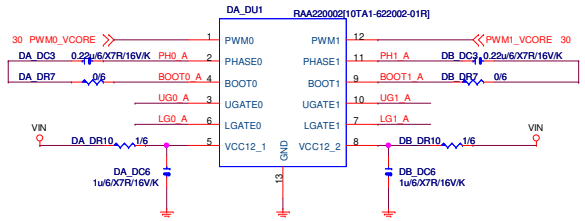

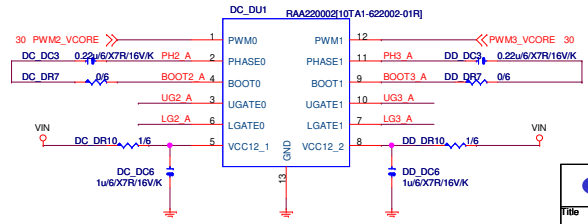

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Title	VCORE_PPAK-1	
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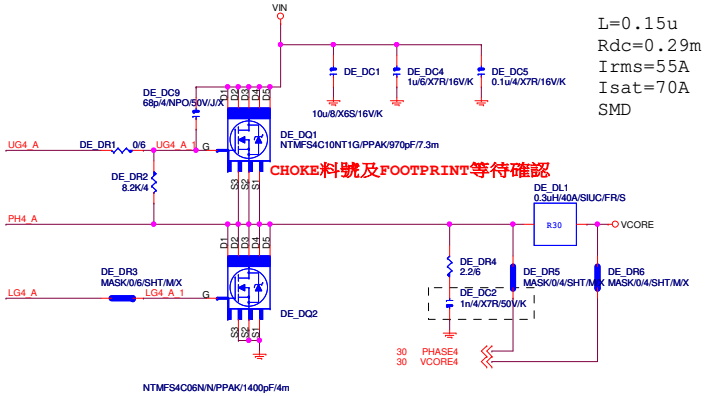
REV:0.1



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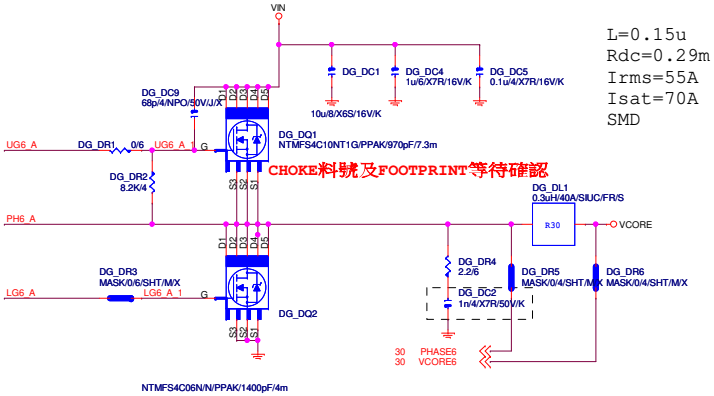
SMD



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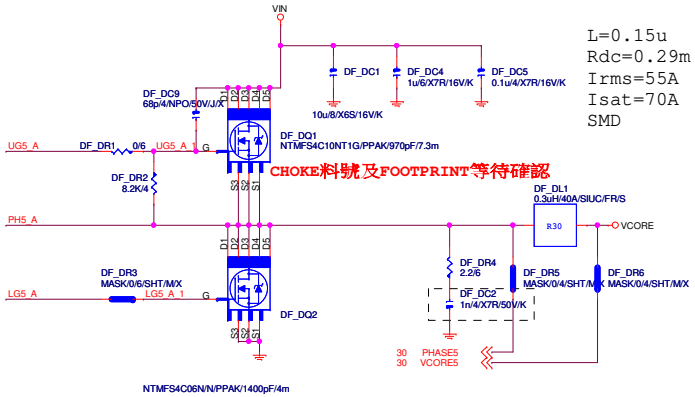
SMD



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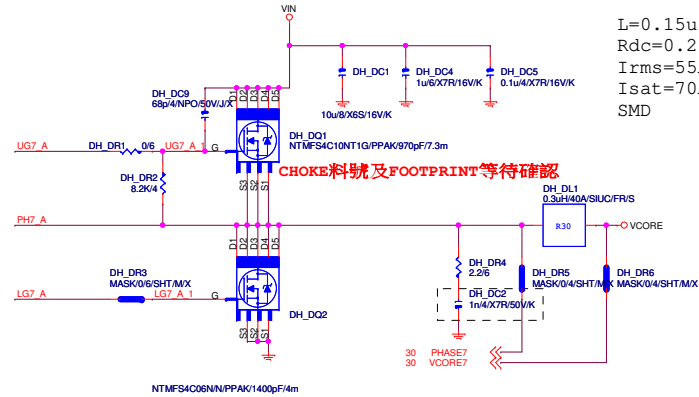
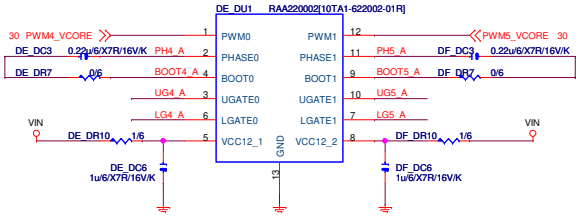
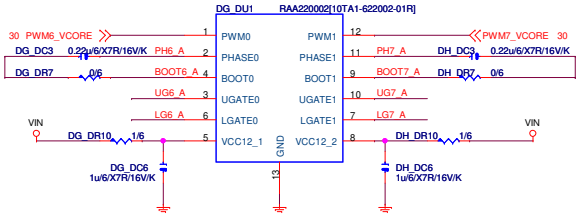
Rdc=0.29m
Irms=55A
Isat=70A
SMD







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Title	VCORE_PPAK-2	
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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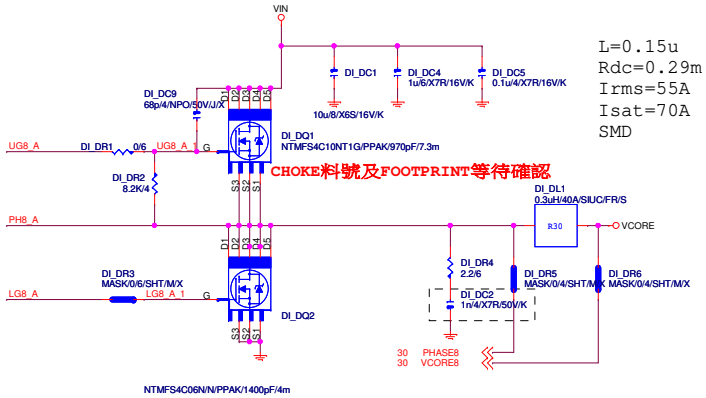
REV:0.1



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Rdc=0.29m
Irms=55A
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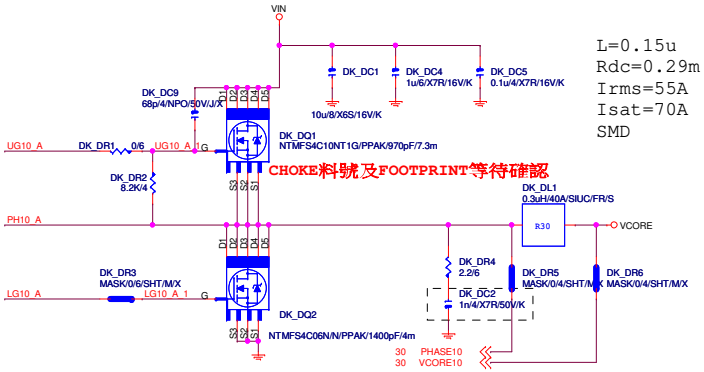
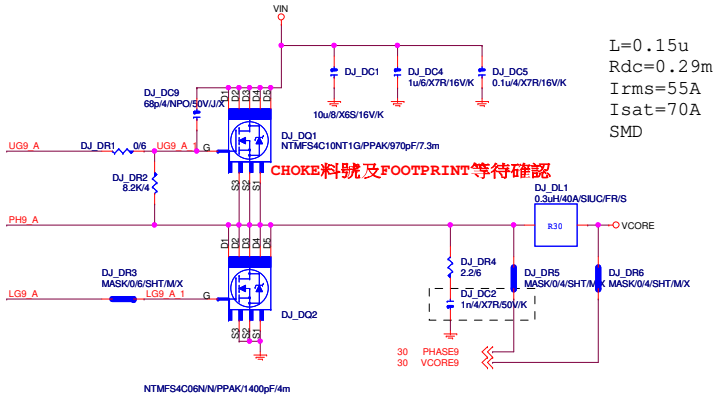
SMD

CHOKE料號及FOOTPRINT等待確認



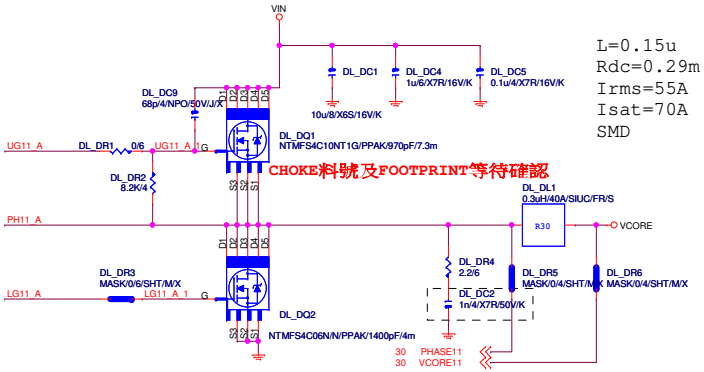
L=0.15u
Rdc=0.29m
Irms=55A
Isat=70A
SMD

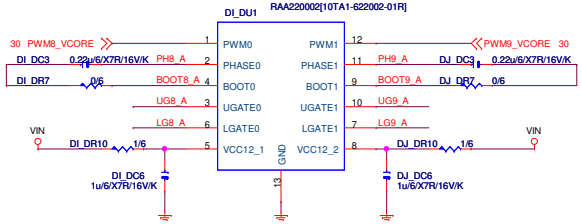
CHOKE料號及FOOTPRINT等待確認

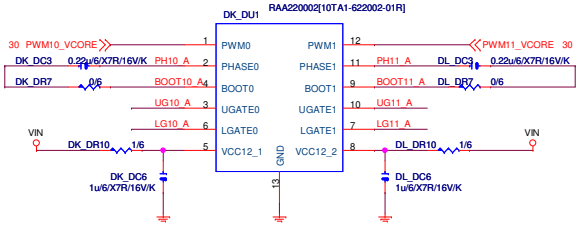


L=0.15u
Rdc=0.29m
Irms=55A
Isat=70A
SMD

CHOKE料號及FOOTPRINT等待確認







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Title	VCORE_PPAK-3	
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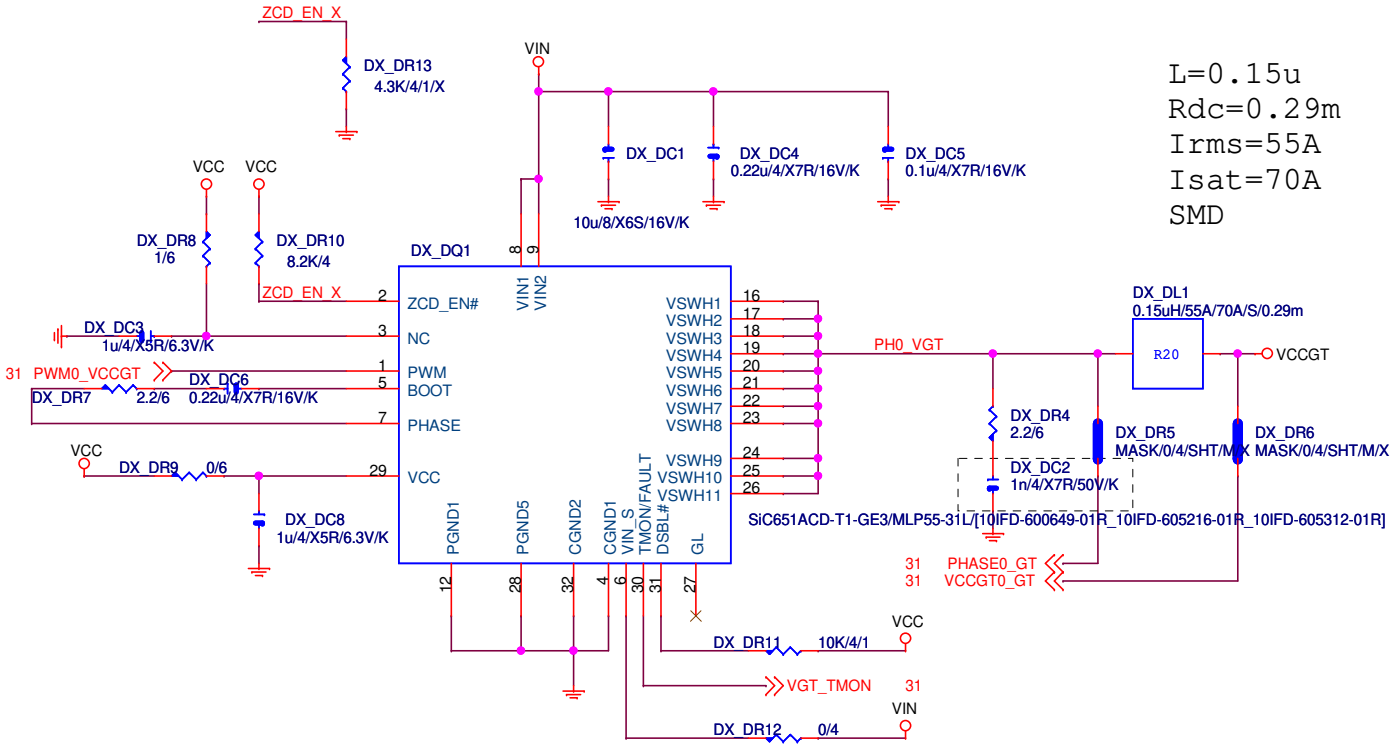
REV:0.1

DRMOS使用NCP302155時PIN2 and PIN3要上件(Ex:DA_DR13.DA_DR8.DA_DC3)



L=0.15u
Rdc=0.29m
Irms=55A
Isat=70A
SMD

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Title	VCCGT_DRMOS	
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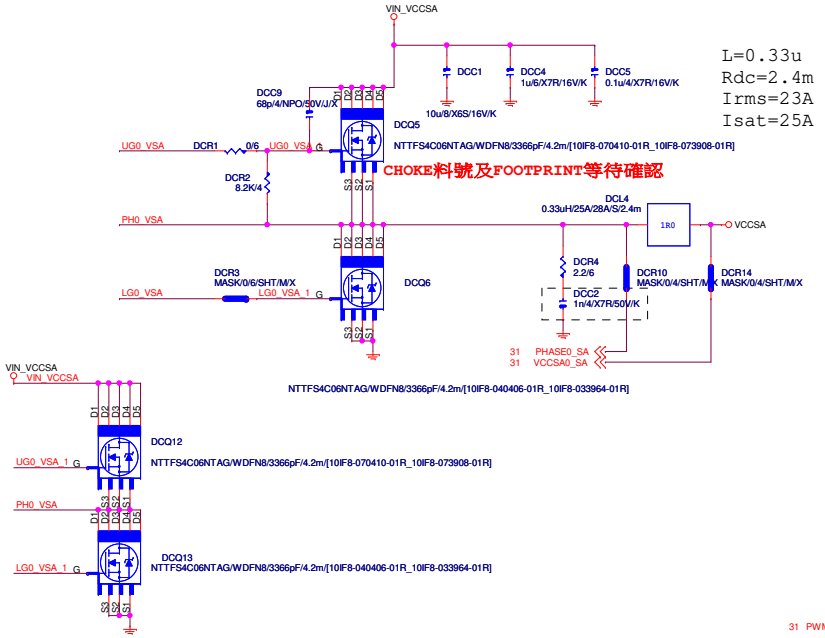
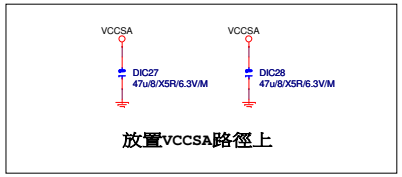
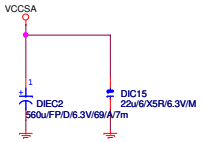
REV:0.1



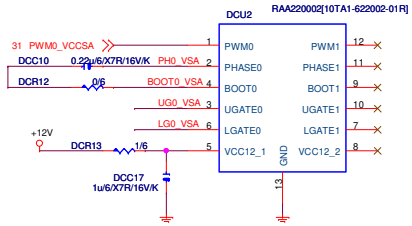
L=0.33u
Rdc=2.4m
Irms=23A
Isat=25A

VCCSA CAP



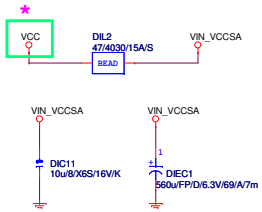


CPU SOCKET 已經有22u/6 *4pcs



VIN CAP

100u*1PCS



560u/FP/D/6.3V/69/A/7m

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Title	VCCSA MOSFET	
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VCCIO

REV:0.12

RKL MODIFY

5VDUAL DFR11 2.2/6 DRV_VIO DFC11 1u/6/X7R/16V/K

VCC DFR10 100K/4/1 VCCIO_PG

VCC3 DFR25 8.2K/4 VCCIO_EN_1

5VDUAL DFR20 0/4 VCCIO0_MODE

VCCIO_EN_1

A_CPU_ID_N VCCIO0_VID1

DFR18 140K/4/1 DFC56 3.3n/4/X7R/50V/K

DFU2 TPS51215ARUKR/WQFN-20

15	V5IN	DRVH	13 UGATE_VIO
7	PGOOD	BST	11 VCCIO_BOOT DFR19 0/6 DFC10 0.1u/6/X7R/25V/K
10	EN	SW	12 PHASE_VIO
16	MODE	DRVL	14 LGATE_VIO
8	VID0	GSNS	1 VIO_RGND
9	VID1	VSNS	20
17	GND	V3	2 VCCIO0_V3
18	TRIP	V2	3 VCCIO0_V2
19	SLEW	V1	4 VCCIO0_V1
21	AGND	V0	5 VCCIO0_V0
6	VREF		

VCCIO0_VREF DFC57 0.1u/4/X7R/16V/K

VIO_VSA_RGND DFR35 0/4/X VSSSA_VIO_SENSE 6,31

請盡量靠近分支點

靠近PIN1 DFC58 100p/4/NPO/50V/J/X

DFR34 0/4/X VIO_VSA_RGND

DFR26 0/4

放置靠近output cap端

使用GPIO超壓
1. DFR26須改為100/4/1
2. DFR34需上件

DFC59 100p/4/NPO/50V/J/X 靠近PIN20

VCCIO_EN DFR36 0/4/X VCCIO_EN_1

Connect to IT8795

17,38,6 VCCIO_EN

Connect to IT8686

5VDUAL DCR21 8.2K/4 DCQ7 2N7002/SOT23/25pF/5 SOT23

5VDUAL DCR22 8.2K/4/X DCQ8 2N7002/SOT23/25pF/5 SOT23

DCR23 100K/4/1 DCC16 1u/6/X7R/16V/K

VCC3 DFR38 100K/4/1 VCCIO0_VID1 DFQ1 2N7002/SOT23/25pF/5 SOT23

VCC3 DFR37 8.2K/4/1 A_CPU_ID_N DFQ11 2N7002/SOT23/25pF/5 SOT23

4,31,38 A_CPU_ID

* A_CPU_ID
1: RKL -->VCCIO=1.05V (VID0=L,VID1=H)
0: CML -->VCCIO=0.95V (VID0=H,VID1=L)

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

CHOKE與CAP料號可變

注意耐壓

VCC DCL1 6*6 47/4030/15A/S BEAD

Close Choke

DFC36 0.1u/4/X7R/16V/K DFC37 0.1u/4/X7R/16V/K DFC39 0.1u/4/X7R/16V/K DFC27 68p/4/NPO/50V/J/X 0.1u/4/X7R/16V/K

VCCIO_VIN

DFC9 1u/6/X7R/16V/K Close MOS

DFC24 10u/8/X5R/16V/K DFC25 10u/8/X5R/16V/K DFC26 10u/8/X5R/16V/K

D1 D2 D3 D4 D5 DFQ5 NTTFS4C10NTAG/WDFN8/993pF/7.4m

L=1u NTTFS4C10NTAG/WDFN8/993pF/7.4m
DCR=6.7 mohm
Isat=15A
Idc=12A

UGATE_VIO DFR12 2.2/6 UG_VIO

DFR13 8.2K/4

PHASE_VIO

LGATE_VIO

D1 D2 S3 D3 S2 D4 S1 D5 DFQ6 NTTFS4C10NTAG/WDFN8/993pF/7.4m

DFL2 1.0uH/12A/15A/S/7.4 6*6

VCCIO 使用GPIO超壓須移除

DFR15 2.2/6 DFC14 1n/4/X7R/50V/K

DFR16 487/4/1/X DFR17 1K/4/1 DFEC2 560u/FP/D/6.3V/69/A/7m DFC38 22u/6/X5R/6.3V/M

DFC15 3.3n/4/X7R/50V/K/X RS

ADDRESS=2A
VREF=02

VCCIO_OV 63 VCCIO_OV

DFR28 100/4/1/X DFR27 10K/4/1/X DFR9 0/4/X VCCIO_SENSE 6

使用GPIO超壓須上件

VCCIO0_VREF

DFR40 51K/4/1

VCCIO0_V3

DFR14 43K/4/1

VCCIO0_V2 1.050V

DFR39 9.53K/4/1

VCCIO0_V1 0.951V

DFR41 102K/4/1

VCCIO0_V0

DFR50 0/4

VCCIO_OV DFR33 422K/4/1/X VIO_RGND

3VDUAL DFR43 42.2K/4/1 DFR29 100K/4/1/X DFQ2 2N7002/SOT23/25pF/5 SOT23 DFR30 100K/4/1 DFC28 0.1u/4/X7R/16V/K

3VDUAL DFR44 21K/4/1 DFR31 100K/4/1/X DFQ3 2N7002/SOT23/25pF/5 SOT23 DFR32 100K/4/1 DFC29 0.1u/4/X7R/16V/K

14 VCCIO_VID1 14 VCCIO_VID2 VIO_RGND

VCCIO_VID1-->GPP_F_22
VCCIO_VID2-->GPP_F_23

使用GPIO超壓須上件

VCCIO_VID1	VCCIO_VID2	VCCIO_0_G1	VOUT
LOW	LOW	LOW	0.950V
LOW	LOW	HIGH	1.050V
HIGH	LOW	HIGH	1.075V
LOW	HIGH	HIGH	1.100V
HIGH	HIGH	HIGH	1.125V

Mode	VR	Mode logic	LPM	VID Setting G1 logic	VID Setting G0 logic	VOUT (V)
Mode1	VCCIO	0	0	x	x	0(LPM)
			1	0	0	0.85
			1	0	1	0.875
			1	1	0	0.95
			1	1	1	0.975
Mode2	VPRIMCORE	Floating	0	x	x	0.7V(LPM)
			1	0	0	0.85
			1	0	1	0.9
			1	1	0	0.95
			1	1	1	1
Mode3	VccEDRAM/ VccEOPIO	1	0	x	x	0(LPM)
			1	0	0	0.8
			1	0	1	0.95
			1	1	0	1
			1	1	1	1.05

VCCIO_PG DGR36 1 MASK/0/4/SHT/X VCCIO_PWRGD

Connector to SIO PIN7

VCCIO_PWRGD 17

3VDUAL DGR2 100K/4/1/X DGQ2 2N7002/SOT23/25pF/5/X SOT23

3VDUAL DGR4 100K/4/1 DGQ10 2N7002/SOT23/25pF/5 SOT23

* A_CPU_ID_N
0: RKL
1: CML

DGQ1 2N7002/SOT23/25pF/5/X SOT23 VCCIO_PG

DGQ3 2N7002/SOT23/25pF/5 SOT23 A_CPU_ID_N

DGQ4 2N7002/SOT23/25pF/5 SOT23 38 VCCIO2_PG VCCIO2_PG

VIO_C10_G 38

VCC3 DFR24 10K/4/1 VIO_C10_G

A_CPU_ID_N DFQ16 2N7002/SOT23/25pF/5 SOT23

DFQ15 MMBT2222A/SOT23/600mA/40 SOT23

VCCIO0_VID1 DFQ17 2N7002/SOT23/25pF/5 SOT23

14,61 CPU_VCCIO_PWR_GATEB DFR42 10K/4/1

C10 function

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Title: VCCIO

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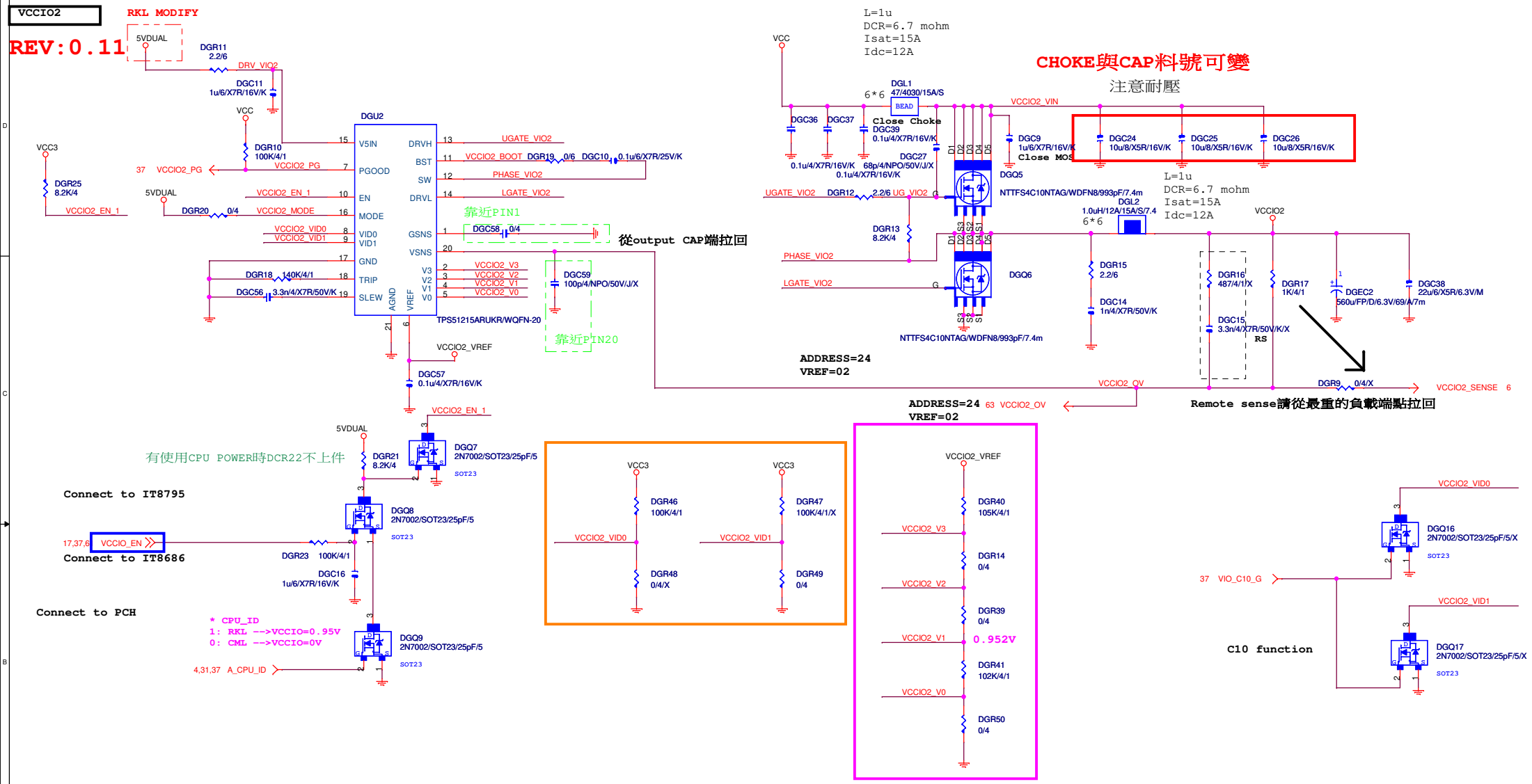
VCCIO2

RKL MODIFY

REV:0.11



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Title	VCCIO2	
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REV:0.11

DDR4

5VDUAL — MAR2 8.2K/4 — MA_EN

上件

MA_DR38.MA_DC15

VPP_25V使用8120.8068A.RT8237時上件

VDDQ_SIO — DDR_VS MASK/0/4/SHT/M/X — VDDQ

CLOSE TO DDR POWER PLANE

5VDUAL — MA_DR8 2.2/6 — MA_DC10 1u/6/X7R/16V/K — MA_DR37 100K/4/1 — VDDQ_GD

VPP_25V — MA_DR40 8.2K/4/X

5VDUAL — MA_DR41 8.2K/4

40 VPP25V_GD — MA_DR38 — MASK/0/4/SHT/M/10/X — DDR_EN

17,40,61 MA_EN — MA_DR39 0/4/X

MA_DC15 0.1u/4/X7R/16V/K

MAU2 RT8237/[10TA1-608237-01R]

EN, PGOOD, VCC, BOOT, UGATE, PHASE, FB, CS, RF, GND, GLGATE

MA_DC9 0.1u/6/X7R/25V/K

MA_UGATE, MA_PHASE, MA_LGATE

MA_RF — MA_DR45 — VDDQ_GD 470K/4/1

MA_DR15 91K/4/1 — MA_DR19 470K/4/1/X

FS=290K

OCP=40A

PIN7-->20mil
PIN1-->6mil
PIN2-->6mil
PIN5-->6mil
PIN3-->6mil

MOSFET請依MOSFET使用規則,自行選擇
ON-->10IF9-040406-10R[NTMFS4C06N/N/PPAK/1400pF/4m]
VISHAY-->10IF9-040012-10R[SIRA12DP/PPAKSO8/2070pF/4.3m]

5VDUAL — MA_L2 47/4030/15A/S BEAD — MA_VIN

MA_DC6 0.1u/4/X7R/16V/K Close Choke

MA_DC7 1u/6/X7R/16V/K Close MOS

MAEC1 560u/FP/D/6.3V/69/A/7m

MA_DC25 68p/4/NPO/50V/J/X

MA_DQ1 NTMFS4C10NT1G/PPAK/970pF/7.3m/[10IF9-040406-10R]

MA_UGATE — MA_DR1 2.2/6 — MA_UG

MA_PHASE — MA_DR2 8.2K/4

MA_LGATE — MA_DR9 2.2/6 — MA_LG

MA_DQ2, MA_DQ3 NTMFS4C10NT1G/PPAK/970pF/7.3m/[10IF9-040406-10R]

MA_DR5 2.2/6

MA_DC5 1n/4/X7R/50V/K

MA_L1 1uH/35A/IMD109/M/D R50 10*10

VDDQ

DDR_ADJ — 63 DDR_ADJ

MA_DC14 22p/4/NPO/50V/J/X RS

MA_DR13 1K/4/1

MA_DR12 1.4K/4/1 — RO

L=1u
DCR=2.5 mohm
Isat=35A
Idc=28A

MAC60 22u/6/X5R/6.3V/M

Remote sense請從最重的負載端點拉回

DDR VIN CAP
560u*2PCS

CHOKE與CAP料號可變

SUPPORT DDR4 1.2V

25A MAX

1H1L規格移除

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

PWR SEQ

For power sequence require

VPP_25V使用8120時上件

MAU1上RT9045時上件(不可MASK)

DDRVTT

VDDQ — NCT3103S/SOP8/2A/[10GL2-203103-01R]

MAC2 1u/4/X5R/6.3V/K — MAR5 1K/4/1

MAU1: VIN, GND, VREF1, VOUT, VREF2, ENABLE, VCNTL, BOOT_SEL, GND

MA_VTT_REF

MAC1 0.01u/4/X7R/50V/K — MAR4 1K/4/1

1.1A MAX

DDRVTT

DDRVTT_EN — DDRVTT_BOOT

5VDUAL — MAC7 10u/6/X5R/6.3V/M

DDR CAP

560u*3PCS

VDDQ — Footprint EC6D8MM-RH-2 — MAEC3 560u/FP/D/6.3V/69/A/7m

* 大電容 x4

MAEC4 560u/FP/D/6.3V/69/A/7m

MAEC2 560u/FP/D/6.3V/69/A/7m

DDRVTT CAP

* 大電容 x0

DDRVTT — MAC4 22u/6/X5R/6.3V/M

4 DDR_VTT_CTL
10,17,29,51,61,65,70 N_-SLP_S3

DDR_VTT_CTL MAR110 MASK/0/4/SHT/M/10/X DDRVTT_EN
N_-SLP_S3 MAR111 MASK/0/4/SHT/M/10/X DDRVTT_BOOT

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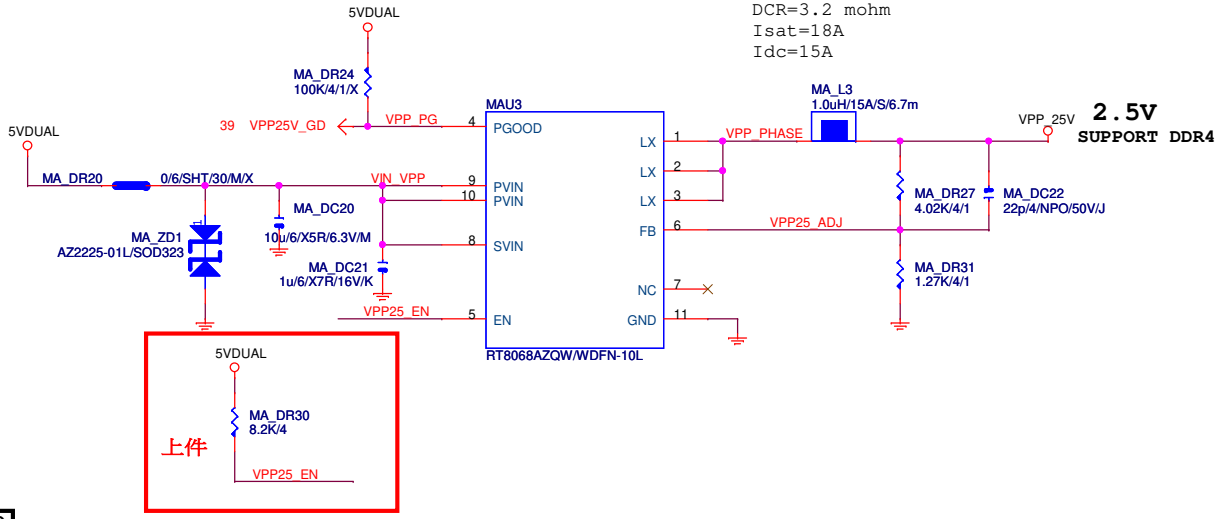
VPP_25V

CHOKE與CAP料號可變

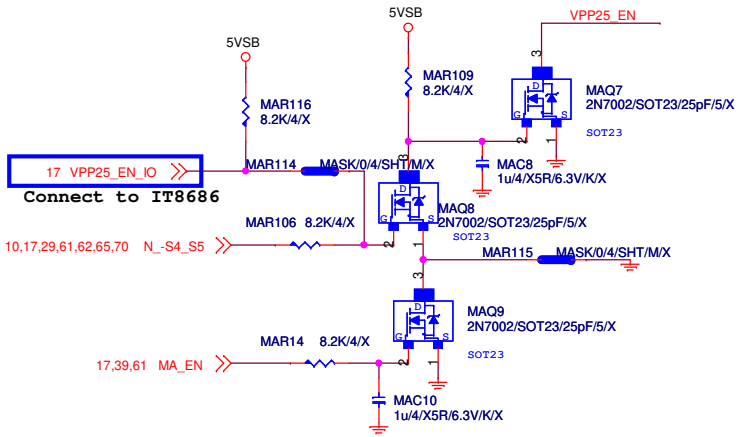
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A

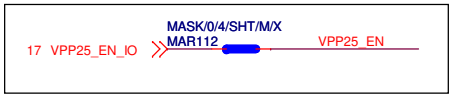


PWR SEQ

PWR SEQ

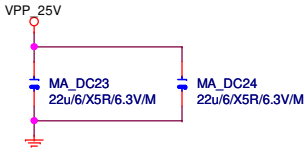
* 刪 MA_DR32





VPP CAP 22u*2PCS

* 大電容 x0



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Title	RT8068A_VPP25 POWER	
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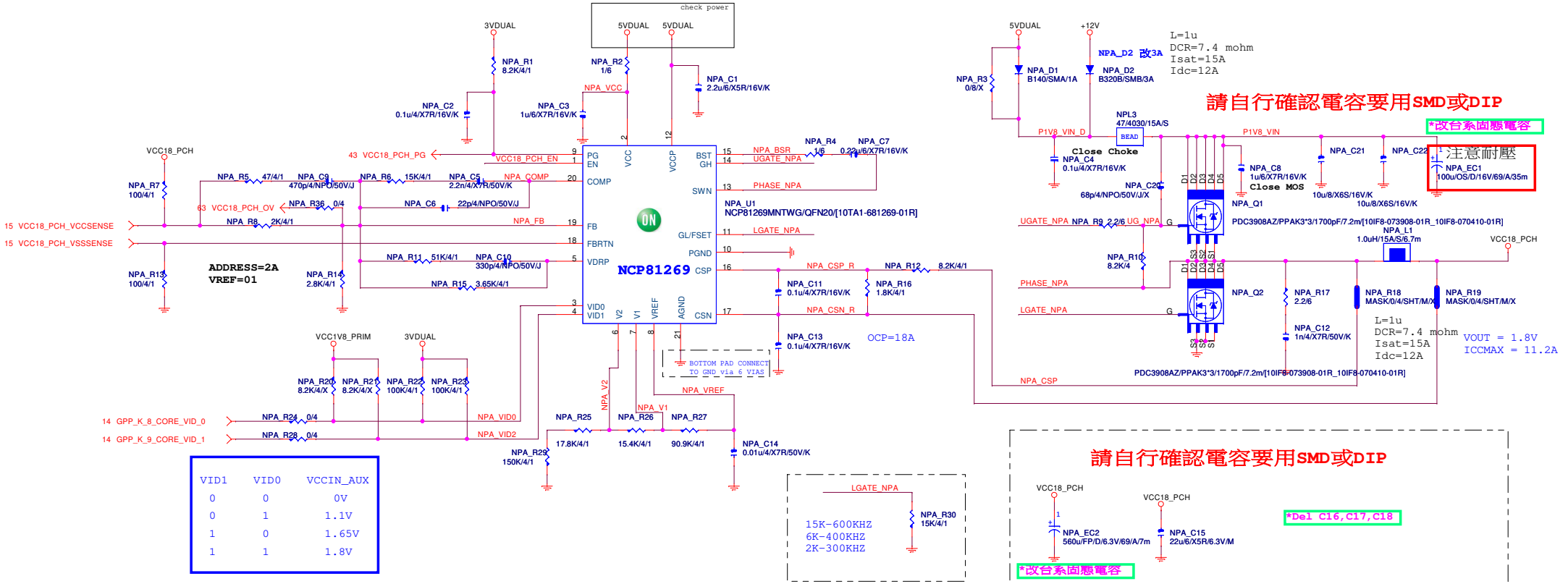

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Title	NCP81269_PCH POWER	
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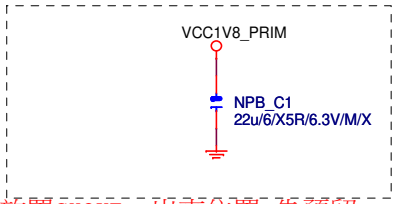
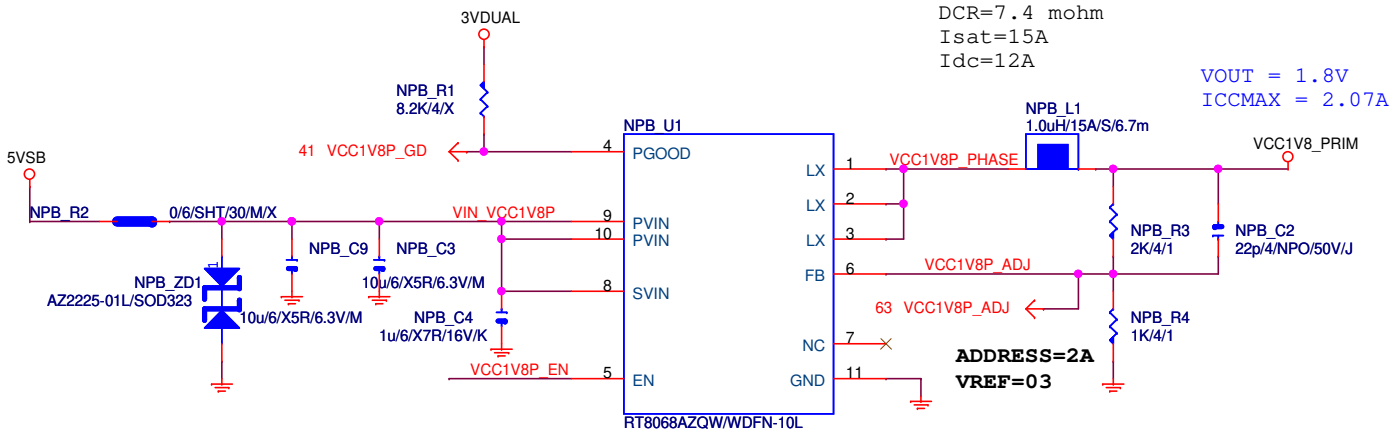
REV:0.1

VCC1V8_PRIM

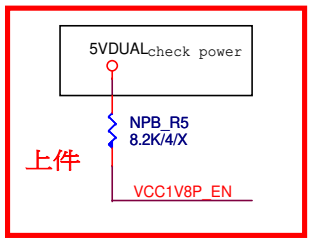
CHOKE與CAP料號可變



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

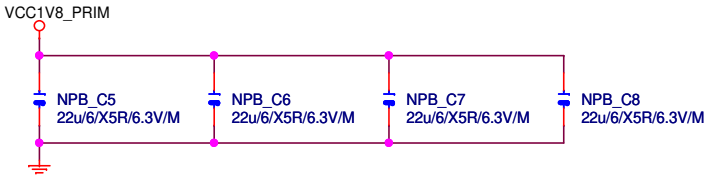


PWR SEQ



connect to PCH pin AD46

VCC1V8_PRIM CAP 22u*4PCS



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5VDUAL

REV:0.1

* 5Vdual , update from SKL 0.2B

*NIKO

+12V
R57 8.2K/4
Q30 PK6H6BA/PDFN5*6/857pF/7.8m/[10IF9-040406-10R]
5VDUAL
5VDL_G1
5VSB
R51 8.2K/4
Q32 2N7002/SOT23/25pF/5 SOT23
Q54 MMBT2222A/SOT23/600mA/40 SOT23
C41 1n/4/X7R/50V/K/X
17 5VAUX_SW
R113 8.2K/4
VCC
Q31 P2003ED/P/TO252/30m
P_EN
5VSB
BC59 22u/6/X5R/6.3V/M
BC58 22u/6/X5R/6.3V/M
5VSB
R52 1K/4/1
17 5VAUX_SW
R53 1K/4/1
R56 100K/4/1/X
C23 0.1u/4/X7R/16V/K

3VDUAL

5VDUAL
BC27 0.1u/4/X7R/16V/K
3VDUAL
3VDUAL
Q4 L1085DG/TO252/5A
R37 100/4/1
R38 169/4/1
BC25 0.1u/4/X7R/16V/K
R36 22K/4
O_-RSMRST 12,17,65
C9 22u/6/X5R/6.3V/M
C8 1n/4/X7R/50V/K
上22u 電容
Meet the rise time

Rise/Fall max 50us
Rise:20% - 80%
Fall :2V- 0.8V

O_-RSMRST
5VSB
R54 8.2K/4
Q34 2N7002/SOT23/25pF/5 SOT23
Q33 2N7002/SOT23/25pF/5 SOT23
41 VCC18_PCH_PG
C42 0.1u/4/X7R/16V/K/X
R115 0/4/X

3VDUAL_PCH

NQ9 L1117LG/N/SOT223/1A
5VSB
3VDUAL_PCH
3VDUAL_PCH
NBC68 1u/4/X5R/6.3V/K
NR217 301/4/1
NBC66 22u/6/X5R/6.3V/M
NBC67 0.1u/4/X7R/16V/K
NR218 510/4/1

Gigabyte Technology		
Title: DISCRETE POWER		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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ATXX24 POWER CONNECTOR

2x12(空心Pin)
FOOTPRINT:ATXPWR_24-6

Patch some PSU no internal pull up resistor

5VSB
R695 22K/4
17,65 -PSON
BC37 0.1u/4/X7R/16V/K

* 刪除 -5V

-12V VCC3 VCC3

ATX

13	3.3V	3.3V	1
14	-12V	3.3V	2
15	GND	GND	3
16	PSON	5V	4
17	GND	GND	5
18	GND	5V	6
19	GND	GND	7
20	-5V	POK	8
21	5V	5VSB	9
22	5V	12V	10
23	5V	12V	11
24	GND	3.3V	12

BK

VCC3 VCC3 VCC3
BC35 22u/6/X5R/6.3V/M
BC46 0.47u/2/X5R/6.3V/K
BC48 0.47u/2/X5R/6.3V/K

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

VCC
VCC
PWOK
PWOK
5VSB
+12V
BC9 4.7u/6/X5R/6.3V/K
AD1 AZ2225-01L/SOD323/X

VCC
VCC
BC39 1u/4/X5R/6.3V/K
BC36 0.1u/4/X7R/16V/K/X
APW/2*12/BK/VA/SN/2SHK/PA66
BC38 510/6/X
BC42 510/6/X
BC43 1u/4/X5R/6.3V/K
BC44 0.1u/4/X7R/16V/K
BC45 0.1u/4/X7R/16V/K
BC41 0.1u/4/X7R/16V/K

To prevent the 5VSB under loading when boot

ATXX4 POWER CONNECTOR

2x4 (實心Pin)
FOOTPRINT:ATXPW2X4-SOLID

V12
ATX_12V_2X4

1	GND	+12V	5
2	GND	+12V	6
3	GND	+12V	7
4	GND	+12V	8

17

BK

APW/2*4/BK/OC/P/4.2/VA/SN/OH/S/PA9T::ATX_12V_2X4
BC7 0.1u/4/X7R/16V/K

螺絲孔

MH1 HOLE_3/X
MH2 HOLE_3/X
HOLE_4-RH-1

14/12/24
Modify for EMI
MH3 HOLE_3/X
HOLE_4-RH-5MM-2

MH5 HOLE_3/X
MH6 HOLE_3/X
MH4 HOLE_3/X
MH7 HOLE_3/X
MH8 HOLE_3/X
HOLE_4-RH-5MM-5PIN-2

固定孔/光學點

K6 K3 K1
K5 K2 K4
K1_ICT/X

K1-ICT

To prevent the 5VSB under loading when boot

I1 I2 I3 I4 I5
4MMH/X
4MMH

+12V DUMMY LOAD

To fix 12V light load abnromal issue

+12V
RN2 2.7K/8P4R/4
RN3 2.7K/8P4R/4
RN4 2.7K/8P4R/4
RN5 2.7K/8P4R/4
RN6 2.7K/8P4R/4
RN10 2.7K/8P4R/4
RN11 2.7K/8P4R/4
RN12 2.7K/8P4R/4
RN13 2.7K/8P4R/4
RN14 2.7K/8P4R/4
RN15 2.7K/8P4R/4

VCC3
R1 1K/4/1/X
Q9
13 N_GPP_D11
R703 330/4
EMF30N02J/SOT23/627pF/30m

DUMMY LOAD

5VSB VCC VCC3
RN7 1K/8P4R/6/X
RN8 1K/8P4R/6/X
RN9 1K/8P4R/6/X

COUPON

BY LAYOUT位置

COUPON1 COUPON1 COUPON/X 5VDUAL
COUPON2 COUPON2 COUPON/X 5VDUAL
COUPON3 COUPON3 COUPON/X
COUPON4 COUPON4 COUPON/X

Gigabyte Technology

Title: ATX POWER CONNECTOR
Size: Custom
Document Number: B560M AORUS ELITE
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USB20 HUB_1

Single USB2 HUB used Rev 0.2

HU2AU1

GL850G/S

HUB1_-USBP3
HUB1_+USBP3
HU2AR7 680/4/1
HUB_AVDD11
HUB_AVDD12
GL1_XTALO
GL1_XTALI
HUB1_-USBP2
HUB1_+USBP2
HUB_AVDD13
HUB1_-USBP4
HUB1_+USBP4
-GL1_RESET

AVDD DM2 DP2 RREF AVDD X1 X2 DM3 DP3 AVDD DM4 DP4 RESET# TEST/SCL

DP1 DM1 DP0 DM0 V33 V5 PWREN1#/SDA OVCUR1#/SMC PWREN2# OVCUR2#/SMD PGANG PSELF DVDD GND

3_3V_IN1
5VDUAL
GL1_OVCUR1
GL1_PGANG
GL1_PSELF
HUB1_DVDD

HUB1_+USBP1
HUB1_-USBP1
N_+USBP9 11
N_-USBP9 11

HU2AC7
0.1u/4/X7R/16V/K

GL850S-HHY22/SSOP28

SSOP28-IT8209R

HUB RESET

5VDUAL
HU2AR5 10K/4/1
-GL1_RESET
HU2AR1
47K/4/1
HU2AC1
1u/4/X5R/6.3V/K

HUB PWR

HUB1_DVDD
3_3V_IN1
HU2AC2
10u/6/X5R/6.3V/M
CLOSE PIN24
HUB_AVDD11
HUB_AVDD12
HUB_AVDD13
HU2AC4
0.1u/4/X7R/16V/K
HU2AC5
HU2AC6
0.1u/4/X7R/16V/K
0.1u/4/X7R/16V/K
CLOSE PWR PIN

HUB OVER CURRENT SENSE

5VDUAL
HU2AR2 8.2K/4
GL1_OVCUR1
HU2AR3
15K/4/1
HU2AOC1
SOT23
FSVCC_U2R5
FSVCC_U2R6
BAT54A/SOT23/200mA

HUB CRYSTAL

ONLY SUPPORT 12MHZ

HU2AC3
22p/4/NPO/50V/J
GL1_XTALI
GL1_XTALO
HU2AX1
12M/20p/30ppm/3.2*2.5/80/S/[10XT5-812000-40R]
HU2AC8
22p/4/NPO/50V/J

REU2D1

HUB1_+USBP1
HUB1_-USBP3
HUB1_-USBP1
FSVCC_U2R5
HUB1_+USBP3

AZC099-04S/SOT23-6L

RFU2D1

HUB1_-USBP4
HUB1_+USBP2
HUB1_+USBP4
FSVCC_U2R6
HUB1_-USBP2

AZC099-04S/SOT23-6L

NET 可變

R_USB20

HUB1_-USBP2
HUB1_+USBP2
HUB1_-USBP4
HUB1_+USBP4
HUB1_-USBP3
HUB1_+USBP3
HUB1_-USBP1
HUB1_+USBP1
FSVCC_U2R5
FSVCC_U2R6

UP
MID 1
MID 2
DOWN

USB/A/BK/OS/RA/D/4

FUSE 2 Port 1 Fuse 2A

5VDUAL
REU2F1
SPR-P200T/6V/8/S
FSVCC_U2R5
REU2EC1
100u/OS/D/6.3V/66/A/35m
REU2BC1
0.1u/4/X7R/16V/K

FUSE 2 Port 1 Fuse 2A

5VDUAL
RFU2F1
SPR-P200T/6V/8/S
FSVCC_U2R6
RFU2BC1
0.1u/4/X7R/16V/K

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

R_USB 2.0 OC SIGNAL

HUB MODE

Ganged mode

HUB1_DVDD
HU2AR4
100K/4/1
GL1_PGANG

P.H. USE GL_OVCUR1
DETECT ALL PORT

PSELF

HUB1_DVDD
HU2AR6
100K/4/1
GL1_PSELF

HUB self-power mode:
P.H.=EVERY PORT 500mA.
P.D.=EVERY PORT 100mA.

Gigabyte Technology

Title	HUB GL850GS_1		
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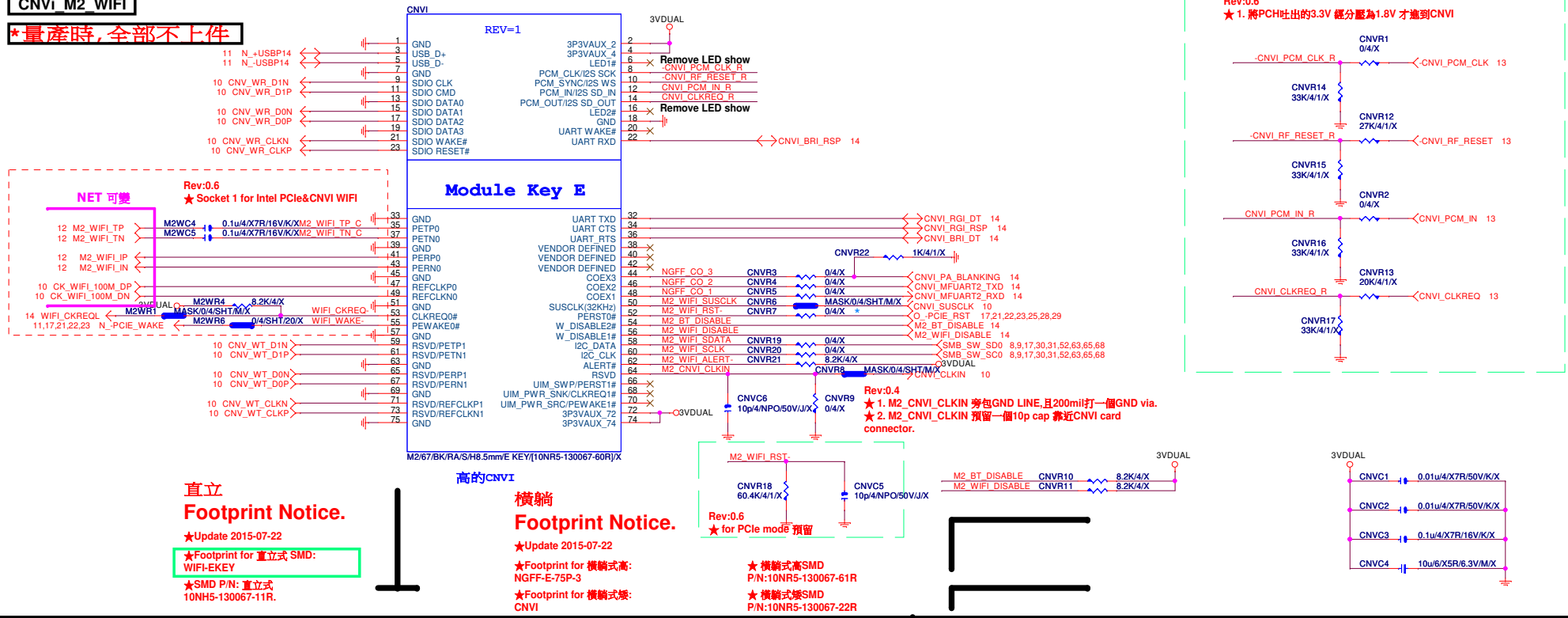
Rev: 0.94

CNVi_M2_WIFI

*量產時,全部不上件

支援PCIE介面WIFI及USB介面BT



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.

高的CNVI

橫躺

Footprint Notice.

★Update 2015-07-22

★Footprint for 橫躺式高: NGFF-E-75P-3

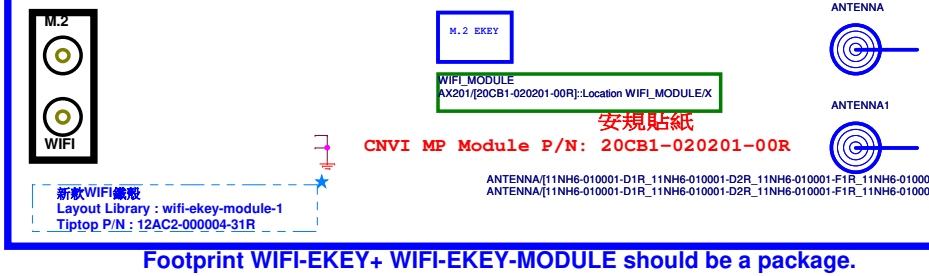
★Footprint for 橫躺式矮: CNVI

★ 橫躺式高SMD P/N:10NR5-130067-61R

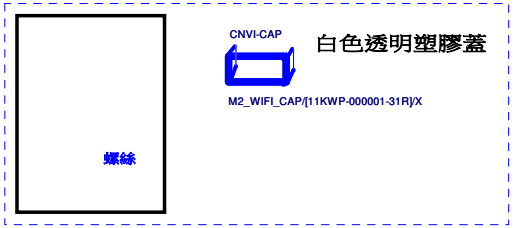
★ 橫躺式矮SMD P/N:10NR5-130067-22R

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.



10KS2-S40126-01R

GIGABYTE			
Title	CNVi_M2_WIFI		
Size: Custom	Document Number: B560M AORUS ELITE		Rev: 1.03
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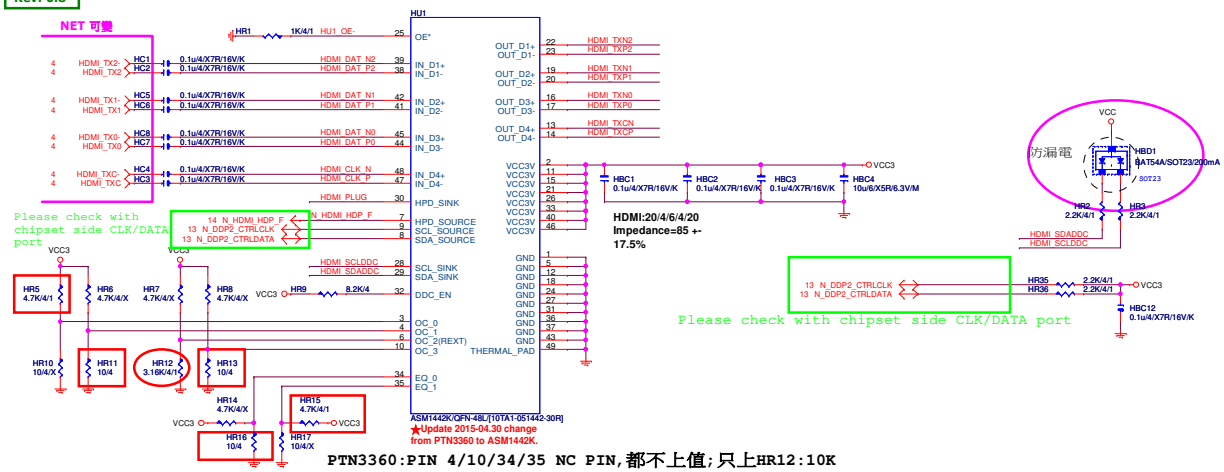
HDMI LEVEL SHIFT

Rev: 0.8

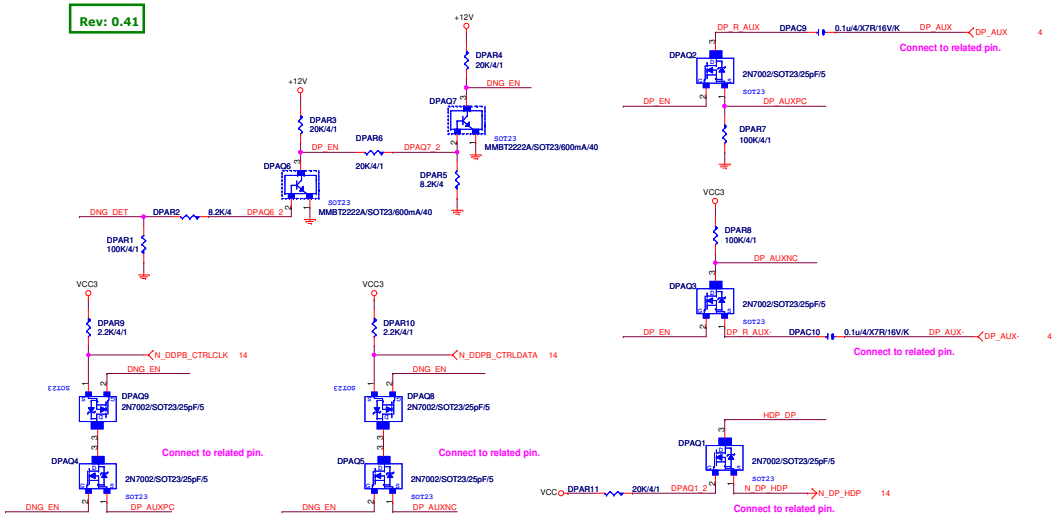


PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K

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)

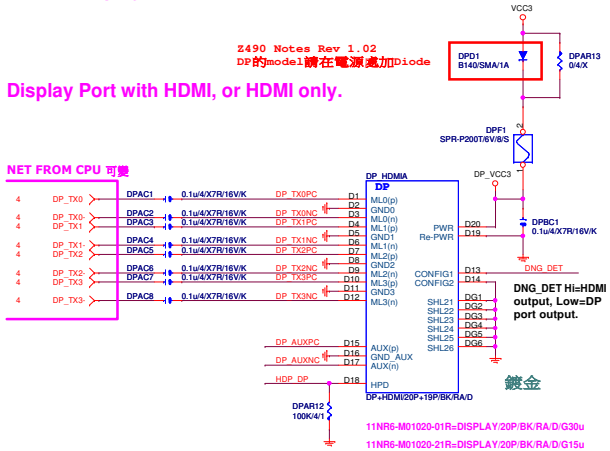
Rev: 0.41



SINGLE Display Port

Z490 Notes Rev 1.02
DP的model請在電源處加Diode

Display Port with HDMI, or HDMI only.



11NR6-M01020-01R=DISPLAY/20P/BK/RA/D/G30u
11NR6-M01020-21R=DISPLAY/20P/BK/RA/D/G15u
11NR6-M01020-71R=DISPLAY/20P/BK/RA/D/G15u/Au

DP

Gigabyte Technology			
Title: HDMI_NO LS/U32			
Size: Custom	Document Number: B560M AORUS ELITE		Rev: 1.03
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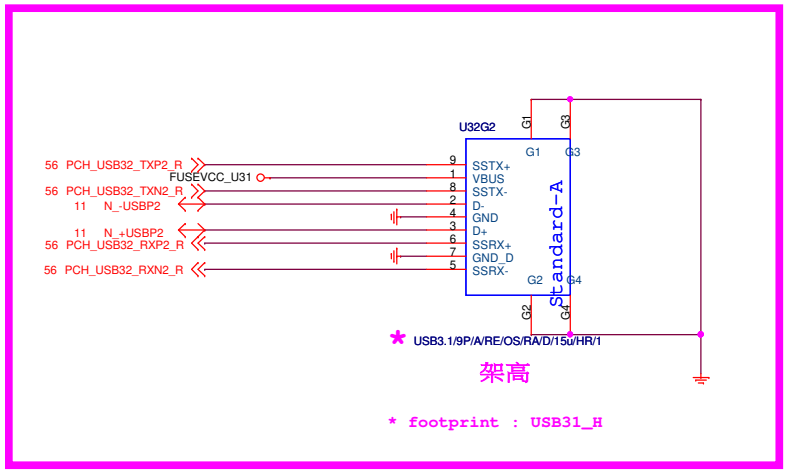
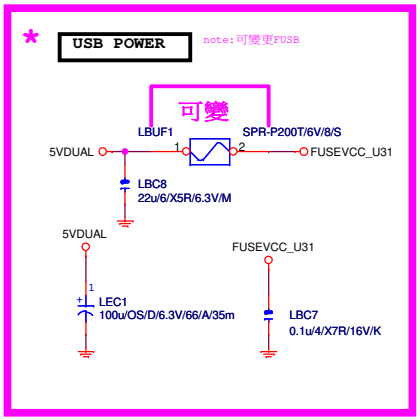
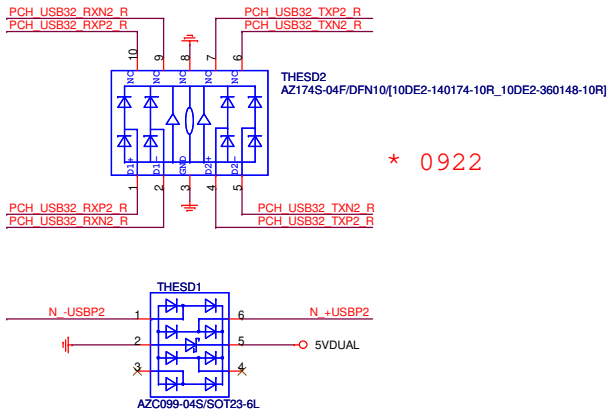
GROUP B

USB31 TYPE A Connector / power source / FUSE which choose for project demand







P/N SWAP

GIGABYTE™

Title	PI3EQX1002B Redriver/DC-J_C/D	
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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Gigabyte Technology

Title: R_USB30,USB_OC

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USB20 HUB_2

Dual USB2 HUB used Rev 0.2

HUB2

GL850G/S

HUB2_AVDD21	1	AVDD	DP1	28	HUB2_+USBP1
HUB2_-USBP2	2	DM2	DM1	27	HUB2_-USBP1
HUB2_+USBP2	3	DP2	DP0	26	N_+USBP10 11
HU2BR7 680/4/1	4	RREF	DM0	25	N_-USBP10 11
HUB2_AVDD22	5	AVDD	V33	24	3_3V_IN2
GL2_XTALO	6	X1	V5	23	5VDUAL
GL2_XTALI	7	X2	PWREN1#/SDA	22	
HUB2_-USBP3	8	DM3	OVCUR1#/SMC	21	GL2_OVCUR1
HUB2_+USBP3	9	DP3	PWREN2#	20	
HUB2_AVDD23	10	AVDD	OVCUR2#/SMD	19	
HUB2_-USBP4	11	DM4	PGANG	18	GL2_PGANG
HUB2_+USBP4	12	DP4	PSELF	17	GL2_PSELF
-GL2_RESET	13	RESET#	DVDD	16	HUB2_DVDD
	14	TEST/SCL	GND	15	

HU2BC7 0.1u/4/X7R/16V/K

GL850S-HHY22/SSOP28

SSOP28-IT8209R

HUB RESET

5VDUAL — HU2BR5 10K/4/1 — -GL2_RESET

HU2BR1 47K/4/1

HU2BC1 1u/4/X5R/6.3V/K

HUB PWR

HUB2_DVDD

3_3V_IN2

HU2BC2 10u/6/X5R/6.3V/M

CLOSE PIN24

HUB2_AVDD21 — HU2BC4 0.1u/4/X7R/16V/K

HUB2_AVDD22 — HU2BC5 0.1u/4/X7R/16V/K

HUB2_AVDD23 — HU2BC6 0.1u/4/X7R/16V/K

CLOSE_PWR_PIN

HUB OVER CURRENT SENSE

5VDUAL

HU2BR2 8.2K/4 — GL2_OVCUR1

HU2BR3 15K/4/1

HU2BOC1 (SOT23) — FSVCC_U2F1

BAT54A/SOT23/200mA

FRONT USB1

NET 可變

FSVCC_U2F1 FSVCC_U2F1

F_USB1

HUB2_-USBP1	3	4	HUB2_-USBP2
HUB2_+USBP1	5	6	HUB2_+USBP2
	7	8	
		10	

BH/2*5K9/BK/ON/2.54/VA/USB/PRT/TUR180

FAU2D1

HUB2_+USBP1	1	6	HUB2_-USBP1
	2	5	3VDUAL
HUB2_-USBP2	3	4	HUB2_+USBP2

AZC099-04S/SOT23-6L

Close to connector

FUSE 2 Port 1 Fuse 2A

FUSE 2 Port 1 Fuse 2A

5VDUAL — FAU2F1 SPR-P200T/6V/8/S — FSVCC_U2F1

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

FAU2BC1 0.1u/4/X7R/16V/K

FRONT USB2

NET 可變

FSVCC_U2F1 FSVCC_U2F1

F_USB2

HUB2_-USBP3	3	4	HUB2_-USBP4
HUB2_+USBP3	5	6	HUB2_+USBP4
	7	8	
		10	

BH/2*5K9/BK/ON/2.54/VA/USB/PRT/TUR180

FBU2D1

HUB2_-USBP3	1	6	HUB2_+USBP3
	2	5	3VDUAL
HUB2_+USBP4	3	4	HUB2_-USBP4

AZC099-04S/SOT23-6L

Close to connector

FUSE 2 Port 1 Fuse 2A

HUB CRYSTAL

ONLY SUPPORT 12MHZ

HU2BC3 22p/4/NPO/50V/J

GL2_XTALI — GL2_XTALO

HU2BX1 12M/20p/30ppm/3.2*2.5/80/S/[10XT5-812000-40R]

HU2BC8 22p/4/NPO/50V/J

HUB MODE

Ganged mode

HUB2_DVDD — HU2BR4 100K/4/1 — GL2_PGANG

P.H. USE GL_OVCUR1
DETECT ALL PORT

PSELF

HUB2_DVDD — HU2BR6 100K/4/1 — GL2_PSELF

HUB self-power mode:
P.H.=EVERY PORT 500mA.
P.D.=EVERY PORT 100mA.

Gigabyte Technology

Title: HUB GL850GS_1

Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.03

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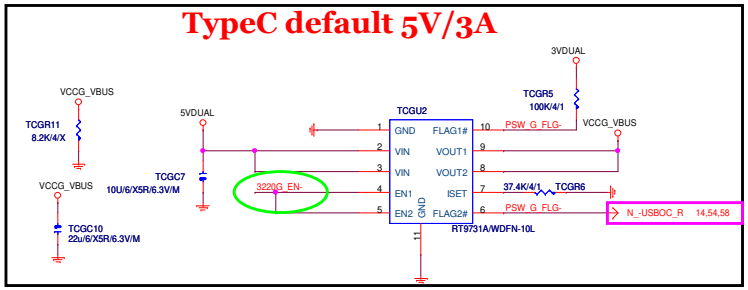
USB3.2 GEN2 PI3EQX1004E Rev0.1

IT5201 MUX Type-C

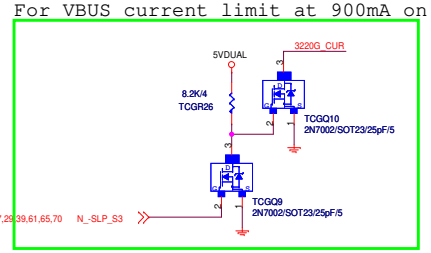
MUX 請擇一

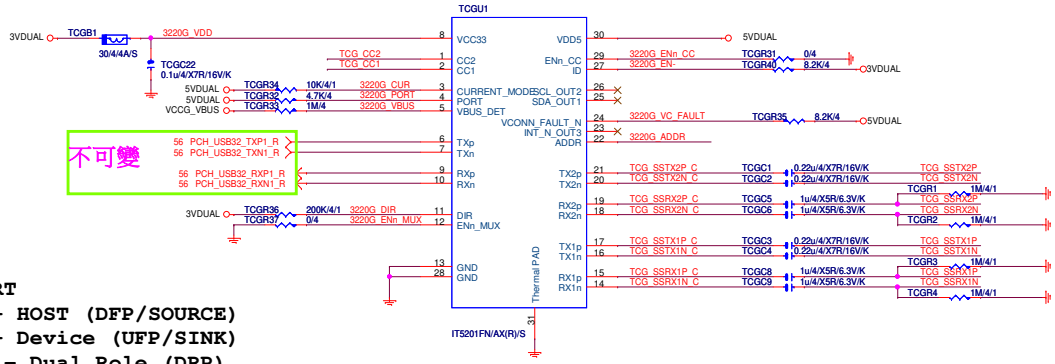
GROUP_G

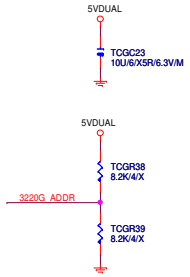
TypeC default 5V/3A



For VBUS current limit at 900mA on S3







PORT

H – HOST (DFP/SOURCE)

L – Device (UFP/SINK)

NC – Dual Role (DRP)

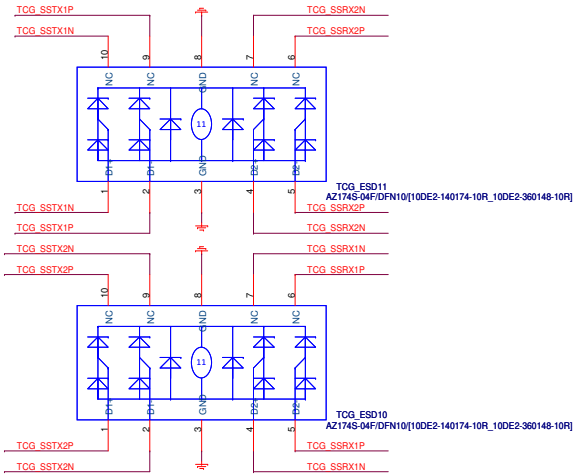
CURRENT MODE

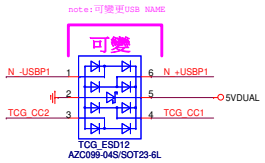
L – Default (900mA) / Pull down to GND or NC

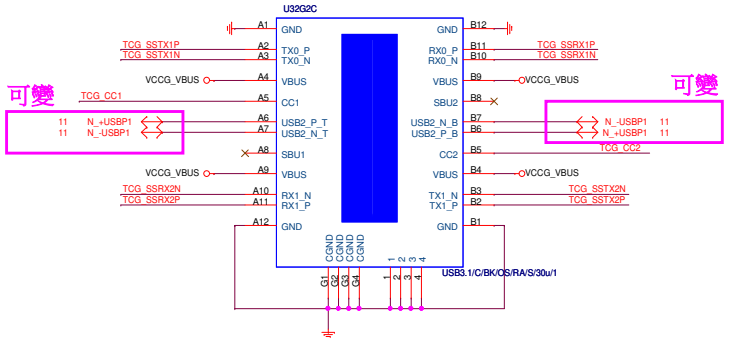
M – Medium (1.5A) / Pull up to VDD 500K

H – High (3.0A) / Pull up to VDD 10K

Color markers can be changed by model

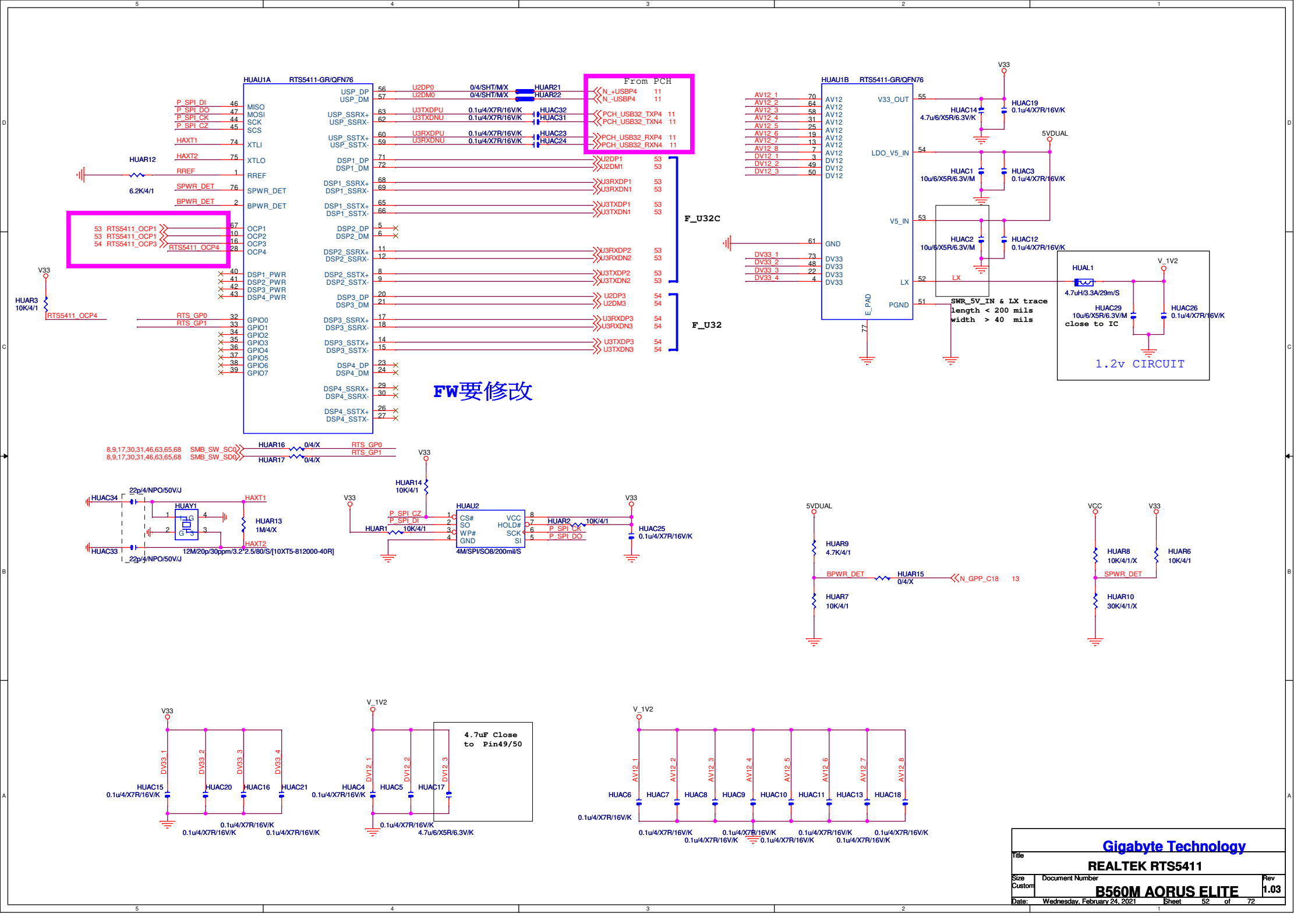






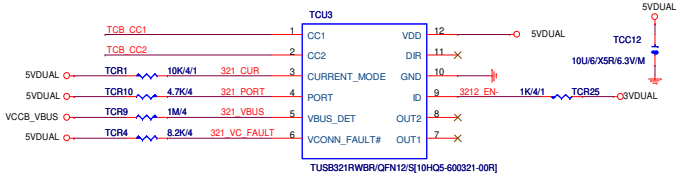
USB2.0 can be used the same source

Title	Gigabyte Technology		
	ITE5201_C_Type-C		
Size C	Document Number B560M AORUS ELITE		Rev 1.03
Date: Wednesday, February 24, 2021		Sheet 51 of 72	


HUAU1A RTS5411-GR/QFN76
From PCH
F_U32C
F_U32
FW要修改
HUAU1B RTS5411-GR/QFN76
SWR_5V_IN & LX trace length < 200 mils width > 40 mils close to IC
1.2v CIRCUIT
4.7uF Close to Pin49/50
Gigabyte Technology
REALTEK RTS5411
B560M AORUS ELITE
1.03
Wednesday, February 24, 2021

Front1 U32 GEN1 RTS5441E Rev0.1

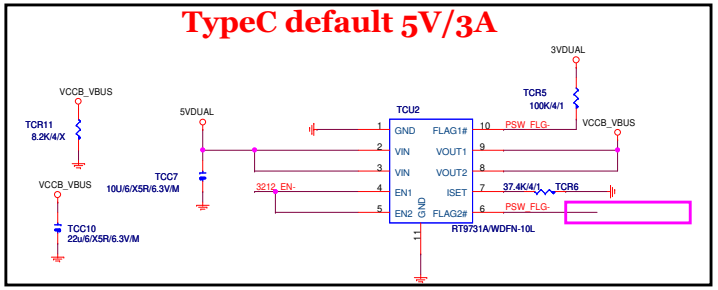
GROUP B



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

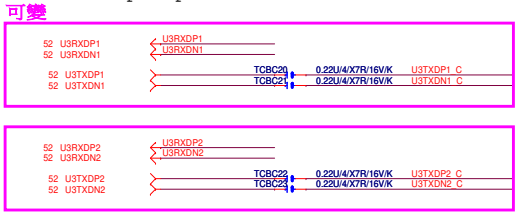
PORT
H – HOST
L – Device
NC – Dual Role

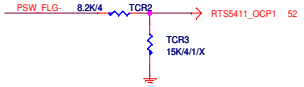
TypeC default 5V/3A



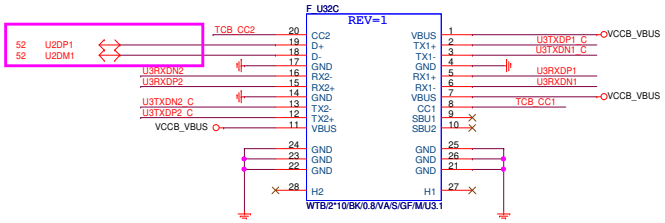
USB 3.x SuperSpeed

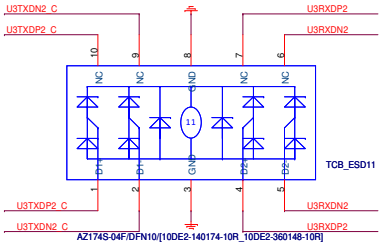
可變

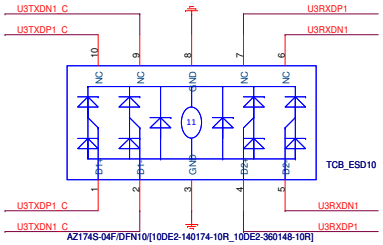


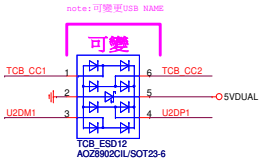


Color markers can be changed by model









GIGABYTE™

Title	TI HD3SS3220_Front1	
Size C	Document Number B560M AORUS ELITE	Rev 1.03
Date: Wednesday, February 24, 2021	Sheet 53 of 72	

Rev: 0.94

Front USB3.0

右 Port

左 Port

F_U32
REV=1

FSVCC_U3F1

NET 可自行調整

11 PCH_USB32_RXN3
11 PCH_USB32_RXP3
11 PCH_USB32_TXN3
11 PCH_USB32_TXP3
11 N_-USBP3
11 N_+USBP3

FBU3C1 0.1u/4/X7R/16V/K FU30_TXN7
FBU3C2 0.1u/4/X7R/16V/K FU30_TXP7

FBU3C3 0.1u/4/X7R/16V/K FU30_TXN8
FBU3C4 0.1u/4/X7R/16V/K FU30_TXP8

U3TXDN3 52
U3TXDP3 52
U3RXDN3 52
U3RXDP3 52
U2DM3 52
U2DP3 52

BH/2*10K20/BK/ON/2.0/VA/USB3.0/PRT

黑色

NET 可自行調整

U3RXDN3
U3RXDP3
U3RXDP3
U3RXDN3

PCH_USB32_RXP3
PCH_USB32_RXN3
PCH_USB32_RXN3
PCH_USB32_RXP3

FBU3D1
AZ174S-04F/DFN10/[10DE2-140174-10R_10DE2-360148-10R]

FBU3D3
AZC099-04S/SOT23-6L

N_-USBP3
U2DP3
N_+USBP3
3VDUAL
U2DM3

CLOSE F_USB30

FUSE 2 Port 1 Fuse 2.6A

5VDUAL RBU3F2 SPR-P260T/6V/8/S FSVCC_U3F1
RBU3EC2 100u/OS/D/6.3V/66/A/35m
RBU3C6 0.1u/4/X7R/16V/K

F_USB POWER PROTECT

POWER 可自行調整

FSVCC_U3F1 UBR3 8.2K/4 RTS5411_OCP3 52
UBR4 15K/4/1

FU30_TXP7
FU30_TXN7
FU30_TXN7
FU30_TXP7

FU30_TXN8
FU30_TXP8
FU30_TXP8
FU30_TXN8

FBU3D2
AZ174S-04F/DFN10/[10DE2-140174-10R_10DE2-360148-10R]

CLOSE F_USB30

-USBOC_F

POWER 可自行調整

5VDUAL UAR1 8.2K/4 N_-USBOC_F N_-USBOC_F 14
UAR2 15K/4/1

U3OC4 SOT23

14 N_-USBOC_F N_-USBOC_F

NET 可自行調整

FSVCC_U3F1 F_32

BAT54A/SOT23/200mA

-USBOC_R

POWER 可自行調整

5VDUAL UBR1 8.2K/4 N_-USBOC_R N_-USBOC_R 14,51,58
UBR2 15K/4/1

U3OC5 SOT23

14,51,58 N_-USBOC_R N_-USBOC_R

NET 可自行調整

FUSEVCC_U31 U32G2

BAT54A/SOT23/200mA

* 接 PCH
N_GPP_G6(SMI) &
PCH PU 3Vdual

13 N_GPPC_G7

UAD5 SOT23

N_-USBOC_F N_-USBOC_F 14
N_-USBOC_R N_-USBOC_R 14,51,58

BAT54A/SOT23/200mA

Gigabyte Technology

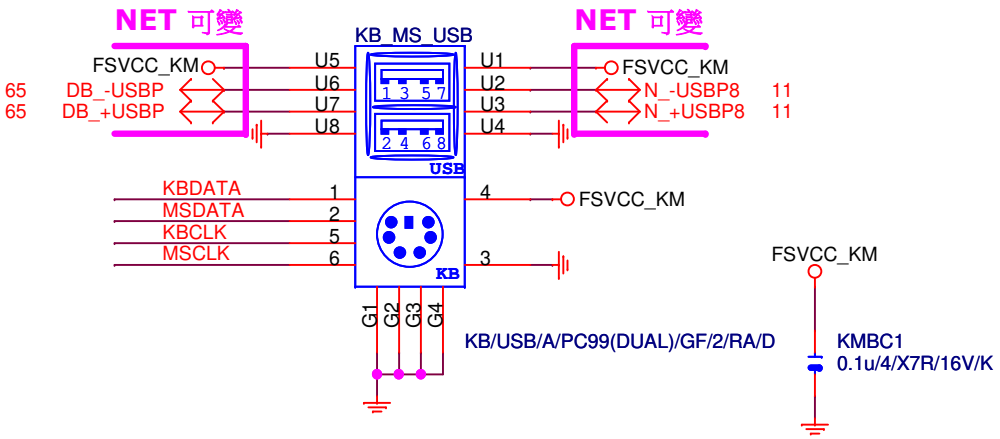
Title: F_U32

Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.03

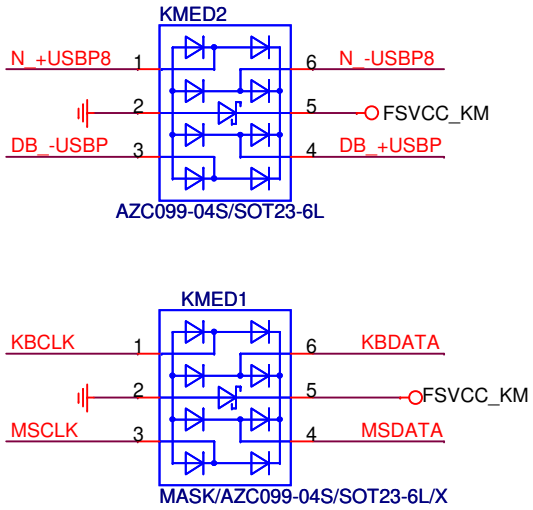
Date: Wednesday, February 24, 2021 | Sheet 54 of 72

KB_MS_USB

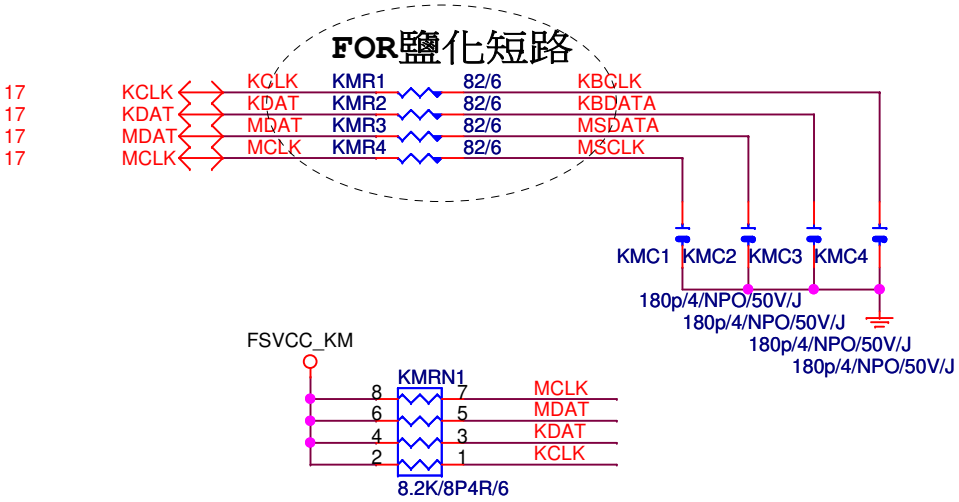
Rev: 0.7



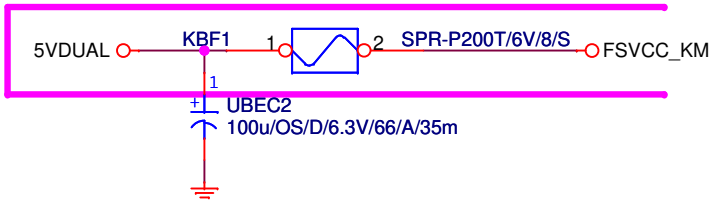
ESD



KB_MS_USB DAMPING/PU



KB_MS_USB PWR



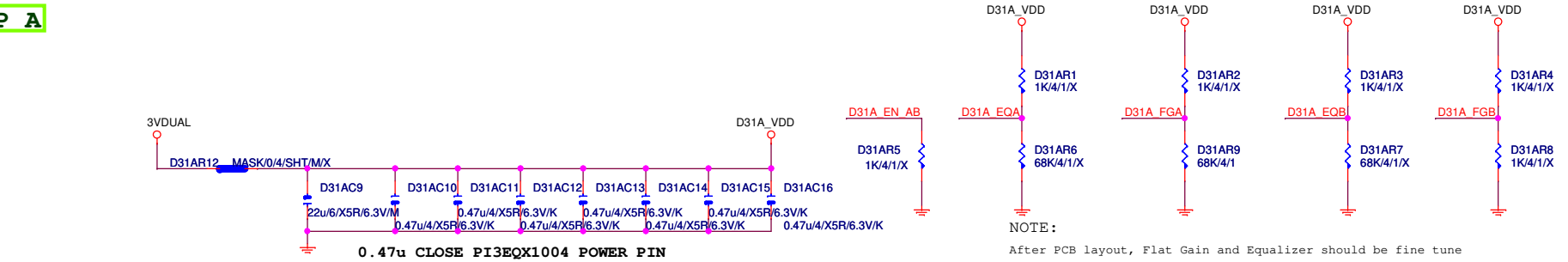
USB OC PROTECT

Gigabyte Technology		
Title: KB_MS_USB30		
Size: A	Document Number: B560M AORUS ELITE	Rev: 1.03
Date: Wednesday, February 24, 2021	Sheet 55 of 72	

USB3.2 GEN2 PI3EQX1004B1 Rev0.1

Type-A

GROUP A

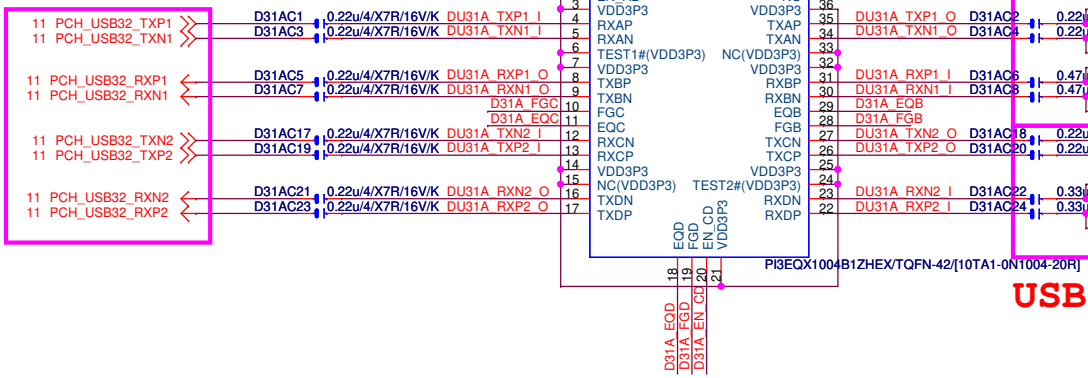


NOTE:

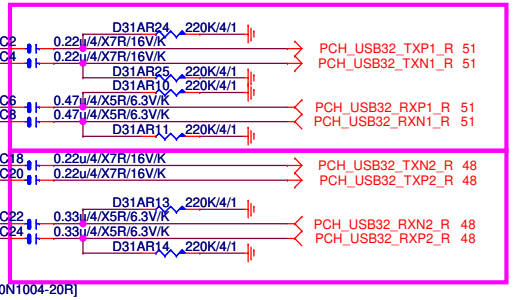
After PCB layout, Flat Gain and Equalizer should be fine tune

PCH Site

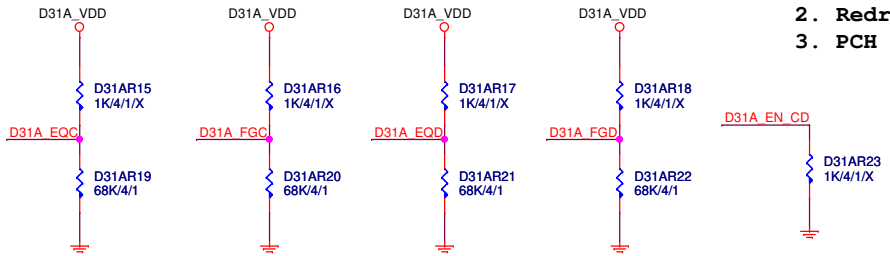
可變



USB Type C Connector Site



USB Type A Connector Site



Layout Rule:

1. Differential Pair can't be swaped
2. Redriver to Connector Length min. 1 inch
3. PCH to Redriver Length min. 6 inch

GIGABYTE™

Title	Redriver_A_TYPE-A	
Size B	Document Number B560M AORUS ELITE	Rev 1.03
Date: Wednesday, February 24, 2021	Sheet 56 of 72	

LAN:RTL8125B(S) R0.3

POW_MODE

For RTL8125B
* Leave LKR1 to LKR2 NC

For RTL8125BS
* LKR1 for Enable SWR
* LKR2 for Disable SWR

For INTEL i219V
* LKR1 NC
* LKR2 0ohm

3VDUAL_LAN1 — LKR1 4.7K/4/X — LK_POW_EXT_SWR — LKR2 4.7K/4/X Disable SWR — RTL8125B, LAR2 NC

External Resistor

3VDUAL_LAN1 — LKR38 Reserver For debug
LKR6 4.7K/4 — N_-PCIE1_WAKE — LKC38 4.7K/4/X — N_-PCIE1_WAKE 17
LKR9 4.7K/4 — PCIE_OB1_RST — LKC5 100p/4/NPO/50V/J/X — O_-PFMRST2 17
LKR11 4.7K/4 — LK_LED_LINK1000

VCC3 — LKR7 4.7K/4 — LK_CLKREQB — LKR8 0/4 — LK_-CLKREQ 14

25M SMD Type

15p/4/NPO/50V/J LKC6 — LK_XTALI
LKC7 15p/4/NPO/50V/J — LKX1 25M/12p/30ppm/3.2*2.5/35/S — LK_XTALO

MDI ESD預留

LKESD1 AZC399-04S.R7G/SOT23-6L/[10DEF-510399-10R]
LK_MDI1- 1 — 6 LK_MDI1+
2 — 5 3VDUAL_LAN1
LK_MDI0+ 3 — 4 LK_MDI0-

LKESD2 AZC399-04S.R7G/SOT23-6L/[10DEF-510399-10R]
LK_MDI3- 1 — 6 LK_MDI3+
2 — 5 3VDUAL_LAN1
LK_MDI2+ 3 — 4 LK_MDI2-

0.1u/4/X7R/16V/K
12 LK_ML_IP — LKC1 — LK_ML_IP_C
12 LK_ML_IN — LKC2 — LK_ML_IN_C
0.1u/4/X7R/16V/K

10 LK_SRCCLK_LAN — LK_SRCCLK_LAN
10 LK_-SRCCLK_LAN — LK_-SRCCLK_LAN

0.1u/4/X7R/16V/K
12 LK_ML_OP — LKC3 — LK_ML_OP_C
12 LK_ML_ON — LKC4 — LK_ML_ON_C
0.1u/4/X7R/16V/K

58 LK_MDI0+ — LK_MDI0+
58 LK_MDI0- — LK_MDI0-
58 LK_MDI1+ — LK_MDI1+
58 LK_MDI1- — LK_MDI1-
58 LK_MDI2+ — LK_MDI2+
58 LK_MDI2- — LK_MDI2-
58 LK_MDI3+ — LK_MDI3+
58 LK_MDI3- — LK_MDI3-

3VDUAL_LAN1 LKR25 0/4 — LKR42 0/4/X — LKPB1 0/4
DVDD09 LKR26 0/4/X

LKR25 FOR RTL8125B(S)
LKR26 FOR INTEL i219V

RTL8125B(S)
LKFB1 : O
LKR42 : X

INTEL i219V
LKFB1 : X
LKR42 : O

FOR RTL8125B(S) — VCC3 — LKR3 1K/4/1 — LKR4 15K/4/1
FOR INTEL i219V — 3VDUAL_LAN1 — LKR27 8.2K/4/X

LKR10 2.49K/4/1
LKR10
RTL8125B(S) : 2.49K
INTEL i219V : 3.01K

LKU1 RTL8125B(S) (RTL8111K) RTL8125BG-CG/S

Realtek RTL8125BG
VALUE : RTL8125BG-CG/S

INTEL i219V
VALUE : WGI219V/QFN48

FOOTPRINT:
IC48QFN-8111E-1

LK_ISOLATEB 1 — ISOLATEB
N_-PCIE1_WAKE 2 — LANWAKEB
LK_GPI 3 — GPI (GPO)
3VDUAL_LAN1 4 — NC/VDDREG (DVDD33)
AVDD33_P05 5 — NC/VDDREG
LK_POW_EXT_SWR 6 — POW_EXT_SWR/ENSWREG
LK_REGOUT 7 — NC/REG_OUT
DVDD09 8 — DVDD09 (DVDD10)
LK_XTALO 9 — CKXTAL2
LK_XTALI 10 — CKXTAL1
DVDD09 11 — AVDD09 (AVDD10)
LK_RSET 12 — RSET

PERSTB — 36 PCIE_OB1_RST
(NC) LED3 — 35 LK_AVDD33_XTAL — LKR20 0/4 — 3VDUAL_LAN1
(NC) AVDD33_XTAL — 34 AVDD33_33
(NC) AVDD33 — 33 — LKR21 0/4
(SMBDATA) EEPROM_SEL — 32 LK_PIN31 — LKR22 0/4/X — N_SML0DAT 13
EECS/SCL — 31 LK_LED_ACT_8125 — LKR23 0/4/X — N_SML0CLK 13
(EEDI/SI/SDA) LED0/EEDI/SPISI/SDA — 30 3VDUAL_LAN1 — LKR24 0/4 — DVDD09
DVDD33 — 29 LK_PIN28
(NC) DVDD09 — 28 LK_LED_LINK2500 — LK_LED_ACT_I219 — LK_LED_LINK2500 58
LED1/EESK — 27 LK_LED_ACT_I219
(LED0/SPICSB) SPICSB — 26 LK_LED_LINK1000 — LK_LED_LINK1000 58
LED2/EEDO — 25 LK_LED_LINK1000

LK_LED_ACT_8125 — LKR30 1K/4/1/X — LKR28 0/4 — LKR29 0/4/X — LK_LED_ACT_TXRX 58
LK_LED_ACT_I219

For RTL8125B(S)
LKR20 & 21 : O

For i219
LKR20 & 21 : X

For RTL8125B(S)
LKR24 : O
LKR22 & 23 : X

For i219
LKR24 : X
LKR20 & 21 : O

For RTL8125B(S)
LKR28 : O
LKR29 & 30 : X

For i219
LKR28 : X
LKR29 & 30 : O

FOR ERP WAKEUP — LKQ1 2N7002/SOT23/25pF/5/X
3VDUAL — LKR40 8.2K/4/X — 3VDUAL_LAN1
LKR5 8.2K/4
10 N_-LAN_DIS — LKR41 0/4/X — LK_GPI

SWR

NC

FOR 8125BS (SWR)
(CLOSE LKU1 PIN7)
FOR 8125BS (SWR)
DVDD09
LKL1 4.7uH/0.8A/3225/S/X
LK_REGOUT — DVDD09
LKC16 4.7u/6/X5R/6.3V/K/X
LKC15 0.1u/4/X7R/16V/K/X
LKC17 1u/4/X5R/6.3V/K
(CLOSE LKL1)

LAN POWER

(CLOSE LKU1 PIN: 29, 46)

3VDUAL_LAN1 — (10u CLOSE LKU1 PIN:15) — AVDD33_P15 — MASK/0/4/SHT/M/X LKR33 — LKC8 10u/6/X5R/6.3V/M — LKC20 0.1u/4/X7R/16V/K
(2.2u CLOSE LKU1 PIN:19, 33) — LKC18 2.2u/4/X5R/6.3V/M — LKC19 2.2u/4/X5R/6.3V/M

3VDUAL_LAN1 — LKC10 0.1u/4/X7R/16V/K — LKC11 0.1u/4/X7R/16V/K

3VDUAL_LAN1 — (CLOSE LKU1 PIN: 5) — AVDD33_P05 — MASK/0/4/SHT/M/X LKR31 — LKC12 0.1u/4/X7R/16V/K — LKC13 4.7u/6/X5R/6.3V/K
(CLOSE LKU1 PIN: 4) — LKC21 0.1u/4/X7R/16V/K — LKC22 4.7u/6/X5R/6.3V/K

(CLOSE LKU1 PIN: 34)
3VDUAL_LAN1 — LKC14 2.2u/4/X5R/6.3V/M
VDD_P43 — LKC23 1u/4/X5R/6.3V/K
(CLOSE LKU1 PIN: 43)

EXTERNAL(0.9V) FOR 8125B(S)

LKR12 100K/4/1
3VDUAL_LAN1 — VCC0P9_PG
3VDUAL — LKR13 0/6/X
5VDUAL — LKR15 0/6
LAN_PWR_VIN
LKD1 AZ2225-01L/SOD323
LKC30 1u/4/X5R/6.3V/K
LKC29 10u/6/X5R/6.3V/M
3VDUAL_LAN1 — VCC0P9_EN
LKR17 8.2K/4

LKU2 RT8068AZQW/WDFN-10L
PGOOD
PVIN
PVIN
SVIN
EN
LX
LX
LX
FB
NC
GND

1uH/4.6A/2520/S/[10LC3-04100B-01R]
LKL2 — DVDD09
LX_09V
LKR14 8.2K/4
LKC24 22p/4/NPO/50V/J
LKC26 10u/6/X5R/6.3V/M
Close LKL2
DVDD09_FB
LKR16 13.7K/4/1
0.96V

External SWR
for RTL8125BS SWR disabled

LK_POW_EXT_SWR — LKR32 0/4 — LKR43 0/4 — O_-LAN_DIS 17
To SIO GP65

LAN POWER

DVDD09
(2.2u CLOSE LKU1 PIN:11,16,22)
LKC25 2.2u/4/X5R/6.3V/M — LKC27 2.2u/4/X5R/6.3V/M — LKC28 2.2u/4/X5R/6.3V/M
(CLOSE LKU1 PIN:37)
LKC31 1u/4/X5R/6.3V/K — LKC37 10u/6/X5R/6.3V/M
(2.2u CLOSE LKU1 PIN:47)
LKC32 2.2u/4/X5R/6.3V/M
(10u CLOSE LKU1 PIN:8,28)
LKC33 10u/6/X5R/6.3V/M — LKC34 10u/6/X5R/6.3V/M

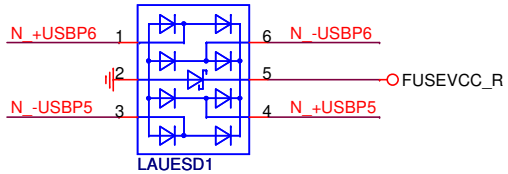
Gigabyte Technology
Title: Realtek RTL8125B(S)
Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.3
Date: Wednesday, February 24, 2021 | Sheet 57 of 72

USB_LAN CONNECTOR R0.3

RMA ESD PROTECT

note:可變更USB NAME

可變



可變

USB_LAN CONNECTOR

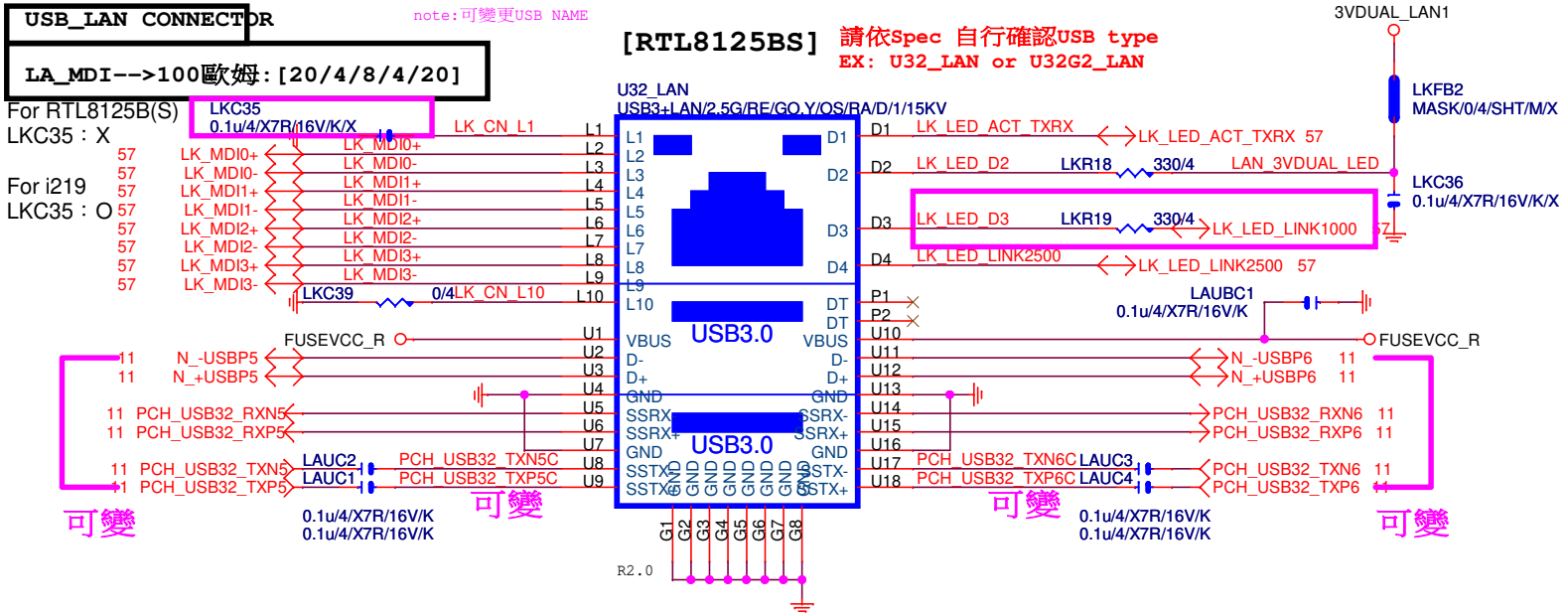
note:可變更USB NAME

LA_MDI-->100歐姆:[20/4/8/4/20]

[RTL8125BS] 請依Spec 自行確認USB type
EX: U32_LAN or U32G2_LAN

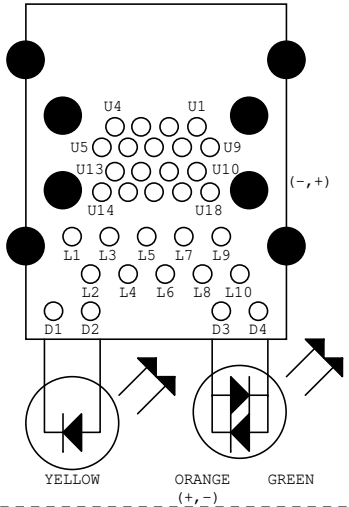
For RTL8125B(S)
LKC35：X

For i219
LKC35：O

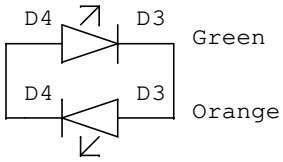


可變 可變 可變 可變

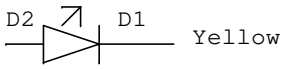
USB30_LAN LAYOUT示意圖



Dual Color LED

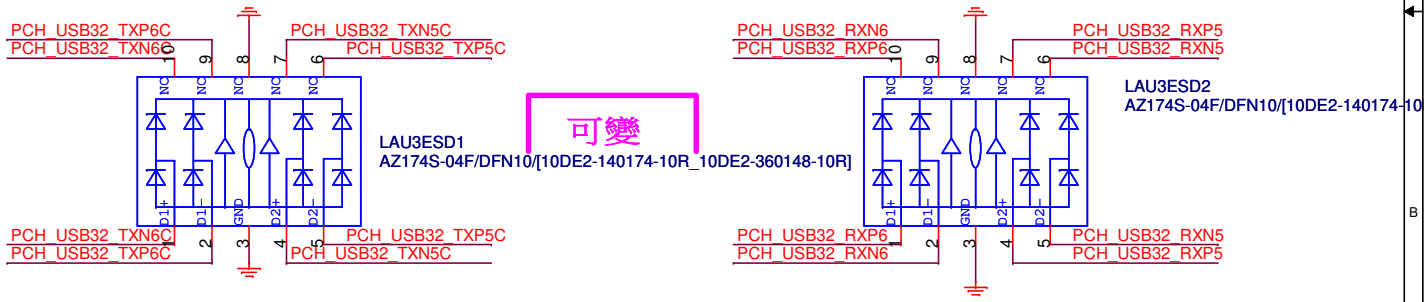


Single Color LED



RMA ESD PROTECT

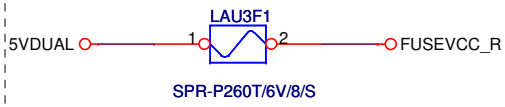
note:可變更USB NAME



USB POWER

note:可變更FUSE

可變



Close to connector
FUSE-0805

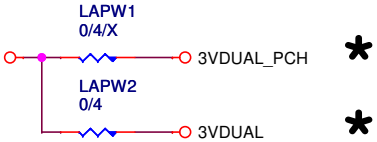
EMI SHORT PAD

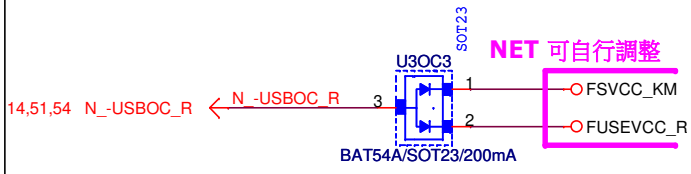
PS:視EMI需求

LAN POWER

note: lan power連接及電流

可變





Gigabyte Technology

Title: **LAN CONNECTOR-RTL8125B(S)**

Size: Custom | Document Number: **B560M AORUS ELITE** | Rev: 1.03

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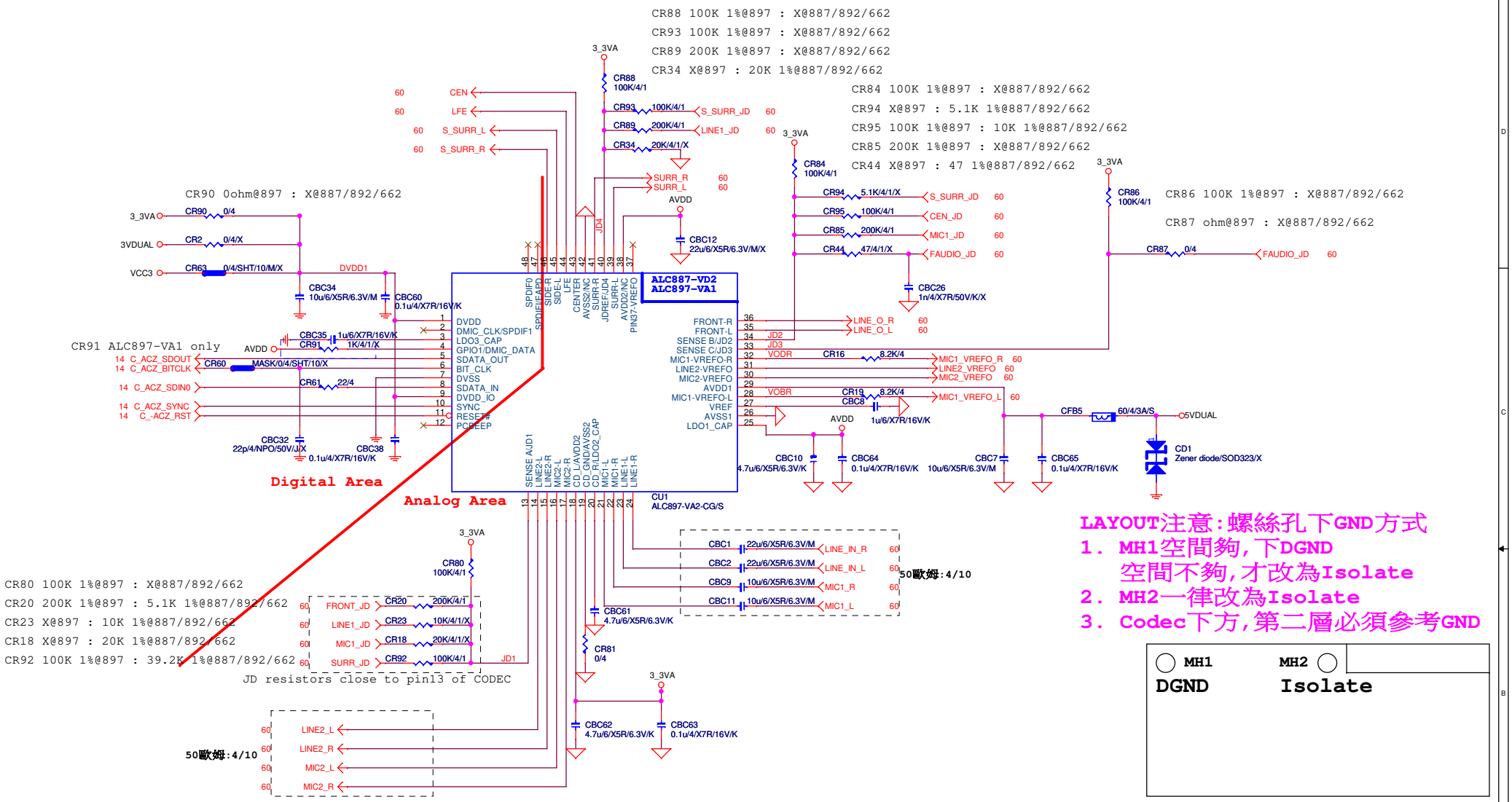

LAYOUT注意:螺絲孔下GND方式

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

MH1	MH2
DGND	Isolate

		897	887/892/662
Pin03	LDO3	1uF	10uF
Pin09	DVDD-IO	0.1uF	1uF
Pin18	AVDD2	4.7uF/0.1uF	NC
CR81	AVDD2	0ohm	NC
Pin20	LDO2	4.7uF	NC
Pin25	LDO1	4.7uF	22uF
Pin27	VREF	1uF	10uF
Pin38	AVDD2	NC	22uF

LAYOUT注意:要加
GND切割線

音效區域印刷

BOM OPTION : 1. Chemicon音效電容
2. 金屬外罩 Reserve (LAYOUT上件與否,依照各Model spec)
3. LED Reserve (上件與否和LED顏色,依照各Model spec)

GIGABYTE™

Title: HD AUDIO ALC887VE/887VD

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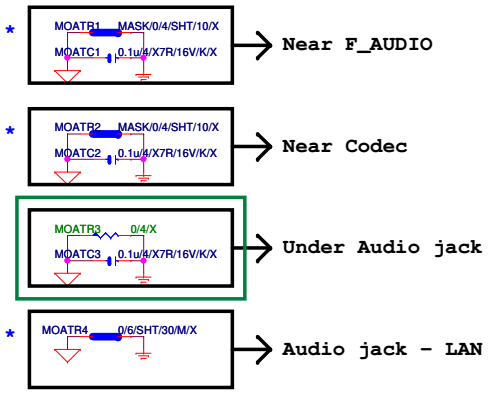
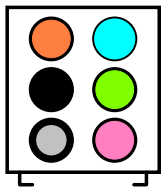
Rev 6.0

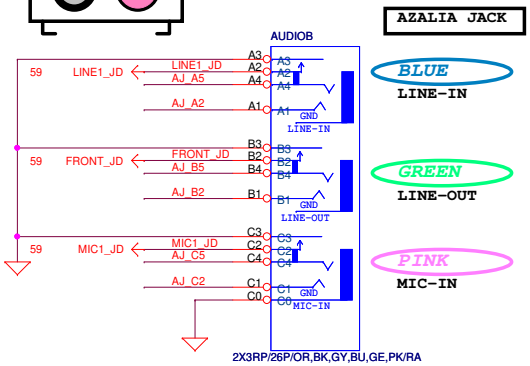


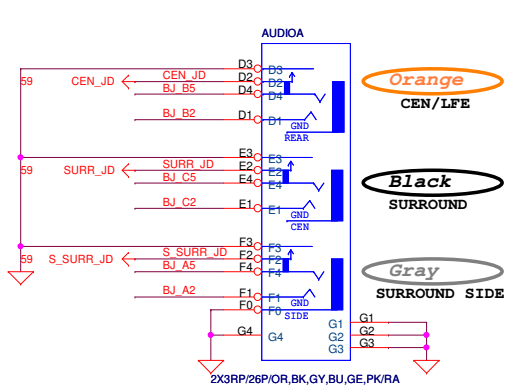
*量產前,MOATR1/MOATR2/MOATR4 ....0ohm改short pad

For HDMI SPDIF （依SPEC保留或移除）

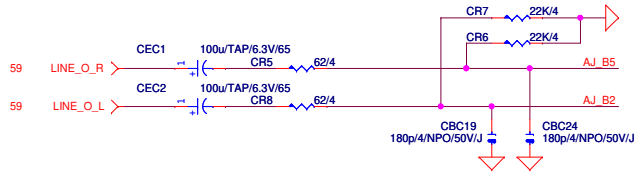
AZALIA JACK



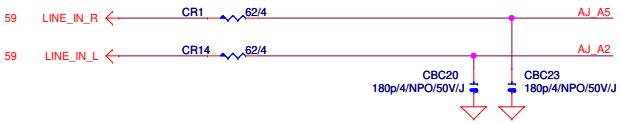




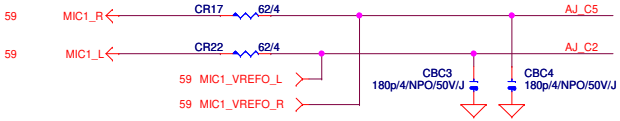
LINE-OUT



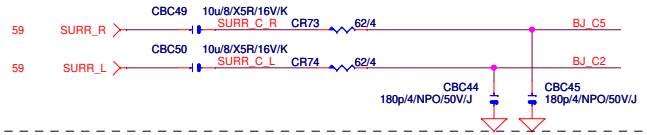
LINE-IN



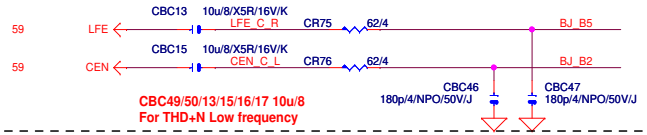
MIC-IN



SURROUND

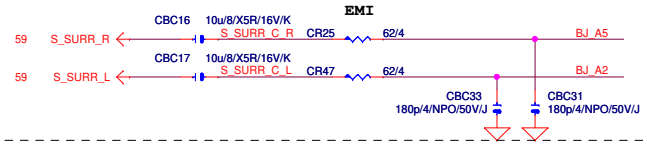


CEN/LFE

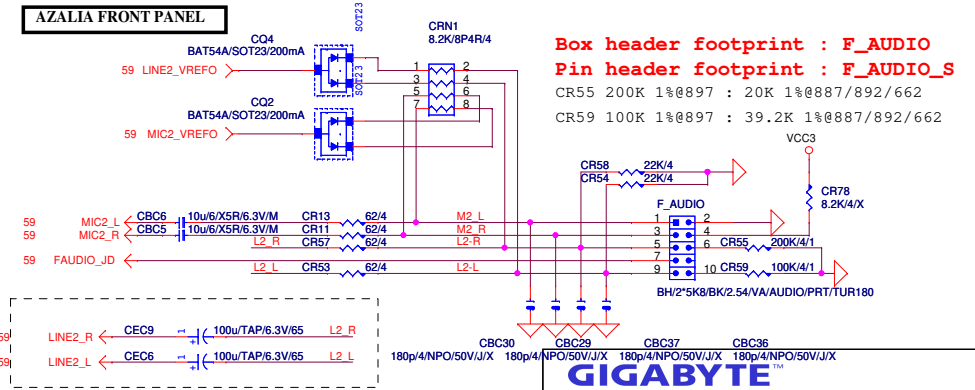


CBC49/50/13/15/16/17 10u/8
For THD+N Low frequency

SURR BACK



AZALIA FRONT PANEL



Box header footprint : F_AUDIO
Pin header footprint : F_AUDIO_S
CR55 200K 1%@897 : 20K 1%@887/892/662
CR59 100K 1%@897 : 39.2K 1%@887/892/662

GIGABYTE

Title: AUDIO JACK

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Custom	B560M AORUS ELITE	1.03

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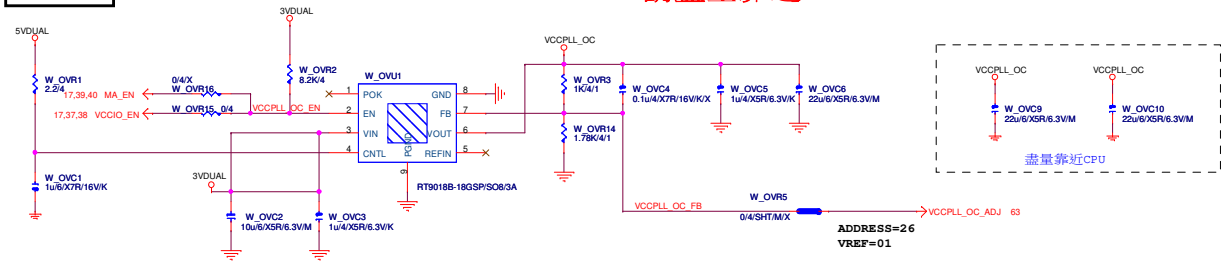
REV:0.12

VCCPLL_OC

請盡量靠近CPU



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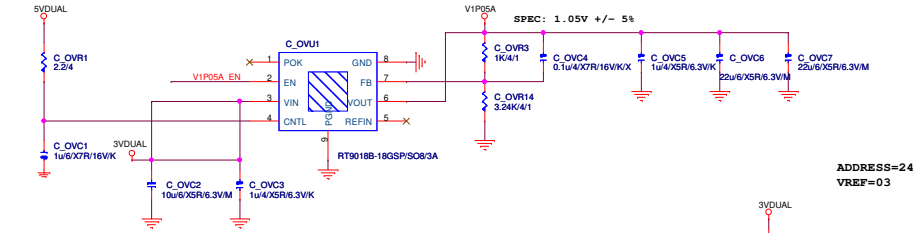
VREF=01

V1P05A



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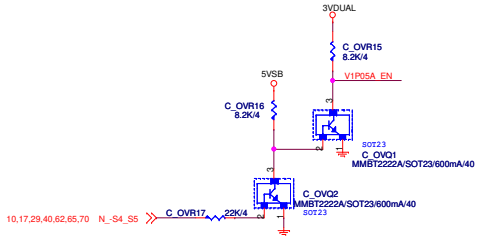
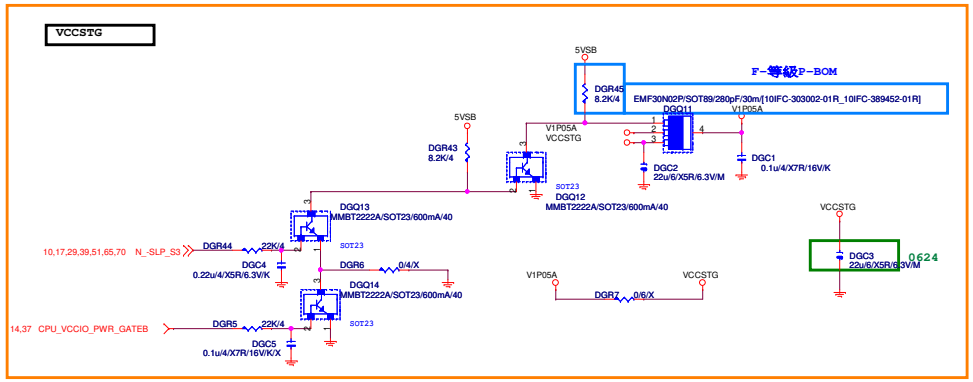


VCCSTG



GIGABYTE™

Title: CPU POWER-1		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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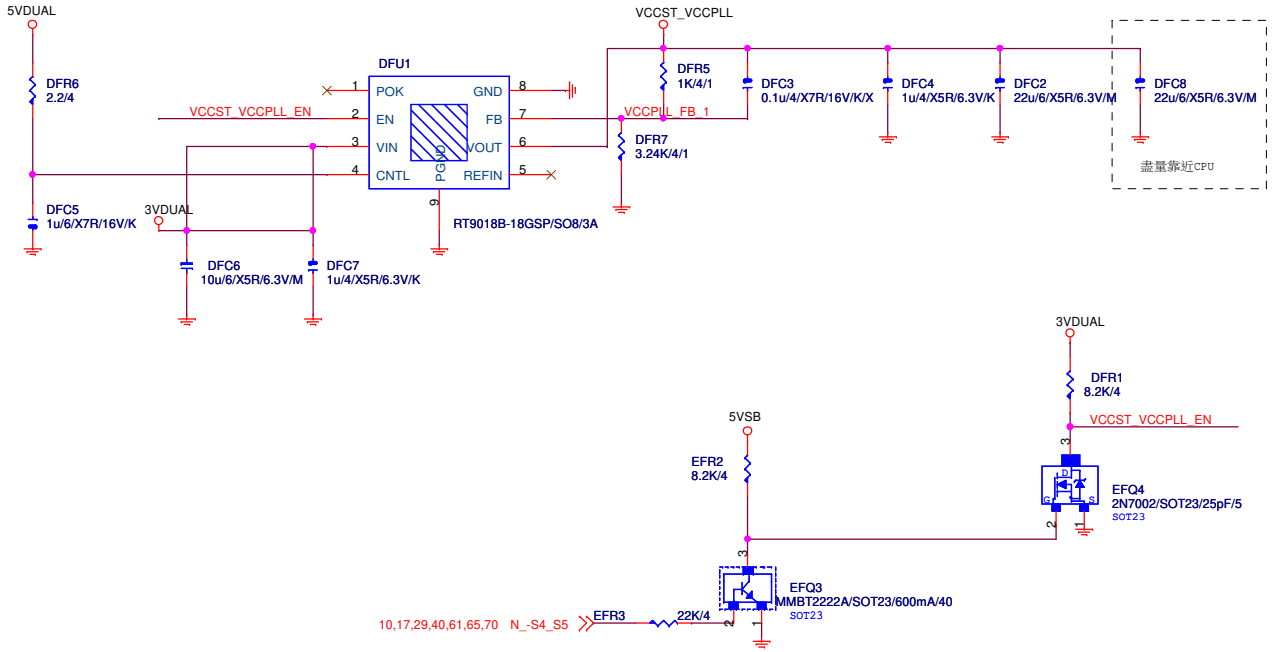
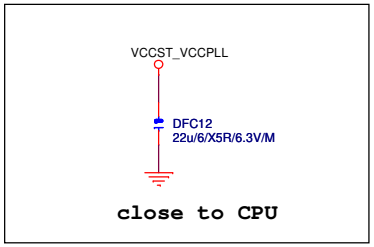
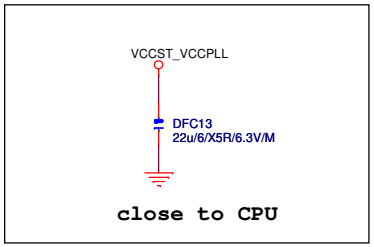
REV:0.12

VCCST_VCCPLL 替換原先MOS開關線路



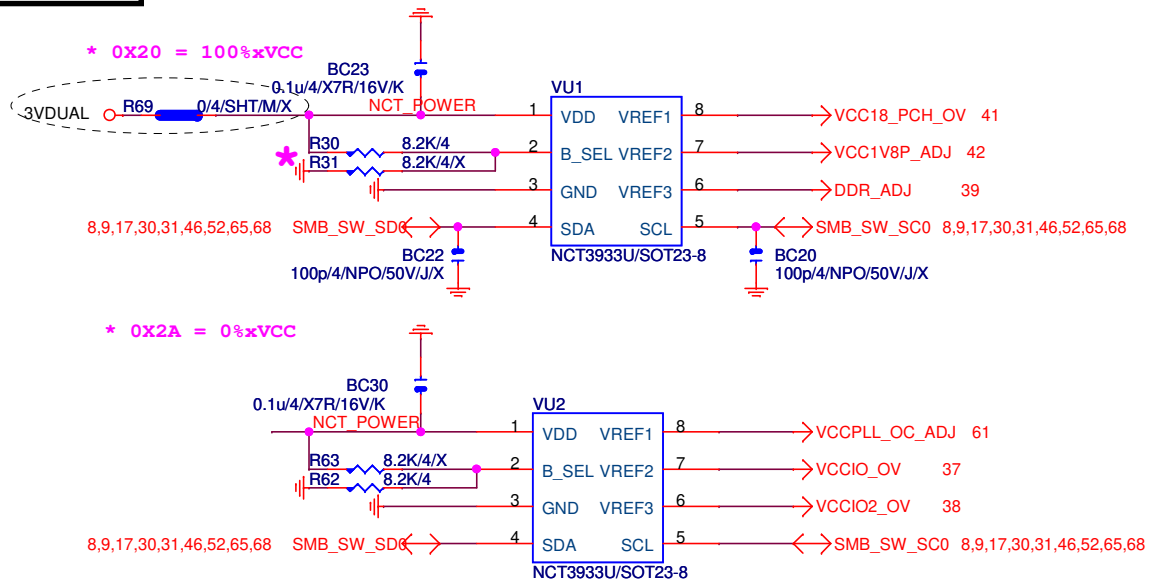




GIGABYTE™

Title: CPU POWER-2		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
Date: Wednesday, February 24, 2021	Sheet 62 of 72	

OVER VOLTAGE REV:0.12



NCT3933	0X2A	0X20
VREF1	VCC18_PCH	VCCPLL_OC
VREF2	VCCIO	VCC1V8_PRIM
VREF3	VCCIO2	VDDQ

Gigabyte Technology

Title: CPU CORE VR-2

Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.03

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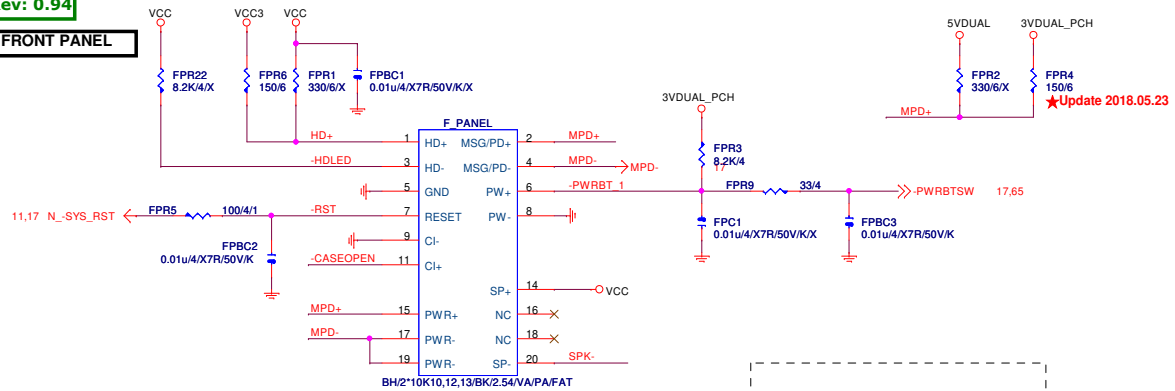
Rev: 0.94

FRONT PANEL

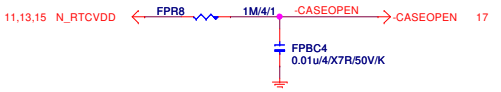
★Update 2016.06.15

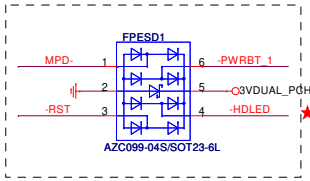


Update 2015.01.08
Footprint=F_PANEL-100

★Update 2018.05.23

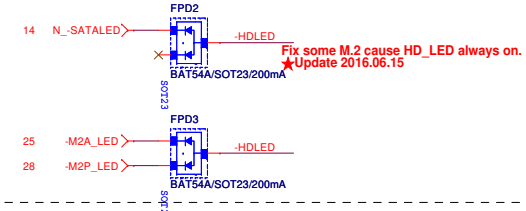
CASE OPEN





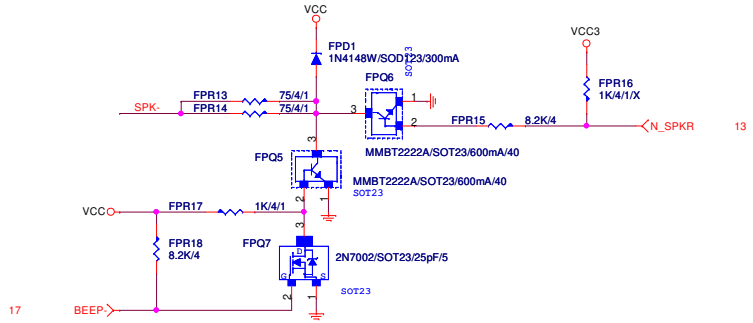
★Update 2015-02-11

SATA/M.2 LED



Fix some M.2 cause HD_LED always on.
★Update 2016.06.15

SPKR W/O EC



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

FRONT PANEL SHORT

Gigabyte Technology		
Title: FRONT PANEL		
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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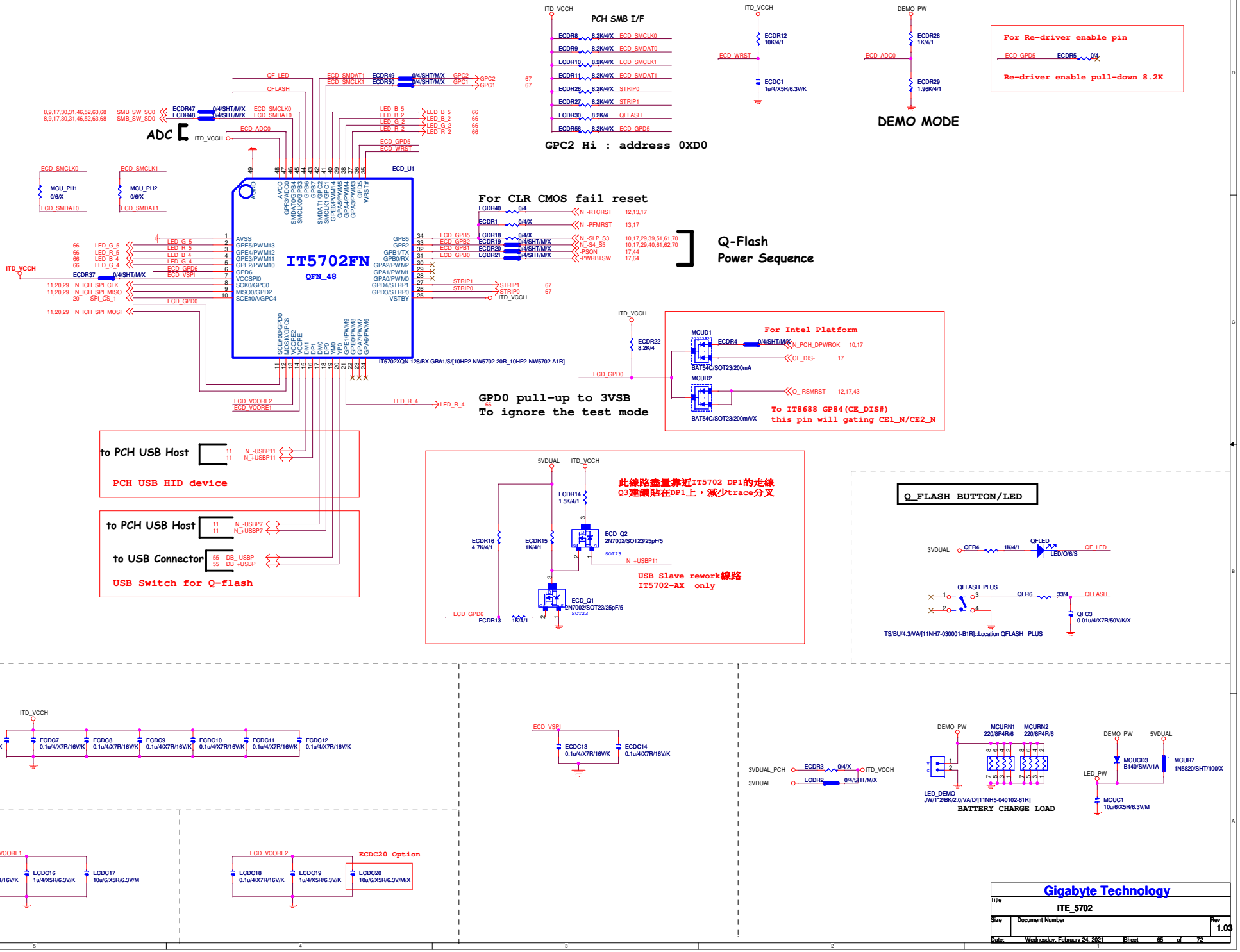
ECD_U1 請放在PCH到BIOS路徑上.避免線過長



Gigabyte Technology		
Title: ITE_5702		
Size	Document Number	Rev 1.03
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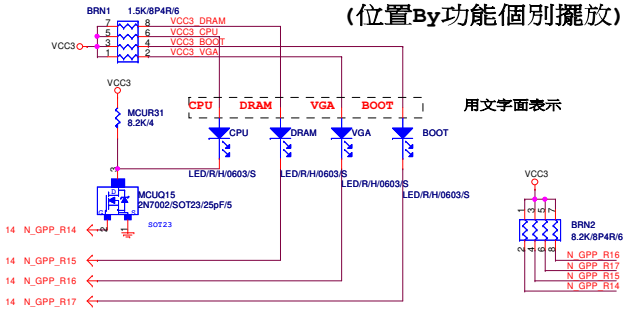
Rev 1.0

第一區 LED CONTROL

DEBUG PORT LED *4
(位置By功能個別擺放)



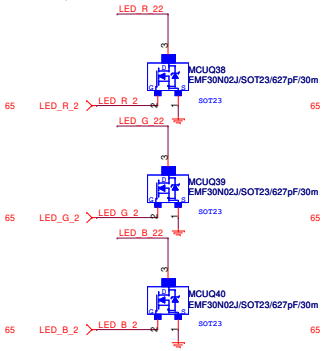
N_GPP_R14	CPU DEBUG
N_GPP_R15	DDR DEBUG
N_GPP_R16	VGA DEBUG
N_GPP_R17	BOOT DEVICE DEBUG

第三區 LED

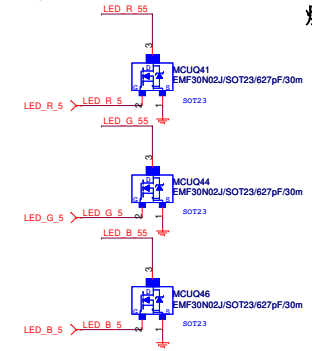
第三區 LED CONTROL

第五區 LED

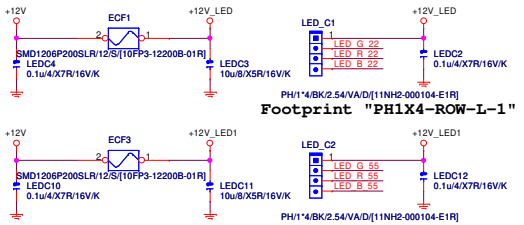
第二區 LED CONTROL



第五區 LED CONTROL

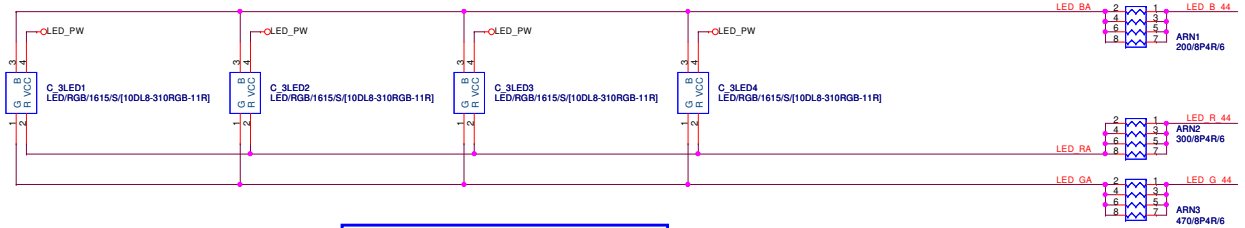


燈條 LED (LED_C1放在PCB左邊板邊位置)
燈條 LED (LED_C2放在PCB右邊板邊位置)



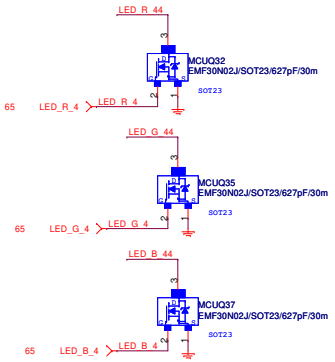
第四區 LED

FOR AUDIO 正發光 LED*5 (位置在背板AUDIO切割線)



FOOTPRINT:LED-4P-RGB

第四區 LED CONTROL



GIGABYTE™

Title	PCH/AUDIO/DEBUG/C_LED1/2	
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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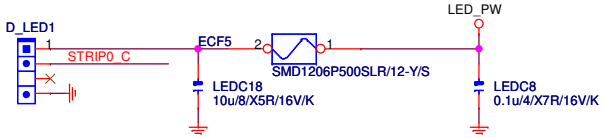
Rev 1.0

第六區 LED (靠近左上板邊位置)

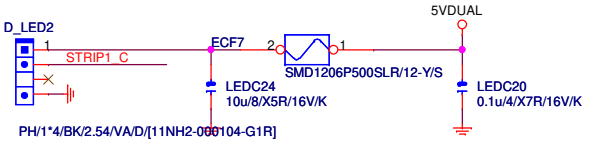
Digital LED Strip1



Footprint PH1X4-CUT3-LED-L

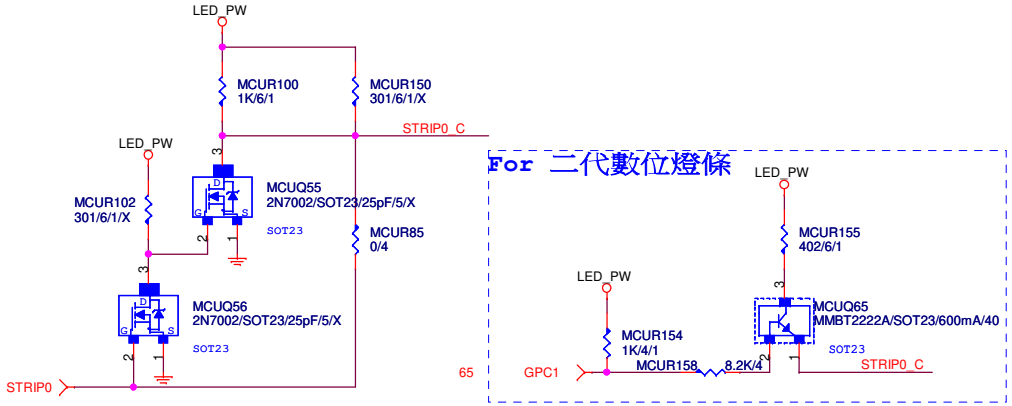
第七區(靠近右下CPU板邊位置)

Digital LED Strip2

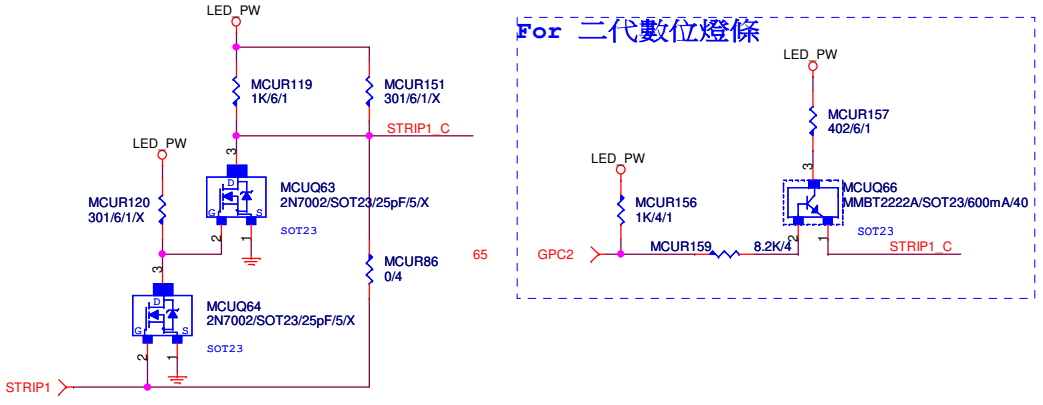


Footprint "PH1X4-CUT3-LED-R"
(for pin-name 與 model-name 同方向)

燈條 Level shift



燈條 Level shift



GIGABYTE™

Title	D_LED1/D_LED2	
Size: Custom	Document Number: B560M AORUS ELITE	Rev: 1.03
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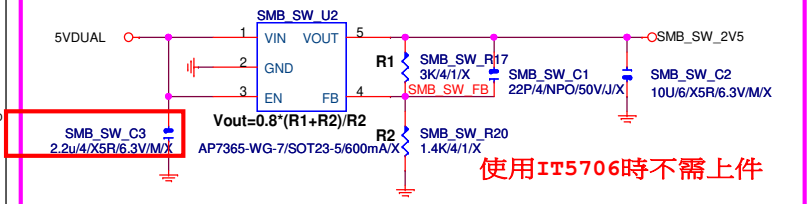
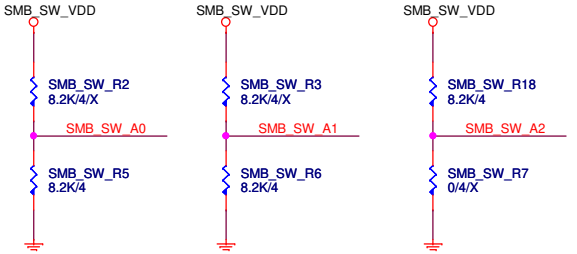
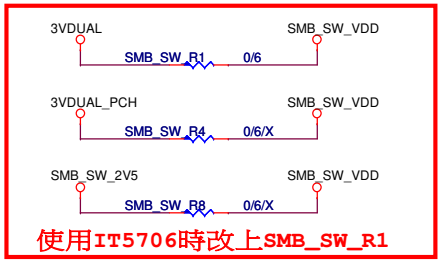
REV:0.1



使用IT5706時不需上件

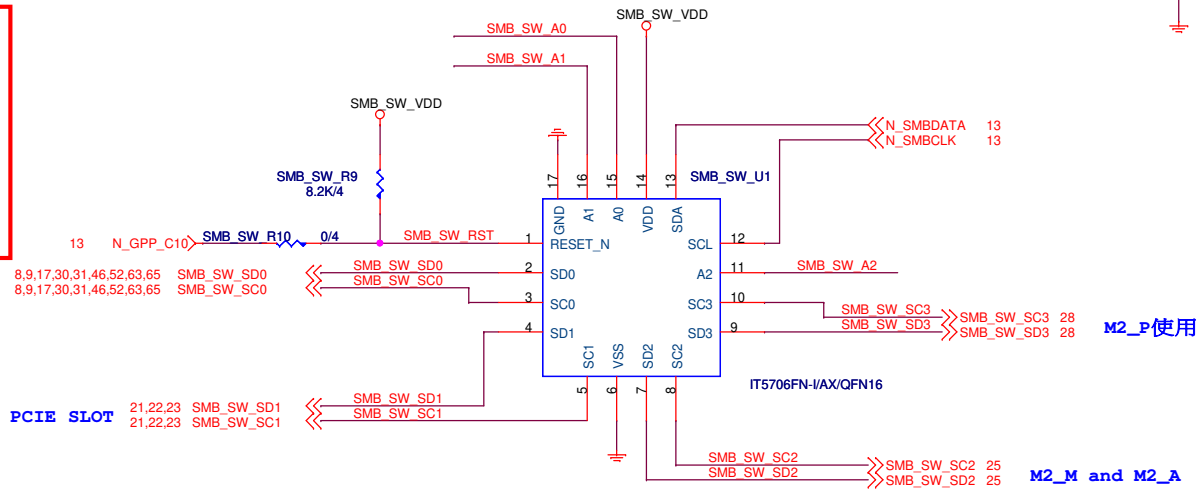
ADDRESS = 74





使用IT5706時改上SMB_SW_R1

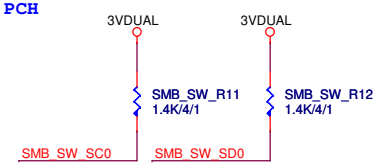
other

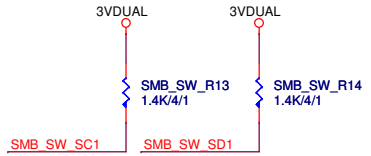


M2_P使用

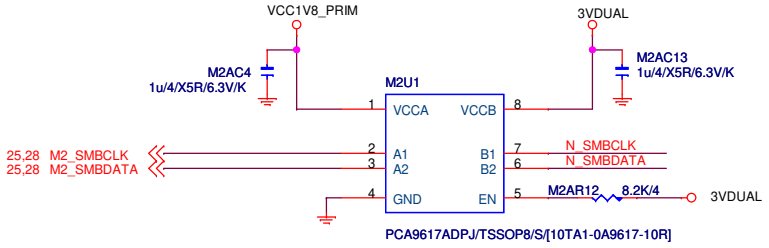
M2_M and M2_A

PCH





SMB_SW_U1 不上件時.電阻要上



PCA9617ADPJ/TSSOP8/S/[10TA1-0A9617-10R]

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Title	SMBUS SWITCH	
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Title

AQC113C

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EMI/ESD R0.1

CLOSE SIO

EMIC1
100p/4/NPO/50V/J/X

10,17,29,39,51,61,65 N_-SLP_S3

EMIC2
100p/4/NPO/50V/J/X

10,17,29,40,61,62,65 N_-S4_S5

CLOSE PCH

EMIC4
100p/4/NPO/50V/J/X

4,10 N_CPUPWROK

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Title	EMI/ESD	
Size A	Document Number B560M AORUS ELITE	Rev 1.03
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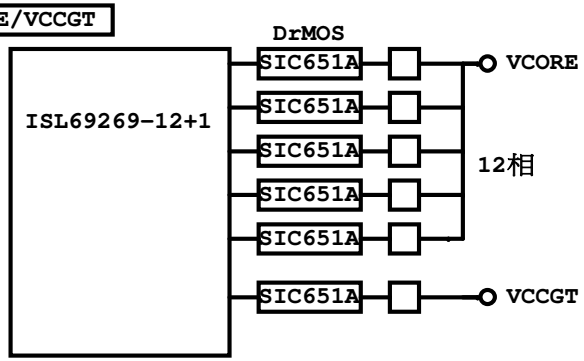
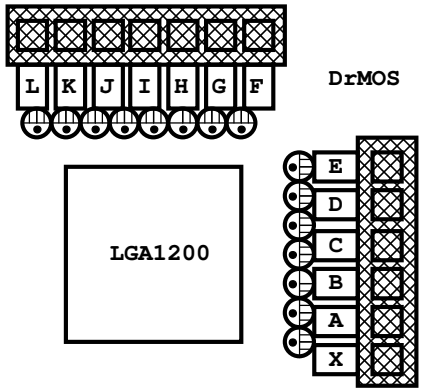
POWER BLOCK MAP

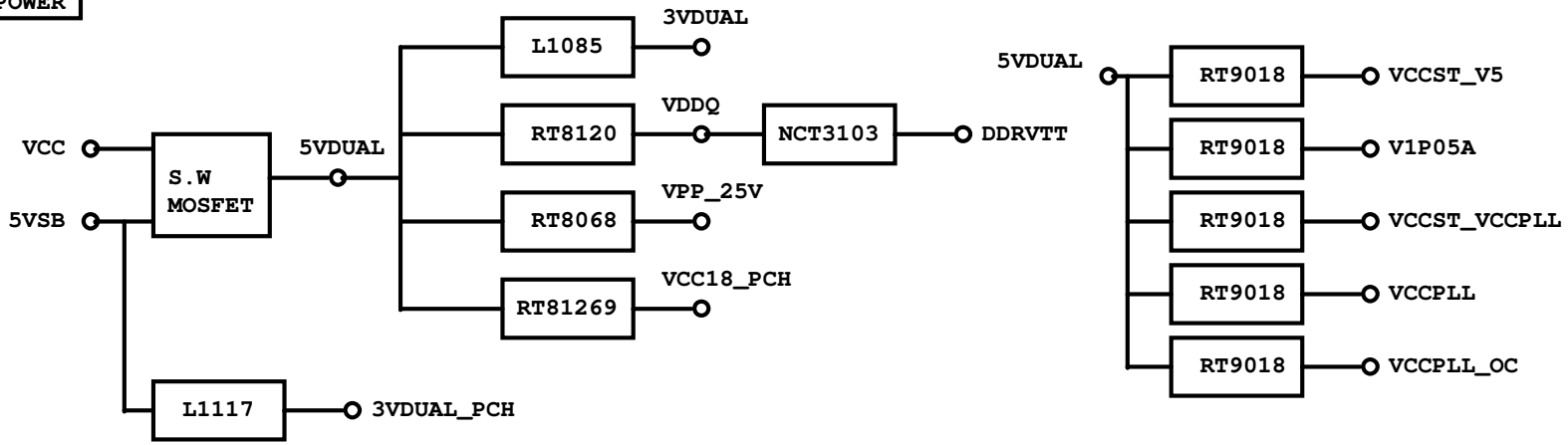
- CPU
  - VCORE
  - VCCGT
  - VCCSA
  - VCCIO
  - VCCIO2
  - VCCST_VCCPLL
  - VCCPLL
  - VCCPLL_OC
  - VCCST_V5
  - V1P05A
  - VCCSTG
  - VDDQ
- DDR4
  - VDDQ
  - DDRVTT
  - VPP_25V
- PCH
  - VCC18_PCH
  - VCC1V8_PRIM
  - VCCPRM_1P05
  - VCCDPHY_1P24
  - VCC0P85_PCH
  - VCC3_PCH
  - 3VDUAL_PCH
  - VCC3
  - N_RTCVDD
- IT8689
  - IT_VCCH
  - IT_AVCC
  - 2_5LEVEL
- HM
  - +12V
  - VCC
  - VCC3
  - VCORE
  - VCCGT(IMON_VCCGT)
  - VDDQ
  - VCCSA(IMON_VCORE)

VCORE/VCCGT

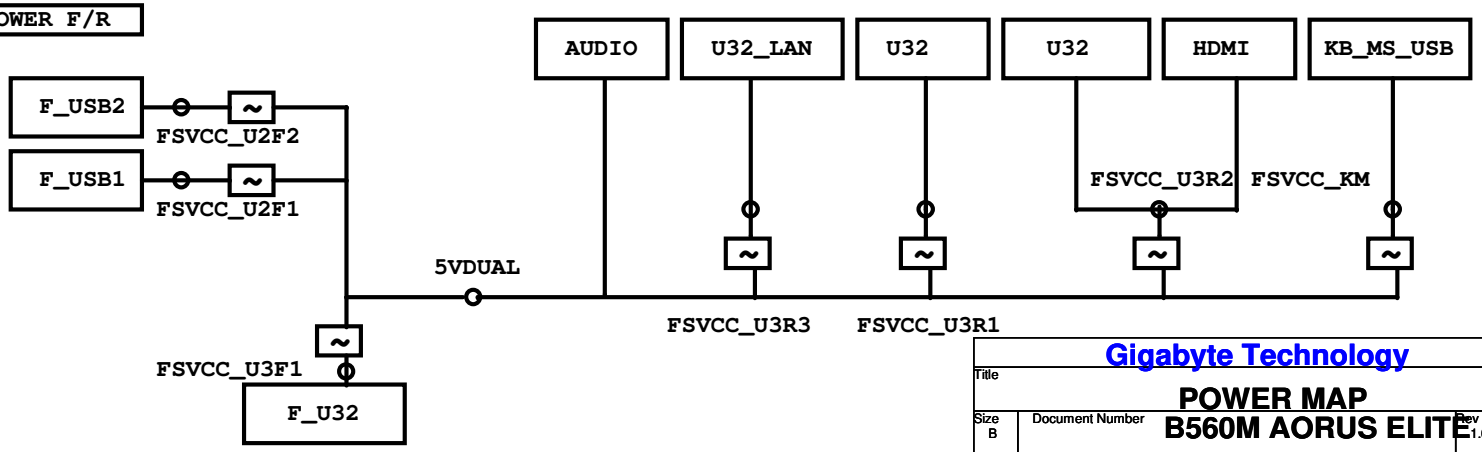




POWER



FUSE POWER F/R



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Title: POWER MAP

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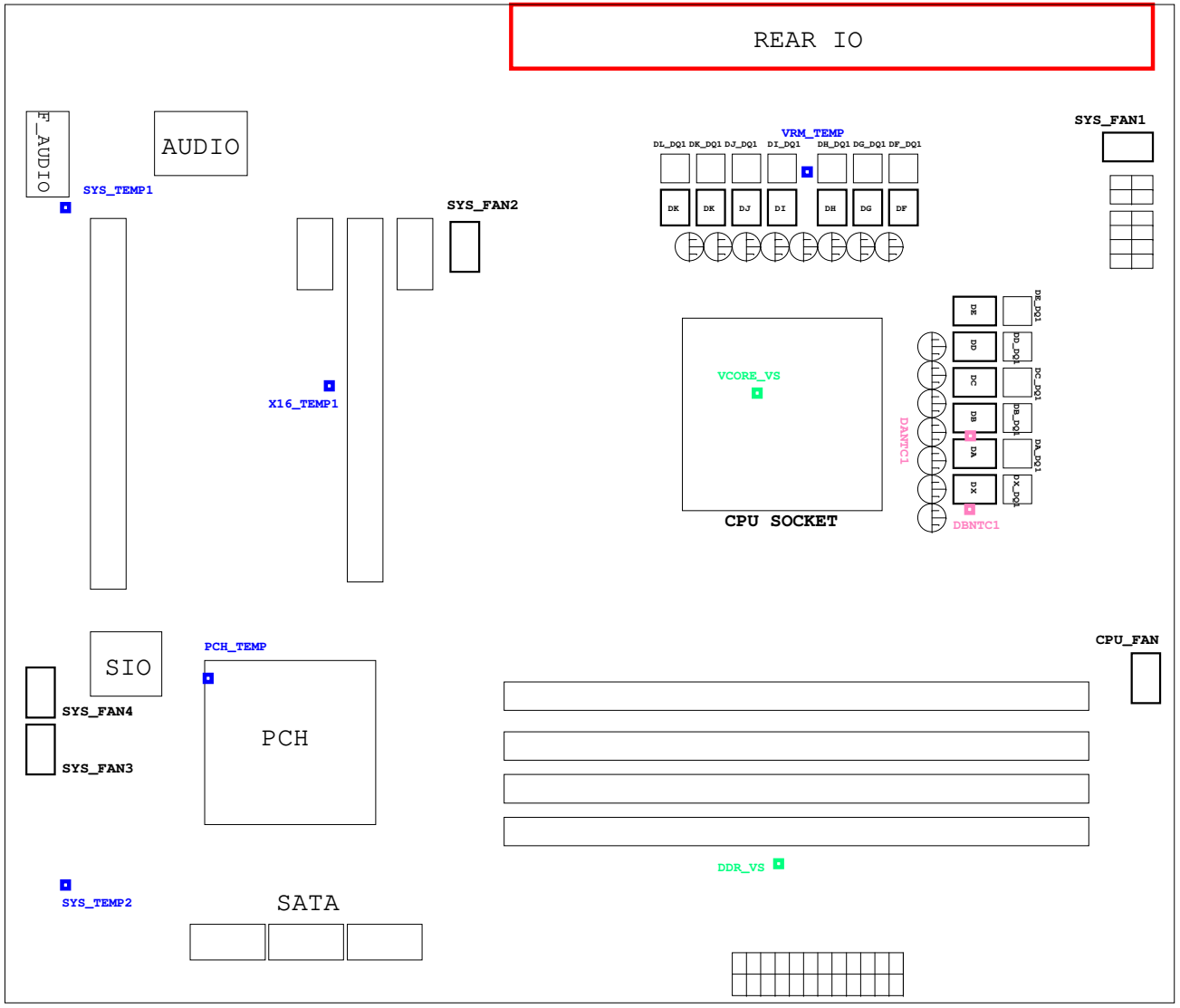

熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL2	Differential
DANTC2	DA_DQ3	Differential
DANTC3	DM_DQ2	Differential
DANTC4	DM_DL1	Differential
VRM_TEMP	DC_DQ1	N/A
X16_TEMP1	PCIEX16	N/A
PCH_TEMP	PCH	N/A
SYS_TEMP1	F_AUDIO	N/A
SYS_TEMP2	F_PANEL	N/A

SIO RS
PWM RS
SIO VIN

FAN

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Title: NTC MAP

Size: Custom | Document Number: B560M AORUS ELITE | Rev: 1.03

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