Model Name: B460 AORUS PRO AC

REV: 1.01

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1200-A
05	CPU_LGA1200-B-DDR4
06	CPU_LGA1200-C
07	CPU_LGA1200-D + Hearsink
08	DDR4 CHANNEL A
09	DDR4 CHANNEL B
10	PCH_CLK BUFFER
11	PCH_DMI,USB,PCIE
12	PCH_MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH PWR
15	PCH GND
16	ITE 8688 LPC IO
17	HWM
18	FAN CTRL--SIO
19	SINGLE BIOS
20	N/A
21	PCI EXPRESS*16 SLOT
22	PCI EXPRESS*4 SLOT
23	PCI EXPRESS*1 SLOT
24	SATA 3
25	M.2 X4 (A)
26	M.2 X4 (Q)
27	ISL69269 PWM-IRON
28	ISL69269 VCORE-IRON
29	ISL69269 VCORE-IRON
30	ISL69269 VCORE-IRON

SHEET	TITLE
31	ISL69269 VCCGT-IRON
32	VCCSA_VCCIO_VCCPLL
33	RT8237_DDR_BEAD
34	RT8068A_VPP
35	RT8237_PCH-BEAD
36	DISCRETE POWER
37	ATX POWER , A_-PROCHOT
38	NCT3933
39	KB_MS_U32
40	HDMI
41	USB20
42~43	INTEL I225V USB32_LAN
44~45	Realtek ALC1200 REAR AUDIO JACK
46,47,57	IT5702 C_LED , AUDIO , DLED STRIP
48	FRONT_USB32
49	FRONT USB
50	F_PANEL
51	COM, LPT, TPM , THB
52	M.2 WIFI
53	GENESYS GL850S_1
54~56	EMI-ESD POWER MAP NTC MAP
58	NCT5946 SM BUS SWITCH
59	AMS3142 USB3.2 GEN2
60	U32G2 TypeA
61	U32G2 TypeC
62	PCIEX4 Share M2A_SB switch
63	DP

GIGABYTE Technology

Title: Cover Sheet

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Model Name: B460 AORUS PRO AC

Rev 1.01

Component value change history

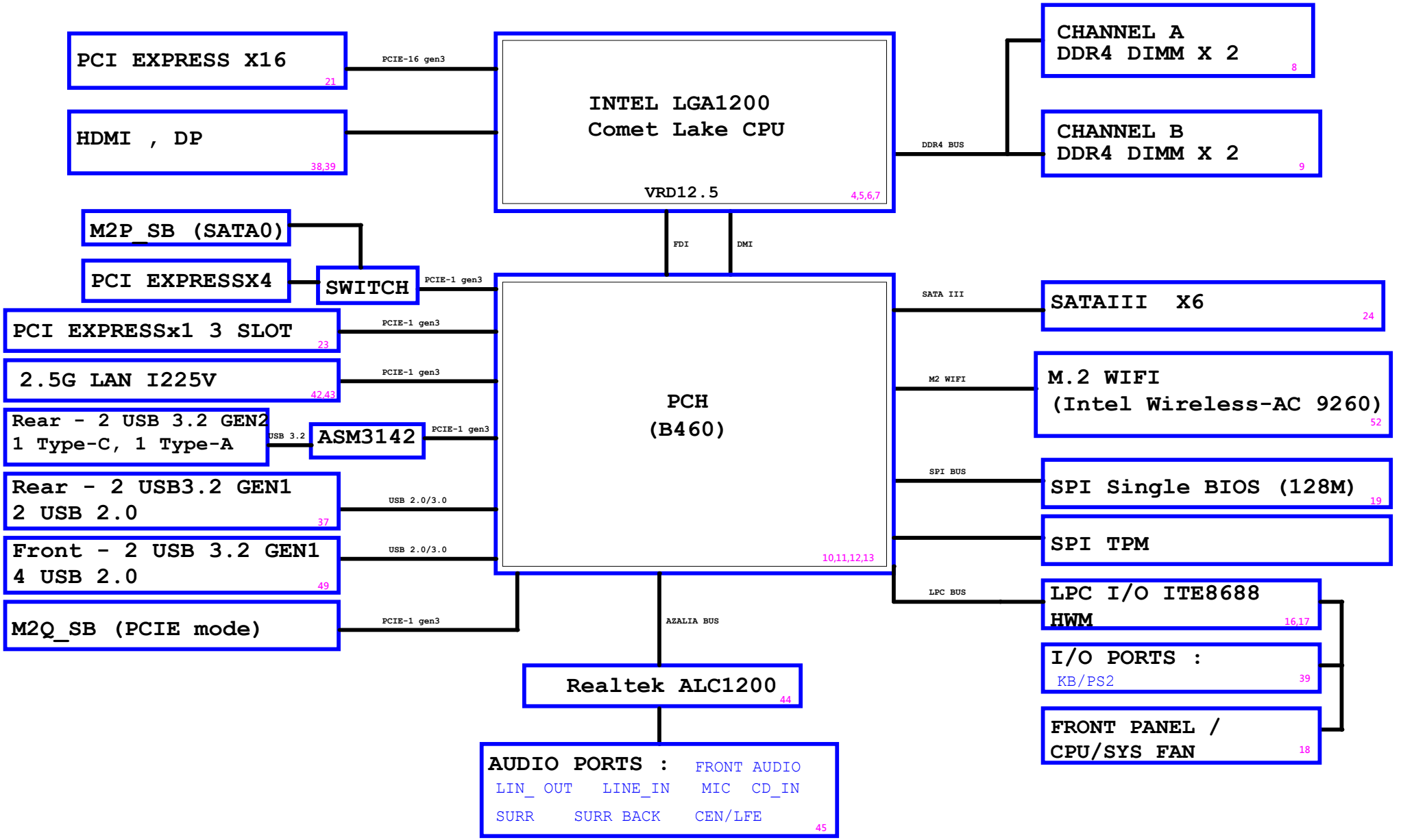
TIP/TOP: 9MA32MS2H-00-11C
P-Code: U17132

Data	Change Item	Reason
2019/10/24	0.1 New BOM release PCB:0.1	Modify from B365 M AORUS Elitte

Circuit or PCB layout change

Data	Change Item	Reason
2019/10/24	Rev0.1	
2019/12	Rev0.2	
	1. Update DDR 4 level rule	
	2. DP diode要用哪一種?	
	3. N_SPI_TPM_CS PCH pin.BA27 --> AY27	
Rev0.2	1. M_BIOS SOCKET , DAJP1 不上件	
	3. Add HU2BC9 for HUB2 pin23	
	4. Update LAN I225 模組 , Add LIR14,LIBC34	
	5. Remove WBC91~95 , Add WBC97~116	
	6. ASM3142 VCCA請加粗到30 mil	
	7. DAD4 改成 DPD1+DPAR13	
	8. Update DDR 4-level RULE	
	9. ALC1220 GND切割	
Rev1.0	1. M_BIOS SOCKET , DAJP1 不上件	
	2. 4.22K開放否?	
Rev1.01	1. M2P_SB SATA Detect N_GPP_F20 --> N_GPP_E0	
	2. A_TDO和A_-HPREQ互換位置走線	
	3. MCU_PH1/MCU_PH2 dip jump改0603 smd pad	
	4. M2P_SB & M2Q_SB文字面轉90度	
	5. 增加MCUR158,MCUR159	
	6. PWM_U1加10GL4-067116-01R	

BLOCK DIAGRAM



GIGABYTE Technology		
Title: BLOCK DIAGRAM		
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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

非X8/X4/X4設計的可移除

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

LGA1200E
CML_S_IP
T=190922B
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CPU-SK/1200/S/GF
GF 腳座

LGA1200C
CML_S_IP
T=190922B
3 OF 13
CPU-SK/1200/S/GF
GF 腳座

LGA1200D
CML_S_IP
T=190922B
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CPU-SK/1200/S/GF
GF 腳座

3VDUAL WR21 8.2K/4 WR22 8.2K/4/X
A_CPU_ID → A_CPU_ID 37

<= 1002 Remove Off page no suport RKL

* 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。

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LGA1200A

CML_S_IP

T=190922B

MDA5	AE39	DDR0_DQ[0]	
MDA4	AE38	DDR0_DQ[1]	
MDA7	AH39	DDR0_DQ[2]	
MDA3	AH38	DDR0_DQ[3]	
MDA1	AF40	DDR0_DQ[4]	
MDA0	AE40	DDR0_DQ[5]	
MDA2	AH40	DDR0_DQ[6]	
MDA6	AG40	DDR0_DQ[7]	
MDA8	AK39	DDR0_DQ[8]	
MDA13	AK40	DDR0_DQ[9]	
MDA10	AN39	DDR0_DQ[10]	
MDA14	AM40	DDR0_DQ[11]	
MDA9	AL40	DDR0_DQ[12]	
MDA12	AK38	DDR0_DQ[13]	
MDA15	AN40	DDR0_DQ[14]	
MDA11	AN38	DDR0_DQ[15]	
MDA21	AR39	DDR0_DQ[16]/DDR0_DQ[32]	
MDA20	AR40	DDR0_DQ[18]/DDR0_DQ[33]	
MDA22	AV39	DDR0_DQ[18]/DDR0_DQ[34]	
MDA17	AU40	DDR0_DQ[19]/DDR0_DQ[35]	
MDA19	AR38	DDR0_DQ[20]/DDR0_DQ[36]	
MDA16	AT40	DDR0_DQ[21]/DDR0_DQ[37]	
MDA18	AW38	DDR0_DQ[22]/DDR0_DQ[38]	
MDA23	AV38	DDR0_DQ[23]/DDR0_DQ[39]	
MDA28	AV36	DDR0_DQ[24]/DDR0_DQ[40]	
MDA24	AY36	DDR0_DQ[25]/DDR0_DQ[41]	
MDA31	AV33	DDR0_DQ[26]/DDR0_DQ[42]	
MDA30	AY34	DDR0_DQ[27]/DDR0_DQ[43]	
MDA25	AY35	DDR0_DQ[28]/DDR0_DQ[44]	
MDA29	AW36	DDR0_DQ[29]/DDR0_DQ[45]	
MDA26	AY33	DDR0_DQ[30]/DDR0_DQ[46]	
MDA27	AW33	DDR0_DQ[31]/DDR0_DQ[47]	
MDA36	AW11	DDR0_DQ[32]/DDR1_DQ[0]	
MDA37	AV11	DDR0_DQ[33]/DDR1_DQ[1]	
MDA34	AY7	DDR0_DQ[34]/DDR1_DQ[2]	
MDA38	AY8	DDR0_DQ[35]/DDR1_DQ[3]	
MDA33	AW9	DDR0_DQ[36]/DDR1_DQ[4]	
MDA32	AW10	DDR0_DQ[37]/DDR1_DQ[5]	
MDA35	AV7	DDR0_DQ[38]/DDR1_DQ[6]	
MDA39	AW7	DDR0_DQ[39]/DDR1_DQ[7]	
MDA40	AW5	DDR0_DQ[40]/DDR1_DQ[8]	
MDA45	AY5	DDR0_DQ[41]/DDR1_DQ[9]	
MDA47	AW2	DDR0_DQ[42]/DDR1_DQ[10]	
MDA46	AW3	DDR0_DQ[43]/DDR1_DQ[11]	
MDA41	AY4	DDR0_DQ[44]/DDR1_DQ[12]	
MDA44	AV5	DDR0_DQ[45]/DDR1_DQ[13]	
MDA43	AV1	DDR0_DQ[46]/DDR1_DQ[14]	
MDA42	AV2	DDR0_DQ[47]/DDR1_DQ[15]	
MDA48	AT1	DDR0_DQ[48]/DDR1_DQ[32]	
MDA50	AN1	DDR0_DQ[49]/DDR1_DQ[33]	
MDA52	AT3	DDR0_DQ[50]/DDR1_DQ[34]	
MDA54	AP1	DDR0_DQ[51]/DDR1_DQ[35]	
MDA53	AT2	DDR0_DQ[52]/DDR1_DQ[36]	
MDA51	AN3	DDR0_DQ[53]/DDR1_DQ[37]	
MDA49	AR1	DDR0_DQ[54]/DDR1_DQ[38]	
MDA55	AN2	DDR0_DQ[55]/DDR1_DQ[39]	
MDA56	AL2	DDR0_DQ[56]/DDR1_DQ[40]	
MDA58	AH1	DDR0_DQ[57]/DDR1_DQ[41]	
MDA60	AL3	DDR0_DQ[58]/DDR1_DQ[42]	
MDA62	AJ1	DDR0_DQ[59]/DDR1_DQ[43]	
MDA59	AH3	DDR0_DQ[60]/DDR1_DQ[44]	
MDA61	AL1	DDR0_DQ[61]/DDR1_DQ[45]	
MDA63	AH2	DDR0_DQ[62]/DDR1_DQ[46]	
MDA57	AK1	DDR0_DQ[63]/DDR1_DQ[47]	

	AK30	DDR0_ECC[7]	
	AM32	DDR0_ECC[6]	
	AJ32	DDR0_ECC[5]	
	AK32	DDR0_ECC[4]	
	AL32	DDR0_ECC[3]	
	AM31	DDR0_ECC[2]	
	AM30	DDR0_ECC[1]	
	AL30	DDR0_ECC[0]	
8 VREF_CAB	VREF_CAB AC38	DDR_VREF_CA_1	
8 VREF_CAB	VREF_CAB AC40	DDR_VREF_CA_0	

DDR CHANNEL A

	AU24	M_DCLKA0	M_DCLKA0 8
	AV24	M_-DCLKA0	M_-DCLKA0 8
	AY23	M_DCLKA1	M_DCLKA1 8
	AW23	M_-DCLKA1	M_-DCLKA1 8
	AT19	M_DCLKA2	M_DCLKA2 8
	AU19	M_-DCLKA2	M_-DCLKA2 8
	AY18	M_DCLKA3	M_DCLKA3 8
	AW18	M_-DCLKA3	M_-DCLKA3 8
	AY31	CKEA0	CKEA0 8
	AW31	CKEA1	CKEA1 8
	AV30	CKEA2	CKEA2 8
	AV31	CKEA3	CKEA3 8
	AY15	M_-CSA0	M_-CSA0 8
	AY13	M_-CSA1	M_-CSA1 8
	AV15	M_-CSA2	M_-CSA2 8
	AV13	M_-CSA3	M_-CSA3 8
	AY14	MODT_A0	
	AV14	MODT_A1	
	AU14	MODT_A2	
	AT14	MODT_A3	
	AY16	SBAA0	SBAA0 8
	AW17	SBAA1	SBAA1 8
	AV29	BG_A0	BG_A0 8
	AW29	BG_A1	BG_A1 8
	AV16	MAAA16	
	AW16	MAAA14	
	AU16	MAAA15	
	AU18	MAAA0	
	AY25	MAAA1	
	AY24	MAAA2	
	AW25	MAAA3	
	AV25	MAAA4	
	AY26	MAAA5	
	AV26	MAAA6	
	AY27	MAAA7	
	AY28	MAAA9	
	AU17	MAAA10	
	AV27	MAAA11	
	AV28	MAAA12	
	AW14	MAAA13	
	AY30	M_-ACT_A	8
	AV18	M_DDR_PARA	8
	AY29	M_-ALERT_A	8
	AJ3	M_DQSA7	
	AK3	M_-DQSA7	
	AP3	M_DQSA6	
	AR3	M_-DQSA6	
	AV3	M_DQSA5	
	AV4	M_-DQSA5	
	AV8	M_DQSA4	
	AV9	M_-DQSA4	
	AV34	M_DQSA3	
	AV35	M_-DQSA3	
	AU38	M_DQSA2	
	AT38	M_-DQSA2	
	AM38	M_DQSA1	
	AL38	M_-DQSA1	
	AG38	M_DQSA0	
	AF38	M_-DQSA0	
	AJ30		
	AJ31		

DDR0_CKP[0]		
DDR0_CKN[0]		
DDR0_CKP[1]		
DDR0_CKN[1]		
DDR0_CKP[2]		
DDR0_CKN[2]		
DDR0_CKP[3]		
DDR0_CKN[3]		
DDR0_CKE[0]		
DDR0_CKE[1]		
DDR0_CKE[2]		
DDR0_CKE[3]		
DDR0_CS#[0]		
DDR0_CS#[1]		
DDR0_CS#[2]		
DDR0_CS#[3]		
DDR0_ODT[0]		
DDR0_ODT[1]		
DDR0_ODT[2]		
DDR0_ODT[3]		
DDR0_BA[0]/DDR0_CAB[4]/DDR0_BA[0]		
DDR0_BA[1]/DDR0_CAB[6]/DDR0_BA[1]		
DDR0_BA[2]/DDR0_CAA[5]/DDR0_BG[0]		
DDR0_MA[14]/DDR0_CAA[9]/DDR0_BG[1]		
DDR0_RAS#/DDR0_CAB[3]/DDR0_MA[16]		
DDR0_WE#/DDR0_CAB[2]/DDR0_MA[14]		
DDR0_CAS#/DDR0_CAB[1]/DDR0_MA[15]		
DDR0_MA[0]/DDR0_CAB[9]/DDR0_MA[0]		
DDR0_MA[1]/DDR0_CAB[8]/DDR0_MA[1]		
DDR0_MA[2]/DDR0_CAB[5]/DDR0_MA[2]		
DDR0_MA[3]		
DDR0_MA[4]		
DDR0_MA[5]/DDR0_CAA[0]/DDR0_MA[5]		
DDR0_MA[6]/DDR0_CAA[2]/DDR0_MA[6]		
DDR0_MA[7]/DDR0_CAA[4]/DDR0_MA[7]		
DDR0_MA[8]/DDR0_CAA[3]/DDR0_MA[8]		
DDR0_MA[9]/DDR0_CAA[1]/DDR0_MA[9]		
DDR0_MA[10]/DDR0_CAB[7]/DDR0_MA[10]		
DDR0_MA[11]/DDR0_CAA[7]/DDR0_MA[11]		
DDR0_MA[12]/DDR0_CAA[6]/DDR0_MA[12]		
DDR0_MA[13]/DDR0_CAB[0]/DDR0_MA[13]		
DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT#		
DDR0_PAR		
DDR0_ALERT#		
DDR0_DQSP[7]/DDR1_DQSP[5]		
DDR0_DQSN[7]/DDR1_DQSN[5]		
DDR0_DQSP[6]/DDR1_DQSP[4]		
DDR0_DQSN[6]/DDR1_DQSN[4]		
DDR0_DQSP[5]/DDR1_DQSP[1]		
DDR0_DQSN[5]/DDR1_DQSN[1]		
DDR0_DQSP[4]/DDR1_DQSP[0]		
DDR0_DQSN[4]/DDR1_DQSN[0]		
DDR0_DQSP[3]/DDR0_DQSP[5]		
DDR0_DQSN[3]/DDR0_DQSN[5]		
DDR0_DQSP[2]/DDR0_DQSP[4]		
DDR0_DQSN[2]/DDR0_DQSN[4]		
DDR0_DQSP[1]		
DDR0_DQSN[1]		
DDR0_DQSP[0]		
DDR0_DQSN[0]		
DDR0_DQSP[8]		
DDR0_DQSN[8]		

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CPU-SK/1200/S/GF

LGA1200B

CML_S_IP

T=190922B

MDB4	AD34	DDR1_DQ[0]/DDR0_DQ[16]	
MDB5	AD35	DDR1_DQ[1]/DDR0_DQ[17]	
MDB1	AE36	DDR1_DQ[2]/DDR0_DQ[18]	
MDB6	AF36	DDR1_DQ[3]/DDR0_DQ[19]	
MDB3	AG35	DDR1_DQ[4]/DDR0_DQ[20]	
MDB7	AG34	DDR1_DQ[5]/DDR0_DQ[21]	
MDB0	AD36	DDR1_DQ[6]/DDR0_DQ[22]	
MDB2	AG36	DDR1_DQ[7]/DDR0_DQ[23]	
MDB13	AJ36	DDR1_DQ[8]/DDR0_DQ[24]	
MDB8	AJ35	DDR1_DQ[9]/DDR0_DQ[25]	
MDB14	AL36	DDR1_DQ[10]/DDR0_DQ[26]	
MDB10	AM35	DDR1_DQ[11]/DDR0_DQ[27]	
MDB9	AK36	DDR1_DQ[12]/DDR0_DQ[28]	
MDB12	AJ34	DDR1_DQ[13]/DDR0_DQ[29]	
MDB15	AM36	DDR1_DQ[14]/DDR0_DQ[30]	
MDB11	AM34	DDR1_DQ[15]/DDR0_DQ[31]	
MDB17	AT36	DDR1_DQ[16]/DDR0_DQ[48]	
MDB20	AP36	DDR1_DQ[17]/DDR0_DQ[49]	
MDB22	AT34	DDR1_DQ[18]/DDR0_DQ[50]	
MDB19	AP33	DDR1_DQ[19]/DDR0_DQ[51]	
MDB16	AR36	DDR1_DQ[20]/DDR0_DQ[52]	
MDB21	AT35	DDR1_DQ[21]/DDR0_DQ[53]	
MDB23	AR33	DDR1_DQ[22]/DDR0_DQ[54]	
MDB18	AT33	DDR1_DQ[23]/DDR0_DQ[55]	
MDB28	AP31	DDR1_DQ[24]/DDR0_DQ[56]	
MDB29	AT31	DDR1_DQ[25]/DDR0_DQ[57]	
MDB30	AT29	DDR1_DQ[26]/DDR0_DQ[58]	
MDB27	AP28	DDR1_DQ[27]/DDR0_DQ[59]	
MDB24	AR31	DDR1_DQ[28]/DDR0_DQ[60]	
MDB25	AT30	DDR1_DQ[29]/DDR0_DQ[61]	
MDB31	AR28	DDR1_DQ[30]/DDR0_DQ[62]	
MDB26	AT28	DDR1_DQ[31]/DDR0_DQ[63]	
MDB37	AT12	DDR1_DQ[32]/DDR1_DQ[16]	
MDB33	AR12	DDR1_DQ[33]/DDR1_DQ[17]	
MDB34	AT10	DDR1_DQ[34]/DDR1_DQ[18]	
MDB39	AR10	DDR1_DQ[35]/DDR1_DQ[19]	
MDB36	AP12	DDR1_DQ[36]/DDR1_DQ[20]	
MDB32	AT11	DDR1_DQ[37]/DDR1_DQ[21]	
MDB38	AP10	DDR1_DQ[38]/DDR1_DQ[22]	
MDB35	AN10	DDR1_DQ[39]/DDR1_DQ[23]	
MDB40	AR8	DDR1_DQ[40]/DDR1_DQ[24]	
MDB45	AT8	DDR1_DQ[41]/DDR1_DQ[25]	
MDB42	AT5	DDR1_DQ[42]/DDR1_DQ[26]	
MDB46	AT6	DDR1_DQ[43]/DDR1_DQ[27]	
MDB44	AP8	DDR1_DQ[44]/DDR1_DQ[28]	
MDB41	AT7	DDR1_DQ[45]/DDR1_DQ[29]	
MDB47	AP5	DDR1_DQ[46]/DDR1_DQ[30]	
MDB43	AR5	DDR1_DQ[47]/DDR1_DQ[31]	
MDB52	AM8	DDR1_DQ[48]	
MDB53	AM7	DDR1_DQ[49]	
MDB54	AK6	DDR1_DQ[50]	
MDB48	AM5	DDR1_DQ[51]	
MDB49	AM6	DDR1_DQ[52]	
MDB51	AK7	DDR1_DQ[53]	
MDB55	AK5	DDR1_DQ[54]	
MDB50	AL5	DDR1_DQ[55]	
MDB63	AF7	DDR1_DQ[56]	
MDB60	AH8	DDR1_DQ[57]	
MDB62	AG5	DDR1_DQ[58]	
MDB59	AF6	DDR1_DQ[59]	
MDB57	AH6	DDR1_DQ[60]	
MDB56	AH7	DDR1_DQ[61]	
MDB58	AF5	DDR1_DQ[62]	
MDB61	AH5	DDR1_DQ[63]	

	AM26	DDR1_ECC[7]	
	AM27	DDR1_ECC[6]	
	AL28	DDR1_ECC[5]	
	AK28	DDR1_ECC[4]	
	AM28	DDR1_ECC[3]	
	AL26	DDR1_ECC[2]	
	AK26	DDR1_ECC[1]	
	AJ28	DDR1_ECC[0]	
9 VREF_DQB	VREF_DQB AB40	DDR_VREF_CA_3	
9 VREF_DQB	VREF_DQB AC39	DDR_VREF_CA_2	

DDR CHANNEL B

	AT23	M_DCLKB0	M_DCLKB0 9
	AU23	M_-DCLKB0	M_-DCLKB0 9
	AV22	M_DCLKB1	M_DCLKB1 9
	AU22	M_-DCLKB1	M_-DCLKB1 9
	AT21	M_DCLKB2	M_DCLKB2 9
	AU21	M_-DCLKB2	M_-DCLKB2 9
	AU20	M_DCLKB3	M_DCLKB3 9
	AV20	M_-DCLKB3	M_-DCLKB3 9
	AT25	CKEB0	CKEB0 9
	AR26	CKEB1	CKEB1 9
	AT26	CKEB2	CKEB2 9
	AP26	CKEB3	CKEB3 9
	AN17	M_-CSB0	M_-CSB0 9
	AN15	M_-CSB1	M_-CSB1 9
	AR16	M_-CSB2	M_-CSB2 9
	AM15	M_-CSB3	M_-CSB3 9
	AM17	MODT_B0	
	AP14	MODT_B1	
	AM16	MODT_B2	
	AM14	MODT_B3	
	AP18	SBAB0	SBAB0 9
	AN19	SBAB1	SBAB1 9
	AM23	BG_B0	BG_B0 9
	AM22	BG_B1	BG_B1 9
	AM18	MAAB16	
	AP17	MAAB14	
	AP16	MAAB15	
	AP19	MAAB0	
	AP20	MAAB1	
	AR20	MAAB2	
	AM20	MAAB3	
	AP21	MAAB4	
	AN21	MAAB5	
	AR22	MAAB6	
	AM21	MAAB7	
	AP22	MAAB8	
	AN23	MAAB9	
	AR18	MAAB10	
	AP23	MAAB11	
	AP24	MAAB12	
	AP15	MAAB13	
	AP25	M_-ACT_B	9
	AM19	M_DDR_PARB	9
	AP24	M_-ALERT_B	9
	AF8	M_DQSB7	
	AG8	M_-DQSB7	
	AK8	M_DQSB6	
	AL8	M_-DQSB6	
	AP6	M_DQSB5	
	AP7	M_-DQSB5	
	AN11	M_DQSB4	
	AN12	M_-DQSB4	
	AP29	M_DQSB3	
	AP30	M_-DQSB3	
	AP34	M_DQSB2	
	AP35	M_-DQSB2	
	AL34	M_DQSB1	
	AK34	M_-DQSB1	
	AF34	M_DQSB0	
	AE34	M_-DQSB0	
	AJ27		
	AJ26		

DDR1_CKP[0]		
DDR1_CKN[0]		
DDR1_CKP[1]		
DDR1_CKN[1]		
DDR1_CKP[2]		
DDR1_CKN[2]		
DDR1_CKP[3]		
DDR1_CKN[3]		
DDR1_CKE[0]		
DDR1_CKE[1]		
DDR1_CKE[2]		
DDR1_CKE[3]		
DDR1_CS#[0]		
DDR1_CS#[1]		
DDR1_CS#[2]		
DDR1_CS#[3]		
DDR1_ODT[0]		
DDR1_ODT[1]		
DDR1_ODT[2]		
DDR1_ODT[3]		
DDR1_BA[0]/DDR1_CAB[4]/DDR1_BA[0]		
DDR1_BA[1]/DDR1_CAB[6]/DDR1_BA[1]		
DDR1_BA[2]/DDR1_CAA[5]/DDR1_BG[0]		
DDR1_MA[14]/DDR1_CAA[9]/DDR1_BG[1]		
DDR1_RAS#/DDR1_CAB[3]/DDR1_MA[16]		
DDR1_WE#/DDR1_CAB[2]/DDR1_MA[14]		
DDR1_CAS#/DDR1_CAB[1]/DDR1_MA[15]		
DDR1_MA[0]/DDR1_CAB[9]/DDR1_MA[0]		
DDR1_MA[1]/DDR1_CAB[8]/DDR1_MA[1]		
DDR1_MA[2]/DDR1_CAB[5]/DDR1_MA[2]		
DDR1_MA[3]		
DDR1_MA[4]		
DDR1_MA[5]/DDR1_CAA[0]/DDR1_MA[5]		
DDR1_MA[6]/DDR1_CAA[2]/DDR1_MA[6]		
DDR1_MA[7]/DDR1_CAA[4]/DDR1_MA[7]		
DDR1_MA[8]/DDR1_CAA[3]/DDR1_MA[8]		
DDR1_MA[9]/DDR1_CAA[1]/DDR1_MA[9]		
DDR1_MA[10]/DDR1_CAB[7]/DDR1_MA[10]		
DDR1_MA[11]/DDR1_CAA[7]/DDR1_MA[11]		
DDR1_MA[12]/DDR1_CAA[6]/DDR1_MA[12]		
DDR1_MA[13]/DDR1_CAB[0]/DDR1_MA[13]		
DDR1_MA[15]/DDR1_CAA[8]/DDR1_ACT#		
DDR1_PAR		
DDR1_ALERT#		
DDR1_DQSP[7]		
DDR1_DQSN[7]		
DDR1_DQSP[6]		
DDR1_DQSN[6]		
DDR1_DQSP[5]/DDR1_DQSP[3]		
DDR1_DQSN[5]/DDR1_DQSN[3]		
DDR1_DQSP[4]/DDR1_DQSP[2]		
DDR1_DQSN[4]/DDR1_DQSN[2]		
DDR1_DQSP[3]/DDR0_DQSP[7]		
DDR1_DQSN[3]/DDR0_DQSN[7]		
DDR1_DQSP[2]/DDR0_DQSP[6]		
DDR1_DQSN[2]/DDR0_DQSN[6]		
DDR1_DQSP[1]/DDR0_DQSP[3]		
DDR1_DQSN[1]/DDR0_DQSN[3]		
DDR1_DQSP[0]/DDR0_DQSP[2]		
DDR1_DQSN[0]/DDR0_DQSN[2]		
DDR1_DQSP[8]		
DDR1_DQSN[8]		

2 OF 13

CPU-SK/1200/S/GF

8 MODT_A[0..3] <> MODT_A[0..3]

9 MODT_B[0..3] <> MODT_B[0..3]

8 MDA[0..63] <> MDA[0..63]

9 MDB[0..63] <> MDB[0..63]

8 M_DQSA[0..7] <> M_DQSA[0..7]

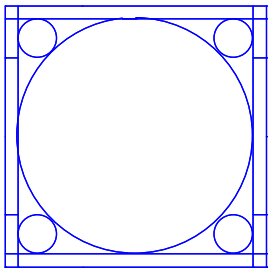
8 M_-DQSA[0..7] <> M_-DQSA[0..7]

8 MAAA[0..16] <> MAAA[0..16]

9 MAAB[0..16] <> MAAB[0..16]

9 M_DQSB[0..7] <> M_DQSB[0..7]

9 M_-DQSB[0..7] <> M_-DQSB[0..7]



黑色cover

LGA1200

BP(S50C)+ILM(SUS)/NORMAL NI/[12KRC-SF0001-81R_12KRC-SF0001-82R]

GIGABYTE

Title	CPU LGA1200-B		
Size	Document Number		Rev
Custom	B460 AORUS PRO AC		1.01
Date:	Monday, March 09, 2020	Sheet 5 of 63	

191002A

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
放CPU SOCKET (Bottom LAYER)

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

VCCIO2 CAP
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
WBC75 22u/6/X5R/6.3V/M
+VCCDDQ_EDGECAP1
WBC76 22u/6/X5R/6.3V/M
放CPU SOCKET (Bottom LAYER)

1004 Removed

*CML增加,RKL才會用到

VCCGT
LGA1200J CML_S_IP
T=190922B
AA32 AA34 AA35 AA36 AA37 AA38 AB32 AB33 AB34 AB35 AB36 AC32 AD32 AE32 AF32 AG32 R40 T37 T38 T39 T40 U33 U34 U35 U36 U37 U38 U39 U40 V32 V33 V34 V36 V38 V40 W32 W34 W35 W36 W37 W38 Y32 Y33 Y34 Y36 Y38 VCCGT
VCCGT_SENSE AB37
VSSGT_SENSE AB38
VCCGT_SENSE 27
VSSGT_SENSE 27
12 OF 13
CPU-SK/1200/S/GF
GF 腳座

1014 Removed

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

VCCSA
LGA1200K CML_S_IP
T=190922B
B3 B6 D1 G3 H1 L11 L12 L3 M1 M11 M12 N11 N12 N13 VCCSA
AJ9 AK10 AK11 AL10 AL11 VCCIO_2
AK25 AL12 AL24 AM12 VCCIO_1
AA3 AB8 AC1 AC7 AD6 U5 V3 V7 W1 W7 W8 VCCIO_0
C6 VCCSA_SENSE
AE4 VCCIO_1_2_SENSE
D5 VCCIO_0_SENSE
D6 VSS_SA_VCCIO_0_SENSE
VDDQ
AR14 AT24 AU15 AU25 AV17 AV19 AV23 AW13 AW15 AW24 AW26 AW28 AW30 AY17 VCCDDQ
AM13 VCCDDQ_EDGECAP2
AM24 VCCDDQ_EDGECAP1
+VCCDDQ_EDGECAP2
+VCCDDQ_EDGECAP1
U2 V1 V2 VCCST
VCCST WR87 0/4/SHT/20/M/X VCCST_VCCPLL
R1 VCCSFR
VCCSFR WR125 0/4/SHT/20/M/X VCCST_VCCPLL
WBC124 1u/4/X5R/6.3V/K
AU13 AU27 VCCSFR_OC
VCCSFR_OC WR86 0/4/X VDDQ
WR95 0/4 VCCPLL_OC
R2 R3 VCCSTG
VCCSTG VCCSTG
R4 T5 T6 VCCFPGM0 VCCFPGM1 VCCFPGM2
VCCFPGM VCCSTG
11 OF 13
CPU-SK/1200/S/GF
GF 腳座

VCCIO
AA3 AB8 AC1 AC7 AD6 U5 V3 V7 W1 W7 W8 VCCIO_0

W_OVU1
3VDUAL
VIN VOUT GND EN FB
VCCPLL_OC_EN
W_OVC1 2.2u/4/X5R/6.3V/M
R1 W_OVR3 1K/4/1
R2 W_OVR14 1.37K/4/1
W_OVC4 22P/4/NPO/50V/J
VCCPLL_OC_FB
Vout=0.8*(R1+R2)/R2
AP7365-WG-7/SOT23-5/600mA
W_OVC6 10U/6/X5R/6.3V/M
W_OVC5 0.1u/4/X7R/16V/K
VCCPLL_OC
CML=0.17A
RKL=0.25A

3VDUAL
W_OVR5 8.2K/4
W_OVR6 8.2K/4
VCCPLL_OC_EN
VDDQ
W_OVR4 8.2K/4
W_OVQ1
SOT23
W_OVQ2
SOT23
2N7002/SOT23/25pF/5
W_OVC7 0.01u/4/X7R/25V/K/X
MMBT2222A/SOT23/600mA/40

LGA1200L CML_S_IP
T=190922B
K16 G16 H8 AU32 AN25 P33 R33 J4 L4 P8 M8 G4 E4 J11 J13 B15
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
AH33 AH32 D8 F8 D12 E12 AL18 L33 M16 M33 N4 T33
THERMDA2
THERMDC2
THERMDA1
THERMDC1
WTP2
WTP3
CPU_TRIGGEROUT
CPU_TRIGGERIN
A_CPU_PCH_TO_R WR88 33/4
A_CPU_PCH_TO 13
N_PCH_CPU_TI 13
VCCCOREG5
VCCCOREG4
RSVD_M16
RSVD_M33
RSVD_N4
RSVD_T33
13 OF 13
CPU-SK/1200/S/GF
GF 腳座

GIGABYTE
Title: CPU LGA1200-C
Size: Custom
Document Number: B460 AORUS PRO AC
Rev: 1.01
Date: Tuesday, March 17, 2020
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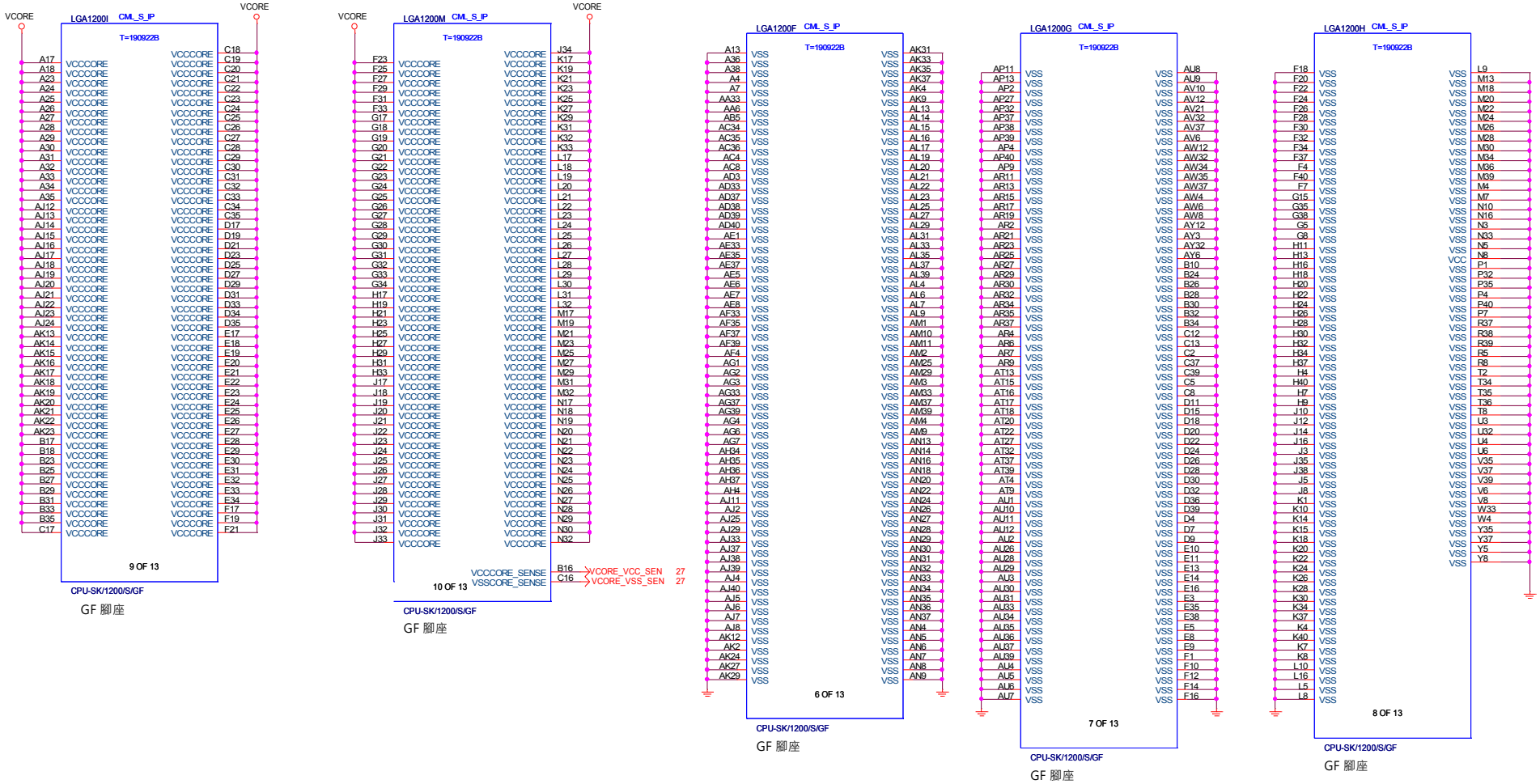
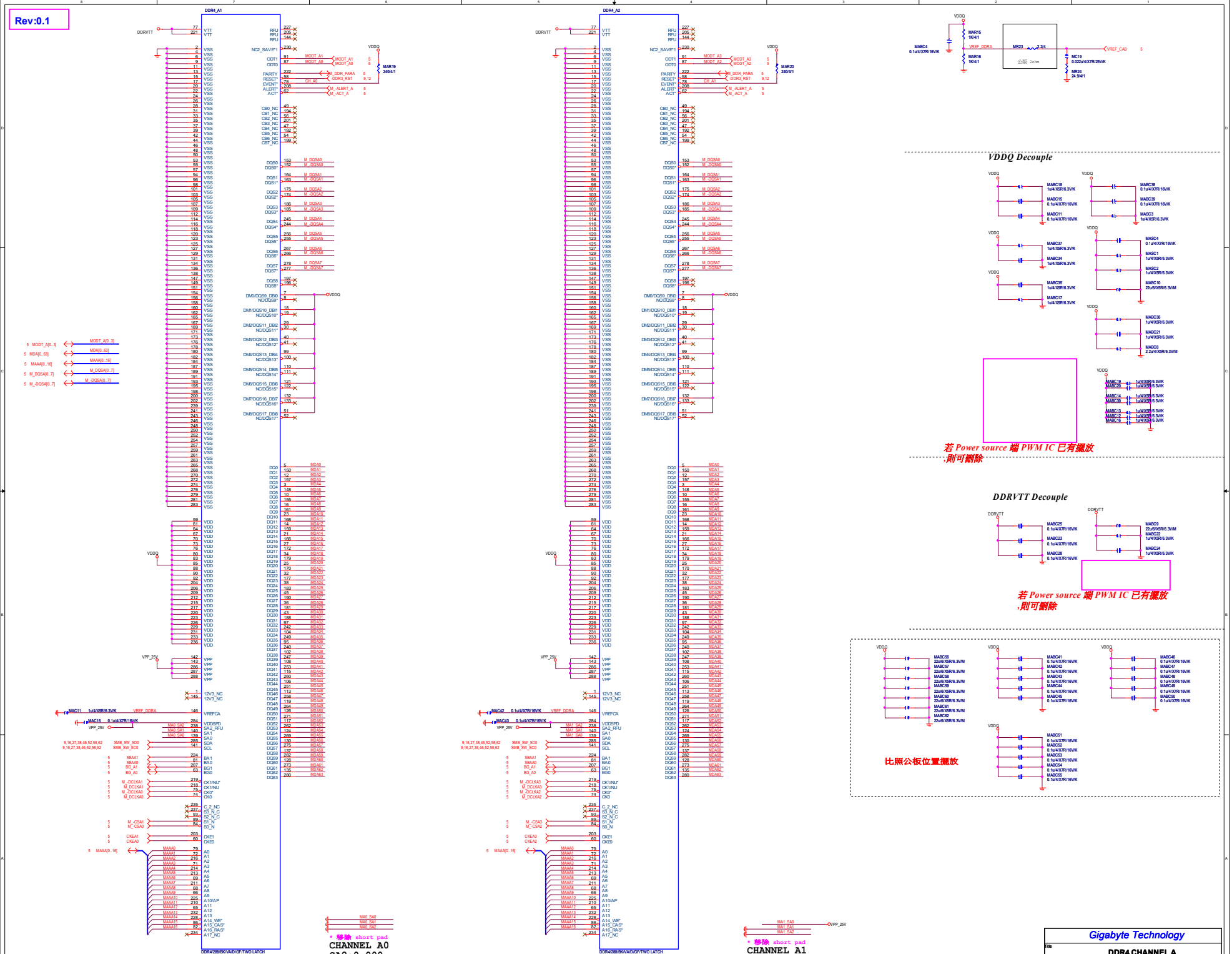


* 刪 Vcore 電容

GIGABYTE™

Title	CPU LGA1200-D	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
Date: Thursday, March 12, 2020	Sheet 7 of 63	

Rev:0.1



VDDQ Decouple

若 Power source 端 PWM IC 已有擺放 ,則可刪除

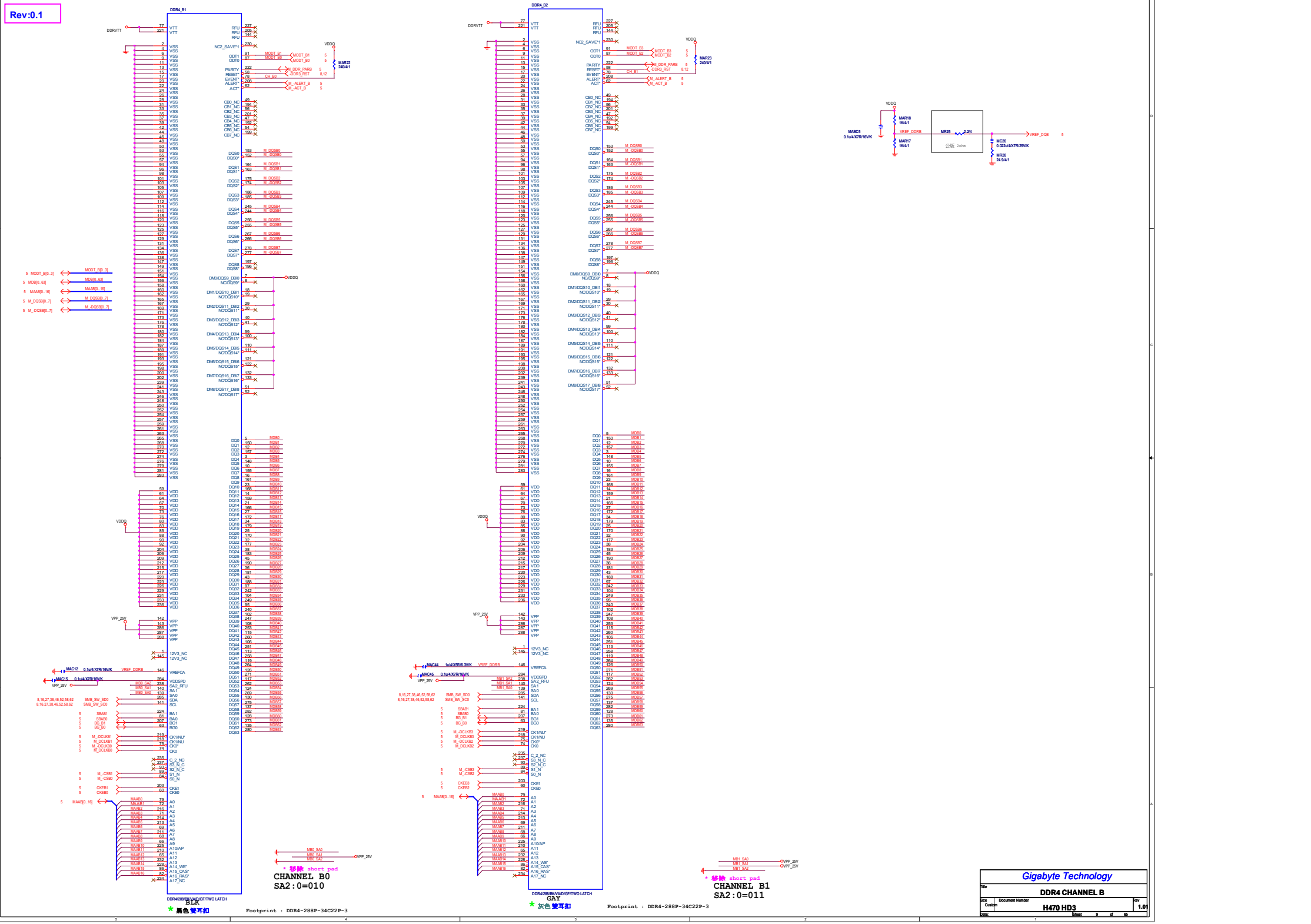
DDRVTT Decouple

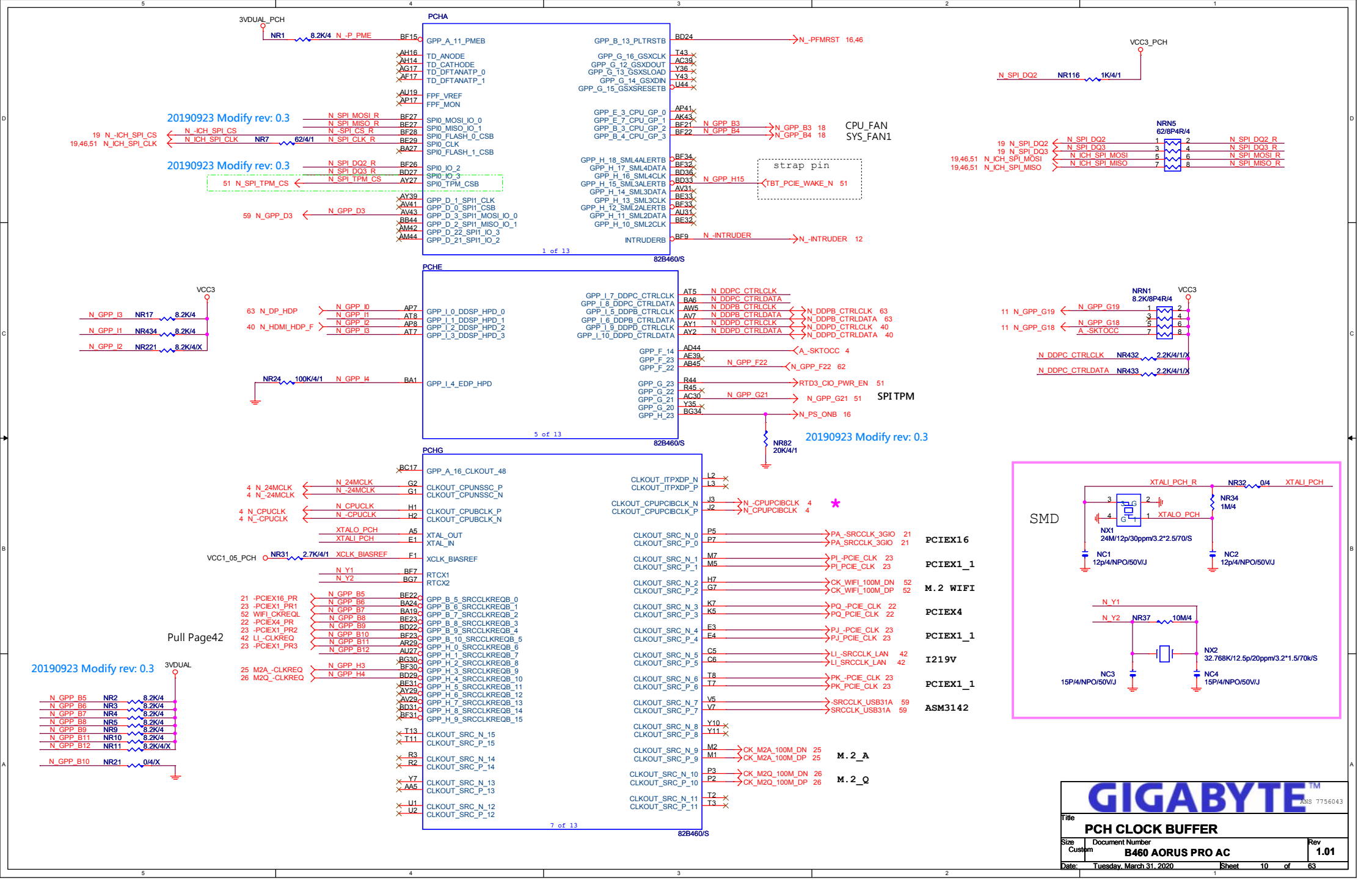
若 Power source 端 PWM IC 已有擺放 ,則可刪除

比照公板位置擺放

Gigabyte Technology	
Title	DDR4 CHANNEL A
Size: Custom	Document Number: H470 HD3
Rev: 1.0	
Date:	Sheet 8 of 65

Rev:0.1


DDR4_B1
DDR4_B2
CHANNEL B0
SA2:0=010
CHANNEL B1
SA2:0=011
BLK
GAY
Footprint : DDR4-288P-34C22P-3
Footprint : DDR4-288P-34C22P-3
* 黑色雙耳扣
* 灰色雙耳扣
* 移除 short pad
* 移除 short pad
Gigabyte Technology
DDR4 CHANNEL B
H470 HD3
1.01


PCHA
PCHE
PCHG
82B460/S
1 of 13
5 of 13
7 of 13
20190923 Modify rev: 0.3
CPU_FAN
SYS_FAN1
SPI TPM
strap pin
SMD
PCIEX16
PCIEX1_1
M.2 WIFI
PCIEX4
PCIEX1_1
I219V
PCIEX1_1
ASM3142
M.2_A
M.2_Q
Pull Page42
GIGABYTE
PCH CLOCK BUFFER
B460 AORUS PRO AC
1.01
Tuesday, March 31, 2020
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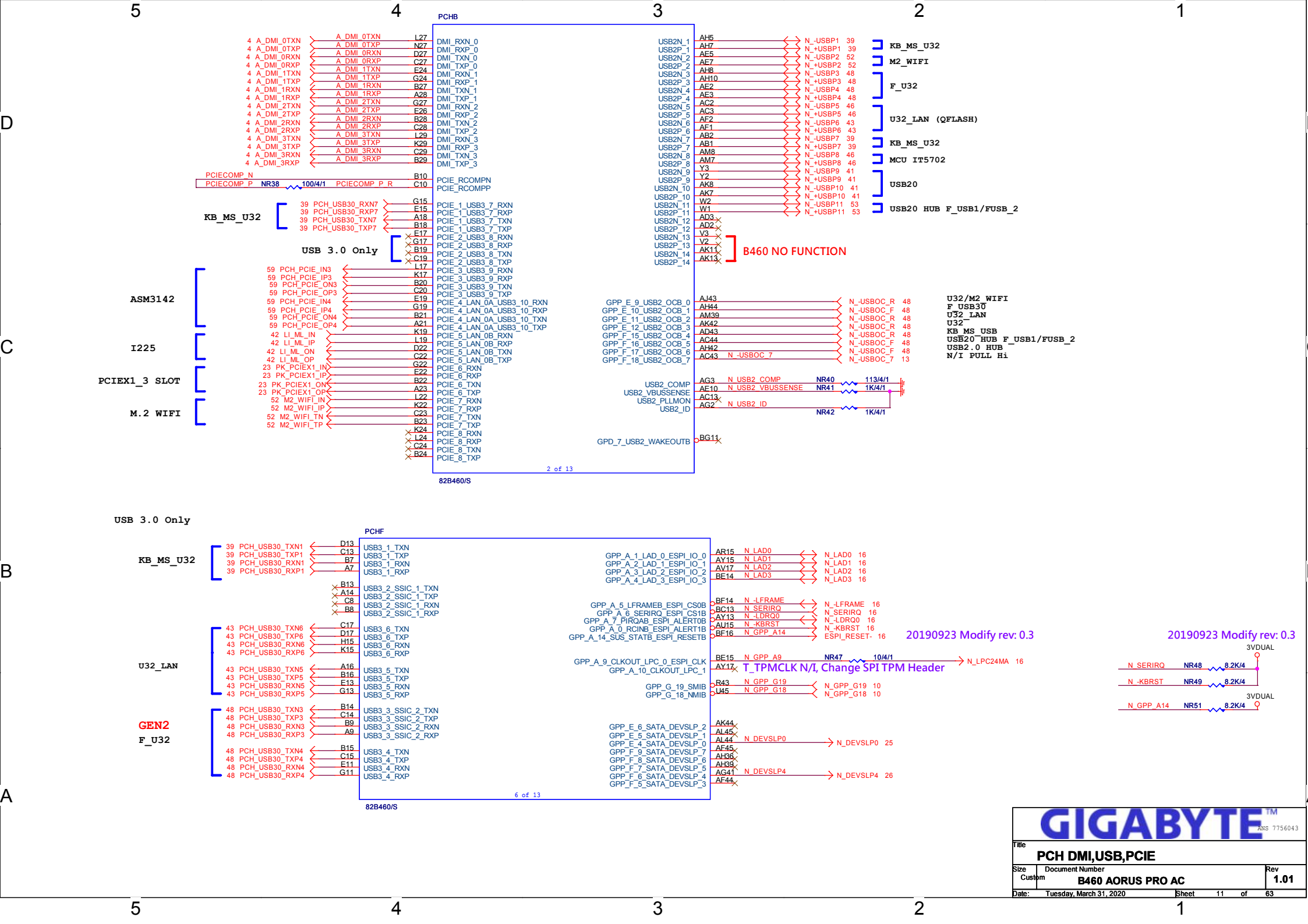
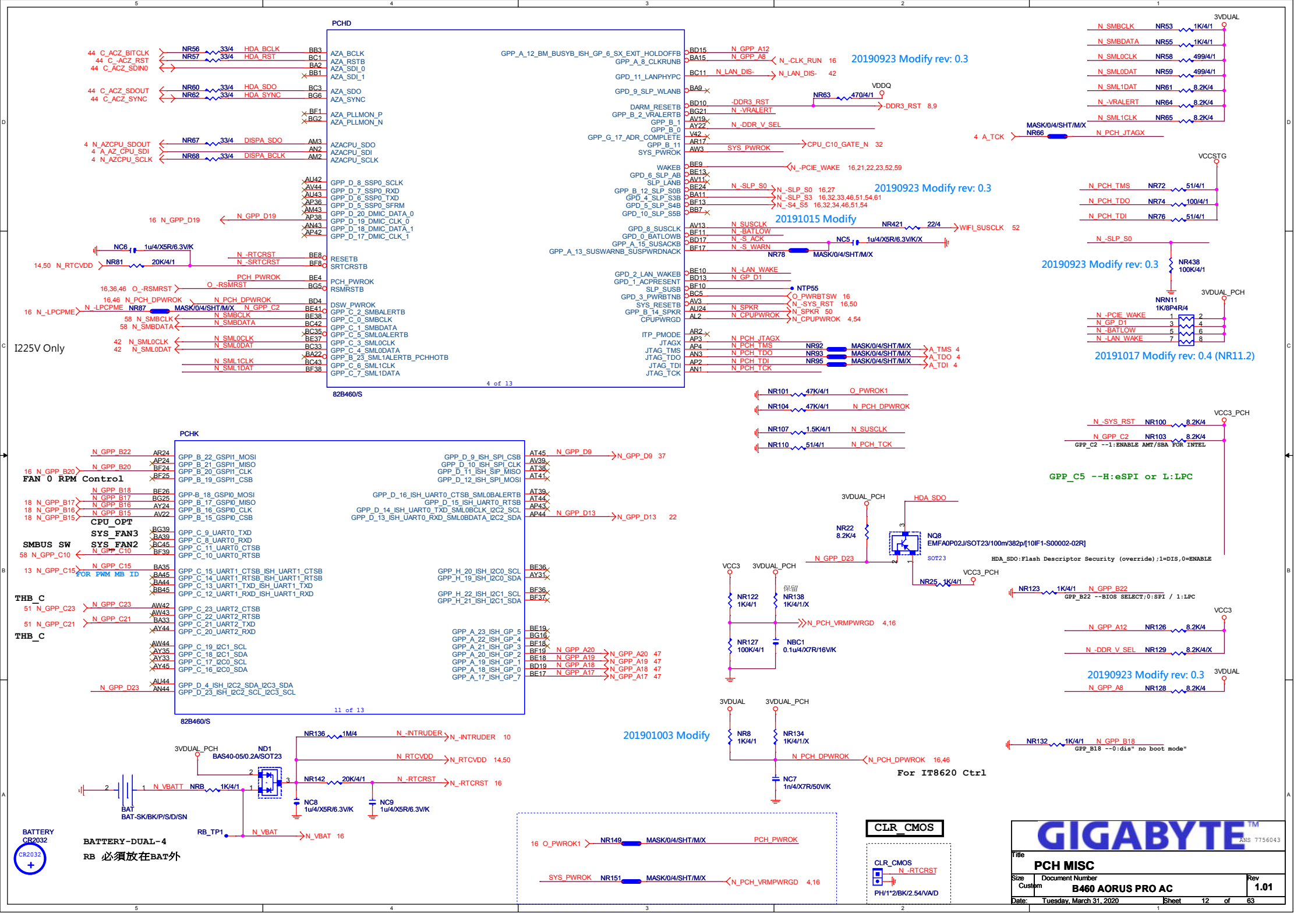


GIGABYTE™ ANS 7756043

Title	PCH DMI,USB,PCIE		
Size	Document Number		Rev
Custom	B460 AORUS PRO AC		1.01
Date:	Tuesday, March 31, 2020	Sheet 11 of 63	


PCHD
AZA_BCLK
AZA_RSTB
AZA_SDI_0
AZA_SDI_1
AZA_SDO
AZA_SYNC
AZA_PLLMON_P
AZA_PLLMON_N
AZACPU_SDO
AZACPU_SDI
AZACPU_SCLK
GPP_D_8_SSP0_SCLK
GPP_D_7_SSP0_RXD
GPP_D_6_SSP0_TXD
GPP_D_5_SSP0_SFRM
GPP_D_20_DMIC_DATA_0
GPP_D_19_DMIC_CLK_0
GPP_D_18_DMIC_DATA_1
GPP_D_17_DMIC_CLK_1
RESETB
SRTCRSTB
PCH_PWROK
RSMRSTB
DSW_PWROK
GPP_C_2_SMBALERTB
GPP_C_0_SMBCLK
GPP_C_1_SMBDATA
GPP_C_5_SML0ALERTB
GPP_C_3_SML0CLK
GPP_C_4_SML0DATA
GPP_B_23_SML1ALERTB_PCHHOTB
GPP_C_6_SML1CLK
GPP_C_7_SML1DATA
4 of 13
82B460/S
GPP_A_12_BM_BUSYB_ISH_GP_6_SX_EXIT_HOLDOFFB
GPP_A_8_CLKRUNB
GPD_11_LANPHYPC
GPD_9_SLP_WLANB
DARM_RESETB
GPP_B_2_VRALERTB
GPP_B_1
GPP_B_0
GPP_G_17_ADR_COMPLETE
GPP_B_11
SYS_PWROK
WAKEB
GPD_6_SLP_AB
SLP_LANB
GPP_B_12_SLP_S0B
GPD_4_SLP_S3B
GPD_5_SLP_S4B
GPD_10_SLP_S5B
GPD_8_SUSCLK
GPD_0_BATLOWB
GPP_A_15_SUSACKB
GPP_A_13_SUSWARNB_SUSPWRDNACK
GPD_2_LAN_WAKEB
GPD_1_ACPRESENT
SLP_SUSB
GPD_3_PWRBTNB
SYS_RESETB
GPP_B_14_SPKR
CPUPWRGD
ITP_PMODE
JTAGX
JTAG_TMS
JTAG_TDO
JTAG_TDI
JTAG_TCK
20190923 Modify rev: 0.3
20190923 Modify rev: 0.3
20191015 Modify
20190923 Modify rev: 0.3
20191017 Modify rev: 0.4 (NR11.2)
I225V Only
PCHK
FAN 0 RPM Control
CPU_OPT
SYS_FAN3
SMBUS SW
SYS_FAN2
THB_C
THB_C
FOR PWM MB ID
GPP_B_22_GSPI1_MOSI
GPP_B_21_GSPI1_MISO
GPP_B_20_GSPI1_CLK
GPP_B_19_GSPI1_CSB
GPP-B_18_GSPI0_MOSI
GPP_B_17_GSPI0_MISO
GPP_B_16_GSPI0_CLK
GPP_B_15_GSPI0_CSB
GPP_C_9_UART0_TXD
GPP_C_8_UART0_RXD
GPP_C_11_UART0_CTSB
GPP_C_10_UART0_RTSB
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_23_UART2_CTSB
GPP_C_22_UART2_RTSB
GPP_C_21_UART2_TXD
GPP_C_20_UART2_RXD
GPP_C_19_I2C1_SCL
GPP_C_18_I2C1_SDA
GPP_C_17_I2C0_SCL
GPP_C_16_I2C0_SDA
GPP_D_4_ISH_I2C2_SDA_I2C3_SDA
GPP_D_23_ISH_I2C2_SCL_I2C3_SCL
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82B460/S
GPP_D_9_ISH_SPI_CSB
GPP_D_10_ISH_SPI_CLK
GPP_D_11_ISH_SIP_MISO
GPP_D_12_ISH_SPI_MOSI
GPP_D_16_ISH_UART0_CTSB_SML0BALERTB
GPP_D_15_ISH_UART0_RTSB
GPP_D_14_ISH_UART0_TXD_SML0BCLK_I2C2_SCL
GPP_D_13_ISH_UART0_RXD_SML0BDATA_I2C2_SDA
GPP_H_20_ISH_I2C0_SCL
GPP_H_19_ISH_I2C0_SDA
GPP_H_22_ISH_I2C1_SCL
GPP_H_21_ISH_I2C1_SDA
GPP_A_23_ISH_GP_5
GPP_A_22_ISH_GP_4
GPP_A_21_ISH_GP_3
GPP_A_20_ISH_GP_2
GPP_A_19_ISH_GP_1
GPP_A_18_ISH_GP_0
GPP_A_17_ISH_GP_7
201901003 Modify
For IT8620 Ctrl
GPP_C5 --H:eSPI or L:LPC
HDA_SDO:Flash Descriptor Security (override);1=DIS,0=ENABLE
GPP_B22 --BIOS SELECT;0:SPI / 1:LPC
GPP_B18 --0:dis" no boot mode"
GPP_C2 --1:ENABLE AMT/SBA FOR INTEL
NQ8
EMFA0P02J/SOT23/100m/382p/[10IF1-S00002-02R]
SOT23
保留
3VDUAL
3VDUAL_PCH
VCC3
VCC3_PCH
VDDQ
VCCSTG
MASK/0/4/SHT/M/X
ND1
BAS40-05/0.2A/SOT23
BAT
BAT-SK/BK/P/S/D/SN
BATTERY
CR2032
BATTERY-DUAL-4
RB 必須放在BAT外
RB_TP1
CLR_CMOS
PH/1*2/BK/2.54/VA/D
NRN11
1K/8P4R/4
GIGABYTE
ANS 7756043
Title
PCH MISC
Size
Custom
Document Number
B460 AORUS PRO AC
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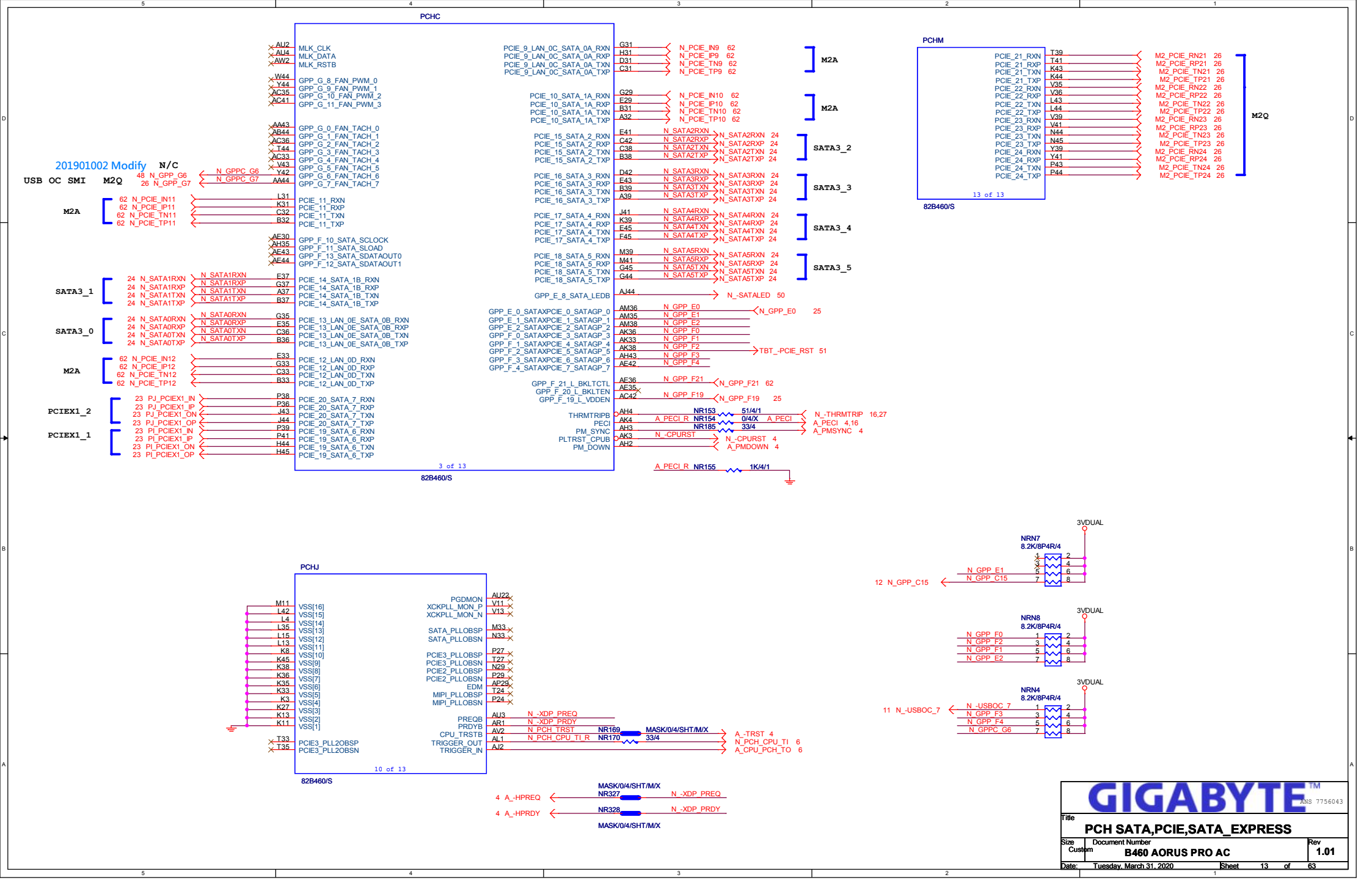
PCHC
MLK_CLK
MLK_DATA
MLK_RSTB
GPP_G_8_FAN_PWM_0
GPP_G_9_FAN_PWM_1
GPP_G_10_FAN_PWM_2
GPP_G_11_FAN_PWM_3
GPP_G_0_FAN_TACH_0
GPP_G_1_FAN_TACH_1
GPP_G_2_FAN_TACH_2
GPP_G_3_FAN_TACH_3
GPP_G_4_FAN_TACH_4
GPP_G_5_FAN_TACH_5
GPP_G_6_FAN_TACH_6
GPP_G_7_FAN_TACH_7
201901002 Modify
N/C
USB OC SMI
M2Q
N_GPPC_G6
N_GPPC_G7
M2A
PCIE_11_RXN
PCIE_11_RXP
PCIE_11_TXN
PCIE_11_TXP
GPP_F_10_SATA_SCLOCK
GPP_F_11_SATA_SLOAD
GPP_F_13_SATA_SDATAOUT0
GPP_F_12_SATA_SDATAOUT1
SATA3_1
PCIE_14_SATA_1B_RXN
PCIE_14_SATA_1B_RXP
PCIE_14_SATA_1B_TXN
PCIE_14_SATA_1B_TXP
SATA3_0
PCIE_13_LAN_0E_SATA_0B_RXN
PCIE_13_LAN_0E_SATA_0B_RXP
PCIE_13_LAN_0E_SATA_0B_TXN
PCIE_13_LAN_0E_SATA_0B_TXP
M2A
PCIE_12_LAN_0D_RXN
PCIE_12_LAN_0D_RXP
PCIE_12_LAN_0D_TXN
PCIE_12_LAN_0D_TXP
PCIEX1_2
PCIE_20_SATA_7_RXN
PCIE_20_SATA_7_RXP
PCIE_20_SATA_7_TXN
PCIE_20_SATA_7_TXP
PCIEX1_1
PCIE_19_SATA_6_RXN
PCIE_19_SATA_6_RXP
PCIE_19_SATA_6_TXN
PCIE_19_SATA_6_TXP
3 of 13
82B460/S
PCIE_9_LAN_0C_SATA_0A_RXN
PCIE_9_LAN_0C_SATA_0A_RXP
PCIE_9_LAN_0C_SATA_0A_TXN
PCIE_9_LAN_0C_SATA_0A_TXP
M2A
PCIE_10_SATA_1A_RXN
PCIE_10_SATA_1A_RXP
PCIE_10_SATA_1A_TXN
PCIE_10_SATA_1A_TXP
M2A
PCIE_15_SATA_2_RXN
PCIE_15_SATA_2_RXP
PCIE_15_SATA_2_TXN
PCIE_15_SATA_2_TXP
SATA3_2
PCIE_16_SATA_3_RXN
PCIE_16_SATA_3_RXP
PCIE_16_SATA_3_TXN
PCIE_16_SATA_3_TXP
SATA3_3
PCIE_17_SATA_4_RXN
PCIE_17_SATA_4_RXP
PCIE_17_SATA_4_TXN
PCIE_17_SATA_4_TXP
SATA3_4
PCIE_18_SATA_5_RXN
PCIE_18_SATA_5_RXP
PCIE_18_SATA_5_TXN
PCIE_18_SATA_5_TXP
SATA3_5
GPP_E_8_SATA_LEDB
GPP_E_0_SATAXPCIE_0_SATAGP_0
GPP_E_1_SATAXPCIE_1_SATAGP_1
GPP_E_2_SATAXPCIE_2_SATAGP_2
GPP_F_0_SATAXPCIE_3_SATAGP_3
GPP_F_1_SATAXPCIE_4_SATAGP_4
GPP_F_2_SATAXPCIE_5_SATAGP_5
GPP_F_3_SATAXPCIE_6_SATAGP_6
GPP_F_4_SATAXPCIE_7_SATAGP_7
GPP_F_21_L_BKLTCTL
GPP_F_20_L_BKLTEN
GPP_F_19_L_VDDEN
THRMTRIPB
PECI
PM_SYNC
PLTRST_CPUB
PM_DOWN
NR153
NR154
NR185
NR155
1K/4/1
PCHM
PCIE_21_RXN
PCIE_21_RXP
PCIE_21_TXN
PCIE_21_TXP
PCIE_22_RXN
PCIE_22_RXP
PCIE_22_TXN
PCIE_22_TXP
PCIE_23_RXN
PCIE_23_RXP
PCIE_23_TXN
PCIE_23_TXP
PCIE_24_RXN
PCIE_24_RXP
PCIE_24_TXN
PCIE_24_TXP
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82B460/S
M2Q
PCHJ
VSS[16]
VSS[15]
VSS[14]
VSS[13]
VSS[12]
VSS[11]
VSS[10]
VSS[9]
VSS[8]
VSS[7]
VSS[6]
VSS[5]
VSS[4]
VSS[3]
VSS[2]
VSS[1]
PCIE3_PLL2OBSP
PCIE3_PLL2OBSN
PGDMON
XCKPLL_MON_P
XCKPLL_MON_N
SATA_PLLOBSP
SATA_PLLOBSN
PCIE3_PLLOBSP
PCIE3_PLLOBSN
PCIE2_PLLOBSP
PCIE2_PLLOBSN
EDM
MIPI_PLLOBSP
MIPI_PLLOBSN
PREQB
PRDYB
CPU_TRSTB
TRIGGER_OUT
TRIGGER_IN
10 of 13
82B460/S
N_-XDP_PREQ
N_-XDP_PRDY
N_PCH_TRST
N_PCH_CPU_TI_R
NR169
NR170
MASK/0/4/SHT/M/X
33/4
A_-TRST
N_PCH_CPU_TI
A_CPU_PCH_TO
NR327
NR328
A_-HPREQ
A_-HPRDY
3VDUAL
NRN7
8.2K/8P4R/4
N_GPP_E1
N_GPP_C15
NRN8
N_GPP_F0
N_GPP_F2
N_GPP_F1
N_GPP_E2
NRN4
N_-USBOC_7
N_GPP_F3
N_GPP_F4
N_GPPC_G6
GIGABYTE
Title
PCH SATA,PCIE,SATA_EXPRESS
Size
Custom
Document Number
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Rev
1.01
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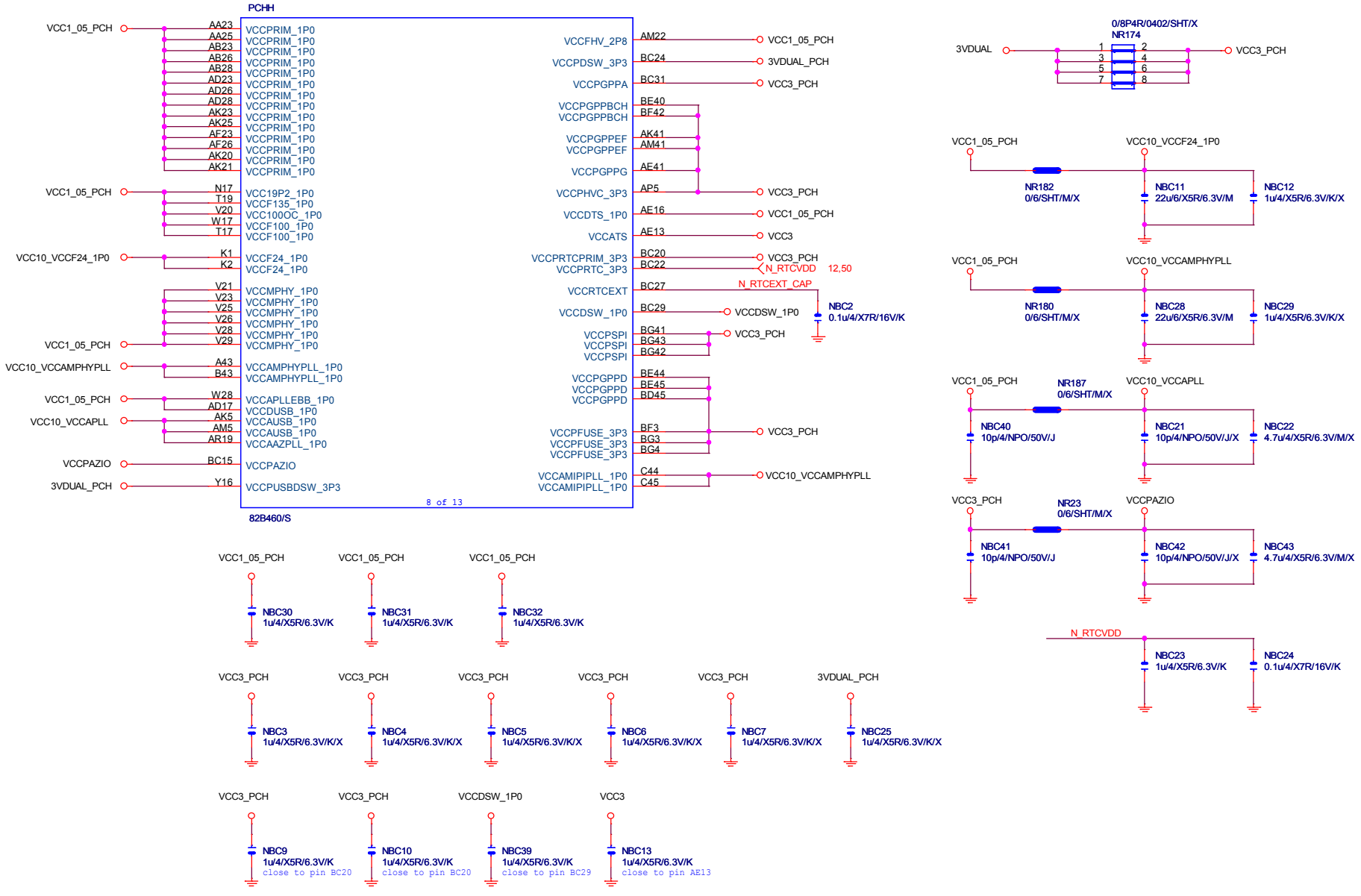
63



GIGABYTE™ ANS 7756043

Title	PCH PWR	
Size B	Document Number B460 AORUS PRO AC	Rev 1.01
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PCHI

A25	VSS	VSS	A42
A30	VSS	VSS	D45
P22	VSS	VSS	BG44
AV38	VSS	VSS	BF44
AV45	VSS	VSS	BF45
AV8	VSS	VSS	BF2
AY11	VSS	VSS	W29
AY19	VSS	VSS	A35
AY37	VSS	VSS	A40
AY4	VSS	VSS	A41
AY42	VSS	VSS	AA17
AY8	VSS	VSS	AA18
B25	VSS	VSS	AA20
B3	VSS	VSS	AA21
B30	VSS	VSS	AA26
B35	VSS	VSS	AA28
B4	VSS	VSS	AA29
B41	VSS	VSS	AB17
BA13	VSS	VSS	AC32
BA17	VSS	VSS	AE4
BA29	VSS	VSS	AE8
BA31	VSS	VSS	AF18
BA37	VSS	VSS	AF20
BA4	VSS	VSS	AF21
BA42	VSS	VSS	AF25
BB40	VSS	VSS	AF28
BC38	VSS	VSS	AF29
BC40	VSS	VSS	AF4
BC9	VSS	VSS	AF42
BD11	VSS	VSS	AG18
BD16	VSS	VSS	AG20
BD2	VSS	VSS	AG21
BD21	VSS	VSS	AG23
BD25	VSS	VSS	AG25
F2	VSS	VSS	AG26
E31	VSS	VSS	AG28
E6	VSS	VSS	AG29
E8	VSS	VSS	AH11
F39	VSS	VSS	AH13
F43	VSS	VSS	AH30
G4	VSS	VSS	AH32
G40	VSS	VSS	AH33
G42	VSS	VSS	AH38
F6	VSS	VSS	AJ1
G9	VSS	VSS	AJ17
H11	VSS	VSS	AJ18
H13	VSS	VSS	AJ20
H17	VSS	VSS	AJ21
H19	VSS	VSS	AJ23
H22	VSS	VSS	AJ25
H24	VSS	VSS	AJ26
H27	VSS	VSS	AJ28
H29	VSS	VSS	AJ29
H33	VSS	VSS	AJ45
H35	VSS	VSS	AK10
H38	VSS	VSS	AK14
H4	VSS	VSS	AK16
H42	VSS	VSS	AK17
H9	VSS	VSS	AK18
J4	VSS	VSS	AK26
M36	VSS	VSS	AK28
M38	VSS	VSS	AM14
M4	VSS	VSS	AN14
M8	VSS	VSS	AP19
M9	VSS	VSS	AR22
N13	VSS	VSS	AR27
N15	VSS	VSS	AU29
N19	VSS	VSS	AU33
N22	VSS	VSS	AV1
N24	VSS	VSS	AV10
N31	VSS	VSS	AV15
N42	VSS	VSS	AV24
P10	VSS	VSS	AV27
P12	VSS	VSS	AV33
AV35	VSS		

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PCHL

BD34	VSS[70]	VSS[1]	AB18
BD39	VSS[71]	VSS[2]	AB20
BD7	VSS[72]	VSS[3]	AB21
BE2	VSS[73]	VSS[4]	AB25
BF43	VSS[74]	VSS[5]	AB29
BF5	VSS[75]	VSS[6]	AB4
BG18	VSS[76]	VSS[7]	AB42
BG23	VSS[77]	VSS[8]	AC10
BG28	VSS[78]	VSS[9]	AC11
BG32	VSS[79]	VSS[10]	AC14
BG37	VSS[80]	VSS[11]	AC16
BG40	VSS[81]	VSS[12]	AC38
BG9	VSS[83]	VSS[13]	AC4
C1	VSS[84]	VSS[14]	AC5
A12	VSS[85]	VSS[15]	AC7
C2	VSS[86]	VSS[16]	AC8
C37	VSS[87]	VSS[17]	AD1
A6	VSS[88]	VSS[18]	AD18
C9	VSS[89]	VSS[19]	AD20
D1	VSS[90]	VSS[20]	AD21
D10	VSS[91]	VSS[21]	AD25
D12	VSS[92]	VSS[22]	AD29
D15	VSS[93]	VSS[23]	AD45
D16	VSS[94]	VSS[24]	AE11
B12	VSS[95]	VSS[25]	AE14
D19	VSS[96]	VSS[26]	AE32
D21	VSS[97]	VSS[27]	AE33
D24	VSS[98]	VSS[28]	AE38
D25	VSS[99]	VSS[29]	AK29
D29	VSS[100]	VSS[30]	AK30
D30	VSS[101]	VSS[31]	AK32
D33	VSS[102]	VSS[32]	AK35
D35	VSS[103]	VSS[33]	AK39
D36	VSS[104]	VSS[34]	AL4
D39	VSS[105]	VSS[35]	AL42
D44	VSS[106]	VSS[36]	AM10
D7	VSS[107]	VSS[37]	AM11
P13	VSS[108]	VSS[38]	AM13
P15	VSS[109]	VSS[39]	AM17
P17	VSS[110]	VSS[40]	AM19
P19	VSS[111]	VSS[41]	AM24
P31	VSS[112]	VSS[42]	AM27
P33	VSS[113]	VSS[43]	AM29
P35	VSS[114]	VSS[44]	AM32
P4	VSS[115]	VSS[45]	AM33
P42	VSS[116]	VSS[46]	AM4
P8	VSS[117]	VSS[47]	AN45
R1	VSS[118]	VSS[48]	AP10
R32	VSS[119]	VSS[49]	AP11
T10	VSS[120]	VSS[50]	AP13
T14	VSS[121]	VSS[51]	AP15
T22	VSS[122]	VSS[52]	AP22
T29	VSS[123]	VSS[53]	AP27
T32	VSS[124]	VSS[54]	AP31
T36	VSS[125]	VSS[55]	AP33
T38	VSS[126]	VSS[56]	AP34
Y38	VSS[151]	VSS[57]	AP39
Y4	VSS[152]	VSS[127]	T4
Y8	VSS[153]	VSS[143]	W26
T42	VSS[154]	VSS[128]	V16
T5	VSS[155]	VSS[129]	V17
U4	VSS[156]	VSS[130]	V18
U42	VSS[157]	VSS[131]	V30
V10	VSS[158]	VSS[132]	V32
V14	VSS[159]	VSS[133]	V33
W3	VSS[144]	VSS[134]	V38
AR13	VSS[58]	VSS[135]	V4
AR31	VSS[59]	VSS[136]	V8
AR33	VSS[60]		
AR4	VSS[61]	VSS[138]	W18
AT10	VSS[62]	VSS[139]	W20
AT13	VSS[63]	VSS[140]	W21
AT35	VSS[64]	VSS[141]	W23
AT37	VSS[65]	VSS[142]	W25
AT42	VSS[66]		
AU11	VSS[67]	VSS_1	A44
AU17	VSS[68]	VSS_10	BE1
BD30	VSS[69]	VSS_11	BD1
W45	VSS[145]	VSS_14	B1
Y13	VSS[146]	VSS_15	A2
Y14	VSS[147]	VSS_16	B2
Y30	VSS[148]	VSS_17	A3
Y32	VSS[149]	VSS_18	A4
Y33	VSS[150]	VSS_2	B44
BG14	VSS_BG14	VSS_3	B45

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裝甲HEATSINK 分成四大部份

MOS_HS

Location: TMOS 12SP2-S11233-11R / 12R
Location: RMOS 12SP2-S08823-11R / 12R

MOS_HS_T 1X

Footprint :sink_z490_aorus_elite-t
HEAT SINK/[12SP2-S10237-02R_12SP2-S10237-04R_12SP2-S10237-05R] X2

MOS_HS_R 1X

Footprint :
sink_z490_gaming_x-r
HEAT SINK/[12SP2-S08823-32R_12SP2-S08823-34R_12SP2-S08823-35R] X2

PCH_HS

PCH_HS 1X

後窗裝甲 (便宜+IO SHIELD))
Footprint :SINK_Z490_AORUS_MASTER_PCH
HEAT SINK/[12SP2-S09811-02R_12SP2-S09811-04R_12SP2-S09811-05R] X2

*料號待確認...

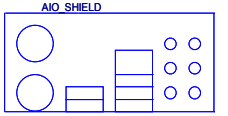
Footprint :
BGAHSINK-Z370_HD3P

REAR_HS 1X

Footprint :z490_aorus_elite_io_cover
HEAT SINK/[12KRC-0H0045-01R] X2

一體式IO SHIELD

AIO_SHIELD



IO SH/SUS 430/t=0.2mm AJOHO/[11AIO-0C0047-02R]

AIO_SK1 AIO_SK2

SC/I/M2/4.0mm/M1/0.5I/3.5D/[12KSF-F10305-02R]/X
SC/I/M2/4.0mm/M1/0.5I/3.5D/[12KSF-F10305-02R]/X
鎖背面裝甲SK

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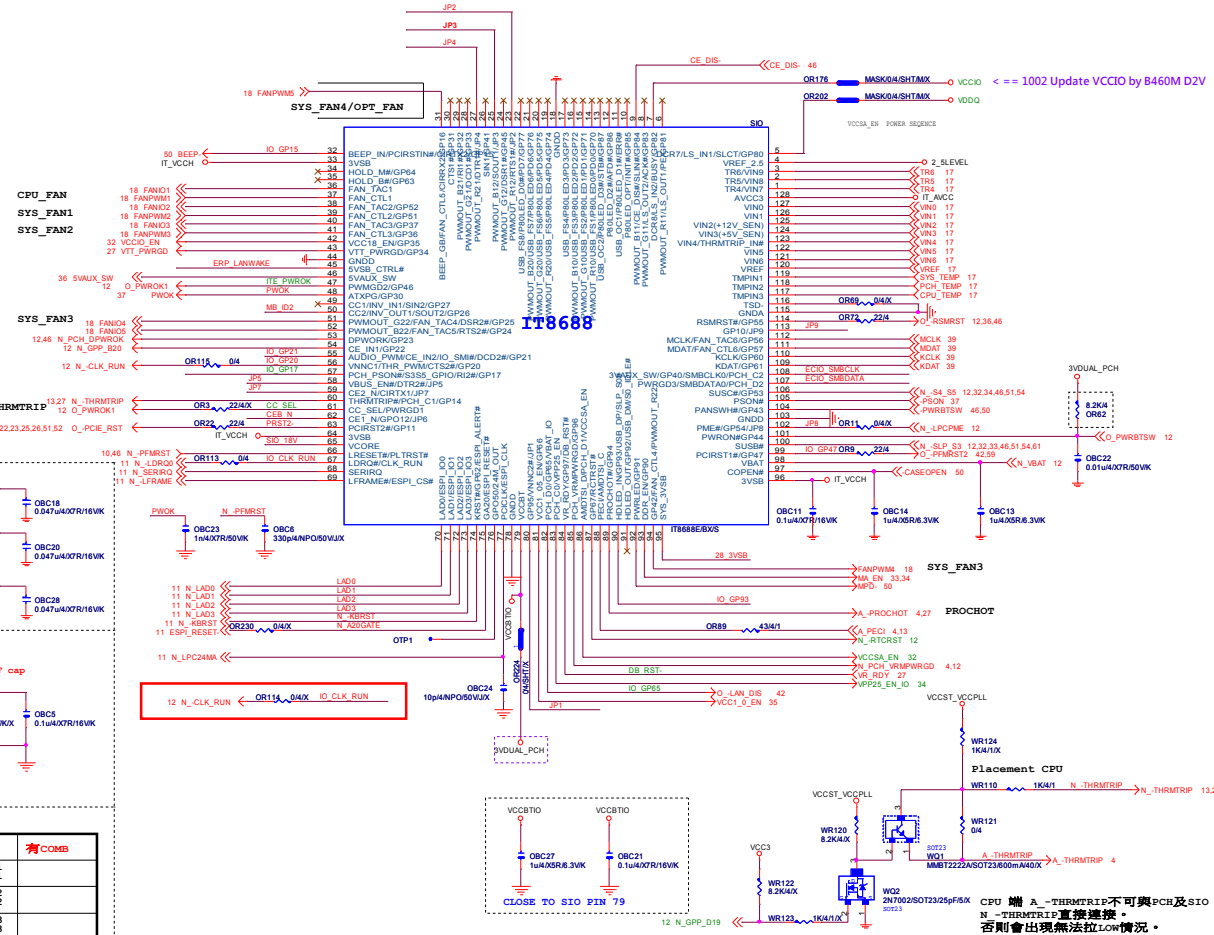
CFL SIO IT8686 REV:0.5



SIO_18V

internal power pin, max 22nF cap

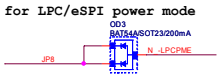
FAN TABLE		有COMB
CPU_FAN	FAN_CTL1 FAN_TAC1	
SYS_FAN1	FAN_CTL2 FAN_TAC2	
SYS_FAN2	FAN_CTL3 FAN_TAC3	
SYS_FAN3	FAN_CTL4 FAN_TAC4	
OPT FAN or SYS_FAN4	FAN_CTL5 FAN_TAC5	
THRMTRIP	PIN56	
PROCHOT	PIN89	
MB_ID2	PIN50 (GP26)	PIN31 (GP16)
LAN_GREEN_PWR	GP41	
Audio Beat LED	GP21	
VDDQ OV	GP24,GP25 GP27	
N_-CLK_RUN	GP20	PIN67
O_-LAN_DIS	GP65	

DUAL BIOS OPT STRAP

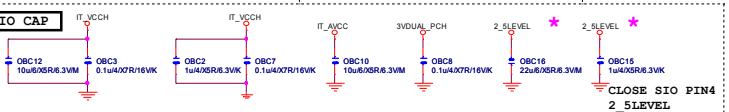
OR58 上件/OR56 不上件 SINGLE BIOS
OR58 不上件/OR56 上件 DUAL BIOS

MB ID

for LPC/eSPI power mode

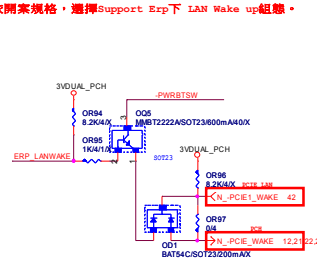


SIO CAP



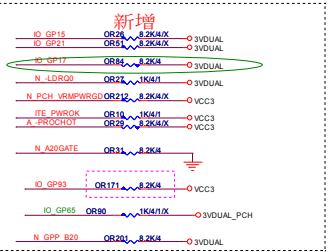
CLOSE SIO PIN4
2_5LEVEL

PWR SHT



請依開案規格，選擇Support Erp下 LAN Wake up組態。

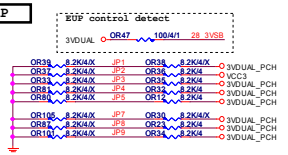
SIO PU



新增

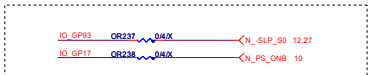
(組態二) INTEL219 LAN(Single LAN)

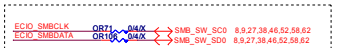
SIO STRAP

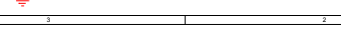


有EC 機種，不支援ERP Wake，只需上件OR99，OR94,OR95,OQ5,OD2,OR98不上件。

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







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。	

GIGABYTE

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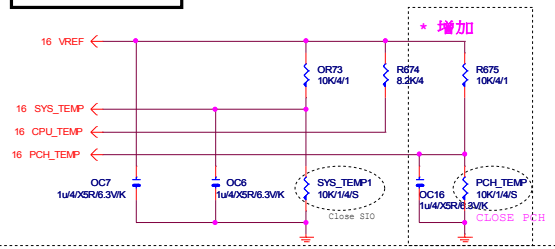
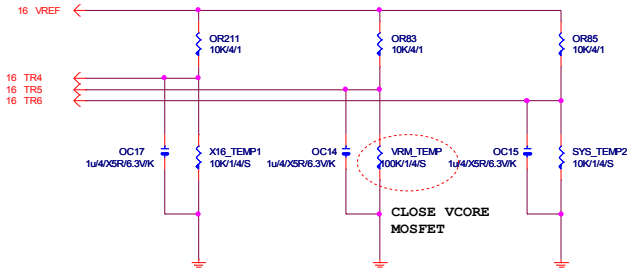
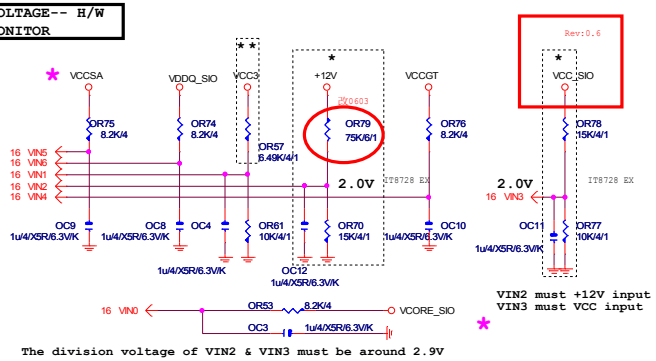
TEMP H/W MONITOR

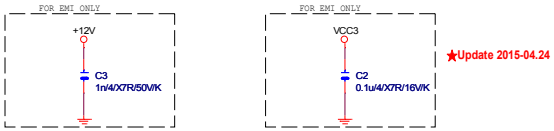


5個FAN時使用



VOLTAGE-- H/W MONITOR





★Update 2015-04.24

GIGABYTE Technology		
Title: HWM,KB/MS, FAN CTRL		
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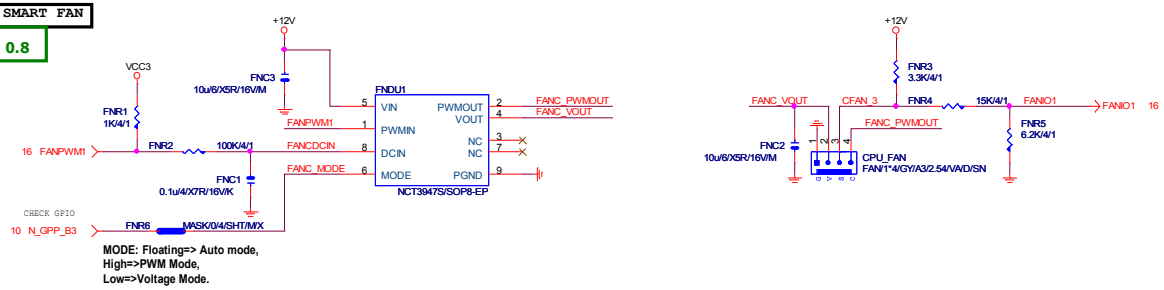
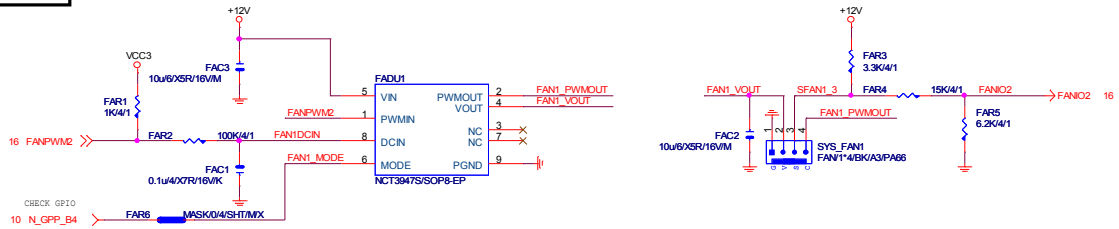
CPU SMART FAN

Rev: 0.8



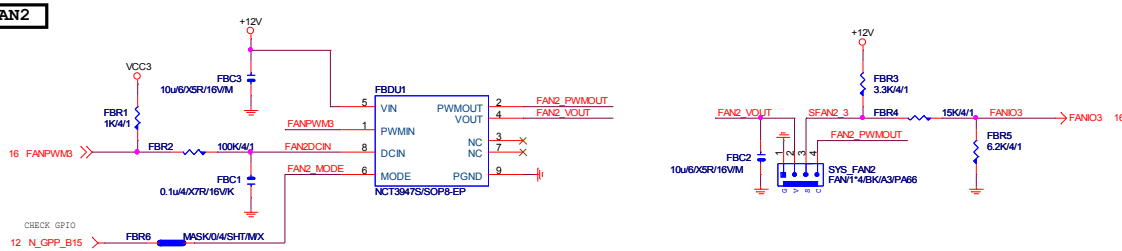
MODE: Floating=> Auto mode,
High=>PWM Mode,
Low=>Voltage Mode.

SYSTEM FAN1



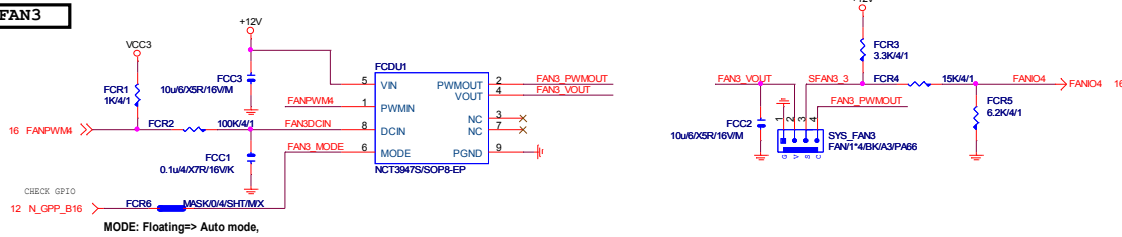
MODE: Floating=> Auto mode,
High=>PWM Mode,
Low=>Voltage Mode.

SYSTEM FAN2



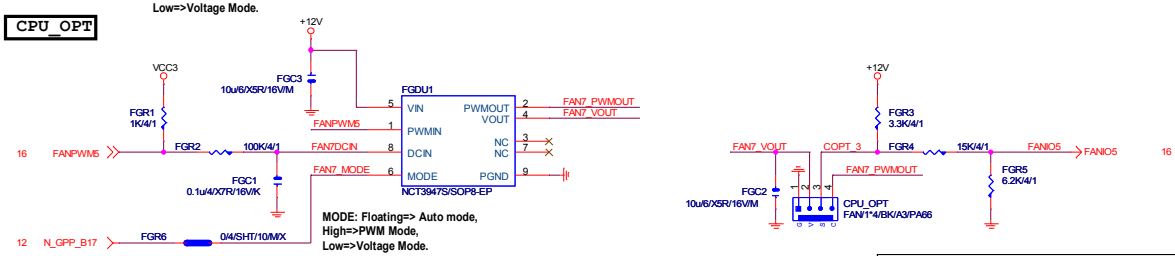
MODE: Floating=> Auto mode,
High=>PWM Mode,
Low=>Voltage Mode.

SYSTEM FAN3



MODE: Floating=> Auto mode,
High=>PWM Mode,
Low=>Voltage Mode.

CPU_OPT



MODE: Floating=> Auto mode,
High=>PWM Mode,
Low=>Voltage Mode.

GIGABYTE Technology		
Title: FAN CTRL		
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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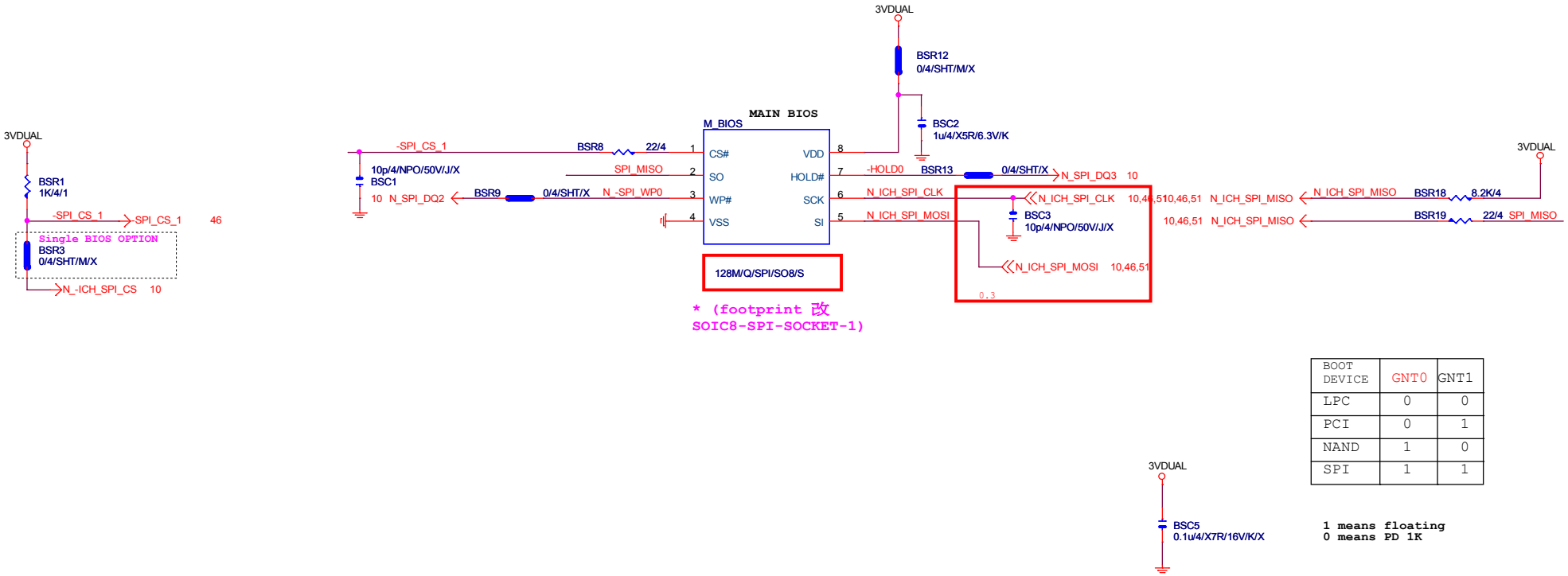
DUAL BIOS

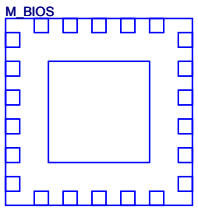


BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

3VDUAL

BSC5
0.1u/4/X7R/16V/K/X

1 means floating
0 means PD 1K



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

* 試產先上 , PVT 移除

GIGABYTE Technology

Title: BIOS

Size	Document Number	Rev
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CEC_R0.3

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Title	CEC relate circuit	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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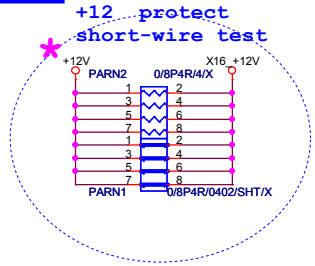
Rev 0.2

+12 protect short-wire test



PCIESLOT-164STH

PCIEX16

3GIO_*16

1002 Modify

KEY

PCI-E/16X-164P/BK/LONG DOUBLE/HK*2/SHELL/[11AC1-023164-L1R]

黑色SLOT 金屬加強版

PCIEX16 CAP

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

Title	PCI EXPRESS * 16
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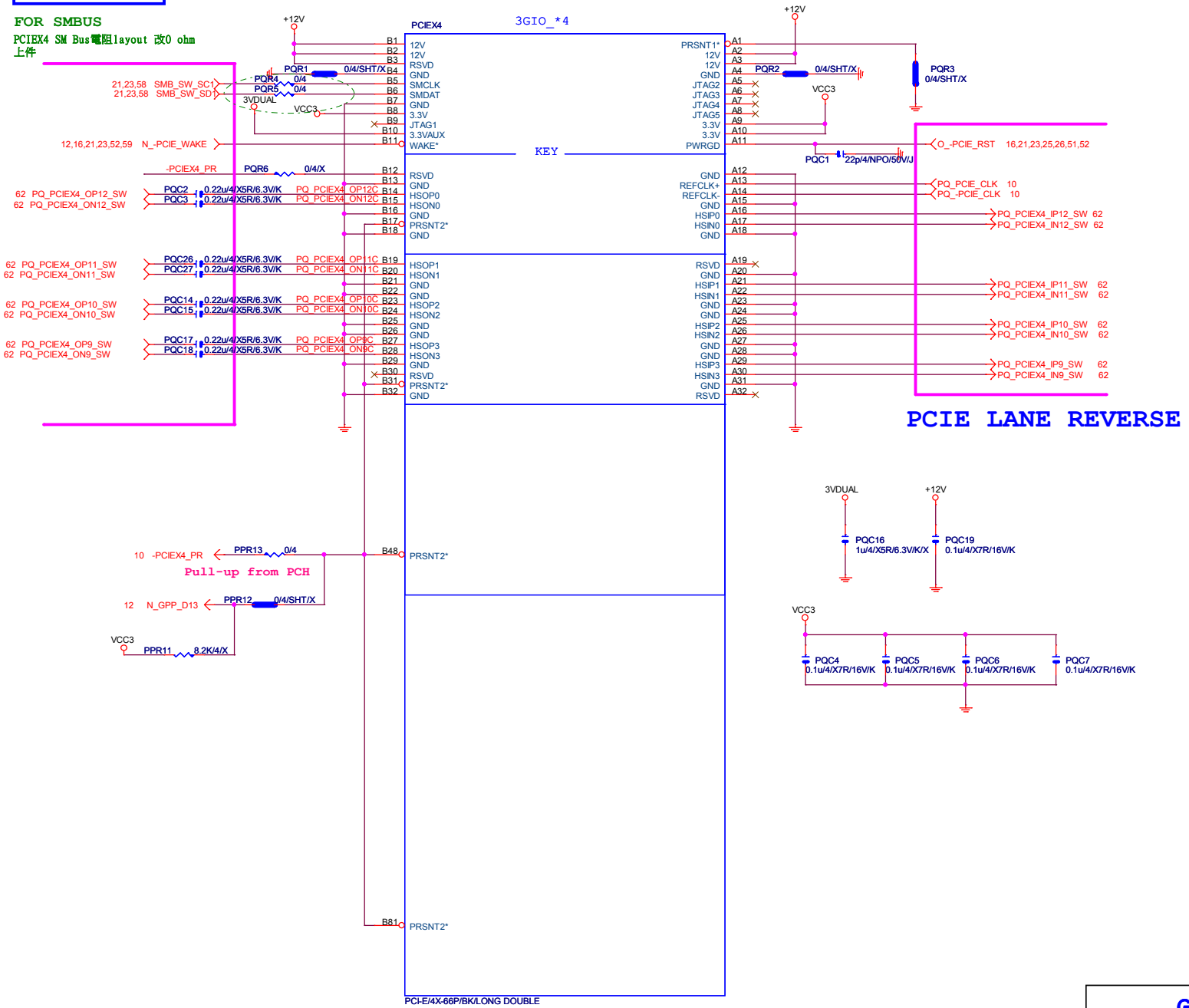
Rev 0.51

PCIE*4

Footprint "PCIESLOT-64STH-1"

FOR SMBUS

PCIEX4 SM Bus電阻layout 改0 ohm 上件



黑色

Gigabyte Technology

Title: PCIE_X4

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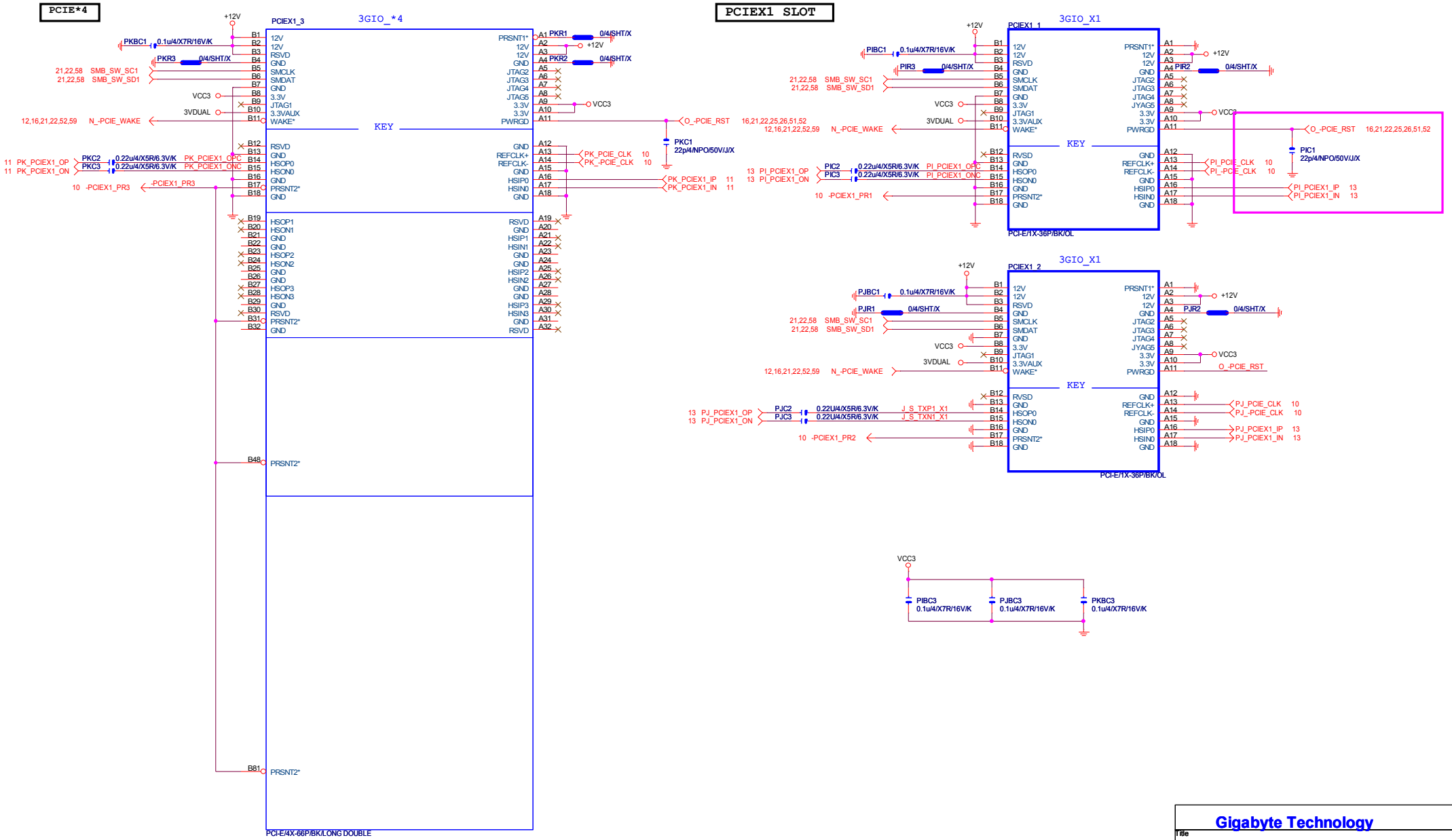

Gigabyte Technology		
Title: PCIE_X1 1,2		
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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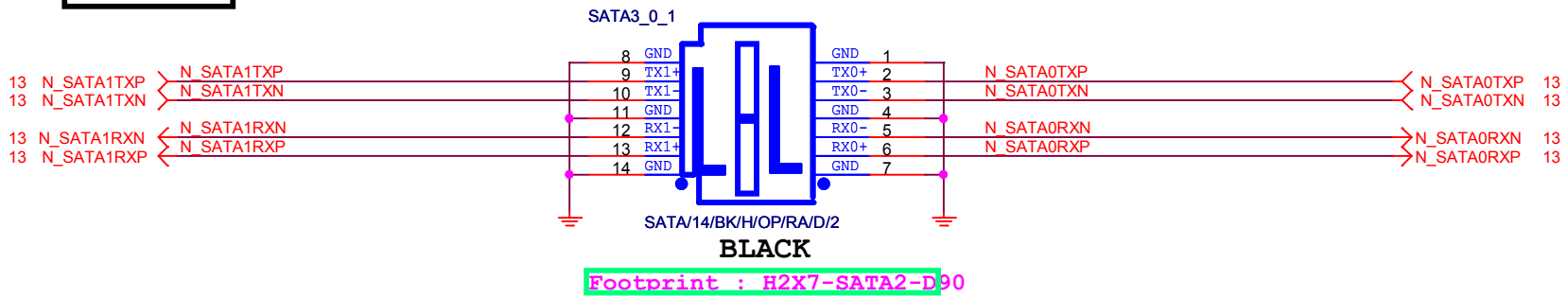
IO18/IO19 To SATA3 port0/1 (90度R-A, 180度V-A)

上 Port (8~14)　　下 Port (1~7)　　6 SATA3 from Z390 (90度R-A)

SATA3 0/1



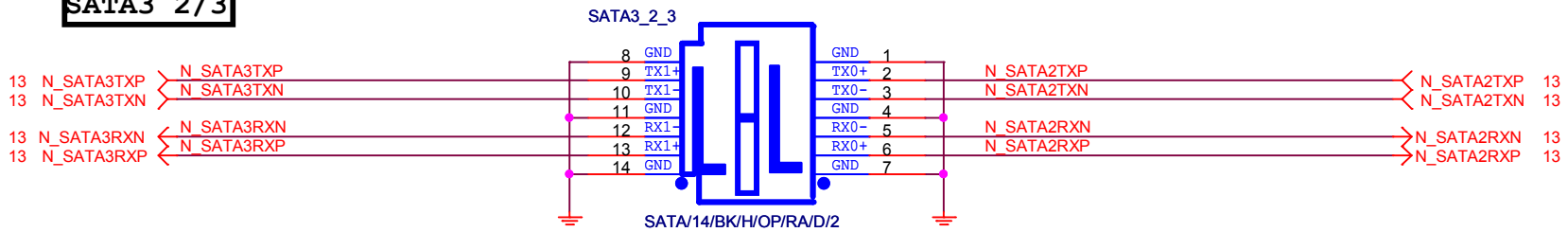
BLACK

Footprint : H2X7-SATA2-D90

IO20/IO21 To SATA3 port2/3

上 Port (8~14)　　下 Port (1~7)

SATA3 2/3



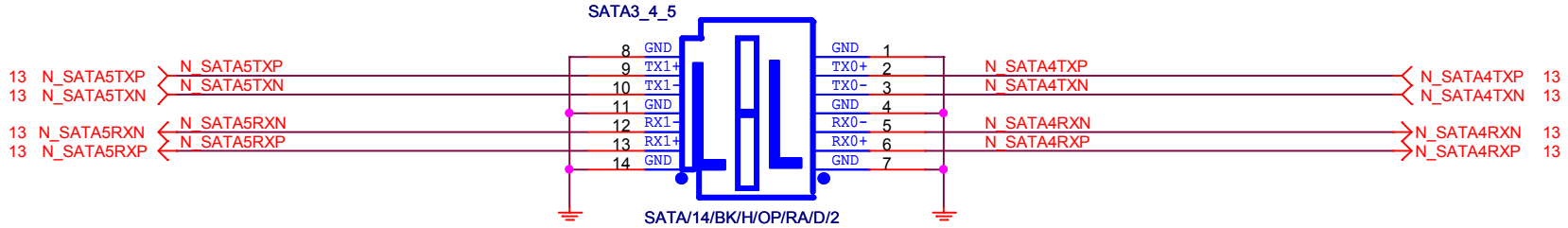
BLACK

Footprint : H2X7-SATA2-D90

IO22/IO23 To SATA3 port4/5

上 Port (8~14)　　下 Port (1~7)

SATA3 4/5



BLACK

GIGABYTE Technology

Title: SATA

Size: Custom　Document Number: B460 AORUS PRO AC　Rev: 1.01

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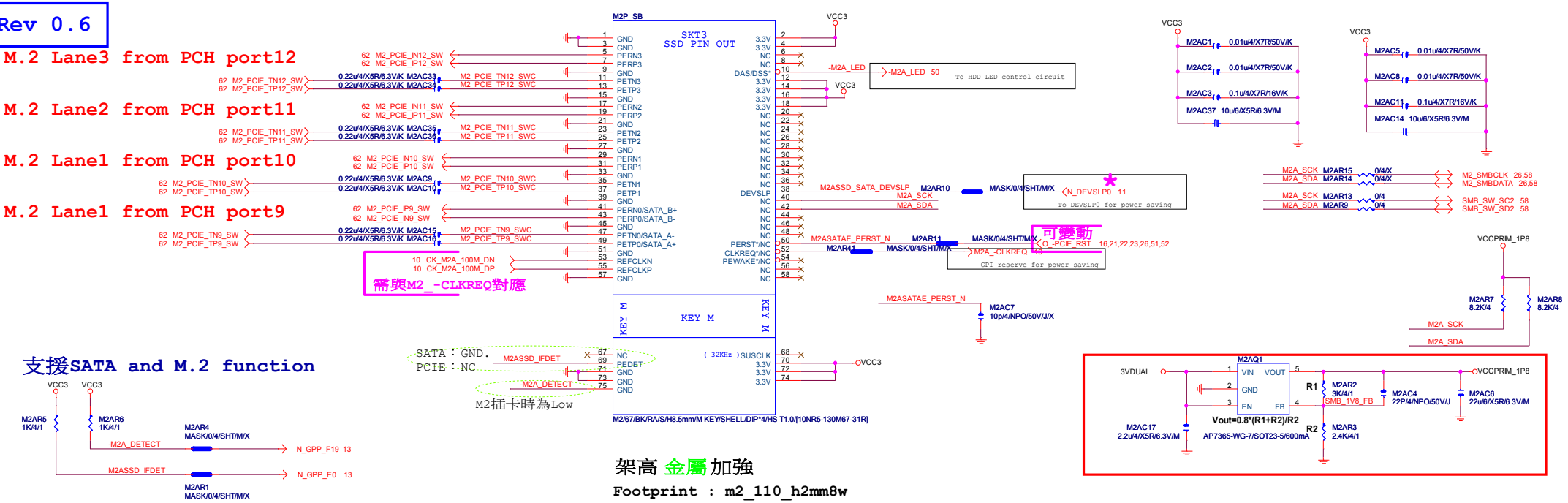
Rev 0.6

M.2 Lane3 from PCH port12

M.2 Lane2 from PCH port11

M.2 Lane1 from PCH port10

M.2 Lane1 from PCH port9



Title	M.2 X4
Size	Custom
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GIGABYTE Technology

Rev 0.1

M.2 Lane4 from PCH port24

M.2 Lane3 from PCH port23

M.2 Lane2 from PCH port22

M.2 Lane2 from PCH port21

需與M2_-CLKREQ對應

支援SATA and M.2 function

SATA : GND.
PCIE : NC

M2插卡時為Low

金屬加強 Footprint : m2_110_h2mm8w
架高(有鐵殼款)

可變動

删除SMD螺柱文字面 "A" ,不要show 出在PCB文字面上

SMD螺柱 10KS2-040131-02R

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

M.2 slot heatsink ,靠近CPU, 22110, low cost)

SMD螺母
有上M2 HEATSINK時螺柱/螺母一體式

DIP螺絲

M2Q_HS/[12SP1-S10205-N2R_12SP1-S10205-N4R_12SP1-S10205-N5R]

GIGABYTE Technology

Title	M.2 X4	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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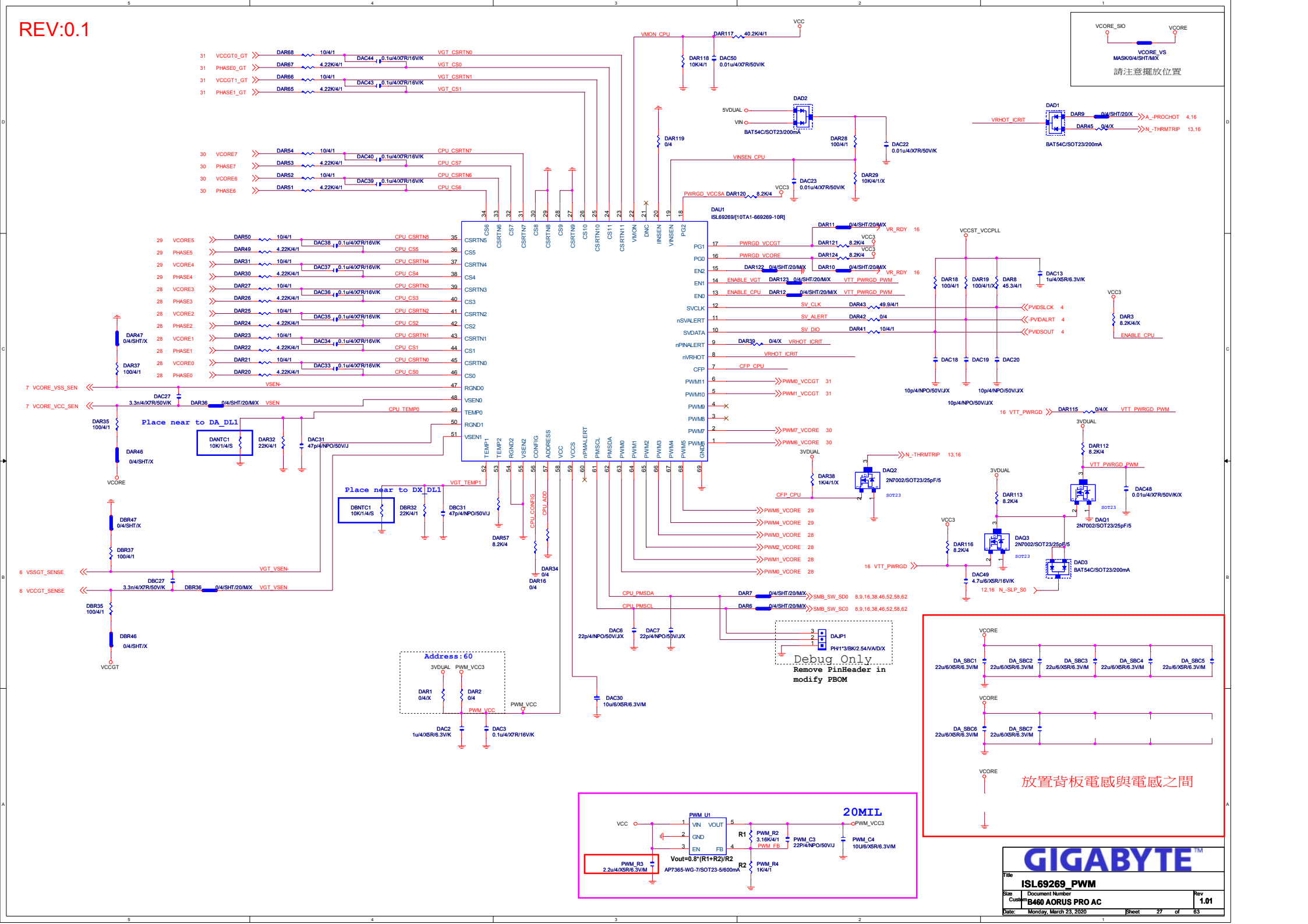
REV:0.1



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Title	ISL69269_PWM	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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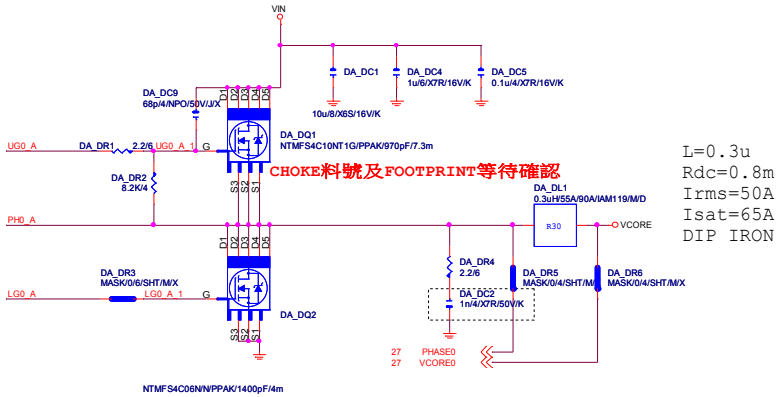
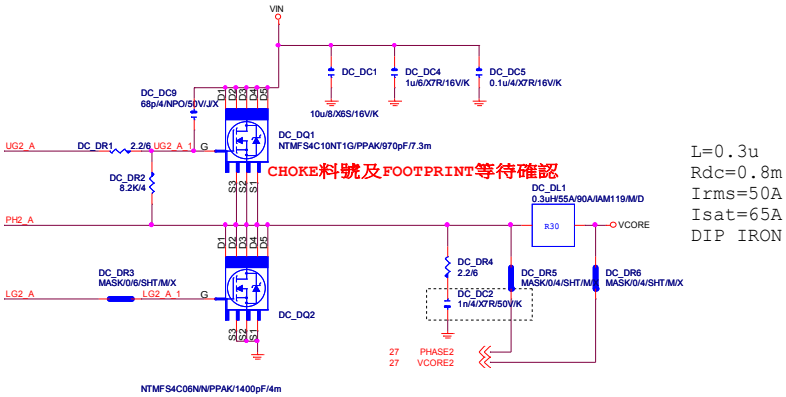
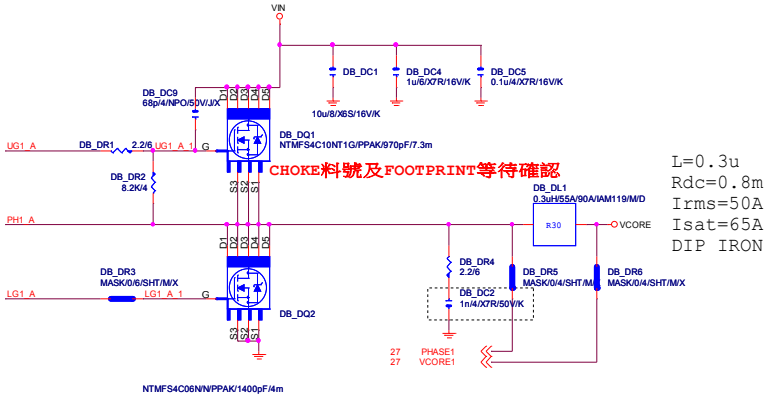
REV:0.1



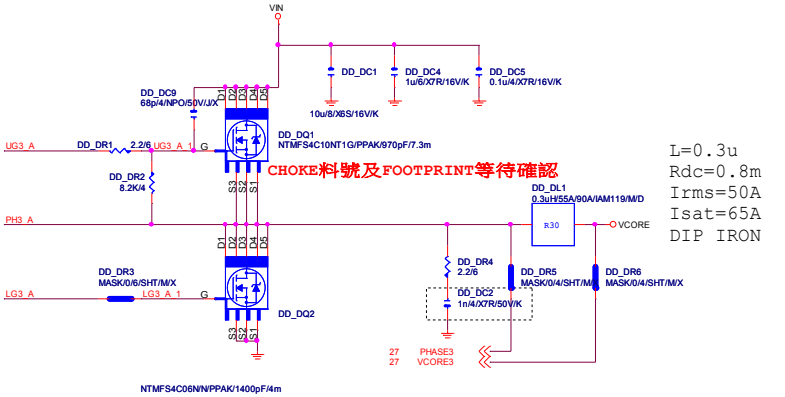
L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON



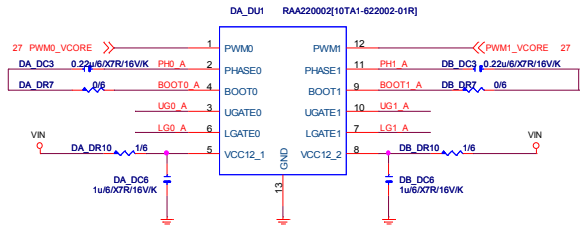
L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON

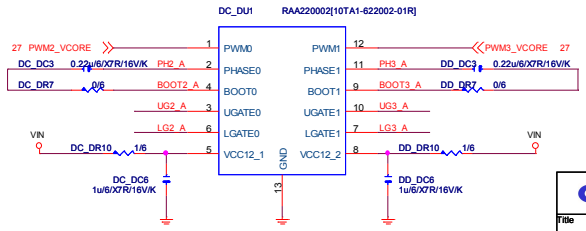


L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON



L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON





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Title	VCORE_PPAK-1	
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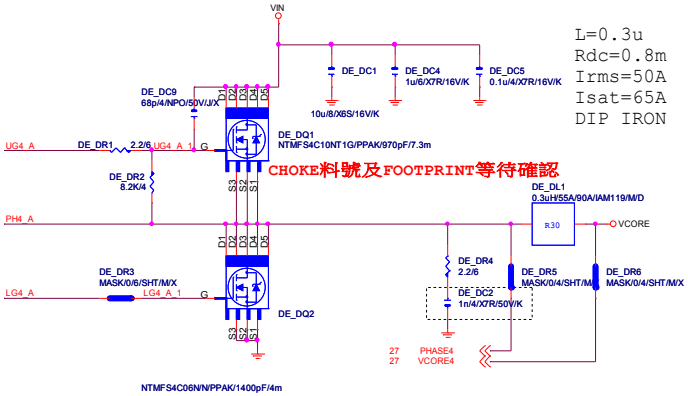
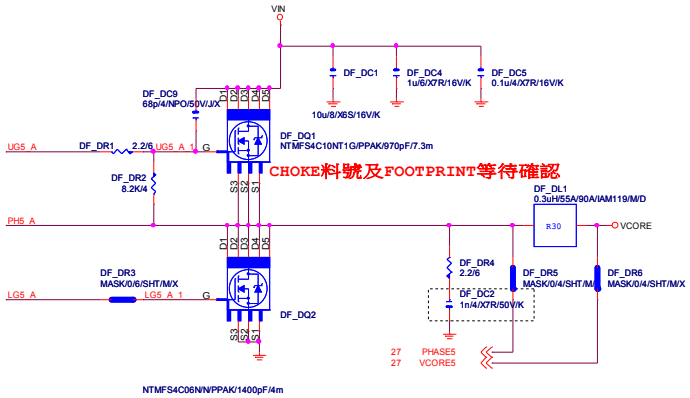
REV:0.1



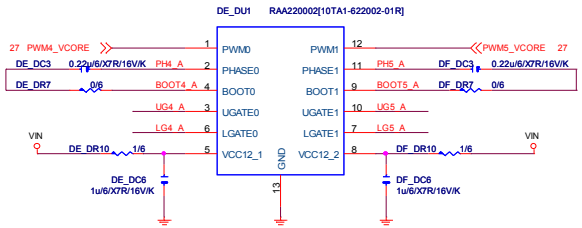
L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON

CHOKE料號及FOOTPRINT等待確認



1H1L機種請自行刪除

L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON



GIGABYTE™

Title	VCORE_PPAK-2	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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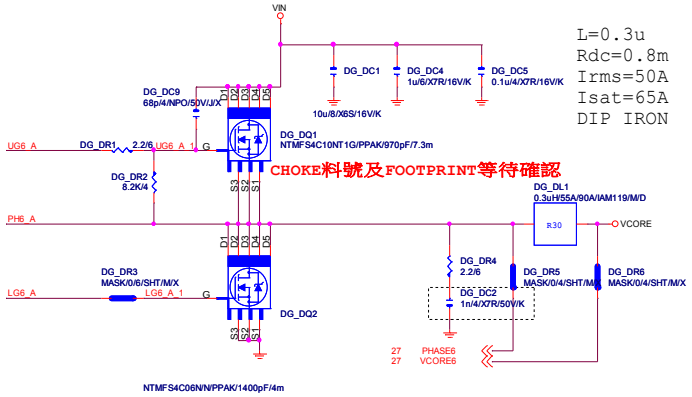
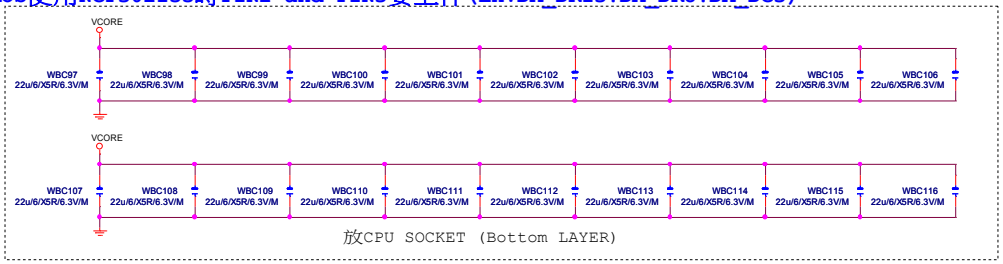
REV:0.1

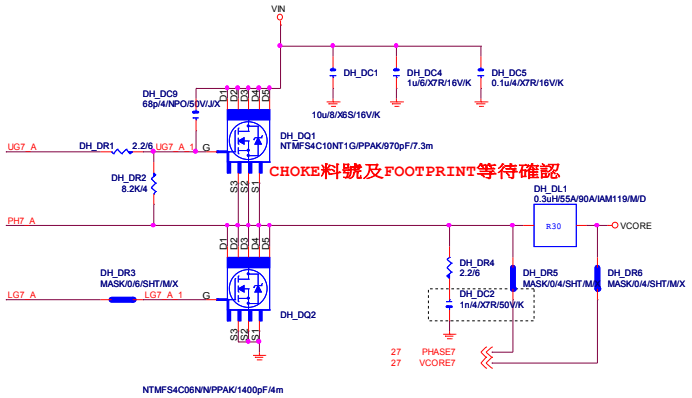


L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON

CHOKE料號及FOOTPRINT等待確認

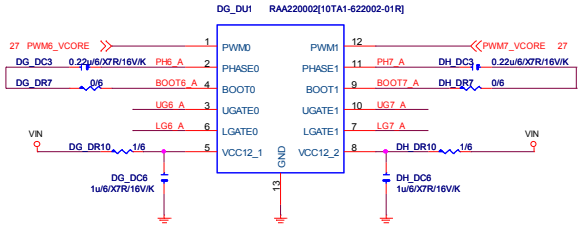
DRMOS使用NCP302155時PIN2 and PIN3要上件(Ex:DA_DR13.DA_DR8.DA_DC3)



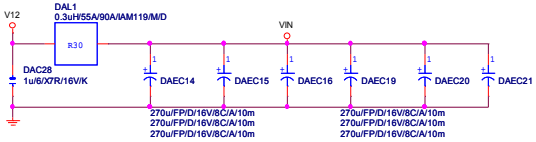


L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON

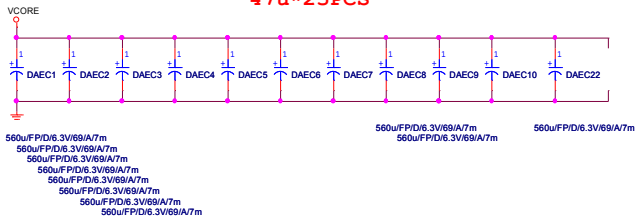
CHOKE料號及FOOTPRINT等待確認



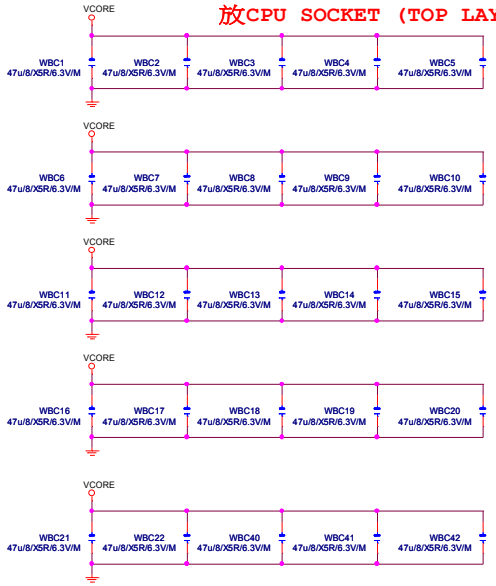
VIN CAP 270u*6PCS



VCORE CAP 560u*12PCS 47u*25PCS



放CPU SOCKET (TOP LAYER)



GIGABYTE

Title	VCORE_PPAK-2	
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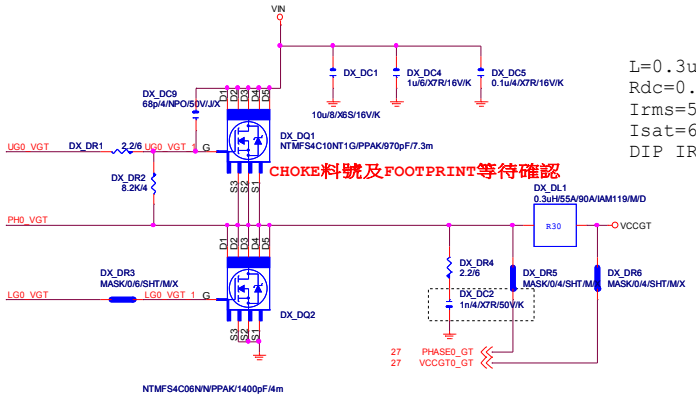
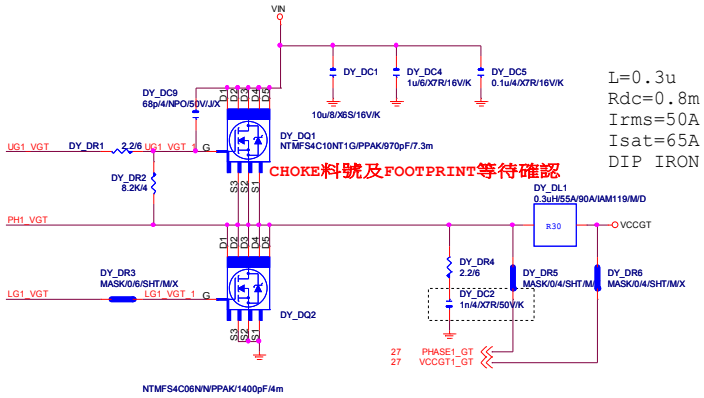
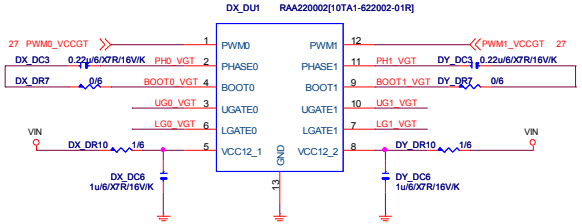
REV:0.1

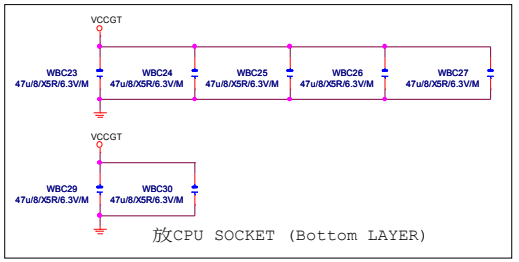


L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON

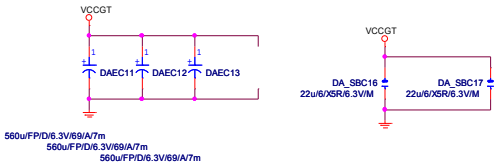


L=0.3u
Rdc=0.8m
Irms=50A
Isat=65A
DIP IRON





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



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Title	VCCGT_PPAK	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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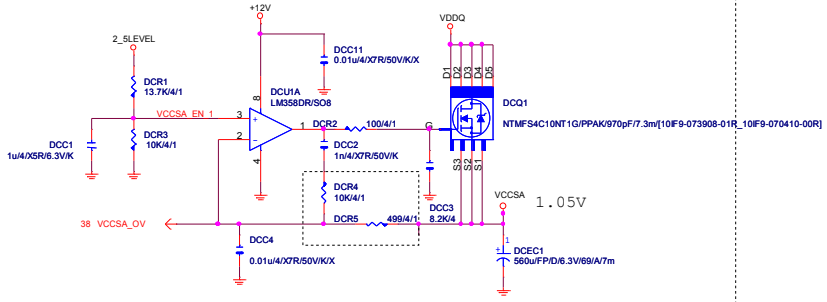
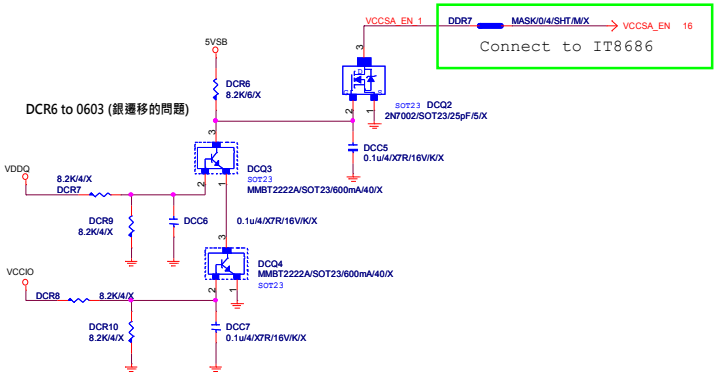
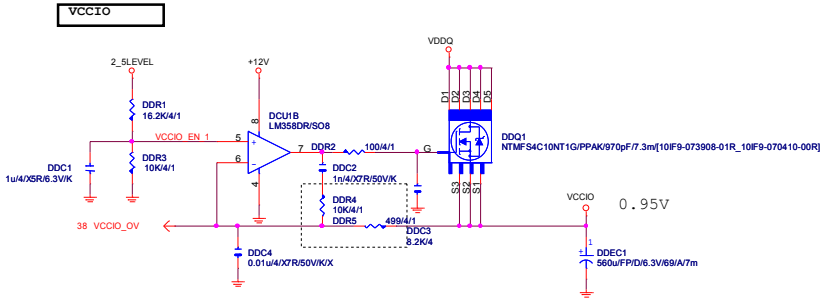
REV:0.3

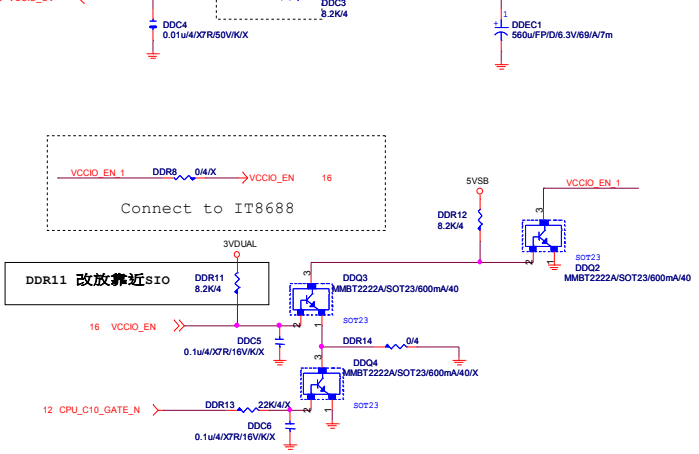
VCCSA



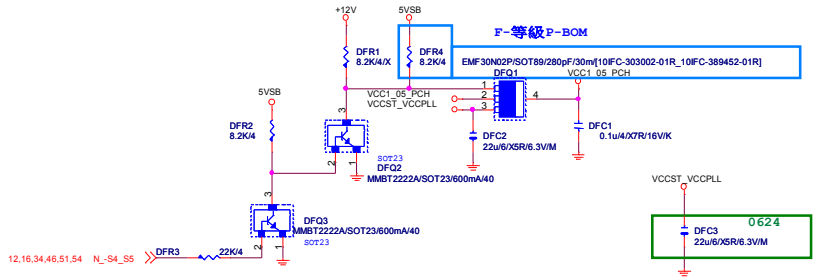


VCCIO

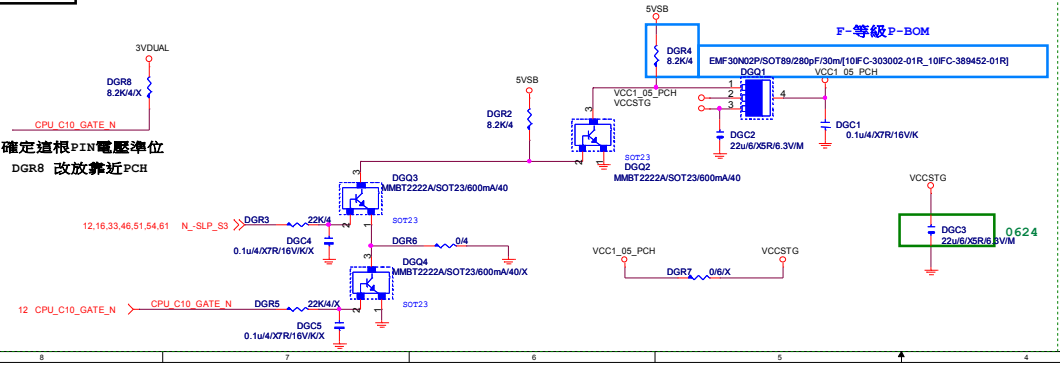




VCCST_VCCPLL



VCCSTG



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Title	VCCSA_VCCIO_no 44E	
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REV:0.3

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

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 5VDUAL
MA_DR40 8.2K/4/X
MA_DR41 8.2K/4
34 VPP25V_GD MA_DR38 MASK/0/4/SHT/M/10/X
16,34 MA_EN MA_DR39 0/4/X
DDR_EN
MA_DC15 0.1u/4/X7R/16V/K

MAU2 RT8237/[10TA1-608237-01R]
EN PGOOD VCC BOOT UGATE PHASE LGATE GND FB CS RF

MA_DC9 0.1u/6/X7R/25V/K
MA_UGATE
MA_PHASE
MA_LGATE
MA_RF
MA_DR15 95.3K/4/1
MA_DR19 470K/4/1/X
MA_DR45
VDDQ_GD 470K/4/1

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

FS=290K
OCP=40A

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_DC6 0.1u/4/X7R/16V/K Close Choke
MA_DC25 68p/4/NPO/50V/J/X
MA_VIN
MA_DC7 1u/6/X7R/16V/K Close MOS
MAEC1 560u/FP/D/6.3V/69/A7m

DDR VIN CAP CHOKE與CAP料號可變
560u*2PCS

MA_UGATE MA_DR1 2.2/6 MA_UG
MA_DQ1 NTMFS4C06N/N/PPAK/1400pF/4m
MA_DR2 8.2K/4
MA_DQ2 MA_DQ3
MA_L1
自動插件 CHOKE05U-40A-1PQ-AT
1uH/35A/IMD109/M/D
10*10
MA_DR5 2.2/6
MA_DC5 1n/4/X7R/50V/K
MA_LGATE MA_DR9 2.2/6 MA_LG
NTMFS4C06N/N/PPAK/1400pF/4m
NTMFS4C06N/N/PPAK/1400pF/4m

VDDQ
SUPPORT DDR4
1.2V
25A MAX
MA_DR13 1K/4/1
MA_DC14 22p/4/NPO/50V/J/X RS
RO MA_DR12 1.4K/4/1
DDR_ADJ
38 DDR_ADJ

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

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

請放置CHOKE一出來位置.先預留.
請自行確認ripple後再決定是否上件
Remote sense請從最重的負載端點拉回

PWR SEQ

For power sequence require

VPP_25V使用8120時上件

MAU1上RT9045時上件(不可MASK)
MA_VTT_REF

DDRVTT

VDDQ
MAC2 1u/4/X5R/6.3V/K
MAR5 1K/4/1
NCT3103S/SOP8/2A/[10GL2-203103-01R]
MAU1
VIN VREF2 GND ENABLE VREF1 VCNTL VOUT BOOT_SEL GND
DDRVTT_EN
DDRVTT_BOOT
38 MA_VTT_REF
MAR4 1K/4/1
MAC1 0.01u/4/X7R/50V/K
1.1A MAX
DDRVTT
5VDUAL
MAC7 10u/6/X5R/6.3V/M

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

VDDQ
MAEC3 560u/FP/D/6.3V/69/A7m
MAEC4 560u/FP/D/6.3V/69/A7m
* 大電容 x4
MAEC6 560u/FP/D/6.3V/69/A7m
MAEC7 560u/FP/D/6.3V/69/A7m
Footprint EC6D8MM-RH-2
WBC49 22u/6/X5R/6.3V/M

DDRVTT CAP

* 大電容 x0
DDRVTT
MAC4 22u/6/X5R/6.3V/M
MAC5 22u/6/X5R/6.3V/M

4 DDR_VTT_CTL
12,16,32,46,51,54,61 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

GIGABYTE

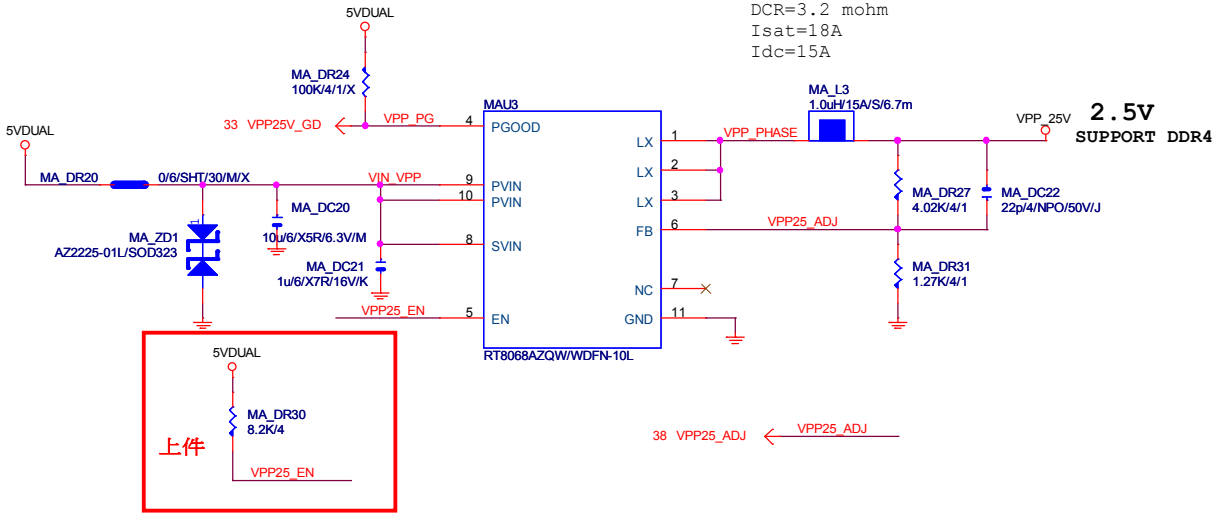
Title	RT8237_DDR4 POWER	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
Date: Monday, March 02, 2020	Sheet 33 of 63	

REV:0.1

VPP_25V

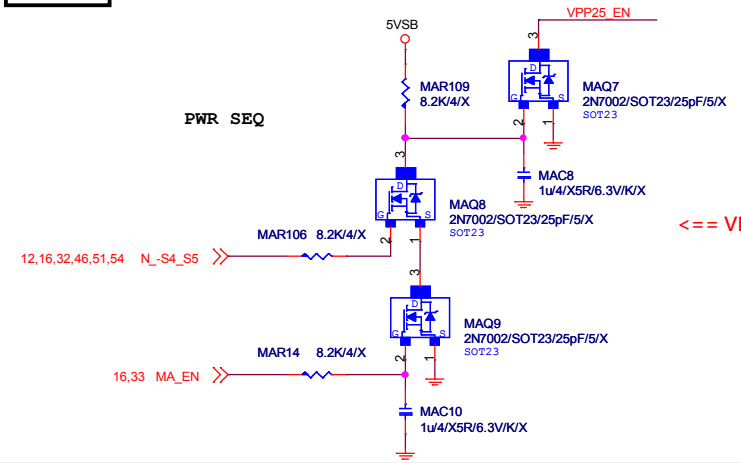
CHOKE與CAP料號可變

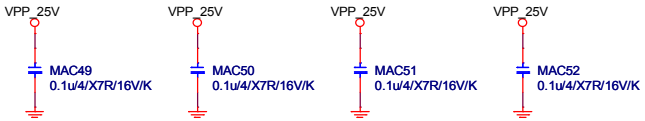
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A



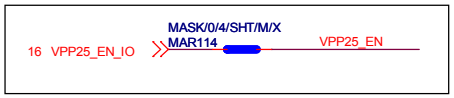
PWR SEQ

* 刪 MA_DR32



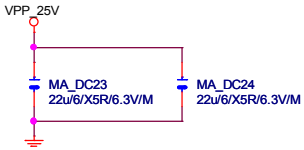


<== VPP25_EN CTRL by SIO, 外部線路不上件, 1014 modify



VPP CAP 22u*1PCS

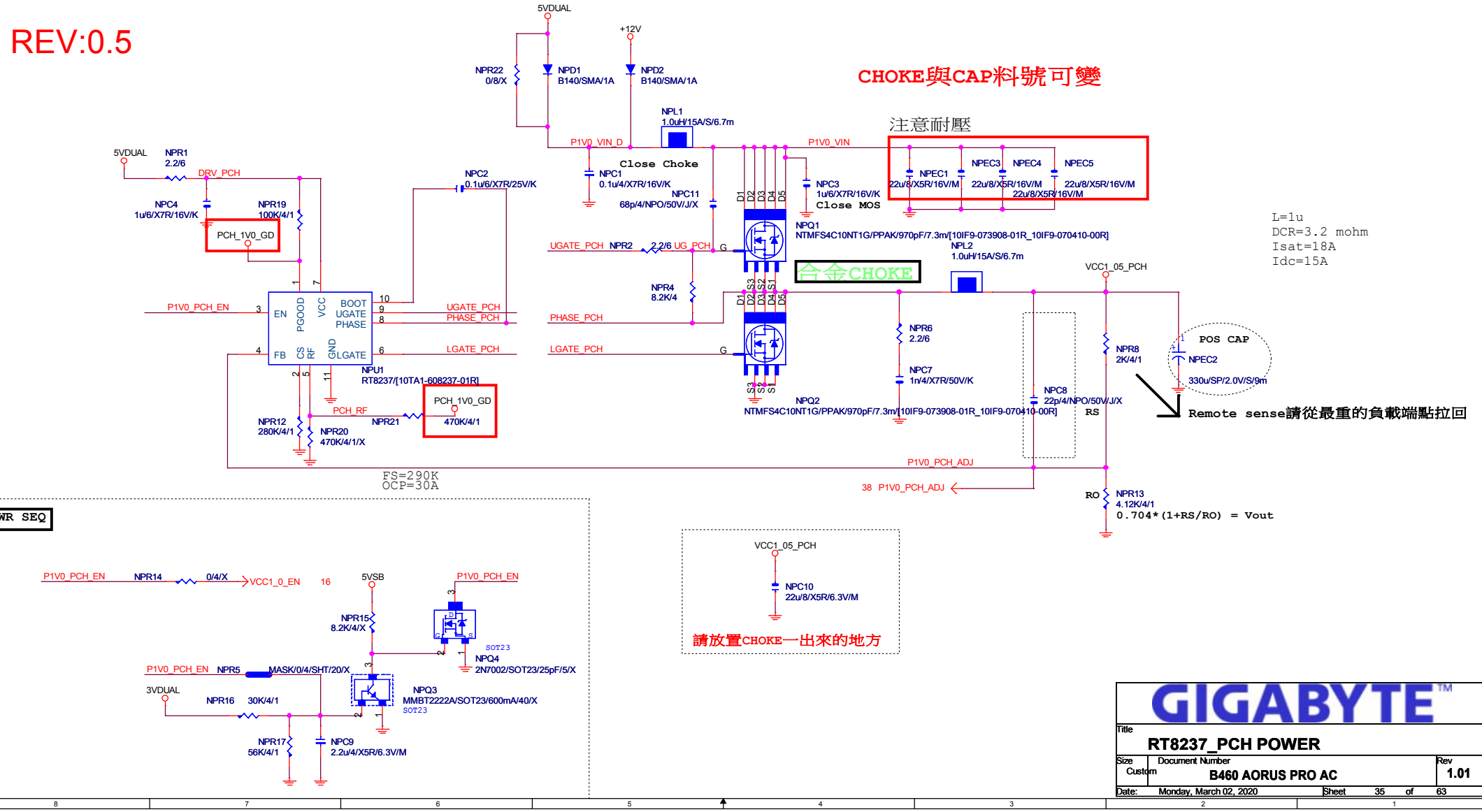
* 大電容 x0



GIGABYTE

Title	RT8068A_VPP25 POWER	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
Date: Monday, March 02, 2020	Sheet 34 of 63	

REV:0.5



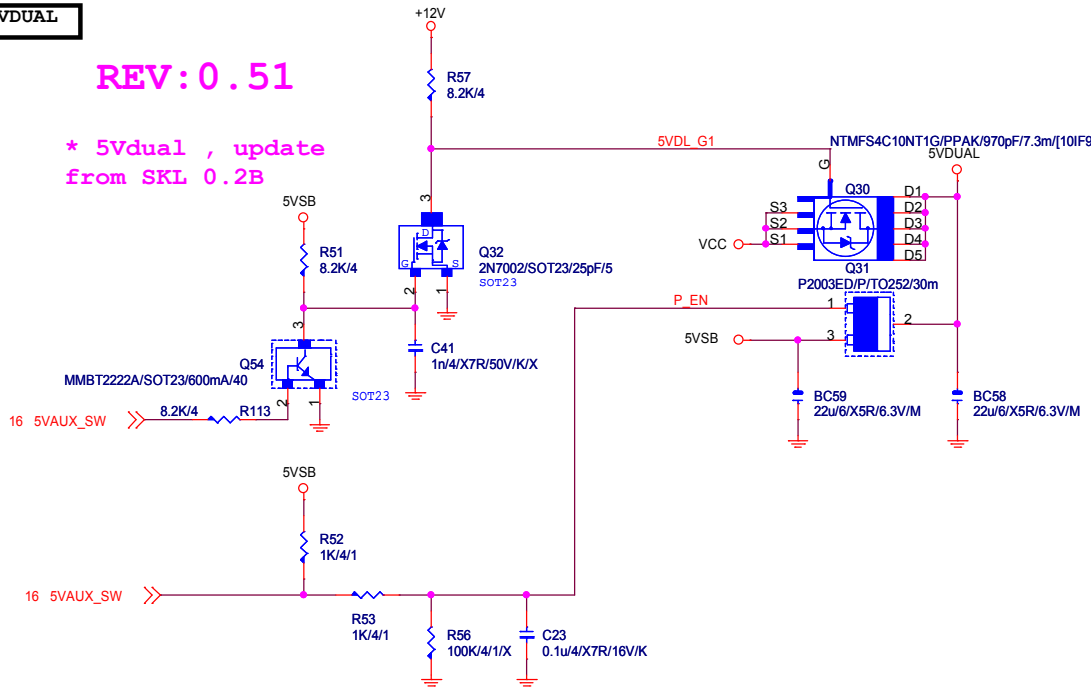
GIGABYTE™

Title	RT8237_PCH POWER	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
Date: Monday, March 02, 2020	Sheet 35 of 63	

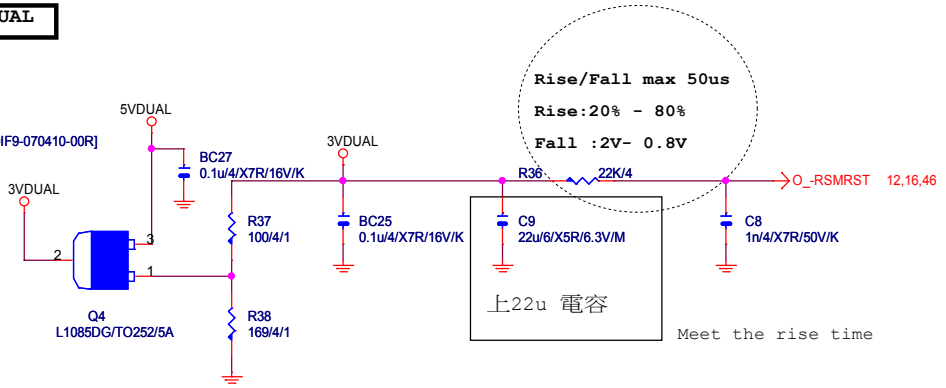
5VDUAL

REV:0.51

* 5Vdual , update from SKL 0.2B



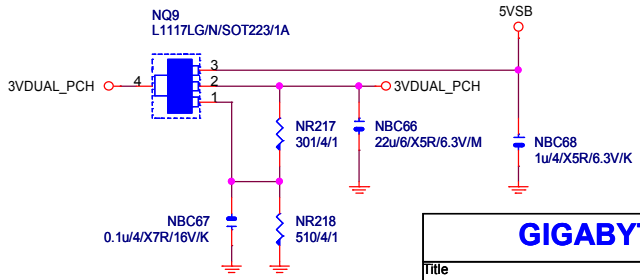
3VDUAL



O_-RSMRST （不上件）

20191014 Removed ,ref B460M-D2V

3VDUAL_PCH



GIGABYTE Technology		
Title: DISCRETE POWER		
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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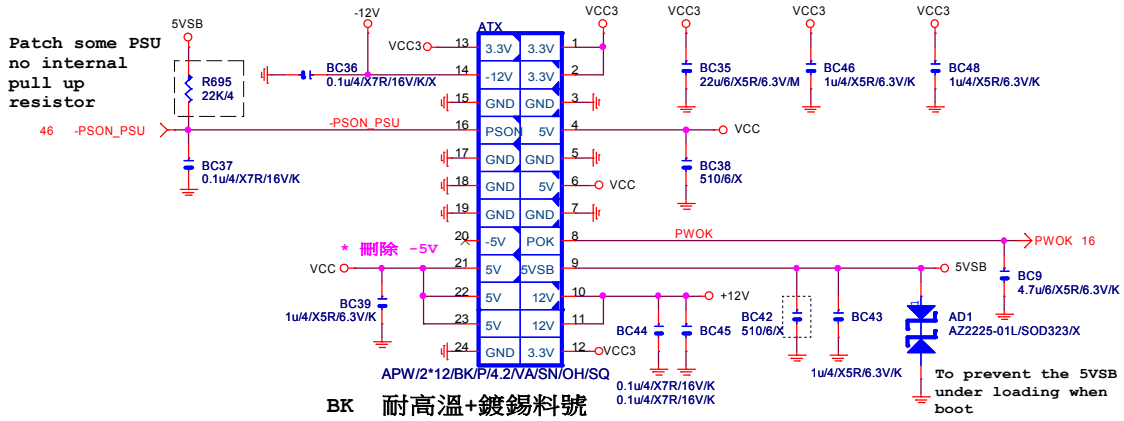
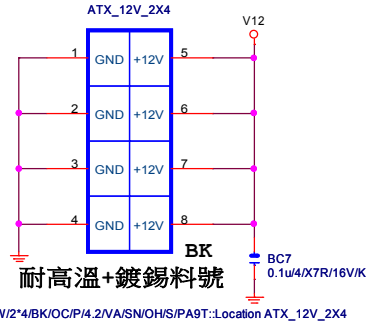
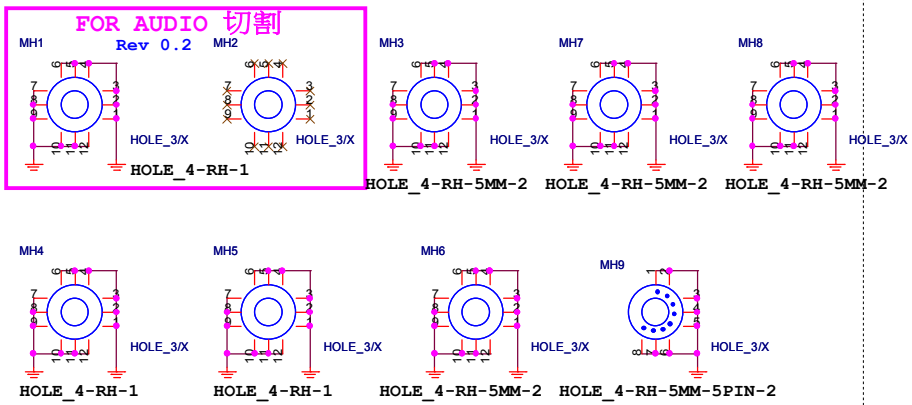
ATXX24 POWER CONNECTOR



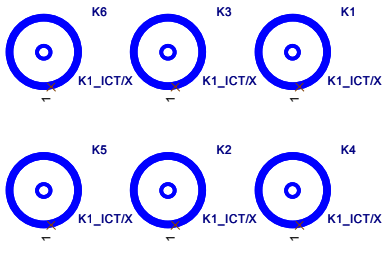
ATXX4 POWER CONNECTOR

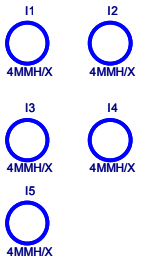


螺絲孔



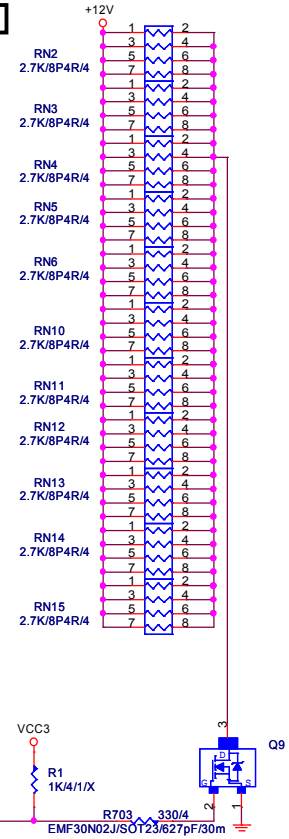
固定孔/光學點



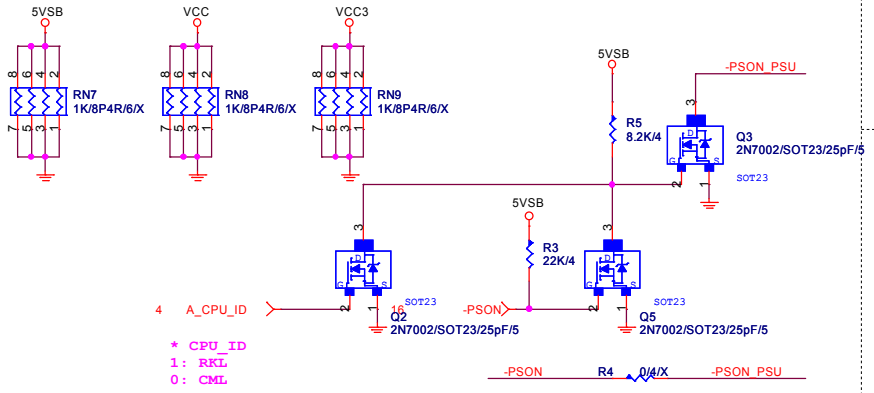


+12V DUMMY LOAD

To fix 12V light load
abnromal issue

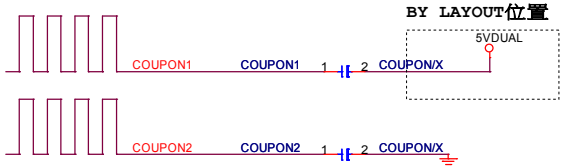


DUMMY LOAD



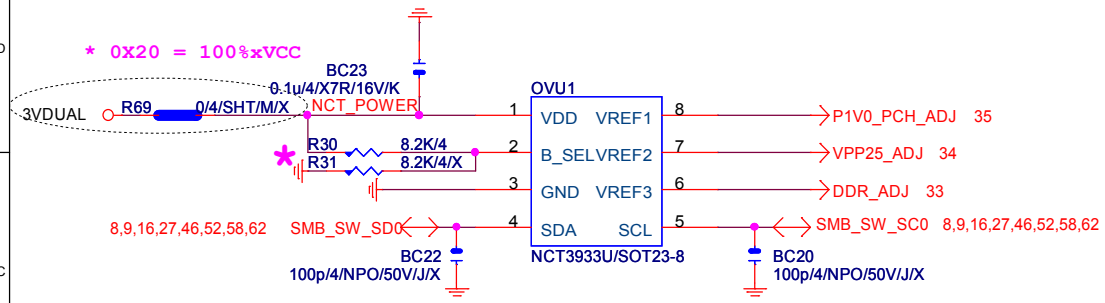
-PROHOT

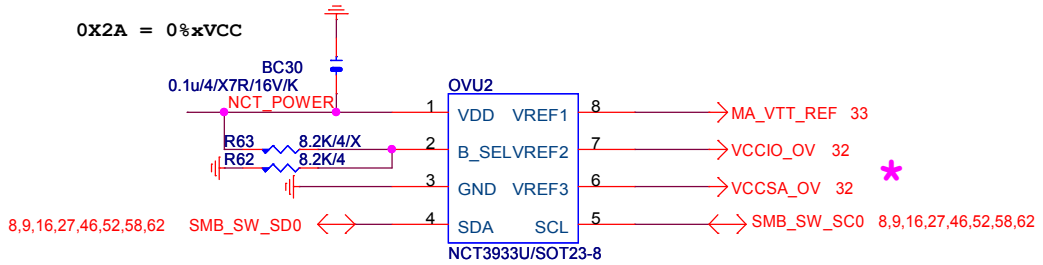
COUPON



GIGABYTE Technology			
Title: ATX POWER CONNECTOR			
Size: Custom	Document Number: B460 AORUS PRO AC		Rev: 1.01
Date: Monday, March 09, 2020	Sheet 37 of 63		

OVER VOLTAGE





0X22 = 75%xVCC

* 刪除 OVU3

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

GIGABYTE Technology

Title: CPU CORE VR-2

Size: Custom | Document Number: B460 AORUS PRO AC | Rev: 1.01

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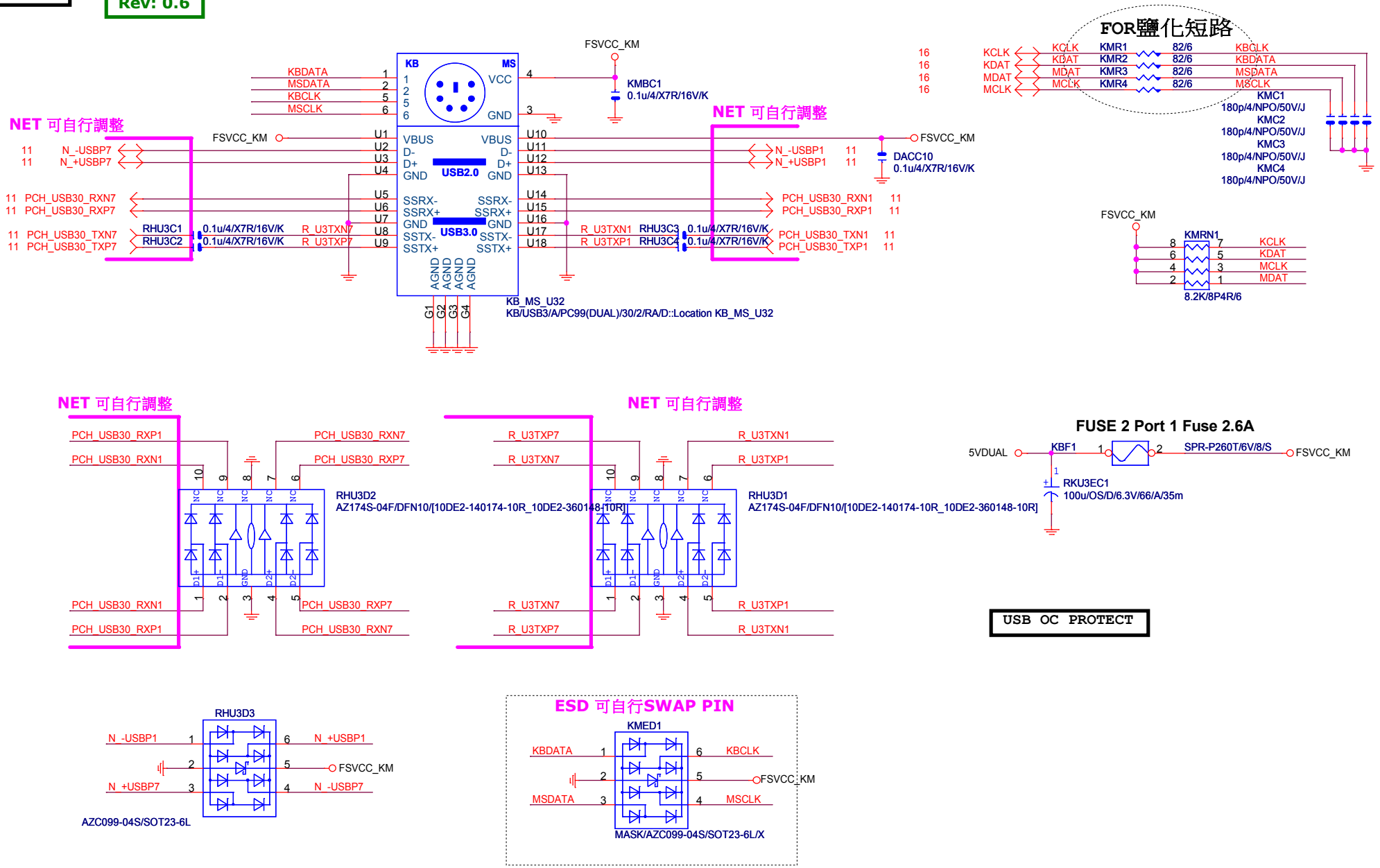
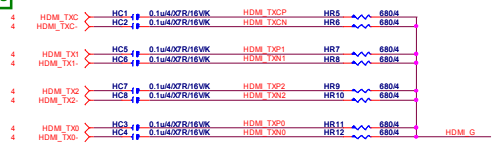
KB_MS_USB

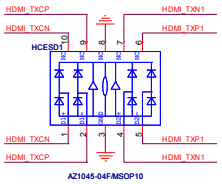
Rev: 0.6



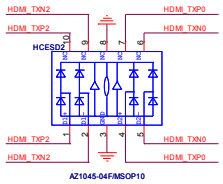
Gigabyte Technology			
Title: KB_MS_USB			
Size: Custom	Document Number: B460 AORUS PRO AC		Rev: 1.01
Date: Monday, March 02, 2020	Sheet 39 of 63		

Rev: 0.73



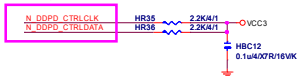


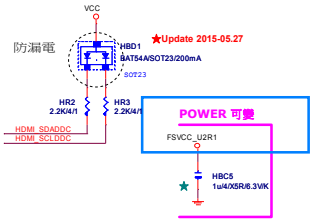
Close to connector

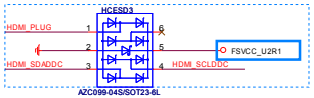


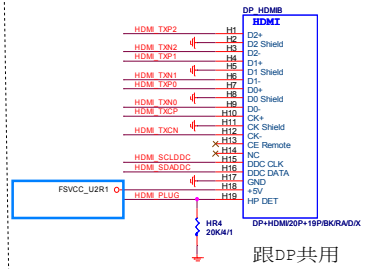
Close to connector

Port 自行調整

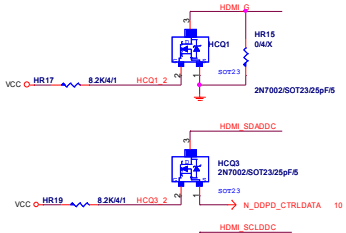








跟DP共用



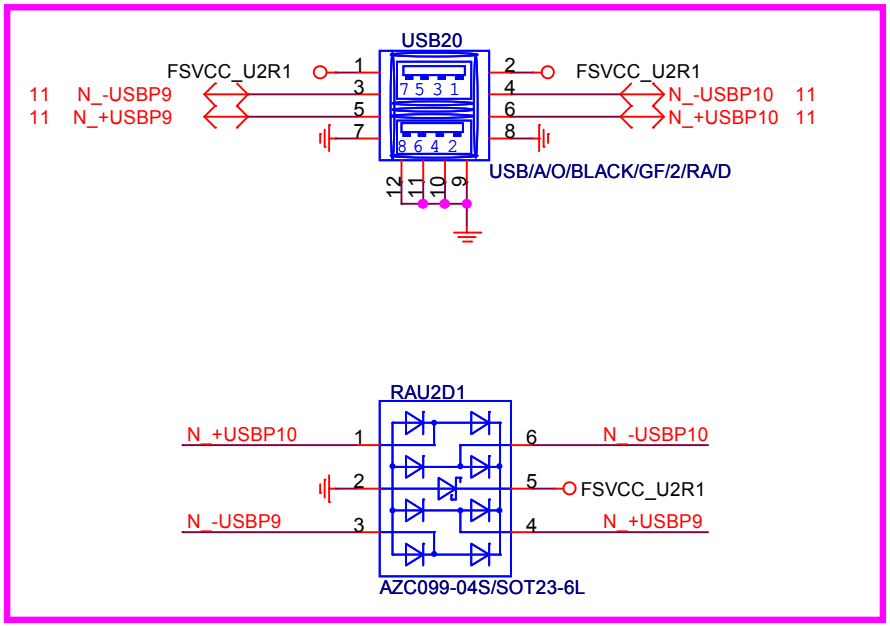
Gigabyte Technology			
Title: HDMI_NO LS/U32			
Size: Custom	Document Number: B460 AORUS PRO AC		Rev: 1.01
Date: Monday, March 09, 2020	Sheet 40 of 63		

Rev: 0.6

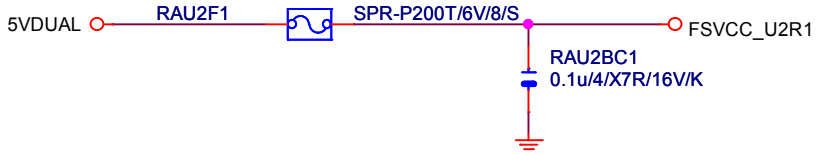
R_USB 2.0 OC SIGNAL

Rear USB1

NET 可變



FUSE 2 Port 1 Fuse 2A

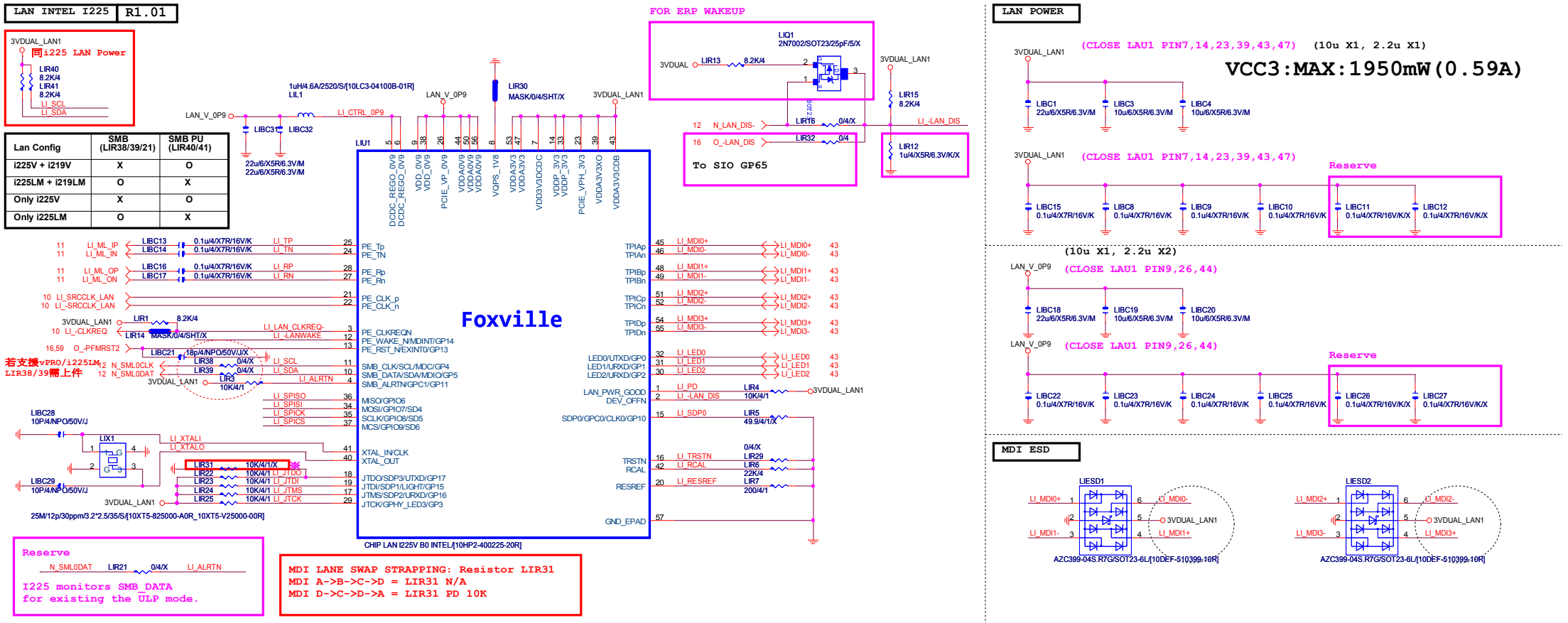


Gigabyte Technology		
Title: COM,-RI,KB_USB,USB_ESATA,-PROCHOT		
Size: A	Document Number: B460 AORUS PRO AC	Rev: 1.01
Date: Monday, March 02, 2020	Sheet 41 of 63	

LAN INTEL I225 R1.01

同i225 LAN Power

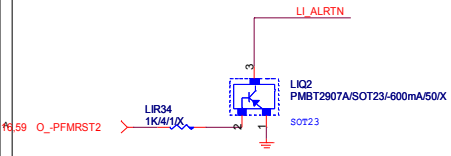
Lan Config	SMB (LIR38/39/21)	SMB PU (LIR40/41)
i225V + i219V	X	O
i225LM + i219LM	O	X
Only i225V	X	O
Only i225LM	O	X



LAN POWER

MDI ESD

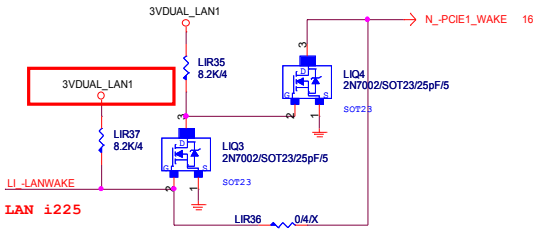
ULP Wake design for D3 cold and ULP wake

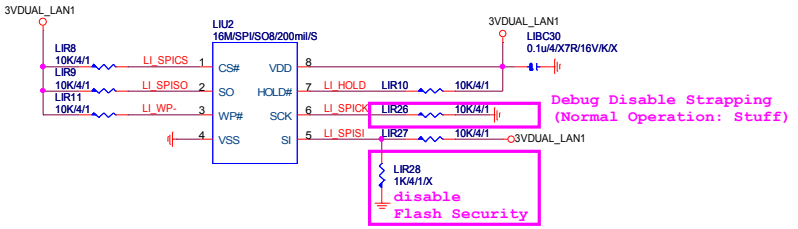


(組態一) PCIE LAN(Single & Dual LAN)

Patch LAN i225 WAKE 漏電

TO SIO





Gigabyte Technology

Title: **INTEL I225**

Size	Document Number	Rev
Custom	B460 AORUS PRO AC	1.01

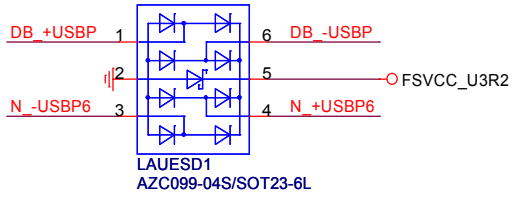
Date: Monday, March 02, 2020 Sheet 42 of 63

USB31_LAN CONNECTOR R2.04

RMA ESD PROTECT

note:可變更USB NAME

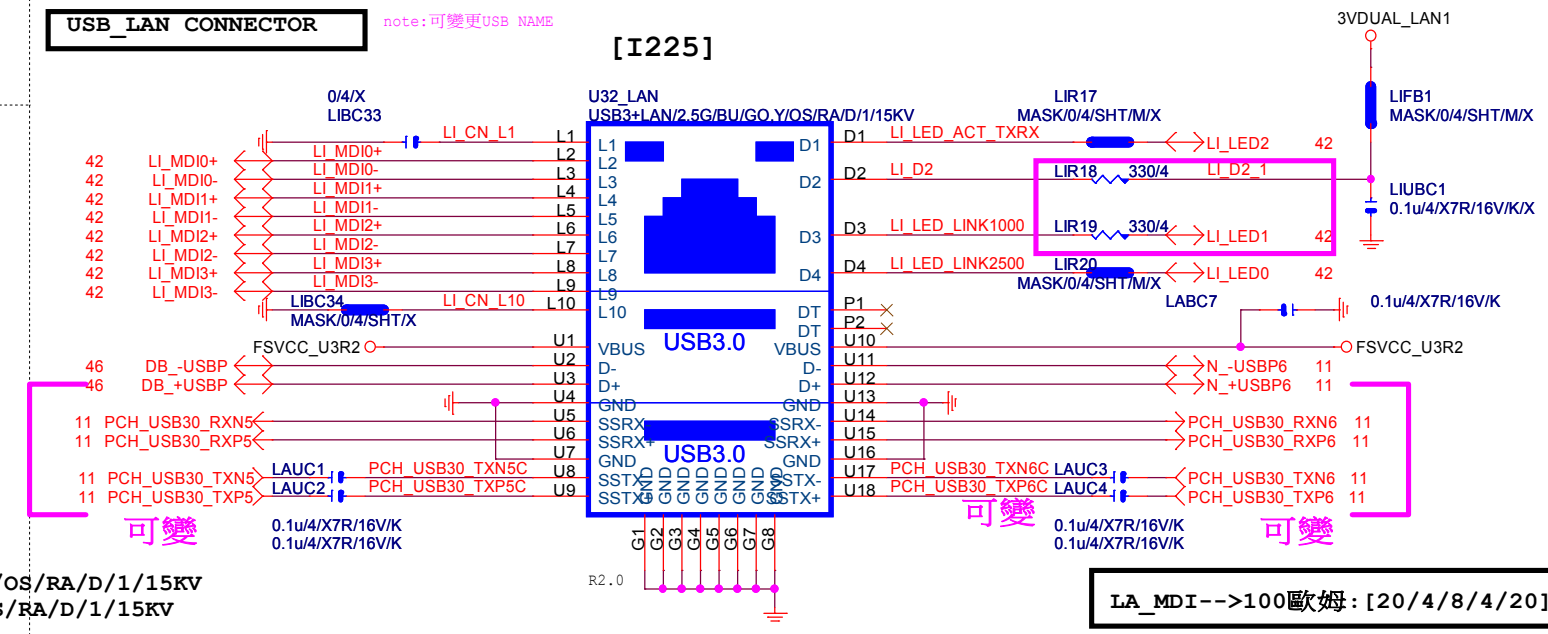
可變



USB_LAN CONNECTOR

note:可變更USB NAME

[I225]

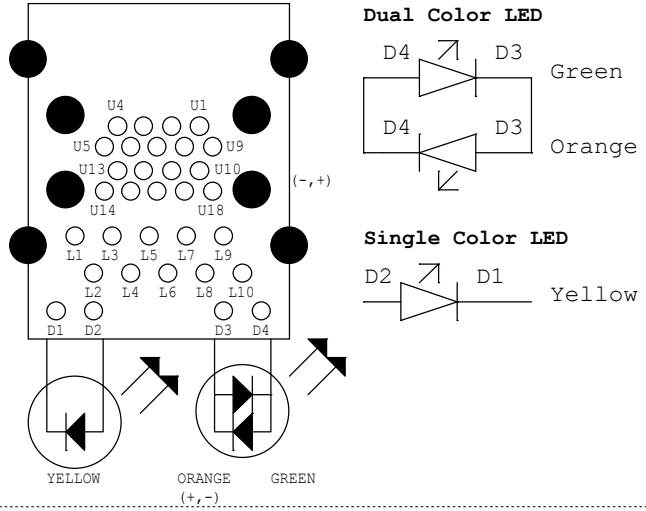


USB上藍下紅:USB3.1+LAN/1G/ BU,RE /GO,Y/OS/RA/D/1/15KV

USB上白下紅:USB3.1+LAN/1G/WH,RE/GO,Y/OS/RA/D/1/15KV

LA_MDI-->100歐姆:[20/4/8/4/20]

USB30_LAN LAYOUT示意圖

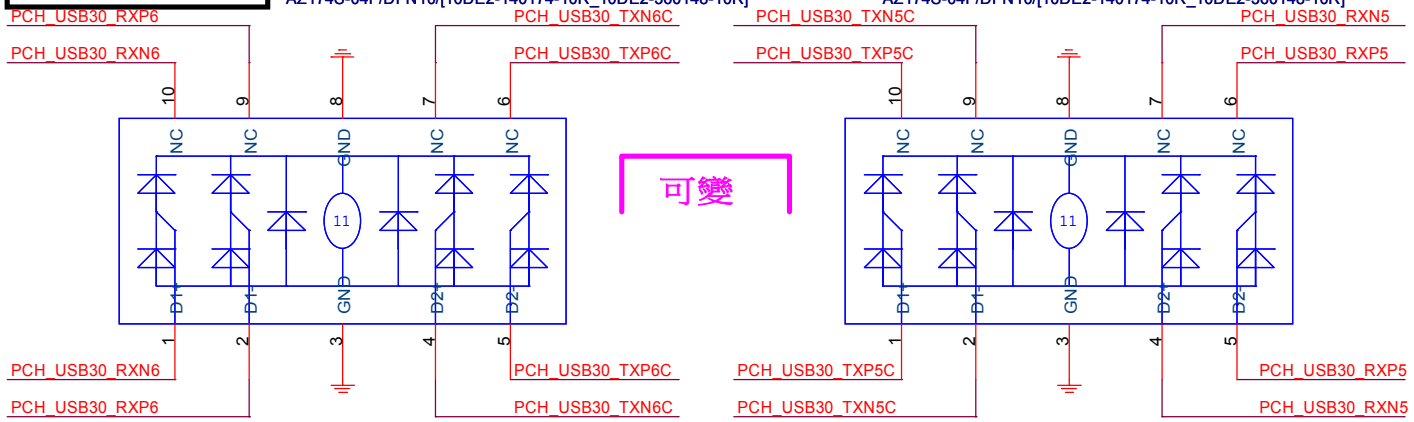


RMA ESD PROTECT

note:可變更USB NAME

LAU3ESD1
AZ174S-04F/DFN10/[10DE2-140174-10R_10DE2-360148-10R]

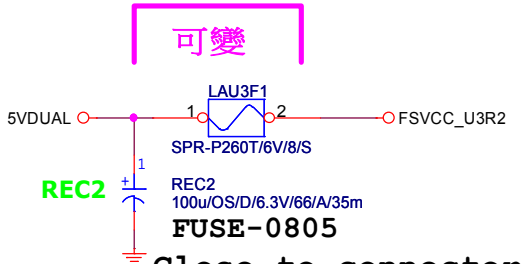
LAU3ESD2
AZ174S-04F/DFN10/[10DE2-140174-10R_10DE2-360148-10R]



USB POWER

note:可變更FUSE

可變

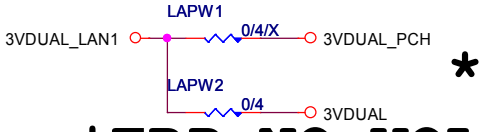


LAN POWER

*ERP WOL

note: lan power連接及電流

可變



*ERP NO WOL

LAN_COVER

FOOT PRINT:LAN_COVER

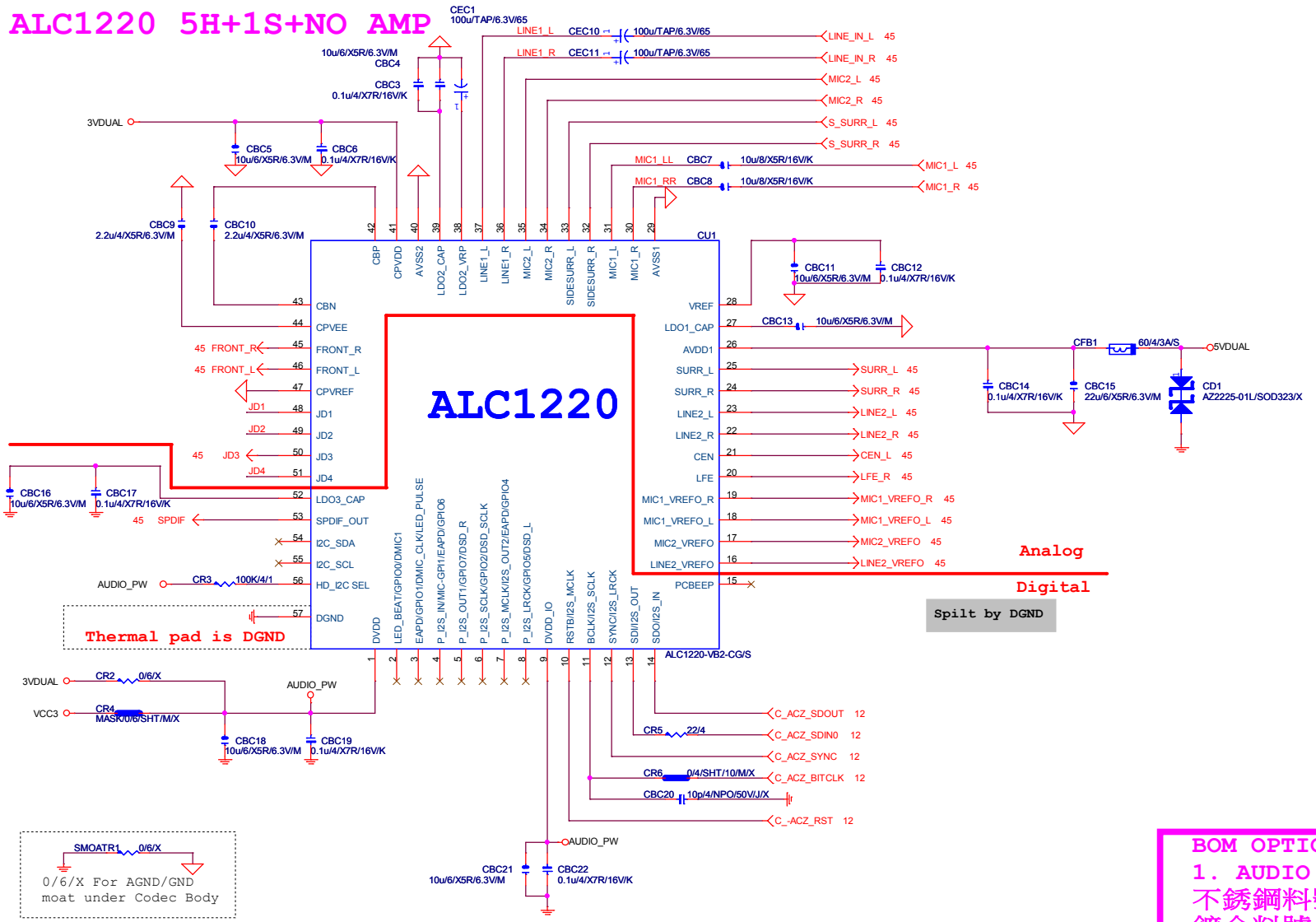
可變

[視SPEC需求]

Gigabyte Technology			
Title: LAN CONNECTOR-I219			
Size: Custom	Document Number: B460 AORUS PRO AC		Rev: 1.01
Date: Monday, March 02, 2020		Sheet 43 of 63	

Rev 6.0

ALC1220 5H+1S+NO AMP

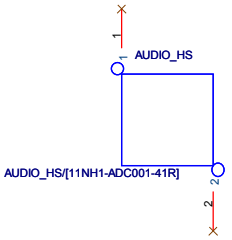


LAYOUT注意:螺絲孔下GND方式
1. MH1下DGND
2. MH2一律改為Isolate

MH1	MH2
DGND	Isolate

LAYOUT注意:是否要加?
AGND切割線

音效區域印刷



BOM OPTION :
1. AUDIO CONNECT
不銹鋼料號:11NR6-403025-A3R
鍍金料號:11NR6-403025-92R
全黑料號:11NR6-403025-B1R
2. AUDIO CAP
Nichicon MW音效電容 : 100u/TAP/6.3V/65
Chemicon音效電容 : 100uF/TAP/10V/6*5

Gigabyte Technology		
Title: ALC1220		
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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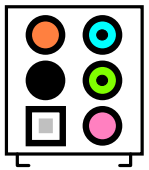
Rev 6.0

AZALIA JACK



5VDUAL

SPDIF_O

CBC111 1u/6/X7R/16V/K

CR27 MASK/0/4/SHT/10/X

SPDIF 44

PH/1*4K2/BK/2.54/VA/D

CBC31 100p/4/NPO/50V/J

For HDMI SPDIF （依SPEC保留或移除）

MOATR1 0/4
MOATC1 0.1u/4/X7R/16V/K → Near F_AUDIO

MOATR2 0/4/X
MOATC2 0.1u/4/X7R/16V/K → Near Codec

MOATR3 0/4/X
MOATC3 0.1u/4/X7R/16V/K → Under Audio Jack

MOATR4 2.2/6 → Audio Jack - LAN

LINE-OUT

44 FRONT_R — CR20 75/4/1 — AJ_B5_R
44 FRONT_L — CR21 75/4/1 — AJ_B2_L

CE7 330p/D/100V/[11CLB-753300-01R]
CE9 330p/D/100V/[11CLB-753300-01R]
CD3 AZ2225-01L/SOD323
CD4 AZ2225-01L/SOD323
CBC25 180p/4/NPO/50V/J
CBC26 180p/4/NPO/50V/J

LINE-IN

44 LINE_IN_R — CR23 62/4 — AJ_A5_R
44 LINE_IN_L — CR24 62/4 — AJ_A2_L
CR35 22K/4
CR33 22K/4

CQ12 BAT54A/SOT23/200mA
44 MIC1_VREFO_R — CR140 8.2K/4 — CR141 8.2K/4

CBC27 180p/4/NPO/50V/J
CBC28 180p/4/NPO/50V/J

MIC-IN

44 MIC1_R — CR25 62/4 — AJ_C5_R
44 MIC1_L — CR26 62/4 — AJ_C2_L

CQ13 BAT54A/SOT23/200mA
44 MIC1_VREFO_L — CR142 8.2K/4 — CR143 8.2K/4

CBC29 180p/4/NPO/50V/J
CBC30 180p/4/NPO/50V/J

SURROUND

44 SURR_R — CBC49 10u/8/X5R/16V/K — SURR_C_R — CR30 62/4 — BJ_C5_R
44 SURR_L — CBC50 10u/8/X5R/16V/K — SURR_C_L — CR31 62/4 — BJ_C2_L

CBC32 180p/4/NPO/50V/J
CBC33 180p/4/NPO/50V/J

CEN/LFE

44 LFE_R — CBC51 10u/8/X5R/16V/K — LFE_C_R — CR34 62/4 — BJ_B5_R
44 CEN_L — CBC52 10u/8/X5R/16V/K — CEN_C_L — CR40 62/4 — BJ_B2_L

CBC35 180p/4/NPO/50V/J
CBC36 180p/4/NPO/50V/J

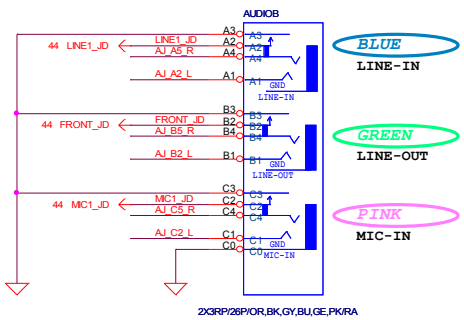
CBC49/50/51/52 10u/8
For THD+N Low frequency

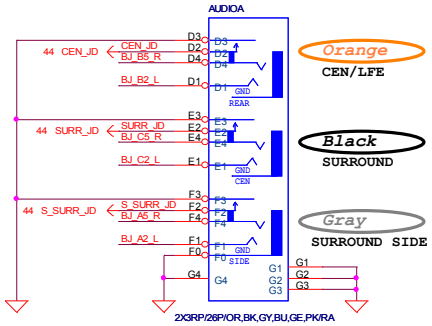
SURR BACK

44 S_SURR_R — CBC53 10u/8/X5R/16V/K — S_SURR_C_R — CR62 62/4 — BJ_A5_R
44 S_SURR_L — CBC54 10u/8/X5R/16V/K — S_SURR_C_L — CR63 62/4 — BJ_A2_L

CBC47 180p/4/NPO/50V/J
CBC48 180p/4/NPO/50V/J

AZALIA JACK





AZALIA FRONT PANEL

CQ10 BAT54A/SOT23/200mA
44 LINE2_VREFO
CQ9 BAT54A/SOT23/200mA
44 MIC2_VREFO

CRN6 8.2K/8P4R/4

Box header footprint : F_AUDIO
Pin header footprint : F_AUDIO_S

CR70 22K/4
CR71 22K/4
CR55 22K/4
CR56 22K/4

CEC8 100u/TAP/6.3V/65
CEC9 100u/TAP/6.3V/65
44 MIC2_L — M2_LL — CR57 62/4 — M2_L
44 MIC2_R — M2_RR — CR58 62/4 — M2_R
L2_R — CR49 62/4 — L2-R
44 JD3 — CR60 47/4/1
L2_L — CR43 62/4 — L2-L
EMI

F_AUDIO
CR59 200K/4/1
CR61 100K/4/1
BH/2*5K8/BK/2.54/VA/AUDIO/PRT/TUR180

CBC42 1n/4/X7R/50V/K
CD5 AZ2225-01L/SOD323/X
CD6 AZ2225-01L/SOD323/X

CBC43 180p/4/NPO/50V/J
CBC44 180p/4/NPO/50V/J
CBC45 180p/4/NPO/50V/J
CBC46 180p/4/NPO/50V/J

44 LINE2_R — CEC4 100u/TAP/6.3V/65 — L2_R
44 LINE2_L — CEC7 100u/TAP/6.3V/65 — L2_L

CE10 330p/D/100V/[11CLB-753300-01R]
CE11 330p/D/100V/[11CLB-753300-01R]

Gigabyte Technology

Title: AUDIO JACK

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Rev 1.0

ECD_U1 請放在PCH到BIOS路徑上.避免線過長

For Intel Platform
ECDR4 0/4 N_PCH_DPWROK 12,16
ECDR7 0/4/X O_-RSMRST 12,16,36
ECD_GPD5

ECD_SMCLK0 — MCU_PH1 0/6/X — ECD_SMDAT0
ECD_SMCLK1 — MCU_PH2 0/6/X — ECD_SMDAT1

PCH SMB I/F

ITD_VCCH
ECDR8 8.2K/4/X ECD_SMCLK0
ECDR9 8.2K/4/X ECD_SMDAT0
ECDR10 8.2K/4/X ECD_SMCLK1
ECDR11 8.2K/4/X ECD_SMDAT1
ECDR26 8.2K/4/X STRIP0
ECDR27 8.2K/4/X STRIP1
ECDR30 8.2K/4 QFLASH

ITD_VCCH
ECDR12 10K/4/1
ECD_WRST-
ECDC1 1u/4/X5R/6.3V/K

DEMO_PW
ECDR28 1K/4/1
ECD_ADC0
ECDR29 1.96K/4/1

DEMO MODE

QF_LED
QFLASH
ECD_SMDAT1 ECDR49 0/4/SHT/M/X GPC2 → GPC2 57
ECD_SMCLK1 ECDR50 0/4/SHT/M/X GPC1 → GPC1 57

8,9,16,27,38,52,58,62 SMB_SW_SC0 ECDR47 0/4/SHT/M/X ECD_SMCLK0
8,9,16,27,38,52,58,62 SMB_SW_SD0 ECDR48 0/4/SHT/M/X ECD_SMDAT0

ADC
ITD_VCCH
ECD_ADC0
ECD_GPD5
ECD_WRST-

LED_B_5 → LED_B_5 47
LED_B_2 → LED_B_2 47
LED_G_2 → LED_G_2 47
LED_R_2 → LED_R_2 47

ECD_U1

IT5702FN
QFN_48

1 AVSS
2 GPE5/PWM13
3 GPE4/PWM12
4 GPE3/PWM11
5 GPE2/PWM10
6 GPD6
7 VCCSPI0
8 SCK0/GPC0
9 MISO0/GPD2
10 SCE#0A/GPC4

47 LED_G_5 → LED_G_5
47 LED_R_5 → LED_R_5
47 LED_B_4 → LED_B_4
47 LED_G_4 → LED_G_4
ECD_GPD6
ECDR37 0/4/SHT/M/X ECD_VSPI
ECD_GPC0
ECD_GPC2
ECD_GPC4
ECD_GPD0
ECD_GPC6
10,19,51 N_ICH_SPI_CLK
10,19,51 N_ICH_SPI_MISO
19 -SPI_CS_1
10,19,51 N_ICH_SPI_MOSI

34 GPB5 ECD_GPB5 ECDR1 0/4 N_-PFMRST 10,16
33 GPB2 ECD_GPB2 ECDR18 0/4/X N_-SLP_S3 12,16,32,33,51,54,6
32 GPB1/TX ECD_GPB1 ECDR19 0/4/SHT/M/X N_-S4_S5 12,16,32,34,51,54
31 GPB0/RX ECD_GPB0 ECDR20 0/4/SHT/M/X -PSON_PSU 37
ECDR21 0/4/SHT/M/X -PWRBTSW 16,50
30 GPA2/PWM2 LED_B_1 → LED_B_1 47
29 GPA1/PWM1 LED_G_1 → LED_G_1 47
28 GPA0/PWM0 LED_R_1 → LED_R_1 47
27 GPD4/STRP1 STRIP1 → STRIP1 57
26 GPD3/STRP0 STRIP0 → STRIP0 57
25 VSTBY ITD_VCCH

IT5702XQN-128/BX-GB12/S[10HP2-NW5702-12R]

Q-Flash
Power Sequence

ITD_VCCH
ECDR22 8.2K/4
ECD_GPD0
ECDR6 0/4/X CE_DIS- 16

To IT8688 GP84(CE_DIS#)
this pin will gating CE1_N/CE2_N

GPD0 pull-up to 3VSB
To ignore the test mode

ECD_VCORE2
ECD_VCORE1
LED_R_4 → LED_R_4 47

to PCH USB Host
11 N_-USBP8
11 N_+USBP8
PCH USB HID device

to PCH USB Host
11 N_-USBP5
11 N_+USBP5
to USB Connector
43 DB_-USBP
43 DB_+USBP
USB Switch for Q-flash

5VDUAL ITD_VCCH
ECDR14 1.5K/4/1
ECDR16 4.7K/4
ECDR15 1K/4/1
ECD_Q2 2N7002/SOT23/25pF/5
SOT23
N_+USBP8
ECD_Q1 2N7002/SOT23/25pF/5
SOT23
ECD_GPD6
ECDR13 1K/4/1

此線路盡量靠近IT5702 DP1的走線
Q3建議貼在DP1上，減少trace分叉
same as DP1 net
USB Slave rework線路
IT5702-AX only

Q_FLASH BUTTON/LED

3VDUAL QFR4 1K/4/1 QFLED LED/O/6/S QF_LED
QFLASH_PLUS
QFR6 33/4 QFLASH
QFC3 0.01u/4/X7R/50V/K/X
TS/BU/4.3/VA/[11NH7-030001-B1R]::Location QFLASH_PLUS

ITD_VCCH
ECDC6 1u/4/X5R/6.3V/K
ECDC7 0.1u/4/X7R/16V/K
ECDC8 0.1u/4/X7R/16V/K
ECDC9 0.1u/4/X7R/16V/K
ECDC10 0.1u/4/X7R/16V/K
ECDC11 0.1u/4/X7R/16V/K
ECDC12 0.1u/4/X7R/16V/K

ECD_VSPI
ECDC13 0.1u/4/X7R/16V/K
ECDC14 0.1u/4/X7R/16V/K

3VDUAL_PCH
3VDUAL
ECDR3 0/4/X
ECDR2 0/4
ITD_VCCH

DEMO_PW
MCURN1 220/8P4R/6
MCURN2 220/8P4R/6
LED_DEMO JW/1*2/BK/2.0/VA/D/[11NH5-040102-61R]
BATTERY CHARGE LOAD

DEMO_PW 5VDUAL
LED_PW
MCUCD3 B140/SMA/1A
MCUR7 1N5820/SHT/100/X
MCUC1 10u/6/X5R/6.3V/M

ECD_VCORE1
ECDC15 0.1u/4/X7R/16V/K
ECDC16 1u/4/X5R/6.3V/K
ECDC17 10u/6/X5R/6.3V/M

ECD_VCORE2
ECDC20 Option
ECDC18 0.1u/4/X7R/16V/K
ECDC19 1u/4/X5R/6.3V/K
ECDC20 10u/6/X5R/6.3V/M/X

GIGABYTE™

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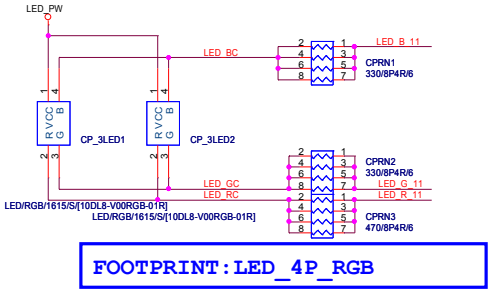
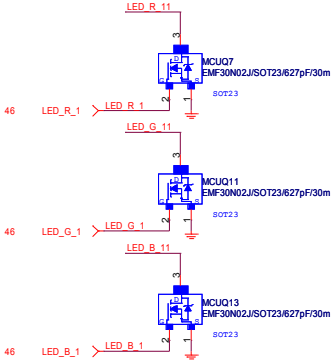
Rev 1.0

第一區 LED

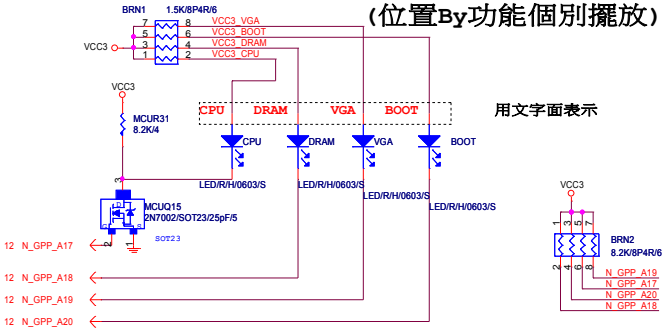


FOOTPRINT:LED_4P_RGB

第一區 LED CONTROL



DEBUG PORT LED *4
(位置By功能個別擺放)

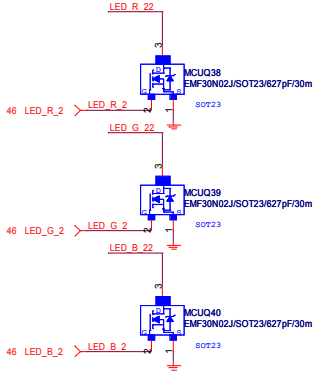


N_GPP_A17	CPU DEBUG
N_GPP_A18	DDR DEBUG
N_GPP_A19	VGA DEBUG
N_GPP_A20	BOOT DEVICE DEBUG

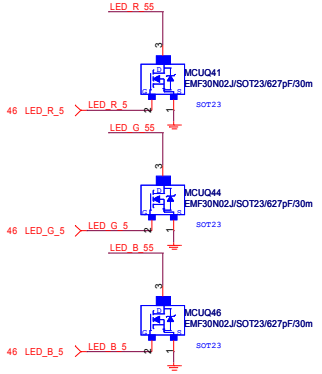
第三區 LED

第五區 LED

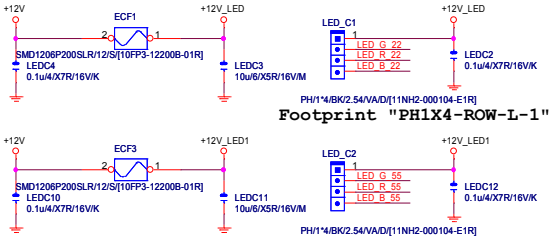
第二區 LED CONTROL



第五區 LED CONTROL

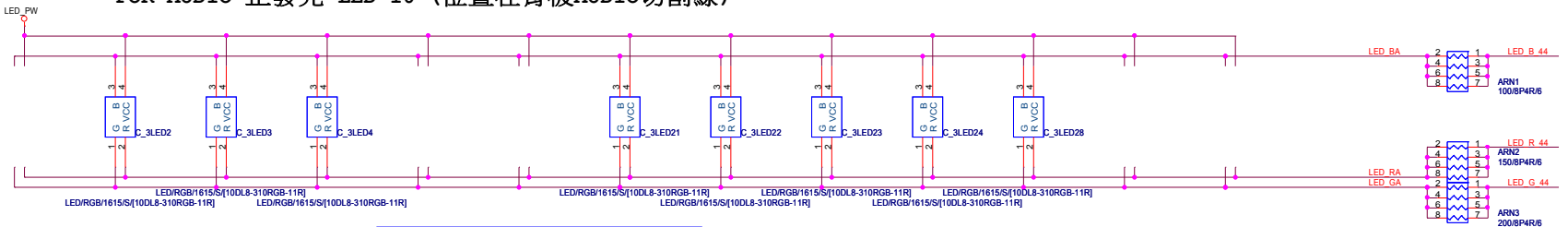


燈條 LED (LED_C1放在PCB左邊板邊位置)
燈條 LED (LED_C2放在PCB右邊板邊位置)



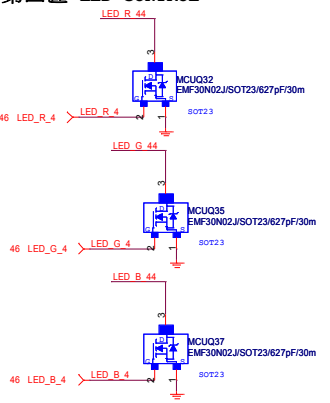
第四區 LED

FOR AUDIO 正發光 LED*10 (位置在背板AUDIO切割線)



FOOTPRINT:LED-4P-RGB

第四區 LED CONTROL



GIGABYTE

Title	Amient Single LED	
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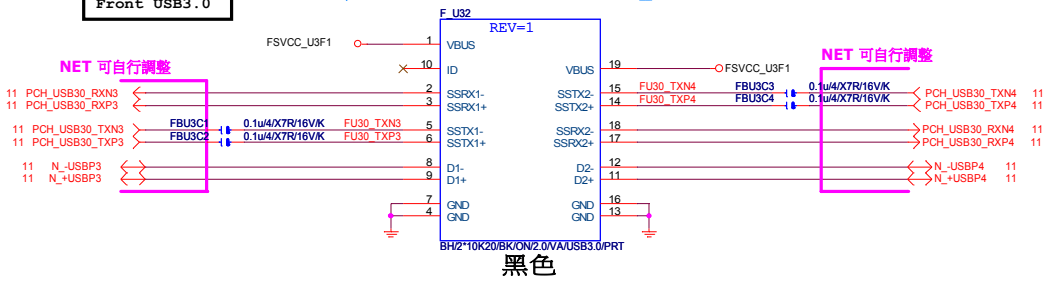
Front USB3.0

右 Port

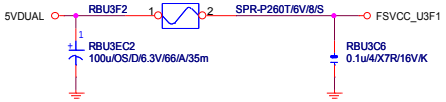
左 Port

NET 可自行調整



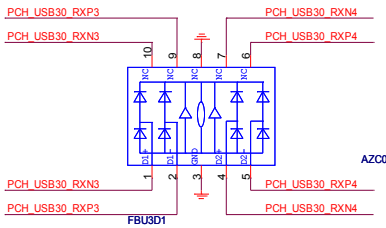
黑色

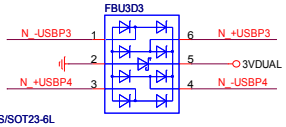
FUSE 2 Port 1 Fuse 2.6A



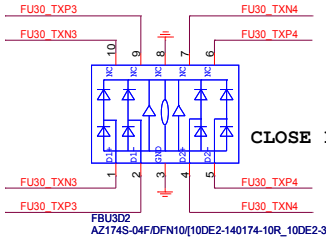
F_USB POWER PROTECT

NET 可自行調整

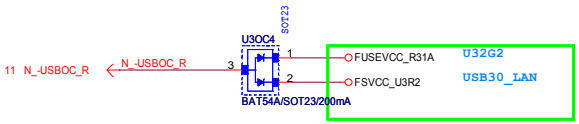


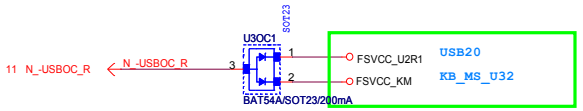


CLOSE F_USB30



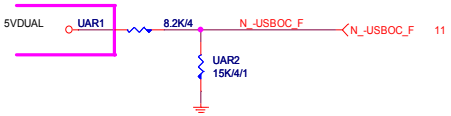
CLOSE F_USB30





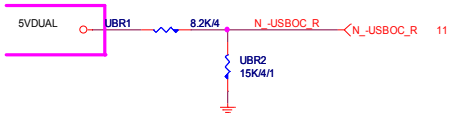
-USBOC_F

POWER 可自行調整

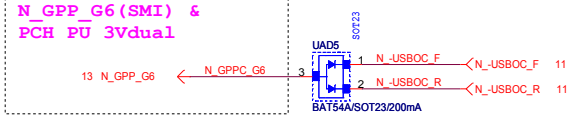


-USBOC_R

POWER 可自行調整



* 接 PCH
N_GPP_G6(SMI) &
PCH PU 3Vdual



GIGABYTE Technology		
Title: R_USB30,F_USB30, USB_OC		
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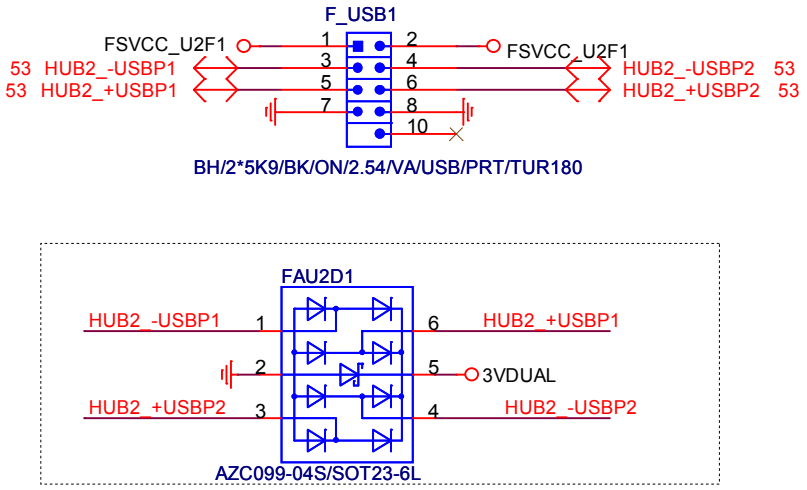
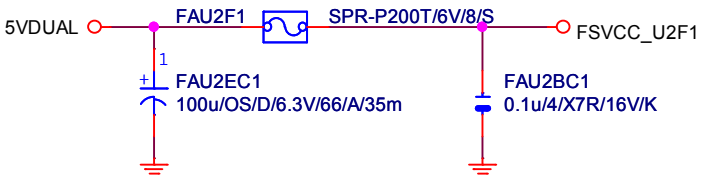
FRONT USB1

NET 可變



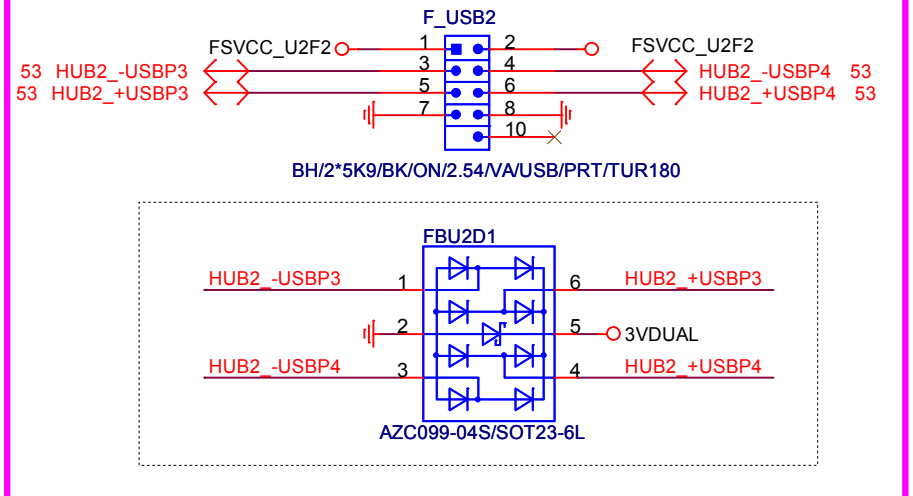
Close to connector

FUSE 2 Port 1 Fuse 2A



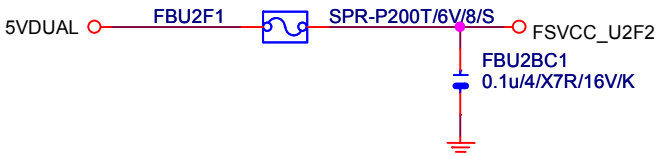
FRONT USB2

NET 可變



Close to connector

FUSE 2 Port 1 Fuse 2A



GIGABYTE Technology

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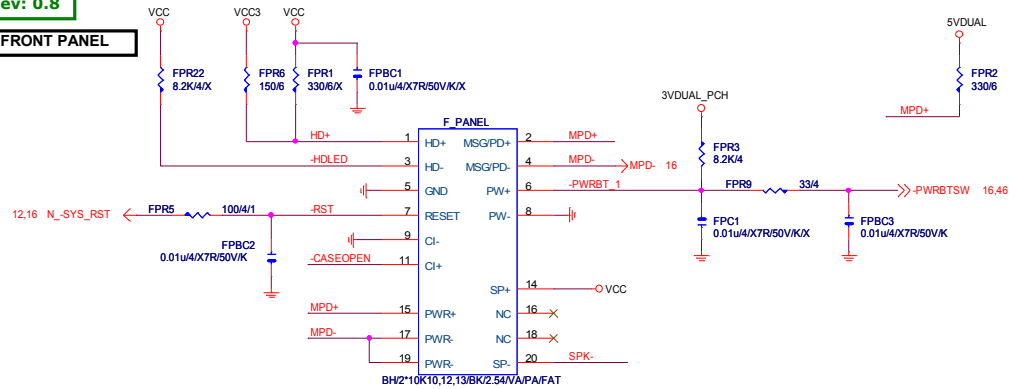
Rev: 0.8

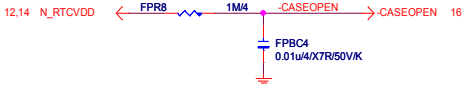
FRONT PANEL

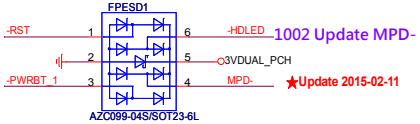
★Update 2016.06.15



Update 2015.01.08
Footprint=F_PANEL-100

CASE OPEN



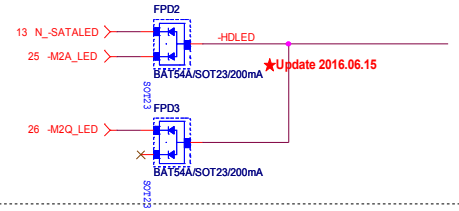


1002 Update MPD-

★Update 2015-02-11

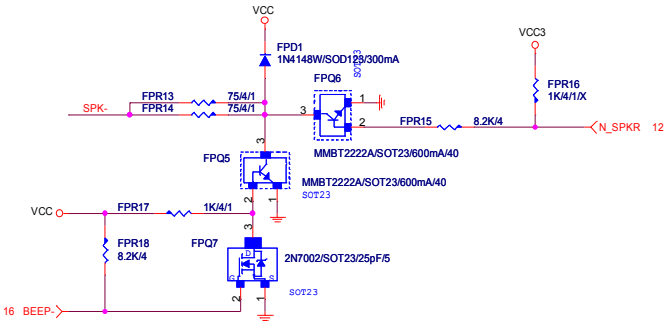
SATA/M.2 LED

Fix some M.2 cause HD_LED always on.



★Update 2016.06.15

SPKR



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

FRONT PANEL SHORT

GIGABYTE Technology		
Title: FRONT PANEL		
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
Date: Monday, March 02, 2020	Sheet 50 of 63	

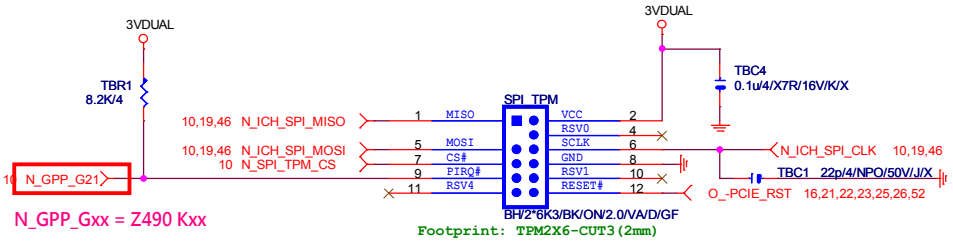
COM PORT

Rev: 0.7

COM RI

★Update 2015.04.22 -RI remove.

TPM CONNECT

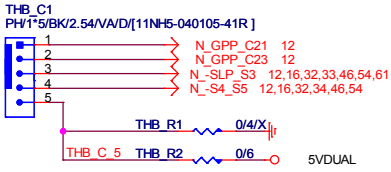


N_GPP_Gxx = Z490 Kxx

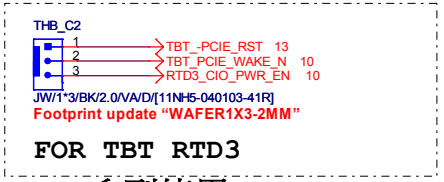
Footprint: TPM2X6-CUT3(2mm)

Thunderbolt

★Update 2015-12-29



Footprint update "WAFER-1X5P"



FOR TBT RTD3

B460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_G_23

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

GIGABYTE Technology

Title: FP,F_USB,USB PWR,BZ

Size: Custom | Document Number: B460 AORUS PRO AC | Rev: 1.01

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Rev: 0.2

請選擇適用的USBport :
SOC/UD7/UD5/G1/G7 : USB4
;UD3/G5:USB6

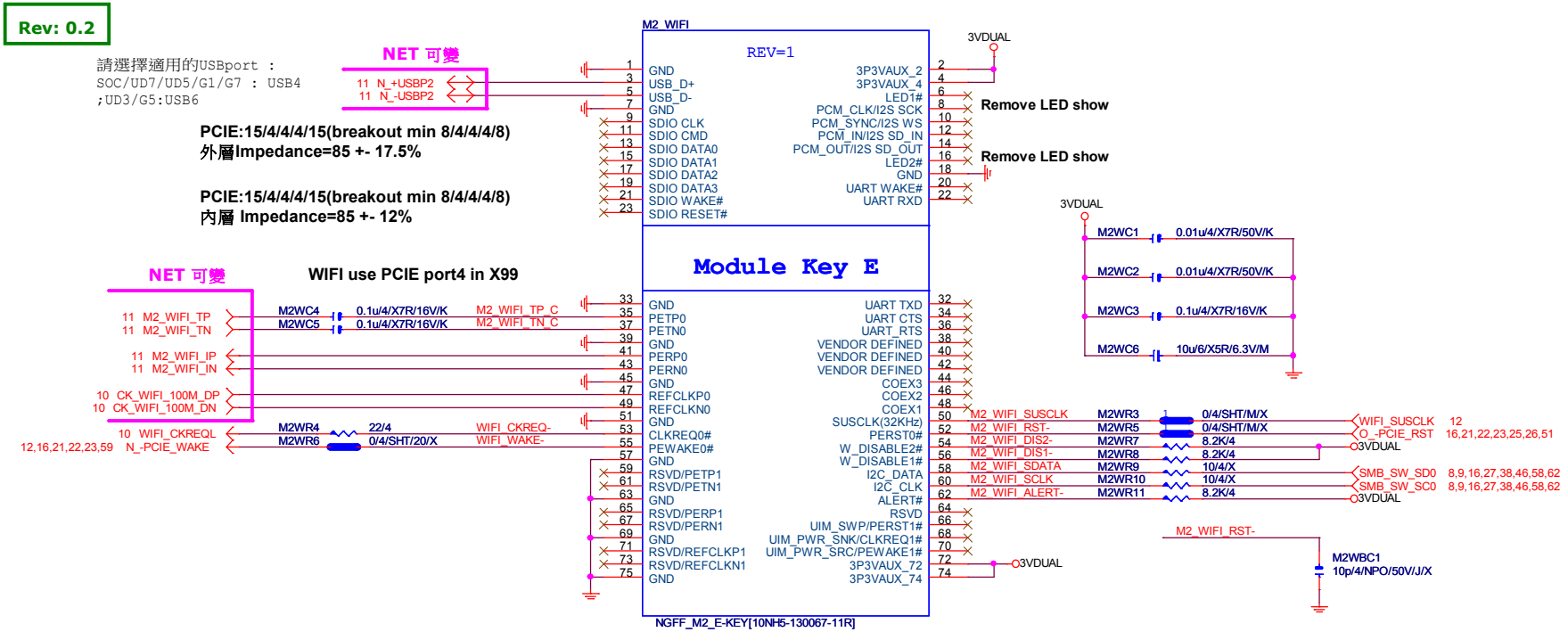
NET 可變
11 N_+USBP2
11 N_-USBP2

PCIE:15/4/4/4/15(breakout min 8/4/4/4/8)
外層Impedance=85 +- 17.5%

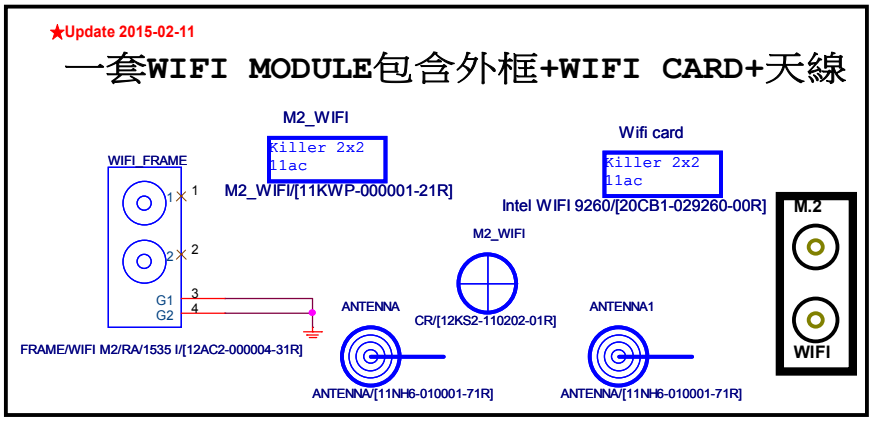
PCIE:15/4/4/4/15(breakout min 8/4/4/4/8)
內層 Impedance=85 +- 12%

NET 可變

WIFI use PCIE port4 in X99



FOR M.2 WIFI MODULE @ REAR PANEL



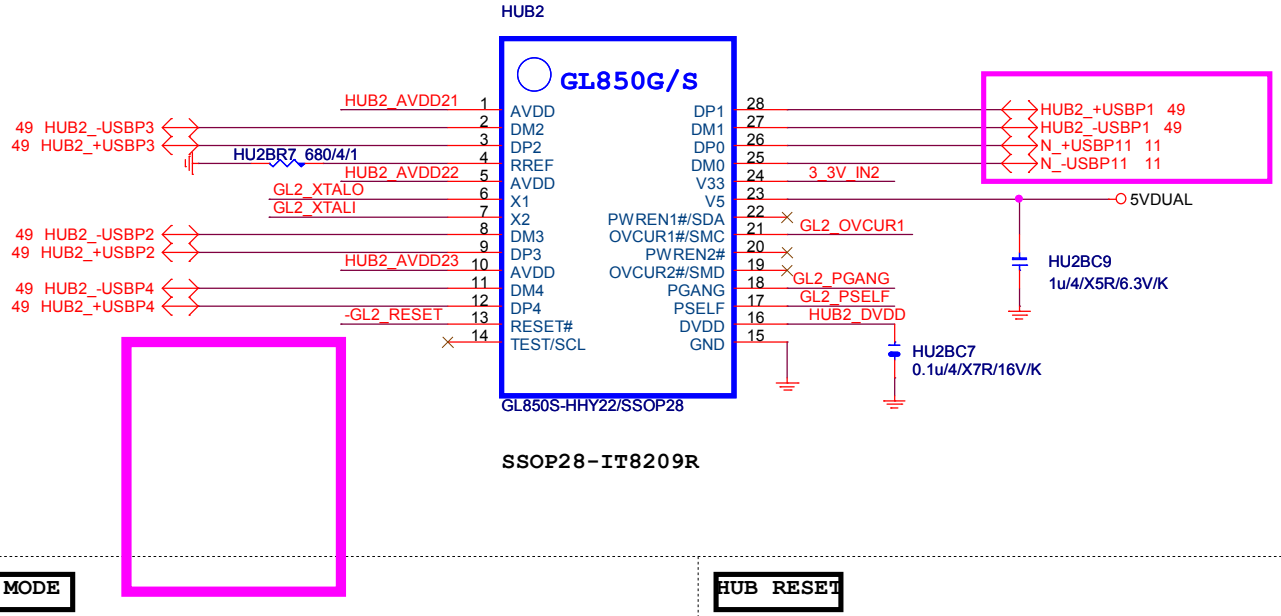
DIP螺絲

GIGABYTE™

Title	M2 WIFI	
Size B	Document Number B460 AORUS PRO AC	Rev 1.01
Date: Thursday, March 12, 2020	Sheet 52 of 63	

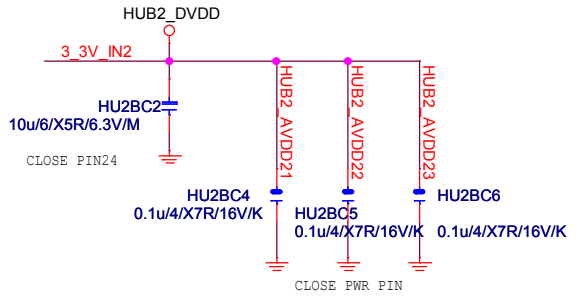
USB20 HUB_2

Dual USB2 HUB used Rev 0.2

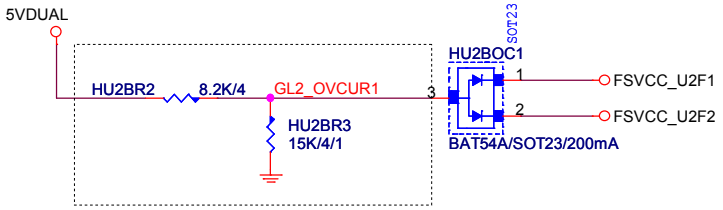


SSOP28-IT8209R

HUB PWR

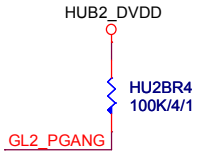


HUB OVER CURRENT SENSE



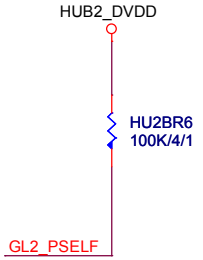
HUB MODE

Ganged mode



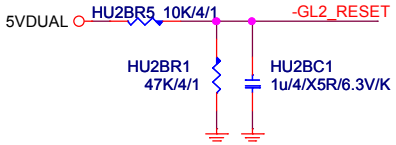
P.H. USE GL_OVCUR1
DETECT ALL PORT

PSELF



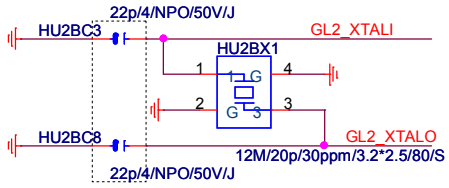
HUB self-power mode:
P.H.=EVERY PORT 500mA.
P.D.=EVERY PORT 100mA.

HUB RESET



HUB CRYSTAL

ONLY SUPPORT 12MHZ



Gigabyte Technology			
Title: HUB GL850GS_2			
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EMI/ESD R0.1

CLOSE SIO

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

12,16,32,33,46,51,61 N_-SLP_S3

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

12,16,32,34,46,51 N_-S4_S5

CLOSE PCH

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

4,12 N_CPUPWROK

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Title	EMI/ESD	
Size: A	Document Number: B460 AORUS PRO AC	Rev: 1.01
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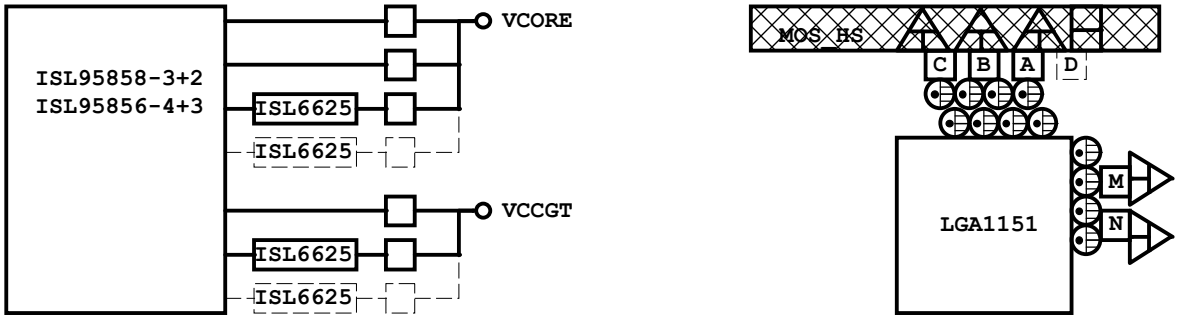
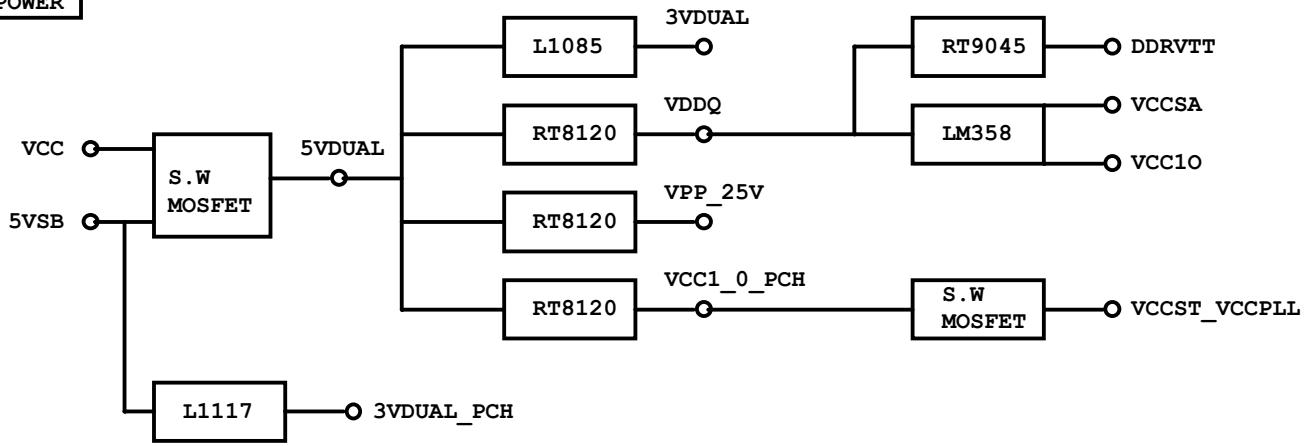
POWER BLOCK MAP

- CPU: VCORE, VCCGT, VCCSA, VCCIO, VDDQ, VCCST_VCCPLL, VCCSFUSEPRG
- DDR4: VDDQ, DDRVTT, VPP_25V, VDDSPD(VCC3)
- PCH: VCC1_0_PCH, VCC1_0_PCH_DSW, VCC10_VCCF24_1P0, VCC10_VCCAMPHYPLL, VCC10_VCCAPLL, VCC3_PCH, 3VDUAL_PCH, VCC3, N_RTCVDD
- IT8628: IT_VCCH, IT_AVCC, 2_5LEVEL
- HM: +12V, VCC, VCC3, VCORE, VCCGT(IMON_VCCGT), VDDQ, VCCSA(IMON_VCORE)

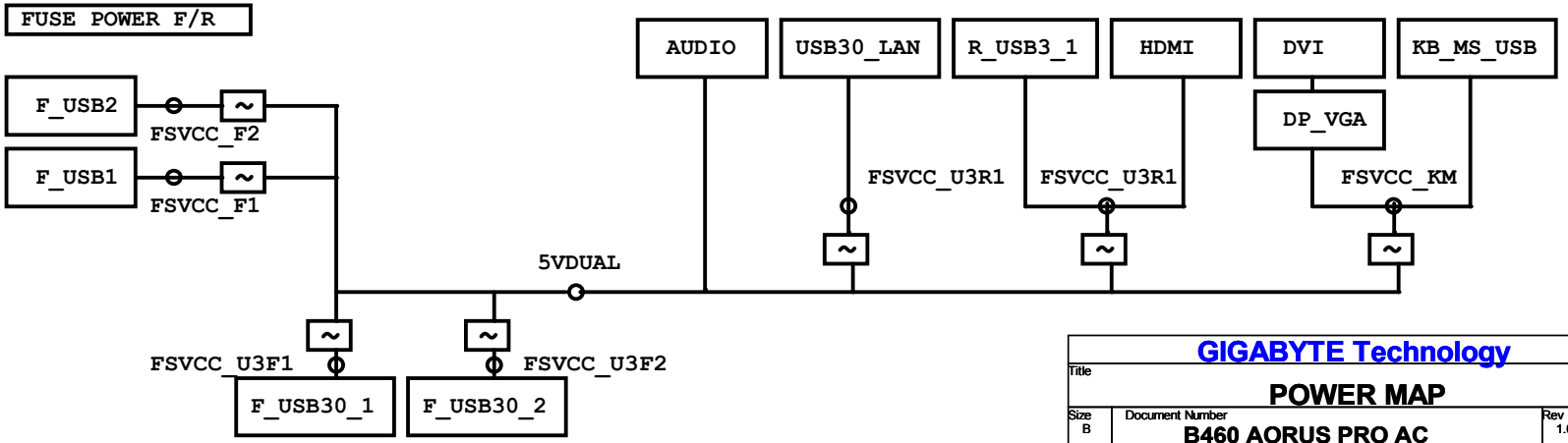
VCORE/VCCGT



POWER

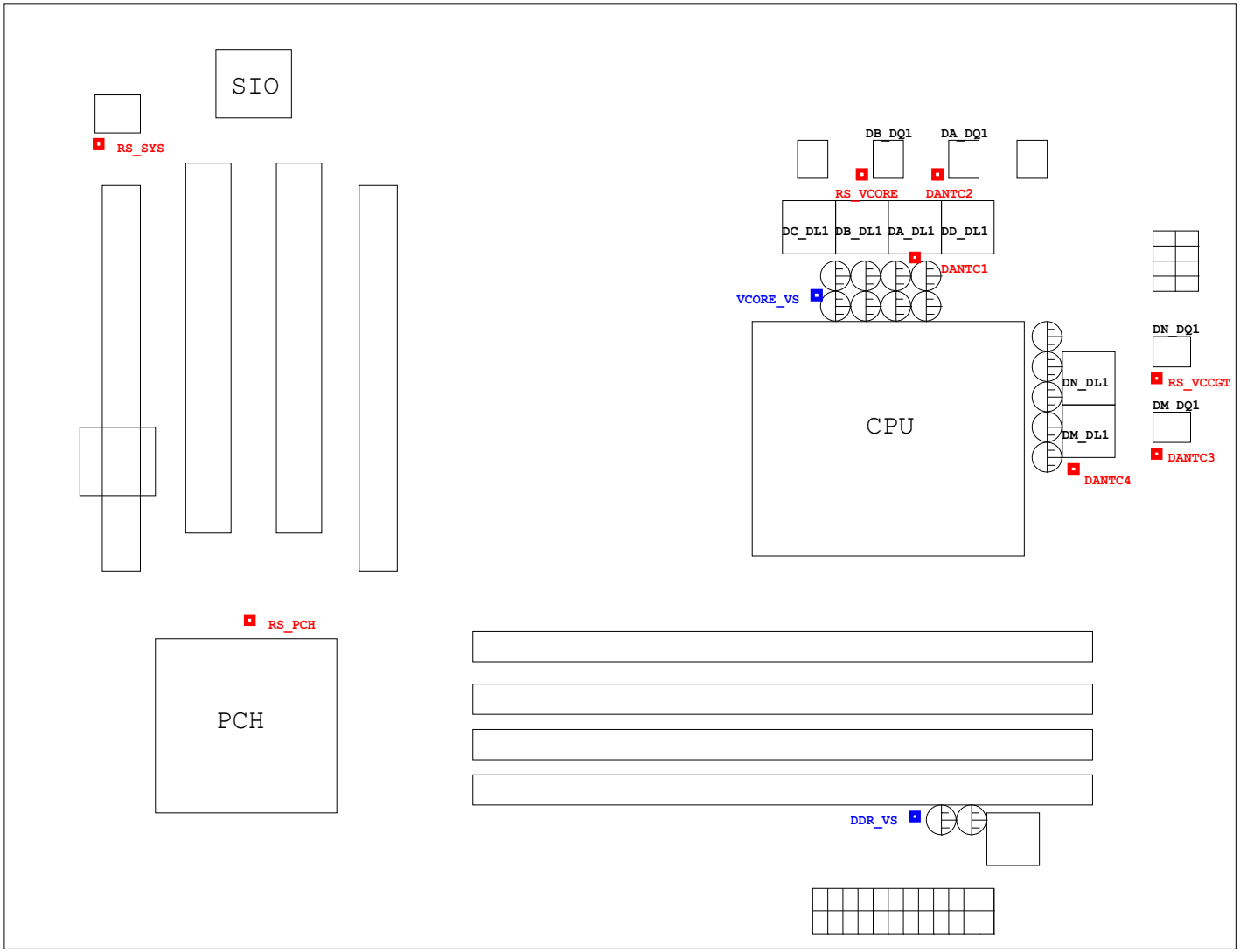


FUSE POWER F/R



GIGABYTE Technology

Title	POWER MAP	
Size B	Document Number B460 AORUS PRO AC	Rev 1.01
Date: Monday, March 02, 2020	Sheet 55 of 63	



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

GIGABYTE Technology

Title: NTC MAP

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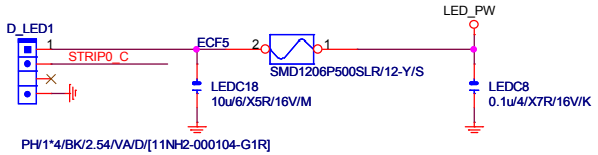
Rev 1.0

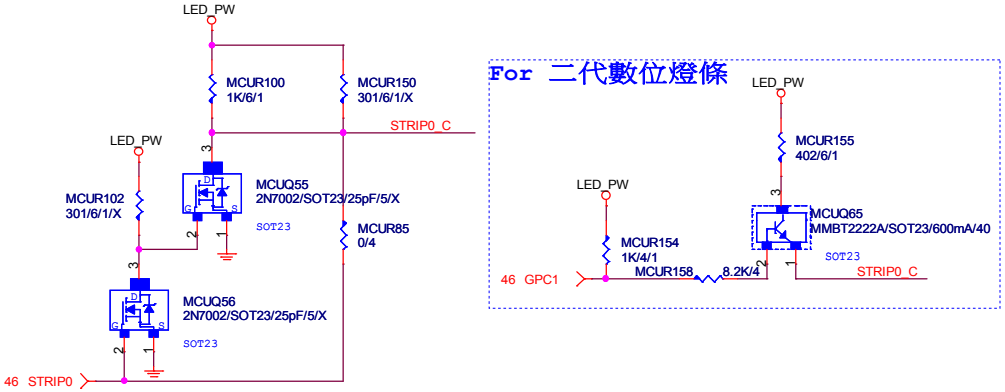
第六區 LED (靠近左上板邊位置)

Digital LED Strip1



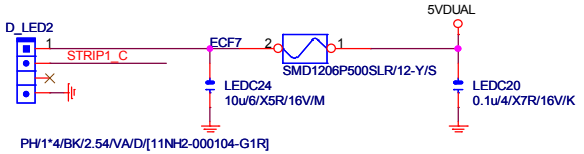
Footprint PH1X4-CUT3-LED-L

燈條 Level shift



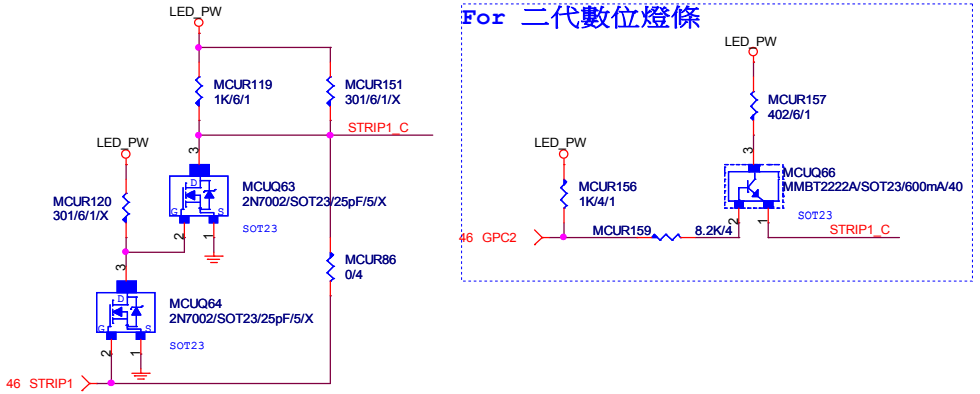
第七區(靠近右下CPU板邊位置)

Digital LED Strip2



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

燈條 Level shift

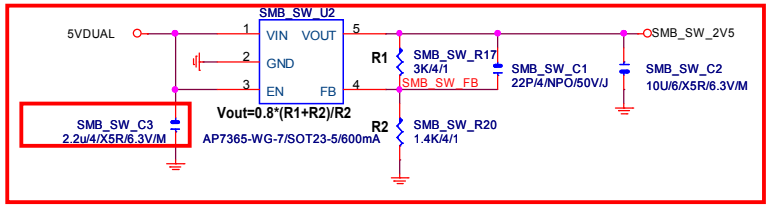


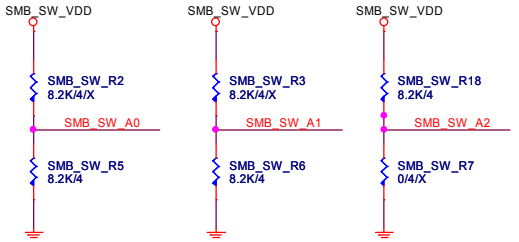
GIGABYTE™

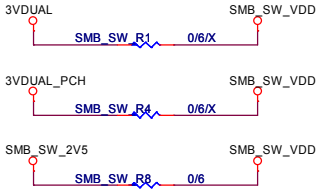
Title	D_LED1/D_LED2	
Size B	Document Number B460 AORUS PRO AC	Rev 1.01
Date: Tuesday, March 03, 2020	Sheet 57 of 63	

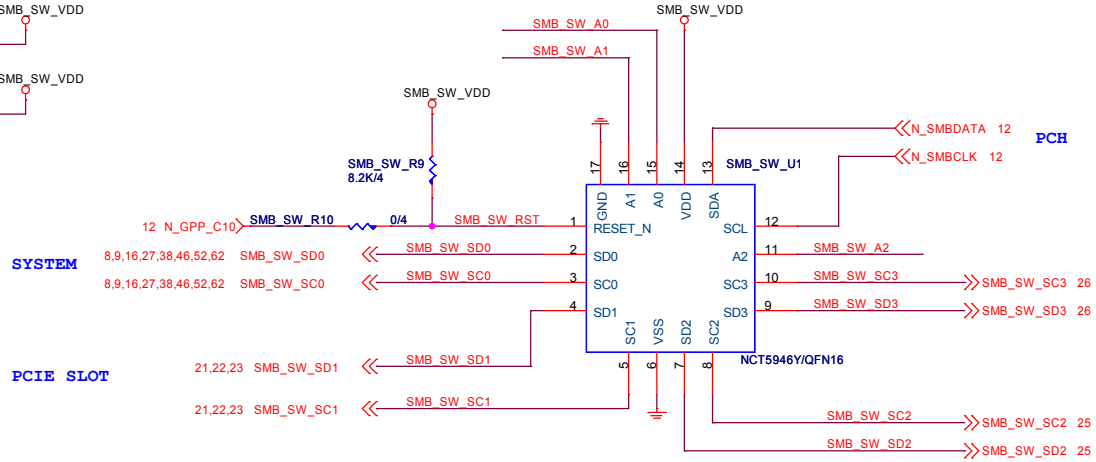
REV:0.1

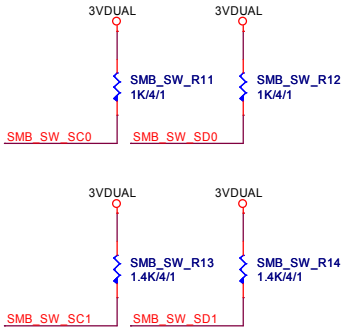
ADDRESS=77



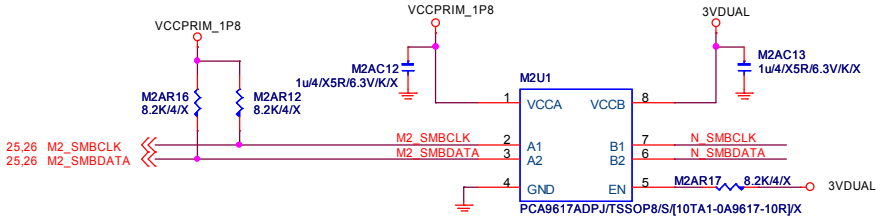








SMB_SW_U1 不上件時.電阻要上



GIGABYTE™

Title	NCT5946	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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ASM3142 Host Rev0.1
TI HD3SS3220 + FRONT U32C
PCIE Gen3 X2

Color markers can be changed by model

ASM3142 USB3.1

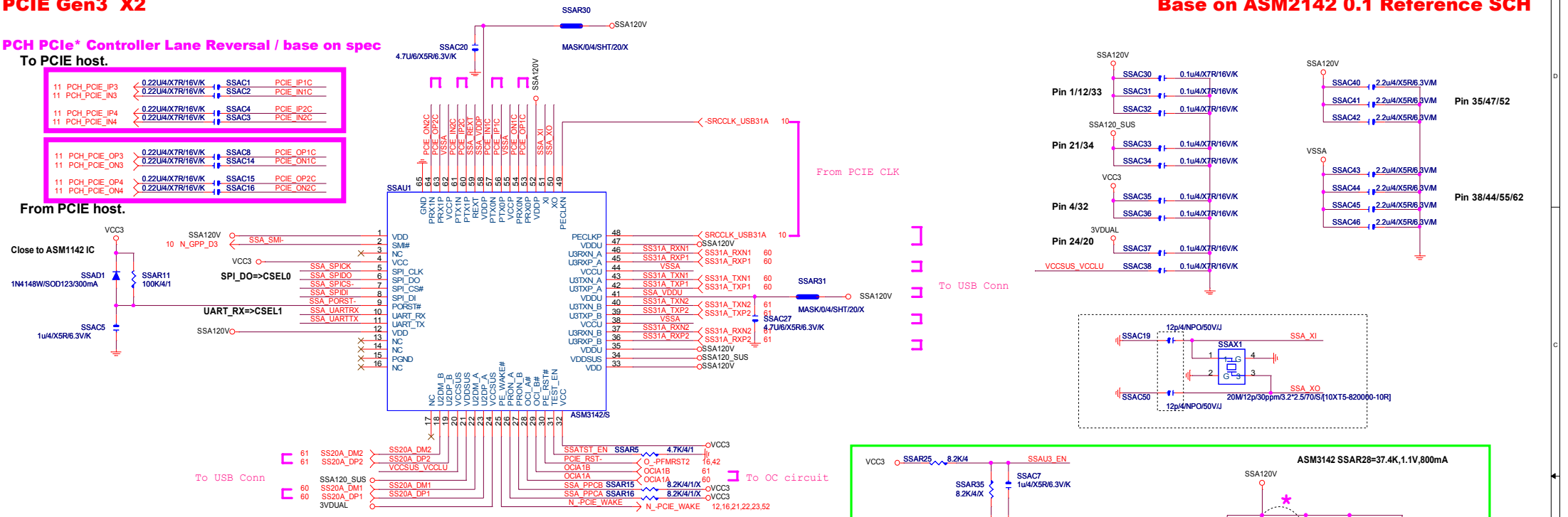
Base on ASM2142 0.1 Reference SCH

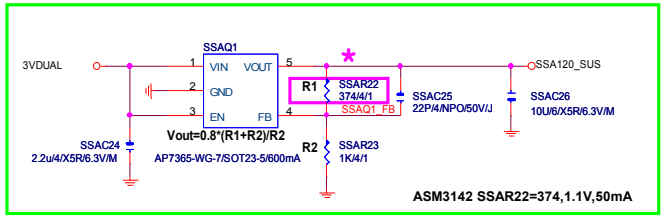
PCH PCIe* Controller Lane Reversal / base on spec

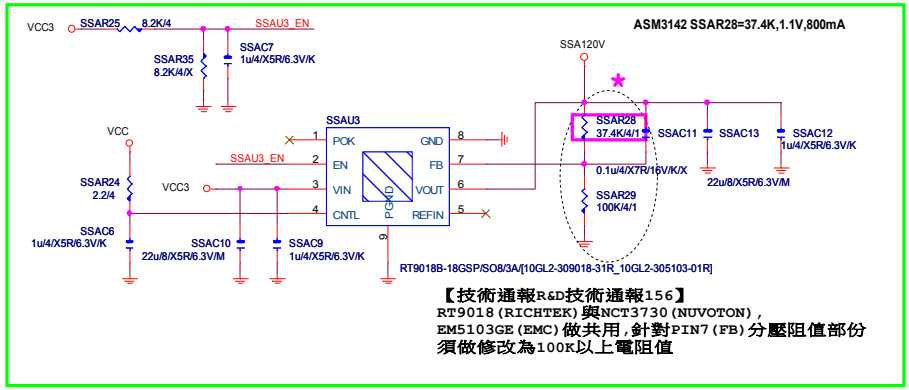
To PCIE host.

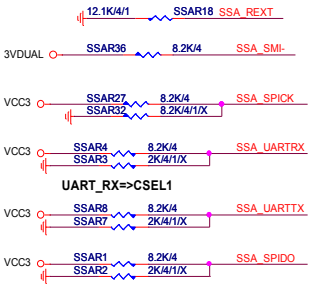
11 PCH_PCIE_IP3	0.22U/4/X7R/16V/K	SSAC1	PCIE_IP1C
11 PCH_PCIE_IN3	0.22U/4/X7R/16V/K	SSAC2	PCIE_IN1C
11 PCH_PCIE_IP4	0.22U/4/X7R/16V/K	SSAC4	PCIE_IP2C
11 PCH_PCIE_IN4	0.22U/4/X7R/16V/K	SSAC3	PCIE_IN2C
11 PCH_PCIE_OP3	0.22U/4/X7R/16V/K	SSAC8	PCIE_OP1C
11 PCH_PCIE_ON3	0.22U/4/X7R/16V/K	SSAC14	PCIE_ON1C
11 PCH_PCIE_OP4	0.22U/4/X7R/16V/K	SSAC15	PCIE_OP2C
11 PCH_PCIE_ON4	0.22U/4/X7R/16V/K	SSAC16	PCIE_ON2C

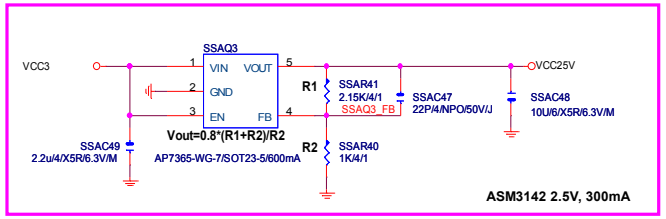
From PCIE host.

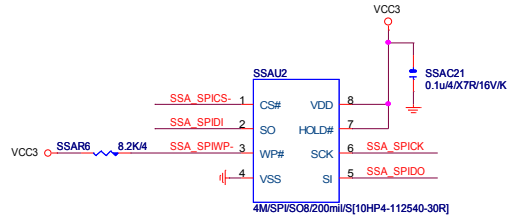












CSEL1	CSEL0	
1	1	External 20MHz Crystal (Asynchronous)
0	1	48MHz clock input (Synchronous)
X	0	Reseved for Test

GIGABYTE™

Title	ASM3142 USB31A_R	
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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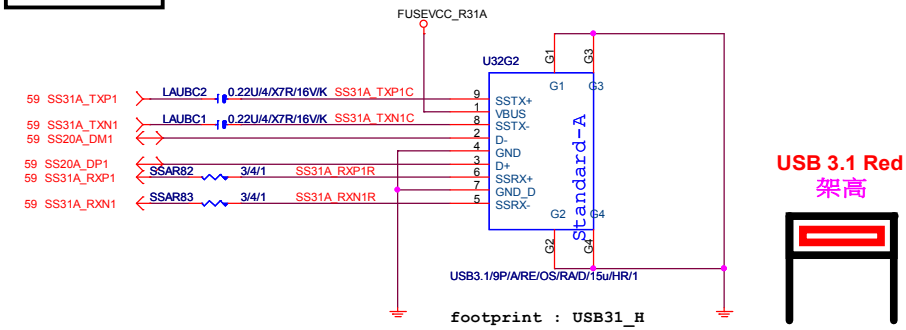
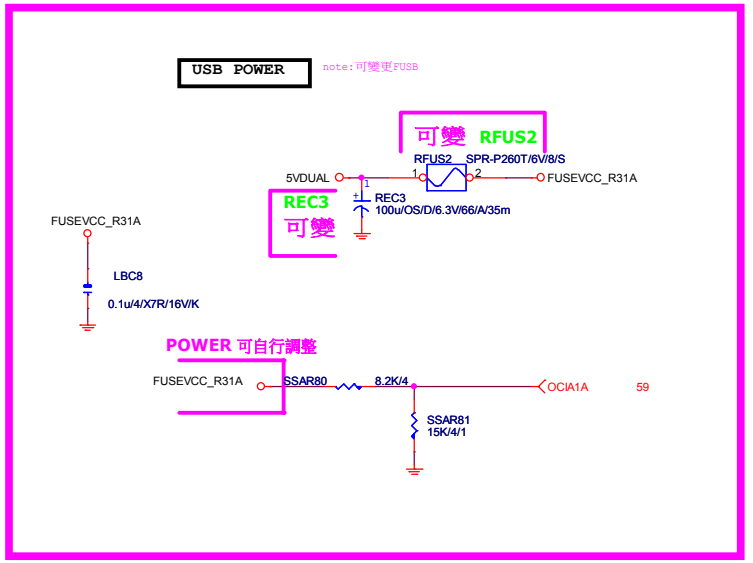
ASM3142 Host Rev0.1
TI HD3SS3220 + FRONT U32C

架高式type A

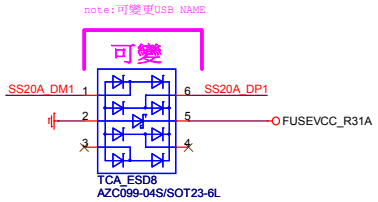


USB 3.1 Red
架高

後窗Rule ： （後窗由左至右）
DIP電容 : REC1, REC3, REC2
FUSE : RFUS1, RFUS2, RFUS3,RFUS4...



請勿跟USB3.0的ESD做SWAP



GIGABYTE™

Title: TI USB31 PORT A		
Size: Custom	Document Number: B460 AORUS PRO AC	Rev: 1.01
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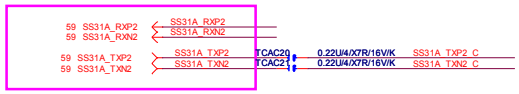
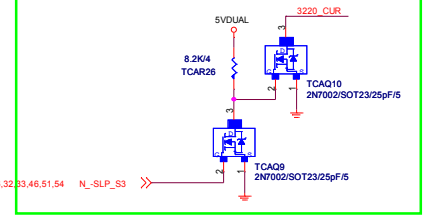
ASM3142 Host Rev0.1
TI HD3SS3220 + FRONT U32C

USB 3.x SuperSpeed

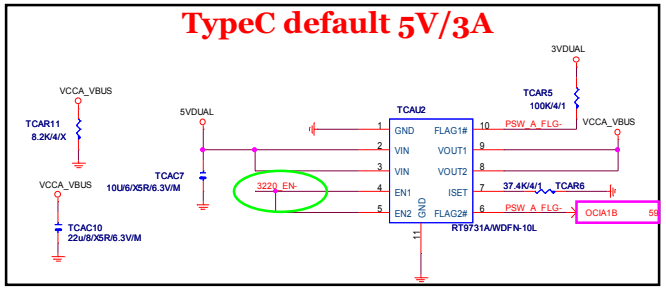


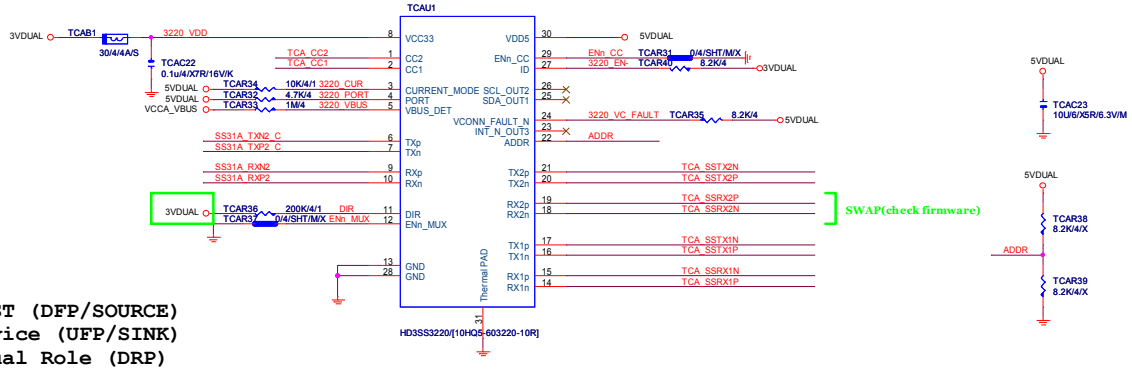
For VBUS current limit at 900mA on S3

*Del IO_GP21



TypeC default 5V/3A



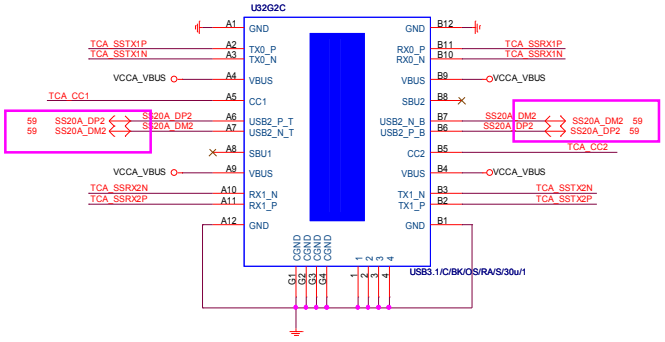


SWAP(check firmware)

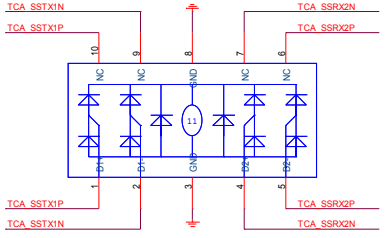
PORT
H - HOST (DFP/SOURCE)
L - Device (UFP/SINK)
NC - Dual Role (DRP)

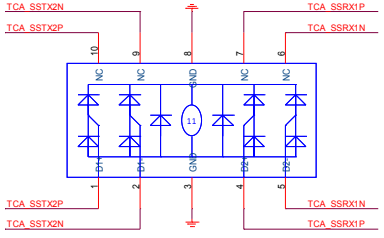
CURRENT MODE
L - Default (900mA) / Pull down to GND or NC
M - Medium (1.5A) / Pull up to VDD 500K
H - High (3.0A) / Pull up to VDD 10K

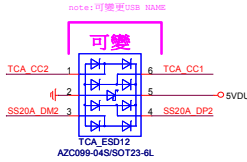
Color markers can be changed by model



USB2.0 can be used the same source







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Title	TI HD3SS3220_B	
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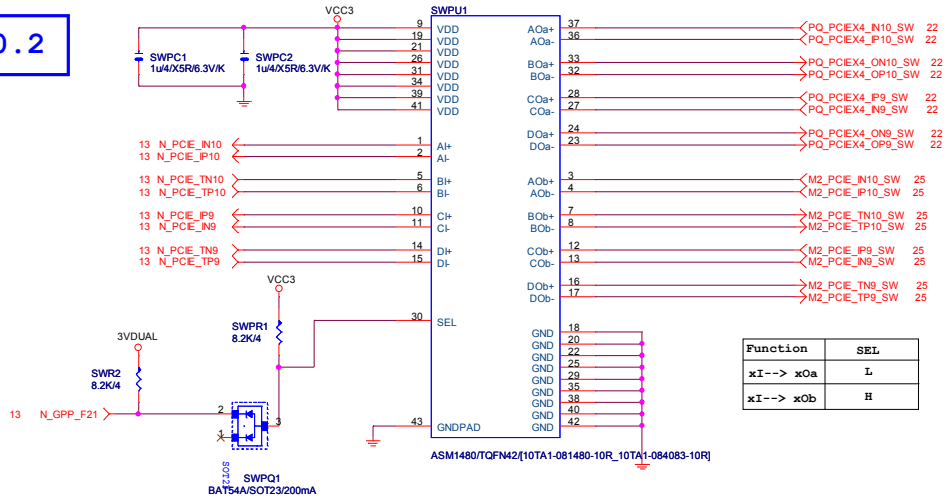
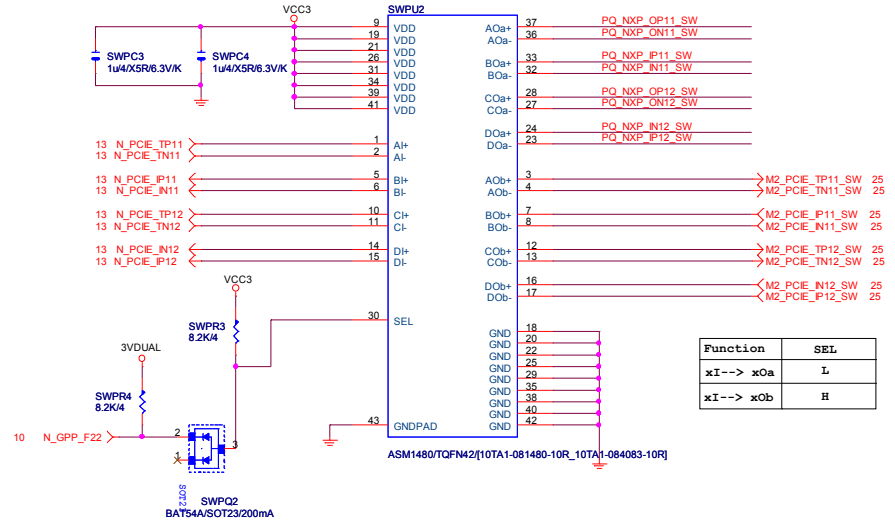
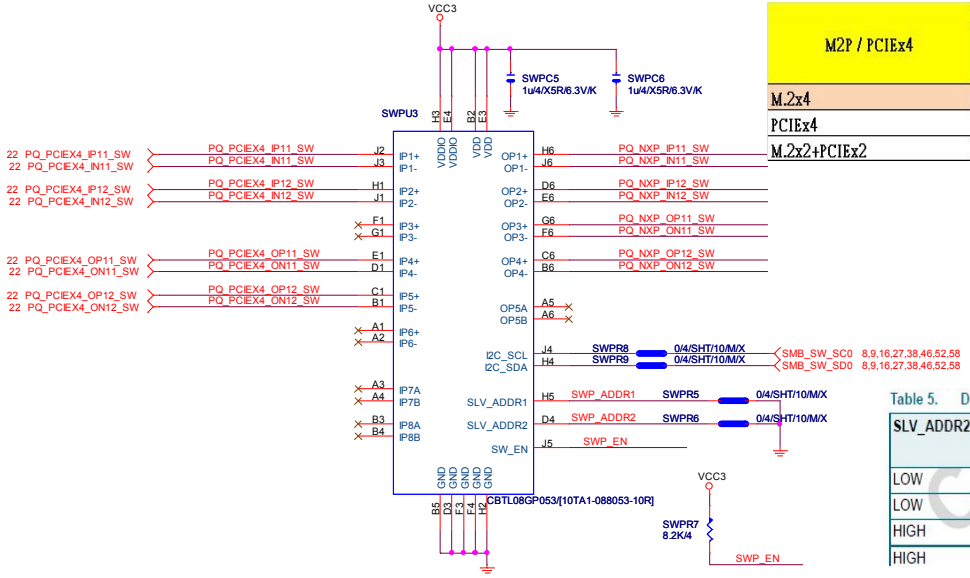


Function	SEL
xI--> xOa	L
xI--> xOb	H



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



M2P / PCIEx4	GPI			GPO		M.E. Config				CBTL08GP053
	N_GPP_F19	N_GPP_F20	N_GPP_D13	N_GPP_F21	N_GPP_F22	P24	P23	P22	P21	0x60/0x61
M.2x4	0	1	1	1	1	PCIEx4				Don't Care
PCIEx4	1	1	0	0	0	PCIEx4 (Reverse)				IP1=OP1, IP2=OP2, IP4=OP3, IP5=OP4
M.2x2+PCIEx2	0	1	0	1	0	PCIEx2		PCIEx2		IP2=OP1, IP1=OP2, IP5=OP3, IP4=OP4

Table 5. Device slave address

SLV_ADDR2	SLV_ADDR1	I²C-bus device address
LOW	LOW	0x60/0x61
LOW	HIGH	0x64/0x65
HIGH	LOW	0x68/0x69
HIGH	HIGH	0x6C/0x6D

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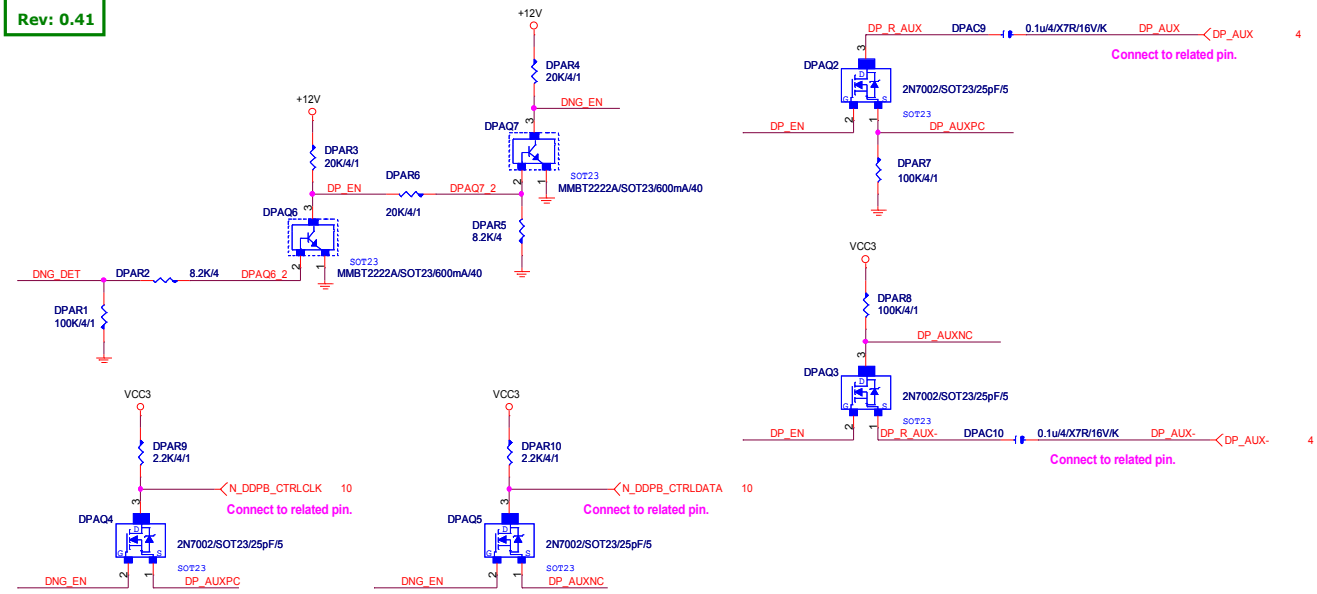
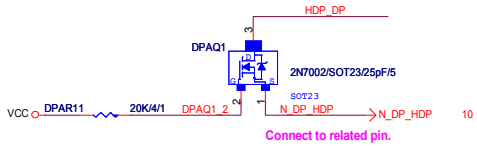
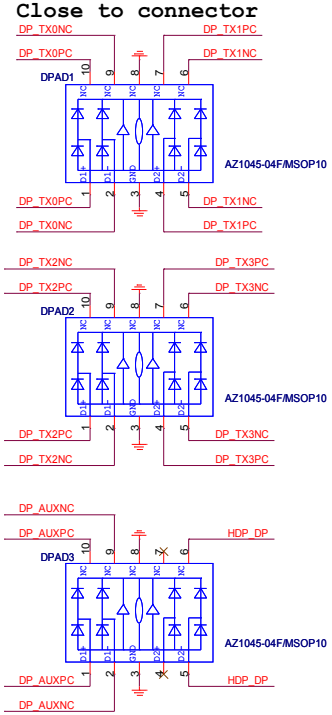
Rev: 0.41





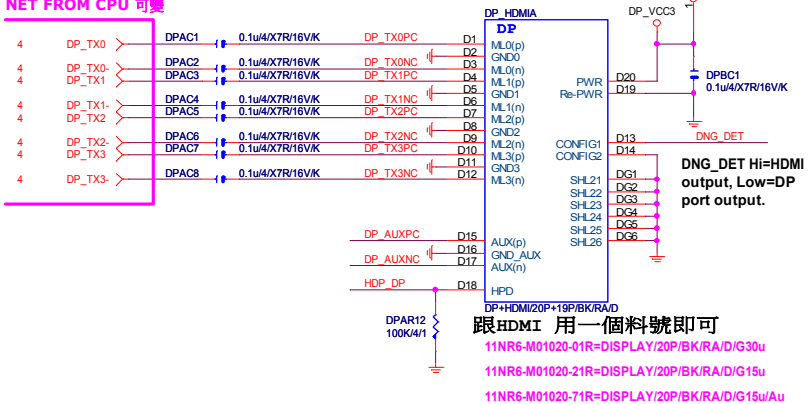
Close to connector



SINGLE Display Port

Display Port with HDMI, or HDMI only.

NET FROM CPU 可變



DNG_DET Hi=HDMI output, Low=DP port output.

跟HDMI 用一個料號即可

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: DP PORT			
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