Model Name: Z390 I AORUS PRO WIFI

rev 1.0

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05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1150-D
08	DDR4 CHANNEL A
09	DDR4 CHANNEL B
10	PCH_CLK /DDC/BIOS
11	PCH_DMI,USB,PCIE
12	PCH_HDA/MISC
13	PCH SATA,PCIE,CNVI
14	PCH_PWR
15	PCH_GND/HEATSINK
16	DUAL BIOS
17	ITE 8688 LPC IO
18	HWM,TPM
19	FAN CTRL--SIO
20	PCI EXPRESS*16 SLOT
21	M.2X4(P)
22	M.2X4(M)
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24	CNVi M2 WIFI
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31	RT8237_DDR_BEAD
32	RT8068A_VPP_25V
33	RT8120_PCH-CHOKE
34	VSA_VIO_VCCPLL-系列-ITX
35	DISCRETE POWER
36	NCT3933
37	ATX POWER
38	DP PORT
39	HDMI20 MCDP2800-BC
40	TI TUSB321 FRONT
41	TYPE C& A USB3.1
42	Rediver_TYPE C& A
43	DUAL LAN-B~I219
44	DUAL USB30_LAN-I219
45	Realtek ALC1220
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47	R_USB30
48	F_USB30, USBOC
49	F_USB
50	F_PANEL
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53	PCB/PCH/PCIEX16 LED
54	D_LED
55	EMI-ESD
56	POWER MAP
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Gigabyte Technology

Title: Cover Sheet

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Model Name: Z390 I AUROS PRO WIFI

rev 1.0

Component value change history

2018/08/22

Data	Change Item	Reason
2018/04/26	COFFEEE LAKE Z390 ITX MODEL.	
2018/05/21	R0.2. MPD- 接到ESD上, PWR 改為3VDUAL_PCH	
	M.2 SM Bus 改用Level Shift, ADD M2M SWITCH SATA.	
	SIO Add OQ18 For S0iX	
2018/07/30	R1.0. RENAME Z390 I AORUS PRO WIFI .	
	ADD VCCPLL_OC POWER.CPU LOADLINE 1.6mohm.	
	TYPE_C SWAP P/N NET. M.2 SMBUS L/S MODIFY NXP.	
	ADD WD1/WD2 for bifurcation GPIO漏電.	
	REMOVE ESPI POWER PWF_U1.	
2018/08/22	R1.0. PBOM.	PBOM:9MZ39ARSI-00-10A

Circuit or PCB layout change

DATE	Change Item	Reason

GIGABYTE™

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: Z390 I AORUS PRO WIFI | Rev: 1.0

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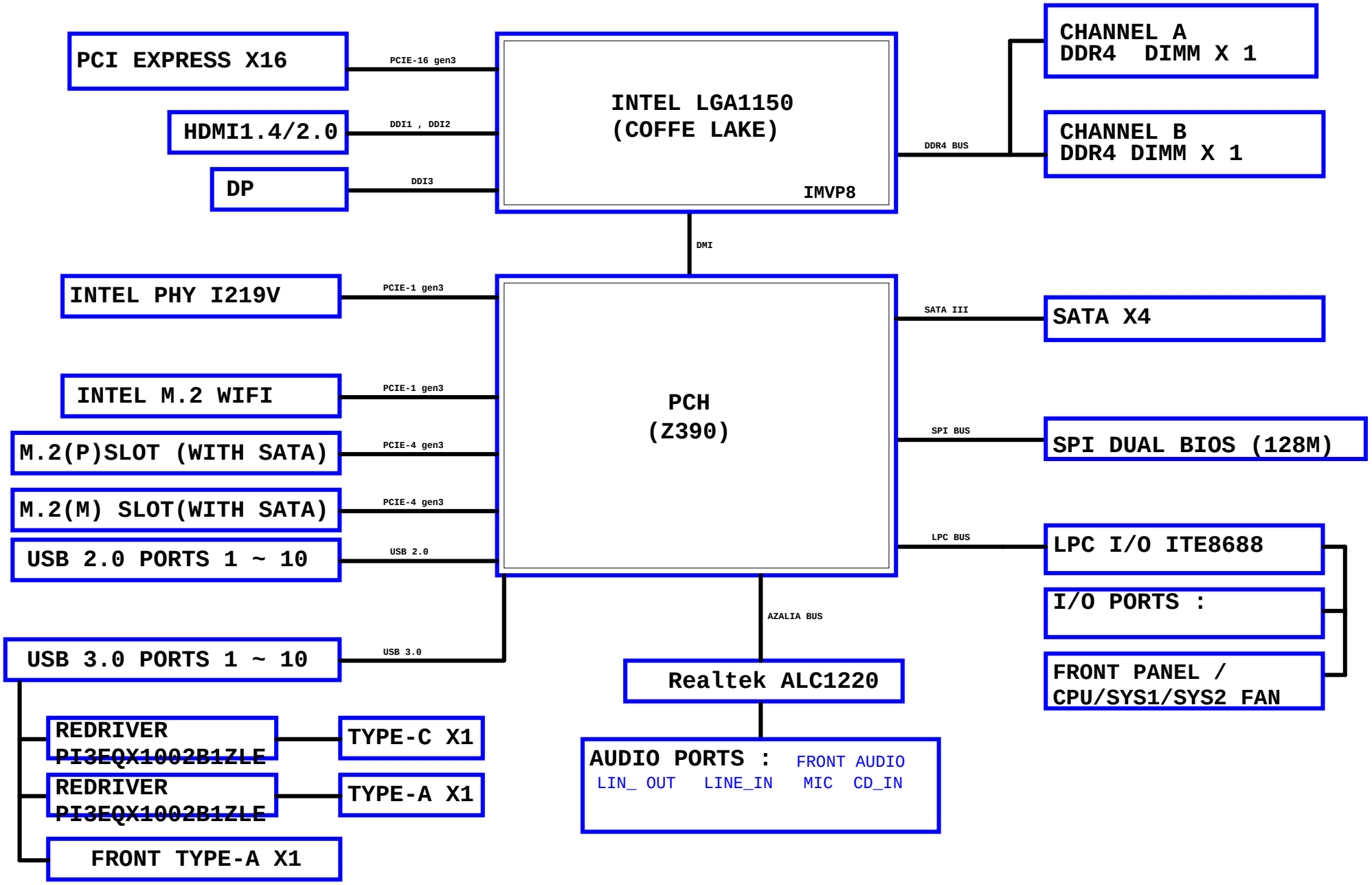
BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
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CFL_R0.5

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

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

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

HDMI2.0

DP_OUT

若有不上CODEC出貨的可能，請預留CLK and SDO對地電阻。

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

Title	CPU LGA1151-A
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Gigabyte Technology

CFL_R0.5

LGA1151A

SKT_H4

LGA1151

MDA0	AE38	DDR0_DQ[0]			
MDA1	AE37	DDR0_DQ[1]			
MDA2	AG38	DDR0_DQ[2]			
MDA3	AG37	DDR0_DQ[3]			
MDA4	AE39	DDR0_DQ[4]			
MDA5	AE40	DDR0_DQ[5]			
MDA6	AG39	DDR0_DQ[6]			
MDA7	AG40	DDR0_DQ[7]			
MDA8	AJ38	DDR0_DQ[8]			
MDA9	AJ37	DDR0_DQ[9]			
MDA10	AL38	DDR0_DQ[10]			
MDA11	AL37	DDR0_DQ[11]			
MDA12	AJ40	DDR0_DQ[12]			
MDA13	AJ39	DDR0_DQ[13]			
MDA14	AL39	DDR0_DQ[14]			
MDA15	AL40	DDR0_DQ[15]			
MDA16	AN38	DDR0_DQ[16]/DDR0_DQ[32]			
MDA17	AN40	DDR0_DQ[17]/DDR0_DQ[33]			
MDA18	AR38	DDR0_DQ[18]/DDR0_DQ[34]			
MDA19	AR37	DDR0_DQ[19]/DDR0_DQ[35]			
MDA20	AN39	DDR0_DQ[20]/DDR0_DQ[36]			
MDA21	AN37	DDR0_DQ[21]/DDR0_DQ[37]			
MDA22	AR39	DDR0_DQ[22]/DDR0_DQ[38]			
MDA23	AR40	DDR0_DQ[23]/DDR0_DQ[39]			
MDA24	AW37	DDR0_DQ[24]/DDR0_DQ[40]			
MDA25	AU38	DDR0_DQ[25]/DDR0_DQ[41]			
MDA26	AV35	DDR0_DQ[26]/DDR0_DQ[42]			
MDA27	AW35	DDR0_DQ[27]/DDR0_DQ[43]			
MDA28	AU37	DDR0_DQ[28]/DDR0_DQ[44]			
MDA29	AV37	DDR0_DQ[29]/DDR0_DQ[45]			
MDA30	AT35	DDR0_DQ[30]/DDR0_DQ[46]			
MDA31	AU35	DDR0_DQ[31]/DDR0_DQ[47]			
MDA32	AY8	DDR0_DQ[32]/DDR1_DQ[0]			
MDA33	AW8	DDR0_DQ[33]/DDR1_DQ[1]			
MDA34	AV6	DDR0_DQ[34]/DDR1_DQ[2]			
MDA35	AU6	DDR0_DQ[35]/DDR1_DQ[3]			
MDA36	AU8	DDR0_DQ[36]/DDR1_DQ[4]			
MDA37	AV8	DDR0_DQ[37]/DDR1_DQ[5]			
MDA38	AW6	DDR0_DQ[38]/DDR1_DQ[6]			
MDA39	AY6	DDR0_DQ[39]/DDR1_DQ[7]			
MDA40	AY4	DDR0_DQ[40]/DDR1_DQ[8]			
MDA41	AV4	DDR0_DQ[41]/DDR1_DQ[9]			
MDA42	AT1	DDR0_DQ[42]/DDR1_DQ[10]			
MDA43	AT2	DDR0_DQ[43]/DDR1_DQ[11]			
MDA44	AV3	DDR0_DQ[44]/DDR1_DQ[12]			
MDA45	AW4	DDR0_DQ[45]/DDR1_DQ[13]			
MDA46	AT4	DDR0_DQ[46]/DDR1_DQ[14]			
MDA47	AT3	DDR0_DQ[47]/DDR1_DQ[15]			
MDA48	AP2	DDR0_DQ[48]/DDR1_DQ[32]			
MDA49	AM4	DDR0_DQ[49]/DDR1_DQ[33]			
MDA50	AP3	DDR0_DQ[50]/DDR1_DQ[34]			
MDA51	AM3	DDR0_DQ[51]/DDR1_DQ[35]			
MDA52	AP4	DDR0_DQ[52]/DDR1_DQ[36]			
MDA53	AM2	DDR0_DQ[53]/DDR1_DQ[37]			
MDA54	AP1	DDR0_DQ[54]/DDR1_DQ[38]			
MDA55	AM1	DDR0_DQ[55]/DDR1_DQ[39]			
MDA56	AK3	DDR0_DQ[56]/DDR1_DQ[40]			
MDA57	AH1	DDR0_DQ[57]/DDR1_DQ[41]			
MDA58	AK4	DDR0_DQ[58]/DDR1_DQ[42]			
MDA59	AH2	DDR0_DQ[59]/DDR1_DQ[43]			
MDA60	AH4	DDR0_DQ[60]/DDR1_DQ[44]			
MDA61	AK2	DDR0_DQ[61]/DDR1_DQ[45]			
MDA62	AH3	DDR0_DQ[62]/DDR1_DQ[46]			
MDA63	AK1	DDR0_DQ[63]/DDR1_DQ[47]			

	AU33	DDR0_ECC[0]			
	AT33	DDR0_ECC[1]			
	AW33	DDR0_ECC[2]			
	AV31	DDR0_ECC[3]			
	AU31	DDR0_ECC[4]			
	AV33	DDR0_ECC[5]			
	AW31	DDR0_ECC[6]			
	AY31	DDR0_ECC[7]			

	AW18	M_DCLKA0	M_DCLKA0 [8]		
	AV18	M_-DCLKA0	M_-DCLKA0 [8]		
	AW17	M_DCLKA1	M_DCLKA1 [8]		
	AY17	M_-DCLKA1	M_-DCLKA1 [8]		
	AW16				
	AV16				
	AT16				
	AU16				
	AY24	CKEA0	CKEA0 [8]		
	AW24	CKEA1	CKEA1 [8]		
	AV24				
	AV25				
	AW12	M_-CSA0	M_-CSA0 [8]		
	AU11	M_-CSA1	M_-CSA1 [8]		
	AV13				
	AV10				
	AW11	MODT_A0			
	AU14	MODT_A1			
	AU12				
	AY10				
	AY13	SBAA0	SBAA0 [8]		
	AV15	SBAA1	SBAA1 [8]		
	AW23	BG_A0	BG_A0 [8]		
	AW13	MAAA16			
	AV14	MAAA14			
	AY11	MAAA15			
	AW15	MAAA0			
	AU18	MAAA1			
	AU17	MAAA2			
	AV19	MAAA3			
	AT19	MAAA4			
	AU20	MAAA5			
	AV20	MAAA6			
	AU21	MAAA7			
	AT20	MAAA8			
	AT22	MAAA9			
	AY14	MAAA10			
	AU22	MAAA11			
	AV22	MAAA12			
	AV12	MAAA13			
	AY23	BG_A1	BG_A1 [8]		
	AU24		M_-ACT_A [8]		
	AY15		M_DDR_PARA [8]		
	AT23		M_-ALERT_A [8]		

	AF39	M_-DQSA0			
	AK39	M_-DQSA1			
	AP39	M_-DQSA2			
	AU36	M_-DQSA3			
	AW7	M_-DQSA4			
	AU3	M_-DQSA5			
	AN3	M_-DQSA6			
	AJ3	M_-DQSA7			
	AF38	M_DQSA0			
	AK38	M_DQSA1			
	AP38	M_DQSA2			
	AV36	M_DQSA3			
	AV7	M_DQSA4			
	AU2	M_DQSA5			
	AN2	M_DQSA6			
	AJ2	M_DQSA7			
	AV32				
	AU32				

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_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[14]/DDR0_CAA[9]/DDR0_BG[1] DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT#

DDR0_PAR DDR0_ALERT#

DDR0_DQSN[0] DDR0_DQSN[1] DDR0_DQSN[2]/DDR0_DQSN[4] DDR0_DQSN[3]/DDR0_DQSN[5] DDR0_DQSN[4]/DDR1_DQSN[0] DDR0_DQSN[5]/DDR1_DQSN[1] DDR0_DQSN[6]/DDR1_DQSN[4] DDR0_DQSN[7]/DDR1_DQSN[5]

DDR0_DQSP[0] DDR0_DQSP[1] DDR0_DQSP[2]/DDR0_DQSP[4] DDR0_DQSP[3]/DDR0_DQSP[5] DDR0_DQSP[4]/DDR1_DQSP[0] DDR0_DQSP[5]/DDR1_DQSP[1] DDR0_DQSP[6]/DDR1_DQSP[4] DDR0_DQSP[7]/DDR1_DQSP[5]

DDR0_DQSP[8] DDR0_DQSN[8]

DDR CHANNEL A

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LGA1151B

SKT_H4

LGA1151

MDB0	AD34	DDR1_DQ[0]/DDR0_DQ[16]			
MDB1	AD35	DDR1_DQ[1]/DDR0_DQ[17]			
MDB2	AG35	DDR1_DQ[2]/DDR0_DQ[18]			
MDB3	AH35	DDR1_DQ[3]/DDR0_DQ[19]			
MDB4	AE35	DDR1_DQ[4]/DDR0_DQ[20]			
MDB5	AE34	DDR1_DQ[5]/DDR0_DQ[21]			
MDB6	AG34	DDR1_DQ[6]/DDR0_DQ[22]			
MDB7	AH34	DDR1_DQ[7]/DDR0_DQ[23]			
MDB8	AK35	DDR1_DQ[8]/DDR0_DQ[24]			
MDB9	AL35	DDR1_DQ[9]/DDR0_DQ[25]			
MDB10	AK32	DDR1_DQ[10]/DDR0_DQ[26]			
MDB11	AL32	DDR1_DQ[11]/DDR0_DQ[27]			
MDB12	AK34	DDR1_DQ[12]/DDR0_DQ[28]			
MDB13	AL34	DDR1_DQ[13]/DDR0_DQ[29]			
MDB14	AK31	DDR1_DQ[14]/DDR0_DQ[30]			
MDB15	AL31	DDR1_DQ[15]/DDR0_DQ[31]			
MDB16	AP35	DDR1_DQ[16]/DDR0_DQ[48]			
MDB17	AN35	DDR1_DQ[17]/DDR0_DQ[49]			
MDB18	AN32	DDR1_DQ[18]/DDR0_DQ[50]			
MDB19	AP32	DDR1_DQ[19]/DDR0_DQ[51]			
MDB20	AN34	DDR1_DQ[20]/DDR0_DQ[52]			
MDB21	AP34	DDR1_DQ[21]/DDR0_DQ[53]			
MDB22	AN31	DDR1_DQ[22]/DDR0_DQ[54]			
MDB23	AP31	DDR1_DQ[23]/DDR0_DQ[55]			
MDB24	AL29	DDR1_DQ[24]/DDR0_DQ[56]			
MDB25	AM29	DDR1_DQ[25]/DDR0_DQ[57]			
MDB26	AP29	DDR1_DQ[26]/DDR0_DQ[58]			
MDB27	AR29	DDR1_DQ[27]/DDR0_DQ[59]			
MDB28	AM28	DDR1_DQ[28]/DDR0_DQ[60]			
MDB29	AL28	DDR1_DQ[29]/DDR0_DQ[61]			
MDB30	AR28	DDR1_DQ[30]/DDR0_DQ[62]			
MDB31	AP28	DDR1_DQ[31]/DDR0_DQ[63]			
MDB32	AR12	DDR1_DQ[32]/DDR1_DQ[16]			
MDB33	AP12	DDR1_DQ[33]/DDR1_DQ[17]			
MDB34	AM13	DDR1_DQ[34]/DDR1_DQ[18]			
MDB35	AL13	DDR1_DQ[35]/DDR1_DQ[19]			
MDB36	AR13	DDR1_DQ[36]/DDR1_DQ[20]			
MDB37	AP13	DDR1_DQ[37]/DDR1_DQ[21]			
MDB38	AM12	DDR1_DQ[38]/DDR1_DQ[22]			
MDB39	AL12	DDR1_DQ[39]/DDR1_DQ[23]			
MDB40	AP10	DDR1_DQ[40]/DDR1_DQ[24]			
MDB41	AR10	DDR1_DQ[41]/DDR1_DQ[25]			
MDB42	AR7	DDR1_DQ[42]/DDR1_DQ[26]			
MDB43	AP7	DDR1_DQ[43]/DDR1_DQ[27]			
MDB44	AR9	DDR1_DQ[44]/DDR1_DQ[28]			
MDB45	AP9	DDR1_DQ[45]/DDR1_DQ[29]			
MDB46	AR6	DDR1_DQ[46]/DDR1_DQ[30]			
MDB47	AP6	DDR1_DQ[47]/DDR1_DQ[31]			
MDB48	AM10	DDR1_DQ[48]			
MDB49	AL10	DDR1_DQ[49]			
MDB50	AM7	DDR1_DQ[50]			
MDB51	AL7	DDR1_DQ[51]			
MDB52	AM9	DDR1_DQ[52]			
MDB53	AL9	DDR1_DQ[53]			
MDB54	AM6	DDR1_DQ[54]			
MDB55	AL6	DDR1_DQ[55]			
MDB56	AJ6	DDR1_DQ[56]			
MDB57	AJ7	DDR1_DQ[57]			
MDB58	AE6	DDR1_DQ[58]			
MDB59	AE7	DDR1_DQ[59]			
MDB60	AH7	DDR1_DQ[60]			
MDB61	AH6	DDR1_DQ[61]			
MDB62	AE7	DDR1_DQ[62]			
MDB63	AF6	DDR1_DQ[63]			

	AR25	DDR1_ECC[0]			
	AR26	DDR1_ECC[1]			
	AM26	DDR1_ECC[2]			
	AM25	DDR1_ECC[3]			
	AP26	DDR1_ECC[4]			
	AP25	DDR1_ECC[5]			
	AL25	DDR1_ECC[6]			
	AL26	DDR1_ECC[7]			

	AM20	M_DCLKB0	M_DCLKB0 [9]		
	AM21	M_-DCLKB0	M_-DCLKB0 [9]		
	AP22	M_DCLKB1	M_DCLKB1 [9]		
	AP21	M_-DCLKB1	M_-DCLKB1 [9]		
	AN20				
	AN21				
	AP19				
	AP20				
	AY29	CKEB0	CKEB0 [9]		
	AV29	CKEB1	CKEB1 [9]		
	AW29				
	AU29				
	AP17	M_-CSB0	M_-CSB0 [9]		
	AN15	M_-CSB1	M_-CSB1 [9]		
	AN17				
	AM15				
	AM16	MODT_B0			
	AL16	MODT_B1			
	AP15				
	AL15				
	AN18	MAAB16			
	AL17	MAAB14			
	AP16	MAAB15			
	AL18	SBAB0	SBAB0 [9]		
	AM18	SBAB1	SBAB1 [9]		
	AW28	BG_B0	BG_B0 [9]		
	AL19	MAAB0			
	AL22	MAAB1			
	AM22	MAAB2			
	AM23	MAAB3			
	AP23	MAAB4			
	AL23	MAAB5			
	AW26	MAAB6			
	AY26	MAAB7			
	AU26	MAAB8			
	AW27	MAAB9			
	AP18	MAAB10			
	AU27	MAAB11			
	AV27	MAAB12			
	AR15	MAAB13			
	AY28	BG_B1	BG_B1 [9]		
	AU28		M_-ACT_B [9]		
	AL20		M_DDR_PARB [9]		
	AY25		M_-ALERT_B [9]		

	AF34	M_-DQSB0			
	AK33	M_-DQSB1			
	AN33	M_-DQSB2			
	AN29	M_-DQSB3			
	AN13	M_-DQSB4			
	AR8	M_-DQSB5			
	AM8	M_-DQSB6			
	AG6	M_-DQSB7			
	AF35	M_DQSB0			
	AL33	M_DQSB1			
	AP33	M_DQSB2			
	AN28	M_DQSB3			
	AN12	M_DQSB4			
	AP8	M_DQSB5			
	AL8	M_DQSB6			
	AG7	M_DQSB7			

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_RAS#/DDR1_CAB[3]/DDR1_MA[16] DDR1_WE#/DDR1_CAB[2]/DDR1_MA[14] DDR1_CAS#/DDR1_CAB[1]/DDR1_MA[15]

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[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[14]/DDR1_CAA[9]/DDR1_BG[1] DDR1_MA[15]/DDR1_CAA[8]/DDR1_ACT#

DDR1_PAR DDR1_ALERT#

DDR1_DQSN[0]/DDR0_DQSN[2] DDR1_DQSN[1]/DDR0_DQSN[3] DDR1_DQSN[2]/DDR0_DQSN[6] DDR1_DQSN[3]/DDR0_DQSN[7] DDR1_DQSN[4]/DDR1_DQSN[2] DDR1_DQSN[5]/DDR1_DQSN[3] DDR1_DQSN[6] DDR1_DQSN[7]

DDR1_DQSP[0]/DDR0_DQSP[2] DDR1_DQSP[1]/DDR0_DQSP[3] DDR1_DQSP[2]/DDR0_DQSP[6] DDR1_DQSP[3]/DDR0_DQSP[7] DDR1_DQSP[4]/DDR1_DQSP[2] DDR1_DQSP[5]/DDR1_DQSP[3] DDR1_DQSP[6] DDR1_DQSP[7]

DDR1_DQSP[8] DDR1_DQSN[8]

DDR CHANNEL B

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DDR_VREF_CA DDR0_VREF_DQ DDR1_VREF_DQ

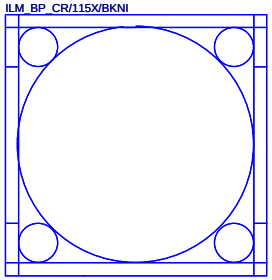
AB40 VREF_CAB → VREF_CAB [8]
AC40
AC39 VREF_DQB → VREF_DQB [9]

LGA1151 **BLACK NI**

CPU-SK/1151/S/GF

CPU-SK/1151/S/GF

ILM_BP_CR/115X/BKNI



Need check the new CPU ME

[8] MODT_A[0..1] ↔ MODT_A[0..1]
[9] MODT_B[0..1] ↔ MODT_B[0..1]

[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]

Gigabyte Technology

Title: CPU LGA1151-B

Size: Custom | Document Number: Z390 I AORUS PRO WIFI | Rev: 1.0

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CFL_R0.5

VCCSA

WBC56 22u/6/X5R/6.3V/M
WBC57 22u/6/X5R/6.3V/M
WBC51 22u/6/X5R/6.3V/M
WBC52 22u/6/X5R/6.3V/M

CPU POWER

VCCST_VCCPLL
VCCSFUSEPRG

VCCIO

WBC69 22u/6/X5R/6.3V/M
WBC70 22u/6/X5R/6.3V/M
WBC71 22u/6/X5R/6.3V/M
WBC72 22u/6/X5R/6.3V/M
WBC73 22u/6/X5R/6.3V/M
WBC74 22u/6/X5R/6.3V/M

VCCGT

LGA1151J SKT_H4
LGA1151

AA34 AA35 AA36 AA37 AA38 AB33 AB34 G36 G37 G38 G39 G40 H36 H38 H40 J36 J37 J38 J39 J40 K36 K38 K40 L34 L35 L36 L37 L38 L39 L40 M33 M34 M36 M38 M40 N34 N35 N36 N37 N38 N39 N40 P33 P34 P36 P38 P40 R34 R35 R36 R37 R38 R39 R40 T33 T34 T36 T38 T40 U34 U35 U36 U37 U38 U39 U40 V33 V34 V36 V38 V40 W34 W35 W36 W37 W38 Y33 Y34 Y36 Y38 — VCCGT

VCCGT_SENSE F39
VSSGT_SENSE F38

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CPU-SK/1151/S/GF

VCCSA

LGA1151K SKT_H4
LGA1151

AA7 AB6 AB7 AB8 AC7 AC8 N7 P7 R7 T7 U7 Y6 Y7 Y8 W7 V7 AA6 — VCCSA

VCCIO

AK11 AK14 AK24 AJ23 M8 P8 T8 U8 W8 — VCCIO

VCCST_VCCPLL V5
VCCSFUSEPRG V6
VCCST_VCCPLL V4

VCCST
VCCFUSEPRG
VCCSFR

VDDQ

VDDQ_AT18 AT18
VDDQ_AT21 AT21
VDDQ_AU13 AU13
VDDQ_AU15 AU15
VDDQ_AU19 AU19
VDDQ_AU23 AU23
VDDQ_AV11 AV11
VDDQ_AV17 AV17
VDDQ_AV21 AV21
VDDQ_AW10 AW10
VDDQ_AW14 AW14
VDDQ_AW25 AW25
VDDQ_AY12 AY12
VDDQ_AY16 AY16
VDDQ_AY18 AY18
VDDQ_AY23 AY23

VCCPLL_OC AJ9 VCCPLL_S

WR86 MASK/0/4/SHT/20/X
WBC50 0.47u/2/X5R/6.3V/K
VCCPLL_OC

VCCSA_SENSE AD5
VCCIO_SENSE AF4
VSS_SAIO_SENSE AE4

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CPU-SK/1151/S/GF

LGA1151L SKT_H4
LGA1151

PEG_VIEW[0] J8
PEG_VIEW[1] J7
PEG_VIEW[2] L8
PEG_VIEW[3] K8
DDR_VIEW[0] AV1
DDR_VIEW[1] AW2
EXTBGREF H8
FIVR_PROBE_ANA[0] K10
FIVR_PROBE_ANA[1] L10
VCCCOREG0 J17
VCCCOREG1 B39
VCCCOREG3 C40
VCCCOREG4 J19
CPU_EDM[0] G8
CPU_EDM[1] AY3
CPU_TRIGGERIN D1
CPUTRIGGEROUT B3
HVM_CLK_P L12
HVM_CLK_N K12

RSVD_AC37 AC37
RSVD_AB35 AB35
RSVD_AB37 AB37
RSVD_AB38 AB38
RSVD_AJ22 AJ22
RSVD_D15 D15
RSVD_K11 K11
THERMDA1 J15
THERMDC1 J14
THERMDA2 AU9
THERMDC2 AU10
LGC_SPARE[0] J13
LGC_SPARE[1] K13
LGC_SPARE[2] J11

??? WTP2 WTP3 WTP4 WTP5

WR89 560/4/1

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CPU-SK/1151/S/GF

[13] N_PCH_CPU_TI
[13] A_CPU_PCH_TO
WR88 33/4 A_CPU_PCH_TO_R

VCCGT_SENSE [25]
VSSGT_SENSE [25]

Gigabyte Technology

Title: CPU LGA1151-C

Size: Custom
Document Number: Z390 I AORUS PRO WIFI
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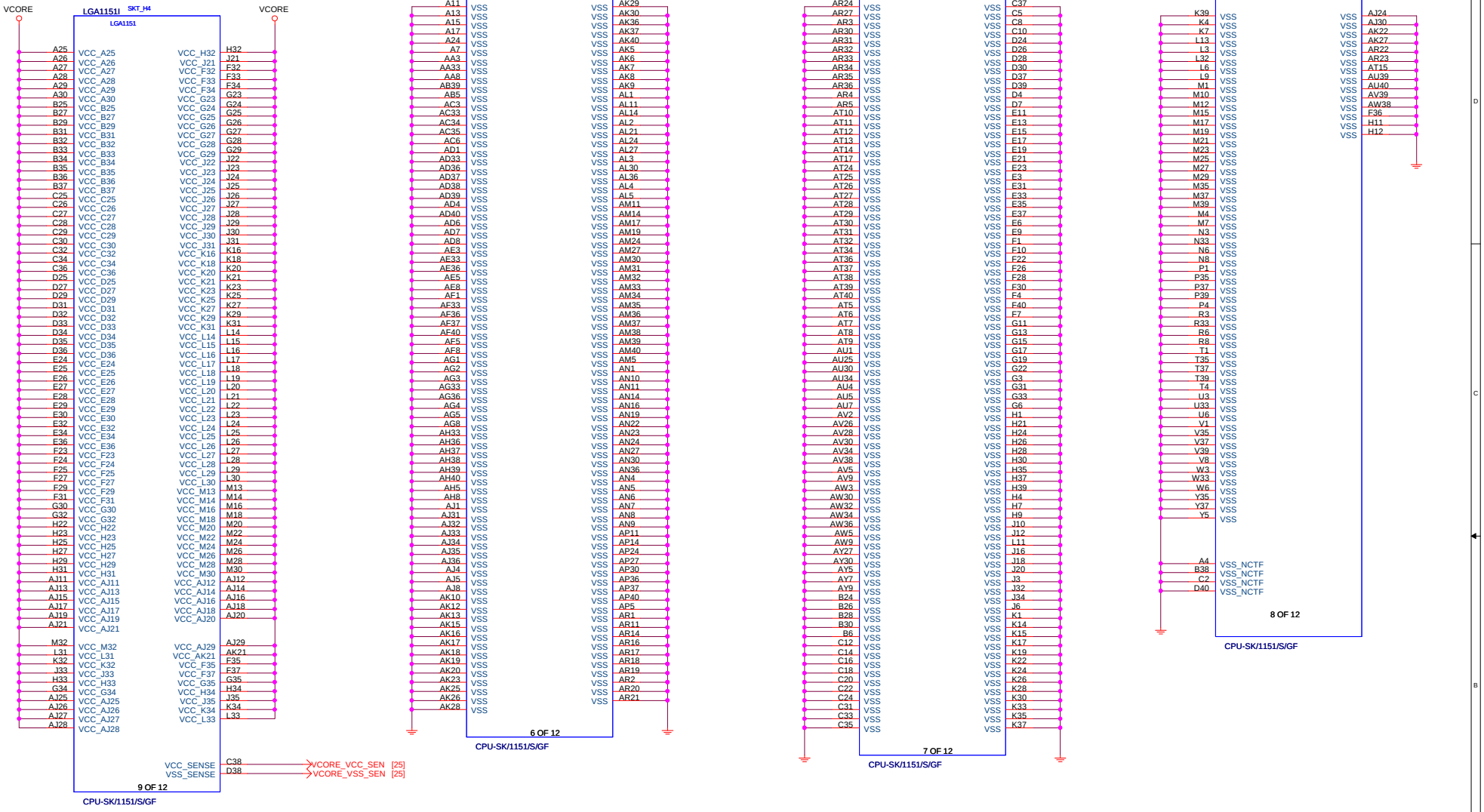
CFL_R0.5



Gigabyte Technology		
Title: CPU LGA1151-C		
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
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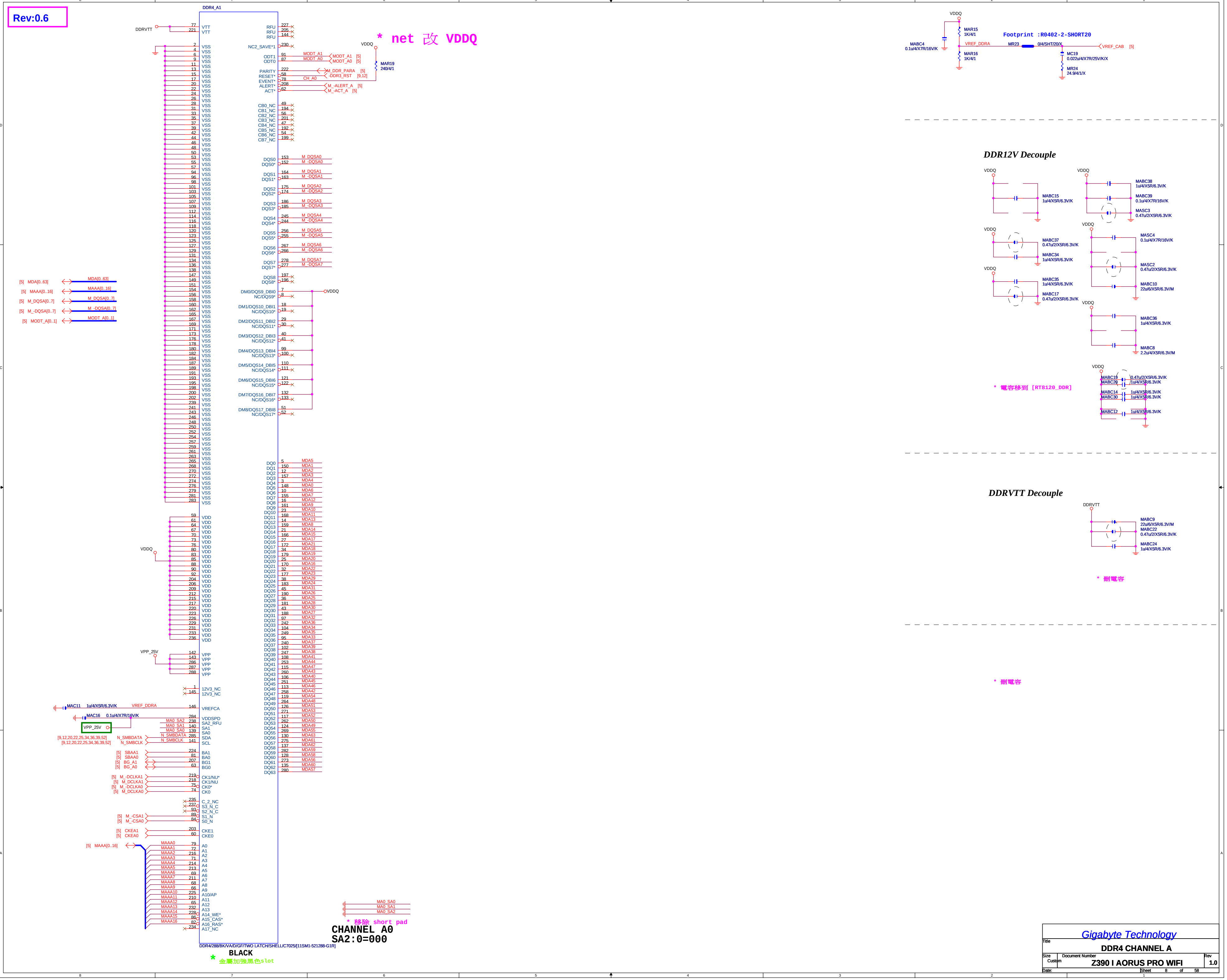
Rev:0.6
DDR4_A1
* net 改 VDDQ
Footprint :R0402-2-SHORT20
DDR12V Decouple
* 電容移到 [RT8120_DDR]
DDRVTT Decouple
* 刪電容
* 刪電容
* 移除 short pad
CHANNEL A0
SA2:0=000
DDR4/288/BK/VA/D/GF/TWO LATCH/SHELL/C7025/[11SM1-S21288-G1R]
* BLACK
金屬加強黑色slot
Gigabyte Technology
Title
DDR4 CHANNEL A
Size
Custom
Document Number
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Rev
1.0
Date:
Sheet 8 of 58

Rev:0.6

DDR4_B1

* net 改 VDDQ

DDRVTT

VDDQ

MAR18 1K/4/1

MAR17 1K/4/1

Footprint :R0402-2-SHORT20

MABC5 0.1u/4/X7R/16V/K

MR25 0/4/SHT/20/X

VREF_DQB [5]

MC30 0.022u/4/X7R/25V/K/X

MR26 24.9/4/1/X

MAR22 240/4/1

MDB[0..63]

MAAB[0..16]

M_DQSB[0..7]

M_-DQSB[0..7]

MODT_B[0..1]

VPP_25V

MAC12 0.1u/4/X7R/16V/K VREF_DDRB

MAC15 0.1u/4/X7R/16V/K

* 移除 short pad

CHANNEL B0
SA2:0=010

BLACK

* 金属加强黑色slot

DDR4/288/BK/VA/D/GF/TWO LATCH/SHELL/C7025[11SM1-52128B-G1R]

Gigabyte Technology

Title: DDR4 CHANNEL B

Size: Custom | Document Number: Z390 I AORUS PRO WIFI | Rev: 1.0

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CNP_R1.0

STRAP

VCC3_PCH

NR108 1K/4/1/X N_ICH_SPI_MOSI NR109 8.2K/4/X
BOOT HALT ENABLED IF LOW, PCH HAS INTERNAL WEAK PU

NR111 1K/4/1/X N_ICH_SPI_MISO NR112 8.2K/4/X
JTAG ODT IS DISABLED IF LOW, PCH HAS INTERNAL WEAK PU

NR115 1K/4/1/X N_SPI_DQ2 NR116 20K/4/1
CONSENT STRAP IS ENABLED IF LOW, PCH HAS INTERNAL WEAK PU

NR117 1K/4/1/X N_SPI_DQ3 NR118 20K/4/1
PESONALITY STRAP IS ENABLED IF LOW, PCH HAS INTERNAL WEAK PU

NR120 20K/4/1/X N_GPP_H12 NR121 8.2K/4/X
ESPI FLASH SHARING MODE, PCH HAS INTERNAL WEAK PU
0: MASTER ATTACHED FLASH SHARIN
1:SLAVE ATTACEHD FLASH SHARING

NR427 20K/4/1 N_GPP_H15 NR428 4.7K/4/1/X
JTAG ODT IS DISABLED IF LOW

3VDUAL_PCH
NR1 8.2K/4/X

PCHA

BE36 GPP_A_11_PMEB_SD_VDD2_PWR_EN_B
R15 TD_ANODE
R13 TD_CATHODE
AL37 FPF_VREF
AN35 FPF_MON
AU41 SPI0_MOSI_IO_0
BA45 SPI0_MISO_IO_1
AY47 SPI0_FLASH_0_CSB
AW47 SPI0_CLK
AW48 SPI0_FLASH_1_CSB
AY48 SPI0_IO_2
BA46 SPI0_IO_3
AT40 SPI0_TPM_CSB
BE19 GPP_D_1_SPI1_CLK_SBK_1_BK_1
BF19 GPP_D_0_SPI1_CSB_SBK_0_BK_0
BF18 GPP_D_3_SPI1_MOSI_IO_0_SBK_3_BK_3
BE18 GPP_D_2_SPI1_MISO_IO_1_SBK_2_BK_2
BC17 GPP_D_22_SPI1_IO_3
BD17 GPP_D_21_SPI1_IO_2

AV29 GPP_B_13_PLTRSTB → N_-PFMRST [17]
Y47 GPP_K_16_GSXCLK
Y46 GPP_K_12_GSXDOUT
Y48 GPP_K_13_GSXSLOAD
W46 GPP_K_14_GSXDIN
AA45 GPP_K_15_GSXSRESETB → M2_BT_DISABLE [24]
AL47 GPP_E_3_CPU_GP_0
AM45 GPP_E_7_CPU_GP_1
BF32 GPP_B_3_CPU_GP_2 N_GPP_B3 → N_GPP_B3 [19]
BC33 GPP_B_4_CPU_GP_3 N_GPP_B4 → N_GPP_B4 [19]
AE44 GPP_H_18_SML4ALERTB
AJ46 GPP_H_17_SML4DATA
AE43 GPP_H_16_SML4CLK
AC47 GPP_H_15_SML3ALERTB N_GPP_H15
AD48 GPP_H_14_SML3DATA
AF47 GPP_H_13_SML3CLK
AB47 GPP_H_12_SML2ALERTB N_GPP_H12
AD47 GPP_H_11_SML2DATA
AE48 GPP_H_10_SML2CLK
BB44 INTRUDERB → N_-INTRUDER [12]

1 of 13
Z390/MP/B0/S/[10HB1-03Z390-30R]

[16] N_ICH_SPI_MOSI → N_ICH_SPI_MOSI NR7 15/4/1 N_SPI_MOSI_R
N_SPI_MISO_R
N_-SPI_CS_R
N_SPI_CLK_R
[16] N_SPI_DQ3 → N_SPI_DQ3 NR14 15/4/1 N_SPI_DQ2_R N_SPI_DQ3_R
N_GPP_D21

NRN5 15/8P4R/4
[16] N_ICH_SPI_MISO → N_ICH_SPI_MISO N_SPI_MISO_R
[16] N_SPI_DQ2 → N_SPI_DQ2 N_SPI_DQ2_R
[16,17] N_-ICH_SPI_CS → N_-ICH_SPI_CS N_-SPI_CS_R
[16] N_ICH_SPI_CLK → N_ICH_SPI_CLK N_SPI_CLK_R

PCHE

AT6 GPP_I_0_DDSP_HPD_0_DISP_MISC_0
AN10 GPP_I_1_DDSP_HPD_1_DISP_MISC_1
AP9 GPP_I_2_DDSP_HPD_2_DISP_MISC_2
AL15 GPP_I_3_DDSP_HPD_3_DISP_MISC_3
AN6 GPP_I_4_EDP_HPD_DISP_MISC_4

[39] N_HDMI20_HDP_F
[38] DP_HDP
N_GPP_I3
N_GPP_I4

AL13 GPP_I_5_DDPB_CTRLCLK
AR8 GPP_I_6_DDPB_CTRLDATA
AN13 GPP_I_7_DDPC_CTRLCLK N_DDPC_CTRLCLK → N_DDPC_CTRLCLK [39]
AL10 GPP_I_8_DDPC_CTRLDATA N_DDPC_CTRLDATA → N_DDPC_CTRLDATA [39]
AL9 GPP_I_9_DDPD_CTRLCLK N_DDPD_CTRLCLK → N_DDPD_CTRLCLK [38]
AR3 GPP_I_10_DDPD_CTRLDATA N_DDPD_CTRLDATA → N_DDPD_CTRLDATA [38]
AT49 GPP_F_22_DDPF_CTRLCLK N_GPP_F22
AN40 GPP_F_23_DDPF_CTRLDATA N_GPP_F23
AP41 GPP_F_14_EXT_PWR_GATEB_PS_ONB N_PS_ONB → N_PS_ONB [17]
M45 GPP_K_23_IMGCLKOUT_1
L48 GPP_K_22_IMGCLKOUT_0 N_GPP_K22
T45 GPP_K_21_CORE_VID_1 N_GPP_K21
T46 GPP_K_20_CORE_VID_0 N_GPP_K20
AJ47 GPP_H_23_TIME_SYNC_0

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Z390/MP/B0/S/[10HB1-03Z390-30R]

VCC3
N_GPP_I3 NR27 8.2K/4
N_GPP_I4 NR24 100K/4/1

VCC3
N_GPP_F23 NR29 8.2K/4/X
N_GPP_F22 NR30 8.2K/4/X
N_GPP_K22 NR33 8.2K/4/X
NRN1 8.2K/8P4R/4/X
[11] N_GPP_K18 → N_GPP_K18
[11] N_GPP_K19 → N_GPP_K19
N_GPP_K21
N_GPP_K20

3VDUAL
N_GPP_D21 NR299 1K/4/1

NRN11 8.2K/8P4R/4
VCC3
[12] N_-DDR_V_SEL → N_-DDR_V_SEL
[13] N_GPP_K2 → N_GPP_K2
[12,17] N_-CLK_RUN → N_-CLK_RUN
N_GPP_B8 NR2 8.2K/4/X
N_GPP_B10 NR11 8.2K/4/X
N_GPP_H0 NR15 8.2K/4/X

PCHG

NTP26 N_GPP_A16 BE33 GPP_A_16_CLKOUT_48
[4] N_24MCLK → N_24MCLK D7 CLKOUT_CPUNSSC_P
[4] N_-24MCLK → N_-24MCLK C6 CLKOUT_CPUNSSC_N
[4] N_CPUCLK → N_CPUCLK B8 CLKOUT_CPUBCLK_P
[4] N_-CPUCLK → N_-CPUCLK C8 CLKOUT_CPUBCLK_N
XTALO_PCH U9 XTAL_OUT
XTALI_PCH U10 XTAL_IN
NR31 60.4/4/1 XCLK_BIASREF T3 XCLK_BIASREF
N_Y1 BA49 RTCX1
N_Y2 BA48 RTCX2

CLK:4/15<1000;Guard GND

[20] -PCIEX16_PR → N_GPP_B5 BF31 GPP_B_5_SRCCLKREQB_0
BE31 GPP_B_6_SRCCLKREQB_1
[22] M2M_-CLKREQ → N_GPP_B8 AR32 GPP_B_7_SRCCLKREQB_2
BB30 GPP_B_8_SRCCLKREQB_3
BA30 GPP_B_9_SRCCLKREQB_4
[21] M2P_-CLKREQ → N_GPP_B10 AN29 GPP_B_10_SRCCLKREQB_5
[43] LA_-CLKREQ → N_GPP_H0 AE47 GPP_H_0_SRCCLKREQB_6
AC48 GPP_H_1_SRCCLKREQB_7
AE41 GPP_H_2_SRCCLKREQB_8
AF48 GPP_H_3_SRCCLKREQB_9
AC41 GPP_H_4_SRCCLKREQB_10
AC39 GPP_H_5_SRCCLKREQB_11
AE39 GPP_H_6_SRCCLKREQB_12
AB48 GPP_H_7_SRCCLKREQB_13
AC44 GPP_H_8_SRCCLKREQB_14
AC43 GPP_H_9_SRCCLKREQB_15

V2 CLKOUT_SRC_N_15
V3 CLKOUT_SRC_P_15
T2 CLKOUT_SRC_N_14
T1 CLKOUT_SRC_P_14
AA1 CLKOUT_SRC_N_13
Y2 CLKOUT_SRC_P_13
AC7 CLKOUT_SRC_N_12
AC6 CLKOUT_SRC_P_12

CLKOUT_ITPXDP_N Y3
CLKOUT_ITPXDP_P Y4
CLKOUT_CPUPCIBCLK_N B6 → N_-CPUPCIBCLK [4]
CLKOUT_CPUPCIBCLK_P A6 → N_CPUPCIBCLK [4]
CLKOUT_SRC_N_0 AJ6 → PA_-SRCCLK_3GIO [20]
CLKOUT_SRC_P_0 AJ7 → PA_SRCCLK_3GIO [20] PCIEX16
CLKOUT_SRC_N_1 AH9
CLKOUT_SRC_P_1 AH10
CLKOUT_SRC_N_2 AE14
CLKOUT_SRC_P_2 AE15
CLKOUT_SRC_N_3 AE6 → CK_M2M_100M_DN [22]
CLKOUT_SRC_P_3 AE7 → CK_M2M_100M_DP [22] M.2_M
CLKOUT_SRC_N_4 AC2
CLKOUT_SRC_P_4 AC3
CLKOUT_SRC_N_5 AB2 → CK_M2P_100M_DN [21]
CLKOUT_SRC_P_5 AB3 → CK_M2P_100M_DP [21] M.2_P
CLKOUT_SRC_N_6 W4 → LA_-SRCCLK_LAN [43]
CLKOUT_SRC_P_6 W3 → LA_SRCCLK_LAN [43] I219V
CLKOUT_SRC_N_7 W7
CLKOUT_SRC_P_7 W6
CLKOUT_SRC_N_8 AC14
CLKOUT_SRC_P_8 AC15
CLKOUT_SRC_N_9 U2
CLKOUT_SRC_P_9 U3
CLKOUT_SRC_N_10 AC9
CLKOUT_SRC_P_10 AC11
CLKOUT_SRC_N_11 AE9
CLKOUT_SRC_P_11 AE11
CLKIN_XTAL_LCP R6 → CNVI_CLKIN [24]

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Z390/MP/B0/S/[10HB1-03Z390-30R]

NR32如果有問題就改回68/4/1

XTALI_PCH_R NR32 0/4/SHT/M/X XTALI_PCH
NX1
NR34 200K/4/1
XTALO_PCH
24M/12p/30ppm/3.2*2.5/70/S
SMD X'TAL
NC1 12p/4/NPO/50V/J
NC2 12p/4/NPO/50V/J

CLK:4/15<1000 mils±100 mils;Guard GND

N_Y1
N_Y2 NR37 10M/4
SMD X'TAL
NX2
NC3 15P/4/NPO/50V/J
NC4 15P/4/NPO/50V/J
32.768K/12.5p/20ppm/3.2*1.5/70

ANS 6489537

GIGABYTE

Title	PCH CLOCK BUFFER	
Size Custom	Document Number Z390 I AORUS PRO WIFI	Rev 1.0
Date: Thursday, August 23, 2018	Sheet 10 of 58	

CNP_R0.1

注意左側Table及下方訊號名稱改USB31

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

USB pin out map

PCH

USB31_1
USB31_2
USB31_3
USB31_4
USB31_5
USB31_6
USB30_7
USB30_8
USB30_9
USB30_10

PCHF

F_TYPE-C
LAN_USB30
R_TYPE_A
R_TYPE_C

USB31_1_RXN D11 [40] PCH_USB31_RXN1
USB31_1_RXP C11 [40] PCH_USB31_RXP1
USB31_1_TXN F9 [40] PCH_USB31_TXN1
USB31_1_TXP F7 [40] PCH_USB31_TXP1
USB31_2_RXN B9 [40] PCH_USB31_RXN2
USB31_2_RXP C9 [40] PCH_USB31_RXP2
USB31_2_TXN C3 [40] PCH_USB31_TXN2
USB31_2_TXP D4 [40] PCH_USB31_TXP2
USB31_3_RXN B10 [44] PCH_USB30_RXN3
USB31_3_RXP C10 [44] PCH_USB30_RXP3
USB31_3_TXN F11 [44] PCH_USB30_TXN3
USB31_3_TXP G12 [44] PCH_USB30_TXP3
USB31_4_RXN K16 [44] PCH_USB30_RXN4
USB31_4_RXP J15 [44] PCH_USB30_RXP4
USB31_4_TXN B14 [44] PCH_USB30_TXN4
USB31_4_TXP C14 [44] PCH_USB30_TXP4
USB31_5_RXN J13 [42] PCH_USB31_RXN5
USB31_5_RXP K13 [42] PCH_USB31_RXP5
USB31_5_TXN C15 [42] PCH_USB31_TXN5
USB31_5_TXP B15 [42] PCH_USB31_TXP5
USB31_6_RXN G14 [42] PCH_USB31_RXN6
USB31_6_RXP F14 [42] PCH_USB31_RXP6
USB31_6_TXN C17 [42] PCH_USB31_TXN6
USB31_6_TXP C16 [42] PCH_USB31_TXP6

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Z390/MP/B0/S/[10HB1-03Z390-30R]

GPP_A_1_LAD_0_ESPI_IO_0 BB39 N_LAD0 → N_LAD0 [17,18]
GPP_A_2_LAD_1_ESPI_IO_1 AW37 N_LAD1 → N_LAD1 [17,18]
GPP_A_3_LAD_2_ESPI_IO_2 AV37 N_LAD2 → N_LAD2 [17,18]
GPP_A_4_LAD_3_ESPI_IO_3 BA38 N_LAD3 → N_LAD3 [17,18]
GPP_A_5_LFRAMEB_ESPI_CS0B BE38 N_-LFRAME → N_-LFRAME [17,18]
GPP_A_6_SERIRQ_ESPI_CS1B AW35 N_SERIRQ → N_SERIRQ [17,18]
GPP_A_7_PIRQAB_ESPI_ALERT0B BA36 N_-LDRQ0 → N_-LDRQ0 [17]
GPP_A_0_RCINB_ESPI_ALERT1B BE39 N_-KBRST → N_-KBRST [17]
GPP_A_14_SUS_STATB_ESPI_RESETB BF38 N_GPP_A14
GPP_A_9_CLKOUT_LPC_0_ESPI_CLK BB36 N_GPP_A9 NR46 10/4 → T_TPMCLK [18]
GPP_A_10_CLKOUT_LPC_1 BB34 N_GPP_A10 NR47 10/4 → N_LPC24MA [17]
GPP_K_19_SMIB T48 N_GPP_K19 → N_GPP_K19 [10]
GPP_K_18_SMIB T47 N_GPP_K18 → N_GPP_K18 [10]
GPP_E_6_SATA_DEVSLP_2 AH40
GPP_E_5_SATA_DEVSLP_1 AH35
GPP_E_4_SATA_DEVSLP_0 AL48 → N_DEVSLP0 [21]
GPP_F_9_SATA_DEVSLP_7 AP47
GPP_F_8_SATA_DEVSLP_6 AN37
GPP_F_7_SATA_DEVSLP_5 AN46
GPP_F_6_SATA_DEVSLP_4 AR47 → N_DEVSLP4 [22]
GPP_F_5_SATA_DEVSLP_3 AP48 N_GPP_F5 → N_GPP_F5 [13]

3VDUAL
N_-LDRQ0 NR50 8.2K/4/X
N_GPP_A14 NR51 8.2K/4

VCC3
N_SERIRQ NR48 8.2K/4
N_-KBRST NR49 8.2K/4

DMI need to reverse

PCHB

A_DMI_3TXN [4] → A_DMI_3TXN K34
A_DMI_3TXP [4] → A_DMI_3TXP J35
A_DMI_3RXN [4] → A_DMI_3RXN C33
A_DMI_3RXP [4] → A_DMI_3RXP B33
A_DMI_2TXN [4] → A_DMI_2TXN G33
A_DMI_2TXP [4] → A_DMI_2TXP F34
A_DMI_2RXN [4] → A_DMI_2RXN C32
A_DMI_2RXP [4] → A_DMI_2RXP B32
A_DMI_1TXN [4] → A_DMI_1TXN K32
A_DMI_1TXP [4] → A_DMI_1TXP J32
A_DMI_1RXN [4] → A_DMI_1RXN C31
A_DMI_1RXP [4] → A_DMI_1RXP B31
A_DMI_0TXN [4] → A_DMI_0TXN G30
A_DMI_0TXP [4] → A_DMI_0TXP F30
A_DMI_0RXN [4] → A_DMI_0RXN C29
A_DMI_0RXP [4] → A_DMI_0RXP B29

DMI_0_RXN M29
DMI_0_RXP K29
DMI_0_TXN E28
DMI_0_TXP D29
DMI_1_RXN M26
DMI_1_RXP L26
DMI_1_TXN C27
DMI_1_TXP B27
DMI_2_RXN G26
DMI_2_RXP F26
DMI_2_TXN B26
DMI_2_TXP C26
DMI_3_RXN R24
DMI_3_RXP P24
DMI_3_TXN B25
DMI_3_TXP A25
DMI_4_RXN
DMI_4_RXP
DMI_4_TXN
DMI_4_TXP
DMI_5_RXN
DMI_5_RXP
DMI_5_TXN
DMI_5_TXP
DMI_6_RXN
DMI_6_RXP
DMI_6_TXN
DMI_6_TXP
DMI_7_RXN
DMI_7_RXP
DMI_7_TXN
DMI_7_TXP

USB2N_1 J3 N_-USBP1 [40]
USB2P_1 J2 N_+USBP1 [40]
USB2N_2 N13
USB2P_2 N15
USB2N_3 K4 N_-USBP3 [44]
USB2P_3 K3 N_+USBP3 [44]
USB2N_4 M10 N_-USBP4 [44]
USB2P_4 L9 N_+USBP4 [44]
USB2N_5 M1 N_-USBP5 [41]
USB2P_5 L2 N_+USBP5 [41]
USB2N_6 K7 N_-USBP6 [41]
USB2P_6 K6 N_+USBP6 [41]
USB2N_7 L4 N_-USBP7 [47]
USB2P_7 L3 N_+USBP7 [47]
USB2N_8 G4 N_-USBP8 [47]
USB2P_8 G5 N_+USBP8 [47]
USB2N_9 M6 N_-USBP9 [48]
USB2P_9 N8 N_+USBP9 [48]
USB2N_10 H3 N_-USBP10 [48]
USB2P_10 H2 N_+USBP10 [48]
USB2N_11 R10 N_-USBP11 [49]
USB2P_11 P9 N_+USBP11 [49]
USB2N_12 G1 N_-USBP12 [49]
USB2P_12 G2 N_+USBP12 [49]
USB2N_13 N3 N_-USBP13 [52]
USB2P_13 N2 N_+USBP13 [52]
USB2N_14 E5
USB2P_14 E6

F_TYPE-C
LAN_USB30
R_TYPE_A
R_TYPE_C
R_USB30
F_USB30
F_USB1
MCU 8297

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

GPP_E_9_USB2_OCB_0 AH36
GPP_E_10_USB2_OCB_1 AL40
GPP_E_11_USB2_OCB_2 AJ44
GPP_E_12_USB2_OCB_3 AL41
GPP_F_15_USB2_OCB_4 AV47
GPP_F_16_USB2_OCB_5 AR35
GPP_F_17_USB2_OCB_6 AR37
GPP_F_18_USB2_OCB_7 AV43 N_-USBOC_7

N_-USBOC_F [40,48]
N_-USBOC_R [41,48]

3VDUAL
NR39 8.2K/4

USB2_COMP F4 N_USB2_COMP NR40 115/4/1
USB2_VBUSSENSE E3 N_USB2_VBUSSENSE NR41 10K/4/1
USB2_PLLMON U13 USB2_PLLMON NTP38
USB2_ID G3 N_USB2_ID NR42 10K/4/1/X

GPD_7 BE41 N_GPD_7

STRAP

3VDUAL
NR411 1K/4/1/X N_GPD_7 NR412 1K/4/1
XTAL INPUT MODE, PCH HAS INTERNAL 20K PD
HIGH:XTAL INPUT IS DIFFERENTIAL
LOW:XTAL INPUT IS SINGLE-ENDED

R_USB30
F_USB30
I219V

[47] PCH_USB30_RXN7 G17
[47] PCH_USB30_RXP7 F16
[47] PCH_USB30_TXN7 A17
[47] PCH_USB30_TXP7 B17
[47] PCH_USB30_RXN8 R21
[47] PCH_USB30_RXP8 P21
[47] PCH_USB30_TXN8 B18
[47] PCH_USB30_TXP8 C18
[48] PCH_USB30_RXN9 K18
[48] PCH_USB30_RXP9 J18
[48] PCH_USB30_TXN9 B19
[48] PCH_USB30_TXP9 C19
[48] PCH_USB30_RXN10 N18
[48] PCH_USB30_RXP10 R18
[48] PCH_USB30_TXN10 D20
[48] PCH_USB30_TXP10 C20
[43] LA_ML_IN F20
[43] LA_ML_IP G20
[43] LA_ML_ON B21
[43] LA_ML_OP A22

PCIE_1_USB31_7_RXN K21
PCIE_1_USB31_7_RXP J21
PCIE_1_USB31_7_TXN D21
PCIE_1_USB31_7_TXP C21
PCIE_2_USB31_8_RXN L24
PCIE_2_USB31_8_RXP J24
PCIE_2_USB31_8_TXN C23
PCIE_2_USB31_8_TXP B23
PCIE_3_USB31_9_RXN F24
PCIE_3_USB31_9_RXP G24
PCIE_3_USB31_9_TXN B24
PCIE_3_USB31_9_TXP C24
PCIE_4_USB31_10_RXN
PCIE_4_USB31_10_RXP
PCIE_4_USB31_10_TXN
PCIE_4_USB31_10_TXP
PCIE_5_LAN_0A_RXN
PCIE_5_LAN_0A_RXP
PCIE_5_LAN_0A_TXN
PCIE_5_LAN_0A_TXP
PCIE_6_RXN
PCIE_6_RXP
PCIE_6_TXN
PCIE_6_TXP
PCIE_7_RXN
PCIE_7_RXP
PCIE_7_TXN
PCIE_7_TXP
PCIE_8_RXN
PCIE_8_RXP
PCIE_8_TXN
PCIE_8_TXP

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PCIE_21_RXN T43
PCIE_21_RXP R44
PCIE_21_TXN G47
PCIE_21_TXP F46
PCIE_22_RXN U40
PCIE_22_RXP U41
PCIE_22_TXN H47
PCIE_22_TXP H48
PCIE_23_RXN W43
PCIE_23_RXP W44
PCIE_23_TXN G49
PCIE_23_TXP G48
PCIE_24_RXN Y40
PCIE_24_RXP Y41
PCIE_24_TXN G46
PCIE_24_TXP G45

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CNP_R0.1

PCHD

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PCHK

Z390/MP/B0/S/[10HB1-03Z390-30R]

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STRAP

只有SUPPORT_CEC功能的model才需要更改
N_GPP_A8改接到N_-CLK_RUN

只有SUPPORT_CEC功能的model才需要更改
NR122改接到3VDUAL_PCH

At least 10ms delay after 3VDUAL_PCH stabel

REMOVE NR125

REMOVE NR73

N_GPP_C17/C16 -->TEST PIN

N_INTERMEN : Integrated 1.05V SUS VRM Enable

RB 必須放在BAT外

BAT-PASTE

HEADER_DIP

CLR_CMOS

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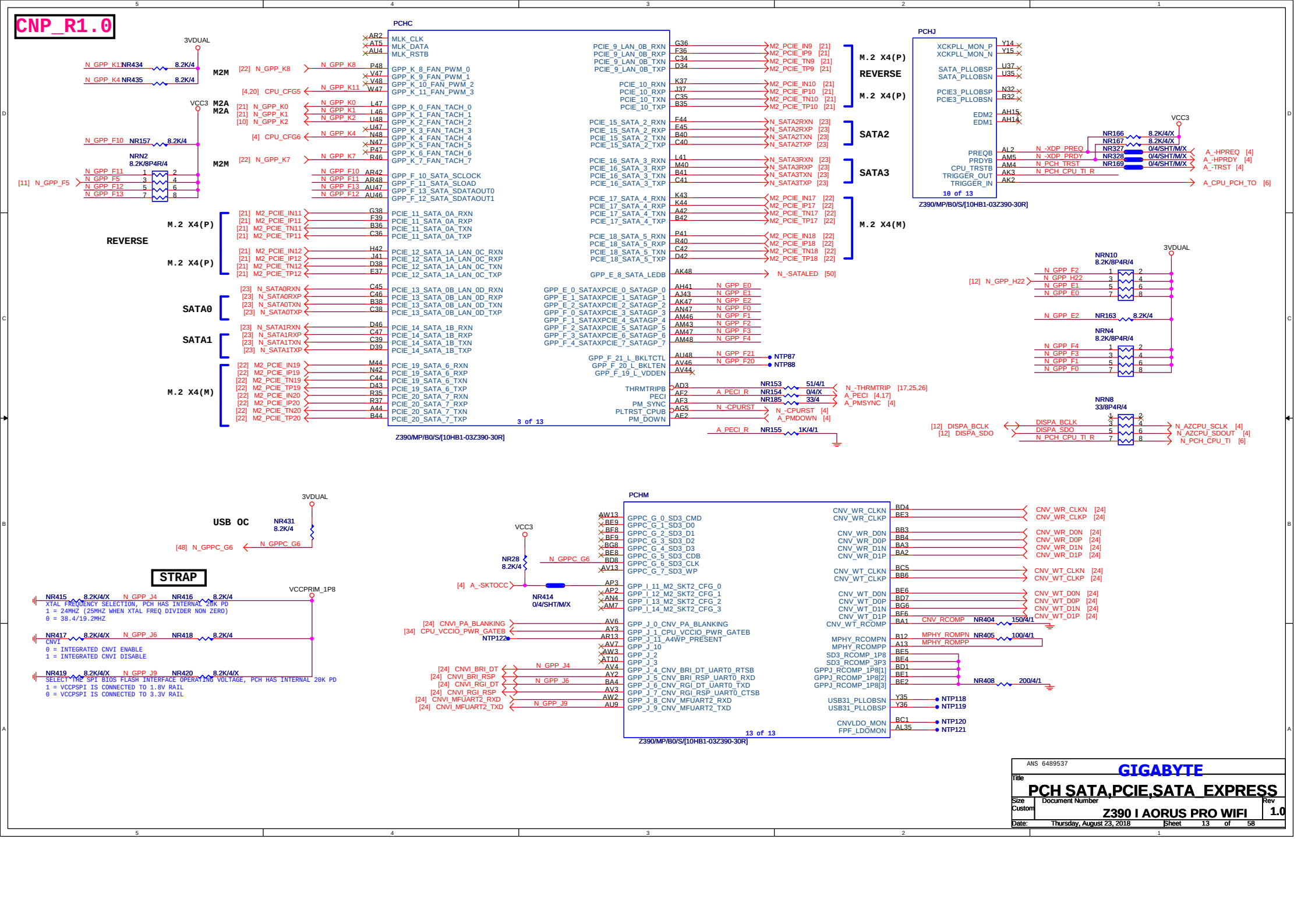
CNP_R1.0
PCHC
PCHJ
PCHM
M.2 X4(P)
REVERSE
M.2 X4(P)
SATA2
SATA3
M.2 X4(M)
M2M
M2A
SATA0
SATA1
USB OC
STRAP
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GIGABYTE
PCH SATA,PCIE,SATA EXPRESS
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CNP_R0.1

PCHH

VCC1_05_PCH
VCC1_05_AMPHYPLL
NR180 MASK/0/6/SHT/M/X
NBC70 1u/4/X5R/6.3V/K
NBC29 22u/6/X5R/6.3V/M
NBC28 22u/6/X5R/6.3V/M

VCCDSW_1P05
NBC69 1u/4/X5R/6.3V/K

VCC1_05_PCH
VCCA_XTAL_1P05
NR182 MASK/0/6/SHT/M/X
NBC11 22u/6/X5R/6.3V/M
NBC12 22u/6/X5R/6.3V/M

VCC1_05_SRC
VCC1_05_OC
NBC74 0.47u/2/X5R/6.3V/K/X
NBC27 0.47u/2/X5R/6.3V/K/X

VCC1_05_PCH
NBC33 0.47u/2/X5R/6.3V/K
NBC34 1u/4/X5R/6.3V/K
NBC35 1u/4/X5R/6.3V/K
NBC36 0.47u/2/X5R/6.3V/K
NBC37 0.47u/2/X5R/6.3V/K

VCC1_05_PCH
NBC31 1u/4/X5R/6.3V/K
NBC78 0.47u/2/X5R/6.3V/K
NBC79 1u/4/X5R/6.3V/K
NBC80 1u/4/X5R/6.3V/K
NBC81 22u/6/X5R/6.3V/M

VCC1_05_PCH	AA22	VCCPRIM_1P05[1]
	AA23	VCCPRIM_1P05[2]
	AB20	VCCPRIM_1P05[3]
	AB22	VCCPRIM_1P05[4]
	AB23	VCCPRIM_1P05[5]
	AB27	VCCPRIM_1P05[6]
	AB28	VCCPRIM_1P05[7]
	AB30	VCCPRIM_1P05[8]
	AD20	VCCPRIM_1P05[9]
	AD23	VCCPRIM_1P05[10]
	AD27	VCCPRIM_1P05[11]
	AD28	VCCPRIM_1P05[12]
	AD30	VCCPRIM_1P05[13]
	AF23	VCCPRIM_1P05[14]
	AF27	VCCPRIM_1P05[15]
	AF30	VCCPRIM_1P05[16]
VCC1_05_PCH	U26	VCCMPHY_1P05[1]
	U29	VCCMPHY_1P05[2]
	V25	VCCMPHY_1P05[3]
	V27	VCCMPHY_1P05[4]
	V28	VCCMPHY_1P05[5]
	V30	VCCMPHY_1P05[6]
	V31	VCCMPHY_1P05[7]
VCC1_05_PCH	AD31	VCCPRIM_FUSE_1P05
VCC1_05_PCH	AE17	VCCPRIM_CNV_HVLDO_1P05
VCC1_05_PCH	W22	VCCDUSB_1P05[1]
	W23	VCCDUSB_1P05[2]
VCCDSW_1P05	BG45	VCCDSW_1P05[1]
	BG46	VCCDSW_1P05[2]
VCC1_05_PCH	W31	VCCCLPLLEBB_1P05
VCC1_05_PCH	D1	VCCAZPLL_1P05[1]
	E1	VCCAZPLL_1P05[2]
VCC1_05_AMPHYPLL	C49	VCCAMPHYPLL_1P05[1]
	D49	VCCAMPHYPLL_1P05[2]
	E49	VCCAMPHYPLL_1P05[3]
VCCA_XTAL_1P05	P2	VCCA_XTAL_1P05[1]
	P3	VCCA_XTAL_1P05[2]
VCC1_05_PCH	W19	VCCA_SRC_1P05[1]
	W20	VCCA_SRC_1P05[2]
VCC1_05_PCH	C1	VCCA_OCPLL1_1P05[1]
	C2	VCCA_OCPLL1_1P05[2]
VCC1_05_PCH	V19	VCCA_OC_1P05
VCC1_05_PCH	B1	VCCA_BCLKPLL2_1P05[1]
	B2	VCCA_BCLKPLL2_1P05[2]
	B3	VCCA_BCLKPLL2_1P05[3]

NR424 MASK/0/6/SHT/M/X VCC1_05_SRC
NR410 MASK/0/6/SHT/M/X VCC1_05_OC

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VCCPHVC_3P3	AW9	VCC3_PCH
VCCRTCEXT[1]	BF47	N_RTCEXT_CAP → NBC2 0.1u/4/X7R/16V/K
VCCRTCEXT[2]	BG47	
VCCPUSB2_3P3	V23	VCC3_PCH
VCCPSPI	AN44	VCC3_PCH
VCCPRTC_3P3[1]	BC49	N_RTCVDD [12,50]
VCCPRTC_3P3[2]	BD49	
VCCPGPPC_G_3P3	AN21	VCC3_PCH
VCCPHVLDO_3P3[1]	AY8	VCC3_PCH
VCCPHVLDO_3P3[2]	BB7	
VCCPGPPHK[1]	AC35	VCC3_PCH
VCCPGPPHK[2]	AC36	
VCCPGPPEF[1]	AE35	VCC3_PCH
VCCPGPPEF[2]	AE36	
VCCPGPPD	AN24	VCC3_PCH
VCCPGPPBC[1]	AN26	VCC3_PCH
VCCPGPPBC[2]	AP26	
VCCPGPPA	AN32	VCC3_PCH
VCCPFUSE_3P3	AT44	VCC3_PCH
VCCPDSW_3P3[1]	BE48	3VDUAL_PCH
VCCPDSW_3P3[2]	BE49	
VCCPAZIO	BB14	VCC3_PCH
VCCPRIM_1P8[1]	AG19	VCCPRIM_1P8
VCCPRIM_1P8[2]	AG20	
VCCPRIM_1P8[3]	AN15	
VCCPRIM_1P8[4]	AR15	
VCCPRIM_1P8[5]	BB11	
VCCPHVLDO_1P8[1]	AF19	INTERNAL LDO OUTPUT → VCCPHVLDO_1P8
VCCPHVLDO_1P8[2]	AF20	
VCCFHV1_2P8	AG31	VCC1_05_PCH
VCCFHV0_2P8	AF31	
VCCLDOSRAM_IN_1P24[1]	AK22	VCCDPHY_1P24
VCCLDOSRAM_IN_1P24[2]	AK23	
VCCDPHY_1P24[1]	AJ22	VCCDPHY_1P24
VCCDPHY_1P24[2]	AJ23	
VCCDPHY_1P24[3]	BG5	VCCDPHY_1P24
VCCMPHY_SENSE	K47	VCCMPHY_SENSE [33]
VSSMPHY_SENSE	K46	

REMOVE NTP123 FOR LAYOUT

3VDUAL
VCC3_PCH
NR174 0/8P4R/0402/SHT/X
NBC3 4.7u/6/X5R/6.3V/K

N_RTCVDD
NBC23 0.1u/4/X7R/16V/K/X
NBC24 0.47u/2/X5R/6.3V/K

VCC3_PCH
NBC71 0.1u/4/X7R/16V/K/X
NBC72 0.1u/4/X7R/16V/K/X
NBC73 0.1u/4/X7R/16V/K/X

VCCPHVLDO_1P8
NR425 MASK/0/6/SHT/M/X
VCCPRIM_1P8
REMOVE NR426
NBC75 4.7u/6/X5R/6.3V/K

3VDUAL_PCH
NBC76 0.1u/4/X7R/16V/K/X

VCCDPHY_1P24
NBC77 4.7u/6/X5R/6.3V/K

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PCHI

A2	VSS		VSS	AL12			
A28	VSS		VSS	AL17			
A3	VSS		VSS	AL21			
A33	VSS		VSS	AL24			
A37	VSS		VSS	AL26			
A4	VSS		VSS	AL29			
A45	VSS		VSS	AL33			
A46	VSS		VSS	AL38			
A47	VSS		VSS	AM1			
A48	VSS		VSS	AM18			
A5	VSS		VSS	AM32			
A8	VSS		VSS	AM49			
AA19	VSS		VSS	AN12			
AA20	VSS		VSS	AN16			
AA25	VSS		VSS	AN34			
AA27	VSS		VSS	AN38			
AA28	VSS		VSS	AP4			
AA30	VSS		VSS	AP46			
AA31	VSS		VSS	AR12			
AA49	VSS		VSS	AR16			
AA5	VSS		VSS	AR34			
AB19	VSS		VSS	AR38			
AB25	VSS		VSS	AT1			
AB31	VSS		VSS	AT16			
AC12	VSS		VSS	AT18			
AC17	VSS		VSS	AT21			
AC33	VSS		VSS	AT24			
AC38	VSS		VSS	AT26			
AC4	VSS		VSS	AT29			
AC46	VSS		VSS	AT32			
AD1	VSS		VSS	AT34			
AD19	VSS		VSS	AT45			
AD2	VSS		VSS	AV11			
AD22	VSS		VSS	AV39			
AD25	VSS		VSS	AW10			
AD49	VSS		VSS	AW4			
AE12	VSS		VSS	AW40			
AE33	VSS		VSS	AW46			
AE38	VSS		VSS	B47			
AE4	VSS		VSS	B48			
AE46	VSS		VSS	B49			
AF22	VSS		VSS	BA12			
AF25	VSS		VSS	BA14			
AF28	VSS		VSS	BA44			
AG1	VSS		VSS	BA5			
AG22	VSS		VSS	BA6			
AG23	VSS		VSS	BB41			
AG25	VSS		VSS	BB43			
AG27	VSS		VSS	BB9			
AG28	VSS		VSS	BC10			
AG30	VSS		VSS	BC13			
AG49	VSS		VSS	BC15			
AH12	VSS		VSS	BC19			
AH17	VSS		VSS	BC24			
AH33	VSS		VSS	BC26			
AH38	VSS		VSS	BC31			
AJ19	VSS		VSS	BC35			
AJ20	VSS		VSS	BC40			
AJ25	VSS		VSS	BC45			
AJ27	VSS		VSS	BC8			
AJ28	VSS		VSS	BD43			
AJ30	VSS		VSS	BE44			
AJ31	VSS		VSS	BF1			
AK19	VSS		VSS	BF2			
AK20	VSS		VSS	BF3			
AK25	VSS		VSS	BF48			
AK27	VSS		VSS	BF49			
AK28	VSS		VSS	BG17			
AK30	VSS		VSS	BG2			
AK31	VSS		VSS	BG22			
AK4	VSS		VSS	BG25			
AK46	VSS		VSS	BG28			
	VSS	9 of 13	VSS				

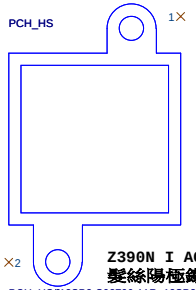
Z390/MP/B0/S/[10HB1-03Z390-30R]

PCHL

BG3	VSS		VSS	M24			
BG33	VSS		VSS	M32			
BG37	VSS		VSS	M34			
BG4	VSS		VSS	M49			
BG48	VSS		VSS	M5			
C12	VSS		VSS	N12			
C25	VSS		VSS	N16			
C30	VSS		VSS	N34			
C4	VSS		VSS	N35			
C48	VSS		VSS	N37			
C5	VSS		VSS	N38			
D12	VSS		VSS	P26			
D16	VSS		VSS	P29			
D17	VSS		VSS	P4			
D30	VSS		VSS	P46			
D33	VSS		VSS	R12			
D8	VSS		VSS	R16			
E10	VSS		VSS	R26			
E13	VSS		VSS	R29			
E15	VSS		VSS	R3			
E17	VSS		VSS	R34			
E19	VSS		VSS	R38			
E22	VSS		VSS	R4			
E24	VSS		VSS	T17			
E26	VSS		VSS	T18			
E31	VSS		VSS	T32			
E33	VSS		VSS	T4			
E35	VSS		VSS	T49			
E40	VSS		VSS	T5			
E42	VSS		VSS	T7			
E8	VSS		VSS	U12			
F41	VSS		VSS	U15			
F43	VSS		VSS	U17			
F47	VSS		VSS	U21			
G44	VSS		VSS	U24			
G6	VSS		VSS	U33			
H8	VSS		VSS	U38			
J10	VSS		VSS	V20			
J26	VSS		VSS	V22			
J29	VSS		VSS	V4			
J4	VSS		VSS	V46			
J40	VSS		VSS	W25			
J46	VSS		VSS	W27			
J47	VSS		VSS	W28			
J48	VSS		VSS	W30			
J9	VSS		VSS	Y10			
K11	VSS		VSS	Y12			
K39	VSS		VSS	Y17			
M16	VSS		VSS	Y33			
M18	VSS		VSS	Y38			
M21	VSS		VSS	Y9			
	VSS	12 of 13	VSS				

Z390/MP/B0/S/[10HB1-03Z390-30R]

HEATSINK

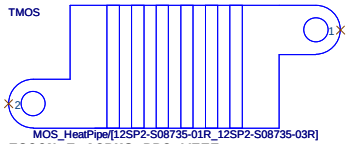


Z390N I AORUS PRO WIFI
髮絲陽極鐵灰色鋁擠

PCH_HS/[12SP2-S03706-11R_12SP2-S03706-13R]

Footprint :BGAHSINK-Z370N_WIFI

VCore MOS Heatsink



MOS_HeatPipe/[12SP2-S08735-01R_12SP2-S08735-03R]

Z390N I AORUS PRO WIFI
髮絲陽極鐵灰色鋁擠+PANTONE8404局部印刷

Footprint :MOSHSINK-Z370N_WIFI

PCH_MS FOOTPRINT 改為以M2P 螺絲孔80P上件.

ANS 6489537

GIGABYTE

Title: PCH GND

Size	Document Number	Rev
Custom	Z390 I AORUS PRO WIFI	1.0

Date: Thursday, August 23, 2018 Sheet 15 of 58

DUAL BIOS

MOSI For DMI RX Termination Voltage

指定用DII

3VDUAL

BSR1 330/4

BSR2 1K/4/1

BSR3 0/4/X

Single BIOS OPTION

-SPI_CS_1 → -SPI_CS_1 [17]

S0T23

N_-ICH_SPI_CS → N_-ICH_SPI_CS [10,17]

BSQ1 MMBT2222A/SOT23/600mA/40

BSQ2 MMBT2222A/SOT23/600mA/40 S0T23

-SPI_HOLD_B BSR4 8.2K/4

指定用DII

BSR5 330/4

BSR6 1K/4/1

-SPI_CS_2 → -SPI_CS_2 [17]

BSQ3 MMBT2222A/SOT23/600mA/40 S0T23

N_-ICH_SPI_CS

BSQ4 MMBT2222A/SOT23/600mA/40 S0T23

-SPI_HOLD_M BSR7 8.2K/4

M_BIOS

1	CS#	VDD	8
2	SO	HOLD#	7
3	WP#	SCK	6
4	VSS	SI	5

-SPI_CS_1 BSR8 22/4

SPI_MISO

[10] N_SPI_DQ2 BSR9 0/4/SHT/X N_-SPI_WP0

BSC1 10p/4/NPO/50V/J/X

BSR12 0/4/SHT/M/X

BSC2 0.47u/2/X5R/6.3V/K

-HOLD0 BSR13 0/4/SHT/X N_SPI_DQ3 [10]

N_ICH_SPI_CLK

N_ICH_SPI_MOSI

BSC3 10p/4/NPO/50V/J/X

MAIN BIOS

128M/Q/SPI/SO8/S

* (footprint 改 IC8-BIOS)

[17] -SPI_HOLD_M BSR16 1K/4/1

[17] -SPI_HOLD_B BSR17 1K/4/1

[10] N_ICH_SPI_MISO BSR18 8.2K/4

[10] N_ICH_SPI_MISO BSR19 22/4 SPI_MISO

B_BIOS

1	CS#	VDD	8
2	SO	HOLD#	7
3	WP#	SCK	6
4	VSS	SI	5

-SPI_CS_2 BSR10 22/4

SPI_MISO

[10] N_SPI_DQ2 BSR11 0/4/SHT/X N_-SPI_WP1

BSR14 0/4/SHT/M/X

BSC4 0.47u/2/X5R/6.3V/K

-HOLD1 BSR15 0/4/SHT/X N_SPI_DQ3 [10]

N_ICH_SPI_CLK [10]

N_ICH_SPI_MOSI [10]

BACKUP BIOS

128M/Q/SPI/SO8/S

* (footprint 改 IC8-BIOS)

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

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

1 means floating
0 means PD 1K

M_BIOS

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

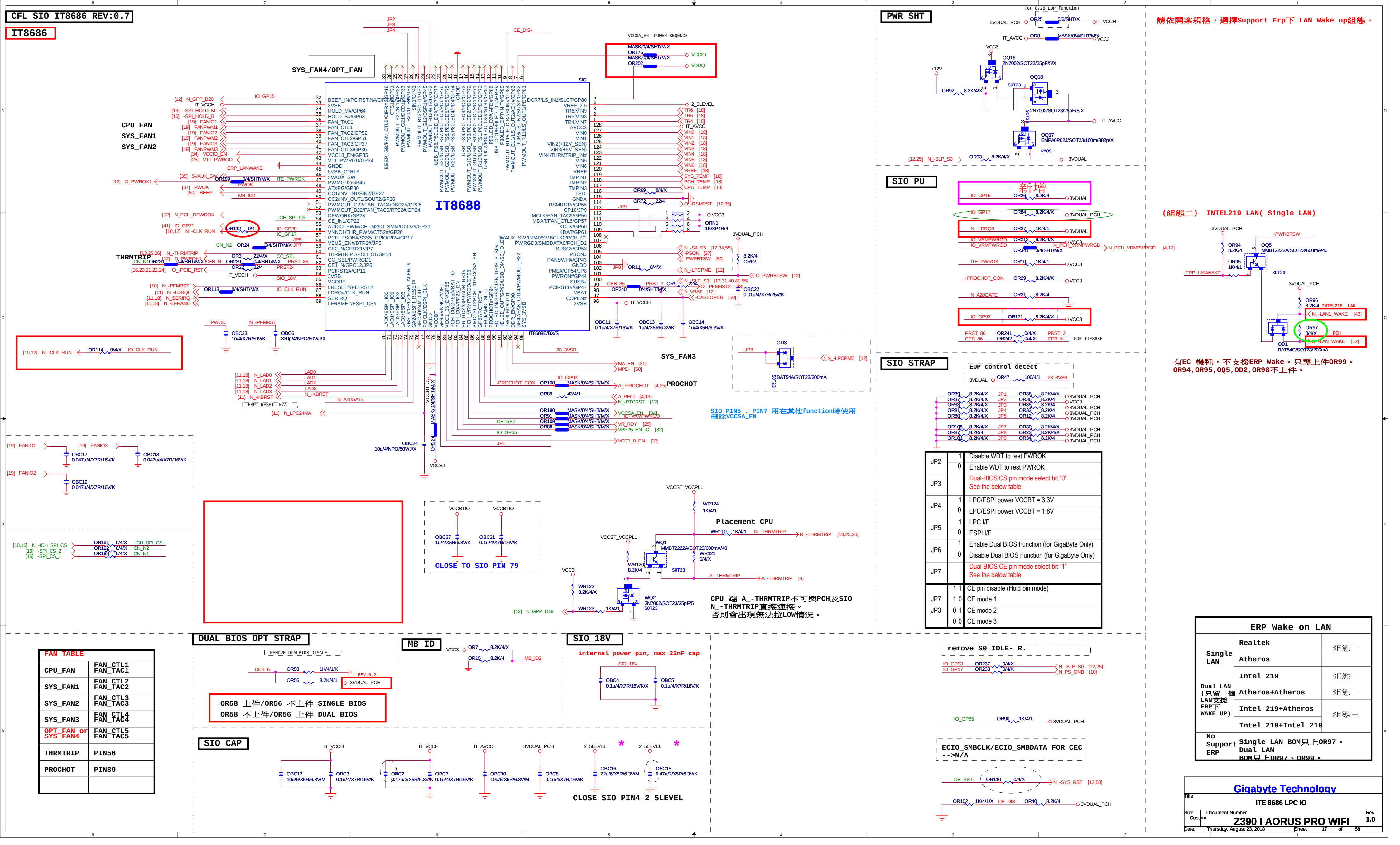
* 試產先上 , PVT 移除

Gigabyte Technology

Title: BIOS

Size: Custom | Document Number: Z390 I AORUS PRO WIFI | Rev: 1.0

Date: Thursday, August 23, 2018 | Sheet 16 of 58



FAN TABLE

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

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

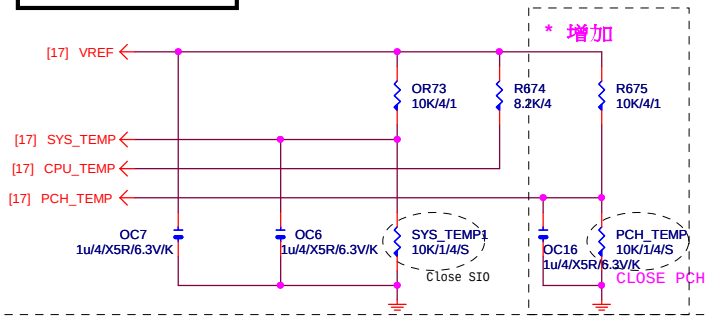
ERP Wake on LAN

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。	

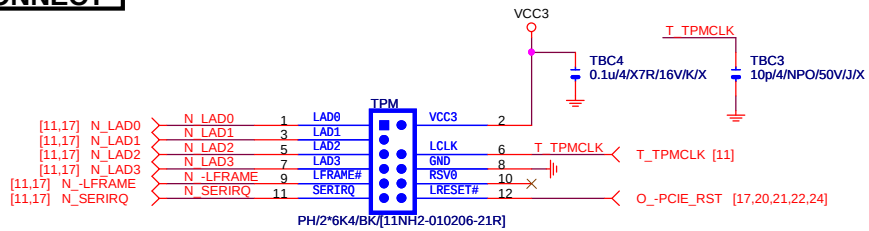
Gigabyte Technology

Title	ITE 8686 LPC IO
Size: Custom	Document Number: Z390 I AORUS PRO WIFI
Rev	1.0
Date: Thursday, August 23, 2018	Sheet 17 of 58

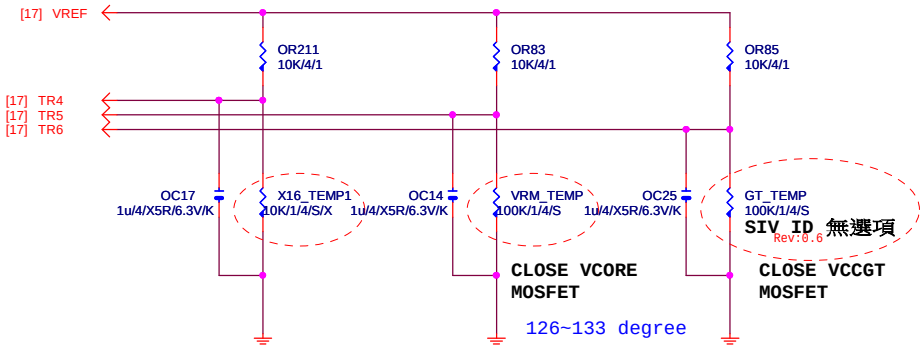
TEMP H/W MONITOR



TPM CONNECT



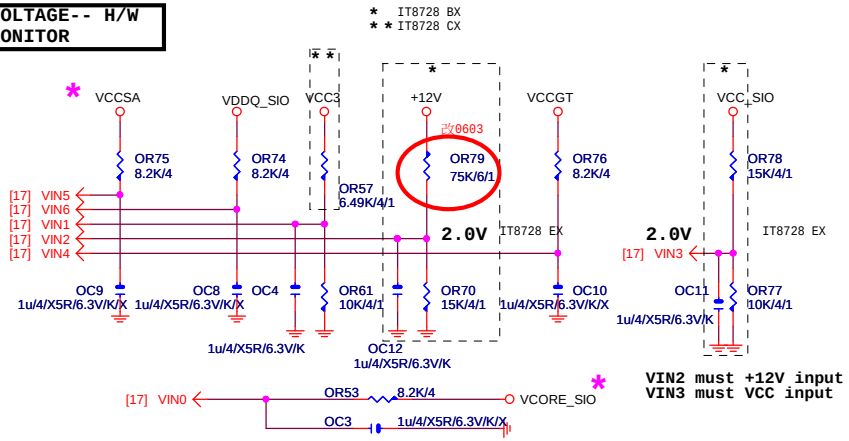
低階機種:3個FAN時使用

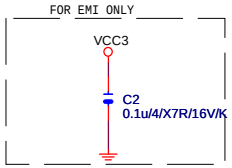


ESPI POWER

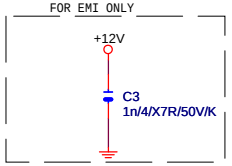
JP4 LOW ESPI MODE
VCCBT 1.8V

VOLTAGE-- H/W MONITOR





★Update 2015-04.24

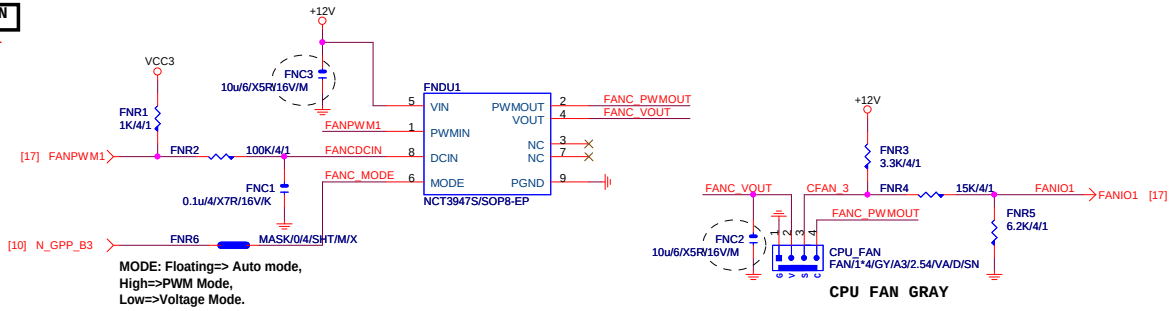


Gigabyte Technology		
Title: HWM,KB/MS, FAN CTRL		
Size: B	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
Date: Thursday, August 23, 2018	Sheet 18 of 58	

Rev: 0.81

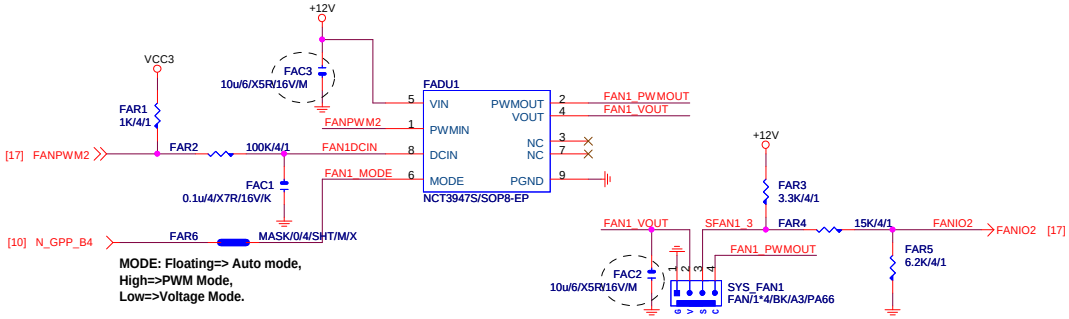
CPU SMART FAN

★Update 2016.06.01



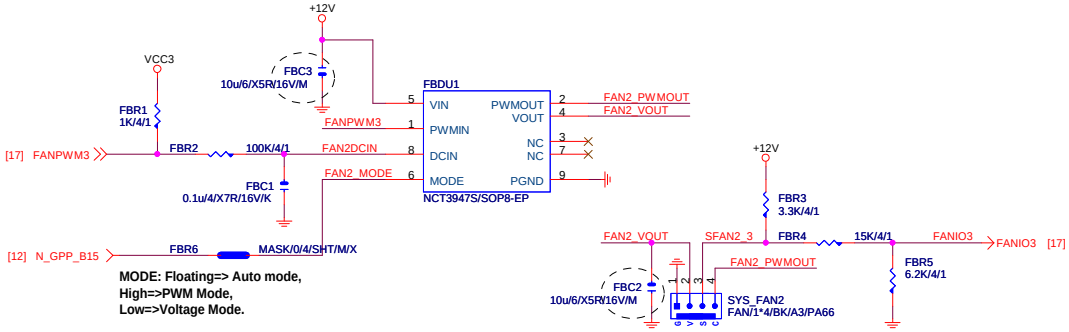
SYSTEM FAN1

A.



SYSTEM FAN2

B.



SYSTEM FAN3

C.

Gigabyte Technology		
Title: FAN CTRL		
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
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Rev 0.2

+12 protect
short-wire test

PCIESLOT-164STH

3GIO_*16

PCIEX16

KEY

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

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

黑色金屬加強

FOR MINI ITX

Gigabyte Technology

Title	PCI EXPRESS * 16	
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
Date: Thursday, August 23, 2018	Sheet 20 of 58	

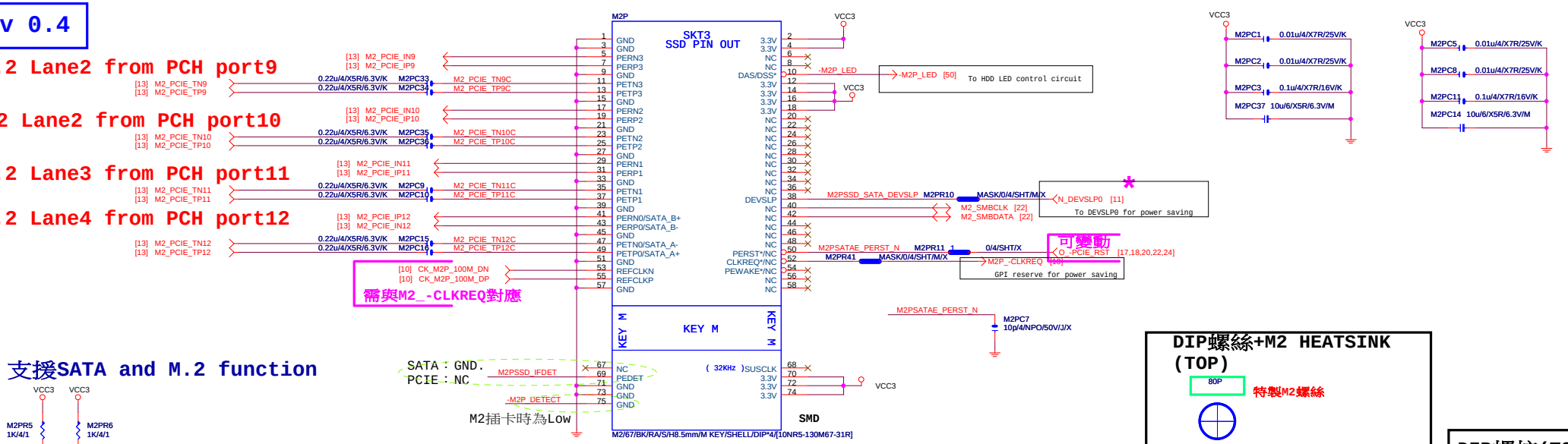
Rev 0.4

M.2 Lane2 from PCH port9

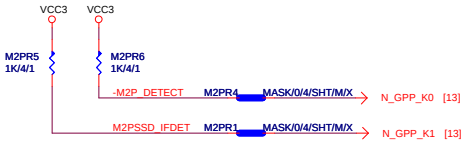
M.2 Lane2 from PCH port10

M.2 Lane3 from PCH port11

M.2 Lane4 from PCH port12



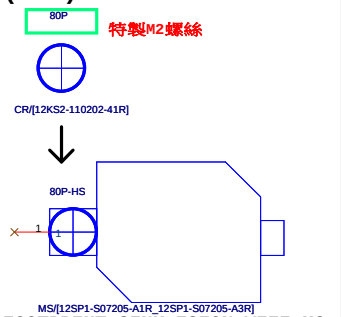
支援SATA and M.2 function



架高,金屬殼,正反上件正面
料號-31R/-21R需搭配80P-HS為何種TYPE使用.

NEW FOOTPRINT: M2_80_CUT42

DIP螺絲+M2 HEATSINK (TOP)



FOOTPRINT:SINK_Z370N_WIFI-M2

DIP螺柱(TOP)

SMD螺柱(TOP)

* **FOOTPRINT:276c236B165P**

Gigabyte Technology		
Title: M.2 X4		
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
Date: Thursday, August 23, 2018	Sheet 21 of 58	

Rev 0.1

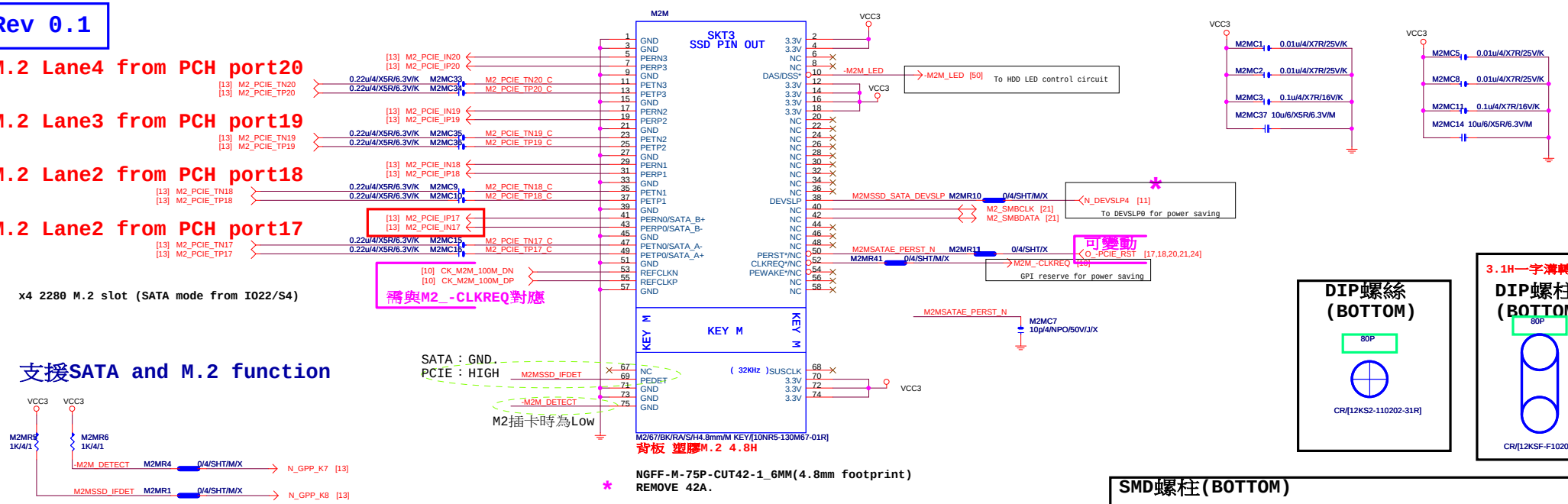
M.2 Lane4 from PCH port20

M.2 Lane3 from PCH port19

M.2 Lane2 from PCH port18

M.2 Lane2 from PCH port17

x4 2280 M.2 slot (SATA mode from IO22/S4)



需與M2_-CLKREQ對應

可變動

SATA：GND.
PCIE：HIGH

M2插卡時為Low

背板 塑膠M.2 4.8H

NGFF-M-75P-CUT42-1_6MM(4.8mm footprint)
REMOVE 42A.

支援SATA and M.2 function

Flex IO priority	N_GPP_K8	IO22 PCIe#17	IO23 PCIe#18	IO24 PCIe#19	IO25 PCIe#20
M2M SATA	L	SATA 4	PCIE	PCIE	PCIE
M2M PCIE	H	PCIE	PCIE	PCIE	PCIE

DIP螺絲 (BOTTOM)

80P

CR/[12KS2-110202-31R]

3.1H一字溝轉接柱

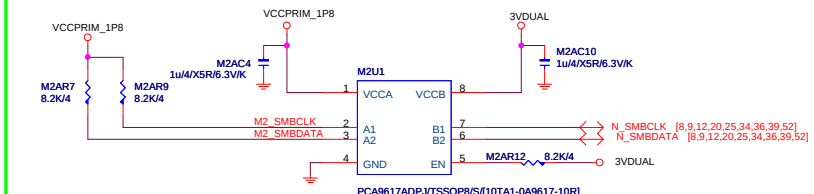
DIP螺柱 (BOTTOM)

80P

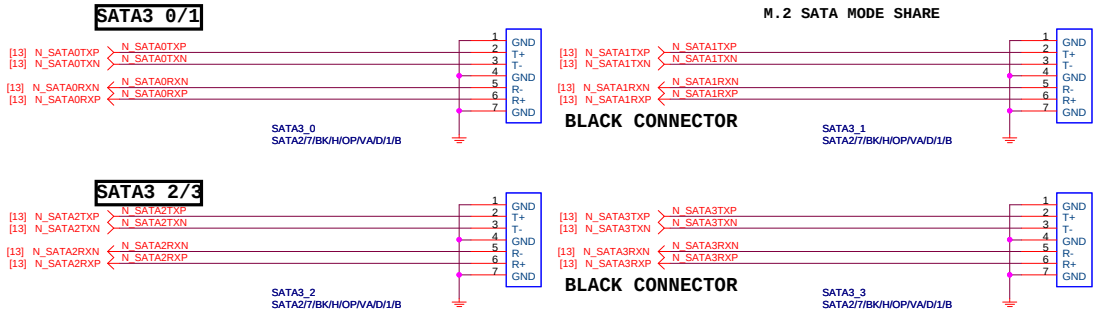
CR/[12KSF-F10202-11R]

SMD螺柱(BOTTOM)

N/A-->共用正面SMD螺孔.



Gigabyte Technology			
Title: M.2 X4			
Size: Custom	Document Number: Z390 I AORUS PRO WIFI		Rev: 1.0
Date: Thursday, August 23, 2018	Sheet 22 of 58		



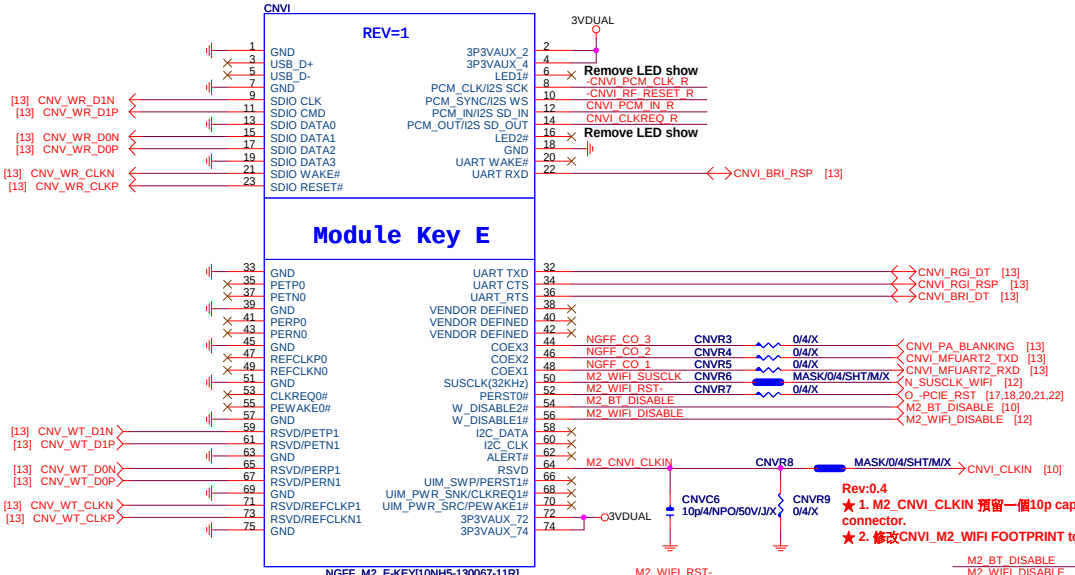
Z390 series 移除SATA 0ohm short pad

Gigabyte Technology		
Title: SATA EXPRESS		
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
Date: Thursday, August 23, 2018	Sheet 23 of 58	

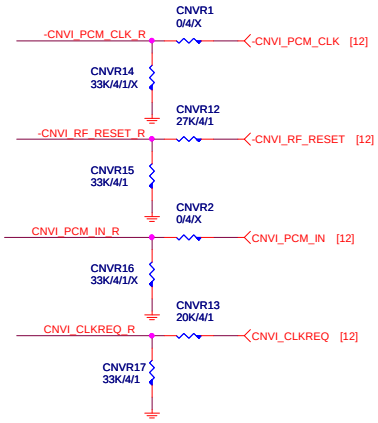
Rev: 0.6

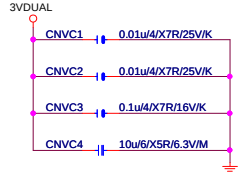
不支援PCIE介面WIFI及USB介面BT

CNVi_M2_WIFI

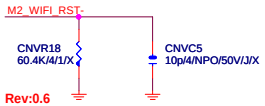


Rev:0.6
★ 1. 將PCH吐出的3.3V 經分壓為1.8V 才進到CNVI





Rev:0.4
★ 1. M2_CNVI_CLKIN 預留一個10p cap 靠近CNVI card connector.
★ 2. 修改CNVI_M2_WIFI FOOTPRINT to CNVI



Rev:0.6
★ for PCIe mode 預留

直立

Footprint Notice.

★Update 2015-07-22

★Footprint for 直立式 SMD: WIFI-EKEY

★SMD P/N: 直立式 10NH5-130067-11R.

橫躺

Footprint Notice.

★Update 2015-07-22

★Footprint for 橫躺式高: NGFF-E-75P-3

★Footprint for 橫躺式矮: NGFF-E-75P-2

★ 橫躺式高SMD P/N:10NR5-130067-61R

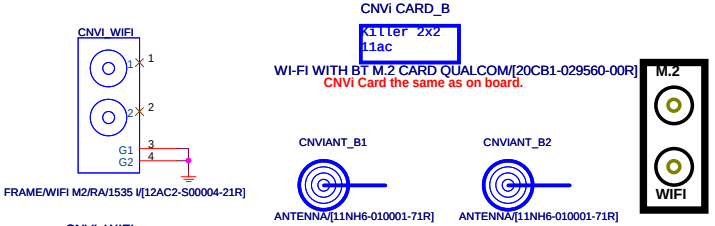
★ 橫躺式矮SMD P/N:10NR5-130067-22R

FOR M.2 WIFI PIN SIZE

FOR M.2 WIFI MODULE @ REAR PANEL

★Update 2015-02-11

一套WIFI MODULE包含外框+WIFI CARD+天線



CNVI_WIFI

EMI STICKERS

EMI STICKER
料號需搭配CARD型號

EMI STICJERS/[12LB6-TAC9560-00R]

GIGABYTE™

Title	CNVi_M2_WIFI	
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
Date: Thursday, August 23, 2018	Sheet 24 of 58	

REV:0.11

For Phase margin and gain margin measure

Debug Only

Remove PinHeader in modify PBOM

I2C Addr: 3Ah

DEFAULT LOADLINE 1.6mohm

Close to Vcore output inductor

Pop DAR83 if pop DAR63

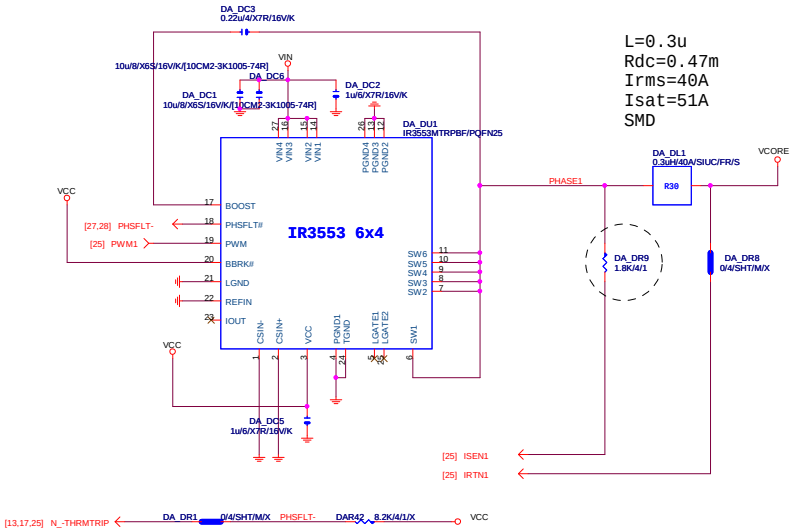
For Phase margin and gain margin measure

放置背板電感與電感之間

Title	IR35201_PWM
Size	Custom
Document Number	Z390 I AORUS PRO WIFI
Rev	1.0
Date:	Thursday, August 23, 2018
Sheet	25 of 58

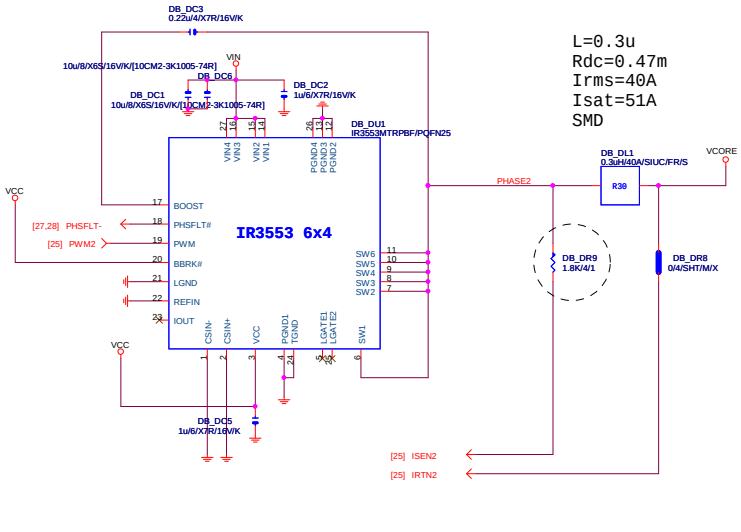
REV:0.1

VCORE PHASE1



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

VCORE PHASE2



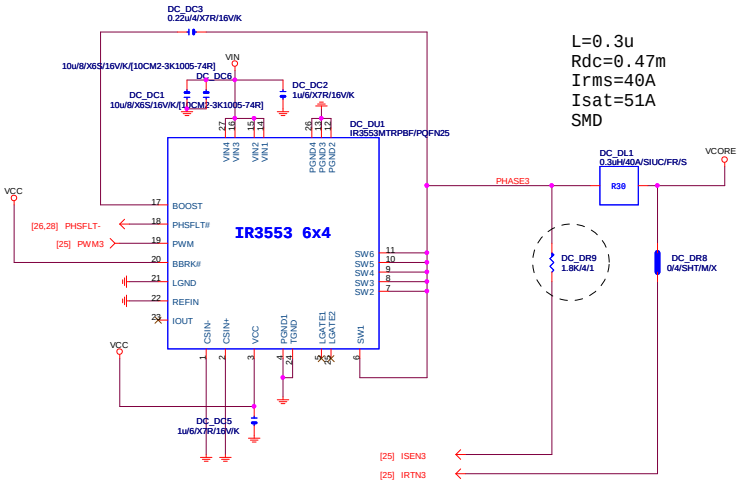
L=0.3u
Rdc=0.47m
Irms=40A
Isat=51A
SMD

GIGABYTE™

Title	IR3553_MOS_1	
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
Date: Thursday, August 23, 2018	Sheet 26 of 58	

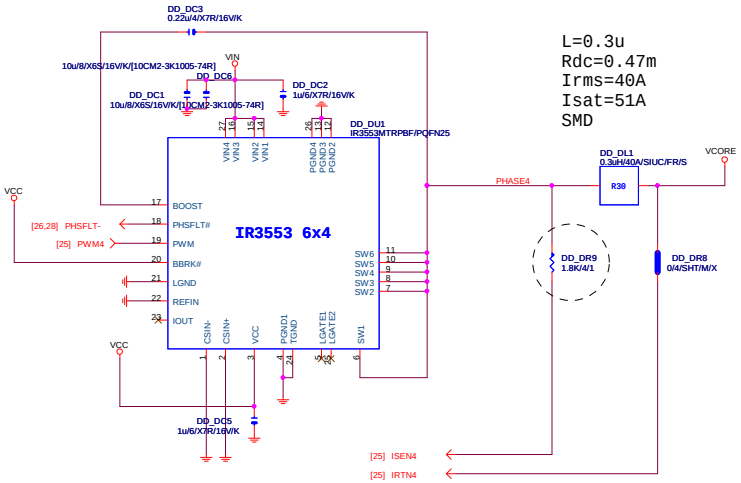
REV:0.11

VCORE PHASE3



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

VCORE PHASE4



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

GIGABYTE™

Title	IR3553_MOS_2	
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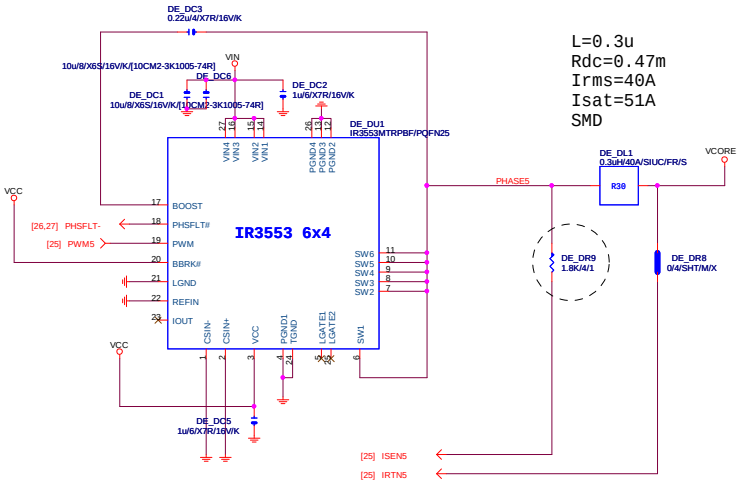
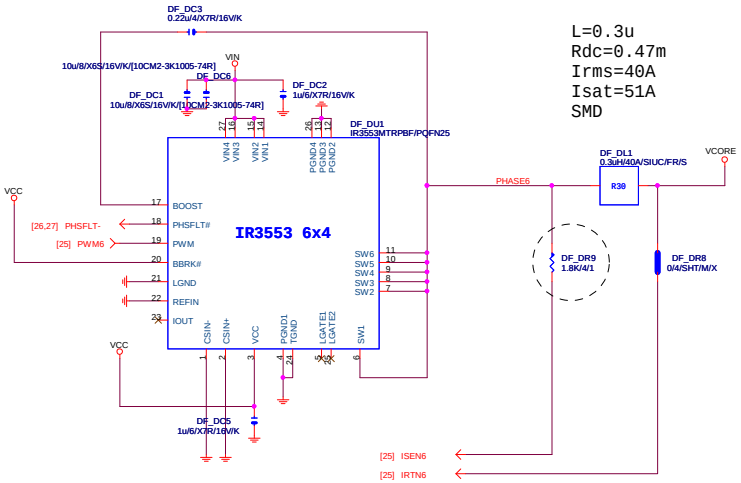
REV:0.11

VCORE PHASE5



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

VCORE PHASE6



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

GIGABYTE™

Title	IR3553_MOS_3	
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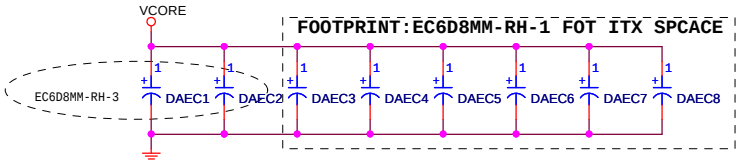
REV:0.11

VCORE CAP

560u*8PCS
22u*29PCS



560u/TAP/FP/D/6.3V/68/C/8m
560u/TAP/FP/D/6.3V/68/C/8m

560u/TAP/FP/D/6.3V/68/C/8m
560u/TAP/FP/D/6.3V/68/C/8m
560u/TAP/FP/D/6.3V/68/C/8m
560u/TAP/FP/D/6.3V/68/C/8m
560u/TAP/FP/D/6.3V/68/C/8m
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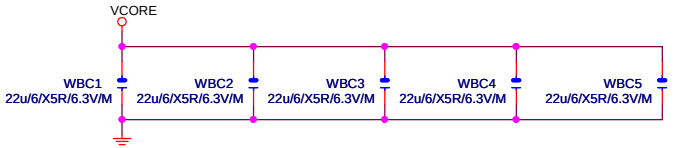
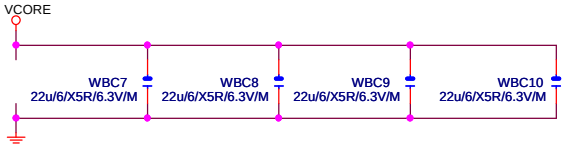
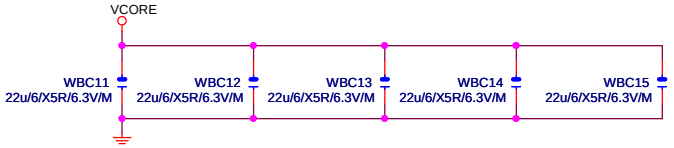
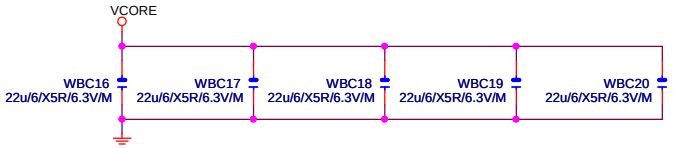


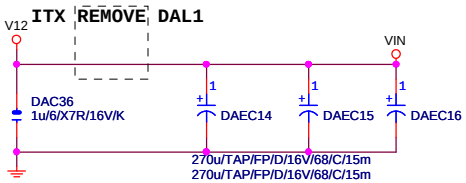




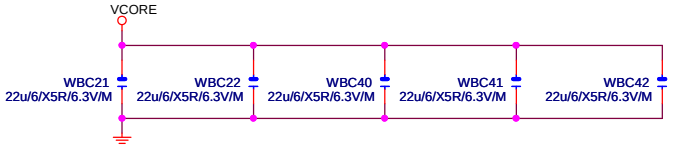


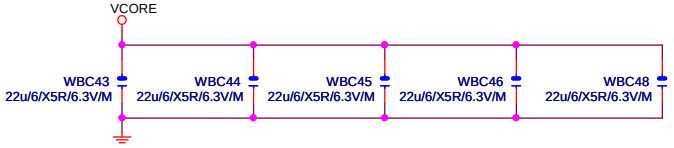
VIN CAP

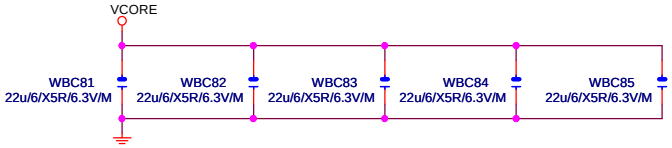
270u*3PCS

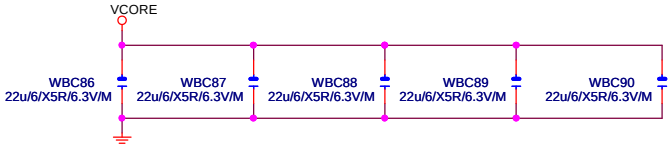


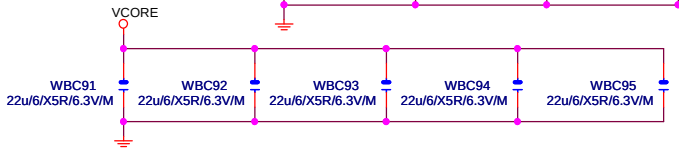
270u/TAP/FP/D/16V/68/C/15m
270u/TAP/FP/D/16V/68/C/15m
270u/TAP/FP/D/16V/68/C/15m

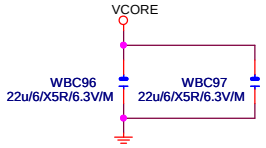












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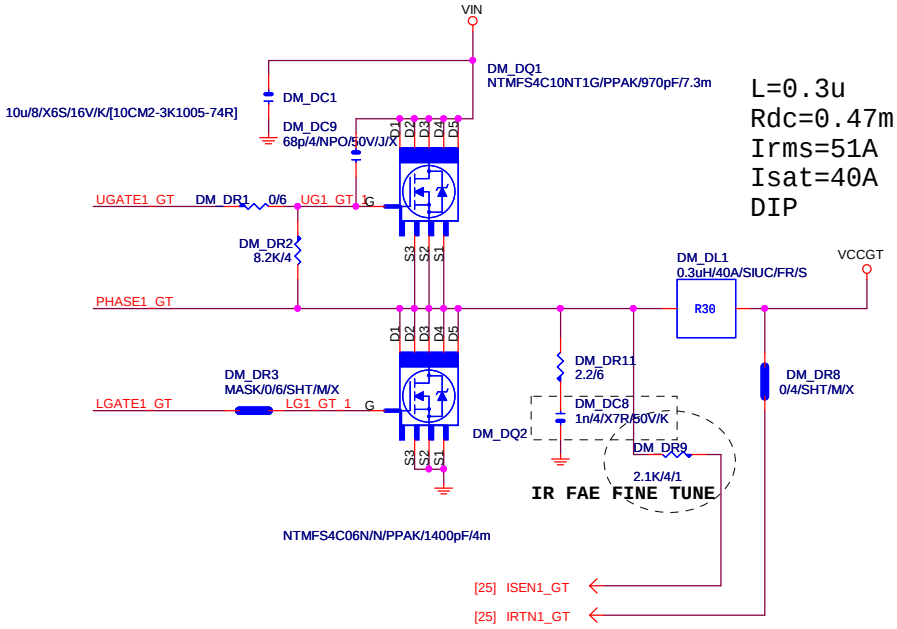
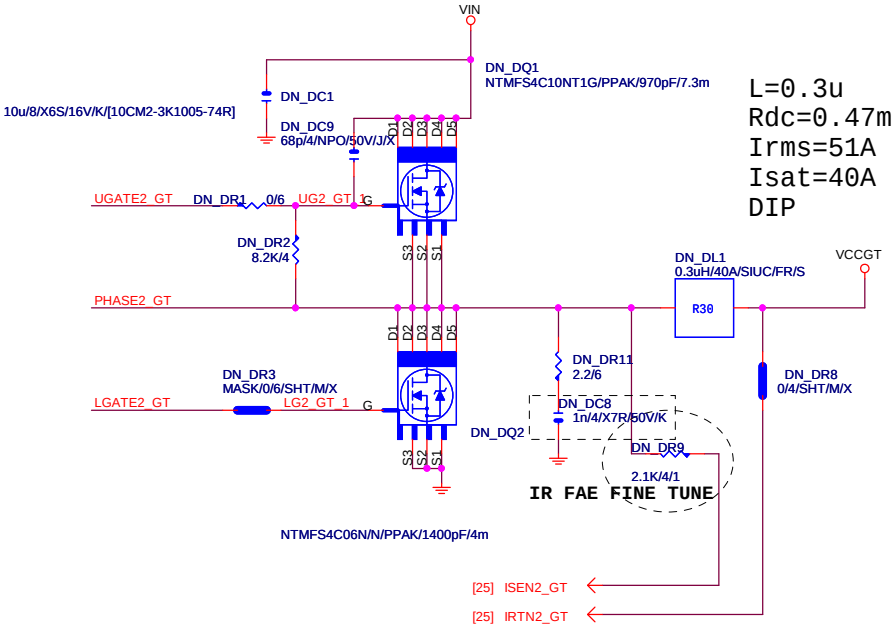
REV:0.1

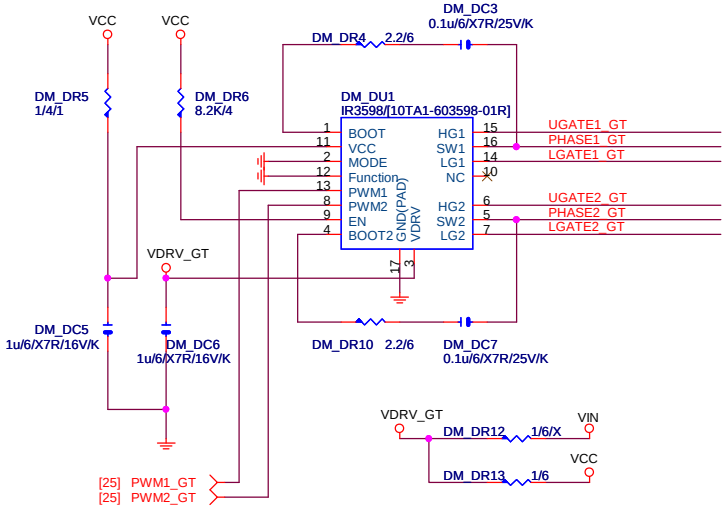
VCCGT-PHASE1

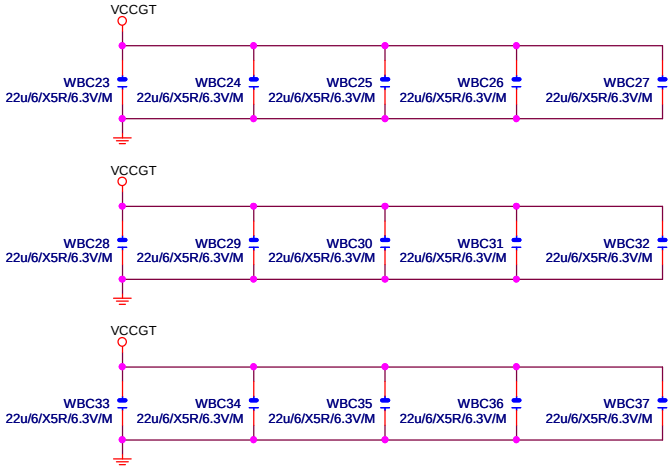


L=0.3u
Rdc=0.47m
Irms=51A
Isat=40A
DIP



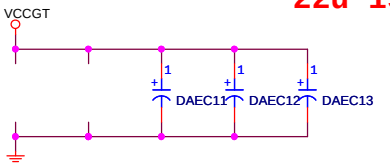
L=0.3u
Rdc=0.47m
Irms=51A
Isat=40A
DIP





VCCGT CAP

560u*3PCS
22u*15PCS



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Title	VCCGT_MOS_PPAK	
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REV:0.1

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 DRV_DDR
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
[32] VPP25V_GD MA_DR38 MASK/0/4/SHT/M/10/X DDR_EN
[17] MA_EN MA_DR39 0/4/X
MA_DC15 0.1u/4/X7R/16V/K

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

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

FS=290K
OCP=40A

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

5VDUAL MA_L2 47/4030/15A/S BEAD MA_VIN
MA_DC6 0.1u/4/X7R/16V/K Close Choke
MA_DC25 68p/4/NPO/50V/J/X
MA_DC7 1u/6/X7R/16V/K Close MOS
MAEC1 560u/TAP/FP/D/6.3V/68/C/8m

MA_UGATE MA_DR1 2.2/6
MA_DQ1 NTTFS4C06NTAG/WDFN8/3366pF/4.2m
MA_DR2 8.2K/4
MA_PHASE
MA_DQ2 NTTFS4C06NTAG/WDFN8/3366pF/4.2m
MA_LGATE MA_DR9 2.2/6 MA_LG
MA_DR5 2.2/6
MA_DC5 1n/4/X7R/50V/K

MA_L1 1uH/35A/IMD109/BP/D
R50 10*10
VDDQ

DDR VIN CAP
560u*2PCS

CHOKE與CAP料號可變

SUPPORT DDR4 1.2V
25A MAX

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

MA_DC14 22p/4/NPO/50V/J/X RS
MA_DR13 1K/4/1
RO MA_DR12 1.4K/4/1

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

DDR_ADJ
[36] DDR_ADJ

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]

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

NCT3103S/SOP8/2A/[10GL2-203103-01R]
MAU1
VIN VREF2 GND ENABLE VREF1 VCNTL VOUT BOOT_SEL GND
MAC2 1u/4/X5R/6.3V/K
MAR5 1K/4/1
MAR4 1K/4/1
MAC1 0.01u/4/X7R/25V/K
[36] MA_VTT_REF
DDRVTT_EN DDRVTT_BOOT
1.1A MAX
DDRVTT
5VDUAL
MAC7 10u/6/X5R/6.3V/M

DDR CAP

560u*4PCS 22u*2PCS

VDDQ
Footprint EC6D8MM-RH-2
MAEC3 560u/TAP/FP/D/6.3V/68/C/8m
MAEC4 560u/TAP/FP/D/6.3V/68/C/8m
* 大電容 x4
MAEC6 560u/TAP/FP/D/6.3V/68/C/8m

WBC49 22u/6/X5R/6.3V/M
WBC6 22u/6/X5R/6.3V/M

DDRVTT CAP

* 大電容 x0

DDRVTT
MAC5 22u/6/X5R/6.3V/M

[4] DDR_VTT_CTL
[12,17,40,41,55] N_SLP_S3
DDR_VTT_CTL MAR110 MASK/0/4/SHT/M/10/X DDRVTT_EN
N_SLP_S3 MAR111 MASK/0/4/SHT/M/10/X DDRVTT_BOOT

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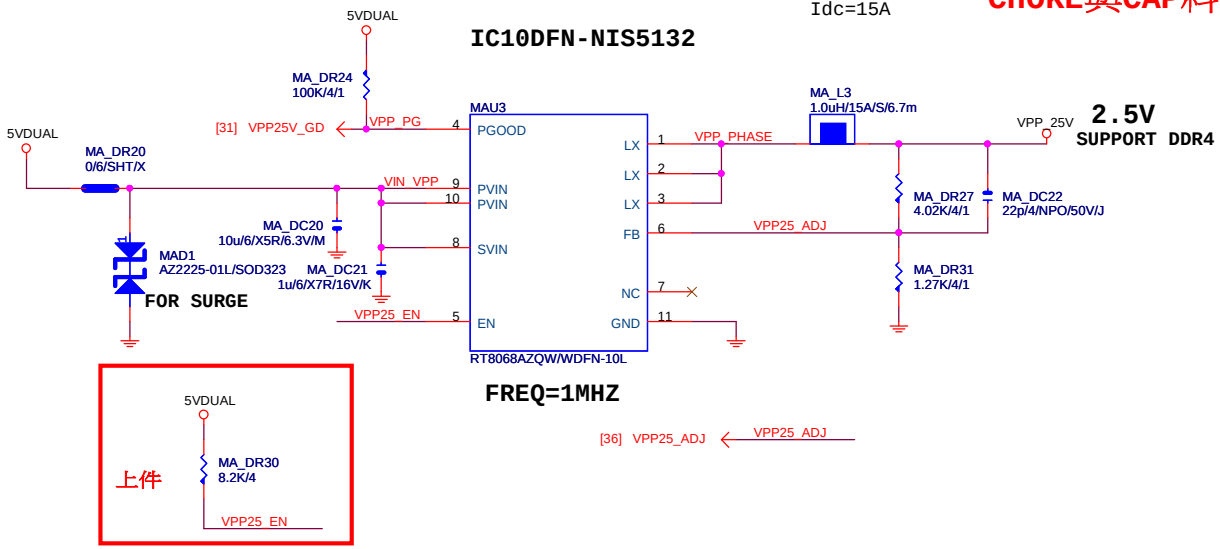
VPP_25V

REV:0.1 (IRON CHOKE)

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

CHOKE與CAP料號可變

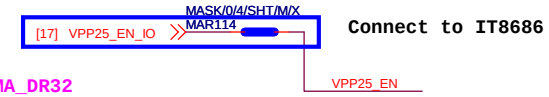
IC10DFN-NIS5132



FREQ=1MHZ

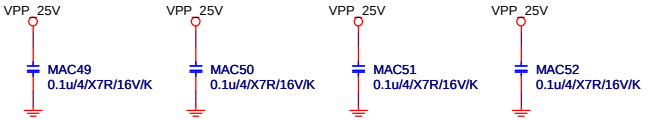
[36] VPP25_ADJ ← VPP25_ADJ

PWR SEQ



Connect to IT8686

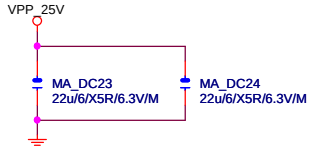
* 刪 MA_DR32



VPP CAP

22u*1PCS

* 大電容 x0



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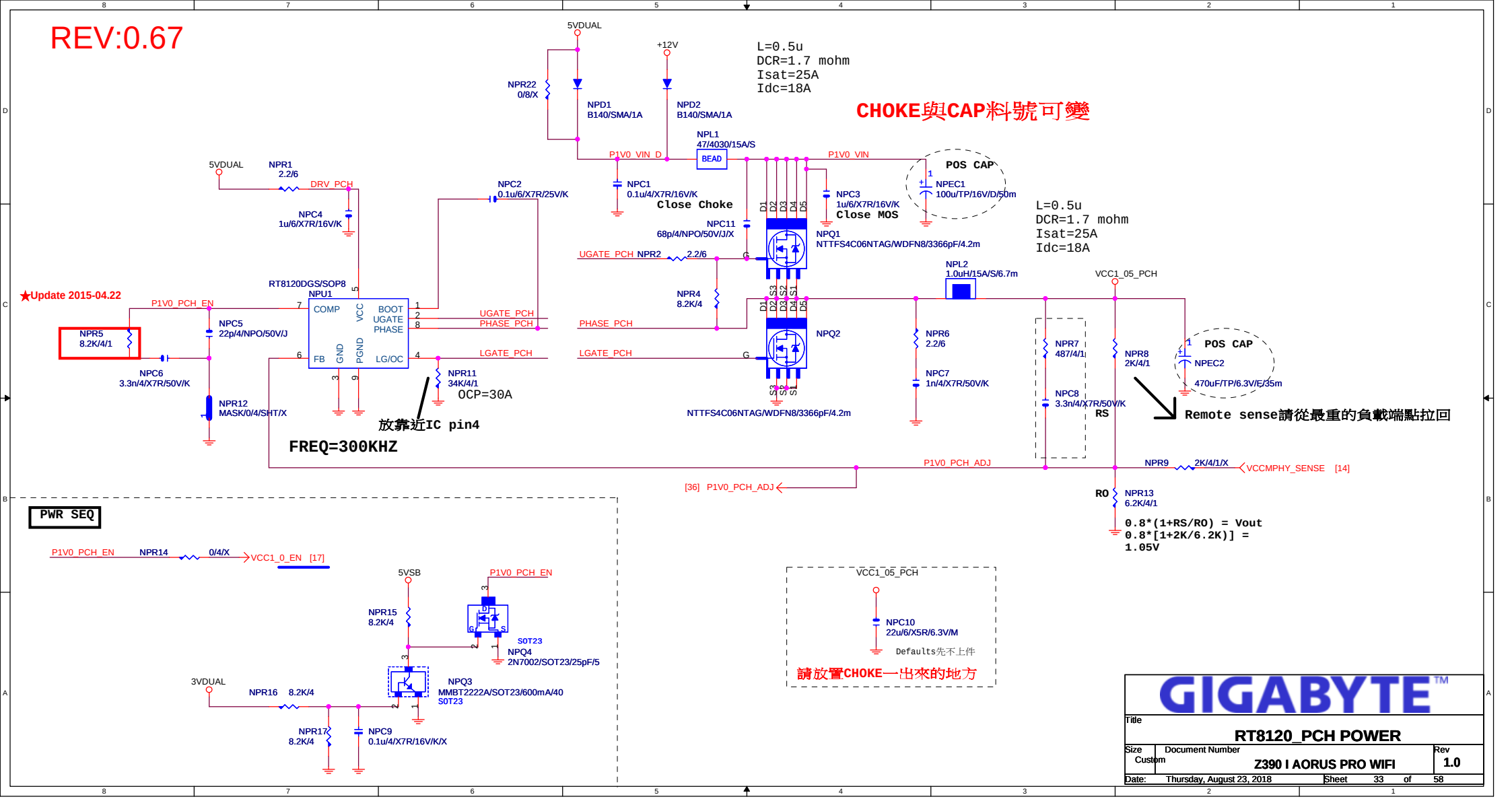
REV:0.67



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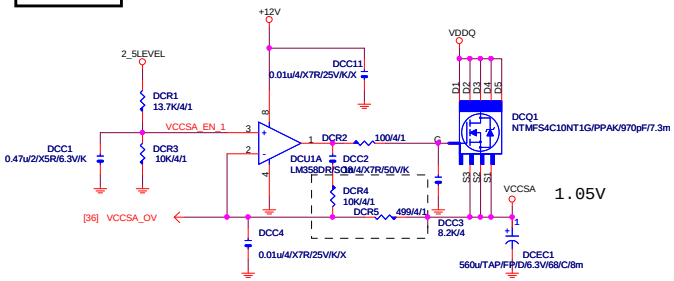
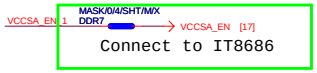
REV:0.12

VCCSA



Connect to IT8793

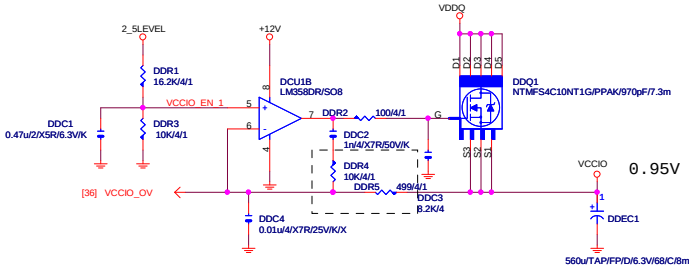


Connect to IT8686

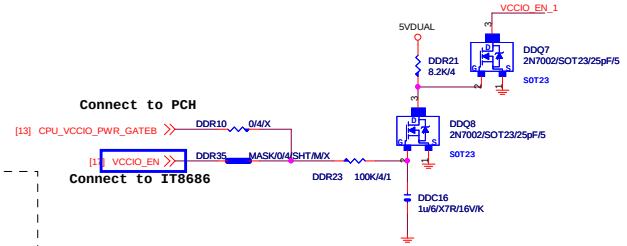
SIO PIN5 . PIN7 用在其他function時
DCQ2.DCR6.DCQ3.DCQ4DCR7.DCR8.DCC7 上件
DDR7 不需要預留

SIO PIN5 . PIN7接VDDQ . VCCIO時
DCQ2.DCR6.DCQ3.DCQ4DCR7.DCR8.DCC7 不上件
DDR7 可以SHORT PAD

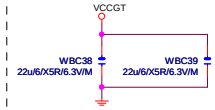
VCCIO



Connect to PCH

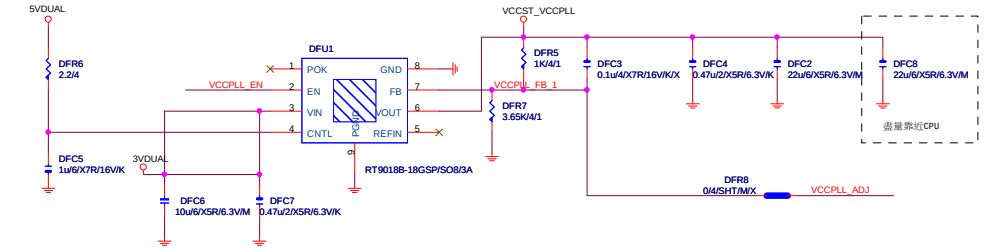


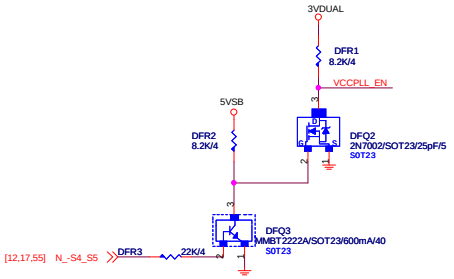
Connect to IT8686



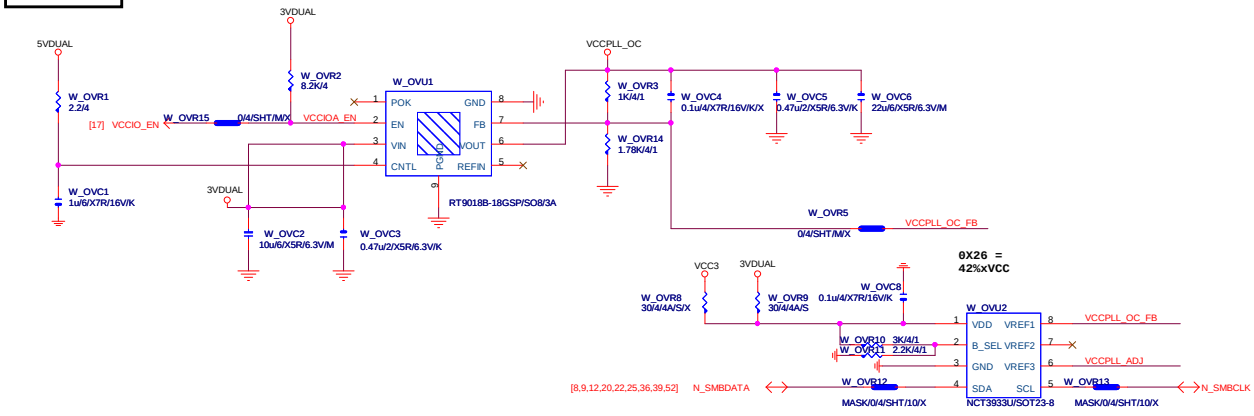
放CPU端.

VCCST_VCCPLL





VCCPLL_OC



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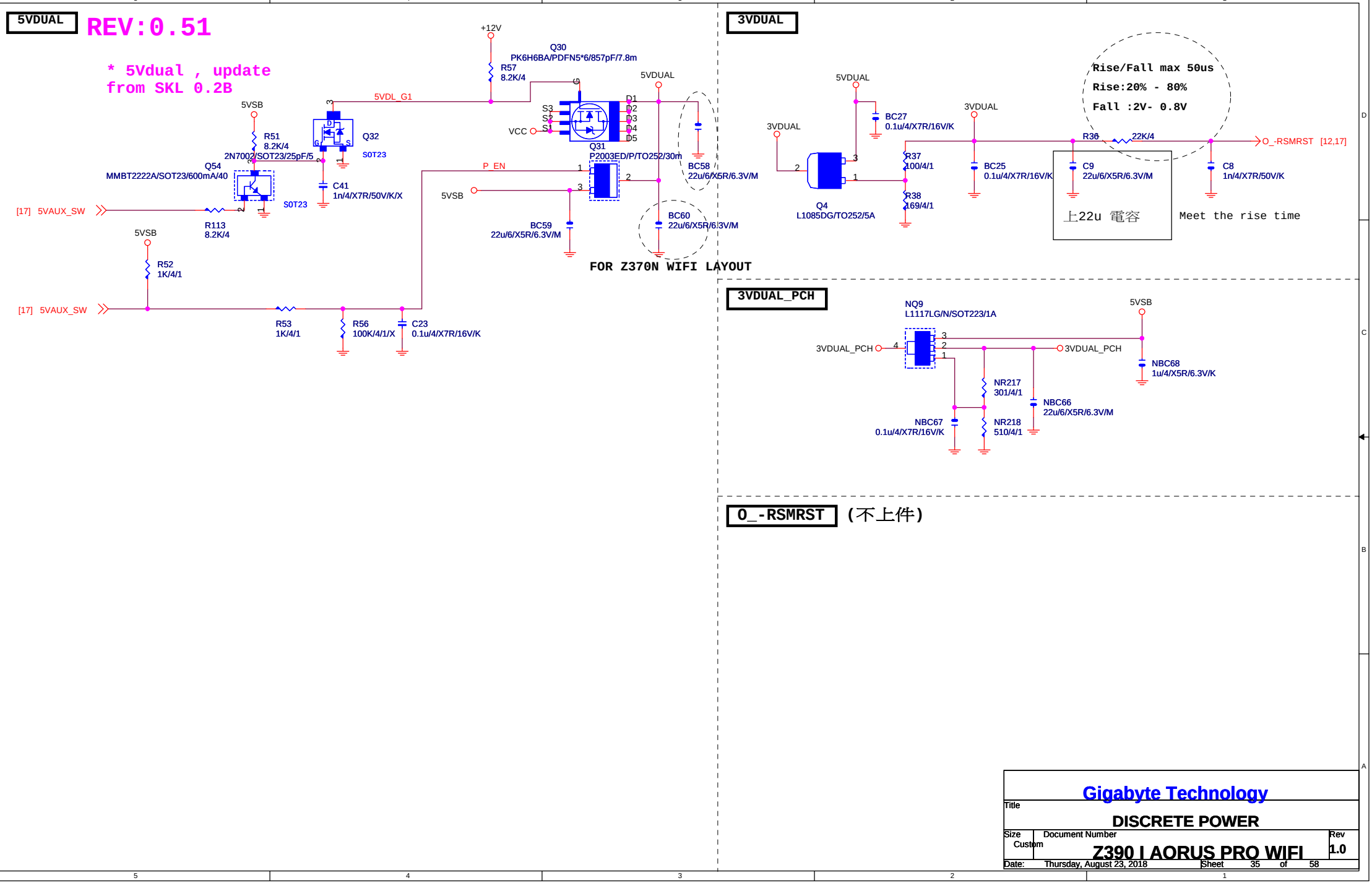
5VDUAL
REV:0.51
* 5Vdual , update from SKL 0.2B
+12V
Q30
PK6H6BA/PDFN5*6/857pF/7.8m
R57
8.2K/4
5VDUAL
5VDL_G1
5VSB
R51
8.2K/4
2N7002/SOT23/25pF/5
Q32
SOT23
Q54
MMBT2222A/SOT23/600mA/40
SOT23
C41
1n/4/X7R/50V/K/X
[17] 5VAUX_SW
R113
8.2K/4
VCC
Q31
P2003ED/P/TO252/30m
P_EN
BC58
22u/6/X5R/6.3V/M
BC59
22u/6/X5R/6.3V/M
BC60
22u/6/X5R/6.3V/M
FOR Z370N WIFI LAYOUT
R52
1K/4/1
R53
1K/4/1
R56
100K/4/1/X
C23
0.1u/4/X7R/16V/K
3VDUAL
BC27
0.1u/4/X7R/16V/K
Q4
L1085DG/TO252/5A
R37
100/4/1
R38
169/4/1
BC25
0.1u/4/X7R/16V/K
R36
22K/4
O_-RSMRST [12,17]
C9
22u/6/X5R/6.3V/M
C8
1n/4/X7R/50V/K
上22u 電容
Meet the rise time
Rise/Fall max 50us
Rise:20% - 80%
Fall :2V- 0.8V
3VDUAL_PCH
NQ9
L1117LG/N/SOT223/1A
NR217
301/4/1
NR218
510/4/1
NBC66
22u/6/X5R/6.3V/M
NBC67
0.1u/4/X7R/16V/K
NBC68
1u/4/X5R/6.3V/K
O_-RSMRST (不上件)
Gigabyte Technology
Title
DISCRETE POWER
Size
Custom
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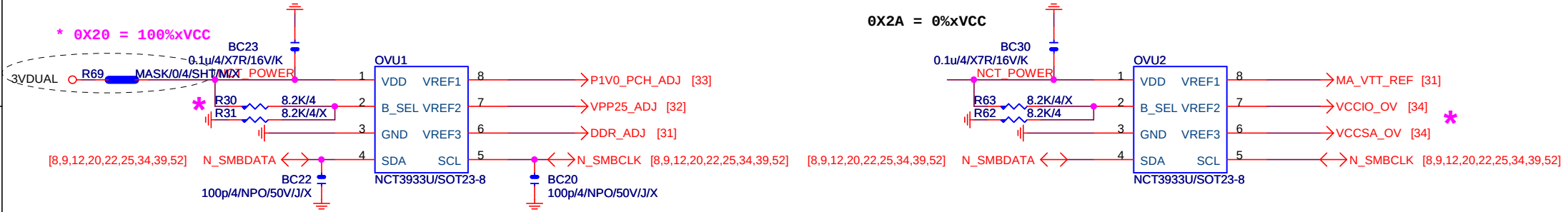
OVER VOLTAGE



0X22 = 75%xVCC

* 刪除 OVU3

NCT3933	0X20	0X2A
VREF1	VCC1_0_PCH	DDRVTT
VREF2	VPP_25V	VCCIO
VREF3	VDDQ	VCCSA

Gigabyte Technology

Title: CPU CORE VR-2

Size: Custom | Document Number: Z390 I AORUS PRO WIFI | Rev: 1.0

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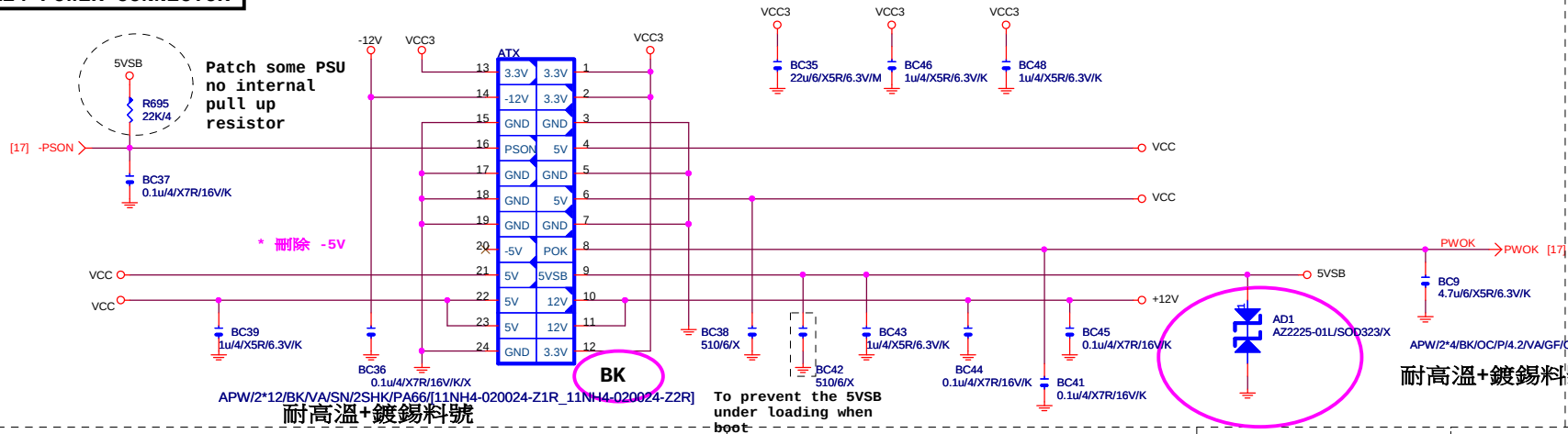
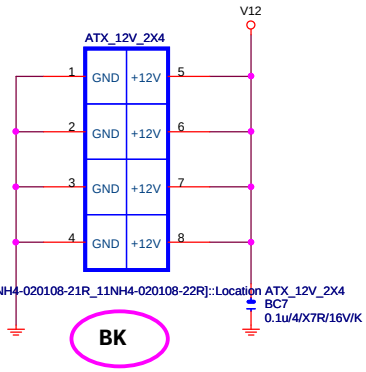
ATXX24 POWER CONNECTOR



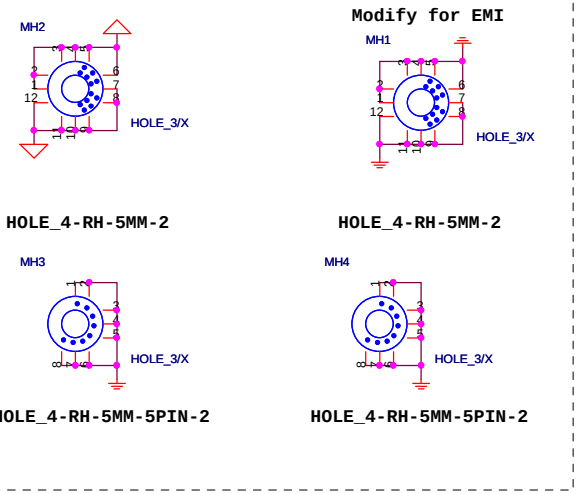
ATXX4 POWER CONNECTOR



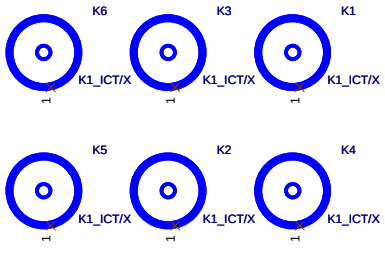
螺絲孔

MH1:GND-T
FOR EMI
TEST驗證

MB LOCATION

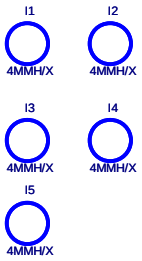


固定孔/光學點



K1-ICT

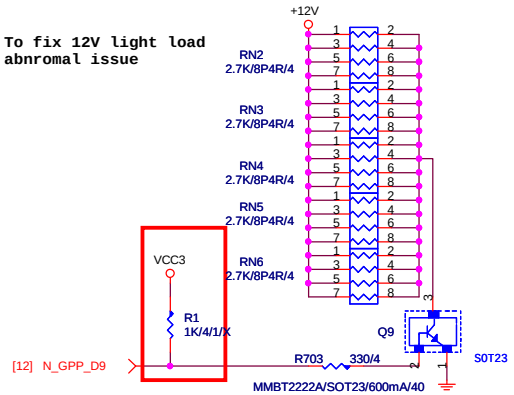
To prevent the 5VSB
under loading when
boot



4MMH

+12V DUMMY LOAD

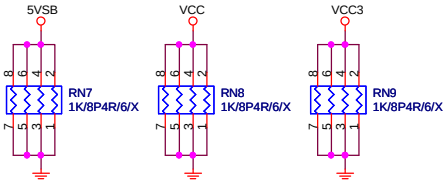
To fix 12V light load
abnromal issue



【技術通報R&D技術通報153】

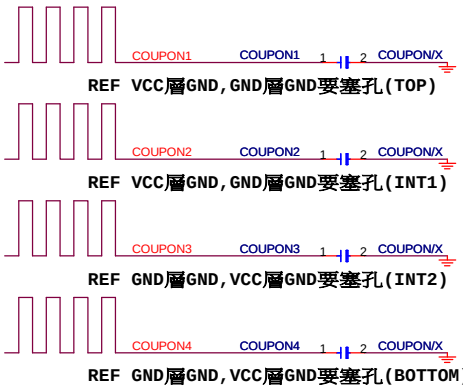
DUMMY LOAD

* Add MH8



COUPON

PCB ,8Layers



REF VCC層GND,GND層GND要塞孔(TOP)

REF VCC層GND,GND層GND要塞孔(INT1)

REF GND層GND,VCC層GND要塞孔(INT2)

REF GND層GND,VCC層GND要塞孔(BOTTOM)

-PROHOT

Gigabyte Technology		
Title: ATX POWER CONNECTOR		
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
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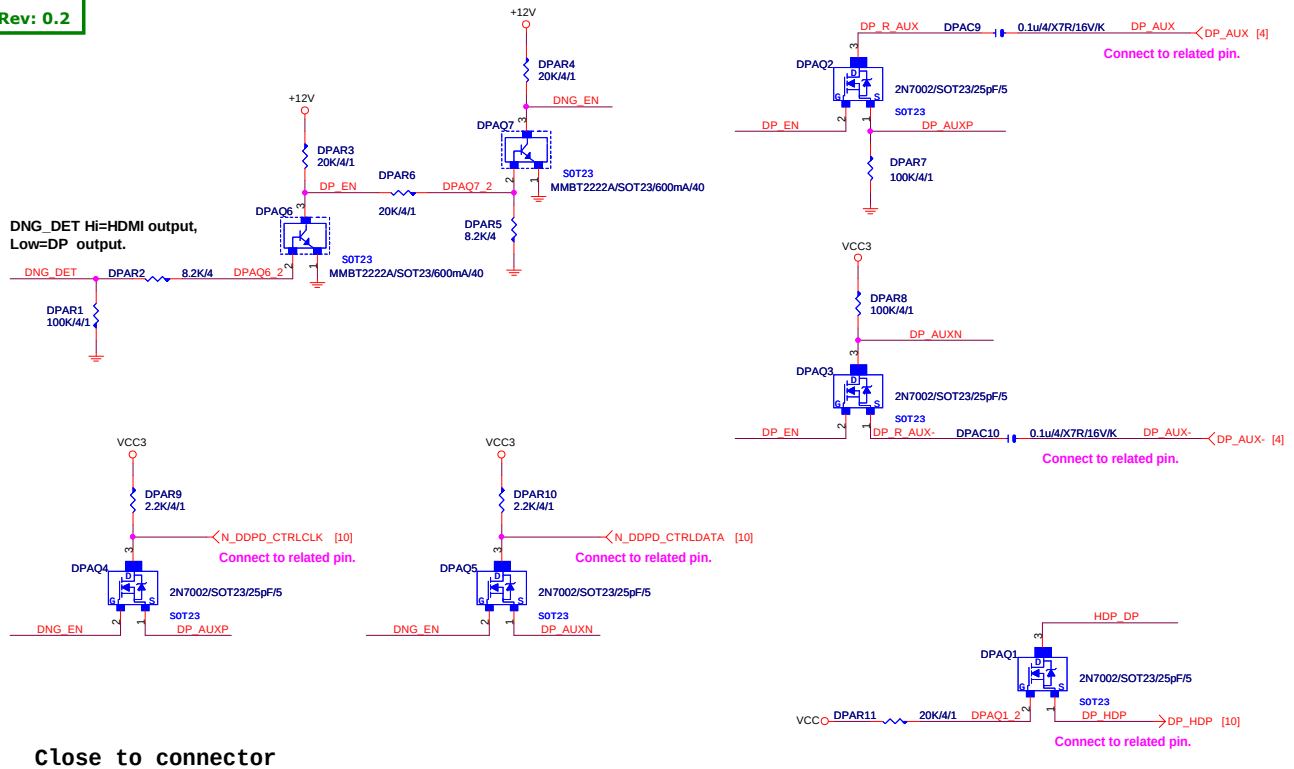
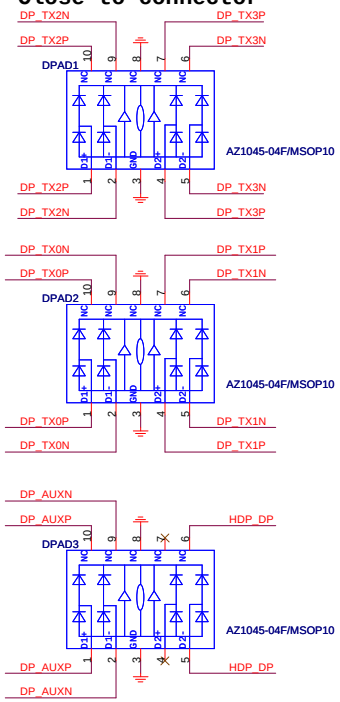
Rev: 0.2

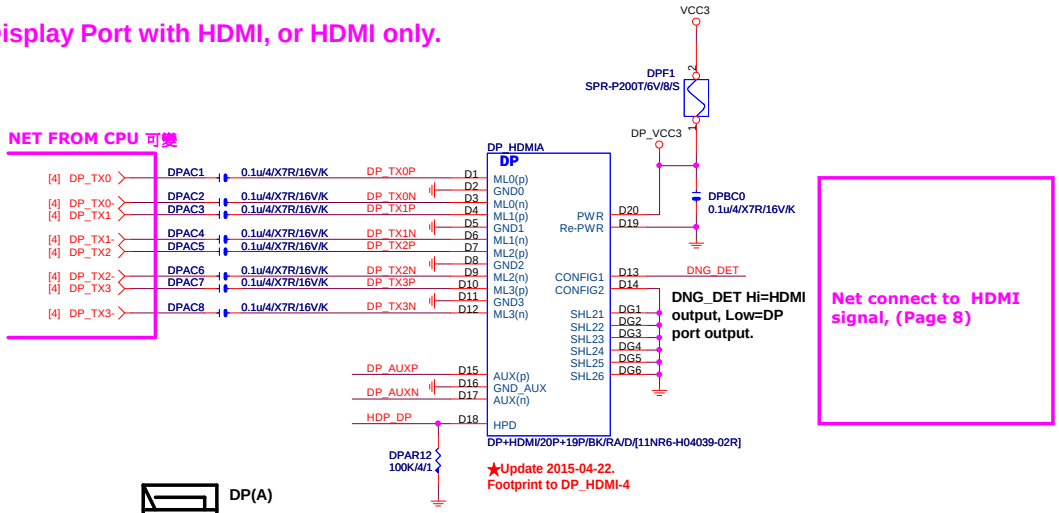


SINGLE Display Port

Close to connector



Display Port with HDMI, or HDMI only.



DP(A)

HDMI(B)

Footprint:DP_HDMI-4,
P/N:11NR6-H04039-02R
Golden:11NR6-H04039-11R

★Update 2015-04-22.

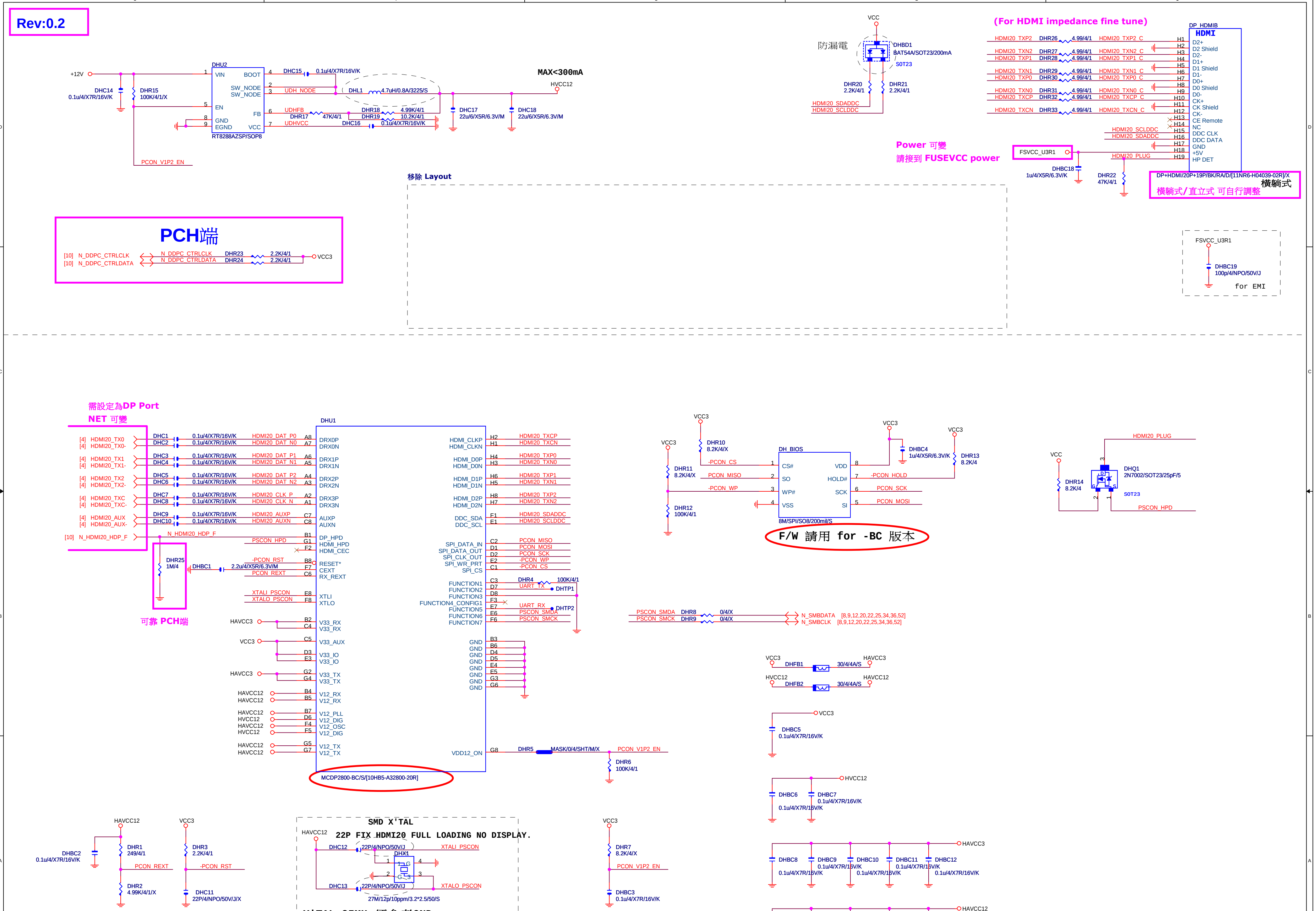
OR

HDMI only

Footprint:DP_HDMI-4, Capture
Value:HDMI/19P/BK/S/RA/INTEL

★Update 2015-04-22.

Gigabyte Technology		
Title: DP PORT		
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
Date: Thursday, August 23, 2018	Sheet 38 of 58	



Rev:0.2
DHU2
RT8288AZSP/SOP8
VIN
BOOT
SW_NODE
EN
FB
GND
EGND
VCC
+12V
DHC14
0.1u/4/X7R/16V/K
DHR15
100K/4/1/X
DHC15
0.1u/4/X7R/16V/K
UDH_NODE
DHL1
4.7uH/0.8A/3225/S
UDHFB
DHR17
47K/4/1
DHR18
4.99K/4/1
DHR19
10.2K/4/1
UDHVCC
DHC16
0.1u/4/X7R/16V/K
DHC17
22u/6/X5R/6.3V/M
DHC18
22u/6/X5R/6.3V/M
MAX<300mA
HVCC12
PCON_V1P2_EN
VCC
防漏電
DHBD1
BAT54A/SOT23/200mA
SOT23
DHR20
2.2K/4/1
DHR21
2.2K/4/1
HDMI20_SDADDC
HDMI20_SCLDDC
(For HDMI impedance fine tune)
DP_HDMIB
HDMI
HDMI20_TXP2
DHR26
4.99/4/1
HDMI20_TXP2_C
HDMI20_TXN2
DHR27
HDMI20_TXN2_C
HDMI20_TXP1
DHR28
HDMI20_TXP1_C
HDMI20_TXN1
DHR29
HDMI20_TXN1_C
HDMI20_TXP0
DHR30
HDMI20_TXP0_C
HDMI20_TXN0
DHR31
HDMI20_TXN0_C
HDMI20_TXCP
DHR32
HDMI20_TXCP_C
HDMI20_TXCN
DHR33
HDMI20_TXCN_C
D2+
D2 Shield
D2-
D1+
D1 Shield
D1-
D0+
D0 Shield
D0-
CK+
CK Shield
CK-
CE Remote
NC
DDC CLK
DDC DATA
GND
+5V
HP DET
Power 可變
請接到 FUSEVCC power
FSVCC_U3R1
DHBC18
1u/4/X5R/6.3V/K
DHR22
47K/4/1
HDMI20_PLUG
DP+HDMI/20P+19P/BK/RA/D/[11NR6-H04039-02R]/X
橫躺式
橫躺式/直立式 可自行調整
移除 Layout
PCH端
[10] N_DDPC_CTRLCLK
[10] N_DDPC_CTRLDATA
DHR23
DHR24
2.2K/4/1
VCC3
FSVCC_U3R1
DHBC19
100p/4/NPO/50V/J
for EMI
需設定為DP Port
NET 可變
[4] HDMI20_TX0
[4] HDMI20_TX0-
[4] HDMI20_TX1
[4] HDMI20_TX1-
[4] HDMI20_TX2
[4] HDMI20_TX2-
[4] HDMI20_TXC
[4] HDMI20_TXC-
[4] HDMI20_AUX
[4] HDMI20_AUX-
[10] N_HDMI20_HDP_F
DHR25
1M/4
可靠 PCH端
DHU1
DRX0P
DRX0N
DRX1P
DRX1N
DRX2P
DRX2N
DRX3P
DRX3N
AUXP
AUXN
DP_HPD
HDMI_HPD
HDMI_CEC
RESET*
CEXT
RX_REXT
XTLI
XTLO
V33_RX
V33_AUX
V33_IO
V33_TX
V12_RX
V12_PLL
V12_DIG
V12_OSC
V12_TX
HDMI_CLKP
HDMI_CLKN
HDMI_D0P
HDMI_D0N
HDMI_D1P
HDMI_D1N
HDMI_D2P
HDMI_D2N
DDC_SDA
DDC_SCL
SPI_DATA_IN
SPI_DATA_OUT
SPI_CLK_OUT
SPI_WR_PRT
SPI_CS
FUNCTION1
FUNCTION2
FUNCTION3
FUNCTION4_CONFIG1
FUNCTION5
FUNCTION6
FUNCTION7
VDD12_ON
MCDP2800-BC/S/[10HB5-A32800-20R]
DHR4
100K/4/1
DHTP1
DHTP2
UART_TX
UART_RX
PSCON_SMDA
PSCON_SMCK
DHR5
MASK/0/4/SHT/M/X
DHR6
100K/4/1
DH_BIOS
CS#
SO
WP#
VSS
VDD
HOLD#
SCK
SI
8M/SPI/SO8/200mil/S
F/W 請用 for -BC 版本
DHR10
8.2K/4/X
DHR11
8.2K/4/X
DHR12
100K/4/1
DHBC4
1u/4/X5R/6.3V/K
DHR13
8.2K/4
PCON_CS
PCON_MISO
PCON_WP
PCON_HOLD
PCON_SCK
PCON_MOSI
DHQ1
2N7002/SOT23/25pF/5
DHR14
8.2K/4
PSCON_HPD
DHR8
DHR9
0/4/X
N_SMBDATA [8,9,12,20,22,25,34,36,52]
N_SMBCLK [8,9,12,20,22,25,34,36,52]
DHFB1
DHFB2
30/4/4A/S
HAVCC3
HAVCC12
DHBC5
0.1u/4/X7R/16V/K
DHBC6
DHBC7
DHBC8
DHBC9
DHBC10
DHBC11
DHBC12
DHBC13
DHBC14
DHBC15
DHBC16
DHBC17
DHR1
249/4/1
DHR2
4.99K/4/1/X
DHBC2
DHR3
2.2K/4/1
DHC11
22P/4/NPO/50V/J/X
PCON_REXT
PCON_RST
SMD X'TAL
22P FIX HDMI20 FULL LOADING NO DISPLAY.
DHC12
DHC13
22P/4/NPO/50V/J
DHX1
27M/12p/10ppm/3.2*2.5/50/S
XTALI_PSCON
XTALO_PSCON
X'TAL 25MHz須參考GND
CRYSTAL/TRACE
週邊不要有訊號,VIA靠近
走線遠離其他40mil以上
DHR7
8.2K/4/X
DHBC3
0.1u/4/X7R/16V/K

Gigabyte Technology

Title	HDMI20 MCDP2800-BC
Size C	Document Number: Z390 I AORUS PRO WIFI
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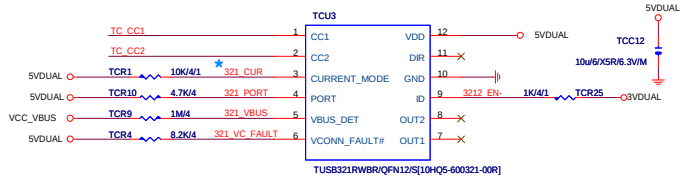
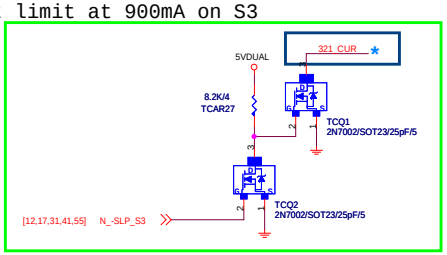
Type C U30 SW Rev. 1.02

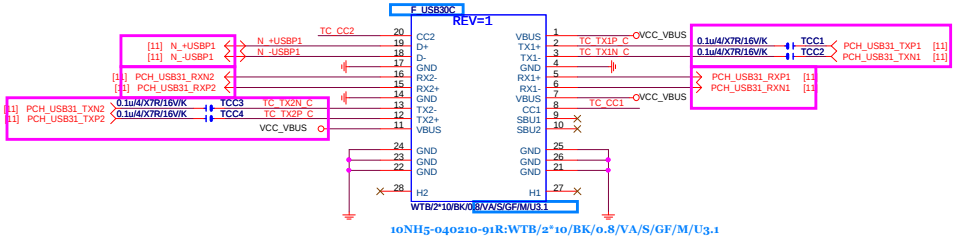


CURRENT MODE
L - Default current / Pull down to GND or NC
M - Medium (1.5A) current / Pull up to VDD 500K
H - High (3.0A) current / Pull up to VDD 10K

PORT
H - HOST
L - Device
NC - Dual Role

For VBUS current limit at 900mA on S3

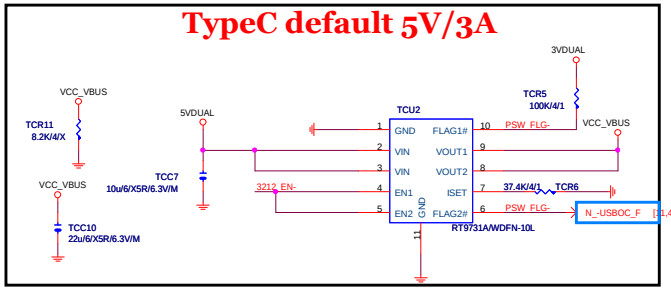


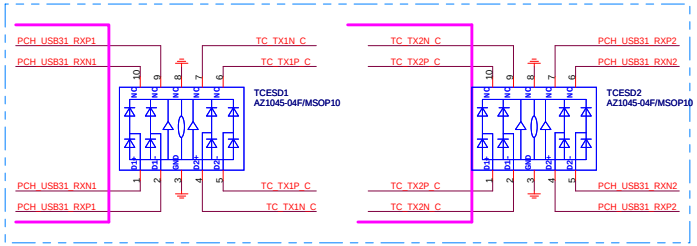


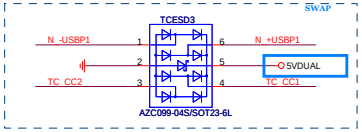
10NH5-040210-91R:WTB/2*10/BK/0.8/VA/S/GF/M/U3.1

USB2.0 can be used the same source

TypeC default 5V/3A







Color markers can be changed by model

GIGABYTE™

Title	TUSB321_Front	
Size C	Document Number Z390 I AORUS PRO WIFI	Rev 1.0
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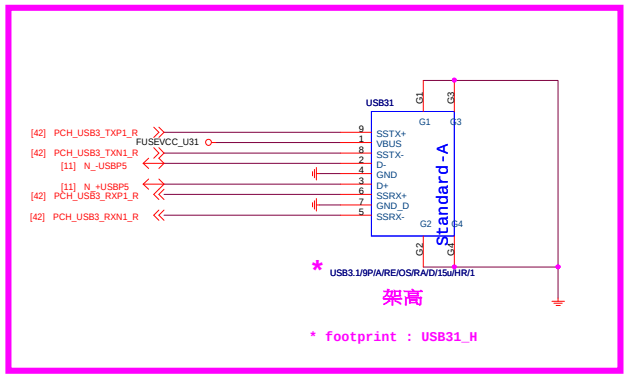
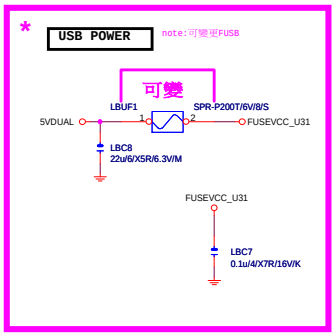
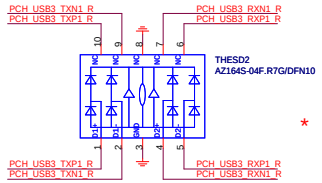
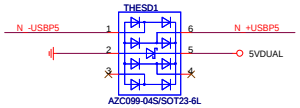
USB31 TYPE A Connector / power source / FUSE which choose for project demand



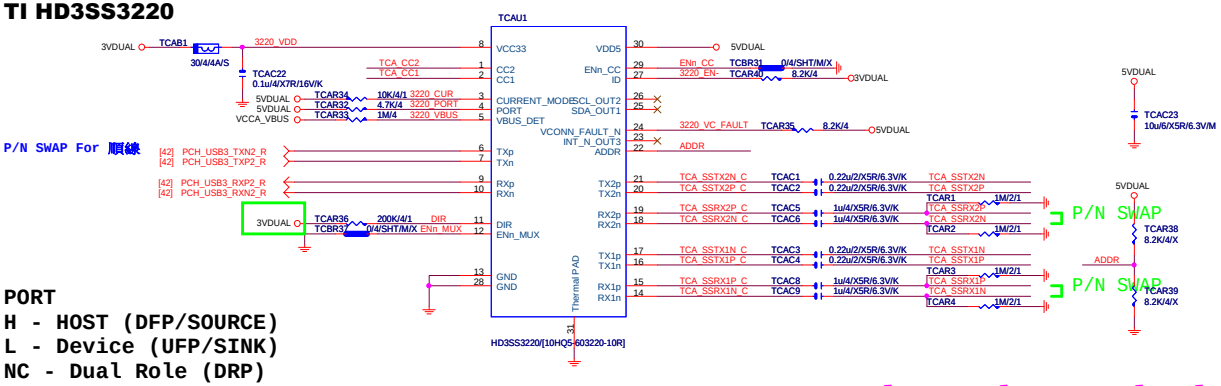




* 0922



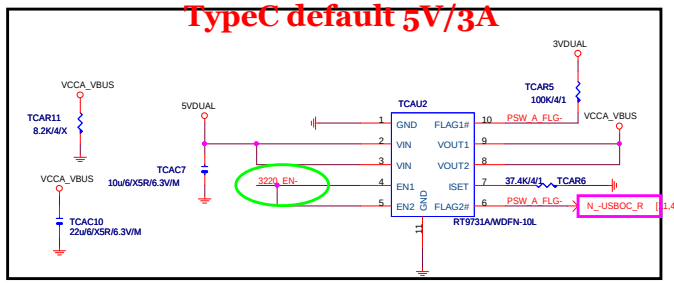
TI HD3SS3220



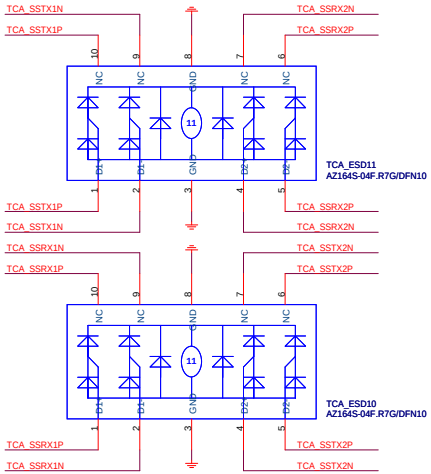
PORT
H - HOST (DFP/SOURCE)
L - Device (UFP/SINK)
NC - Dual Role (DRP)

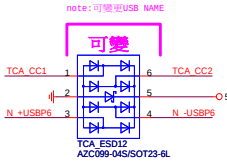
CURRENT MODE
L - Default (900mA) / Pull down to GND or NC
M - Medium (1.5A) / Pull up to VDD 500K
H - High (3.0A) / Pull up to VDD 10K

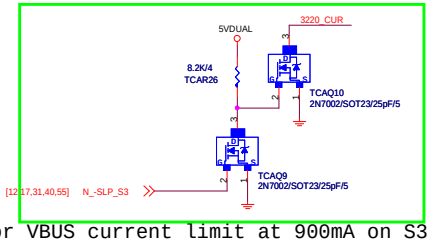
TypeC default 5V/3A



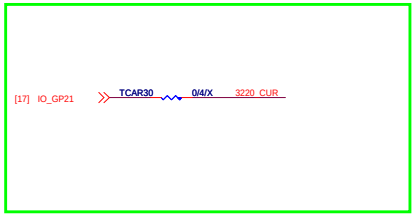
Color markers can be changed by model

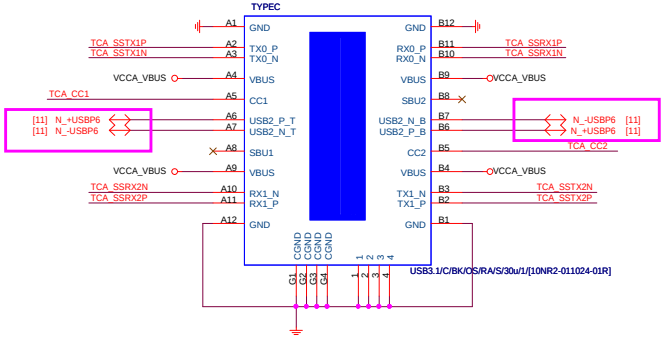






For VBUS current limit at 900mA on S3





USB2.0 can be used the same source

Gigabyte Technology			
Title: R_USB30,USB_OC			
Size: C	Document Number: Z390 I AORUS PRO WIFI		Rev: 1.0
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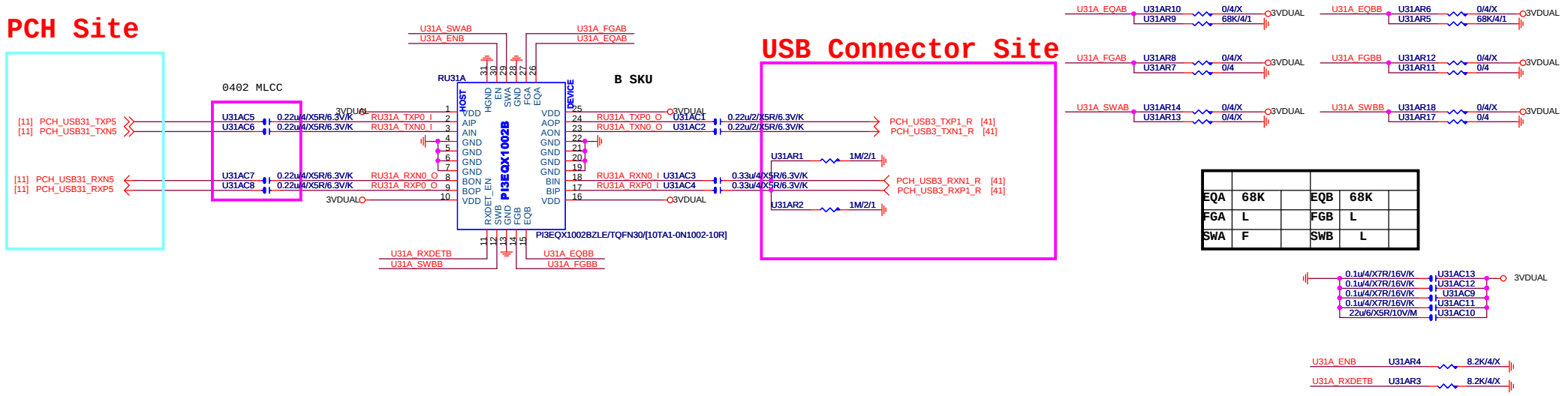

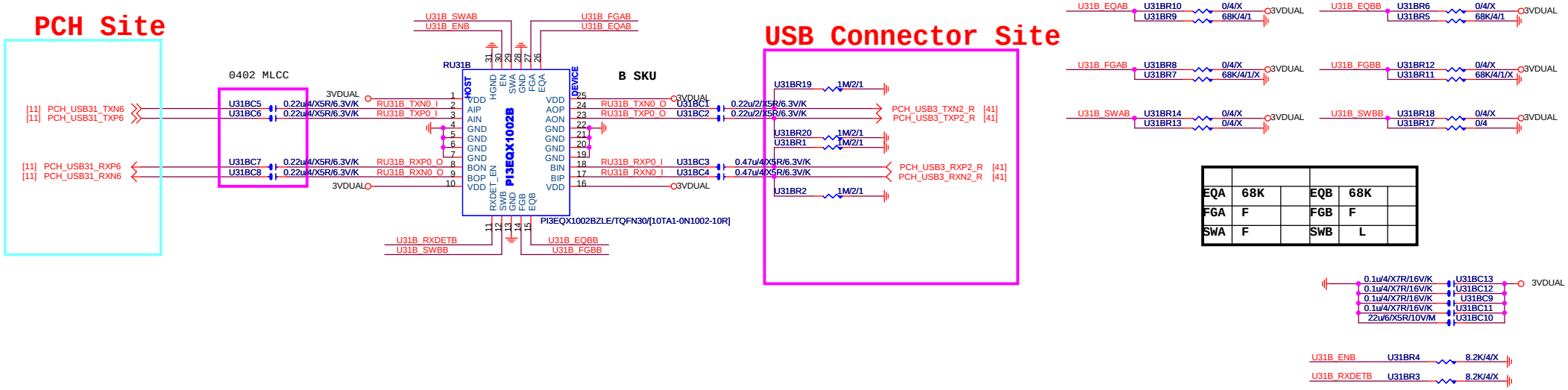

GIGABYTE™

Title	PI3EQX1002B Redriver/DC-J			
Size: Custom	Document Number: Z390 I AORUS PRO WIFI			Rev: 1.0
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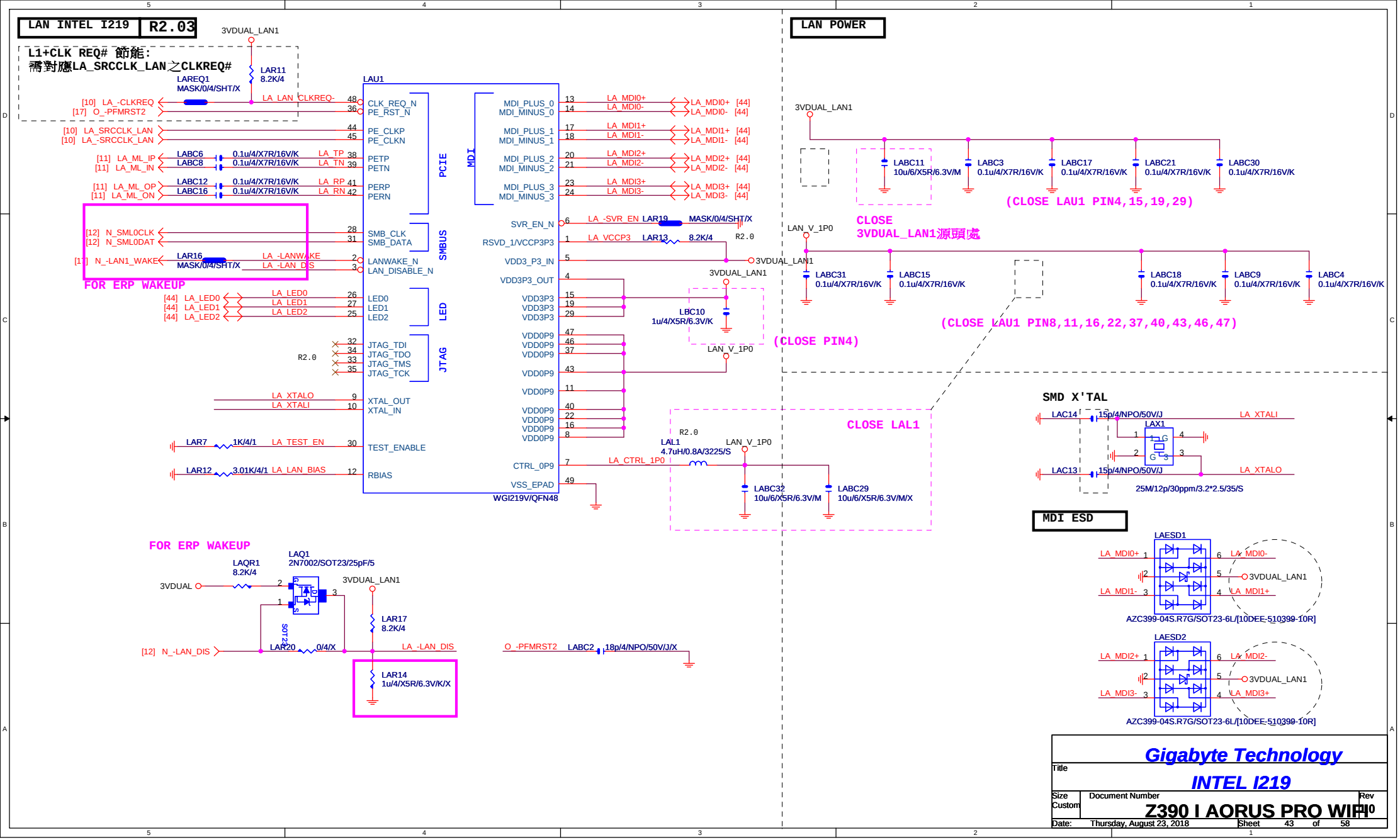

LAN INTEL I219
R2.03
L1+CLK REQ# 節能:
需對應LA_SRCCLK_LAN之CLKREQ#
3VDUAL_LAN1
LAR11 8.2K/4
LAREQ1 MASK/0/4/SHT/X
LA_LAN_CLKREQ-
[10] LA_-CLKREQ
[17] O_-PFMRST2
LAU1
CLK_REQ_N
PE_RST_N
PE_CLKP
PE_CLKN
PETP
PETN
PERP
PERN
PCIE
MDI
MDI_PLUS_0
MDI_MINUS_0
MDI_PLUS_1
MDI_MINUS_1
MDI_PLUS_2
MDI_MINUS_2
MDI_PLUS_3
MDI_MINUS_3
[10] LA_SRCCLK_LAN
[10] LA_-SRCCLK_LAN
[11] LA_ML_IP
[11] LA_ML_IN
[11] LA_ML_OP
[11] LA_ML_ON
LABC6 0.1u/4/X7R/16V/K
LABC8 0.1u/4/X7R/16V/K
LABC12 0.1u/4/X7R/16V/K
LABC16 0.1u/4/X7R/16V/K
LA_TP
LA_TN
LA_RP
LA_RN
SMB_CLK
SMB_DATA
SMBUS
[12] N_SML0CLK
[12] N_SML0DAT
[17] N_-LAN1_WAKE
LAR16 MASK/0/4/SHT/X
LA_-LANWAKE
LA_-LAN_DIS
LANWAKE_N
LAN_DISABLE_N
FOR ERP WAKEUP
[44] LA_LED0
[44] LA_LED1
[44] LA_LED2
LED0
LED1
LED2
LED
R2.0
JTAG_TDI
JTAG_TDO
JTAG_TMS
JTAG_TCK
JTAG
LA_XTALO
LA_XTALI
XTAL_OUT
XTAL_IN
LAR7 1K/4/1 LA_TEST_EN
TEST_ENABLE
LAR12 3.01K/4/1 LA_LAN_BIAS
RBIAS
WGI219V/QFN48
SVR_EN_N
LA_-SVR_EN
LAR19 MASK/0/4/SHT/X
RSVD_1/VCCP3P3
LA_VCCP3
LAR13 8.2K/4
R2.0
VDD3_P3_IN
VDD3P3_OUT
VDD3P3
VDD0P9
CTRL_0P9
VSS_EPAD
LA_MDI0+
LA_MDI0-
LA_MDI1+
LA_MDI1-
LA_MDI2+
LA_MDI2-
LA_MDI3+
LA_MDI3-
[44]
LBC10 1u/4/X5R/6.3V/K
LAN_V_1P0
(CLOSE PIN4)
CLOSE LAL1
LAL1 4.7uH/0.8A/3225/S
LA_CTRL_1P0
LABC32 10u/6/X5R/6.3V/M
LABC29 10u/6/X5R/6.3V/M/X
FOR ERP WAKEUP
LAQR1 8.2K/4
LAQ1 2N7002/SOT23/25pF/5
3VDUAL
3VDUAL_LAN1
LAR17 8.2K/4
SOT23
LAR20 0/4/X
[12] N_-LAN_DIS
LA_-LAN_DIS
LAR14 1u/4/X5R/6.3V/K/X
O_-PFMRST2
LABC2 18p/4/NPO/50V/J/X
LAN POWER
3VDUAL_LAN1
LABC11 10u/6/X5R/6.3V/M
LABC3 0.1u/4/X7R/16V/K
LABC17 0.1u/4/X7R/16V/K
LABC21 0.1u/4/X7R/16V/K
LABC30 0.1u/4/X7R/16V/K
(CLOSE LAU1 PIN4,15,19,29)
CLOSE
3VDUAL_LAN1源頭處
LAN_V_1P0
LABC31 0.1u/4/X7R/16V/K
LABC15 0.1u/4/X7R/16V/K
LABC18 0.1u/4/X7R/16V/K
LABC9 0.1u/4/X7R/16V/K
LABC4 0.1u/4/X7R/16V/K
(CLOSE LAU1 PIN8,11,16,22,37,40,43,46,47)
SMD X'TAL
LAC14 15p/4/NPO/50V/J
LAC13 15p/4/NPO/50V/J
LAX1
LA_XTALI
LA_XTALO
25M/12p/30ppm/3.2*2.5/35/S
MDI ESD
LAESD1
LA_MDI0+
LA_MDI0-
LA_MDI1-
LA_MDI1+
3VDUAL_LAN1
AZC399-04S.R7G/SOT23-6L/[10DEE-510399-10R]
LAESD2
LA_MDI2+
LA_MDI2-
LA_MDI3-
LA_MDI3+
3VDUAL_LAN1
AZC399-04S.R7G/SOT23-6L/[10DEE-510399-10R]
Gigabyte Technology
Title
INTEL I219
Size
Custom
Document Number
Z390 I AORUS PRO WIFI
Rev
1.0
Date:
Thursday, August 23, 2018
Sheet
43
of
58

USB30_LAN CONNECTOR R2.03

RMA ESD PROTECT

note:可變更USB NAME

可變

N_-USBP4 1 6 N_+USBP4
2 5 FUSEVCC_R
N_-USBP3 3 4 N_+USBP3

LAUESD1
AZC099-04S/SOT23-6L

USB_LAN CONNECTOR

note:可變更USB NAME

[I219]

LABC22
0.1u/4/X7R/16V/K

LA_CN_L1

[43] LA_MDI0+ LA_MDI0+
[43] LA_MDI0- LA_MDI0-
[43] LA_MDI1+ LA_MDI1+
[43] LA_MDI1- LA_MDI1-
[43] LA_MDI2+ LA_MDI2+
[43] LA_MDI2- LA_MDI2-
[43] LA_MDI3+ LA_MDI3+
[43] LA_MDI3- LA_MDI3-

LA_CN_L10
LABC25 MASK/0/4/SHT/X

FUSEVCC_R

[11] N_-USBP3
[11] N_+USBP3
[11] PCH_USB30_RXN3
[11] PCH_USB30_RXP3
[11] PCH_USB30_TXN3
[11] PCH_USB30_TXP3

LAUAC1 PCH_USB3_TXN3C
LAUAC2 PCH_USB3_TXP3C

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

可變 可變

USB30_LAN

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10
U1 U2 U3 U4 U5 U6 U7 U8 U9
VBUS D- D+ GND SSRX- SSRX+ GND SSTX- SSTX+
USB3.0
USB3.0
D1 D2 D3 D4
DT DT
P1 P2
U10 U11 U12 U13 U14 U15 U16 U17 U18
G1 G2 G3 G4 G5 G6 G7 G8

R2.0

LAR8
MASK/0/4/SHT/M/X

D1 LA_LED_ACT_TXRX LA_LED0 [43]
D2 LA_D2 LAR10 330/4 LA_D2_1
D3 LA_LED_LINK100 LAR9 330/4 LA_LED2 [43]
D4 LA_LED_LINK1000 LAR3 LA_LED1 [43]

MASK/0/4/SHT/M/X LABC7 0.1u/4/X7R/16V/K

FUSEVCC_R

N_-USBP4 [11]
N_+USBP4 [11]
PCH_USB30_RXN4 [11]
PCH_USB30_RXP4 [11]
PCH_USB30_TXN4 [11]
PCH_USB30_TXP4 [11]

PCH_USB3_TXN4C LAUAC3
PCH_USB3_TXP4C LAUAC4

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

可變 可變

3VDUAL_LAN1

LAFB2
MASK/0/4/SHT/M/X

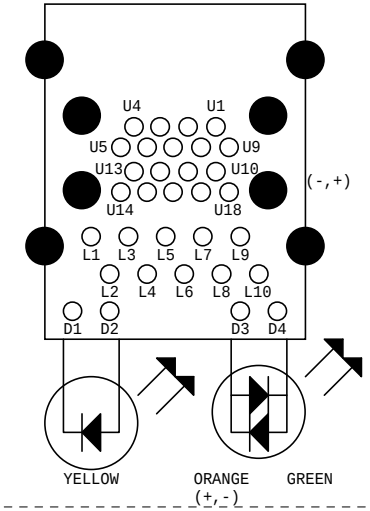
LABC24
0.1u/4/X7R/16V/K/X

LA_MDI-->100歐姆:[20/4/8/4/20]

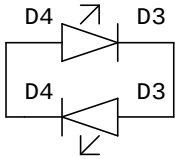
USB上白下藍:USB3+LAN/1G/GO,Y/OS/RA/D/G30/15KV/Q FLASH

USB3+LAN/1G/GO,Y/OS/RA/D/G30

USB30_LAN LAYOUT示意圖

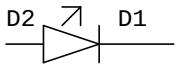


Dual Color LED



Green
Orange

Single Color LED



Yellow

PCH_USB3_TXP4C
PCH_USB3_TXN4C
PCH_USB3_TXN3C
PCH_USB3_TXP3C
PCH_USB30_RXP3
PCH_USB30_RXN3
PCH_USB30_RXN4
PCH_USB30_RXP4

10 9 8 7 6
NC NC GND NC NC
11
D1 D1 GND D2 D2
1 2 3 4 5

note:可變更USB NAME

可變

LAU3ESD1
AZ1045-04F/MSOP10

LAU3ESD2
AZ1045-04F/MSOP10

USB POWER

note:可變更FUSE

可變

LAUF1
5VDUAL 1 2 FUSEVCC_R

SPR-P260T/6V/8/S

Close to connector
FUSE-0805

LAN POWER

note: lan power連接及電流

LAPW1
MASK/0/4/SHT/M/X

可變 3VDUAL_LAN1 3VDUAL_PCH *

R2.0

LAN_COVER

Gigabyte Technology

Title: **LAN CONNECTOR-I219**

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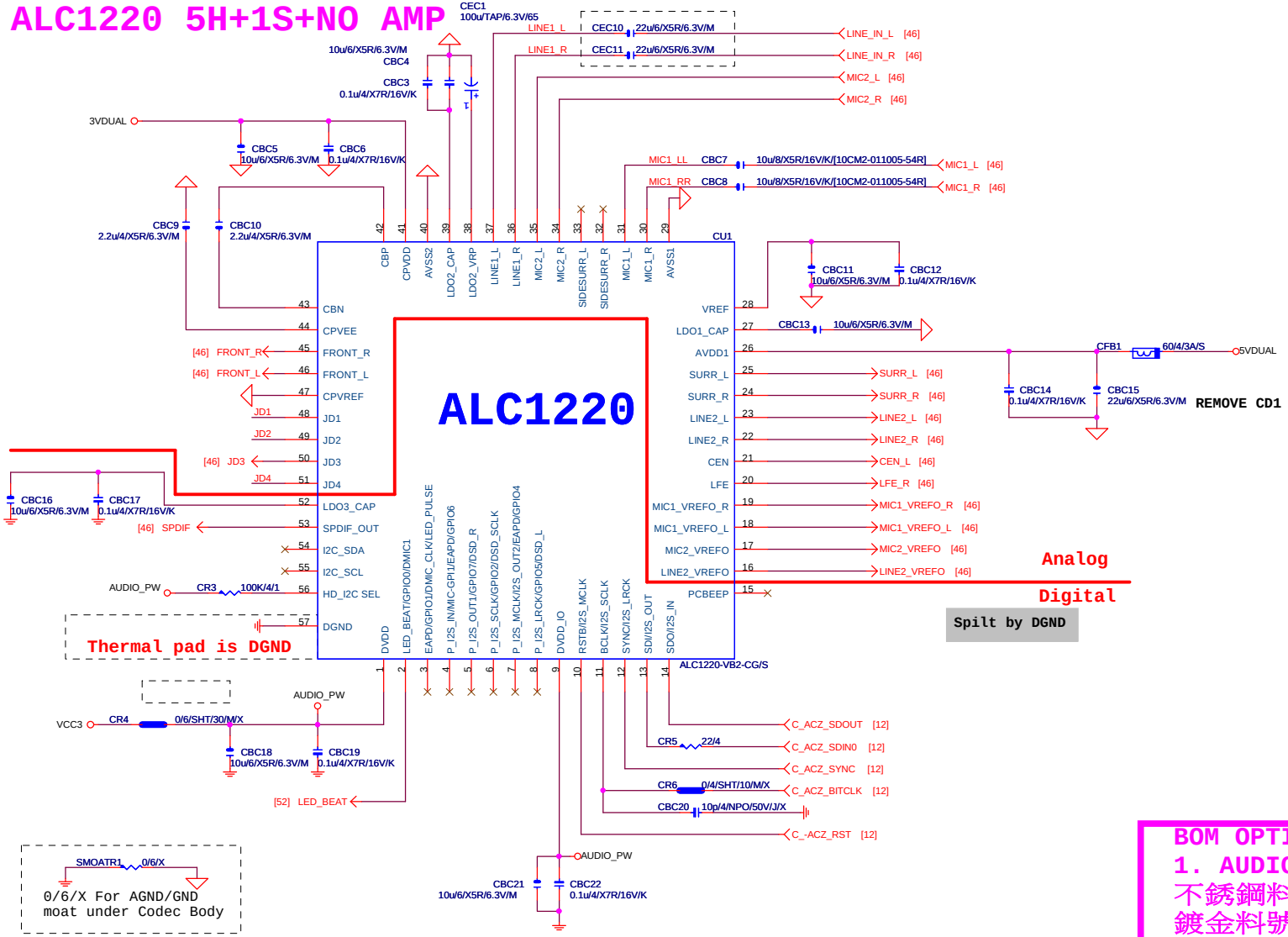
Rev 3.0

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
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		
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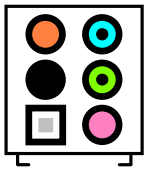
Rev 3.0

AZALIA JACK



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

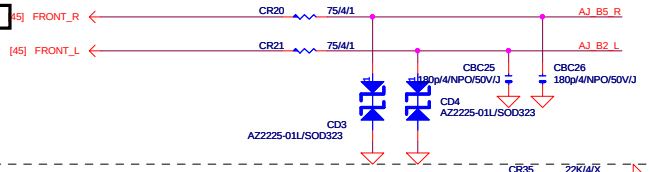
MOATR2 0/4/X
MOATC2 0.1u/4/X7R/16V/K → Near Codec

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

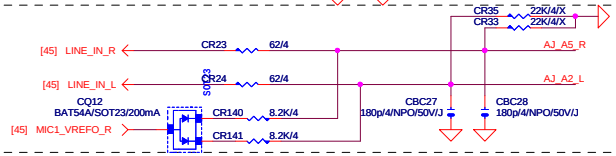
MOATR4 2.2/6 → Audio Jack - LAN

For HDMI SPDIF （依SPEC保留或移除）

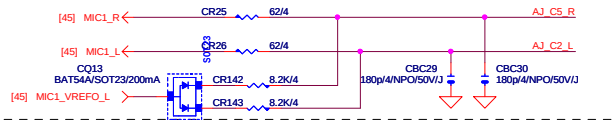
LINE-OUT



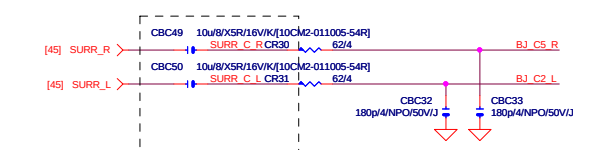
LINE-IN



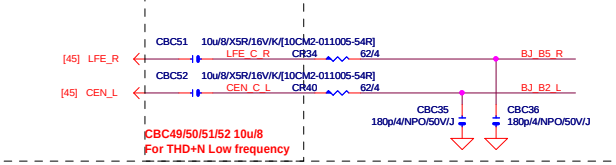
MIC-IN



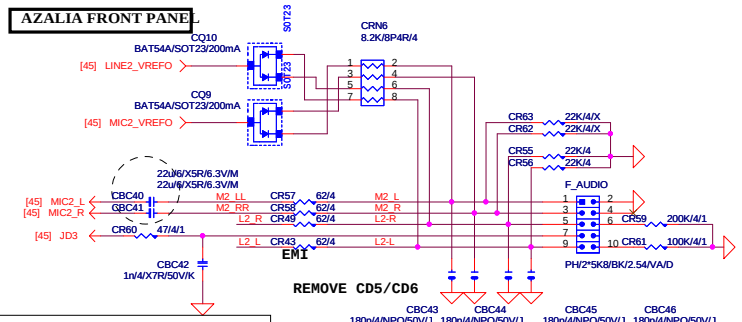
SURROUND



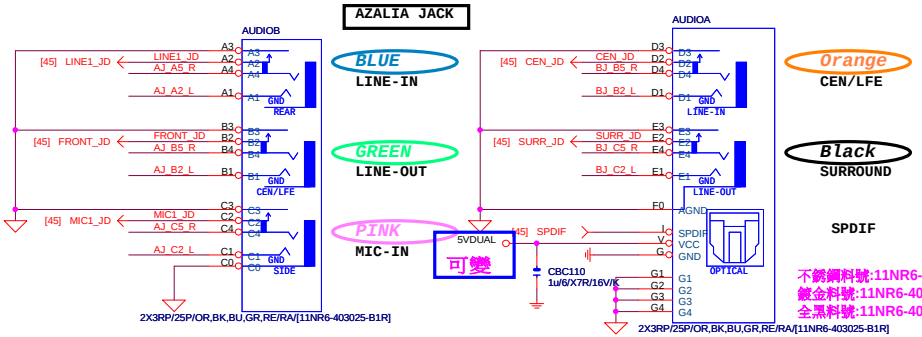
CEN/LFE



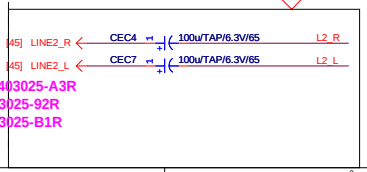
AZALIA FRONT PANEL



AZALIA JACK



不銹鋼料號:11NR6-403025-A3R
鍍金料號:11NR6-403025-92R
全黑料號:11NR6-403025-B1R



Gigabyte Technology

Title: AUDIO JACK

Size: Custom | Document Number: Z390 I AORUS PRO WIFI | Rev: 1.0

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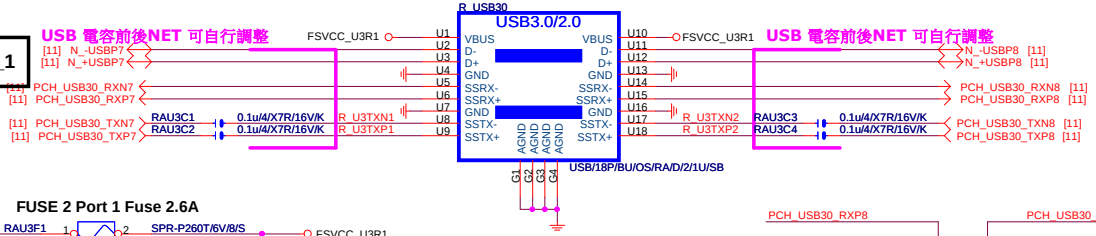
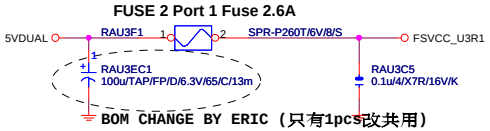
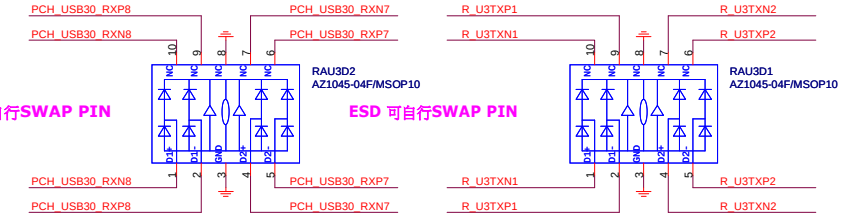
Rev: 0.2

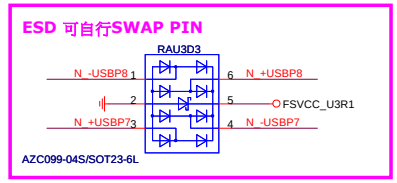
R_USB30_1



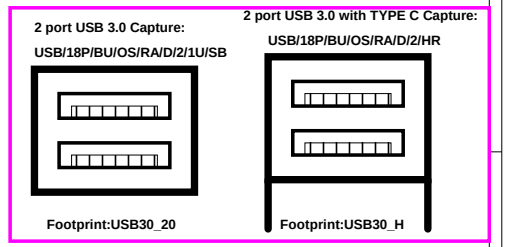


BOM CHANGE BY ERIC (只有1pcs改共用)





CONNECTOR 自行調整



R_USB30_2

KB_MS_USB3

Gigabyte Technology		
Title: KB_MS_USB3, R_USB30		
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
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Rev: 0.81

Front USB3.0

F_USB30 REV=1

NET 自行調整

FSVCC_U3F1 → VBUS (1)

[11] PCH_USB30_RXN9 → SSRX1- (2)
[11] PCH_USB30_RXP9 → SSRX1+ (3)
[11] PCH_USB30_TXN9 → FAU3C1 0.1u/4/X7R/16V/K → FU30_TXN1 → SSTX1- (5)
[11] PCH_USB30_TXP9 → FAU3C2 0.1u/4/X7R/16V/K → FU30_TXP1 → SSTX1+ (6)
[11] N_-USBP9 → D1- (8)
[11] N_+USBP9 → D1+ (9)
GND (7, 4)
ID (10)

VBUS (19) → FSVCC_U3F1
FU30_TXN2 → FAU3C3 0.1u/4/X7R/16V/K → SSTX2- (15)
FU30_TXP2 → FAU3C4 0.1u/4/X7R/16V/K → SSTX2+ (14)
SSRX2- (18) → PCH_USB30_RXN10 [11]
SSRX2+ (17) → PCH_USB30_RXP10 [11]
D2- (12) → N_-USBP10 [11]
D2+ (11) → N_+USBP10 [11]
GND (16, 13)

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

NET 可自行調整

0.1u/4/X7R/16V/K PCH_USB30_TXN10 [11]
0.1u/4/X7R/16V/K PCH_USB30_TXP10 [11]

F_USB30 PWR

5VDUAL → FAU3F1 → SPR-P260T/6V/8/S → FSVCC_U3F1
FAU3EC1 100u/TAP/FP/D/6.3V/65/C/13m
FAU3C5 0.1u/4/X7R/16V/K

[11,40] N_-USBOC_F → N_-USBOC_F → U3OC3 (SOT23) → FSVCC_U3F1 / FSVCC_F1
BAT54A/SOT23/200mA

NET 可自行調整

NET 可自行調整

PCH_USB30_RXP9 / PCH_USB30_RXN9 / PCH_USB30_TXP10 / PCH_USB30_TXN10
FAU3D1 AZ1045-04F/MSOP10
PCH_USB30_RXN9 / PCH_USB30_RXP9 / PCH_USB30_TXN10 / PCH_USB30_TXP10

FAU3D3
N_+USBP9 / N_-USBP9 / 3VDUAL / N_-USBP10 / N_+USBP10
AZC099-04S/SOT23-6L

CLOSE F_USB30

FU30_TXP1 / FU30_TXN1 / FU30_TXN2 / FU30_TXP2
FAU3D2 AZ1045-04F/MSOP10
FU30_TXN1 / FU30_TXP1 / FU30_TXP2 / FU30_TXN2

CLOSE F_USB30

Front USB30 P/N:11NH3-021210-B1R/B2R

Rear window

★Update 2015.10.01

Front USB30 P/N:11NH3-021210-51R/52R

Front USB30 P/N:11NH3-021210-B1R/B2R

Rear window

★Update 2015.10.01

Front USB30 P/N:11NH3-021210-51R/52R

-USBOC_F

POWER 可自行調整

5VDUAL → UAR1 8.2K/4 → N_-USBOC_F → N_-USBOC_F [11,40]
UAR2 15K/4/1

-USBOC_R

POWER 可自行調整

5VDUAL → UBR1 8.2K/4 → N_-USBOC_R → N_-USBOC_R [11,41]
UBR2 15K/4/1

[11,41] N_-USBOC_R → N_-USBOC_R → U3OC1 (SOT23) → FSVCC_U3R1 / FUSEVCC_R
BAT54A/SOT23/200mA

U3OC4 (SOT23) → FUSEVCC_U31
BAT54A/SOT23/200mA

* 接 PCH N_GPP_G6(SMI) & PCH PU 3Vdual

[13] N_GPPC_G6 → UAD5 (SOT23)
N_-USBOC_F → N_-USBOC_F [11,40]
N_-USBOC_R → N_-USBOC_R [11,41]
BAT54A/SOT23/200mA

Gigabyte Technology		
Title: R_USB30,F_USB30, USB_OC		
Size: Custom	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
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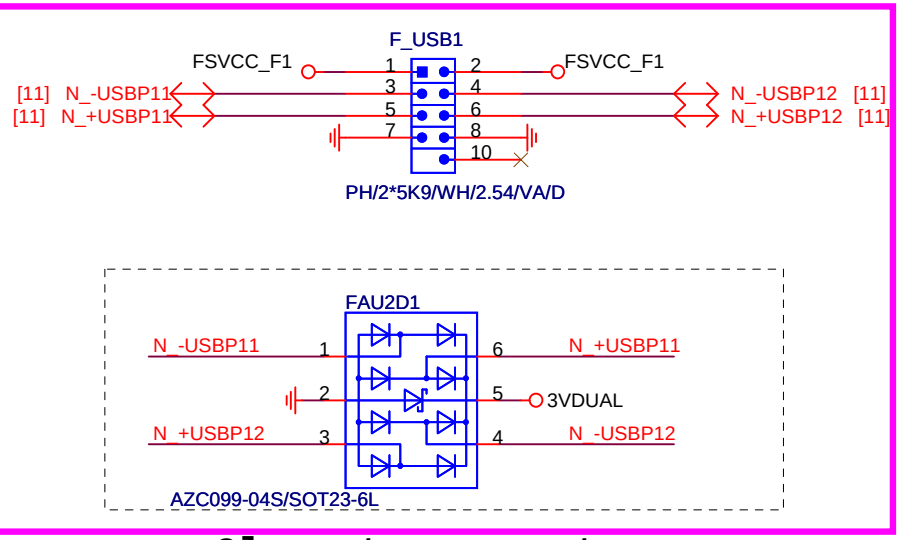
Rev: 0.81

FRONT USB1

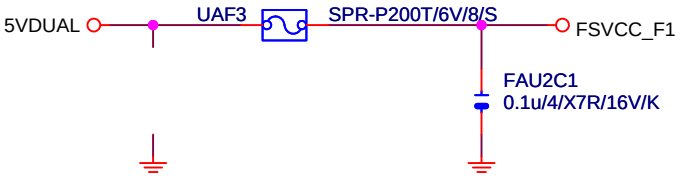
NET 可變

FUSB2X5-S



Close to connector

FUSE 2 Port 1 Fuse 2A



F_USB 2.0 OC SIGNAL

REMOVE TO F_USB30

Gigabyte Technology			
Title: USB2.0			
Size: A	Document Number: Z390 I AORUS PRO WIFI		Rev: 1.0
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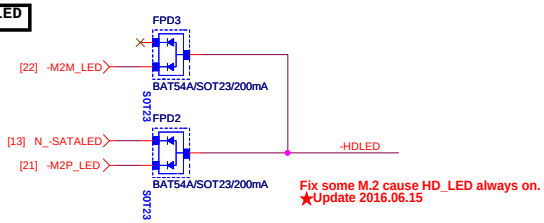
Rev: 0.2

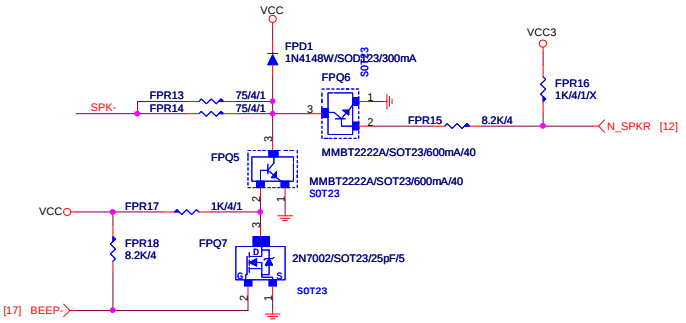
FRONT PANEL

SATA/M.2 LED



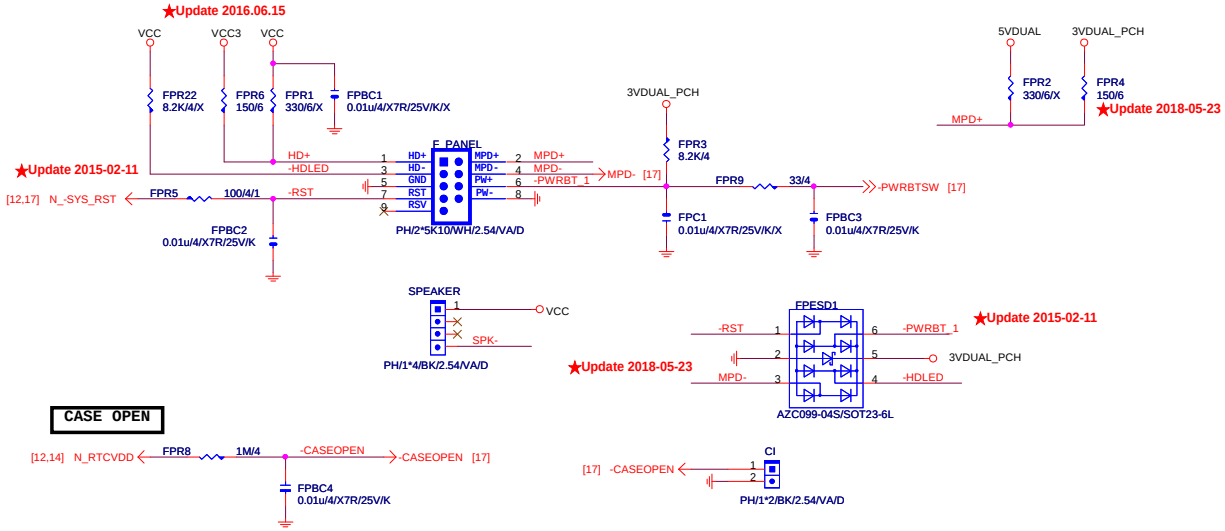
Fix some M.2 cause HD_LED always on.
★Update 2016.06.15

SPKR W/O EC



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

FRONT PANEL SHORT



CASE OPEN

SPKR W EC

Gigabyte Technology		
Title: FRONT PANEL		
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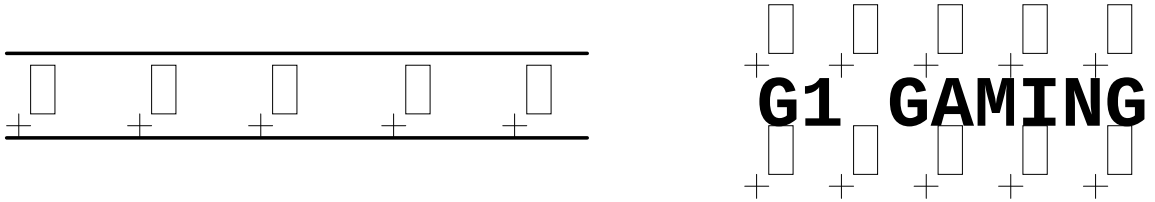
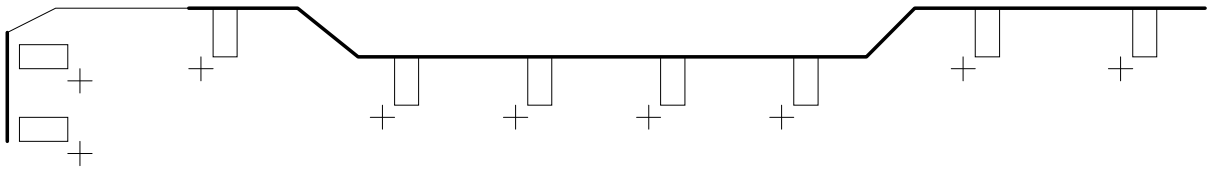
RGB LED LAYOUT 注意事項 :

1. **Debug LED (各LED依CPU/DRAM/VGA/BOOT個別位置擺放)**
2. 背板 **RGB LED** 方向整板請統一如下
   (整板正極可統一朝下或朝上)
3. 正板 **RGB LED** 統一方向即可
4. **MCU_PW & MCU_PW33電源一律走20mils**
5. **ECF1,ECF2,ECF3,ECF5 兩端電源走80mils或用鋪銅方式加粗**
6. **MCU LED 出pin的走線4mils,如:LED_R_1,LED_G_1,LED_B_1 .....**
7. **LED RGBW rule :W/S=10/5 mils 如:LED_R_11,LED_G_11,LED_B_11..**
   (包含從晶體到排阻到LED的net)
8. **Digital LED NET rule W/S=4/8 mils**
   GPD0_SDA_B,GPD0_SDA_BB,GPD0_SDA_C,GPD0_SDA_CC

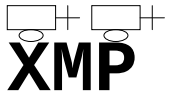
PCB板邊透光model name鏤空+背面 RGB LED



Audio Ground切割線+背面 RGB LED



"XMP"字樣鏤空+背面 RGB測發光 LED



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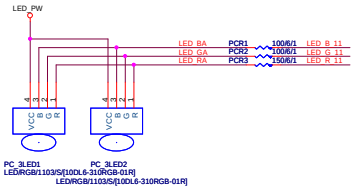
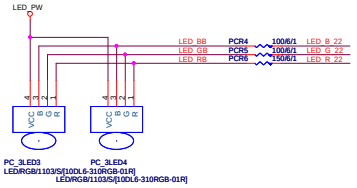
Rev 3.2

第一區 LED



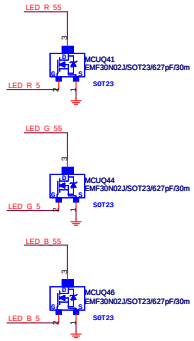
第二區 LED

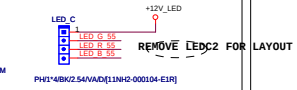


第五區 LED

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)

第五區 LED CONTROL

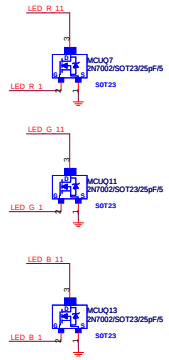




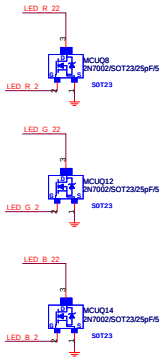
REMOVE LEDC2 FOR LAYOUT

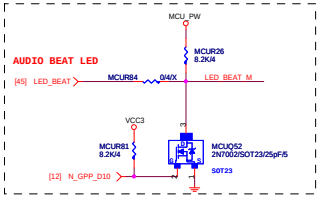
Footprint "PH1X4-ROW"
FOR WIFI ITX ,文字面無反白.

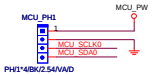
第一區 LED CONTROL

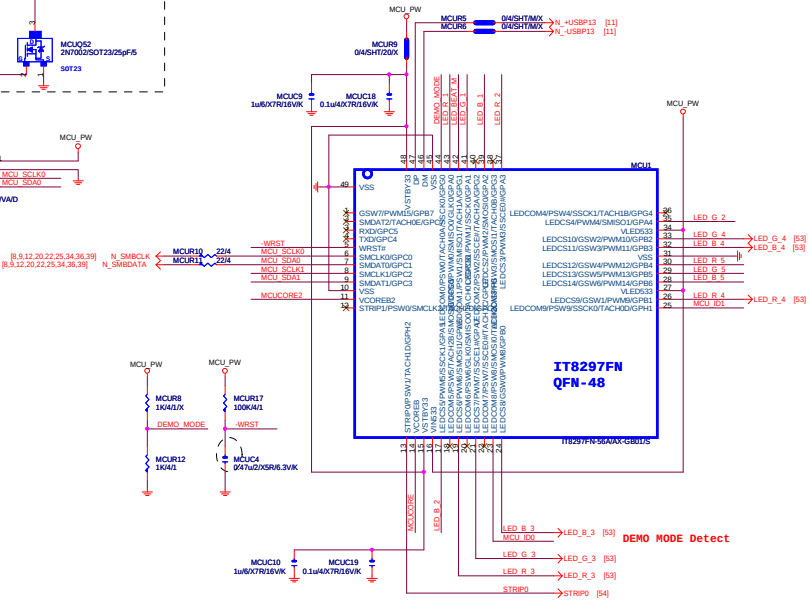


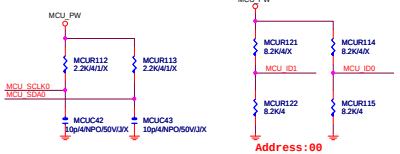
第二區 LED CONTROL

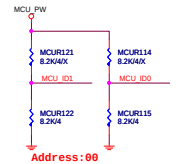


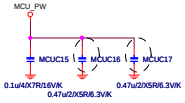


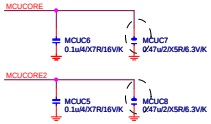












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Title	CPU / DDR / MCU LED	
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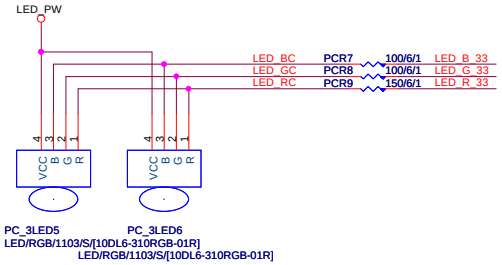
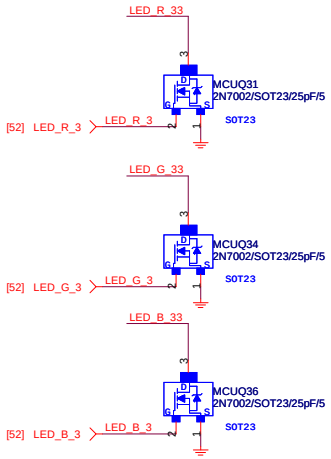
Rev 3.2

第三區 LED

FOR PCH_HS led connect (放在PCH_HS附近)

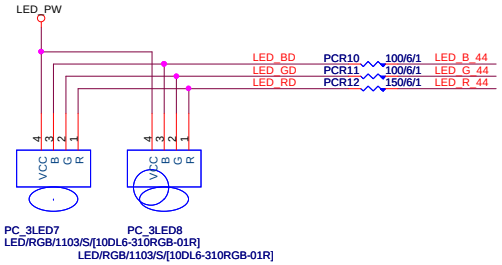


第三區 LED CONTROL

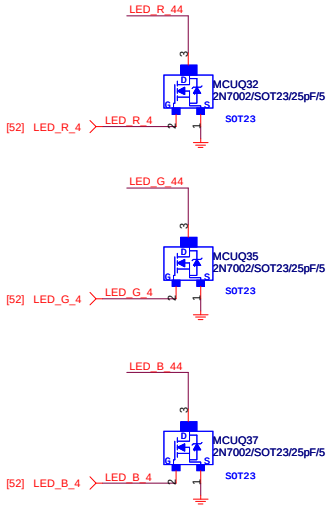


第四區 LED

FOR AUDIO 測發光 LED*6 (位置在正板,依據AUDIO_HS設計擺放)



第四區 LED CONTROL



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Title: MODEL / PCB /AUDIO/PCIE LED		
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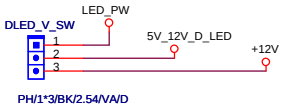
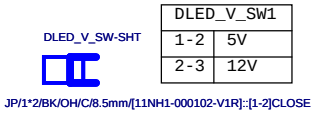
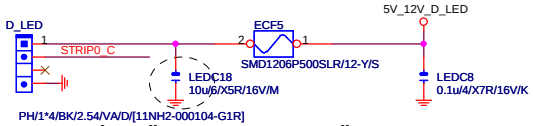
第六區 LED (靠近左上板邊位置)





DLED_V_SW1	
1-2	5V
2-3	12V

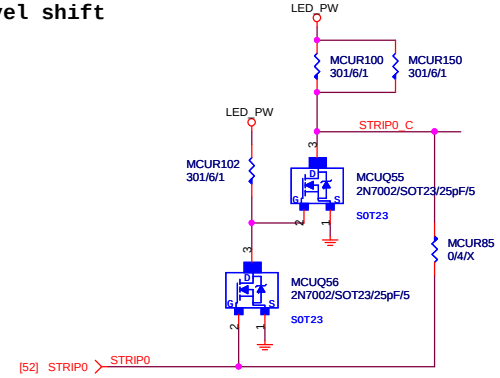
Digital LED Strip1



Footprint "PH1X4-CUT3-LED"

FOR WIFI ITX ,文字面無反白.

Level shift



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Title	PCH / IO / HS / LED_C LED	
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EMI/ESD R0.1

CLOSE SIO

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

[12,17,3 ,40,41] N_-SLP_S3

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

[12,17,34] N_-S4_S5

*Del EMIC3

CLOSE PCH

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

[4,12] N_CPUPWROK

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Title	EMI/ESD	
Size A	Document Number Z390 I AORUS PRO WIFI	Rev 1.0
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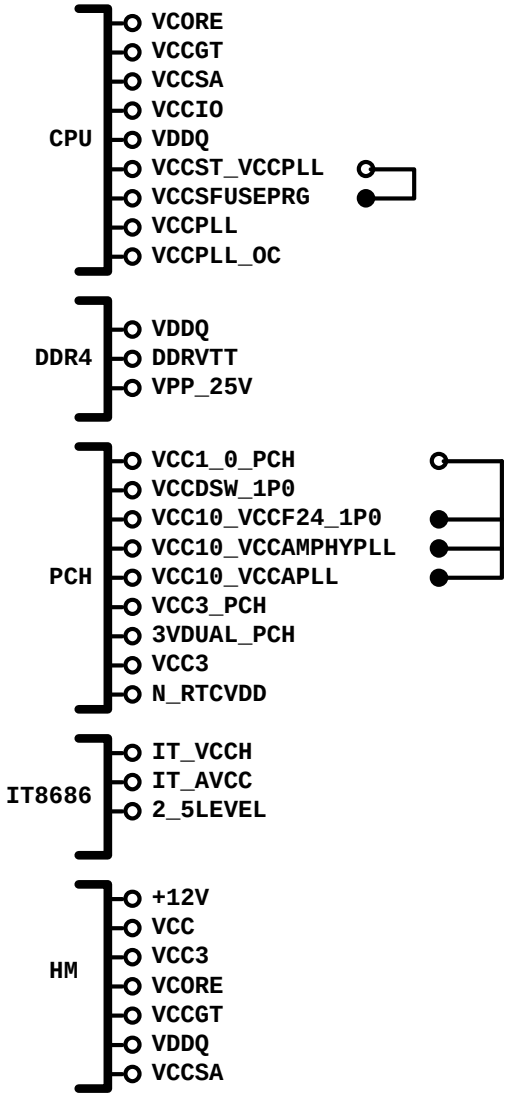
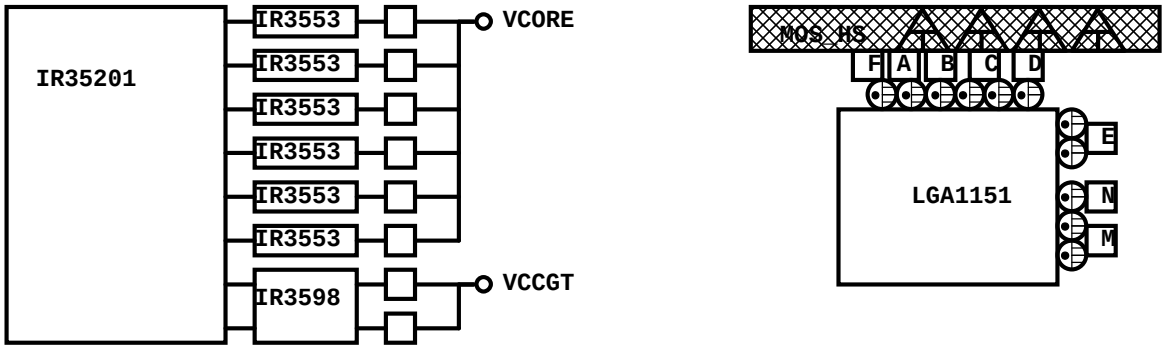
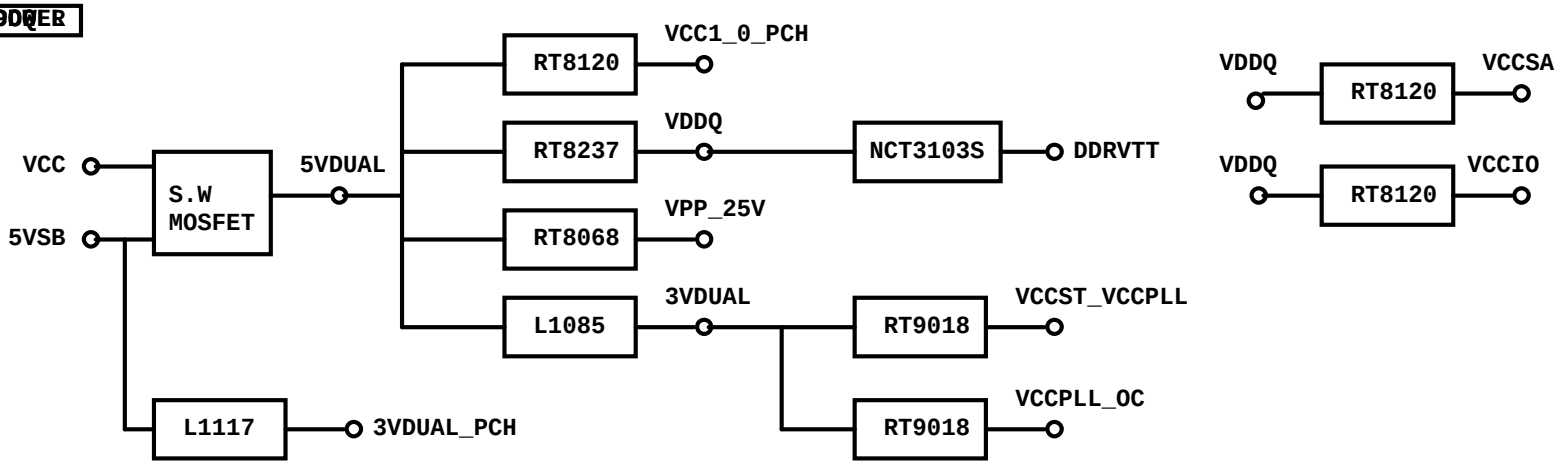
POWER BLOCK MAP



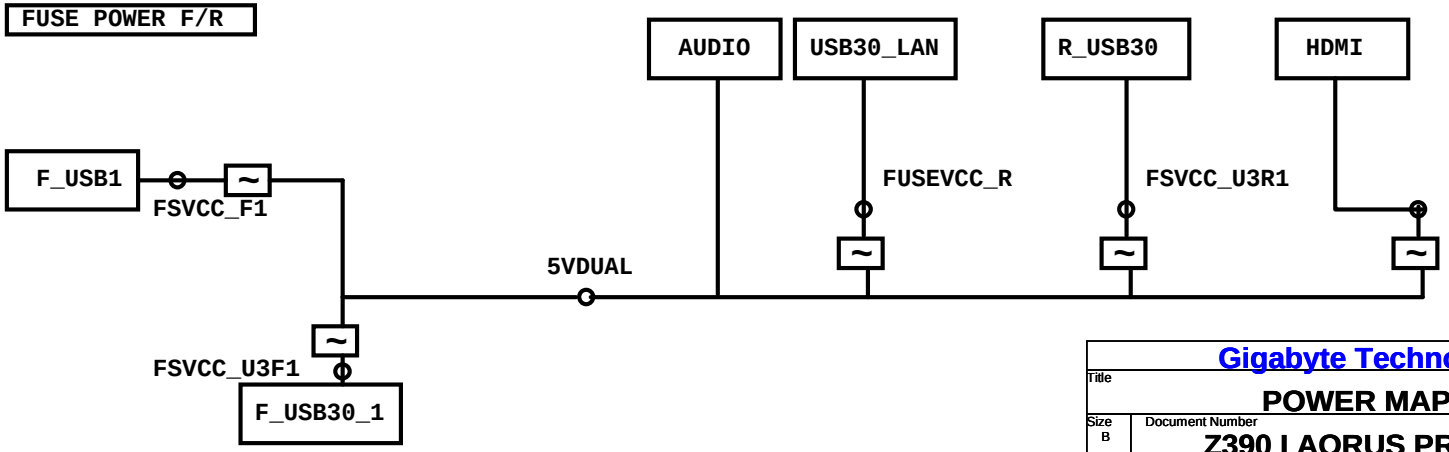
VCORE/VCCGT



VDDQ POWER



FUSE POWER F/R



Gigabyte Technology		
Title: POWER MAP		
Size: B	Document Number: Z390 I AORUS PRO WIFI	Rev: 1.0
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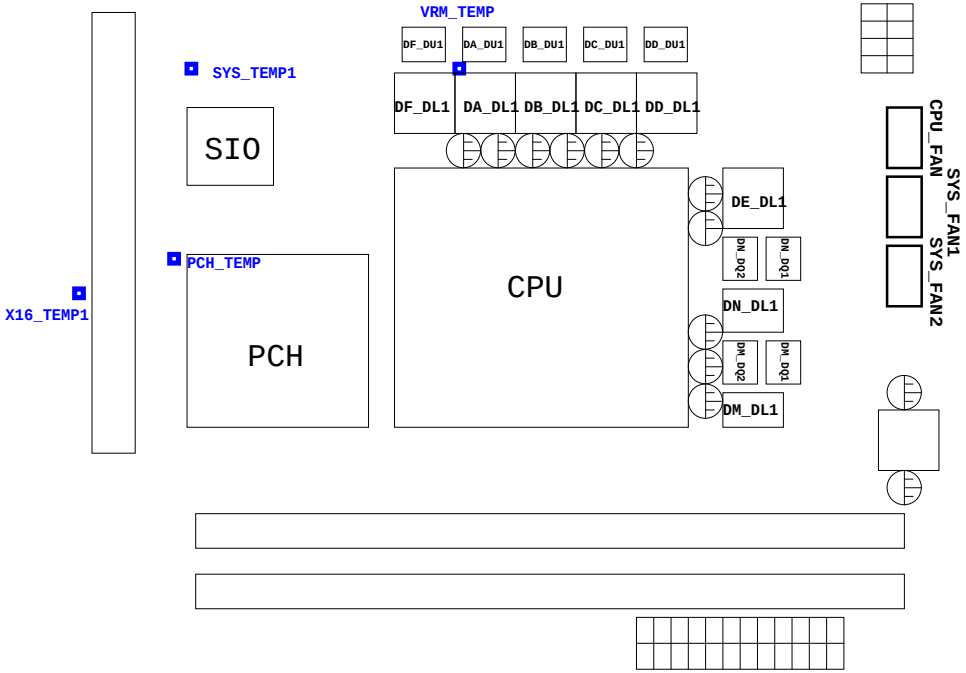

熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL1	N/A
DANTC2	DA_DQ1	Differential
DANTC3	DM_DQ2	N/A
DANTC4	DM_DL1	N/A
VCORE_TEMP	DB_DQ1	N/A
X16_TEMP1	PCIEX16	N/A
PCH_TEMP	PCH	N/A
SYS_TEMP1	CU1	N/A
SYS_TEMP2	N/A	N/A

SIO RS
SIO VIN
PWM RS
FAN

Gigabyte Technology

Title: NTC MAP

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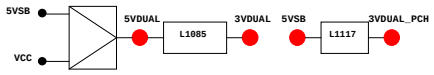
PCH GPIO LIST TABLE

PIN NAME	PWR	RP1E/PLTRST	Default	USAGE	NOTE
GPP_A0	MAIN	H-Z	RCIN#	N_-KBRST	P/U 8.2K VCC3
GPP_A1	MAIN	H-Z	LAD0	N_LAD0	N/A
GPP_A2	MAIN	H-Z	LAD1	N_LAD1	N/A
GPP_A3	MAIN	H-Z	LAD2	N_LAD2	N/A
GPP_A4	MAIN	H-Z	LAD3	N_LAD3	N/A
GPP_A5	MAIN	H-Z	LFRAME#	N_-LFRAME	N/A
GPP_A6	MAIN	H-Z	SERIRQ	N_SERIRQ	P/U 8.2K VCC3
GPP_A7	MAIN	H-Z	PIRQA#	N_-LDRQ0	P/U 8.2K VCC3
GPP_A8	MAIN	H-Z	CLKRUN#	N_GPP_A8	P/U 8.2K VCC3
GPP_A9	MAIN	H-Z	CLKOUT	T_TPMCLK/N_LPC24MA	N/A
GPP_A11	MAIN	H-Z	PME#	N_-P_PME	P/U 8.2K 3VDUAL_PCH
GPP_A12	MAIN	H-Z	GPI	N_GPP_A12	P/U 8.2K VCC3
GPP_A13	MAIN	H-Z	WANRN#	N_-S_WARN	N/A
GPP_A14	MAIN	H-Z	STAT#	N_GPP_A14	P/U 8.2K 3VDUAL
GPP_A15	MAIN	H-Z	ACK#	N_-S_ACK	N/A
GPP_B0	MAIN	H-Z	GPO	N_-DDR_V_SEL	P/U 8.2K VCC3
GPP_B2	MAIN	H-Z	GPI	N_-VRALERT	P/U 8.2K 3VDUAL
GPP_B3	MAIN	H-Z	GPI	N_GPP_B3	N/A
GPP_B4	MAIN	H-Z	GPI	N_GPP_B4	N/A
GPP_B5	MAIN	H-Z	GPI	-PCIEX16_PR	P/U 8.2K VCC3
GPP_B6	MAIN	H-Z	GPI	-PCIEX1_PR1	P/U 8.2K VCC3
GPP_B8	MAIN	H-Z	GPI	-PCIEX4_PR	P/U 8.2K VCC3
GPP_B9	MAIN	H-Z	GPI	N_GPP_B9	P/D GND
GPP_B10	MAIN	H-Z	GPI	LA_-CLKREQ	P/U 8.2K 3VDUAL_LAN1
GPP_B12	MAIN	H-Z	SLP_S0	N_-SLP_S0	N/A
GPP_B13	MAIN	H-Z	PLTRST	N_-PFMRST	N/A
GPP_B14	MAIN		GPO	N_SPKR	N/A
GPP_B15	MAIN	H-Z	GPI	N_GPP_B15	N/A
GPP_B16	MAIN	H-Z	GPI	N_GPP_B16	N/A
GPP_B22	MAIN		GPO	N_GPP_B22	P/D 1K GND
GPP_B23	MAIN	H-Z	GPO	N_-PCH_HOT	N/A
GPP_C0	MAIN	H-Z	SMBCLK	N_SMBCLK	P/U 1K 3VDUAL
GPP_C1	MAIN	H-Z	SMBDATA	N_SMBDATA	P/U 1K 3VDUAL
GPP_C2	MAIN		GPO	N_-LPCPME	N/A
GPP_C3	MAIN	H-Z	SML0CLK	N_SML0CLK	P/U 499 3VDUAL
GPP_C4	MAIN	H-Z	SML0DAT	N_SML0DAT	P/U 499 3VDUAL
GPP_C5	MAIN		GPO	N_GPP_C5	N/A
GPP_C6	MAIN	H-Z	GPI	N_SML1CLK	P/U 8.2K 3VDUAL
GPP_C7	MAIN	H-Z	GPI	N_SML1DAT	P/U 8.2K 3VDUAL
GPP_C22	MAIN	H-Z	GPI	N_GPP_C22	N/A
GPP_C23	MAIN	H-Z	GPI	N_GPP_C23	N/A
GPP_D4	MAIN	H-Z	GPI	N_GPP_D4	P/U 8.2K 3VDUAL
GPP_D7	MAIN	H-Z	GPI	N_GPP_D7	N/A
GPP_D8	MAIN	H-Z	GPI	N_GPP_D8	N/A
GPP_D9	MAIN	H-Z	GPI	N_GPP_D9	P/U 1K VCC3
GPP_D10	MAIN	H-Z	GPI	N_GPP_D10	N/A
GPP_D13	MAIN	H-Z	GPI	N_GPP_D13	N/A
GPP_D23	MAIN	H-Z	GPI	N_GPP_D23	P/U 8.2K 3VDUAL
GPP_E0	MAIN	H-Z	GPI	N_GPP_E0	P/U 8.2K 3VDUAL
GPP_E1	MAIN	H-Z	GPI	N_GPP_E1	P/U 8.2K 3VDUAL
GPP_E2	MAIN	H-Z	GPI	N_GPP_E2	P/U 8.2K 3VDUAL
GPP_E3	MAIN	H-Z	GPI	N/A	N/A
GPP_E4	MAIN	H-Z	GPI	N_DEVSLP0	N/A
GPP_E6	MAIN	H-Z	GPI	N_DEVSLP2	N/A
GPP_E8	MAIN	H-Z	GPI	N_-SATALED	N/A
GPP_E9	MAIN	H-Z	GPI	N_-USBOC_F	N/A
GPP_E10	MAIN	H-Z	GPI	N_-USBOC_R	N/A
GPP_E11	MAIN	H-Z	GPI	N_-USBOC_R	N/A
GPP_E12	MAIN	H-Z	GPI	N_-USBOC_F	N/A
GPP_F0	MAIN	H-Z	GPI	N_GPP_F0	P/U 8.2K 3VDUAL
GPP_F1	MAIN	H-Z	GPI	N_GPP_F1	P/U 8.2K 3VDUAL
GPP_F2	MAIN	H-Z	GPI	N_GPP_F2	P/U 8.2K 3VDUAL
GPP_F3	MAIN	H-Z	GPI	N_GPP_F3	P/U 8.2K 3VDUAL
GPP_F4	MAIN	H-Z	GPI	N_GPP_F4	P/U 8.2K 3VDUAL
GPP_F5	MAIN	H-Z	GPI	N_GPP_F5	P/U 8.2K VCC3
GPP_F6	MAIN	H-Z	GPI	N_DEVSLP4	N/A
GPP_F10	MAIN	H-Z	GPI	N_GPP_F10	P/U 8.2K VCC3
GPP_F11	MAIN	H-Z	GPI	N_GPP_F11	P/U 8.2K VCC3
GPP_F12	MAIN	H-Z	GPI	N_GPP_F12	P/U 8.2K VCC3
GPP_F13	MAIN	H-Z	GPI	N_GPP_F13	P/U 8.2K VCC3
GPP_F14	MAIN	H-Z	GPI	A_-SKTOCC	P/U 8.2K VCC3
GPP_F15	MAIN	H-Z	GPI	N_-USBOC_F	N/A
GPP_F16	MAIN	H-Z	GPI	N_-USBOC_F	N/A
GPP_F17	MAIN	H-Z	GPI	N_-USBOC_7	P/U 8.2K 3VDUAL
GPP_F18	MAIN	H-Z	GPI	N_-USBOC_7	P/U 8.2K 3VDUAL
GPP_F22	MAIN	H-Z	GPI	N_GPP_F22	P/U 8.2K VCC3
GPP_F23	MAIN	H-Z	GPI	N_GPP_F23	P/U 8.2K VCC3
GPP_G11	MAIN	H-Z	FANPWM2	N/A	N/A
GPP_G12	MAIN	H-Z	GPI	N_GPP_G12	N/A
GPP_G13	MAIN	H-Z	GPI	N_CPU_S1	N/A
GPP_G14	MAIN	H-Z	GPI	N_GT_S	N/A
GPP_G15	MAIN	H-Z	GPI	N_CPU_S	N/A
GPP_G18	MAIN	H-Z	GPI	N_GPP_G18	P/U 8.2K VCC3
GPP_G19	MAIN	H-Z	GPI	N_GPP_G19	P/U 8.2K VCC3
GPP_G20	MAIN	H-Z	GPI	N_GPP_G20	P/U 8.2K VCC3
GPP_G21	MAIN	H-Z	GPI	N_GPP_G21	P/U 8.2K VCC3
GPP_G22	MAIN	H-Z	GPI	N_GPP_G22	P/U 8.2K VCC3
GPP_H0	MAIN	H-Z	GPI	M2A_-CLKREQ	P/U 8.2K VCC3
GPP_H12	MAIN		GPO	N_GPP_H12	N/A
GPP_H19	MAIN	H-Z	GPI	N_GPP_H19	P/U 8.2K 3VDUAL
GPP_H20	MAIN	H-Z	GPI	N_GPP_H20	P/U 8.2K 3VDUAL
GPP_H21	MAIN	H-Z	GPI	N_GPP_H21	P/U 8.2K 3VDUAL
GPP_H22	MAIN	H-Z	GPI	N_GPP_H22	P/U 8.2K 3VDUAL
GPP_I0	MAIN	H-Z	GPI	N_DP_HDP	N/A
GPP_I1	MAIN	H-Z	GPI	N_DP2_HDP	N/A
GPP_I2	MAIN	H-Z	GPI	N_DVI_HDP_F	N/A

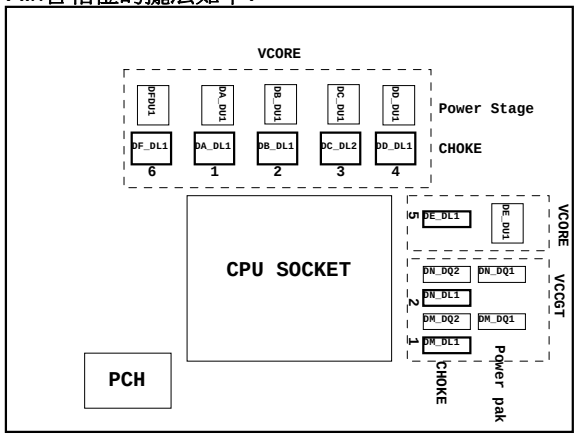
PIN NAME	PWR	RP1E/PLTRST	Default	USAGE	NOTE
GPP_I3	MAIN	H-Z	GPI	N_GPP_I3	P/U 8.2K VCC3
GPP_I4	MAIN	H-Z	GPI	N_GPP_I4	P/D 100K GND
GPP_I5	MAIN	H-Z	GPI	N_DDPB_CTRLCLK	P/U 2.2K VCC3
GPP_I6	MAIN		GPO	N_DDPB_CTRLDATA	P/U 2.2K VCC3
GPP_I7	MAIN	H-Z	GPI	N_DDPC_CTRLCLK	P/U 2.2K VCC3
GPP_I8	MAIN		GPO	N_DDPC_CTRLDATA	P/U 2.2K VCC3
GPP_I9	MAIN	H-Z	GPI	N_DDPD_CTRLCLK	P/U 2.2K VCC3
GPP_I10	MAIN		GPO	N_DDPD_CTRLDATA	P/U 2.2K VCC3
GPD0	STBY		BATLOW	N_-BATLOW	P/U 8.2K 3VDUAL_PCH
GPD1	STBY		ACPRESENT	N_GP_D1	P/U 8.2K 3VDUAL_PCH
GPD2	STBY		LAN_WAKE	N_-LAN_WAKE	P/U 8.2K 3VDUAL_PCH
GPD3	STBY		PWRBTN	O_PWRBTSW	P/U 8.2K 3VDUAL_PCH
GPD4	STBY		SLP_S3	N_-SLP_S3	N/A
GPD5	STBY		SLP_S4	N_-S4_S5	N/A
GPD6	STBY		SLP_A	N_-SLP_A	N/A
GPD8	STBY		SUSCLK	N_SUSCLK	P/D 1.5K GND
GPD10	STBY		SLP_S5	N_-SLP_S5	N/A
GPD11	STBY		LANPHYPC	N_-LAN_DIS	N/A

Super I/O ITE8686 GPIO Table

PIN NAME	USAGE	NOTE
PCIRST3#/GP10/VDIMM_STR_EN	N/A	
PCIRST2#/GP11	O_-PCIE_RST	
PCIRST1#/GP12	O_-PFMRST2	
SVC/PECI_RQT/GP14	N_-THRMTRIP	
SLP_SUS#/PCIRSTIN#/CIRTX2/GP15	-PCIRSTIN	
PSI_L/FAN_CLT5/CIRRX2/GP16	空 PIN	
RI2#/GP17	IO_GP17	
THR_PWM_CTS2#/GP20	空 PIN	
IO_SMI#DCD2#/GP21	空 PIN	
SPI_SI/GP22	BEEP-	
DPWROK/CPU_PG/GP23	N_PCH_DPWROK	
FAN_TAC5/RTS2#/GP24	FANIO5	
FAN_TAC4/DSR2#/GP25	空 PIN	
INV_OUT1_SOUT2/GP26	G_PLED	
INV_IN1/SIN2/GP27	INV_IN1	
ATXPG/GP30	PWOK	
CTS1/GP31	CTS1-	
OCWDT3/RI1#/GP32	RI1-	
OCWDT2/DCD1#/GP33	DCD1-	
VTT_PWRGD/GP34	VTT_PWRGD	
VCC18_EN/GP35	VCCIO_EN	
FAN_CTL3/GP36	FANPWM3	
FAN_TAC3/GP37	FANIO3	
3VSBSW#/GP40	空 PIN	
OCWDT1/SIN1/GP41	RXD1	
GP42/SCK/FAN_CTL4	FANPWM4	
PANSWH#/GP43	-PWRBTSW	
PWRON#/GP44	O_PWRBTSW	
OCWDT0/DSR1#/GP45	DSR1-	
CE2_N/GP47/JP6	CEB_N	
GP50/JP1	O_TPMCLK	
FAN_CTL2/GP51	FANPWM2	
FAN_TAC2/GP52	FANIO2	
SUSC#/GP53	N_-S4_S5	
PME#/GP54	N_-LPCPME	
RSMRST#/CIRRX1/GP55	O_-RSMRST	
MCLK/FAN_TAC6/GP56	MCLK	
MDAT/FAN_CTL6/GP57	MDAT	
KCLK/GP60	KCLK	
KDAT/GP61	KDAT	
KRST#/GP62	N_-KBRST	
HOLD_B#/GP63	空 PIN	
HOLD_B#/GP64	-SPI_HOLD_M	
VLDT_EN/PCH_D0/GP65	MB_ID2	
VCC1_05_EN/GP66	VCC1_0_EN	
GP67	N_-RTCRST	
USB_FS1/PD0/GP70	空 PIN	
USB_FS2/PD1/GP71	空 PIN	
USB_FS3/PD2/GP72	空 PIN	
USB_FS3/PD3/GP73	空 PIN	
USB_FS5/PD4/GP74	空 PIN	
USB_FS6/PD5/GP75	空 PIN	
USB_FS7/PD7/GP76	空 PIN	
USB_FS8/PD8/GP77	空 PIN	
LS-IN1/SLCT/GP80	VDDQ	
LS_OUT1/PE/GP81	空 PIN	
LS_IN2/BUSY/GP82	VCCIO	
LS_OUT2/ACK#/GP83	空 PIN	
IPHONE_CHARGE#/SLIN#/GP84	空 PIN	
OC_IN/INIT#/GP85	空 PIN	
OC_OUT/AFD#/GP86	空 PIN	
USB_OC2/STB#/GP87	空 PIN	
DDR_EN/GP90	MA_EN	
PWRLED/GP91	MPD-	
HOLD_OUT/GP92	空 PIN	
HDLED_IN/GP93	GP93	
PROCHOT#/GP94	A_-PROCHOT	
CPUPWRGD/GP95	空 PIN	
PCH_VRMPWRGD/GP96	N_PCH_VRMPWRGD	
VR_RDY/GP97	VR_RDY	



PWM各相位的擺法如下:



BIOS超電壓對應表:

線路圖名稱	BIOS選項
Vcore	CPU Vcore
VCCGT	CPU Graphic Voltage
VCCSA	CPU System Agent Voltage
VCCIO	CPU I/O Voltage
VCC1_0_PCH	PCH core
VDDQ	DRAM voltage
VPP_25V	DRAM VPP voltage
DDRVTT	DRAM Terminatio
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號:

Z270M-D3P-WG :
PCH : 12SP2-S04907-01R/02R/03R
MOS : 12SP2-S09325-31R/32R/33R

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	VCC	FANIO1	IT8686
	FANC_VOUT	N/A	N/A	NCT3947
SYS FAN1	FANPWM2	VCC	FANIO2	IT8686
	FAN1_VOUT	N/A	N/A	NCT3947
SYS FAN2	FANPWM3	VCC	FANIO3	IT8686
	FAN2_VOUT	N/A	N/A	NCT3947

Gigabyte Technology

Title: TABLE LIST

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