Model Name: H310M H 2.0

Rev:1.01

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1150-D
08	DDR4 CHANNEL A
09	DDR4 CHANNEL B
10	PCH_CLK BUFFER
11	PCH_DMI,USB,PCIE
12	PCH_MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH_PWR
15	PCH_GND
16	ITE 8686 LPC IO
17	BIOS
18	FAN CTRL--SIO
19	HWM
20	PCI EXPRESS*16 SLOT
21	PCI EXPRESS*1 SLOT
22	SATA
23	ISL95858_856 PWM
24	ISL95858_856 MOS_VCORE
25	ISL95858_856 MOS_VCCGT
26	VCCSA_VCCIO_VCCPLL
27	RT8237_DDR_VDDQ

SHEET	TITLE
28	RT8068_VPP
29	RT8237_PCH_VCC1_0_PCH
30	DISCRETE POWER
31	ATX POWER , A_-PROCHOT
32	KB_MS_USB
33	RTD2168 - DP to VGA - IC
34	RTD2168 - DP to VGA - Conn
35	R_USB30
36	REALTEK - RTL8111G
37	USB20_LAN CONNECTOR-RTL8111G
38	Realtek ALC887
39	REAR AUDIO JACK
40	F_USB30
41	F_USB20
42	M.2 X2
43	COM , LPT , TPM
44	F_PANEL
45	HDMI CONN
46	AUDIO LED
47	EMI/ESD
48	POWER MAP
49	TABLE LIST
50	NTC MAP
51	

Gigabyte Technology

Title: **Cover Sheet**

Size: Custom | Document Number: **H310M H 2.0** | Rev: 1.01

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Model Name: H310M H 2.0

Rev:1.01

Component value change history

2018/06/08

Data	Change Item	Reason
2018/05/18	First Release	9MH310MH2-00-10A
2018/07/01	PCB Rev 1.01	9MH310MH2-00-10K

Circuit or PCB layout change

DATE	Change Item	Reason
2018/05/18	更新PCH為H310CM CHIPSET	Rev 1.0
2019/07/01	1. 修改Choke Footprint for自動化	Rev 1.01

GIGABYTE™

Title: BOM & PCB MODIFY HISTORY

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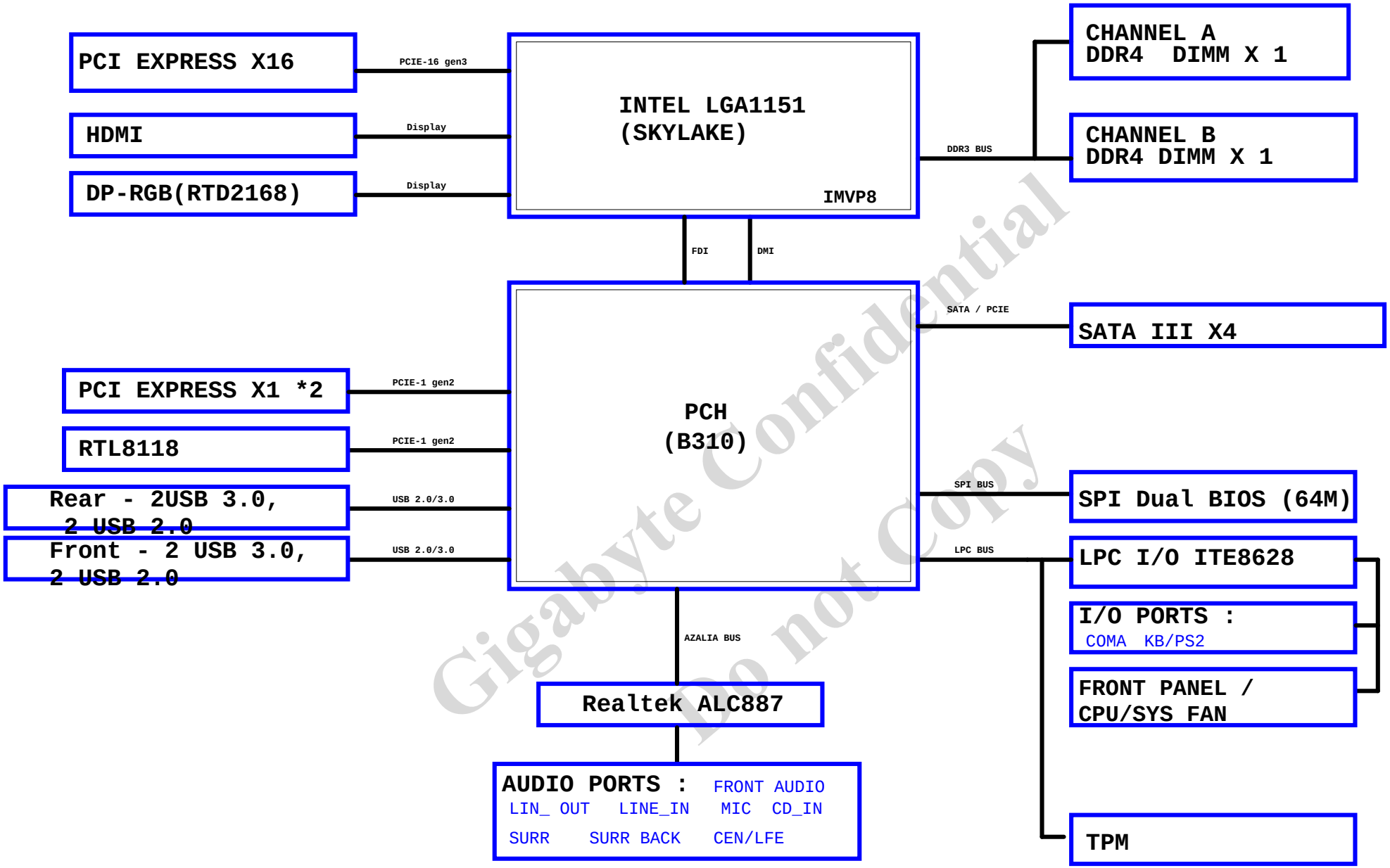
BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
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CFL_R0.1

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

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

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

TDO PULL HIGH 刪?

HDMI
DP-VGA

DVI

HDMI

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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CFL_R0.1

LGA1151A

SKT_H4

LGA1151

MDA0	AE38	DDR0_DQ[0]		AW18	M_DCLKA0	M_DCLKA0	8
MDA1	AE37	DDR0_DQ[1]		AW18	M_-DCLKA0	M_-DCLKA0	8
MDA2	AG38	DDR0_DQ[2]		AW17	M_DCLKA1	M_DCLKA1	8
MDA3	AG37	DDR0_DQ[3]		AY17	M_-DCLKA1	M_-DCLKA1	8
MDA4	AE39	DDR0_DQ[4]		AW16			
MDA5	AE40	DDR0_DQ[5]		AV16			
MDA6	AG39	DDR0_DQ[6]		AT16			
MDA7	AG40	DDR0_DQ[7]		AU16			
MDA8	AJ38	DDR0_DQ[8]					
MDA9	AJ37	DDR0_DQ[9]	DDR0_CKP[0]	AY24	CKEA0	CKEA0	8
MDA10	AL38	DDR0_DQ[10]	DDR0_CKN[0]	AW24	CKEA1	CKEA1	8
MDA11	AL37	DDR0_DQ[11]	DDR0_CKP[1]	AV24			
MDA12	AJ40	DDR0_DQ[12]	DDR0_CKN[1]	AV25			
MDA13	AJ39	DDR0_DQ[13]	DDR0_CKP[2]				
MDA14	AL39	DDR0_DQ[14]	DDR0_CKN[2]	AW12	M_-CSA0	M_-CSA0	8
MDA15	AL40	DDR0_DQ[15]	DDR0_CKP[3]	AU11	M_-CSA1	M_-CSA1	8
MDA16	AN38	DDR0_DQ[16]/DDR0_DQ[32]	DDR0_CKN[3]	AV13			
MDA17	AN40	DDR0_DQ[17]/DDR0_DQ[33]		AV10			
MDA18	AR38	DDR0_DQ[18]/DDR0_DQ[34]	DDR0_CKE[0]				
MDA19	AR37	DDR0_DQ[19]/DDR0_DQ[35]	DDR0_CKE[1]	AW11	MODT_A0		
MDA20	AN39	DDR0_DQ[20]/DDR0_DQ[36]	DDR0_CKE[2]	AU14	MODT_A1		
MDA21	AN37	DDR0_DQ[21]/DDR0_DQ[37]	DDR0_CKE[3]	AU12			
MDA22	AR39	DDR0_DQ[22]/DDR0_DQ[38]		AY10			
MDA23	AR40	DDR0_DQ[23]/DDR0_DQ[39]	DDR0_CS#[0]				
MDA24	AW37	DDR0_DQ[24]/DDR0_DQ[40]	DDR0_CS#[1]	AY13	SBAA0	SBAA0	8
MDA25	AU38	DDR0_DQ[25]/DDR0_DQ[41]	DDR0_CS#[2]	AV15	SBAA1	SBAA1	8
MDA26	AV35	DDR0_DQ[26]/DDR0_DQ[42]	DDR0_CS#[3]	AW23	BG_A0	BG_A0	8
MDA27	AW35	DDR0_DQ[27]/DDR0_DQ[43]					
MDA28	AU37	DDR0_DQ[28]/DDR0_DQ[44]	DDR0_ODT[0]	AW13	MAAA16		
MDA29	AV37	DDR0_DQ[29]/DDR0_DQ[45]	DDR0_ODT[1]	AV14	MAAA14		
MDA30	AT35	DDR0_DQ[30]/DDR0_DQ[46]	DDR0_ODT[2]	AY11	MAAA15		
MDA31	AU35	DDR0_DQ[31]/DDR0_DQ[47]	DDR0_ODT[3]				
MDA32	AY8	DDR0_DQ[32]/DDR1_DQ[0]		AW15	MAAA0		
MDA33	AW8	DDR0_DQ[33]/DDR1_DQ[1]	DDR0_BA[0]/DDR0_CAB[4]/DDR0_BA[0]	AU18	MAAA1		
MDA34	AV6	DDR0_DQ[34]/DDR1_DQ[2]	DDR0_BA[1]/DDR0_CAB[6]/DDR0_BA[1]	AU17	MAAA2		
MDA35	AU6	DDR0_DQ[35]/DDR1_DQ[3]	DDR0_BA[2]/DDR0_CAA[5]/DDR0_BG[0]	AV19	MAAA3		
MDA36	AU8	DDR0_DQ[36]/DDR1_DQ[4]		AT19	MAAA4		
MDA37	AV8	DDR0_DQ[37]/DDR1_DQ[5]	DDR0_RAS#/DDR0_CAB[3]/DDR0_MA[16]	AU20	MAAA5		
MDA38	AW6	DDR0_DQ[38]/DDR1_DQ[6]	DDR0_WE#/DDR0_CAB[2]/DDR0_MA[14]	AV20	MAAA6		
MDA39	AY6	DDR0_DQ[39]/DDR1_DQ[7]	DDR0_CAS#/DDR0_CAB[1]/DDR0_MA[15]	AU21	MAAA7		
MDA40	AY4	DDR0_DQ[40]/DDR1_DQ[8]		AT20	MAAA8		
MDA41	AV4	DDR0_DQ[41]/DDR1_DQ[9]	DDR0_MA[0]/DDR0_CAB[9]/DDR0_MA[0]	AT22	MAAA9		
MDA42	AT1	DDR0_DQ[42]/DDR1_DQ[10]	DDR0_MA[1]/DDR0_CAB[8]/DDR0_MA[1]	AY14	MAAA10		
MDA43	AT2	DDR0_DQ[43]/DDR1_DQ[11]	DDR0_MA[2]/DDR0_CAB[5]/DDR0_MA[2]	AU22	MAAA11		
MDA44	AV3	DDR0_DQ[44]/DDR1_DQ[12]	DDR0_MA[3]	AV22	MAAA12		
MDA45	AW4	DDR0_DQ[45]/DDR1_DQ[13]	DDR0_MA[4]	AV12	MAAA13		
MDA46	AT4	DDR0_DQ[46]/DDR1_DQ[14]	DDR0_MA[5]/DDR0_CAA[0]/DDR0_MA[5]	AV23	BG_A1	BG_A1	8
MDA47	AT3	DDR0_DQ[47]/DDR1_DQ[15]	DDR0_MA[6]/DDR0_CAA[2]/DDR0_MA[6]	AU24		M_-ACT_A	8
MDA48	AP2	DDR0_DQ[48]/DDR1_DQ[32]	DDR0_MA[7]/DDR0_CAA[4]/DDR0_MA[7]				
MDA49	AM4	DDR0_DQ[49]/DDR1_DQ[33]	DDR0_MA[8]/DDR0_CAA[3]/DDR0_MA[8]	AY15		M_DDR_PARA	8
MDA50	AP3	DDR0_DQ[50]/DDR1_DQ[34]	DDR0_MA[9]/DDR0_CAA[1]/DDR0_MA[9]	AT23		M_-ALERT_A	8
MDA51	AM3	DDR0_DQ[51]/DDR1_DQ[35]	DDR0_MA[10]/DDR0_CAB[7]/DDR0_MA[10]				
MDA52	AP4	DDR0_DQ[52]/DDR1_DQ[36]	DDR0_MA[11]/DDR0_CAA[7]/DDR0_MA[11]				
MDA53	AM2	DDR0_DQ[53]/DDR1_DQ[37]	DDR0_MA[12]/DDR0_CAA[6]/DDR0_MA[12]	AF39	M_-DQSA0		
MDA54	AP1	DDR0_DQ[54]/DDR1_DQ[38]	DDR0_MA[13]/DDR0_CAB[0]/DDR0_MA[13]	AK39	M_-DQSA1		
MDA55	AM1	DDR0_DQ[55]/DDR1_DQ[39]	DDR0_MA[14]/DDR0_CAA[9]/DDR0_BG[1]	AP39	M_-DQSA2		
MDA56	AK3	DDR0_DQ[56]/DDR1_DQ[40]	DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT#	AU36	M_-DQSA3		
MDA57	AH1	DDR0_DQ[57]/DDR1_DQ[41]		AW7	M_-DQSA4		
MDA58	AK4	DDR0_DQ[58]/DDR1_DQ[42]	DDR0_PAR	AU3	M_-DQSA5		
MDA59	AH2	DDR0_DQ[59]/DDR1_DQ[43]	DDR0_ALERT#	AN3	M_-DQSA6		
MDA60	AH4	DDR0_DQ[60]/DDR1_DQ[44]		AJ3	M_-DQSA7		
MDA61	AK2	DDR0_DQ[61]/DDR1_DQ[45]					
MDA62	AH3	DDR0_DQ[62]/DDR1_DQ[46]	DDR0_DQSN[0]	AF38	M_DQSA0		
MDA63	AK1	DDR0_DQ[63]/DDR1_DQ[47]	DDR0_DQSN[1]	AK38	M_DQSA1		
			DDR0_DQSN[2]/DDR0_DQSN[4]	AP38	M_DQSA2		
	AU33		DDR0_DQSN[3]/DDR0_DQSN[5]	AV36	M_DQSA3		
	AT33	DDR0_ECC[0]	DDR0_DQSN[4]/DDR1_DQSN[0]	AV7	M_DQSA4		
	AW33	DDR0_ECC[1]	DDR0_DQSN[5]/DDR1_DQSN[1]	AU2	M_DQSA5		
	AV31	DDR0_ECC[2]	DDR0_DQSN[6]/DDR1_DQSN[4]	AN2	M_DQSA6		
	AU31	DDR0_ECC[3]	DDR0_DQSN[7]/DDR1_DQSN[5]	AJ2	M_DQSA7		
	AV33	DDR0_ECC[4]					
	AW31	DDR0_ECC[5]	DDR0_DQSP[0]				
	AY31	DDR0_ECC[6]	DDR0_DQSP[1]	AV32			
		DDR0_ECC[7]	DDR0_DQSP[2]/DDR0_DQSP[4]	AU32			
			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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LGA1151

CPU-SK/1151/S/GF

LGA1151B

SKT_H4

LGA1151

MDB0	AD34	DDR1_DQ[0]/DDR0_DQ[16]		AM20	M_DCLKB0	M_DCLKB0	9
MDB1	AD35	DDR1_DQ[1]/DDR0_DQ[17]		AM21	M_-DCLKB0	M_-DCLKB0	9
MDB2	AG35	DDR1_DQ[2]/DDR0_DQ[18]		AP22	M_DCLKB1	M_DCLKB1	9
MDB3	AH35	DDR1_DQ[3]/DDR0_DQ[19]		AP21	M_-DCLKB1	M_-DCLKB1	9
MDB4	AE35	DDR1_DQ[4]/DDR0_DQ[20]		AN20			
MDB5	AE34	DDR1_DQ[5]/DDR0_DQ[21]		AN21			
MDB6	AG34	DDR1_DQ[6]/DDR0_DQ[22]		AP19			
MDB7	AH34	DDR1_DQ[7]/DDR0_DQ[23]		AP20			
MDB8	AK35	DDR1_DQ[8]/DDR0_DQ[24]					
MDB9	AL35	DDR1_DQ[9]/DDR0_DQ[25]	DDR1_CKP[0]	AY29	CKEB0	CKEB0	9
MDB10	AK32	DDR1_DQ[10]/DDR0_DQ[26]	DDR1_CKN[0]	AV29	CKEB1	CKEB1	9
MDB11	AL32	DDR1_DQ[11]/DDR0_DQ[27]	DDR1_CKP[1]	AW29			
MDB12	AK34	DDR1_DQ[12]/DDR0_DQ[28]	DDR1_CKN[1]	AU29			
MDB13	AL34	DDR1_DQ[13]/DDR0_DQ[29]	DDR1_CKP[2]				
MDB14	AK31	DDR1_DQ[14]/DDR0_DQ[30]	DDR1_CKN[2]	AP17	M_-CSB0	M_-CSB0	9
MDB15	AL31	DDR1_DQ[15]/DDR0_DQ[31]	DDR1_CKP[3]	AN15	M_-CSB1	M_-CSB1	9
MDB16	AP35	DDR1_DQ[16]/DDR0_DQ[48]	DDR1_CKN[3]	AN17			
MDB17	AN35	DDR1_DQ[17]/DDR0_DQ[49]		AM15			
MDB18	AN32	DDR1_DQ[18]/DDR0_DQ[50]	DDR1_CKE[0]				
MDB19	AP32	DDR1_DQ[19]/DDR0_DQ[51]	DDR1_CKE[1]	AM16	MODT_B0		
MDB20	AN34	DDR1_DQ[20]/DDR0_DQ[52]	DDR1_CKE[2]	AL16	MODT_B1		
MDB21	AP34	DDR1_DQ[21]/DDR0_DQ[53]	DDR1_CKE[3]	AP15			
MDB22	AN31	DDR1_DQ[22]/DDR0_DQ[54]		AL15			
MDB23	AP31	DDR1_DQ[23]/DDR0_DQ[55]	DDR1_CS#[0]				
MDB24	AL29	DDR1_DQ[24]/DDR0_DQ[56]	DDR1_CS#[1]	AN18	MAAB16		
MDB25	AM29	DDR1_DQ[25]/DDR0_DQ[57]	DDR1_CS#[2]	AL17	MAAB14		
MDB26	AP29	DDR1_DQ[26]/DDR0_DQ[58]	DDR1_CS#[3]	AP16	MAAB15		
MDB27	AR29	DDR1_DQ[27]/DDR0_DQ[59]					
MDB28	AM28	DDR1_DQ[28]/DDR0_DQ[60]	DDR1_ODT[0]	AL18	SBAB0	SBAB0	9
MDB29	AL28	DDR1_DQ[29]/DDR0_DQ[61]	DDR1_ODT[1]	AM18	SBAB1	SBAB1	9
MDB30	AR28	DDR1_DQ[30]/DDR0_DQ[62]	DDR1_ODT[2]	AW28	BG_B0	BG_B0	9
MDB31	AP28	DDR1_DQ[31]/DDR0_DQ[63]	DDR1_ODT[3]				
MDB32	AR12	DDR1_DQ[32]/DDR1_DQ[16]		AL19	MAAB0		
MDB33	AP12	DDR1_DQ[33]/DDR1_DQ[17]	DDR1_BA[0]/DDR1_CAB[4]/DDR1_BA[0]	AL22	MAAB1		
MDB34	AM13	DDR1_DQ[34]/DDR1_DQ[18]	DDR1_BA[1]/DDR1_CAB[6]/DDR1_BA[1]	AM22	MAAB2		
MDB35	AL13	DDR1_DQ[35]/DDR1_DQ[19]	DDR1_BA[2]/DDR1_CAA[5]/DDR1_BG[0]	AM23	MAAB3		
MDB36	AR13	DDR1_DQ[36]/DDR1_DQ[20]		AP23	MAAB4		
MDB37	AP13	DDR1_DQ[37]/DDR1_DQ[21]	DDR1_RAS#/DDR1_CAB[3]/DDR1_MA[16]	AL23	MAAB5		
MDB38	AM12	DDR1_DQ[38]/DDR1_DQ[22]	DDR1_WE#/DDR1_CAB[2]/DDR1_MA[14]	AW26	MAAB6		
MDB39	AL12	DDR1_DQ[39]/DDR1_DQ[23]	DDR1_CAS#/DDR1_CAB[1]/DDR1_MA[15]	AY26	MAAB7		
MDB40	AP10	DDR1_DQ[40]/DDR1_DQ[24]		AU26	MAAB8		
MDB41	AR10	DDR1_DQ[41]/DDR1_DQ[25]	DDR1_MA[0]/DDR1_CAB[9]/DDR1_MA[0]	AW27	MAAB9		
MDB42	AR7	DDR1_DQ[42]/DDR1_DQ[26]	DDR1_MA[1]/DDR1_CAB[8]/DDR1_MA[1]	AP18	MAAB10		
MDB43	AP7	DDR1_DQ[43]/DDR1_DQ[27]	DDR1_MA[2]/DDR1_CAB[5]/DDR1_MA[2]	AU27	MAAB11		
MDB44	AR9	DDR1_DQ[44]/DDR1_DQ[28]	DDR1_MA[3]	AV27	MAAB12		
MDB45	AP9	DDR1_DQ[45]/DDR1_DQ[29]	DDR1_MA[4]	AR15	MAAB13		
MDB46	AR6	DDR1_DQ[46]/DDR1_DQ[30]	DDR1_MA[5]/DDR1_CAA[0]/DDR1_MA[5]	AY28	BG_B1	BG_B1	9
MDB47	AP6	DDR1_DQ[47]/DDR1_DQ[31]	DDR1_MA[6]/DDR1_CAA[2]/DDR1_MA[6]	AU28		M_-ACT_B	9
MDB48	AM10	DDR1_DQ[48]	DDR1_MA[7]/DDR1_CAA[4]/DDR1_MA[7]				
MDB49	AL10	DDR1_DQ[49]	DDR1_MA[8]/DDR1_CAA[3]/DDR1_MA[8]	AL20		M_DDR_PARB	9
MDB50	AM7	DDR1_DQ[50]	DDR1_MA[9]/DDR1_CAA[1]/DDR1_MA[9]	AY25		M_-ALERT_B	9
MDB51	AL7	DDR1_DQ[51]	DDR1_MA[10]/DDR1_CAB[7]/DDR1_MA[10]				
MDB52	AM9	DDR1_DQ[52]	DDR1_MA[11]/DDR1_CAA[7]/DDR1_MA[11]				
MDB53	AL9	DDR1_DQ[53]	DDR1_MA[12]/DDR1_CAA[6]/DDR1_MA[12]	AF34	M_-DQSB0		
MDB54	AM6	DDR1_DQ[54]	DDR1_MA[13]/DDR1_CAB[0]/DDR1_MA[13]	AK33	M_-DQSB1		
MDB55	AL6	DDR1_DQ[55]	DDR1_MA[14]/DDR1_CAA[9]/DDR1_BG[1]	AN33	M_-DQSB2		
MDB56	AJ6	DDR1_DQ[56]	DDR1_MA[15]/DDR1_CAA[8]/DDR1_ACT#	AN29	M_-DQSB3		
MDB57	AJ7	DDR1_DQ[57]		AN13	M_-DQSB4		
MDB58	AE6	DDR1_DQ[58]	DDR1_PAR	AR8	M_-DQSB5		
MDB59	AF7	DDR1_DQ[59]	DDR1_ALERT#	AM8	M_-DQSB6		
MDB60	AH7	DDR1_DQ[60]		AG6	M_-DQSB7		
MDB61	AH6	DDR1_DQ[61]					
MDB62	AE7	DDR1_DQ[62]	DDR1_DQSN[0]/DDR0_DQSN[2]	AF35	M_DQSB0		
MDB63	AF6	DDR1_DQ[63]	DDR1_DQSN[1]/DDR0_DQSN[3]	AL33	M_DQSB1		
			DDR1_DQSN[2]/DDR0_DQSN[6]	AP33	M_DQSB2		
	AR25		DDR1_DQSN[3]/DDR0_DQSN[7]	AN28	M_DQSB3		
	AR26	DDR1_ECC[0]	DDR1_DQSN[4]/DDR1_DQSN[2]	AN12	M_DQSB4		
	AM26	DDR1_ECC[1]	DDR1_DQSN[5]/DDR1_DQSN[3]	AP8	M_DQSB5		
	AM25	DDR1_ECC[2]	DDR1_DQSN[6]	AL8	M_DQSB6		
	AP26	DDR1_ECC[3]	DDR1_DQSN[7]	AG7	M_DQSB7		
	AP25	DDR1_ECC[4]					
	AL25	DDR1_ECC[5]	DDR1_DQSP[0]/DDR0_DQSP[2]	AN25			
	AL26	DDR1_ECC[6]	DDR1_DQSP[1]/DDR0_DQSP[3]	AN26			
		DDR1_ECC[7]	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	AB40	VREF_CAB	VREF_CAB	8
			DDR0_VREF_DQ	AC40			
			DDR1_VREF_DQ	AC39	VREF_DQB	VREF_DQB	9

CPU-SK/1151/S/GF

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]

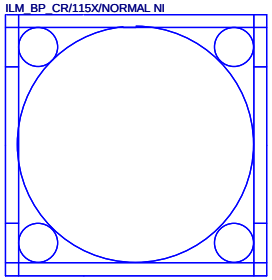
8 MAAA[0..16] ↔ MAAA[0..16]

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]

ILM_BP_CR/115X/NORMAL NI



Need check the new CPU ME

CPU-SK/1151/S/GF

Gigabyte Technology			
Title: CPU LGA1151-B			
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CFL_R0.1

VCCSA

WBC57
22u/6/X5R/6.3V/M

VCCIO

WBC69
22u/6/X5R/6.3V/M

CPU POWER

VCCST_VCCPLL
VCCSFUSEPRG

VCCGT

LGA1151J SKT_H4
LGA1151

AA34	VCCGT
AA35	VCCGT
AA36	VCCGT
AA37	VCCGT
AA38	VCCGT
AB33	VCCGT
AB34	VCCGT
G36	VCCGT
G37	VCCGT
G38	VCCGT
G39	VCCGT
G40	VCCGT
H36	VCCGT
H38	VCCGT
H40	VCCGT
J36	VCCGT
J37	VCCGT
J38	VCCGT
J39	VCCGT
J40	VCCGT
K36	VCCGT
K38	VCCGT
K40	VCCGT
L34	VCCGT
L35	VCCGT
L36	VCCGT
L37	VCCGT
L38	VCCGT
L39	VCCGT
L40	VCCGT
M33	VCCGT
M34	VCCGT
M36	VCCGT
M38	VCCGT
M40	VCCGT
N34	VCCGT
N35	VCCGT
N36	VCCGT
N37	VCCGT
N38	VCCGT
N39	VCCGT
N40	VCCGT
P33	VCCGT
P34	VCCGT
P36	VCCGT
P38	VCCGT
P40	VCCGT
R34	VCCGT
R35	VCCGT
R36	VCCGT
R37	VCCGT
R38	VCCGT
R39	VCCGT
R40	VCCGT
T33	VCCGT
T34	VCCGT
T36	VCCGT
T38	VCCGT
T40	VCCGT
U34	VCCGT
U35	VCCGT
U36	VCCGT
U37	VCCGT
U38	VCCGT
U39	VCCGT
U40	VCCGT
V33	VCCGT
V34	VCCGT
V36	VCCGT
V38	VCCGT
V40	VCCGT
W34	VCCGT
W35	VCCGT
W36	VCCGT
W37	VCCGT
W38	VCCGT
Y33	VCCGT
Y34	VCCGT
Y36	VCCGT
Y38	VCCGT
VCCGT_SENSE	F39
VSSGT_SENSE	F38

10 OF 12

CPU-SK/1151/S/GF

VCCGT_SENSE 23
VSSGT_SENSE 23

VCCSA

LGA1151K SKT_H4
LGA1151

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

VCCIO

AK11	VCCIO
AK14	VCCIO
AK24	VCCIO
AJ23	VCCIO
M8	VCCIO
P8	VCCIO
T8	VCCIO
U8	VCCIO
W8	VCCIO

CPU POWER

VCCST_VCCPLL	V5	VCCST
VCCSFUSEPRG	V6	VCCFUSEPRG
VCCST_VCCPLL	V4	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

VDDQ

VCCSA_SENSE	AD5
VCCIO_SENSE	AF4
VSS_SAIO_SENSE	AE4

11 OF 12

CPU-SK/1151/S/GF

LGA1151L SKT_H4
LGA1151

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

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

Gigabyte Technology

Title	CPU LGA1151-C	
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
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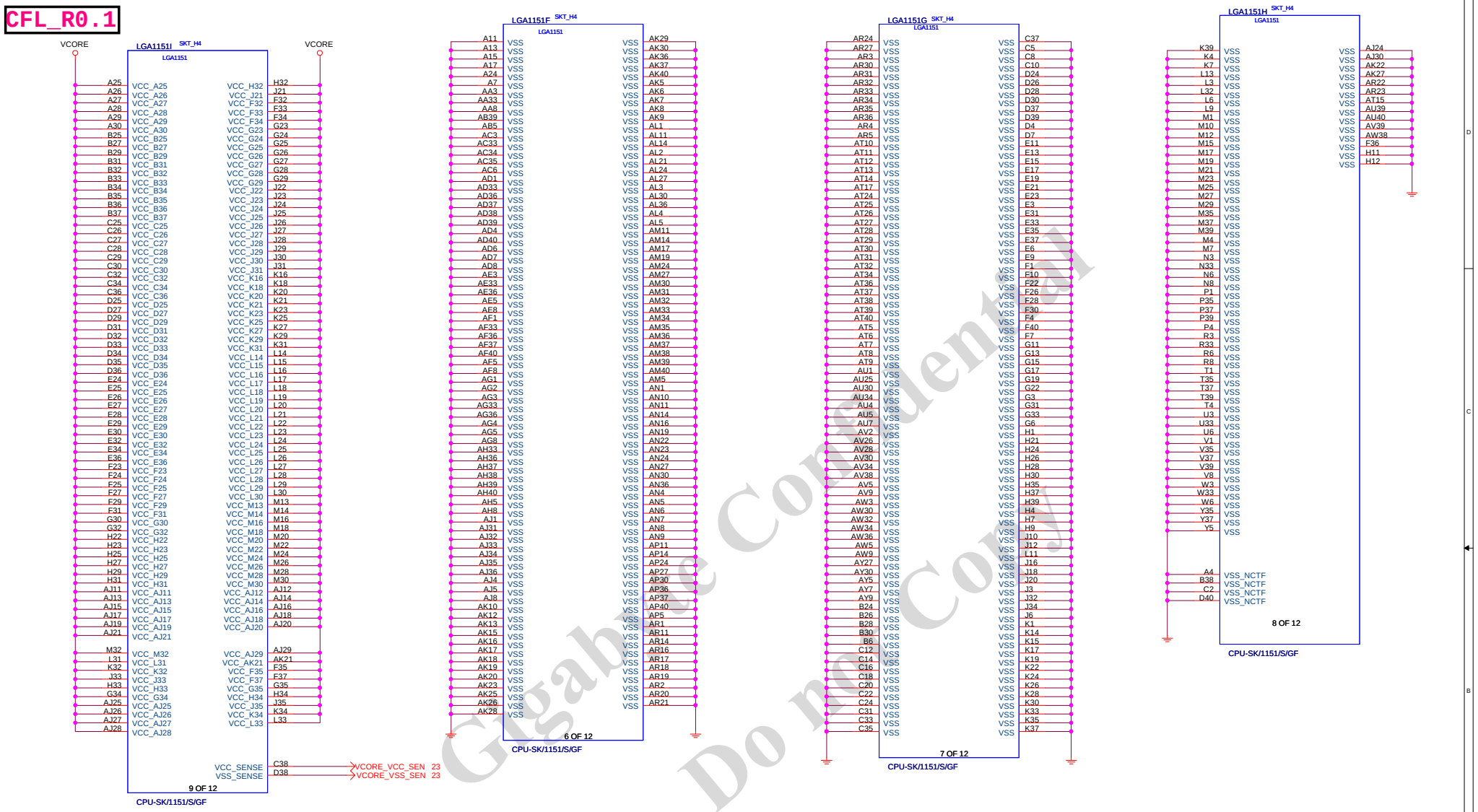
CFL_R0.1
VCORE
LGA1151I SKT_H4
LGA1151
VCC_A25 VCC_A26 VCC_A27 VCC_A28 VCC_A29 VCC_A30 VCC_B25 VCC_B27 VCC_B29 VCC_B31 VCC_B32 VCC_B33 VCC_B34 VCC_B35 VCC_B36 VCC_B37 VCC_C25 VCC_C26 VCC_C27 VCC_C28 VCC_C29 VCC_C30 VCC_C32 VCC_C34 VCC_C36 VCC_D25 VCC_D27 VCC_D29 VCC_D31 VCC_D32 VCC_D33 VCC_D34 VCC_D35 VCC_D36 VCC_E24 VCC_E25 VCC_E26 VCC_E27 VCC_E28 VCC_E29 VCC_E30 VCC_E32 VCC_E34 VCC_E36 VCC_F23 VCC_F24 VCC_F25 VCC_F27 VCC_F29 VCC_F31 VCC_G30 VCC_G32 VCC_H22 VCC_H23 VCC_H25 VCC_H27 VCC_H29 VCC_H31 VCC_AJ11 VCC_AJ13 VCC_AJ15 VCC_AJ17 VCC_AJ19 VCC_AJ21
VCC_M32 VCC_L31 VCC_K32 VCC_J33 VCC_H33 VCC_G34 VCC_AJ25 VCC_AJ26 VCC_AJ27 VCC_AJ28
VCC_H32 VCC_J21 VCC_F32 VCC_F33 VCC_F34 VCC_G23 VCC_G24 VCC_G25 VCC_G26 VCC_G27 VCC_G28 VCC_G29 VCC_J22 VCC_J23 VCC_J24 VCC_J25 VCC_J26 VCC_J27 VCC_J28 VCC_J29 VCC_J30 VCC_J31 VCC_K16 VCC_K18 VCC_K20 VCC_K21 VCC_K23 VCC_K25 VCC_K27 VCC_K29 VCC_K31 VCC_L14 VCC_L15 VCC_L16 VCC_L17 VCC_L18 VCC_L19 VCC_L20 VCC_L21 VCC_L22 VCC_L23 VCC_L24 VCC_L25 VCC_L26 VCC_L27 VCC_L28 VCC_L29 VCC_L30 VCC_M13 VCC_M14 VCC_M16 VCC_M18 VCC_M20 VCC_M22 VCC_M24 VCC_M26 VCC_M28 VCC_M30 VCC_AJ12 VCC_AJ14 VCC_AJ16 VCC_AJ18 VCC_AJ20
VCC_AJ29 VCC_AK21 VCC_F35 VCC_F37 VCC_G35 VCC_H34 VCC_J35 VCC_K34 VCC_L33
VCC_SENSE VSS_SENSE
C38 D38
VCORE_VCC_SEN 23
VCORE_VSS_SEN 23
9 OF 12
CPU-SK/1151/S/GF
LGA1151F SKT_H4
LGA1151
A11 A13 A15 A17 A24 A7 AA3 AA33 AA8 AB39 AB5 AC3 AC33 AC34 AC35 AC6 AD1 AD33 AD36 AD37 AD38 AD39 AD4 AD40 AD6 AD7 AD8 AE3 AE33 AE36 AE5 AE8 AF1 AF33 AF36 AF37 AF40 AF5 AF8 AG1 AG2 AG3 AG33 AG36 AG4 AG5 AG8 AH33 AH36 AH37 AH38 AH39 AH40 AH5 AH8 AJ1 AJ31 AJ32 AJ33 AJ34 AJ35 AJ36 AJ4 AJ5 AJ8 AK10 AK12 AK13 AK15 AK16 AK17 AK18 AK19 AK20 AK23 AK25 AK26 AK28
VSS
AK29 AK30 AK36 AK37 AK40 AK5 AK6 AK7 AK8 AK9 AL1 AL11 AL14 AL2 AL21 AL24 AL27 AL3 AL30 AL36 AL4 AL5 AM11 AM14 AM17 AM19 AM24 AM27 AM30 AM31 AM32 AM33 AM34 AM35 AM36 AM37 AM38 AM39 AM40 AM5 AN1 AN10 AN11 AN14 AN16 AN19 AN22 AN23 AN24 AN27 AN30 AN36 AN4 AN5 AN6 AN7 AN8 AN9 AP11 AP14 AP24 AP27 AP30 AP36 AP37 AP40 AP5 AR1 AR11 AR14 AR16 AR17 AR18 AR19 AR2 AR20 AR21
6 OF 12
CPU-SK/1151/S/GF
LGA1151G SKT_H4
LGA1151
AR24 AR27 AR3 AR30 AR31 AR32 AR33 AR34 AR35 AR36 AR4 AR5 AT10 AT11 AT12 AT13 AT14 AT17 AT24 AT25 AT26 AT27 AT28 AT29 AT30 AT31 AT32 AT34 AT36 AT37 AT38 AT39 AT40 AT5 AT6 AT7 AT8 AT9 AU1 AU25 AU30 AU34 AU4 AU5 AU7 AV2 AV26 AV28 AV30 AV34 AV38 AV5 AV9 AW3 AW30 AW32 AW34 AW36 AW5 AW9 AY27 AY30 AY5 AY7 AY9 B24 B26 B28 B30 B6 C12 C14 C16 C18 C20 C22 C24 C31 C33 C35
VSS
C37 C5 C8 C10 D24 D26 D28 D30 D37 D39 D4 D7 E11 E13 E17 E19 E21 E23 E3 E31 E33 E35 E37 E6 E9 F1 F10 F22 F26 F28 F30 F4 F40 F7 G11 G13 G15 G17 G19 G22 G3 G31 G33 G6 H1 H21 H24 H26 H28 H30 H35 H37 H39 H4 H7 H9 J10 J12 L11 J16 J18 J20 J3 J32 J34 J6 K1 K14 K15 K17 K19 K22 K24 K26 K28 K30 K33 K35 K37
7 OF 12
CPU-SK/1151/S/GF
LGA1151H SKT_H4
LGA1151
K39 K4 K7 L13 L3 L32 L6 L9 M1 M10 M12 M15 M17 M19 M21 M23 M25 M27 M29 M35 M37 M39 M4 M7 N3 N33 N6 N8 P1 P35 P37 P39 P4 R3 R33 R6 R8 T1 T35 T37 T39 T4 U3 U33 U6 V1 V35 V37 V39 V8 W3 W33 W6 Y35 Y37 Y5
VSS
AJ24 AJ30 AK22 AK27 AR22 AR23 AT15 AU39 AU40 AV39 AW38 F36 H11 H12
A4 B38 C2 D40
VSS_NCTF
8 OF 12
CPU-SK/1151/S/GF
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CPU LGA1151-C
Size Custom
Document Number
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DDR4_1

DDRVTT

* net 改 VDDQ

VDDQ

MAR19 240/4/1

MDA[0..63]
MAAA[0..16]
M_DQSA[0..7]
M_-DQSA[0..7]
MODT_A[0..1]

DDR4/28BGY/YA/D/GF/TWO LATCH

* 黑色 變更扣

MA0_SA0
MA0_SA1
MA0_SA2

* 移除 short pad

CHANNEL A0
SA2:0=000

MABC4 0.1u/4X7R/16V/K

MAR15 1K/4/1

MAR16 1K/4/1

Footprint :R0402-2-SHORT20

VREF_DDRA

MR23 0/4/SHT/20/X

VREF_CAB

MC19 0.022u/4X7R/25V/K/X

MR24 24.9/4/1/X

DDR12V Decouple

MABC15 0.47u/2/X5R/6.3V/K

MABC38 0.47u/2/X5R/6.3V/K

MABC39 0.1u/4X7R/16V/K

MASC3 0.47u/2/X5R/6.3V/K

MABC35 0.47u/2/X5R/6.3V/K

MABC17 0.47u/2/X5R/6.3V/K

MASC4 0.1u/4X7R/16V/K

MASC2 0.47u/2/X5R/6.3V/K

MABC10 22u/6/X5R/6.3V/M

MABC36 0.47u/2/X5R/6.3V/K

MABC8 2.2u/4/X5R/6.3V/M

* 電容移到 [RT8120_DDR]

MABC19 0.47u/2/X5R/6.3V/K

MABC20 0.47u/2/X5R/6.3V/K

MABC14 0.47u/2/X5R/6.3V/K

MABC30 0.47u/2/X5R/6.3V/K

MABC12 0.47u/2/X5R/6.3V/K

DDRVTT Decouple

MABC9 22u/6/X5R/6.3V/M

MABC22 0.47u/2/X5R/6.3V/K

MABC24 0.47u/2/X5R/6.3V/K

* 新電容

* 新電容

MAC11 0.47u/2/X5R/6.3V/K

MAC16 0.1u/4X7R/16V/K

VPP_25V

Gigabyte Technology	
Title	DDR4 CHANNEL A
Size: Custom	Document Number: H310M H 2.0
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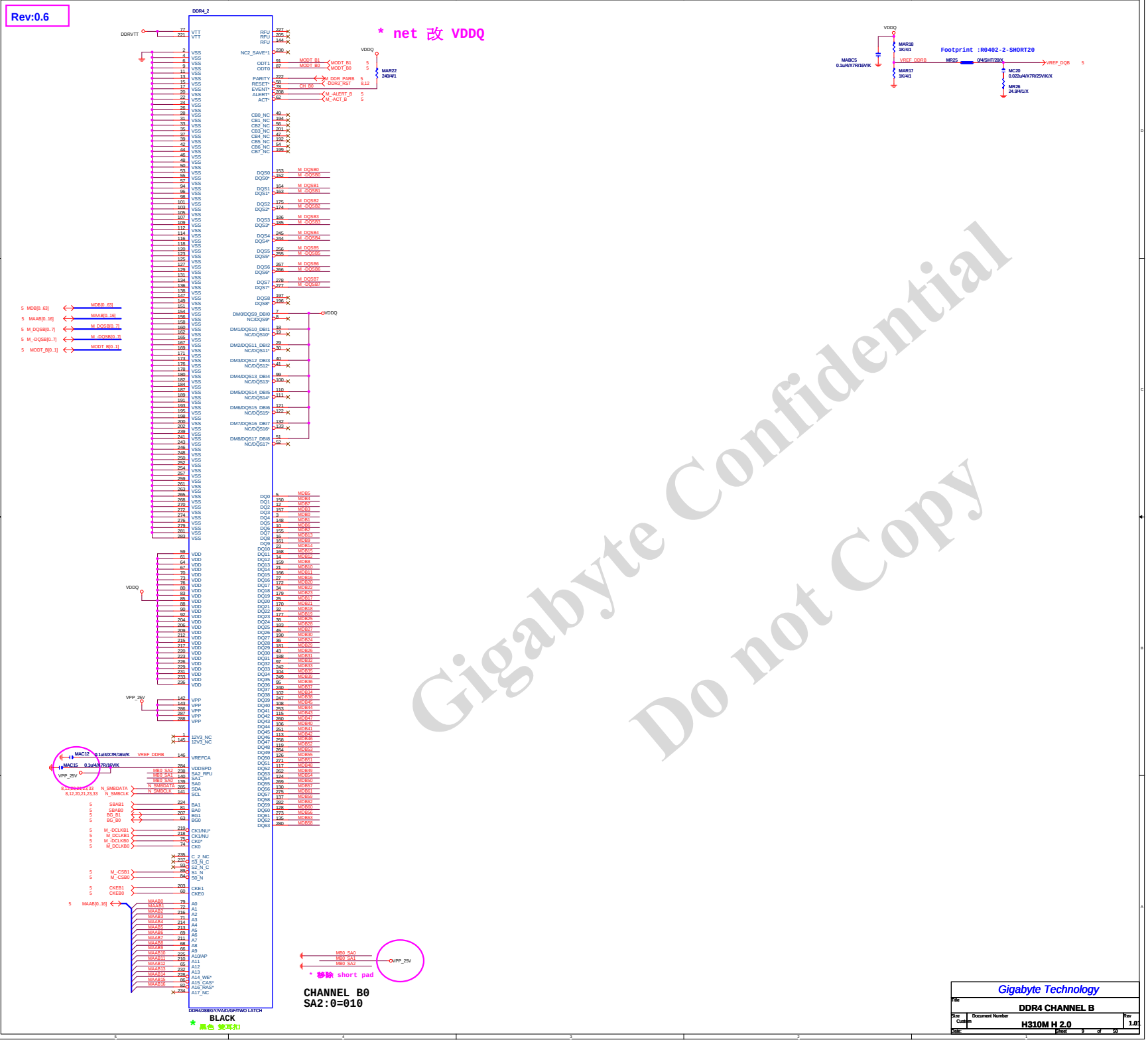

Gigabyte Technology	
Title	DDR4 CHANNEL B
Size: Custom	Document Number: H310M H 2.0
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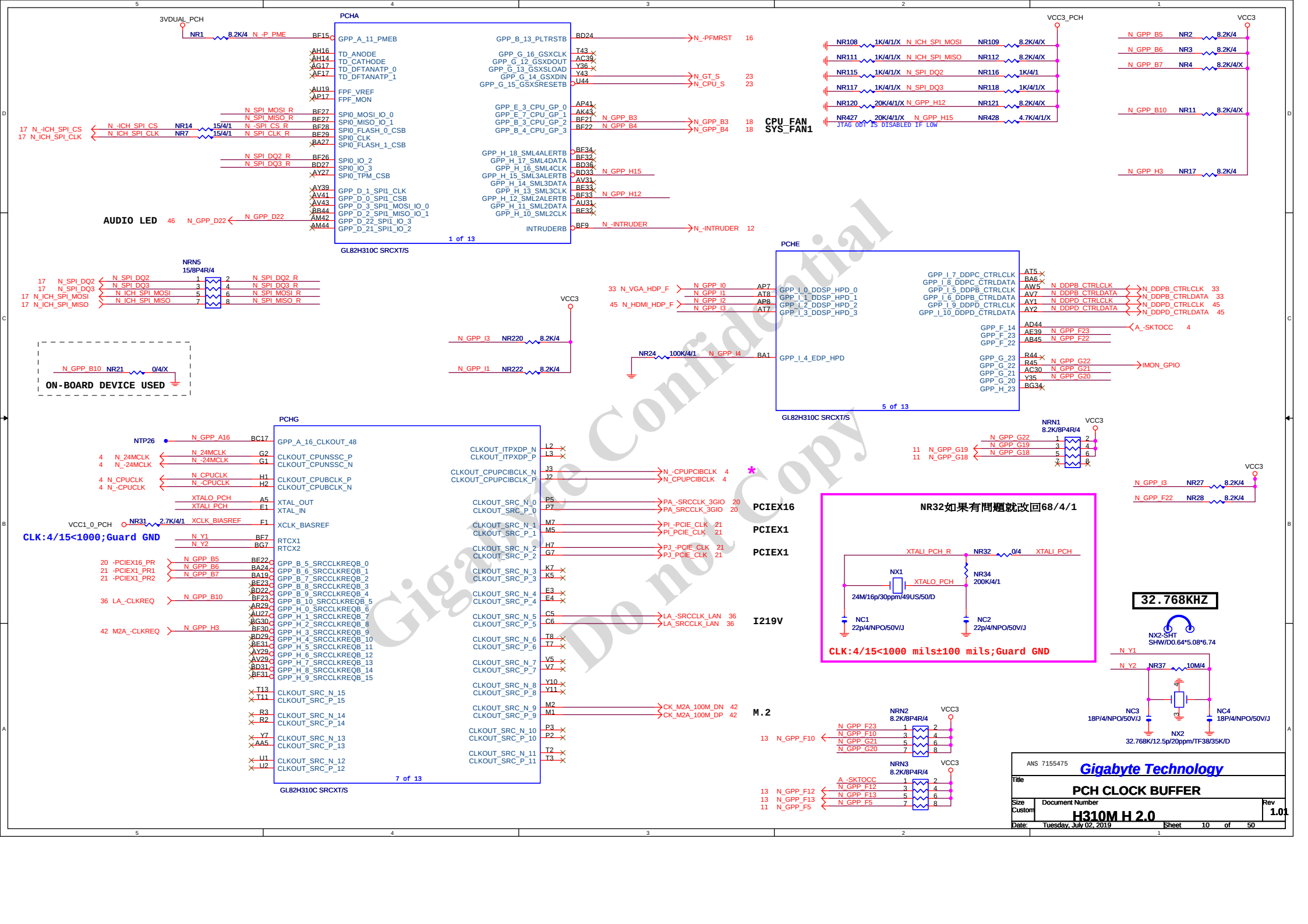
Date:	Sheet 9 of 50


PCHA
GL82H310C SRCXT/S
1 of 13
3VDUAL_PCH
AUDIO LED
ON-BOARD DEVICE USED
CPU_FAN
SYS_FAN1
PCHE
5 of 13
PCHG
7 of 13
CLK:4/15<1000;Guard GND
PCIEX16
PCIEX1
PCIEX1
I219V
M.2
NR32如果有問題就改回68/4/1
CLK:4/15<1000 mils±100 mils;Guard GND
32.768KHZ
Gigabyte Technology
PCH CLOCK BUFFER
H310M H 2.0
Tuesday, July 02, 2019
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Rev 1.01
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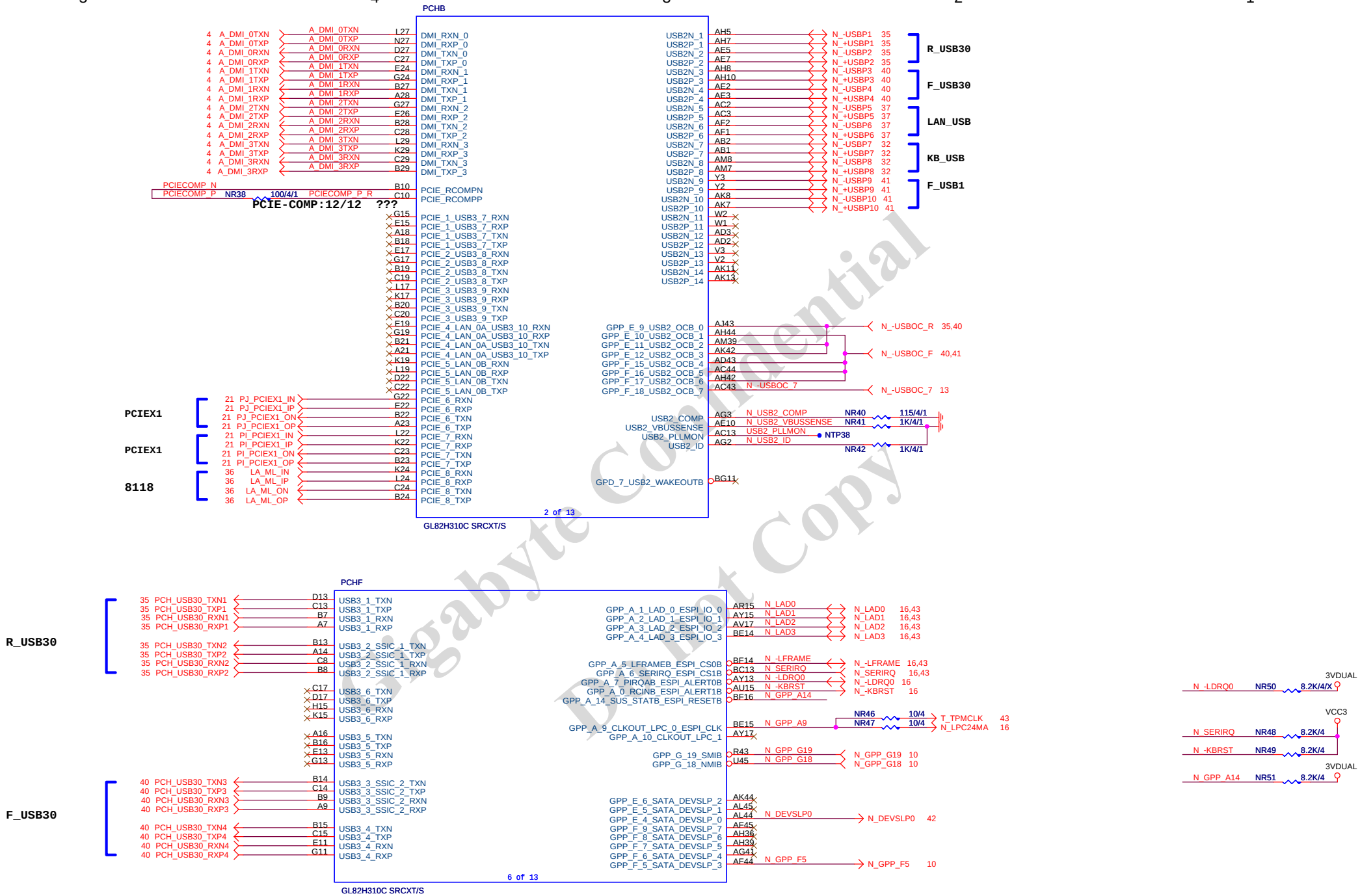
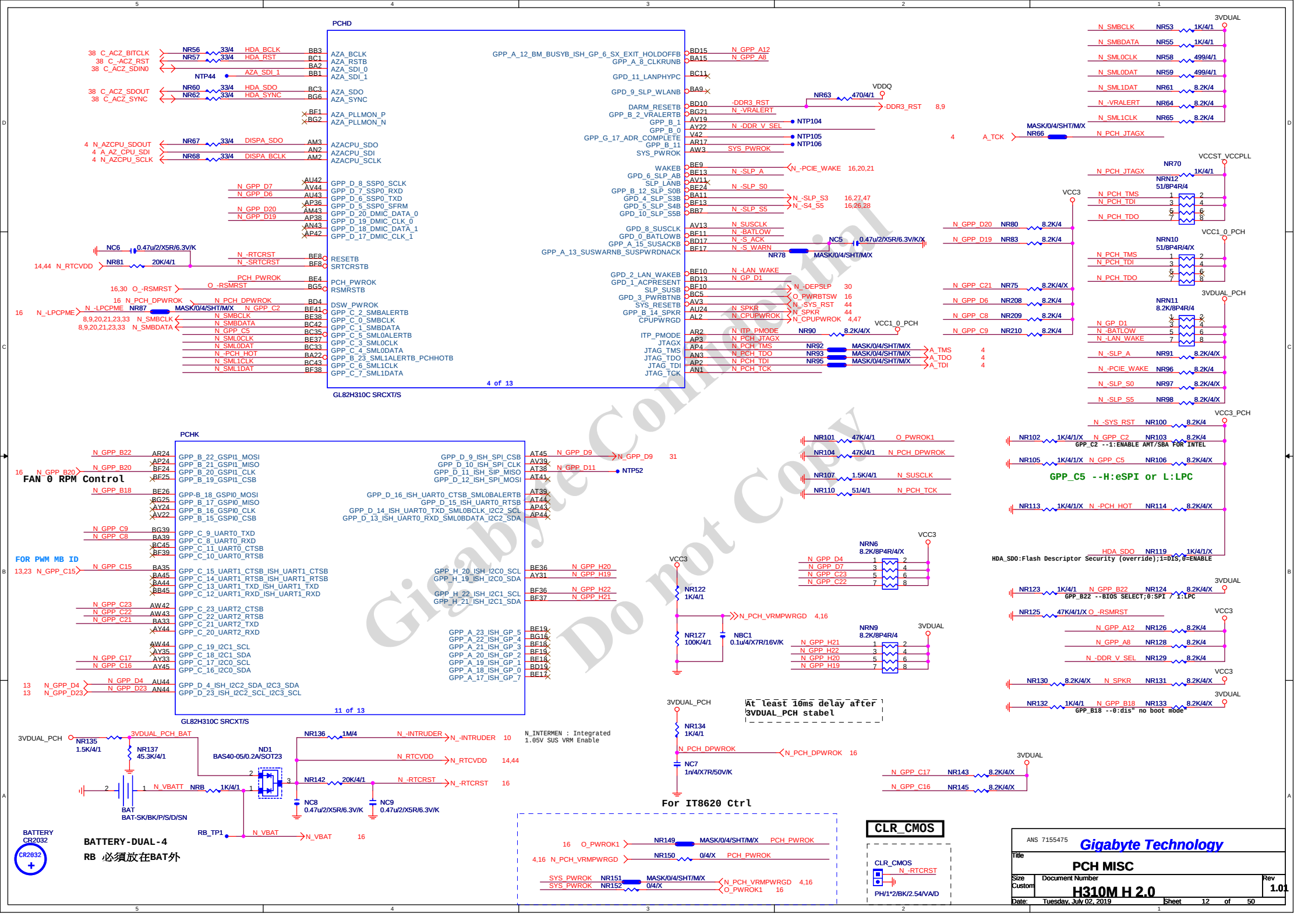


ANS 7155475 **Gigabyte Technology**

Title	PCH DMI,USB,PCIE	
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 11 of 50	



Title	PCH MISC
Size	Custom
Document Number	H310M H 2.0
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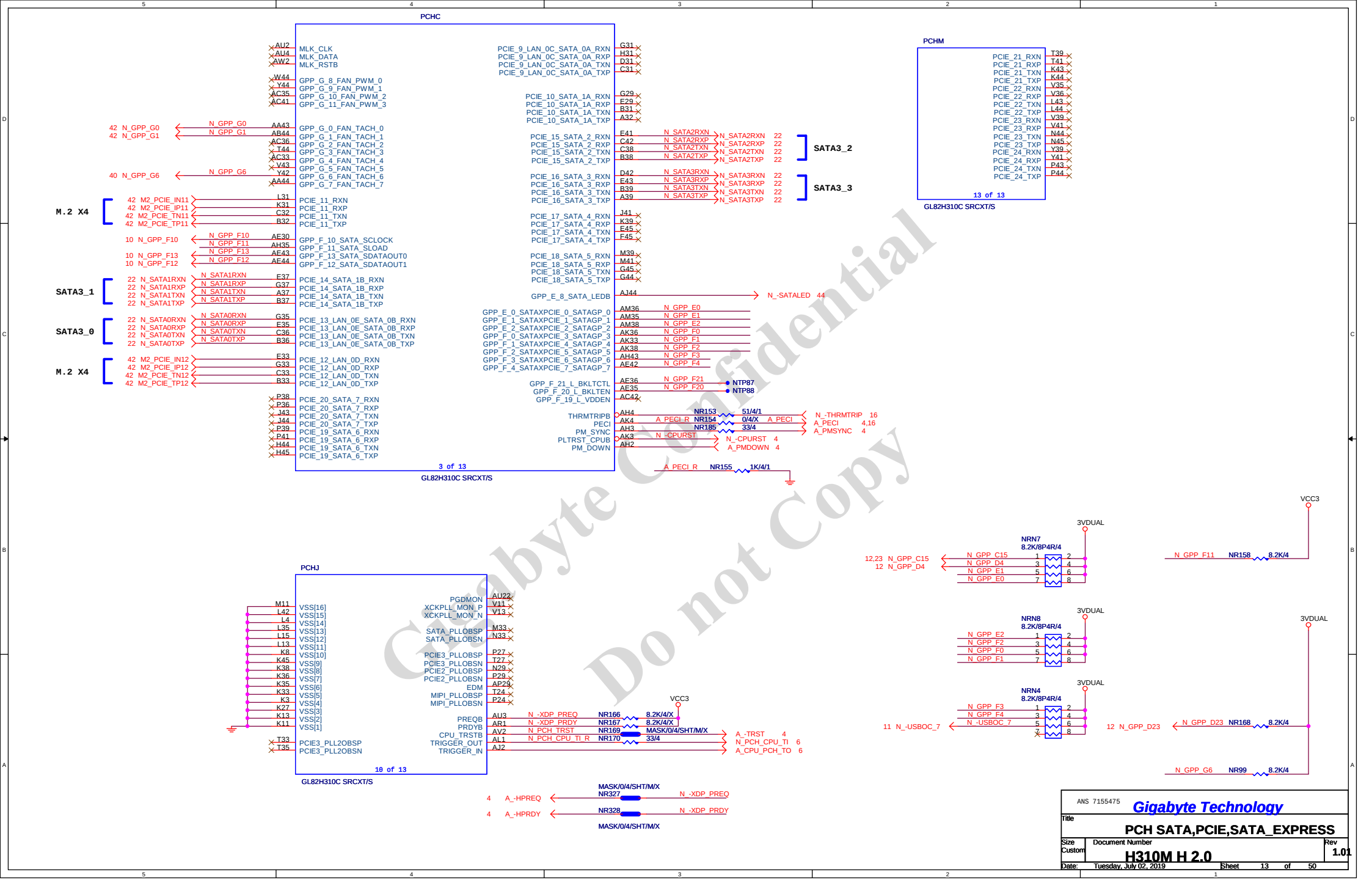
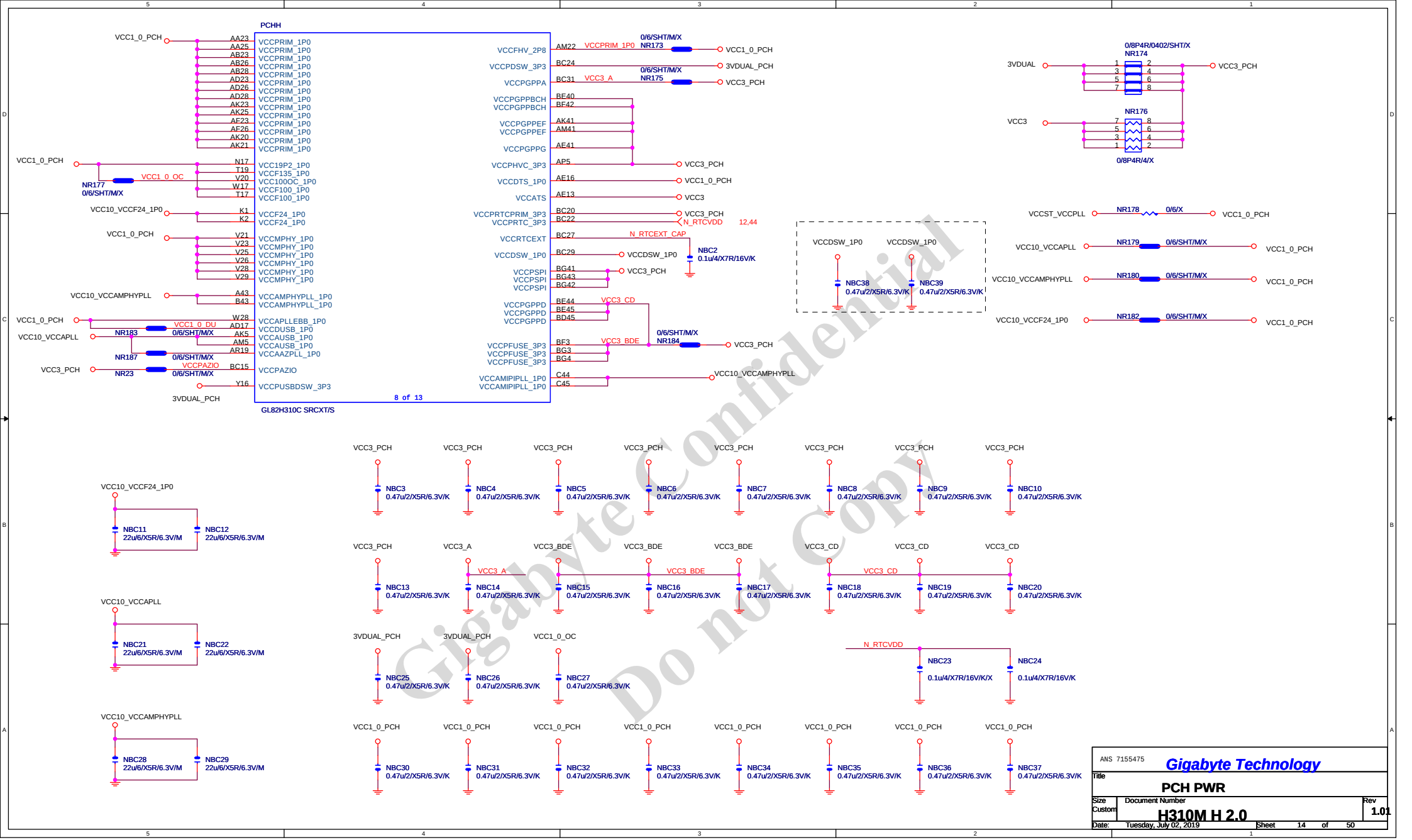
ANS 7155475 Gigabyte Technology





ANS 7155475

Gigabyte Technology

Title: **PCH PWR**

Size	Document Number	Rev
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PCHI

A25	VSS	VSS	A42
A30	VSS	VSS	D45
P22	VSS	VSS	BG44
AV38	VSS	VSS	BF44
AV45	VSS	VSS	BF45
AV8	VSS	VSS	BF2
AY11	VSS	VSS	W29
AY19	VSS	VSS	A35
AY37	VSS	VSS	A40
AY4	VSS	VSS	A41
AY42	VSS	VSS	AA17
AY8	VSS	VSS	AA18
B25	VSS	VSS	AA20
B3	VSS	VSS	AA21
B30	VSS	VSS	AA26
B35	VSS	VSS	AA28
B4	VSS	VSS	AA29
BA1	VSS	VSS	AB17
BA13	VSS	VSS	AC32
BA17	VSS	VSS	AE4
BA29	VSS	VSS	AE8
BA31	VSS	VSS	AF18
BA37	VSS	VSS	AF20
BA4	VSS	VSS	AF21
BA42	VSS	VSS	AF25
BB40	VSS	VSS	AF28
BC38	VSS	VSS	AF29
BC40	VSS	VSS	AF4
BC9	VSS	VSS	AF42
BD11	VSS	VSS	AG18
BD16	VSS	VSS	AG20
BD2	VSS	VSS	AG21
BD21	VSS	VSS	AG23
BD25	VSS	VSS	AG25
F2	VSS	VSS	AG26
E31	VSS	VSS	AG28
E6	VSS	VSS	AG29
E8	VSS	VSS	AH11
F39	VSS	VSS	AH13
F43	VSS	VSS	AH30
G4	VSS	VSS	AH32
G40	VSS	VSS	AH33
G42	VSS	VSS	AH38
F6	VSS	VSS	AJ1
G9	VSS	VSS	AJ17
H11	VSS	VSS	AJ18
H13	VSS	VSS	AJ20
H17	VSS	VSS	AJ21
H19	VSS	VSS	AJ23
H22	VSS	VSS	AJ25
H24	VSS	VSS	AJ26
H27	VSS	VSS	AJ28
H29	VSS	VSS	AJ29
H33	VSS	VSS	AJ45
H35	VSS	VSS	AK10
H38	VSS	VSS	AK14
H4	VSS	VSS	AK16
H42	VSS	VSS	AK17
H9	VSS	VSS	AK18
J4	VSS	VSS	AK26
M36	VSS	VSS	AK28
M38	VSS	VSS	AM14
M4	VSS	VSS	AN14
M8	VSS	VSS	AP19
M9	VSS	VSS	AR22
N13	VSS	VSS	AR27
N15	VSS	VSS	AU29
N19	VSS	VSS	AU33
N22	VSS	VSS	AV1
N24	VSS	VSS	AV10
N31	VSS	VSS	AV15
N42	VSS	VSS	AV24
P10	VSS	VSS	AV27
P12	VSS	VSS	AV33
AV35	VSS		

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GL82H310C SRCXT/S

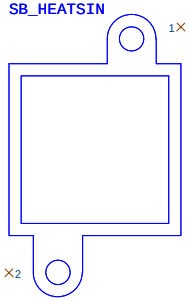
PCHL

BD34	VSS[70]	VSS[1]	AB18
BD39	VSS[71]	VSS[2]	AB20
BD7	VSS[72]	VSS[3]	AB21
BE2	VSS[73]	VSS[4]	AB25
BF43	VSS[74]	VSS[5]	AB29
BF5	VSS[75]	VSS[6]	AB4
BG18	VSS[76]	VSS[7]	AB42
BG23	VSS[77]	VSS[8]	AC10
BG28	VSS[78]	VSS[9]	AC11
BG32	VSS[79]	VSS[10]	AC14
BG37	VSS[80]	VSS[11]	AC16
BG40	VSS[81]	VSS[12]	AC38
BG9	VSS[83]	VSS[13]	AC4
C1	VSS[84]	VSS[14]	AC5
A12	VSS[85]	VSS[15]	AC7
C2	VSS[86]	VSS[16]	AC8
C37	VSS[87]	VSS[17]	AD1
A6	VSS[88]	VSS[18]	AD18
C9	VSS[89]	VSS[19]	AD20
D1	VSS[90]	VSS[20]	AD21
D10	VSS[91]	VSS[21]	AD25
D12	VSS[92]	VSS[22]	AD29
D15	VSS[93]	VSS[23]	AD45
D16	VSS[94]	VSS[24]	AE11
B12	VSS[95]	VSS[25]	AE14
D19	VSS[96]	VSS[26]	AE32
D21	VSS[97]	VSS[27]	AE33
D24	VSS[98]	VSS[28]	AE38
D25	VSS[99]	VSS[29]	AK29
D29	VSS[100]	VSS[30]	AK30
D30	VSS[101]	VSS[31]	AK32
D33	VSS[102]	VSS[32]	AK35
D35	VSS[103]	VSS[33]	AK39
D36	VSS[104]	VSS[34]	AL4
D39	VSS[105]	VSS[35]	AL42
D44	VSS[106]	VSS[36]	AM10
D7	VSS[107]	VSS[37]	AM11
P13	VSS[108]	VSS[38]	AM13
P15	VSS[109]	VSS[39]	AM17
P17	VSS[110]	VSS[40]	AM19
P19	VSS[111]	VSS[41]	AM24
P31	VSS[112]	VSS[42]	AM27
P33	VSS[113]	VSS[43]	AM29
P35	VSS[114]	VSS[44]	AM32
P4	VSS[115]	VSS[45]	AM33
P42	VSS[116]	VSS[46]	AM4
P8	VSS[117]	VSS[47]	AN45
R1	VSS[118]	VSS[48]	AP10
R32	VSS[119]	VSS[49]	AP11
T10	VSS[120]	VSS[50]	AP13
T14	VSS[121]	VSS[51]	AP15
T22	VSS[122]	VSS[52]	AP22
T29	VSS[123]	VSS[53]	AP27
T32	VSS[124]	VSS[54]	AP31
T36	VSS[125]	VSS[55]	AP33
T38	VSS[126]	VSS[56]	AP34
Y38	VSS[151]	VSS[57]	AP39
Y4	VSS[152]	VSS[127]	T4
Y8	VSS[153]	VSS[143]	W26
T42	VSS[154]	VSS[128]	V16
T5	VSS[155]	VSS[129]	V17
U4	VSS[156]	VSS[130]	V18
U42	VSS[157]	VSS[131]	V30
V10	VSS[158]	VSS[132]	V32
V14	VSS[159]	VSS[133]	V33
W3	VSS[144]	VSS[134]	V38
AF13	VSS[58]	VSS[135]	V4
AR31	VSS[59]	VSS[136]	V8
AR33	VSS[60]		
AR4	VSS[61]	VSS[138]	W18
AT10	VSS[62]	VSS[139]	W20
AT13	VSS[63]	VSS[140]	W21
AT35	VSS[64]	VSS[141]	W23
AT37	VSS[65]	VSS[142]	W25
AT42	VSS[66]		
AU11	VSS[67]	VSS_1	A44
AU17	VSS[68]	VSS_10	BE1
BD30	VSS[69]	VSS_11	BD1
W45	VSS[145]	VSS_14	B1
Y13	VSS[146]	VSS_15	A2
Y14	VSS[147]	VSS_16	B2
Y30	VSS[148]	VSS_17	A3
Y32	VSS[149]	VSS_18	A4
Y33	VSS[150]	VSS_2	B44
BG14	VSS_BG14	VSS_3	B45

12 of 13

GL82H310C SRCXT/S

SB_HEATSIN



業務指定使用B150M-EVO Heatsink

BGAHSINK_SB-N

PCH_HS

PCH_HS/[12SP2-030005-51R_12SP2-030005-52R_12SP2-030005-53R]

ANS 7155475

Gigabyte Technology

Title: PCH GND

Size: Custom | Document Number: H310M H 2.0 | Rev: 1.01

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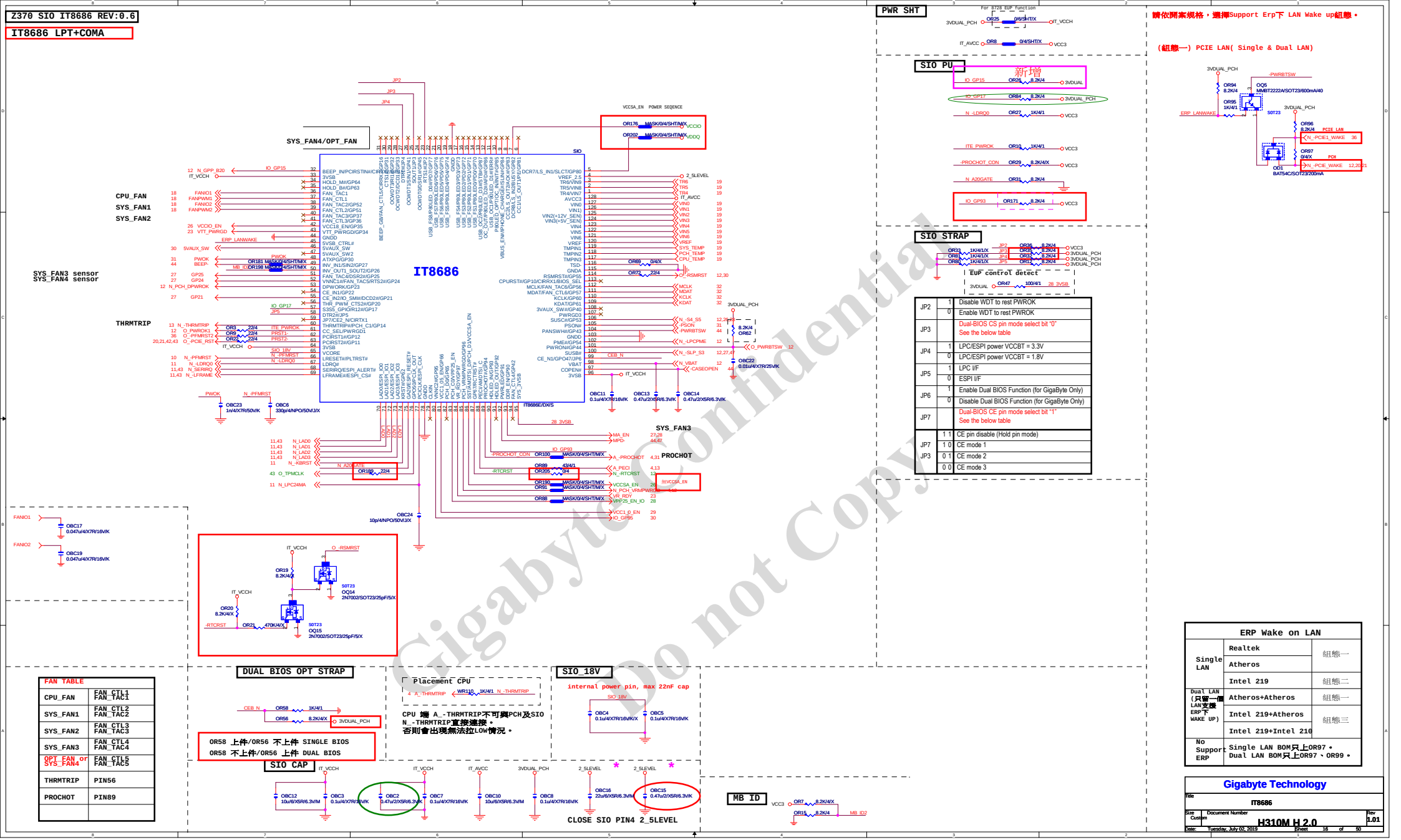
Z370 SIO IT8686 REV:0.6

IT8686 LPT+COMA



PWR SHT

SIO PU

SIO STRAP

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	1 1	CE pin disable (Hold pin mode)
JP7	1 0	CE mode 1
JP3	0 1	CE mode 2
JP7	0 0	CE mode 3

請依開案規格，選擇Support Erp下 LAN Wake up組態。

(組態一) PCIE LAN(Single & Dual LAN)

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

DUAL BIOS OPT STRAP

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

Placement CPU

CPU 端 A_-THRMTRIP不可與PCH及SIO N_-THRMTRIP直接連接。
否則會出現無法拉LOW情況。

SIO_18V

internal power pin, max 22nF cap

SIO CAP

CLOSE SIO PIN4 2_5LEVEL

MB ID

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	IT8686	
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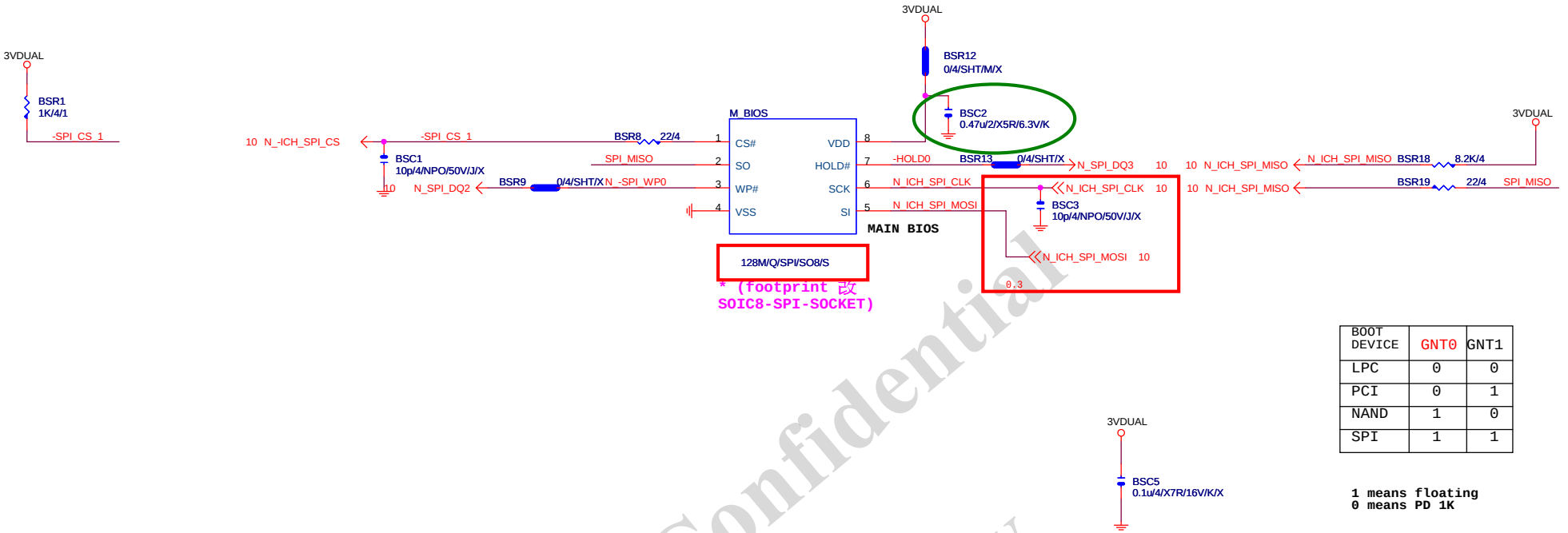
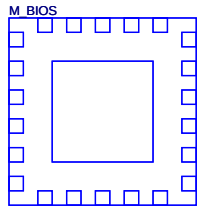
DUAL BIOS

MOSI For DMI RX Termination Voltage



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

1 means floating
0 means PD 1K



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

* 試產先上 ， PVT 移除

Gigabyte Technology		
Title: BIOS		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
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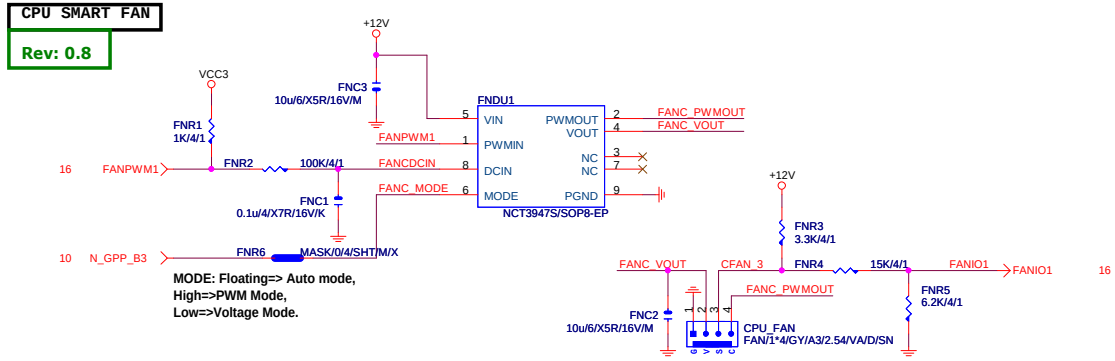
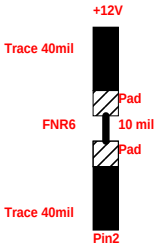
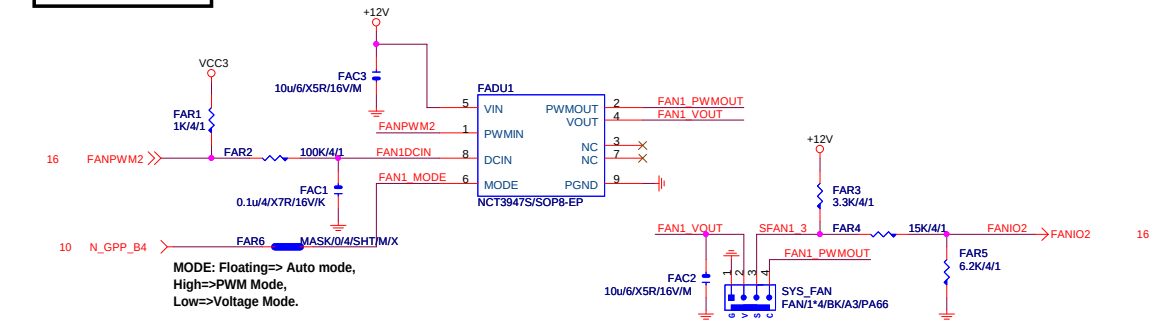
CPU SMART FAN

Rev: 0.8



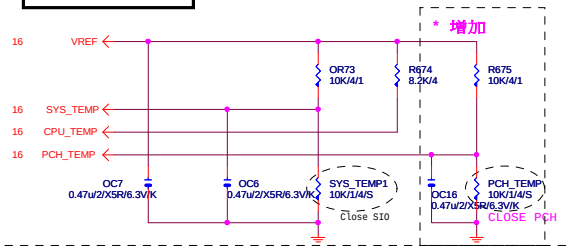


A. SYSTEM FAN1

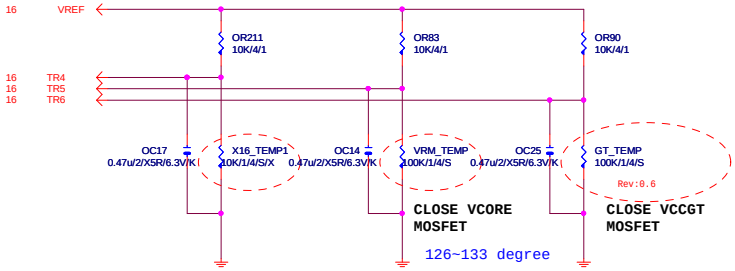


Gigabyte Technology		
Title: FAN CTRL		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 18 of 50	

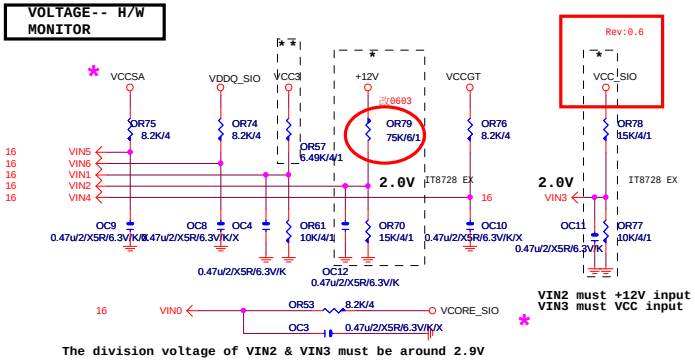
TEMP H/W MONITOR

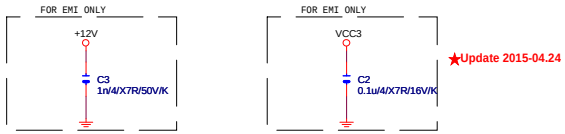


低階機種:3個FAN時使用



VOLTAGE-- H/W MONITOR





Gigabyte Technology			
Title: HWM,KB/MS, FAN CTRL			
Size: Custom	Document Number: H310M H 2.0		Rev: 1.01
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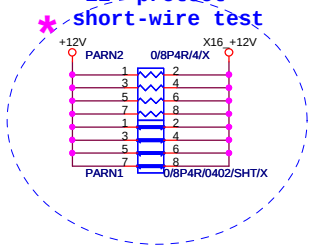
Rev 0.2

+12 protect
short-wire test



PCIESLOT-164STH

PCIEX16

3GIO_*16

KEY

X16 +12V

3VDUAL

VCC3

PAR1 0/4/SHT/M/X

PAR2 0/4/SHT/M/X

PAR3 0/4/SHT/M/X

PAR4 0/4

PAR5 0/4

8,9,12,21,23,33 N_SMBCLK
8,9,12,21,23,33 N_SMBDATA

12,16,21 N_-PCIE_WAKE

10 -PCIEX16_PR

O_-PCIE_RST 16,21,42,43

PAC1 33p/4/NPO/50V/J

PA_SRCCLK_3GIO 10
PA_-SRCCLK_3GIO 10

PA_EXP_RXP[0..15] → PA_EXP_RXP[0..15] 4
PA_EXP_RXN[0..15] → PA_EXP_RXN[0..15] 4
PA_EXP_TXP[0..15] → PA_EXP_TXP[0..15] 4
PA_EXP_TXN[0..15] → PA_EXP_TXN[0..15] 4

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

B1	12V	
B2	12V	
B3	RSVD	
B4	GND	
B5	SMCLK	
B6	SMDAT	
B7	GND	
B8	3.3V	
B9	JTAG1	
B10	3.3VAUX	
B11	WAKE*	
B12	RSVD	
B13	GND	
B14	HSOP0	PA_EXP_TXP0_C
B15	HSON0	PA_EXP_TXN0_C
B16	GND	
B17	PRSNT2*	
B18	GND	
B19	HSOP1	PA_EXP_TXP1_C
B20	HSON1	PA_EXP_TXN1_C
B21	GND	
B22	GND	
B23	HSOP2	PA_EXP_TXP2_C
B24	HSON2	PA_EXP_TXN2_C
B25	GND	
B26	GND	
B27	HSOP3	PA_EXP_TXP3_C
B28	HSON3	PA_EXP_TXN3_C
B29	GND	
B30	RSVD	
B31	PRSNT2*	
B32	GND	
B33	HSOP4	PA_EXP_TXP4_C
B34	HSON4	PA_EXP_TXN4_C
B35	GND	
B36	GND	
B37	HSOP5	PA_EXP_TXP5_C
B38	HSON5	PA_EXP_TXN5_C
B39	GND	
B40	GND	
B41	HSOP6	PA_EXP_TXP6_C
B42	HSON6	PA_EXP_TXN6_C
B43	GND	
B44	GND	
B45	HSOP7	PA_EXP_TXP7_C
B46	HSON7	PA_EXP_TXN7_C
B47	GND	
B48	PRSNT2*	
B49	GND	
B50	HSOP8	PA_EXP_TXP8_C
B51	HSON8	PA_EXP_TXN8_C
B52	GND	
B53	GND	
B54	HSOP9	PA_EXP_TXP9_C
B55	HSON9	PA_EXP_TXN9_C
B56	GND	
B57	GND	
B58	HSOP10	PA_EXP_TXP10_C
B59	HSON10	PA_EXP_TXN10_C
B60	GND	
B61	GND	
B62	HSOP11	PA_EXP_TXP11_C
B63	HSON11	PA_EXP_TXN11_C
B64	GND	
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B66	HSOP12	PA_EXP_TXP12_C
B67	HSON12	PA_EXP_TXN12_C
B68	GND	
B69	GND	
B70	HSOP13	PA_EXP_TXP13_C
B71	HSON13	PA_EXP_TXN13_C
B72	GND	
B73	GND	
B74	HSOP14	PA_EXP_TXP14_C
B75	HSON14	PA_EXP_TXN14_C
B76	GND	
B77	GND	
B78	HSOP15	PA_EXP_TXP15_C
B79	HSON15	PA_EXP_TXN15_C
B80	GND	
B81	PRSNT2*	
B82	RSVD	

A1	PRSNT1*	
A2	12V	
A3	12V	
A4	GND	
A5	JTAG2	
A6	JTAG3	
A7	JTAG4	
A8	JTAG5	
A9	3.3V	
A10	3.3V	
A11	PWRGD	
A12	GND	
A13	REFCLK+	
A14	REFCLK-	
A15	GND	
A16	HSIP0	PA_EXP_RXP0
A17	HSIN0	PA_EXP_RXN0
A18	GND	
A19	RSVD	
A20	GND	
A21	HSIP1	PA_EXP_RXP1
A22	HSIN1	PA_EXP_RXN1
A23	GND	
A24	GND	
A25	HSIP2	PA_EXP_RXP2
A26	HSIN2	PA_EXP_RXN2
A27	GND	
A28	GND	
A29	HSIP3	PA_EXP_RXP3
A30	HSIN3	PA_EXP_RXN3
A31	GND	
A32	RSVD	
A33	RSVD	
A34	GND	
A35	HSIP4	PA_EXP_RXP4
A36	HSIN4	PA_EXP_RXN4
A37	GND	
A38	GND	
A39	HSIP5	PA_EXP_RXP5
A40	HSIN5	PA_EXP_RXN5
A41	GND	
A42	GND	
A43	HSIP6	PA_EXP_RXP6
A44	HSIN6	PA_EXP_RXN6
A45	GND	
A46	GND	
A47	HSIP7	PA_EXP_RXP7
A48	HSIN7	PA_EXP_RXN7
A49	GND	
A50	RSVD	
A51	GND	
A52	HSIP8	PA_EXP_RXP8
A53	HSIN8	PA_EXP_RXN8
A54	GND	
A55	GND	
A56	HSIP9	PA_EXP_RXP9
A57	HSIN9	PA_EXP_RXN9
A58	GND	
A59	GND	
A60	HSIP10	PA_EXP_RXP10
A61	HSIN10	PA_EXP_RXN10
A62	GND	
A63	GND	
A64	HSIP11	PA_EXP_RXP11
A65	HSIN11	PA_EXP_RXN11
A66	GND	
A67	GND	
A68	HSIP12	PA_EXP_RXP12
A69	HSIN12	PA_EXP_RXN12
A70	GND	
A71	GND	
A72	HSIP13	PA_EXP_RXP13
A73	HSIN13	PA_EXP_RXN13
A74	GND	
A75	GND	
A76	HSIP14	PA_EXP_RXP14
A77	HSIN14	PA_EXP_RXN14
A78	GND	
A79	GND	
A80	HSIP15	PA_EXP_RXP15
A81	HSIN15	PA_EXP_RXN15
A82	GND	

PCI-E/16X-164P/GY/LONG DOUBLE/HK*2/[11AC1-023164-D1R_11AC1-023164-D3R]

VCC3

PABC2 0.1u/4/X7R/16V/K

PABC3 0.1u/4/X7R/16V/K

PABC4 0.1u/4/X7R/16V/K/X

+12V

PAEC1 270u/TAP/FP/D/16V/8C/10m/[11CO5-8C2700-11R_11CO5-8C2700-12R_11CO5-882700-3AR]

X16 +12V

PABC1 0.1u/4/X7R/16V/K

VCC3

PAEC2 560u/TAP/FP/D/6.3V/69/A/7m/[11CO2-6

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

Gigabyte Technology

Title: PCI EXPRESS * 16

Size: Custom | Document Number: H310M H 2.0 | Rev: 1.01

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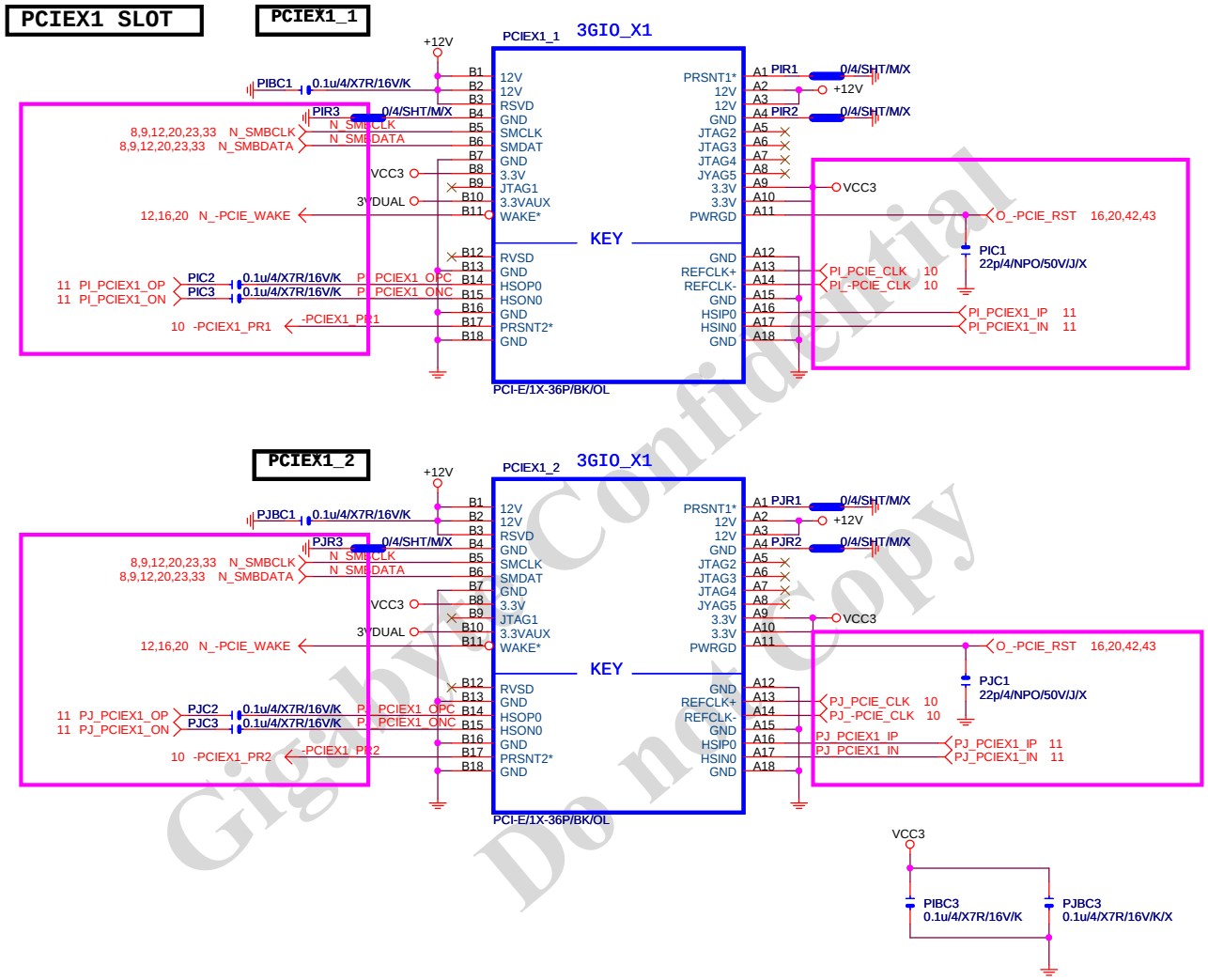
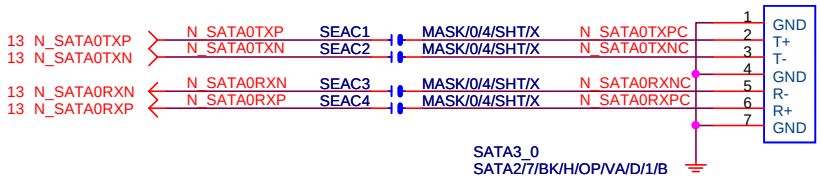
Rev 0.2

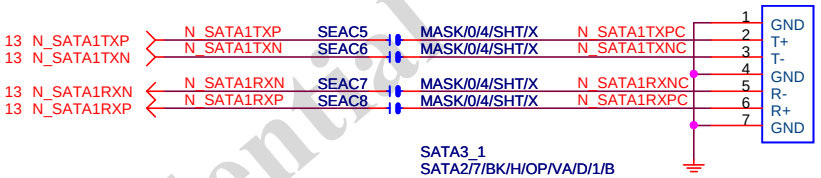


Gigabyte Technology		
Title: PCIE_X1 1,2		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 21 of 50	

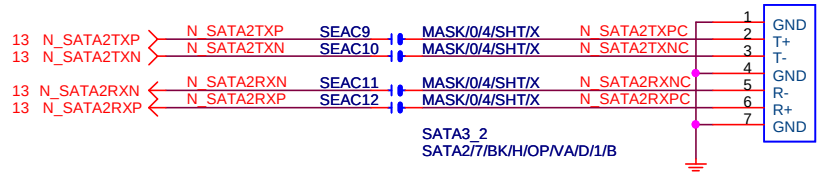
Rev 0.6



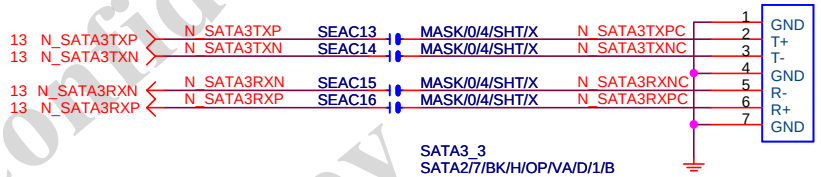
SATA3_0
SATA2/7/BK/H/OP/VA/D/1/B



SATA3_1
SATA2/7/BK/H/OP/VA/D/1/B



SATA3_2
SATA2/7/BK/H/OP/VA/D/1/B



SATA3_3
SATA2/7/BK/H/OP/VA/D/1/B

Gigabyte Technology		
Title: SATA EXPRESS		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
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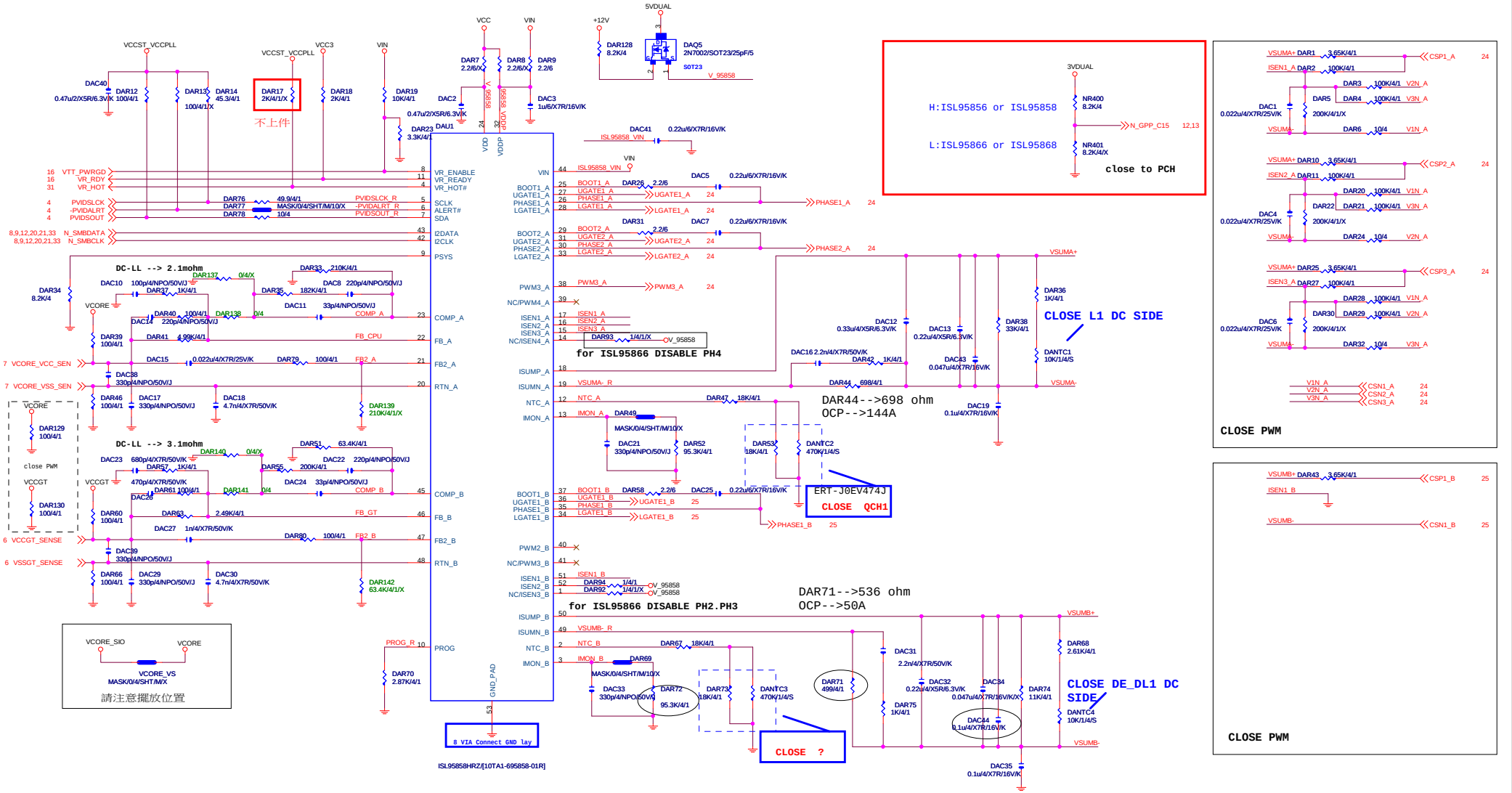
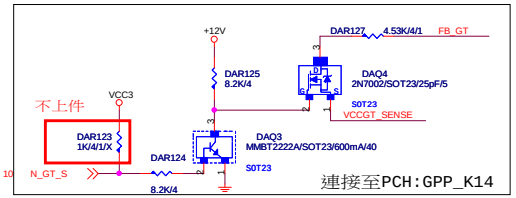
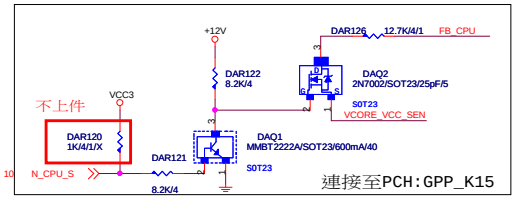
REV:0.2



VCORE	ISL95858	ISL95868
DAR137	X	V
DAR138	V	X
DAR139	X	V
DAC15	V	X
DAR79	V	X
DAR33	V	X

VCCGT	ISL95858	ISL95868
DAR140	X	V
DAR141	V	X
DAR142	X	V
DAC27	V	X
DAR80	V	X
DAR51	V	X





GIGABYTE™

Title	ISL95858_PWM	
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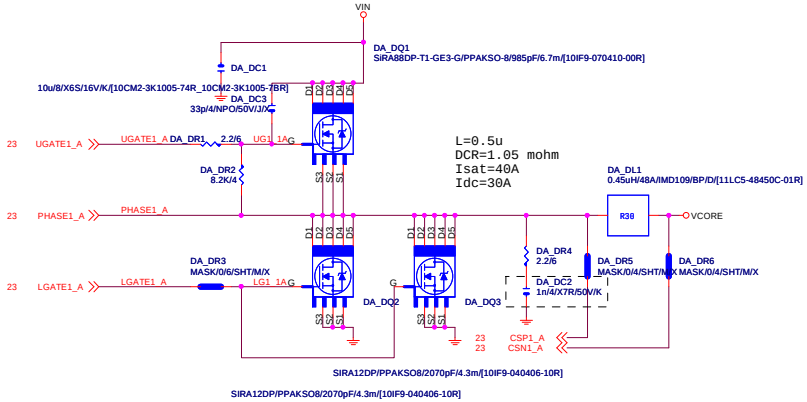
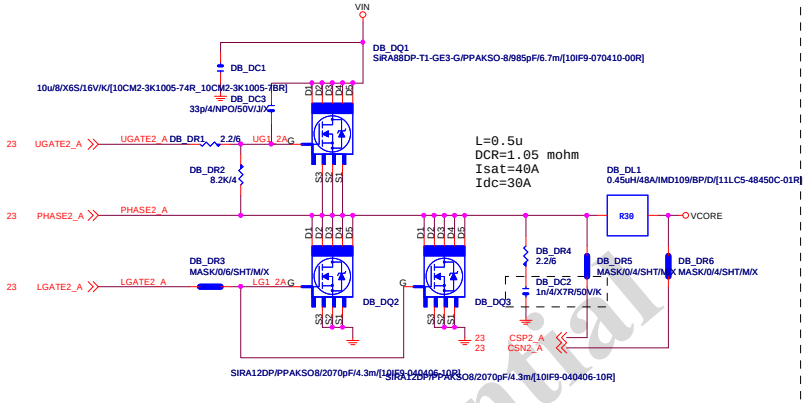
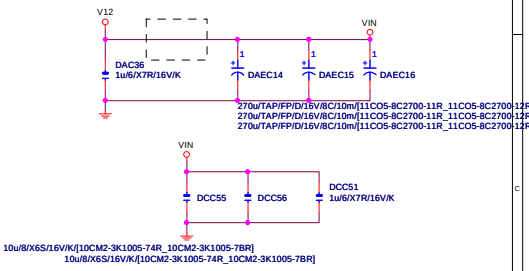
REV:0.14

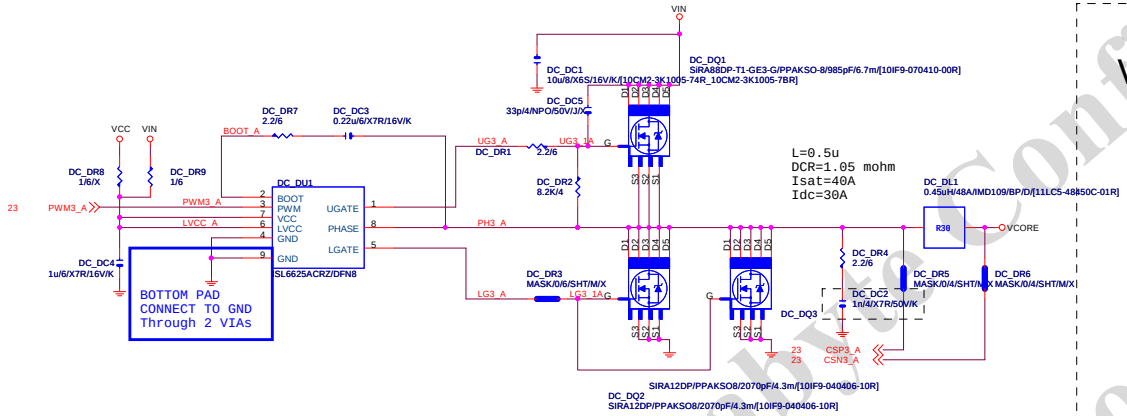
VCORE



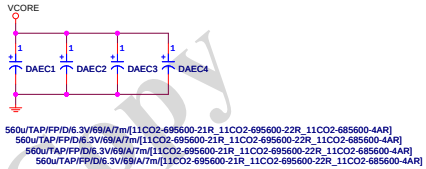


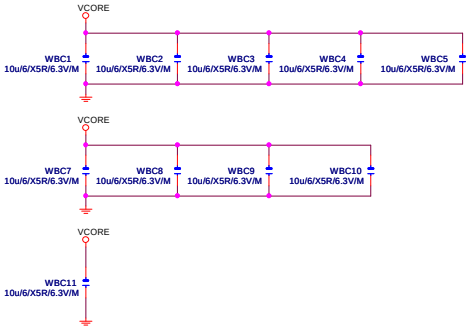
VIN CAP 270u*3PCS





VCORE CAP 560u*4PCS 22u*10PCS





GIGABYTE™

Title	ISL95858_MOS	
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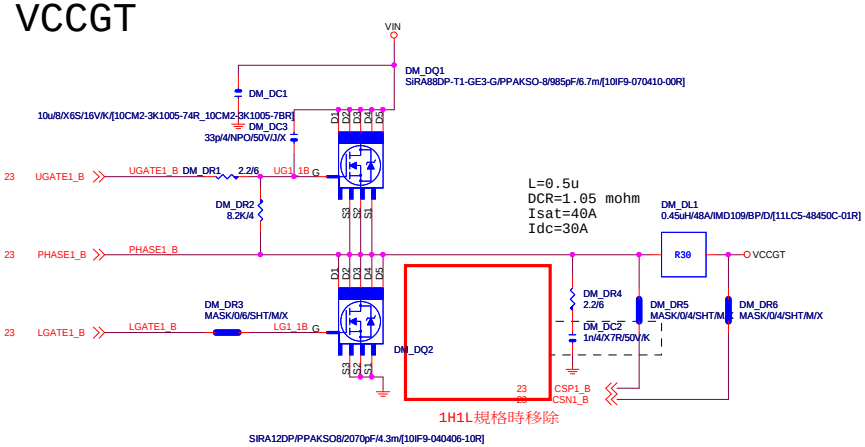
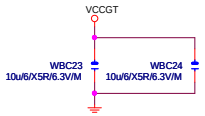
REV:0.14

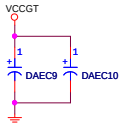
VCCGT



VCCGT CAP

560u*2PCS
22u*2PCS





560u/TAP/FP/D/6.3V/69/A/7m/[11CO2-695600-21R_11CO2-695600-22R_11CO2-685600-4AR]
560u/TAP/FP/D/6.3V/69/A/7m/[11CO2-695600-21R_11CO2-695600-22R_11CO2-685600-4AR]

GIGABYTE™

Title	ISL95858_MOS	
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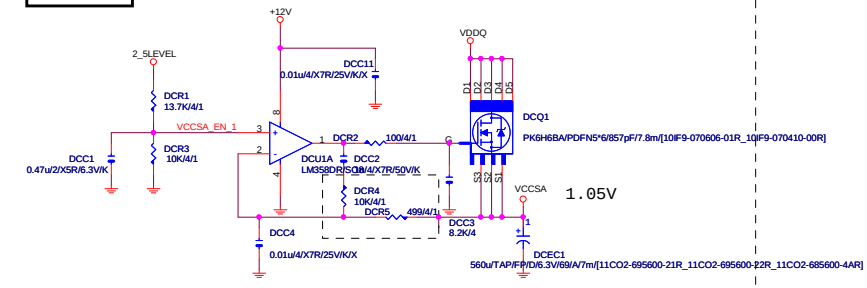
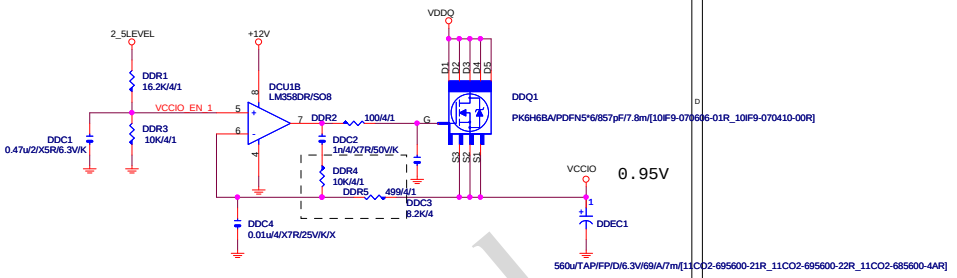
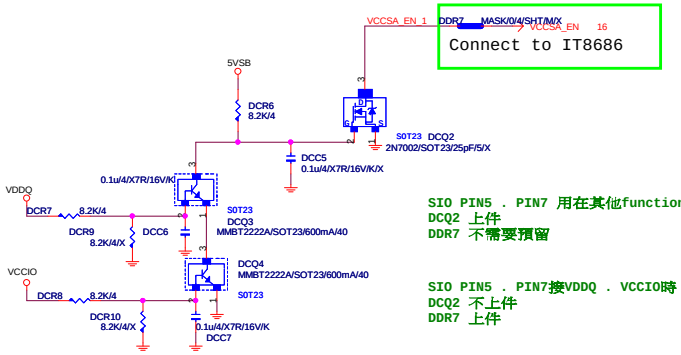
REV:0.6

VCCSA



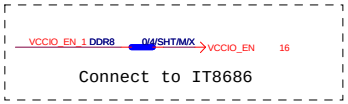
VCCIO



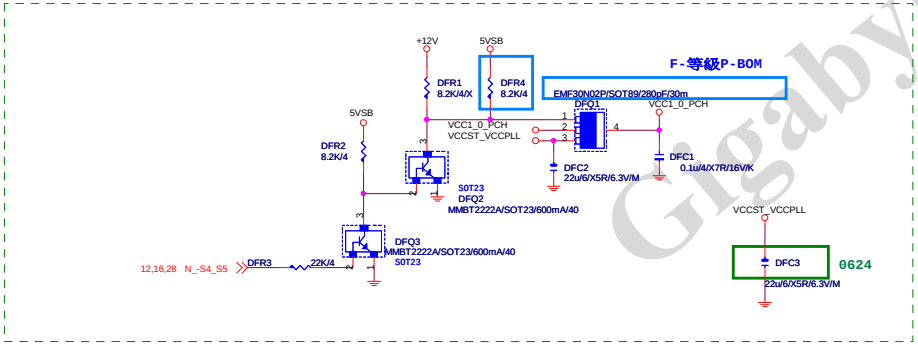


SIO PIN5 . PIN7 用在其他function時
DCQ2 上件
DDR7 不需要預留

SIO PIN5 . PIN7接VDDQ . VCCIO時
DCQ2 不上件
DDR7 上件



VCCST_VCCPLL



GIGABYTE™

Title	VCCSA_VCCIO_no 44E	
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REV:0.4

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

FS=290K
OCP=40A

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

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

1H1L規格移除

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

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

Remote sense請從最重的負載端點拉回

PWR SEQ

CLOSE TO DDR POWER PLANE

For power sequence require

VPP_25V使用8120時上件

MAU1上RT9045時上件(不可MASK)

DDRVTT

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

1.1A MAX

DDR CAP

560u*4PCS 22u*2PCS

Footprint
EC6D8MM-RH-2

* 大電容 x4

DDRVTT CAP

* 大電容 x0

GIGABYTE™

Title: RT8237_DDR4 POWER
Size: Custom
Document Number: H310M H 2.0
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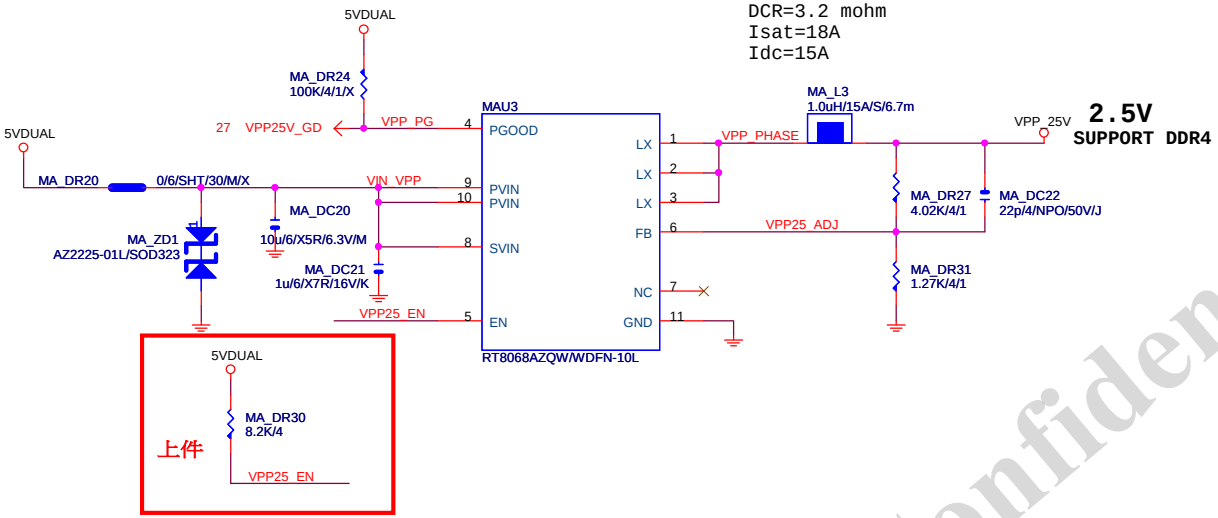
REV:0.4

VPP_25V

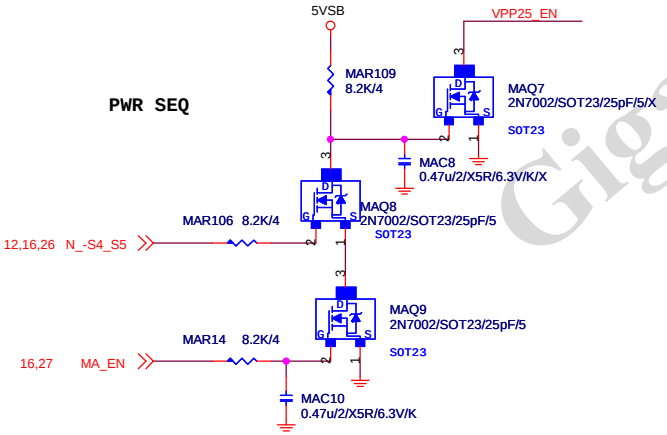
CHOKE與CAP料號可變

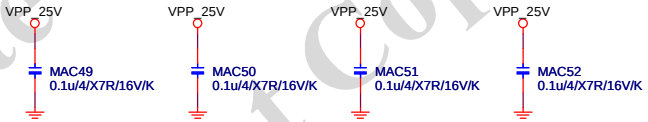
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A

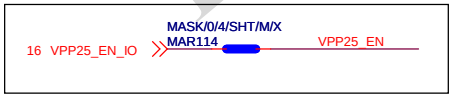


PWR SEQ

* 刪 MA_DR32

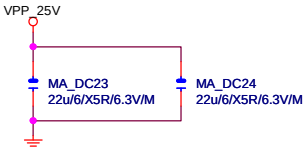






VPP CAP 22u*1PCS

* 大電容 x0



GIGABYTE™

Title	RT8068A_VPP25 POWER	
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
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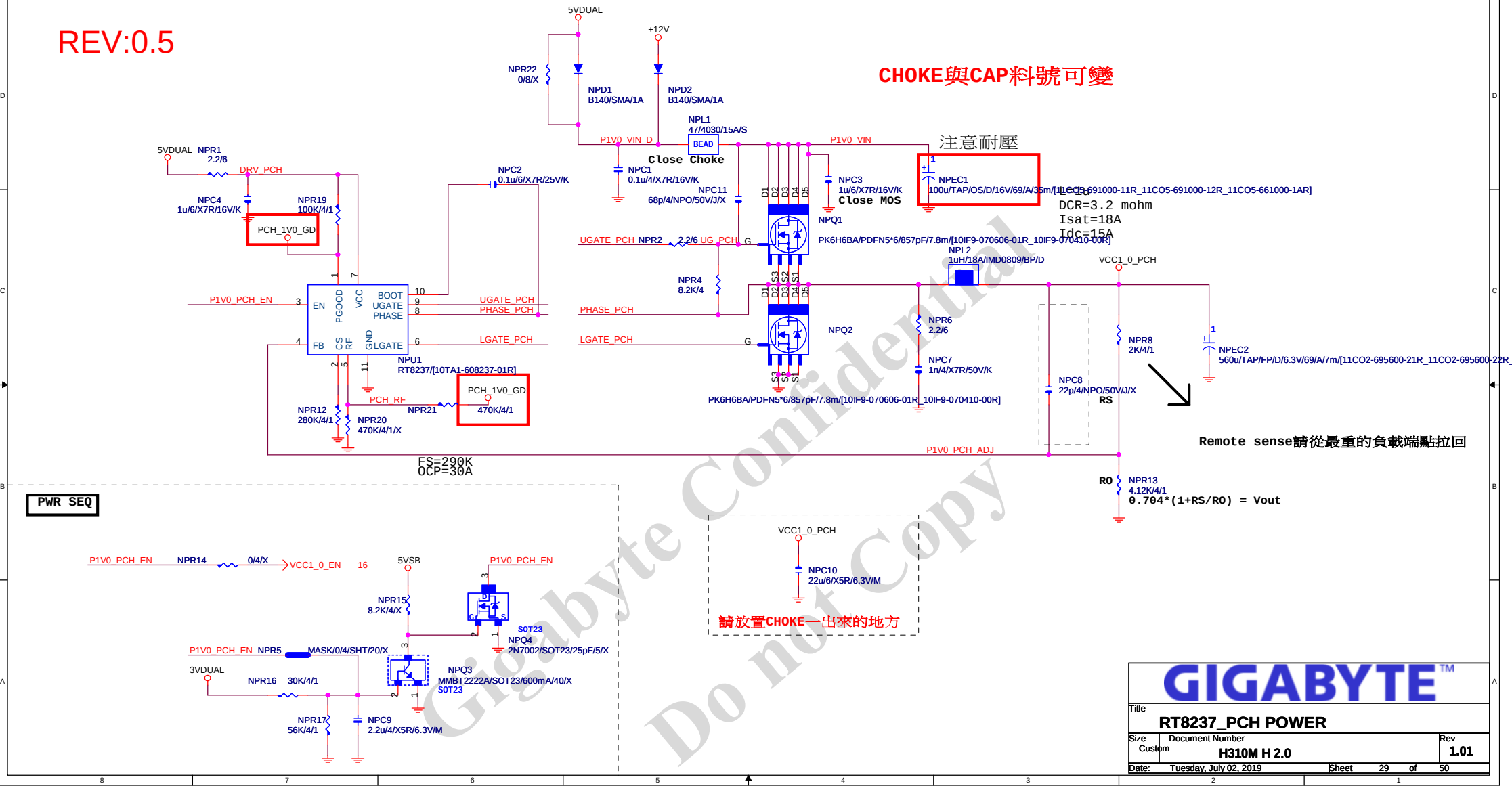
REV:0.5



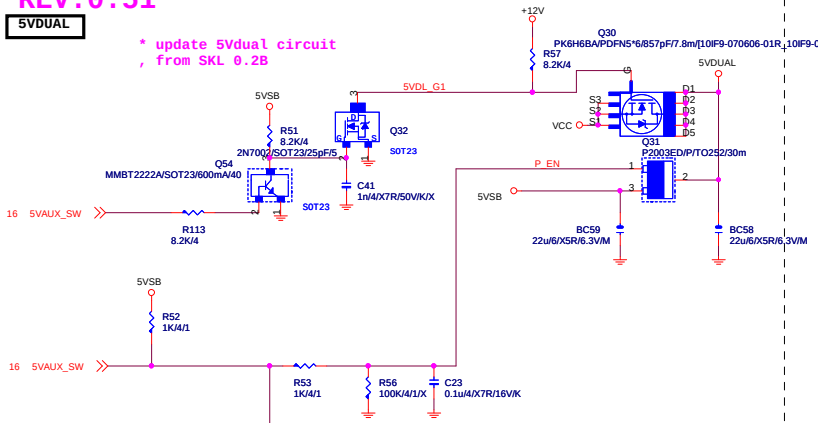
GIGABYTE™

Title	RT8237_PCH POWER	
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 29 of 50	

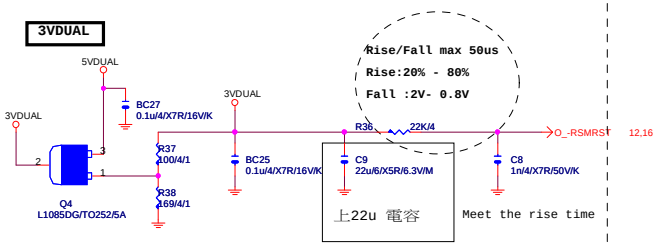
REV:0.51

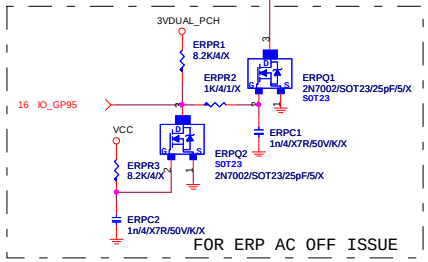
5VDUAL

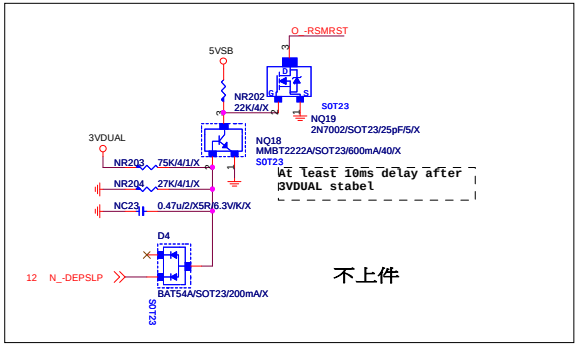
* update 5Vdual circuit
, from SKL 0.2B



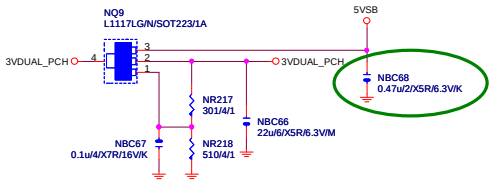
3VDUAL







3VDUAL_PCH



Gigabyte Technology			
Title: DISCRETE POWER			
Size: Custom	Document Number: H310M H 2.0		Rev: 1.01
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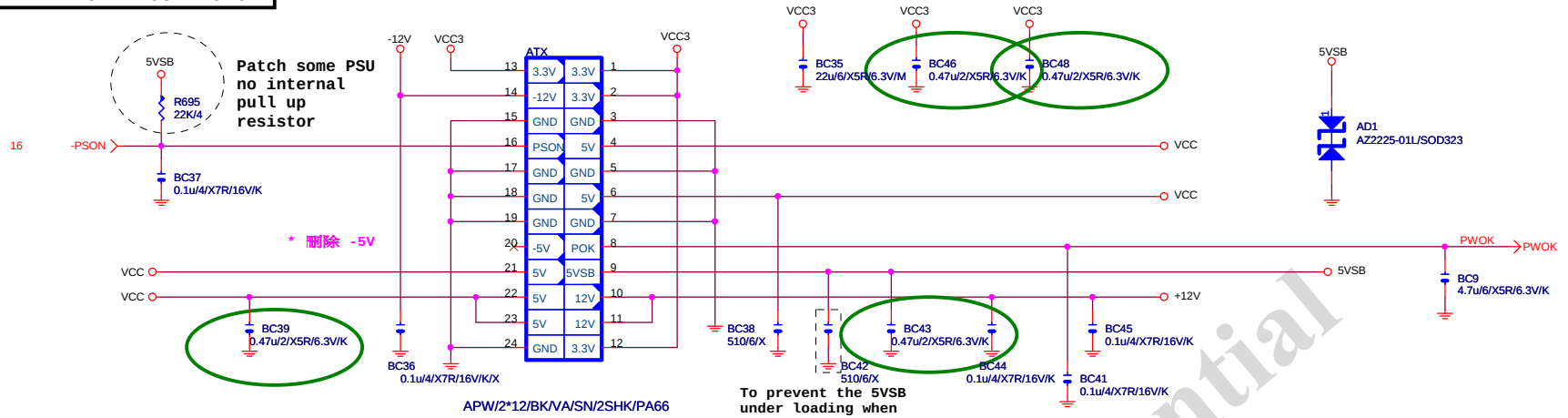
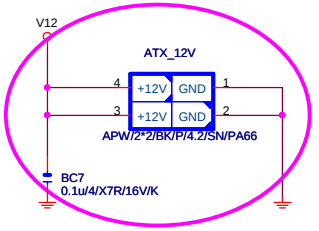
ATXX24 POWER CONNECTOR

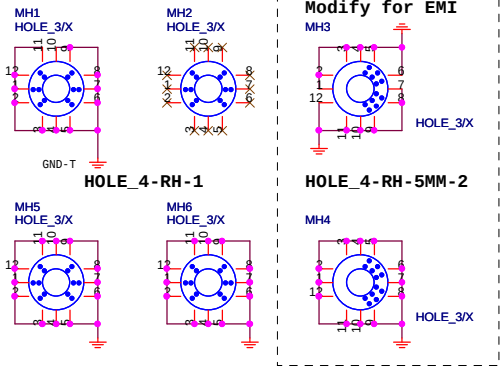


ATXX4 POWER CONNECTOR

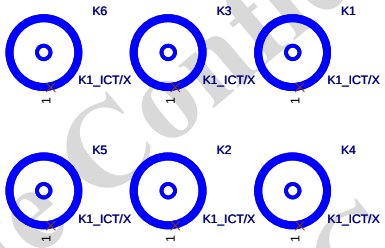


螺絲孔

MH1:GND-T
FOR EMI
TEST驗證



固定孔/光學點



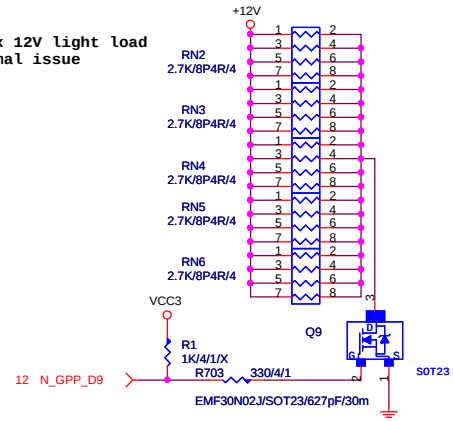
K1-ICT

To prevent the 5VSB
under loading when
boot

4MMH

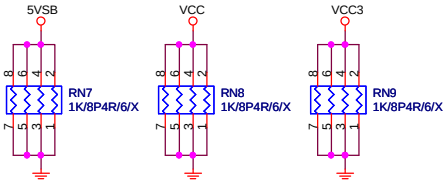
+12V DUMMY LOAD

To fix 12V light load
abnromal issue



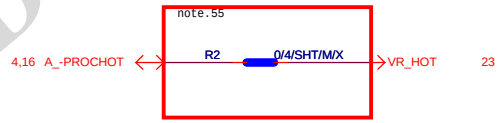
【技術通報R&D技術通報153】

DUMMY LOAD



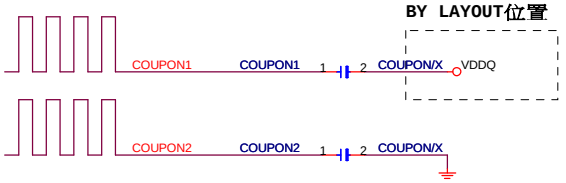
-PROHOT

* 保留 ?



COUPON

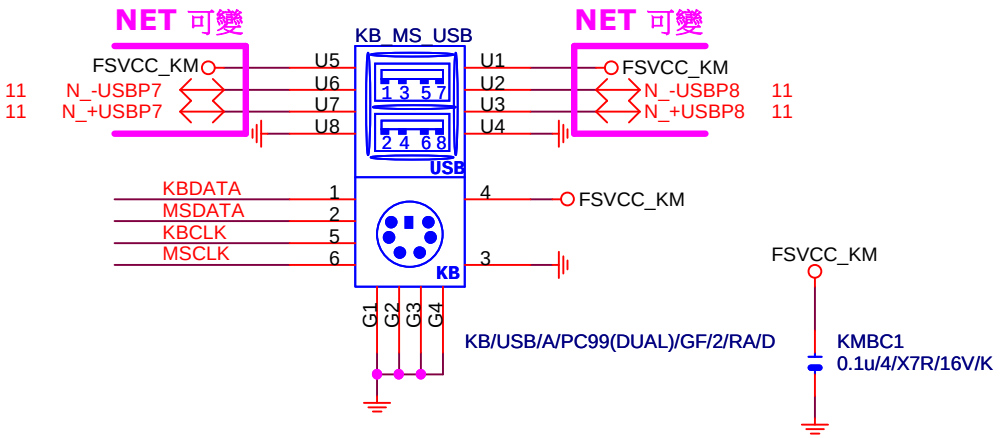
BY LAYOUT位置



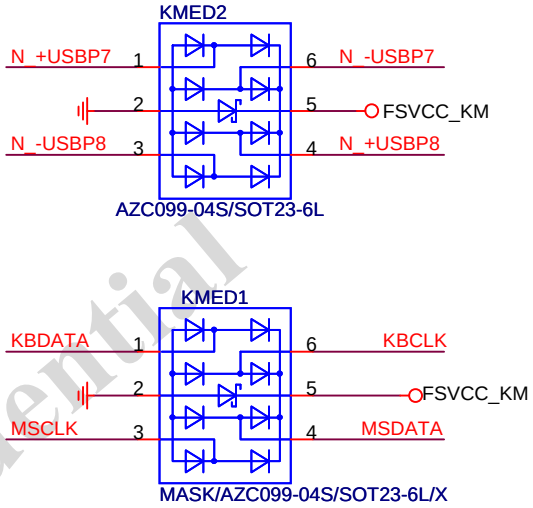
Gigabyte Technology		
Title: ATX POWER CONNECTOR		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 31 of 50	

KB_MS_USB

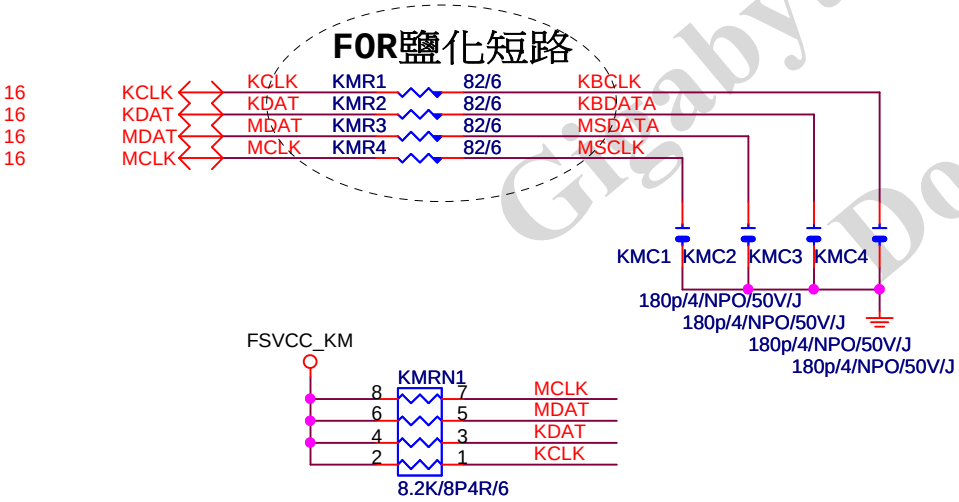
Rev: 0.7



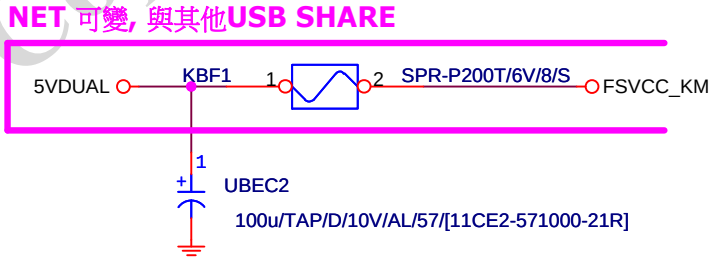
ESD



KB_MS_USB DAMPING/PU



KB_MS_USB PWR



USB OC PROTECT

Gigabyte Technology			
Title: KB_MS_USB			
Size: A	Document Number: H310M H 2.0		Rev: 1.01
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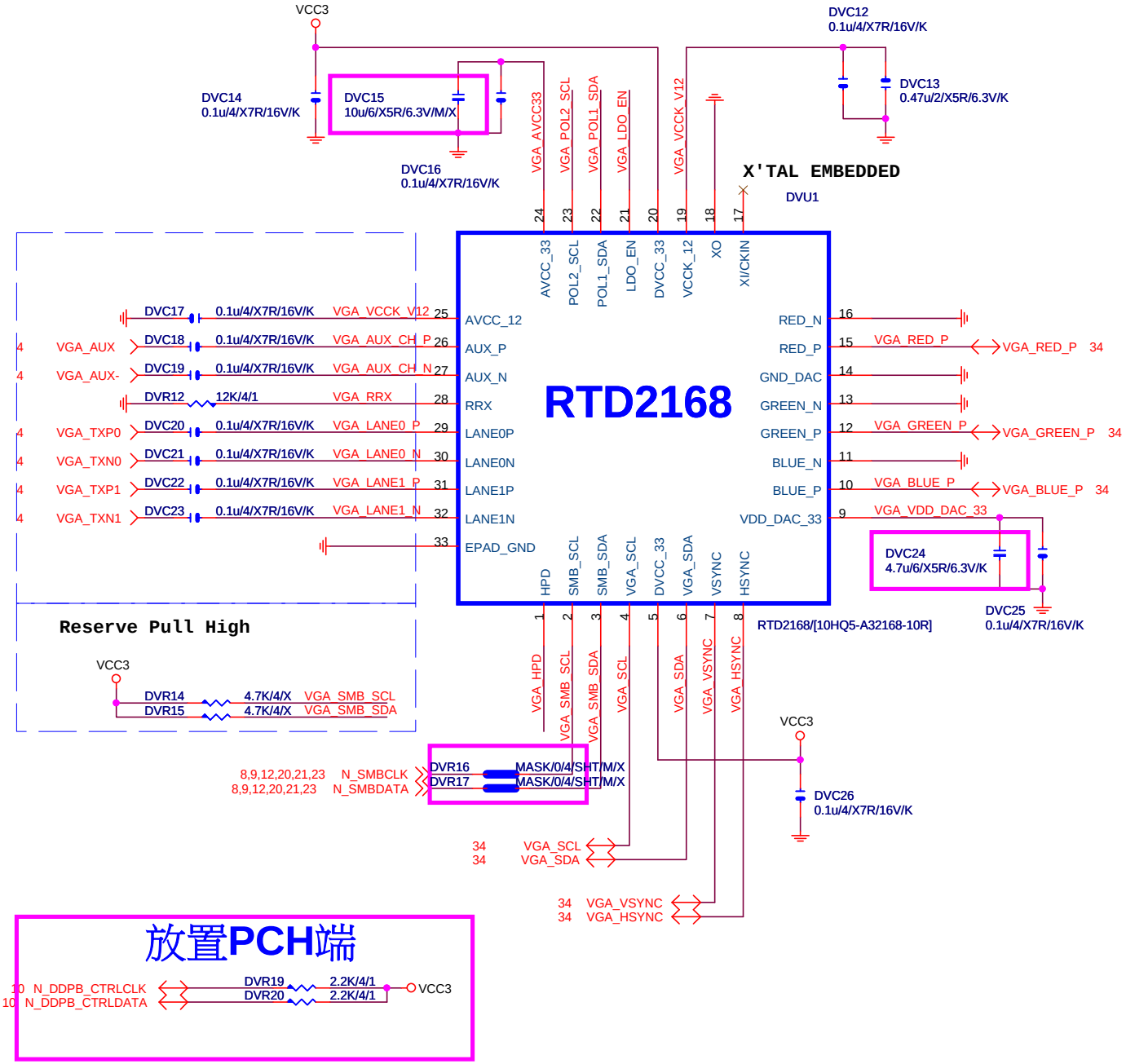
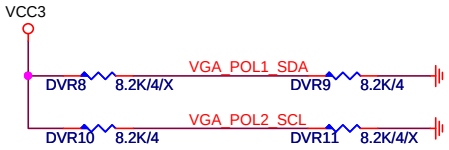
RTD2168 R2.0



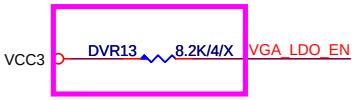
POWER

Power on latch



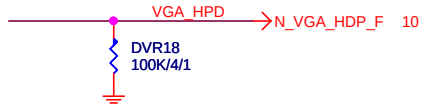
POL2_SCL (PIN23) \ POL1_SDA(PIN22)	0	1
0	X	EP MODE
1	**ROM ONLY MODE**	EEPROM MODE

Embedded LDO



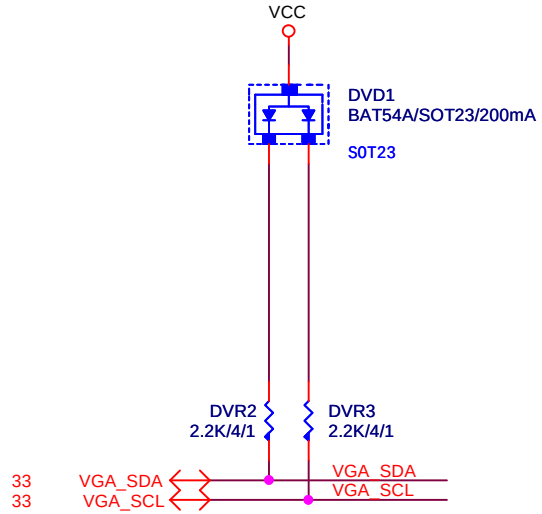
LDO_EN(PIN21)	
0	1
VCCK_V12 from External 1.2V	VCCK_V12 from Embedded LDO

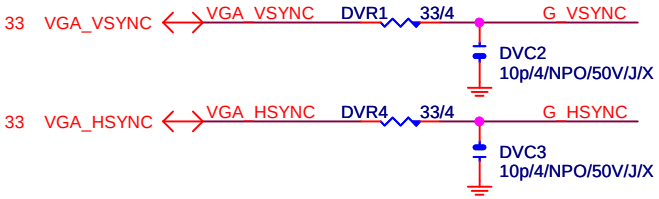
DP HPD

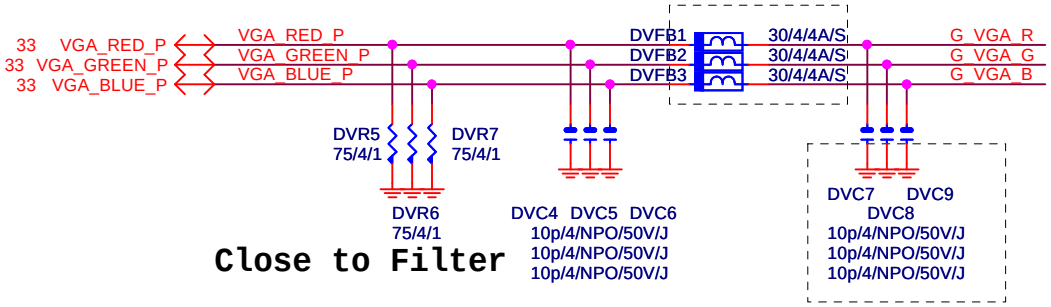


Title	Gigabyte Technology DP-VGA RTD2168		
Size Custom	Document Number H310M H 2.0		Rev 1.01
Date: Tuesday, July 02, 2019		Sheet 33 of 50	

VGA SIGNAL R2.0



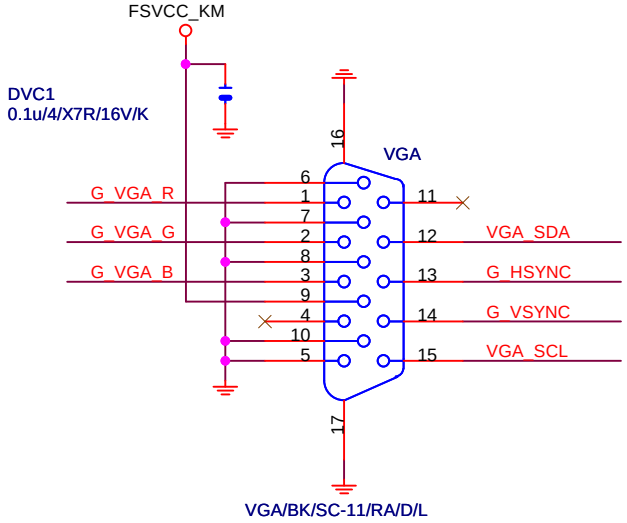




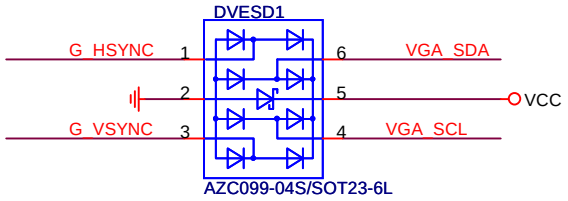
Close to Filter

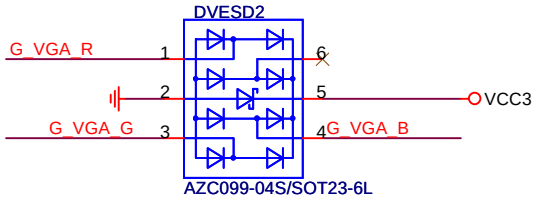
FOR EMI

VGA CONN.



VGA ESD

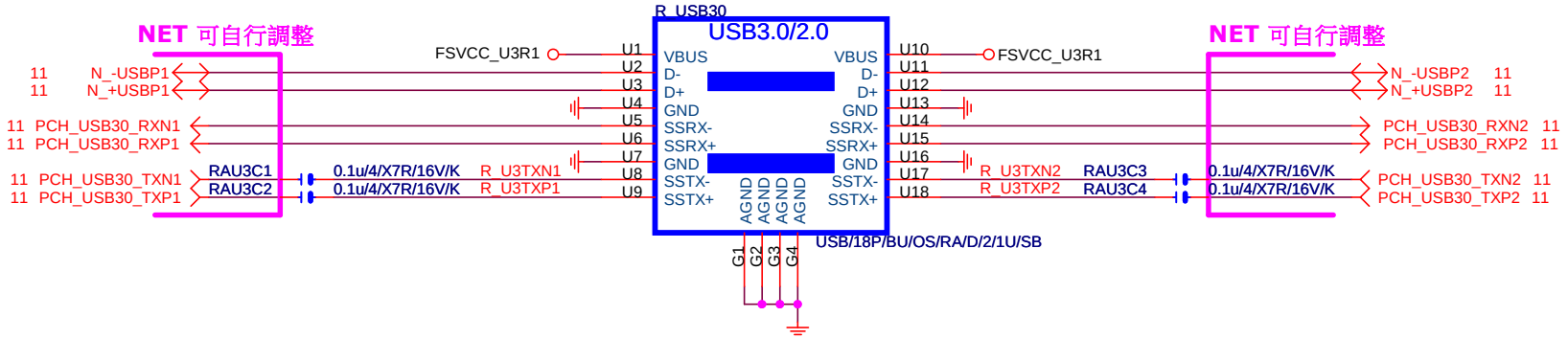




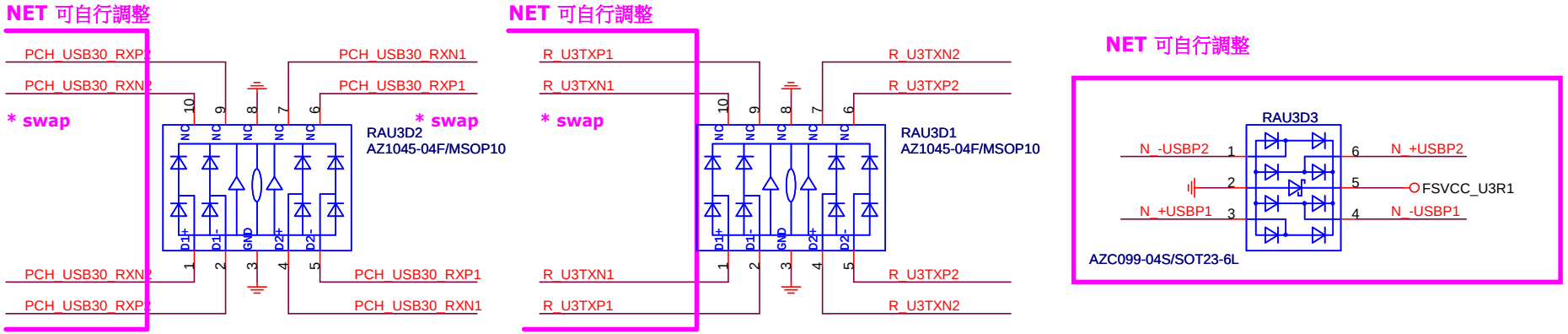
Title	Gigabyte Technology NXP-PTN3356		
Size: Custom	Document Number: H310M H 2.0		Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 34 of 50		

Rev: 0.7

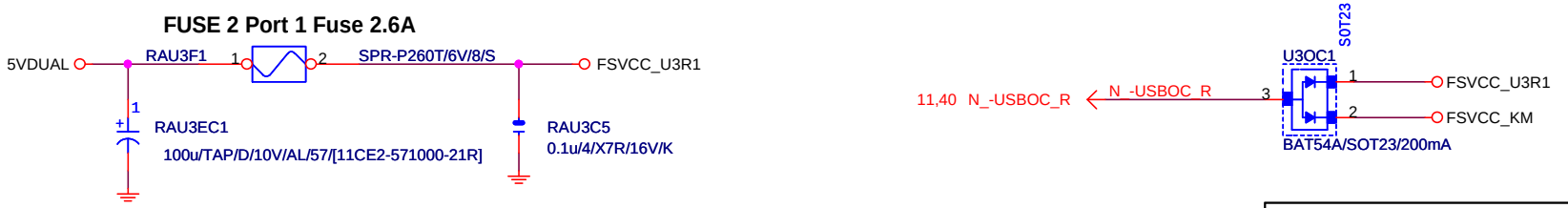
ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可



ESD



FUSE



Gigabyte Technology		
Title: R_USB30,USB_OC		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 35 of 50	

LAN:RTL8111G R1.06

LAR12 2.49K/4/1

LA_LED_ACT_TXRX 37
LA_LED_LINK100 37
LA_LED_LINK1000 37

LAU1

RTL8111G(S)/8106E

RTL8118-CG/S

SRCCLK-->50歐姆:[18/4/10/4/18]

LAR9 MASK/0/6/SHT/M/X

LAR4 1K/4/1

LAR5 15K/4/1/X

LABC4 100p/4/NPO/50V/J/X

LAX1
25M/16p/30ppm/49US/20/D

LAC5 20p/4/NPO/50V/J

LAC6 20p/4/NPO/50V/J

L1+CLK REQ# 節能:
需對應LA_SRCCLK_LAN之CLKREQ#

LAR1 8.2K/4

LAC3 0.1u/4/X7R/16V/K

LAC2 0.1u/4/X7R/16V/K

離IC近越好

LA_ ML-->80歐姆:[15/5/5/5/15]

MDI ESD預留 *

LAESD2 AZC099-04S/SOT23-6L/X

LAESD3 AZC099-04S/SOT23-6L/X

LAN POWER

(CLOSE LAU1 PIN22,30,3,8)

LABC2:1U CLOSE PIN22[REALTEK REQ]

LAN POWER

note: lan power連接及電流

(CLOSE LAU1 PIN23)

LAN POWER

(CLOSE LAU1 PIN:11,32)

LABC18,27:CLOSE PIN11[REALTEK SURGE]
LABC14,20:CLOSE PIN32[REALTEK SURGE]

LAN POWER

(CLOSE LAU1 PIN24)

Gigabyte Technology

Title: Realtek RTL8111GUS

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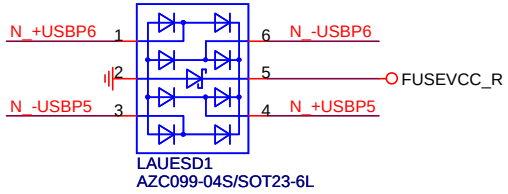
USB_LAN CONNECTOR R1.06

RMA ESD PROTECT

note:可變更USB NAME

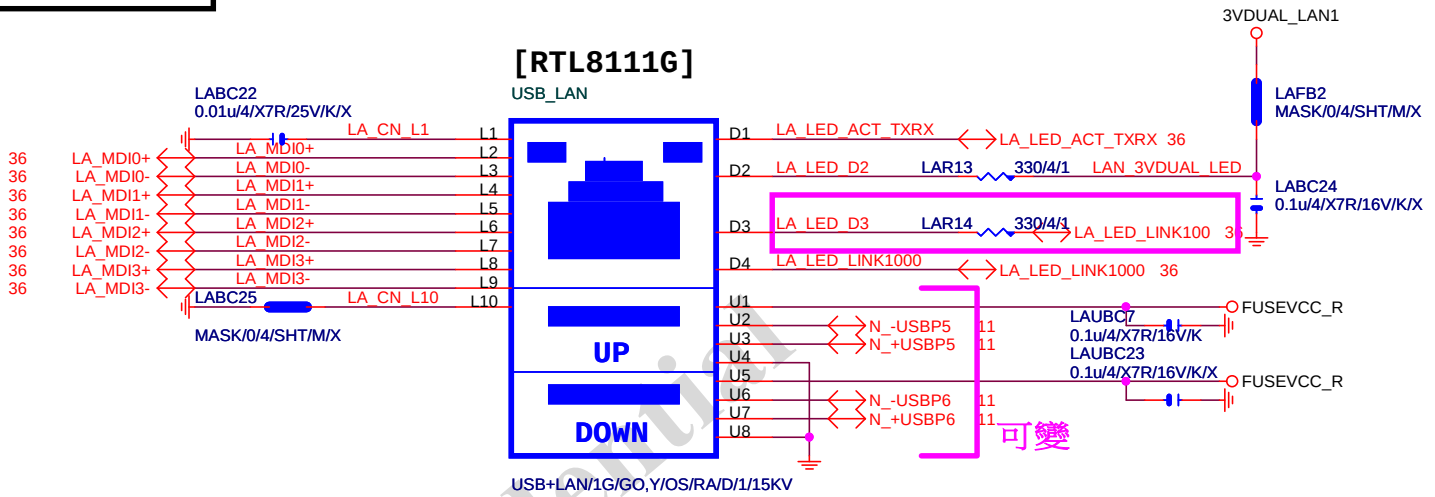
可變



USB_LAN CONNECTOR

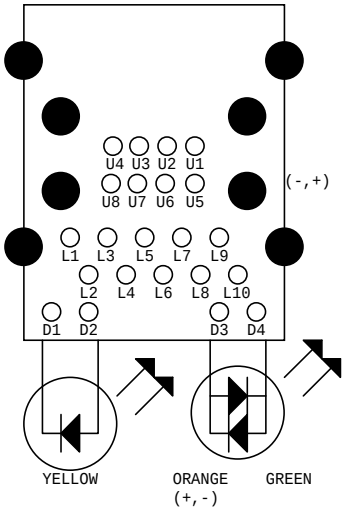
note:可變更USB NAME

[RTL8111G]

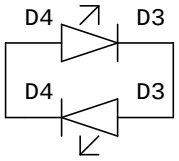


LA_MDI-->100歐姆:[20/4/8/4/20]

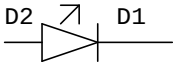
USB_LAN LAYOUT示意圖



Dual Color LED



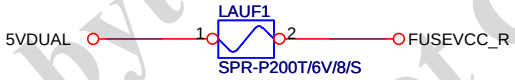
Single Color LED



USB POWER

note:可變更FUSE

可變



Close to connector

USB_LAN 2-Port 2.0A

FUSE-0805

EMI SHORT PAD

PS:視EMI需求

LAN POWER

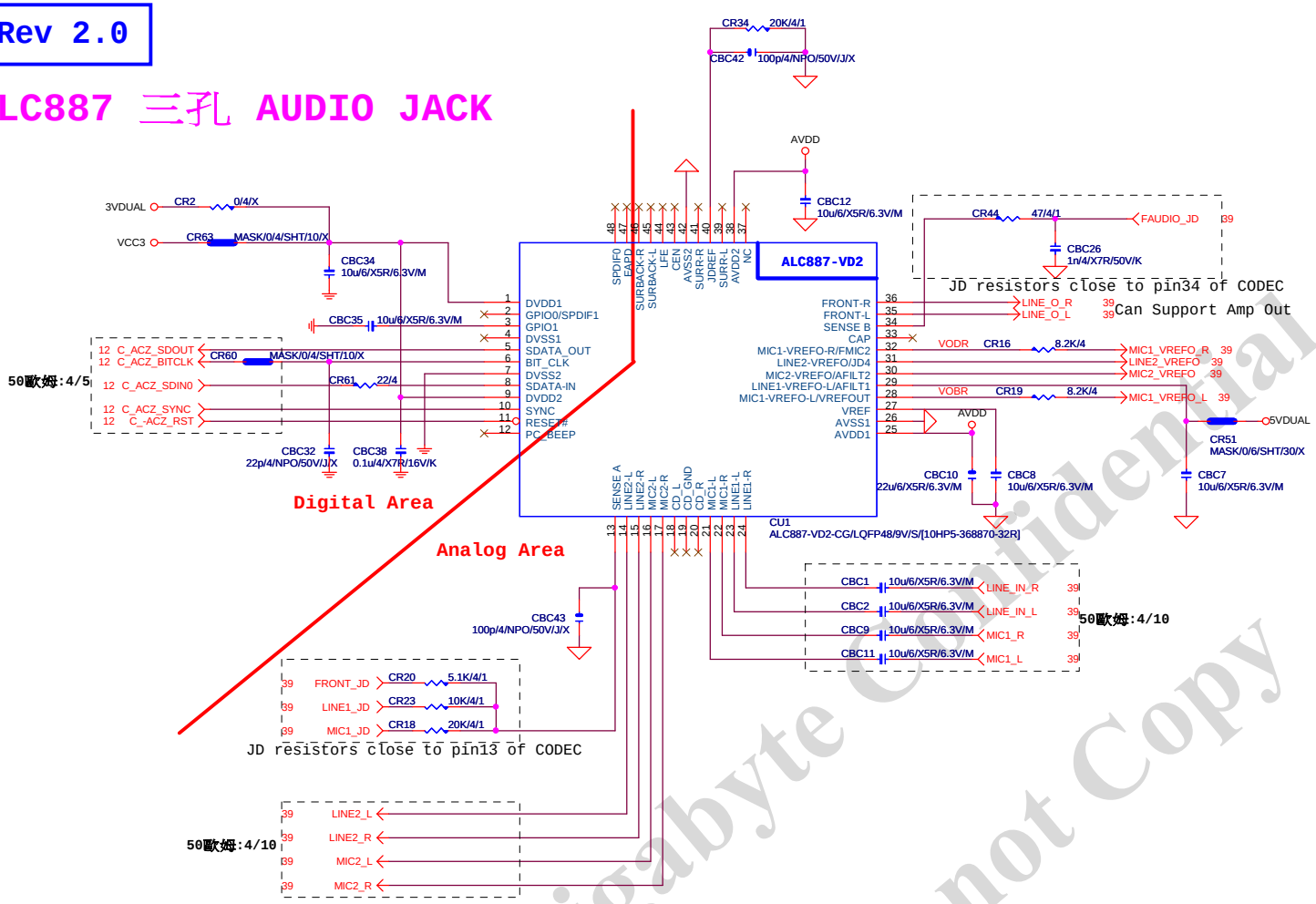
note: lan power連接及電流

可變

Gigabyte Technology		
Title: LAN CONNECTOR-RTL8111G		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 37 of 50	

Rev 2.0

ALC887 三孔 AUDIO JACK



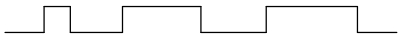
LAYOUT注意:螺絲孔下GND方式

1. MH1空間夠,下DGND
   空間不夠,改為Isolate
2. MH2一律改為Isolate

MH1	MH2
DGND	Isolate

LAYOUT注意:要加

GND切割線



音效區域印刷

Gigabyte Technology		
Title: HD AUDIO ALC887		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
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Rev 2.01

MOATR1 MASK/0/4/SHT/10/X
MOATC1 0.1u/4/X7R/16V/K/X
→ Near F_AUDIO

MOATR2 MASK/0/4/SHT/10/X
MOATC2 0.1u/4/X7R/16V/K/X
→ Near Codec

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

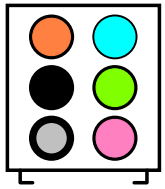
MOATR4 MASK/0/6/SHT/M/X
→ Audio jack - LAN

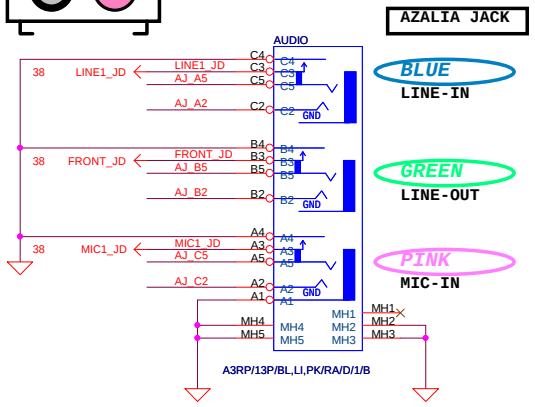
*量產前,0ohm改short pad

SPDIF_OUT

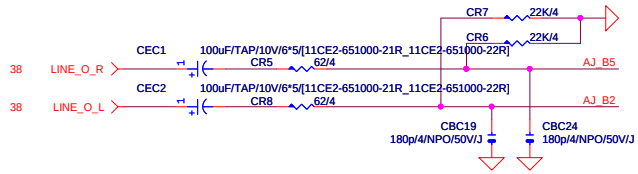
SPDIF_IN

AZALIA JACK

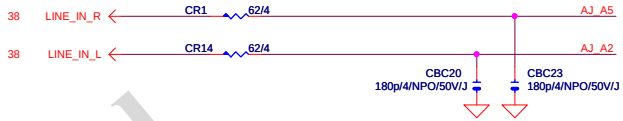




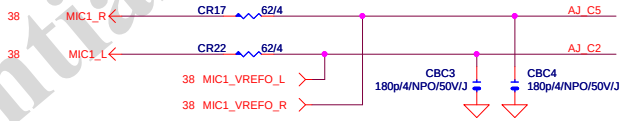
LINE-OUT



LINE-IN



MIC-IN

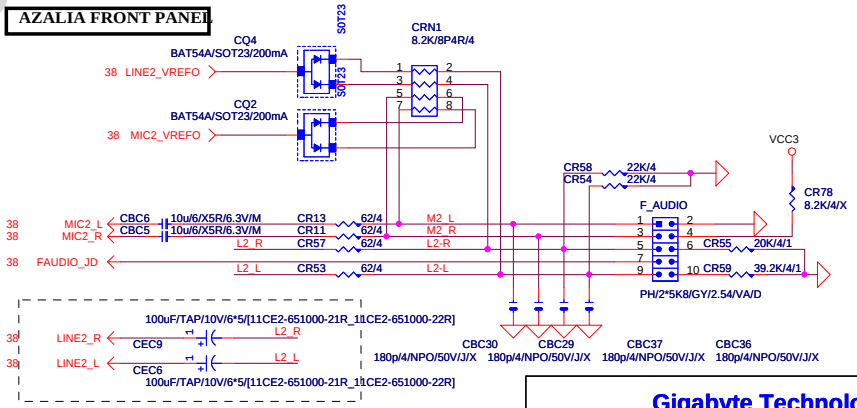


SURROUND

CEN/LFE

SURR BACK

AZALIA FRONT PANEL



Gigabyte Technology

Title	AUDIO JACK	
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
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Rev: 0.7

Front USB3.0

NET 自行調整

F_USB30 REV=1

FSVCC_U3F1 → VBUS (1)
ID (10)
SSRX1-, SSRX1+ (2, 3)
SSTX1-, SSTX1+ (5, 6)
D1-, D1+ (8, 9)
GND, GND (7, 4)

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

FAU3C1 0.1u/4/X7R/16V/K FU30_TXN1
FAU3C2 0.1u/4/X7R/16V/K FU30_TXP1

VBUS (19) ← FSVCC_U3F1
SSTX2-, SSTX2+ (15, 14) FU30_TXN2 FU30_TXP2 FAU3C3 FAU3C4 0.1u/4/X7R/16V/K
SSRX2-, SSRX2+ (18, 17)
D2-, D2+ (12, 11)
GND, 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_TXN4 11
0.1u/4/X7R/16V/K PCH_USB30_TXP4 11
PCH_USB30_RXN4 11
PCH_USB30_RXP4 11
N_-USBP4 11
N_+USBP4 11

F_USB30 PWR

5VDUAL → FAU3F1 (1, 2) SPR-P260T/6V/8/S → FSVCC_U3F1
FAU3EC1 100u/TAP/D/10V/AL/57/[11CE2-571000-21R]
FAU3C5 0.1u/4/X7R/16V/K

刪U30C3

NET 可自行調整

PCH_USB30_RXP3
PCH_USB30_RXN3
PCH_USB30_RXN4
PCH_USB30_RXP4

FAU3D1 AZ1045-04F/MSOP10

AZC099-04S/SOT23-6L

FAU3D3
N_+USBP4 1 — 6 N_-USBP4
2 — 5 3VDUAL
N_-USBP3 3 — 4 N_+USBP3

CLOSE F_USB30

FU30_TXP2
FU30_TXN2
FU30_TXN1
FU30_TXP1

FAU3D2 AZ1045-04F/MSOP10

CLOSE F_USB30

-USBOC_F

POWER 可自行調整

FSVCC_U3F1 → UAR1 8.2K/4 → N_-USBOC_F → N_-USBOC_F 11,41
UAR2 15K/4/1

-USBOC_R

POWER 可自行調整

FUSEVCC_R → UBR1 8.2K/4 → N_-USBOC_R → N_-USBOC_R 11,35
UBR2 15K/4/1

* 接 PCH N_GPP_G6(SMI) & PCH PU 3Vdual

13 N_GPP_G6

UAD5 SOT23
N_-USBOC_F 1 — 1 N_-USBOC_F 11,41
N_-USBOC_R 2 — 2 N_-USBOC_R 11,35
3

BAT54A/SOT23/200mA

Gigabyte Technology		
Title: R_USB30,F_USB30, USB_OC		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
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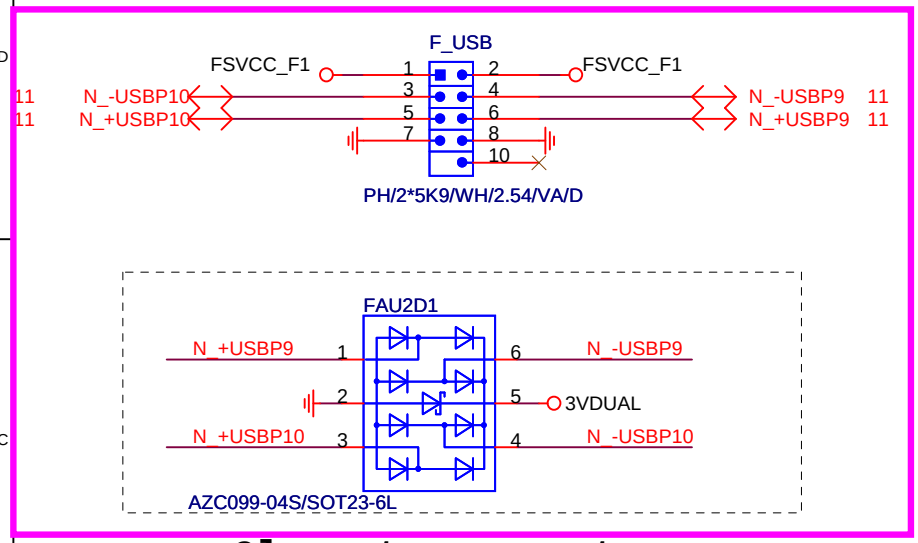
Rev: 0.7

FRONT USB1

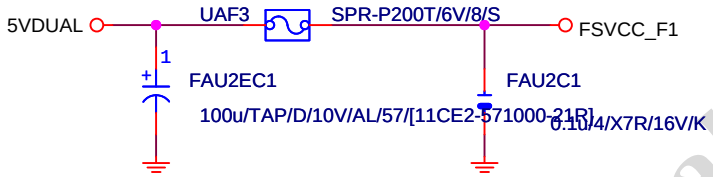
NET 可變

FUSB2X5-HS

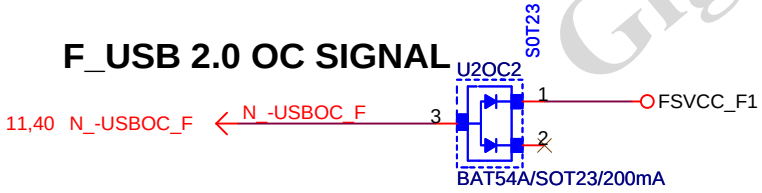


Close to connector

FUSE 2 Port 1 Fuse 2A



F_USB 2.0 OC SIGNAL



Gigabyte Technology		
Title: USB2.0		
Size: A	Document Number: H310M H 2.0	Rev: 1.01
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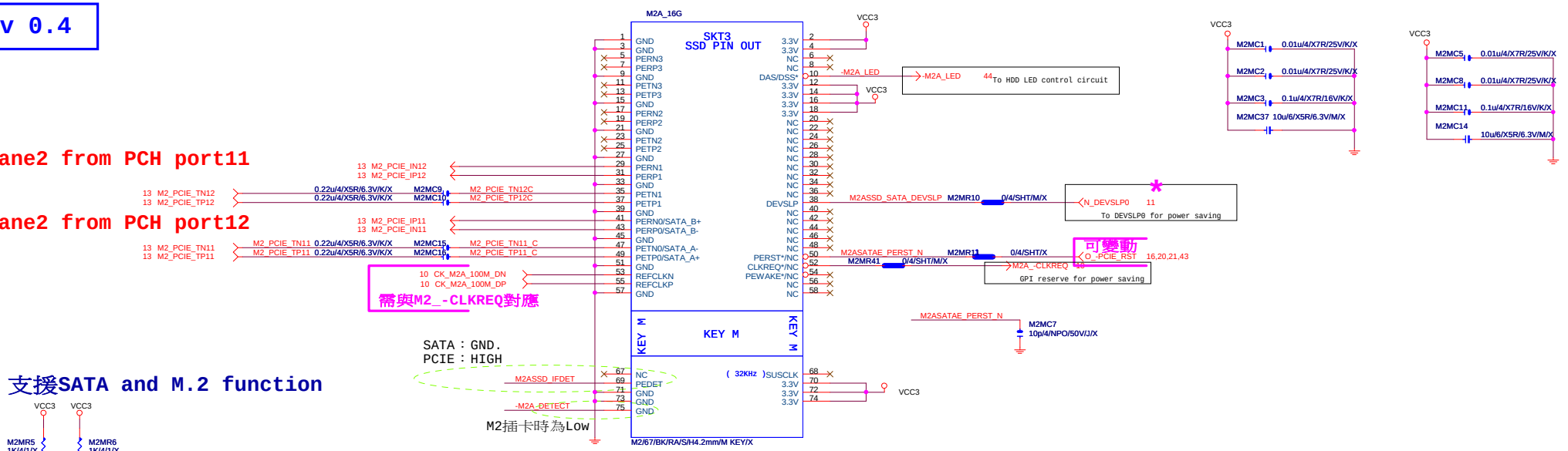
Rev 0.4

M.2 Lane2 from PCH port11

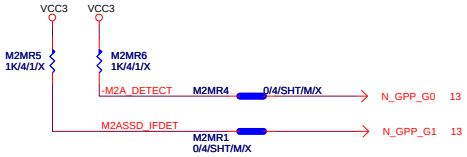
M.2 Lane2 from PCH port12



SATA：GND.
PCIE：HIGH

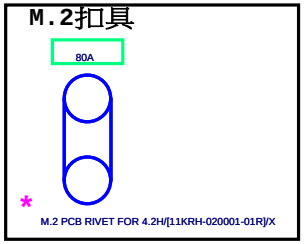
M2插卡時為Low

支援SATA and M.2 function

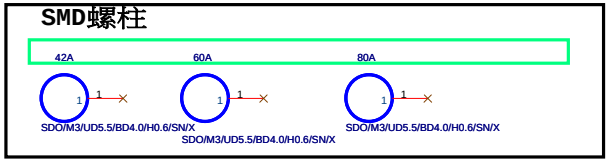


* **Footprint : NGFF-M-75P-8CM-09MM-SMD**
MASK:NGFF-M-8CM-09MM-SMD-MASK

M.2扣具



SMD螺柱

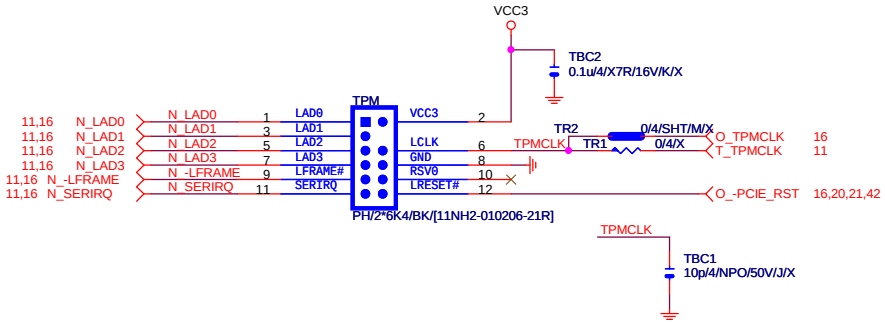


* **Footprint : HOLE_165NP**
MASK:HOLE_165NP-MASK

Gigabyte Technology		
Title: M.2 X4		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 42 of 50	

COM PORT

TPM CONNECT



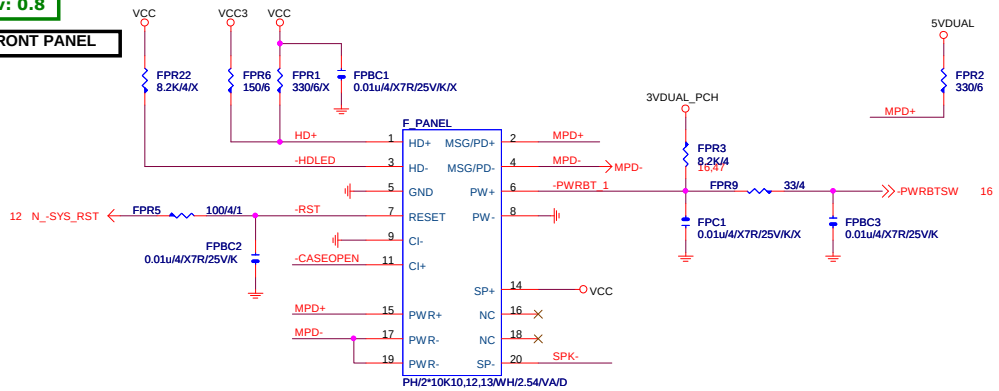
Thunderbolt (N/A)

Gigabyte Technology		
Title: FP,F_USB,USB PWR,BZ		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
Date: Tuesday, July 02, 2019	Sheet 43 of 50	

Rev: 0.8

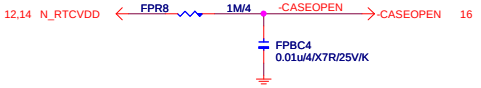
FRONT PANEL

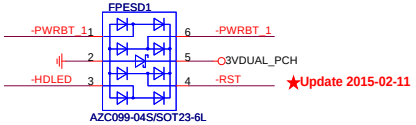
★Update 2016.06.15



FOOTPRINT:PIN2X10PANEL-NEW

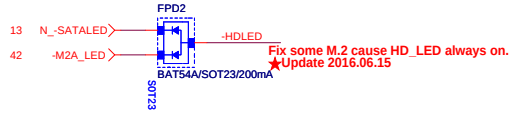
CASE OPEN





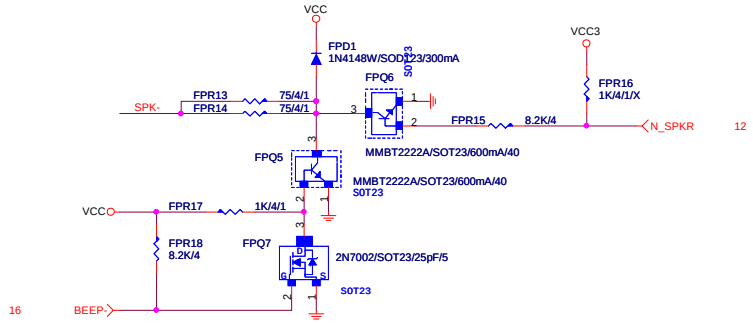
★Update 2015-02-11

SATA/M.2 LED



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

SPKR



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

FRONT PANEL SHORT

Gigabyte Technology		
Title: FRONT PANEL		
Size: Custom	Document Number: H310M H 2.0	Rev: 1.01
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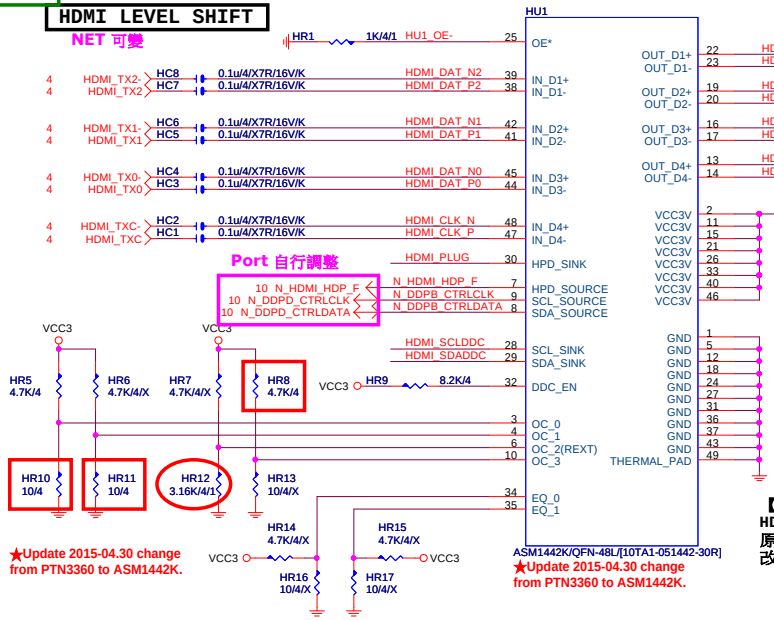
Rev: 0.73

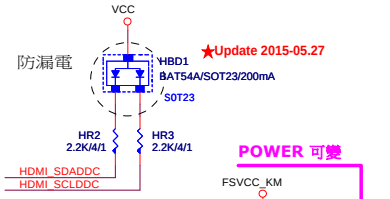
HDMI LEVEL SHIFT

NET 可變

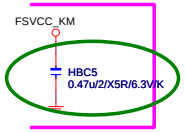


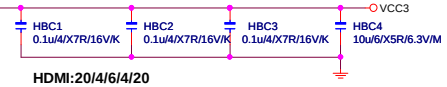
★Update 2015-04.30 change from PTN3360 to ASM1442K.

★Update 2015-04.30 change from PTN3360 to ASM1442K.



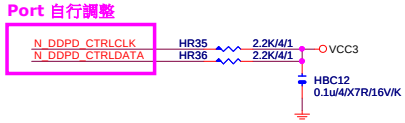
POWER 可變





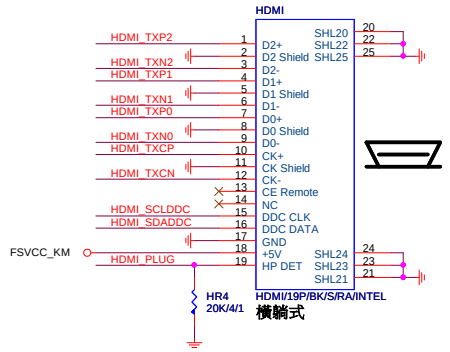
HDMI:20/4/6/4/20
Impedance=85 +- 17.5%

Port 自行調整



【技術通報R&D技術通報150】
HDMI eye diagram1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K
ASM1442:紅色框要上,HR12:3.16K



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Title: FP,F_USB,USB PWR,BZ

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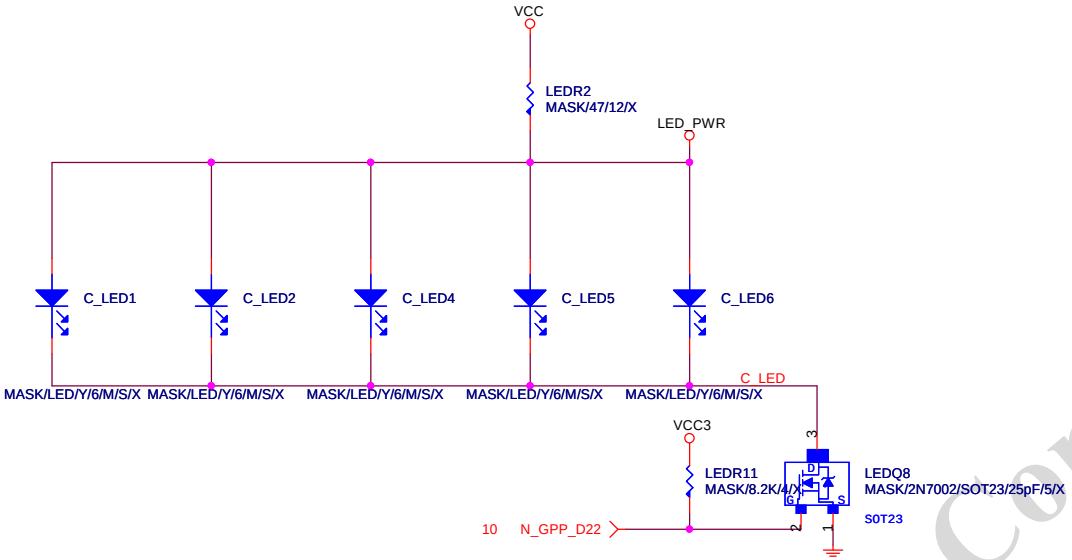
Rev 2.02

Ambient LED Control

	N_GPP_D22
Ambient Mode	H
OFF Mode	L



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Title: Amient Single LED		
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EMI/ESD R0.1

CLOSE SIO

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

12,16,27 N_-SLP_S3

CLOSE PCH

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

4,12 N_CPUPWROK

close to PCH (NR17)

R_USB30_2 & DVI 之間

close to SIO (PIN92)MPD-

EMIC6
0.01u/4/X7R/25V/K

16,44 MPD-

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Title	EMI/ESD	
Size A	Document Number H310M H 2.0	Rev 1.01
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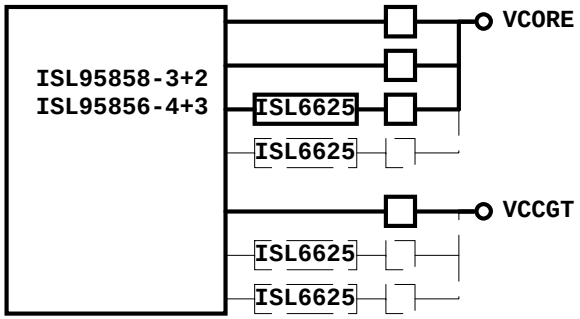
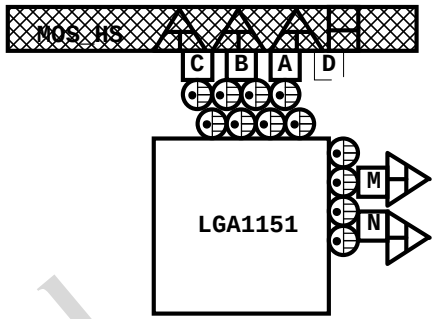
POWER BLOCK MAP

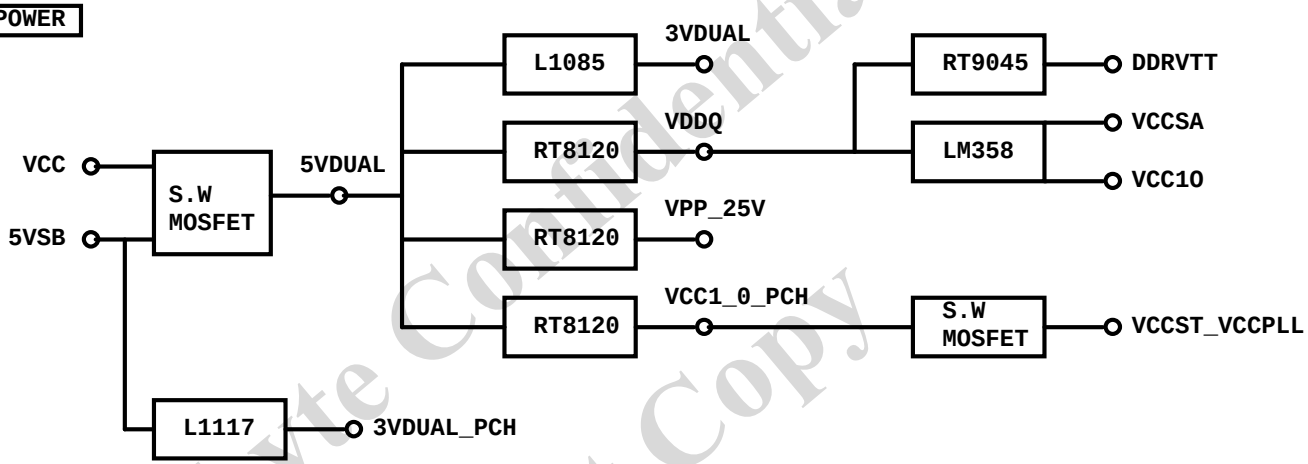
- **CPU**
  - VCORE
  - VCCGT
  - VCCSA
  - VCCIO
  - VDDQ
  - VCCST_VCCPLL
  - VCCSFUSEPRG
- **DDR4**
  - VDDQ
  - DDRVTT
  - VPP_25V
  - VDDSPD(VCC3)
- **PCH**
  - VCC1_0_PCH
  - VCC1_0_PCH_DSW
  - VCC10_VCCF24_1P0
  - VCC10_VCCAMPHYPLL
  - VCC10_VCCAPLL
  - VCC3_PCH
  - 3VDUAL_PCH
  - VCC3
  - N_RTCVDD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

VCORE/VCCGT

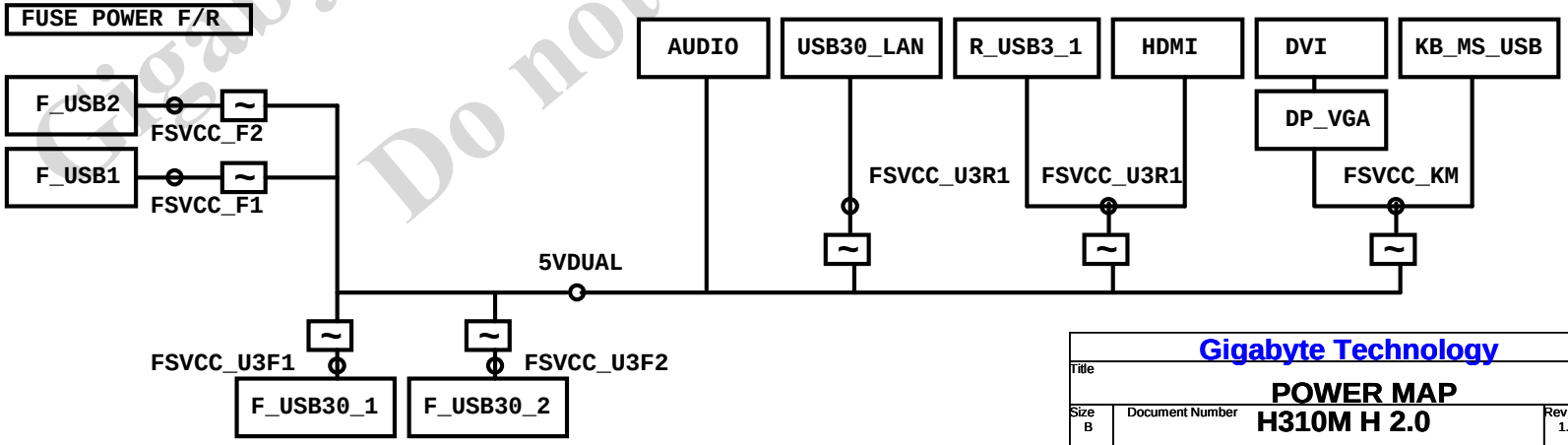




POWER



FUSE POWER F/R



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Title: POWER MAP		
Size: B	Document Number: H310M H 2.0	Rev: 1.01
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固態電容料號.請自行修改

日系黑色固態	Capture Value
11C02-C85600-01R	560u/FP/D/6.3V/68/C/8m
11CO5-C82700-01R	270u/FP/D/16V/88/C/12m
11CO5-C61000-01R	100u/OS/D/16V/66/C/30m
11CO2-C51000-01R	100u/FP/D/6.3V/65/C/13m

日系一般固態	Capture Value
11CO2-685600-01R	560u/FP/D/6.3V/68/8m
11CO5-882700-01R	270u/FP/D/16V/88/12m
11CO5-661000-03R	100u/OS/D/16V/66/30m
11CO2-651000-02R	100u/OS/D/6.3V/66/30m

台系固態	Capture Value
11CO2-661000-09R	100u/OS/D/6.3V/66/A/35m
11CO5-691000-09R	100u/OS/D/16V/69/A/35m
11CO5-8C2700-09R	270u/FP/D/16V/8C/A/10m
11CO2-695600-09R	560u/FP/D/6.3V/69/A/11m

IRON CHOKE

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

Ferrite

	料號	Capture Value	SIZE	Footprint
DIP	11LC5-F3500C-11R	0.5uH/32A/INCG109/FSI/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-F2500C-11R	0.5uH/25A/INC0809/F/D	8*8	CHOKE1U-R50M-IF
SMD	未建(SIUC1007-R30M-JJ1W)		10*7	CHOKE11X8MM-SMD

BEAD

	料號	Capture Value	SIZE	Footprint
DIP	10LFB-15470A-01R	47/4030/15A/S	4*3	BEADC8B-BPH_SMD

PWM料號

		料號	Capture Value	Footprint
PWM	ISL95856	10TA1-695856-01R		IC52QFN-6x6-G
PWM	ISL95858	10TA1-695858-01R		IC52QFN-6x6-G
PWM	IR35201	10TA1-635201-00R		IC56QFN-9VRS4339
PWM	IR3570	10TA1-603570-00R		IC40MLFP-ISL95835

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Title: RT8120_DDR4 POWER		
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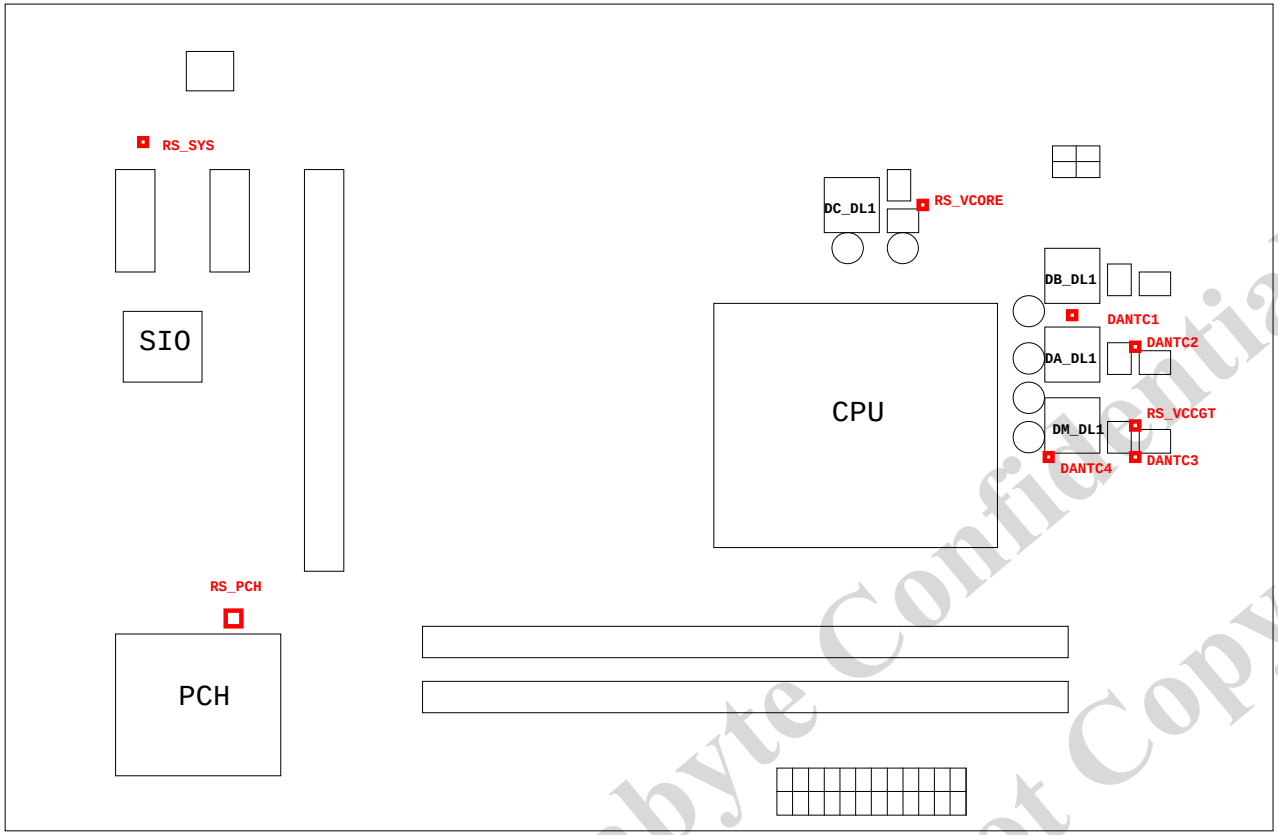

熱敏電阻	擺放靠近位置	走線方式
DANTC4	DM_DL1	Differential
DANTC1	DA_DL1	Differential
DANTC3	DM_DQ1	Differential
DANTC2	DA_DQ1	Differential
RS_VCORE	DA_DQ1	N/A
RS_VCCGT	DM_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A

Gigabyte Technology

Title: NTC MAP

Size: Custom | Document Number: H310M H 2.0 | Rev: 1.01

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