Model Name: H310M H

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	Document Number	Rev
Custom	H310M H	1.01

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Model Name: H310M H

rev:1.01

Component value change history

2018/01/22

Data	Change Item	Reason
2018/01/22	first release	9MH31MH-00-10A
2018/01/29	22U CHANGE 0603	9MH31MH-00-10B

Circuit or PCB layout change

DATE	Change Item	Reason
2018/01/22	由H310M DS2 R01 來改: 1、增加HDMI 2、CPU台系固態 & others電解 3、DEL LPT COM PORT 4、增加ERP線路 5、MASK LED	9MH31MH-00-10A
2018/01/29	採購需求更換MLCC電容22U尺寸為0603	9MH31MH-00-10B

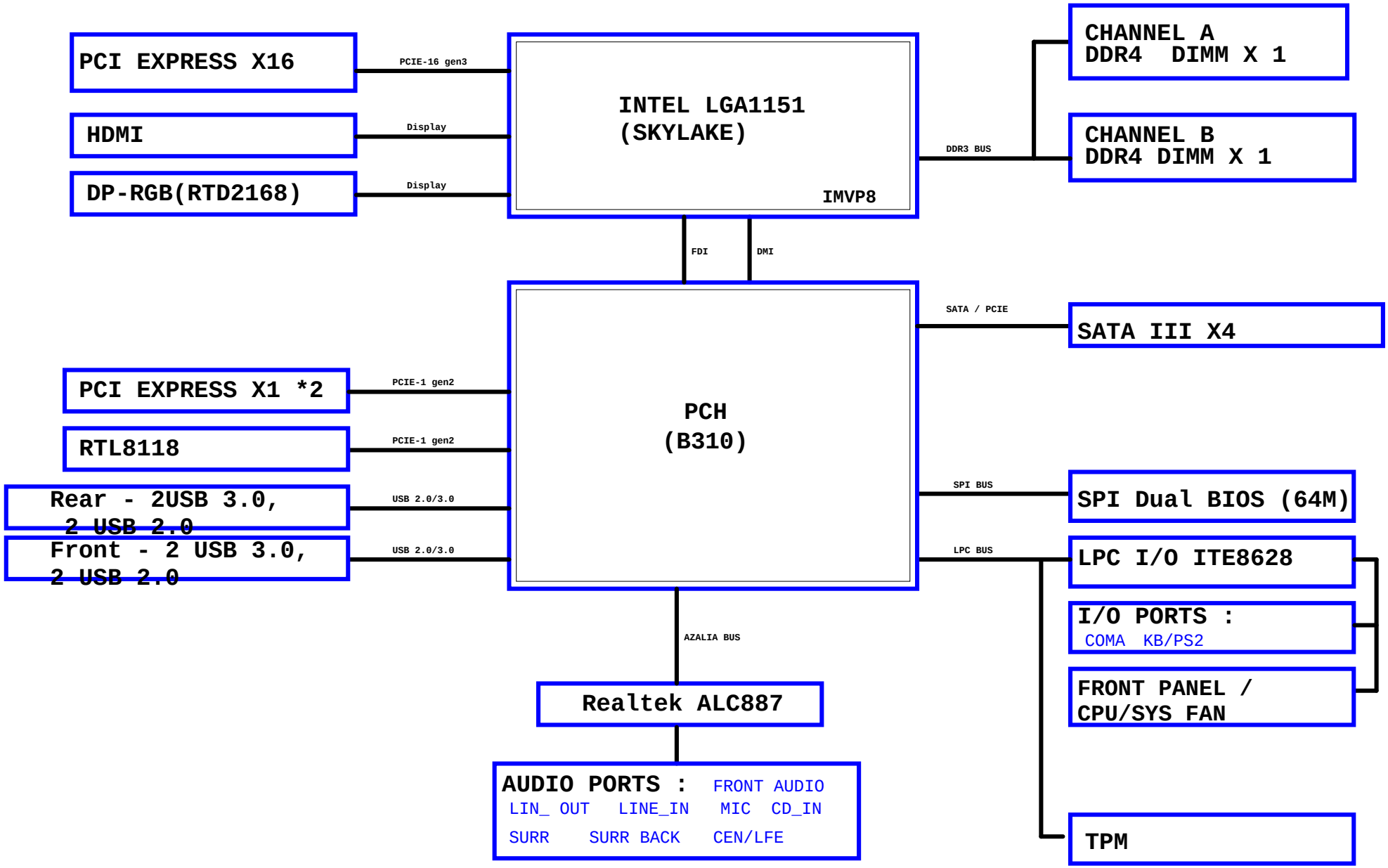
GIGABYTE™

Title: BOM & PCB MODIFY HISTORY

Size	Document Number	Rev
Custom	H310M H	1.01

Date: Tuesday, February 27, 2018 Sheet 2 of 50

BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: C	Document Number: H310M H		Rev: 1.01
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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

Gigabyte Technology	
Title	CPU LGA1151-A
Size: Custom	Document Number: H310M H
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CFL_R0.1

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	DDR0_CKP[0]	M_DCLKA0	8			
AV18	M_-DCLKA0	DDR0_CKN[0]	M_-DCLKA0	8			
AW17	M_DCLKA1	DDR0_CKP[1]	M_DCLKA1	8			
AY17	M_-DCLKA1	DDR0_CKN[1]	M_-DCLKA1	8			
AW16		DDR0_CKP[2]					
AV16		DDR0_CKN[2]					
AT16		DDR0_CKP[3]					
AU16		DDR0_CKN[3]					
AY24	CKEA0	DDR0_CKE[0]	CKEA0	8			
AW24	CKEA1	DDR0_CKE[1]	CKEA1	8			
AV24		DDR0_CKE[2]					
AV25		DDR0_CKE[3]					
AW12	M_-CSA0	DDR0_CS#[0]	M_-CSA0	8			
AU11	M_-CSA1	DDR0_CS#[1]	M_-CSA1	8			
AV13		DDR0_CS#[2]					
AV10		DDR0_CS#[3]					
AW11	MODT_A0	DDR0_ODT[0]					
AU14	MODT_A1	DDR0_ODT[1]					
AU12		DDR0_ODT[2]					
AY10		DDR0_ODT[3]					
AY13	SBAA0	DDR0_BA[0]/DDR0_CAB[4]/DDR0_BA[0]	SBAA0	8			
AY15	SBAA1	DDR0_BA[1]/DDR0_CAB[6]/DDR0_BA[1]	SBAA1	8			
AW23	BG_A0	DDR0_BA[2]/DDR0_CAA[5]/DDR0_BG[0]	BG_A0	8			
AW13	MAAA16	DDR0_RAS#/DDR0_CAB[3]/DDR0_MA[16]					
AY14	MAAA14	DDR0_WE#/DDR0_CAB[2]/DDR0_MA[14]					
AY11	MAAA15	DDR0_CAS#/DDR0_CAB[1]/DDR0_MA[15]					
AW15	MAAA0	DDR0_MA[0]/DDR0_CAB[9]/DDR0_MA[0]					
AU18	MAAA1	DDR0_MA[1]/DDR0_CAB[8]/DDR0_MA[1]					
AU17	MAAA2	DDR0_MA[2]/DDR0_CAB[5]/DDR0_MA[2]					
AV19	MAAA3	DDR0_MA[3]					
AT19	MAAA4	DDR0_MA[4]					
AU20	MAAA5	DDR0_MA[5]/DDR0_CAA[0]/DDR0_MA[5]					
AV20	MAAA6	DDR0_MA[6]/DDR0_CAA[2]/DDR0_MA[6]					
AU21	MAAA7	DDR0_MA[7]/DDR0_CAA[4]/DDR0_MA[7]					
AT20	MAAA8	DDR0_MA[8]/DDR0_CAA[3]/DDR0_MA[8]					
AT22	MAAA9	DDR0_MA[9]/DDR0_CAA[1]/DDR0_MA[9]					
AY14	MAAA10	DDR0_MA[10]/DDR0_CAB[7]/DDR0_MA[10]					
AU22	MAAA11	DDR0_MA[11]/DDR0_CAA[7]/DDR0_MA[11]					
AV22	MAAA12	DDR0_MA[12]/DDR0_CAA[6]/DDR0_MA[12]					
AV12	MAAA13	DDR0_MA[13]/DDR0_CAB[0]/DDR0_MA[13]					
AV23	BG_A1	DDR0_MA[14]/DDR0_CAA[9]/DDR0_BG[1]	BG_A1	8			
AU24		DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT#	M_-ACT_A	8			
AY15		DDR0_PAR	M_DDR_PARA	8			
AT23		DDR0_ALERT#	M_-ALERT_A	8			
AF39	M_-DQSA0	DDR0_DQSN[0]					
AK39	M_-DQSA1	DDR0_DQSN[1]					
AP39	M_-DQSA2	DDR0_DQSN[2]/DDR0_DQSN[4]					
AU36	M_-DQSA3	DDR0_DQSN[3]/DDR0_DQSN[5]					
AW7	M_-DQSA4	DDR0_DQSN[4]/DDR1_DQSN[0]					
AU3	M_-DQSA5	DDR0_DQSN[5]/DDR1_DQSN[1]					
AN3	M_-DQSA6	DDR0_DQSN[6]/DDR1_DQSN[4]					
AJ3	M_-DQSA7	DDR0_DQSN[7]/DDR1_DQSN[5]					
AF38	M_DQSA0	DDR0_DQSP[0]					
AK38	M_DQSA1	DDR0_DQSP[1]					
AP38	M_DQSA2	DDR0_DQSP[2]/DDR0_DQSP[4]					
AV36	M_DQSA3	DDR0_DQSP[3]/DDR0_DQSP[5]					
AV7	M_DQSA4	DDR0_DQSP[4]/DDR1_DQSP[0]					
AU2	M_DQSA5	DDR0_DQSP[5]/DDR1_DQSP[1]					
AN2	M_DQSA6	DDR0_DQSP[6]/DDR1_DQSP[4]					
AJ2	M_DQSA7	DDR0_DQSP[7]/DDR1_DQSP[5]					
AV32		DDR0_DQSP[8]					
AU32		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]					
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	AF6	DDR1_DQ[58]					
MDB59	AF7	DDR1_DQ[59]					
MDB60	AH7	DDR1_DQ[60]					
MDB61	AH6	DDR1_DQ[61]					
MDB62	AF7	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	DDR1_CKP[0]	M_DCLKB0	9			
AM21	M_-DCLKB0	DDR1_CKN[0]	M_-DCLKB0	9			
AP22	M_DCLKB1	DDR1_CKP[1]	M_DCLKB1	9			
AP21	M_-DCLKB1	DDR1_CKN[1]	M_-DCLKB1	9			
AN20		DDR1_CKP[2]					
AN21		DDR1_CKN[2]					
AP19		DDR1_CKP[3]					
AP20		DDR1_CKN[3]					
AY29	CKEB0	DDR1_CKE[0]	CKEB0	9			
AV29	CKEB1	DDR1_CKE[1]	CKEB1	9			
AW29		DDR1_CKE[2]					
AU29		DDR1_CKE[3]					
AP17	M_-CSB0	DDR1_CS#[0]	M_-CSB0	9			
AN15	M_-CSB1	DDR1_CS#[1]	M_-CSB1	9			
AN17		DDR1_CS#[2]					
AM15		DDR1_CS#[3]					
AM16	MODT_B0	DDR1_ODT[0]					
AL16	MODT_B1	DDR1_ODT[1]					
AP15		DDR1_ODT[2]					
AL15		DDR1_ODT[3]					
AN18	MAAB16	DDR1_RAS#/DDR1_CAB[3]/DDR1_MA[16]					
AL17	MAAB14	DDR1_WE#/DDR1_CAB[2]/DDR1_MA[14]					
AP16	MAAB15	DDR1_CAS#/DDR1_CAB[1]/DDR1_MA[15]					
AL18	SBAB0	DDR1_BA[0]/DDR1_CAB[4]/DDR1_BA[0]	SBAB0	9			
AM18	SBAB1	DDR1_BA[1]/DDR1_CAB[6]/DDR1_BA[1]	SBAB1	9			
AW28	BG_B0	DDR1_BA[2]/DDR1_CAA[5]/DDR1_BG[0]	BG_B0	9			
AL19	MAAB0	DDR1_MA[0]/DDR1_CAB[9]/DDR1_MA[0]					
AL22	MAAB1	DDR1_MA[1]/DDR1_CAB[8]/DDR1_MA[1]					
AM22	MAAB2	DDR1_MA[2]/DDR1_CAB[5]/DDR1_MA[2]					
AM23	MAAB3	DDR1_MA[3]					
AP23	MAAB4	DDR1_MA[4]					
AL23	MAAB5	DDR1_MA[5]/DDR1_CAA[0]/DDR1_MA[5]					
AW26	MAAB6	DDR1_MA[6]/DDR1_CAA[2]/DDR1_MA[6]					
AY26	MAAB7	DDR1_MA[7]/DDR1_CAA[4]/DDR1_MA[7]					
AU26	MAAB8	DDR1_MA[8]/DDR1_CAA[3]/DDR1_MA[8]					
AW27	MAAB9	DDR1_MA[9]/DDR1_CAA[1]/DDR1_MA[9]					
AP18	MAAB10	DDR1_MA[10]/DDR1_CAB[7]/DDR1_MA[10]					
AU27	MAAB11	DDR1_MA[11]/DDR1_CAA[7]/DDR1_MA[11]					
AV27	MAAB12	DDR1_MA[12]/DDR1_CAA[6]/DDR1_MA[12]					
AR15	MAAB13	DDR1_MA[13]/DDR1_CAB[0]/DDR1_MA[13]					
AY28	BG_B1	DDR1_MA[14]/DDR1_CAA[9]/DDR1_BG[1]	BG_B1	9			
AU28		DDR1_MA[15]/DDR1_CAA[8]/DDR1_ACT#	M_-ACT_B	9			
AL20		DDR1_PAR	M_DDR_PARB	9			
AY25		DDR1_ALERT#	M_-ALERT_B	9			
AF34	M_-DQSB0	DDR1_DQSN[0]/DDR0_DQSN[2]					
AK33	M_-DQSB1	DDR1_DQSN[1]/DDR0_DQSN[3]					
AN33	M_-DQSB2	DDR1_DQSN[2]/DDR0_DQSN[6]					
AN29	M_-DQSB3	DDR1_DQSN[3]/DDR0_DQSN[7]					
AN13	M_-DQSB4	DDR1_DQSN[4]/DDR1_DQSN[2]					
AR8	M_-DQSB5	DDR1_DQSN[5]/DDR1_DQSN[3]					
AM8	M_-DQSB6	DDR1_DQSN[6]					
AG6	M_-DQSB7	DDR1_DQSN[7]					
AF35	M_DQSB0	DDR1_DQSP[0]/DDR0_DQSP[2]					
AL33	M_DQSB1	DDR1_DQSP[1]/DDR0_DQSP[3]					
AP33	M_DQSB2	DDR1_DQSP[2]/DDR0_DQSP[6]					
AN28	M_DQSB3	DDR1_DQSP[3]/DDR0_DQSP[7]					
AN12	M_DQSB4	DDR1_DQSP[4]/DDR1_DQSP[2]					
AP8	M_DQSB5	DDR1_DQSP[5]/DDR1_DQSP[3]					
AL8	M_DQSB6	DDR1_DQSP[6]					
AG7	M_DQSB7	DDR1_DQSP[7]					
AN25		DDR1_DQSP[8]					
AN26		DDR1_DQSN[8]					

DDR CHANNEL B

2 OF 12

		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

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

Date: Tuesday, February 27, 2018 | Sheet 5 of 50

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 → VCCGT_SENSE 23
VSSGT_SENSE F38 → VSSGT_SENSE 23

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CPU-SK/1151/S/GF

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

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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 → WTP2
THERMDC1	J14 → WTP3
THERMDA2	AU9 → WTP4
THERMDC2	AU10 → WTP5
LGC_SPARE[0]	J13
LGC_SPARE[1]	K13 → WR89 560/4/1
LGC_SPARE[2]	J11

13 N_PCH_CPU_TI
13 A_CPU_PCH_TO → WR88 33/4 A_CPU_PCH_TO_R → B3

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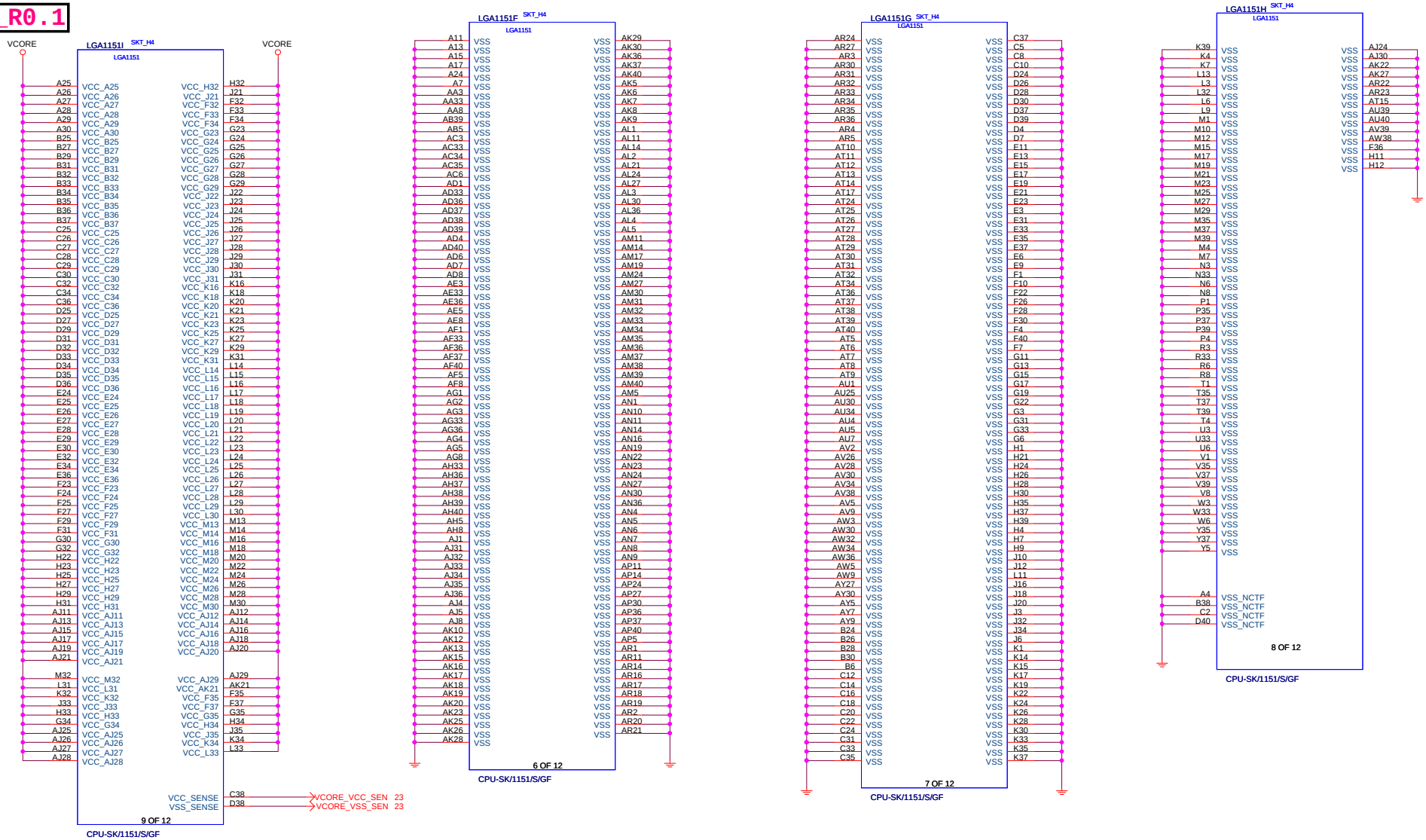
CPU-SK/1151/S/GF

Gigabyte Technology		
Title: CPU LGA1151-C		
Size: Custom	Document Number: H310M H	Rev: 1.01
Date: Tuesday, February 27, 2018	Sheet 6 of 50	

CFL_R0.1



Title	CPU LGA1151-C
Size	Custom
Document Number	H310M H
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Gigabyte Technology

Rev:0.6

DDR4_1

DDRVTT

VTT

VSS

RFU

NC2_SAVE*1

ODT1

ODT0

PARITY

RESET*

EVENT*

ALERT*

ACT*

CB0_NC

CB1_NC

CB2_NC

CB3_NC

CB4_NC

CB5_NC

CB6_NC

CB7_NC

DQS0

DQS0*

DQS1

DQS1*

DQS2

DQS2*

DQS3

DQS3*

DQS4

DQS4*

DQS5

DQS5*

DQS6

DQS6*

DQS7

DQS7*

DQS8

DQS8*

DM0/DQS9_DBI0

NC/DQS9*

DM1/DQS10_DBI1

NC/DQS10*

DM2/DQS11_DBI2

NC/DQS11*

DM3/DQS12_DBI3

NC/DQS12*

DM4/DQS13_DBI4

NC/DQS13*

DM5/DQS14_DBI5

NC/DQS14*

DM6/DQS15_DBI6

NC/DQS15*

DM7/DQS16_DBI7

NC/DQS16*

DM8/DQS17_DBI8

NC/DQS17*

DQ0

DQ1

DQ2

DQ3

DQ4

DQ5

DQ6

DQ7

DQ8

DQ9

DQ10

DQ11

DQ12

DQ13

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DQ60

DQ61

DQ62

DQ63

VDD

VPP

12V3_NC

VREFCA

VDDSPD

SA2_RFU

SA1

SA0

SDA

SCL

BA1

BA0

BG1

BG0

CK1/NU*

CK1/NU

CK0*

CK0

C_2_NC

S3_N_C

S2_N_C

S1_N

S0_N

CKE1

CKE0

A0

A1

A2

A3

A4

A5

A6

A7

A8

A9

A10/AP

A11

A12

A13

A14_WE*

A15_CAS*

A16_RAS*

A17_NC

DDR4/2B8G/Y/A/D/GF/TWO LATCH

MDA[0..63]

MAAA[0..16]

M_DQSA[0..7]

M_-DQSA[0..7]

MODT_A[0..1]

MAC11 1u/4/X5R/6.3V/K

MAC16 0.1u/4/X7R/16V/K

VREF_DDRA

VPP_25V

N_SMBDATA

N_SMBCLK

MA0_SA2

MA0_SA1

MA0_SA0

SBAA1

SBAA0

BG_A1

BG_A0

M_DCLKA1

M_-DCLKA1

M_DCLKA0

M_-DCLKA0

M_-CSA1

M_-CSA0

CKEA1

CKEA0

MAAA[0..16]

* net 改 VDDQ

MODT_A1

MODT_A0

MAR19 240/4/1

M_DDR_PARA

DDR3_RST

CH_A0

M_-ALERT_A

M_-ACT_A

M_DQSA0

M_-DQSA0

M_DQSA1

M_-DQSA1

M_DQSA2

M_-DQSA2

M_DQSA3

M_-DQSA3

M_DQSA4

M_-DQSA4

M_DQSA5

M_-DQSA5

M_DQSA6

M_-DQSA6

M_DQSA7

M_-DQSA7

MDA0

MDA1

MDA2

MDA3

MDA4

MDA5

MDA6

MDA7

MDA8

MDA9

MDA10

MDA11

MDA12

MDA13

MDA14

MDA15

MDA16

MDA17

MDA18

MDA19

MDA20

MDA21

MDA22

MDA23

MDA24

MDA25

MDA26

MDA27

MDA28

MDA29

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MDA38

MDA39

MDA40

MDA41

MDA42

MDA43

MDA44

MDA45

MDA46

MDA47

MDA48

MDA49

MDA50

MDA51

MDA52

MDA53

MDA54

MDA55

MDA56

MDA57

MDA58

MDA59

MDA60

MDA61

MDA62

MDA63

* 黑色 變更扣

MA0_SA0

MA0_SA1

MA0_SA2

* 移除 short pad

CHANNEL A0

SA2:0=000

VDDQ

MABC4 0.1u/4/X7R/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/4/X7R/25V/K/X

MR24 24.9/4/1/X

DDR12V Decouple

MABC15 1u/4/X5R/6.3V/K

MABC38 1u/4/X5R/6.3V/K

MABC39 0.1u/4/X7R/16V/K

MASC3 1u/4/X5R/6.3V/K

MASC4 0.1u/4/X7R/16V/K

MASC2 1u/4/X5R/6.3V/K

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

MABC35 1u/4/X5R/6.3V/K

MABC17 1u/4/X5R/6.3V/K

MABC36 1u/4/X5R/6.3V/K

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

* 電容移到 [RT8120_DDR]

MABC19 1u/4/X5R/6.3V/K

MABC20 1u/4/X5R/6.3V/K

MABC14 1u/4/X5R/6.3V/K

MABC30 1u/4/X5R/6.3V/K

MABC12 1u/4/X5R/6.3V/K

DDRVTT Decouple

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

MABC22 1u/4/X5R/6.3V/K

MABC24 1u/4/X5R/6.3V/K

* 新電容

* 新電容

Gigabyte Technology

Title: DDR4 CHANNEL A

Size: Custom

Document Number: H310M H

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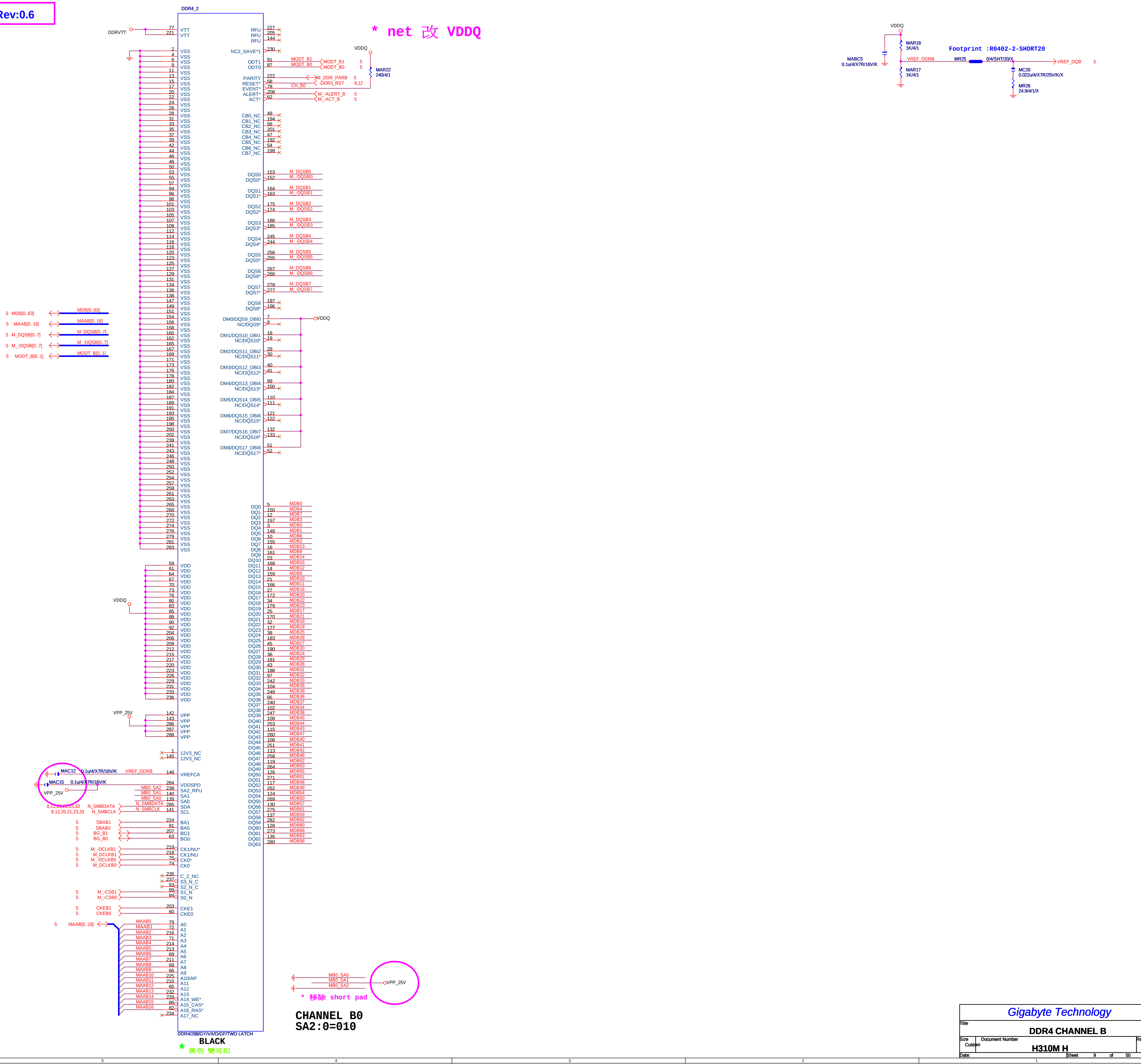

DDR4_2
* net 改 VDDQ
DDRVTT
VTT
RFU
NC2_SAVE*1
ODT1
ODT0
MODT_B1
MODT_B0
VDDQ
PARITY
RESET*
EVENT*
ALERT*
ACT*
M_DDR_PARB
-DDR3_RST
CH_B0
M_-ALERT_B
M_-ACT_B
MAR22
240/4/1
CB0_NC
CB1_NC
CB2_NC
CB3_NC
CB4_NC
CB5_NC
CB6_NC
CB7_NC
DQS0
DQS0*
M_DQSB0
M_-DQSB0
M_DQSB1
M_-DQSB1
M_DQSB2
M_-DQSB2
M_DQSB3
M_-DQSB3
M_DQSB4
M_-DQSB4
M_DQSB5
M_-DQSB5
M_DQSB6
M_-DQSB6
M_DQSB7
M_-DQSB7
DM0/DQS9_DBI0
NC/DQS9*
DM1/DQS10_DBI1
NC/DQS10*
DM2/DQS11_DBI2
NC/DQS11*
DM3/DQS12_DBI3
NC/DQS12*
DM4/DQS13_DBI4
NC/DQS13*
DM5/DQS14_DBI5
NC/DQS14*
DM6/DQS15_DBI6
NC/DQS15*
DM7/DQS16_DBI7
NC/DQS16*
DM8/DQS17_DBI8
NC/DQS17*
VSS
5 MDB[0..63]
5 MAAB[0..16]
5 M_DQSB[0..7]
5 M_-DQSB[0..7]
5 MODT_B[0..1]
VDD
VPP_25V
VPP
12V3_NC
VREFCA
VDDSPD
SA2_RFU
SA1
SA0
SDA
SCL
MAC12 0.1u/4/X7R/16V/K
MAC15 0.1u/4/X7R/16V/K
VREF_DDRB
MB0_SA2
MB0_SA1
MB0_SA0
N_SMBDATA
N_SMBCLK
8,12,20,21,23,33
SBAB1
SBAB0
BG_B1
BG_B0
BA1
BA0
BG1
BG0
M_-DCLKB1
M_DCLKB1
M_-DCLKB0
M_DCLKB0
CK1/NU*
CK1/NU
CK0*
CK0
C_2_NC
S3_N_C
S2_N_C
S1_N
S0_N
M_-CSB1
M_-CSB0
CKEB1
CKEB0
CKE1
CKE0
MAAB[0..16]
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10/AP
A11
A12
A13
A14_WE*
A15_CAS*
A16_RAS*
A17_NC
DQ0
DQ63
MDB0
MDB63
MAR18 1K/4/1
MAR17 1K/4/1
MABC5 0.1u/4/X7R/16V/K
Footprint :R0402-2-SHORT20
MR25
0/4/SHT/20/X
VREF_DQB
MC20 0.022u/4/X7R/25V/K/X
MR26 24.9/4/1/X
* 移除 short pad
CHANNEL B0
SA2:0=010
DDR4/288/GY/VA/D/GF/TWO LATCH
BLACK
* 黑色 雙耳扣

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

CNP_R0.7

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/4/1X 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

GPP_A_11_PMEB_SD_VDD2_PWR_EN_B BE36
TD_ANODE R15
TD_CATHODE R13
FPF_VREF AL37
FPF_MON AN35
SPI0_MOSI_IO_0 AU41
SPI0_MISO_IO_1 BA45
SPI0_FLASH_0_CSB AY47
SPI0_CLK AW47
SPI0_FLASH_1_CSB AW48
SPI0_IO_2 AY48
SPI0_IO_3 BA46
SPI0_TPM_CSB AT40
GPP_D_1_SPI1_CLK_SBK_1_BK_1 BE19
GPP_D_0_SPI1_CSB_SBK_0_BK_0 BF19
GPP_D_3_SPI1_MOSI_IO_0_SBK_3_BK_3 BF18
GPP_D_2_SPI1_MISO_IO_1_SBK_2_BK_2 BE18
GPP_D_22_SPI1_IO_3 BC17
GPP_D_21_SPI1_IO_2 BD17
1 of 13

GPP_B_13_PLTRSTB AV29
GPP_K_16_GSXCLK Y47
GPP_K_12_GSXDOUT Y46
GPP_K_13_GSXSLOAD Y48
GPP_K_14_GSXDIN W46
GPP_K_15_GSXSRESETB AA45
GPP_E_3_CPU_GP_0 AL47
GPP_E_7_CPU_GP_1 AM45
GPP_B_3_CPU_GP_2 BF32
GPP_B_4_CPU_GP_3 BC33
GPP_H_18_SML4ALERTB AE44
GPP_H_17_SML4DATA AJ46
GPP_H_16_SML4CLK AE43
GPP_H_15_SML3ALERTB AC47
GPP_H_14_SML3DATA AD48
GPP_H_13_SML3CLK AF47
GPP_H_12_SML2ALERTB AB47
GPP_H_11_SML2DATA AD47
GPP_H_10_SML2CLK AE48
INTRUDERB BB44

N_PFMRST 16
N_GT_S 23
N_CPU_S 23
N_GPP_B3 18
N_GPP_B4 18
N_GPP_H15
N_GPP_H12
N_INTRUDER 12

FH82H310 SR409/S

17 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
17 N_SPI_DQ3 — N_SPI_DQ3 NR14 15/4/1 — N_SPI_DQ2_R / N_SPI_DQ3_R
N_GPP_D3 / N_GPP_D2 / N_GPP_D22 / N_GPP_D21
46 N_GPP_D22

NRN5 15/8P4R/4
17 N_ICH_SPI_MISO — N_ICH_SPI_MISO — N_SPI_MISO_R
17 N_SPI_DQ2 — N_SPI_DQ2 — N_SPI_DQ2_R
17 N_-ICH_SPI_CS — N_-ICH_SPI_CS — N_-SPI_CS_R
17 N_ICH_SPI_CLK — N_ICH_SPI_CLK — N_SPI_CLK_R

PCHE

GPP_I_0_DDSP_HPD_0_DISP_MISC_0 AT6
GPP_I_1_DDSP_HPD_1_DISP_MISC_1 AN10
GPP_I_2_DDSP_HPD_2_DISP_MISC_2 AP9
GPP_I_3_DDSP_HPD_3_DISP_MISC_3 AL15
GPP_I_4_EDP_HPD_DISP_MISC_4 AN6
5 of 13

GPP_I_5_DDPB_CTRLCLK AL13
GPP_I_6_DDPB_CTRLDATA AR8
GPP_I_7_DDPC_CTRLCLK AN13
GPP_I_8_DDPC_CTRLDATA AL10
GPP_I_9_DDPD_CTRLCLK AL9
GPP_I_10_DDPD_CTRLDATA AR3
GPP_F_22_DDPF_CTRLCLK AT49
GPP_F_23_DDPF_CTRLDATA AN40
GPP_F_14_EXT_PWR_GATEB_PS_ONB AP41
GPP_K_23_IMGCLKOUT_1 M45
GPP_K_22_IMGCLKOUT_0 L48
GPP_K_21_CORE_VID_1 T45
GPP_K_20_CORE_VID_0 T46
GPP_H_23_TIME_SYNC_0 AJ47

N_DDPB_CTRLCLK 33
N_DDPB_CTRLDATA 33
N_DDPC_CTRLCLK
N_DDPC_CTRLDATA
N_DDPD_CTRLCLK 45
N_DDPD_CTRLDATA 45
N_GPP_F22
N_GPP_F23
N_GPP_K22
N_GPP_K21
N_GPP_K20
11 N_GPP_K18
11 N_GPP_K19

FH82H310 SR409/S

33 N_VGA_HDP_F — N_GPP_I0 / N_GPP_I1
45 N_HDMI_HDP_F — N_GPP_I3
N_GPP_I4 — NR24 100K/4/1

VCC3
N_GPP_I3 NR27 8.2K/4
N_GPP_I1 NR309 8.2K/4

VCC3
NR20 2.2K/4/1
NR287 2.2K/4/1
NR29 8.2K/4/X
NR30 8.2K/4/X
NR33 8.2K/4
NRN1 8.2K/8P4R/4
N_GPP_K18 — 1
N_GPP_K19 — 3
N_GPP_K20 — 5
N_GPP_K21 — 7
2 4 6 8

3VDUAL
N_GPP_D3 NR148 1K/4/1/X
N_GPP_D21 NR299 1K/4/1
N_GPP_D2 NR403 1K/4/1/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
21 -PCIEX1_PR1 — N_GPP_B6 BF31 GPP_B_6_SRCCLKREQB_1
21 -PCIEX1_PR2 — N_GPP_B7 AR32 GPP_B_7_SRCCLKREQB_2
N_GPP_B8 BB30 GPP_B_8_SRCCLKREQB_3
N_GPP_B9 BA30 GPP_B_9_SRCCLKREQB_4
36 LA_-CLKREQ — N_GPP_B10 AN29 GPP_B_10_SRCCLKREQB_5
N_GPP_H0 AE47 GPP_H_0_SRCCLKREQB_6
N_GPP_H1 AC48 GPP_H_1_SRCCLKREQB_7
N_GPP_H2 AE41 GPP_H_2_SRCCLKREQB_8
42 M2A_-CLKREQ — N_GPP_H3 AF48 GPP_H_3_SRCCLKREQB_9
N_GPP_H4 AC41 GPP_H_4_SRCCLKREQB_10
N_GPP_H5 AC39 GPP_H_5_SRCCLKREQB_11
N_GPP_H6 AE39 GPP_H_6_SRCCLKREQB_12
N_GPP_H7 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
CLKOUT_CPUPCIBCLK_P A6
CLKOUT_SRC_N_0 AJ6
CLKOUT_SRC_P_0 AJ7
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
CLKOUT_SRC_P_3 AE7
CLKOUT_SRC_N_4 AC2
CLKOUT_SRC_P_4 AC3
CLKOUT_SRC_N_5 AB2
CLKOUT_SRC_P_5 AB3
CLKOUT_SRC_N_6 W4
CLKOUT_SRC_P_6 W3
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
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N_-CPUPCIBCLK 4
N_CPUPCIBCLK 4
PA_-SRCCLK_3GIO 20
PA_SRCCLK_3GIO 20
PCIEX16
PI_-PCIE_CLK 21
PI_PCIE_CLK 21
PCIEX1_1
PJ_-PCIE_CLK 21
PJ_PCIE_CLK 21
PCIEX1_2
8892JX
LA_-SRCCLK_LAN 36
LA_SRCCLK_LAN 36
RTL8111H
CK_M2A_100M_DN 42
CK_M2A_100M_DP 42
M.2_A

FH82H310 SR409/S

NR32如果有問題就改回68/4/1

XTALI_PCH_R — NR32 0/4 — XTALI_PCH
NX1 24M/16p/30ppm/49US/50/D
XTALO_PCH — NR34 200K/4/1
NC1 22p/4/NPO/50V/J
NC2 22p/4/NPO/50V/J

CLK:4/15<1000 mils±100 mils;Guard GND

NX2-SHT SHW/D0.64*5.08*6.74
N_Y1
N_Y2
NR37 10M/4
NC3 18P/4/NPO/50V/J
NC4 18P/4/NPO/50V/J
NX2 32.768K/12.5p/20ppm/TF38/35K/D

NRN11 8.2K/8P4R/4
N_GPP_B8 — 1
N_GPP_B7 — 3
12 N_GPP_A8 — N_GPP_A8 — 5
12 N_-DDR_V_SEL — N_-DDR_V_SEL — 7
2 4 6 8

N_GPP_B5 NR2 8.2K/4
N_GPP_B6 NR3 8.2K/4
N_GPP_B9 NR6 8.2K/4/X
NR21 0/4/X N_GPP_B10 NR11 8.2K/4/X
N_GPP_H1 NR15 8.2K/4/X
N_GPP_H2 NR16 8.2K/4/X
NR286 0/4/X N_GPP_H3 NR17 8.2K/4/X
N_GPP_H4 NR18 8.2K/4/X
NR402 0/4/X N_GPP_H6 NR186 8.2K/4/X
NR307 0/4/X N_GPP_H7 NR193 8.2K/4/X

NRN12 8.2K/8P4R/4
13 N_GPP_K2 — N_GPP_K2 — 1
N_GPP_H5 — 3
N_GPP_H0 — 5
7
2 4 6 8

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Title: PCH CLOCK BUFFER

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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
H310	U3.1 Gen1	U3.1 Gen1	U3.1 Gen1	U3.1 Gen1	N/A	N/A
B360	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen1	U3.1 Gen1
Q360	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen1	U3.1 Gen1
H370	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen1	U3.1 Gen1
Z390	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2
Q370	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2	U3.1 Gen2

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

DMI need to reverse

PCHB

ITEM	USB P7 PCIE P1	USB P8 PCIE P2	USB P9 PCIE P3	USB P10 PCIE P4	PCIE P5	PCIE P6	PCIE P7	PCIE P8
H310	N/A	N/A	N/A	N/A	PCIE GbE	PCIE	PCIE	PCIE
B360	N/A	N/A	N/A	N/A	PCIE GbE	PCIE	PCIE	PCIE
Q360	U3.1 Gen1	U3.1 Gen1	N/A	N/A	PCIE GbE	PCIE	PCIE	PCIE
H370	U3.1 Gen1	U3.1 Gen1	PCIE	PCIE	PCIE GbE	PCIE	PCIE	PCIE
Z390	U3.1 Gen1 PCIE	U3.1 Gen1 PCIE	U3.1 Gen1 PCIE	U3.1 Gen1 PCIE	PCIE GbE	PCIE	PCIE	PCIE
Q370	U3.1 Gen1 PCIE	U3.1 Gen1 PCIE	U3.1 Gen1 PCIE	U3.1 Gen1 PCIE	PCIE GbE	PCIE	PCIE	PCIE

H310 N/A

PCIEX1

PCIEX1

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R_USB30

GEN1

F_USB30

H310 N/A

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FH82H310 SR409/S

R_USB30

F_USB30

LAN_USB

KB_USB

F_USB1

H310 N/A

F_USB1

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

3VDUAL

VCC3

ITEM	USB P10	USB P11	USB P12	USB P13	USB P14
H310	N/A	N/A	N/A	N/A	USB2
B360	USB2	USB2	N/A	N/A	USB2
Q360	USB2	USB2	USB2	USB2	USB2
H370	USB2	USB2	USB2	USB2	USB2
Z390	USB2	USB2	USB2	USB2	USB2
Q370	USB2	USB2	USB2	USB2	USB2

STRAP

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

H310 N/A

ITEM	PCIE P21	PCIE P22	PCIE P23	PCIE P24
H310	N/A	N/A	N/A	N/A
B360	PCIE	PCIE	PCIE	PCIE
Q360	PCIE	PCIE	PCIE	PCIE
H370	PCIE	PCIE	PCIE	PCIE
Z390	PCIE	PCIE	PCIE	PCIE
Q370	PCIE	PCIE	PCIE	PCIE

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GIGABYTE

Title: PCH DMI,USB,PCIE

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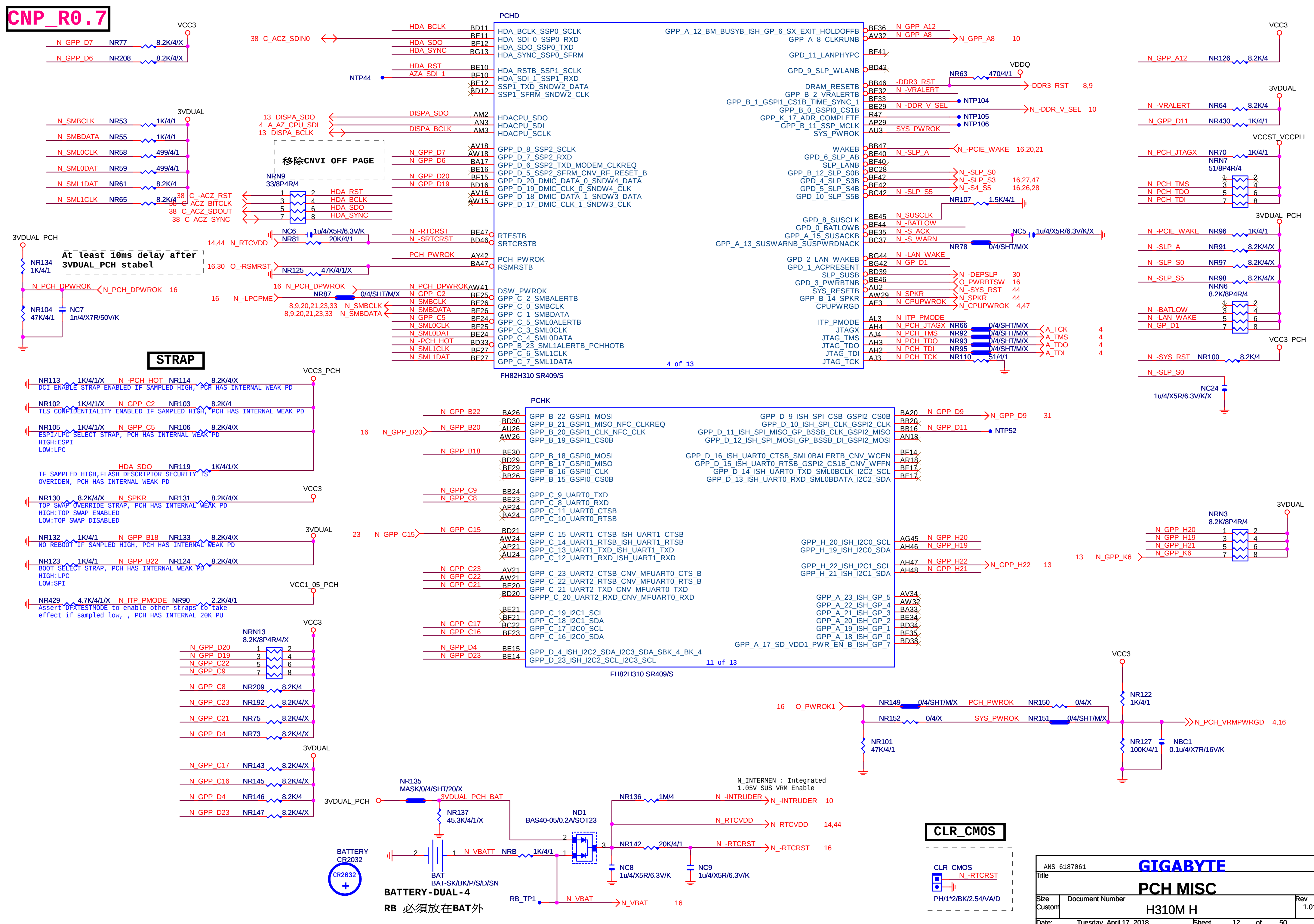

CNP_R0.7
PCHD
HDA_BCLK_SSP0_SCLK
HDA_SDI_0_SSP0_RXD
HDA_SDO_SSP0_TXD
HDA_SYNC_SSP0_SFRM
HDA_RSTB_SSP1_SCLK
HDA_SDI_1_SSP1_RXD
SSP1_TXD_SNDW2_DATA
SSP1_SFRM_SNDW2_CLK
HDACPU_SDO
HDACPU_SDI
HDACPU_SCLK
GPP_D_8_SSP2_SCLK
GPP_D_7_SSP2_RXD
GPP_D_6_SSP2_TXD_MODEM_CLKREQ
GPP_D_5_SSP2_SFRM_CNV_RF_RESET_B
GPP_D_20_DMIC_DATA_0_SNDW4_DATA
GPP_D_19_DMIC_CLK_0_SNDW4_CLK
GPP_D_18_DMIC_DATA_1_SNDW3_DATA
GPP_D_17_DMIC_CLK_1_SNDW3_CLK
RTESTB
SRTCRSTB
PCH_PWROK
RSMRSTB
DSW_PWROK
GPP_C_2_SMBALERTB
GPP_C_0_SMBCLK
GPP_C_1_SMBDATA
GPP_C_5_SML0ALERTB
GPP_C_3_SML0CLK
GPP_C_4_SML0DATA
GPP_B_23_SML1ALERTB_PCHHOTB
GPP_C_6_SML1CLK
GPP_C_7_SML1DATA
GPP_A_12_BM_BUSYB_ISH_GP_6_SX_EXIT_HOLDOFFB
GPP_A_8_CLKRUNB
GPD_11_LANPHYPC
GPD_9_SLP_WLANB
DRAM_RESETB
GPP_B_2_VRALERTB
GPP_B_1_GSPI1_CS1B_TIME_SYNC_1
GPP_B_0_GSPI0_CS1B
GPP_K_17_ADR_COMPLETE
GPP_B_11_SSP_MCLK
SYS_PWROK
WAKEB
GPD_6_SLP_AB
SLP_LANB
GPP_B_12_SLP_S0B
GPD_4_SLP_S3B
GPD_5_SLP_S4B
GPD_10_SLP_S5B
GPD_8_SUSCLK
GPD_0_BATLOWB
GPP_A_15_SUSACKB
GPP_A_13_SUSWARNB_SUSPWRDNACK
GPD_2_LAN_WAKEB
GPD_1_ACPRESENT
SLP_SUSB
GPD_3_PWRBTNB
SYS_RESETB
GPP_B_14_SPKR
CPUPWRGD
ITP_PMODE
JTAGX
JTAG_TMS
JTAG_TDO
JTAG_TDI
JTAG_TCK
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FH82H310 SR409/S
移除CNVI OFF PAGE
At least 10ms delay after 3VDUAL_PCH stabel
STRAP
DCI ENABLE STRAP ENABLED IF SAMPLED HIGH, PCH HAS INTERNAL WEAK PD
TLS CONFIDENTIALITY ENABLED IF SAMPLED HIGH, PCH HAS INTERNAL WEAK PD
ESPI/LPC SELECT STRAP, PCH HAS INTERNAL WEAK PD
HIGH:ESPI
LOW:LPC
IF SAMPLED HIGH,FLASH DESCRIPTOR SECURITY IS OVERIDEN, PCH HAS INTERNAL WEAK PD
TOP SWAP OVERRIDE STRAP, PCH HAS INTERNAL WEAK PD
HIGH:TOP SWAP ENABLED
LOW:TOP SWAP DISABLED
NO REBOOT IF SAMPLED HIGH, PCH HAS INTERNAL WEAK PD
BOOT SELECT STRAP, PCH HAS INTERNAL WEAK PD
HIGH:LPC
LOW:SPI
Assert DFXTESTMODE to enable other straps to take effect if sampled low, , PCH HAS INTERNAL 20K PU
PCHK
GPP_B_22_GSPI1_MOSI
GPP_B_21_GSPI1_MISO_NFC_CLKREQ
GPP_B_20_GSPI1_CLK_NFC_CLK
GPP_B_19_GSPI1_CS0B
GPP_B_18_GSPI0_MOSI
GPP_B_17_GSPI0_MISO
GPP_B_16_GSPI0_CLK
GPP_B_15_GSPI0_CS0B
GPP_C_9_UART0_TXD
GPP_C_8_UART0_RXD
GPP_C_11_UART0_CTSB
GPP_C_10_UART0_RTSB
GPP_C_15_UART1_CTSB_ISH_UART1_CTSB
GPP_C_14_UART1_RTSB_ISH_UART1_RTSB
GPP_C_13_UART1_TXD_ISH_UART1_TXD
GPP_C_12_UART1_RXD_ISH_UART1_RXD
GPP_C_23_UART2_CTSB_CNV_MFUART0_CTS_B
GPP_C_22_UART2_RTSB_CNV_MFUART0_RTS_B
GPP_C_21_UART2_TXD_CNV_MFUART0_TXD
GPPP_C_20_UART2_RXD_CNV_MFUART0_RXD
GPP_C_19_I2C1_SCL
GPP_C_18_I2C1_SDA
GPP_C_17_I2C0_SCL
GPP_C_16_I2C0_SDA
GPP_D_4_ISH_I2C2_SDA_I2C3_SDA_SBK_4_BK_4
GPP_D_23_ISH_I2C2_SCL_I2C3_SCL
GPP_D_9_ISH_SPI_CSB_GSPI2_CS0B
GPP_D_10_ISH_SPI_CLK_GSPI2_CLK
GPP_D_11_ISH_SPI_MISO_GP_BSSB_CLK_GSPI2_MISO
GPP_D_12_ISH_SPI_MOSI_GP_BSSB_DI_GSPI2_MOSI
GPP_D_16_ISH_UART0_CTSB_SML0BALERTB_CNV_WCEN
GPP_D_15_ISH_UART0_RTSB_GSPI2_CS1B_CNV_WFFN
GPP_D_14_ISH_UART0_TXD_SML0BCLK_I2C2_SCL
GPP_D_13_ISH_UART0_RXD_SML0BDATA_I2C2_SDA
GPP_H_20_ISH_I2C0_SCL
GPP_H_19_ISH_I2C0_SDA
GPP_H_22_ISH_I2C1_SCL
GPP_H_21_ISH_I2C1_SDA
GPP_A_23_ISH_GP_5
GPP_A_22_ISH_GP_4
GPP_A_21_ISH_GP_3
GPP_A_20_ISH_GP_2
GPP_A_19_ISH_GP_1
GPP_A_18_ISH_GP_0
GPP_A_17_SD_VDD1_PWR_EN_B_ISH_GP_7
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FH82H310 SR409/S
N_INTERMEN : Integrated 1.05V SUS VRM Enable
BATTERY CR2032
BATTERY-DUAL-4
RB 必須放在BAT外
BAT-SK/BK/P/S/D/SN
ND1 BAS40-05/0.2A/SOT23
CLR_CMOS
PH/1*2/BK/2.54/VA/D
ANS 6187061
GIGABYTE
Title
PCH MISC
Size Custom
Document Number H310M H
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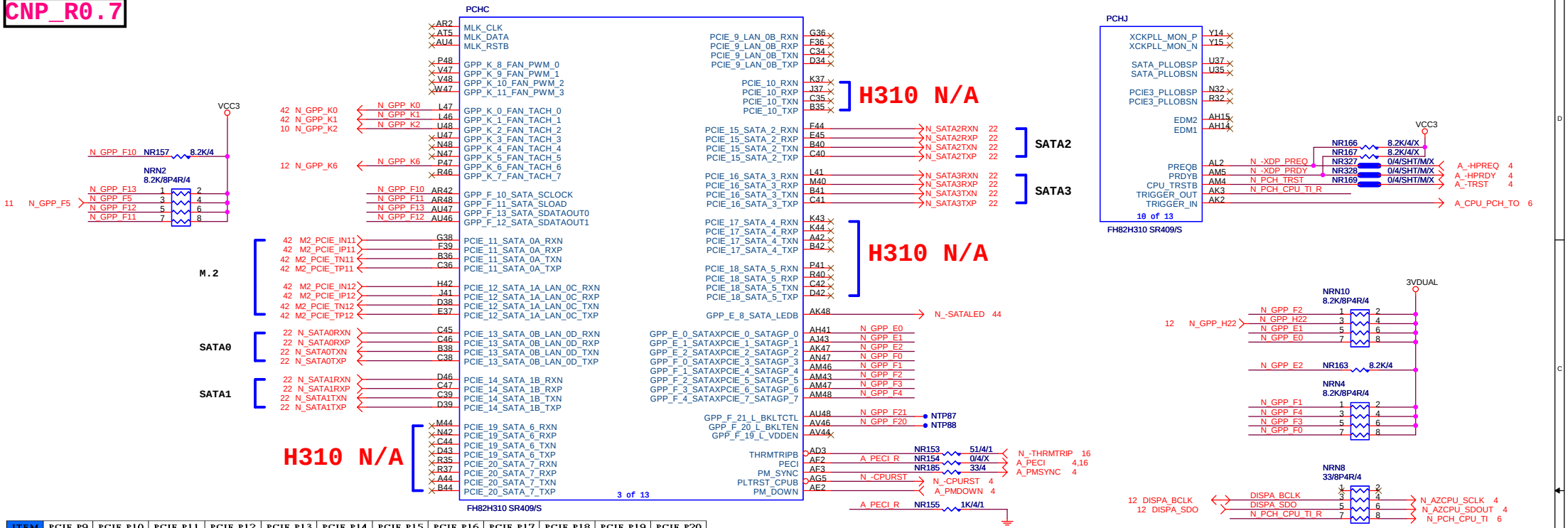
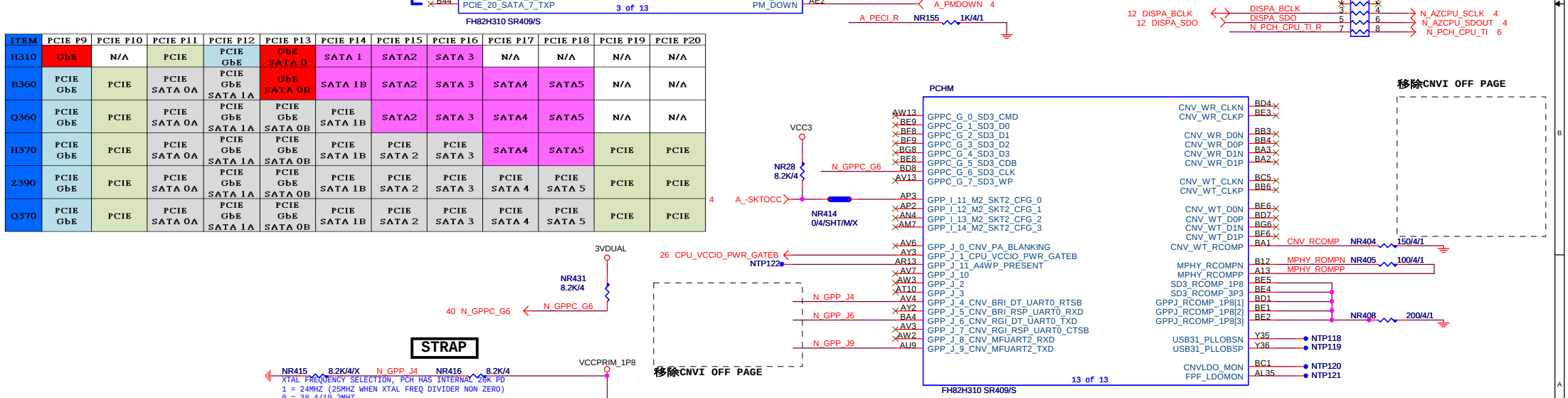
CNP_R0.7



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



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CNP_R0.7

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 1u/4/X5R/6.3V/K/X
NBC27 1u/4/X5R/6.3V/K/X

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

VCC1_05_PCH
NBC31 1u/4/X5R/6.3V/K
NBC78 1u/4/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]

NR424 MASK/0/6/SHT/M/X
VCC1_05_PCH
VCC1_05_SRC
W19 VCCA_SRC_1P05[1]
W20 VCCA_SRC_1P05[2]

VCC1_05_PCH
C1 VCCA_OCPLL1_1P05[1]
C2 VCCA_OCPLL1_1P05[2]

NR410 MASK/0/6/SHT/M/X
VCC1_05_PCH
VCC1_05_OC
V19 VCCA_OC_1P05

VCC1_05_PCH
B1 VCCA_BCLKPLL2_1P05[1]
B2 VCCA_BCLKPLL2_1P05[2]
B3 VCCA_BCLKPLL2_1P05[3]

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FH82H310 SR409/S

VCCPHVC_3P3 AW9 → VCC3_PCH

VCCRTCEXT[1] BF47
VCCRTCEXT[2] BG47
N_RTCEXT_CAP
NBC2 0.1u/4/X7R/16V/K

VCCPUSB2_3P3 V23 → VCC3_PCH

VCCPSPI AN44 → VCC3_PCH

VCCPRTC_3P3[1] BC49
VCCPRTC_3P3[2] BD49
N_RTCVDD 12,44

VCCPGPPC_G_3P3 AN21 → VCC3_PCH

VCCPHVLDO_3P3[1] AY8
VCCPHVLDO_3P3[2] BB7
→ VCC3_PCH

VCCPGPPHK[1] AC35
VCCPGPPHK[2] AC36
→ VCC3_PCH

VCCPGPPEF[1] AE35
VCCPGPPEF[2] AE36
→ VCC3_PCH

VCCPGPPD AN24 → VCC3_PCH

VCCPGPPBC[1] AN26
VCCPGPPBC[2] AP26
→ VCC3_PCH

VCCPGPPA AN32 → VCC3_PCH

VCCPFUSE_3P3 AT44 → VCC3_PCH

VCCPDSW_3P3[1] BE48
VCCPDSW_3P3[2] BE49
→ 3VDUAL_PCH

VCCPAZIO BB14 → VCC3_PCH

VCCPRIM_1P8[1] AG19
VCCPRIM_1P8[2] AG20
VCCPRIM_1P8[3] AN15
VCCPRIM_1P8[4] AR15
VCCPRIM_1P8[5] BB11
→ VCCPRIM_1P8

VCCPHVLDO_1P8[1] AF19
VCCPHVLDO_1P8[2] AF20
INTERNAL LDO OUTPUT
→ VCCPHVLDO_1P8

VCCFHV1_2P8 AG31
VCCFHV0_2P8 AF31
→ VCC1_05_PCH

VCCLDOSRAM_IN_1P24[1] AK22
VCCLDOSRAM_IN_1P24[2] AK23
→ VCCDPHY_1P24

VCCDPHY_1P24[1] AJ22
VCCDPHY_1P24[2] AJ23
VCCDPHY_1P24[3] BG5
→ VCCDPHY_1P24

VCCMPHY_SENSE K47 → VCCMPHY_SENSE 29
VSSMPHY_SENSE K46 → NTP123

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

N_RTCVDD
NBC23 0.1u/4/X7R/16V/K/X
NBC24 1u/4/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
NR426 0/4/X
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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Title: PCH PWR

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CNP_R0.1

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

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FH82H310 SR409/S

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

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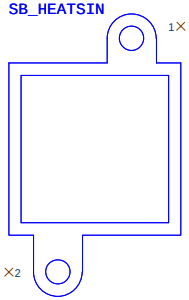
FH82H310 SR409/S

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 6187061

GIGABYTE

Title

PCH GND

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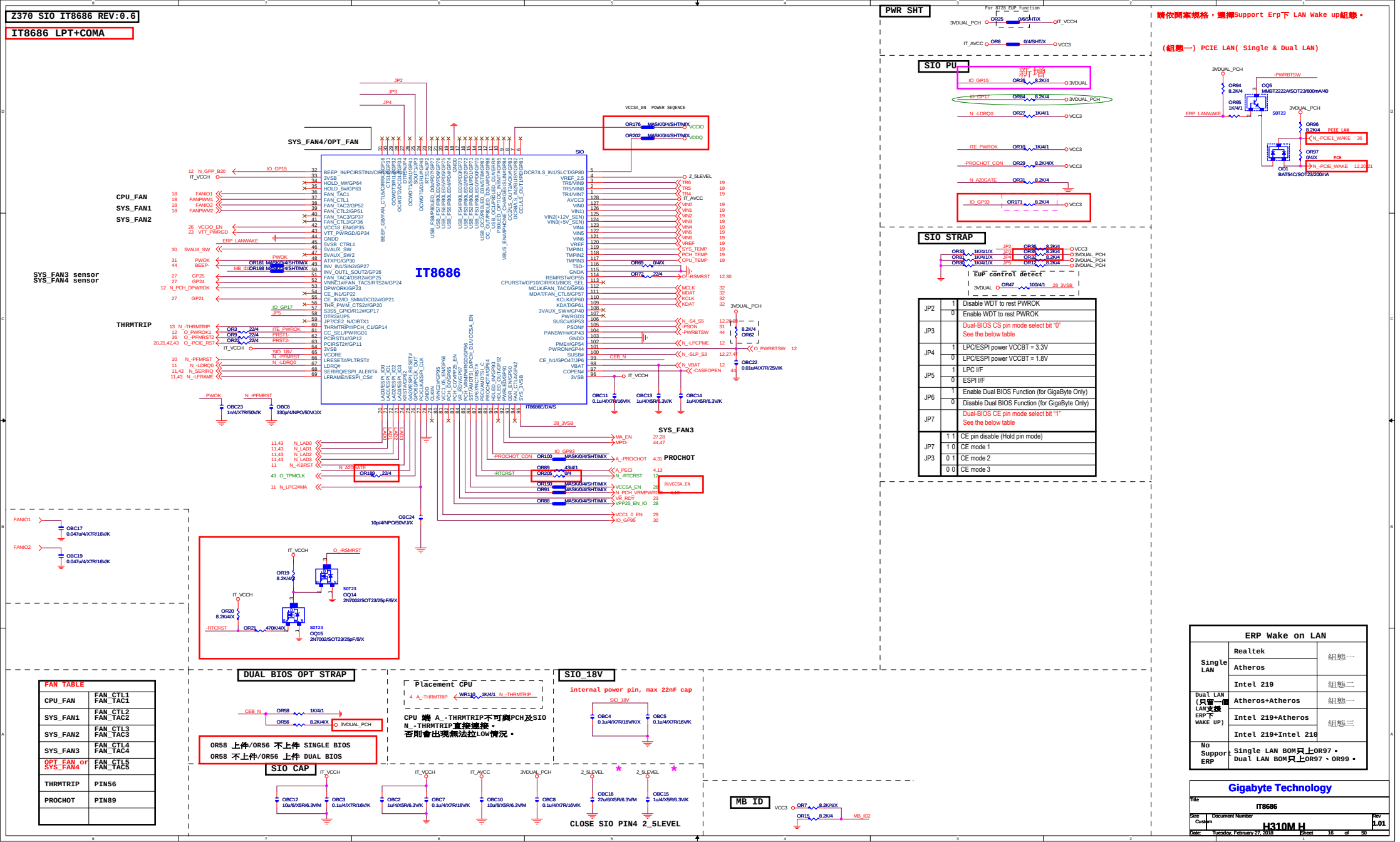
Z370 SIO IT8686 REV:0.6

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 JP3	1 0	CE mode 1
	0 1	CE mode 2
	0 0	CE mode 3

請依開案規格，選擇Support Erp下 LAN Wake up組態。

(組態一) PCIE LAN(Single & Dual LAN)

ERP Wake on LAN		
Single LAN	Realtek	組態一
	Atheros	
	Intel 219	組態二
Dual LAN (只要一個LAN支援ERP下WAKE UP)	Atheros+Atheros	組態一
	Intel 219+Atheros	組態三
	Intel 219+Intel 210	
No Support ERP	Single LAN BOM只上OR97。 Dual LAN BOM只上OR97、OR99。	

FAN TABLE

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

DUAL BIOS OPT STRAP

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

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

Gigabyte Technology

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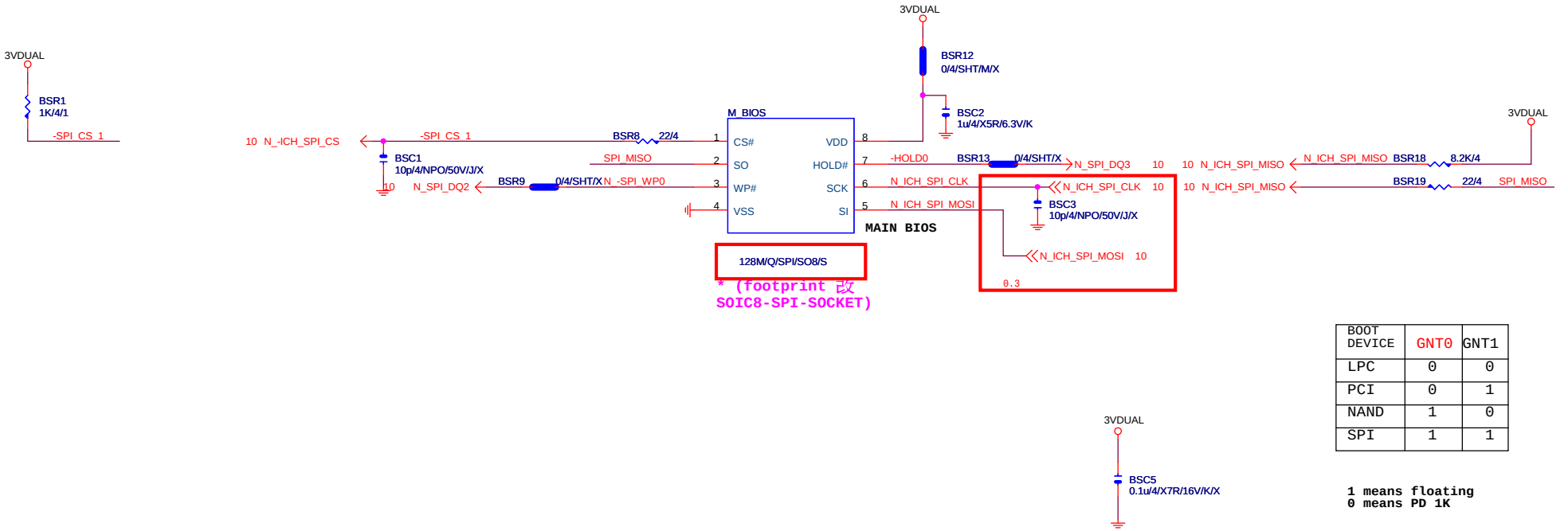
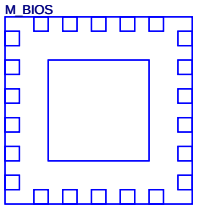
DUAL BIOS

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	Rev: 1.01
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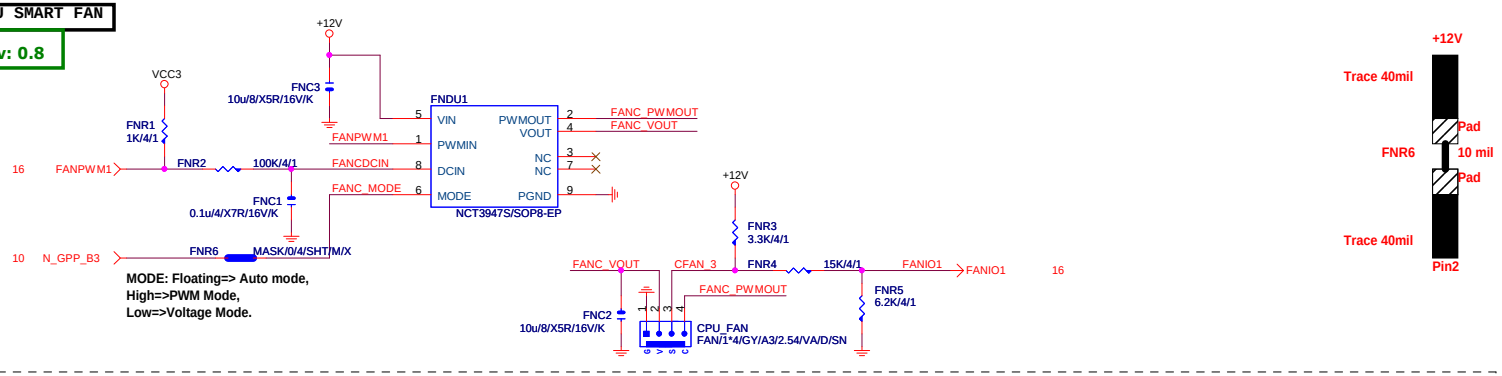
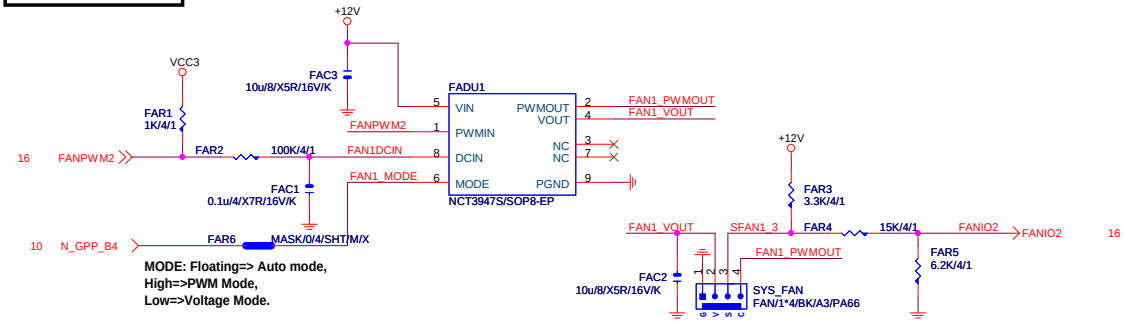
CPU SMART FAN

Rev: 0.8



A. SYSTEM FAN1



Gigabyte Technology			
Title: FAN CTRL			
Size: Custom	Document Number: H310M H		Rev: 1.01
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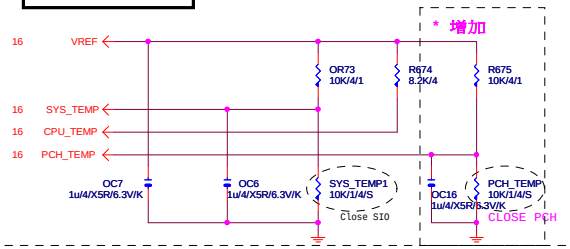
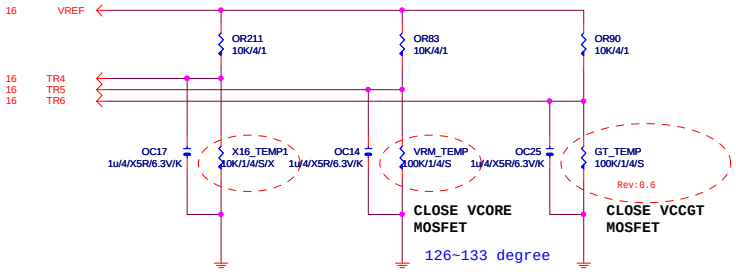
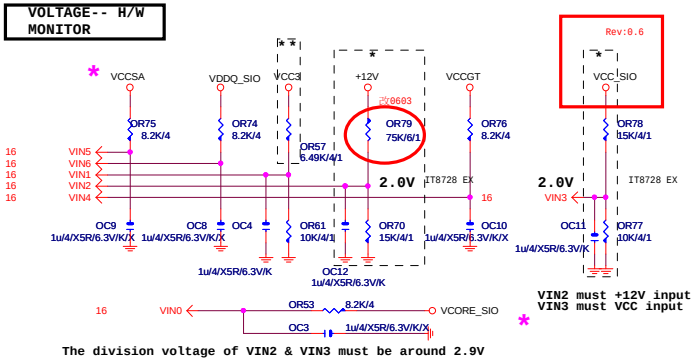
TEMP H/W MONITOR

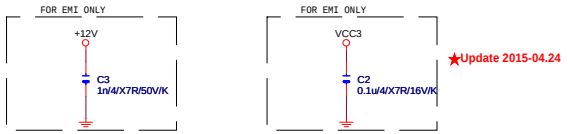


低階機種:3個FAN時使用



VOLTAGE-- H/W MONITOR





★Update 2015-04.24

Gigabyte Technology			
Title: HWM,KB/MS, FAN CTRL			
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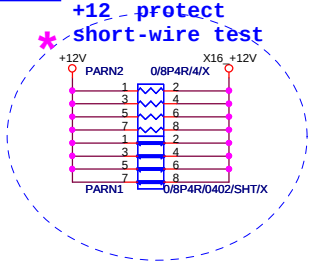
Rev 0.2

+12 protect
short-wire test



PCIESLOT-164STH

PCIEX16

3GIO_*16

KEY

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

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		
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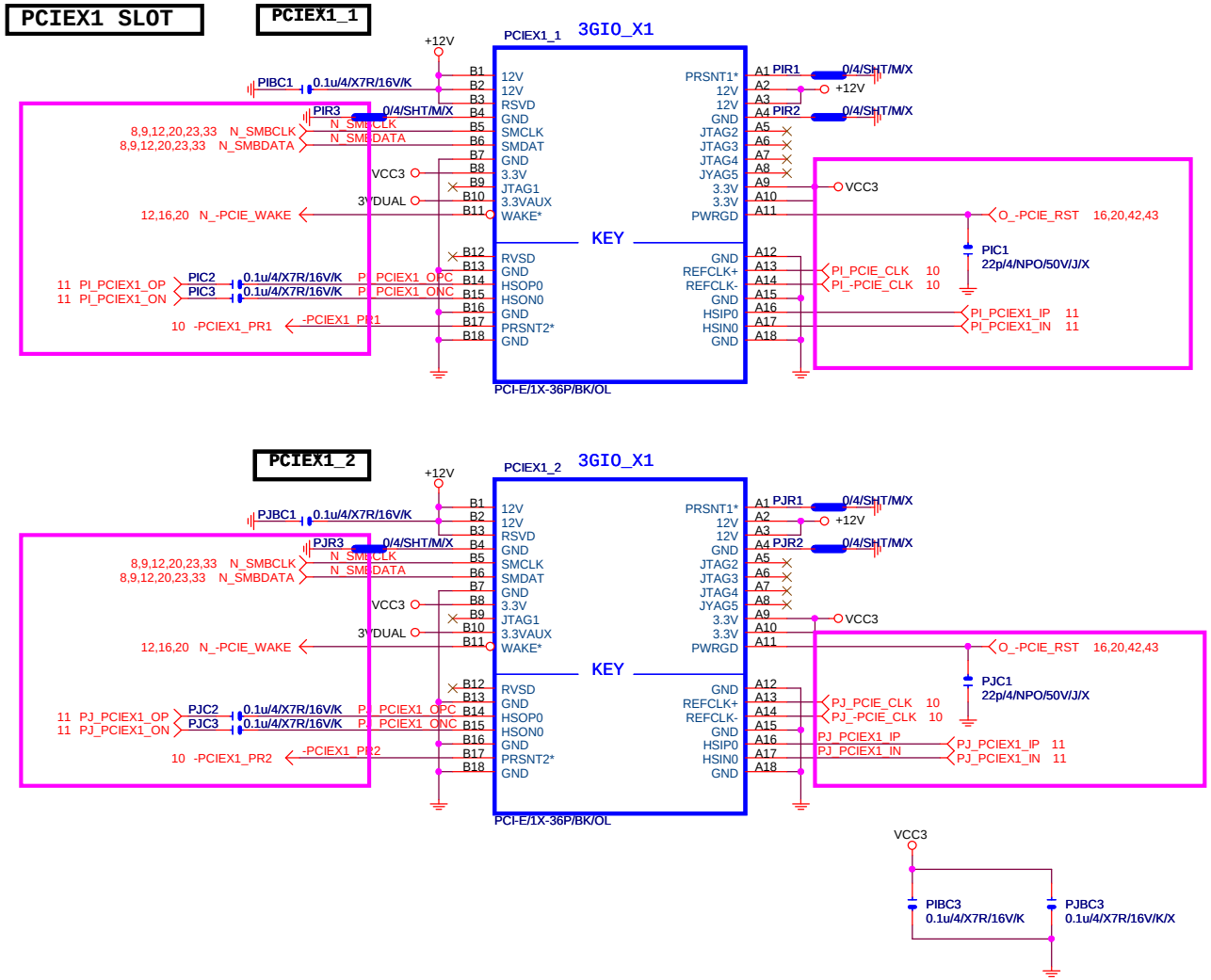
Rev 0.2



Gigabyte Technology		
Title: PCIE_X1 1,2		
Size: Custom	Document Number: H310M H	Rev: 1.01
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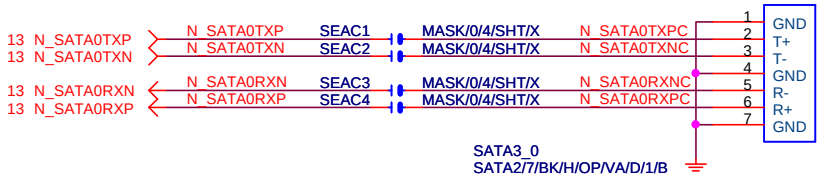
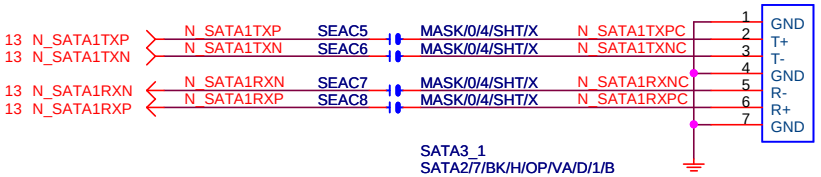
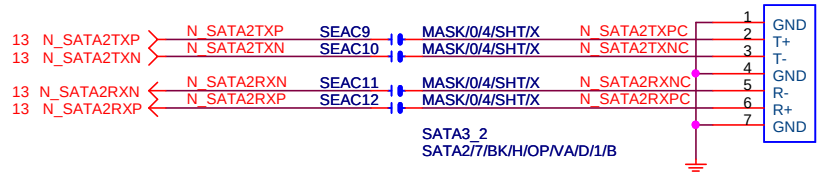
Rev 0.6



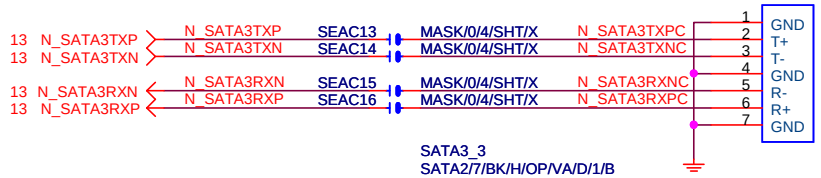
SATA3_0
SATA2/7/BK/H/OP/VA/D/1/B



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	Rev: 1.01
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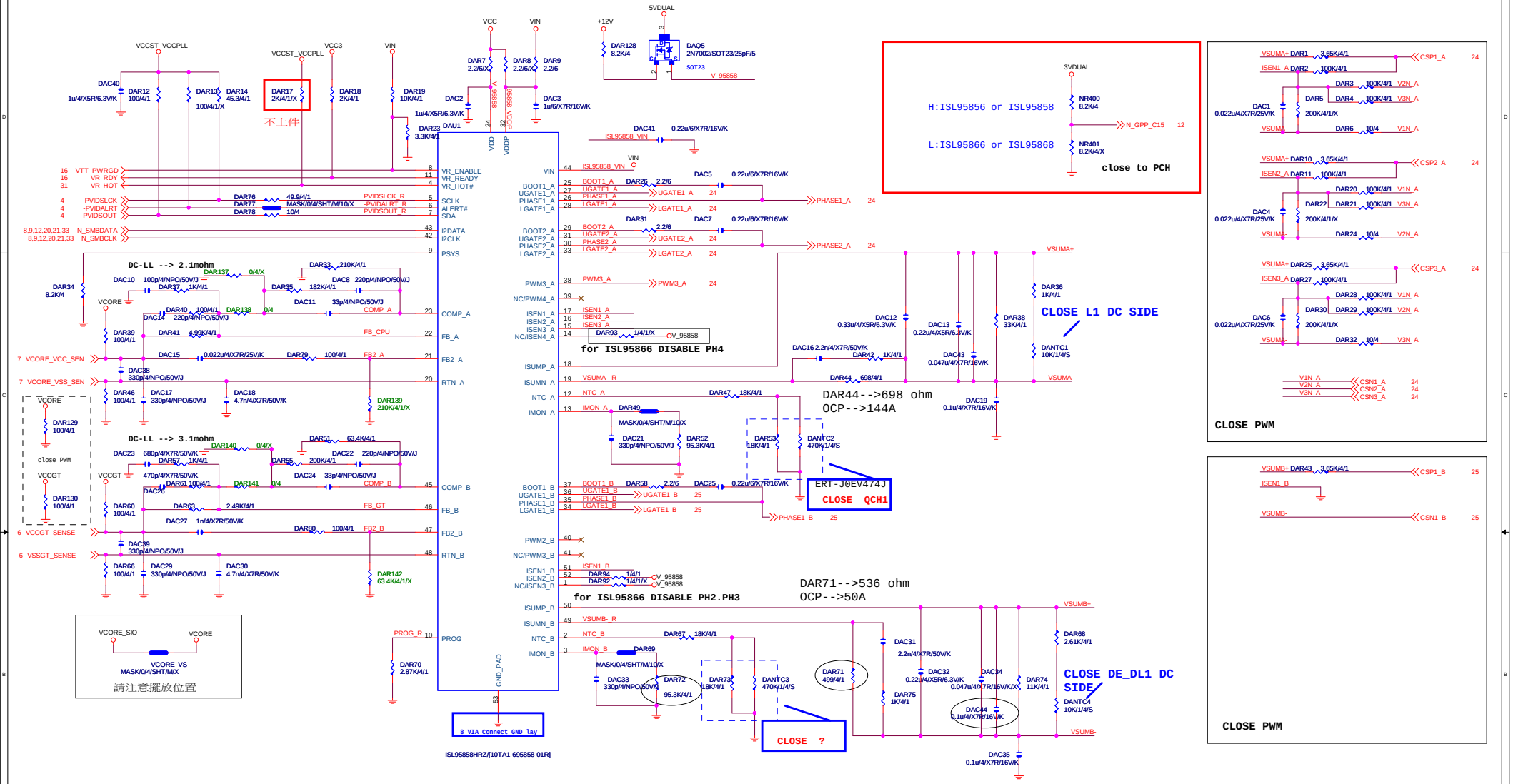
REV:0.2



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

Title	ISL95858_PWM
Size	Custom
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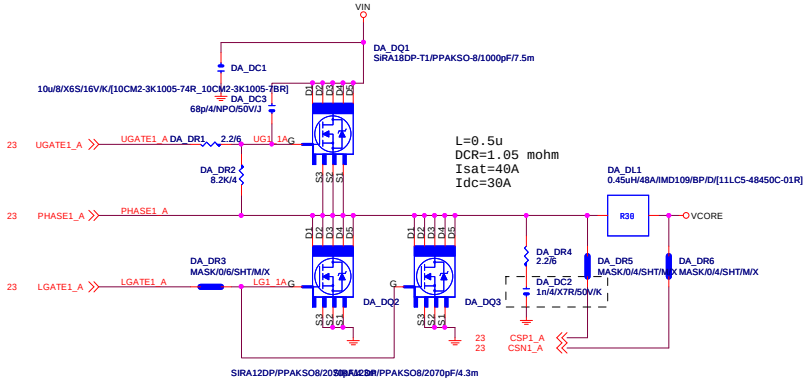
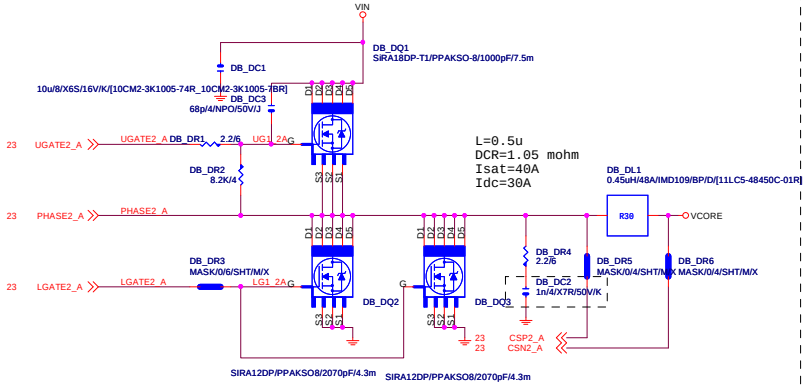
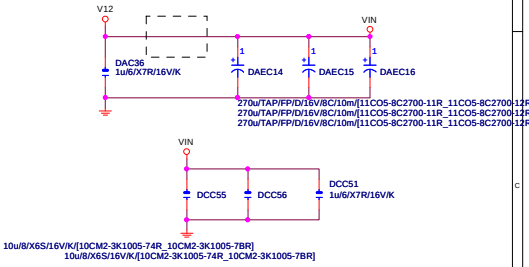
REV:0.14

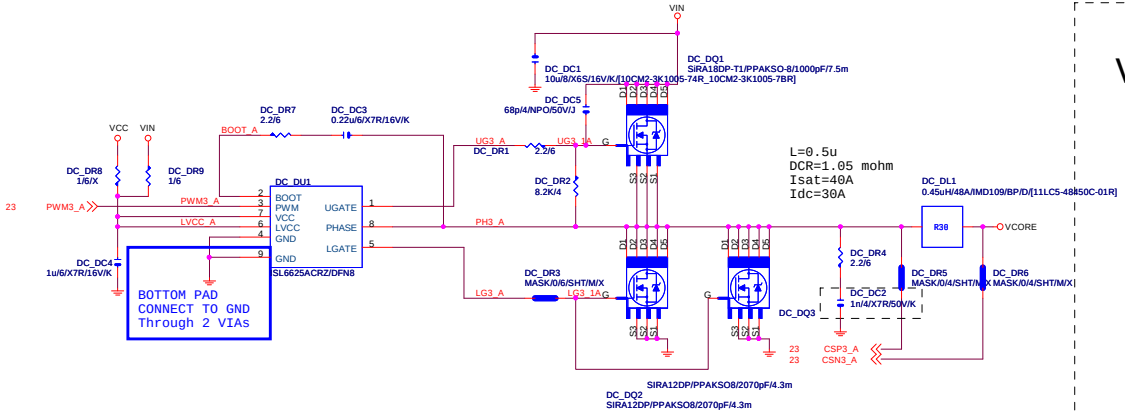
VCORE



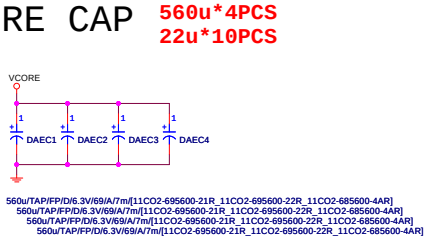


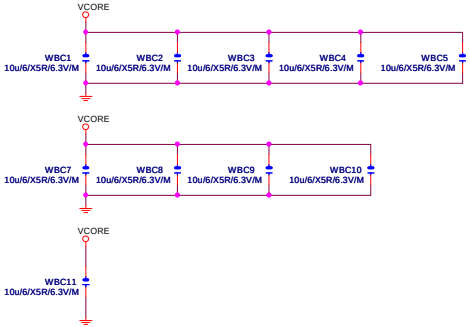
VIN CAP 270u*3PCS





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





GIGABYTE™

Title	ISL95858_MOS	
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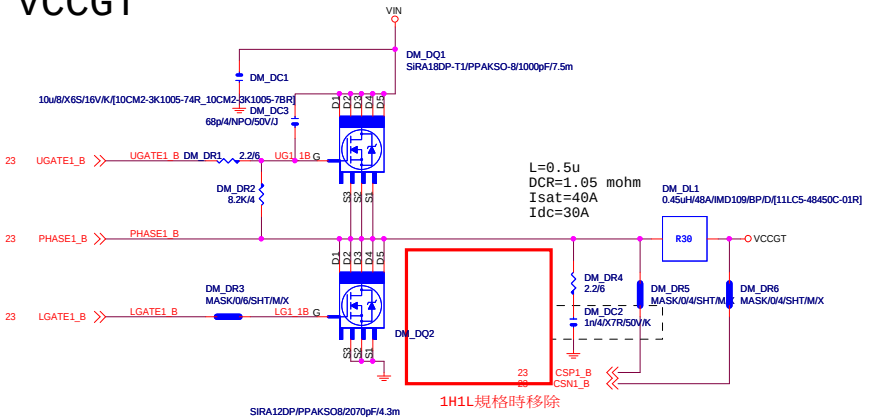
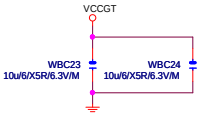
REV:0.14

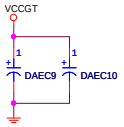
VCCGT



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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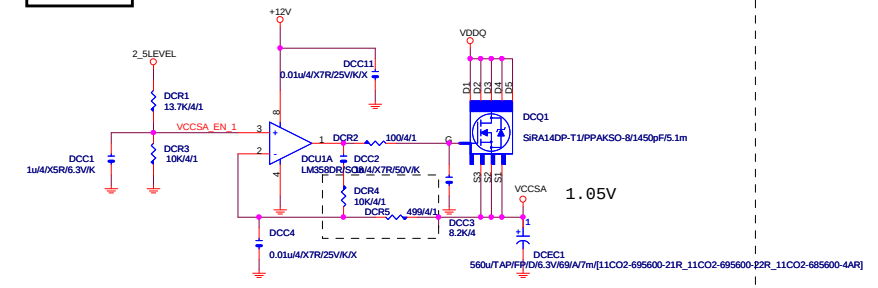
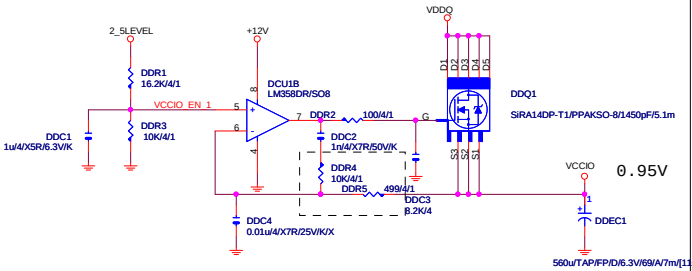
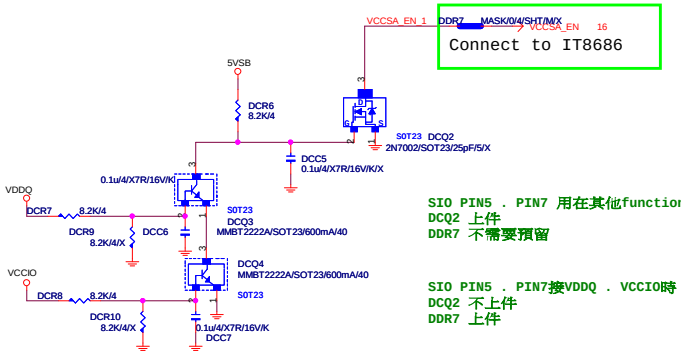
REV:0.6

VCCSA



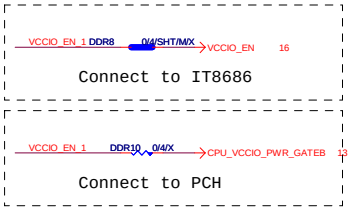
VCCIO



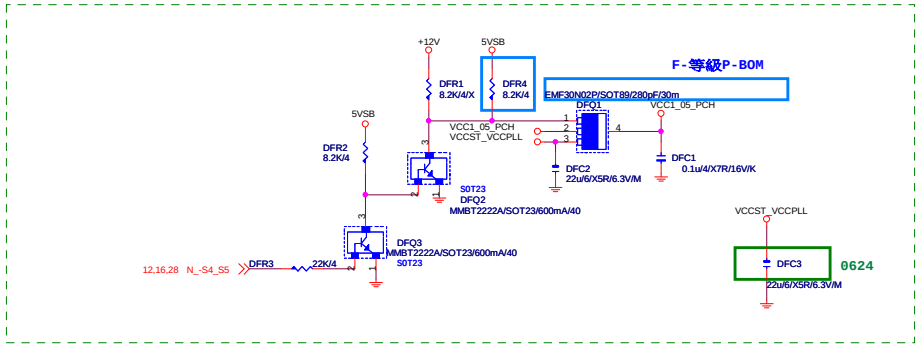


SIO PIN5 . PIN7 用在其他function時
DCQ2 上件
DDR7 不需要預留

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



VCCST_VCCPLL



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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]

MA_DR8 2.2/6
MA_DC10 1u/6/X7R/16V/K
MA_DR37 100K/4/1
VDDQ_GD
MA_DC9 0.1u/6/X7R/25V/K
VPP_25V 5VDUAL
MA_DR40 8.2K/4/X
MA_DR41 8.2K/4
28 VPP25V_GD
16,28 MA_EN
MA_DR38 MASK/0/4/SHT/M/10/X
DDR_EN
MA_DR39 0/4/X
MA_DC15 0.1u/4/X7R/16V/K
EN PGOOD VCC BOOT UGATE PHASE FB CS RF GND LGATE
MA_UGATE
MA_PHASE
MA_LGATE
MAU2
RT8237/[10TA1-608237-01R]
MA_RF
MA_DR45 470K/4/1
VDDQ_GD
MA_DR15 182K/4/1
MA_DR19 470K/4/1/X

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

5VDUAL
MA_L2 47/4030/15A/S
BEAD
MA_DC6 0.1u/4/X7R/16V/K Close Choke
MA_DC25 68p/4/NPO/50V/J/X
MA_VIN
MA_DC7 1u/6/X7R/16V/K Close MOS
MAEC1 560u/TAP/FP/D/6.3V/69/A/7m/[11CO2-695600-21R_11CO2-695600-22R_11CO2-685600-4AR]
MA_DQ1 SIRA12DP/PPAKSO8/2070pF/4.3m
MA_UGATE MA_DR1 2.2/6 MA_UG
MA_DR2 8.2K/4
MA_PHASE
MA_LGATE MA_DR9 2.2/6 MA_LG
MA_DQ2 SIRA12DP/PPAKSO8/2070pF/4.3m
MA_L1 1uH/35A/IMD109/BP/D
R50
10*10
VDDQ
MA_DR5 2.2/6
MA_DC5 1n/4/X7R/50V/K
MA_DC14 22p/4/NPO/50V/J/X
RS
MA_DR13 2K/4/1
L=1u
DCR=2.5 mohm
Isat=35A
Idc=28A
MAC60 22u/6/X5R/6.3V/M/X
DDR_ADJ
16 GP25 MA_DR46 9.1K/4/1 1.35V
16 GP24 MA_DR21 26.1K/4/1 1.25V
16 GP21 MA_DR22 6.8K/4/1 1.4V
RO MA_DR12 2.8K/4/1

DDR VIN CAP
560u*2PCS

CHOKE與CAP料號可變

SUPPORT DDR4 1.2V
25A MAX

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

VDDQ
NCT3103S/SOP8/2A/[10GL2-203103-01R]
MAC2 1u/4/X5R/6.3V/K
MAR5 1K/4/1
MAU1
VIN GND VREF1 VOUT VREF2 ENABLE VCNTL BOOT_SEL GND
DDRVTT_EN
DDRVTT_BOOT
MA_VTT_REF
MAR4 1K/4/1
MAC1 0.01u/4/X7R/25V/K
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/69/A/7m/[11CO2-695600-21R_11CO2-695600-22R_11CO2-685600-4AR]
* 大電容 x4
MAEC4
560u/TAP/FP/D/6.3V/69/A/7m/[11CO2-695600-21R_11CO2-695600-22R_11CO2-685600-4AR]
WBC49 22u/6/X5R/6.3V/M

DDRVTT CAP

* 大電容 x0
DDRVTT
MAC4 22u/6/X5R/6.3V/M

4 DDR_VTT_CTL
12,16,47 N_SLP_S3
DDR_VTT_CTL MAR110 MASK/0/4/SHT/M/10/X DDRVTT_EN
N_SLP_S3 MAR111 MASK/0/4/SHT/M/10/X DDRVTT_BOOT

GIGABYTE

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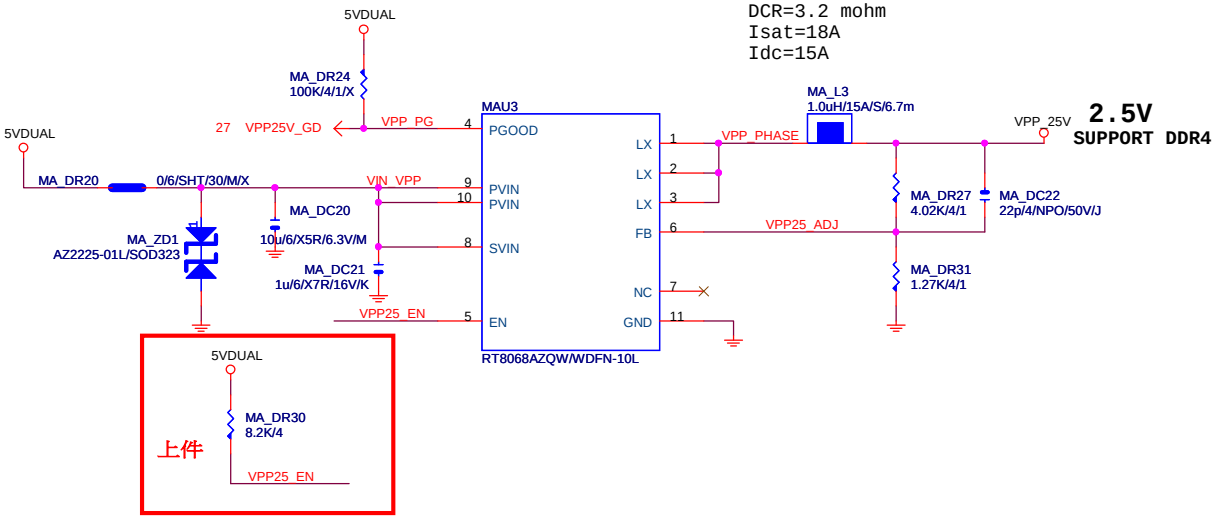
VPP_25V

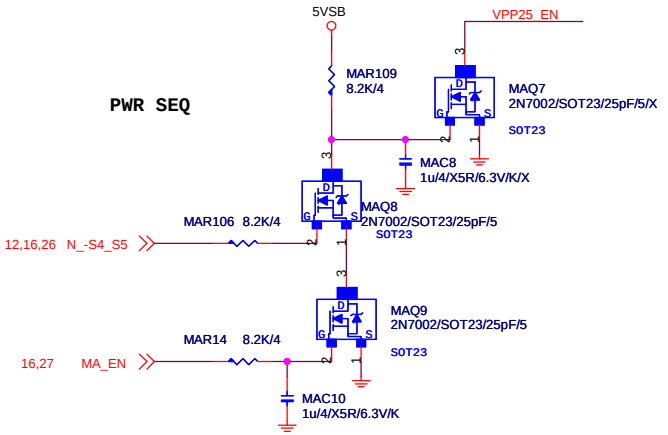
CHOKE與CAP料號可變

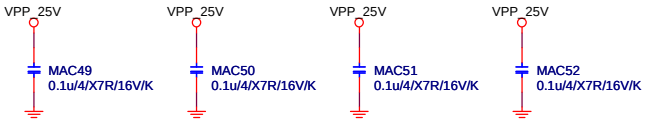
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A

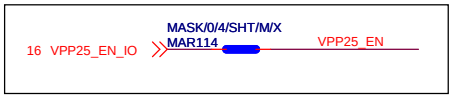


PWR SEQ

* 刪 MA_DR32

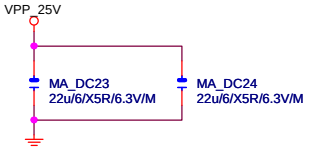






VPP CAP 22u*1PCS

* 大電容 x0



GIGABYTE™

Title: RT8068A_VPP25 POWER		
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REV:0.5

CHOKE與CAP料號可變

5VDUAL
+12V
NPR22 0/8/X
NPD1 B140/SMA/1A
NPD2 B140/SMA/1A
NPL1 47/4030/15A/S
BEAD
P1V0_VIN_D
P1V0_VIN
Close Choke
NPC1 0.1u/4/X7R/16V/K
NPC11 68p/4/NPO/50V/J/X
NPC3 1u/6/X7R/16V/K
Close MOS
注意耐壓
NPEC1 100u/TAP/OS/D/16V/69/A/35m/[11CO5-691000-11R_11CO5-691000-12R_11CO5-661000-1AR]
L Spec
DCR=3.2 mohm
Isat=18A
Idc=15A
NPQ1
SiRA14DP-T1/PPAKSO-8/1450pF/5.1m
NPL2 1uH/18A/IMD0809/BP/D
VCC1_05_PCH
5VDUAL NPR1 2.2/6
DRV_PCH
NPC4 1u/6/X7R/16V/K
NPR19 100K/4/1
PCH_1V0_GD
NPC2 0.1u/6/X7R/25V/K
P1V0_PCH_EN
EN PGOOD VCC BOOT UGATE PHASE FB CS RF GND LGATE
UGATE_PCH
PHASE_PCH
LGATE_PCH
NPU1 RT8237/[10TA1-608237-01R]
PCH_RF
NPR21
PCH_1V0_GD 470K/4/1
NPR12 280K/4/1
NPR20 470K/4/1/X
FS=290K
OCP=30A
UGATE_PCH NPR2 2.2/6 UG_PCH
NPR4 8.2K/4
PHASE_PCH
LGATE_PCH
NPQ2
SiRA14DP-T1/PPAKSO-8/1450pF/5.1m
NPR6 2.2/6
NPC7 1n/4/X7R/50V/K
NPC8 22p/4/NPO/50V/J/X
RS
NPR8 2K/4/1
NPEC2 560u/TAP/FP/D/6.3V/69/A/7m/[11CO2-695600-21R_11CO2-695600-22R_1
Remote sense請從最重的負載端點拉回
P1V0_PCH_ADJ
NPR9 2K/4/1/X
VCCMPHY_SENSE 14
RO
NPR13 4.12K/4/1
0.704*(1+RS/RO) = Vout

PWR SEQ

P1V0_PCH_EN NPR14 0/4/X VCC1_0_EN 16
5VSB
NPR15 8.2K/4/X
P1V0_PCH_EN
NPQ4 2N7002/SOT23/25pF/5/X
SOT23
P1V0_PCH_EN NPR5 MASK/0/4/SHT/20/X
3VDUAL
NPR16 30K/4/1
NPQ3 MMBT2222A/SOT23/600mA/40/X
SOT23
NPR17 56K/4/1
NPC9 2.2u/4/X5R/6.3V/M

VCC1_05_PCH
NPC10 22u/6/X5R/6.3V/M
請放置CHOKE一出來的地方

GIGABYTE

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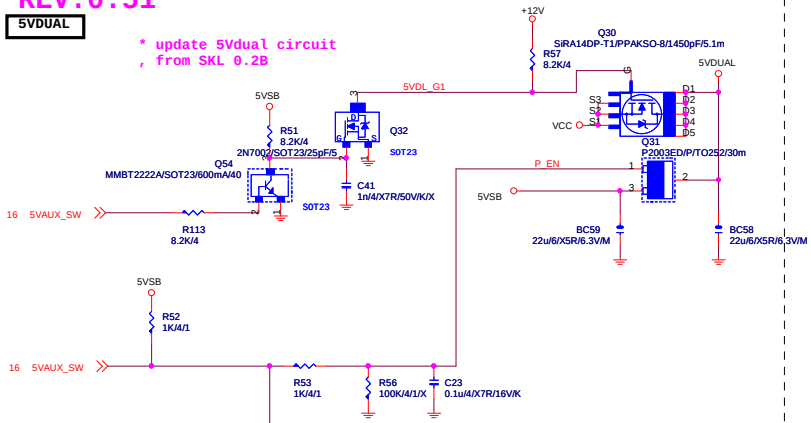
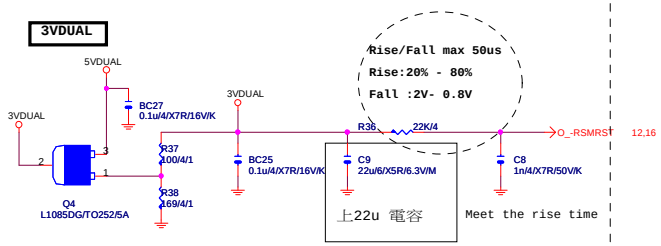
REV:0.51

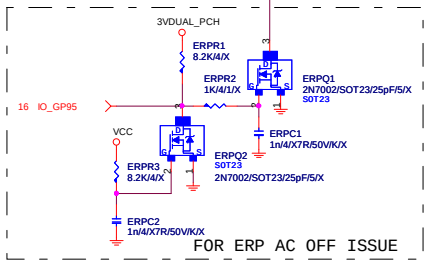
5VDUAL

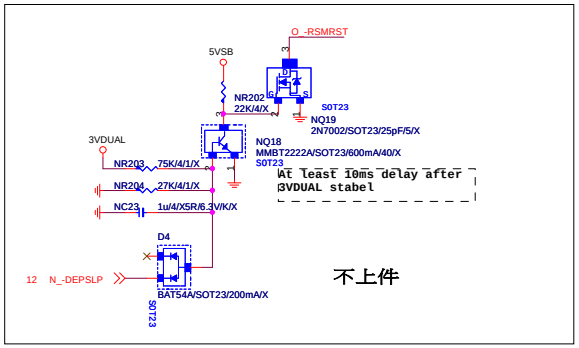
* update 5Vdual circuit
, from SKL 0.2B



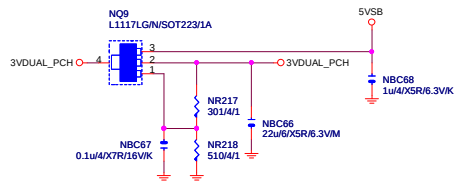
3VDUAL







3VDUAL_PCH



Gigabyte Technology			
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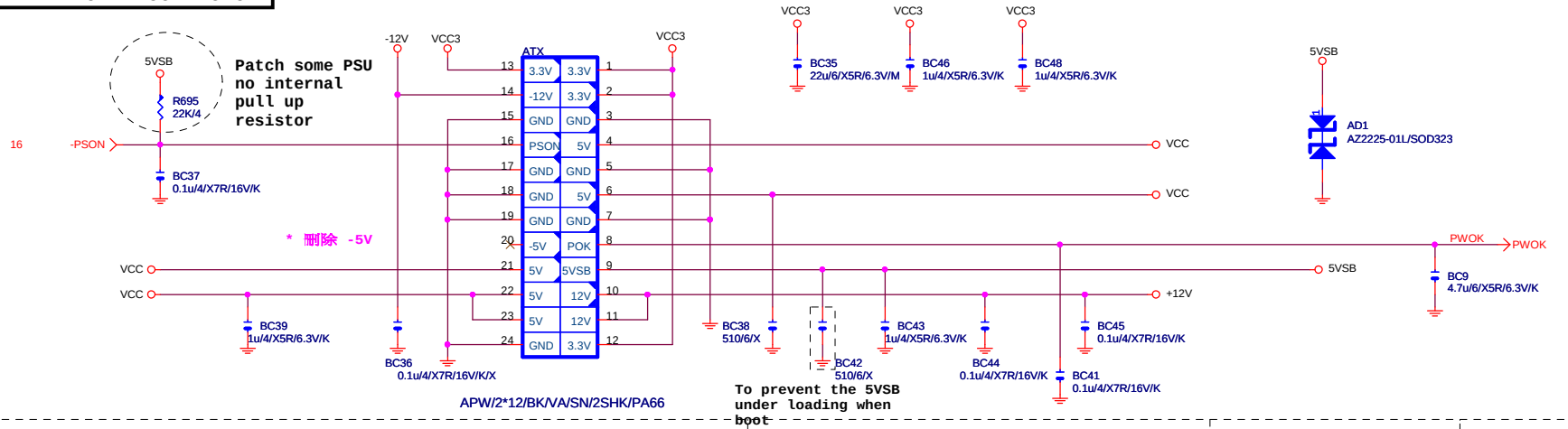
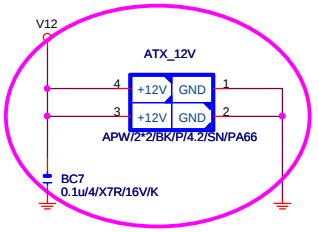
ATXX24 POWER CONNECTOR

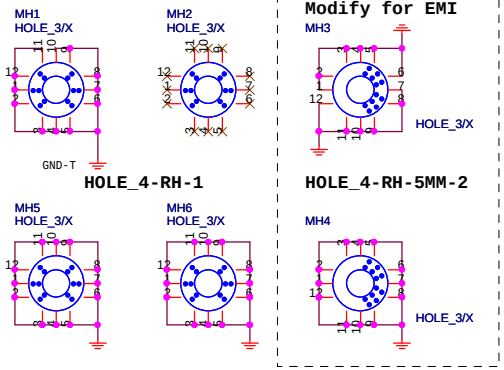


ATXX4 POWER CONNECTOR

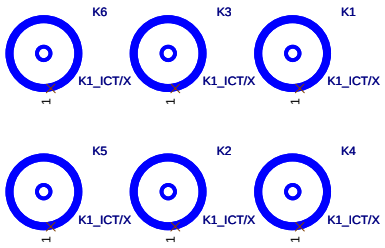


螺絲孔

MH1:GND-T
FOR EMI
TEST驗證

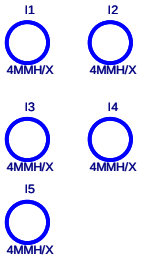


固定孔/光學點



K1-ICT

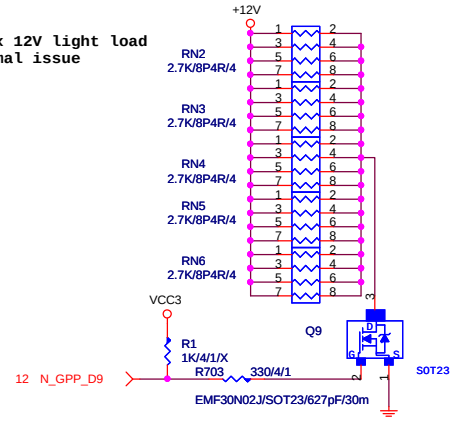
To prevent the 5VSB
under loading when
boot



4MMH

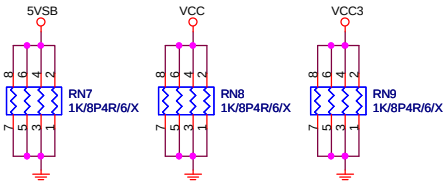
+12V DUMMY LOAD

To fix 12V light load
abnromal issue



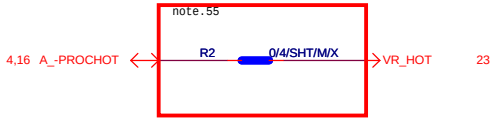
【技術通報R&D技術通報153】

DUMMY LOAD

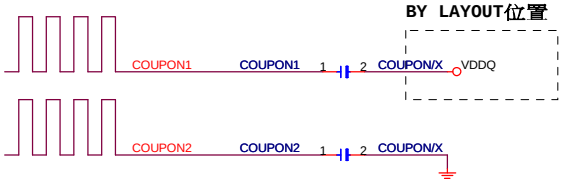


-PROHOT

* 保留 ?



COUPON



Gigabyte Technology		
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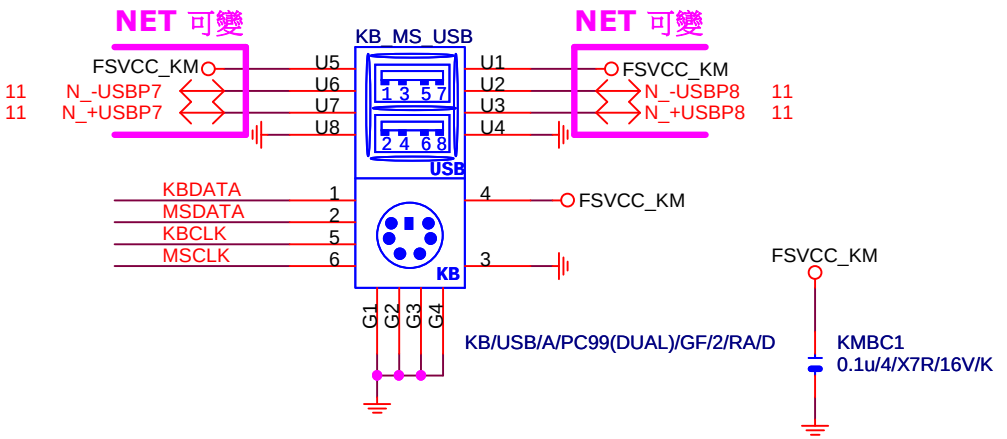
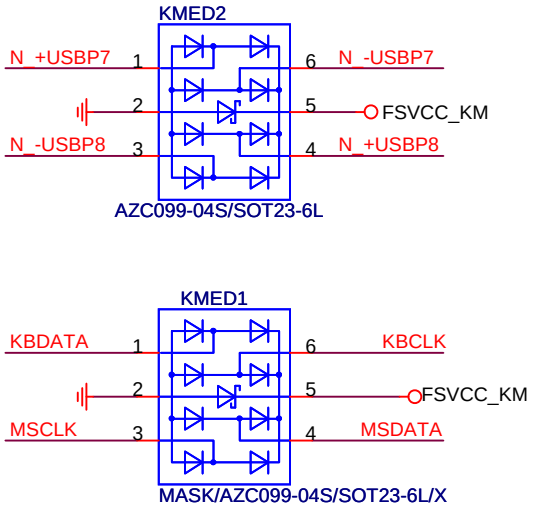
KB_MS_USB

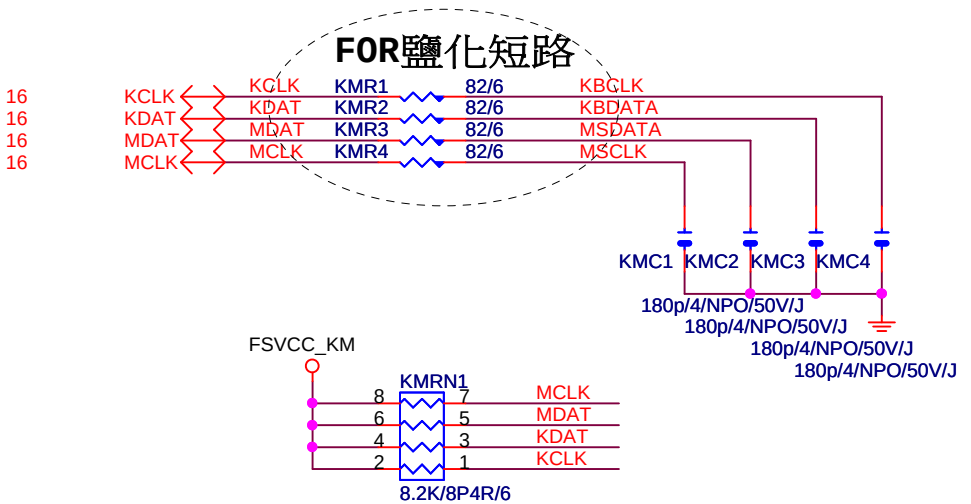
Rev: 0.7



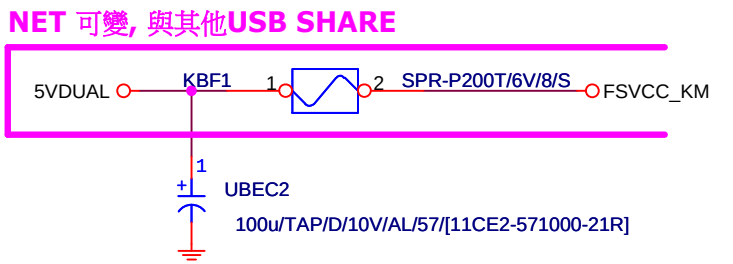
ESD



KB_MS_USB DAMPING/PU



KB_MS_USB PWR



USB OC PROTECT

Gigabyte Technology			
Title: KB_MS_USB			
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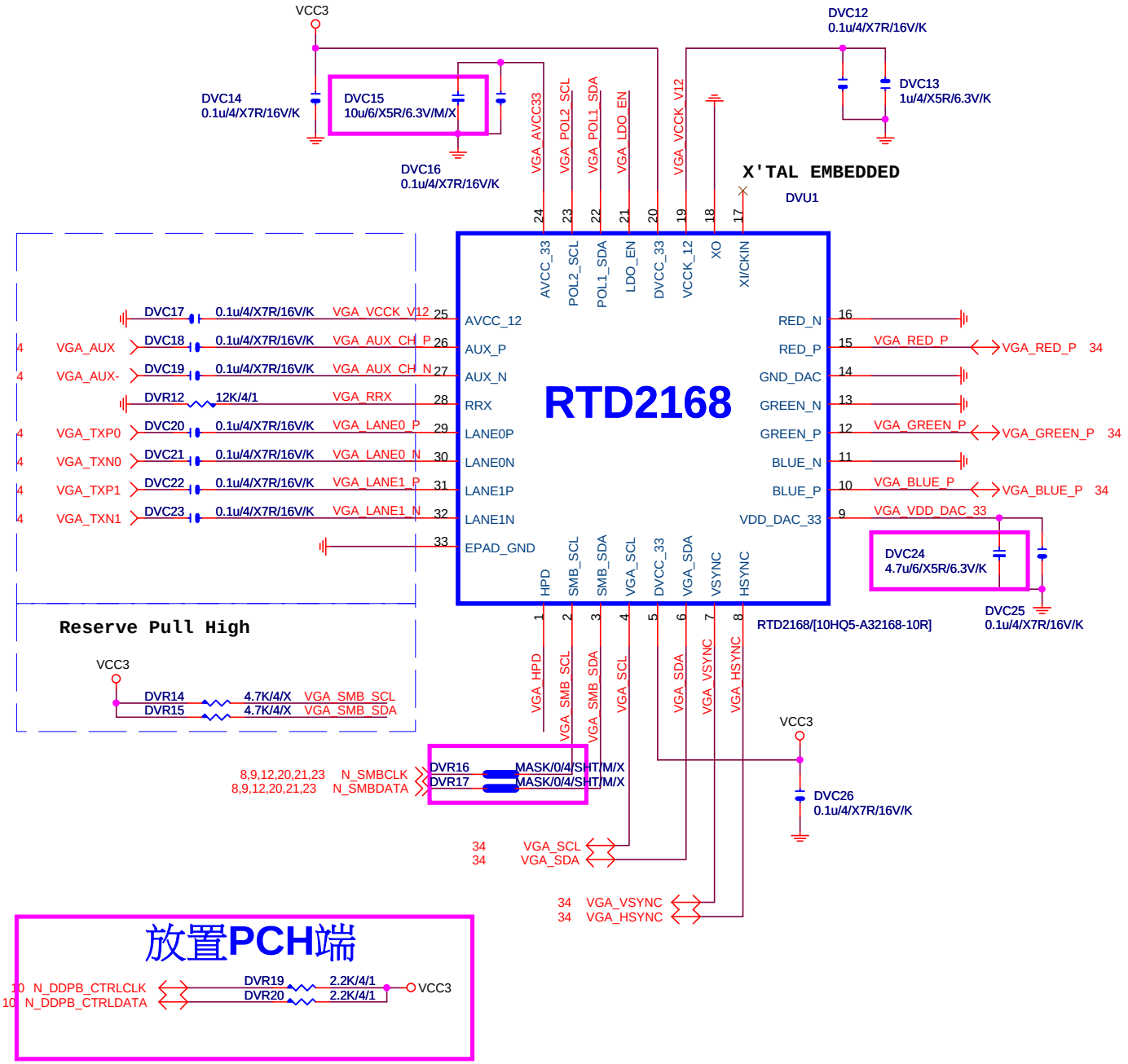
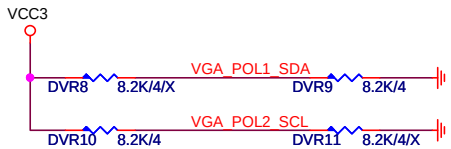
RTD2168 R2.0



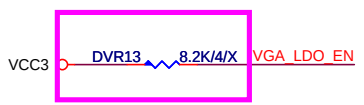
POWER

Power on latch



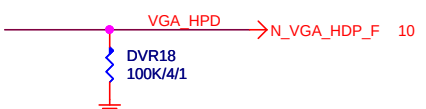
POL2_SCL (PIN23)	POL1_SDA(PIN22) = 0	POL1_SDA(PIN22) = 1
0	X	EP MODE
1	ROM ONLY MODE	EEPROM MODE

Embedded LDO



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

DP HPD



Gigabyte Technology

Title: **DP-VGA RTD2168**

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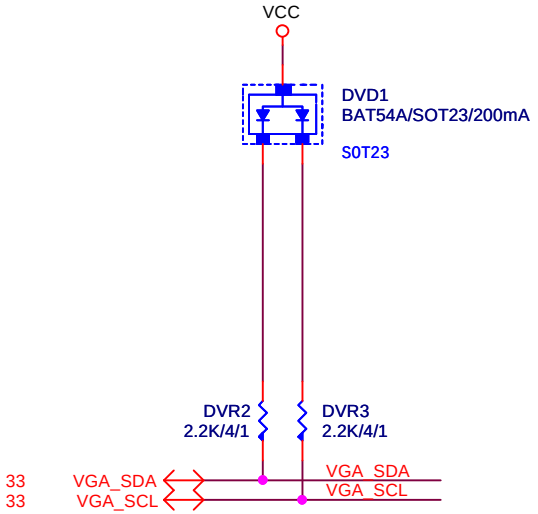
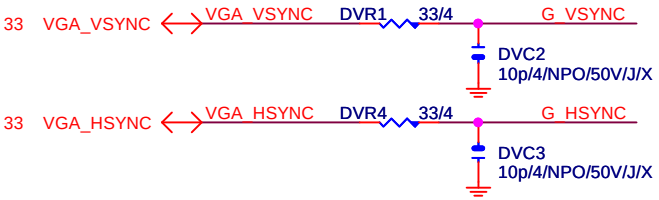
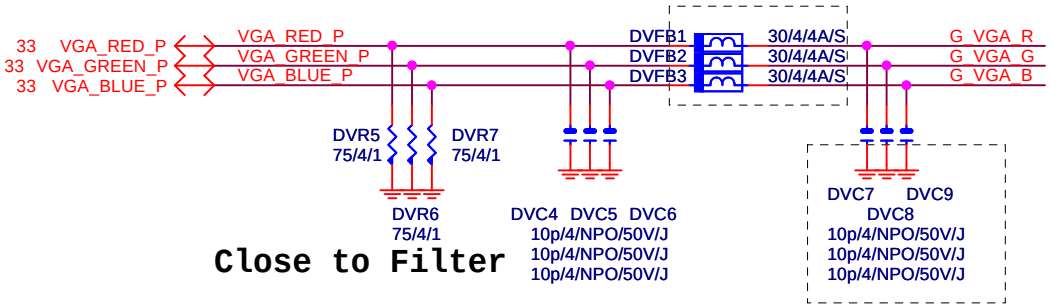
VGA SIGNAL R2.0



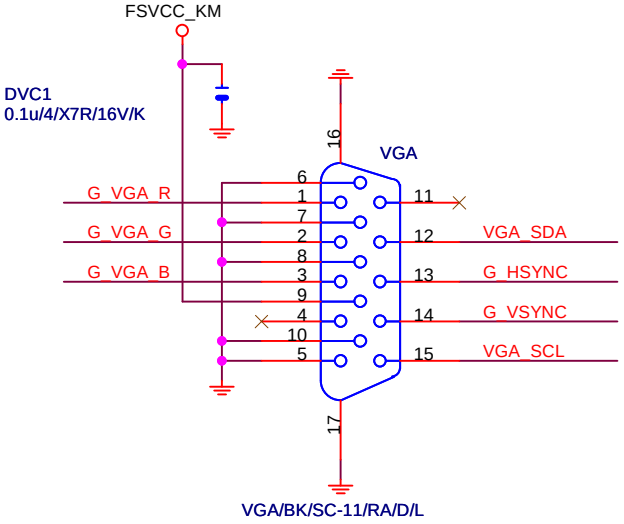




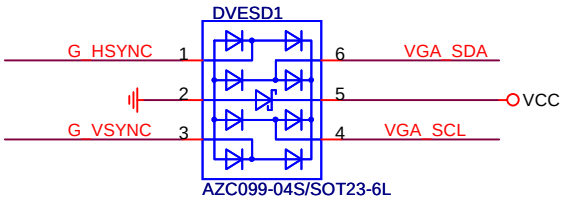
Close to Filter

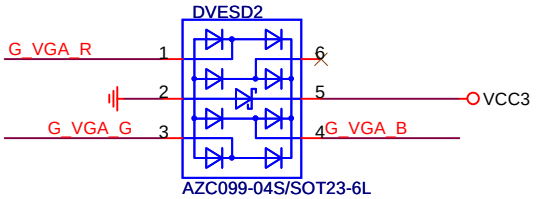
FOR EMI

VGA CONN.



VGA ESD

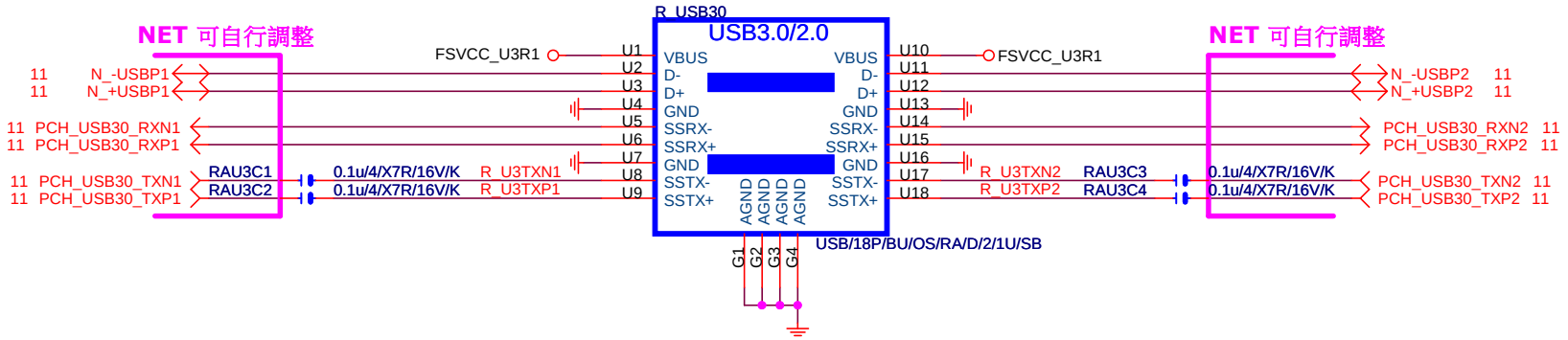




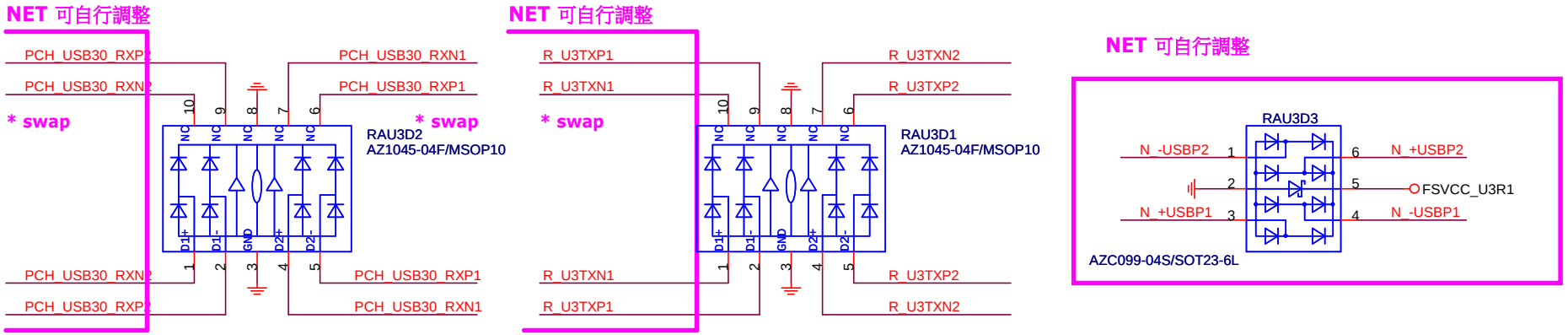
Title	Gigabyte Technology NXP-PTN3356	
Size: Custom	Document Number: H310M H	Rev: 1.01
Date: Tuesday, February 27, 2018	Sheet 34 of 50	

Rev: 0.7

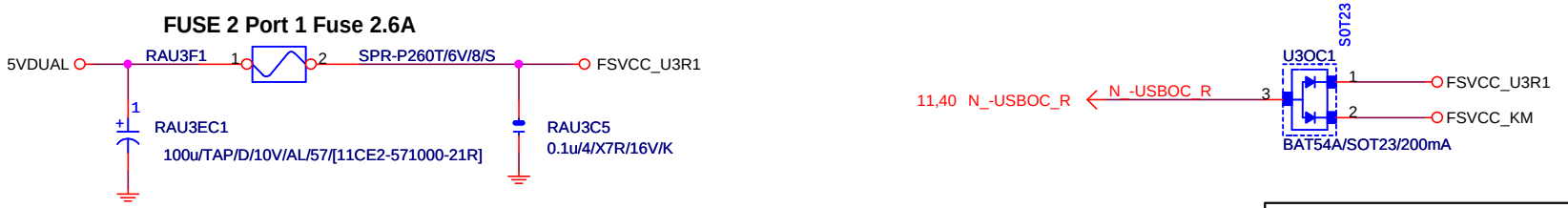
ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可



ESD



FUSE



Gigabyte Technology		
Title: R_USB30,USB_OC		
Size: Custom	Document Number: H310M H	Rev: 1.01
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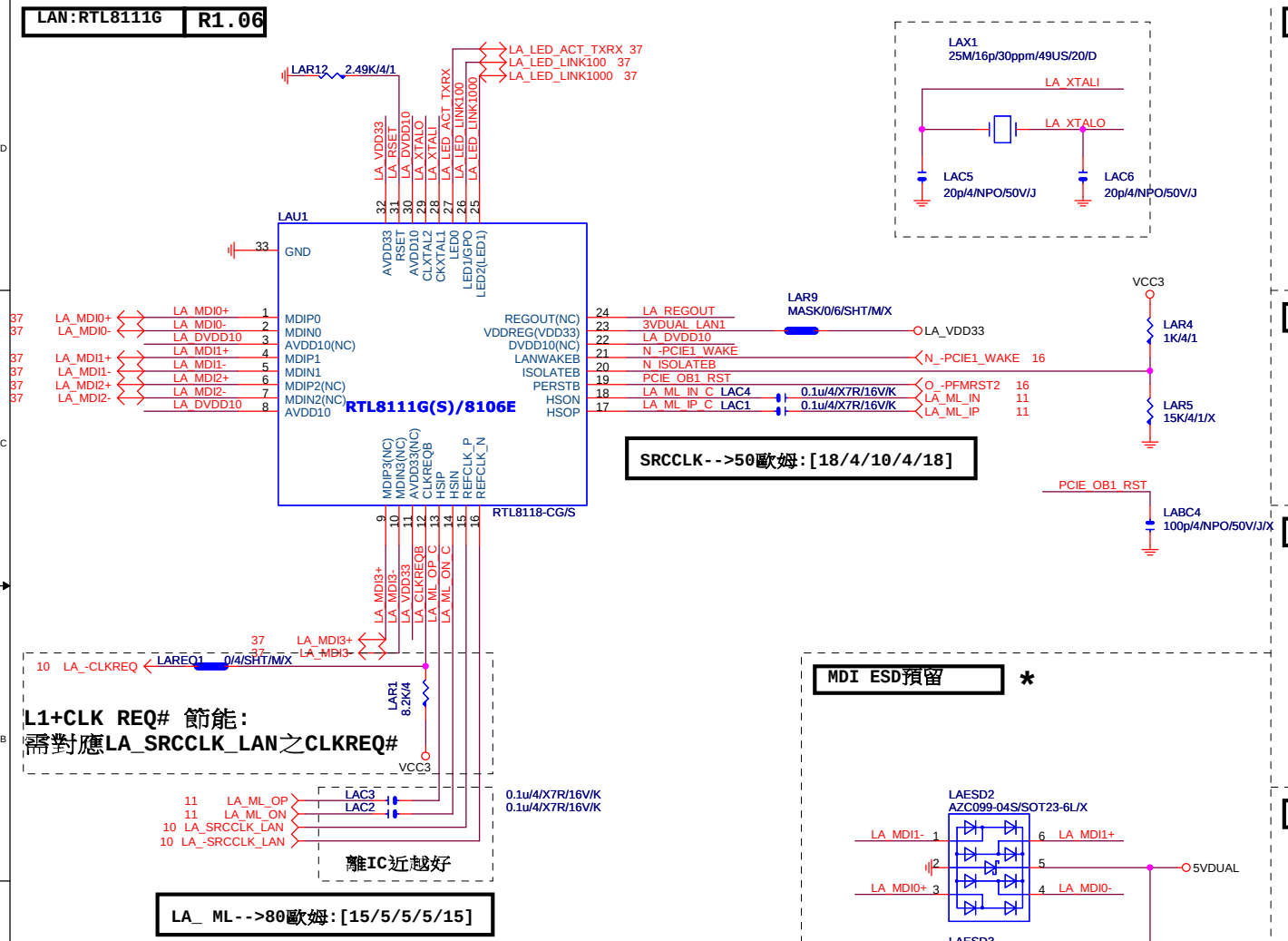
LAN:RTL8111G R1.06



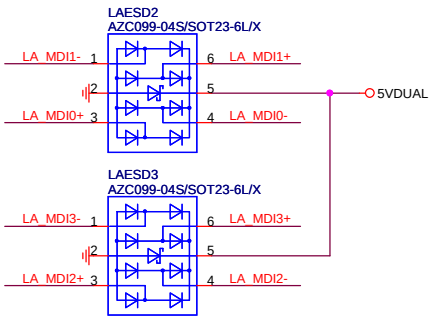
SRCCLK-->50歐姆:[18/4/10/4/18]

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

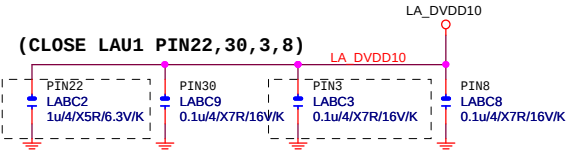
離IC近越好

LA_ ML-->80歐姆:[15/5/5/5/15]

MDI ESD預留 *



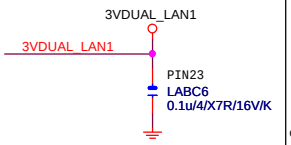
LAN POWER



LABC2:1U CLOSE PIN22[REALTEK REQ]

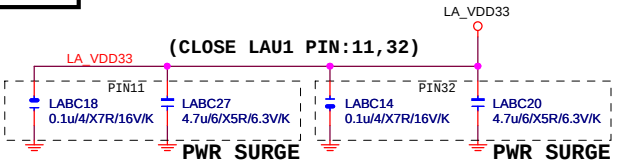
LAN POWER

note: lan power連接及電流



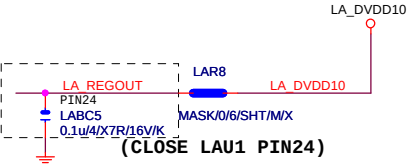
(CLOSE LAU1 PIN23)

LAN POWER



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

LAN POWER



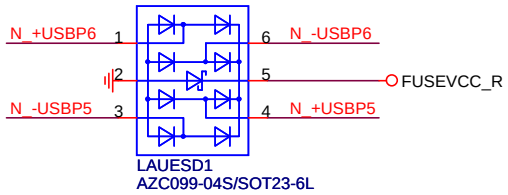
Gigabyte Technology		
Title: Realtek RTL8111GUS		
Size: Custom	Document Number: H310M H	Rev: 1.01
Date: Tuesday, February 27, 2018	Sheet 36 of 50	

USB_LAN CONNECTOR R1.06

RMA ESD PROTECT

note:可變更USB NAME

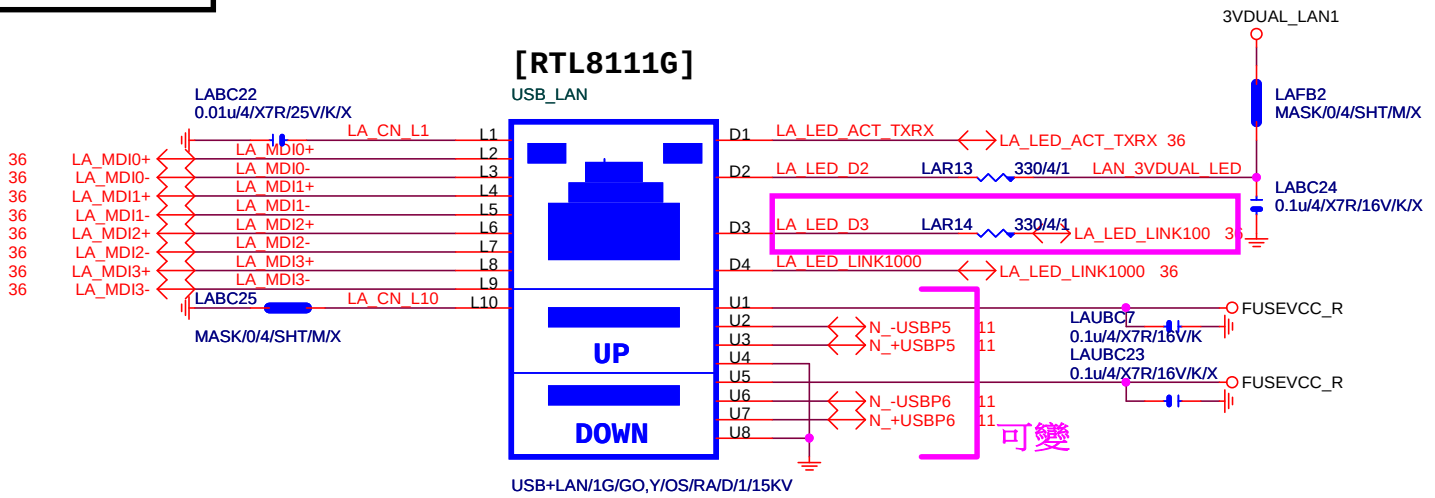
可變



USB_LAN CONNECTOR

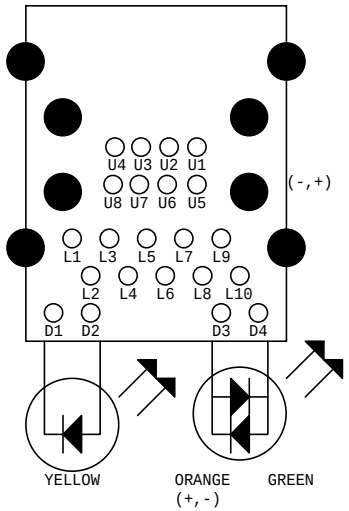
note:可變更USB NAME

[RTL8111G]

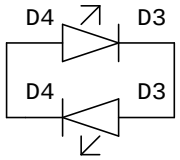


LA_MDI-->100歐姆:[20/4/8/4/20]

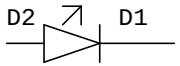
USB_LAN LAYOUT示意圖



Dual Color LED



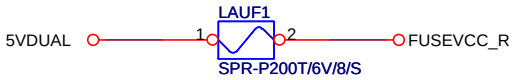
Single Color LED



USB POWER

note:可變更FUSE

可變



Close to connector

USB_LAN 2-Port 2.0A

FUSE-0805

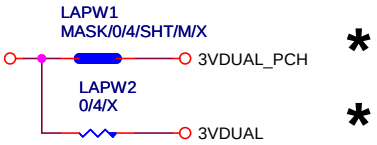
EMI SHORT PAD

PS:視EMI需求

LAN POWER

note: lan power連接及電流

可變



Gigabyte Technology

Title: **LAN CONNECTOR-RTL8111G**

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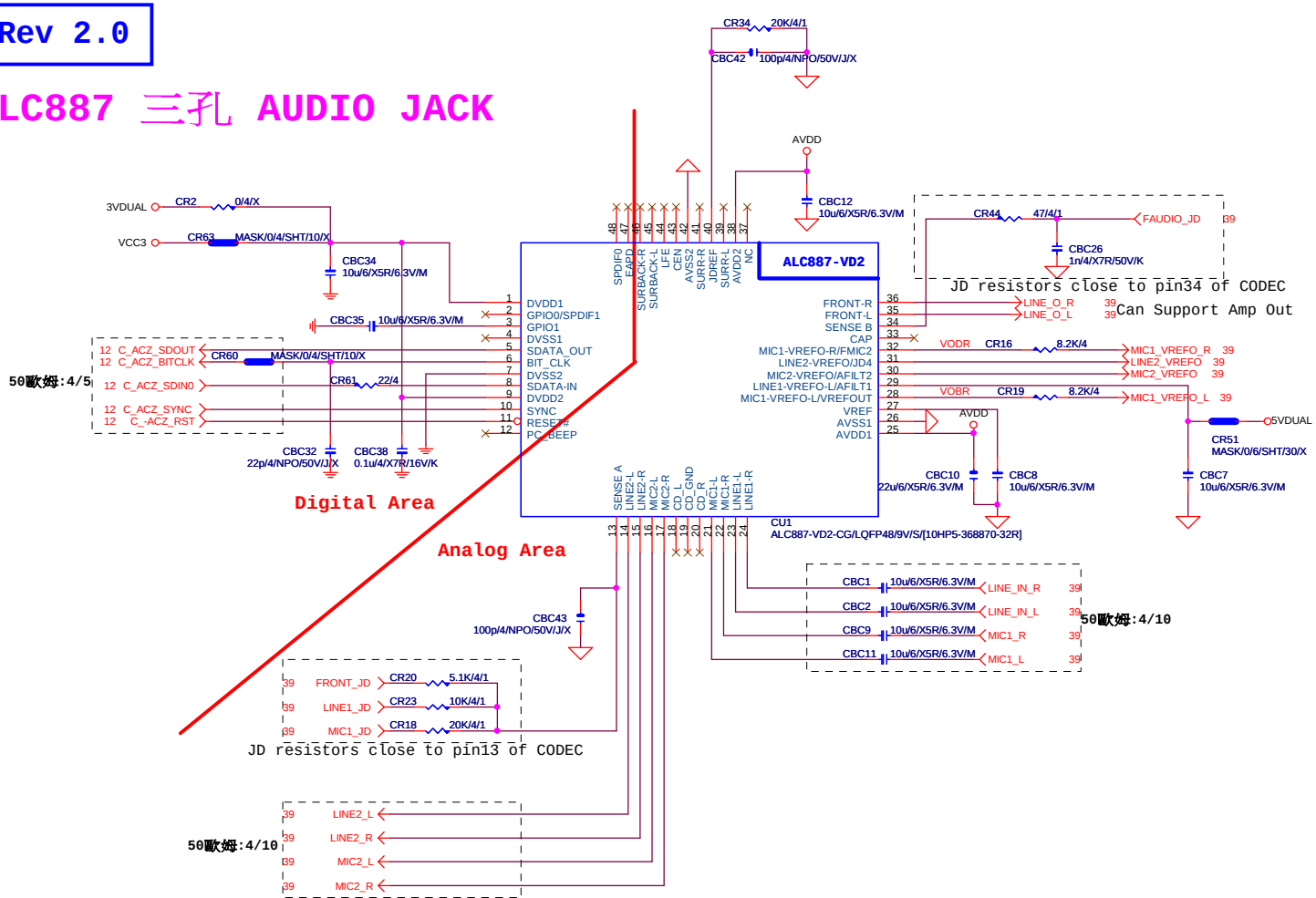
Rev 2.0

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		
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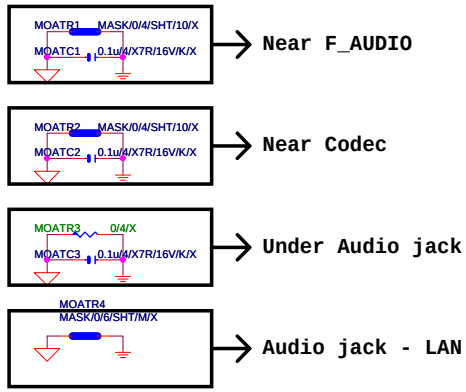
Rev 2.01

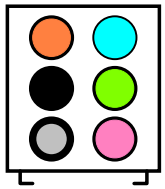


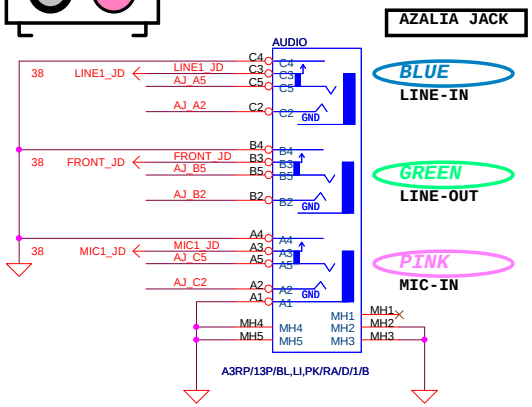
*量產前,0ohm改short pad

SPDIF_OUT

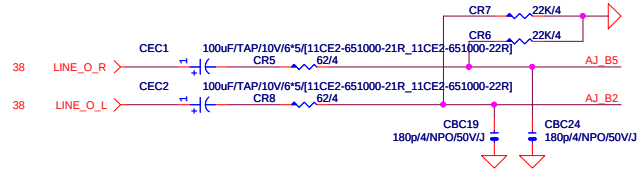
SPDIF_IN

AZALIA JACK



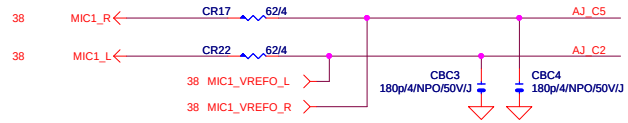


LINE-OUT



LINE-IN

MIC-IN

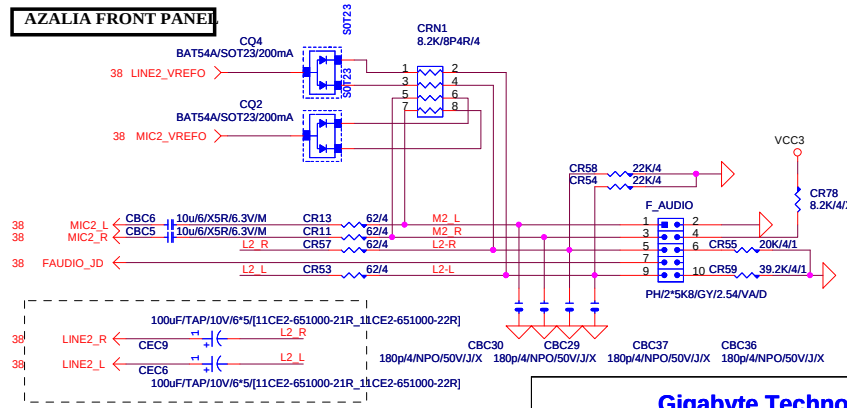


SURROUND

CEN/LFE

SURR BACK

AZALIA FRONT PANEL



Gigabyte Technology

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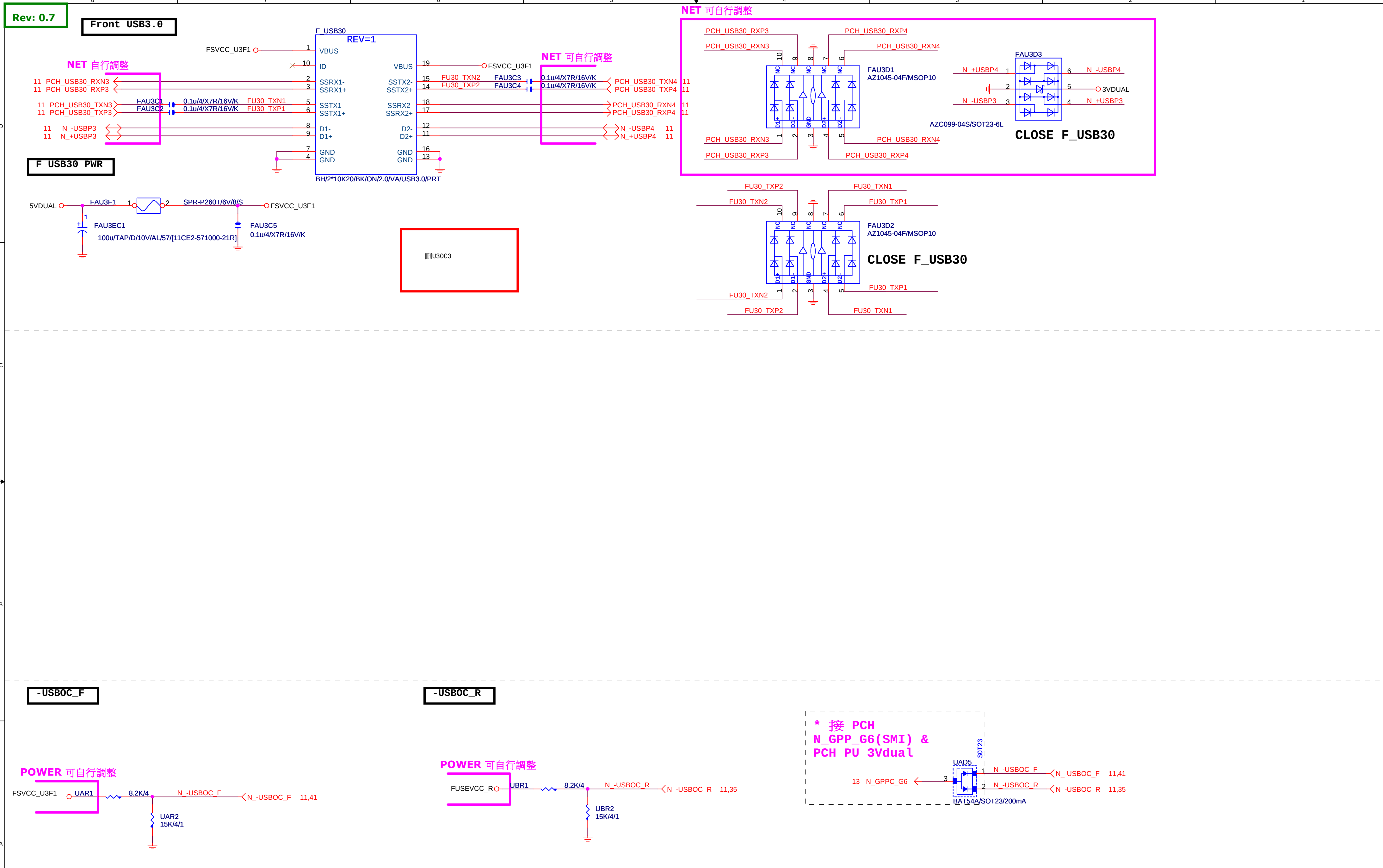

Rev: 0.7
Front USB3.0
F_USB30
REV=1
FSVCC_U3F1
VBUS
ID
SSRX1-
SSRX1+
SSTX1-
SSTX1+
D1-
D1+
GND
VBUS
SSTX2-
SSTX2+
SSRX2-
SSRX2+
D2-
D2+
BH/2*10K20/BK/ON/2.0/VA/USB3.0/PRT
NET 自行調整
11 PCH_USB30_RXN3
11 PCH_USB30_RXP3
11 PCH_USB30_TXN3
11 PCH_USB30_TXP3
11 N_-USBP3
11 N_+USBP3
FAU3C1
FAU3C2
0.1u/4/X7R/16V/K
FU30_TXN1
FU30_TXP1
NET 可自行調整
FU30_TXN2
FU30_TXP2
FAU3C3
FAU3C4
PCH_USB30_TXN4 11
PCH_USB30_TXP4 11
PCH_USB30_RXN4 11
PCH_USB30_RXP4 11
N_-USBP4 11
N_+USBP4 11
F_USB30 PWR
5VDUAL
FAU3F1
SPR-P260T/6V/8/S
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_RXP4
PCH_USB30_RXN4
FAU3D1
AZ1045-04F/MSOP10
FAU3D3
N_+USBP4
N_-USBP4
N_-USBP3
N_+USBP3
3VDUAL
AZC099-04S/SOT23-6L
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_GPPC_G6
UAD5
SOT23
N_-USBOC_F
N_-USBOC_R
N_-USBOC_F 11,41
N_-USBOC_R 11,35
BAT54A/SOT23/200mA

Gigabyte Technology

Title	R_USB30,F_USB30, USB_OC
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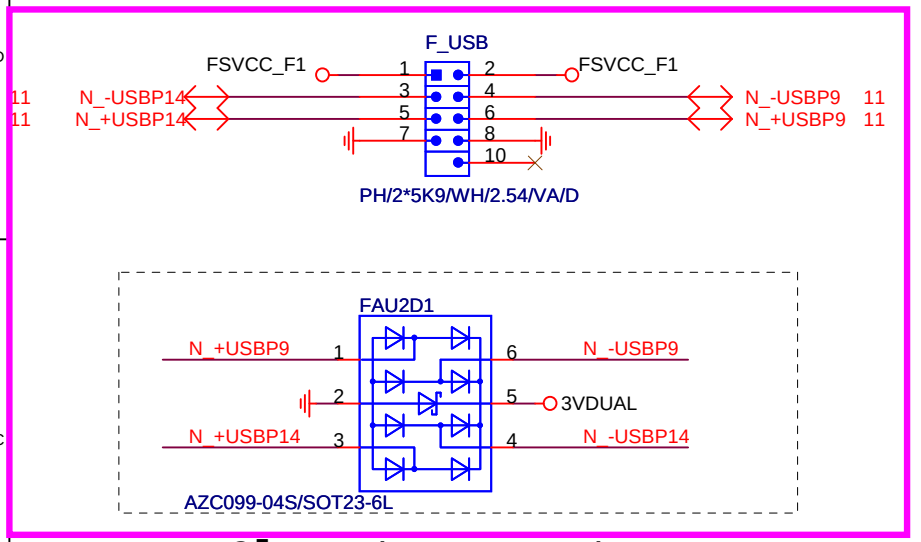
Rev: 0.7

FRONT USB1

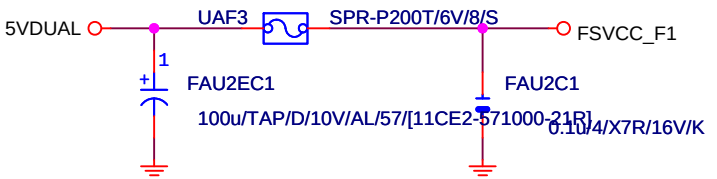
NET 可變

FUSB2X5-HS

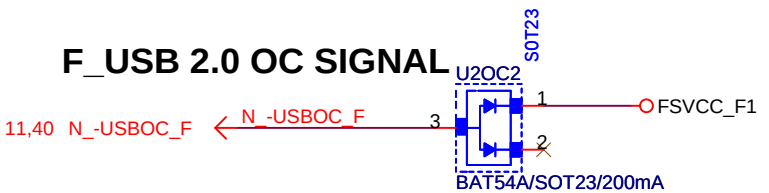


Close to connector

FUSE 2 Port 1 Fuse 2A



F_USB 2.0 OC SIGNAL

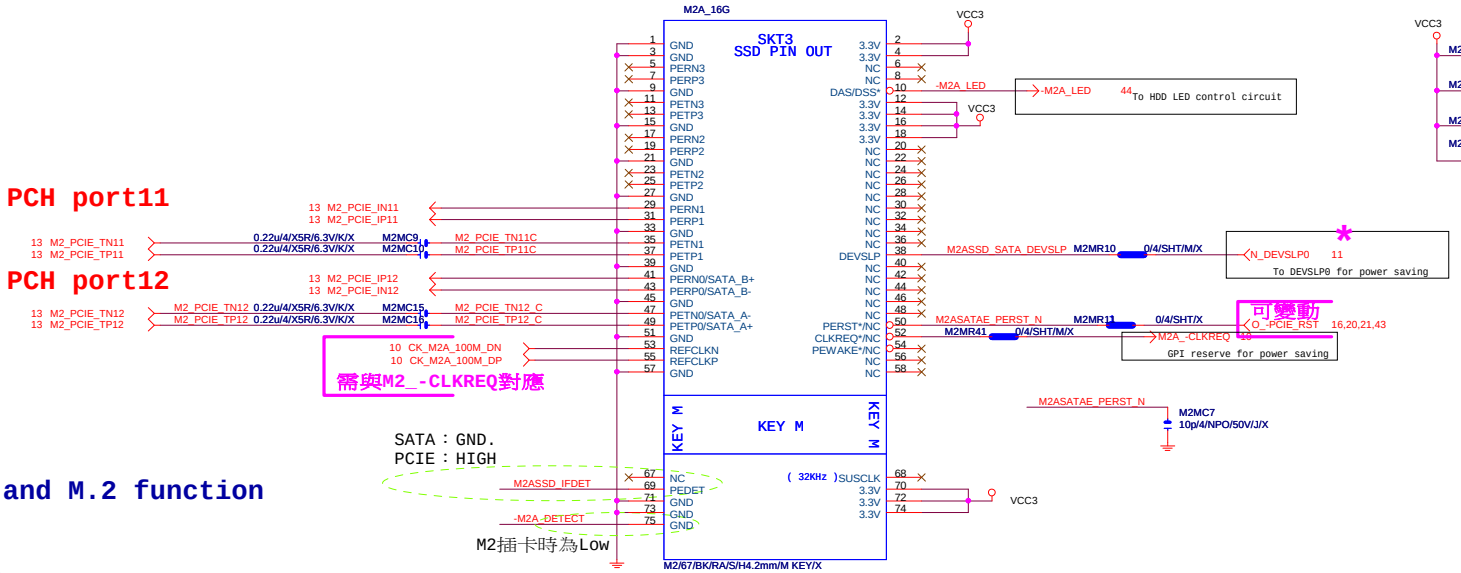


Gigabyte Technology			
Title: USB2.0			
Size: A	Document Number: H310M H		Rev: 1.01
Date: Tuesday, February 27, 2018		Sheet 41 of 50	

Rev 0.4

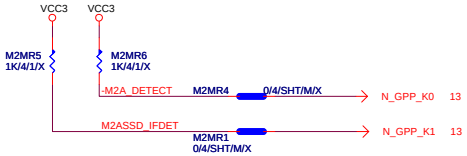
M.2 Lane2 from PCH port11

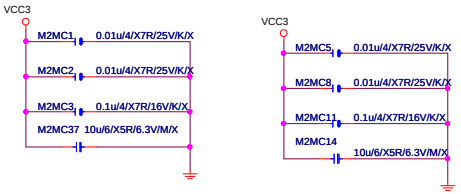
M.2 Lane2 from PCH port12



SATA：GND.
PCIE：HIGH

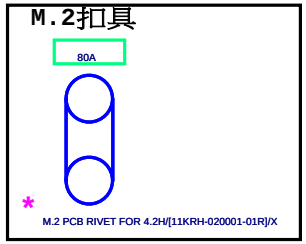
支援SATA and M.2 function



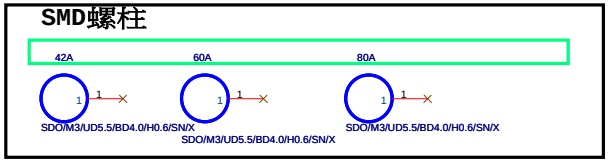


* Footprint : NGFF-M-75P-8CM-09MM-SMD
MASK:NGFF-M-8CM-09MM-SMD-MASK

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	Rev: 1.01
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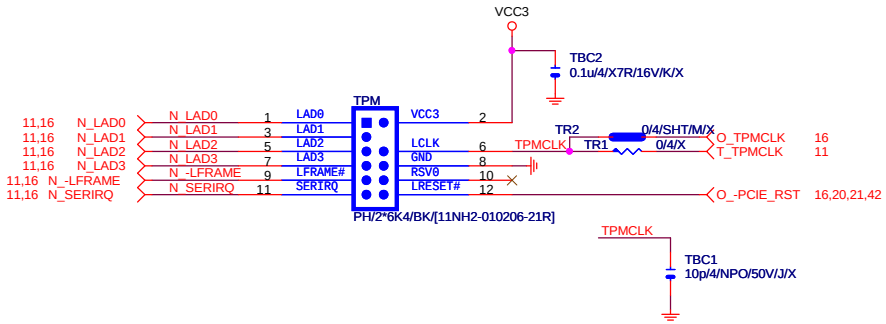
COM PORT

TPM CONNECT



Thunderbolt (N/A)

Gigabyte Technology		
Title: FP,F_USB,USB PWR,BZ		
Size: Custom	Document Number: H310M H	Rev: 1.01
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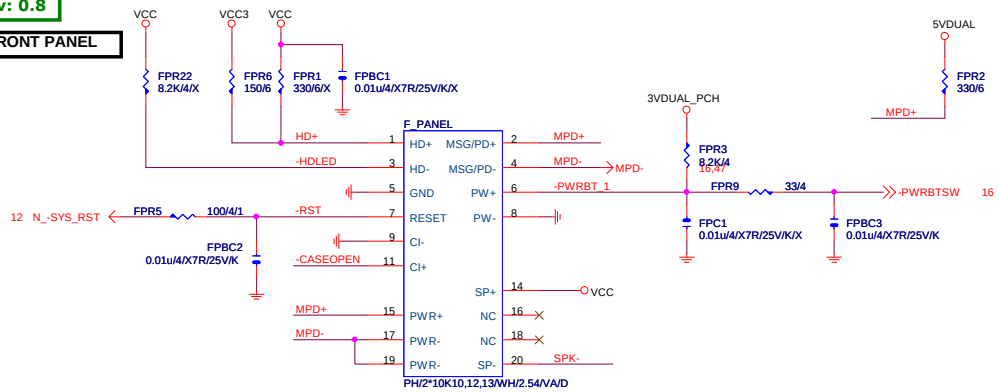
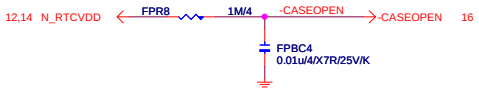
Rev: 0.8

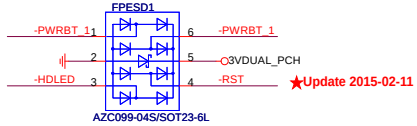
FRONT PANEL

★Update 2016.06.15



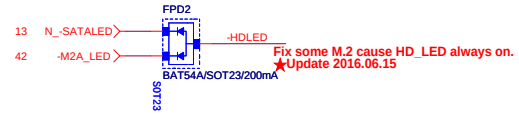
CASE OPEN





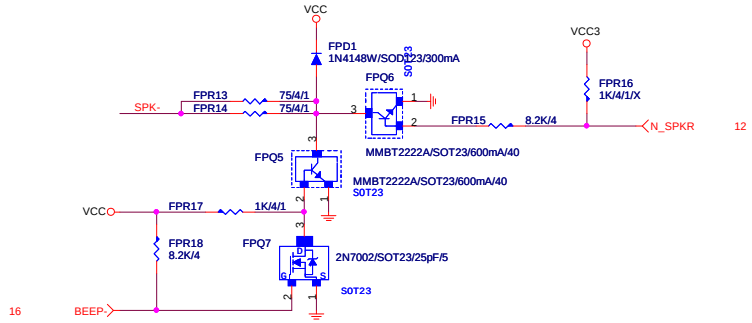
★Update 2015-02-11

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	Rev: 1.01
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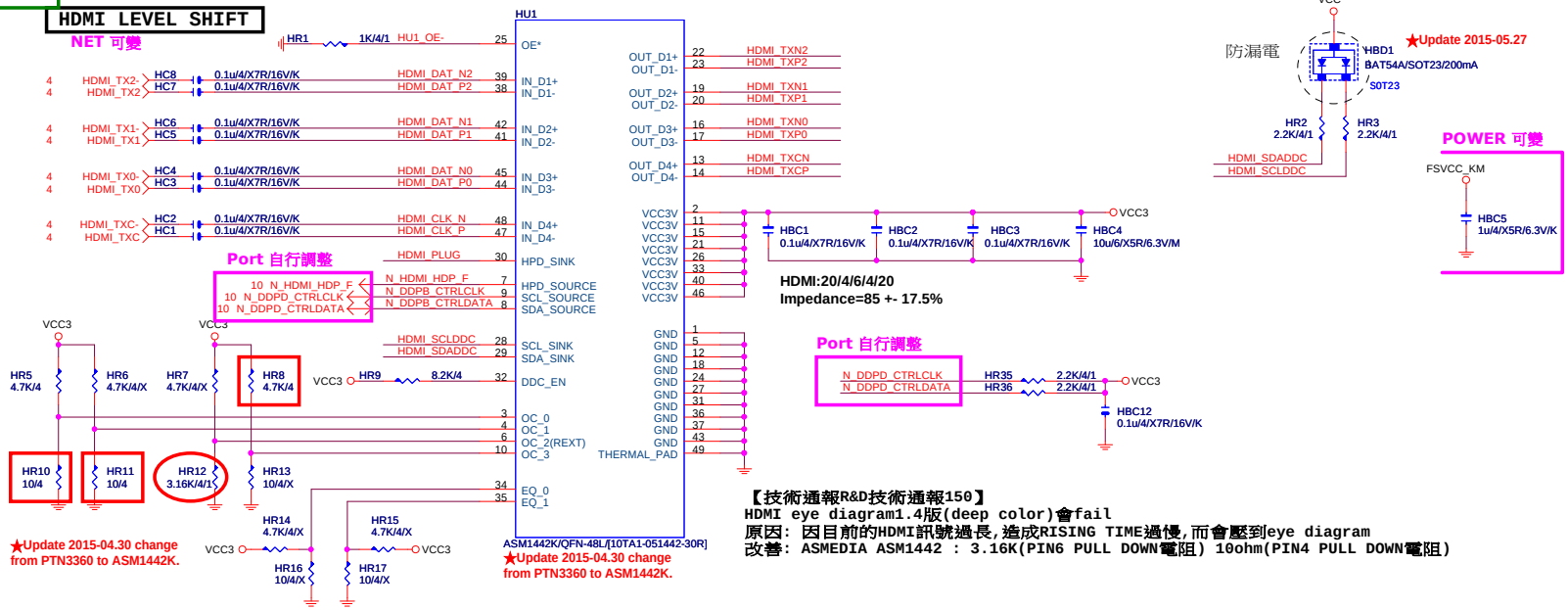
HDMI LEVEL SHIFT

NET 可變



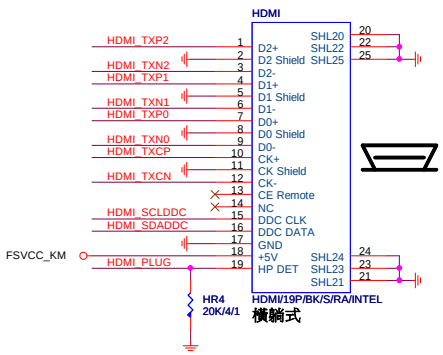
POWER 可變

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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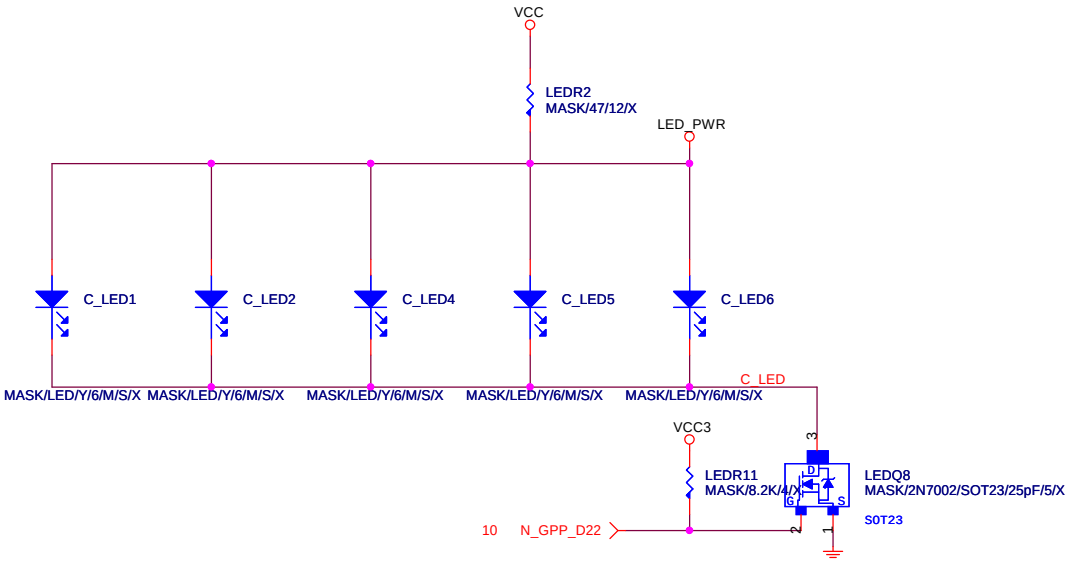
Rev 2.02

Ambient LED Control

	N_GPP_D22
ţ ill Mode	H
OFF Mode	L



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EMI/ESD R0.1

CLOSE SIO

CLOSE PCH

close to PCH (NR17)

R_USB30_2 & DVI 之間

close to SIO (PIN92)MPD-

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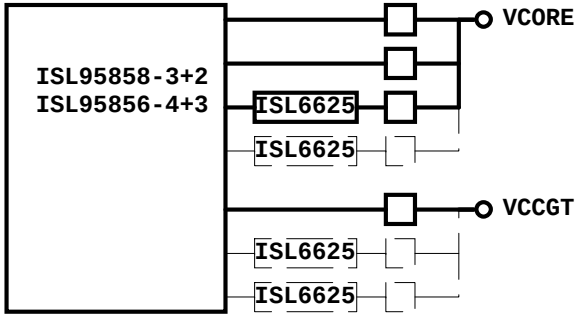
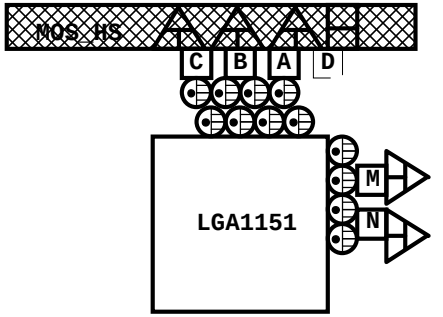
POWER BLOCK MAP

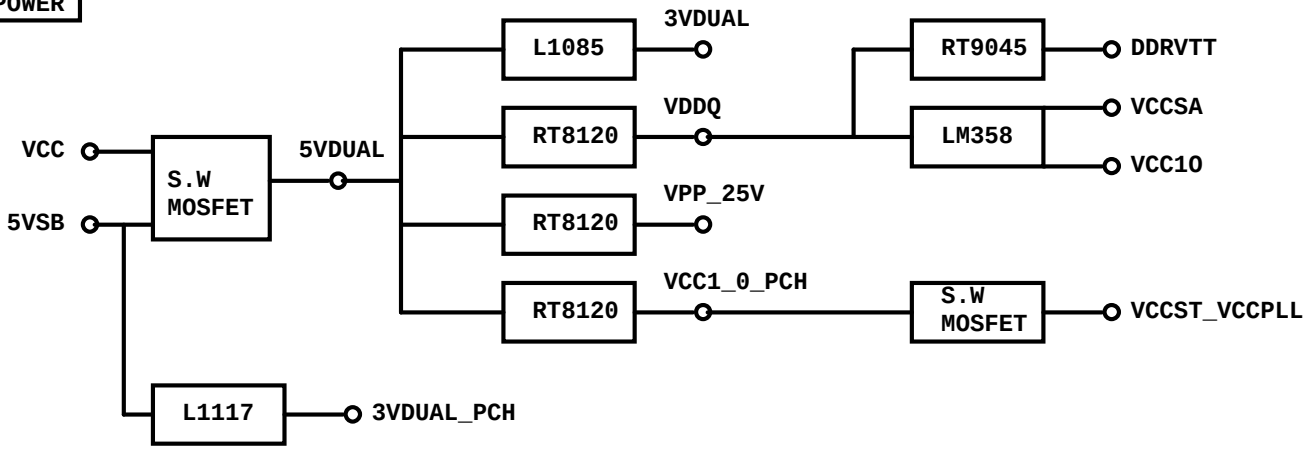
- **CPU**
  - VCORE
  - VCCGT
  - VCCSA
  - VCCIO
  - VDDQ
  - VCCST_VCCPLL
  - VCCSFUSEPRG
- **DDR4**
  - VDDQ
  - DDRVTT
  - VPP_25V
  - VDDSPD(VCC3)
- **PCH**
  - VCC1_0_PCH
  - VCC1_0_PCH_DSW
  - VCC10_VCCF24_1P0
  - VCC10_VCCAMPHYPLL
  - VCC10_VCCAPLL
  - VCC3_PCH
  - 3VDUAL_PCH
  - VCC3
  - N_RTCVDD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

VCORE/VCCGT

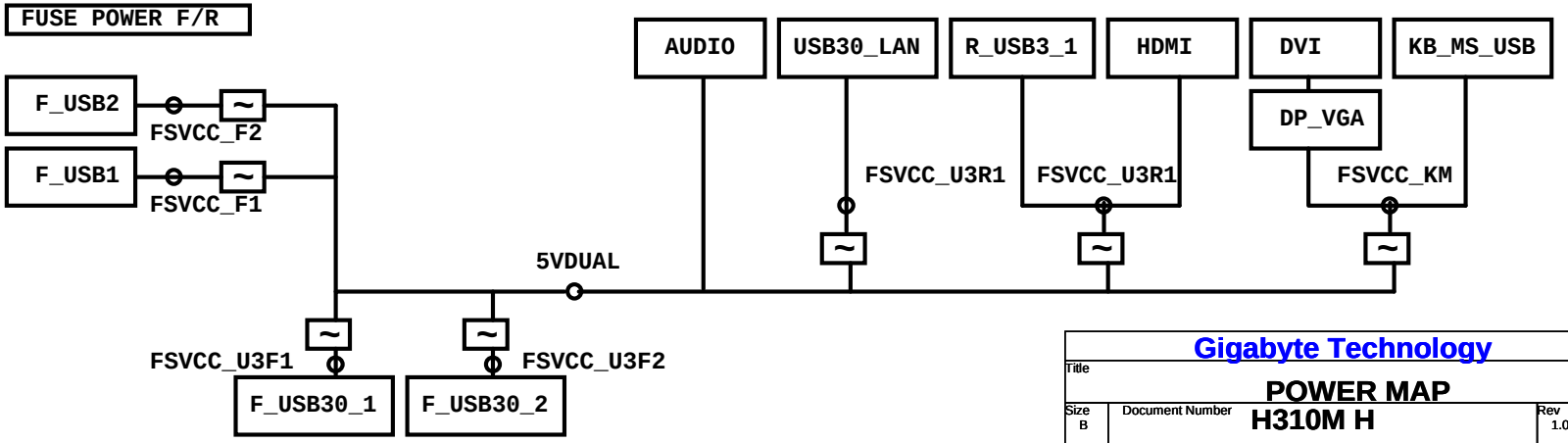




POWER



FUSE POWER F/R



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Title	POWER MAP	
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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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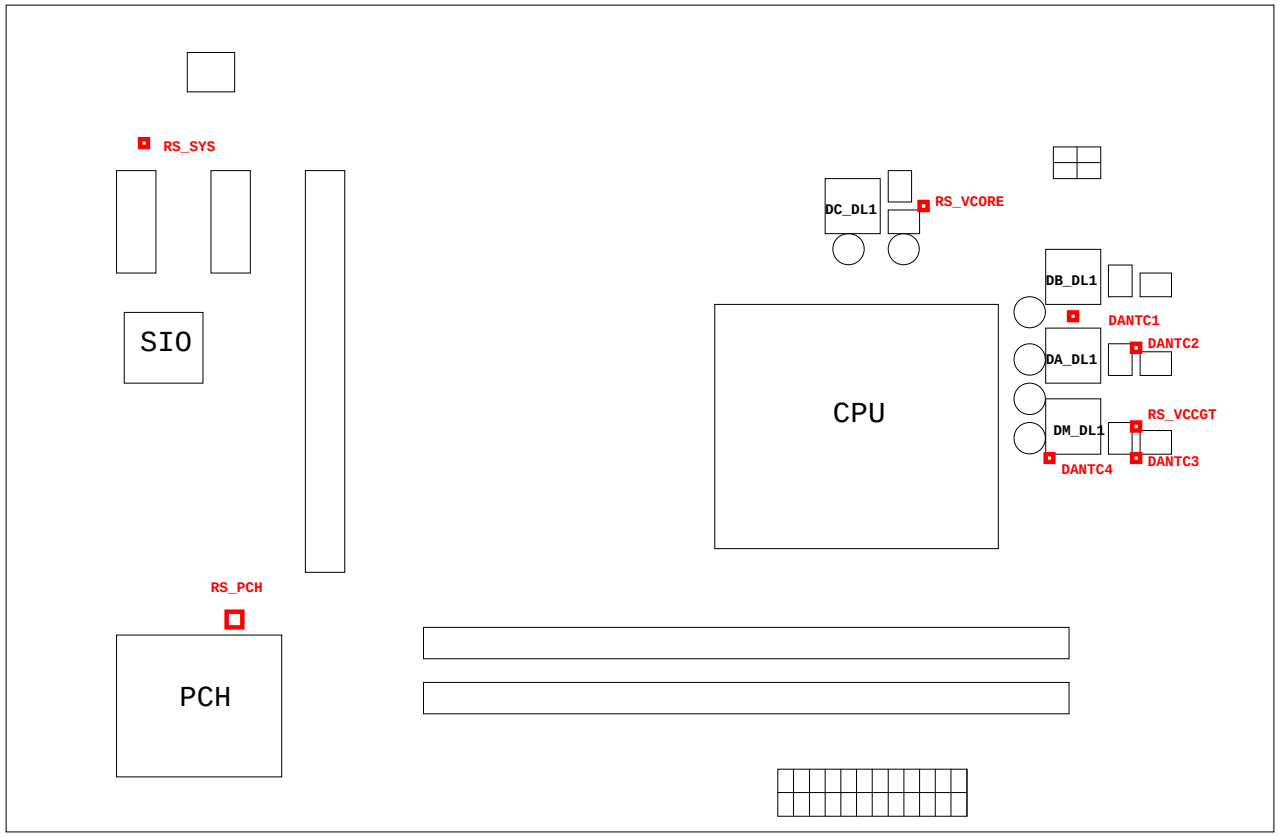

熱敏電阻	擺放靠近位置	走線方式
DANTC4	DM_DL1	Differential
DANTC1	DA_DL1	Differential
DANTC3	DM_DQ1	Differential
DANTC2	DA_DQ1	Differential
RS_VCORE	DA_DQ1	N/A
RS_VCCGT	DM_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A

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Title: NTC MAP

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