

Model Name: H310M S2V 2.0 Rev:1.0

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,GND
15	Dual BIOS
16	ITE 8628 LPC IO
17	HWM
18	FAN CTRL--SIO
19	PCI EXPRESS*16 SLOT
20	PCI EXPRESS*1 SLOT
21	SATA
22	ISL95858_856 PWM
23	ISL95858_856 MOS_VCORE
24	ISL95858_856 MOS_VCCGT
25	VCCSA_VCCIO_VCCPLL
26	RT8237_DDR_VDDQ
27	RT8068_VPP

SHEET TITLE

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

<b>Gigabyte Technology</b>		
<b>Cover Sheet</b>		
Size Custom	Document Number <b>H310M S2V</b>	Rev <b>1.0</b>
Date: Monday, June 11, 2018	Sheet 1	of 50

**Rev: 2.0**

## Component value change history

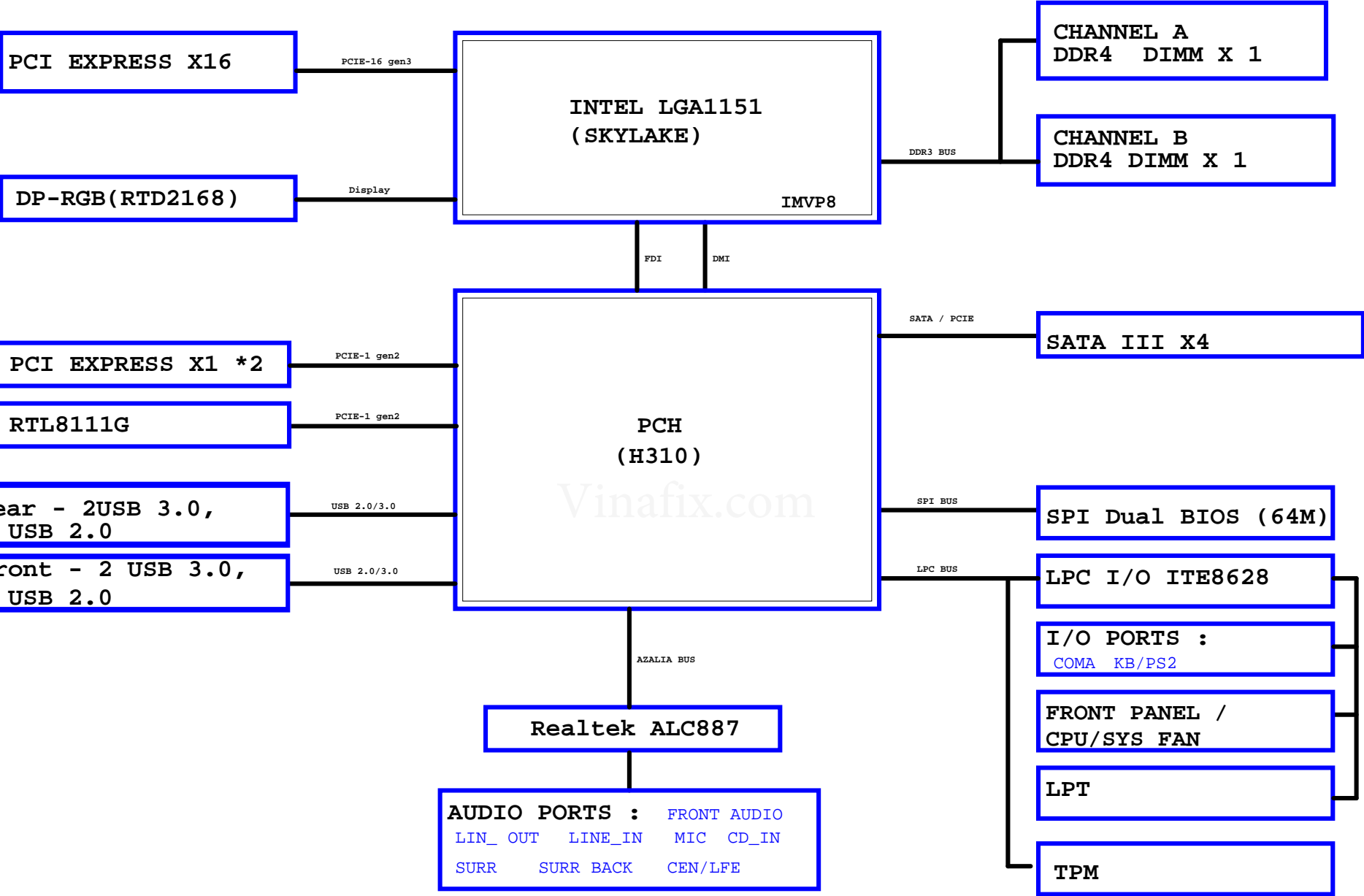
2015/09/04

[illegible]

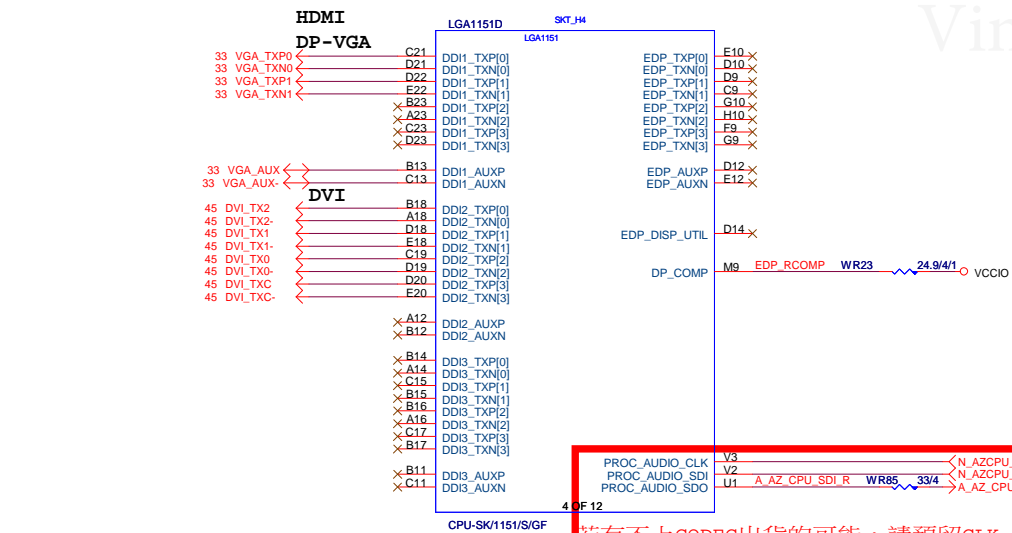
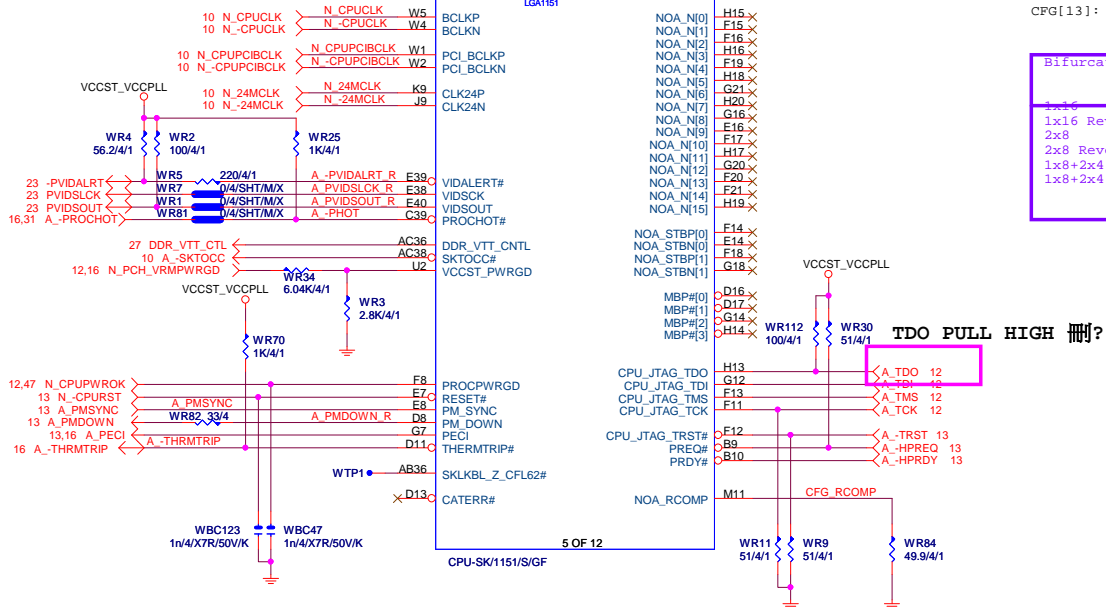
## Circuit or PCB layout change

[illegible]

BLOCK DIAGRAM



## CFL\_R0.1

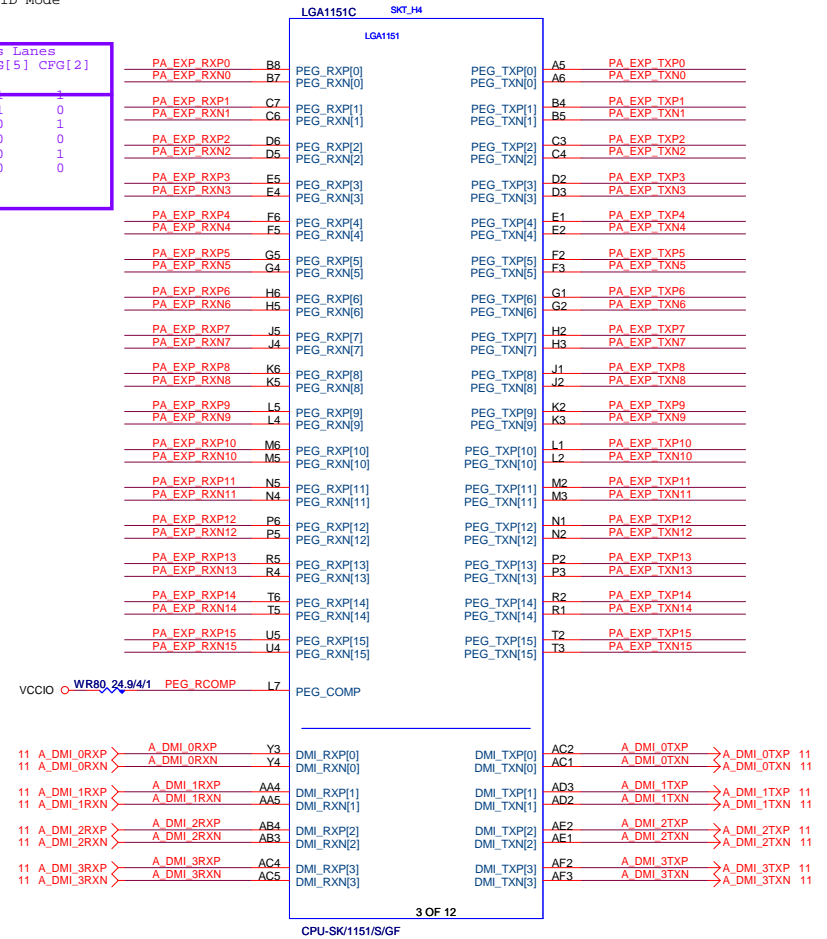


若有不上CODEC出貨的可能，請預留CLK and SDO對地電阻。

```
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
```

```
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



```
PA_EXP_TXP[0..15]    >> PA_EXP_TXP[0..15]  20
PA_EXP_TXN[0..15]    >> PA_EXP_TXN[0..15]  20
PA_EXP_RXP[0..15]    >> PA_EXP_RXP[0..15]  20
PA_EXP_RXN[0..15]    >> PA_EXP_RXN[0..15]  20
```

LGA1151A SKT\_H4

MDA0	AE38	DDR0_DQ[0]	DDR0_CK_P[0]	AW18	M_DCLKA0	M_DCLKA0 8
MDA1	AE37	DDR0_DQ[1]	DDR0_CK_N[0]	AV18	M_-DCLKA0	M_-DCLKA0 8
MDA2	AG38	DDR0_DQ[2]	DDR0_CK_P[1]	AW17	M_DCLKA1	M_DCLKA1 8
MDA3	AG37	DDR0_DQ[3]	DDR0_CK_N[1]	AY17	M_-DCLKA1	M_-DCLKA1 8
MDA4	AE39	DDR0_DQ[4]	DDR0_CK_P[2]	AW18		
MDA5	AE40	DDR0_DQ[5]	DDR0_CK_N[2]	AV18		
MDA6	AG39	DDR0_DQ[6]	DDR0_CK_P[3]	AT16		
MDA7	AG40	DDR0_DQ[7]	DDR0_CK_N[3]	AU16		
MDA8	AJ38	DDR0_DQ[8]				
MDA9	AJ37	DDR0_DQ[9]	DDR0_CKE[0]	AY24	CKEA0	CKEA0 8
MDA10	AL38	DDR0_DQ[10]	DDR0_CKE[1]	AW24	CKEA1	CKEA1 8
MDA11	AL37	DDR0_DQ[11]	DDR0_CKE[2]	AY24		
MDA12	AJ40	DDR0_DQ[12]	DDR0_CKE[3]	AV26		
MDA13	AJ39	DDR0_DQ[13]				
MDA14	AL39	DDR0_DQ[14]	DDR0_CS#0[0]	AW12	M_-CSA0	M_-CSA0 8
MDA15	AL40	DDR0_DQ[15]	DDR0_CS#1[0]	AU11	M_-CSA1	M_-CSA1 8
MDA16	AN38	DDR0_DQ[16]	DDR0_CS#2[0]	AV13		
MDA17	AR38	DDR0_DQ[17]	DDR0_CS#3[0]	AV19		
MDA18	AR37	DDR0_DQ[18]	DDR0_ODT[0]	AW11	MODT_A0	
MDA19	AN39	DDR0_DQ[19]	DDR0_ODT[1]	AU14	MODT_A1	
MDA20	AN37	DDR0_DQ[20]	DDR0_ODT[2]	AU12		
MDA21	AR39	DDR0_DQ[21]	DDR0_ODT[3]	AV19		
MDA22	AR40	DDR0_DQ[22]				
MDA23	AW37	DDR0_DQ[23]				
MDA24	AJ38	DDR0_DQ[24]	DDR0_BA[0]DDR0_CAB[4]DDR0_BA[0]	AY13	SBA0A	SBA0A 8
MDA25	AJ38	DDR0_DQ[25]	DDR0_BA[1]DDR0_CAB[6]DDR0_BA[1]	AV15	SBA0A	SBA0A 8
MDA26	AV35	DDR0_DQ[26]	DDR0_BA[2]DDR0_CAA[5]DDR0_BG[0]	AW23	BG_A0	BG_A0 8
MDA27	AW35	DDR0_DQ[27]				
MDA28	AV37	DDR0_DQ[28]	DDR0_RAS#/DDR0_CAB[3]DDR0_MA[16]	AW13	MAAA16	
MDA29	AV37	DDR0_DQ[29]	DDR0_WE#/DDR0_CAB[2]DDR0_MA[14]	AV14	MAAA14	
MDA30	AT35	DDR0_DQ[30]	DDR0_CAS#/DDR0_CAB[1]DDR0_MA[15]	AY11	MAAA15	
MDA31	AJ35	DDR0_DQ[31]				
MDA32	AV38	DDR0_DQ[32]	DDR0_MA[0]DDR0_CAB[9]DDR0_MA[0]	AW15	MAAA0	
MDA33	AV38	DDR0_DQ[33]	DDR0_MA[1]DDR0_CAB[8]DDR0_MA[1]	AU18	MAAA1	
MDA34	AV6	DDR0_DQ[34]	DDR0_MA[2]DDR0_CAB[5]DDR0_MA[2]	AU17	MAAA2	
MDA35	AU8	DDR0_DQ[35]	DDR0_MA[3]	AV19	MAAA3	
MDA36	AU8	DDR0_DQ[36]	DDR0_MA[4]	AT19	MAAA4	
MDA37	AV8	DDR0_DQ[37]	DDR0_MA[5]DDR0_CAA[0]DDR0_MA[5]	AU20	MAAA5	
MDA38	AV6	DDR0_DQ[38]	DDR0_MA[6]DDR0_CAA[2]DDR0_MA[6]	AV20	MAAA6	
MDA39	AV6	DDR0_DQ[39]	DDR0_MA[7]DDR0_CAA[4]DDR0_MA[7]	AU20	MAAA7	
MDA40	AV4	DDR0_DQ[40]	DDR0_MA[8]DDR0_CAA[3]DDR0_MA[8]	AU21	MAAA8	
MDA41	AV4	DDR0_DQ[41]	DDR0_MA[9]DDR0_CAA[1]DDR0_MA[9]	AT22	MAAA9	
MDA42	AT1	DDR0_DQ[42]	DDR0_MA[10]DDR0_CAB[7]DDR0_MA[10]	AY14	MAAA10	
MDA43	AT2	DDR0_DQ[43]	DDR0_MA[11]DDR0_CAA[7]DDR0_MA[11]	AU22	MAAA11	
MDA44	AV3	DDR0_DQ[44]	DDR0_MA[12]DDR0_CAA[6]DDR0_MA[12]	AV22	MAAA12	
MDA45	AV4	DDR0_DQ[45]	DDR0_MA[13]DDR0_CAB[0]DDR0_MA[13]	AV12	MAAA13	
MDA46	AT4	DDR0_DQ[46]	DDR0_MA[14]DDR0_CAA[9]DDR0_BG[1]	AV23	BG_A1	BG_A1 8
MDA47	AT3	DDR0_DQ[47]	DDR0_MA[15]DDR0_CAA[8]DDR0_ACT#	AU24		M_-ACT_A 8
MDA48	AP2	DDR0_DQ[48]				
MDA49	AM4	DDR0_DQ[49]	DDR0_PAR	AY15		M_DDR_PARA 8
MDA50	AP3	DDR0_DQ[50]	DDR0_ALERT#	AT23		M_-ALERT_A 8
MDA51	AM3	DDR0_DQ[51]				
MDA52	AP4	DDR0_DQ[52]				
MDA53	AM2	DDR0_DQ[53]	DDR0_DQSN[0]	AE38	M_DQSA0	
MDA54	AP1	DDR0_DQ[54]	DDR0_DQSN[1]	AK39	M_DQSA1	
MDA55	AM1	DDR0_DQ[55]	DDR0_DQSN[2]DDR0_DQSN[4]	AP39	M_DQSA2	
MDA56	AK3	DDR0_DQ[56]	DDR0_DQSN[3]DDR0_DQSN[5]	AU36	M_DQSA3	
MDA57	AH1	DDR0_DQ[57]	DDR0_DQSN[4]DDR1_DQSN[0]	AW7	M_DQSA4	
MDA58	AK4	DDR0_DQ[58]	DDR0_DQSN[5]DDR1_DQSN[1]	AU3	M_DQSA5	
MDA59	AH2	DDR0_DQ[59]	DDR0_DQSN[6]DDR1_DQSN[4]	AN3	M_DQSA6	
MDA60	AH4	DDR0_DQ[60]	DDR0_DQSN[7]DDR1_DQSN[5]	AJ3	M_DQSA7	
MDA61	AK2	DDR0_DQ[61]				
MDA62	AH3	DDR0_DQ[62]	DDR0_DQSP[0]	AE38	M_DQSA0	
MDA63	AK1	DDR0_DQ[63]	DDR0_DQSP[1]	AK38	M_DQSA1	
			DDR0_DQSP[2]DDR0_DQSP[4]	AP38	M_DQSA2	
			DDR0_DQSP[3]DDR0_DQSP[5]	AV36	M_DQSA3	
			DDR0_DQSP[4]DDR1_DQSP[0]	AV7	M_DQSA4	
			DDR0_DQSP[5]DDR1_DQSP[1]	AU2	M_DQSA5	
			DDR0_DQSP[6]DDR1_DQSP[4]	AN2	M_DQSA6	
			DDR0_DQSP[7]DDR1_DQSP[5]	AJ2	M_DQSA7	
			DDR0_DQSP[8]	AV32		
			DDR0_DQSN[8]	AU32		

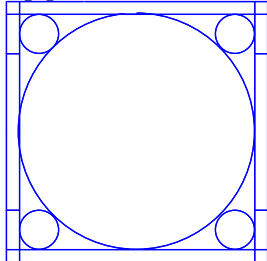
DDR CHANNEL A

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CPU-SK/1151/S/GF

CPU-SK/1151/S/GF

ILM\_BP\_CR/115X/NORMAL NI



Need check the new CPU ME

LGA1151B SKT\_H4

MDB0	AD34	DDR1_DQ[0]DDR0_DQ[16]	DDR1_CK_P[0]	AM20	M_DCLKB0	M_DCLKB0 9
MDB1	AD35	DDR1_DQ[1]DDR0_DQ[17]	DDR1_CK_N[0]	AM21	M_-DCLKB0	M_-DCLKB0 9
MDB2	AG35	DDR1_DQ[2]DDR0_DQ[18]	DDR1_CK_P[1]	AP22	M_DCLKB1	M_DCLKB1 9
MDB3	AH35	DDR1_DQ[3]DDR0_DQ[19]	DDR1_CK_N[1]	AP21	M_-DCLKB1	M_-DCLKB1 9
MDB4	AE35	DDR1_DQ[4]DDR0_DQ[20]	DDR1_CK_P[2]	AN20		
MDB5	AE34	DDR1_DQ[5]DDR0_DQ[21]	DDR1_CK_N[2]	AN21		
MDB6	AG34	DDR1_DQ[6]DDR0_DQ[22]	DDR1_CK_P[3]	AN22		
MDB7	AH34	DDR1_DQ[7]DDR0_DQ[23]	DDR1_CK_N[3]	AN23		
MDB8	AK35	DDR1_DQ[8]DDR0_DQ[24]				
MDB9	AL35	DDR1_DQ[9]DDR0_DQ[25]	DDR1_CKE[0]	AY29	CKEB0	CKEB0 9
MDB10	AL32	DDR1_DQ[10]DDR0_DQ[26]	DDR1_CKE[1]	AV29	CKEB1	CKEB1 9
MDB11	AL32	DDR1_DQ[11]DDR0_DQ[27]	DDR1_CKE[2]	AV29		
MDB12	AK34	DDR1_DQ[12]DDR0_DQ[28]	DDR1_CKE[3]	AV29		
MDB13	AL34	DDR1_DQ[13]DDR0_DQ[29]				
MDB14	AK31	DDR1_DQ[14]DDR0_DQ[30]	DDR1_CS#0[0]	AP17	M_-CSB0	M_-CSB0 9
MDB15	AL31	DDR1_DQ[15]DDR0_DQ[31]	DDR1_CS#1[0]	AN15	M_-CSB1	M_-CSB1 9
MDB16	AP35	DDR1_DQ[16]DDR0_DQ[32]	DDR1_CS#2[0]	AN16		
MDB17	AN35	DDR1_DQ[17]DDR0_DQ[33]	DDR1_CS#3[0]	AN17		
MDB18	AN32	DDR1_DQ[18]DDR0_DQ[34]				
MDB19	AP32	DDR1_DQ[19]DDR0_DQ[35]	DDR1_ODT[0]	AM16	MODT_B0	
MDB20	AN34	DDR1_DQ[20]DDR0_DQ[36]	DDR1_ODT[1]	AL16	MODT_B1	
MDB21	AP34	DDR1_DQ[21]DDR0_DQ[37]	DDR1_ODT[2]	AP15		
MDB22	AN31	DDR1_DQ[22]DDR0_DQ[38]	DDR1_ODT[3]	AL15		
MDB23	AP31	DDR1_DQ[23]DDR0_DQ[39]				
MDB24	AL29	DDR1_DQ[24]DDR0_DQ[40]	DDR1_RAS#/DDR1_CAB[3]DDR1_MA[16]	AN18	MAAB16	
MDB25	AM29	DDR1_DQ[25]DDR0_DQ[41]	DDR1_WE#/DDR1_CAB[2]DDR1_MA[14]	AL17	MAAB14	
MDB26	AP29	DDR1_DQ[26]DDR0_DQ[42]	DDR1_CAS#/DDR1_CAB[1]DDR1_MA[15]	AP16	MAAB15	
MDB27	AR28	DDR1_DQ[27]DDR0_DQ[43]				
MDB28	AM28	DDR1_DQ[28]DDR0_DQ[44]	DDR1_BA[0]DDR1_CAB[4]DDR1_BA[0]	AL18	SBA0B	SBA0B 9
MDB29	AL28	DDR1_DQ[29]DDR0_DQ[45]	DDR1_BA[1]DDR1_CAB[6]DDR1_BA[1]	AM18	SBA0B	SBA0B 9
MDB30	AR28	DDR1_DQ[30]DDR0_DQ[46]	DDR1_BA[2]DDR1_CAA[5]DDR1_BG[0]	AW28	BG_B0	BG_B0 9
MDB31	AP28	DDR1_DQ[31]DDR0_DQ[47]				
MDB32	AR12	DDR1_DQ[32]DDR1_DQ[16]	DDR1_MA[0]DDR1_CAB[9]DDR1_MA[0]	AL19	MAAB0	
MDB33	AP12	DDR1_DQ[33]DDR1_DQ[17]	DDR1_MA[1]DDR1_CAB[8]DDR1_MA[1]	AL22	MAAB1	
MDB34	AM13	DDR1_DQ[34]DDR1_DQ[18]	DDR1_MA[2]DDR1_CAB[5]DDR1_MA[2]	AM22	MAAB2	
MDB35	AL13	DDR1_DQ[35]DDR1_DQ[19]	DDR1_MA[3]	AM23	MAAB3	
MDB36	AR13	DDR1_DQ[36]DDR1_DQ[20]	DDR1_MA[4]	AP23	MAAB4	
MDB37	AP13	DDR1_DQ[37]DDR1_DQ[21]	DDR1_MA[5]DDR1_CAA[0]DDR1_MA[5]	AL23	MAAB5	
MDB38	AM12	DDR1_DQ[38]DDR1_DQ[22]	DDR1_MA[6]DDR1_CAA[2]DDR1_MA[6]	AV26	MAAB6	
MDB39	AL12	DDR1_DQ[39]DDR1_DQ[23]	DDR1_MA[7]DDR1_CAA[4]DDR1_MA[7]	AV26	MAAB7	
MDB40	AP10	DDR1_DQ[40]DDR1_DQ[24]	DDR1_MA[8]DDR1_CAA[3]DDR1_MA[8]	AU26	MAAB8	
MDB41	AR10	DDR1_DQ[41]DDR1_DQ[25]	DDR1_MA[9]DDR1_CAA[1]DDR1_MA[9]	AW27	MAAB9	
MDB42	AR7	DDR1_DQ[42]DDR1_DQ[26]	DDR1_MA[10]DDR1_CAB[7]DDR1_MA[10]	AP18	MAAB10	
MDB43	AP7	DDR1_DQ[43]DDR1_DQ[27]	DDR1_MA[11]DDR1_CAA[7]DDR1_MA[11]	AU27	MAAB11	
MDB44	AR9	DDR1_DQ[44]DDR1_DQ[28]	DDR1_MA[12]DDR1_CAA[6]DDR1_MA[12]	AU27	MAAB12	
MDB45	AP9	DDR1_DQ[45]DDR1_DQ[29]	DDR1_MA[13]DDR1_CAB[0]DDR1_MA[13]	AR15	MAAB13	
MDB46	AR6	DDR1_DQ[46]DDR1_DQ[30]	DDR1_MA[14]DDR1_CAA[9]DDR1_BG[1]	AY28	BG_B1	BG_B1 9
MDB47	AP6	DDR1_DQ[47]DDR1_DQ[31]	DDR1_MA[15]DDR1_CAA[8]DDR1_ACT#	AU28		M_-ACT_B 9
MDB48	AM10	DDR1_DQ[48]				
MDB49	AL10	DDR1_DQ[49]	DDR1_PAR	AL20		M_DDR_PARB 9
MDB50	AM7	DDR1_DQ[50]	DDR1_ALERT#	AY25		M_-ALERT_B 9
MDB51	AL7	DDR1_DQ[51]				
MDB52	AM9	DDR1_DQ[52]				
MDB53	AL9	DDR1_DQ[53]	DDR1_DQSN[0]DDR0_DQSN[2]	AF34	M_DQSB0	
MDB54	AM6	DDR1_DQ[54]	DDR1_DQSN[1]DDR0_DQSN[3]	AK33	M_DQSB1	
MDB55	AL6	DDR1_DQ[55]	DDR1_DQSN[2]DDR0_DQSN[6]	AN29	M_DQSB2	
MDB56	AJ6	DDR1_DQ[56]	DDR1_DQSN[3]DDR0_DQSN[7]	AN33	M_DQSB3	
MDB57	AJ7	DDR1_DQ[57]	DDR1_DQSN[4]DDR1_DQSN[2]	AN13	M_DQSB4	
MDB58	AE6	DDR1_DQ[58]	DDR1_DQSN[5]DDR1_DQSN[3]	AR8	M_DQSB5	
MDB59	AE7	DDR1_DQ[59]	DDR1_DQSN[6]DDR1_DQSN[4]	AM8	M_DQSB6	
MDB60	AH7	DDR1_DQ[60]	DDR1_DQSN[7]	AG6	M_DQSB7	
MDB61	AH6	DDR1_DQ[61]				
MDB62	AE7	DDR1_DQ[62]	DDR1_DQSP[0]DDR0_DQSP[2]	AF35	M_DQSB0	
MDB63	AE6	DDR1_DQ[63]	DDR1_DQSP[1]DDR0_DQSP[3]	AL33	M_DQSB1	
			DDR1_DQSP[2]DDR0_DQSP[6]	AP33	M_DQSB2	
			DDR1_DQSP[3]DDR0_DQSP[7]	AN28	M_DQSB3	
			DDR1_DQSP[4]DDR1_DQSP[2]	AN12	M_DQSB4	
			DDR1_DQSP[5]DDR1_DQSP[3]	AP8	M_DQSB5	
			DDR1_DQSP[6]DDR1_DQSP[4]	AL8	M_DQSB6	
			DDR1_DQSP[7]	AG7	M_DQSB7	
			DDR1_DQSP[8]	AN25		
			DDR1_DQSN[8]	AN26		

DDR CHANNEL B

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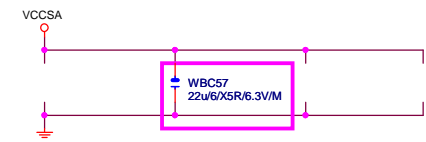
CPU-SK/1151/S/GF

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]

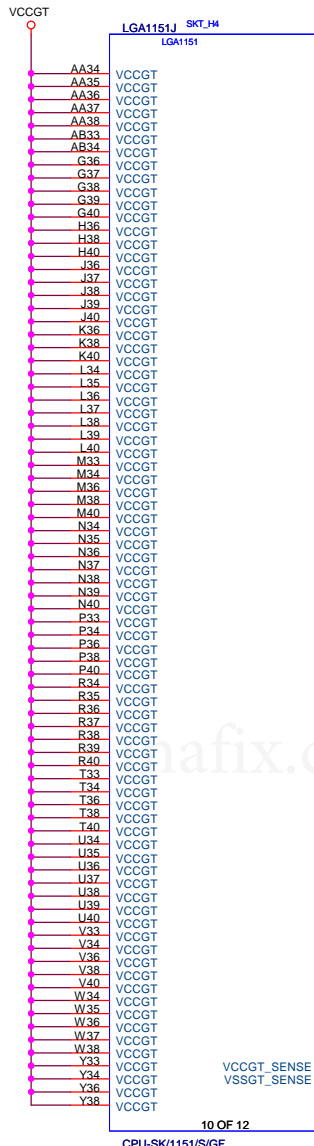
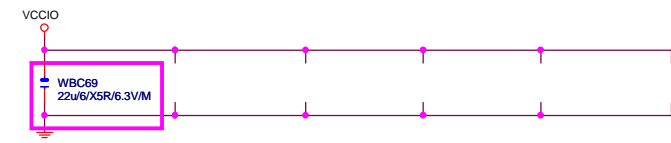
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Gigabyte Technology

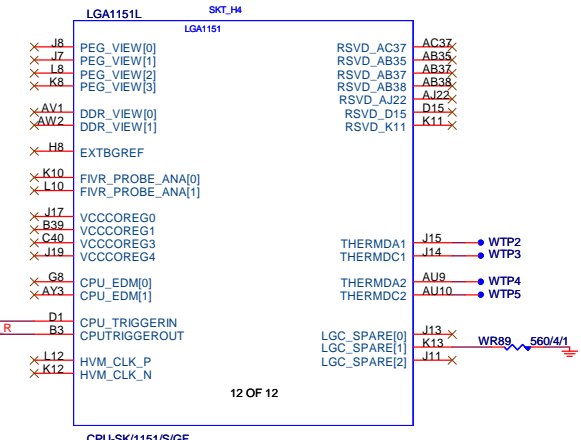
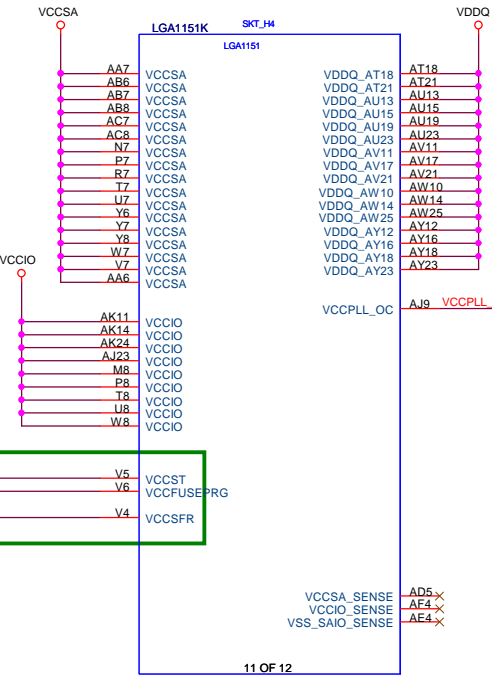
Title			Rev
CPU LGA1151-B			1.0
Size	Document Number		
Custom	H310M S2V		
Date:	Monday, June 11, 2018	Sheet	5 of 50

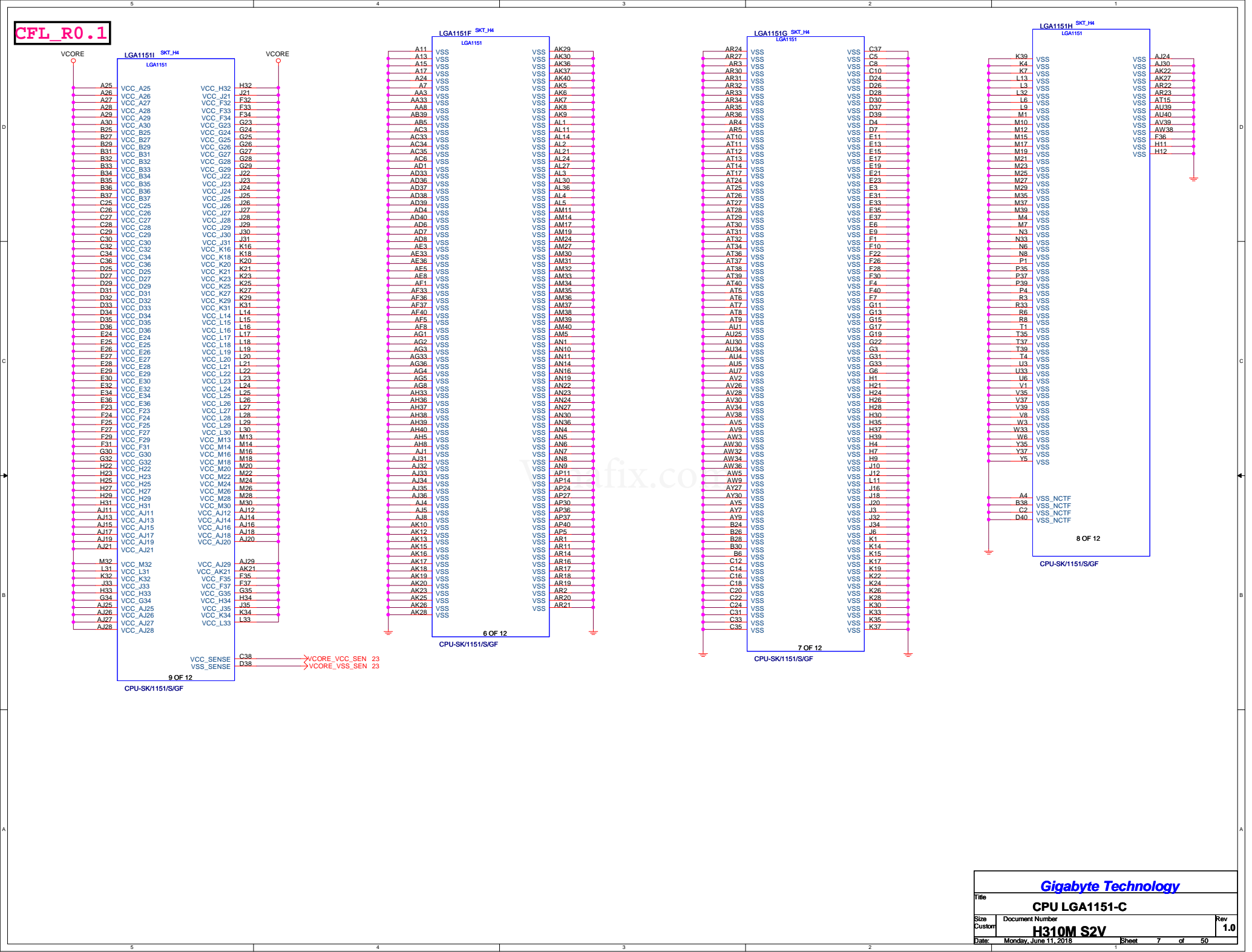


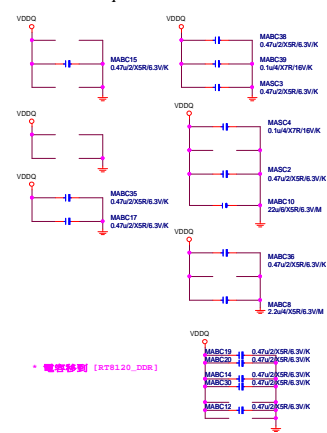
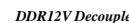
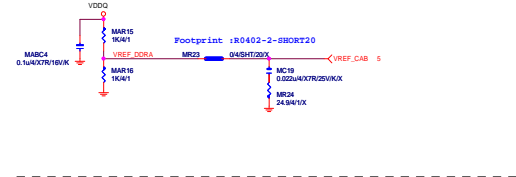
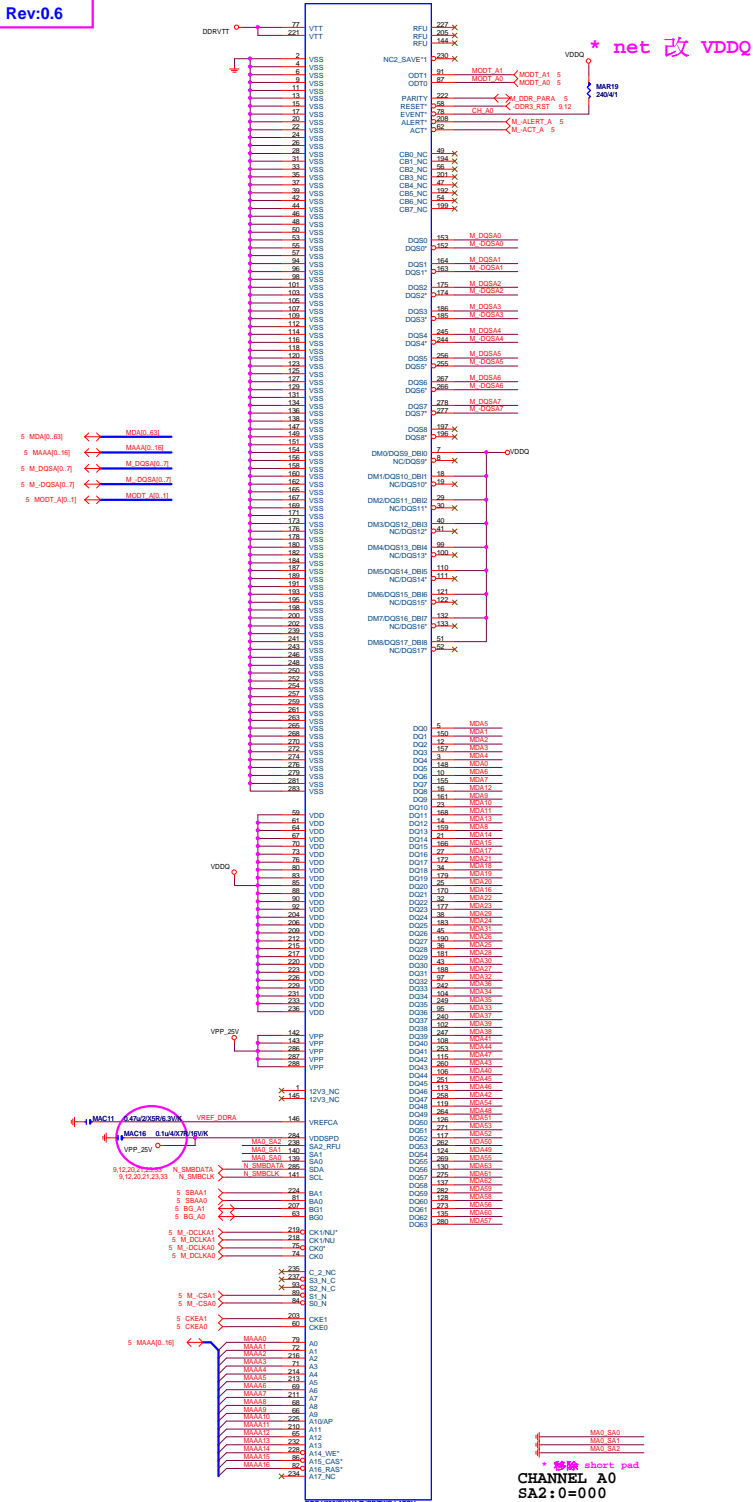
CPU POWER



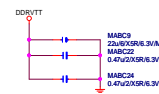
CPU POWER







\* 電容移到 [RT8120\_DDR

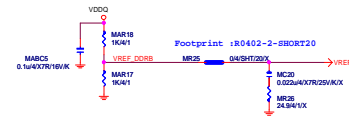
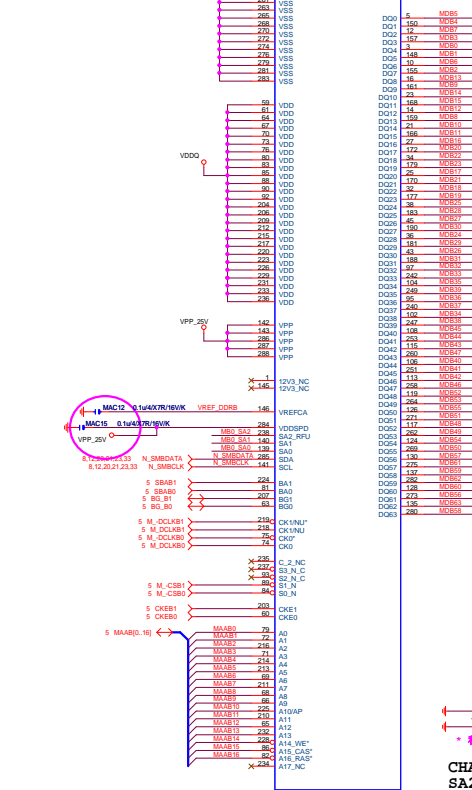


• 割電機

• 雷電空

• 雷電空

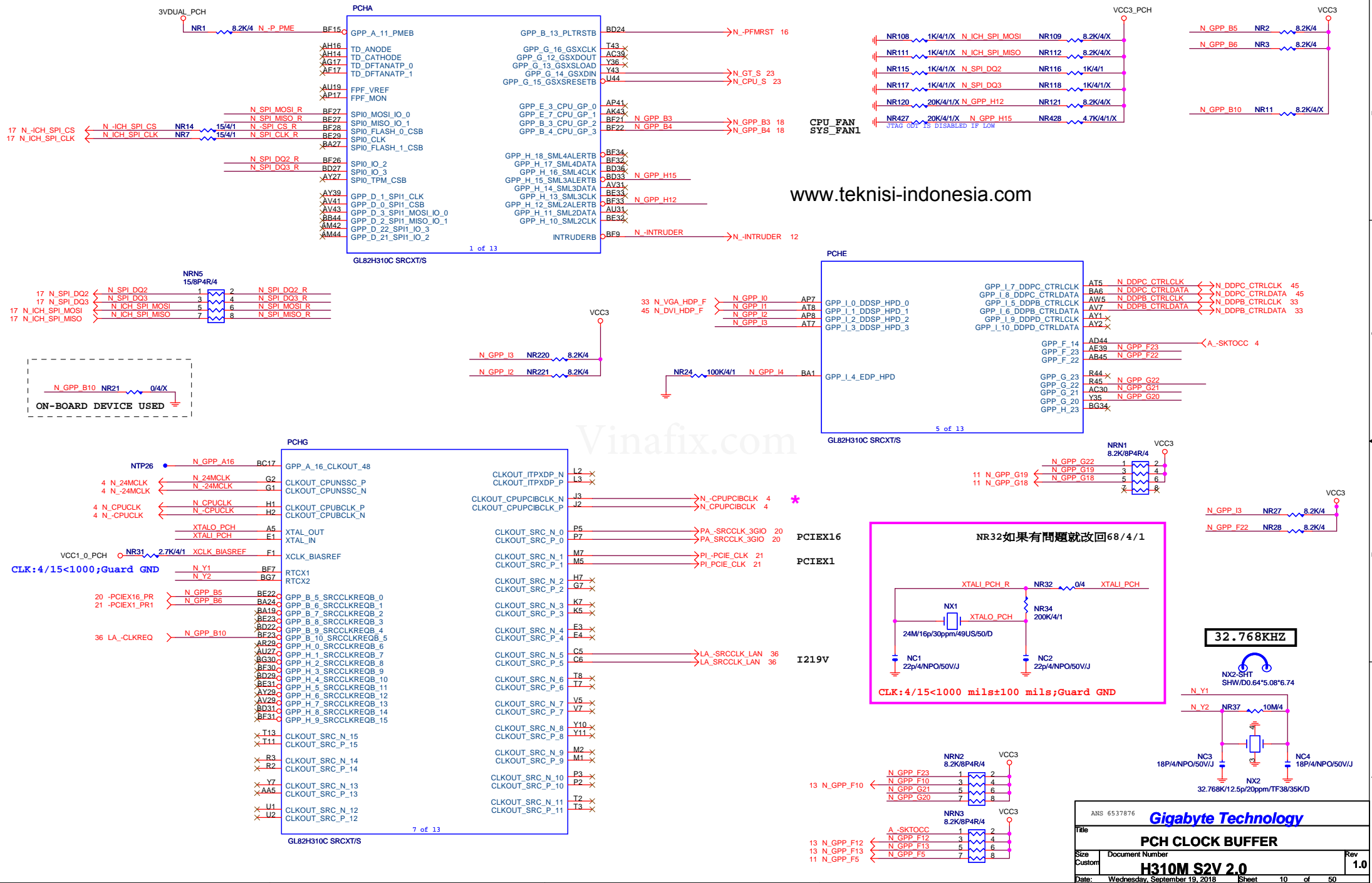




CHANNEL B0  
SA2:0=010

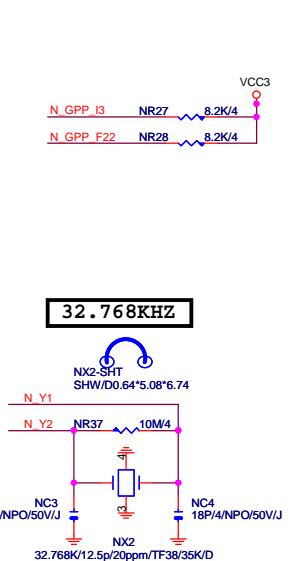
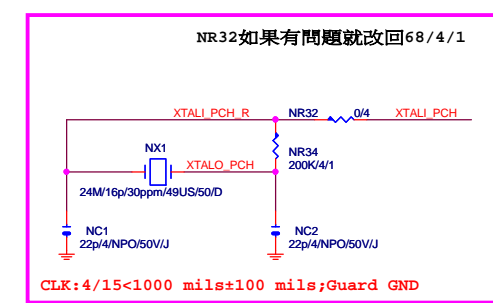
**Gigabyte Technology**

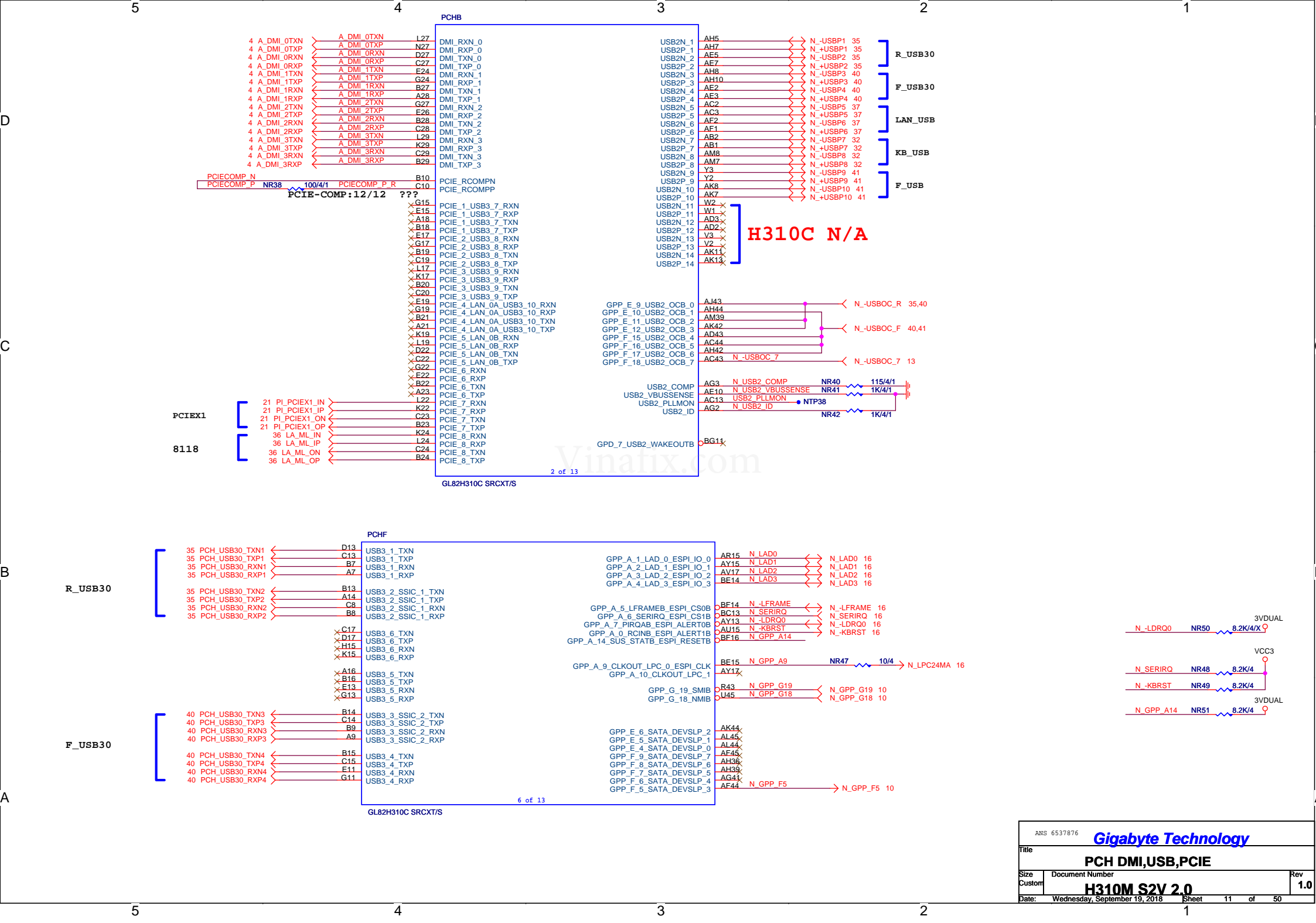
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Size	Document Number						Rev
Custom	H310M S2V						1
Date:		Sheet		9		of 50	

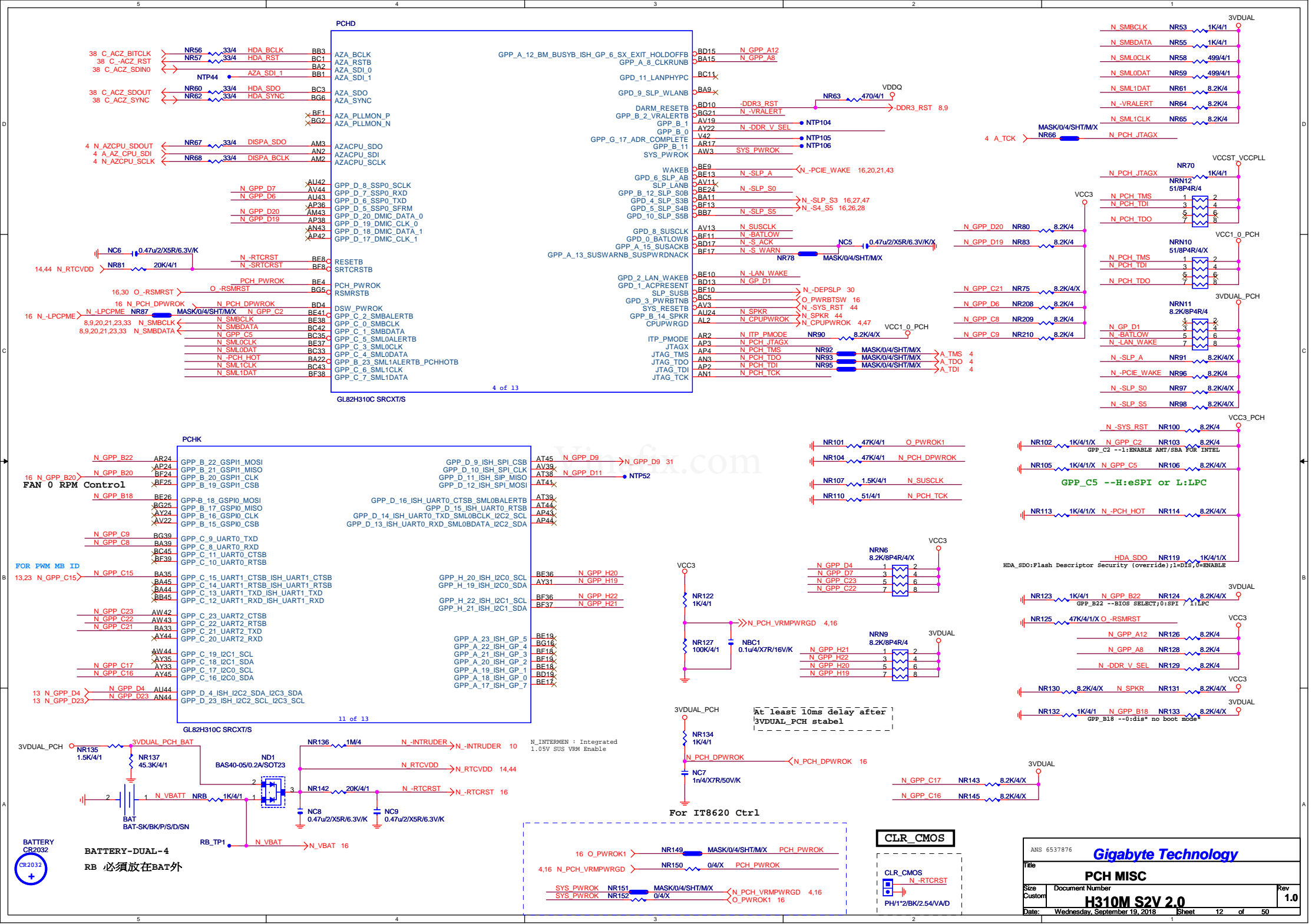


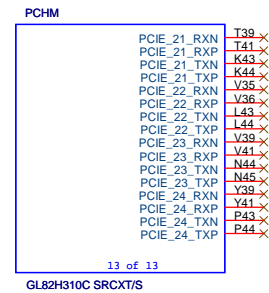
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Vinafix.com







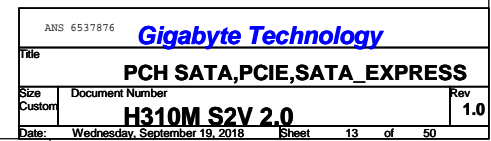


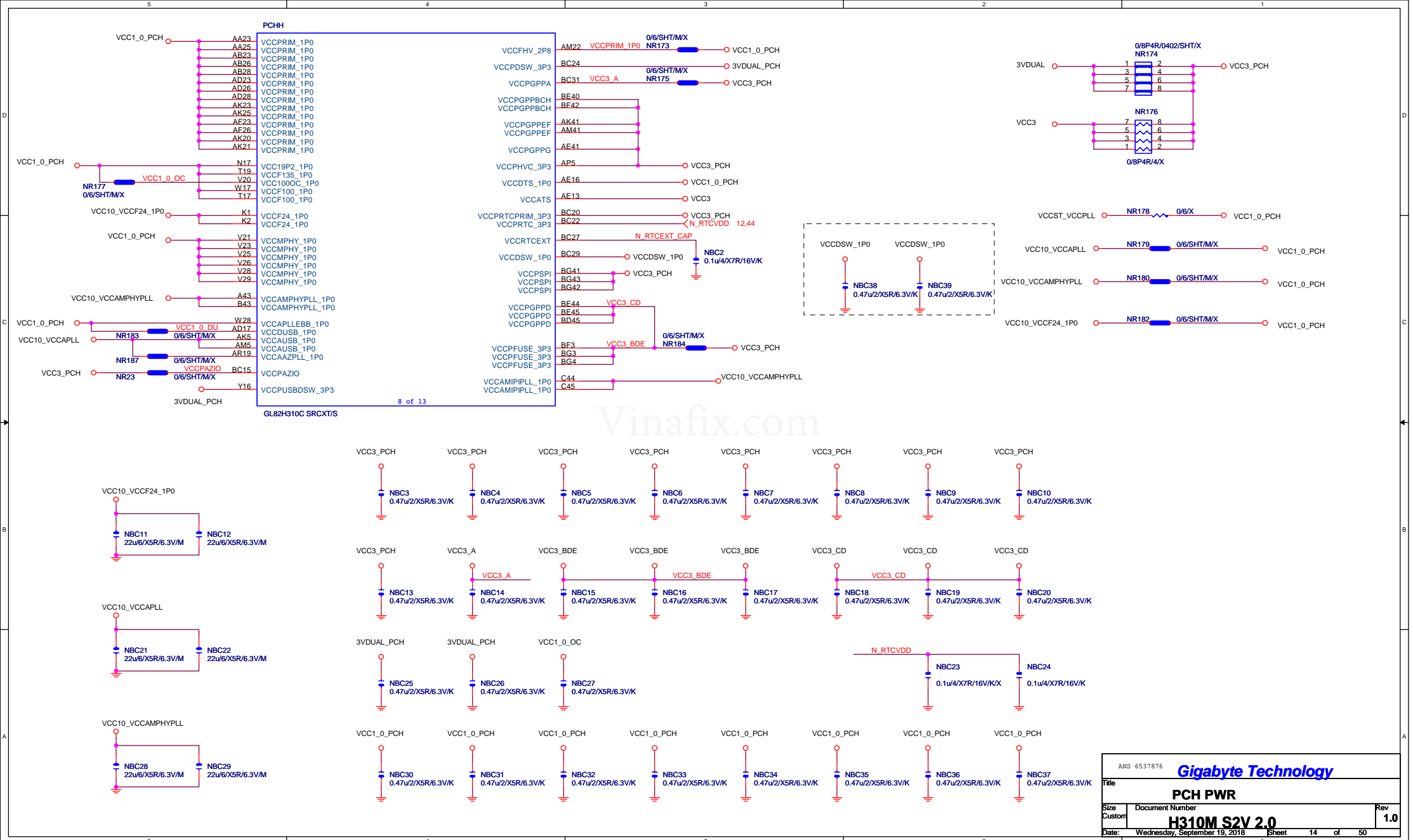
The diagrams show the following connections:

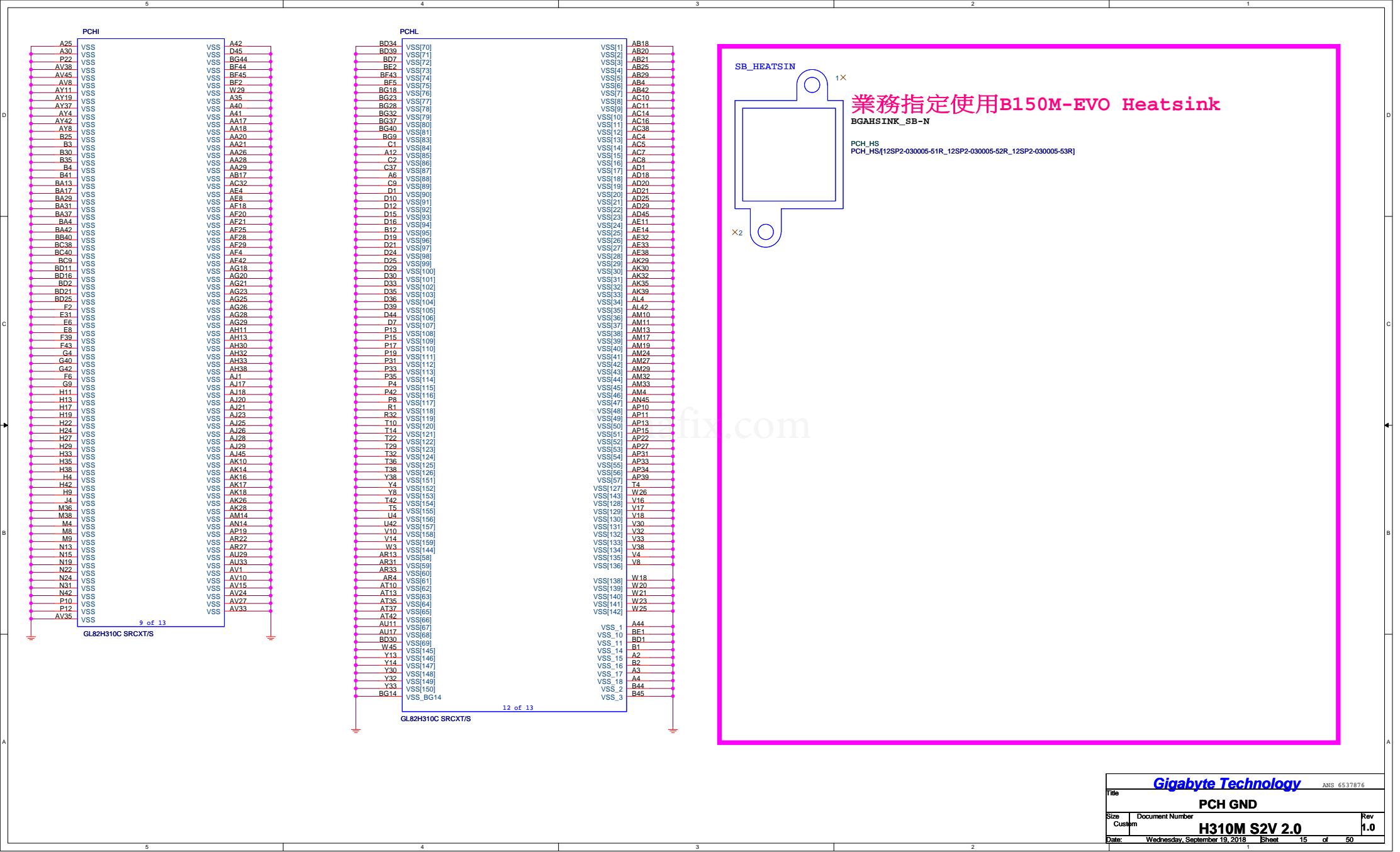
- NR7 (8.2K/8P4R/4):**
  - Pin 1: N\_GPP\_C15
  - Pin 2: 3VDUAL
  - Pin 3: N\_GPP\_D4
  - Pin 4: N\_GPP\_E1
  - Pin 5: N\_GPP\_E0
  - Pin 6: (unconnected)
  - Pin 7: (unconnected)
  - Pin 8: (unconnected)
- NR8 (8.2K/8P4R/4):**
  - Pin 1: N\_GPP\_E2
  - Pin 2: 3VDUAL
  - Pin 3: N\_GPP\_F2
  - Pin 4: N\_GPP\_F0
  - Pin 5: N\_GPP\_F1
  - Pin 6: (unconnected)
  - Pin 7: (unconnected)
  - Pin 8: (unconnected)
- NR4 (8.2K/8P4R/4):**
  - Pin 1: N\_GPP\_F3
  - Pin 2: 3VDUAL
  - Pin 3: N\_GPP\_F4
  - Pin 4: N\_USBOC\_7
  - Pin 5: N\_USBOC\_7
  - Pin 6: (unconnected)
  - Pin 7: (unconnected)
  - Pin 8: (unconnected)

Additional components and connections shown in the diagrams include:

- NR158 (8.2K/4):** Connected between N\_GPP\_F11 and VCC3.
- NR168 (8.2K/4):** Connected between N\_GPP\_D23 and N\_GPP\_G6.
- NR99 (8.2K/4):** Connected between N\_GPP\_G6 and ground.



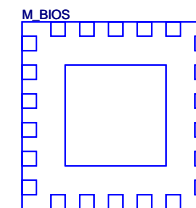
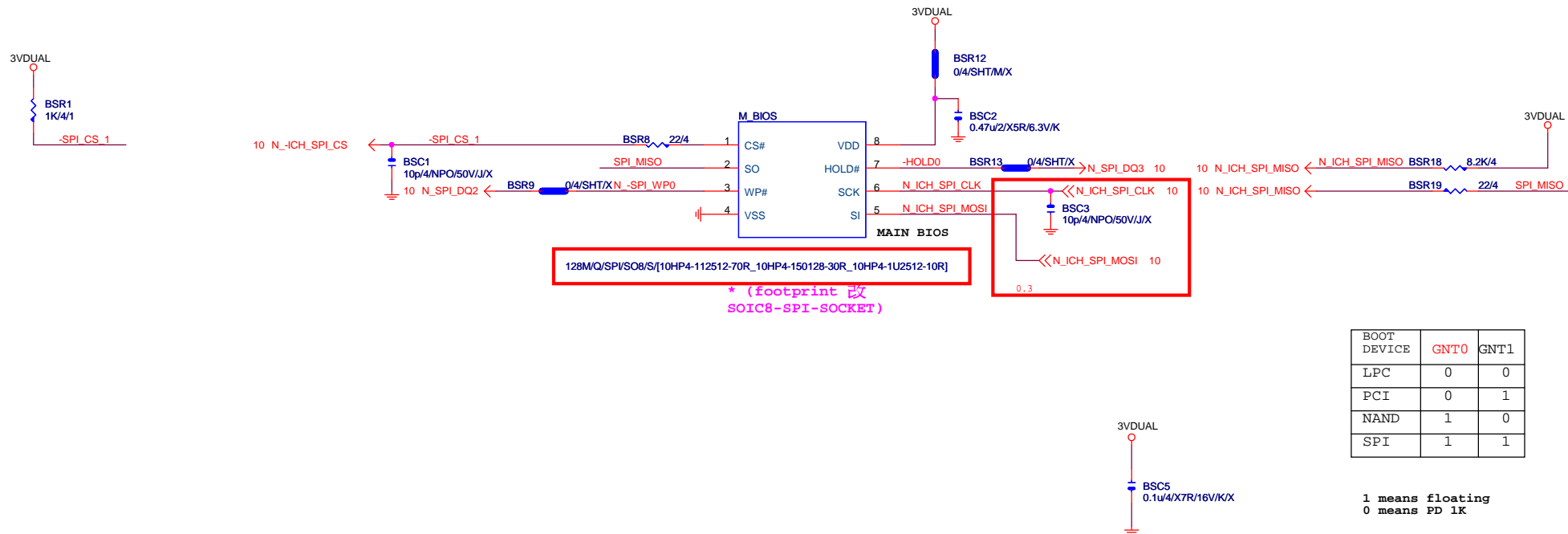










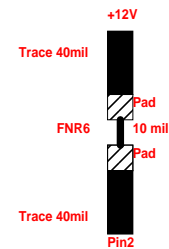


LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]/X

\* 試産先上 , PVT 移除

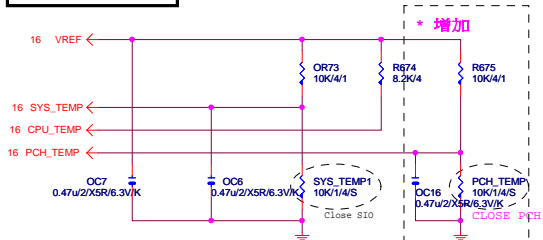
Gigabyte Technology

Title			
BIOS			
Size	Document Number	Rev	
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Date:	Thursday, July 19, 2018	Sheet	17 of 50

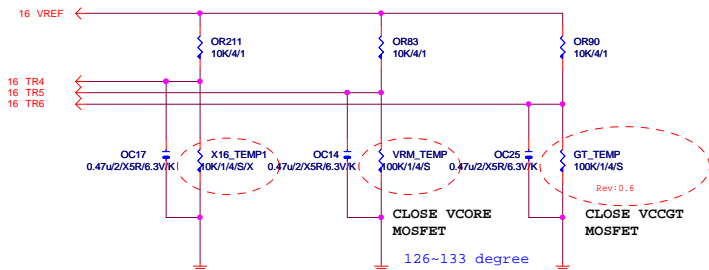
**Rev: 0.8**[illegible]

Vinafix.com

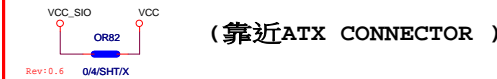
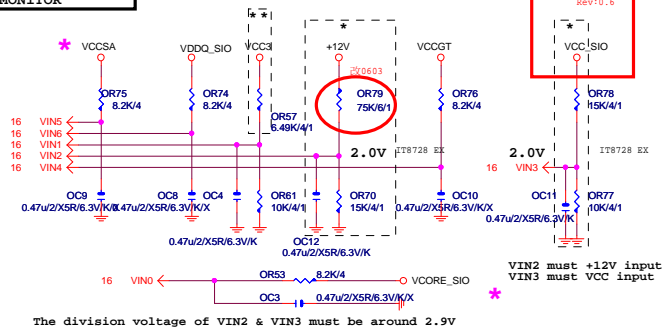
# TEMP H/W MONITOR



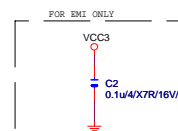
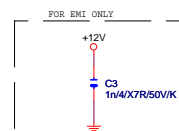
## 低階機種: 3個FAN時使用



# VOLTAGE-- H/W MONITOR



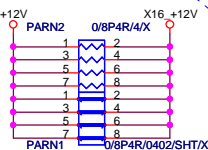
(靠近ATX CONNECTOR)



★Update 2015-04.24

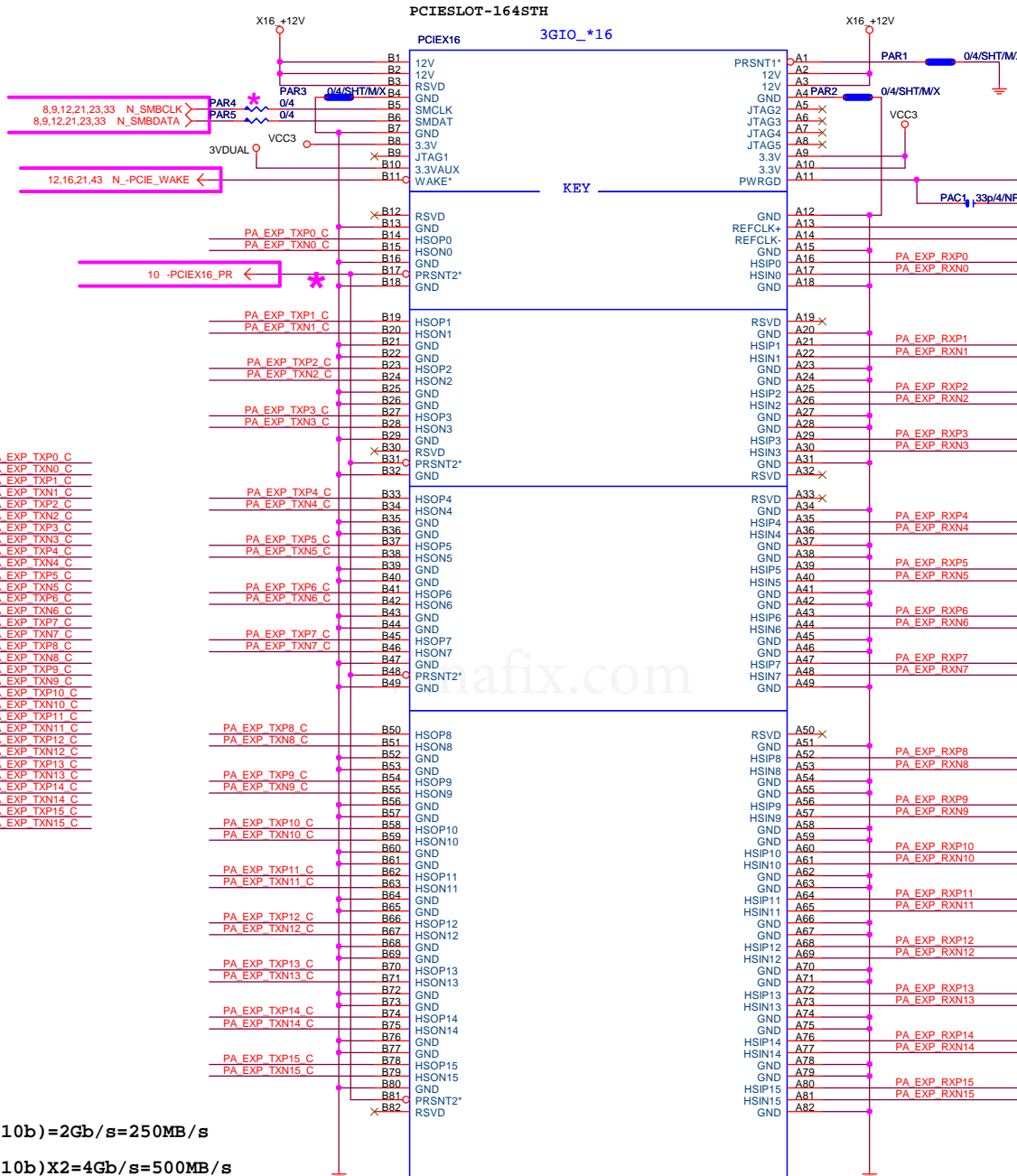
Gigabyte Technology

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Size	Document Number	H310M S2V	
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+12V protect  
short-wire test

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	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8_C
PA_EXP_TXN8	PAC21	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



PCI-E/16x-164P/GY/Long Double/HK\*2

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--&gt; 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

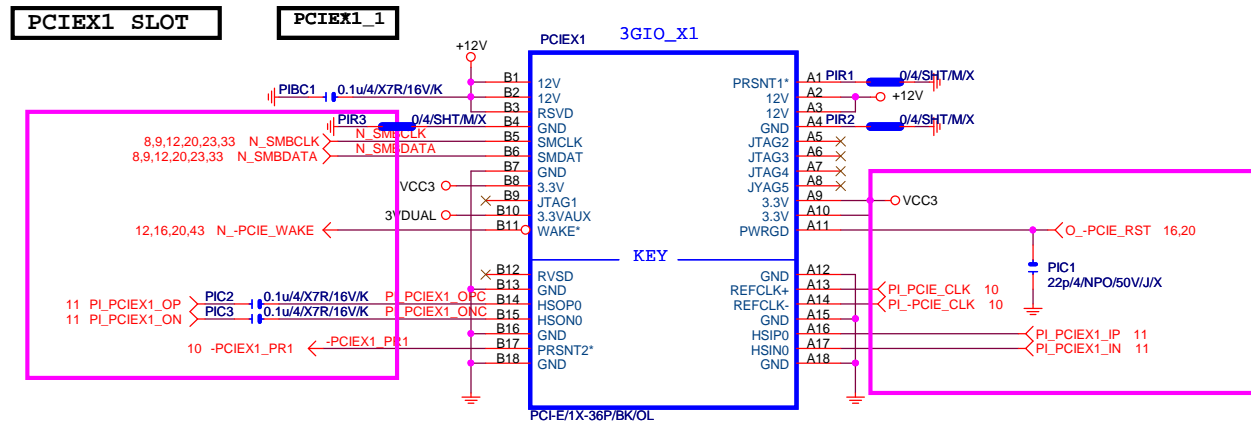
PCE-E X16(單向) BANDWITH=2.5GHz\*(8b/10b)X16=32Gb/s=4GB/s

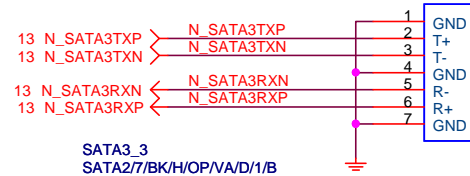
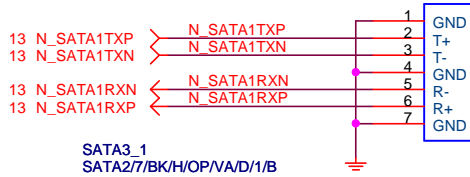
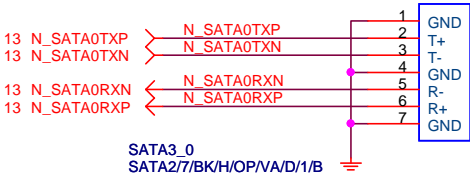
PCE-E X16(雙向) BANDWITH=2.5GHz\*(8b/10b)X16X2=64Gb/s=8GB/s

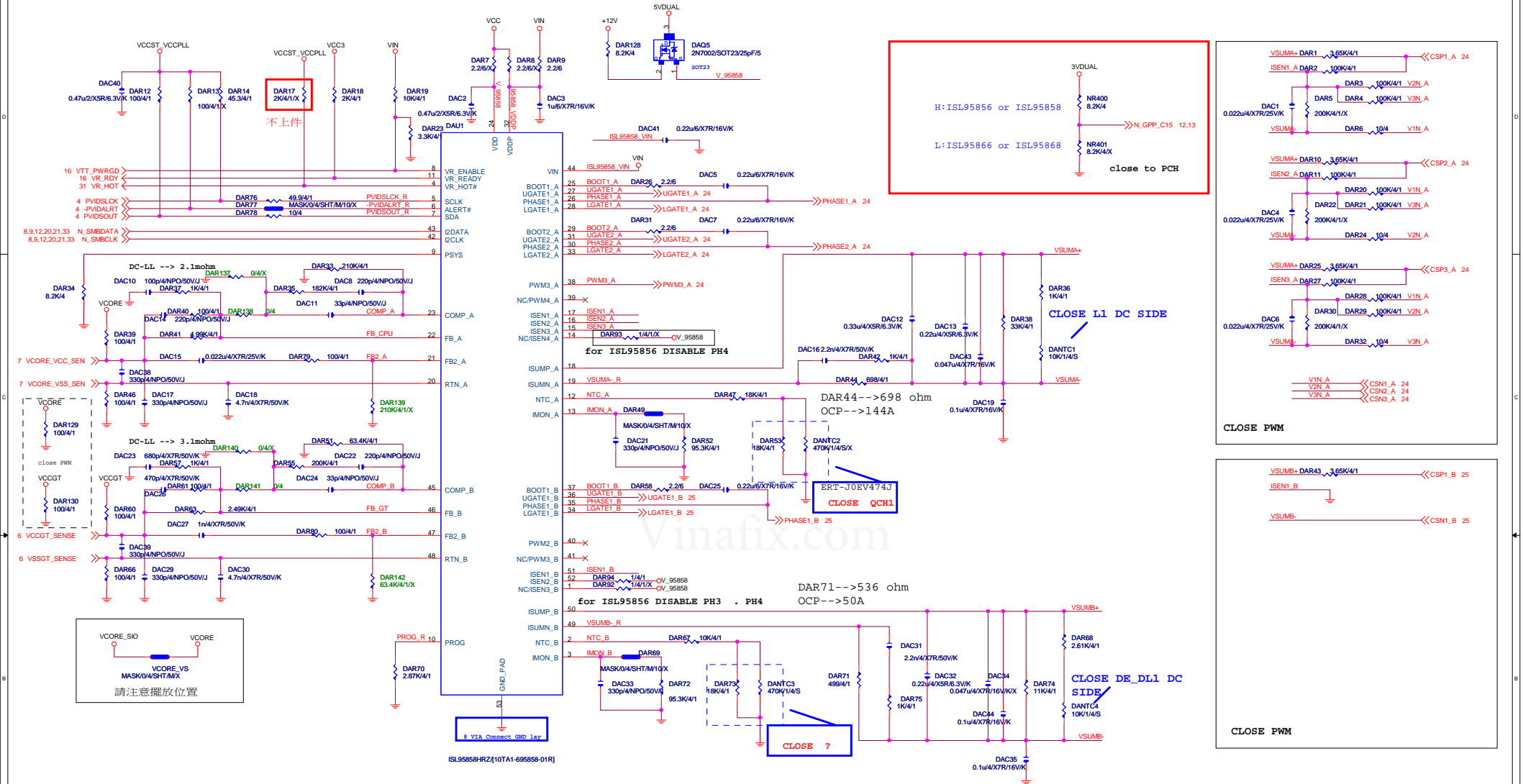
PCI-E REV:2.0--&gt; 5GHZ

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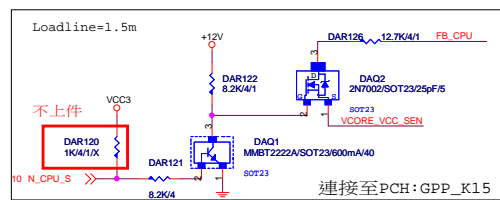
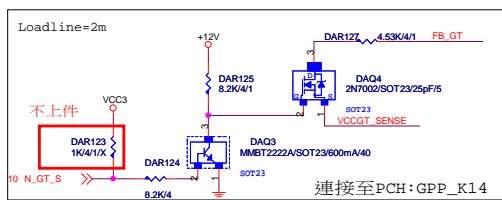
PCI EXPRESS \* 16



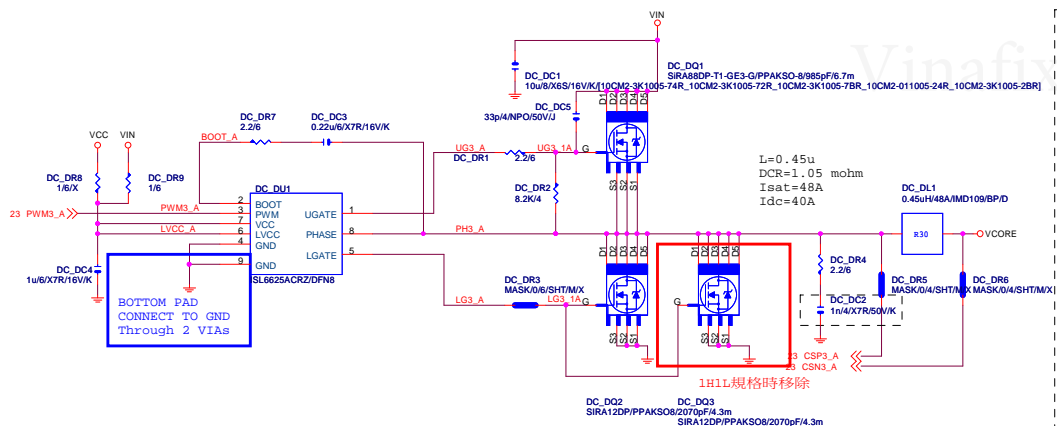
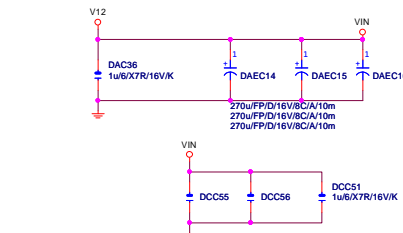
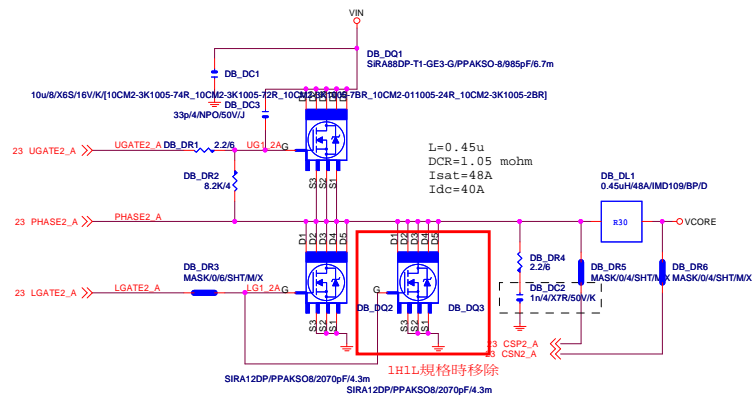




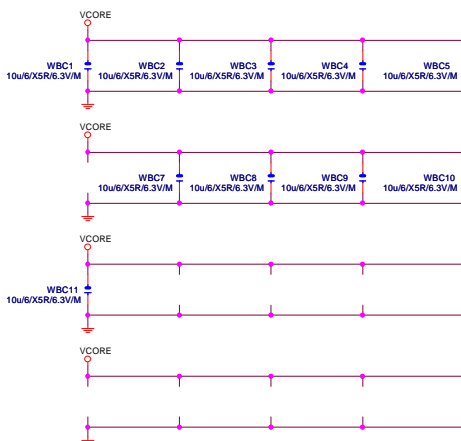
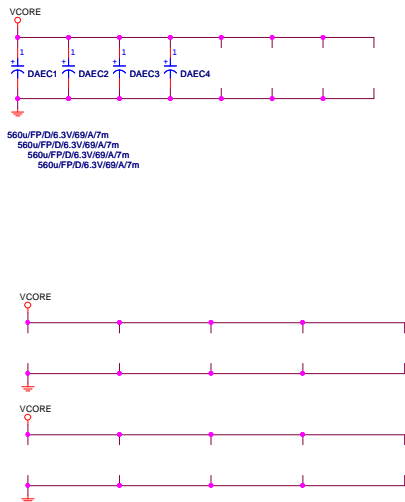
<b>VSCORE</b>	ISL95858	ISL95868		<b>VCCGT</b>	ISL95858	ISL95868
DAR137	X	V		DAR140	X	V
DAR138	V	X		DAR141	V	X
DAR139	X	V		DAR142	X	V
DAC15	V	X		DAC27	V	X
DAR79	V	X		DAR80	V	X
DAR33	V	X		DAR51	V	X



VCORE

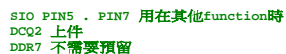
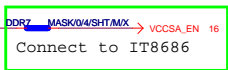


VCORE	CAP	560u*4PCS
		10u*10PCS

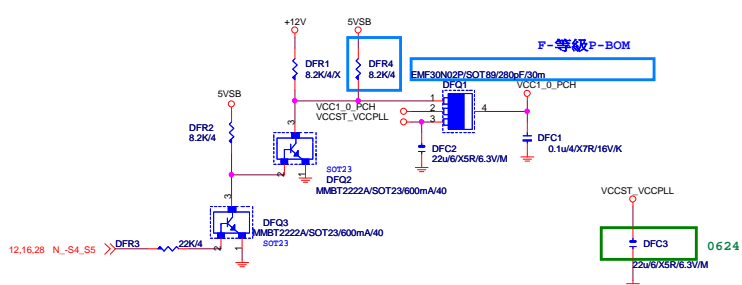
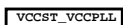
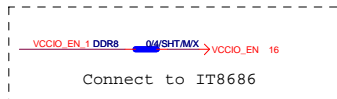




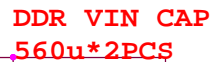




SIO PIN5 . PIN7接VDDQ . VCCIO時  
DCQ2 不上件  
DDR7 上件



## DDR4



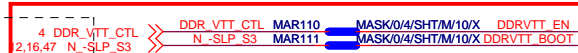
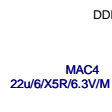
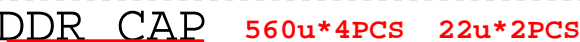
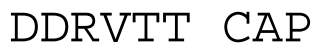
SUPPORT DDR4 1.2V

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



Title **RT8237 DDR4 POWER**

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VPP\_25V

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

Title			
RT8068A_VPP25 POWER			
Size	Document Number	Rev	
Custom	H310M S2V	1.0	
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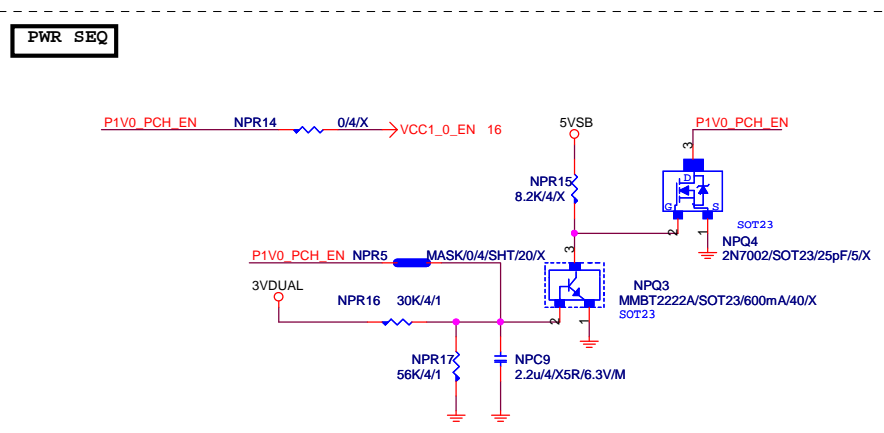
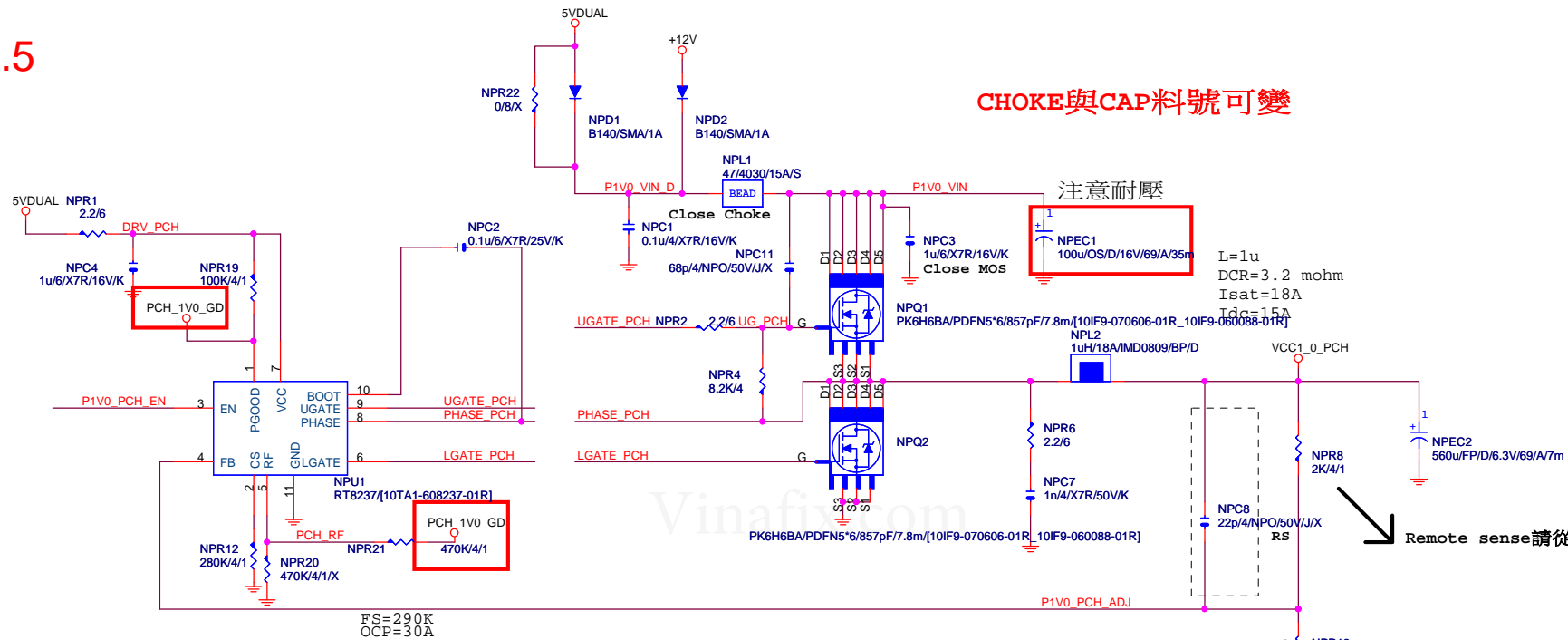
REV:0.5

CHOKE與CAP料號可變

注意耐壓

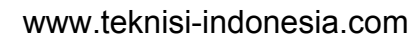
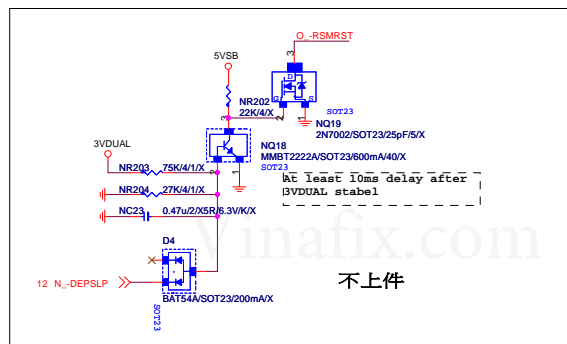
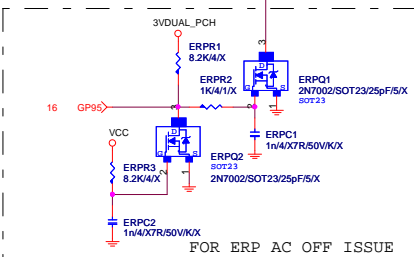
Remote sense請從最重的負載端點拉回

請放置CHOKE一出來的地方

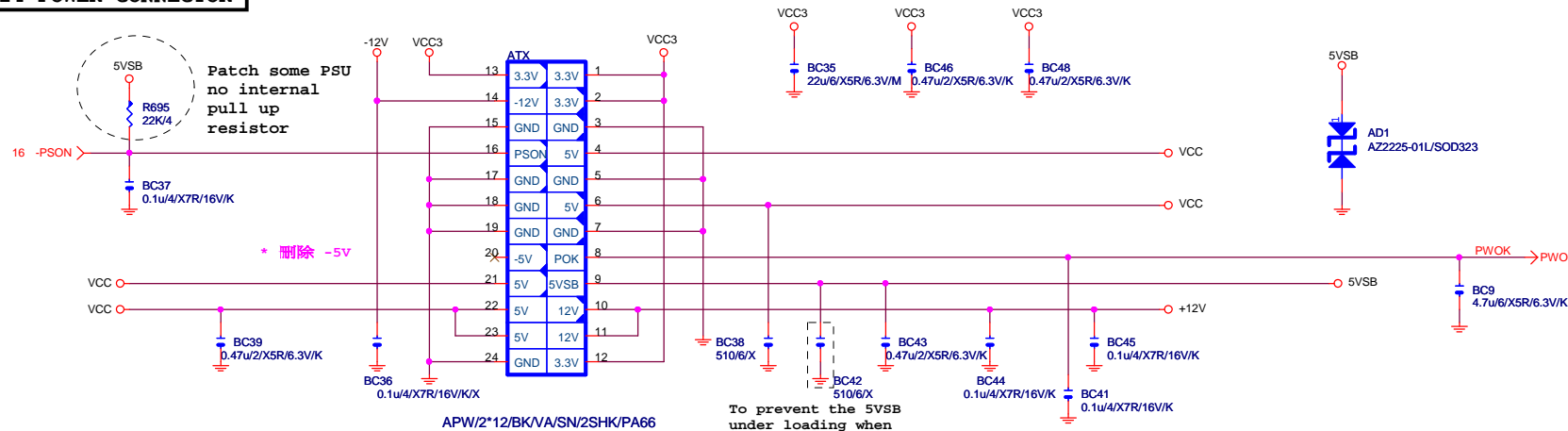


GIGABYTE™			
Title RT8237_PCH POWER			
Size Custom	Document Number H310M S2V		Rev 1.0
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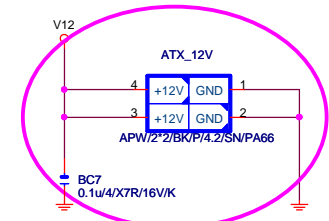
```
* update 5Vdual circuit
, from SKL 0.2B
```



## ATXX24 POWER CONNECTOR

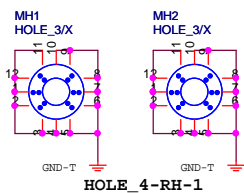


## ATXX4 POWER CONNECTOR

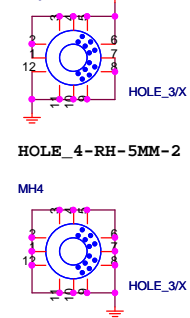


## 螺絲孔

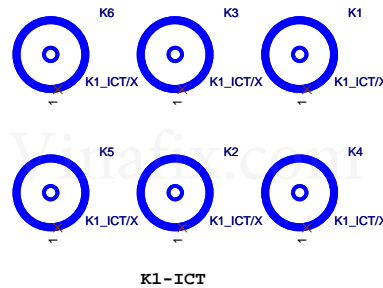
MH1:GND-T  
FOR EMI  
TEST驗證



14/12/24  
Modify for EMI  
MH3



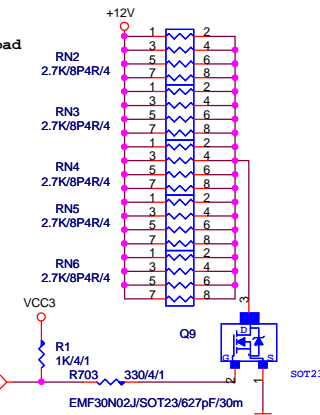
## 固定孔/光學點



To prevent the 5VSB under loading when boot

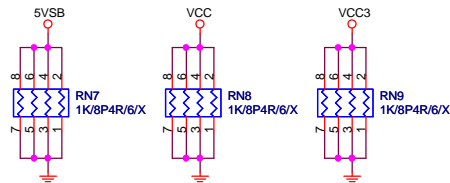
## +12V DUMMY LOAD

To fix 12V light load abnormal issue



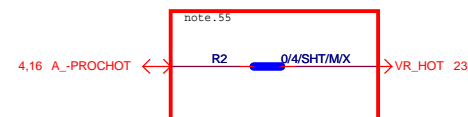
【技術通報R&D技術通報153】

## DUMMY LOAD

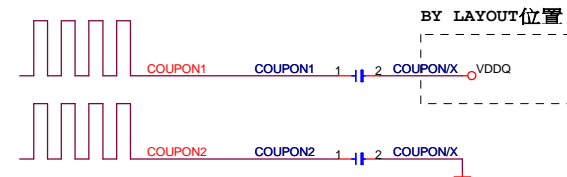


## -PROHOT

\* 保留 ?



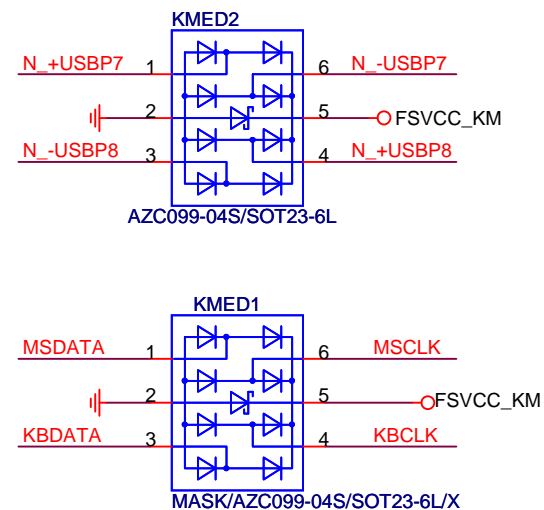
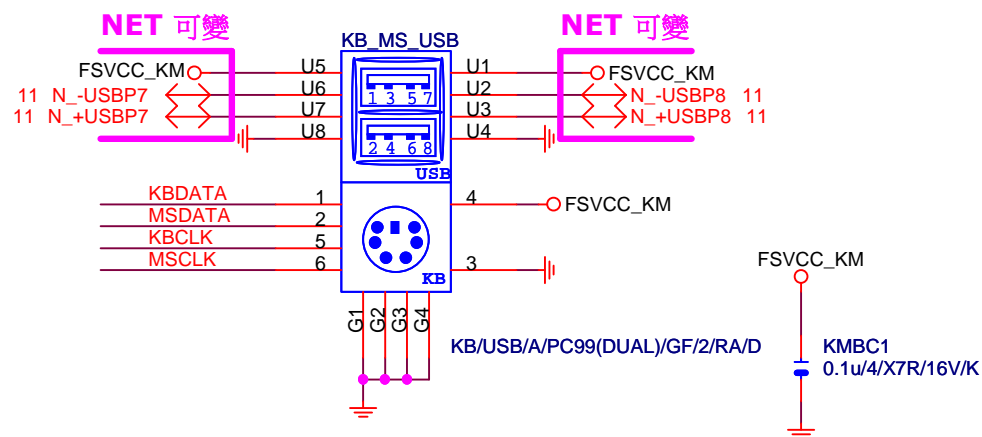
## COUPON



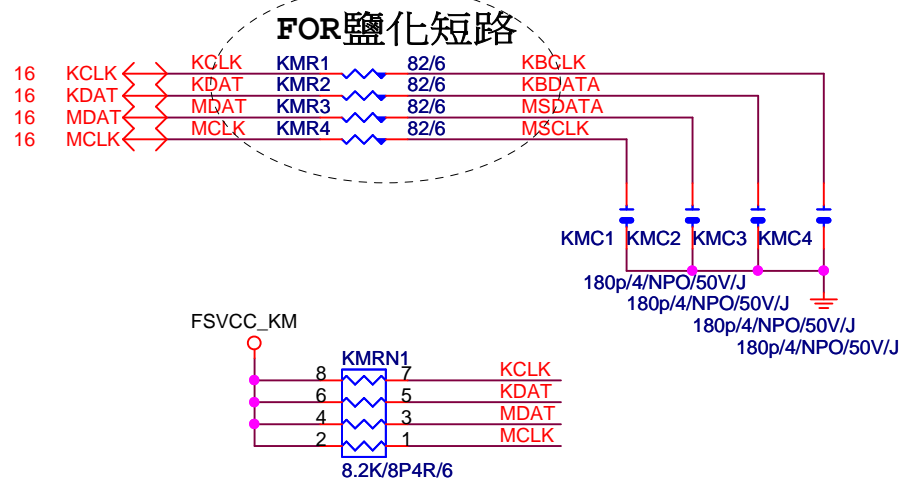
BY LAYOUT位置

Gigabyte Technology

Title		
ATX POWER CONNECTOR		
Size	Document Number	H310M S2V
Custom		Rev 1.0
Date:	Monday, June 11, 2018	Sheet 31 of 50

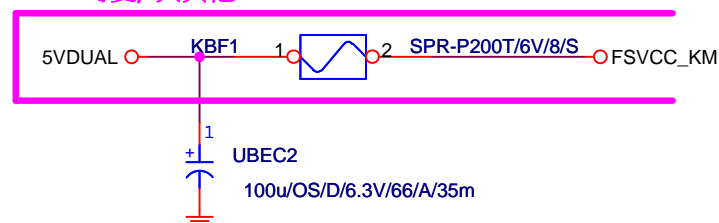


## KB\_MS\_USB DAMPING/PU



## KB\_MS\_USB PWR

## NET 可變, 與其他USB SHARE



## USB OC PROTECT

Gigabyte Technology

Title

KB\_MS\_USB

Size

Document Number

Rev

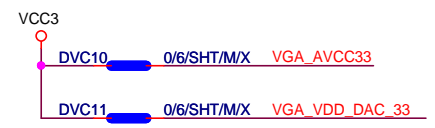
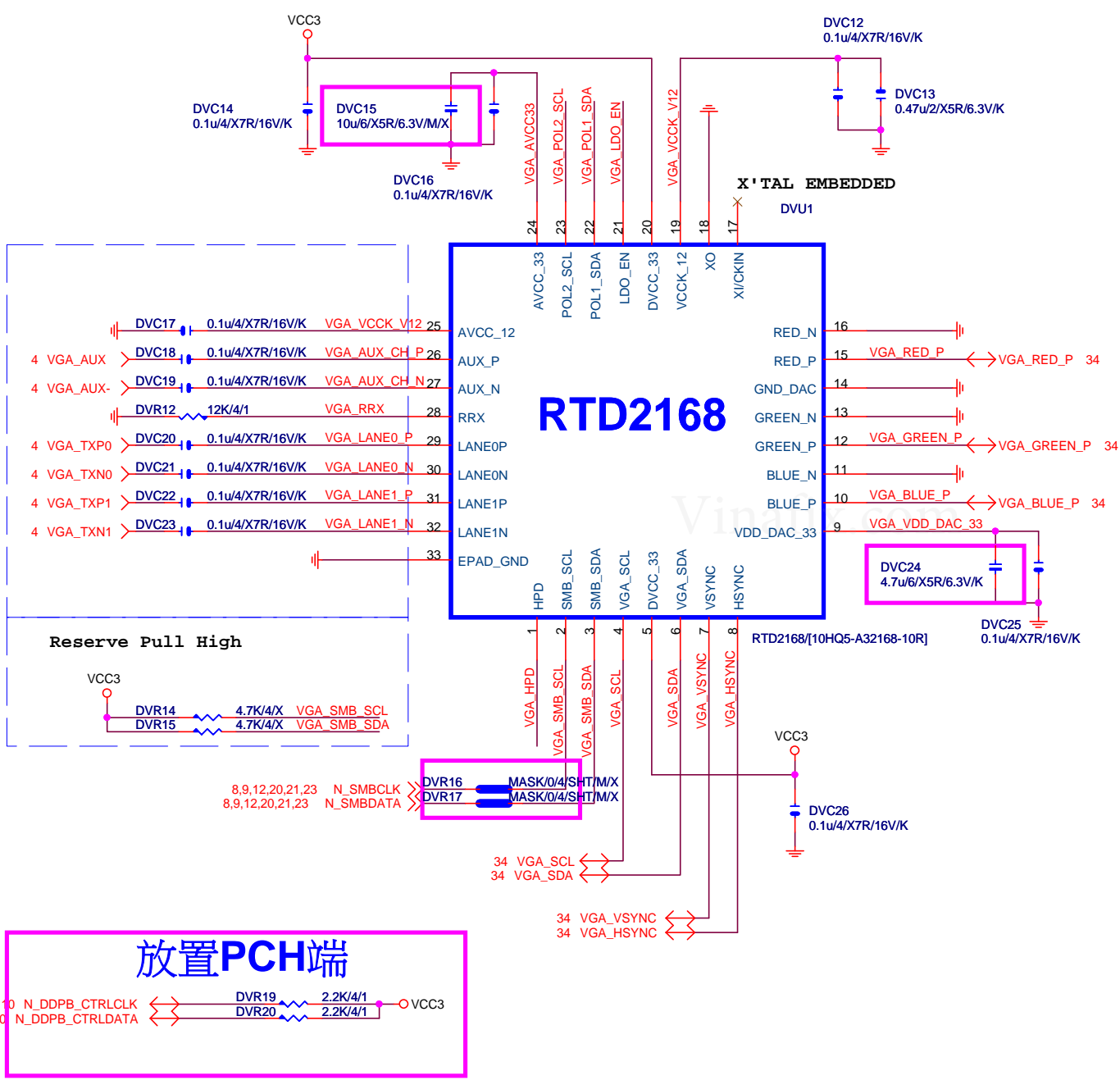
H310M S2V

1.0

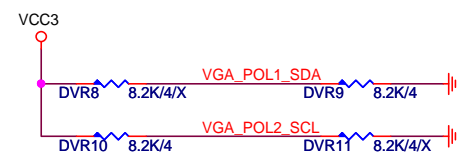
Date: Friday, July 20, 2018

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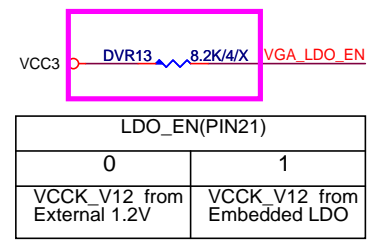


Power on latch

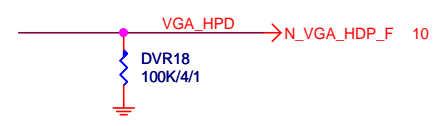


		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

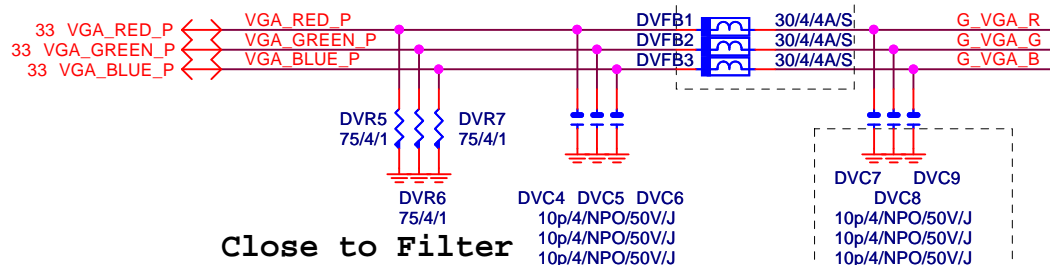
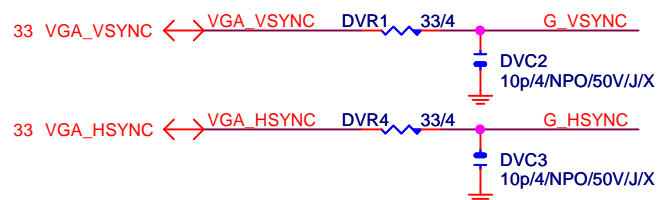
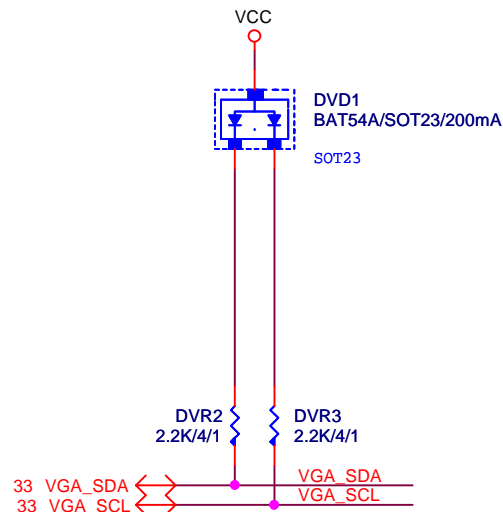
Embedded LDO



DP HPD



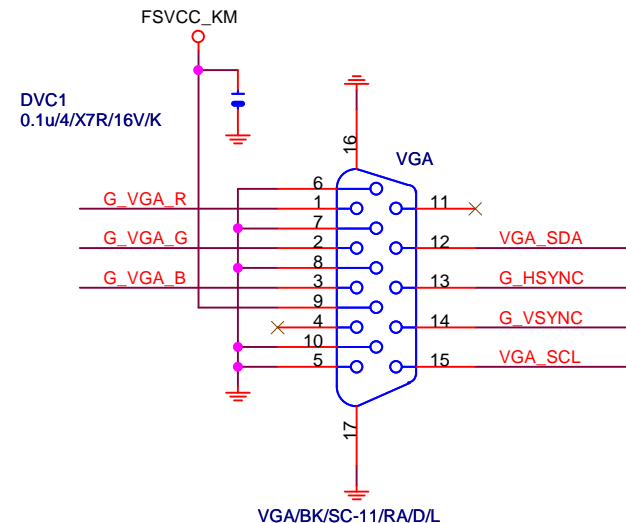
# VGA SIGNAL R2.0



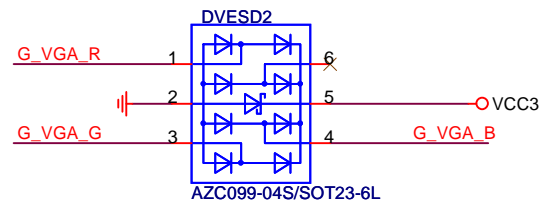
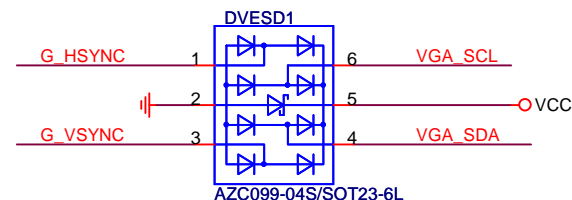
Close to Filter

FOR EMI

# VGA CONN.



# VGA ESD



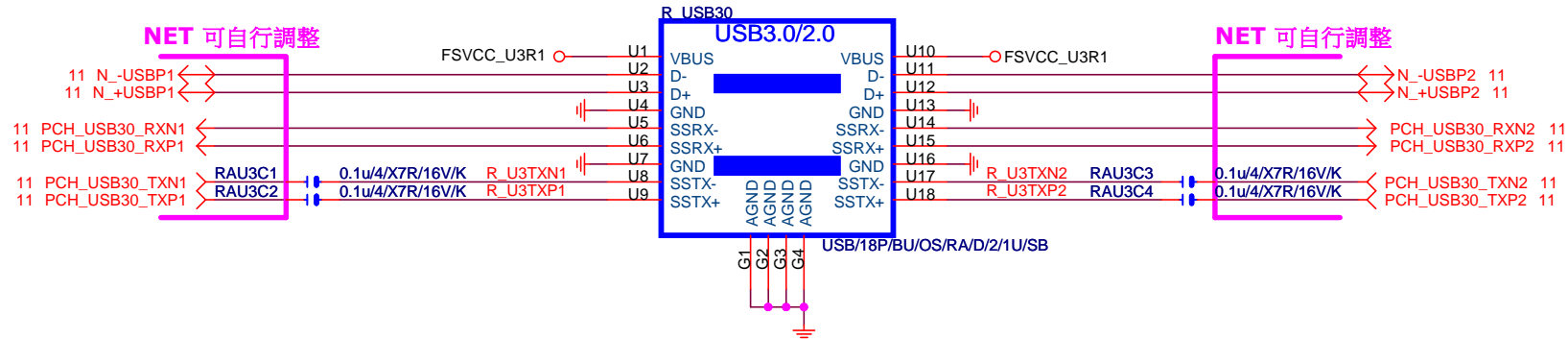
Gigabyte Technology

NXP-PTN3356

Title		
Size	Document Number	Rev
Custom	H310M S2V	1.0
Date:	Monday, June 11, 2018	Sheet 34 of 50

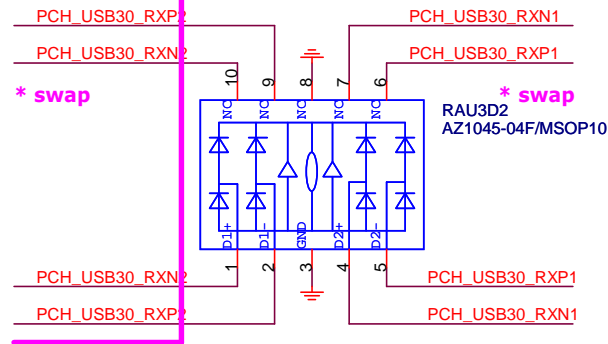
Rev: 0.7

ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可

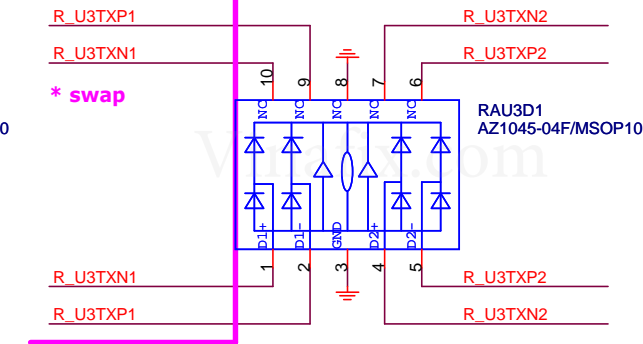


ESD

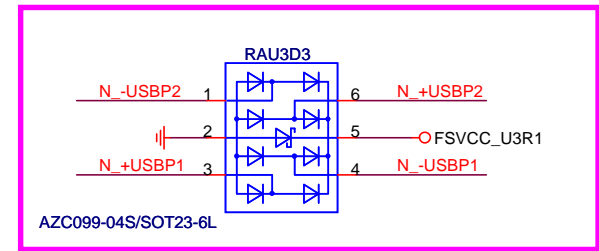
**NET 可自行調整**



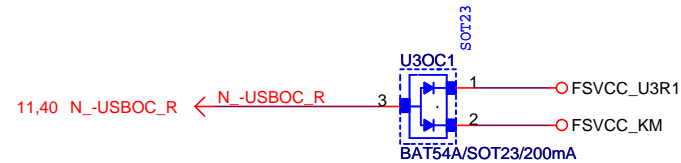
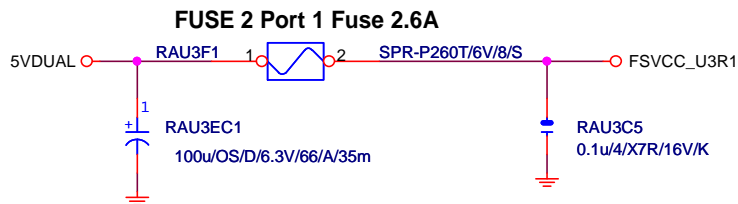
**NET 可自行調整**



**NET 可自行調整**



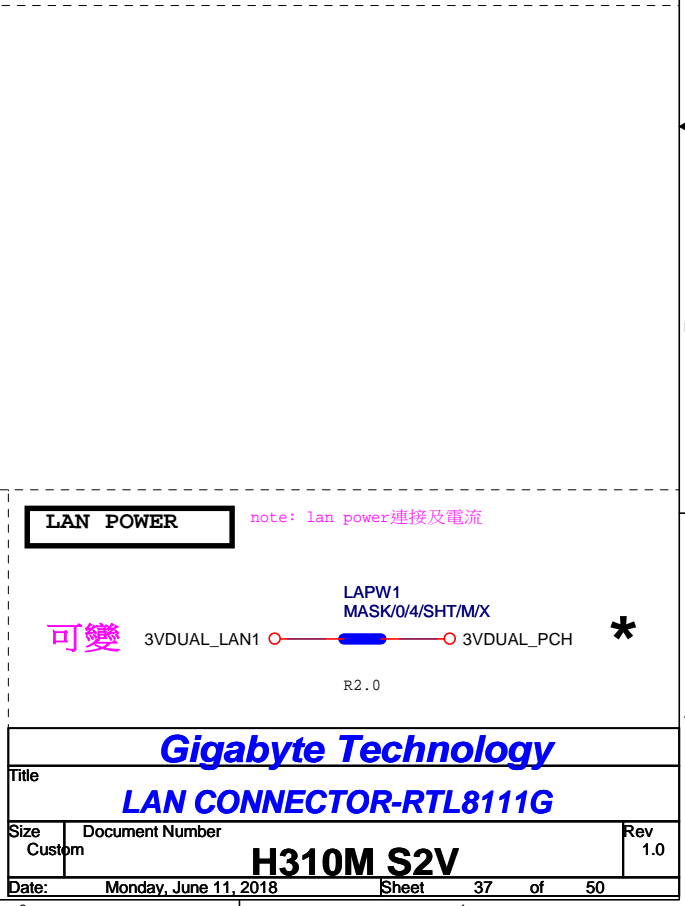
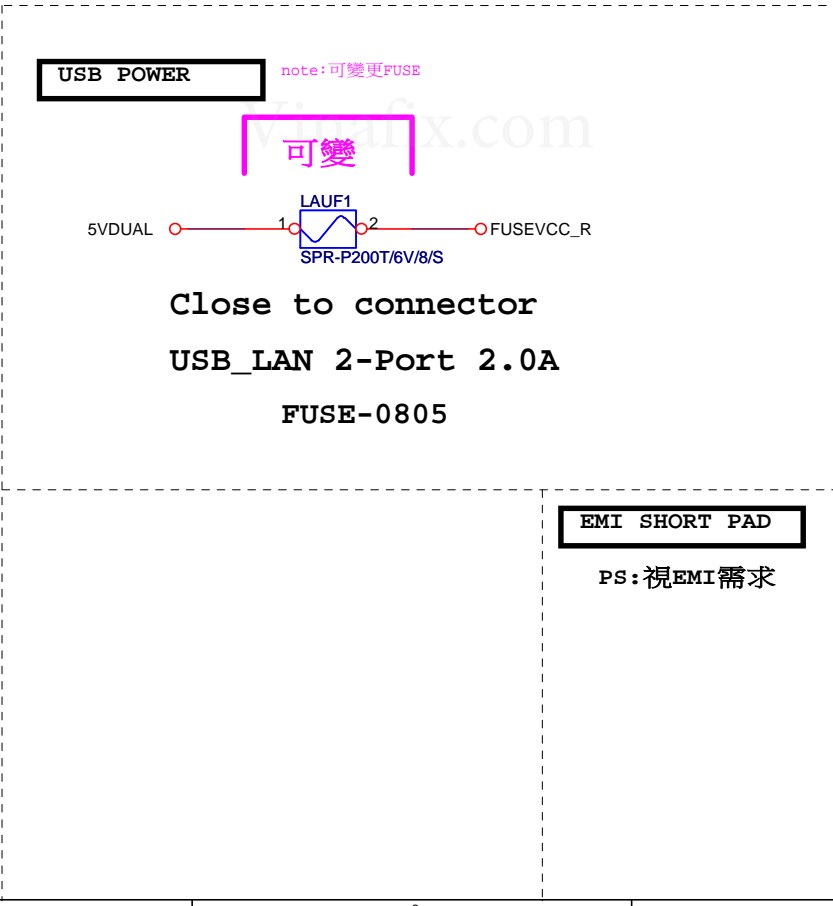
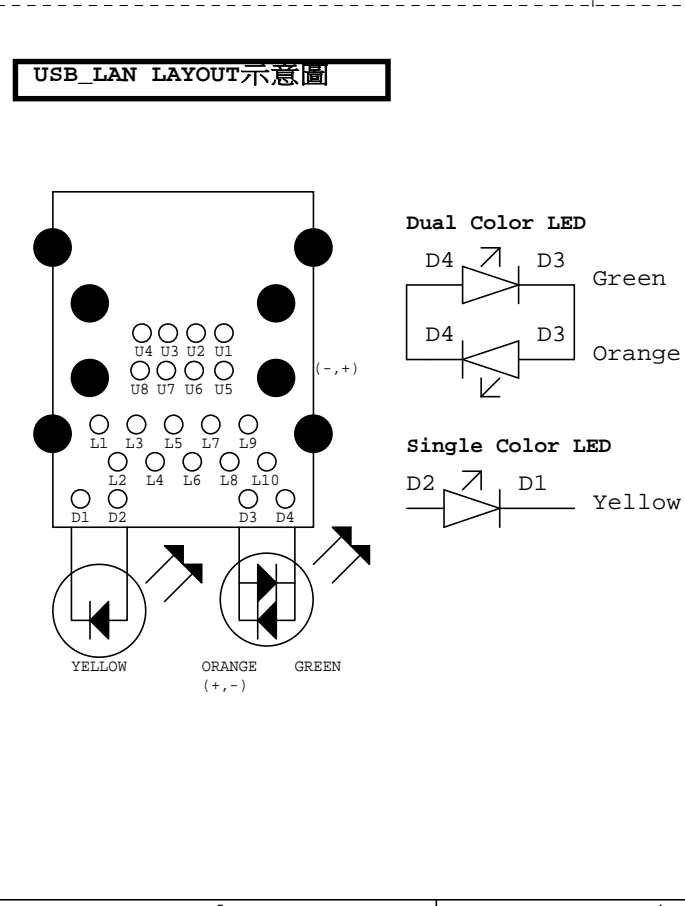
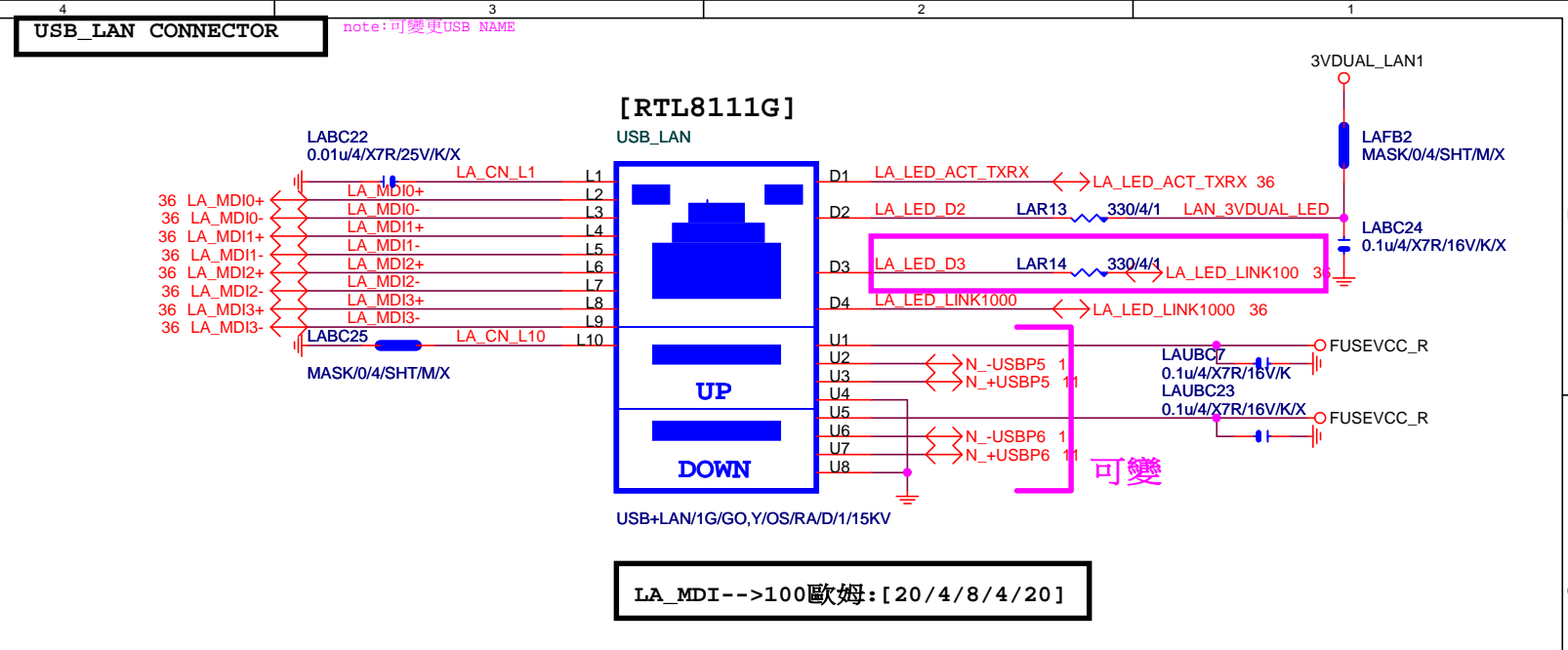
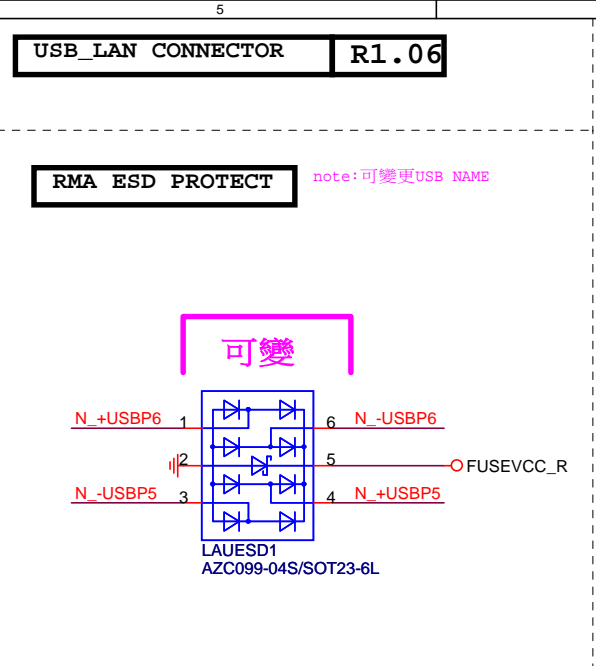
FUSE



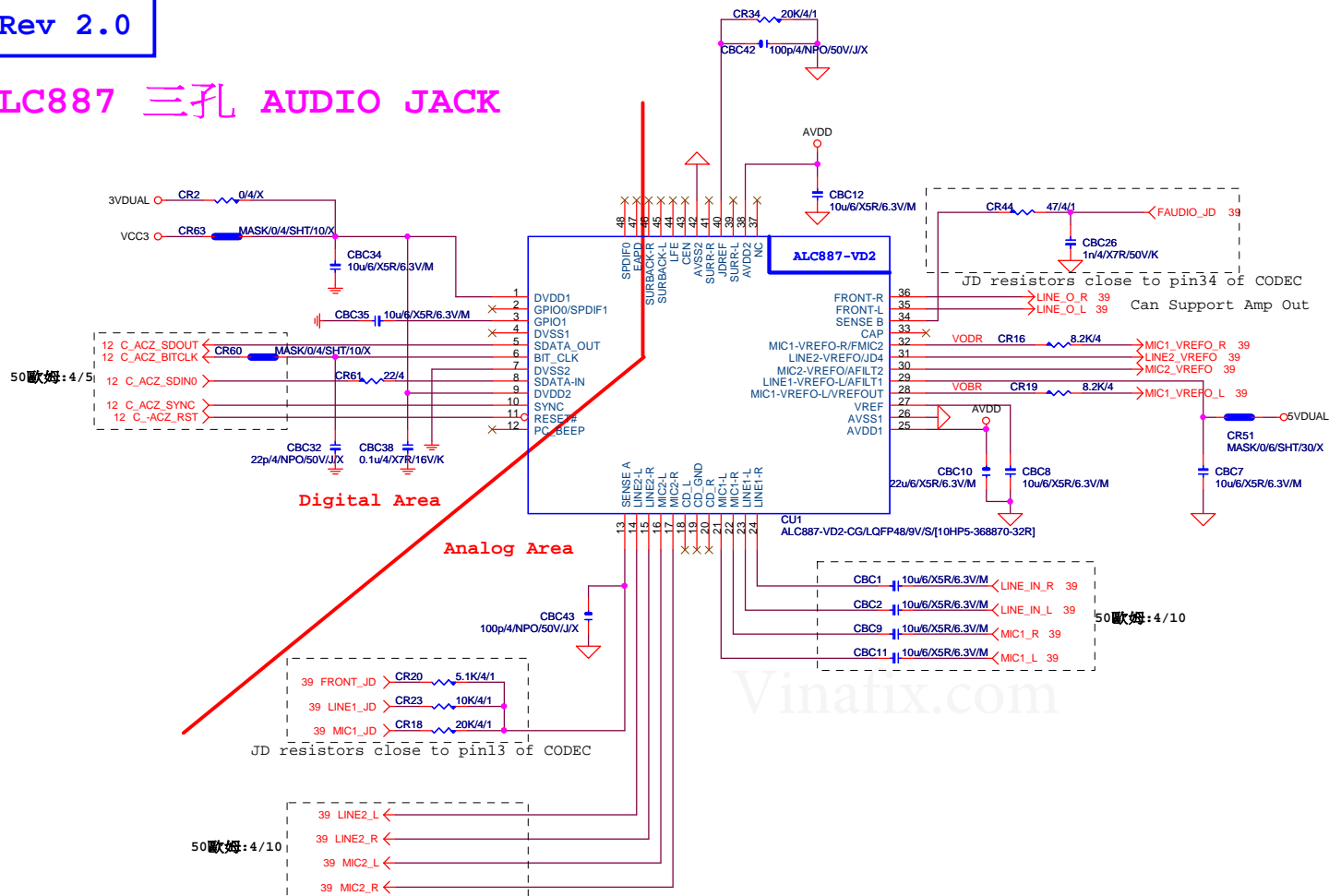
**Gigabyte Technology**

Title			
R_USB30,USB_OC			
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## ALC887 三孔 AUDIO JACK



LAYOUT注意: 螺絲孔下GND方式

- MH1空間夠, 下DGND  
空間不夠, 改為Isolate
- MH2一律改為Isolate

<input type="radio"/> MH1	<input type="radio"/> MH2
DGND	Isolate

LAYOUT注意: 要加

GND切割線



音效區域印刷

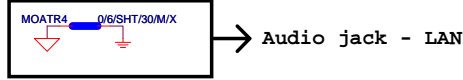
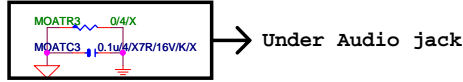
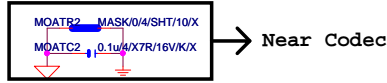
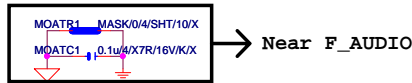


Gigabyte Technology

HD AUDIO ALC887

Title	Document Number	Rev
Size Custom	H310M S2V	1.0
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Rev 2.01

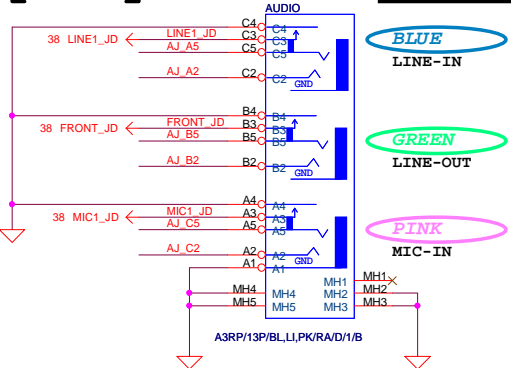
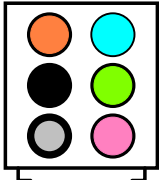


\*量産前,0ohm改short pad

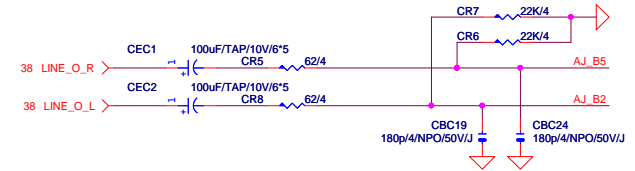
SPDIF\_OUT

SPDIF\_IN

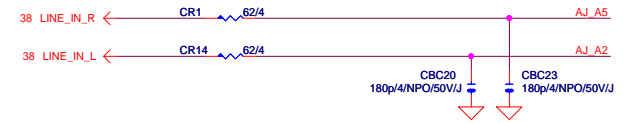
AZALIA JACK



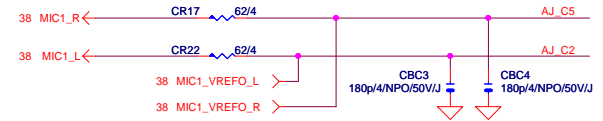
LINE-OUT



LINE-IN



MIC-IN

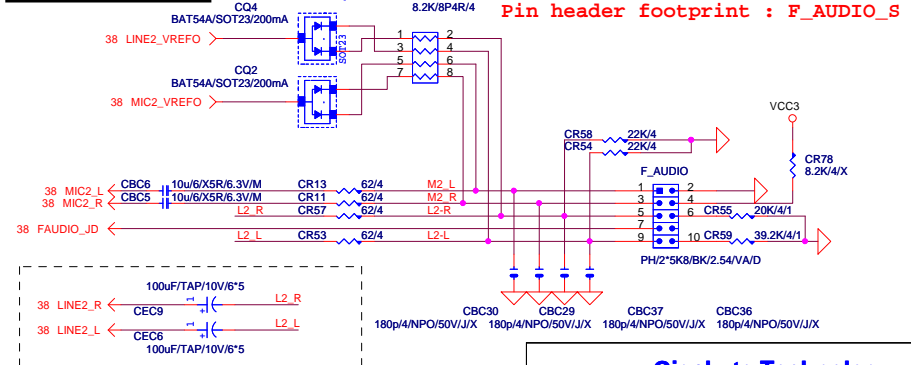


SURROUND

CEN/LFE

SURR BACK

AZALIA FRONT PANEL



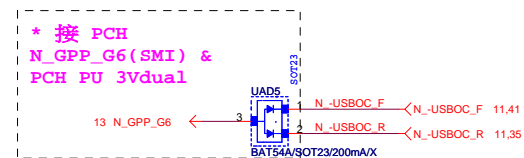
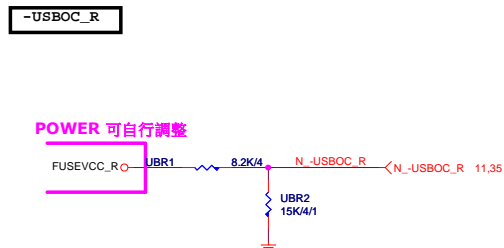
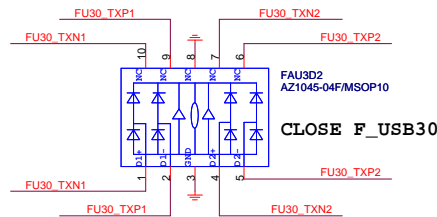
Gigabyte Technology

AUDIO JACK

H310M S2V

Rev 1.0

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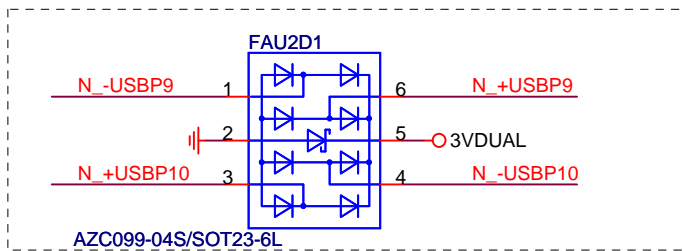
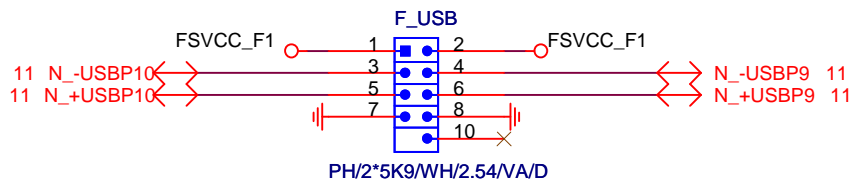


Rev: 0.7

FRONT USB1

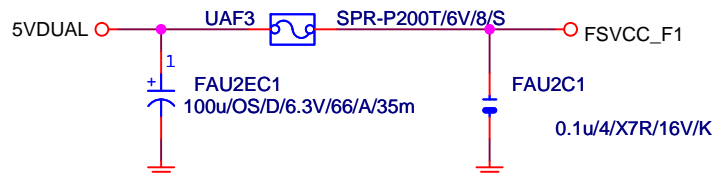
NET 可變

FUSB2X5-HS

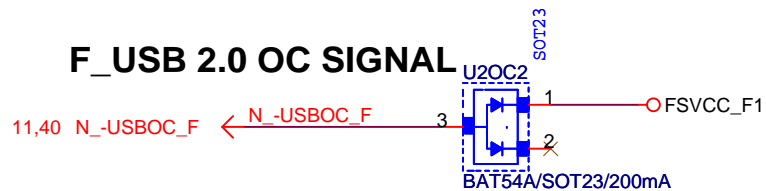


Close to connector

FUSE 2 Port 1 Fuse 2A



F\_USB 2.0 OC SIGNAL



Gigabyte Technology

Title

USB2.0

Size A

Document Number

H310M S2V

Rev 1.0

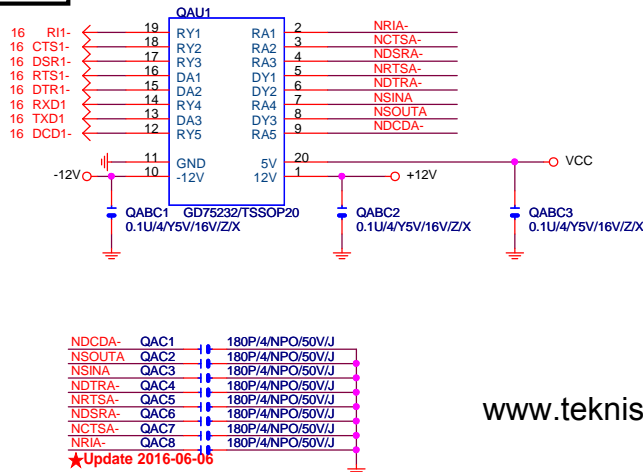
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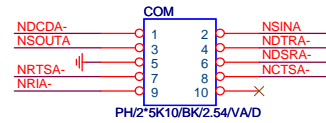
Vinafix.com

Gigabyte Technology		
Title		
M.2 X4		
Size	Document Number	Rev
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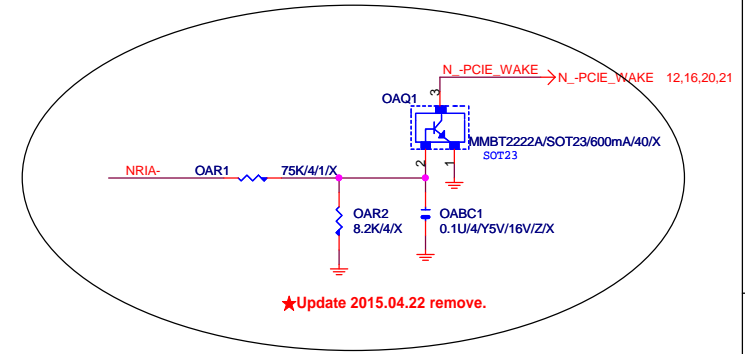
COM PORT



COMA



COM RI



www.teknisi-indonesia.com

Vinafix.com

TPM CONNECT

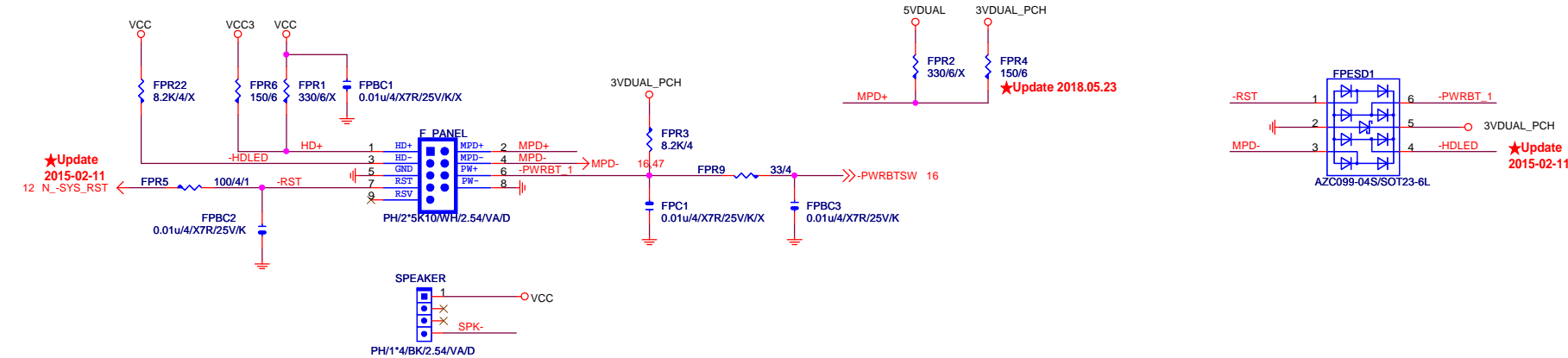
Thunderbolt (N/A)

Gigabyte Technology

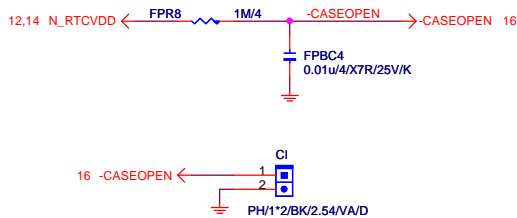
Title			
FP,F_USB,USB PWR,BZ			
H310M S2V			
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Custom			
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FRONT PANEL SHORT

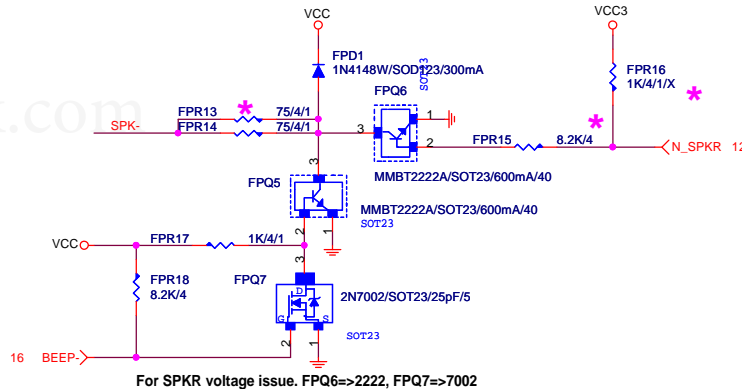
Rev: 0.8

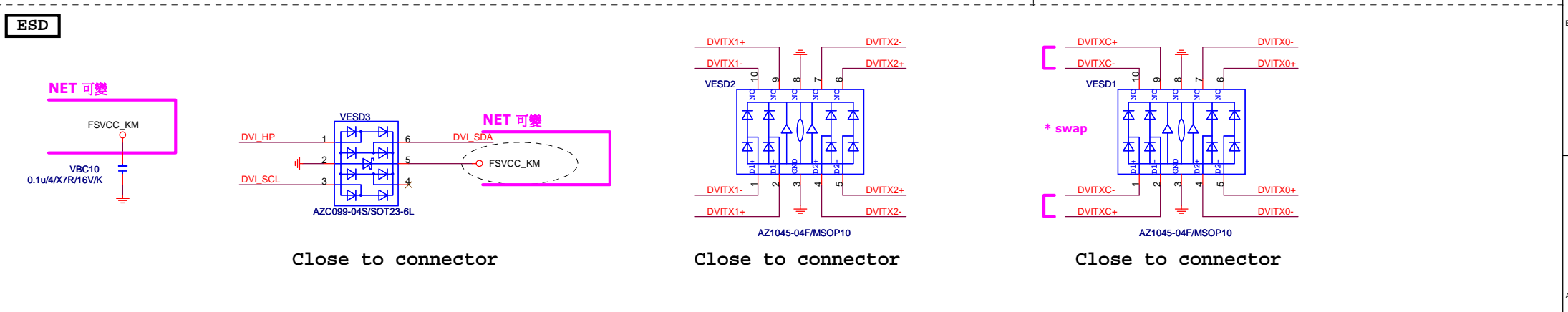
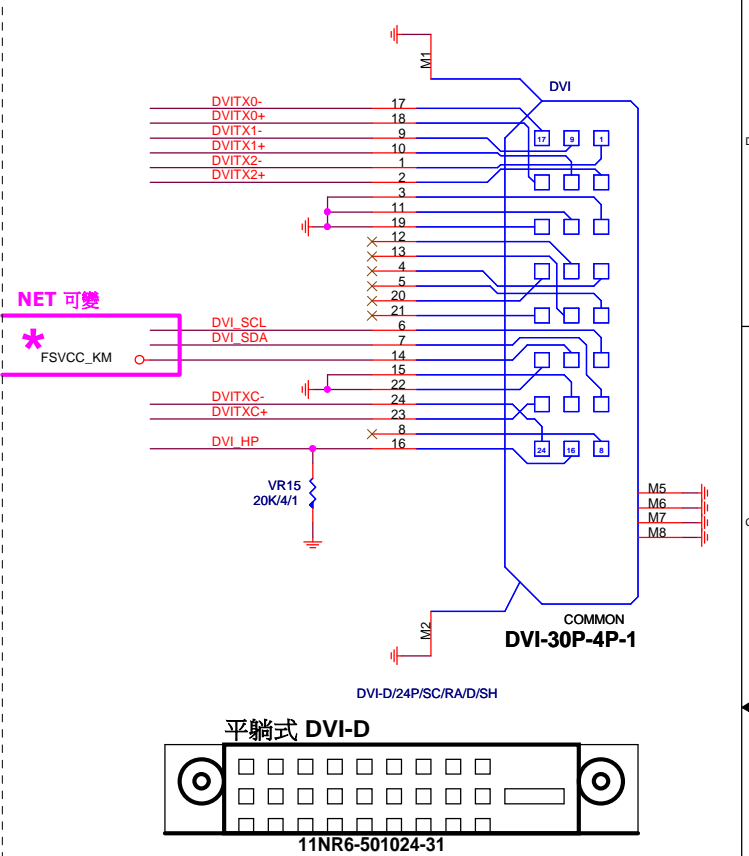
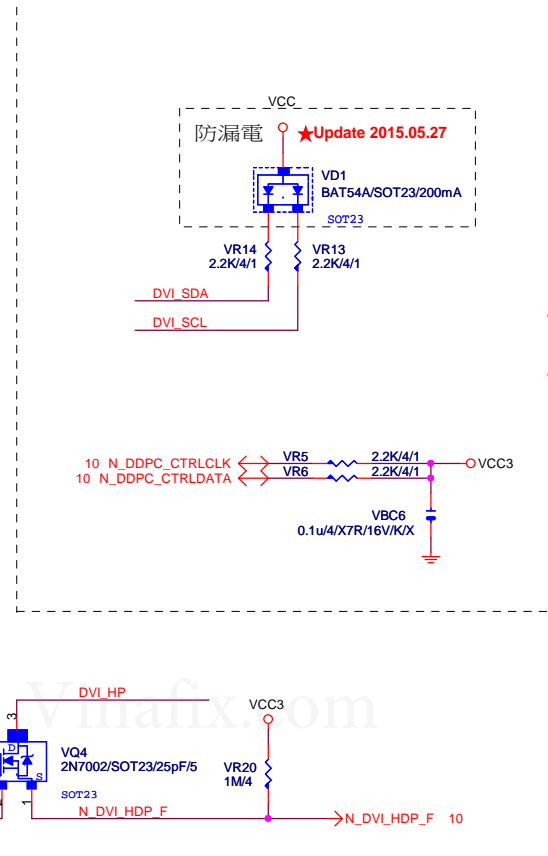
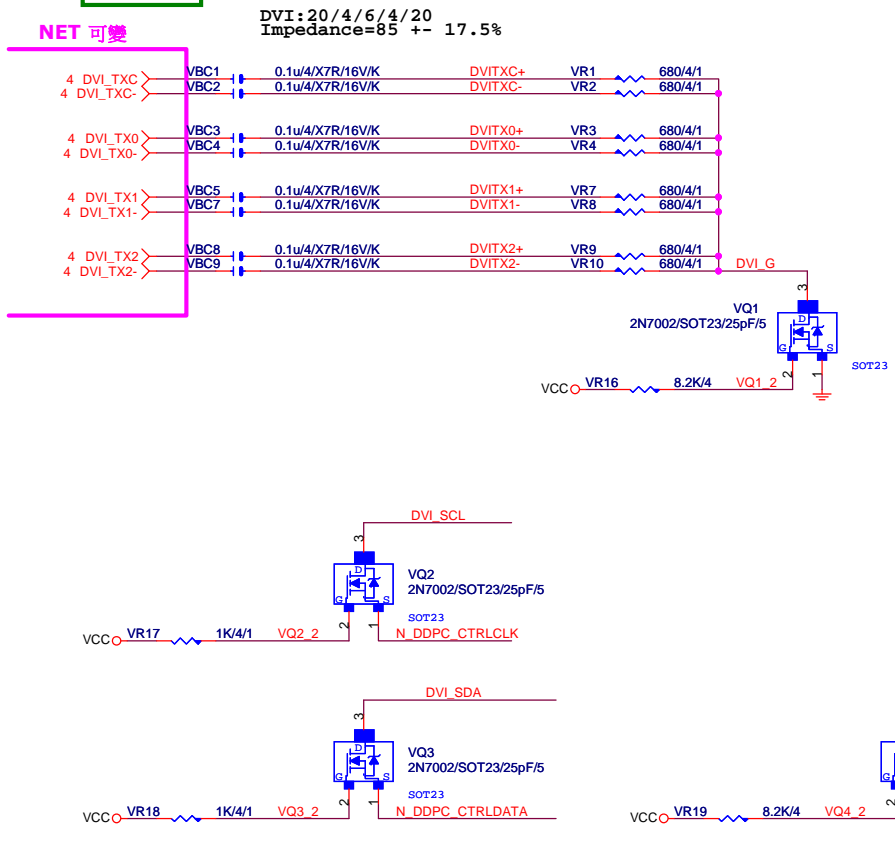


CASE OPEN



SATA LED





Rev 2.02

Vinafix.com

GIGABYTE™		
Title		
Amient Single LED		
Size	Document Number	Rev
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CLOSE SIO



CLOSE PCH



close to PCH (NR17)

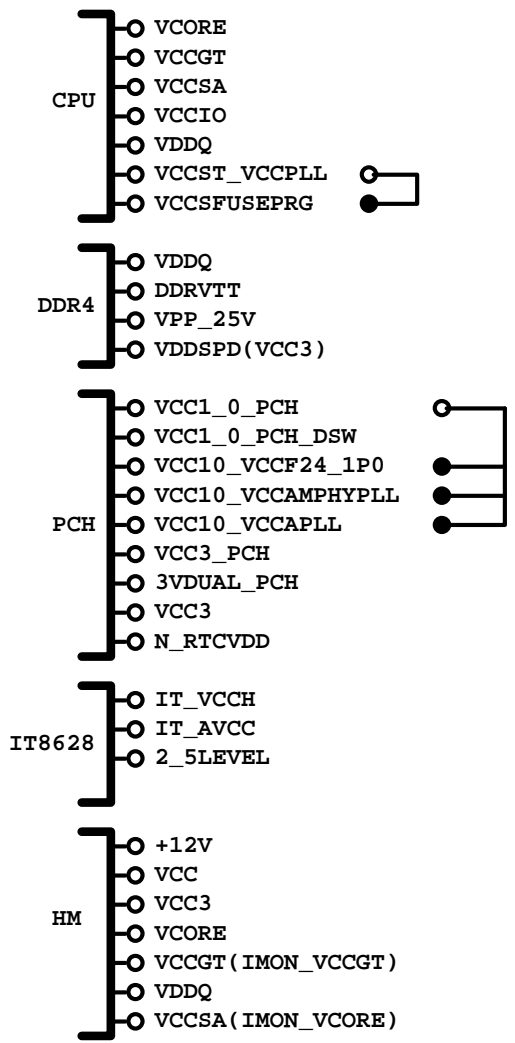
R\_USB30\_2 & DVI 之間

close to SIO (PIN92) MPD-

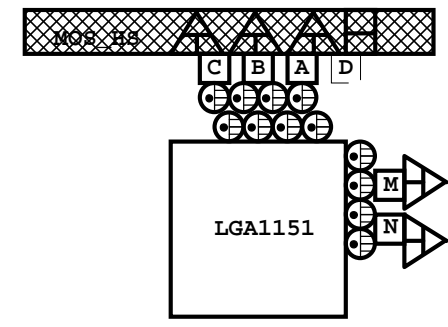
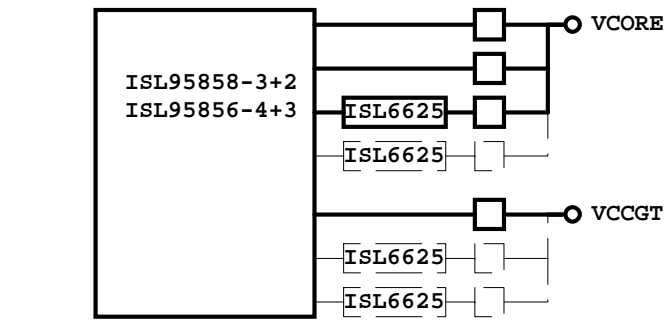


Title		
EMI/ESD		
Size A	Document Number	Rev
	H310M S2V	1.0
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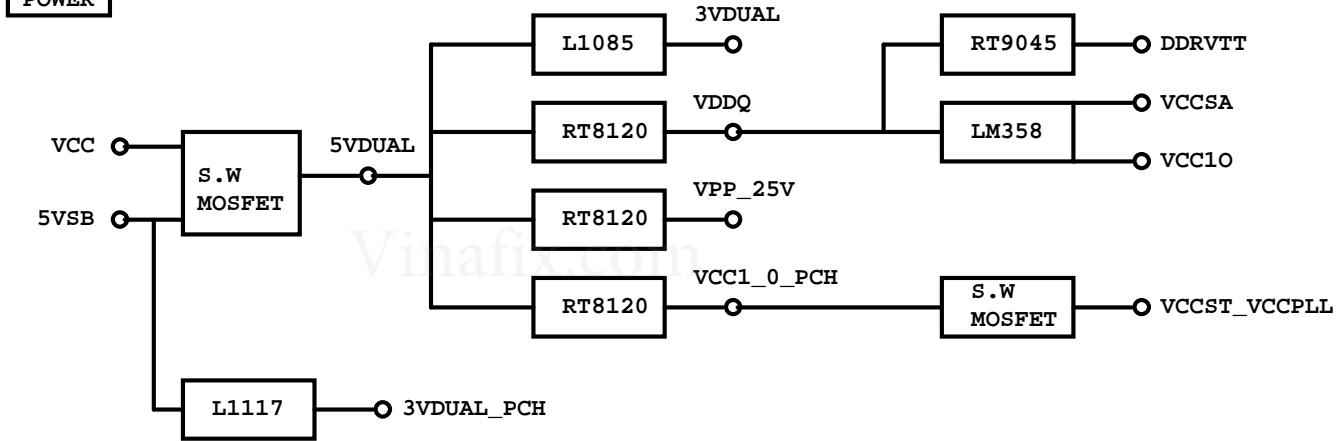
# POWER BLOCK MAP



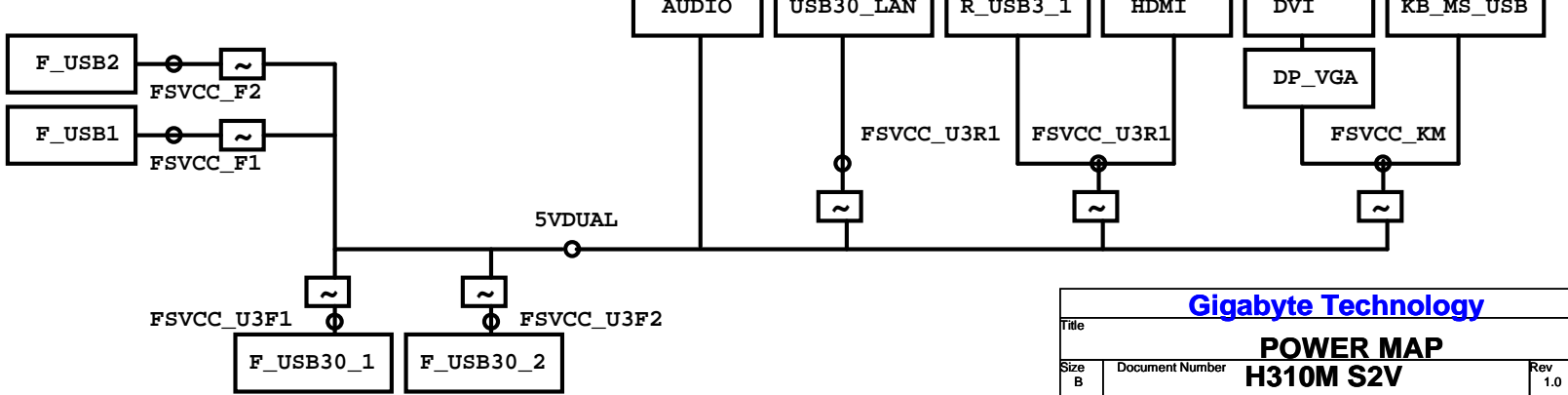
# VCORE/VCCGT



# POWER



# FUSE POWER F/R





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
11C05-C82700-01R	270u/FP/D/16V/88/C/12m
11C05-C61000-01R	100u/OS/D/16V/66/C/30m
11C02-C51000-01R	100u/FP/D/6.3V/65/C/13m

日系一般固態	Capture Value
11C02-685600-01R	560u/FP/D/6.3V/68/8m
11C05-882700-01R	270u/FP/D/16V/88/12m
11C05-661000-03R	100u/OS/D/16V/66/30m
11C02-651000-02R	100u/OS/D/6.3V/66/30m

台系固態	Capture Value
11C02-661000-09R	100u/OS/D/6.3V/66/A/35m
11C05-691000-09R	100u/OS/D/16V/69/A/35m
11C05-8C2700-09R	270u/FP/D/16V/8C/A/10m
11C02-695600-09R	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	CH0KE05U-40A-1PQ-3
DIP	11LC5-M2500C-01R	0.5uH/20A/IMD0809/M/D	8*8	CH0KE1U-R50M-IF

Ferrite

	料號	Capture Value	SIZE	Footprint
DIP	11LC5-F3500C-11R	0.5uH/32A/INCG109/FSI/D	10*10	CH0KE05U-40A-1PQ-3
DIP	11LC5-F2500C-11R	0.5uH/25A/INC0809/F/D	8*8	CH0KE1U-R50M-IF
SMD	未建(SIUC1007-R30M-JJ1W)		10*7	CH0KE11X8MM-SMD

BEAD

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

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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

GIGABYTE™

Title

RT8120\_DDR4 POWER

Size

Custom

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1.0

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