

Model Name: GA-B150N Phoenix-WIFI

SHEET TITLE Rev 1.0

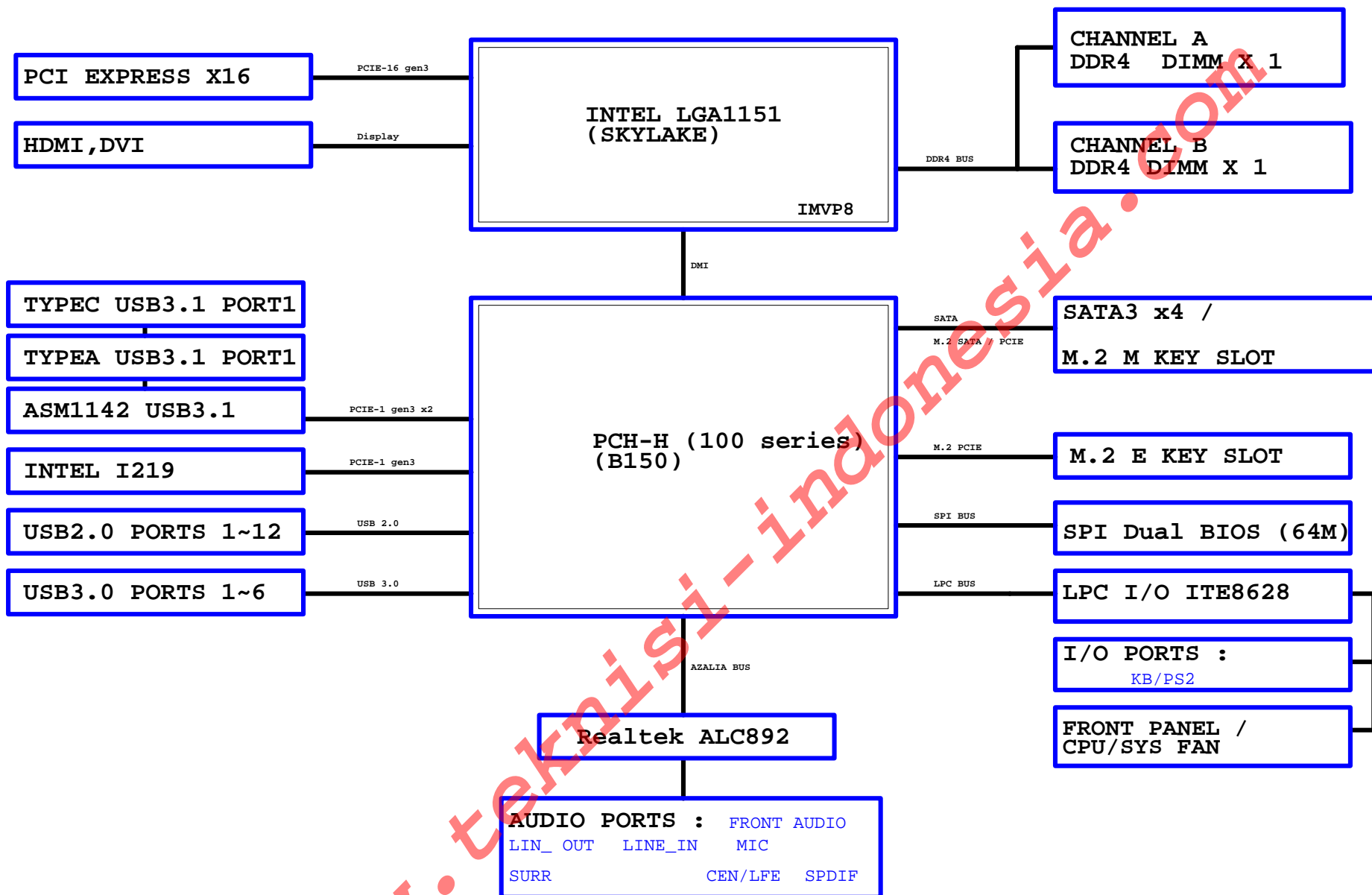
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1151-D
08	DDR4 CHANNEL A
09	DDR4 CHANNEL B
10	PCH_CLK BUFFER
11	PCH_DMI,USB,PCIE
12	PCH_MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH_PWR,GND
15	Dual BIOS
16	ITE 8628 LPC IO
17	HWM
18	FAN CTRL--SIO
19	PCI EXPRESS*16 SLOT
20	M.2X4
21	M.2 WIFI
22	SATA
23	ISL95858 PWM_VCORE
24	ISL95858 MOS_VCORE
25	ISL95858 MOS_VCCGT
26	VCCSA_VCCIO_VCCPLL
27	RT8237_DDR_BEAD

SHEET TITLE

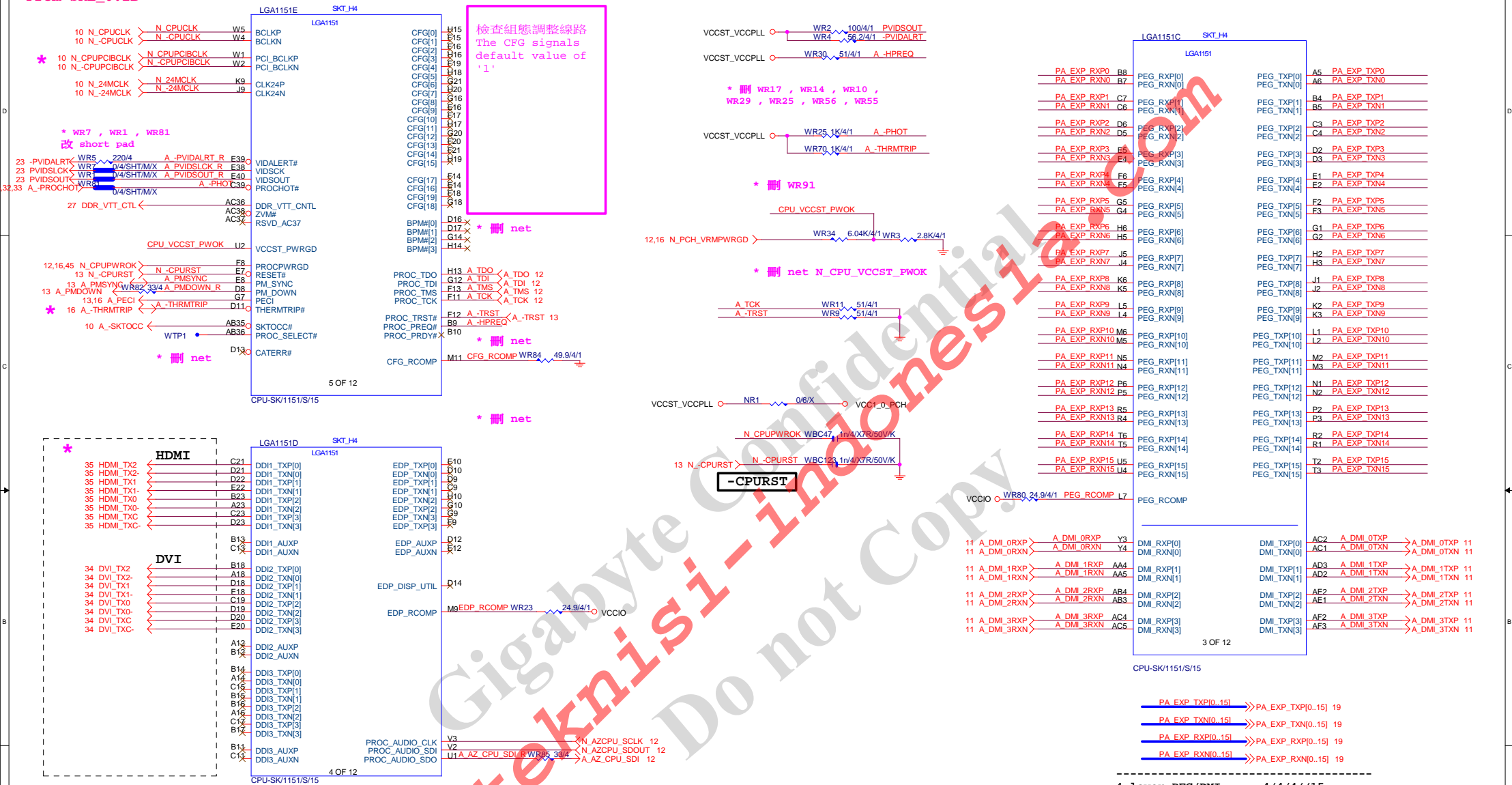
28	RT8068A_VPP25 POWER
29	RT8237_PCH-BEAD
30	DISCRETE POWER
31	NCT3933
32	ATX POWER , A_-PROCHOT
33	KB_MS_USB3
34	DVI CONN
35	HDMI CONN
36	INTEL I219
37	USB30_LAN CONNECTOR-I219
38	Realtek ALC892
39	REAR AUDIO JACK
40	AUDIO POWER
41	PCB LED
42	F_USB30
43	F_USB
44	F_PANEL
45	EMI-ESD
46	ASM1142 USB31A
47	TI HD3SS3212&TUSB321_A
48	U3.1 PORT A
49	TABLE LIST



# BLOCK DIAGRAM



From SKL\_0.2B



```
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
```

```
4 layer HDMI/DP/eDP/=====4/4/4//15
6 layer HDMI/DP/eDP/=====4/5.5/4//15
```

Impedance=85 +- 15%

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]  19
PA_EXP_TXN[0..15]  >> PA_EXP_TXN[0..15]  19
PA_EXP_RXP[0..15]  >> PA_EXP_RXP[0..15]  19
PA_EXP_RXN[0..15]  >> PA_EXP_RXN[0..15]  19

```

4 layer PEG/DMI=====4/4/4//15  
6 layer PEG/DMI=====4/5.5/4//15

Impedance=85 +- 15%

W=12 mil out of CPU  
S=15 mil out of CPU

# \* 改DDR4 net

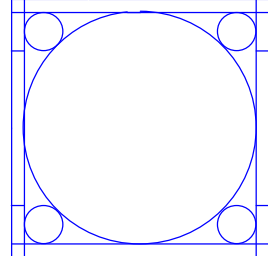
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MDA0 AE38	DDR0_DQ[0]	DDR0_CK[0]	AW18 M_DCLKA0 <=> M_DCLKA0 8
MDA1 AE37	DDR0_DQ[1]	DDR0_CK[1]	AV18 M_DCLKA0 <=> M_DCLKA0 8
MDA2 AG38	DDR0_DQ[2]	DDR0_CK[1]	AW17 M_DCLKA1 <=> M_DCLKA1 8
MDA3 AG37	DDR0_DQ[3]	DDR0_CK[1]	AY17 M_DCLKA1 <=> M_DCLKA1 8
MDA4 AE38	DDR0_DQ[4]	DDR0_CK[2]	AW16 M_DCLKA1 <=> M_DCLKA1 8
MDA5 AE39	DDR0_DQ[5]	DDR0_CK[2]	AV16 M_DCLKA1 <=> M_DCLKA1 8
MDA6 AG38	DDR0_DQ[6]	DDR0_CK[2]	AW16 M_DCLKA1 <=> M_DCLKA1 8
MDA7 AG40	DDR0_DQ[7]	DDR0_CK[3]	AV16 M_DCLKA1 <=> M_DCLKA1 8
MDA8 AJ38	DDR0_DQ[8]	DDR0_CK[3]	AV16 M_DCLKA1 <=> M_DCLKA1 8
MDA9 AJ37	DDR0_DQ[9]	DDR0_CK[0]	AY24 CKEA0 <=> CKEA0 8
MDA10 AL38	DDR0_DQ[10]	DDR0_CK[1]	AY24 CKEA1 <=> CKEA1 8
MDA11 AL37	DDR0_DQ[11]	DDR0_CK[2]	AY24 CKEA1 <=> CKEA1 8
MDA12 AL40	DDR0_DQ[12]	DDR0_CK[3]	AY25 CKEA1 <=> CKEA1 8
MDA13 AL39	DDR0_DQ[13]	DDR0_CK[0]	AY12 M_CSA0 <=> M_CSA0 8
MDA14 AL39	DDR0_DQ[14]	DDR0_CK[1]	AY13 M_CSA1 <=> M_CSA1 8
MDA15 AL40	DDR0_DQ[15]	DDR0_CK[2]	AY13 M_CSA1 <=> M_CSA1 8
MDA16 AX38	DDR0_DQ[16]	DDR0_CK[3]	AY10 M_CSA1 <=> M_CSA1 8
MDA17 AN40	DDR0_DQ[17]	DDR0_CK[0]	AW11 MODT_A0
MDA18 AR38	DDR0_DQ[18]	DDR0_CK[1]	AW14 MODT_A1
MDA19 AR37	DDR0_DQ[19]	DDR0_CK[2]	AY10 MODT_A1
MDA20 AN39	DDR0_DQ[20]	DDR0_CK[3]	AY10 MODT_A1
MDA21 AN37	DDR0_DQ[21]	DDR0_CK[0]	AY10 MODT_A1
MDA22 AR39	DDR0_DQ[22]	DDR0_CK[1]	AY10 MODT_A1
MDA23 AR40	DDR0_DQ[23]	DDR0_CK[2]	AY10 MODT_A1
MDA24 AW37	DDR0_DQ[24]	DDR0_CK[3]	AY10 MODT_A1
MDA25 AL38	DDR0_DQ[25]	DDR0_CK[0]	AY13 SBAA0 <=> SBAA0 8
MDA26 AV36	DDR0_DQ[26]	DDR0_CK[1]	AW23 SBAA1 <=> SBAA1 8
MDA27 AW36	DDR0_DQ[27]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA28 AL37	DDR0_DQ[28]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA29 AV37	DDR0_DQ[29]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA30 AT36	DDR0_DQ[30]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA31 AU35	DDR0_DQ[31]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA32 AY38	DDR0_DQ[32]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA33 AW38	DDR0_DQ[33]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA34 AV6	DDR0_DQ[34]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA35 AU6	DDR0_DQ[35]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA36 AU8	DDR0_DQ[36]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA37 AV8	DDR0_DQ[37]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA38 AW6	DDR0_DQ[38]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA39 AV6	DDR0_DQ[39]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA40 AY4	DDR0_DQ[40]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA41 AV4	DDR0_DQ[41]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA42 AT4	DDR0_DQ[42]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA43 AU2	DDR0_DQ[43]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA44 AV3	DDR0_DQ[44]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA45 AW4	DDR0_DQ[45]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA46 AT4	DDR0_DQ[46]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA47 AT3	DDR0_DQ[47]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA48 AP2	DDR0_DQ[48]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA49 AM4	DDR0_DQ[49]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA50 AP3	DDR0_DQ[50]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA51 AM3	DDR0_DQ[51]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA52 AP4	DDR0_DQ[52]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA53 AM2	DDR0_DQ[53]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA54 AP1	DDR0_DQ[54]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA55 AM1	DDR0_DQ[55]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA56 AK3	DDR0_DQ[56]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA57 AH1	DDR0_DQ[57]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA58 AK4	DDR0_DQ[58]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA59 AH2	DDR0_DQ[59]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8
MDA60 AH4	DDR0_DQ[60]	DDR0_CK[3]	AY13 SBAA1 <=> SBAA1 8
MDA61 AK2	DDR0_DQ[61]	DDR0_CK[0]	AW23 BG_A0 <=> BG_A0 8
MDA62 AH3	DDR0_DQ[62]	DDR0_CK[1]	AY13 SBAA1 <=> SBAA1 8
MDA63 AK1	DDR0_DQ[63]	DDR0_CK[2]	AW23 BG_A0 <=> BG_A0 8

DDR CHANNEL A

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LGA1151

ILM\_BP\_CR/115X/BKNI



Need check the new CPU MB

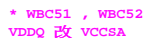
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MDB0 AD34	DDR1_DQ[0]/DDR0_DQ[16]	DDR1_CK[0]	AM20 M_DCLKB0 <=> M_DCLKB0 9
MDB1 AD35	DDR1_DQ[1]/DDR0_DQ[17]	DDR1_CK[1]	AM21 M_DCLKB0 <=> M_DCLKB0 9
MDB2 AG35	DDR1_DQ[2]/DDR0_DQ[18]	DDR1_CK[2]	AP22 M_DCLKB1 <=> M_DCLKB1 9
MDB3 AH35	DDR1_DQ[3]/DDR0_DQ[19]	DDR1_CK[3]	AP21 M_DCLKB1 <=> M_DCLKB1 9
MDB4 AE35	DDR1_DQ[4]/DDR0_DQ[20]	DDR1_CK[0]	AN20 M_DCLKB1 <=> M_DCLKB1 9
MDB5 AE34	DDR1_DQ[5]/DDR0_DQ[21]	DDR1_CK[1]	AN21 M_DCLKB1 <=> M_DCLKB1 9
MDB6 AG34	DDR1_DQ[6]/DDR0_DQ[22]	DDR1_CK[2]	AP19 M_DCLKB1 <=> M_DCLKB1 9
MDB7 AH34	DDR1_DQ[7]/DDR0_DQ[23]	DDR1_CK[3]	AP20 M_DCLKB1 <=> M_DCLKB1 9
MDB8 AK35	DDR1_DQ[8]/DDR0_DQ[24]	DDR1_CK[0]	AY29 CKEB0 <=> CKEB0 9
MDB9 AL35	DDR1_DQ[9]/DDR0_DQ[25]	DDR1_CK[1]	AY29 CKEB1 <=> CKEB1 9
MDB10 AL32	DDR1_DQ[10]/DDR0_DQ[26]	DDR1_CK[2]	AY29 CKEB1 <=> CKEB1 9
MDB11 AL32	DDR1_DQ[11]/DDR0_DQ[27]	DDR1_CK[3]	AY29 CKEB1 <=> CKEB1 9
MDB12 AK34	DDR1_DQ[12]/DDR0_DQ[28]	DDR1_CK[0]	AP17 M_CSB0 <=> M_CSB0 9
MDB13 AL34	DDR1_DQ[13]/DDR0_DQ[29]	DDR1_CK[1]	AN15 M_CSB1 <=> M_CSB1 9
MDB14 AK31	DDR1_DQ[14]/DDR0_DQ[30]	DDR1_CK[2]	AN17 M_CSB1 <=> M_CSB1 9
MDB15 AL31	DDR1_DQ[15]/DDR0_DQ[31]	DDR1_CK[3]	AM15 M_CSB1 <=> M_CSB1 9
MDB16 AP35	DDR1_DQ[16]/DDR0_DQ[32]	DDR1_CK[0]	AM16 MODT_B0
MDB17 AN35	DDR1_DQ[17]/DDR0_DQ[33]	DDR1_CK[1]	AL16 MODT_B1
MDB18 AN32	DDR1_DQ[18]/DDR0_DQ[34]	DDR1_CK[2]	AL15 MODT_B1
MDB19 AP32	DDR1_DQ[19]/DDR0_DQ[35]	DDR1_CK[3]	AN18 MAAB16
MDB20 AN34	DDR1_DQ[20]/DDR0_DQ[36]	DDR1_CK[0]	AL17 MAAB16
MDB21 AP34	DDR1_DQ[21]/DDR0_DQ[37]	DDR1_CK[1]	AL16 MAAB16
MDB22 AN31	DDR1_DQ[22]/DDR0_DQ[38]	DDR1_CK[2]	AL15 MAAB16
MDB23 AP31	DDR1_DQ[23]/DDR0_DQ[39]	DDR1_CK[3]	AN18 MAAB16
MDB24 AL29	DDR1_DQ[24]/DDR0_DQ[40]	DDR1_CK[0]	AL17 MAAB16
MDB25 AM29	DDR1_DQ[25]/DDR0_DQ[41]	DDR1_CK[1]	AL16 MAAB16
MDB26 AP29	DDR1_DQ[26]/DDR0_DQ[42]	DDR1_CK[2]	AL15 MAAB16
MDB27 AR29	DDR1_DQ[27]/DDR0_DQ[43]	DDR1_CK[3]	AN18 MAAB16
MDB28 AM28	DDR1_DQ[28]/DDR0_DQ[44]	DDR1_CK[0]	AL17 MAAB16
MDB29 AL28	DDR1_DQ[29]/DDR0_DQ[45]	DDR1_CK[1]	AL16 MAAB16
MDB30 AR28	DDR1_DQ[30]/DDR0_DQ[46]	DDR1_CK[2]	AL15 MAAB16
MDB31 AP28	DDR1_DQ[31]/DDR0_DQ[47]	DDR1_CK[3]	AN18 MAAB16
MDB32 AP12	DDR1_DQ[32]/DDR0_DQ[48]	DDR1_CK[0]	AL17 MAAB16
MDB33 AP12	DDR1_DQ[33]/DDR0_DQ[49]	DDR1_CK[1]	AL16 MAAB16
MDB34 AM13	DDR1_DQ[34]/DDR0_DQ[50]	DDR1_CK[2]	AL15 MAAB16
MDB35 AL13	DDR1_DQ[35]/DDR0_DQ[51]	DDR1_CK[3]	AN18 MAAB16
MDB36 AR13	DDR1_DQ[36]/DDR0_DQ[52]	DDR1_CK[0]	AL17 MAAB16
MDB37 AP13	DDR1_DQ[37]/DDR0_DQ[53]	DDR1_CK[1]	AL16 MAAB16
MDB38 AM12	DDR1_DQ[38]/DDR0_DQ[54]	DDR1_CK[2]	AL15 MAAB16
MDB39 AL12	DDR1_DQ[39]/DDR0_DQ[55]	DDR1_CK[3]	AN18 MAAB16
MDB40 AP10	DDR1_DQ[40]/DDR0_DQ[56]	DDR1_CK[0]	AL17 MAAB16
MDB41 AR10	DDR1_DQ[41]/DDR0_DQ[57]	DDR1_CK[1]	AL16 MAAB16
MDB42 AP7	DDR1_DQ[42]/DDR0_DQ[58]	DDR1_CK[2]	AL15 MAAB16
MDB43 AR7	DDR1_DQ[43]/DDR0_DQ[59]	DDR1_CK[3]	AN18 MAAB16
MDB44 AR9	DDR1_DQ[44]/DDR0_DQ[60]	DDR1_CK[0]	AL17 MAAB16
MDB45 AP9	DDR1_DQ[45]/DDR0_DQ[61]	DDR1_CK[1]	AL16 MAAB16
MDB46 AR6	DDR1_DQ[46]/DDR0_DQ[62]	DDR1_CK[2]	AL15 MAAB16
MDB47 AP6	DDR1_DQ[47]/DDR0_DQ[63]	DDR1_CK[3]	AN18 MAAB16
MDB48 AM10	DDR1_DQ[48]/DDR0_DQ[64]	DDR1_CK[0]	AL17 MAAB16
MDB49 AL10	DDR1_DQ[49]/DDR0_DQ[65]	DDR1_CK[1]	AL16 MAAB16
MDB50 AM7	DDR1_DQ[50]/DDR0_DQ[66]	DDR1_CK[2]	AL15 MAAB16
MDB51 AL7	DDR1_DQ[51]/DDR0_DQ[67]	DDR1_CK[3]	AN18 MAAB16
MDB52 AM8	DDR1_DQ[52]/DDR0_DQ[68]	DDR1_CK[0]	AL17 MAAB16
MDB53 AL9	DDR1_DQ[53]/DDR0_DQ[69]	DDR1_CK[1]	AL16 MAAB16
MDB54 AM6	DDR1_DQ[54]/DDR0_DQ[70]	DDR1_CK[2]	AL15 MAAB16
MDB55 AL6	DDR1_DQ[55]/DDR0_DQ[71]	DDR1_CK[3]	AN18 MAAB16
MDB56 AL6	DDR1_DQ[56]/DDR0_DQ[72]	DDR1_CK[0]	AL17 MAAB16
MDB57 AL7	DDR1_DQ[57]/DDR0_DQ[73]	DDR1_CK[1]	AL16 MAAB16
MDB58 AE6	DDR1_DQ[58]/DDR0_DQ[74]	DDR1_CK[2]	AL15 MAAB16
MDB59 AE7	DDR1_DQ[59]/DDR0_DQ[75]	DDR1_CK[3]	AN18 MAAB16
MDB60 AH7	DDR1_DQ[60]/DDR0_DQ[76]	DDR1_CK[0]	AL17 MAAB16
MDB61 AH6	DDR1_DQ[61]/DDR0_DQ[77]	DDR1_CK[1]	AL16 MAAB16
MDB62 AE7	DDR1_DQ[62]/DDR0_DQ[78]	DDR1_CK[2]	AL15 MAAB16
MDB63 AE6	DDR1_DQ[63]/DDR0_DQ[79]	DDR1_CK[3]	AN18 MAAB16

DDR CHANNEL B

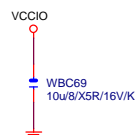
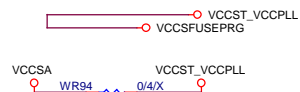
2 OF 12

- 8 MODT\_A[0..1] <=> MODT\_A0..11
- 9 MODT\_B[0..1] <=> MODT\_B0..11
- 8 MDA[0..63] <=> MDA0..63
- 9 MDB[0..63] <=> MDB0..63
- 8 M\_DQSA[0..7] <=> M\_DQSA0..71
- 8 M\_-DQSA[0..7] <=> M\_-DQSA0..71
- 8 MAAA[0..16] <=> MAAA0..16
- 9 MAAB[0..16] <=> MAAB0..16
- 9 M\_DQSB[0..7] <=> M\_DQSB0..71
- 9 M\_-DQSB[0..7] <=> M\_-DQSB0..71

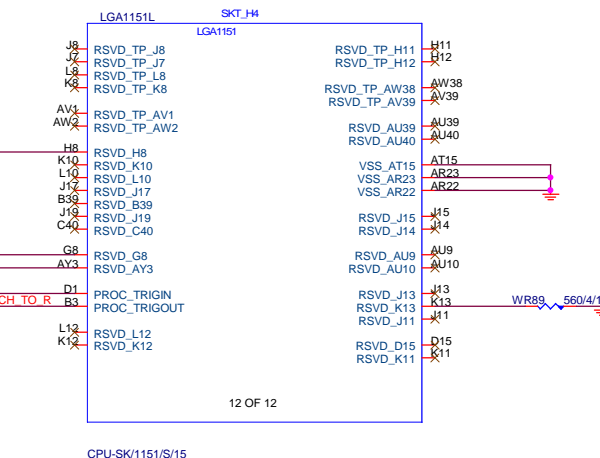
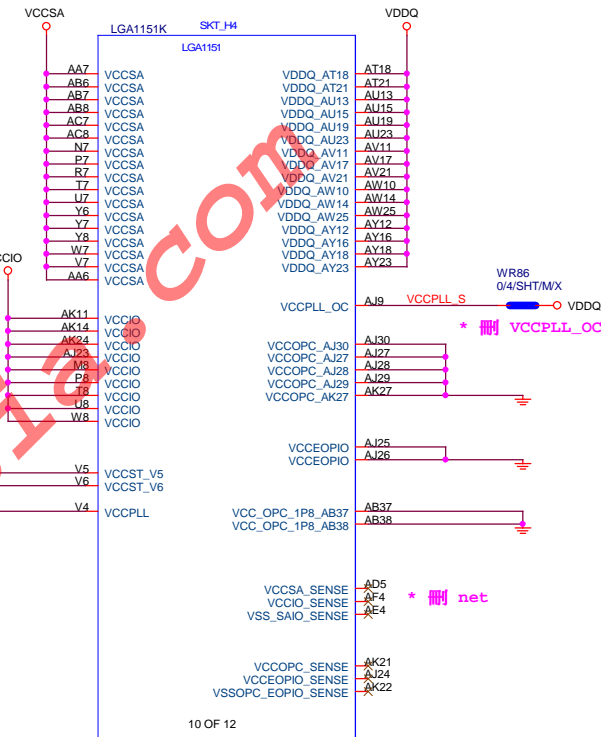
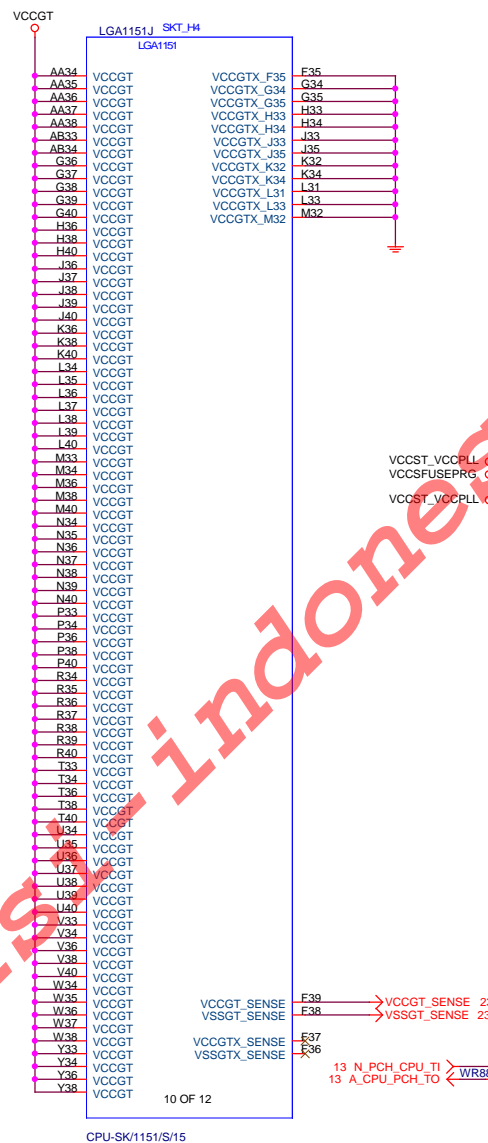
Gigabyte Technology	
Title CPU LGA1151-B	
Size Custom	Document Number GA-B150N Phoenix-WIFI
Date: Friday, October 23, 2015	Sheet 5 of 49



\* 刪 WBC124 , WBC125 , WBC126 , WBC127 電容



\* 刪 VCCGT 電容







CPU-SK/1151/S/15

WWW



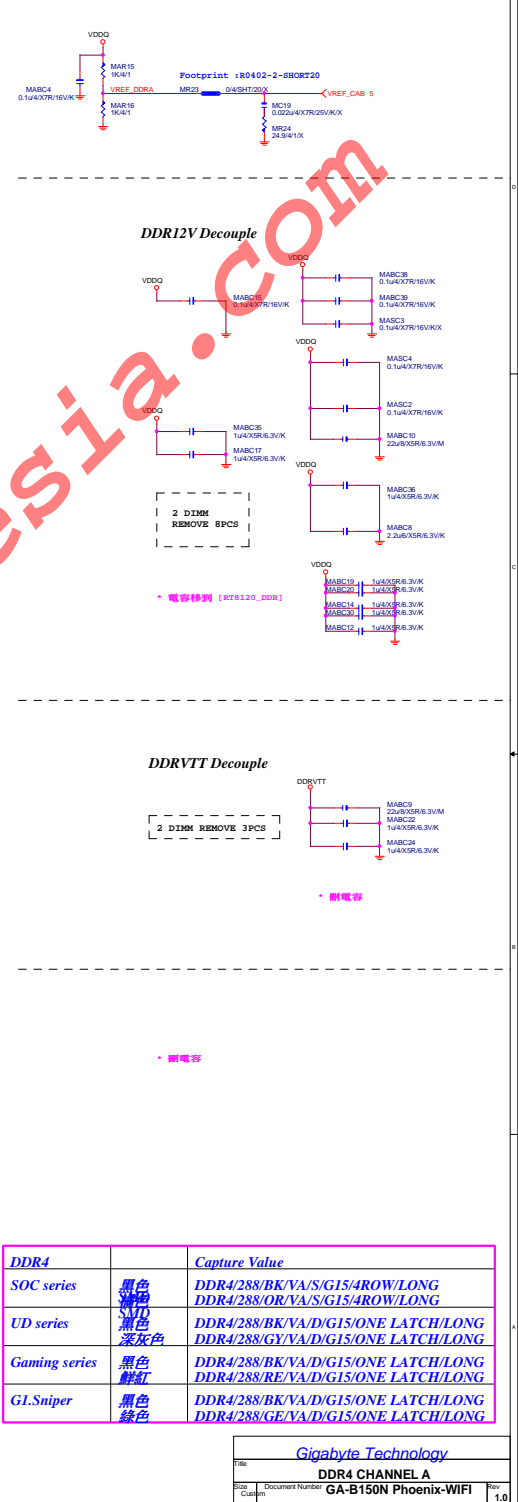
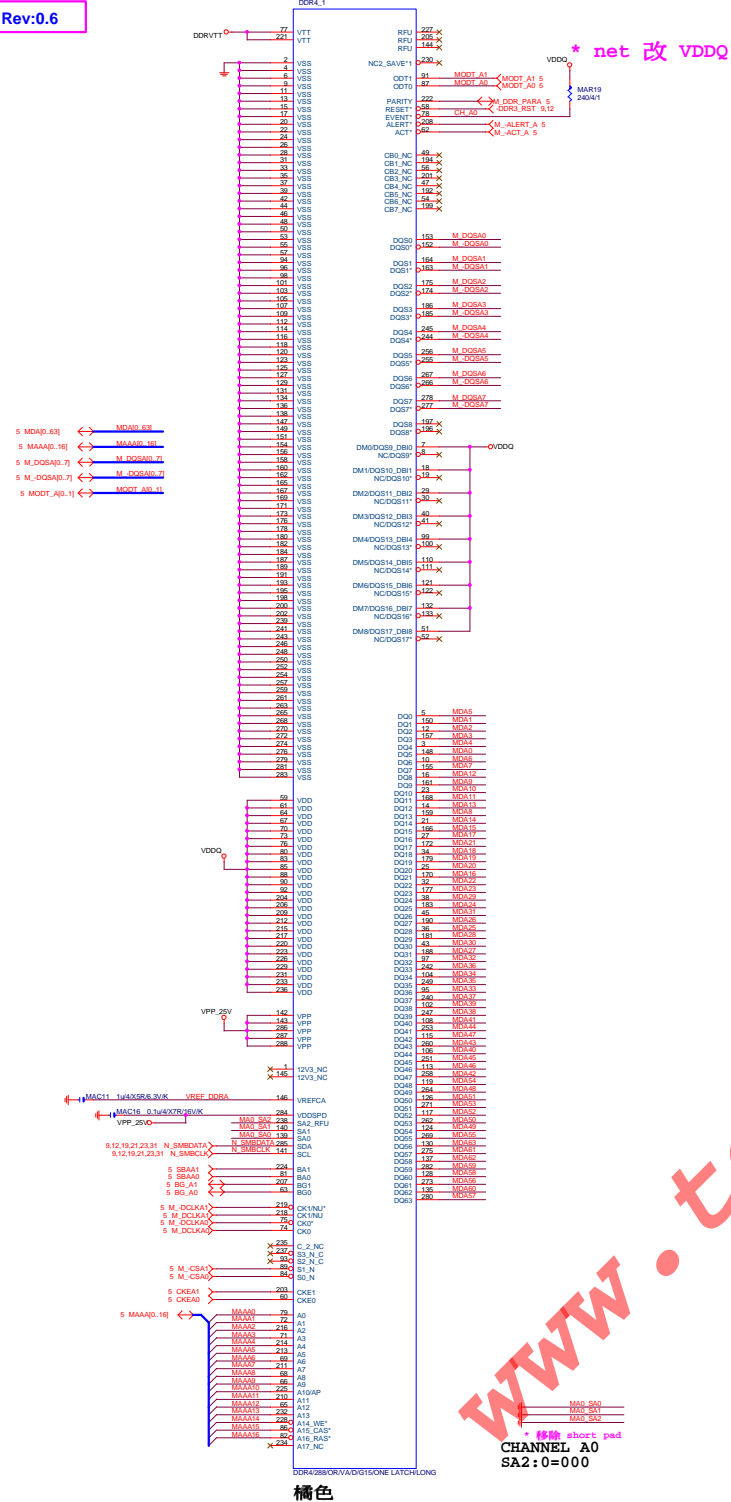
CPU-SK/1151/S/15



CPU-SK/1151/S/15

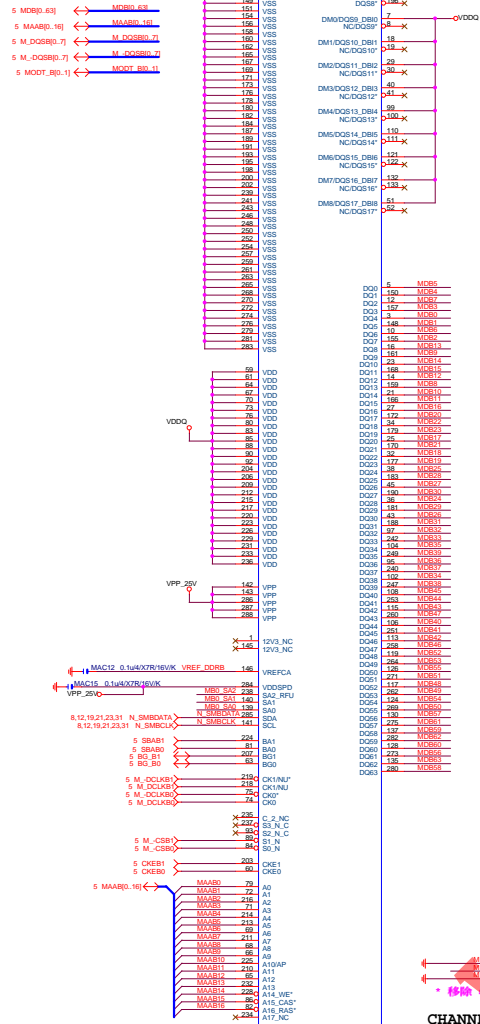


CPU-SK/1151/S/15



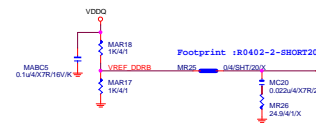


\* net 改 VDDQ



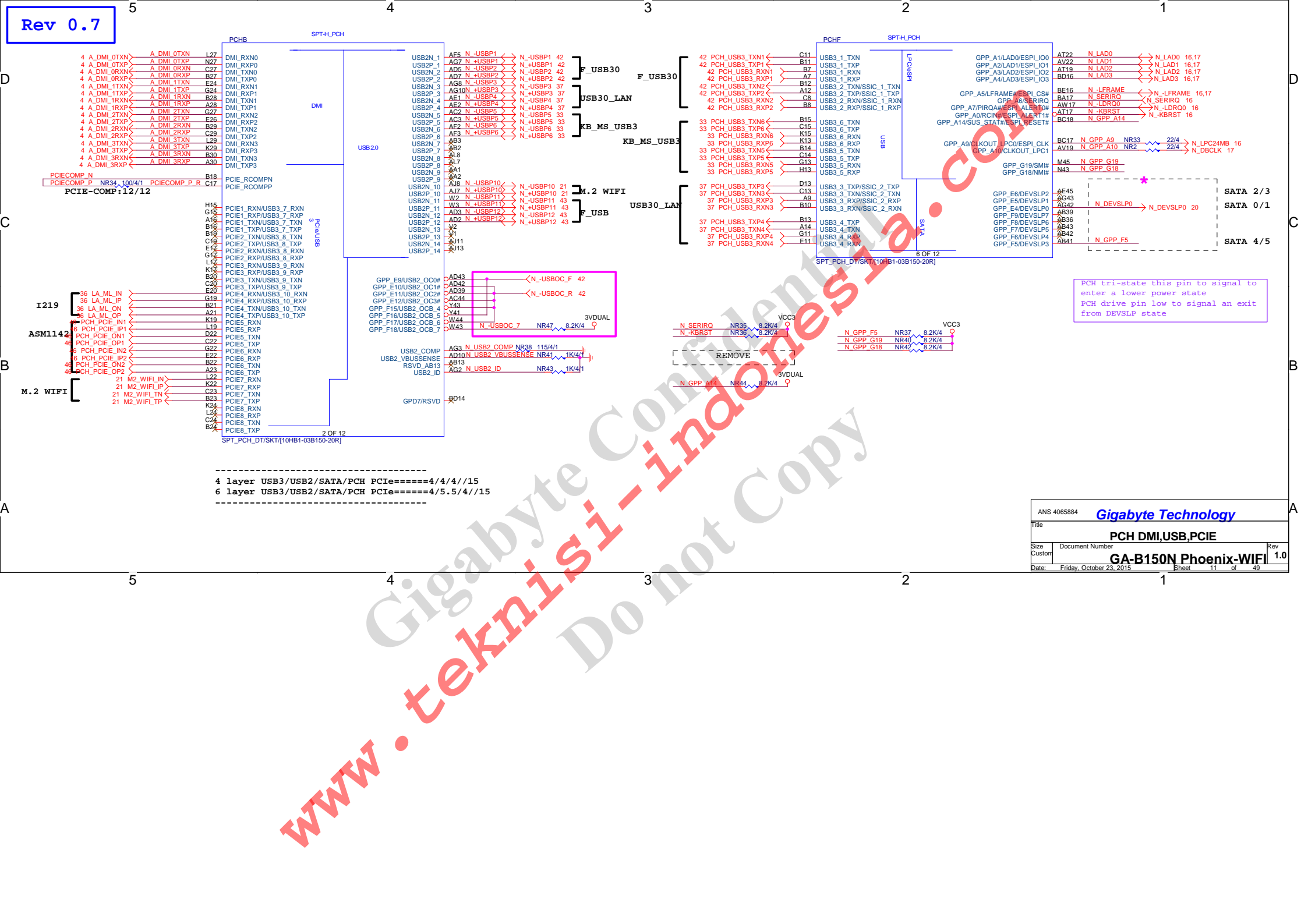
CHANNEL B0  
SA2:0=010

橘色



<i>Gigabyte Technology</i>			
Title <b>DDR4 CHANNEL B</b>			
Size Custom	Document Number <b>GA-B150N Phoenix-WIFI</b>		Rev 1.0
Date:	Sheet	9	of 49

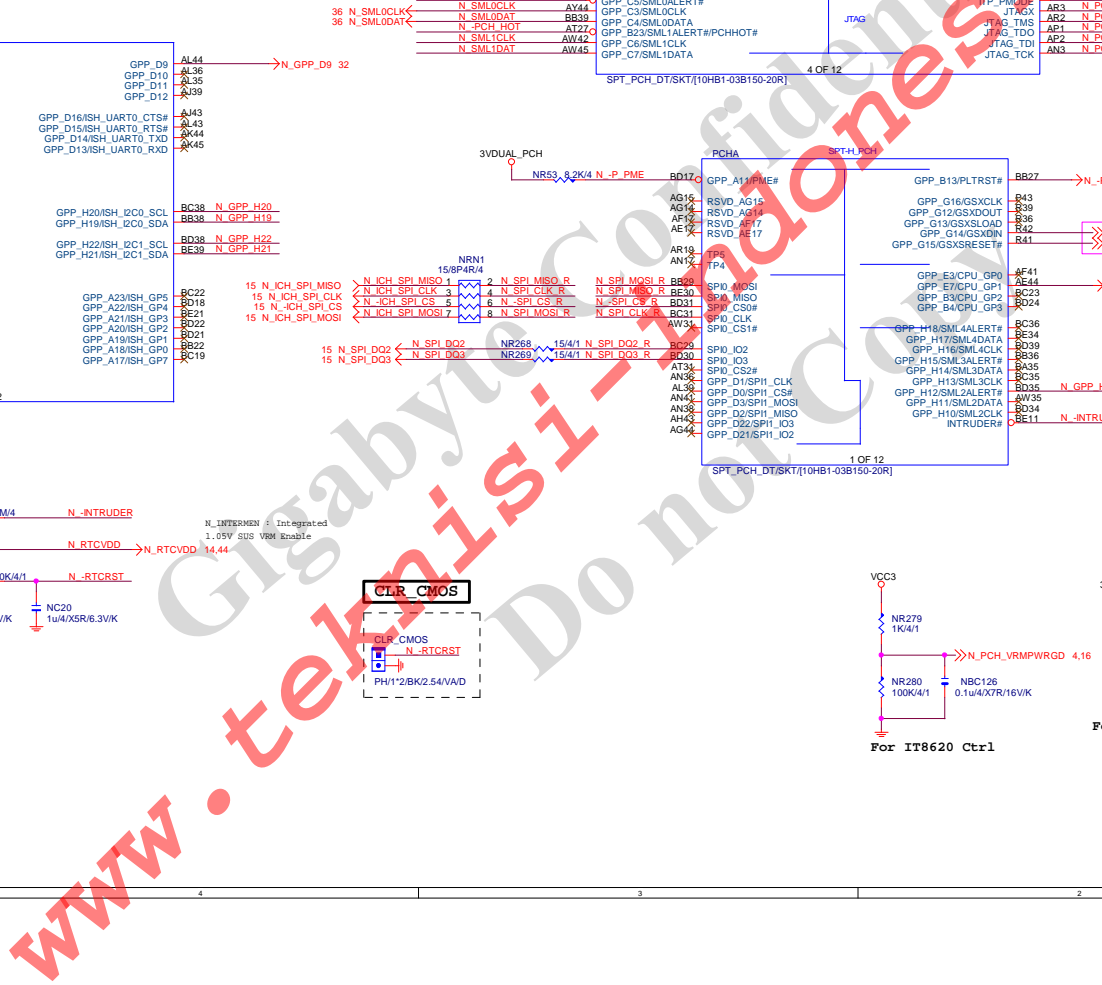




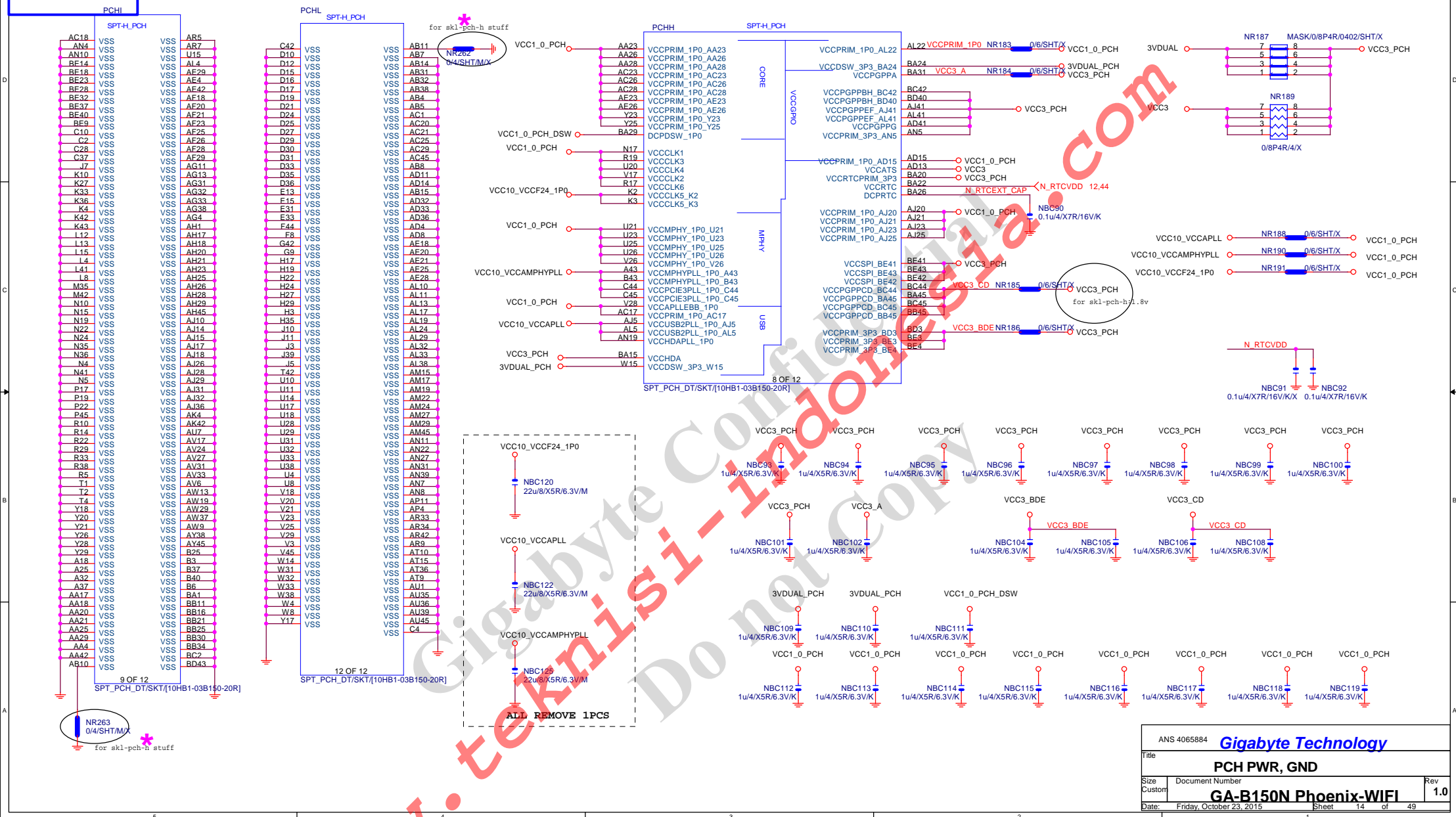
<p>PCH tri-state this pin to signal to enter a lower power state</p> <p>PCH drive pin low to signal an exit from DEVSLP state</p>
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```
4 layer USB3/USB2/SATA/PCH PCIe=====4/4/4//15
6 layer USB3/USB2/SATA/PCH PCIe=====4/5.5/4//15
```

ANS 4065884		<b>Gigabyte Technology</b>	
Title		PCH DMI,USB,PCIE	
Size	Document Number	GA-B150N Phoenix-WIFI	Rev 1.0
Custom			
Date:	Friday, October 23, 2015	Sheet 11 of 49	

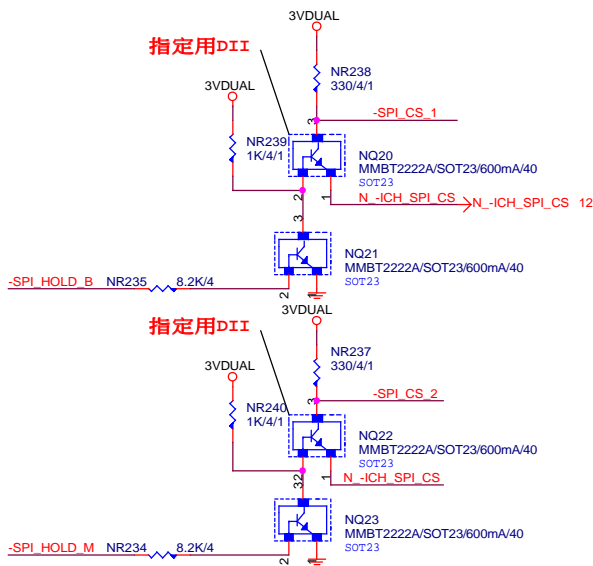




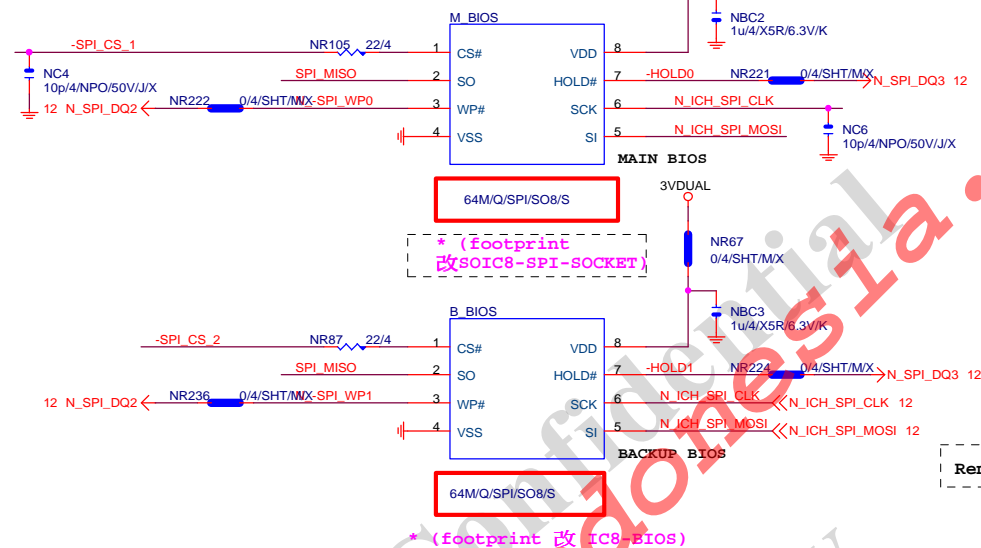




指定用DII

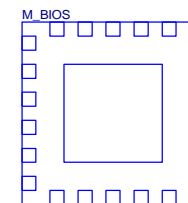


指定用DII



Remove NBC4

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

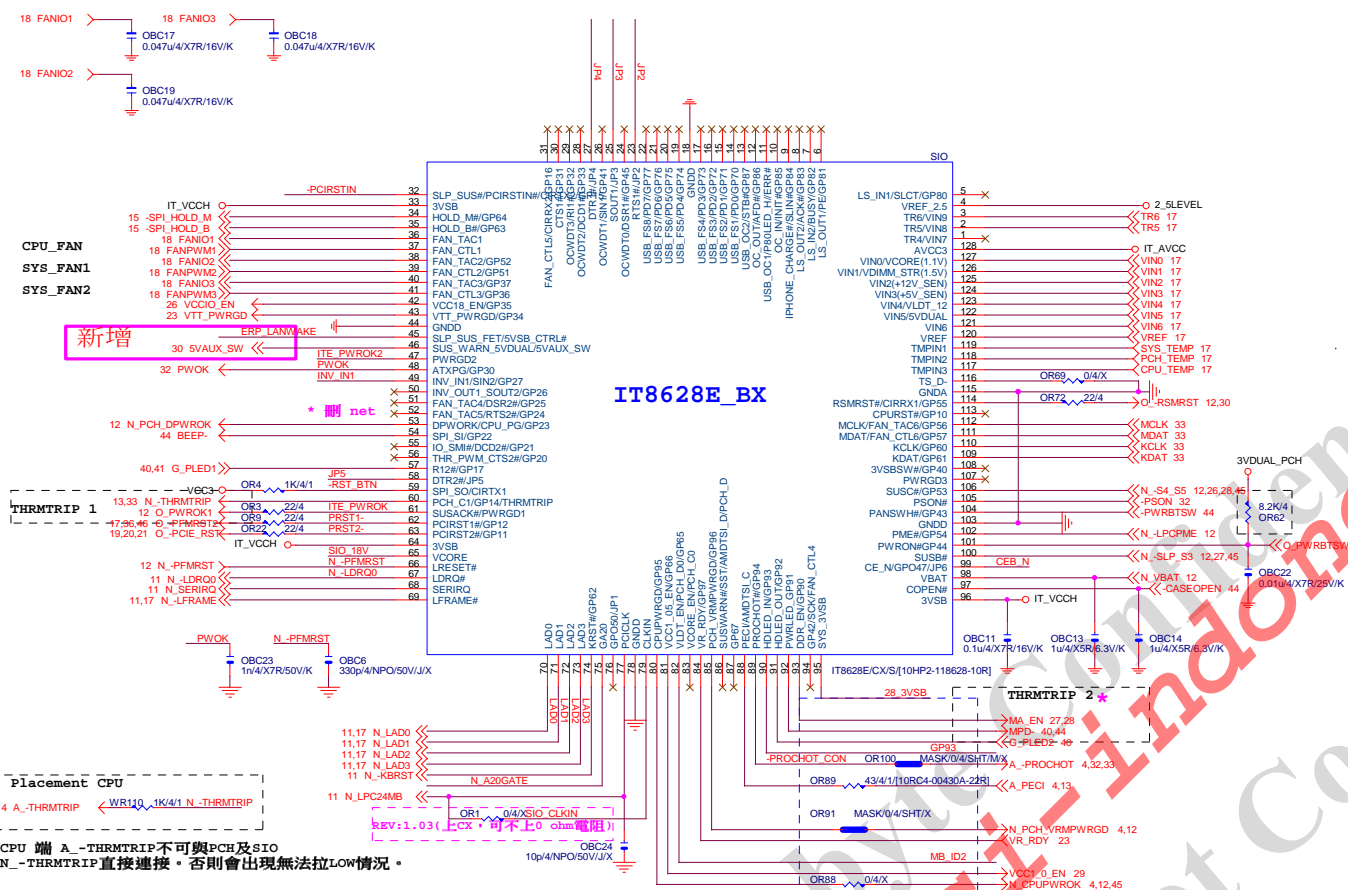
\* 試産先上, PVT 移除

Gigabyte Technology

Title		BIOS	
Size	Document Number	GA-B150N Phoenix-WIFI	
Custom		Rev 1.0	
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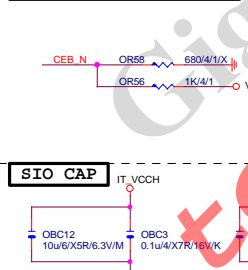
SIO IT8628CX REV:1.08



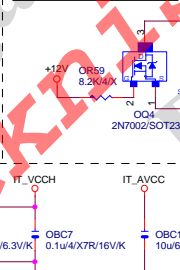
FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	N/A
SYS_FAN3	N/A
OPT_FAN	N/A
THRMTRIP1	YES PIN60

IT8620E GPIO問題匯整	
PIN 50	GP26-第一次接上POWER時會拉 Lo
PIN 90/91	DEFAULT為HDLDE FUNCTION, GP93 BYPASS TO GP92 高阻時 GP92 會被拉Lo(ITE BUG)
PIN 108	GP40--- POWER ON 時會拉 Lo
PIN 111/112	MOUSE 跟PAN6 FUNCTION 擇一使用, 不然會互相干擾
PIN 22	PIN22+, 需高於3V+, 若低於此部分COM PORT及LPT裝置 蜂鳴器會異常動作。

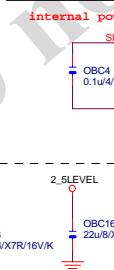
DUAL BIOS OPT STRAP



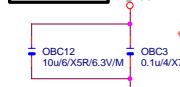
Power leakage



SIO 18V



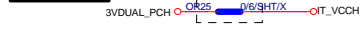
SIO CAP



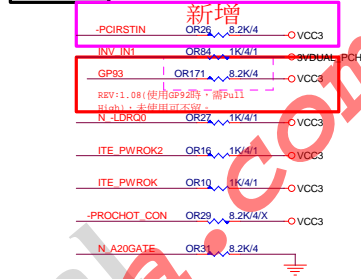
CLOSE SIO PIN4 2\_5LEVEL



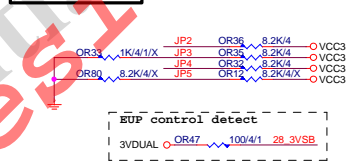
PWR SHT



SIO PU

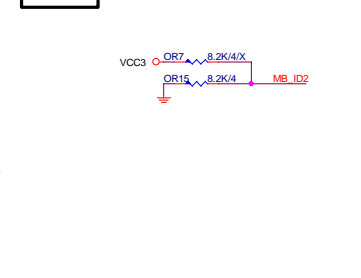


SIO STRAP

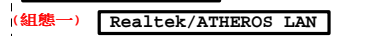


JP2	1	Disable WDT
JP2	0	Enable WDT to rest PWROK
JP3	0	Dual BIOS CS PIN Disable
JP3	1	Dual BIOS CS PIN Enable
JP4	0	k8 power sequency function is Disable
JP4	1	k8 power sequency function is Enable
JP5	0	anti-surge Disable
JP5	1	anti-surge Enable
JP3	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
JP3	1 0	The default value of EC Index 63h/6Bh/73h is FFh.
JP5	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
JP5	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

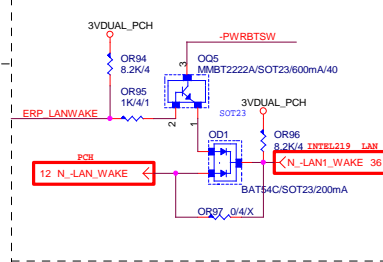
MB ID



ERP WAKE on LAN (依LAN組態選擇)



Intel LAN



Dual LAN

ERP Wake on LAN		
Single LAN	Realtek	組態一
	Atheros	組態二
Dual LAN	Intel 219	組態一
	Atheros+Atheros	組態二
No Support ERP	Intel 219+Intel 210	組態三
	BOM不上	N/A

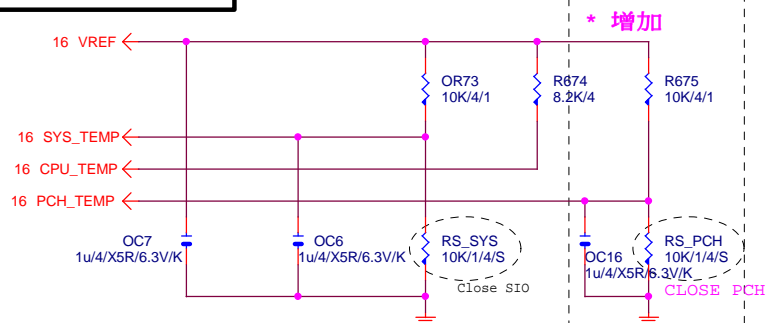
Gigabyte Technology

ITE 8628 LPC IO

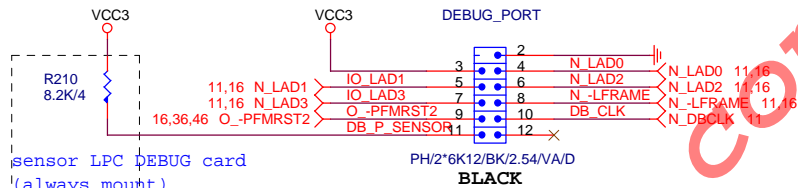
GA-B150N Phoenix-WiFi

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## TEMP H/W MONITOR

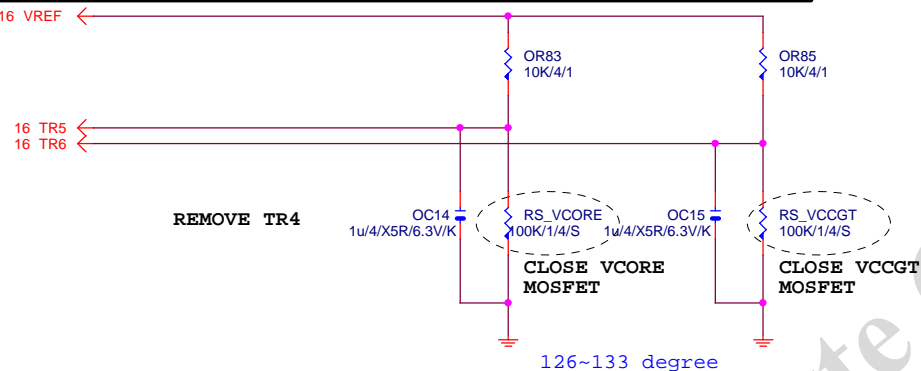


## DEBUG PORT

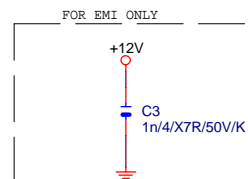
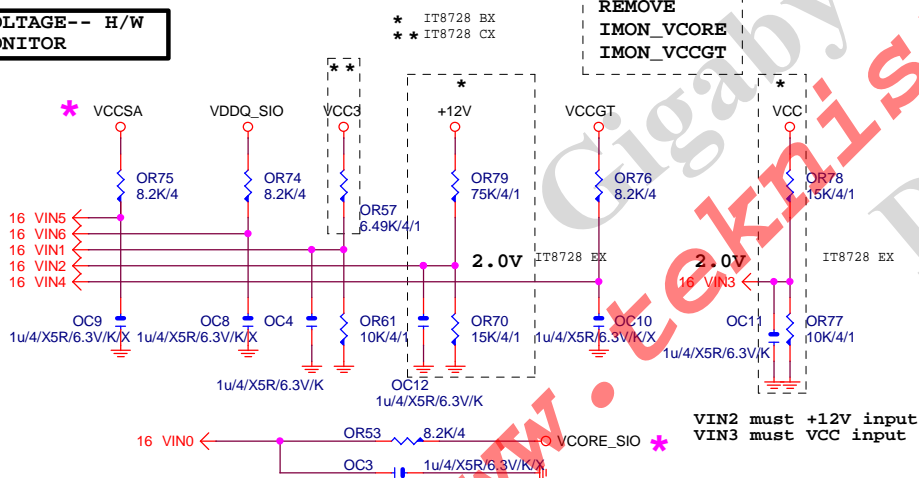


## RS\_VCORE, RS\_VCCGT, CLOSE CPU\_VCORE &amp; VCCGT MOSFET

-PROCHOT:有mos heartsink不用prochot function



## VOLTAGE-- H/W MONITOR

REMOVE  
IMON\_VCORE  
IMON\_VCCGTVIN2 must +12V input  
VIN3 must VCC input

Gigabyte Technology

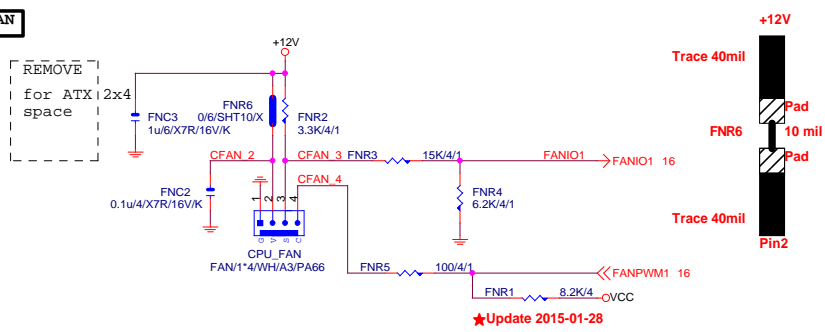
Title  
HWM,KB/MS, FAN CTRLSize Document Number  
Custom

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GA-B150N Phoenix-WIFI1.0

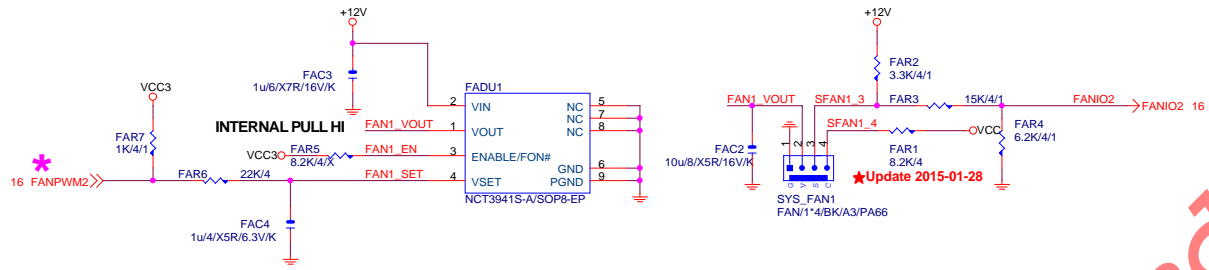
# CPU SMART FAN

Rev: 0.6



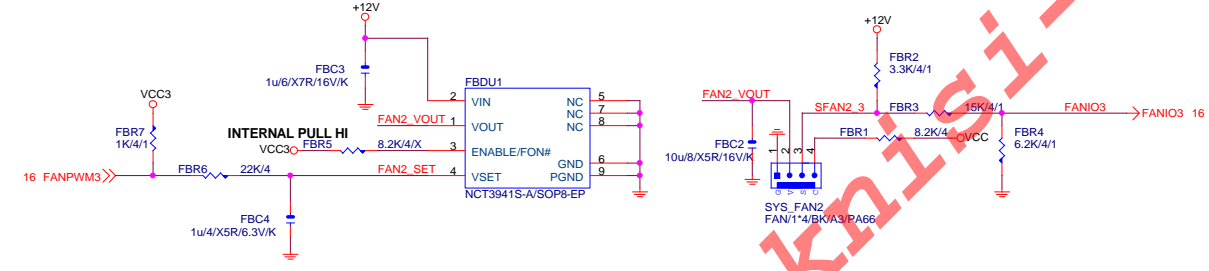
# SYSTEM FAN1

A.  
Linear SYS\_FAN  
Enable Function (NCT3941S)  
Full Turn On Function (NCT3941S-A)



# SYSTEM FAN2

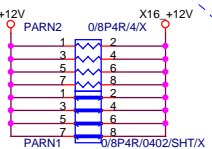
N/A



# SYSTEM FAN3

N/A

+12V protect  
short-wire test



PA\_EXP\_RXP0\_15] >> PA\_EXP\_RXP[0..15] 4  
PA\_EXP\_RXN0\_15] >> PA\_EXP\_RXN[0..15] 4  
PA\_EXP\_TXP0\_15] >> PA\_EXP\_TXP[0..15] 4  
PA\_EXP\_TXN0\_15] >> PA\_EXP\_TXN[0..15] 4

PA_EXP_TXP0	PAC5	0.22u4/X5R/6.3V/K	PA_EXP_TXP0 C
PA_EXP_TXN0	PAC4	0.22u4/X5R/6.3V/K	PA_EXP_TXN0 C
PA_EXP_TXP1	PAC6	0.22u4/X5R/6.3V/K	PA_EXP_TXP1 C
PA_EXP_TXN1	PAC7	0.22u4/X5R/6.3V/K	PA_EXP_TXN1 C
PA_EXP_TXP2	PAC8	0.22u4/X5R/6.3V/K	PA_EXP_TXP2 C
PA_EXP_TXN2	PAC9	0.22u4/X5R/6.3V/K	PA_EXP_TXN2 C
PA_EXP_TXP3	PAC10	0.22u4/X5R/6.3V/K	PA_EXP_TXP3 C
PA_EXP_TXN3	PAC11	0.22u4/X5R/6.3V/K	PA_EXP_TXN3 C
PA_EXP_TXP4	PAC12	0.22u4/X5R/6.3V/K	PA_EXP_TXP4 C
PA_EXP_TXN4	PAC13	0.22u4/X5R/6.3V/K	PA_EXP_TXN4 C
PA_EXP_TXP5	PAC14	0.22u4/X5R/6.3V/K	PA_EXP_TXP5 C
PA_EXP_TXN5	PAC15	0.22u4/X5R/6.3V/K	PA_EXP_TXN5 C
PA_EXP_TXP6	PAC16	0.22u4/X5R/6.3V/K	PA_EXP_TXP6 C
PA_EXP_TXN6	PAC17	0.22u4/X5R/6.3V/K	PA_EXP_TXN6 C
PA_EXP_TXP7	PAC18	0.22u4/X5R/6.3V/K	PA_EXP_TXP7 C
PA_EXP_TXN7	PAC19	0.22u4/X5R/6.3V/K	PA_EXP_TXN7 C
PA_EXP_TXP8	PAC20	0.22u4/X5R/6.3V/K	PA_EXP_TXP8 C
PA_EXP_TXN8	PAC21	0.22u4/X5R/6.3V/K	PA_EXP_TXN8 C
PA_EXP_TXP9	PAC22	0.22u4/X5R/6.3V/K	PA_EXP_TXP9 C
PA_EXP_TXN9	PAC23	0.22u4/X5R/6.3V/K	PA_EXP_TXN9 C
PA_EXP_TXP10	PAC24	0.22u4/X5R/6.3V/K	PA_EXP_TXP10 C
PA_EXP_TXN10	PAC25	0.22u4/X5R/6.3V/K	PA_EXP_TXN10 C
PA_EXP_TXP11	PAC26	0.22u4/X5R/6.3V/K	PA_EXP_TXP11 C
PA_EXP_TXN11	PAC27	0.22u4/X5R/6.3V/K	PA_EXP_TXN11 C
PA_EXP_TXP12	PAC28	0.22u4/X5R/6.3V/K	PA_EXP_TXP12 C
PA_EXP_TXN12	PAC29	0.22u4/X5R/6.3V/K	PA_EXP_TXN12 C
PA_EXP_TXP13	PAC30	0.22u4/X5R/6.3V/K	PA_EXP_TXP13 C
PA_EXP_TXN13	PAC31	0.22u4/X5R/6.3V/K	PA_EXP_TXN13 C
PA_EXP_TXP14	PAC32	0.22u4/X5R/6.3V/K	PA_EXP_TXP14 C
PA_EXP_TXN14	PAC33	0.22u4/X5R/6.3V/K	PA_EXP_TXN14 C
PA_EXP_TXP15	PAC34	0.22u4/X5R/6.3V/K	PA_EXP_TXP15 C
PA_EXP_TXN15	PAC35	0.22u4/X5R/6.3V/K	PA_EXP_TXN15 C

PCIE16:16/5/5/5/16

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

PCIESLOT-164P

3GIO\_\*16

PCI-E/16X-164P/OR/LONG DOUBLE/HK\*2

NPA雙魚叉

橘色

## M.2 Lane4 from PCH port18

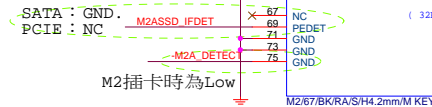
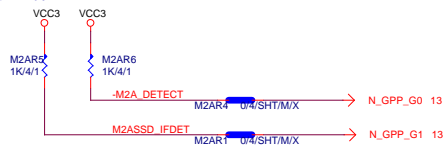
## M.2 Lane3 from PCH port17

## M.2 Lane2 from PCH port16

## M.2 Lane2 from PCH port15

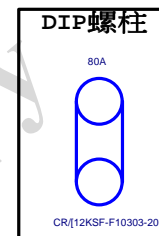
需與M2\_-CLKREQ對應

## 支援SATA and M.2 function

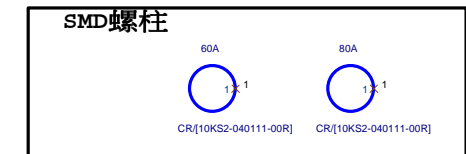


NGFF-M-75P-CUT42  
REMOVE 42A, FOOTPRINT 正反共用.

M.2 有插卡 /沒插卡 GPP_G0	M.2插何種卡? GPP_G1	SATA Express 插何種硬碟? GPP_E0/E2/F1	IO15 (S0)	IO16 (S1)	IO17	IO18	IO19 (S0)	IP20 (S1)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	PCIE x1	SATA
		SATA Express (Low)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	SATA Express	
	PCIE Mode (Hi)	SATA (Hi)	PCIE x4 (For M.2)				SATA	SATA
		SATA Express (Low)	PCIE x4 (For M.2)				SATA Express	
沒插卡 (Hi)	Don't Care (Hi)	SATA (Hi)	PCIE x4				SATA	SATA
		SATA Express (Low)	PCIE x4				SATA Express	



- M.2上在背板須修改:
1. DIP螺絲背板上件
  2. DIP螺絲背板上件, 須修改料號
  3. SMD螺柱正面上件, 須修改料號及FOOTPRINT正反共用.

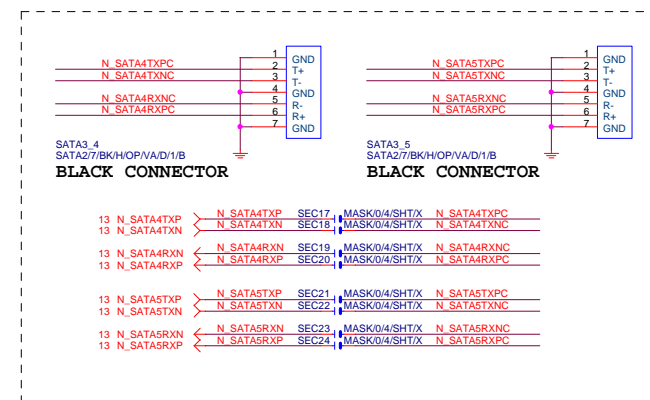
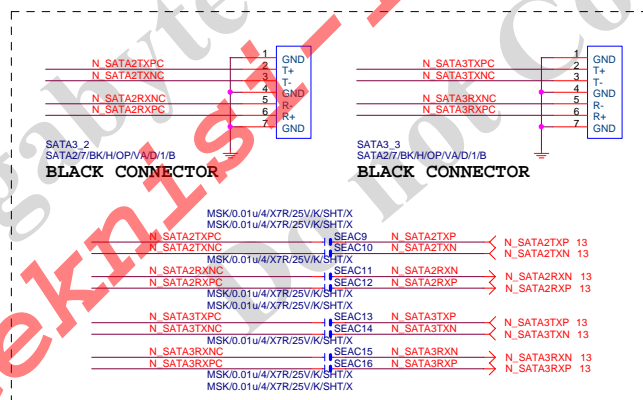


FOOTPRINT: 276c236B165P





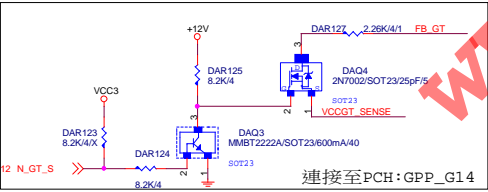
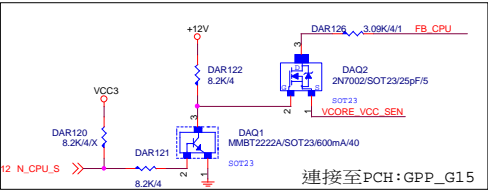
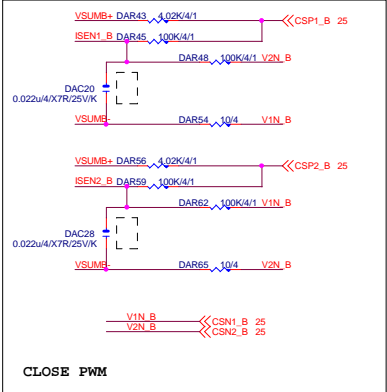
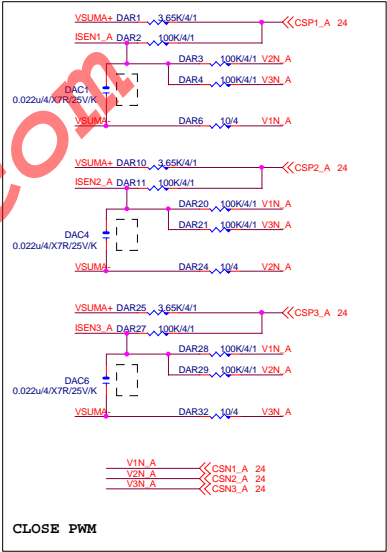
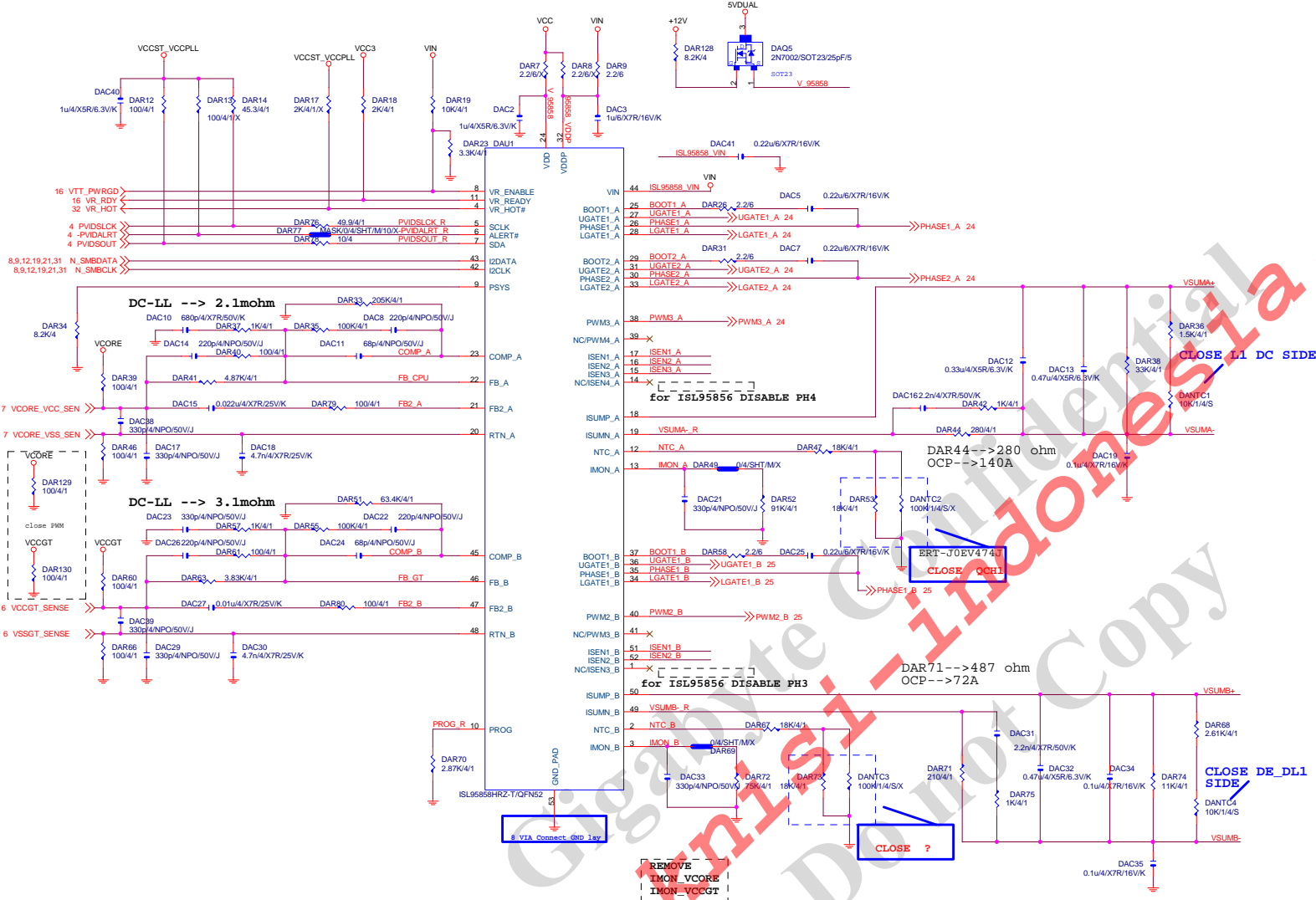
SATA 5 (文字面寫SATA 1)  
SATA 4 (文字面寫SATA 0)  
SATA 3  
SATA 2  
SATA 1 (文字面寫SATA 5)  
SATA 0 (文字面寫SATA 4)

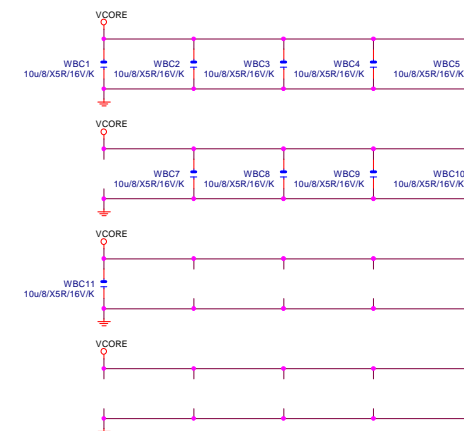
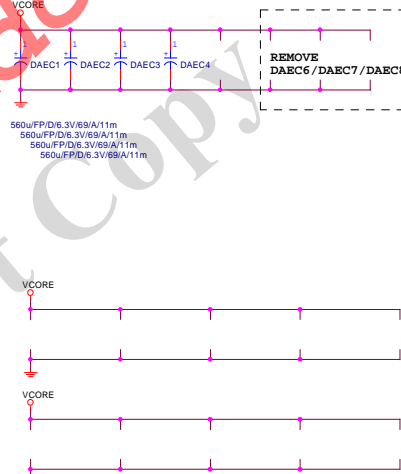
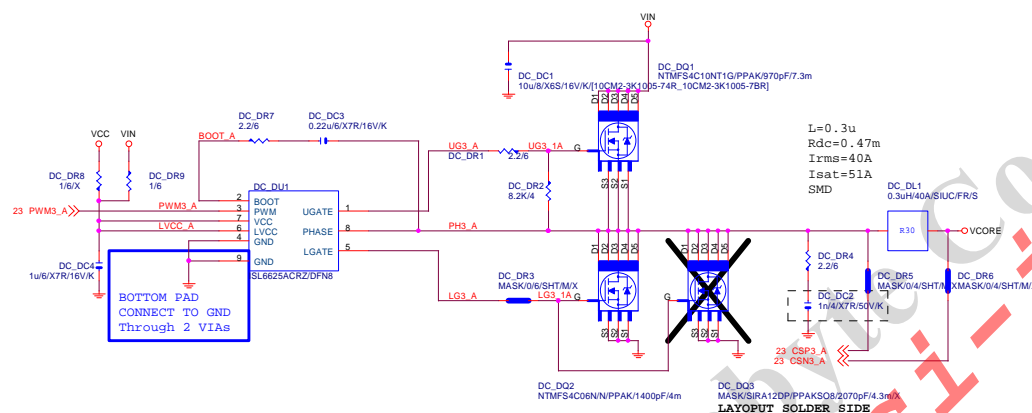
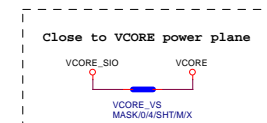
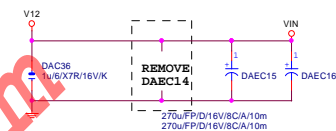
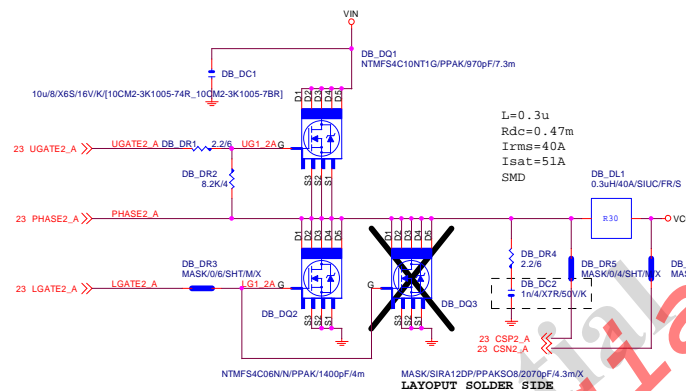


Gigabyte Technology

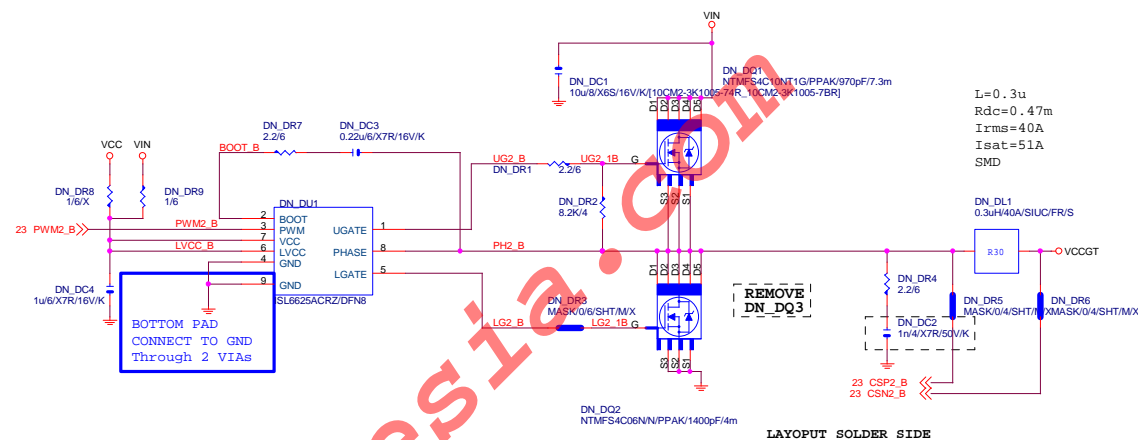
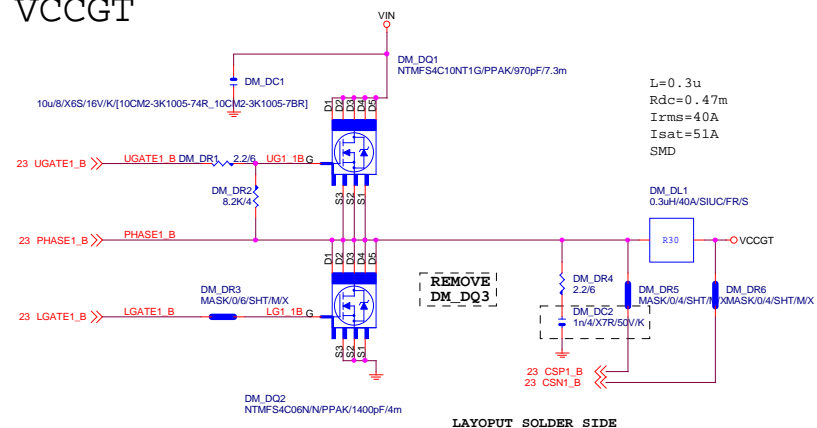
SATA			
Title	Document Number	Rev	
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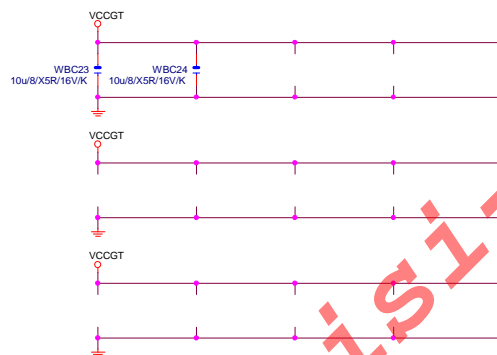
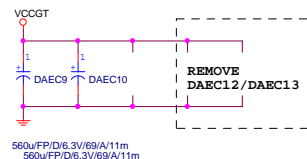




## VCCGT



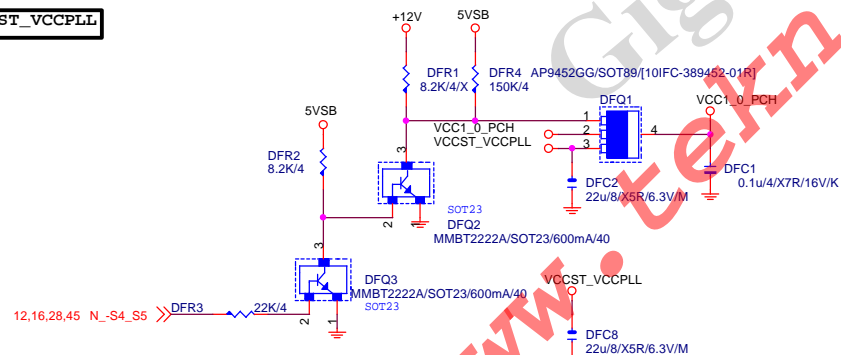
VCCGT CAP 560u\*3PCS  
22u\*15PCS



REV: 0.4

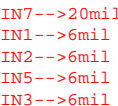
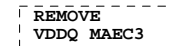


放CPU端





VPP\_25V使用8120.8068A.RT8237時上件

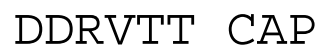


IN5-->6mil 1H1L規格移除

31 DDR\_ADJ



4



\* 大電容 x0



**CHOKER與CAP料號可變**

SUPPORT DDR4 1.2V

25A MAX

1.2V


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

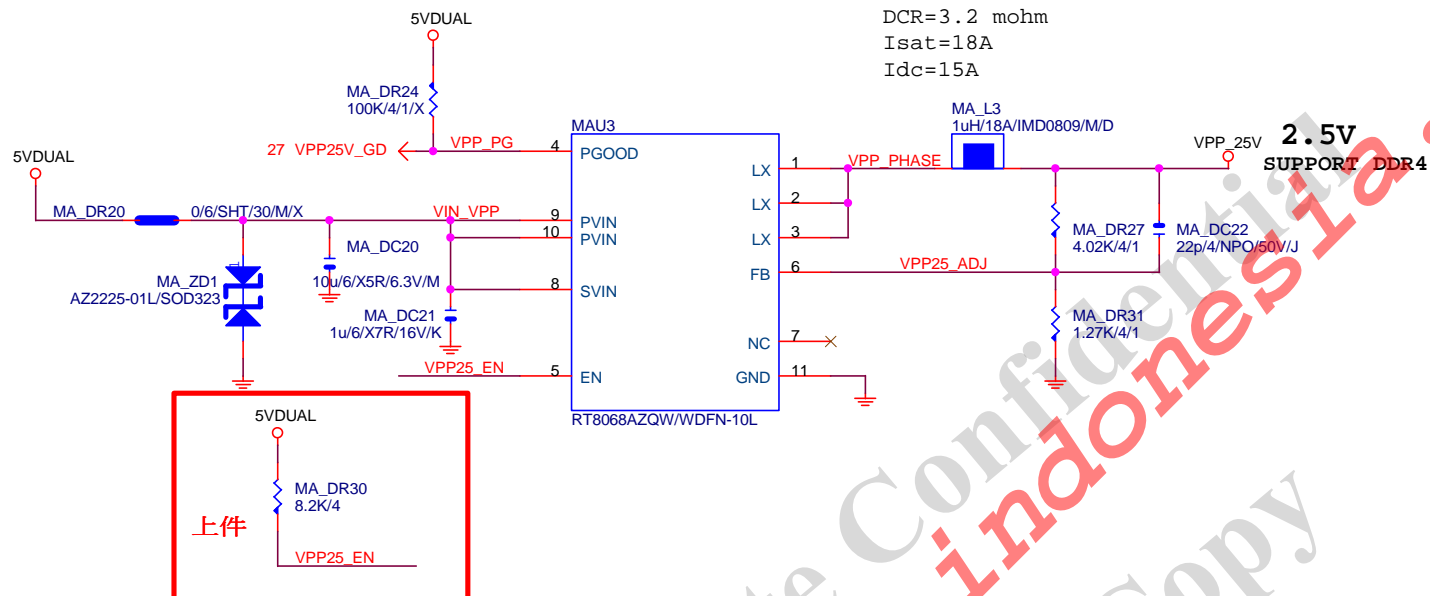
DDR\_VTT\_CTL MAR110 0/4 DDRVTT\_EN  
N\_SLP\_S3 MAR111 0/4 DDRVTT\_BOOT

MAU1上NCT3103S時上件

			
Title			
RT8237_DDR4 POWER			
Size	Document Number	Rev	
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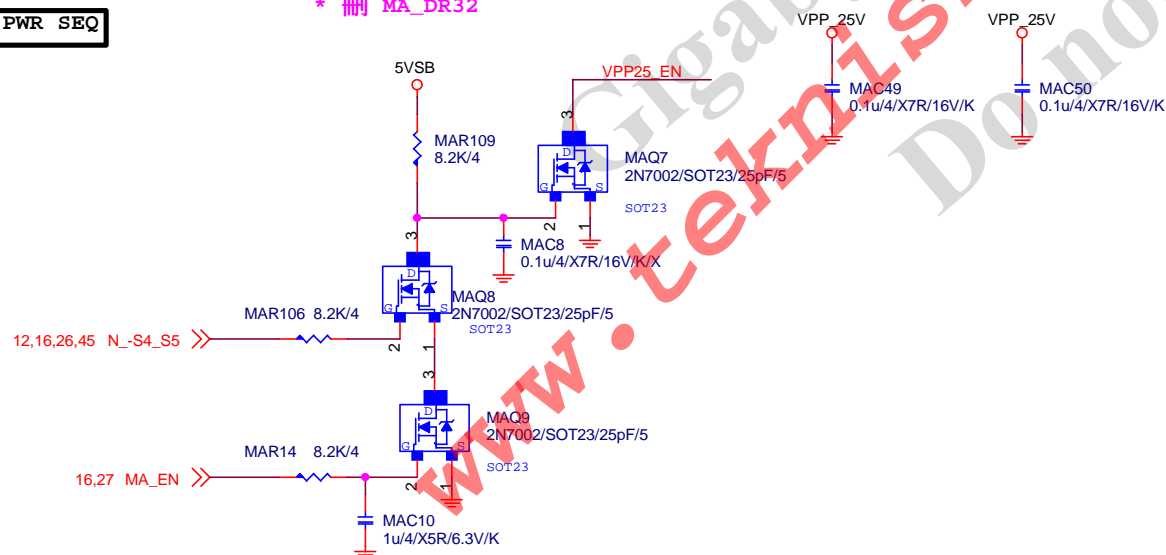
**VPP\_25V**

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



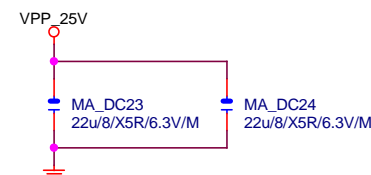
PWR SEQ

\* 冊 MA\_DR32



VPP CAP 22u\*1PCS

\* 大電容 x0

**GIGABYTE™**

Title  
**RT8068A\_VPP25\_POWER**

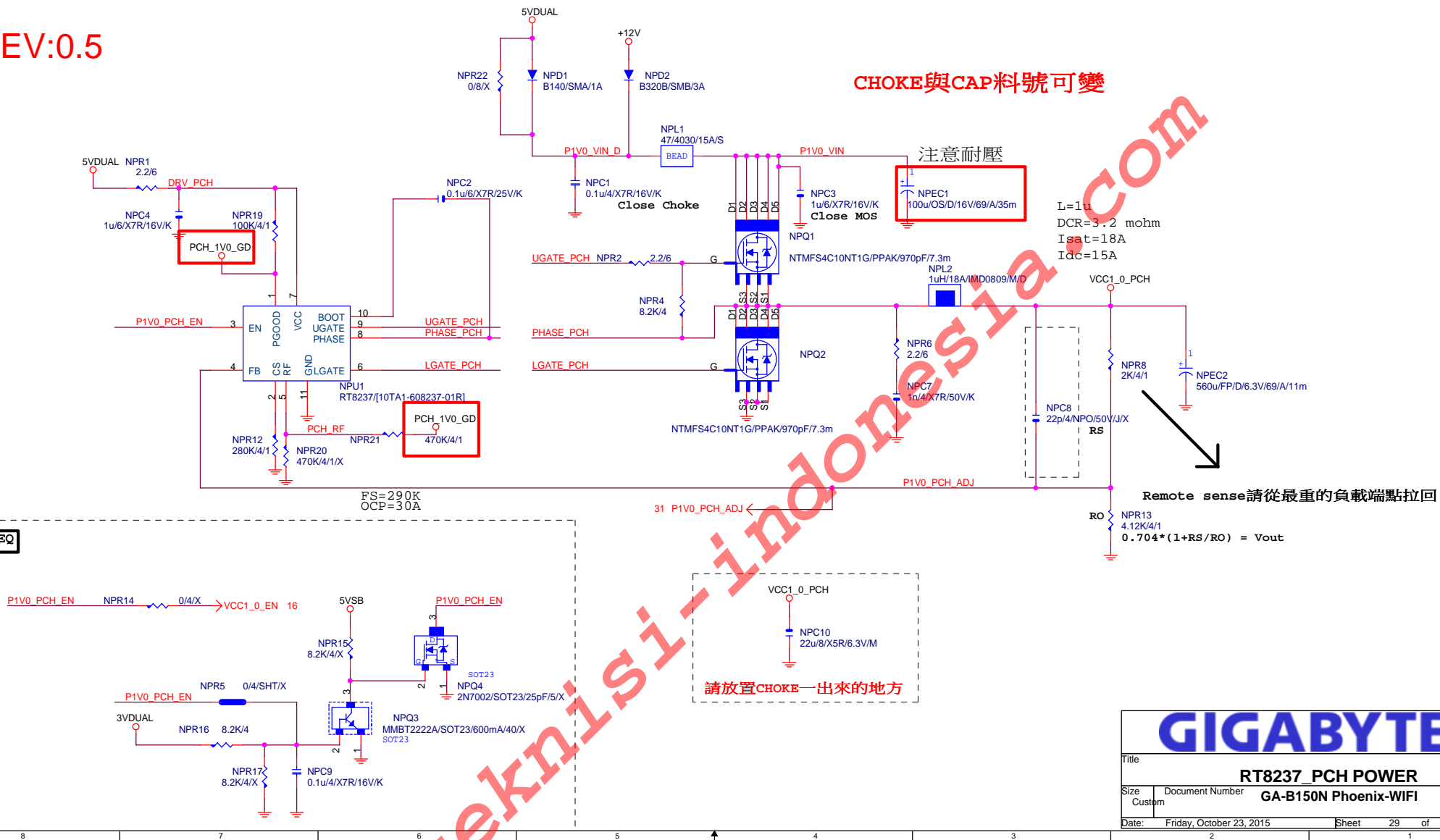
Size	Document Number
Custom	<b>GA-B150N Phoenix-WIFI</b>

Rev	1.0
-----	-----

Date: Friday, October 23, 2015 Sheet 28 of 49

REV:0.5

CHOKE與CAP料號可變



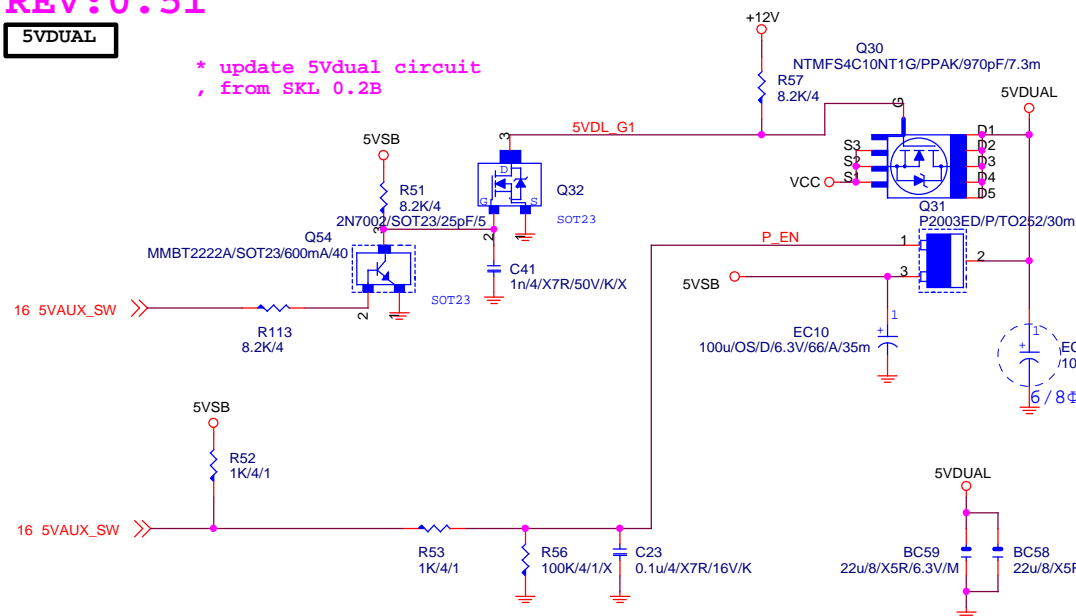
**GIGABYTE™**

Title			
RT8237_PCH POWER			
Size	Document Number	Rev	
Custom	GA-B150N Phoenix-WIFI	1.0	
Date:	Friday, October 23, 2015	Sheet	29 of 49

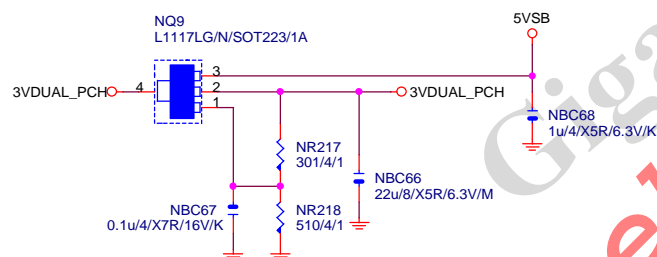


5VDUAL

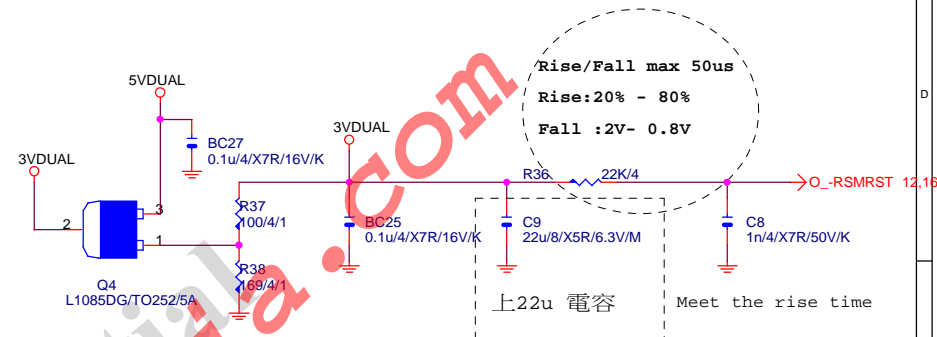
16 5VAUX\_SW &gt;&gt;



## 3VDUAL PCH

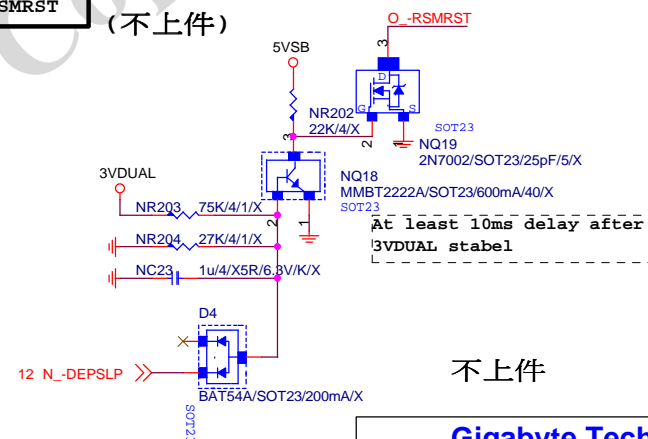


## 3VDUAL



0 -RSMRST

(不上件)



不上件

## Gigabyte Technology

Title
-------

## DISCRETE POWER

Size

Document Number
-----------------

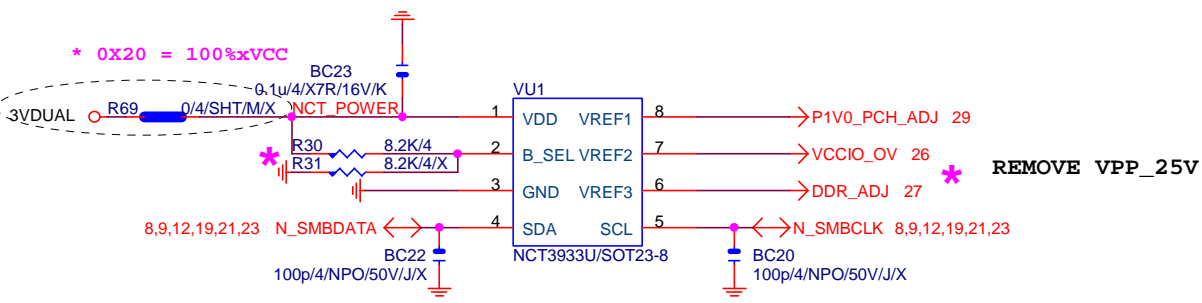
GA-B150N Phoenix-WiFi

Date: Friday, October 23, 2015

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1.0

OVER VOLTAGE



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

Gigabyte Technology

Title

CPU CORE VR-2

Size Custom

Document Number

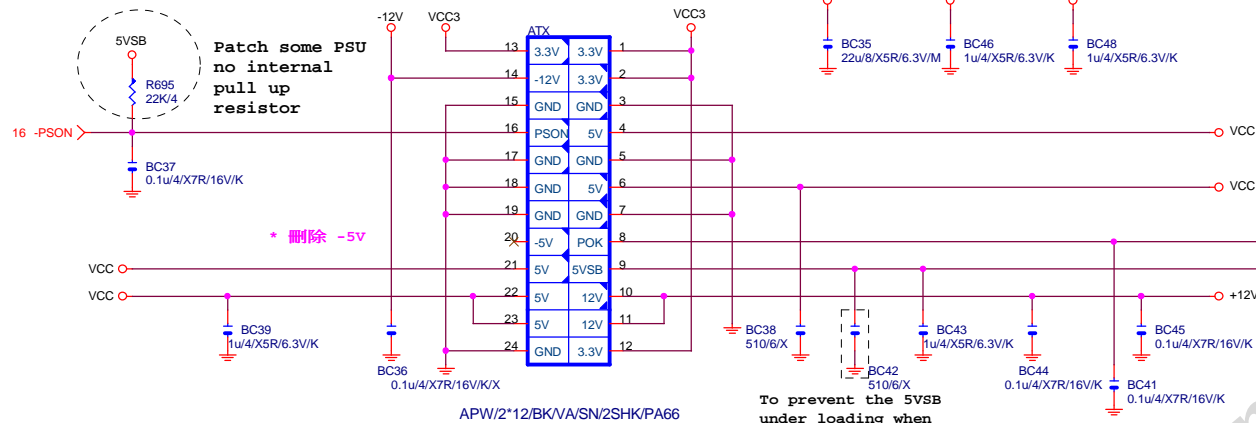
GA-B150N Phoenix-WiFi

Date: Friday, October 23, 2015

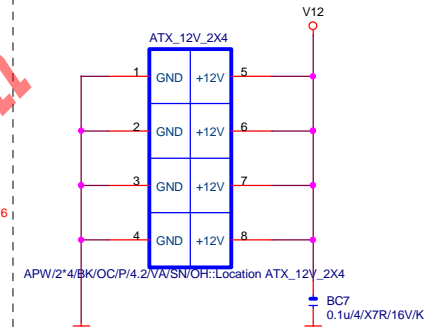
Sheet 31 of 49

Rev 1.0

## ATXX24 POWER CONNECTOR

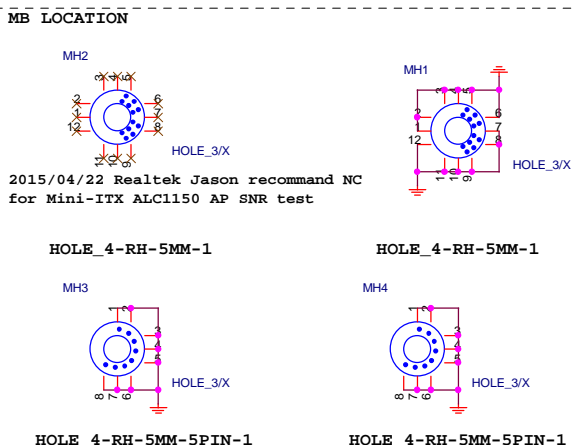


## ATXX4 POWER CONNECTOR

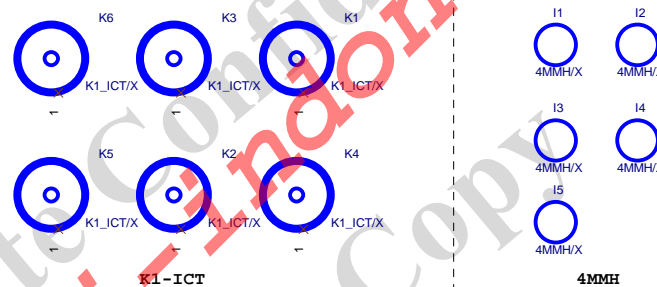


## 螺絲孔

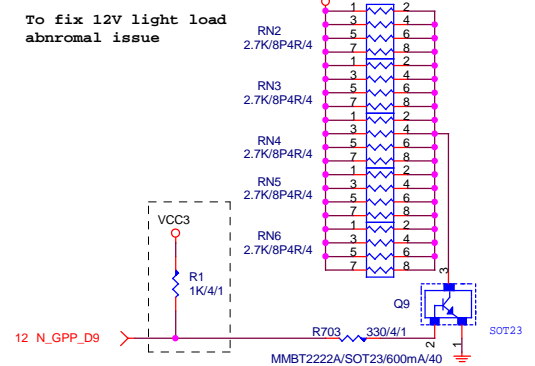
MH1:GND-T  
FOR EMI  
TEST驗證



## 固定孔/光學點

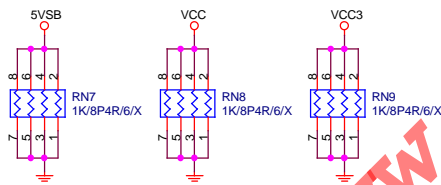


## +12V DUMMY LOAD



【技術通報R&D技術通報153】

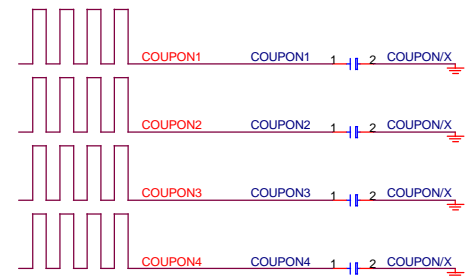
## DUMMY LOAD



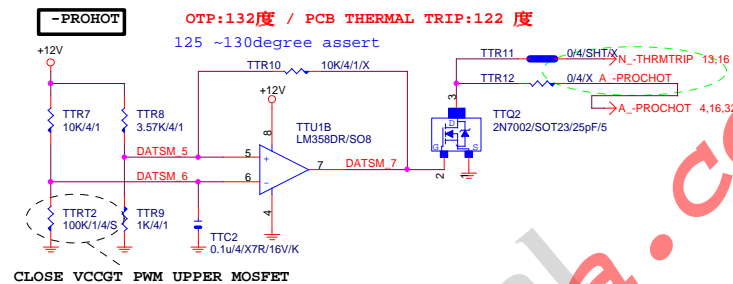
## -PROHOT

4,16,33 A\_-PROHOT <-> A\_-PROHOT R2 0/4/SHT/X VR\_HOT 23

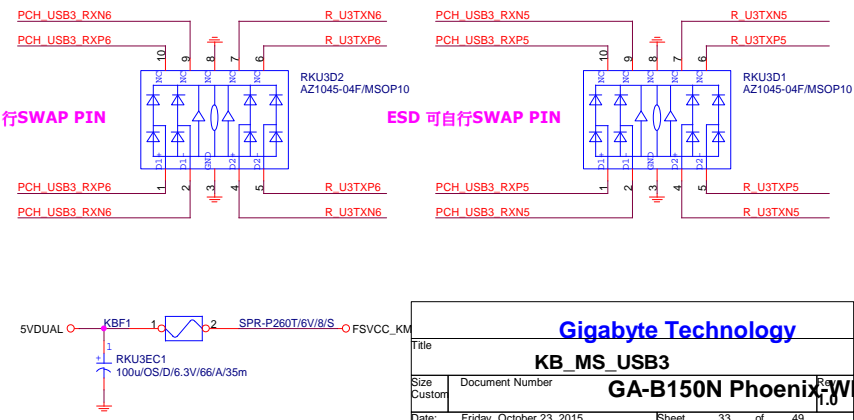
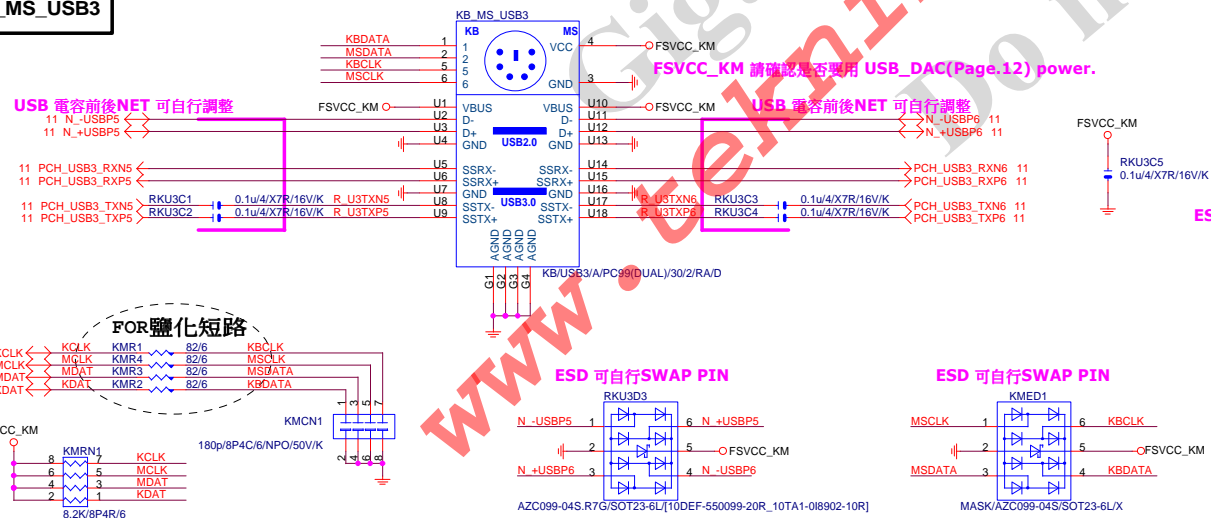
## COUPON



Gigabyte Technology	
ATX POWER CONNECTOR	
Size	Document Number
Custom	GA-B150N Phoenix-WiFi
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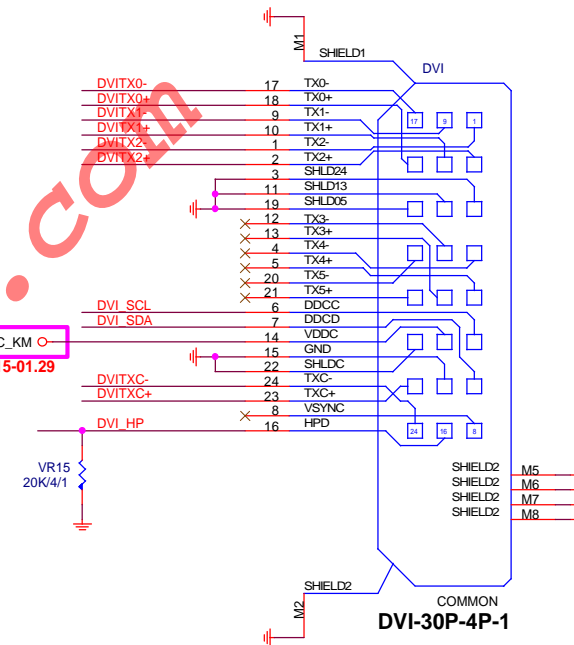
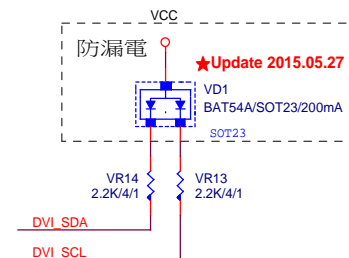
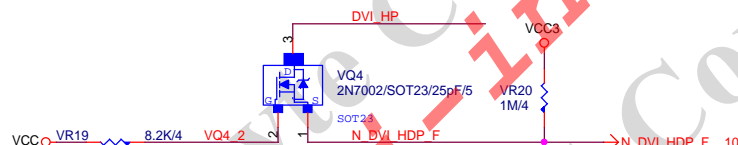
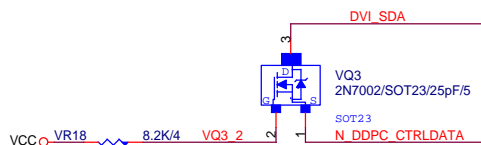
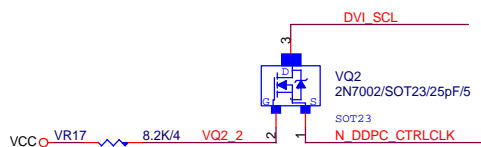
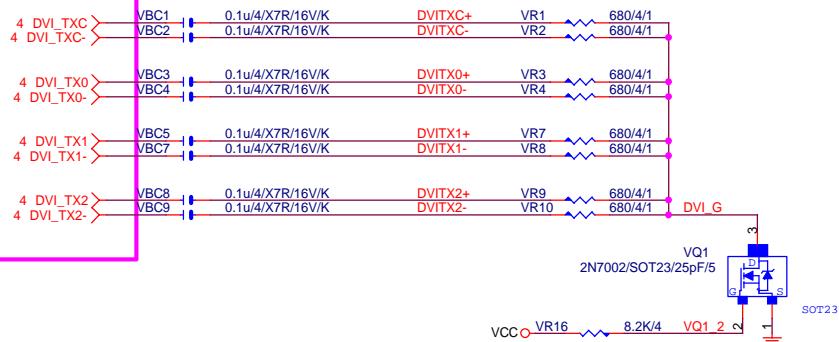


## USB\_DAC



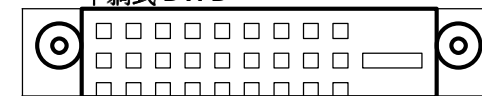
## NET 可變

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



DVI-D/24P/SC/RA/D/SH/[11NR6-501024-31R

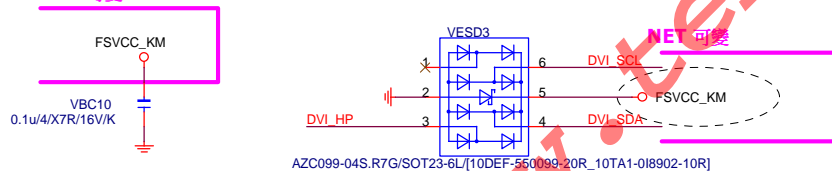
### 平躺式 DVI-D



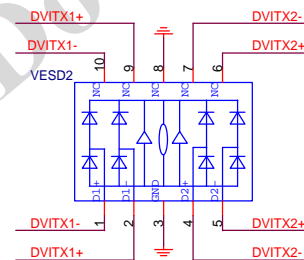
11NR6-501024-31

ESD

NET 可變

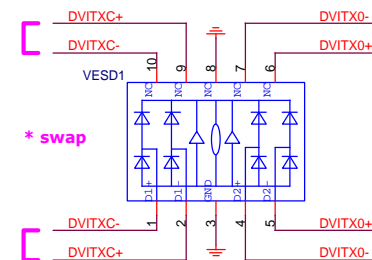


Close to connector



AZ1045-04F/MSOP10

Close to connector



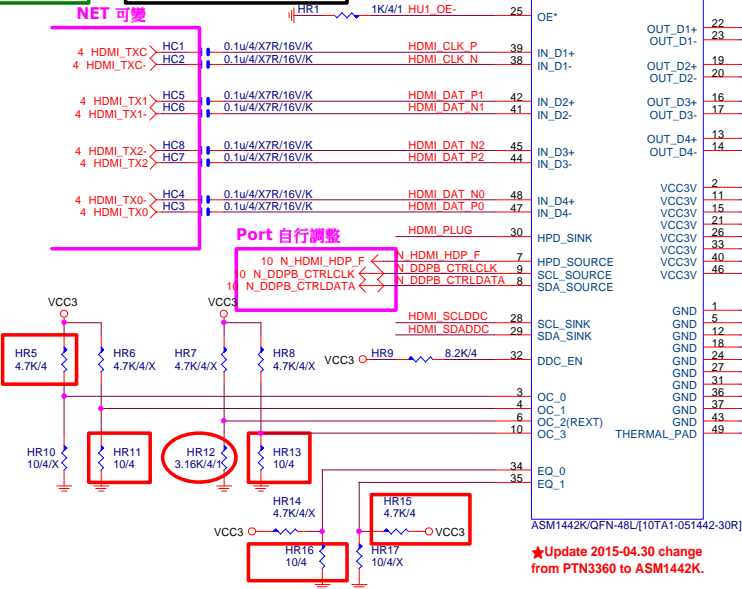
AZ1045-04F/MSOP10

Close to connector

## Gigabyte Technology

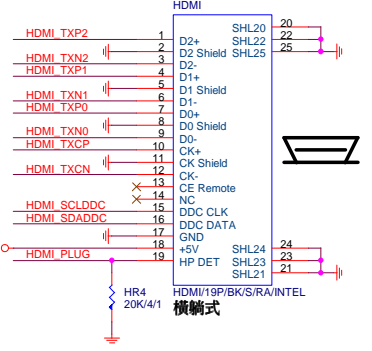
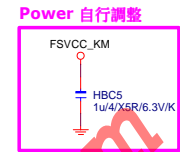
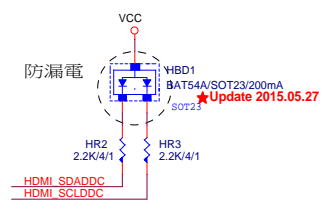
Title			
DVI CONN			
Size Custom	Document Number	GA-B150N Phoenix-Wh	
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HDMI LEVEL SHIFT



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

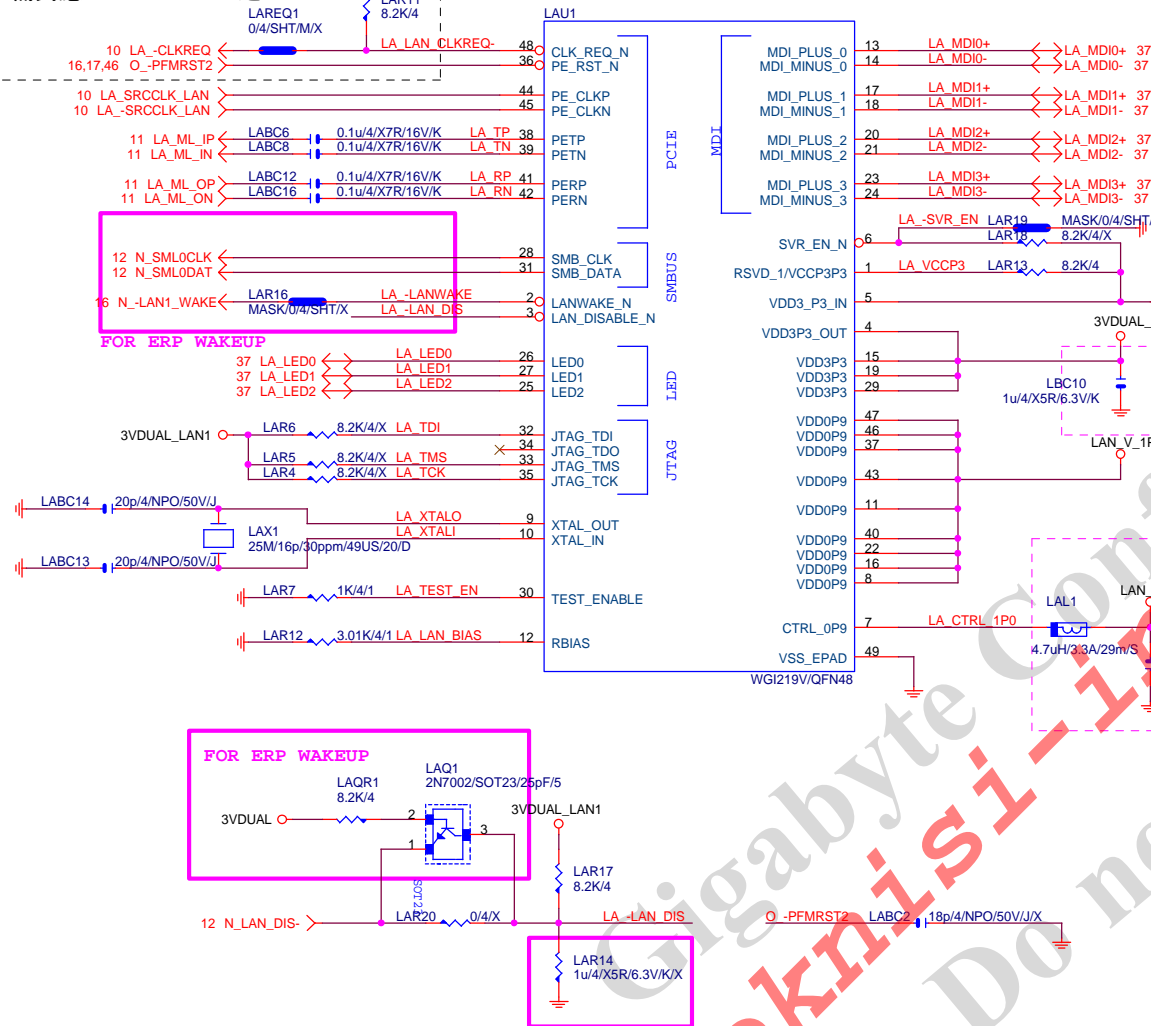
【技術通報R&D技術通報150】  
HDMI eye diagram 1.4版(deep color)會fail  
原因: 因目前的HDMI訊號過長,造成RISE TIME過慢,而會壓到eye diagram  
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)



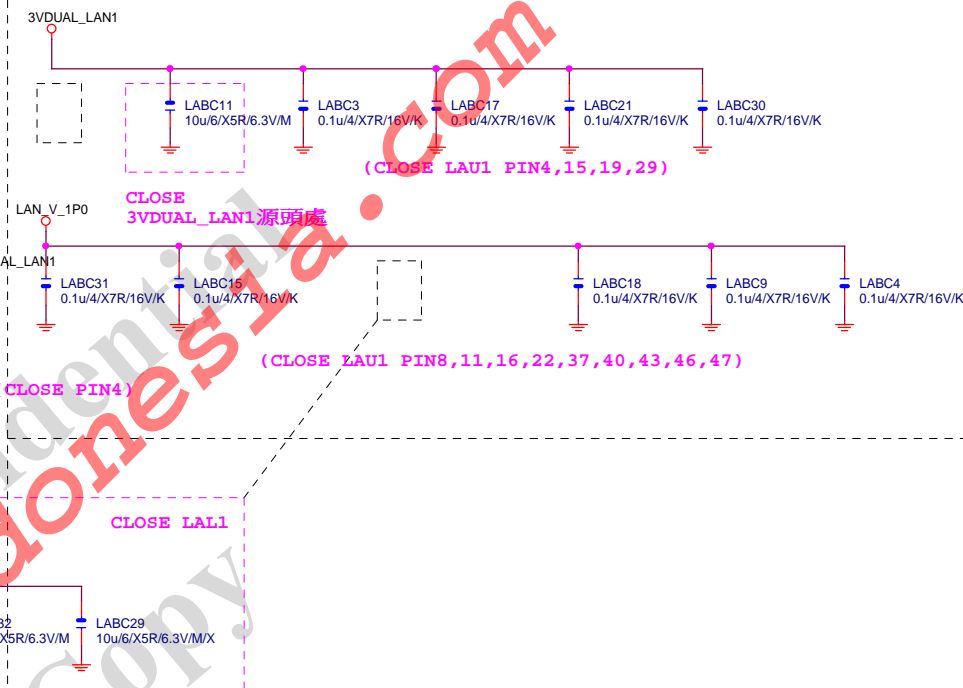
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Do not Copy  
www.teknisi-indonesia.com

## R1.11

L1+CLK REQ# 節能：  
需對應LA\_SRCCLK\_LAN之CLKREQ#



## LAN POWER



## Gigabyte Technology

**INTEL I219**

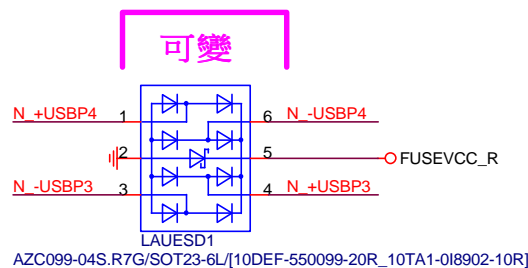
Size Custom	Document Number	Rev
<b>GA-B150N Phoenix-WF</b>		
Date:	Friday, October 23, 2015	Sheet 36 of 49

Date:	Friday, October 23, 2015	Sheet	36	of	49
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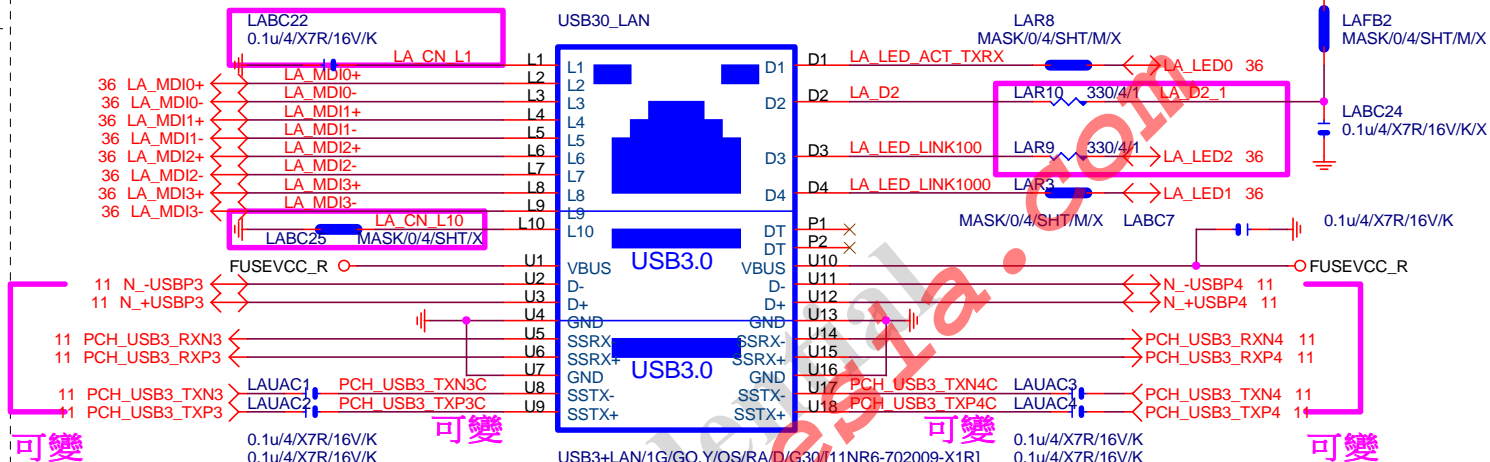
## R1.11

note:可變更USB NAME



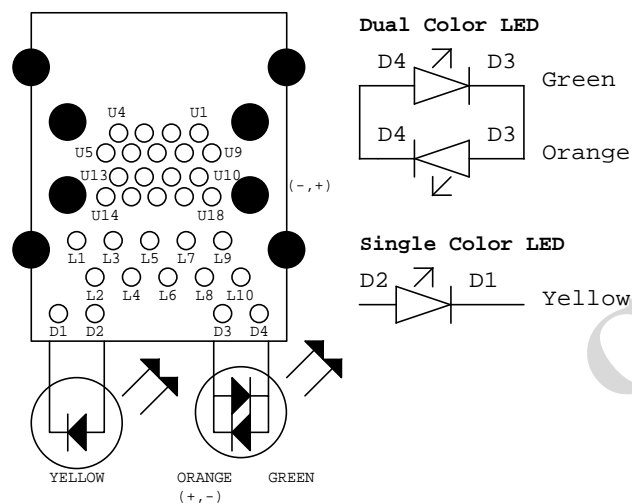
note:可變更USB NAME

[ I219 ]



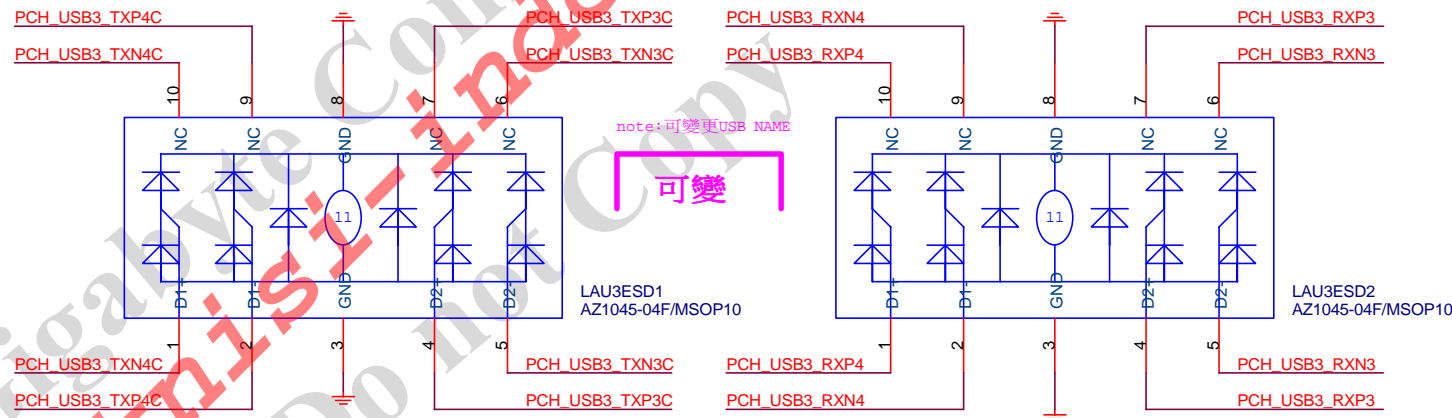
LA\_MDI-->100歐姆:[20/4/8/4/20]

### USB30\_LAN LAYOUT示意圖



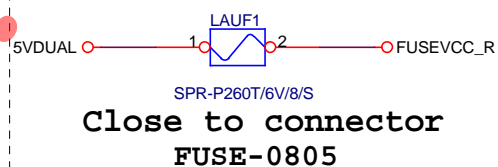
FOOT PRINT:LAN COVER

## 可變 [視SPEC需求]



note:可變更FUSE

## 可變

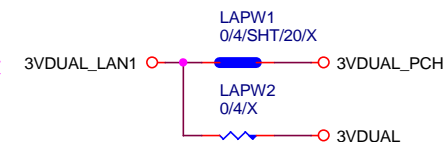


PS:視EMI需求

LAR24 MASK/0/4/SHT/M/X

note: lan power連接及電流

## 可變



## Gigabyte Technology

## LAN CONNECTOR-I219

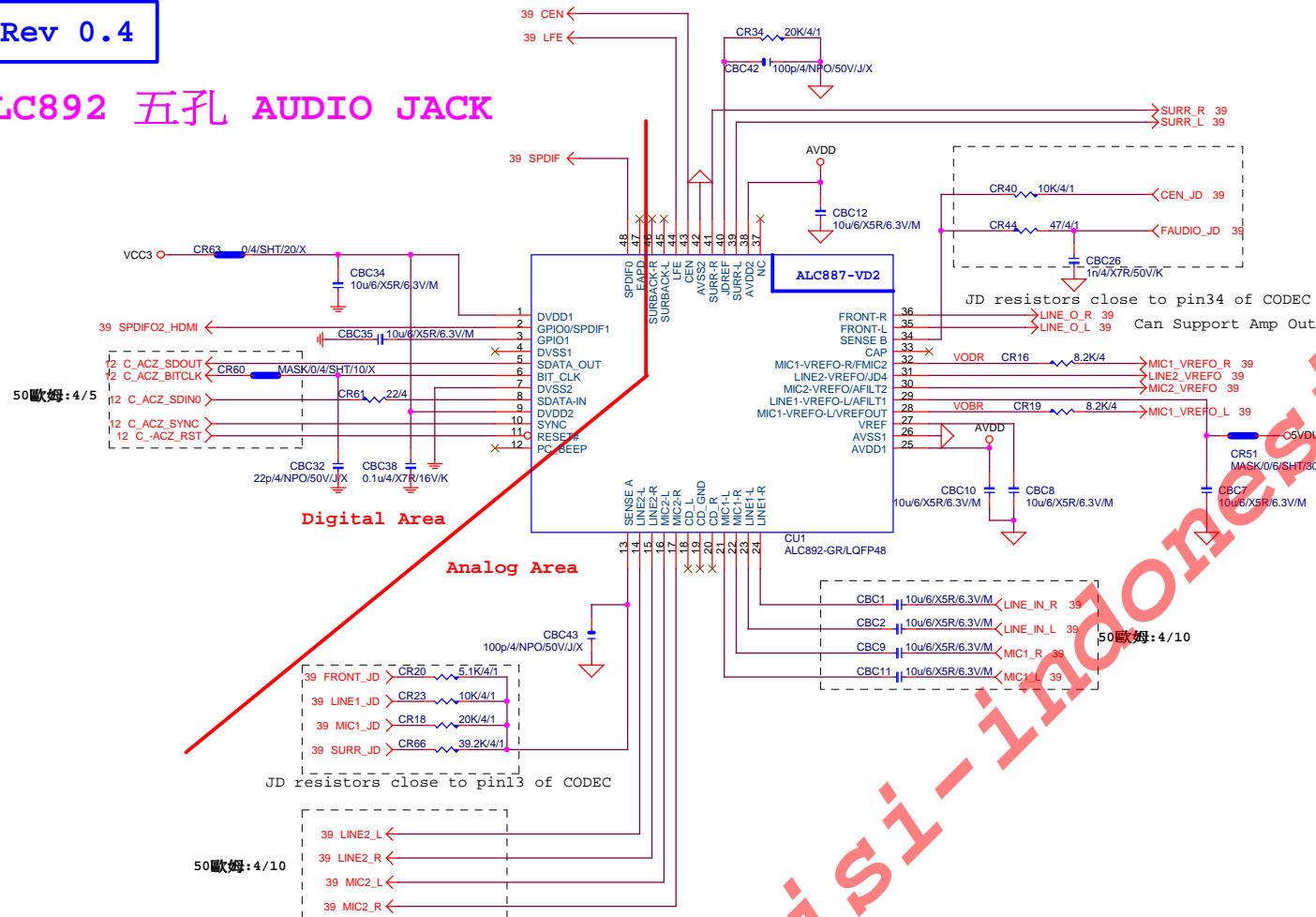
Size	Document Number
------	-----------------

## GA-B150N Phoenix-WiFi

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## ALC892 五孔 AUDIO JACK



LAYOUT注意:螺絲孔下GND方式

1. MH1空間夠,下DGND  
空間不夠,才改為Isolate
2. MH2一律改為Isolate
3. Codec下方,第二層必須參考GND

○ MH1      MH2 ○  
DGND      Isolate

LAYOUT注意:要加

GND切割線

音效區域印刷



VALUE可變,LED顏色請自行修改  
(預設:低亮度黃色LED:LED/Y/6/S)

LAYOUT注意:  
CQ5, CQ6必須擺放在一起

- BOM OPTION :
1. Chemicon音效電容
  2. 金屬外罩 Reserve (LAYOUT上件與否,依照各Model spec)
  3. LED Reserve (上件與否和LED顏色,依照各Model spec)

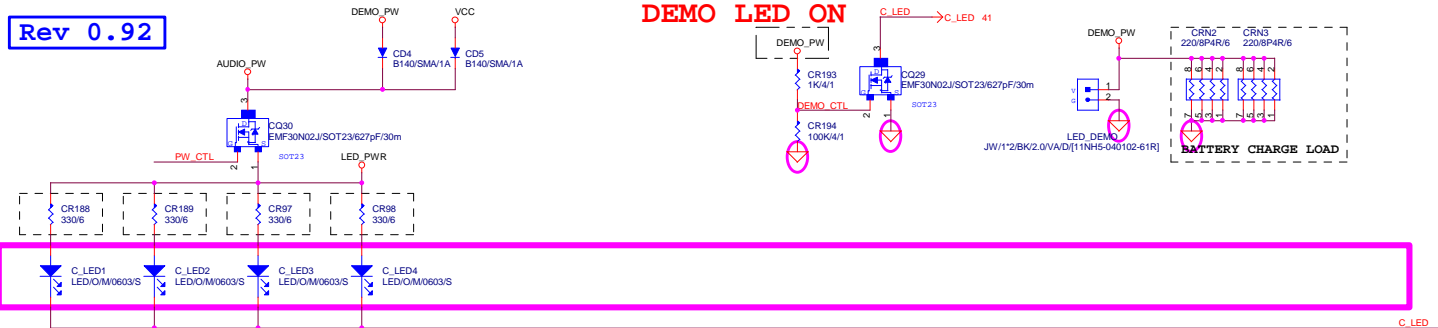
Gigabyte Technology

Title HD AUDIO ALC887

Size Custom Document Number GA-B150N Phoenix-WIFI

Date: Friday, October 23, 2015 Sheet 38 of 49

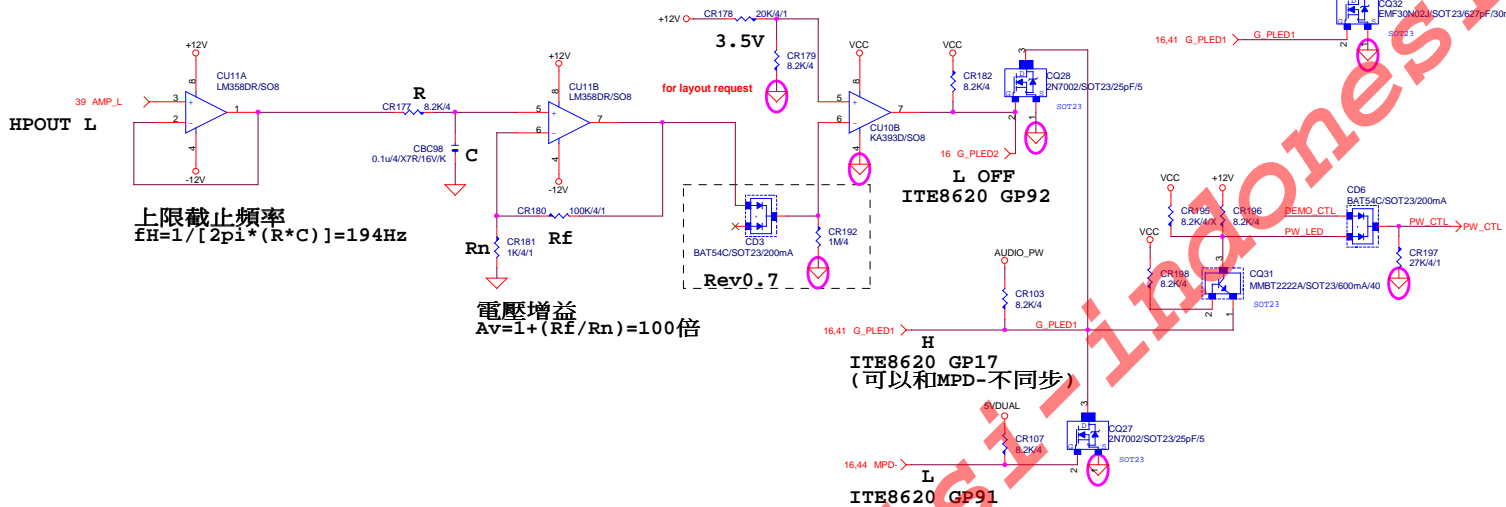




VALUE可變, LED顏色請自行修改

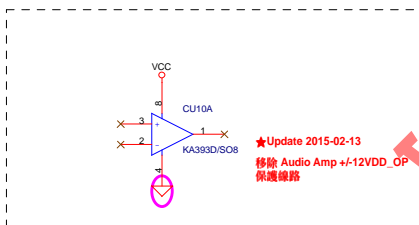
[UD/SOC系列--> 白光LED(黃色):LED/W/6/S]

[GAMING系列--> 紅光LED(紅色):LED/R/H/0603/S]



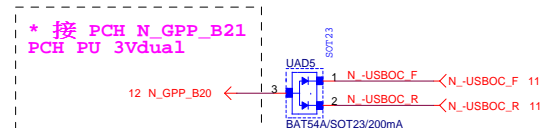
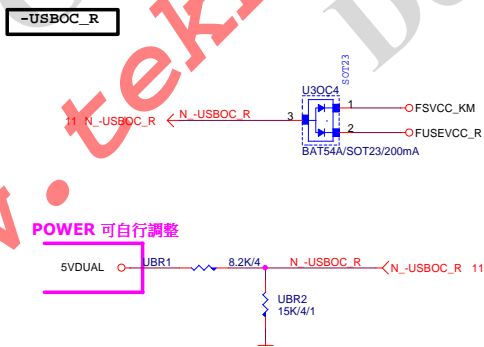
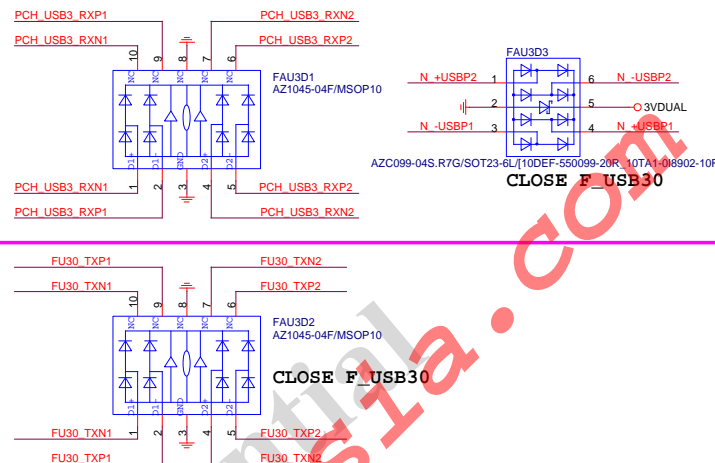
### AUDIO LED Control

	IO_GP92	IO_GP17	IO_GP91
Sill Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L

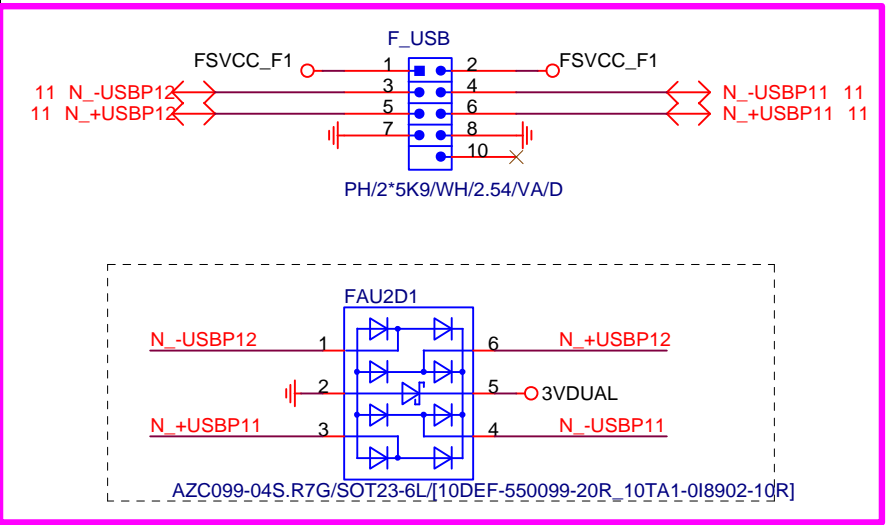


★Update 2015-02-13  
移除 Audio Amp +/-12VDD\_OP  
保護線路

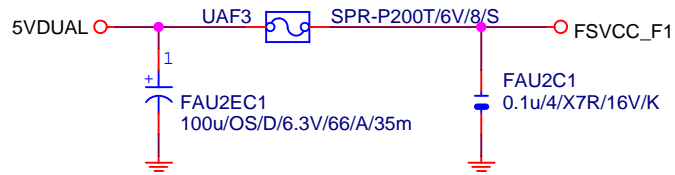




NET 可變



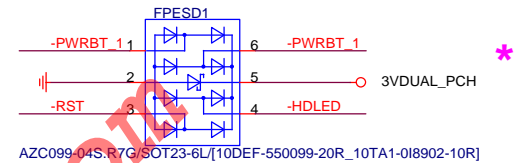
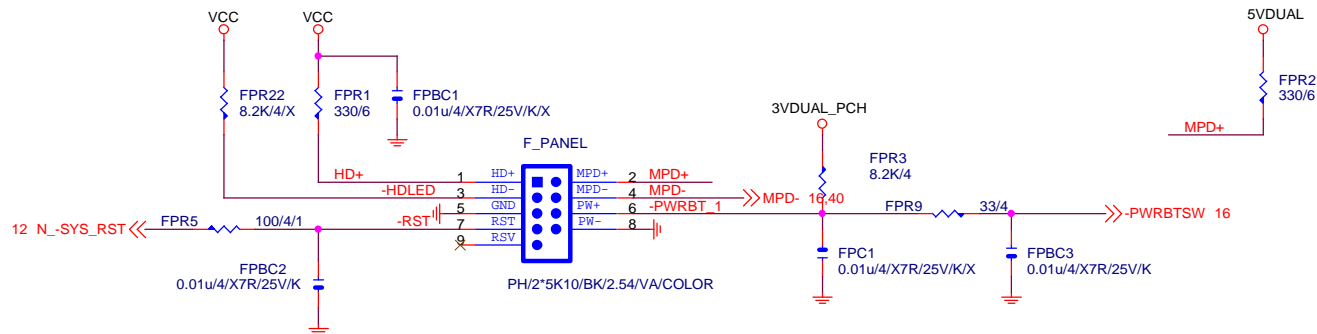
Close to connector  
FUSE 2 Port 1 Fuse 2A



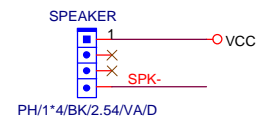
F\_USB 2.0 OC SIGNAL-->SCH IN F\_USB30  
PAGE

Gigabyte Technology			
Title			
USB2.0			
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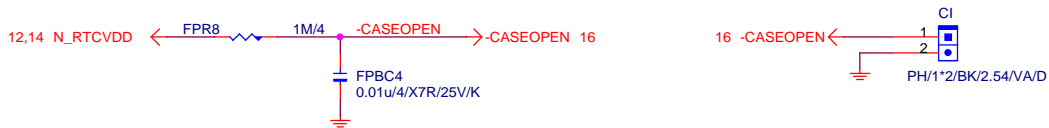


**Rev: 0.51**

**SPEAKER**



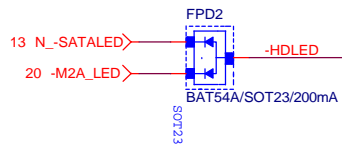
## CASE OPEN



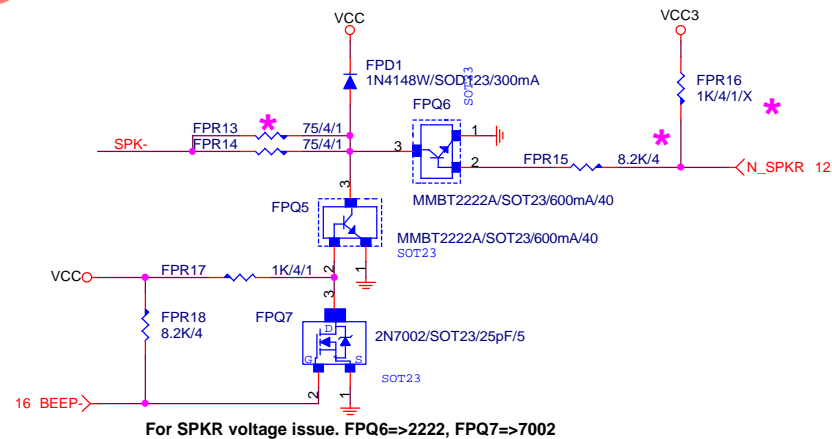
## SATA LED

SATALED# signal open-collector, pull-up (8.2 kΩ to 10 kΩ) to Vcc3 3

★Update 2015-02-12



## SPKR



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

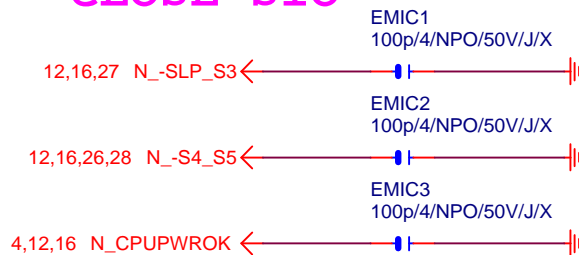
## Gigabyte Technology

## FRONT PANEL

GA-B150N Phoenix-WIFI Rev 1.0

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### CLOSE SIO



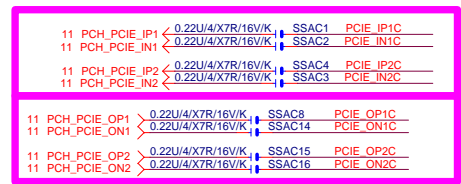
### CLOSE PCH



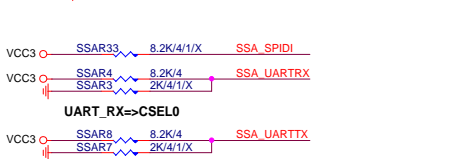
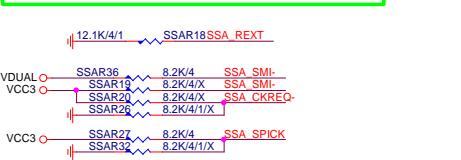
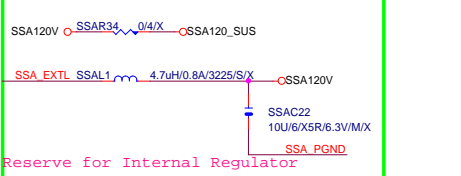
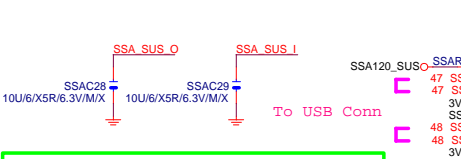
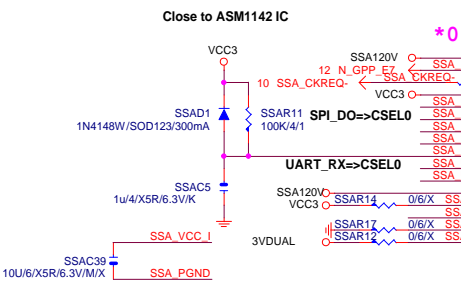
**GIGABYTE™**

Title		
EM/ESD		
Size A	Document Number GA-B150N Phoenix-WIFI	Rev 1.0
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PCIE Gen3 X1 or PCIE Gen2 X2  
To PCIE host.



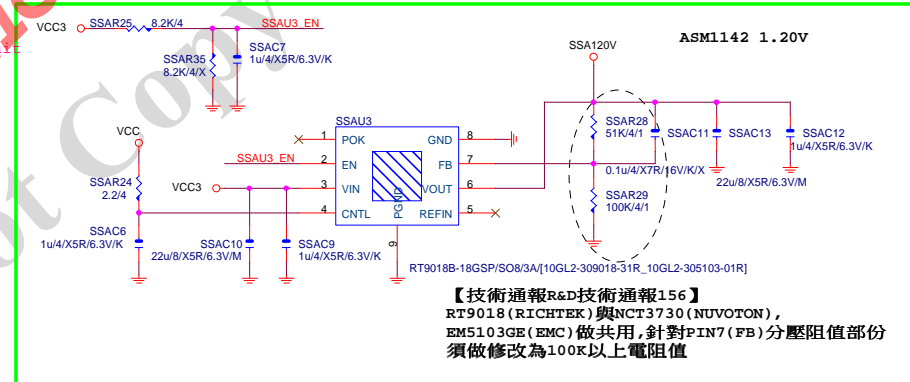
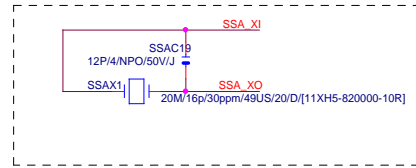
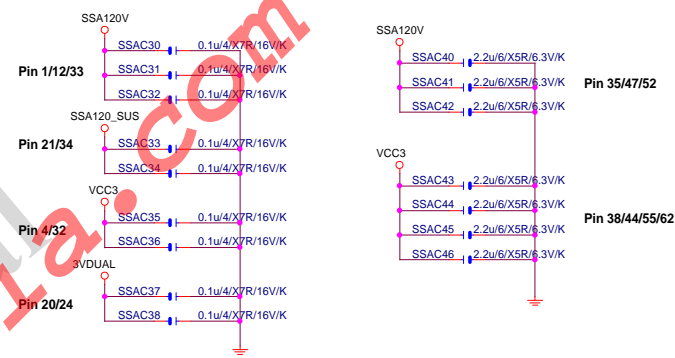
From PCIE host.



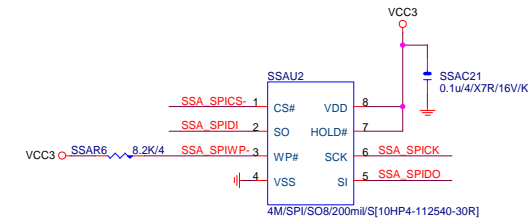
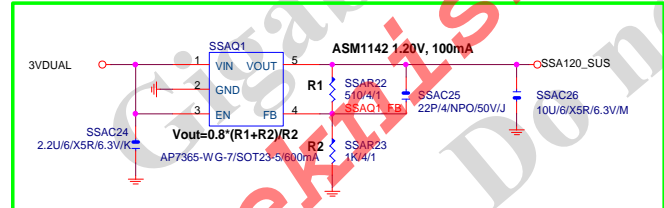
CSEL1	CSEL0	
1	1	External 20MHz Crystal (Asynchronous)
0	1	48MHz clock input (Synchronous)
X	0	Reserved for Test

Color markers can be changed by model

Base on ASM1142 0.3 Reference SCH



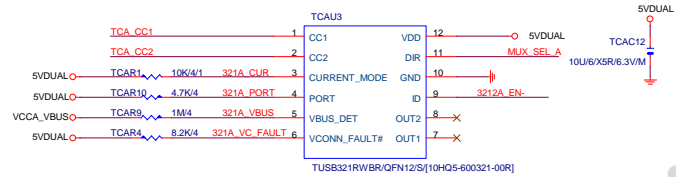
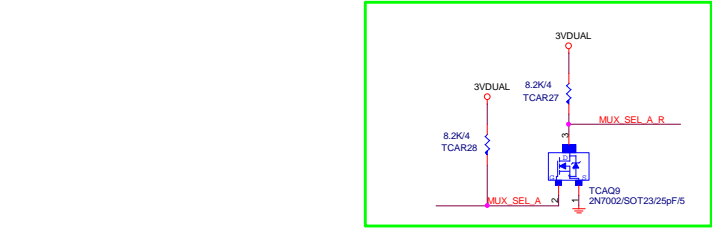
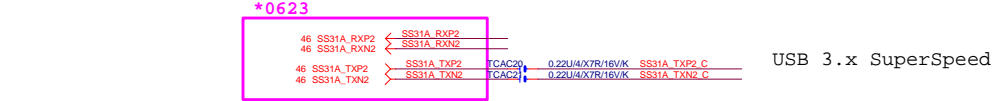
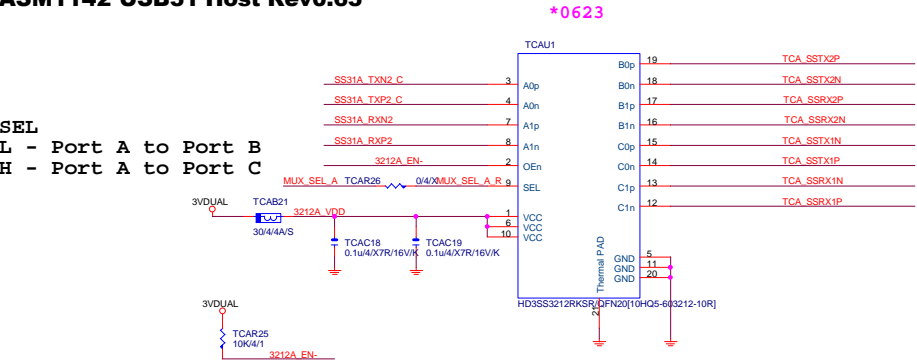
【技術通報R&D技術通報156】  
RT9018 (RICHTER) 與NCT3730 (NUVOTON),  
EM5103GE (EMC) 做共用, 針對PIN7 (FB) 分壓阻值部份  
須做修改為100K以上電阻值



GIGABYTE		
Title ASM1142 USB3.1A		
Size Custom	Document Number GA-B150N Phoenix-WIFI	Rev 1.0
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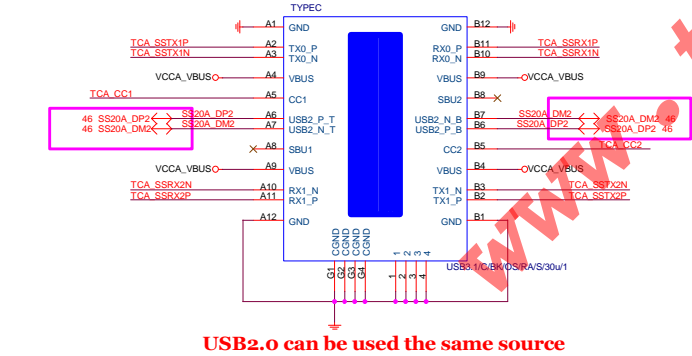
ASM1142 USB31 Host Rev0.63

SEL  
L - Port A to Port B  
H - Port A to Port C

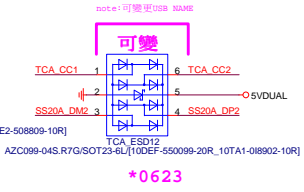
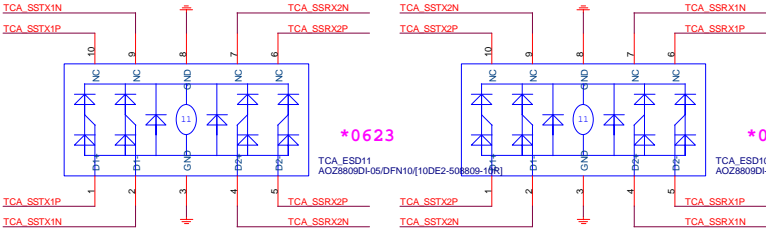


CURRENT MODE  
L - Default current / Pull down to GND or NC  
M - Medium (1.5A) current / Pull up to VDD 500K  
H - High (3.0A) current / Pull up to VDD 10K

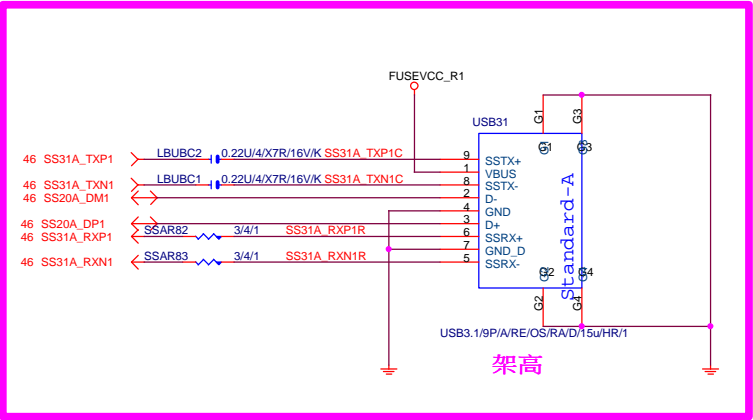
PORT  
H - HOST  
L - Device  
NC - Dual Role



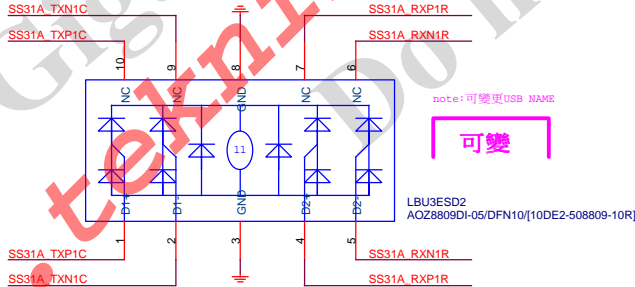
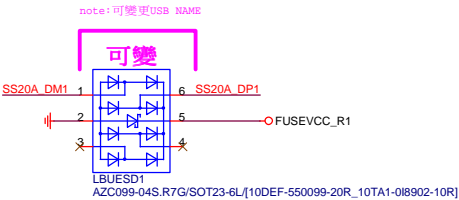
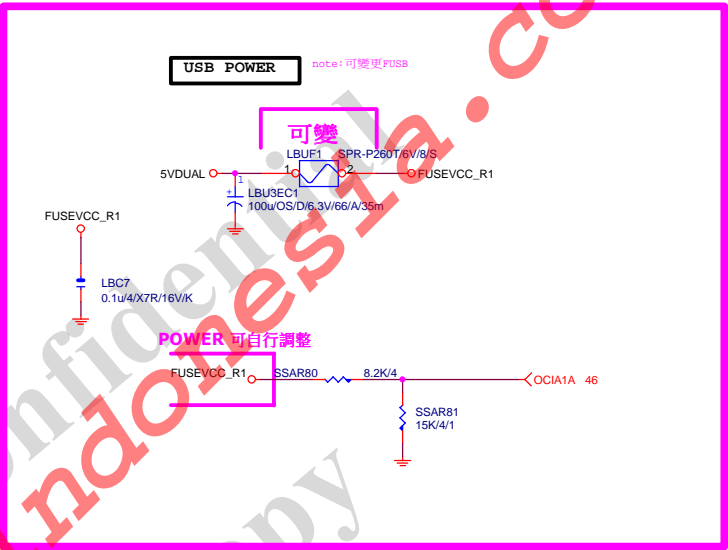
USB2.o can be used the same source



GIGABYTE™		
TI HD3SS3212		
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USB31 TYPE A Connector which chooses for project demand

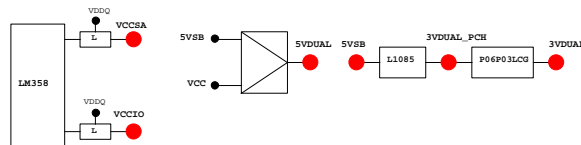


PIN GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GPP_A0	MAIN	NATIVE	N_-KBRST	P/U 8.2K VCC3	
GPP_A1	MAIN	NATIVE	N_LAD0	N/A	
GPP_A2	MAIN	NATIVE	N_LAD1	N/A	
GPP_A3	MAIN	NATIVE	N_LAD2	N/A	
GPP_A4	MAIN	NATIVE	N_LAD3	N/A	
GPP_A5	MAIN	NATIVE	N_-LFRAME	N/A	
GPP_A6	MAIN	NATIVE	N_SBR1Q	P/U 8.2K VCC3	
GPP_A7	MAIN	NATIVE	N_-LDRQ0	P/U 8.2K 3VDUAL	
GPP_A8	MAIN	NATIVE	N_GPP_A8	P/U 8.2K VCC3	
GPP_A9	MAIN	NATIVE	N_LPC24MB	N/A	
GPP_A10	MAIN	NATIVE	N_LPC24MA	N/A	
GPP_A11	MAIN	NATIVE	N_-P_FME	P/U 8.2K 3VDUAL_PCH	
GPP_A12	MAIN	GPI	N_GPP_A12	P/U 8.2K VCC3	
GPP_A13	MAIN	NATIVE	N_-S_WARN	N/A	
GPP_A14	MAIN	NATIVE	N_GPP_A14	P/U 8.2K 3VDUAL	
GPP_A15	MAIN	NATIVE	N_-S_ACK	N/A	
GPP_B0	MAIN	CORE_VIO0	N_-DDR_V_SEL	P/U 8.2K VCC3	
GPP_B1	MAIN	CORE_VIO1	N/A	N/A	
GPP_B2	MAIN	GPI	N_-VREALRT	P/U 8.2K 3VDUAL	
GPP_B5	MAIN	GPI	-PCIEX16_PR	P/U 8.2K VCC3	
GPP_B6	MAIN	GPI	-PCIEX1_PR1	P/U 8.2K VCC3	
GPP_B7	MAIN	GPI	-PCIEX1_PR2	P/U 8.2K VCC3	
GPP_B8	MAIN	GPI	-PCIEX4_PR	P/U 8.2K VCC3	
GPP_B9	MAIN	GPI	N/A	N/A	
GPP_B10	MAIN	GPI	N/A	N/A	
GPP_B11	MAIN	GPO	N/A	N/A	
GPP_B12	MAIN	SLP_S0	N_SLP_S0	N/A	
GPP_B13	MAIN	PLTRST	N_-PPMRST	N/A	
GPP_B14	MAIN	H-Z	GPO	N_SFRR	N/A
GPP_B18	MAIN	H-Z	GPO	N_GPP_B18	P/D 1K GND
GPP_B20	MAIN	GPI	N_GPP_B20	P/U 8.2K 3VDUAL	
GPP_B22	MAIN	GPI	N_GPP_B22	P/D 1K GND	
GPP_C0	MAIN	SMCLK	N/A	N/A	
GPP_C1	MAIN	SMCDATA	N/A	N/A	
GPP_C2	MAIN	H-Z	GPO	N_-LPCVME	N/A
GPP_C3	MAIN	SMCLK	N_SMCLK	P/U 499 3VDUAL	
GPP_C4	MAIN	SMCLK	N_SMCLK	P/U 499 3VDUAL	
GPP_C5	MAIN	H-Z	GPO	N_GPP_C5	N/A
GPP_C6	MAIN	GPI	N_SMCLK	P/U 8.2K 3VDUAL	
GPP_C7	MAIN	GPI	N_SMCLK	P/U 8.2K 3VDUAL	
GPP_D4	MAIN	GPI	N_GPP_D4	P/U 8.2K 3VDUAL	
GPP_D7	MAIN	GPI	N_GPP_D7	N/A	
GPP_D9	MAIN	GPI	N_GPP_D9	N/A	
GPP_D17	MAIN	GPI	N_GPP_D17	P/U 8.2K VCC3	
GPP_D18	MAIN	GPI	N_GPP_D18	P/U 8.2K VCC3	
GPP_D19	MAIN	GPI	N_GPP_D19	P/U 8.2K VCC3	
GPP_D20	MAIN	GPI	N_GPP_D20	P/U 8.2K VCC3	
GPP_D23	MAIN	GPI	N_GPP_D23	P/U 8.2K 3VDUAL	
GPP_E0	MAIN	NATIVE	N_GPP_E0	P/U 8.2K VCC3	
GPP_E1	MAIN	NATIVE	N_GPP_E1	P/U 8.2K VCC3	
GPP_E2	MAIN	NATIVE	N_GPP_E2	P/U 8.2K VCC3	
GPP_E3	MAIN	GPI	N_CPU_S	P/U 8.2K VCC3	
GPP_E4	MAIN	GPI	N_DEVSLP0	P/U 8.2K VCC3	
GPP_E6	MAIN	GPI	N_DEVSLP2	P/U 8.2K VCC3	
GPP_E7	MAIN	GPI	N_GT_S	P/U 8.2K VCC3	
GPP_E8	MAIN	GPI	N_-SATALED	N/A	
GPP_E9	MAIN	H-Z	GPI	N_-USB0C_F	N/A
GPP_E10	MAIN	H-Z	GPI	N_-USB0C_R	N/A
GPP_E11	MAIN	H-Z	GPI	N_-USB0C_R	N/A
GPP_E12	MAIN	H-Z	GPI	N_-USB0C_F	N/A
GPP_F0	MAIN	NATIVE	N_GPP_F0	P/U 8.2K VCC3	
GPP_F1	MAIN	NATIVE	N_GPP_F1	P/U 8.2K VCC3	
GPP_F2	MAIN	NATIVE	N_GPP_F2	P/U 8.2K VCC3	
GPP_F3	MAIN	GPI	N_GPP_F3	P/U 8.2K VCC3	
GPP_F4	MAIN	GPI	N_GPP_F4	P/U 8.2K VCC3	
GPP_F5	MAIN	GPI	N_GPP_F5	P/U 8.2K VCC3	
GPP_F6	MAIN	GPI	N_DEVSLP4	P/U 8.2K VCC3	
GPP_F10	MAIN	GPI	N_GPP_F10	P/U 8.2K VCC3	
GPP_F11	MAIN	GPI	N_GPP_F11	P/U 8.2K VCC3	
GPP_F12	MAIN	GPI	N_GPP_F12	P/U 8.2K VCC3	
GPP_F13	MAIN	GPI	N_GPP_F13	P/U 8.2K VCC3	
GPP_F14	MAIN	GPI	A_-SKTOCC	P/U 8.2K VCC3	
GPP_F15	MAIN	GPI	N_-USB0C_F	N/A	
GPP_F16	MAIN	GPI	N_-USB0C_F	N/A	
GPP_F17	MAIN	GPI	N_-USB0C_R	N/A	
GPP_F18	MAIN	GPI	N_-USB0C_F	P/U 8.2K 3VDUAL	
GPP_F22	MAIN	GPI	N_GPP_F22	P/U 8.2K VCC3	
GPP_F23	MAIN	GPI	N_GPP_F23	P/U 8.2K VCC3	
GPP_G0	MAIN	GPI	N_GPP_G0	P/U 1K VCC3	
GPP_G1	MAIN	GPI	N_GPP_G1	P/U 1K VCC3	
GPP_G12	MAIN	GPI	N_GPP_G12	P/U 3.3K VCC3	
GPP_G16	MAIN	GPI	N_GPP_G16	N/A	
GPP_G18	MAIN	GPI	N_GPP_G18	P/U 8.2K VCC3	
GPP_G19	MAIN	GPI	N_GPP_G19	P/U 8.2K VCC3	
GPP_G20	MAIN	GPI	N_GPP_G20	P/U 8.2K VCC3	
GPP_G21	MAIN	GPI	N_GPP_G21	P/U 8.2K VCC3	
GPP_G22	MAIN	GPI	N_GPP_G22	P/U 8.2K VCC3	
GPP_H0	MAIN	GPI	M2_-CLKREQ	P/U 8.2K VCC3	
GPP_H12	MAIN	GPO	N_GPP_H12	P/U 8.2K VCC3	
GPP_H19	MAIN	GPI	N_GPP_H19	P/U 8.2K 3VDUAL	
GPP_H20	MAIN	GPI	N_GPP_H20	P/U 8.2K 3VDUAL	
GPP_H21	MAIN	GPI	N_GPP_H21	P/U 8.2K 3VDUAL	
GPP_H22	MAIN	GPI	N_GPP_H22	P/U 8.2K 3VDUAL	
GPP_I0	MAIN	GPI	N_HDMI_HDP_F	N/A	
GPP_I1	MAIN	GPI	N_DVI_HDP_F	P/U 1M VCC3	
GPP_I2	MAIN	GPI	N_VGA_HDP_F	N/A	

PIN NAME	PWR	Default	USAGE	NOTE
GPP_I3	MAIN	GPI	N_GPP_I3	P/U 8.2K VCC3
GPP_I4	MAIN	GPI	N_GPP_I4	P/D 100K GND
GPP_I5	MAIN	GPI	N_DDPB_CTRLCLK	P/U 2.2K VCC3
GPP_I6	MAIN	GPO	N_DDPB_CTRLDATA	P/U 2.2K VCC3
GPP_I7	MAIN	GPI	N_DDPB_CTRLCLK	P/U 2.2K VCC3
GPP_I8	MAIN	GPI	N_DDPB_CTRLDATA	P/U 2.2K VCC3
GPP_I9	MAIN	GPI	N_DDPD_CTRLCLK	P/U 2.2K VCC3
GPP_I10	MAIN	GPI	N_DDPD_CTRLDATA	P/U 2.2K VCC3
GPD0	STBY	BATLOW	N_-BATLOW	P/U 8.2K 3VDUAL_PCH
GPD1	STBY	ACPRESENT	N_GP_D1	P/U 8.2K 3VDUAL_PCH
GPD2	STBY	LAM_WAKE	N_-LAM_WAKE	N/A
GPD3	STBY	PWRBTN	O_PWRBTN	P/U 8.2K 3VDUAL_PCH
GPD4	STBY	SLP_S3	N_-SLP_S3	N/A
GPD5	STBY	SLP_S4	N_-SLP_S4	N/A
GPD6	STBY	SLP_A	N_-SLP_A	P/U 8.2K 3VDUAL
GPD7	STBY	NATIVE	N_-S_ACK	N/A
GPD8	STBY	SUSCLK	N_SUSCLK	N/A
GPD10	STBY	SLP_S5	N_-SLP_S5	N/A

Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
PCIRST#	N/A	
PCIRST#	N/A	
PCIRST#	N/A	
SVC#	TPM	
SLP_SUS#	-PCIRST#	
PSI_L/FAN_CLT5/CIRKX2/GP16	N_-THERMTRIP	
R12#	MB_ID2	
THR_PWM_CTS#	N_-THERMTRIP	
IO_SMI#	FIN	
SPI_S1/GP22	BEEP-	
DPWRK/CPU_RQ/GP23	N_PCH_DPWRK	
FAN_TACS/RTS#	FIN	
FAN_TAC4/DSR#	FANIO4	
INV_OUT1_SOUT2/GP26	Q_PLED	
INV_IN1/SIN2/GP27	INV_IN1	
ATXPG/GP30	FWOK	
CTS1/GP31	CTS1-	
OCWD13/R1#	R11-	
OCWD2/DCD1#	DCD1-	
VTT_PWRGD/GP34	VTT_PWRGD	
VCC18_EN/GP35	VCCIO_EN	
FAN_CTL3/GP36	FANPWM3	
FAN_TAC3/GP37	FANIO3	
3VSB#	FIN	
OCWD11/SIN1/GP41	RXD1	
GP42/SCK/FAN_CTL4	FIN	
PANSW#	-PWRBTSW	
PWRON#	O_PWRBTSW	
OCWD10/DSR1#	DSR1-	
CE2_N/GP47	CEB_N	
GP50/GP1	FIN	
FAN_CTL4/GP51	FANPWM2	
FAN_TAC2/GP52	FANIO2	
SUSOC/GP53	N_-G4_S5	
PWR#	N_-LPCVME	
RSMB#	N_-RSMRST	
KCLK/FAN_TAC5/GP56	KCLK	
KDAT/FAN_CTL6/GP57	KDAT	
KCLK/GP60	KCLK	
KDAT/GP61	KDAT	
KRST#	N_-KBRST	
HOLD_B#	-SPI_HOLD_B	
HOLD_M#	-SPI_HOLD_M	
VLDT_EN/PCH_D0/GP65	FIN	
VCC1_05_EN/GP66	VCC1_0_EN	
GP67	FIN	
USB_F#1/PD0/GP70	PD0	
USB_F#2/PD1/GP71	PD1	
USB_F#3/PD2/GP72	PD2	
USB_F#3/PD3/GP73	PD3	
USB_F#5/PD4/GP74	PD4	
USB_F#6/PD5/GP75	PD5	
USB_F#7/PD7/GP76	PD6	
USB_F#8/PD8/GP77	PD7	
LS_IN1/SLCT/GP80	SLCT	
LS_OUT1/PE/GP81	PE	
LS_IN2/BUSY/GP82	BUSY	
LS_OUT2/ACK#	ACK-	
IPHONE_CHARGE#	SLIN-	
OC_IN/INIT#	INIT-	
OC_OUT/AFD#	AFD-	
USB_OC4/STB#	STB-	
DOX_IN/GP90	MA_IN	
PWRLED/GP91	HPD-	
HOLD_OUT/GP92	FIN	
HDLN_IN/GP93	FIN	
PROC_HOT#	-PROC_HOT_CON	
CHUNKRD/GP95	FIN	
PCH_VRMWRGD/GP96	N_PCH_VRMWRGD	
VR_RDY/GP97	VR_RDY	



PWM各相位的擺法如下:

