



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



Rev 1.0

**CHINA FDI**

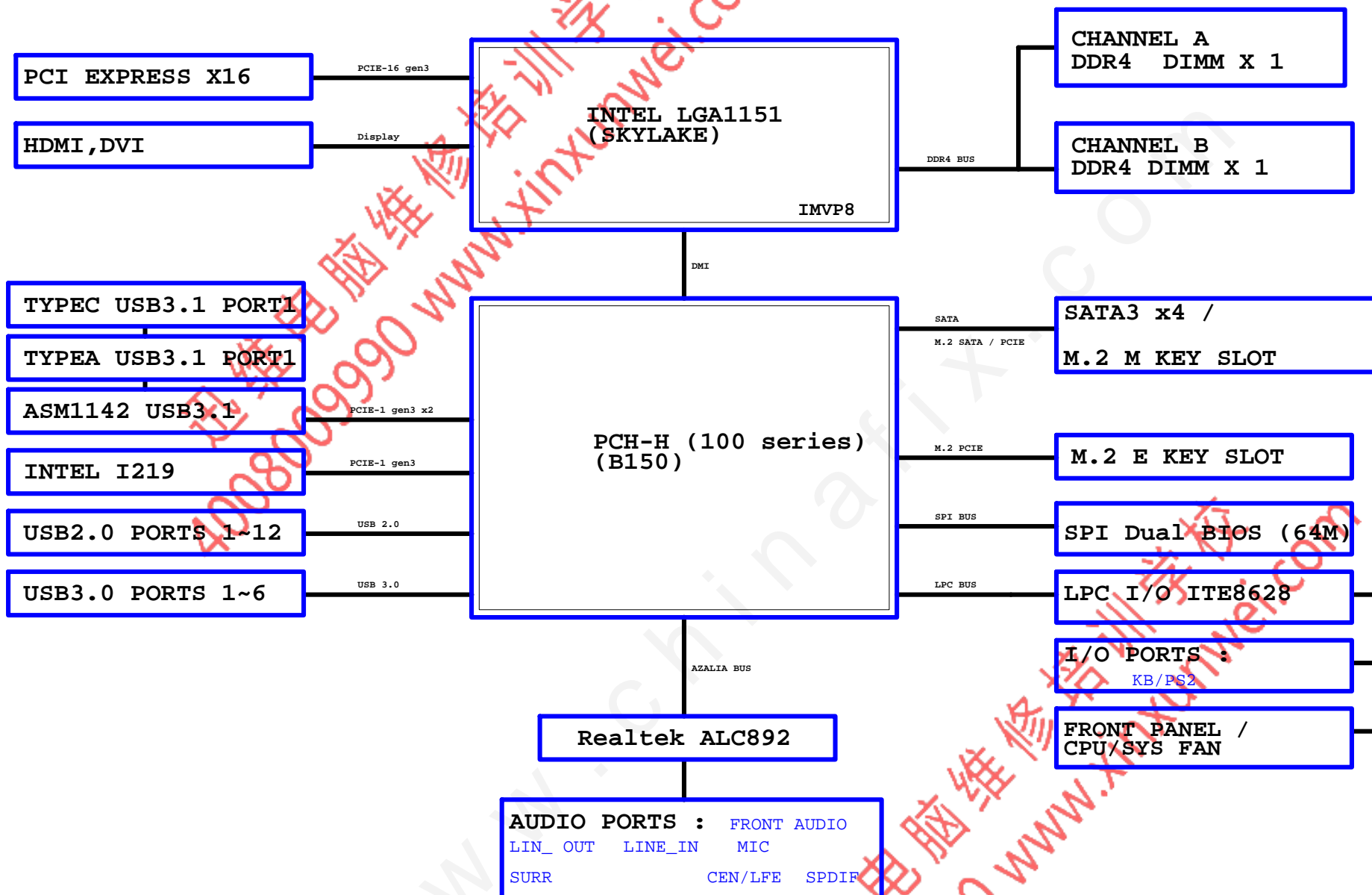
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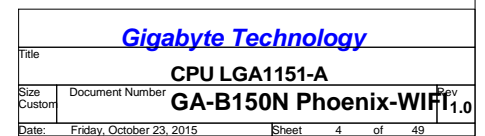


# BLOCK DIAGRAM

www.xinxunwei.com 400-800-9990







Bifurcation Config.	Signals Lane	CFG[6]	CFG[5]	CFG[4]
1x16	1	1	1	1
1x16 Reversed	1	1	0	0
2x8	1	0	0	0
2x8 Reversed	1	0	0	0
1x8+2x4	0	0	0	1
1x8+2x4 Reversed	0	0	0	0

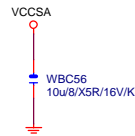






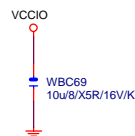


\* WBC49 移到 RT8120\_DDR  
\* 删 WBC50 电容

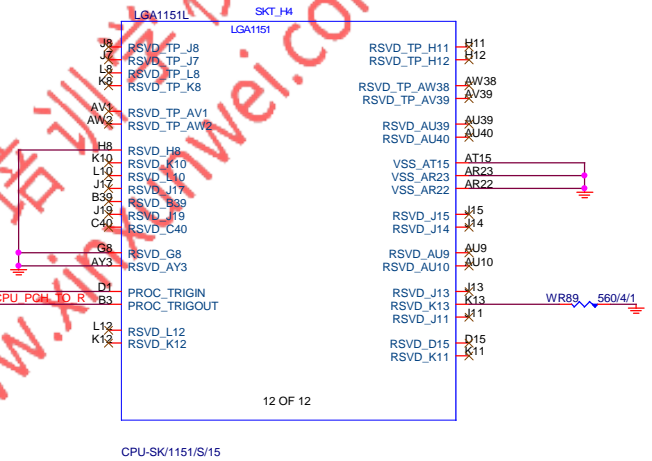
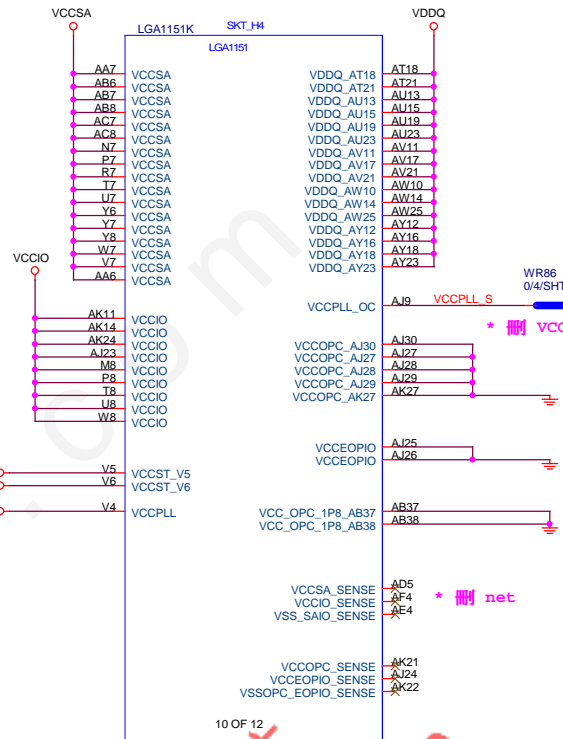
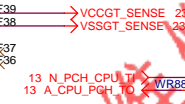
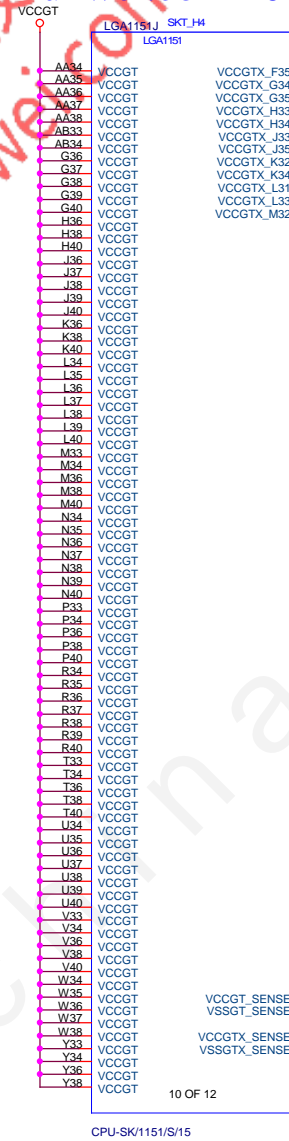
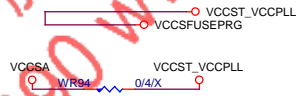


\* WBC51 , WBC52  
VDDQ 改 VCCSA

\* 删 WBC124 , WBC125 , WBC126 , WBC127 电容



\* 删 VCCGT 电容



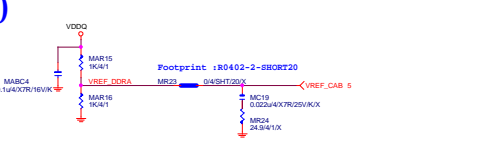
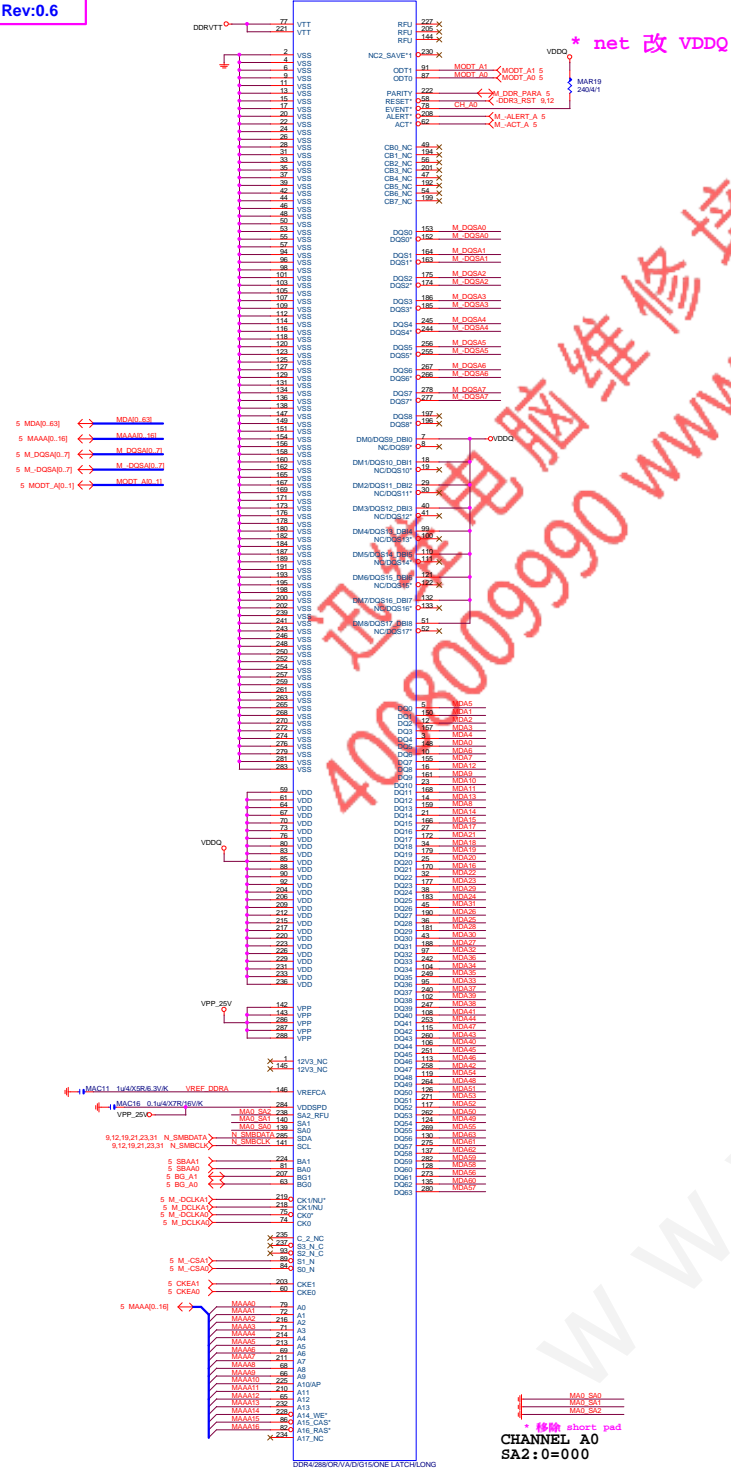




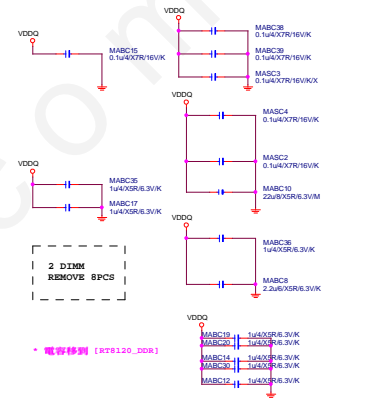
Gigabyte Technology

Title			CPU LGA1151-D
Size	Document Number	Rev	1.0
Custom	GA-B150N Phoenix-WIFI		
Date:	Friday, October 23, 2015	Sheet	7 of 49

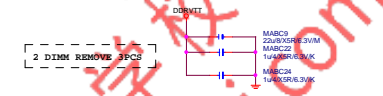




DDR12V Decouple



DDRVT Decouple



DDR4	Capture Value
SOC series	DDR4/288/BK/VA/S/G15/4ROW/LONG DDR4/288/OR/VA/S/G15/4ROW/LONG
UD series	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GY/VA/D/G15/ONE LATCH/LONG
Gaming series	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/RE/VA/D/G15/ONE LATCH/LONG
GI.Sniper	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GE/VA/D/G15/ONE LATCH/LONG

Gigabyte Technology			
DDR4 CHANNEL A			
Docu	Document Number	GA-B150N Phoenix-WIFI	Rev
1.0	1.0	1.0	1.0

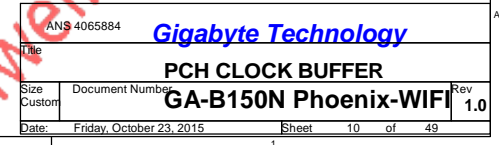




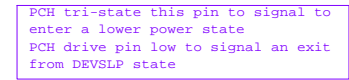
CHANNEL B0  
SA2:0=010

Gigabyte Technology			
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Size Custom	Document Number		Rev 1
GA-B150N Phoenix-WIFI			
Date:	Sheet	9	of 49

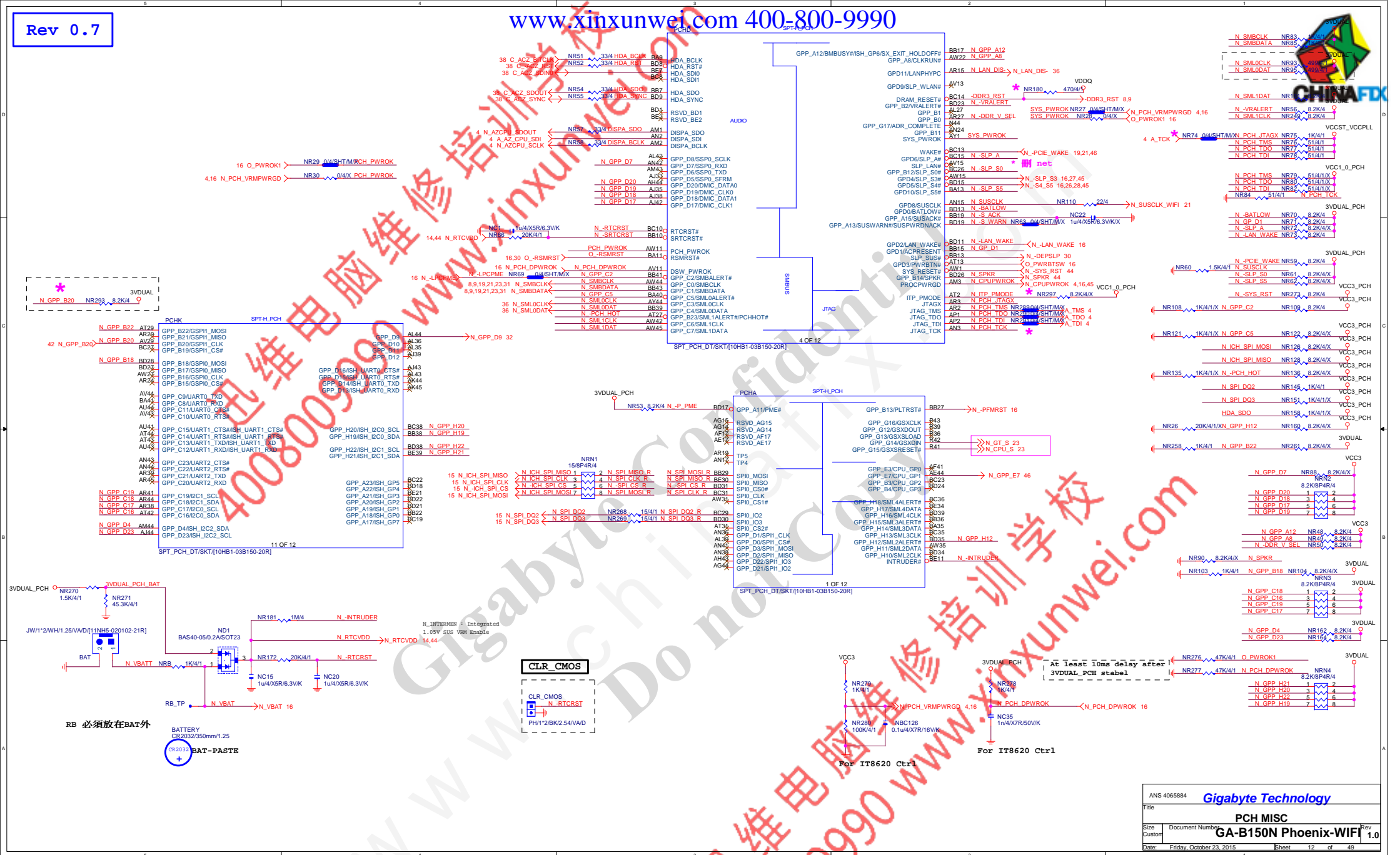




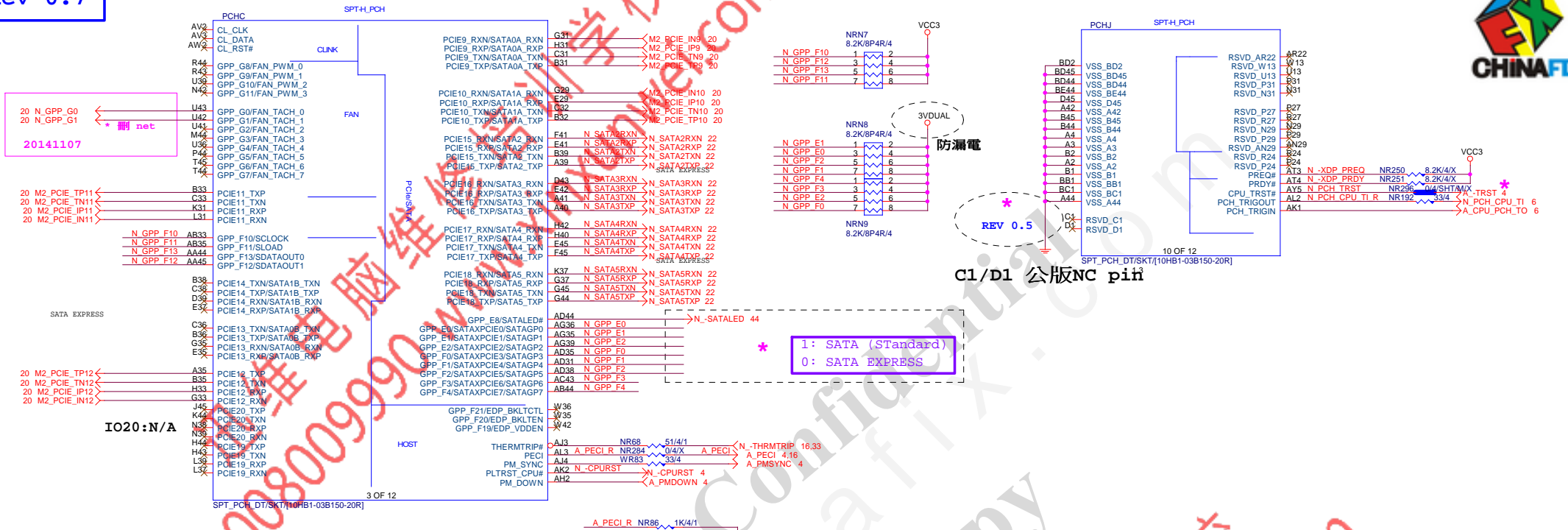






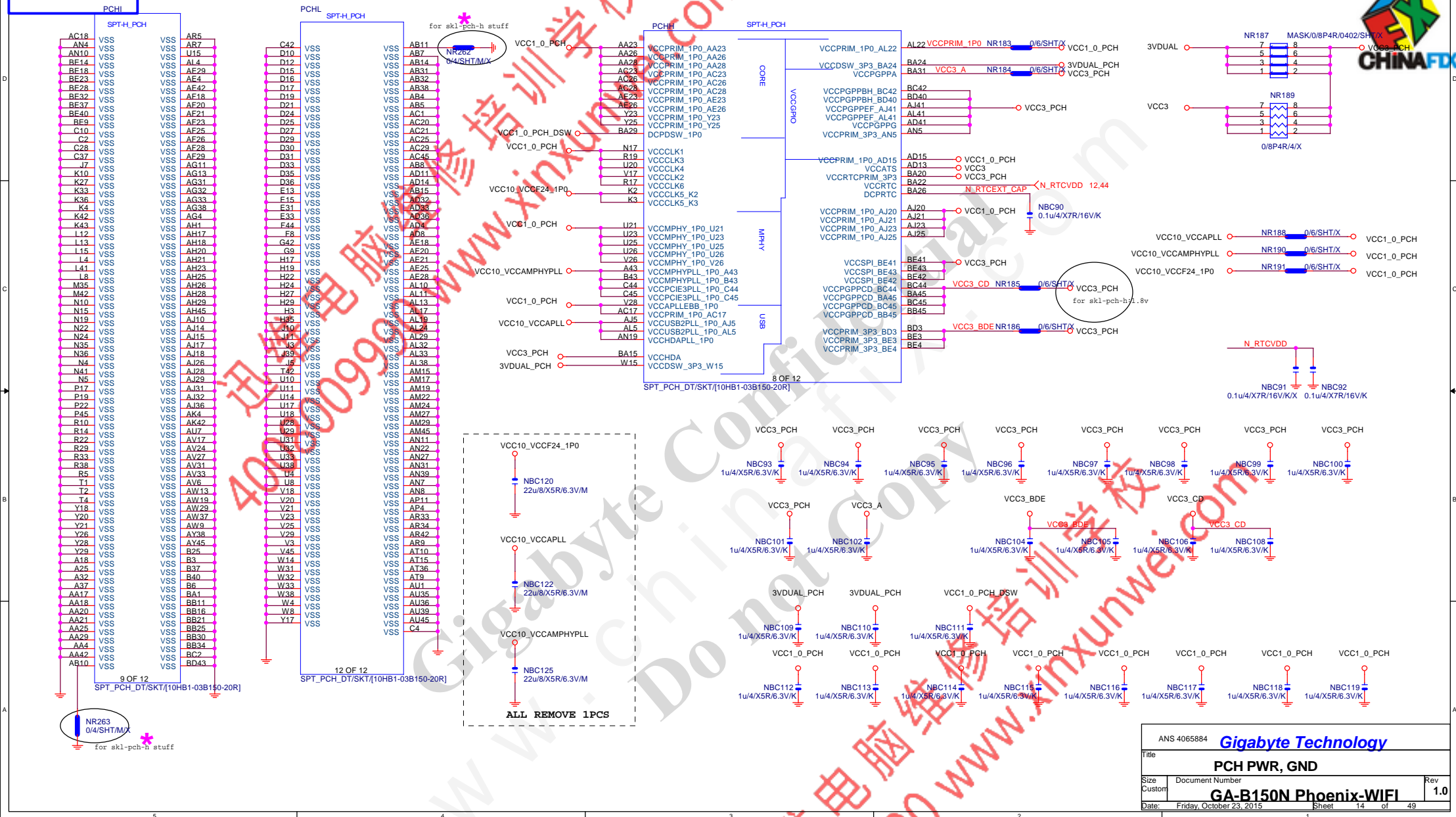




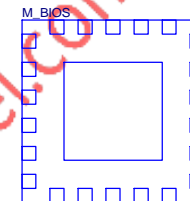
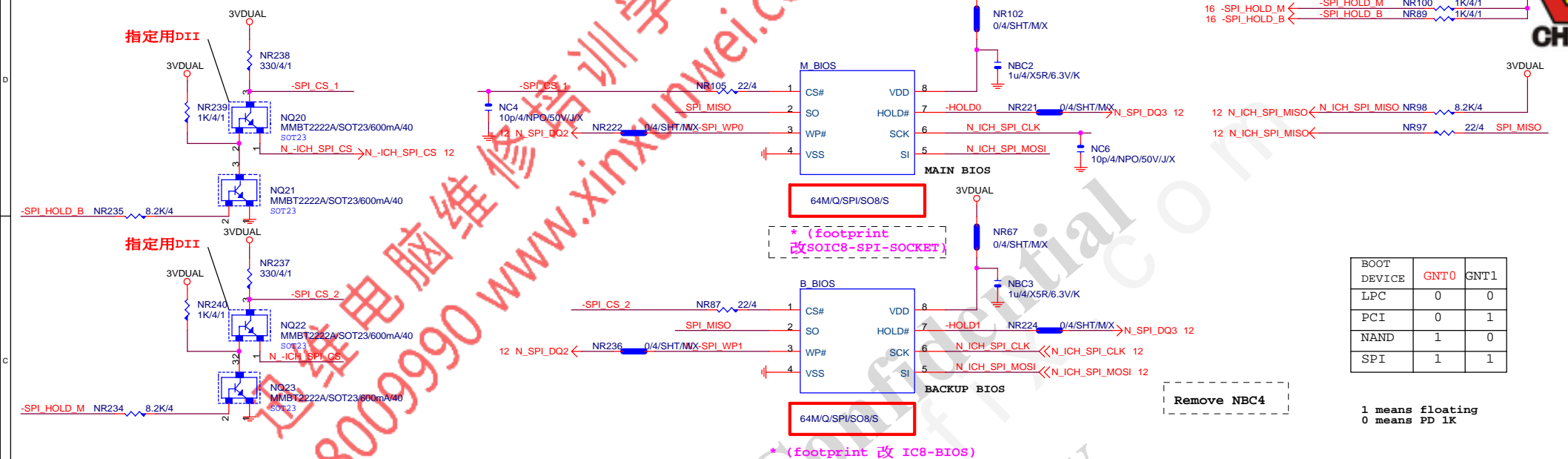
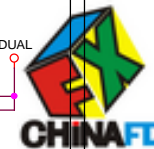


<b>Gigabyte Technology</b>			
<b>PCH SATA, PCIE, SATA_EXPRESS</b>			
Size Custom	Document Number	<b>GA-B150N Phoenix-WiFi</b>	Rev <b>1.1.0</b>
Date: Friday, October 23, 2015		Sheet 13 of 49	









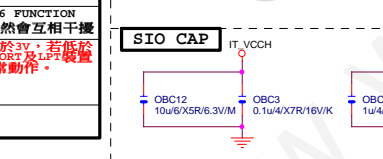
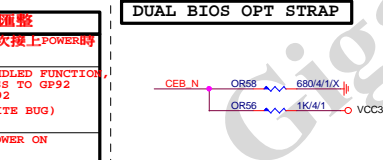
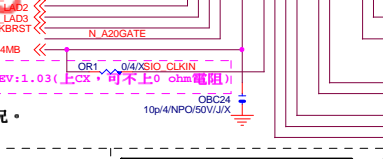
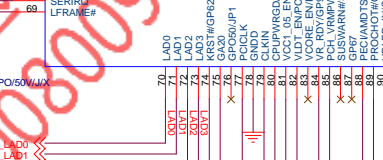
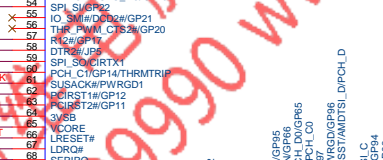
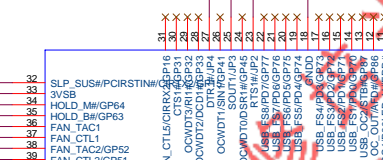
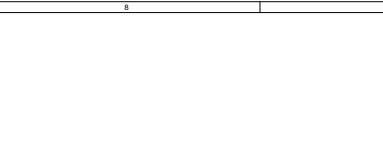
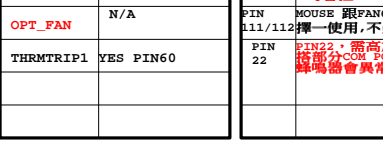
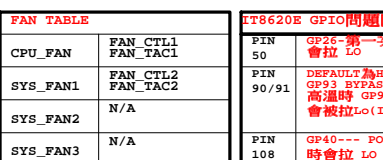
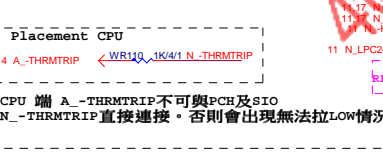
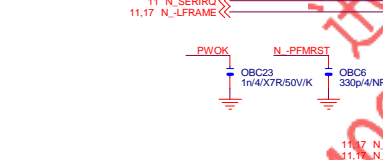
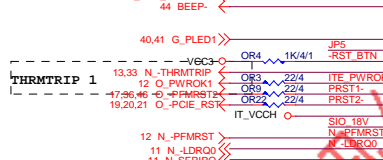
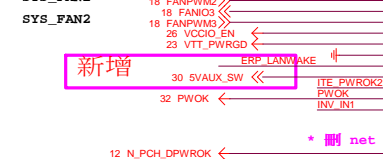
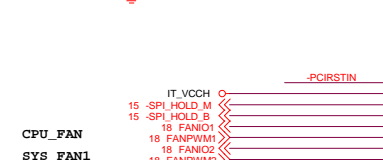
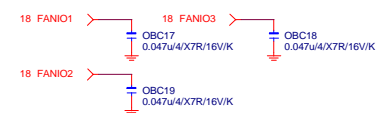
LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]/X

\* 試産先上 , PVT 移除



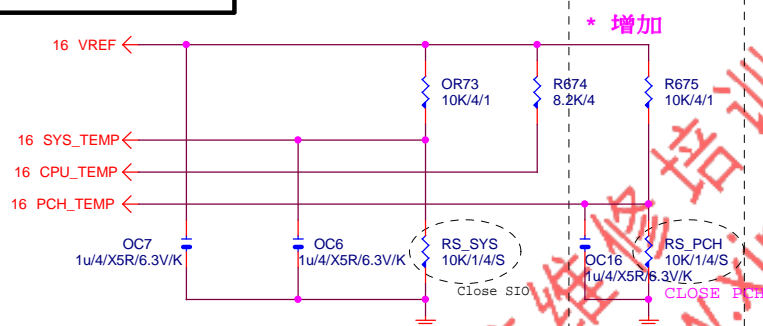


## SIO IT8628CX REV:1.08

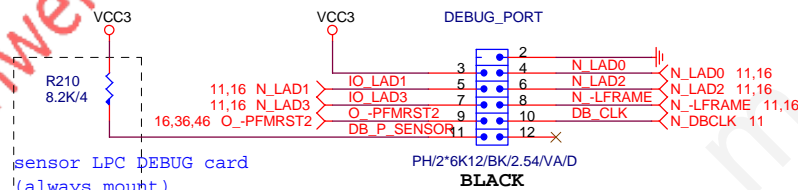




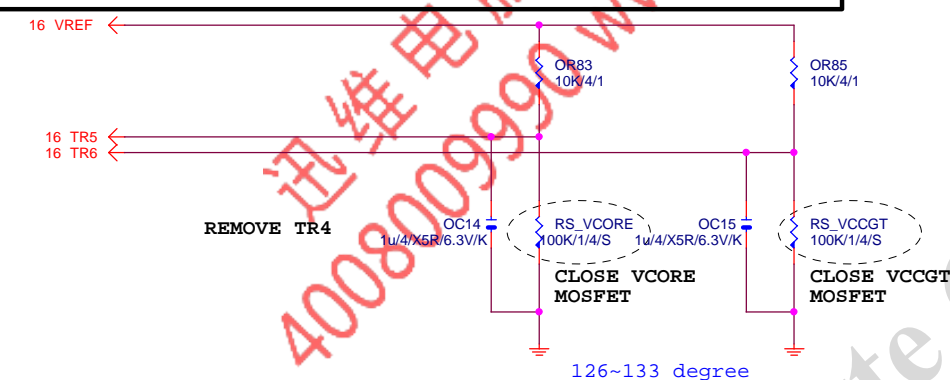
## TEMP H/W MONITOR



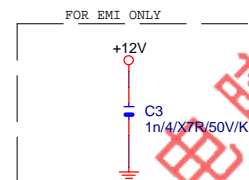
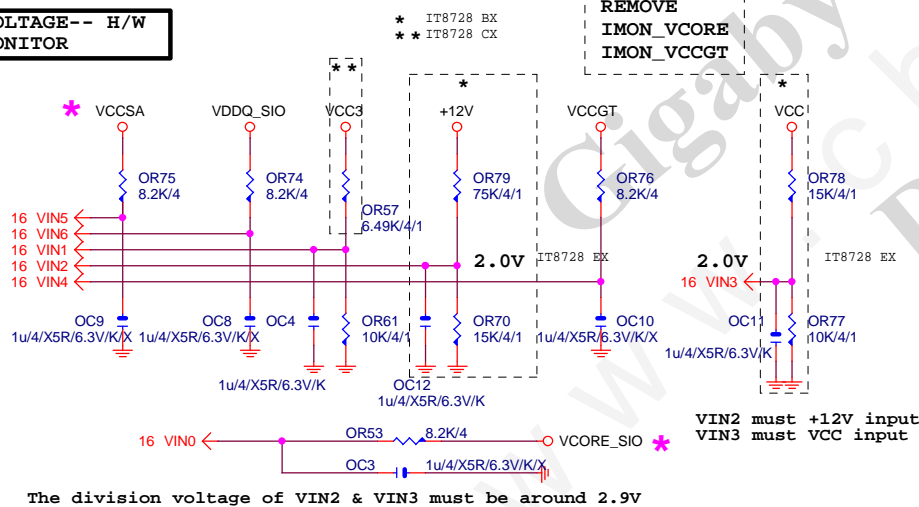
## PIN2X6-CUT1



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



## VOLTAGE-- H/W MONITOR



Gigabyte Technology

HWM,KB/MS, FAN CTRL

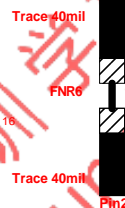
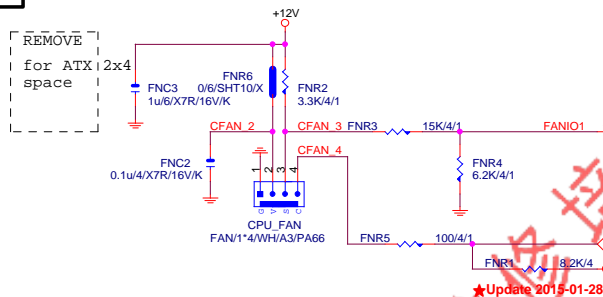
Title	GA-B150N Phoenix-WIFI	Rev	1.0
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# CPU SMART FAN

Rev: 0.6

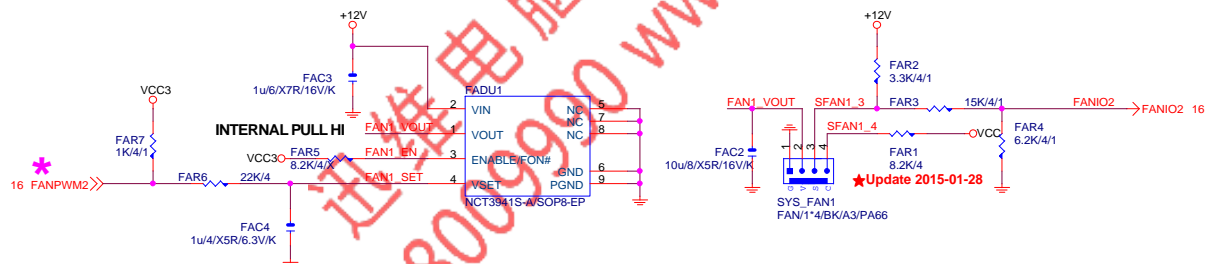


# SYSTEM FAN1

## Linear SYS\_FAN

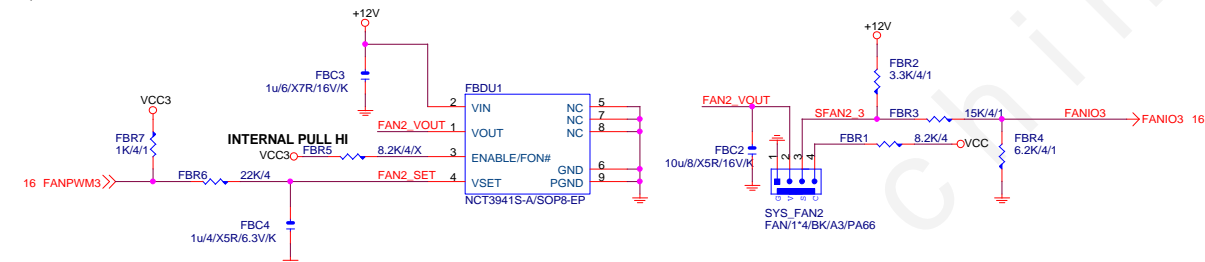
Enable Function (NCT3941S)  
Full Turn On Function (NCT3941S-A)

A.



# SYSTEM FAN2

N/A



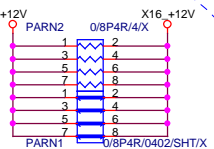
# SYSTEM FAN3

N/A

Gigabyte Technology	
Title	
FAN CTRL	
Size	Document Number
Custom	GA-B150N Phoenix-WIFI
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Rev  
1.0



**+12\_protect  
short-wire test**

PA\_EXP\_RXP0\_15I >> PA\_EXP\_RXP[0..15] 4  
PA\_EXP\_RXN0\_15I >> PA\_EXP\_RXN[0..15] 4  
PA\_EXP\_TXP0\_15I >> PA\_EXP\_TXP[0..15] 4  
PA\_EXP\_TXN0\_15I >> 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

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--&gt; 2.5GHZ

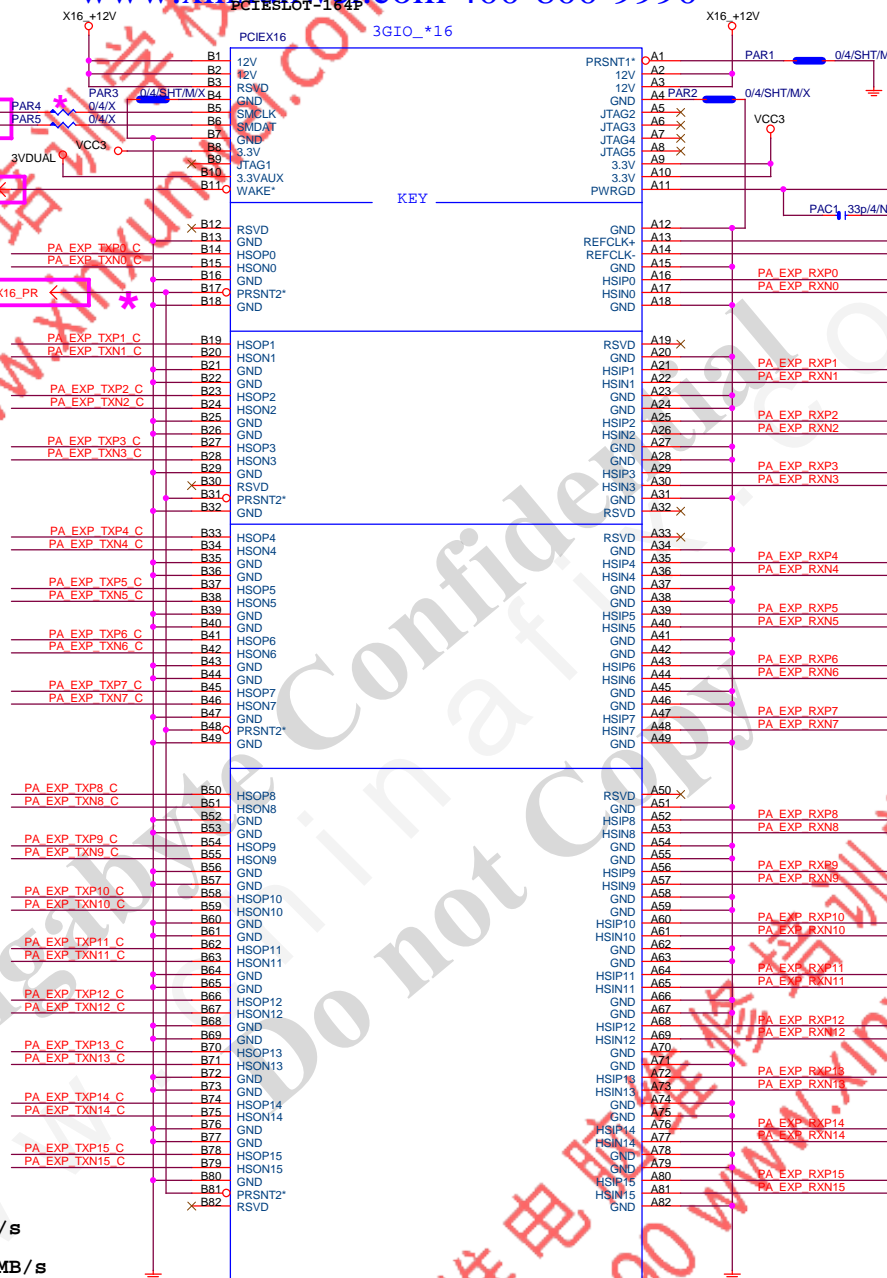
PCE-E X1(單向) BANDWIDTH=2.5GHz\*(8b/10b)=2Gb/s=250MB/s

PCE-E X1(雙向) BANDWIDTH=2.5GHz\*(8b/10b)X2=4Gb/s=500MB/s

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

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

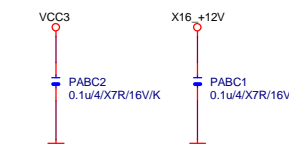
PCI-E REV:2.0--&gt; 5GHZ



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

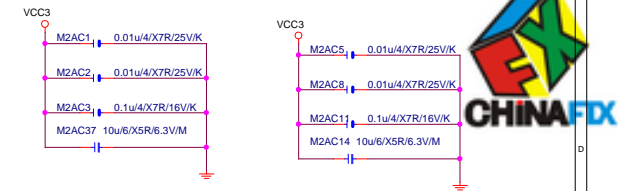
橘色

NPA雙魚叉



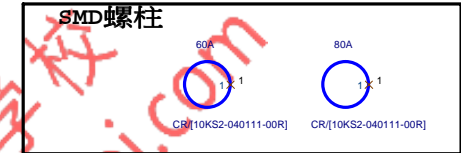


M.2 Lane2 from PCH port15



需與M2\_-CLKREQ對應

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	I015 (S0)	I016 (S1)	I017	I018	I019 (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螺柱背板上件,須修改料號
3. SMD螺柱正面上件,須修改料號及FOOTTPRINT正反共用.

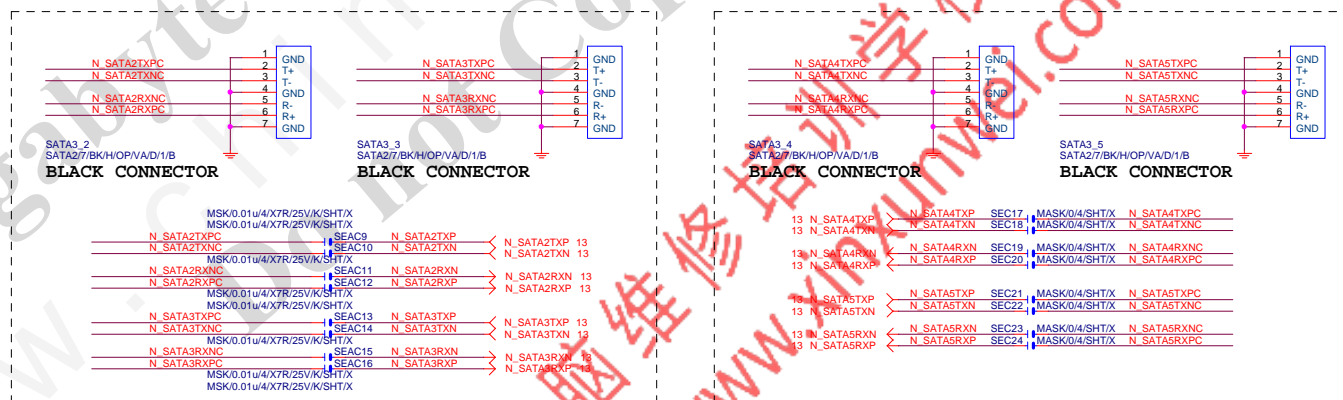




Title			
<b>M2_WIFI_E_KEY</b>			
Size	Document Number	Rev	
Custom	GA-B150N Phoenix-WIFI	1.0	
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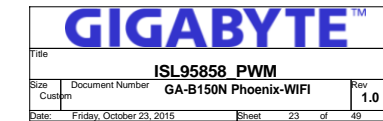
SATA 5 (文字面寫SATA 1)  
SATA 4 (文字面寫SATA 0)  
SATA 3  
SATA 2  
SATA 1 (文字面寫SATA 5)  
SATA 0 (文字面寫SATA 4)



Gigabyte Technology

SATA			
Title			
Size	Document Number		Rev
Custom	GA-B150N Phoenix-WIFI		1.0
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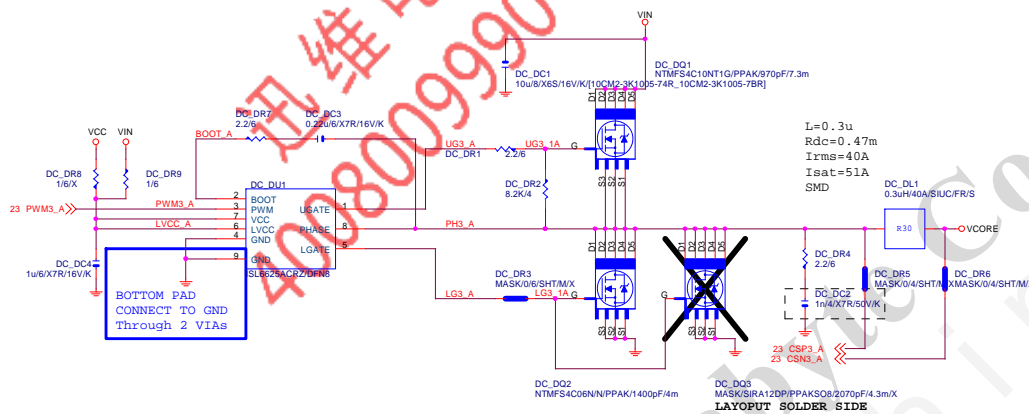
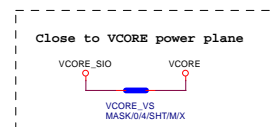
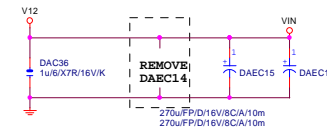




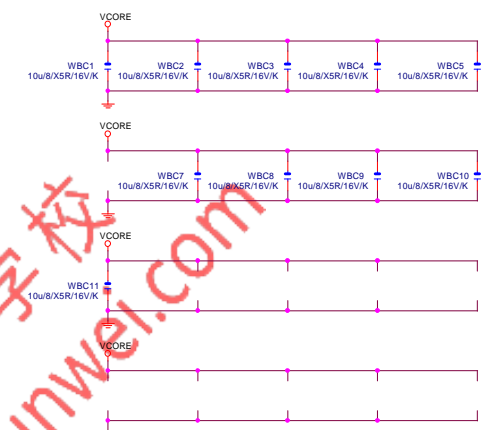
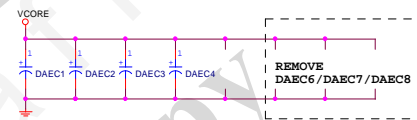
VCORE



VIN CAP 270u\*2PCS



VCORE CAP 560u\*5PCS  
22u\*29PCS

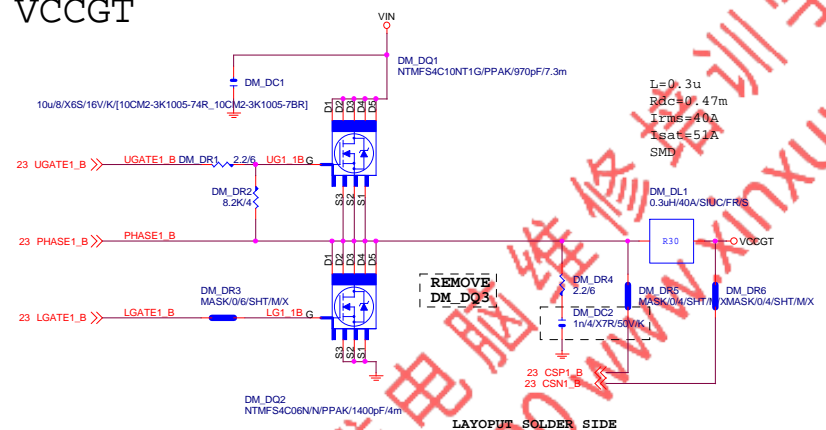


GIGABYTE™			
ISL95858 MOS			
Size	Document Number	GA-B150N Phoenix-WIFI	Rev
Custm			1.0
Date:	Friday, October 23, 2015	Sheet	24 of 49

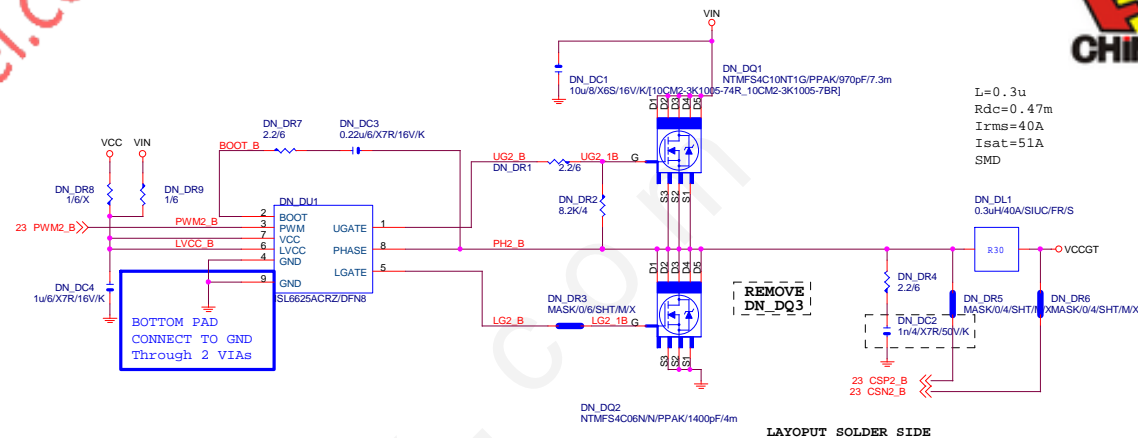




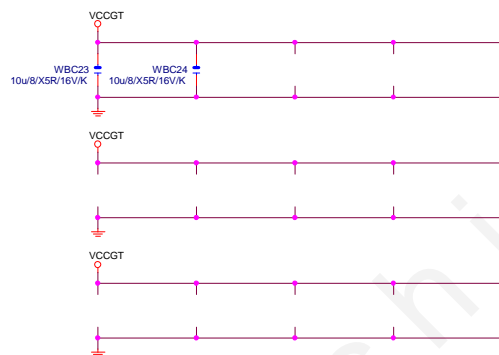
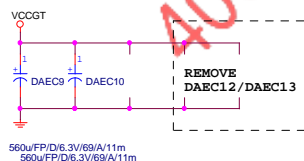
## VCCGT



LAYOPUT SOLDER SIDE

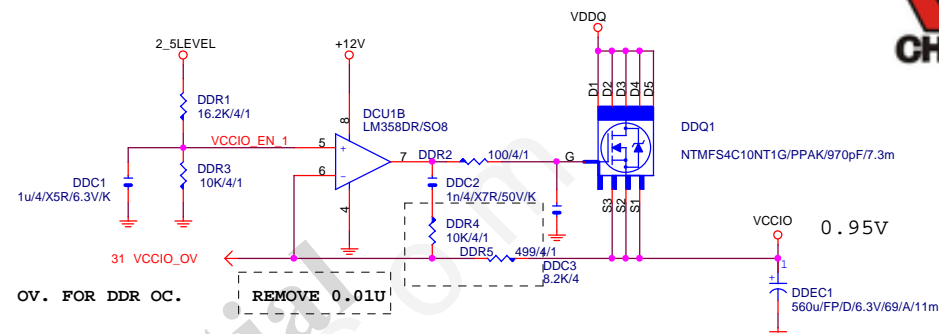


LAYOPUT SOLDER SIDE

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

GIGABYTE™			
Title			
ISL95858 MOS			
Size	Document Number	GA-B150N Phoenix-WIFI	
Custom		Rev 1.0	
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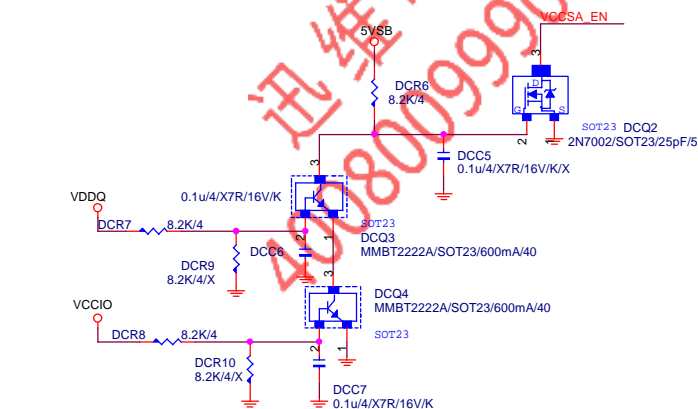


OV. FOR DDR OC.

REMOVE 0.01U

Connect to IT8620

放CPU端



ST\_VCCPLL

+12V

5VSB

DFR1 8.2K/4/X

DFR4 AP9452GG/SOT89/[10]FC-389452-01R] 150K/4

5VSB

DFR2 8.2K/4

VCC1\_0\_PCH

VCCST\_VCCPLL

DFO1

DFC1 0.1u/4/X7R/16V/K

DFC2 22u/8/X5R/6.3V/M

SOT23

DFO2

MMBT2222A/SOT23/600mA/40

DFO3


MMBT2222A/SOT23/600mA/40

SOT23

DFR3 22K/4

12,16,28,45 N\_S4\_S5

DFC8 22u/8/X5R/6.3V/M

			
Title		VCCSA_VCCIO	
Size	Document Number	GA-B150N Phoenix-WIFI	Rev
Custom			1.0
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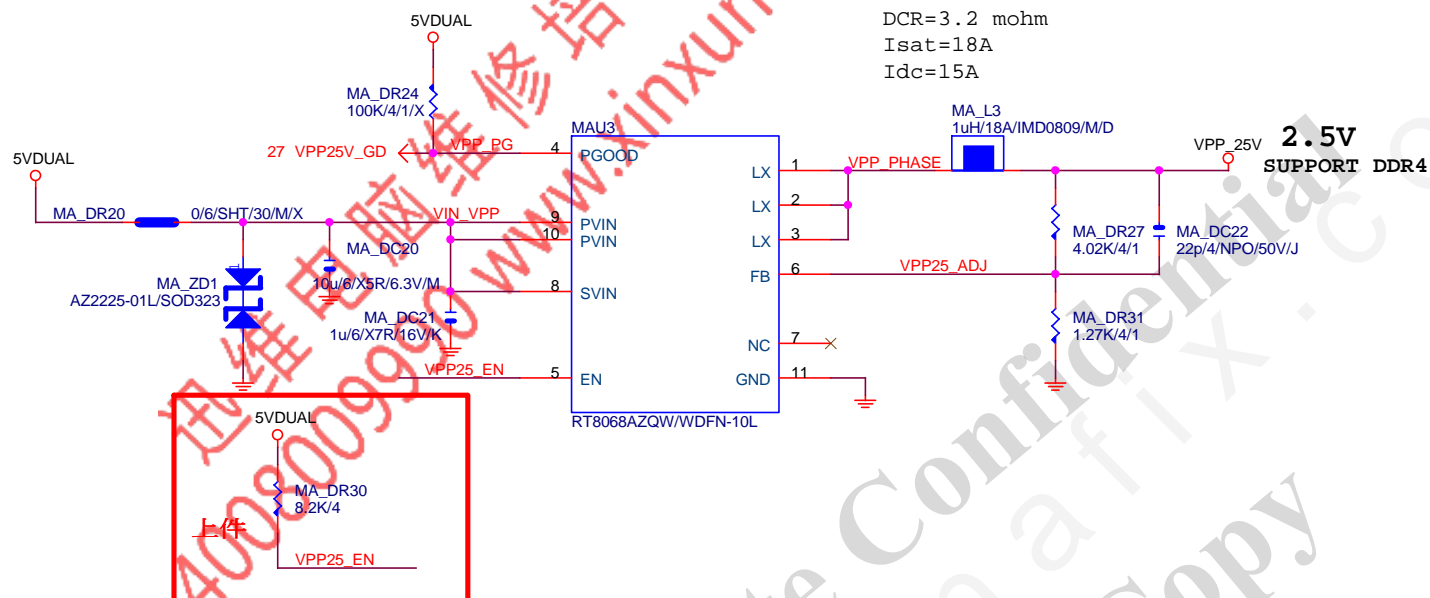
## CHOKES與CAP料號可變

[illegible]



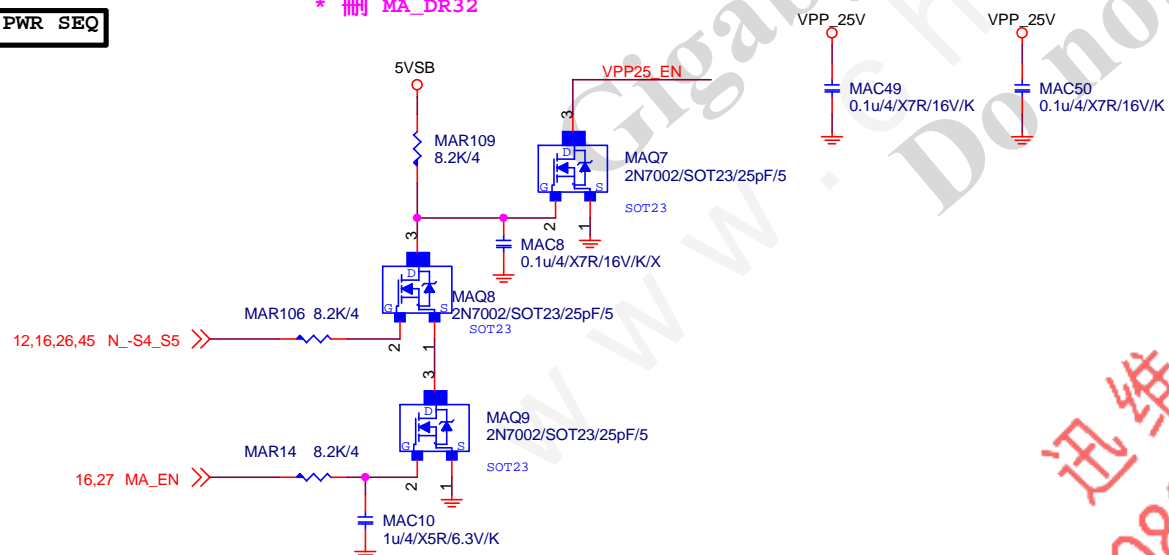
**VPP 25V**

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



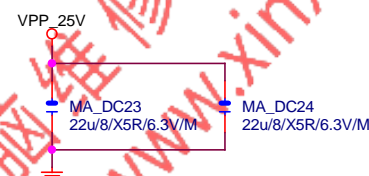
PWR SEQ

\* 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
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REV:0.5

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CHOKE與CAP料號可變

注意耐壓

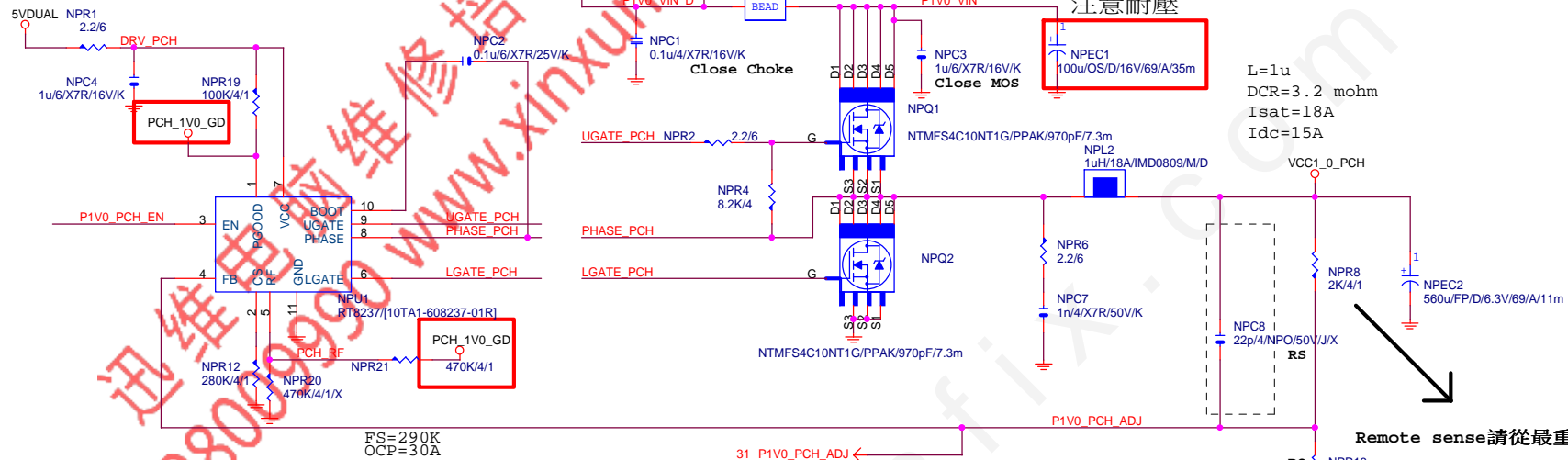
L=1u  
DCR=3.2 mohm  
Isat=18A  
Idc=15A

Remote sense請從最重的負載端點拉回

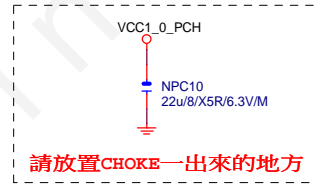
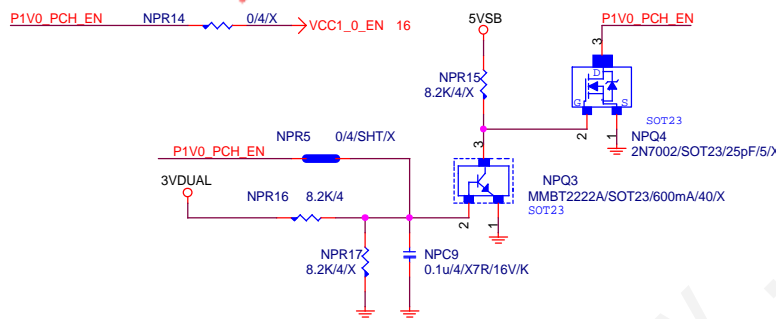
GIGABYTE™

RT8237\_PCH POWER

Size	Document Number	Rev
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PWR\_SEQ



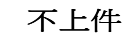




16 5VAUX\_SW



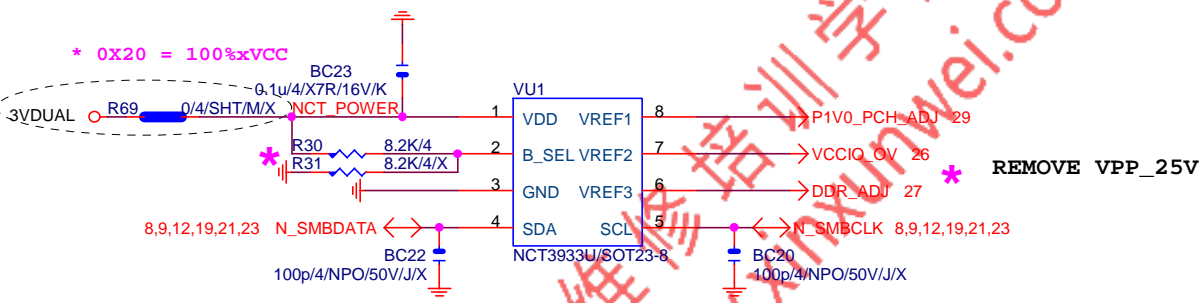
Q\_-RSMRST



Title			
<b>DISCRETE POWER</b>			
Size	Document Number	<b>GA-B150N Phoenix-III</b>	Rev <b>1.0</b>
Custom			
Date:	Friday, October 23, 2015	Sheet	30 of 49



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

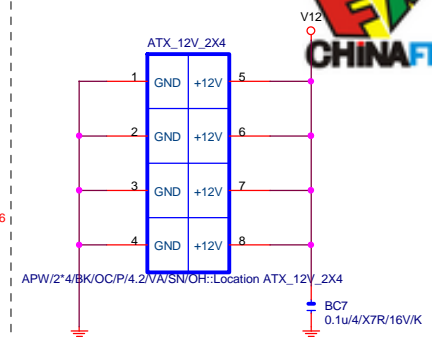
Gigabyte Technology

Title CPU CORE VR-2

Size Custom Document Number GA-B150N Phoenix-WiFi Rev 1.0

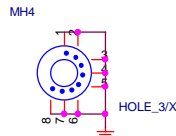
Date: Friday, October 23, 2015 Sheet 31 of 49





+12V DUMMY LOAD

HOLE\_4-RH-5MM-5PIN-1



To fix 12V light load abnormal issue

12 N\_GPP\_D9

VCC3

R1 1K/4/1

R703 330/4/1

Q9

SOT23

MMBT2222A/SOT23-600mA/40

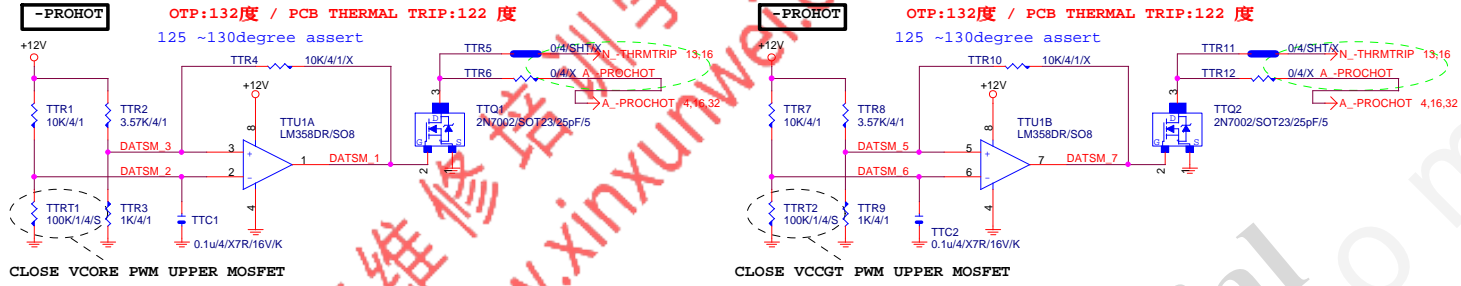
-PROHOT







R\_USB30\_1



USB\_DAC

KB\_MS\_USB3



Gigabyte Technology	
KB_MS_USB3	
Size	Document Number
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11NR6-501024-31

Close to connector

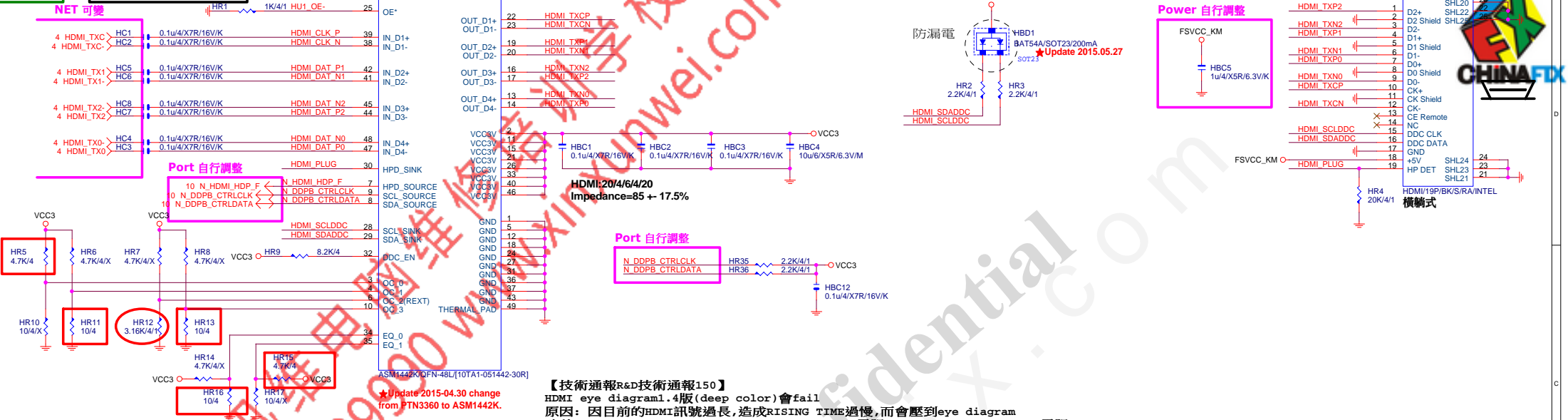
Sheet 34 of 49



Rev: 0.7

HDMI LEVEL SHIFT

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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RISING TIME過慢,而會壓到eye diagram  
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

GIGABYTE	
Title	
HDMI CONN	
Size	Document Number
Custom	GA-B150N Phoenix WIFI
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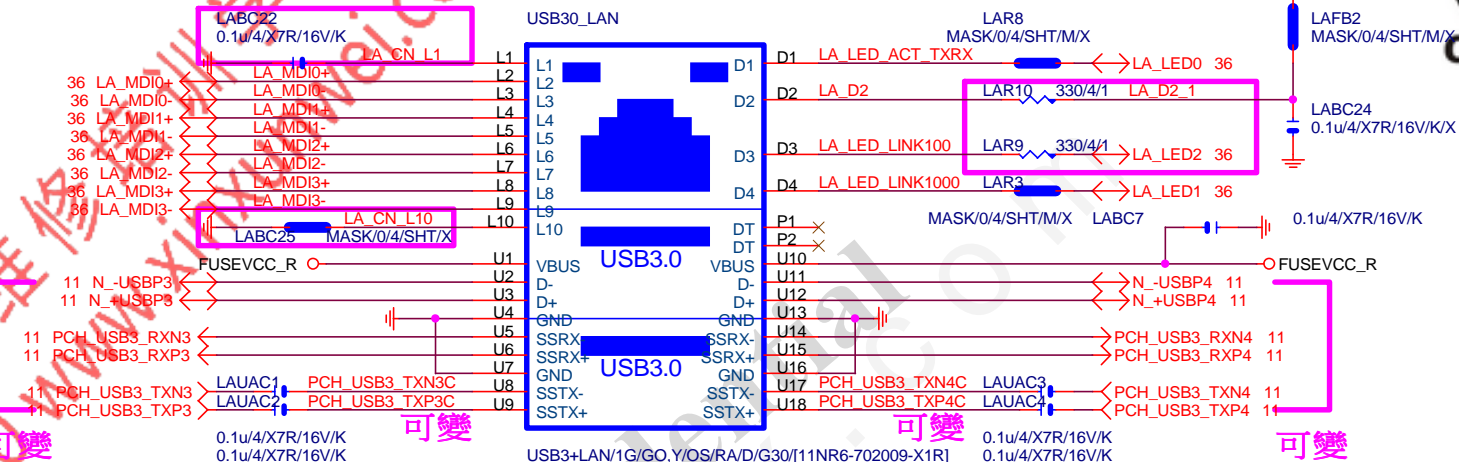
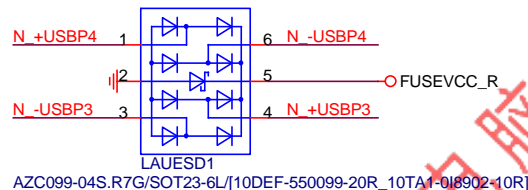


The diagram shows a horizontal beam of total length 1. A vertical line is drawn at the midpoint, labeled  $\frac{1}{2}$ . The left half of the beam is labeled  $\frac{1}{2}$  and the right half is labeled  $\frac{1}{2}$ . The entire beam is labeled  $1$  at the right end.



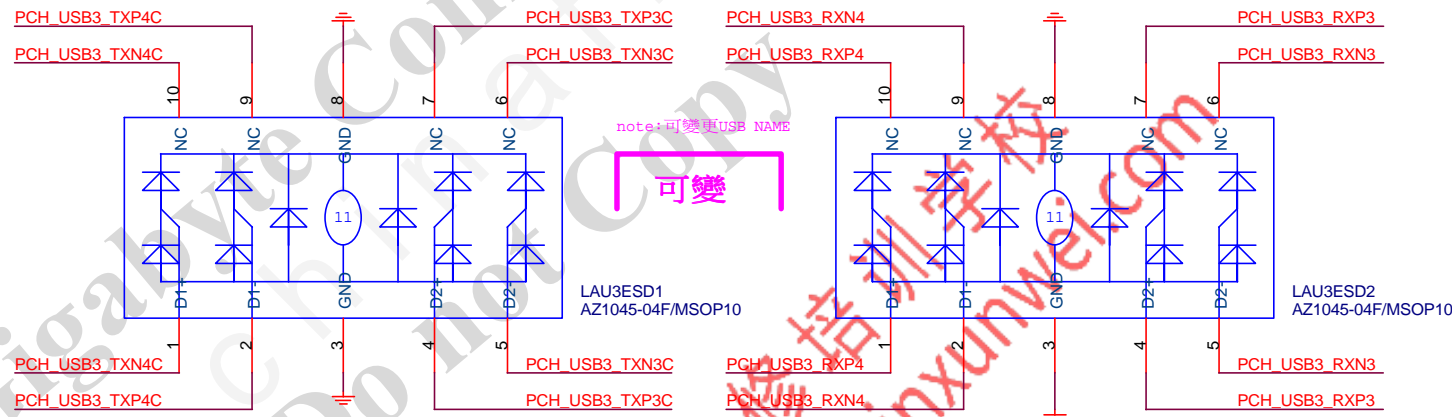
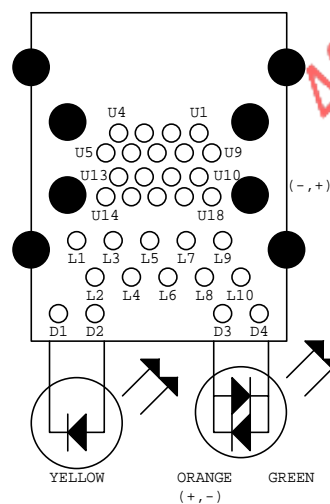
## 3VDUAL LAN1

## 可變



LA\_MDI-->100歐姆:[20/4/8/4/20]

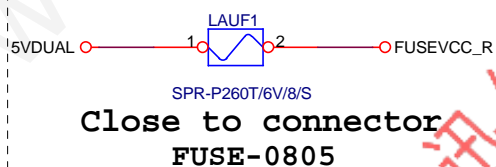
可變  
[視SPEC需求]



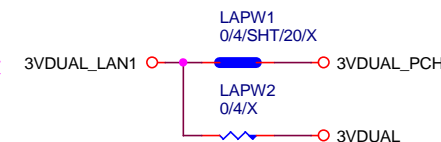
note: lan power連接及電流

PS:視EMI需求

## 可變



## 可變



## Gigabyte Technology

## LAN CONNECTOR-I219

Size	Document Number
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GA-B150N Phoenix-WiFi

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Re



39 SPDIF ←

AVDD

CBC12 10u6/X5R/6.3V/M

CR40 10K/4/1

CR44 47/4/1

CBC26 1n4/X7R/50V/K

JD resistors close to pin34 of CODEC

LINE\_O\_R 39

LINE\_O\_L 39

Can Support Amp Out

CR16 8.2K/4

CR19 8.2K/4

CR51 MASK/0/6/SHT/30/X

CBC7 10u6/X5R/6.3V/M

CBC10 10u6/X5R/6.3V/M

CBC8 10u6/X5R/6.3V/M

CBC43 10u6/X5R/6.3V/M

CBC1 10u6/X5R/6.3V/M

CBC2 10u6/X5R/6.3V/M

CBC9 10u6/X5R/6.3V/M

CBC11 10u6/X5R/6.3V/M

50歐姆: 4/10

ALC887-VD2

FRONT-R

FRONT-L

SENSE B

MIC1-VREF0-R/FM1C2

LINE2-VREF0/JD4

MIC2-VREF0-AFILT2

LINE1-VREF0-L/AFILT1

MIC1-VREF0-L/VREFOUT

VREF

AVSS1

AVDD1

CU1 ALC892-GR/LQFP48

SPDIF0

SPDIF1

GPIO0

GPIO1

DVSS1

SDATA\_OUT

BIT\_CLK

DVSS2

SDATA\_IN

DVDD2

SYNC

RES0

PC\_BEEP

SENSE A

LINE2-L

MIC2-R

MIC2-L

CD-R

CD-L

MIC1-L

MIC1-R

LINE1-L

LINE1-R

AVDD

AVSS1

AVDD1

LINE\_IN\_R 39

LINE\_IN\_L 39

MIC1\_R 39

MIC1\_L 39

50歐姆: 4/10

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:螺絲孔

1. MH1空間夠,下DGN

空間不夠,才改為

2. MH2一律改為Iso

3. Codec下方,第二層

MH1

DGND

MH2

Isc

LAYOUT注意

GND切割線

音效區域

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

HD AUDIO

Title

Size

Custom


Document Number

GA-

Date

Friday, October 23, 2015

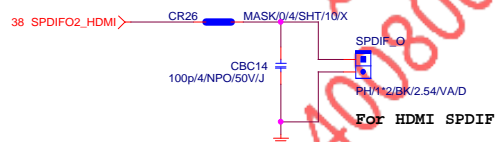
2. MH2一律改為Isolate
3. Codec下方第二層必須參考GND

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<div style="text-align: center;"> <b>Title</b>  <b>HD AUDIO ALC887</b> </div>			
<b>Size</b> <b>Custom</b>	<b>Document Number</b> <b>GA-B150N Phoenix-WiFi</b>		
<b>Date:</b>	<b>Friday, October 23, 2015</b>	<b>Sheet</b>	<b>38 of 49</b>



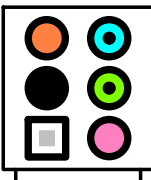


## SPDIF\_OUT

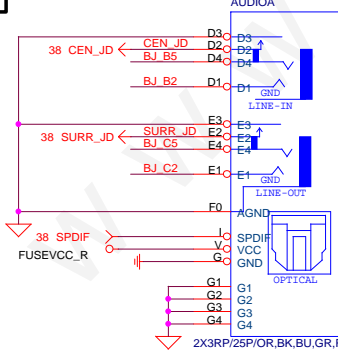
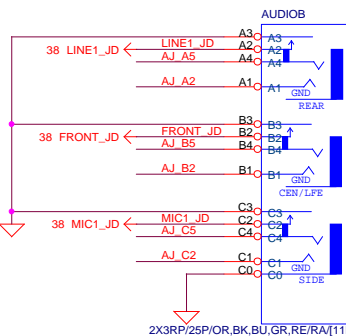


## SPDIF\_IN

## AZALIA JACK

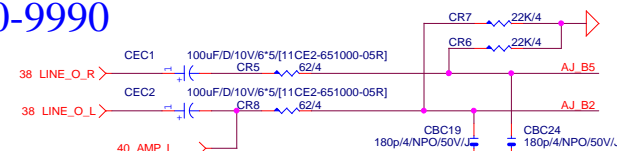


## AZALIA JACK

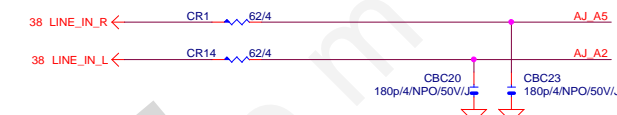
BLUE  
LINE-INGREEN  
LINE-OUTPINK  
MIC-INOrange  
CEN/LFEBlack  
SURROUND

SPDIF

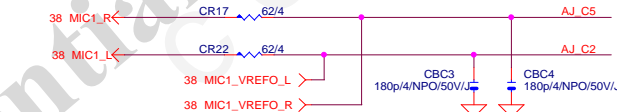
## LINE-OUT



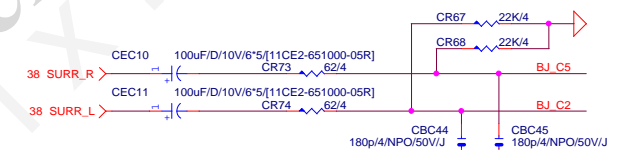
## LINE-IN



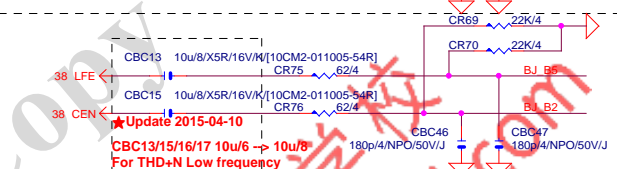
## MIC-IN



## SURROUND

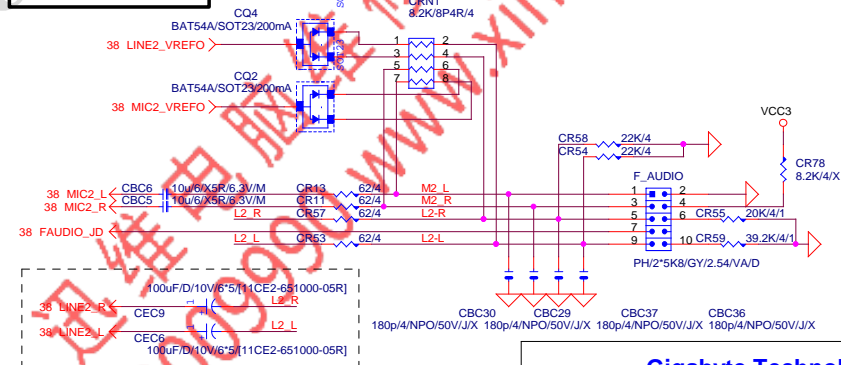


## CEN/LFE



## SURRBACK

## AZALIA FRONT PANEL



Gigabyte Technology

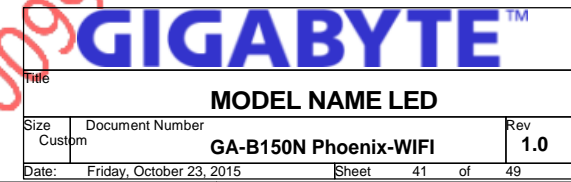
Title	AUDIO JACK
Size	Document Number
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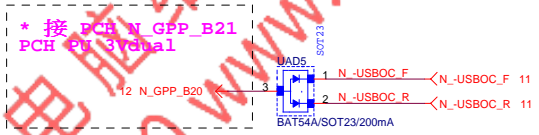
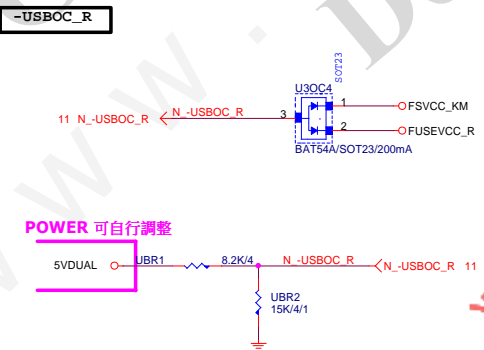
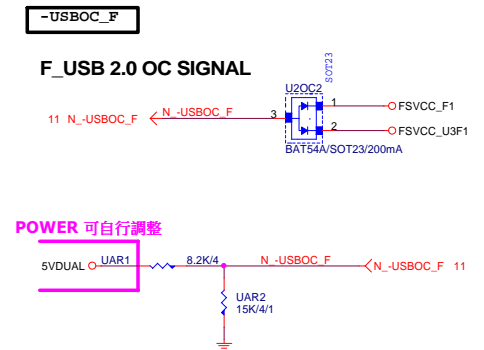
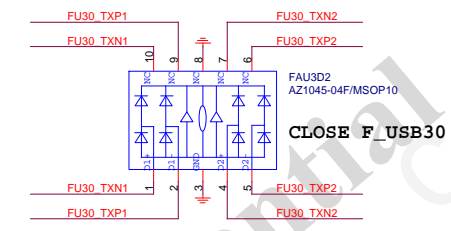
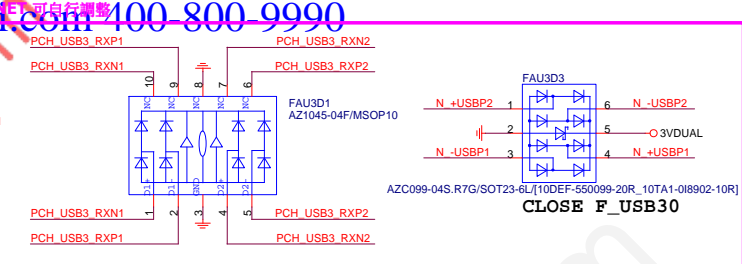
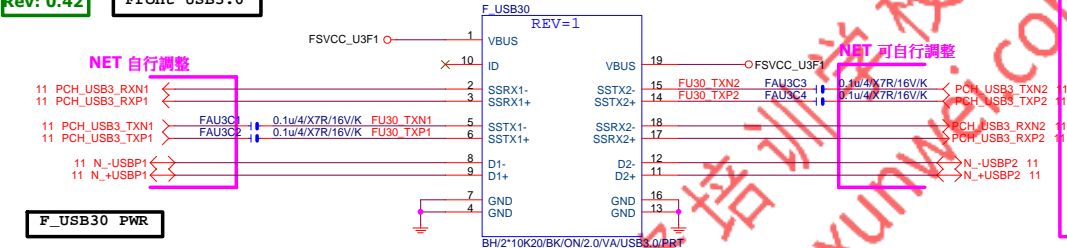
## AUDIO LED Control







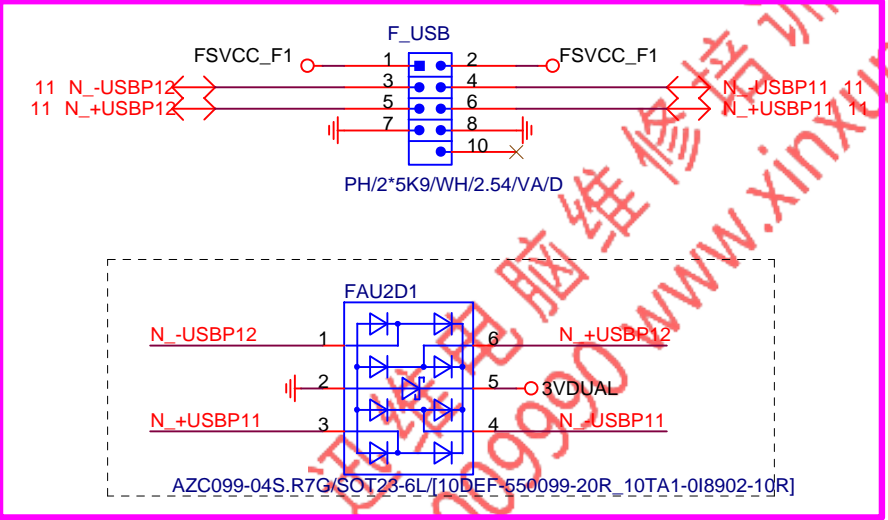
Rev: 0.42 Front USB3.0



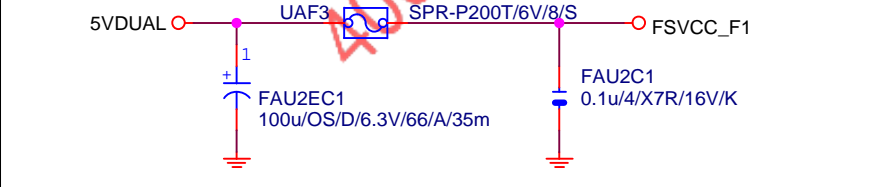




NET 可變



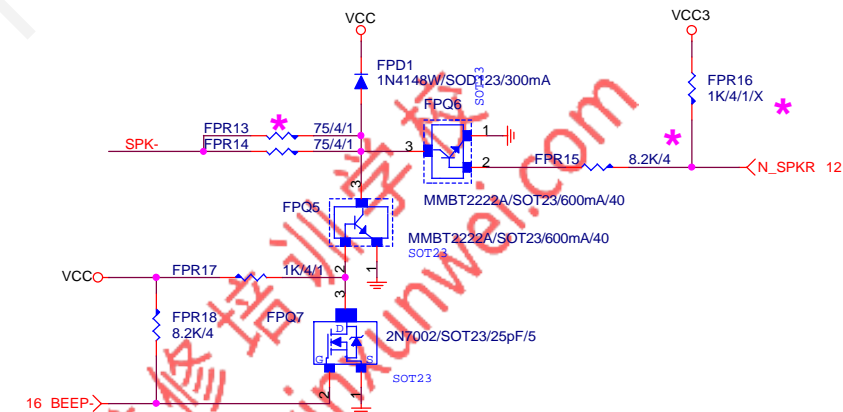
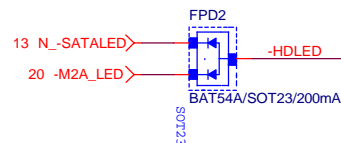
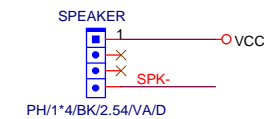
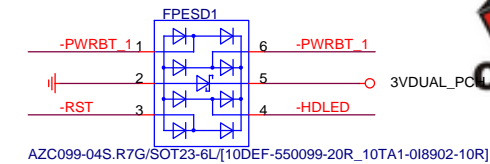
Close to connector  
FUSE 2 Port 1 Fuse 2A




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

Gigabyte Technology			
Title			
USB2.0			
Size A	Document Number	GA-B150N Phoenix-WIFI	
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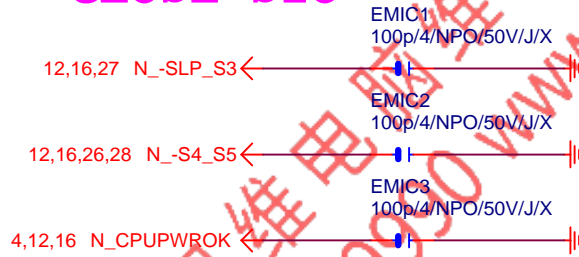




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Size Custom	Document Number	<div style="text-align: center;"> <b>GA-B150N Phoenix-WiFi</b> </div>	
Date:	Friday, October 23, 2015	Sheet	44 of 49
			Rev 1.0



CLOSE SIO



CLOSE PCH



GIGABYTE™

Title		
EM/ESD		
Size A	Document Number GA-B150N Phoenix-WIFI	Rev 1.0
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Color markers can be changed by model

**ASM1142 USB3.0**

**142 0.3 Reference**

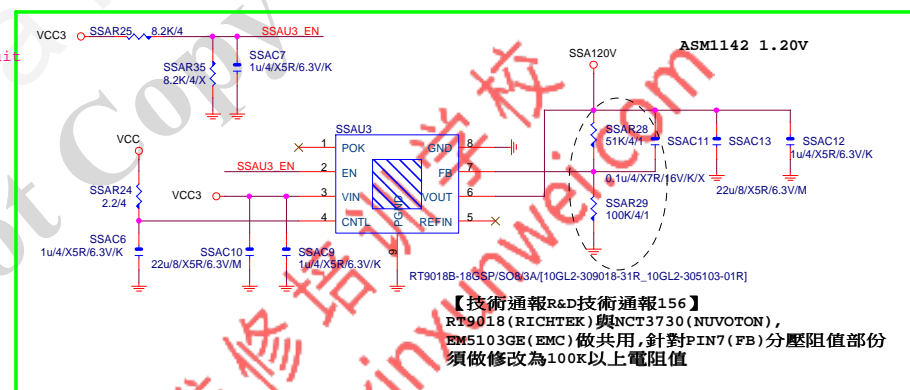
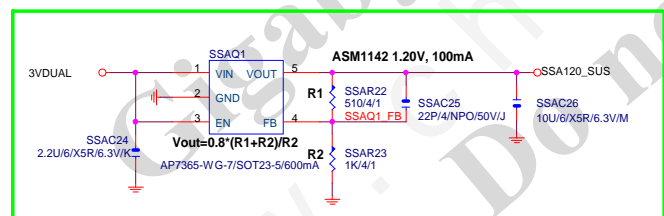
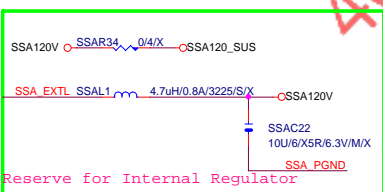
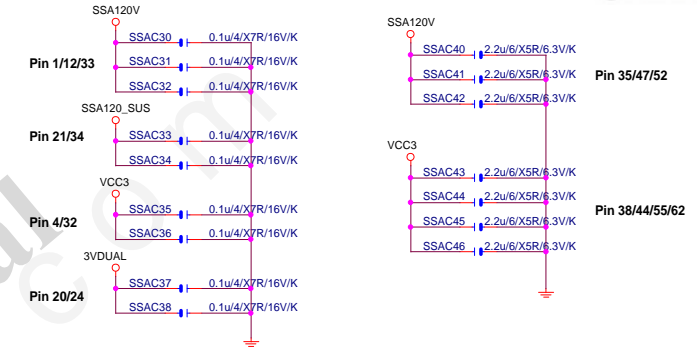
**EX**

**CHINA**

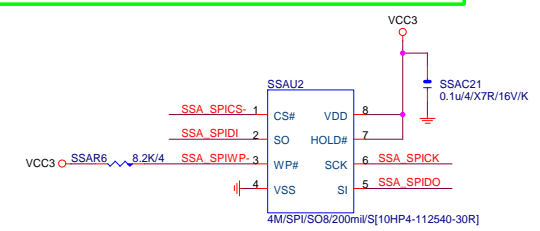
**Base on ASM1142 0.3 Reference SCH**




To USB Conn



【技術通報R&D技術通報156】  
RT9018(RICHTEK)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

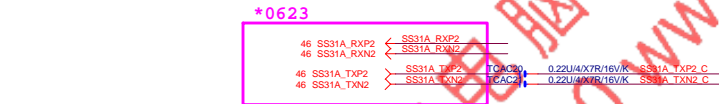
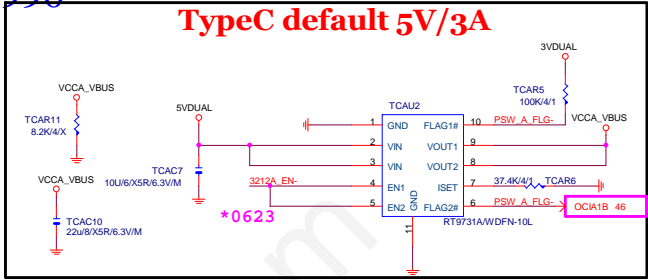
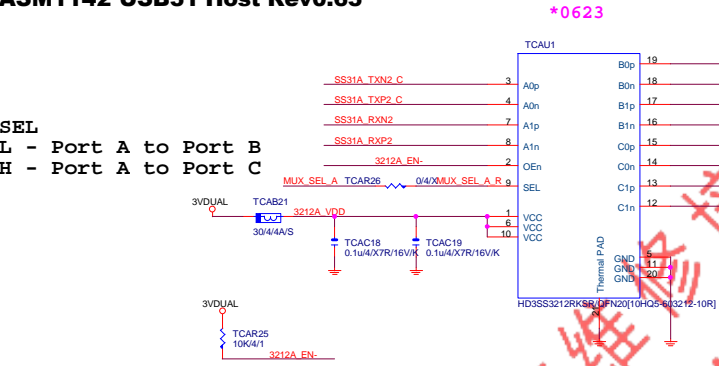


			
Title			
<b>ASM1142 USB3.1A</b>			
Size	Document Number		Rev
Custom	<b>GA-B150N Phoenix-WIFI</b>		<b>1.0</b>
Date:	Friday, October 23, 2015	Sheet	46 of 49

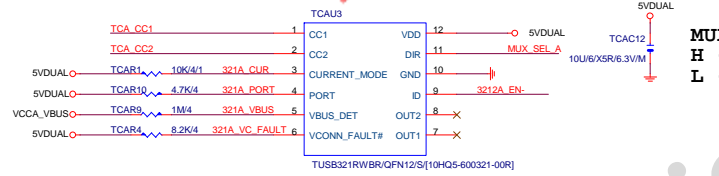
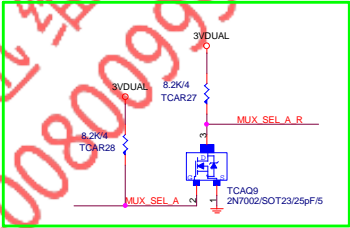




SEL  
L - Port A to Port B  
H - Port A to Port C



USB 3.x SuperSpeed

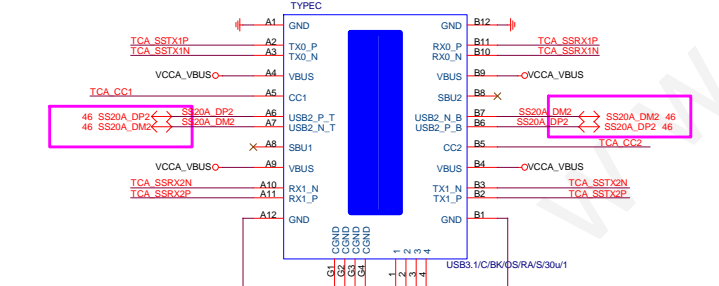


MUX\_SEL  
H - TypeC plug position 2  
L - TypeC plug position 1

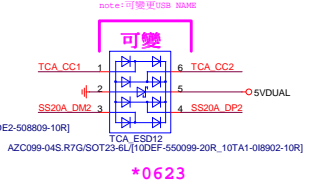
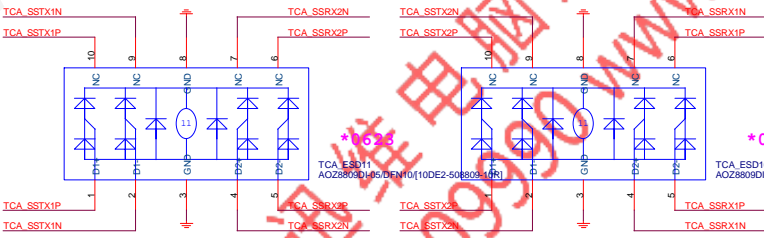
CURRENT MODE  
L - Default current / Pull down to GND or NC  
M - Medium (1.5A) current / Pull up to VDD 500K  
H - High (3.0A) current / Pull up to VDD 10K

PORT  
H - HOST  
L - Device  
NC - Dual Role

Color markers can be changed by model

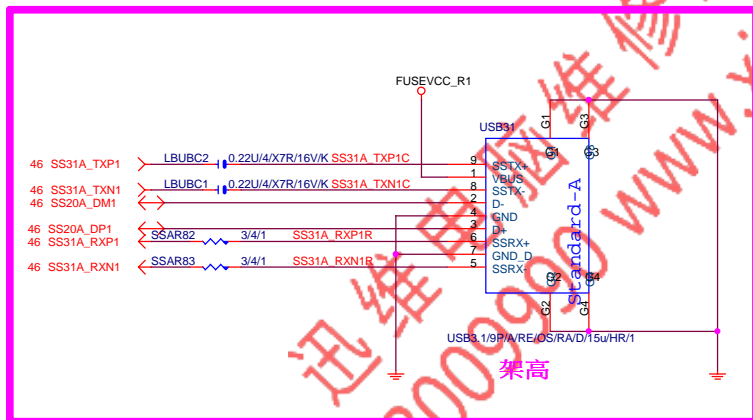


USB2.o can be used the same source

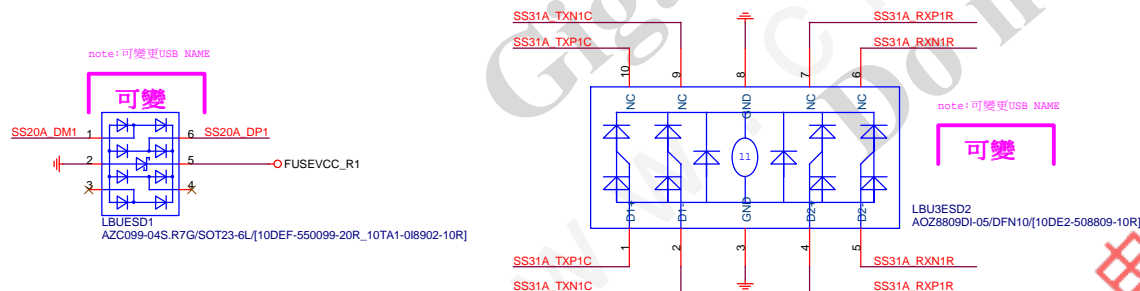
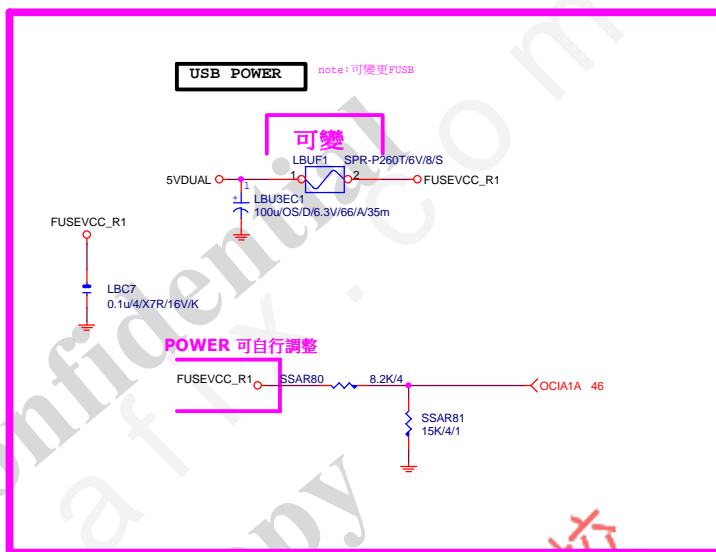


GIGABYTE™		
Title		
TI HD3SS3212		
Size	Document Number	Rev
C	GA-B150N Phoenix-WIFI	1.0
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USB31 TYPE A Connector which chooses for project demand





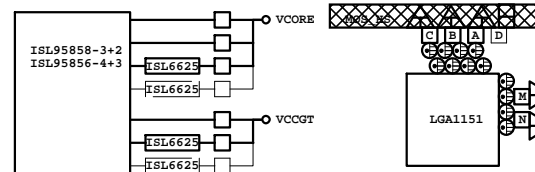
PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GPP_A0	MAIN	NATIVE	N_KBRST	P/U 8.2K VCC3	
GPP_A1	MAIN	NATIVE	N_LAD0	N/A	
GPP_A2	MAIN	NATIVE	N_LAD1	N/A	
GPP_A3	MAIN	NATIVE	N_LAD2	N/A	
GPP_A4	MAIN	NATIVE	N_LAD3	N/A	
GPP_A5	MAIN	NATIVE	N_LFRAME	N/A	
GPP_A6	MAIN	NATIVE	N_SBR1RQ	P/U 8.2K VCC3	
GPP_A7	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_FMR	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_V1D0	N_DDR_V_SEL	P/U 8.2K VCC3	
GPP_B1	MAIN	CORE_V1D1	N/A	N/A	
GPP_B2	MAIN	GPI	N_VREALST	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_PFRMST	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	SMMDATA	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_DEVS1P0	P/U 8.2K VCC3	
GPP_E6	MAIN	GPI	N_DEVS1P2	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_USBOC_F	N/A
GPP_E10	MAIN	H-Z	GPI	N_USBOC_R	N/A
GPP_E11	MAIN	H-Z	GPI	N_USBOC_R	N/A
GPP_E12	MAIN	H-Z	GPI	N_USBOC_F	N/A
GPP_F0	MAIN	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_DEVS1P4	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_SKT0CC	P/U 8.2K VCC3	
GPP_F15	MAIN	GPI	N_USBOC_F	N/A	
GPP_F16	MAIN	GPI	N_USBOC_F	N/A	
GPP_F17	MAIN	GPI	N_USBOC_R	N/A	
GPP_F18	MAIN	GPI	N_USBOC_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_DDBP_CTRLCLK	P/U 2.2K VCC3
GPP_I6	MAIN	GPO	N_DDBP_CTRLDATA	P/U 2.2K VCC3
GPP_I7	MAIN	GPI	N_DDBP_CTRLCLK	P/U 2.2K VCC3
GPP_I8	MAIN	GPI	N_DDBP_CTRLDATA	P/U 2.2K VCC3
GPP_I9	MAIN	GPI	N_DDBP_CTRLCLK	P/U 2.2K VCC3
GPP_I10	MAIN	GPI	N_DDBP_CTRLDATA	P/U 2.2K VCC3
GPD0	STBY	BATLOW	N_-BATLOW	P/U 8.2K 3VDUAL_PCH
GPD1	STBY	APRESST	N_GFP_D1	P/U 8.2K 3VDUAL_PCH
GPD2	STBY	LAM_MAKE	N_-LAM_MAKE	N/A
GPD3	STBY	PWRSTN	O_PWRSTN	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_-R_ACK	N/A
GPD8	STBY	SUSCLE	N_SUSCLE	N/A
GPD10	STBY	SLP_S5	N_-SLP_S5	N/A

Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
PCIRSTF38/GP10/VDPMN_ATRK_EN	N/A	
PCIRSTF28/GP11	O_-PCIE_RSR	
PCIRSTF18/GP12	O_-PFRMST	
SVC/REQ_H07/GP14	TFM_GP14	
SLP_S0B/PCIRSTF10/CIKT2/GP15	-PCIRSTN	
PSI_L/FAN_CTL3/CIKT2/GP16	N_THERMTRIP	
R128/GP17	MD_ID0	
TRM_FHM_CTS28/GP20	N_THERMTRIP	
IO_SMIWCD28/GP21	<a href="#">PIN</a>	
SPI_S1/GP22	BEEP-	
DPWRK/CPU_F0/GP23	N_PCH_DPWRK	
FAN_TACS/RTS28/GP24	<a href="#">PIN</a>	
FAN_TAC4/DSR28/GP25	FANIO4	
INV_OUT1_S0072/GP26	Q_PLED	
INV_IN1_S1N2/GP27	INV_IN1	
ATAP0/GP30	PWOK	
CT81/GP31	CT81-	
OCWD13/R118/GP32	R11-	
OCWD12/DCD18/GP33	DCD1-	
VTT_PWRGD/GP34	VTT_PWRGD	
VCC18_EN/GP35	VCCIO_EN	
FAN_CTL3/GP36	FANPWM3	
FAN_TAC3/GP37	FANIO3	
3VSB5W8/GP40	<a href="#">PIN</a>	
OCWD11/S1N1/GP41	RXD1	
GP42/SCK/FAN_CTL4	<a href="#">PIN</a>	
PANSW88/GP43	-PWRSTW	
PWRGN8/GP44	O_PWRSTW	
OCWD10/DSR18/GP45	DSR1-	
CE2_N/GP47/JP6	CEB_N	
GP50/GP1	<a href="#">PIN</a>	
FAN_CTL4/GP51	FANPWM2	
FAN_TAC3/GP52	FANIO2	
SUSCW/GP53	N_-SA_S5	
PWR8/GP54	N_-LPCVME	
RSMB278/CIKT81/GP55	O_-RSMRST	
KCLK/FAN_TAC5/GP56	KCLK	
MDAT/FAN_CTL6/GP57	MDAT	
KCLK/GP60	KCLK	
KDAT/GP61	KDAT	
KRST8/GP62	N_-KRST	
HOLD_B8/GP63	-SPI_HOLD_B	
HOLD_B8/GP64	-SPI_HOLD_M	
VLD1T_EN/PCH_D0/GP65	<a href="#">PIN</a>	
VCC1_05_EN/GP66	VCC1_0_EN	
GP67	<a href="#">PIN</a>	
USB_F51/PD0/GP70	PD0	
USB_F52/PD1/GP71	PD1	
USB_F53/PD2/GP72	PD2	
USB_F53/PD3/GP73	PD3	
USB_F55/PD4/GP74	PD4	
USB_F56/PD5/GP75	PD5	
USB_F57/PD7/GP76	PD6	
USB_F58/PD8/GP77	PD7	
LS_IN1/SLCT/GP80	SLCT	
LS_OUT1/PE/GP81	PE	
LS_IN2/BUSY/GP82	BUSY	
LS_OUT2/ACK8/GP83	ACK-	
IPHONE_CHARGE8/SLIN8/GP84	SLIN-	
OC_IN/INIT8/GP85	INIT-	
OC_OUT/AFD8/GP86	AFD-	
USB_OC4/STB8/GP87	STB-	
DOE_EN/GP90	NA_EN	
PWRLED/GP91	HPD-	
HOLD_OUT/GP92	<a href="#">PIN</a>	
HDLED_IN/GP93	<a href="#">PIN</a>	
PROCHOT8/GP94	-PROCHOT_CON	
CPUPWRGD/GP95	<a href="#">PIN</a>	
PCH_VRMPWRGD/GP96	N_PCH_VRMPWRGD	
VR_RDY/GP97	VR_RDY	

PWM各相位的擺法如下:



BIOS超電壓對應表:

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

散熱模組料號:

Z1704M-D3H :  
PCH :  
MOSFET :

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	+12V	FANPWM1	FANIO1	IT8628
SYS FAN1	FANPWM2	VCC	FANIO2	IT8628
	FAN1_VOUT	N/A	N/A	NCT3941
SYS FAN2	FANPWM3	VCC	FANIO3	IT8628
	FAN2_VOUT	N/A	N/A	NCT3941
SYS FAN3	FANPWM4	VCC	FANIO4	IT8628
	FAN3_VOUT	N/A	N/A	NCT3941

Gigabyte Technology

TABLE LIST

Doc Number	Rev
GA-B150N Phoenix-WiFi	0
File	File
File	File