

Model Name: GA-B150M-PIO-SI R3

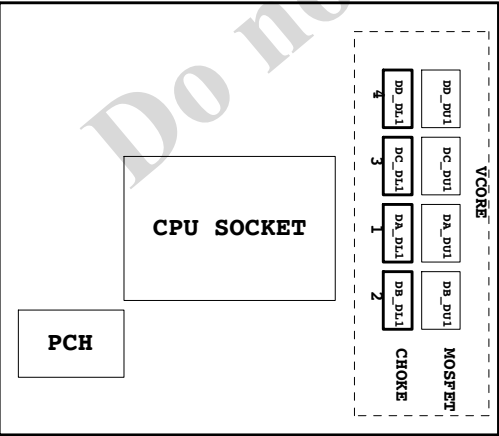
SHEET TITLE Rev 1.0

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR3
06	CPU_LGA1151-C
07	CPU_LGA1151-D
08	DDR 4 CHANNEL A
09	DDR 4 CHANNEL B
10	PCH CLOCK BUFFER
11	PCH DMI,USB,PCIE
12	PCH MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH_PWR,GND
15	Dual BIOS
16	I/O ITE8628
17	HWM
18	FAN CTRL-SIO
19	PCIEX16 SLOT
20	
21	
22	
23	
24	
25	
26	ISL95858_856 PWM
27	ISL95858_856 MOS_VCORE
28	ISL95858_856 MOS_VCCGT
29	VCCSA_VCCIO_VCCPLL
30	RT8237_DDR_BEAD
31	
32	RT8237_PCH-BEAD
33	DISCRETE POWER
34	NCP3933 OVER VOLTAGE

SHEET TITLE

35	ATX POWER , -PROCHOT
36	KB_MS_USB
37	DVI
38	RTD2168 - DP to VGA - IC
39	RTD2168 - DP to VGA - Conn
40	HDMI
41	R_USB30
42	Realtek 8111G
43	USB30_LAN CONNECTOR-8111G
44	ALC887-VD2 CODEC
45	REAR AUDIO JACK
46	F_USB30
47	F_USB20
48	COM , LPT , TPM
49	F_PANEL
50	TABLE LIST

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**Rev 1.0**

### Component value change history

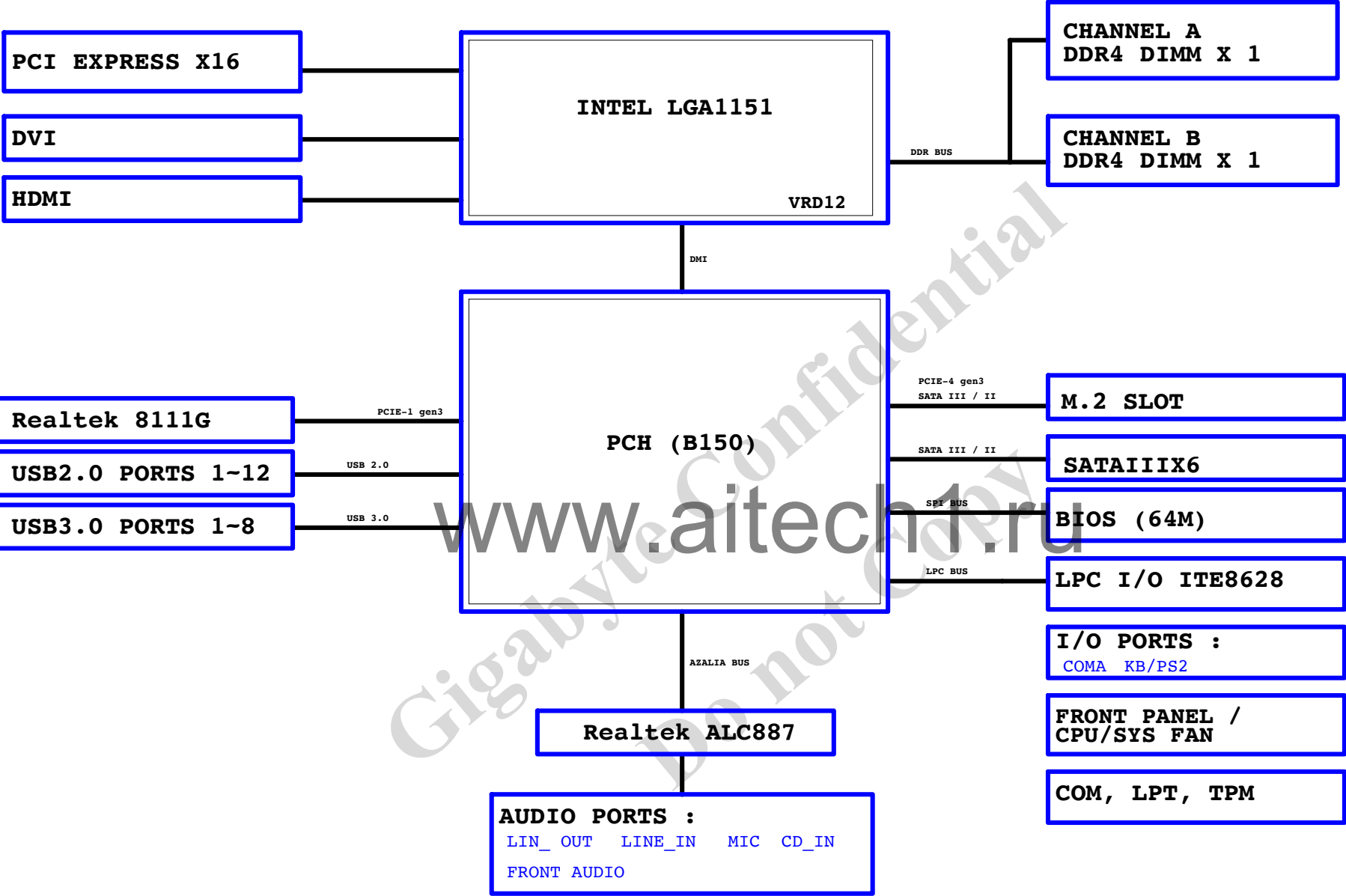
2016/05/16

[illegible]

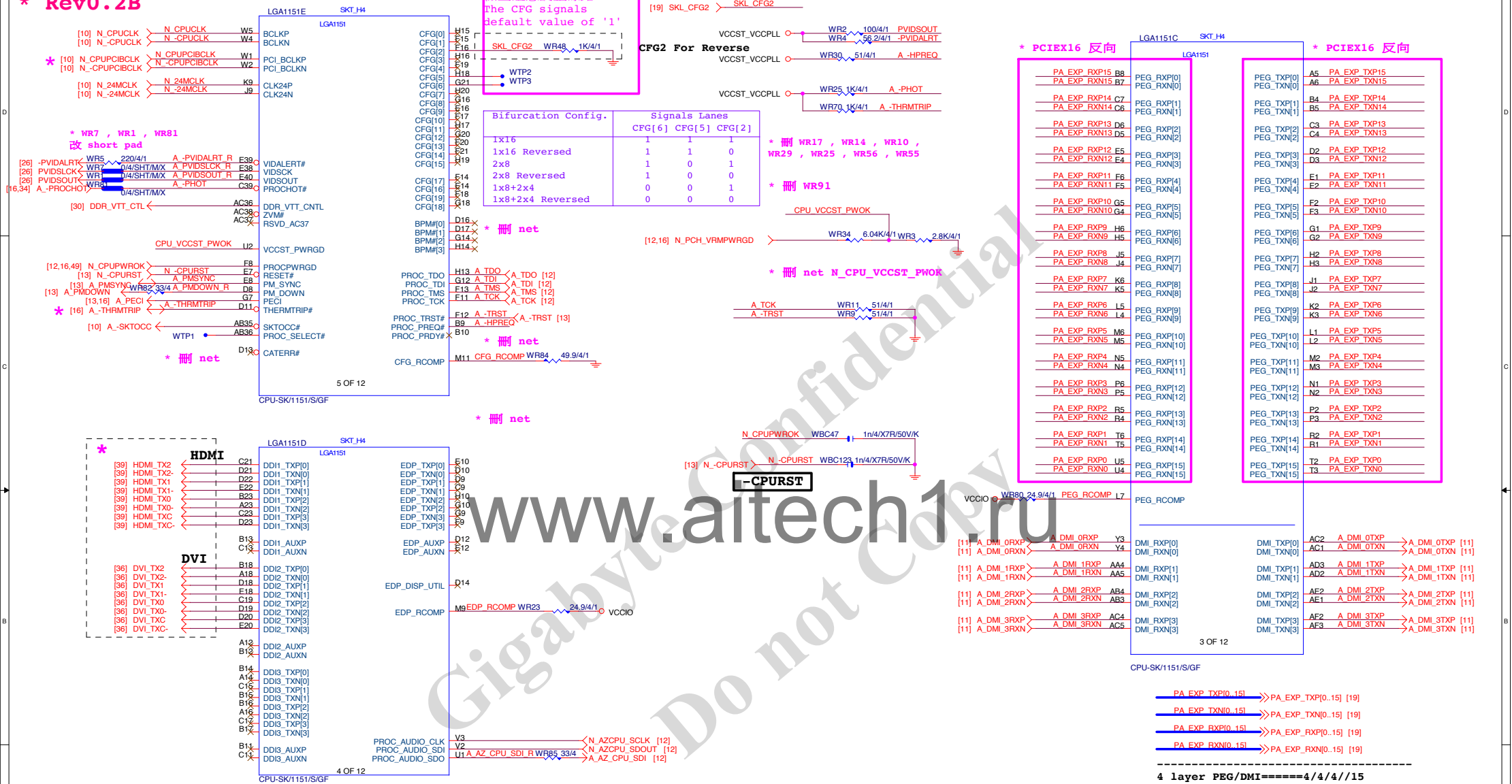
## Circuit or PCB layout change

[illegible]

BLOCK DIAGRAM



**Rev0.2B**



```
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%**

```

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]

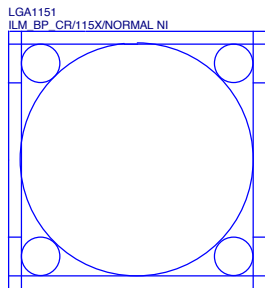
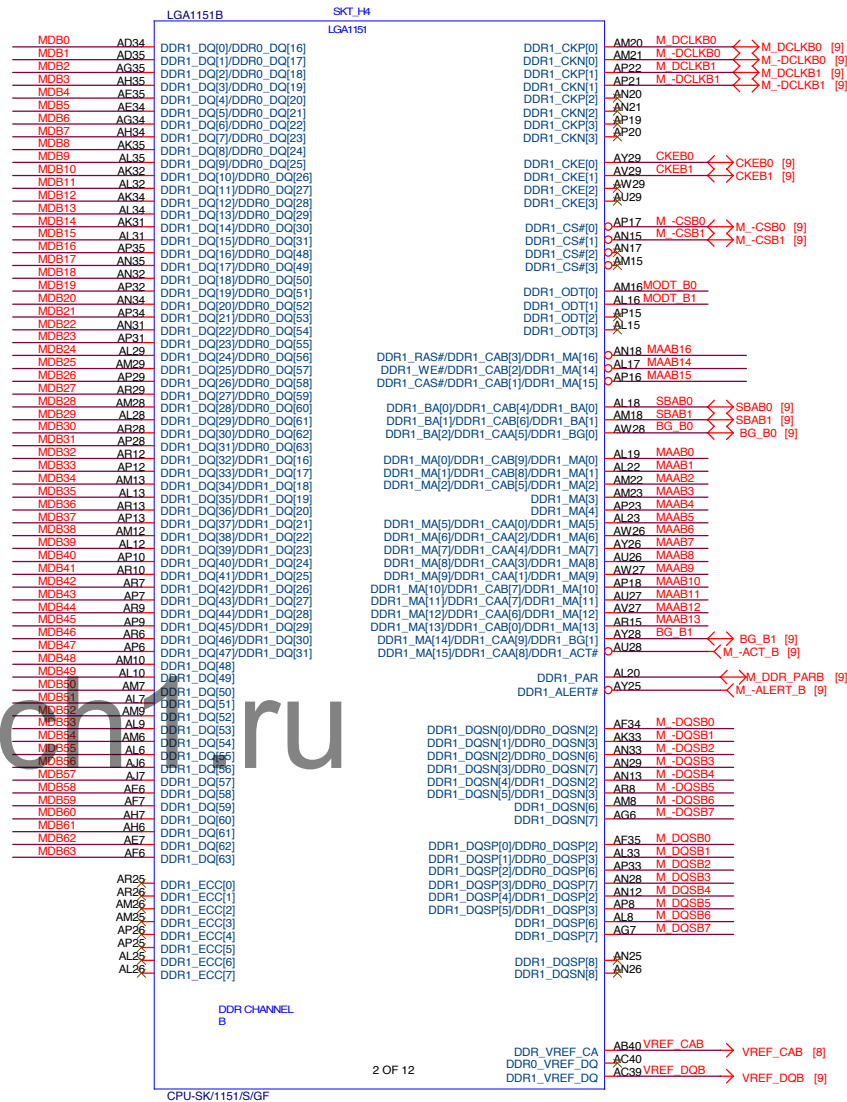
```

```
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



Need check the new CPU ME

[8] MODT\_A[0..1] ↔ MODT\_A[0..1]

[9] MODT\_B[0..1] ↔ MODT\_B[0..1]

[8] MDA[0..63] ↔ MDA[0..63]

[9] MDB[0..63] ↔ MDB[0..63]

[8] M\_DQSA[0..7] ↔ M\_DQSA[0..7]

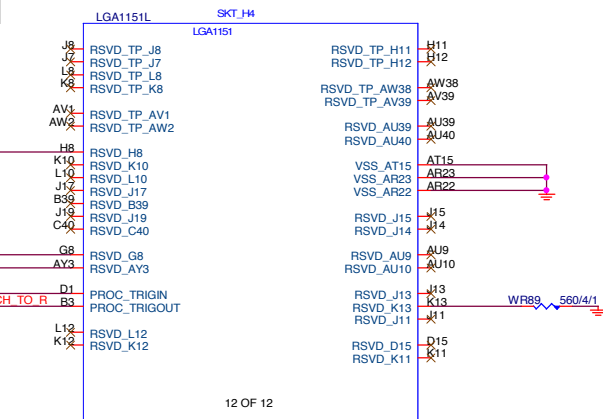
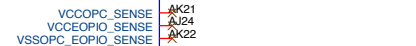
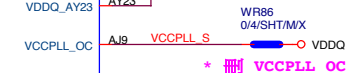
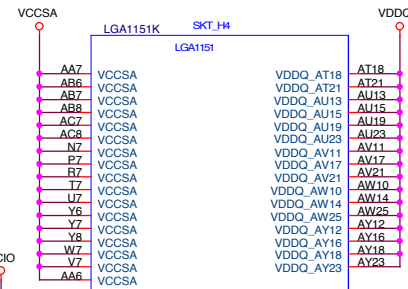
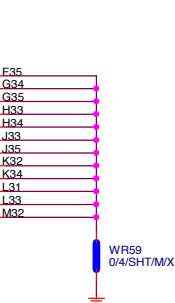
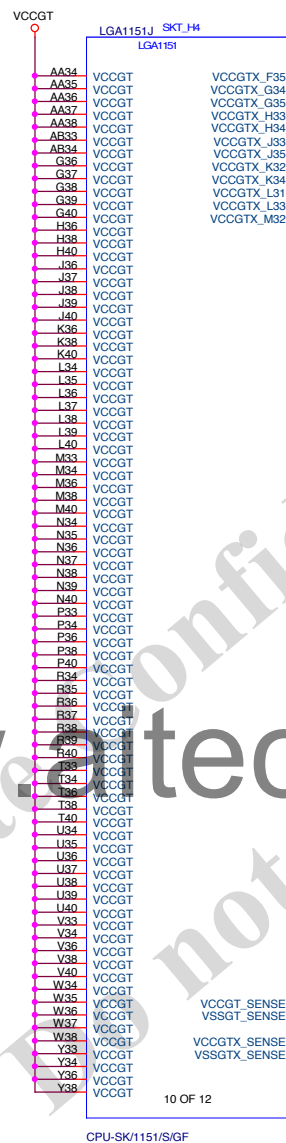
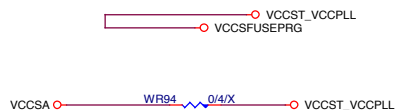
[8] M\_-DQSA[0..7] ↔ M\_-DQSA[0..7]

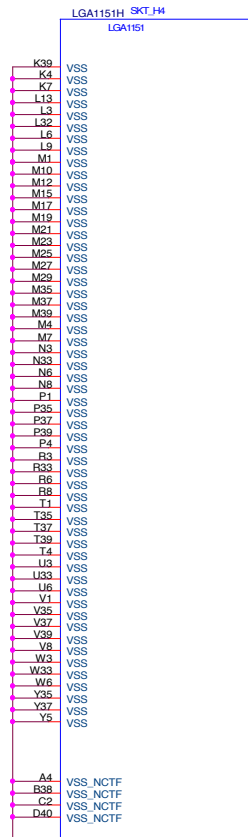
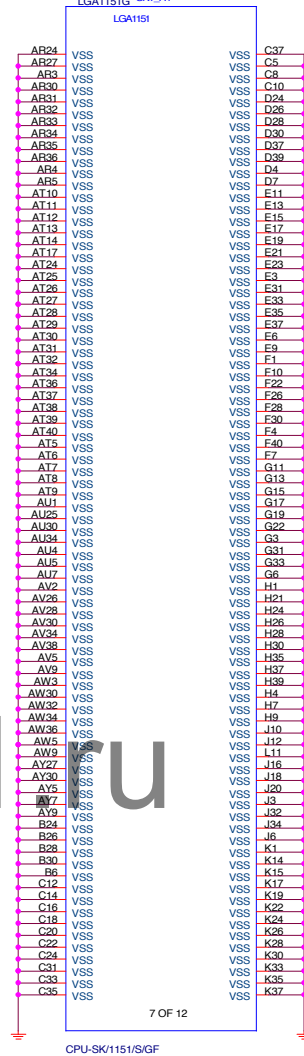
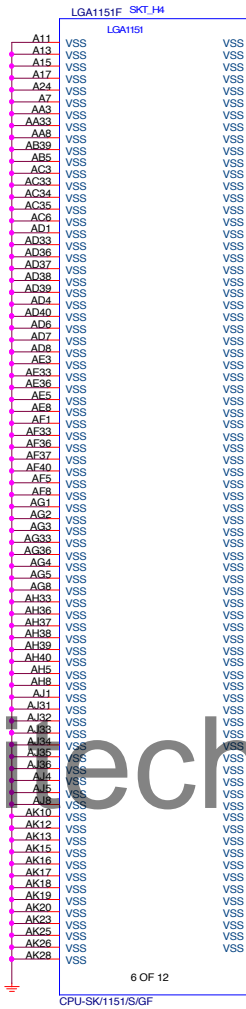
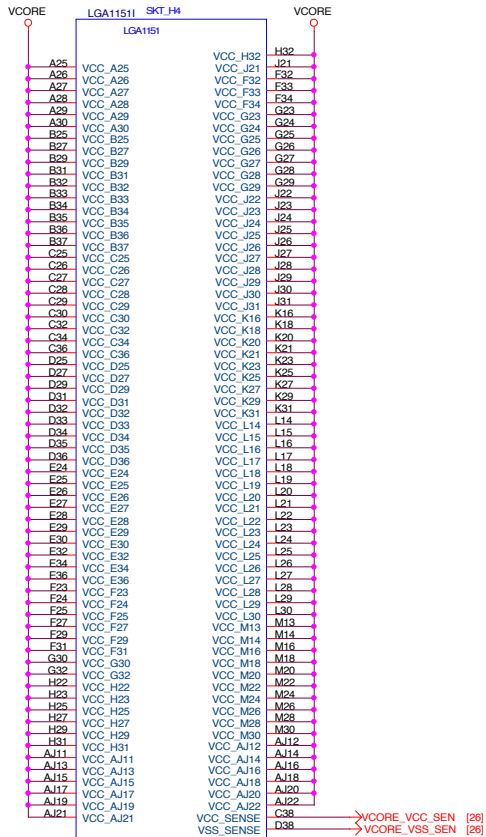
[8] MAAA[0..16] ↔ MAAA[0..16]

[9] MAAB[0..16] ↔ MAAB[0..16]

[9] M\_DQSB[0..7] ↔ M\_DQSB[0..7]

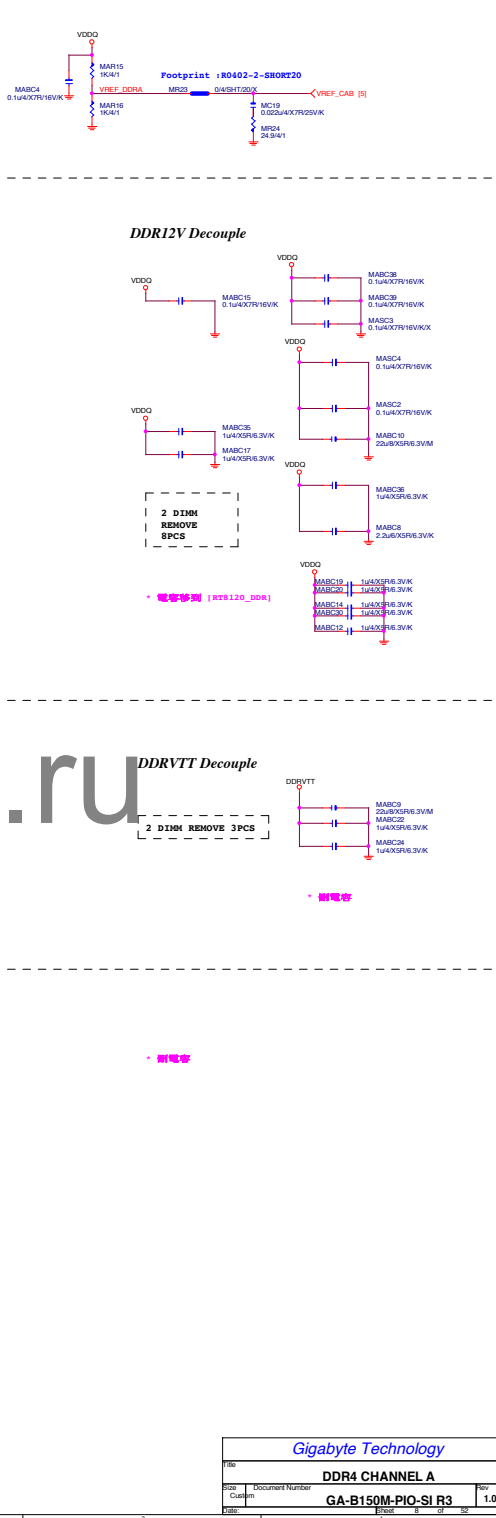
[9] M\_-DQSB[0..7] ↔ M\_-DQSB[0..7]





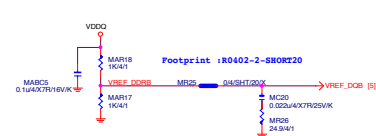
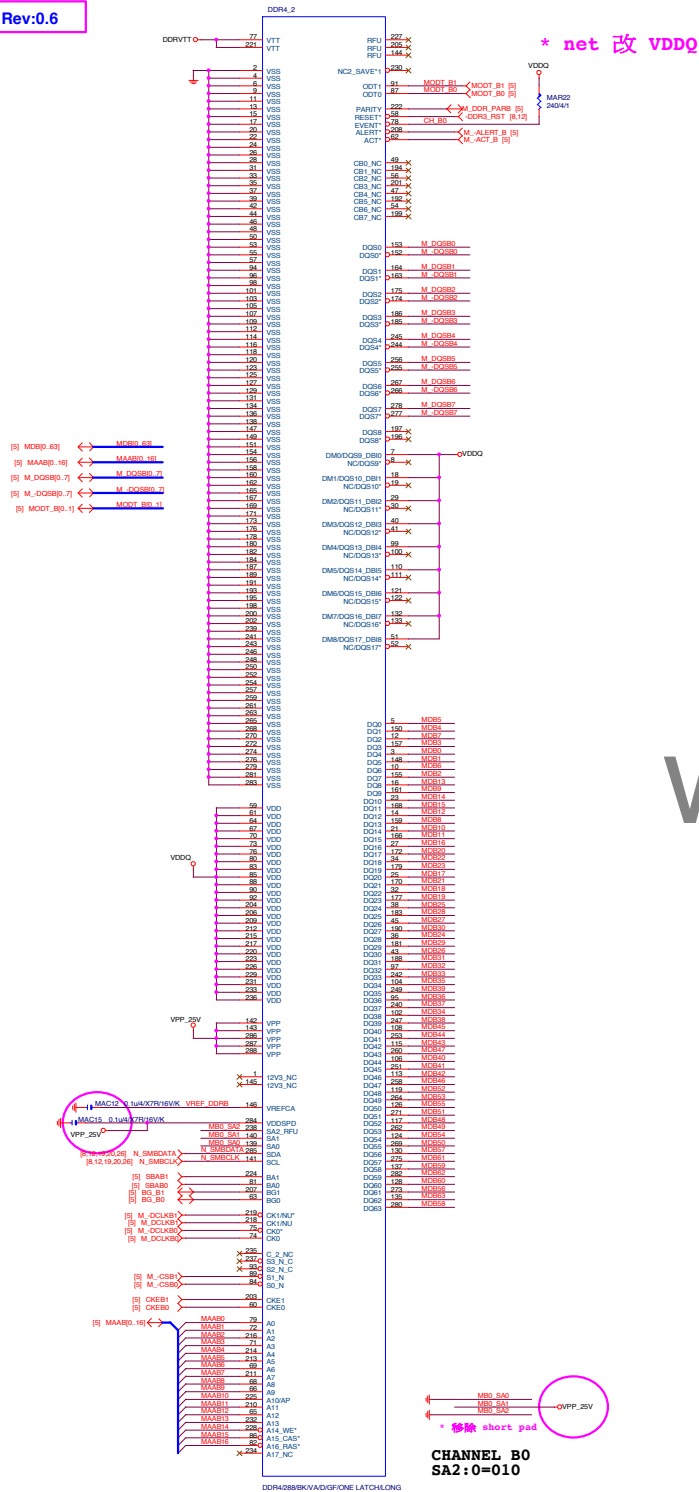
\* 刪 Vcore 電容





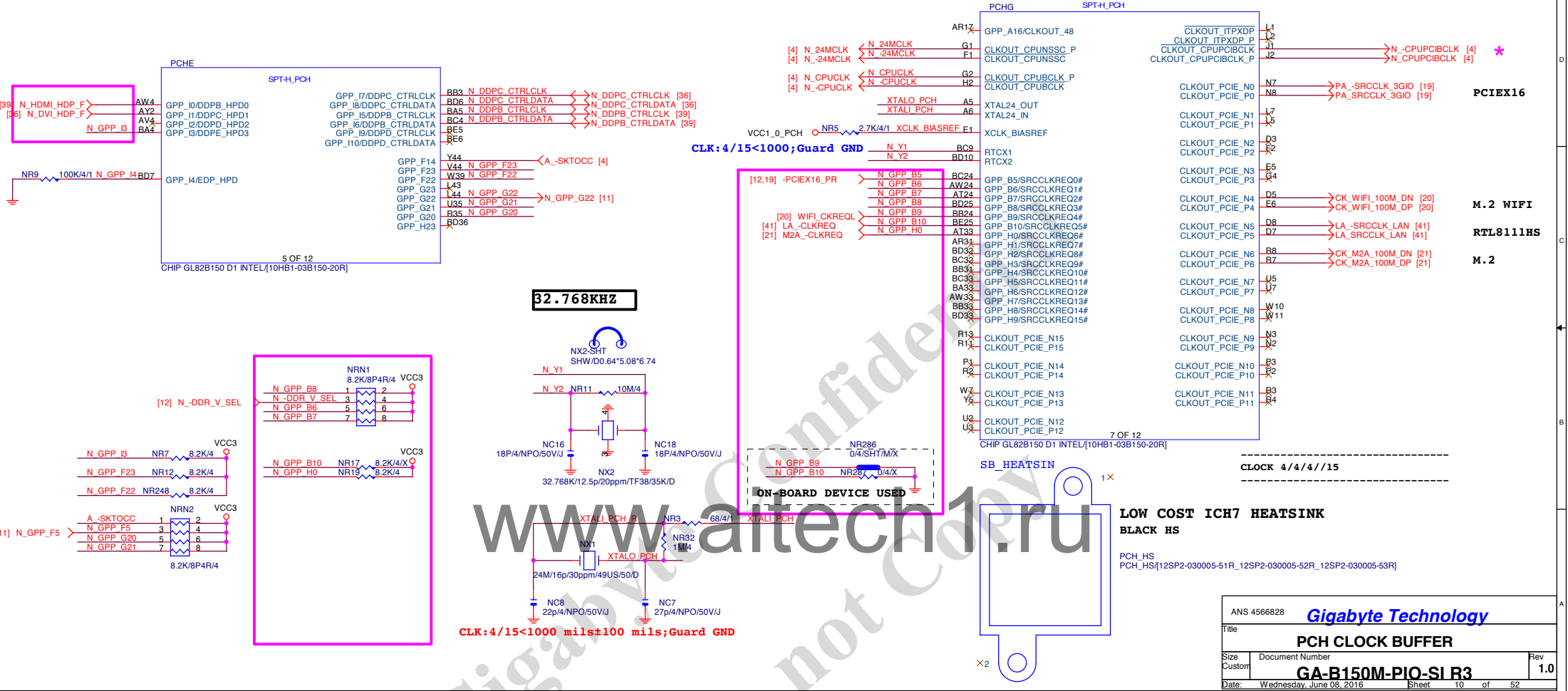
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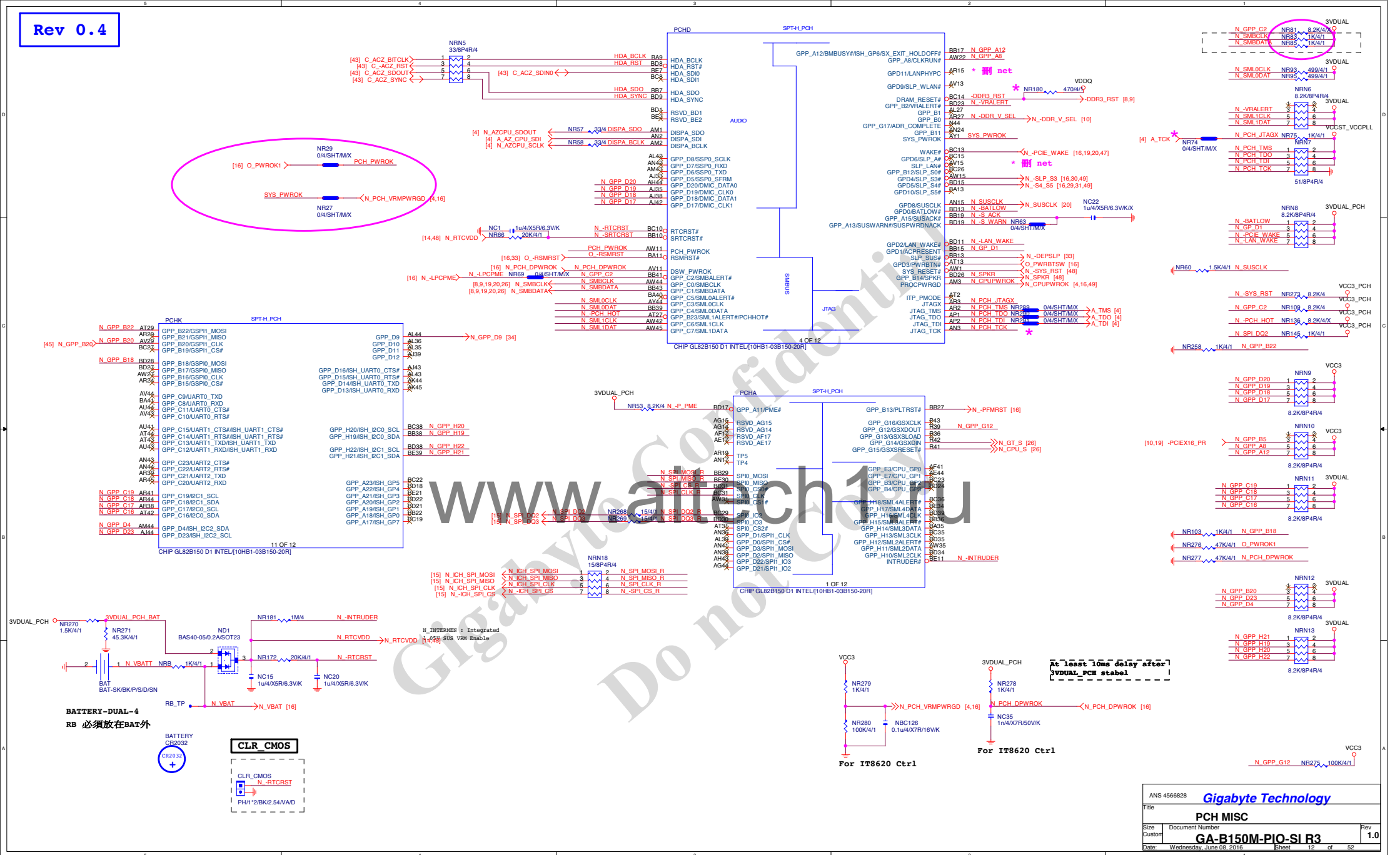


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<i>Gigabyte Technology</i>			
Title			
DDR4 CHANNEL B			
Size	Document Number		Rev
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Author	Sheet	9	of 52

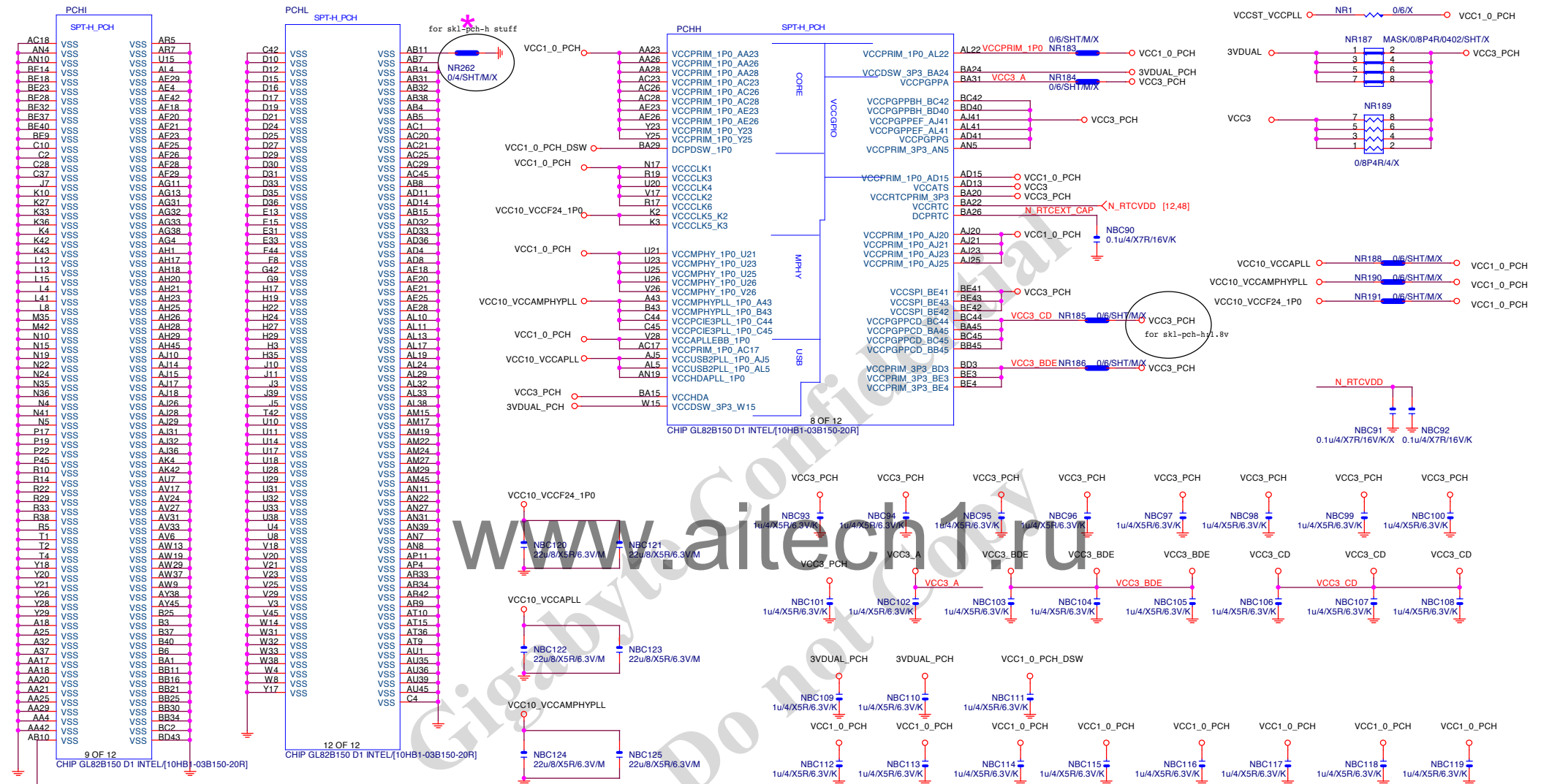




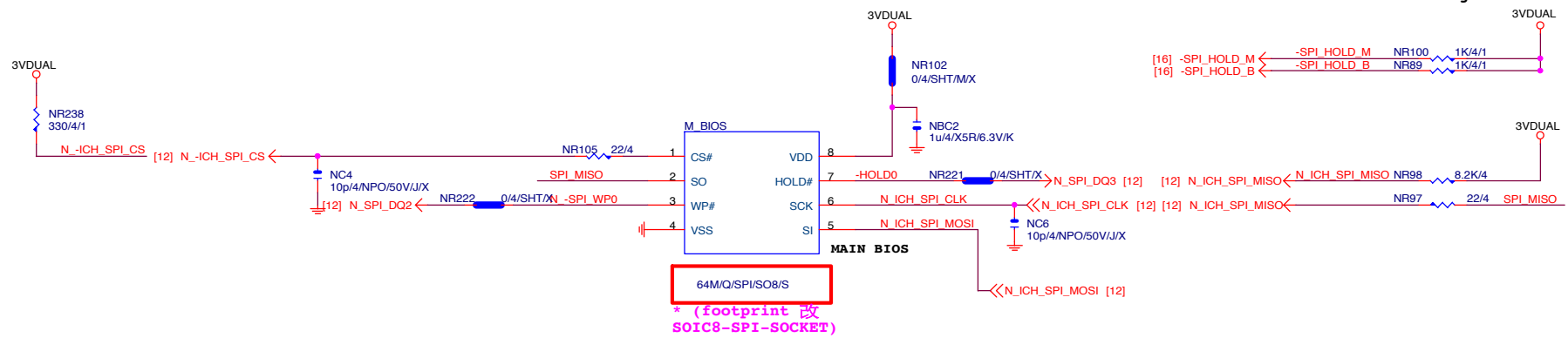


A PECL R NR86 1K/4/1

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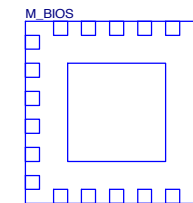
ANS 4566828		<b>Gigabyte Technology</b>	
Title		<b>PCH PWR, GND</b>	
Size	Document Number	Rev	
Custom	<b>GA-B150M-PIO-SI R3</b>	<b>1.0</b>	
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BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating  
0 means PD 1K

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

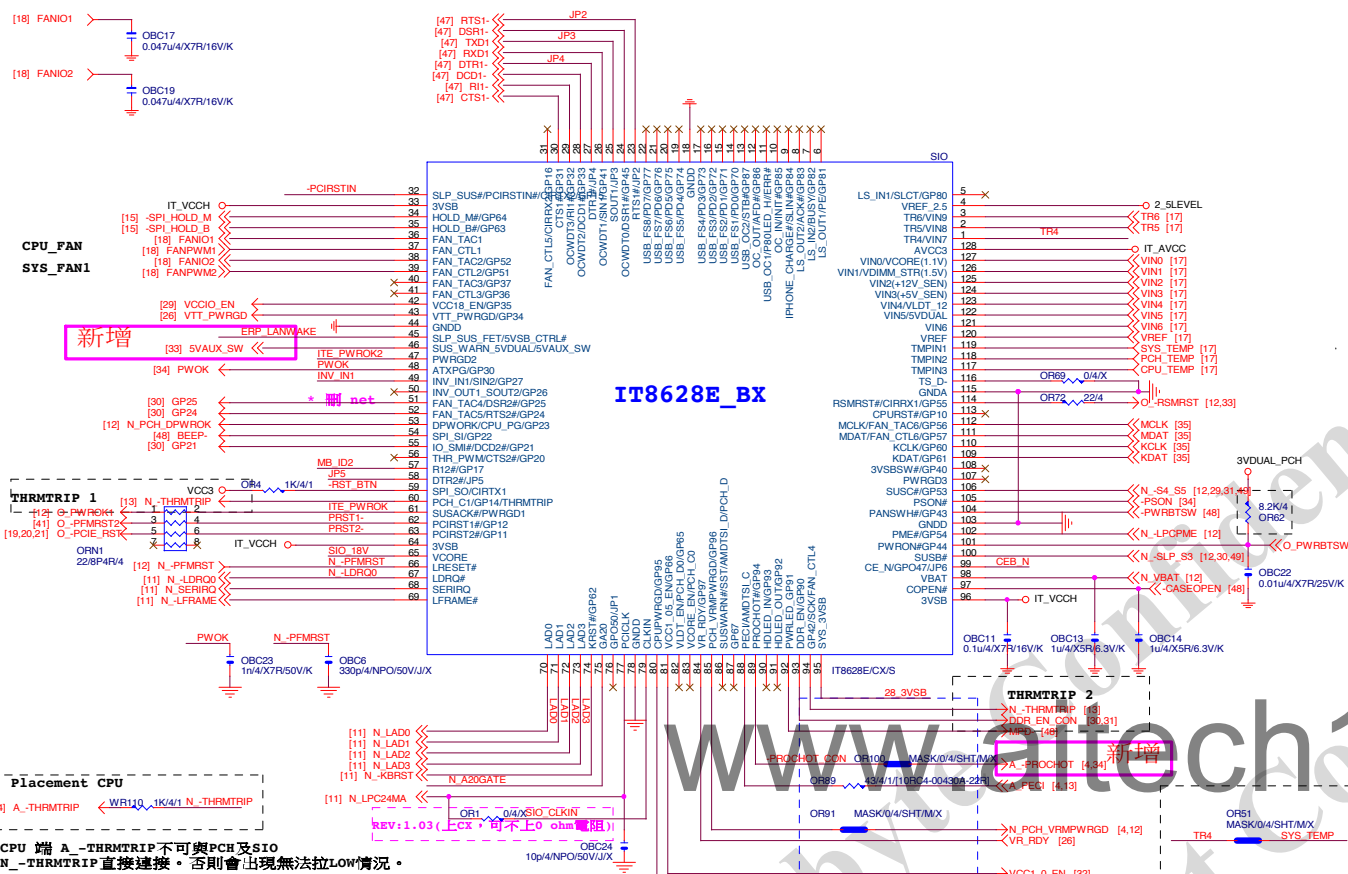
\* 試産先上 , PVT 移除

Gigabyte Technology

Title	BIOS
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SIO IT8628BX REV:1.05



Placement CPU

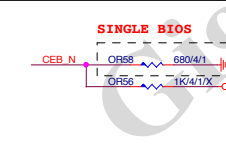
[4] A\_THRMTRIP < WRT10 1K/4/1 N\_THRMTRIP

CPU 端 A - THRMTRIP 不可與 PCH 及 SIO N\_THRMTRIP 直接連接。否則會出現無法拉 LOW 情況。

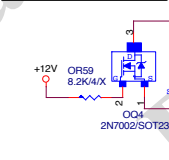
FAN TABLE	
CPU_FAN	FAN CTL1 FAN_TAC1
SYS_FAN1	FAN CTL2 FAN_TAC2
SYS_FAN2	FAN CTL3 FAN_TAC3
SYS_FAN3	FAN CTL5 FAN_TAC5
OPT FAN or SYS_FAN4	N/A
THRMTRIP1	YES PIN60
THRMTRIP2	YES PIN94

IT8620E GPIO問題匯整	
PIN 50	GP26-第一次接上POWER時會拉 Lo
PIN 90/91	DEFAULT為HDLed FUNCTION, GP93 BYPASS TO GP92 高溫時 GP92 會被拉 Lo (ITE BUG)
PIN 108	GP40--- POWER ON 時會拉 Lo
PIN 111/112	MOUSE 跟FAN6 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 雜訊會異常動作。

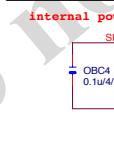
DUAL BIOS OPT STRAP



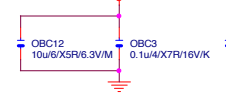
Power leakage



SIO 18V



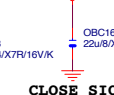
SIO CAP



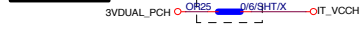
Power leakage



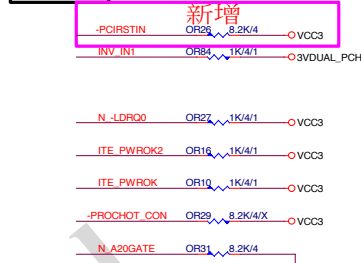
SIO 18V



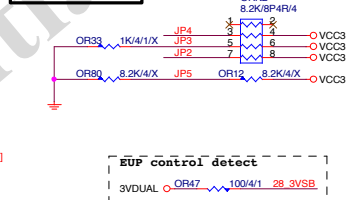
PWR SHT



SIO PU



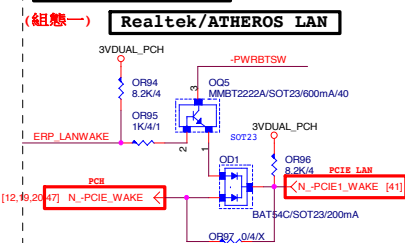
SIO STRAP



EUP control detect	
3VDUAL_PCH	OR47 100k/4/1 28 3VSB

JP2	1 Disable WDT
JP2	0 Enable WDT to rest PWR0K
JP3	1 SPI-Flash Disable
JP3	0 SPI-Flash Enable
JP4	1 k8 power function is Disable
JP4	0 k8 power sequence function is Enable
JP5	1 anti-surge Disable
JP5	0 anti-surge Enable
JP3	1 1 The default value of EC Index 63h/6Bh/73h is 80h.
JP3	0 1 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.

ERP WAKE on LAN (依LAN組態選擇)

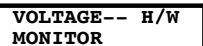


Realtek/ATHEROS LAN



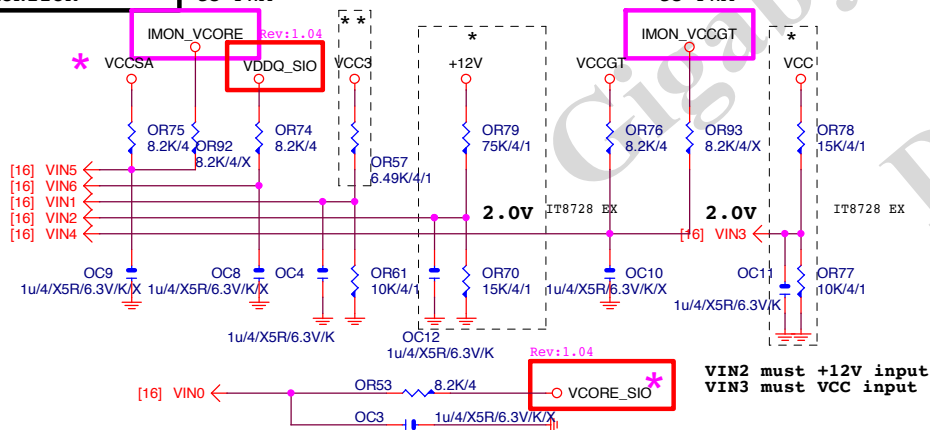
Gigabyte Technology	
ITE 8628 LPC IO	
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**REV 1.04**

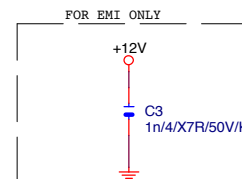


```
* IT8728 BX
* * IT8728 CX
```

## Connect to PWM



The division voltage of VIN2 & VIN3 must be around 2.9V



VIN2 must +12V input  
VIN3 must VCC input

## Gigabyte Technology

Title
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HWM,KB/MS, FAN CTRL

Size

Document Number

Custom
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# GA-B150M-PIO-SI R3

Rev
-----

10

Date \_\_\_\_\_

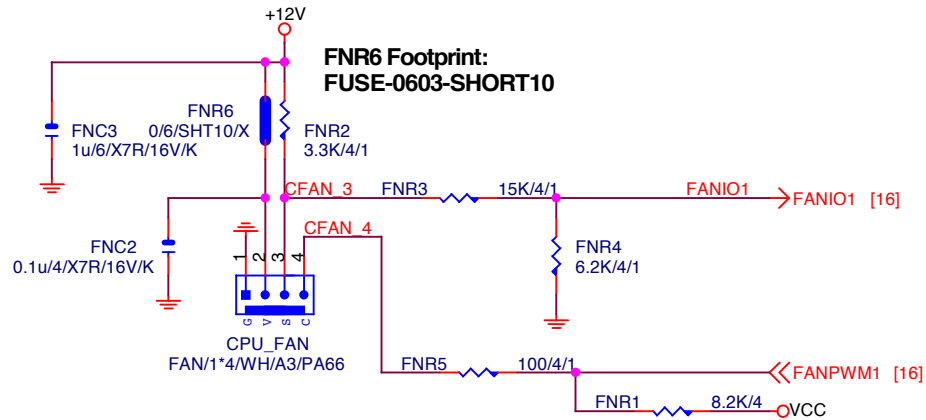
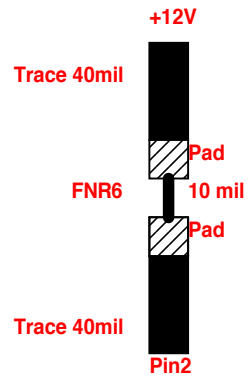
Wednesday, June 08, 2016

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of

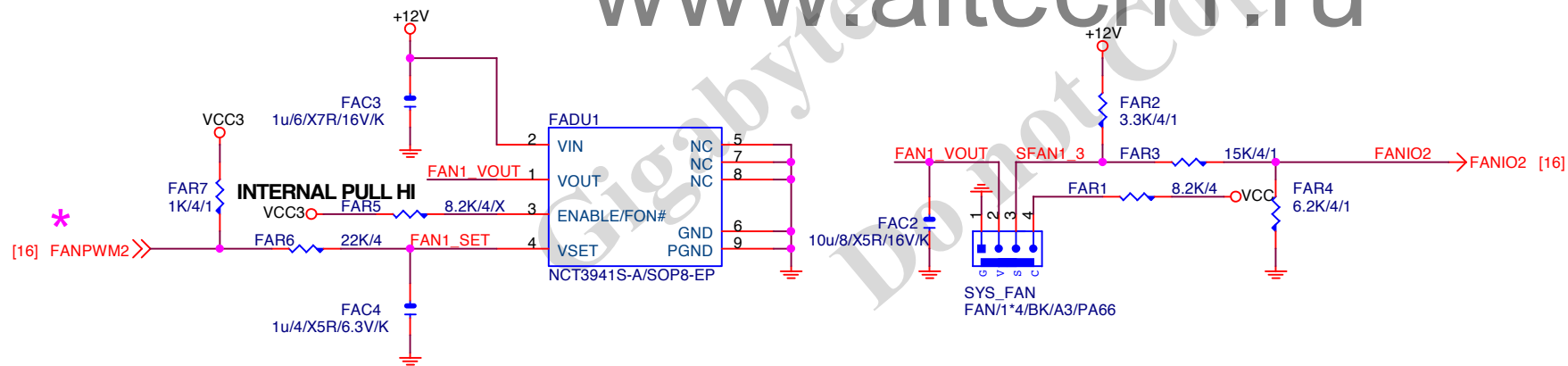
2

**Rev: 0.53**

## SYSTEM FAN1

## Linear SYS\_FAN

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



## Gigabyte Technology

Title
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**HWM,KB/MS, FAN CTRL**

Size

Document Number

Rev

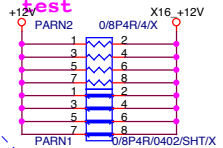
**GA-B150M-PIO-SI R3**

# 1.0

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\* +12 protect  
short-wire  
test



PA\_EXP\_RXP0\_15] >> PA\_EXP\_RXP0[0..15] [4]  
PA\_EXP\_RXN0\_15] >> PA\_EXP\_RXN0[0..15] [4]  
PA\_EXP\_TXP0\_15] >> PA\_EXP\_TXP0[0..15] [4]  
PA\_EXP\_TXN0\_15] >> PA\_EXP\_TXN0[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

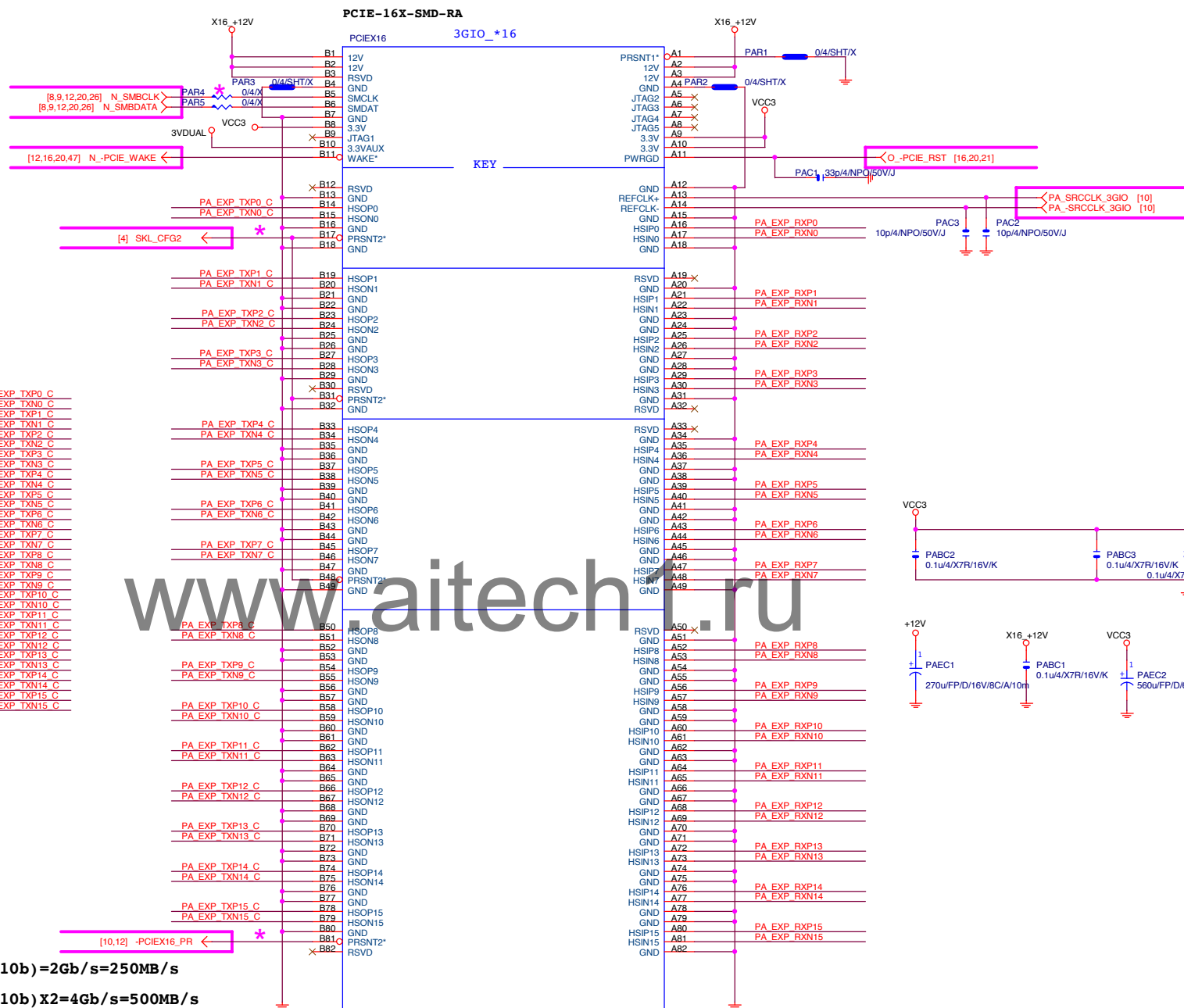
PCE-E X1(單向) BANDWIDTH=2.5GHz\*(8b/10b)=2Gb/s=250MB/s

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



PCE-E/164P/BK/RA/S/GF

R01A

Gigabyte Technology

Title			PCI EXPRESS * 16	
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## M.2 Lane4 from PCH port18

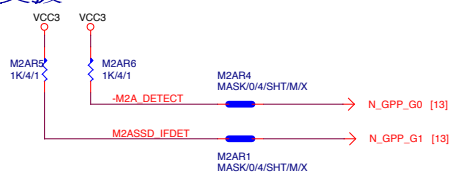
## M.2 Lane3 from PCH port17

## M.2 Lane2 from PCH port16

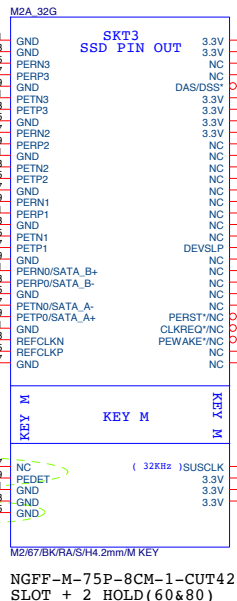
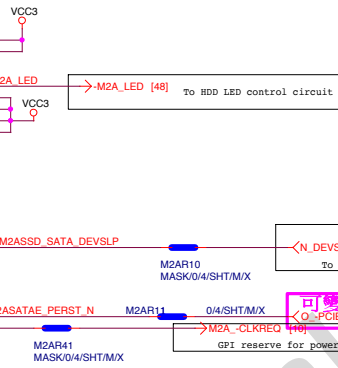
## M.2 Lane2 from PCH port15

需與M2\_-CLKREQ對應

## 支援SATA and M.2 function

SATA : GND.  
PCIE : NC

M2插卡時為Low

NGFF-M-75P-8CM-1-CUT42  
SLOT + 2 HOLD (60&80)M2ASSD SATA DEVSLP  
M2AR10  
MASK/0/4/SHT/M/X  
To DEVSLP0 for power savingM2ASATAE PERST\_N  
M2AR11  
0/4/SHT/M/X  
M2A\_-CLKREQ [40]  
PCI RST [16,19,20]  
GPI reserve for power savingM2ASATAE PERST\_N  
M2AR7  
10p/4/NPO/50V/J/X

## DIP螺柱

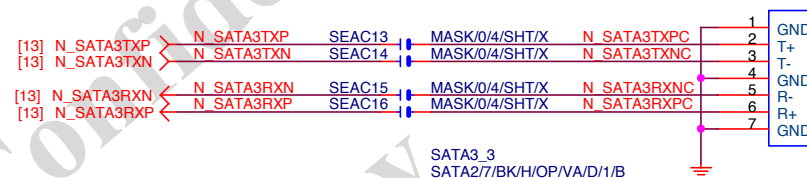
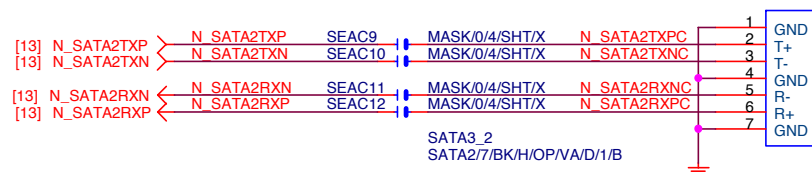


## SMD螺柱



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	

Rev 0.5a

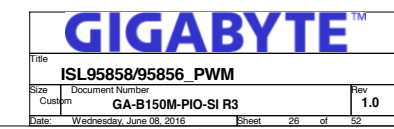


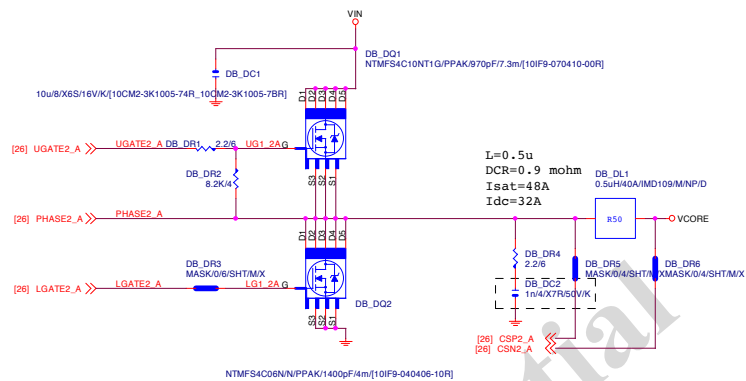
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Gigabyte Technology

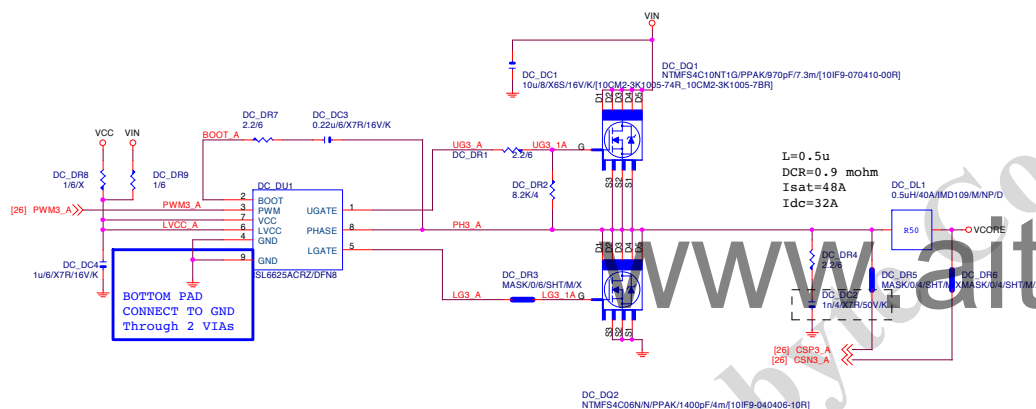
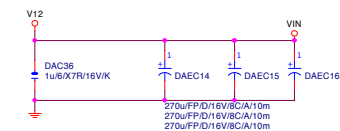
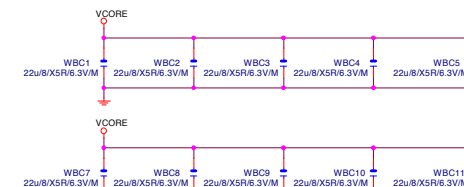
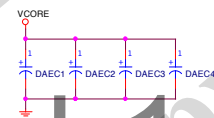
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SATA EXPRESS		
Size	Document Number	Rev
Custom	GA-B150M-PIO-SI R3	1.0
Date:	Wednesday, June 08, 2016	Sheet 1 of 22



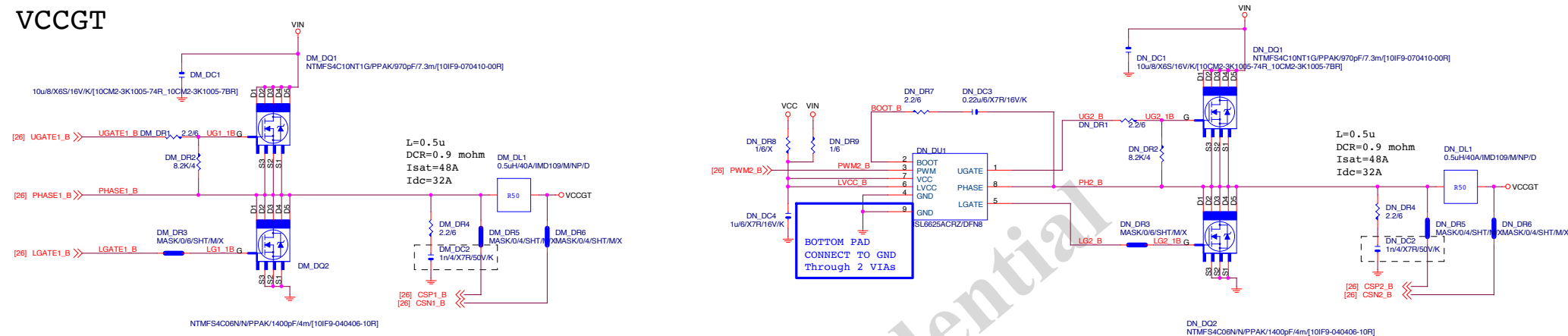
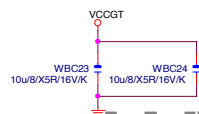
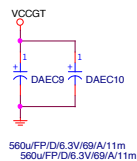




VIN CAP 270u\*3PCS

VCORE CAP 560u\*8PCS  
22u\*29PCS

## VCCGT

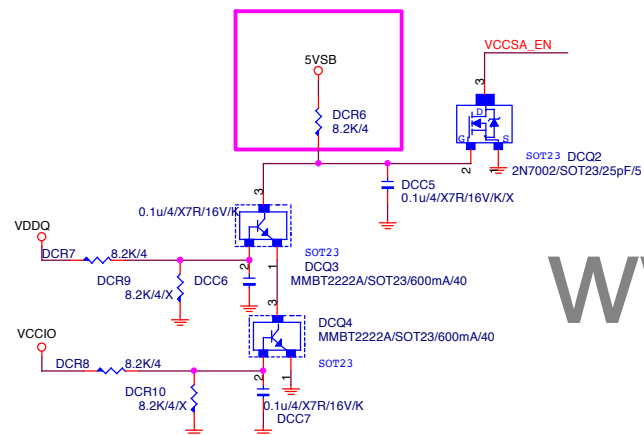
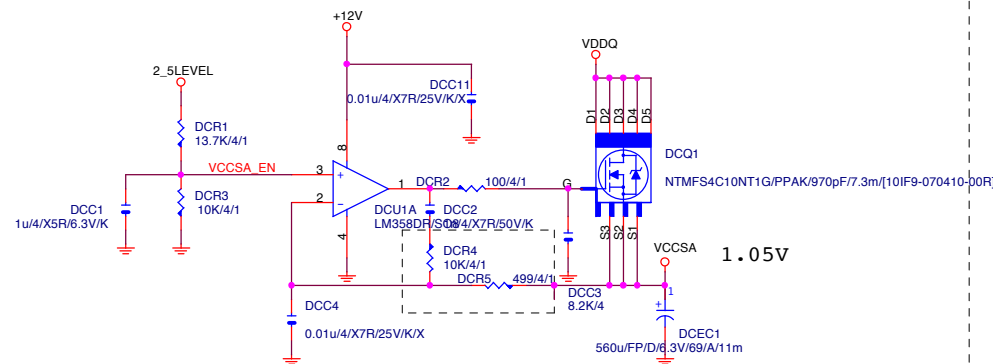
VCCGT CAP 560u\*5PCS  
22u\*15PCS

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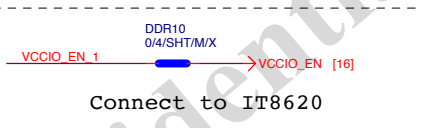
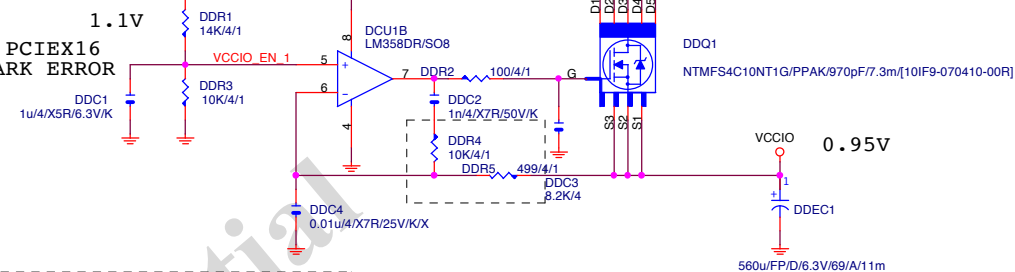
GIGABYTE™			
Title			
ISL95858 MOS			
Size			
Custom			
Date: Wednesday, June 08, 2016			
Sheet 28 of 52			
Document Number			Rev
GA-B150M-PIO-SI R3			1.0

VCCSA

REV:0.4

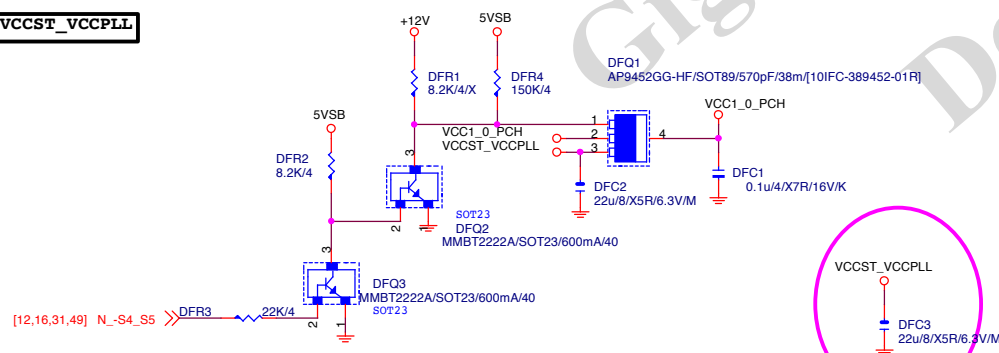


VCCIO

FIX PCIEX16  
3DMARK ERROR

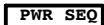
www.aitech1.ru

VCCST\_VCCPLL



GIGABYTE™			
Title VCCSA_VCCIO			
Size Custom	Document Number GA-B150M-PIO-SI R3		Rev 1.0
Date: Wednesday, June 08, 2016	Sheet 2	of 29	52

## DDR4



## CLOSE TO DDR POWER PLANE



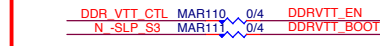
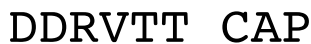
## CHOKES與CAP料號可變



25A MAX  
L=0.5uH  
DCR=1.05 mohm  
Isat=40A  
MA\_DR13  
Idc=30A

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



MAU1上NCT3103S時上件(不可以改short pad)

**GIGABYTE™**

Title  
**RT8120 DDR POWER**

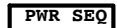
Size	Document Number
Custom	<b>GA-B150M-PIO-SI R3</b>

Date: Wednesday, June 08, 2016 Sheet 30 of 52

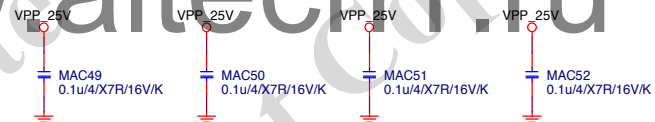
2	1
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VPP 25V

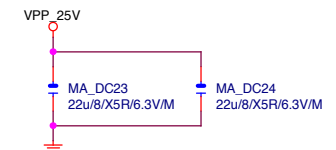
## CHOKES與CAP料號可變



The schematic diagram illustrates the power management section of the T1020 SoC. It features three 2N7002/SOT23/25pF/5 MOSFETs (MAQ7, MAQ8, MAQ9) connected to the 5VSB and VPP25\_EN pins. The circuit includes resistors MAR109 (8.2K/4), MAR106 (8.2K/4), and MAR14 (8.2K/4), and capacitors MAC8 (0.1u4/X7R/16V/K) and MAC10 (1u4/X5R/6.3V/K). Signals N\_S4\_S5 and DDR\_EN\_CON are connected to the gates of MAQ8 and MAQ9 respectively. The MOSFETs are connected in a common-source configuration with their drains to the 5VSB pin and their sources to ground. The gates of MAQ7 and MAQ8 are connected to the VPP25\_EN pin, while the gate of MAQ9 is connected to the DDR\_EN\_CON pin. The gates of MAQ7 and MAQ8 are also connected to ground through capacitors MAC8 and MAC10 respectively.



\* 大電容 x0

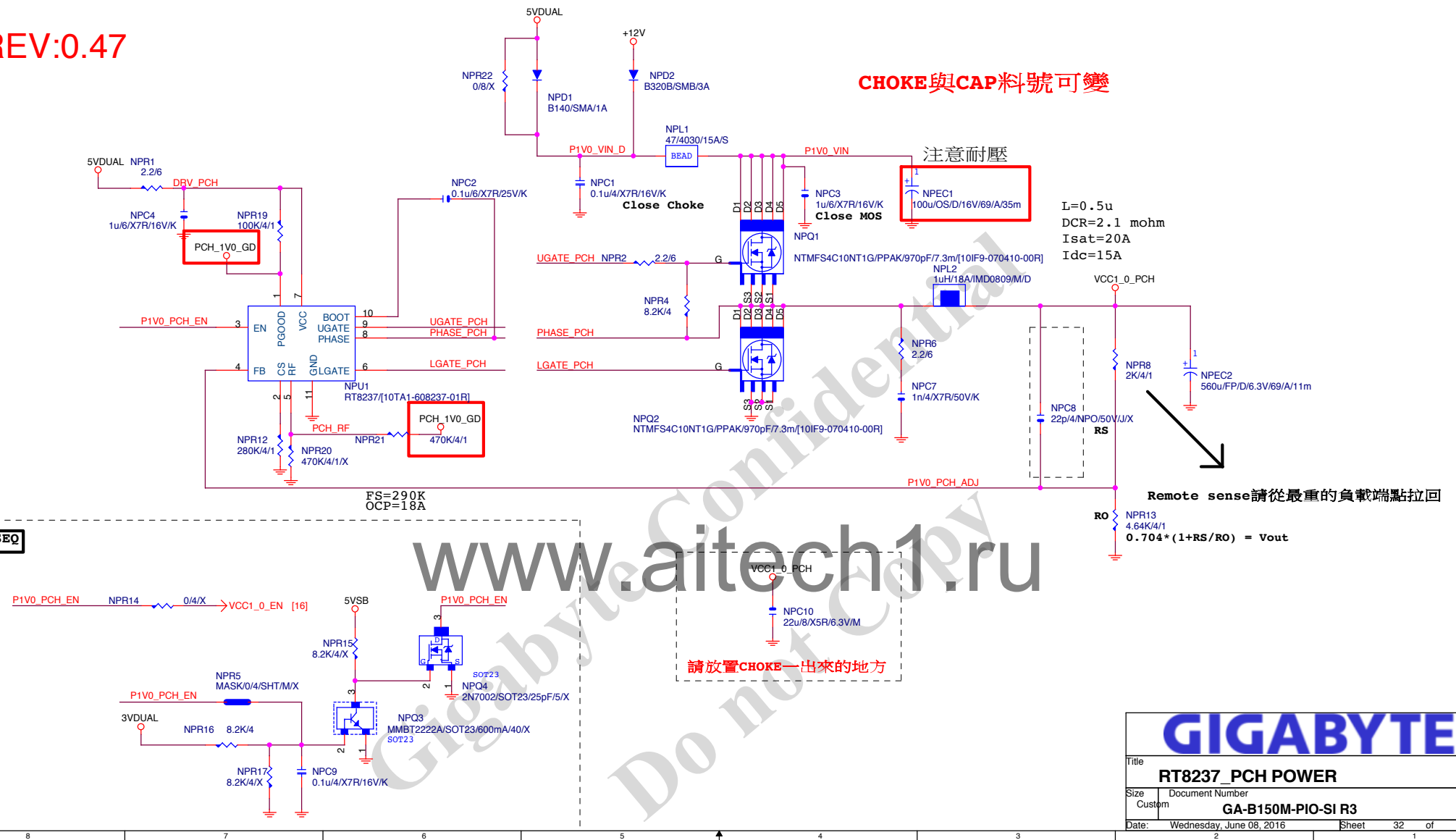


**GIGABYTE™**

Title			
RT8068A_VPP25 POWER			
Size	Document Number	Rev	
Custom	GA-B150M-PIO-SI R3	1.0	
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REV:0.47

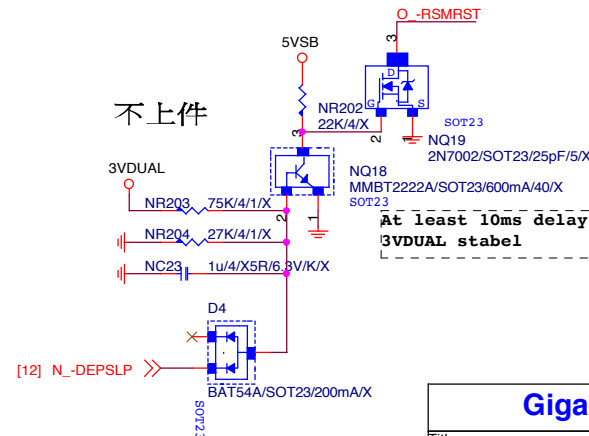
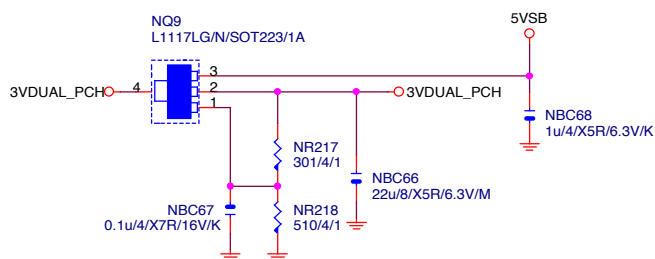
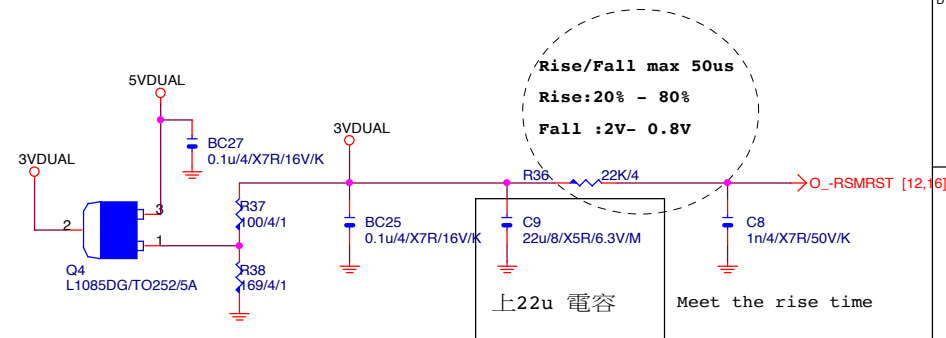
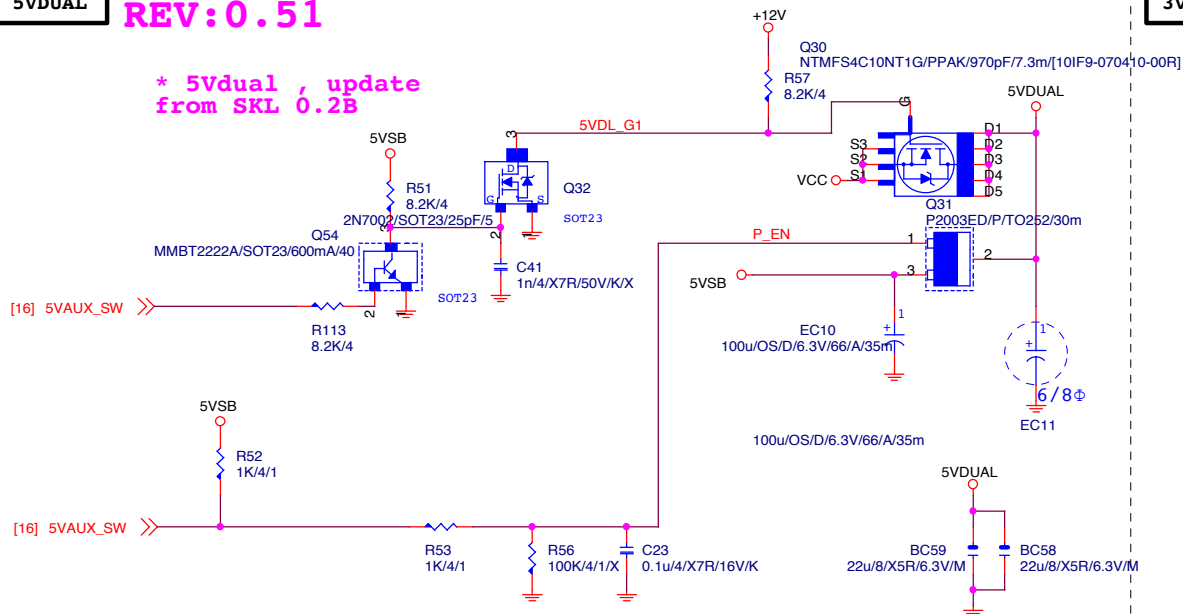
CHOKE與CAP料號可變



<b>GIGABYTE™</b>			
Title			
RT8237_PCH POWER			
Size	Document Number	Rev	
Custom	GA-B150M-PIO-SI R3	1.0	
Date:	Wednesday, June 08, 2016	Sheet	32 of 52



\* 5Vdual , update  
from SKL 0.2B

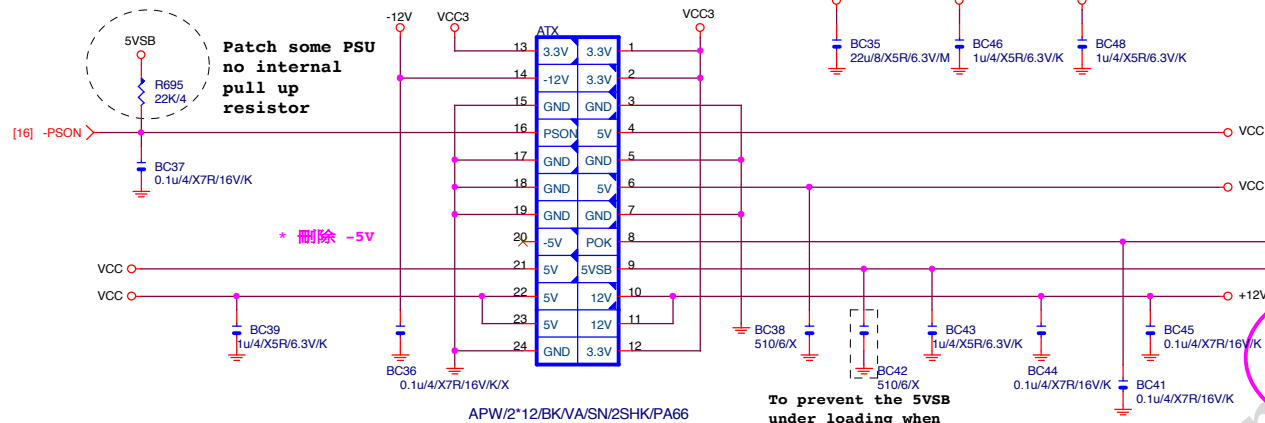


Gigabyte Technology

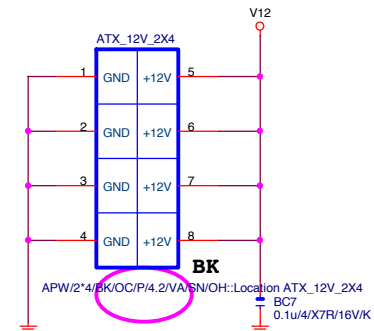
Title			
DISCRETE POWER			
Size	Document Number	Rev	
Custom	GA-B150M-PIO-SI R3	1.0	
Date:	Wednesday, June 08, 2016	Sheet	33 of 52

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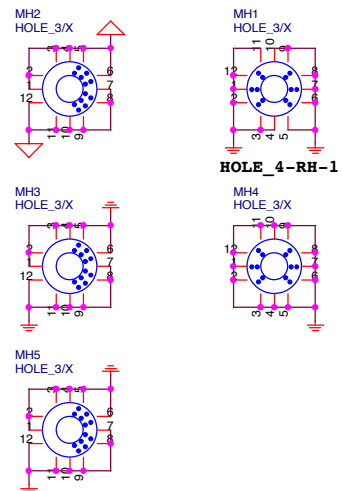
## ATXX24 POWER CONNECTOR



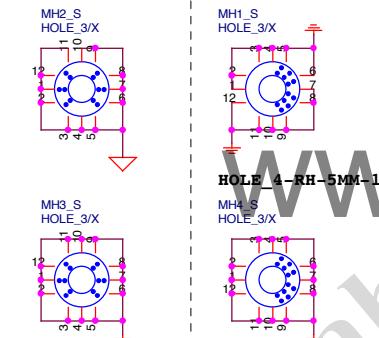
## ATXX4 POWER CONNECTOR



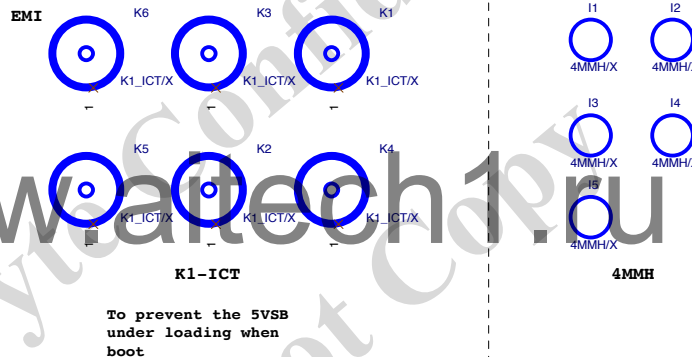
## 螺絲孔



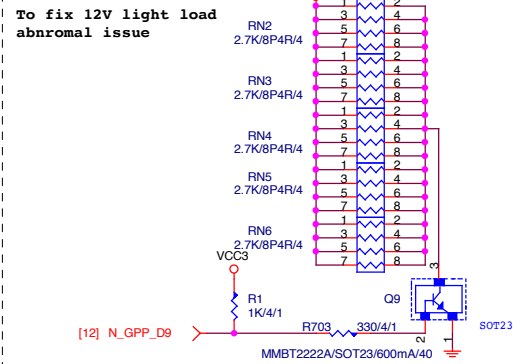
## 螺絲孔(Standard)



## 固定孔/光學點

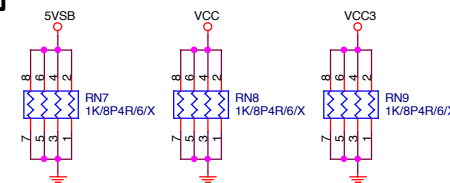


## +12V DUMMY LOAD

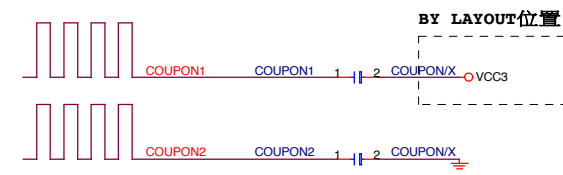


【技術通報R&D技術通報153】

## DUMMY LOAD



## COUPON

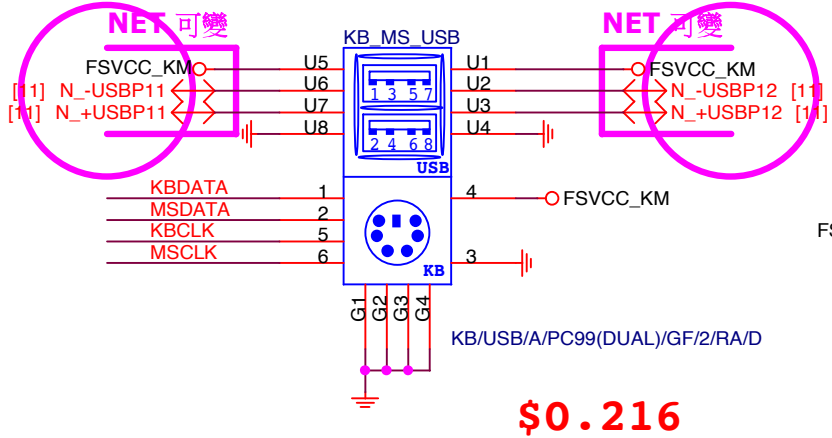


Gigabyte Technology

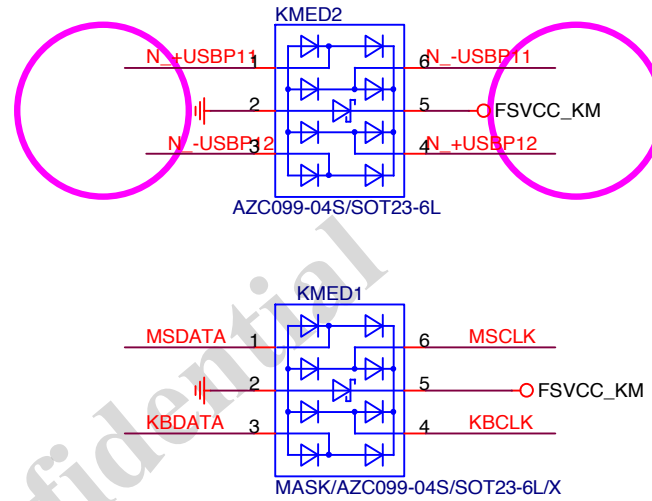
Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-B150M-PIO-SI R3	1.0
Date:	Wednesday, June 08, 2016	Sheet 34 of 52

KB\_MS\_USB

Rev: 0.7

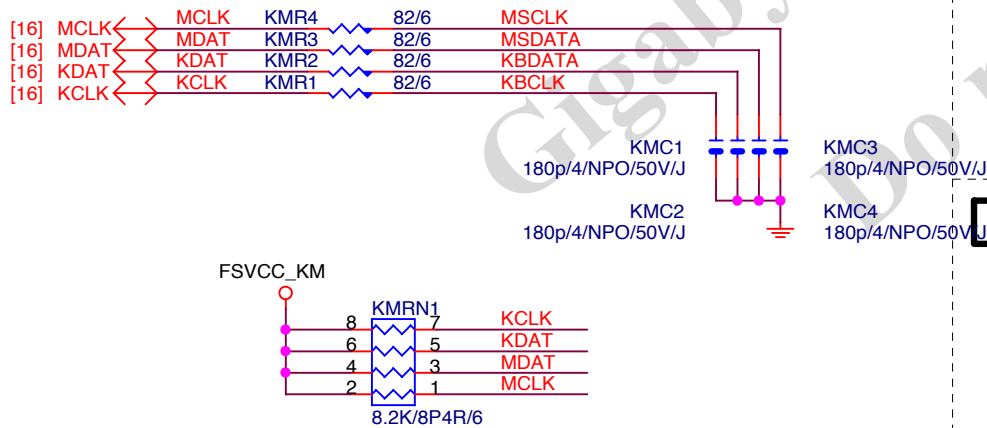


ESD



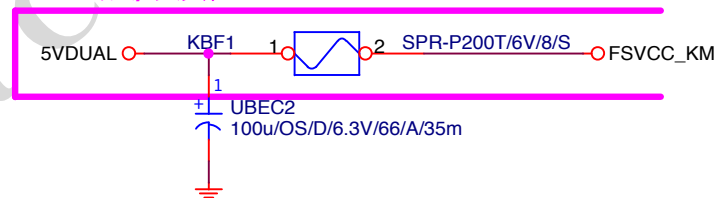
FOR 鹽化短路

KB\_MS\_USB DAMPING/PU

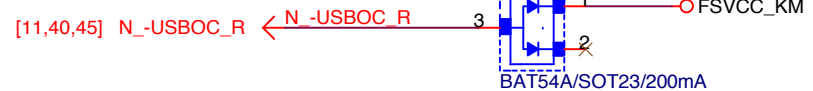


KB\_MS\_USB PWR

NET 可變, 與其他 USB SHARE



USB OC PROTECT



Gigabyte Technology

Title

AUDIO JACK

Size  
A

Document Number

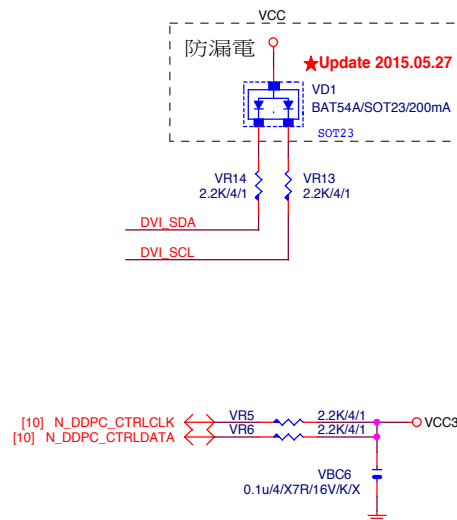
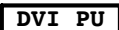
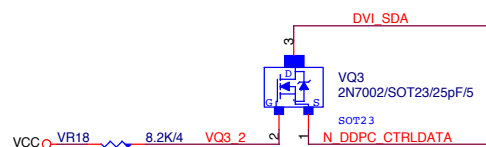
GA-B150M-PIO-SI R3

Rev  
1.0

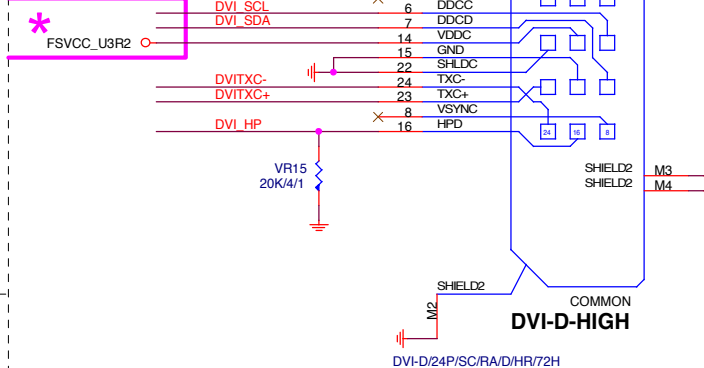
Date: Wednesday, June 08, 2016

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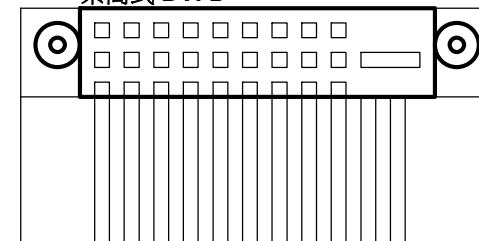
## NET 可變



## DVI CONN



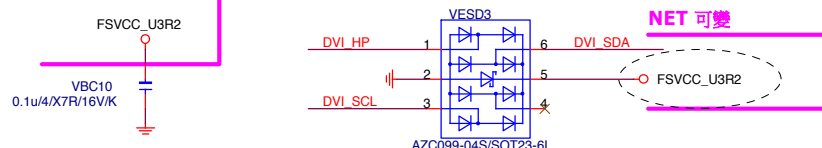
### 架高式 DVI-D



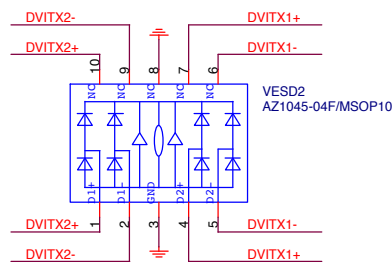
★Update 2015-03.24 11NR6-501024-R1R(Golden),  
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**ESD**

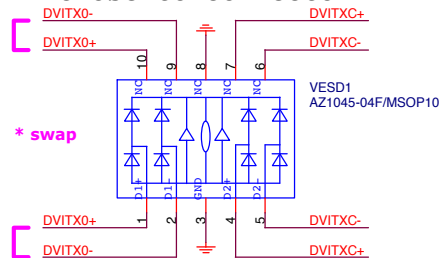
NET 可變



**Close to connector**



**Close to connector**



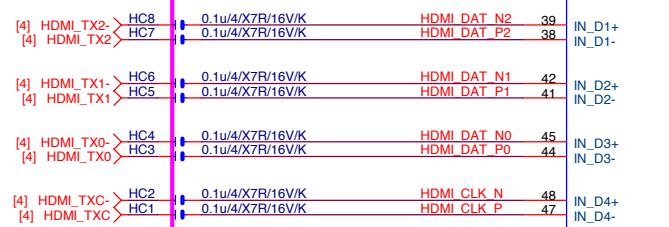
**Close to connector**

## Gigabyte Technology

Title			
FP,F_USB,USB PWR,BZ			
Size	Document Number		
Custom	GA-B150M-PIO-SI B3		
Date:	Wednesday, June 08, 2016	Sheet	36 of 52

## HDMI LEVEL SHIFT

## NET 可變



## Port 自行調整

[10] N\_HDMI\_HDP\_F  
[10] N\_DDPB\_CTRLCLK  
[10] N\_DDPB\_CTRLDATA

N\_HDMI\_HDP\_F  
N\_DDPB\_CTRLCLK  
N\_DDPB\_CTRLDATA

HDMI\_SCLDDC  
HDMI\_SDADD

HDMI\_PLUG  
HDMI\_TXN2  
HDMI\_TXN1  
HDMI\_TXP0  
HDMI\_TXN0  
HDMI\_TXCP

HDMI\_TXN2  
HDMI\_TXN1  
HDMI\_TXP0  
HDMI\_TXN0  
HDMI\_TXCP

HDMI\_TXN2  
HDMI\_TXN1  
HDMI\_TXP0  
HDMI\_TXN0  
HDMI\_TXCP

HDMI\_TXN2  
HDMI\_TXN1  
HDMI\_TXP0  
HDMI\_TXN0  
HDMI\_TXCP

HDMI\_TXN2  
HDMI\_TXN1  
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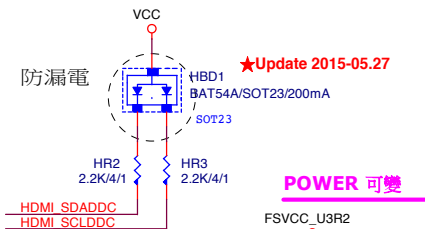
PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K  
ASM1442:紅色框要上,HR12:3.16K

★Update 2015-04.30 change from PTN3360 to ASM1442K.

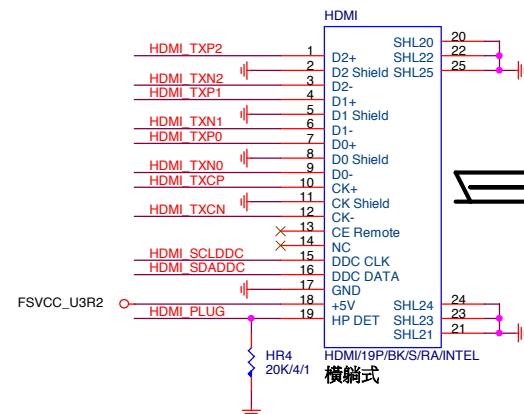
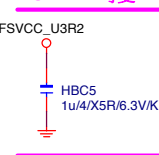
## 【技術通報R&amp;D技術通報150】

HDMI eye diagram1.4版(deep color)會fail

原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram  
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)



## POWER 可變



Gigabyte Technology

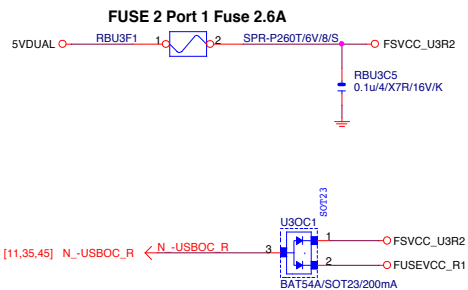
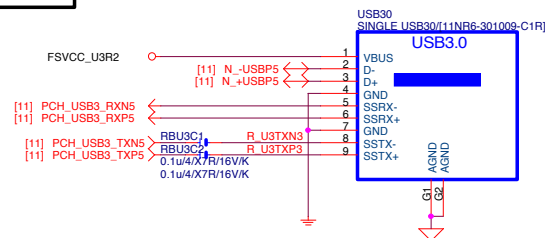
## HDMI

Title	HDMI
Size	Document Number
B	GA-B150M-PIO-SI R3
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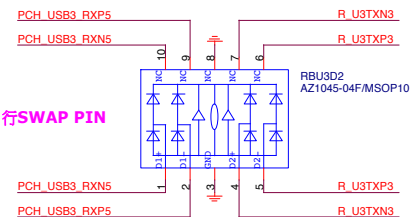
FUSE

REAR USB30

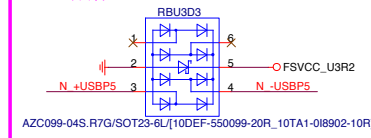
USB30-SINGLE



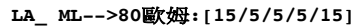
ESD 可自行SWAP PIN



ESD 可自行SWAP PIN



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**R1.06**

note:可變更USB NAME



note:可變更USB NAME

## USB30\_LAN



### USB30\_LAN LAYOUT示意圖



Orange

### Single Color LED

Yellow

note:可變更USB NAME



note:可變更FUSE



SPR-P260T/6V/8/S

PS:視EMI需求



note: lan power連接及電流



## LAN CONNECTOR-RTL8111G

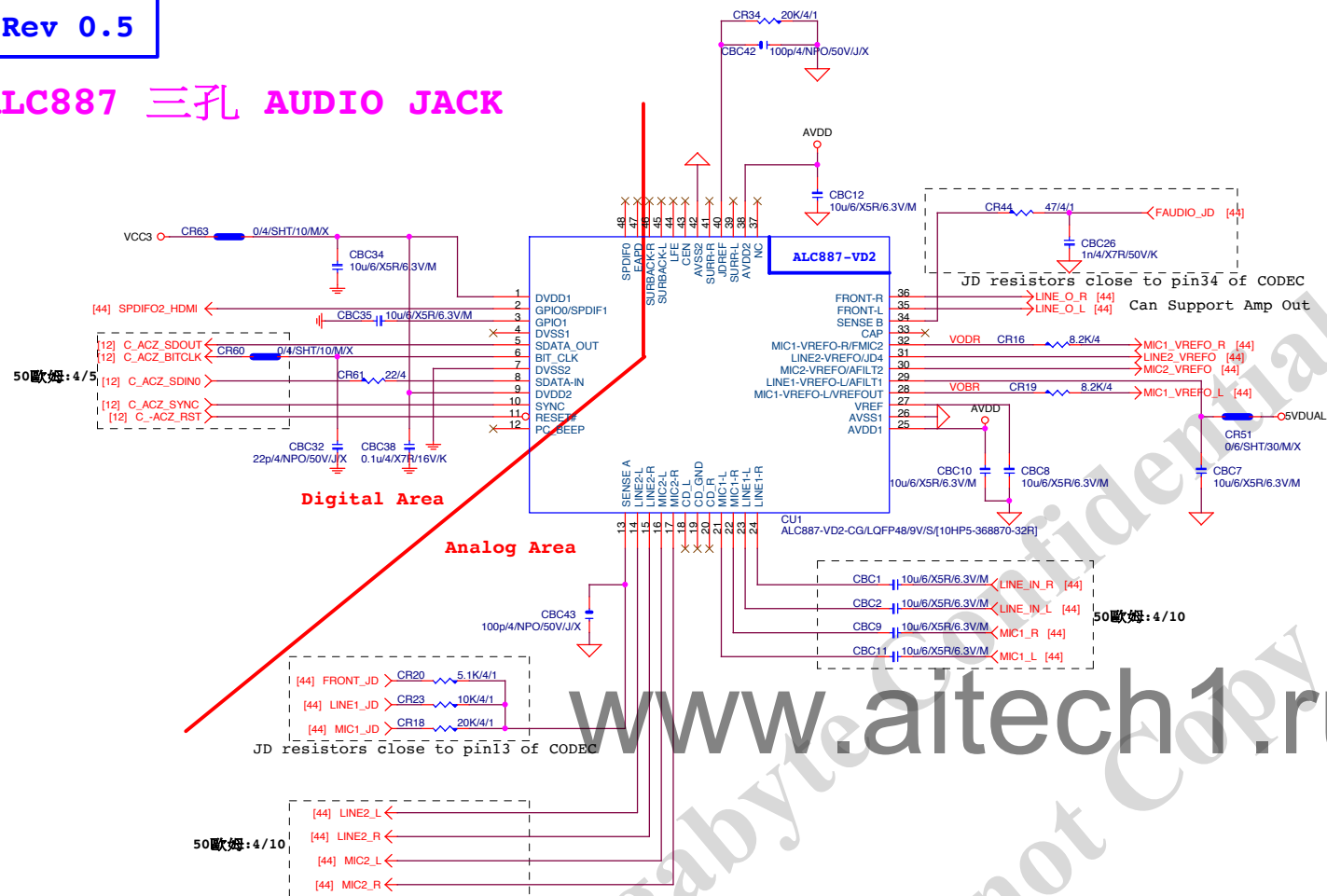
Size	
Custom	

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## ALC887 三孔 AUDIO JACK



LAYOUT注意: 螺絲孔下GND方式

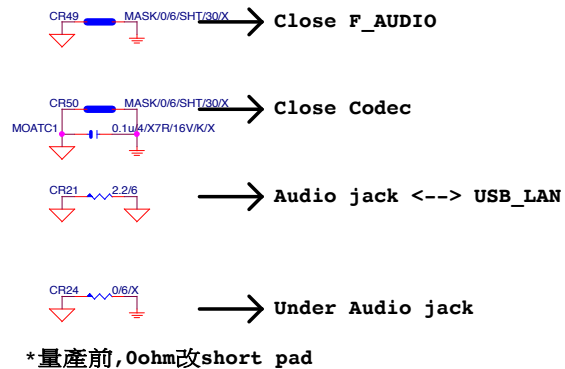
1. MH1空間夠, 下DGND  
空間不夠, 改為Isolate
2. MH2一律改為Isolate

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

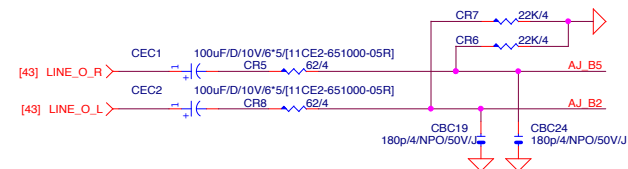
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Title	HD AUDIO ALC887		
Size	Document Number	GA-B150M-PIO-SI R3	Rev 1.0
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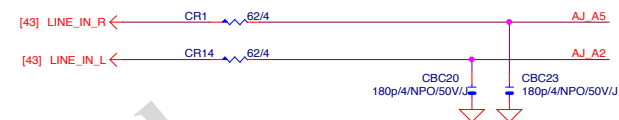
Rev 0.5



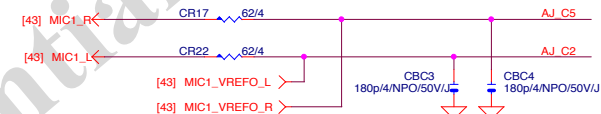
## LINE-OUT



## LINE-IN



## MIC-IN

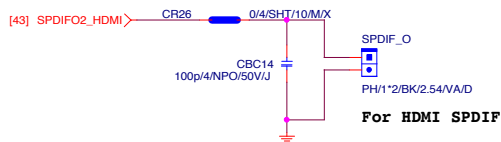


## SURROUND

## CEN/LFE

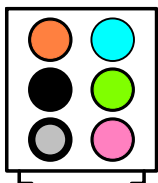
## SURRBACK

## SPDIF\_OUT

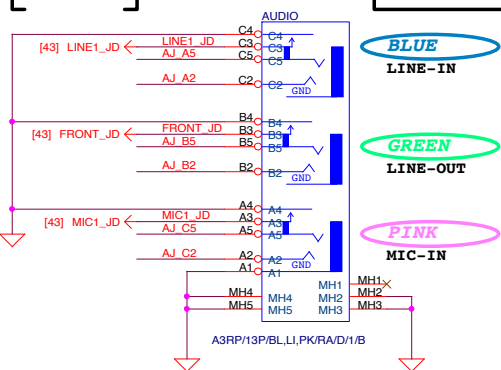


## SPDIF\_IN

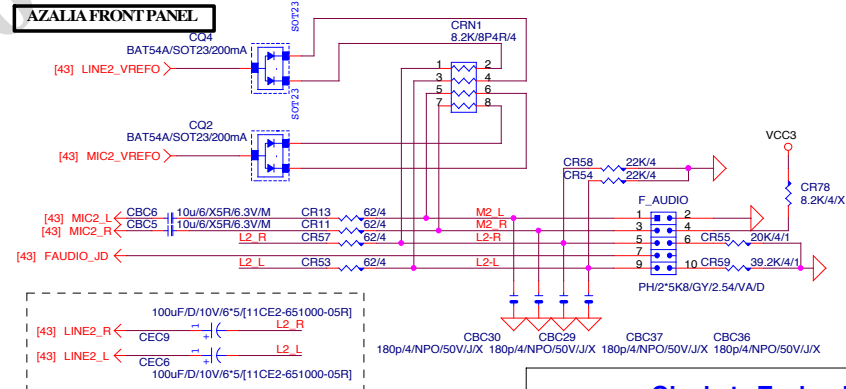
## AZALIA JACK



## AZALIA JACK



## AZALIA FRONT PANEL

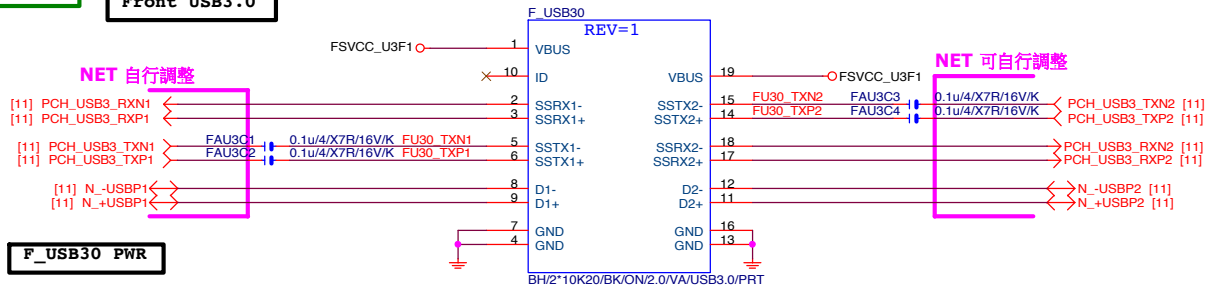


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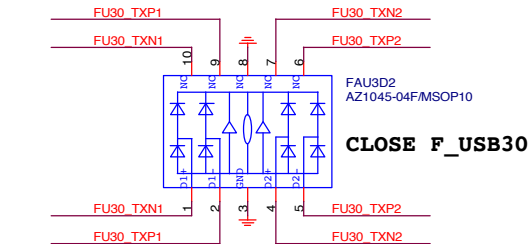
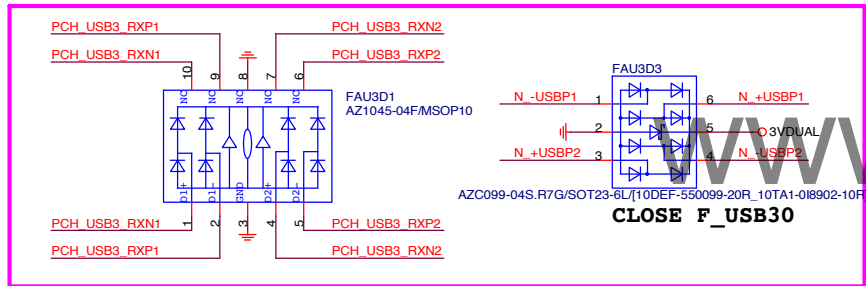
Title			
AUDIO JACK			
Size	Document Number	GA-B150M-PIO-SI R3	Rev 1.0
Custom			
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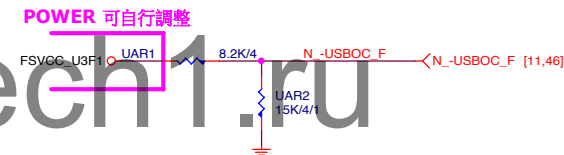
Front USB3.0



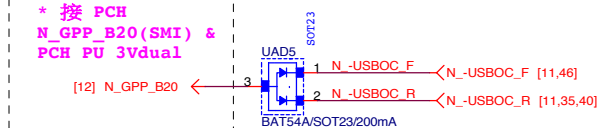
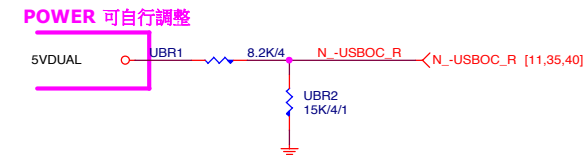
**NET 可自行調整**



**-USBOC\_F**



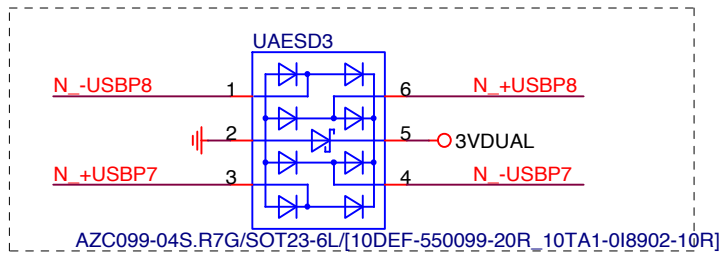
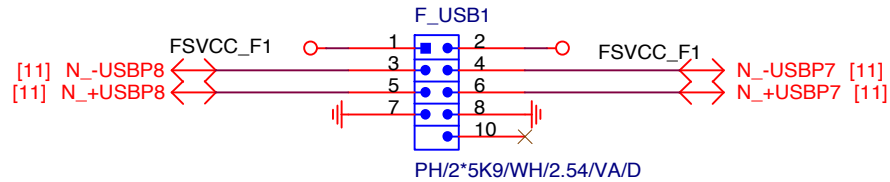
**-USBOC\_R**



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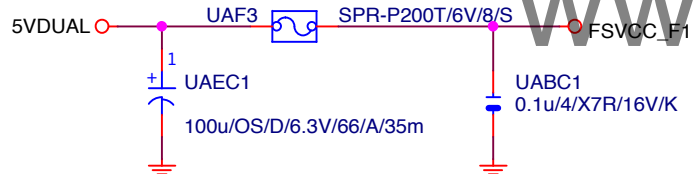
Title		R_USB30,F_USB30, USB_OC	
Size	Document Number	GA-B150M-PIO-SI R3	
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NET 可變

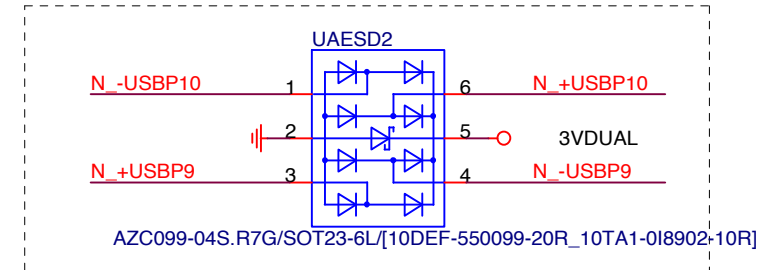
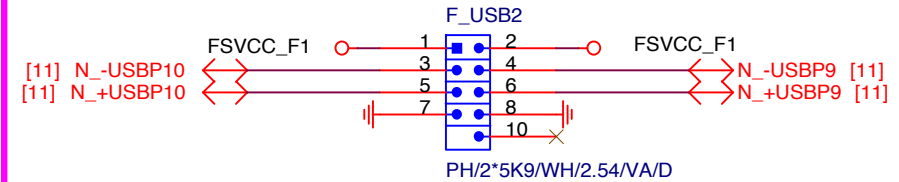


Close to connector

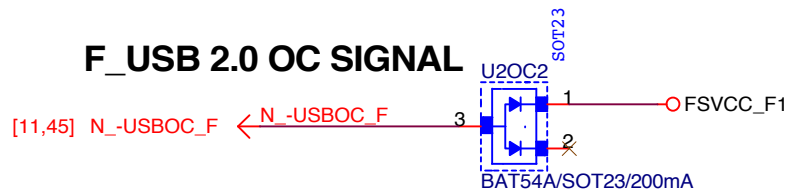
FUSE 2 Port 1 Fuse 2A



NET 可變



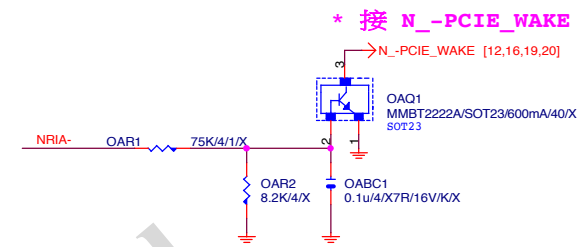
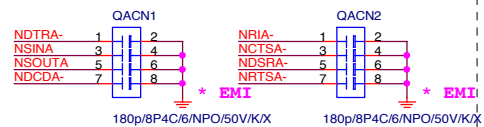
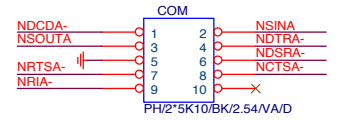
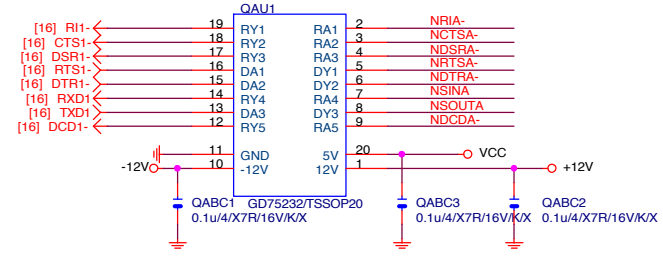
F\_USB 2.0 OC SIGNAL



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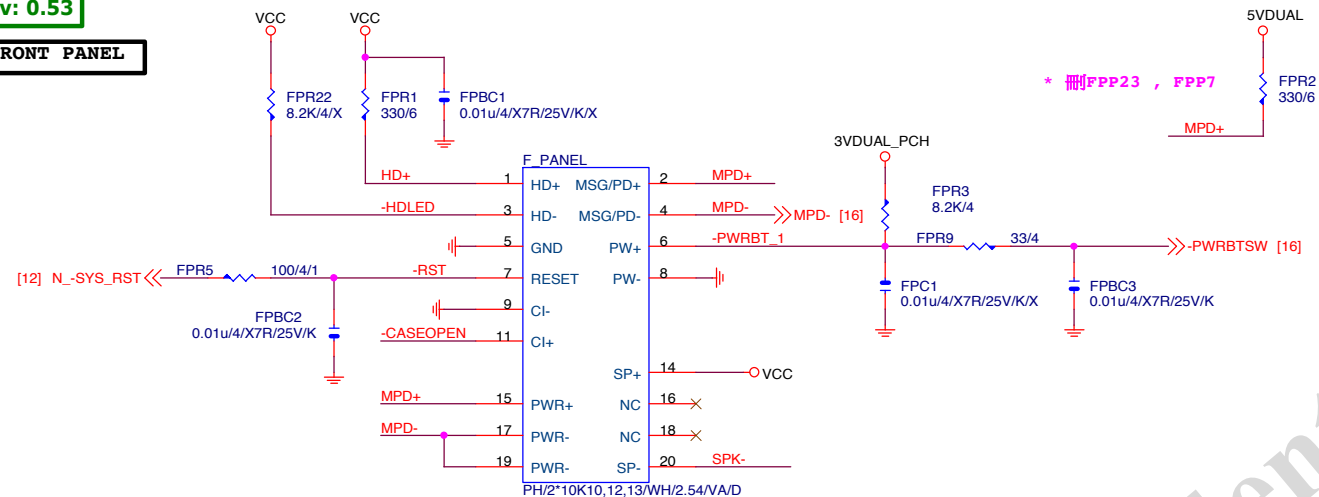
USB2.0

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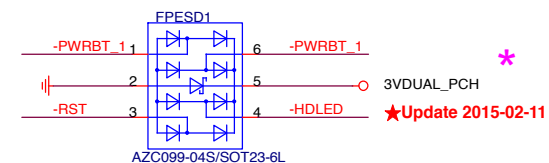


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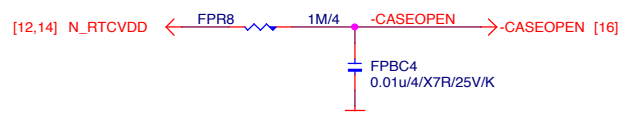
## FRONT PANEL



**FOOTPRINT:PIN2X10PANEL-NEW**

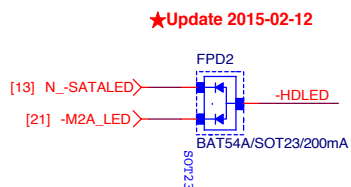


**CASE OPEN**

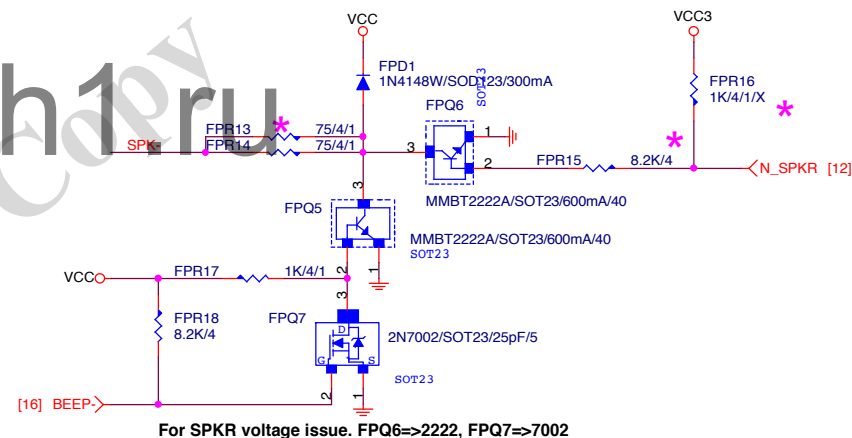


**SATA LED**

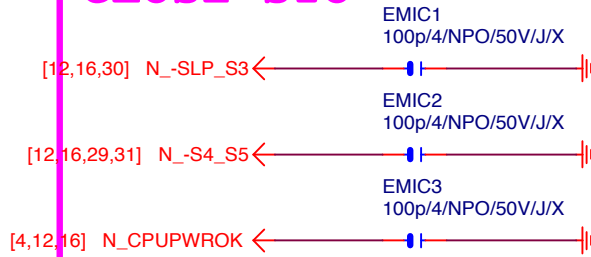
```
SATALED# signal open-collector,pull-up (8.2 kΩ to 10 kΩ) to
Vcc3 3
```



SPKR



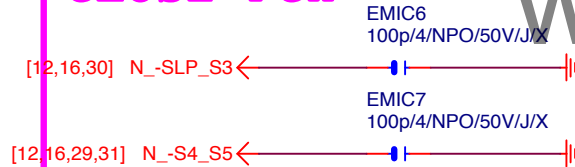
### CLOSE SIO



### CLOSE PCH



### CLOSE PCH



### For H1703M-HD3 USB



**GIGABYTE™**

Title

**EM/ESD**

Size  
A

Document Number

**GA-B150M-PIO-SI R3**

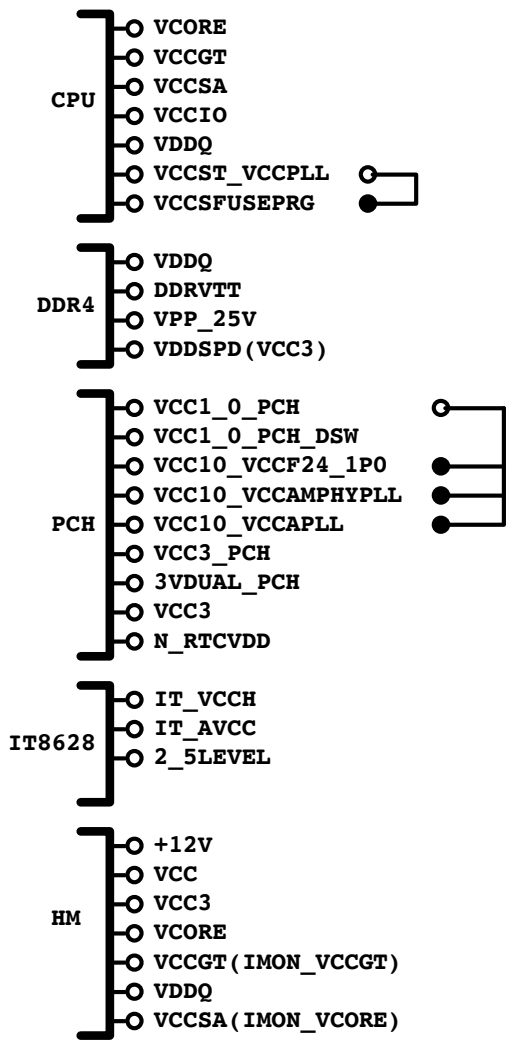
Rev  
**1.0**

Date: Wednesday, June 08, 2016

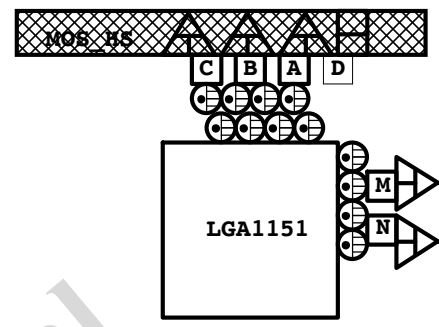
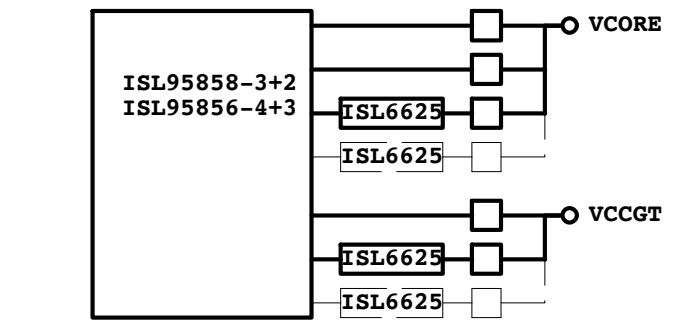
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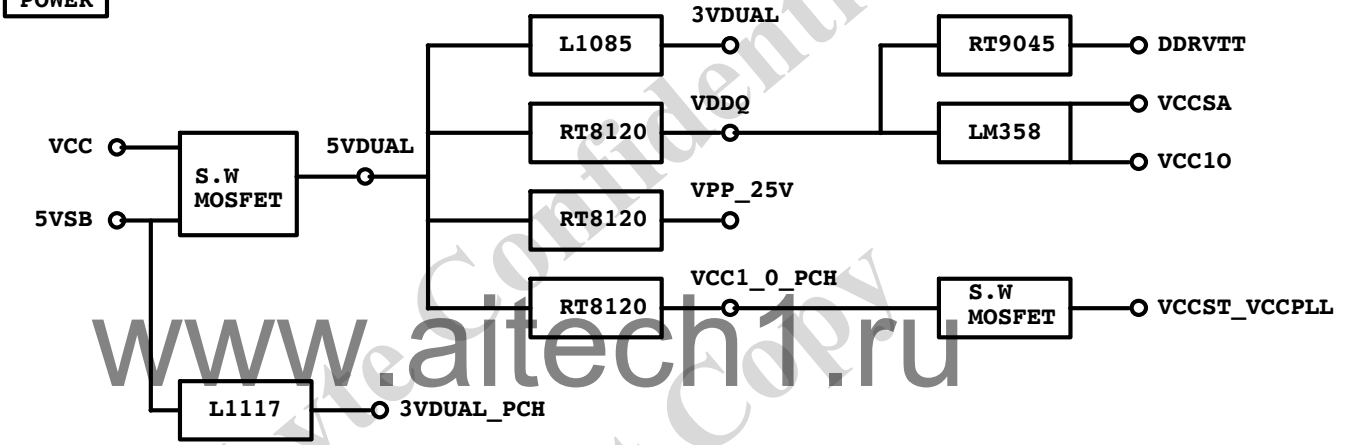
# POWER BLOCK MAP



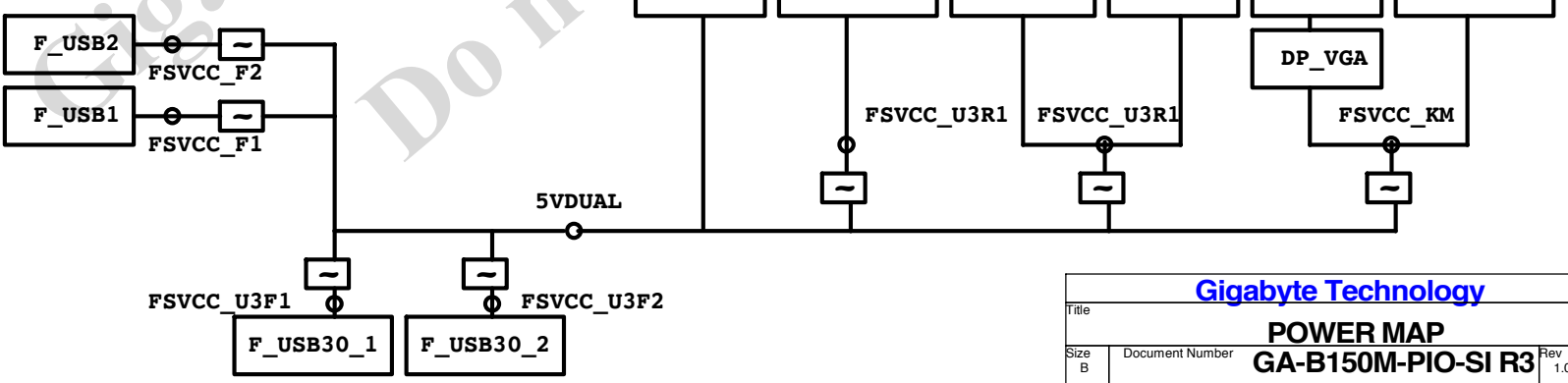
# VCORE/VCCGT



# POWER



# FUSE POWER F/R



Gigabyte Technology			
Title			
POWER MAP			
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固態電容料號.請自行修改

日系黑色固態	Capture Value
11C02-C85600-01R	560u/FP/D/6.3V/68/C/8m
11C05-C82700-01R	270u/FP/D/16V/88/C/12m
11C05-C61000-01R	100u/OS/D/16V/66/C/30m
11C02-C51000-01R	100u/FP/D/6.3V/65/C/13m

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

台系固態	Capture Value
11C02-661000-09R	100u/OS/D/6.3V/66/A/35m
11C05-691000-09R	100u/OS/D/16V/69/A/35m
11C05-8C2700-09R	270u/FP/D/16V/8C/A/10m
11C02-695600-09R	560u/FP/D/6.3V/69/A/11m

IRON CHOKE

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

Ferrite

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

BEAD

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

PWM料號

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

GIGABYTE™

Title

POWER零件使用表

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pre
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7



B

	BIOS選項
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**z7**

PC  
12

control	4 pin FAN control
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## Gigabyte Technology

GA-B150M-PIO-SI R3