

## Model Name: GA-H170M-D3H-GSM

SHEET

TITLE

rev 1.0

SHEET

TITLE

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12	PCH_MISC
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Gigabyte Technology

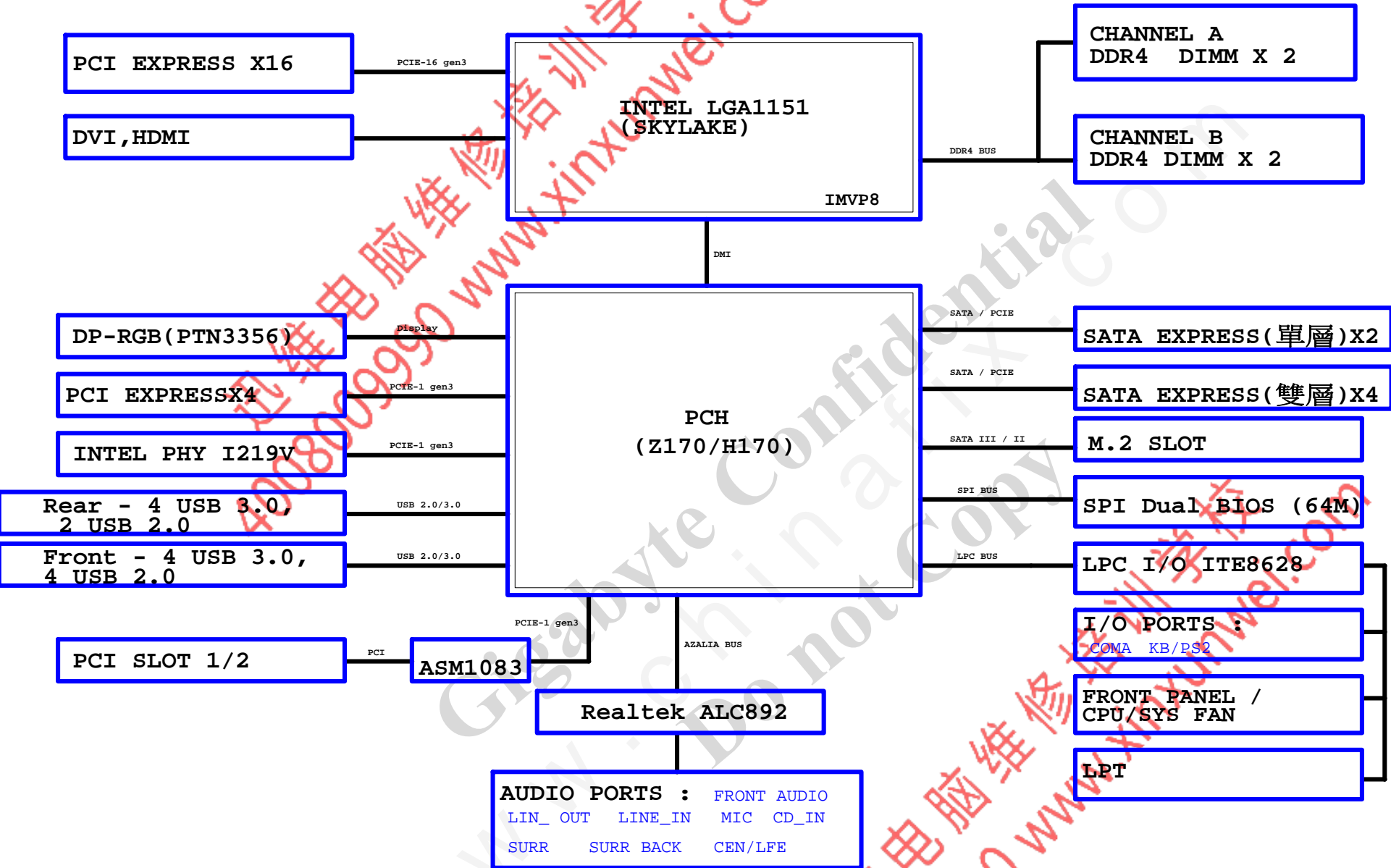
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Cover Sheet			
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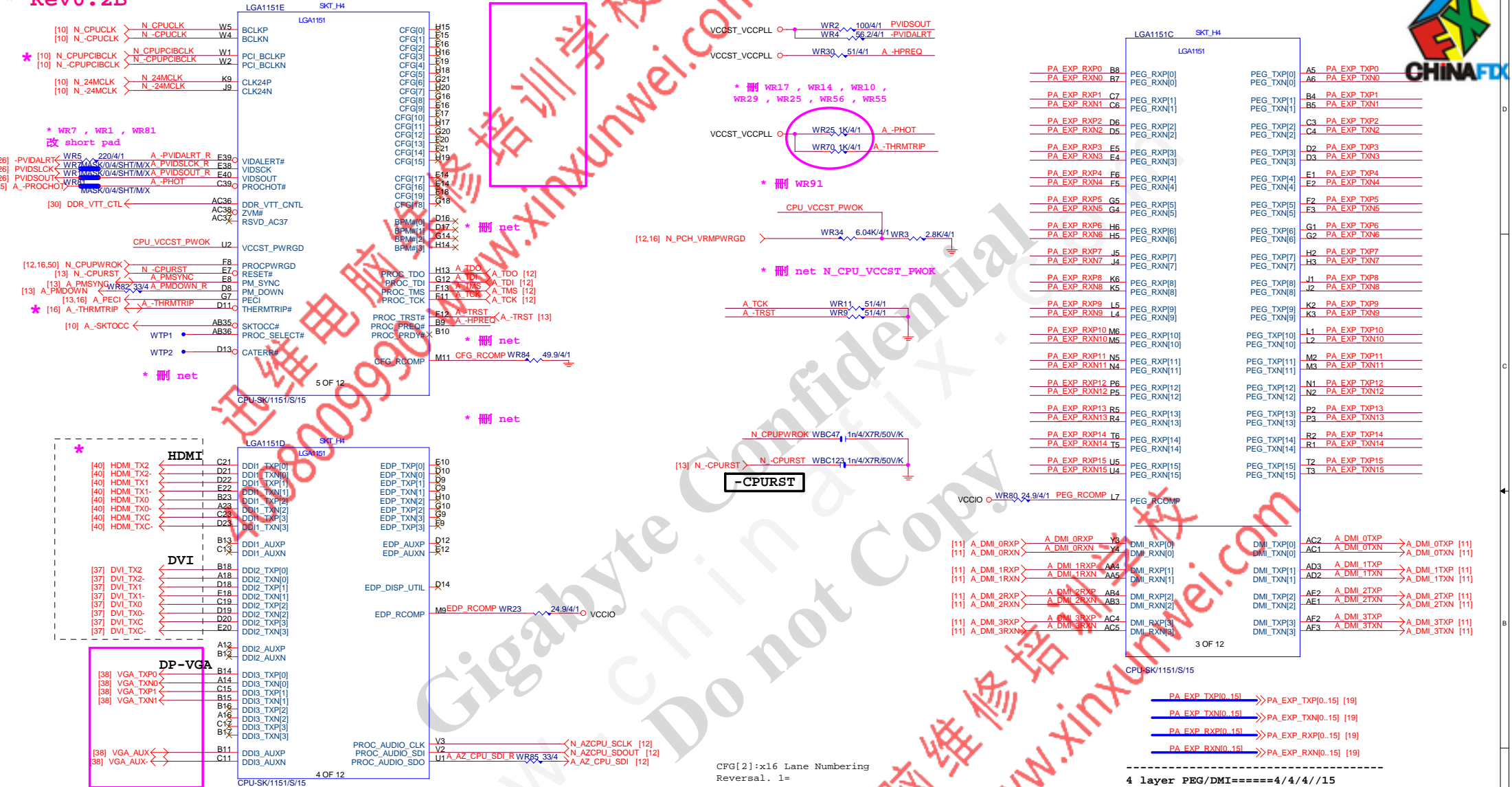
**CHINA FDX**

## 2016/01/05

[illegible]

BLOCK DIAGRAM





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%

CFG[2]:x16 Lane Numbering Reversal. 1= NORMAL;0=reversal  
CFG[4]: eDP enable:1:disable/0=enable  
CFG[6:5]:PCI Express\*Bifurcation; 1l= 1 x16 PCI Express;10=2x8 PCI Express  
CFG[7]: PEG Training:1=(default) PEG Train immediately following RESET#;0=PEG Wait for BIOS

Bifurcation Config.	Signals	Lanes
CFG[8]	CFG[5]	CFG[2]
1x16	1	1
1x16 Reversed	1	1
2x8	1	0
2x8 Reversed	1	0
1x8+2x4	0	1
1x8+2x4 Reversed	0	0

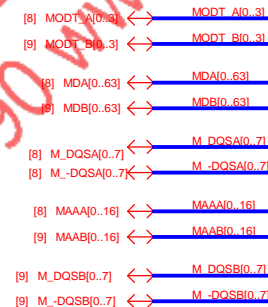
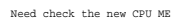
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PA\_EXP\_TXN[0..15] >>> PA\_EXP\_TXN[0..15] [19]  
PA\_EXP\_RXP[0..15] >>> PA\_EXP\_RXP[0..15] [19]  
PA\_EXP\_RXN[0..15] >>> PA\_EXP\_RXN[0..15] [19]

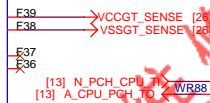
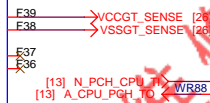
4 layer PEG/DMI=====4/4/4//15  
6 layer PEG/DMI=====4/5.5/4//15

Impedance=85 +- 15%  
W=12 mil out of CPU  
S=15 mil out of CPU

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CPU LGA1151-A		
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VCORE	LGA1151I SKT_H4	VCORE
LGA1151		
A25	VCC_A25	VCC_H32
A26	VCC_A26	VCC_J21
A27	VCC_A27	VCC_F32
A28	VCC_A28	VCC_F33
A29	VCC_A29	VCC_F34
A30	VCC_A30	VCC_G24
B25	VCC_B25	VCC_G25
B27	VCC_B27	VCC_G26
B29	VCC_B29	VCC_G27
B31	VCC_B31	VCC_G28
B32	VCC_B32	VCC_G29
B33	VCC_B33	VCC_J22
B34	VCC_B34	VCC_J23
B35	VCC_B35	VCC_J24
B36	VCC_B36	VCC_J25
B37	VCC_B37	VCC_J26
C25	VCC_C25	VCC_J27
C26	VCC_C26	VCC_J28
C27	VCC_C27	VCC_J29
C28	VCC_C28	VCC_J30
C29	VCC_C29	VCC_J31
C30	VCC_C30	VCC_K16
C32	VCC_C32	VCC_K18
C34	VCC_C34	VCC_K20
C36	VCC_C36	VCC_K21
D25	VCC_D25	VCC_K23
D27	VCC_D27	VCC_K25
D29	VCC_D29	VCC_K27
D31	VCC_D31	VCC_K29
D32	VCC_D32	VCC_K31
D33	VCC_D33	VCC_L14
D34	VCC_D34	VCC_L15
D35	VCC_D35	VCC_L16
D36	VCC_D36	VCC_L17
E24	VCC_E24	VCC_L18
E25	VCC_E25	VCC_L19
E26	VCC_E26	VCC_L20
E27	VCC_E27	VCC_L21
E28	VCC_E28	VCC_L22
E29	VCC_E29	VCC_L23
E30	VCC_E30	VCC_L24
E32	VCC_E32	VCC_L25
E34	VCC_E34	VCC_L26
F36	VCC_F36	VCC_L27
F23	VCC_F23	VCC_L28
F24	VCC_F24	VCC_L29
F25	VCC_F25	VCC_L30
F27	VCC_F27	VCC_M13
F29	VCC_F29	VCC_M14
F31	VCC_F31	VCC_M16
G30	VCC_G30	VCC_M18
G32	VCC_G32	VCC_M20
H22	VCC_H22	VCC_M22
H23	VCC_H23	VCC_M24
H25	VCC_H25	VCC_M26
H27	VCC_H27	VCC_M28
H29	VCC_H29	VCC_M30
H31	VCC_H31	VCC_AJ12
AJ11	VCC_AJ11	VCC_AJ14
AJ13	VCC_AJ13	VCC_AJ16
AJ15	VCC_AJ15	VCC_AJ18
AJ17	VCC_AJ17	VCC_AJ20
AJ19	VCC_AJ19	VCC_AJ22
AJ21	VCC_AJ21	VCC_SENSE
		VCC_VCORE_SEN [26]
		VCC_VSS_SEN [26]

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CPU-SK/1151/S/15

\* 刪 Vcore 電容

LGA1151F SKT_H4	LGA1151
A11	VSS
A13	VSS
A15	VSS
A17	VSS
A24	VSS
A27	VSS
A33	VSS
AA33	VSS
AA8	VSS
AB39	VSS
AB5	VSS
AC3	VSS
AC33	VSS
AC34	VSS
AC65	VSS
AD1	VSS
AD33	VSS
AD36	VSS
AD37	VSS
AD38	VSS
AD39	VSS
AD4	VSS
AD40	VSS
AD6	VSS
AD7	VSS
AD8	VSS
AE3	VSS
AE33	VSS
AE36	VSS
AE5	VSS
AF8	VSS
AF1	VSS
AF33	VSS
AF36	VSS
AF37	VSS
AF40	VSS
AF5	VSS
AF8	VSS
AG1	VSS
AG2	VSS
AG3	VSS
AG33	VSS
AG36	VSS
AG4	VSS
AG5	VSS
AG8	VSS
AH33	VSS
AH36	VSS
AH37	VSS
AH38	VSS
AH39	VSS
AH40	VSS
AH5	VSS
AH8	VSS
AJ1	VSS
AJ31	VSS
AJ32	VSS
AJ33	VSS
AJ12	VSS
AJ35	VSS
AJ36	VSS
AJ4	VSS
AJ5	VSS
AJ8	VSS
AK10	VSS
AK12	VSS
AK13	VSS
AK15	VSS
AK16	VSS
AK17	VSS
AK18	VSS
AK19	VSS
AK20	VSS
AK23	VSS
AK25	VSS
AK26	VSS
AK28	VSS

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CPU-SK/1151/S/15

AK29	VSS
AK30	VSS
AK36	VSS
AK37	VSS
AK40	VSS
AK5	VSS
AK6	VSS
AK7	VSS
AK8	VSS
AK9	VSS
AL1	VSS
AL11	VSS
AL14	VSS
AL2	VSS
AL21	VSS
AL24	VSS
AL27	VSS
AL3	VSS
AL30	VSS
AL36	VSS
AL4	VSS
AL5	VSS
AM11	VSS
AM14	VSS
AM17	VSS
AM19	VSS
AM24	VSS
AM27	VSS
AM30	VSS
AM31	VSS
AM32	VSS
AM33	VSS
AM34	VSS
AM35	VSS
AM36	VSS
AM37	VSS
AM38	VSS
AM39	VSS
AM40	VSS
AM5	VSS
AN1	VSS
AN10	VSS
AN11	VSS
AN14	VSS
AN16	VSS
AN19	VSS
AN22	VSS
AN23	VSS
AN24	VSS
AN27	VSS
AN30	VSS
AN36	VSS
AN4	VSS
AN5	VSS
AN6	VSS
AN7	VSS
AN8	VSS
AN9	VSS
AP11	VSS
AP14	VSS
AP24	VSS
AP27	VSS
AP30	VSS
AP36	VSS
AP37	VSS
AP40	VSS
AP5	VSS
AR1	VSS
AR11	VSS
AR14	VSS
AR16	VSS
AR17	VSS
AR18	VSS
AR19	VSS
AR2	VSS
AR20	VSS
AR26	VSS
AR21	VSS

LGA1151G SKT_H4	LGA1151
AR24	VSS
AR27	VSS
AR3	VSS
AR30	VSS
AR31	VSS
AR32	VSS
AR33	VSS
AR34	VSS
AR35	VSS
AR36	VSS
AR4	VSS
AR5	VSS
AT10	VSS
AT11	VSS
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AT39	VSS
AT40	VSS
AT5	VSS
AT6	VSS
AT7	VSS
AT8	VSS
AT9	VSS
AU1	VSS
AU25	VSS
AU30	VSS
AU34	VSS
AU4	VSS
AU5	VSS
AU7	VSS
AV2	VSS
AV26	VSS
AV28	VSS
AV30	VSS
AV34	VSS
AV38	VSS
AV5	VSS
AV9	VSS
AW3	VSS
AW30	VSS
AW32	VSS
AW34	VSS
AW36	VSS
AW5	VSS
AW9	VSS
AY27	VSS
AY30	VSS
AY5	VSS
AY7	VSS
AY9	VSS
B24	VSS
B26	VSS
B28	VSS
B30	VSS
B6	VSS
C12	VSS
C14	VSS
C16	VSS
C18	VSS
C20	VSS
C22	VSS
C24	VSS
C31	VSS
C33	VSS
C35	VSS

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CPU-SK/1151/S/15

LGA1151H SKT_H4	LGA1151
C37	VSS
C5	VSS
C8	VSS
C10	VSS
D24	VSS
D26	VSS
D28	VSS
D30	VSS
D37	VSS
D39	VSS
D4	VSS
D7	VSS
E110	VSS
E13	VSS
E15	VSS
E17	VSS
E19	VSS
E21	VSS
E23	VSS
E3	VSS
E31	VSS
E32	VSS
E35	VSS
E37	VSS
E6	VSS
E9	VSS
F1	VSS
F10	VSS
F22	VSS
F26	VSS
F28	VSS
F30	VSS
F4	VSS
F40	VSS
F7	VSS
G11	VSS
G13	VSS
G15	VSS
G17	VSS
G19	VSS
G22	VSS
G3	VSS
G31	VSS
G33	VSS
G6	VSS
H1	VSS
H21	VSS
H24	VSS
H26	VSS
H28	VSS
H30	VSS
H35	VSS
H37	VSS
H39	VSS
H4	VSS
H7	VSS
H9	VSS
J10	VSS
J12	VSS
L11	VSS
J16	VSS
J18	VSS
J20	VSS
J3	VSS
J62	VSS
J84	VSS
J6	VSS
K1	VSS
K14	VSS
K15	VSS
K17	VSS
K19	VSS
K22	VSS
K24	VSS
K26	VSS
K28	VSS
K30	VSS
K33	VSS
K35	VSS
K37	VSS

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CPU-SK/1151/S/15

A4	VSS_NCTF
B38	VSS_NCTF
C2	VSS_NCTF
D40	VSS_NCTF

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Title

CPU LGA1151-C

Size

Document Number

Rev

GA-H170M-D3H-GSM

1.0

Date:

Monday, January 11, 2016

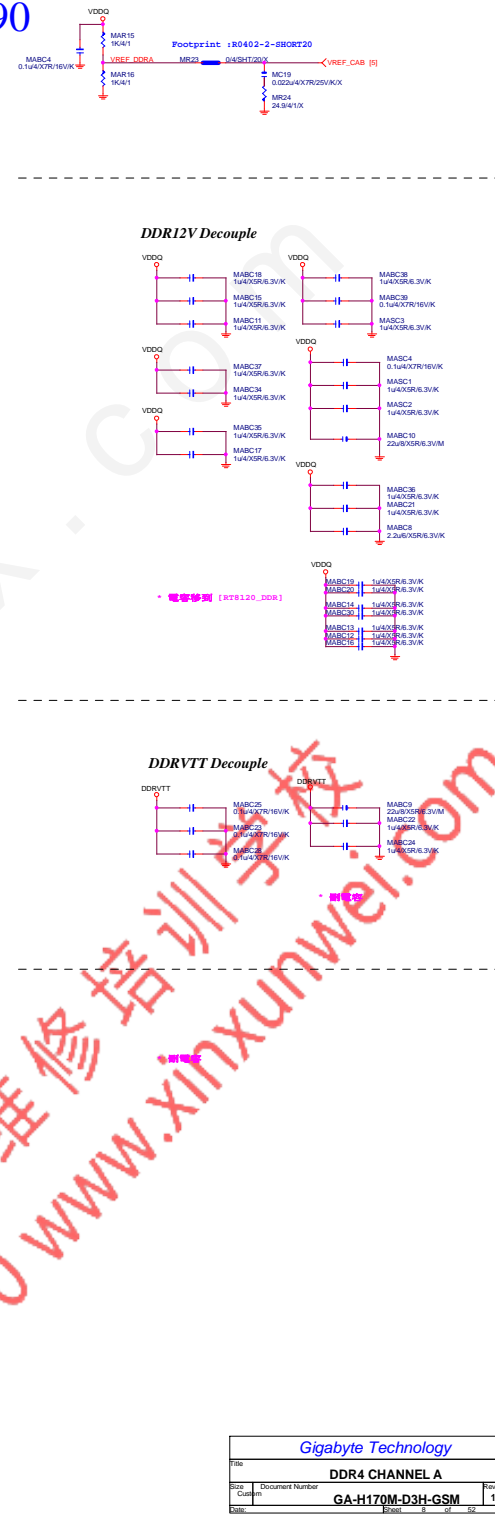
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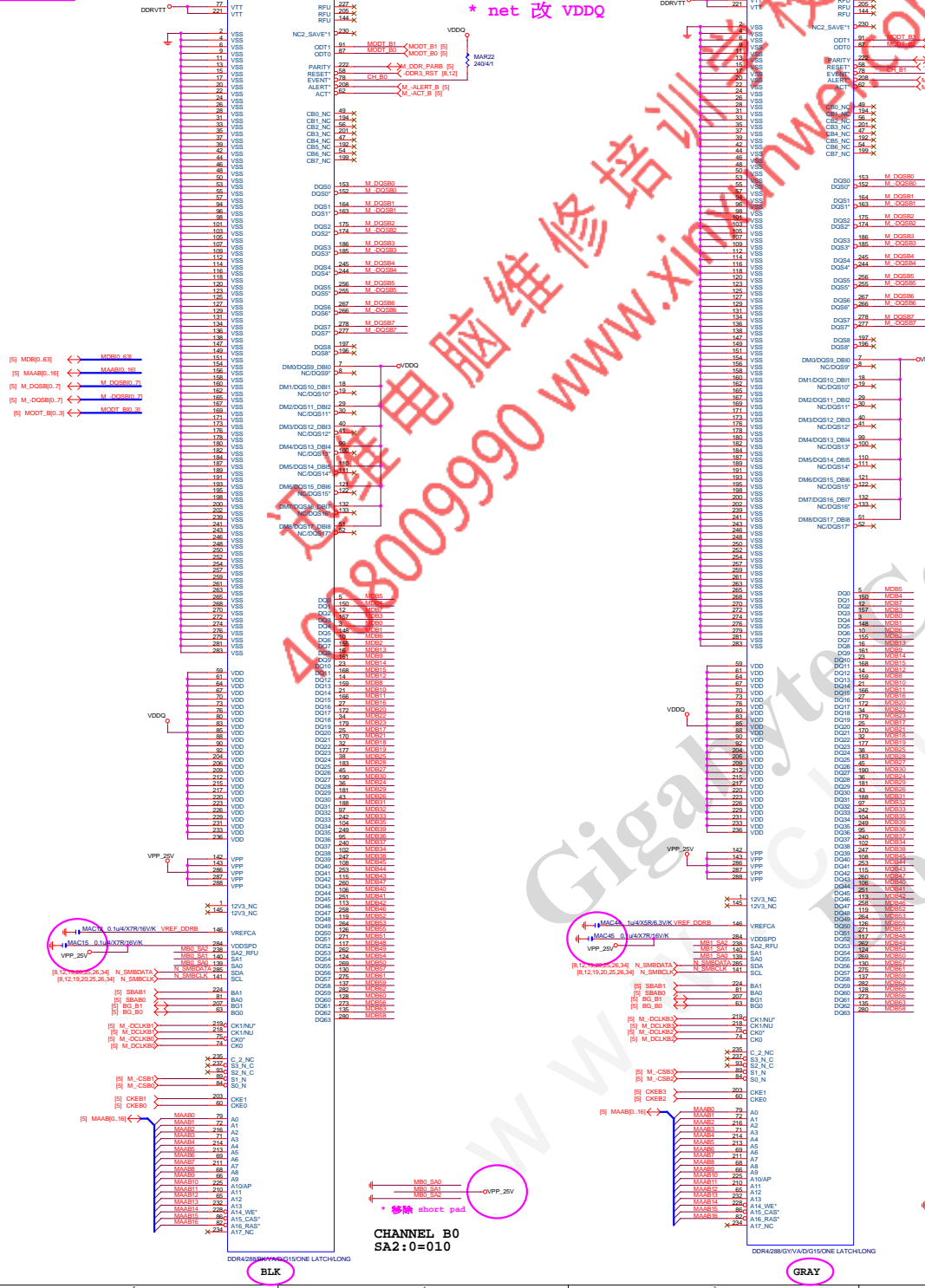
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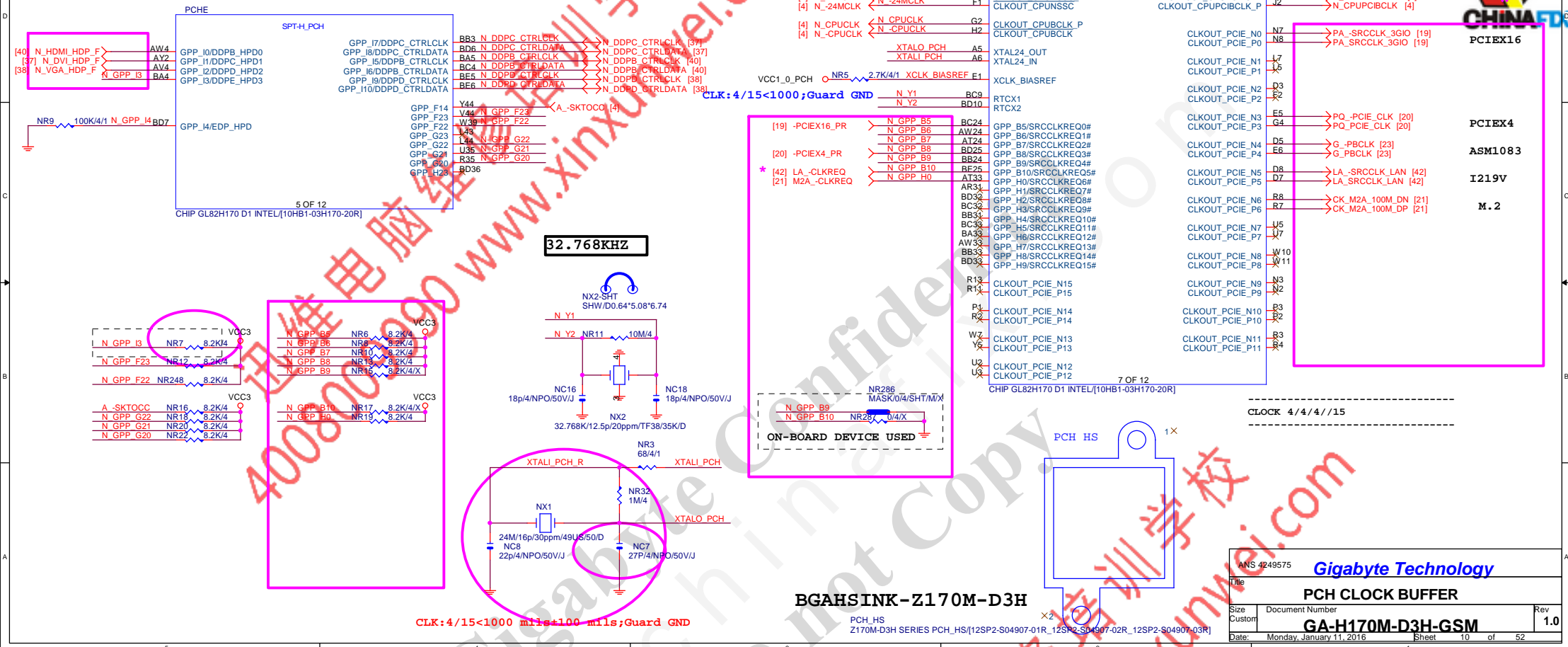








Gigabyte Technology		
DDR4 CHANNEL B		
File	Document Number	Rev
	GA-H170M-D3H-GSM	1.0
Size		
Count		
Scale		



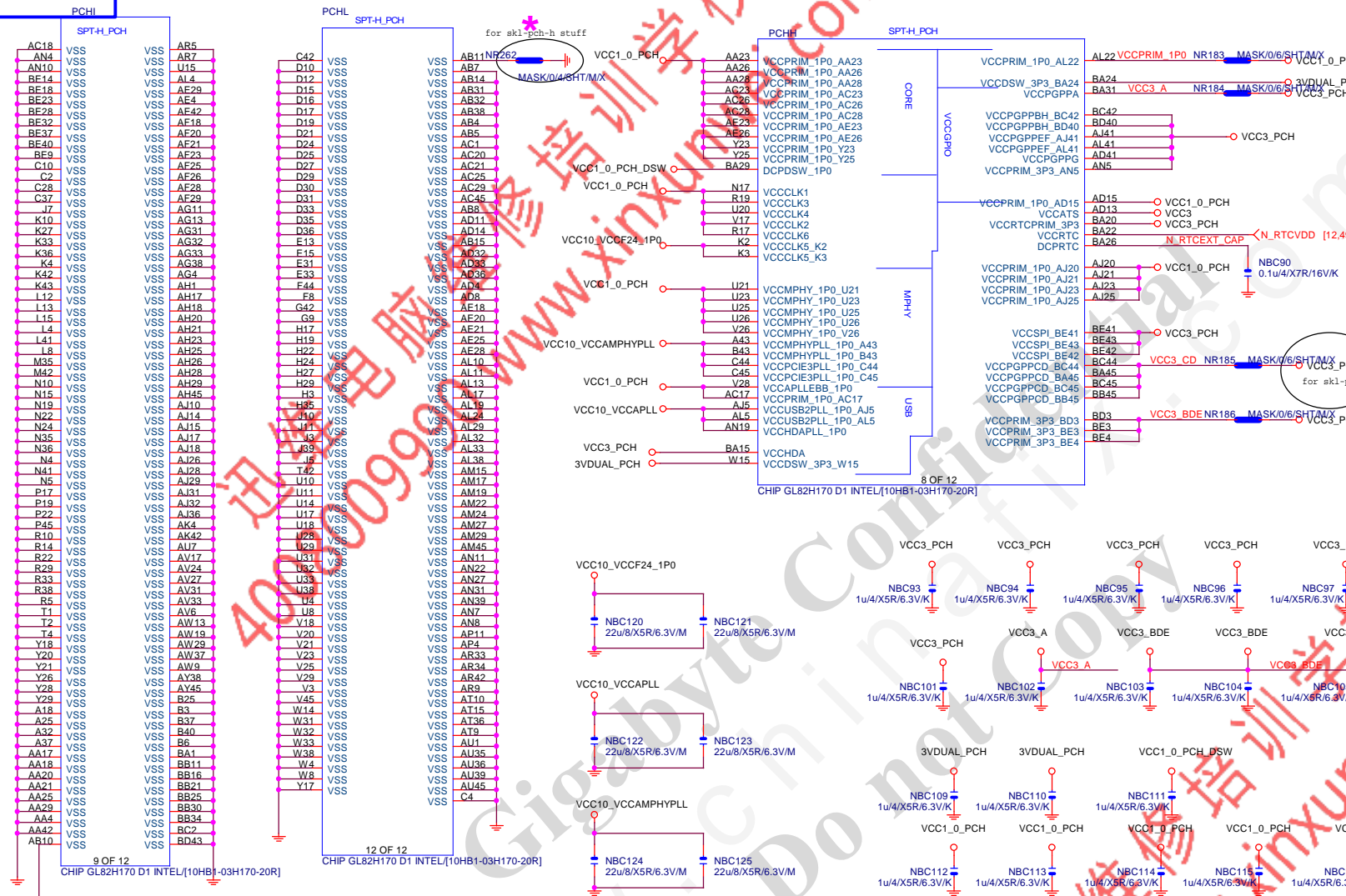
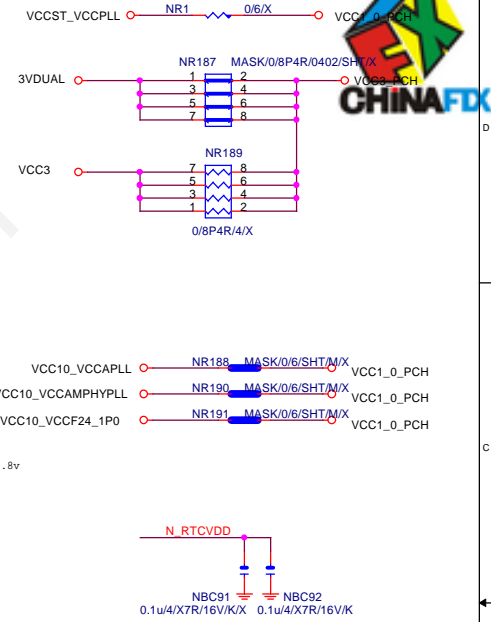


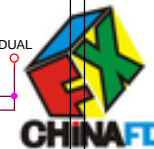




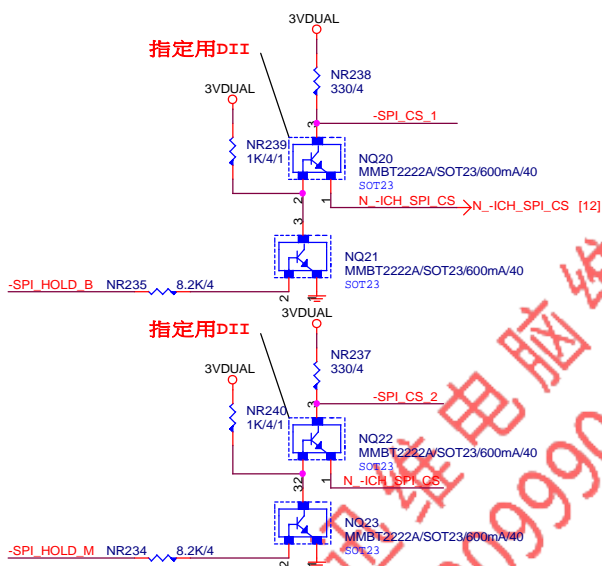




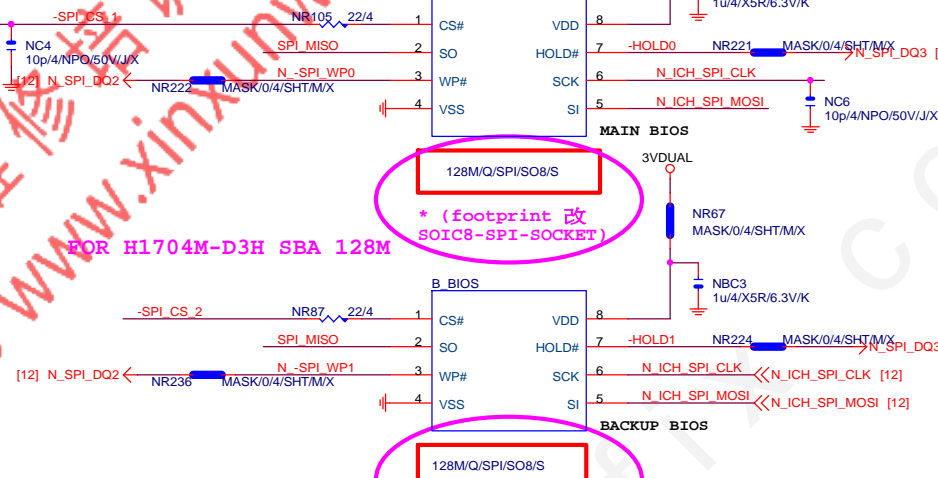




指定用DII



指定用DII



FOR H1704M-D3H SBA 128M

128M/Q/SPI/SO8/S  
\* (footprint 改 SOIC8-SPI-SOCKET)

FOR H1704M-D3H SBA 128M \* (footprint 改 IC8-BIOS)

[16] -SPI\_HOLD\_M ← -SPI\_HOLD\_M NR100 1K/4/1  
[16] -SPI\_HOLD\_B ← -SPI\_HOLD\_B NR89 1K/4/1

BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating  
0 means PD 1K

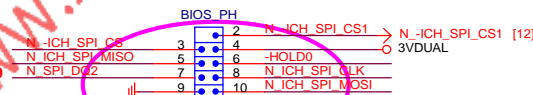
N/A



LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-3]R/X

\* 試産先上, PVT 移除

BIOS\_PH MASK



\* Update 2015-01-29

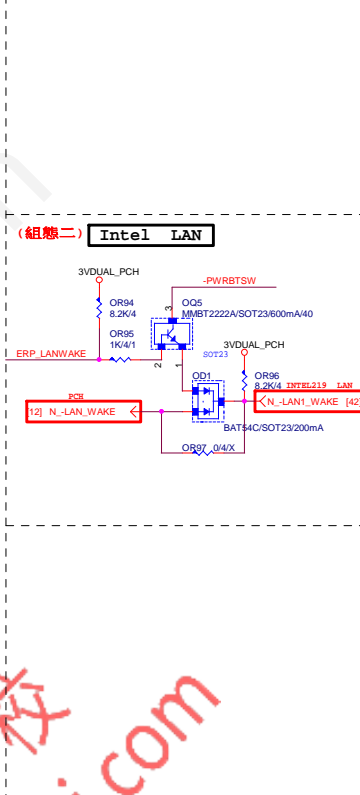
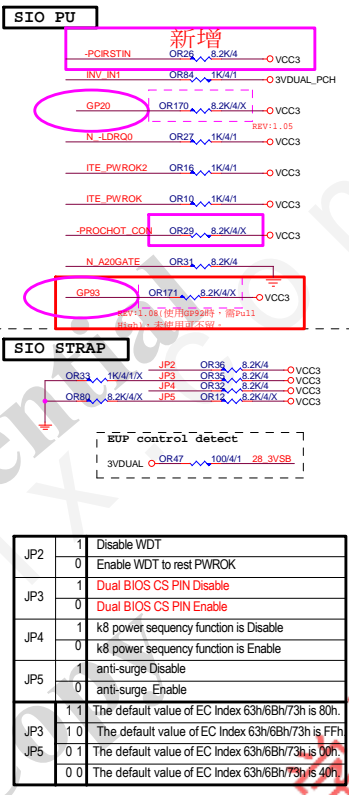
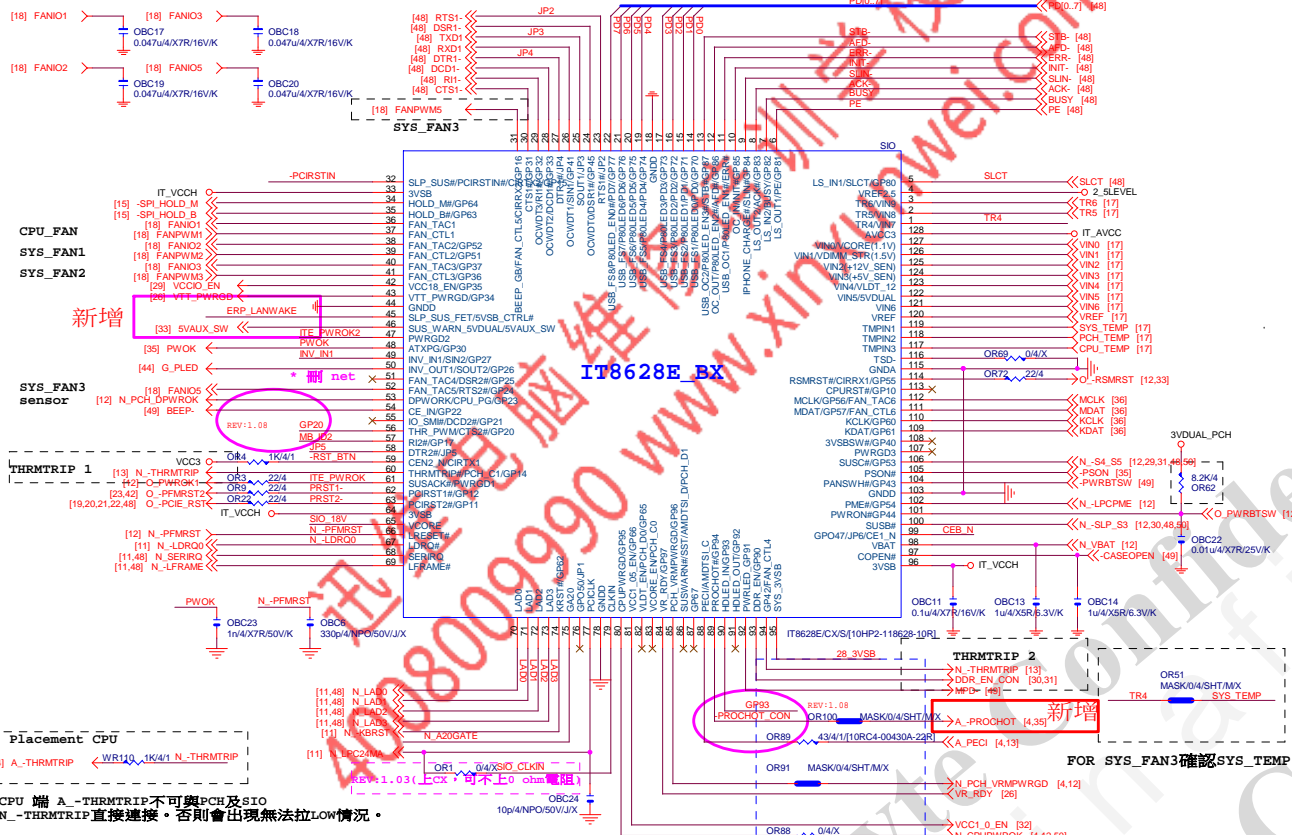
MASK/PH/2\*5K10/BK/2.54/V/A/D/X

Footprint the same, confirmed by Graceing.

Use COM port pin header part.

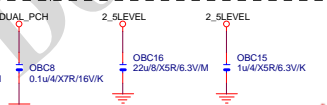
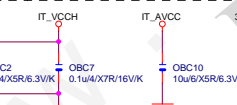
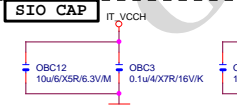
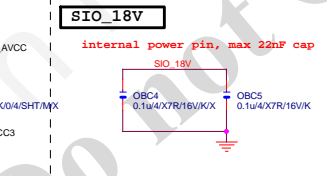
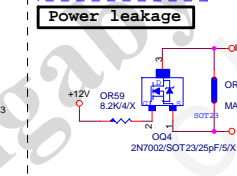
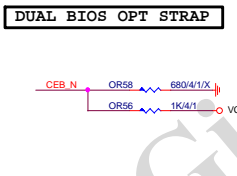
Gigabyte Technology

Title	BIOS
Size	Document Number
Custom	GA-H170M-D3H-GSM
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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

IT8628E GPIO問題匯整	
PIN 50	GP25-第一次上POWER時會拉LO
PIN 90/91	DEFAULT為HLED 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	FIN22, 高溫於3V, 若低於此部分, CPU, POST及LPC裝置電路器會異常動作。

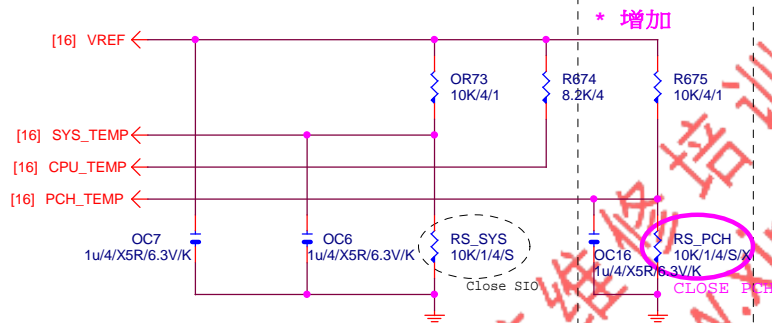


ERP Wake on LAN		
Single LAN	Realtek	組態一
	Atheros	組態一
Dual LAN	Intel 219	組態二
	Atheros+Atheros	組態一
	Intel 219+Atheros	組態三
No Support ERP	BOM不上	N/A



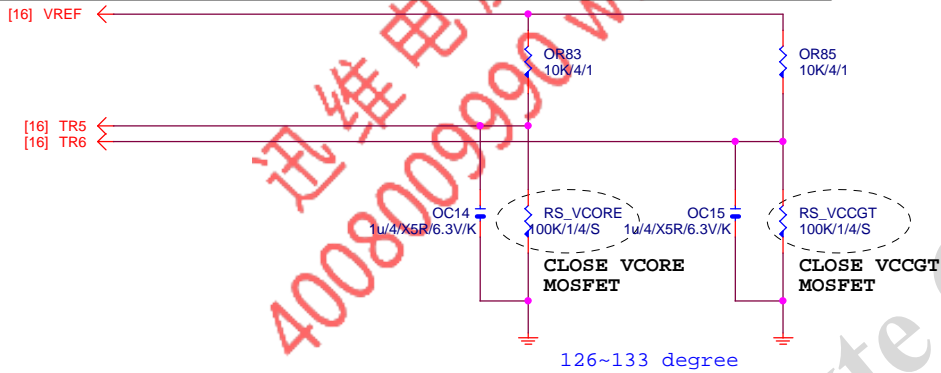
## TEMP H/W MONITOR

REV 1.08



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

-PROCHOT:有mos heartsink不用prochot function

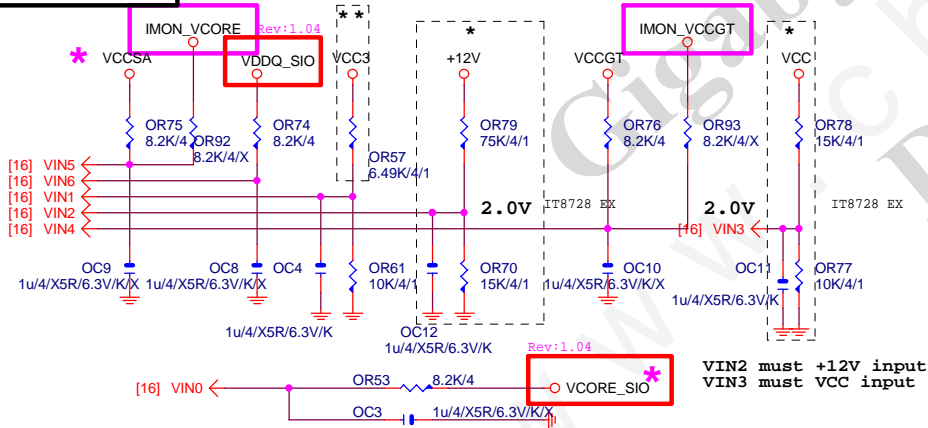


## VOLTAGE-- H/W MONITOR

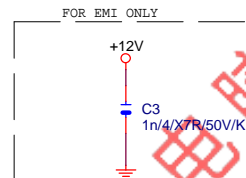
Connect to PWM

\* IT8728 BX  
\*\* IT8728 CX

Connect to PWM



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



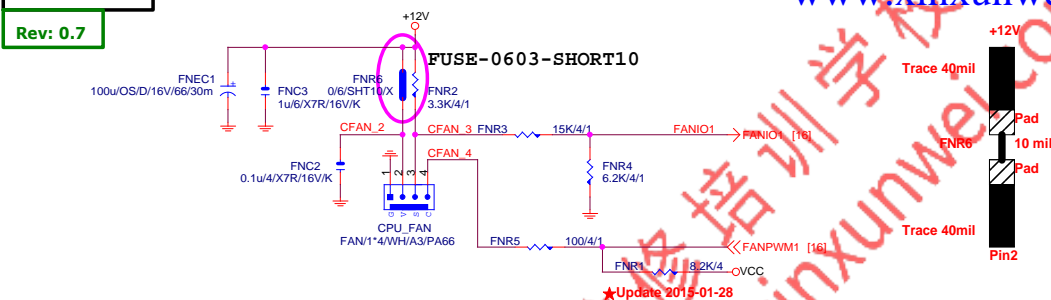
Gigabyte Technology

Title					HWM,KB/MS, FAN CTRL					
Size		Document Number			Rev					
Custom		GA-H170M-D3H-GSM			1.0					
Date:		Monday, January 11, 2016			Sheet		17		of 52	



# CPU SMART FAN

Rev: 0.7

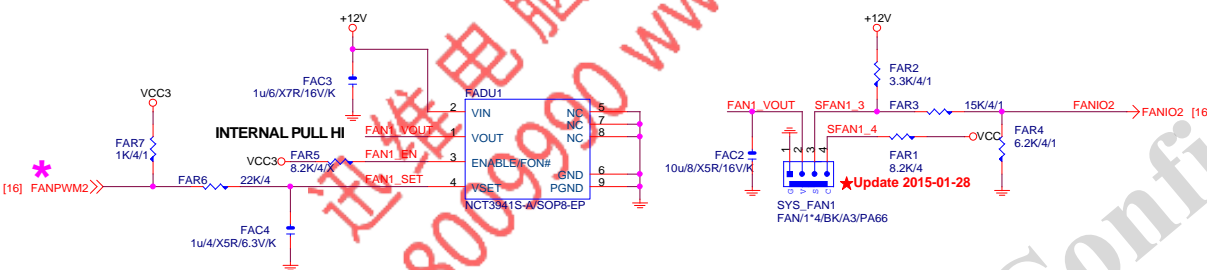


# SYSTEM FAN1

A.

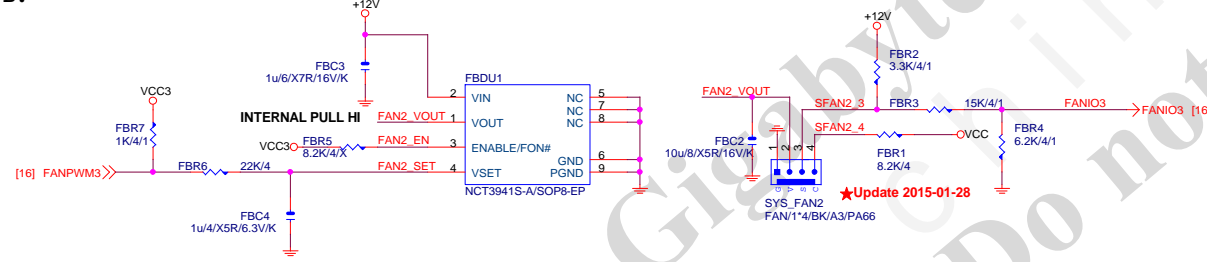
## Linear SYS\_FAN

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



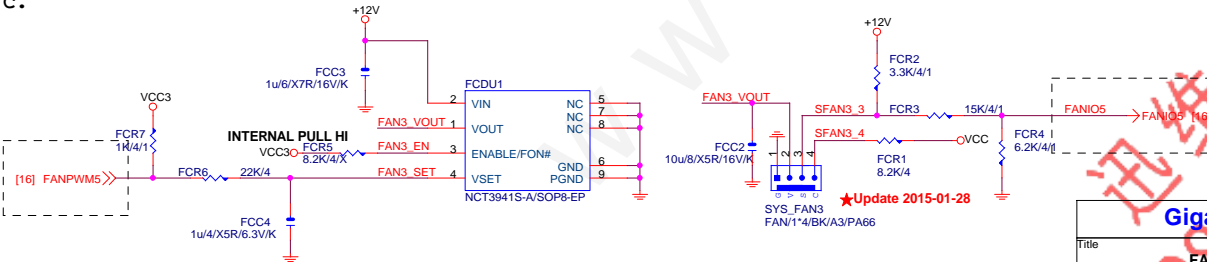
# SYSTEM FAN2

B.

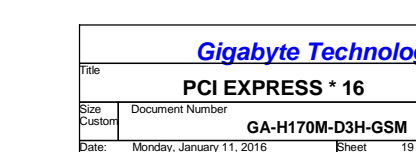
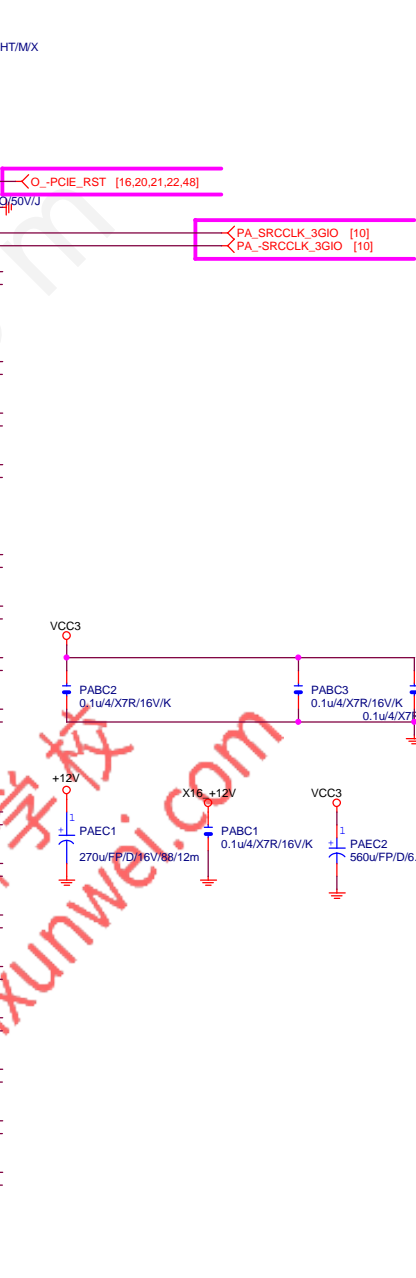
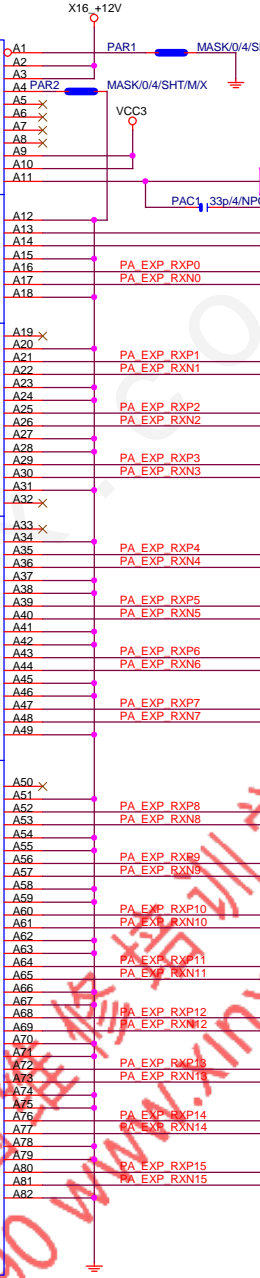
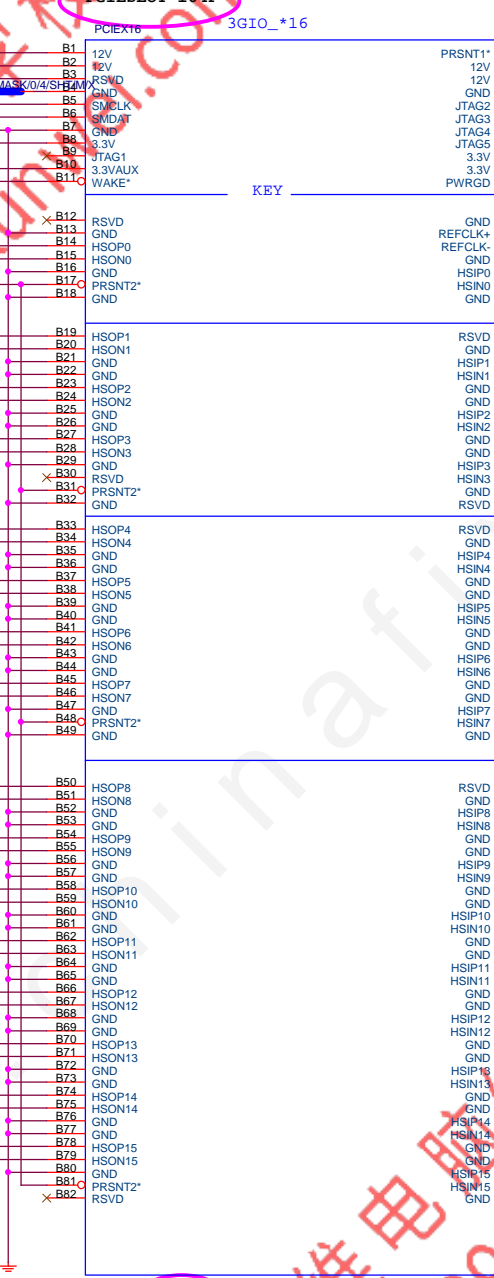
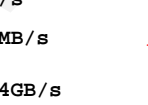
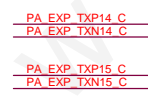
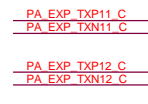
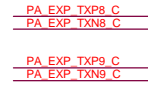
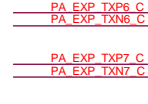
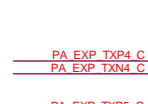
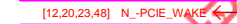
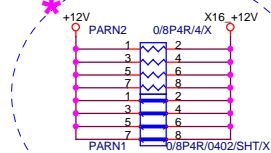


# SYSTEM FAN3

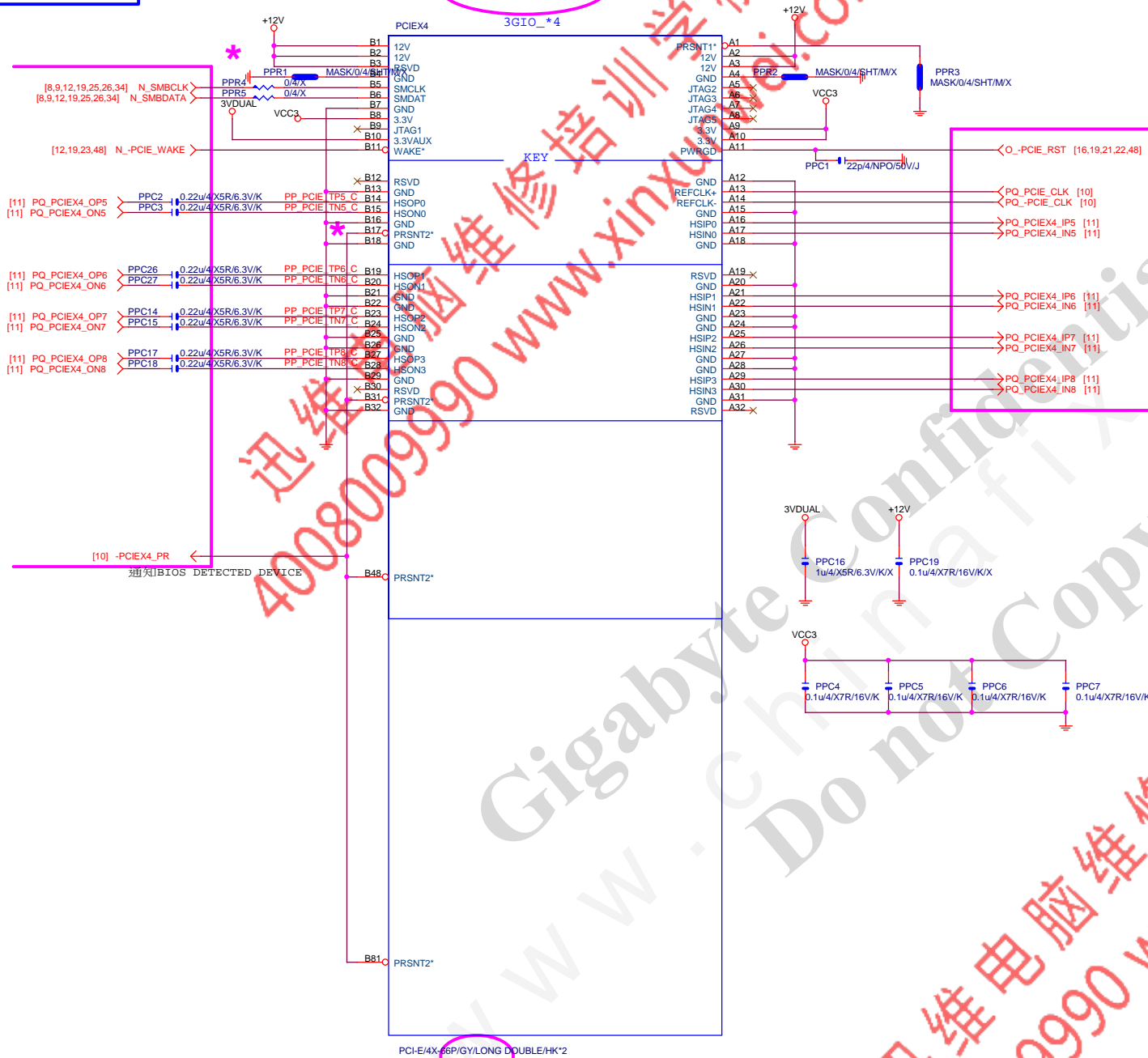
C.



Gigabyte Technology		
Title FAN CTRL		
Size Custom	Document Number GA-H170M-D3H-GSM	Rev 1.0
Date: Monday, January 11, 2016	Sheet 18	of 52



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





## M.2 Lane4 from PCH port18

## M.2 Lane3 from PCH port17

## M.2 Lane2 from PCH port16

## M.2 Lane2 from PCH port15

## 支援SATA and M.2 function



請與M2-CLKREQ對應

KEY M

( 32KHz ) SUSCLK

PEDET

GND

GND

GND

M2/67/BKRA/S/H4.2mm/M KEY

## DIP螺柱



CR[12KS2-110202-01R]

## SMD螺柱



CR[11KS2-040002-01R]



CR[11KS2-040002-01R]



CR[11KS2-040002-01R]

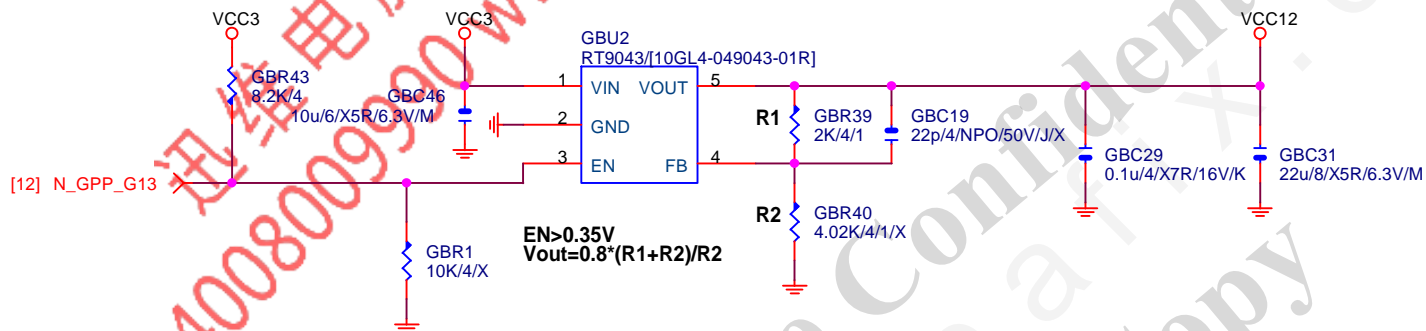
M.2 有插卡 /沒插卡 GPP_G0	M.2插何種卡? GPP_G1	SATA Express 插何種硬碟? GPP_E0/E2/F1	IO15 (S0)	IO16 (S1)	IO17	IO18	IO19 (S0)	IP20 (S1)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	PCIE x1	SATA
		SATA Express (Low)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	SATA Express	
	PCIE Mode (Hi)	SATA (Hi)		PCIE 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	







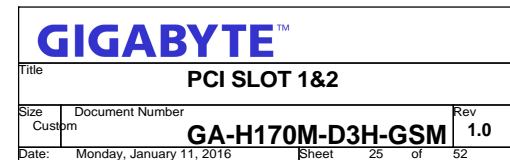
Rev 0.9

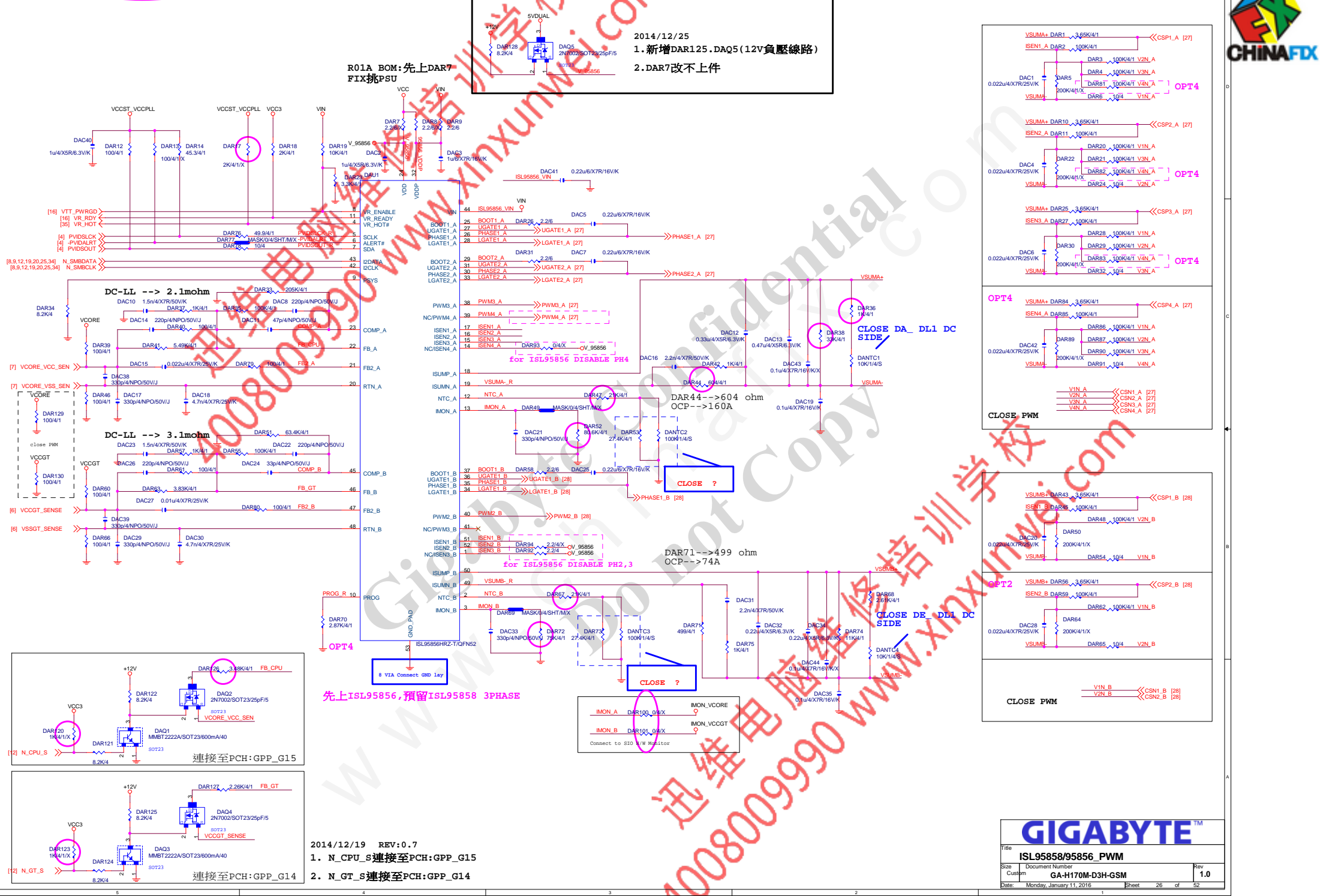


Gigabyte Technology

Title			ASM1085 POWER		
Size			Document Number		
Custom			GA-H170M-D3H-GSM		
Date:			Monday, January 11, 2016		
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Rev			1.0		



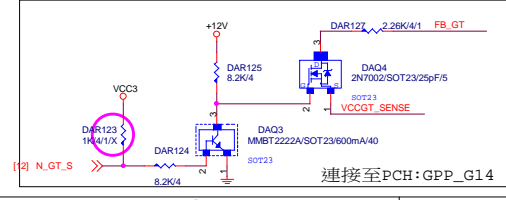
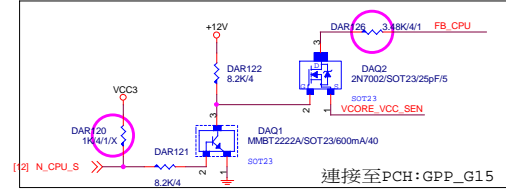
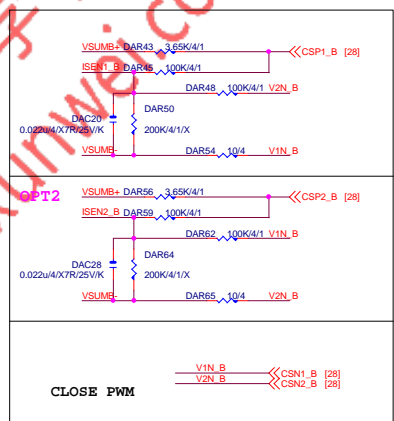
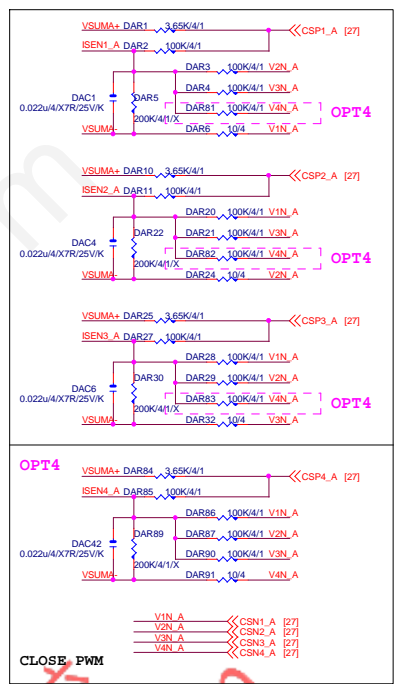




RO1A BOM: 先上DAR7  
FIX挑PSU



- 2014/12/25
- 1. 新增DAR125, DAQ5 (12V負壓線路)
- 2. DAR7改不上件

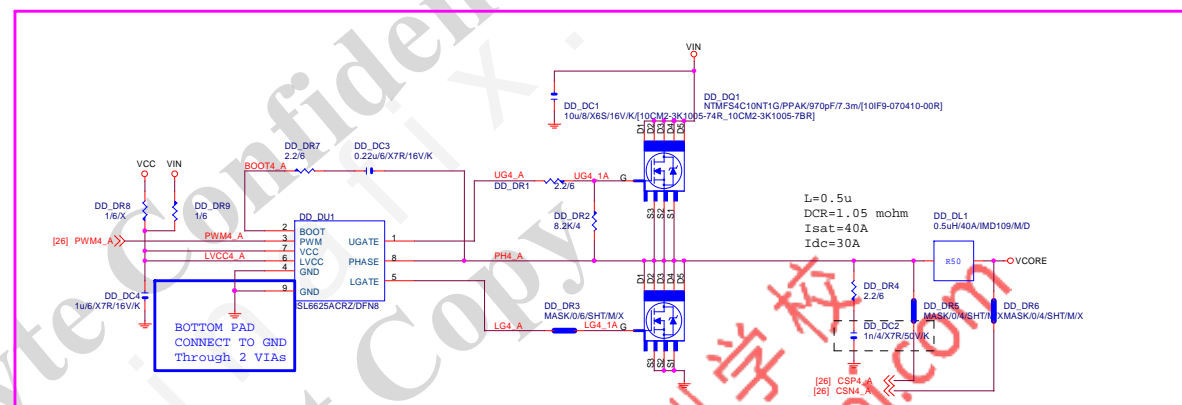
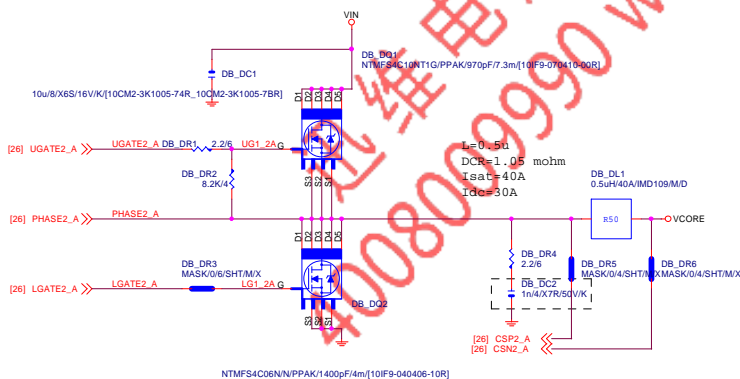
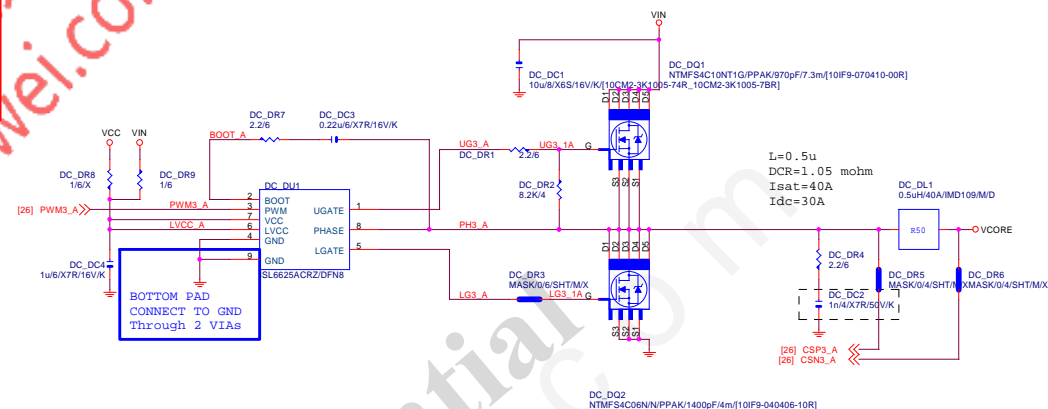
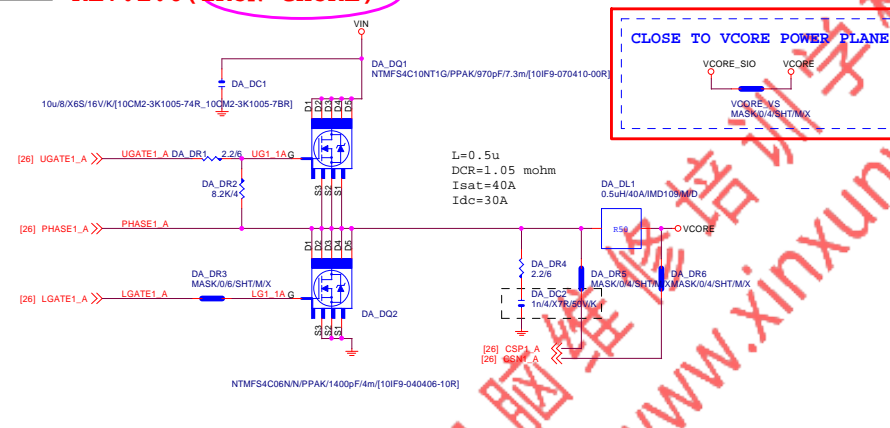


先上ISL95856, 預留ISL9585 3PHASE

- 2014/12/19 REV:0.7
- 1. N\_CPU\_S連接至PCH:GPP\_G15
- 2. N\_GT\_S連接至PCH:GPP\_G14

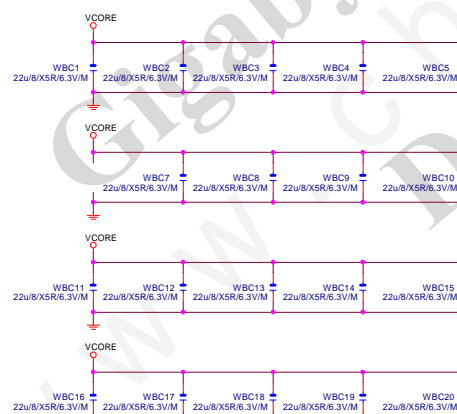
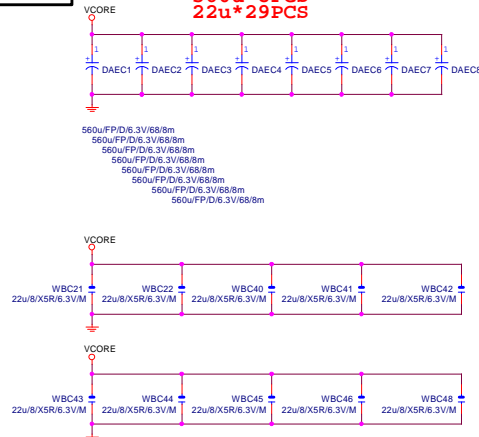
GIGABYTE™		
Title ISL95858/95856_PWM		
Size Document Number		
Custom GA-H170M-D3H-GSM		
Date: Monday, January 11, 2016		
Sheet 26 of 52		
Rev 1.0		

VCORE REV:1.0 (IRON CHOKE)



## VCORE CAP

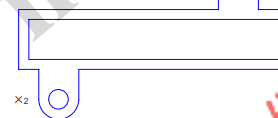
560u\*8PCS  
22u\*29PCS



## MOSHSINK

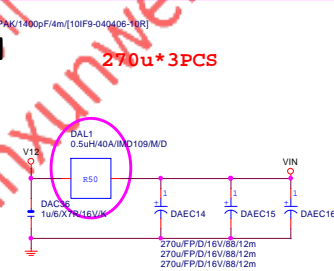
MOSHSINK-Z1704-HD3

MOS\_HS1  
HEAT SINK/12SP2-S09325-31R\_12SP2-S09325-33R\_12SP2-S09325-33R



## VIN CAP

270u\*3PCS

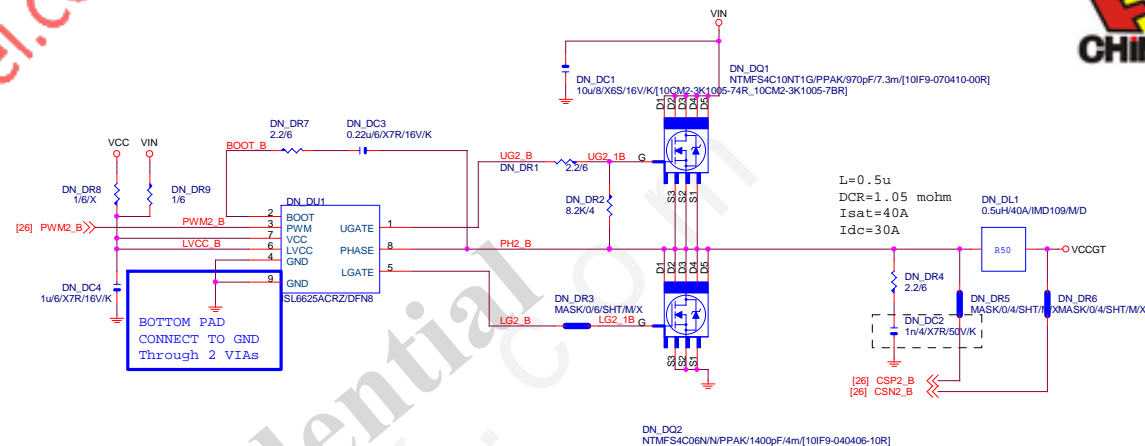
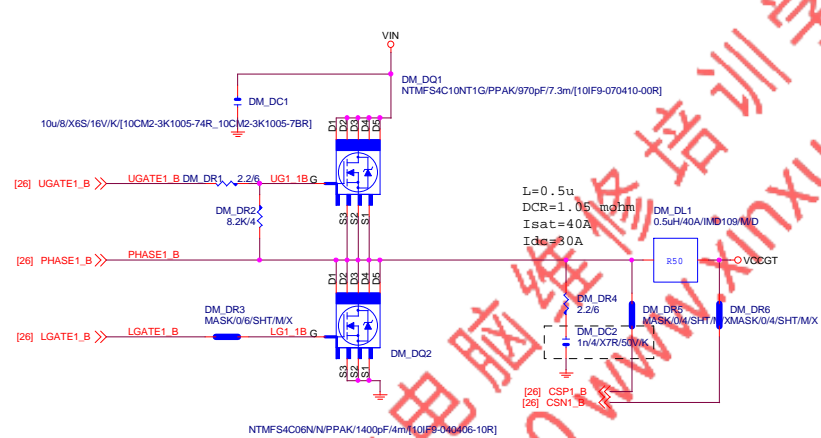


# GIGABYTE

Title			
ISL95858_856_MOS			
Size	Document Number	Rev	
Custom	GA-H170M-D3H-GSM	1.0	
Date:	Monday, January 11, 2016	Sheet	27 of 52

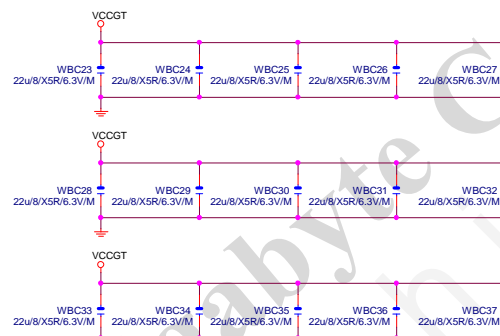
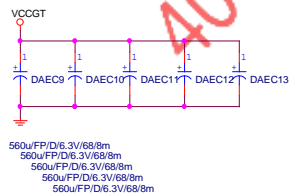
VCCGT


REV:1.0 (IRON CHOKE)



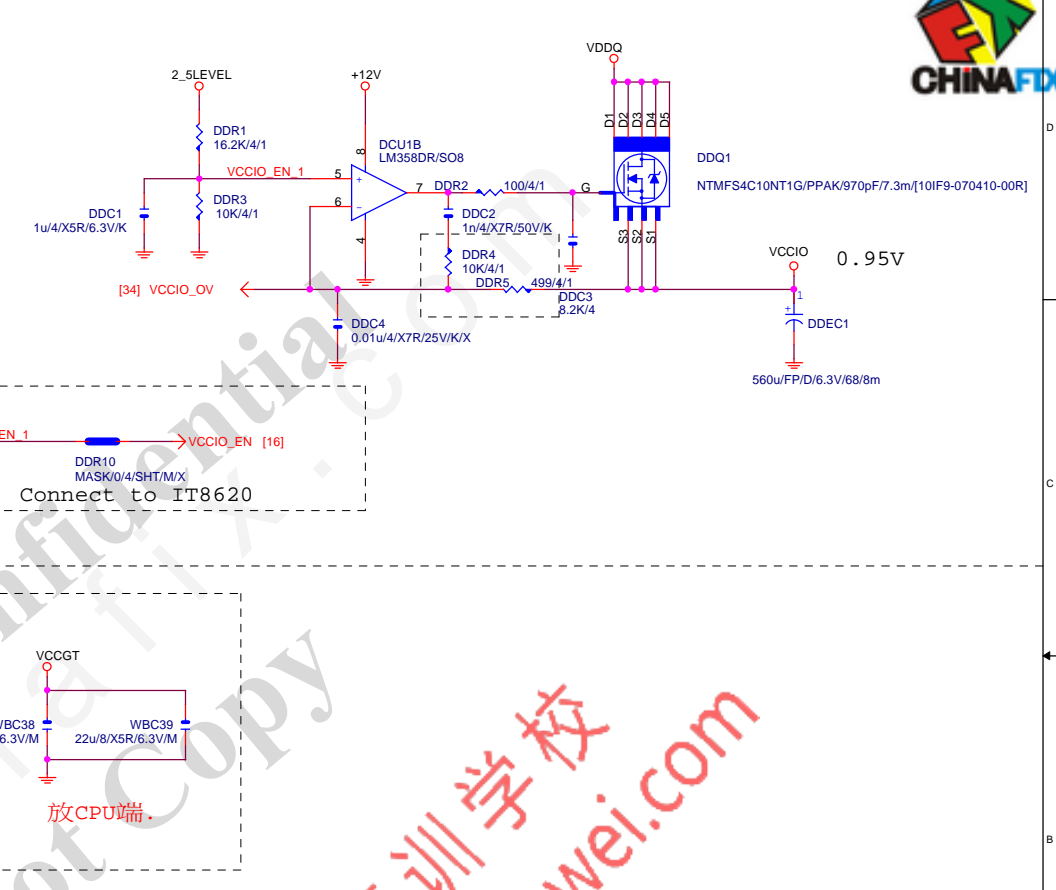
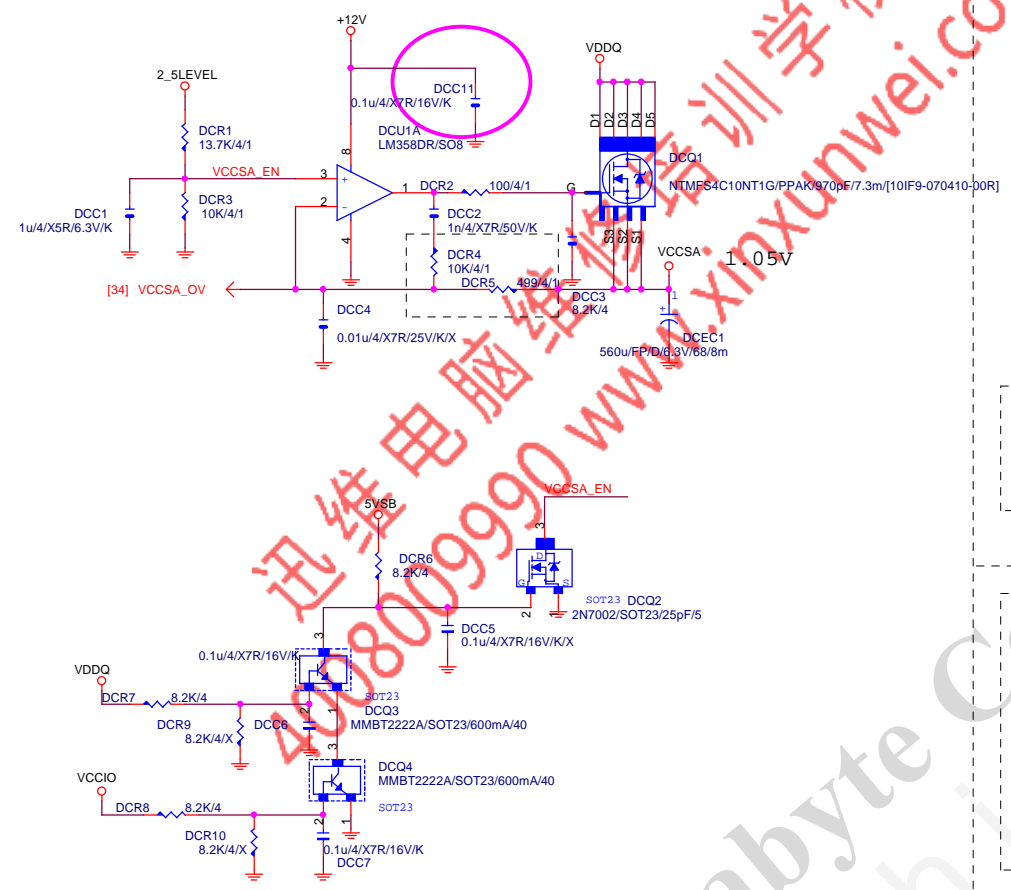
VCCGT CAP

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



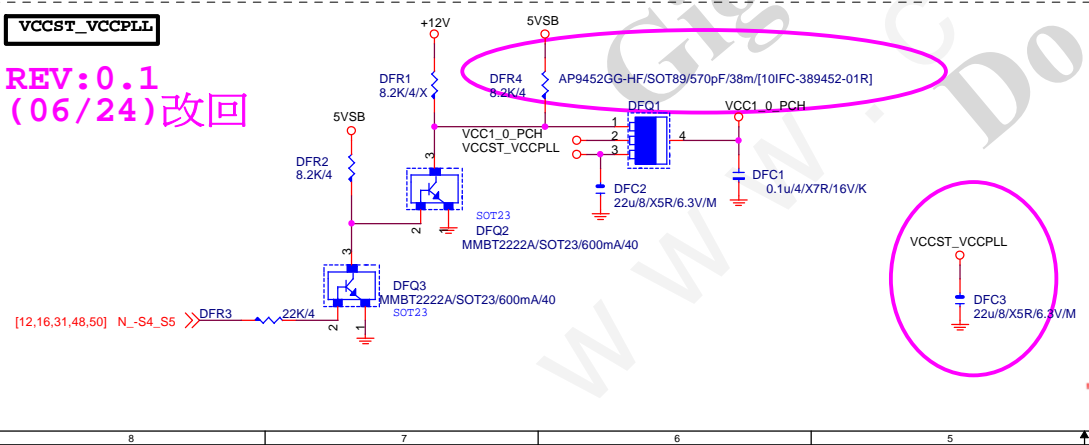
			
Title			
ISL95858_MOS			
Size	Document Number	Rev	
Custom	GA-H170M-D3H-GSM	1.0	
Date:	Monday, January 11, 2016	Sheet	28 of 52



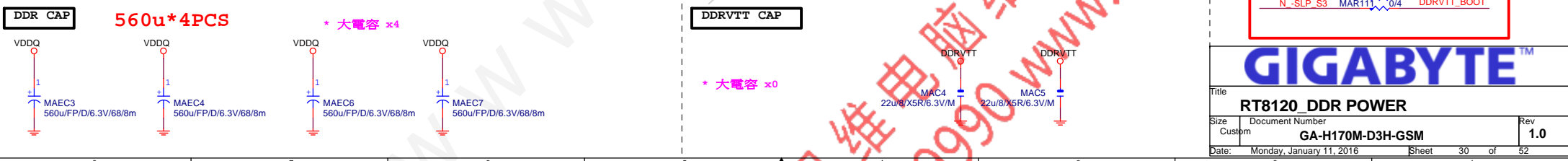


VCCIO\_EN 1  
DDR10  
MASK/0/4/SHT/M/X  
Connect to IT8620

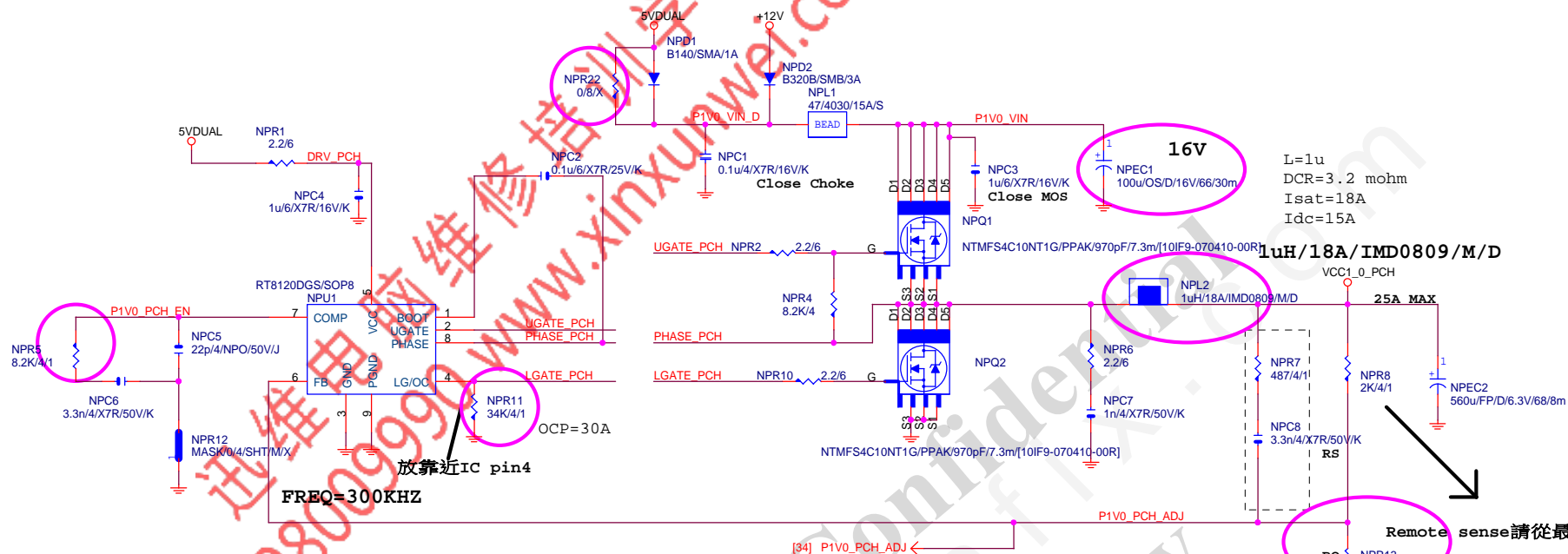
VCCGT  
WBC38  
22u/8/X5R/6.3V/M  
WBC39  
22u/8/X5R/6.3V/M  
放CPU端.



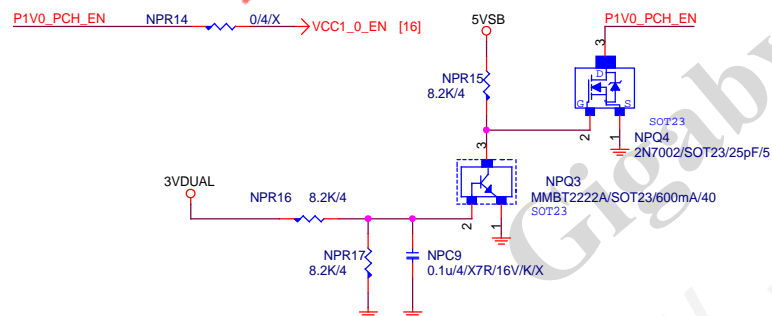
GIGABYTE™			
Title VCCSA_VCCIO			
Size	Document Number	Rev	
Custom	GA-H170M-D3H-GSM	1.0	
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## CHOKE與CAP料號可變



## PWR\_SEQ



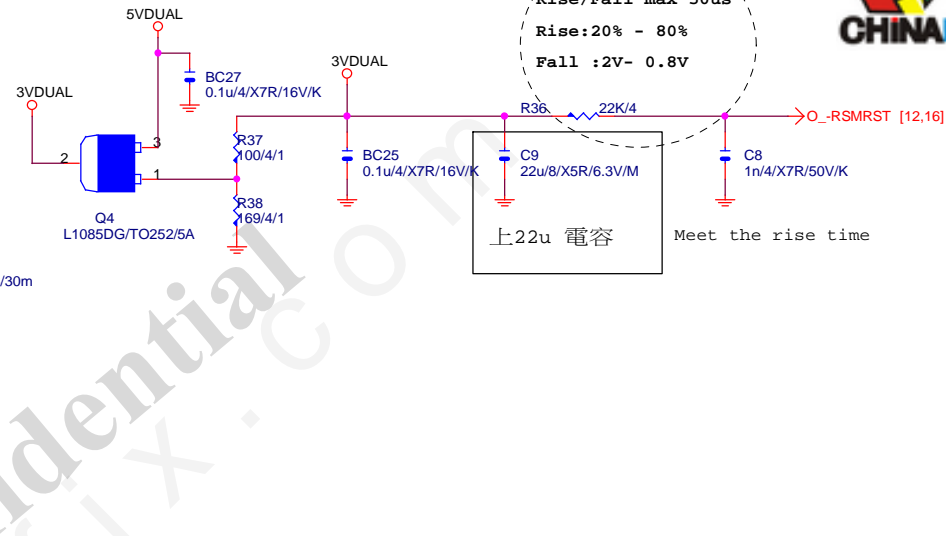
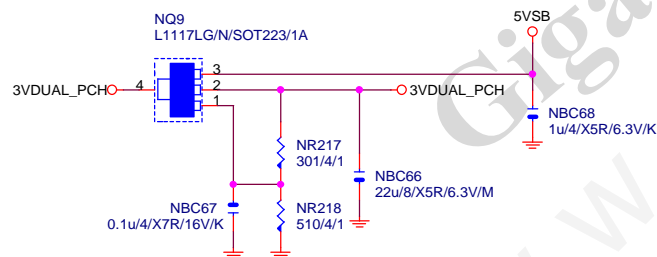
請放置CHOKE一出來的地方

**GIGABYTE™**

Title			
RT8120_PCH POWER			
Size	Document Number	Rev	
Custom	GA-H170M-D3H-GSM	1.0	
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```
* 5Vdual , update
from SKL 0.2B
```



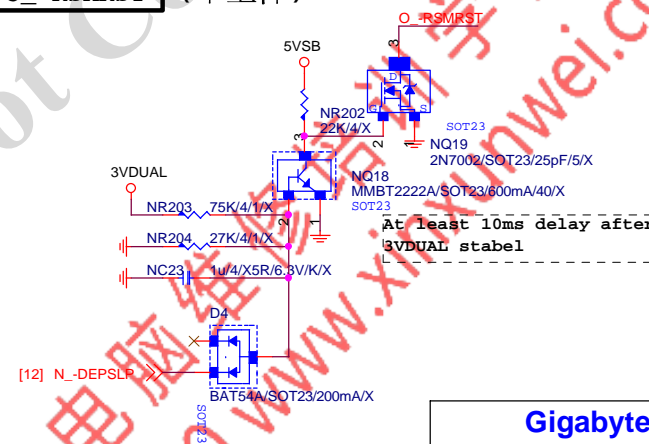
```

Rise/Fall max 50us
Rise:20% - 80%
Fall :2V- 0.8V

```

上22u 電容

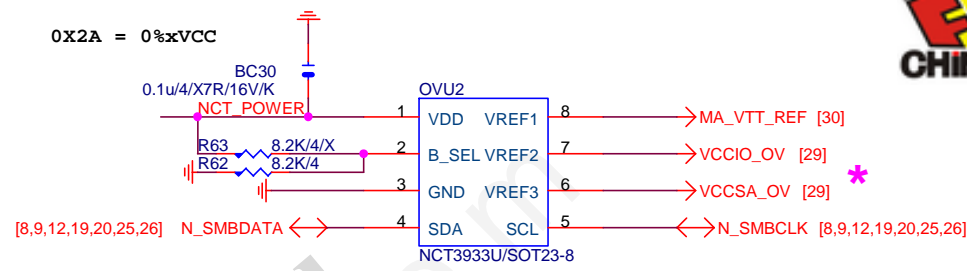
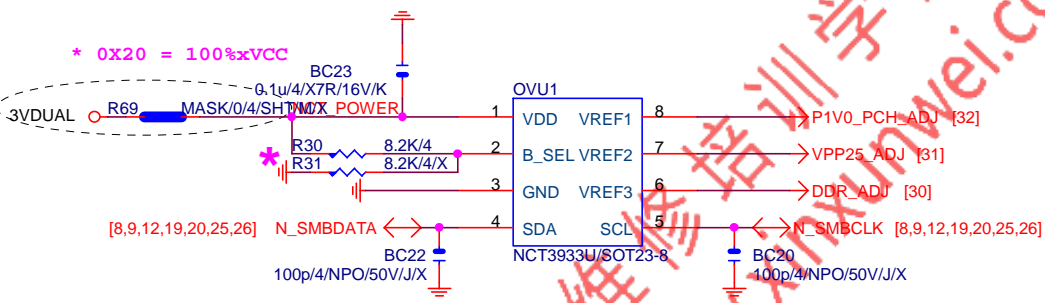
Meet the rise time



```
At least 10ms delay after
3VDUAL stabel
```

Title			
DISCRETE POWER			
Size	Document Number		Rev
Custom	GA-H170M-D3H-GSM		1.0
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OVER VOLTAGE



\* 删除 OVU3

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

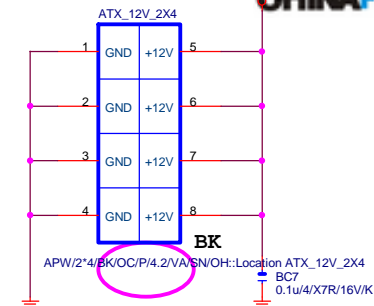
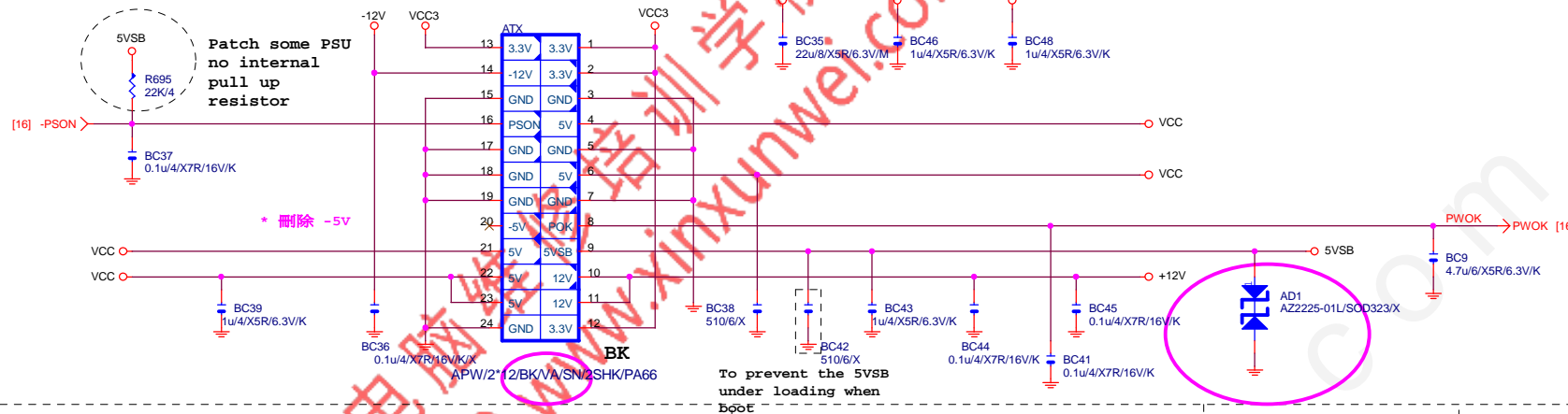
Size Custom: Document Number: GA-H170M-D3H-GSM

Date: Monday, January 11, 2016 Sheet 34 of 52

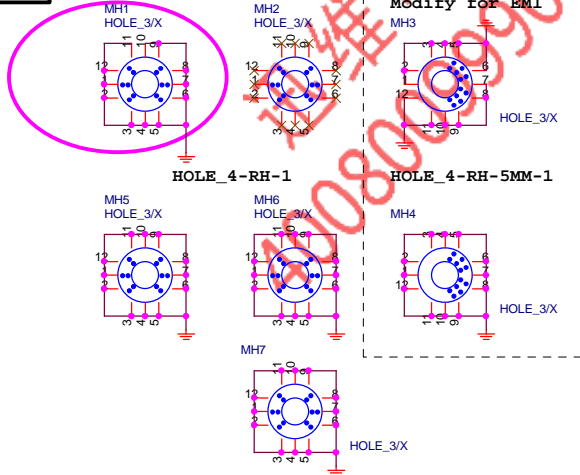
# ATXX24 POWER CONNECTOR

www.xinxunwei.com 400-800-9990

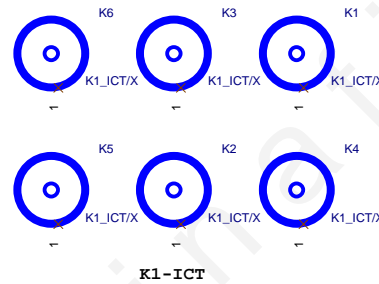
# ATXX4 POWER CONNECTOR



## 螺絲孔



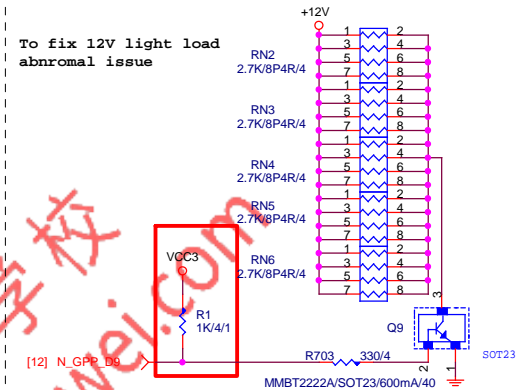
## 固定孔/光學點



To prevent the 5VSB under loading when boot

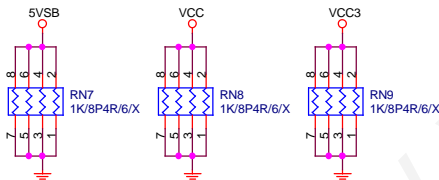
## +12V DUMMY LOAD

To fix 12V light load abnormal issue



【技術通報R&D技術通報153】

## DUMMY LOAD



## -PROHOT

[4,16] A\_-PROHOT <-A\_-PROCHOTR2 MASK/0/4/SHT/M/X VR\_HOT [26]

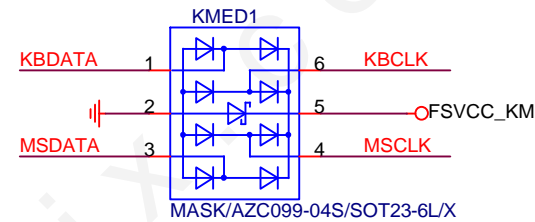
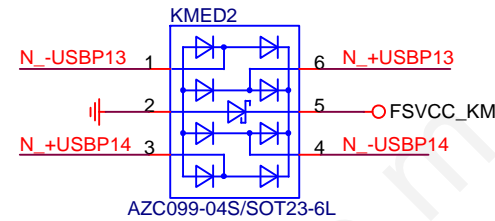
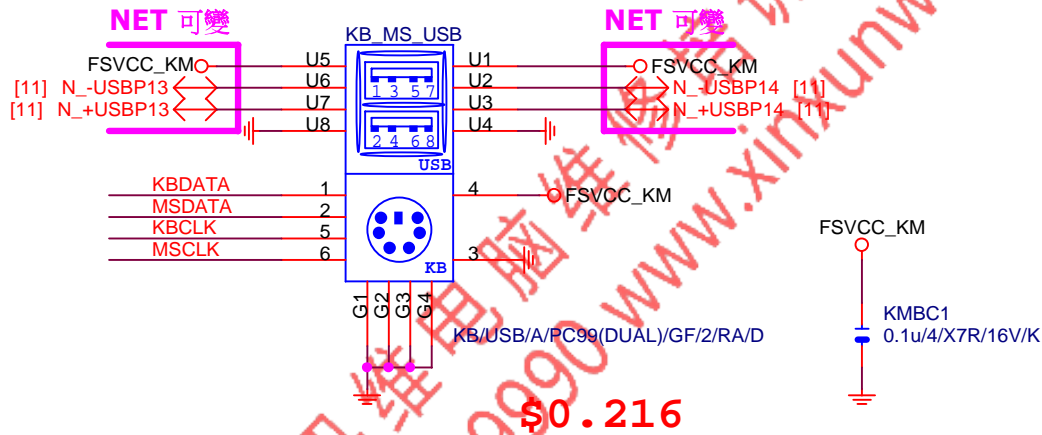
## COUPON



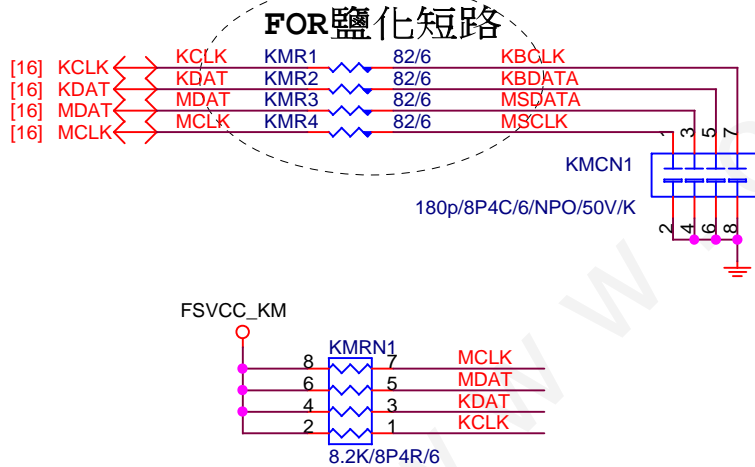
BY LAYOUT位置

## Gigabyte Technology

Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-H170M-D3H-GSM	1.0
Date:	Monday, January 11, 2016	Sheet 35 of 52

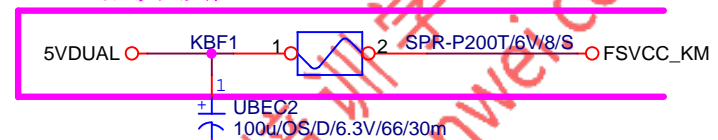


## KB\_MS\_USB DAMPING/PU

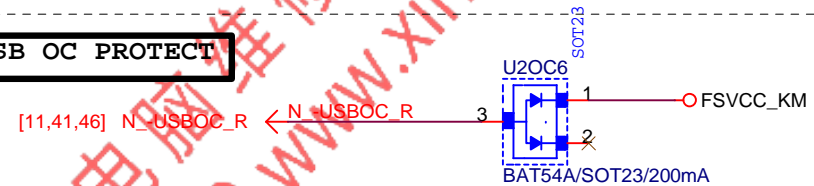


## KB\_MS\_USB PWR

## NET 可變, 與其他USB SHARE



## USB OC PROTECT



Gigabyte Technology

Title

KB\_MS\_USB

Size

Document Number

GA-H170M-D3H-GSM

Rev  
1.0

Date:

Monday, January 11, 2016

Sheet

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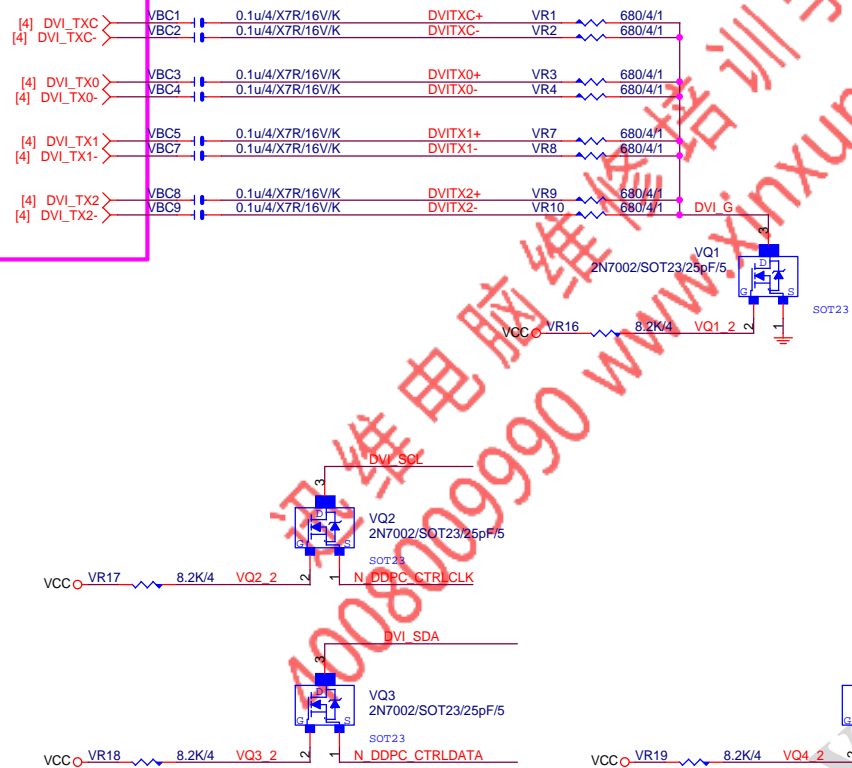
of 52



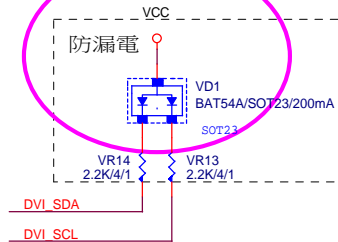


NET 可變

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



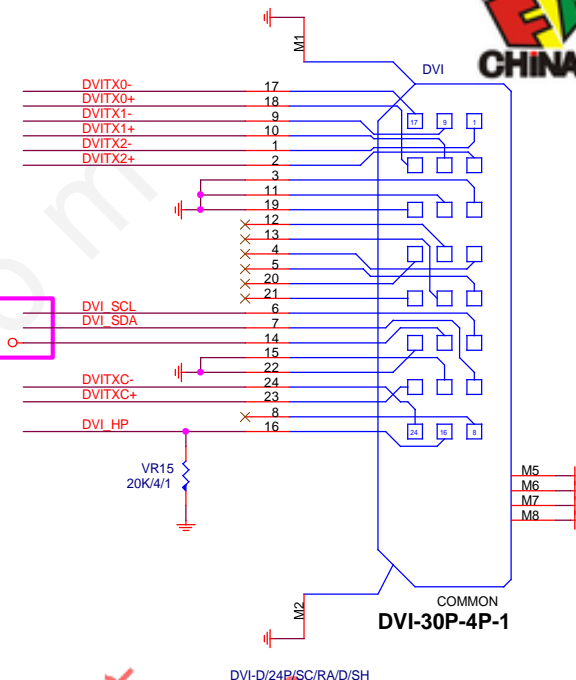
## R&amp;D技術通報 162



[10] N\_DDPC\_CTRLCLK  $\longleftrightarrow$  VR5  $\xrightarrow{2.2K/4/1}$   $\xrightarrow{2.2K/4/1}$  VCC3  
[10] N\_DDPC\_CTRLDATA  $\longleftrightarrow$  VR6  $\xrightarrow{2.2K/4/1}$   $\xrightarrow{2.2K/4/1}$  VCC3

VBC6  
0.1u4/X7R/16V/K/X

## NET 可變

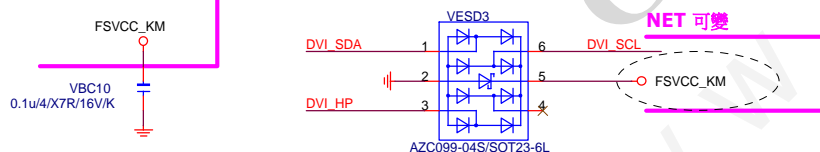


~~平躺式~~ DVI-D

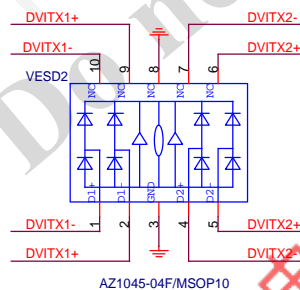


**ESD**

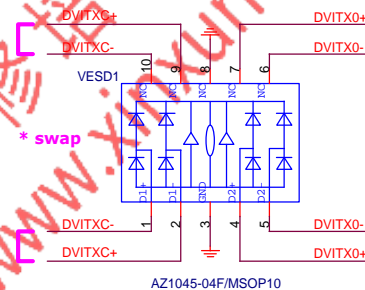
## NET 可變



Close to connector



Close to connector



Close to connector

## Gigabyte Technology

Title
-------

## DVI

Size	Custom
------	--------

Document Number

GA-H170M-D3H-GSM

Date: Monday, January 11, 2016

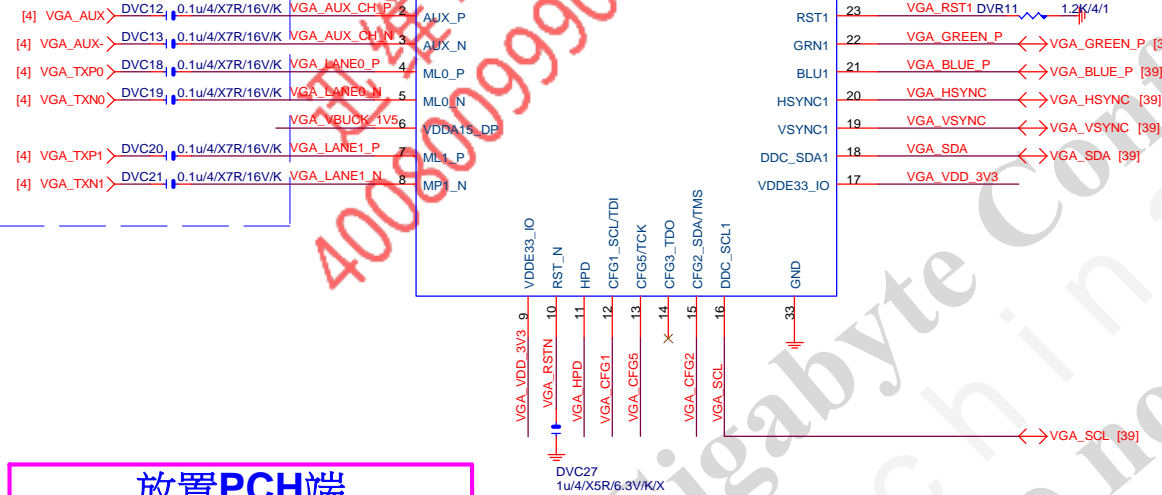
Sheet 37 of 52

ROM PART: PTN3356R1BS/[10HQ5-A23356-10R]  
FLASH PART: PTN3356F1BS/[10HQ5-A23356-20R]

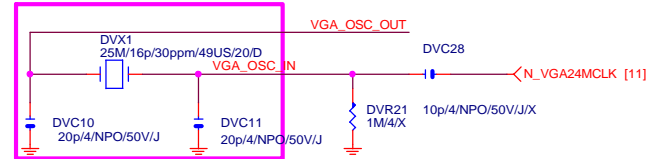
1. 上件:  
DVC28 [10p/4/NPO/50V/J]  
DVC11 [10p/4/NPO/50V/J]~修改值  
DVR10 [8.2K/4]  
2. 删除:  
DVR1 [25M/16p/30ppm/49US/20/D]  
DVC10 [20p/4/NPO/50V/J]  
DVR9 [8.2K/4]

DVU1  
PTN3356F1BS/QFN32/[10HQ5-A23356-20R]

## \* CPU DP端



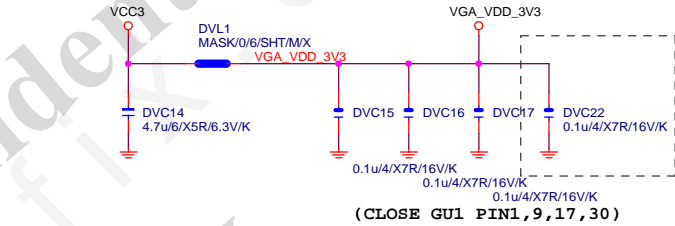
## 放置PCH端



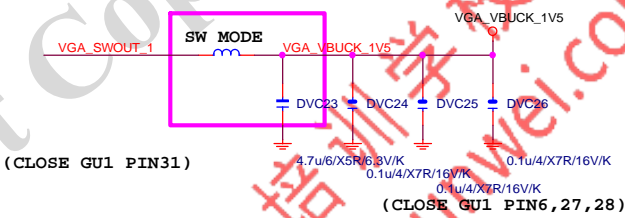
## CFG5 For Crystal Less



## ADAPTER POWER

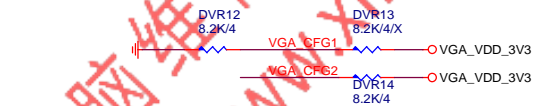


LDO MODE: DVL2, DVC23-->X  
S.W MODE: DVL2, DVC23-->O



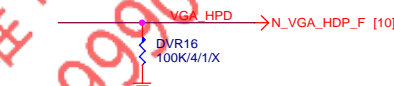
## CFG1&amp;2

Non-Compliant



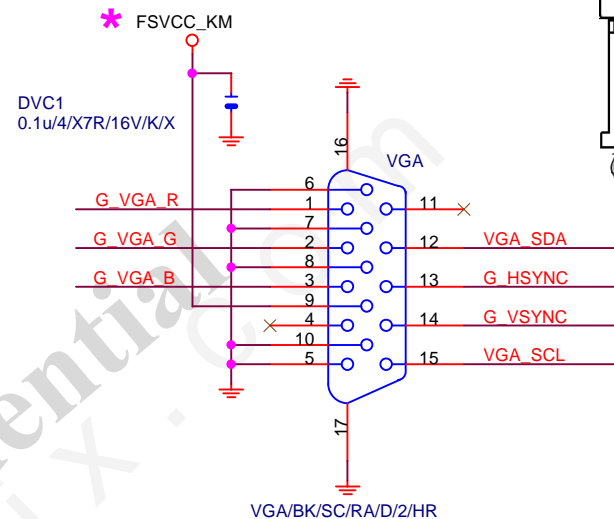
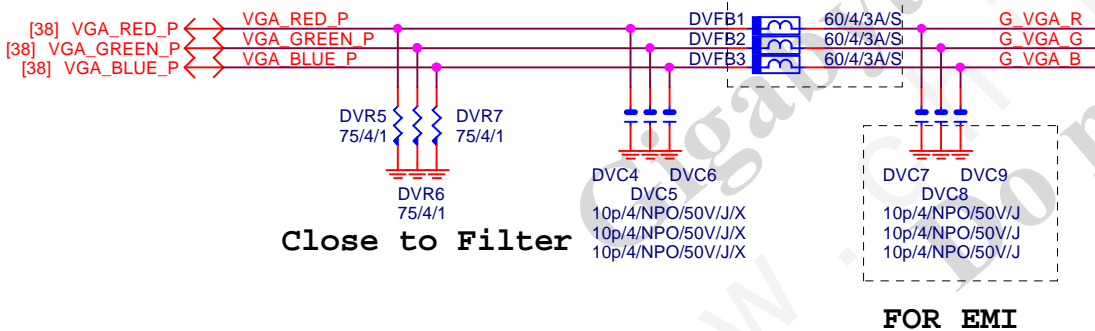
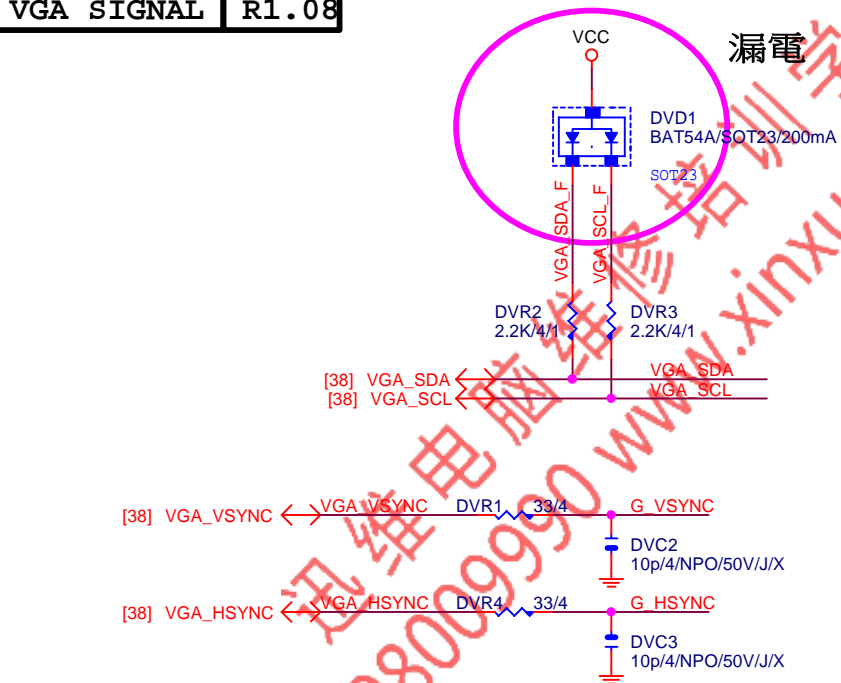
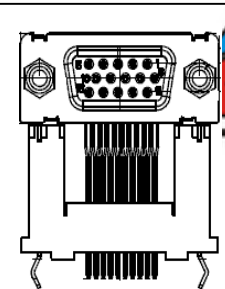
## HPD

## \* PCH端

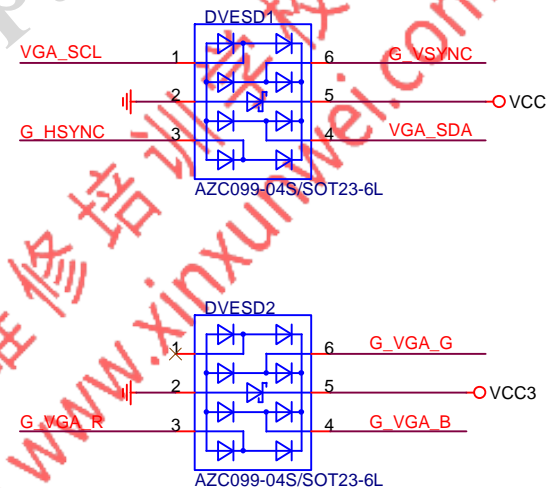


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NXP-PTN3356

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## VGA ESD



Gigabyte Technology

Title NXP-PTN3356

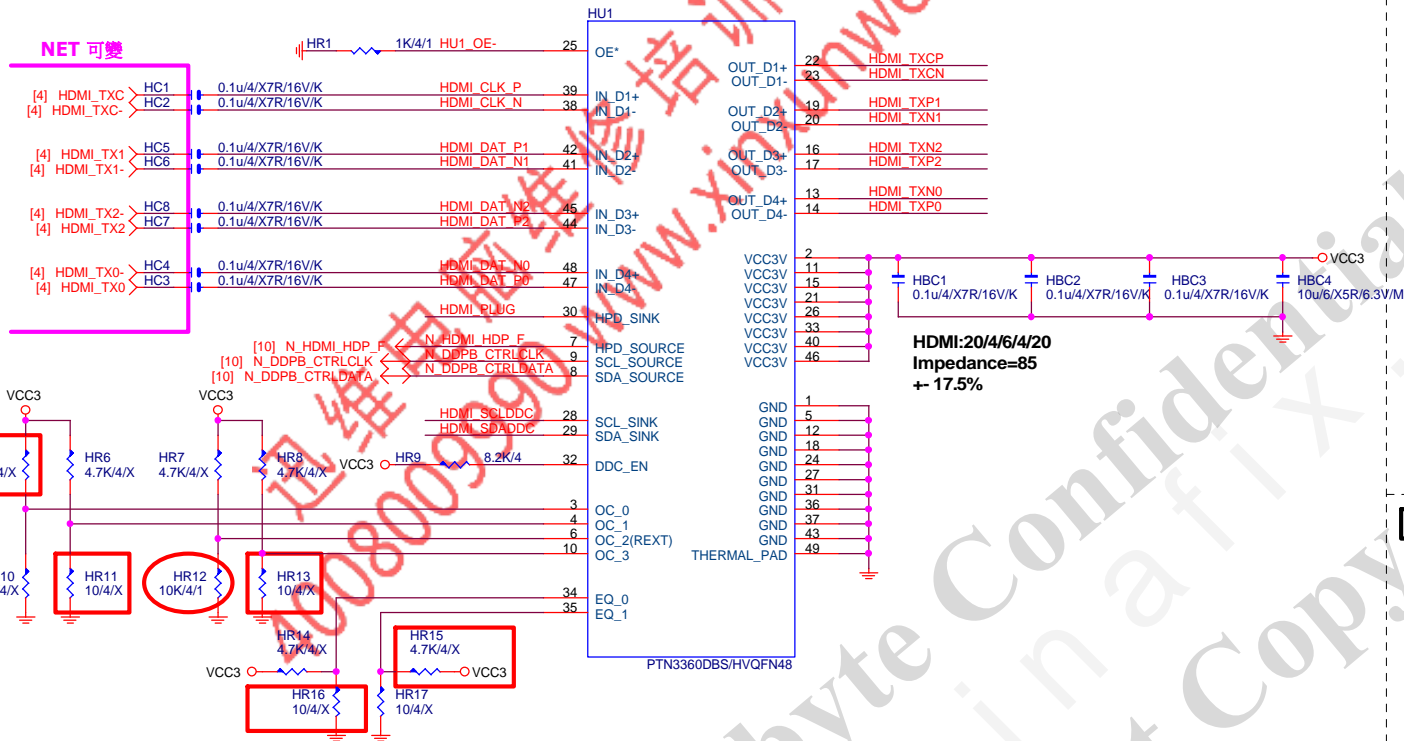
Size Custom Document Number GA-H170M-D3H-GSM Rev 1.0

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## HDMI LEVEL SHIFT

Rev: 0.7

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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

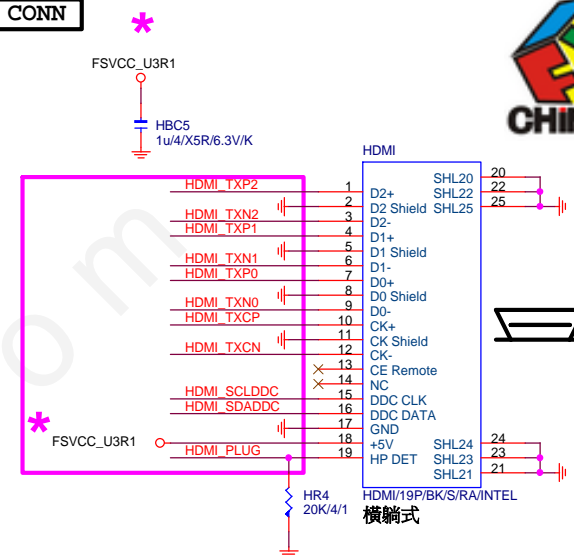
## 【技術通報R&amp;D技術通報150】

HDMI eye diagram 1.4版(deep color)會fail

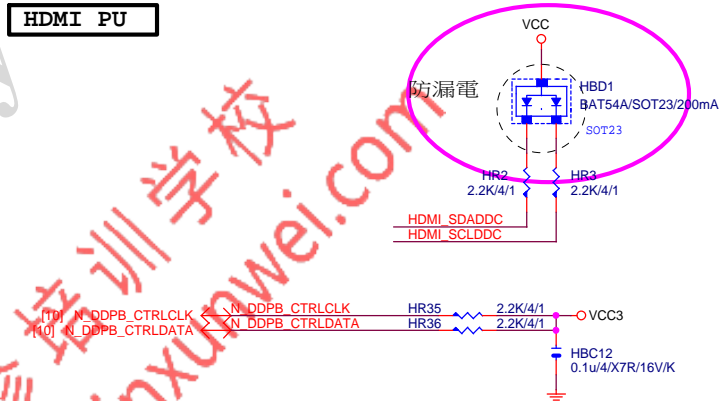
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram

改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

## HDMI CONN



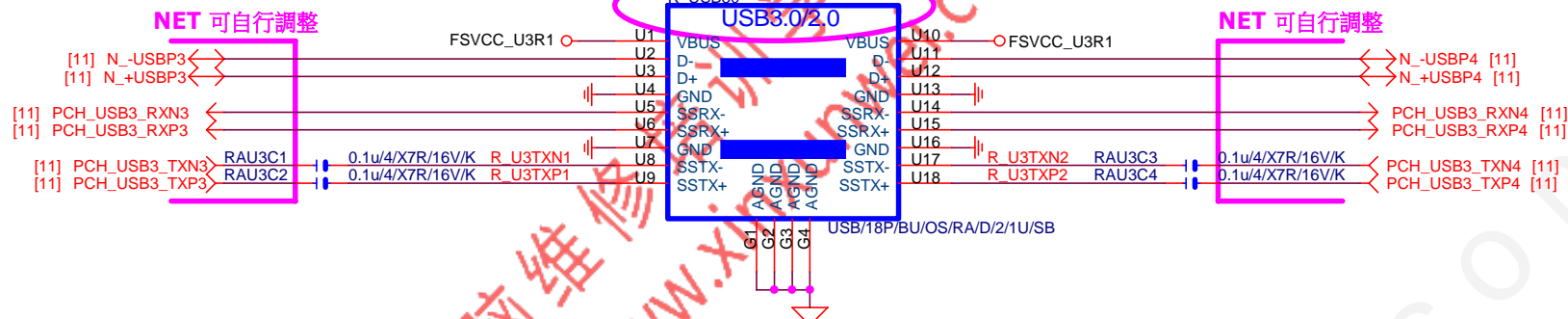
## HDMI PU



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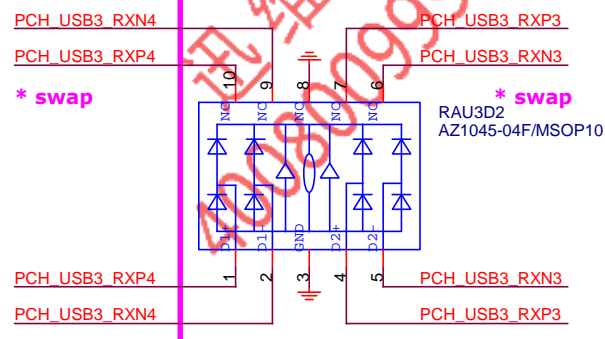
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Size	Document Number	GA-H170M-D3H-GSM	
Custom			
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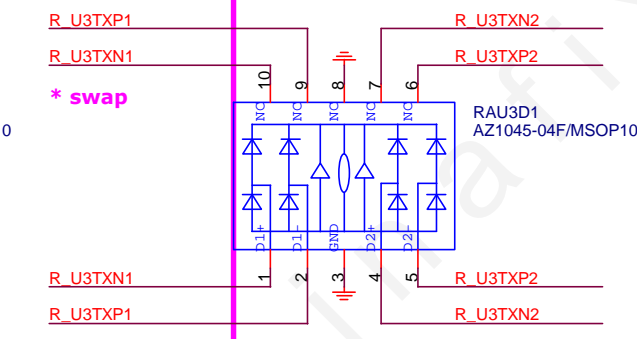


## ESD

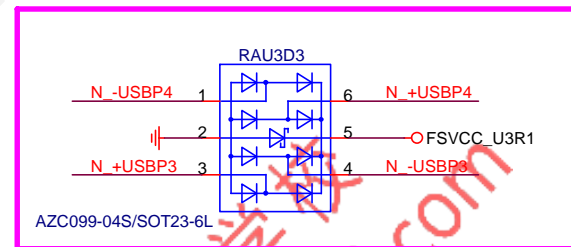
NET 可自行調整



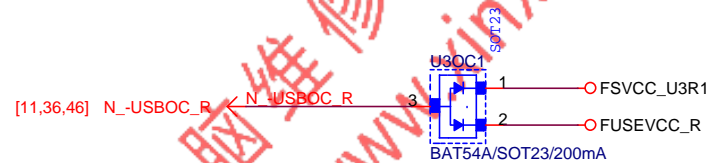
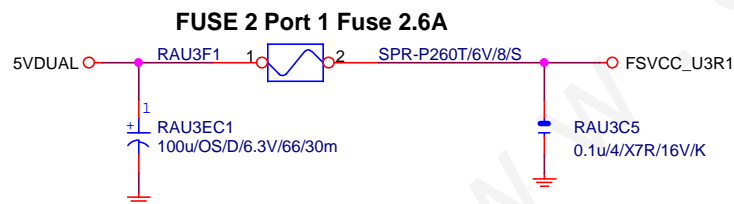
NET 可自行調整



NET 可自行調整



## FUSE



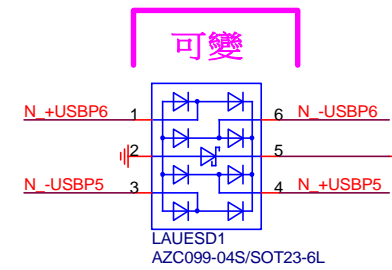
Gigabyte Technology

Title		R_USB30,USB_OC	
Size		Document Number	
Custom		GA-H170M-D3H-GSM	
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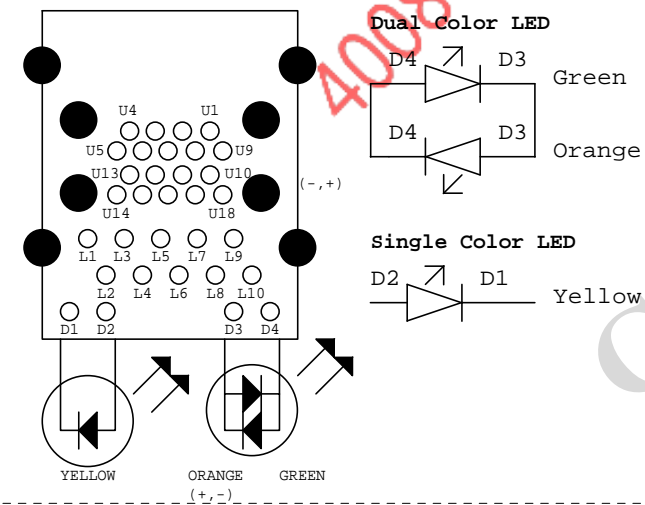


# USB\_LAN CONNECTOR R1.1

## RMA ESD PROTECT note:可變更USB NAME



## USB30 LAN LAYOUT示意圖

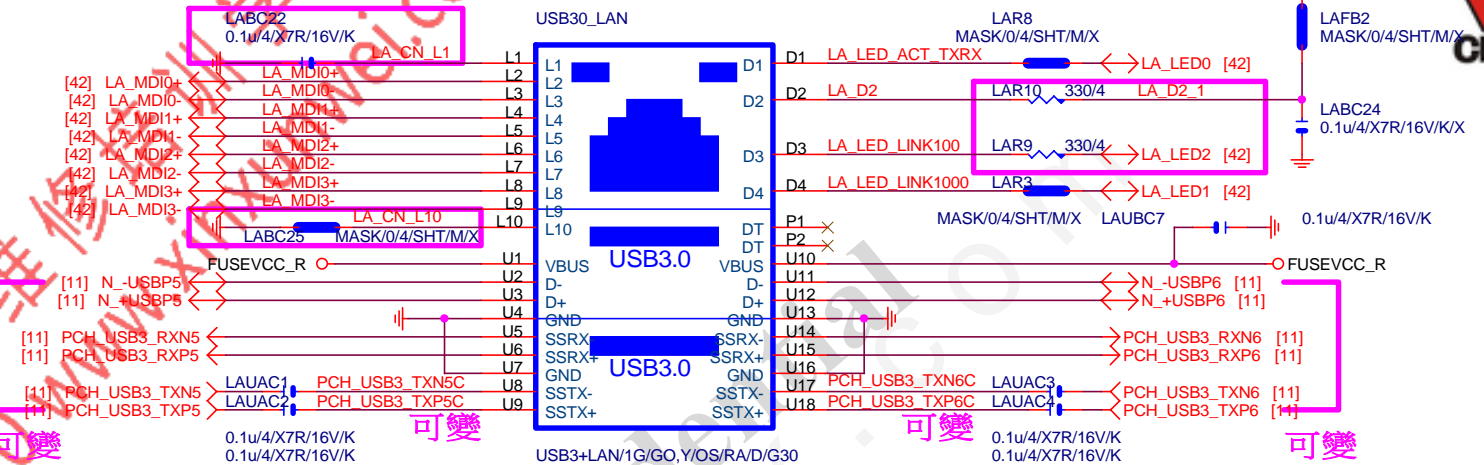


## LAN COVER FOOT PRINT:LAN COVER

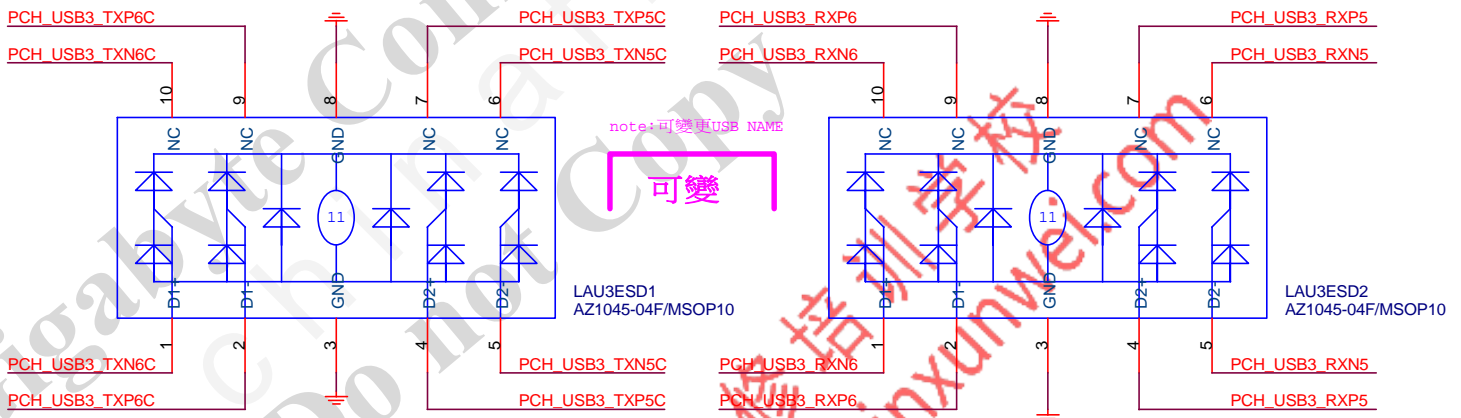
可變  
[視SPEC需求]

[-D3H不加蓋]

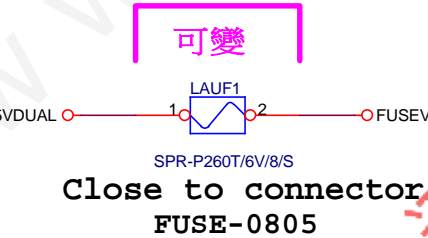
# USB\_LAN CONNECTOR [I219]



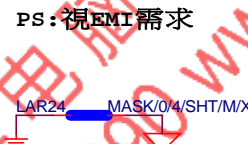
LA\_MDI-->100歐姆:[20/4/8/4/20]



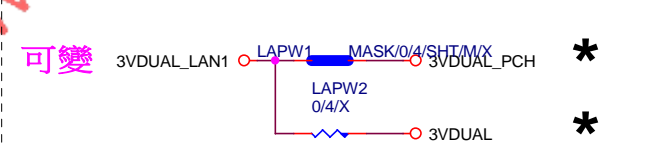
## USB POWER note:可變更FUSE



## EMI SHORT PAD PS:視EMI需求

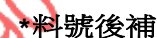
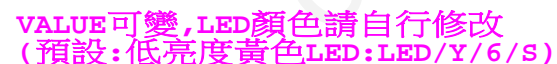
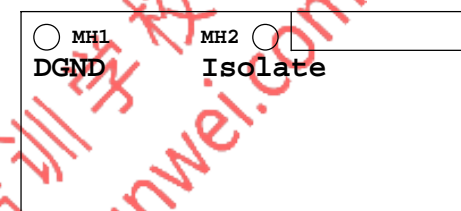
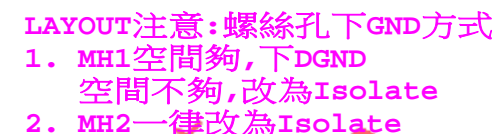


## LAN POWER note:lan power連接及電流



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LAN CONNECTOR-I219			
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## Rev 0.4



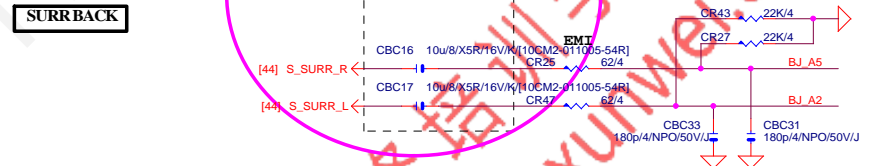
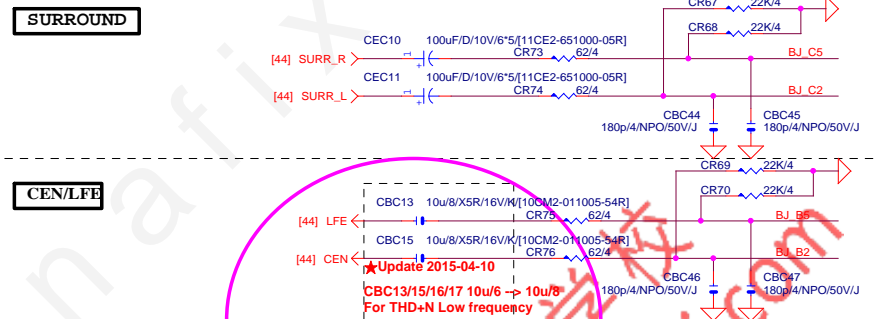
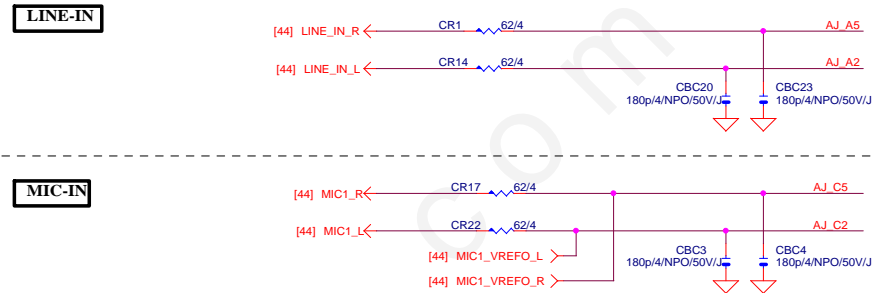
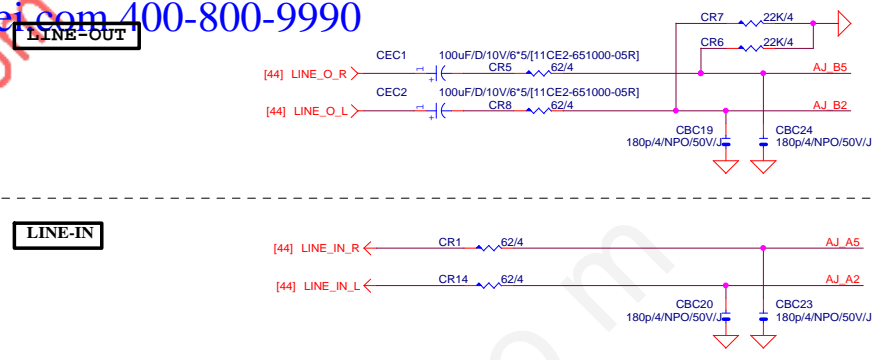
**BOM OPTION :**

1. Chemicon音效電容
2. 金屬外罩 Reserve (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)

## 音效區域印刷

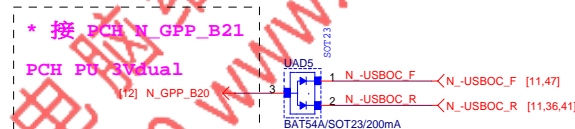
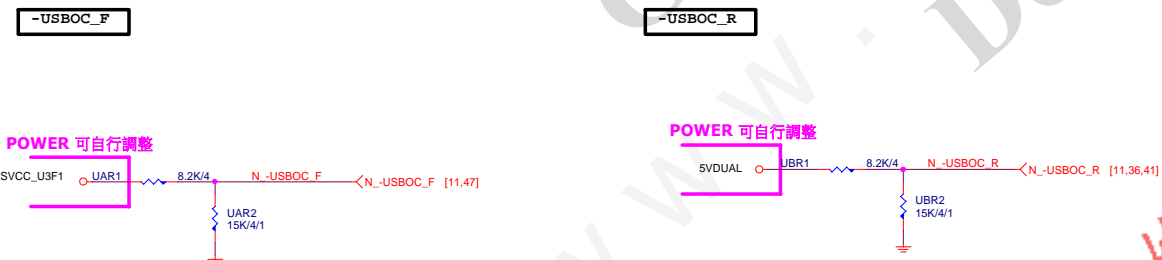
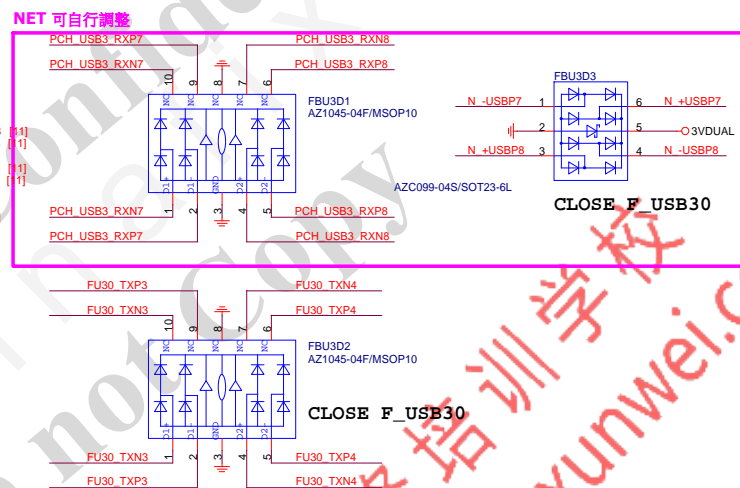
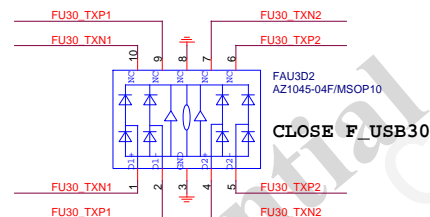
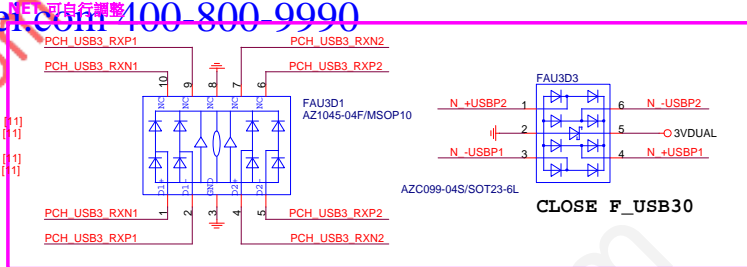
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Size Custom	Document Number	<div style="text-align: center;"> <b>GA-H170M-D3H-GSM</b> </div>	
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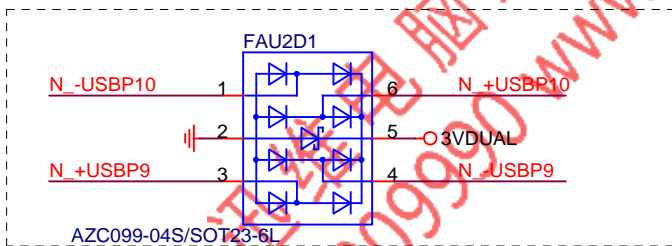
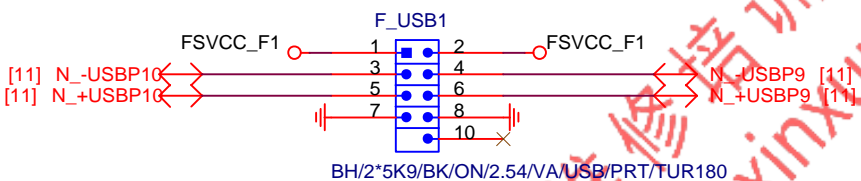
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Size Custom	Document Number			Rev
	<b>GA-H170M-D3H-GSM</b>			<b>1.0</b>
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Front USB3.0



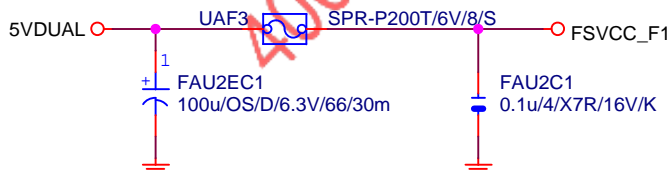
NET 可變

FUSB2X5-HS



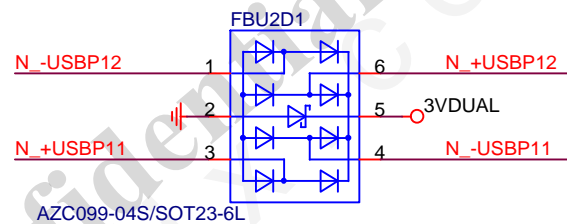
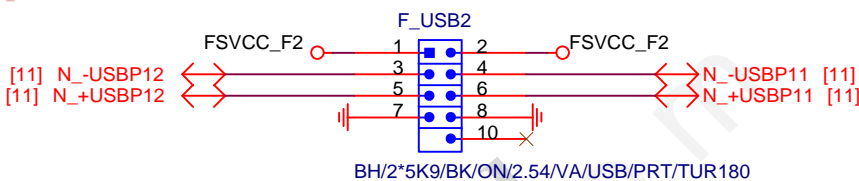
Close to connector

FUSE 2 Port 1 Fuse 2A



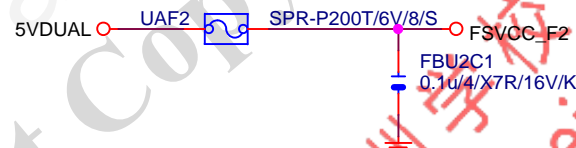
NET 可變

FUSB2X5-HS

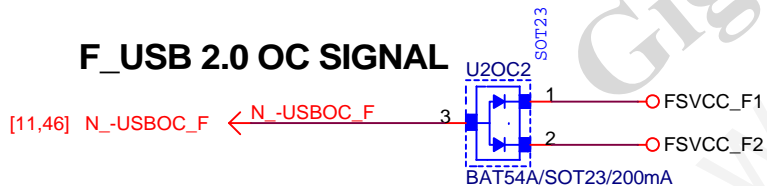


Close to connector

FUSE 2 Port 1 Fuse 2A



F\_USB 2.0 OC SIGNAL



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Title

USB2.0

Size

Document Number

GA-H170M-D3H-GSM

Date:

Monday, January 11, 2016

Sheet

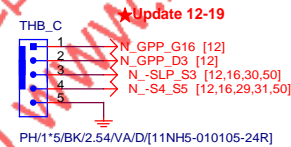
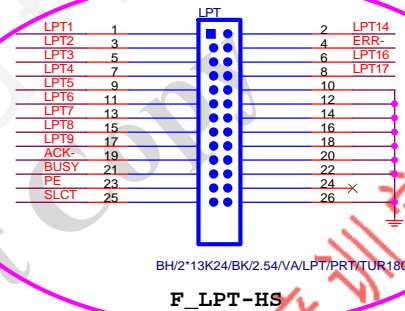
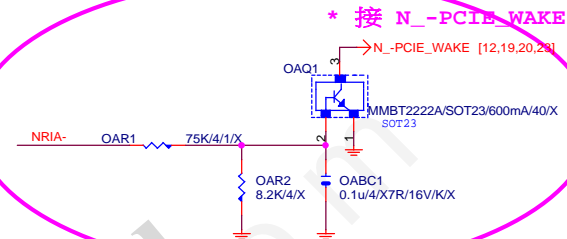
47

of

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Rev

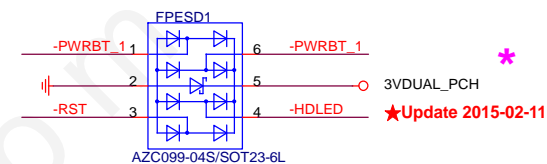
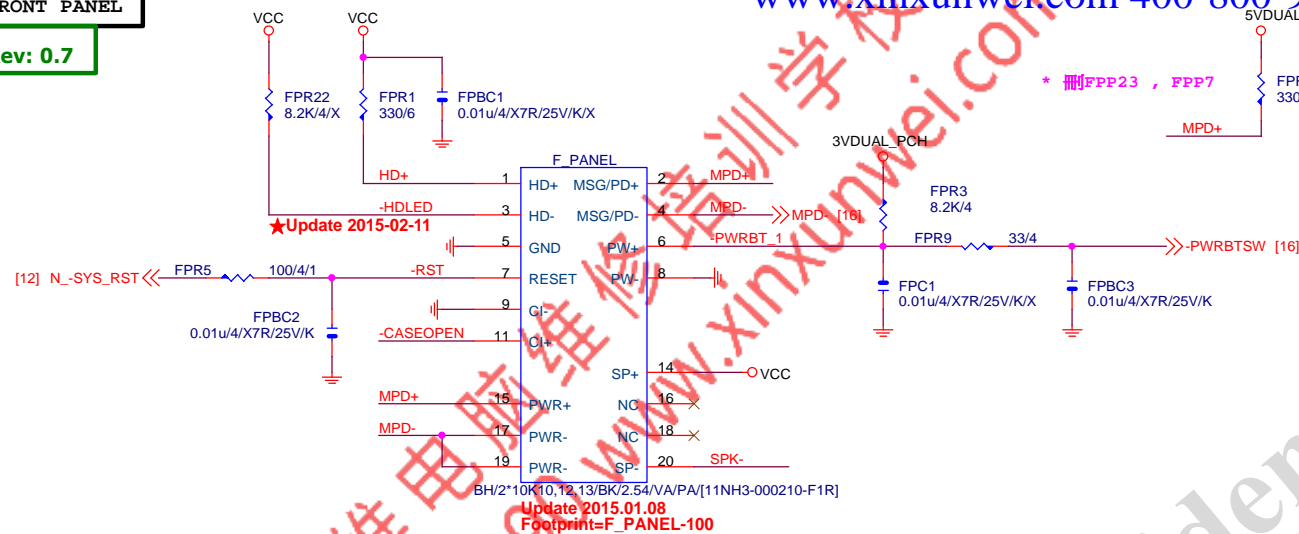
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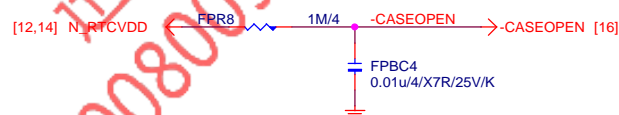


**Rev: 0.7**

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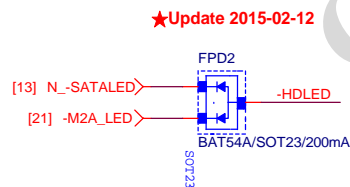


## CASE OPEN

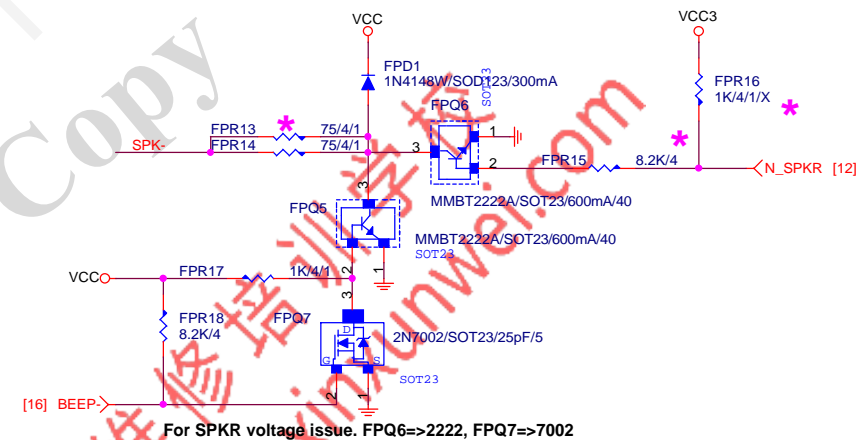


## SATA LED

SATALED# signal open-collector, pull-up (8.2 k $\Omega$  to 10 k $\Omega$ ) to Vcc3\_3



## SPKR

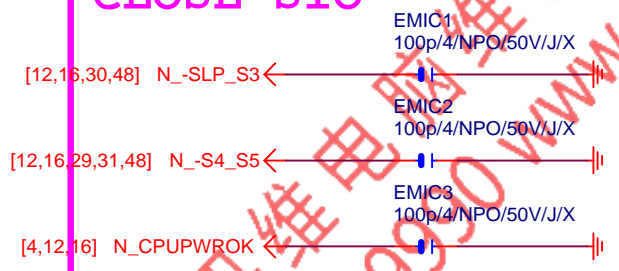


## Gigabyte Technology

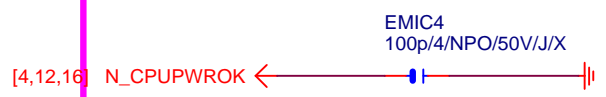
Title			
FRONT PANEL			
Size Custom	Document Number	GA-H170M-D3H-GSM	Rev 1.0
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CLOSE SIO



CLOSE PCH



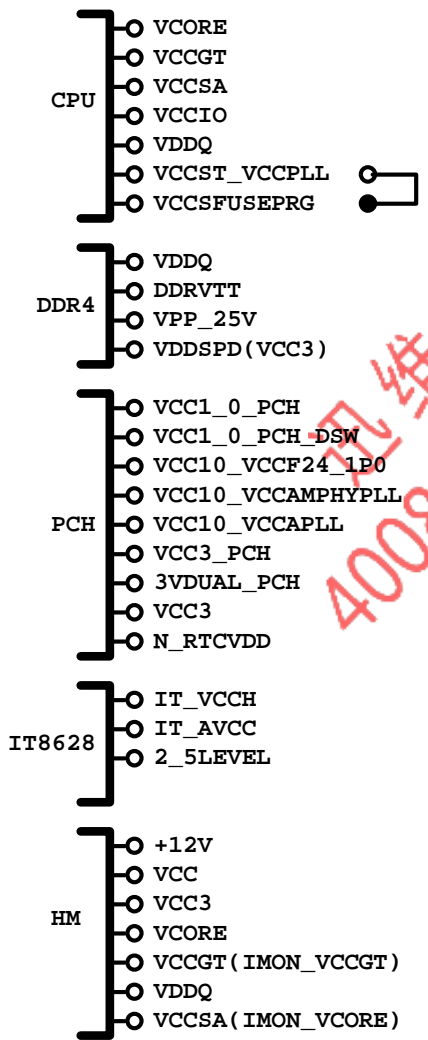
GIGABYTE™

Title		
EMI/ESD		
Size A	Document Number	Rev
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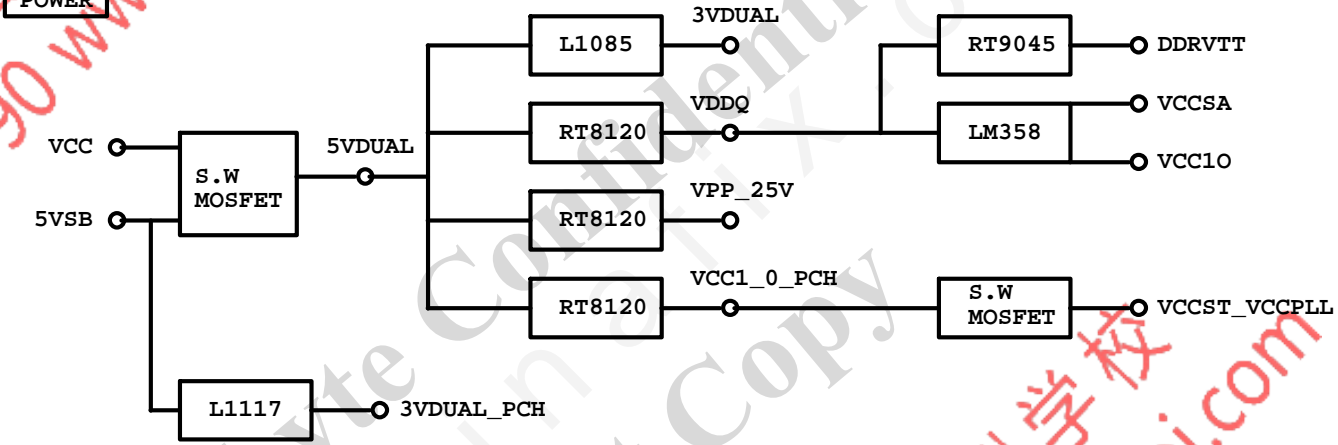
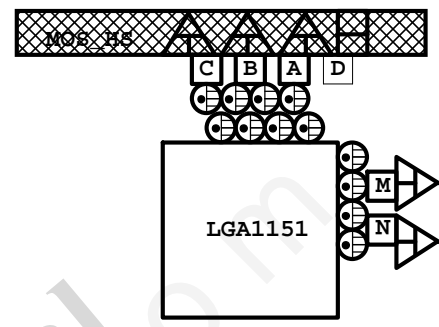
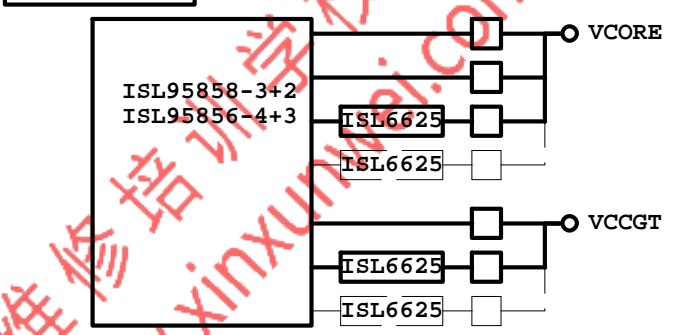
POWER BLOCK MAP

VCORE/VCCGT

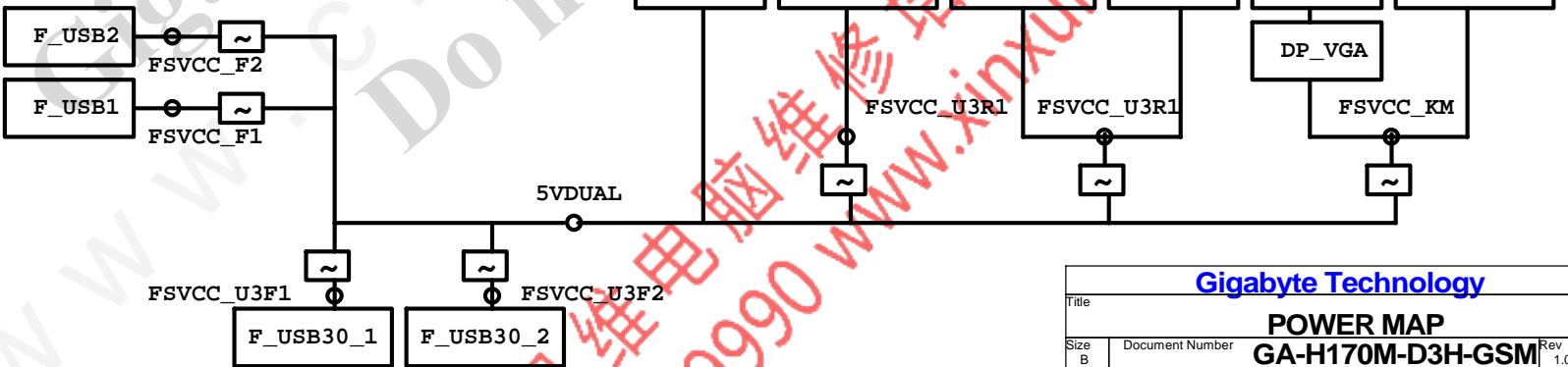
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POWER

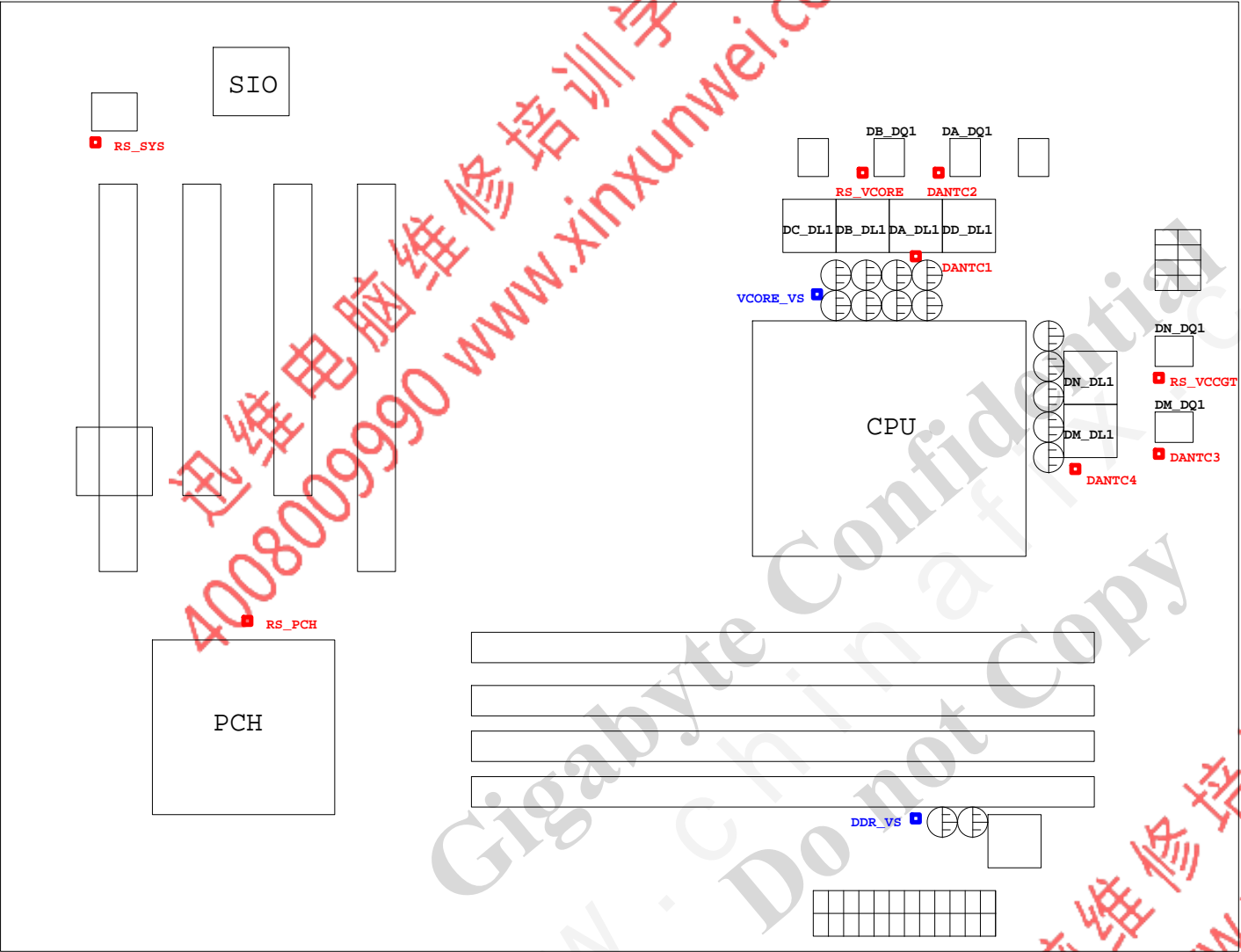


FUSE POWER F/R



Gigabyte Technology

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熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL1	N/A
DANTC2	DA_DQ1	Differential
DANTC3	DM_DQ1	N/A
DANTC4	DM_DL1	Differential
RS_VCORE	DB_DQ1	N/A
RS_VCCGT	DN_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A