

SHEET

TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1150-D
08	DDR4 CHANNEL A
09	DDR4 CHANNEL B
10	PCH_CLK BUFFER
11	PCH_DMI,USB,PCIE
12	PCH_MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH PWR
15	PCH GND
16	ITE 8686 LPC IO
17	HWM
18	FAN CTRL--SIO
19	PCI EXPRESS*16 SLOT
20	PCI EXPRESS*4 & *1 SLOT
21	
22	DUAL BIOS
23	
24	
25	
26	
27	ISL95866 PWM-IRON
28	ISL95866 VCORE-IRON

SHEET

TITLE

29	ISL95866 VCCGT-IRON
30	VCCSA_VCCIO_VCCPLL
31	RT8237_DDR_BEAD
32	RT8068A_VPP
33	RT8237_PCH-BEAD
34	DISCRETE POWER
35	NCT3933
36	ATX POWER , A_-PROCHOT
37	KB_MS_USB
38	DVI CONN
39	RTD2168 - DP to VGA - IC
40	RTD2168 - DP to VGA - Conn
41	HDMI
42	INTEL i219V
43	USB30_LAN CONNECTOR- i219V
44	Realtek ALC892
45	REAR AUDIO JACK
46	ADUIO LED
47	F_USB30
48	F_USB
49	R_USB30
50	F_PANEL
51	M.2 X4 (Q)
52	
53	COM, LPT, TPM
54	EMI-ESD
55	POWER MAP
56	NTC MAP

Gigabyte Technology

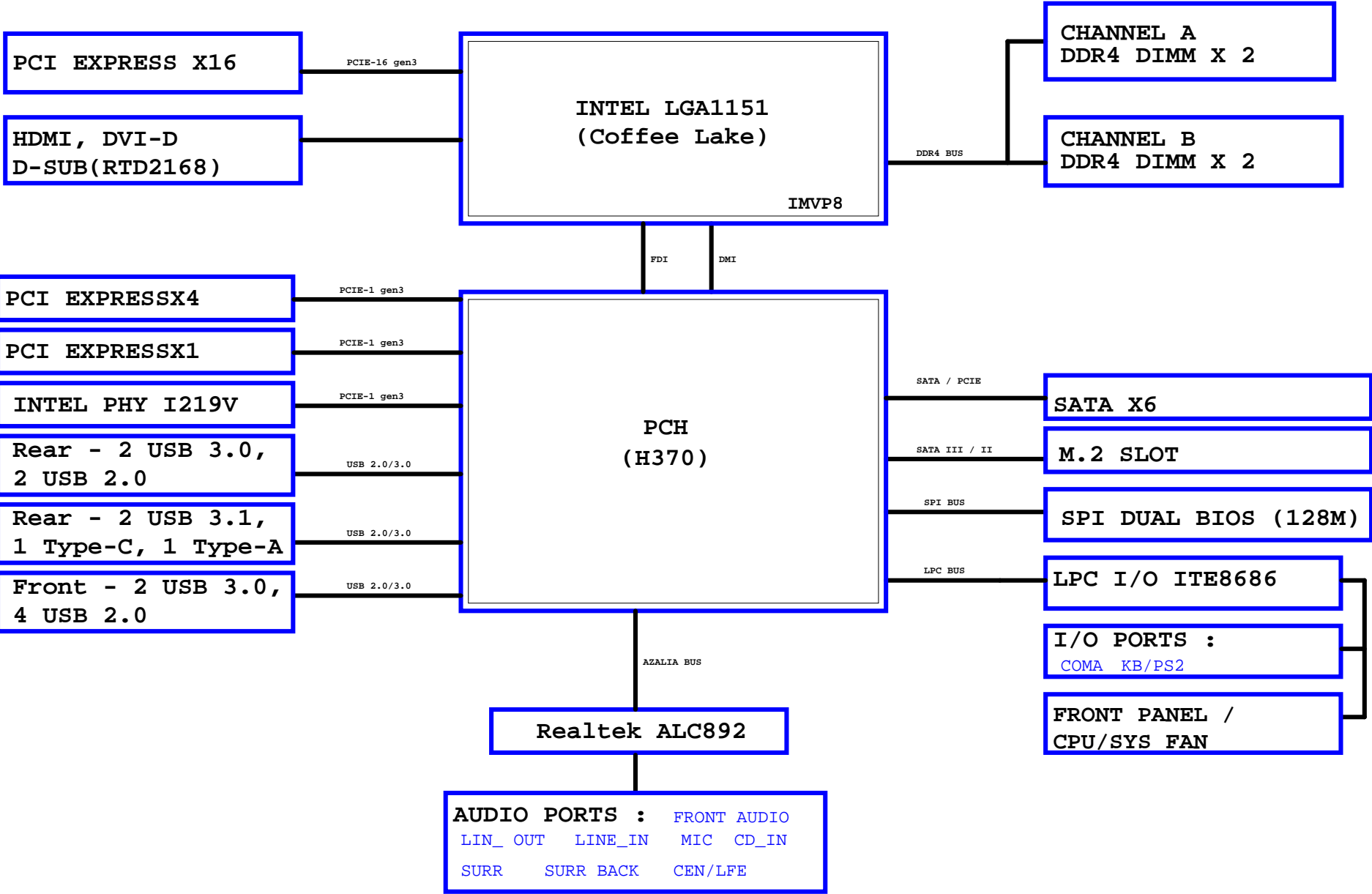
Title			Cover Sheet
Size	Document Number	H370M D3H GSM	
Custom		Rev	1.01
Date:	Monday, April 09, 2018	Sheet	1 of 58

rev1.01 Circuit or PCB layout change

## 2018/03/19

[illegible]

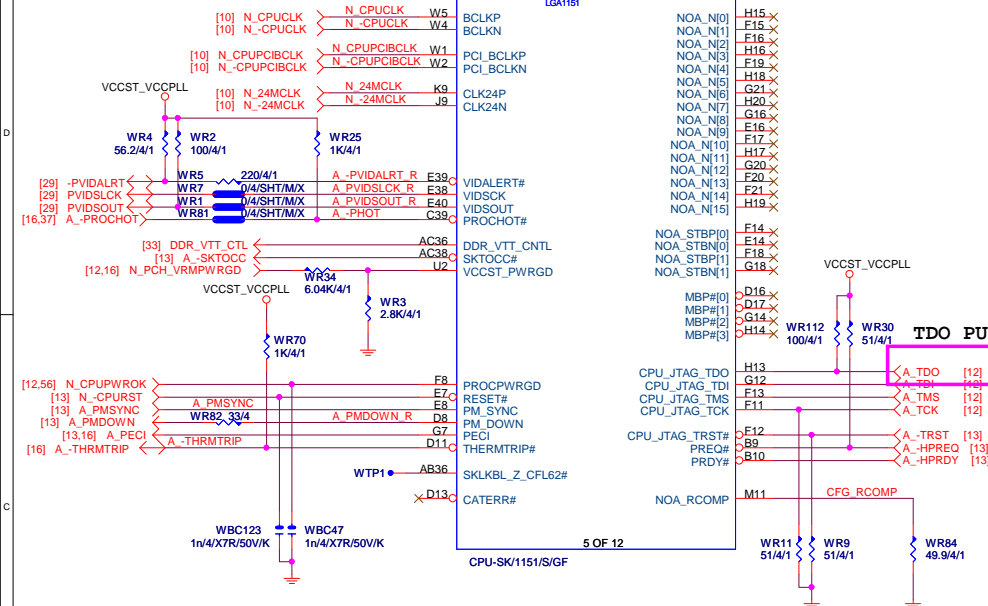
BLOCK DIAGRAM



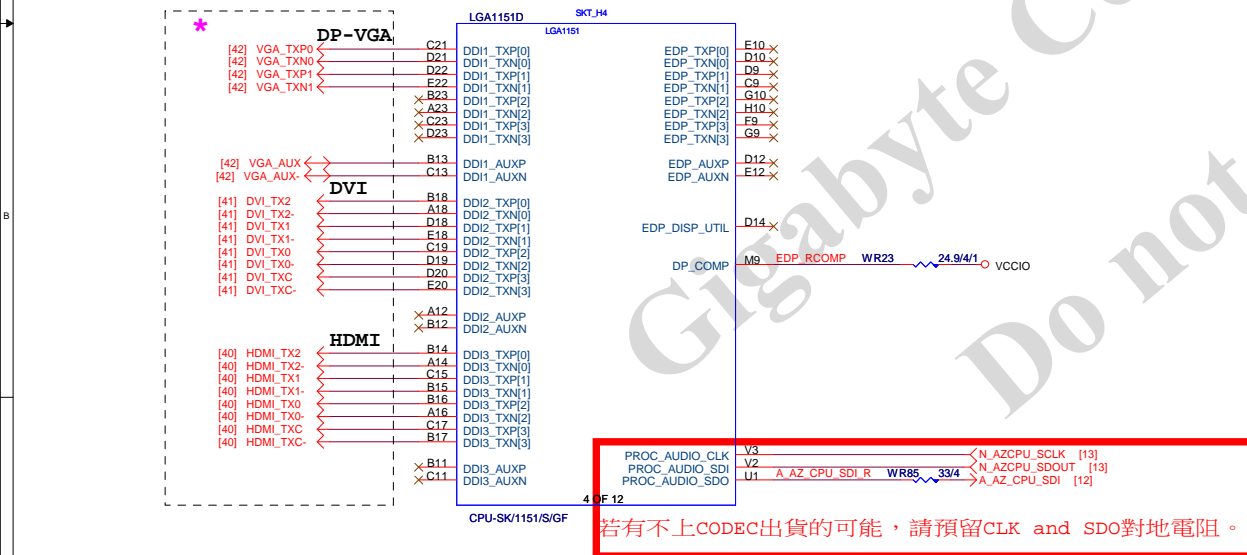
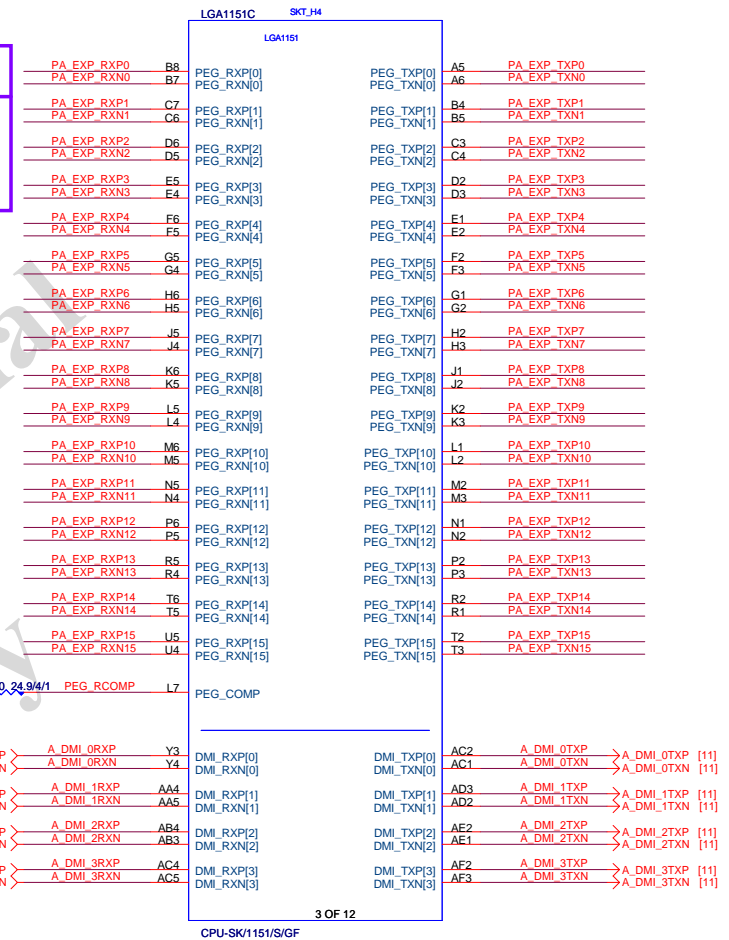
## CFL\_R0.5

```
CFG[4]: 1=eDP enable / 0=eDP disable
CFG[7]: 1=PEG Train immediately following RESET
        0=PEG Wait for BIOS
```

CFG[13]: 1=VCCSA Fixed Mode / 0=SVID Mode



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

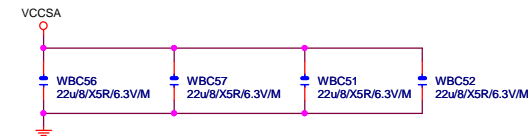


若有不上CODEC出貨的可能，請預留CLK and SDO對地電阻。

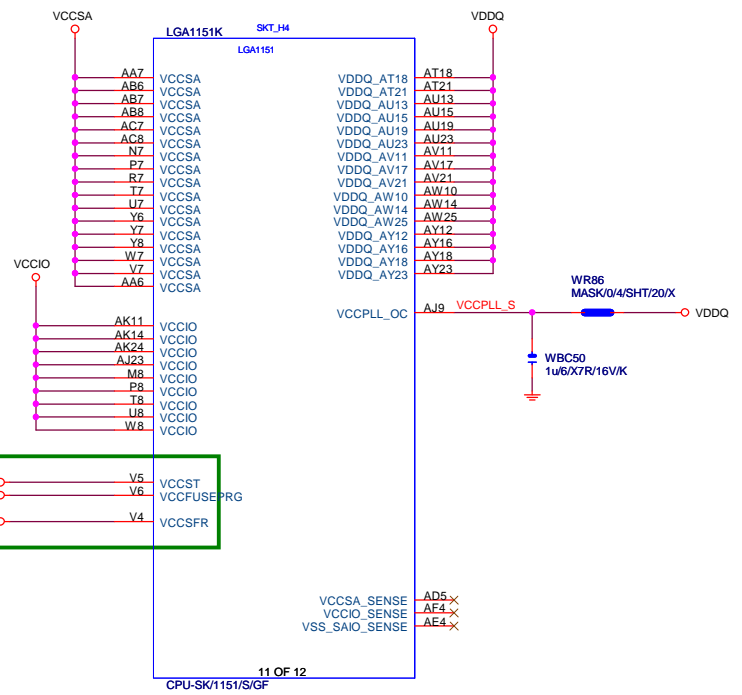
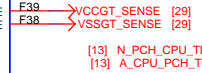
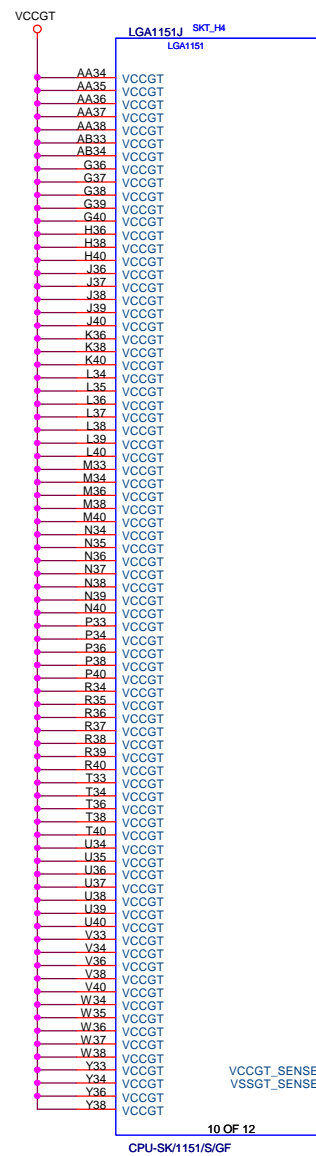
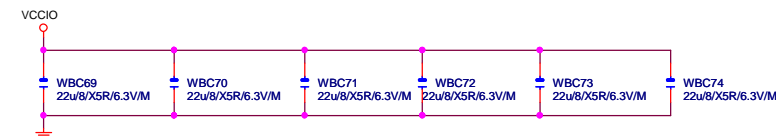
G-15u : (CPU-SK/1151/S/15)  
10SC1-F01151-11R / 10SC1-F01151-12R  
G-FL : (CPU-SK/1151/S/GF)  
10SC1-F01151-21R / 10SC1-F01151-22R

<p align="center"><b><i>Gigabyte Technology</i></b></p>				
<p>Title: <b>CPU LGA1151-A</b></p>				
Size	Document Number			Rev
Custom	<b>H370M D3H GSM</b>			<b>1.0</b>
Date:	Monday, April 09, 2018	Sheet	4	of 58

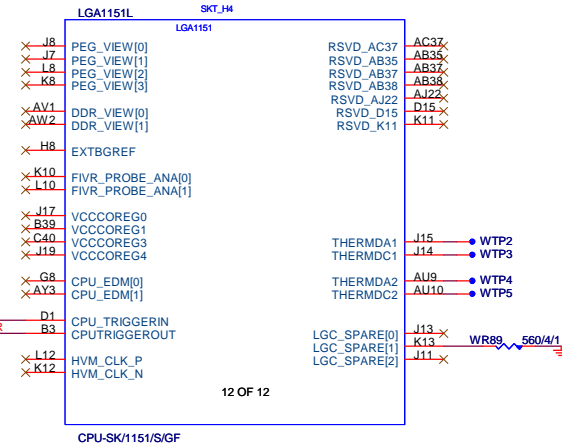
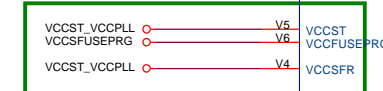


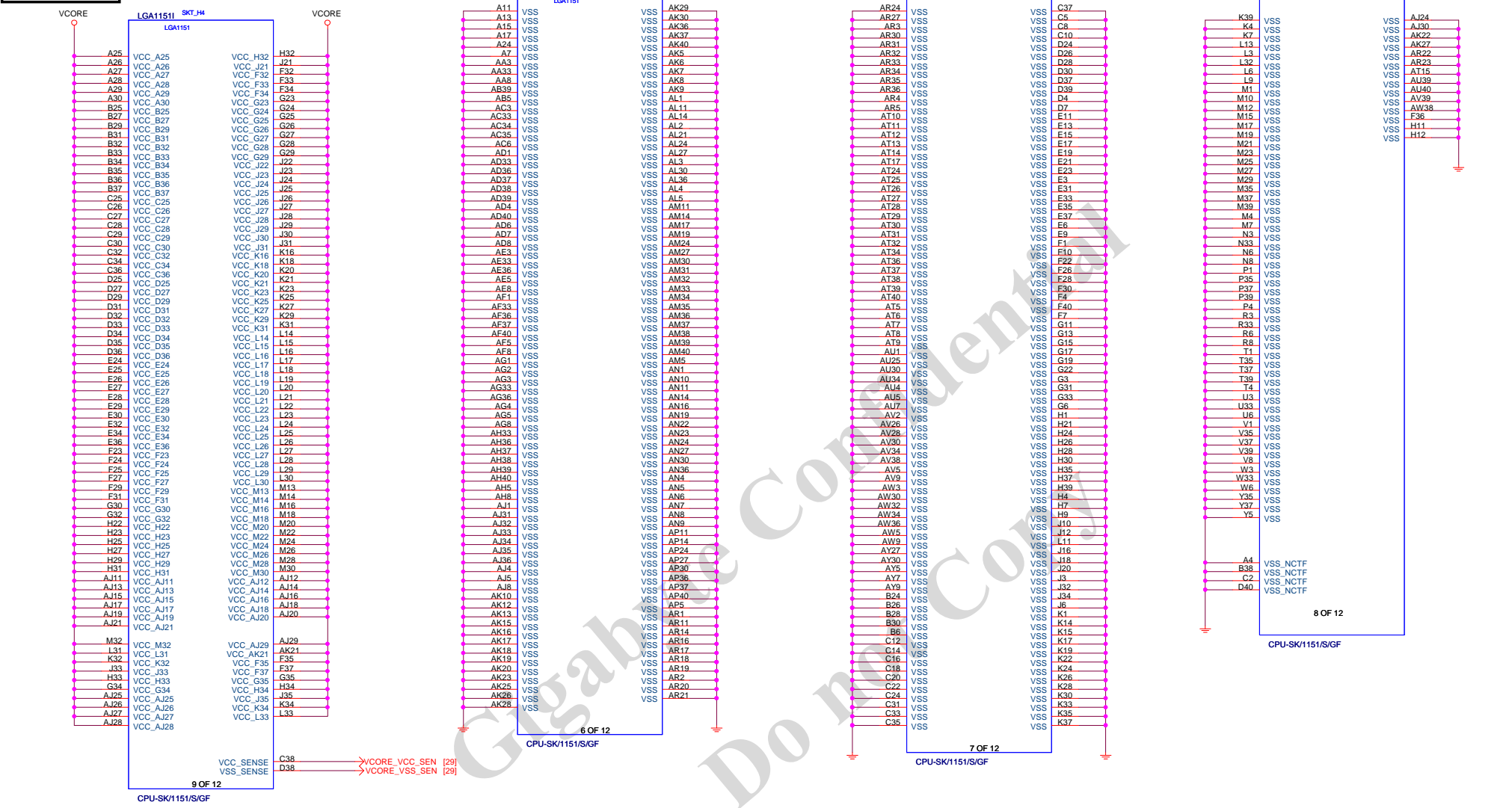


CPU POWER



CPU POWER





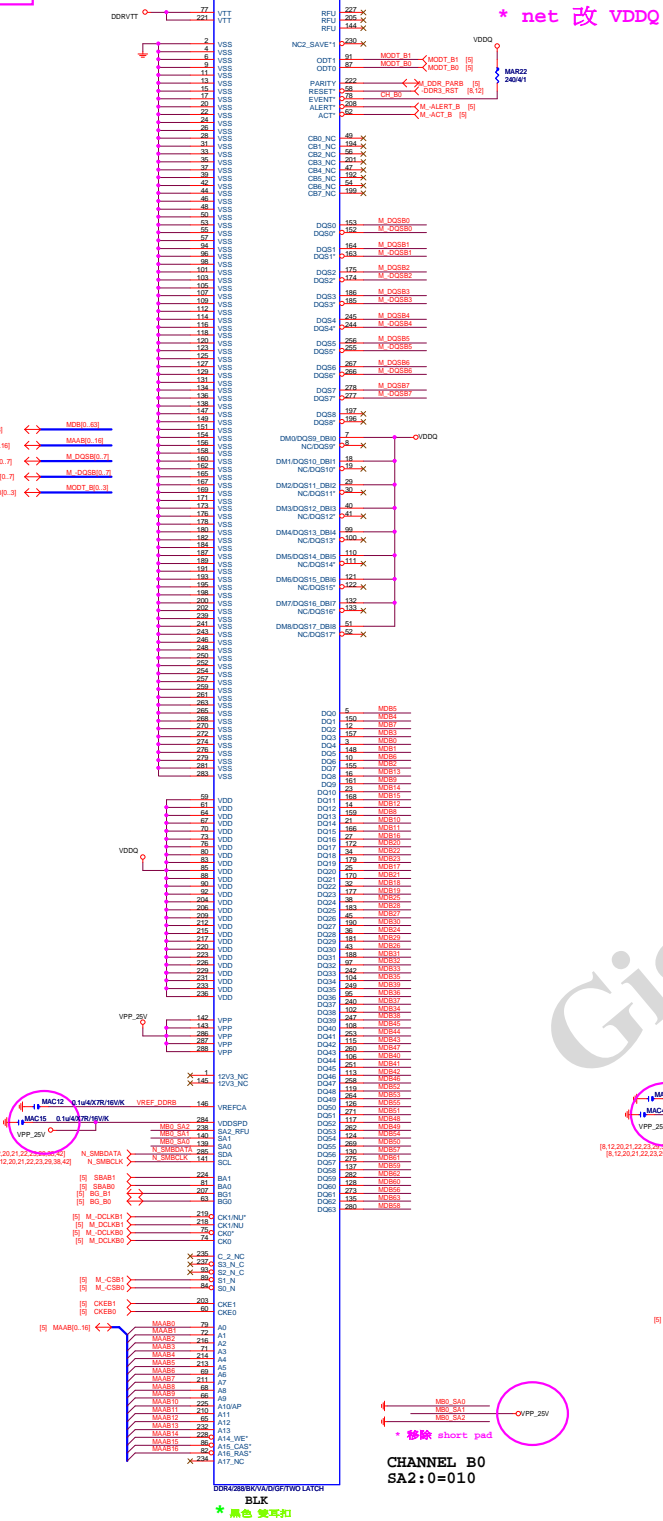






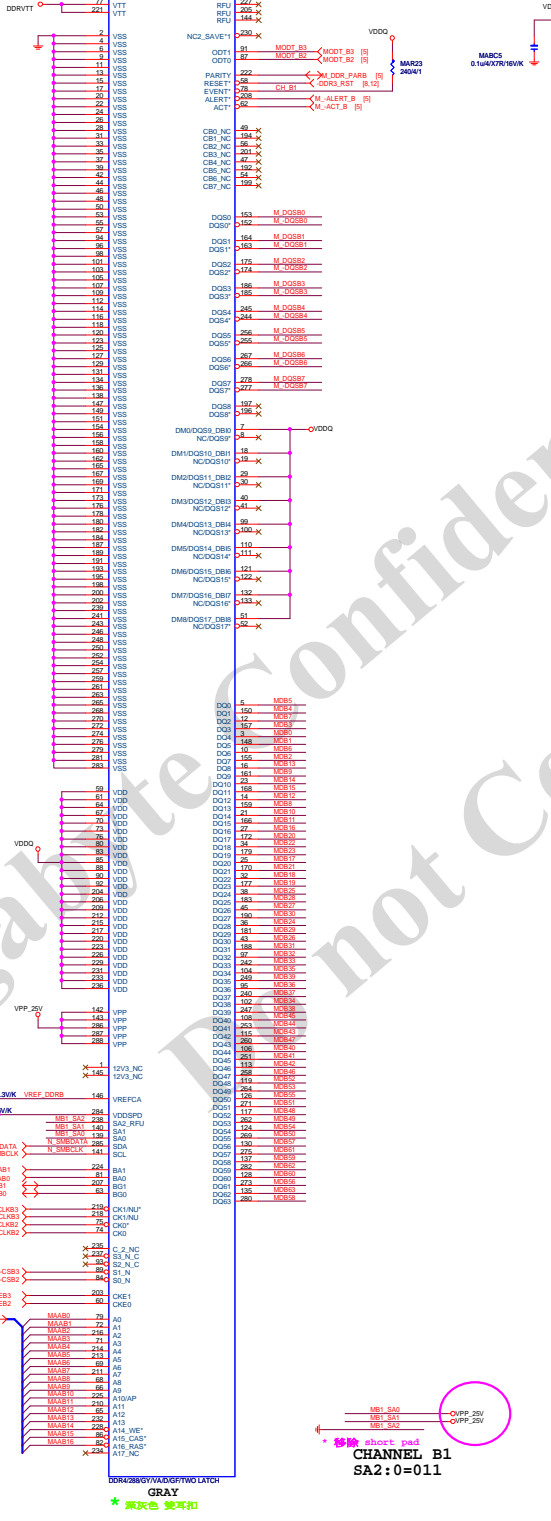
- [R] M0B0\_03] <-- M0B0\_03
- [R] MAAB0\_16] <-- MAAB0\_16
- [R] M\_DQSB0\_7] <-- M\_DQSB0\_7
- [R] M\_DQSB0\_7] <-- M\_DQSB0\_7
- [R] M0OT\_B0\_3] <-- M0OT\_B0\_3

- [R] M0B0\_03] <-- M0B0\_03
- [R] MAAB0\_16] <-- MAAB0\_16
- [R] M\_DQSB0\_7] <-- M\_DQSB0\_7
- [R] M\_DQSB0\_7] <-- M\_DQSB0\_7
- [R] M0OT\_B0\_3] <-- M0OT\_B0\_3



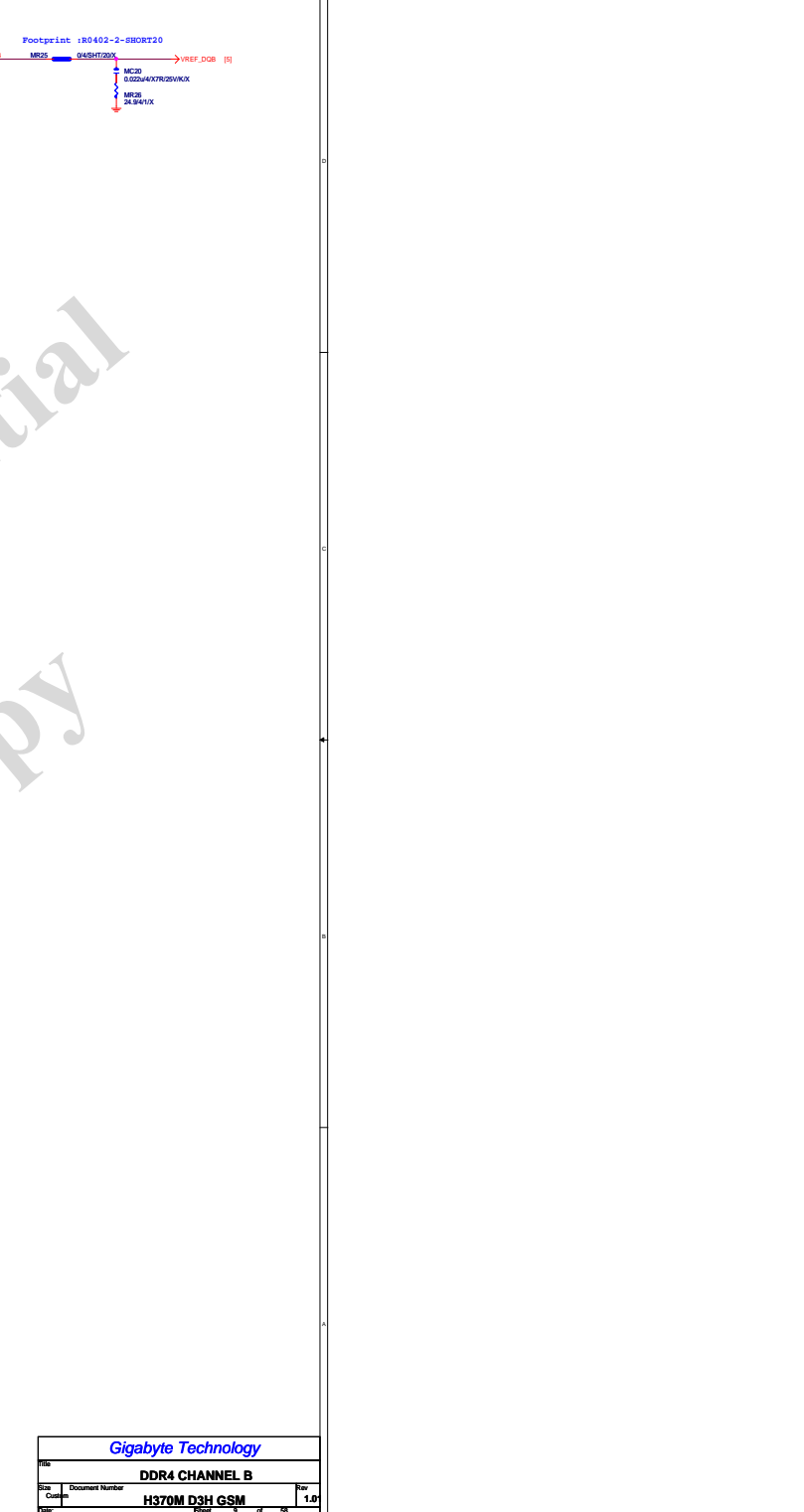
- \* net 改 VDDQ

- \* 移除 short pad

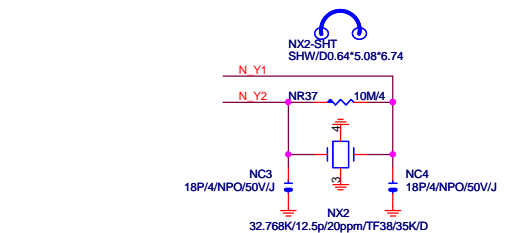
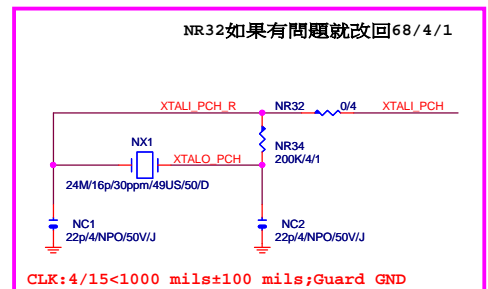
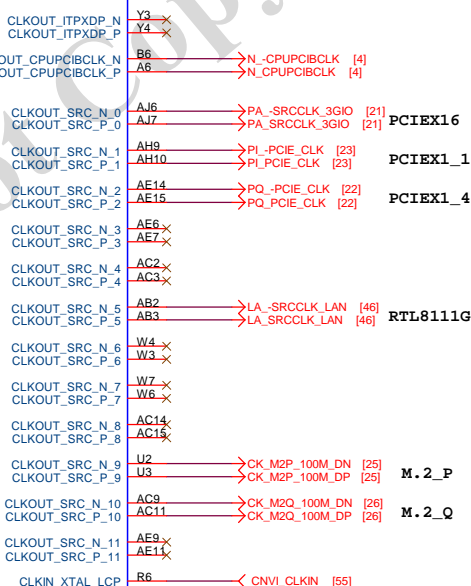
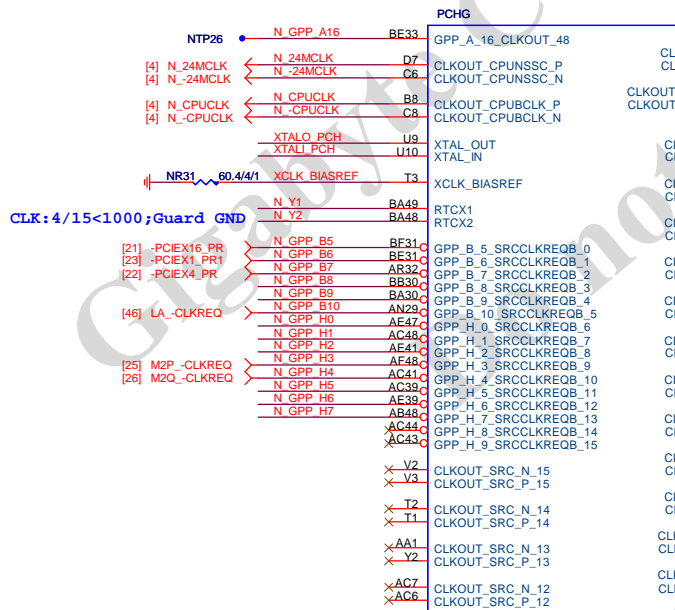
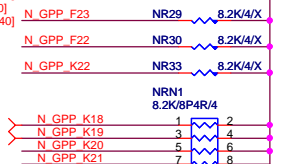
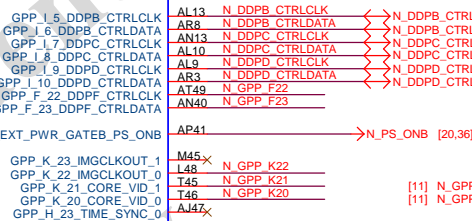
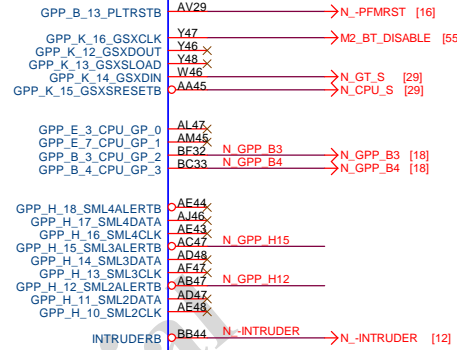
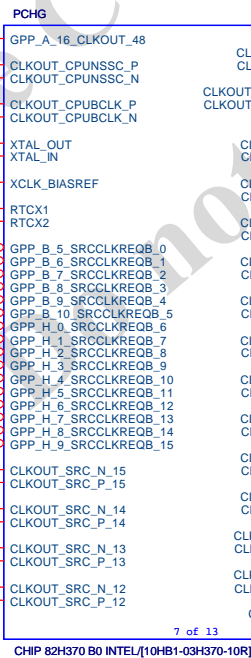
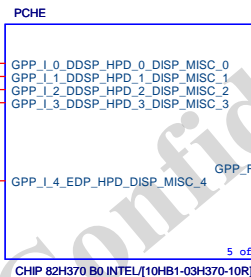
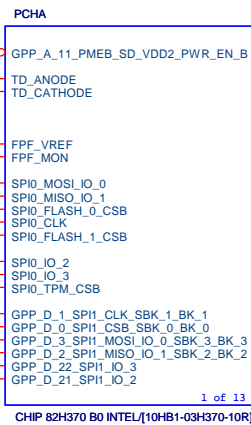
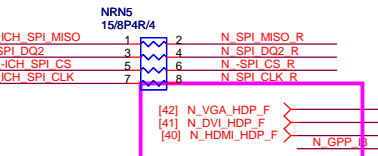
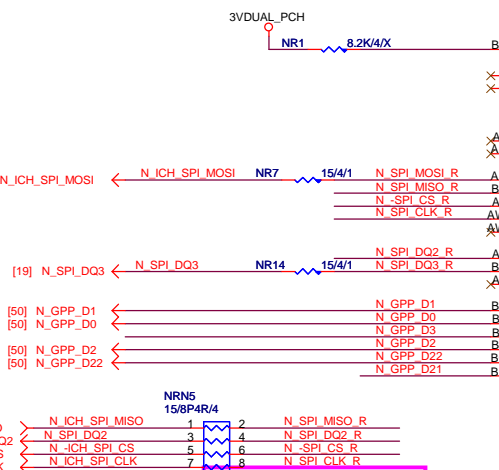
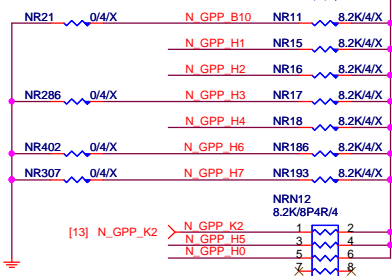
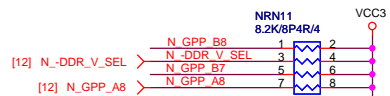


- \* net 改 VDDQ

- \* 移除 short pad



## STRAP



## CNP\_R0.1

注意左側Table及下方訊號名稱改USB31

Item	USB P1	USB P2	USB P3	USB P4	USB P5	USB P6	USB P7 PCIE P1	USB P8 PCIE P2	USB P9 PCIE P3	USB P10 PCIE P4
H310	USB3.0	USB3.0	USB3.0	USB3.0	NA	NA	NA	NA	NA	NA
B350	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	NA	NA	NA	NA
Q350	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	USB3.0	USB3.0	NA	NA
H370	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	USB3.0	USB3.0	PCIE	PCIE
Z370	USB3.1	USB3.1	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	PCIE	PCIE
Q370	USB3.1	USB3.1	USB3.1	USB3.1	USB3.1	USB3.1	USB3.0	USB3.0	PCIE	PCIE

USB pin out map

USB31\_1  
USB31\_2  
USB31\_3  
USB31\_4  
USB31\_5  
USB31\_6  
USB30\_7  
USB30\_8  
USB30\_9  
USB30\_10

PCH

DMI need to reverse

	A	DMI 3TXN	K34	DMI 0_RXN
[4] A_DMI_3TXN	>	A_DMI_3TXP	J35	DMI 0_RXP
[4] A_DMI_3RXN	>	A_DMI_3RXN	C33	DMI 0_TXN
[4] A_DMI_3RXP	>	A_DMI_3RXP	B33	DMI 0_TXP
[4] A_DMI_2TXN	>	A_DMI_2TXN	G33	DMI 1_RXN
[4] A_DMI_2TXP	>	A_DMI_2TXP	F34	DMI 1_RXP
[4] A_DMI_2RXN	>	A_DMI_2RXN	C32	DMI 1_TXN
[4] A_DMI_2RXP	>	A_DMI_2RXP	B32	DMI 1_TXP
[4] A_DMI_1TXN	>	A_DMI_1TXN	K32	DMI 2_RXN
[4] A_DMI_1TXP	>	A_DMI_1TXP	J32	DMI 2_RXP
[4] A_DMI_1RXN	>	A_DMI_1RXN	C31	DMI 2_TXN
[4] A_DMI_1RXP	>	A_DMI_1RXP	B31	DMI 2_TXP
[4] A_DMI_0TXN	>	A_DMI_0TXN	G30	DMI 3_RXN
[4] A_DMI_0TXP	>	A_DMI_0TXP	F30	DMI 3_RXP
[4] A_DMI_0RXN	>	A_DMI_0RXN	C29	DMI 3_TXN
[4] A_DMI_0RXP	>	A_DMI_0RXP	B29	DMI 3_TXP

PCHB

	A	DMI 3TXN	K34	DMI 0_RXN
[4] A_DMI_3TXN	>	A_DMI_3TXP	J35	DMI 0_RXP
[4] A_DMI_3RXN	>	A_DMI_3RXN	C33	DMI 0_TXN
[4] A_DMI_3RXP	>	A_DMI_3RXP	B33	DMI 0_TXP
[4] A_DMI_2TXN	>	A_DMI_2TXN	G33	DMI 1_RXN
[4] A_DMI_2TXP	>	A_DMI_2TXP	F34	DMI 1_RXP
[4] A_DMI_2RXN	>	A_DMI_2RXN	C32	DMI 1_TXN
[4] A_DMI_2RXP	>	A_DMI_2RXP	B32	DMI 1_TXP
[4] A_DMI_1TXN	>	A_DMI_1TXN	K32	DMI 2_RXN
[4] A_DMI_1TXP	>	A_DMI_1TXP	J32	DMI 2_RXP
[4] A_DMI_1RXN	>	A_DMI_1RXN	C31	DMI 2_TXN
[4] A_DMI_1RXP	>	A_DMI_1RXP	B31	DMI 2_TXP
[4] A_DMI_0TXN	>	A_DMI_0TXN	G30	DMI 3_RXN
[4] A_DMI_0TXP	>	A_DMI_0TXP	F30	DMI 3_RXP
[4] A_DMI_0RXN	>	A_DMI_0RXN	C29	DMI 3_TXN
[4] A_DMI_0RXP	>	A_DMI_0RXP	B29	DMI 3_TXP

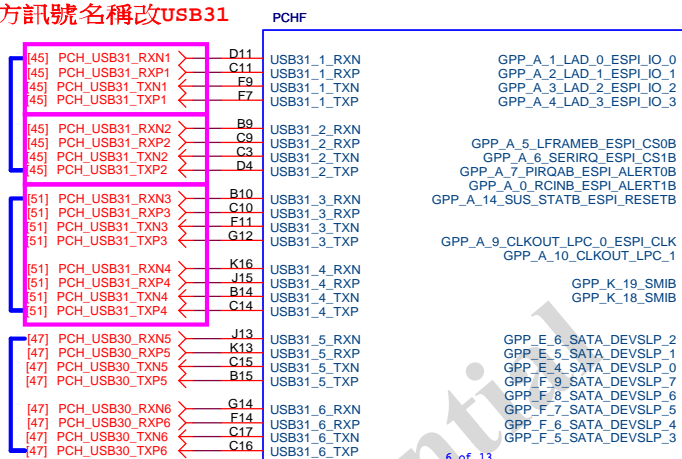
[40] PCH_USB3_RXN7	>	G17	PCIE_1_USB31_7_RXN
[40] PCH_USB3_RXP7	>	F16	PCIE_1_USB31_7_RXP
[40] PCH_USB3_TXN7	>	A17	PCIE_1_USB31_7_TXN
[40] PCH_USB3_TXP7	>	B17	PCIE_1_USB31_7_TXP
[40] PCH_USB3_RXN8	>	R21	PCIE_2_USB31_8_RXN
[40] PCH_USB3_RXP8	>	P21	PCIE_2_USB31_8_RXP
[40] PCH_USB3_TXN8	>	B18	PCIE_2_USB31_8_TXN
[40] PCH_USB3_TXP8	>	C18	PCIE_2_USB31_8_TXP
[23] PI_PCIE1_IN	>	K18	PCIE_3_USB31_9_RXN
[23] PI_PCIE1_IP	>	J18	PCIE_3_USB31_9_RXP
[23] PI_PCIE1_ON	>	B19	PCIE_3_USB31_9_TXN
[23] PI_PCIE1_OP	>	C19	PCIE_3_USB31_9_TXP

[22] PO_PCIE4_IN5	>	G20	PCIE_5_LAN_0A_RXN
[22] PO_PCIE4_IP5	>	B21	PCIE_5_LAN_0A_RXP
[22] PO_PCIE4_ON5	>	A22	PCIE_5_LAN_0A_TXN
[22] PO_PCIE4_OP5	>	K21	PCIE_5_LAN_0A_TXP
[22] PO_PCIE4_IP6	>	J21	PCIE_6_RXN
[22] PO_PCIE4_ON6	>	D21	PCIE_6_TXN
[22] PO_PCIE4_OP6	>	C21	PCIE_6_TXP
[22] PO_PCIE4_IN7	>	L24	PCIE_7_RXN
[22] PO_PCIE4_IP7	>	J24	PCIE_7_RXP
[22] PO_PCIE4_ON7	>	C23	PCIE_7_TXN
[22] PO_PCIE4_OP7	>	F24	PCIE_7_TXP
[22] PO_PCIE4_IN8	>	G24	PCIE_8_RXN
[22] PO_PCIE4_IP8	>	B24	PCIE_8_RXP
[22] PO_PCIE4_ON8	>	B24	PCIE_8_TXN
[22] PO_PCIE4_OP8	>	C24	PCIE_8_TXP

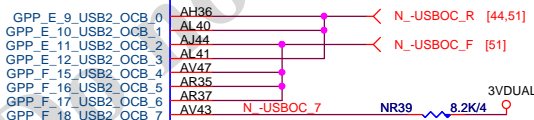
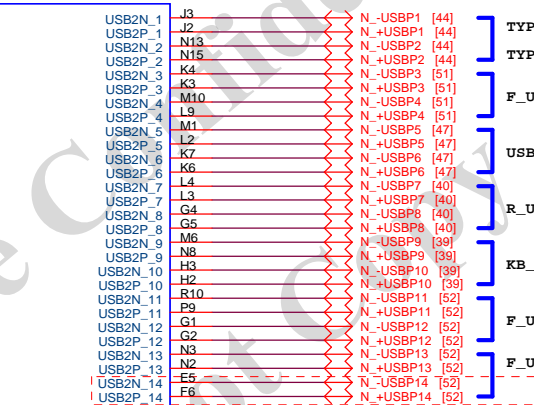
PCIEX1

PCIEX4

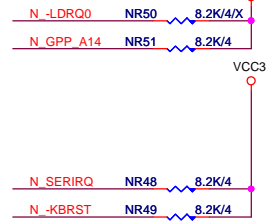
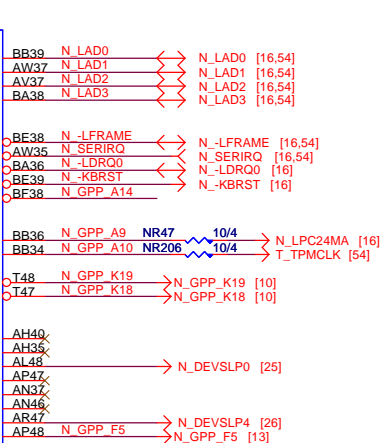
LAN\_USB30



CHIP 82H370 B0 INTEL[10HB1-03H370-10R]



CHIP 82H370 B0 INTEL[10HB1-03H370-10R]

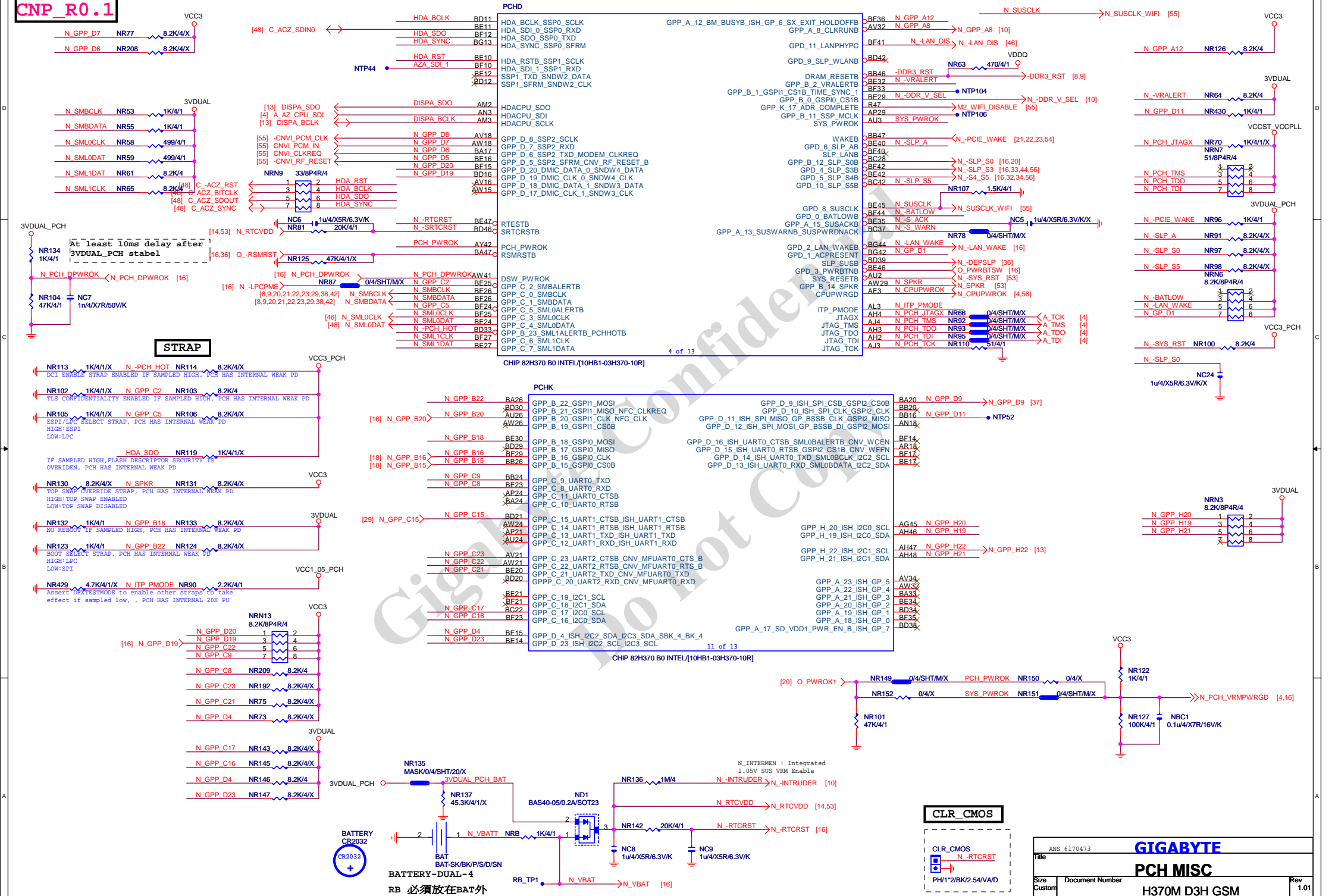
CNVI的BT功能enable時  
PCH的USB2.0 port14會被disable

STRAP

M.2 22110

ANS 6170473		GIGABYTE	
Title		PCH DMI,USB,PCIE	
Size	Document Number	H370M D3H GSM	
Custom		Rev 1.01	
Date:	Monday, April 09, 2018	Sheet	11 of 58

## CNP\_R0.1







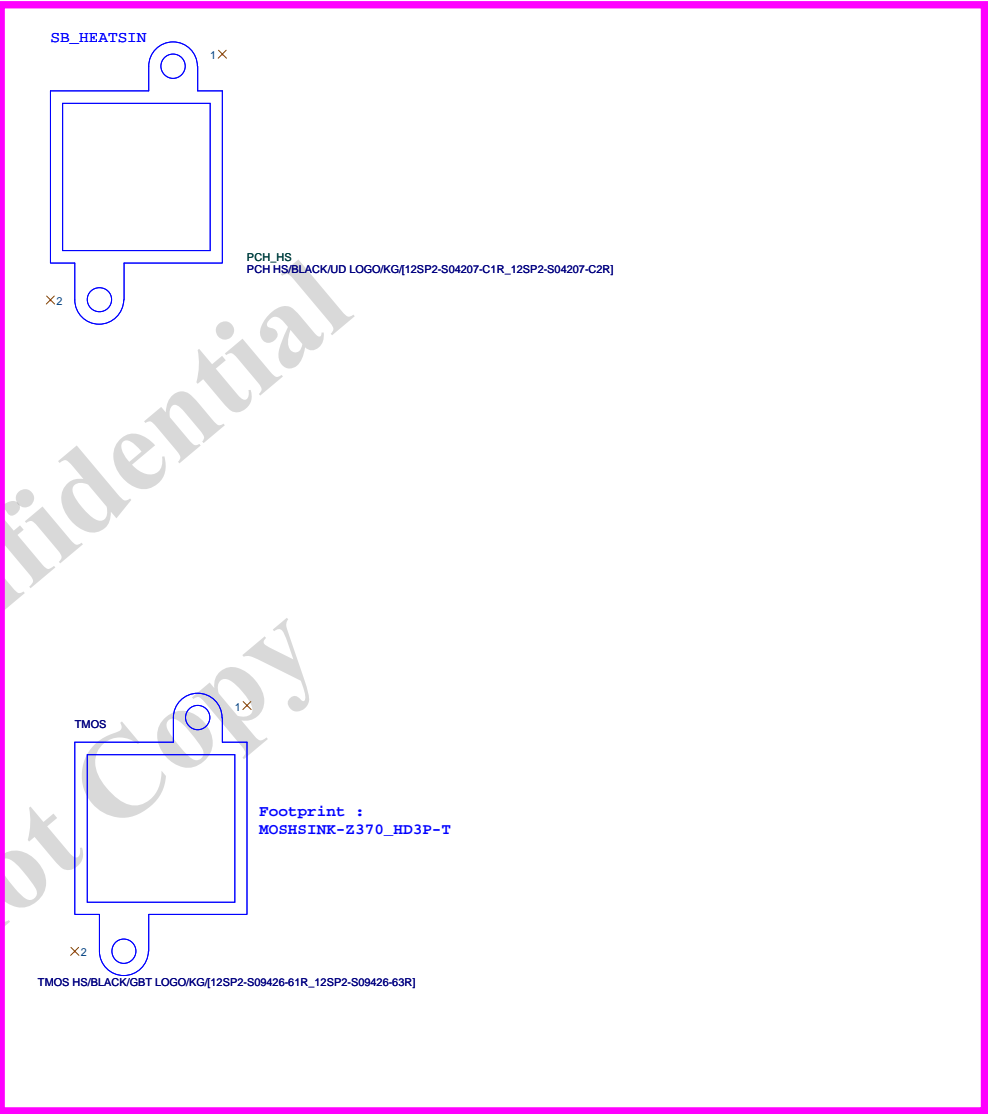


PCHL		
A2	VSS	VSS
A28	VSS	AL12
A3	VSS	AL17
A33	VSS	AL21
A37	VSS	AL24
A4	VSS	BG48
A45	VSS	AL29
A46	VSS	AL33
A47	VSS	AL38
A48	VSS	AM1
A5	VSS	AM18
A8	VSS	AM32
AA19	VSS	AM49
AA20	VSS	AN12
AA25	VSS	AN16
AA27	VSS	AN34
AA28	VSS	AN38
AA30	VSS	AP4
AA31	VSS	AP46
AA49	VSS	AR12
AA5	VSS	AR16
AB19	VSS	AR34
AB25	VSS	AR38
AB31	VSS	AT1
AC12	VSS	AT16
AC17	VSS	AT18
AC33	VSS	AT21
AC38	VSS	AT24
AC4	VSS	AT26
AC46	VSS	AT29
AD1	VSS	AT32
AD19	VSS	AT34
AD2	VSS	AT45
AD22	VSS	AV11
AD25	VSS	AV39
AD49	VSS	AW10
AE12	VSS	AW4
AE33	VSS	AW40
AE38	VSS	AW46
AE4	VSS	B47
AE46	VSS	B48
AF22	VSS	B49
AF25	VSS	BA12
AF28	VSS	BA14
AG1	VSS	BA44
AG22	VSS	BA5
AG23	VSS	BA6
AG25	VSS	BB41
AG27	VSS	BB43
AG28	VSS	BB9
AG30	VSS	M16
AG49	VSS	M18
AH12	VSS	BC13
AH17	VSS	BC15
AH33	VSS	BC19
AH38	VSS	BC24
AJ19	VSS	BC26
AJ20	VSS	BC31
AJ25	VSS	BC35
AJ27	VSS	BC40
AJ28	VSS	BC45
AJ30	VSS	BC8
AJ31	VSS	BD43
AK19	VSS	BE44
AK20	VSS	BE1
AK25	VSS	BF2
AK27	VSS	BF3
AK28	VSS	BF48
AK30	VSS	BF49
AK31	VSS	BG17
AK4	VSS	BG2
AK46	VSS	BG22
		BG25
		BG28

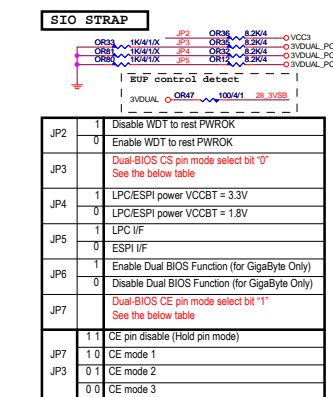
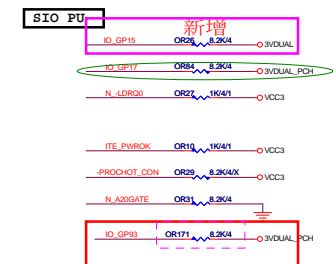
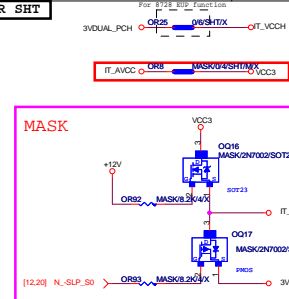
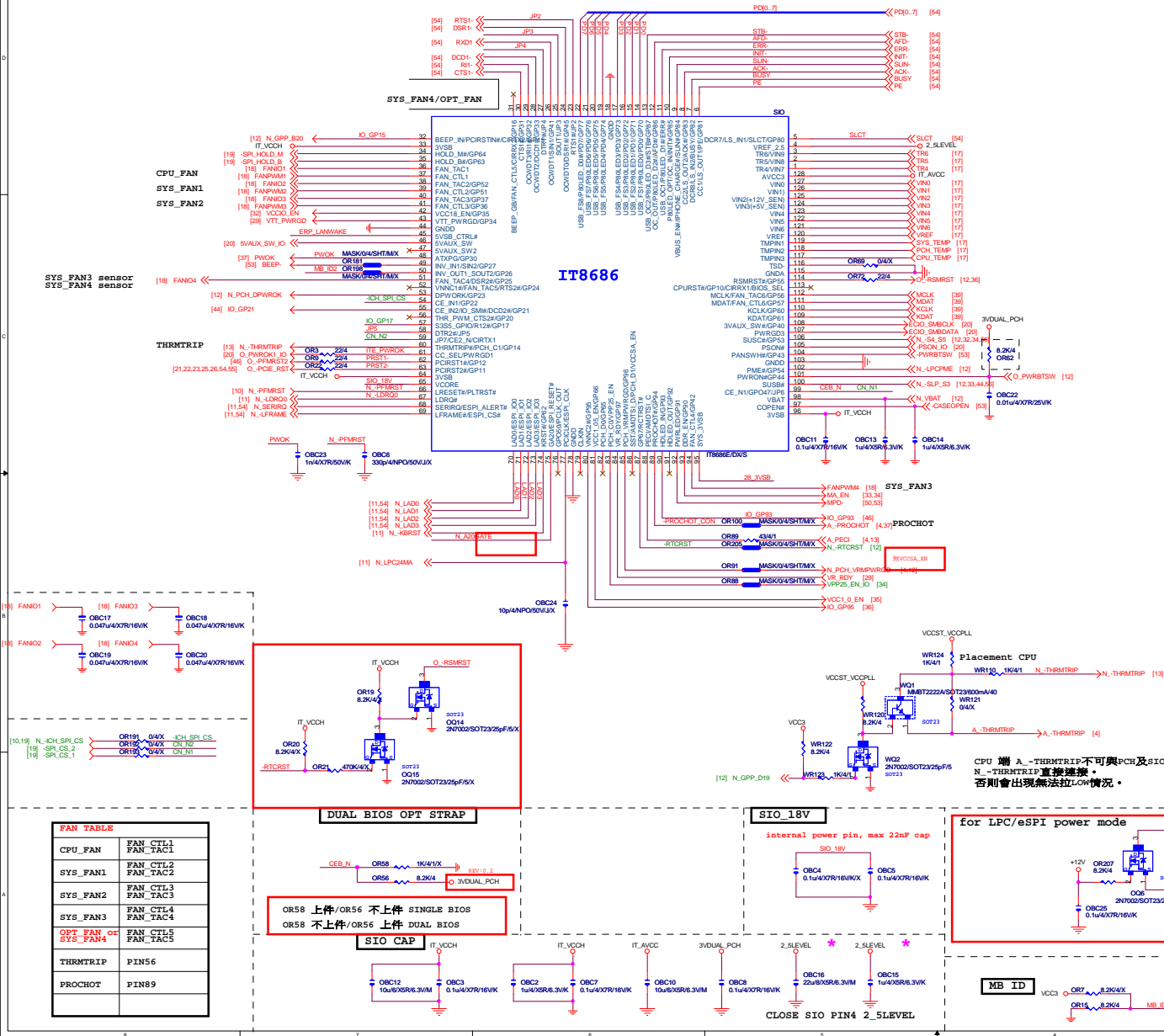
CHIP 82H370 B0 INTEL[10HB1-03H370-10R]

PCHL		
BG3	VSS	M24
BG33	VSS	M32
BG37	VSS	M34
BG4	VSS	M49
BG48	VSS	M5
C12	VSS	N12
C25	VSS	N16
C30	VSS	N34
C4	VSS	N35
C48	VSS	N37
C5	VSS	N38
D12	VSS	P26
D16	VSS	P29
D17	VSS	P4
D30	VSS	P46
D33	VSS	R12
D8	VSS	R16
E10	VSS	R26
E13	VSS	R28
E15	VSS	R3
E17	VSS	R34
E19	VSS	R38
E22	VSS	R4
E24	VSS	T17
E26	VSS	T18
E31	VSS	T32
E33	VSS	T4
E35	VSS	T49
E40	VSS	T5
E42	VSS	T7
E8	VSS	U12
F41	VSS	U15
F43	VSS	U17
F47	VSS	U21
G44	VSS	U24
G6	VSS	U33
H8	VSS	U38
J10	VSS	V20
J26	VSS	V22
J29	VSS	V4
J4	VSS	V46
J40	VSS	W25
J46	VSS	W27
J47	VSS	W28
J48	VSS	W30
J9	VSS	Y10
K11	VSS	Y12
K39	VSS	Y17
M16	VSS	Y33
M18	VSS	Y38
M21	VSS	Y9

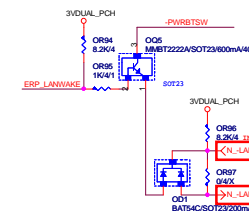
CHIP 82H370 B0 INTEL[10HB1-03H370-10R]





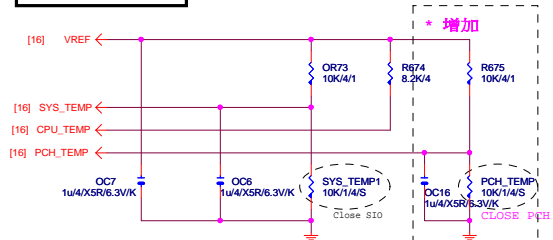


(組糖二) INTEL219 LAN( Single LAN)

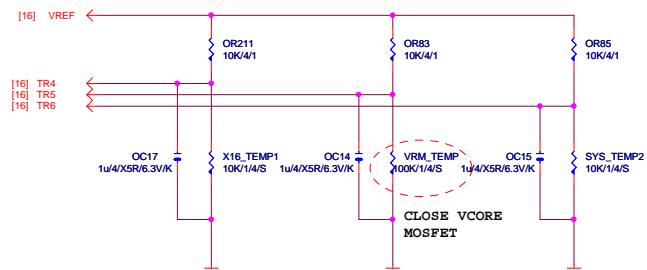


ERP Wake on LAN		
Single LAN	Realtek	組態一
	Atheros	
	Intel 219	組態二
Dual LAN (只可 LAN+Wake ERP下 Wake up)	Atheros+Atheros	組態一
	Intel 219+Atheros	組態三
	Intel 219+Intel 210	
No Support ERP	Single LAN BOM只上OR97。 Dual LAN BOM只上OR97、OR99。	

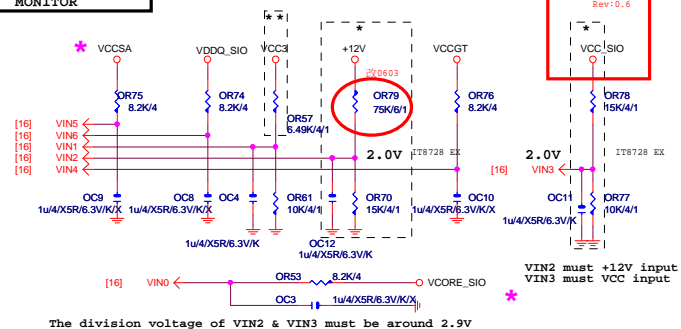
# TEMP H/W MONITOR



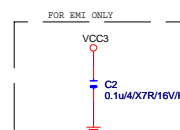
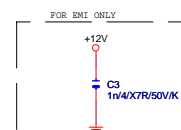
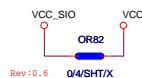
## 5個FAN時使用



# VOLTAGE-- H/W MONITOR



## (靠近ATX CONNECTOR )

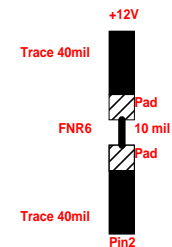


★Update 2015-04.24

## Gigabyte Technology

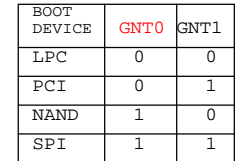
Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	H370M D3H GSM	1.01	
Date	Monday, April 03, 2016	Sheet	17 of 58

## Rev: 0.8




biology	Rev
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Title			
FAN CTRL			
Size	Document Number	Rev	
Custom	H370M D3H GSM	1.0	
Date:	Monday, April 09, 2018	Sheet	18 of 58



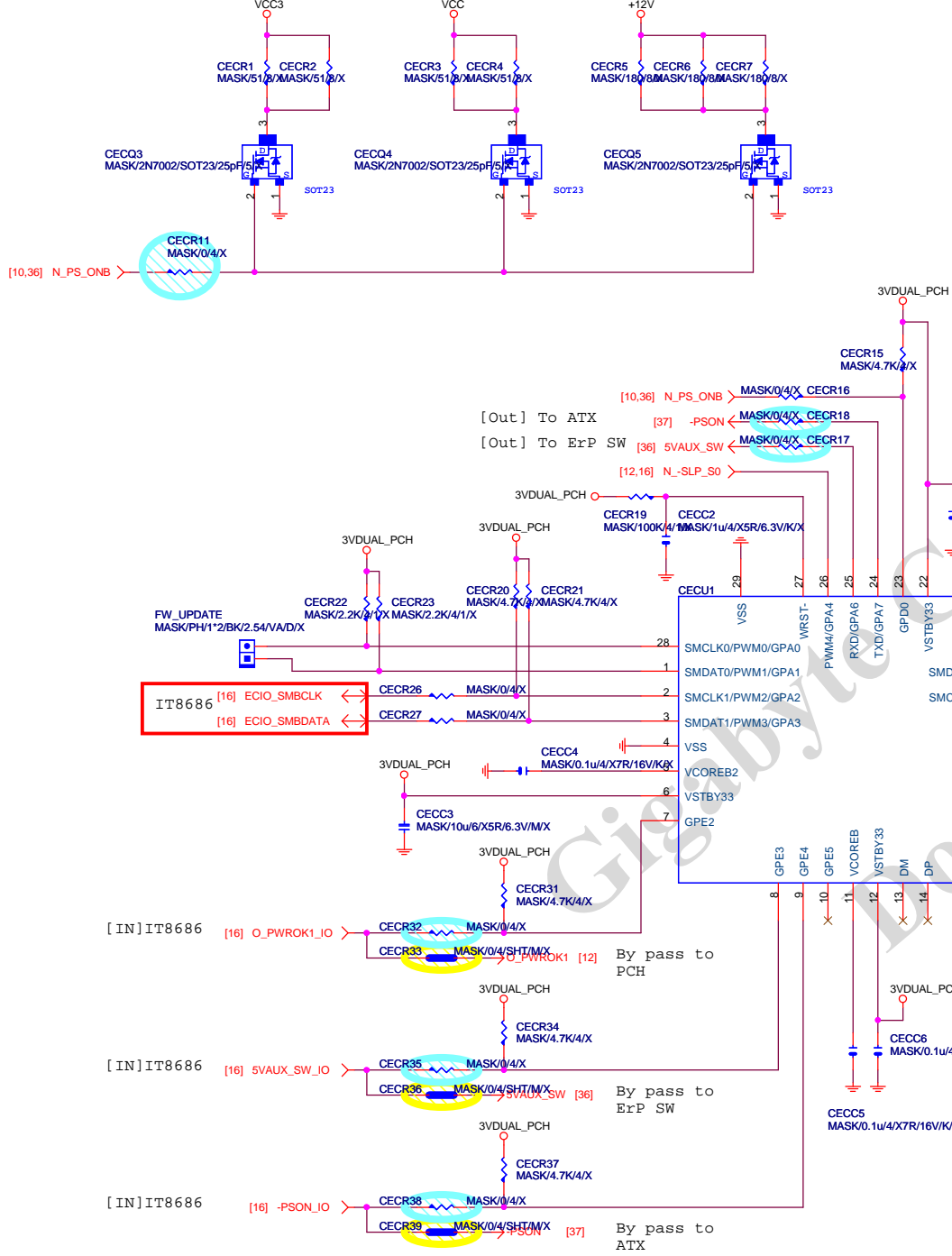
M BIOS



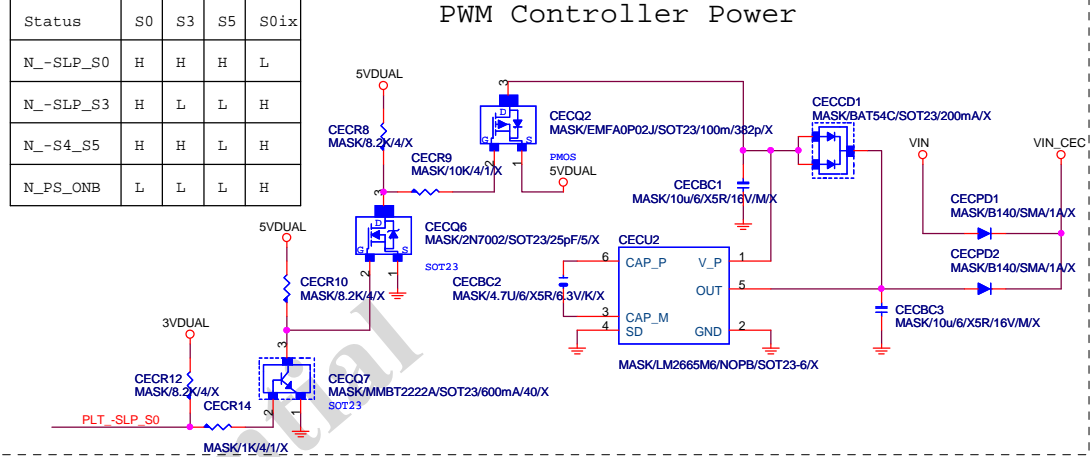
LCP/G-FU/1.27mm/200MIL/WHITE[10SL2-000008-31R]/X

\* 試產先上，PVT 移除

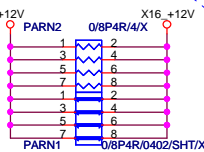
ATX Power Discharge



PWM Controller Power



+12 - protect  
short-wire test



[8,9,12,20,22,23,29,38,42] N\_SMBCLK  
[8,9,12,20,22,23,29,38,42] N\_SMBDATA

[12,22,23,54] N\_-PCIE\_WAKE

[10] -PCIE16\_PR

PA\_EXP\_RXP[0..15] >> PA\_EXP\_RXP[0..15] [4]  
PA\_EXP\_RXN[0..15] >> PA\_EXP\_RXN[0..15] [4]  
PA\_EXP\_TXP[0..15] >> PA\_EXP\_TXP[0..15] [4]  
PA\_EXP\_TXN[0..15] >> PA\_EXP\_TXN[0..15] [4]

PA_EXP_TXP0	PAC5	0.22u4/X5R6.3V/K	PA_EXP_TXP0_C
PA_EXP_TXN0	PAC4	0.22u4/X5R6.3V/K	PA_EXP_TXN0_C
PA_EXP_TXP1	PAC6	0.22u4/X5R6.3V/K	PA_EXP_TXP1_C
PA_EXP_TXN1	PAC7	0.22u4/X5R6.3V/K	PA_EXP_TXN1_C
PA_EXP_TXP2	PAC8	0.22u4/X5R6.3V/K	PA_EXP_TXP2_C
PA_EXP_TXN2	PAC9	0.22u4/X5R6.3V/K	PA_EXP_TXN2_C
PA_EXP_TXP3	PAC10	0.22u4/X5R6.3V/K	PA_EXP_TXP3_C
PA_EXP_TXN3	PAC11	0.22u4/X5R6.3V/K	PA_EXP_TXN3_C
PA_EXP_TXP4	PAC12	0.22u4/X5R6.3V/K	PA_EXP_TXP4_C
PA_EXP_TXN4	PAC13	0.22u4/X5R6.3V/K	PA_EXP_TXN4_C
PA_EXP_TXP5	PAC14	0.22u4/X5R6.3V/K	PA_EXP_TXP5_C
PA_EXP_TXN5	PAC15	0.22u4/X5R6.3V/K	PA_EXP_TXN5_C
PA_EXP_TXP6	PAC16	0.22u4/X5R6.3V/K	PA_EXP_TXP6_C
PA_EXP_TXN6	PAC17	0.22u4/X5R6.3V/K	PA_EXP_TXN6_C
PA_EXP_TXP7	PAC18	0.22u4/X5R6.3V/K	PA_EXP_TXP7_C
PA_EXP_TXN7	PAC19	0.22u4/X5R6.3V/K	PA_EXP_TXN7_C
PA_EXP_TXP8	PAC21	0.22u4/X5R6.3V/K	PA_EXP_TXP8_C
PA_EXP_TXN8	PAC20	0.22u4/X5R6.3V/K	PA_EXP_TXN8_C
PA_EXP_TXP9	PAC22	0.22u4/X5R6.3V/K	PA_EXP_TXP9_C
PA_EXP_TXN9	PAC23	0.22u4/X5R6.3V/K	PA_EXP_TXN9_C
PA_EXP_TXP10	PAC24	0.22u4/X5R6.3V/K	PA_EXP_TXP10_C
PA_EXP_TXN10	PAC25	0.22u4/X5R6.3V/K	PA_EXP_TXN10_C
PA_EXP_TXP11	PAC26	0.22u4/X5R6.3V/K	PA_EXP_TXP11_C
PA_EXP_TXN11	PAC27	0.22u4/X5R6.3V/K	PA_EXP_TXN11_C
PA_EXP_TXP12	PAC28	0.22u4/X5R6.3V/K	PA_EXP_TXP12_C
PA_EXP_TXN12	PAC29	0.22u4/X5R6.3V/K	PA_EXP_TXN12_C
PA_EXP_TXP13	PAC30	0.22u4/X5R6.3V/K	PA_EXP_TXP13_C
PA_EXP_TXN13	PAC31	0.22u4/X5R6.3V/K	PA_EXP_TXN13_C
PA_EXP_TXP14	PAC32	0.22u4/X5R6.3V/K	PA_EXP_TXP14_C
PA_EXP_TXN14	PAC33	0.22u4/X5R6.3V/K	PA_EXP_TXN14_C
PA_EXP_TXP15	PAC34	0.22u4/X5R6.3V/K	PA_EXP_TXP15_C
PA_EXP_TXN15	PAC35	0.22u4/X5R6.3V/K	PA_EXP_TXN15_C

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--> 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

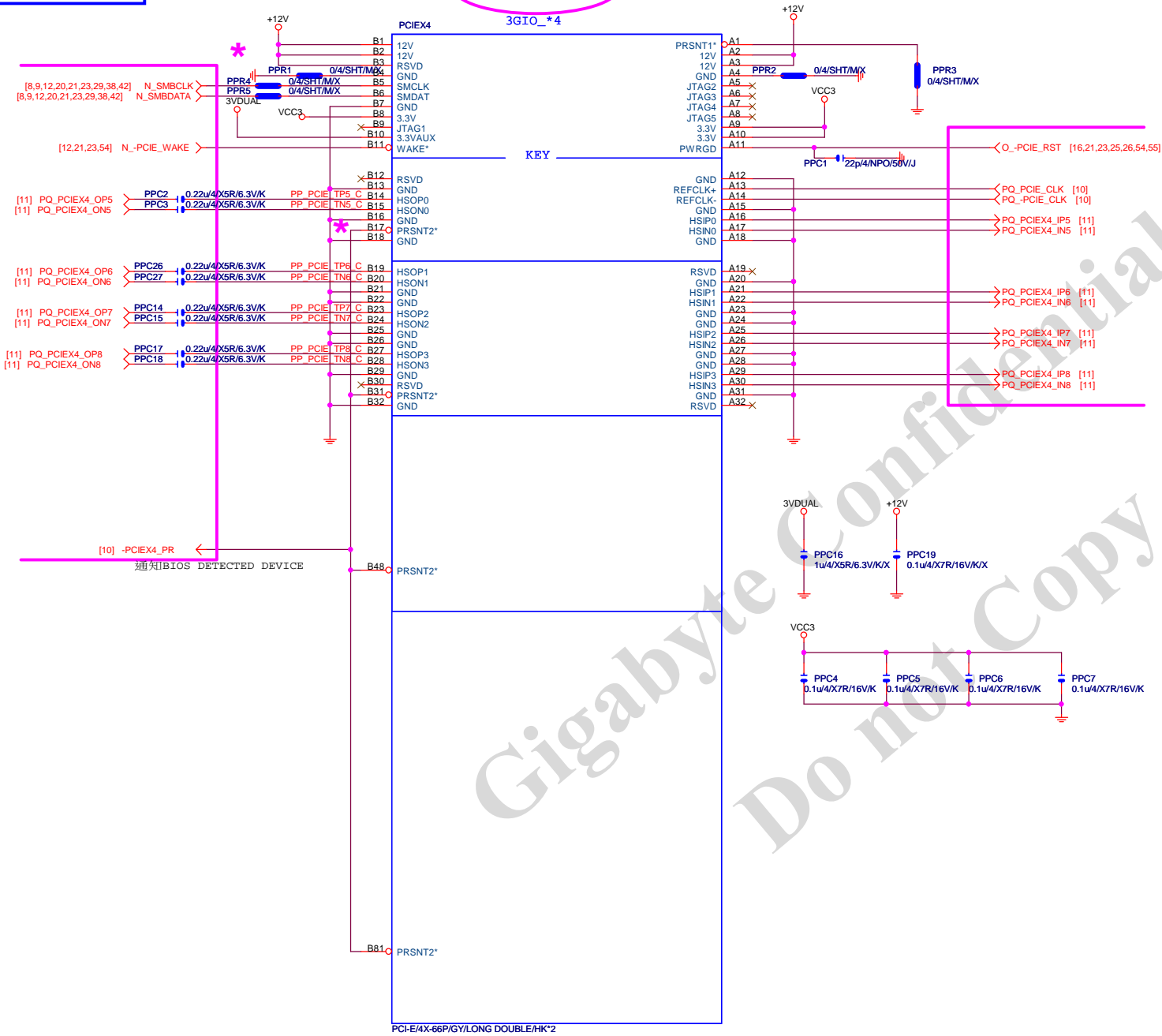
PCI-E REV:2.0--> 5GHZ

PCIESLOT-164P

3GIO\_\*16

PCI-E/16X-164P/GY/LONG DOUBLE/HK/2

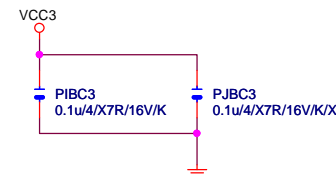
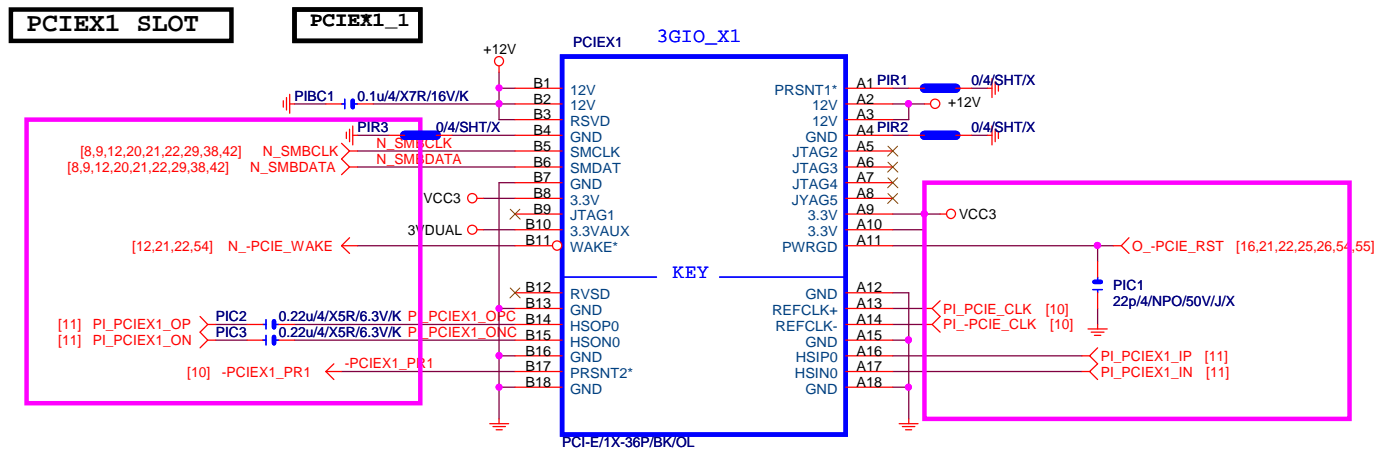
灰色SLOT



灰色

Gigabyte Technology			
Title		PCIE_X4	
Size	Document Number	H370M D3H GSM	
Custom		Rev 1.01	
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**Gigabyte Technology**

Title

**PCIE\_X4**

Size

Document Number

**H370M D3H GSM**

Rev

**1.01**

Date:

Monday, April 09, 2018

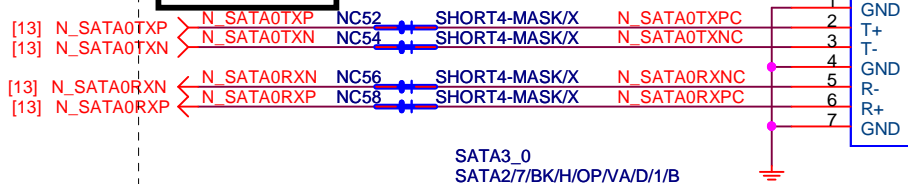
Sheet

23

of

58

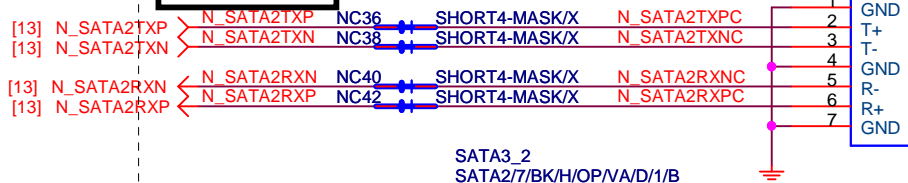
### SATA3 0/1



BLACK CONNECTOR

SATA3\_1  
SATA2/7/BK/H/OP/VA/D/1/B

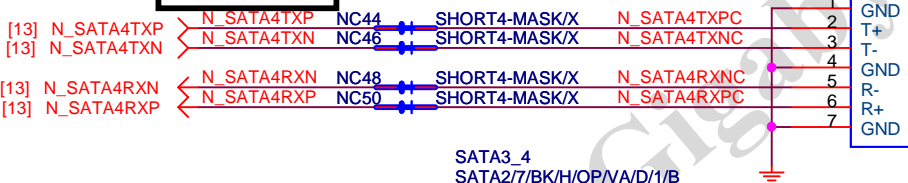
### SATA3 2/3



BLACK CONNECTOR

SATA3\_3  
SATA2/7/BK/H/OP/VA/D/1/B

### SATA3 4/5



BLACK CONNECTOR

SATA3\_5  
SATA2/7/BK/H/OP/VA/D/1/B

Gigabyte Technology

Title

SATA

Size  
Custom

Document Number

H370M D3H GSM

Rev

1.01

Date: Monday, April 09, 2018

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Rev 0.1

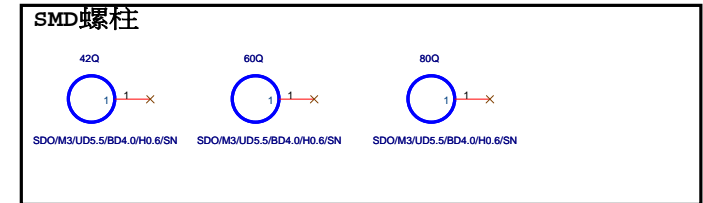
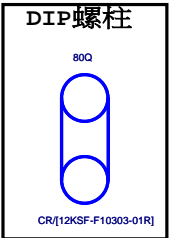
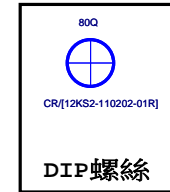
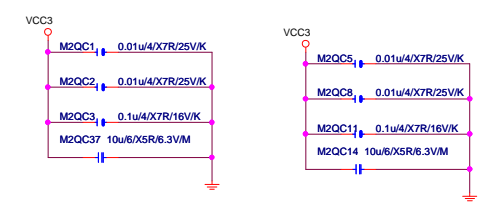
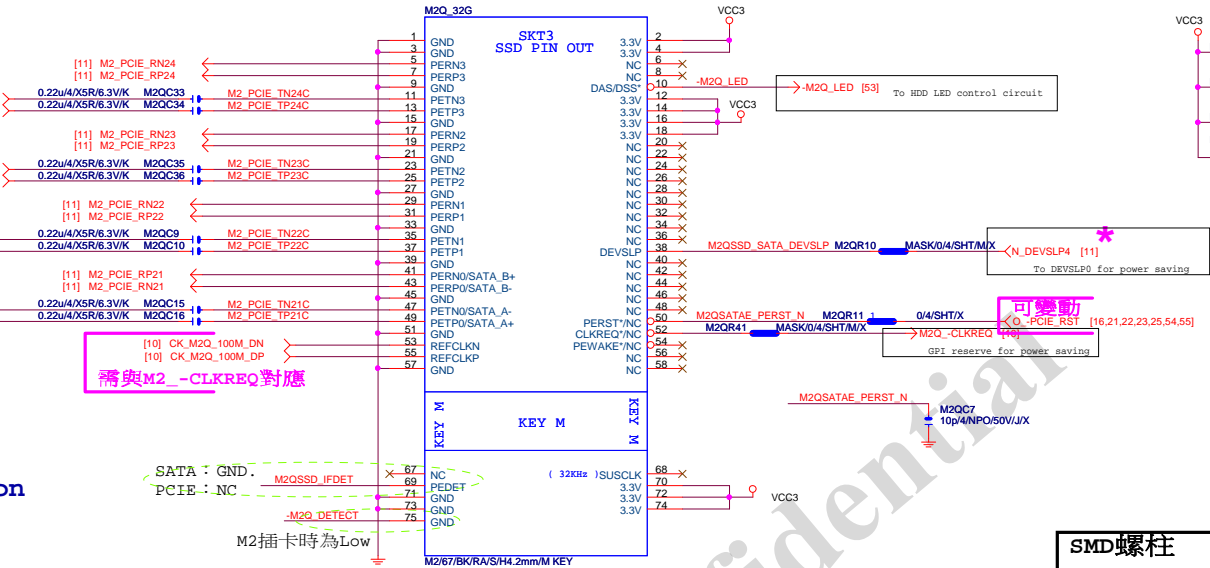
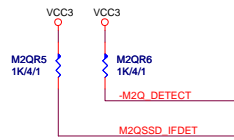
**M.2 Lane4 from PCH port24**

M.2 Lane3 from PCH port23

M.2 Lane2 from PCH port22

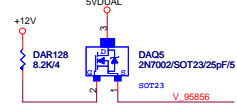
M.2 Lane2 from PCH port21

支援SATA and M.2 function





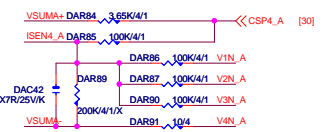
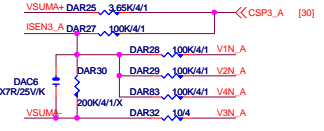
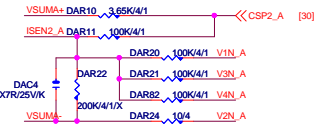
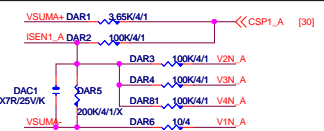
CEC:DAR133,DAR132 上件.DAR18.DAR19.DAR23.DAR131不上件  
non CEC:DAR133.DAR132 不上件.DAR18.DAR19.DAR23.上件.  
DAR131改short pad  
DAR131 short pad footprint:R0603-RH-SHORT30-MASK



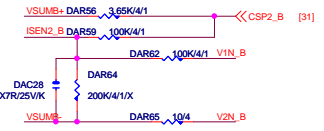
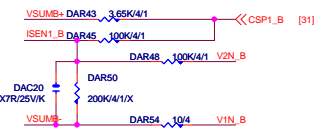
H:ISL95856 or ISL95858

L:ISL95866 or ISL95868

close to PCH



CLOSE PWM



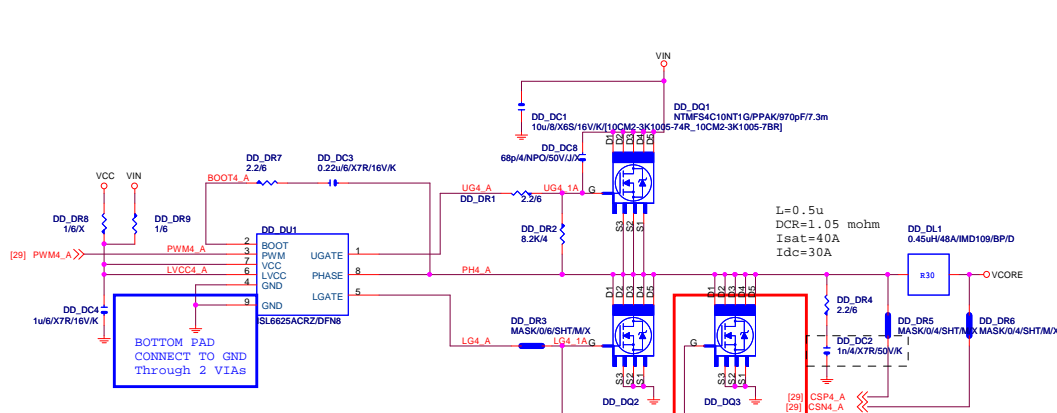
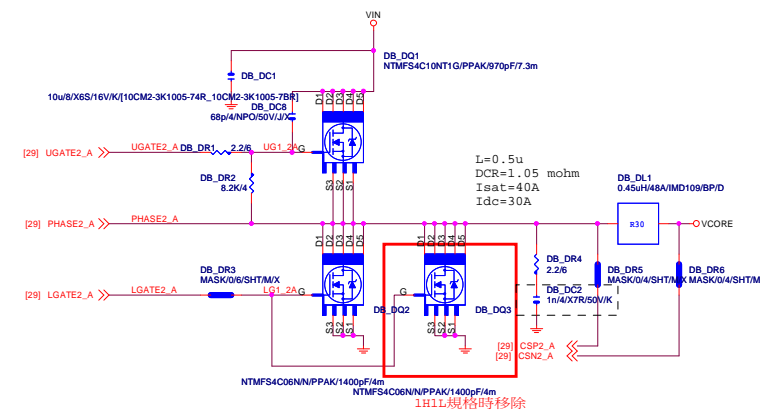
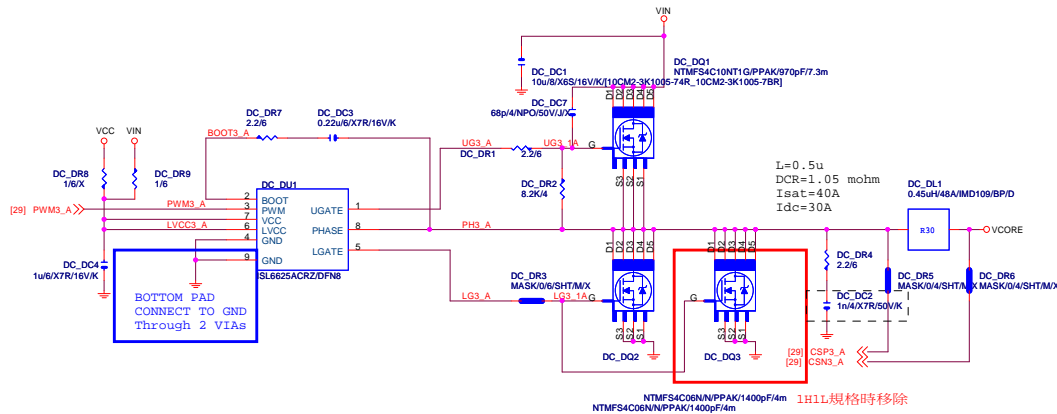
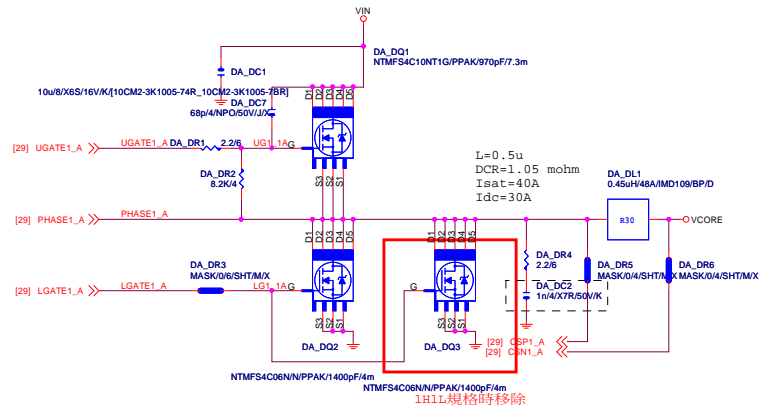
CLOSE PWM



CLOSE PWM

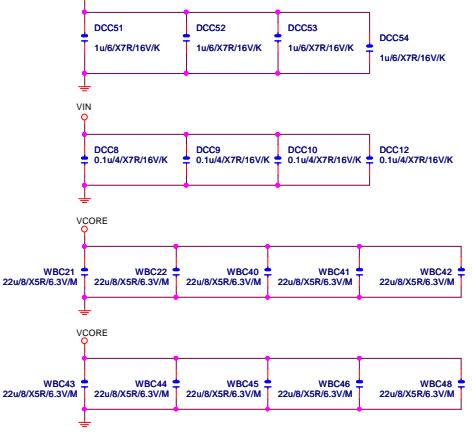
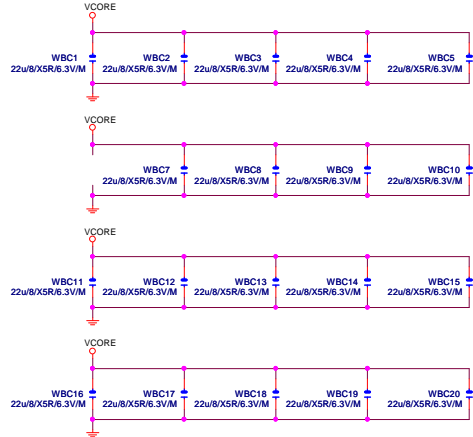
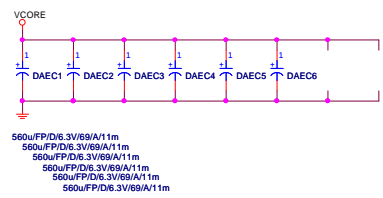
**GIGABYTE™**

VCORE



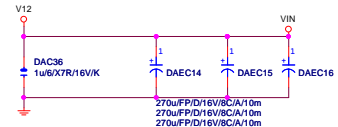
VCORE CAP

560u\*4PCS  
10u\*10PCS



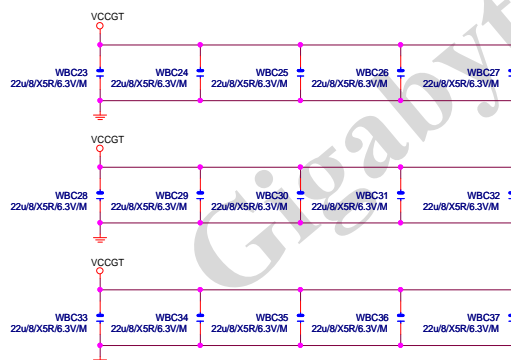
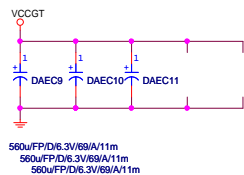
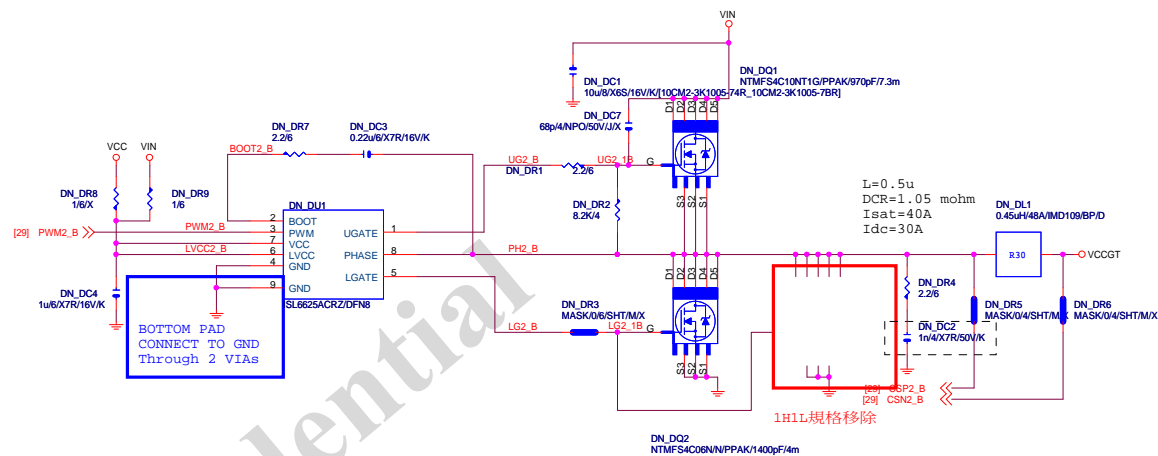
VIN CAP

270u\*3PCS

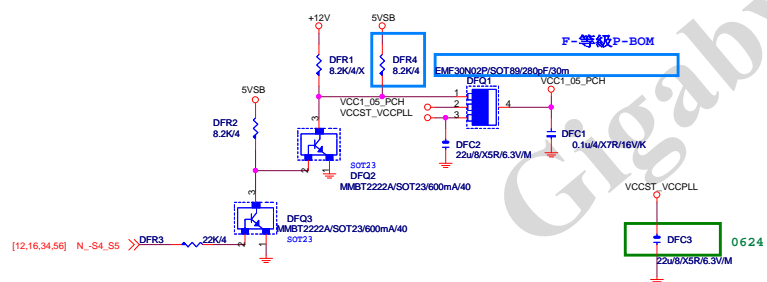
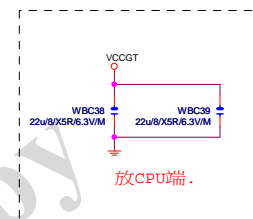


**GIGABYTE**

File	ISL95856 MOS		
Size	Document Number	Rev	1.01
Custm	H370M D3H GSM		
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For power sequence require

## 指定fingerprint "EC6D8MM-RH-2"

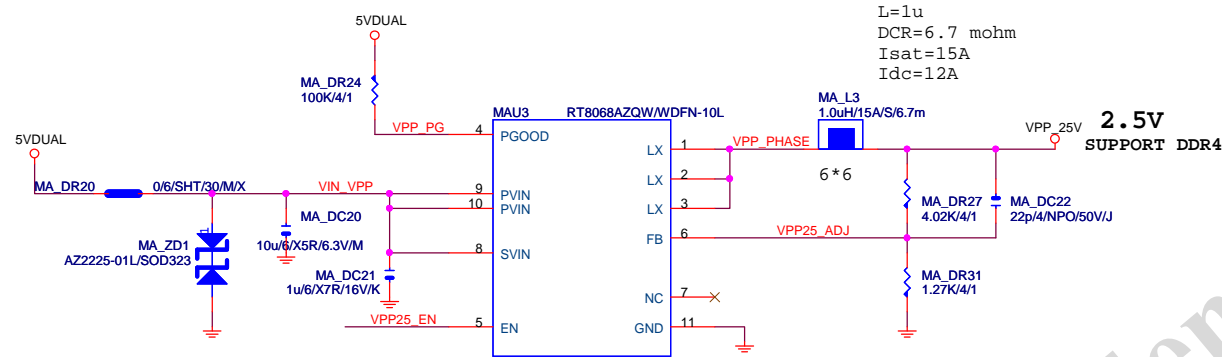
\* 大電容 x0

**GIGABYTE™**

REV:0.4

VPP\_25V

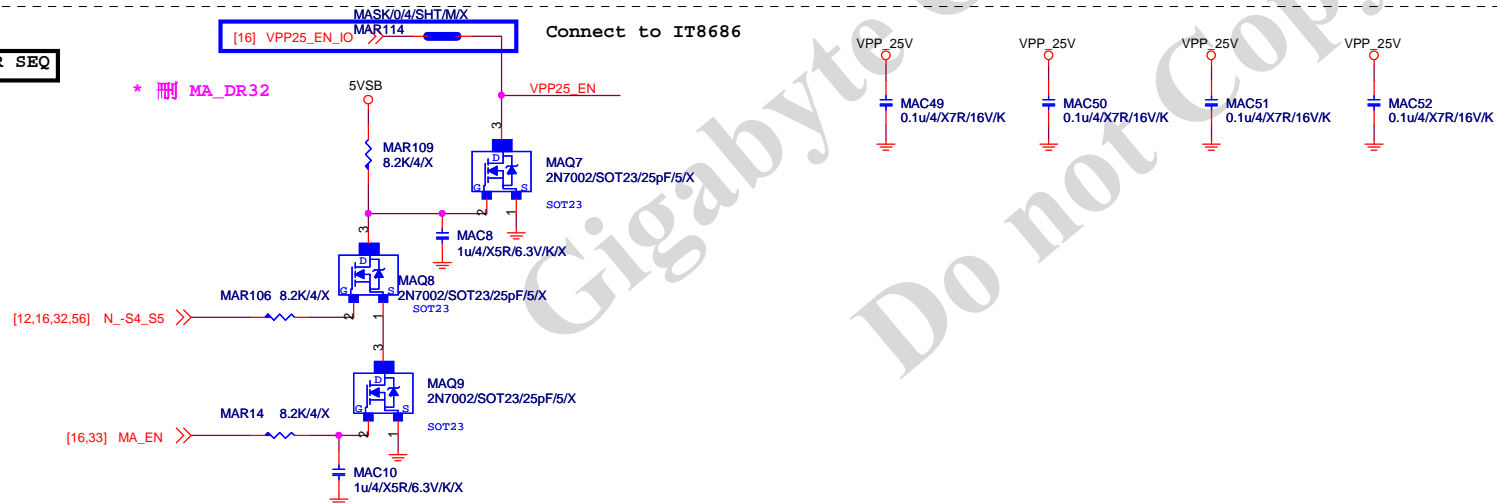
CHOKE與CAP料號可變



[38] VPP25\_ADJ ← VPP25\_ADJ

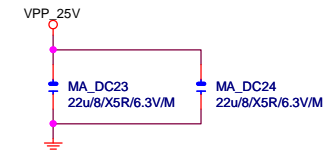
上件

PWR\_SEQ



VPP CAP 22u\*2PCS

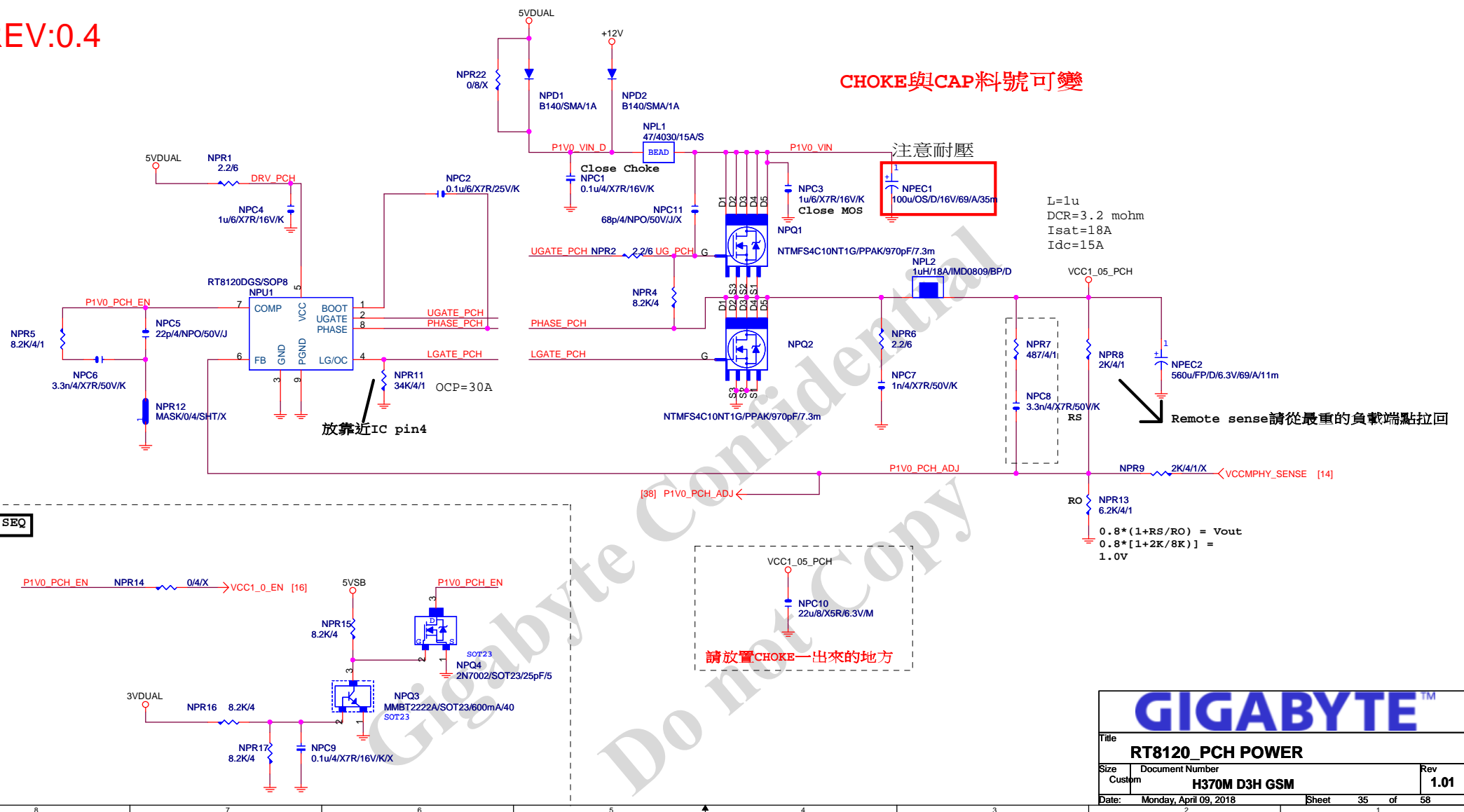
\* 大電容 x0



GIGABYTE™

Title		
RT8068A_VPP25 POWER		
Size	Document Number	Rev
Custom	H370M D3H GSM	1.01
Date:	Monday, April 09, 2018	Sheet 34 of 58

REV:0.4

**GIGABYTE™**

## RT8120\_PCH POWER

Size	Document Number
Custom	<b>H370M D3H GSM</b>

Rev  
**1.01**

Date: Monday, April 09, 2018

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[20] 5VAUX\_SW



[10,20] N\_PS\_ONB 

[16] IO\_GP95



上22u 電容

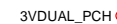
Meet the rise time

[12] N\_-DEPSI



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

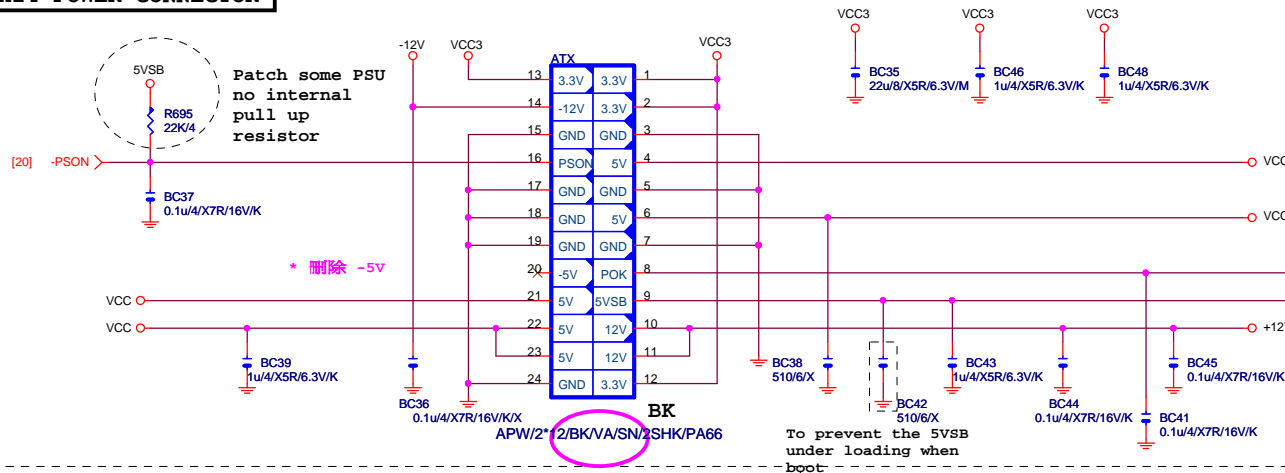
## 3VDUAL\_PCH



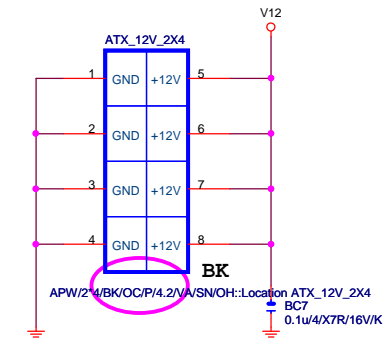
## Gigabyte Technology

Title			
<b>DISCRETE POWER</b>			
Size	Document Number		Rev
Custom	<b>H370M D3H GSM</b>		<b>1.01</b>
Date:	Monday, April 09, 2018	Sheet	36 of 58

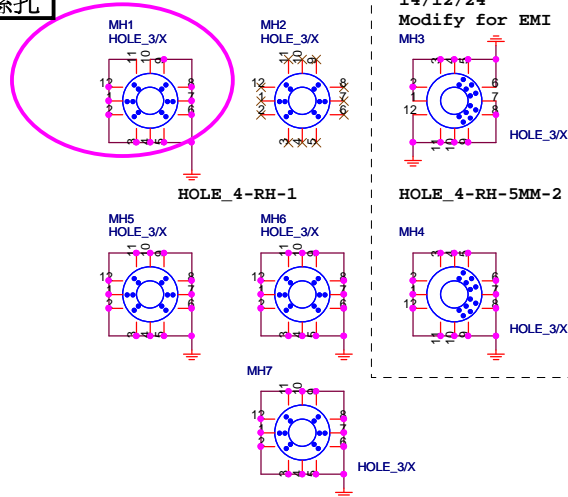
## ATXX24 POWER CONNECTOR



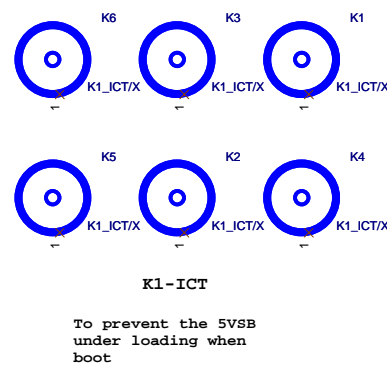
## ATXX4 POWER CONNECTOR



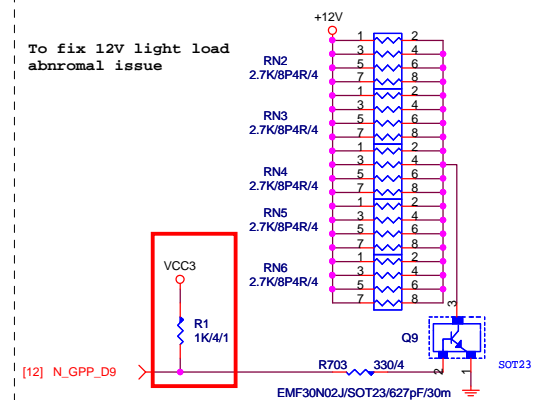
## 螺絲孔



## 固定孔/光學點

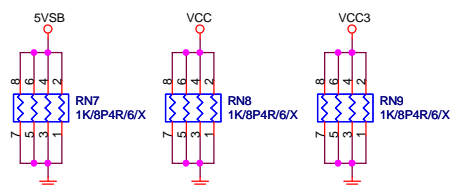


## +12V DUMMY LOAD



【技術通報R&D技術通報153】

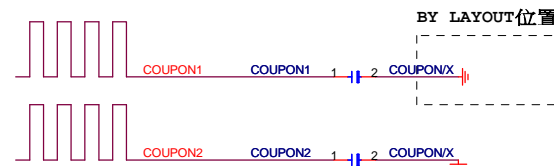
## DUMMY LOAD



## -PROHOT



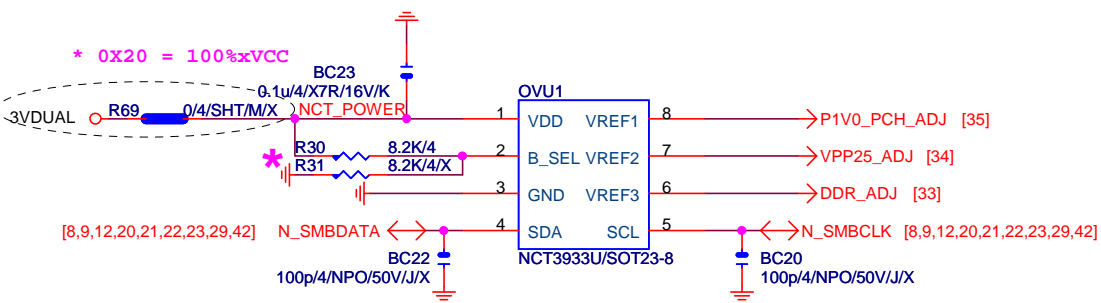
## COUPON



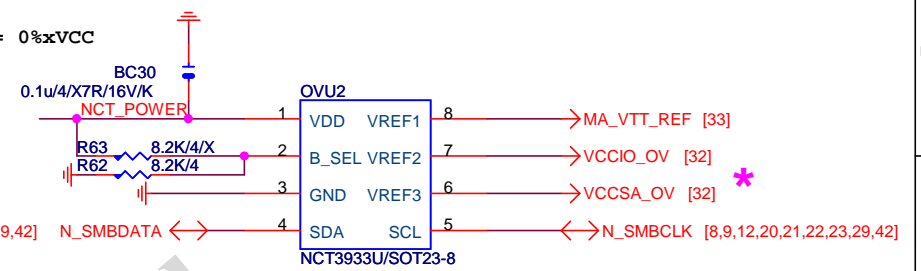
## Gigabyte Technology

Title			ATX POWER CONNECTOR
Size	Document Number	H370M D3H GSM	
Custom			Rev 1.01
Date:	Monday, April 09, 2018	Sheet	37 of 58

OVER VOLTAGE



0X2A = 0%xVCC



0X22 = 75%xVCC

\* 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

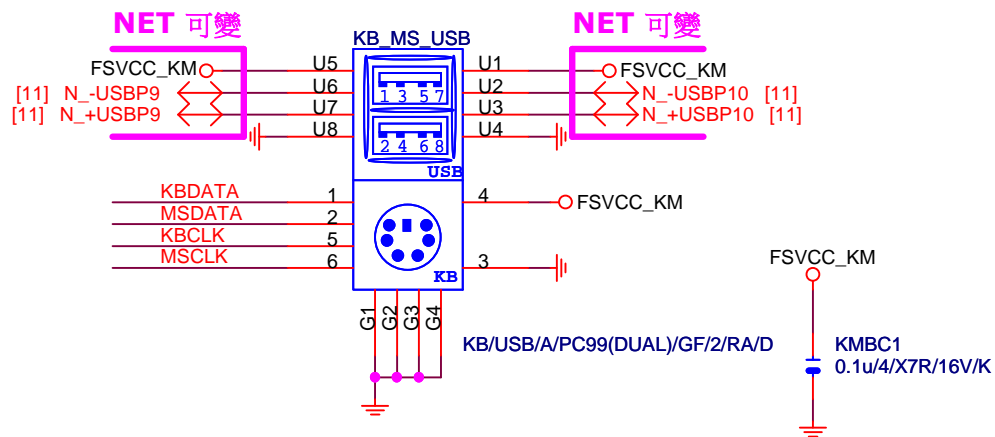
Size Custom Document Number H370M D3H GSM Rev 1.01

Date: Monday, April 09, 2018 Sheet 38 of 58

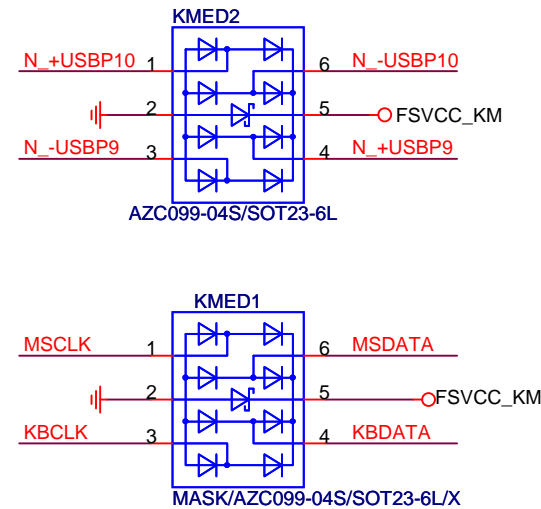


## KB\_MS\_USB

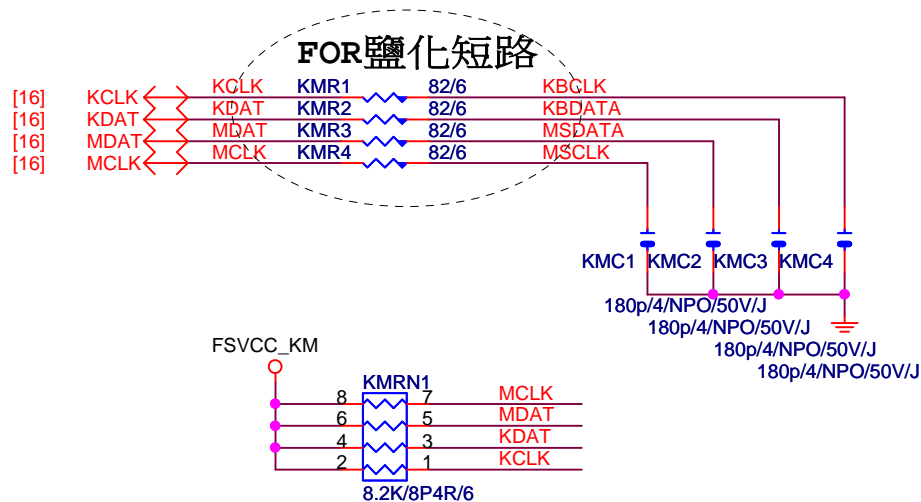
Rev: 0.7



## ESD

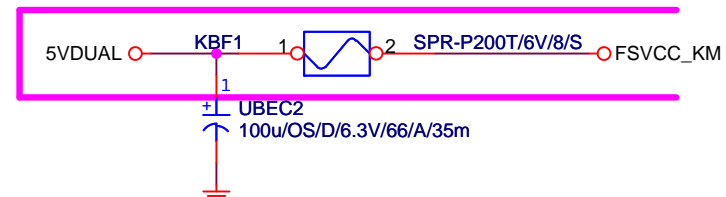


## KB\_MS\_USB DAMPING/PU



## KB\_MS\_USB PWR

## NET 可變, 與其他USB SHARE



## USB OC PROTECT

Gigabyte Technology

Title

KB\_MS\_USB

Size

Document Number

H370M D3H GSM

Rev

1.01

Date:

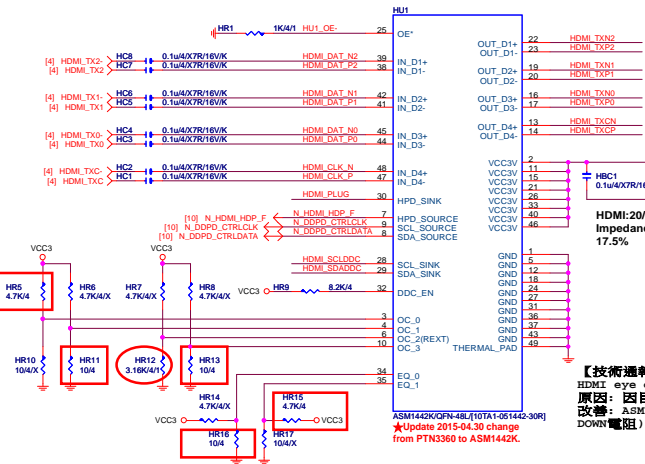
Monday, April 09, 2018

Sheet

39

of

58



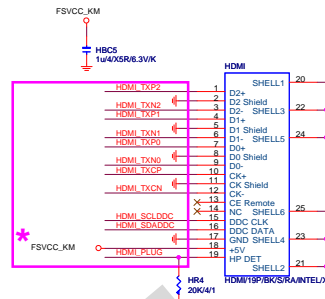
PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K

ASM1442:紅色框要上,HR12:3.16K

【技術通報R&D技術通報150】  
HDMI eye 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)  
★Update 2015-04-30 change from PTN3360 to ASM1442K.

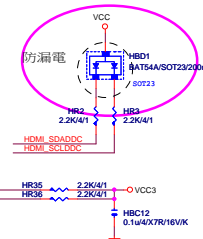
NET 可變

HDMI CONN

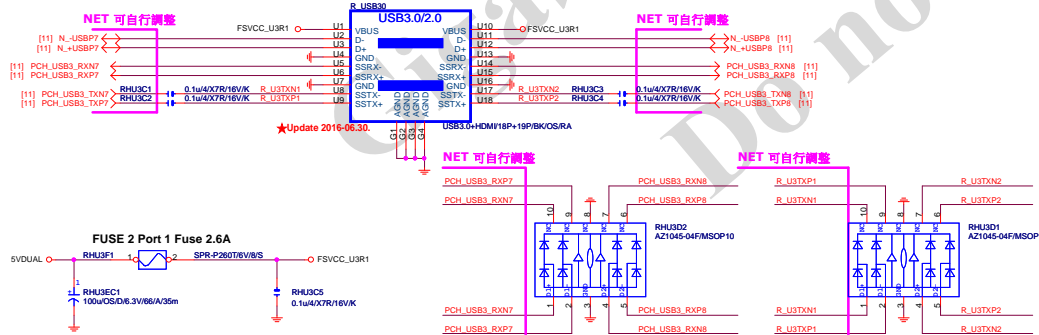


USB 3.0  
USB 3.0  
HDMI

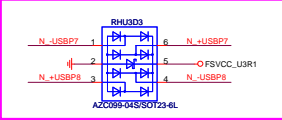
HDMI PU

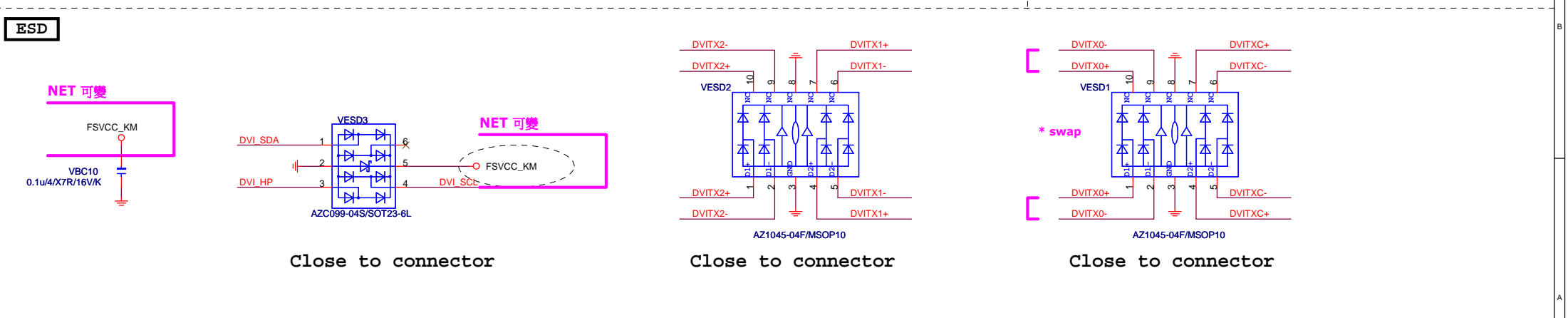
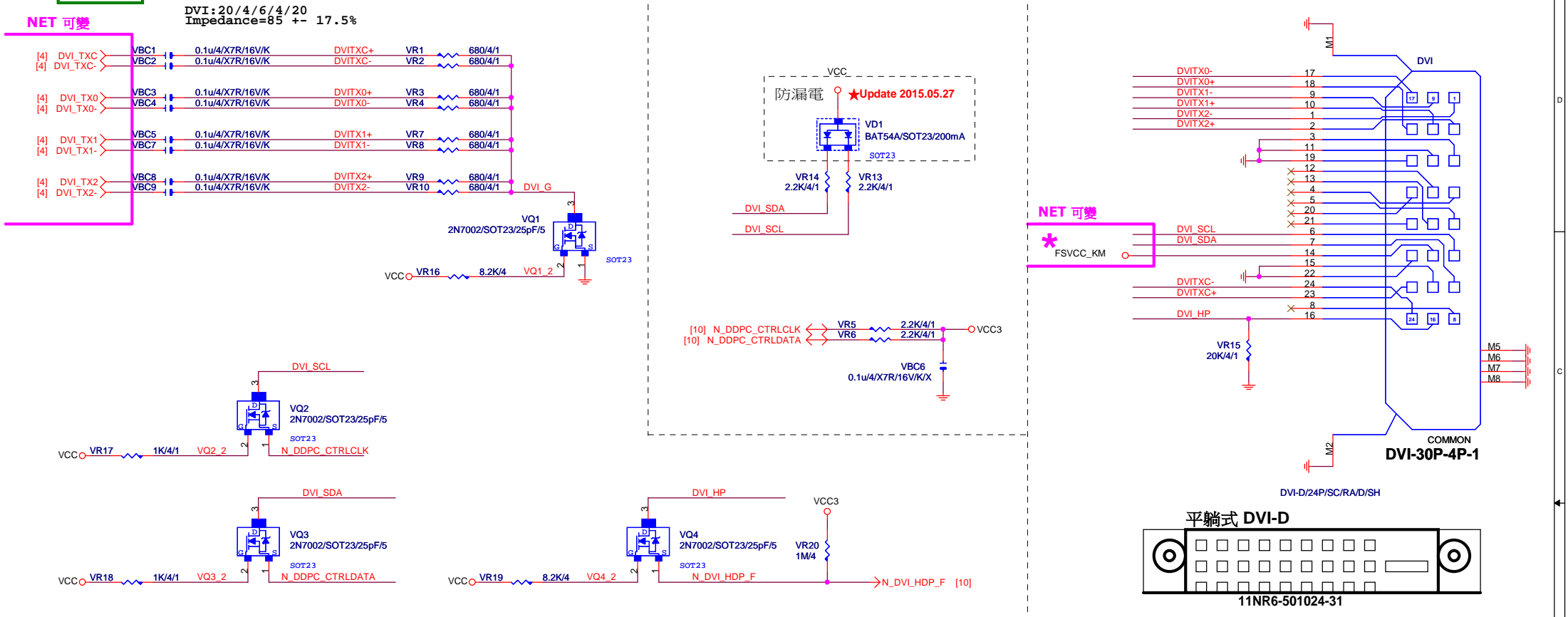


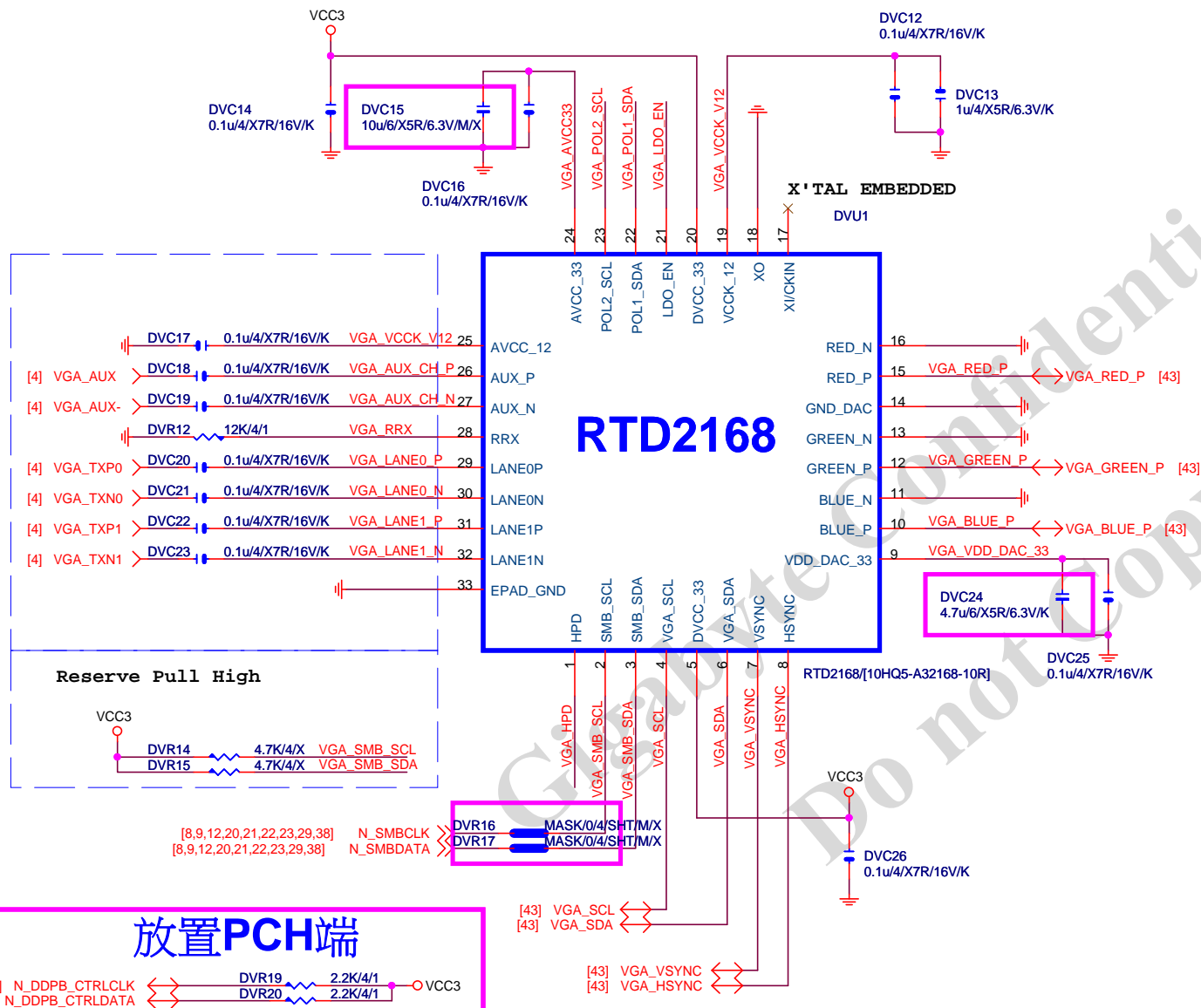
ESD 可自行SWAP PIN, CONN端 NET 名稱不可



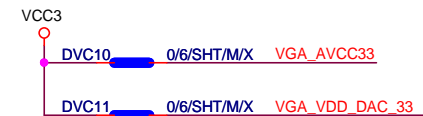
NET 可自行調整



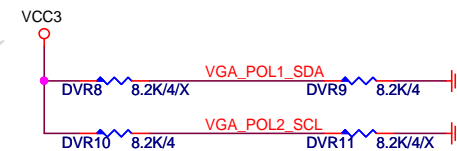




## POWER

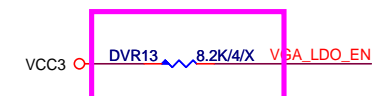


Power on latch



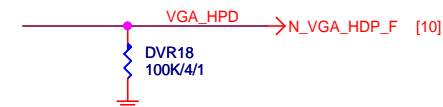
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	<b>ROM ONLY MODE</b>	EEPROM MODE

## Embedded LDO

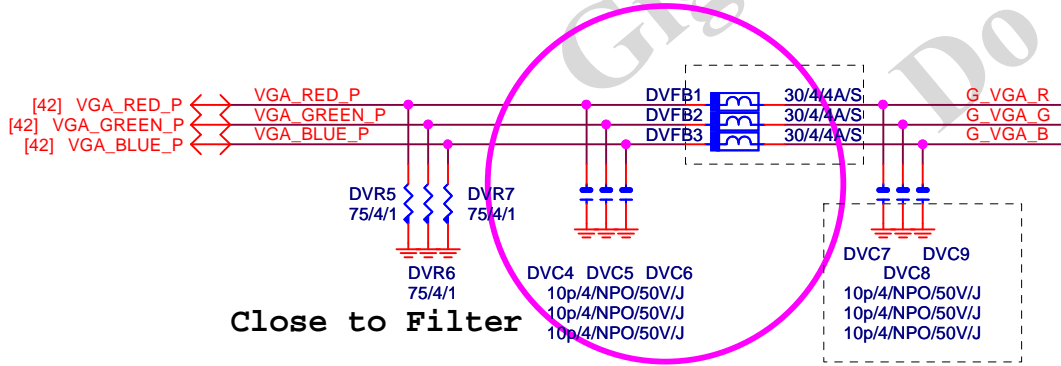
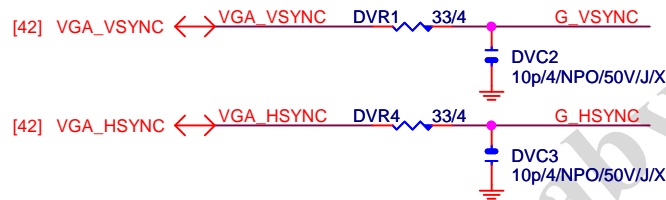
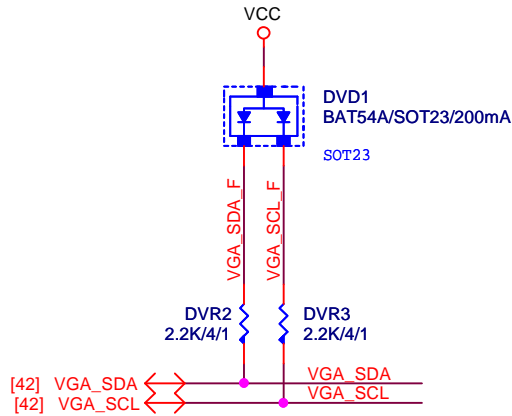


LDO_EN(PIN21)	
0	1
VCCK_V12 from External 1.2V	VCCK_V12 from Embedded LDO

DP HPD

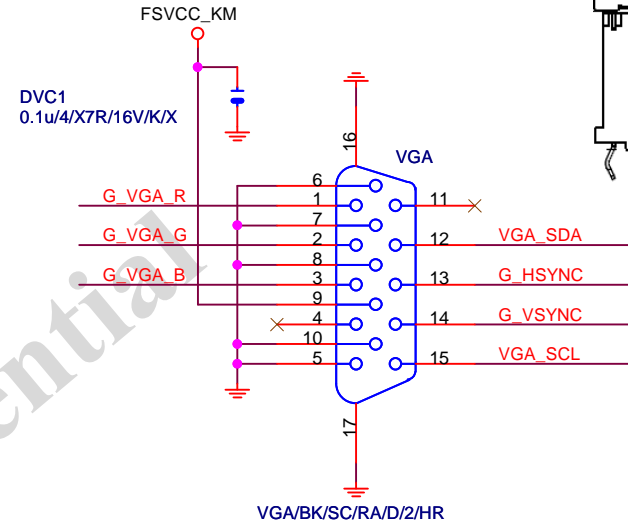
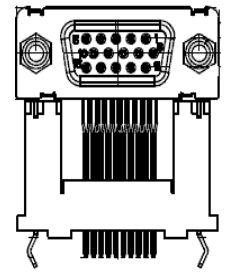


VGA SIGNAL R2.0

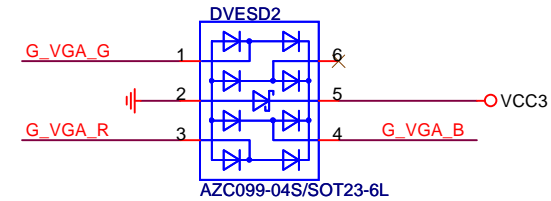
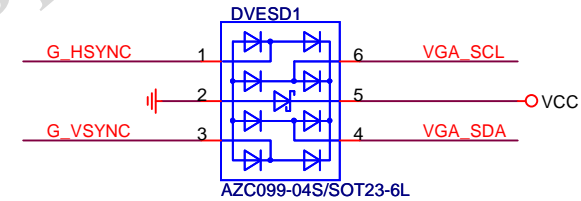


FOR EMI

VGA CONN. 架高型VGA ( BLACK )

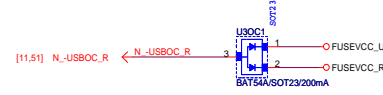
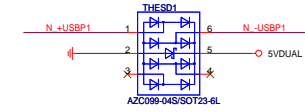
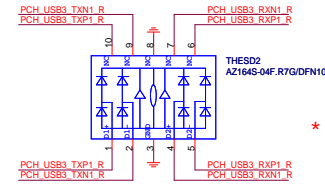
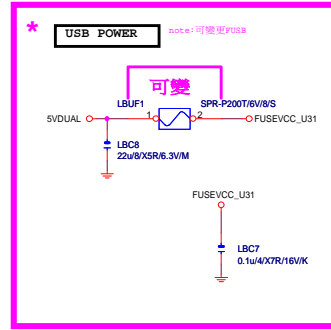
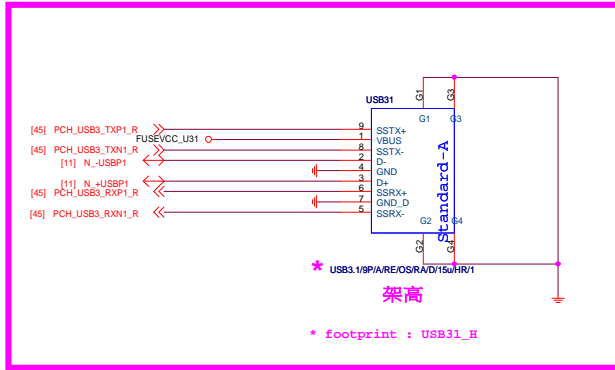


VGA ESD

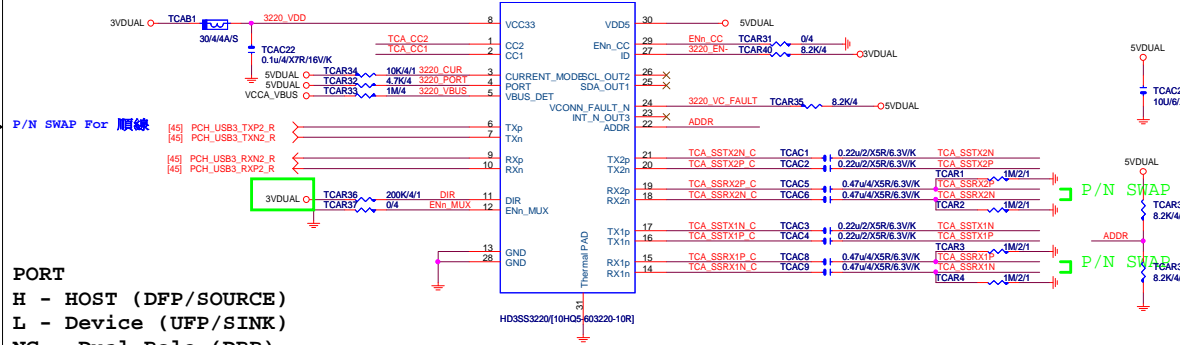


Gigabyte Technology			
Title DP-VGA RTD2168			
Size Custom	Document Number H370M D3H GSM		Rev 1.01
Date: Monday, April 09, 2018	Sheet 43 of 58		

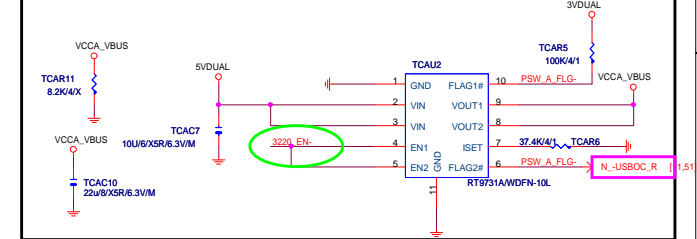
USB31 TYPE A Connector / power source / FUSE which choose for project demand



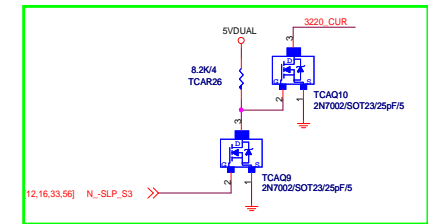
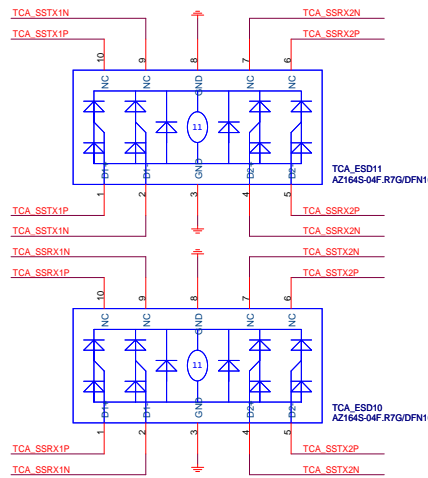
## TI HD3SS3220



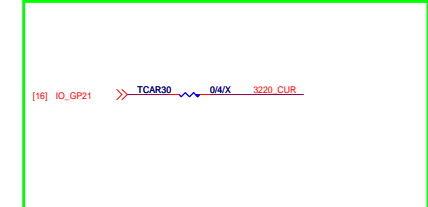
## TypeC default 5V/3A



## Color markers can be changed by model

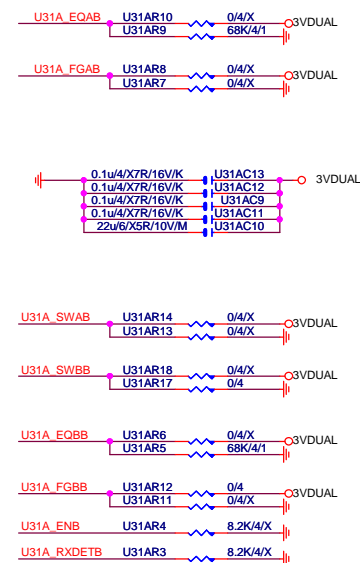
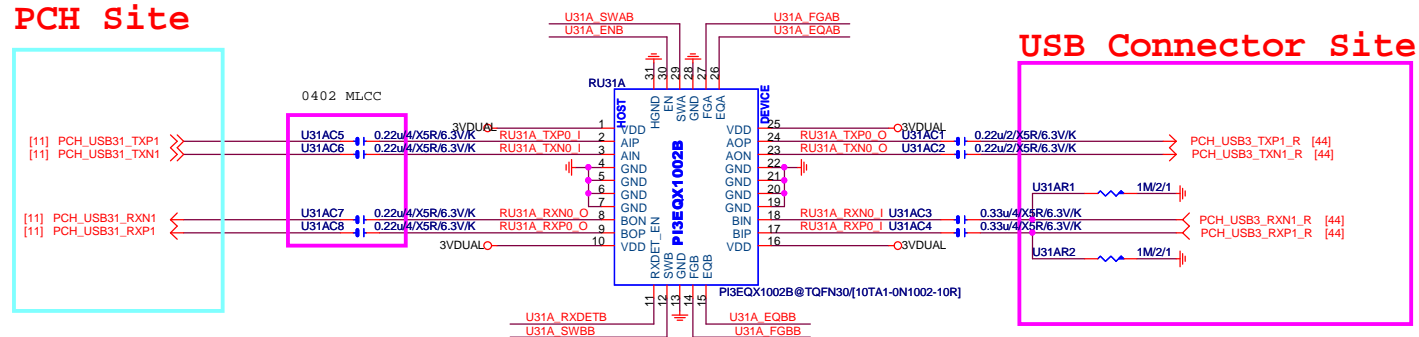


For VBUS current limit at 900mA on S3

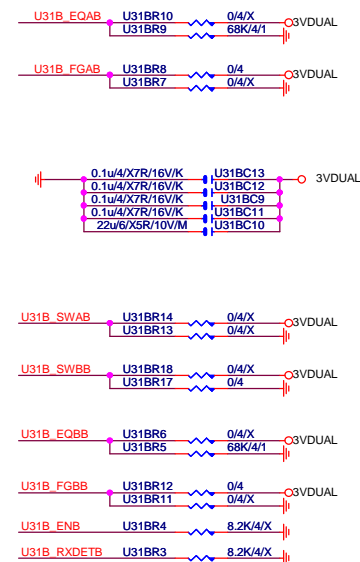
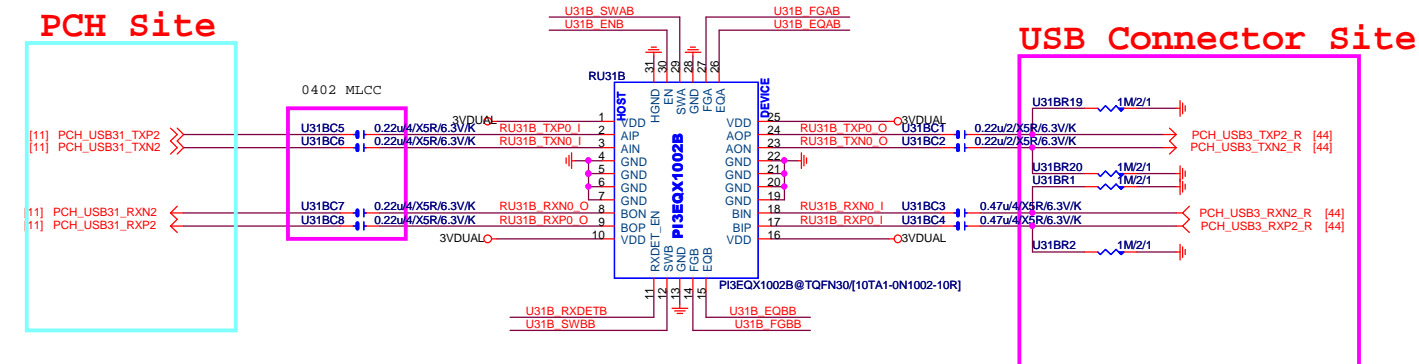


USB2.o can be used the same source

## PCH Site

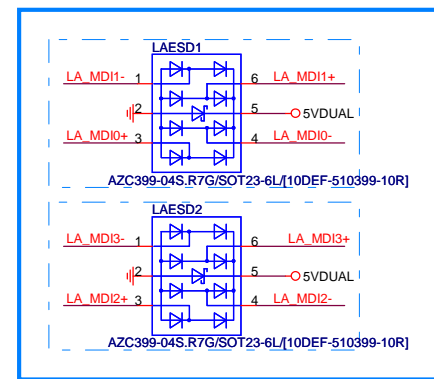


## PCH Site





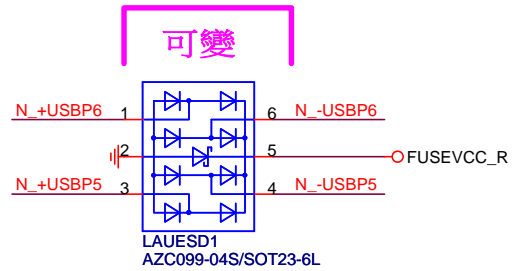
**之CLKREQ#**

**INTEL I219**

Date: Monday, April 09, 2018 Sheet 46 of 58

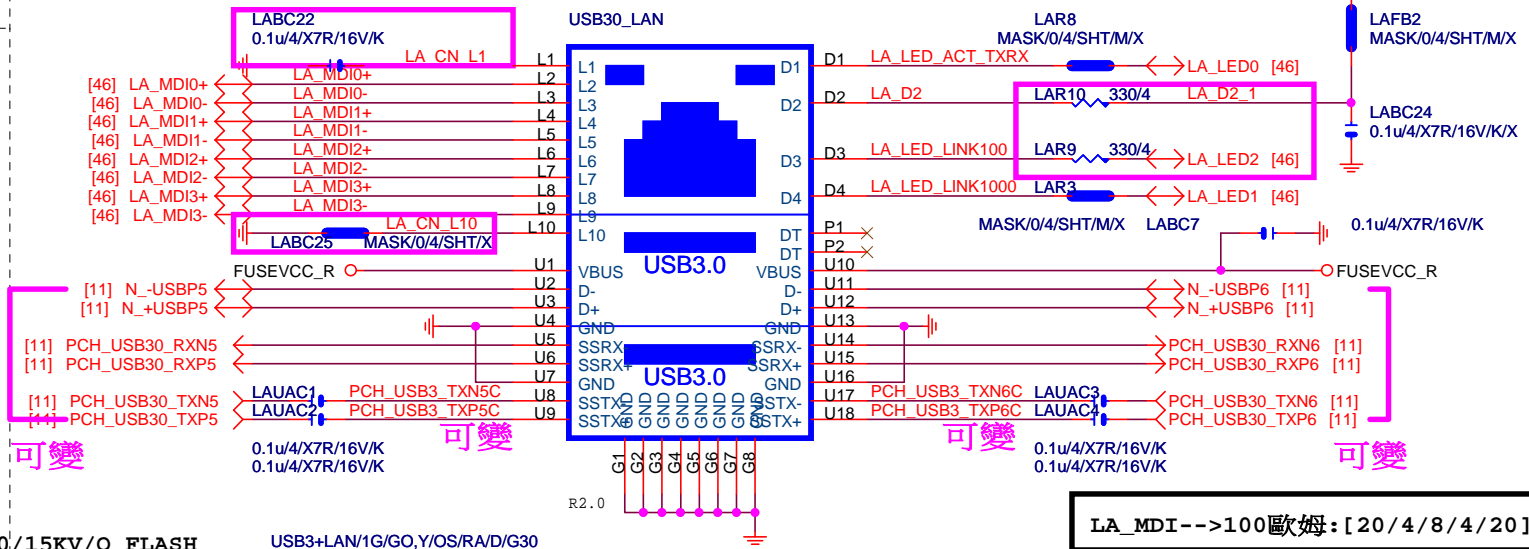
USB30\_LAN CONNECTOR R2.01

RMA ESD PROTECT note:可變更USB NAME



USB\_LAN CONNECTOR note:可變更USB NAME

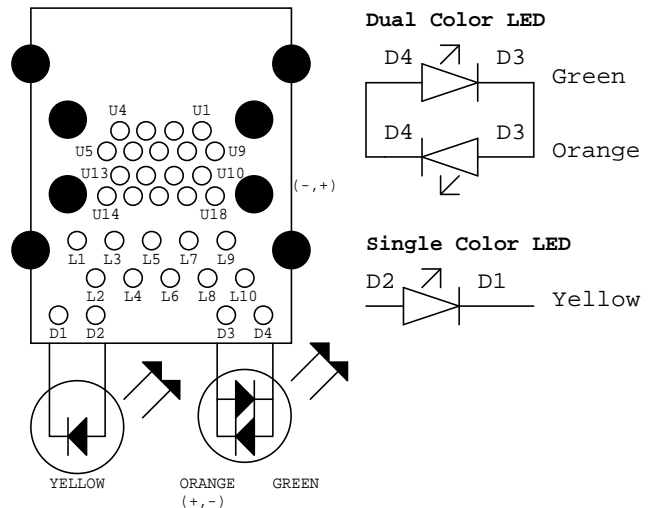
[I219]



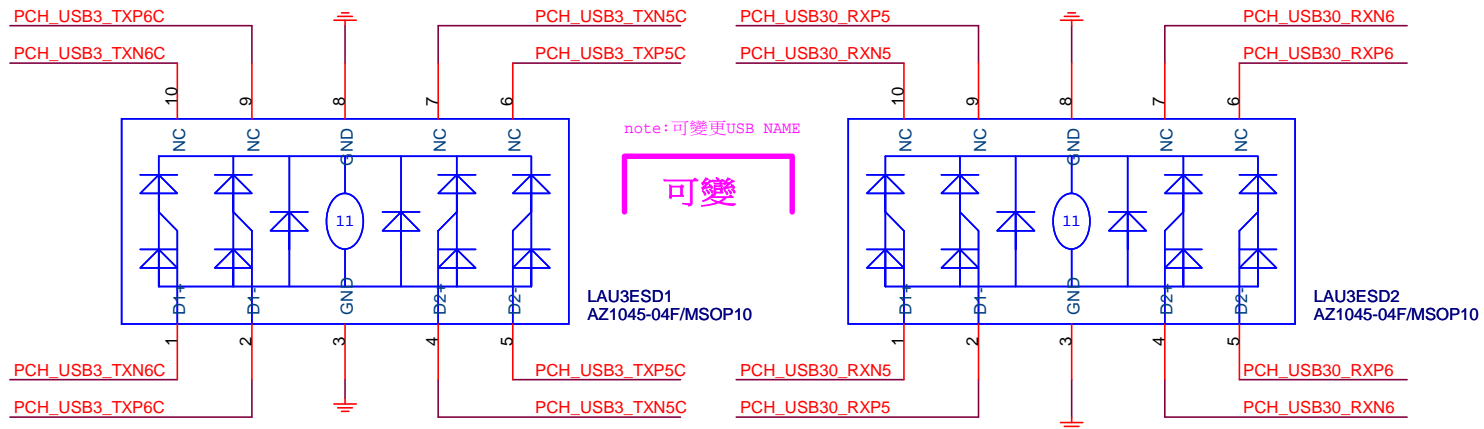
USB上白下藍:USB3+LAN/1G/GO,Y/OS/RA/D/G30/15KV/Q FLASH

USB3+LAN/1G/GO,Y/OS/RA/D/G30

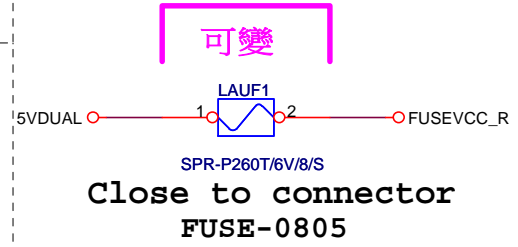
USB30\_LAN LAYOUT示意圖



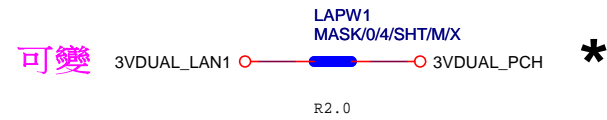
LAN\_COVER



USB POWER note:可變更FUSE

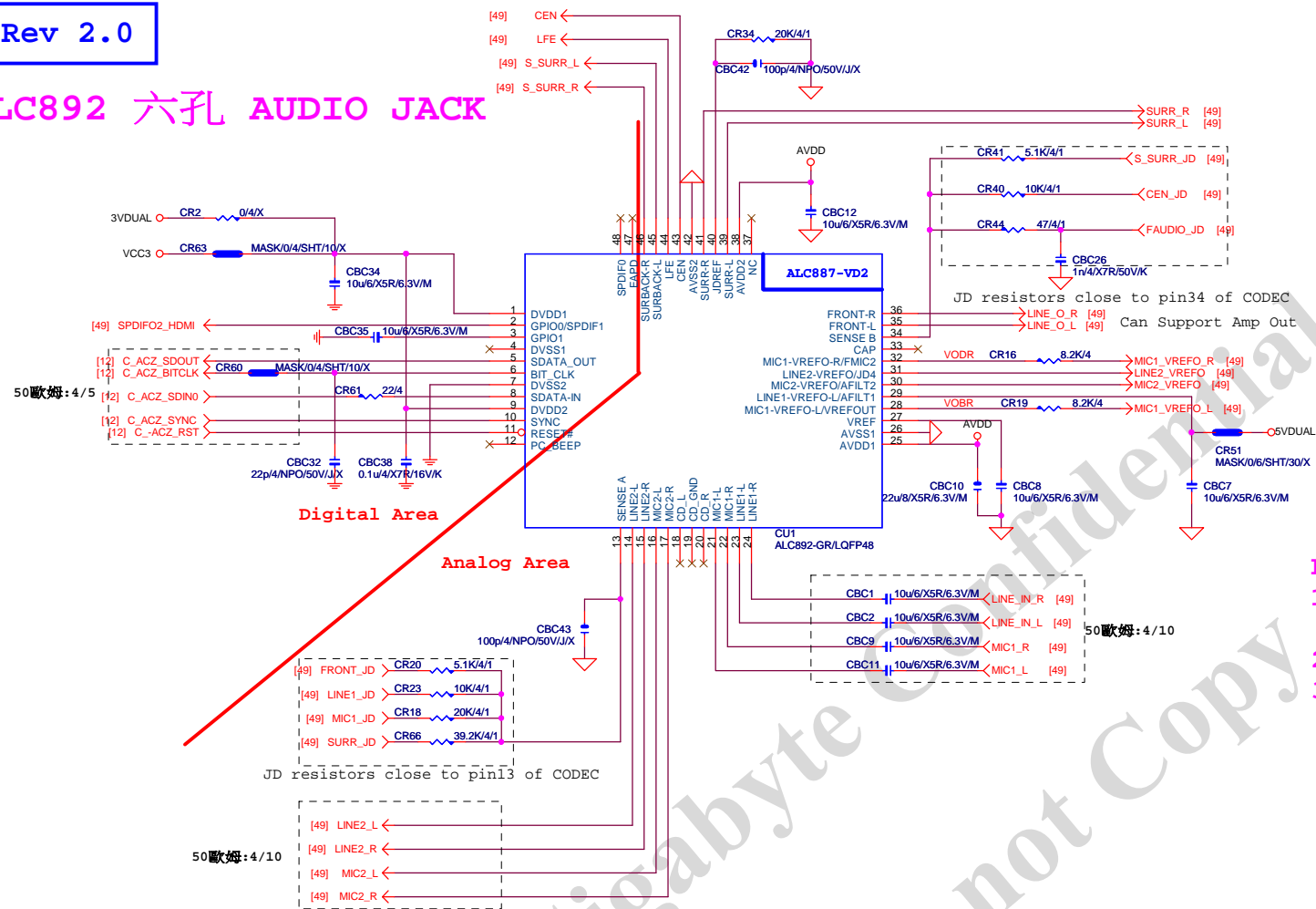


LAN POWER note: lan power連接及電流



Gigabyte Technology			
LAN CONNECTOR-I219			
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Custom			
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		1	Rev 1.01

## ALC892 六孔 AUDIO JACK



LAYOUT注意: 螺絲孔下GND方式

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

○ MH1      MH2 ○  
DGND      Isolate

LAYOUT注意: 要加

GND切割線



音效區域印刷



Gigabyte Technology

Title HD AUDIO ALC892

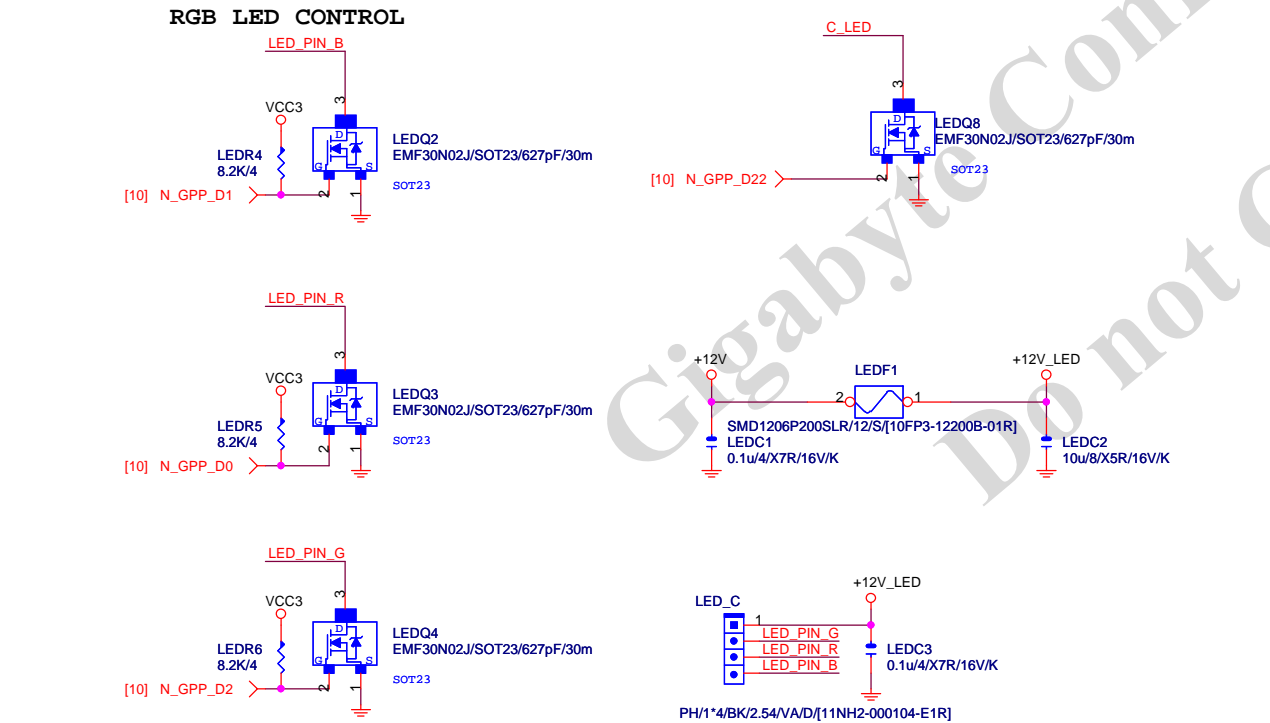
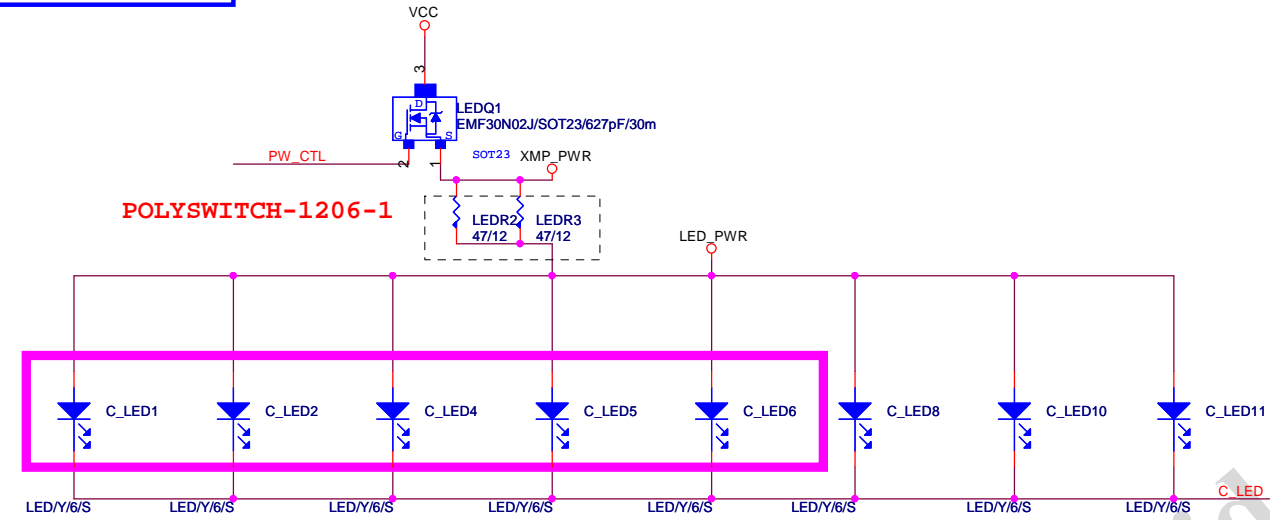
Size Custom Document Number H370M D3H GSM

Rev 1.01

Date: Monday, April 09, 2018

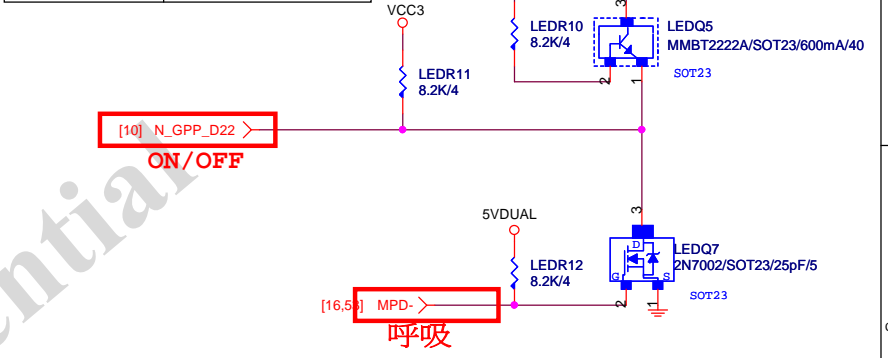
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Title			
AUDIO JACK			
Size	Document Number		Rev
Custom	H370M D3H GSM		1.01
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# Ambient LED Control

	N_GPP_D22
Still Mode	H
OFF Mode	L



	三色 LED Control	N_GPP_D0 (R)	N_GPP_D2 (G)	N_GPP_D1 (B)
藍		L	L	H
綠		L	H	L
淺綠		L	H	H
紅		H	L	L
粉紅		H	L	H
黃		H	H	L
白光		H	H	H
循環	順序:藍-綠-淺綠-紅-粉紅-黃-白光 切換間隔時間為 1 秒			

Title

Amient Single LED

Size

Custom

Document Number

H370M D3H GSM

Rev

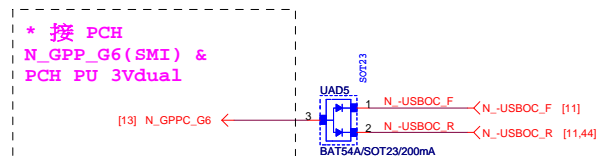
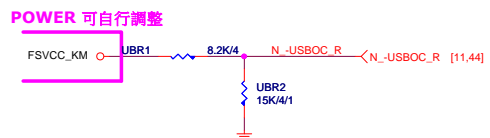
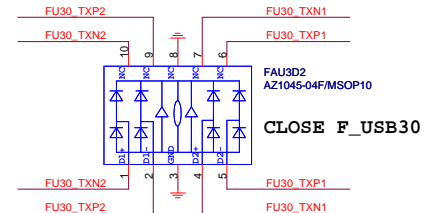
1.01

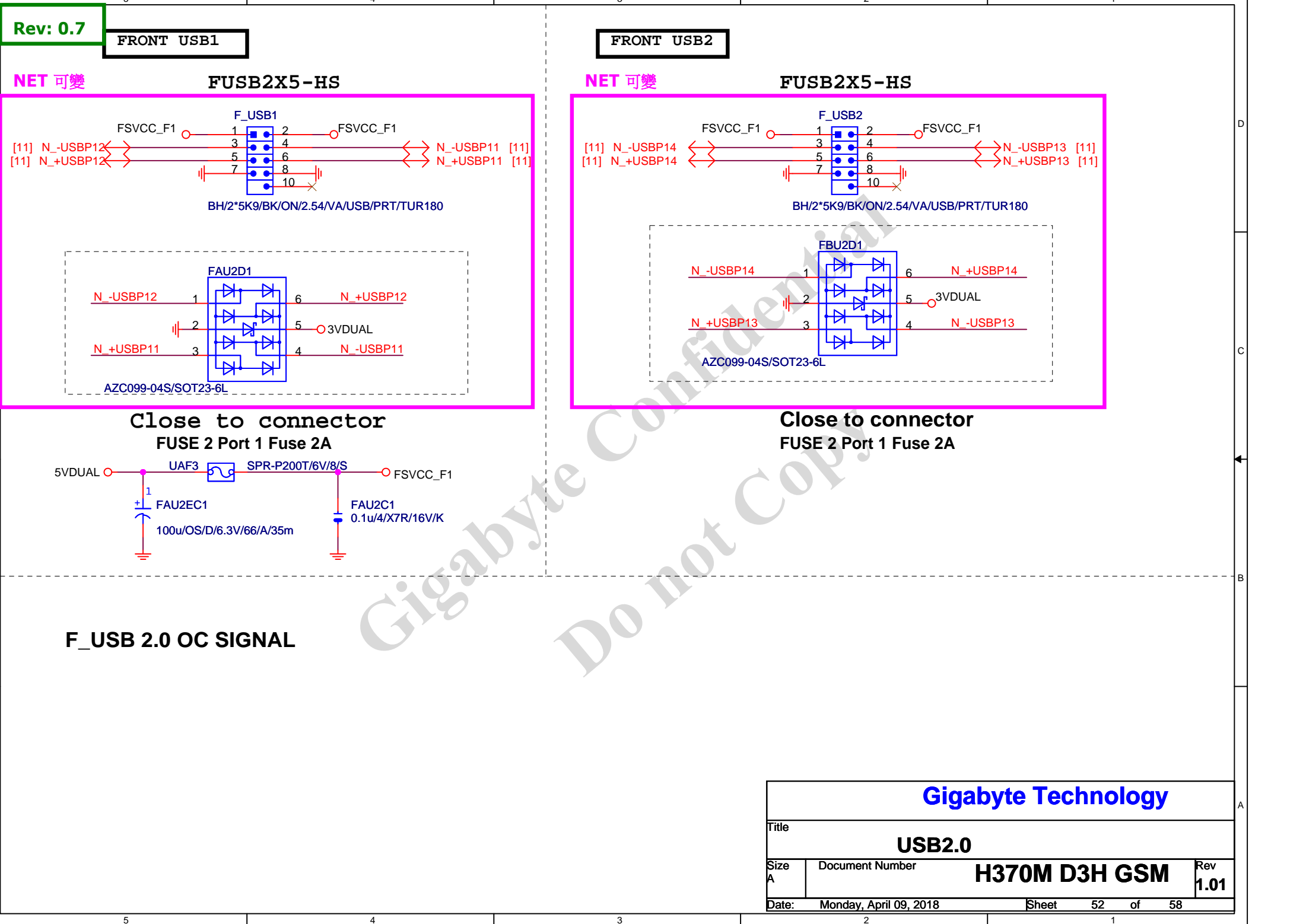
Date:

Monday, April 09, 2018

Sheet

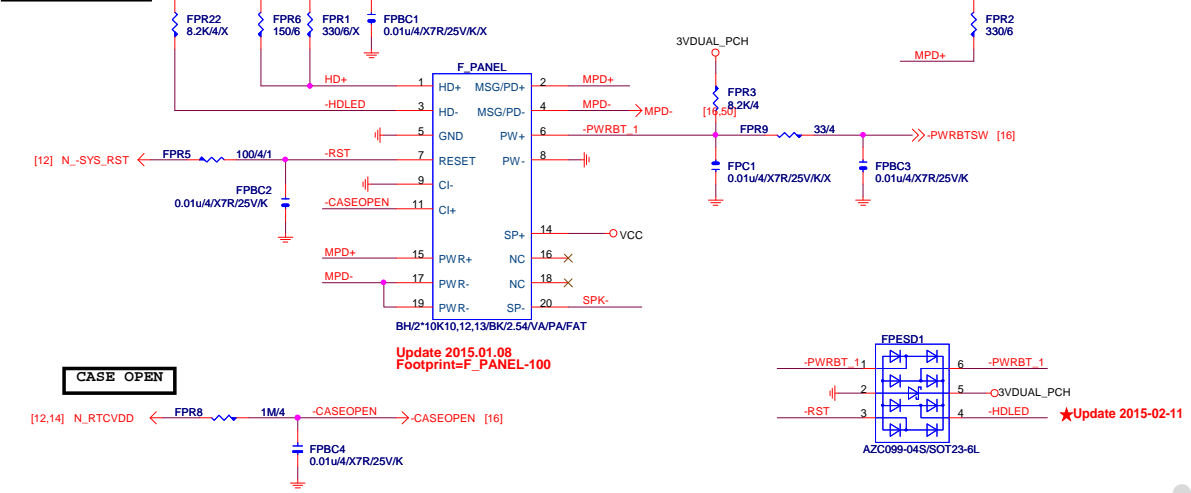
50 of 58





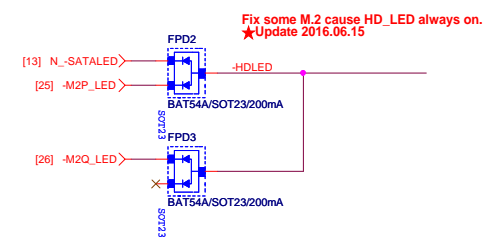


FRONT PANEL

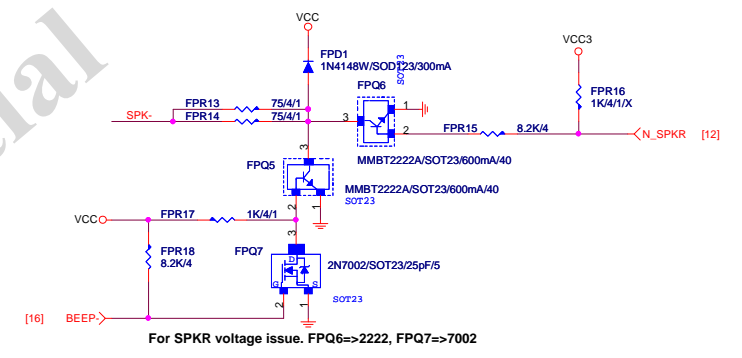


FRONT PANEL SHORT

SATA/M.2 LED

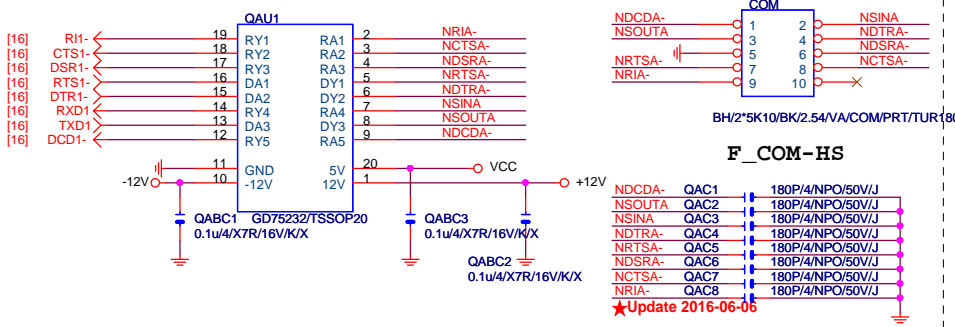


SPKR

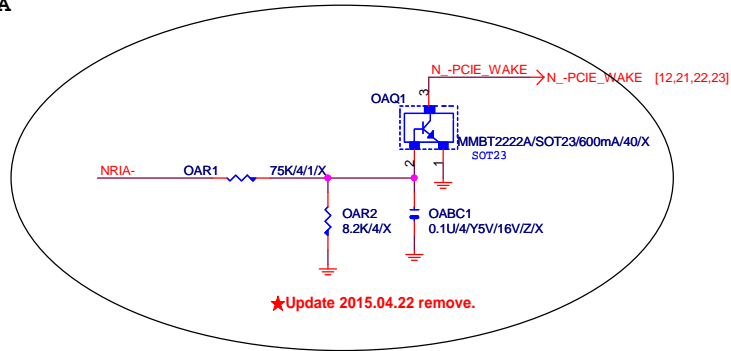


Gigabyte Confidential  
Do not Copy

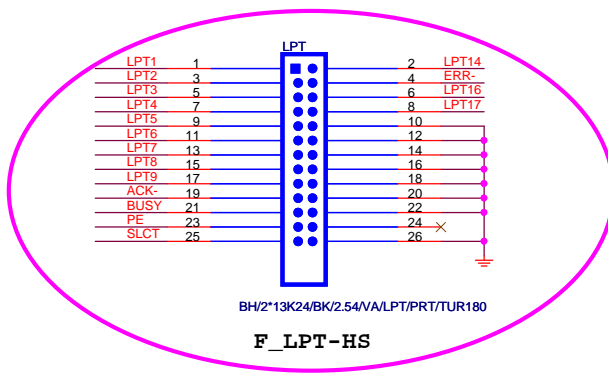
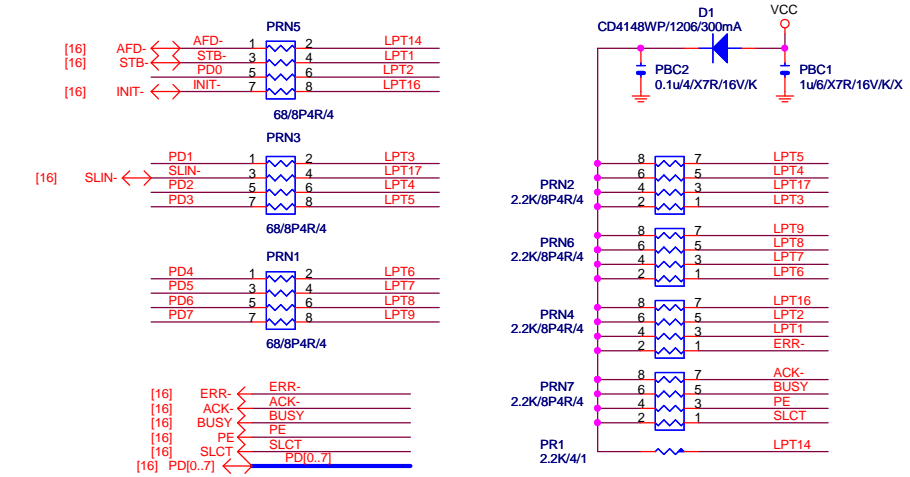
COM PORT Rev: 0.7



COM RI N/A

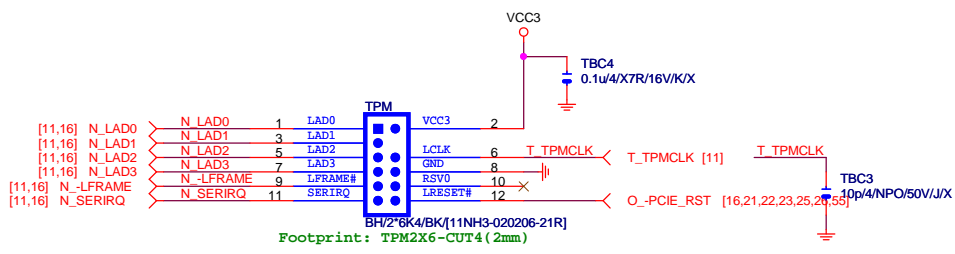


LPT PORT

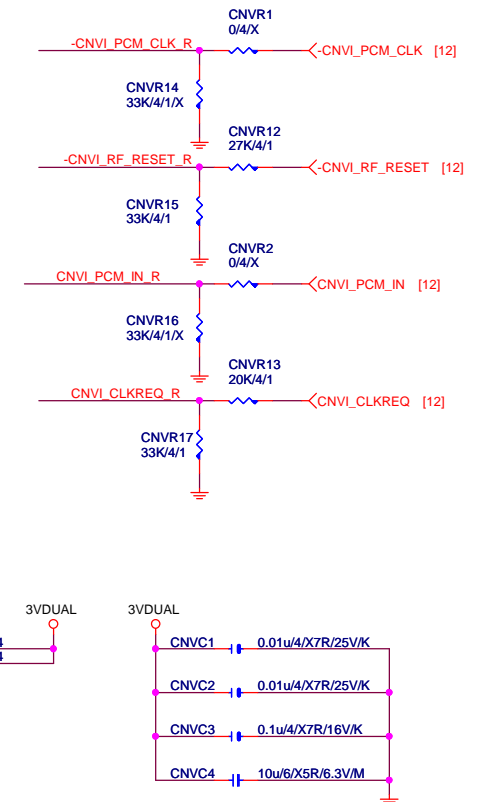


R&D技術通報151 有使用PRINT PORT的  
MODEL，需使用新料號:10HP2-118728-72R。(CHIP IT8728F/EX (GB) ITE/SMD  
QFP128 PRINTPORT SORTING)料件。串電阻33 ohm改為68 ohm。

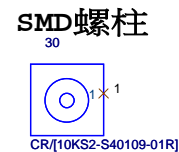
TPM CONNECT



★ 1. 將PCH吐出的3.3V 經分壓為1.8V 才進到CNVI



★ 横躺式矮SMD  
P/N:10NR5-130067-22R



## CLOSE SIO

EMIC1  
100p/4/NPO/50V/J/X

[12,15,33,44] N\_-SLP\_S3 ←

EMIC2  
100p/4/NPO/50V/J/X

[12,16,32,34] N\_-S4\_S5 ←

## CLOSE PCH

EMIC4  
100p/4/NPO/50V/J/X

[4,12] N\_CPUPWROK ←

**GIGABYTE™**

Title

**EMI/ESD**Size  
A

Document Number

**H370M D3H GSM**

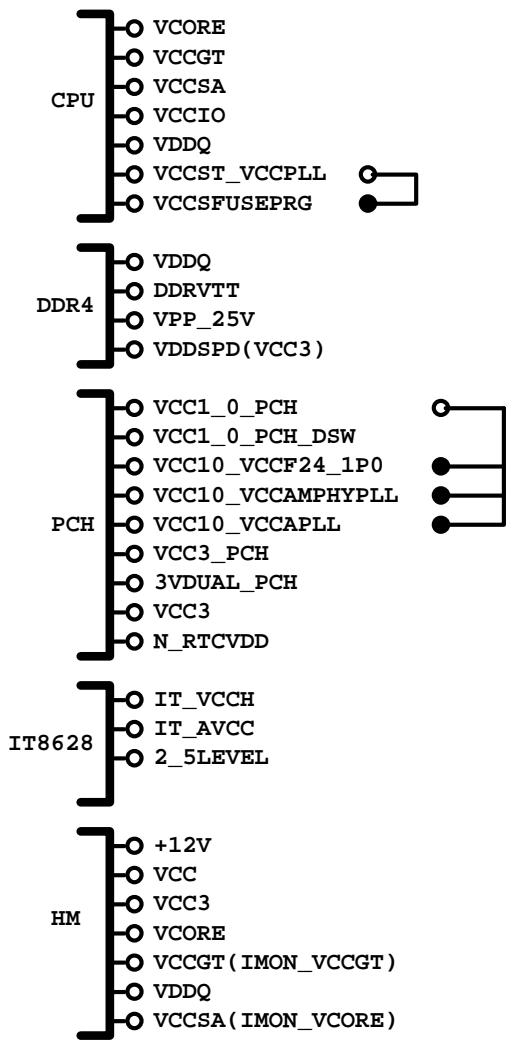
Rev

**1.01**

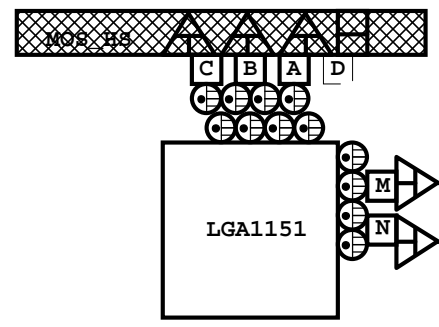
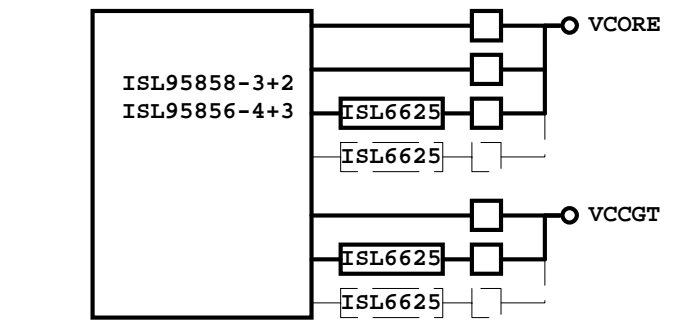
Date: Monday, April 09, 2018

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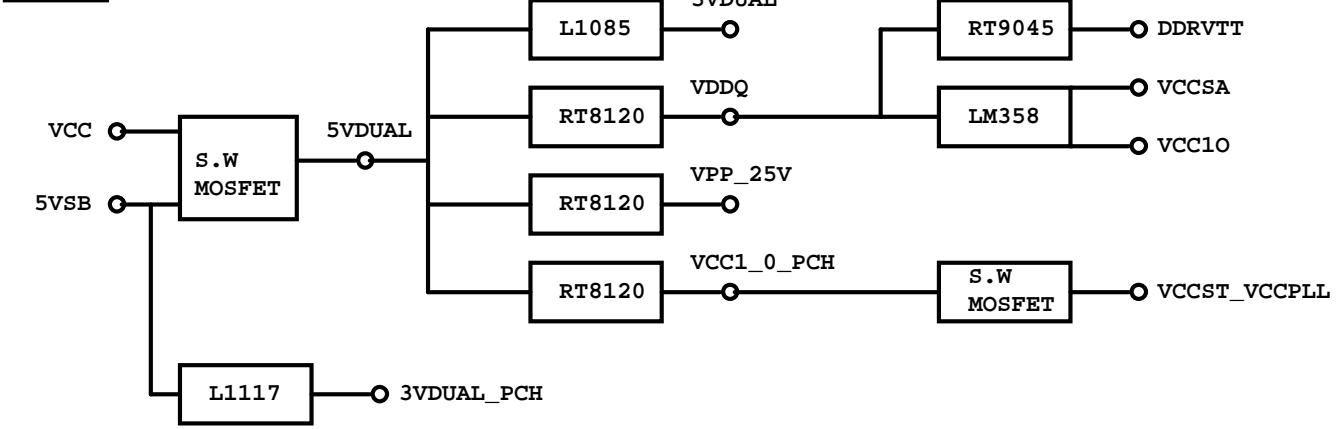
POWER BLOCK MAP



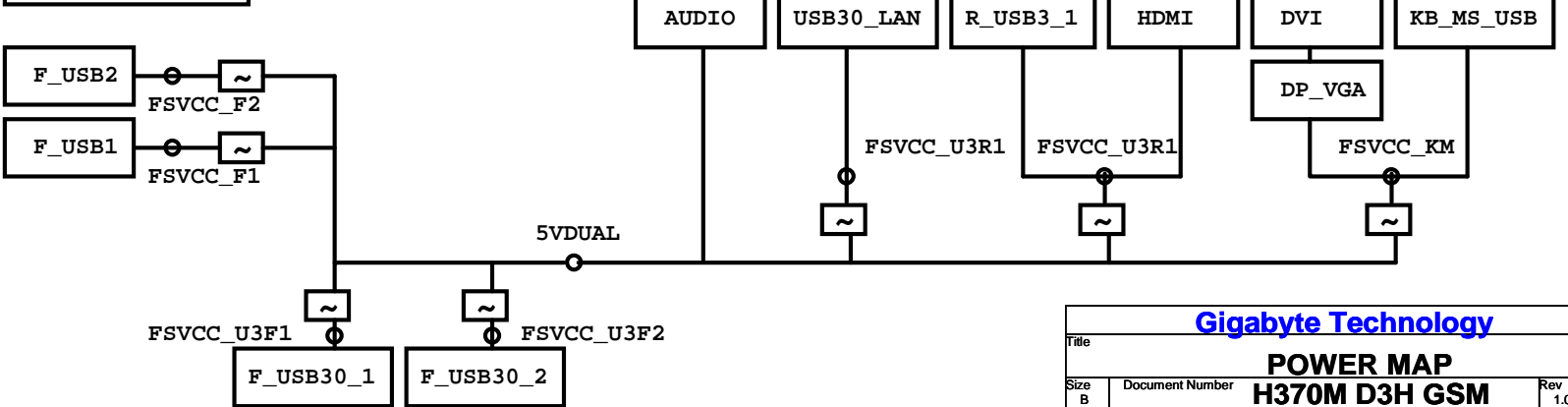
VCORE/VCCGT

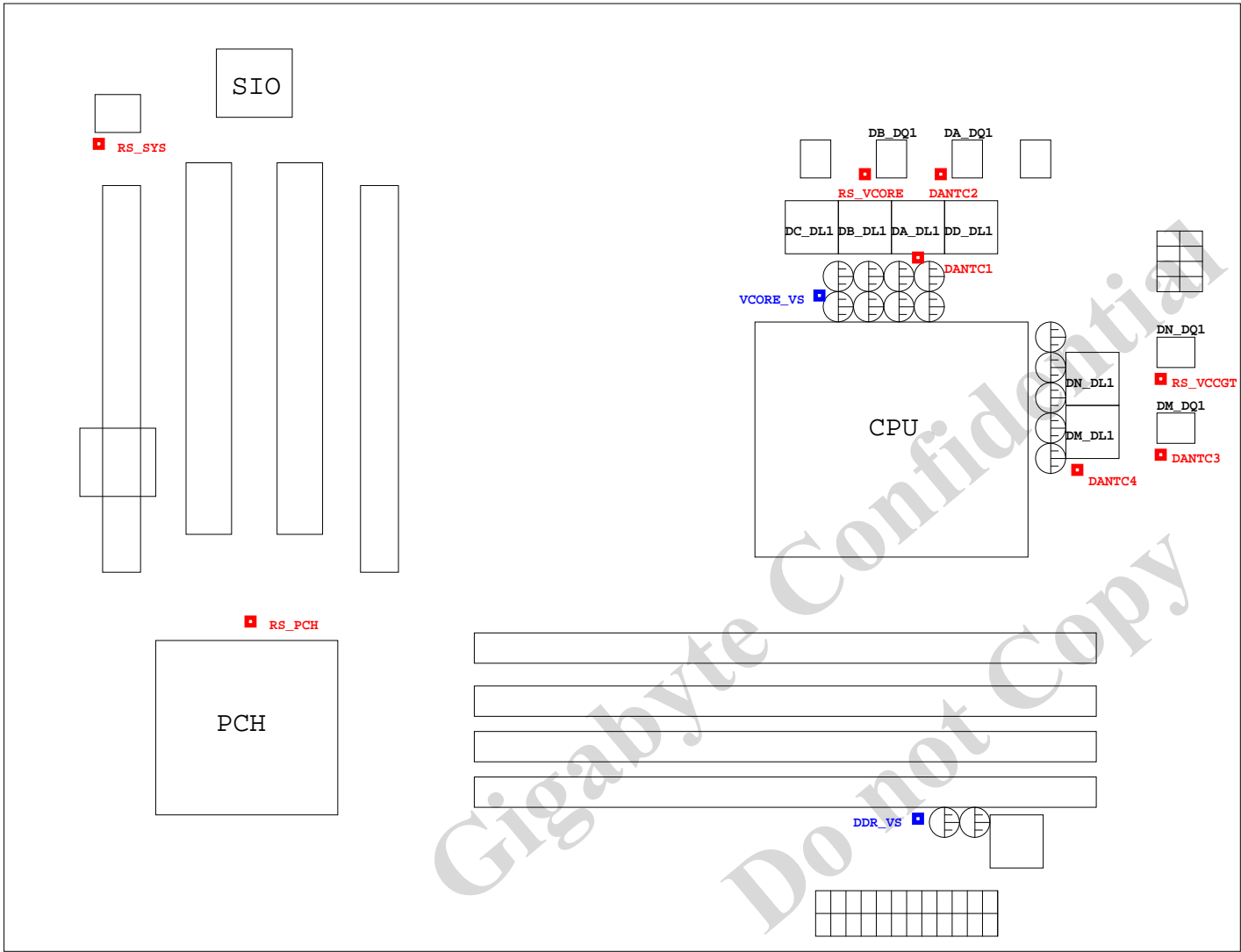


POWER



FUSE POWER F/R





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