

Model Name: H310M H 2.0

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	BIOS
18	FAN CTRL--SIO
19	HWM
20	PCI EXPRESS*16 SLOT
21	PCI EXPRESS*1 SLOT
22	SATA
23	ISL95858_856 PWM
24	ISL95858_856 MOS_VCORE
25	ISL95858_856 MOS_VCCGT
26	VCCSA_VCCIO_VCCPLL
27	RT8237_DDR_VDDQ

rev:1.0

SHEET

TITLE

28	RT8068_VPP
29	RT8237_PCH_VCC1_0_PCH
30	DISCRETE POWER
31	ATX POWER , A_-PROCHOT
32	KB_MS_USB
33	RTD2168 - DP to VGA - IC
34	RTD2168 - DP to VGA - Conn
35	R_USB30
36	REALTEK - RTL8111G
37	USB20_LAN CONNECTOR-RTL8111G
38	Realtek ALC887
39	REAR AUDIO JACK
40	F_USB30
41	F_USB20
42	M.2 X2
43	COM , LPT , TPM
44	F_PANEL
45	HDMI CONN
46	AUDIO LED
47	EMI/ESD
48	POWER MAP
49	TABLE LIST
50	NTC MAP
51	



Gigabyte Technology			
Title			
Cover Sheet			
Size	Document Number	Rev	
Custom	H310M H 2.0	1.0	
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rev:1.0

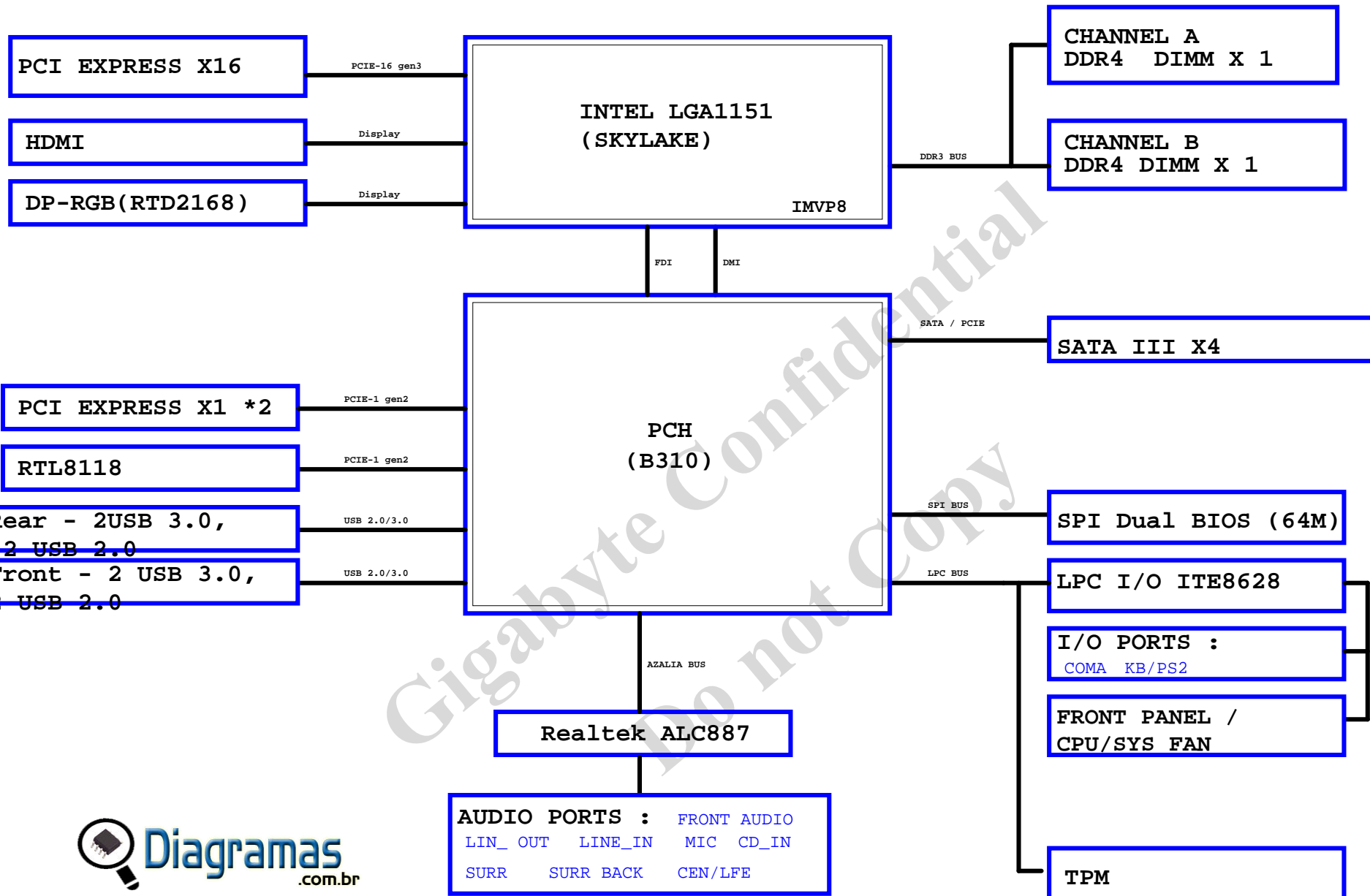
Circuit or PCB layout change

Component value change history

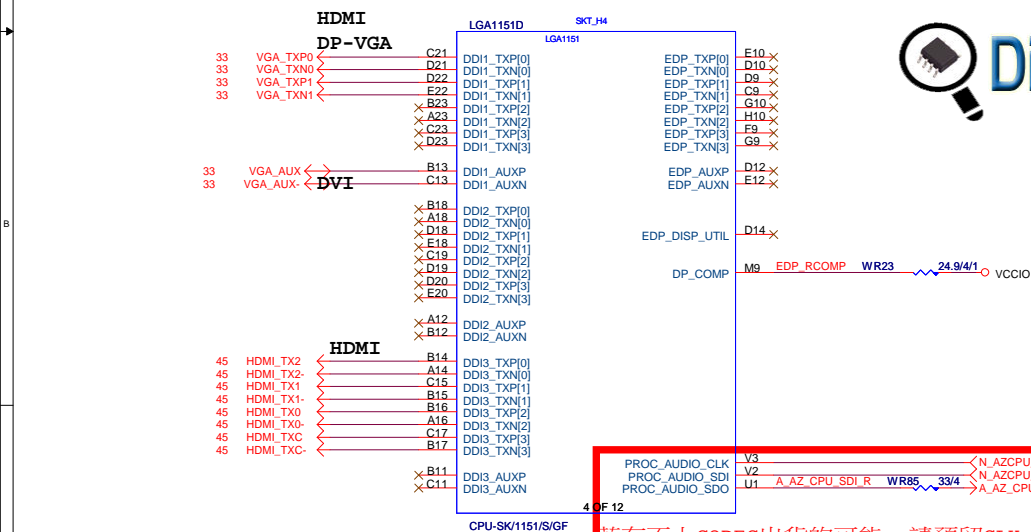
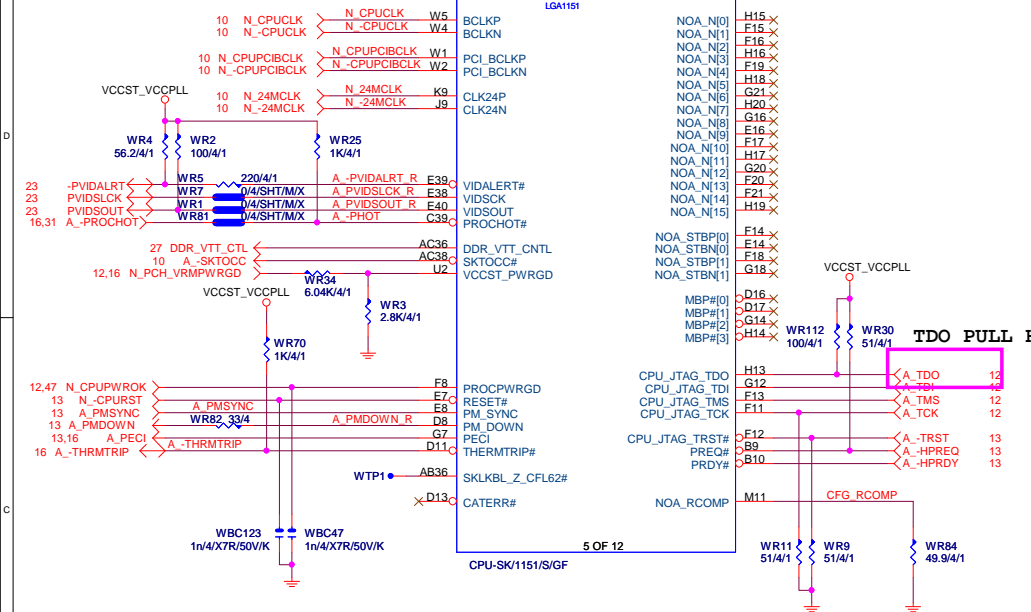
2018/06/08

[illegible][illegible]

BLOCK DIAGRAM



CFL_R0.1



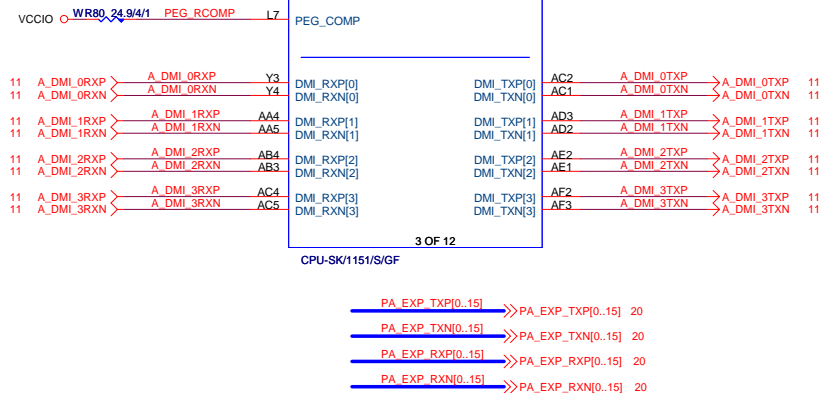
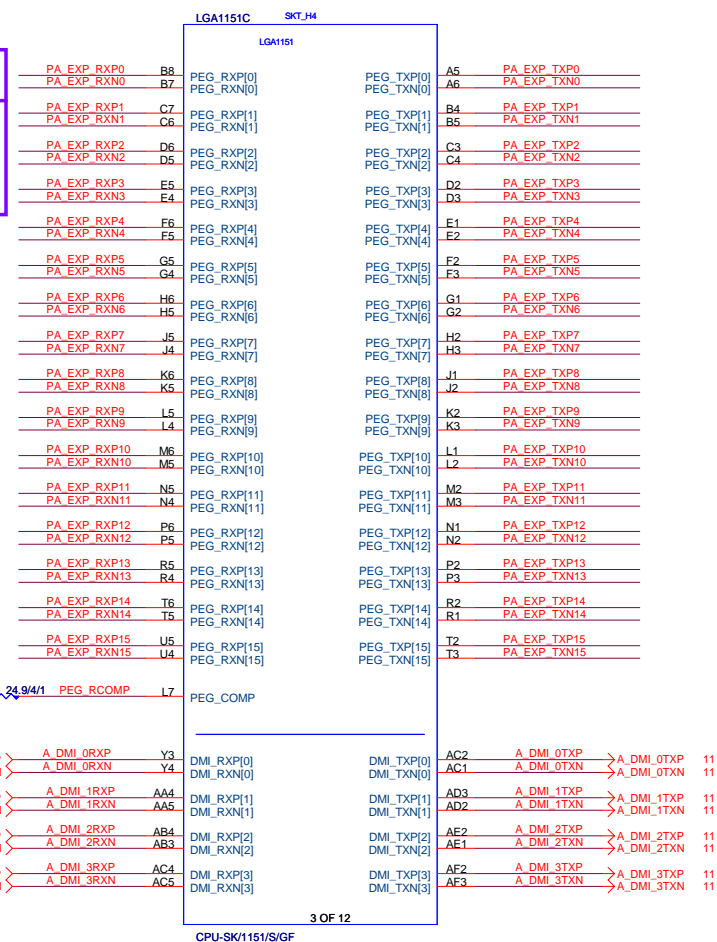
G-15u : (CPU-SK/1151/S/15)
10SC1-F01151-11R / 10SC1-F01151-12R
G-FL : (CPU-SK/1151/S/GF)
10SC1-F01151-21R / 10SC1-F01151-22R

若有不上CODEC出貨的可能，請預留CLK and SDO對地電阻。

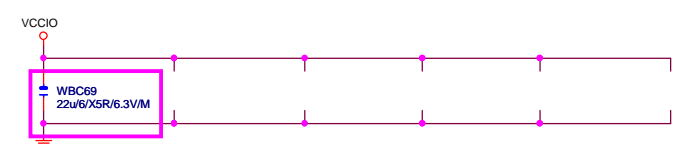
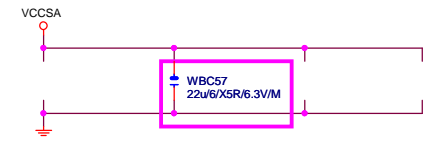
```
CFG[4]: 1=eDP enable / 0=eDP disable
CFG[7]: 1=PEG Train immediately following RESET
        0=PEG Wait for BIOS
```

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

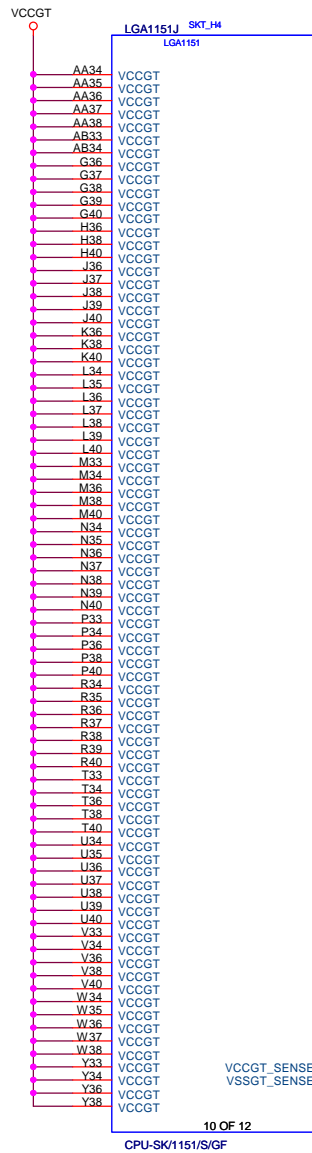
Bifurcation Config.	Signals Lanes		
	CFG[6]	CFG[5]	CFG[2]
1x16	1	1	1
1x16 Reversed	1	1	0
2x8	1	0	1
2x8 Reversed	1	0	0
1x8+2x4	0	0	1
1x8+2x4 Reversed	0	0	0



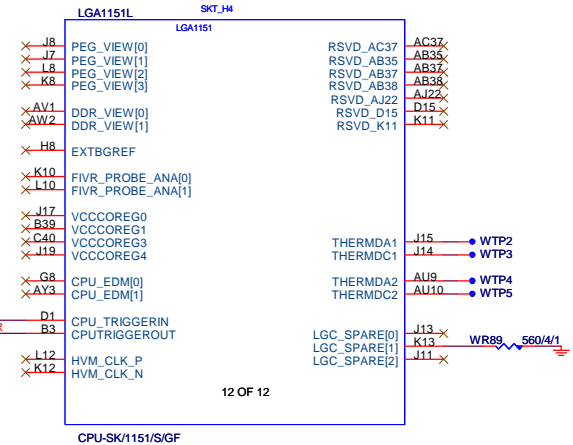
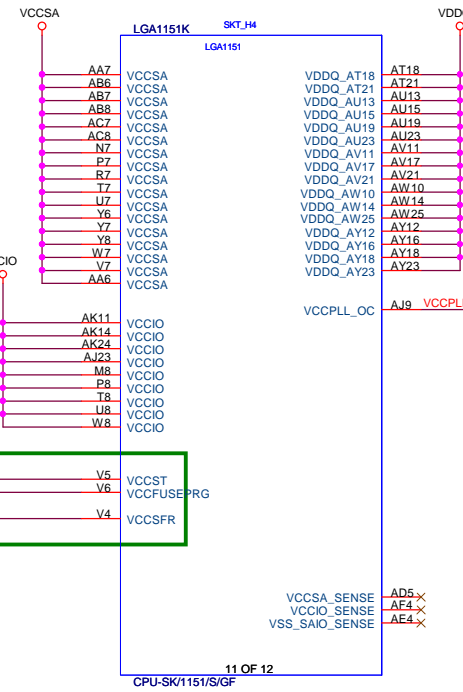
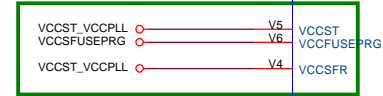
PA_EXP_TXP[0..15]	>>>	PA_EXP_TXP[0..15]	20
PA_EXP_TXN[0..15]	>>>	PA_EXP_TXN[0..15]	20
PA_EXP_RXP[0..15]	>>>	PA_EXP_RXP[0..15]	20
PA_EXP_RXN[0..15]	>>>	PA_EXP_RXN[0..15]	20

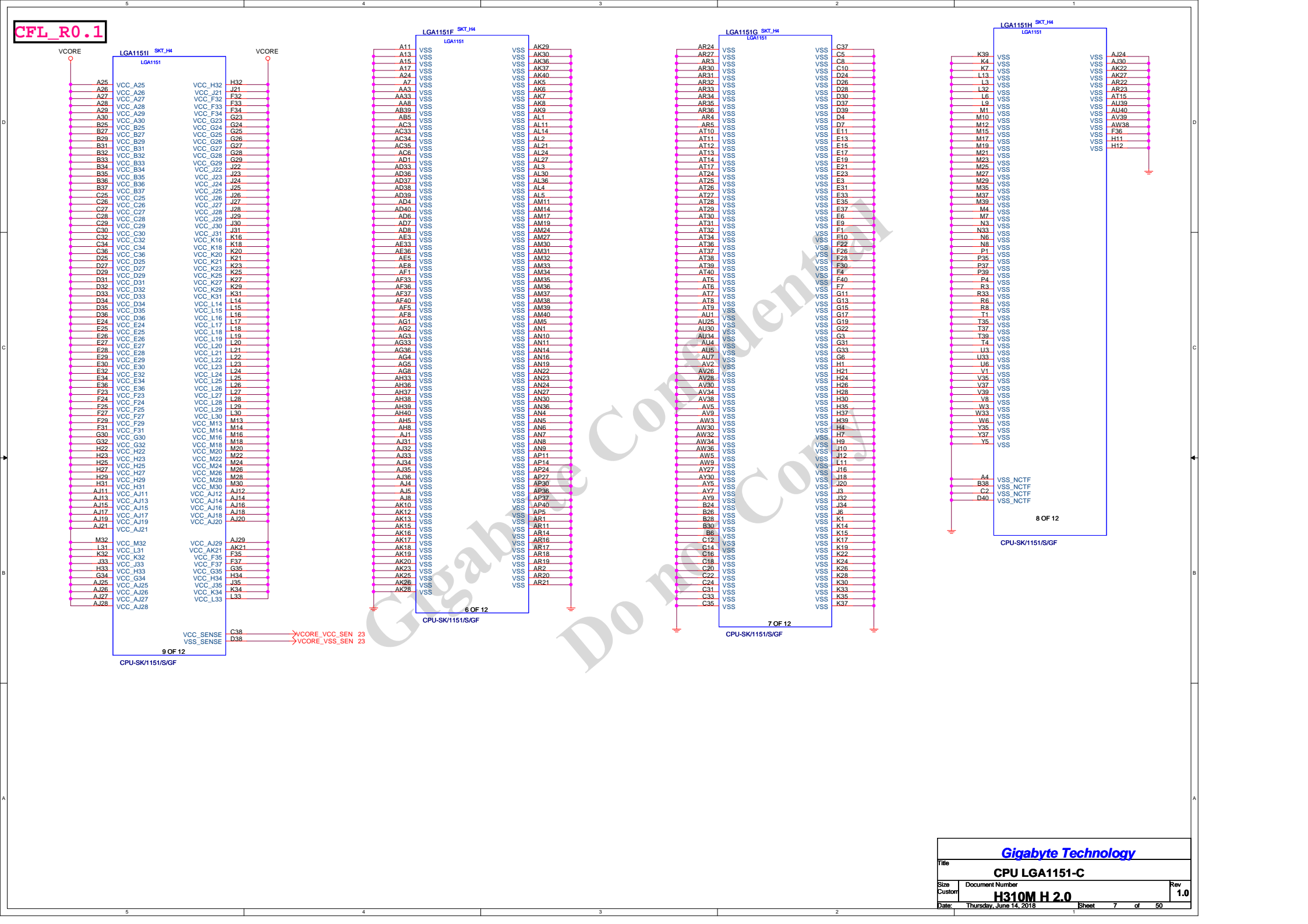


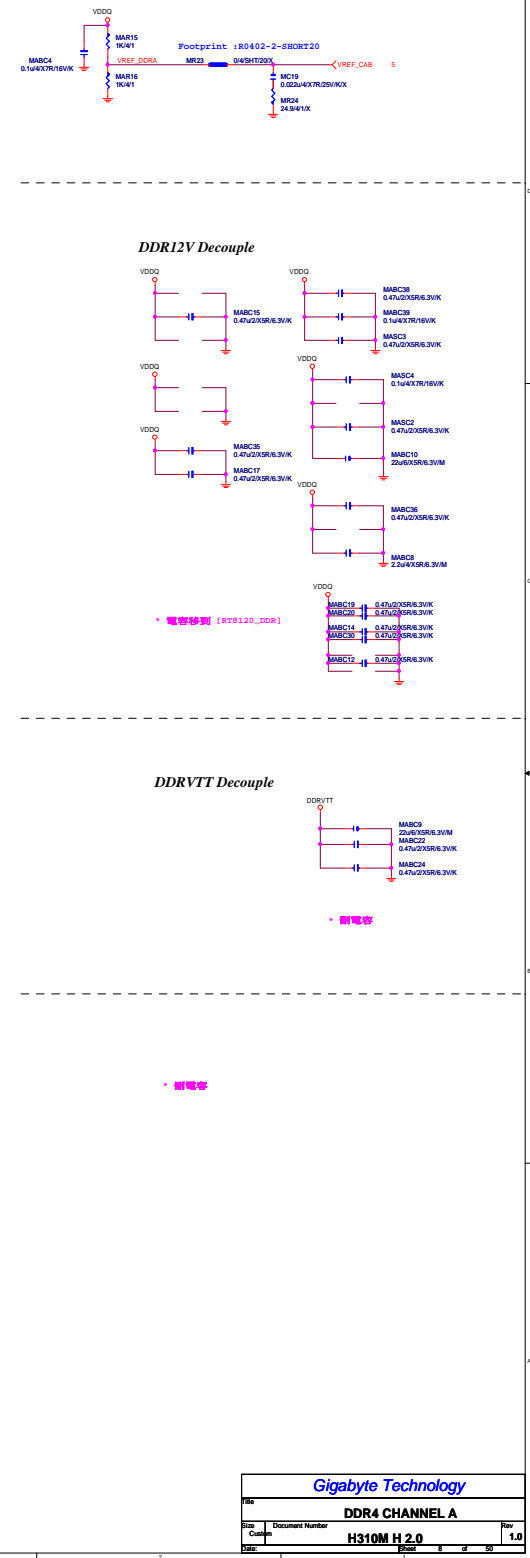
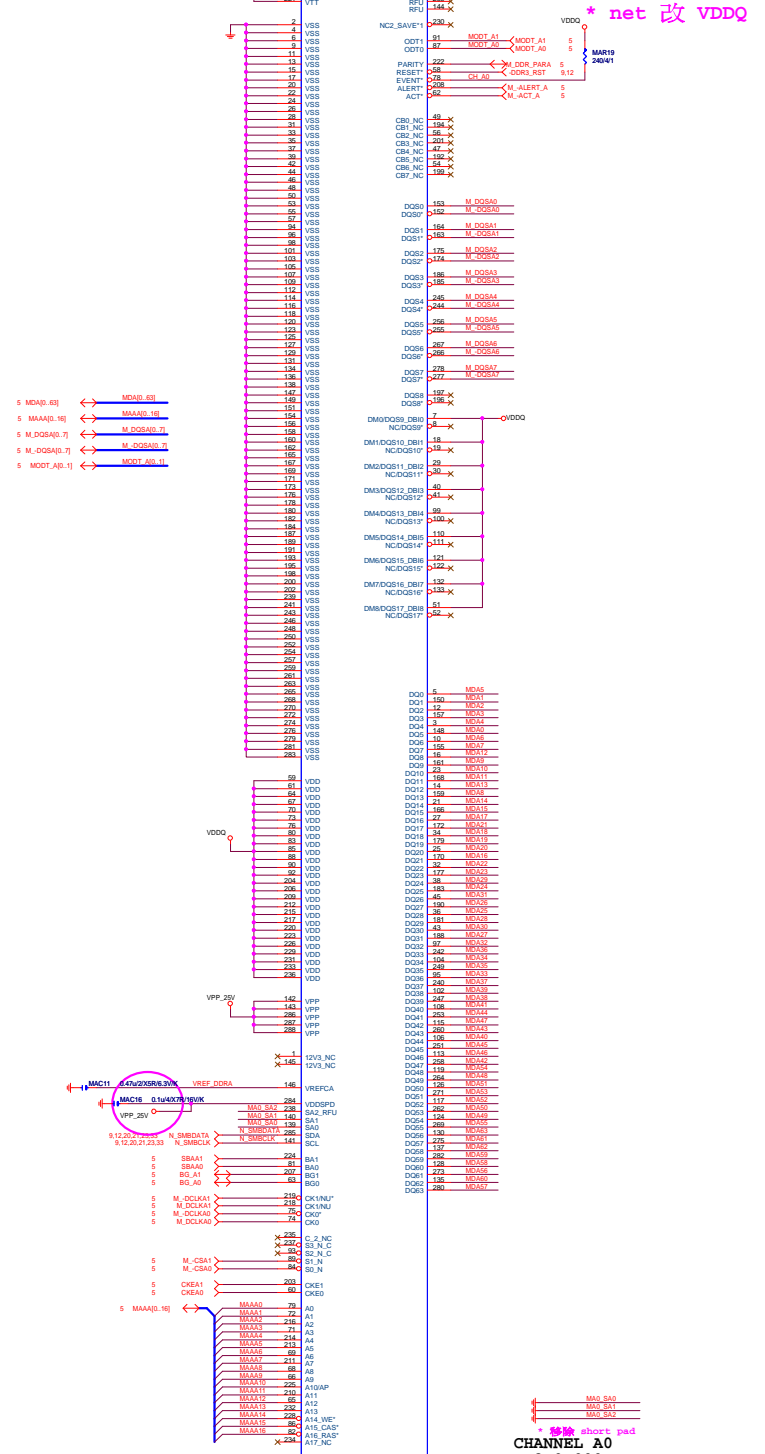
CPU POWER

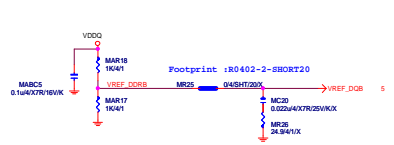
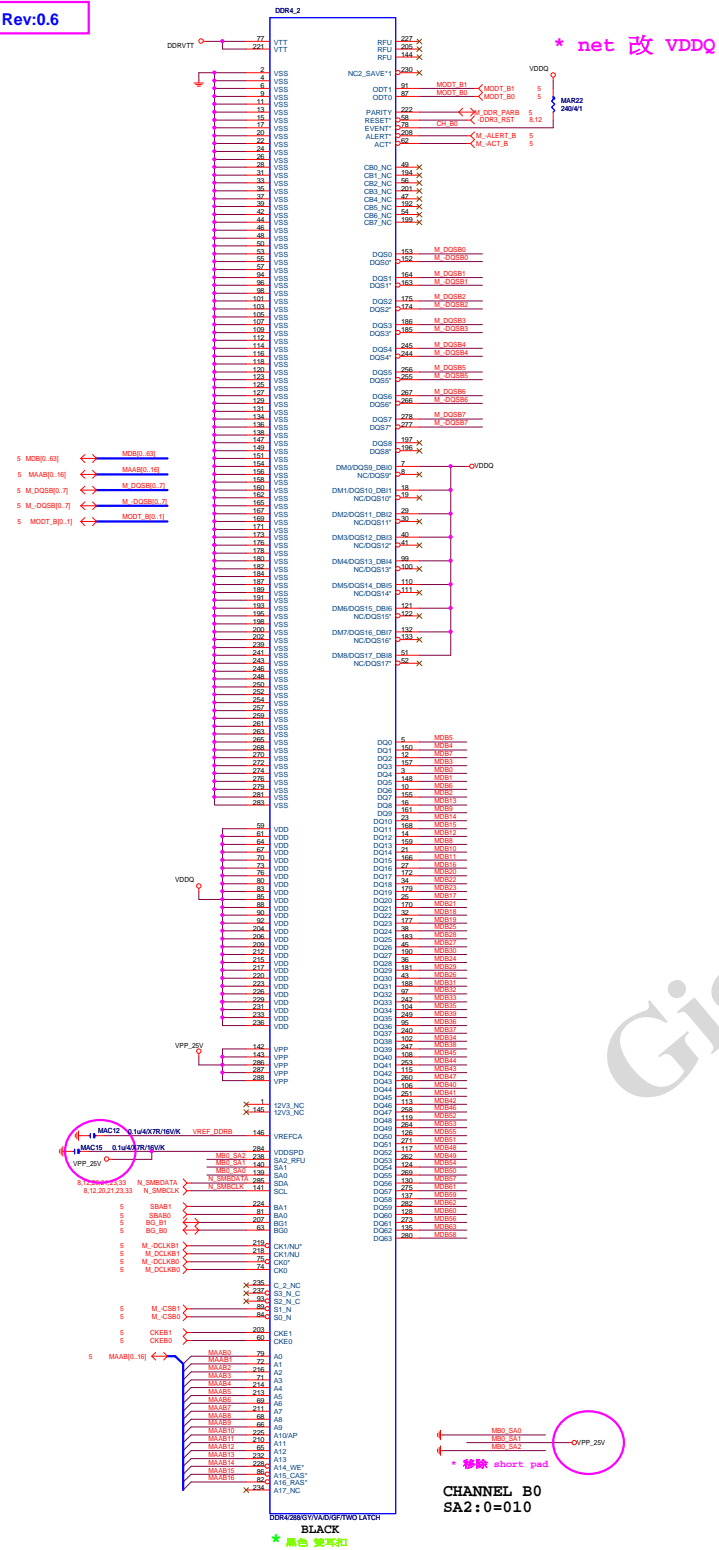


CPU POWER

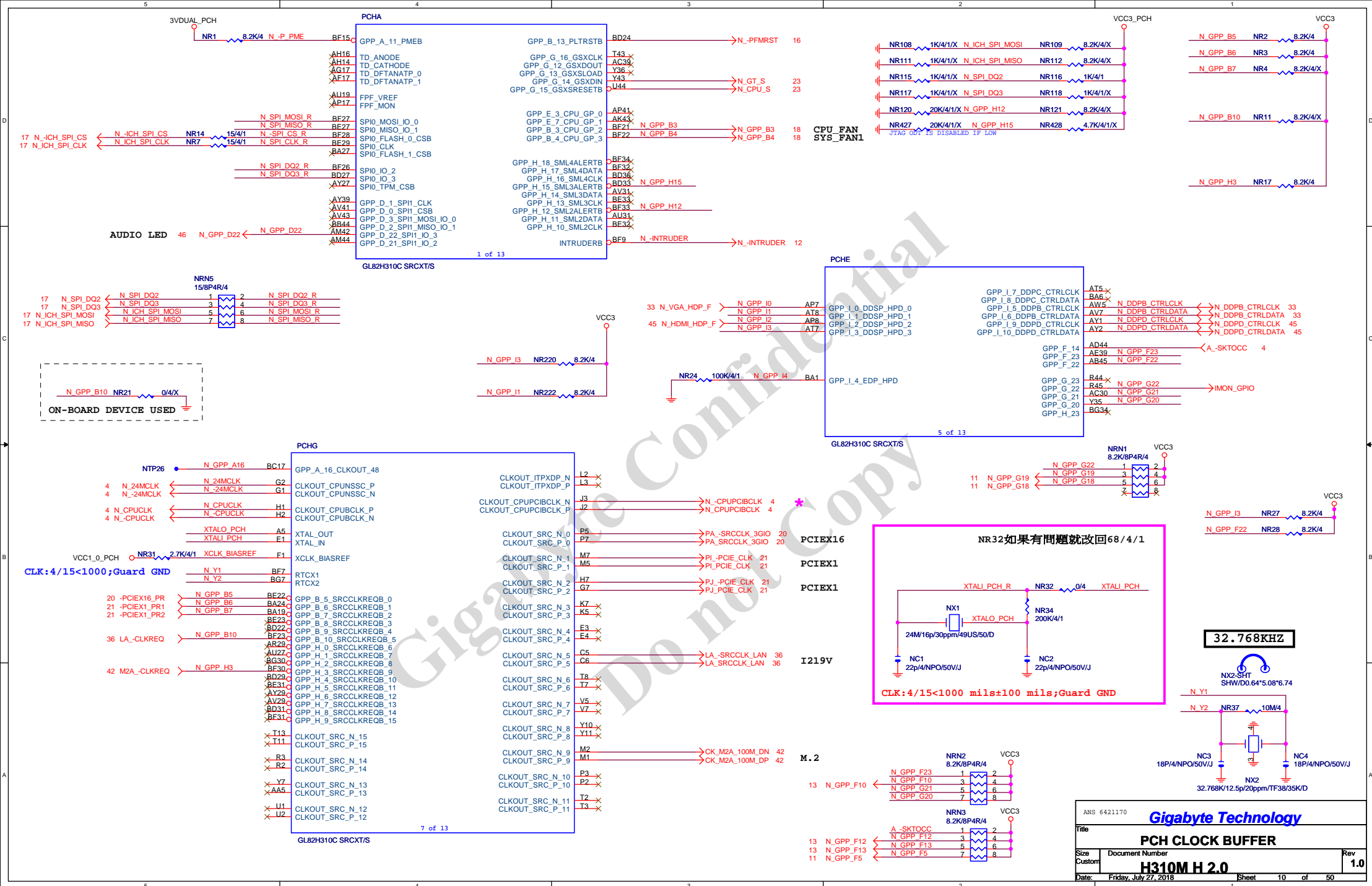


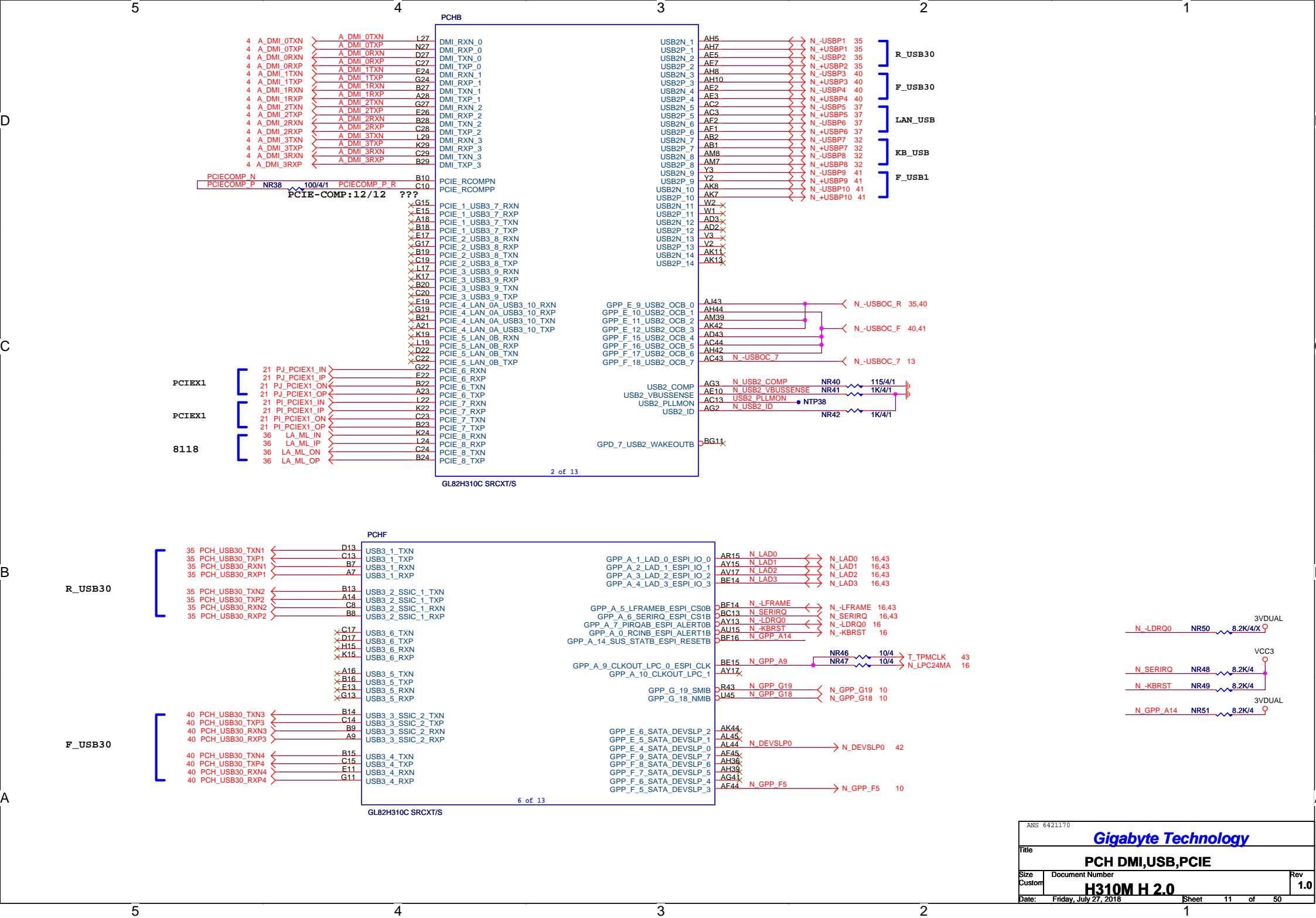


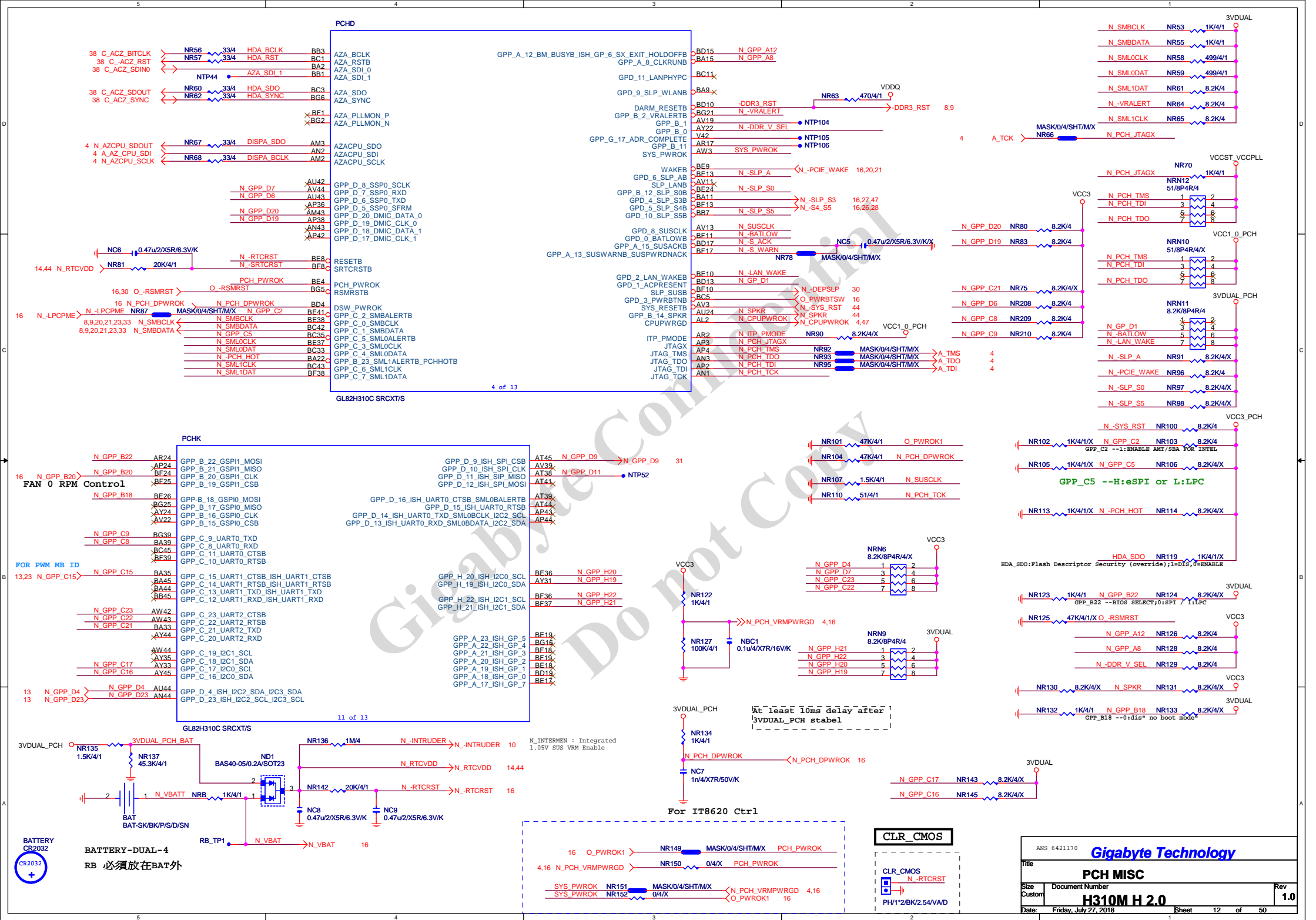


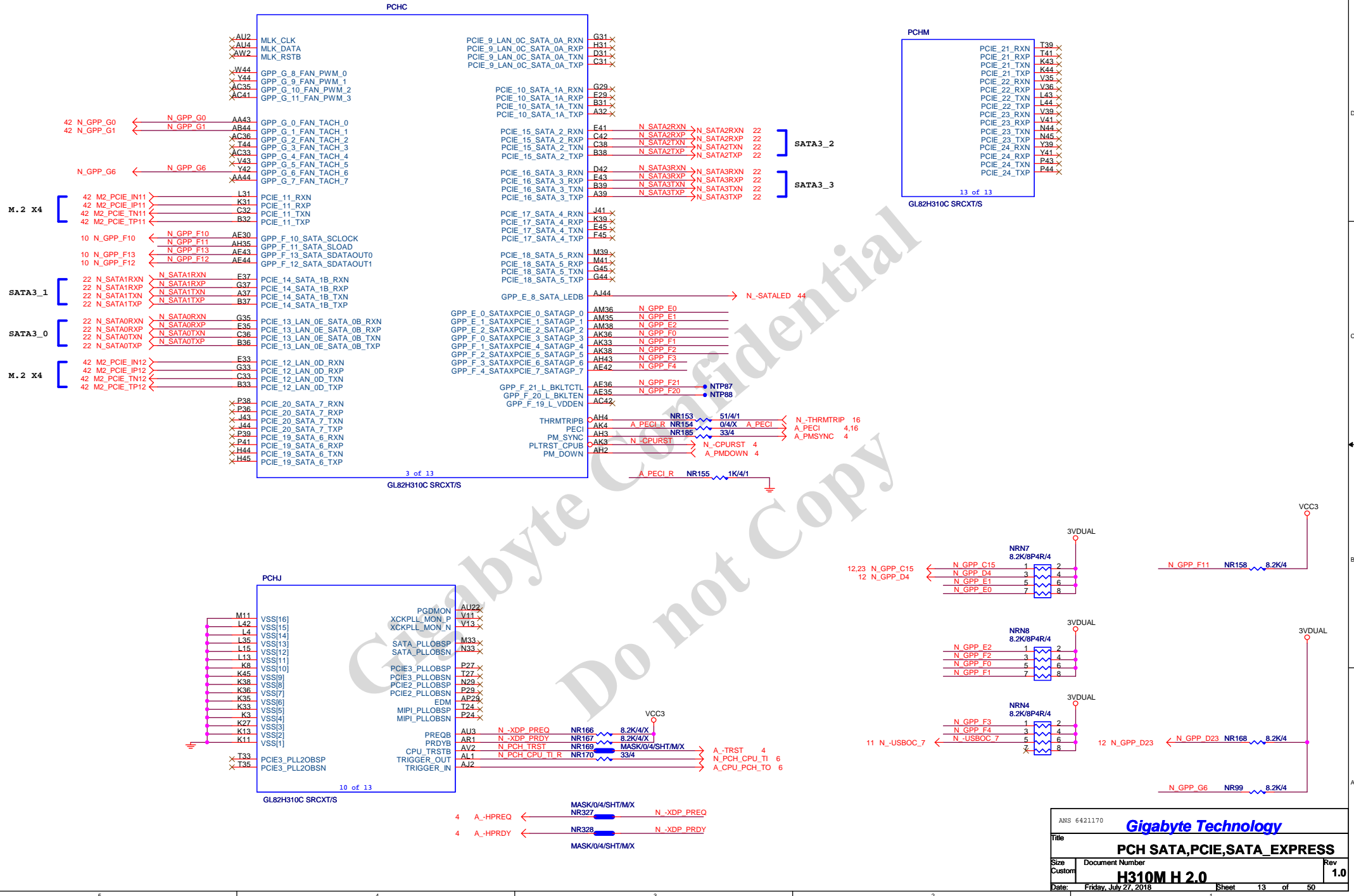


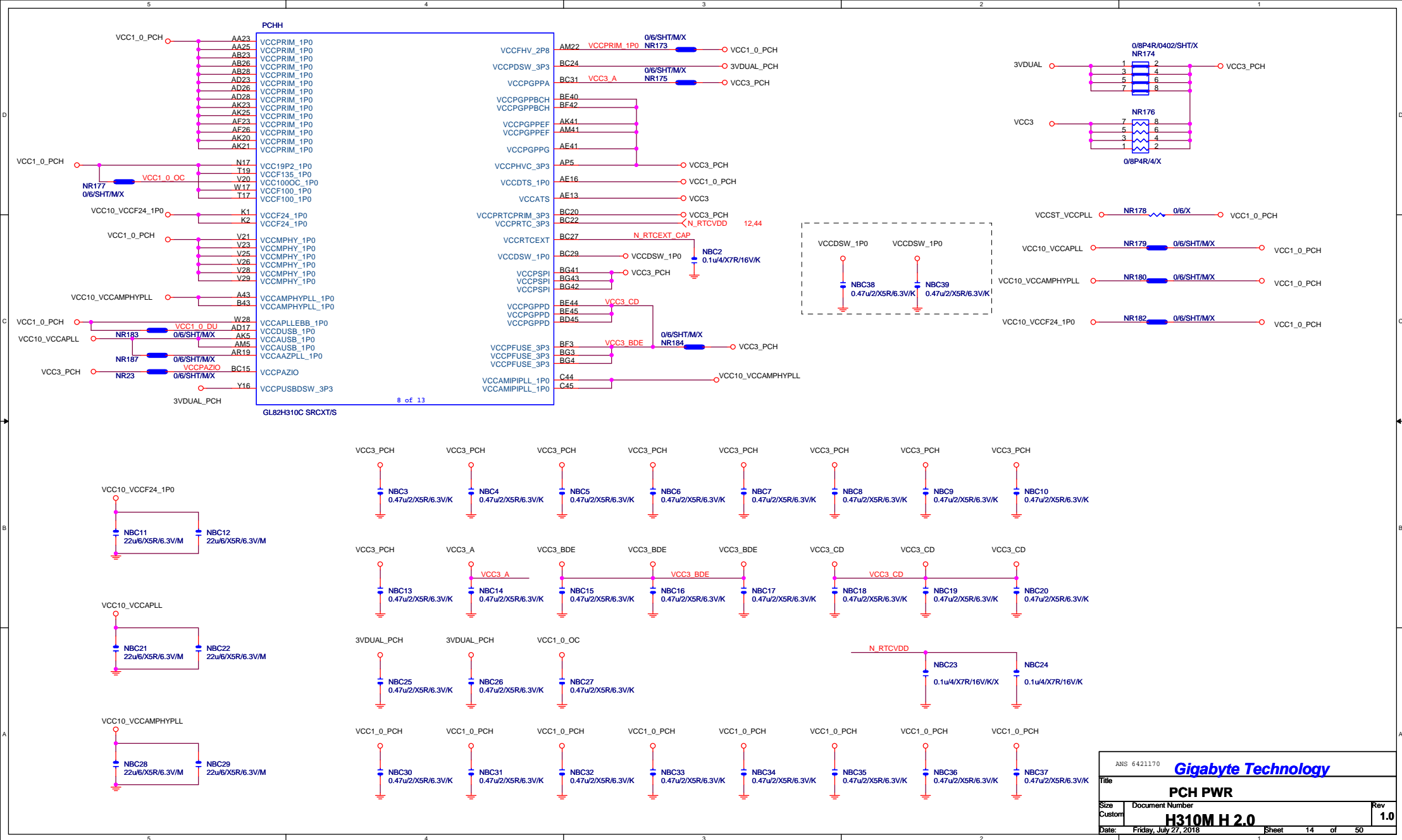
Gigabyte Technology		
DDR4 CHANNEL B		
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SB_HEATSIN

1X

2X

業務指定使用B150M-EVO Heatsink

BGAHSINK_SB-N

PCH_HS
PCH_HS[12SP2-030005-51R_12SP2-030005-52R_12SP2-030005-53R]

PCHI		
A25	VSS	A42
A30	VSS	D45
P22	VSS	BG44
AV38	VSS	BF44
AV45	VSS	BF45
AV8	VSS	BF2
AY11	VSS	W29
AY19	VSS	A35
AY37	VSS	A40
AY4	VSS	A41
AY42	VSS	AA17
AY8	VSS	AA18
B25	VSS	AA20
B3	VSS	AA21
B30	VSS	AA26
B38	VSS	AA28
B4	VSS	AA29
B41	VSS	AB17
BA13	VSS	AC32
BA17	VSS	AE4
BA25	VSS	AE8
BA31	VSS	AF18
BA37	VSS	AF20
BA4	VSS	AF21
BA42	VSS	AF25
BB40	VSS	AF28
BC38	VSS	AF29
BC40	VSS	AF4
BC9	VSS	AF42
BD11	VSS	AG18
BD16	VSS	AG20
BD2	VSS	AG21
BD21	VSS	AG23
BD28	VSS	AG25
F2	VSS	AG26
E31	VSS	AG28
E6	VSS	AG29
F39	VSS	AH11
F43	VSS	AH13
G4	VSS	AH30
G40	VSS	AH32
G42	VSS	AH33
F6	VSS	AH38
G9	VSS	AJ1
H11	VSS	AJ17
H13	VSS	AJ18
H17	VSS	AJ20
H19	VSS	AJ21
H22	VSS	AJ23
H24	VSS	AJ25
H27	VSS	AJ26
H29	VSS	AJ28
H33	VSS	AJ29
H35	VSS	AJ45
H38	VSS	AK10
H4	VSS	AK14
H42	VSS	AK16
H9	VSS	AK17
J4	VSS	AK18
M36	VSS	AK26
M38	VSS	AK28
M4	VSS	AM14
M8	VSS	AN14
M9	VSS	AP19
N13	VSS	AR22
N15	VSS	AR27
N19	VSS	AU29
N22	VSS	AU33
N24	VSS	AV1
N31	VSS	AV10
N42	VSS	AV15
P10	VSS	AV24
P12	VSS	AV27
AV35	VSS	AV33

PCHL		
BD34	VSS[70]	AB18
BD39	VSS[71]	AB20
BE2	VSS[72]	AB21
BF43	VSS[73]	AB25
BF5	VSS[74]	AB29
BG18	VSS[75]	AB4
BG23	VSS[76]	AB42
BG28	VSS[77]	AC10
BG32	VSS[78]	AC11
BG37	VSS[79]	AC14
BG40	VSS[80]	AC16
BG9	VSS[81]	AC38
C1	VSS[83]	AC4
A12	VSS[84]	AC5
CA28	VSS[85]	AC7
C37	VSS[86]	AC8
A6	VSS[87]	AD1
C9	VSS[88]	AD18
D1	VSS[89]	AD20
D10	VSS[90]	AD21
D12	VSS[91]	AD25
D15	VSS[92]	AD29
D16	VSS[93]	AD45
B12	VSS[94]	AE11
D19	VSS[95]	AE14
D21	VSS[96]	AE32
D24	VSS[97]	AE33
D25	VSS[98]	AE38
D29	VSS[99]	AK29
D30	VSS[100]	AK30
D33	VSS[101]	AK32
D35	VSS[102]	AK35
D36	VSS[103]	AK39
D39	VSS[104]	AL4
D44	VSS[105]	AL42
D7	VSS[106]	AM10
P13	VSS[107]	AM11
P15	VSS[108]	AM13
P17	VSS[109]	AM17
P19	VSS[110]	AM19
P21	VSS[111]	AM24
P33	VSS[112]	AM27
P35	VSS[113]	AM29
P4	VSS[114]	AM32
P42	VSS[115]	AM33
P8	VSS[116]	AM4
R1	VSS[117]	AN45
R32	VSS[118]	AP10
T10	VSS[119]	AP11
T14	VSS[120]	AP13
T22	VSS[121]	AP15
T29	VSS[122]	AP22
T32	VSS[123]	AP27
T36	VSS[124]	AP31
T38	VSS[125]	AP33
Y38	VSS[126]	AP34
Y4	VSS[127]	AP39
Y8	VSS[128]	T4
T42	VSS[129]	W26
T5	VSS[130]	W16
U4	VSS[131]	V17
U42	VSS[132]	V18
V10	VSS[133]	V30
V14	VSS[134]	V32
W3	VSS[135]	V33
AR13	VSS[136]	V38
AR31	VSS[137]	V4
AR33	VSS[138]	V8
AR4	VSS[139]	W18
AT10	VSS[140]	W20
AT13	VSS[141]	W21
AT35	VSS[142]	W23
AT37	VSS[143]	W25
AT42	VSS[144]	A44
AU11	VSS[145]	BE1
AU17	VSS[146]	BD1
BD30	VSS[147]	B1
W45	VSS[148]	A2
Y13	VSS[149]	B2
Y14	VSS[150]	A3
Y30	VSS[151]	A4
Y32	VSS[152]	B44
Y33	VSS[153]	B45
BG14	VSS[154]	

SB_HEATSIN

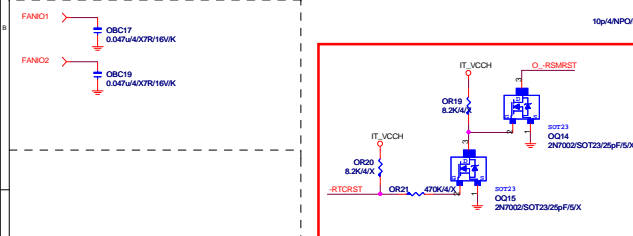
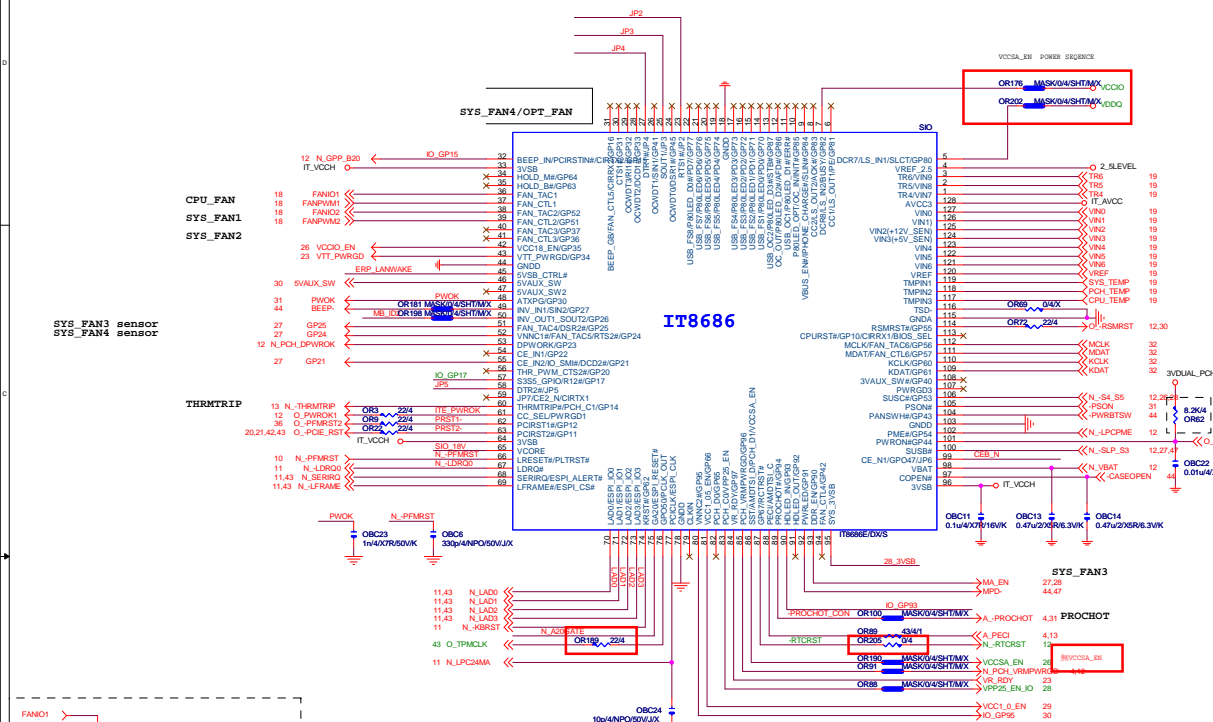
1X

2X

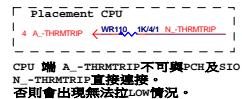
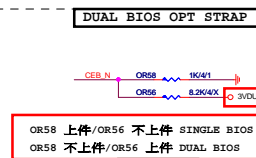
業務指定使用B150M-EVO Heatsink

BGAHSINK_SB-N

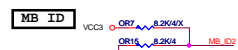
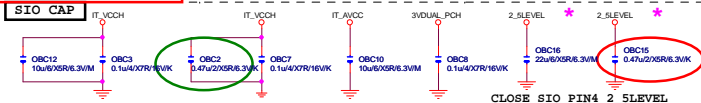
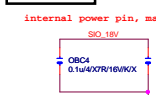
PCH_HS
PCH_HS[12SP2-030005-51R_12SP2-030005-52R_12SP2-030005-53R]



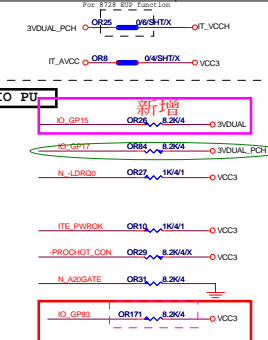
FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL4 FAN_TAC4
OPT_FAN OR SYS_FAN4	FAN_CTL5 FAN_TAC5
THRMTRIP	PIN56
PROCHOT	PIN89



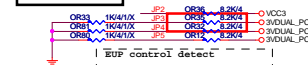
SIO_18V



PWR	SHT
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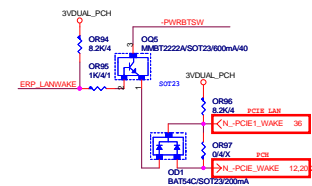
SIO STRAP



JP2	1	Disable WDT to reset PWROK
	0	Enable WDT to reset PWROK
JP3		Dual-BIOS CS pin mode select bit "0" See the below table
JP4	1	LPC/ESPI power VCCBT = 3.3V
	0	LPC/ESPI power VCCBT = 1.8V
JP5	1	LPC I/F
	0	ESPI I/F
JP6	1	Enable Dual BIOS Function (for GigaByte On)
	0	Disable Dual BIOS Function (for GigaByte On)
JP7		Dual-BIOS CE pin mode select bit "1" See the below table
	1 1	CE pin disable (Hold pin mode)
JP7	1	CE mode 1
JP3	0 1	CE mode 2
	0 0	CE mode 3

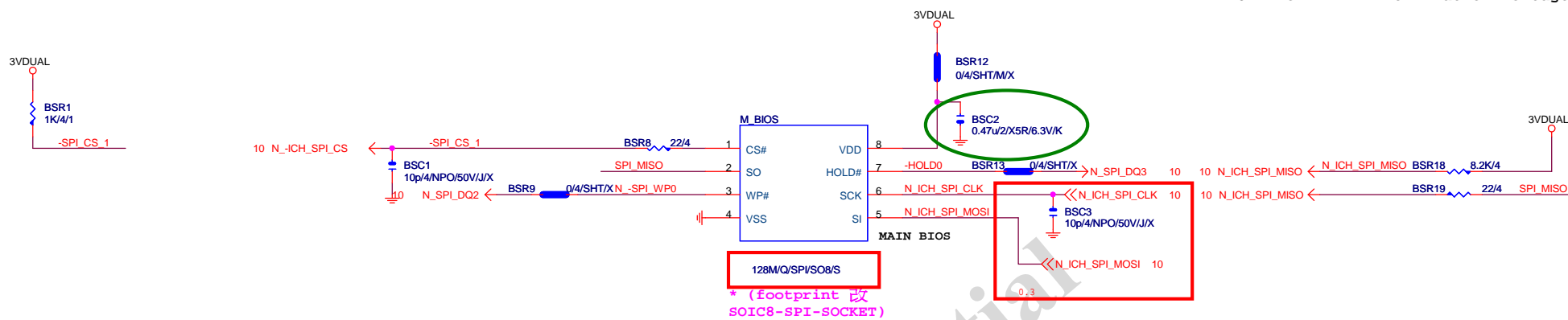
請依開案規格，選擇Support Erp下 LAN Wake up組態。

(組態一) PCIE LAN(Single & Dual LAN)



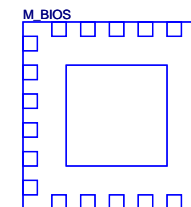
ERP Wake on LAN		
Single LAN	Realtek	組態一
	Atheros	
	Intel 219	組態二
Dual LAN (只支持 LAN2Wake ERP下 wake up)	Atheros+Atheros	組態一
	Intel 219+Atheros	組態三
	Intel 219+Intel 210	
No Support ERP	Single LAN BOM 只 OR97。 Dual LAN BOM 只 OR97、OR99。	

Gigabyte Technology			
Title IT8686			
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BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K



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

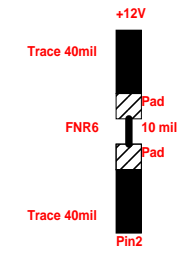
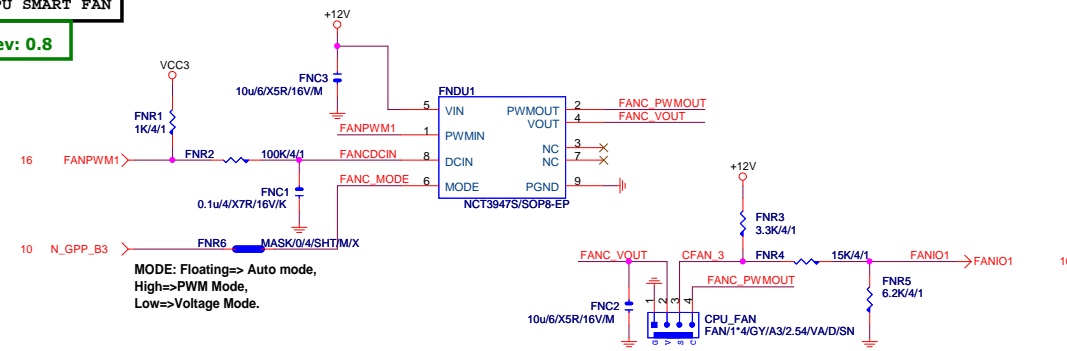
* 試産先上, PVT 移除

Gigabyte Technology

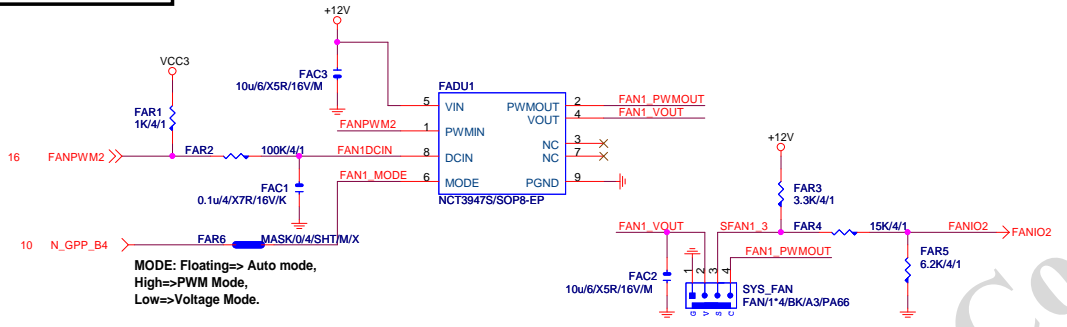
Title			BIOS
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CPU SMART FAN

Rev: 0.8

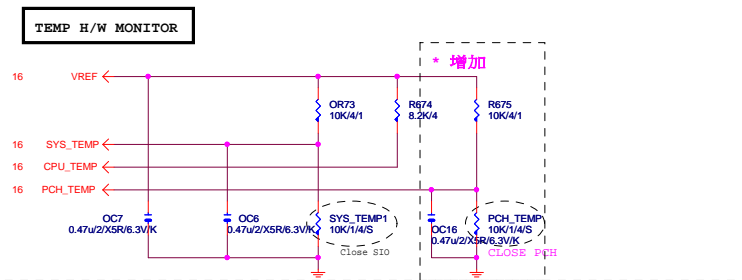


A. SYSTEM FAN1

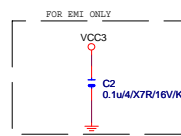
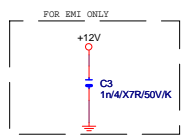
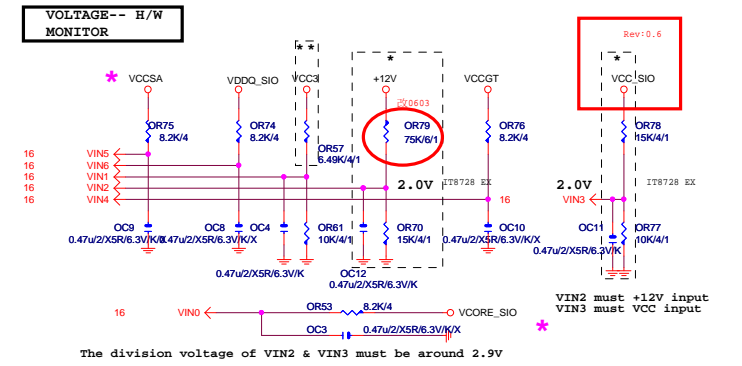
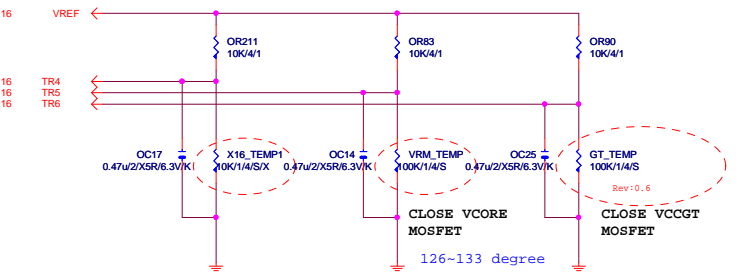


Gigabyte Technology

Title			
FAN CTRL			
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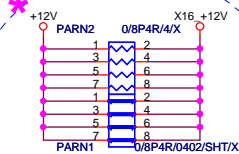


低階機種: 3個FAN時使用



★Update 2015-04.24

Gigabyte Technology			
Title		HWM,KB/MS, FAN CTRL	
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**+12 - protect
short-wire test**

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

8,9,12,21,23,33 N_SMBCLK
8,9,12,21,23,33 N_SMBDATA

12,16,21 N_-PCIE_WAKE

10 -PCIE16_PR

PA_EXP_TXP0_C
PA_EXP_TXN0_C

PA_EXP_TXP1_C
PA_EXP_TXN1_C

PA_EXP_TXP2_C
PA_EXP_TXN2_C

PA_EXP_TXP3_C
PA_EXP_TXN3_C

PA_EXP_TXP4_C
PA_EXP_TXN4_C

PA_EXP_TXP5_C
PA_EXP_TXN5_C

PA_EXP_TXP6_C
PA_EXP_TXN6_C

PA_EXP_TXP7_C
PA_EXP_TXN7_C

PA_EXP_TXP8_C
PA_EXP_TXN8_C

PA_EXP_TXP9_C
PA_EXP_TXN9_C

PA_EXP_TXP10_C
PA_EXP_TXN10_C

PA_EXP_TXP11_C
PA_EXP_TXN11_C

PA_EXP_TXP12_C
PA_EXP_TXN12_C

PA_EXP_TXP13_C
PA_EXP_TXN13_C

PA_EXP_TXP14_C
PA_EXP_TXN14_C

PA_EXP_TXP15_C
PA_EXP_TXN15_C

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--> 2.5GHZ

PCE-E X1(單向) BANDWITH=2.5GHZ*(8b/10b)=2Gb/s=250MB/s

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

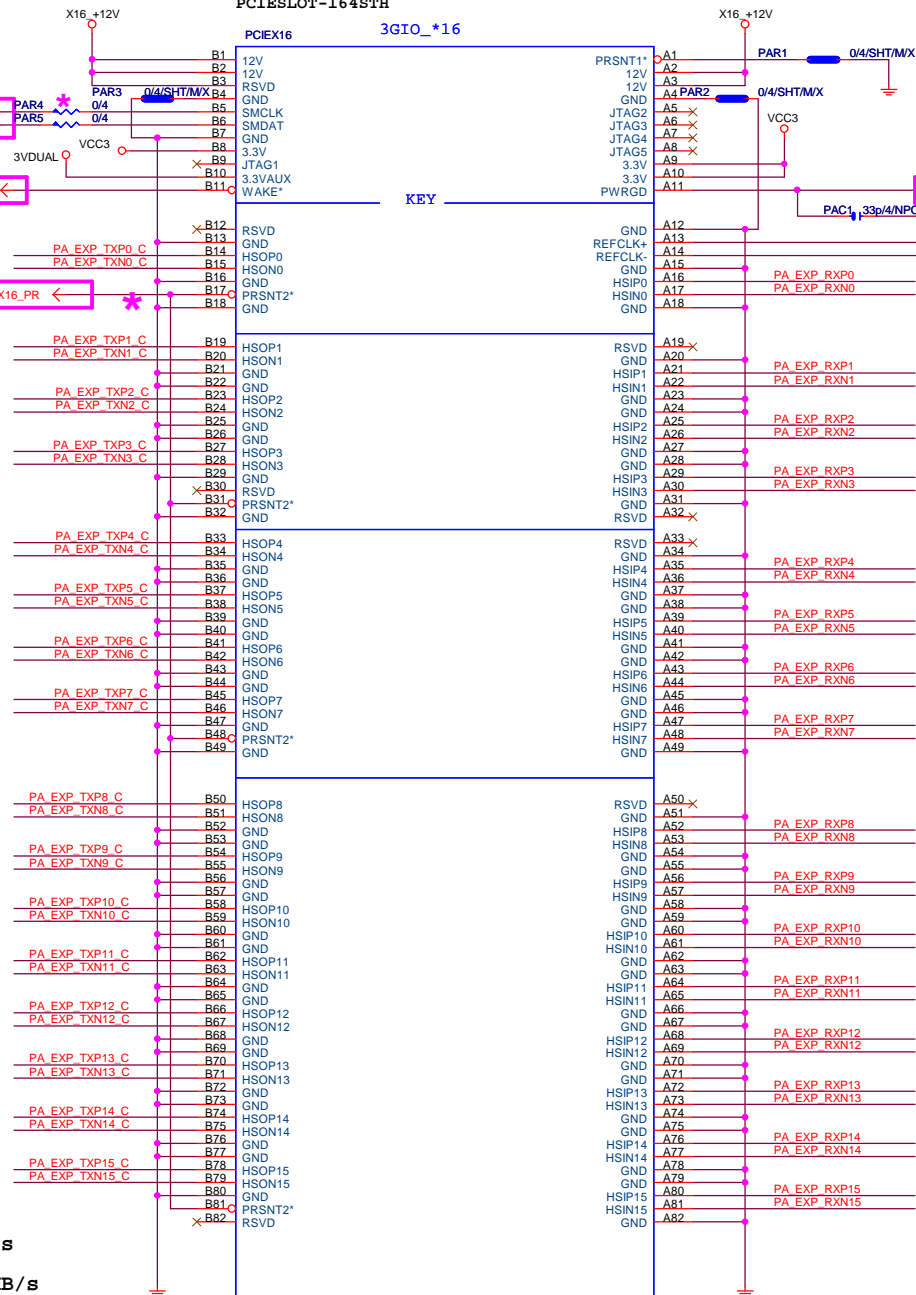
PCE-E X16(單向) BANDWITH=2.5GHZ*(8b/10b)X16=32Gb/s=4GB/s

PCE-E X16(雙向) BANDWITH=2.5GHZ*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

PCIESLOT-1645TH

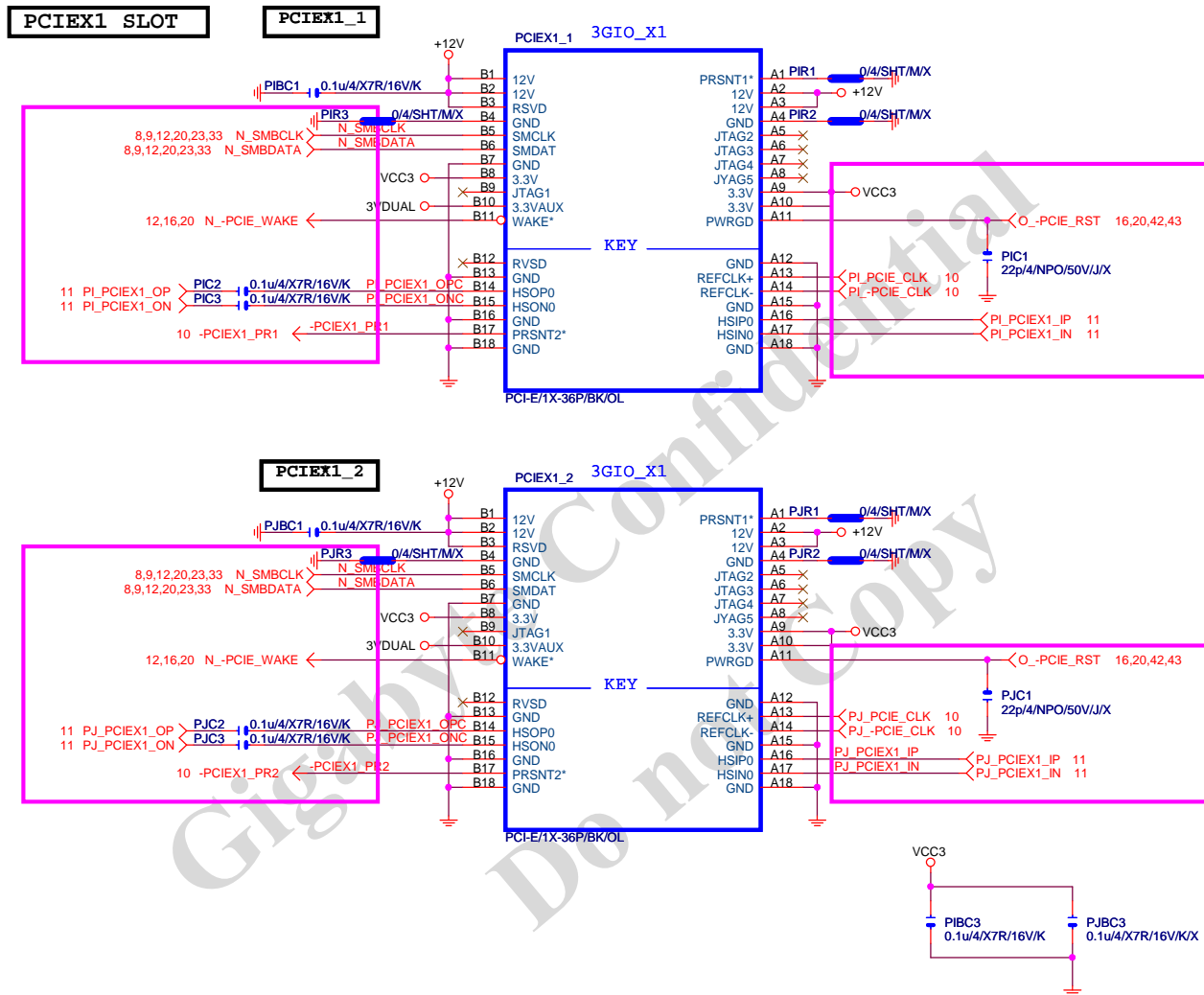
PCIEX16 3GIO_*16



PCI-E/16X-164P/GY/LONG DOUBLE/HK*2/[11AC1-023164-D1R_11AC1-023164-D3R]

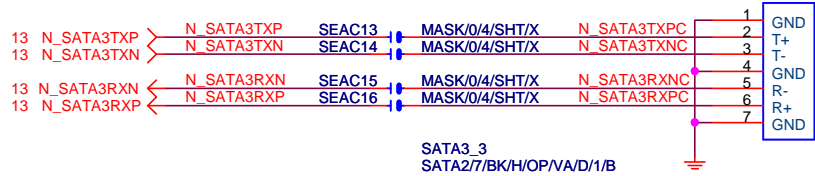
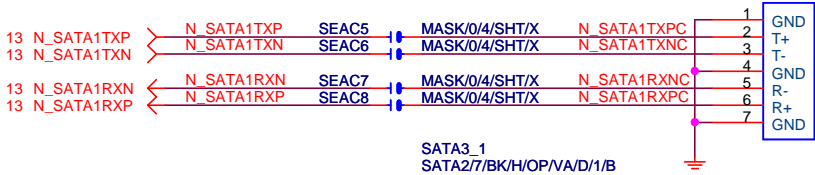
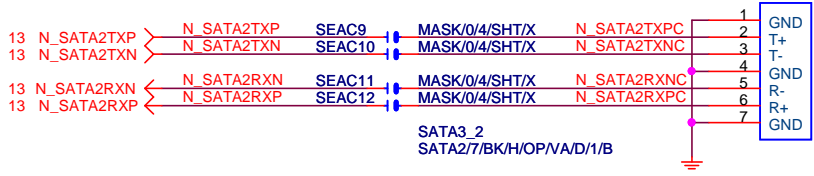
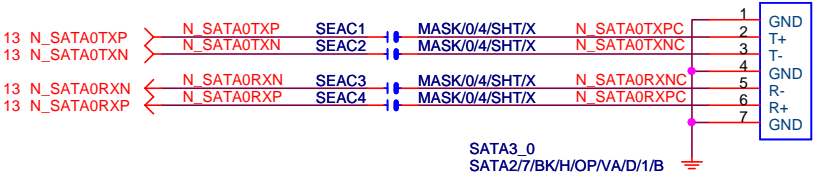
Gigabyte Technology

Title			PCI EXPRESS * 16
Size	Document Number	H310M H 2.0	
Custom			Rev 1.0
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Gigabyte Technology

Title		PCIE_X1 1,2	Rev 1.0
Size	Document Number	H310M H 2.0	
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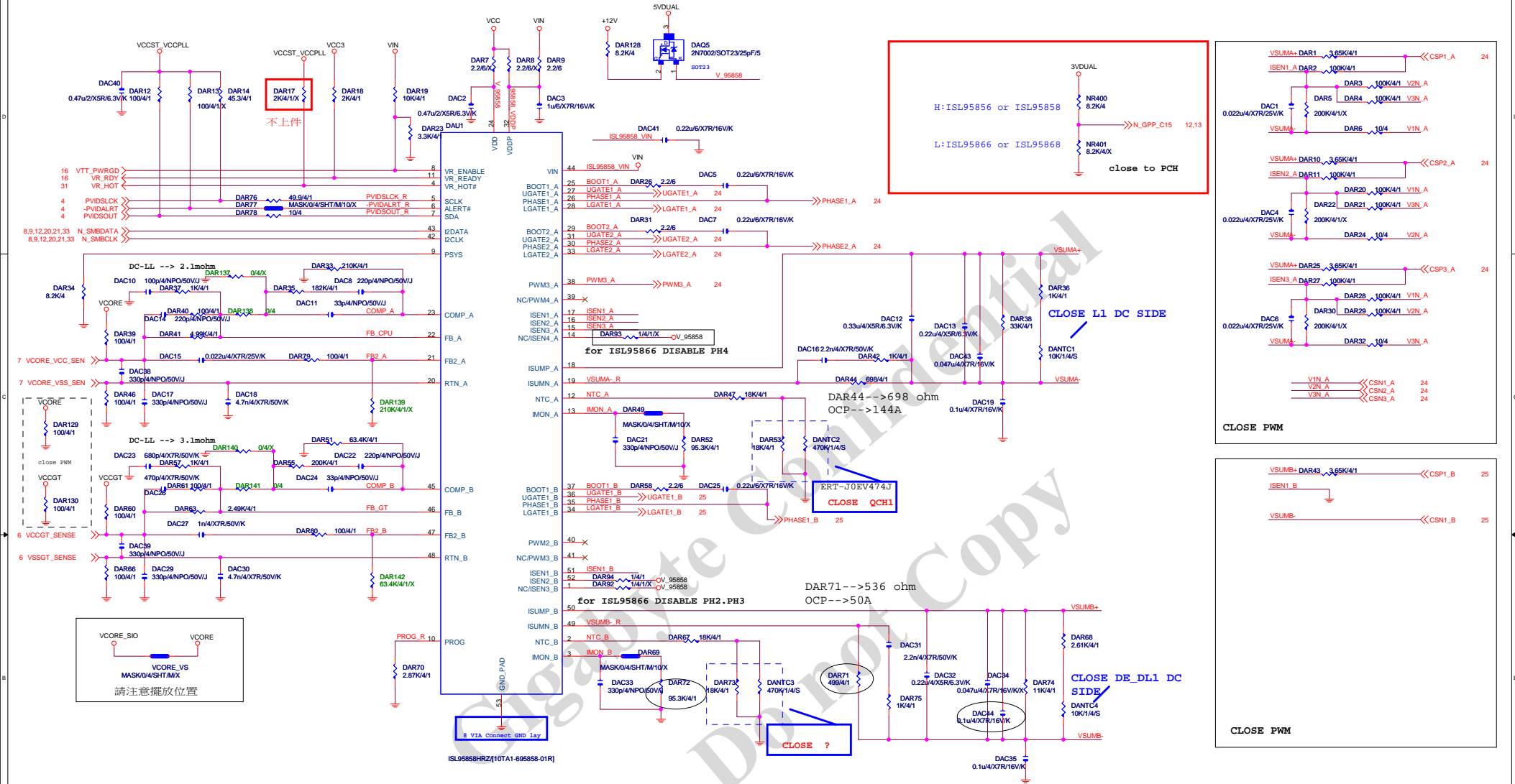


Gigabyte Technology

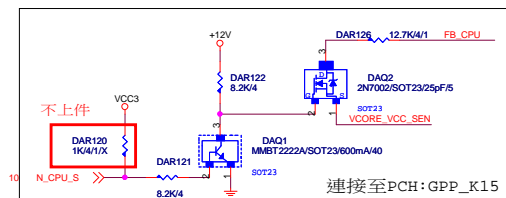
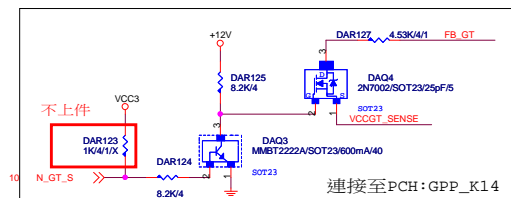
SATA EXPRESS

H310M H 2.0

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		1.0
Date:	Thursday, June 14, 2018	Sheet 22 of 50

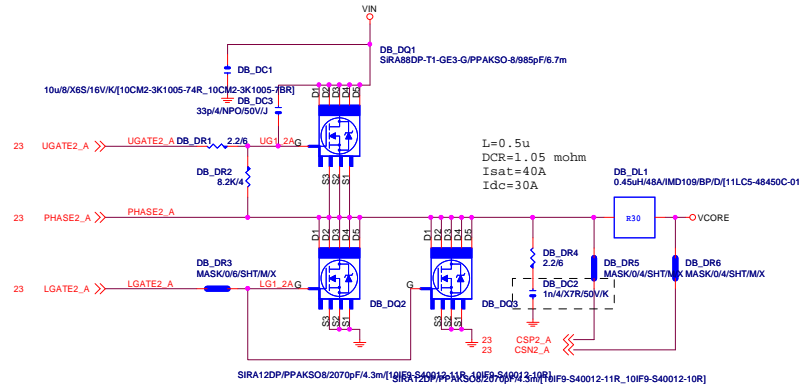
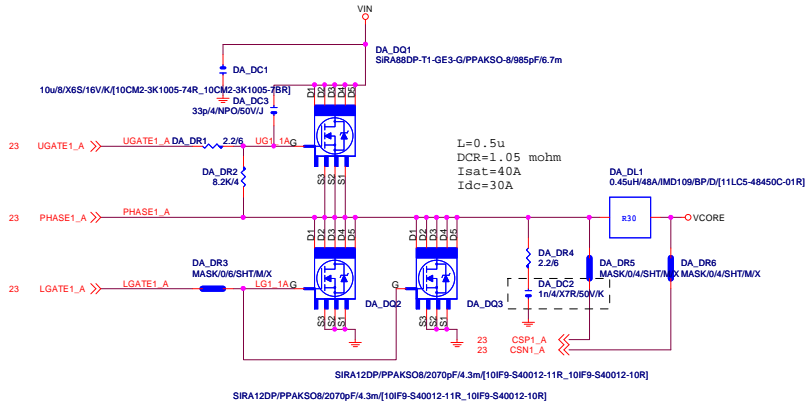


VSCORE	ISL95858	ISL95868	VCCGT	ISL95858	ISL95868
DAR137	X	V	DAR140	X	V
DAR138	V	X	DAR141	V	V
DAR139	X	V	DAR142	X	V
DAC15	V	X	DAC27	V	X
DAR79	V	X	DAR80	V	X
DAR33	V	X	DAR51	V	X

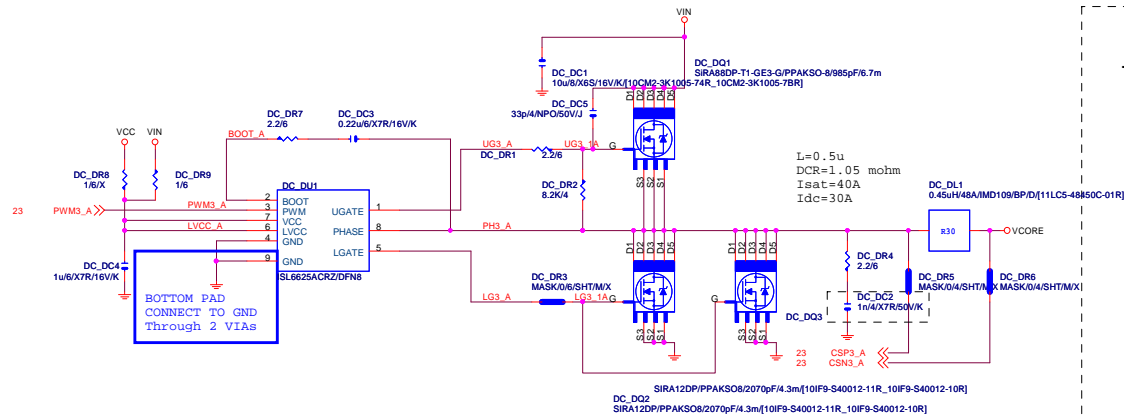
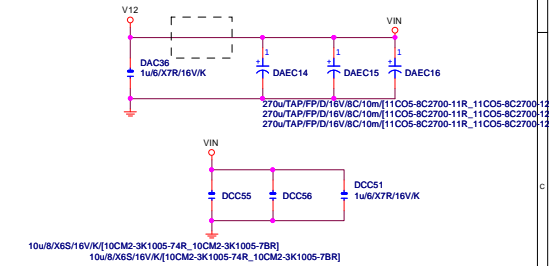
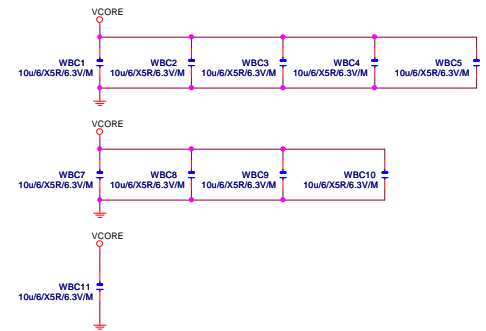
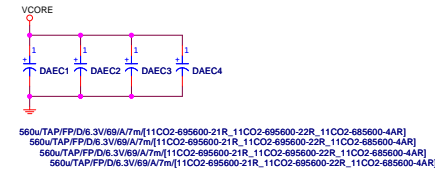


REV:0.14

VCORE



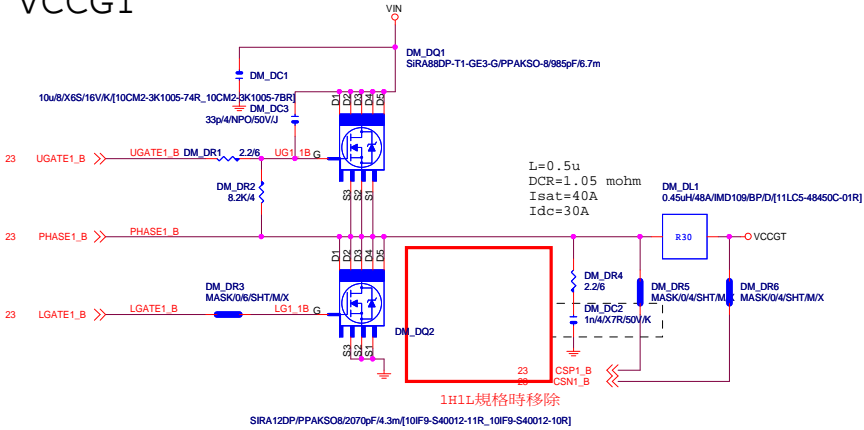
VIN CAP 270u*3PCS

VCORE CAP 560u*4PCS
22u*10PCS

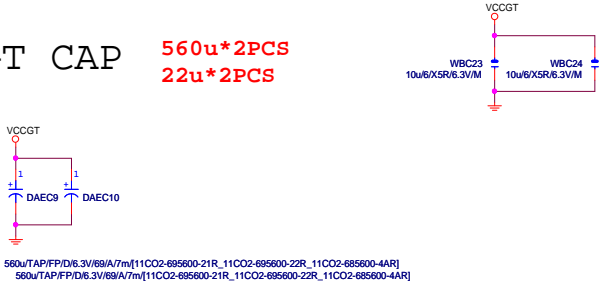
GIGABYTE™

File	ISL95858_MOS		
Size	Document Number	Rev	
Custom	H310M H 2.0	1.0	
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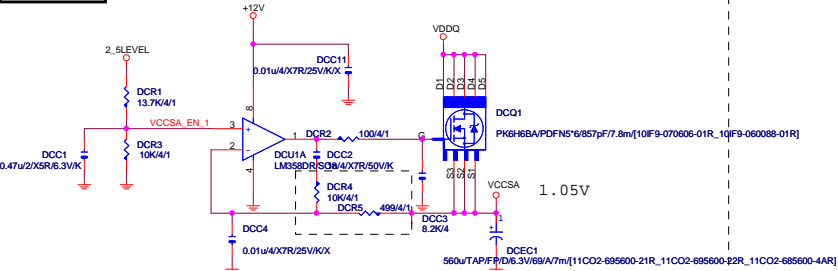
VCCGT



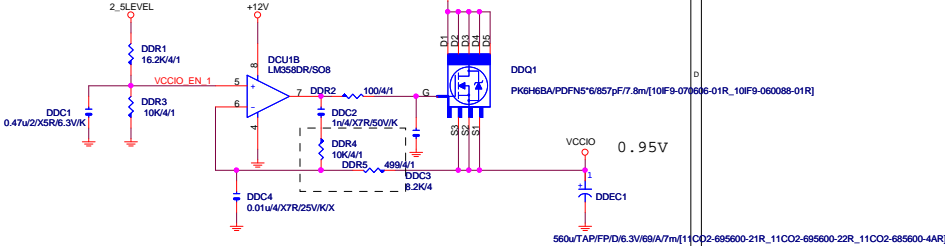
VCCGT CAP 560u*2PCS
22u*2PCS



VCCSA



VCCIO



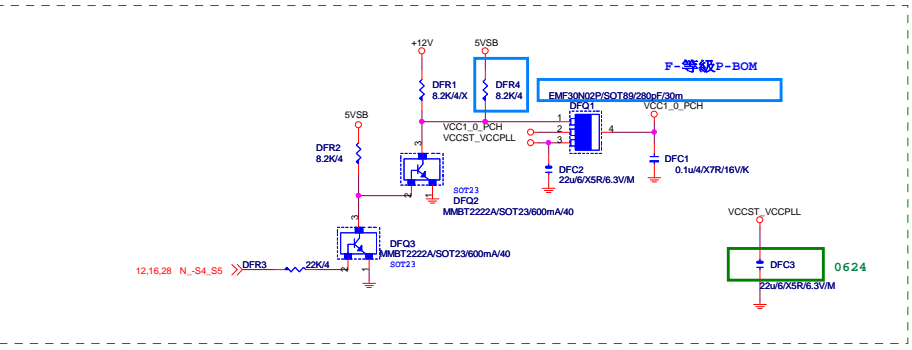
Connect to IT8686

Connect to IT8686

SIO PIN5 . PIN7 用在其他function時
DCQ2 上件
DDR7 不需要預留

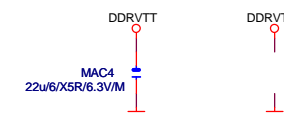
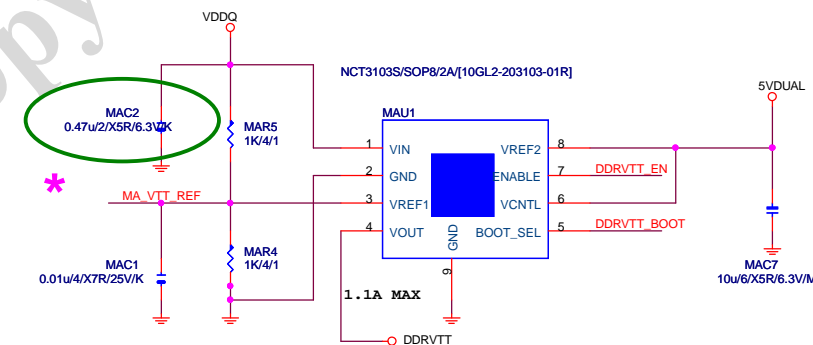
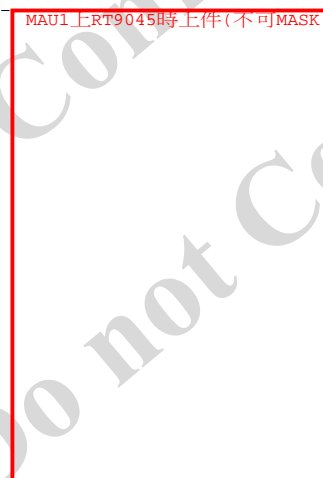
SIO PIN5 . PIN7接VDDQ . VCCIO時
DCQ2 不上件
DDR7 上件

VCCST_VCCPLL






請放置CHOKE一出來位置.先預留.
請自行確認ripple後再決定是否上件
請從最重的負載端點拉回

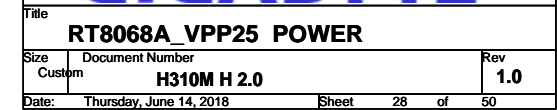
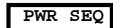


* 大電容 *

			
Title			
RT8237_DDR4 POWER			
Size	Document Number		Rev
Custom	H310M H 2.0		1.0
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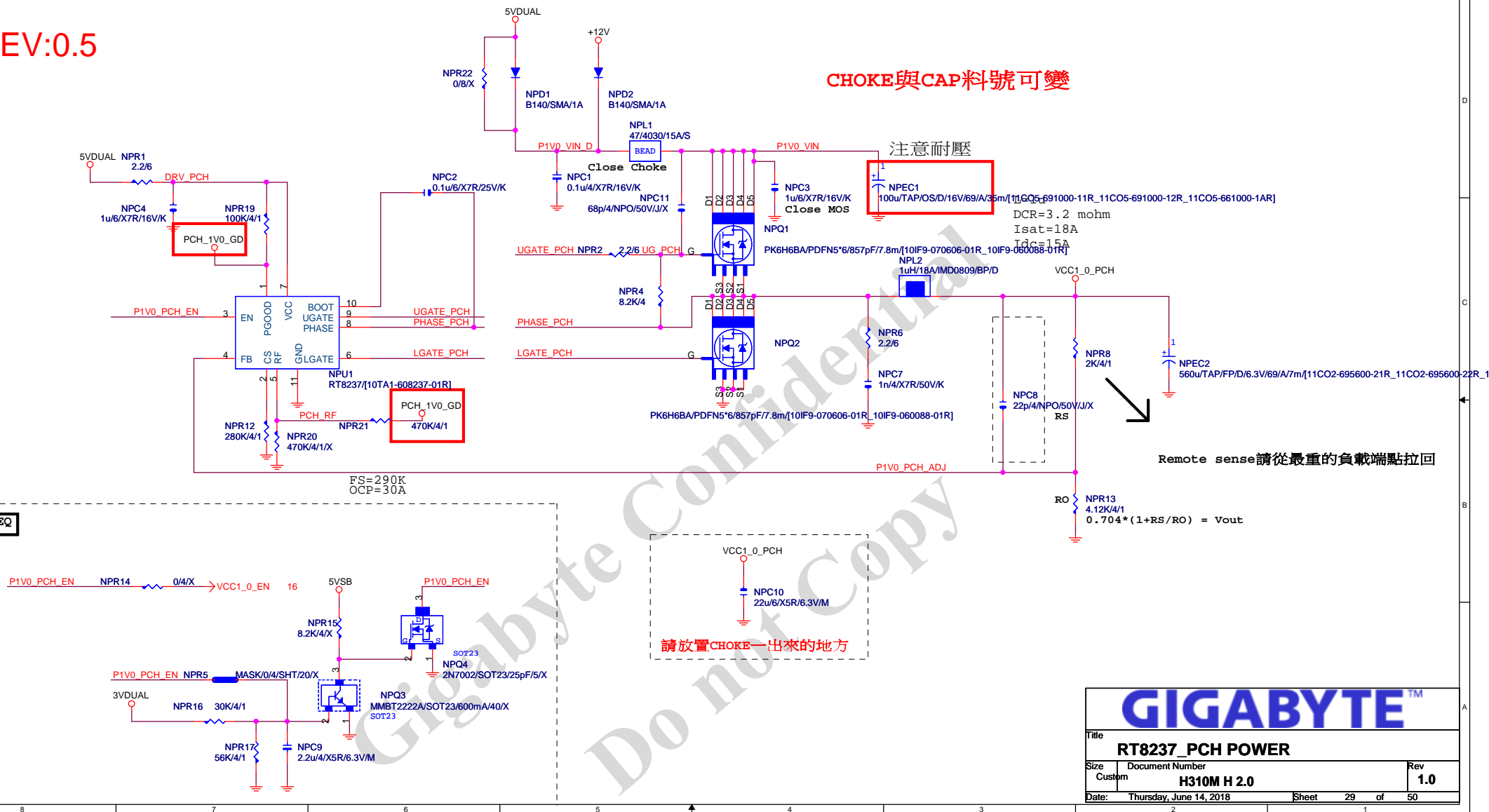
VPP_25V

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



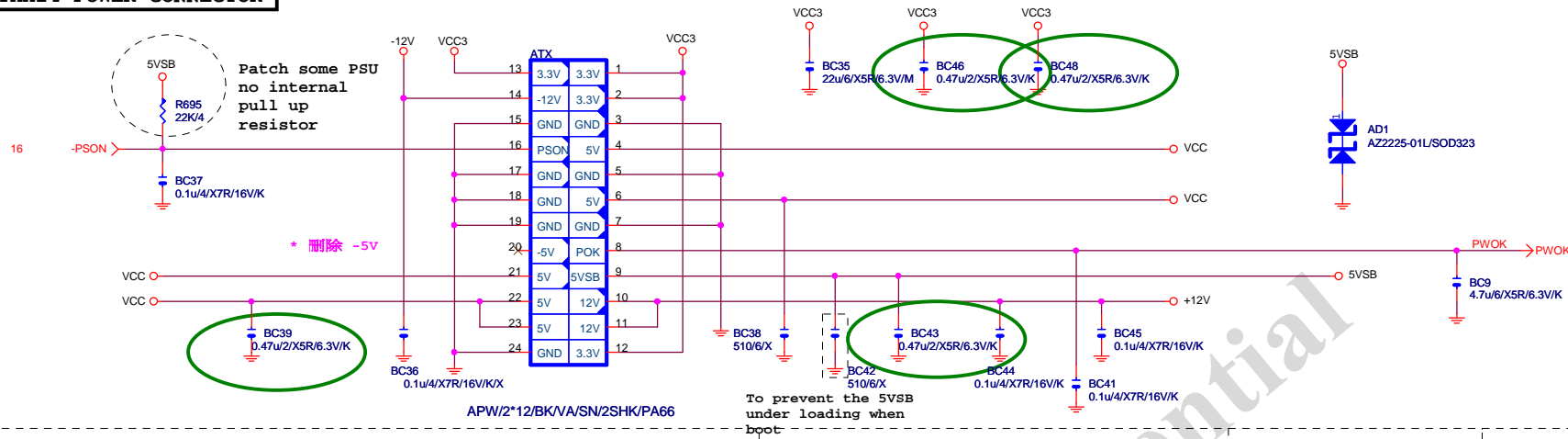
REV:0.5

CHOKE與CAP料號可變

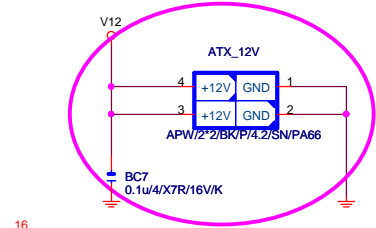


GIGABYTE™			
Title			
RT8237_PCH POWER			
Size	Document Number	Rev	
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ATXX24 POWER CONNECTOR

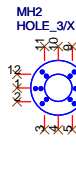
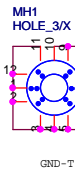


ATXX4 POWER CONNECTOR

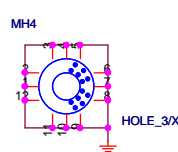
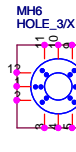
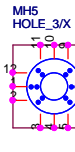
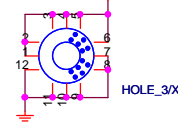


螺絲孔

MH1:GND-T
FOR EMI
TEST驗證



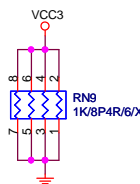
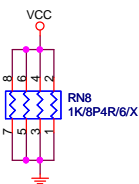
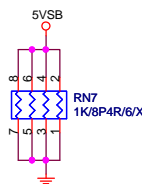
14/12/24
Modify for EMI
MH3



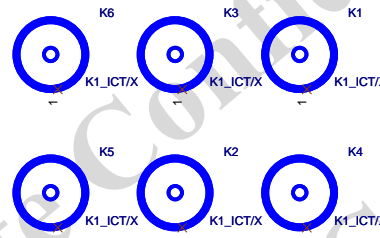
HOLE_4-RH-1

HOLE_4-RH-5MM-2

DUMMY LOAD



固定孔/光學點



K1-ICT

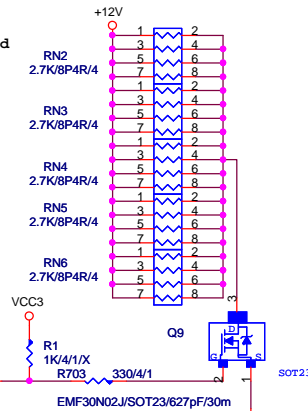
To prevent the 5VSB under loading when boot



4MMH

+12V DUMMY LOAD

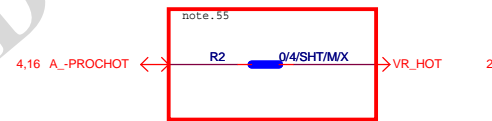
To fix 12V light load abnormal issue



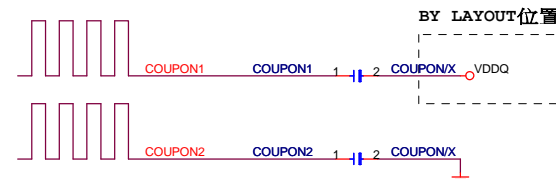
【技術通報R&D技術通報153】

-PROHOT

* 保留 ?



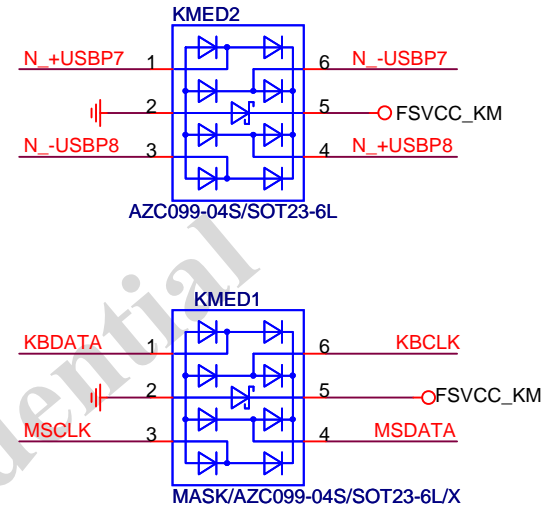
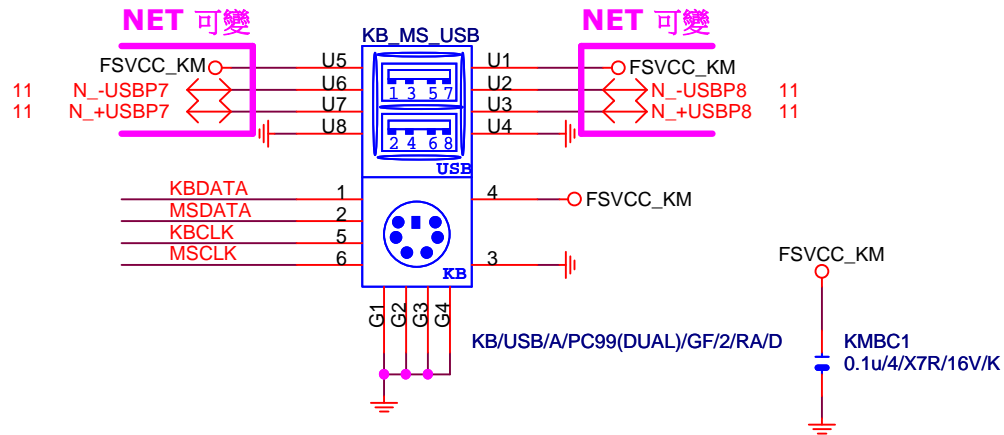
COUPON



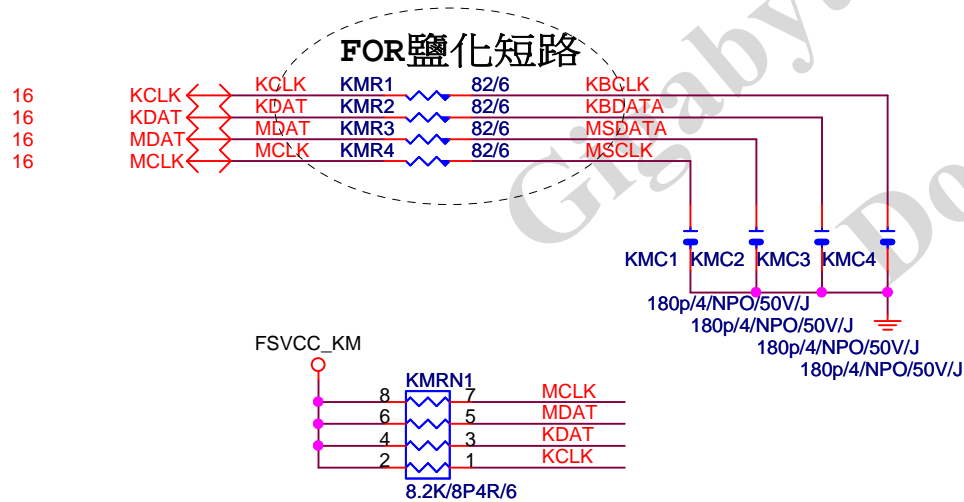
BY LAYOUT位置

Gigabyte Technology

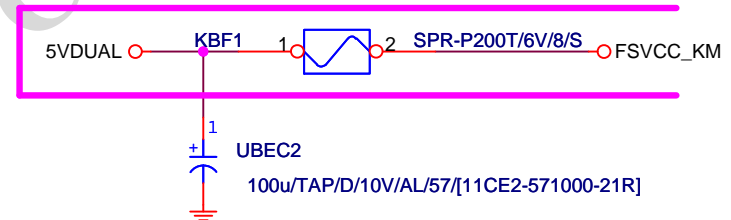
Title			ATX POWER CONNECTOR
Size	Document Number	H310M H 2.0	
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KB_MS_USB DAMPING/PU



KB_MS_USB PWR

NET 可變, 與其他USB SHARE

USB OC PROTECT

Gigabyte Technology

Title

KB_MS_USB

Size

Document Number

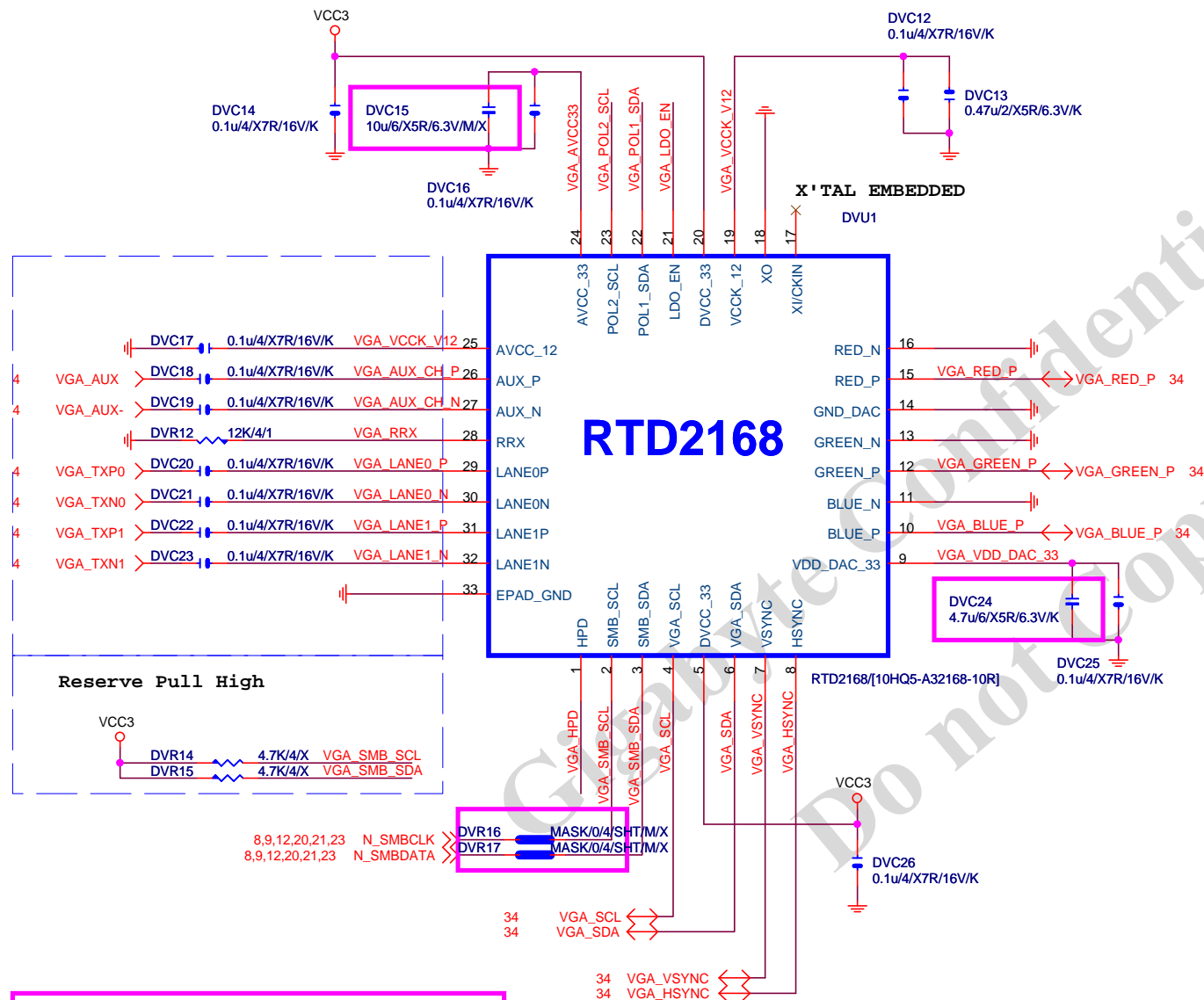
Rev

H310M H 2.0

1.0

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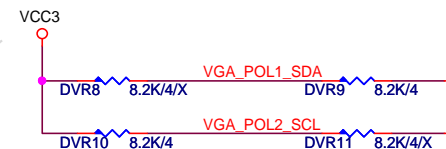
放置PCH端



POWER

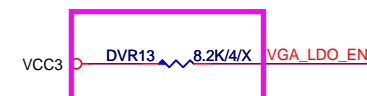


Power on latch



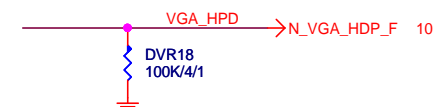
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

Embedded LDO

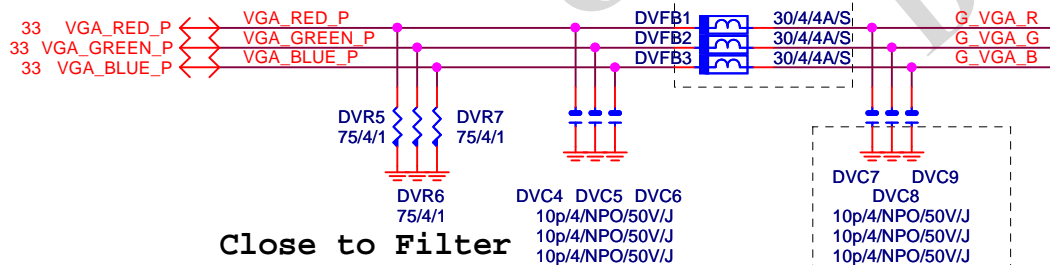
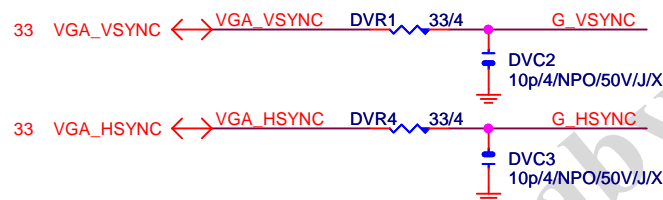
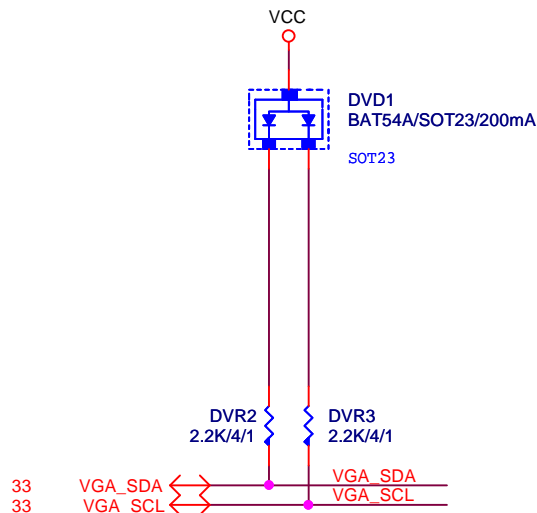


LDO_EN(PIN21)	
0	1
VCCK_V12 from External 1.2V	VCCK_V12 from Embedded LDO

DP HPD



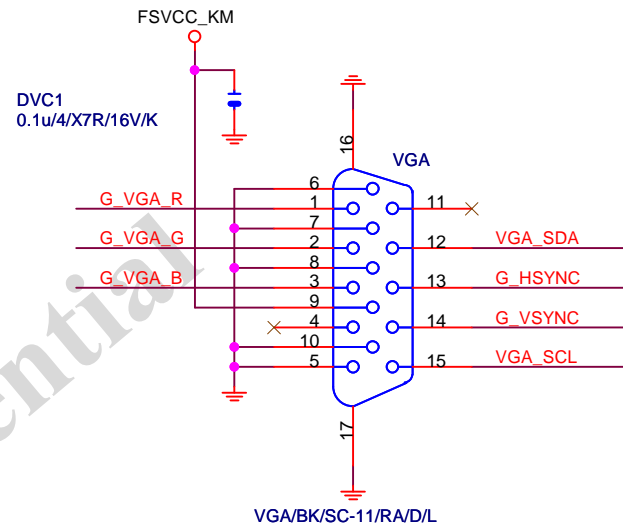
VGA SIGNAL R2.0



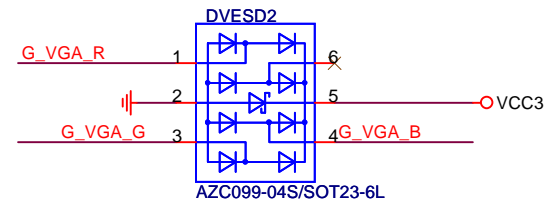
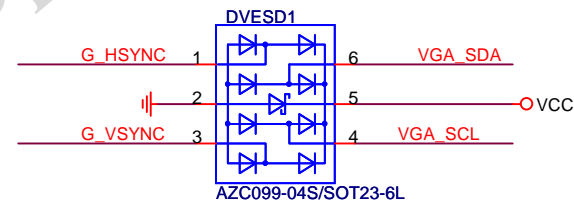
Close to Filter

FOR EMI

VGA CONN.

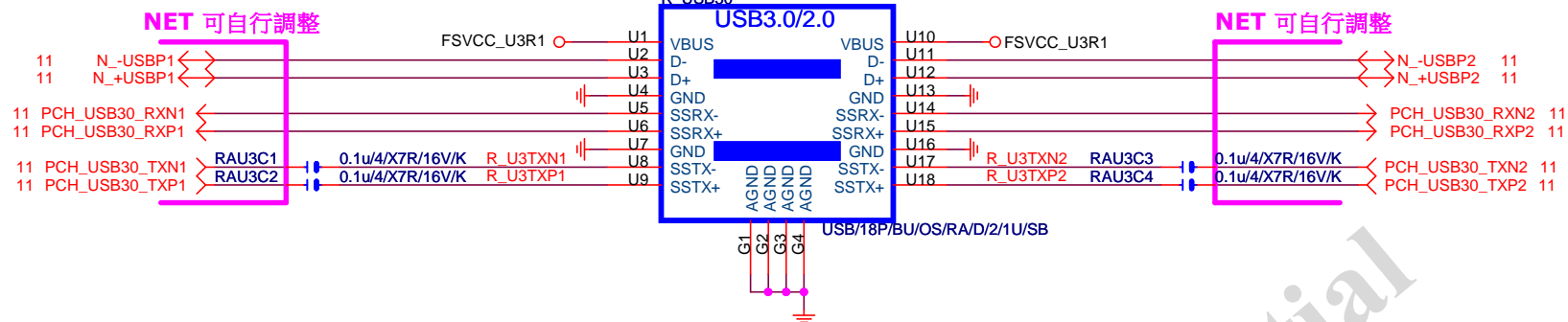


VGA ESD



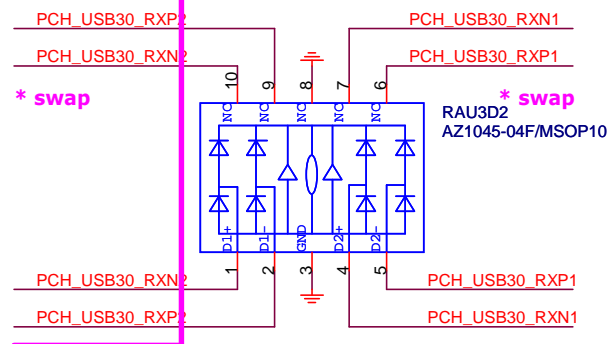
Gigabyte Technology
NXP-PTN3356

Title		
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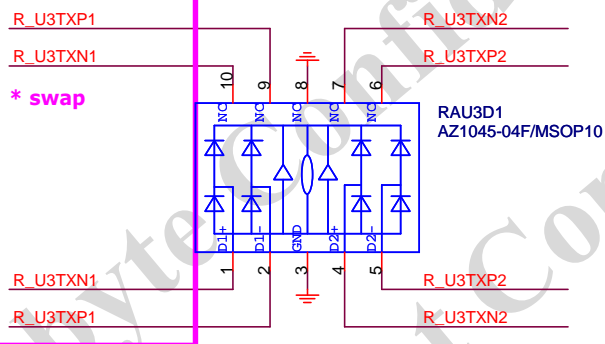


ESD

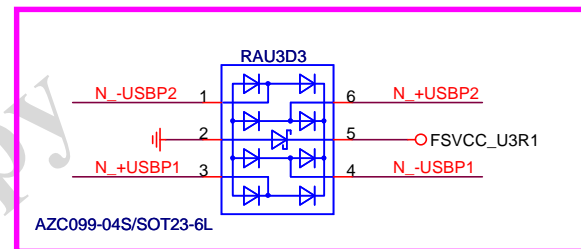
NET 可自行調整



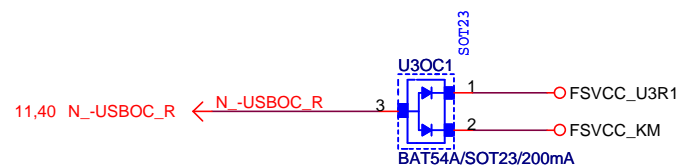
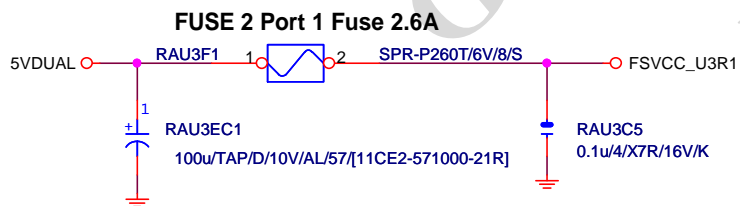
NET 可自行調整



NET 可自行調整

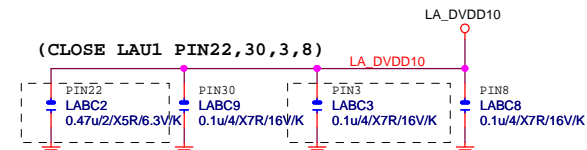
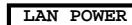


FUSE

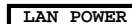


Gigabyte Technology

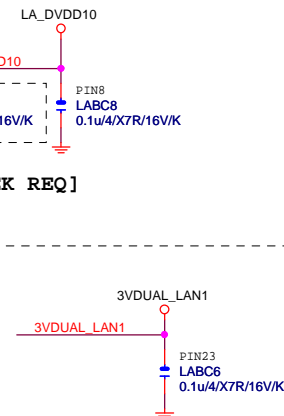
Title		
R_USB30,USB_OC		
Size	Document Number	Rev
Custom	H310M H 2.0	1.0
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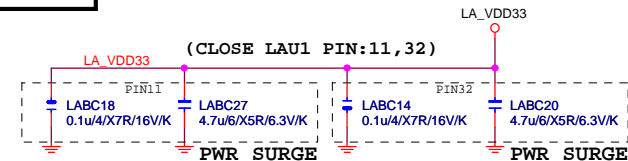
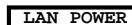
LABC2:1U CLOSE PIN22[REALTEK REQ]



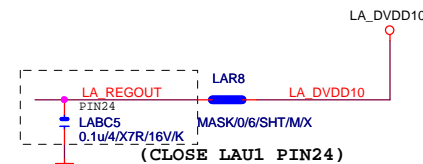
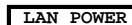
note: lan power 連接及電流



(CLOSE LAU1 PIN23)



```
LABC14,20:CLOSE PIN32[REALTEK SURGE]
```



Gigabyte Technology

Title

Realtek RTL8111GUS

Size
Custom

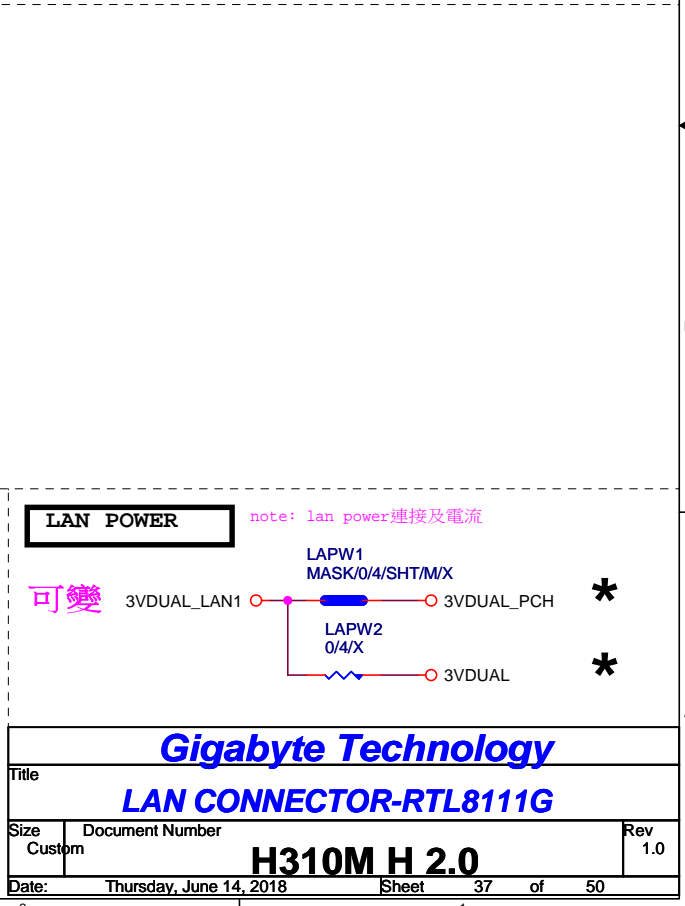
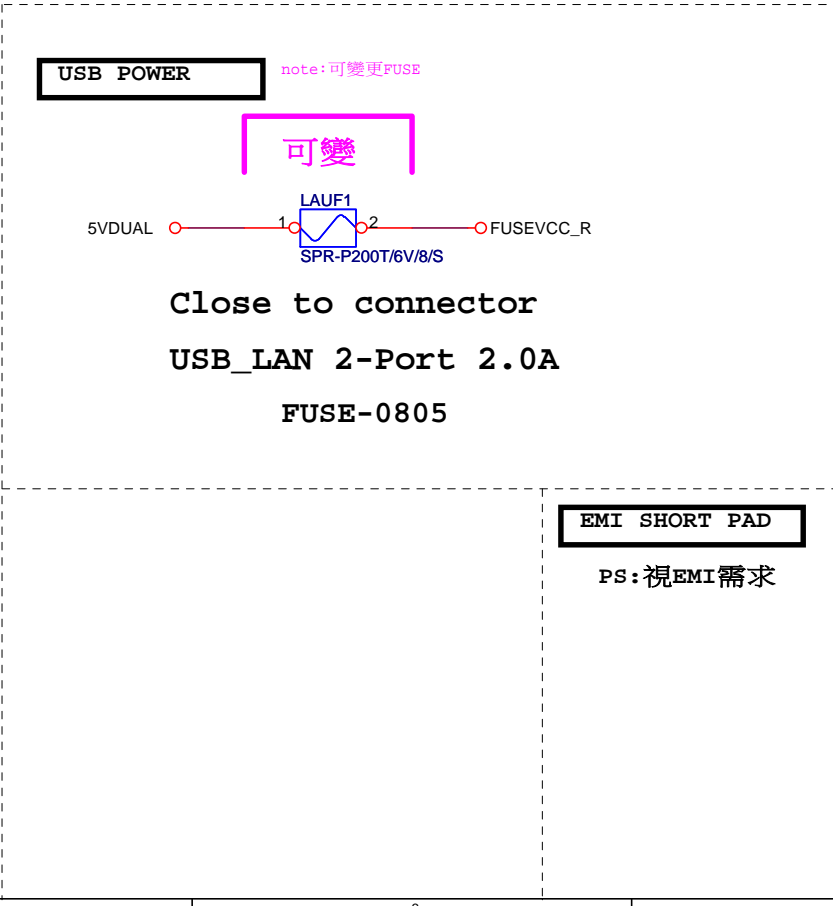
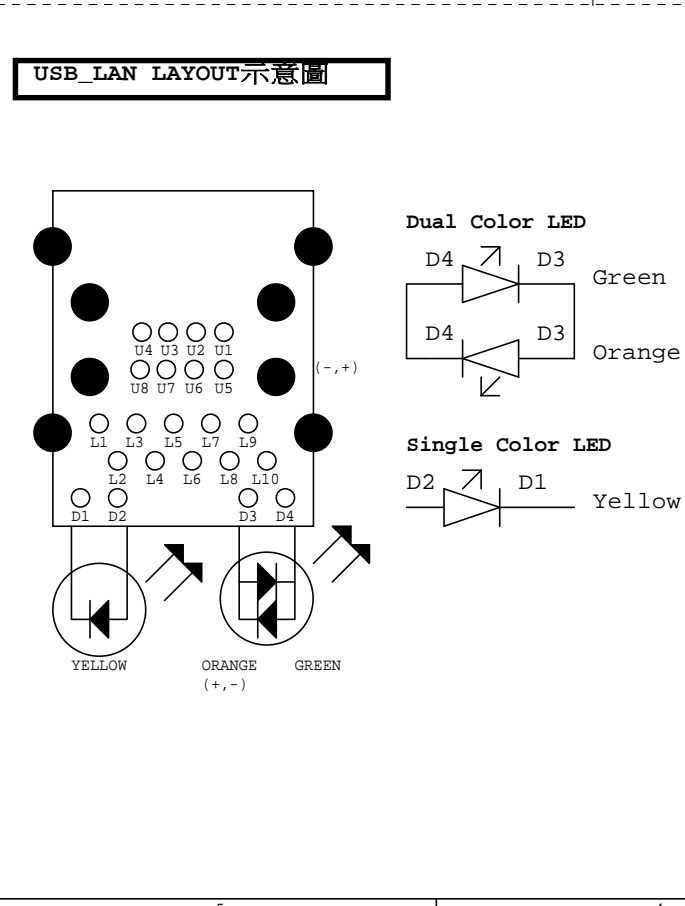
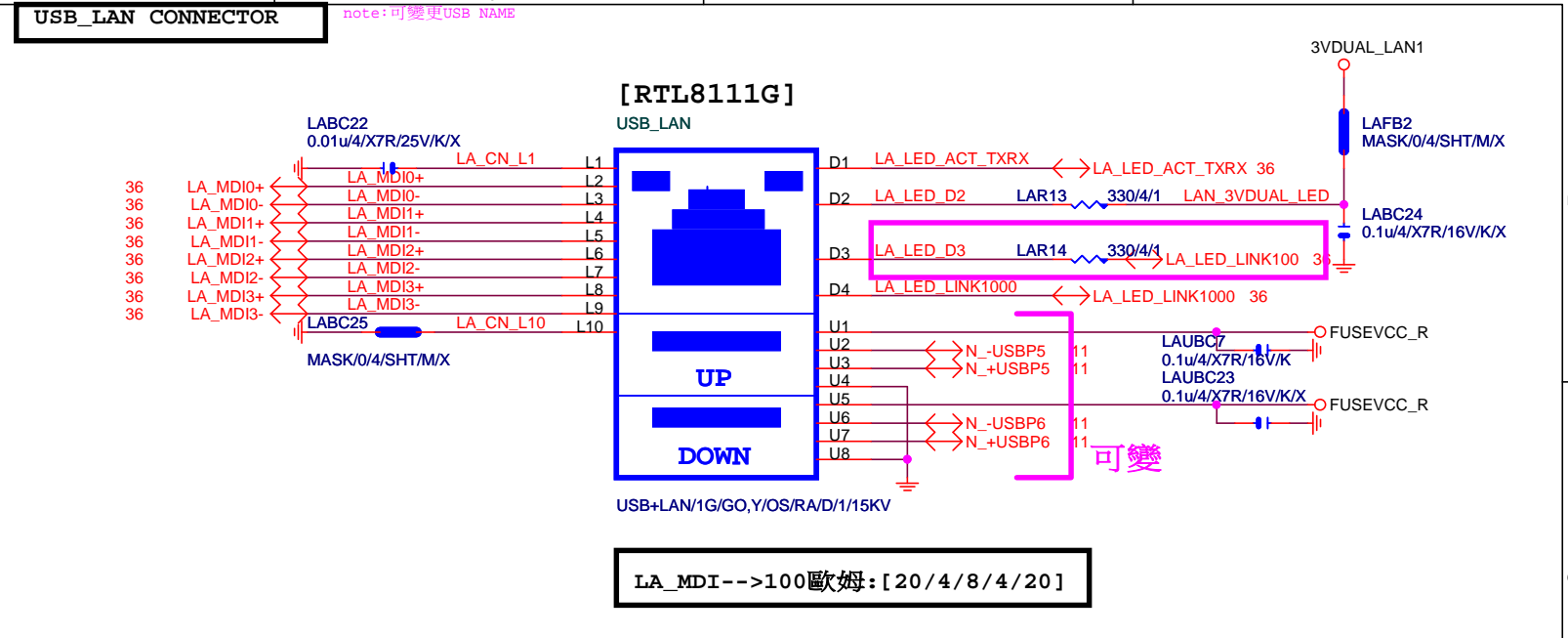
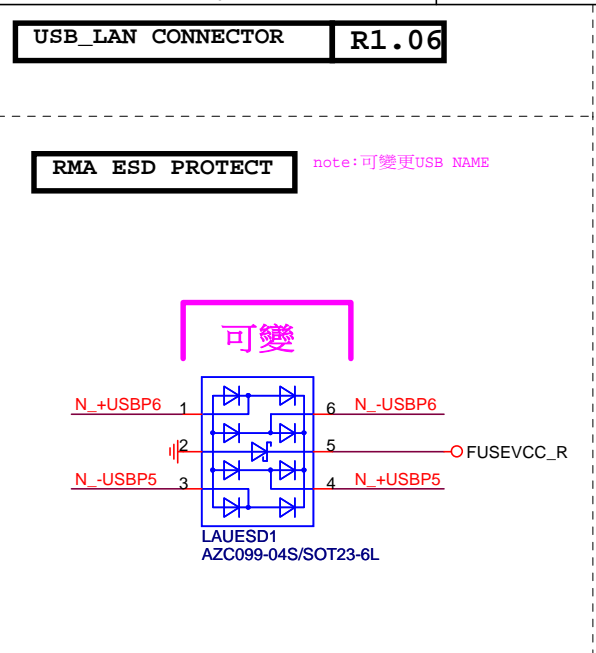
Document Number

H310M H 2.0

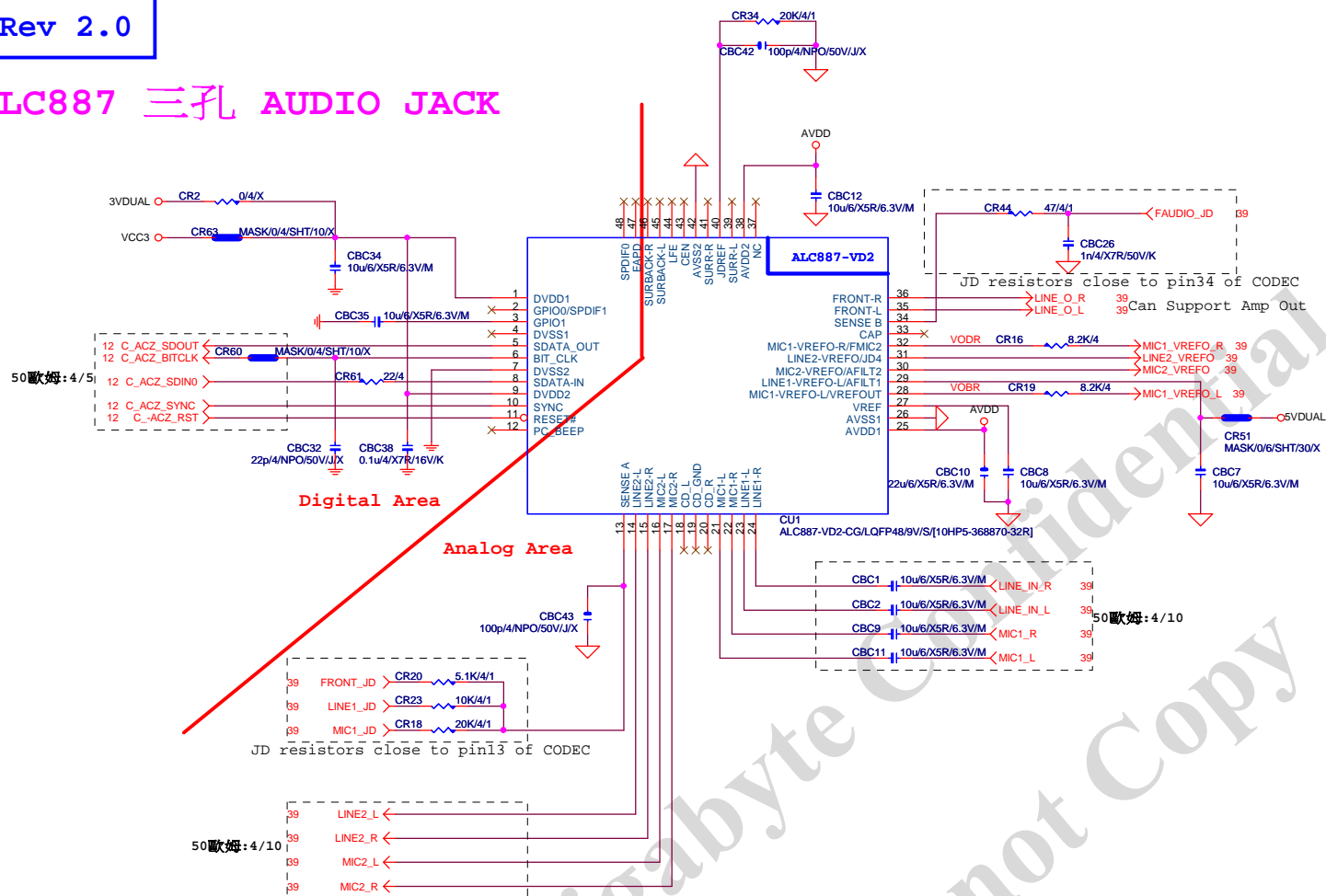
Rev	1.0
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ALC887 三孔 AUDIO JACK

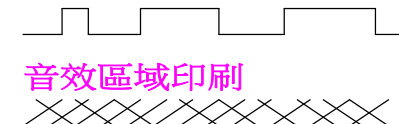


LAYOUT注意:螺絲孔下GND方式

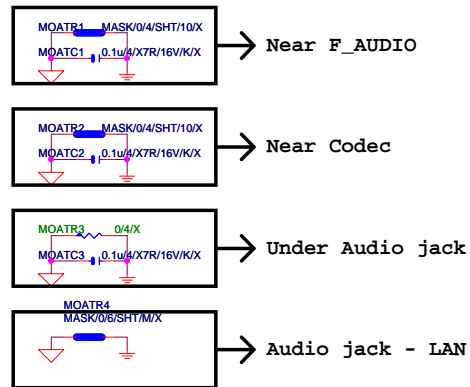
1. MH1空間夠,下DGND
空間不夠,改為Isolate
2. MH2一律改為Isolate

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

LAYOUT注意:要加
GND切割線



Rev 2.01

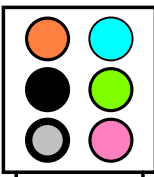


*量産前, 0ohm改short pad

SPDIF_OUT

SPDIF_IN

AZALIA JACK

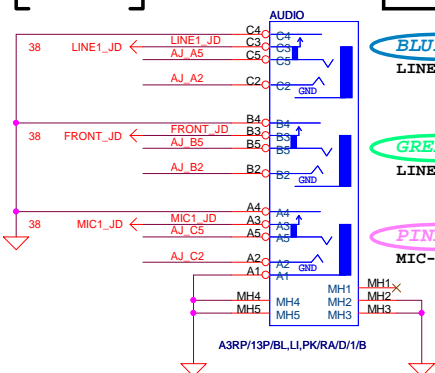


AZALIA JACK

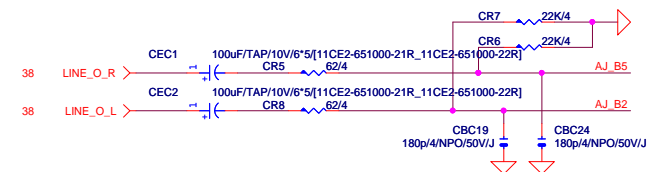
BLUE
LINE-IN

GREEN
LINE-OUT

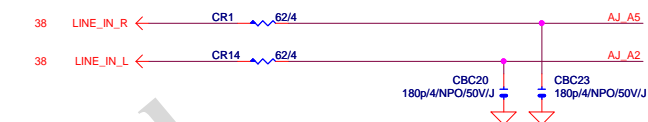
PINK
MIC-IN



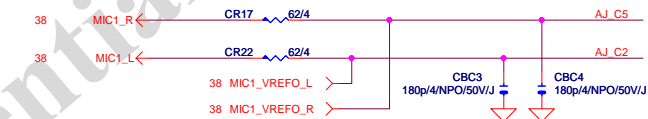
LINE-OUT



LINE-IN



MIC-IN

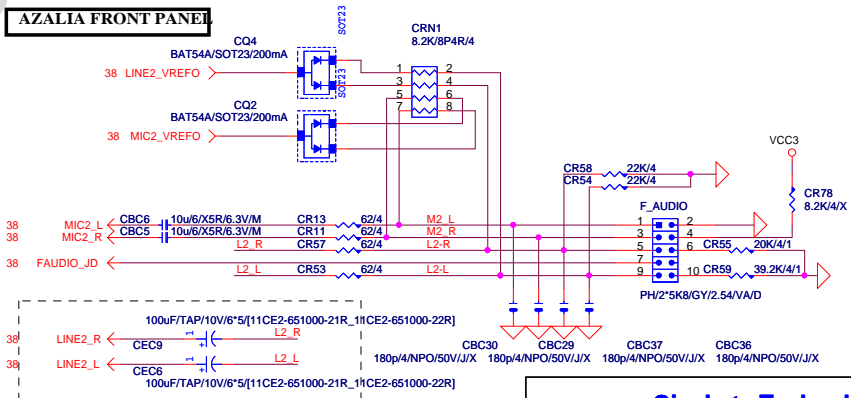


SURROUND

CEN/LFE

SURR BACK

AZALIA FRONT PANEL

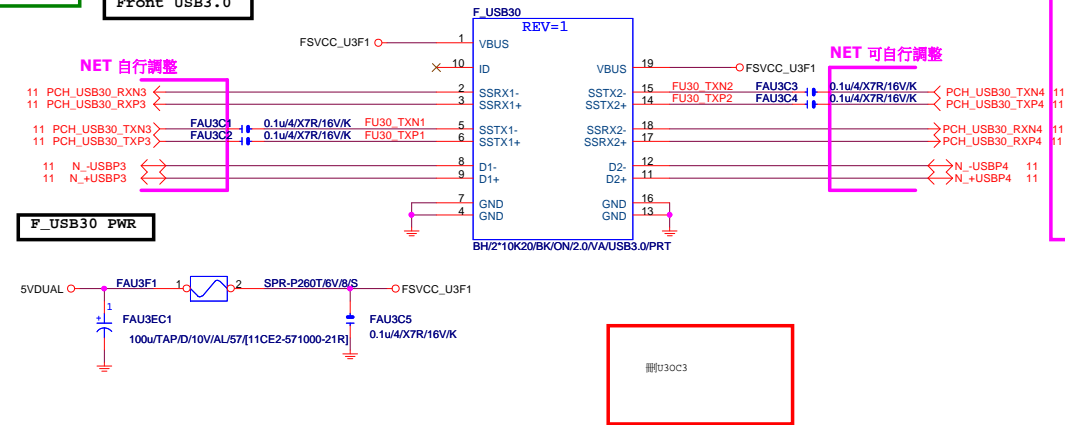


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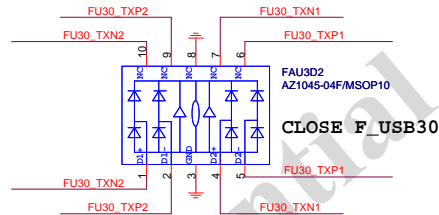
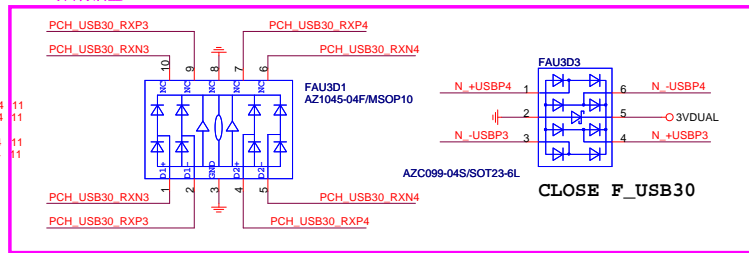
AUDIO JACK

Title	Document Number	Rev
Size Custom	H310M H 2.0	1.0
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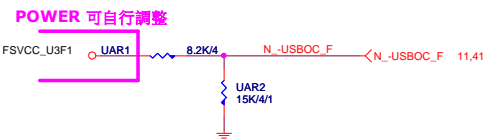
Front USB3.0



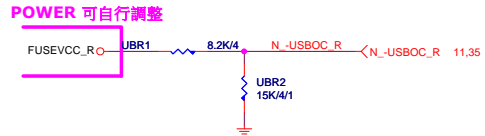
NET 可自行調整



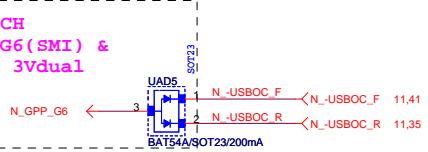
-USBOC_F



-USBOC_R



* 接 PCH
N_GPP_G6(SMI) &
PCH PU 3Vdual

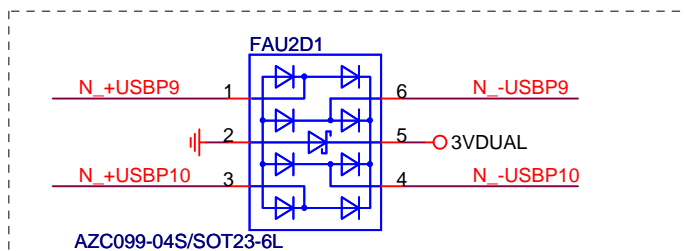
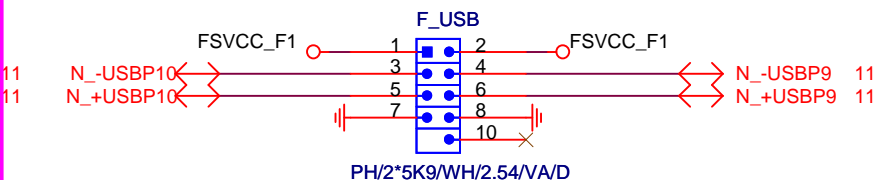


Rev: 0.7

FRONT USB1

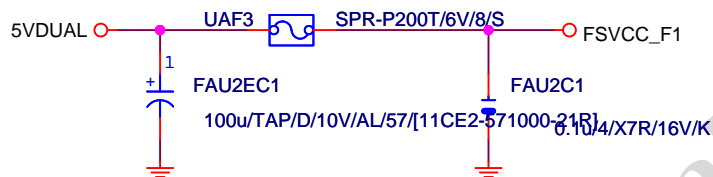
NET 可變

FUSB2X5-HS

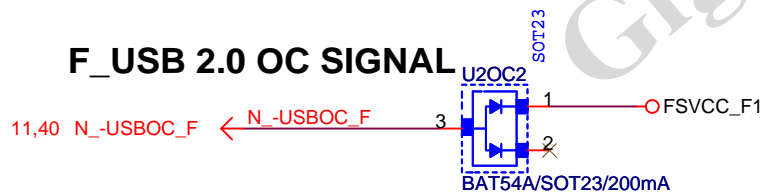


Close to connector

FUSE 2 Port 1 Fuse 2A



F_USB 2.0 OC SIGNAL



Gigabyte Technology

Title

USB2.0

Size A

Document Number

H310M H 2.0

Rev 1.0

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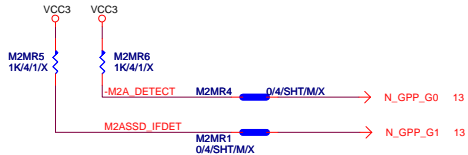
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Rev 0.4

M.2 Lane2 from PCH port11

M.2 Lane2 from PCH port12

支援SATA and M.2 function



需與M2_-CLKREQ對應

SATA : GND.
PCIe : HIGH

M2插卡時為Low

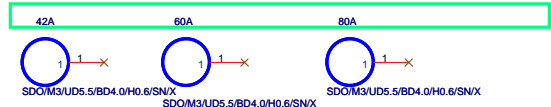
* Footprint : NGFF-M-75P-8CM-09MM-SMD
MASK:NGFF-M-8CM-09MM-SMD-MASK

M.2扣具

80A

* M.2 PCB RIVET FOR 4.2H[11KRH-020001-01R]X

SMD螺柱



* Footprint : HOLE_165NP
MASK:HOLE_165NP-MASK

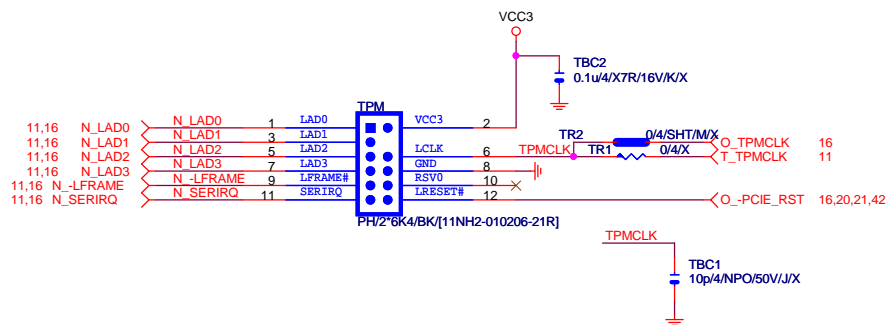
Gigabyte Technology

Title			M.2 X4
Size			Custom
Date:			Thursday, June 14, 2018
Document Number			H310M H 2.0
Rev			1.0

COM PORT

TPM CONNECT

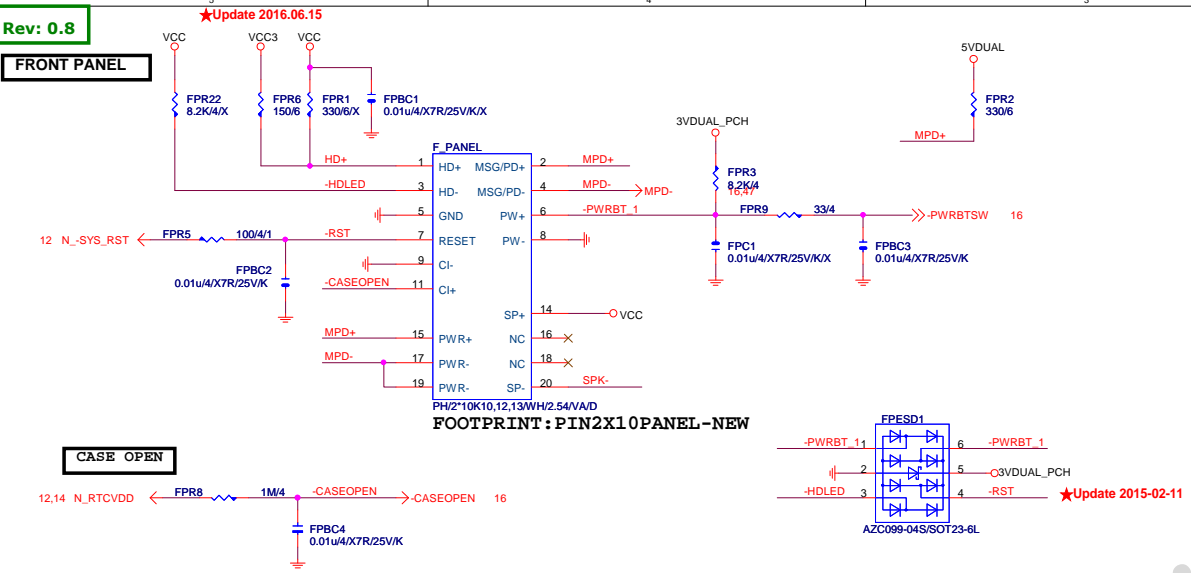
Thunderbolt (N/A)



Gigabyte Technology

Title			
FP,F_USB,USB PWR,BZ			
Size	Document Number		Rev
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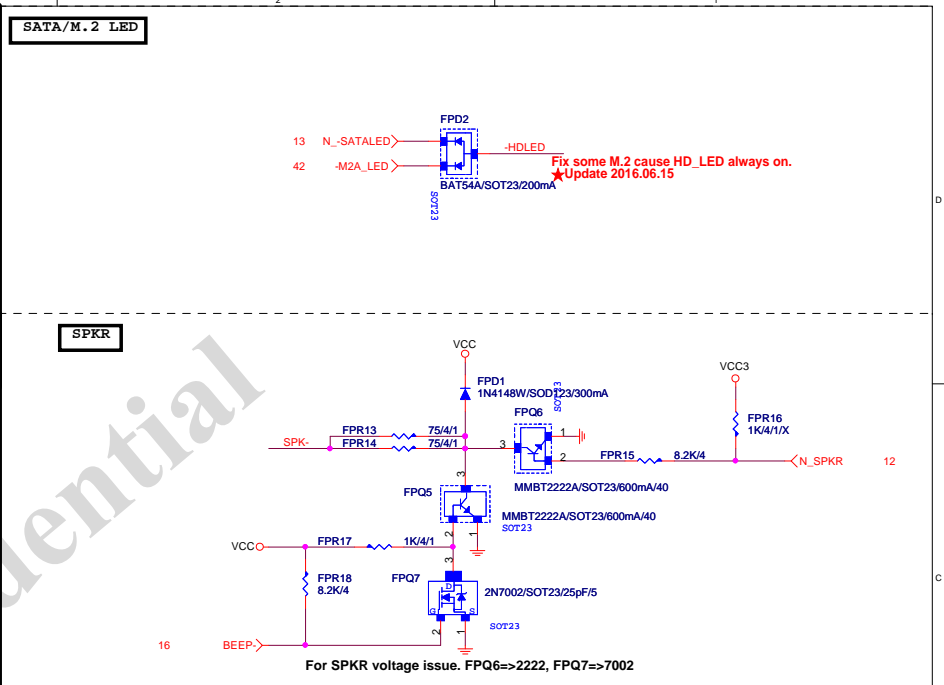
FRONT PANEL



FRONT PANEL SHORT

SATA/M.2 LED

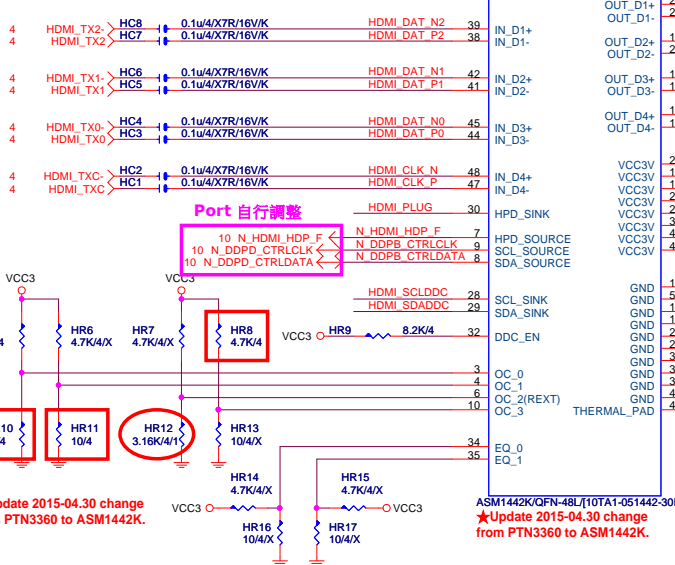
SPKR



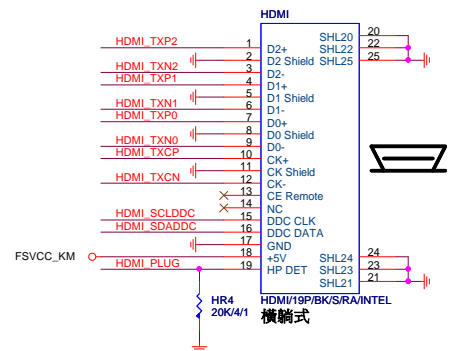
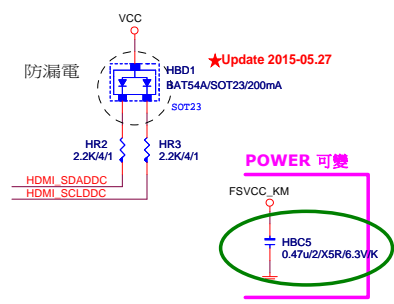
Gigabyte Confidential
Do not Copy

HDMI LEVEL SHIFT

NET 可變



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

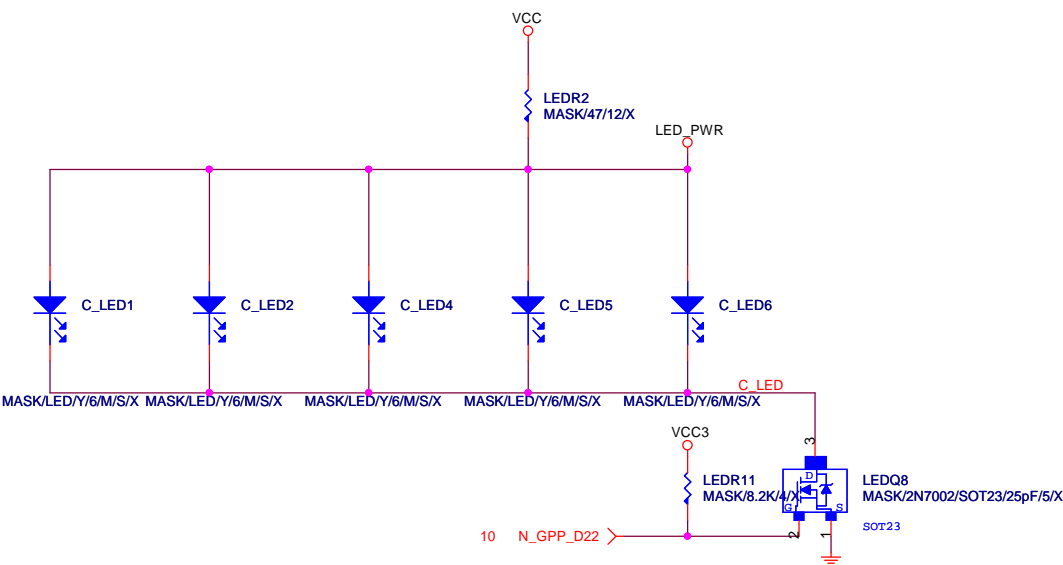


【技術通報R&D技術通報150】
HDMI eye diagram 1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

Rev 2.02

Ambient LED Control

	N_GPP_D22
Full Mode	H
OFF Mode	L



Title			Amient Single LED		
Size	Document Number	H310M H 2.0			Rev
Custom					1.0
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CLOSE SIO

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

12,16,27 N_SLP_S3 ←

CLOSE PCH

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

4,12 N_CPUPWROK ←

close to PCH (NR17)

R_USB30_2 & DVI 之間

close to SIO (PIN92) MPD-

EMIC6
0.01u/4/X7R/25V/K

16,4 MPD- ←

GIGABYTE™

Title

EMI/ESDSize
A

Document Number

H310M H 2.0

Rev

1.0

Date: Thursday, June 14, 2018

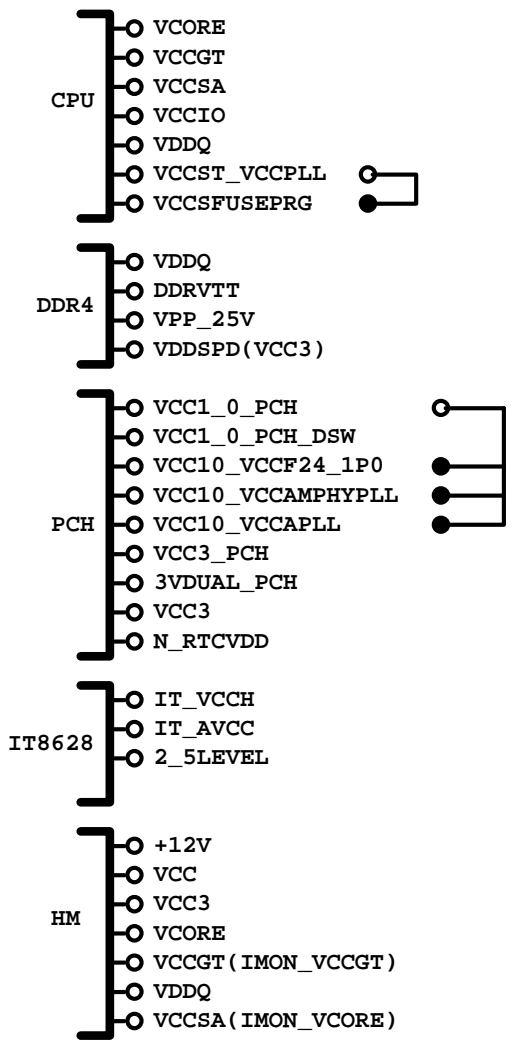
Sheet

47

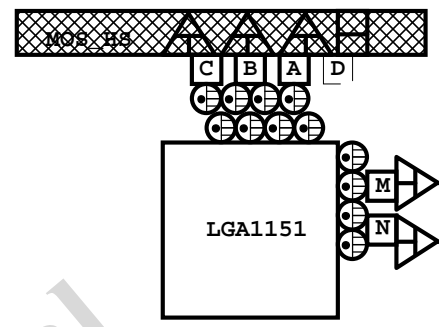
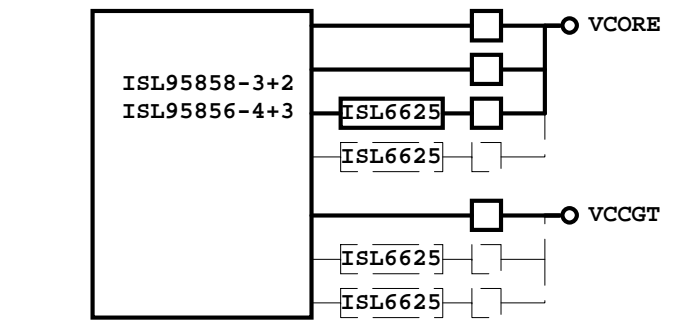
of

50

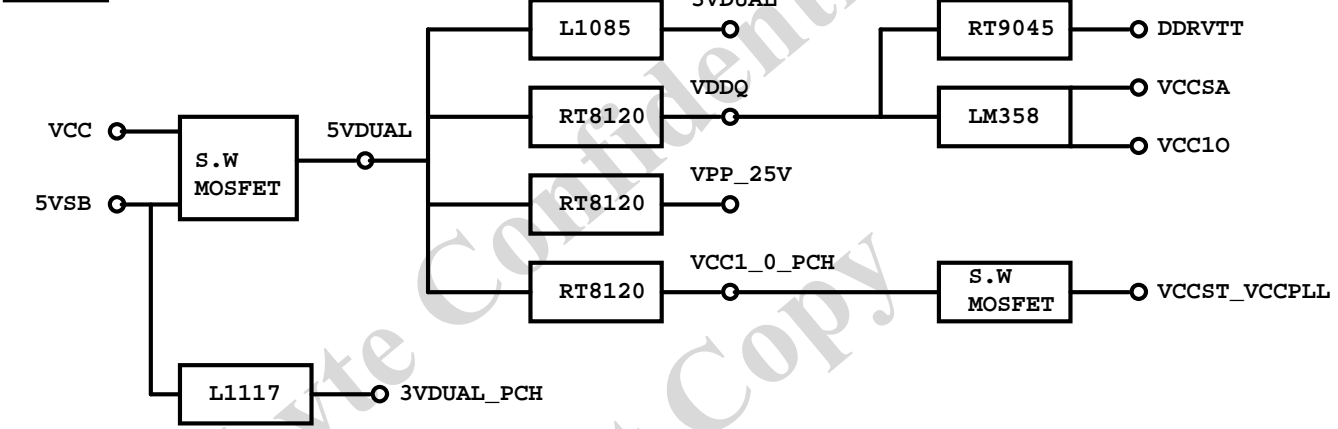
POWER BLOCK MAP



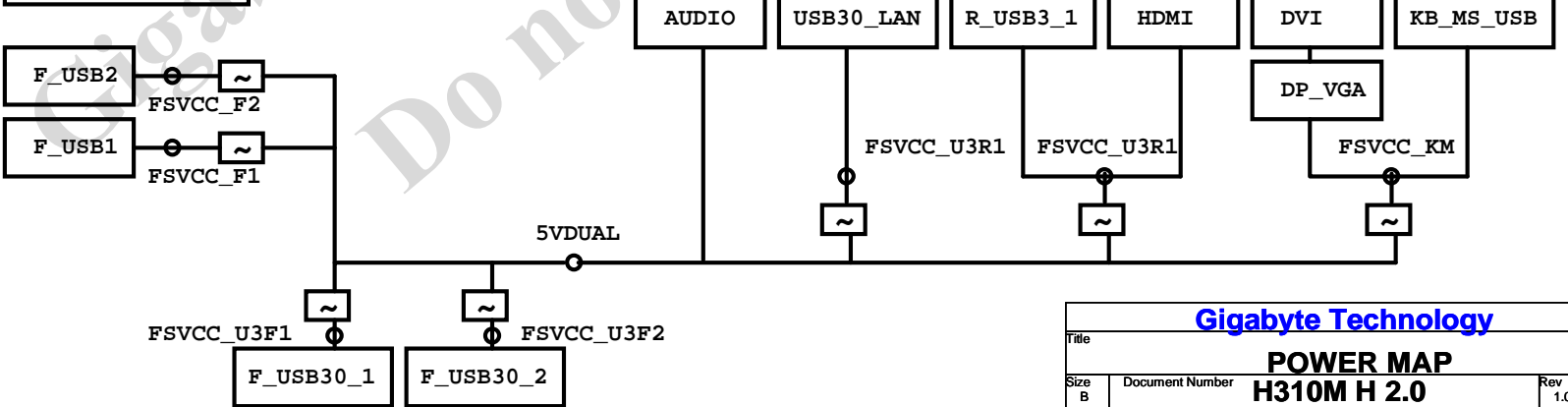
VCORE/VCCGT



POWER



FUSE POWER F/R



固態電容料號.請自行修改

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

日系一般固態	Capture Value
11CO2-685600-01R	560u/FP/D/6.3V/68/8m
11CO5-882700-01R	270u/FP/D/16V/88/12m
11CO5-661000-03R	100u/OS/D/16V/66/30m
11CO2-651000-02R	100u/OS/D/6.3V/66/30m

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

IRON CHOKE

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

Ferrite


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

BEAD

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

PWM料號

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

			
Title			
RT8120_DDR4 POWER			
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