

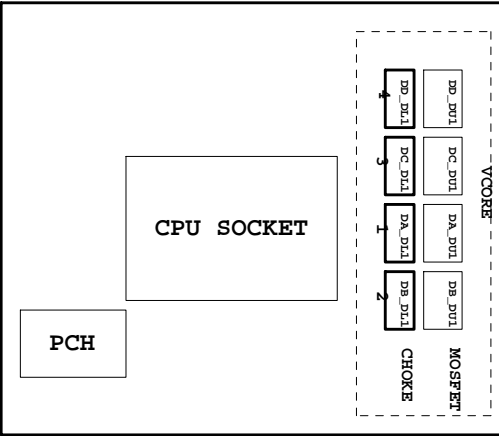
Model Name: GA-H110M-S2PV

SHEET TITLE Rev 1.0

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1151-D
08	DDR 4 CHANNEL A
09	DDR 4 CHANNEL B
10	PCH CLOCK BUFFER
11	PCH DMI,USB,PCIE
12	PCH MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH_PWR,GND
15	Dual BIOS
16	I/O ITE8628
17	HWM
18	FAN CTRL-SIO
19	PCIEX16 SLOT
20	PCIEX1*2 SLOT
21	SATA
22	IT8892E/FX
23	PCI SLOT
24	ISL95858_856 PWM
25	ISL95858_856 MOS_VCORE
26	ISL95858_856 MOS_VCCGT
27	VCCSA_VCCIO_VCCPLL
28	RT8237_DDR_BEAD
29	RT8068A_VPP_TRON
30	RT8237_PCH-BEAD
31	DISCRETE POWER
32	ATX POWER , -PROCHOT
33	KB_MS_USB
34	DVI

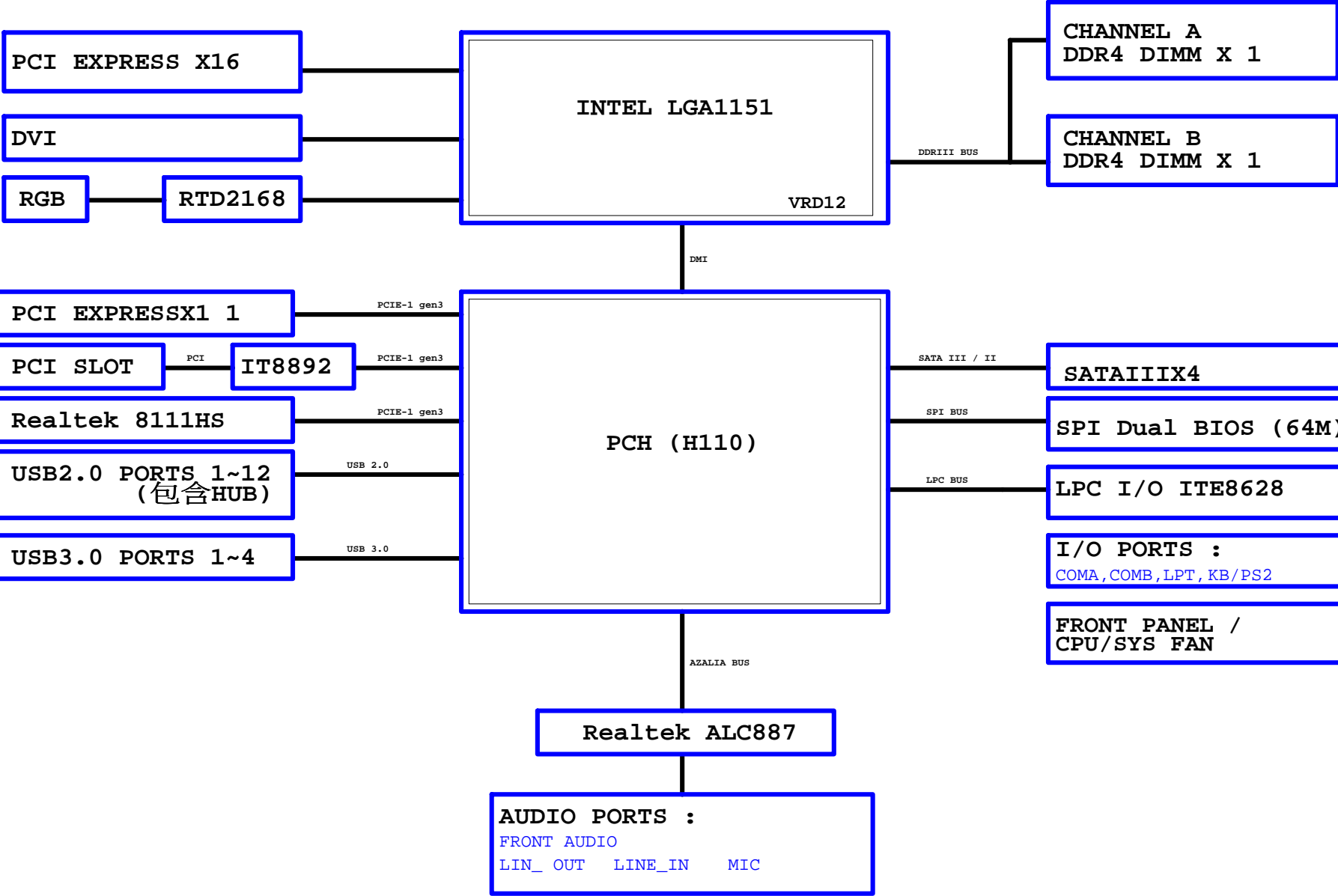
SHEET TITLE

35	RTD2168 - DP to VGA - IC
36	RTD2168 - DP to VGA - Conn
37	R_USB30
38	Realtek 8111G
39	USB30_LAN CONNECTOR-8111HS
40	ALC887-VD2 CODEC
41	REAR AUDIO JACK
42	F_USB30
43	F_USB20
44	COM , LPT
45	F_PANEL
46	USB20 HUB , ESD
47	POWER MAP
48	POWER 零件使用表
49	TABLE LIST





BLOCK DIAGRAM



\* <10> N\_CPUPCIBCLK } N\_CPUPCIBCLK  
 <10> N\_-CPUPCIBCLK } N\_-CPUPCIBCLK

<10> N\_24MCLK } N\_24MCLK  
 <10> N\_-24MCLK } N\_-24MCLK

PVIDALRT WR5 220/4/1 A -PVIDALRT\_R  
 PVIDSLCK WR7 0/4/SHT/M/X A PVIDSLCK\_R  
 PVIDSOUT WR1 0/4/SHT/M/X A PVIDSOUT\_R  
 \_-PROCHOT WR8 0/4/SHT/M/X A -PHOT  
 <28> DDR\_VTT\_CTL <

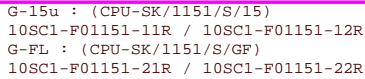
```

<12,46> N_CPUPWROK >
<13> N_CPURST > N_CPURST
<13> A_PMSYNC > A_PMSYNC
<13> A_PMDOWN < WR82 33/4 A_PMDOWN R

```

\* <16> A\_-THRMTRIP  $\longleftrightarrow$  A\_-THRMTRIP  
 <10> A\_-SKTOCC  $\longleftrightarrow$

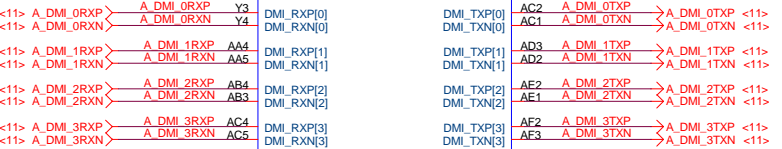
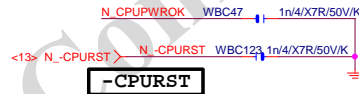
\* 刪 net



Impedance=85 +- 15%



```
* 删除 net N_CPU_VCCST_PWORK
```



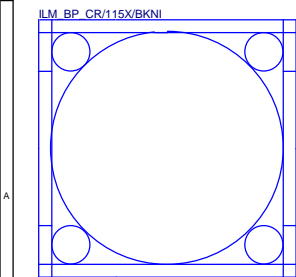
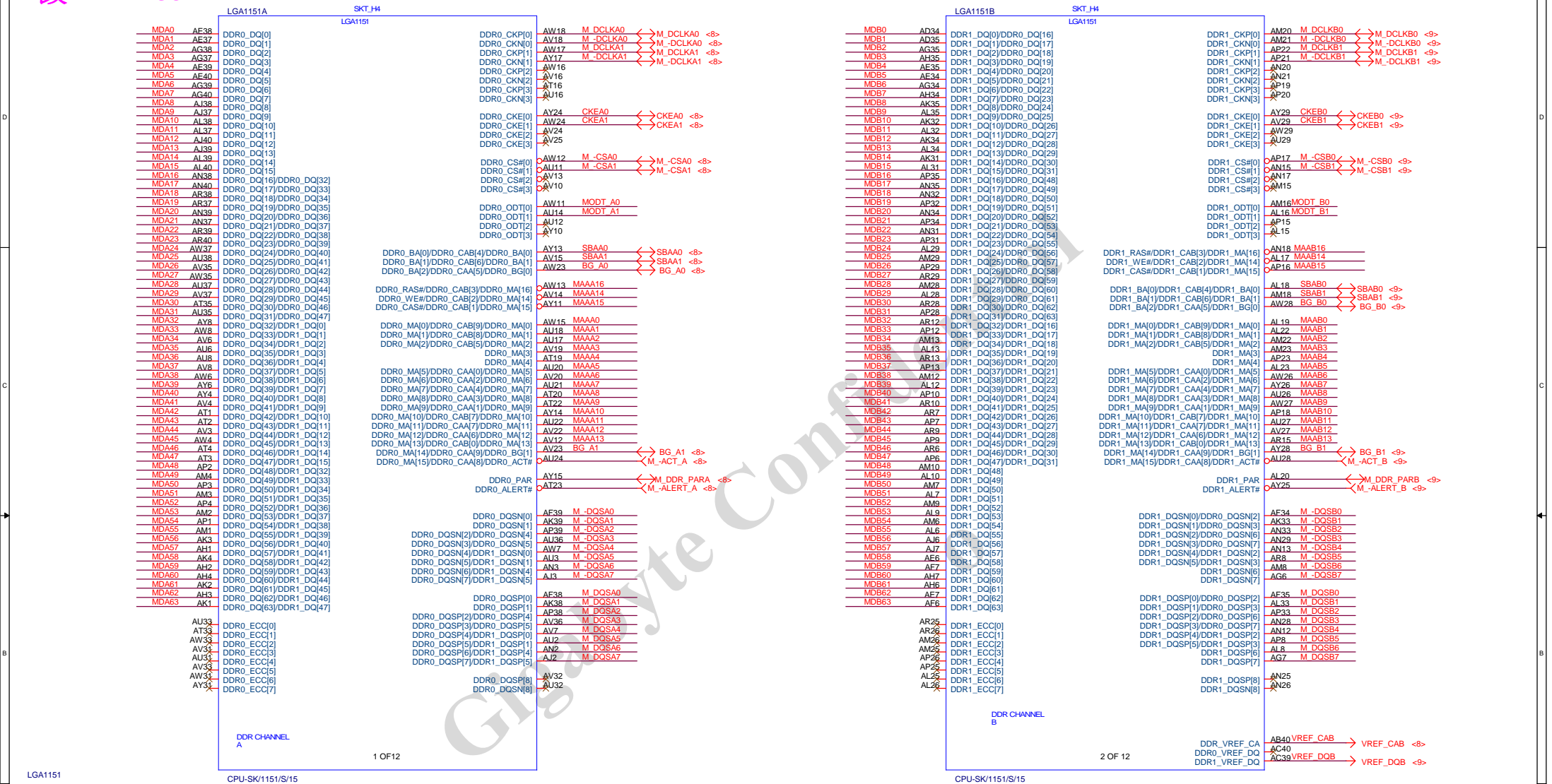
```
PA_EXP_TXP[0..15] >> PA_EXP_TXP[0..15] <19>
PA_EXP_TXN[0..15] >> PA_EXP_TXN[0..15] <19>
PA_EXP_RXP[0..15] >> PA_EXP_RXP[0..15] <19>
PA_EXP_RXN[0..15] >> PA_EXP_RXN[0..15] <19>
```

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

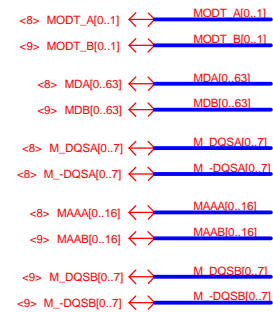
Impedance=85 +- 15%  
W=12 mil out of CPU  
S=15 mil out of CPU

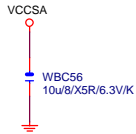
Bifurcation Config.	Signals Lanes		
	CFG[6]	CFG[5]	CFG[2]
1x16	1	1	1
1x16 Reversed	1	1	0
2x8	1	0	1
2x8 Reversed	1	0	0
1x8+2x4	0	0	1
1x8+2x4 Reversed	0	0	0

<b><i>Gigabyte Technology</i></b>			
Title			
<b>CPU LGA1151-A</b>			
Size Custom	Document Number		Rev
	<b>GA-H110M-S2PV</b>		<b>1.0</b>
Date:	Thursday, October 08, 2015	Sheet	4 of 49

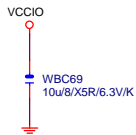
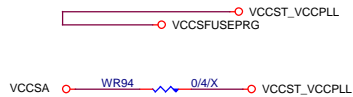


Need check the new CPU ME

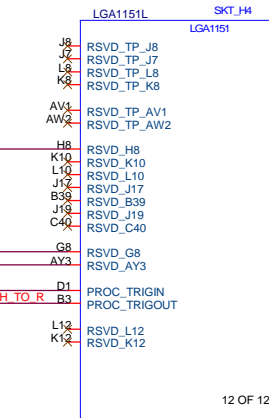
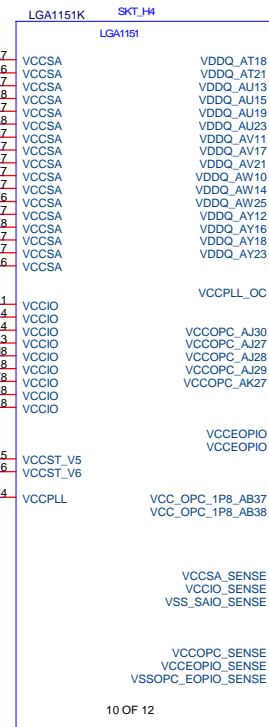
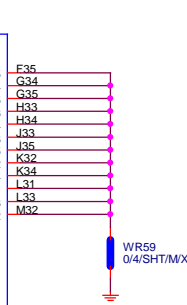
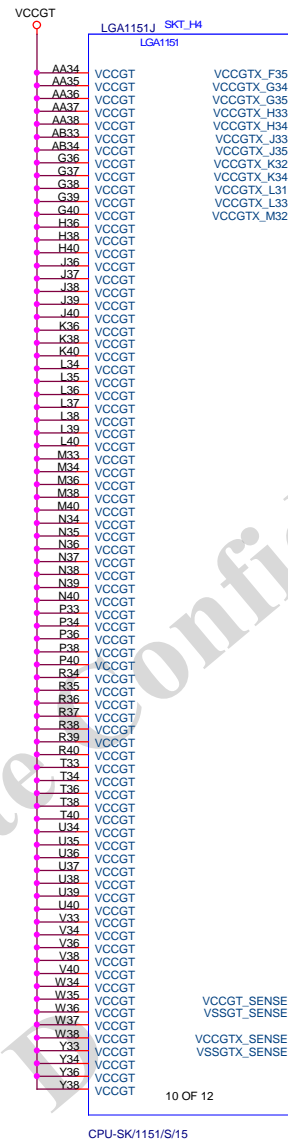


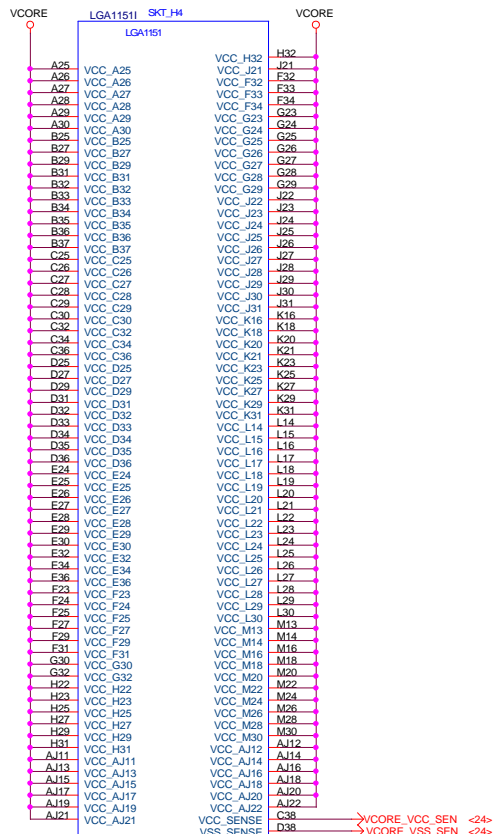


\* 刪 WBC124 , WBC125 , WBC126 , WBC127 電容



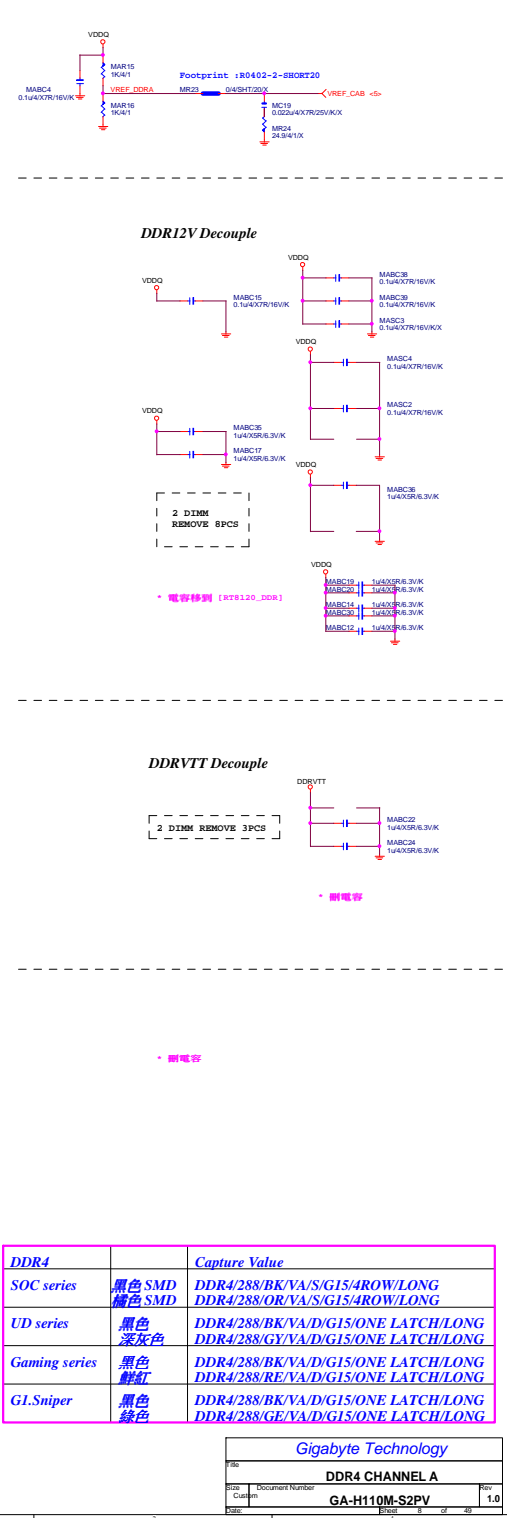
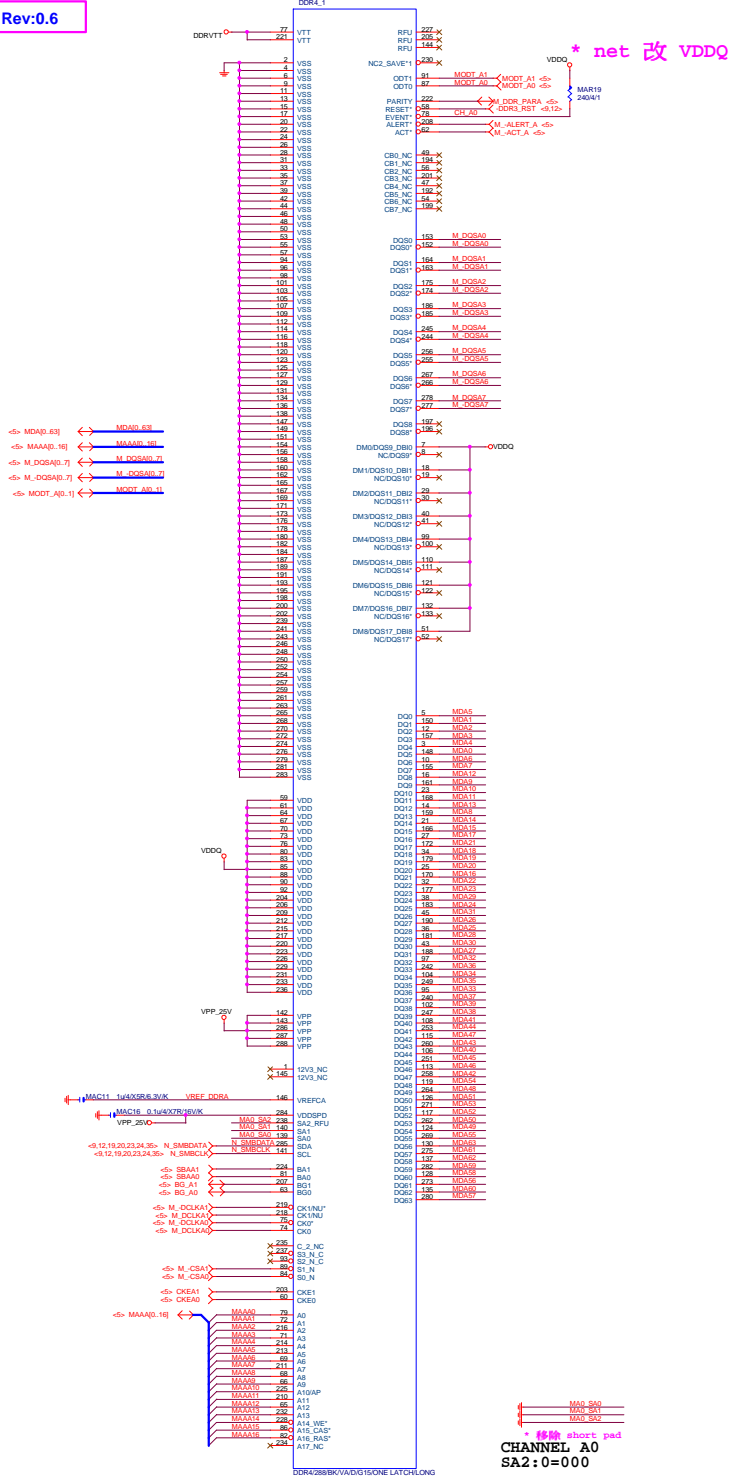
\* 刪 VCCGT 電容



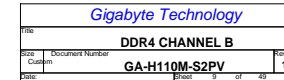
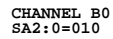


\* 刪 Voore 電容

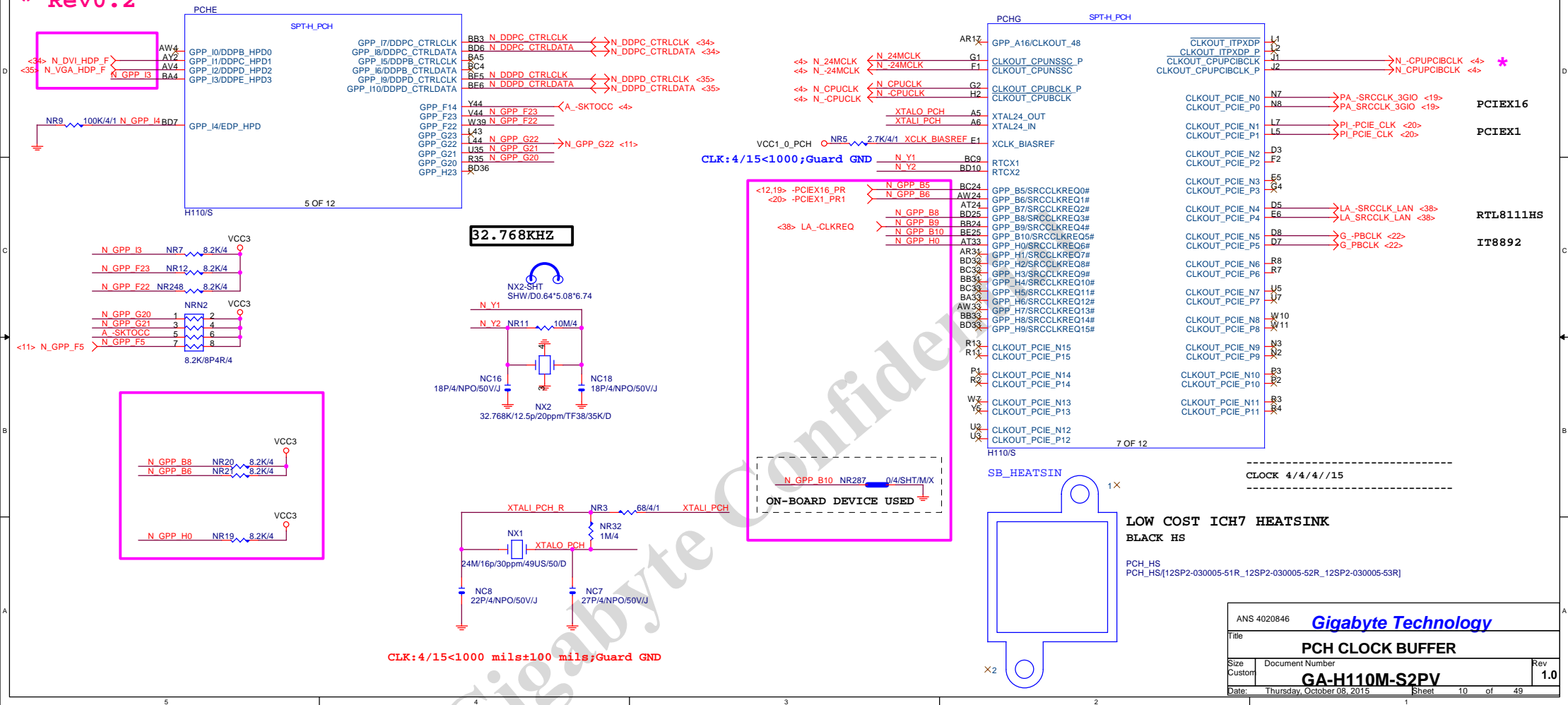


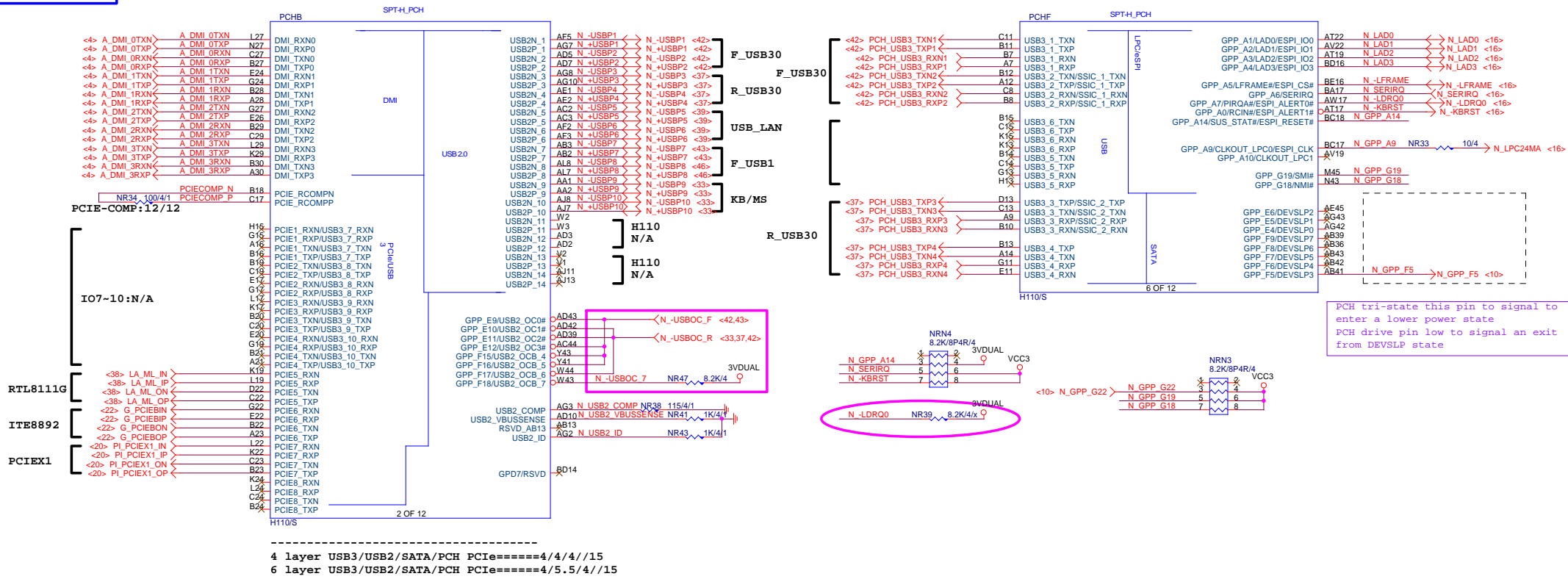




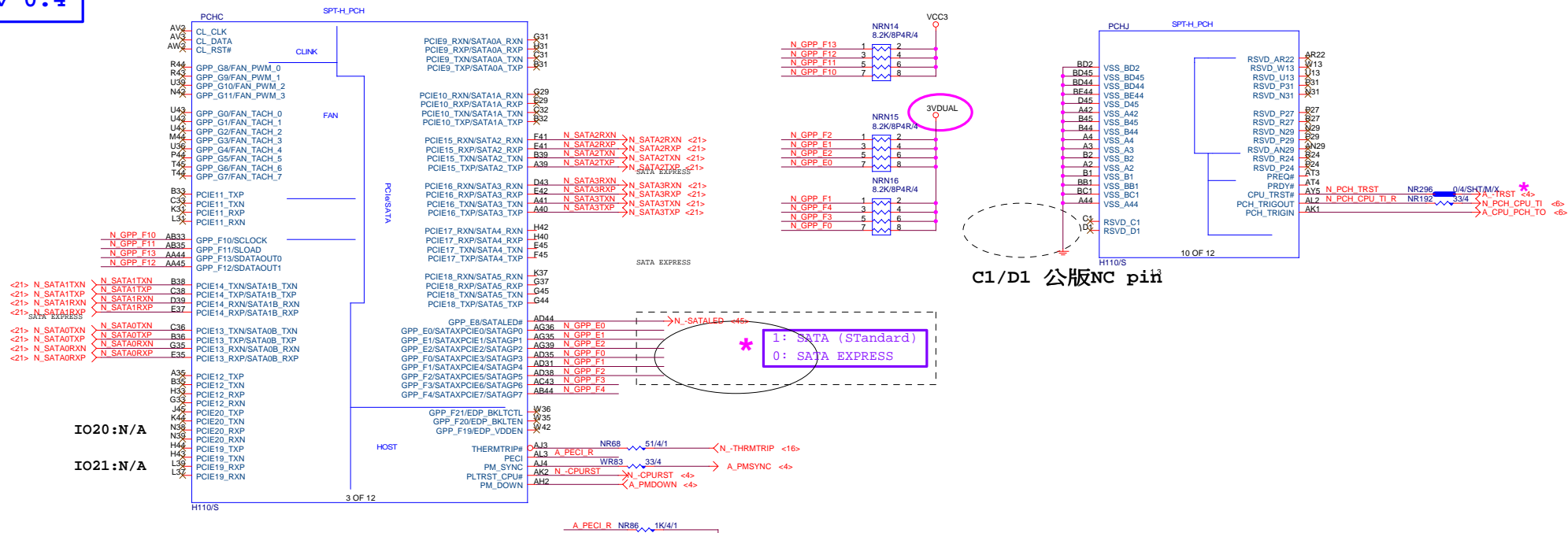


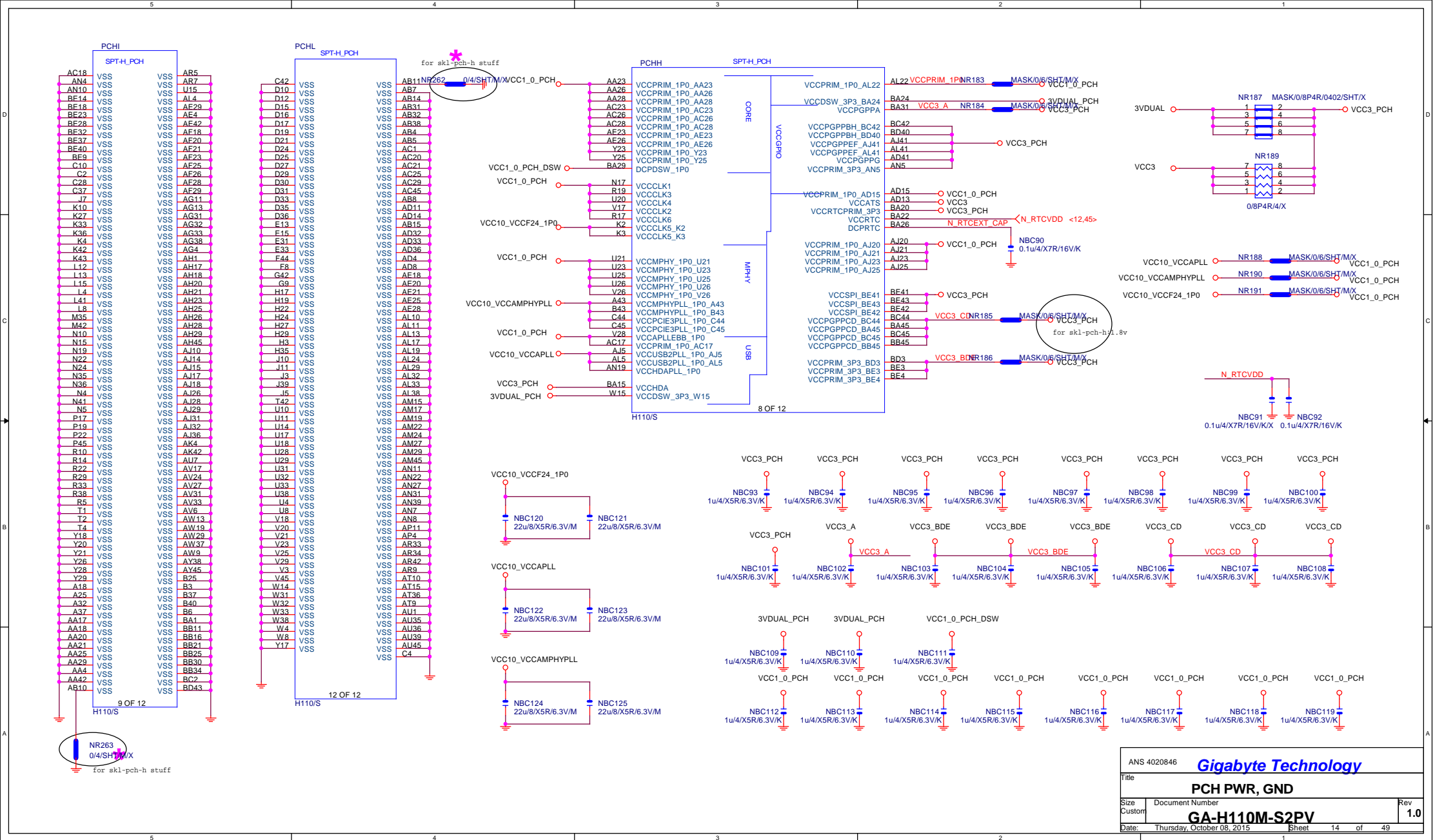
\* Rev0.2











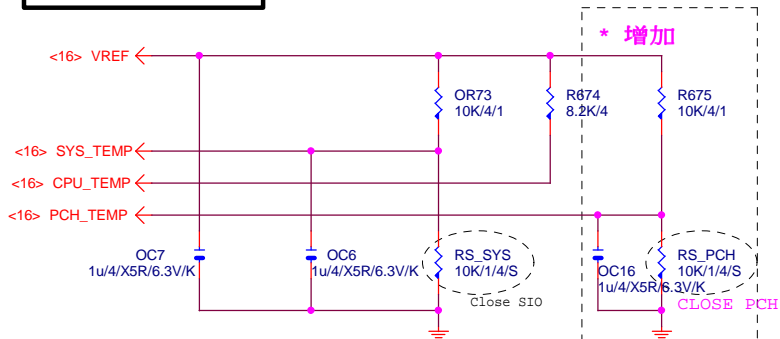




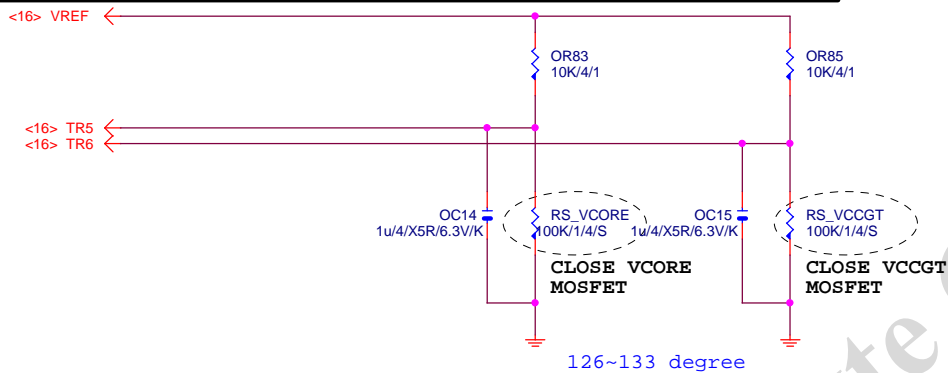


## TEMP H/W MONITOR

REV 1.04



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

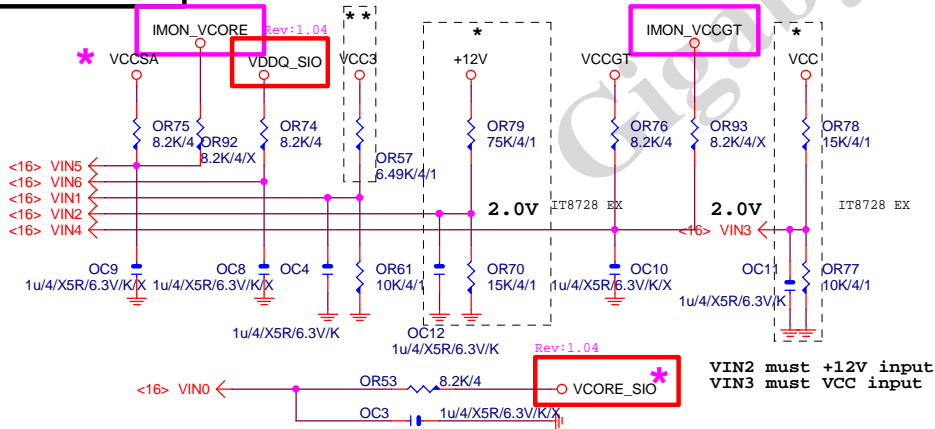
~~PROCHOT: 有mos heartsink不用prochot function~~

## VOLTAGE-- H/W MONITOR

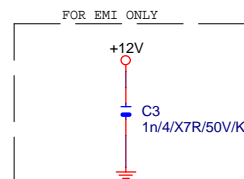
Connect to PWM

\* IT8728 BX  
\*\* IT8728 CX

Connect to PWM



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

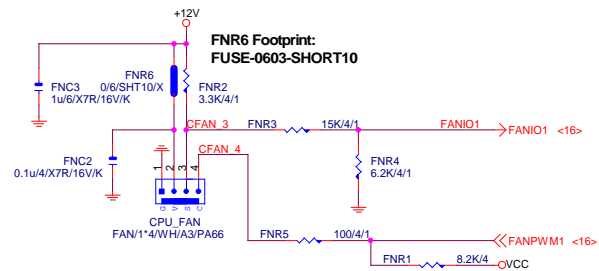


Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL		
Size	Document Number		Rev		
Custom	GA-H110M-S2PV		1.0		
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CPU SMART FAN

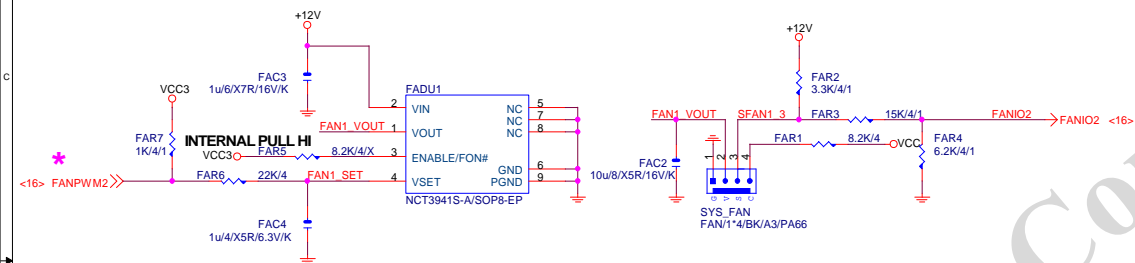
Rev: 0.53



SYSTEM FAN1

Linear SYS\_FAN

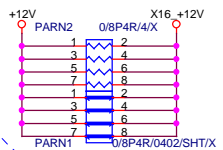
Enable Function (NCT3941S)  
Full Turn On Function  
(NCT3941S-A)



Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL		
Size	Custom	Document Number	GA-H110M-S2PV		
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			Rev	1.0	

\* +12 protect  
short-wire test



<8,9,12,20,23,24,35> N\_SMBCLK  
<8,9,12,20,23,24,35> N\_SMBDATA  
<12,16,20,22,23,44> N\_-PCIE\_WAKE

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

PA_EXP_TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA_EXP_TXP0 C
PA_EXP_TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA_EXP_TXN0 C
PA_EXP_TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA_EXP_TXP1 C
PA_EXP_TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA_EXP_TXN1 C
PA_EXP_TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA_EXP_TXP2 C
PA_EXP_TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA_EXP_TXN2 C
PA_EXP_TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA_EXP_TXP3 C
PA_EXP_TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA_EXP_TXN3 C
PA_EXP_TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA_EXP_TXP4 C
PA_EXP_TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA_EXP_TXN4 C
PA_EXP_TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA_EXP_TXP5 C
PA_EXP_TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA_EXP_TXN5 C
PA_EXP_TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA_EXP_TXP6 C
PA_EXP_TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA_EXP_TXN6 C
PA_EXP_TXP7	PAC18	0.22u/4/X5R/6.3V/K	PA_EXP_TXP7 C
PA_EXP_TXN7	PAC19	0.22u/4/X5R/6.3V/K	PA_EXP_TXN7 C
PA_EXP_TXP8	PAC21	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8 C
PA_EXP_TXN8	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXN8 C
PA_EXP_TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA_EXP_TXP9 C
PA_EXP_TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA_EXP_TXN9 C
PA_EXP_TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA_EXP_TXP10 C
PA_EXP_TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA_EXP_TXN10 C
PA_EXP_TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA_EXP_TXP11 C
PA_EXP_TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA_EXP_TXN11 C
PA_EXP_TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA_EXP_TXP12 C
PA_EXP_TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA_EXP_TXN12 C
PA_EXP_TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA_EXP_TXP13 C
PA_EXP_TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA_EXP_TXN13 C
PA_EXP_TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA_EXP_TXP14 C
PA_EXP_TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA_EXP_TXN14 C
PA_EXP_TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA_EXP_TXP15 C
PA_EXP_TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA_EXP_TXN15 C

PCIE16:16/5/5/5/16

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

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

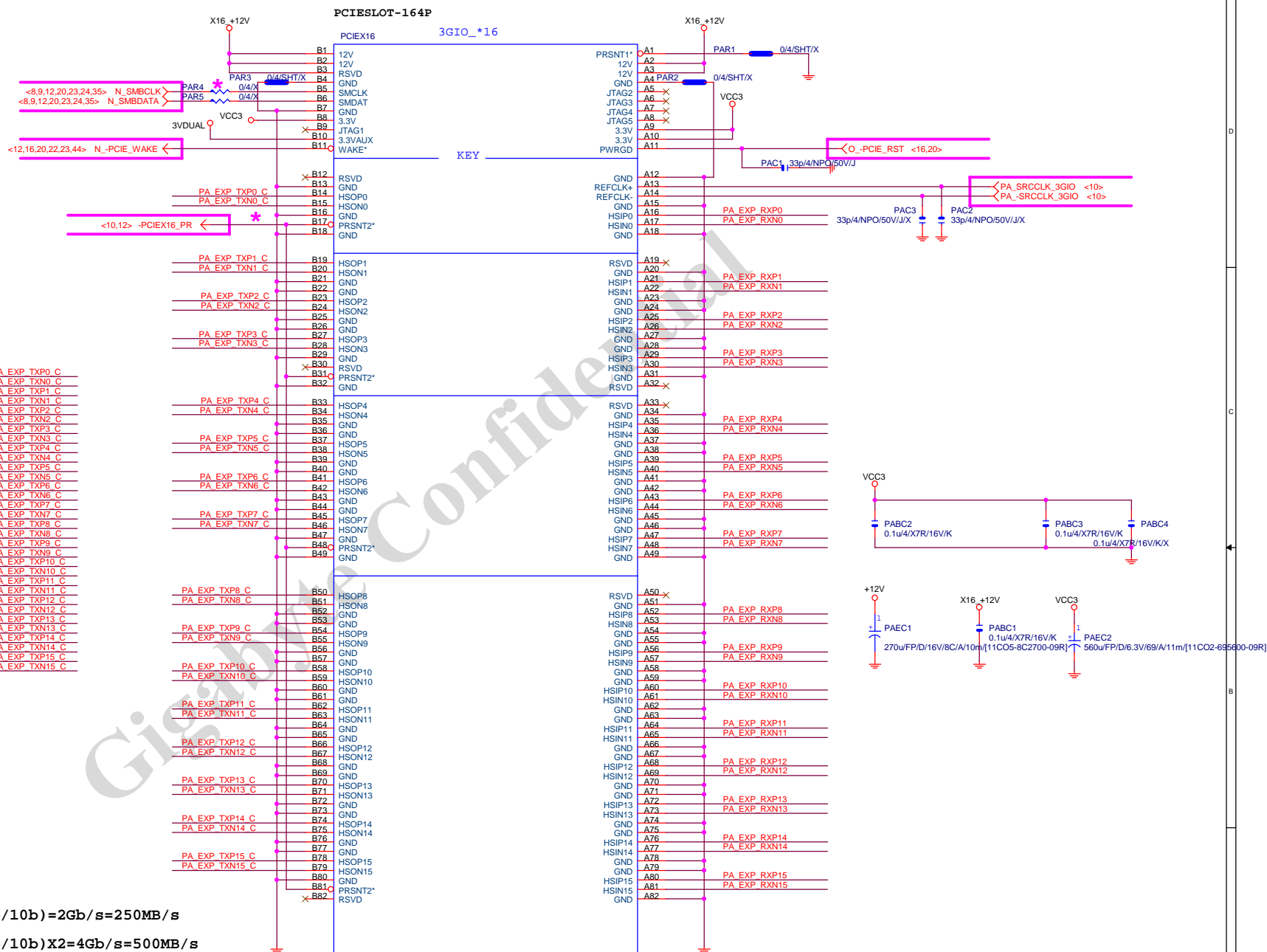
PCE-E X1(雙向) BANDWIDTH=2.5GHz\*(8b/10b)X2=4Gb/s=500MB/s

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

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

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

## PCIESLOT-164P

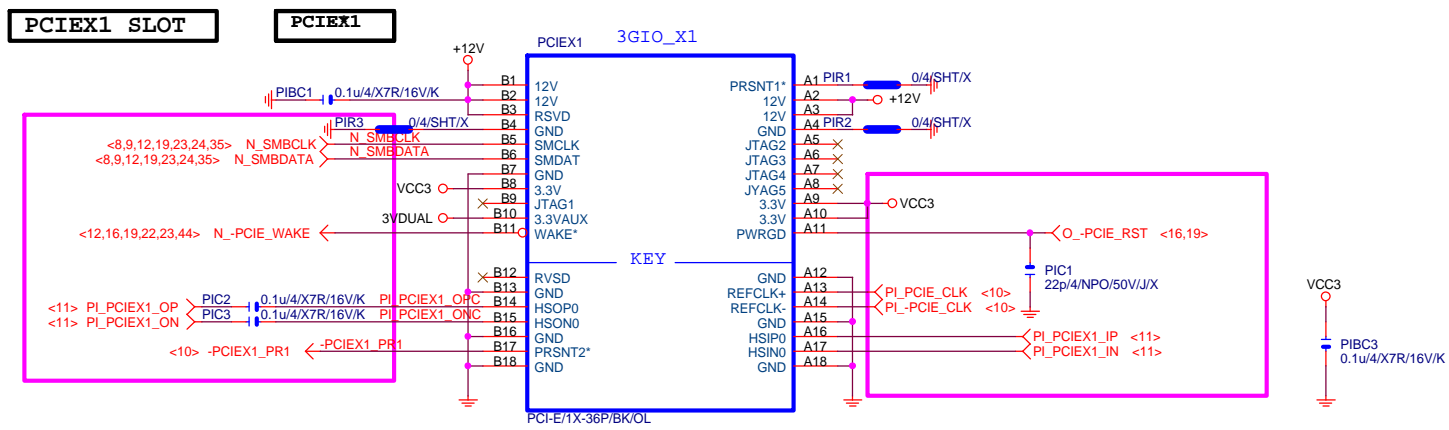


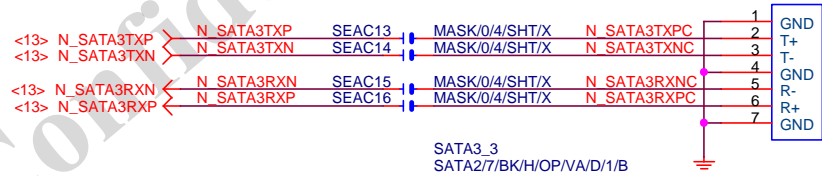
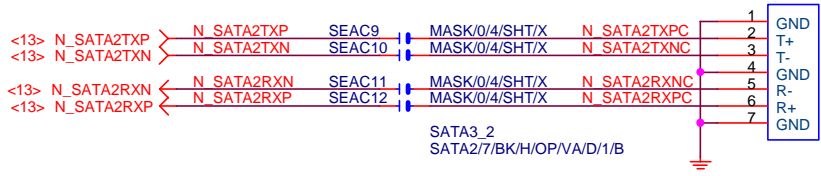
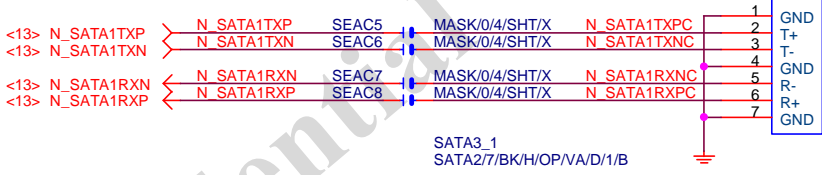
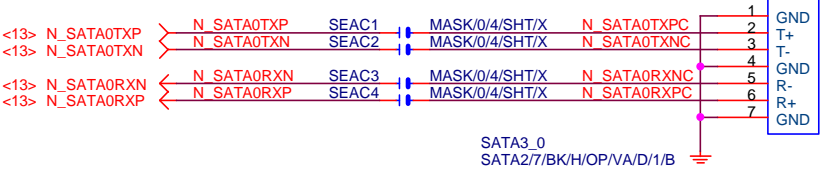
PCI-E/16X-164P/BK/LONG DOUBLE[11AC1-023164-D1R]

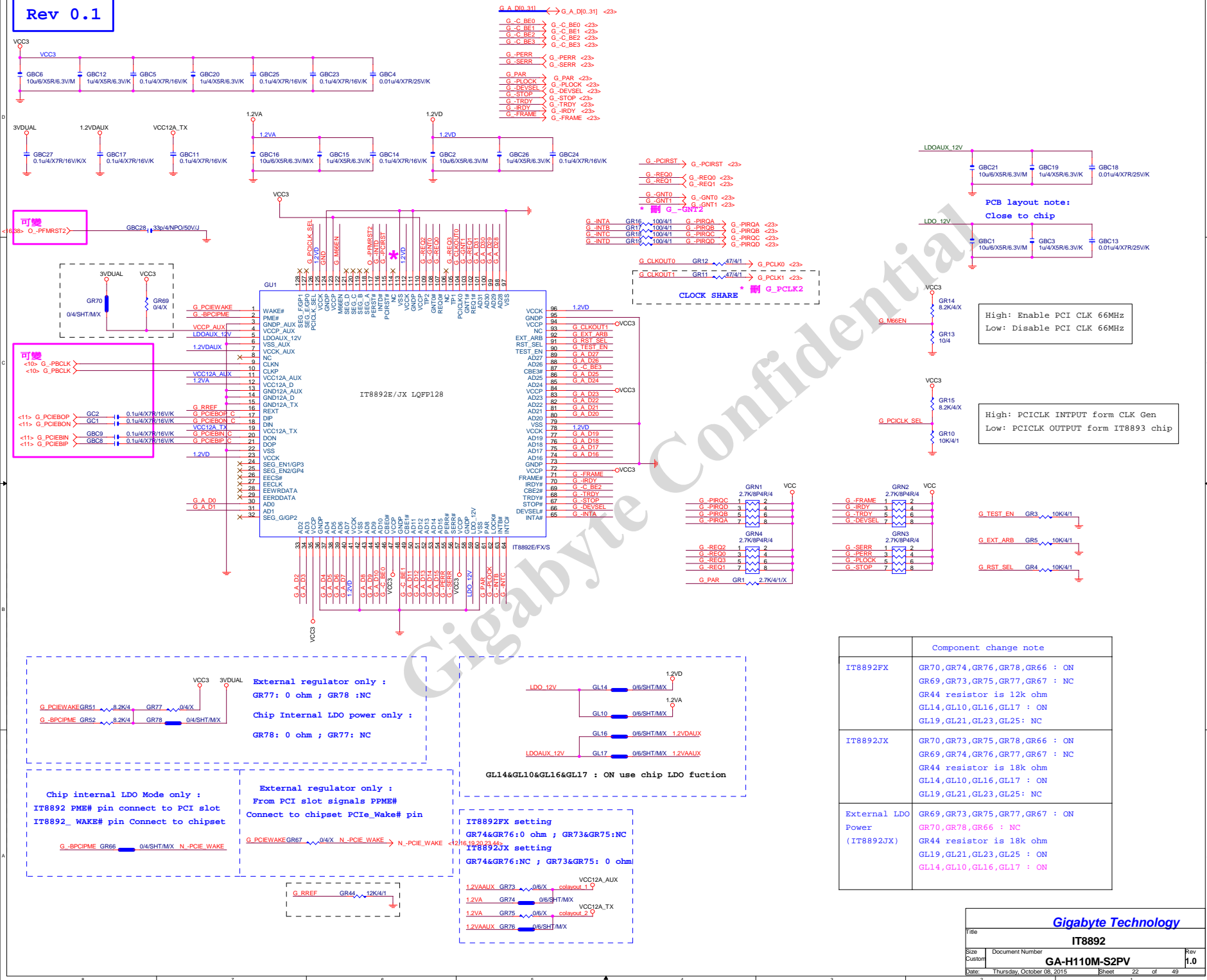
R01A

Gigabyte Technology

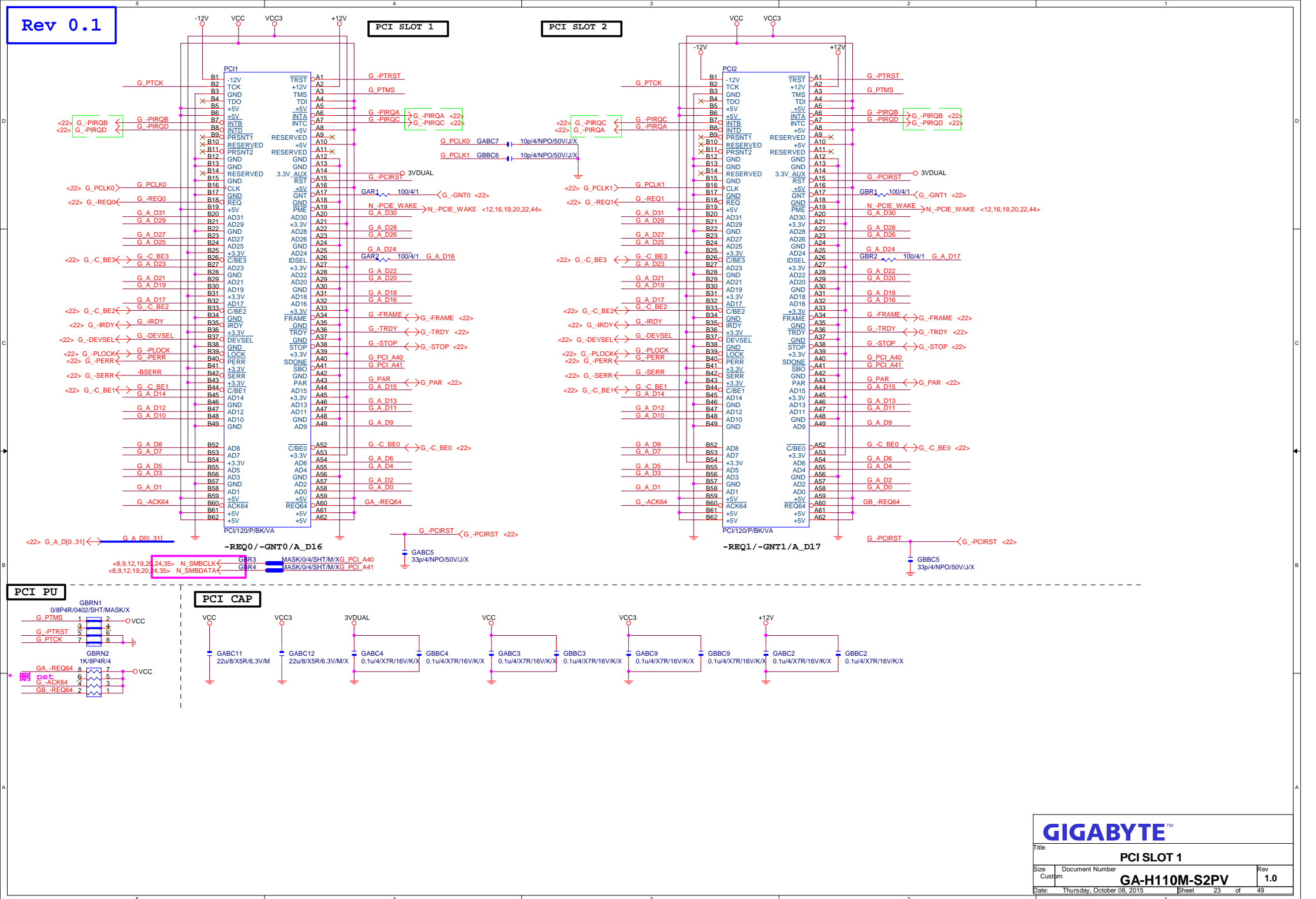
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Size			Document Number	Rev
Custom			GA-H110M-S2PV	1.0
Date:			Thursday, October 08, 2015	Sheet 19 of 49

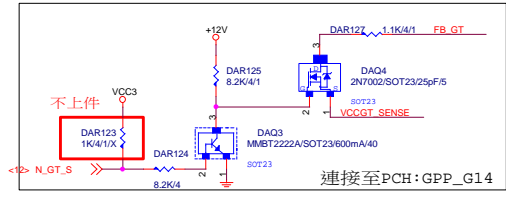
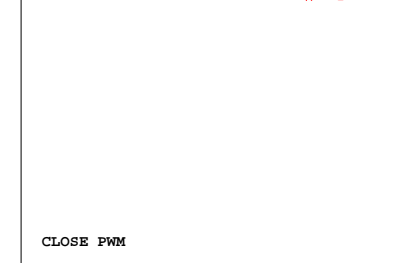




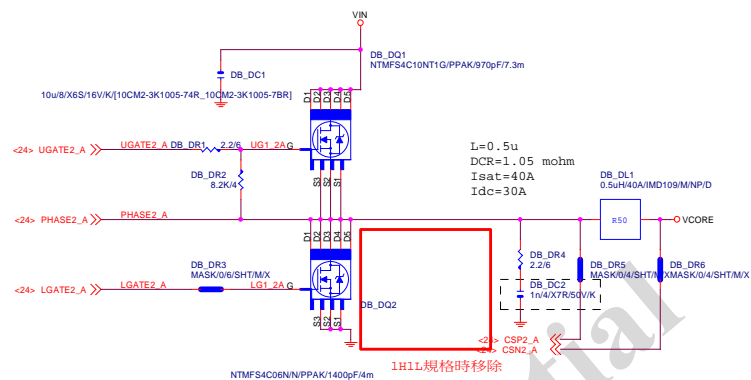




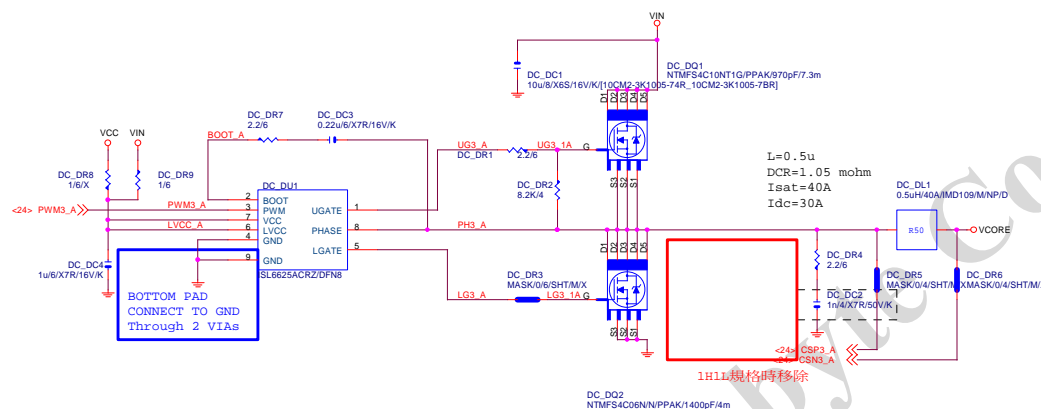
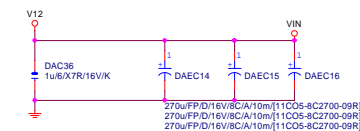
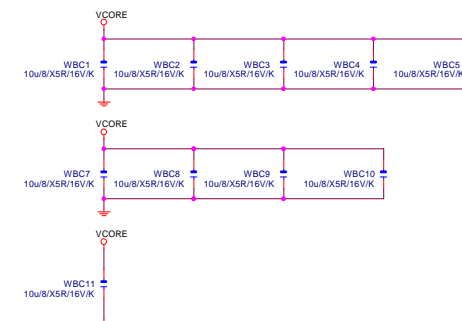
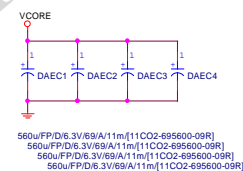




VCORE



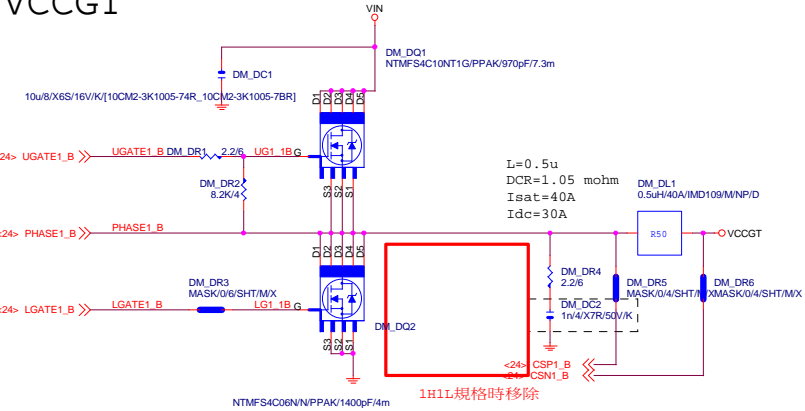
VIN CAP 270u\*3PCS

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

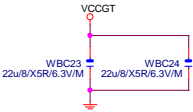
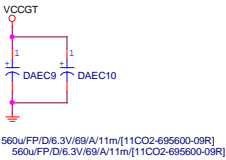
**GIGABYTE™**

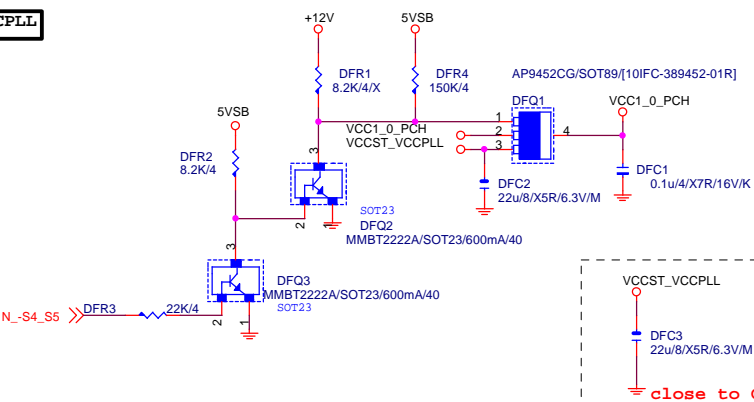
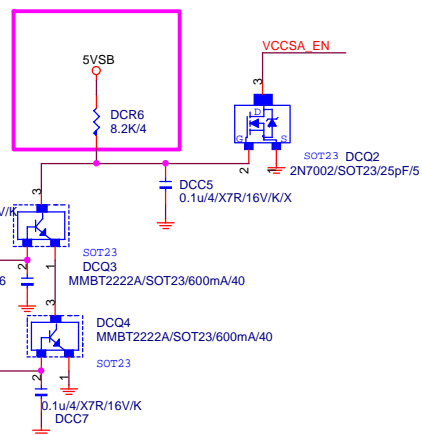
Title			
ISL95858_MOS			
Size	Document Number	Rev	
Custom	GA-H110M-S2PV	1.0	
Date:	Thursday, October 08, 2015	Sheet	25 of 49

VCCGT

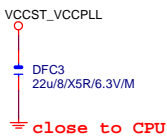


VCCGT CAP 560u\*2PCS  
22u\*2PCS





VCCIO\_EN 1 DDR10 0/4/SHT/MX  
VCCIO\_EN <16>  
Connect to IT8620



REV:0.4

DDR4

CHOKE與CAP料號可變

DDR VIN CAP  
560u\*2PCS

1.2V

SUPPORT DDR4

25A MAX

 $L=1\mu$   
 $DCR=2.5\text{ mohm}$   
 $I_{sat}=35A$   
 $I_{dc}=28A$ 請放置CHOKE--出來位置.先預留.  
請自行確認ripple後再決定是否上件

Remote sense請從最重的負載端點拉回

PIN7-->20mil  
PIN1-->6mil  
PIN2-->6mil  
PIN5-->6mil  
PIN3-->6mil

1H1L規格移除

上件

MA\_DR38.MA\_DC15

VPP\_25V使用8120.8068A.RT8237時上件

DDR VS  
MASK/0/4/SHT/M/X

PWR SEQ

CLOSE TO DDR POWER PLANE

DDRVTT

DDRVTT CAP

DDR CAP 560u\*4PCS 22u\*2PCS

\* 大電容 x4

\* 大電容 x0

DDR\_VTT\_CTL MAR110 0/4 DDRVTT\_EN  
N\_SLP\_S3 MAR111 0/4 DDRVTT\_BOOT

MAU1上NCT3103S時上件

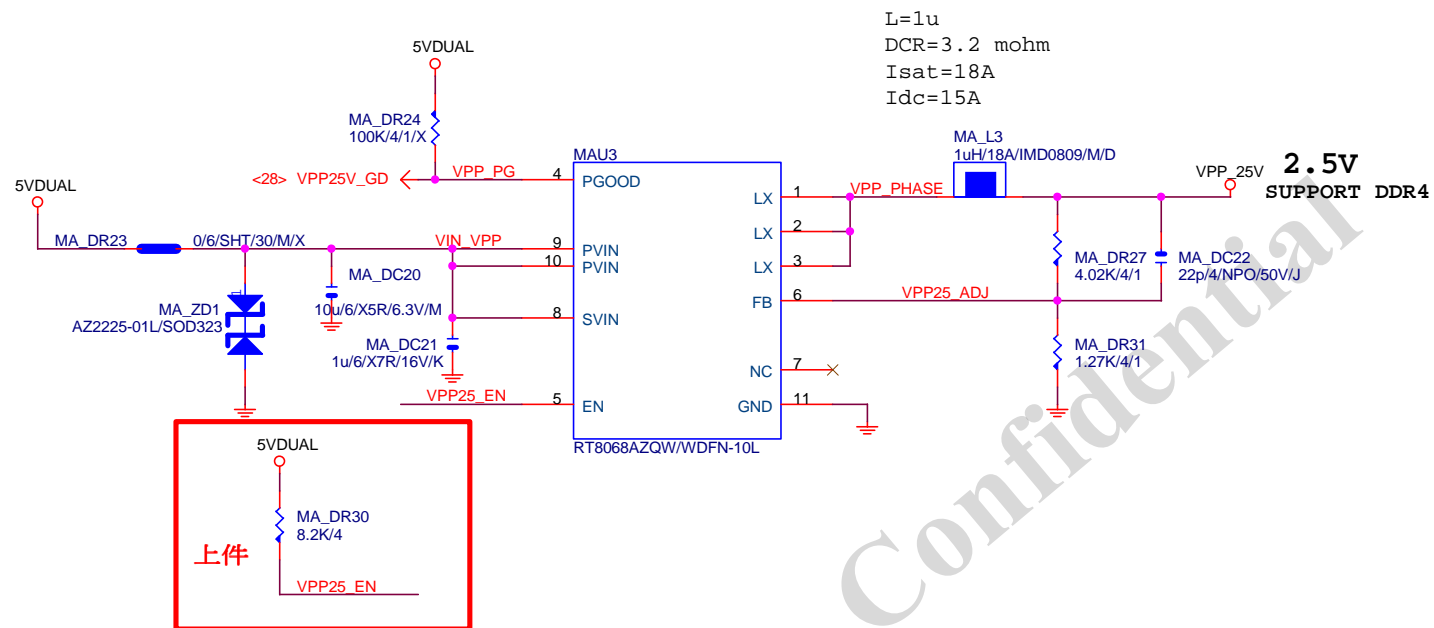
GIGABYTE™

Title RT8120_DDR POWER		
Size Custom	Document Number GA-H110M-S2PV	Rev 1.0
Date: Thursday, October 08, 2015	Sheet 28	of 49

REV:0.4

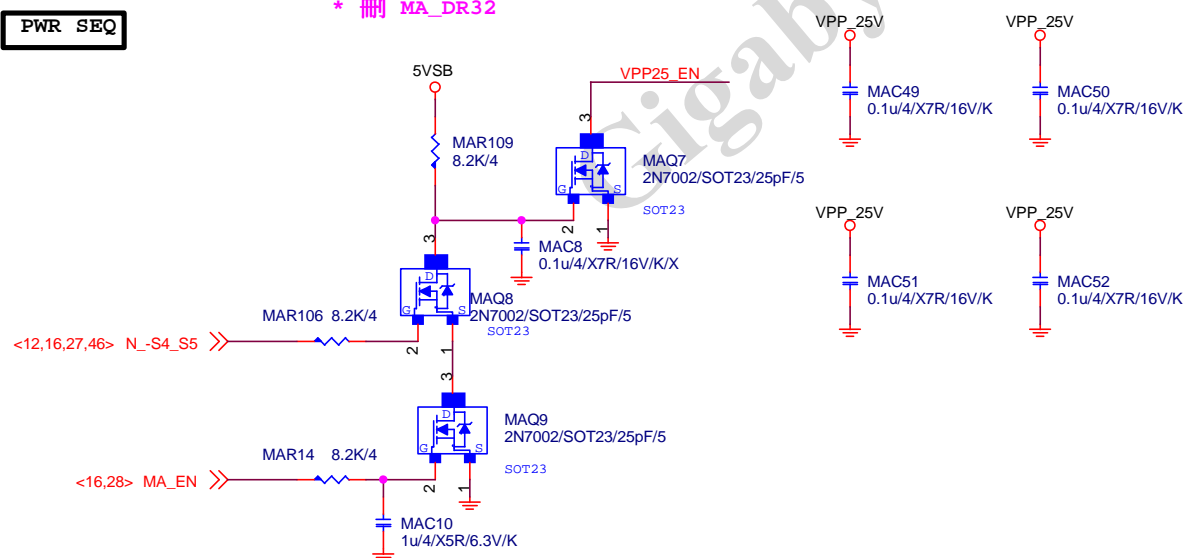
VPP 25V

CHOKE與CAP料號可變



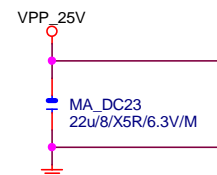
PWR SEQ

\* 刪 MA\_DR32



VPP CAP 22u\*1PCS

\* 大電容 x0



GIGABYTE™

Title  
RT8068A\_VPP POWERSize  
Custom  
Document Number  
GA-H110M-S2PVRev  
0.1

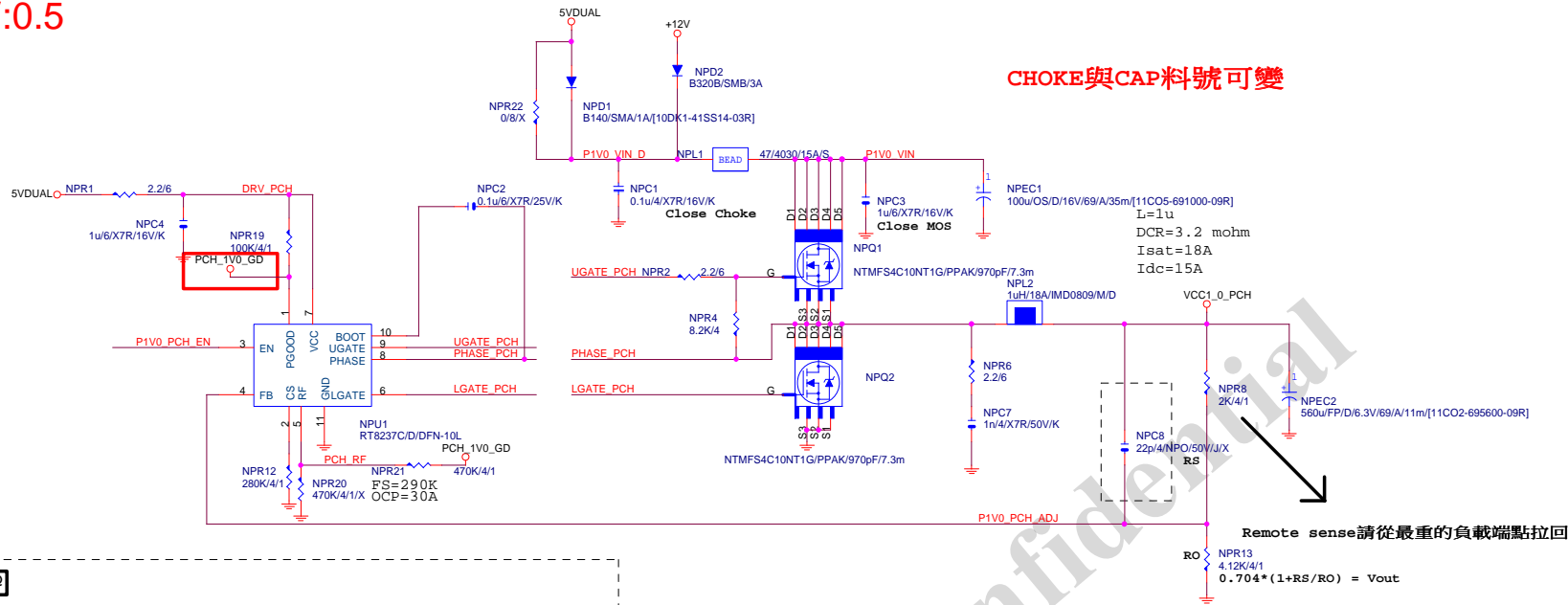
Date: Thursday, October 08, 2015

Sheet 29 of 49

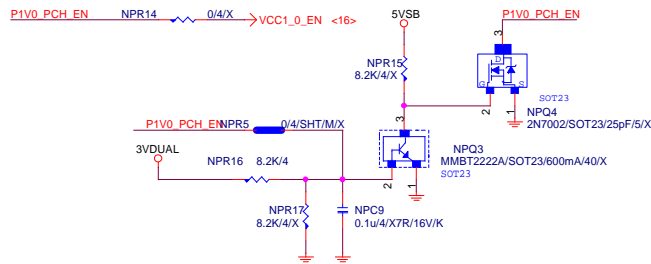


REV:0.5

CHOKE與CAP料號可變



PWR SEQ



請放置CHOKE一出來的地方

**GIGABYTE**

Title  
RT8237\_PCH POWER

Size  
Custom  
Document Number  
GA-H110M-S2PV

Rev  
1.0

Date: Thursday, October 08, 2015

Sheet 30 of 49

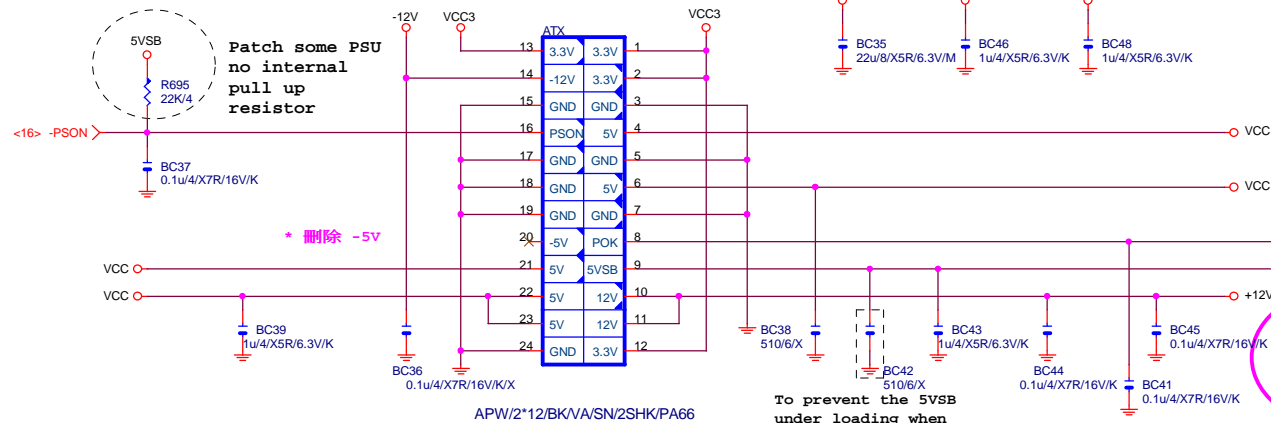
## REV:0.51

<16> 5VAUX\_SW >>

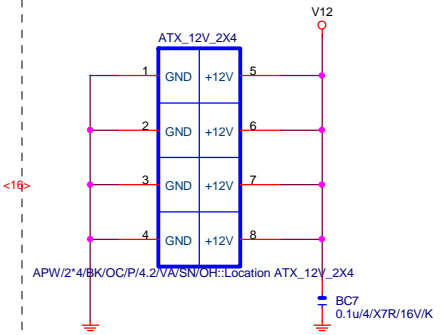


Title			
<b>DISCRETE POWER</b>			
Size	Document Number		Rev
Custom	<b>GA-H110M-S2PV</b>		<b>1.0</b>
Date:	Thursday, October 08, 2015	Sheet	31 of 49

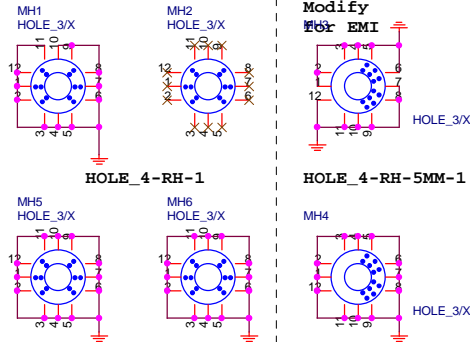
## ATXX24 POWER CONNECTOR



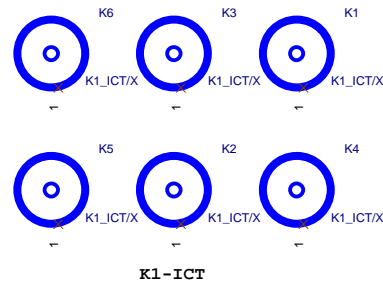
## ATXX4 POWER CONNECTOR



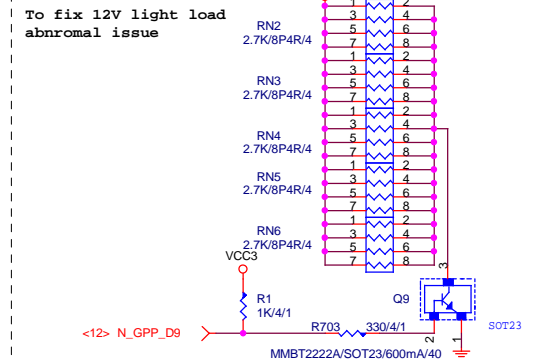
## 螺絲孔



## 固定孔/光學點

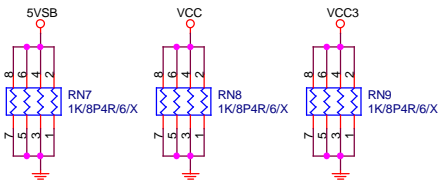


## +12V DUMMY LOAD

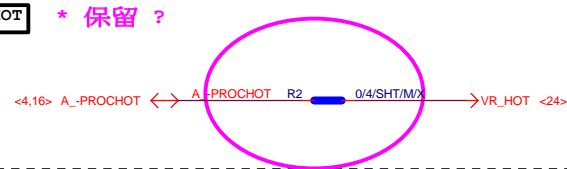


【技術通報R&D技術通報153】

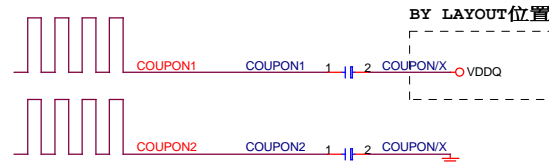
## DUMMY LOAD



## -PROHOT



## COUPON



## Gigabyte Technology

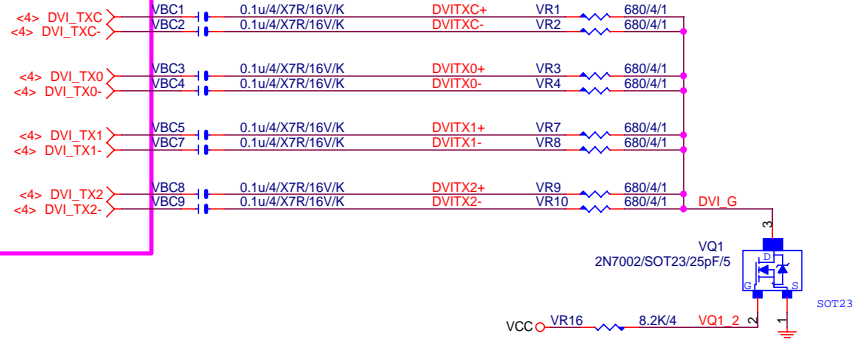
Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-H110M-S2PV	1.0
Date:	Thursday, October 08, 2015	Sheet 32 of 49



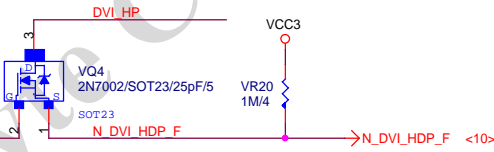
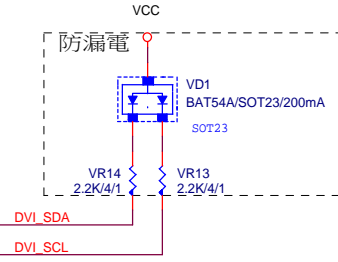
DVI

NET 可變

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



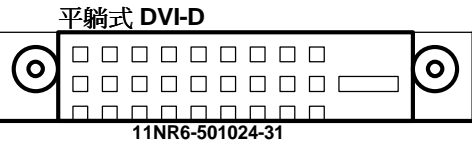
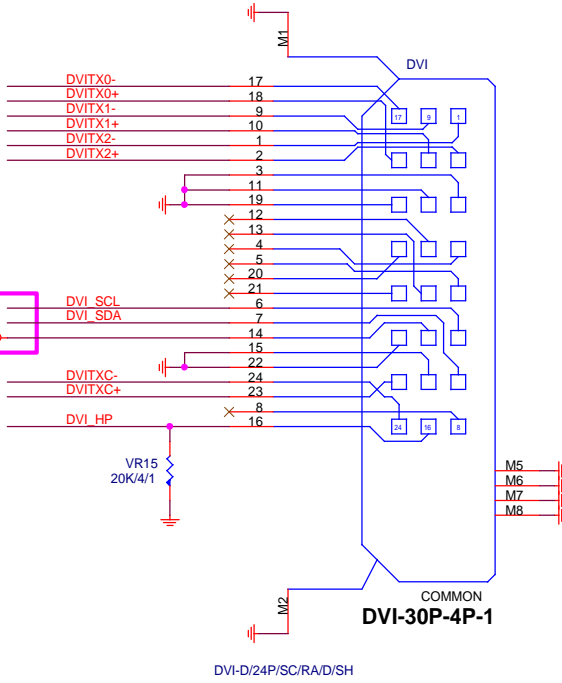
DVI PU



DVI CONN

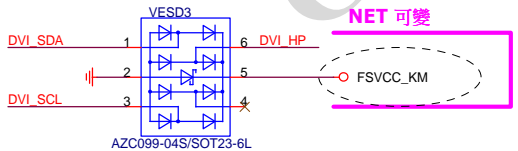
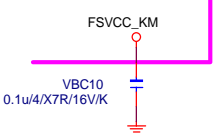
NET 可變

\* FSVCC\_KM

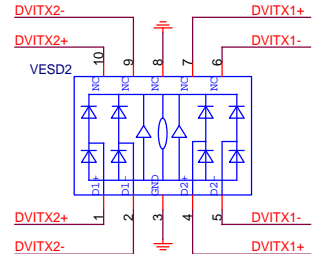


ESD

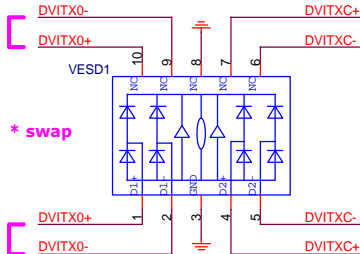
NET 可變



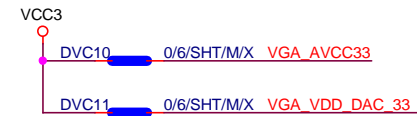
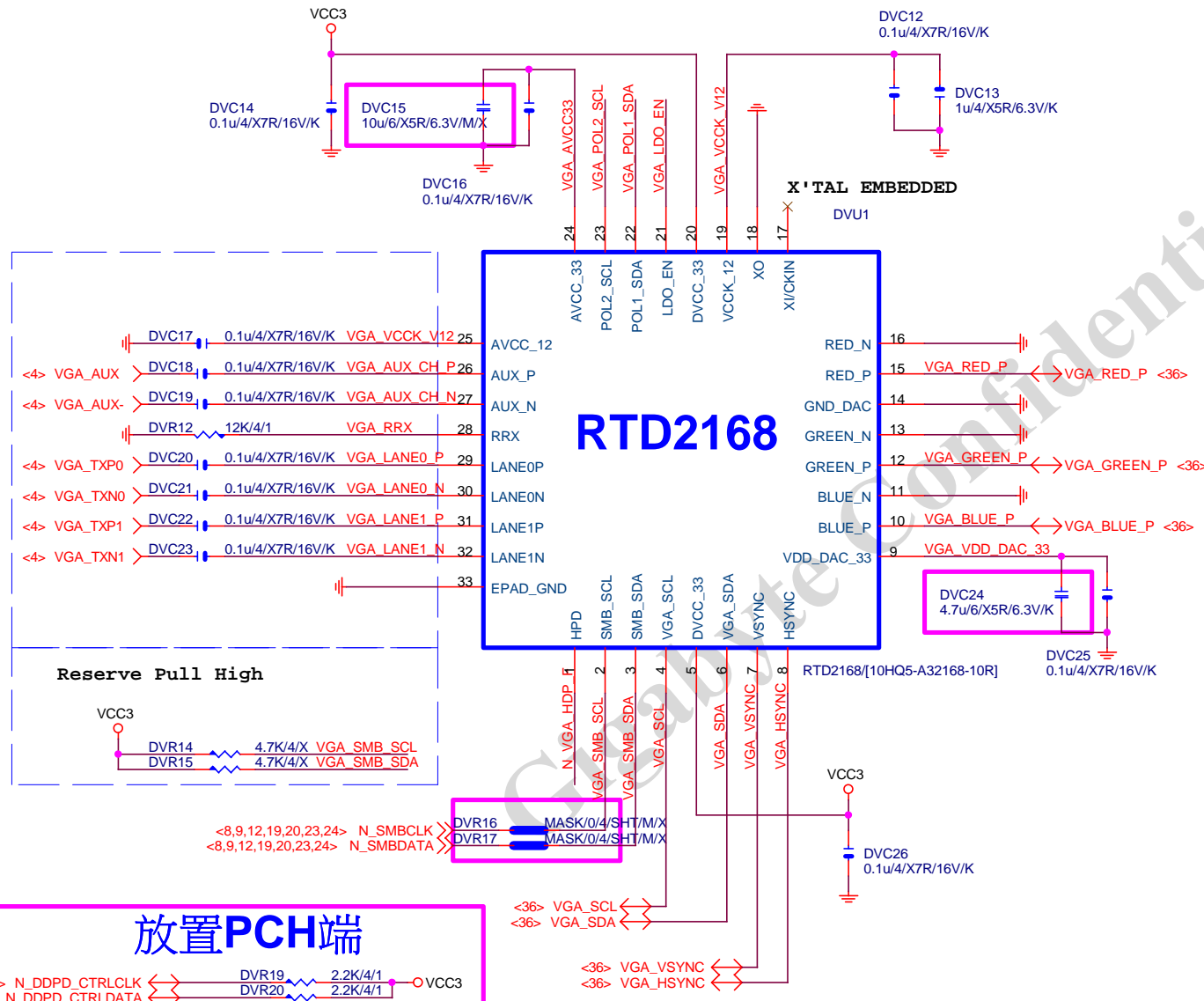
Close to connector



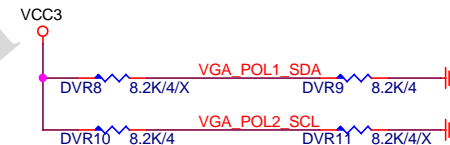
Close to connector



Close to connector

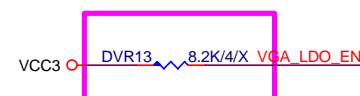


## Power on latch



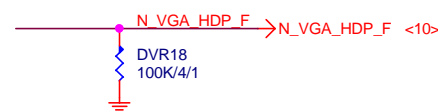
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

## Embedded LDO



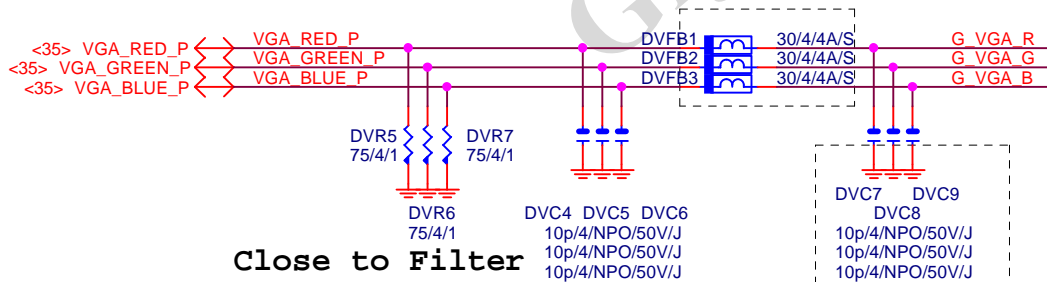
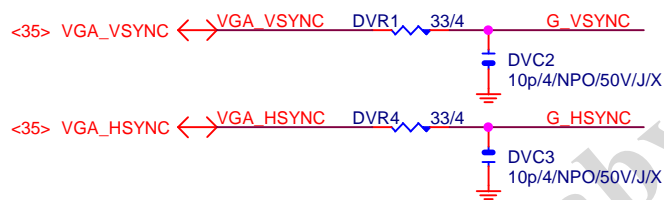
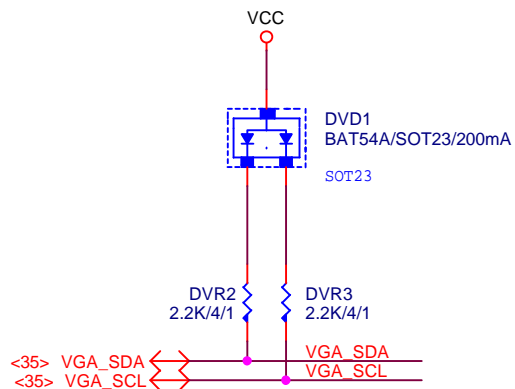
LDO_EN(PIN21)	
0	1
VCCCK_V12 from External 1.2V	VCCCK_V12 from Embedded LDO

## DP HPD



Gigabyte Technology  
DP-VGA RTD2168

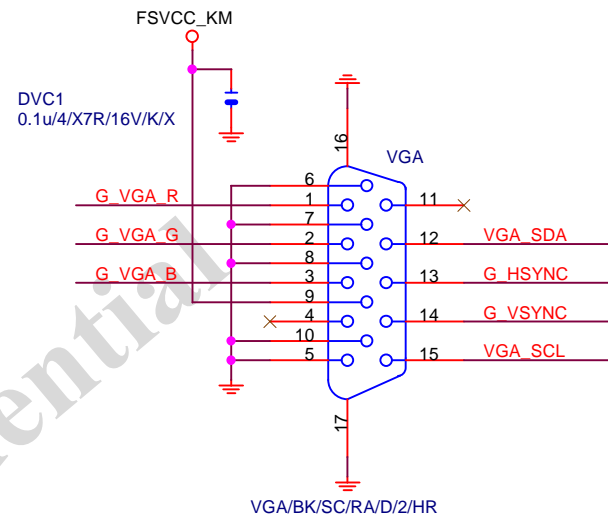
# VGA SIGNAL R1.03



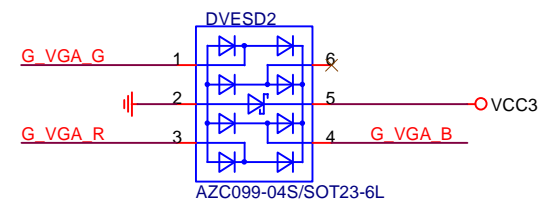
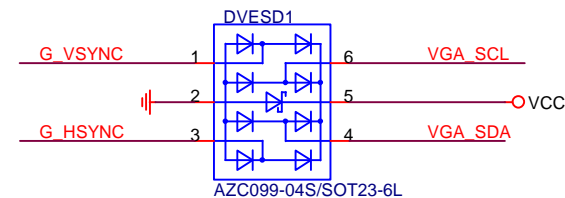
Close to Filter

FOR EMI

# VGA CONN.



# VGA ESD



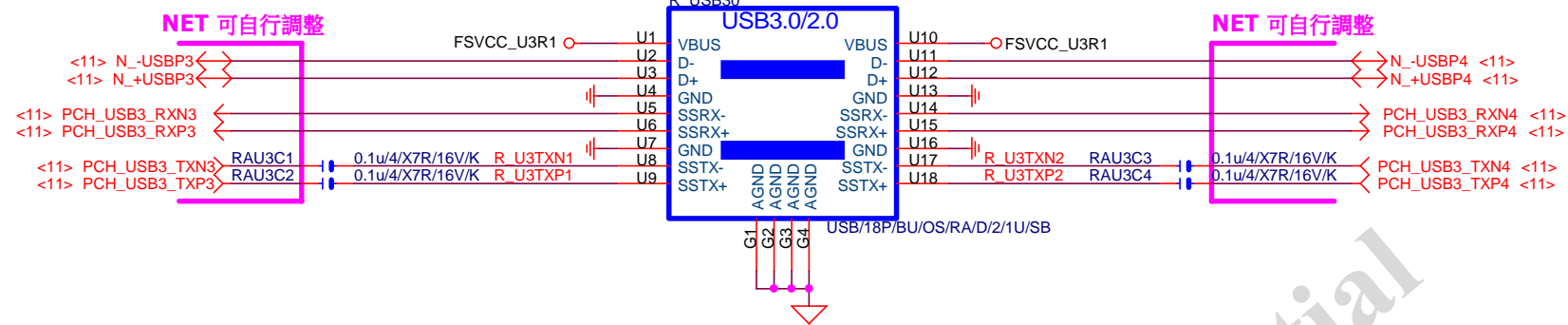
Gigabyte Technology  
DP-VGA RTD2168

Title		
Size	Document Number	Rev
Custom	GA-H110M-S2PV	1.0
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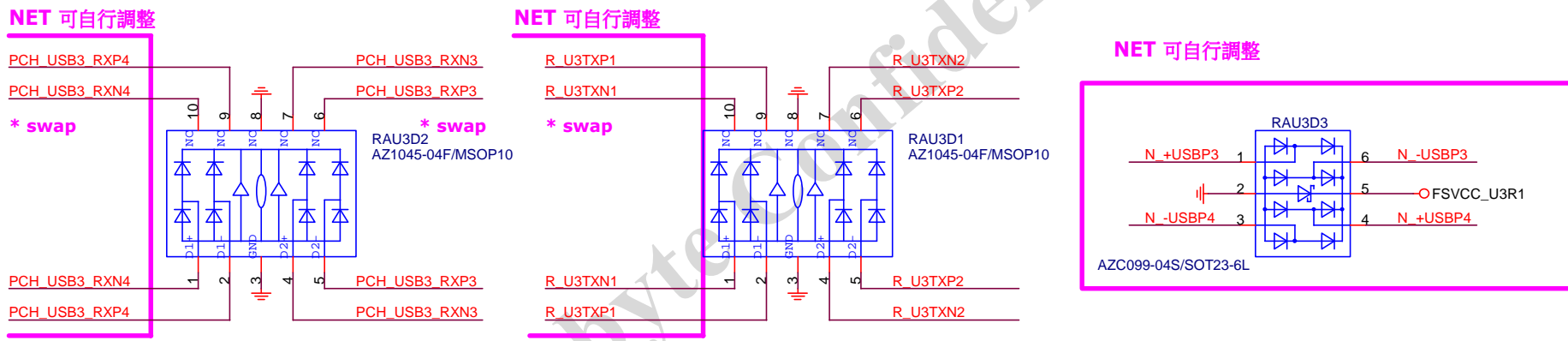


R\_USB30\_1

ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可

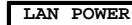
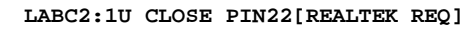
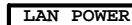


ESD

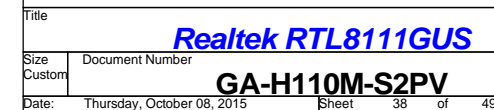
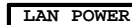
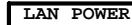
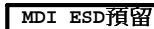


FUSE



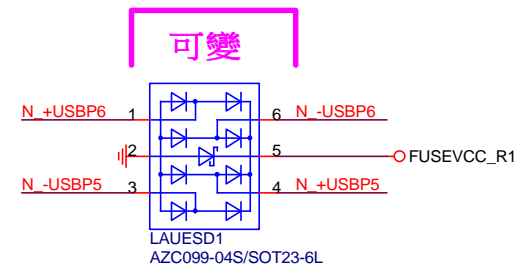


(CLOSE LAU1 PIN23)



USB\_LAN CONNECTOR R1.06

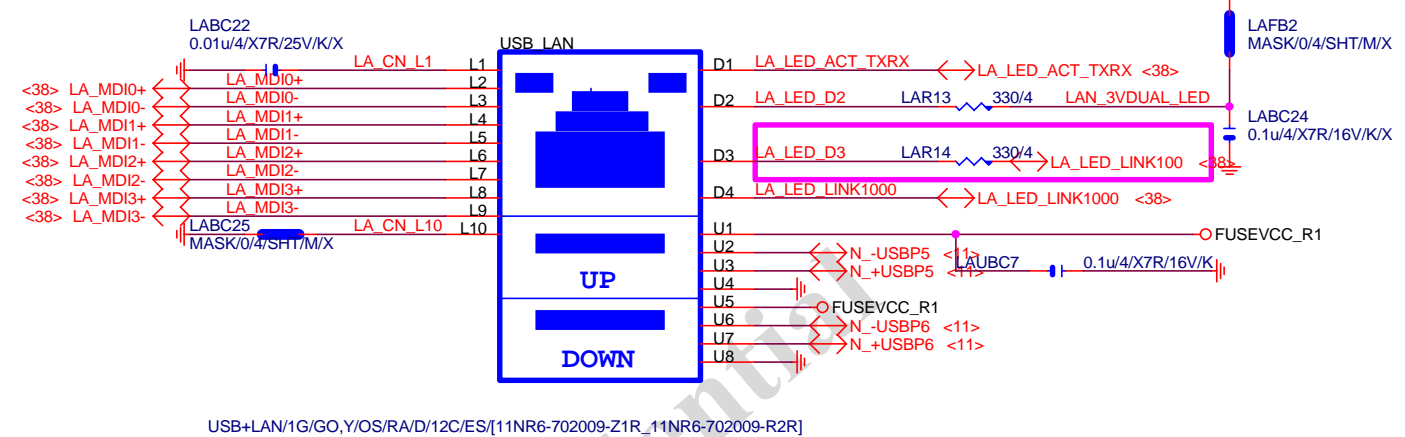
RMA ESD PROTECT note:可變更USB NAME



USB\_LAN CONNECTOR

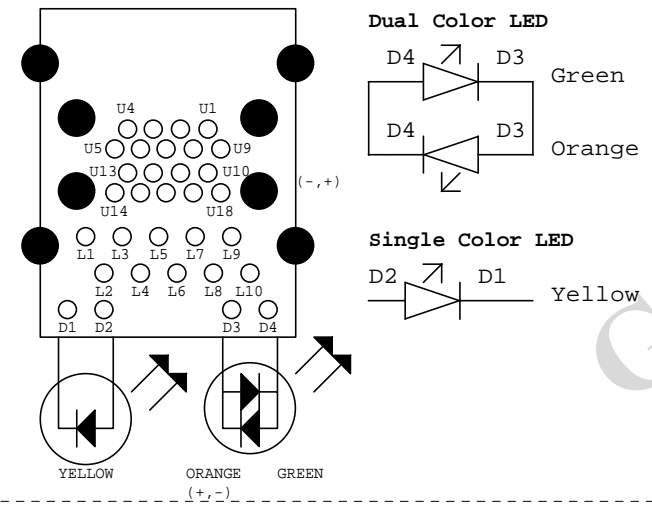
note:可變更USB NAME

[RTL8111G]



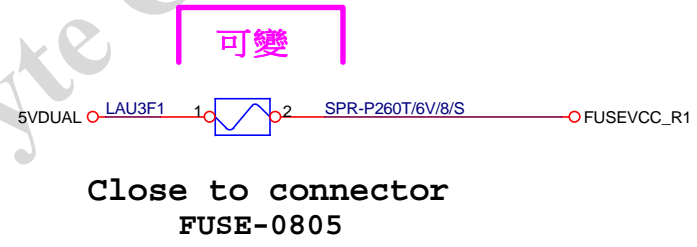
LA\_MDI--->100歐姆:[20/4/8/4/20]

USB30 LAN LAYOUT示意圖



USB POWER

note:可變更FUSE



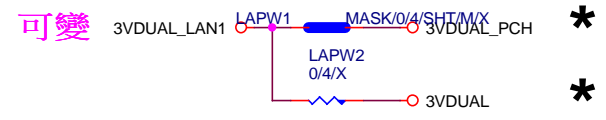
EMI SHORT PAD

PS:視EMI需求

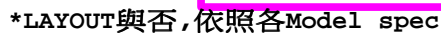
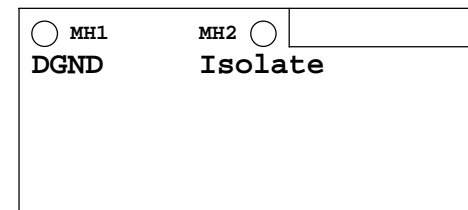
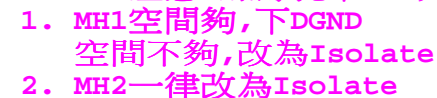


LAN POWER


note: lan power連接及電流



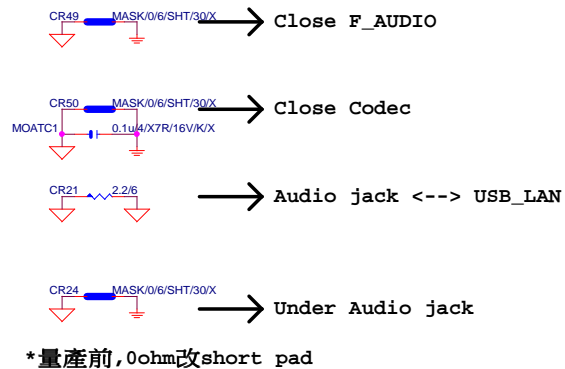
Gigabyte Technology			
LAN CONNECTOR-RTL8111G			
Title			
Size	Document Number	Rev	
Custom	GA-H110M-S2PV	1.0	
Date:	Thursday, October 08, 2015	Sheet	39 of 49



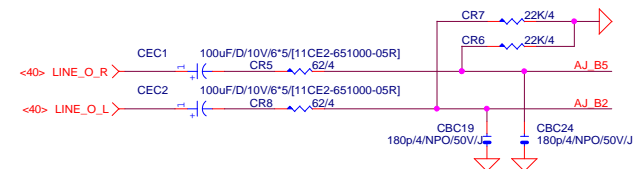
## Gigabyte Technology

<div style="text-align: center;">  </div>			
Title			
<div style="text-align: center;"> <b>HD AUDIO ALC887</b> </div>			
Size Custom	Document Number	<div style="text-align: center;"> <b>GA-H110M-S2PV</b> </div>	Rev 1.0
Date:	Thursday, October 08, 2015	Sheet 40 of 49	

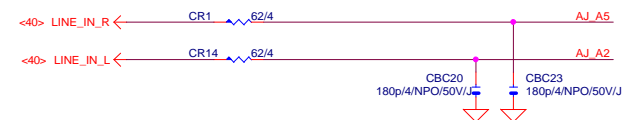
Rev 0.4



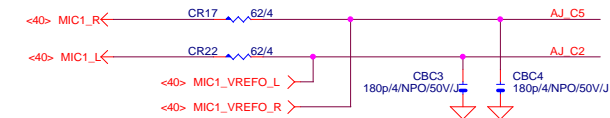
#### LINE-OUT



#### LINE-IN



#### MIC-IN

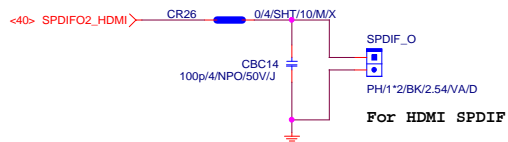


#### SURROUND

#### CEN/LFE

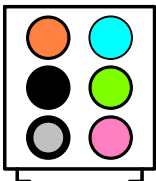
#### SURRBACK

#### SPDIF\_OUT



#### SPDIF\_IN

#### AZALIA JACK

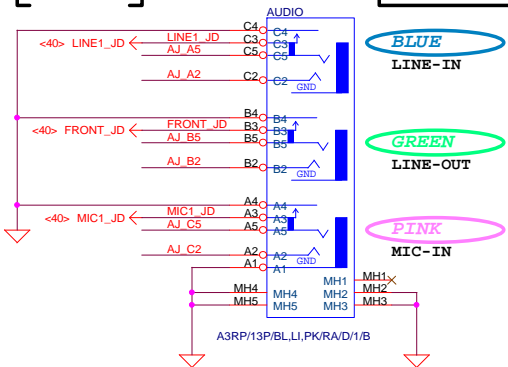


#### AZALIA JACK

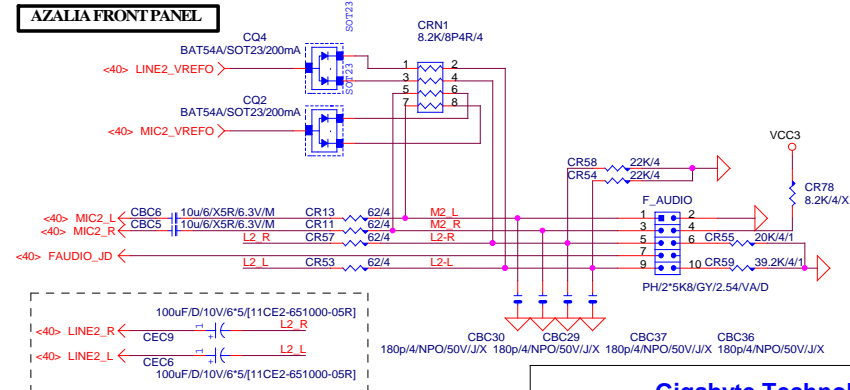
BLUE  
LINE-IN

GREEN  
LINE-OUT

PINK  
MIC-IN



#### AZALIA FRONT PANEL



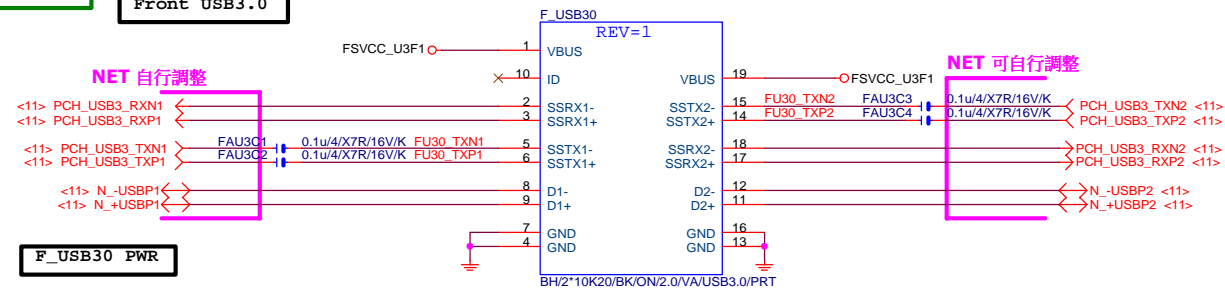
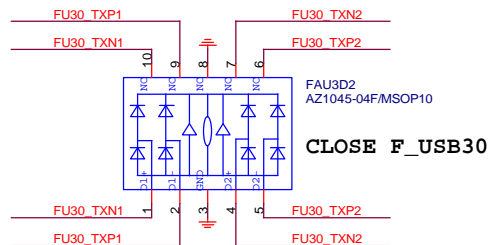
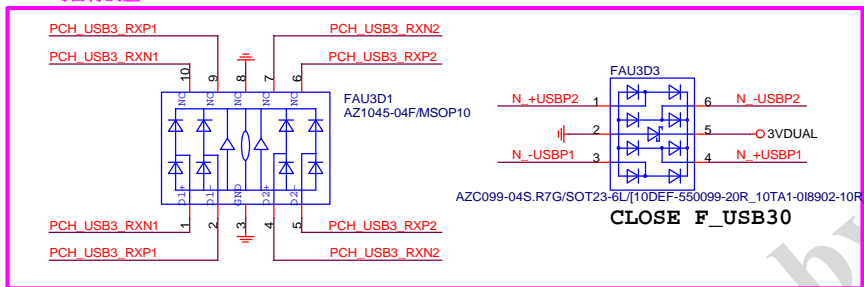
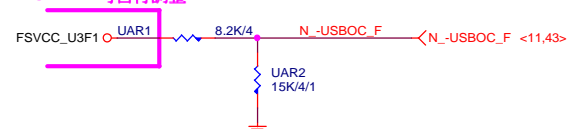
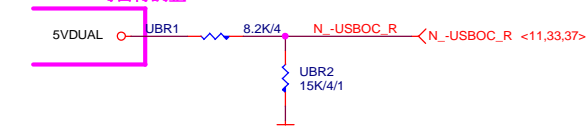
Gigabyte Technology

AUDIO JACK

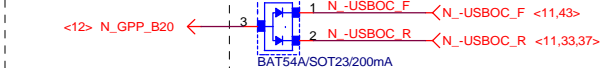
GA-H110M-S2PV

Rev 1.0

Title	Document Number	Rev
	GA-H110M-S2PV	1.0
Size	Custom	
Date:	Thursday, October 08, 2015	Sheet 41 of 49

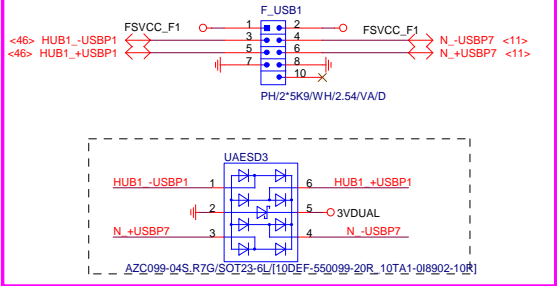
**NET 可自行調整****-USBOC\_F****POWER 可自行調整****-USBOC\_R****POWER 可自行調整**

\* 接 PCH  
N\_GPP\_B20(SMI) &  
PCH PU 3Vdual

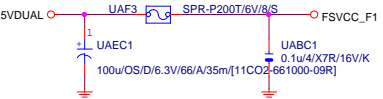
**Gigabyte Technology**

Title			
R_USB30,F_USB30,USB_OC			
Size	Document Number	GA-H110M-S2PV	
Custom		Rev	1.0
Date:	Thursday, October 08, 2015	Sheet	42 of 49

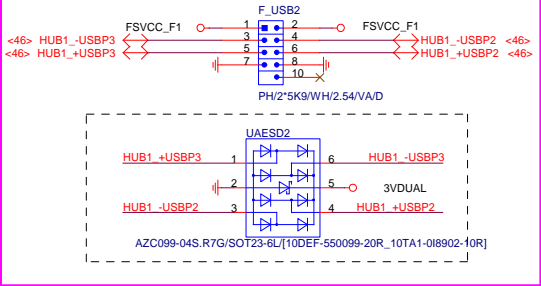
NET 可變



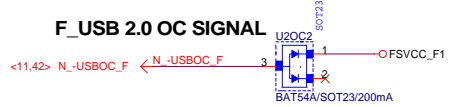
Close to connector  
FUSE 2 Port 1 Fuse 2A



NET 可變



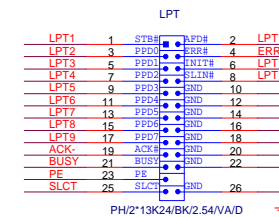
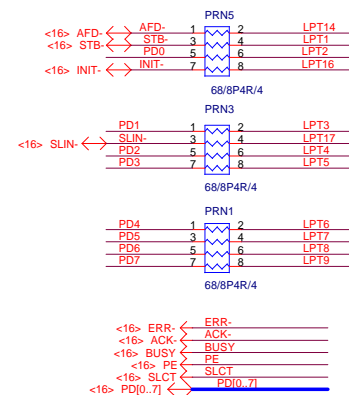
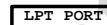
F\_USB 2.0 OC SIGNAL



Gigabyte Confidential

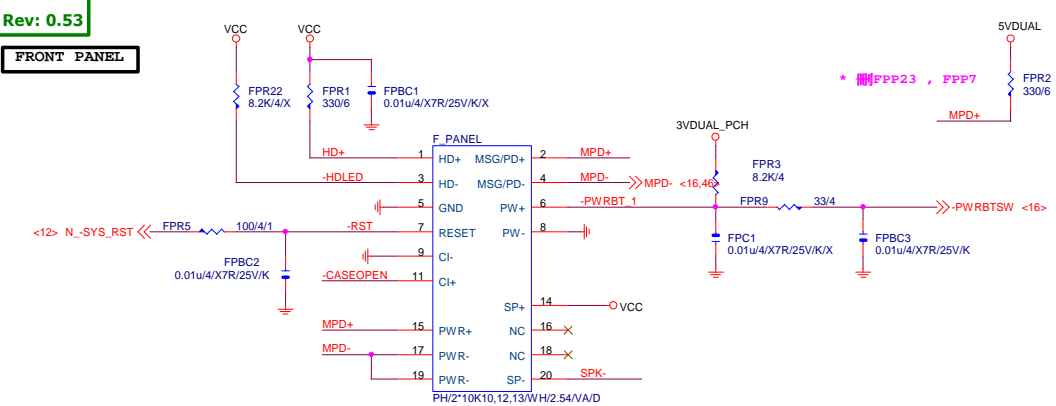
Gigabyte Technology

Title			USB2.0
Size	Document Number	GA-H110M-S2PV	Rev
Custom			1.0
Date:	Thursday, October 08, 2015	Sheet	43 of 49

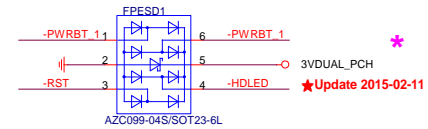




FRONT PANEL

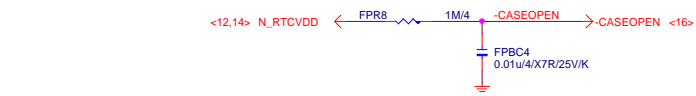


ESD

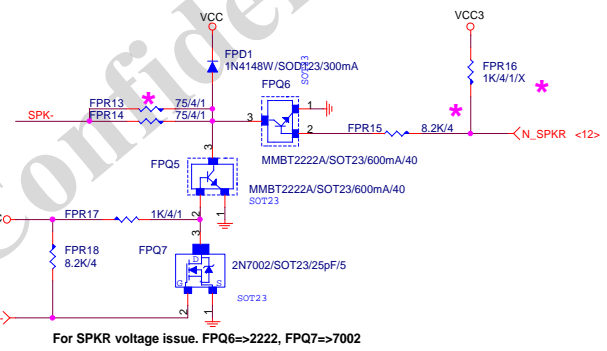


FOOTPRINT: PIN2X10PANEL-NEW

CASE OPEN



SPKR

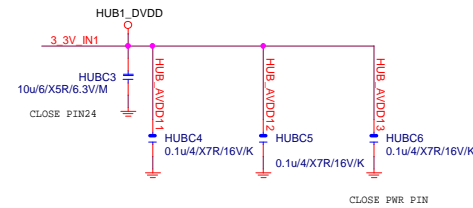


SATA LED

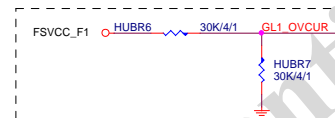
SATALED# signal open-collector, pull-up (8.2 kΩ to 10 kΩ) to Vcc3\_3

★Update 2015-02-12

<13> N\_SATALED -HDLED

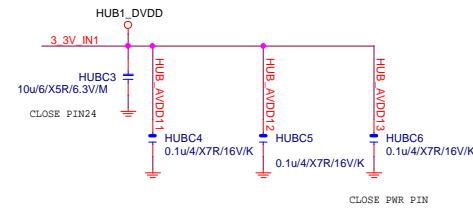
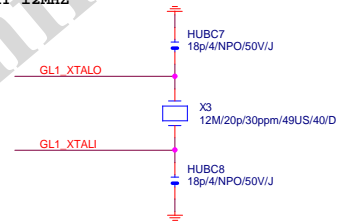


## HUB OVER CURRENT SENSE

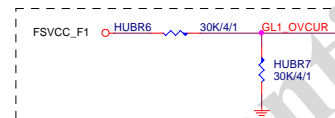


## HUB CRYSTAL

ONLY SUPPORT 12MHZ

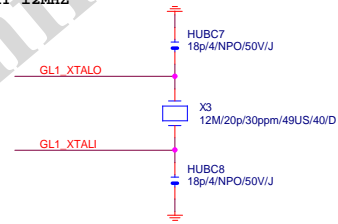


## HUB OVER CURRENT SENSE

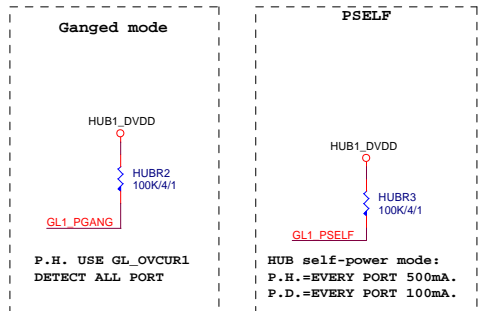


## HUB CRYSTAL

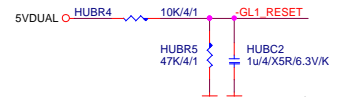
ONLY SUPPORT 12MHZ



## HUB MODE



## HUB RESET



## CLOSE SIO



## close to SIO (PIN92)MPD-



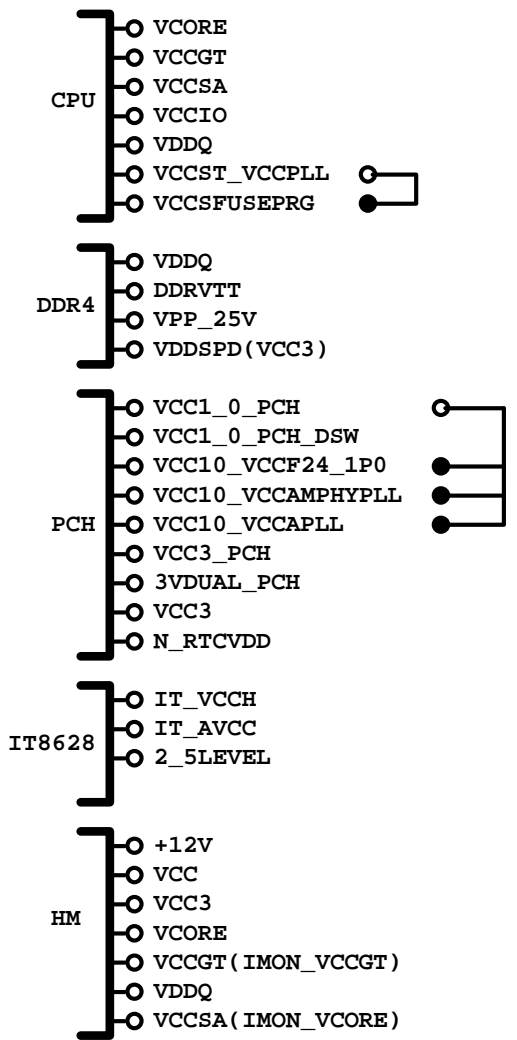
## CLOSE PCH



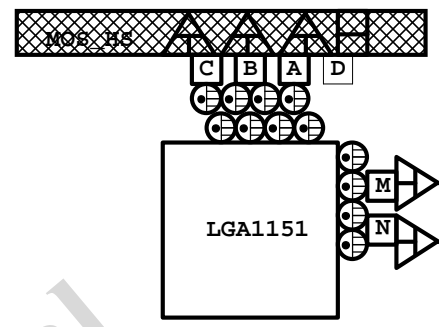
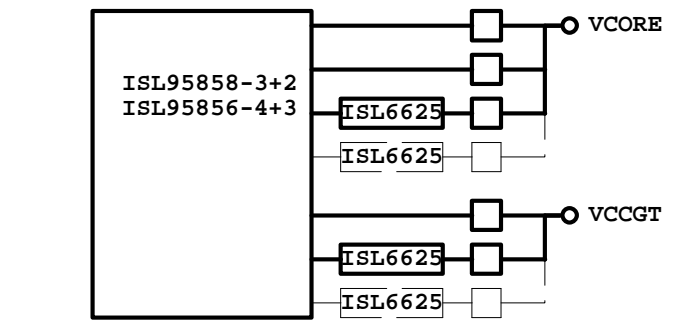
## For H1703M-HD3 USB



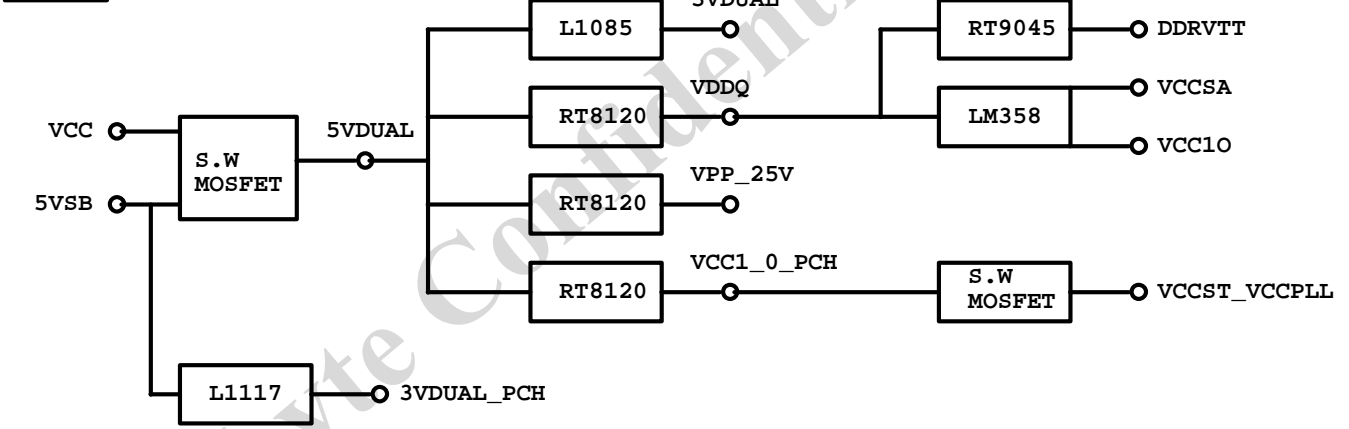
POWER BLOCK MAP



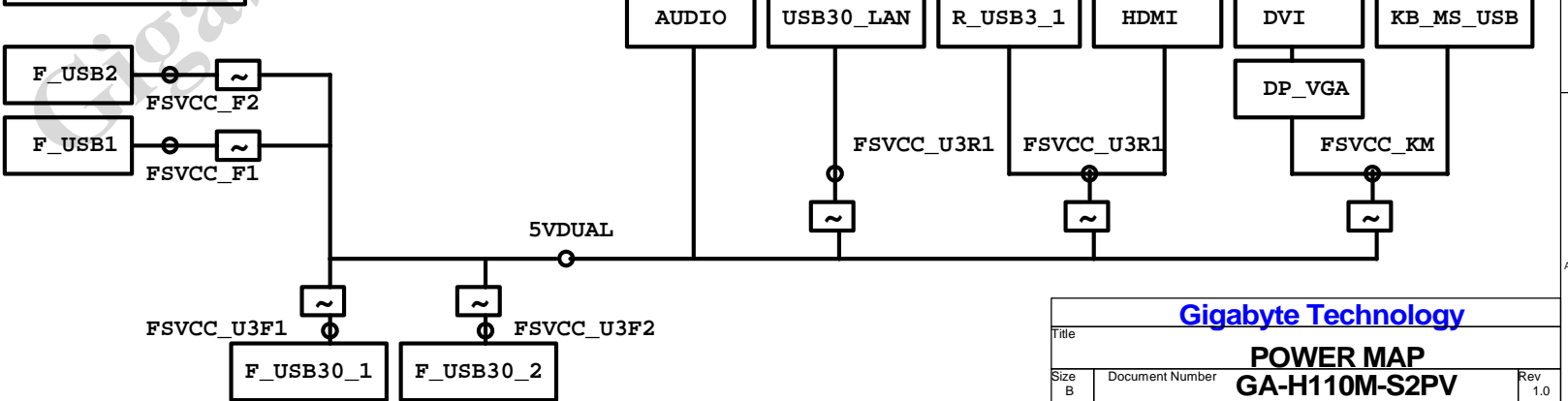
VCORE/VCCGT



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
11CO2-661000-09R	100u/OS/D/6.3V/66/A/35m
11CO5-691000-09R	100u/OS/D/16V/69/A/35m
11CO5-8C2700-09R	270u/FP/D/16V/8C/A/10m
11CO2-695600-09R	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

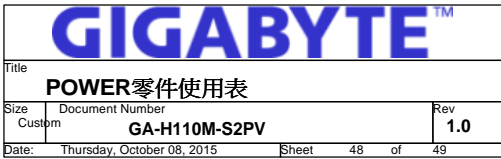
	料號	Capture Value	SIZE	Footprint
DIP	11LC5-F3500C-11R	0.5uH/32A/INCG109/FSI/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-F2500C-11R	0.5uH/25A/INC0809/F/D	8*8	CHOKE1U-R50M-IF
SMD	未建(SIUC1007-R30M-JJ1W)		10*7	CHOKE11X8MM-SMD

## BEAD

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

PWM料號

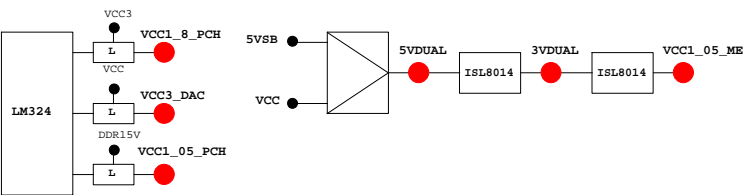
		料號	Capture Value	Footprint
PWM	ISL95856	10TA1-695856-01R		IC52QFN-6x6-G
PWM	ISL95858	10TA1-695858-01R		IC52QFN-6x6-G
PWM	IR35201	10TA1-635201-00R		IC56QFN-9VRS4339
PWM	IR3570	10TA1-603570-00R		IC40MLFP-ISL95835



PIN	NAME	PWR	AFTER S4728	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPI	GPIO0	N/A	
GP1/TACH1	MAIN		GPI	GPIO1	N/A	
GP2/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3	
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3	
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3	
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3	
GP6/TACH2	MAIN		GPI	PCIEX1 Detect	P/U 8.2K VCC3	
GP7/TACH3	MAIN		GPI	GPIO7	P/U 8.2K VCC3	
GP8	STBY	H	GPI	GPIO8	N/A	
GP9/OC5#	STBY	NATIVE		USB OC5#	N/A	
GP10/OC6#	STBY	NATIVE		USB OC6#	N/A	
GP11/SMBALERT#	STBY	NATIVE		USB PWR protect	P/U 8.2K 3VDUAL	
GP12	STBY	L	GPI	GPIO12	N/A	
GP13	STBY	L	GPI	LPCPM#	P/U 8.2K 3VDUAL	
GP14/OC7#	STBY	NATIVE		USB OC7#	N/A	
GP15	STBY	L	GPI	GPIO15(TLS Enable)	P/U 8.2K 3VDUAL	
GP16	MAIN		GPI	GPIO16	P/U 8.2K VCC3	
GP17/TACH0	MAIN		GPI	GPIO17	P/U 8.2K VCC3	
GP18	MAIN		GPI	Mobile Only	N/A	
GP19	MAIN		GPI	GPIO19	P/U 8.2K VCC3	
GP20	MAIN		GPI	GPIO20	P/U 8.2K VCC3	
GP21	MAIN		GPI	GPIO21	P/U 8.2K VCC3	
GP22	MAIN	H-Z	GPI	GPIO22	P/U 8.2K VCC3	
GP23	MAIN		GPI	GPIO23	N/A	
GP24	STBY	L	GPI	SKTOCC#	N/A	
GP25	STBY			Mobile Only	N/A	
GP26	STBY			Mobile Only	N/A	
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL	
GP28	STBY	H	GPO	PWR LED	P/U 8.2K 3VDUAL	
GP29	STBY	L	GPI	GPIO29	N/A	
GP30	STBY	H-Z	GPI	Mobile Only	N/A	
GP31	STBY	H-Z	GPI	Mobile Only	N/A	
GP32	MAIN	H	GPO	N/A	N/A	
GP33	MAIN	H	GPO	N/A	N/A	
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3	
GP35	MAIN	L	GPO	-ACZ_DET	P/U 8.2K VCC3	
GP36	MAIN		GPI	N/A	N/A	
GP37	MAIN		GPI	N/A	N/A	
GP38	MAIN	H-Z	GPI	PCIEX4 Detect	P/U 8.2K VCC3	
GP39	MAIN	H-Z	GPI	GPIO39	P/U 8.2K VCC3	
GP40	STBY	NATIVE		USB OC1#	N/A	
GP41	STBY	NATIVE		USB OC2#	N/A	
GP42	STBY	NATIVE		USB OC3#	N/A	
GP43	STBY	NATIVE		USB OC4#	N/A	
GP44	STBY	L	NATIVE	GPIO44	P/U 8.2K 3VDUAL	
GP45	STBY	NATIVE		GPIO45	P/U 8.2K 3VDUAL	
GP46	STBY	L	NATIVE	GPIO46	P/U 8.2K 3VDUAL	
GP47	STBY			Mobile Only	N/A	
GP48	MAIN	H-Z	IN	GPIO48	P/U 8.2K 3VDUAL	
GP49	MAIN	H-Z	IN	GPIO49	P/U 8.2K 3VDUAL	
GP50	MAIN	NATIVE		-REQ1	P/U 2.2K VCC	
GP51	MAIN	H	NATIVE	-GNT1	N/A	
GP52	MAIN	NATIVE		-REQ2	P/U 2.2K VCC	
GP53	MAIN	H	NATIVE	-GNT2	N/A	
GP54	MAIN	NATIVE		-REQ3	P/U 2.2K VCC	
GP55	MAIN	H	NATIVE	-GNT3	N/A	
GP56	STBY	NATIVE		Mobile Only	N/A	
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL	
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL	
GP59	STBY	NATIVE		USB_OC0#	N/A	
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL	
GP61	STBY	L	NATIVE	-SUSTAT	N/A	
GP62	STBY	L	NATIVE	SUSCLK	N/A	
GP63	STBY	L	NATIVE	GPIO63	N/A	
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A	
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A	
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A	
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A	
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL	
GP73	STBY			Mobile Only	N/A	
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL	
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL	

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	~LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSS11	SB_LED1_C	
PD4/GP74/BUSS12	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSS10	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VBSBW#/GP40	CSI_F0	BSEL166_1
SUSC#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMBC_R	PS_PIN	FST_2X8
INIT#/GP85/SMBD_M	SMC_2x8	GT1REF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#/GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRX2/GP16	~THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	I_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



The diagram illustrates the power distribution network (PDN) for the Intel® Xeon® Phi 7205. It shows the following components and their connections:

- CPU\_VTT**: A dashed box containing MOSFET, CHOKE, and PCH components.
  - MOSFET**: Contains TQ3 and TQ4.
  - CHOKE**: Contains TL1.
  - PCH**: A separate block connected to the CPU SOCKET.
- CPU SOCKET**: A central block connected to the CPU\_VTT and the VCORE/VAXG planes.
- VCORE**: A dashed box containing DC\_DQ1, DC\_DQ2, DC\_DQ3, DC\_DL1, DC\_DL2, and DC\_DL3. It is connected to the CPU SOCKET via a 4-pin connector.
- VAXG**: A dashed box containing DZ\_DQ1, DZ\_DQ2, DZ\_DQ3, DZ\_DQ4, DZ\_DL1, and DZ\_DL2. It is connected to the CPU SOCKET via a 6-pin connector.
- CHOKE**: A dashed box containing DB\_DL1, DA\_DL1, and DZ\_DL1. It is connected to the VCORE and VAXG planes via 3-pin and 1-pin connectors.

**散熱模組料號:**

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Termination
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

Z77-D3H :  
PCH :  
12SP2-S05511-01R/02R/03R  
MOSFET :  
12SP2-S08924-01R/02R/03R

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH