

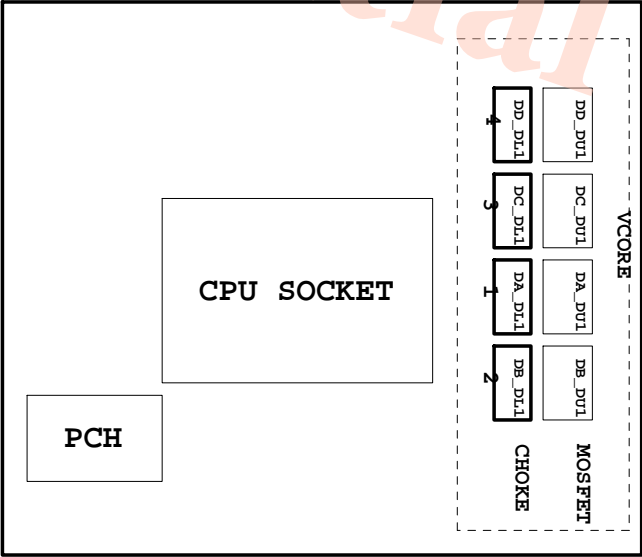
Model Name: GA-H110M-S2PH

SHEET TITLE Rev 1.0

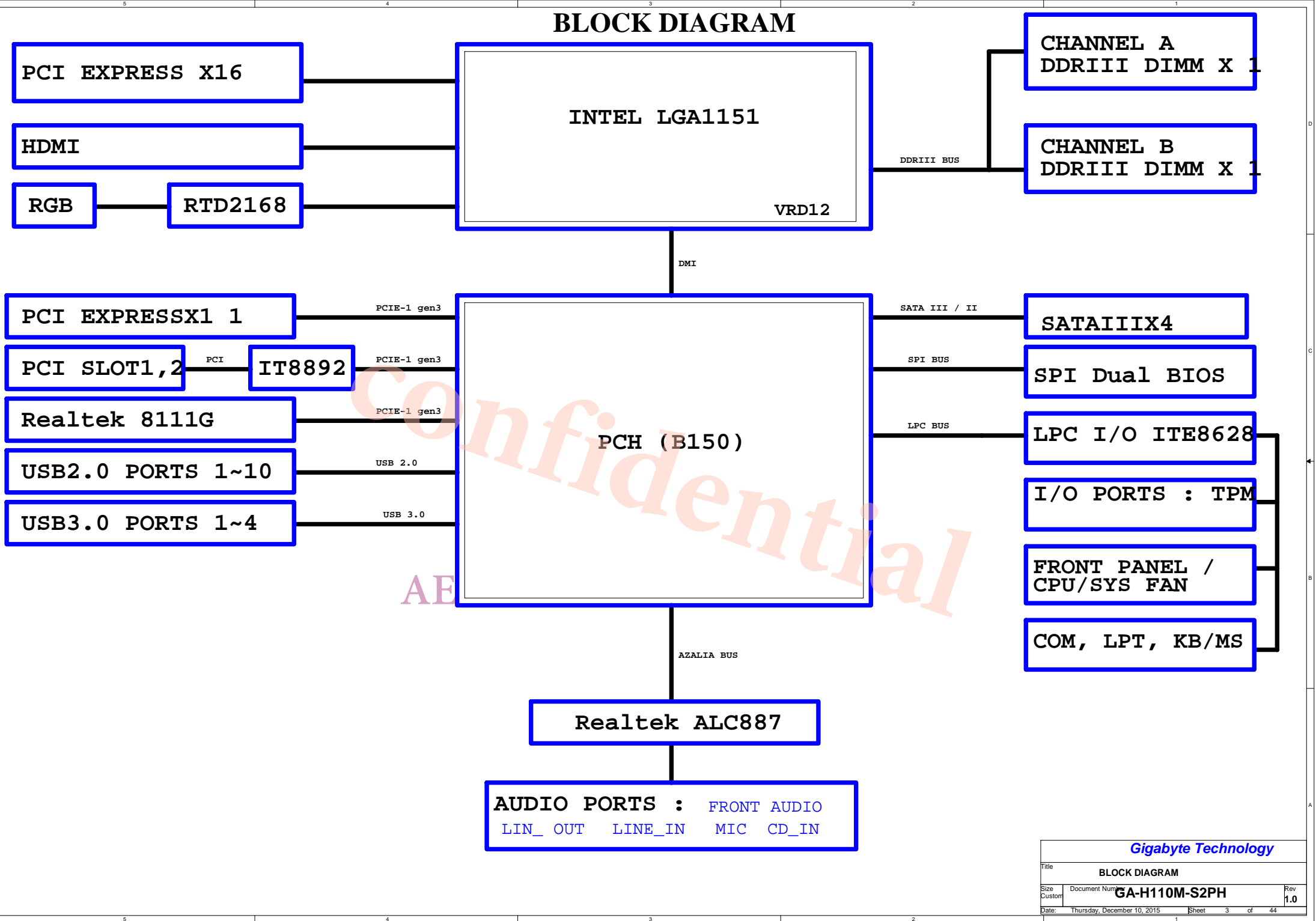
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR3
06	CPU_LGA1151-C
07	CPU_LGA1151-D
08	DDR 3 CHANNEL A
09	DDR 3 CHANNEL B
10	PCH CLOCK BUFFER
11	PCH DMI,USB,PCIE
12	PCH MISC
13	PCH SATA,PCIE,SATA SATA CONN
14	PCH_PWR,GND
15	Dual BIOS
16	I/O ITE8628
17	HWM
18	FAN CTRL-SIO
19	PCIEX16 SLOT
20	PCIEX1 SLOT
21	IT8892E/FX
22	PCI SLOT 1, 2
23	ISL95858_856 PWM
24	ISL95858_856 MOS_VCORE
25	ISL95858_856 MOS_VCCGT
26	VCCSA_VCCIO_VCCPLL
27	RT8237_DDR_BEAD
28	RT8237_PCH-BEAD

SHEET TITLE

29	DISCRETE POWER
30	ATX POWER , -PROCHOT
31	KB_MS_USB
32	HDMI CONN
33	RTD2168 - DP to VGA
34	R_USB30
35	Realtek 8111G USB 2.0
36	ALC887-VD2 CODEC
37	REAR AUDIO JACK
38	F_USB30
39	F_USB20
40	COM , LPT
41	F_PANEL, EMI
42	POWER MAP
43	POWER 零件使用表
44	TABLE LIST



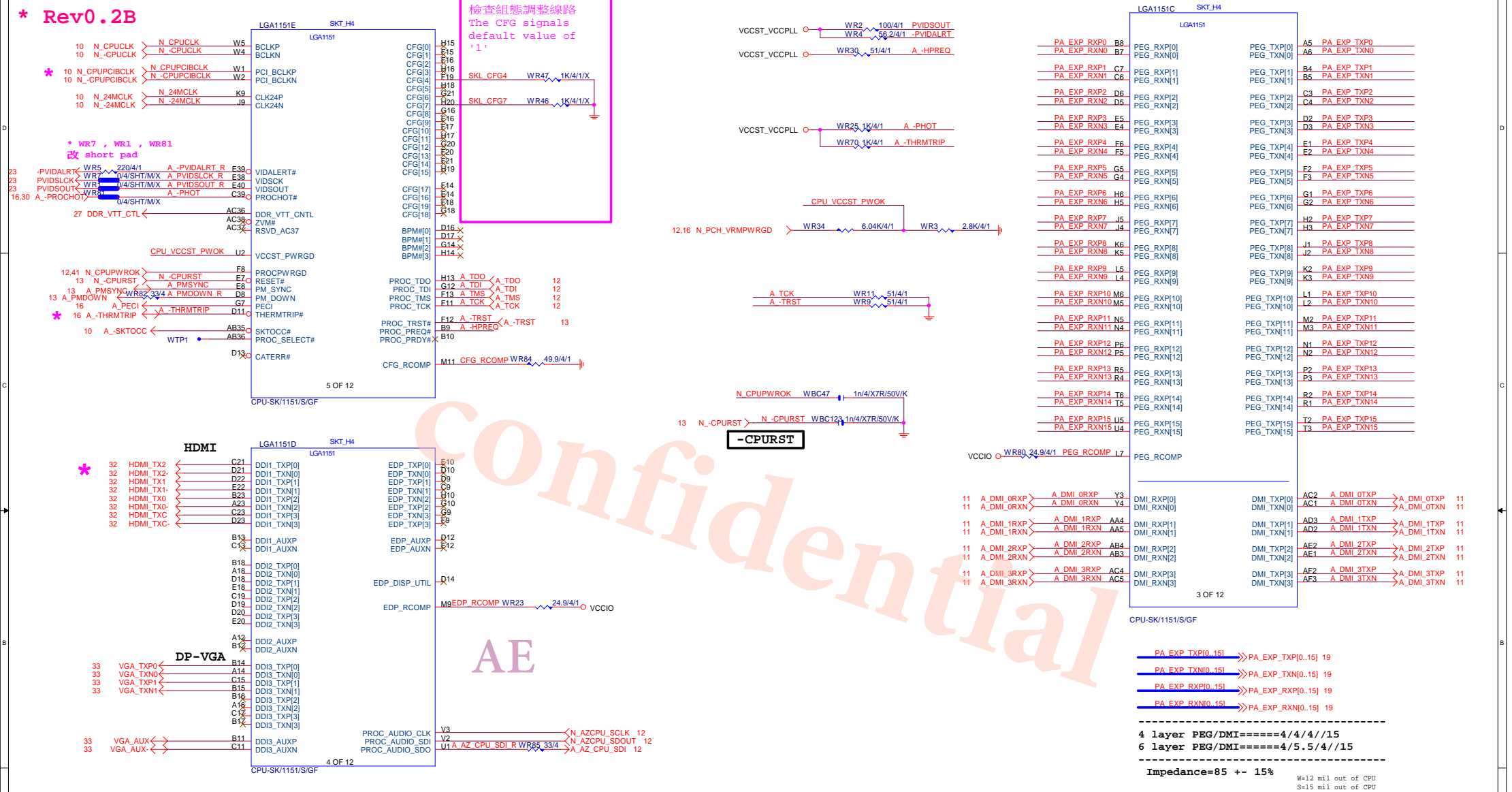
BLOCK DIAGRAM



Gigabyte Technology

Title			
BLOCK DIAGRAM			
Size	Document Number	Rev	
Custom	GA-H110M-S2PH	1.0	
Date:	Thursday, December 10, 2015	Sheet	3 of 44

* Rev0.2B

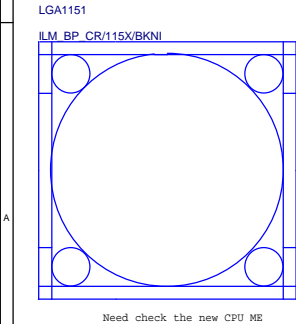
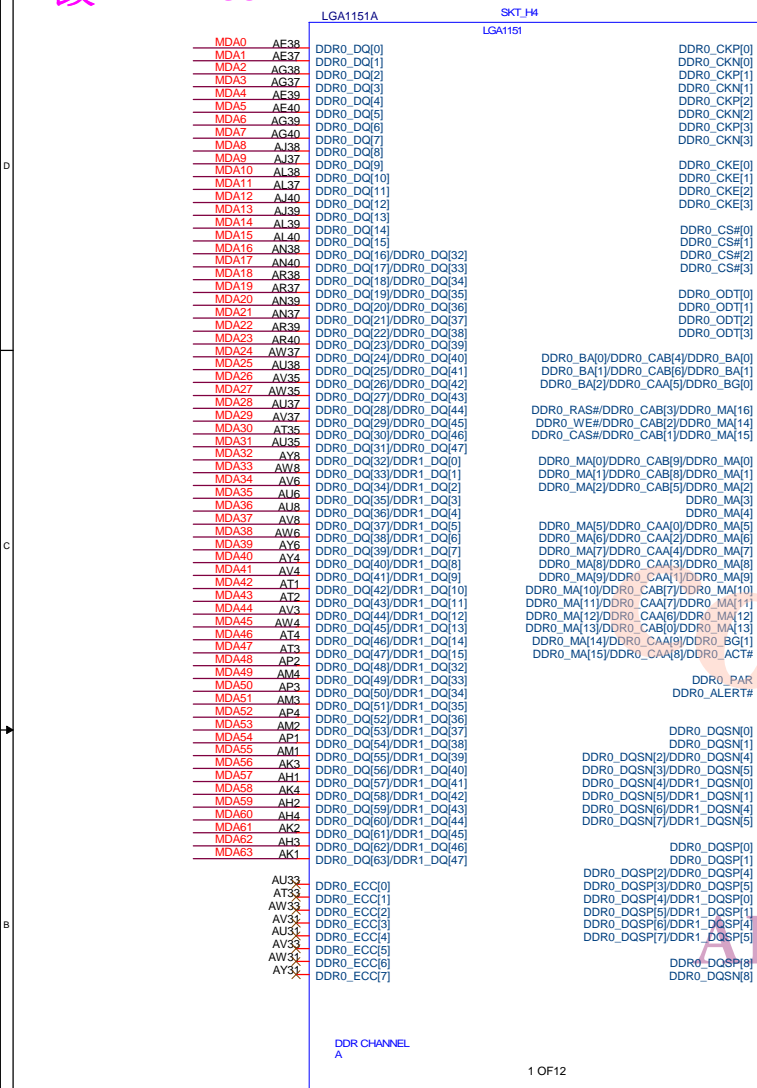


```
G-15u : (CPU-SK/1151/S/15)
10SC1-F01151-11R / 10SC1-F01151-12R
G-FL : (CPU-SK/1151/S/GF)
10SC1-F01151-21R / 10SC1-F01151-22R
```

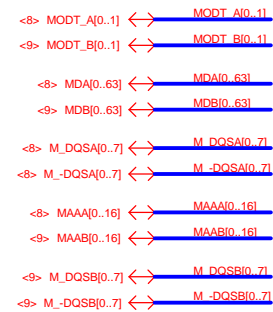
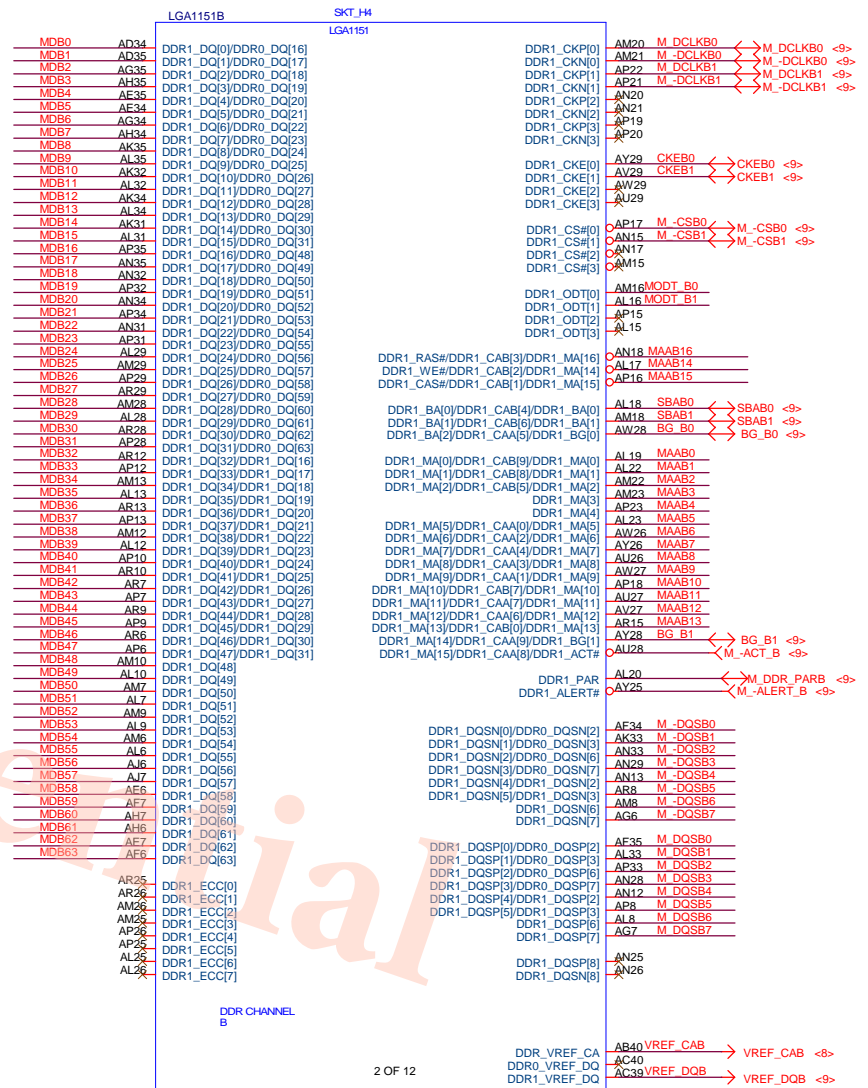
```
4 layer HDMI/DP/eDP/=====4/4/4//15
6 layer HDMI/DP/eDP/=====4/5.5/4//15
```

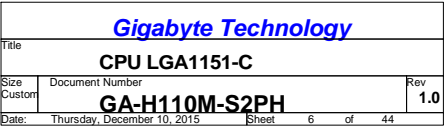
Impedance=85 +- 15%

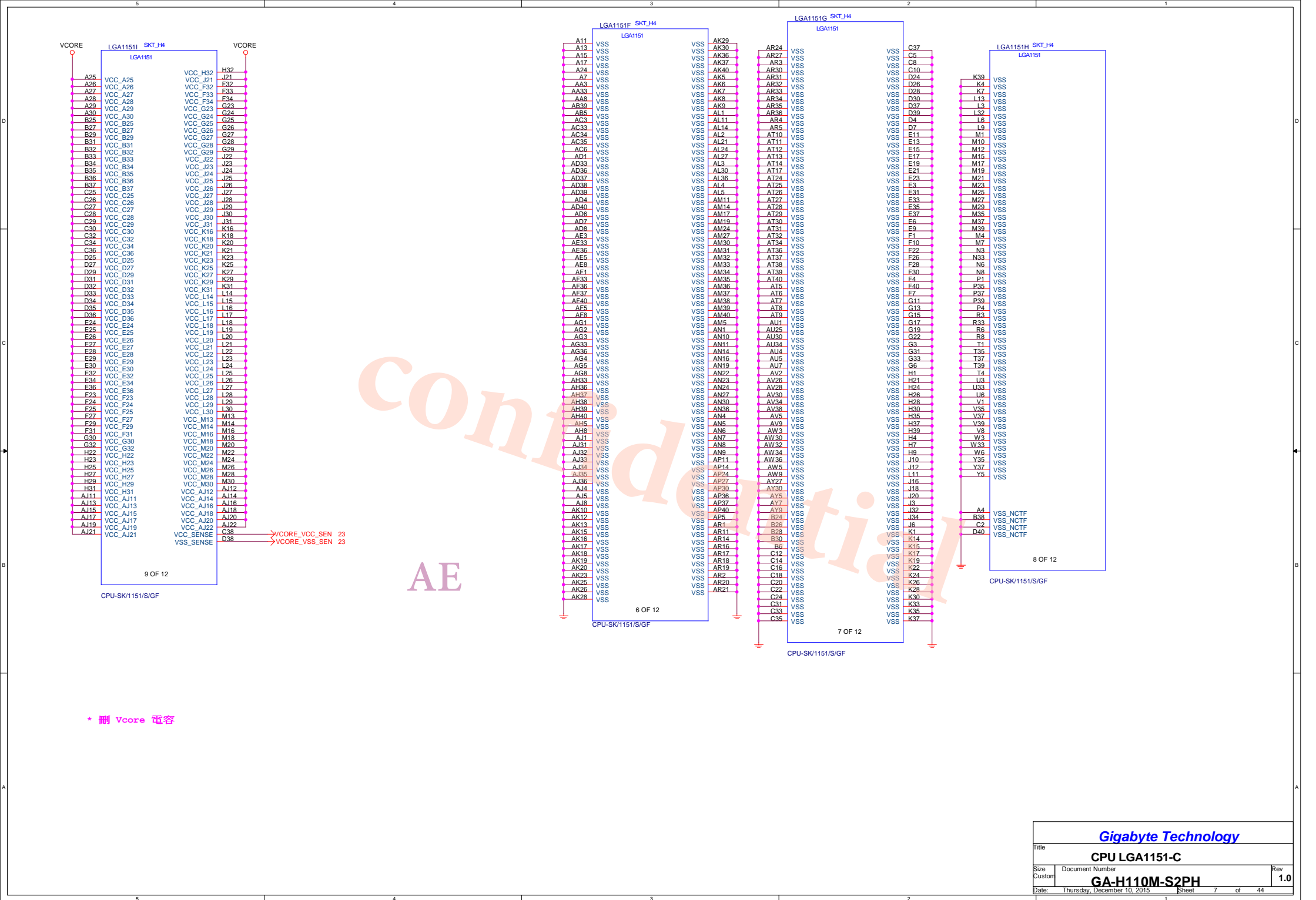
Bifurcation Config.	Signals Lanes		
	CFG[6]	CFG[5]	CFG[2]
1x16	1	1	1
1x16 Reversed	1	1	0
2x8	1	0	1
2x8 Reversed	1	0	0
1x8+2x4	0	0	1
1x8+2x4 Reversed	0	0	0



Need check the new CPU ME

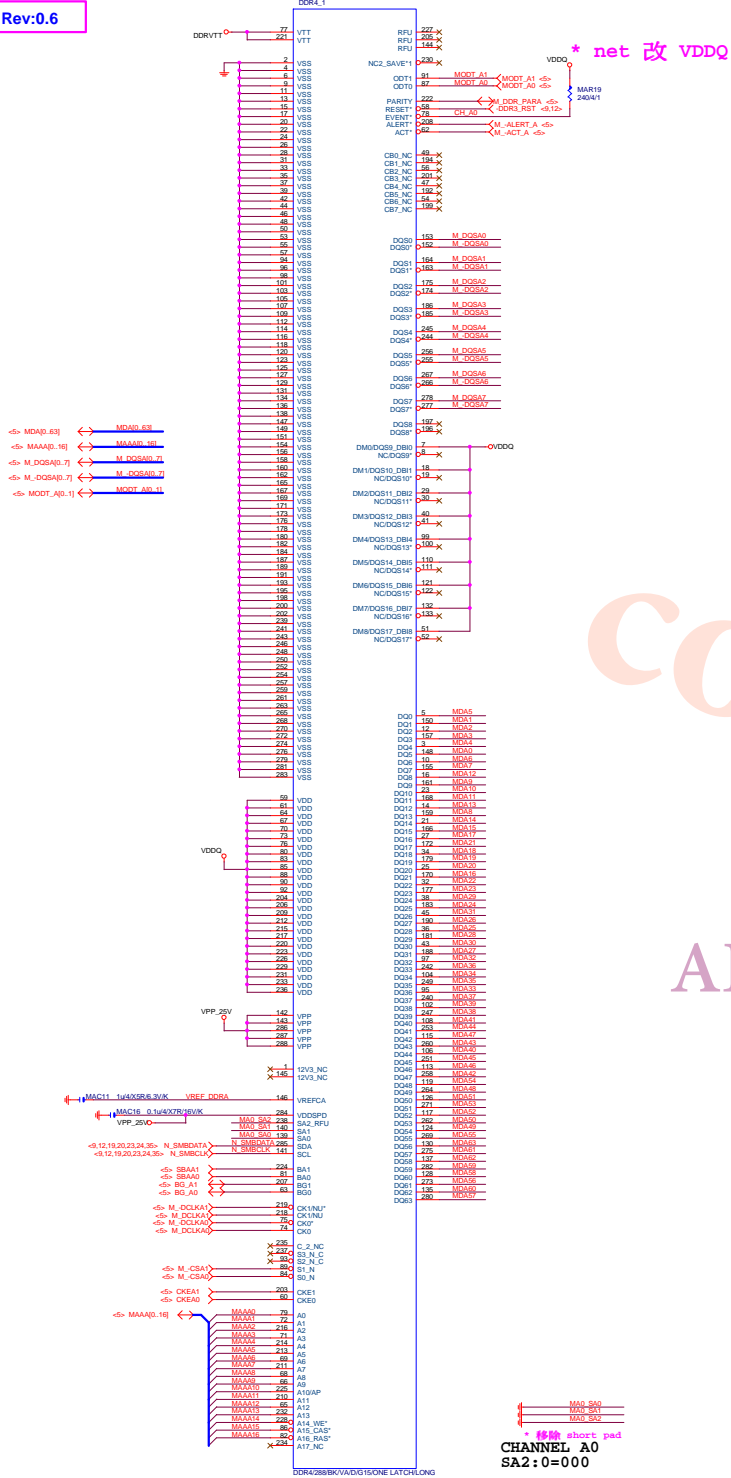




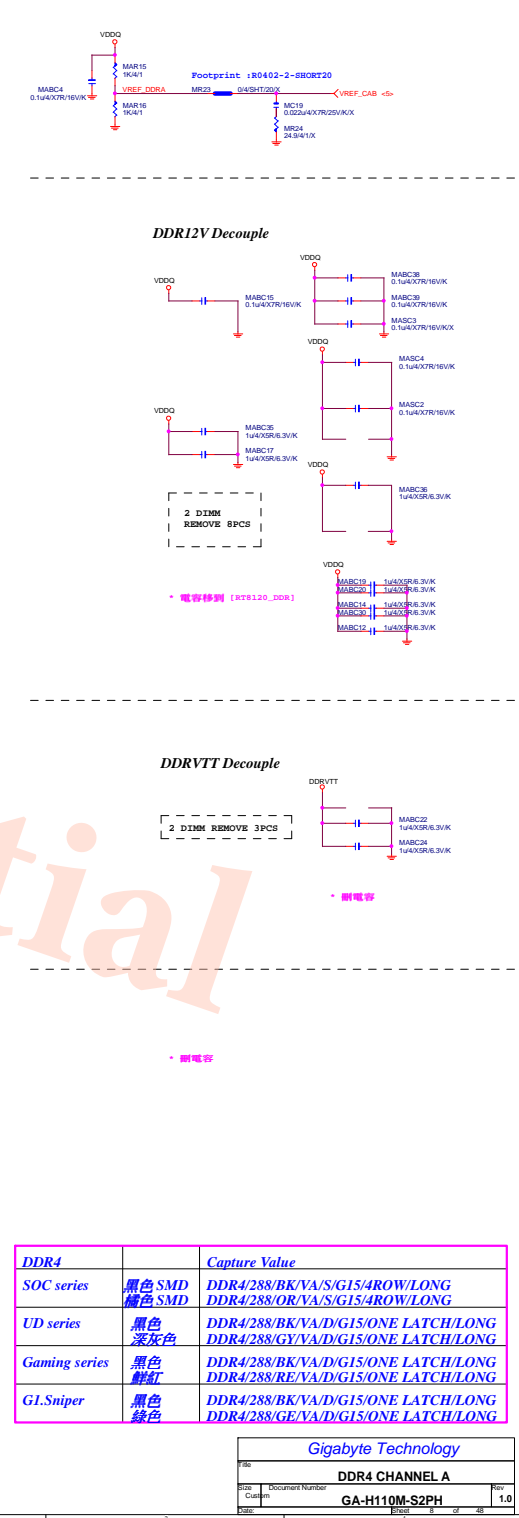


Confidential

AE



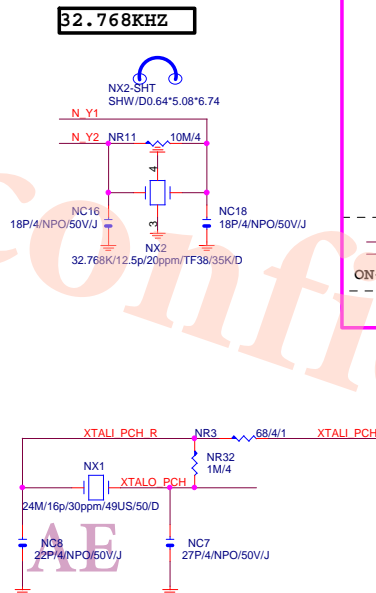
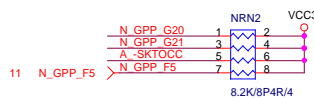
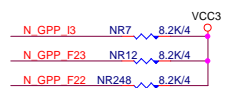
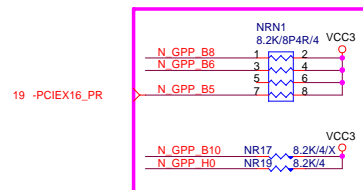
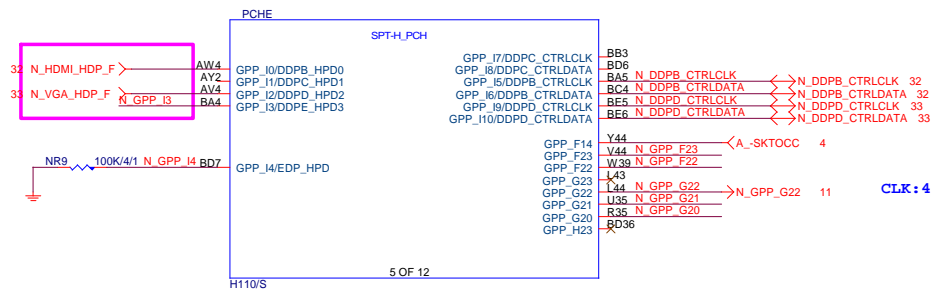
CHANNEL A0
SA2:0=000



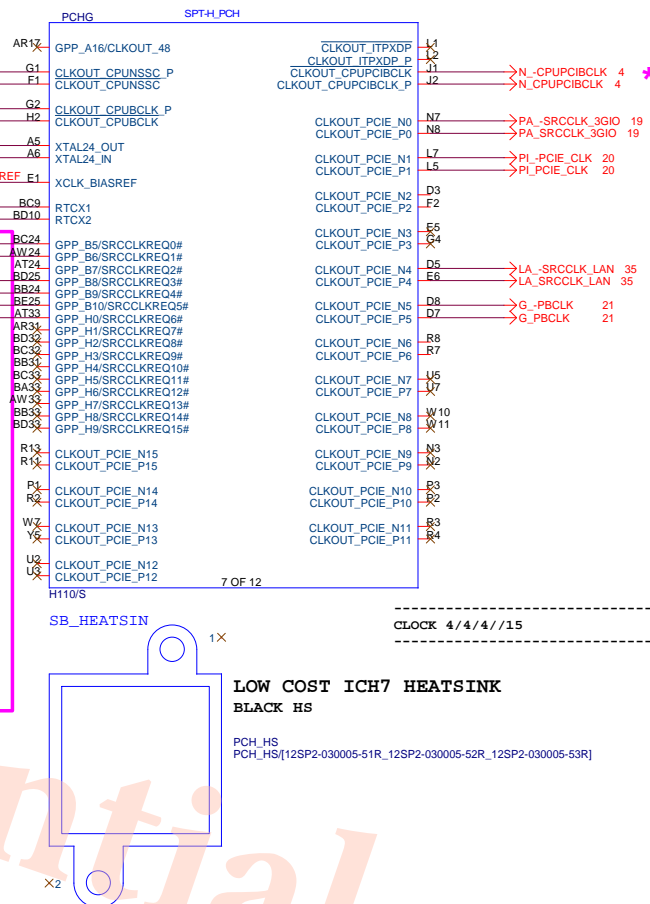
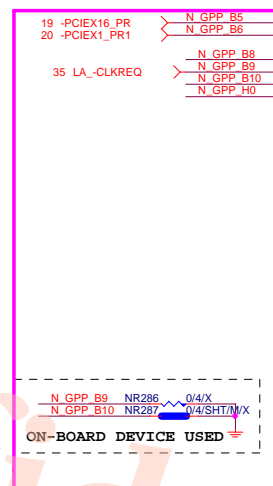
DDR4		Capture Value
SOC series	黑色 SMD 棕色 SMD	DDR4/288/BK/VA/S/G15/4ROW/LONG DDR4/288/OR/VA/S/G15/4ROW/LONG
UD series	黑色 深灰色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GY/VA/D/G15/ONE LATCH/LONG
Gaming series	黑色 鮮紅	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/RE/VA/D/G15/ONE LATCH/LONG
GI.Sniper	黑色 綠色	DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GE/VA/D/G15/ONE LATCH/LONG

Gigabyte Technology		
DDR4 CHANNEL A		
Doc. Number	GA-H110M-S2PH	Rev 1.0

* Rev0.2



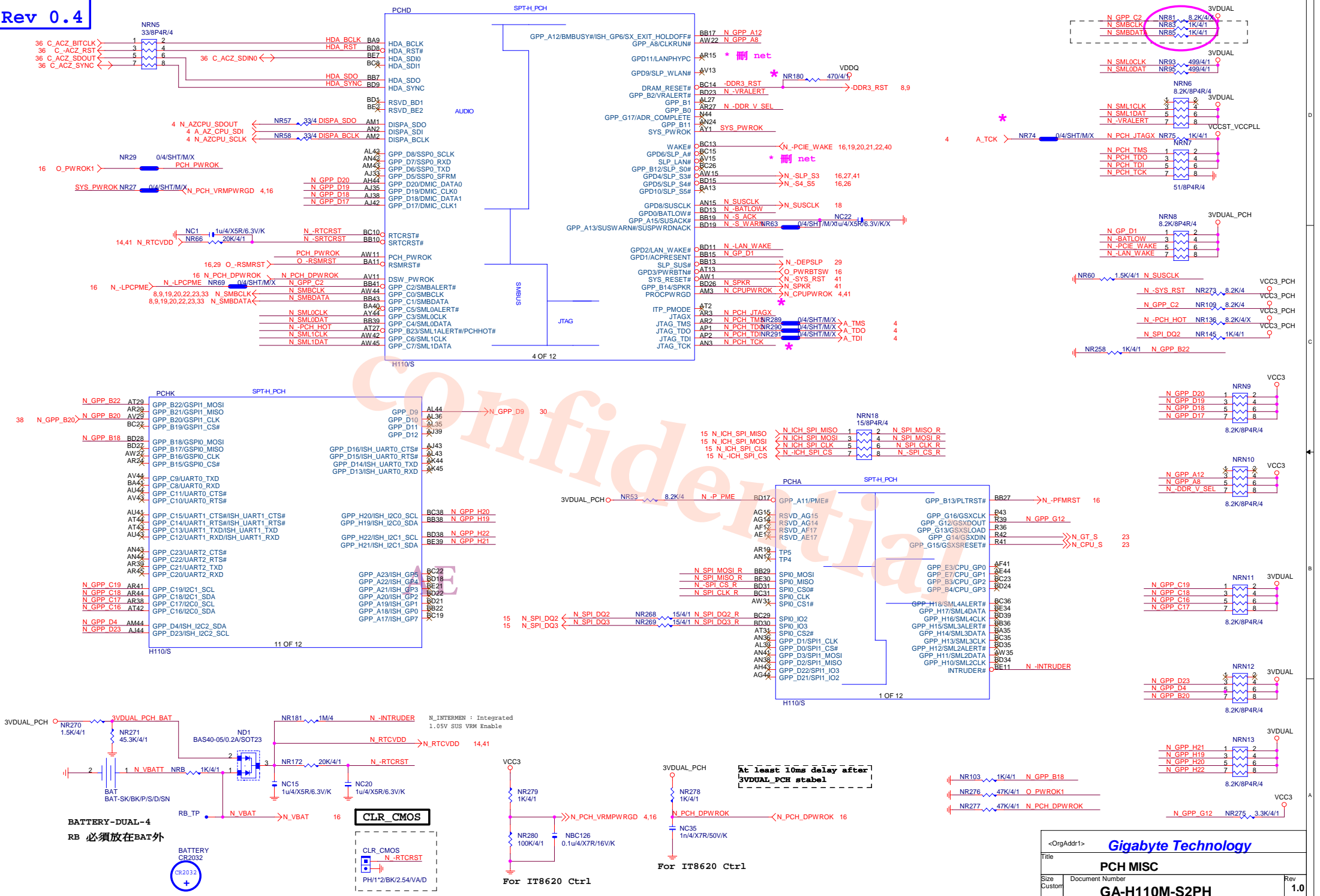
CLK:4/15<1000 mils±100 mils;Guard GND

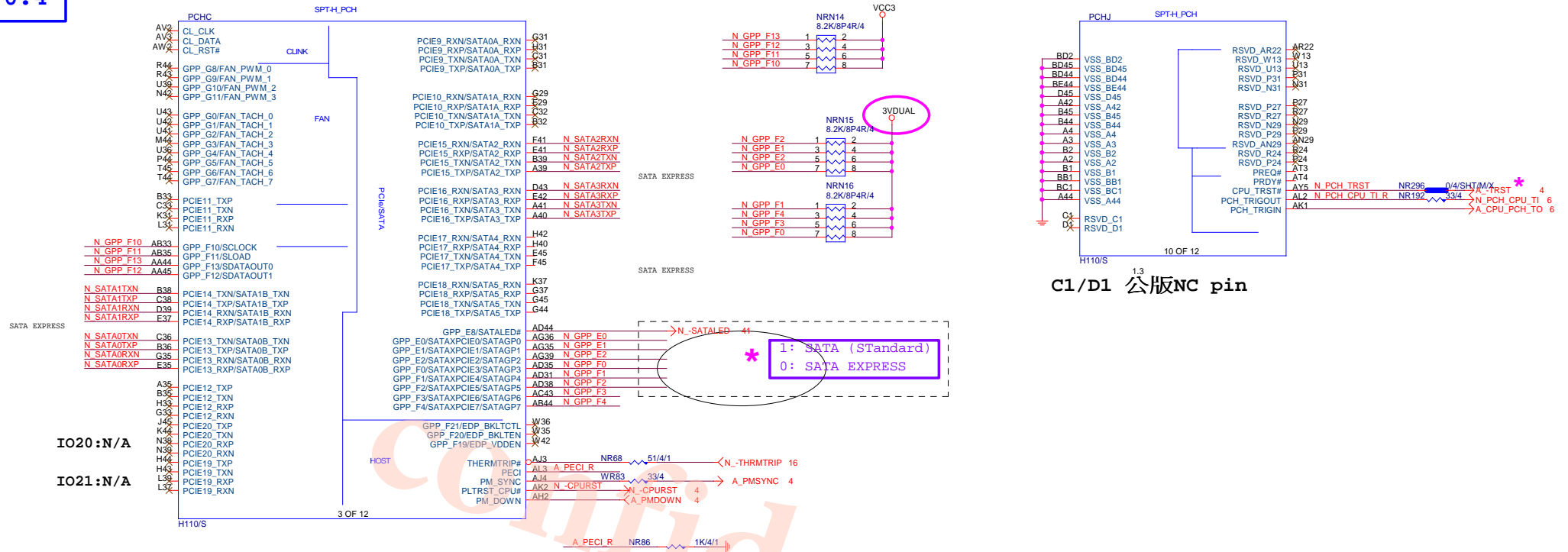


LOW COST ICH7 HEATSINK
BLACK HS

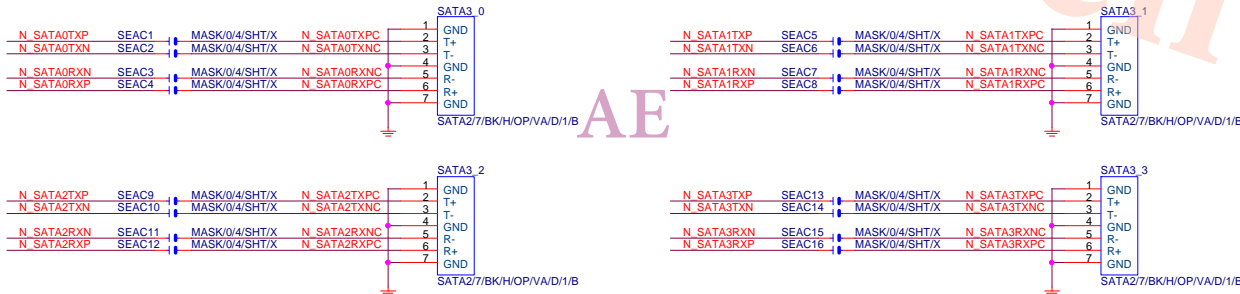
PCH_HS
PCH_HS/12SP2-030005-51R_12SP2-030005-52R_12SP2-030005-53R

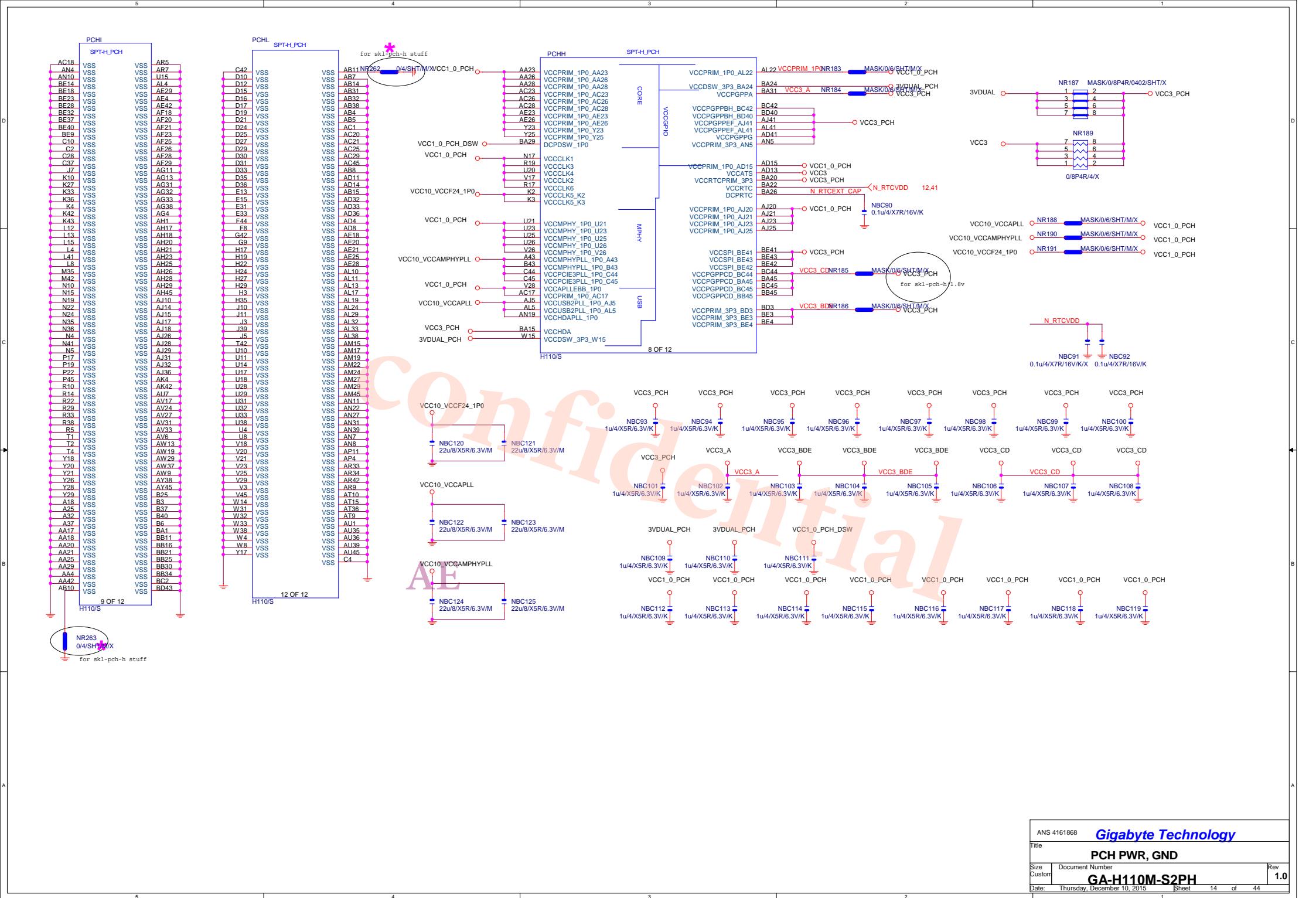


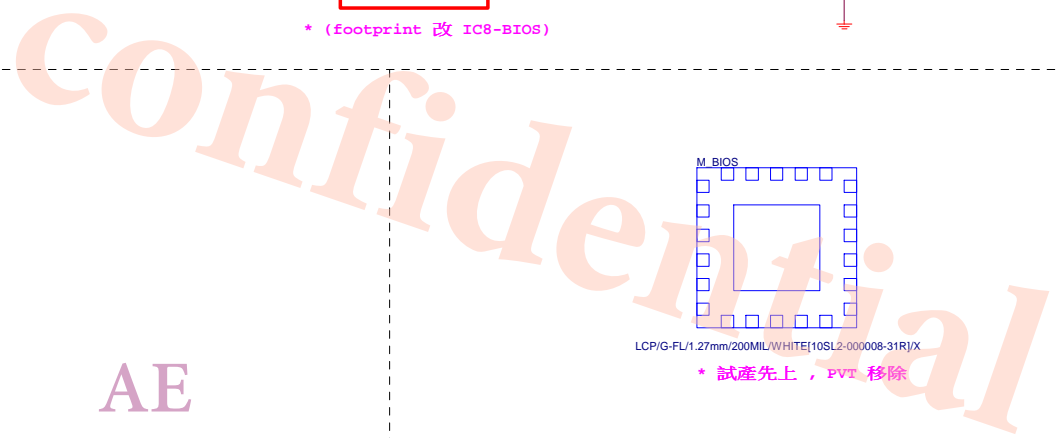




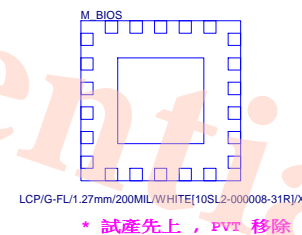
C1/D1 公版NC pin

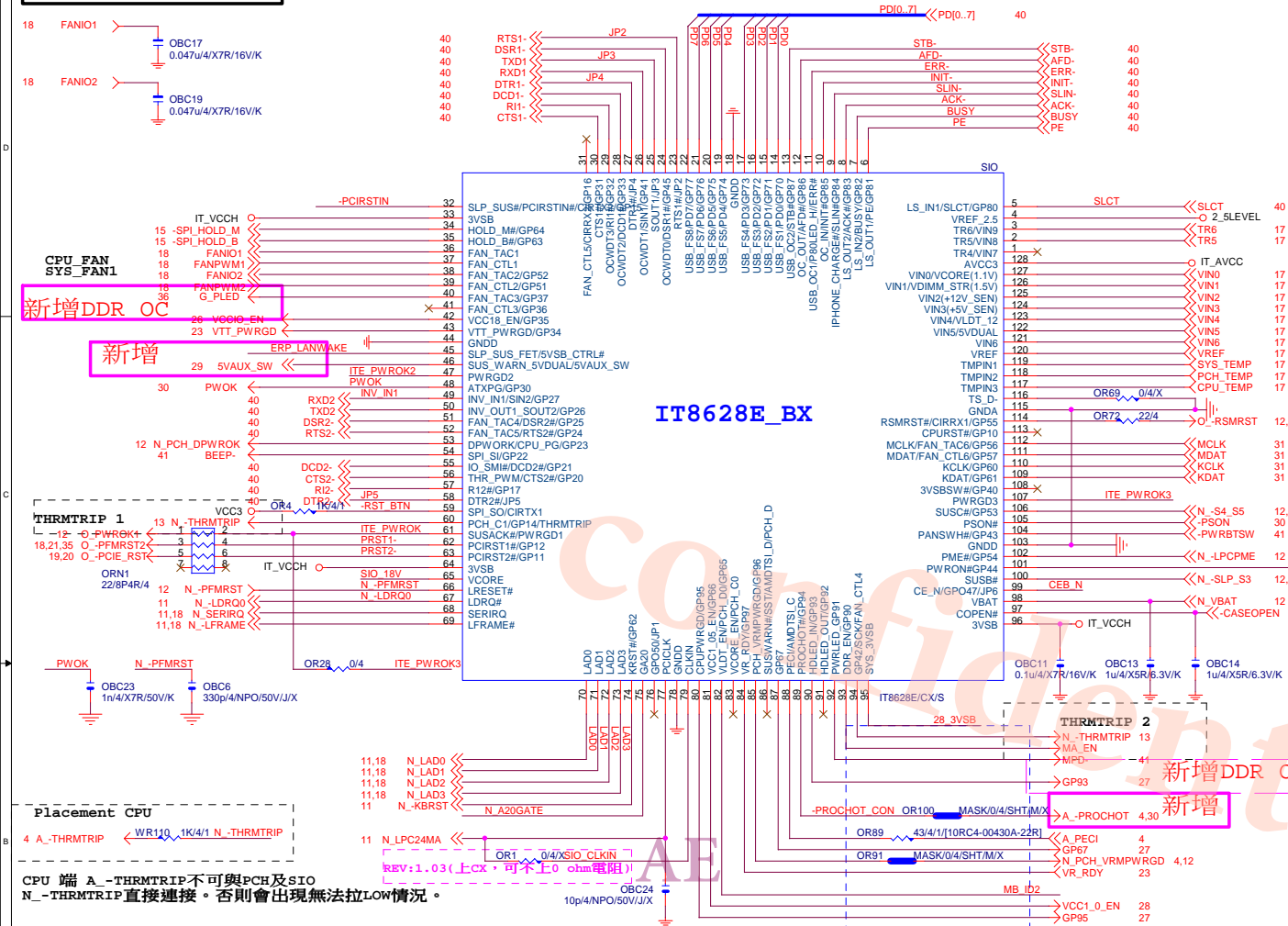






AE

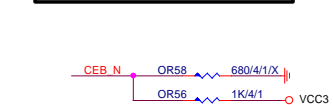




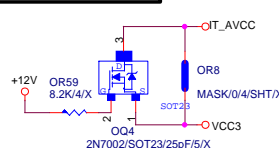
FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL5 FAN_TAC5
OPT_FAN or SYS_FAN4	N/A
THRMTRIP1	YES PIN60
THRMTRIP2	YES PIN94

IT8628E GPIO問題匯整	
PIN 50	GP26-第一次接上POWER時 會拉 Lo
PIN 90/91	DEFAULT為HDLED FUNCTION, GP93 BYPASS TO GP92 高溫時 GP92 會被拉Lo(ITE BUG)
PIN 108	GP40--- POWER ON 時會拉 Lo
PIN 111/112	MOUSE 跟FAN6 FUNCTION 擇一使用,不然會互相干擾
PIN 22	PIN22, 需高於3V, 若低於 將部分COM PORT及LPT裝置 蜂鳴器會異常動作。

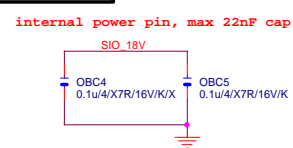
DUAL BIOS OPT STRAP



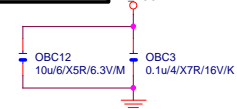
Power leakage



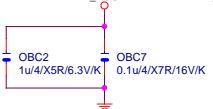
SIO_18V



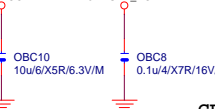
SIO CAP



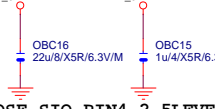
IT_VCC3



IT_VCC5



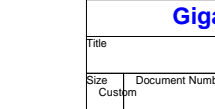
3VDUAL_PCH



2_5LEVEL

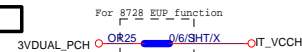


2_5LEVEL

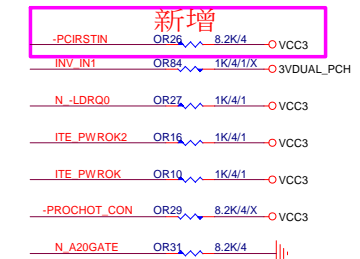


CLOSE SIO PIN4 2_5LEVEL

PWR SHT

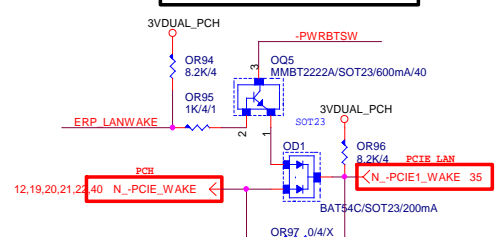


SIO PU



ERP WAKE on LAN (依LAN組態選擇)

(組態一) Realtek/ATHEROS LAN



SIO STRAP

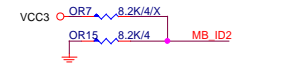


EUP control detect



JP2	1	Disable WDT
	0	Enable WDT to rest PWROK
JP3	1	SPI-Flash Disable
	0	SPI-Flash Enable
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP5	1	anti-surge Disable
	0	anti-surge Enable
	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh.
	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

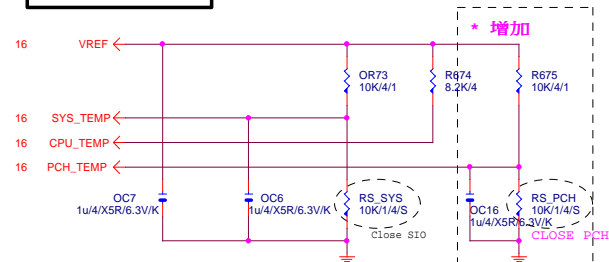
MB ID



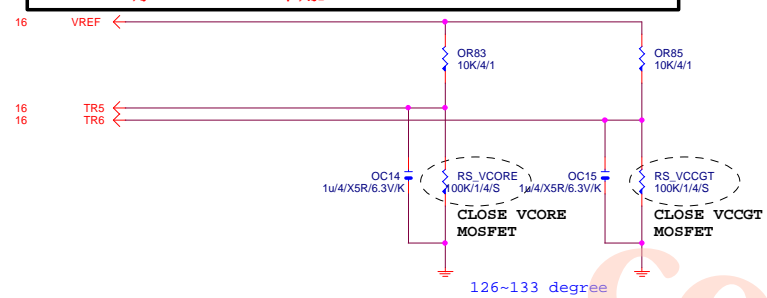
Gigabyte Technology

Title		ITE 8628 LPC IO	
Size	Document Number	GA-H110M-S2PH	
Custom		Rev 1.0	
Date:	Thursday, December 10, 2015	Sheet	16 of 44

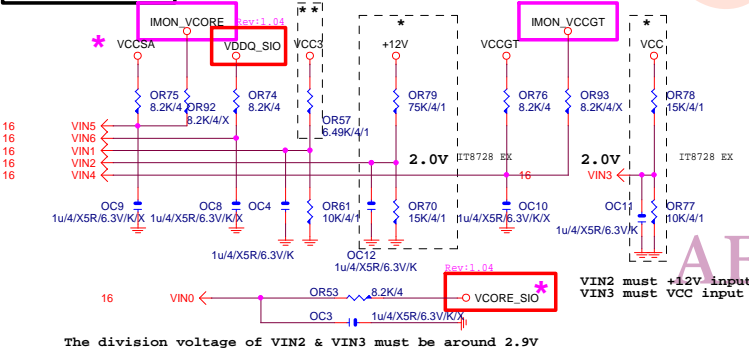
TEMP H/W MONITOR REV 1.04



RS_VCORE, RS_VCCGT, CLOSE CPU_VCORE & VCCGT MOSFET



VOLTAGE-- H/W MONITOR

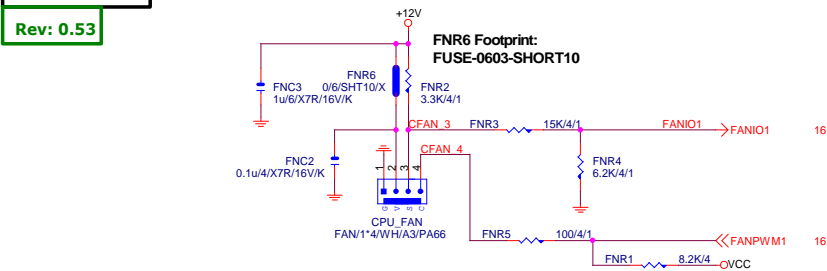


Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	GA-H110M-S2PH	1.0	
Date:	Thursday, December 10, 2015	Sheet	17 of 44

CPU SMART FAN

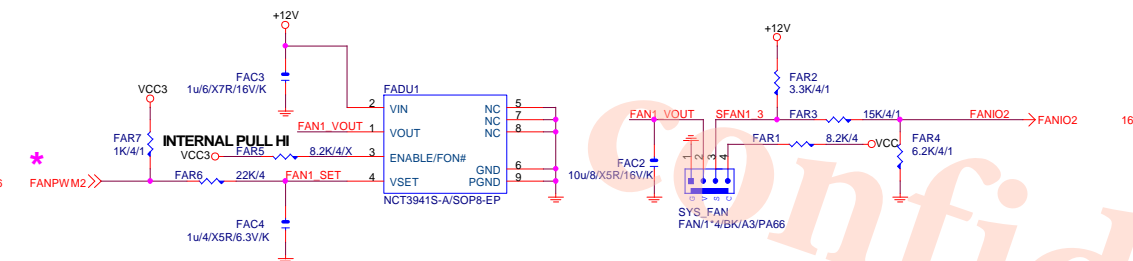
Rev: 0.53



SYSTEM FAN1

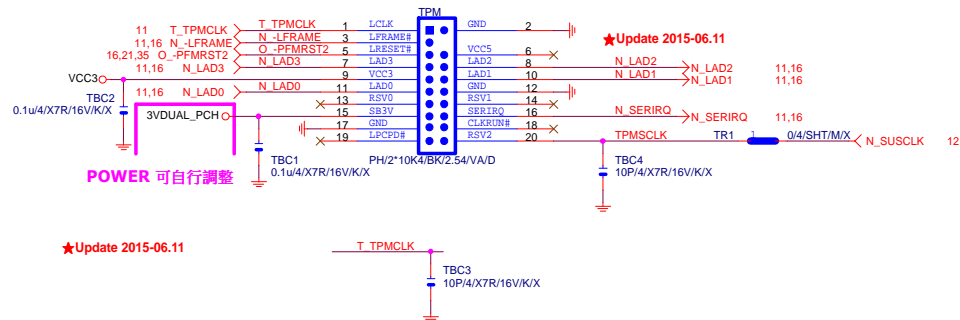
Linear SYS_FAN

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



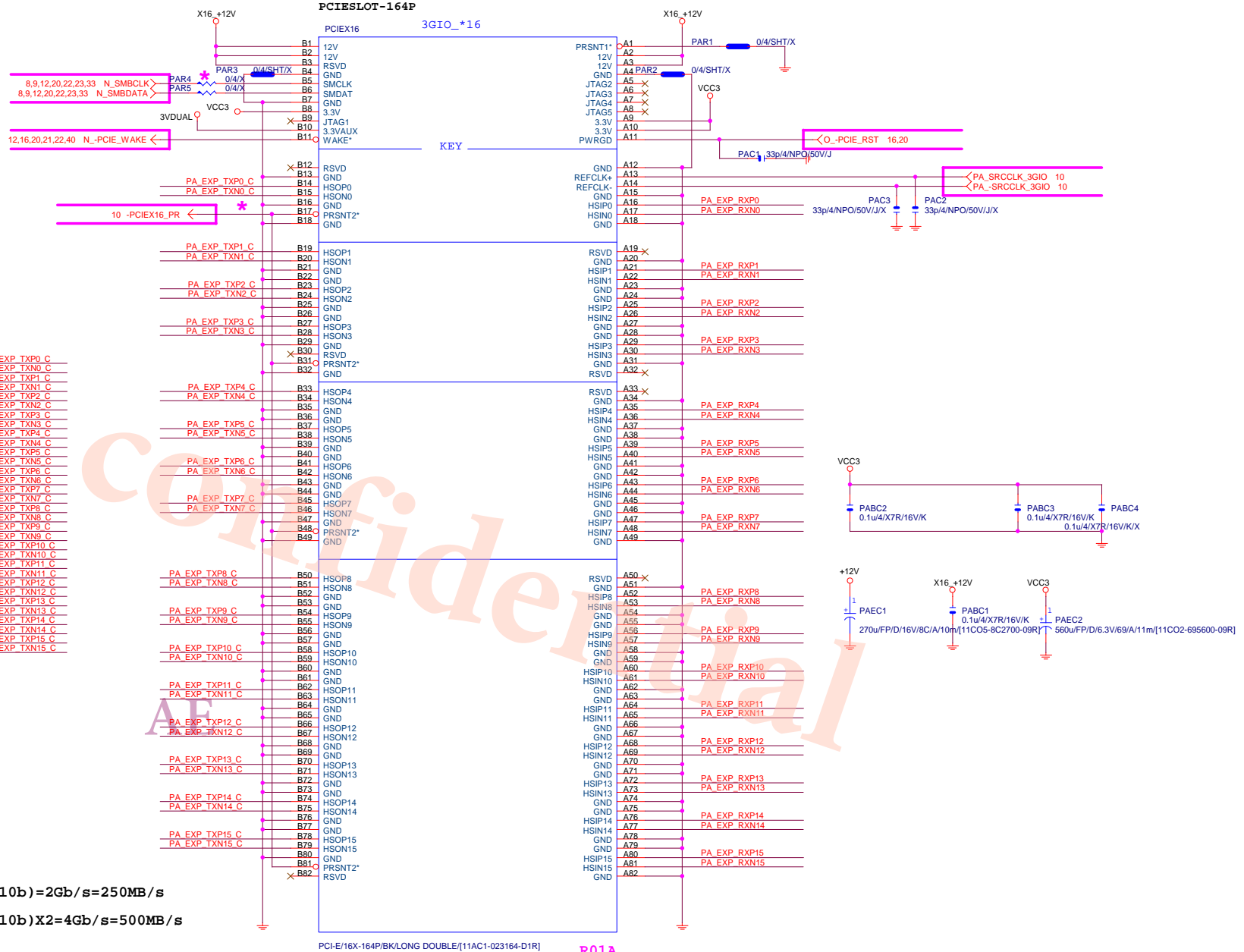
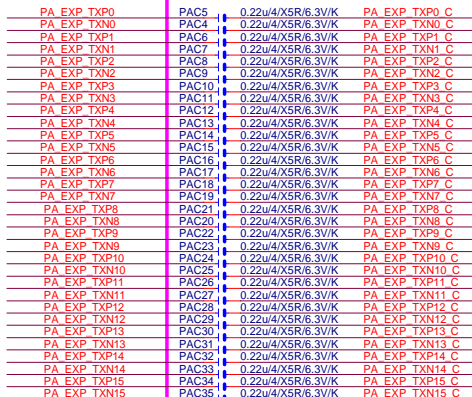
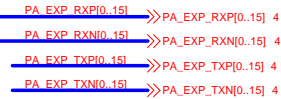
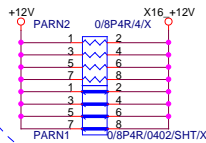
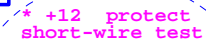
AE

TPM CONNECTOR



Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL	
Size	Document Number			Rev
Custom	GA-H110M-S2PH			1.0
Date:	Thursday, December 10, 2015	Sheet	18 of 44	



PCIEX16:16/5/5/5/16

PCI-E REV:1.1--> 2.5GHZ

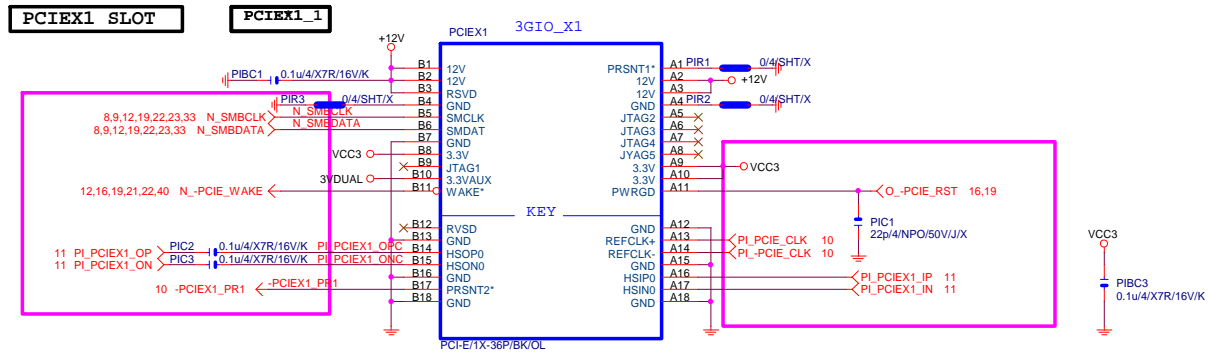
PCE-E X1 (單向) BANDWIDTH=2.5GHz*(8b/10b)=2Gb/s=250MB/s

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

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

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

PCI-E REV:2.0--> 5GHZ



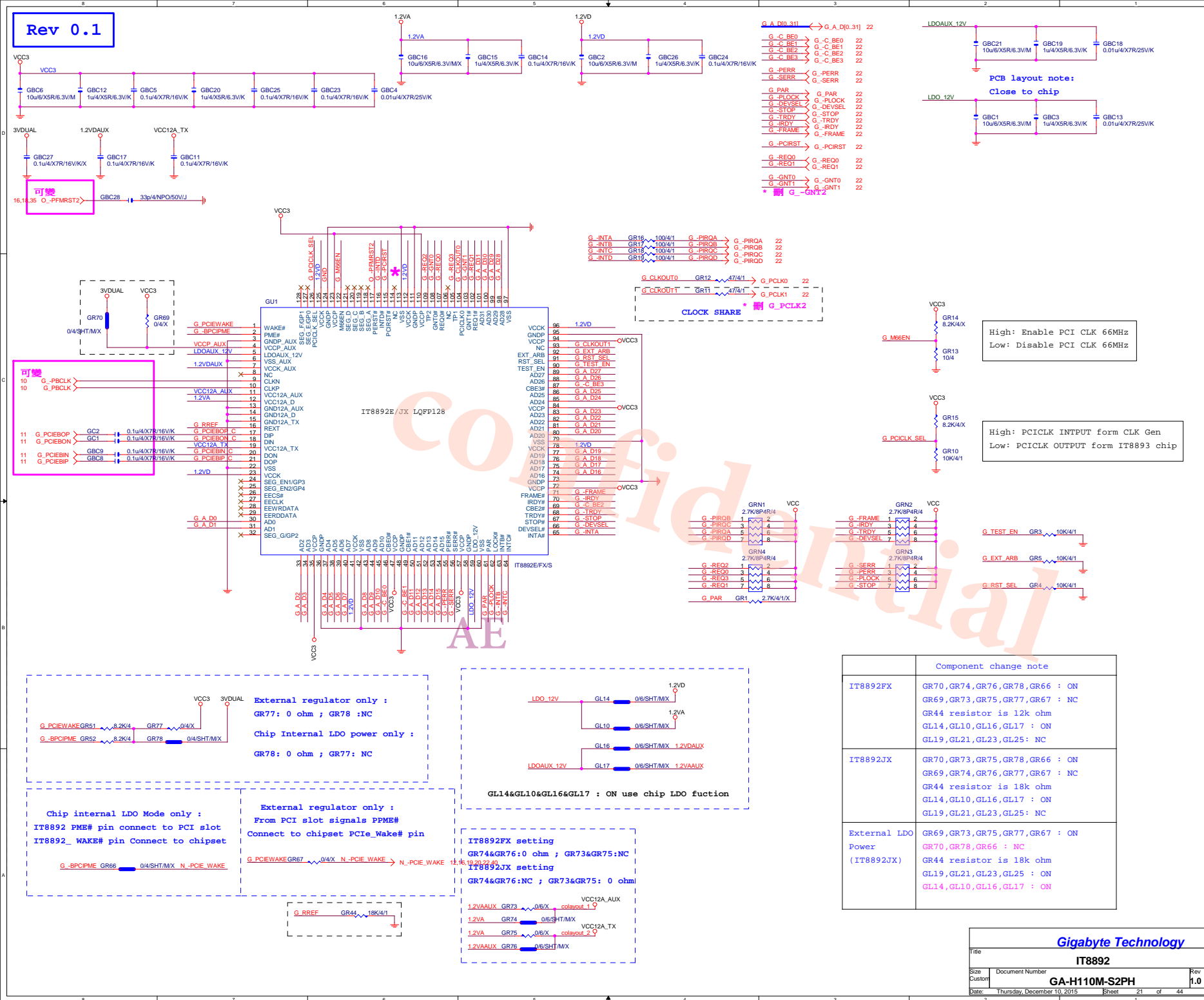
Confidential

AE

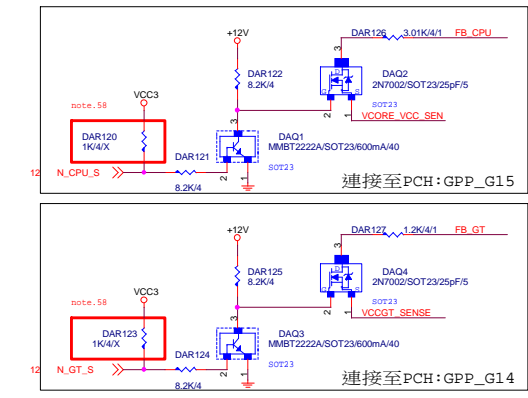
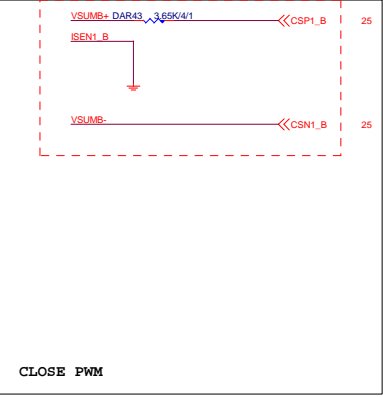
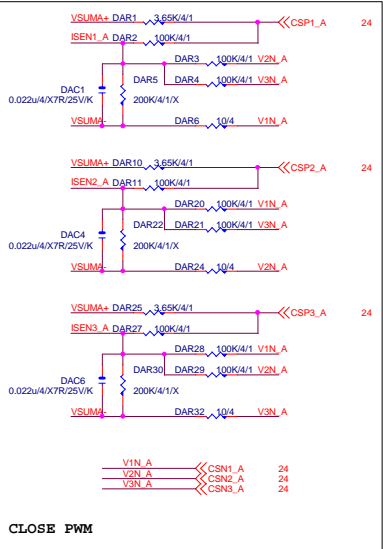
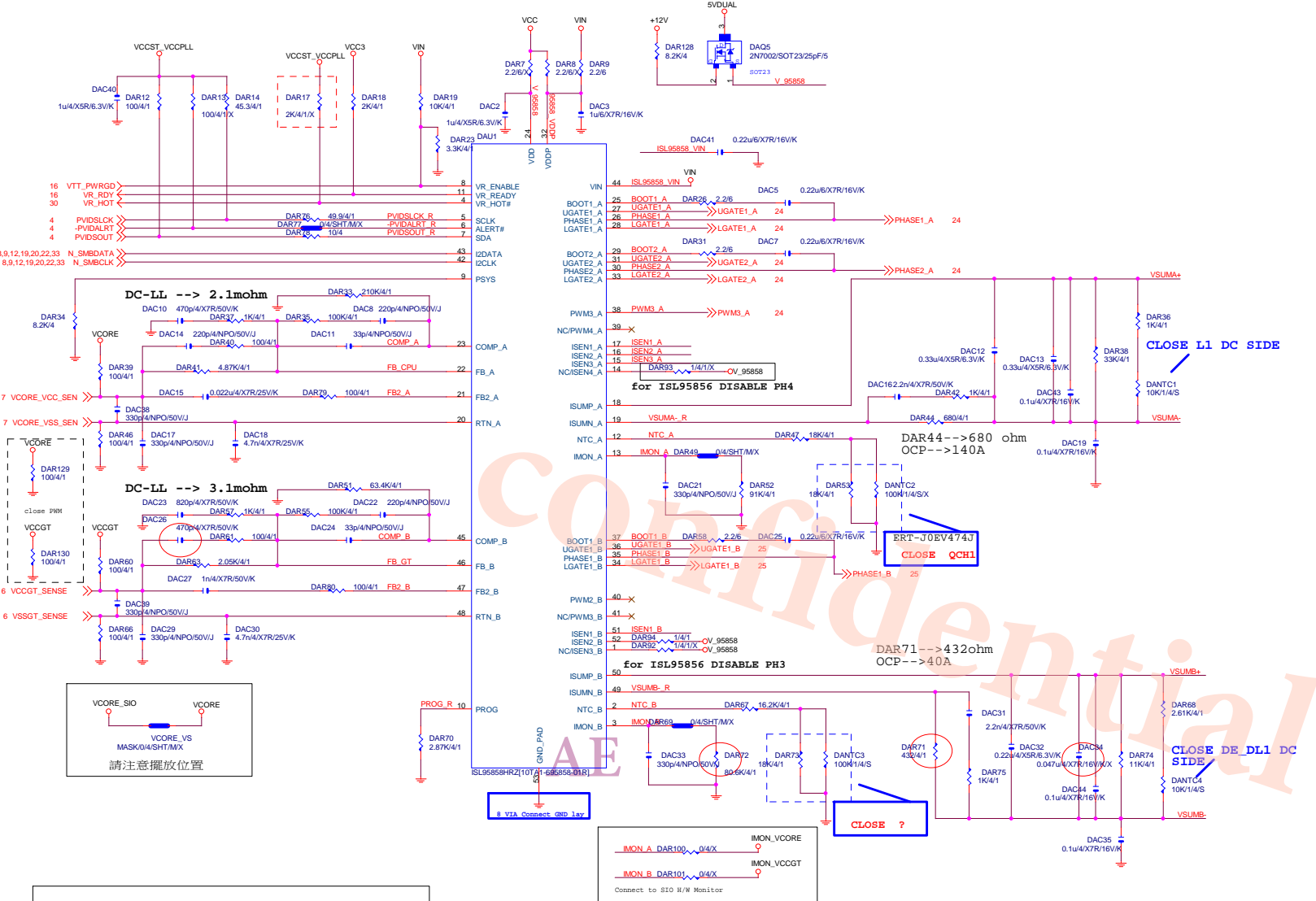
Gigabyte Technology

Title			PCIE_X1 1,2
Size	Document Number	Rev	
Custom	GA-H110M-S2PH	1.0	
Date:	Thursday, December 10, 2015	Sheet	20 of 44

Rev 0.1

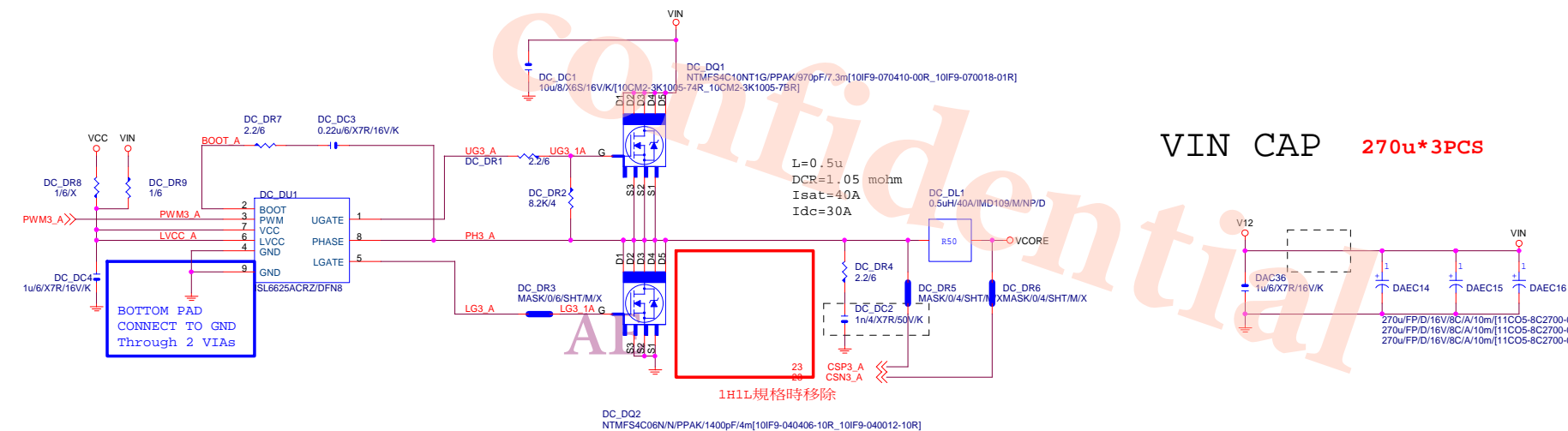
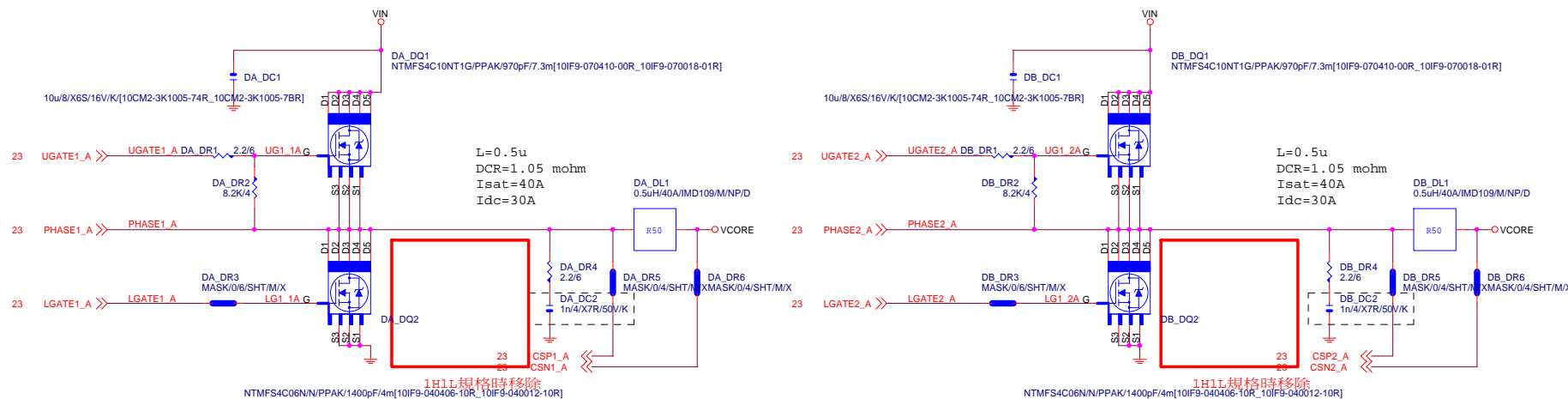
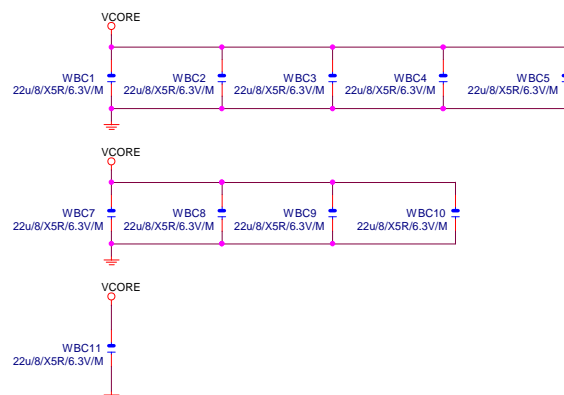
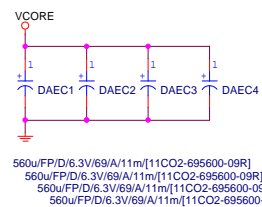


	Component change note
IT8892FX	GR70,GR74,GR76,GR78,GR66 : ON GR69,GR73,GR75,GR77,GR67 : NC GR44 resistor is 12k ohm GL14, GL10, GL16, GL17 : ON GL19, GL21, GL23, GL25 : NC
IT8892JX	GR70,GR73,GR75,GR78,GR66 : ON GR69,GR74,GR76,GR77,GR67 : NC GR44 resistor is 18k ohm GL14, GL10, GL16, GL17 : ON GL19, GL21, GL23, GL25 : NC
External LDO Power (IT8892JX)	GR69,GR73,GR75,GR77,GR67 : ON GR70,GR78,GR66 : NC GR44 resistor is 18k ohm GL19, GL21, GL23, GL25 : ON GL14, GL10, GL16, GL17 : ON

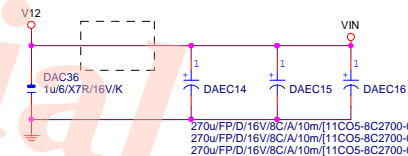


REV:0.91

VCORE

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

VIN CAP 270u*3PCS

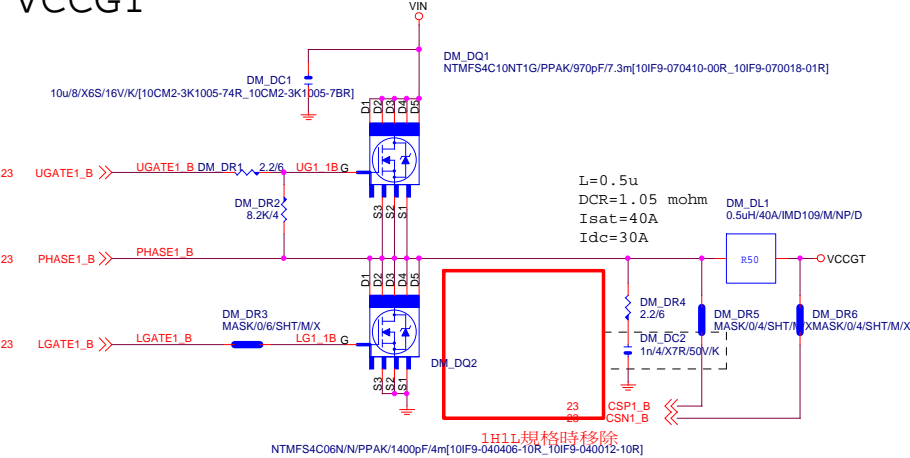
Title
ISL95858 MOS

Size	Document Number
Custom	GA-H110M-S2PH

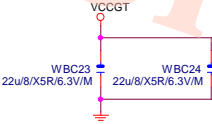
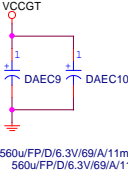
Rev	1.0
-----	-----

Date: Thursday, December 10, 2015 Sheet 24 of 44

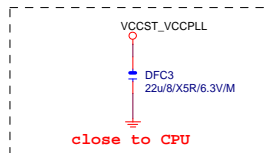
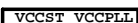
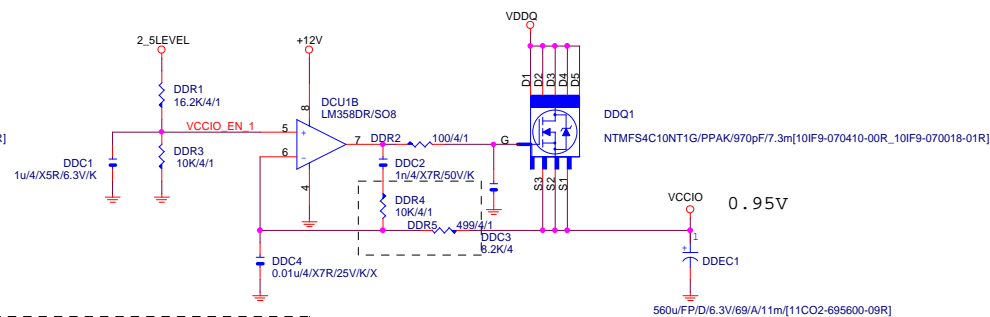
VCCGT



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



AE



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

1H1L規格移除

DDR ADJ

<16> GP93 MA_DR20 9.1K/4/1 1.35V
<16> GP95 MA_DR21 26.1K/4/1 1.25V
<16> GP67 MA_DR22 6.8K/4/1 1.4V

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

F_S=290K
OCP=40A

MA_DR38.MA_DC15

VPP_25V使用8120.8068A.RT8237時上件

PWR SEQ

CLOSE TO DDR POWER PLANE

DDRVTT

MAU1上RT9045時上件

<12,16,46> N_SLP_S3

<4> DDR_VTT_CTL

DDRVTT CAP

* 大電容 x0

DDR_VTT_CTL MA_R110 0/4 DDRVTT_EN
N_SLP_S3 MA_R111 0/4 DDRVTT_BOOT

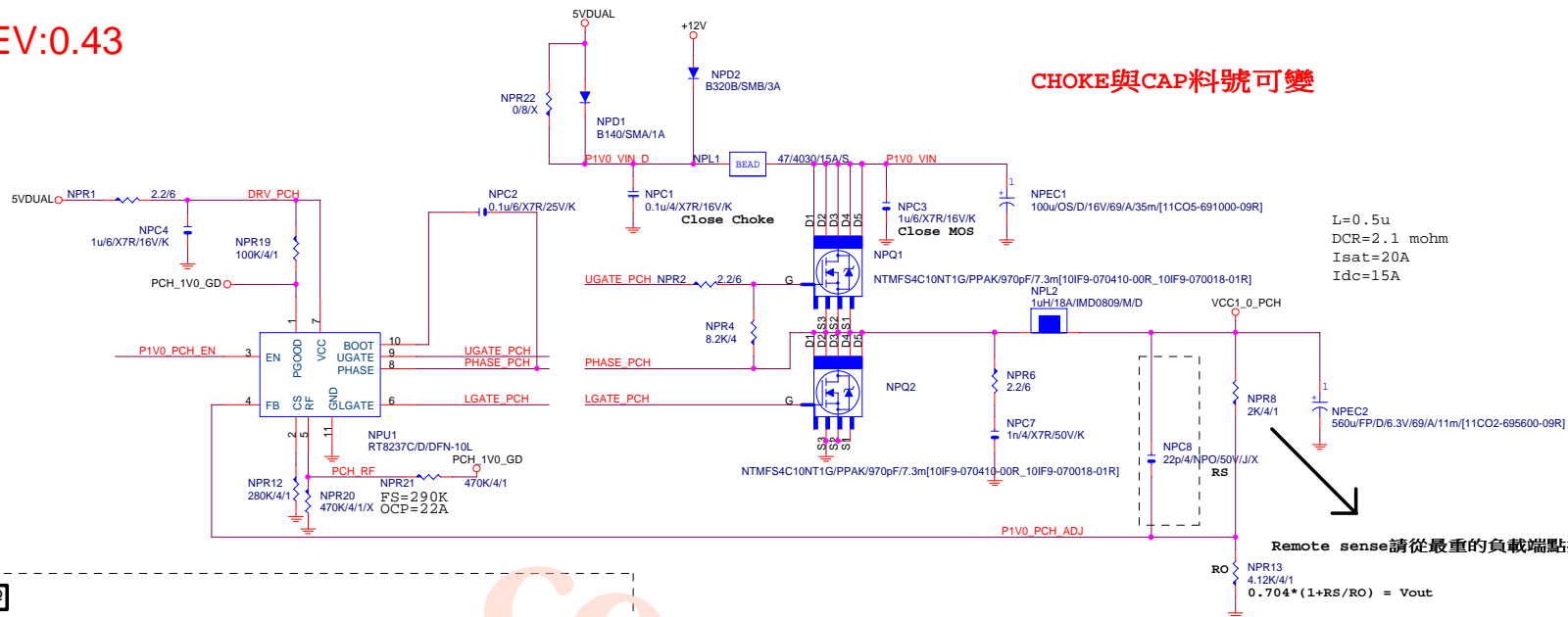
MAU1上NCT3103時上件

GIGABYTE™

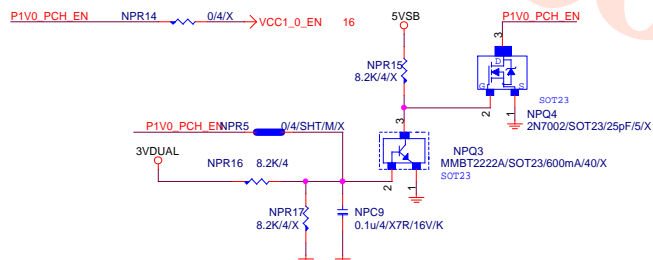
RT8120_DDR POWER		
Title	Document Number	Rev
Custom	GA-H110M-S2PH	1.0
Date:	Thursday, December 10, 2015	Sheet 27 of 45

REV:0.43

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-S2PH

Date: Thursday, December 10, 2015

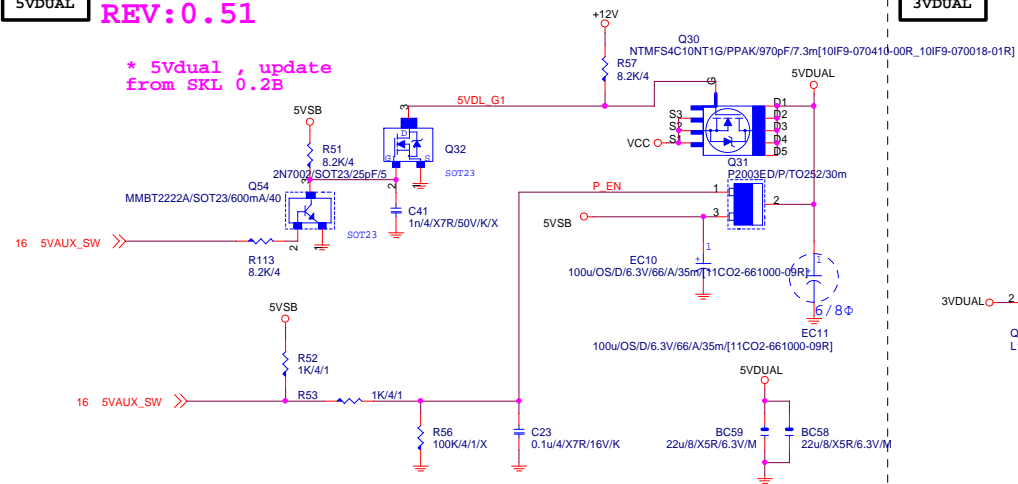
Sheet 28

of 44

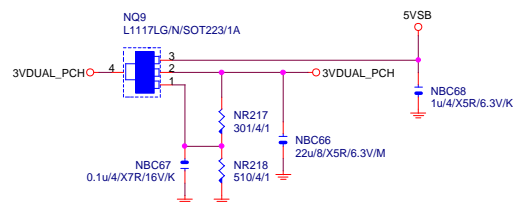
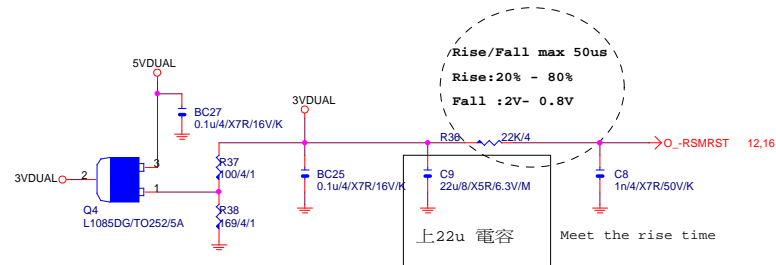
Rev 1.0

REV:0.51

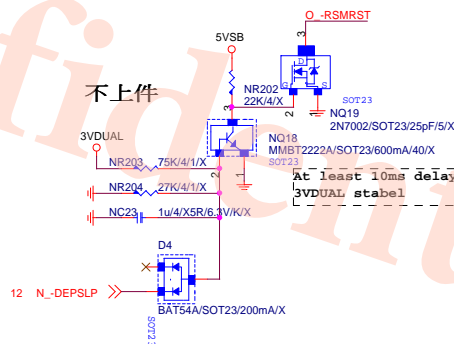
```
* 5Vdual , update
from SKL 0.2B
```



1

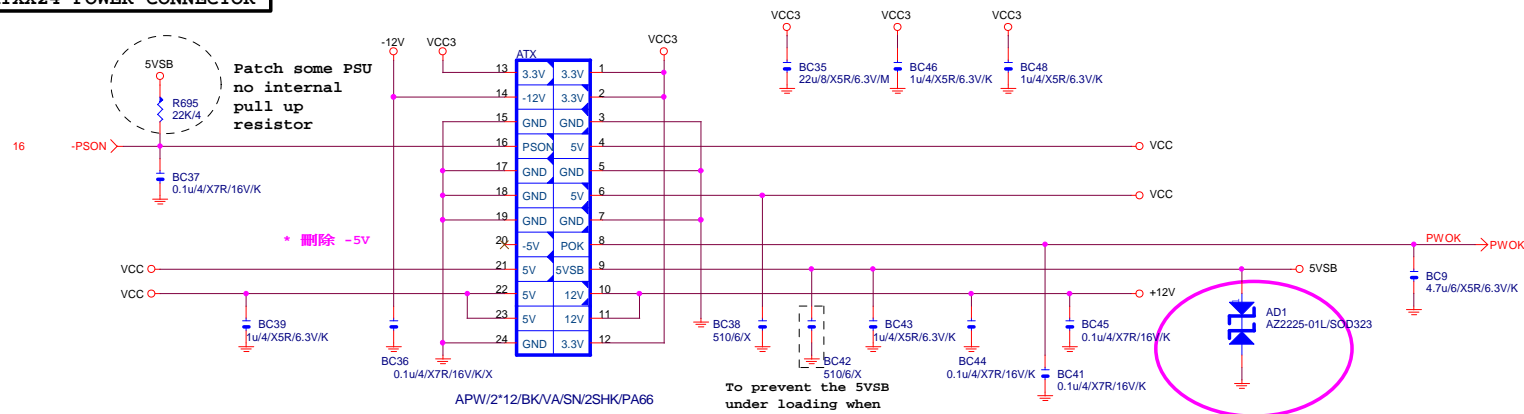


不上件

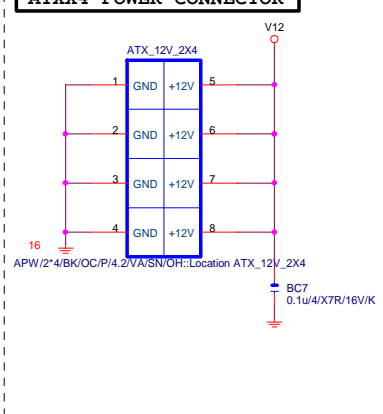


AE

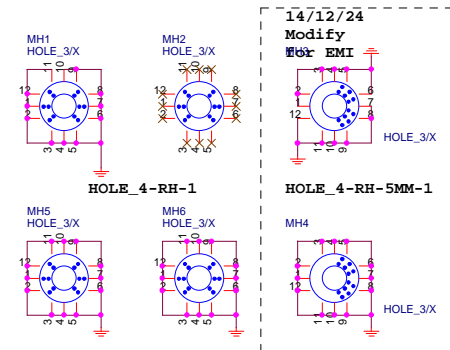
ATXX24 POWER CONNECTOR



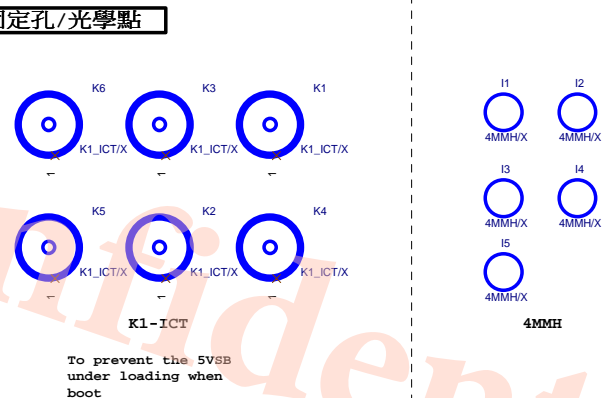
ATXX4 POWER CONNECTOR



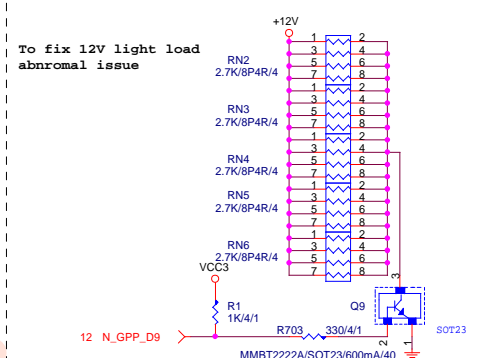
螺絲孔



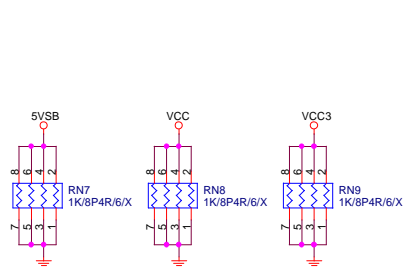
固定孔/光學點



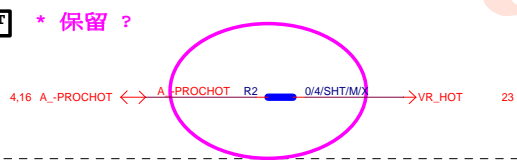
+12V DUMMY LOAD



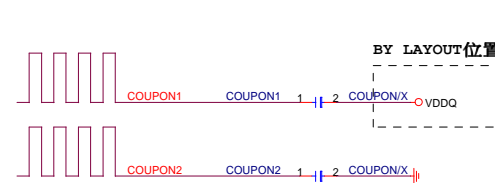
DUMMY LOAD



-PROHOT * 保留 ?

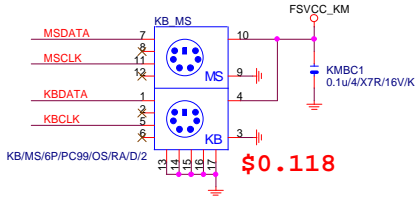


COUPON

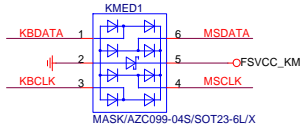


【技術通報R&D技術通報153】

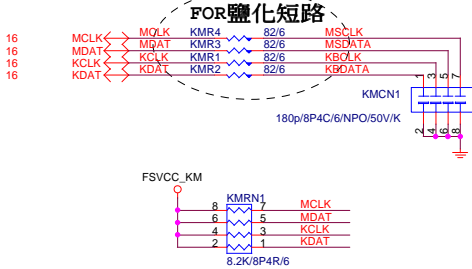
KB_MS_USB



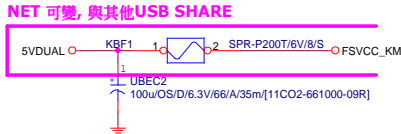
ESD



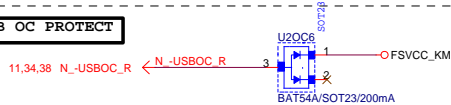
KB_MS_USB DAMPING/PU



KB_MS_USB PWR

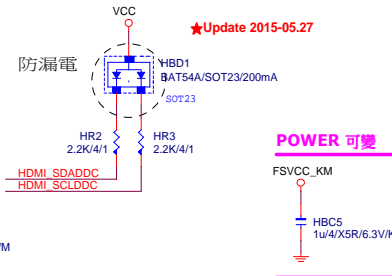


USB OC PROTECT

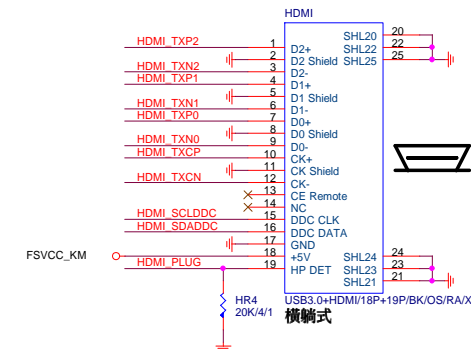


Confidential

AE



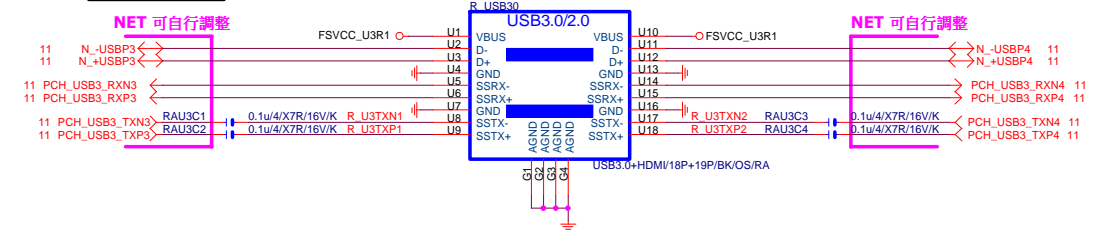
【技術通報R&D技術通報150】
HDMI eye diagram1.4版(deep color)會fail
原因: eye diagram的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)



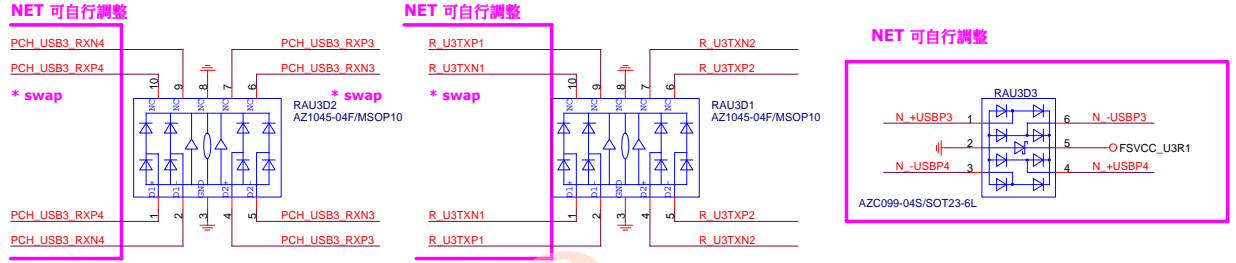
Size Custom	Document Number GA-H110M-S2PH	Rev 1.0
Date:	Thursday, December 10, 2015	Sheet 33 of 44

R_USB30_1

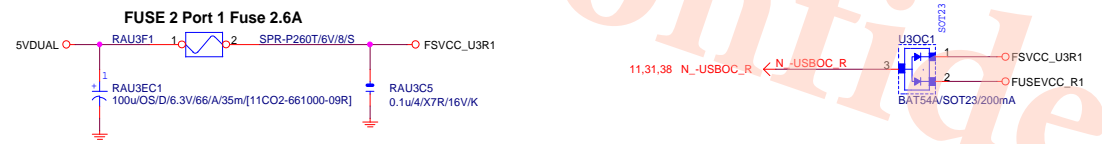
ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可



ESD



FUSE



AE

LAN:RTL8111G R1.06

LAN POWER

LAN POWER

LAN POWER

LAN POWER

L1+CLK REQ# 節能:
需對應LA_SRCCLK_LAN之CLKREQ#

離IC近越好

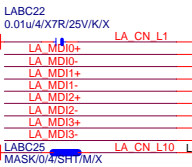
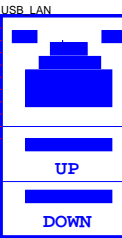
LA_ML-->80歐姆:[15/5/5/5/15]

LAN POWER

note: lan power連接及電流

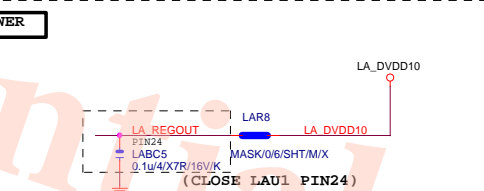
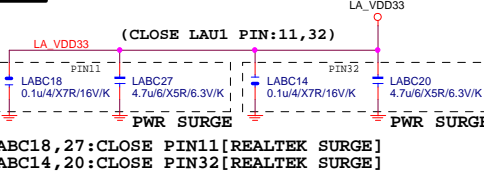
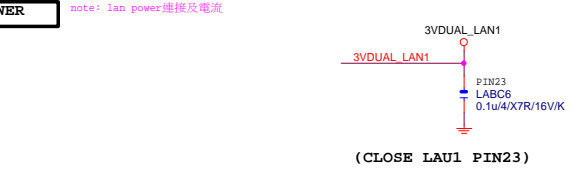
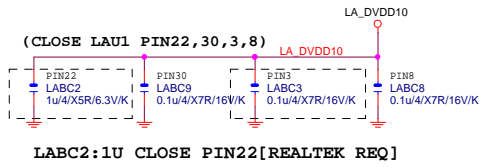
可變

[RTL8111G]

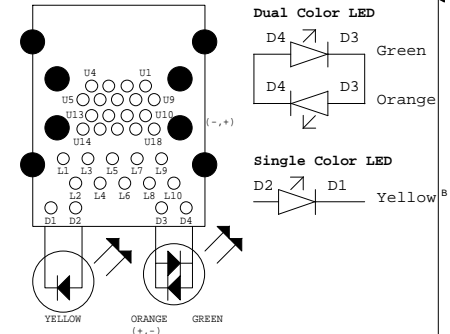


USB+LAN/1G/GO,Y/OS/RA/D/12C/ES[11NR6-702009-Z1R,11NR6-702009-R2R]

LA_MDI-->100歐姆:[20/4/8/4/20]



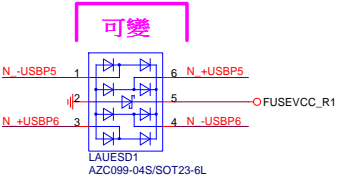
USB30_LAN LAYOUT示意圖



USB_LAN CONNECTOR R1.06

RMA ESD PROTECT

note:可變更USB NAME



EMI SHORT PAD

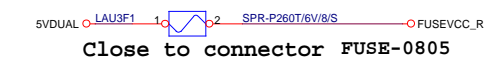
PS:視EMI需求



USB POWER

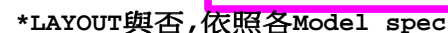
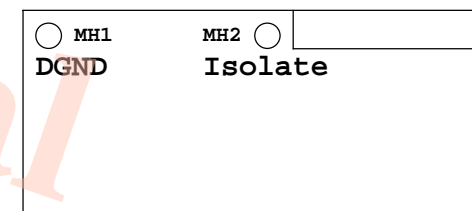
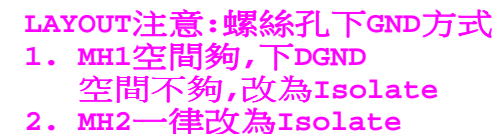
note:可變更FUSE

可變



Close to connector FUSE-0805

Gigabyte Technology			
Realtek RTL8111GUS			
Title	Document Number	Rev	1.0
Size	Custom	GA-H110M-S2PH	
Date:	Thursday, December 10, 2015	Sheet	35 of 44



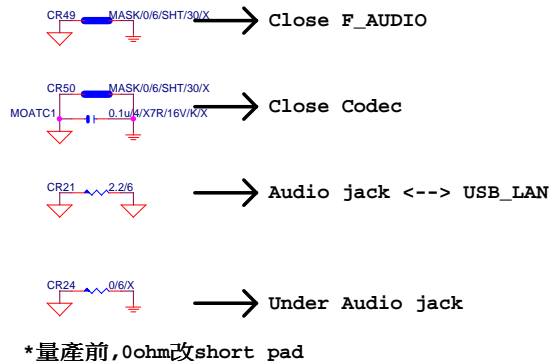
VALUE可變,LED顏色請自行修改
(預設:低亮度黃色LED:LED/Y/6/S)

LAYOUT注意:要加
GND切割線

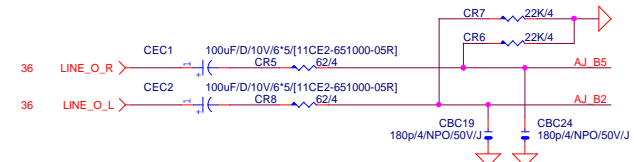
音效區域印刷

BOM OPTION : 1. Chemicon音效電容
2. 金屬外罩 Reserve (上件與否,依照各Model spec)
3. LED Reserve (上件與否和LED顏色,依照各Model spec)

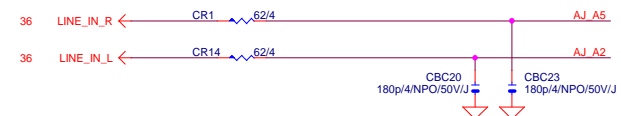
Rev 0.4



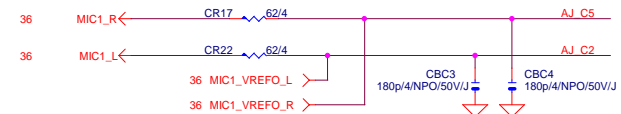
LINE-OUT



LINE-IN



MIC-IN

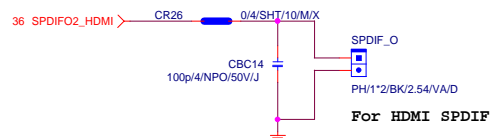


SURROUND

CEN/LFE

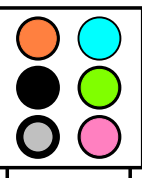
SURRBACK

SPDIF_OUT



SPDIF_IN

AZALIA JACK

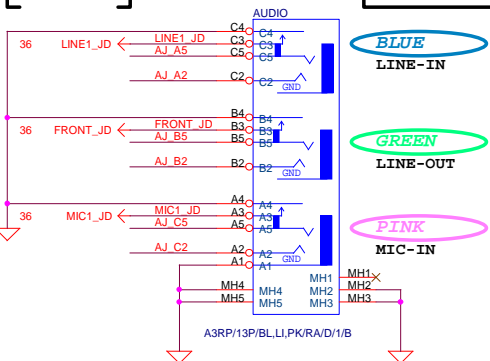


AZALIA JACK

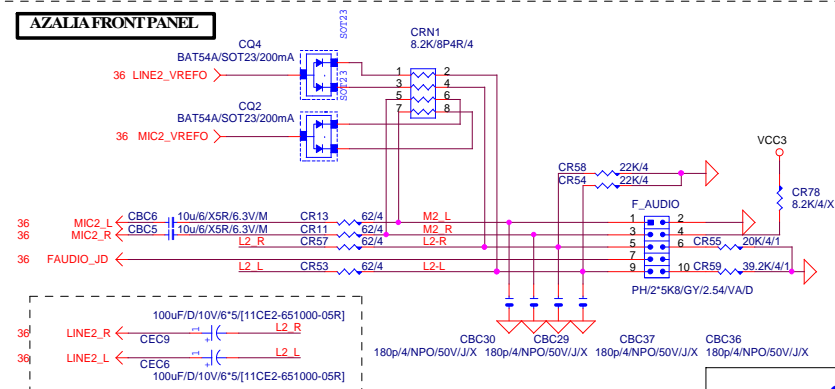
BLUE
LINE-IN

GREEN
LINE-OUT

PINK
MIC-IN



AZALIA FRONT PANEL

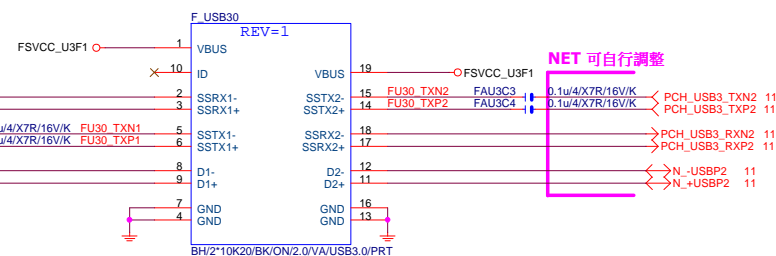


Gigabyte Technology

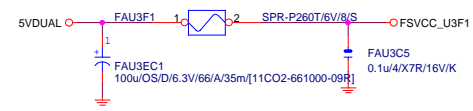
AUDIO JACK

Title	Document Number	Rev
	GA-H110M-S2PH	1.0
Size Custom		
Date:	Thursday, December 10, 2015	Sheet 37 of 44

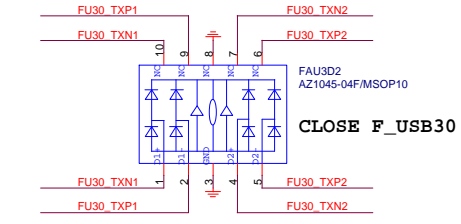
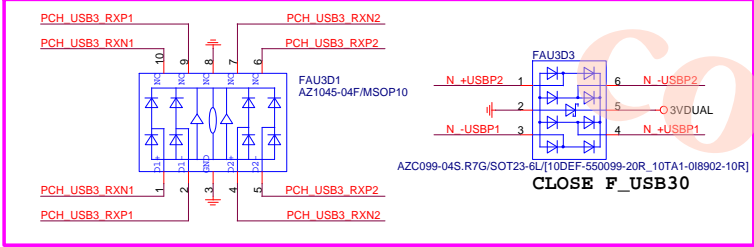
Front USB3.0



F_USB30_PWR

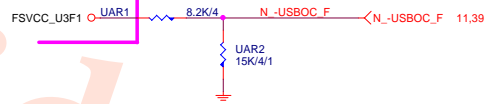


NET 可自訂調整



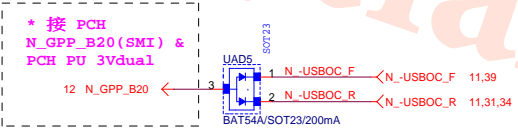
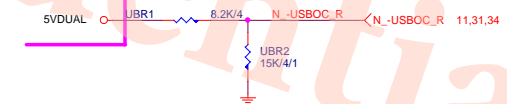
-USBOC_F

POWER 可自訂調整



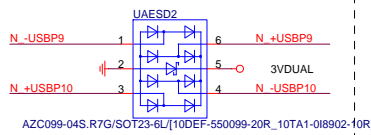
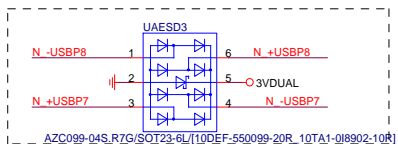
-USBOC_R

POWER 可自訂調整



AE

NET 可變



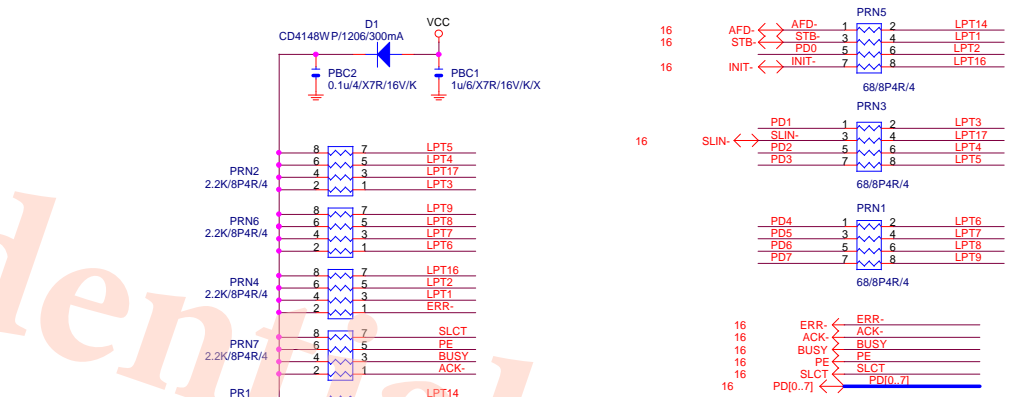
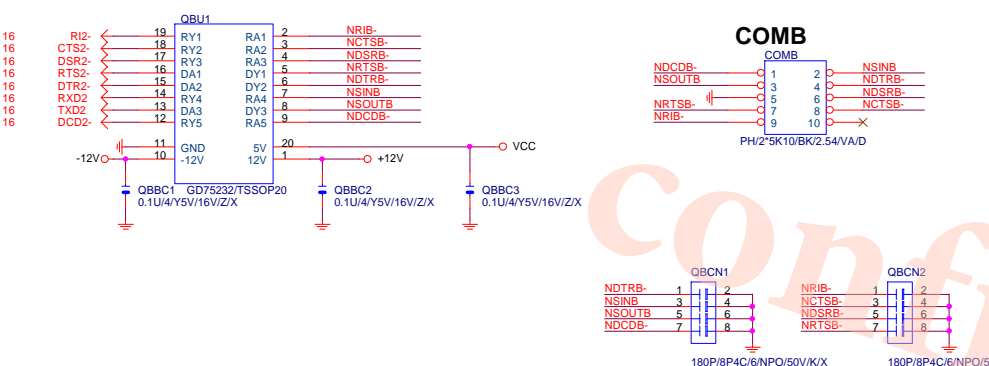
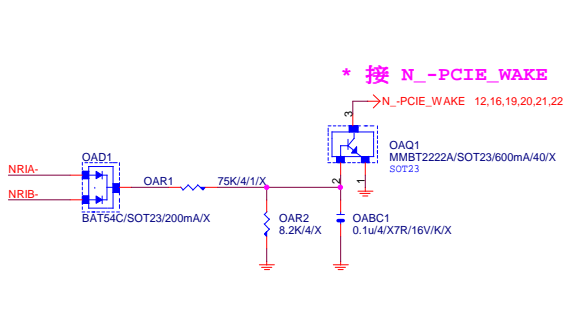
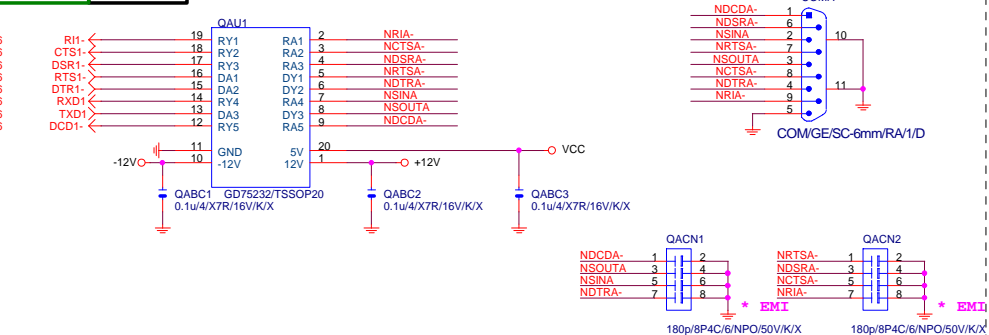
F_USB 2.0 OC SIGNAL

11,38 N_-USBOC_F ← N_-USBOC_F 3 1 FSVCC_F1

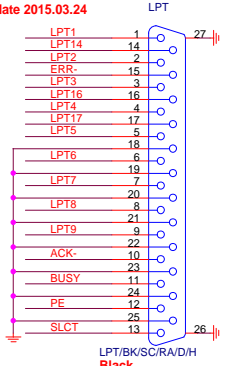
U20C2 SOT23

BAT54A/SOT23/200mA

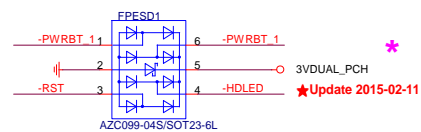
AE



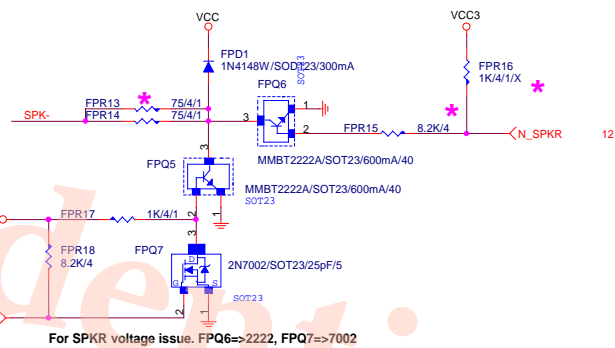
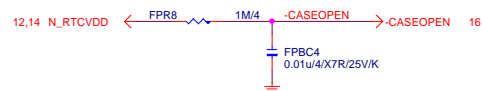
★Update 2015.03.24



AE

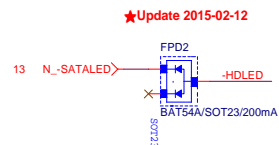


FOOTPRINT:PIN2X10PANEL-NEW



For SPKR voltage issue. FPQ6=>2222, FPQ7=>7002

```
SATALED# signal open-collector,pull-up (8.2 kΩ to 10 kΩ) to
Vcc3_3
```



AE

EMI/ESD	R0.1
---------	------

CLOSE SIO



<12,16,27> N_-S4_S5

close to Front Panel



CLOSE PCH



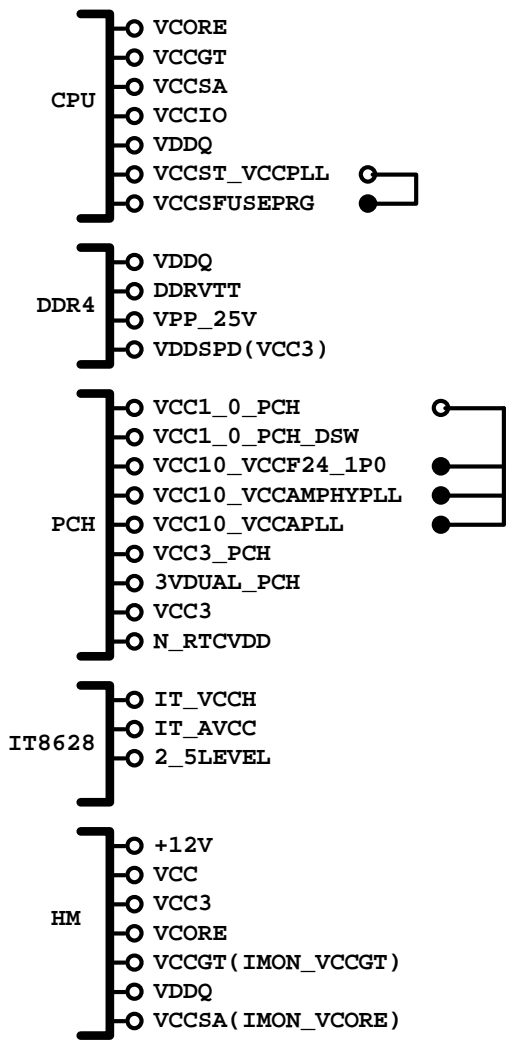
For EMI



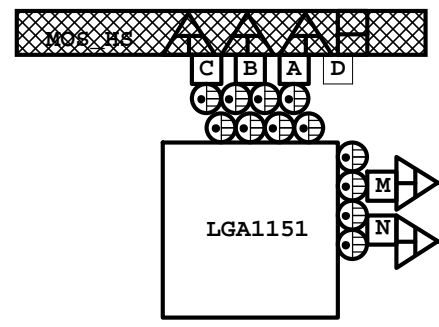
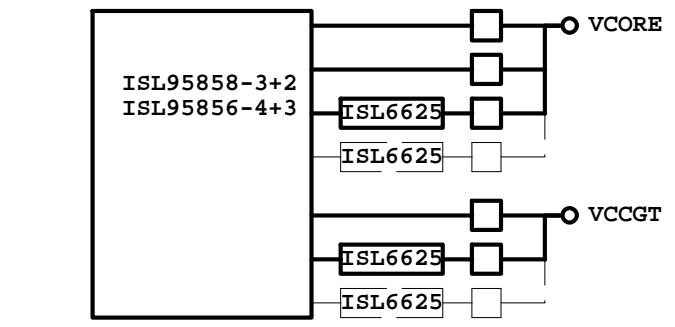
For EMI



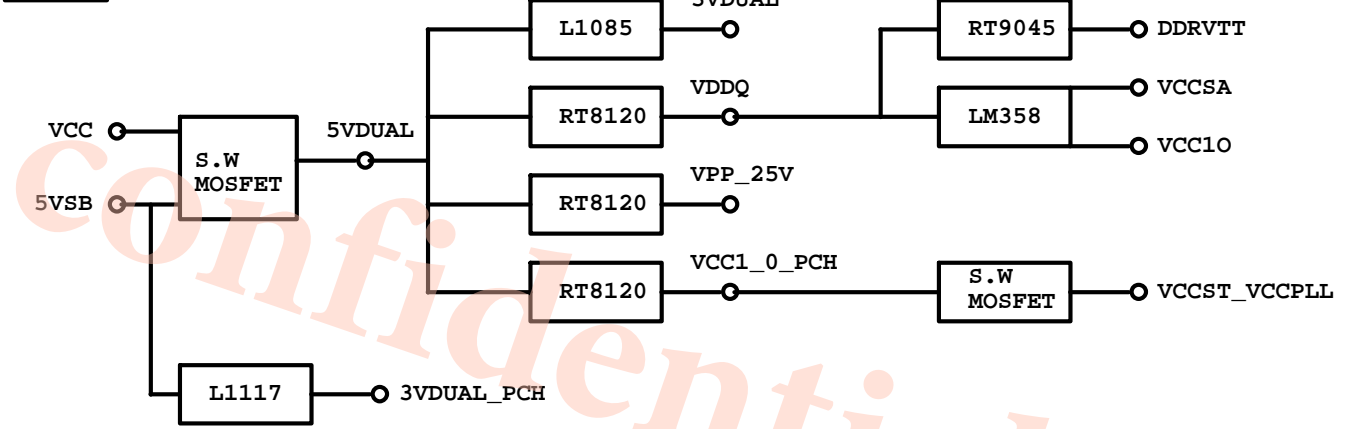
POWER BLOCK MAP



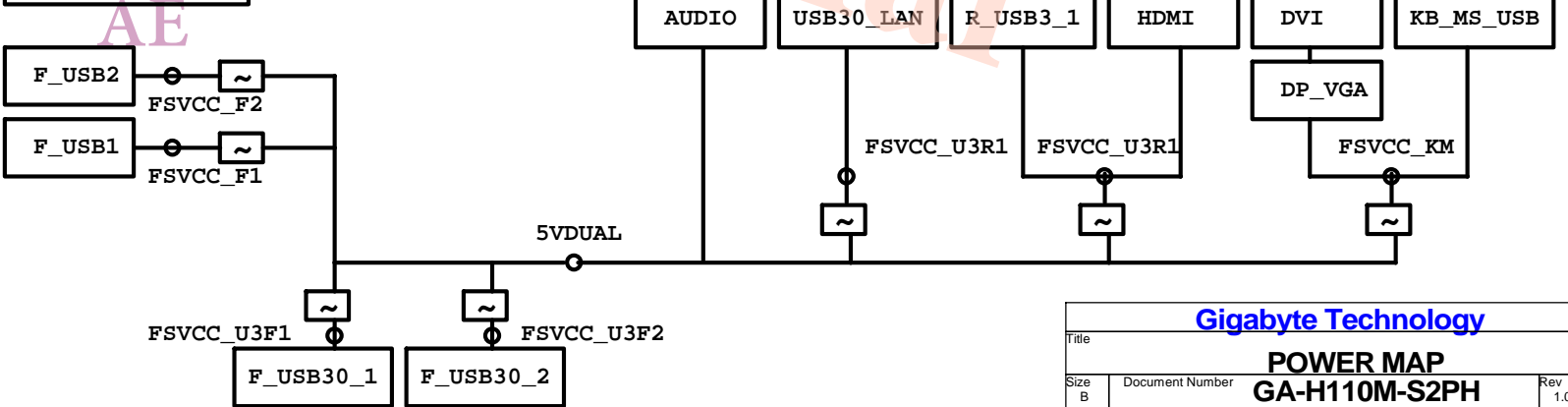
VCORE/VCCGT



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

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

IRON CHOKE

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

Ferrite

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

BEAD

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

PWM料號

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

GIGABYTE™

TitlePOWER零件使用表

SizeCustomDocument NumberGA-H110M-S2PHRev1.0

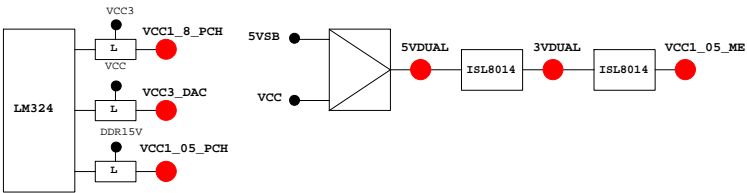
Date:Thursday, December 10, 2015Sheet43 of 44

PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GP0	MAIN	H-Z	GPI0	N/A	
GP1/TACH1	MAIN		GPI01	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	GPI07	P/U 8.2K VCC3
GP8	STBY	H	GPI	GPI08	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	GPI012	N/A
GP13	STBY	L	GPI	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	USB OC7#	N/A
GP15	STBY	L	GPI	GPI015(TLS Enable)	P/U 8.2K 3VDUAL
GP16	MAIN		GPI	GPI016	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	GPI017	P/U 8.2K VCC3
GP18	MAIN		GPI	Mobile Only	N/A
GP19	MAIN		GPI	GPI019	P/U 8.2K VCC3
GP20	MAIN		GPI	GPI020	P/U 8.2K VCC3
GP21	MAIN		GPI	GPI021	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	GPI022	P/U 8.2K VCC3
GP23	MAIN		GPI	GPI023	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	GPI027	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	PWR LED	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPI029	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	GPI039	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	GPI044	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	GPI045	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPI046	P/U 8.2K 3VDUAL
GP47	STBY			Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPI048	P/U 8.2K 3VDUAL
GP49	MAIN	H-Z	IN	GPI049	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	GPI063	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

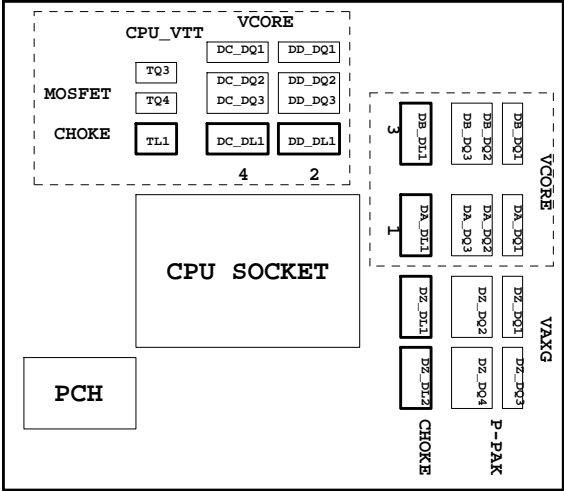
Super I/O ITE8720 GPIO Table

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#CIRRXL/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/BUSSI1	SB_LED1_C	
PD4/GP74/BUSSI2	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSSI0	NB_LED3_C	
GP22/SCK	LOW_PWR_1	
VID05/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	
VID00/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	SEC_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_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		
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/CIRRXL2/GP16	-THERM	
VID04/GP26/SOUT2	DDR18V_PH2_EN	
VID02/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VID06/GP17/RI2#	1_1V_PH_EN	
VID07/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

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 Terminatio
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號：

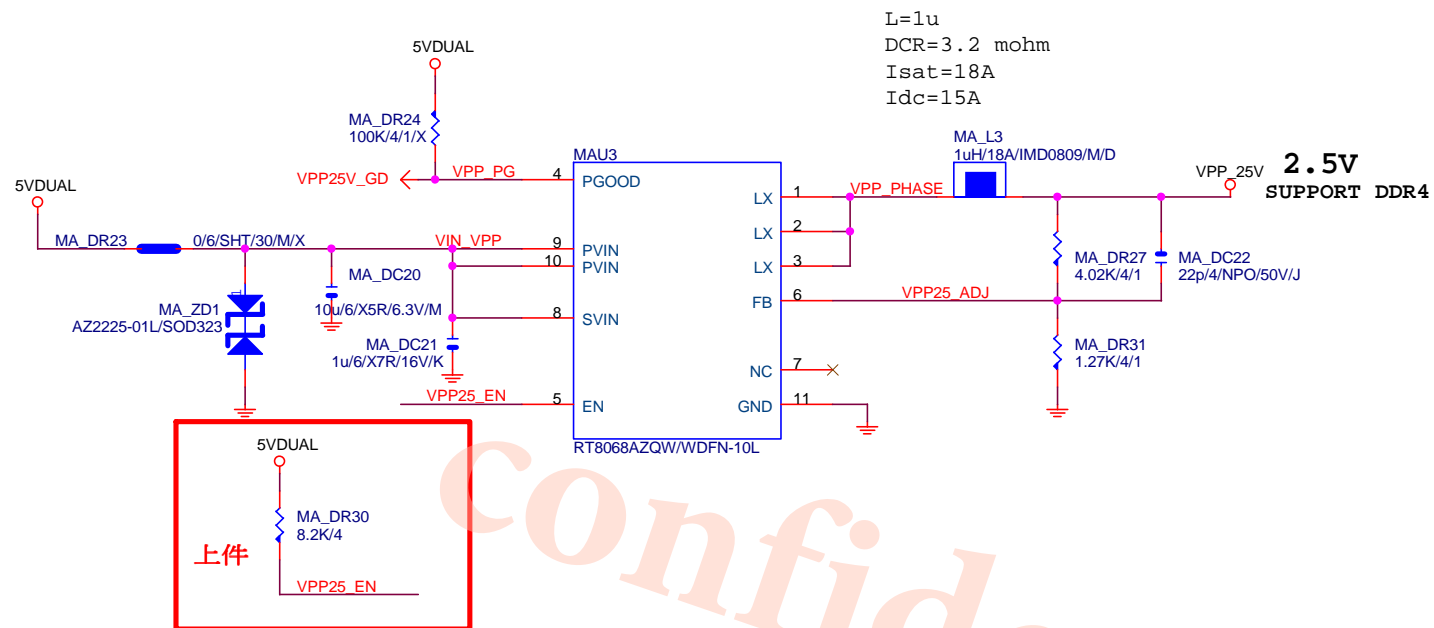
Z77-D3H :
PCH :
12SP2-S05511-01R/02R/03R
MOSFET :
12SP2-S08924-01R/02R/03R

	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

REV:0.4

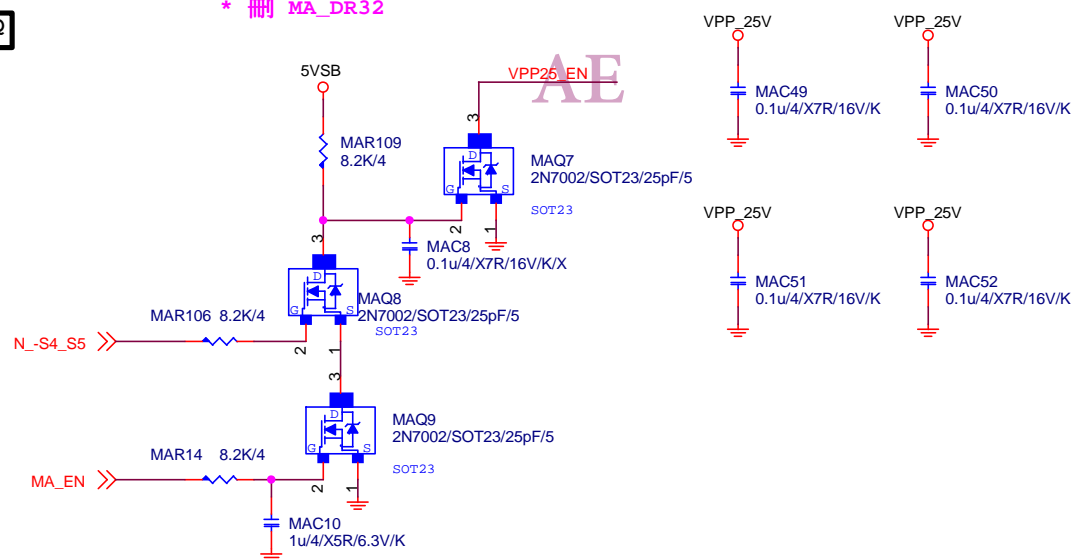
VPP 25V

CHOKE與CAP料號可變



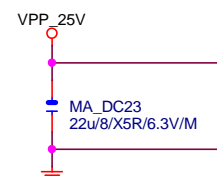
PWR SEQ

* 刪 MA_DR32



VPP CAP 22u*1PCS

* 大電容 x0



GIGABYTE™

 Title
 RT8068A_VPP POWER

 Size Document Number
 Custom GA-H110M-S2PH

 Rev
 1.0

Date: Thursday, December 10, 2015 Sheet 45 of 45