

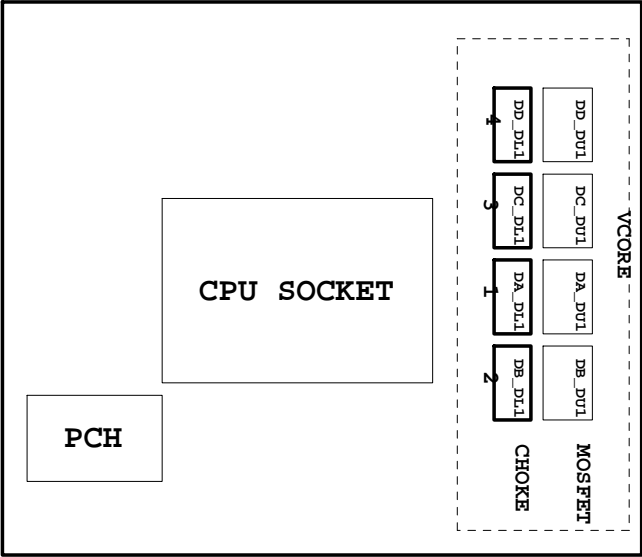
Model Name: GA-H110M-S2PH

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

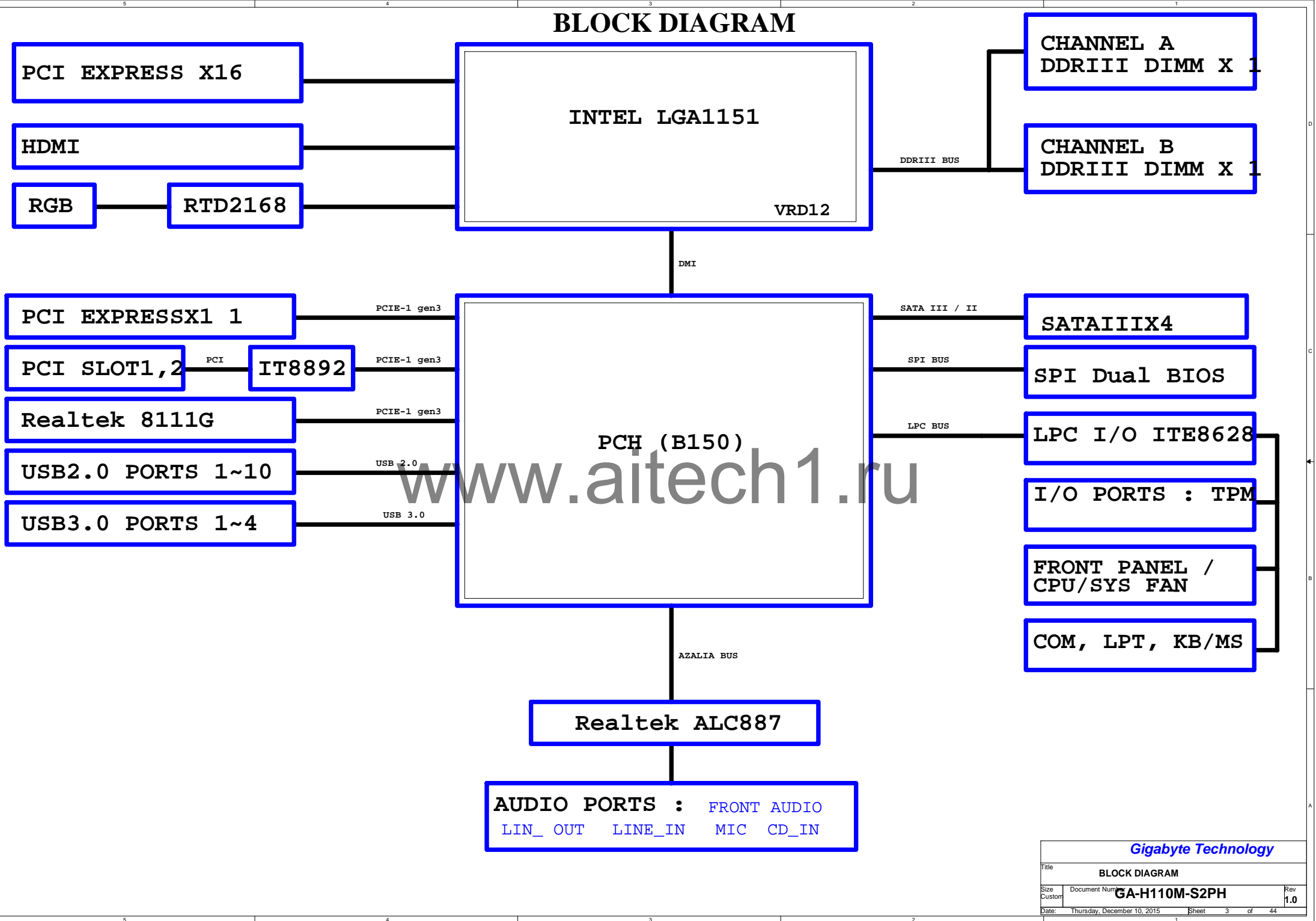
29	DISCRETE POWER
30	ATX POWER , -PROCHOT
31	KB_MS_USB
32	HDMI CONN
33	RTD2168 - DP to VGA
34	R_USB30
35	Realtek 8111G USB 2.0
36	ALC887-VD2 CODEC
37	REAR AUDIO JACK
38	F_USB30
39	F_USB20
40	COM , LPT
41	F_PANEL, EMI
42	POWER MAP
43	POWER 零件使用表
44	TABLE LIST



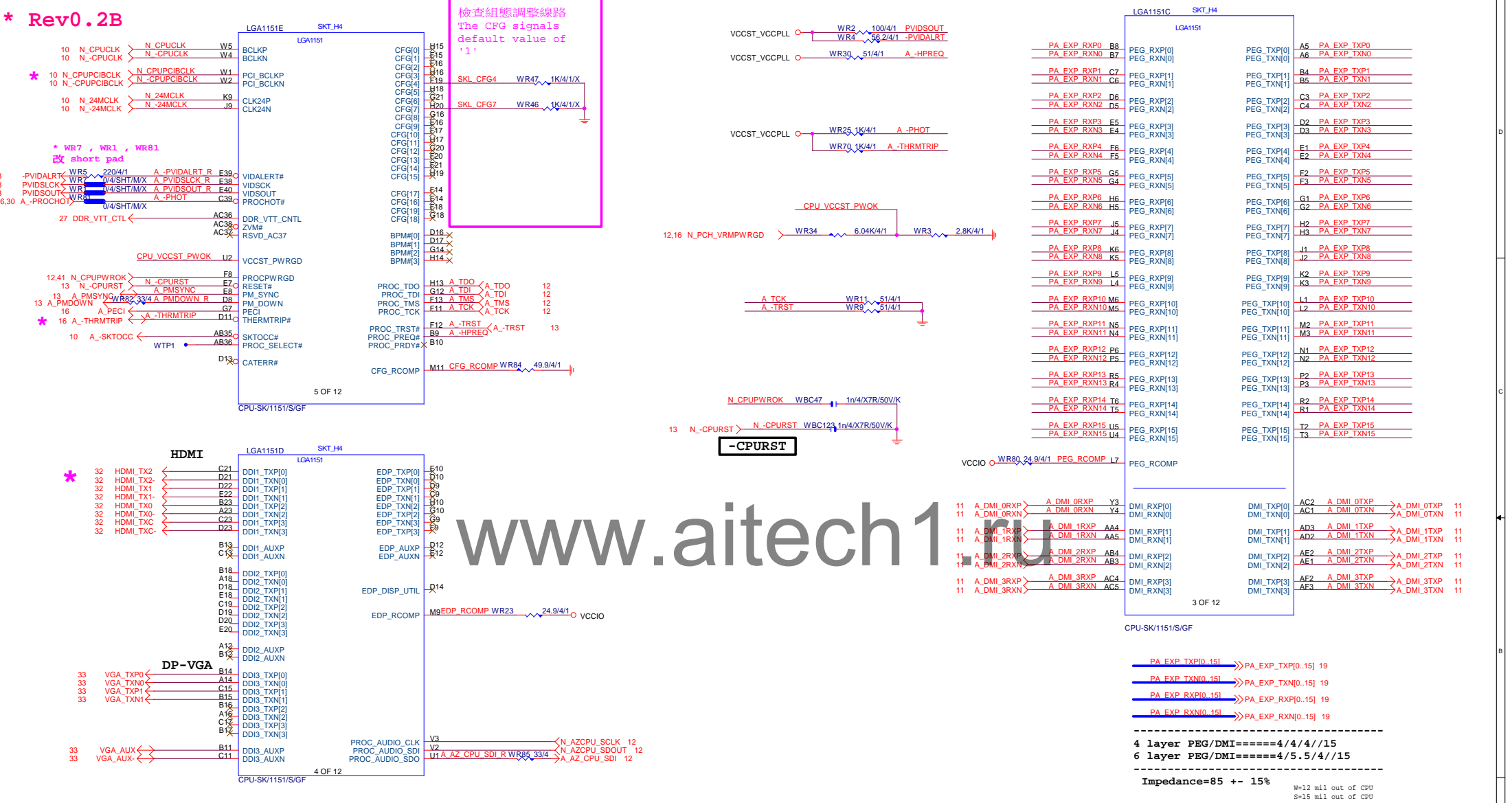
## Component value change history

[illegible][illegible]

# BLOCK DIAGRAM



\* 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%

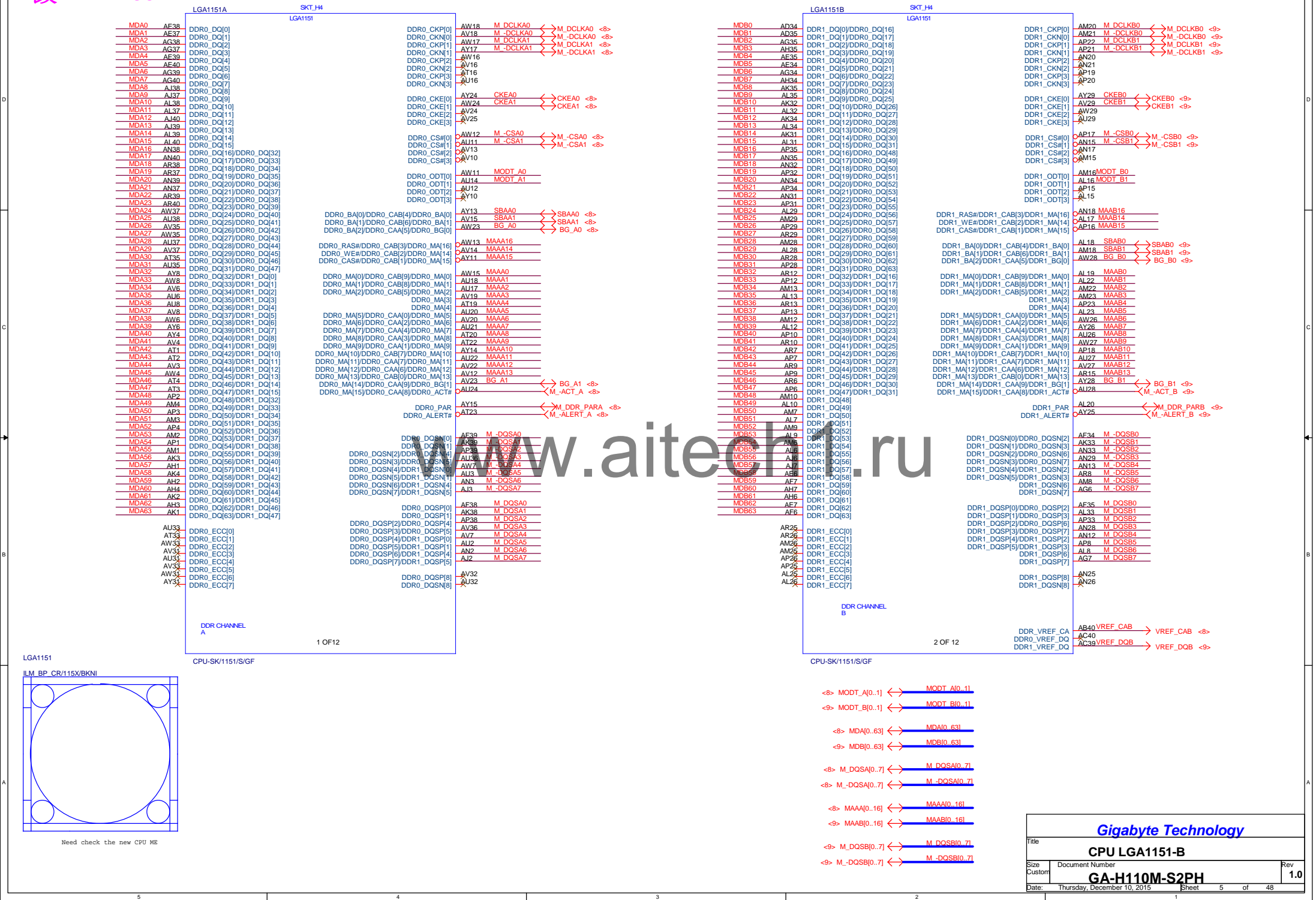
Bifurcation Config.	Signals Lanes
	CPG[6] CPG[5] CPG[2]
1x16	1 1 1
1x16 Reversed	1 1 0
2x8	1 0 1
2x8 Reversed	1 0 0
1x8+2x4	0 0 1
1x8+2x4 Reversed	0 0 0

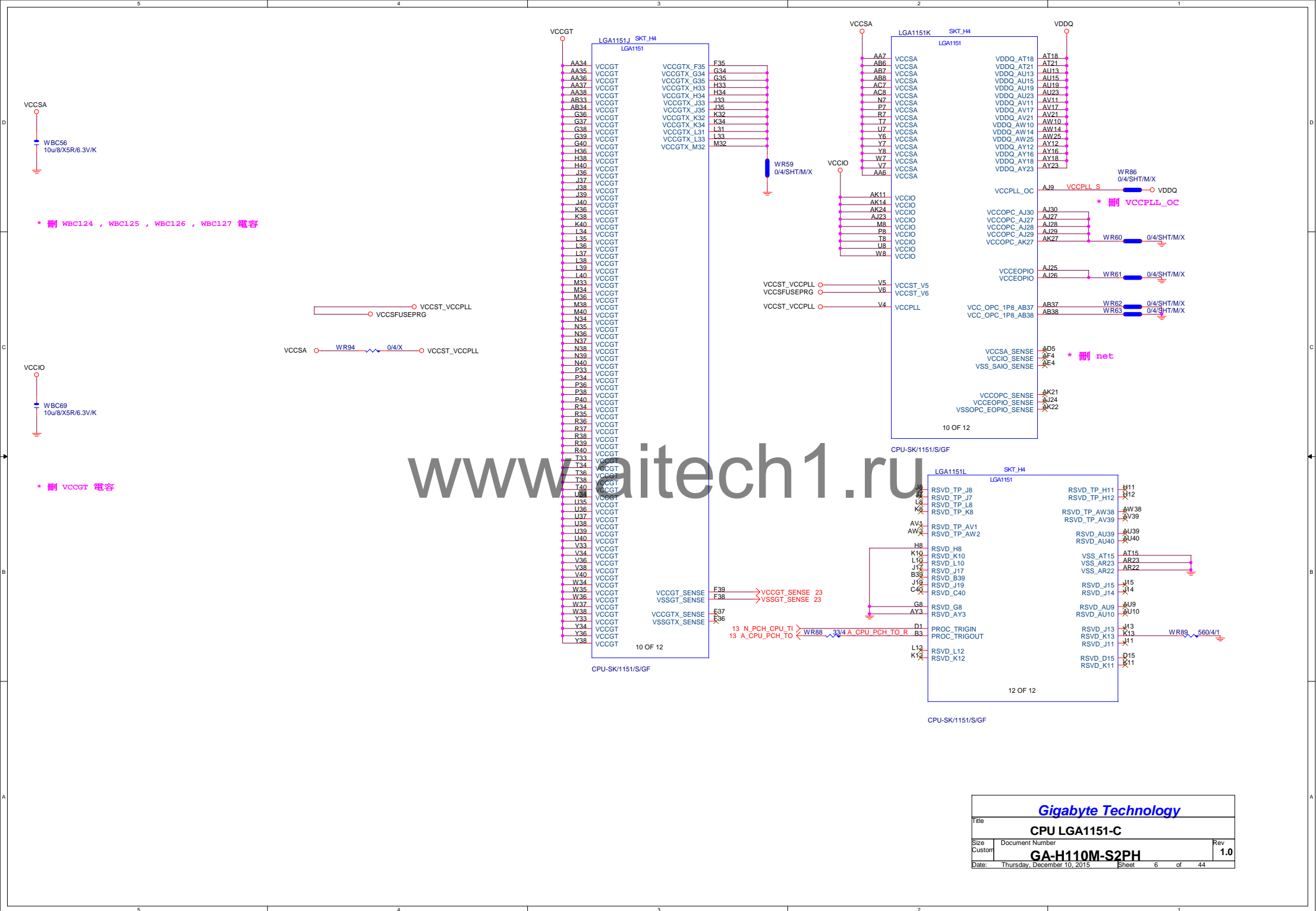
PA\_EXP\_TXP0\_15] >>> PA\_EXP\_TXP0[0..15] 19  
PA\_EXP\_TXN0\_15] >>> PA\_EXP\_TXN0[0..15] 19  
PA\_EXP\_RXP0\_15] >>> PA\_EXP\_RXP0[0..15] 19  
PA\_EXP\_RXN0\_15] >>> PA\_EXP\_RXN0[0..15] 19

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

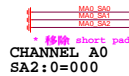
Impedance=85 +- 15%

W=12 mil out of CPU  
S=15 mil out of CPU

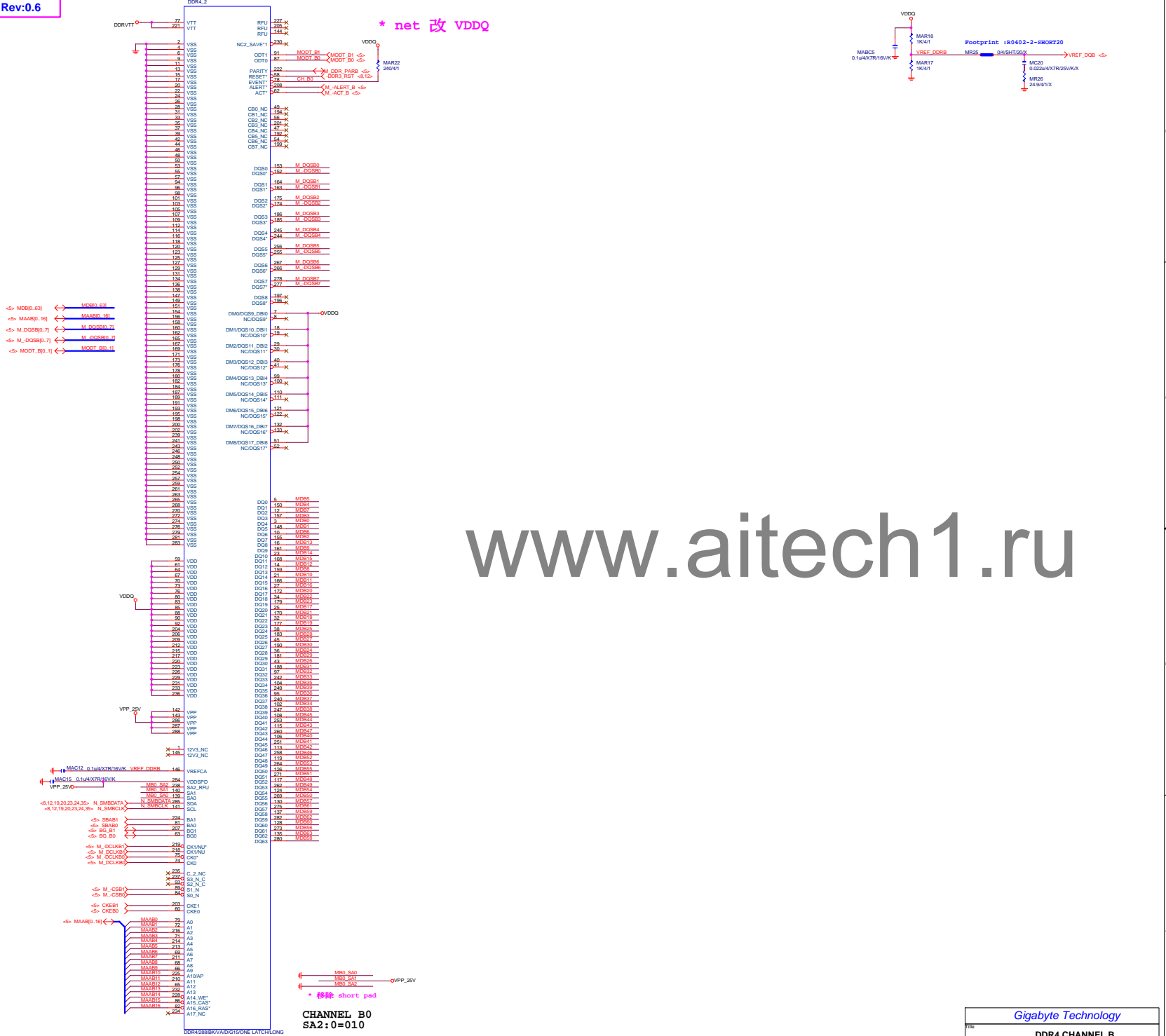




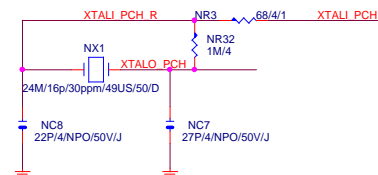
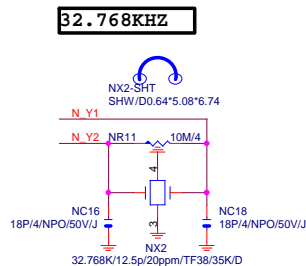
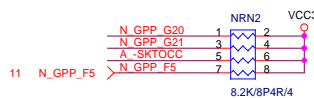
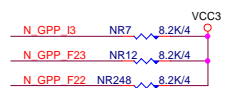
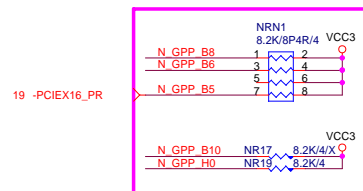
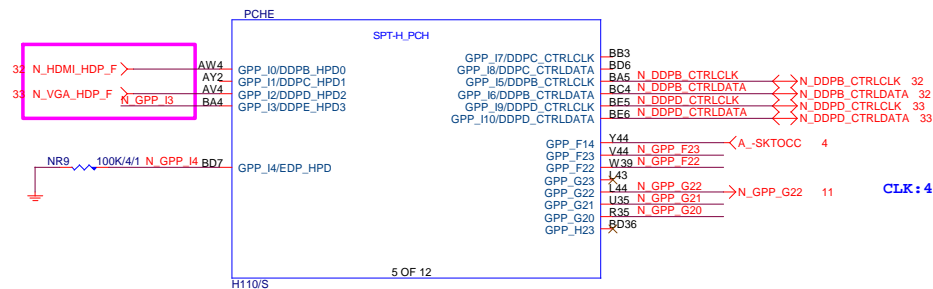




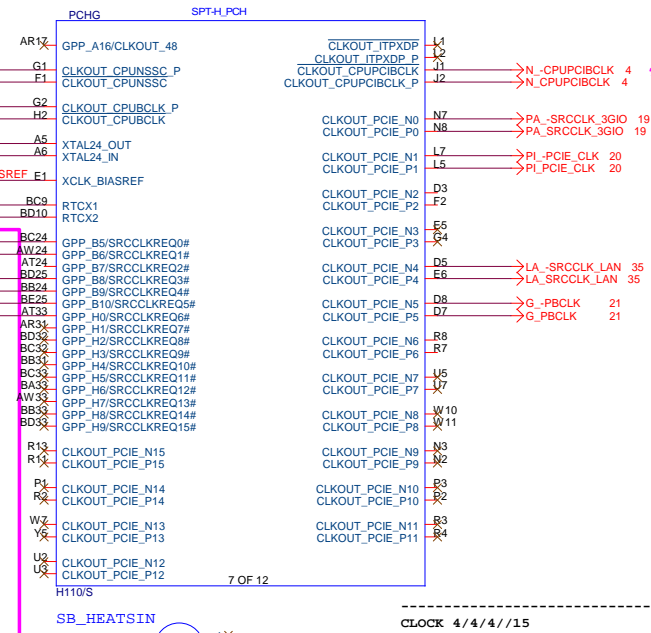
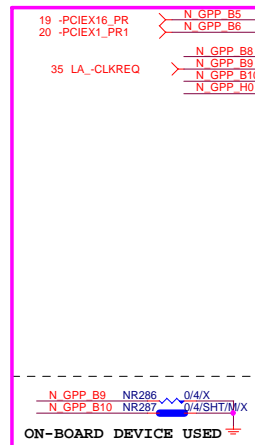
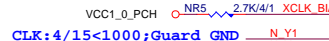




\* Rev0.2



CLK:4/15<1000 mils±100 mils;Guard GND

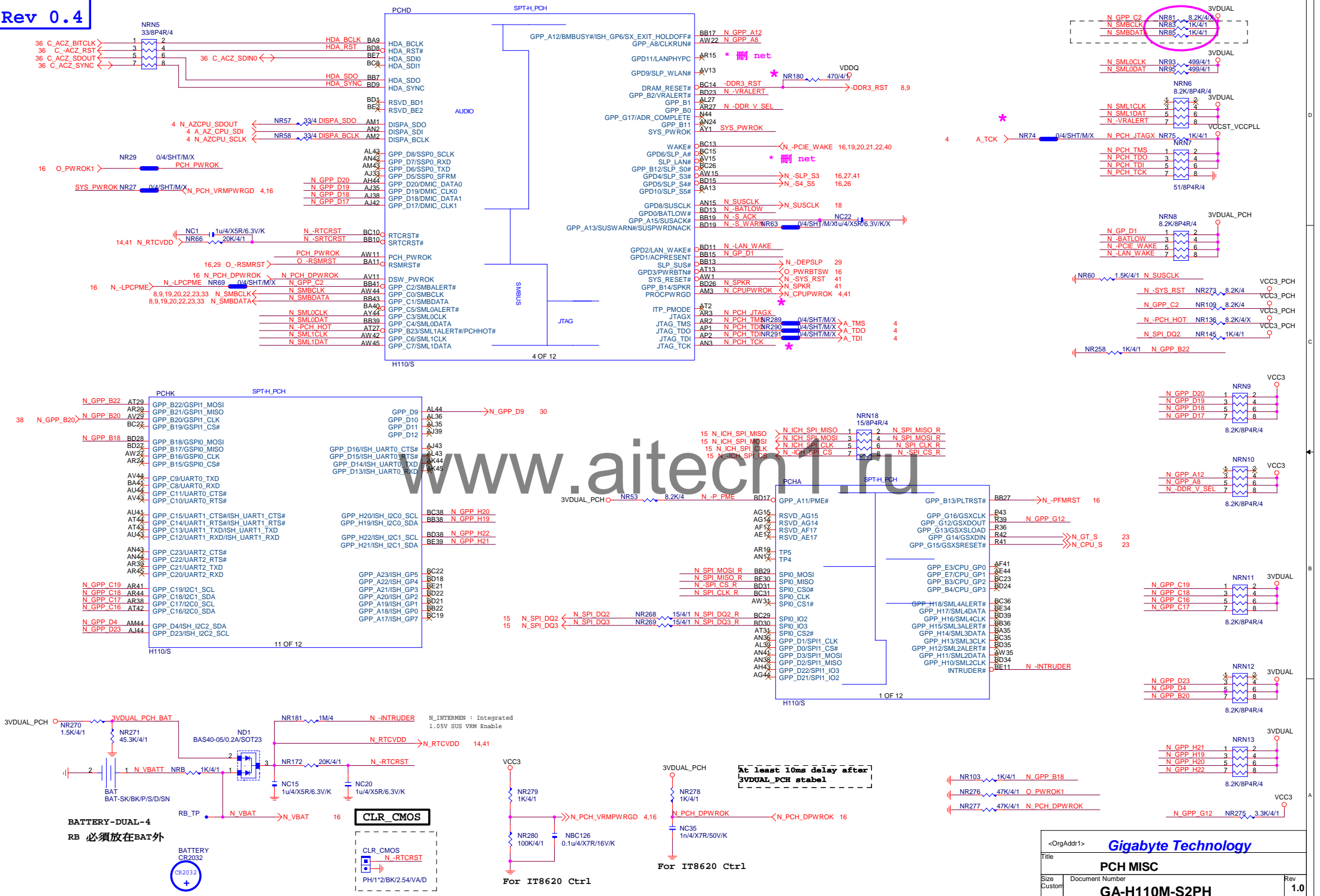


LOW COST ICH7 HEATSINK  
BLACK HS

PCH\_HS  
PCH\_HS/12SP2-030005-51R\_12SP2-030005-52R\_12SP2-030005-53R

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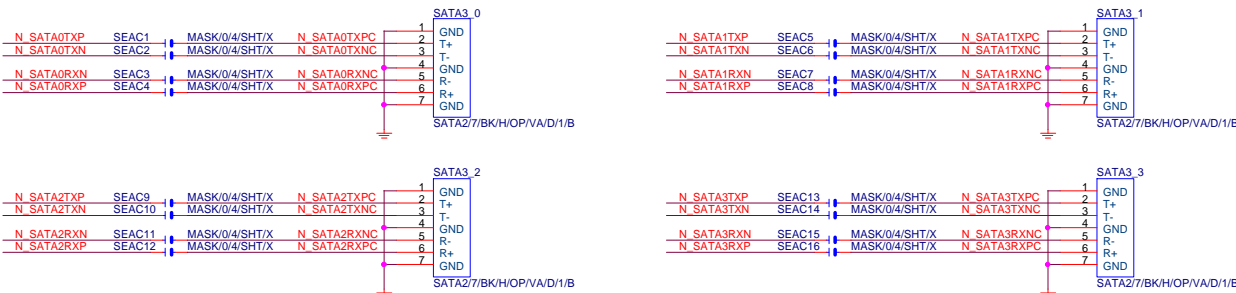
BATTERY-DUAL-4  
RB 必須放在BAT外  
BATTERY CR2032

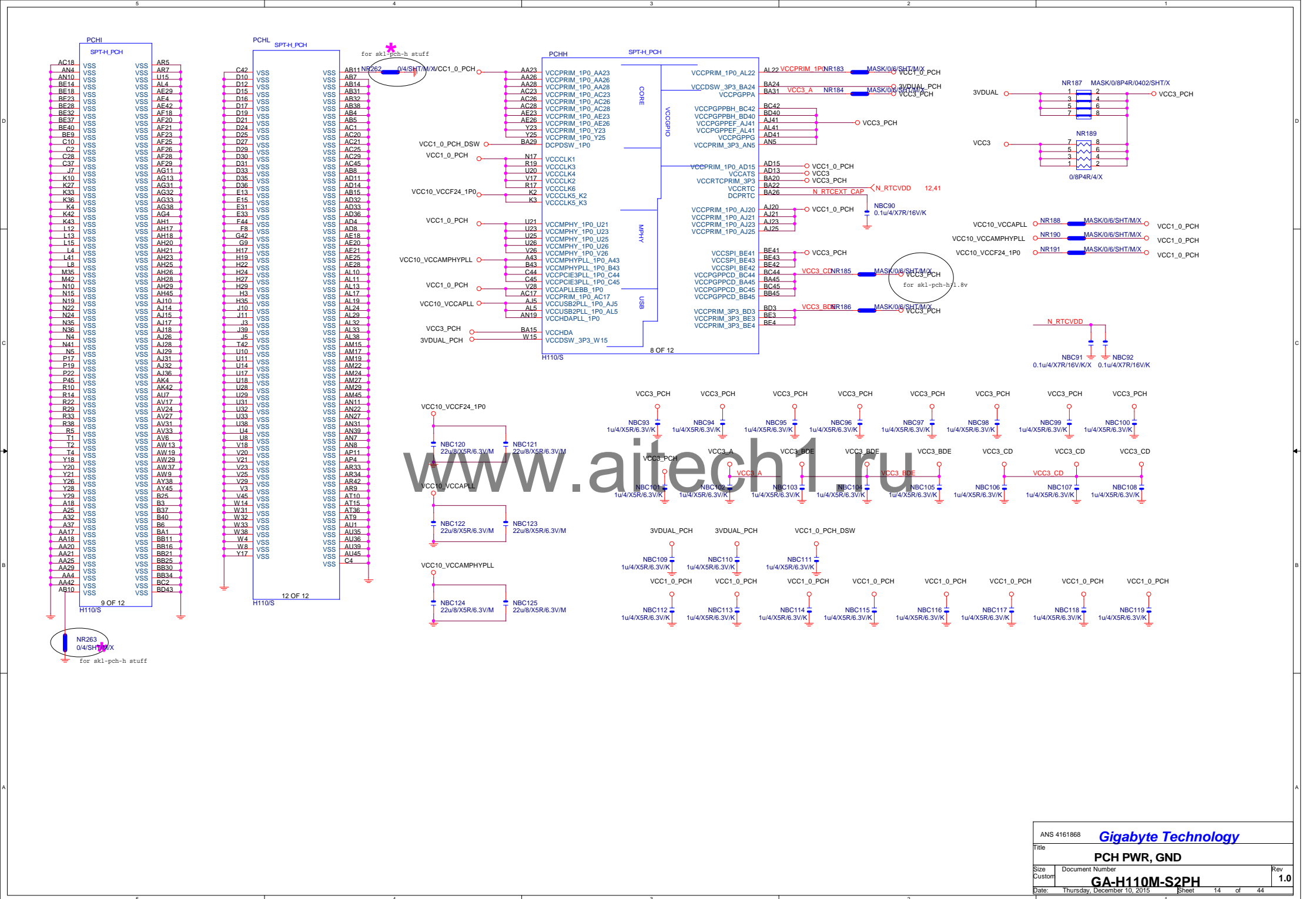
CLR\_CMOS  
N-RTCST  
PH1\*2/BK/2.54/A/D

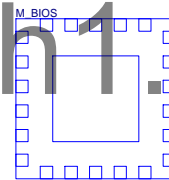
For IT8620 Ctrl1

For IT8620 Ctrl1

At least 10ms delay after 3V3DUAL\_PCH stable







\* 試産先上 , PVT 移除







TEMP H/W MONITOR

REV 1.04

RS\_VCORE, RS\_VCCGT, CLOSE CPU\_VCORE & VCCGT MOSFET

-PROCHOT: 有mos heatsink不用prochot function

VOLTAGE-- H/W MONITOR

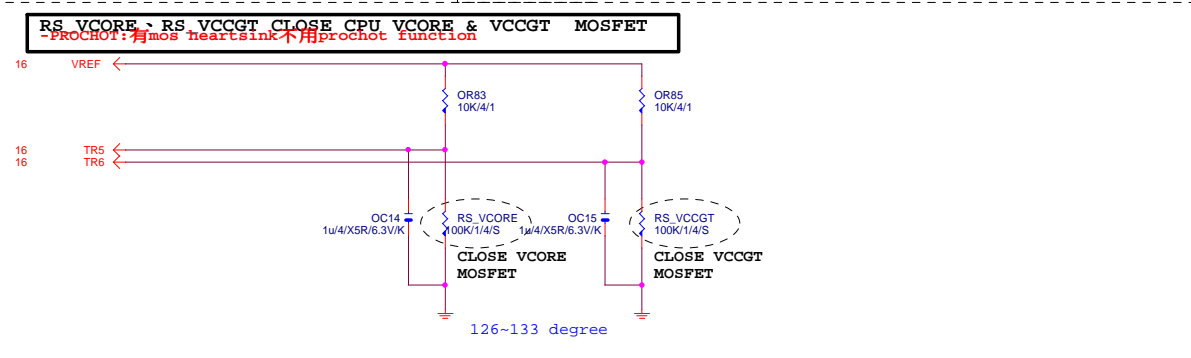
Connect to PWM

Connect to PWM

FOR EMI ONLY

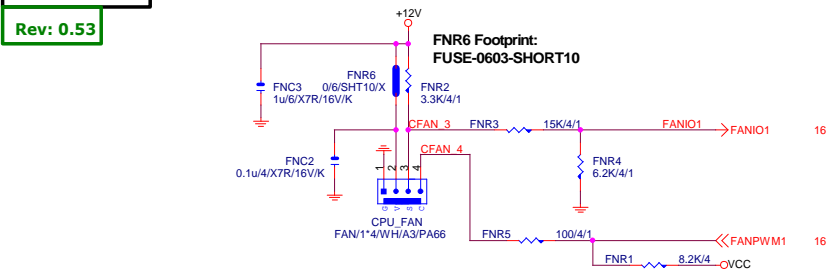
www.aitech1.ru

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



# CPU SMART FAN

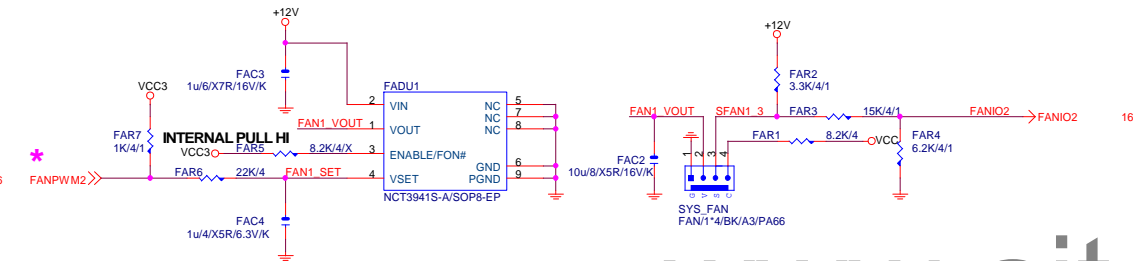
Rev: 0.53



# SYSTEM FAN1

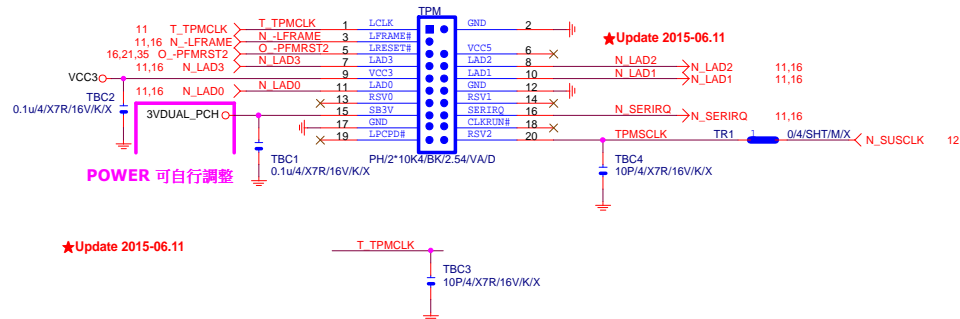
## Linear SYS\_FAN

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



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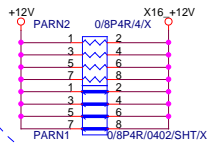
# TPM CONNECTOR



Gigabyte Technology

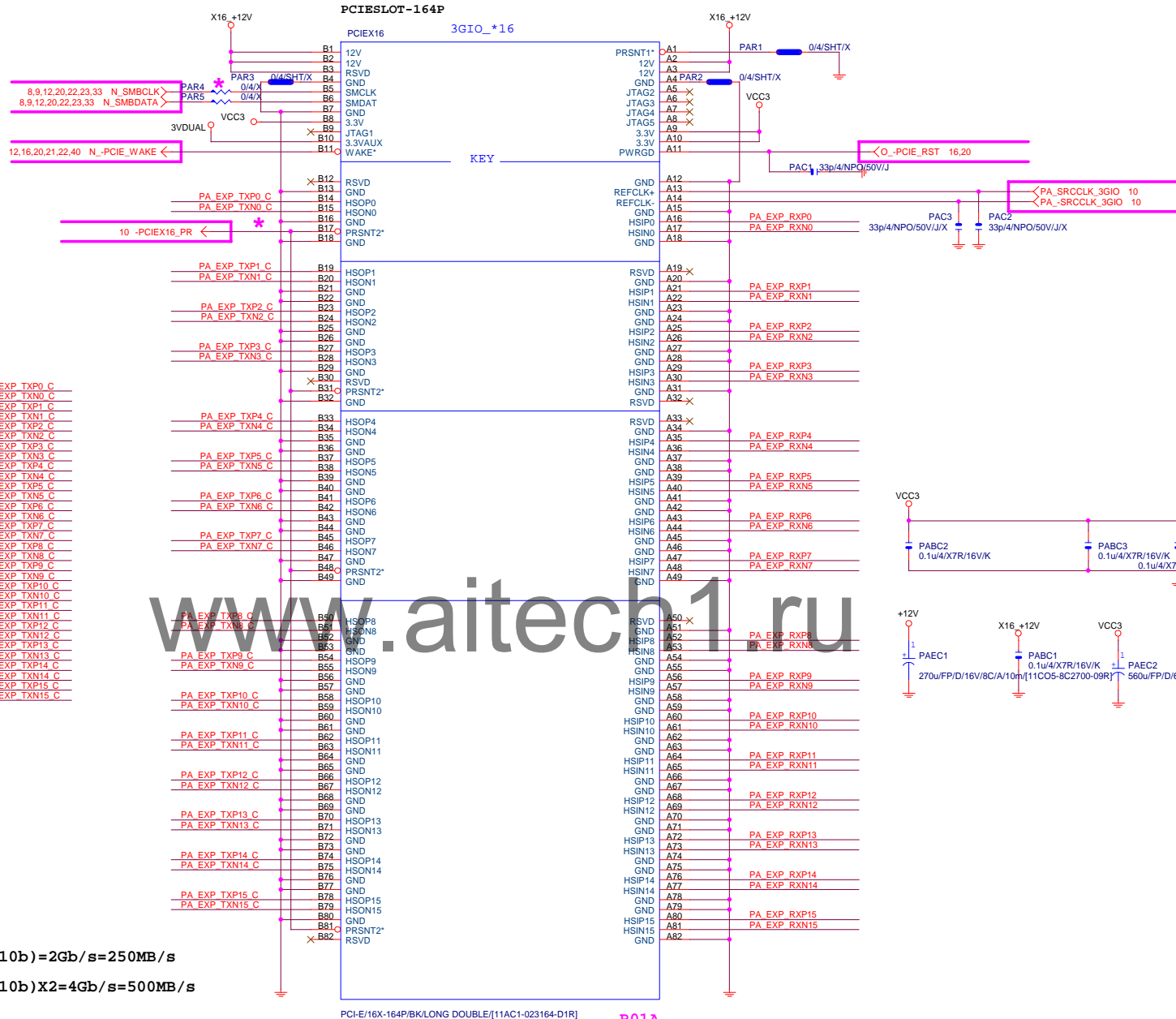
Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	GA-H110M-S2PH	1.0	
Date:	Thursday, December 10, 2015	Sheet	18 of 44

\* +12 protect short-wire test



PA\_EXP\_RXP0\_15] >> PA\_EXP\_RXP[0.15] 4  
 PA\_EXP\_RXN0\_15] >> PA\_EXP\_RXN[0.15] 4  
 PA\_EXP\_TXP0\_15] >> PA\_EXP\_TXP[0.15] 4  
 PA\_EXP\_TXN0\_15] >> 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	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8_C
PA_EXP_TXN8	PAC21	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



PCIEX16:16/5/5/5/16

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

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

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

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

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

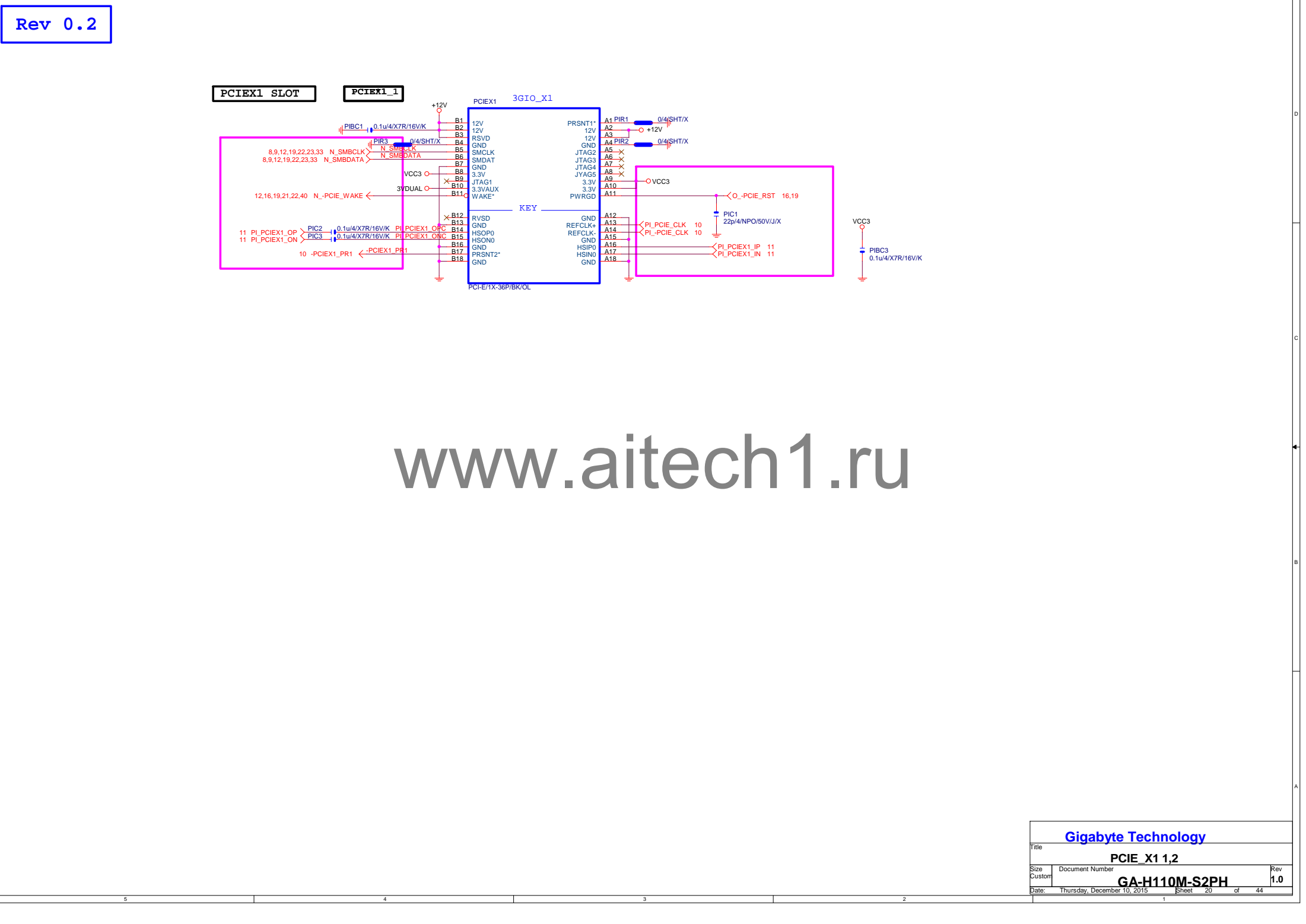
PCI-E REV:2.0--&gt; 5GHZ

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

R01A

Gigabyte Technology

Title			
PCI EXPRESS * 16			
Size	Document Number		Rev
Custom	GA-H110M-S2PH		1.0
Date:	Thursday, December 10, 2015	Sheet	19 of 44



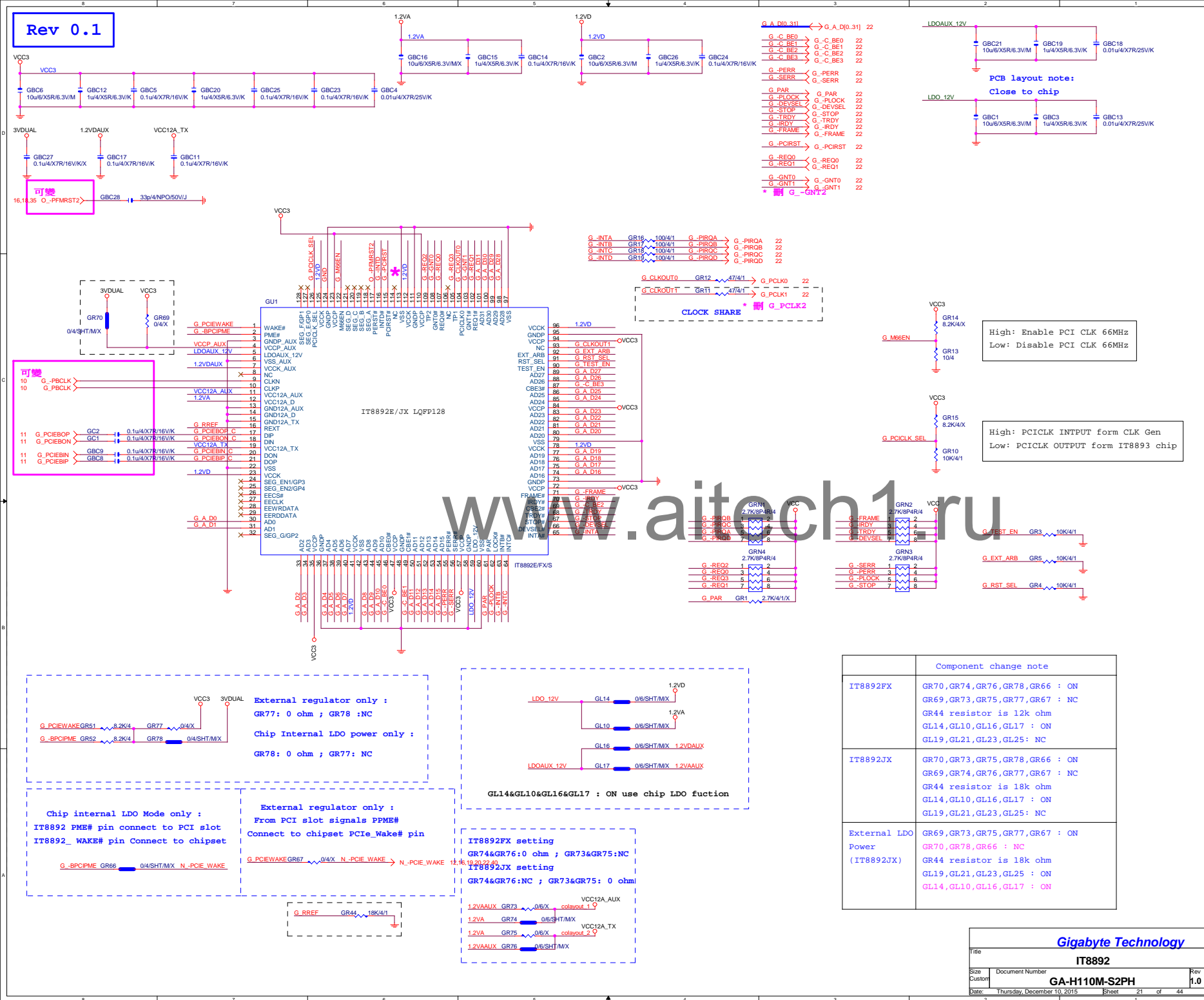
Rev 0.2

The schematic diagram illustrates the electrical connections for a PCIE X1 1,2 slot. It features three main components: the **PCIE X1 SLOT**, the **PCIE X1 1** connector, and the **PCIE X1 3GIO X1** connector. The slot and connector are shown with their respective pin numbers and functions. The **PCIE X1 1** connector is connected to the **PCIE X1 3GIO X1** connector via a series of jumpers and capacitors. The diagram includes various power planes (VCC3, VCC1, VCC2) and ground connections. Key components include capacitors (e.g., 0.1uF/4X7R/16V/K, 22pF/4/NPO/50V/J/X) and a resistor (10k/1% 0603). The diagram is labeled with 'KEY' and 'PCIE/1X-36P/BK/OL'.

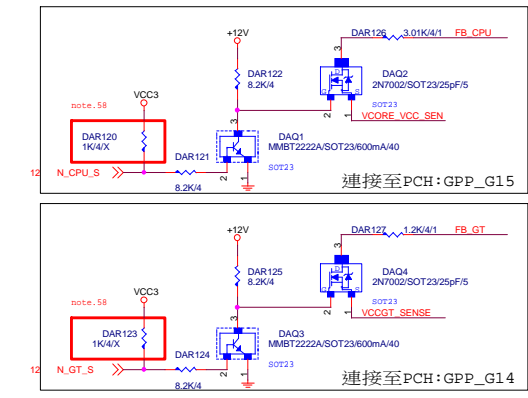
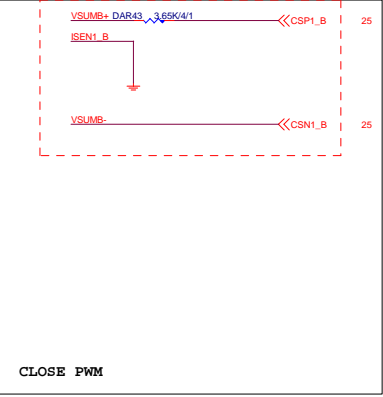
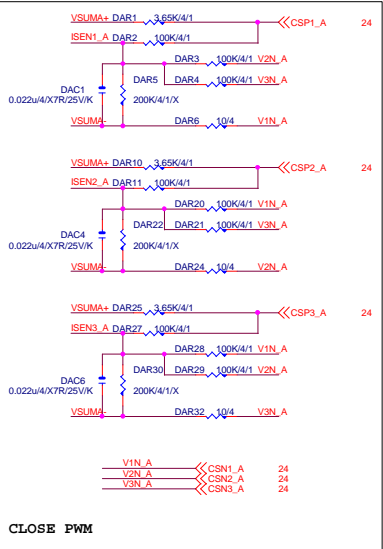
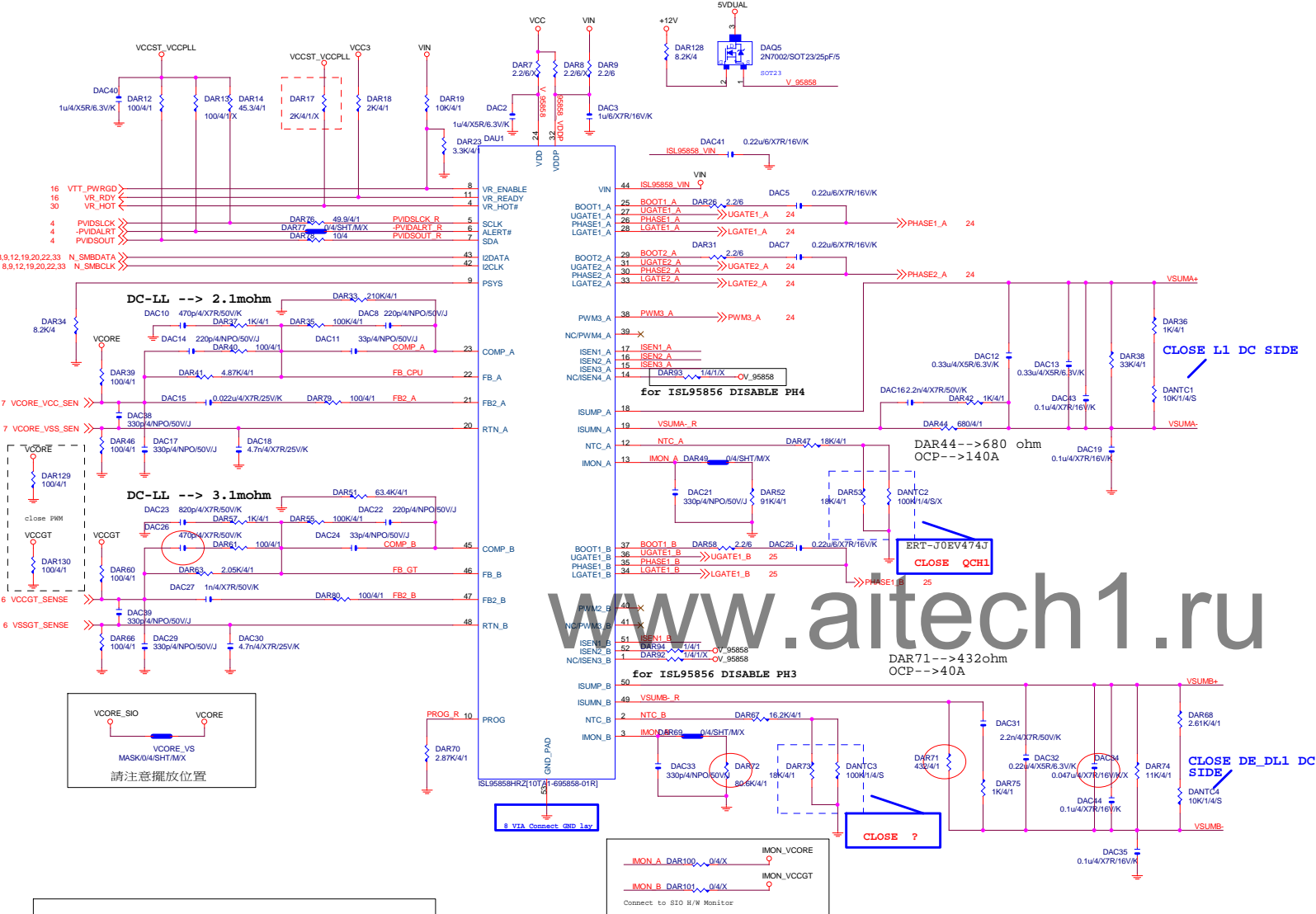
www.aitech1.ru

Gigabyte Technology			
Title PCIE X1 1,2			
Size Custom	Document Number GA-H110M-S2PH		Rev 1.0
Date:	Thursday, December 10, 2015	Sheet 20 of 44	1

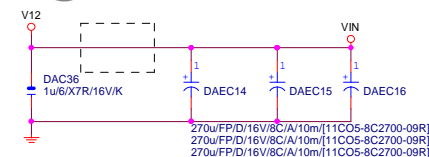
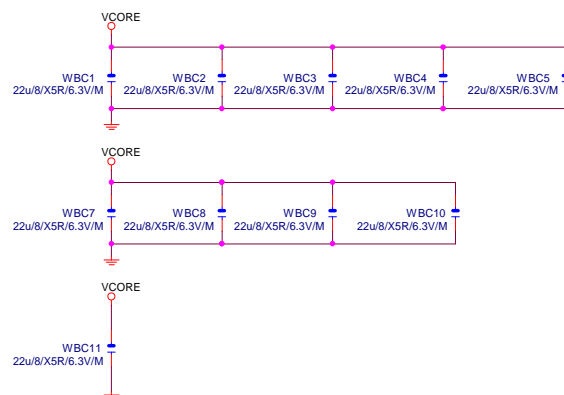
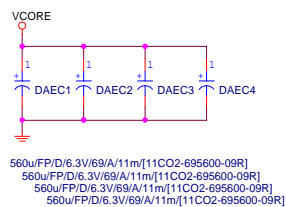
Rev 0.1







VCORE

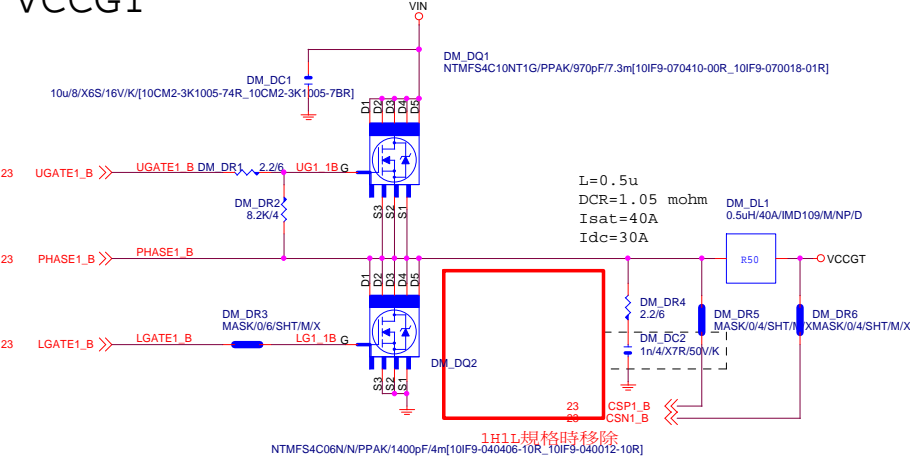
VCORE CAP 560u\*4PCS  
22u\*10PCS

**GIGABYTE™**

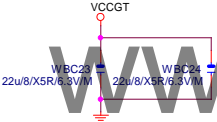
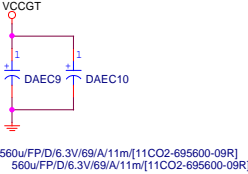
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<b>ISL95858_MOS</b>			
Size	Document Number	Rev	
Custom	<b>GA-H110M-S2PH</b>	<b>1.0</b>	
Date:	Thursday, December 10, 2015	Sheet	24 of 44



VCCGT



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

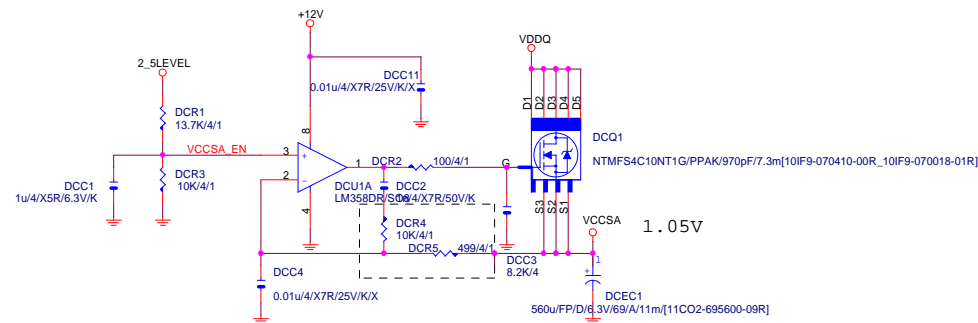


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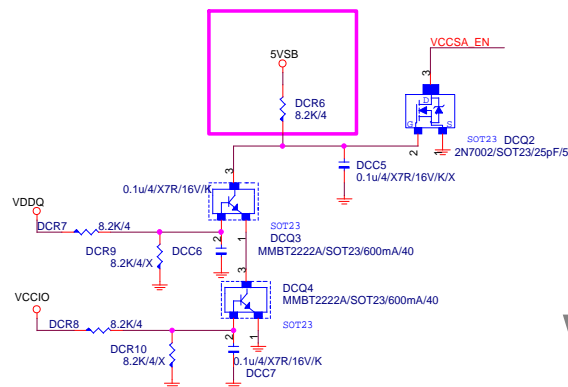
VCCSA

REV:0.4

VCCIO

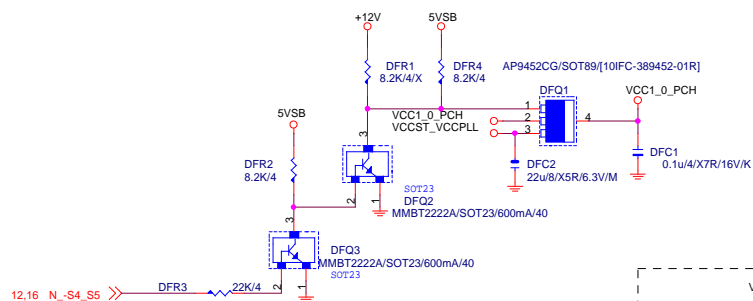


Connect to IT8620



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VCCST\_VCCPLL

VCCST\_VCCPLL  
DFC3  
22u/8/X5R/6.3V/M  
close to CPU

GIGABYTE™

Title		VCCSA_VCCIO
Size	Document Number	GA-H110M-S2PH
Custom	Rev	1.0
Date:	Thursday, December 10, 2015	Sheet 26 of 44

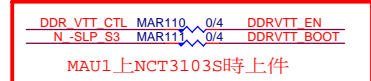
## DDR4



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DDRVTT CAP

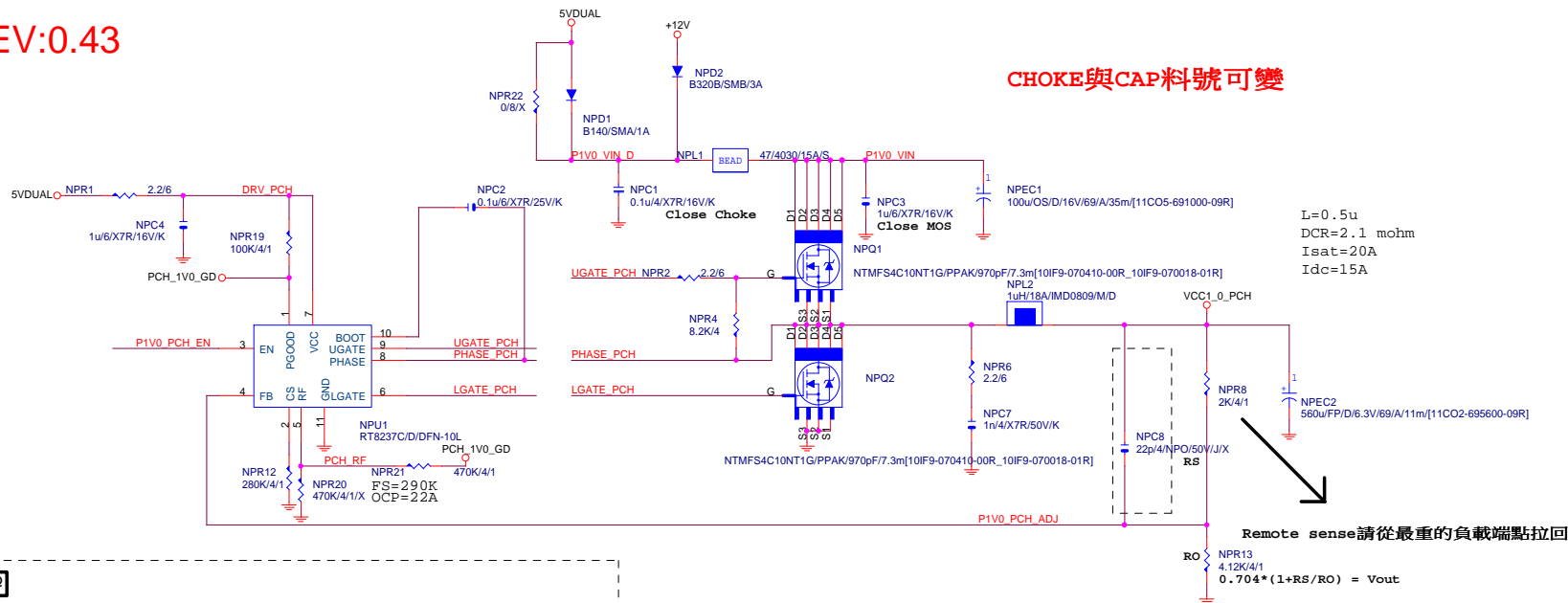


# GIGABYTE™

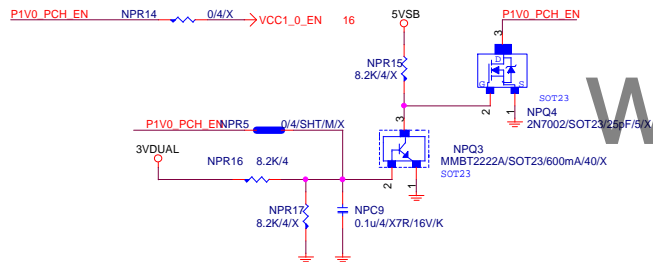
Title			
RT8120_DDR POWER			
Size	Document Number	Rev	
Custom	GA-H110M-S2PH	1.0	
Date:	Thursday, December 10, 2015	Sheet	27 of 45

REV:0.43

CHOKE與CAP料號可變



PWR SEQ



請放置CHOKEB一出來的地方

**GIGABYTE™**

Title  
**RT8237\_PCH POWER**

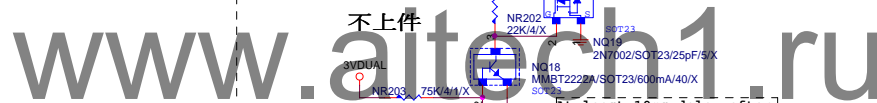
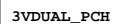
Size  
Custom Document Number  
**GA-H110M-S2PH**

Date: Thursday, December 10, 2015 Sheet 28 of 44

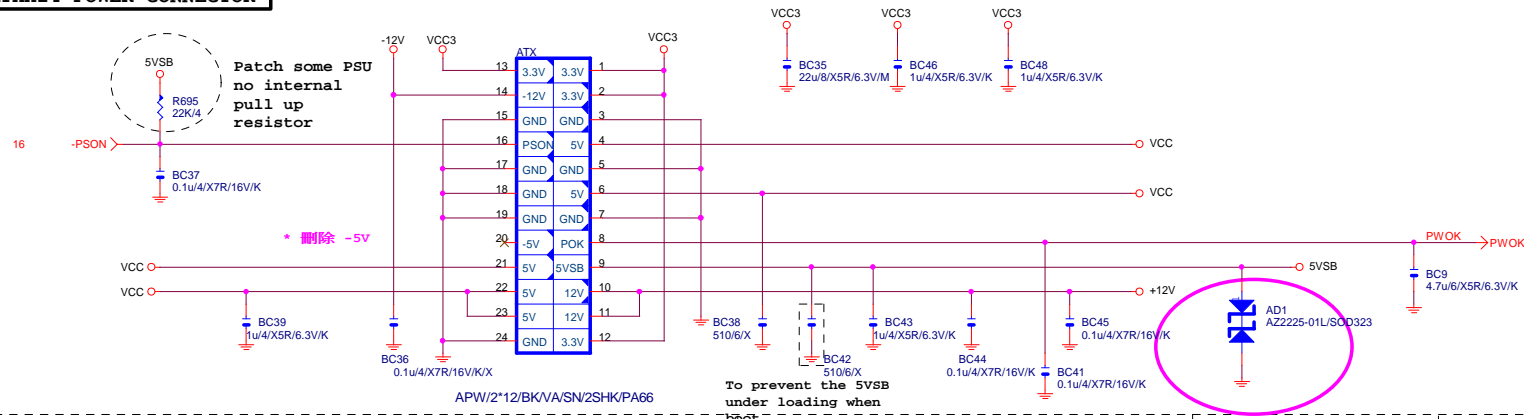
Rev  
**1.0**

## REV:0.51

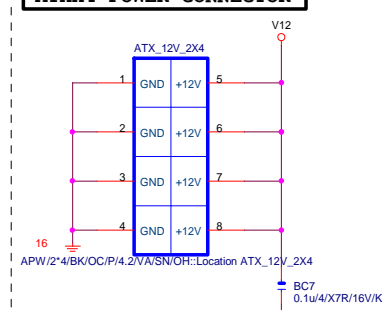
16 5VAU



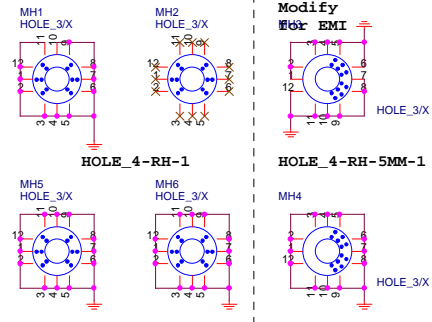
## ATXX24 POWER CONNECTOR



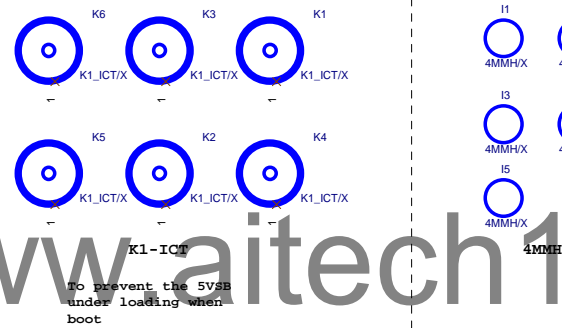
## ATXX4 POWER CONNECTOR



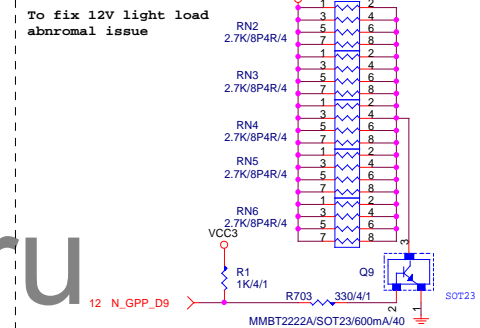
## 螺絲孔



## 固定孔/光學點

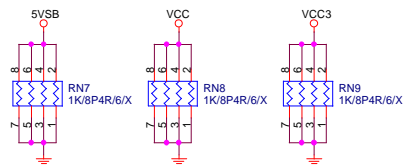


## +12V DUMMY LOAD

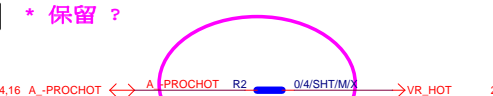


【技術通報R&D技術通報153】

## DUMMY LOAD



## -PROHOT



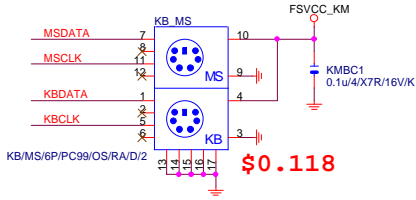
## COUPON



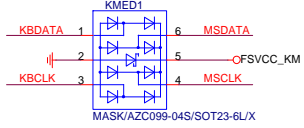
Gigabyte Technology

Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-H110M-S2PH	1.0
Date:	Thursday, December 10, 2015	Sheet 30 of 44

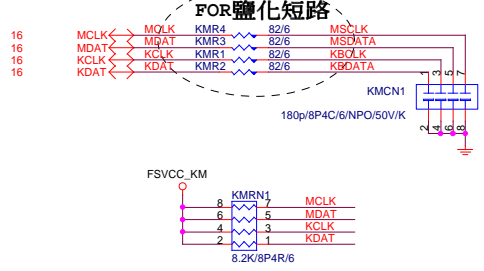
KB\_MS\_USB



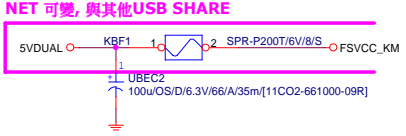
ESD



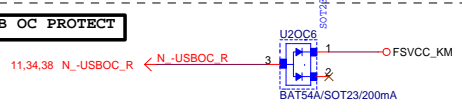
KB\_MS\_USB DAMPING/PU



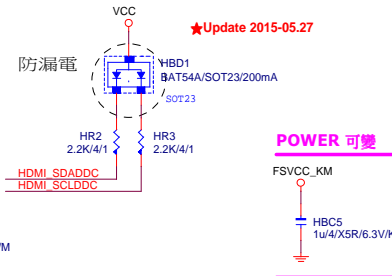
KB\_MS\_USB PWR



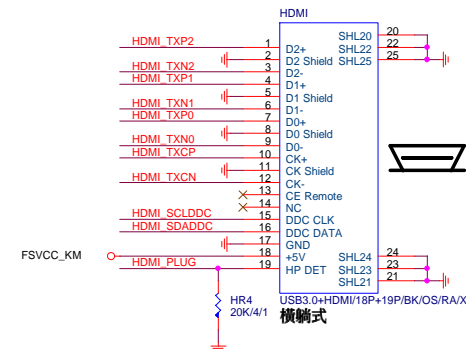
USB OC PROTECT



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【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)



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VGA RED P  
VGA GREEN P  
VGA BLUE P

DVC1  
DVC2  
DVC3

DVC4  
DVC5  
DVC6

DVC7  
DVC8  
DVC9

30/44A/S  
30/44A/S  
30/44A/S

G VGA R  
G VGA G  
G VGA B

DVR5 75/4/1  
DVR7 75/4/1  
DVR6 75/4/1

10p4N/PO/50V/J  
10p4N/PO/50V/J  
10p4N/PO/50V/J

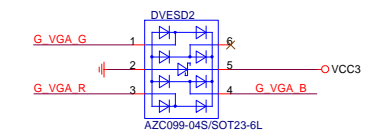
10p4N/PO/50V/J  
10p4N/PO/50V/J  
10p4N/PO/50V/J

Close to Filter

N\_VGA\_HDP\_F → N\_VGA\_HDP\_F 10

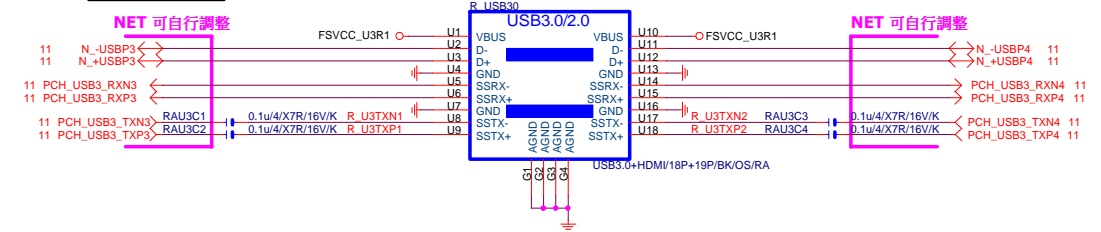
DVR18  
100K/4/1

Pin configuration diagram for the DVFS01 component. The component is a square package with six pins. Pin 1 (top left) is connected to G\_VSYNC. Pin 2 (top right) is connected to G\_VSYNC. Pin 3 (bottom left) is connected to G\_HSYNC. Pin 4 (bottom right) is connected to VGA\_SDA. Pin 5 (top center) is connected to VCC. Pin 6 (bottom center) is connected to VGA\_SCL. The component is labeled DVFS01 and AZC099-04S/SOT23-6L.

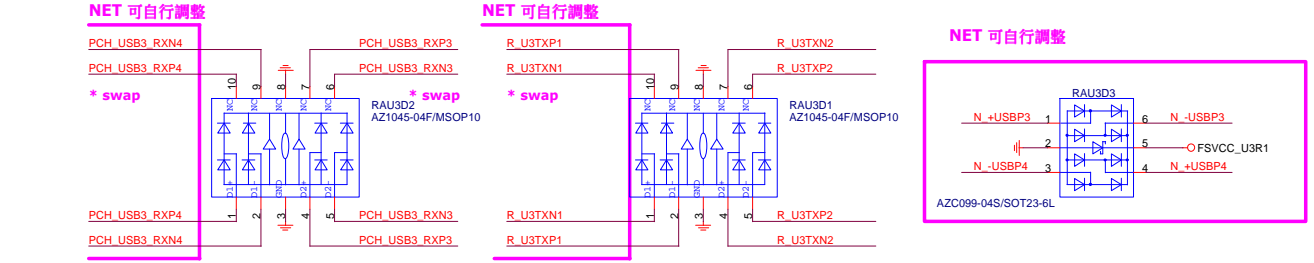


R\_USB30\_1

ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可



ESD

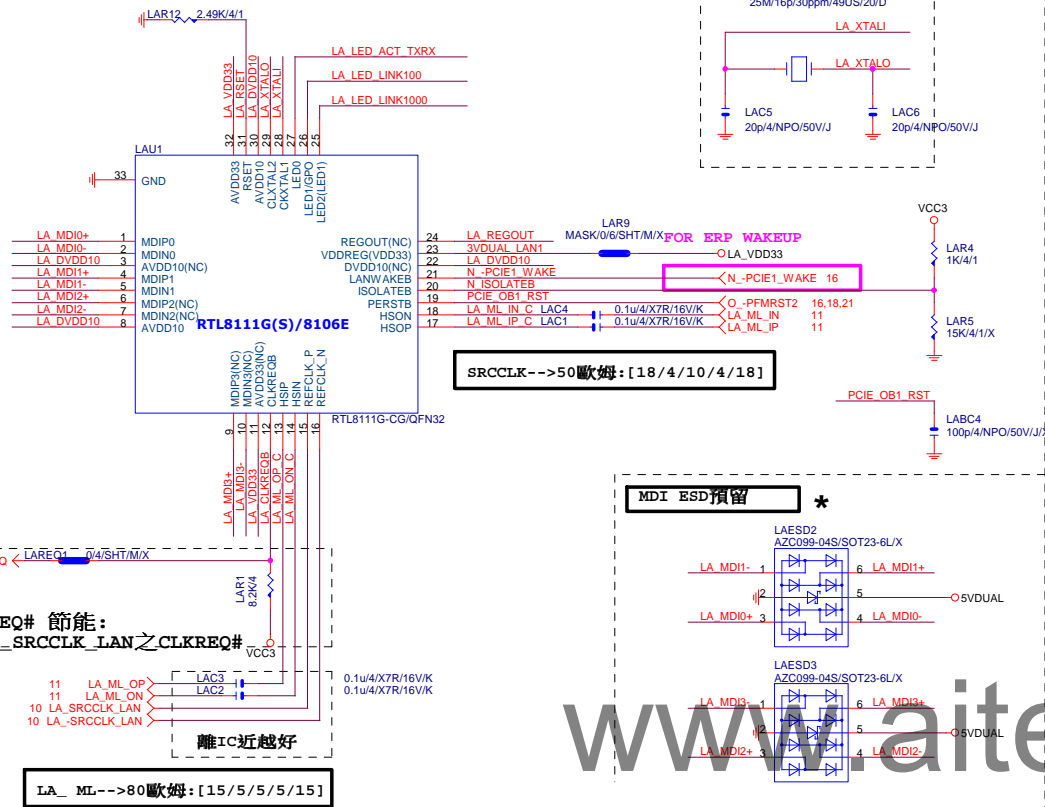


FUSE

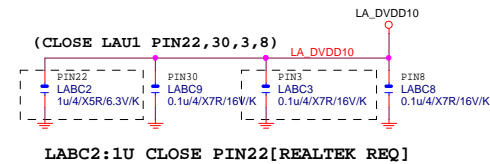


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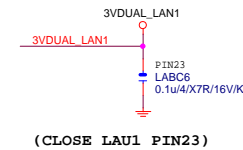
LAN:RTL8111G	R1.06
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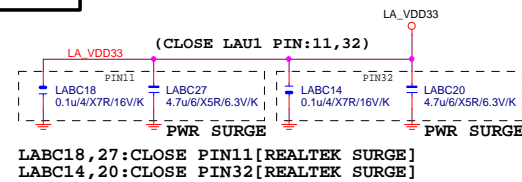
## LAN POWER



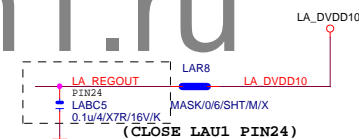
## LAN POWER



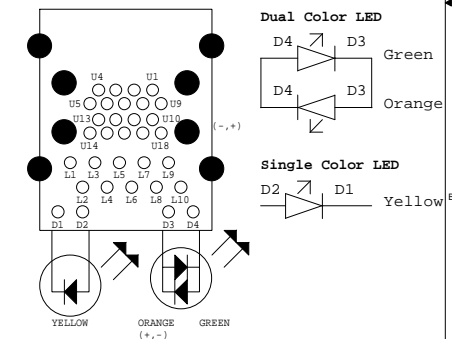
## LAN POWER



## LAN POWER

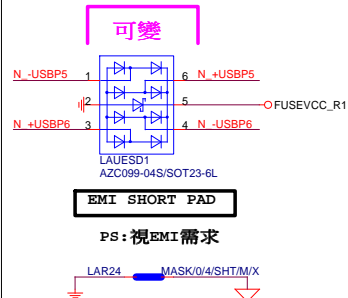


### USB30\_LAN LAYOUT示意圖



USB_LAN CONNECTOR	R1.06
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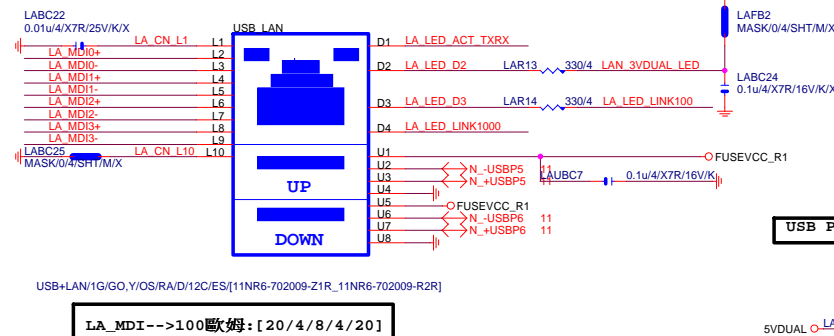
RMA ESD PROTECT
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USB\_LAN CONNECTOR

note:可變更USB NAME


## [RTL8111G]



USB POWER

note:可變更FUSE

可變

5VDUAL LAU3F1 1  2 SPR-P260T/6V/8/S FUSEVCC\_R1

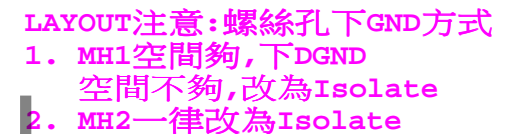
**Close to connector FUSE-0805**

**Gigabyte Technology**

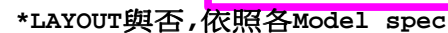
## Realtek RTL8111GUS

**GA-H110M-S2PH**

Rev	
<b>1.0</b>	



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



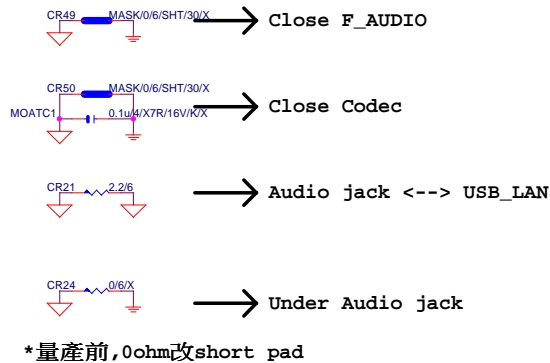
VALUE可變,LED顏色請自行修改  
(預設:低亮度黃色LED:LED/Y/6/S)

LAYOUT注意:要加  
GND切割線

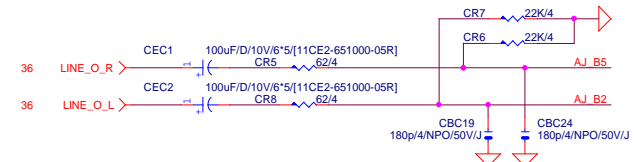
## 音效區域印刷

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)

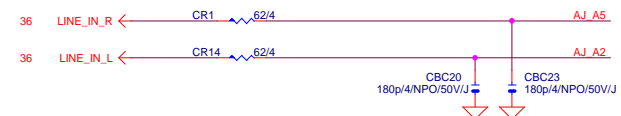
Rev 0.4



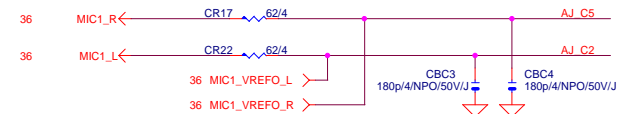
#### LINE-OUT



#### LINE-IN



#### MIC-IN

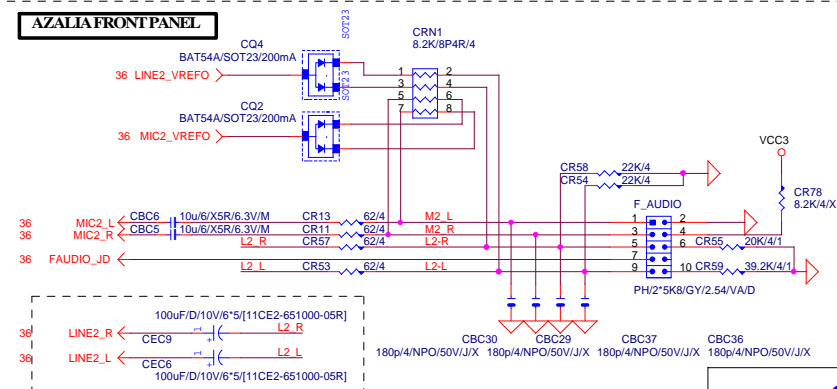


#### SURROUND

#### CEN/LFE

#### SURRBACK

#### AZALIA FRONT PANEL



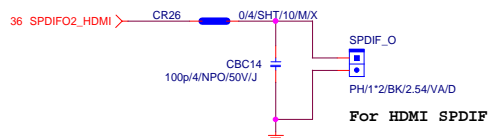
Gigabyte Technology

AUDIO JACK

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

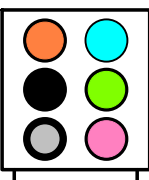
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#### SPDIF\_OUT

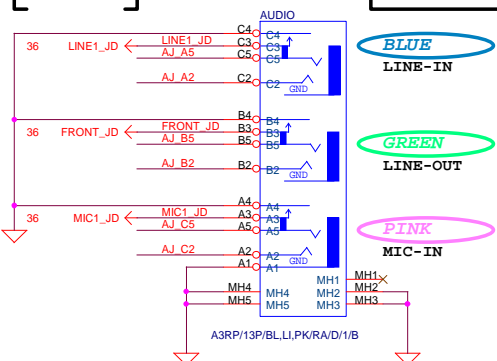


#### SPDIF\_IN

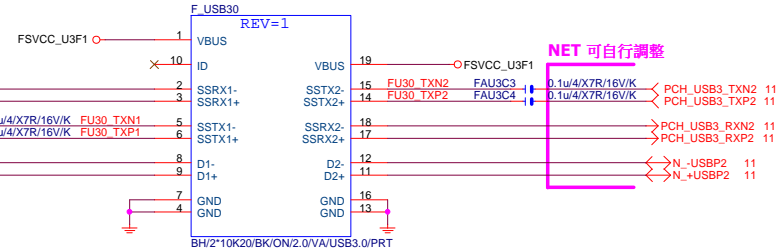
#### AZALIA JACK



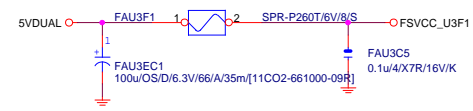
#### AZALIA JACK



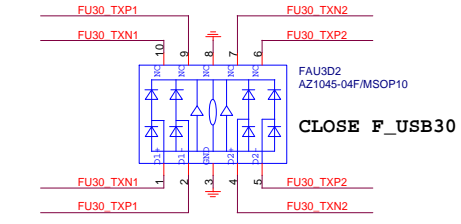
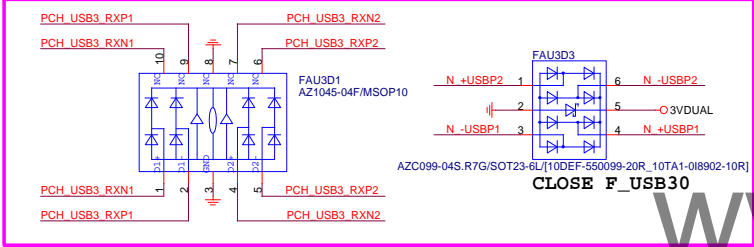
Front USB3.0



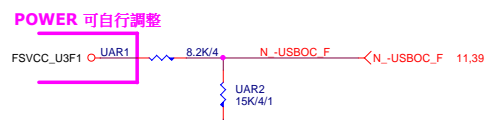
F\_USB30\_PWR



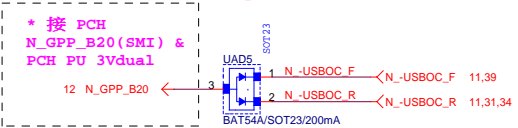
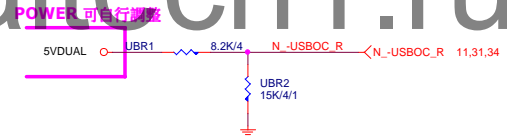
NET 可自行調整



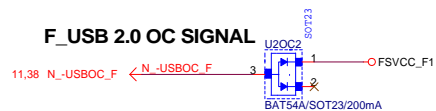
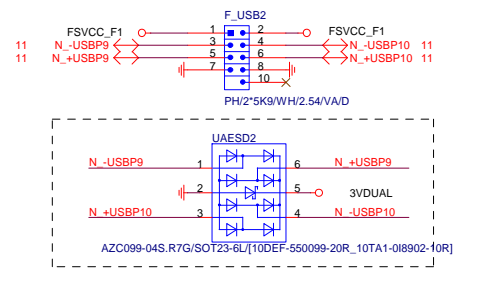
-USBOC\_F



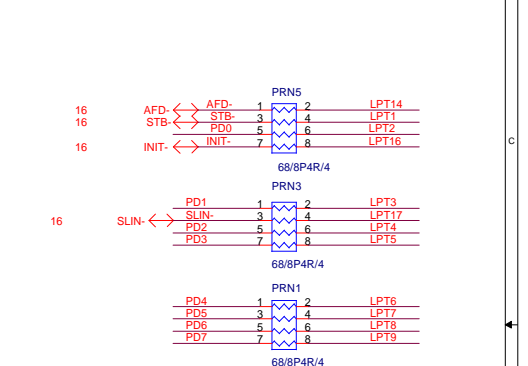
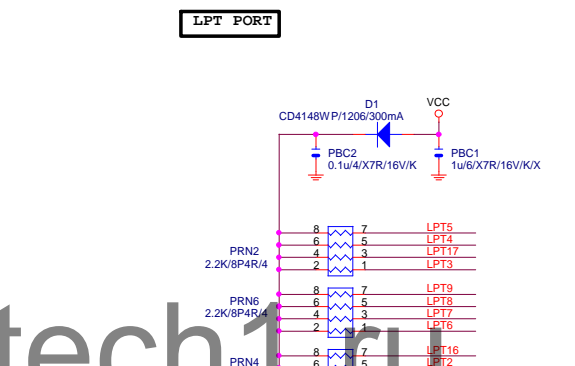
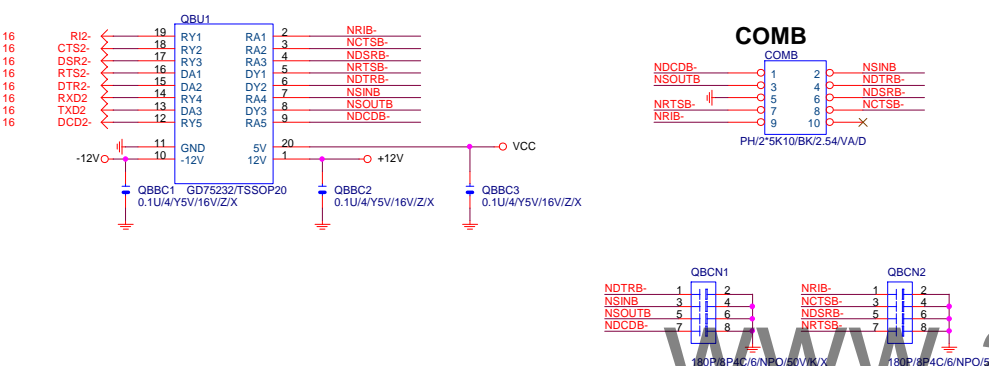
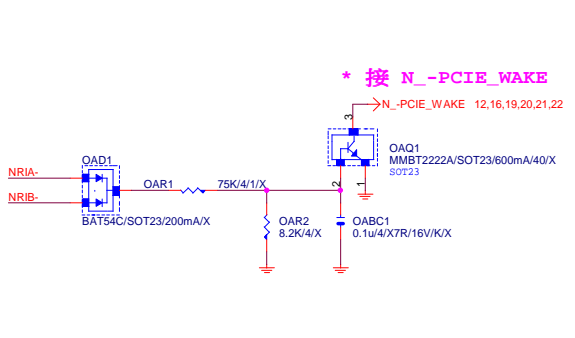
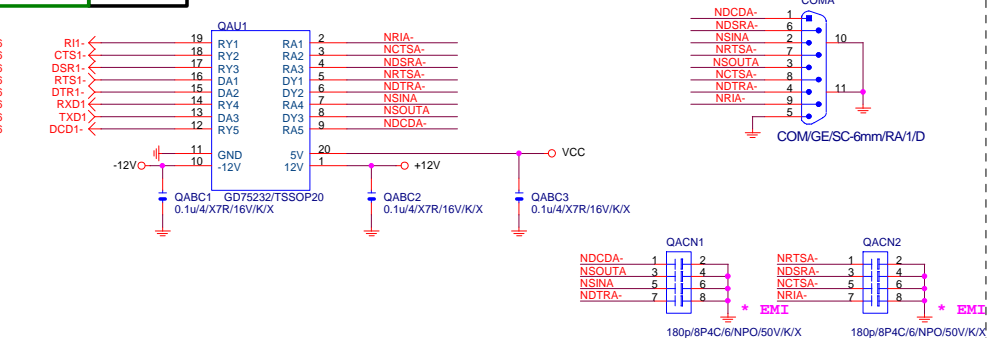
-USBOC\_R



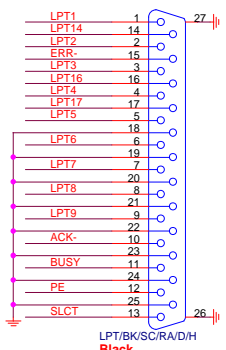
## NET 可變



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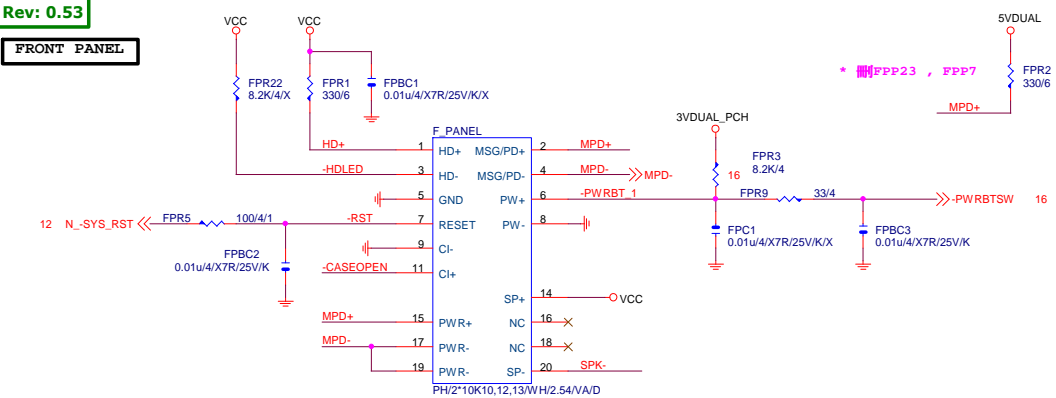


★Update 2015.03.24

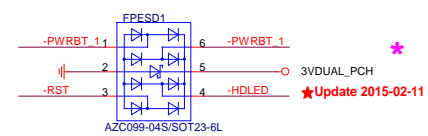




FRONT PANEL



ESD

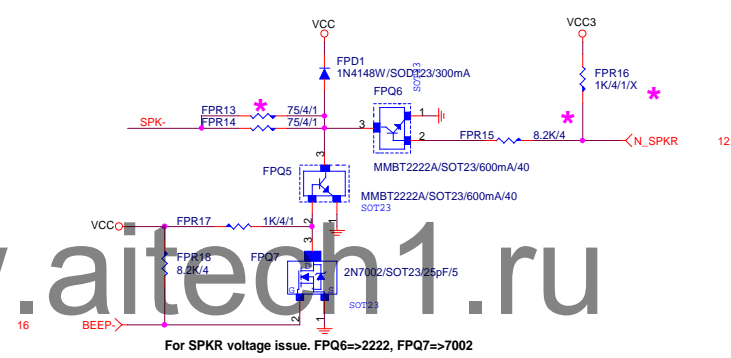


FOOTPRINT: PIN2X10PANEL-NEW

CASE OPEN

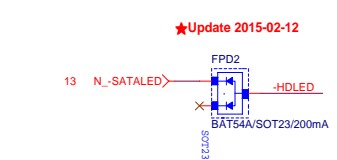


SPKR



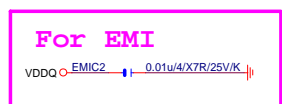
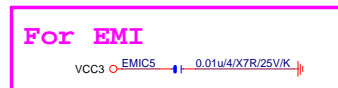
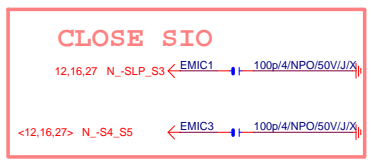
SATA LED

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

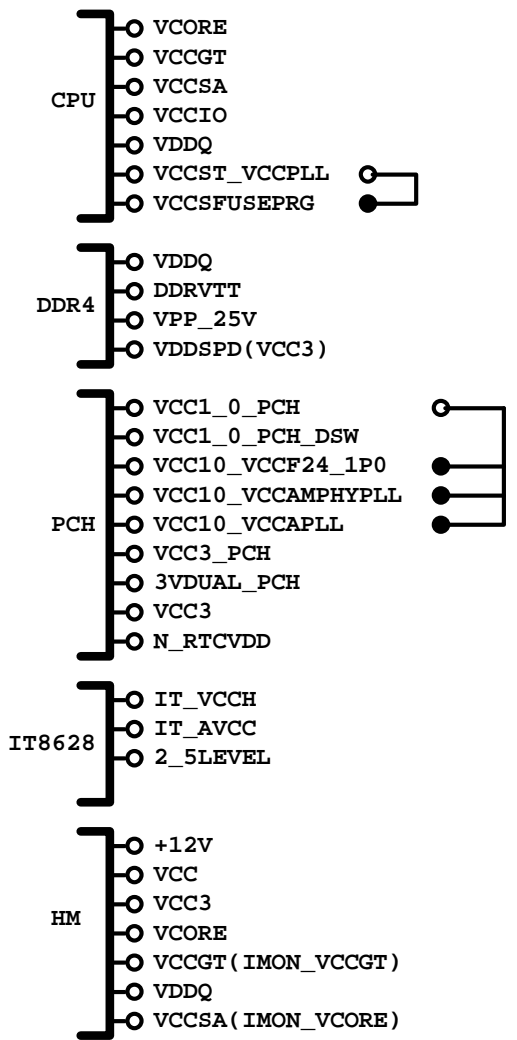


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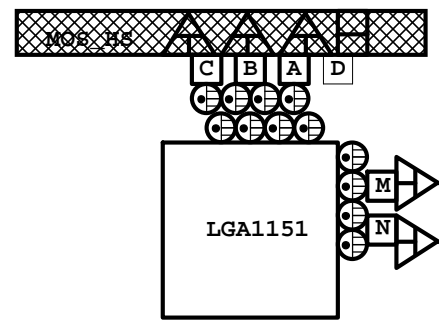
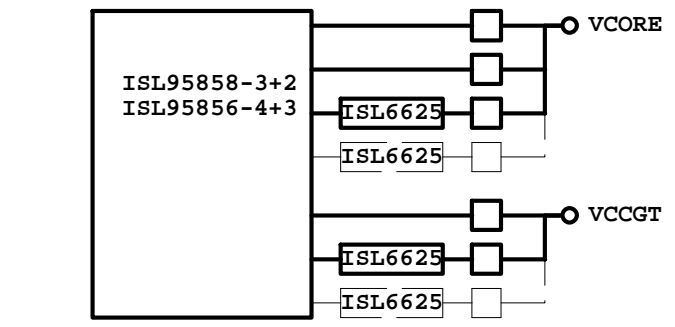
EMI/ESD R0.1



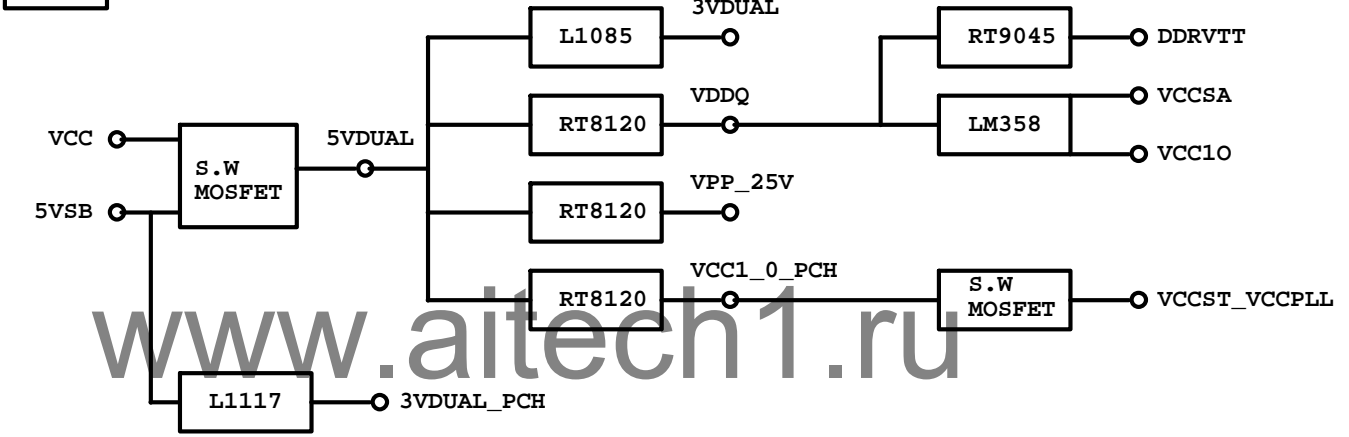
# POWER BLOCK MAP



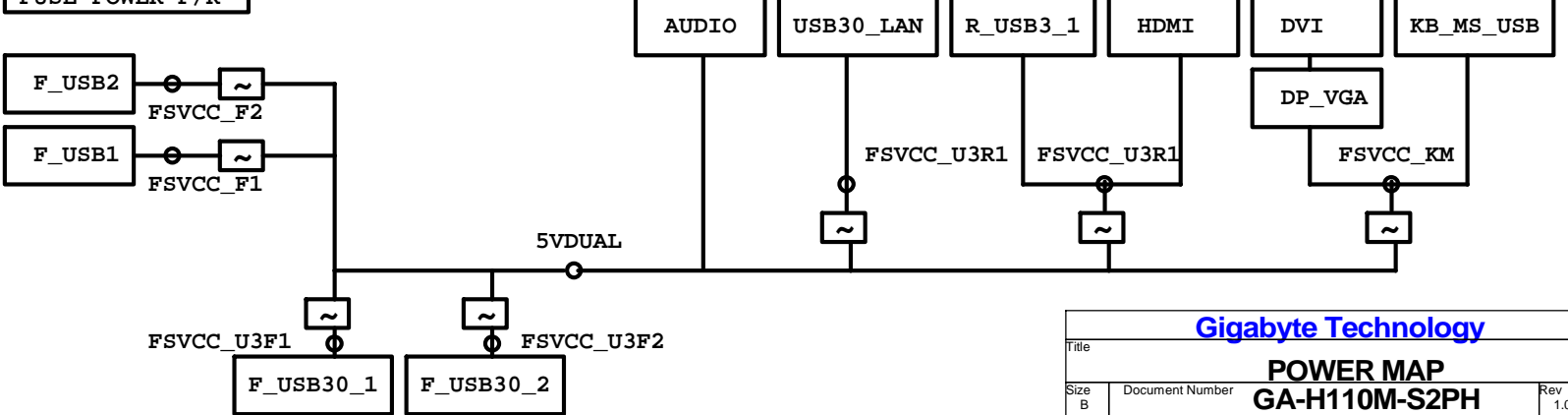
# VCORE/VCCGT



# POWER



# FUSE POWER F/R



Gigabyte Technology			
Title			
POWER MAP			
Size	Document Number	GA-H110M-S2PH	
B		Rev 1.0	
Date:	Thursday, December 10, 2015	Sheet	42 of 44

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



Title

POWER零件使用表

Size Custom

Document Number

Rev

GA-H110M-S2PH

1.0

Date: Thursday, December 10, 2015

Sheet 43 of 44

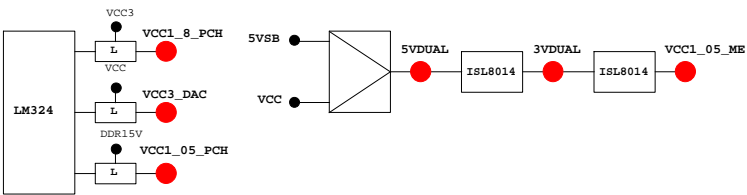
1

PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	N/A
GP2/PIRQ#	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	LPCPME#	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

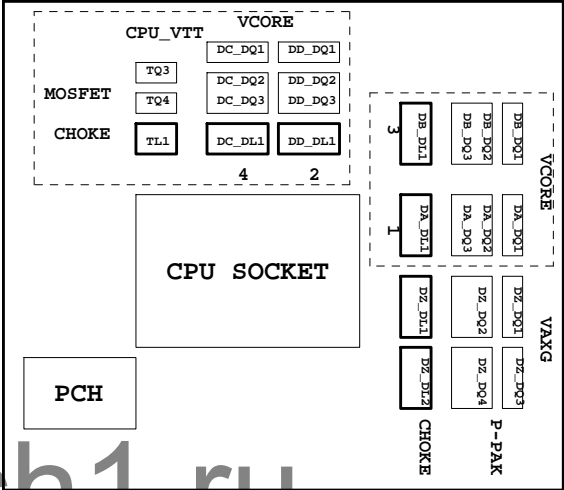
Super I/O ITE8720 GPIO Table

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	-PWRST1	
PCIRST1#/GP12	-PWRST2	
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	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/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：

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 Terminatio
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

