

Model Name: GA-Z170X-Gaming 3 EU

SHEET TITLE Rev 1.02

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1150-A
05	CPU_LGA1150-B_DDR4
06	CPU_LGA1150-C
07	CPU_LGA1150-D
08	DDR4 CHANNEL A 1,2
09	DDR4 CHANNEL B 1,2
10	PCH_RGB,CLK BUFFER
11	PCH DMI,USB,PCIE
12	PCH MISC
13	PCH SATA,PCIE,SATA EXPRESS
14	PCH_PWR,GND
15	DUAL BIOS
16	ITE 8628 LPC IO
17	HMW
18	FAN CTRL--SIO
19	PCI EXPRESS X16 SLOT
20	PCI EXPRESS X4 SLOT(PCH)
21	PCI EXPRESS X1 SLOTS
22	M.2 X4
23	SATA EXPRESS
24	ISL95856 PWM
25	ISL95856 MOS_VCORE
26	ISL95856 MOS_VCCGT
27	VCCSA_VCCIO_VCCPLL
28	RT8120_DDR

SHEET TITLE

29	RT8120_VPP
30	RT8120_PCH
31	DISCRETE POWER1
32	NCT3933
33	ATX POWER , A_-PROCHOT
34	KB_MS_USB
35	DVI CONN
36	PTN3356 - DP to VGA - IC
37	PTN3356 - DP to VGA - Conn
38	HDMI CONN_170
39	R_USB30
40	KILLER E2201
41	USB30 LAN CONNECTOR-E2201
42	Realtek ALC1150
43	REAR AUDIO JACK
44	Audio Power
45	F_USB30
46	F_USB BOX Header
47	COM,TPM,THB
48	F_PANEL
49	PCI EXPRESS X8 SLOT
50	PCI EXPRESS X16 SWITCH
51	IDT6V41530_CLK BUFFER
52	ALPINE RIDGE CIO & DP
53	ALPINE RIDGE POWER
54	HD3SS3212&TUSB321_A
55	EMI ESD
56	2nd M.2 X4
57	M.2 SWITCH
58	TABLE LIST

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Model Name: GA-Z170X-Gaming 3 EU

Rev 1.02

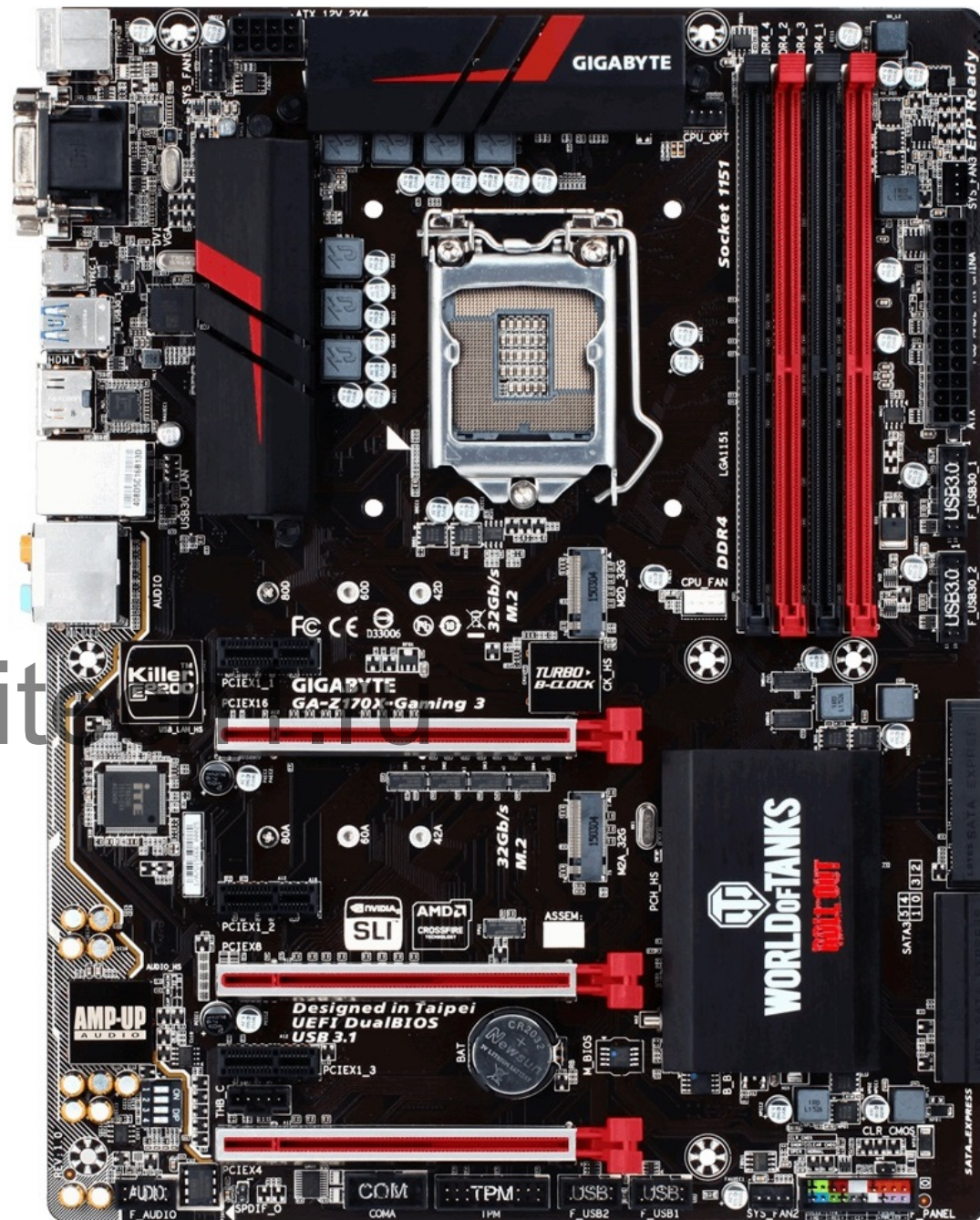
Component value change history

P-Code: U15003-0

Data	Change Item	Reason
2015/03/06	1. BOM first release ,Modify from 9MZ174SLI-00-01B	0.1 New BOM Release PCB:0.1
2015/05/08	1. BOM first release ,Modify from 9MZ17XGM3-00-01	0.1 New BOM Release PCB:0.1
2015/06/18	1.Modify PCH XTAL layout routing , 2.Modify A.R. Type-C CC logic , 3.Modify Codec LED 切割線拉直 , 4.Change HDMI A.R. to PCH LS , 5.Modify DDR ,PCH ,VPP25 output chock .OCP	1.0A E-BOM Release. PCB:1.0
2015/06/29	1.Modify VDDQ ,VCC1_0_PCH ,VDDSPD power	9.0A E-BOM Release. PCB:9.0
2015/07/06	1.Modify MA_DR9 2.2/6 2.Update A.R. module R0.62 3.Remove.PCB killer logo silkscreen 4.Remove M_BIOS socket cover	1.0B P-BOM Release. PCB:1.01
2015/07/06	EU assembly code for 歐洲客戶 (客製化 PCH_HS 42SP2-PF47G3-24R)	1.0B P-BOM Release. PCB:1.01
2015/07/07	1.NPR11 改 34K/4/1	1.0C P-BOM Release. PCB:1.01
2015/07/09	1.THR82,83,18,15 2.2K to 100K 2.DFQ1 Change AP9452GG/SOT89/[10IFC-389452-01R]	1.0D P-BOM Release. PCB:1.01
2015/07/27	1.LAN_COVER 舊料庫存已用完,切換至新料 11NH1-LNC001-02R	1.0E P-BOM Release. PCB:1.01
2015/12/29	1.THU1 add second-source 10HB2-G06540-20R	1.0E P-BOM Release. PCB:1.01
2016/01/14	1.Modify DAC42 layout 位置 for MOS_HS drop issue	1.0F P-BOM Release. PCB:1.02

Circuit or PCB layout change

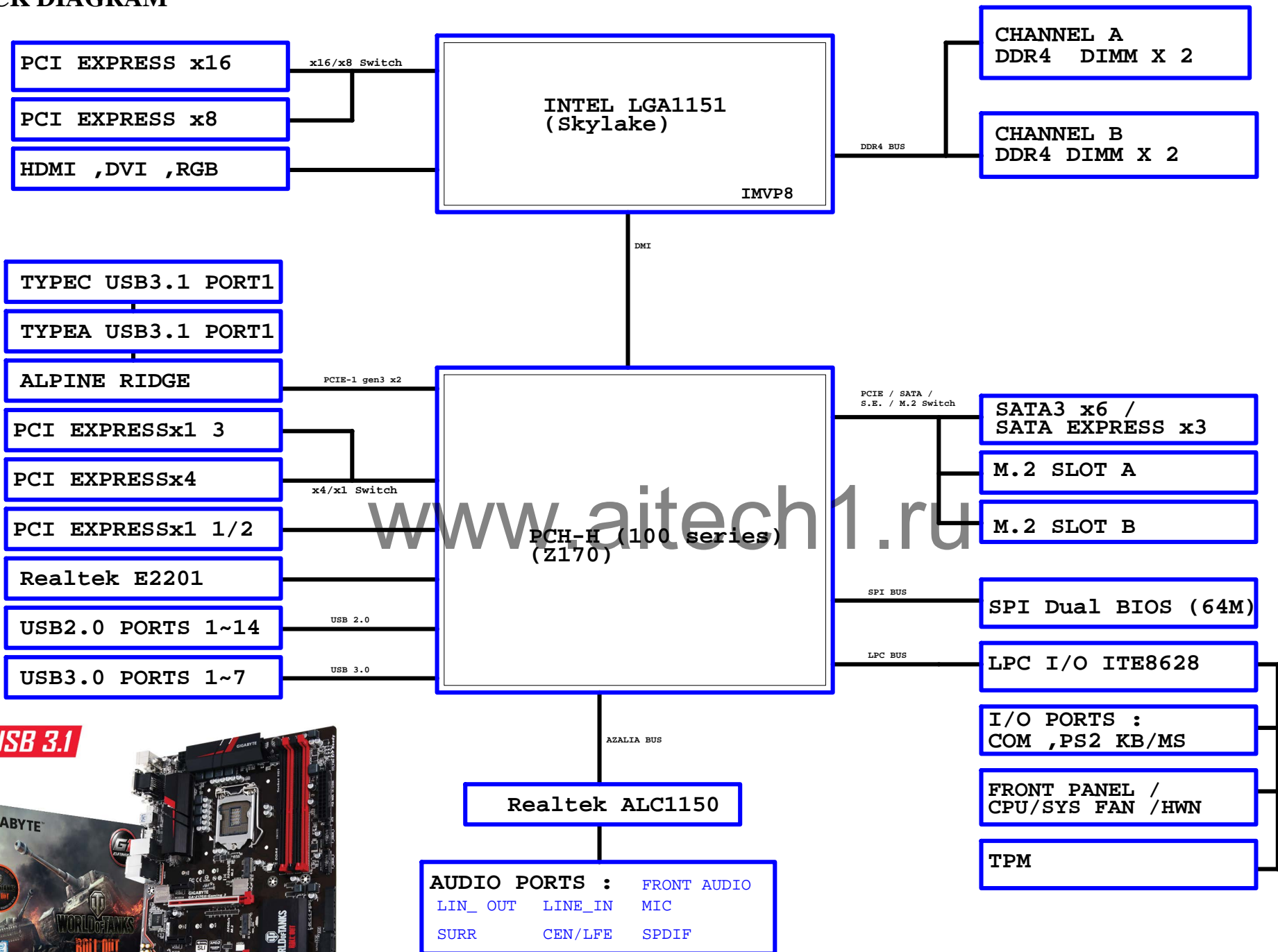
2015/03/05	1.PCB first release ,Modify from GA-Z1704X-SLI Rev0.2	REV 0.1 Gerber-out
2015/05/07	1.Model name change ,Spec modify , 2.Modify from GA-Z1704X-Gaming 3 Rev0.1	REV 0.1 Gerber-out
2015/06/17	1.Modify PCH XTAL layout routing , 2.Modify A.R. Type-C CC logic , 3.Modify Codec LED 切割線拉直 , 4.Change HDMI A.R. to PCH LS	REV 1.0 Gerber-out
2015/06/26	1.Modify VDDQ ,VCC1_0_PCH ,VDDSPD power	REV 9.0 Gerber-out
2015/07/03	1.Modify MA_DR9 2.2/6 2.Update A.R. module R0.62 3.Remove.PCB killer logo silkscreen 4.Remove M_BIOS socket cover	REV 1.01 Gerber-out
2016/01/14	1.Modify DAC42 layout 位置 for MOS_HS drop issue	REV 1.02 Gerber-out



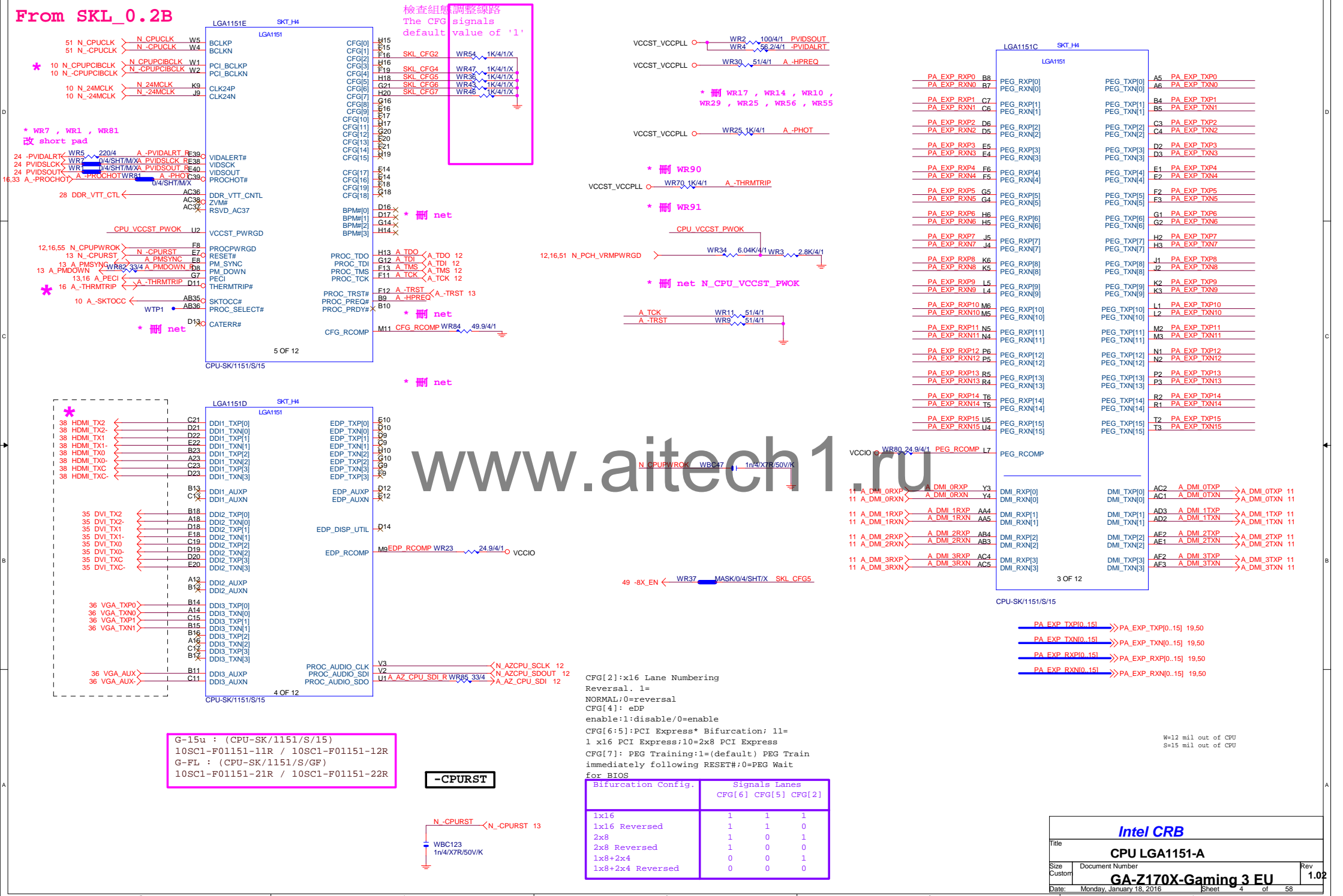
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BOM & PCB MODIFY HISTORY		
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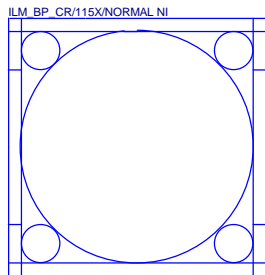
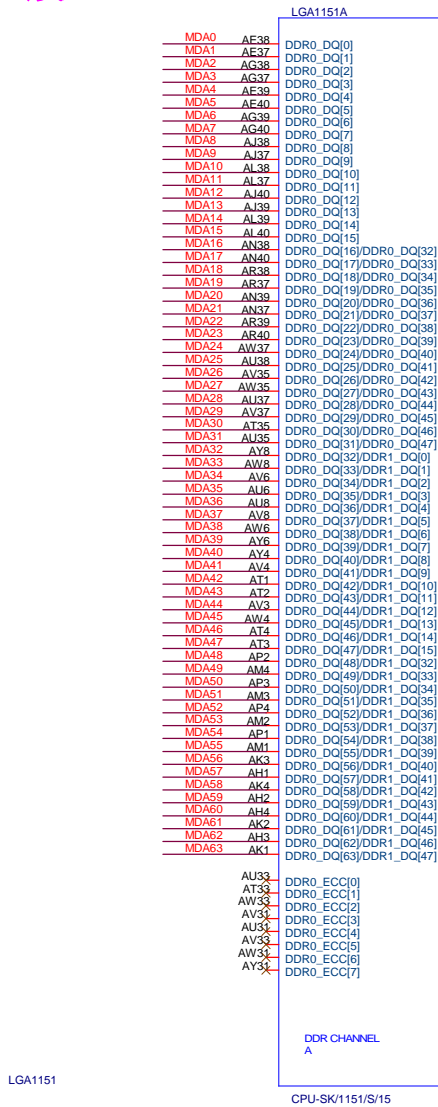
BLOCK DIAGRAM



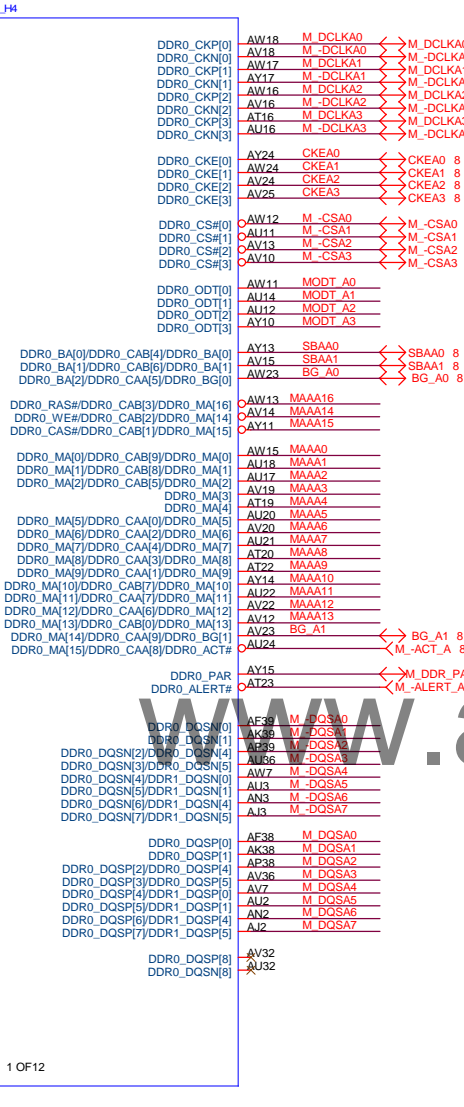
From SKL_0.2B



* 改DDR4 net

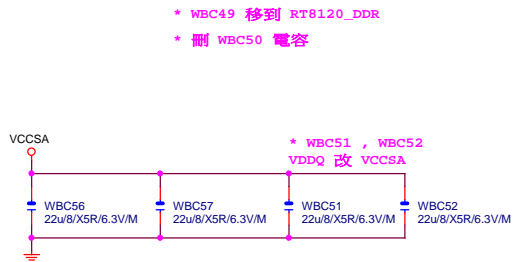


Need check the new CPU ME



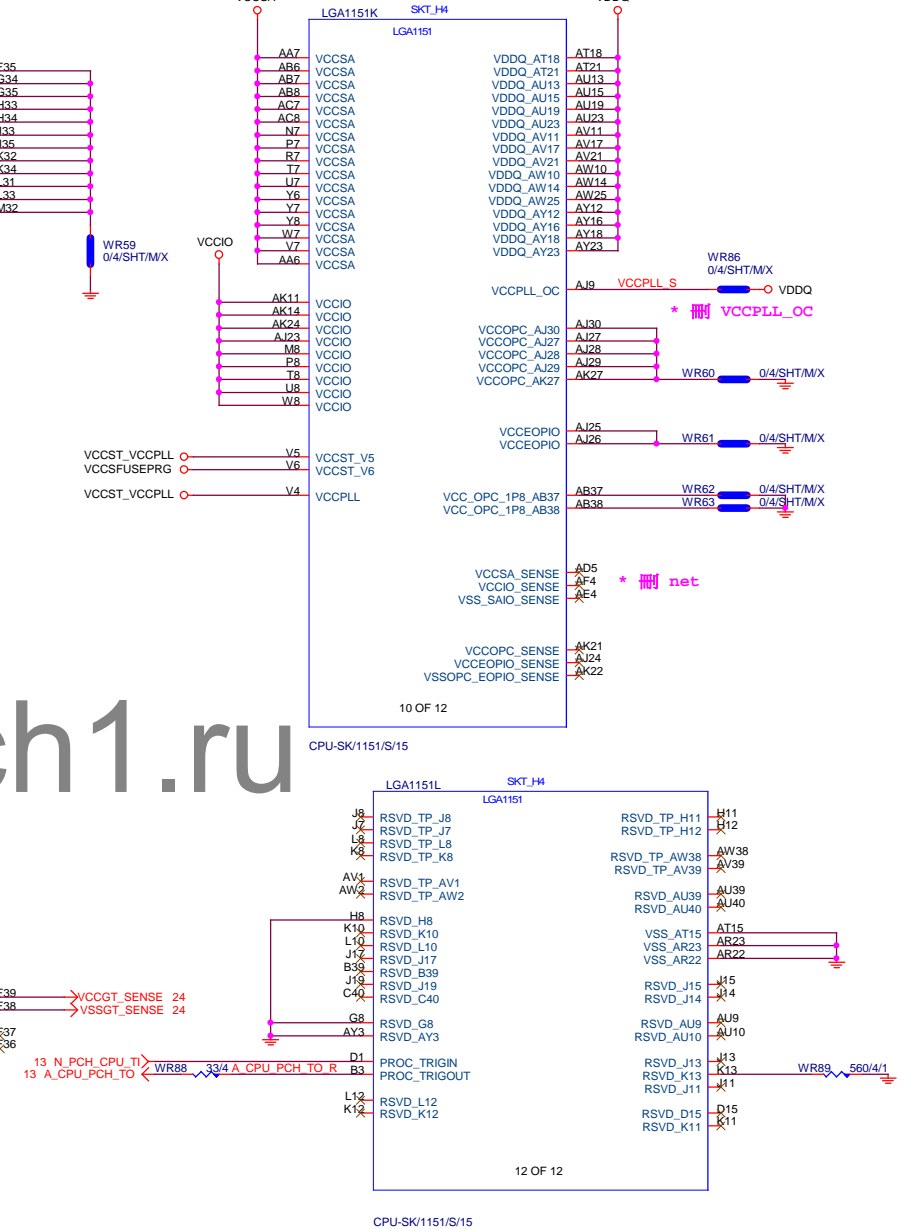
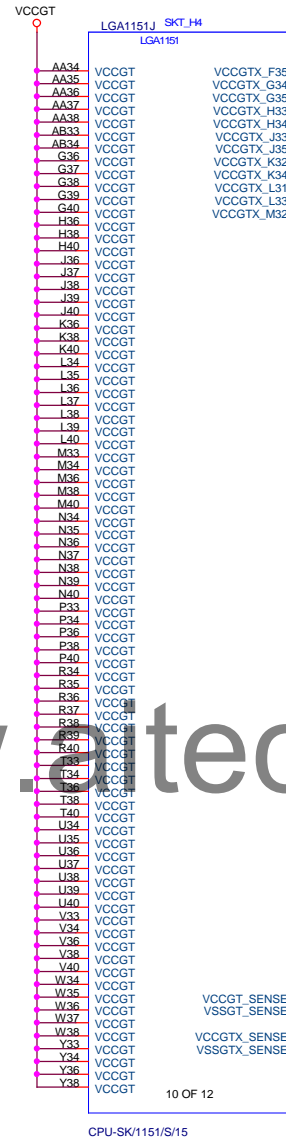
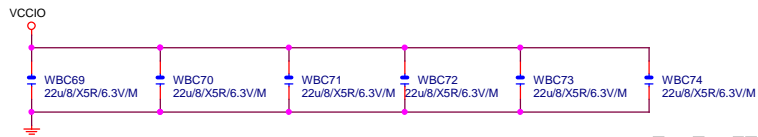
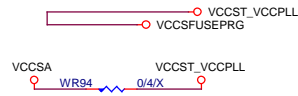
- 8 MODT_A[0..3] <=> MODT_A10..31
- 9 MODT_B[0..3] <=> MODT_B10..31
- 8 MDA[0..63] <=> MDA10..631
- 9 MDB[0..63] <=> MDB10..631
- 8 M_DQSA[0..7] <=> M_DQSA10..71
- 8 M_-DQSA[0..7] <=> M_-DQSA10..71
- 8 MAA[0..16] <=> MAA10..161
- 9 MAAB[0..16] <=> MAAB10..161
- 9 M_DQSB[0..7] <=> M_DQSB10..71
- 9 M_-DQSB[0..7] <=> M_-DQSB10..71

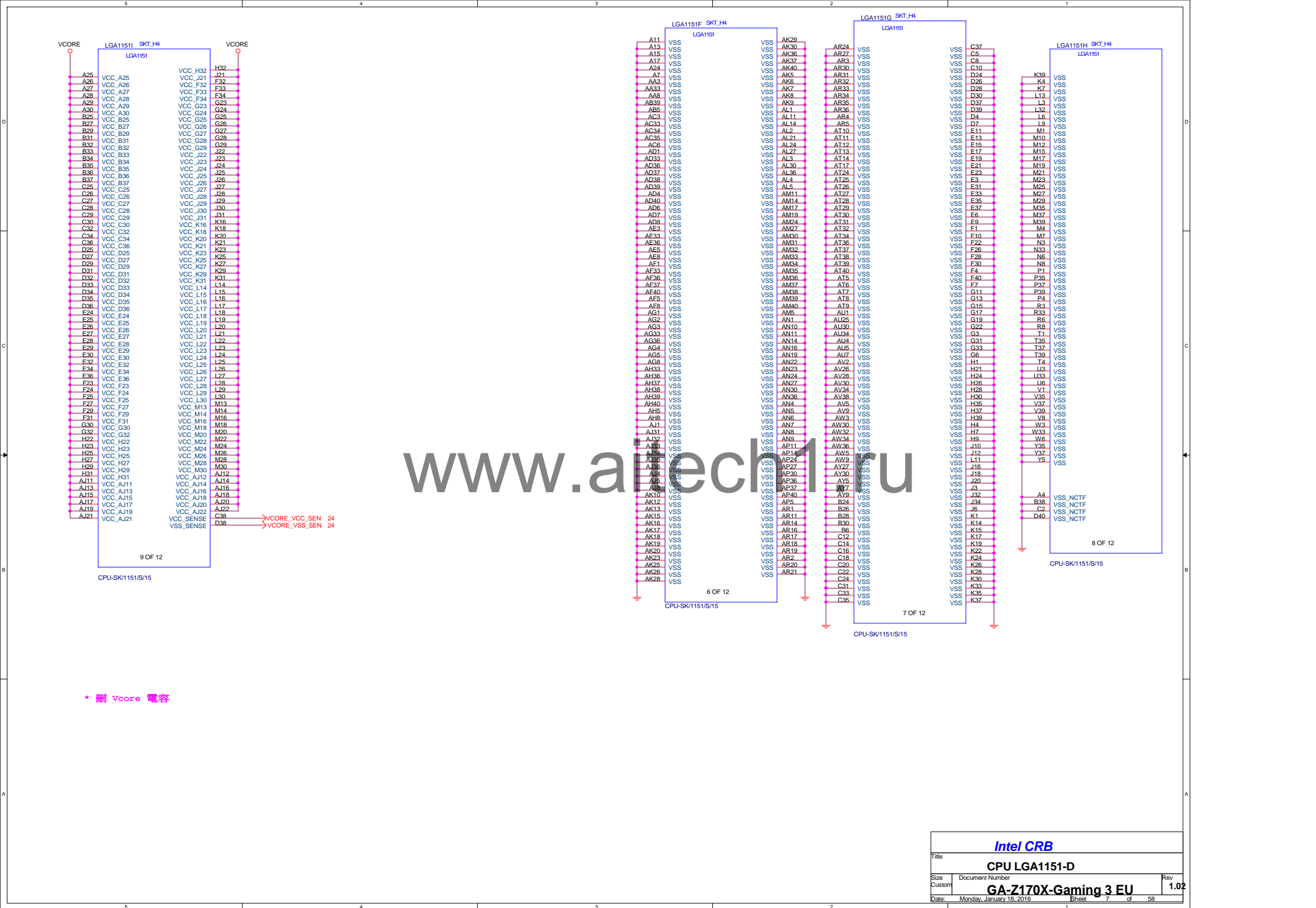
Intel CRB CPU LGA1151-B		
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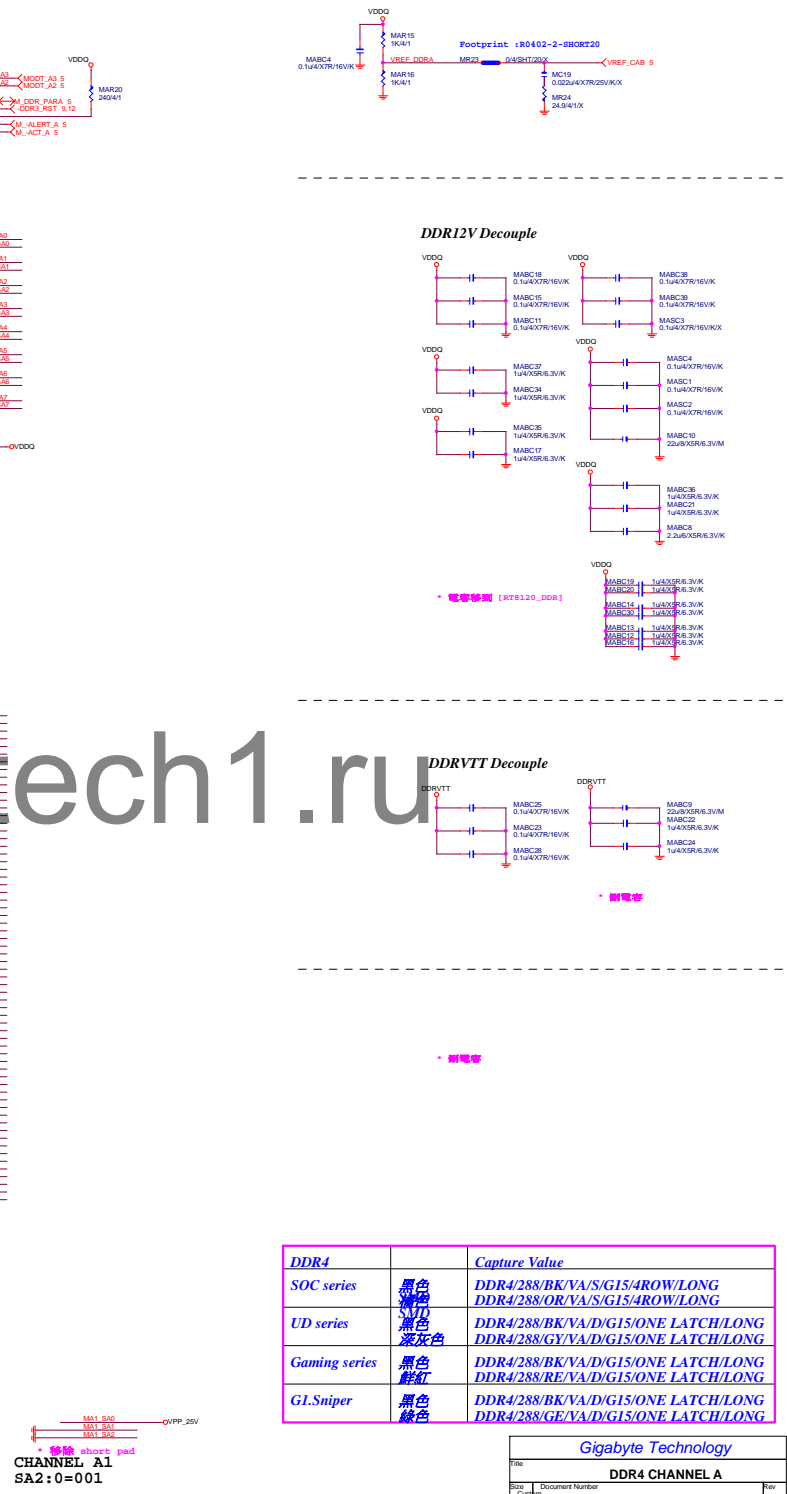
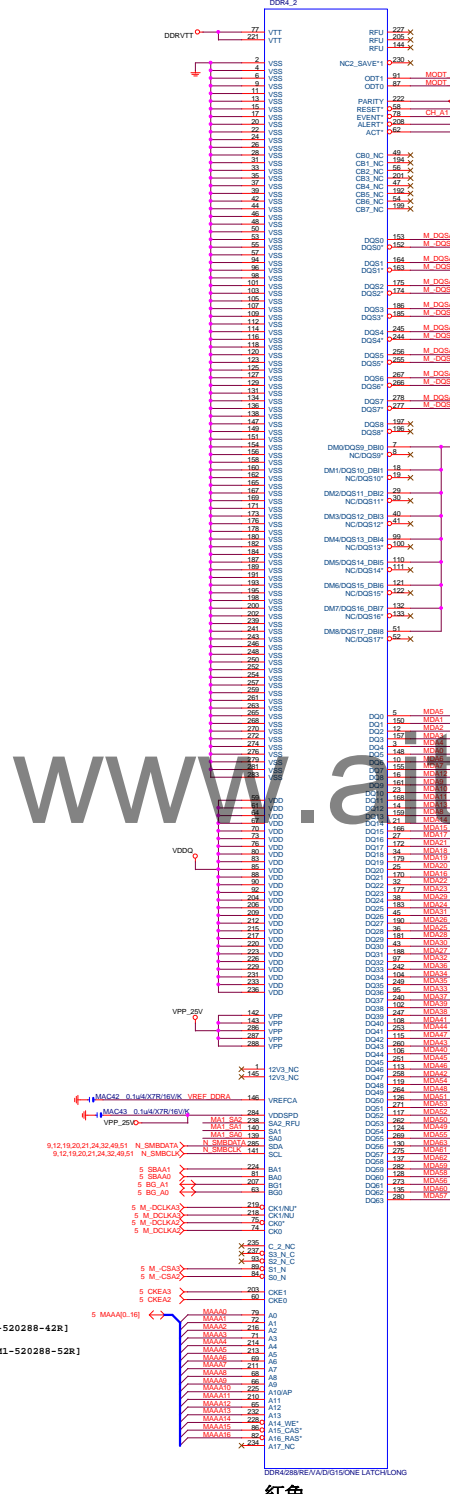
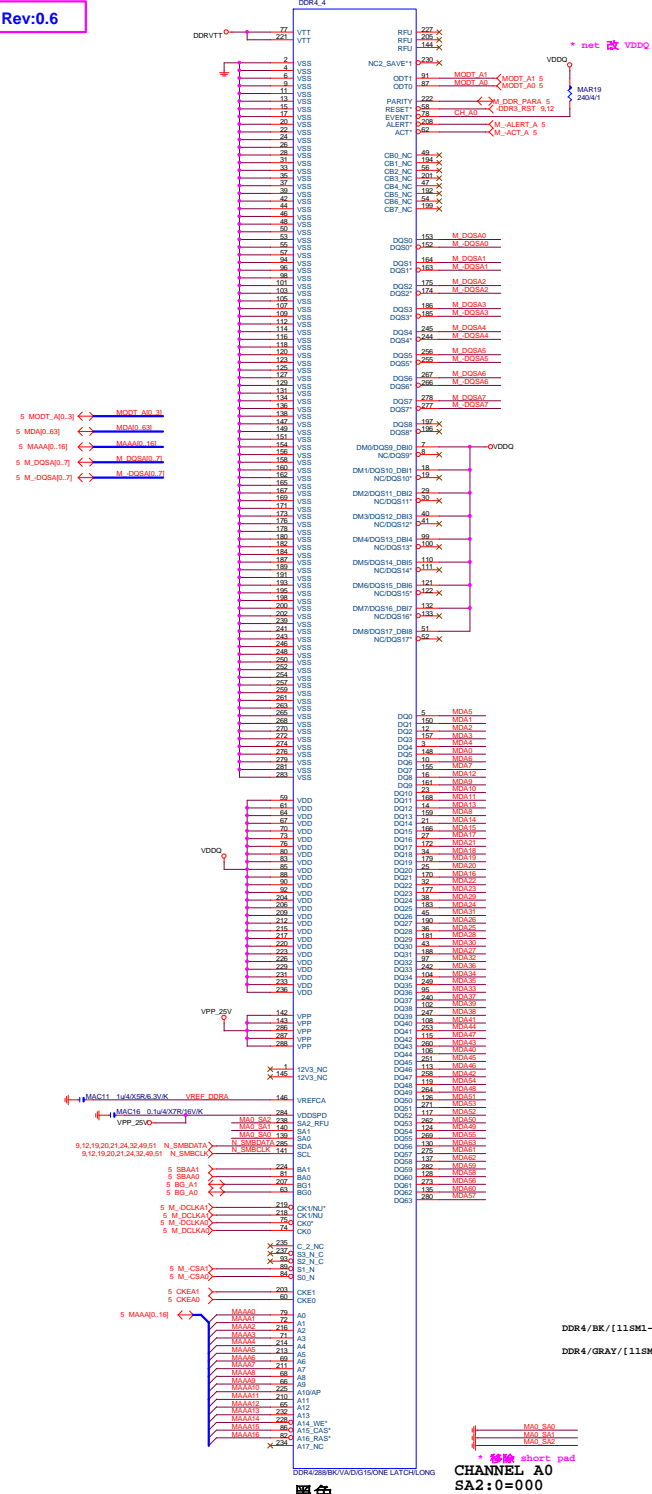


* 刪 WBC124, WBC125, WBC126, WBC127 電容

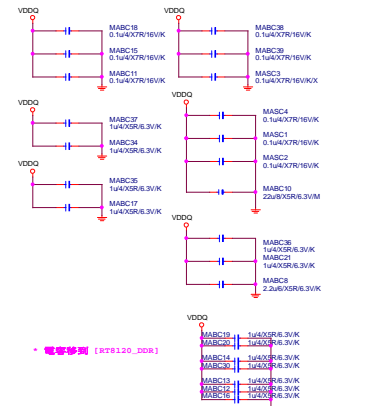
* WR94, WR59, WR86, WR60, WR61, WR62, WR63 改 short pad



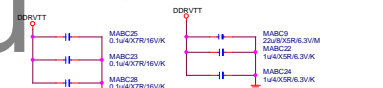




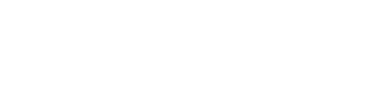
DDR12V Decouple



DDRVT Decouple

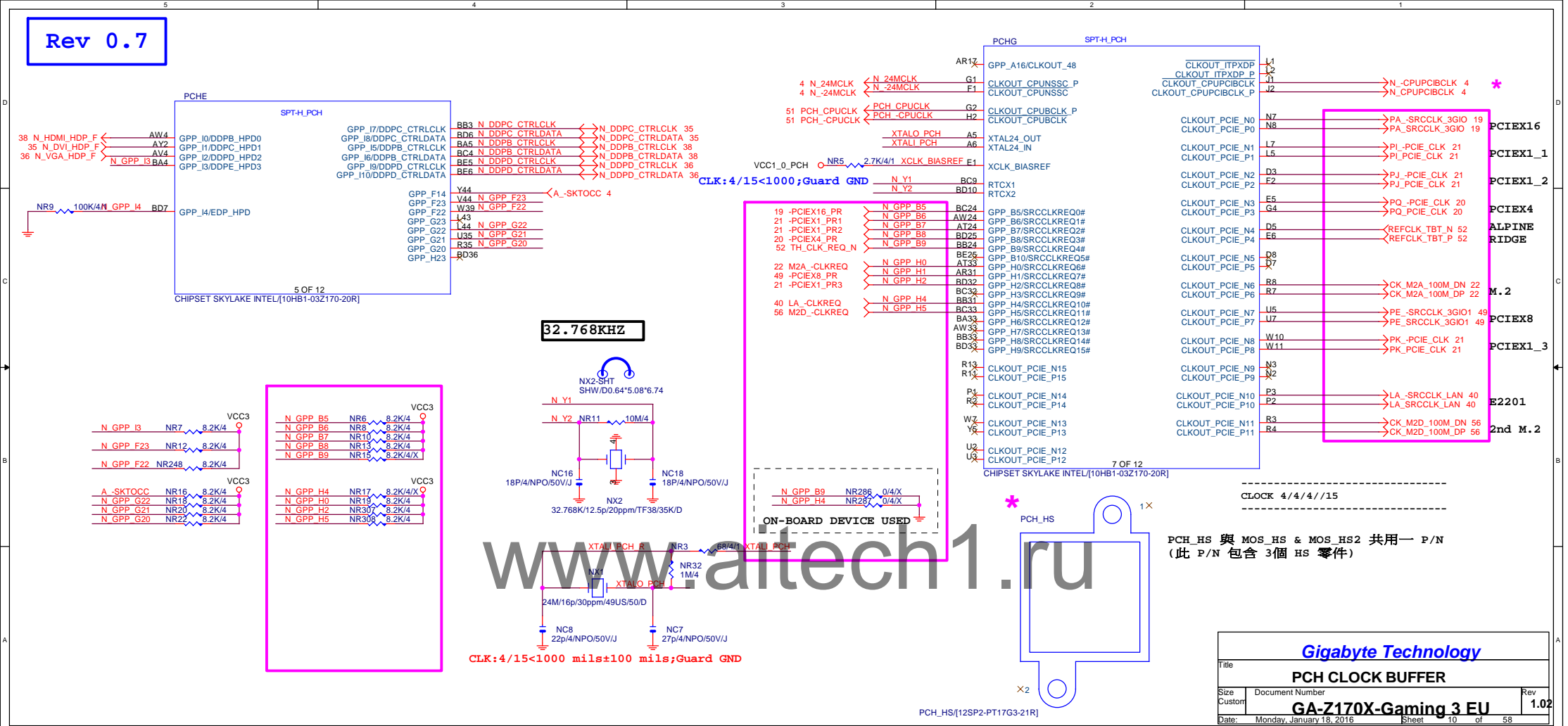


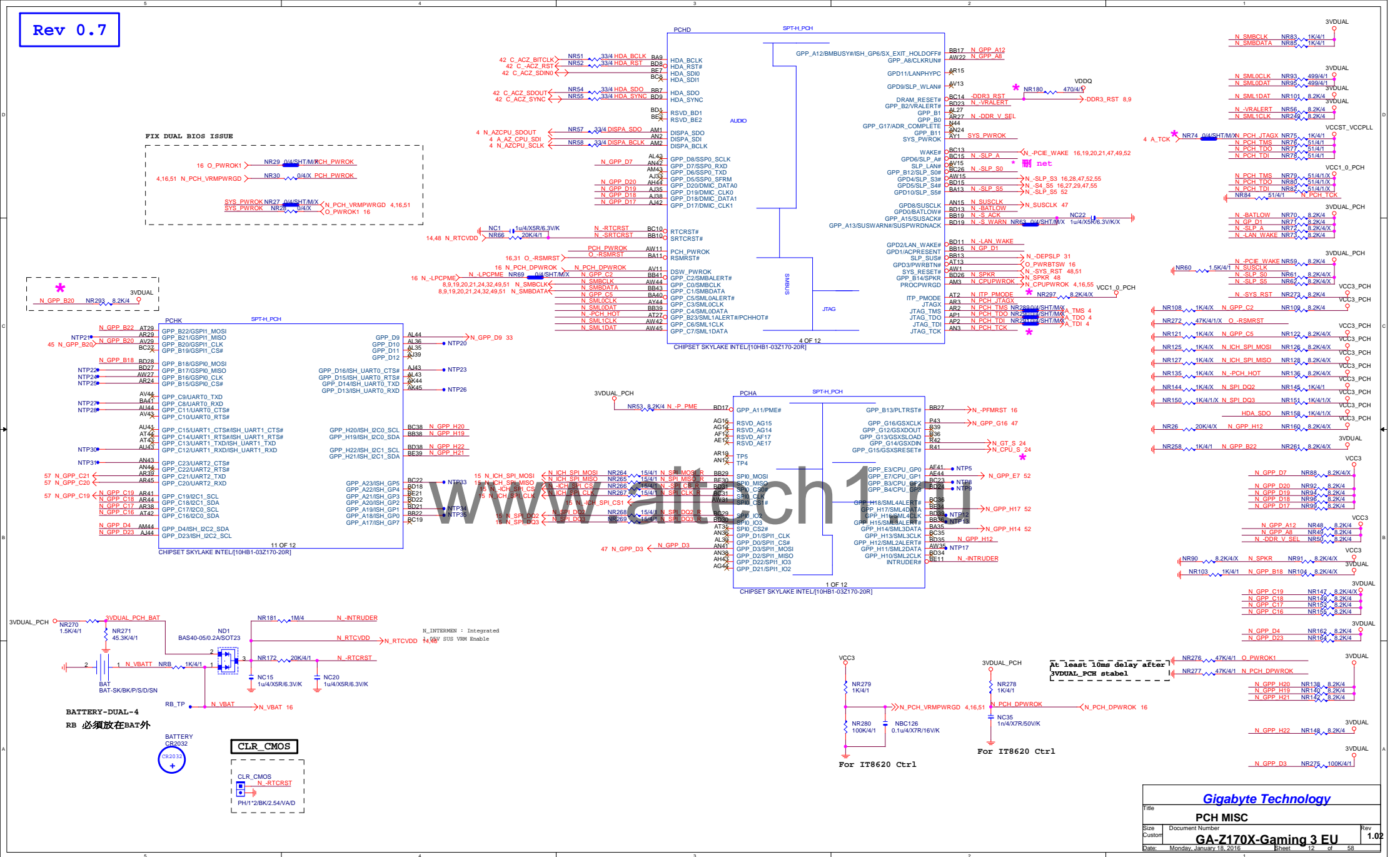
DDRVT Decouple

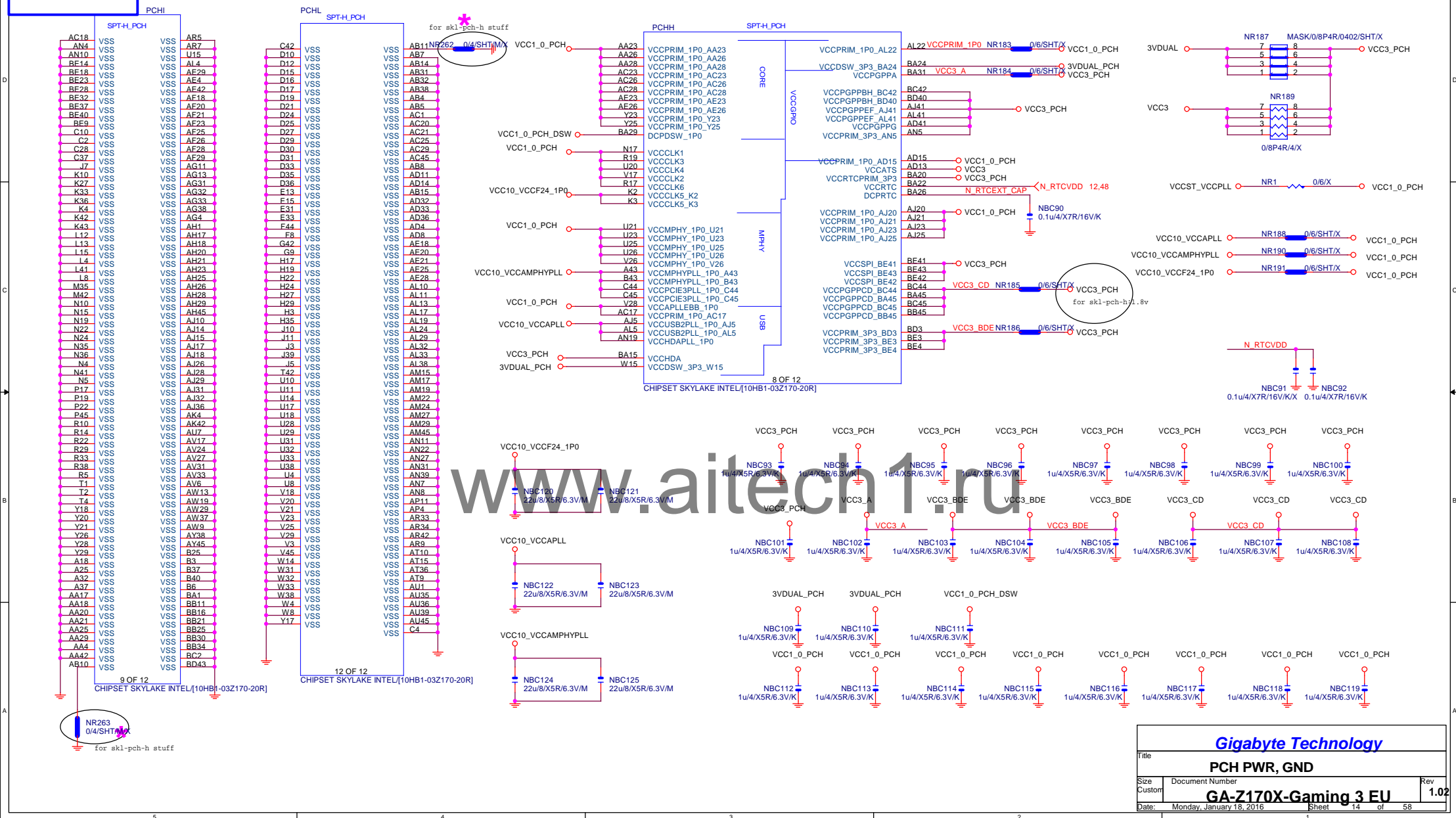


DDR4	SOC series	Capture Value
UD series	黑色	DDR4/288/BK/VA/S/G1S/4ROW/LONG
	红色	DDR4/288/OR/VA/S/G1S/4ROW/LONG
Gaming series	黑色	DDR4/288/BK/VA/D/G1S/ONE LATCH/LONG
	红色	DDR4/288/GY/VA/D/G1S/ONE LATCH/LONG
GI.Sniper	黑色	DDR4/288/BK/VA/D/G1S/ONE LATCH/LONG
	红色	DDR4/288/GE/VA/D/G1S/ONE LATCH/LONG

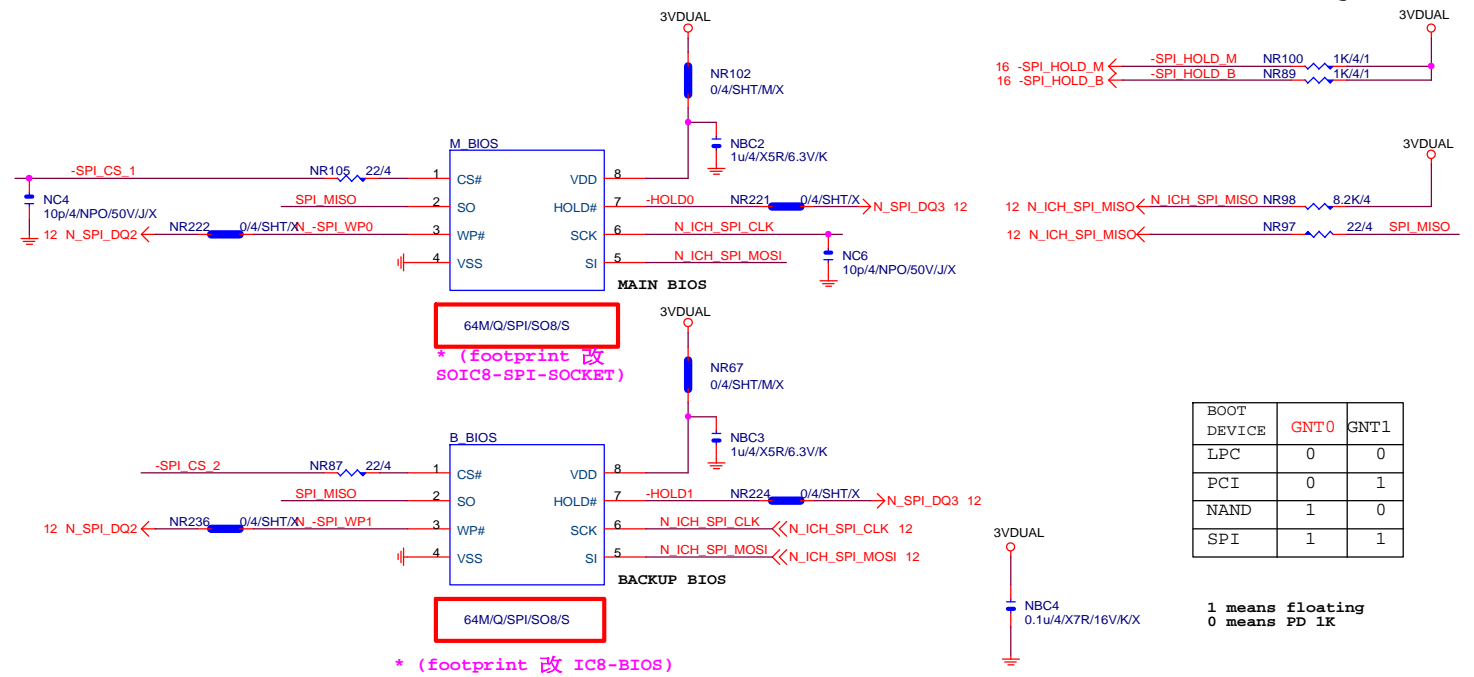
Rev 0.7







MOSI For DMI RX Termination Voltage



BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

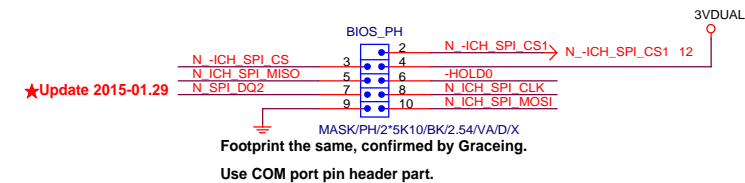
```
1 means floating
0 means PD 1K
```

A diagram of a square chip. It features a central square and a border of pins. The top-left pin is labeled "M BIOS".

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

* 試産先上 , PVT 移除

★Update 2015-01.29

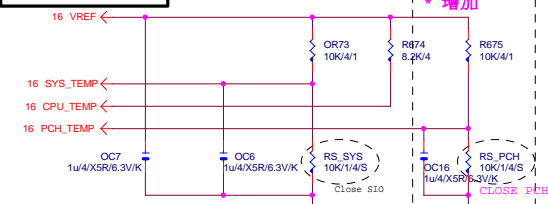


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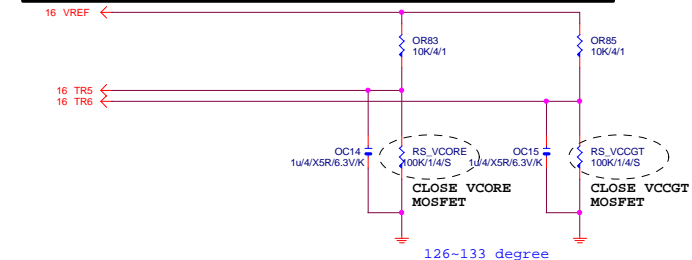
Title			
BIOS			
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REV:1.08

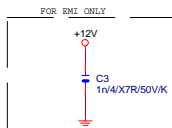
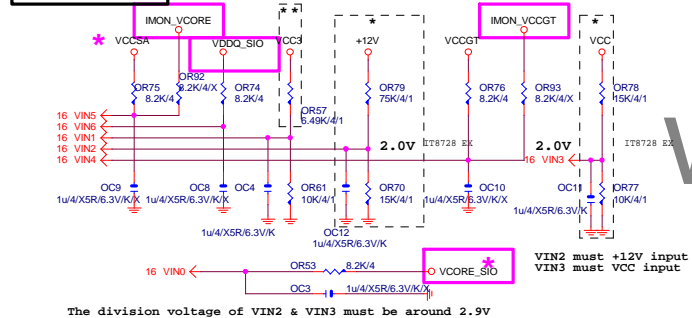
TEMP H/W MONITOR



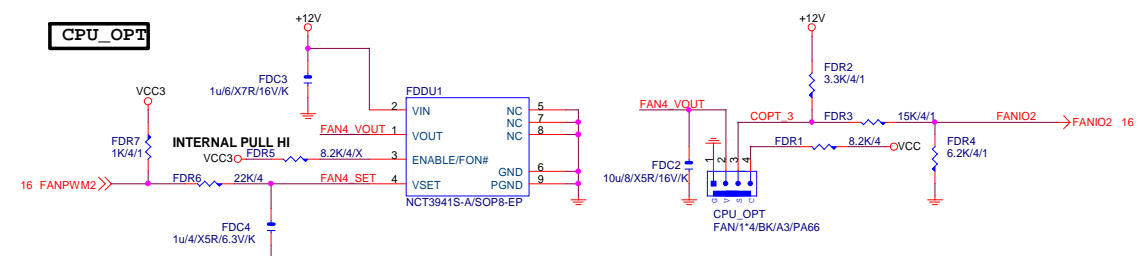
RS_VCORE、RS_VCCGT、CLOSE CPU_VCORE & VCCGT MOSFET



VOLTAGE-- H/W MONITOR



Gigabyte Technology			
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Linear SYS_FAN

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



SYSTEM FAN2

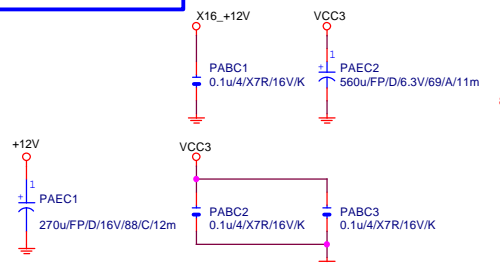


SYSTEM FAN3



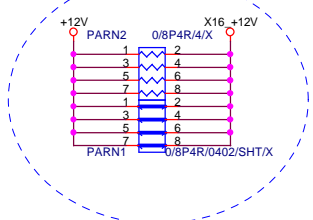
Rev 0.3

PCIEX16 CAP



PCIEX16 PROTECT SHT

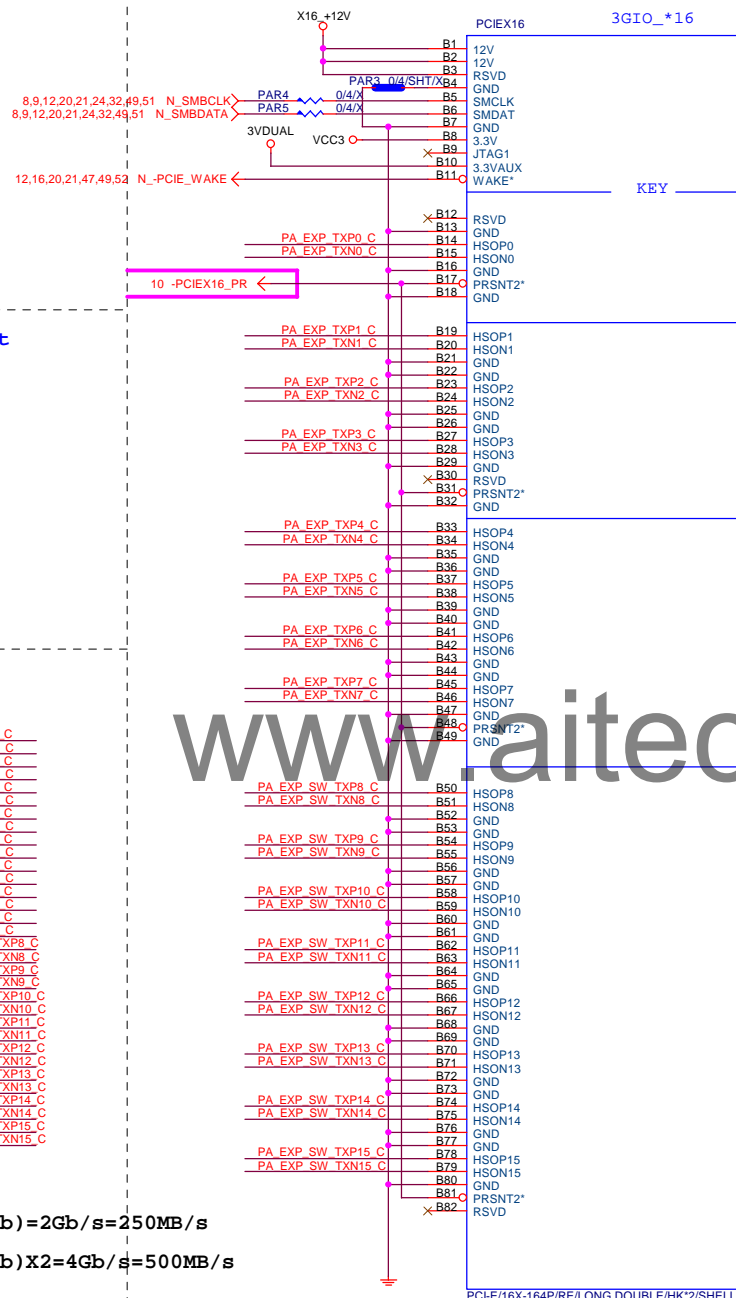
+12 protect short-wire test



PCIEX16 AC CAP

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 SW TXP8	PAC20	0.22u/4/X5R/6.3V/K	PA EXP SW TXP8 C
PA EXP SW TXN8	PAC21	0.22u/4/X5R/6.3V/K	PA EXP SW TXN8 C
PA EXP SW TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA EXP SW TXP9 C
PA EXP SW TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA EXP SW TXN9 C
PA EXP SW TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA EXP SW TXP10 C
PA EXP SW TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA EXP SW TXN10 C
PA EXP SW TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA EXP SW TXP11 C
PA EXP SW TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA EXP SW TXN11 C
PA EXP SW TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA EXP SW TXN12 C
PA EXP SW TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA EXP SW TXN13 C
PA EXP SW TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA EXP SW TXP14 C
PA EXP SW TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA EXP SW TXN14 C
PA EXP SW TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA EXP SW TXP15 C
PA EXP SW TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA EXP SW TXN15 C

PCIEX16 SLOT



PCIESLOT-164DN-Q

3GIO_*16

PCI-E/16X-164P/RE/LONG DOUBLE/HK*2/SHELL

紅色

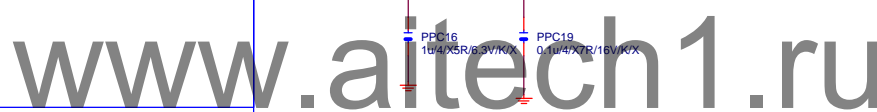
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PA EXP RXPI0.15]	>>>PA_EXP_RXPI0.15]	4,50
PA EXP RXNI0.15]	>>>PA_EXP_RXNI0.15]	4,50
PA EXP TXPI0.15]	>>>PA_EXP_TXPI0.15]	4,50
PA EXP TXNI0.15]	>>>PA_EXP_TXNI0.15]	4,50
PA EXP SW RXPI8.15]	>>>PA_EXP_SW_RXPI8.15]	50
PA EXP SW RXNI8.15]	>>>PA_EXP_SW_RXNI8.15]	50
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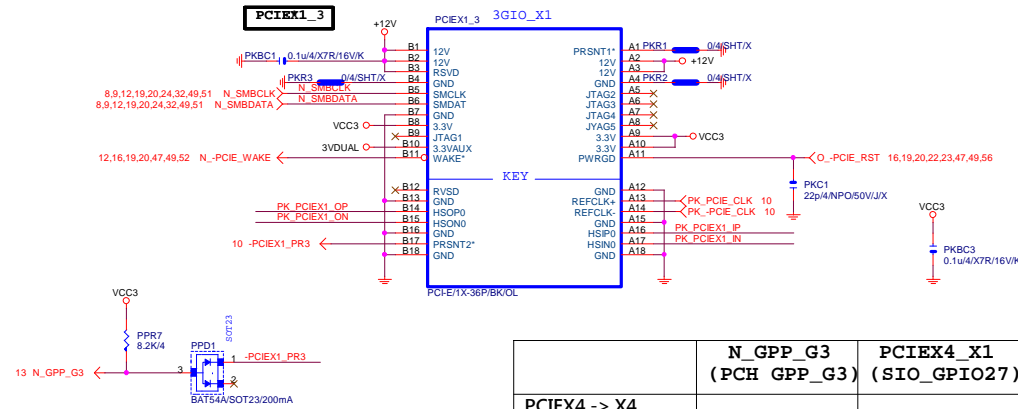
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PCI EXPRESS * 16

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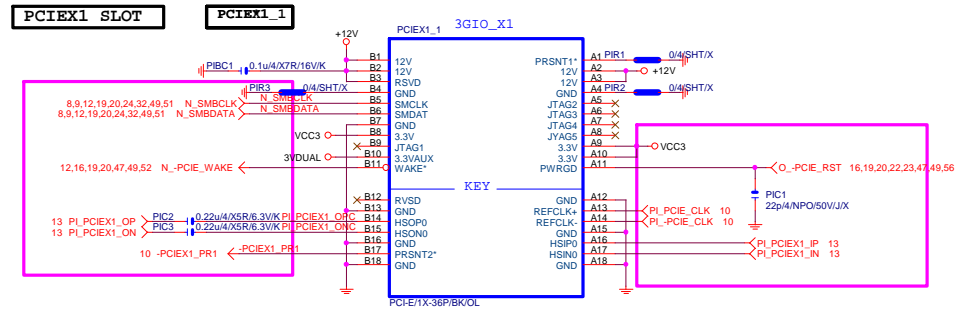


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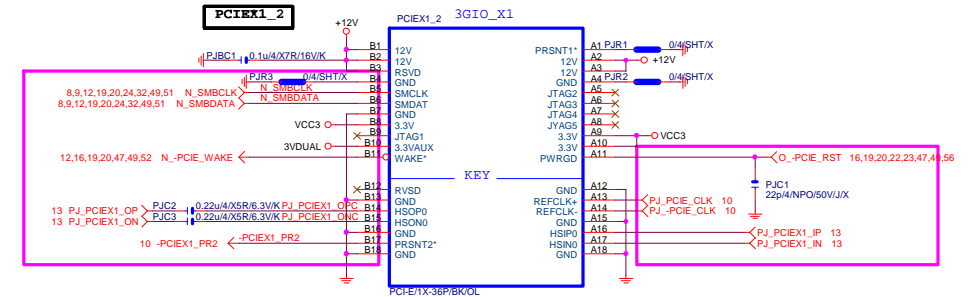


	N_GPP_G3 (PCH GPP_G3)	PCIEX4_X1 (SIO_GPIO27)
PCIEX4 -> X4 M2_WIFI -> N/A PCIEX1 -> N/A (Default)	H	H
PCIEX4 -> X1 M2_WIFI -> X1 PCIEX1 -> X1	L	L

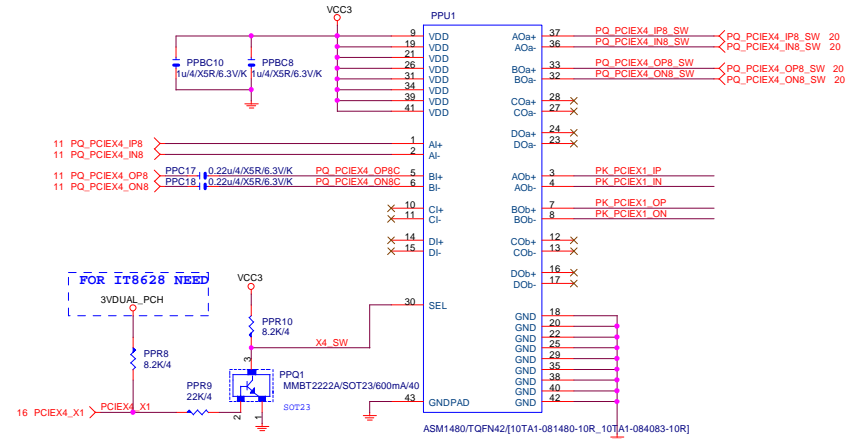
PCIEX1 SLOT



PCIEX1_2



PCIEX4/X1 SWITCH



Function	SEL
XI--> x08	L;PCIEX4 SLOT-->X1
XI--> x0b	H;PCIEX4 SLOT-->X4

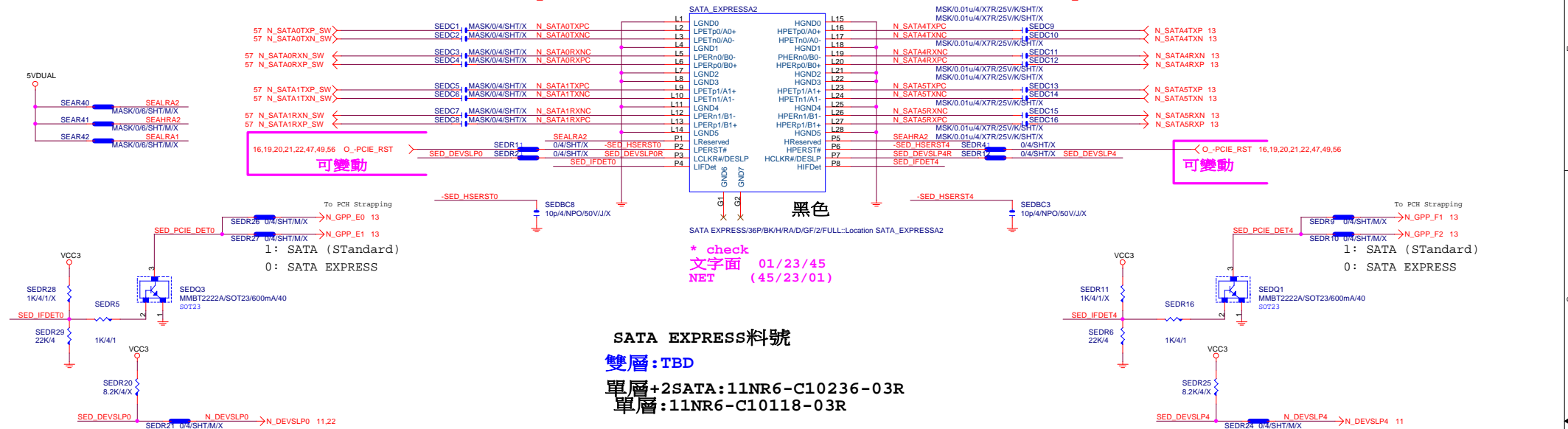
Gigabyte Technology

PCIE X1 1,2,3

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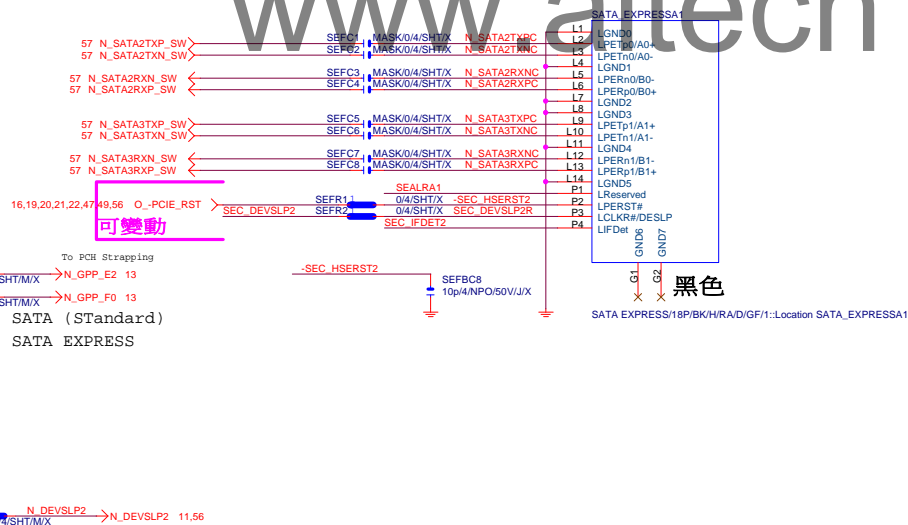


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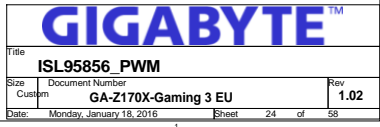
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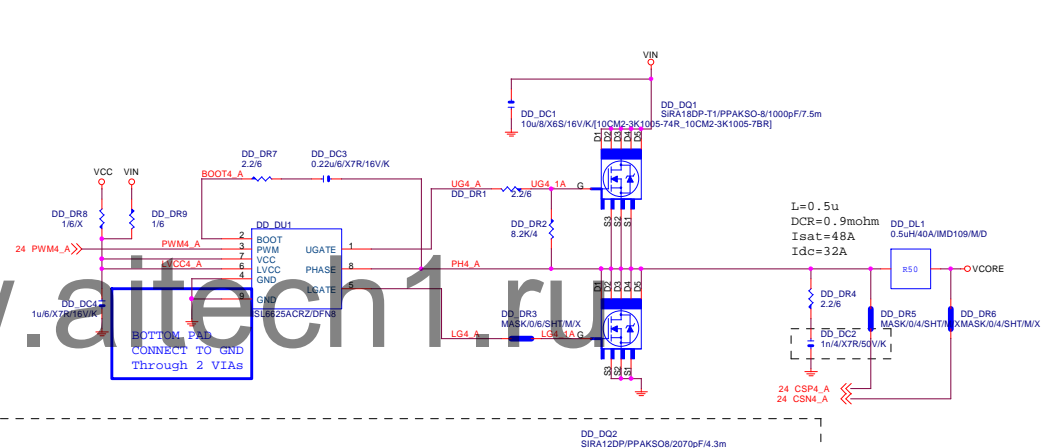
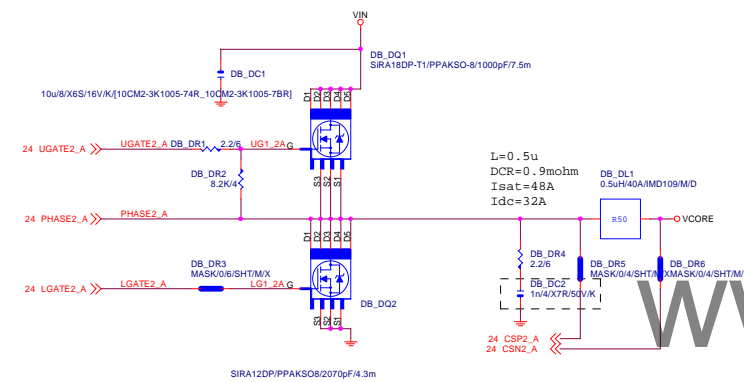
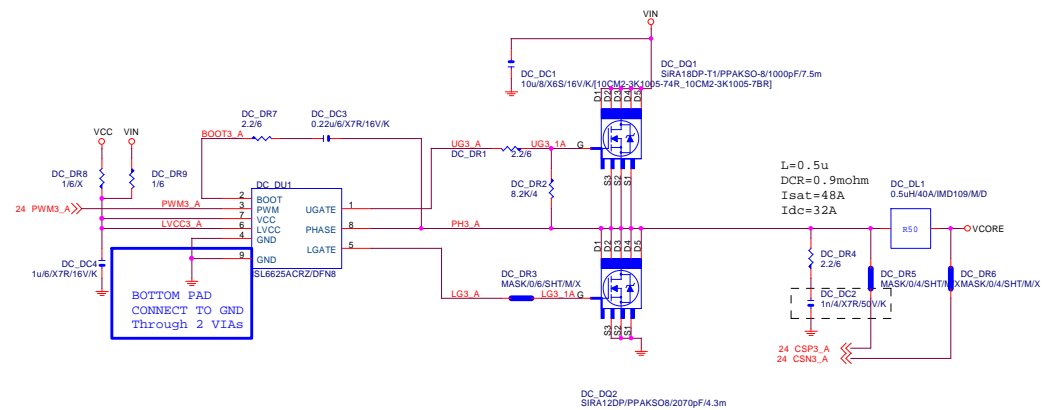
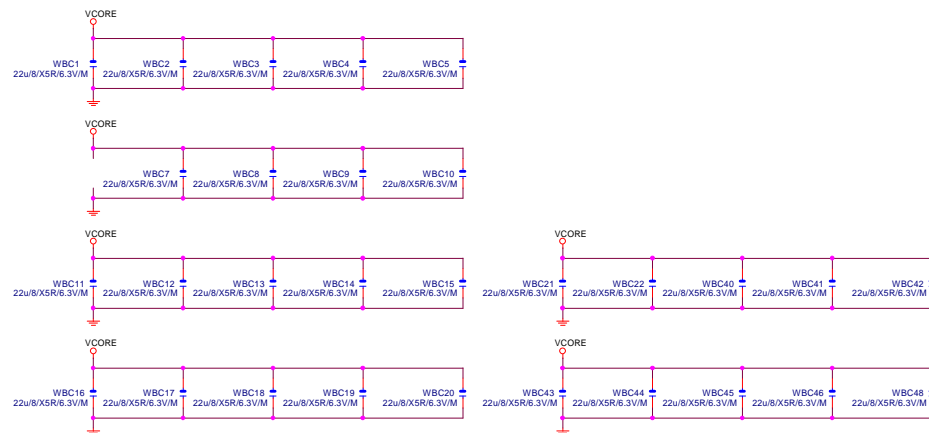
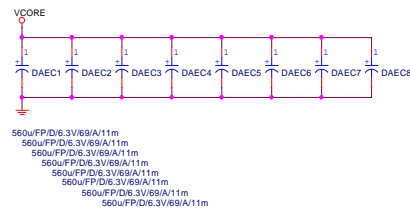
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To SATA3
port2/3

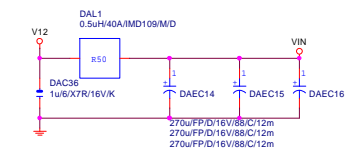


SATA 5	(文字面寫SATA 1)
SATA 4	(文字面寫SATA 0)
SATA 3	
SATA 2	
SATA 1	(文字面寫SATA 5)
SATA 0	(文字面寫SATA 4)



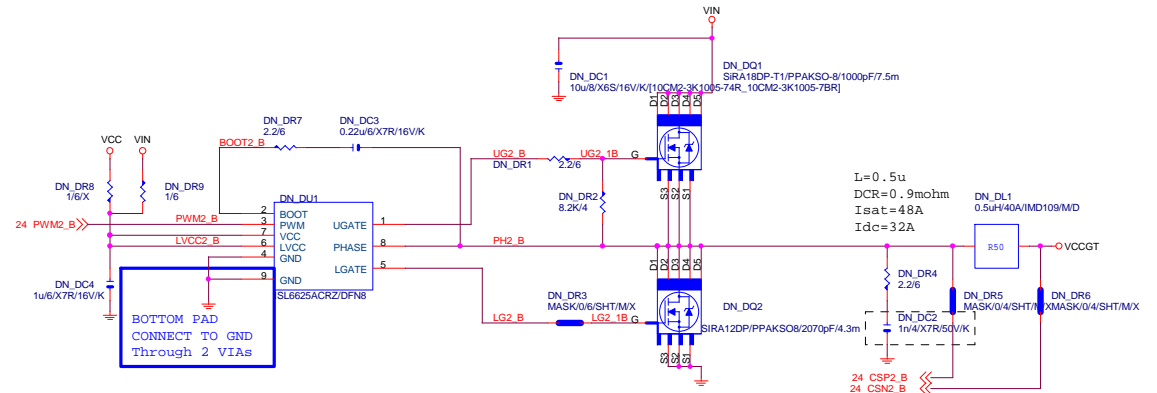
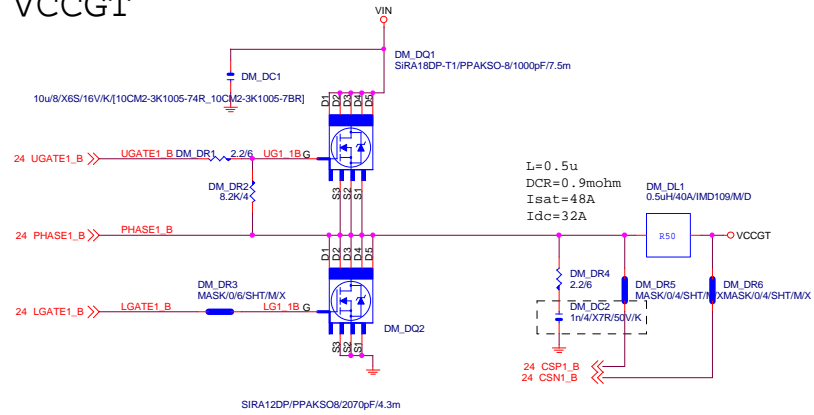
VCORE CAP 560u*8PCS
22u*29PCS

VIN	CAP	270u*3PCS
-----	-----	-----------

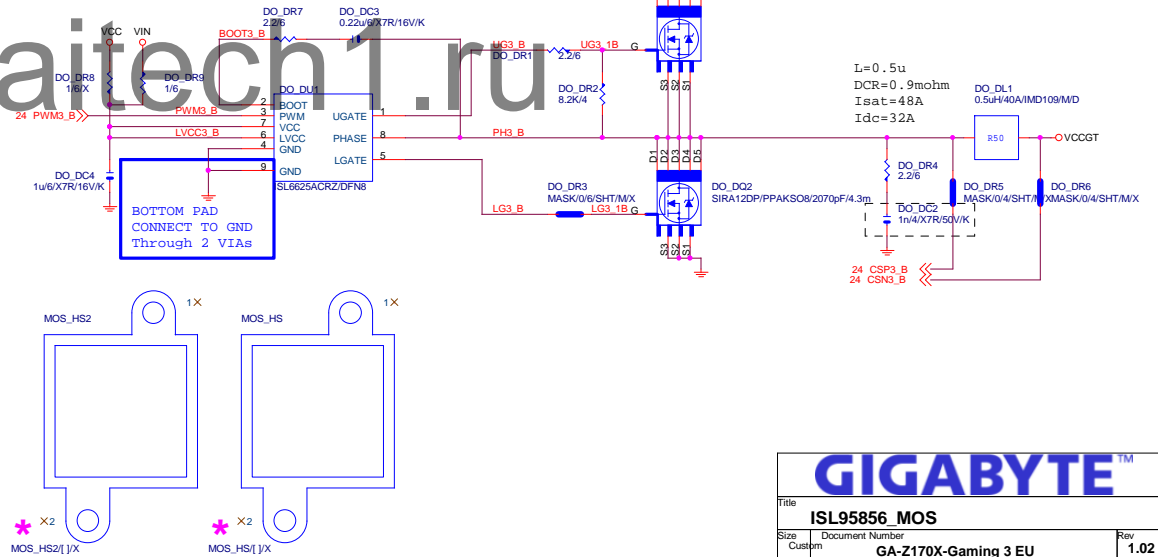
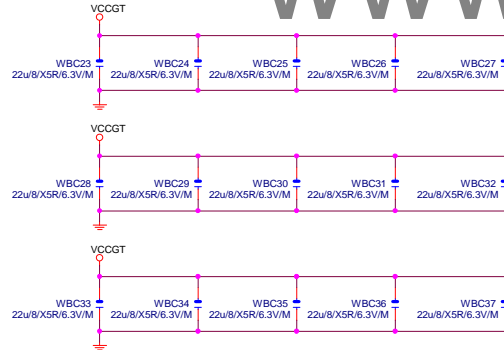
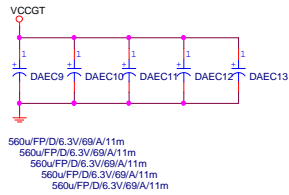
**GIGABYTE™**

Title ISL95856_MOS			
Size Custom	Document Number GA-Z170X-Gaming 3 EU		Rev 1.02
Date:	Monday, January 18, 2016	Sheet	25 of 58

VCCGT



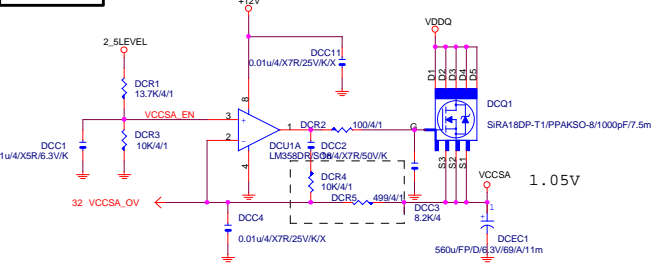
VCCGT CAP 560u*5PCS 22u*15PCS



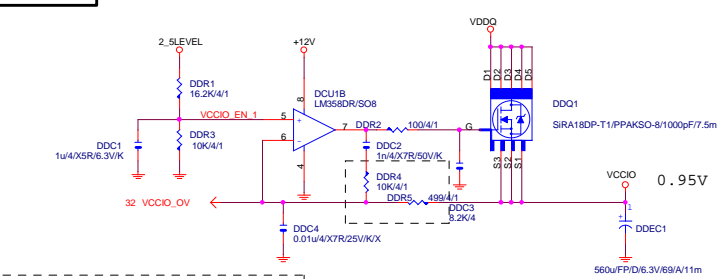
GIGABYTE™			
Title			
ISL95856 MOS			
Size	Document Number	Rev	
Custom	GA-Z170X-Gaming 3 EU	1.02	
Date:	Monday, January 18, 2016	Sheet	26 of 58

REV:0.4

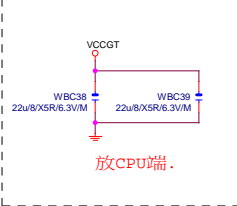
VCCSA



VCCIO

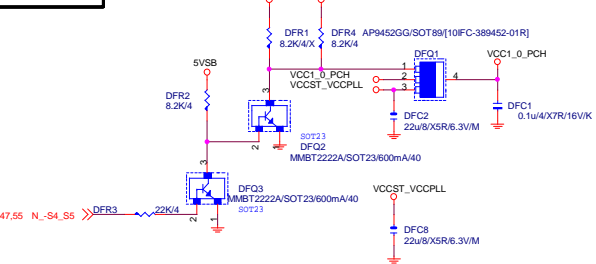


Connect to IT8620



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VCCST_VCCPLL



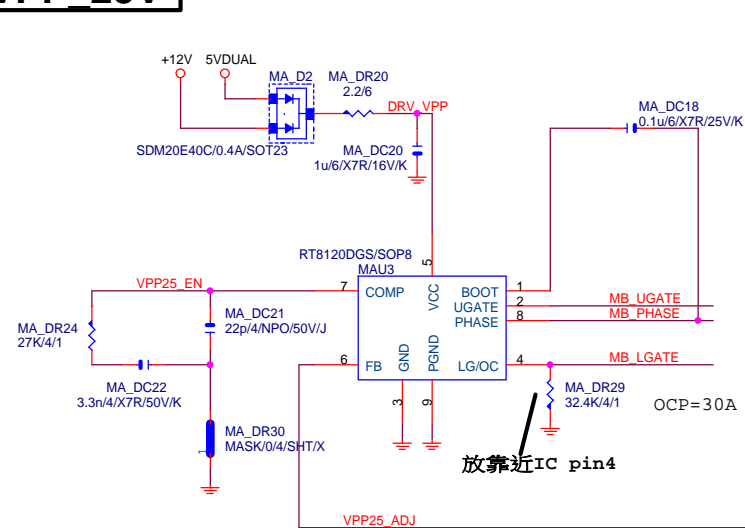
DDR4



Title			
RT8120_DDR4 POWER			
Size	Document Number	Rev	
Custom	GA-Z170X-Gaming 3 EU	1.02	
Date:	Monday, January 18, 2016	Sheet	28 of 58

REV:0.88

VPP_25V



放靠近IC pin4

OCP=30A

SIRA18DP-T1/PPAKSO-8/1000pF/7.5m

L=0.5u
DCR=2.1 mohm
Isat=20A
Idc=15A

DDR_VPP VIN CAP
560u*1PCS

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

SUPPORT DDR4

2.5V

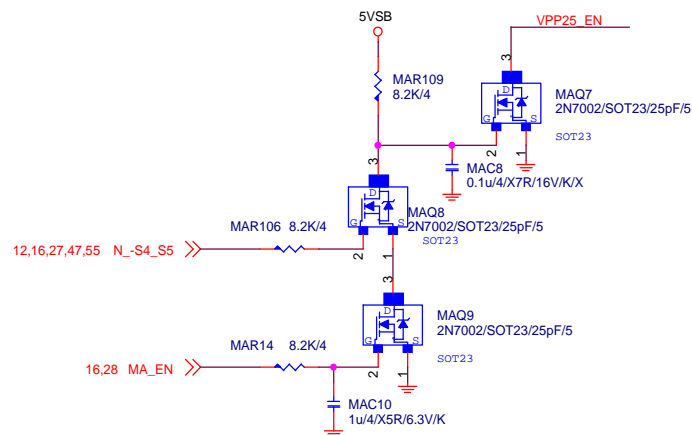
25A MAX

Remote sense請從最重的負載端點拉回

www.aitech1.ru

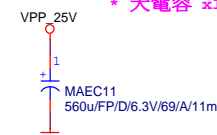
PWR_SEQ

* 刪 MA_DR32



VPP CAP 560u*1PCS

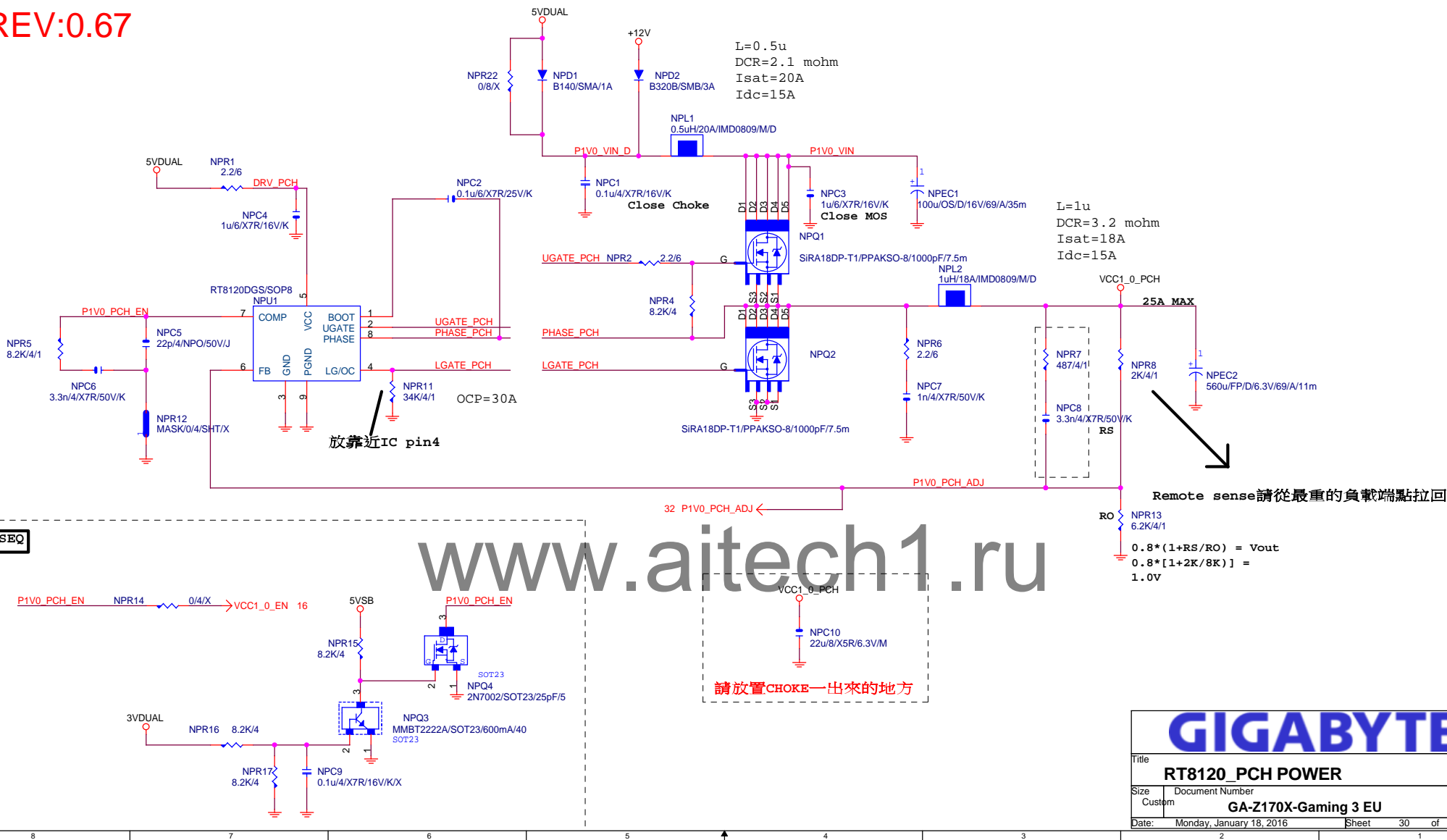
* 大電容 x1



GIGABYTE™

Title		
RT8120_VPP25 POWER		
Size	Document Number	Rev
Custom	GA-Z170X-Gaming 3 EU	1.02
Date:	Monday, January 18, 2016	Sheet 29 of 58

REV:0.67

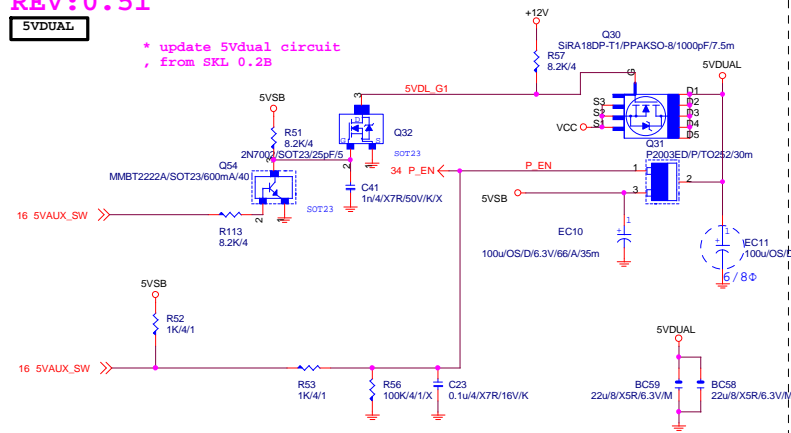


GIGABYTE™			
Title			
RT8120_PCH POWER			
Size	Document Number	Rev	
Custom	GA-Z170X-Gaming 3 EU	1.02	
Date:	Monday, January 18, 2016	Sheet	30 of 58

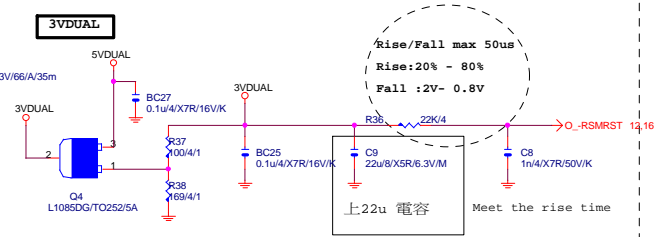
REV:0.51

5VDUAL

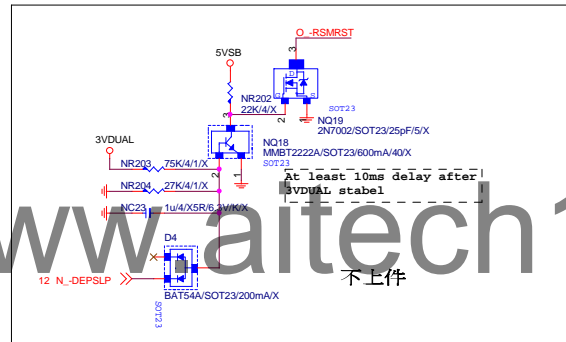
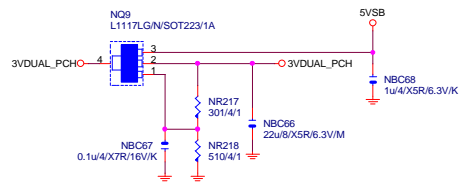
* update 5Vdual circuit
from SKL 0.2B



3VDUAL



3VDUAL_PCH

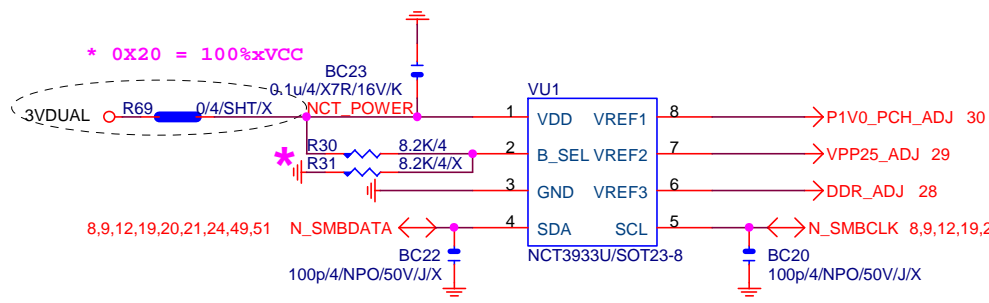


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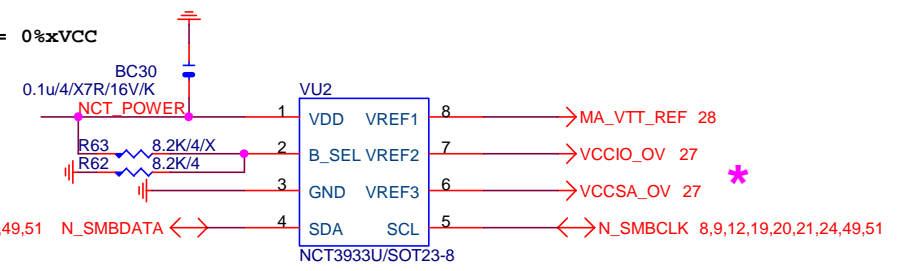
Gigabyte Technology

Title	DISCRETE POWER
Size	Custom
Document Number	GA-Z170X-Gaming 3 E
Date	Monday, January 18, 2016
Sheet	31 of 58

OVER VOLTAGE



0X2A = 0%xVCC



0X22 = 75%xVCC

* 删除 OVU3

NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCCL_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology

Title: NCT3933

Size: Custom

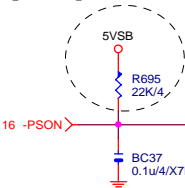
Document Number: GA-Z170X-Gaming 3 EU

Date: Monday, January 18, 2016

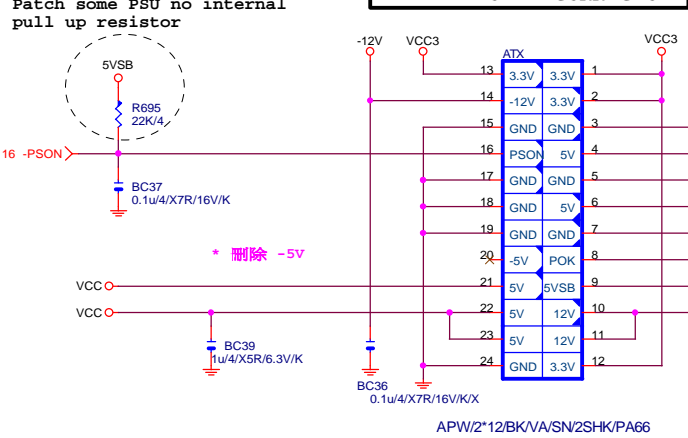
Sheet 32 of 58

Rev 1.02

Patch some PSU no internal pull up resistor

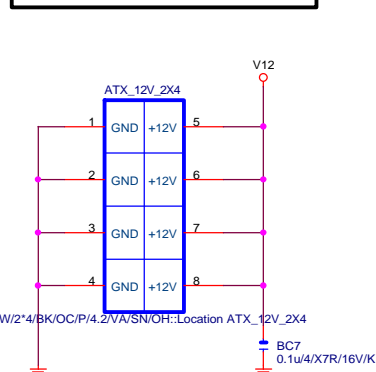


ATXX24 POWER CONNECTOR



To prevent the 5VSB under loading when boot

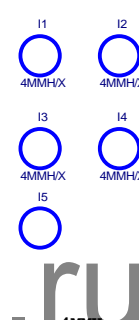
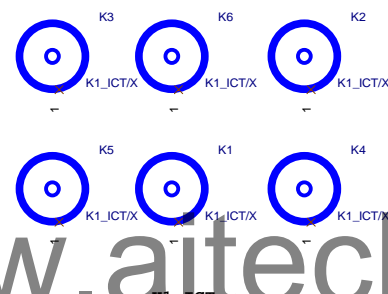
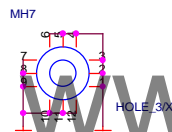
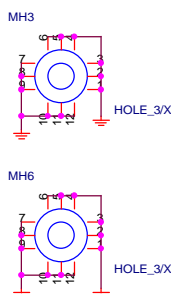
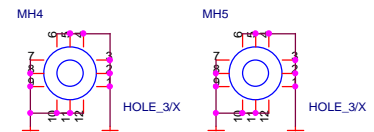
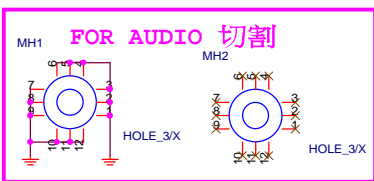
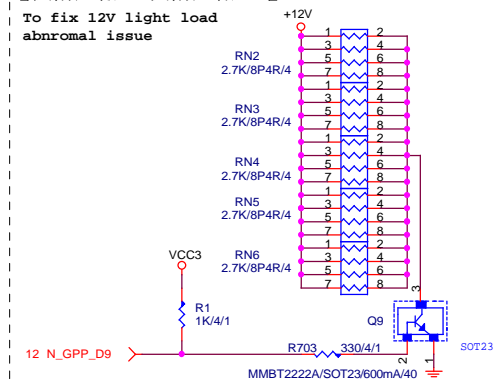
ATXX4 POWER CONNECTOR



Note27:ATX 5VSB ESD Protect BOM移除

【技術通報R&D技術通報153】

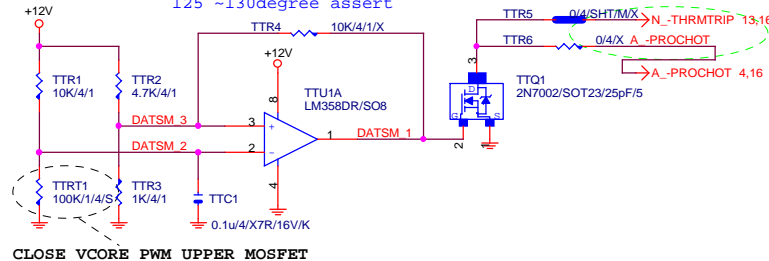
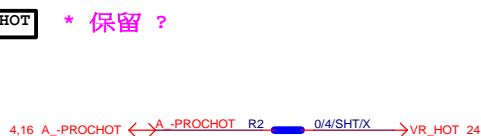
To fix 12V light load abnormal issue



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-PROHOT

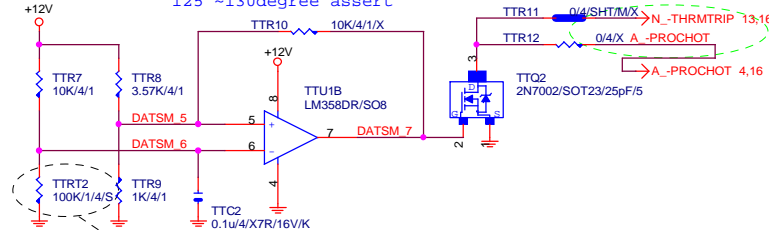
OTP:132度 / PCB THERMAL TRIP:122 度
125 ~130degree assert



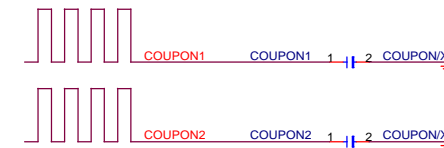
CLOSE VCORE PWM UPPER MOSFET

-PROHOT

OTP:132度 / PCB THERMAL TRIP:122 度
125 ~130degree assert

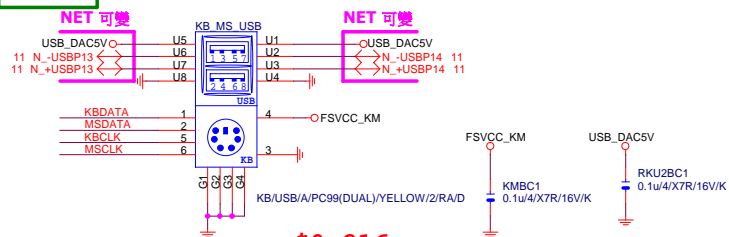


CLOSE VCCGT PWM UPPER MOSFET

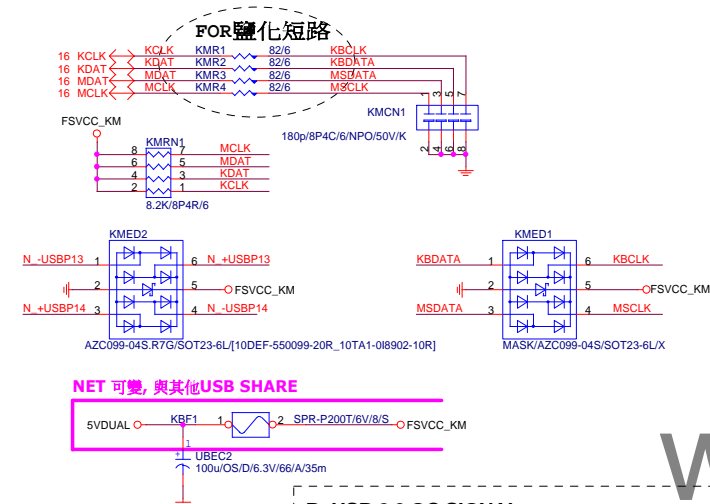


Gigabyte Technology

Title		ATX POWER CONNECTOR	
Size	Document Number	GA-Z170X-Gaming 3 E	
Custom		Rev 02	
Date:	Monday, January 18, 2016	Sheet	33 of 58

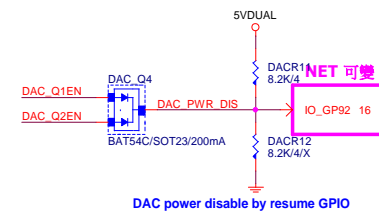
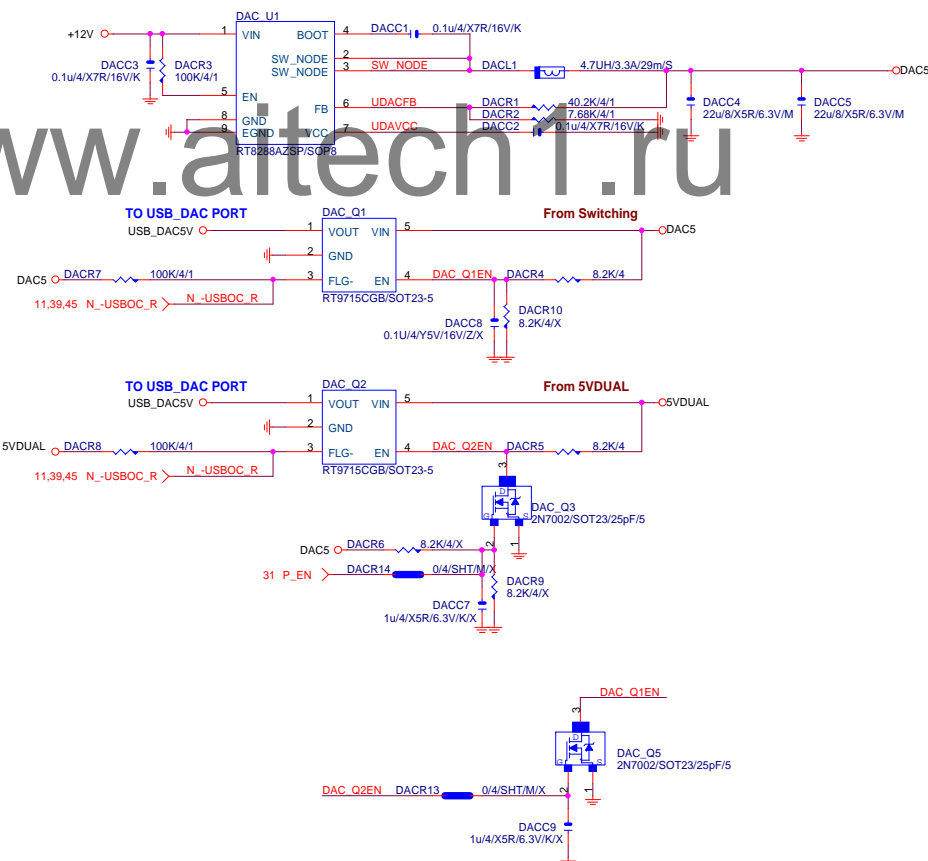


\$0.216



R_USB 2.0 OC SIGNAL

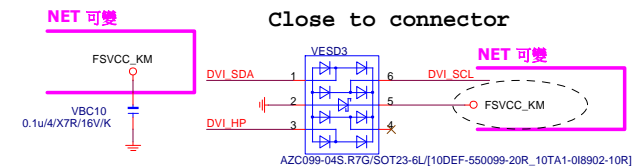
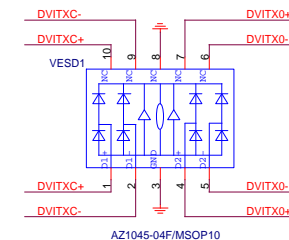
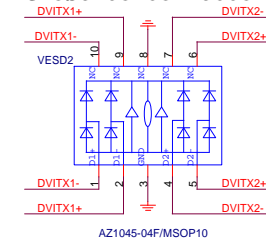
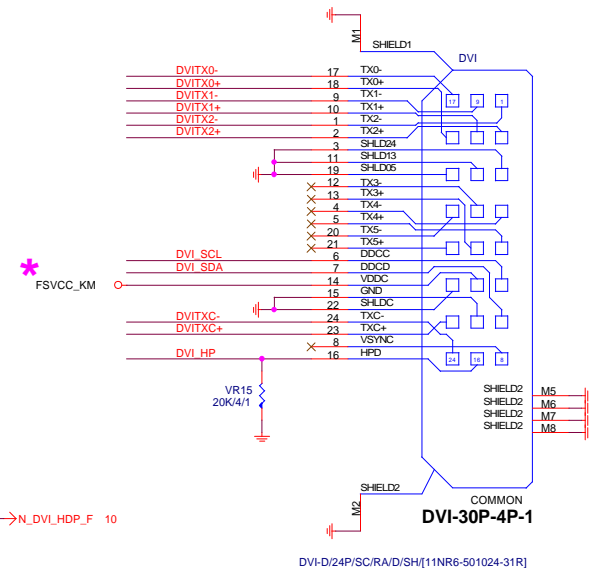
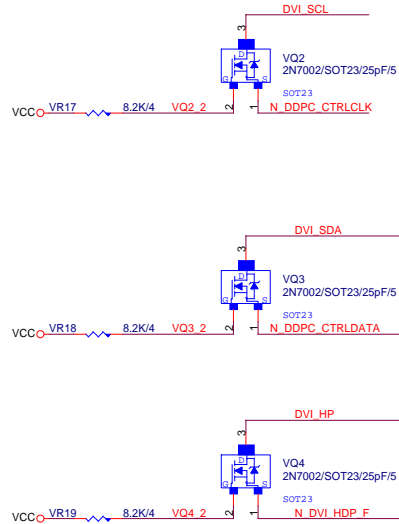
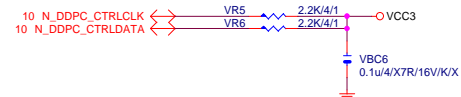
USB_DAC



DAC power disable by resume GPIO



NET 可變

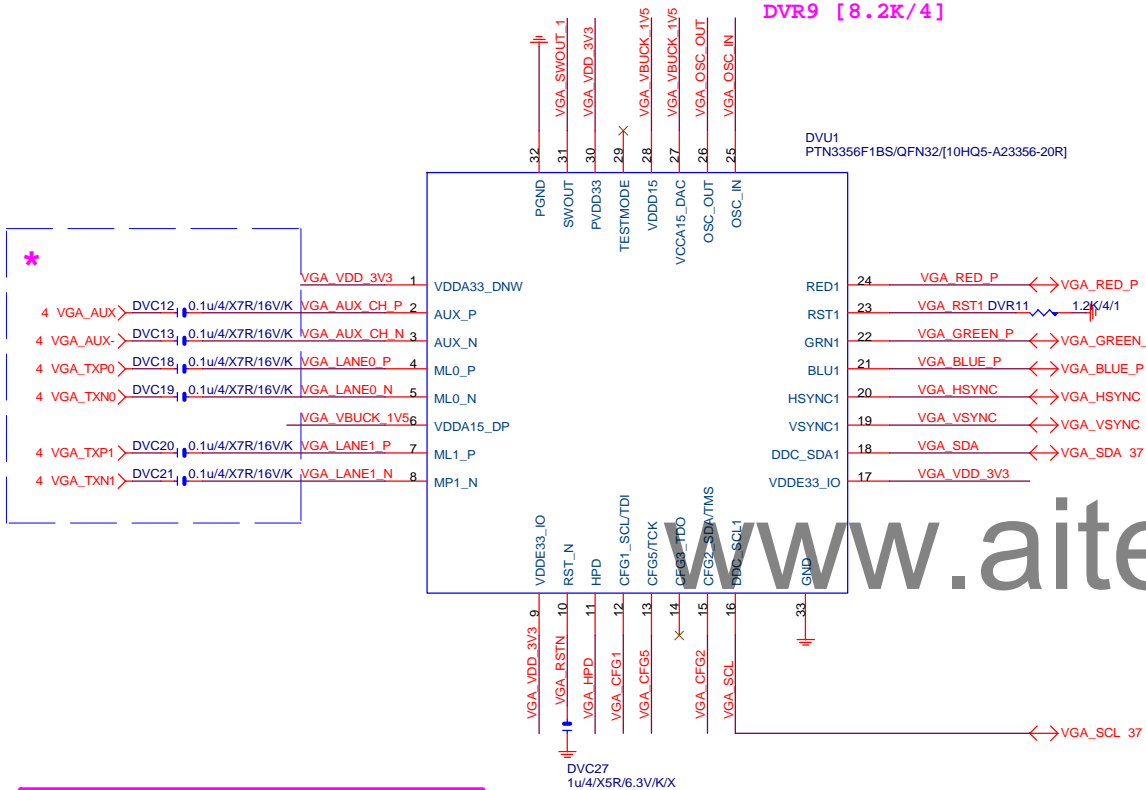



```

1. 上件:
DVC28 [10p/4/NPO/50V/J]
DVC11 [10p/4/NPO/50V/J]~修改值
DVR10 [8.2K/4]

2. 删除:
DVS1 [25M/16p/30ppm/49US/20/D]
DVC10 [20p/4/NPO/50V/J]
DVR9 [8.2K/4]

```



放置PCH端



VCC3

DVL1
0/6/SHT/M/X

VGA_VDD_3V3

DVC14
4.7uF/6/X5R/6.3V/K

DVC15
0.1uF/4/X7R/16V/K

DVC16
0.1uF/4/X7R/16V/K

DVC17
0.1uF/4/X7R/16V/K

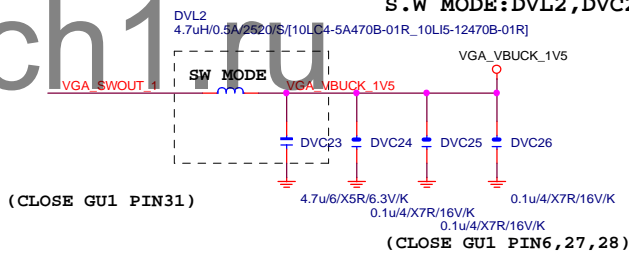
DVC22
0.1uF/4/X7R/16V/K

(CLOSE GU1 PIN1,9,17,30)

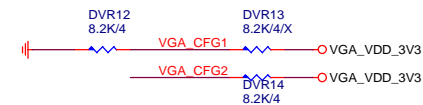
```

LDO  MODE:DVL2,DVC23-->X
S.W  MODE:DVL2,DVC23-->O

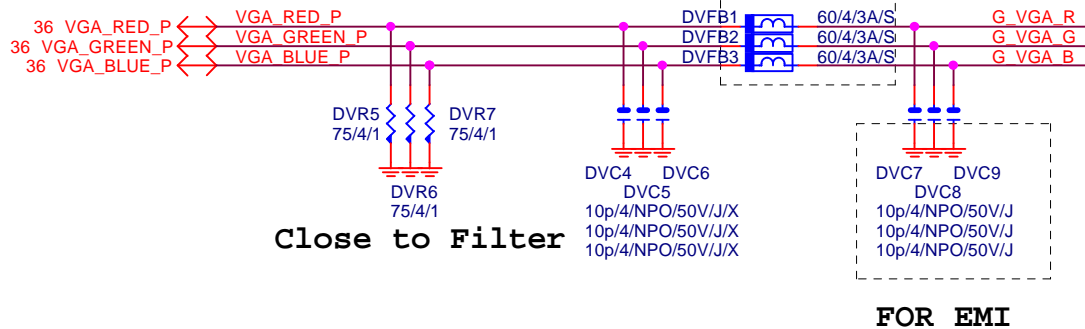
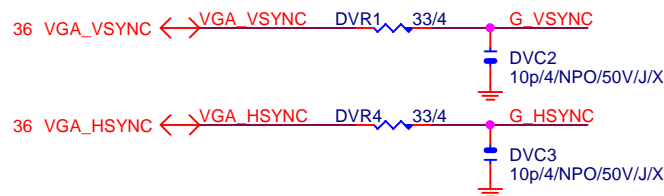
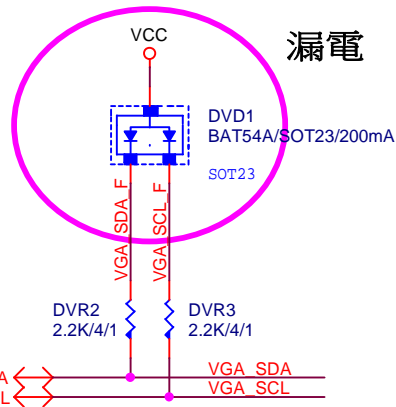
```



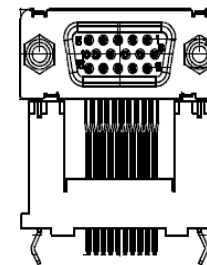
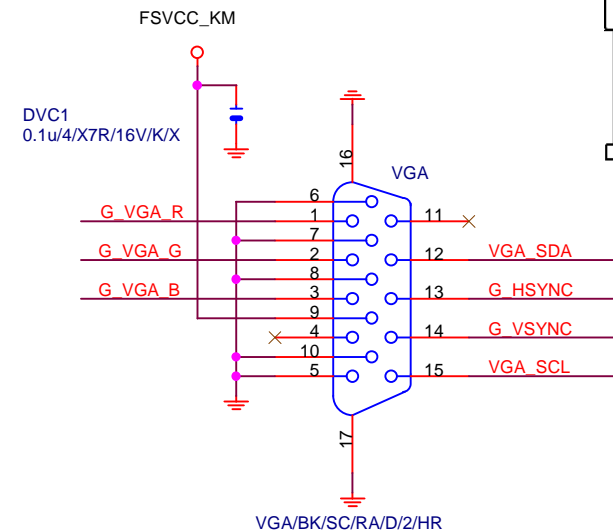
Non-Compliant



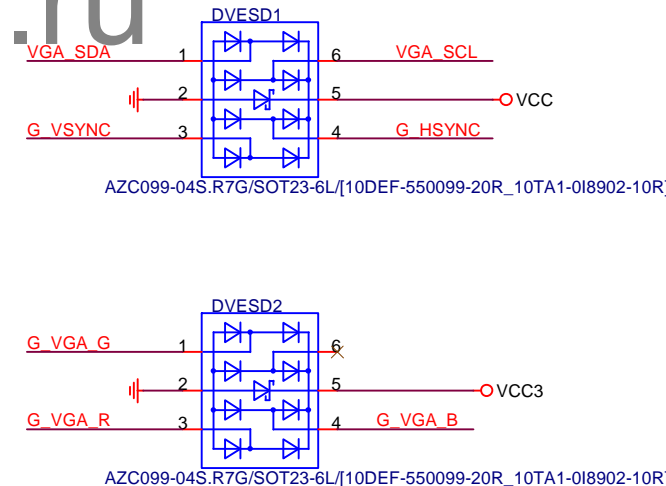
VGA SIGNAL R1.08



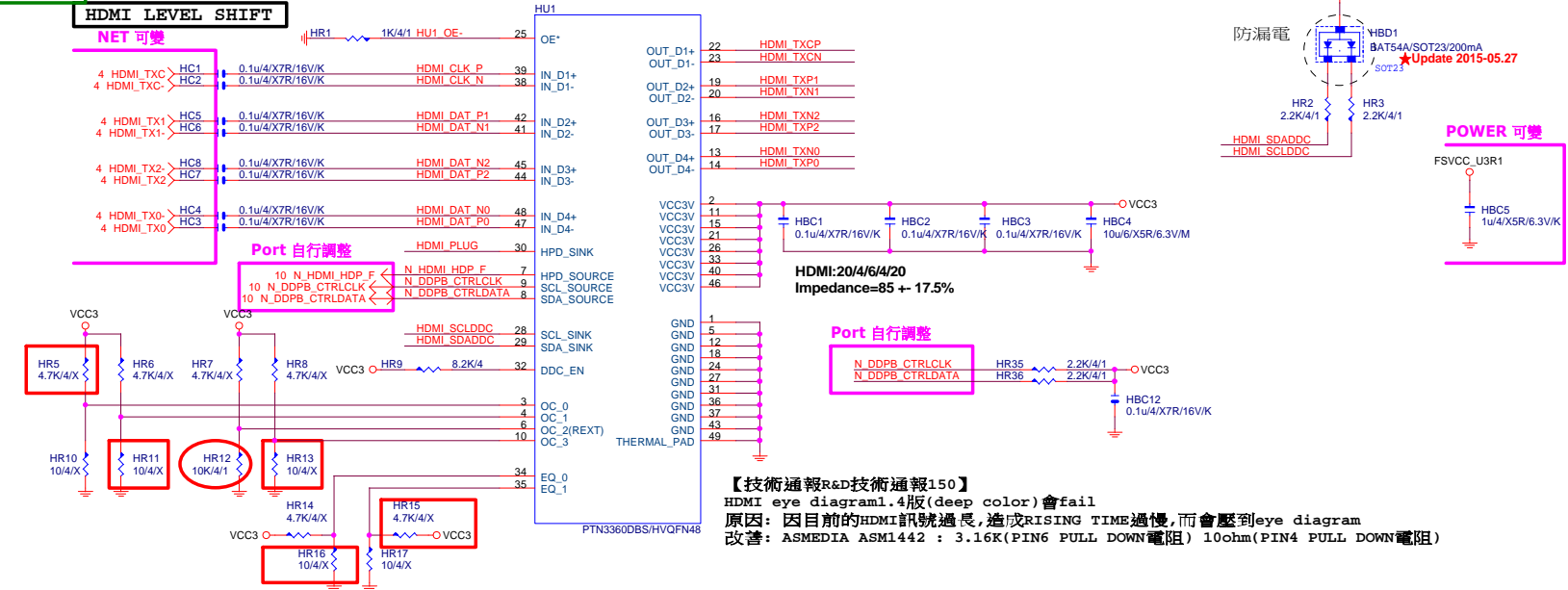
VGA CONN. 架高型VGA (BLACK)



VGA ESD

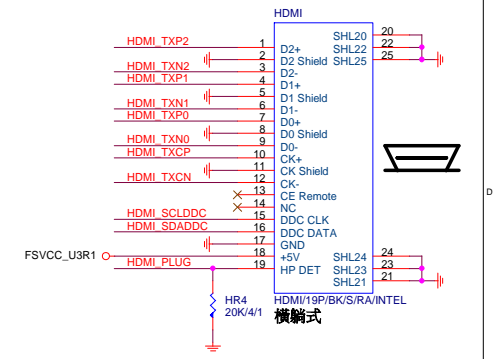
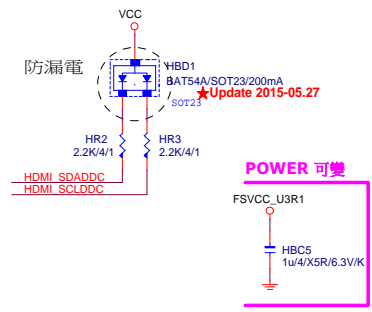


Gigabyte Technology		
NXP-PTN3356		
Title	Document Number	GA-Z170X-Gaming 3 EU.02
Size	Custom	
Date:	Monday, January 18, 2016	Sheet 37 of 58



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

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



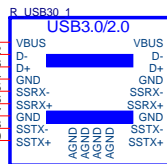
www.aitech1.ru

Rev: 0.31

R_USB30_1

NET 可自行調整

下 port for
Type-A USB3.1



NET 可自行調整

NET 可自行調整

NET 可自行調整

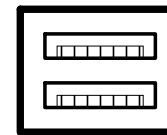
* swap
Type-A
USB3.1 ESD
不可對調

* swap
Type-A
USB3.1 ESD
不可對調

NET 可自行調整

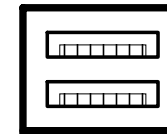
CONNECTOR 自行調整

2 port USB 3.0 Capture:
USB/18P/BU/OS/RA/D/2/1U/SB



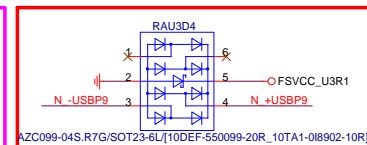
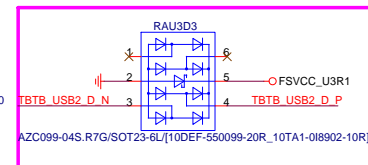
Footprint:USB30_20

2 port USB 3.0 with TYPE C Capture:
USB/18P/BU/OS/RA/D/2/HR

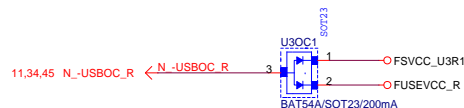


架高

Footprint:USB30_H



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Title		Gigabyte Technology	
Size		R_USB30,F_USB30, USB_OC	
Custom		GA-Z170X-Gaming 3 EU	
Date:		Monday, January 18, 2016	Sheet 39 of 58

LAN: E2201 R1.05

離IC近越好

10 LA_SRCCLK_LAN
10 LA_SRCCLK_LAN
11 LA_ML_OP
11 LA_ML_ON

LA_ML-->80歐姆:[15/5/5/5/15]

SRCLK-->50歐姆:[18/4/10/4/18]

LABC5
0.1u/4/X7R/16V/K

LABC4
1u/4/X5R/6.3V/K
LABC3
0.1u/4/X7R/16V/K

LABC6
0.1u/4/X7R/16V/K/X

LA_AVDDVCO
LABC7
0.1u/4/X7R/16V/K
LABC8
4.7u/6/X5R/6.3V/K

AR8161-->(O)

LA_ML-->80歐姆:[15/5/5/5/15]

離IC近越好

LA_ML_IP_C LAC12
LA_ML_IN_C LAC13

LA_PPS
LA_LED_LINK1000
LA_AVDDH
LA_MDI3-
LARB9
0.1u/4/X7R/16V/K/X
LARB14
0.1u/4/X7R/16V/K/X
LARB17
0.1u/4/X7R/16V/K

Qualcomm
(Atheros)
Killer
E2201

3VDUAL_LAN1
LARB9
10u/6/X5R/6.3V/M
LARB10
1u/4/X5R/6.3V/K
LARB11
0.1u/4/X7R/16V/K

LAC33
100p/4/NPO/50V/J/X

16.52 O.-PFMRST2
16 N.-PCIE1_WAKE

LA_CLKREQ
LAREQ1
0/4/SHT/M/X

LARB12
1u/4/X5R/6.3V/K/X

LARB15
1u/4/X5R/6.3V/K
LARB16
0.1u/4/X7R/16V/K

LARB18
1u/4/X5R/6.3V/K
LARB19
0.1u/4/X7R/16V/K

LARB20
0.1u/4/X7R/16V/K/X

LARB21
0.1u/4/X7R/16V/K

LARB22
1u/4/X5R/6.3V/K

LARB23
1u/4/X5R/6.3V/K

LARB24
1u/4/X5R/6.3V/K

LARB25
1u/4/X5R/6.3V/K

LARB26
1u/4/X5R/6.3V/K

LARB27
1u/4/X5R/6.3V/K

LARB28
1u/4/X5R/6.3V/K

LARB29
1u/4/X5R/6.3V/K

LARB30
1u/4/X5R/6.3V/K

LARB31
1u/4/X5R/6.3V/K

LARB32
1u/4/X5R/6.3V/K

LARB33
1u/4/X5R/6.3V/K

LARB34
1u/4/X5R/6.3V/K

LARB35
1u/4/X5R/6.3V/K

LARB36
1u/4/X5R/6.3V/K

LAX1
25M/16p/30ppm/49US/20/D

LA_XTALI
LA_XTALO

LAC31
20p/4/NPO/50V/J

LAC32
20p/4/NPO/50V/J

LAN POWER

LAL1
4.7uH/0.8A/3225/S/10LC4-5A470B-01R_10LI5-12470B-01R

CLOSE
LA_LX 200mIl

LABC1
10u/6/X5R/6.3V/M
LABC2
0.1u/4/X7R/16V/K

LARB5
MASK/0/6/SHT/XLAFB1
30/4/4A/S
LARB3
30/4/4A/S

LA_DVDDL
LA_AVDDL
LA_AVDDVCO

AR8161-->(O)

LA_AVDDH
LARB7
8.2K/4
LA_LED_ACT_TXRX
LARB8
8.2K/4
LA_LED_LINK100

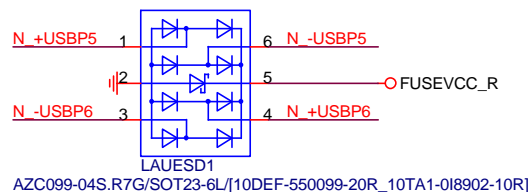
VCC3
LARB1
8.2K/4
LA_VDDCT

Gigabyte Technology	
KILLER E2201	
Size Custom	Document Number
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R1.04

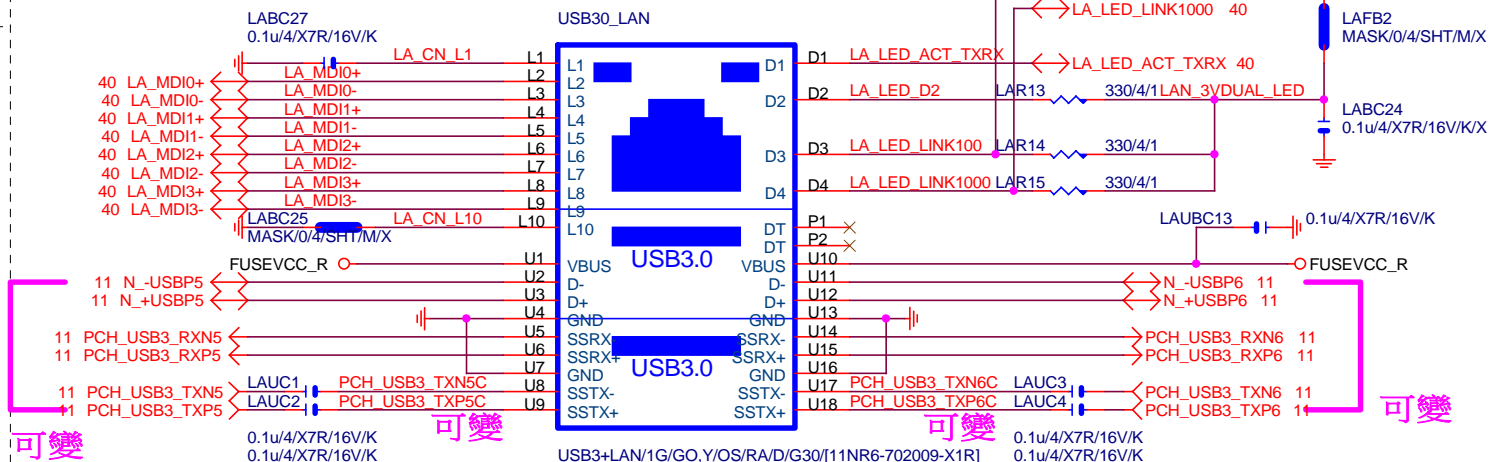
note:可變更USB NAME

可變



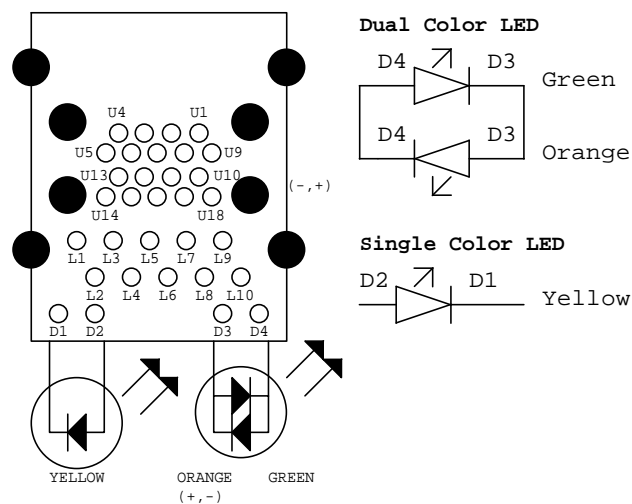
note:可變更USB NAME

[E2201]



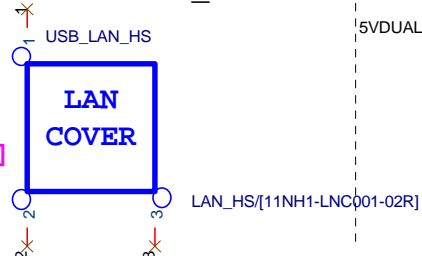
LA MDI-->100歐姆:[20/4/8/4/20]

Dual Color LED



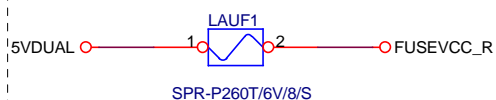
FOOT PRINT:LAN COVER

可變
[視SPEC需求]



note:可變更FUSE

可變

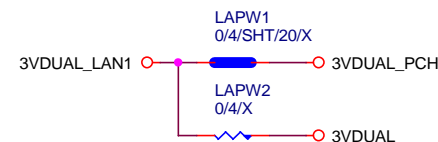


Close to connector
FUSE-0805

PS:視EMI需求

LAR24 MASK/0/4/SHT/M/X

可變



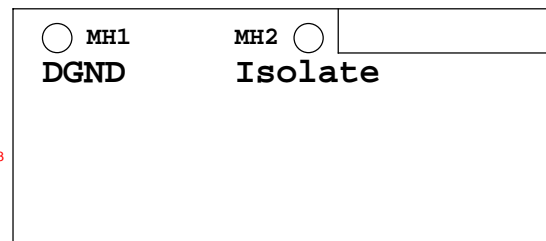
Gigabyte Technology

LAN CONNECTOR-E2201

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ALC1150 五孔+SPDIF
AUDIO JACK

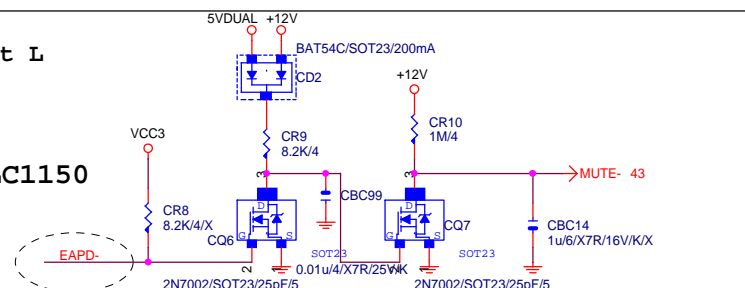
1. MH1空間夠,下DGND
空間不夠,改為Isolate
2. MH2一律改為Isolate
3. Codec下方,第二層必須參考GND



音效區域印刷



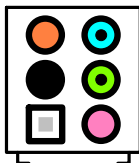
Close to ALC1150



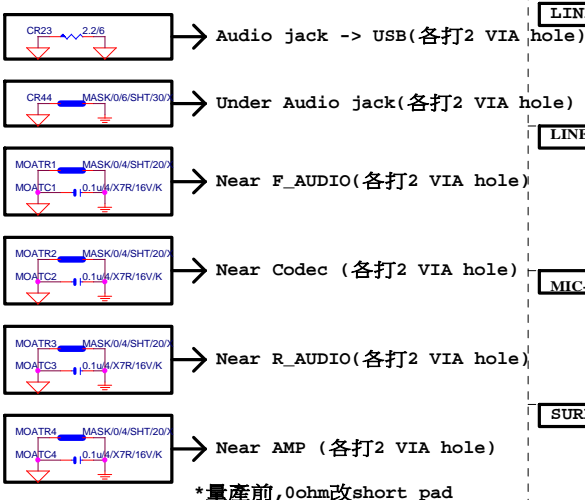
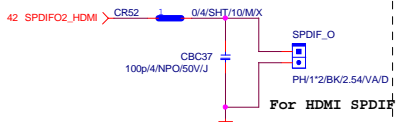
Gigabyte Technology

Title		ALC1150	
Size	Document Number	GA-Z170X-Gaming 3 EU	
Custom		1.02	
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AZALIA JACK



SPDIF_OUT



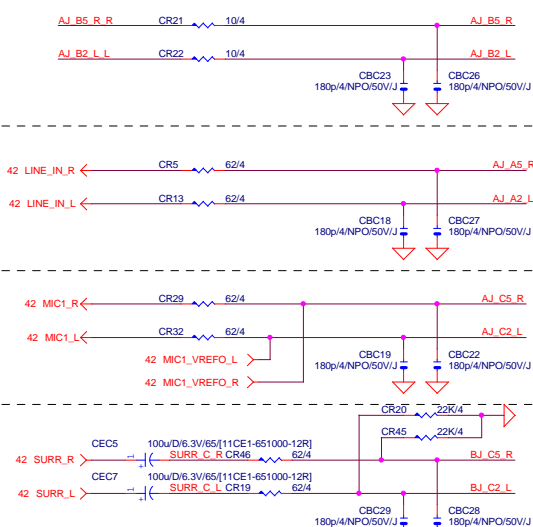
*量產前, 0ohm改short pad

LINE-OUT

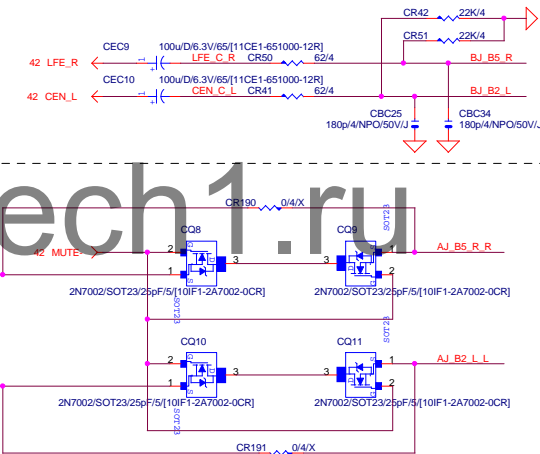
LINE-IN

MIC-IN

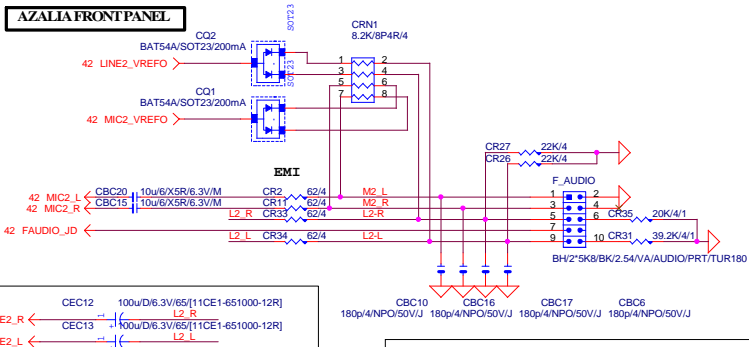
SURROUND



CEN/LFE



AZALIA FRONT PANEL



Gigabyte Technology

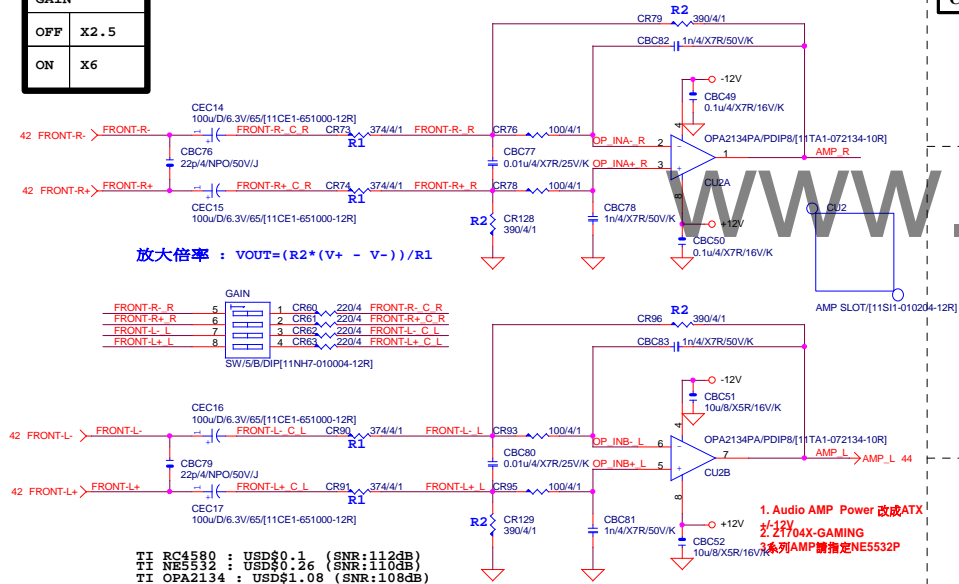
AUDIO JACK

GA-Z170X-Gaming 3 EU^{Rv}

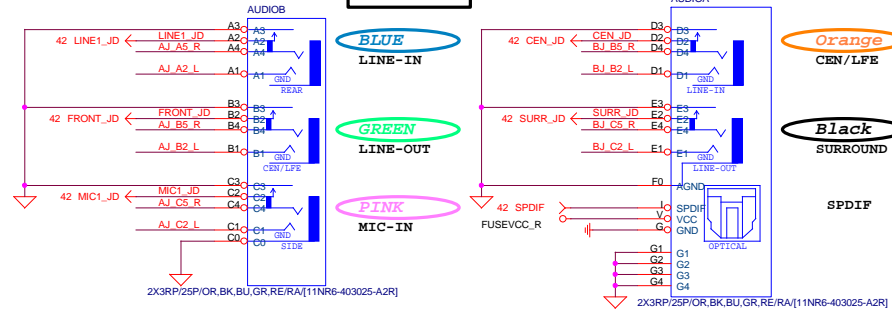
Custom	ORA Error Sampling = 1.0%
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Differential to Single-End AMPLIFIED

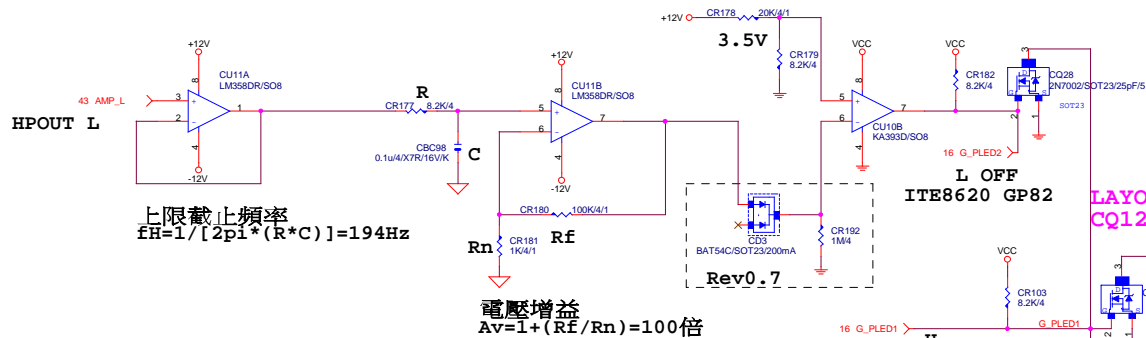
GAIN	
OFF	X2.5
ON	X6



AZALIA JACK



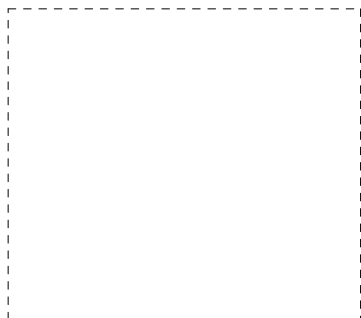
[GAMING系列--> 紅光LED(紅色):LED/R/H/0603/S]



LAYOUT注意:
CQ12,CQ18,CQ19必須擺放在一起

	IO_GP80
BAR LED ON	H
BAR LED OFF	L

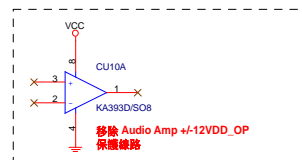
LAYOUT OPTION : 除了GAMING3系列和Z1704N-GAMING5不要LAYOUT, 其餘GAMING系列機種都要留LAYOUT



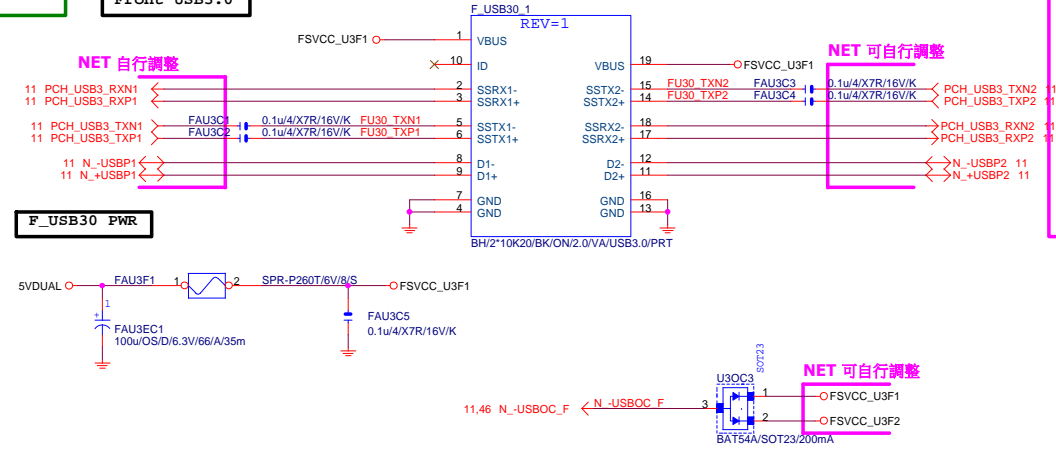
CR107 POWER 5VDUAL
CR107 8.2K4
CO27 2N7002/SOT2325pF5
16.49 MPD
L
ITE8620 GP91

AUDIO LED Control (沒有LPT model)

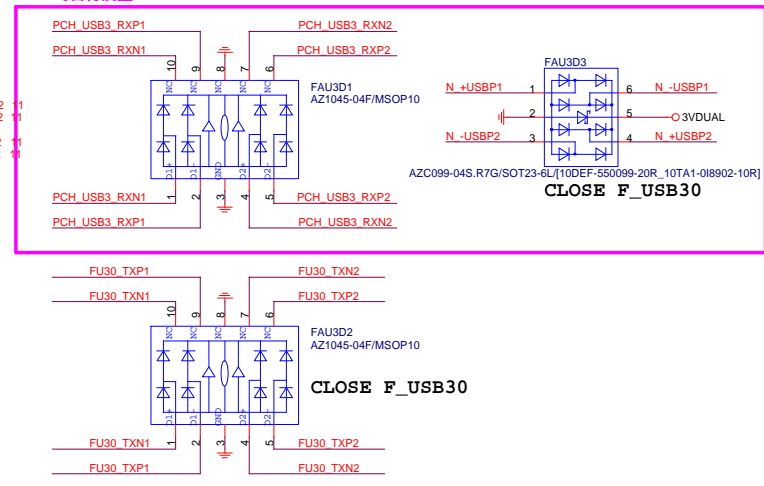
	IO_GP82	IO_GP83	IO_GP91
Sleep Mode	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L



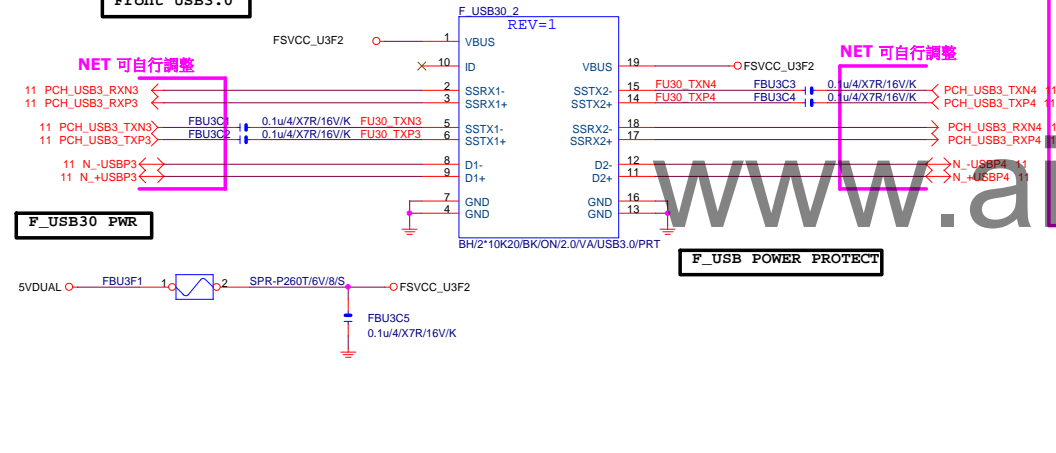
Front USB3.0



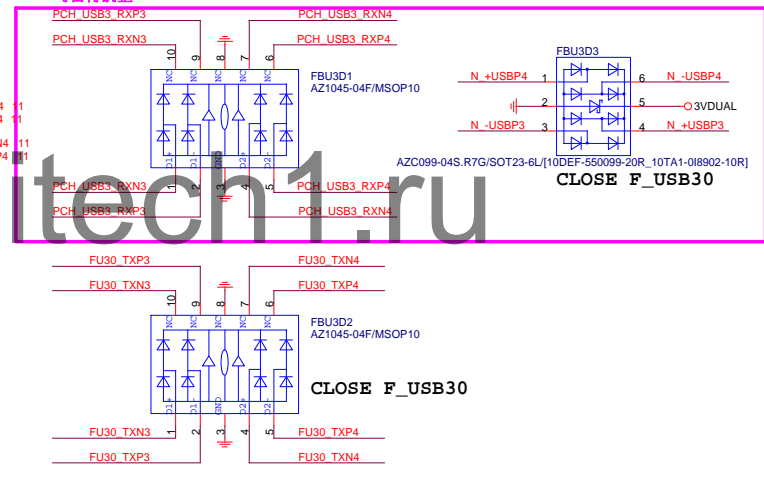
NET 可自行調整



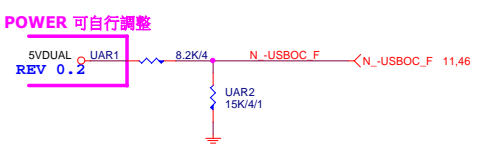
Front USB3.0



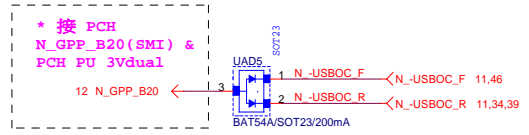
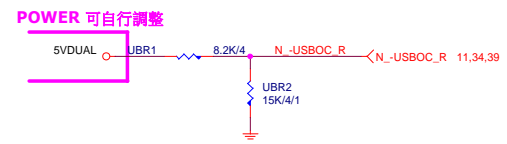
NET 可自行調整



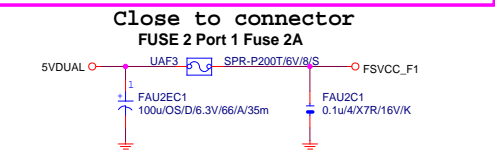
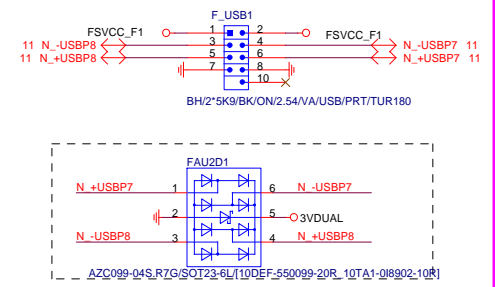
-USBOC_F



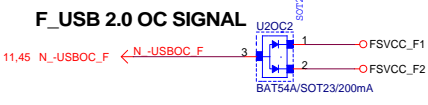
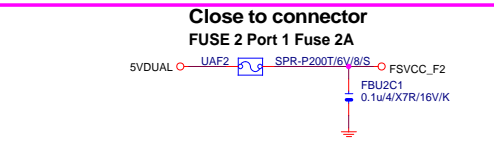
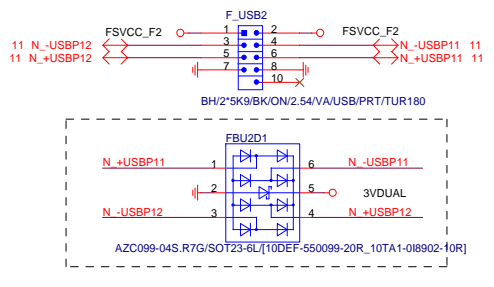
-USBOC_R



NET 可變

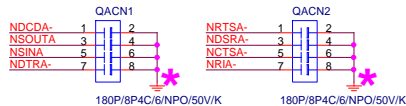


NET 可變

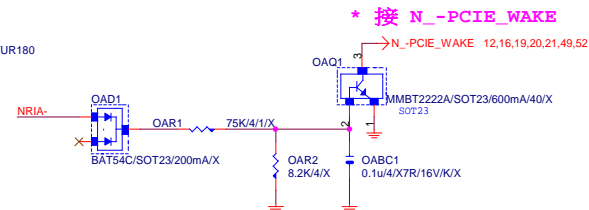
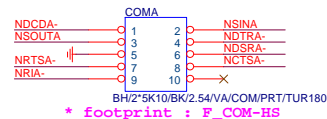


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COM PORT



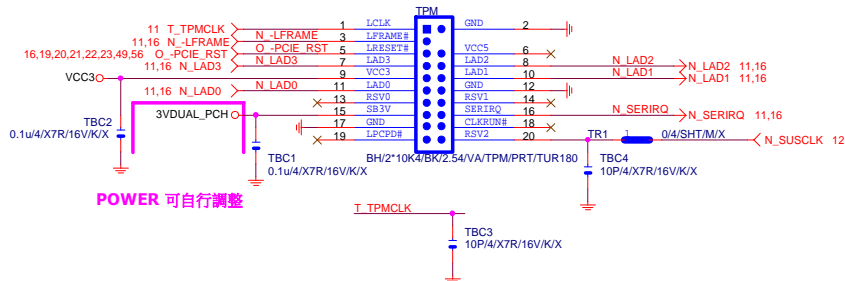
TURBO KEY



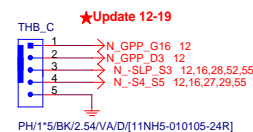
LPT PORT

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TPM CONNECT



Thunderbolt

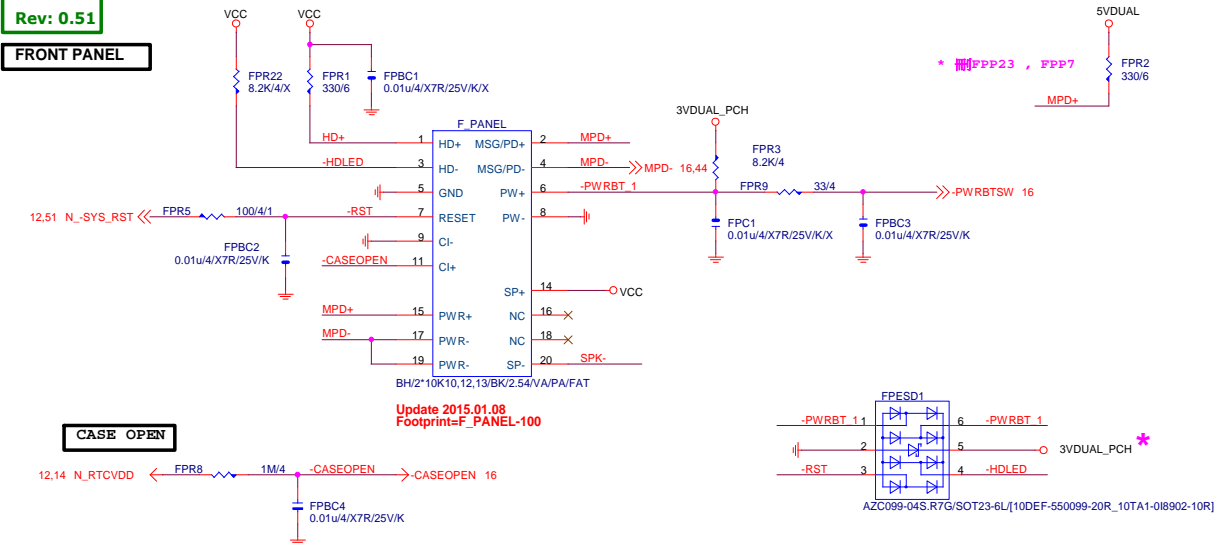


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Title			
COM,TPM,THB			
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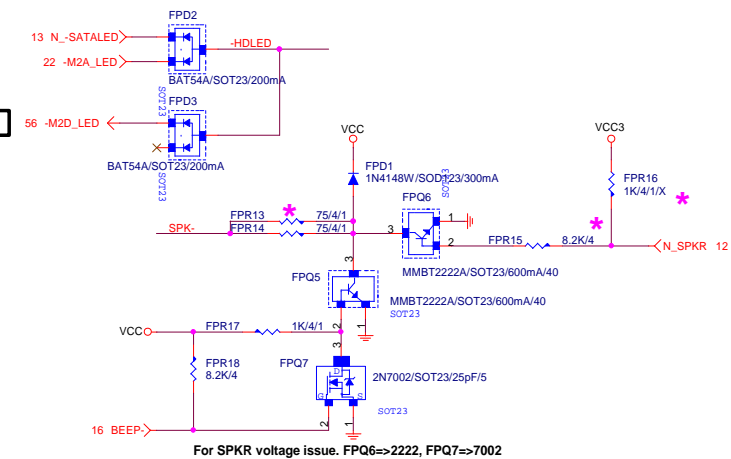
Rev: 0.51

FRONT PANEL



SATA LED

SPKR



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Gigabyte Technology

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Rev 0.3

PCIEX8 PROTECT SHT

+12V protect short-wire test

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Gigabyte Technology

PCI EXPRESS X8

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Component	Value	Component	Value
PE EXP SW TXP8	PEC7	0.22u4/X5R/6.3V/K	PE EXP SW TXP8 C
PE EXP SW TXN8	PEC8	0.22u4/X5R/6.3V/K	PE EXP SW TXN8 C
PE EXP SW TXP9	PEC9	0.22u4/X5R/6.3V/K	PE EXP SW TXP9 C
PE EXP SW TXN9	PEC10	0.22u4/X5R/6.3V/K	PE EXP SW TXN9 C
PE EXP SW TXP10	PEC11	0.22u4/X5R/6.3V/K	PE EXP SW TXP10 C
PE EXP SW TXN10	PEC12	0.22u4/X5R/6.3V/K	PE EXP SW TXN10 C
PE EXP SW TXP11	PEC13	0.22u4/X5R/6.3V/K	PE EXP SW TXP11 C
PE EXP SW TXN11	PEC14	0.22u4/X5R/6.3V/K	PE EXP SW TXN11 C
PE EXP SW TXP12	PEC15	0.22u4/X5R/6.3V/K	PE EXP SW TXP12 C
PE EXP SW TXN12	PEC16	0.22u4/X5R/6.3V/K	PE EXP SW TXN12 C
PE EXP SW TXP13	PEC17	0.22u4/X5R/6.3V/K	PE EXP SW TXP13 C
PE EXP SW TXN13	PEC18	0.22u4/X5R/6.3V/K	PE EXP SW TXN13 C
PE EXP SW TXP14	PEC19	0.22u4/X5R/6.3V/K	PE EXP SW TXP14 C
PE EXP SW TXN14	PEC20	0.22u4/X5R/6.3V/K	PE EXP SW TXN14 C
PE EXP SW TXP15	PEC21	0.22u4/X5R/6.3V/K	PE EXP SW TXP15 C
PE EXP SW TXN15	PEC22	0.22u4/X5R/6.3V/K	PE EXP SW TXN15 C

Rev 0.3

PCIEX8 PROTECT SHT

+12V protect short-wire test

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Rev 0.3

PCIEX8 PROTECT SHT

+12V
protect
short-wire
test

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Component	Value	Component	Value
PE EXP SW TXP8	PEC7	0.22u4/XSR/6.3V/K	PE EXP SW TXP8 C
PE EXP SW TXN8	PEC8	0.22u4/XSR/6.3V/K	PE EXP SW TXN8 C
PE EXP SW TXP9	PEC9	0.22u4/XSR/6.3V/K	PE EXP SW TXP9 C
PE EXP SW TXN9	PEC10	0.22u4/XSR/6.3V/K	PE EXP SW TXN9 C
PE EXP SW TXP10	PEC11	0.22u4/XSR/6.3V/K	PE EXP SW TXP10 C
PE EXP SW TXN10	PEC12	0.22u4/XSR/6.3V/K	PE EXP SW TXN10 C
PE EXP SW TXP11	PEC13	0.22u4/XSR/6.3V/K	PE EXP SW TXP11 C
PE EXP SW TXN11	PEC14	0.22u4/XSR/6.3V/K	PE EXP SW TXN11 C
PE EXP SW TXP12	PEC15	0.22u4/XSR/6.3V/K	PE EXP SW TXP12 C
PE EXP SW TXN12	PEC16	0.22u4/XSR/6.3V/K	PE EXP SW TXN12 C
PE EXP SW TXP13	PEC17	0.22u4/XSR/6.3V/K	PE EXP SW TXP13 C
PE EXP SW TXN13	PEC18	0.22u4/XSR/6.3V/K	PE EXP SW TXN13 C
PE EXP SW TXP14	PEC19	0.22u4/XSR/6.3V/K	PE EXP SW TXP14 C
PE EXP SW TXN14	PEC20	0.22u4/XSR/6.3V/K	PE EXP SW TXN14 C
PE EXP SW TXP15	PEC21	0.22u4/XSR/6.3V/K	PE EXP SW TXP15 C
PE EXP SW TXN15	PEC22	0.22u4/XSR/6.3V/K	PE EXP SW TXN15 C

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PCIEX8 PROTECT SHT

+12V protect short-wire test

Table of Component Values:

Component	Value	Component	Value
PE EXP SW TXP8	PEC7	0.22u4/X5R/6.3V/K	PE EXP SW TXP8 C
PE EXP SW TXN8	PEC8	0.22u4/X5R/6.3V/K	PE EXP SW TXN8 C
PE EXP SW TXP9	PEC9	0.22u4/X5R/6.3V/K	PE EXP SW TXP9 C
PE EXP SW TXN9	PEC10	0.22u4/X5R/6.3V/K	PE EXP SW TXN9 C
PE EXP SW TXP10	PEC11	0.22u4/X5R/6.3V/K	PE EXP SW TXP10 C
PE EXP SW TXN10	PEC12	0.22u4/X5R/6.3V/K	PE EXP SW TXN10 C
PE EXP SW TXP11	PEC13	0.22u4/X5R/6.3V/K	PE EXP SW TXP11 C
PE EXP SW TXN11	PEC14	0.22u4/X5R/6.3V/K	PE EXP SW TXN11 C
PE EXP SW TXP12	PEC15	0.22u4/X5R/6.3V/K	PE EXP SW TXP12 C
PE EXP SW TXN12	PEC16	0.22u4/X5R/6.3V/K	PE EXP SW TXN12 C
PE EXP SW TXP13	PEC17	0.22u4/X5R/6.3V/K	PE EXP SW TXP13 C
PE EXP SW TXN13	PEC18	0.22u4/X5R/6.3V/K	PE EXP SW TXN13 C
PE EXP SW TXP14	PEC19	0.22u4/X5R/6.3V/K	PE EXP SW TXP14 C
PE EXP SW TXN14	PEC20	0.22u4/X5R/6.3V/K	PE EXP SW TXN14 C
PE EXP SW TXP15	PEC21	0.22u4/X5R/6.3V/K	PE EXP SW TXP15 C
PE EXP SW TXN15	PEC22	0.22u4/X5R/6.3V/K	PE EXP SW TXN15 C

Gigabyte Technology

PCI EXPRESS X8

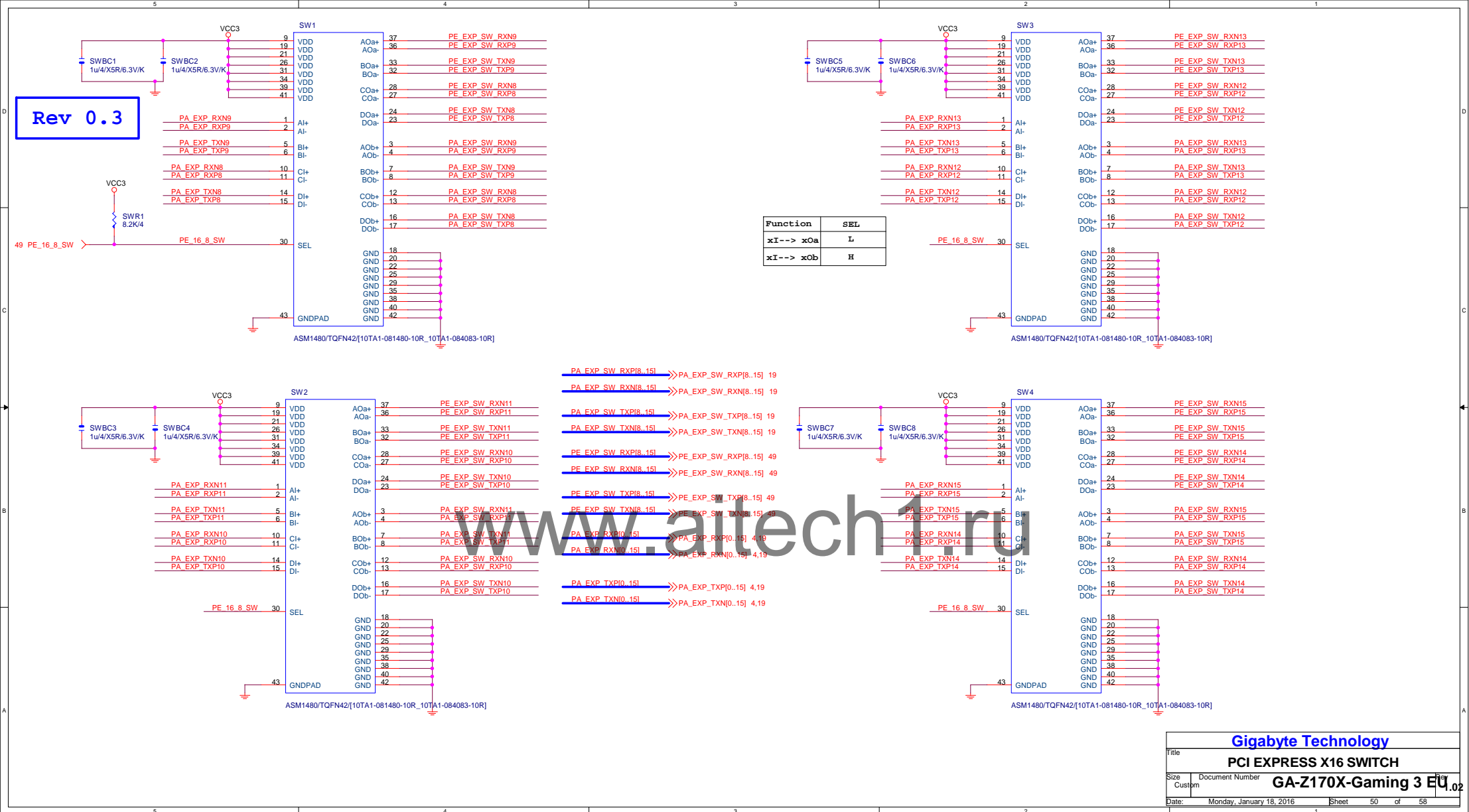
Size Custom

Document Number

GA-Z170X-Gaming 3 EU

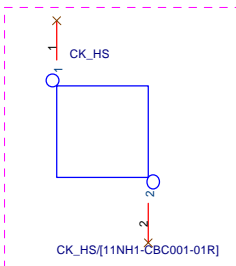
Date: Monday, January 18, 2016

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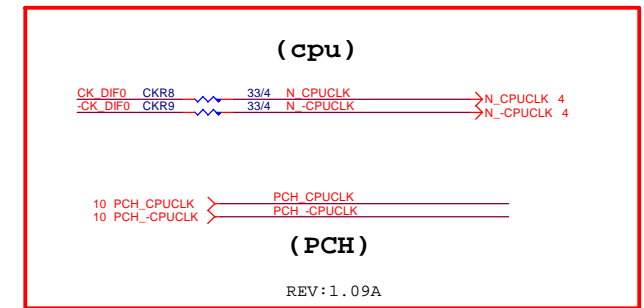
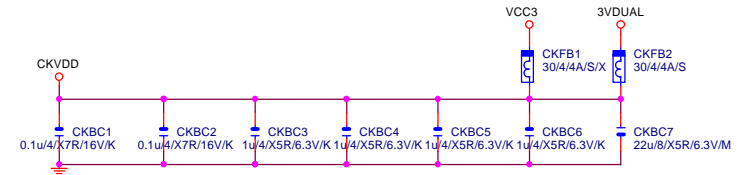
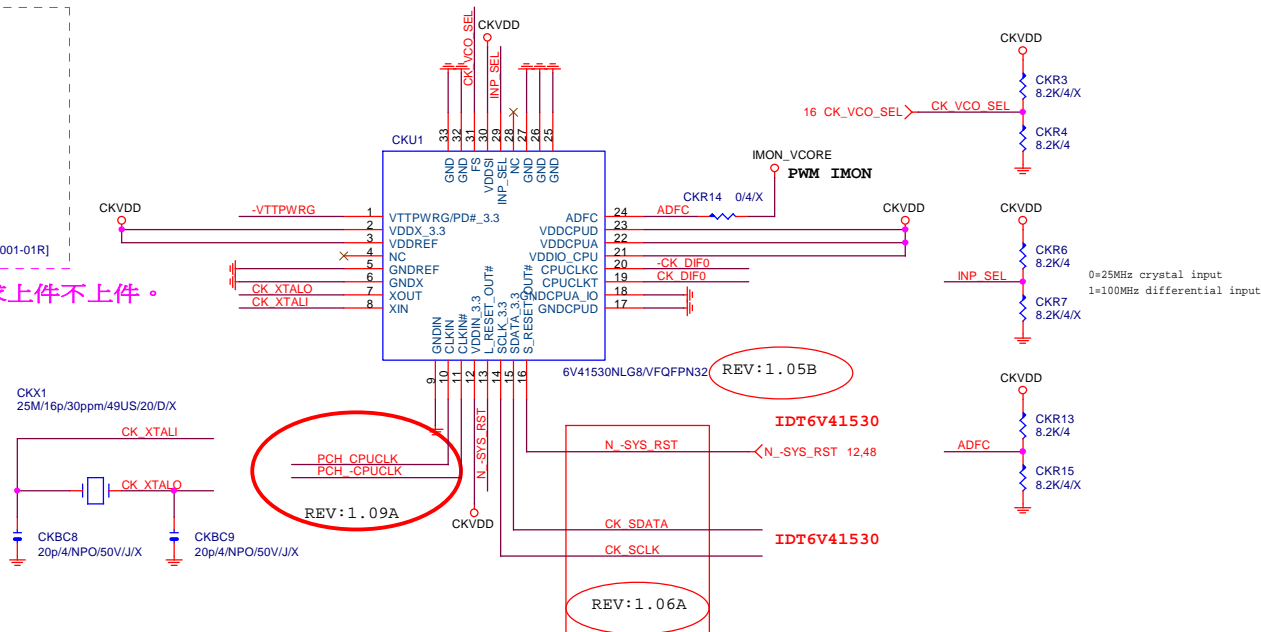


REV:1.10A

IDT6V41530



*可變, 依需求上件不上件。



請依使用情況(0 ohm 請修改為short Pad)

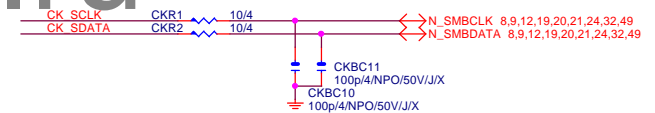
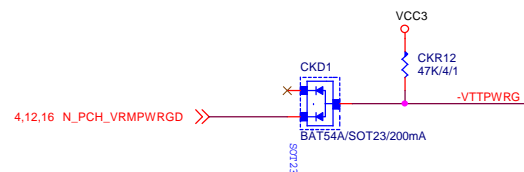
INP_SEL	Intput
0	Crystal
1	CLK_INP/N

CK_VCO_SEL	VCO
0	400M
1	1200M

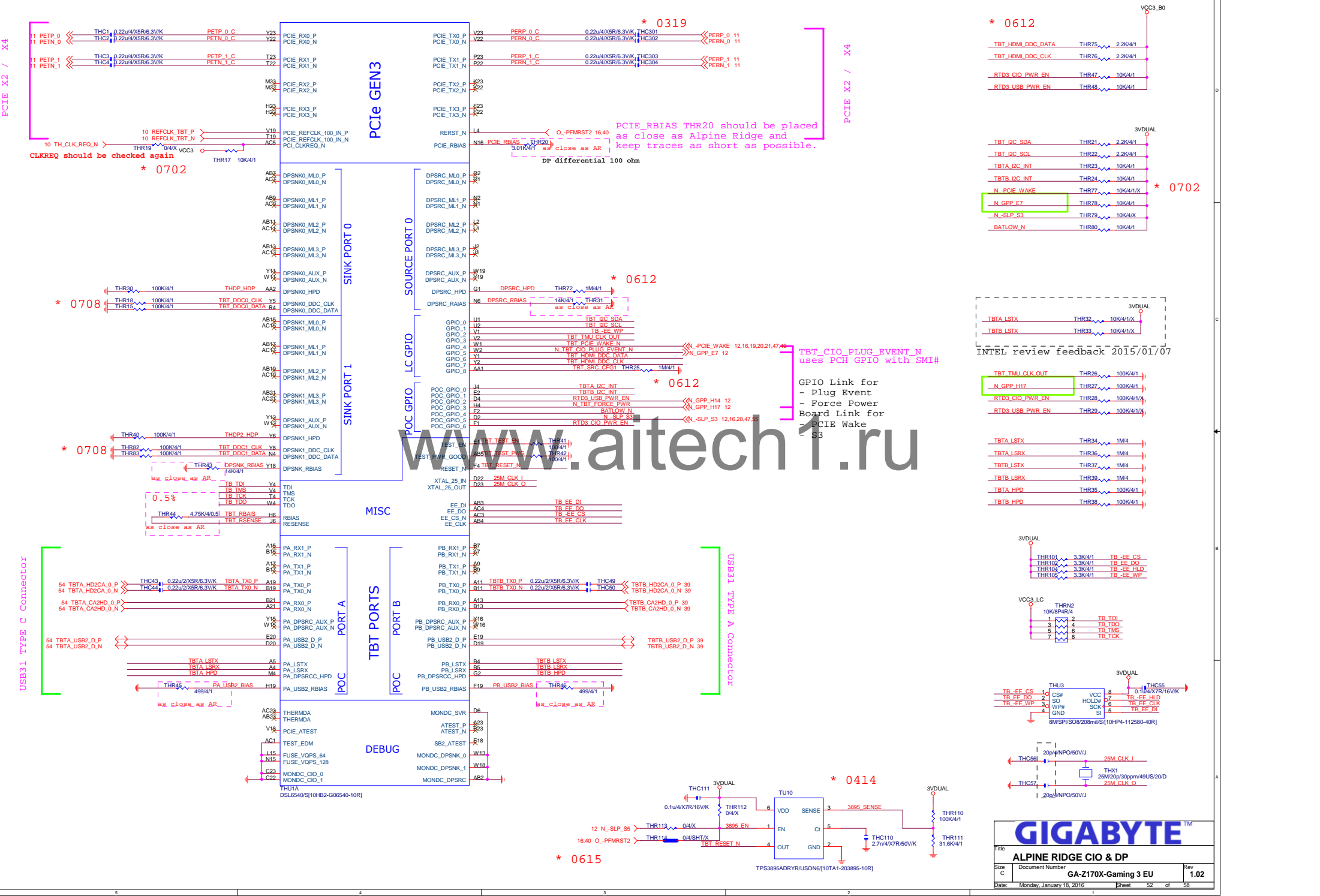
Location	CLK BUFFER	PCH CLK
WR100	MOUNT	N/A
WR101	MOUNT	N/A
NR302	MOUNT	N/A
NR303	MOUNT	N/A
WR102	N/A	MOUNT
WR103	N/A	MOUNT
NR300	N/A	MOUNT
NR301	N/A	MOUNT

CLK BUFFER 未上件時, 零件FOOTPRINT需修改為IC32QFN-SL-MASK

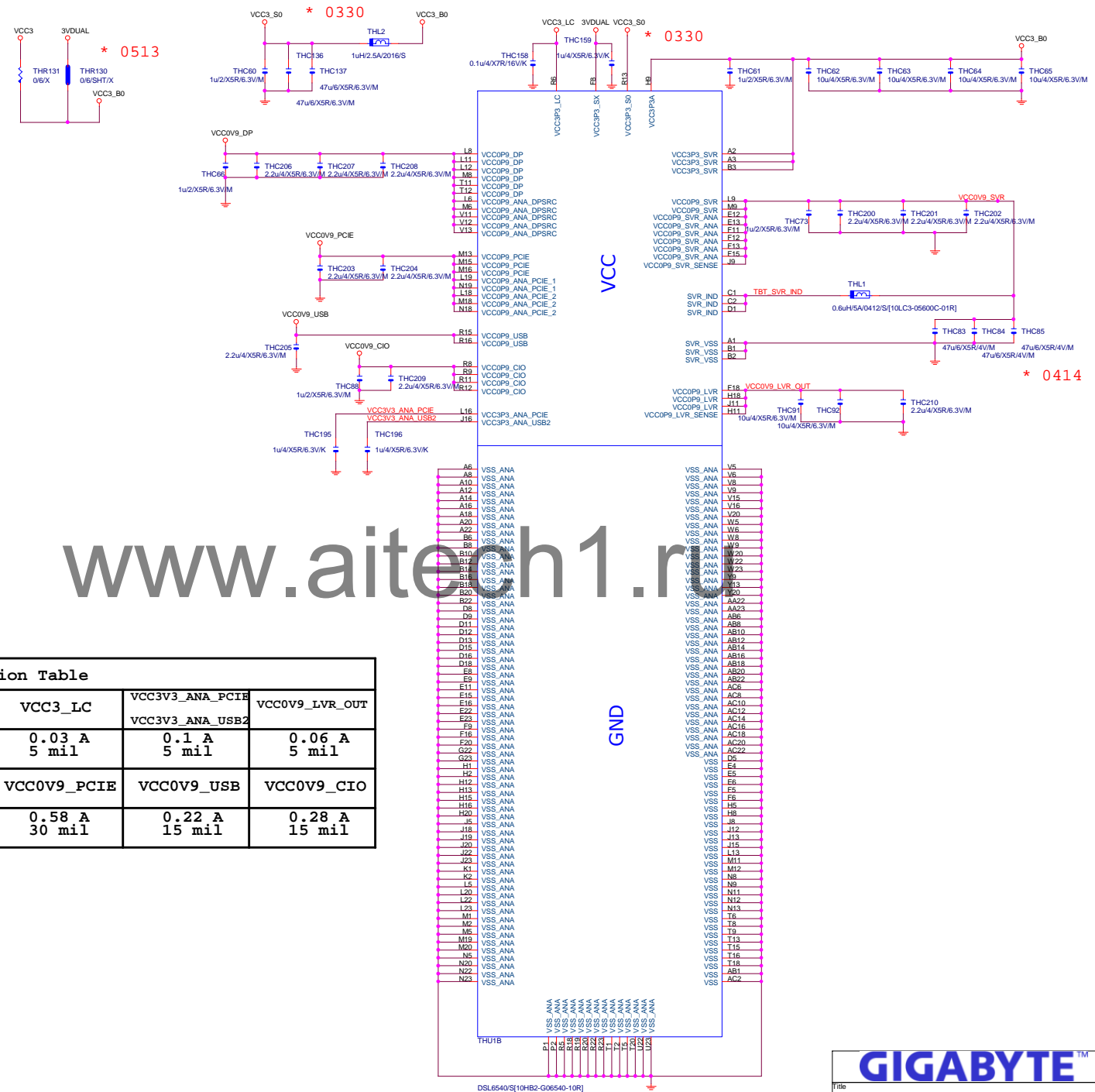
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GIGABYTE™			
Title IDT6V41530_CLK BUFFER			
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INTEL AR USB31 module SCH 0.63 (2015/07/08)



Power Consumption Table

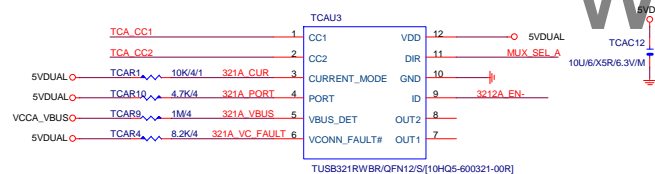
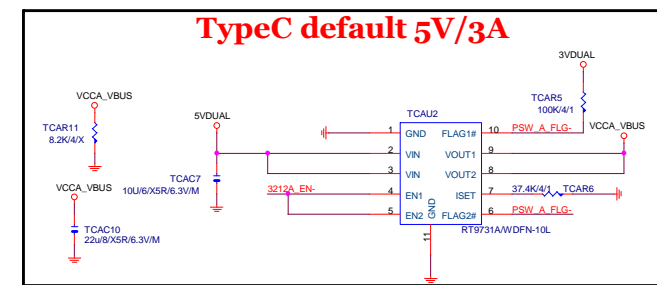
	VCC3	3VDUAL	VCC3_LC	VCC3V3_ANA_PCIE VCC3V3_ANA_USB2	VCC0V9_LVR_OUT
Max Current(A)	1.05 A 40 mil	0.19 A 10 mil	0.03 A 5 mil	0.1 A 5 mil	0.06 A 5 mil
	VCC0V9_SVR	VCC0V9_DP	VCC0V9_PCIE	VCC0V9_USB	VCC0V9_CIO
Max Current(A)	1.83 A 80 mil	0.7 A 30 mil	0.58 A 30 mil	0.22 A 15 mil	0.28 A 15 mil

GIGABYTE

ALPINE RIDGE POWER

File	Document Number	Rev
GA-Z170X-Gaming 3 EU	1.02	
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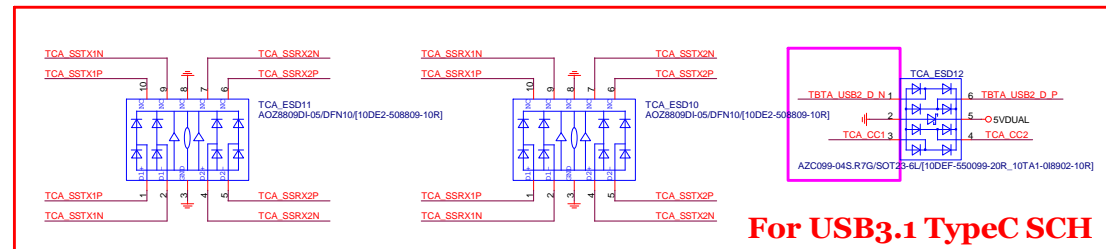
* 0612



MUX_SEL
H - TypeC plug position 2
L - TypeC plug position 1

L - Default current / Pull down to GND or NC
M - Medium (1.5A) current / Pull up to VDD 500K
H - High (3.0A) current / Pull up to VDD 10K

NC - Dual Role

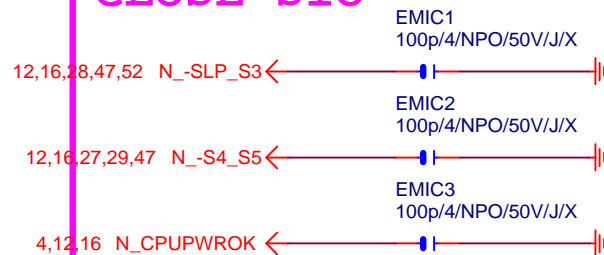


For USB3.1 TypeC SCH

Color markers can be changed by model

			
Title			
TI TUSB321			
Size C	Document Number GA-Z170X-Gaming 3 EU		Rev 1.02
Date	Monday, January 18, 2016	Sheet 54 of 58	

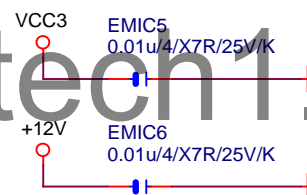
CLOSE SIO



CLOSE PCH



EMI Alain 2015/03/04 modify

**GIGABYTE™**

Title

EMI/ESDSize
A

Document Number

GA-Z170X-Gaming 3 EU

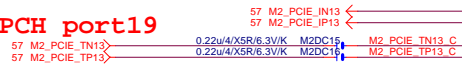
Rev

1.02

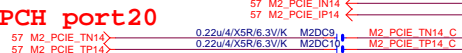
Date: Monday, January 18, 2016

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M.2 Lane2 from PCH port19



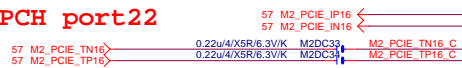
M.2 Lane2 from PCH port20



M.2 Lane3 from PCH port21

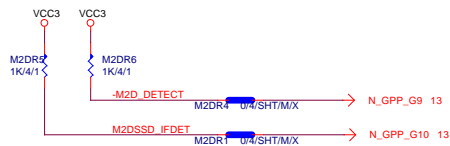


M.2 Lane4 from PCH port22



10 CK_M2D_100M_DN
10 CK_M2D_100M_DP
需與M2-CLKREQ對應

支援SATA and M.2 function



M.2 有插卡 / 沒插卡	M.2插何種卡? GPP_G10	SATA Express 插何種硬碟? GPP_E0/E1/E2/F0	IO19 (S0)	IO20 (S1)	IO21 (S2)	IO22 (S3)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA	SATA	SATA	SATA (For M2)
		SATA Express (Low)	SATA	SATA	SATA	SATA (For M2)
	PCIe Mode (Hi)	SATA (Hi)	PCIEx4 (For M.2)			
		SATA Express (Low)	PCIEx4 (For M.2)			
沒插卡 (Hi)	Don't Care (Hi)	SATA (Hi)	SATA (S0)	SATA (S1)	SATA (S2)	SATA (S3)
		SATA Express (Low)	SATA Express (For S.E.0)		SATA Express (For S.E.1)	

M.2-SATA+SATA S0~2

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	L
GPP_G8	L	GPP_C19	L
GPP_F1/F2	H (SATA)	GPP_C21	H

M.2-SATA+S.E.D

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	L
GPP_G8	L	GPP_C19	L
GPP_F1/F2	L (S.E.)	GPP_C21	H

M.2X4

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	H
GPP_G8	H	GPP_C19	H
GPP_F1/F2	H	GPP_C21	H

M.2X2+S.E.

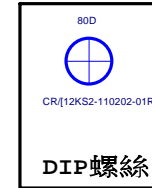
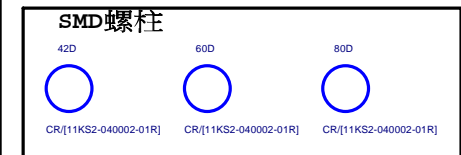
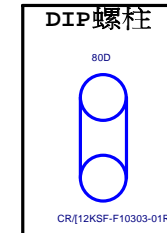
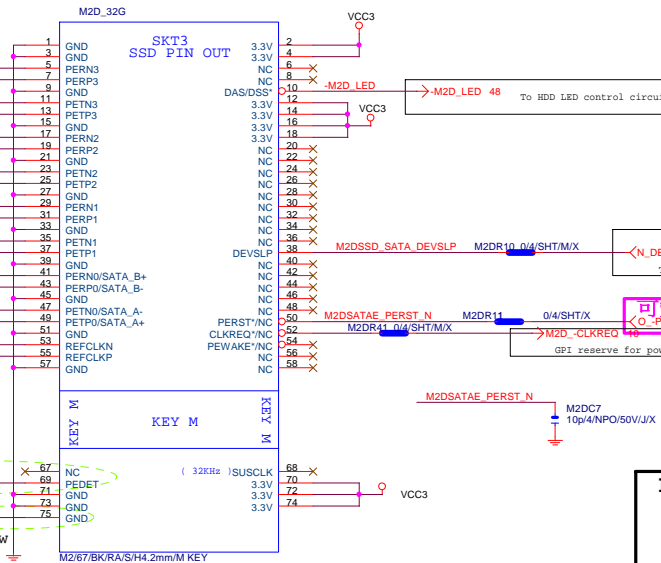
WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	H
GPP_G8	H	GPP_C19	H
GPP_F1/F2	L	GPP_C21	H

M.2沒插卡+SATA S0~3

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	H	GPP_C20	L
GPP_G8	H	GPP_C19	L
GPP_F1/F2	H	GPP_C21	L

M.2沒插卡+S.E.C&S.E.D

WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	H	GPP_C20	L
GPP_G8	H	GPP_C19	L
GPP_F1/F2	L	GPP_C21	L



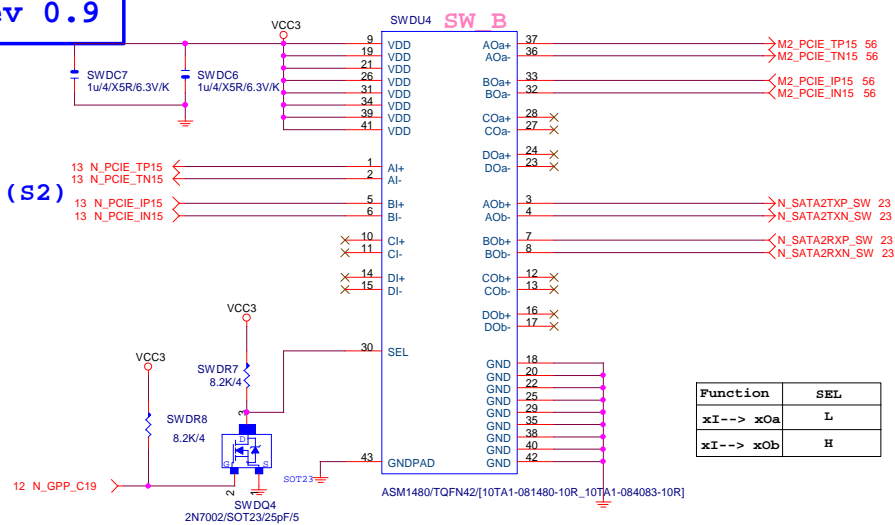
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Title	M.2 X4		
Size	Document Number	GA-Z170X-Gaming 3 EU	Rev 1.02
Date:	Monday, January 18, 2016	Sheet 55 of 58	

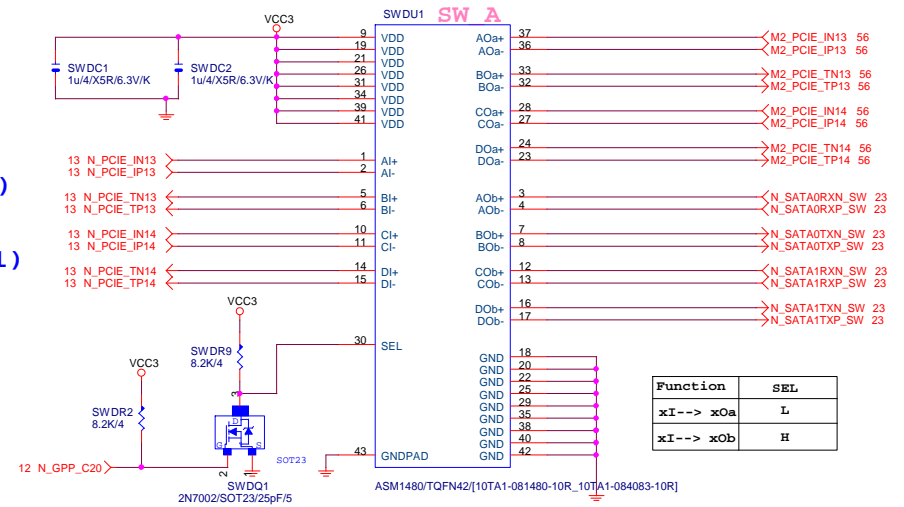
Rev 0.9

PCH (S2)

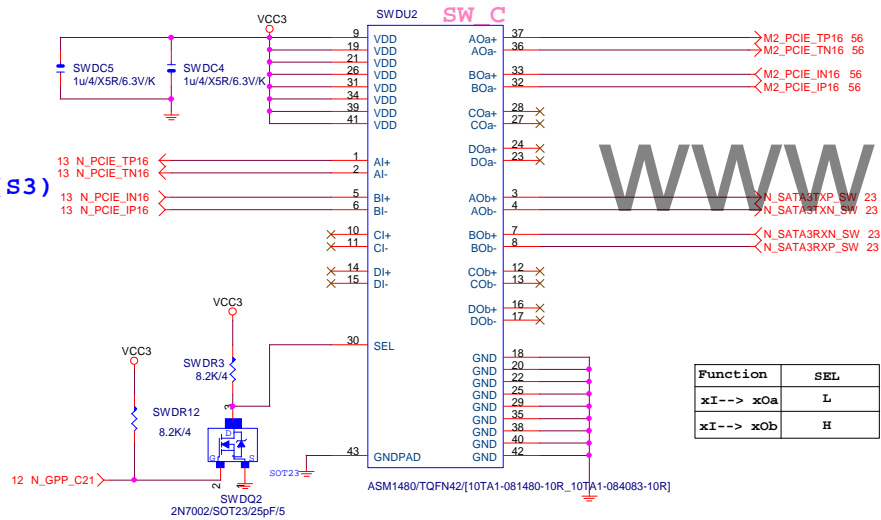


PCH (S0)

PCH (S1)



PCH (S3)



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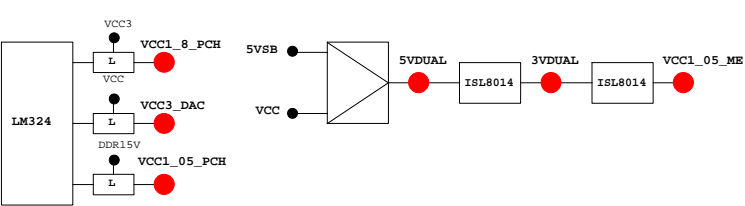
Gigabyte Technology	
M.2 SWITCH	
Title	
Size	Document Number
Custom	GA-Z170X-Gaming 3 EU.02
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PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAGE	NOTE	
GP0	MAIN	H-Z	GPI	GPIO0	N/A
GP1/TACH1	MAIN		GPI	GPIO1	N/A
GP2/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
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	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

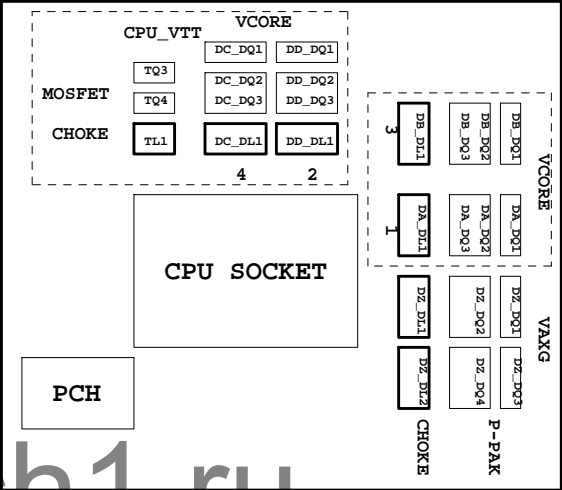
Super I/O ITE8720 GPIO Table

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	-PCI_E_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	
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	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	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/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