

Model Name: GA-Z170X-Gaming 3

SHEET TITLE Rev 1.1

| | |
|----|----------------------------|
| 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 E2400 |
| 41 | USB30 LAN CONNECTOR-E2400 |
| 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 |

GIGABYTE Technology

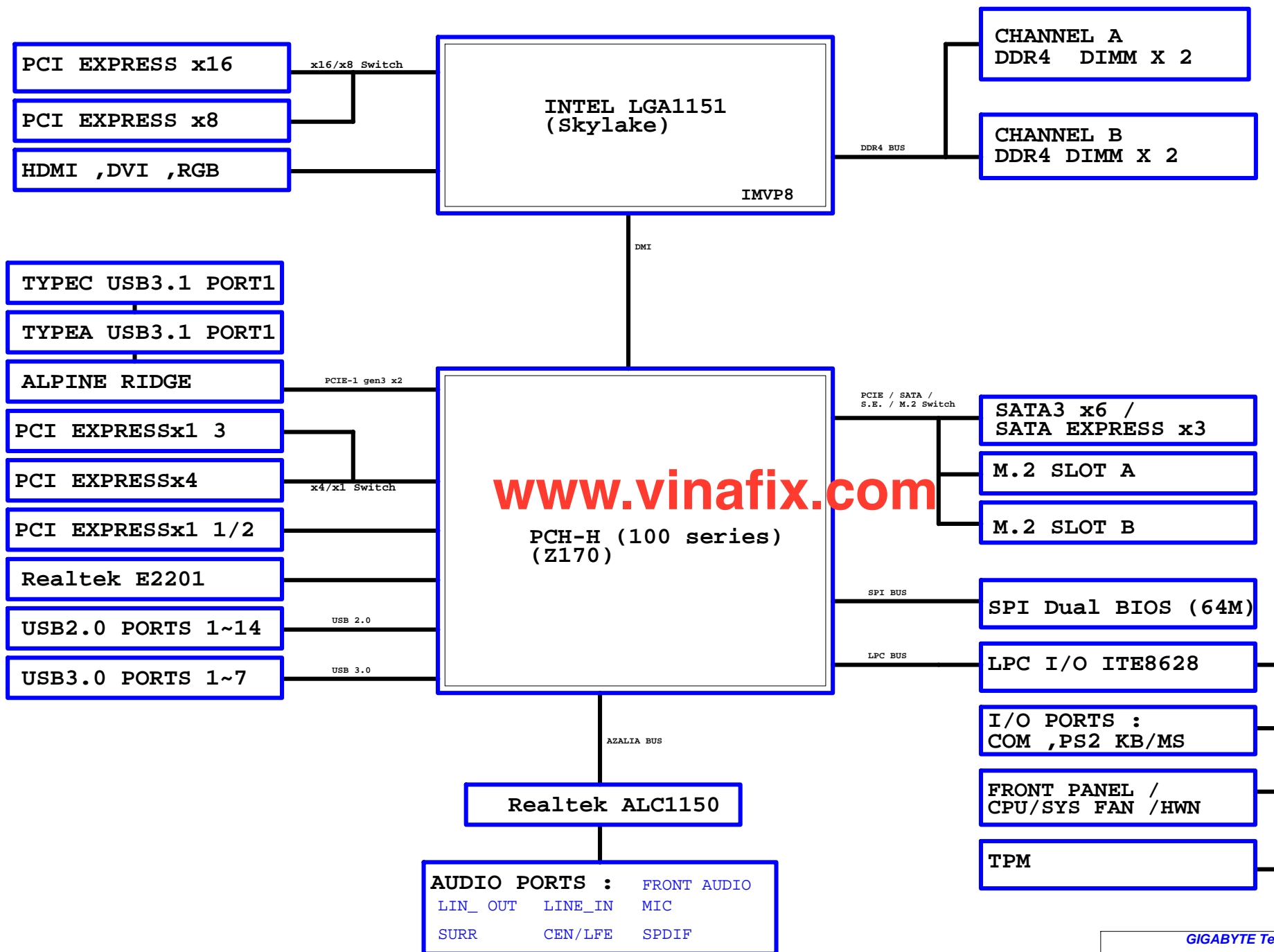
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| Size | Document Number | GA-Z170X-Gaming 3 | Rev 1.1 |
| Custom | | | |
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Rev 1.1

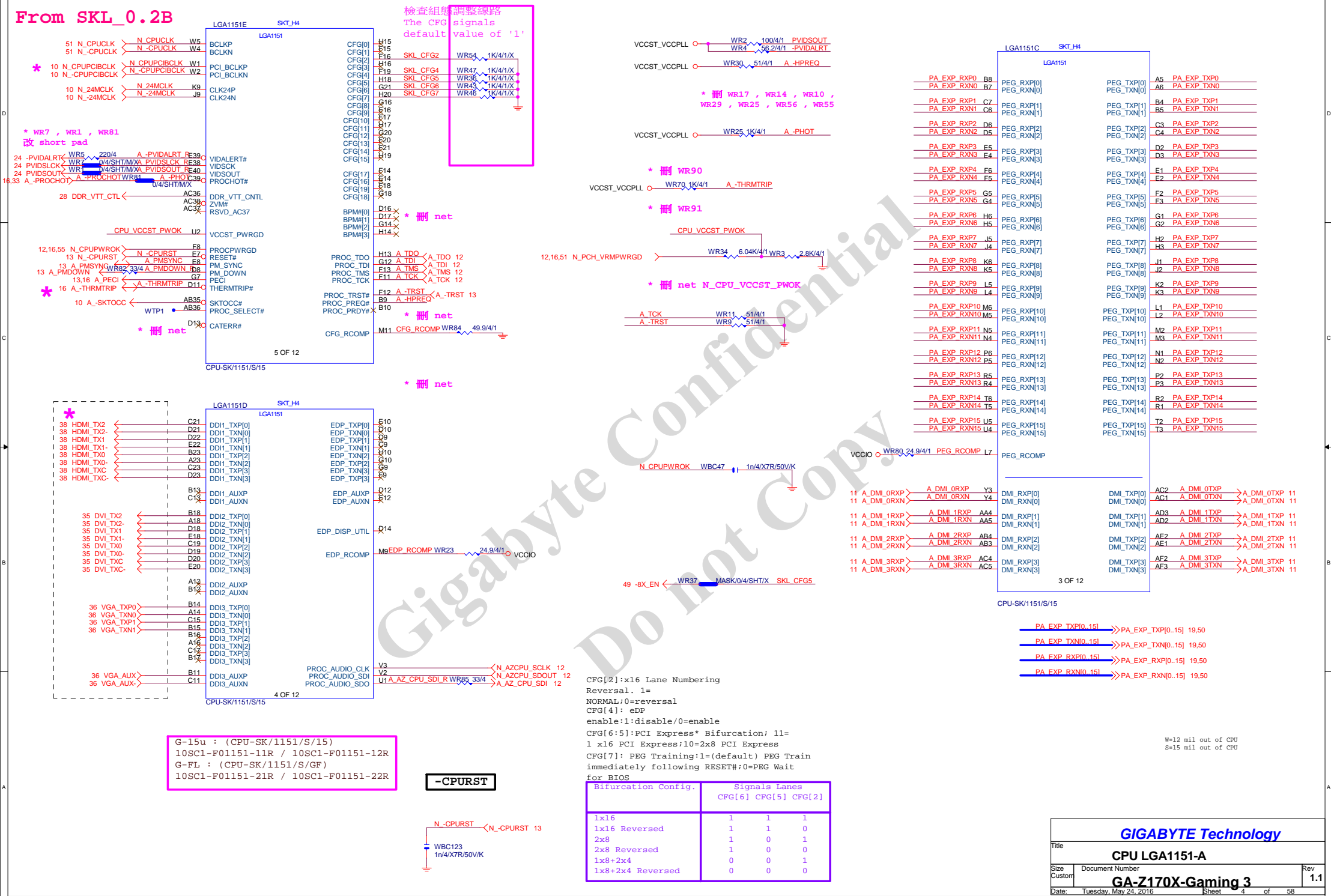
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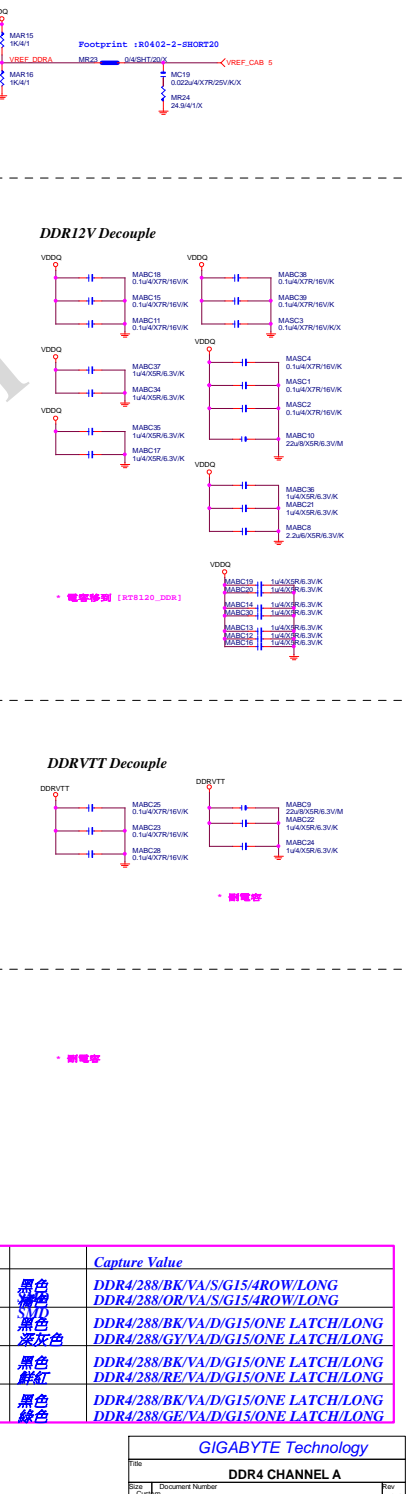
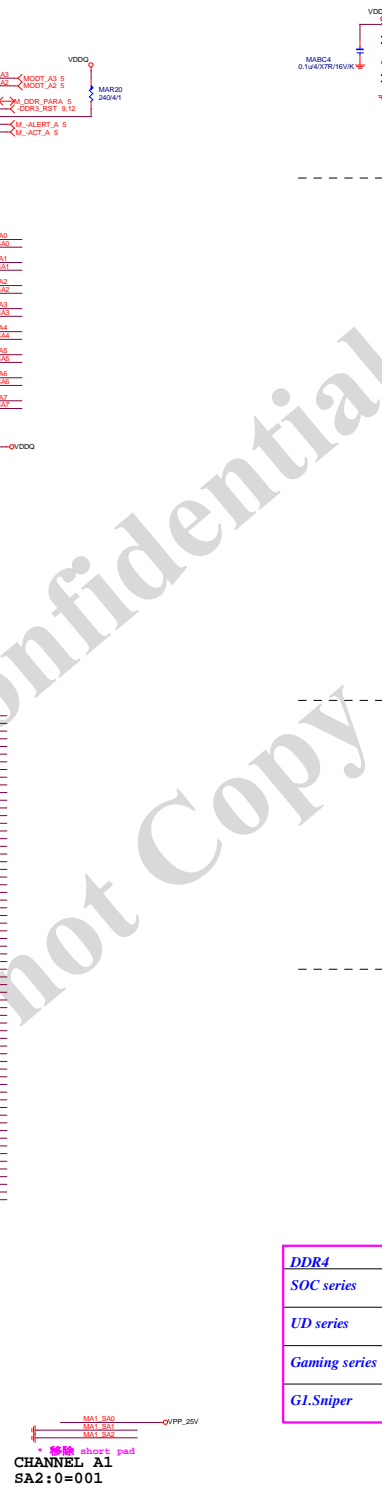
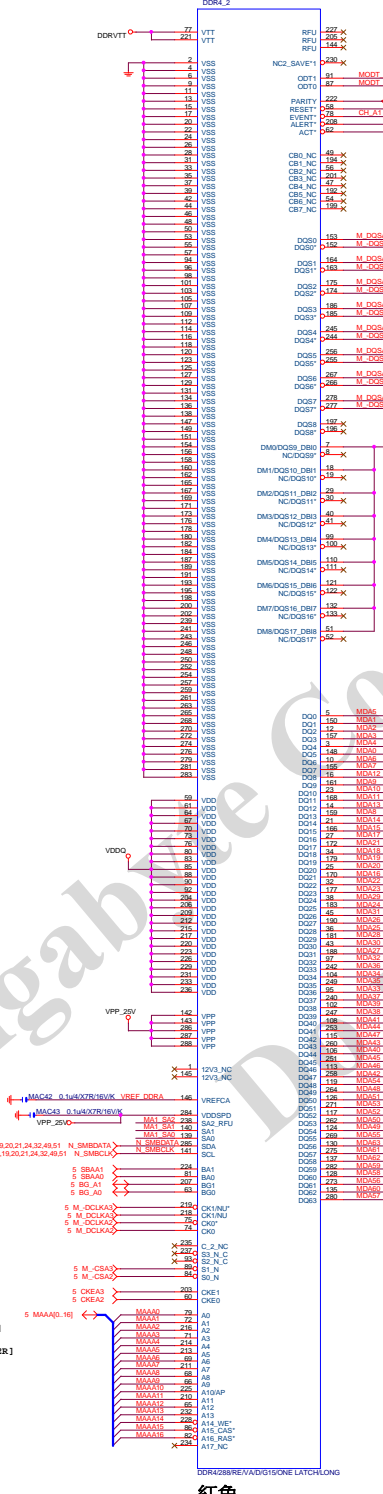
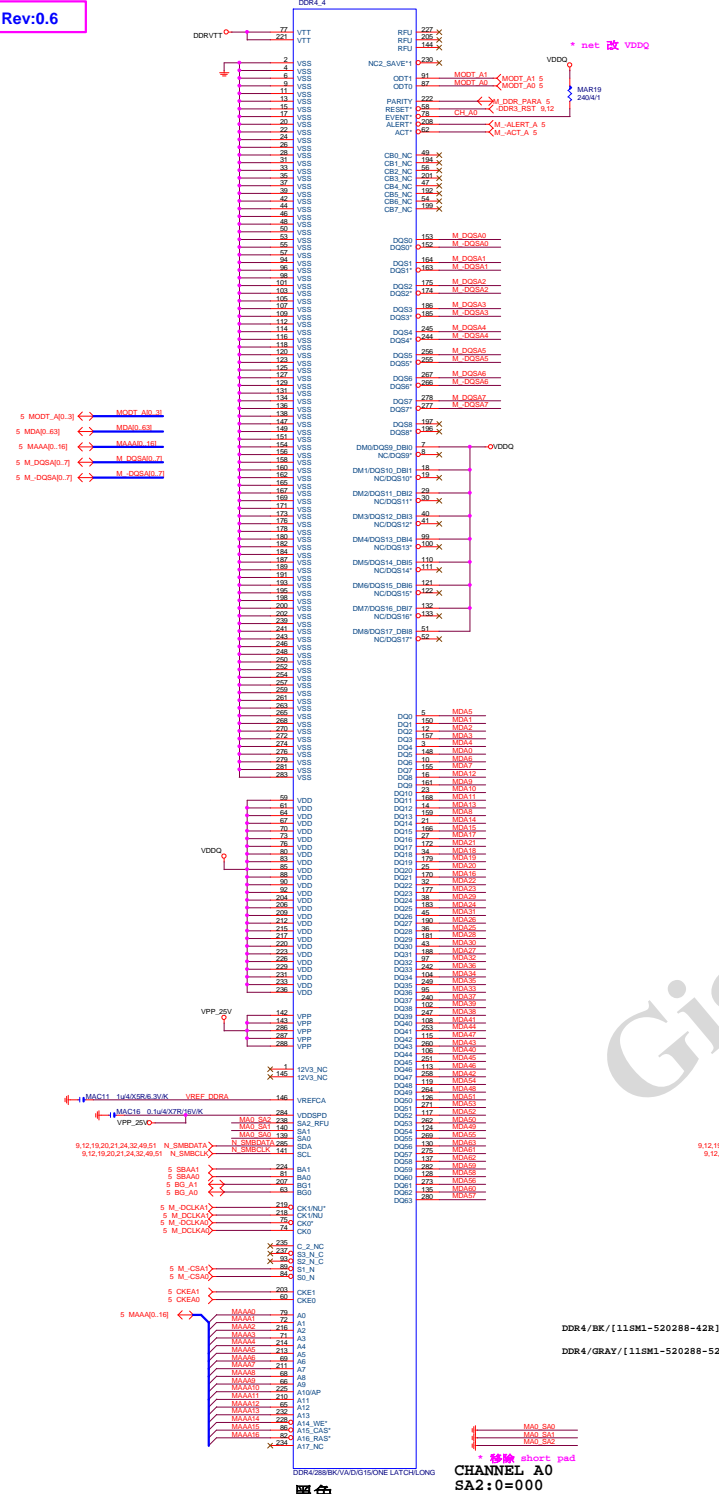
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BLOCK DIAGRAM

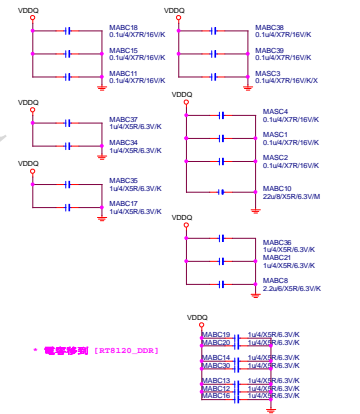


From SKL_0.2B

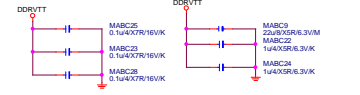




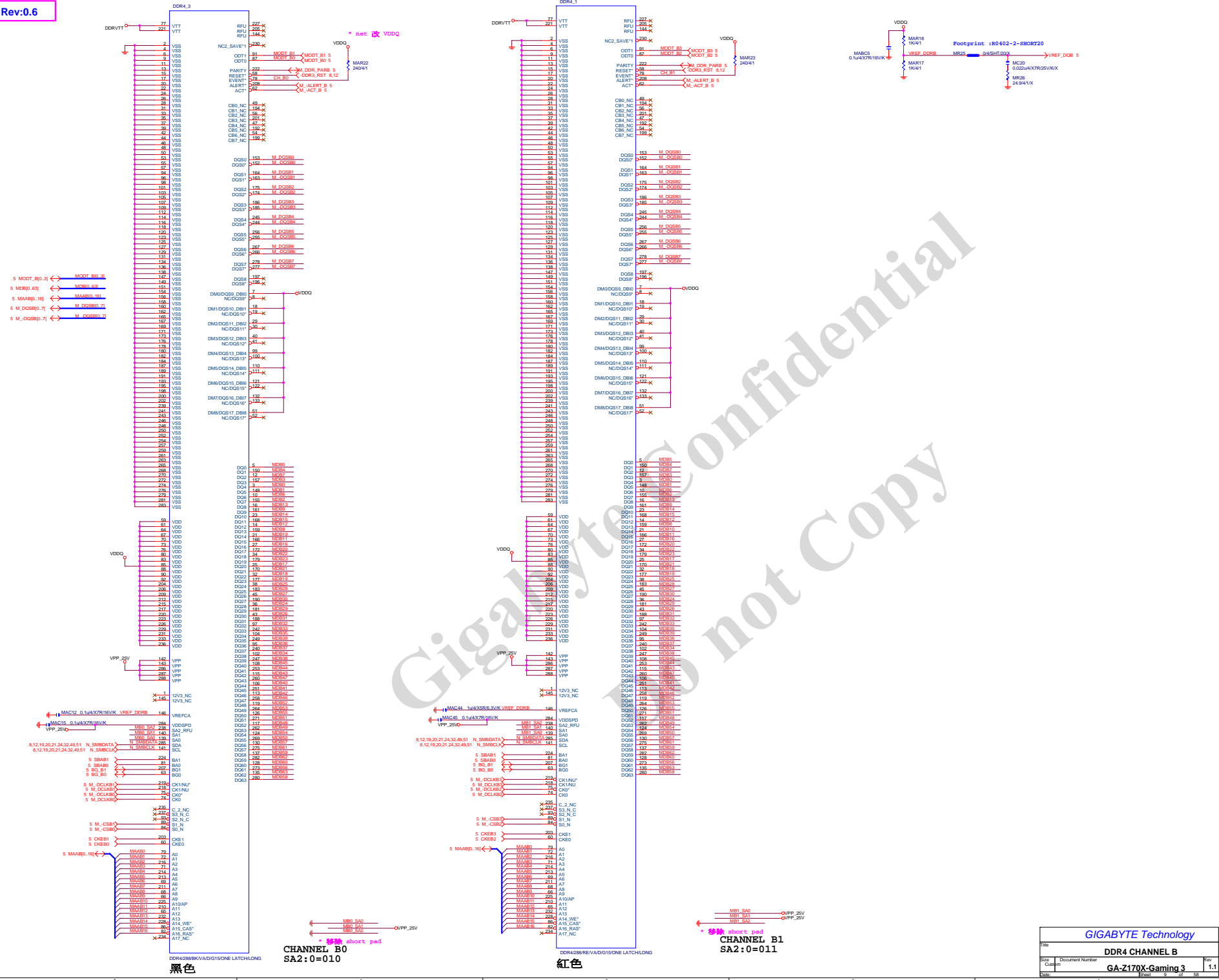
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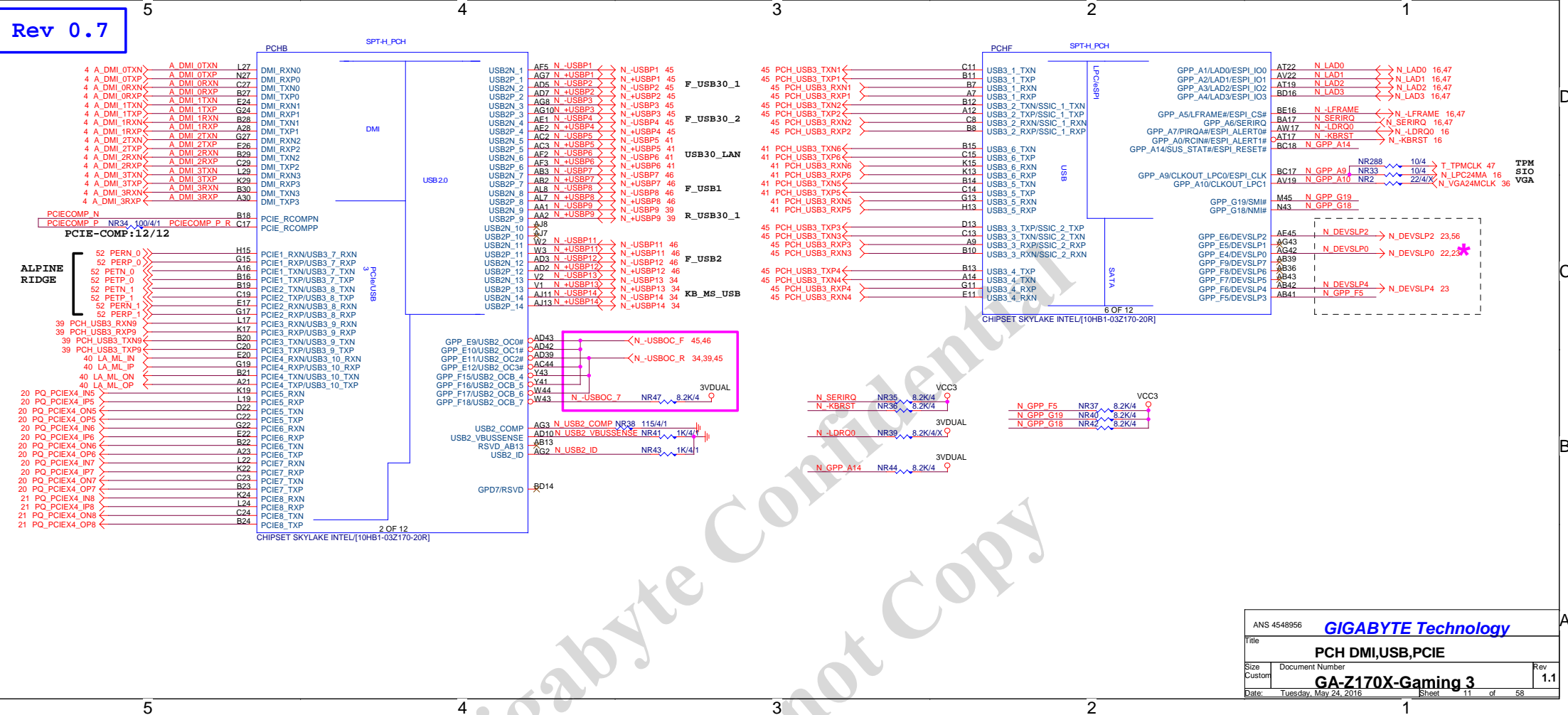


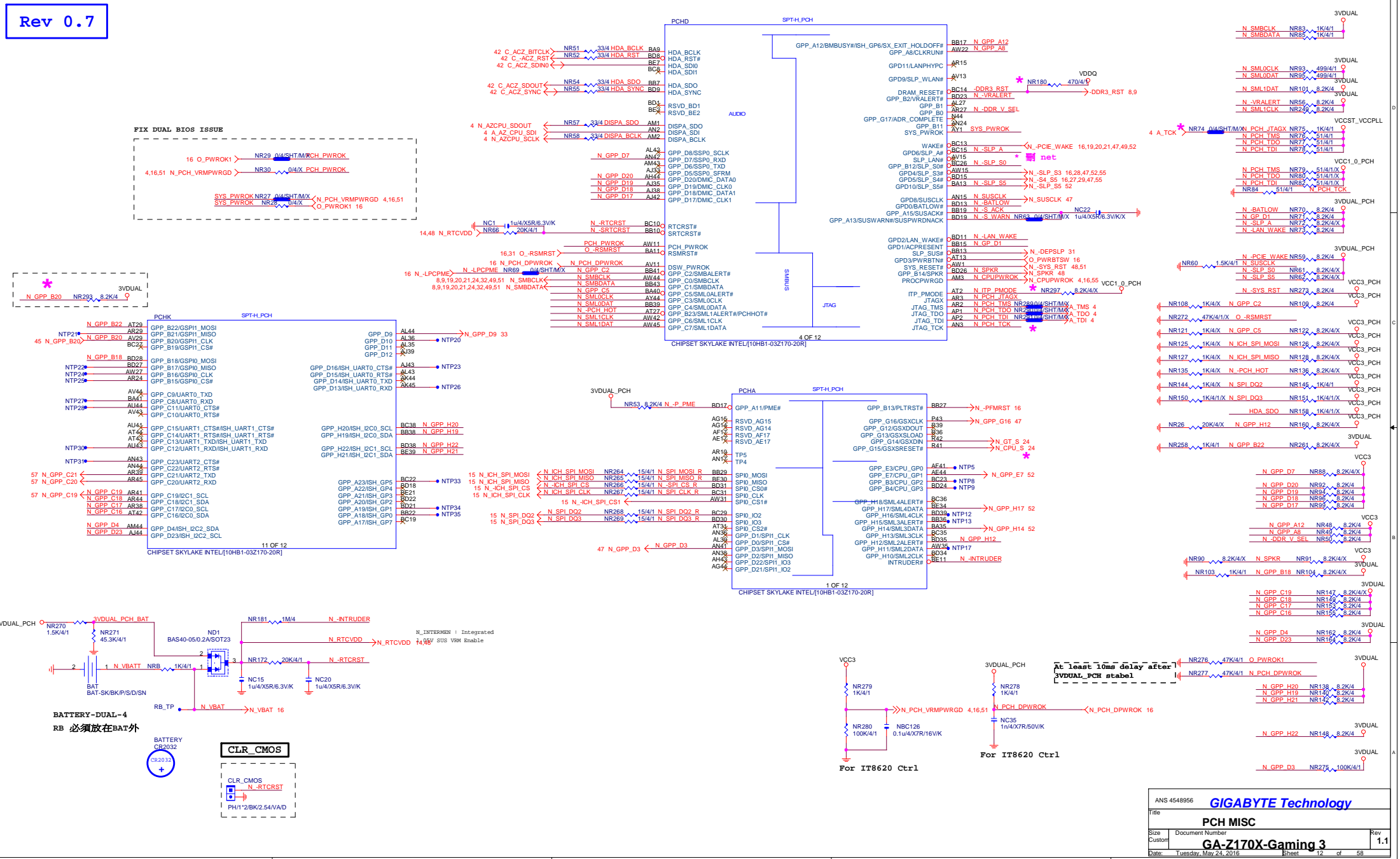
DDRVTT Decouple

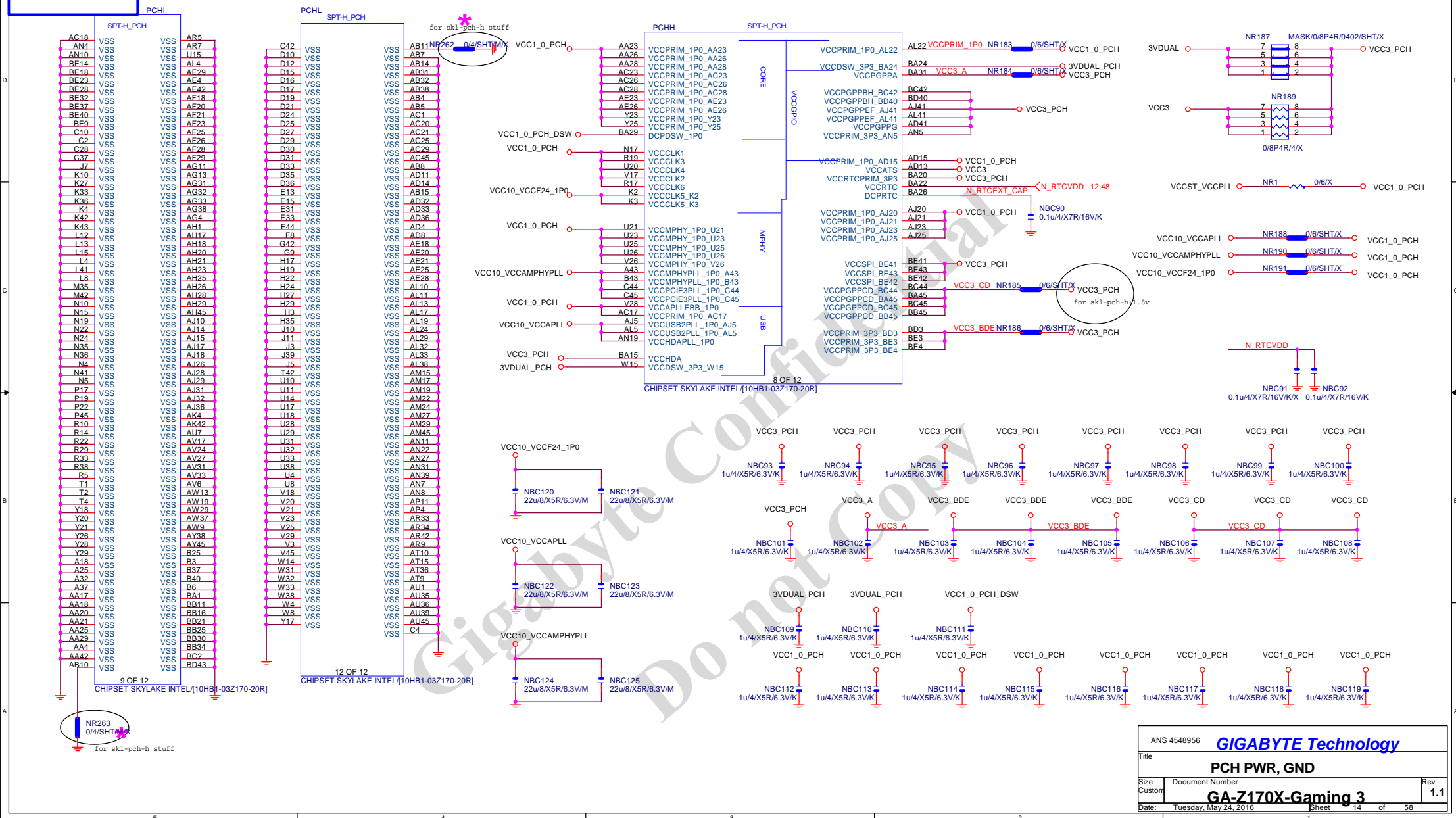


| DDR4 | Capture Value |
|---------------|--|
| SOC series | DDR4/288/BK/VA/S/G15/4ROW/LONG DDR4/288/OR/VA/S/G15/4ROW/LONG |
| UD series | DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GY/VA/D/G15/ONE LATCH/LONG |
| Gaming series | DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/RE/VA/D/G15/ONE LATCH/LONG |
| GI.Sniper | DDR4/288/BK/VA/D/G15/ONE LATCH/LONG DDR4/288/GE/VA/D/G15/ONE LATCH/LONG |







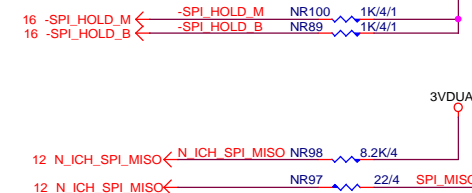
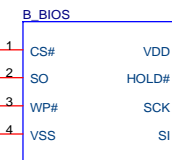
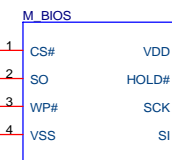


DUAL BIOS

MOSI For DMI RX Termination Voltage

指定用DII

指定用DII



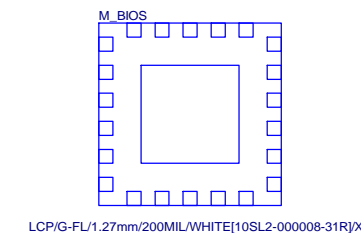
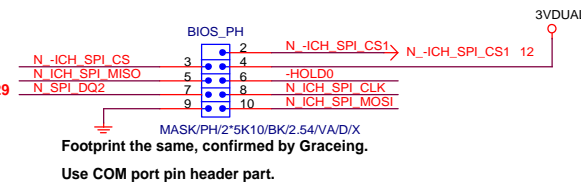
| BOOT DEVICE | GNT0 | GNT1 |
|-------------|------|------|
| LPC | 0 | 0 |
| PCI | 0 | 1 |
| NAND | 1 | 0 |
| SPI | 1 | 1 |

1 means floating
0 means PD 1K

Rev: 0.42

BIOS_PH

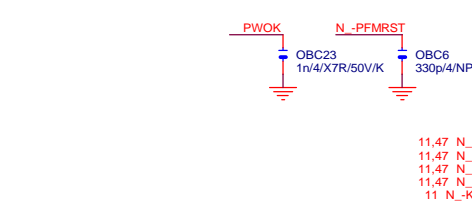
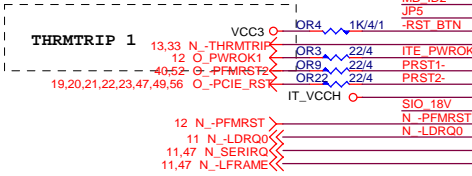
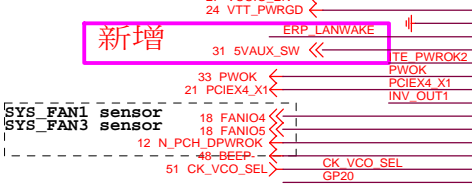
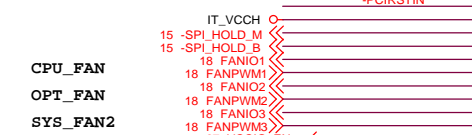
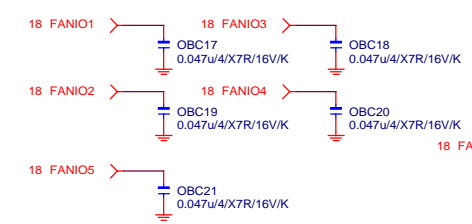
★Update 2015-01.29



GIGABYTE Technology

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|--------|-----------------|-----------------------|-----|
| Title | | BIOS | |
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SIO IT8628CX REV:1.08



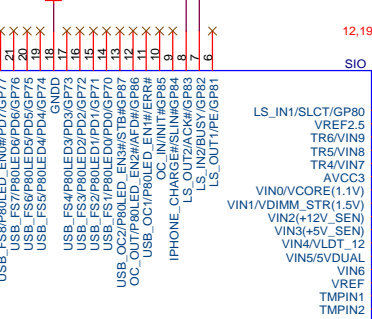
CPU 端 A_-THRMTRIP不可與PCH及SIO N_-THRMTRIP直接連接。否則會出現無法拉Low情況。

| FAN TABLE | |
|-----------|----------------------|
| CPU_FAN | FAN_CTL1 FAN_TAC1 |
| SYS_FAN1 | FAN_CTL4 FAN_TAC4 |
| SYS_FAN2 | FAN_CTL3 FAN_TAC3 |
| SYS_FAN3 | FAN_CTL5 FAN_TAC5 |
| OPT_FAN | FAN_CTL2 FAN_TAC2 |
| THRMTRIP1 | YES PIN60 |

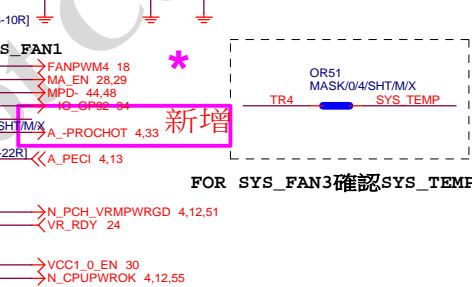
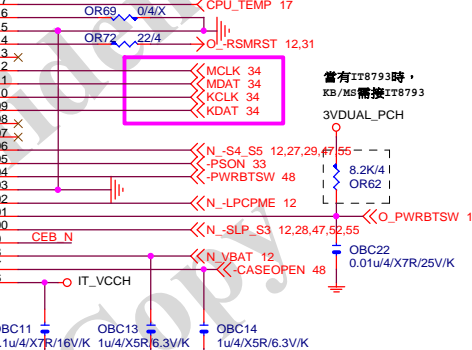
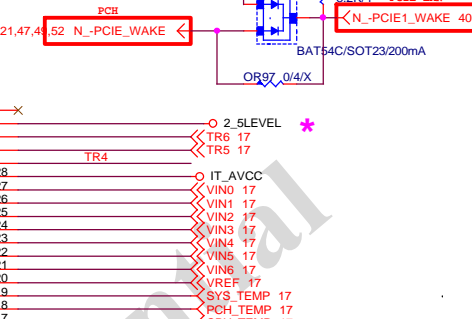
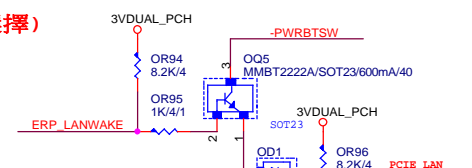
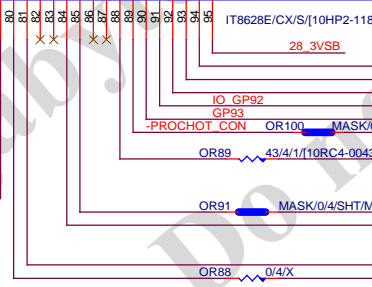
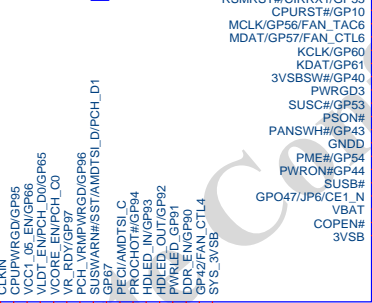
| IT8620E GPIO問題匯整 | |
|------------------|--|
| PIN 50 | GP26-第一次接上POWER時會拉 Lo |
| PIN 90/91 | DEFAULT為HDLLED FUNCTION, GP93 BYPASS TO GP92 高溫時 GP92 會被拉Lo(ITE BUG) |
| PIN 108 | GP40--- POWER ON 時會拉 Lo |
| PIN 111/112 | MOUSE 跟FAN6 FUNCTION 擇一使用, 不然會互相干擾 |
| PIN 22 | PIN22, 需高於3V, 若低於將部分COM PORT及FET裝置端線路會異常動作。 |

ERP WAKE on LAN (依LAN組態選擇)

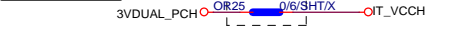
Realtek/ATHEROS LAN



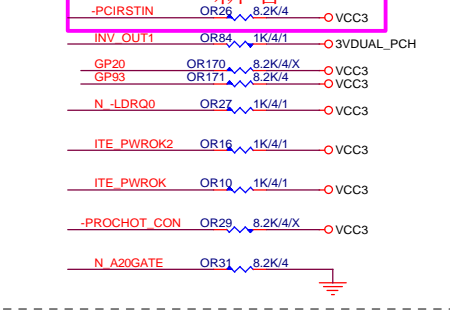
IT8628E_BX



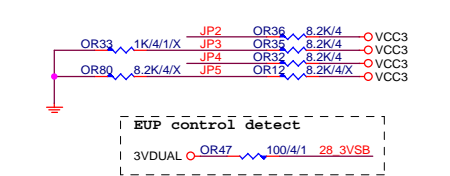
PWR SHT



SIO PU



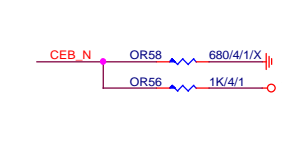
SIO STRAP



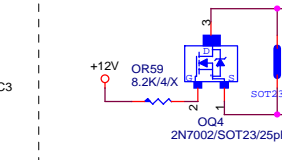
| | | |
|-----|-----|---|
| JP2 | 1 | Disable WDT |
| JP2 | 0 | Enable WDT to rest PWROK |
| JP3 | 1 | Dual BIOS CS PIN Disable |
| JP3 | 0 | Dual BIOS CS PIN Enable |
| JP4 | 1 | k8 power sequency function is Disable |
| JP4 | 0 | k8 power sequency function is Enable |
| JP5 | 1 | anti-surge Disable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

| FAN TABLE | |
|-----------|----------------------|
| CPU_FAN | FAN_CTL1 FAN_TAC1 |
| SYS_FAN1 | FAN_CTL4 FAN_TAC4 |
| SYS_FAN2 | FAN_CTL3 FAN_TAC3 |
| SYS_FAN3 | FAN_CTL5 FAN_TAC5 |
| OPT_FAN | FAN_CTL2 FAN_TAC2 |
| THRMTRIP1 | YES PIN60 |

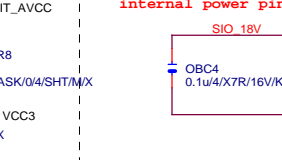
DUAL BIOS OPT STRAP



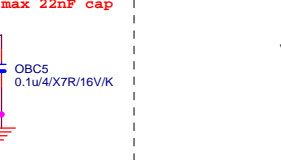
Power leakage



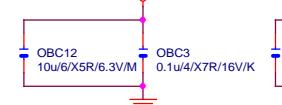
SIO_18V



MB ID



SIO CAP



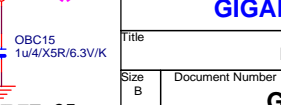
IT_VCC



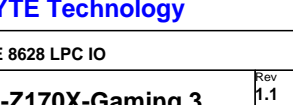
IT_AVCC



3VDUAL_PCH



2_5LEVEL



GIGABYTE Technology

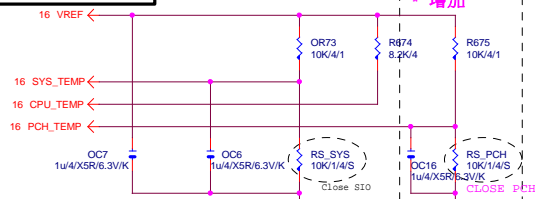
ITE 8628 LPC IO

GA-Z170X-Gaming 3

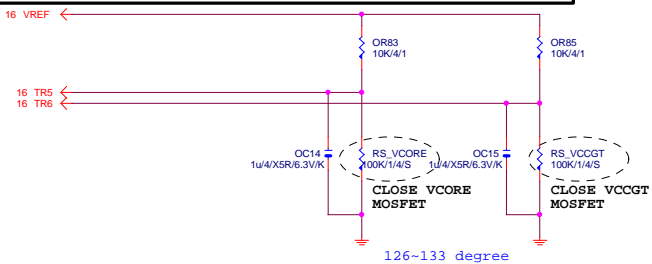
Rev 1.1

REV:1.08

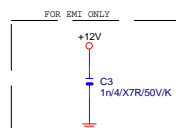
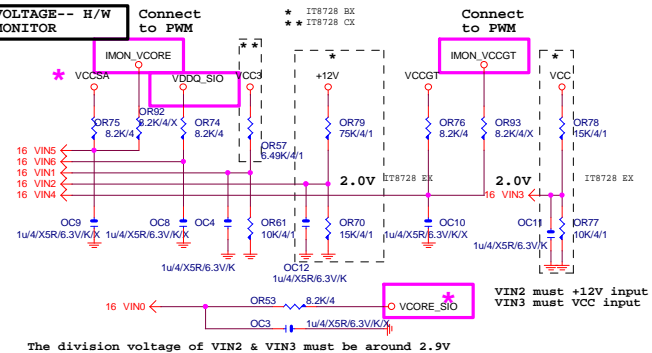
TEMP H/W MONITOR



RS_VCORE、RS_VCCGT、CLOSE CPU_VCORE & VCCGT MOSFET

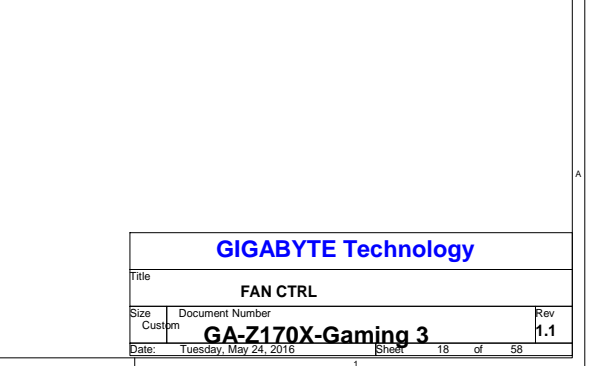
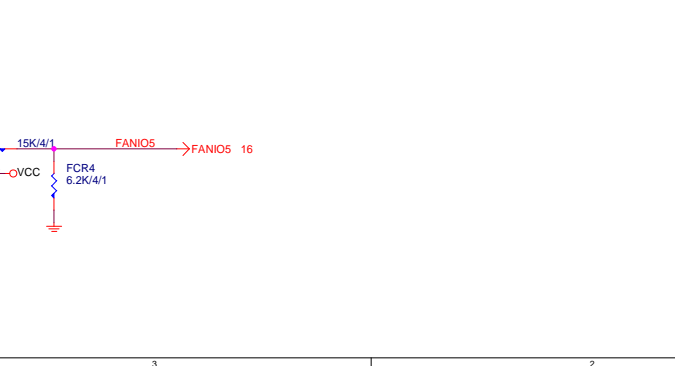
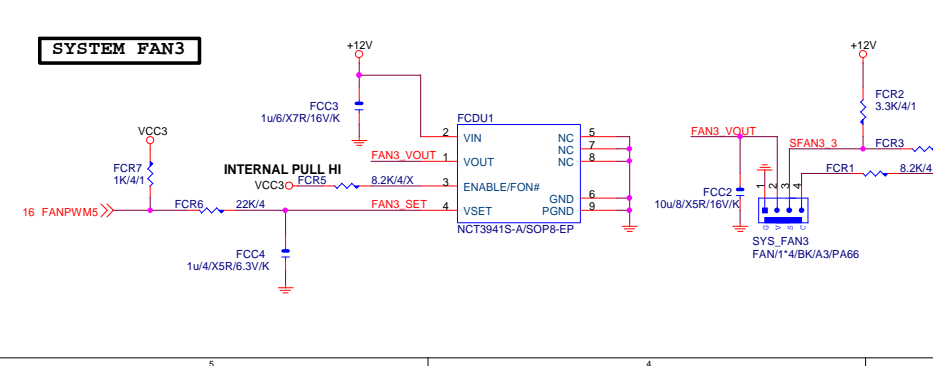
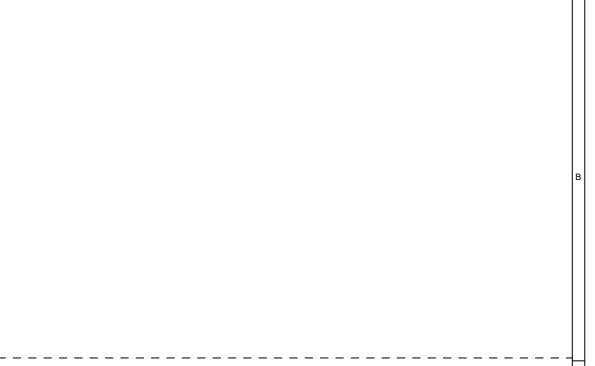
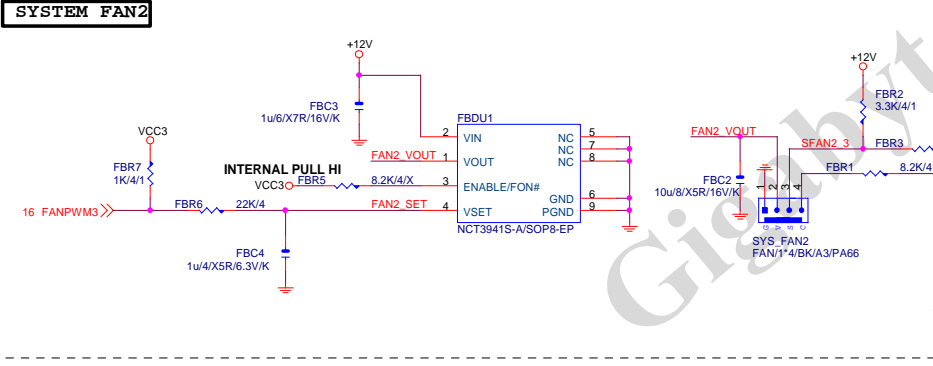
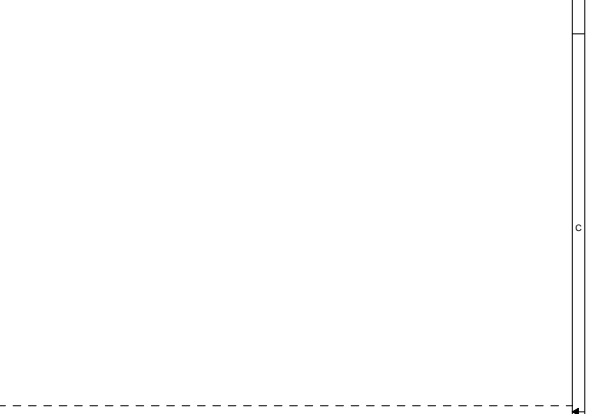
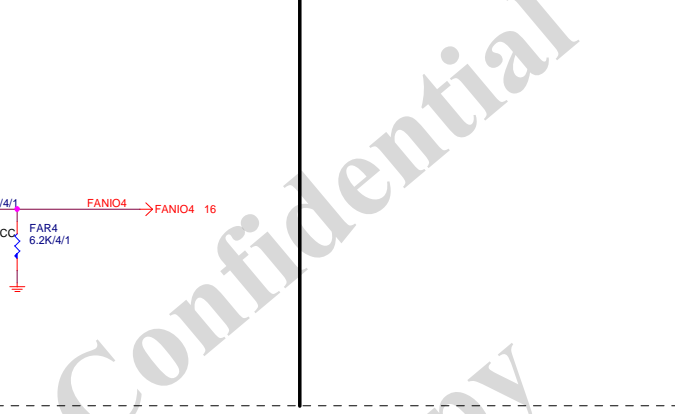
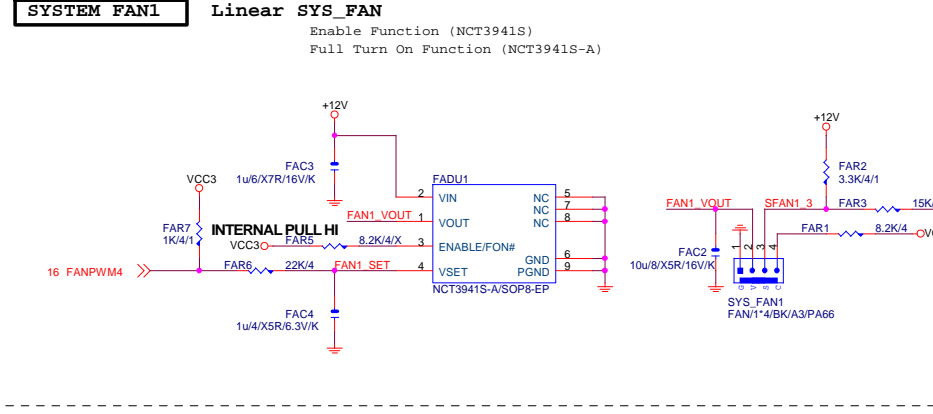
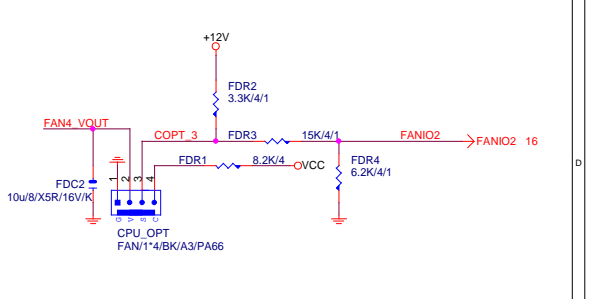
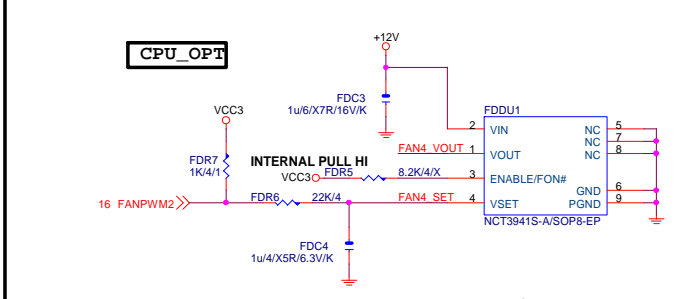
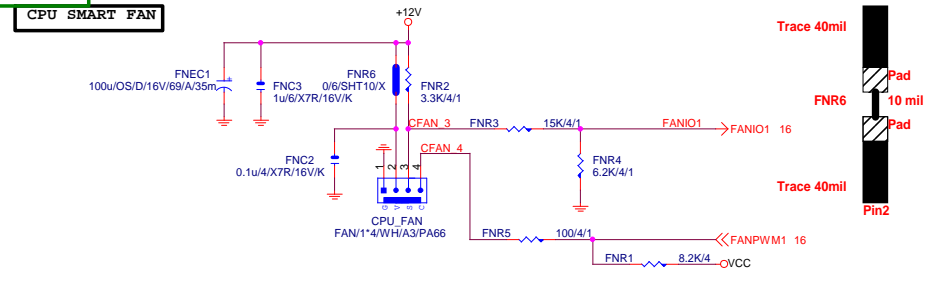
~~-PROCHOT: 有mos mearts sink 不用prochot function~~

VOLTAGE-- H/W MONITOR



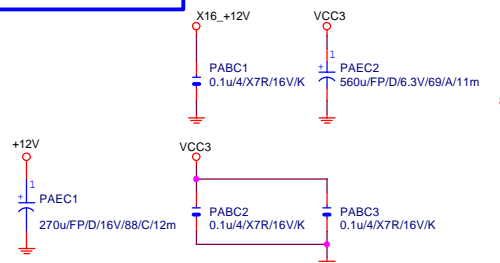
GIGABYTE Technology

| | | | |
|--------|-----------------------|-------|----------|
| Title | | | HWM |
| Size | Document Number | Rev | |
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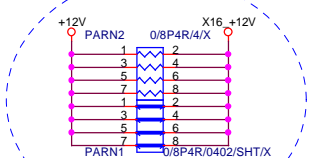
Rev 0.3

PCIEX16 CAP



PCIEX16 PROTECT SHT

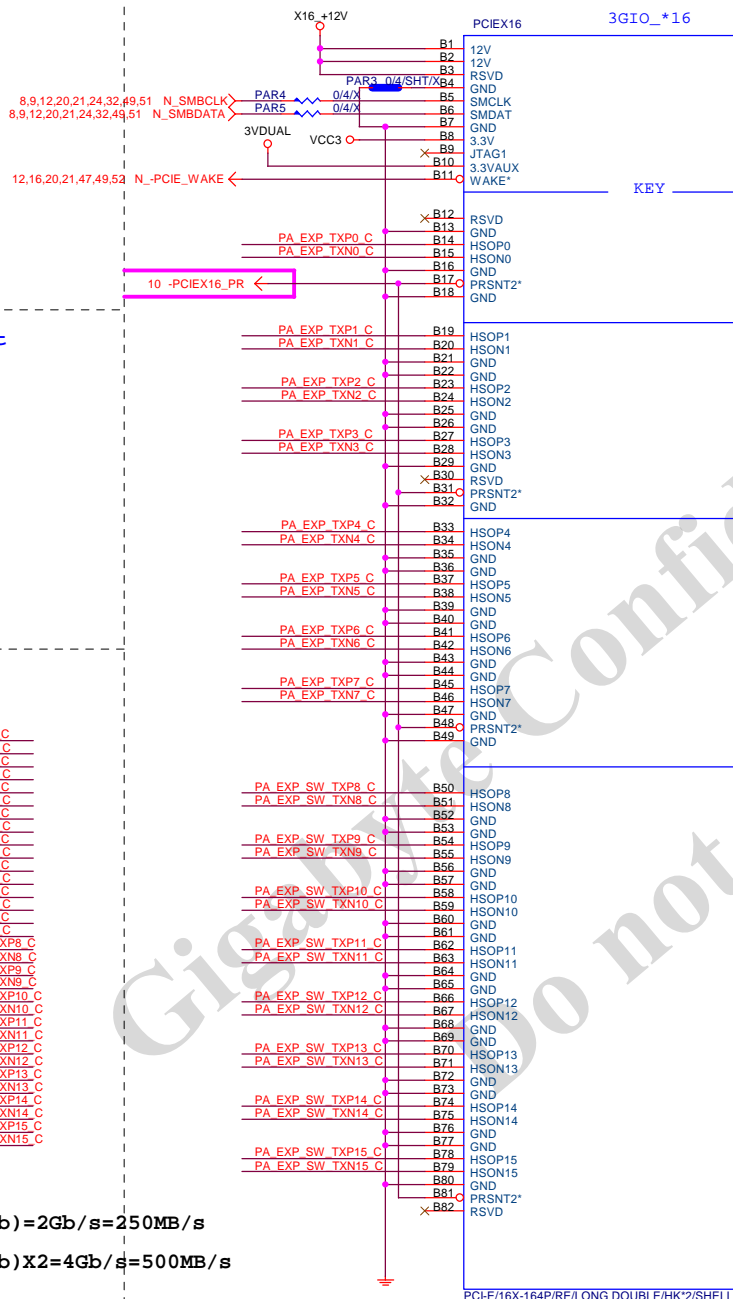
+12 protect short-wire test



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

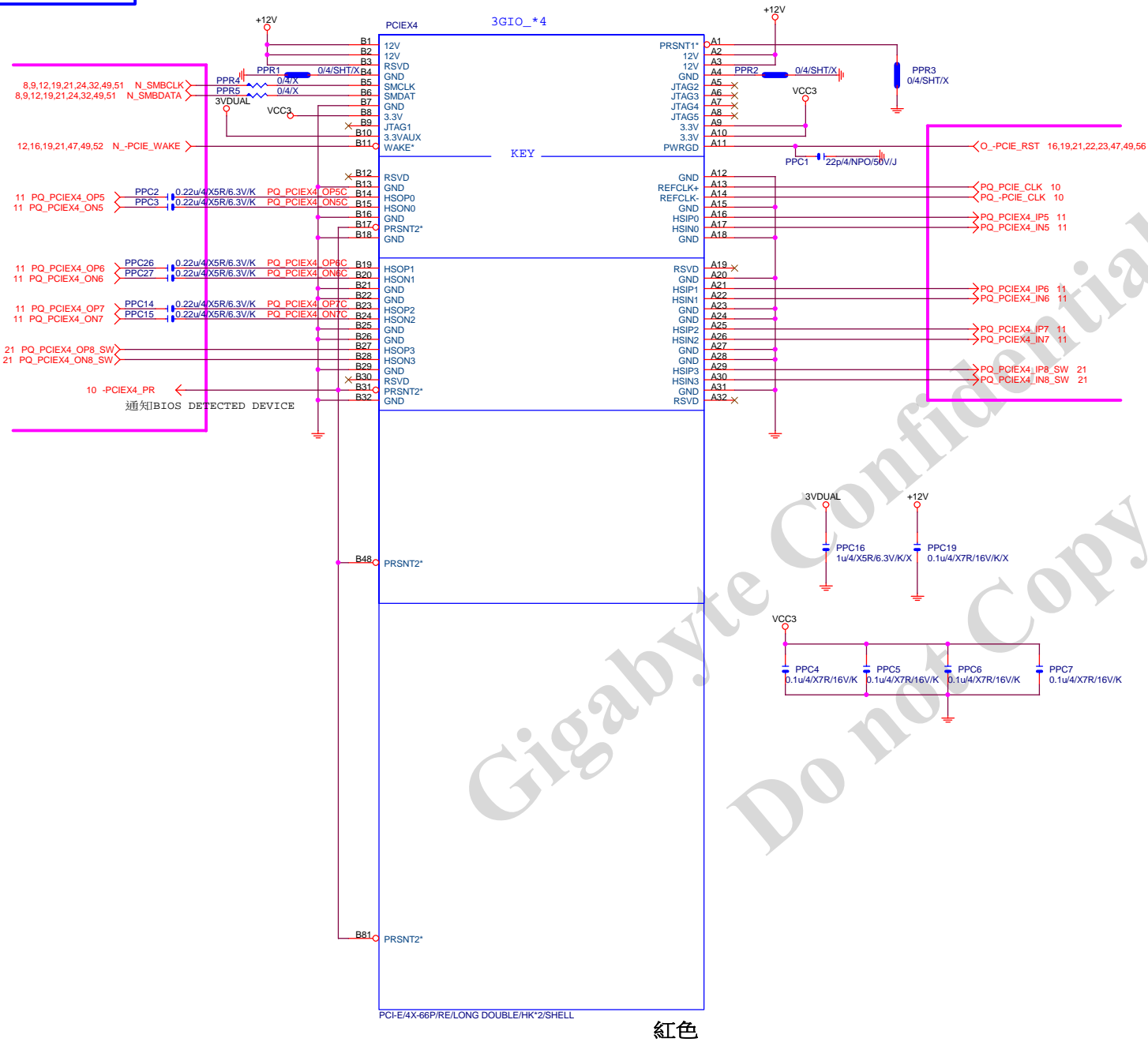
PCIEX16:16/5/5/5/16

| | | |
|--------------------|--------------------------|------|
| PA EXP RXP0.15] | >>>PA_EXP_RXP0[0..15] | 4,50 |
| PA EXP RXN0.15] | >>>PA_EXP_RXN0[0..15] | 4,50 |
| PA EXP TXP0.15] | >>>PA_EXP_TXP0[0..15] | 4,50 |
| PA EXP TXN0.15] | >>>PA_EXP_TXN0[0..15] | 4,50 |
| PA EXP SW RXP8.15] | >>>PA_EXP_SW_RXP8[8..15] | 50 |
| PA EXP SW RXN8.15] | >>>PA_EXP_SW_RXN8[8..15] | 50 |
| PA EXP SW TXP8.15] | >>>PA_EXP_SW_TXP8[8..15] | 50 |
| PA EXP SW TXN8.15] | >>>PA_EXP_SW_TXN8[8..15] | 50 |

GIGABYTE Technology

PCI EXPRESS * 16

| | | |
|--------|-----------------------|----------------|
| Size | Document Number | Rev |
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| Date: | Tuesday, May 24, 2016 | Sheet 19 of 58 |

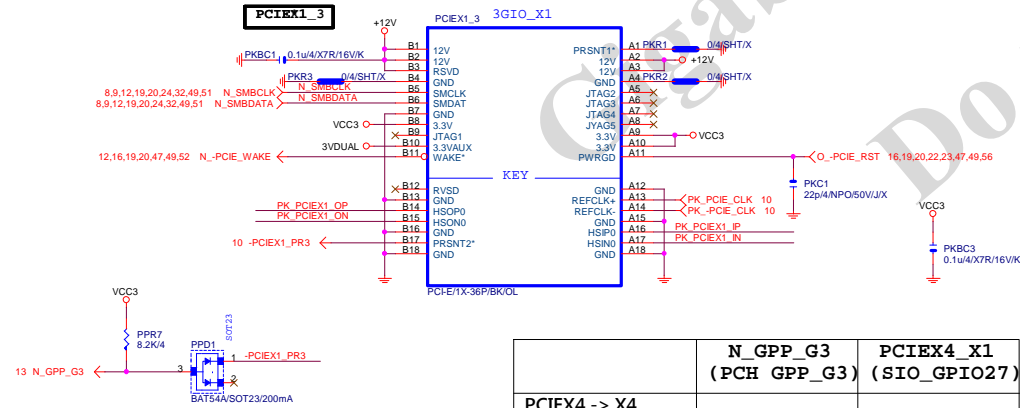


GIGABYTE Technology

PCIE_X4

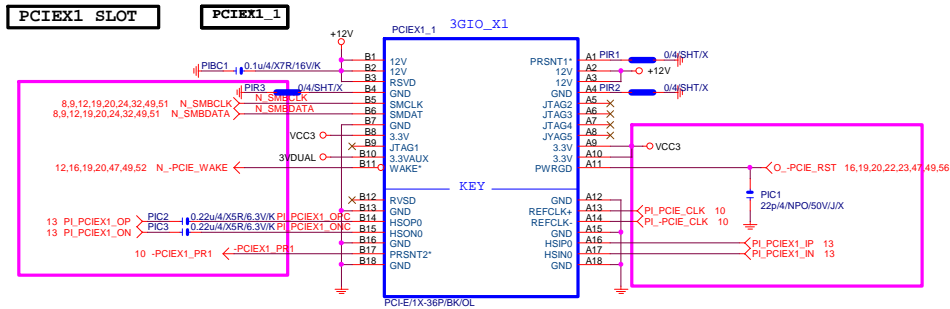
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|-----------------|-----------------------|-------------------|
| Title | | Rev |
| Document Number | | 1.1 |
| Size | | GA-Z170X-Gaming 3 |
| Date: | Tuesday, May 24, 2016 | Sheet 20 of 58 |

PCIEX1_3

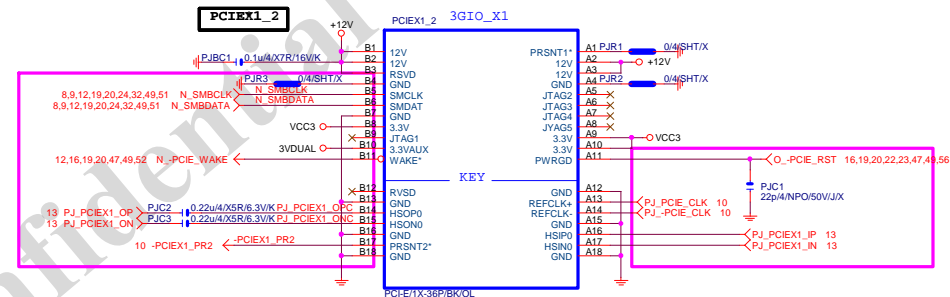


| | N_GPP_G3 (PCH GPP_G3) | PCIEX4_X1 (SIO_GPIO27) |
|--|--------------------------|---------------------------|
| PCIEX4 -> X4 M2_WIFI -> N/A PCIEX1 -> N/A (Default) | H | H |
| PCIEX4 -> X1 M2_WIFI -> X1 PCIEX1 -> X1 | L | L |

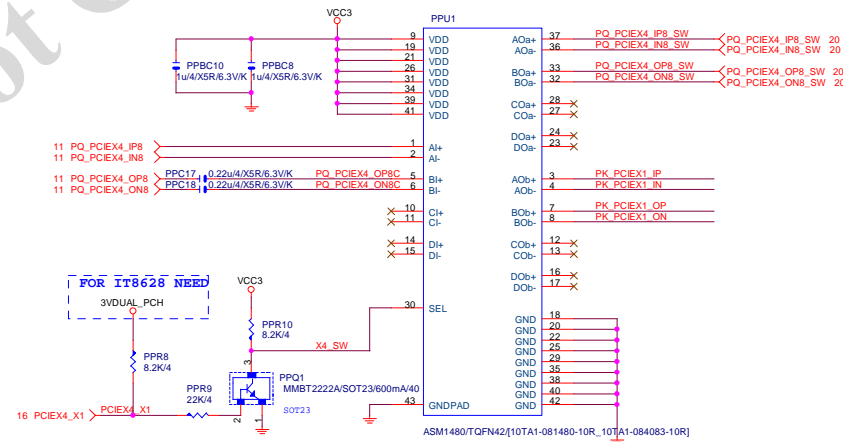
PCIEX1 SLOT



PCIEX1_2



PCIEX4/X1 SWITCH

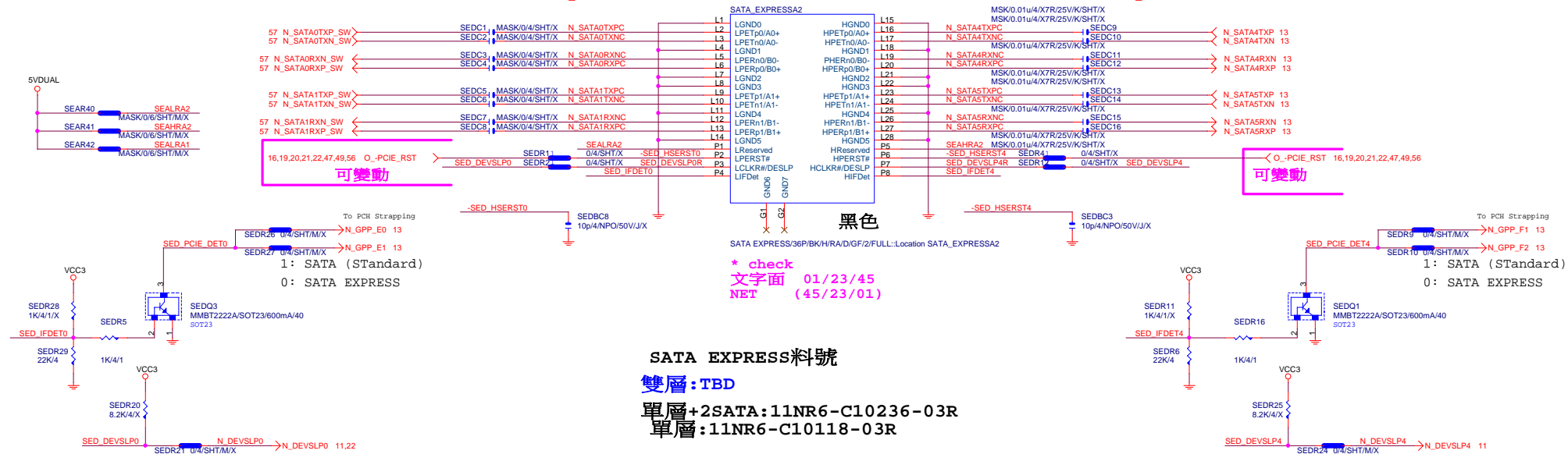


| Function | SEL |
|-----------|--------------------|
| XI--> x08 | L;PCIEX4 SLOT-->X1 |
| XI--> x0b | H;PCIEX4 SLOT-->X4 |

GIGABYTE Technology

PCIE X1 1,2,3

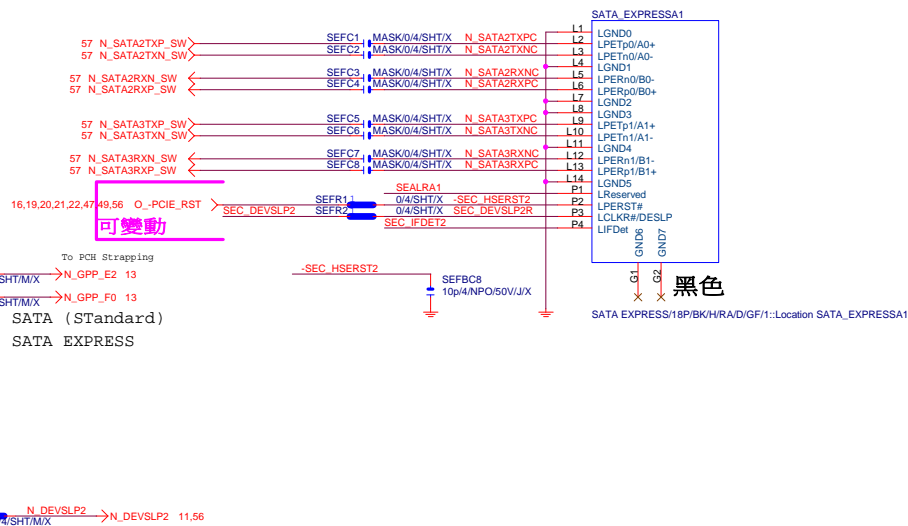
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|-------------------|-----------------|-----|
| File | Document Number | Rev |
| GA-Z170X-Gaming 3 | 1.1 | |



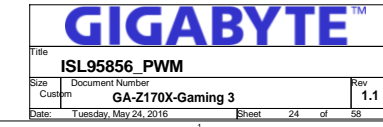
雙層:TBD

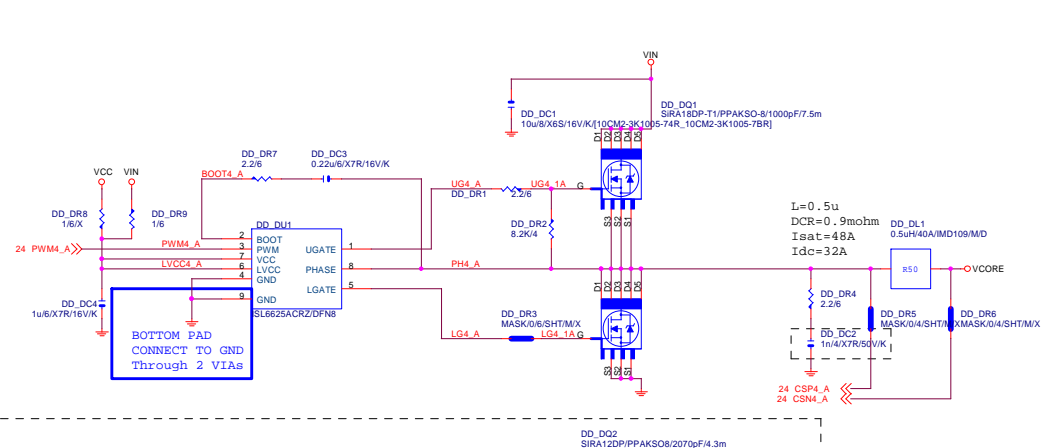
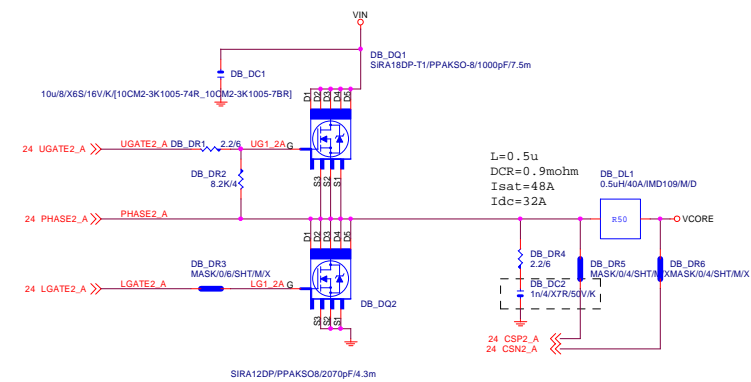
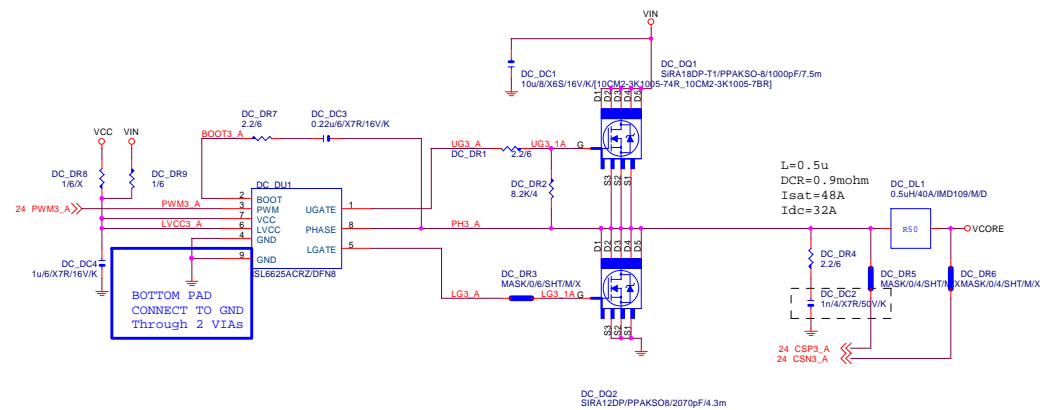
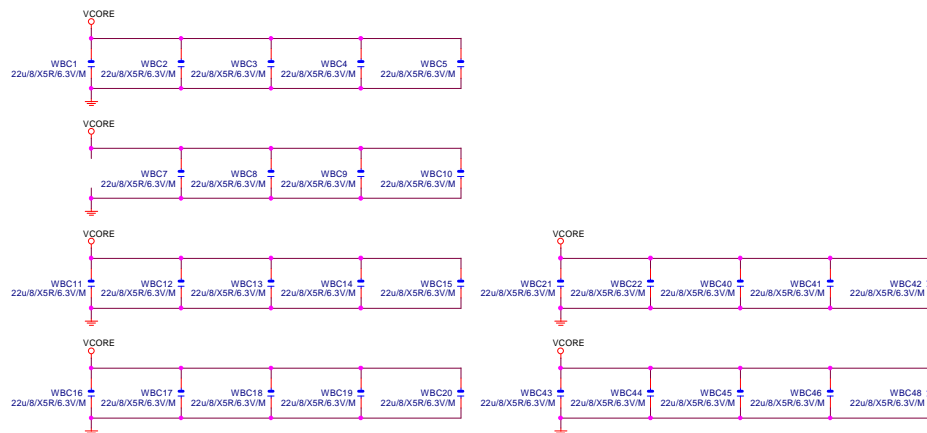
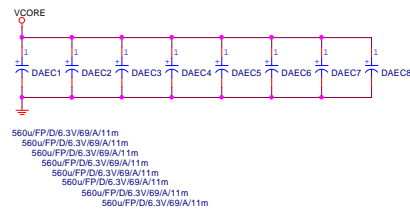
單層:11NR6-C10118-03R

To SATA3
port2/3

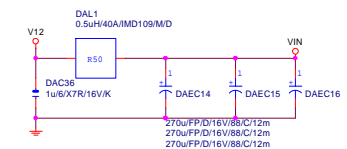


| | |
|--------|--------------|
| SATA 5 | (文字面寫SATA 1) |
| SATA 4 | (文字面寫SATA 0) |
| SATA 3 | |
| SATA 2 | |
| SATA 1 | (文字面寫SATA 5) |
| SATA 0 | (文字面寫SATA 4) |

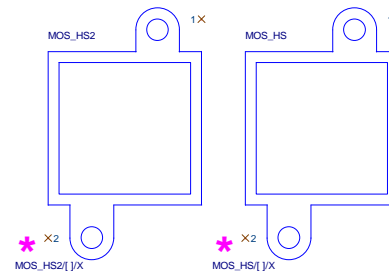
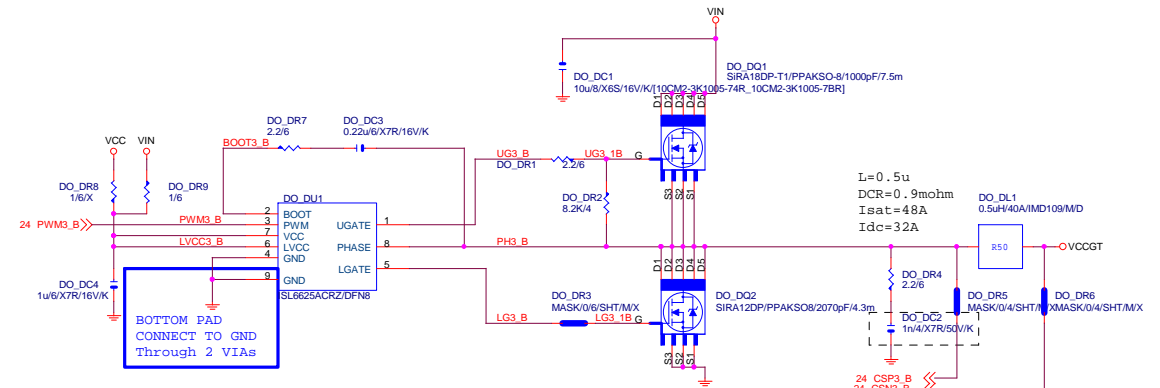
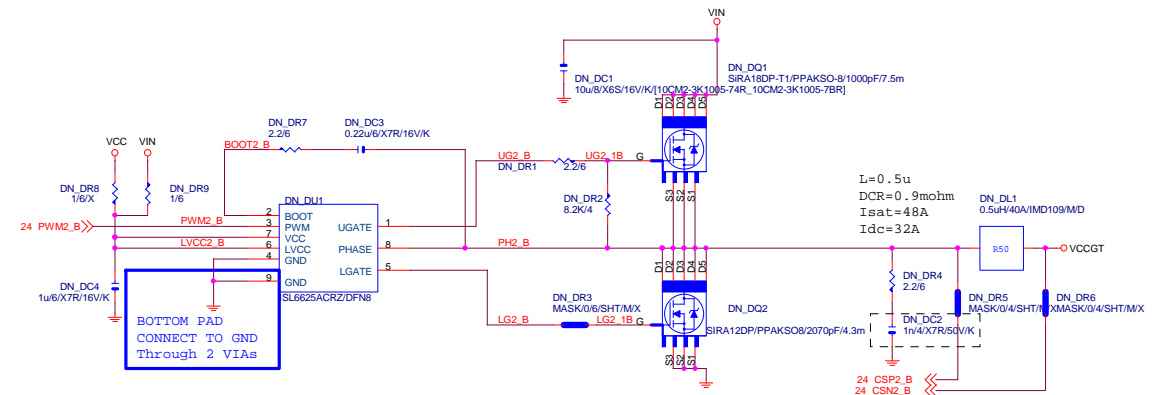



VCORE CAP 560u*8PCS
22u*29PCS

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

**GIGABYTE™**

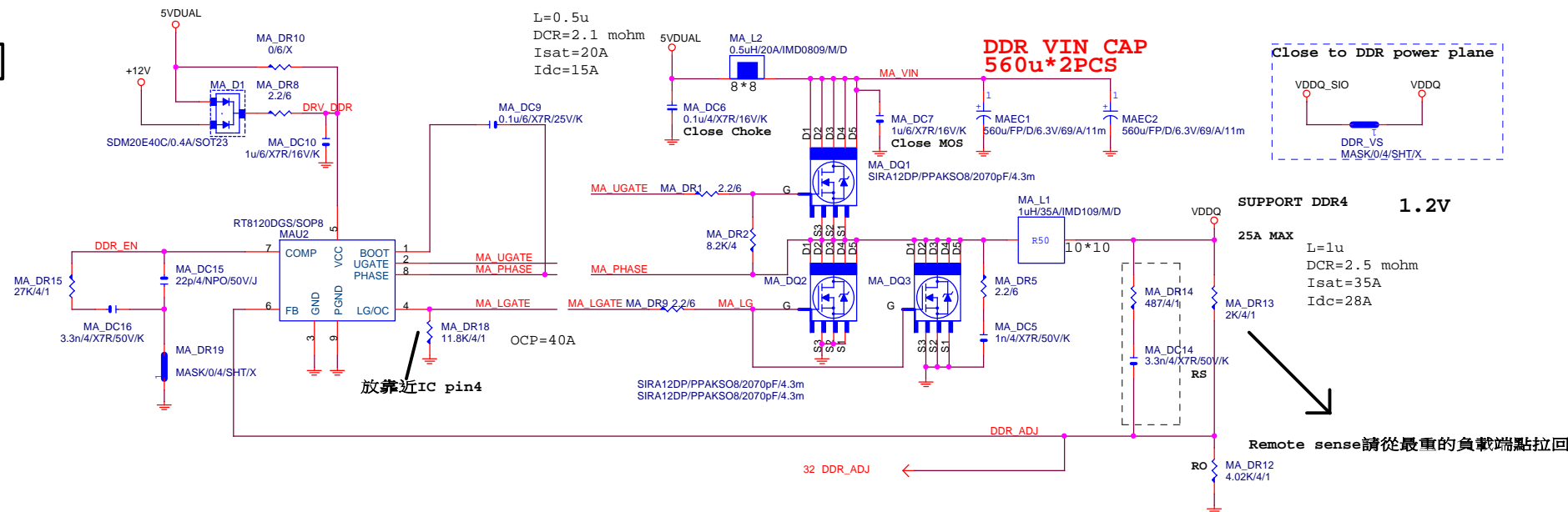
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|--------------|-----------------------|-------|----------|
| Title | | | |
| ISL95856_MOS | | | |
| Size | Document Number | Rev | |
| Custom | GA-Z170X-Gaming 3 | 1.1 | |
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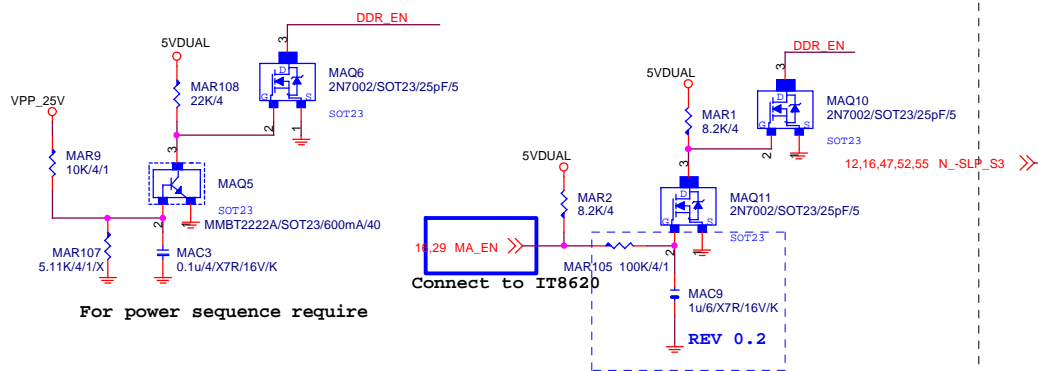
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|---|-----------------------|-------|----------|
|  | | | |
| Title | | | |
| ISL95856_MOS | | | |
| Size | Document Number | | Rev |
| Custom | GA-Z170X-Gaming 3 | | 1.1 |
| Date | Tuesday, May 24, 2016 | Sheet | 26 of 58 |

REV: 0.88

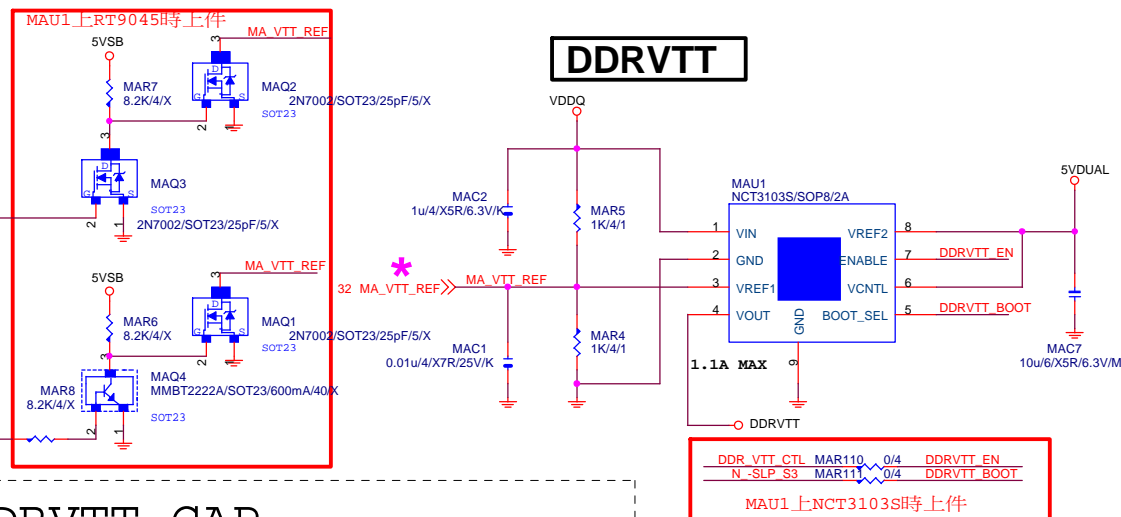
DDR4



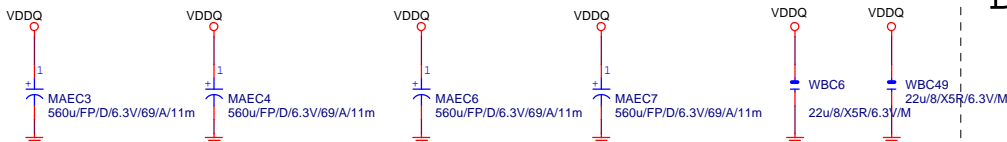
PWR SEQ



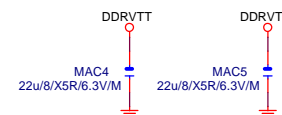
DDRVTT



DDR CAP 560u*4PCS * 大電容 x4



DDRVTT CAP



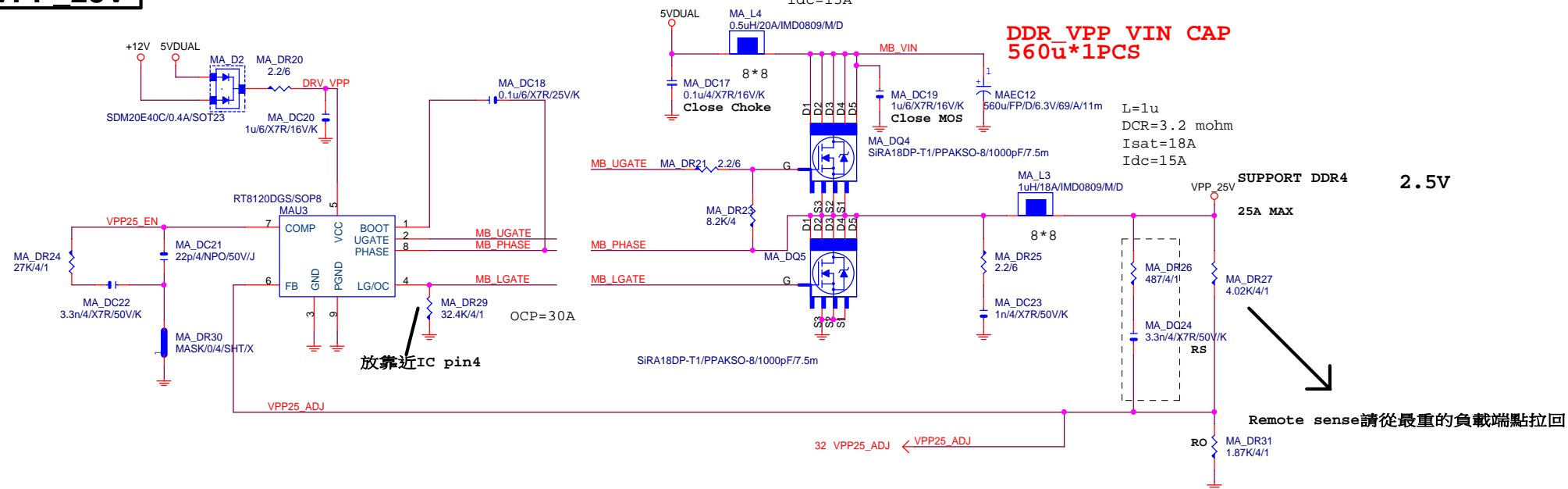
GIGABYTE™

RT8120 DDR4 POWER

| | | |
|-----------------------------|---|-------------------|
| Size Custom | Document Number GA-Z170X-Gaming 3 | Rev 1.1 |
| Date: Tuesday, May 24, 2016 | Sheet 28 of 58 | |

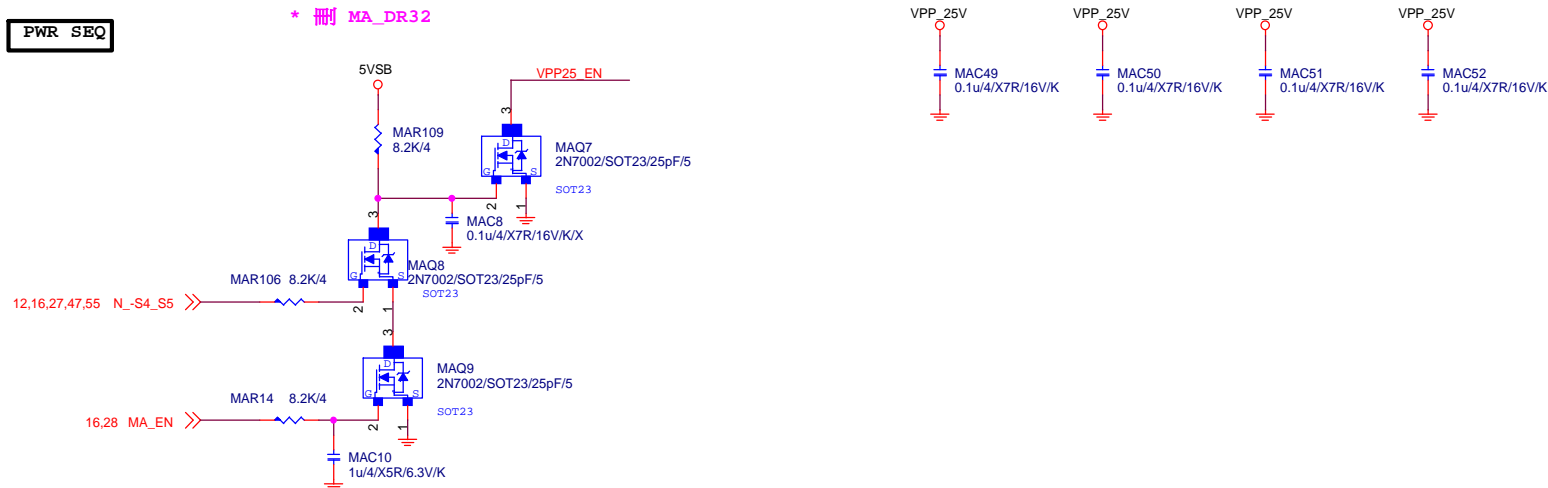
REV:0.88

VPP_25V

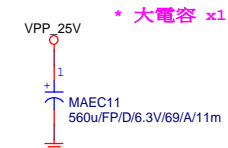


PWR_SEQ

* 刪 MA_DR32



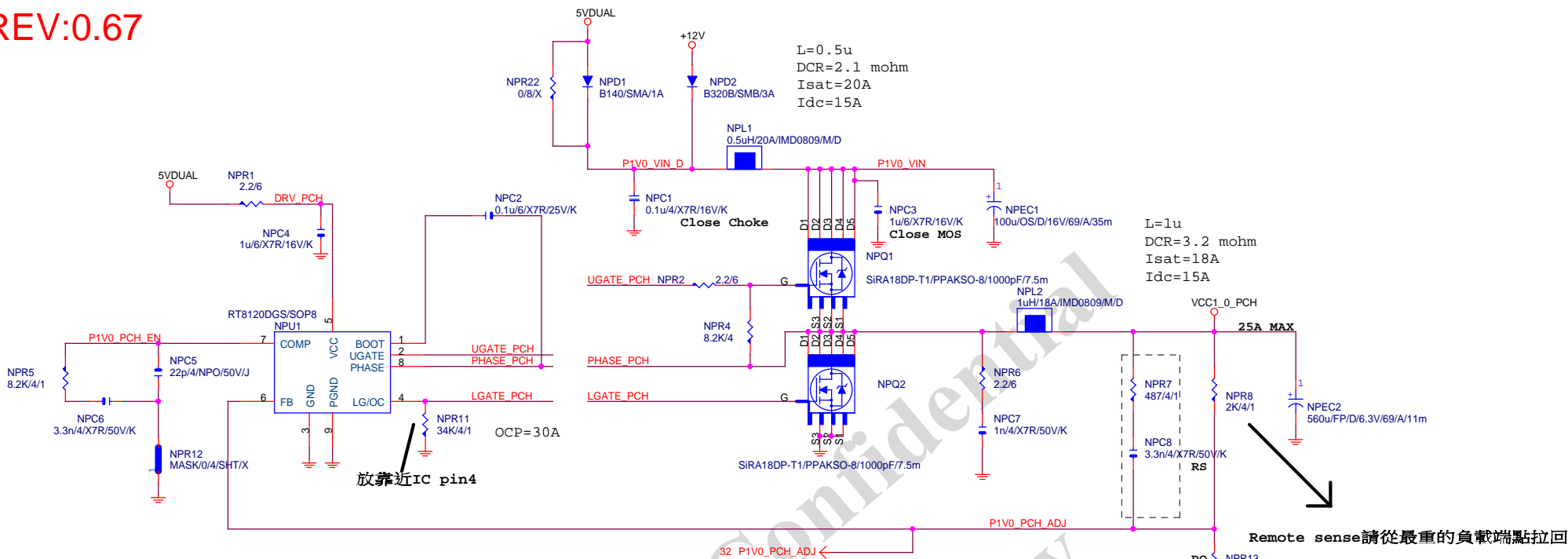
VPP CAP 560u*1PCS



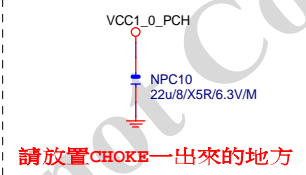
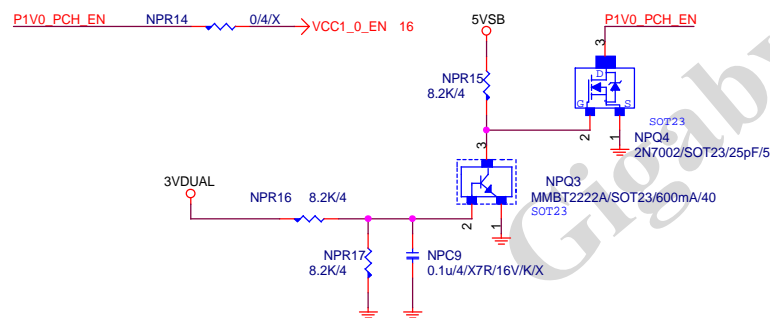
GIGABYTE™

| | | |
|--------------------|-----------------------|----------------|
| Title | | |
| RT8120_VPP25 POWER | | |
| Size | Document Number | Rev |
| Custom | GA-Z170X-Gaming 3 | 1.1 |
| Date: | Tuesday, May 24, 2016 | Sheet 29 of 58 |

REV:0.67

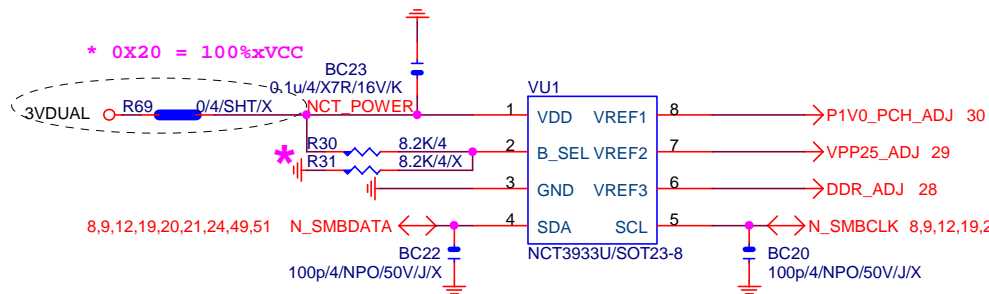


PWR_SEQ

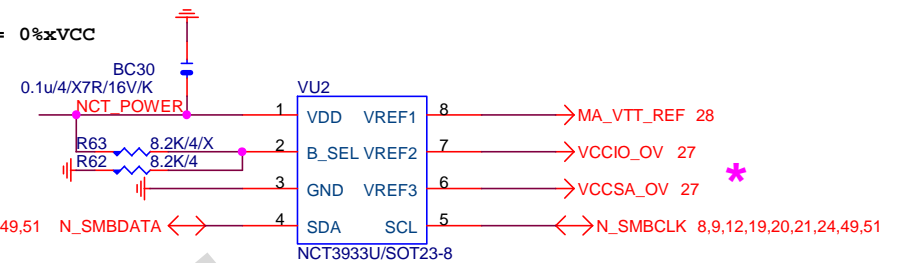


| GIGABYTE™ | | | |
|------------------|-----------------------|-------|----------|
| Title | | | |
| RT8120_PCH POWER | | | |
| Size | Document Number | Rev | |
| Custom | GA-Z170X-Gaming 3 | 1.1 | |
| Date: | Tuesday, May 24, 2016 | Sheet | 30 of 58 |

OVER VOLTAGE



0X2A = 0%xVCC



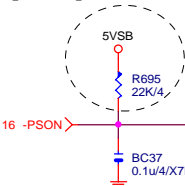
0X22 = 75%xVCC

* 删除 OVU3

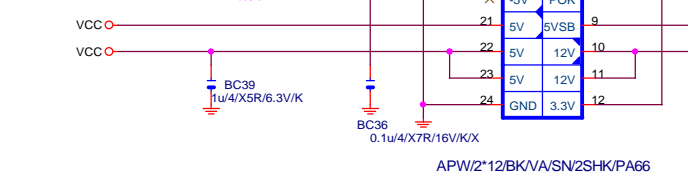
| NCT3933 | 0X2A | 0X20 | 0X22 |
|---------|--------------|--------------|------------|
| VREF1 | DDRVTT | VREF_DDRA_DQ | PCH Core |
| VREF2 | VREF_DDRA_CA | N/A | VCC1_5_PCH |
| VREF3 | VREF_DDRA_CA | VREF_DDRB_DQ | SMREF |

| GIGABYTE Technology | | | |
|---------------------|-----------------------|-------------------|----------|
| Title | | | |
| NCT3933 | | | |
| Size | Document Number | GA-Z170X-Gaming 3 | |
| Custom | | Rev 1.1 | |
| Date: | Tuesday, May 24, 2016 | Sheet | 32 of 58 |

Patch some PSU no internal pull up resistor



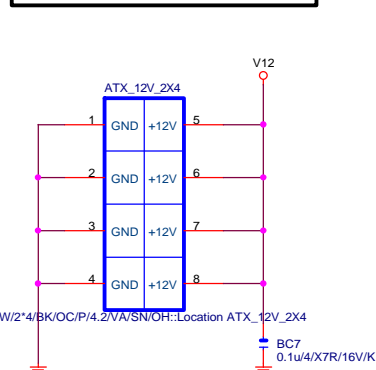
* 删除 -5V



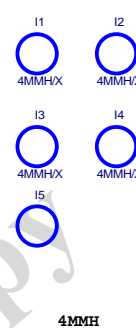
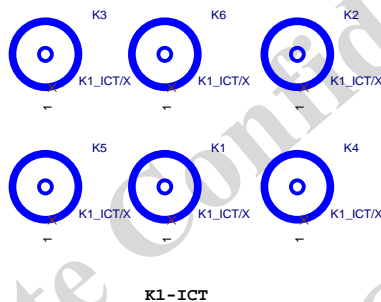
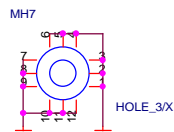
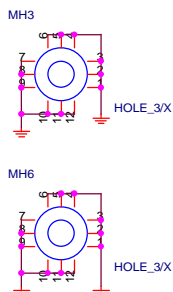
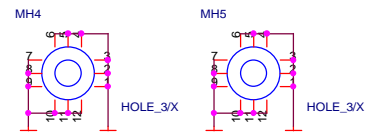
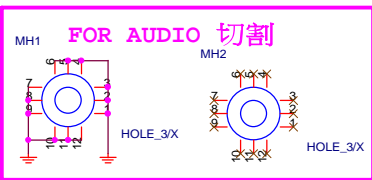
APW/2*12BK/VA/SN/2SHK/PA66

To prevent the 5VSB under loading when board

ATXX4 POWER CONNECTOR

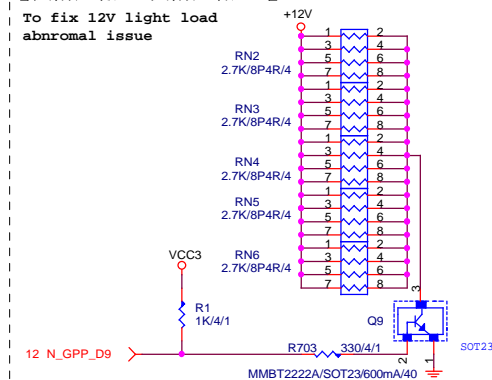


APW/2*4BK/OC/P/4.2VA/SN/OH: Location ATX_12V_2X4



【技術通報R&D技術通報153】

To fix 12V light load abnormal issue

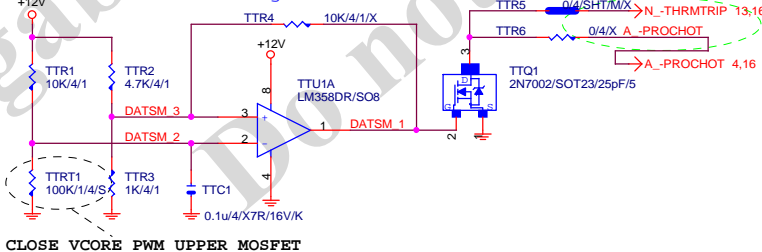


-PROHOT * 保留 ?

4,16 A_-PROHOT <- A_-PROHOT R2 0/4/SHT/X -> VR_HOT 24

-PROHOT

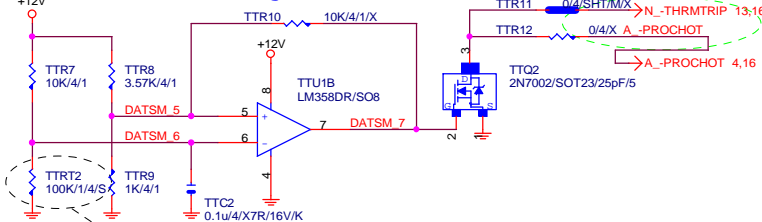
OTP:132度 / PCB THERMAL TRIP:122 度
125 ~130degree assert



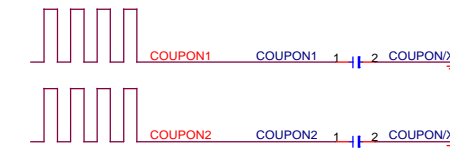
CLOSE VCORE PWM UPPER MOSFET

-PROHOT

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

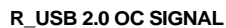


CLOSE VCCGT PWM UPPER MOSFET

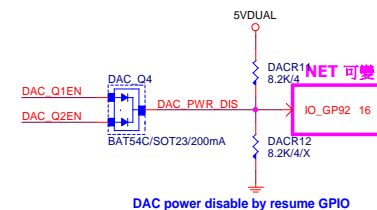
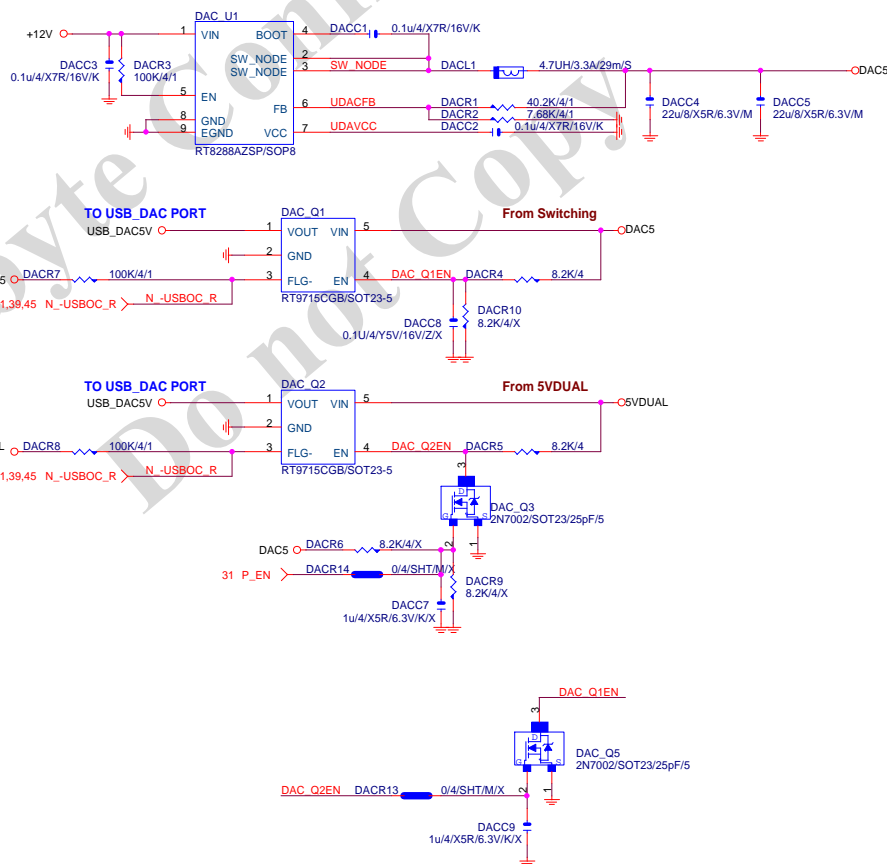


GIGABYTE Technology

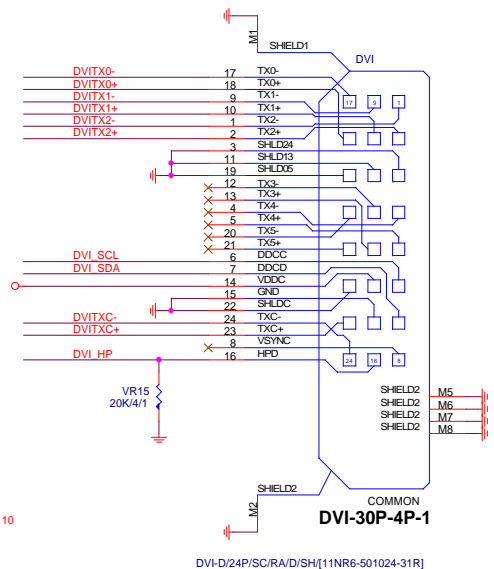
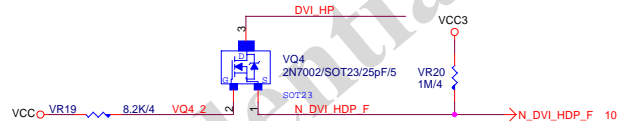
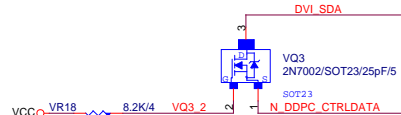
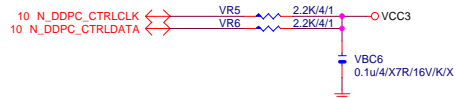
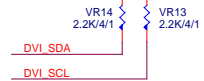
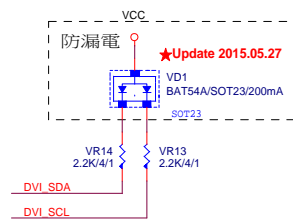
| | | | | |
|---------------------|-----------------------|-------------------|----|-------|
| Title | | | | |
| ATX POWER CONNECTOR | | | | |
| Size | Document Number | GA-Z170X-Gaming 3 | | Rev |
| Custom | | | | 1.1 |
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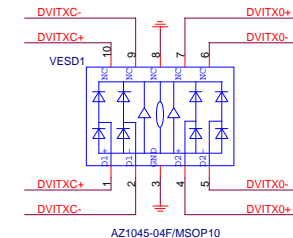
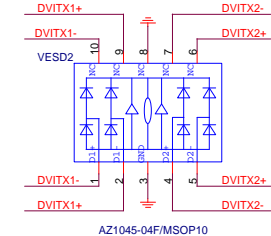
USB_DAC



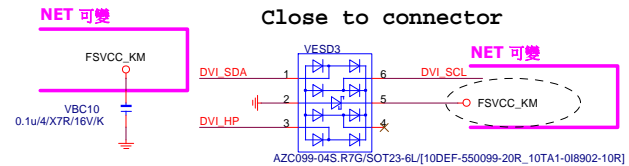
NET 可變



Close to connector

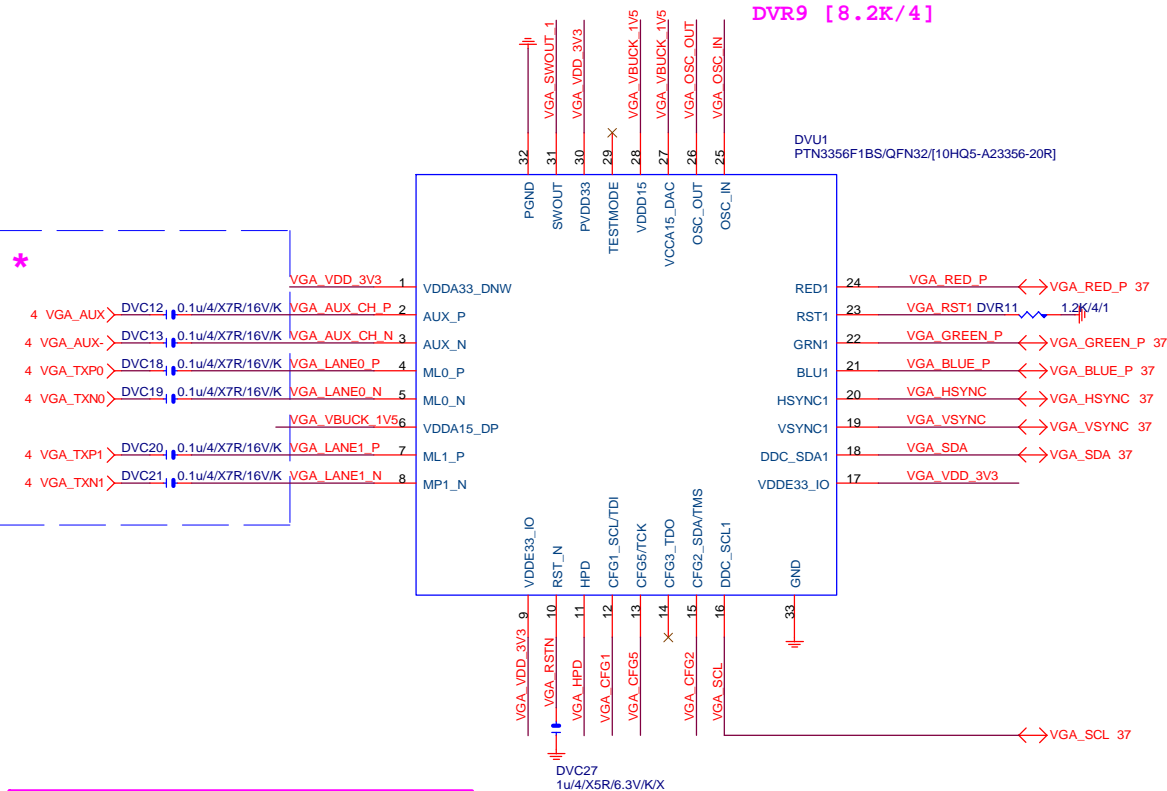


Close to connector



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

2. 刪除:
DVX1 [25M/16p/30ppm/49US/20/D]
DVC10 [20p/4/NPO/50V/J]
DVR9 [8.2K/4]



放置PCH端



VGA_OSC_OUT

DVX1
25M/16p/30ppm/49US/20/D

VGA_OSC_IN

DVC10
20p/4NPO/50V/J

DVC11
20p/4NPO/50V/J

DVR21
1M/4/X

DVC28
10p/4NPO/50V/J/X

<N_VGA24MCLK 11

DVR9 8.2K/4

VGA_CFG5

DVR10 8.2K/4/X

VGA_VDD_3V3

LO: 25M

OPEN: 27M

HI: 24M

VCC3

DVL1
0/6/SHT/MIX

VGA_VDD_3V3

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

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

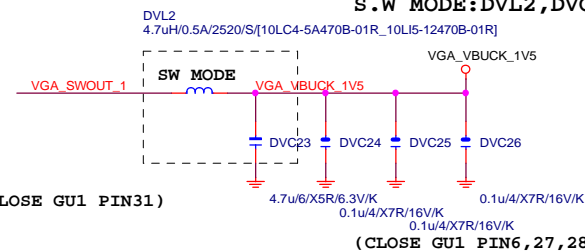
DVC16
0.1u/4/X7R/16V/K

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

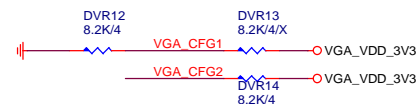
DVC22
0.1u/4/X7R/16V/K

(CLOSE GU1 PIN1,9,17,30)

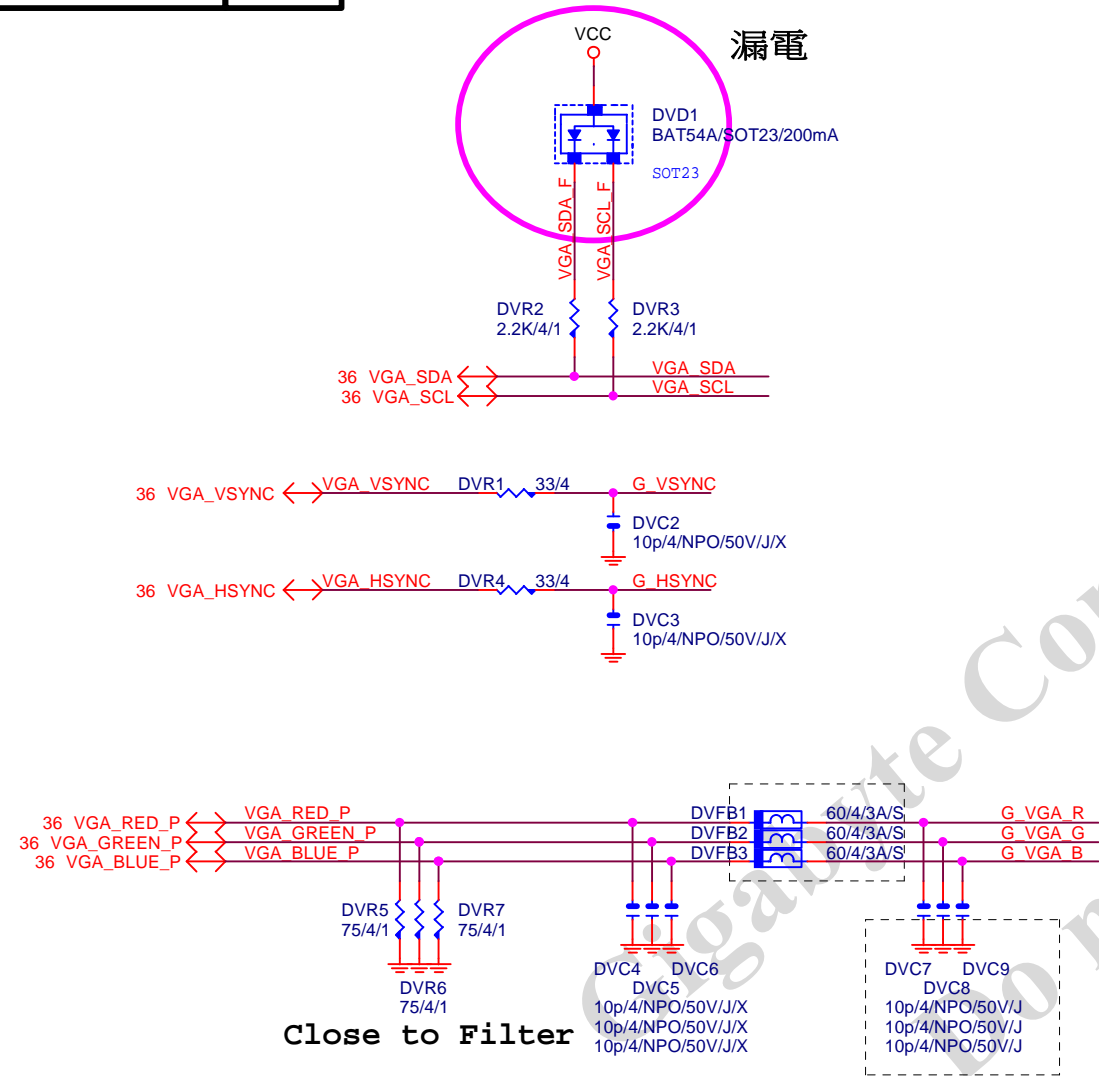
```
LDO  MODE:DVL2,DVC23-->X
S.W  MODE:DVL2,DVC23-->O
```



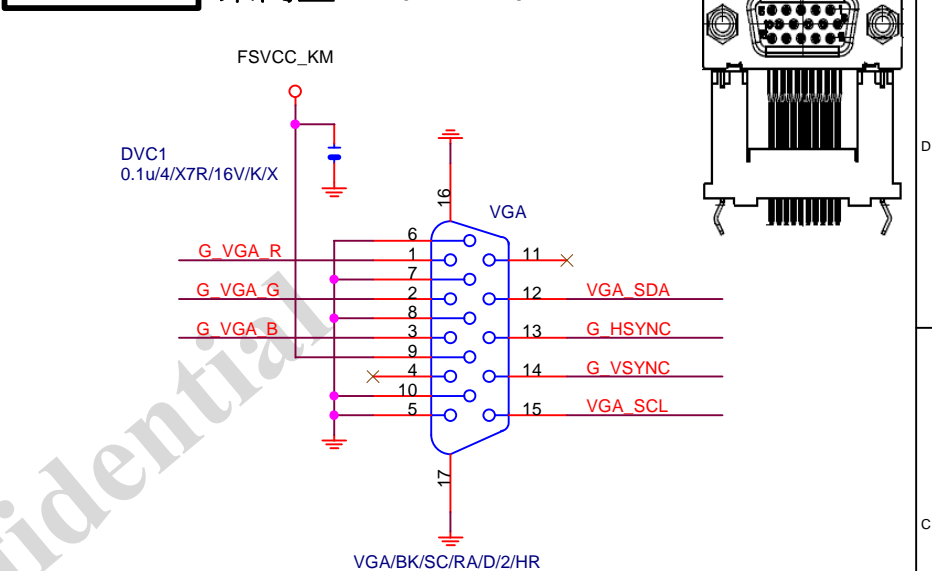
Non-Compliant



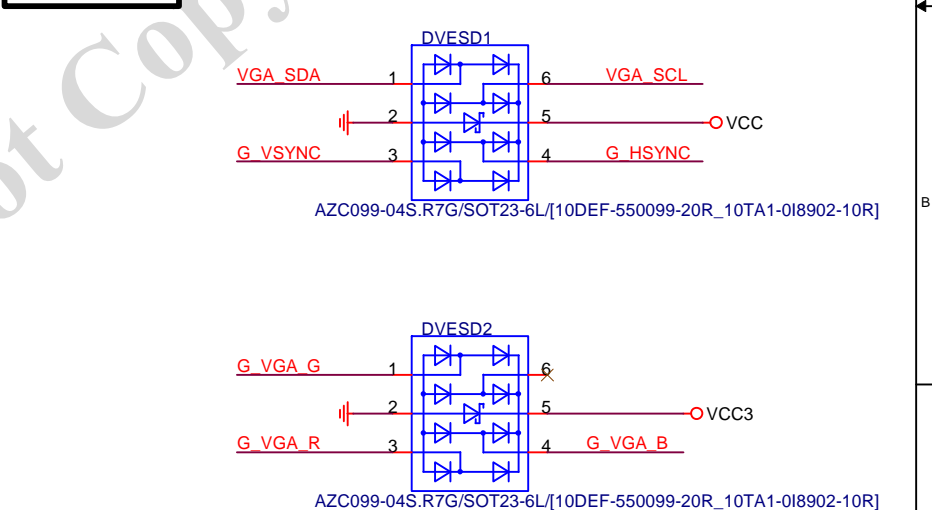
VGA SIGNAL R1.08



VGA CONN. 架高型VGA (BLACK)



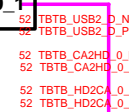
VGA ESD



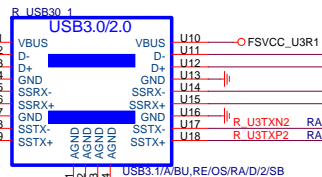
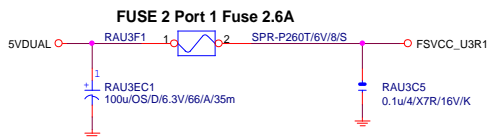
| | | | |
|---------------------|-----------------------|-------------------|---------|
| Gigabyte Technology | | | |
| NXP-PTN3356 | | | |
| Title | | | |
| Size | Document Number | GA-Z170X-Gaming 3 | Rev 1.1 |
| Custom | | | |
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R_USB30_

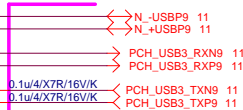
NET 可自行調整



↓ port for
Type-A USB3.1



NET 可自行調整



for layout request

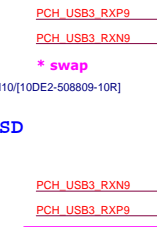
NET 可自行調整



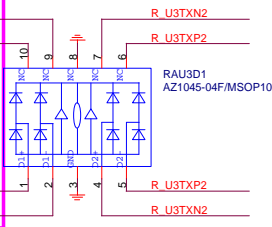
- * swap

* swap
RAU3D2
AOZ8809DI-05/DFN10/[
Type-A
USB3.1 ESD
不可對調

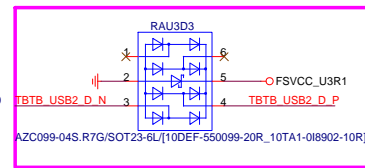
NET 可自行調整



- * swap

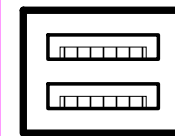


NET 可自行調整



CONNECTOR 自行調整

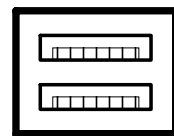
2 port USB 3.0 Capture:
USB/18P/BU/OS/RA/D/2/1U/SB



Footprint:USB30_20

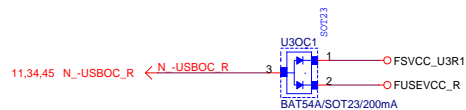
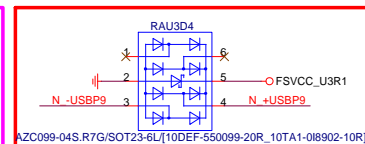
2 port USB 3.0 with TYPE C Capture:

USB/18P/BU/OS/RA/D/2/HR



架高

Footprint:USB30_H

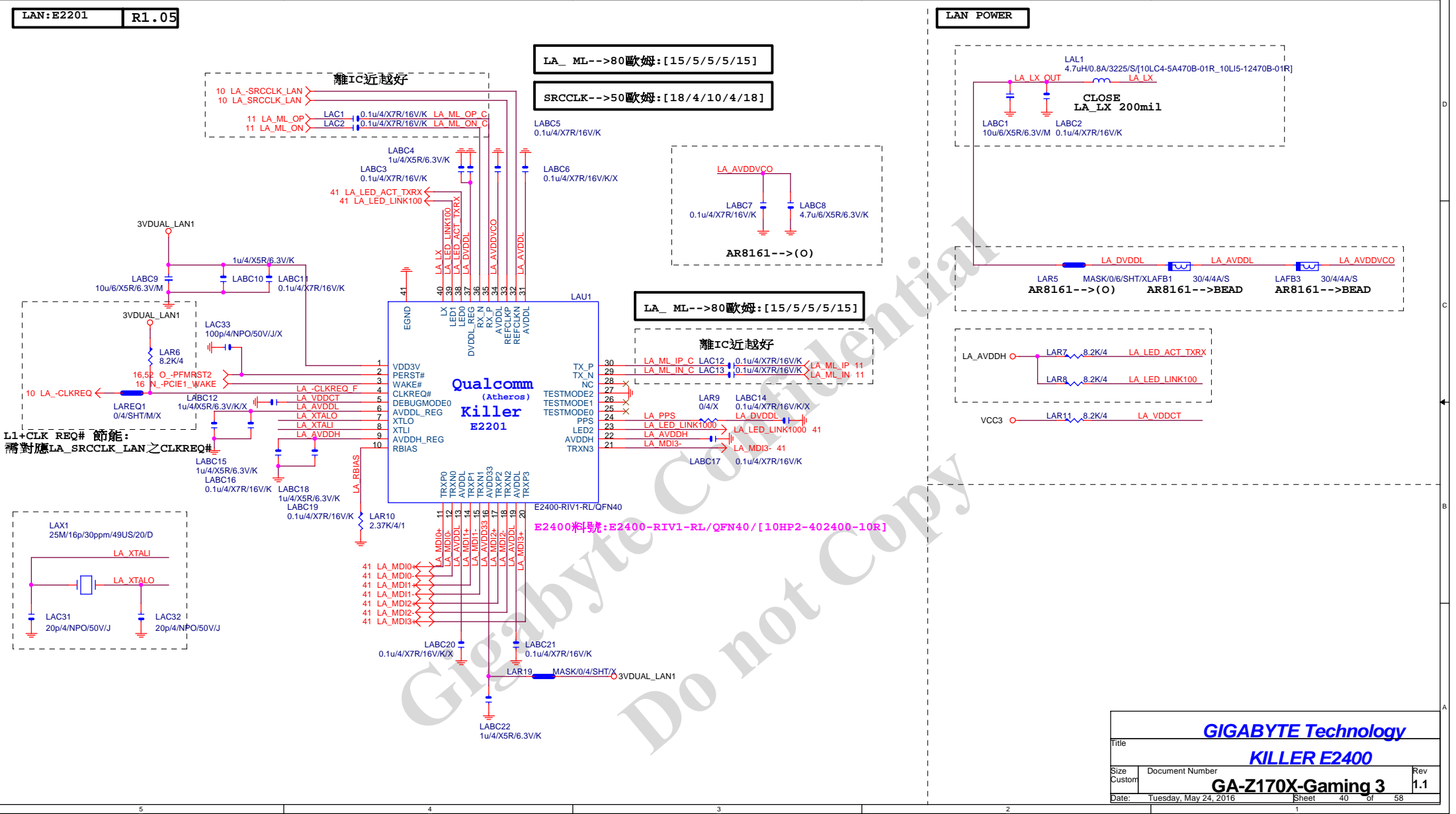


GIGABYTE Technology

| | |
|-------|-------------------------|
| Title | R USB30.F USB30. USB OC |
|-------|-------------------------|

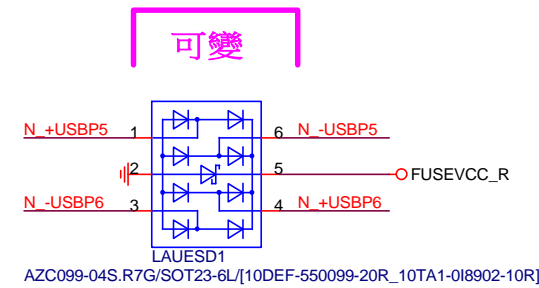
| | |
|-------------|--|
| Size Custom | Document Number GA-Z170X-Gaming 3 |
|-------------|--|

| | | | | | |
|-------|-----------------------|-------|----|----|----|
| Date: | Tuesday, May 24, 2016 | Sheet | 39 | of | 58 |
|-------|-----------------------|-------|----|----|----|

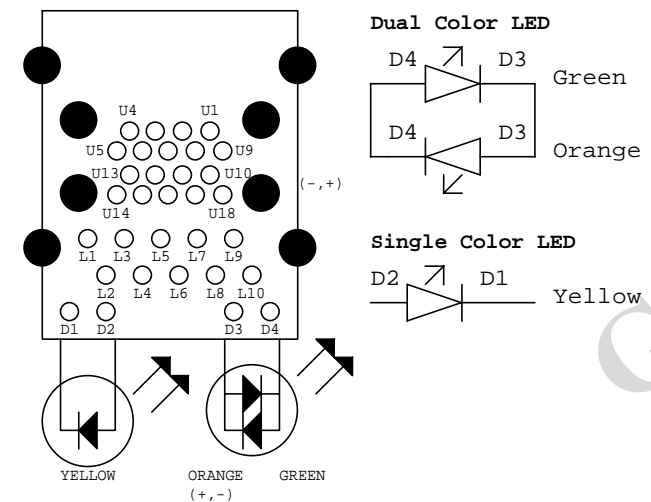


USB_LAN CONNECTOR R1.04

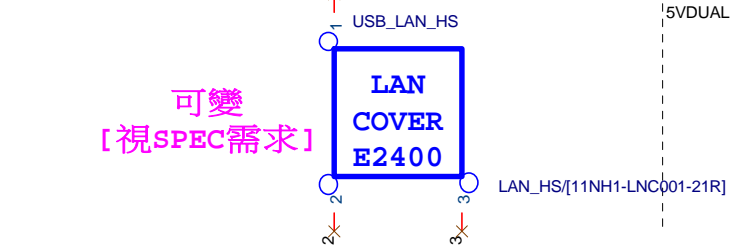
RMA ESD PROTECT note:可變更USB NAME



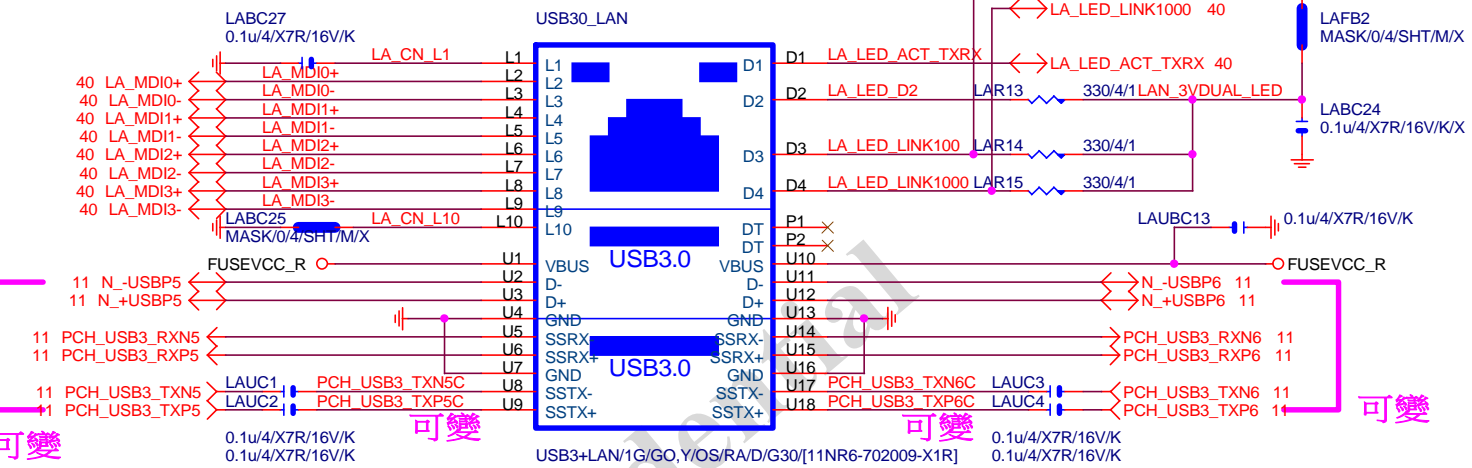
USB30 LAN LAYOUT示意圖



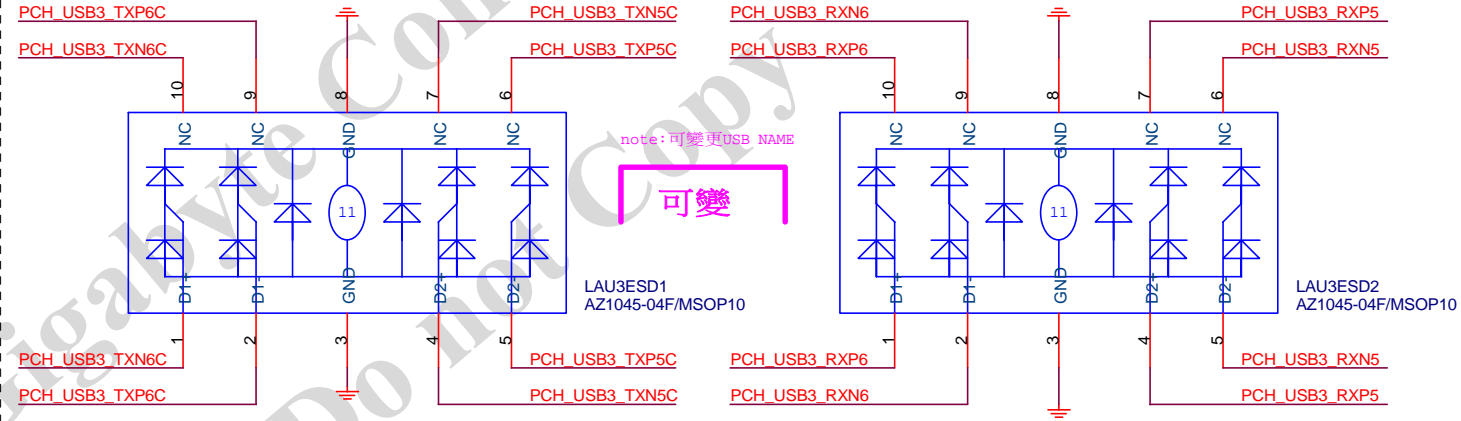
LAN COVER FOOT PRINT:LAN COVER



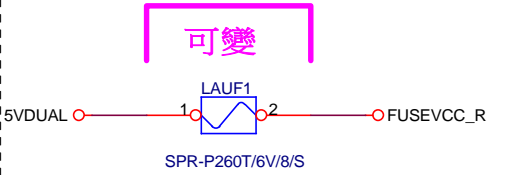
USB_LAN CONNECTOR [E2201] note:可變更USB NAME



LA MDI--->100歐姆:[20/4/8/4/20]

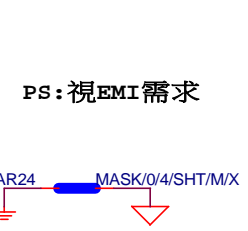


USB POWER note:可變更FUSE

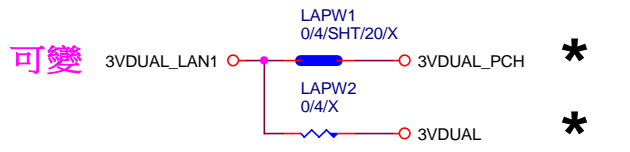


Close to connector FUSE-0805

EMI SHORT PAD



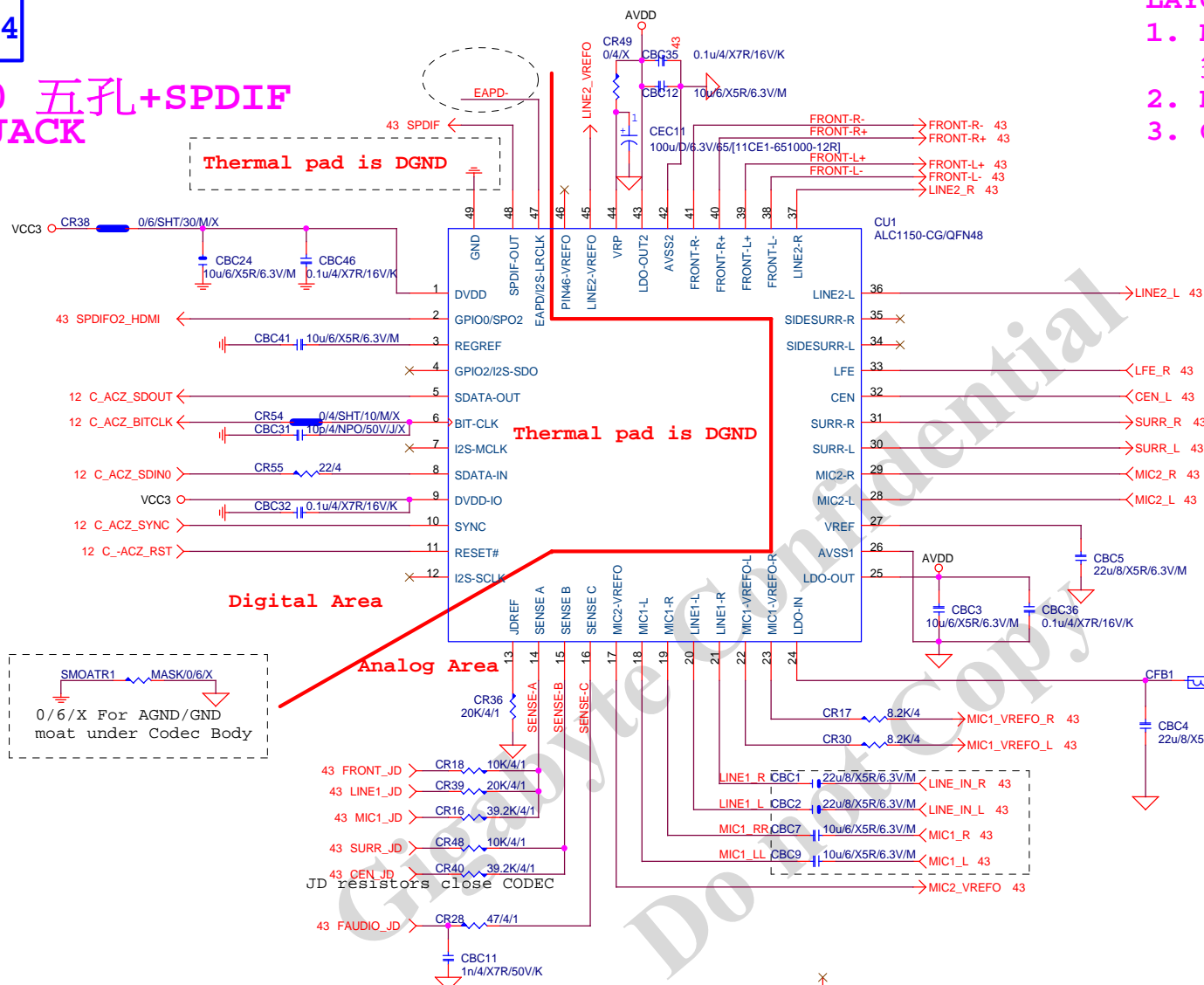
LAN POWER



| | | | |
|---------------------|-----------------------|-------------------|----------|
| GIGABYTE Technology | | | |
| LAN CONNECTOR-E2400 | | | |
| Title | Document Number | Rev | 1.1 |
| Size | Custom | GA-Z170X-Gaming 3 | |
| Date: | Tuesday, May 24, 2016 | Sheet | 41 of 58 |

Rev 0.94

ALC1150 五孔+SPDIF AUDIO JACK



LAYOUT注意:螺絲孔下GND方式

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

○ MH1
DGND

○ MH2
Isolate

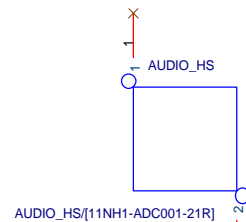
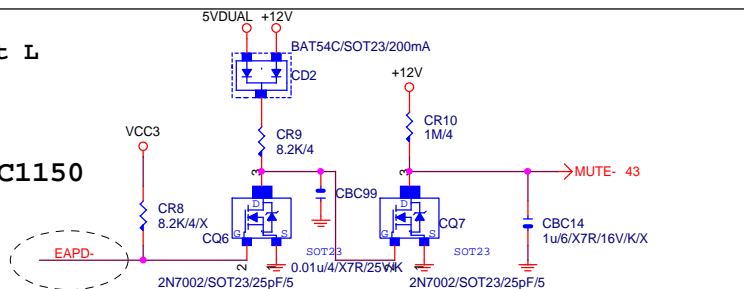
SMOATR1 MASK 0/6/X
0/6/X For AGND/GND
moat under Codec Body

43 FRONT_JD CR18 10K/4/1
43 LINE1_JD CR39 20K/4/1
43 MIC1_JD CR16 39.2K/4/1
43 SURR_JD CR48 10K/4/1
43 CEN_JD CR40 39.2K/4/1
JD resistors close CODEC

43 AUDIO_JD CR28 47/4/1
CBC11 1n/4/X7R/50V/K

EAPD: Default L
H : ON
L : OFF

Close to ALC1150



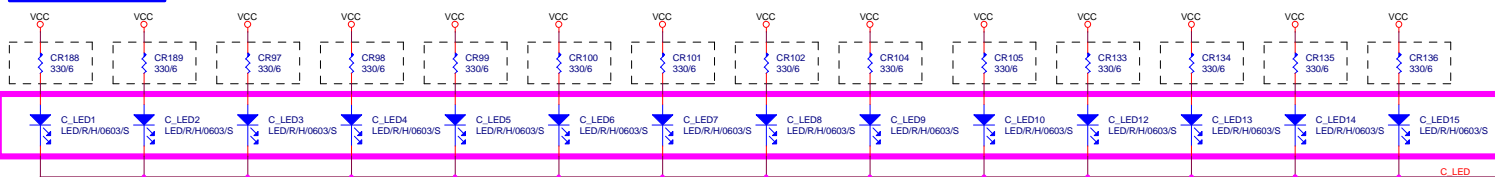
LAYOUT注意:要加
GND切割線



GIGABYTE Technology

| | | | | |
|---------|-----------------------|-------|----------|-----|
| Title | | | | |
| ALC1150 | | | | |
| Size | Document Number | | | Rev |
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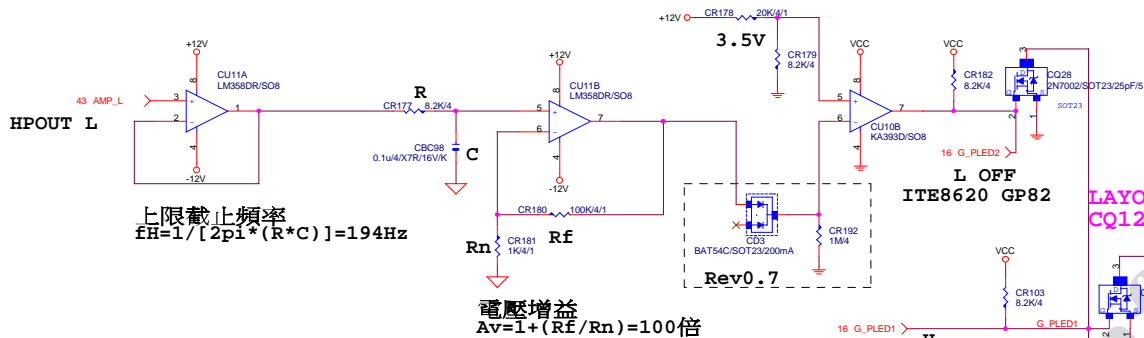
| | | | | | |
|-----------------------------|--|-------------------|--|-----|--|
| Title | | | | Rev | |
| AUDIO JACK | | | | 1.1 | |
| Size Custom | | Document Number | | | |
| | | GA-Z170X-Gaming 3 | | | |
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VALUE可變,LED顏色請自行修改

[UD/SOC系列--> 白光LED(黃色):LED/W/6/S]

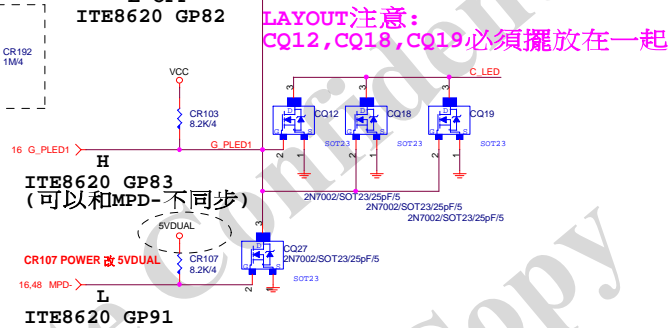
[GAMING系列--> 紅光LED(紅色):LED/R/H/0603/S]



Rear Panel LED ON/OFF

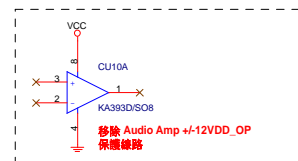
| | IO_GP80 |
|------------|---------|
| AR LED ON | H |
| AR LED OFF | L |

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

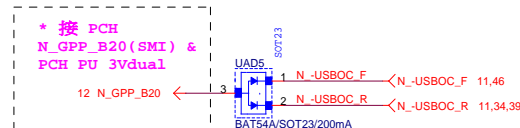
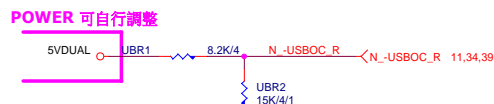
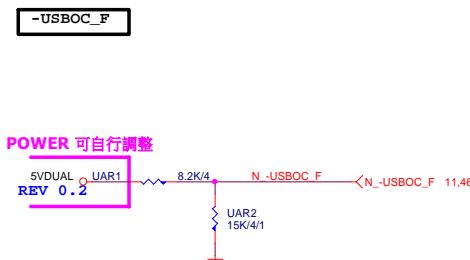
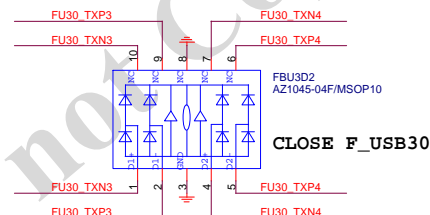
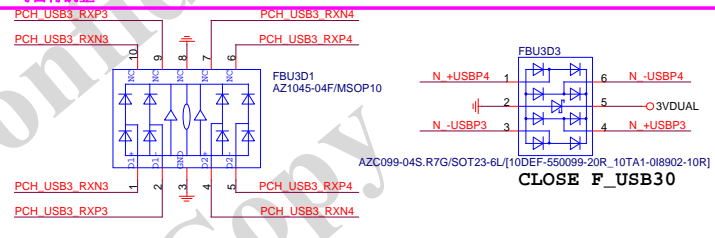
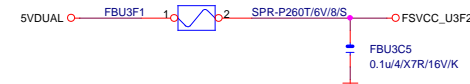
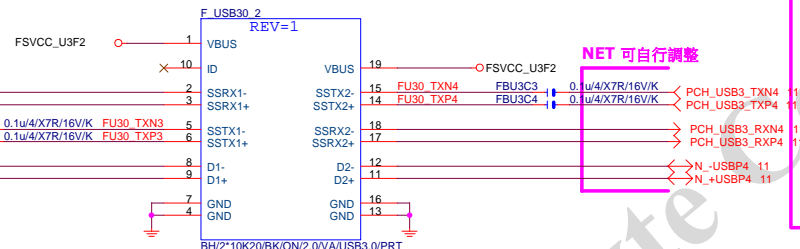
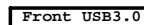
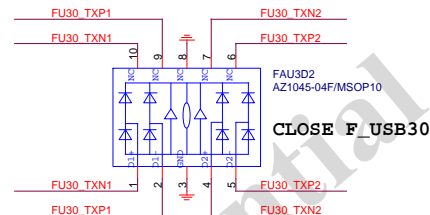
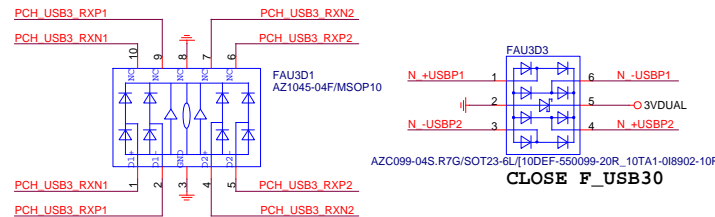
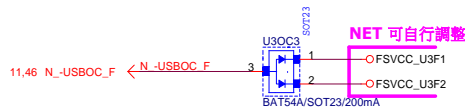
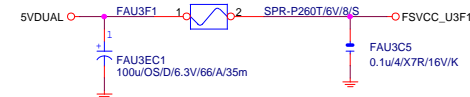


AUDIO LED Control (沒有LPT model)

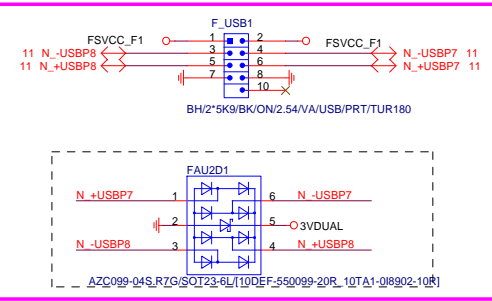
| | IO_GP82 | IO_GP83 | IO_GP91 |
|------------|---------|---------|---------|
| Still Mode | L | H | L |
| OFF Mode | L | L | L |
| Pluse Mode | L | H | BREATH |
| Beat Mode | OD | H | L |



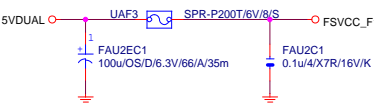
GIGABYTE™



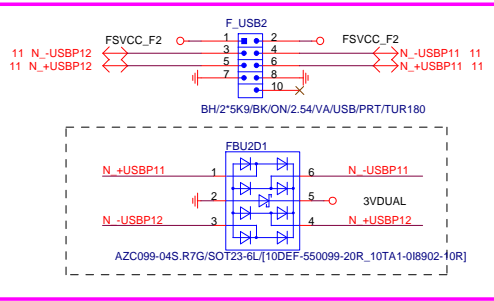
NET 可變



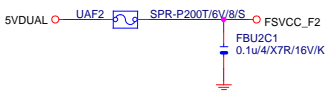
Close to connector
FUSE 2 Port 1 Fuse 2A



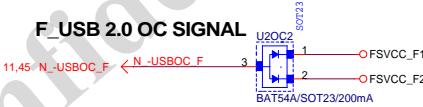
NET 可變



Close to connector
FUSE 2 Port 1 Fuse 2A



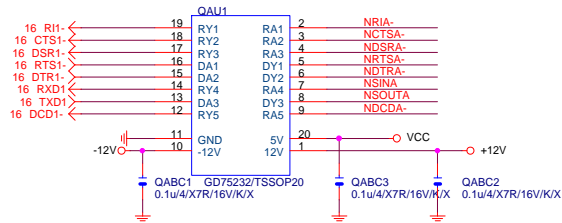
F_USB 2.0 OC SIGNAL



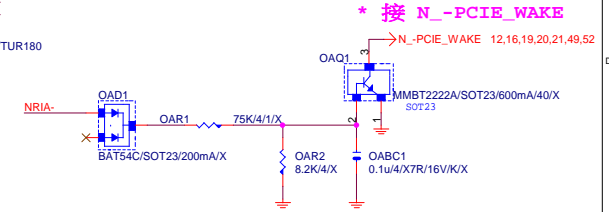
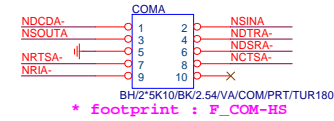
Gigabyte Confidential
Do not Copy

Rev: 0.7

COM PORT



COMA

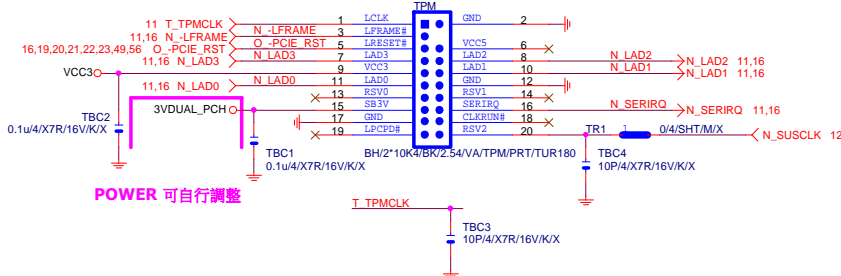


Rev: 0.3

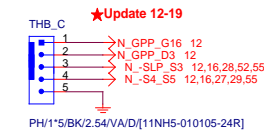
TURBO KEY

LPT PORT

TPM CONNECT

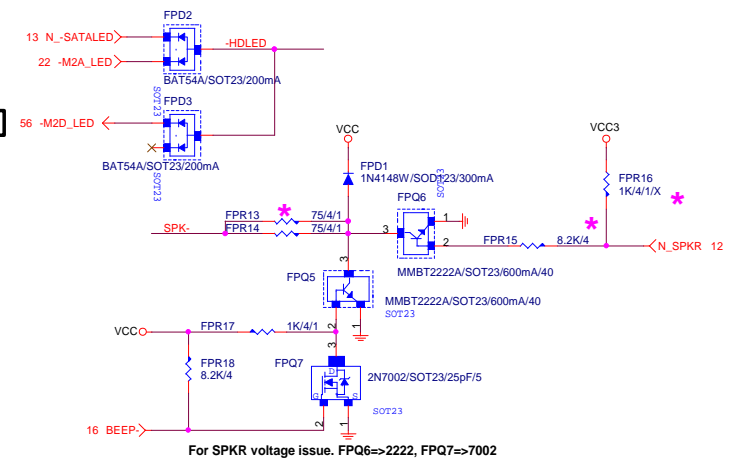
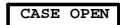


Thunderbolt

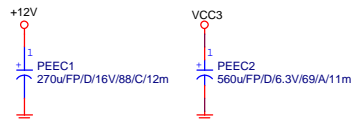


| GIGABYTE Technology | | | |
|---------------------|-----------------------|-------------------|----------|
| Title | | | |
| COM,TPM,THB | | | |
| Size | Document Number | GA-Z170X-Gaming 3 | |
| Custom | | Rev 1.1 | |
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FRONT PANEL



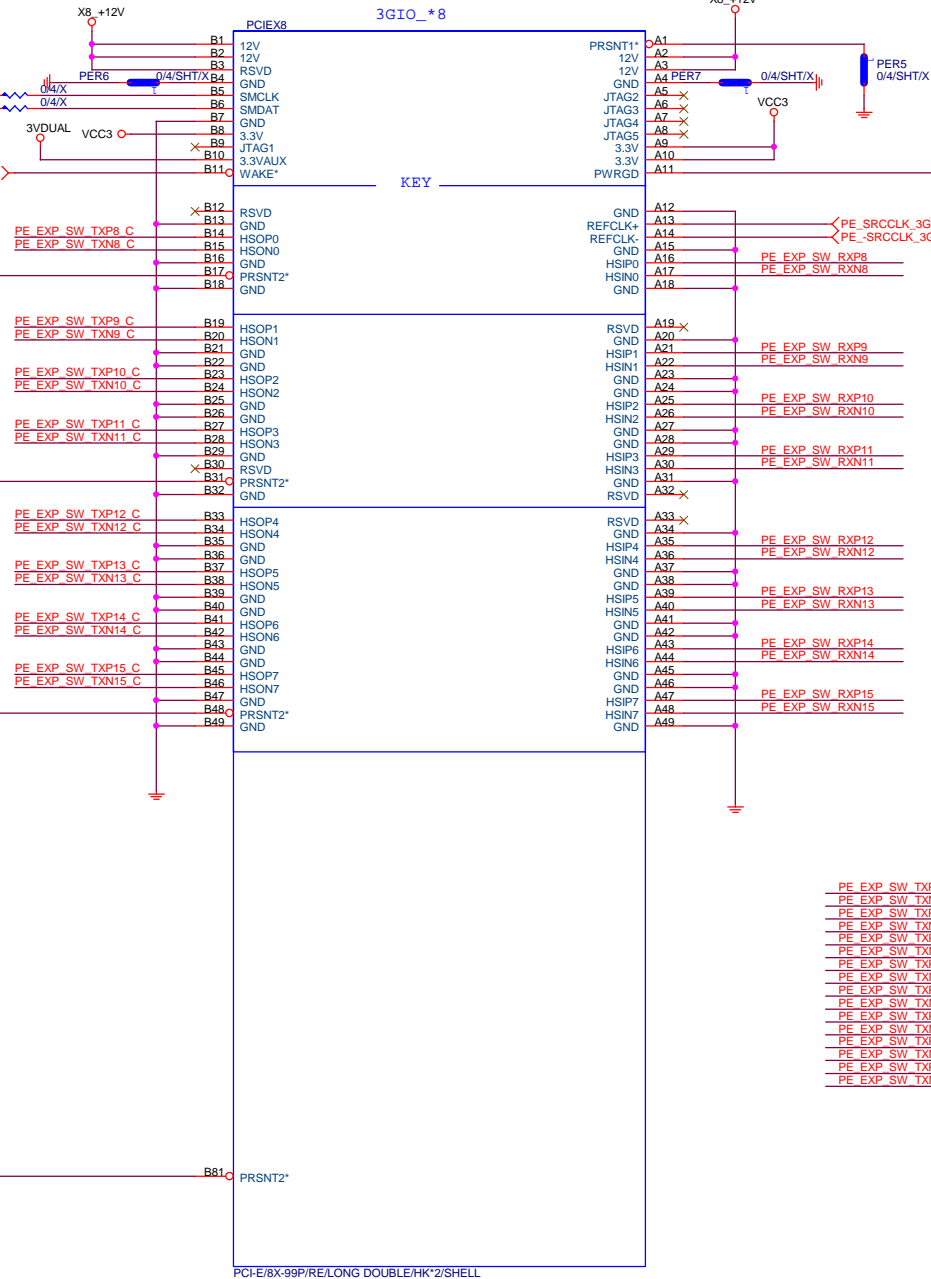
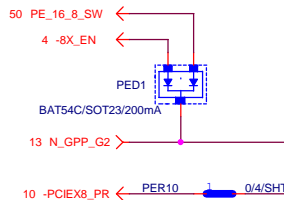
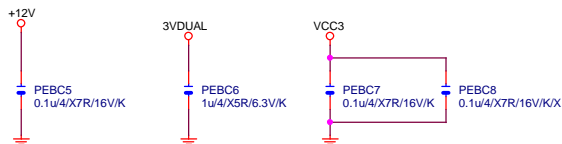
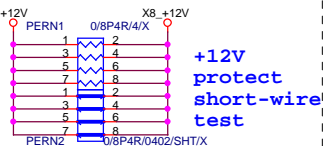
Rev 0.3



8,9,12,19,20,21,24,32,51 N_SMBCLK N_SMBCLK PER8 0/4/X
8,9,12,19,20,21,24,32,51 N_SMBDATA N_SMBDATA PER9 0/4/X

12,16,19,20,21,47,52 N_-PCIE_WAKE

PCIEX8 PROTECT SHT



PE_EXP_SW_RXP[8..15] >>> PE_EXP_SW_RXP[8..15] 50
PE_EXP_SW_RXN[8..15] >>> PE_EXP_SW_RXN[8..15] 50
PE_EXP_SW_TXP[8..15] >>> PE_EXP_SW_TXP[8..15] 50
PE_EXP_SW_TXN[8..15] >>> PE_EXP_SW_TXN[8..15] 50

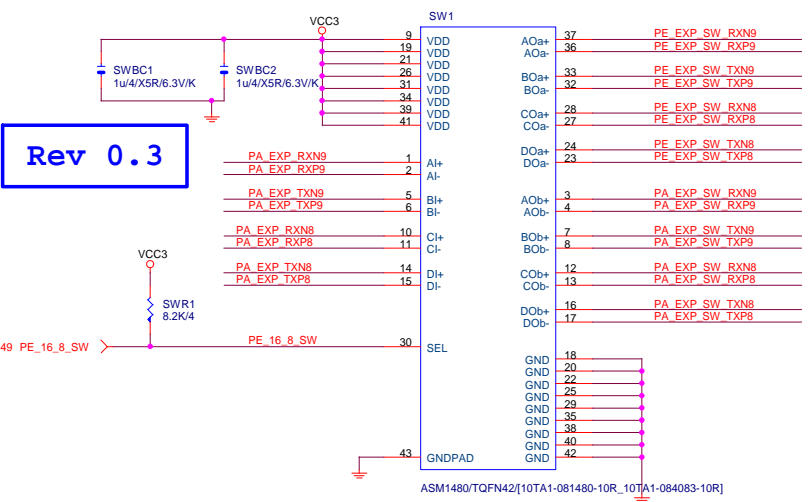
| | | | |
|-----------------|-------|-------------------|-------------------|
| PE_EXP_SW_TXP8 | PEC7 | 0.22u4/X5R/6.3V/K | PE_EXP_SW_TXP8_C |
| PE_EXP_SW_TXN8 | PEC8 | 0.22u4/X5R/6.3V/K | PE_EXP_SW_TXN8_C |
| PE_EXP_SW_TXP9 | PEC9 | 0.22u4/X5R/6.3V/K | PE_EXP_SW_TXP9_C |
| PE_EXP_SW_TXN9 | PEC10 | 0.22u4/X5R/6.3V/K | 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 |

紅色

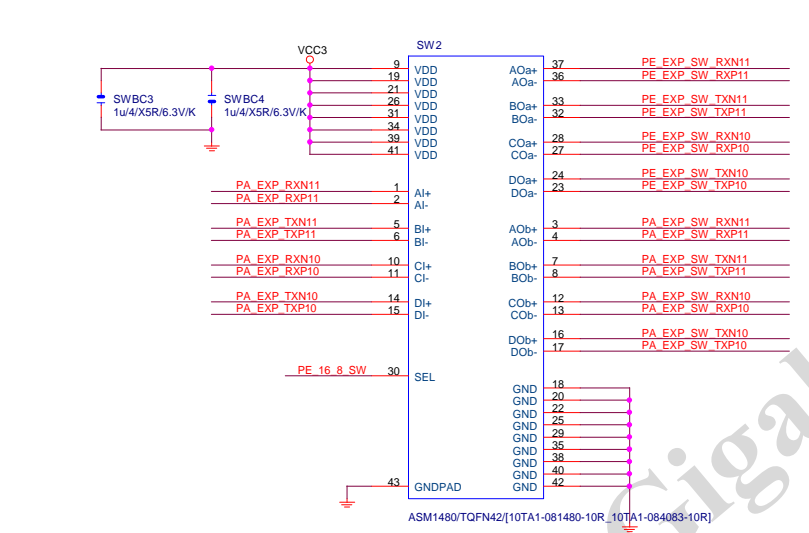
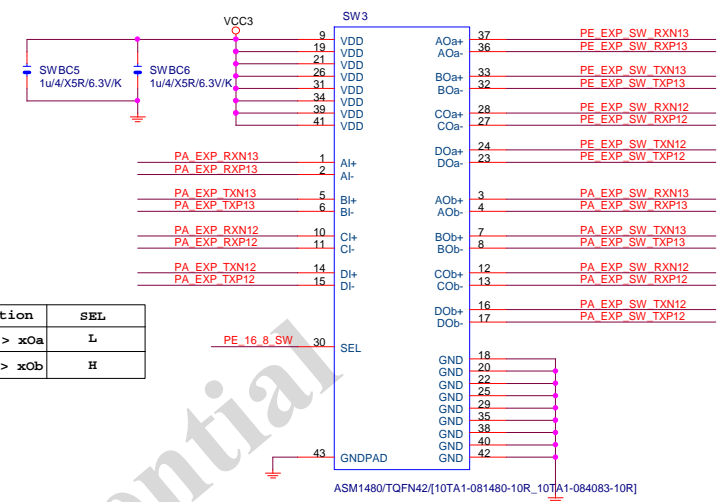
GIGABYTE Technology

| | | | |
|----------------|-----------------------|-------|----------|
| Title | | | |
| PCI EXPRESS X8 | | | |
| Size | Document Number | Rev | |
| Custom | GA-Z170X-Gaming 3 | 1.1 | |
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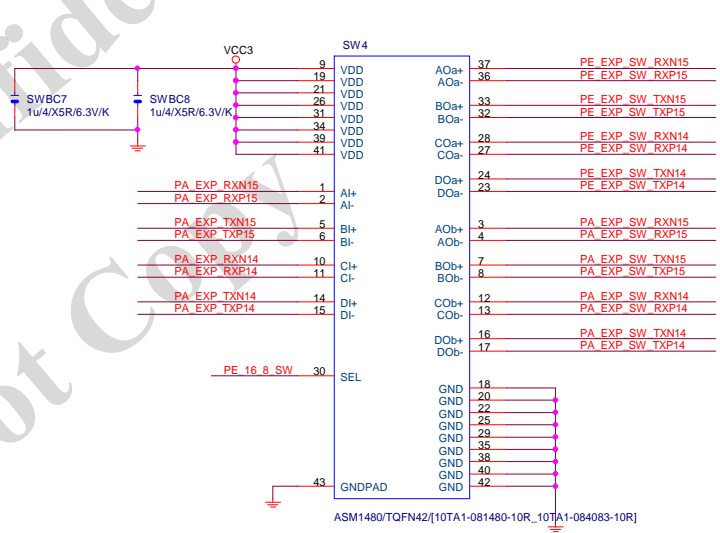
Rev 0.3



| Function | SEL |
|-----------|-----|
| xI--> xOa | L |
| xI--> xOb | H |



PA EXP SW RXP18_15I >>> PA_EXP_SW_RXP18..15] 19
PA EXP SW RXN18_15I >>> PA_EXP_SW_RXN18..15] 19
PA EXP SW TXP18_15I >>> PA_EXP_SW_TXP18..15] 19
PA EXP SW TXN18_15I >>> PA_EXP_SW_TXN18..15] 19
PE EXP SW RXP18_15I >>> PE_EXP_SW_RXP18..15] 49
PE EXP SW RXN18_15I >>> PE_EXP_SW_RXN18..15] 49
PE EXP SW TXP18_15I >>> PE_EXP_SW_TXP18..15] 49
PE EXP SW TXN18_15I >>> PE_EXP_SW_TXN18..15] 49
PA EXP RXP10_15I >>> PA_EXP_RXP10..15] 4,19
PA EXP RXN10_15I >>> PA_EXP_RXN10..15] 4,19
PA EXP TXP10_15I >>> PA_EXP_TXP10..15] 4,19
PA EXP TXN10_15I >>> PA_EXP_TXN10..15] 4,19



GIGABYTE Technology

PCI EXPRESS X16 SWITCH

GA-Z170X-Gaming 3

Title

Document Number

Date:

Size

Custom

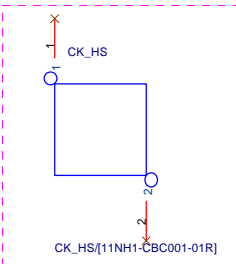
Tuesday, May 24, 2016

Rev

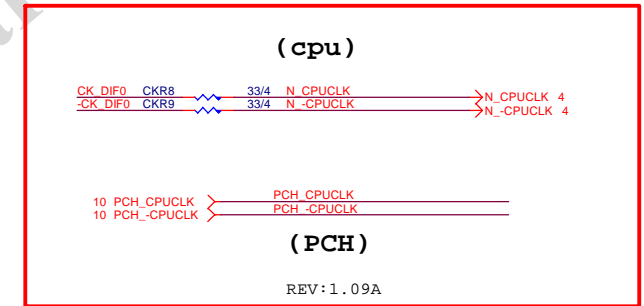
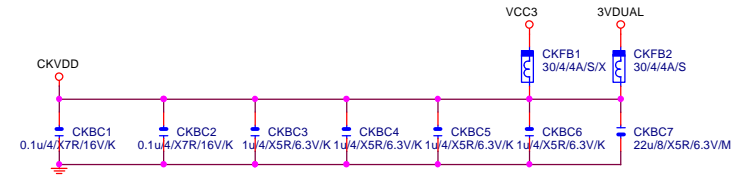
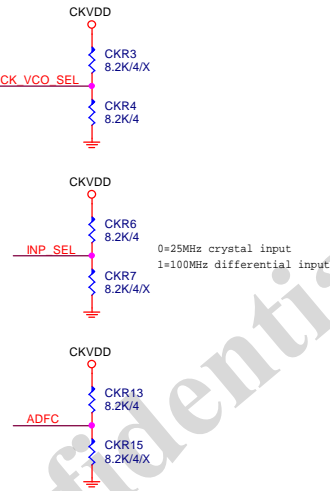
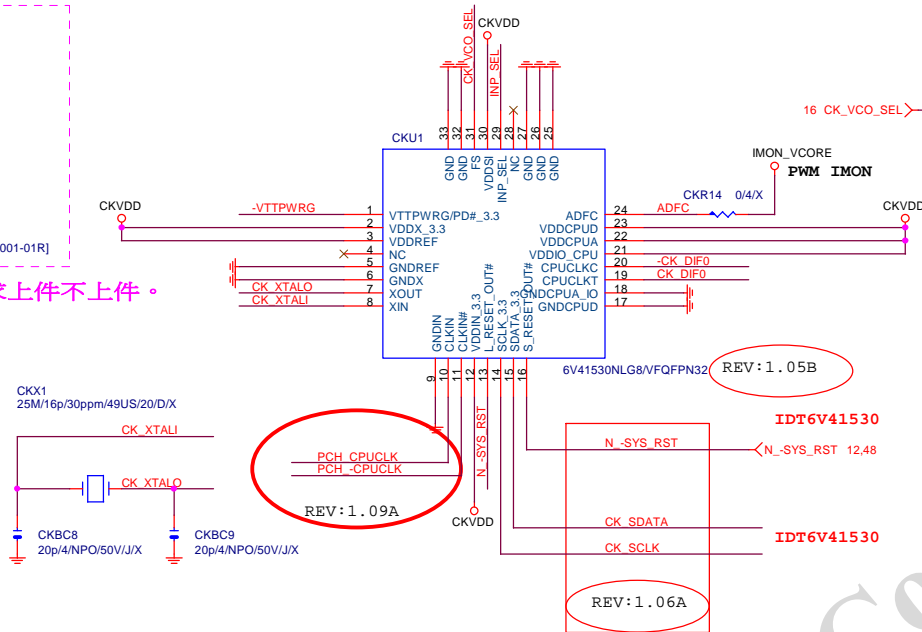
1.1

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IDT6V41530



*可變，依需求上件不上件。



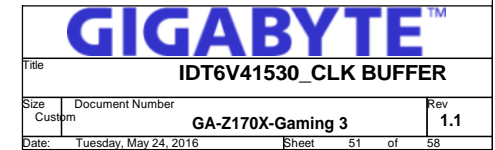
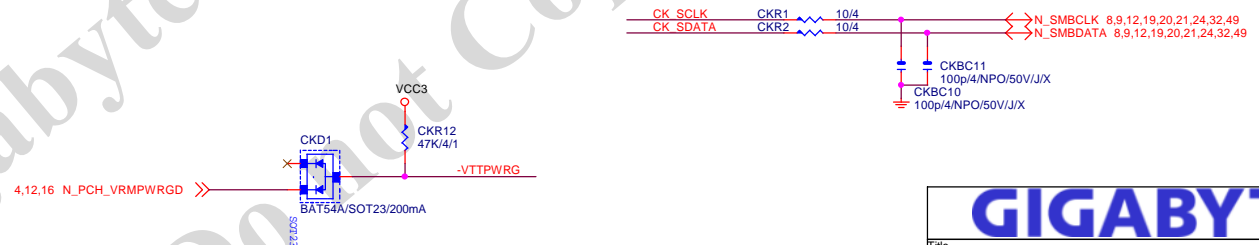
請依使用情況(0 ohm 請修改為short Pad)

| | |
|---------|-----------|
| INP_SEL | Input |
| 0 | Crystal |
| 1 | CLK_INP/N |

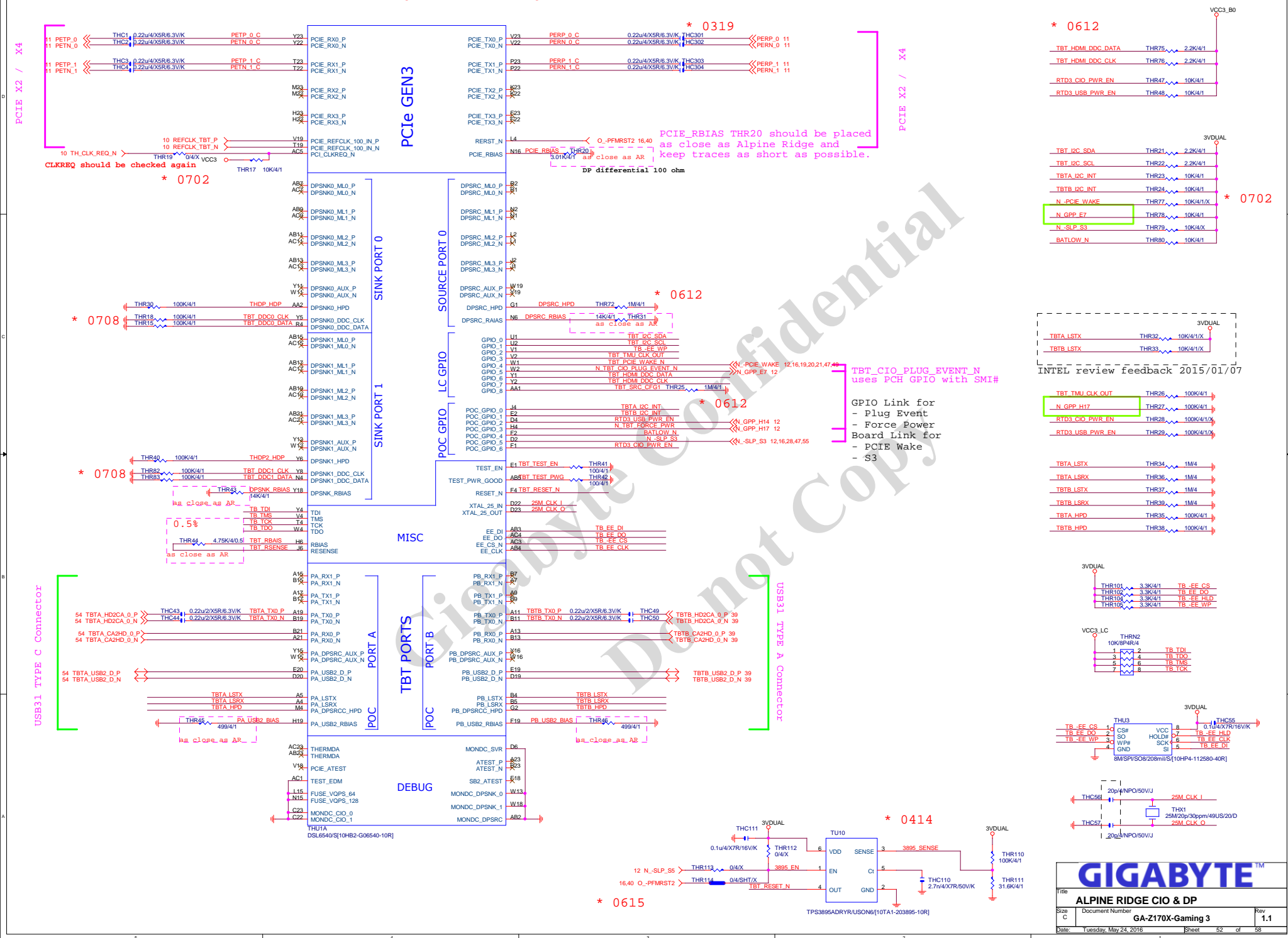
| | |
|------------|-------|
| CK_VCO_SEL | VCO |
| 0 | 400M |
| 1 | 1200M |

| 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 |

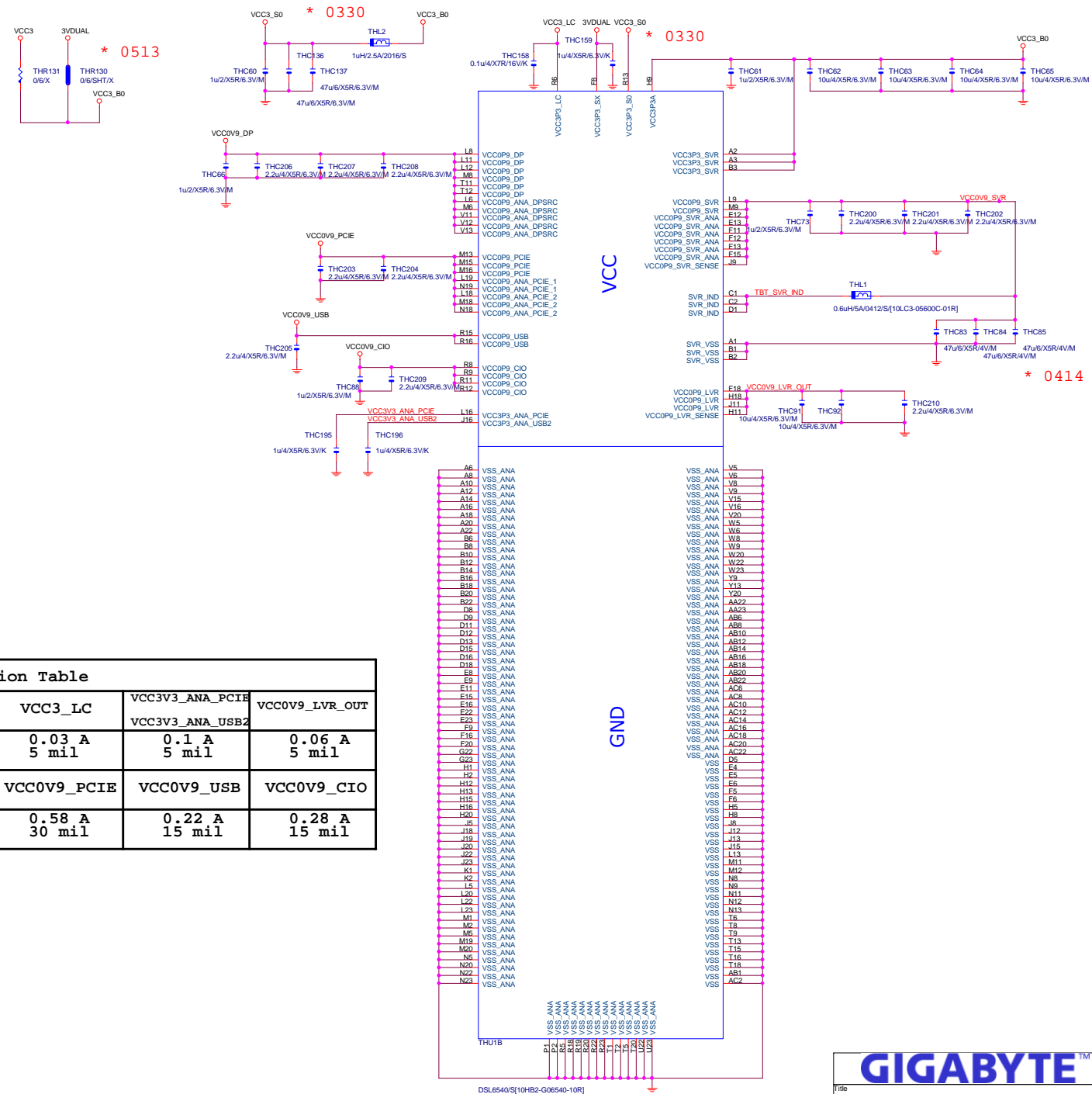
CLK BUFFER 未上件時，零件FOOTPRINT需修改為IC32QFN-SL-MASK



INTEL AR USB31 module SCH 0.63 (2015/07/08)



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 |

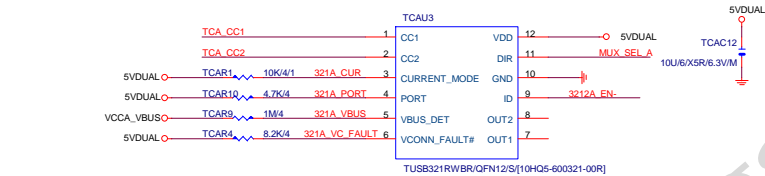
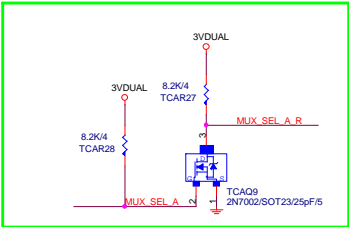
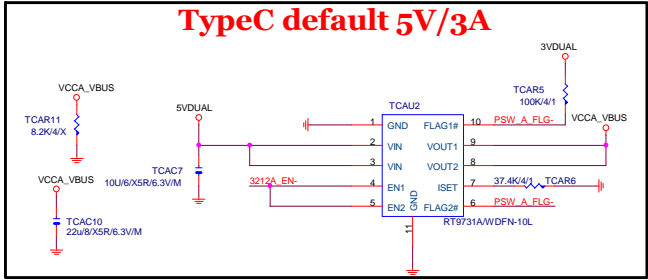
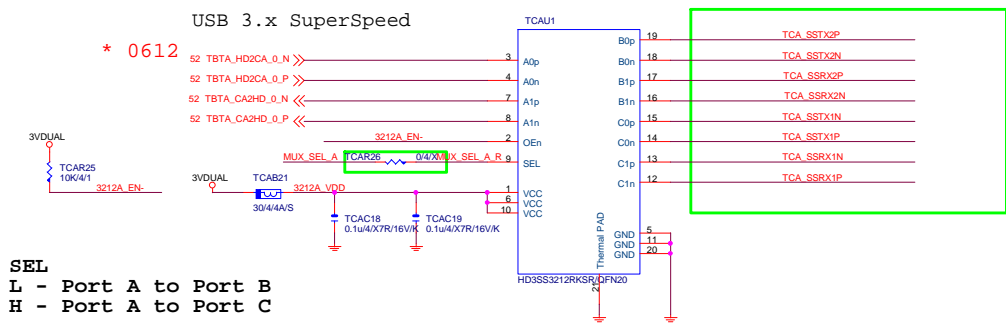
GIGABYTE

ALPINE RIDGE POWER

Document Number
GA-Z170X-Gaming 3

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INTEL AR USB31 module SCH o.63 (2015/07/08)



CURRENT MODE

L - Default current / Pull down to GND or NC

M - Medium (1.5A) current / Pull up to VDD 500K

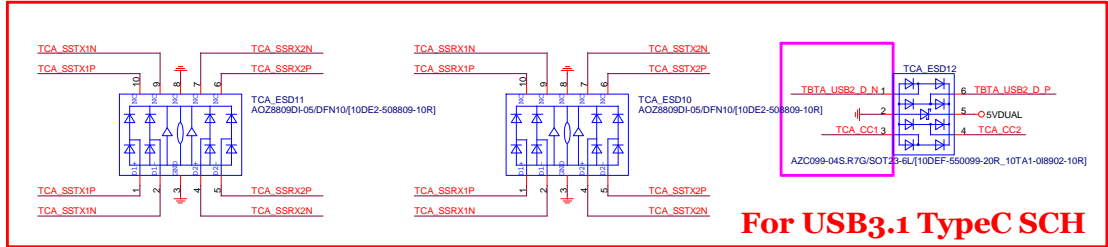
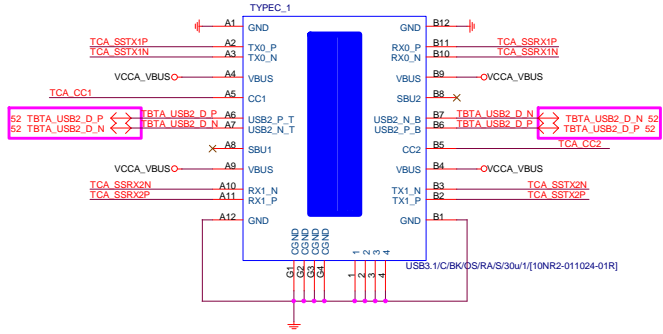
H - High (3.0A) current / Pull up to VDD 10K

PORT

H - HOST

L - Device

NC - Dual Role

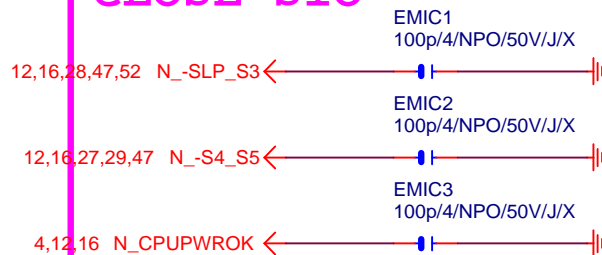


For USB3.1 TypeC SCH

Color markers can be changed by model

| | | |
|-----------------------------|-----------------------------------|---------|
| GIGABYTE™ | | |
| TI TUSB321 | | |
| Size C | Document Number GA-Z170X-Gaming 3 | Rev 1.1 |
| Date: Tuesday, May 24, 2016 | Sheet 54 | of 58 |

CLOSE SIO



CLOSE PCH



EMI Alain 2015/03/04 modify



GIGABYTE™

Title

EMI/ESD

Size
A

Document Number

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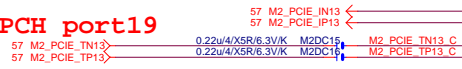
Rev

1.1

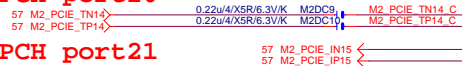
Date: Tuesday, May 24, 2016

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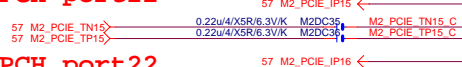
M.2 Lane2 from PCH port19



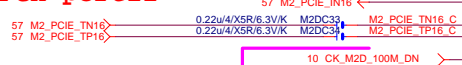
M.2 Lane2 from PCH port20



M.2 Lane3 from PCH port21

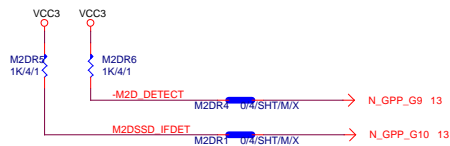


M.2 Lane4 from PCH port22



需與M2-CLKREQ對應

支援SATA and M.2 function



| M.2 有插卡 / 沒插卡 GPP_G9 | 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 |

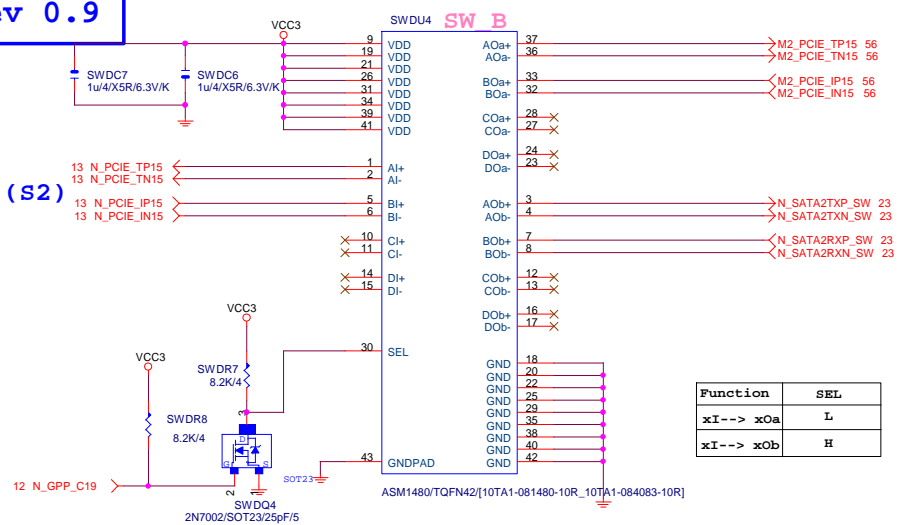
M.2沒插卡+SATA S0~3

| 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

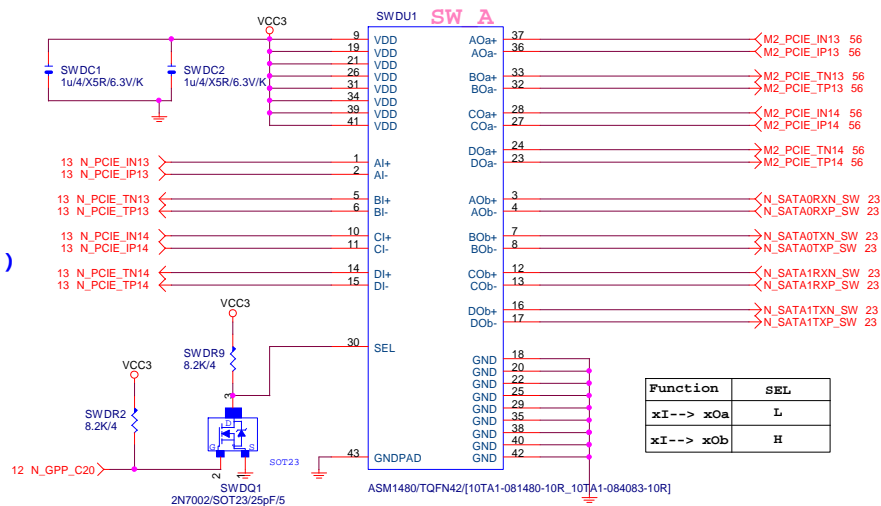
| WHEN | PCH GPIO | SETUP | SWITCH |
|-----------|----------|---------|--------|
| GPP_G7 | H | GPP_C20 | L |
| GPP_G8 | H | GPP_C19 | L |
| GPP_F1/F2 | L | GPP_C21 | L |

PCH (S2)

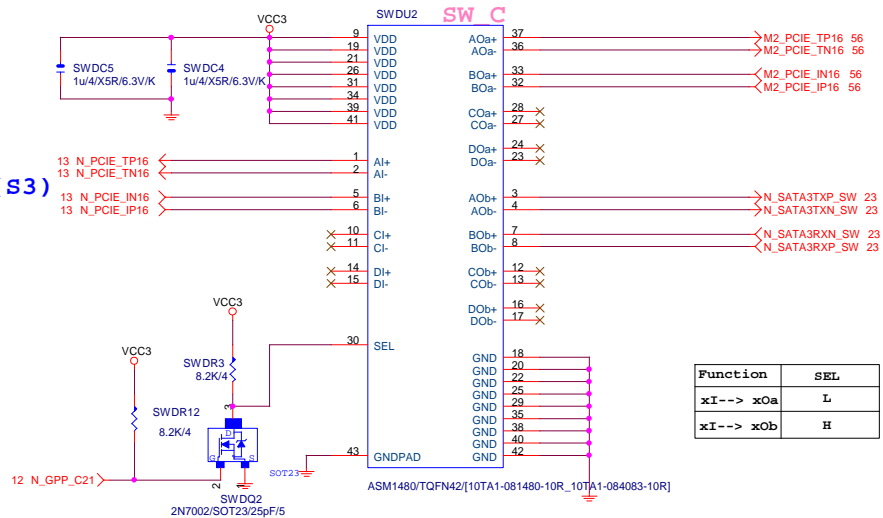


PCH (S0)

PCH (S1)



PCH (S3)

**GIGABYTE Technology**
M.2 SWITCH

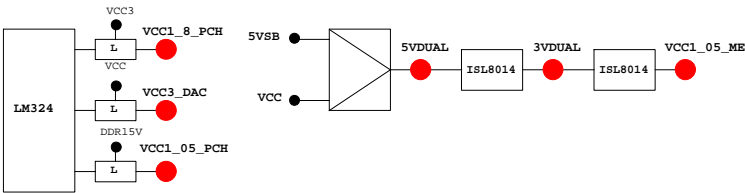
| | | |
|--------|-----------------------|----------------|
| Title | | |
| Size | Document Number | Rev |
| Custom | GA-Z170X-Gaming 3 | 1.1 |
| Date: | Tuesday, May 24, 2016 | Sheet 57 of 58 |

| 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 |

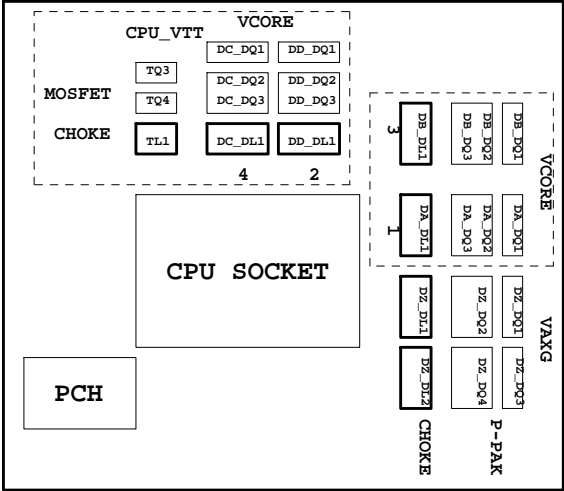
Super I/O ITE8720 GPIO Table

| 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/BUSSIO | NB_LED3_C | |
| GP22/SCK | LOW_PWR_1 | |
| VIDO5/GP27/SIN2 | LOW_PWR_2 | |
| PCIRST2#/GP11 | -PFMRST1 | |
| PCIRST1#/GP12 | -PFMRST2 | |
| 3VBSBW#/GP40 | CSI_F0 | BSEL166_1 |
| SUSC#/GP53 | CSI_F1 | BSEL166_2 |
| GP23/SI | BSEL166_3/CSISBSL | |
| VIDO0/GP20/CTS2# | CPUT_LED1_C | BSEL166_4 |
| GP65/VDDA_EN/GB_01 | MB_ID2 | |
| PD6/GP76/BUSS01 | MB_ID3 | |
| PD7/GP77/BUSS02 | MB_ID4 | |
| AFD#/GP86/SMBC_R | SEC_PIN | FST_2X8 |
| INIT#/GP85/SMBD_M | SEC_2x8 | GTLREF_AD2 |
| ACK#/GP83 | DDR_LED1_C | |
| VIDO1/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 | |
| VIDO4/GP26/SOUT2 | DDR18V_PH2_EN | |
| VIDO2/FAN_TAC5/GP24/DSR2# | DDR18V_LED | |
| VIDO6/GP17/RI2# | 1_1V_PH_EN | |
| VIDO7/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 |