

Model Name: GA-Z170X-Gaming 3

SHEET

TITLE

Rev 1.01

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Rev 1.01

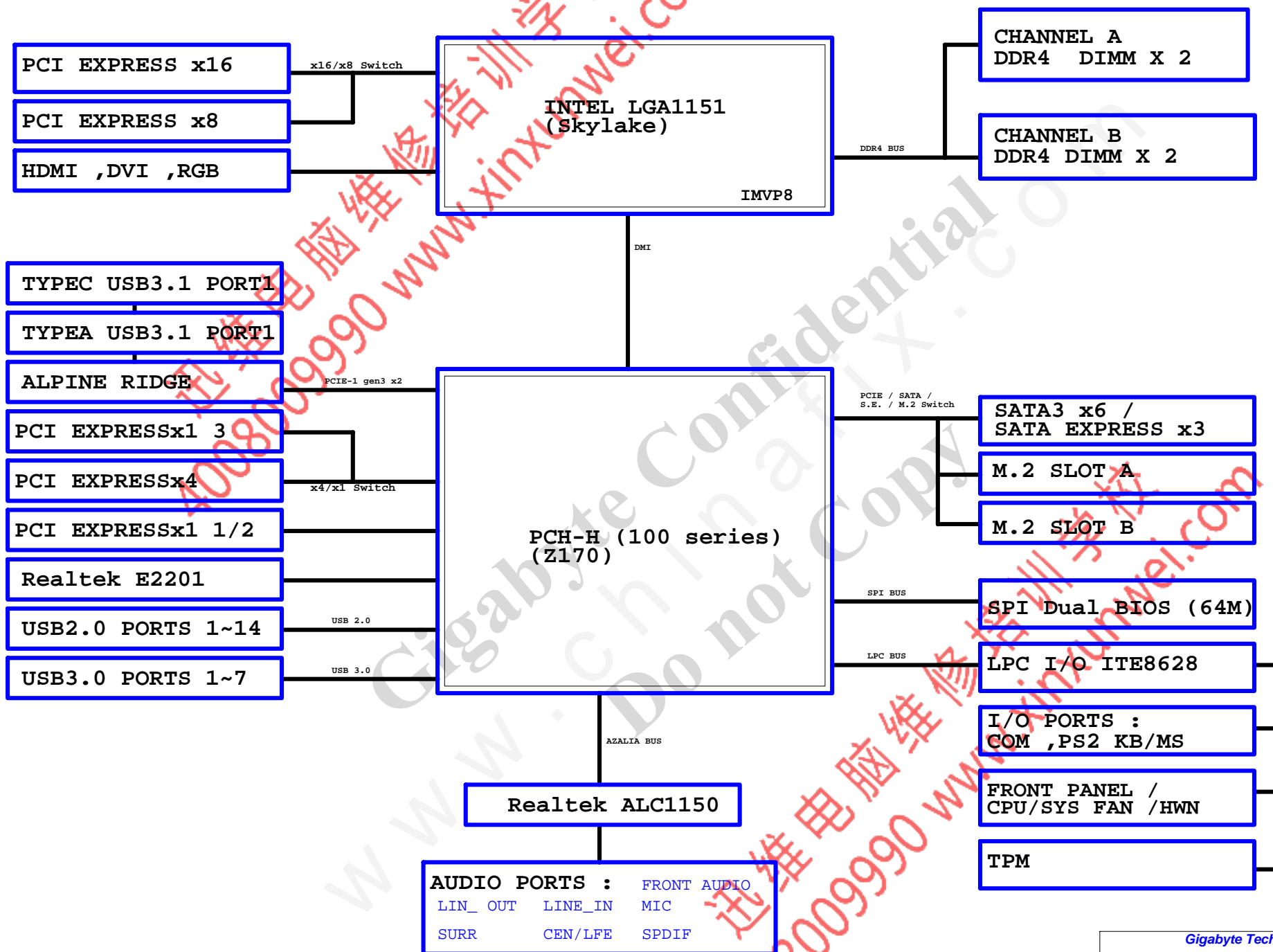
CHINA FDI

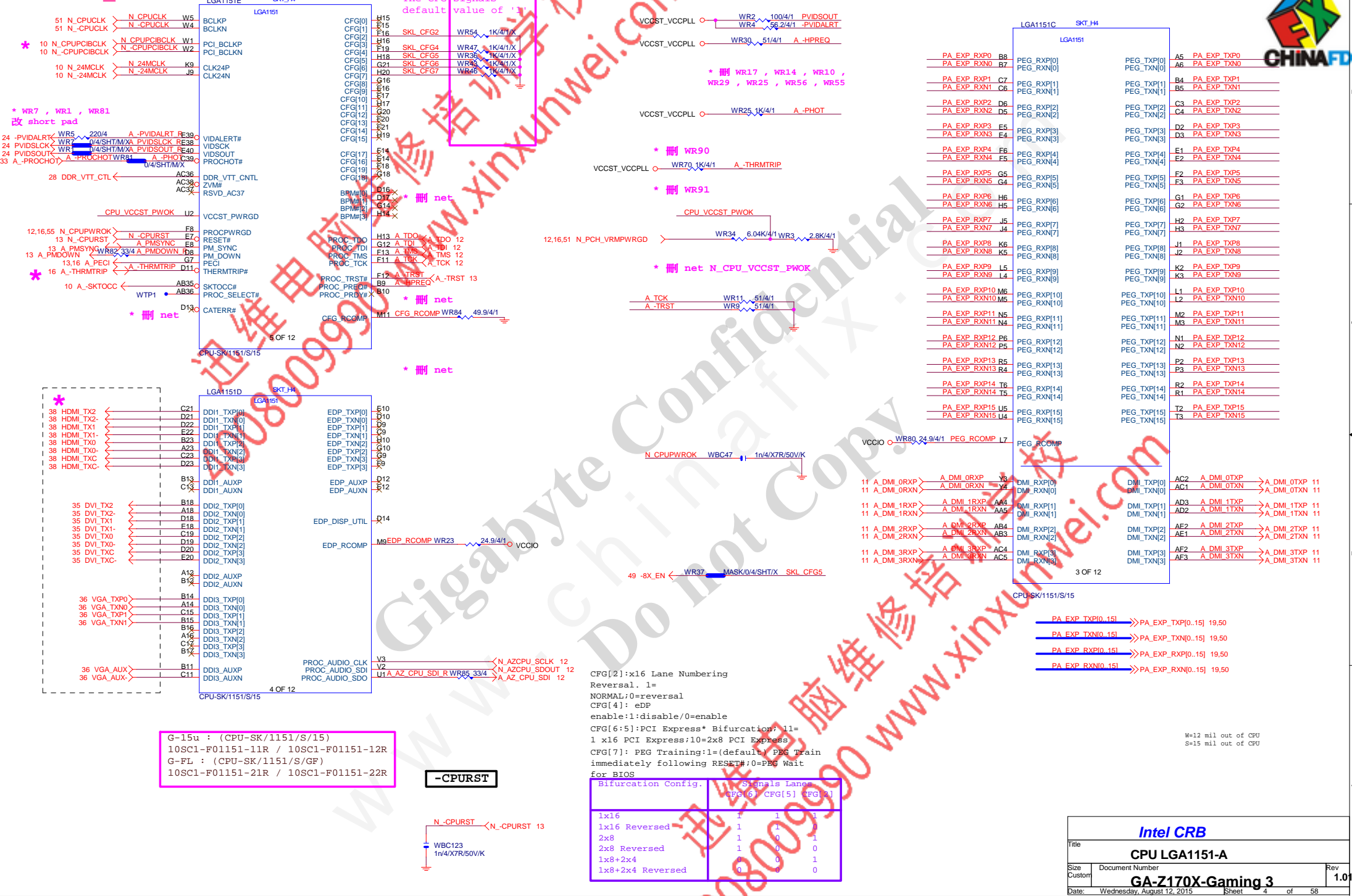
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BLOCK DIAGRAM

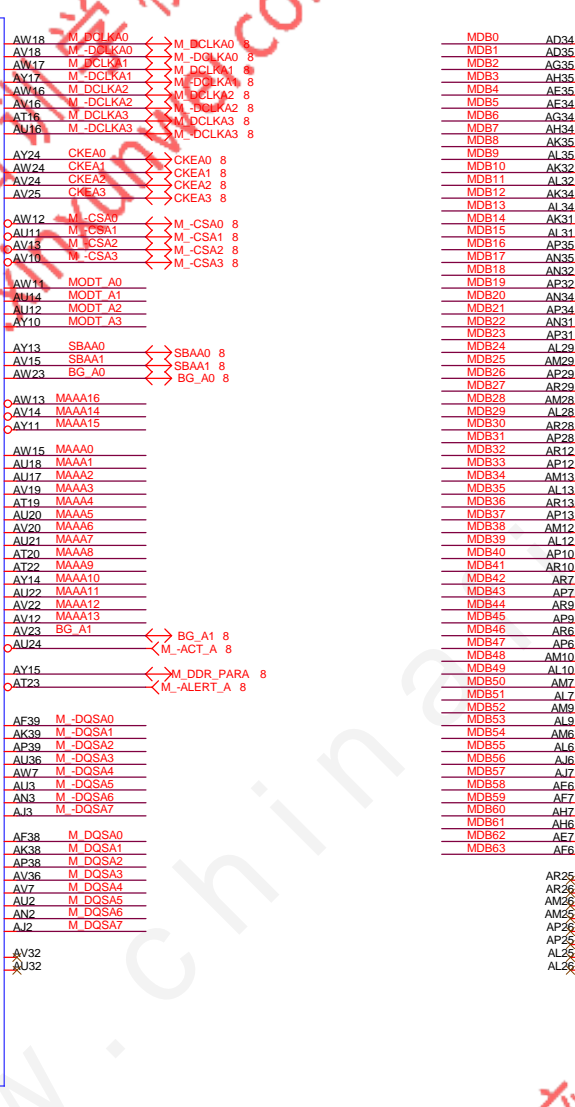
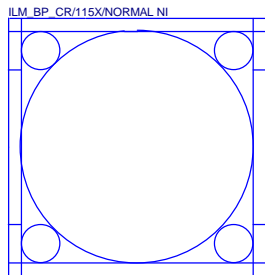
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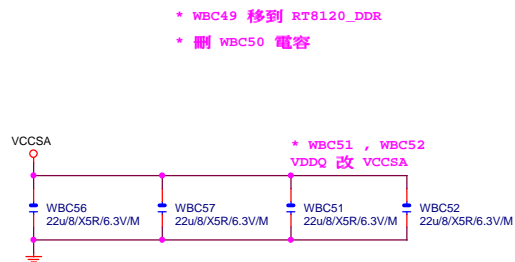


* 改DDR4 net

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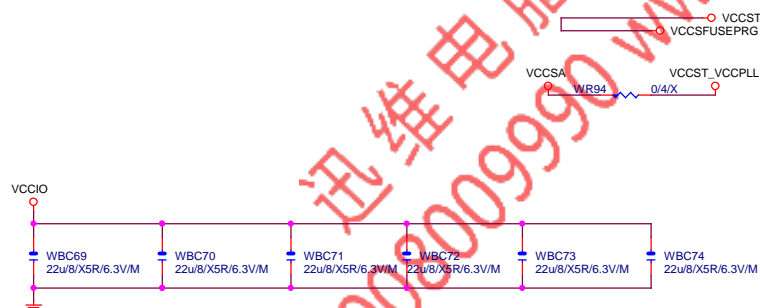


Intel CRB CPU LGA1151-B		
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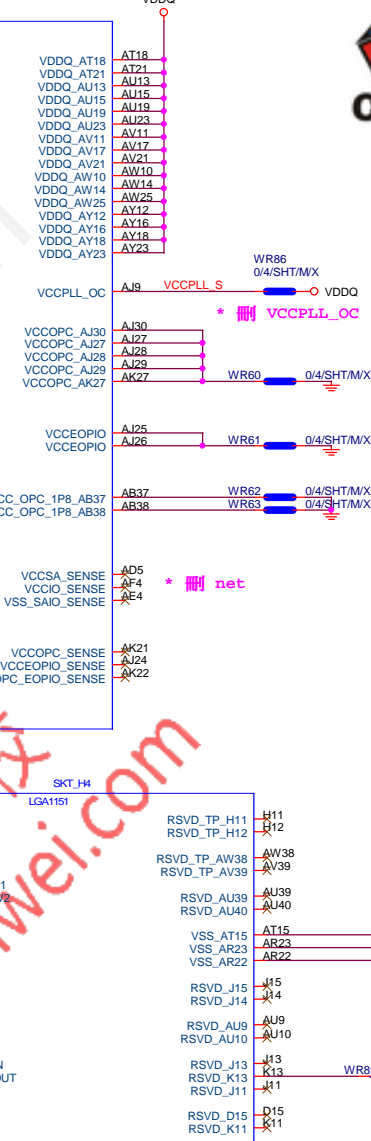
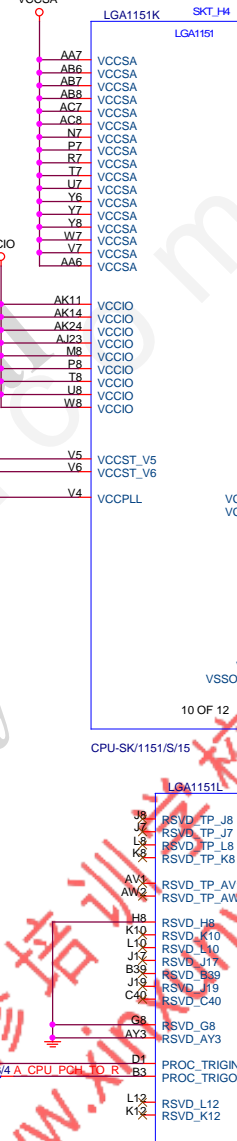
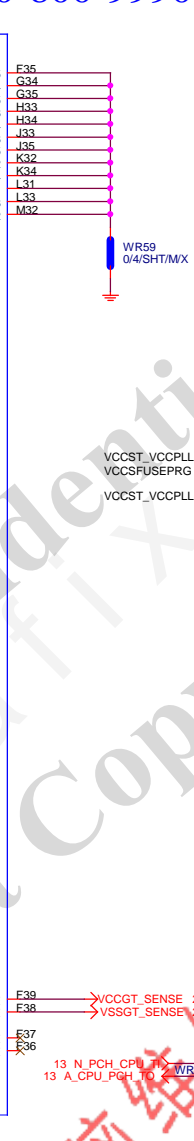
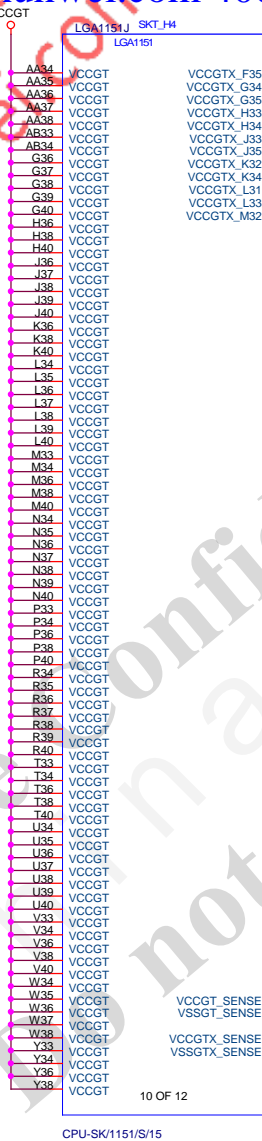


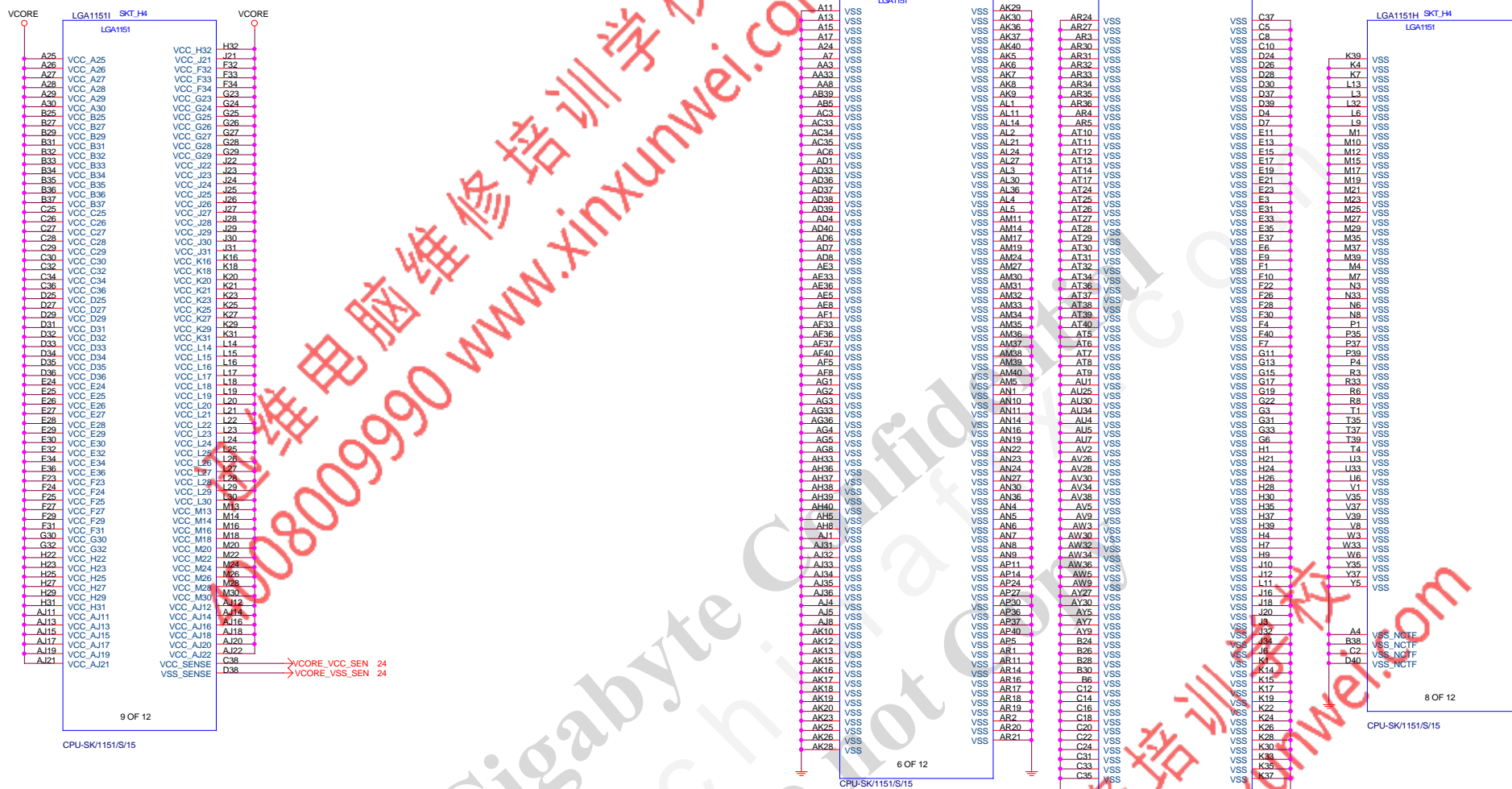
* 删 WBC124, WBC125, WBC126, WBC127 电容

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



* 删 VCCGT 电容



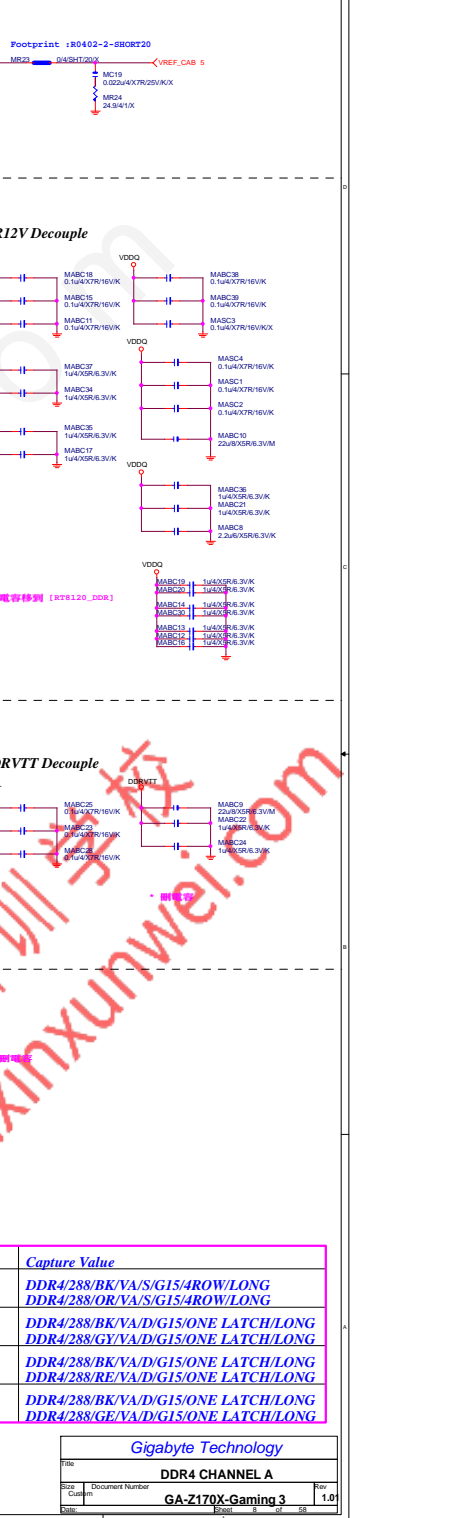
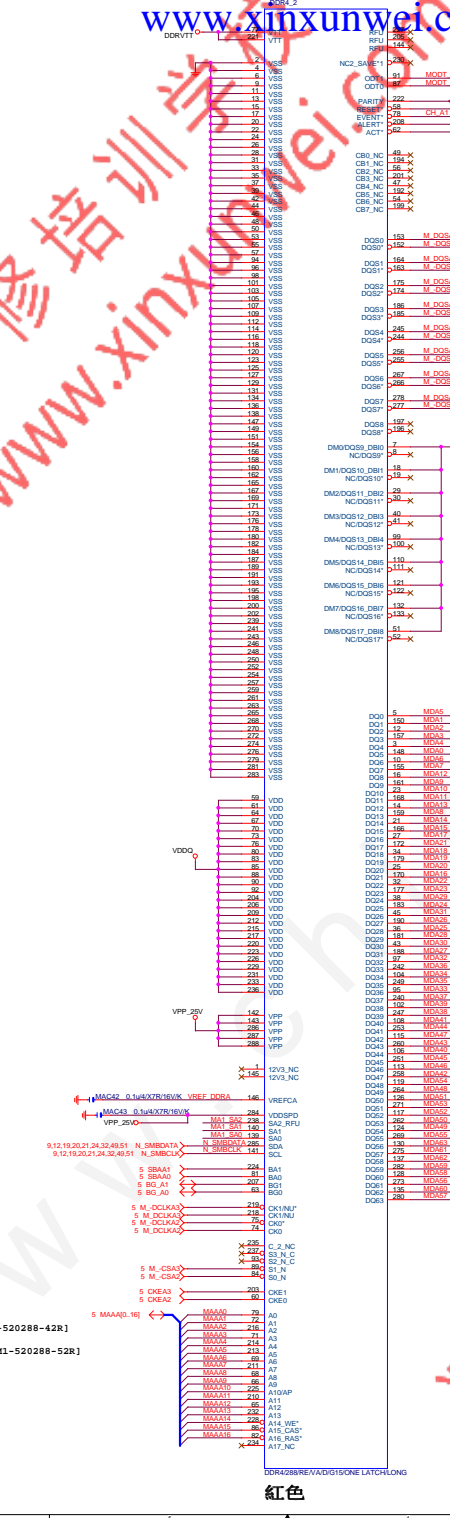


* 刪 Vcore 電容

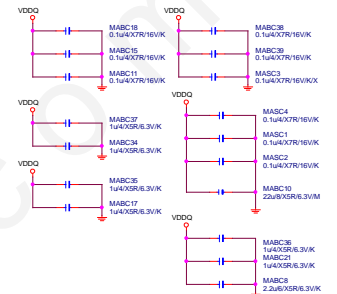
Intel CRB

CPU LGA1151-D

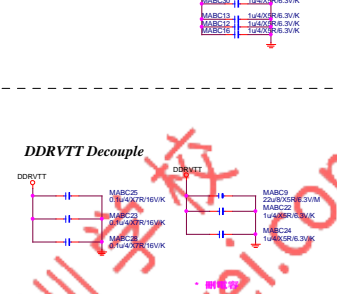
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DDR12V Decouple



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

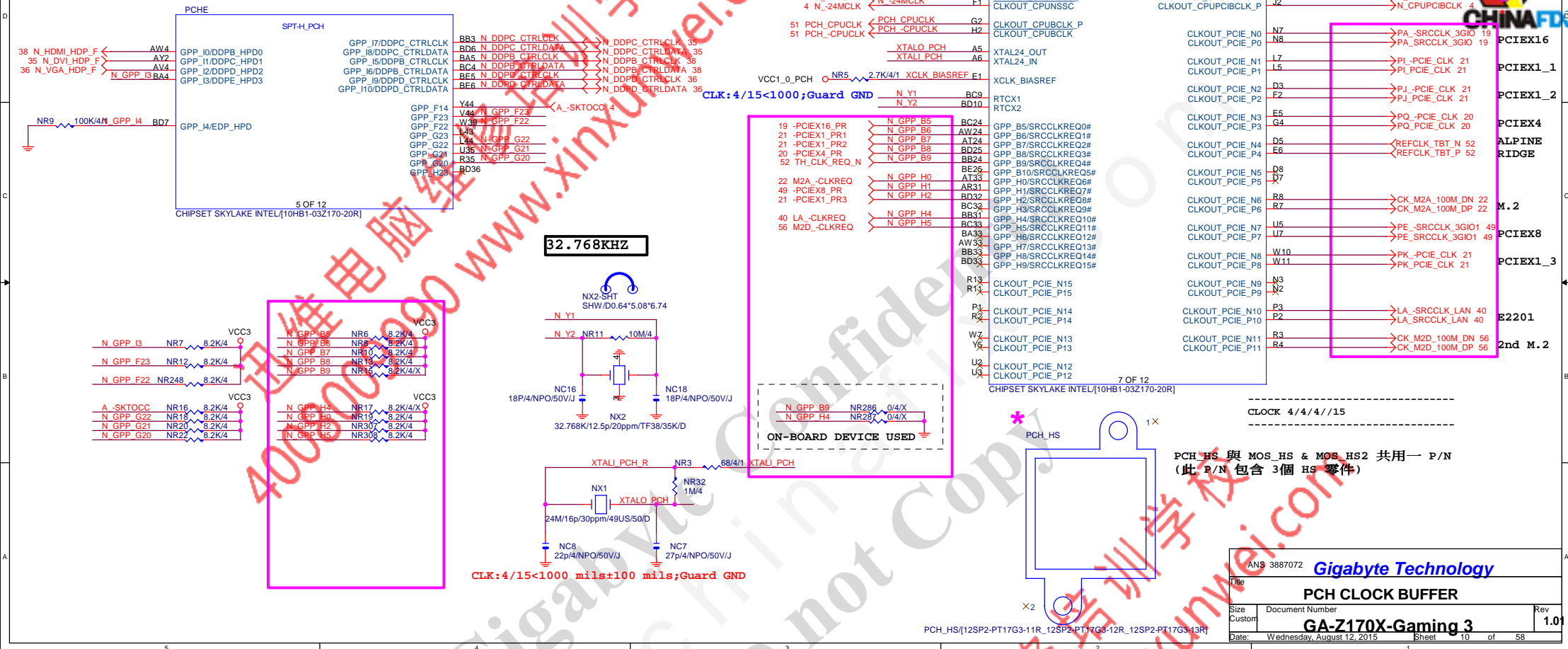
Gigabyte Technology

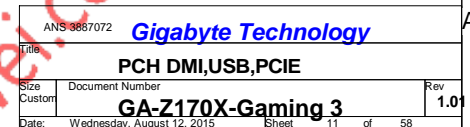
DDR4 CHANNEL A

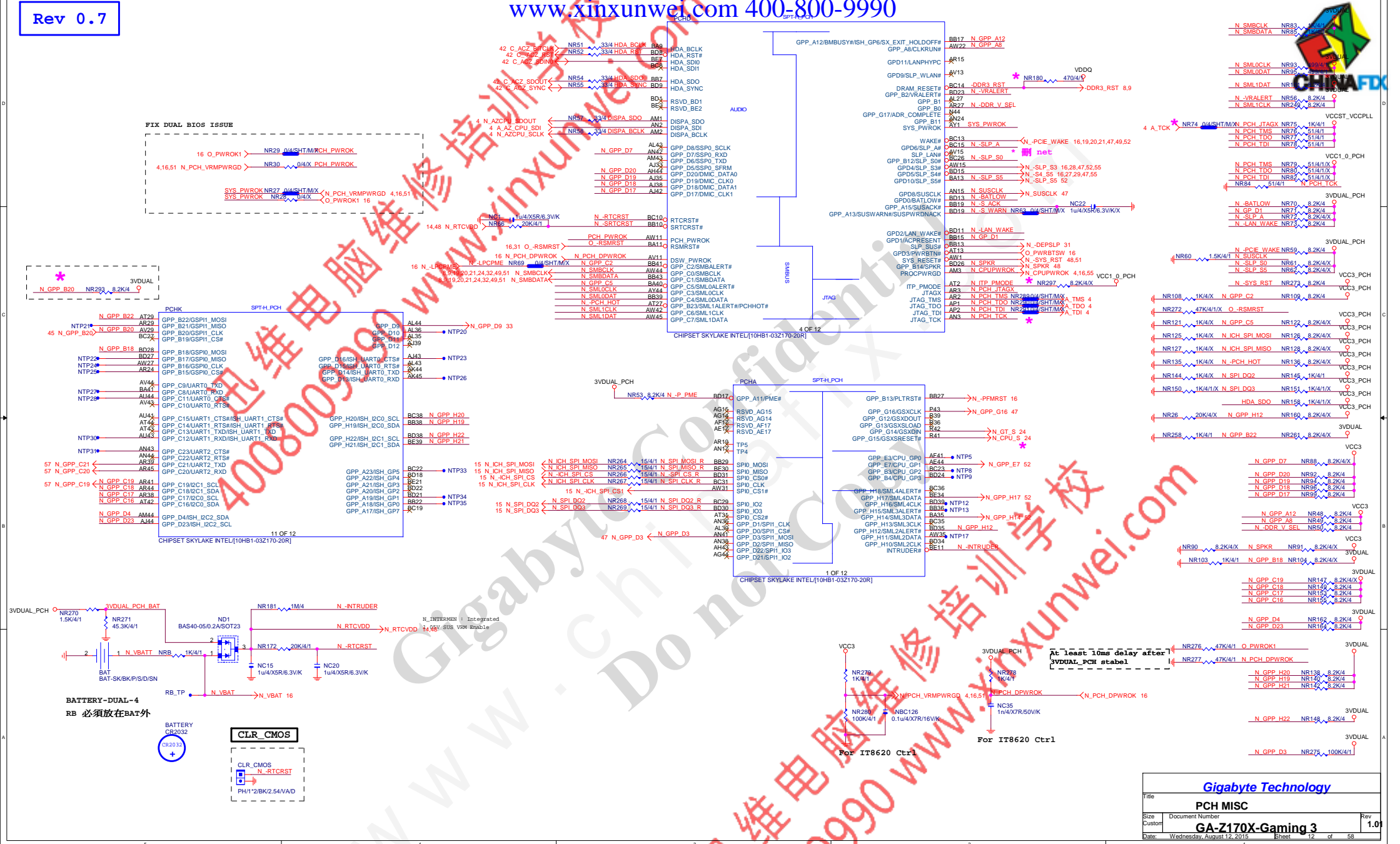
GA-Z170X-Gaming 3

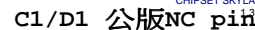


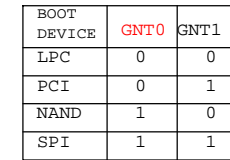
Gigabyte Technology		
File	DDR4 CHANNEL B	
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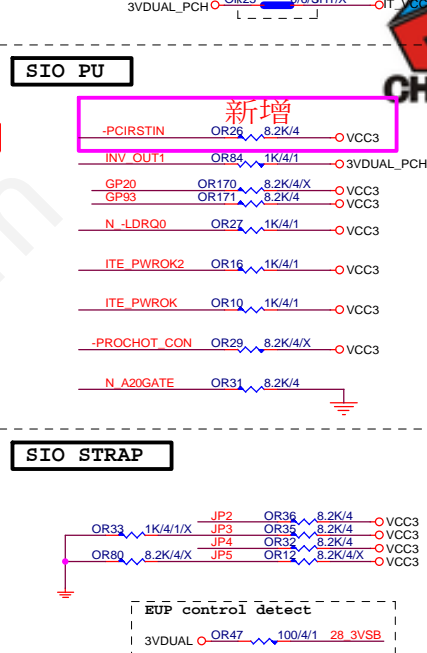




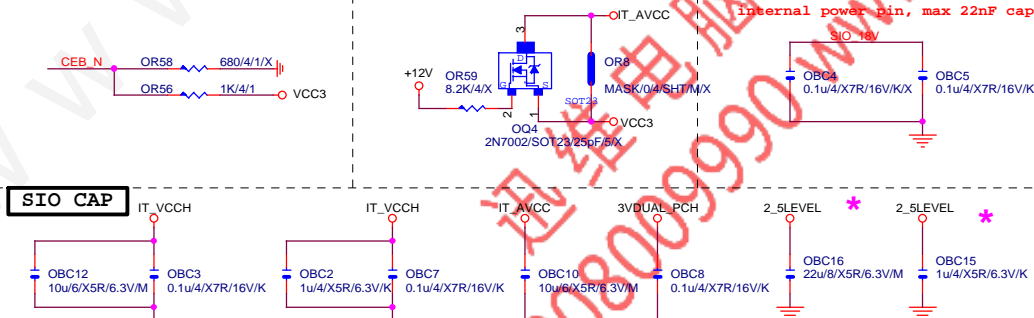
M.BIOS

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

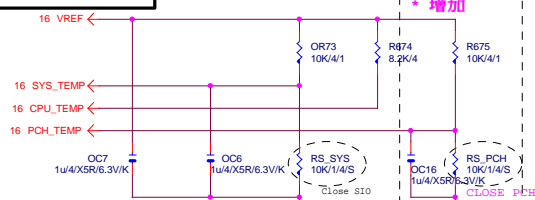
<i>Gigabyte Technology</i>			
Title BIOS			
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JP2	1	Disable WDT
	0	Enable WDT to rest PWROK
JP3	1	Dual BIOS CS PIN Disable
	0	Dual BIOS CS PIN Enable
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP5	1	anti-surge Disable
	0	anti-surge Enable
JP3	1 1	The default value of EC Index 63h/6Bh/73h is 80
	1 0	The default value of EC Index 63h/6Bh/73h is F
JP5	0 1	The default value of EC Index 63h/6Bh/73h is 0
	0 0	The default value of EC Index 63h/6Bh/73h is 40

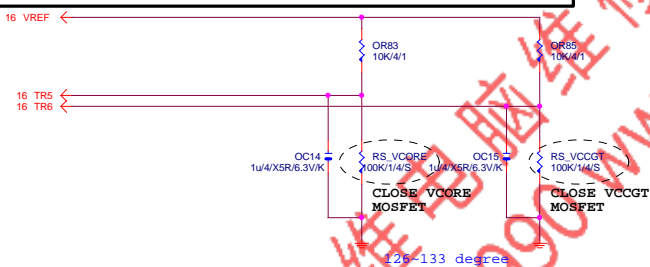
MB ID

TEMP H/W MONITOR

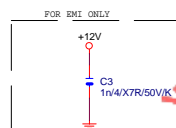
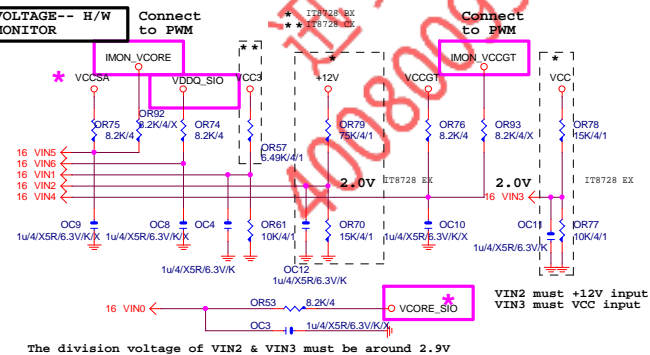


RS_VCORE, RS_VCCGT, CLOSE CPU_VCORE & VCCGT MOSFET

-PROCHOT:有mos meartsink不用prochot function



VOLTAGE-- H/W MONITOR

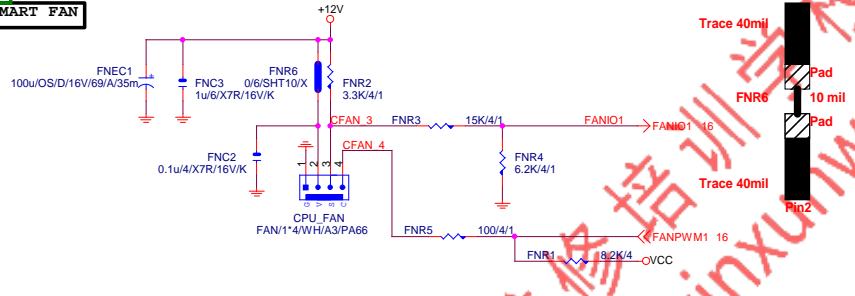


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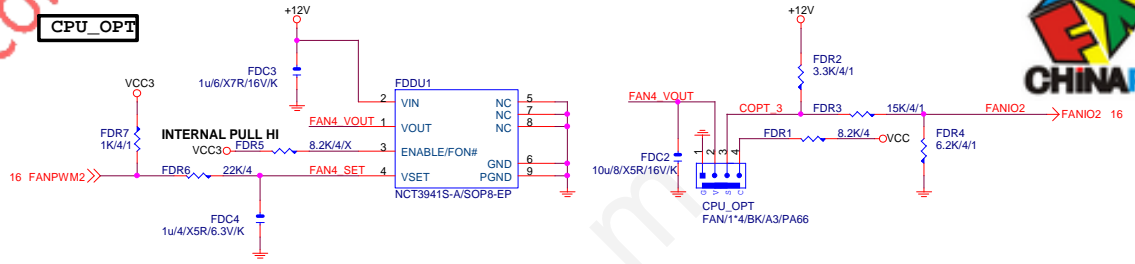
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CPU SMART FAN



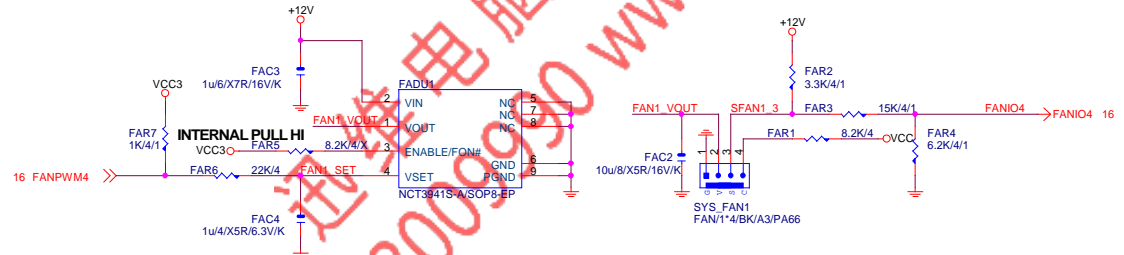
CPU_OPT



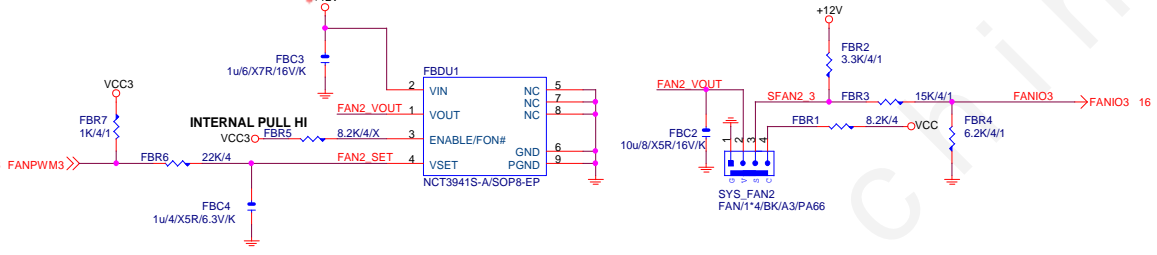
SYSTEM FAN1

Linear SYS_FAN

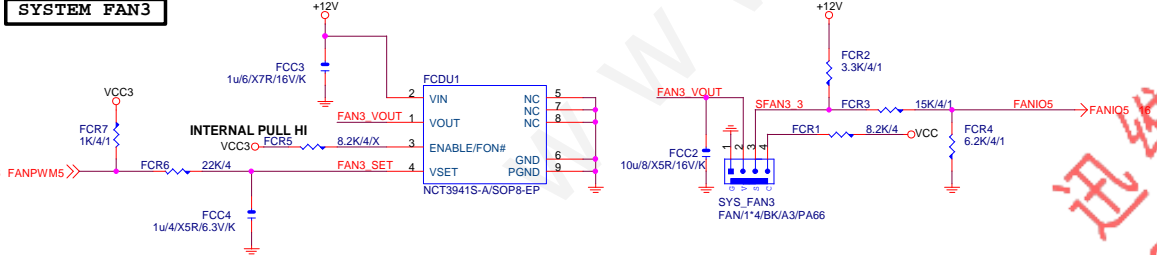
Enable Function (NCT3941S)
Full Turn On Function (NCT3941S-A)



SYSTEM FAN2



SYSTEM FAN3



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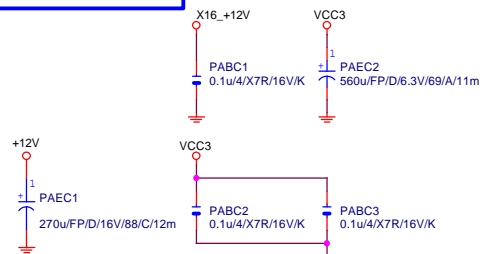
Rev 1.01

Rev 0.3

PCIEX16 CAP

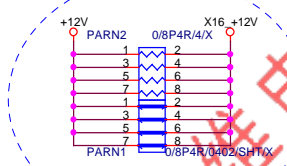
PCIEX16 SLOT

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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

PCI-E REV:1.1--> 2.5GHZ

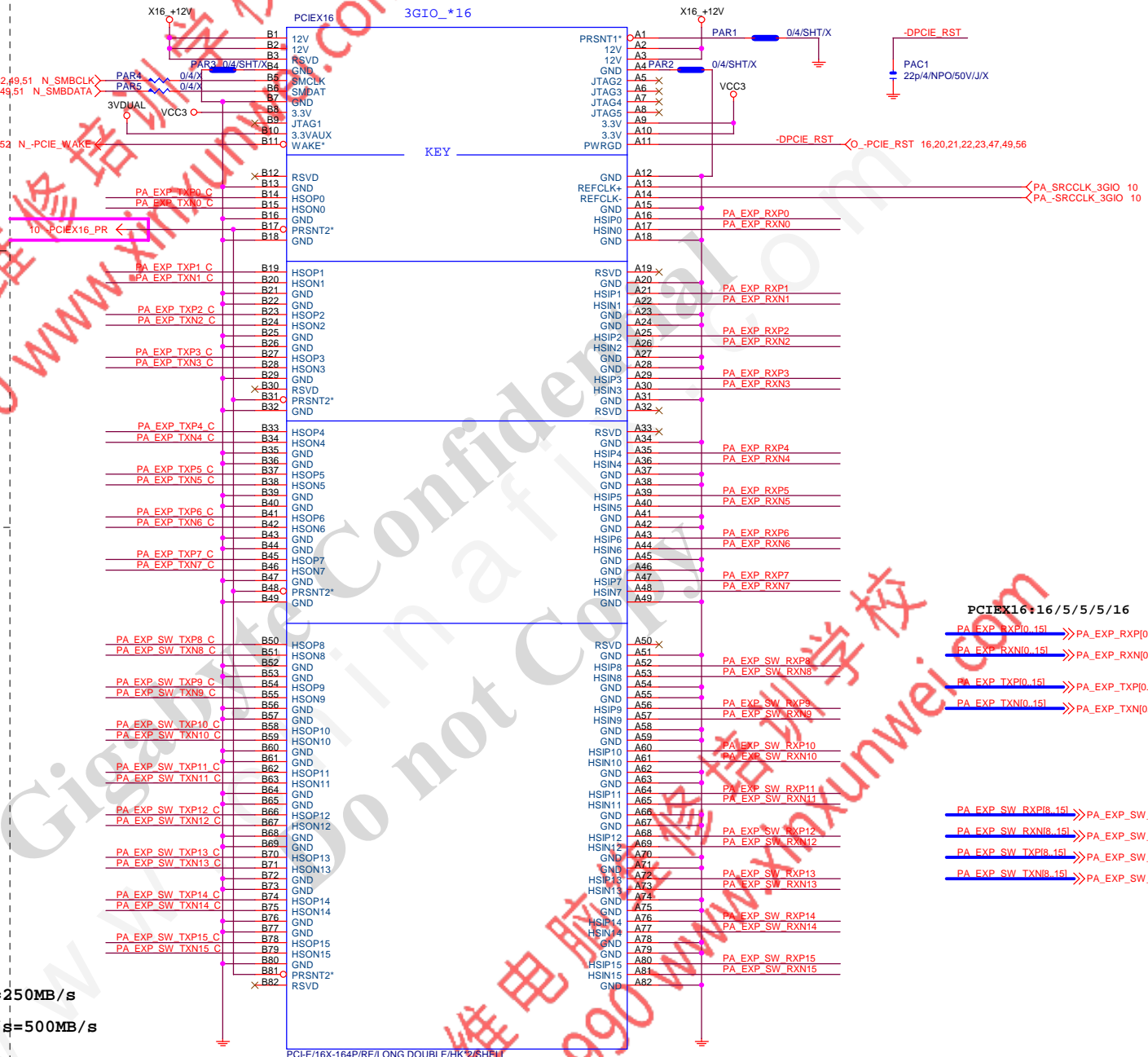
PCE-E X1(單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s

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

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

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

PCI-E REV:2.0--> 5GHZ



PCIEX16*16/5/5/16

PA EXP TXP0.15] >> PA_EXP_RXP0[0..15] 4,50

PA EXP TXN0.15] >> PA_EXP_RXN0[0..15] 4,50

PA EXP TXP1.15] >> PA_EXP_TXP1[0..15] 4,50

PA EXP TXN1.15] >> PA_EXP_TXN1[0..15] 4,50

PA EXP SW_RXP[8..15] >> PA_EXP_SW_RXP[8..15] 50

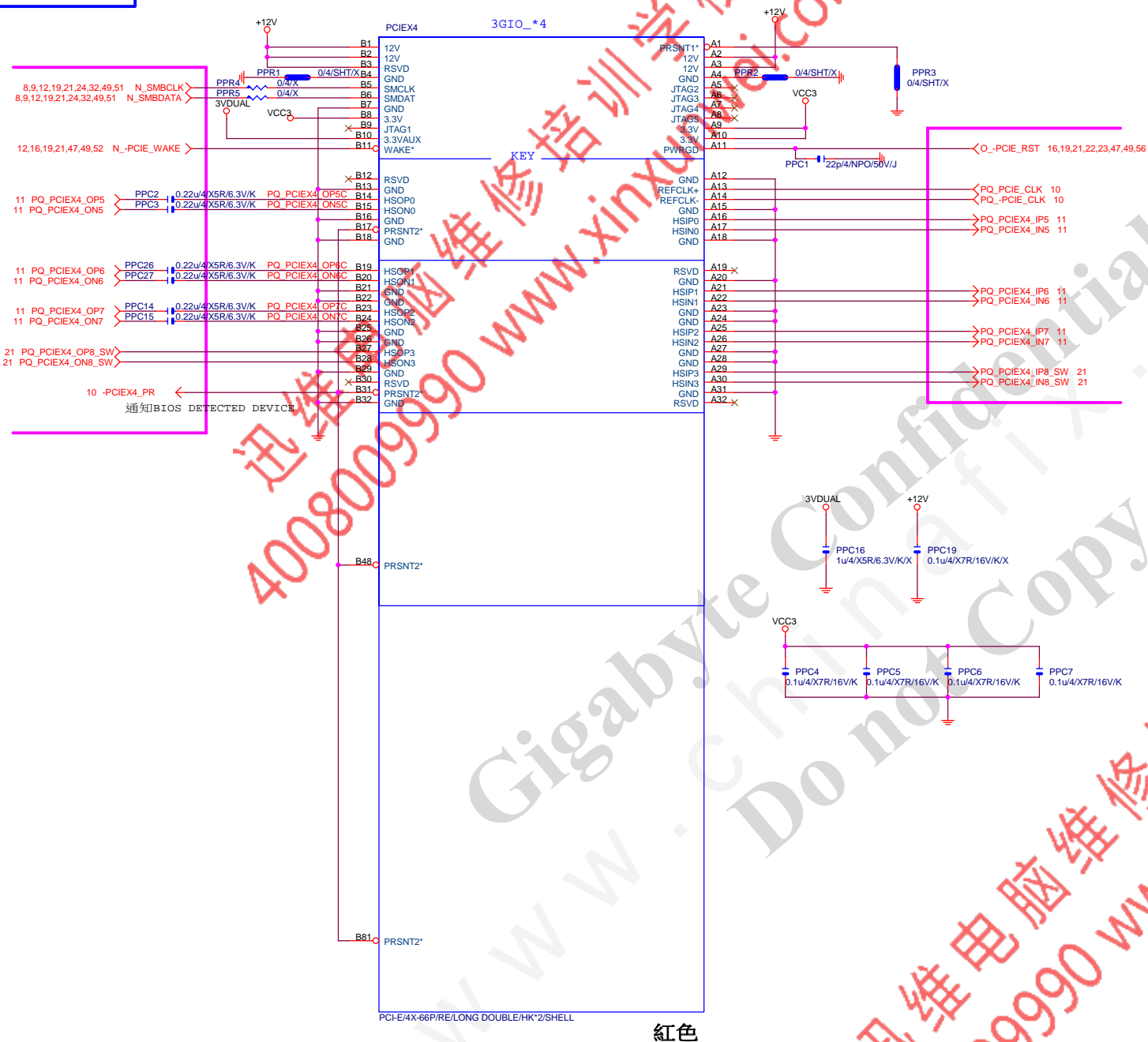
PA EXP SW_RXN[8..15] >> PA_EXP_SW_RXN[8..15] 50

PA EXP SW_TXP[8..15] >> PA_EXP_SW_TXP[8..15] 50

PA EXP SW_TXN[8..15] >> PA_EXP_SW_TXN[8..15] 50

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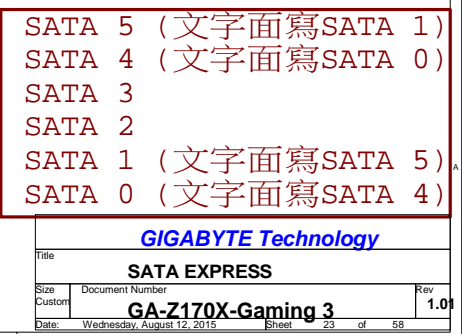
GIGABYTE

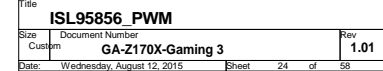
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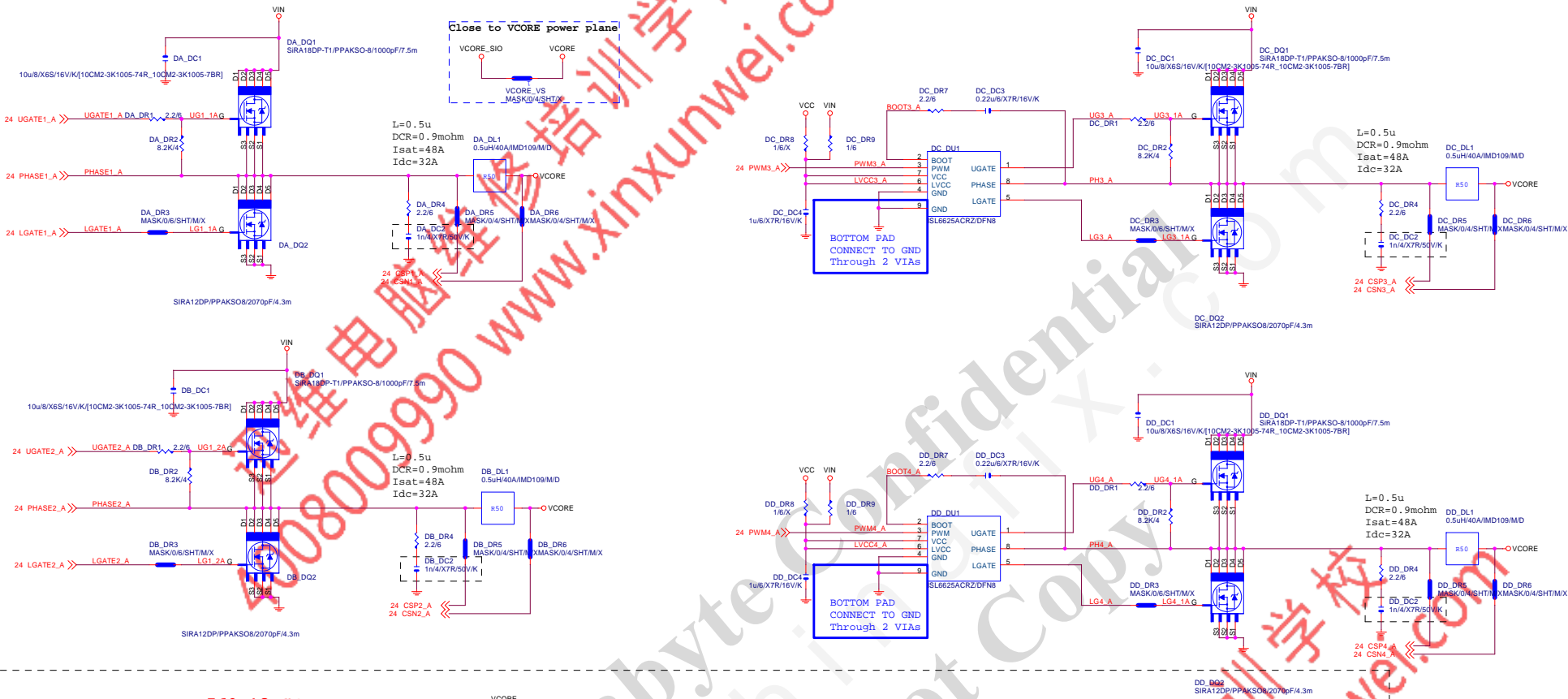
	N_GPP_G3 (PCH_GPP_G3)	PCIEX4_X1 (SIO_GPIO27)
PCIEX4 -> X4 M2_WIFI -> N/A PCIEX1 --> N/A (Default)	H	H
PCIEX4 -> X1 M2_WIFI -> X1 PCIEX1 --> X1	L	L

Function	SEL
xI--> x0a	L;PCIEX4 SLOT-->X1
xI--> x0b	H;PCIEX4 SLOT-->X4

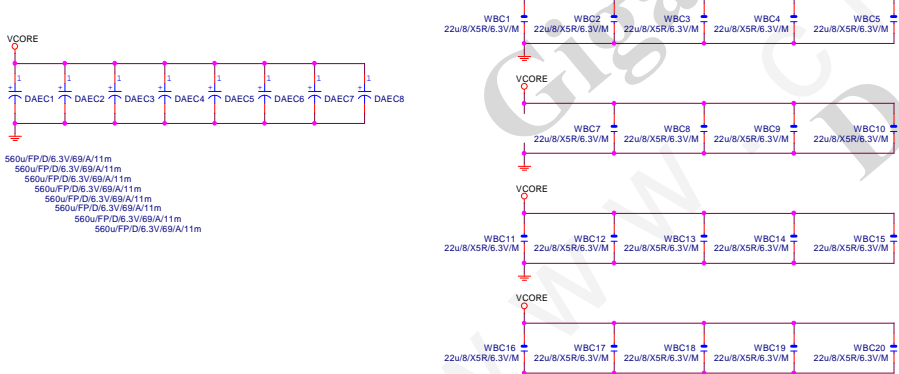




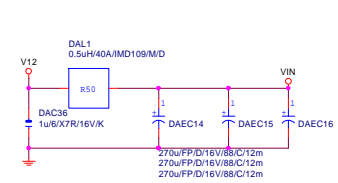
VCORE



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



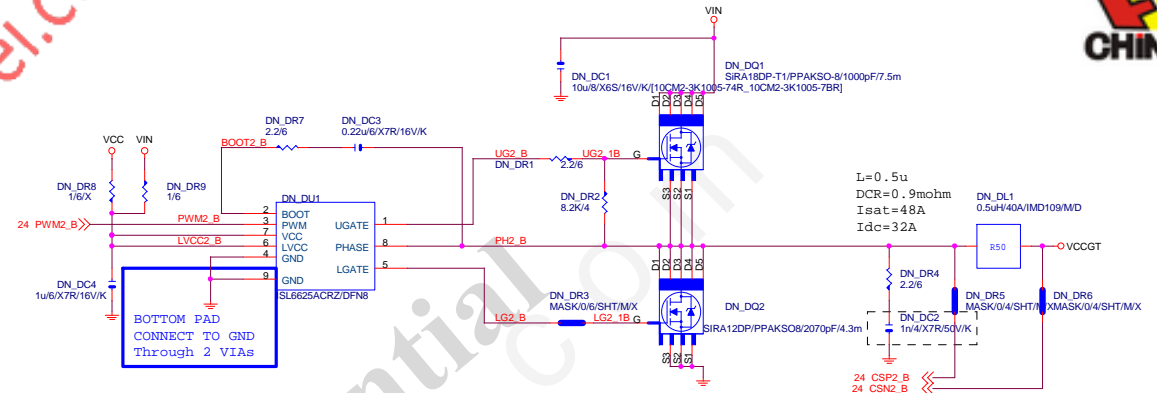
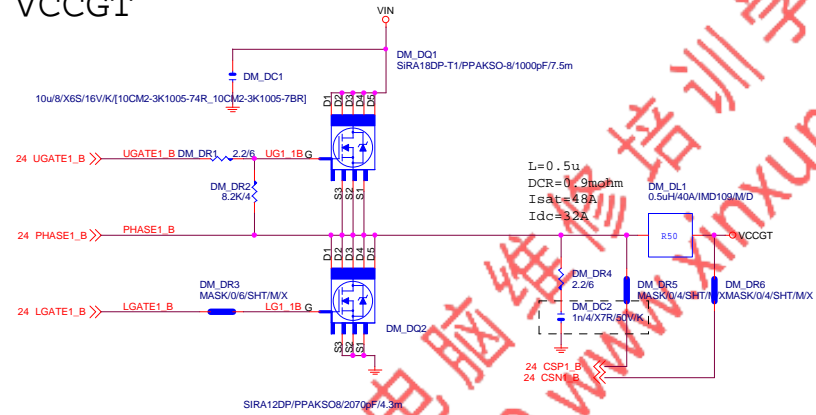
VIN CAP 270u*3PCS



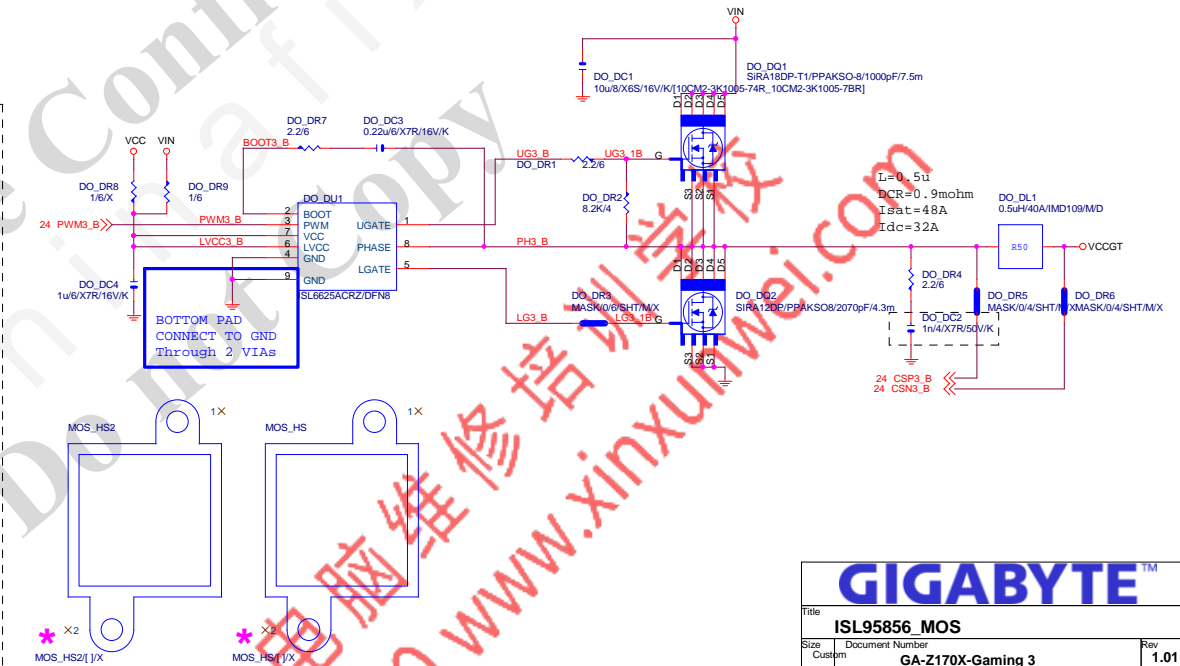
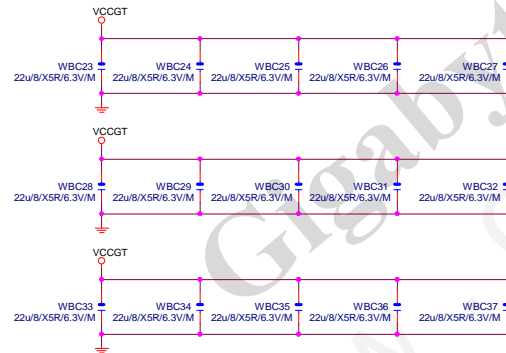
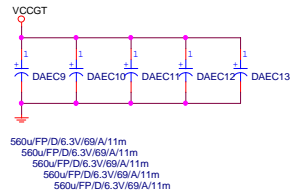
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ISL9585E_MOS		
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VCCGT

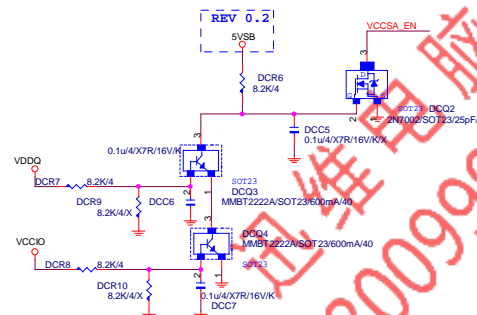
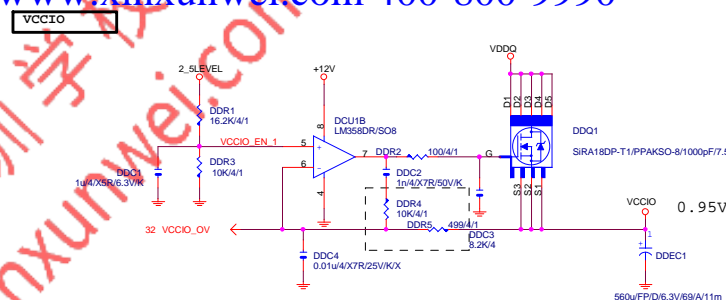
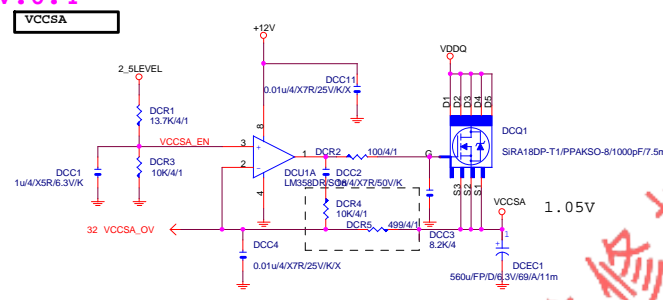


VCCGT	CAP	560u*5PCS 22u*15PCS
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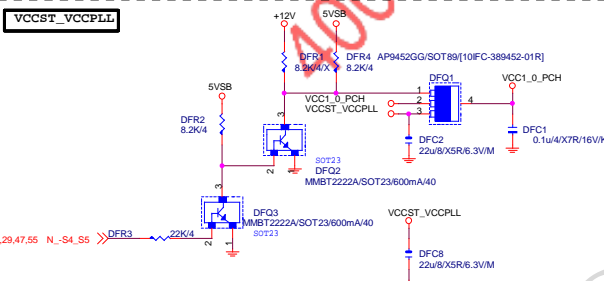
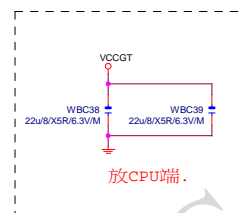
GIGABYTE™

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ISL95856 MOS			
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VCCIO_EN 1 DDR10_04/SHT/MX → VCCIO_EN 1

Connect to IT8620



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VCCSA_VCCIO_no 44E			
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RT8120_DDR4 POWER			
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Custom	GA-Z170X-Gaming 3	1.01	
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RT8120_DDR4 POWER

Size Custom	Document Number GA-Z170X-Gaming 3	Rev 1.01
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DDR_VPP VIN CAP
560u*1PCS



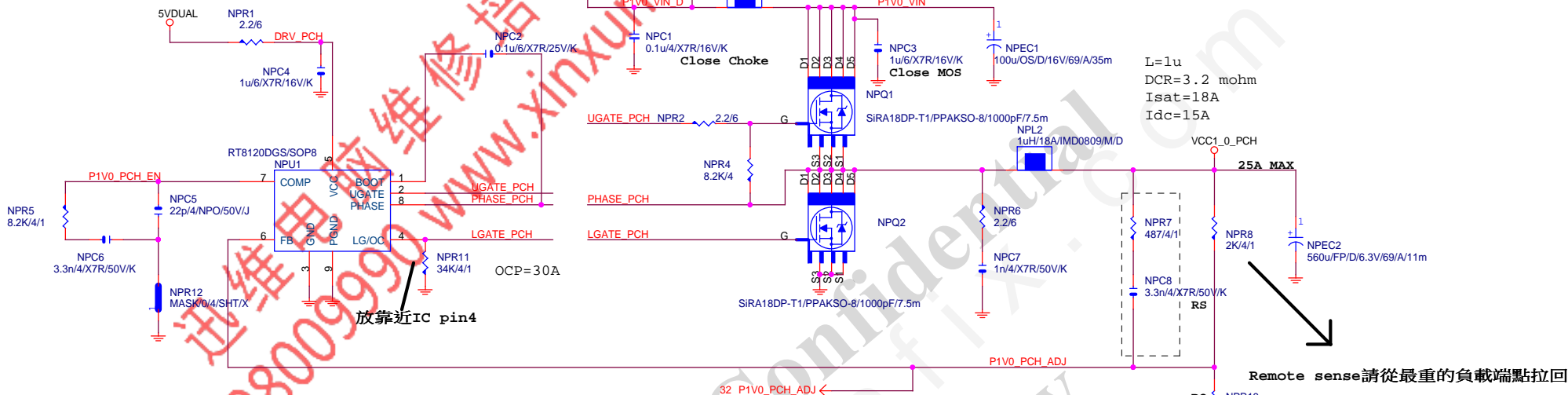
* 大電容 x1



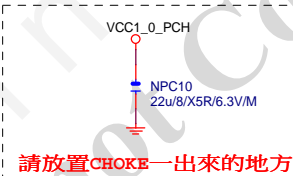
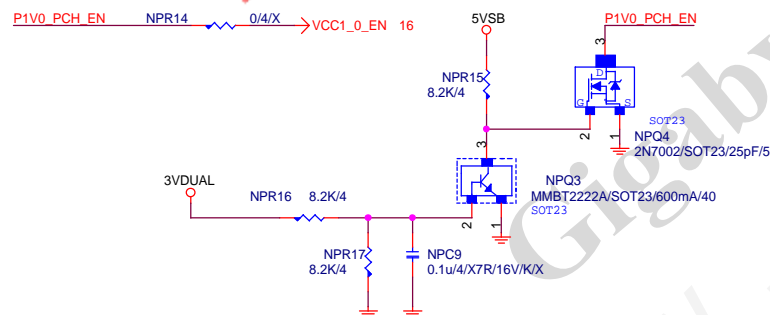
Title RT8120_VPP25 POWER				
Size Custom	Document Number GA-Z170X-Gaming 3			Rev 1.01
Date:	Wednesday, August 12, 2015	Sheet	29 of	58

REV:0.67

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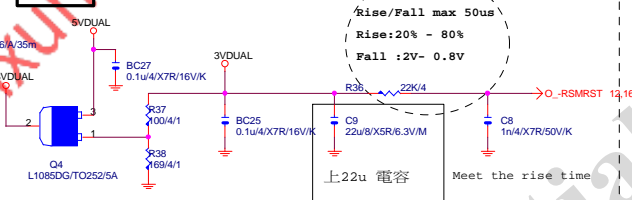
PWR_SEQ



GIGABYTE™

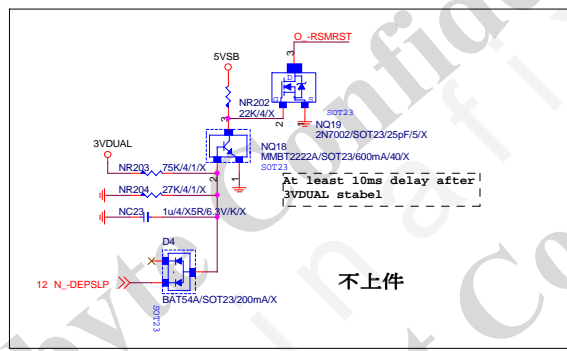
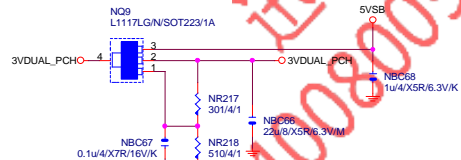
Title			
RT8120_PCH POWER			
Size	Document Number	Rev	
Custom	GA-Z170X-Gaming 3	1.01	
Date:	Wednesday, August 12, 2015	Sheet	30 of 58

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



上22u 電容

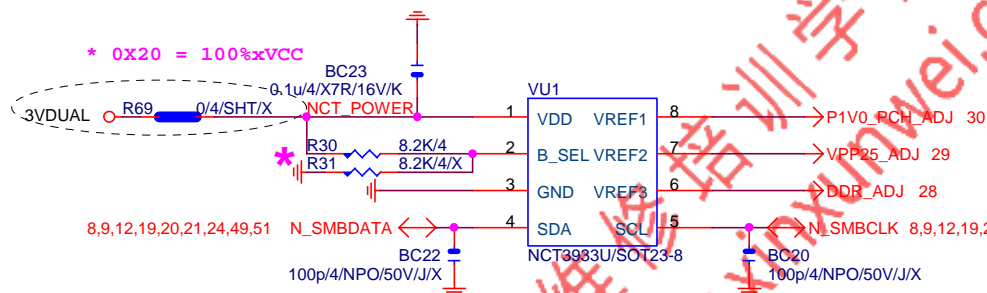
Meet the rise time



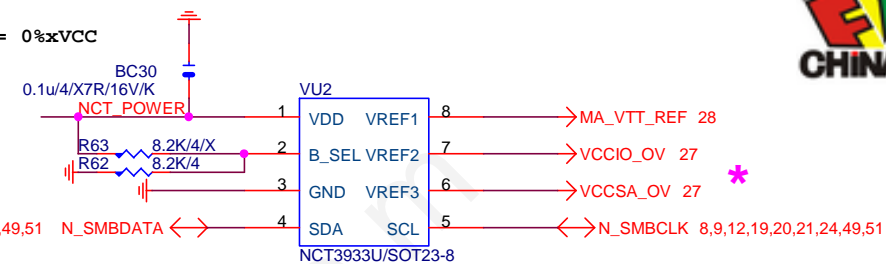
不上件



OVER VOLTAGE



0X2A = 0%xVCC



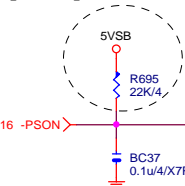
0X22 = 75%xVCC

* 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	Rev
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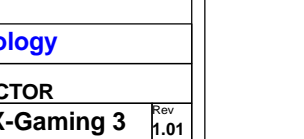
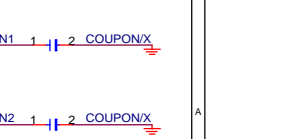
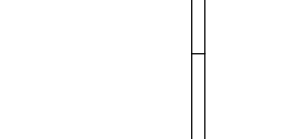
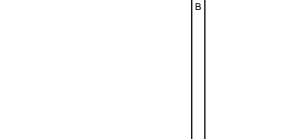
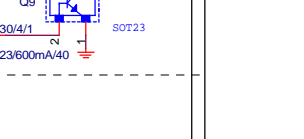
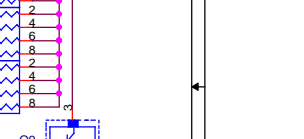
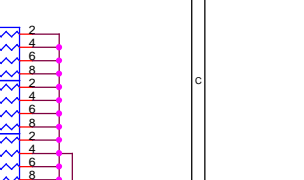
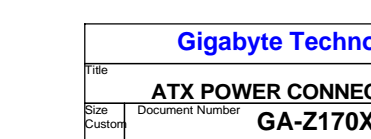
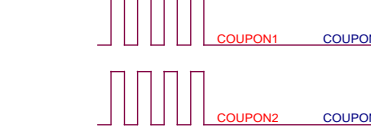
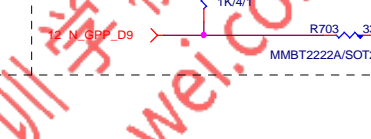
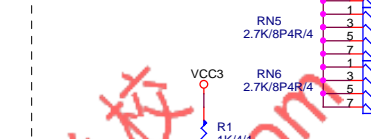
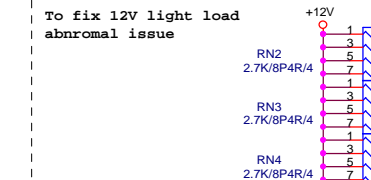
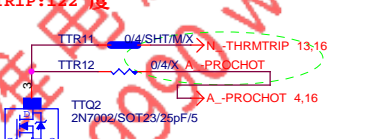
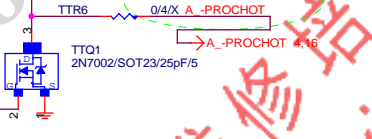
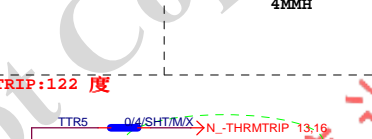
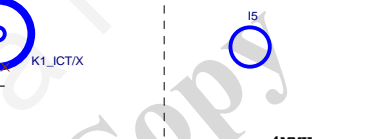
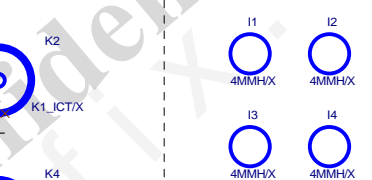
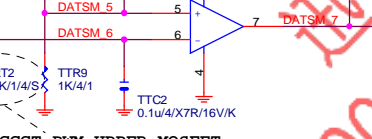
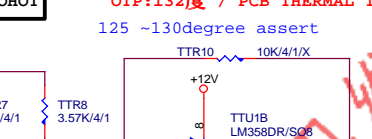
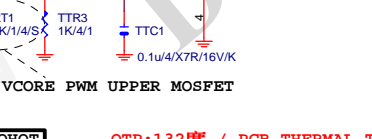
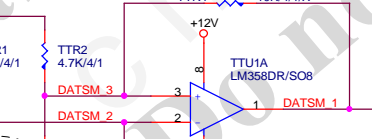
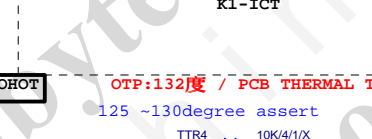
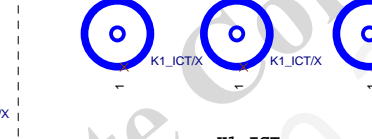
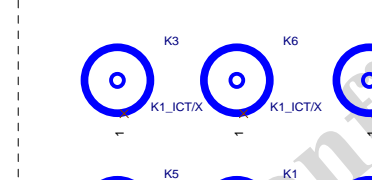
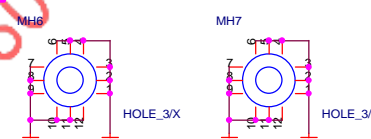
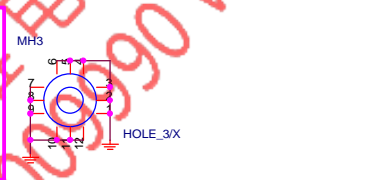
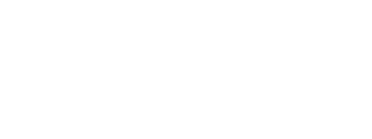
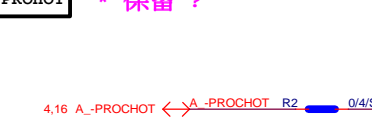
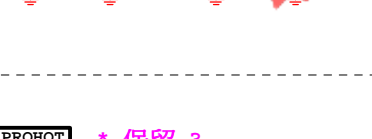
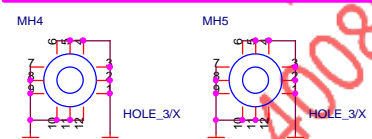
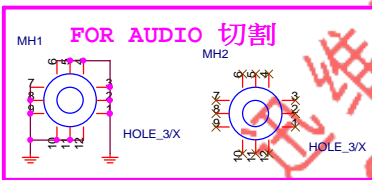
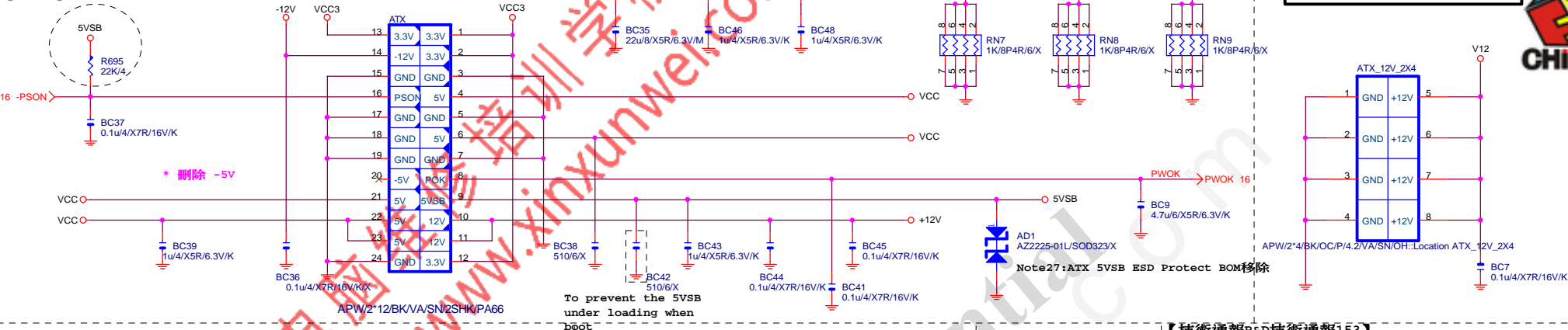
Patch some PSU no internal pull up resistor



ATXX24 POWER CONNECTOR

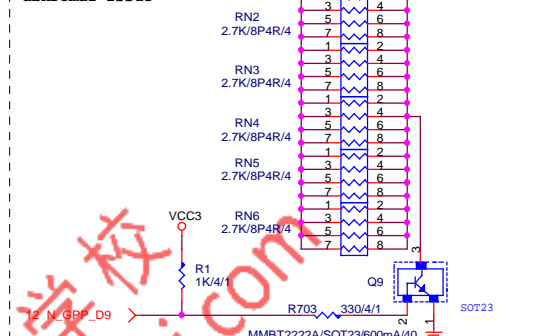
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ATXX4 POWER CONNECTOR



【技術通報R&D技術通報153】

To fix 12V light load abnormal issue

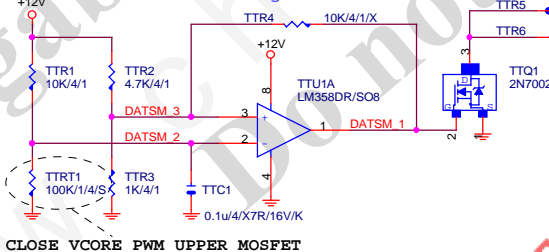


-PROHOT * 保留 ?

4.16 A_PROCHOT <- A_PROCHOT R2 0/4/SHT/X >-VR_HOT 24

-PROHOT

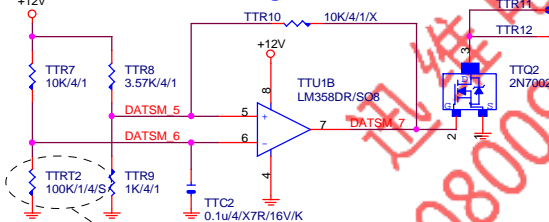
OTP:132度 / PCB THERMAL TRIP:122 度
125 ~130degree assert



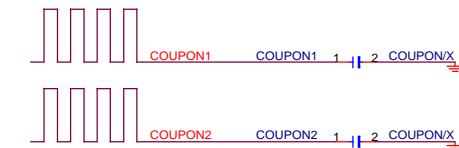
CLOSE VCORE PWM UPPER MOSFET

-PROHOT

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

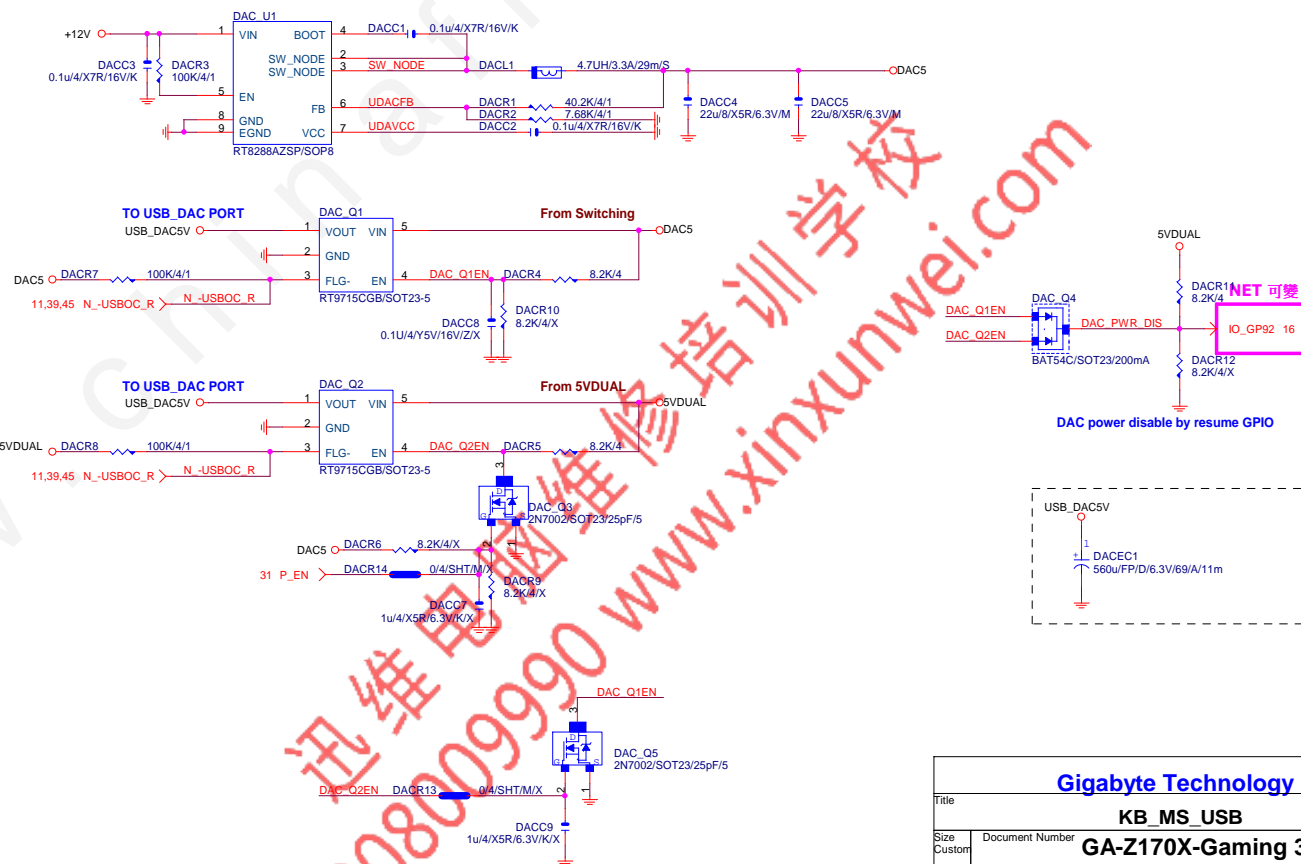


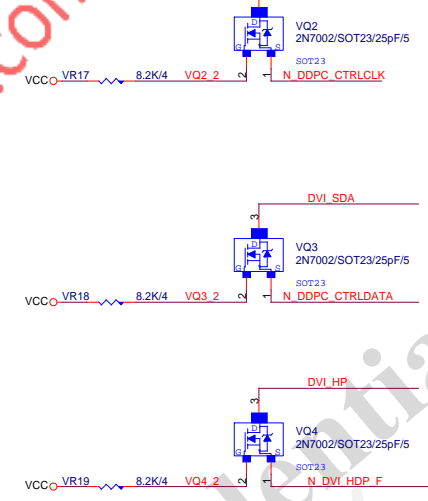
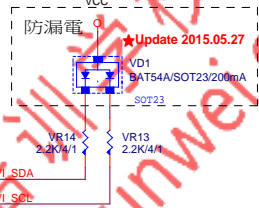
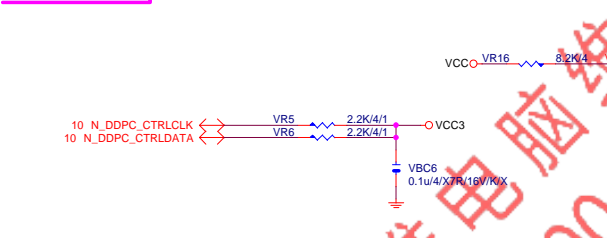
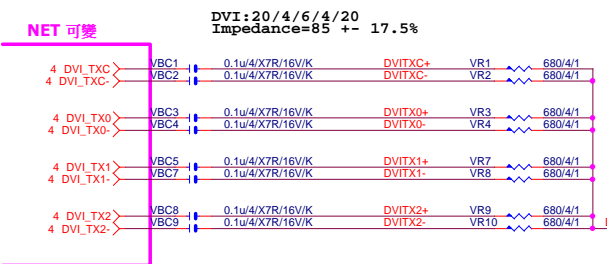
CLOSE VCCGT PWM UPPER MOSFET



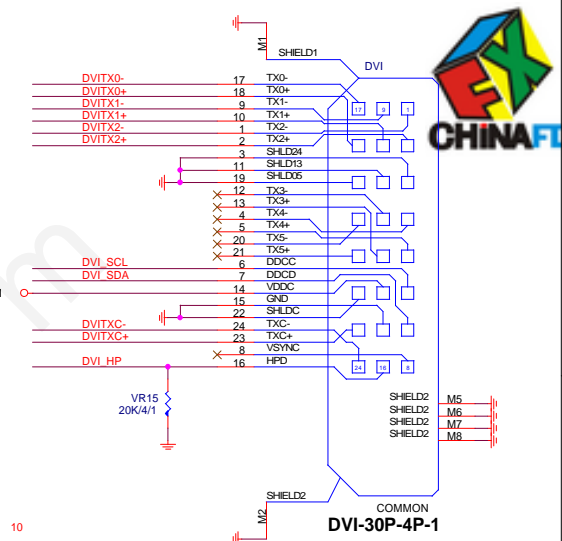
Gigabyte Technology

Title			ATX POWER CONNECTOR
Size	Document Number	GA-Z170X-Gaming 3	
Custom		Rev	1.01
Date:	Wednesday, August 12, 2015	Sheet	33 of 58

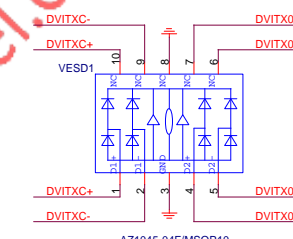
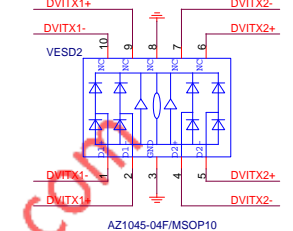




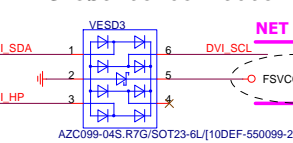
* FSVCC_KM



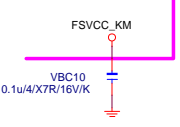
Close to connector



Close to connector



NET 可變



NET 可變

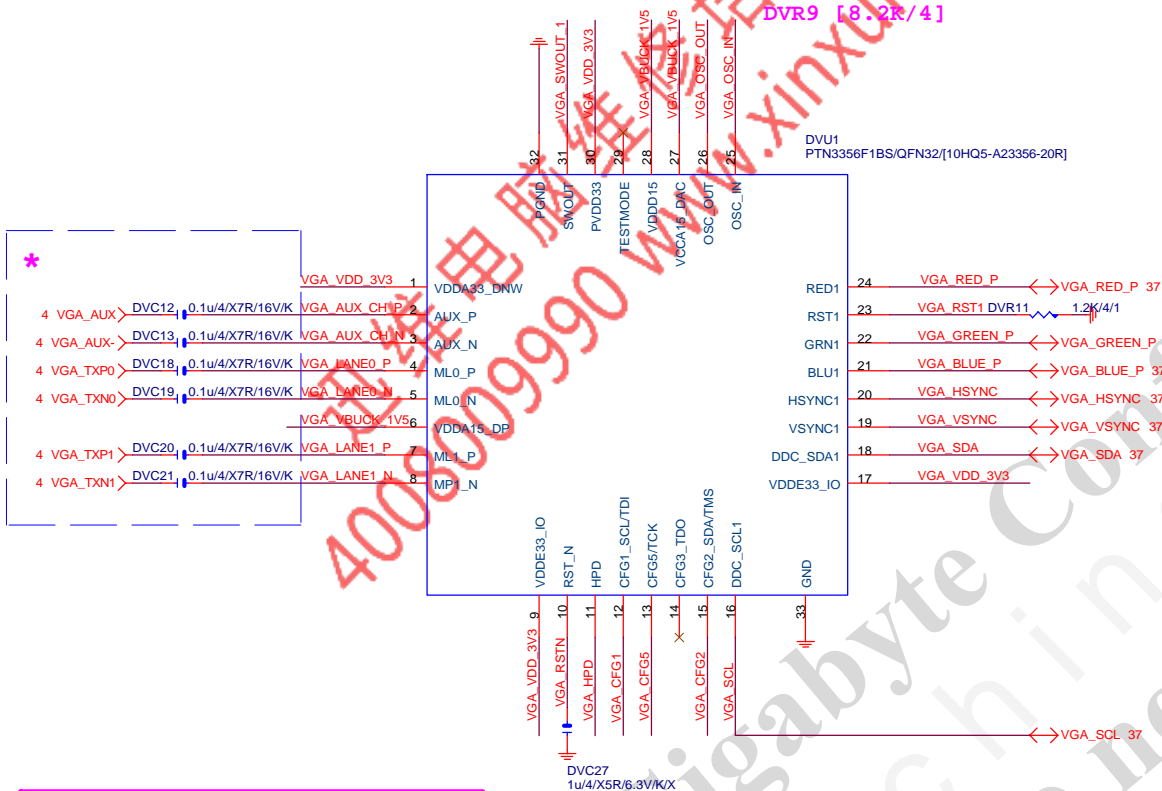


Gigabyte Technology			
Title			
DVI CONN			
Size	Document Number	Rev	
Custom	GA-Z170X-Gaming 3	1.01	
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ROM PART: PTN3356R1BS/[10HQ5-A23356-10R]
FLASH PART: PTN3356F1BS/[10HQ5-A23356-20R]

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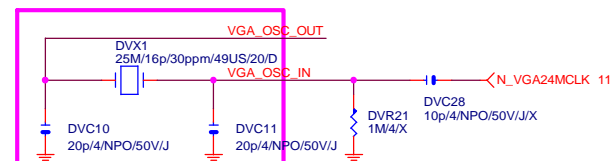
1. 上件:
DVC28 [10p/4/NPO/50V/J]
DVC11 [10p/4/NPO/50V/J]~修改值
DVR10 [8.2K/4]
2. 删除:
DVR1 [25M/16p/30ppm/49US/20/D]
DVC10 [20p/4/NPO/50V/J]
DVR9 [8.2K/4]



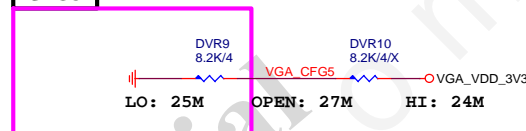
放置PCH端



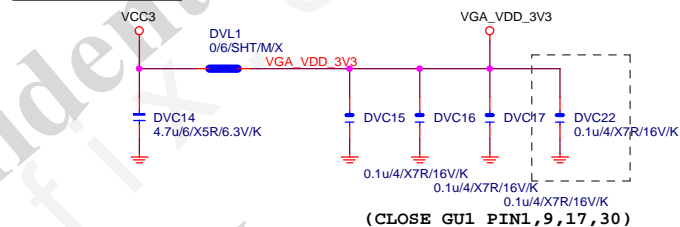
25M Crystal FROM PCH 24MHZ ISSUE



CFG5 For Crystal Less



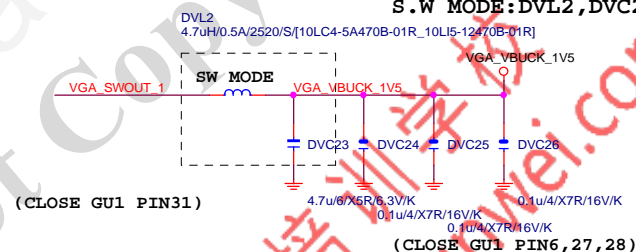
ADAPTER POWER



```

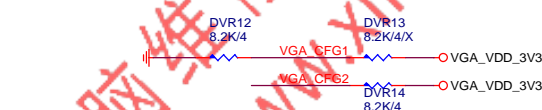
LDO  MODE:DVL2,DVC23-->X
S.W  MODE:DVL2,DVC23-->O

```



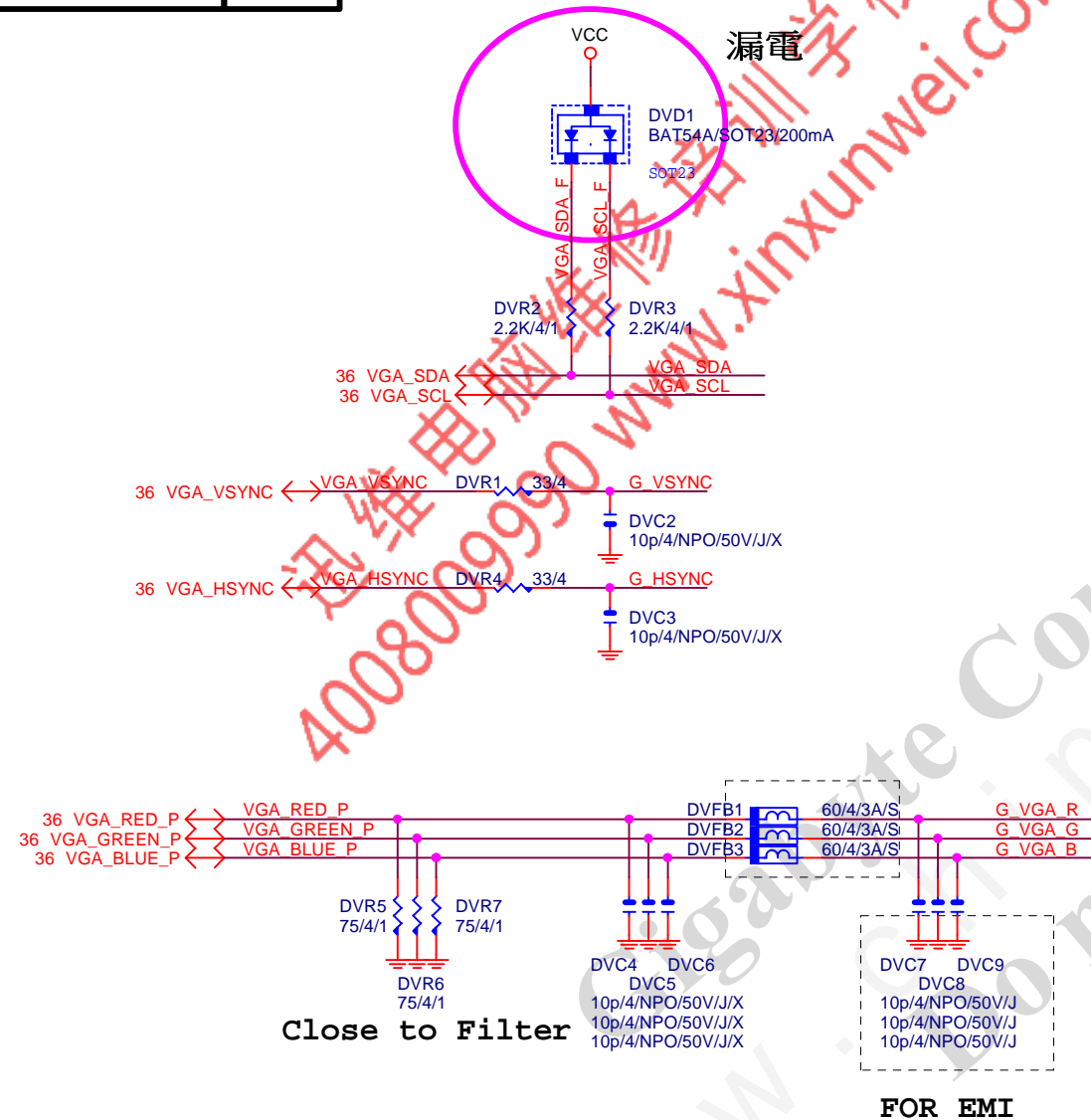
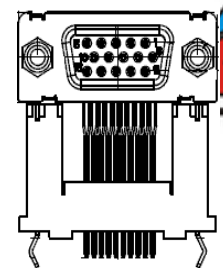
CFG1&2

Non-Compliant

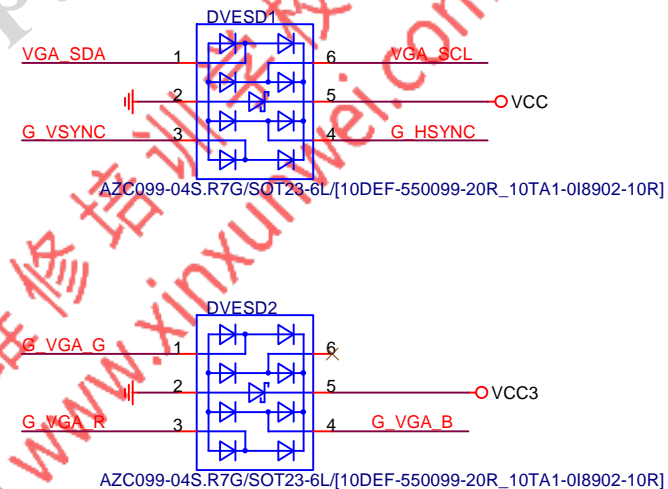


HPD



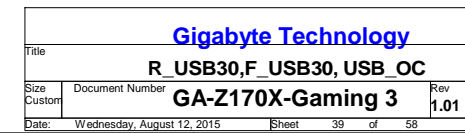
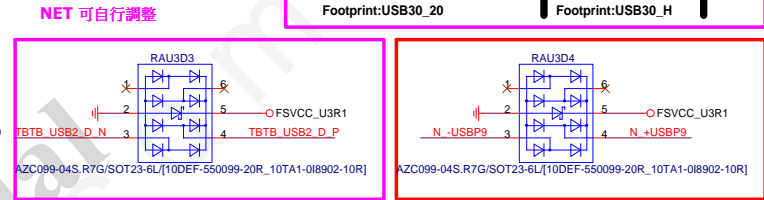


VGA ESD



Gigabyte Technology
NXP-PTN3356

Title				Rev 1.01
NXP-PTN3356				
Size Custom	Document Number GA-Z170X-Gaming 3			Rev 1.01
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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]

SRCCLK-->50歐姆:[18/4/10/4/18]

LABC5
0.1u/4/X7R/16V/KLABC4
1u/4/X5R/6.3V/KLABC3
0.1u/4/X7R/16V/KLABC6
0.1u/4/X7R/16V/K/X41 LA_LED_ACT_TXRX
41 LA_LED_LINK100

LA AVDDVCO

LABC7
0.1u/4/X7R/16V/KLABC8
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 LAC13LA ML IP C LAC12
LA ML IN C LAC13LA PPS
LA LED LINK1000
LA AVDDH
LA MDI3-

LA MDI3- 41

LABC17
0.1u/4/X7R/16V/KQualcomm
(Atheros)
Killer
E2201

E2201-BL3A-R/S

E2400料號:E2400-RIV1-RL/QFN40/[10HP2-402400-10R]

41 LA_MDIO0
41 LA_MDIO1
41 LA_MDIO2
41 LA_MDIO3LABC20
0.1u/4/X7R/16V/K/XLABC21
0.1u/4/X7R/16V/K

LAR19 MASK/0/4/SHT/X 3VDUAL_LAN1

LABC22
1u/4/X5R/6.3V/K

3VDUAL_LAN1

LABC9
10u/6/X5R/6.3V/MLABC10
1u/4/X5R/6.3V/KLABC11
0.1u/4/X7R/16V/KLAC33
100p/4/NPO/50V/J/XLAREQ1
0/4/SHT/M/XLAC12
1u/4/X5R/6.3V/K/XLAC15
1u/4/X5R/6.3V/KLAC16
0.1u/4/X7R/16V/KLAC18
1u/4/X5R/6.3V/KLAC19
0.1u/4/X7R/16V/KLAR10
2.37K/4/1LAX1
25M/16p/30ppm/49US/20/DLAX2
25M/16p/30ppm/49US/20/DLAC31
20p/4/NPO/50V/JLAC32
20p/4/NPO/50V/JLAC33
100p/4/NPO/50V/J/XLAC34
100p/4/NPO/50V/J/XLAC35
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100p/4/NPO/50V/J/XLAC37
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100p/4/NPO/50V/J/XLAC39
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100p/4/NPO/50V/J/XLAC41
100p/4/NPO/50V/J/XLAC42
100p/4/NPO/50V/J/XLAC43
100p/4/NPO/50V/J/XLAC44
100p/4/NPO/50V/J/XLAC45
100p/4/NPO/50V/J/XLAC46
100p/4/NPO/50V/J/XLAC47
100p/4/NPO/50V/J/XLAC48
100p/4/NPO/50V/J/XLAC49
100p/4/NPO/50V/J/XLAC50
100p/4/NPO/50V/J/X

Gigabyte Technology

KILLER E2201

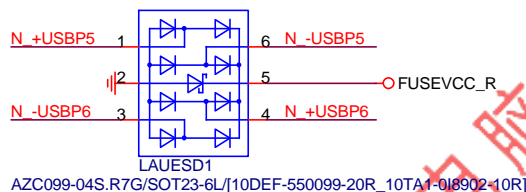
GA-Z170X-Gaming 3

Rev
1.01

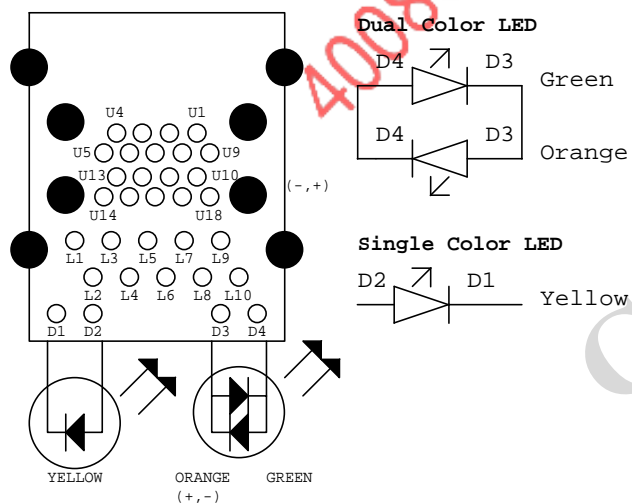
Date: Wednesday, August 12, 2015 Sheet 40 of 58

note:可變更USB NAME

可變



USB30_LAN LAYOUT示意圖



LAN_COVER

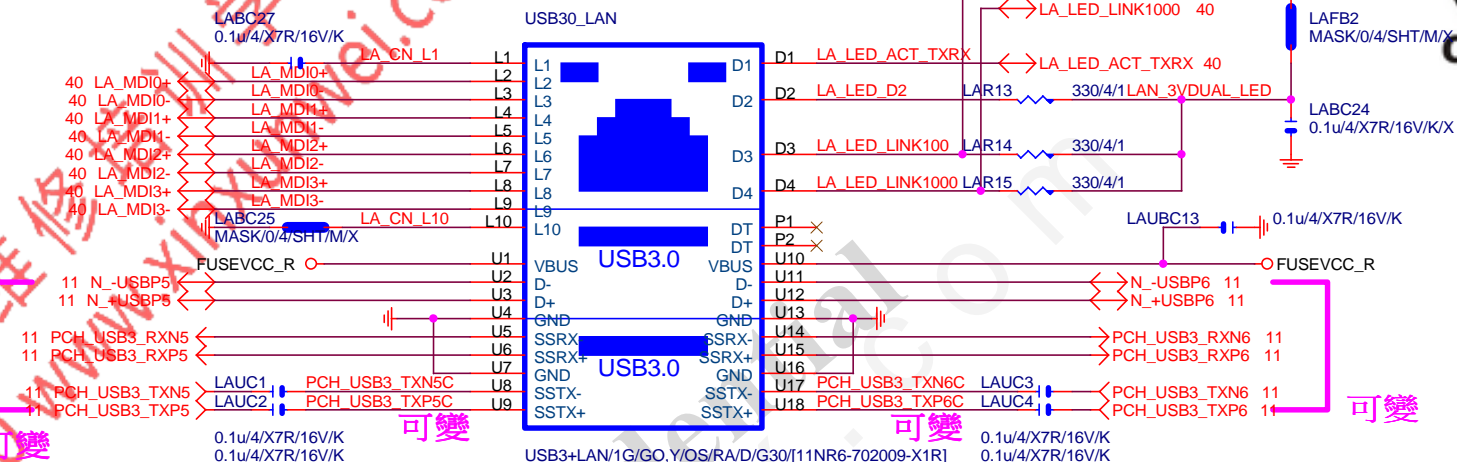
FOOT PRINT:LAN COVER

LAN
COVER

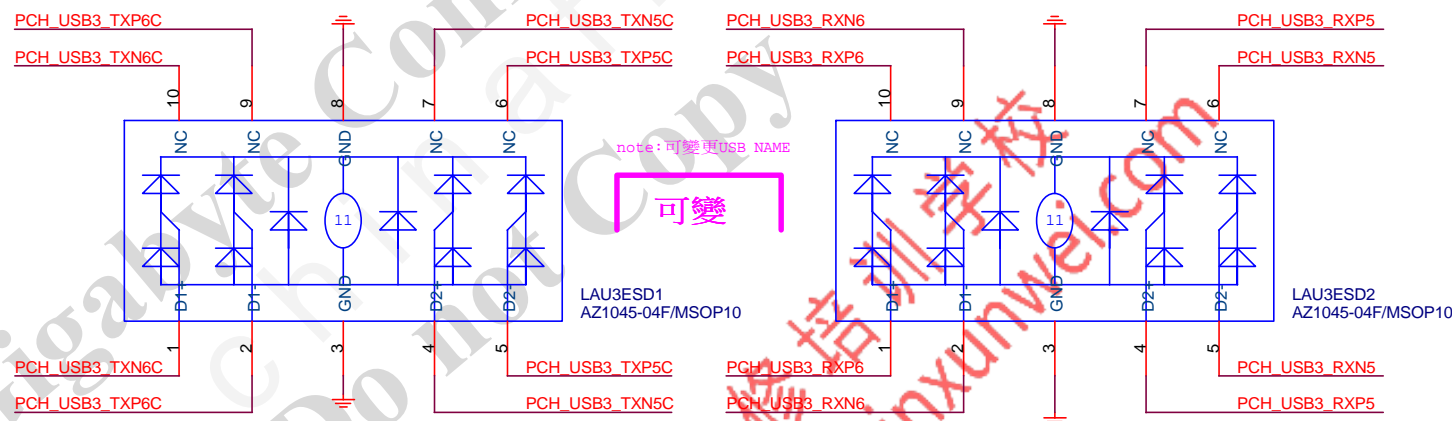
LAN_HS/[11NH1-LNC001-02R]

USB_LAN CONNECTOR

[E2201]

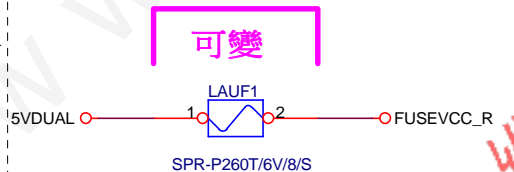


LA MDI-->100歐姆:[20/4/8/4/20]



USB POWER

note:可變更FUSE



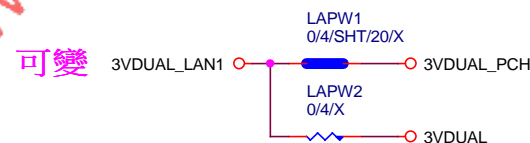
Close to connector
FUSE-0805

EMI SHORT PAD

PS:視EMI需求



LAN POWER



Gigabyte Technology

LAN CONNECTOR-E2201

GA-Z170X-Gaming 3

Rev	
-----	--

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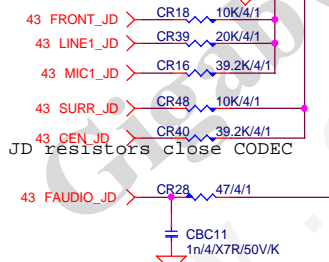
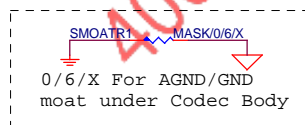
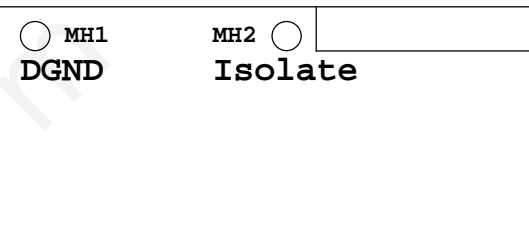
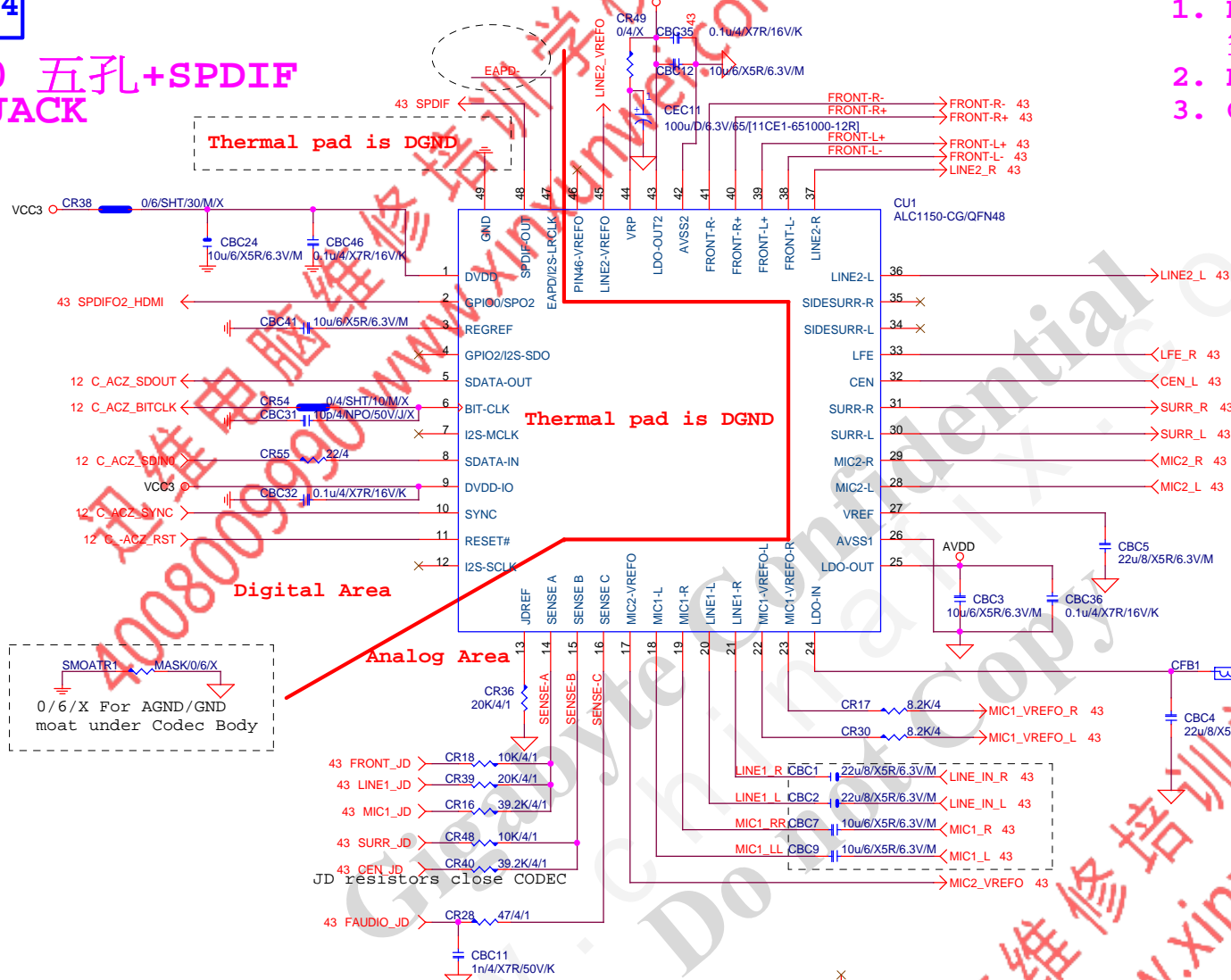
Rev 0.94

ALC1150 五孔+SPDIF AUDIO JACK

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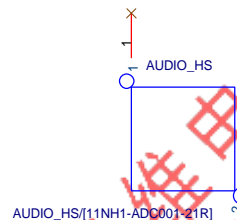
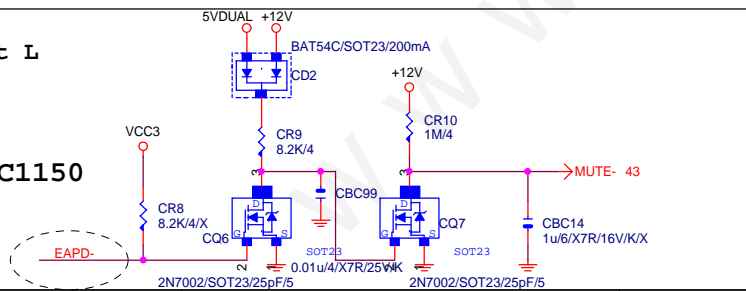
LAYOUT注意:螺絲孔下GND方式

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



EAPD: Default L
H : ON
L : OFF

Close to ALC1150



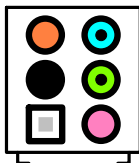
LAYOUT注意:要加
GND切割線



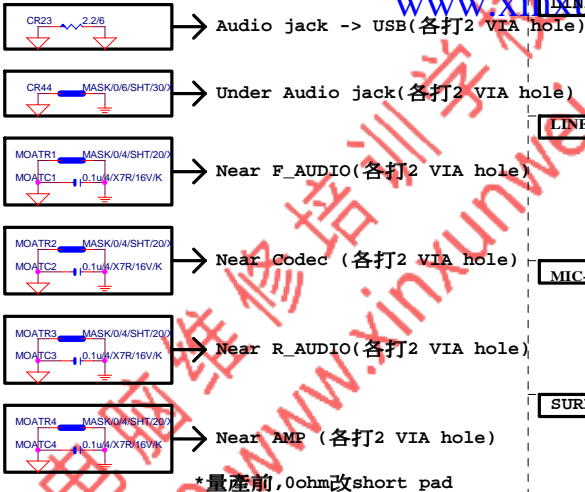
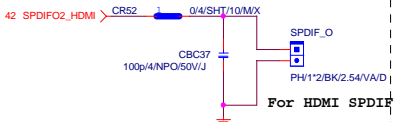
Gigabyte Technology

Title	ALC1150	Rev	1.01
Size	Document Number	GA-Z170X-Gaming 3	
Custom			
Date	Wednesday, August 12, 2015	Sheet	42 of 58

AZALIA JACK

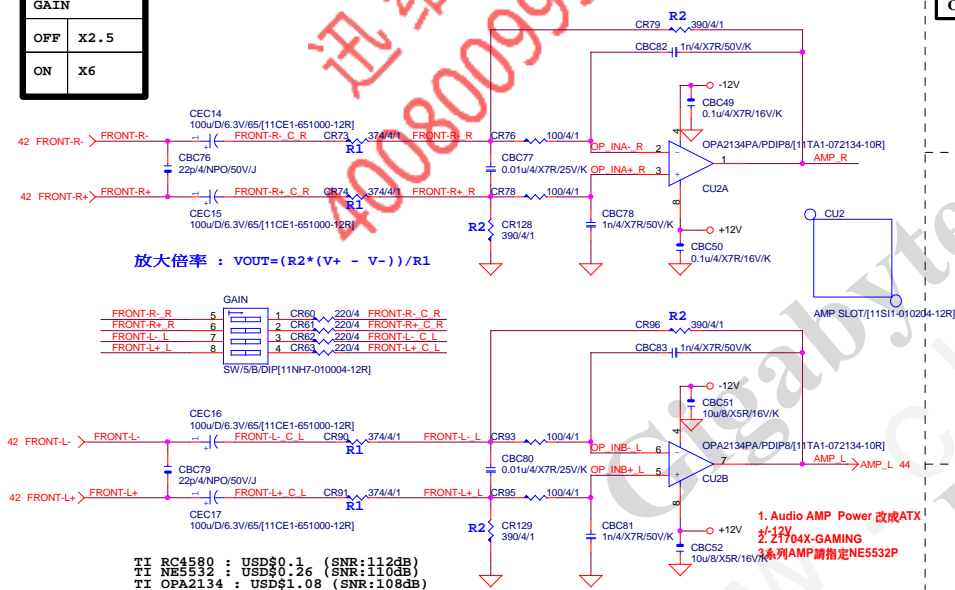


SPDIF OUT

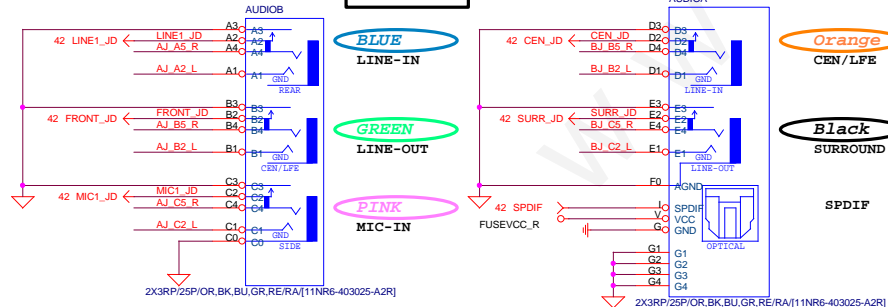


GAIN	
OFF	X2.5
ON	X6

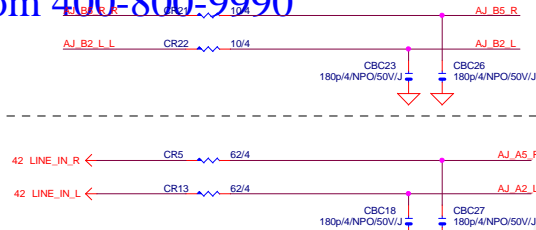
Differential to Single-End AMPLIFIED



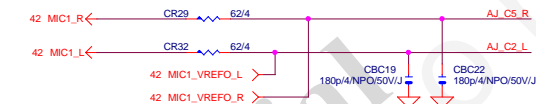
AZALIA JACK



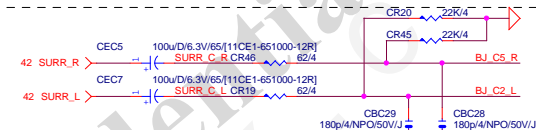
LINE-IN



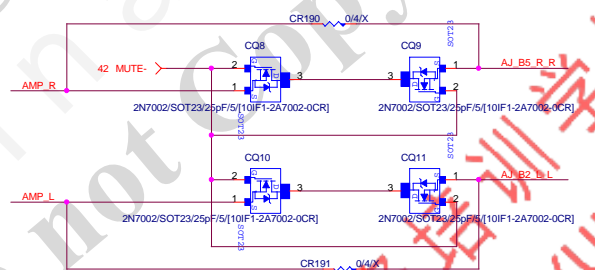
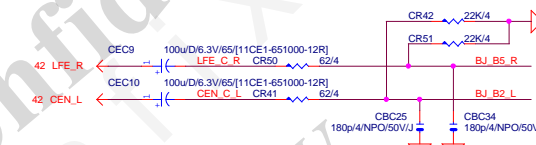
MIC-IN



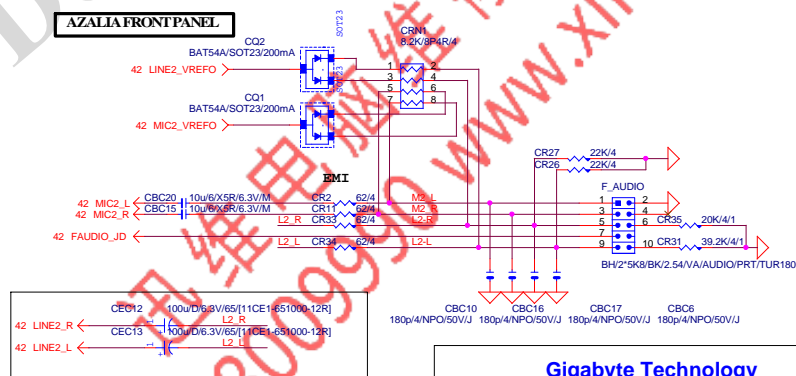
SURROUND



CEN/LFE

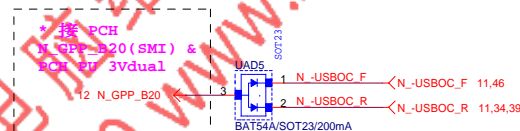
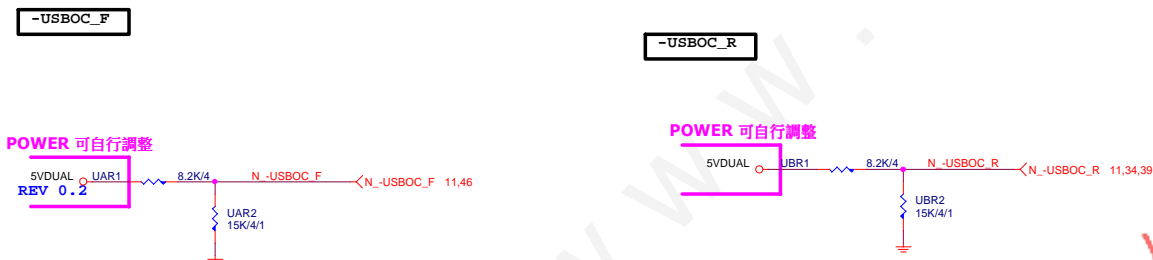
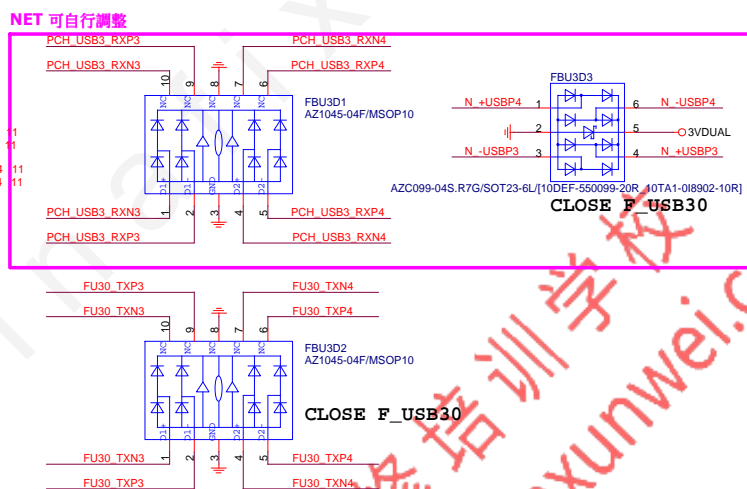
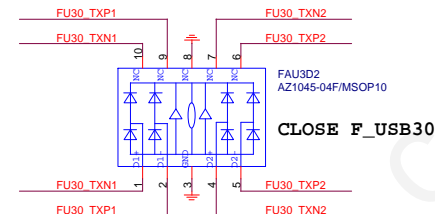
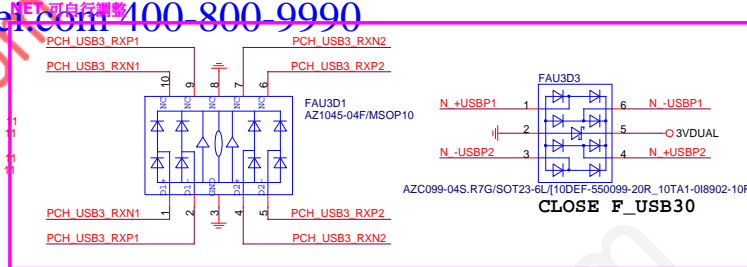


AZALIA FRONT PANEL



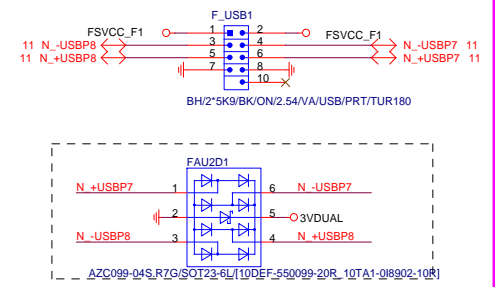
Gigabyte Technology

File	AUDIO JACK		
Size	Document Number	GA-Z170X-Gaming 3	Rev 1.01
Custom			
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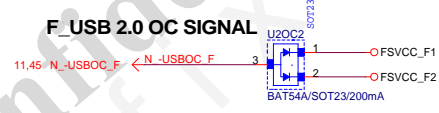
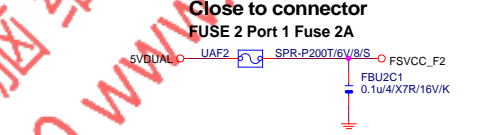
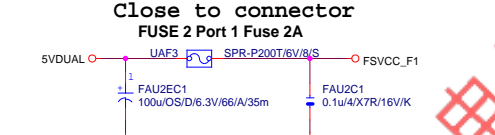
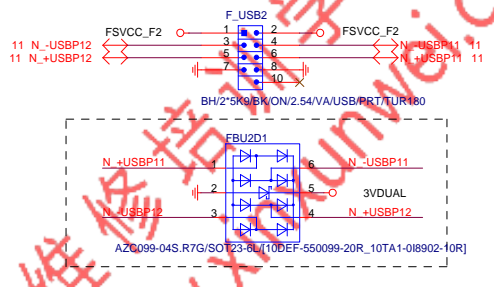




NET 可變



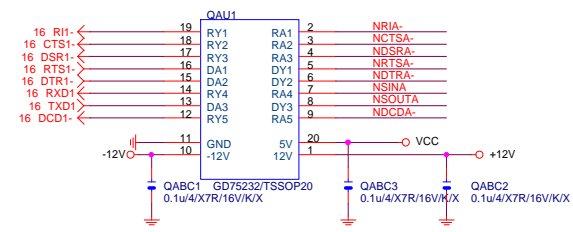
NET 可變



Gigabyte Technology			
Title			
USB2.0			
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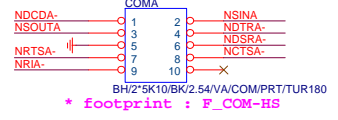
Rev: 0.7

COM PORT

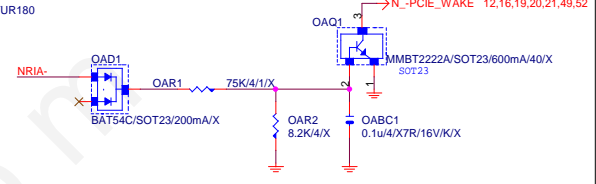


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COMA



* 接 N_-PCIE_WAKE 12,16,19,20,21,49,52

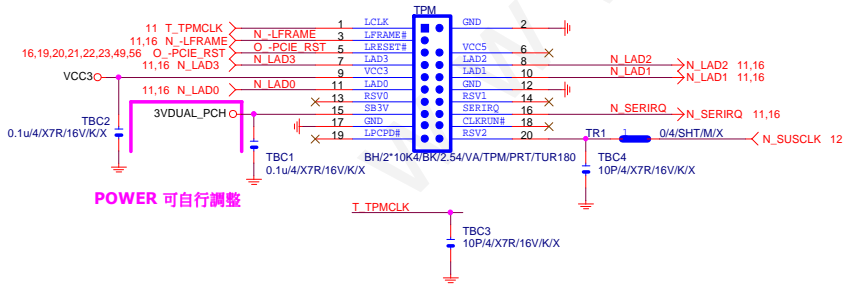


Rev: 0.3

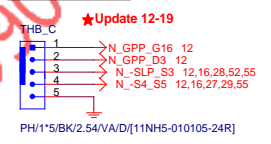
TURBO KEY

LPT PORT

TPM CONNECT



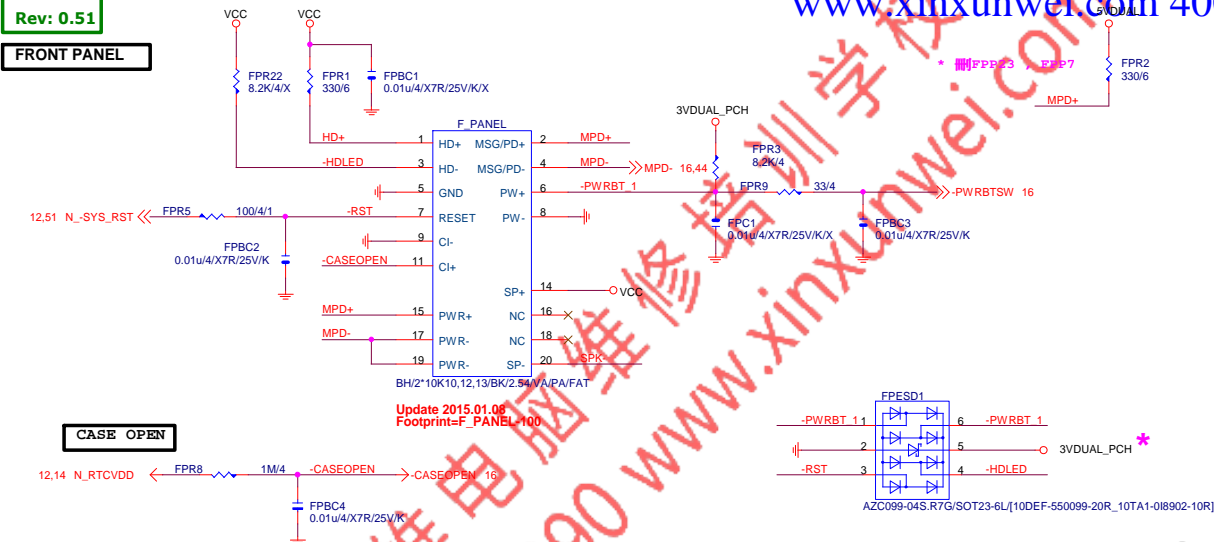
Thunderbolt



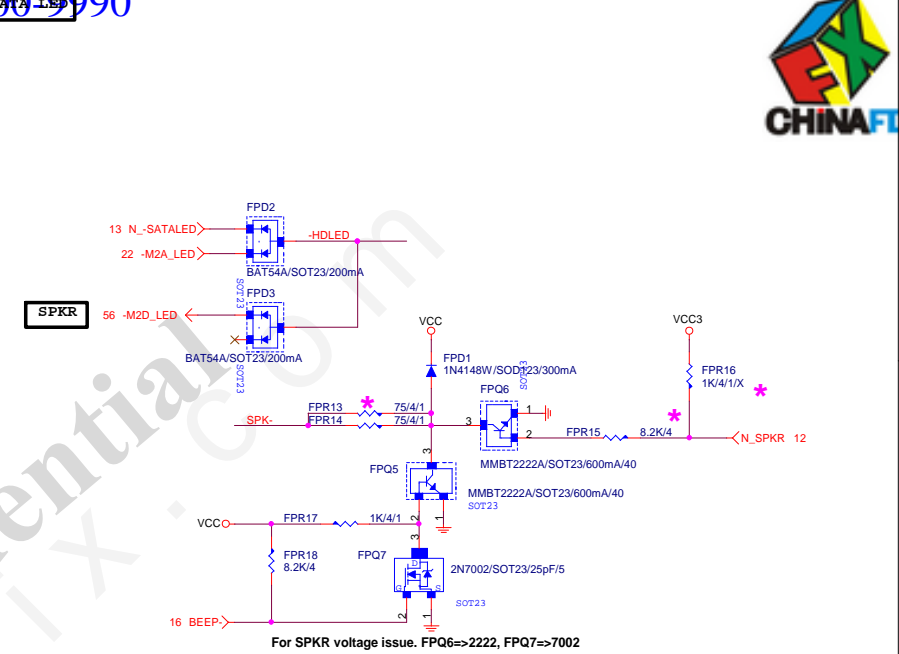
Gigabyte Technology			
Title			
COM,TPM,THB			
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FRONT PANEL



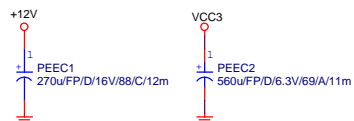
SPKR



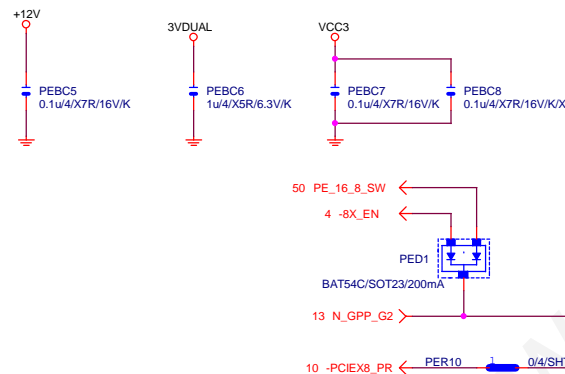
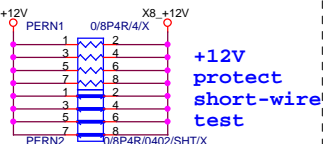
Gigabyte Technology			
Title			
FRONT PANEL			
Size	Document Number	GA-Z170X-Gaming 3	Rev
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Rev 0.3

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PCIEX8 PROTECT SHT



PE EXP SW TXP8 C
PE EXP SW TXN8 C
PE EXP SW TXP9 C
PE EXP SW TXN9 C
PE EXP SW TXP10 C
PE EXP SW TXN10 C
PE EXP SW TXP11 C
PE EXP SW TXN11 C
PE EXP SW TXP12 C
PE EXP SW TXN12 C
PE EXP SW TXP13 C
PE EXP SW TXN13 C
PE EXP SW TXP14 C
PE EXP SW TXN14 C
PE EXP SW TXP15 C
PE EXP SW TXN15 C

PCI-E/8X-99P/RE/LONG DOUBLE/H/K/2/SHELL

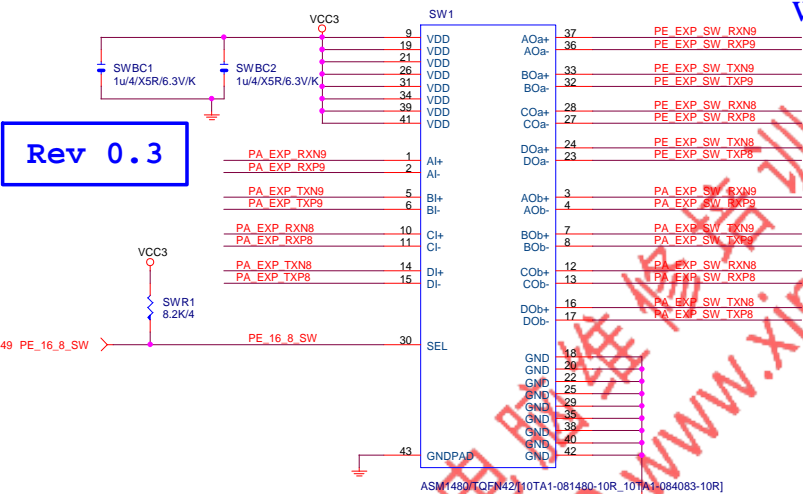
紅色

PE EXP SW TXP8	PEC7	0.22u/4/X5R/6.3V/K	PE EXP SW TXP8 C
PE EXP SW TXN8	PEC8	0.22u/4/X5R/6.3V/K	PE EXP SW TXN8 C
PE EXP SW TXP9	PEC9	0.22u/4/X5R/6.3V/K	PE EXP SW TXP9 C
PE EXP SW TXN9	PEC10	0.22u/4/X5R/6.3V/K	PE EXP SW TXN9 C
PE EXP SW TXP10	PEC11	0.22u/4/X5R/6.3V/K	PE EXP SW TXP10 C
PE EXP SW TXN10	PEC12	0.22u/4/X5R/6.3V/K	PE EXP SW TXN10 C
PE EXP SW TXP11	PEC13	0.22u/4/X5R/6.3V/K	PE EXP SW TXP11 C
PE EXP SW TXN11	PEC14	0.22u/4/X5R/6.3V/K	PE EXP SW TXN11 C
PE EXP SW TXP12	PEC15	0.22u/4/X5R/6.3V/K	PE EXP SW TXP12 C
PE EXP SW TXN12	PEC16	0.22u/4/X5R/6.3V/K	PE EXP SW TXN12 C
PE EXP SW TXP13	PEC17	0.22u/4/X5R/6.3V/K	PE EXP SW TXP13 C
PE EXP SW TXN13	PEC18	0.22u/4/X5R/6.3V/K	PE EXP SW TXN13 C
PE EXP SW TXP14	PEC19	0.22u/4/X5R/6.3V/K	PE EXP SW TXP14 C
PE EXP SW TXN14	PEC20	0.22u/4/X5R/6.3V/K	PE EXP SW TXN14 C
PE EXP SW TXP15	PEC21	0.22u/4/X5R/6.3V/K	PE EXP SW TXP15 C
PE EXP SW TXN15	PEC22	0.22u/4/X5R/6.3V/K	PE EXP SW TXN15 C

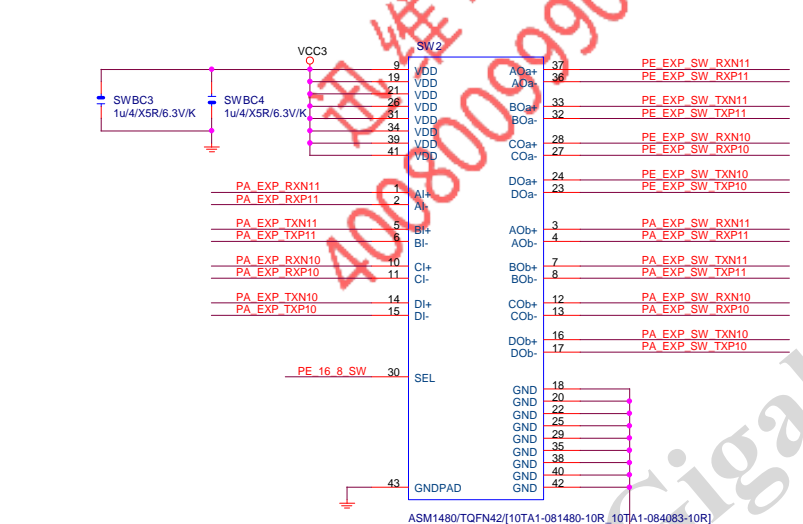
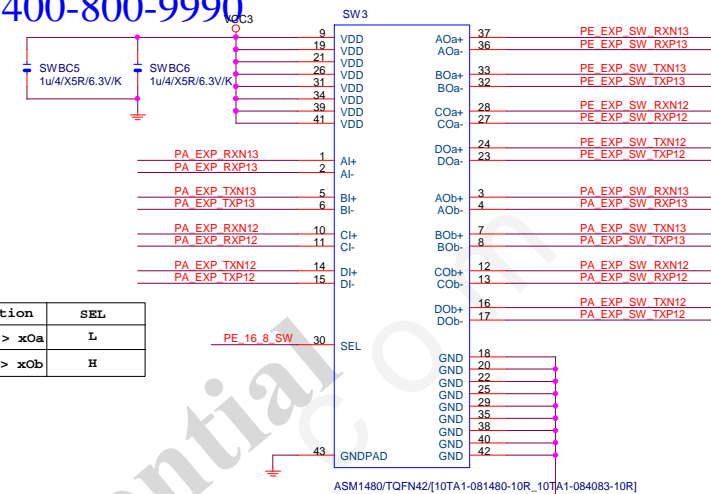
Gigabyte Technology

Title				PCI EXPRESS X8	
Size				Custom	
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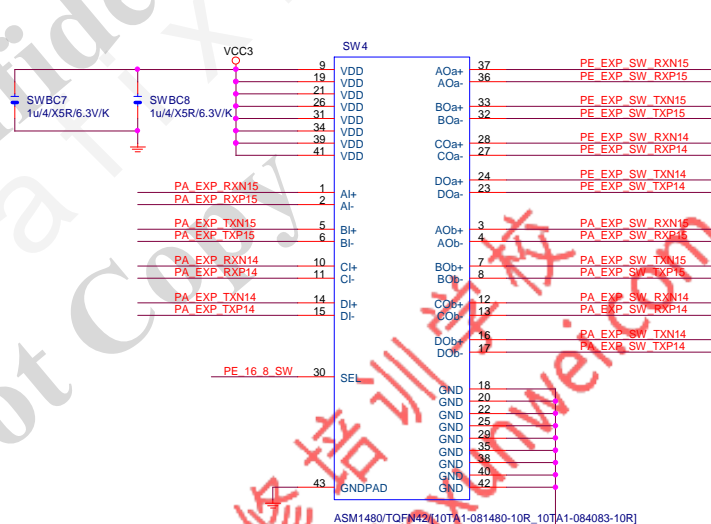
Rev 0.3



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



PA EXP SW RXP18_15I >>> PA_EXP_SW_RXP18_15I 19
PA EXP SW RXN8_15I >>> PA_EXP_SW_RXN8_15I 19
PA EXP SW TXP18_15I >>> PA_EXP_SW_TXP18_15I 19
PA EXP SW TXN8_15I >>> PA_EXP_SW_TXN8_15I 19
PE EXP SW RXP18_15I >>> PE_EXP_SW_RXP18_15I 49
PE EXP SW RXN8_15I >>> PE_EXP_SW_RXN8_15I 49
PE EXP SW TXP18_15I >>> PE_EXP_SW_TXP18_15I 49
PE EXP SW TXN8_15I >>> PE_EXP_SW_TXN8_15I 49
PA EXP RXP10_15I >>> PA_EXP_RXP10_15I 4,19
PA EXP RXN10_15I >>> PA_EXP_RXN10_15I 4,19
PA EXP TXP10_15I >>> PA_EXP_TXP10_15I 4,19
PA EXP TXN10_15I >>> PA_EXP_TXN10_15I 4,19

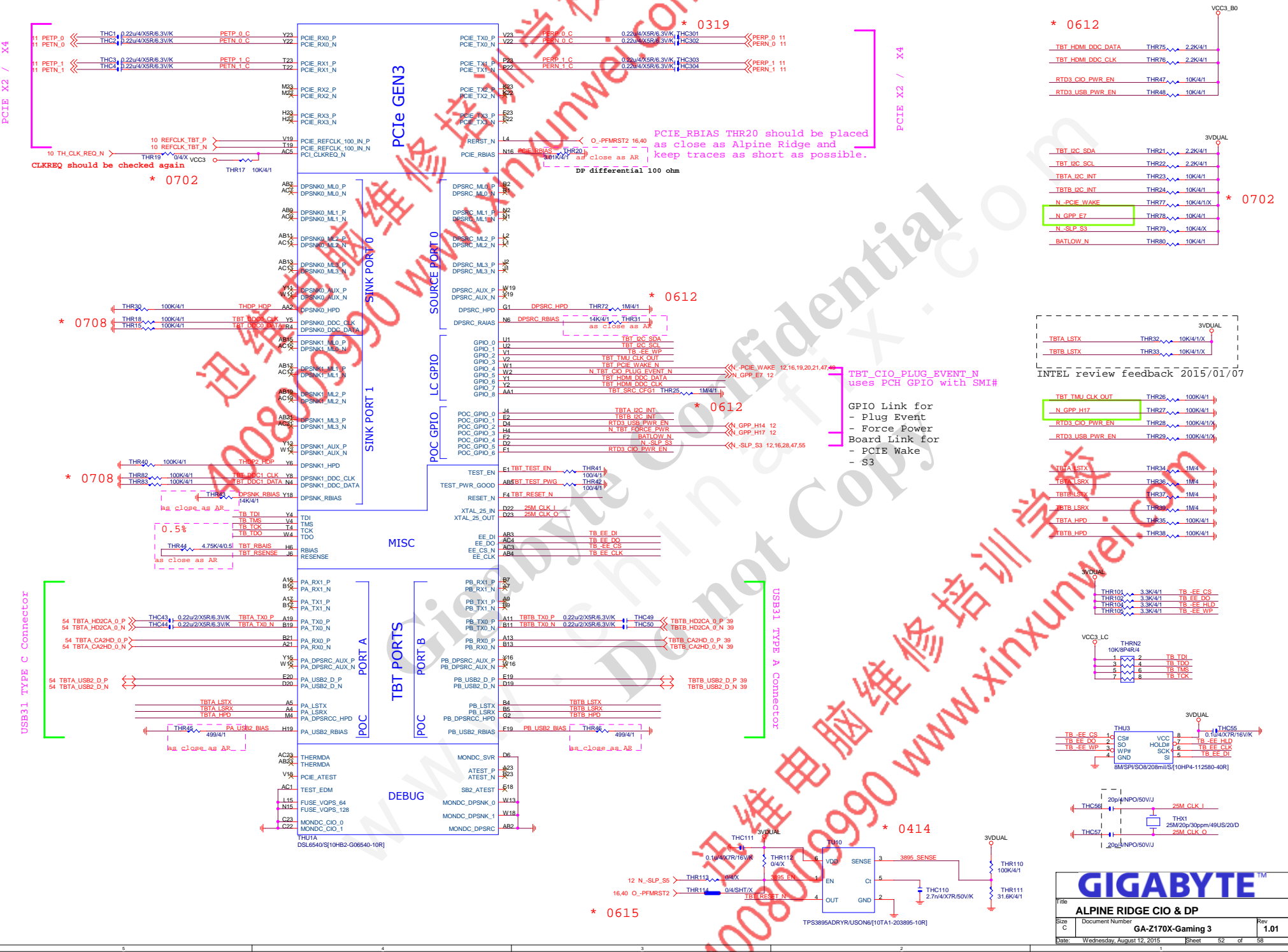


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PCI EXPRESS X16 SWITCH

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GIGABYTE™			
Title IDT6V41530_CLK BUFFER			
Size	Document Number	Rev	
Custom	GA-Z170X-Gaming 3	1.01	
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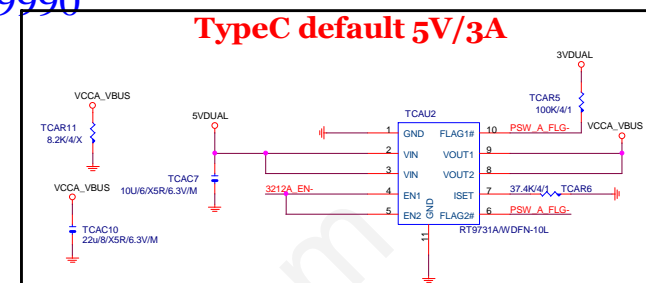


GIGABYTE™			
ALPINE RIDGE CIO & DP			
File	Document Number	Rev	
C	GA-Z170X-Gaming 3	1.01	
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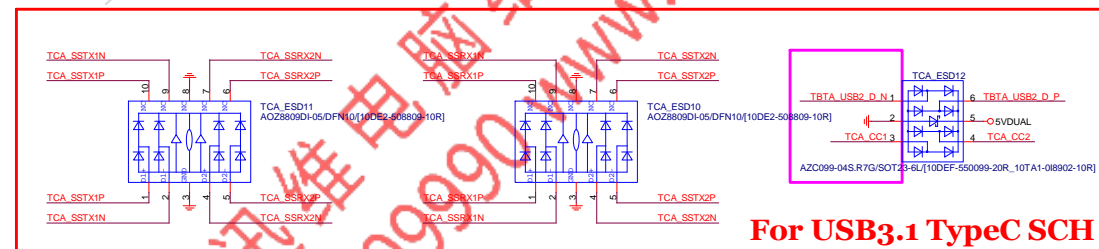
Power Consumption Table					
	VCC3	3VDUAL	VCC3_LC	VCC3V3_ANA_PCIE VCC3V3_ANA_USB2	VCC0V9_LVR_OUT
Max Current(A)	1.05 A 40 mil	0.19 A 10 mil	0.03 A 5 mil	0.1 A 5 mil	0.06 A 5 mil
	VCC0V9_SVR	VCC0V9_DP	VCC0V9_PCIE	VCC0V9_USB	VCC0V9_CIO
Max Current(A)	1.83 A 80 mil	0.7 A 30 mil	0.58 A 30 mil	0.22 A 15 mil	0.28 A 15 mil

CHINAFD



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



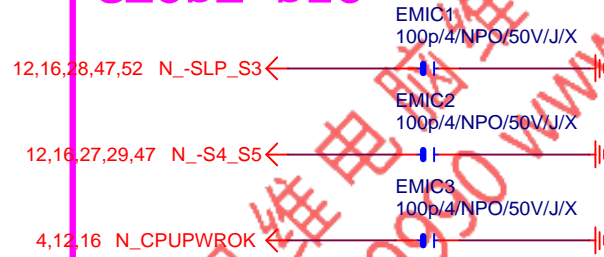
For USB3.1 TypeC SCH

USB2.0 can be used the same source

Color markers can be changed by model

				
Title				
<p align="center">TI USB321</p>				
Size C	Document Number			Rev
	<p align="center">GA-Z170X-Gaming 3</p>			<p align="center">1.0</p>
Date	Wednesday, August 12, 2016	Sheet	4 of 4	4/8

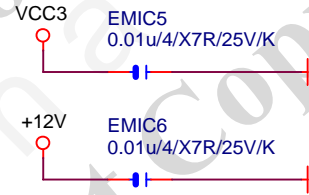
CLOSE SIO



CLOSE PCH



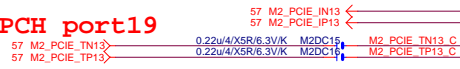
EMI Alain 2015/03/04 modify



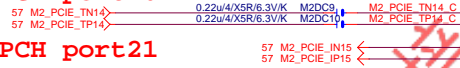
GIGABYTE™

Title			EM/ESD	
Size	Document Number		Rev	
A	GA-Z170X-Gaming 3		1.01	
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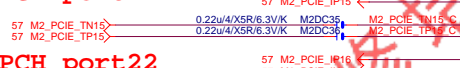
M.2 Lane2 from PCH port19



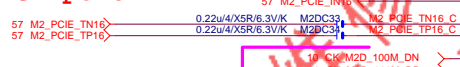
M.2 Lane2 from PCH port20



M.2 Lane3 from PCH port21

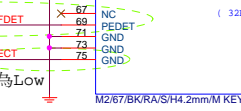


M.2 Lane4 from PCH port22



需與M2 - CLKREQ對應

支援SATA and M.2 function



M.2-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.

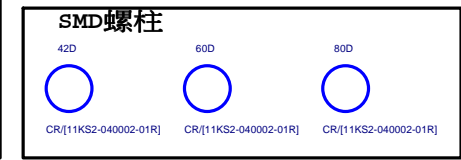
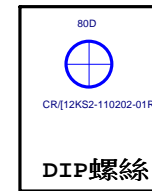
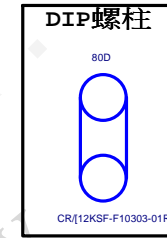
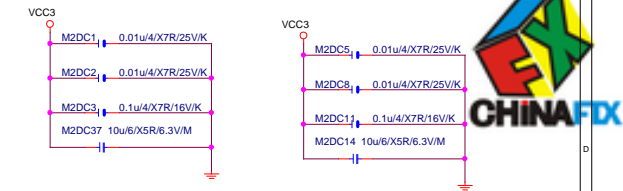
WHEN	PCH GPIO	SETUP	SWITCH
GPP_G7	L	GPP_C20	H
GPP_G8	L	GPP_C19	H
GPP_F1/F2	H	GPP_C21	H

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

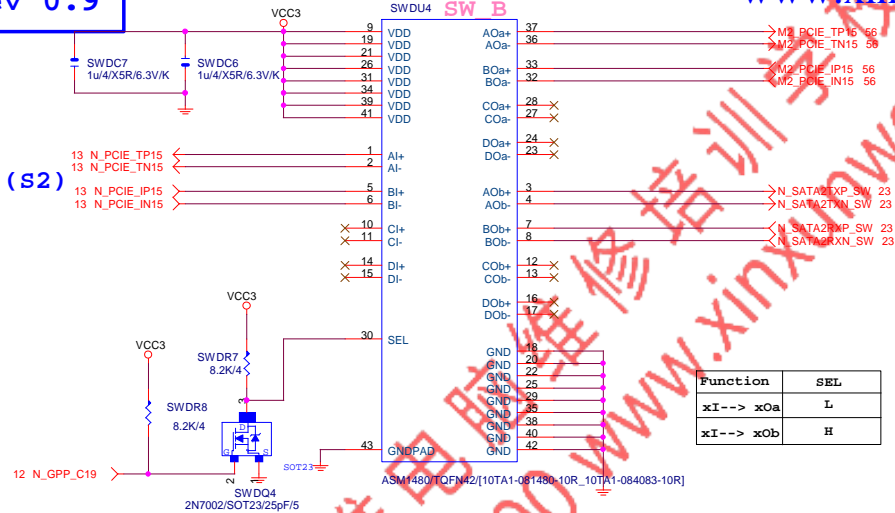


M.2 有插卡 / 沒插卡 GPP_G9	M.2插何種卡? GPP_G10	SATA Express 插何種硬碟? GPP_E0/E1/E2/F0	IO19 (S0)	IO20 (S1)	IO21 (S2)	IO22 (S3)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA	SATA	SATA	SATA (For M2)
		SATA Express (Low)	SATA	SATA	SATA	SATA (For M2)
	PCIe Mode (Hi)	SATA (Hi)	PCIeX4 (For M.2)			
		SATA Express (Low)	PCIeX4 (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)	

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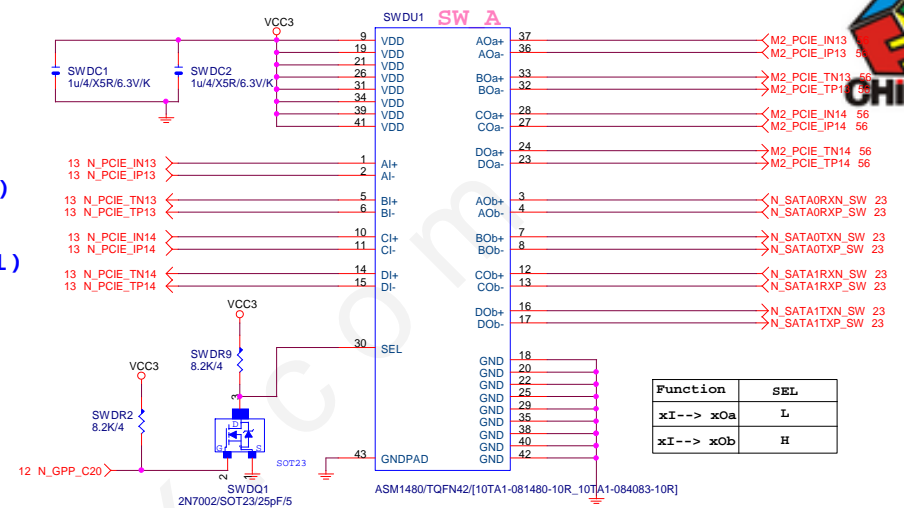


PCH (S2)

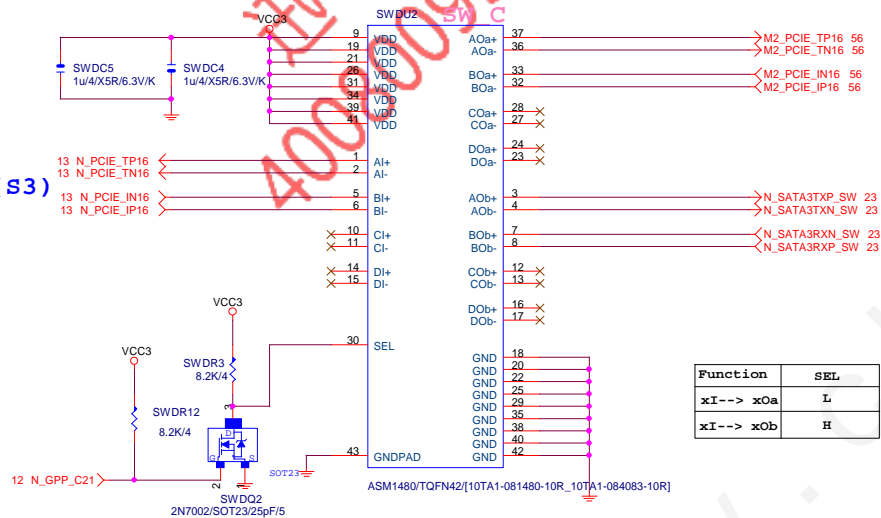


PCH (S0)

PCH (S1)



PCH (S3)

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M.2 SWITCH

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