Model Name: GA-B150M-Wind

rev 1.01

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1150-D
08	DDR3 CHANNEL A
09	DDR3 CHANNEL B
10	PCH_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	HWM
18	FAN CTRL--SIO
19	PCI EXPRESS*16 SLOT
20	PCI EXPRESS*1 SLOT
21	M.2X4
22	SATA EXPRESS
23	IT8892 PCI BRIDGE
24	PCI SLOT
25	ISL95858_856 PWM
26	ISL95858_856 MOS_VCORE
27	ISL95858_856 MOS_VCCGT

SHEET	TITLE
28	
29	VCCSA_VCCIO_VCCPLL
30	RT8120_DDR_VDDQ
31	
32	RT8120_PCH_VCC1_0_PCH
33	DISCRETE POWER
34	NCT3933
35	ATX POWER , A_-PROCHOT
36	KB_MS_USB
37	DVI CONN
38	RTD2168 - DP to VGA - IC
39	RTD2168 - DP to VGA - Conn
40	
41	R_USB30
42	REALTEK - RTL8111G
43	USB30_LAN CONNECTOR-RTL8111G
44	Realtek ALC887
45	REAR AUDIO JACK
46	F_USB30
47	F_USB
48	COM , LPT , TPM
49	F_PANEL
50	TABLE LIST
51	POWER MAP

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Title	Cover Sheet	
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
Date: Wednesday, May 25, 2016	Sheet 1 of 50	

Model Name: GA-B150M-Wind

rev1.01

Component value change history

Data	Change Item	Reason
2016/03/01	NEW BOM	First Release BOM 01
2016/04/01	1.SATA3_0 . SATA3_1不上件 2.SATA3_4 . SATA3_5 上件	

Circuit or PCB layout change

DATE	Change Item	Reason
2016/02/17	NEW	0.1B
2016/03/01	1.ADD M2 SLOT	0.2B

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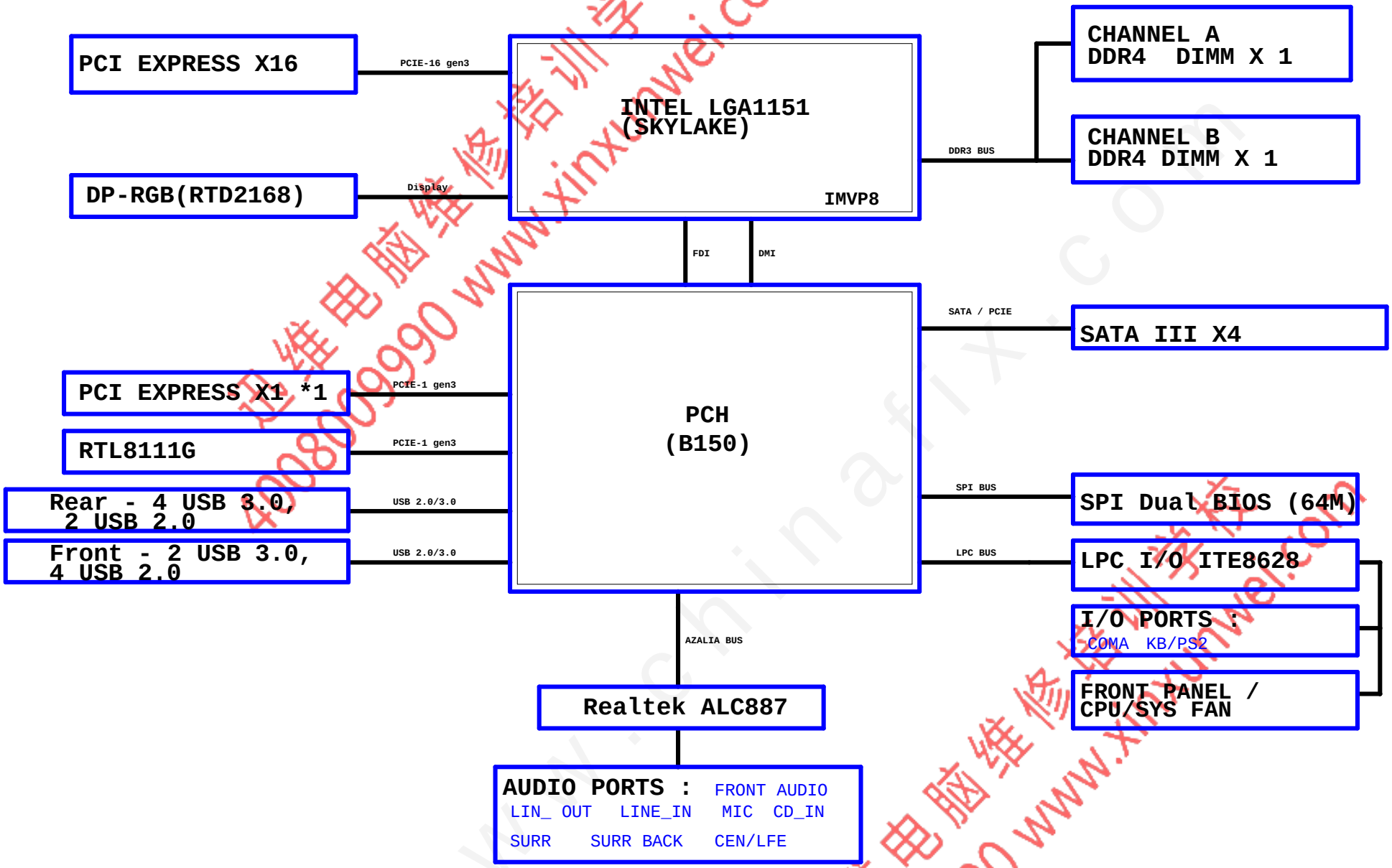
Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-B150M-Wind | Rev: 1.01

Date: Wednesday, May 25, 2016 | Sheet 2 of 50

BLOCK DIAGRAM



Gigabyte Technology			
Title: BLOCK DIAGRAM			
Size: C	Document Number: GA-B150M-Wind		Rev: 1.01
Date: Wednesday, May 25, 2016	Sheet 3 of 50		

* Rev0.2B

檢查組態 / 不用可刪除

* WR7 , WR1 , WR81 改 short pad

* 刪 net

* 刪 WR17 , WR14 , WR10 , WR29 , WR25 , WR56 , WR55

Note.53

* 刪 WR91

* 刪 net N_CPU_VCCST_PWOK

* 刪 net

* 刪 net

* 刪 net

DVI

DP-VGA

-CPURST

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

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

Impedance=85 +- 15%

CFG[2]:x16 Lane Numbering Reversal. 1= NORMAL;0=reversal
CFG[4]: eDP enable:1:disable/0=enable
CFG[6:5]:PCI Express* Bifurcation; 11= 1 x16 PCI Express;10=2x8 PCI Express
CFG[7]: PEG Training:1=(default) PEG Train immediately following RESET#;0=PEG Wait for BIOS

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

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

Impedance=85 +- 15%

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

Title	CPU LGA1151-A
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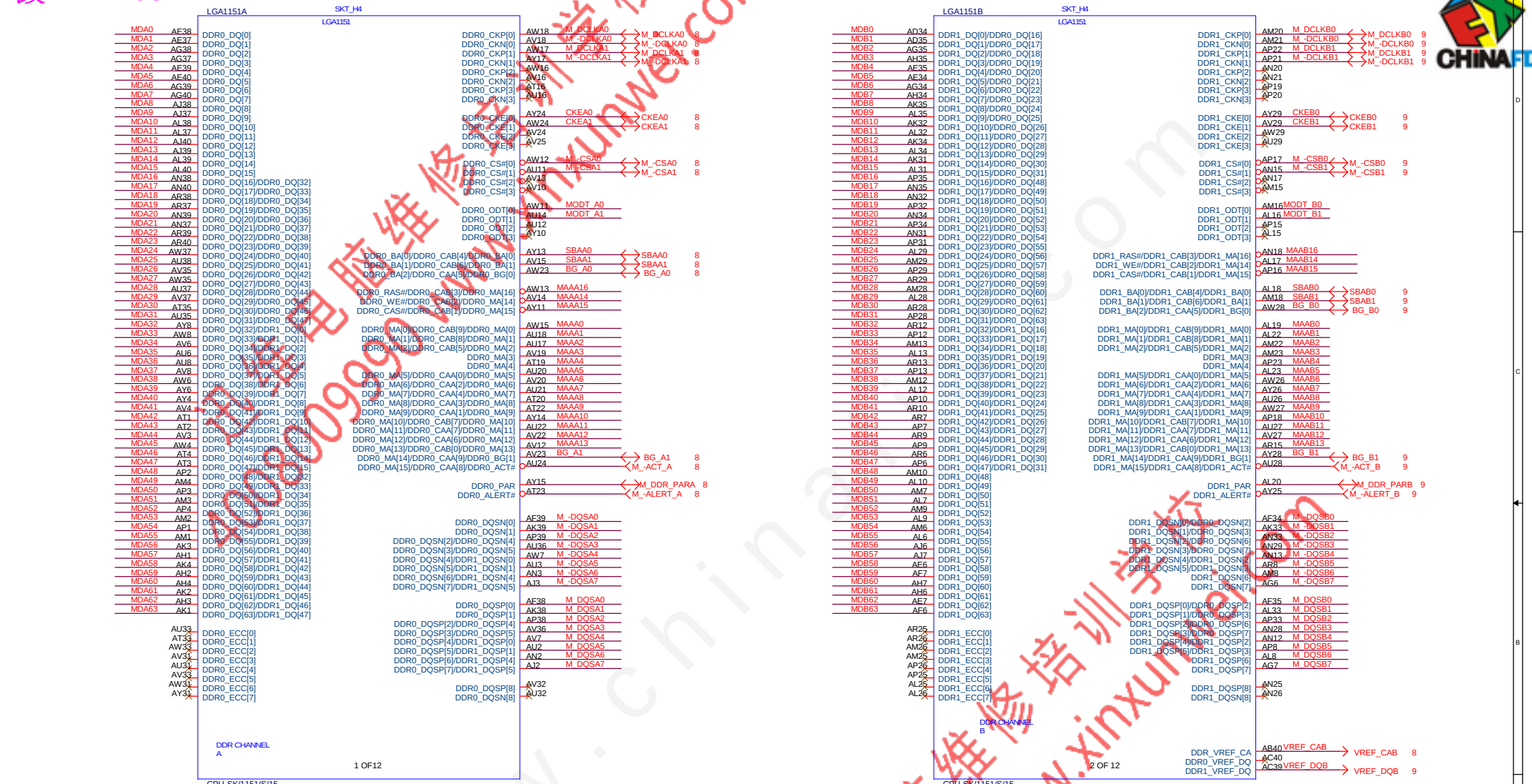
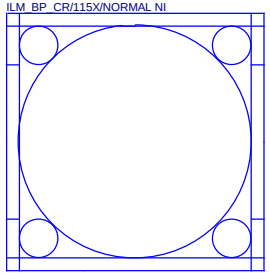
Gigabyte Technology

* 改DDR4 net



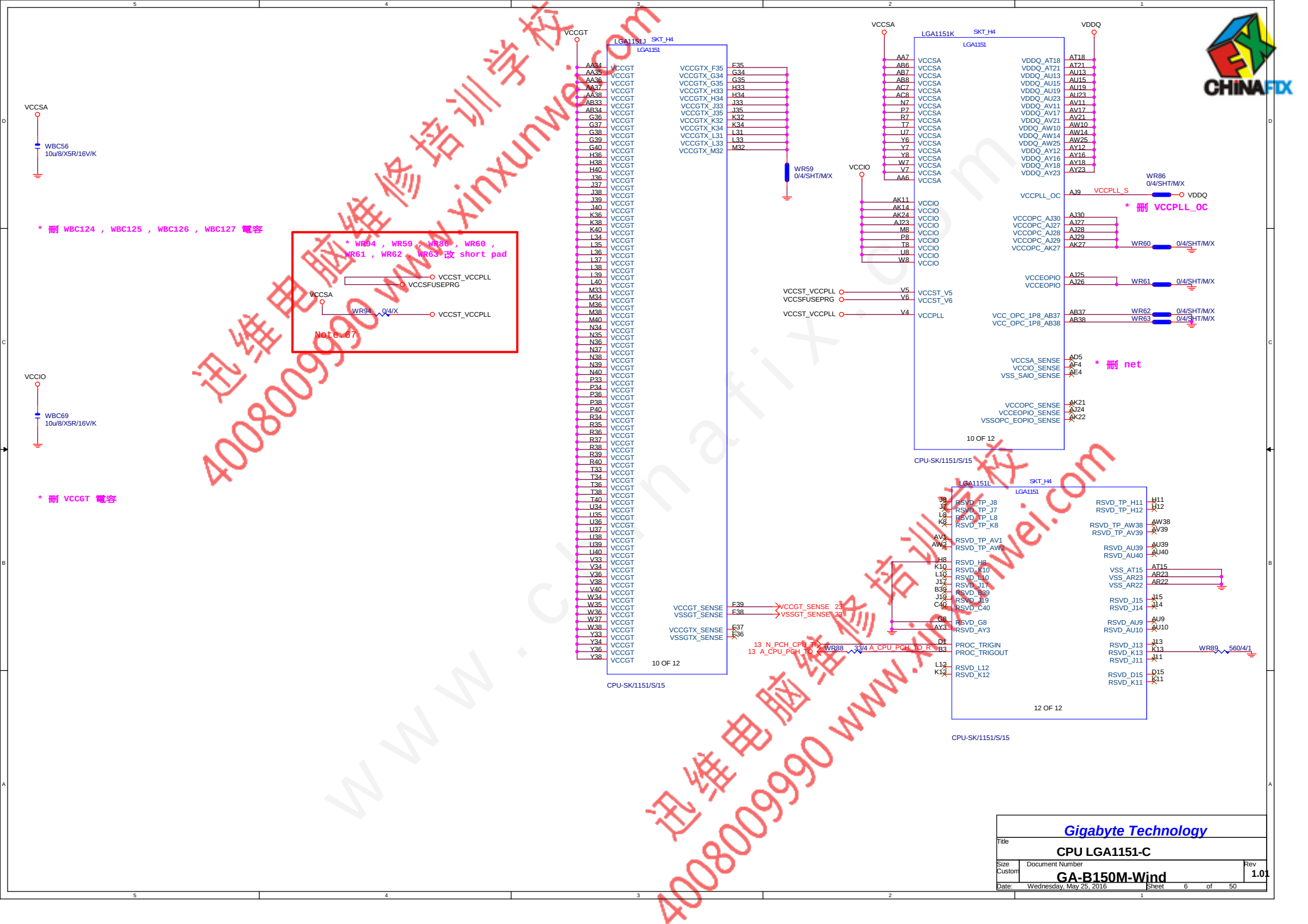
LGA1151
ILM_BP_CR/115X/NORMAL NI



Need check the new CPU ME

BLACK NI

Gigabyte Technology		
Title	CPU LGA1151-B	
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
Date: Wednesday, May 25, 2016	Sheet 5 of 50	


VCCSA
WBC56
10u/8/X5R/16V/K
* 刪 WBC124 , WBC125 , WBC126 , WBC127 電容
* WR94 , WR59 , WR86 , WR60 , WR61 , WR62 , WR63 改 short pad
VCCST_VCCPLL
VCCSFUSEPRG
VCCSA
WR94 0/4/X
VCCST_VCCPLL
Note 67
VCCIO
WBC69
10u/8/X5R/16V/K
* 刪 VCCGT 電容
VCCGT
LGA1151J SKT_H4
LGA1151
AA34 AA35 AA36 AA37 AA38 AB33 AB34 G36 G37 G38 G39 G40 H36 H38 H40 J36 J37 J38 J39 J40 K36 K38 K40 L34 L35 L36 L37 L38 L39 L40 M33 M34 M36 M38 M40 N34 N35 N36 N37 N38 N39 N40 P33 P34 P36 P38 P40 R34 R35 R36 R37 R38 R39 R40 T33 T34 T36 T38 T40 U34 U35 U36 U37 U38 U39 U40 V33 V34 V36 V38 V40 W34 W35 W36 W37 W38 Y33 Y34 Y36 Y38
VCCGT
VCCGTX_F35 VCCGTX_G34 VCCGTX_G35 VCCGTX_H33 VCCGTX_H34 VCCGTX_J33 VCCGTX_J35 VCCGTX_K32 VCCGTX_K34 VCCGTX_L31 VCCGTX_L33 VCCGTX_M32
F35 G34 G35 H33 H34 J33 J35 K32 K34 L31 L33 M32
WR59 0/4/SHT/M/X
VCCGT_SENSE VSSGT_SENSE
F39 F38
VCCGT_SENSE 23
VSSGT_SENSE 23
VCCGTX_SENSE VSSGTX_SENSE
F37 F36
10 OF 12
CPU-SK/1151/S/15
VCCSA
LGA1151K SKT_H4
LGA1151
AA7 AB6 AB7 AB8 AC7 AC8 N7 P7 R7 T7 U7 Y6 Y7 Y8 W7 V7 AA6
VCCSA
VCCIO
AK11 AK14 AK24 AJ23 M8 P8 T8 U8 W8
VCCST_VCCPLL
VCCSFUSEPRG
VCCST_VCCPLL
V5 V6 V4
VCCST_V5 VCCST_V6
VCCPLL
VDDQ
VDDQ_AT18 VDDQ_AT21 VDDQ_AU13 VDDQ_AU15 VDDQ_AU19 VDDQ_AU23 VDDQ_AV11 VDDQ_AV17 VDDQ_AV21 VDDQ_AW10 VDDQ_AW14 VDDQ_AW25 VDDQ_AY12 VDDQ_AY16 VDDQ_AY18 VDDQ_AY23
AT18 AT21 AU13 AU15 AU19 AU23 AV11 AV17 AV21 AW10 AW14 AW25 AY12 AY16 AY18 AY23
VCCPLL_OC
AJ9 VCCPLL_S
WR86 0/4/SHT/M/X
VDDQ
* 刪 VCCPLL_OC
VCCOPC_AJ30 VCCOPC_AJ27 VCCOPC_AJ28 VCCOPC_AJ29 VCCOPC_AK27
AJ30 AJ27 AJ28 AJ29 AK27
WR60 0/4/SHT/M/X
VCCEOPIO VCCEOPIO
AJ25 AJ26
WR61 0/4/SHT/M/X
VCC_OPC_1P8_AB37 VCC_OPC_1P8_AB38
AB37 AB38
WR62 0/4/SHT/M/X
WR63 0/4/SHT/M/X
VCCSA_SENSE VCCIO_SENSE VSS_SAIO_SENSE
AD5 AF4 AE4
* 刪 net
VCCOPC_SENSE VCCEOPIO_SENSE VSSOPC_EOPIO_SENSE
AK21 AJ24 AK22
10 OF 12
CPU-SK/1151/S/15
LGA1151L SKT_H4
LGA1151
J8 J7 L8 K8 AV1 AW2 H8 K10 L10 J17 B39 J19 C40 G8 AY3 D1 B3 L12 K12
RSVD_TP_J8 RSVD_TP_J7 RSVD_TP_L8 RSVD_TP_K8 RSVD_TP_AV1 RSVD_TP_AW2 RSVD_H8 RSVD_K10 RSVD_L10 RSVD_J17 RSVD_B39 RSVD_J19 RSVD_C40 RSVD_G8 RSVD_AY3 PROC_TRIGIN PROC_TRIGOUT RSVD_L12 RSVD_K12
13 N_PCH_CPU_TP
13 A_CPU_PCH_TO
WR88 33/4 A_CPU_PCH_TO_R
RSVD_TP_H11 RSVD_TP_H12 RSVD_TP_AW38 RSVD_TP_AV39 RSVD_AU39 RSVD_AU40 VSS_AT15 VSS_AR23 VSS_AR22 RSVD_J15 RSVD_J14 RSVD_AU9 RSVD_AU10 RSVD_J13 RSVD_K13 RSVD_J11 RSVD_D15 RSVD_K11
H11 H12 AW38 AV39 AU39 AU40 AT15 AR23 AR22 J15 J14 AU9 AU10 J13 K13 J11 D15 K11
WR89 560/4/1
12 OF 12
CPU-SK/1151/S/15
Gigabyte Technology
Title
CPU LGA1151-C
Size Custom
Document Number
GA-B150M-Wind
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Title: CPU LGA1151-C		
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
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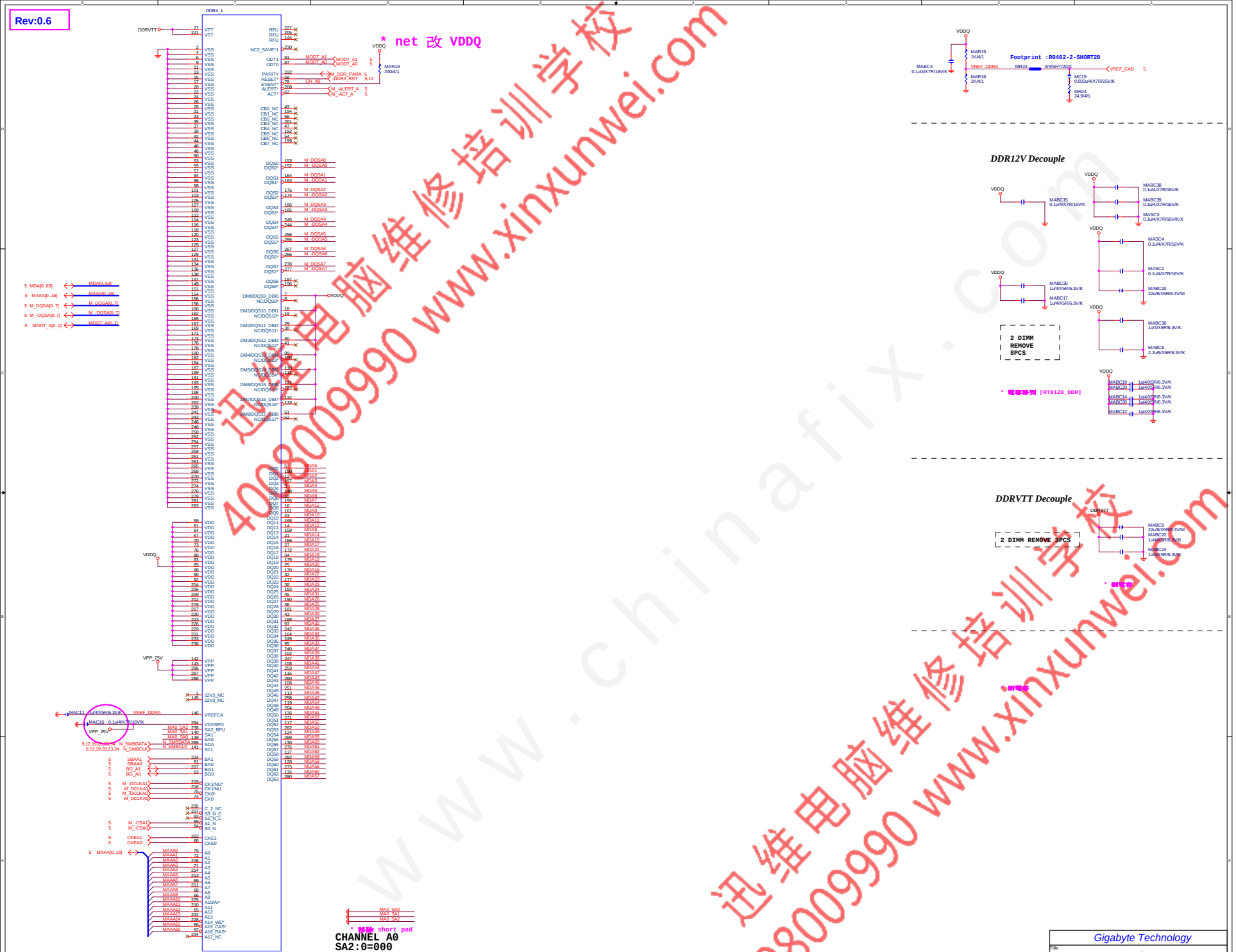
Rev:0.6



DDR12V Decouple

DDRVTT Decouple

Gigabyte Technology	
Title	DDR4 CHANNEL A
Size / Custom	Document Number: GA-B150M-Wind
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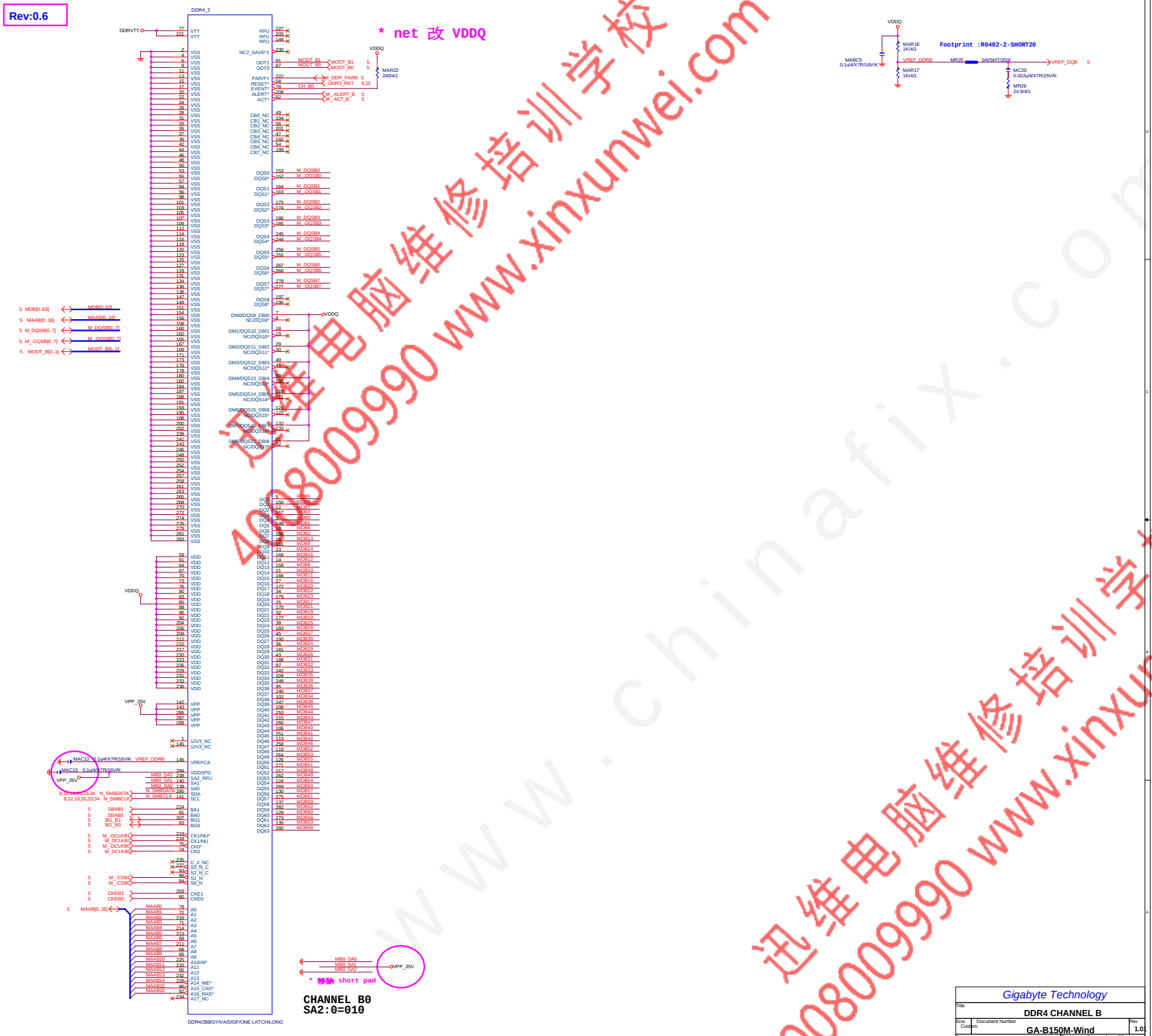
Rev:0.6



Gigabyte Technology	
Title	DDR4 CHANNEL B
Size: Custom	Document Number: GA-B150M-Wind
Rev: 1.01	
Date:	Sheet 9 of 50

* Rev0.2

PCHE
SPT-H_PCH
GPP_I0/DDPB_HPD0
GPP_I1/DDPC_HPD1
GPP_I2/DDPD_HPD2
GPP_I3/DDPE_HPD3
GPP_I4/EDP_HPD
GPP_I7/DDPC_CTRLCLK
GPP_I8/DDPC_CTRLDATA
GPP_I5/DDPB_CTRLCLK
GPP_I6/DDPB_CTRLDATA
GPP_I9/DDPD_CTRLCLK
GPP_I10/DDPD_CTRLDATA
GPP_F14
GPP_F23
GPP_F22
GPP_G23
GPP_G22
GPP_G21
GPP_G20
GPP_H23
5 OF 12
SPT_PCH_DT/SKT/[10HB1-03B150-20R]

33 N_DVI_HDP_F
34 N_VGA_HDP_F
N_GPP_I3
NR9 100K/4/1 N_GPP_I4
N_DDPC_CTRLCLK 33
N_DDPC_CTRLDATA 33
N_DDPD_CTRLCLK 34
N_DDPD_CTRLDATA 34
A_-SKTOCC 4
N_GPP_F23
N_GPP_F22
N_GPP_G22 11
N_GPP_G21
N_GPP_G20

CLK:4/15<1000;Guard GND

32.768KHZ
NX2-SHT
SHW/D0.64*5.08*6.74
N_Y1
N_Y2 NR11 10M/4
NC16 18p/4/NPO/50V/J
NC18 18p/4/NPO/50V/J
NX2
32.768K/12.5p/20ppm/TF38/35K/D

Note.64
VCC3
N_GPP_I3 NR7 8.2K/4
N_GPP_F23 NR12 8.2K/4
N_GPP_F22 NR248 8.2K/4

N_GPP_B10 NR17 8.2K/4/X
N_GPP_H0 NR19 8.2K/4

改排組 NRN2 8.2K/8P4R/4
N_GPP_G20
N_GPP_G21
A_-SKTOCC

改排組 NRN1 8.2K/8P4R/4
N_GPP_B6
N_GPP_B7
N_GPP_B5

Note.63
XTALI_PCH_R NR3 68/4/1 XTALI_PCH
NR32 1M/4
NX1 XTALO_PCH
24M/16p/30ppm/49US/50/D
NC8 22p/4/NPO/50V/J
Note.65
NC7 27p/4/NPO/50V/J
CLK:4/15<1000 mils±100 mils;Guard GND

PCHG
SPT-H_PCH
GPP_A16/CLKOUT_48
CLKOUT_CPUNSSC_P
CLKOUT_CPUNSSC
CLKOUT_CPUBCLK_P
CLKOUT_CPUBCLK
XTAL24_OUT
XTAL24_IN
XCLK_BIASREF
RTCX1
RTCX2
GPP_B5/SRCCLKREQ0#
GPP_B6/SRCCLKREQ1#
GPP_B7/SRCCLKREQ2#
GPP_B8/SRCCLKREQ3#
GPP_B9/SRCCLKREQ4#
GPP_B10/SRCCLKREQ5#
GPP_H0/SRCCLKREQ6#
GPP_H1/SRCCLKREQ7#
GPP_H2/SRCCLKREQ8#
GPP_H3/SRCCLKREQ9#
GPP_H4/SRCCLKREQ10#
GPP_H5/SRCCLKREQ11#
GPP_H6/SRCCLKREQ12#
GPP_H7/SRCCLKREQ13#
GPP_H8/SRCCLKREQ14#
GPP_H9/SRCCLKREQ15#
CLKOUT_PCIE_N15
CLKOUT_PCIE_P15
CLKOUT_PCIE_N14
CLKOUT_PCIE_P14
CLKOUT_PCIE_N13
CLKOUT_PCIE_P13
CLKOUT_PCIE_N12
CLKOUT_PCIE_P12
7 OF 12
SPT_PCH_DT/SKT/[10HB1-03B150-20R]

4 N_24MCLK
4 N_-24MCLK
N_24MCLK
N_-24MCLK
4 N_CPUCLK
4 N_-CPUCLK
N_CPUCLK
N_-CPUCLK
XTALO_PCH
XTALI_PCH
VCC1_0_PCH NR5 2.7K/4/1 XCLK_BIASREF
N_Y1
N_Y2
19 -PCIEX16_PR
20 -PCIEX1_PR1
20 -PCIEX1_PR2
N_GPP_B5
N_GPP_B6
N_GPP_B7
* 38 LA_-CLKREQ
21 M2A_-CLKREQ
N_GPP_B10
N_GPP_H0
N_GPP_B10 NR287 0/4/X
ON-BOARD DEVICE USED

CLKOUT_ITPXDP
CLKOUT_ITPXDP_P
CLKOUT_CPUPCIBCLK
CLKOUT_CPUPCIBCLK_P
N_-CPUPCIBCLK 4
N_CPUPCIBCLK 4
CLKOUT_PCIE_N0
CLKOUT_PCIE_P0
CLKOUT_PCIE_N1
CLKOUT_PCIE_P1
CLKOUT_PCIE_N2
CLKOUT_PCIE_P2
CLKOUT_PCIE_N3
CLKOUT_PCIE_P3
CLKOUT_PCIE_N4
CLKOUT_PCIE_P4
CLKOUT_PCIE_N5
CLKOUT_PCIE_P5
CLKOUT_PCIE_N6
CLKOUT_PCIE_P6
CLKOUT_PCIE_N7
CLKOUT_PCIE_P7
CLKOUT_PCIE_N8
CLKOUT_PCIE_P8
CLKOUT_PCIE_N9
CLKOUT_PCIE_P9
CLKOUT_PCIE_N10
CLKOUT_PCIE_P10
CLKOUT_PCIE_N11
CLKOUT_PCIE_P11

PA_-SRCCLK_3GIO 19
PA_SRCCLK_3GIO 19
PI_-PCIE_CLK 20
PI_PCIE_CLK 20
PJ_-PCIE_CLK 20
PJ_PCIE_CLK 20
LA_-SRCCLK_LAN 38
LA_SRCCLK_LAN 38
CK_M2A_100M_DN 21
CK_M2A_100M_DP 21

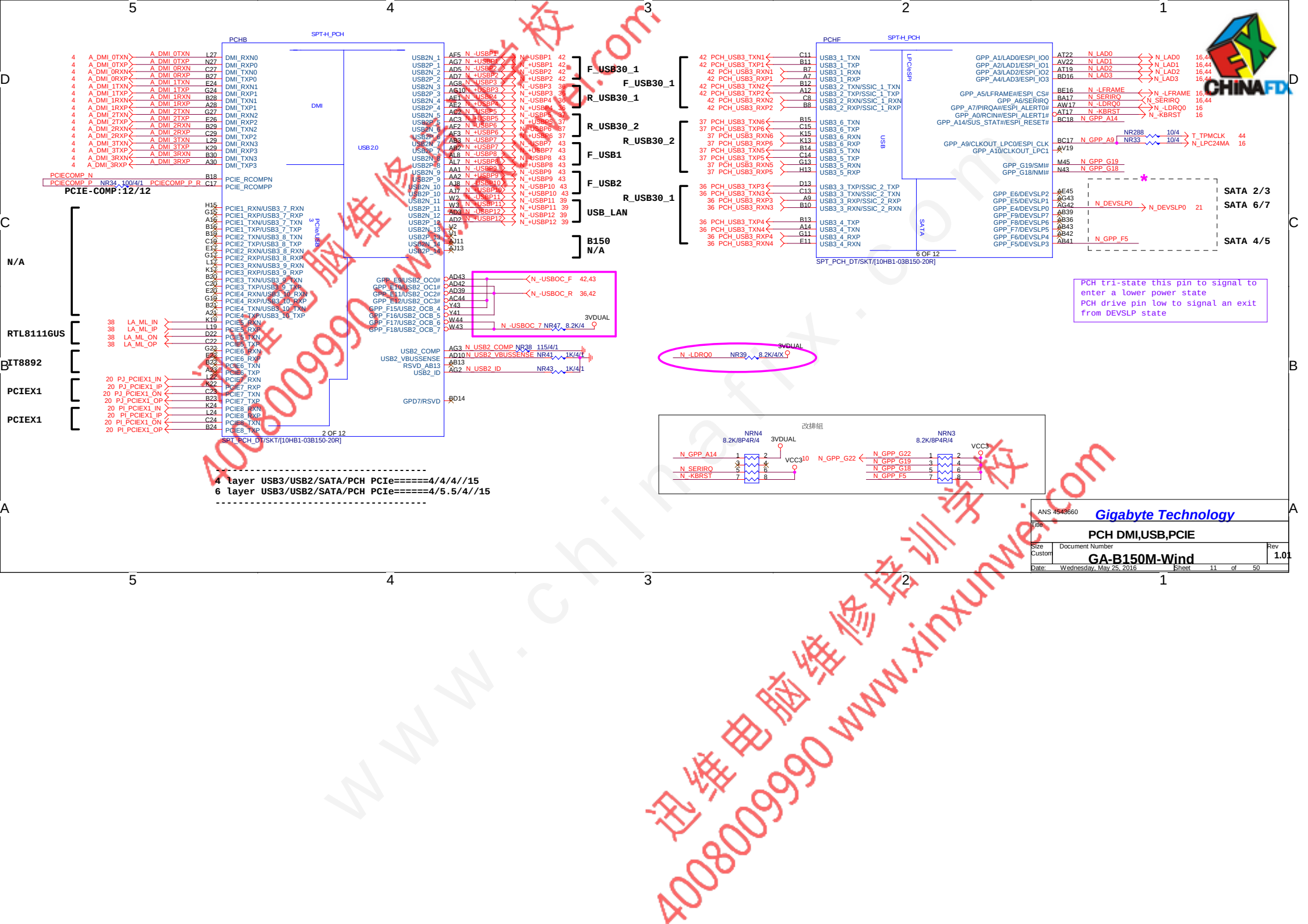
PCIEX16
PCIEX1
PCIEX1
IT8892
RTL8111GUS
M.2

SB_HEATSIN
1
2

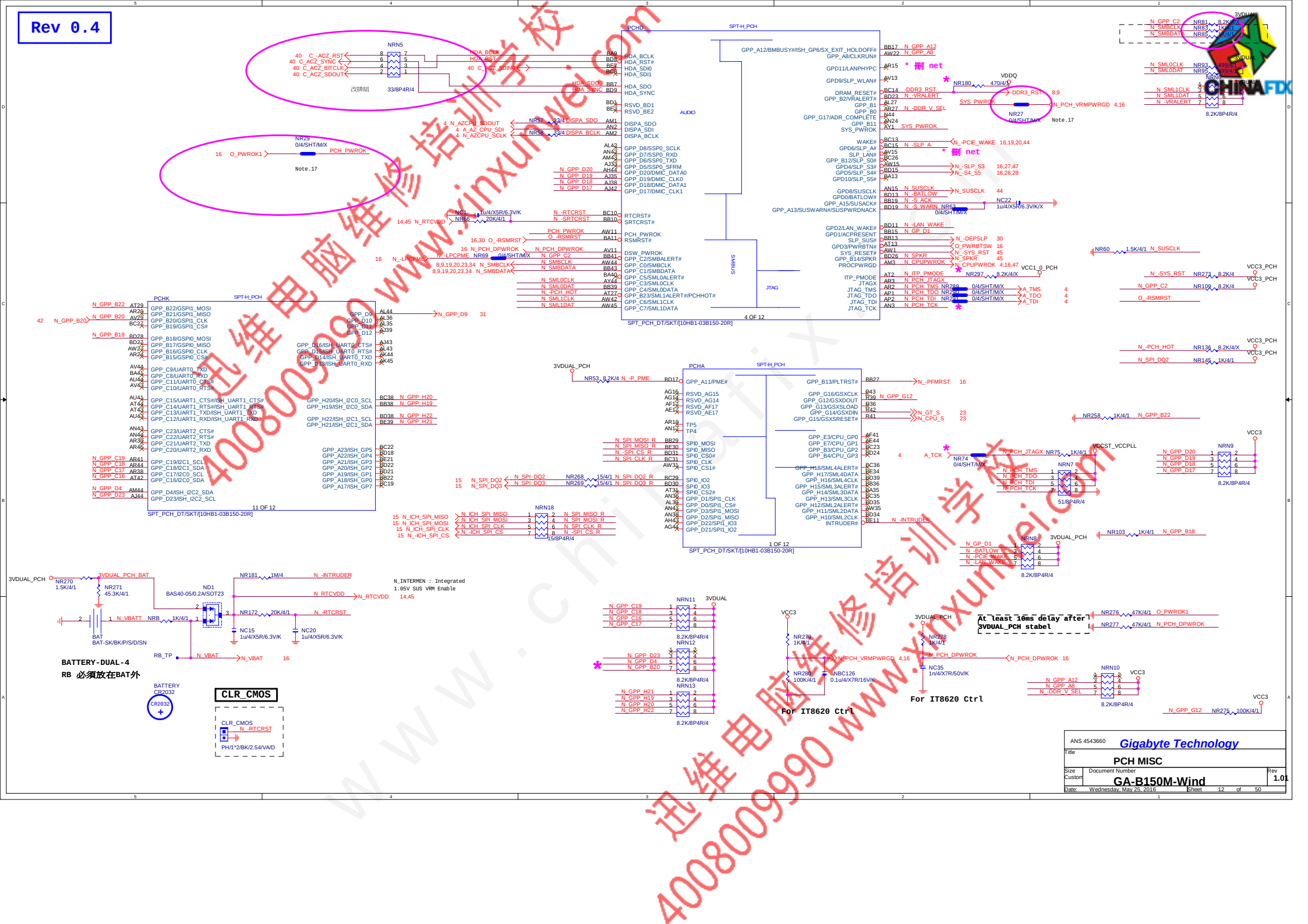
CLOCK 4/4/4//15

LOW COST ICH7 HEATSINK
BLACK HS
PCH_HS
PCH_HS/[12SP2-030005-51R/52R/53R]
同BGAHSINK-Z1704M-HD3 LOW COST

ANS 4543660 Gigabyte Technology
Title: PCH CLOCK BUFFER
Size: Custom | Document Number: GA-B150M-Wind | Rev: 1.01
Date: Wednesday, May 25, 2016 | Sheet 10 of 50


PCHB
SPT-H_PCH
DMI
USB 2.0
PCIe/USB3
PCIE-COMP:12/12
N/A
RTL8111GUS
IT8892
PCIEX1
PCIEX1
F_USB30_1
R_USB30_1
R_USB30_2
F_USB1
F_USB2
USB_LAN
B150
N/A
2 OF 12
SPT_PCH_DT/SKT/[10HB1-03B150-20R]
PCHF
LPC/eSPI
USB
SATA
6 OF 12
SATA 2/3
SATA 6/7
SATA 4/5
PCH tri-state this pin to signal to enter a lower power state
PCH drive pin low to signal an exit from DEVSLP state
4 layer USB3/USB2/SATA/PCH PCIe======4/4/4//15
6 layer USB3/USB2/SATA/PCH PCIe======4/5.5/4//15
ANS 4543660
Gigabyte Technology
PCH DMI,USB,PCIE
GA-B150M-Wind
Wednesday, May 25, 2016
1.01

Rev 0.4



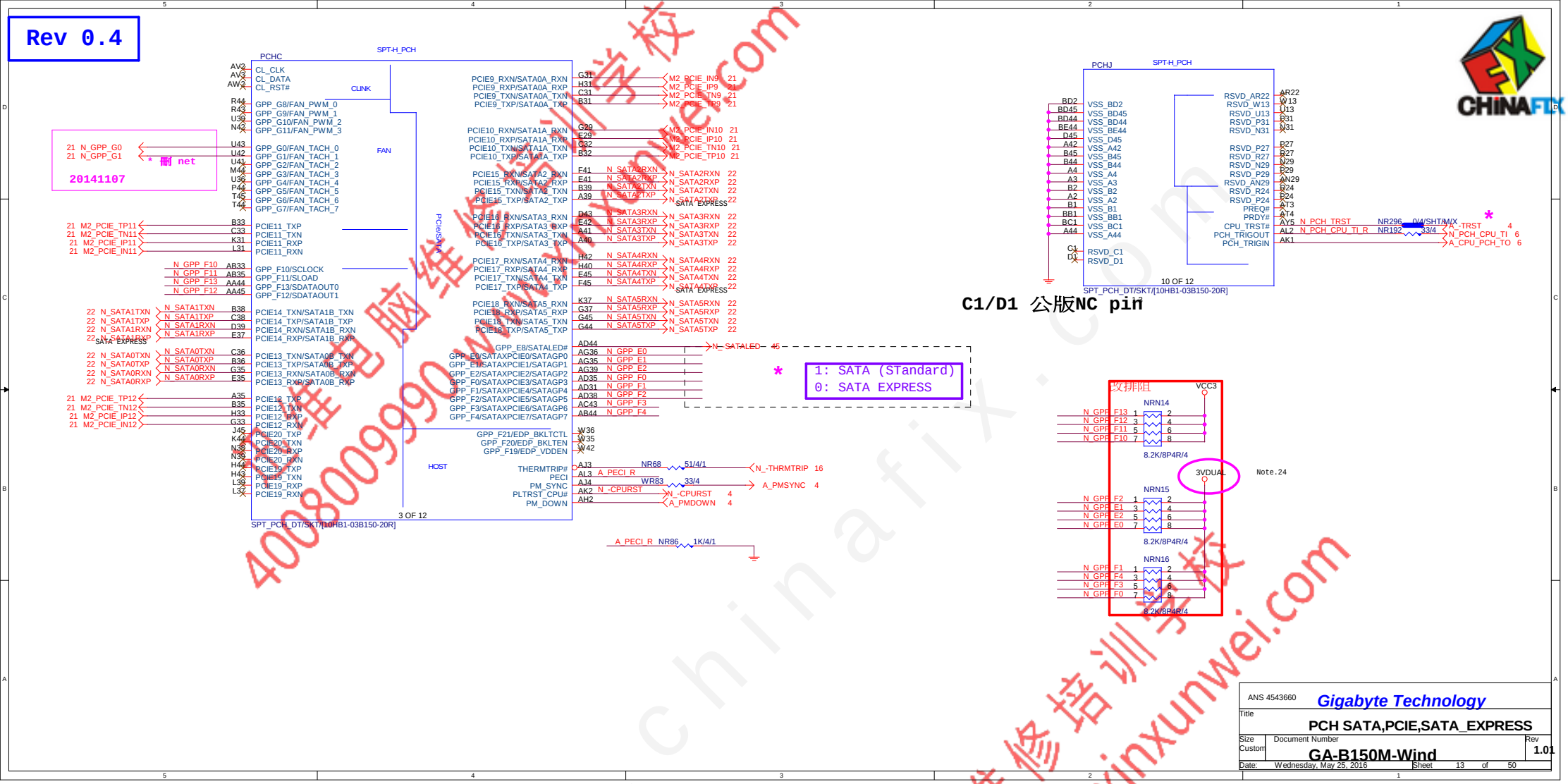
ANS 4543660 **Gigabyte Technology**

Title: **PCH MISC**

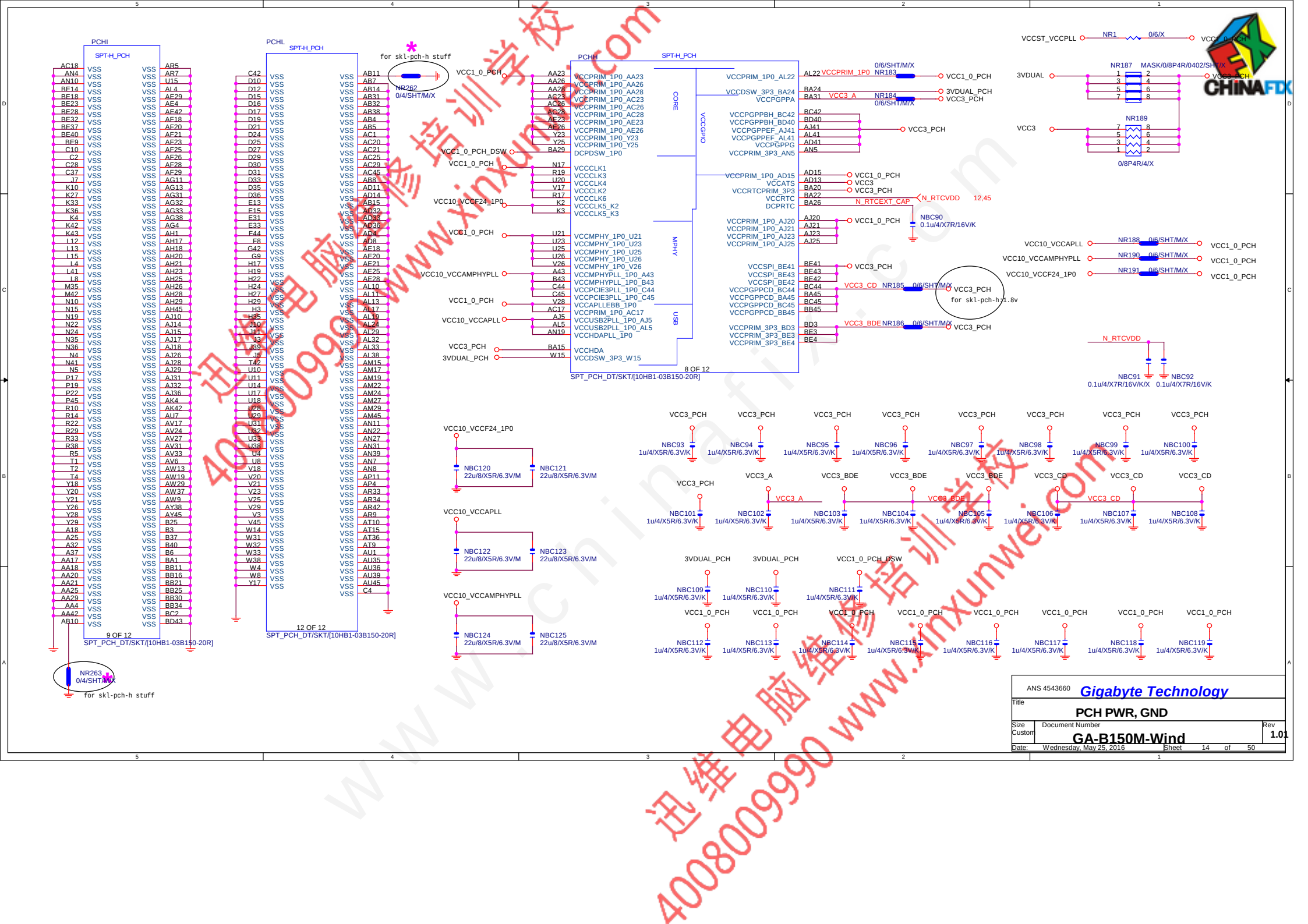
Size: Custom | Document Number: **GA-B150M-Wind** | Rev: **1.01**

Date: Wednesday, May 25, 2016 | Sheet 12 of 50

Rev 0.4



ANS 4543660	Gigabyte Technology		
Title	PCH SATA,PCIE,SATA_EXPRESS		
Size: Custom	Document Number: GA-B150M-Wind		Rev: 1.01
Date: Wednesday, May 25, 2016	Sheet 13 of 50		


PCHI
SPT-H_PCH
9 OF 12
SPT_PCH_DT/SKT/[10HB1-03B150-20R]
PCHL
SPT-H_PCH
12 OF 12
SPT_PCH_DT/SKT/[10HB1-03B150-20R]
for skl-pch-h stuff
NR262
0/4/SHT/M/X
NR263
0/4/SHT/M/X
for skl-pch-h stuff
PCHH
SPT-H_PCH
CORE
VCCGPIO
MPHY
USB
8 OF 12
SPT_PCH_DT/SKT/[10HB1-03B150-20R]
VCC1_0_PCH
VCC1_0_PCH_DSW
VCC10_VCCF24_1P0
VCC10_VCCAMPHYPLL
VCC10_VCCAPLL
VCC3_PCH
3VDUAL_PCH
VCCST_VCCPLL
NR1
0/6/X
3VDUAL
NR187
MASK/0/8P4R/0402/SHT/X
NR189
0/8P4R/4/X
VCC3
VCC10_VCCAPLL
VCC10_VCCAMPHYPLL
VCC10_VCCF24_1P0
NR188
NR190
NR191
0/6/SHT/M/X
NR183
NR184
NR185
NR186
VCC3_A
VCC3_CD
VCC3_BDE
for skl-pch-h 1.8v
N_RTCVDD
12,45
N_RTCEXT_CAP
NBC90
0.1u/4/X7R/16V/K
NBC91
0.1u/4/X7R/16V/K/X
NBC92
0.1u/4/X7R/16V/K
NBC93
NBC94
NBC95
NBC96
NBC97
NBC98
NBC99
NBC100
NBC101
NBC102
NBC103
NBC104
NBC105
NBC106
NBC107
NBC108
NBC109
NBC110
NBC111
NBC112
NBC113
NBC114
NBC115
NBC116
NBC117
NBC118
NBC119
1u/4/X5R/6.3V/K
NBC120
NBC121
NBC122
NBC123
NBC124
NBC125
22u/8/X5R/6.3V/M
ANS 4543660
Gigabyte Technology
Title
PCH PWR, GND
Size
Custom
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1.01
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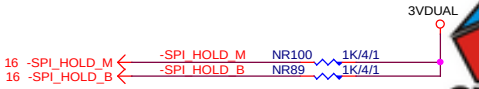
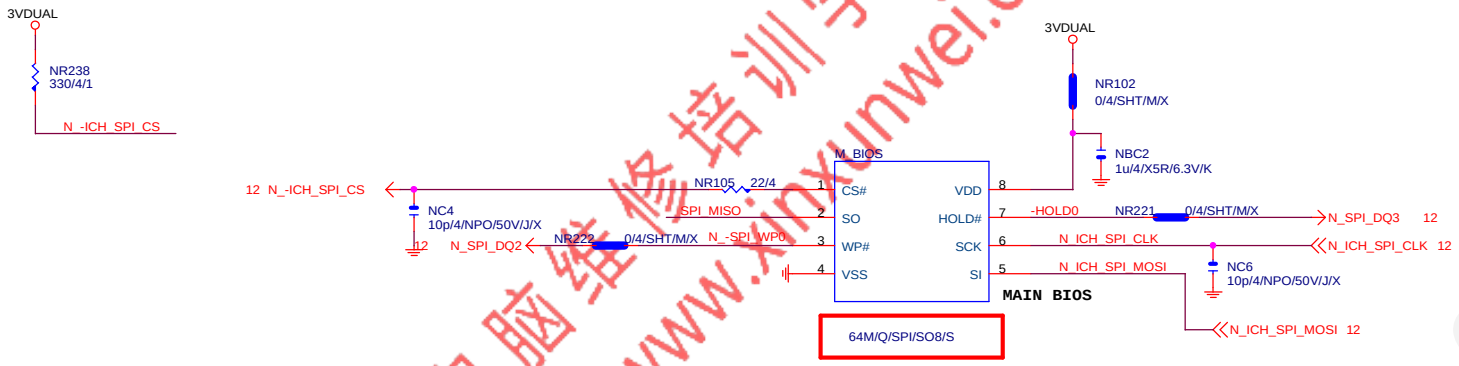
50

Rev 0.1

BIOS

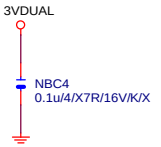
MOSI For DMI RX Termination Voltage



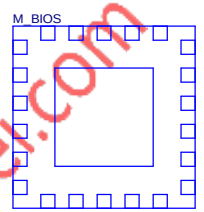


* (footprint 改 SOIC8-SPI-SOCKET)

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



1 means floating
0 means PD 1K

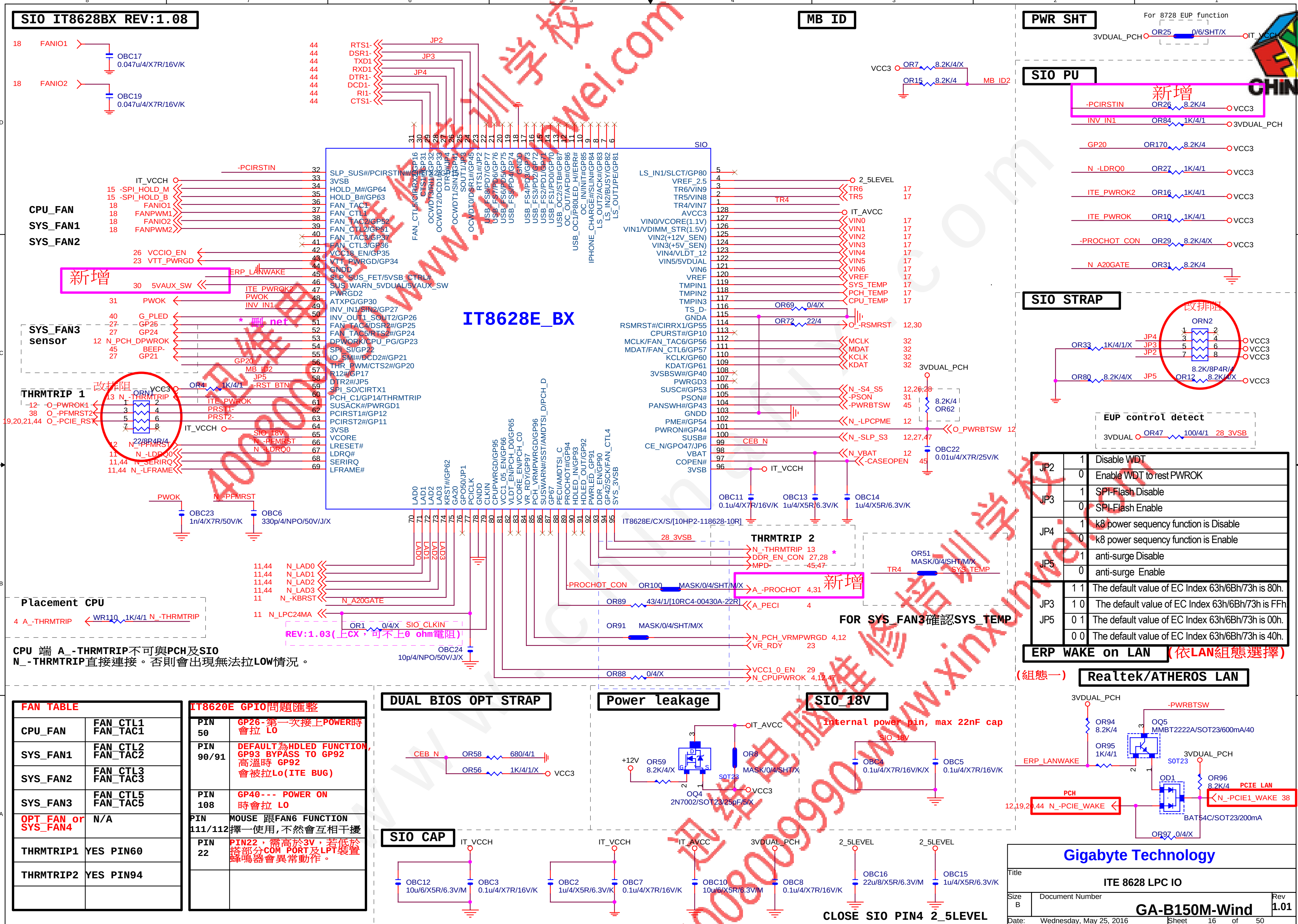


LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]/X

* 試產先上 , PVT 移除

BIOS_PH

Gigabyte Technology			
Title: BIOS			
Size: Custom	Document Number: GA-B150M-Wind		Rev: 1.01
Date: Wednesday, May 25, 2016		Sheet 15 of 50	



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

FAN TABLE

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

IT8620E GPIO問題匯整

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

Gigabyte Technology

Title: ITE 8628 LPC IO

Size: B Document Number: GA-B150M-Wind Rev: 1.01

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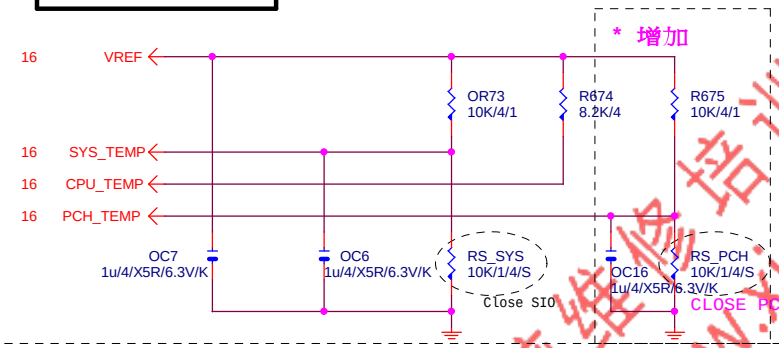
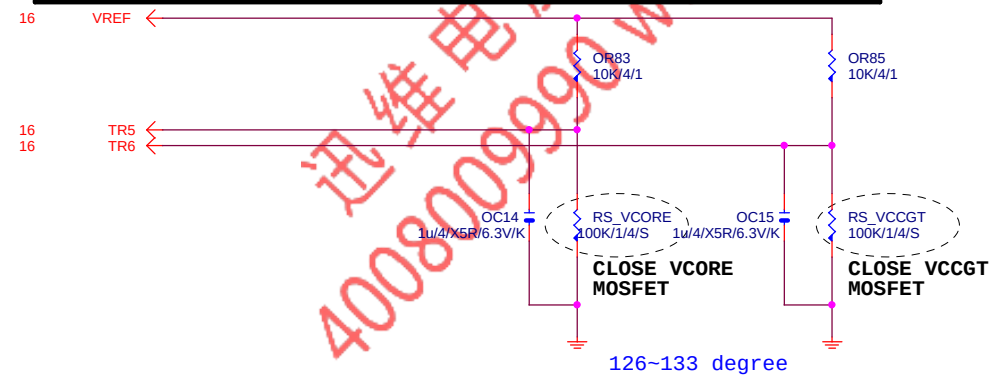
TEMP H/W MONITOR REV 1.04



RS_VCORE、RS_VCCGT CLOSE CPU VCORE & VCCGT MOSFET

-PROCHOT:有mos heartsink不用prochot function

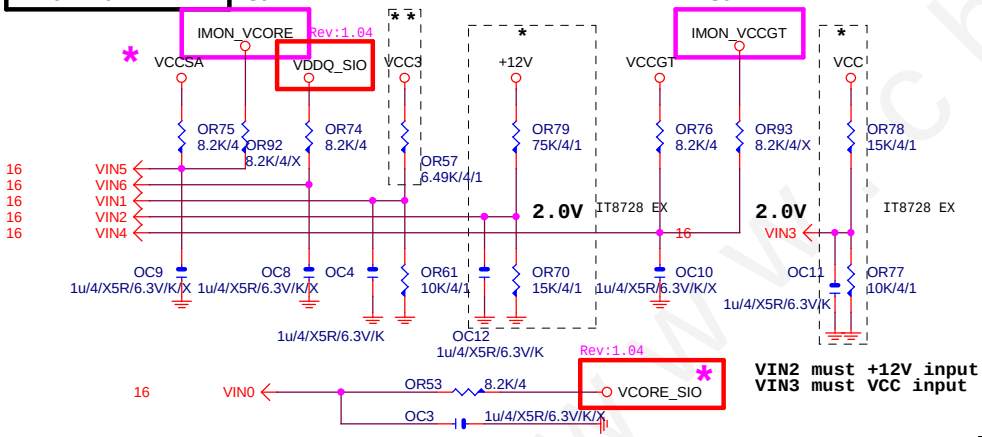


VOLTAGE-- H/W MONITOR

Connect to PWM

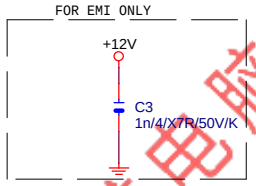
* IT8728 BX
** IT8728 CX

Connect to PWM



VIN2 must +12V input
VIN3 must VCC input

The division voltage of VIN2 & VIN3 must be around 2.9V



Gigabyte Technology		
Title: HWM,KB/MS, FAN CTRL		
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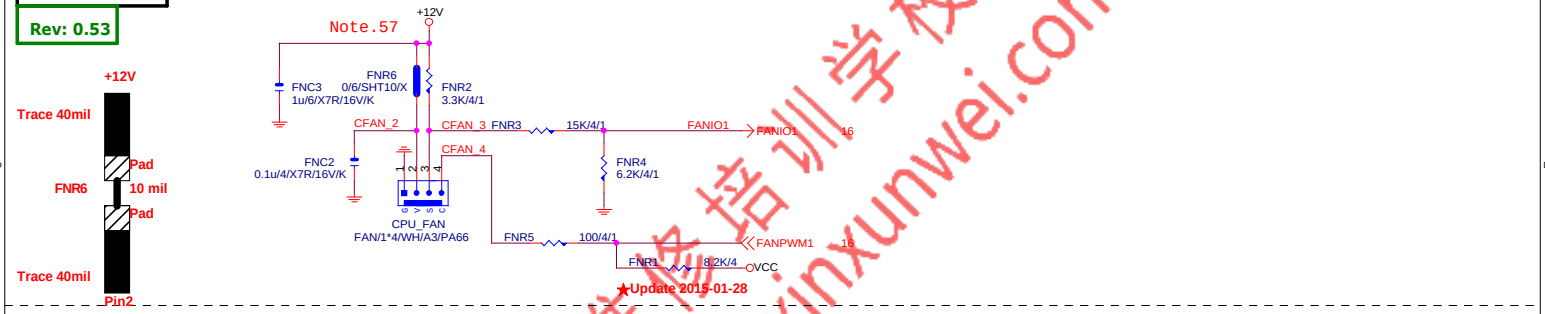
CPU SMART FAN

Rev: 0.53



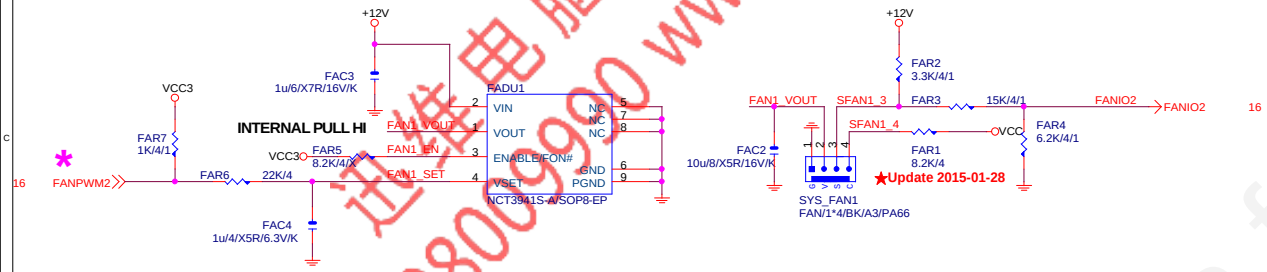
SYSTEM FAN1

A.

Linear SYS_FAN

Enable Function (NCT3941S)

Full Turn On Function (NCT3941S-A)



Gigabyte Technology		
Title: FAN CTRL		
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
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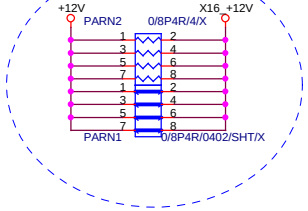
Rev 0.2

+12 protect short-wire test



PCIESLOT-164STH

PCIEX16 3GIO_*16

KEY

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

PA_EXP_RXP[0..15] PA_EXP_RXP[0..15] 4
PA_EXP_RXN[0..15] PA_EXP_RXN[0..15] 4
PA_EXP_TXP[0..15] PA_EXP_TXP[0..15] 4
PA_EXP_TXN[0..15] PA_EXP_TXN[0..15] 4

PA_EXP_TXP0	PAC5	0.22u/4/X5R/6.3V/K	PA_EXP_TXP0_C
PA_EXP_TXN0	PAC4	0.22u/4/X5R/6.3V/K	PA_EXP_TXN0_C
PA_EXP_TXP1	PAC6	0.22u/4/X5R/6.3V/K	PA_EXP_TXP1_C
PA_EXP_TXN1	PAC7	0.22u/4/X5R/6.3V/K	PA_EXP_TXN1_C
PA_EXP_TXP2	PAC8	0.22u/4/X5R/6.3V/K	PA_EXP_TXP2_C
PA_EXP_TXN2	PAC9	0.22u/4/X5R/6.3V/K	PA_EXP_TXN2_C
PA_EXP_TXP3	PAC10	0.22u/4/X5R/6.3V/K	PA_EXP_TXP3_C
PA_EXP_TXN3	PAC11	0.22u/4/X5R/6.3V/K	PA_EXP_TXN3_C
PA_EXP_TXP4	PAC12	0.22u/4/X5R/6.3V/K	PA_EXP_TXP4_C
PA_EXP_TXN4	PAC13	0.22u/4/X5R/6.3V/K	PA_EXP_TXN4_C
PA_EXP_TXP5	PAC14	0.22u/4/X5R/6.3V/K	PA_EXP_TXP5_C
PA_EXP_TXN5	PAC15	0.22u/4/X5R/6.3V/K	PA_EXP_TXN5_C
PA_EXP_TXP6	PAC16	0.22u/4/X5R/6.3V/K	PA_EXP_TXP6_C
PA_EXP_TXN6	PAC17	0.22u/4/X5R/6.3V/K	PA_EXP_TXN6_C
PA_EXP_TXP7	PAC18	0.22u/4/X5R/6.3V/K	PA_EXP_TXP7_C
PA_EXP_TXN7	PAC19	0.22u/4/X5R/6.3V/K	PA_EXP_TXN7_C
PA_EXP_TXP8	PAC21	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8_C
PA_EXP_TXN8	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXN8_C
PA_EXP_TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA_EXP_TXP9_C
PA_EXP_TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA_EXP_TXN9_C
PA_EXP_TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA_EXP_TXP10_C
PA_EXP_TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA_EXP_TXN10_C
PA_EXP_TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA_EXP_TXP11_C
PA_EXP_TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA_EXP_TXN11_C
PA_EXP_TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA_EXP_TXP12_C
PA_EXP_TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA_EXP_TXN12_C
PA_EXP_TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA_EXP_TXP13_C
PA_EXP_TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA_EXP_TXN13_C
PA_EXP_TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA_EXP_TXP14_C
PA_EXP_TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA_EXP_TXN14_C
PA_EXP_TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA_EXP_TXP15_C
PA_EXP_TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA_EXP_TXN15_C

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--> 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

Gigabyte Technology	
Title	PCI EXPRESS * 16
Size: Custom	Document Number: GA-B150M-Wind
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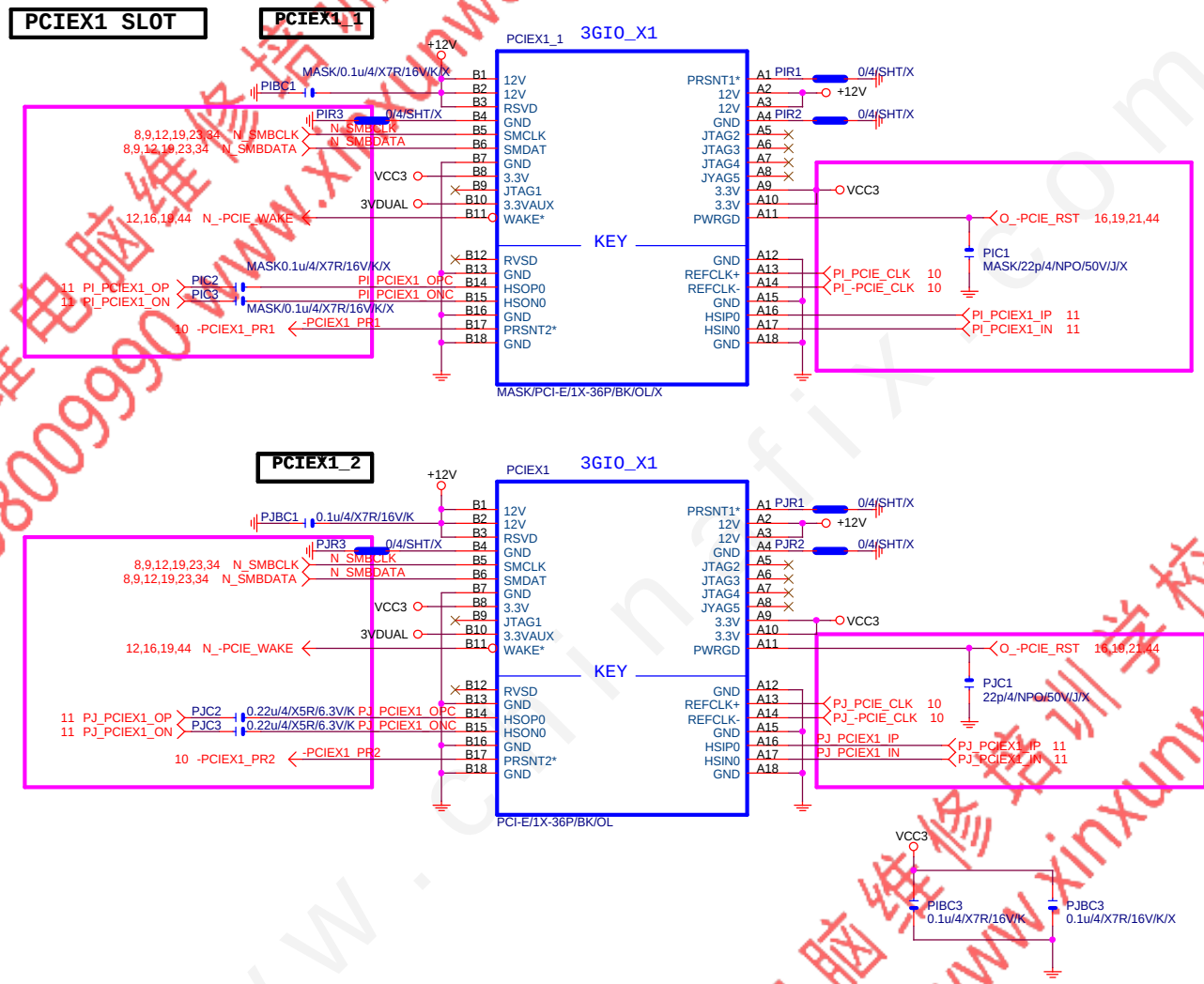
Rev 0.2



Gigabyte Technology

Title: PCIE_X1 1,2		
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
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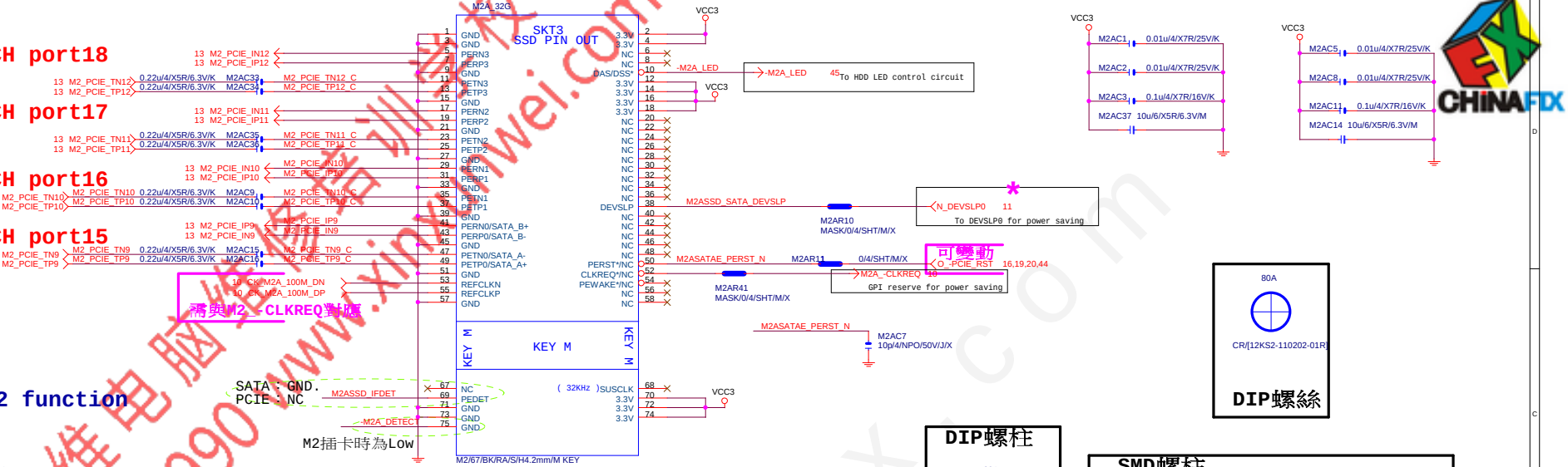
Rev 0.6

M.2 Lane4 from PCH port18

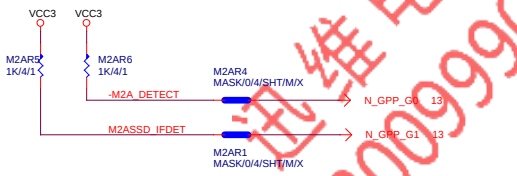
M.2 Lane3 from PCH port17

M.2 Lane2 from PCH port16

M.2 Lane2 from PCH port15

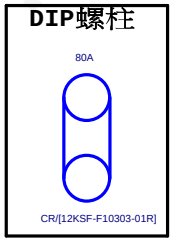


支援SATA and M.2 function

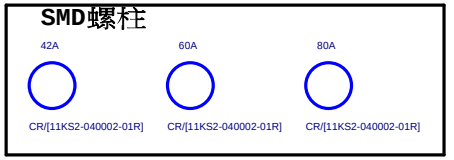


M.2 有插卡/沒插卡 GPP_G0	M.2插何種卡？ GPP_G1	SATA Express 插何種硬碟？ GPP_E0/E2/F1	IO15 (S0)	IO16 (S1)	IO17	IO18	IO19 (S0)	IP20 (S1)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA (M.2)	PCIE x1	PCIE x1	PCIE X1	PCIE x1	SATA
		SATA Express (Low)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	SATA Express	
	PCIE Mode (Hi)	SATA (Hi)	PCIE x4 (For M.2)				SATA	SATA
		SATA Express (Low)	PCIE x4 (For M.2)				SATA Express	
沒插卡 (Hi)	Don't Care (Hi)	SATA (Hi)	PCIE x4				SATA	SATA
		SATA Express (Low)	PCIE x4				SATA Express	

DIP螺柱



SMD螺柱



DIP螺絲

Gigabyte Technology

Title: M.2 X4

Size: Custom | Document Number: GA-B150M-Wind | Rev: 1.01

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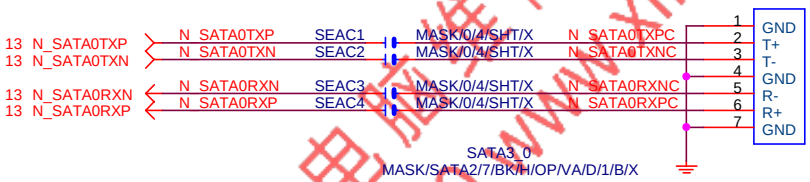
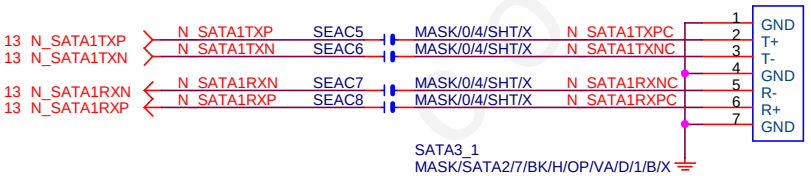
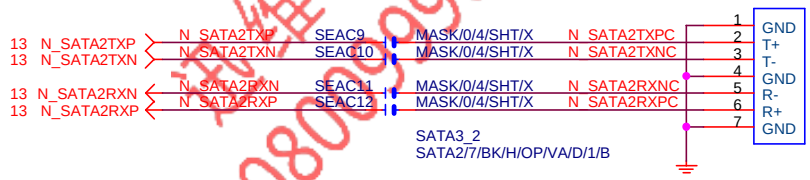
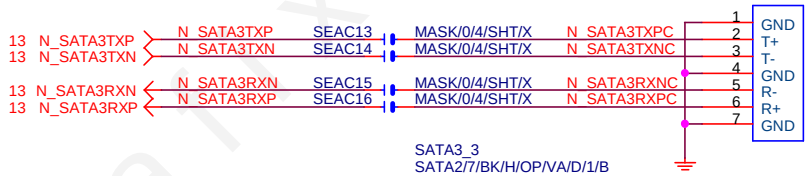
Rev 0.5a

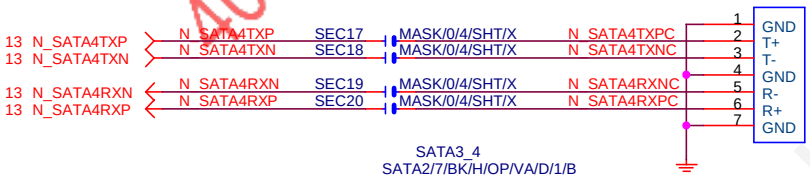
Note.40

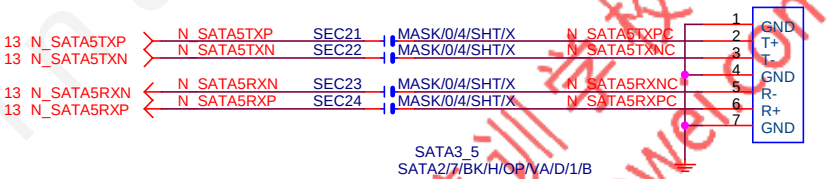












Gigabyte Technology

Title: SATA EXPRESS

Size: Custom | Document Number: GA-B150M-Wind | Rev: 1.01

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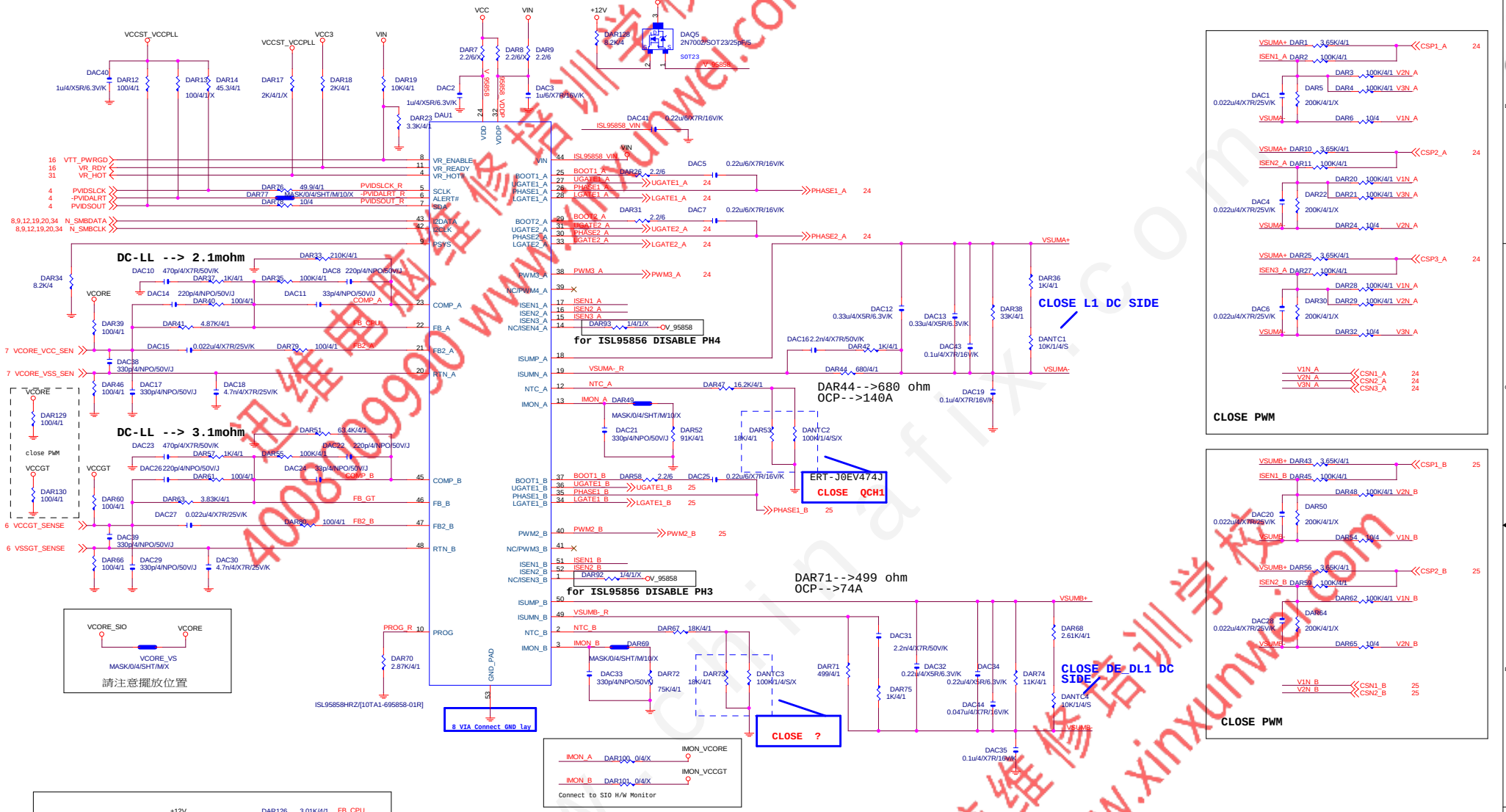
REV:0.91



Title	ISL95858_PWM
Size	Custom
Document Number	GA-B150M-Wind
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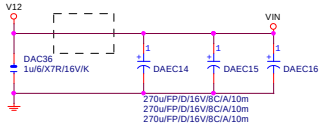
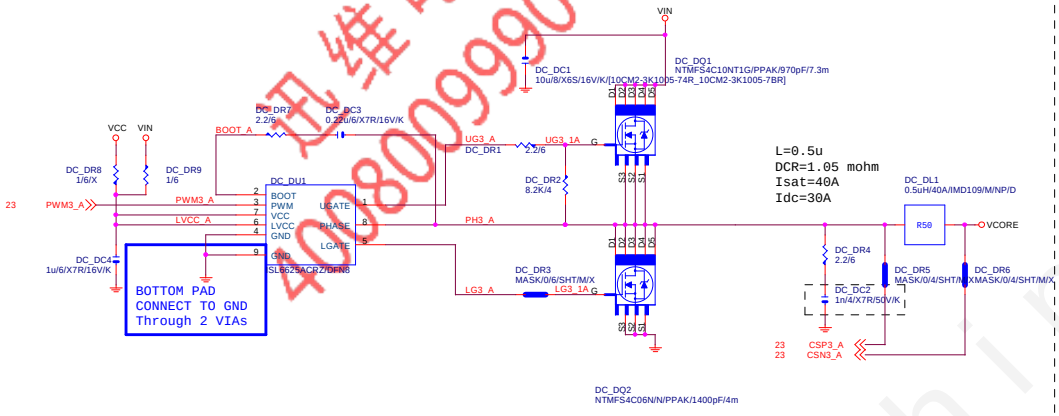
Date:	Wednesday, May 25, 2016
Sheet	23 of 50

REV:0.91

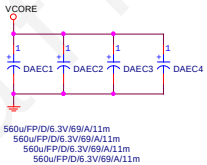
VCORE

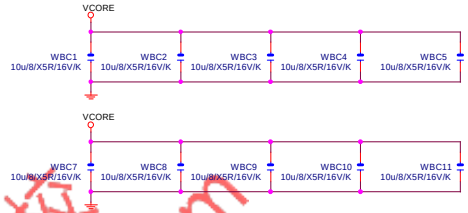
VIN CAP 270u*3PCS





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





GIGABYTE™

Title	ISL95858_MOS	
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
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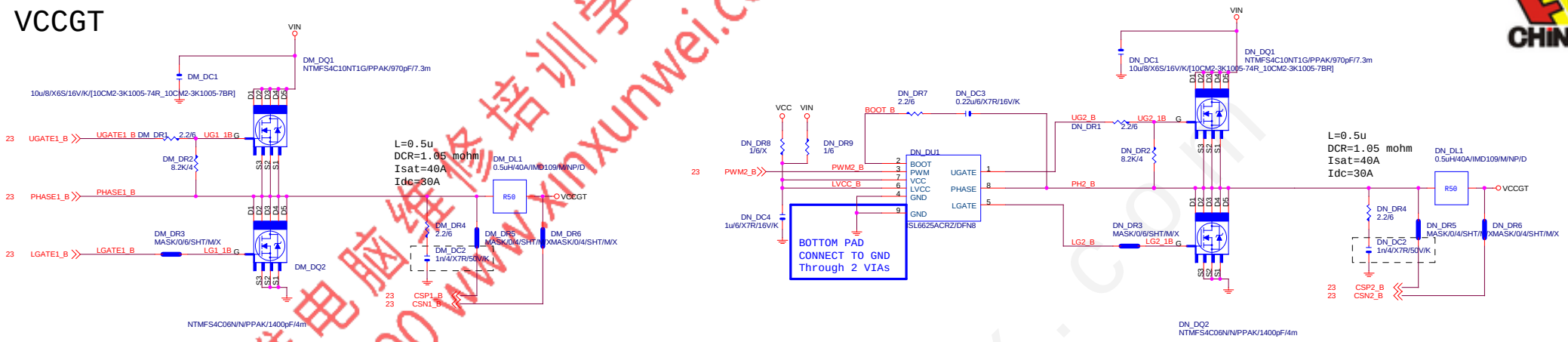
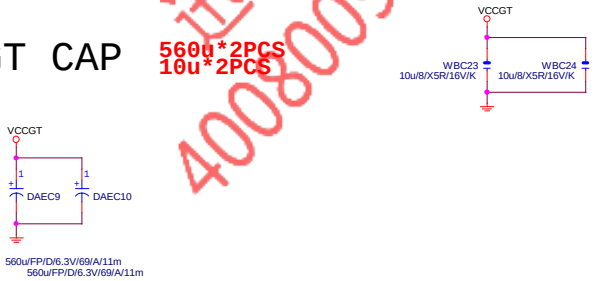
REV:0.91

VCCGT



VCCGT CAP

560u*2PCS
10u*2PCS



GIGABYTE		
Title: ISL95858_MOS		
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
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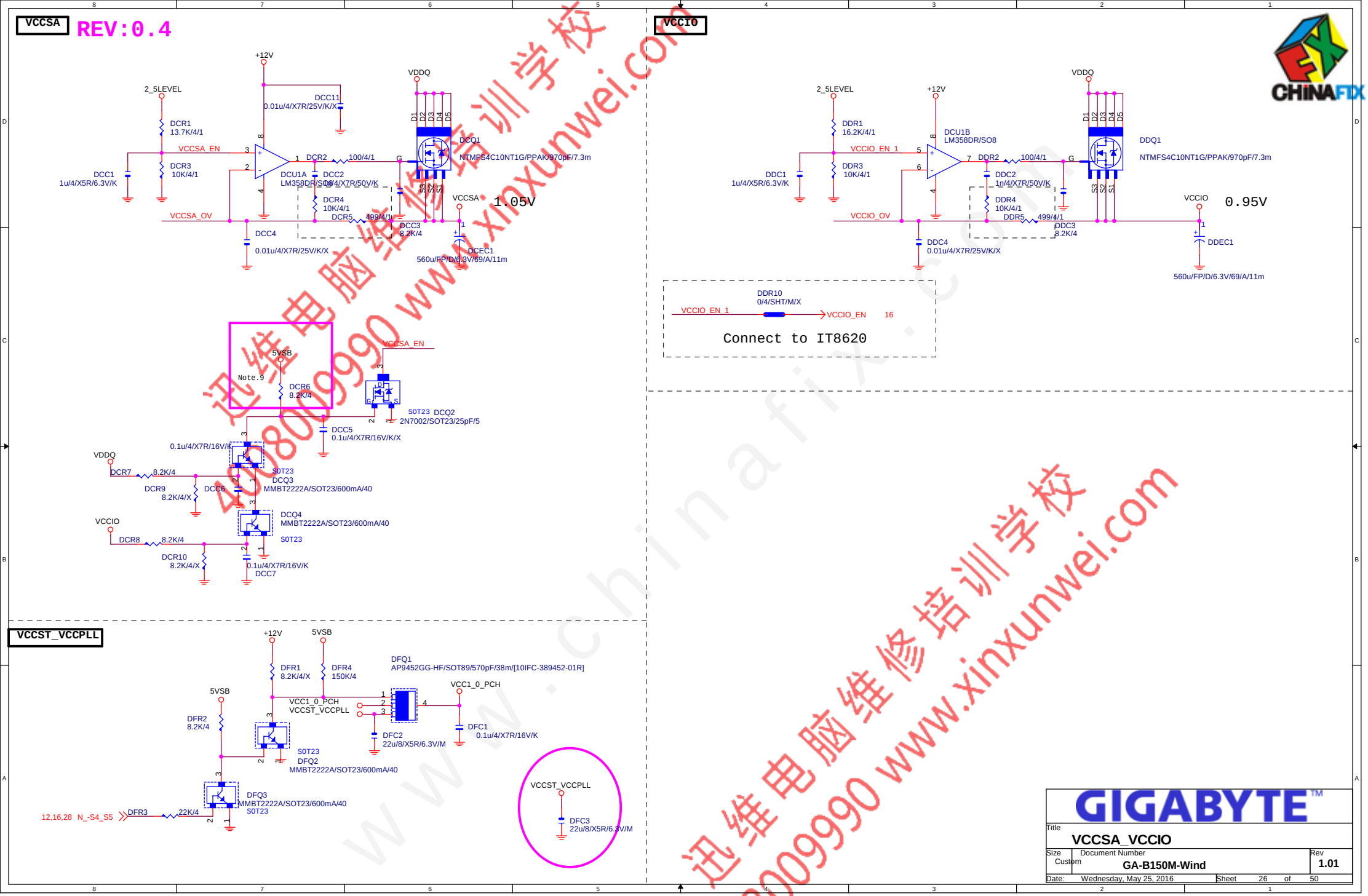
VCCSA
REV:0.4
+12V
2_5LEVEL
DCR1
13.7K/4/1
VCCSA_EN
DCR3
10K/4/1
DCC1
1u/4/X5R/6.3V/K
DCC11
0.01u/4/X7R/25V/K/X
DCU1A
LM358DR/SO8
DCR2
100/4/1
DCC2
1n/4/X7R/50V/K
DCR4
10K/4/1
DCR5
499/4/1
VCCSA_OV
DCC4
0.01u/4/X7R/25V/K/X
VDDQ
DCQ1
NTMFS4C10NT1G/PPAK/970pF/7.3m
DCC3
8.2K/4
VCCSA
1.05V
DCEC1
560u/FP/D/6.3V/69/A/11m
5VSB
Note.9
DCR6
8.2K/4
DCC5
0.1u/4/X7R/16V/K/X
S0T23
DCQ2
2N7002/SOT23/25pF/5
DCR7
8.2K/4
DCR9
8.2K/4/X
DCC6
DCQ3
MMBT2222A/SOT23/600mA/40
DCQ4
MMBT2222A/SOT23/600mA/40
VCCIO
DCR8
8.2K/4
DCR10
8.2K/4/X
DCC7
VCCIO
DDR1
16.2K/4/1
VCCIO_EN_1
DDR3
10K/4/1
DCU1B
LM358DR/SO8
DDQ1
NTMFS4C10NT1G/PPAK/970pF/7.3m
DDC1
1u/4/X5R/6.3V/K
DDR2
100/4/1
DDC2
1n/4/X7R/50V/K
DDR4
10K/4/1
DDR5
499/4/1
VCCIO_OV
DDC3
8.2K/4
DDC4
0.01u/4/X7R/25V/K/X
VCCIO
0.95V
DDEC1
560u/FP/D/6.3V/69/A/11m
DDR10
0/4/SHT/M/X
VCCIO_EN_1
VCCIO_EN
16
Connect to IT8620
VCCST_VCCPLL
+12V
5VSB
DFR1
8.2K/4/X
DFR4
150K/4
DFQ1
AP9452GG-HF/SOT89/570pF/38m/[10IFC-389452-01R]
VCC1_0_PCH
VCCST_VCCPLL
DFC2
22u/8/X5R/6.3V/M
DFC1
0.1u/4/X7R/16V/K
DFR2
8.2K/4
S0T23
DFQ2
MMBT2222A/SOT23/600mA/40
DFQ3
MMBT2222A/SOT23/600mA/40
12,16,28 N_-S4_S5
DFR3
22K/4
VCCST_VCCPLL
DFC3
22u/8/X5R/6.3V/M
GIGABYTE
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VCCSA_VCCIO
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DDR4

5VDUAL
MAR2 8.2K/4
DDR_EN_CON
上件

MA_DR38.MA_DC15

VPP_25V使用8120.8068A.RT8237時上件

VDDQ_SIO VDDQ
DDR_VS MASK/0/4/SHT/M/X

5VDUAL MA_DR8 2.2/6 DRV_DDR
MA_DC10 1u/6/X7R/16V/K MA_DR37 100K/4/1 VDDQ_GD
VPP_25V 5VDUAL
MA_DR40 8.2K/4/X MA_DR41 8.2K/4
28 VPP25V_GD
16,28 DDR_EN_CON
MA_DR38 10/4
DDR_EN
MA_DR39 0/4/X
MA_DR15 182K/4/1
MA_DR19 470K/4/1/X
MA_RF
MA_DR45
VDDQ_GD 470K/4/1
MA_DC15 0.1u/4/X7R/16V/K

MAU2 RT8237/[10TA1-008237-01R]
EN PGOOD VCC BOOT UGATE PHASE FB VO GND LGATE

MA_DC9 0.1u/6/X7R/25V/K
MA_UGATE
MA_PHASE
MA_LGATE

FS=290K
OCP=30A

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

5VDUAL
MA_L2 47/4030/15A/S
BEAD
MA_DC6 0.1u/4/X7R/16V/K Close Choke
MA_VIN
MA_DC7 1u/6/X7R/16V/K Close MOS
MAEC1 560u/FP/D/6.3V/69/A/11m/[11CO2-695600-09R]

DDR VIN CAP
560u*2PCS

MA_DQ1 NTMFS4C06N/N/PPAK/1400pF/4m/[10IF9-040406-10R]
MA_UGATE MA_DR1 2.2/6
MA_DR2 8.2K/4
MA_PHASE
MA_DQ2 NTMFS4C06N/N/PPAK/1400pF/4m/[10IF9-040406-10R]
MA_LGATE MA_DR9 2.2/6 MA_LG
MA_DR5 2.2/6
MA_DC5 1n/4/X7R/50V/K

MA_L1 1uH/35A/IMD109/M/D
R50
10*10

1H1L規格移除

VDDQ
SUPPORT DDR4 1.2V
25A MAX
L=0.5u
DCR=1.05 mohm
Isat=40A
Idc=30A
MAC60 22u/8/X5R/6.3V/M/X
請放置CHOKE一出來位置.先預留.
請自行確認ripple後再決定是否上件

MA_DR13 2K/4/1
MA_DC14 22p/4/NPO/50V/J/X
RS
RO MA_DR12 2.8K/4/1
Remote sense請從最重的負載端點拉回

DDR_ADJ
16 GP25 MA_DR46 9.1K/4/1 1.35V
16 GP24 MA_DR21 26.1K/4/1 1.25V
16 GP21 MA_DR22 6.8K/4/1 1.4V

CHOKE與CAP料號可變

PWR SEQ
CLOSE TO DDR POWER PLANE

(N/A)
DDR_EN
5VDUAL
MAR108 22K/4/X
MAQ6 2N7002/SOT23/25pF/5/X SOT23
VPP_25V
MAR9 10K/4/1/X
MAQ5 SOT23 MMBT2222A/SOT23/600mA/40/X
MAR107 5.11K/4/1/X
MAC3 0.1u/4/X7R/16V/K/X
For power sequence require

DDR_EN
5VDUAL
MAR1 8.2K/4/X
MAQ10 2N7002/SOT23/25pF/5/X SOT23
12,16,47 N_-SLP_S3
MAQ11 2N7002/SOT23/25pF/5/X SOT23
16,28 DDR_EN_CON
Connect to IT8620
MAR105 100K/4/1/X
MAC9 1u/6/X7R/16V/K/X

VPP_25V使用8120時上件

MAU1上RT9045時上件(不可MASK)
(N/A)
5VSB
MA_VTT_REF
MAR7 8.2K/4/X
MAQ2 2N7002/SOT23/25pF/5/X SOT23
MAQ3 SOT23 2N7002/SOT23/25pF/5/X
MAR6 8.2K/4/X
MAQ1 2N7002/SOT23/25pF/5/X SOT23
MAQ4 MMBT2222A/SOT23/600mA/40/X SOT23
MAR8 8.2K/4/X
4 DDR_VTT_CTL

DDRVTT

VDDQ
NCT3103S/SOP8/2A/[10GL2-208103-01R]
MAC2 1u/4/X5R/6.3V/K
MAR5 1K/4/1
MAU1
VIN VREF2 ENABLE VCNTL VREF1 VOUT GND BOOT_SEL
DDRVTT_EN
DDRVTT_BOOT
MAC1 0.01u/4/X7R/25V/K
MAR4 1K/4/1
1.1A MAX
DDRVTT
5VDUAL
MAC7 10u/6/X5R/6.3V/M

DDR_VTT_CTL MAR110 0/4 DDRVTT_EN
N_-SLP_S3 MAR111 0/4 DDRVTT_BOOT
MAU1上NCT3103S時上件(不可以改short pad)

DDR CAP 560u*4PCS 22u*2PCS
VDDQ
MAEC3 560u/FP/D/6.3V/69/A/11m
MAEC4 560u/FP/D/6.3V/69/A/11m
* 大電容 x4
WBC49 10u/8/X5R/16V/K

DDRVTT CAP
* 大電容 x0
DDRVTT
MAC4 10u/8/X5R/16V/K

GIGABYTE™

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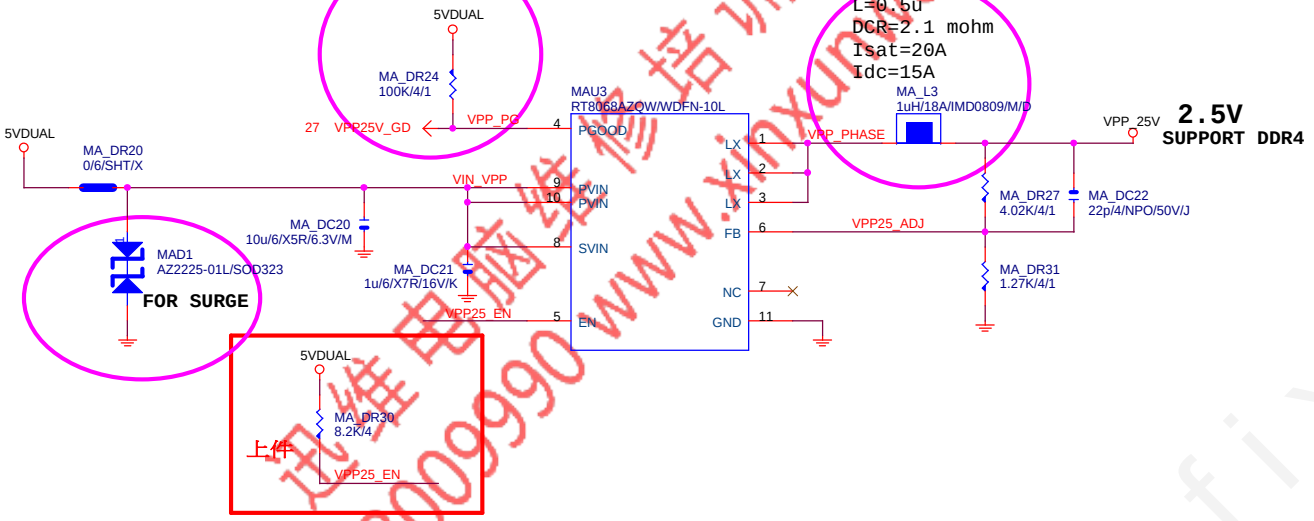
VPP_25V

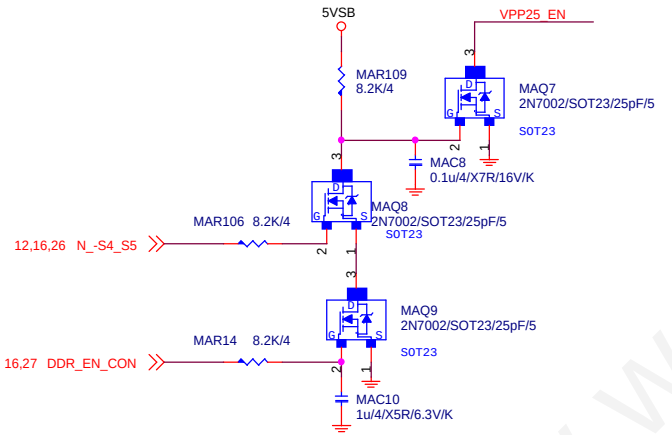
VPP25V_GD不能使用會亂打

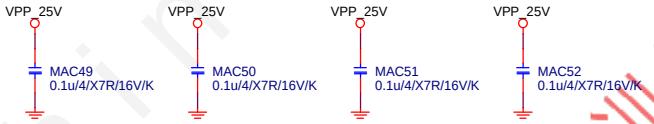
CHOKE與CAP料號可變



PWR SEQ

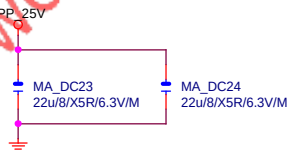
* 刪 MA_DR32





VPP CAP 22u*1PCS

* 大電容 x0



GIGABYTE™

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CHOKE與CAP料號可變

5VDUAL
+12V
NPR22 0/8/X
NPD1 B140/SMA/1A
NPD2 B320B/SMB/3A
Note.61
NPL1 47/4030/15A/S
BEAD
P1V0_VIN_D
P1V0_VIN
NPC1 0.1u/4/X7R/16V/K
Close Choke
NPC3 1u/6/X7R/16V/K
Close MOS
NPEC1 100u/OS/D/16V/69/A/35m
NPQ1
NTMFS4C10NT1G/PPAK/970pF/7.3m
L=0.5u
DCR=2.1 mohm
Isat=20A
Idc=15A
NPL2 1uH/18A/IMD0809/M/D
VCC1_0_PCH
5VDUAL NPR1 2.2/6
DRV_PCH
NPC2 0.1u/6/X7R/25V/K
NPC4 1u/6/X7R/16V/K
NPR19 100K/4/1
PCH_1V0_GD
UGATE_PCH NPR2 2.2/6
NPR4 8.2K/4
P1V0_PCH_EN
PHASE_PCH
LGATE_PCH
NPQ2
NTMFS4C10NT1G/PPAK/970pF/7.3m
NPR6 2.2/6
NPC7 1n/4/X7R/50V/K
NPC8 22p/4/NPO/50V/J/X
RS
NPR8 2K/4/1
NPEC2 560u/FP/D/6.3V/69/A/11m
NPU1 RT8237/[10TA1-608237-01R]
PCH_RF
NPR12 280K/4/1
NPR20 470K/4/1/X
NPR21 470K/4/1
PCH_1V0_GD
PIN7-->20mil
PIN1-->6mil
PIN2-->6mil
PIN5-->6mil
PIN3-->6mil
FS=290K
OCP=19A
P1V0_PCH_ADJ
Remote sense請從最重的負載端點拉回
RO NPR13 4.12K/4/1
0.704*(1+RS/RO) = Vout

PWR SEQ

P1V0_PCH_EN NPR14 0/4/X VCC1_0_EN 16
5VSB
NPR15 8.2K/4/X
NPR5 MASK/0/4/SHT/M/X
NPQ4 2N7002/SOT23/25pF/5/X
SOT23
3VDUAL
NPR16 8.2K/4
NPQ3 MMBT2222A/SOT23/600mA/40/X
SOT23
NPR17 8.2K/4/X
NPC9 0.1u/4/X7R/16V/K

VCC1_0_PCH
NPC10 22u/8/X5R/6.3V/M
請放置CHOKE一出來的地方

GIGABYTE

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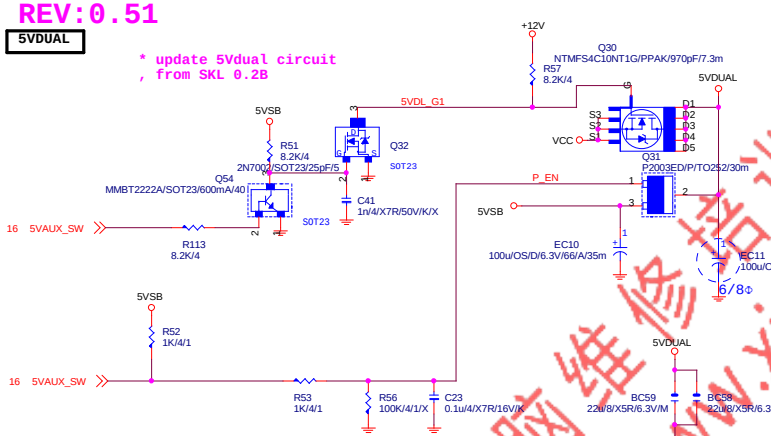
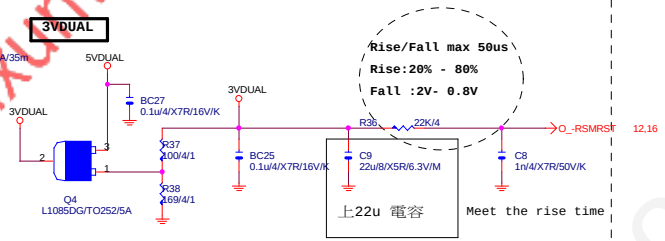
5VDUAL

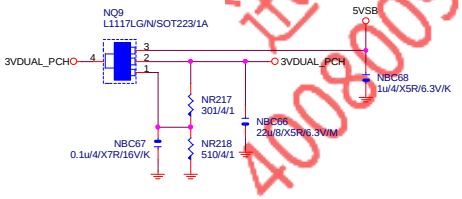
* update 5Vdual circuit
, from SKL 0.2B

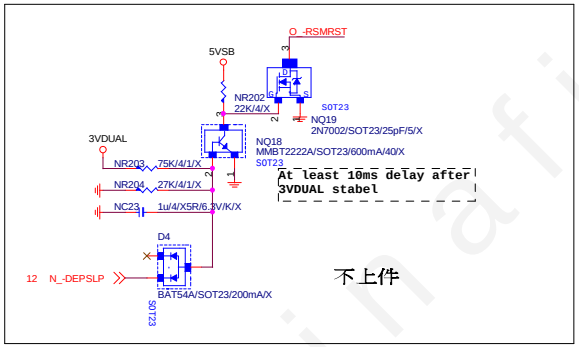


3VDUAL



3VDUAL_PCH





Gigabyte Technology		
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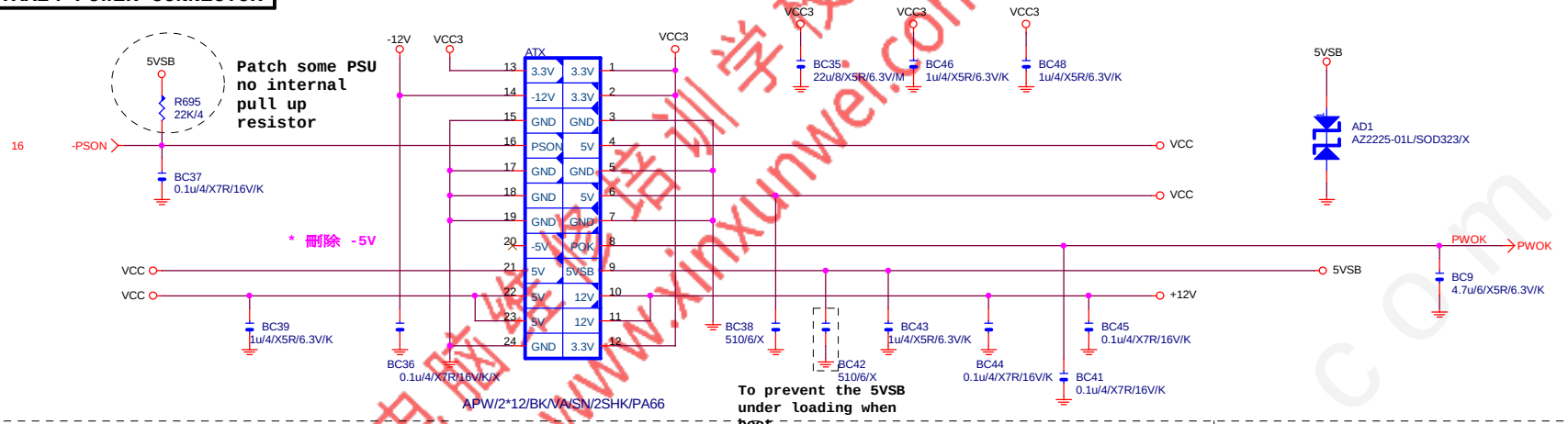
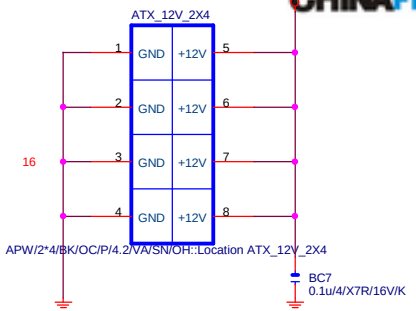
ATXX24 POWER CONNECTOR

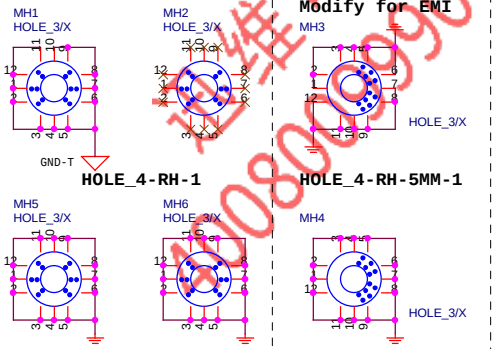


ATXX4 POWER CONNECTOR

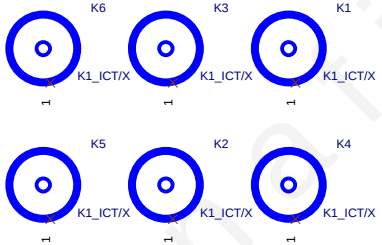


螺絲孔

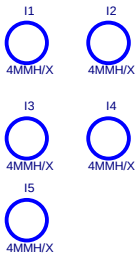
MH1:GND-T
FOR EMI
TEST驗證



固定孔/光學點

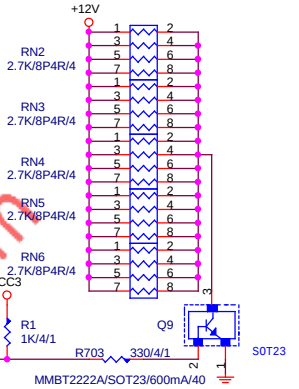


To prevent the 5VSB under loading when boot



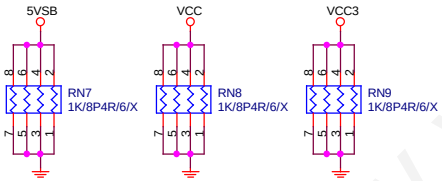
+12V DUMMY LOAD

To fix 12V light load abnromal issue



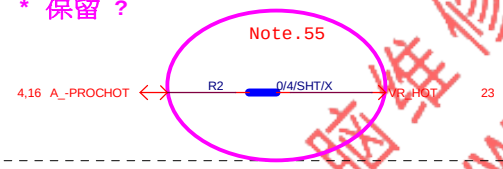
【技術通報R&D技術通報153】

DUMMY LOAD

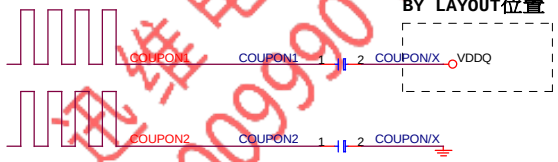


-PROHOT

* 保留 ?



COUPON



Gigabyte Technology		
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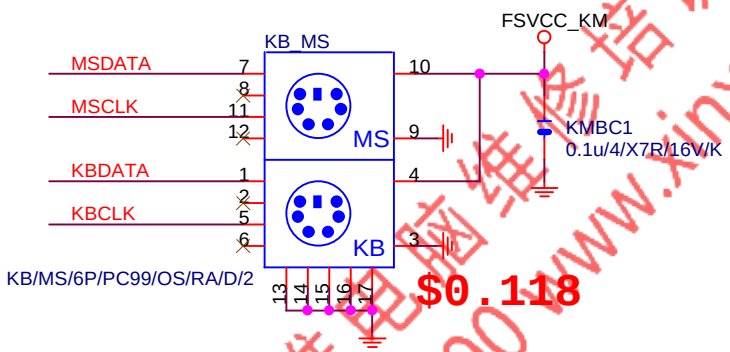
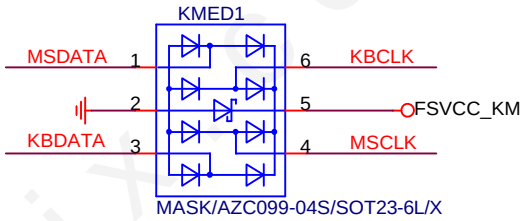
KB_MS_USB

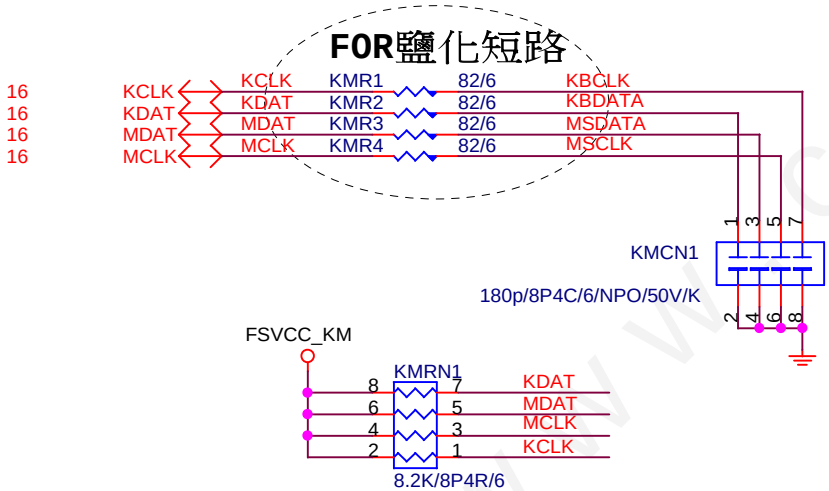
Rev: 0.51



ESD



KB_MS_USB DAMPING/PU



KB_MS_USB PWR

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	KB_MS_USB		
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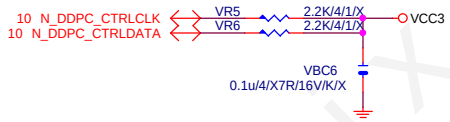
DVI

Rev: 0.51

DVI PU

DVI CONN



ESD

Gigabyte Technology

Title: DVI

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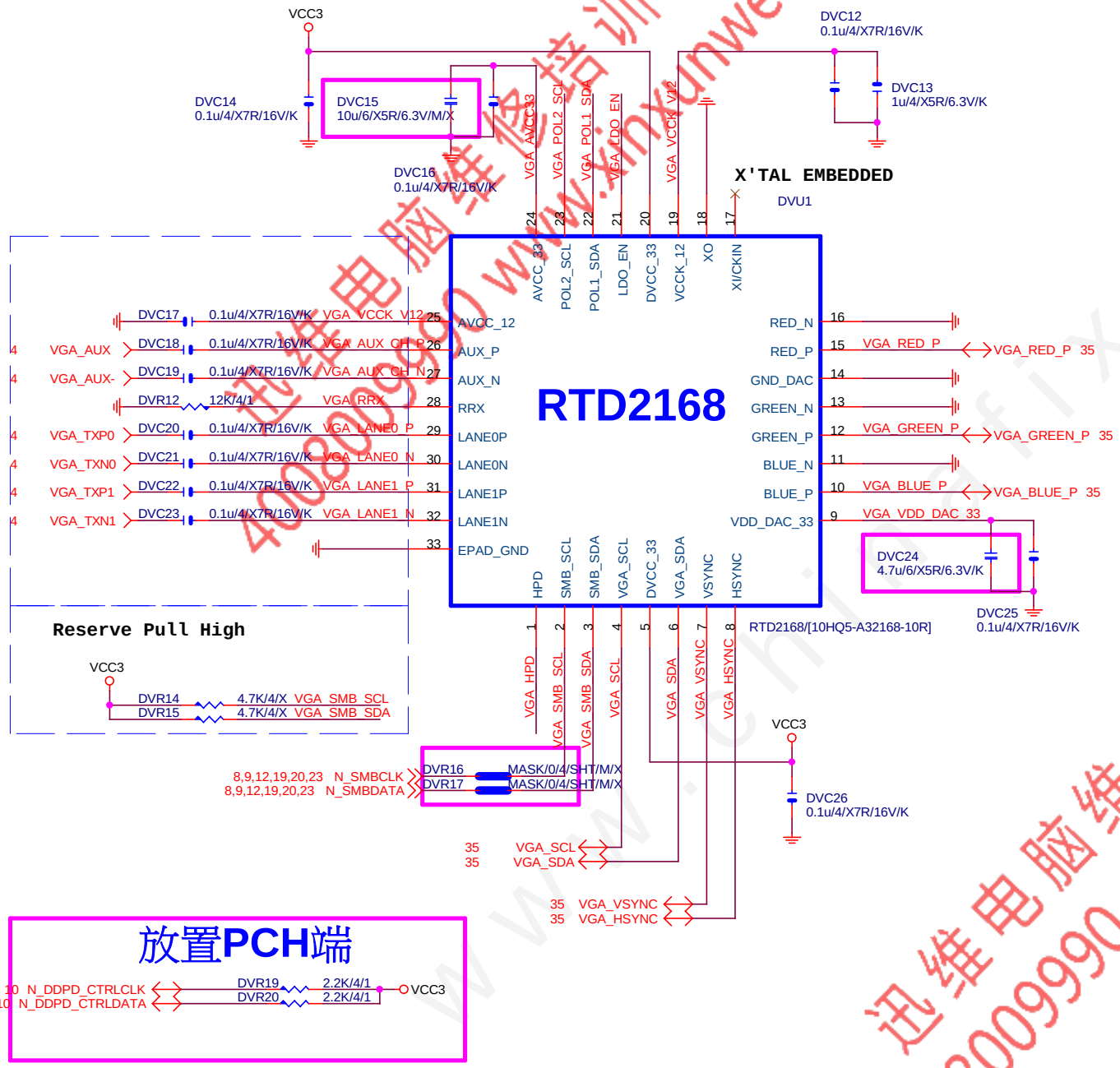
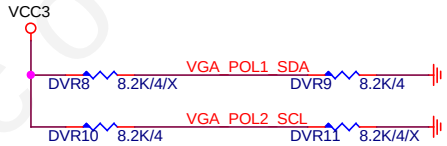
RTD2168 | R1.03



放置PCH端

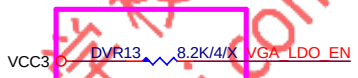
POWER

Power on latch



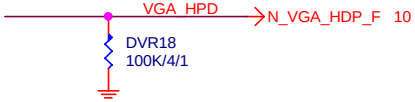
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	**ROM ONLY MODE**	EEPROM MODE

Embedded LDO



LDO_EN(PIN21)	
0	1
VCCK_V12 from External 1.2V	VCCK_V12 from Embedded LDO

DP HPD



Gigabyte Technology

Title: **DP-VGA RTD2168**

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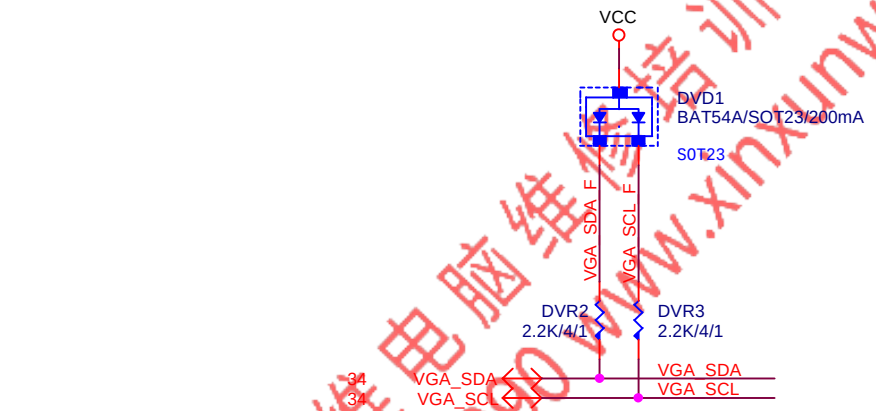
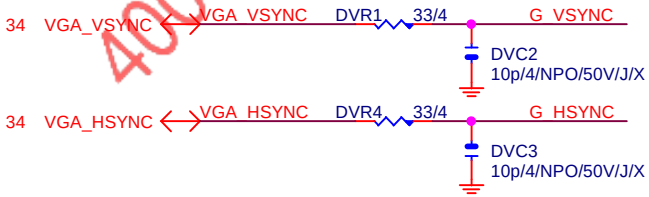
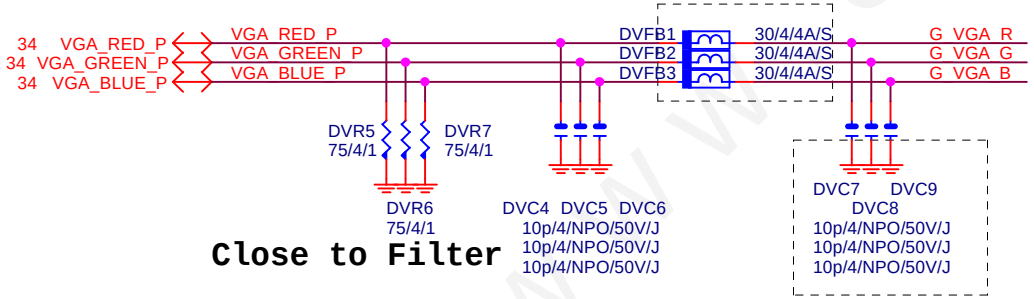
VGA SIGNAL R1.03



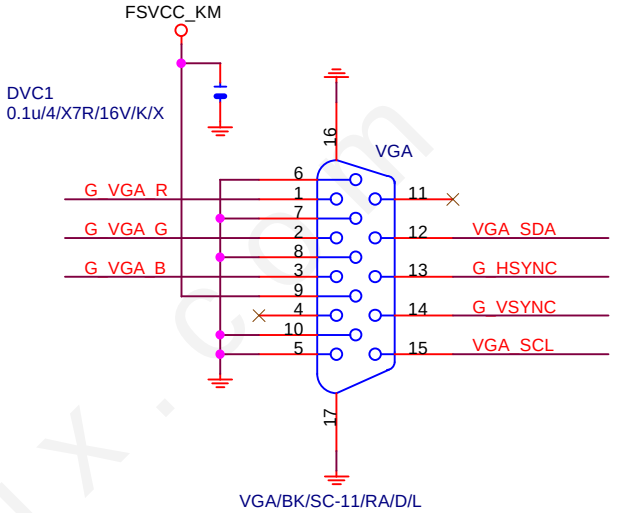




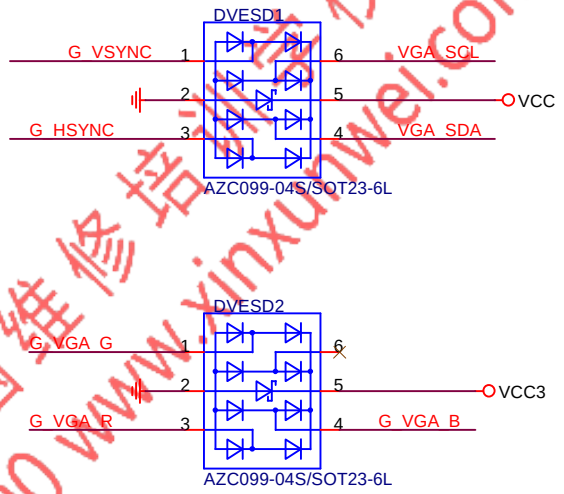
Close to Filter

FOR EMI

VGA CONN. 非架高型VGA(BLACK)



VGA ESD



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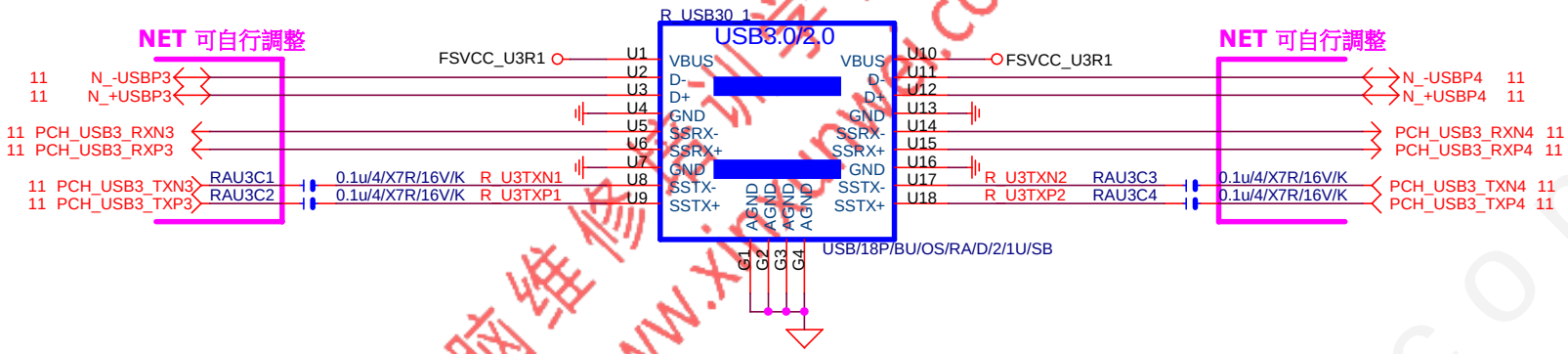
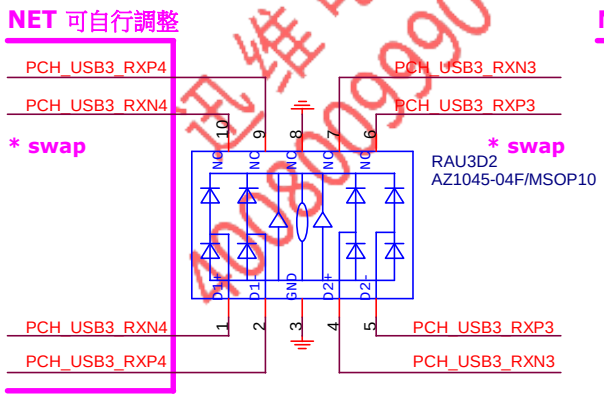
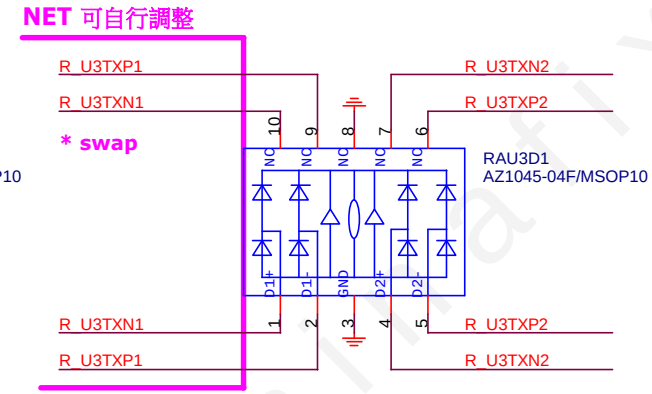
Rev: 0.53

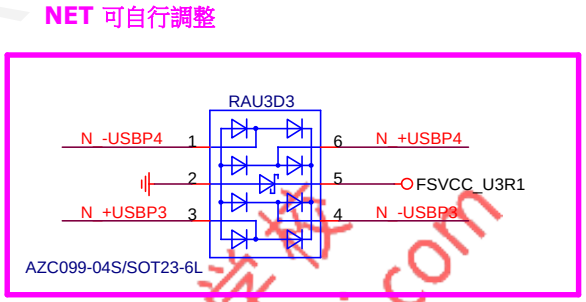
ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可



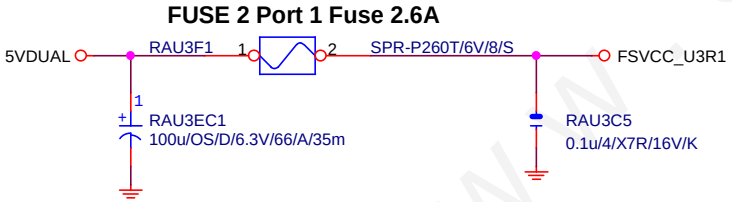
ESD

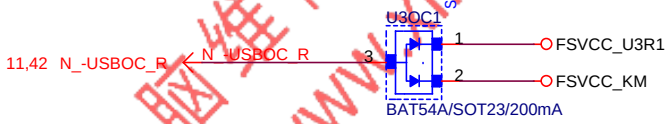






FUSE





Gigabyte Technology

Title: R_USB30,USB_OC

Size: Custom | Document Number: GA-B150M-Wind | Rev: 1.01

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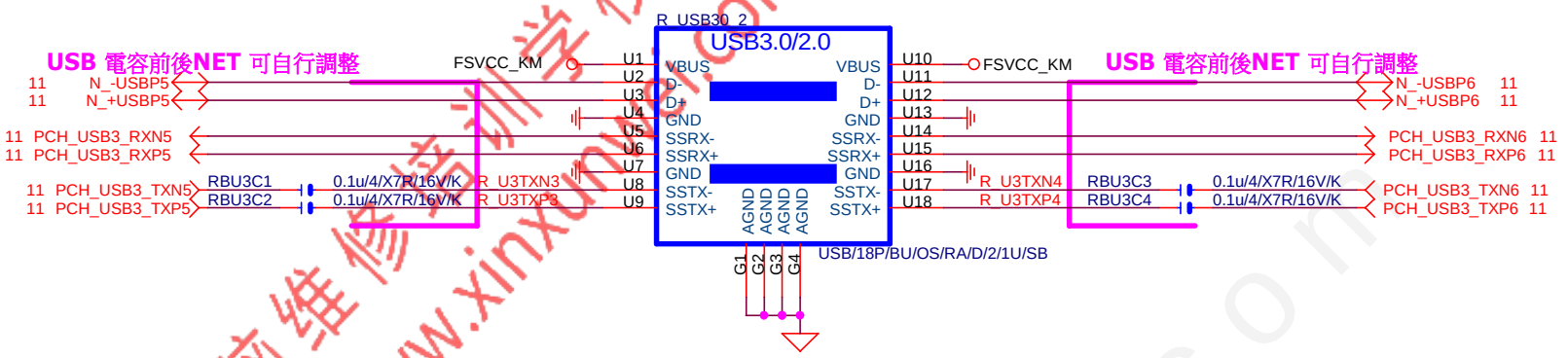
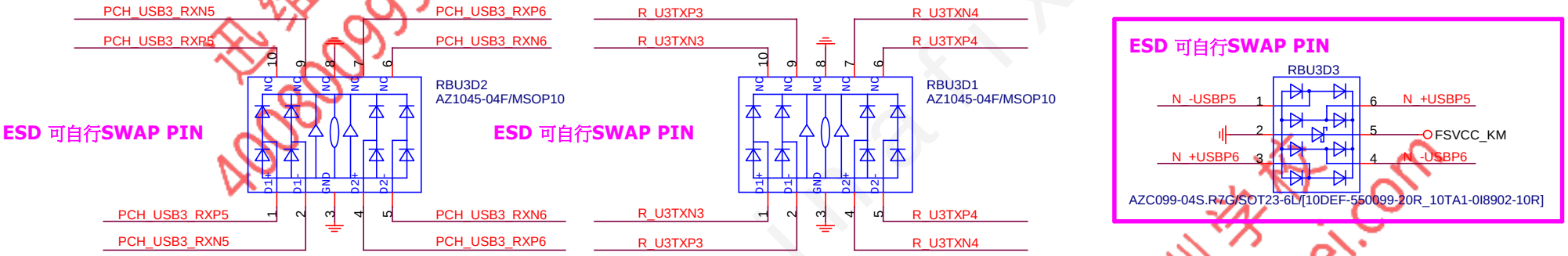
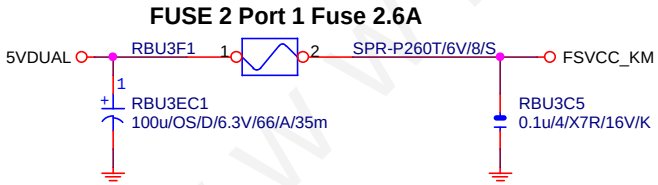
Rev: 0.53



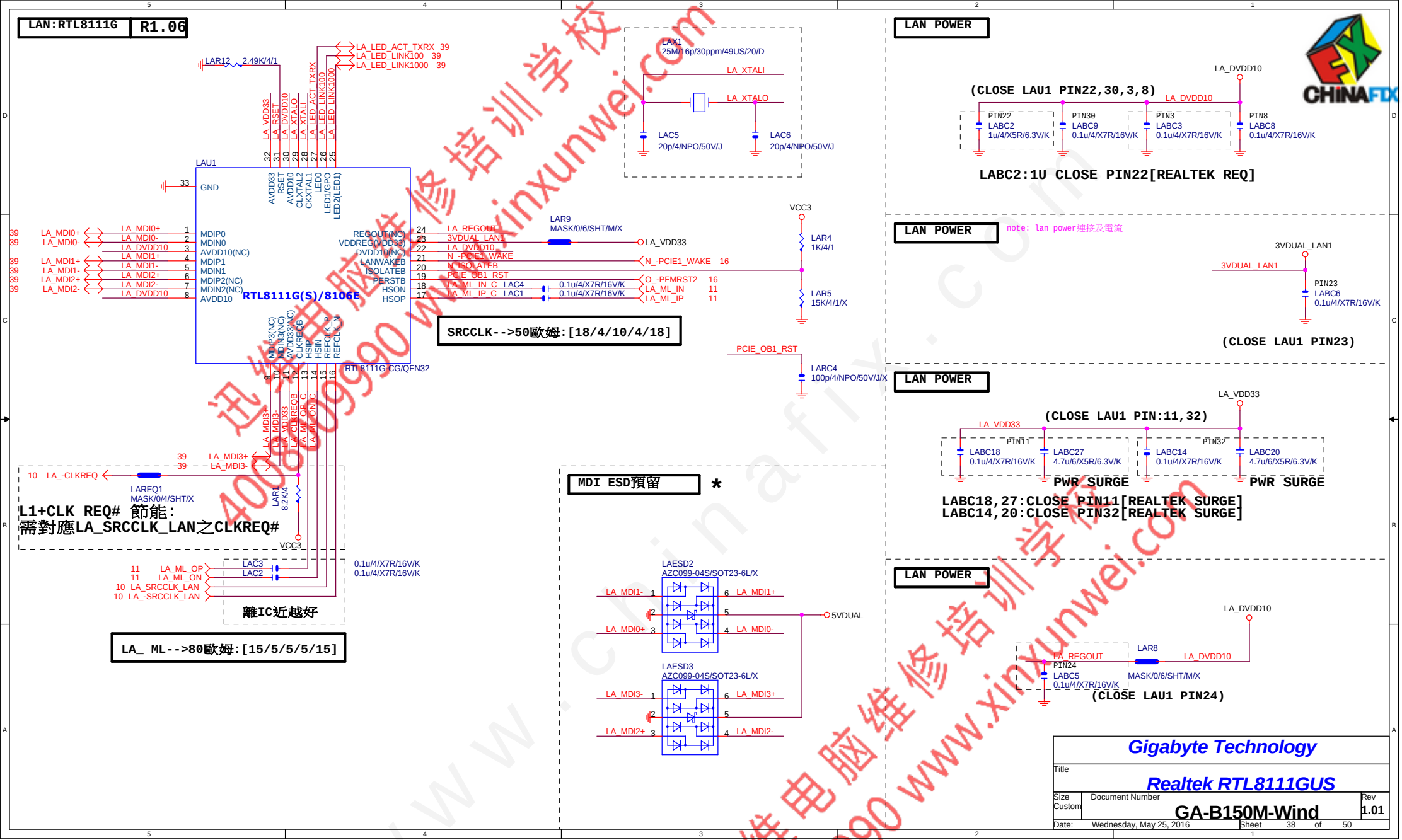
ESD



FUSE



Gigabyte Technology			
Title: R_USB30,USB_OC			
Size: Custom	Document Number: GA-B150M-Wind		Rev: 1.01
Date: Wednesday, May 25, 2016	Sheet 37 of 50		



USB_LAN CONNECTOR R1.06

RMA ESD PROTECT

note:可變更USB NAME

可變

N_+USBP12 1 — 6 N_-USBP12
2 — 5 FUSEVCC_R
N_-USBP11 3 — 4 N_+USBP11

LAUESD1
AZC099-04S/SOT23-6L

USB_LAN CONNECTOR

note:可變更USB NAME

[RTL8111G]

USB_LAN

LABC22
0.01u/4/X7R/25V/K/X

LA_CN_L1

38 LA_MDI0+ — LA_MDI0+ — L1
38 LA_MDI0- — LA_MDI0- — L2
38 LA_MDI1+ — LA_MDI1+ — L3
38 LA_MDI1- — LA_MDI1- — L4
38 LA_MDI2+ — LA_MDI2+ — L5
38 LA_MDI2- — LA_MDI2- — L6
38 LA_MDI3+ — LA_MDI3+ — L7
38 LA_MDI3- — LA_MDI3- — L8
L9
LABC25 — LA_CN_L10 — L10

MASK/0/4/SHT/M/X

UP
DOWN

D1 LA_LED_ACT_TXRX — LA_LED_ACT_TXRX 38
D2 LA_LED_D2 — LAR13 330/4 — LAN_3VDUAL_LED
D3 LA_LED_D3 — LAR14 330/4 — LA_LED_LINK100 38
D4 LA_LED_LINK1000 — LA_LED_LINK1000 38

U1 — FUSEVCC_R
U2 — N_-USBP11 11
U3 — N_+USBP11 11
U4
U5 — FUSEVCC_R
U6 — N_-USBP12 11
U7 — N_+USBP12 11
U8

LAUBC7
0.1u/4/X7R/16V/K
LAUBC23
0.1u/4/X7R/16V/K/X

可變

USB+LAN/1G/GO,Y/OS/RA/D/12C/ES/[11NR6-702009-Z1R_11NR6-702009-R2R]

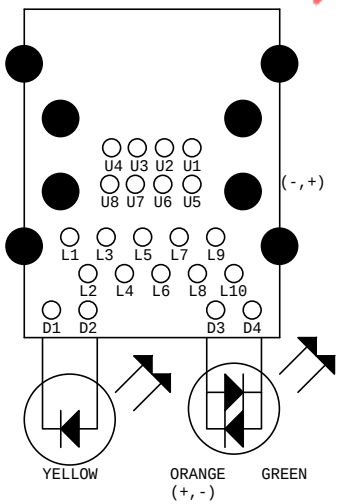
3VDUAL_LAN1

LAFB2
MASK/0/4/SHT/M/X

LABC24
0.1u/4/X7R/16V/K/X

LA_MDI-->100歐姆:[20/4/8/4/20]

USB_LAN LAYOUT示意圖



Dual Color LED

D4 D3 Green
D4 D3 Orange

Single Color LED

D2 D1 Yellow

USB POWER

note:可變更FUSE

可變

5VDUAL — 1 LAUF1 2 — FUSEVCC_R
SPR-P200T/6V/8/S

Close to connector

USB_LAN 2-Port 2.0A

FUSE-0805

EMI SHORT PAD

PS:視EMI需求

LAR24 — MASK/0/4/SHT/M/X

LAN POWER

note: lan power連接及電流

可變

3VDUAL_LAN1 — LAPW1 MASK/0/4/SHT/M/X — 3VDUAL_PCH *
LAPW2 0/4/X — 3VDUAL *

Gigabyte Technology		
Title: LAN CONNECTOR-RTL8111G		
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
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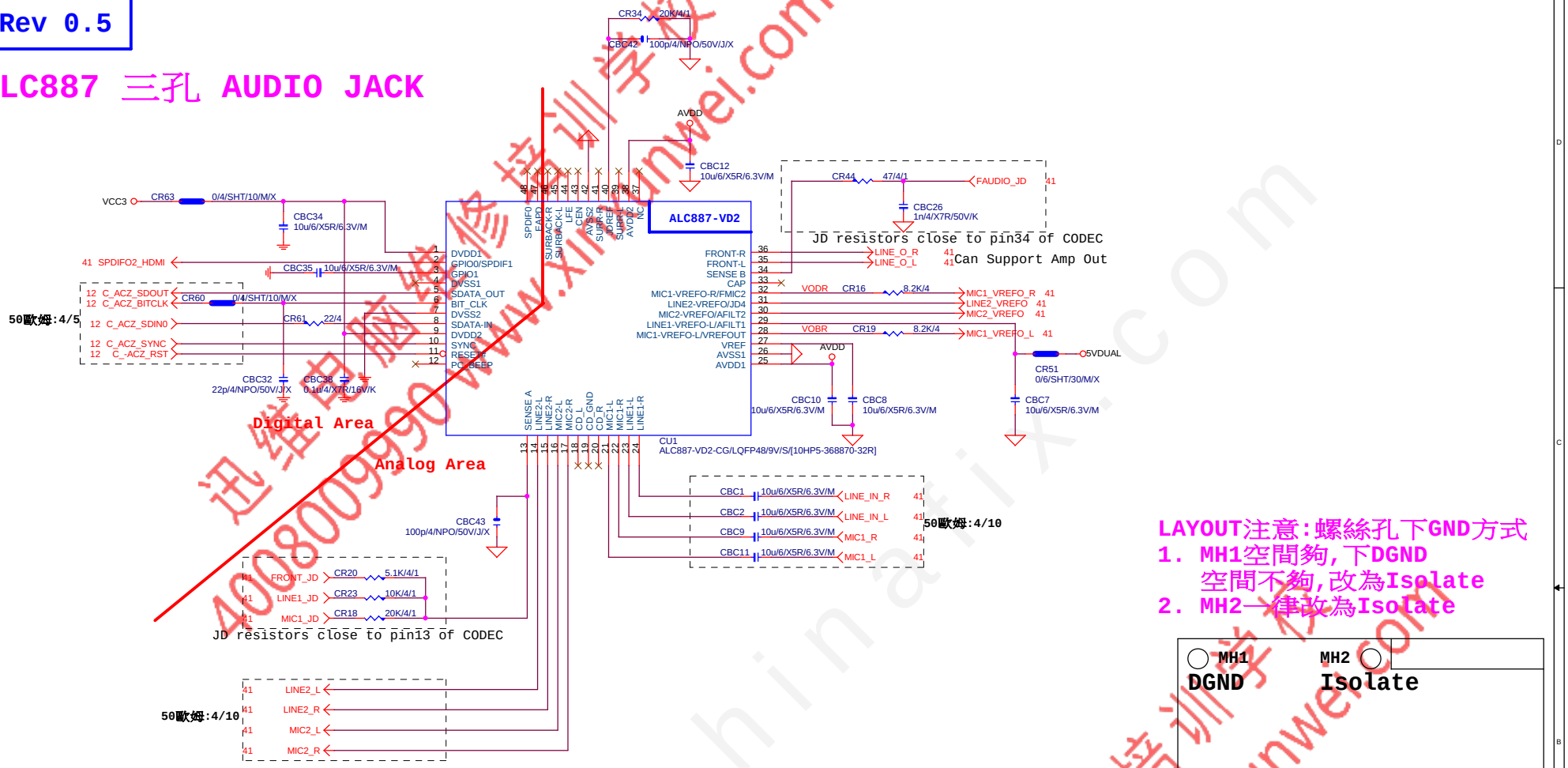
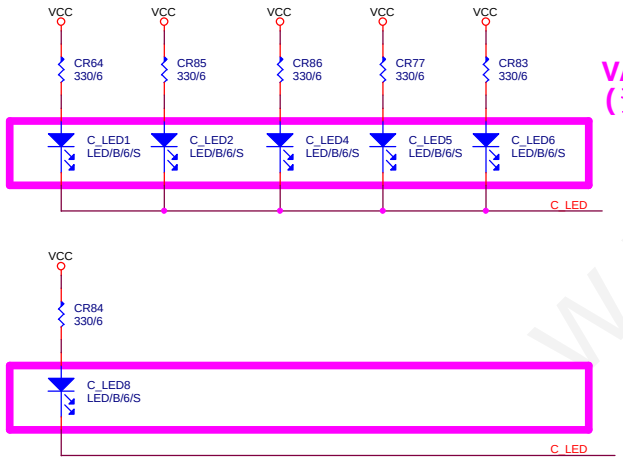
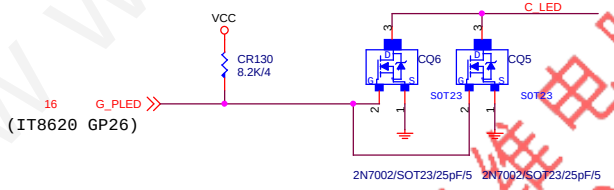
Rev 0.5

ALC887 三孔 AUDIO JACK



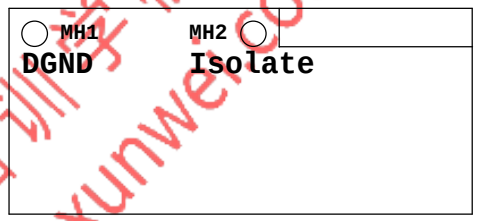


VALUE可變,LED顏色請自行修改
(預設:低亮度黃色LED:LED/Y/6/S)



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

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



LAYOUT注意:要加
GND切割線

音效區域印刷

Title	Gigabyte Technology HD AUDIO ALC887	
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Rev 0.5

CR49 MASK/0/6/SHT/30/X → Close F_AUDIO

CR50 MASK/0/6/SHT/30/X → Close Codec

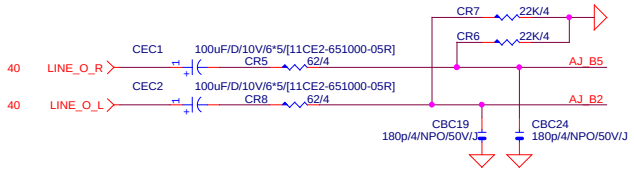
MOATC1 0.1u/4/X7R/16V/K/X

CR21 2.2/6 → Audio jack <--> USB_LAN

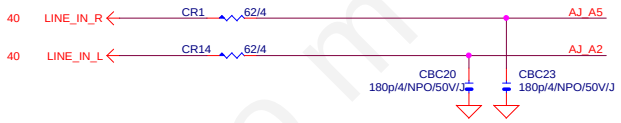
CR24 0/6/X → Under Audio jack

*量產前,0ohm改short pad

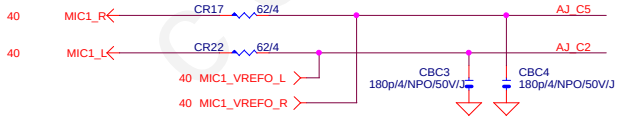
LINE-OUT



LINE-IN



MIC-IN

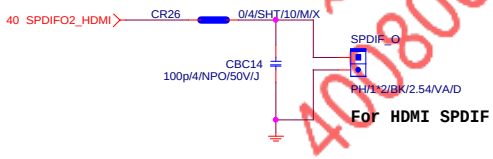


SURROUND

CEN/LFE

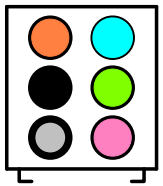
SURR BACK

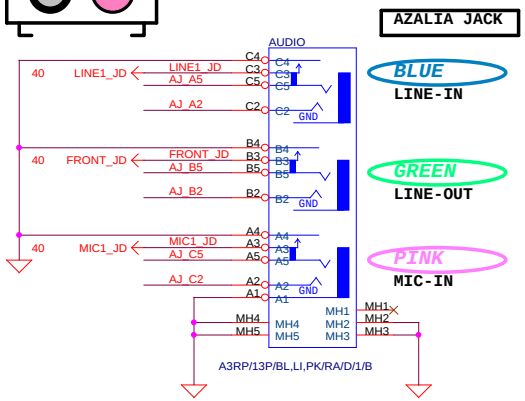
SPDIF_OUT



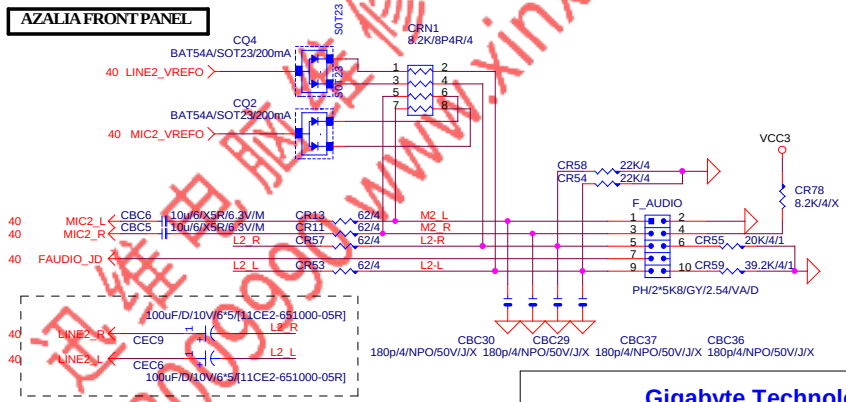
SPDIF_IN

AZALIA JACK





AZALIA FRONT PANEL

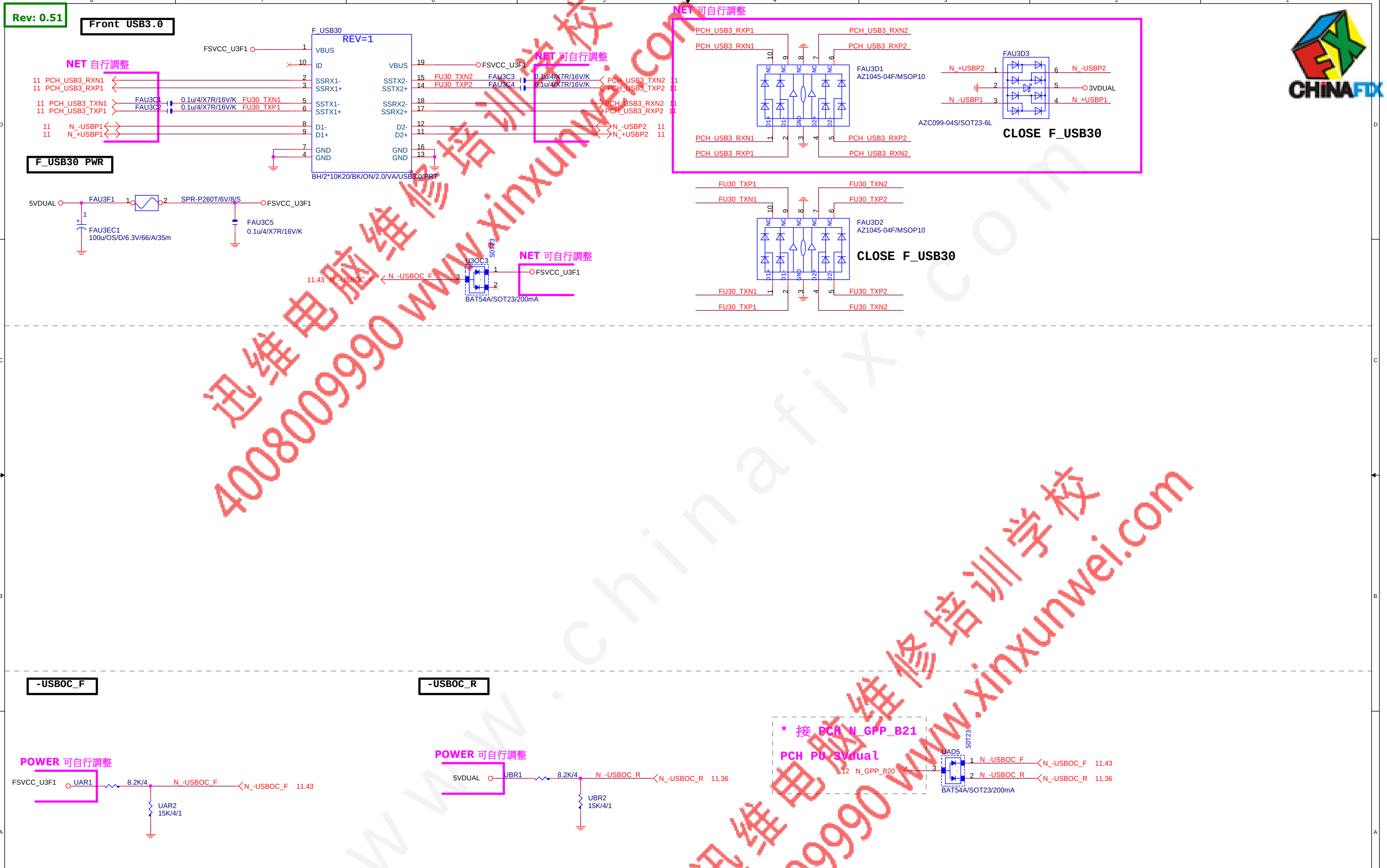


Gigabyte Technology

Title: AUDIO JACK

Size: Custom | Document Number: GA-B150M-Wind | Rev: 1.01

Date: Wednesday, May 25, 2016 | Sheet 41 of 50


Rev: 0.51
Front USB3.0
F_USB30
REV=1
NET 自行調整
NET 可自行調整
F_USB30 PWR
FSVCC_U3F1
VBUS
ID
SSRX1-
SSRX1+
SSTX1-
SSTX1+
D1-
D1+
GND
SSTX2-
SSTX2+
SSRX2-
SSRX2+
D2-
D2+
11 PCH_USB3_RXN1
11 PCH_USB3_RXP1
11 PCH_USB3_TXN1
11 PCH_USB3_TXP1
11 N_-USBP1
11 N_+USBP1
FAU3C1
FAU3C2
FAU3C3
FAU3C4
0.1u/4/X7R/16V/K
FU30_TXN1
FU30_TXP1
FU30_TXN2
FU30_TXP2
PCH_USB3_TXN2 11
PCH_USB3_TXP2 11
PCH_USB3_RXN2 11
PCH_USB3_RXP2 11
N_-USBP2 11
N_+USBP2 11
BH/2*10K20/BK/ON/2.0/VA/USB3.0/PRT
5VDUAL
FAU3F1
SPR-P260T/6V/8/S
FAU3EC1
100u/OS/D/6.3V/66/A/35m
FAU3C5
0.1u/4/X7R/16V/K
U3OC3
SOT23
BAT54A/SOT23/200mA
11,43 N_-USBOC_F
N_-USBOC_F
FAU3D1
AZ1045-04F/MSOP10
FAU3D2
AZ1045-04F/MSOP10
FAU3D3
AZC099-04S/SOT23-6L
3VDUAL
CLOSE F_USB30
-USBOC_F
-USBOC_R
POWER 可自行調整
UAR1
8.2K/4
UAR2
15K/4/1
N_-USBOC_F 11,43
UBR1
UBR2
N_-USBOC_R 11,36
* 接 PCH N_GPP_B21
PCH PU 3Vdual
12 N_GPP_B20
UAD5
BAT54A/SOT23/200mA
N_-USBOC_F 11,43
N_-USBOC_R 11,36

Gigabyte Technology		
Title	R_USB30,F_USB30, USB_OC	
Size Custom	Document Number GA-B150M-Wind	Rev 1.01
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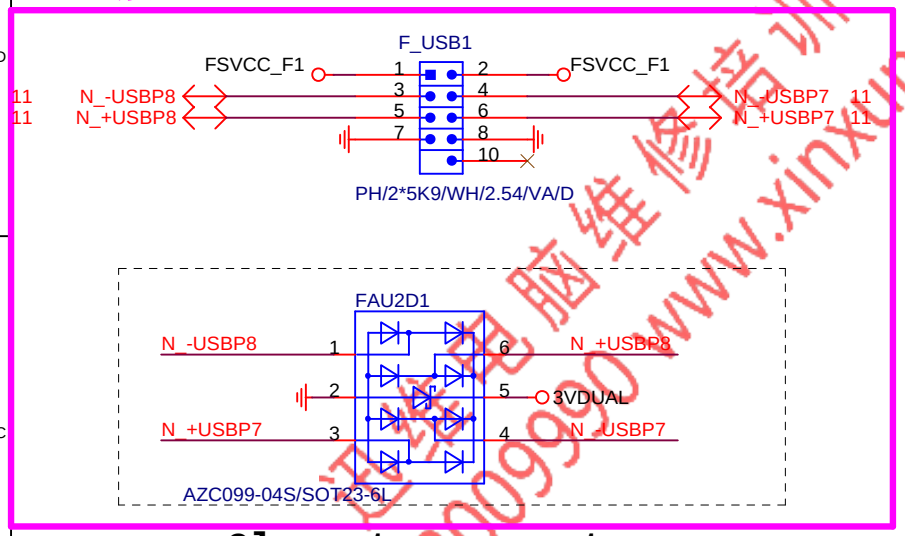
FUSE 4 PCS 1 Fuse 2A

FRONT USB1

NET 可變

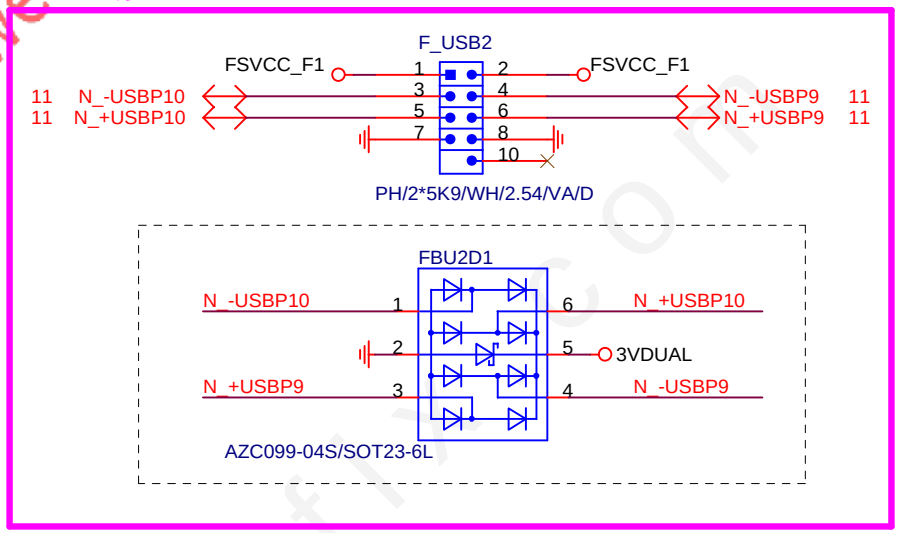
FUSB2X5-HS



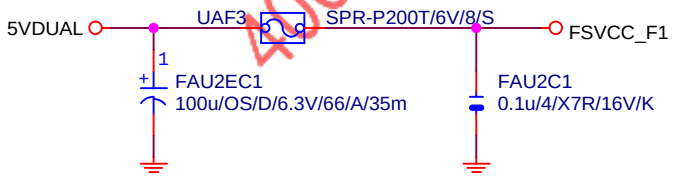
FRONT USB2

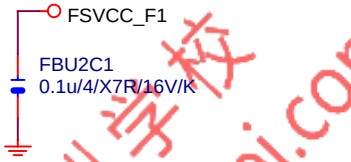
NET 可變

FUSB2X5-HS

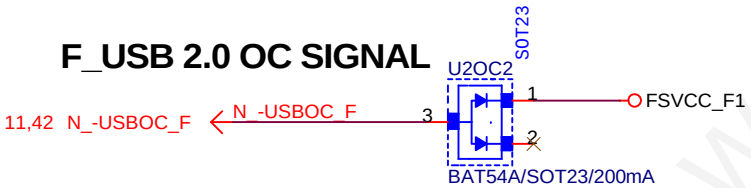


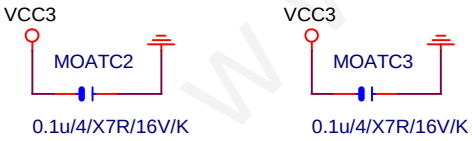
Close to connector





F_USB 2.0 OC SIGNAL





Gigabyte Technology

Title: USB2.0

Size	Document Number	Rev
A	GA-B150M-Wind	1.01

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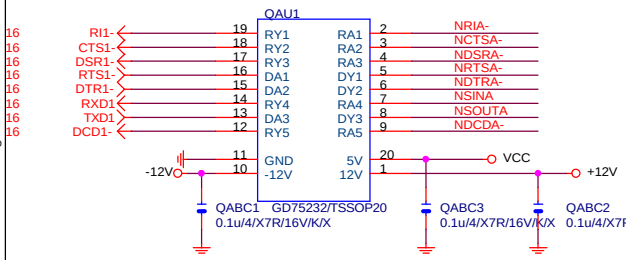
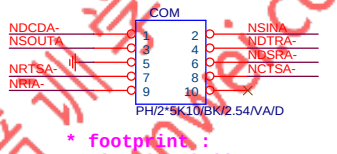
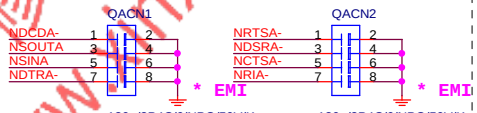
COM PORT

Rev: 0.51



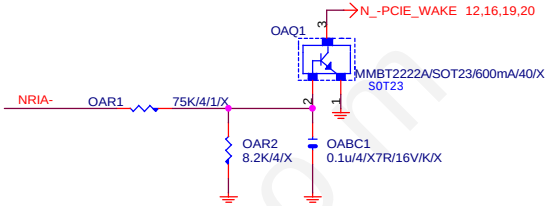


* footprint :
PIN2X5-CUT10-COM



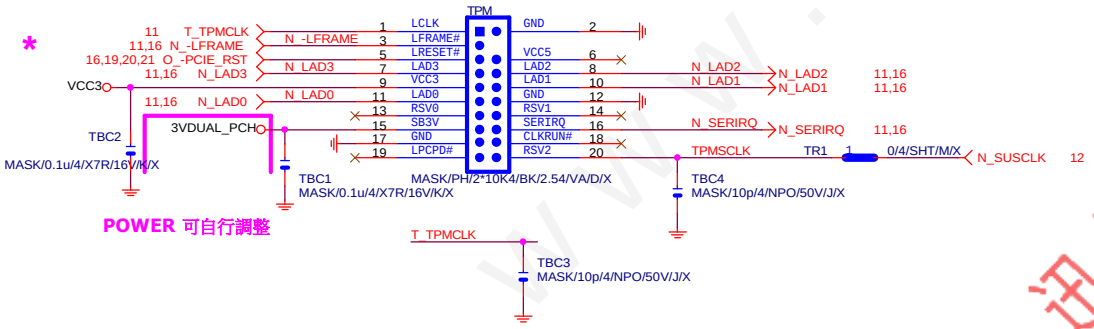
COM RI

* 接 N_-PCIE_WAKE



LPT PORT

TPM CONNECT

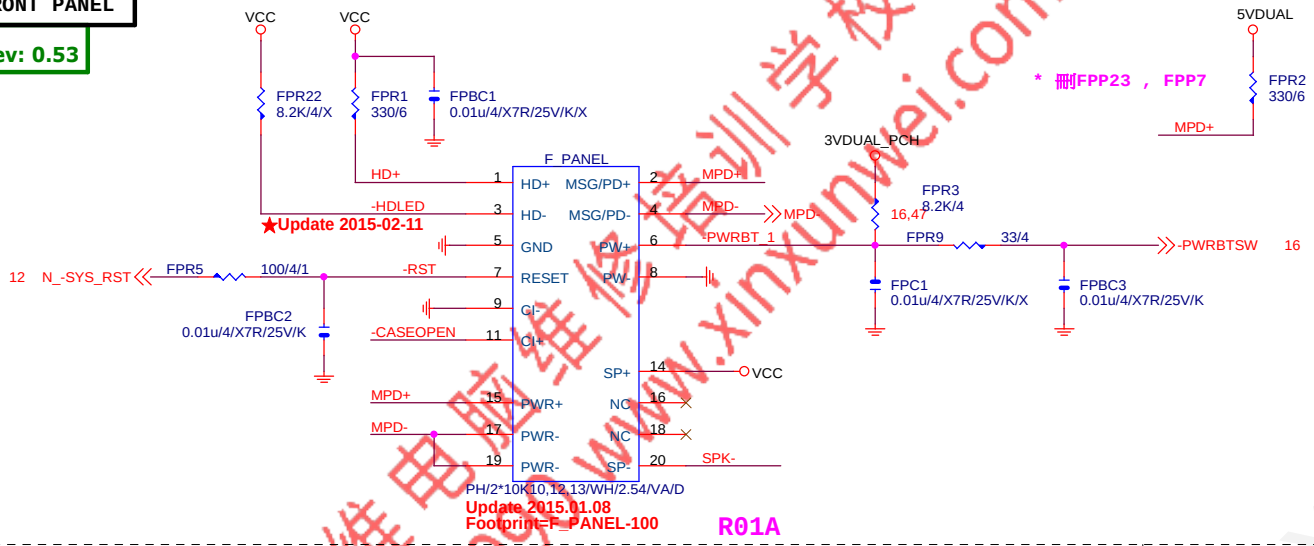


Thunderbolt (N/A)

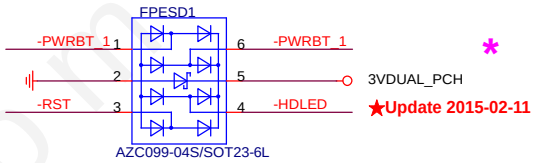
Gigabyte Technology		
Title: FP,F_USB,USB PWR,BZ		
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
Date: Wednesday, May 25, 2016	Sheet 44 of 50	

FRONT PANEL

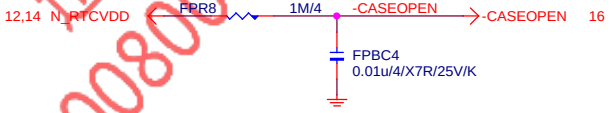
Rev: 0.53



ESD

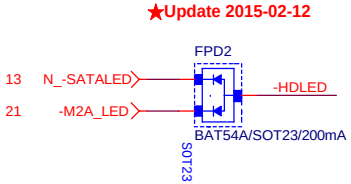


CASE OPEN

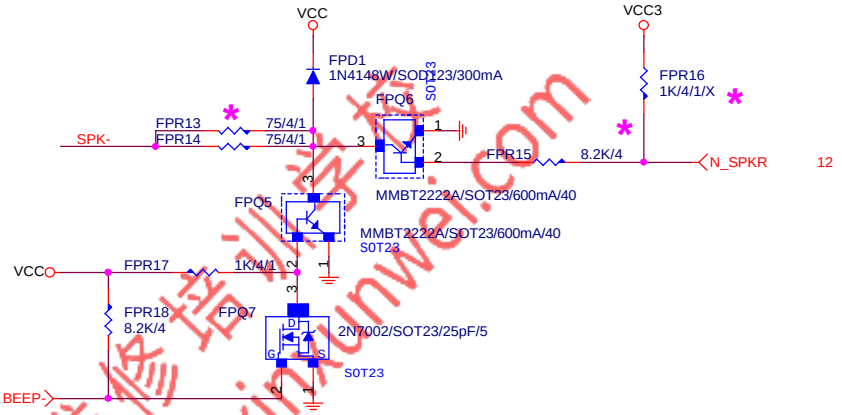


SATA LED

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



SPKR



Gigabyte Technology		
Title: FRONT PANEL		
Size: Custom	Document Number: GA-B150M-Wind	Rev: 1.01
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OVER VOLTAGE

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

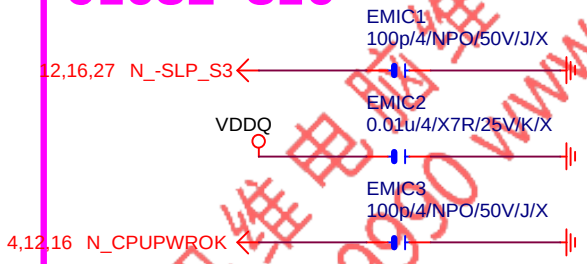
Title: CPU CORE VR-2

Size: Custom | Document Number: GA-B150M-Wind | Rev: 1.01

Date: Wednesday, May 25, 2016 | Sheet 46 of 50

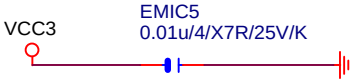
EMI/ESD R0.1

CLOSE SIO



CLOSE PCH

close to PCH (NR17)



R_USB30_2 & DVI 之間

close to FRONT PANEL

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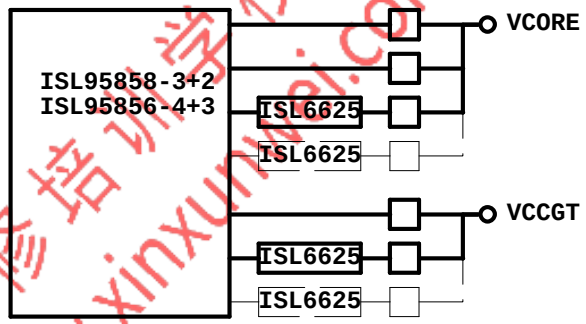
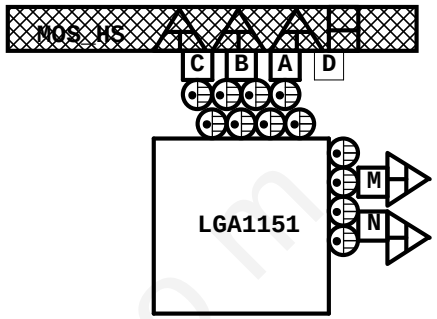
POWER BLOCK MAP

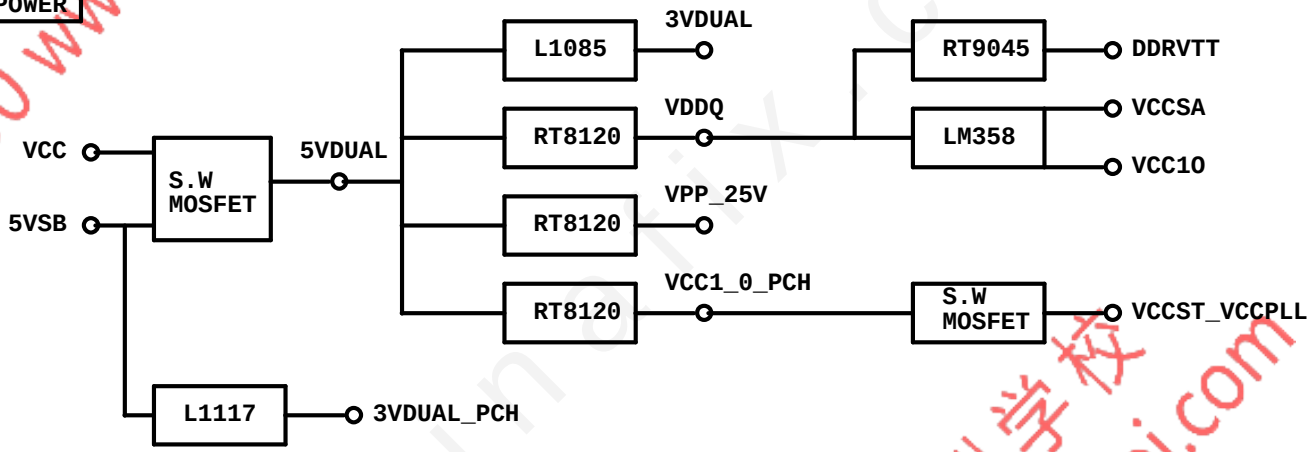
- CPU
  - VCORE
  - VCCGT
  - VCCSA
  - VCCIO
  - VDDQ
  - VCCST_VCCPLL
  - VCCSFUSEPRG
- DDR4
  - VDDQ
  - DDRVTT
  - VPP_25V
  - VDDSPD(VCC3)
- PCH
  - VCC1_0_PCH
  - VCC1_0_PCH_DSW
  - VCC10_VCCF24_1P0
  - VCC10_VCCAMPHYPLL
  - VCC10_VCCAPLL
  - VCC3_PCH
  - 3VDUAL_PCH
  - VCC3
  - N_RTCVDD
- IT8628
  - IT_VCCH
  - IT_AVCC
  - 2_5LEVEL
- HM
  - +12V
  - VCC
  - VCC3
  - VCORE
  - VCCGT(IMON_VCCGT)
  - VDDQ
  - VCCSA(IMON_VCORE)

VCORE/VCCGT

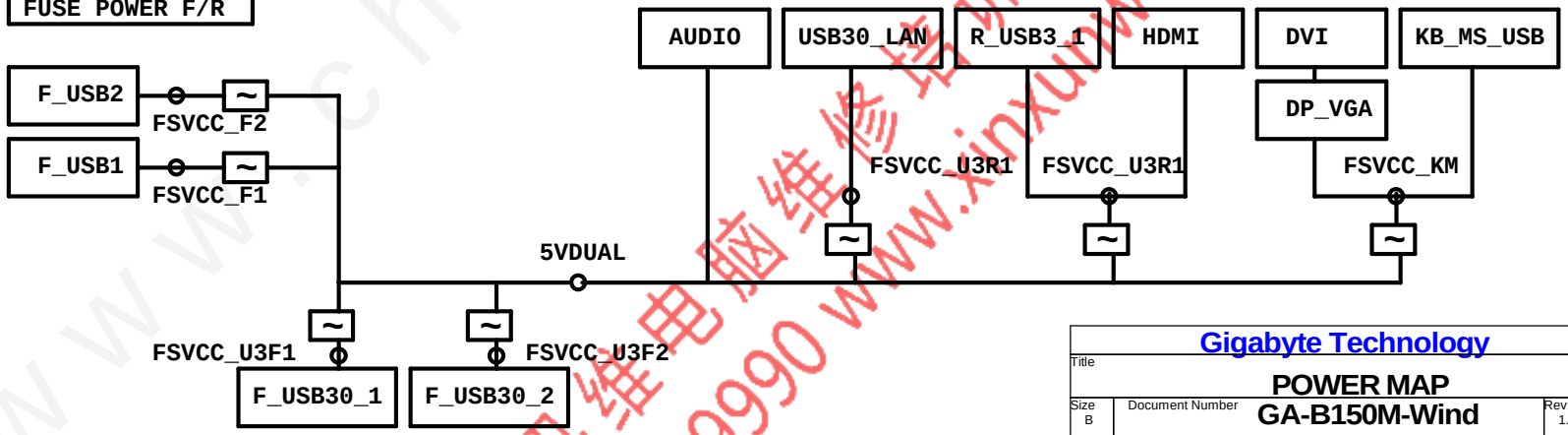




POWER



FUSE POWER F/R



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固態電容料號.請自行修改

日系黑色固態	Capture Value
11C02-C85600-01R	560u/FP/D/6.3V/68/C/8m
11CO5-C82700-01R	270u/FP/D/16V/88/C/12m
11CO5-C61000-01R	100u/OS/D/16V/66/C/30m
11CO2-C51000-01R	100u/FP/D/6.3V/65/C/13m

日系一般固態	Capture Value
11CO2-685600-01R	560u/FP/D/6.3V/68/8m
11CO5-882700-01R	270u/FP/D/16V/88/12m
11CO5-661000-03R	100u/OS/D/16V/66/30m
11CO2-651000-02R	100u/OS/D/6.3V/66/30m

台系固態	Capture Value
11CO2-661000-09R	100u/OS/D/6.3V/66/A/35m
11CO5-691000-09R	100u/OS/D/16V/69/A/35m
11CO5-8C2700-09R	270u/FP/D/16V/8C/A/10m
11CO2-695600-09R	560u/FP/D/6.3V/69/A/11m

IRON CHOKE

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

Ferrite

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

BEAD

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

PWM料號

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

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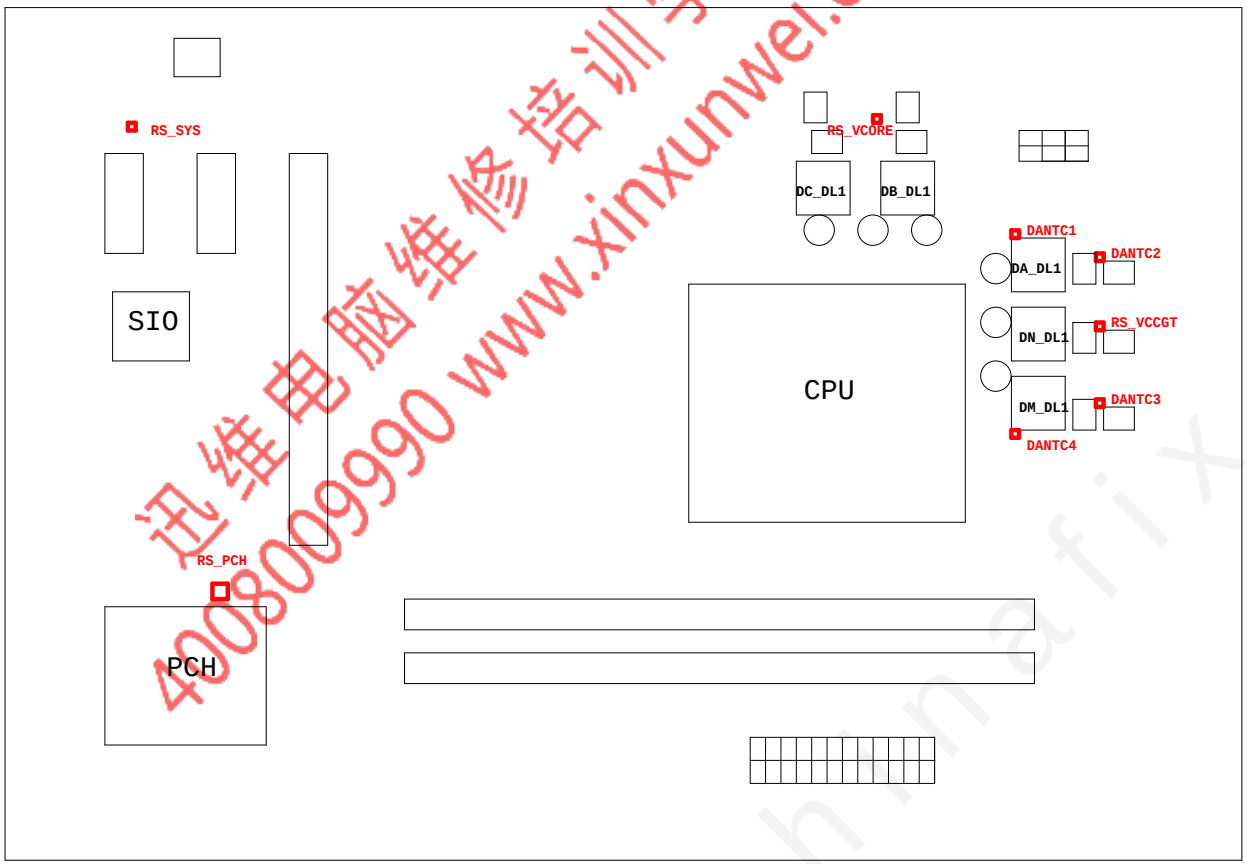

熱敏電阻	擺放靠近位置	走線方式
DANTC4	DM_DL1	Differential
DANTC1	DA_DL1	Differential
DANTC3	DM_DQ1	Differential
DANTC2	DA_DQ1	Differential
RS_VCORE	DC_DQ1	N/A
RS_VCCGT	DM_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A

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File: NTC MAP

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