Model Name: GA-H270M-Gaming 3 rev 1.0

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-Z系列	(REV0.21)
07	CPU_LGA1150-D	
08	DDR4 CHANNEL A	(REV0.6)
09	DDR4 CHANNEL B	
10	PCH_CLK BUFFER	
11	PCH_DMI,USB,PCIE	
12	PCH_MISC	
13	PCH SATA,PCIE,SATA_EXPRESS	
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16	Single BIOS	(REV0.3)
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18	HWM	
19	FAN CTRL--SIO	(REV0.81)
20	PCI EXPRESS*16 SLOT	(REV0.2)
21	PCI EXPRESS*4 SLOT	(REV0.51)
22	PCI EXPRESS*1 SLOT/SW	
23	M.2X4	(REV0.6)
24	SATA EXPRESS	
25	IT8892E_JX	(REV0.1)
26	LDO POWER	
27	PCI SLOT 1	
28	ISL95866 PWM-IRON	(REV0.11)
29	ISL95866 VCORE-IRON	

SHEET	TITLE	
30	ISL95866 VCCGT-IRON	
31	VCCSA_VCCIO-IRON-Z系列	(REV0.21)
32	RT8120_DDR_BEAD	(REV0.1)
33	RT8068A_VPP	(REV0.1)
34	RT8120_PCH-BEAD	(REV0.1)
35	DISCRETE POWER	(REV0.51)
36	NCT3933	
37	ATX POWER , A_-PROCHOT	
38	KB_MS_USB	(REV0.81)
39	DVI CONN	(REV0.81)
40	Dual DP	(REV0.81)
41	F_PANEL	(REV0.81)
42	R_USB30	(REV0.81)
43	INTEL I219	(REV1.11)
44	USB30_LAN CONNECTOR-I219	
45	Realtek ALC892	(REV0.1)
46	REAR AUDIO JACK	
47	AUDIO LED	(REV0.1)
48	F_USB30	(REV0.81)
49	F_USB	(REV0.81)
50	COM, TPM, THB	(REV0.81)
51	CPU POWER-Z系列	(REV0.21)
52	EMI-ESD	(REV0.1)
53	POWER MAP	
54	NTC MAP	
55	TABLE LIST	

Gigabyte Technology

Title: Cover Sheet

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Model Name: GA-H270M-Gaming 3 *rev 1.0*

Component value change history

2016/12/07

Data	Change Item	Reason
2016/11/09	由H270M-D3H R0.1 修改	
	SLOT, LED Heat Sink 搭配Gaming 配色	
2016/12/07	Update to R1.0	

Circuit or PCB layout change

DATE	Change Item	Reason
2016/07/01 BOM:0.1	1.PCB first release	
	2.線路由Z170M-D3P-WG Rev1.0修改	

GIGABYTE™

Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-H270M-Gaming 3 | Rev: 1.0

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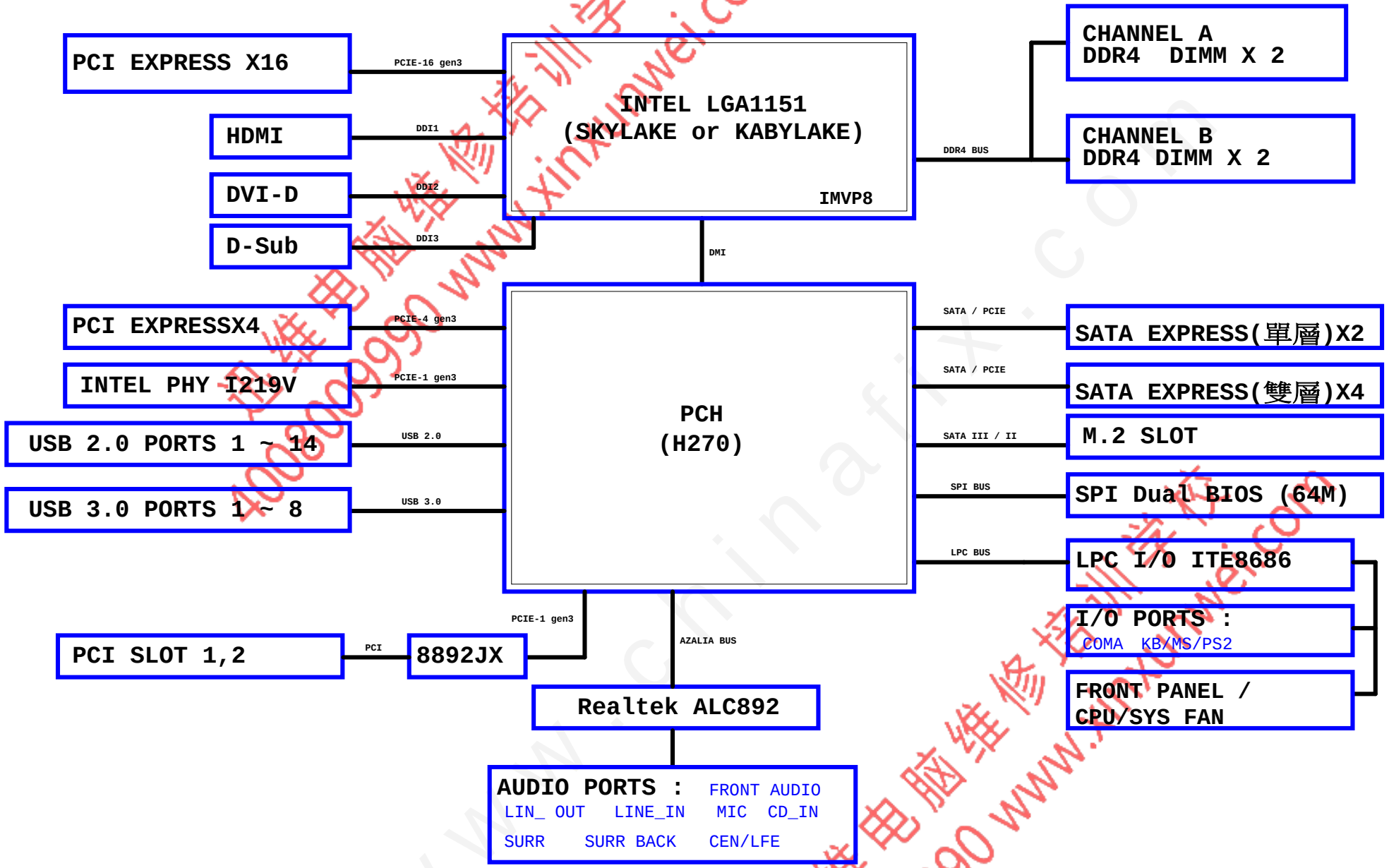
BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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* Rev0.2B

LGA1151E SKT_H4

LGA1151

[10] N_CPUCLK → N_CPUCLK W5
[10] N_-CPUCLK → N_-CPUCLK W4
* [10] N_CPUPCIBCLK → N_CPUPCIBCLK W1
[10] N_-CPUPCIBCLK → N_-CPUPCIBCLK W2
[10] N_24MCLK → N_24MCLK K9
[10] N_-24MCLK → N_-24MCLK J9

BCLKP
BCLKN
PCI_BCLKP
PCI_BCLKN
CLK24P
CLK24N

* WR7 , WR1 , WR81
改 short pad

[28] -PVIDALRT WR5 220/4/1 A_-PVIDALRT_R E39 VIDALERT#
[28] PVIDSLCK WR7 MASK/0/4/SHT/M/X A_PVIDSLCK_R E38 VIDSCK
[28] PVIDSOUT WR1 MASK/0/4/SHT/M/X A_PVIDSOUT_R E40 VIDSOUT
[17,37] A_-PROCHOT WR81 A_-PHOT C39 PROCHOT#
MASK/0/4/SHT/M/X

[32] DDR_VTT_CTL → AC36 DDR_VTT_CNTL
AC38 ZVM#
AC37 RSVD_AC37

CPU_VCCST_PWOK → U2 VCCST_PWRGD

F8 PROCPWRGD
[12,54] N_CPUPWROK → N_-CPURST E7 RESET#
[13] N_-CPURST → A_PMSYNC E8 PM_SYNC
[13] A_PMSYNC WR82 33/4 A_PMDOWN_R D8 PM_DOWN
[13] A_PMDOWN → G7 PECI
[13,17] A_PECI → A_-THRMTRIP D11 THERMTRIP#
* [17] A_-THRMTRIP → A_-THRMTRIP

[10] A_-SKTOCC → AB35 SKTOCC#
WTP1 AB36 PROC_SELECT#

D13 CATERR#

* 刪 net

CFG_RCOMP M11 CFG_RCOMP WR84 49.9/4/1

CFG[0] H15
CFG[1] E15
CFG[2] G16
CFG[3] H16
CFG[4] E19
CFG[5] H18
CFG[6] G21
CFG[7] H20
CFG[8] G16
CFG[9] E16
CFG[10] C17
CFG[11] N17
CFG[12] G20
CFG[13] E20
CFG[14] C21
CFG[15] H19
CFG[17] E14
CFG[16] E14
CFG[19] E18
CFG[18] G18

BPM#[0] D16
BPM#[1] D17
BPM#[2] G14
BPM#[3] H14

* 刪 net

PROC_TDO H13 A_TDO → A_TDO [12]
PROC_TDI G12 A_TDI → A_TDI [12]
PROC_TMS F13 A_TMS → A_TMS [12]
PROC_TCK F11 A_TCK → A_TCK [12]
PROC_TRST# F12 A_-TRST → A_-TRST [13]
PROC_PREQ# B9 A_-HPREQ → A_-HPREQ [13]
PROC_PRDY# B10 A_-HPRDY → A_-HPRDY [13]

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CPU-SK/1151/S/GF

* 刪 net

LGA1151D SKT_H4

LGA1151

HDMI
[40] HDMI_TX2 → C21 DDI1_TXP[0]
[40] HDMI_TX2- → D21 DDI1_TXN[0]
[40] HDMI_TX1 → D22 DDI1_TXP[1]
[40] HDMI_TX1- → E22 DDI1_TXN[1]
[40] HDMI_TX0 → B23 DDI1_TXP[2]
[40] HDMI_TX0- → A23 DDI1_TXN[2]
[40] HDMI_TXC → C23 DDI1_TXP[3]
[40] HDMI_TXC- → D23 DDI1_TXN[3]

B13 DDI1_AUXP
C13 DDI1_AUXN

DVI
[39] DVI_TX2 → B18 DDI2_TXP[0]
[39] DVI_TX2- → A18 DDI2_TXN[0]
[39] DVI_TX1 → D18 DDI2_TXP[1]
[39] DVI_TX1- → E18 DDI2_TXN[1]
[39] DVI_TX0 → C19 DDI2_TXP[2]
[39] DVI_TX0- → D19 DDI2_TXN[2]
[39] DVI_TXC → D20 DDI2_TXP[3]
[39] DVI_TXC- → E20 DDI2_TXN[3]

A12 DDI2_AUXP
B12 DDI2_AUXN

DP-VGA
[41] VGA_TXP0 → B14 DDI3_TXP[0]
[41] VGA_TXN0 → A14 DDI3_TXN[0]
[41] VGA_TXP1 → C15 DDI3_TXP[1]
[41] VGA_TXN1 → B15 DDI3_TXN[1]
B16 DDI3_TXP[2]
A16 DDI3_TXN[2]
C17 DDI3_TXP[3]
B17 DDI3_TXN[3]

[43] VGA_AUX → B11 DDI3_AUXP
[43] VGA_AUX- → C11 DDI3_AUXN

EDP_TXP[0] E10
EDP_TXN[0] D10
EDP_TXP[1] D9
EDP_TXN[1] C9
EDP_TXP[2] H10
EDP_TXN[2] G10
EDP_TXP[3] G9
EDP_TXN[3] E9

EDP_AUXP D12
EDP_AUXN E12

EDP_DISP_UTIL D14

EDP_RCOMP M9 EDP_RCOMP WR23 24.9/4/1 VCCIO

PROC_AUDIO_CLK V3 → N_AZCPU_SCLK [12]
PROC_AUDIO_SDI V2 → N_AZCPU_SDOUT [12]
PROC_AUDIO_SDO U1 A_AZ_CPU_SDI_R WR85 33/4 → A_AZ_CPU_SDI [12]

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CPU-SK/1151/S/GF

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%

VCCST_VCCPLL WR2 100/4/1 PVIDSOUT
WR4 56.2/4/1 -PVIDALRT
VCCST_VCCPLL WR30 51/4/1 A_-HPREQ

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

VCCST_VCCPLL WR25 1K/4/1 A_-PHOT
WR70 1K/4/1 A_-THRMTRIP

* 刪 WR91

CPU_VCCST_PWOK
[12,17] N_PCH_VRMPWRGD → WR34 6.04K/4/1 WR3 2.8K/4/1

* 刪 net N_CPU_VCCST_PWOK

A_TCK WR11 51/4/1
A_-TRST WR9 51/4/1

N_CPUPWROK WBC47 1n/4/X7R/50V/K
[13] N_-CPURST → N_-CPURST WBC123 1n/4/X7R/50V/K

-CPURST

LGA1151C SKT_H4

LGA1151

PA_EXP_RXP0 B8 PEG_RXP[0]
PA_EXP_RXN0 B7 PEG_RXN[0]
PA_EXP_RXP1 C7 PEG_RXP[1]
PA_EXP_RXN1 C6 PEG_RXN[1]
PA_EXP_RXP2 D6 PEG_RXP[2]
PA_EXP_RXN2 D5 PEG_RXN[2]
PA_EXP_RXP3 E5 PEG_RXP[3]
PA_EXP_RXN3 E4 PEG_RXN[3]
PA_EXP_RXP4 F6 PEG_RXP[4]
PA_EXP_RXN4 F5 PEG_RXN[4]
PA_EXP_RXP5 G5 PEG_RXP[5]
PA_EXP_RXN5 G4 PEG_RXN[5]
PA_EXP_RXP6 H6 PEG_RXP[6]
PA_EXP_RXN6 H5 PEG_RXN[6]
PA_EXP_RXP7 J5 PEG_RXP[7]
PA_EXP_RXN7 J4 PEG_RXN[7]
PA_EXP_RXP8 K6 PEG_RXP[8]
PA_EXP_RXN8 K5 PEG_RXN[8]
PA_EXP_RXP9 L5 PEG_RXP[9]
PA_EXP_RXN9 L4 PEG_RXN[9]
PA_EXP_RXP10 M6 PEG_RXP[10]
PA_EXP_RXN10 M5 PEG_RXN[10]
PA_EXP_RXP11 N5 PEG_RXP[11]
PA_EXP_RXN11 N4 PEG_RXN[11]
PA_EXP_RXP12 P6 PEG_RXP[12]
PA_EXP_RXN12 P5 PEG_RXN[12]
PA_EXP_RXP13 R5 PEG_RXP[13]
PA_EXP_RXN13 R4 PEG_RXN[13]
PA_EXP_RXP14 T6 PEG_RXP[14]
PA_EXP_RXN14 T5 PEG_RXN[14]
PA_EXP_RXP15 U5 PEG_RXP[15]
PA_EXP_RXN15 U4 PEG_RXN[15]

PEG_TXP[0] A5 PA_EXP_TXP0
PEG_TXN[0] A6 PA_EXP_TXN0
PEG_TXP[1] B4 PA_EXP_TXP1
PEG_TXN[1] B5 PA_EXP_TXN1
PEG_TXP[2] C3 PA_EXP_TXP2
PEG_TXN[2] C4 PA_EXP_TXN2
PEG_TXP[3] D2 PA_EXP_TXP3
PEG_TXN[3] D3 PA_EXP_TXN3
PEG_TXP[4] E1 PA_EXP_TXP4
PEG_TXN[4] E2 PA_EXP_TXN4
PEG_TXP[5] F2 PA_EXP_TXP5
PEG_TXN[5] F3 PA_EXP_TXN5
PEG_TXP[6] G1 PA_EXP_TXP6
PEG_TXN[6] G2 PA_EXP_TXN6
PEG_TXP[7] H2 PA_EXP_TXP7
PEG_TXN[7] H3 PA_EXP_TXN7
PEG_TXP[8] J1 PA_EXP_TXP8
PEG_TXN[8] J2 PA_EXP_TXN8
PEG_TXP[9] K2 PA_EXP_TXP9
PEG_TXN[9] K3 PA_EXP_TXN9
PEG_TXP[10] L1 PA_EXP_TXP10
PEG_TXN[10] L2 PA_EXP_TXN10
PEG_TXP[11] M2 PA_EXP_TXP11
PEG_TXN[11] M3 PA_EXP_TXN11
PEG_TXP[12] N1 PA_EXP_TXP12
PEG_TXN[12] N2 PA_EXP_TXN12
PEG_TXP[13] P2 PA_EXP_TXP13
PEG_TXN[13] P3 PA_EXP_TXN13
PEG_TXP[14] R2 PA_EXP_TXP14
PEG_TXN[14] R1 PA_EXP_TXN14
PEG_TXP[15] T2 PA_EXP_TXP15
PEG_TXN[15] T3 PA_EXP_TXN15

VCCIO WR80 24.9/4/1 PEG_RCOMP L7 PEG_RCOMP

[11] A_DMI_0RXP → A_DMI_0RXP Y3 DMI_RXP[0]
[11] A_DMI_0RXN → A_DMI_0RXN Y4 DMI_RXN[0]
[11] A_DMI_1RXP → A_DMI_1RXP AA4 DMI_RXP[1]
[11] A_DMI_1RXN → A_DMI_1RXN AA5 DMI_RXN[1]
[11] A_DMI_2RXP → A_DMI_2RXP AB4 DMI_RXP[2]
[11] A_DMI_2RXN → A_DMI_2RXN AB3 DMI_RXN[2]
[11] A_DMI_3RXP → A_DMI_3RXP AC4 DMI_RXP[3]
[11] A_DMI_3RXN → A_DMI_3RXN AC5 DMI_RXN[3]

DMI_TXP[0] AC2 A_DMI_0TXP → A_DMI_0TXP [11]
DMI_TXN[0] AC1 A_DMI_0TXN → A_DMI_0TXN [11]
DMI_TXP[1] AD3 A_DMI_1TXP → A_DMI_1TXP [11]
DMI_TXN[1] AD2 A_DMI_1TXN → A_DMI_1TXN [11]
DMI_TXP[2] AE2 A_DMI_2TXP → A_DMI_2TXP [11]
DMI_TXN[2] AE1 A_DMI_2TXN → A_DMI_2TXN [11]
DMI_TXP[3] AF2 A_DMI_3TXP → A_DMI_3TXP [11]
DMI_TXN[3] AF3 A_DMI_3TXN → A_DMI_3TXN [11]

3 OF 12

CPU-SK/1151/S/GF

PA_EXP_TXP[0..15] → PA_EXP_TXP[0..15] [20]
PA_EXP_TXN[0..15] → PA_EXP_TXN[0..15] [20]
PA_EXP_RXP[0..15] → PA_EXP_RXP[0..15] [20]
PA_EXP_RXN[0..15] → PA_EXP_RXN[0..15] [20]

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

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

Gigabyte Technology

Title: CPU LGA1151-A

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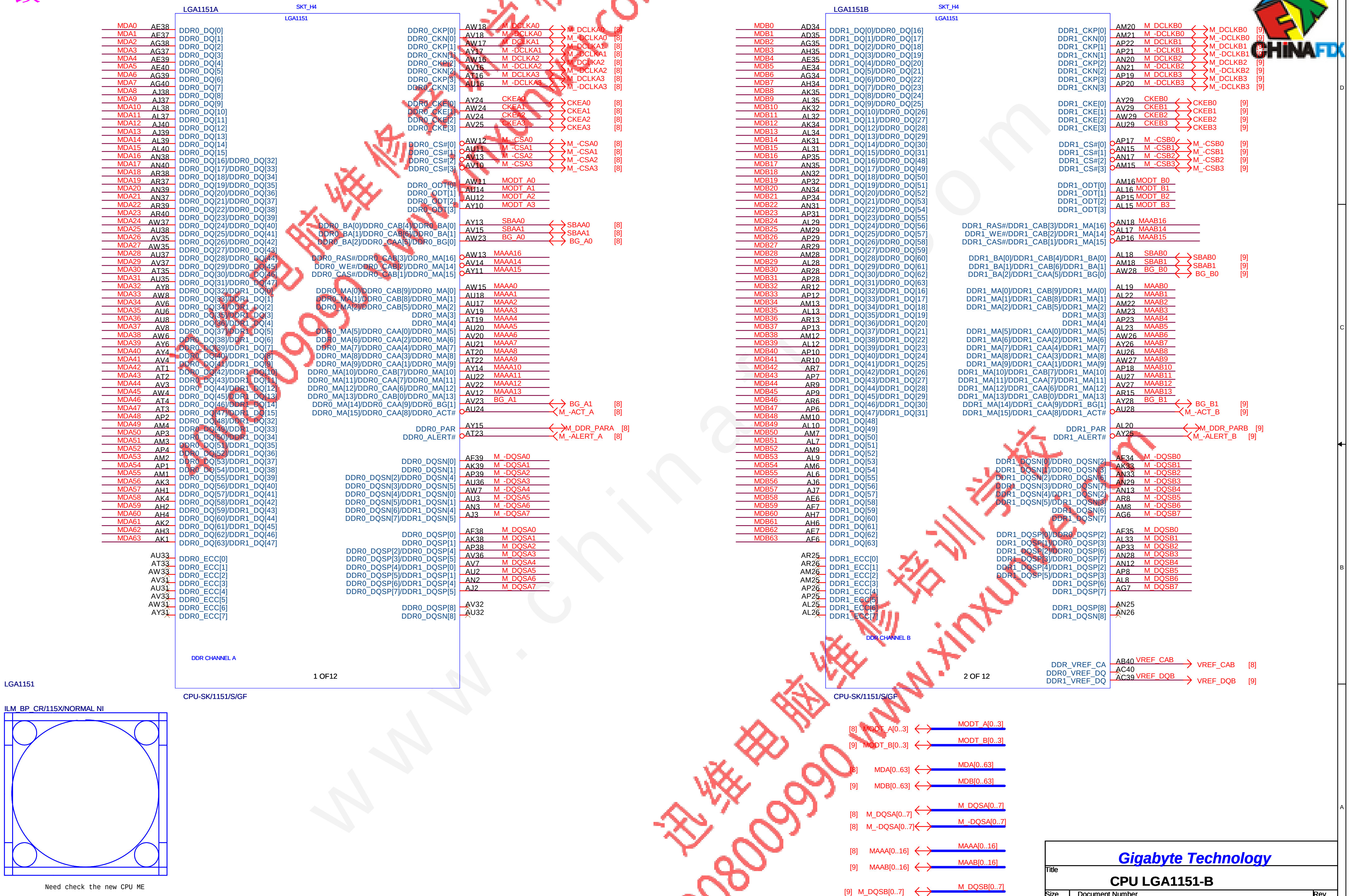
* 改DDR4 net



Need check the new CPU ME

Gigabyte Technology			
Title	CPU LGA1151-B		
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REV:0.21

* WBC49 移到 RT8120_DDR
* 刪 WBC50 電容

VCCSA

* WBC51 , WBC52
VDDQ 改 VCCSA

WBC56 22u/8/X5R/6.3V/M
WBC57 22u/8/X5R/6.3V/M
WBC51 22u/8/X5R/6.3V/M
WBC52 22u/8/X5R/6.3V/M

* 刪 WBC124 , WBC125 , WBC126 , WBC127 電容

CPU POWER

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

VCCST_VCCPLL
VCCSFUSEPRG

VCCSA
VCCST_VCCPLL
remove WR94

VCCIO

WBC69 22u/8/X5R/6.3V/M
WBC70 22u/8/X5R/6.3V/M
WBC71 22u/8/X5R/6.3V/M
WBC72 22u/8/X5R/6.3V/M
WBC73 22u/8/X5R/6.3V/M
WBC74 22u/8/X5R/6.3V/M

* 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/X

VCCGT_SENSE F39 VSSGT_SENSE F38
VCCGTX_SENSE F37 VSSGTX_SENSE F36

VCCGT_SENSE [28]
VSSGT_SENSE [28]

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CPU-SK/1151/S/GF

VCCSA

LGA1151K SKT_H4 LGA1151

AA7 AB6 AB7 AB8 AC7 AC8 N7 P7 R7 T7 U7 Y6 Y7 Y8 W7 V7 AA6 — VCCSA

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

CPU POWER

VCCPLL_OC AJ9 VCCPLL_S WR86 0/4/SHT/20/M/X VDDQ

* 刪 VCCPLL_OC

VCCIO

AK11 AK14 AK24 AJ23 M8 P8 T8 U8 W8 — VCCIO

VCCOPC_AJ30 VCCOPC_AJ27 VCCOPC_AJ28 VCCOPC_AJ29 VCCOPC_AK27 — AJ30 AJ27 AJ28 AJ29 AK27

WR60 0/4/X

VCCEOPIO VCCEOPIO — AJ25 AJ26

WR61 0/4/X

VCCST_VCCPLL
VCCSFUSEPRG
VCCST_VCCPLL — V5 V6 V4 — VCCST_V5 VCCST_V6 VCCPLL

VCC_OPC_1P8_AB37 VCC_OPC_1P8_AB38 — AB37 AB38

WR62 MASK/0/4/SHT/M/X
WR63 MASK/0/4/SHT/M/X

VCCSA_SENSE AD5
VCCIO_SENSE AF4
VSS_SAIO_SENSE AE4

* 刪 net

VCCOPC_SENSE AK21
VCCEOPIO_SENSE AJ24
VSSOPC_EOPIO_SENSE AK22

10 OF 12

CPU-SK/1151/S/GF

LGA1151L SKT_H4 LGA1151

RSVD_TP_J8 RSVD_TP_J7 RSVD_TP_L8 RSVD_TP_K8 — J8 J7 L8 K8
RSVD_TP_AV1 RSVD_TP_AW2 — AV1 AW2
RSVD_H8 RSVD_K10 RSVD_L10 RSVD_J17 RSVD_B39 RSVD_J19 RSVD_C40 — H8 K10 L10 J17 B39 J19 C40
RSVD_G8 RSVD_AY3 — G8 AY3
PROC_TRIGIN PROC_TRIGOUT — D1 B3
RSVD_L12 RSVD_K12 — L12 K12

RSVD_TP_H11 RSVD_TP_H12 — H11 H12
RSVD_TP_AW38 RSVD_TP_AV39 — AW38 AV39
RSVD_AU39 RSVD_AU40 — AU39 AU40
VSS_AT15 VSS_AR23 VSS_AR22 — AT15 AR23 AR22
RSVD_J15 RSVD_J14 — J15 J14
RSVD_AU9 RSVD_AU10 — AU9 AU10
RSVD_J13 RSVD_K13 RSVD_J11 — J13 K13 J11
RSVD_D15 RSVD_K11 — D15 K11

[13] N_PCH_CPU_N
[13] A_CPU_PCH_TO_R
WR88 33/4 A_CPU_PCH_TO_R
WR89 560/4/1

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CPU-SK/1151/S/GF

Gigabyte Technology

Title: CPU LGA1151-C

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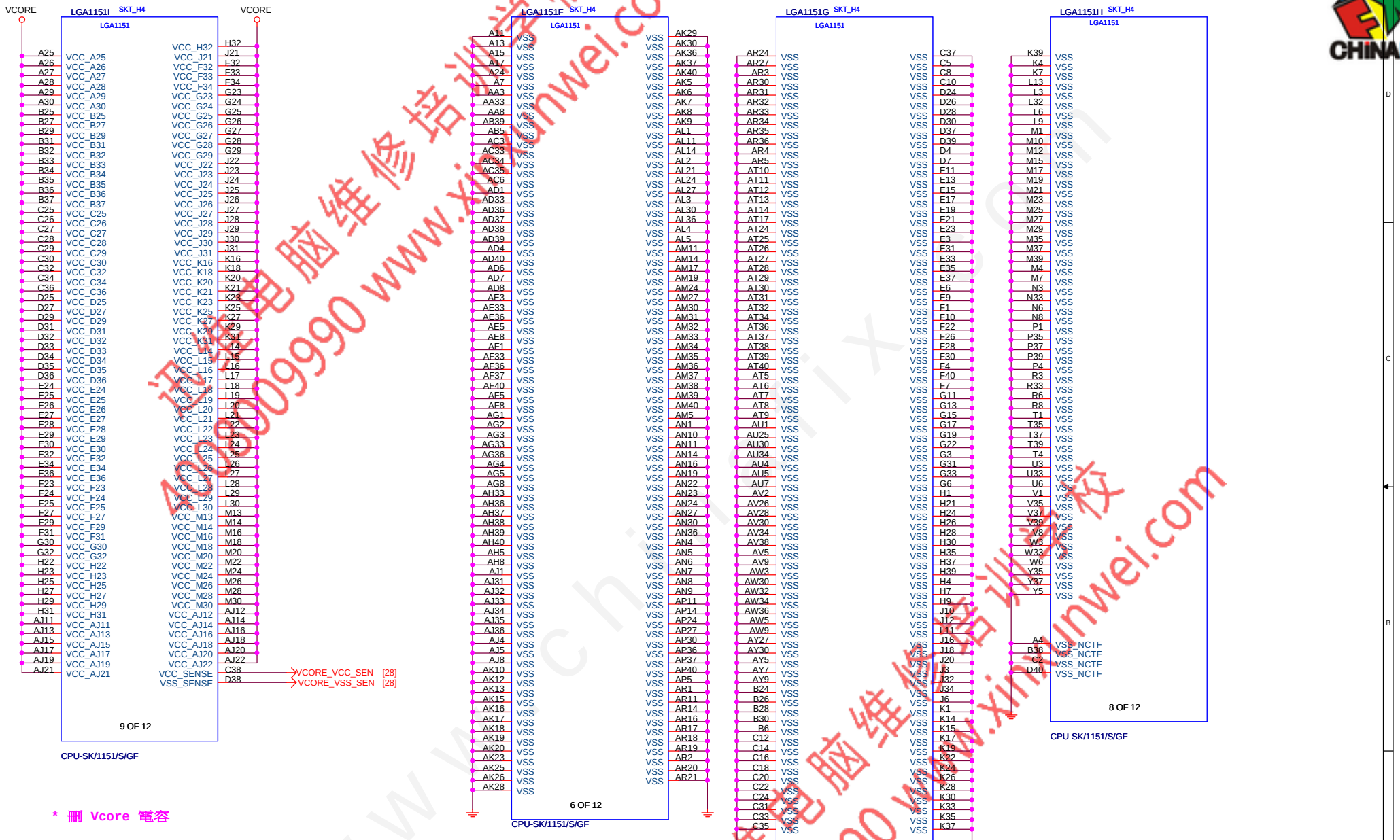

Gigabyte Technology		
Title: CPU LGA1151-C		
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Rev:0.6

DDR4_4

DDR4_2

* net 改 VDDQ

DDR12V Decouple

DDRVTT Decouple

* 電容移到 [RT8120_DDR]

CHANNEL A0
SA2:0=000

CHANNEL A1
SA2:0=001

BLK

RED

* 黑色 筆寫扣

* 紅色 筆寫扣

* 移除 short pad

DDR4/28B8K/VA/D/GF/TWO LATCH

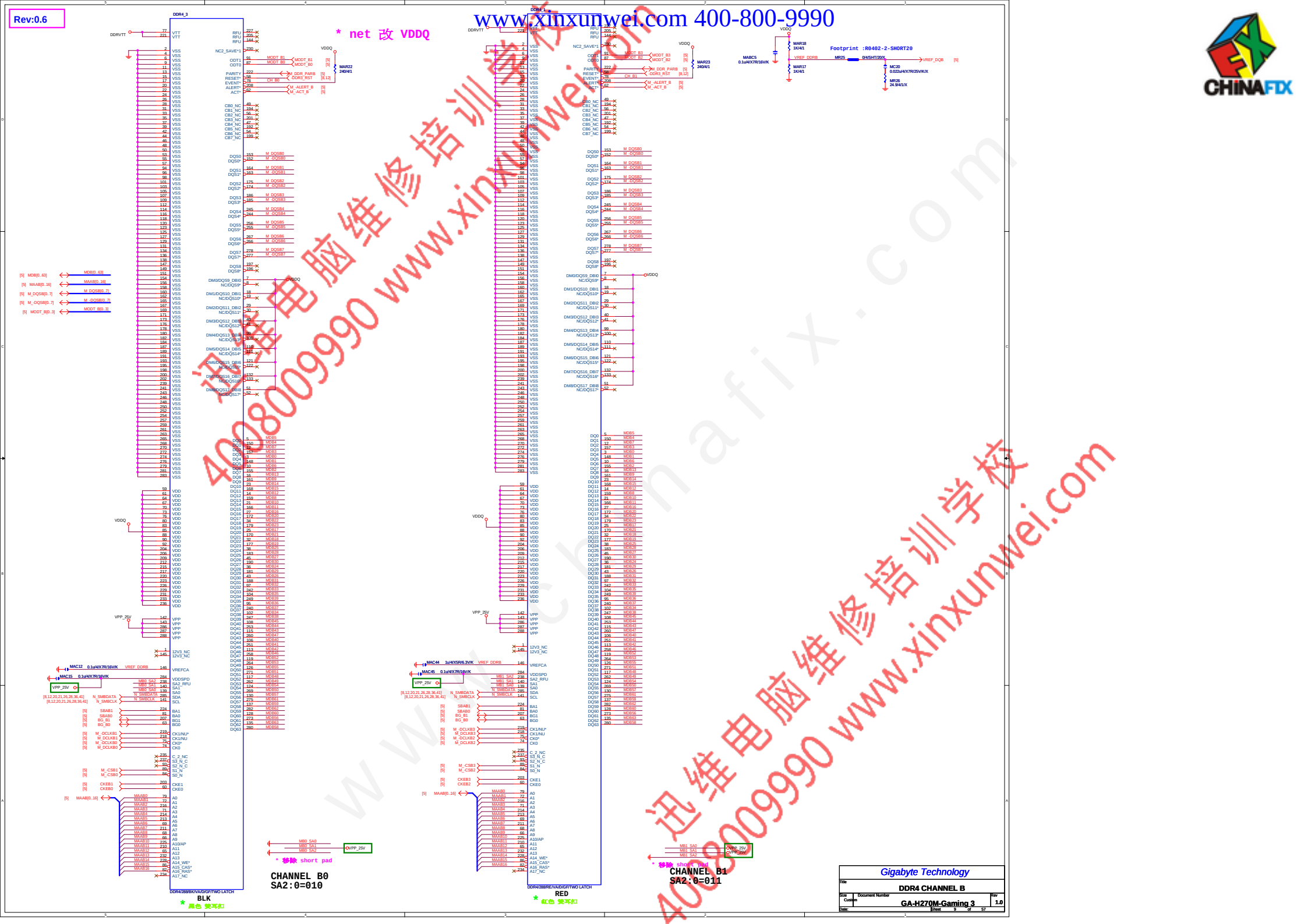
DDR4/28B/RE/VA/D/GF/TWO LATCH

Gigabyte Technology

DDR4 CHANNEL A

GA-H270M-Gaming 3

Rev 1.0


Rev:0.6
www.xinxunwei.com 400-800-9990
* net 改 VDDQ
DDR4_A
DDR4_B
DDR4_3
DDRVTT
VDDQ
VPP_25V
MAA0
MAA1
MAA2
MAA3
MAA4
MAA5
MAA6
MAA7
MAA8
MAA9
MAA10
MAA11
MAA12
MAA13
MAA14
MAA15
MAA16
MDB0
MDB1
MDB2
MDB3
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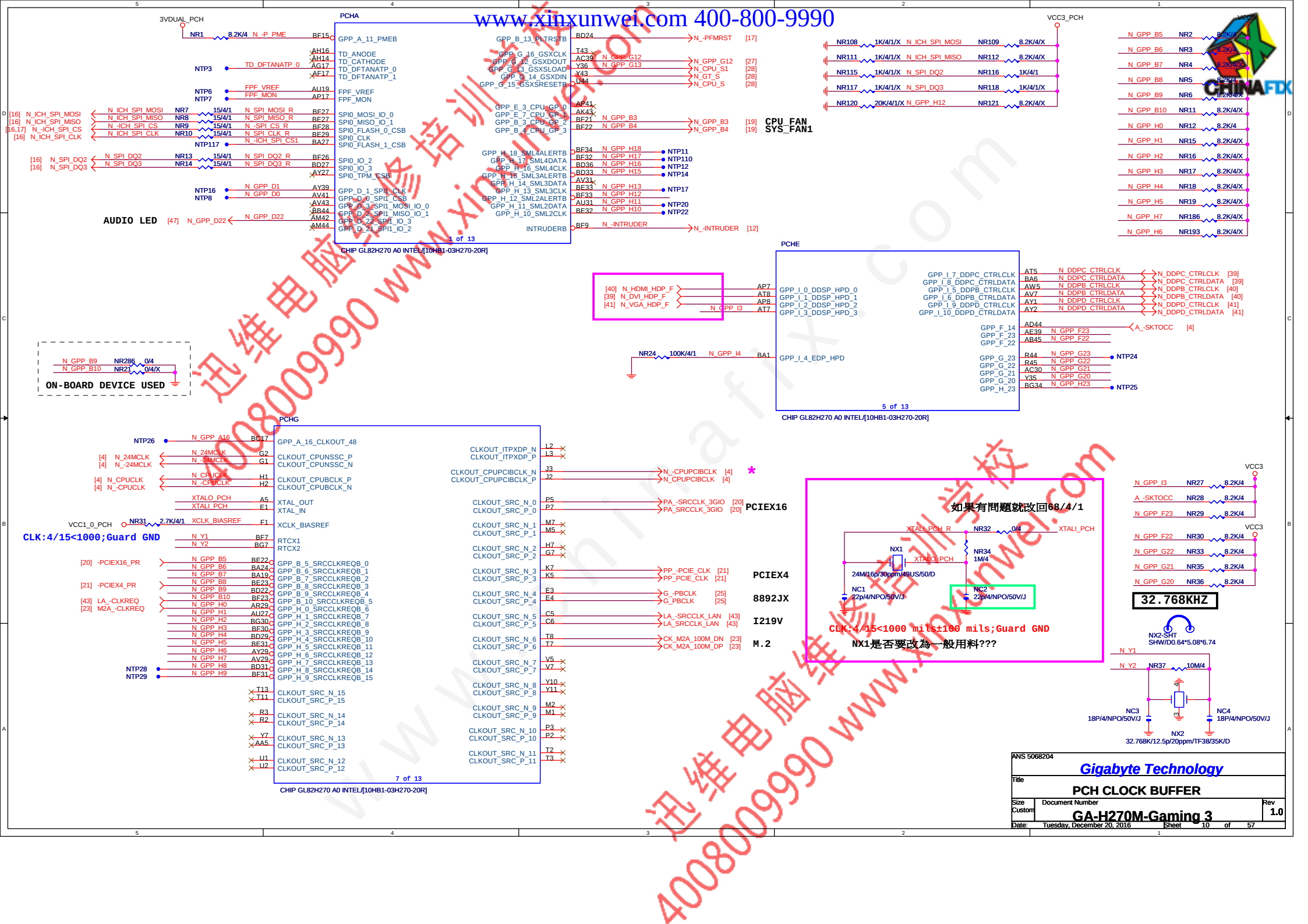
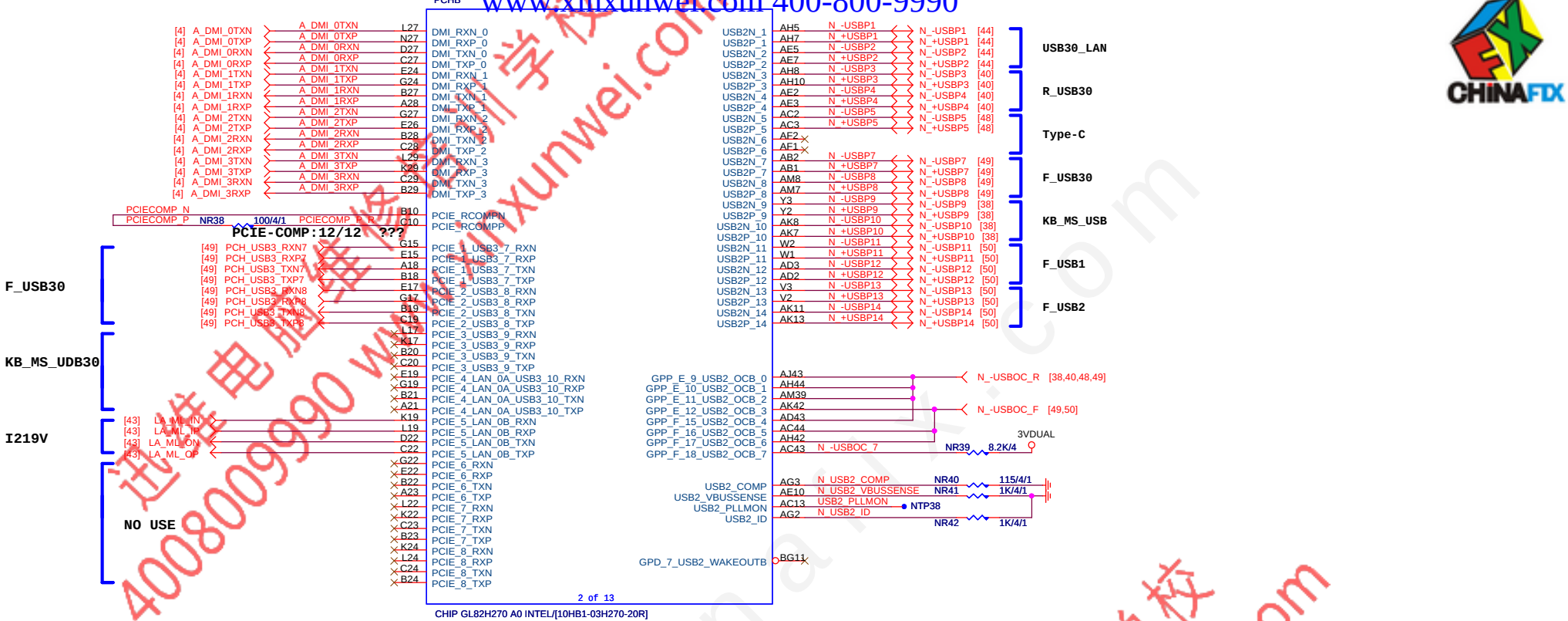
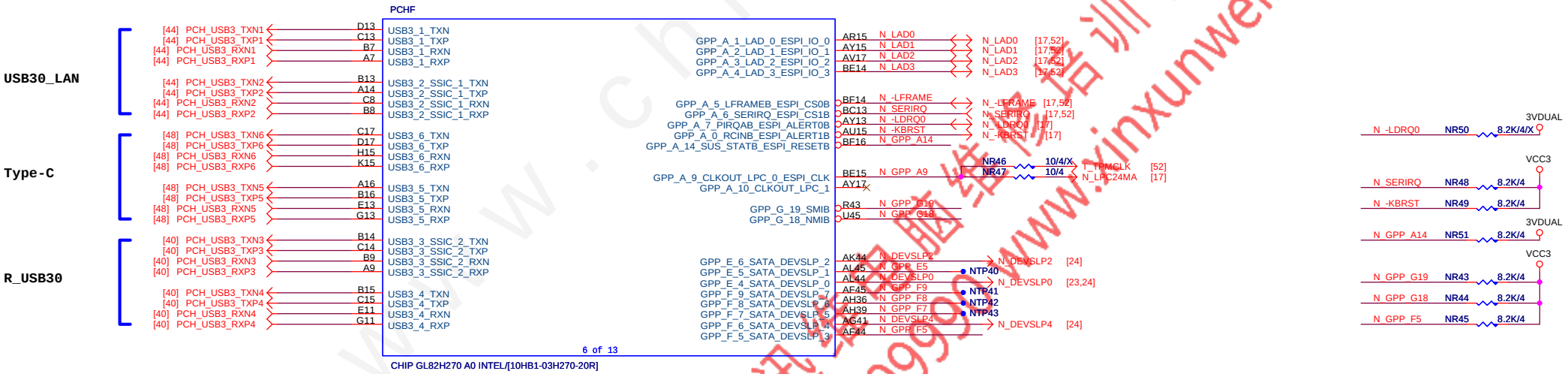
MDB66
MDB67
MDB68
MDB69
MDB70
MDB71
MDB72
MAR22 240/4/1
MAR23 240/4/1
MAR18 1K/4/1
MAR17 1K/4/1
MAR25 0/4/SHT/20X
MABC5 0.1u/4/X7R/16V/K
MABC12 0.1u/4/X7R/16V/K
MABC15 0.1u/4/X7R/16V/K
MABC44 1u/4/X5R/6.3V/K
MABC45 0.1u/4/X7R/16V/K
Footprint :R0402-2-SHORT20
VREF_DDRB
VREF_DQB
* 移除 short pad
CHANNEL B0
SA2:0=010
CHANNEL B1
SA2:0=011
DDR4/288/BK/VA/DI/GF/TWO LATCH
BLK
* 黑色 雙耳扣
DDR4/288/RE/VA/DI/GF/TWO LATCH
RED
* 紅色 雙耳扣
Gigabyte Technology
DDR4 CHANNEL B
GA-H270M-Gaming 3
1.0
Sheet 9 of 57







ANS 5068204	Gigabyte Technology	
Title	PCH DMI,USB,PCIE	
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
Date: Tuesday, December 20, 2016	Sheet 11 of 57	

PCHD

AZA_BCLK
AZA_RSTB
AZA_SDI_0
AZA_SDI_1
AZA_SDO
AZA_SYNC
AZA_PLLMON_P
AZA_PLLMON_N
AZACPU_SDO
AZACPU_SDI
AZACPU_SCLK
GPP_D_8_SSP0_SCLK
GPP_D_7_SSP0_RXD
GPP_D_6_SSP0_TXD
GPP_D_5_SSP0_SFRM
GPP_D_20_DMIC_DATA_0
GPP_D_19_DMIC_CLK_0
GPP_D_18_DMIC_DATA_1
GPP_D_17_DMIC_CLK_1
RESETB
SRTCRSTB
PCH_PWROK
RSMRSTB
DSW_PWROK
GPP_C_2_SMBALERTB
GPP_C_0_SMBCLK
GPP_C_1_SMBDATA
GPP_C_5_SML0ALERTB
GPP_C_3_SML0CLK
GPP_C_4_SML0DATA
GPP_B_23_SML1ALERTB_PCHHOTB
GPP_C_6_SML1CLK
GPP_C_7_SML1DATA
GPP_A_12_BM_BUSYB_ISH_GP_6_SX_EXIT_HOLDOFFB
GPP_A_8_CLKRUNB
GPD_11_LANPHYPC
GPD_9_SLP_WLANB
DARM_RESETB
GPP_B_2_VRALERTB
GPP_B_1
GPP_B_0
GPP_G_17_ADR_COMPLETE
GPP_B_11
SYS_PWROK
WAKEB
GPD_6_SLP_AB
SLP_LANB
GPP_B_12_SLP_S0B
GPD_4_SLP_S3B
GPD_5_SLP_S4B
GPD_10_SLP_S5B
GPD_8_SUSCLK
GPD_0_BATLOWB
GPP_A_15_SUSACKB
GPP_A_13_SUSWARNB_SUSPWRDNACK
GPD_2_LAN_WAKEB
GPD_1_ACPRESENT
SLP_SUSB
GPD_3_PWRBTNB
SYS_RESETB
GPP_B_14_SPKR
CPUPWRGD
ITP_PMODE
JTAGX
JTAG_TMS
JTAG_TDO
JTAG_TDI
JTAG_TCK

4 of 13

CHIP GL82H270 A0 INTEL/[10HB1-03H270-20R]

PCHK

GPP_B_22_GSPI1_MOSI
GPP_B_21_GSPI1_MISO
GPP_B_20_GSPI1_CLK
GPP_B_19_GSPI1_CSB
GPP-B_18_GSPI0_MOSI
GPP_B_17_GSPI0_MISO
GPP_B_16_GSPI0_CLK
GPP_B_15_GSPI0_CSB
GPP_C_9_UART0_TXD
GPP_C_8_UART0_RXD
GPP_C_11_UART0_CTSB
GPP_C_10_UART0_RTSB
GPP_C_15_UART1_CTSB_ISH_UART1_CTSB
GPP_C_14_UART1_RTSB_ISH_UART1_RTSB
GPP_C_13_UART1_TXD_ISH_UART1_TXD
GPP_C_12_UART1_RXD_ISH_UART1_RXD
GPP_C_23_UART2_CTSB
GPP_C_22_UART2_RTSB
GPP_C_21_UART2_TXD
GPP_C_20_UART2_RXD
GPP_C_19_I2C1_SCL
GPP_C_18_I2C1_SDA
GPP_C_17_I2C0_SCL
GPP_C_16_I2C0_SDA
GPP_D_4_ISH_I2C2_SDA_I2C3_SDA
GPP_D_23_ISH_I2C2_SCL_I2C3_SCL
GPP_D_9_ISH_SPI_CSB
GPP_D_10_ISH_SPI_CLK
GPP_D_11_ISH_SPI_MISO
GPP_D_12_ISH_SPI_MOSI
GPP_D_16_ISH_UART0_CTSB_SML0BALERTB
GPP_D_15_ISH_UART0_RTSB
GPP_D_14_ISH_UART0_TXD_SML0BCLK_I2C2_SCL
GPP_D_13_ISH_UART0_RXD_SML0BDATA_I2C2_SDA
GPP_H_20_ISH_I2C0_SCL
GPP_H_19_ISH_I2C0_SDA
GPP_H_22_ISH_I2C1_SCL
GPP_H_21_ISH_I2C1_SDA
GPP_A_23_ISH_GP_5
GPP_A_22_ISH_GP_4
GPP_A_21_ISH_GP_3
GPP_A_20_ISH_GP_2
GPP_A_19_ISH_GP_1
GPP_A_18_ISH_GP_0
GPP_A_17_ISH_GP_7

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CHIP GL82H270 A0 INTEL/[10HB1-03H270-20R]

FOR PWM MB ID

3VDUAL_PCH
3VDUAL_PCH_BAT
ND1 BAS40-05/0.2A/SOT23
BAT BAT-SK/BK/P/S/D/SN
BATTERY CR2032
BATTERY-DUAL-4
RB 必须放在BAT外

For IT8620 Ctrl

At least 10ms delay after 3VDUAL_PCH stabel

N_INTERMEN : Integrated 1.05V SUS VRM Enable

CLR_CMOS

PCH_PWROK
VCC1_0_PCH
VCC3_PCH
3VDUAL_PCH
VCCST_VCCPLL
VDDQ

GPP_C5 --H:eSPI or L:LPC

HDA_SDO:Flash Descriptor Security (override);1=DIS,0=ENABLE

GPP_C2 --1:ENABLE AMT/SBA FOR INTEL

GPP_B22 --BIOS SELECT;0:SPI / 1:LPC

GPP_B18 --0:dis" no boot mode"

ANS	5068204
	Gigabyte Technology
Title	PCH MISC
Size	Custom
Document Number	GA-H270M-Gaming 3
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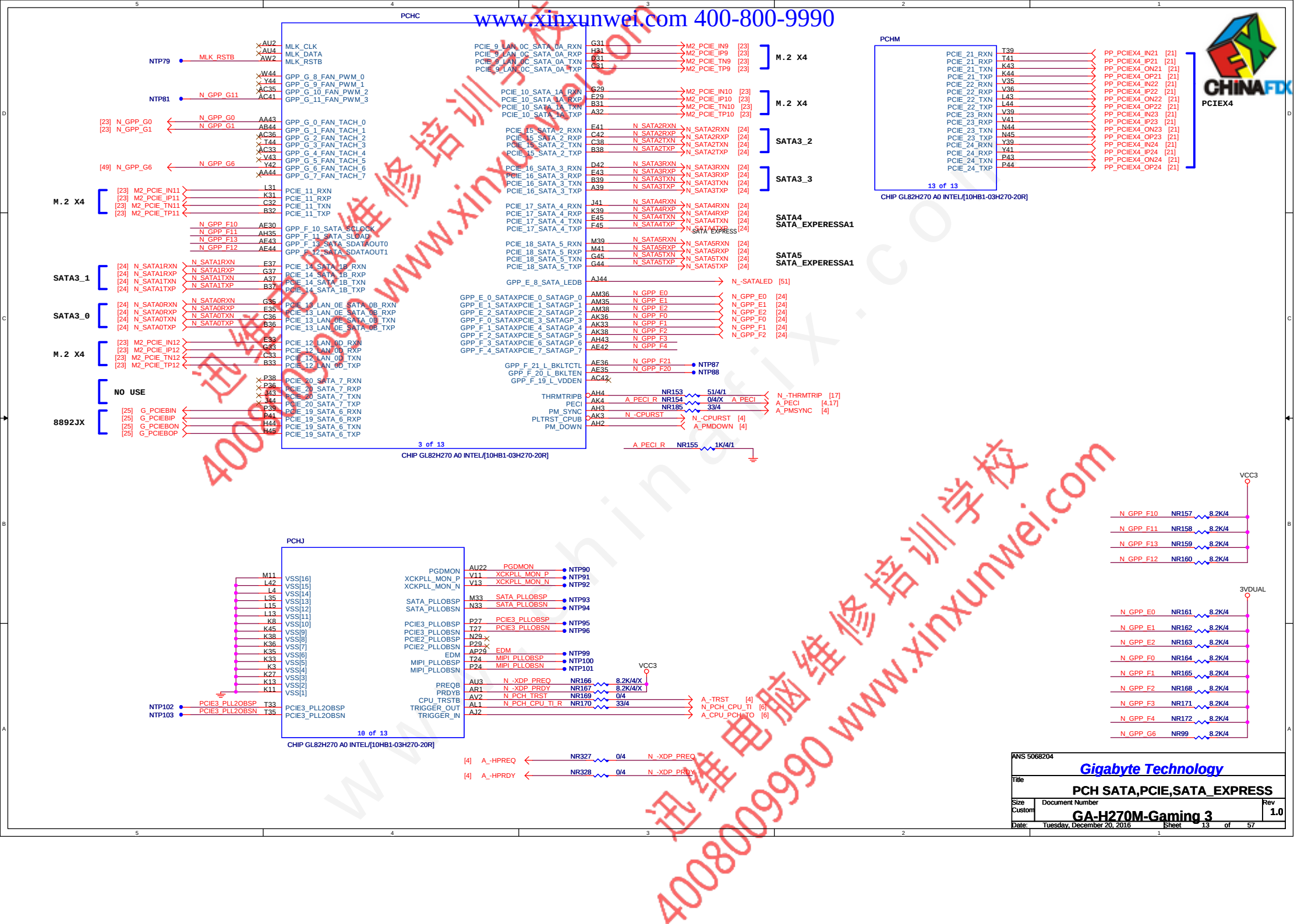
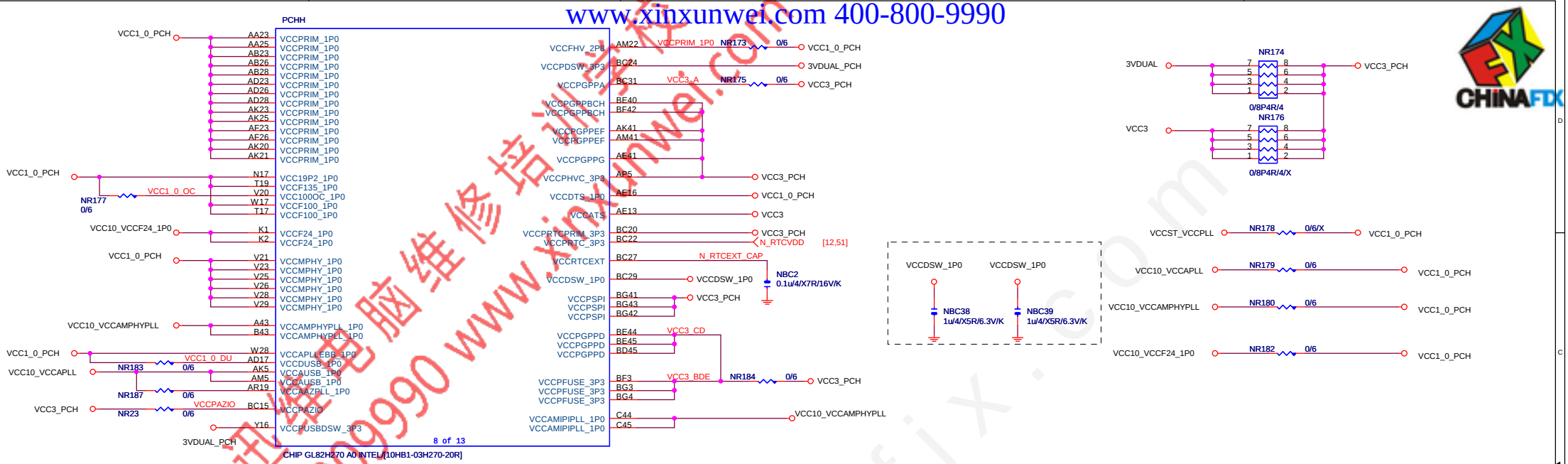
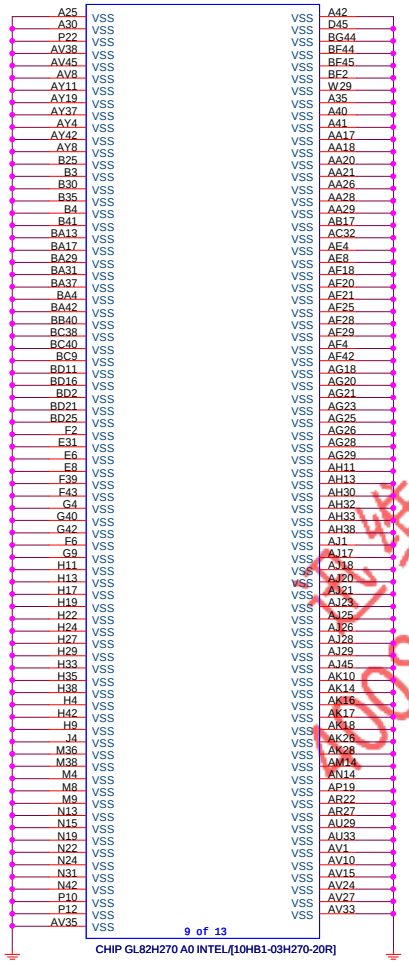


ANS	5068204
	Gigabyte Technology
Title	PCH SATA,PCIE,SATA_EXPRESS
Size	Custom
Document Number	GA-H270M-Gaming 3
Rev	1.0
Date:	Tuesday, December 20, 2016
Sheet	13 of 57



ANS 5068204	Gigabyte Technology	
Title	PCH PWR	
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
Date: Tuesday, December 20, 2016	Sheet 14 of 57	

PCHI



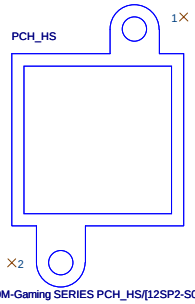
CHIP GL82H270 A0 INTEL/[10HB1-03H270-20R]

PCHL

CHIP GL82H270 A0 INTEL/[10HB1-03H270-20R]

HEATSINK

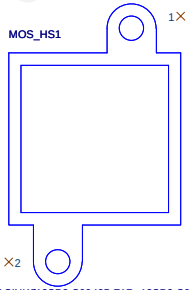
PCH_HS



Footprint :BGAHSINK-Z170M-D3H

H270M-Gaming SERIES PCH_HS/[12SP2-S04407-11R_12SP2-S04407-12R_12SP2-S04407-13R]

MOS_HS1



Footprint :
MOSHSINK-Z1704-HD3

HEAT SINK/[12SP2-S09425-F1R_12SP2-S09425-F2R_12SP2-S09425-F3R]

ANS 5068204 **Gigabyte Technology**

Title: **PCH GND**

Size: Custom | Document Number: **GA-H270M-Gaming 3** | Rev: 1.0

Date: Tuesday, December 20, 2016 | Sheet 15 of 57

DUAL BIOS

MOSI For DMI RX Termination Voltage

指定用DII

3VDUAL

BSR1 1K/4/1/X

BSR2 1K/4/1/X

BSR3 0/4/X

Single BIOS OPTION

-SPI_CS_1 -SPI_CS_1 [17]

S0T23

N_-ICH_SPI_CS N_-ICH_SPI_CS [10,17]

BSQ1 MMBT2222A/SOT23/600mA/40/X

BSQ2 MMBT2222A/SOT23/600mA/40/X S0T23

-SPI_HOLD_B BSR4 8.2K/4/X

BSC1 10p/4/NPO/50V/J/X

[10] N_SPI_DQ2 BSR9 0/4/SHT/X N_-SPI_WP0

M_BIOS

1	CS#	VDD	8
2	SO	HOLD#	7
3	WP#	SCK	6
4	VSS	SI	5

-SPI_CS_1 BSR8 22/4

SPI_MISO

-HOLD0 BSR13 0/4/SHT/X N_SPI_DQ3

N_ICH_SPI_CLK

N_ICH_SPI_MOSI

BSR12 0/4/SHT/M/X

BSC2 1u/4/X5R/6.3V/K

BSC3 10p/4/NPO/50V/J/X

MAIN BIOS

64M/Q/SPI/SO8/S

* (footprint 改 SOIC8-SPI-SOCKET)

[17] -SPI_HOLD_M -SPI_HOLD_M BSR16 1K/4/1

[17] -SPI_HOLD_B -SPI_HOLD_B BSR17 1K/4/1

[10] N_ICH_SPI_MISO N_ICH_SPI_MISO BSR18 8.2K/4

[10] N_ICH_SPI_MISO BSR19 22/4 SPI_MISO

指定用DII

BSR5 1K/4/1/X

BSR6 1K/4/1/X

BSQ3 MMBT2222A/SOT23/600mA/40/X S0T23

N_-ICH_SPI_CS

BSQ4 MMBT2222A/SOT23/600mA/40/X S0T23

-SPI_HOLD_M BSR7 8.2K/4/X

-SPI_CS_2 -SPI_CS_2 [17]

B_BIOS

1	CS#	VDD	8
2	SO	HOLD#	7
3	WP#	SCK	6
4	VSS	SI	5

-SPI_CS_2 BSR10 22/4

SPI_MISO

[10] N_SPI_DQ2 BSR11 0/4/SHT/X N_-SPI_WP1

-HOLD1 BSR15 0/4/SHT/X N_SPI_DQ3 [10]

N_ICH_SPI_CLK N_ICH_SPI_CLK [10]

N_ICH_SPI_MOSI N_ICH_SPI_MOSI [10]

BSR14 0/4/SHT/M/X

BSC4 1u/4/X5R/6.3V/K

BACKUP BIOS

64M/Q/SPI/SO8/S

* (footprint 改 IC8-BIOS)

BSC5 0.1u/4/X7R/16V/K/X

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

1 means floating
0 means PD 1K

BIOS

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

* 試產先上 , PVT 移除

Gigabyte Technology

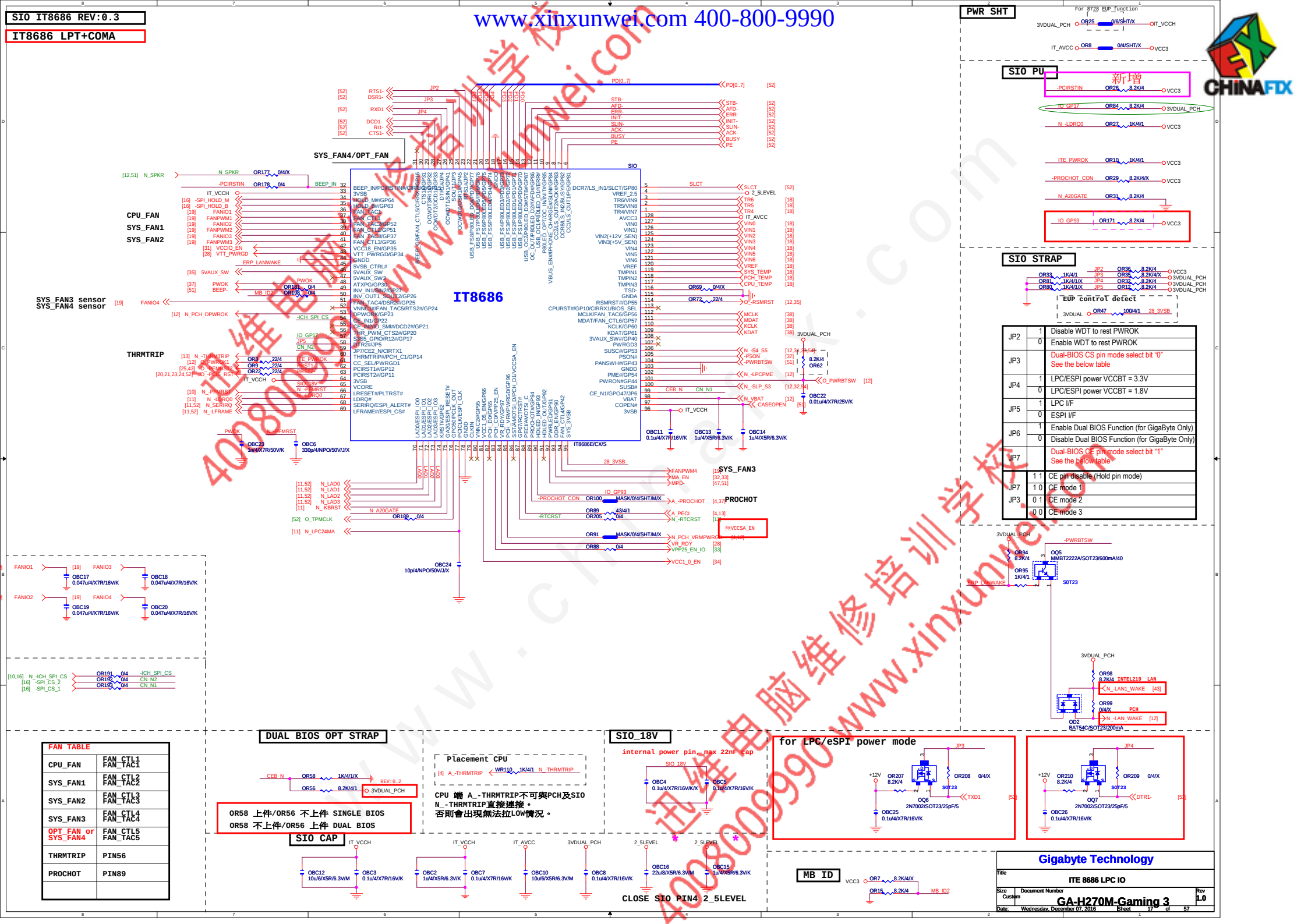
Title: BIOS

Size: Custom | Document Number: GA-H270M-Gaming 3 | Rev: 1.0

Date: Wednesday, December 07, 2016 | Sheet 16 of 57

SIO IT8686 REV:0.3

IT8686 LPT+COMA



FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL4 FAN_TAC4
OPT_FAN or SYS_FAN4	FAN_CTL5 FAN_TAC5
THRMTRIP	PIN56
PROCHOT	PIN89

JP2	1	Disable WDT to rest PWROK
	0	Enable WDT to rest PWROK
JP3		Dual-BIOS CS pin mode select bit "0" See the below table
JP4	1	LPC/ESPI power VCCBT = 3.3V
	0	LPC/ESPI power VCCBT = 1.8V
JP5	1	LPC I/F
	0	ESPI I/F
JP6	1	Enable Dual BIOS Function (for GigaByte Only)
	0	Disable Dual BIOS Function (for GigaByte Only)
JP7		Dual-BIOS CE pin mode select bit "1" See the below table

JP7	1	1	CE pin disable (Hold pin mode)
JP7	1	0	CE mode 1
JP3	0	1	CE mode 2
	0	0	CE mode 3

Title	ITE 8686 LPC IO
Size: Custom	Document Number: GA-H270M-Gaming 3
Rev	1.0
Date:	Wednesday, December 07, 2016
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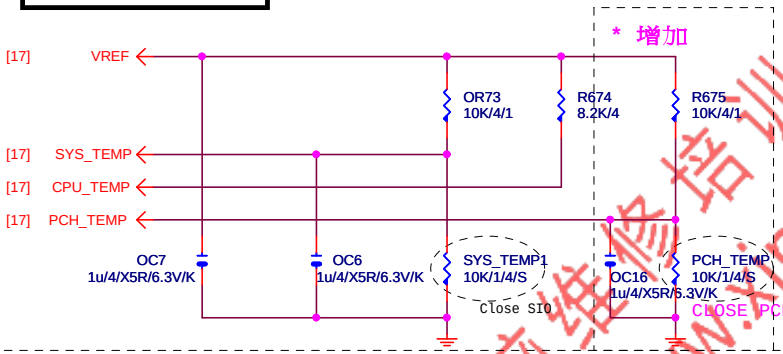
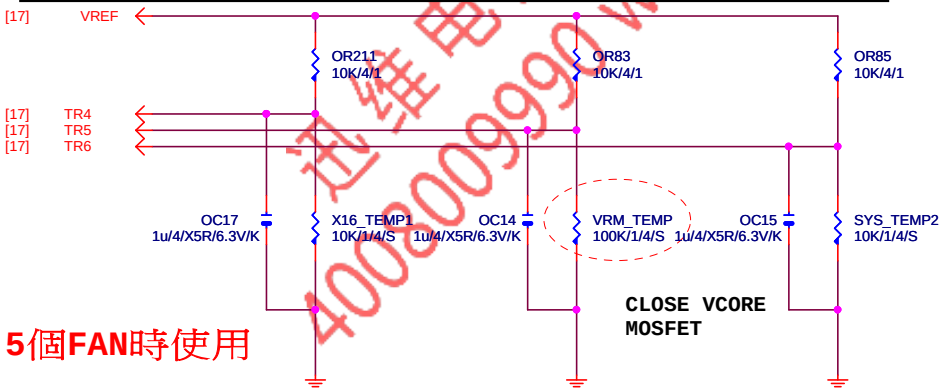
Gigabyte Technology

TEMP H/W MONITOR



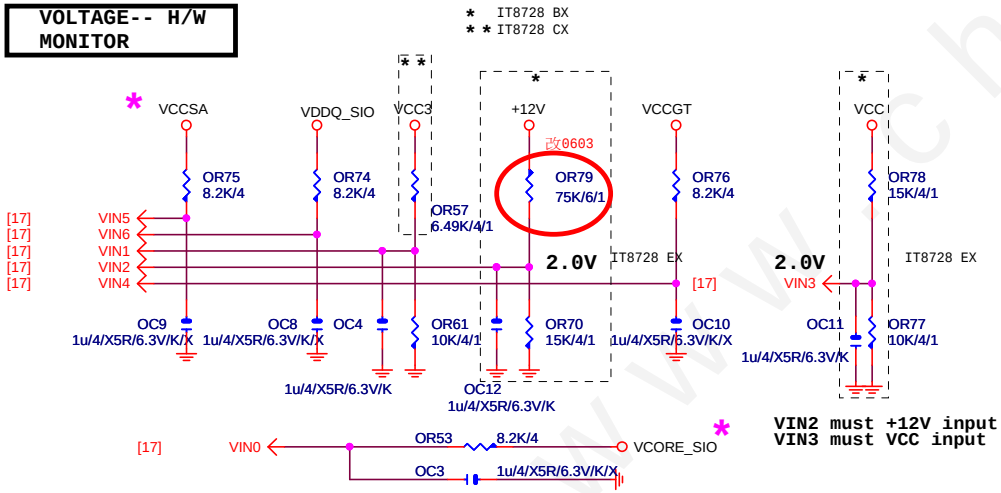
RS_VCORE、RS_VCCGT CLOSE CPU VCORE & VCCGT MOSFET

-PROCHOT:有mos heartsink不用prochot function

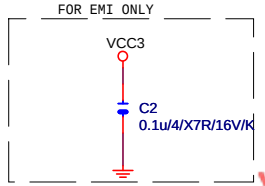


5個FAN時使用

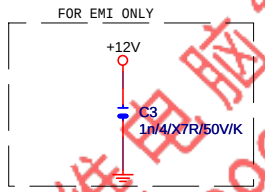
VOLTAGE-- H/W MONITOR



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

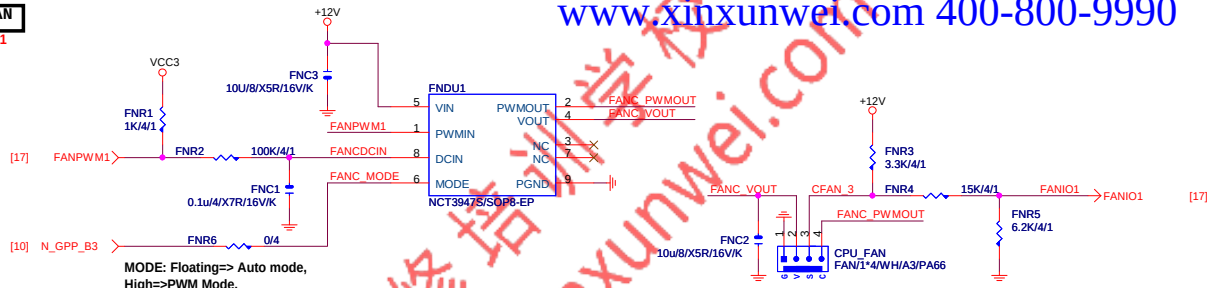


★Update 2015.04.24



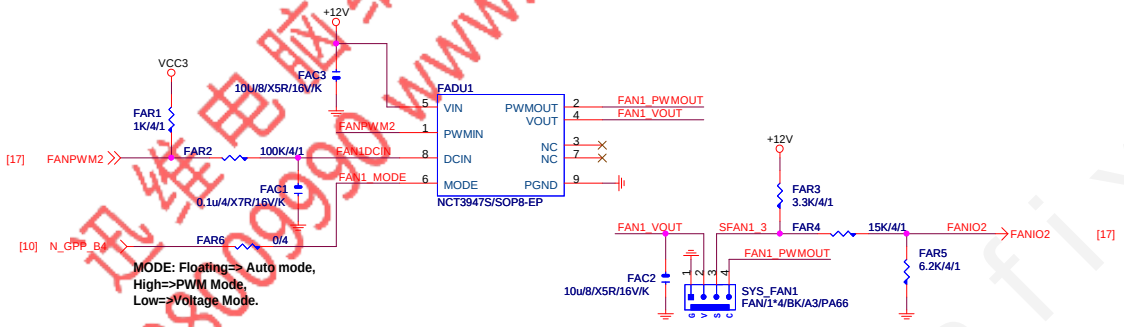
Gigabyte Technology		
Title: HWM,KB/MS, FAN CTRL		
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
Date: Wednesday, December 07, 2016	Sheet 18 of 57	

Rev: 0.81 | CPU SMART FAN | ★Update 2016.06.01



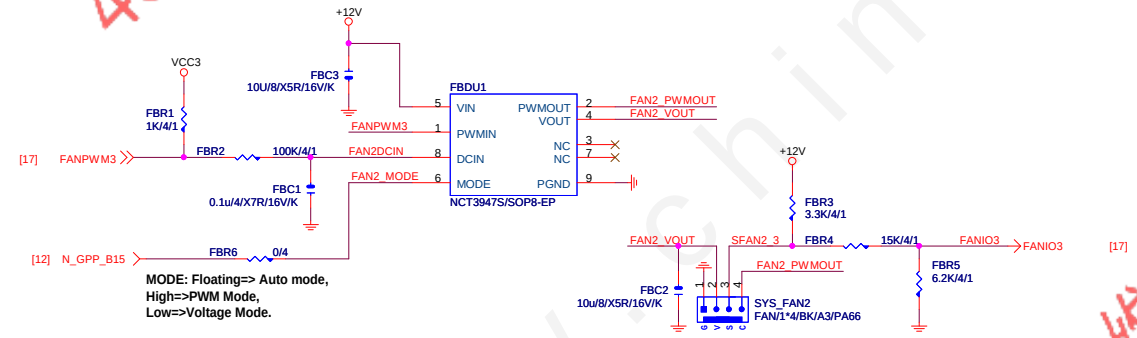
SYSTEM FAN1

A.



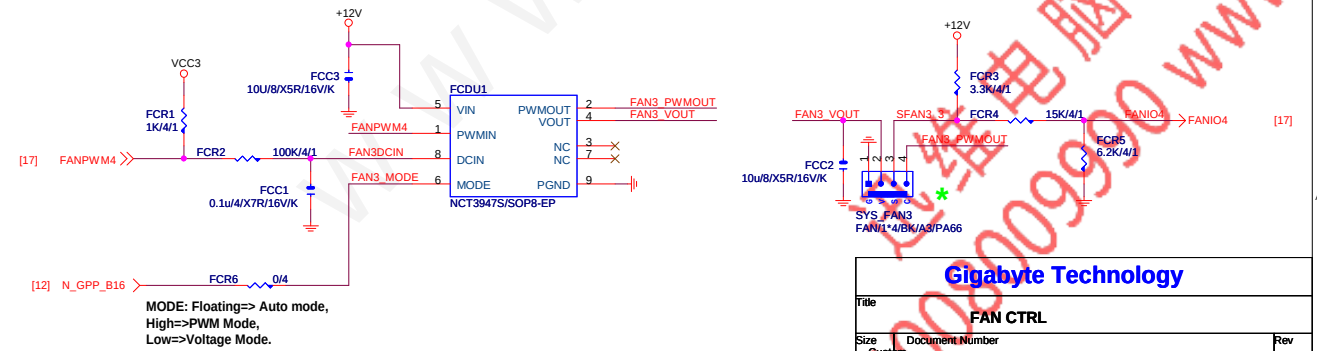
SYSTEM FAN2

B.



SYSTEM FAN3

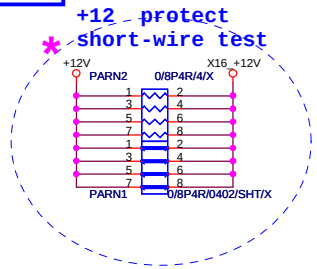
C.



Gigabyte Technology		
Title: FAN CTRL		
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
Date: Wednesday, December 07, 2016	Sheet 19 of 57	

Rev 0.2

+12 protect
short-wire test



Footprint : PCIESLOT-164P
3GIO_*16

PCIEX16

KEY

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
PCE-E X1(單向) BANDWITH=5GHz*(8b/10b)=4Gb/s=500MB/s

PCI-E REV:3.0--> 8GHZ
PCE-E X1(單向) BANDWITH=8GHz*(128b/130b)=8Gb/s=1GB/s

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

紅色SLOT

Gigabyte Technology	
Title	PCI EXPRESS * 16
Size: Custom	Document Number: GA-H270M-Gaming 3
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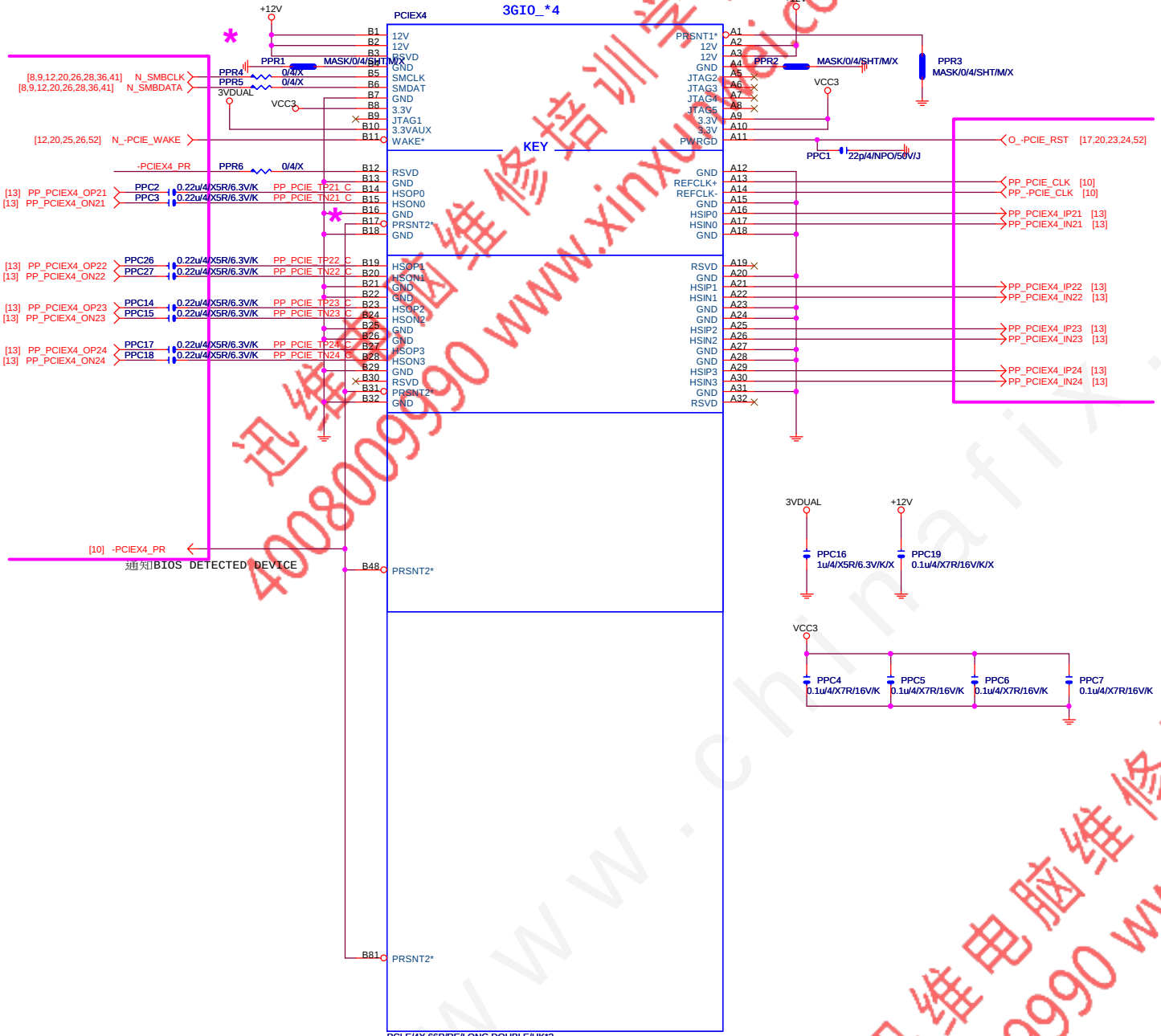
Rev 0.51

PCIE*4

Footprint : PCIESLOT-64P-1



紅色

Gigabyte Technology		
Title	PCIE_X4	
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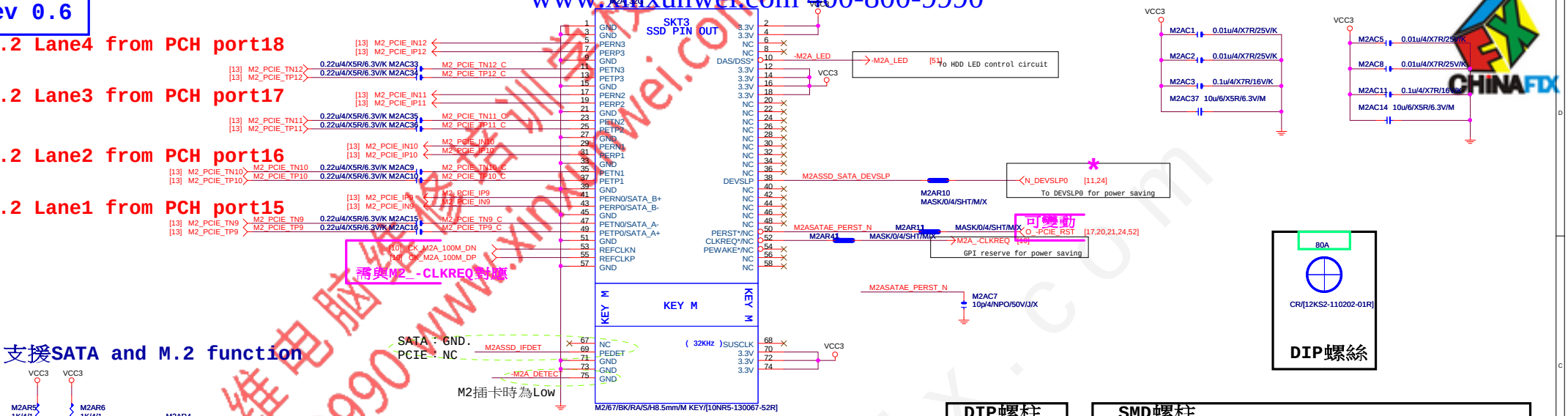
Rev 0.6

M.2 Lane4 from PCH port18

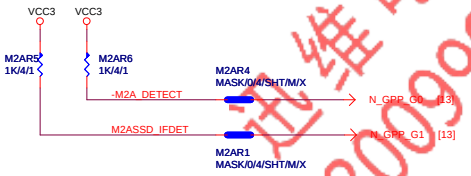
M.2 Lane3 from PCH port17

M.2 Lane2 from PCH port16

M.2 Lane1 from PCH port15

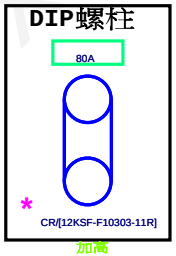


支援SATA and M.2 function

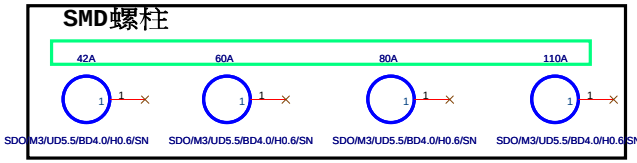


* Footprint : NGFF-M-75P-11CM-3-SMD

DIP螺柱



SMD螺柱



* Footprint : HOLE_C236D165-A

DIP螺絲

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	

Gigabyte Technology

Title: M.2 X4

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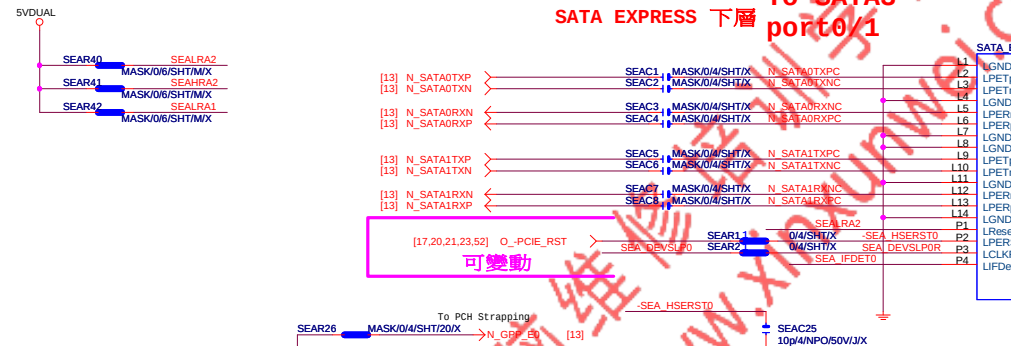
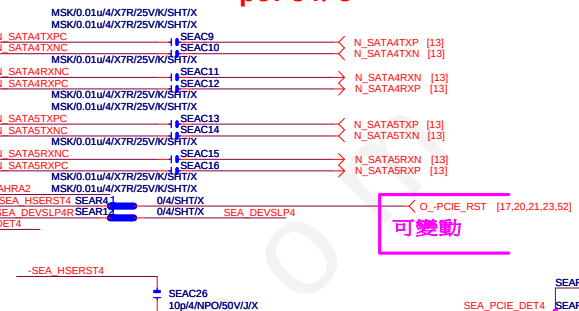
Rev 0.5

SATA EXPRESS 下層 To SATA3 port0/1



SATA EXPRESS 上層 To SATA3 port4/5

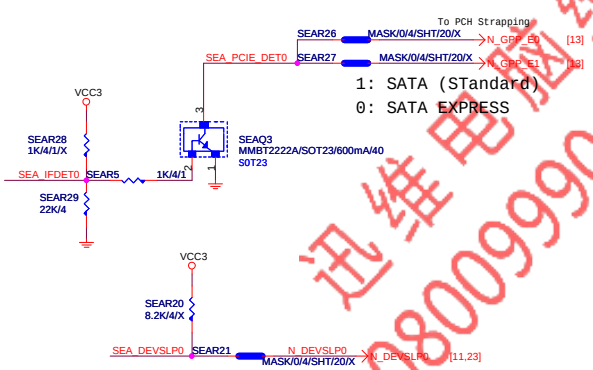


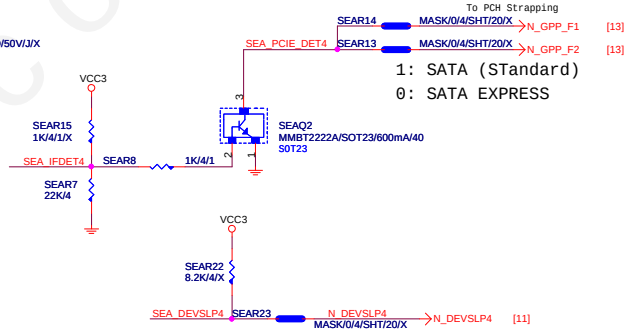
Capture Value 用上層封孔暫代

SATA EXPRESS料號

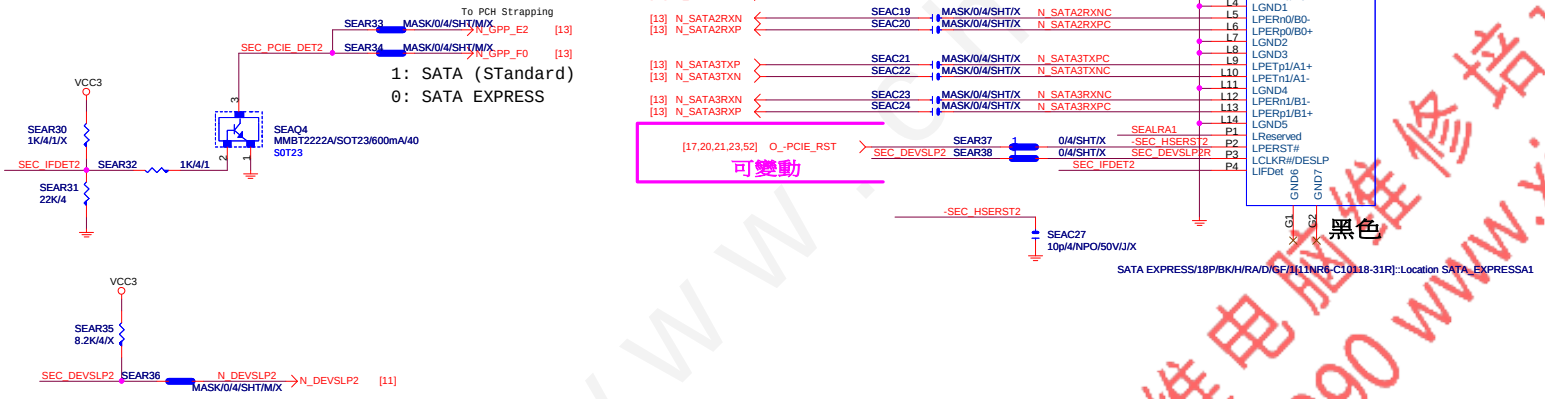
雙層:TBD

單層+2SATA:11NR6-C10236-03R
單層:11NR6-C10118-03R
H270單層+2SATA:
SATA EXPRESS/32P/BK/H/RA/D/GF/2





SATA EXPRESS 單層 To SATA3 port2/3



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

Gigabyte Technology

Title: SATA EXPRESS

Size	Document Number	Rev
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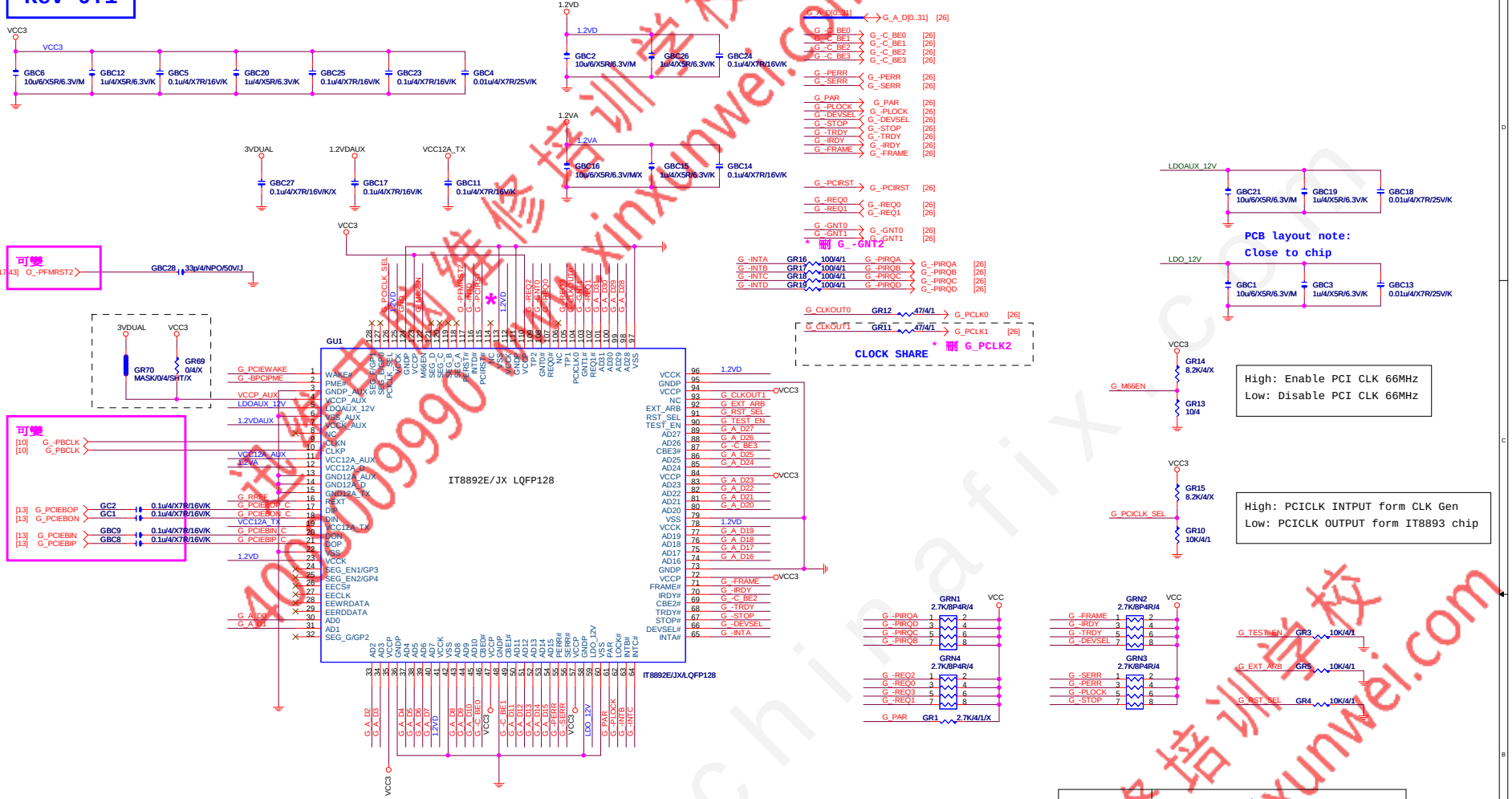
Rev 0.1



Component change note	
IT8892FX	GR70,GR74,GR76,GR78,GR66 : ON GR69,GR73,GR75,GR77,GR67 : NC GR44 resistor is 12k ohm GL14,GL10,GL16,GL17 : ON GL19,GL21,GL23,GL25: NC
IT8892JX	GR70,GR73,GR75,GR78,GR66 : ON GR69,GR74,GR76,GR77,GR67 : NC GR44 resistor is 18k ohm GL14,GL10,GL16,GL17 : ON GL19,GL21,GL23,GL25: NC
External LDO Power (IT8892JX)	GR69,GR73,GR75,GR77,GR67 : ON GR70,GR78,GR66 : NC GR44 resistor is 18k ohm GL19,GL21,GL23,GL25 : ON GL14,GL10,GL16,GL17 : ON

Gigabyte Technology

Title: IT8892E_JX

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Rev 0.1

PCI SLOT 1

PCI SLOT 2

PCI1

PCI2

PCI/120/P/BK/VA

-REQ0/-GNT0/A_D16

-REQ1/-GNT1/A_D17

PCI PU

GBRN1 8.2K/8P4R/4

GBRN2 1K/8P4R/4

PCI CAP

GABC11 22u/8/X5R/6.3V/M

GABC12 22u/8/X5R/6.3V/M/X

GABC4 0.1u/4/X7R/16V/K/X

GBBC4 0.1u/4/X7R/16V/K/X

GABC3 0.1u/4/X7R/16V/K/X

GBBC3 0.1u/4/X7R/16V/K/X

GABC9 0.1u/4/X7R/16V/K/X

GBBC9 0.1u/4/X7R/16V/K/X

GABC2 0.1u/4/X7R/16V/K/X

GBBC2 0.1u/4/X7R/16V/K/X

GABC5 33p/4/NPO/50V/J/X

GBBC5 33p/4/NPO/50V/J/X

GABC7 10p/4/NPO/50V/J/X

GBBC6 10p/4/NPO/50V/J/X

GAR1 100/4/1

GAR2 100/4/1

GBR1 100/4/1

GBR2 100/4/1

GBR3 0/6/SHT/X

GBR4 0/6/SHT/X

GIGABYTE

Title	PCI SLOT 1&2		
Size: Custom	Document Number: GA-H270M-Gaming 3		Rev: 1.0
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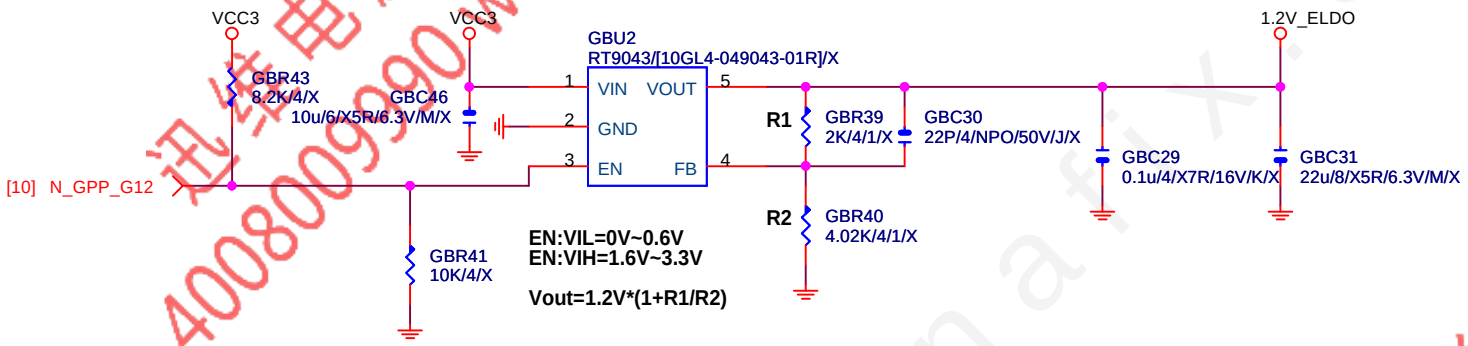
Rev 0.1

* 全部不上件



Gigabyte Technology

Title: LDO POWER

Size	Document Number	Rev
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REV:0.2

VCORE_SIO — VCORE_VS MASK/0/4/SHT/M/X — VCORE

請注意擺放位置

H:ISL95856 or ISL95858

L:ISL95866 or ISL95868

3VDUAL — NR400 8.2K/4 — N_GPP_C15 [12]

NR401 8.2K/4/X

close to PCH

ISL95856HRZ-T/QFN52

8 VIA Connect GND lay

DC-LL --> 2.1mohm

DC-LL --> 3.1mohm

close PWM

DAR44-->604 ohm
OCP-->160A

CLOSE DA_DL1 DC SIDE

CLOSE ?

for ISL95856 DISABLE PH3

DAR71-->499 ohm
OCP-->74A

CLOSE DE_DL1 DC SIDE

CLOSE ?

CLOSE PWM

CLOSE PWM

VCORE	ISL95856	ISL95866
DAR137	X	V
DAR138	V	X
DAR139	X	V
DAC15	V	X
DAR79	V	X
DAR33	V	X

VCCGT	ISL95856	ISL95866
DAR140	X	V
DAR141	V	X
DAR142	X	V
DAC27	V	X
DAR80	V	X
DAR51	V	X

不上件 — 連接至PCH:GPP_G14

不上件 — 連接至PCH:GPP_G15

DAR131 for DC-LL change to 0.4m ohm

不上件 — Z系列才需要留 — 連接至PCH GPP_G13

Title	ISL95866_PWM
Size / Custom	Document Number: GA-H270M-Gaming 3
Rev	1.0
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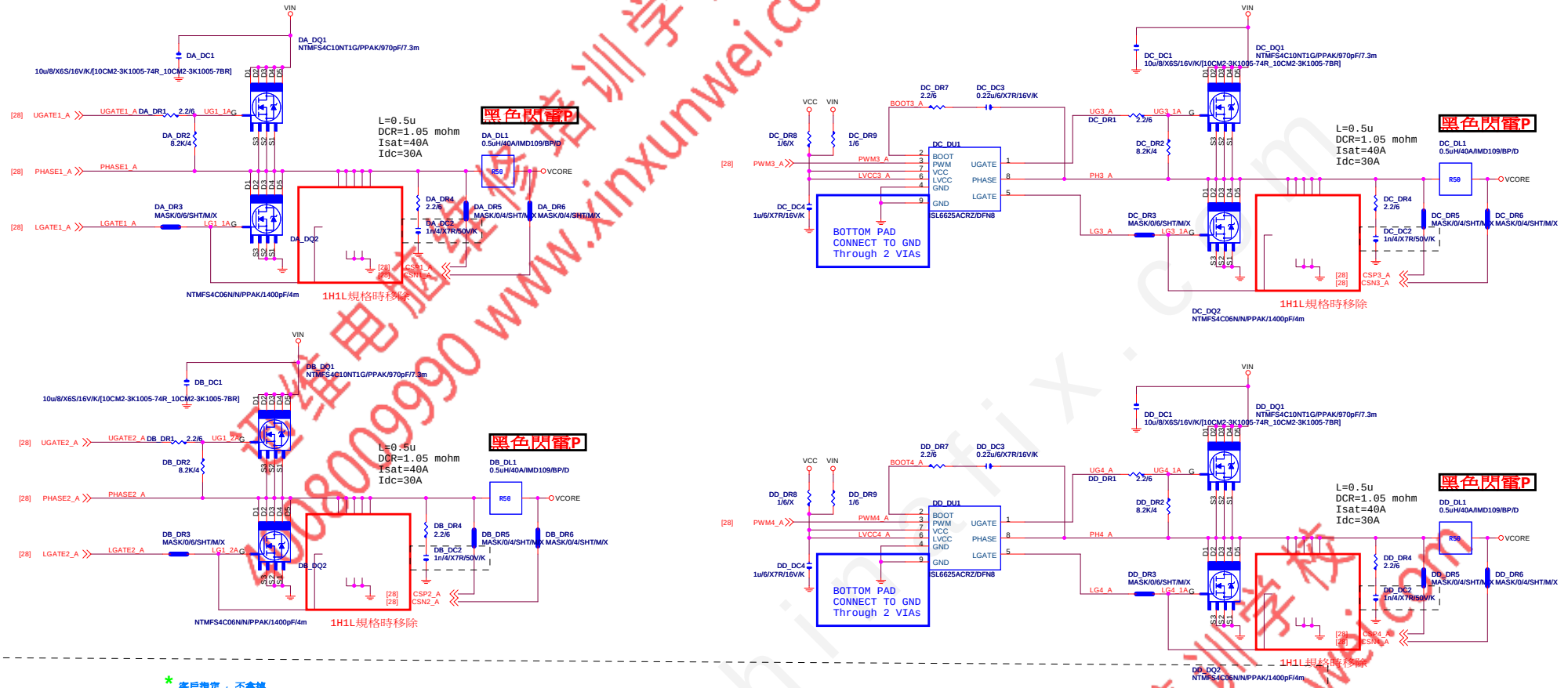
0.11 (IRON CHOKE)

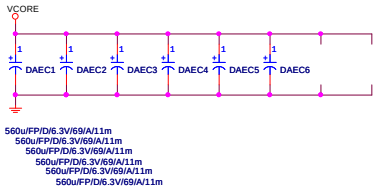
VCORE

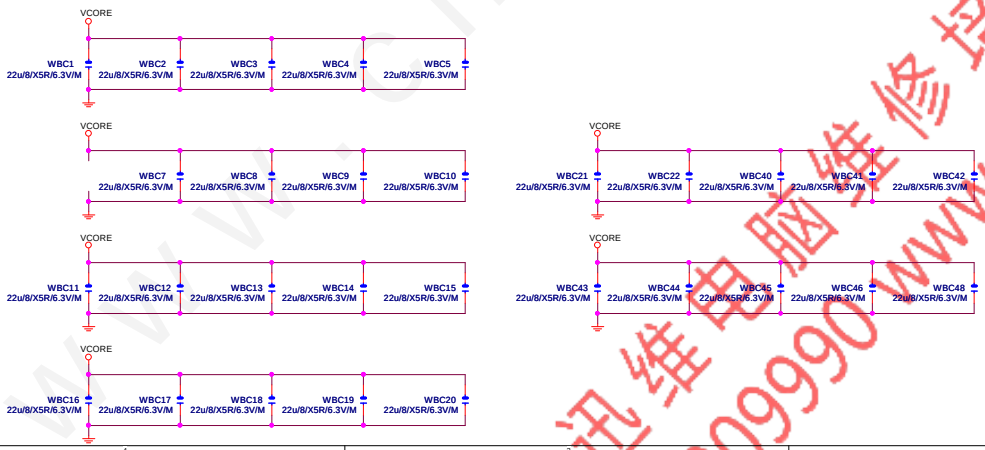


VCORE CAP

* 客戶指定，不拿掉

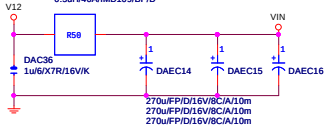
560u*8PCS
22u*29PCS





VIN CAP 270u*3PCS

黑色閃電P



GIGABYTE

Title	ISL95866_MOS_VCORE	
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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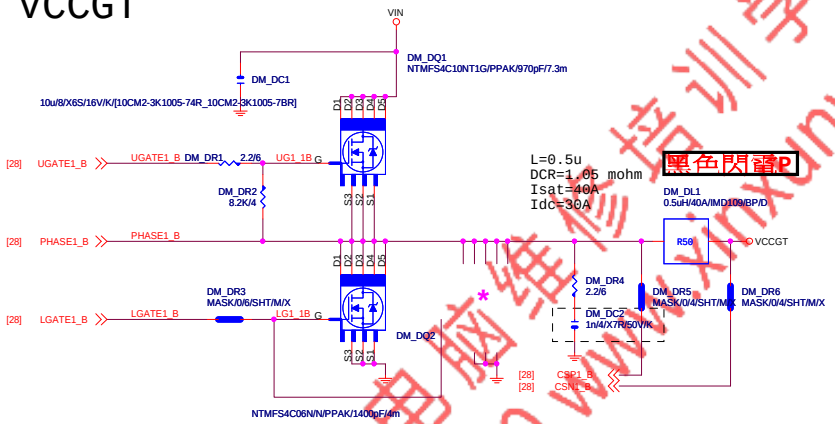
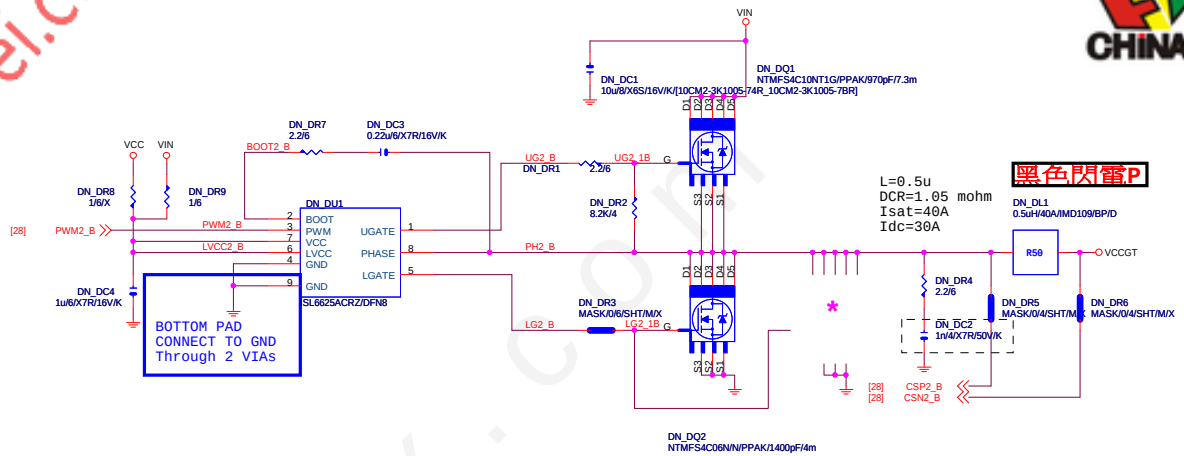
VCCGT

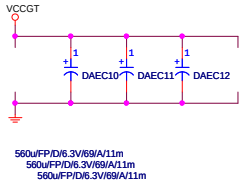


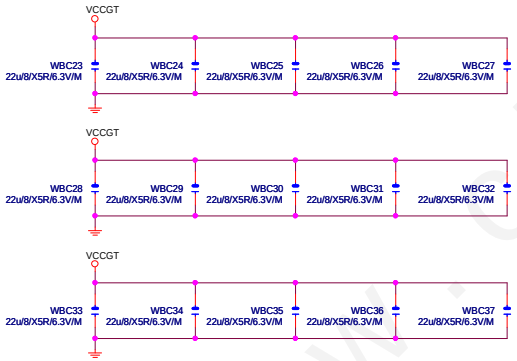


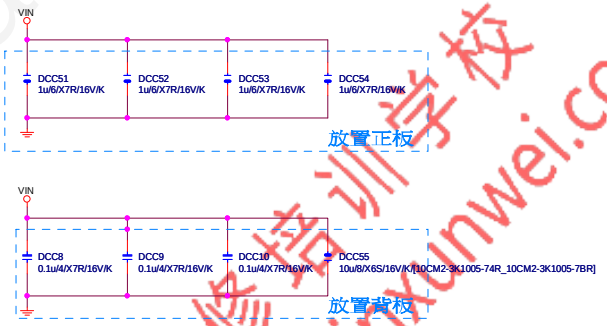
VCCGT CAP

* 客戶指定，不拿掉

560u*5PCS
22u*15PCS







GIGABYTE™

Title	ISL95858_MOS_VCCGT	
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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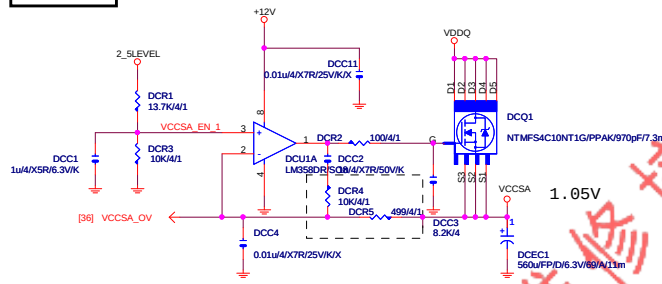
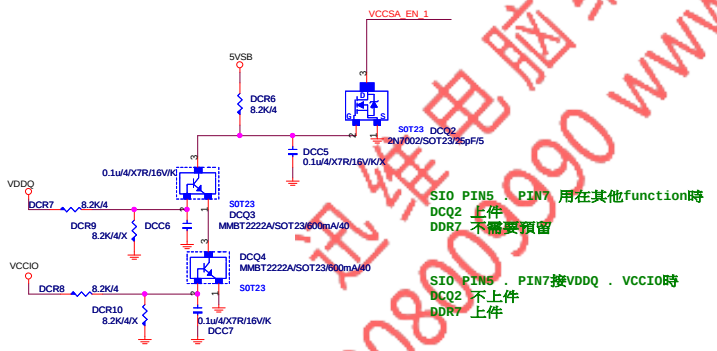
REV:0.21

VCCSA

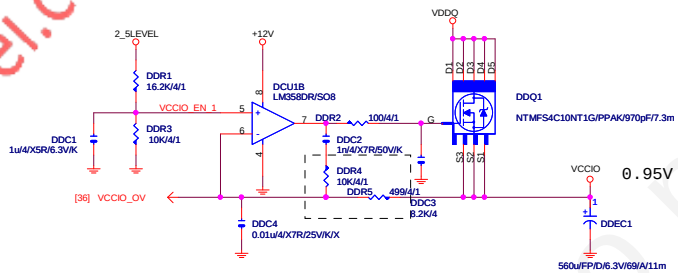


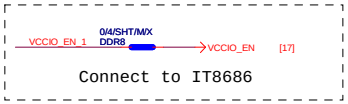


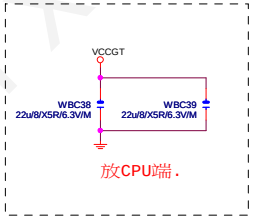
SIO PIN5 . PIN7 用在其他function時
DCQ2 上件
DDR7 不需要預留

SIO PIN5 . PIN7接VDDQ . VCCIO時
DCQ2 不上件
DDR7 上件

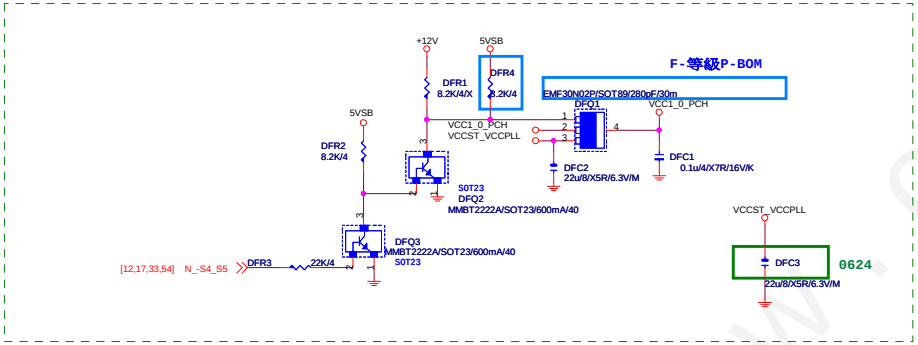
VCCIO







VCCST_VCCPLL



GIGABYTE™

Title	VCCSA_VCCIO	
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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DDR4

REV:0.1(IRON CHOKE)

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

DDR VIN CAP
560u*2PCS

黑色閃雷P

SUPPORT DDR4 1.2V
25A MAX
L=1u
DCR=2.5 mohm
Isat=35A
Idc=28A

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

Remote sense請從最重的負載端點拉回

CLOSE TO DDR POWER PLANE
VDDQ_SIO VDDQ
DDR_VS
MASK/0/4/SHT/M/X

RT8120DGS/SOP8
MAU2
COMP BOOT UGATE PHASE VCC PGND LG/OC FB GND

FREQ=300KHZ

OCP=40A

放靠近IC pin4

MOSFET請依MOSFET使用規則.自行選擇
ON-->10IF9-040406-10R[NTMFS4C06N/N/PPAK/1400pF/4m]
VISHAY-->10IF9-040012-10R[SIRA12DP/PPAKSO8/2070pF/4.3m]

NTMFS4C06N/N/PPAK/1400pF/4m
NTMFS4C06N/N/PPAK/1400pF/4m

PWR SEQ

For power sequence require

* Del MAR112
Connect to IT8686

DDRVTT

NCT3103S/SOP8/2A
MAU1
VIN GND VREF1 VOUT VREF2 ENABLE VCNTL BOOT_SEL

1.1A MAX

0/4/SHT/M/X
MAU1上NCT3103S時上件

DDR CAP

560u*4PCS
* 大電容 x4

22u*2PCS

DDRVTT CAP

* 大電容 x0

GIGABYTE

Title: RT8120_DDR POWER
Size: Custom
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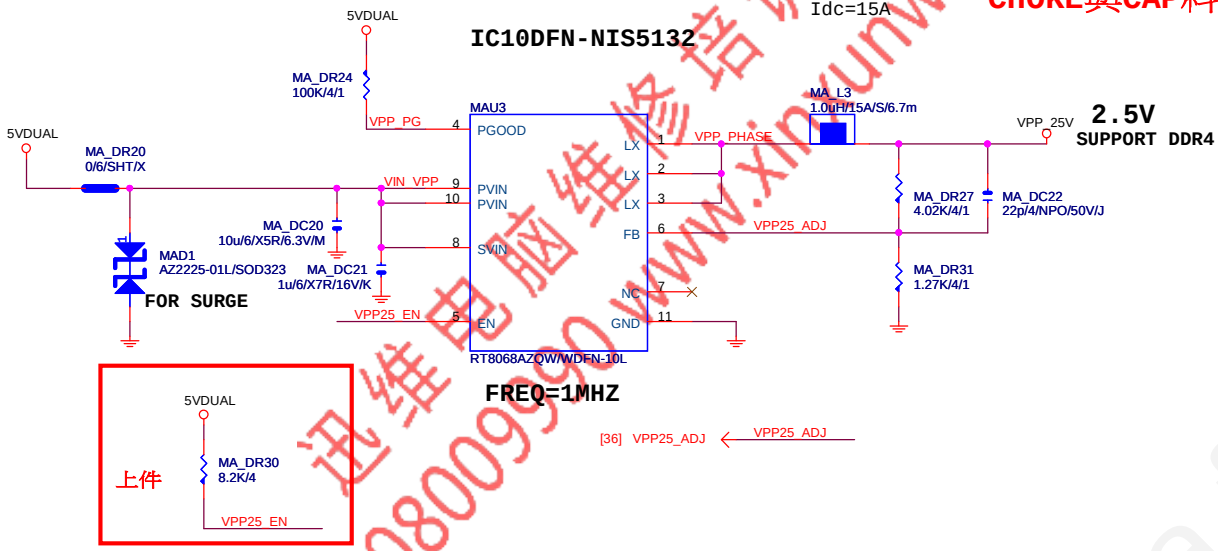
VPP_25V

REV:0.1 (IRON CHOKE)

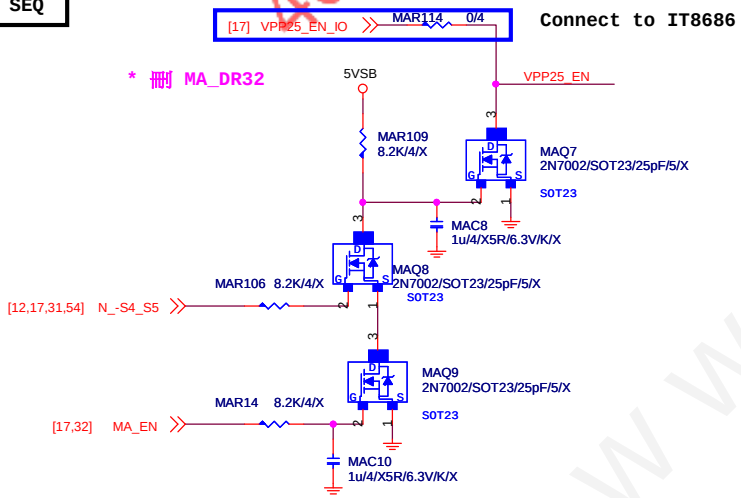
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A

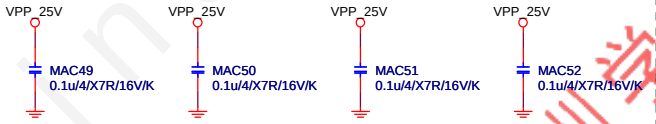
CHOKE與CAP料號可變

IC10DFN-NIS5132



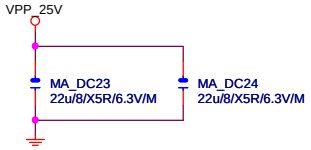
PWR SEQ





VPP CAP 22u*1PCS

* 大電容 x0



GIGABYTE™

Title	RT8068A_VPP25 POWER	
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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VCC1_0_PCH

REV:0.1(IRON CHOKE)

5VDUAL
NPD1
B140/SMA/1A
+12V
NPD2
B140/SMA/1A
NPR22
0/8/X
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
16V
L=1u
DCR=3.2 mohm
Isat=18A
Idc=15A
NPQ1
NTMFS4C10NT1G/PPAK/970pF/7.3m
黑色閃電P
NPL2
1uH/18A/IMD0809/BP/D
VCC1_0_PCH
25A MAX
NPEC2
560u/FP/D/6.3V/69/A/11m
NPR8
2K/4/1
NPR7
487/4/1
NPC8
3.3n/4/X7R/50V/K
RS
NPR6
2.2/6
NPC7
1n/4/X7R/50V/K
NPQ2
NTMFS4C10NT1G/PPAK/970pF/7.3m
NPR4
8.2K/4
UGATE_PCH NPR2 2.2/6
PHASE_PCH
LGATE_PCH
NPC2
0.1u/6/X7R/25V/K
5VDUAL
NPR1
2.2/6
DRV_PCH
NPC4
1u/6/X7R/16V/K
RT8120DGS/SOP8
NPU1
COMP
VCC
BOOT
UGATE
PHASE
FB
GND
PGND
LG/OC
P1V0_PCH_EN
NPR5
8.2K/4/1
NPC5
22p/4/NPO/50V/J
NPC6
3.3n/4/X7R/50V/K
NPR12
MASK/0/4/SHT/M/X
NPR11
34K/4/1
OCP=30A
放靠近IC pin4
FREQ=300KHZ
P1V0_PCH_ADJ
[36] P1V0_PCH_ADJ
Remote sense請從最重的負載端點拉回
RO
NPR13
6.2K/4/1
0.8*(1+RS/RO) = Vout
0.8*[1+2K/6.2K)] =
1.058V
VCC1_0_PCH
NPC10
22u/8/X5R/6.3V/M
Defaults先不上件
請放置CHOKE一出來的地方

PWR SEQ

P1V0_PCH_EN
NPR14
0/4/X
VCC1_0_EN
[17]
5VSB
P1V0_PCH_EN
NPR15
8.2K/4
NPQ4
2N7002/SOT23/25pF/5
SOT23
3VDUAL
NPR16
8.2K/4
NPQ3
MMBT2222A/SOT23/600mA/40
S0T23
NPR17
8.2K/4
NPC9
0.1u/4/X7R/16V/K/X

GIGABYTE

Title	RT8120_PCH POWER	
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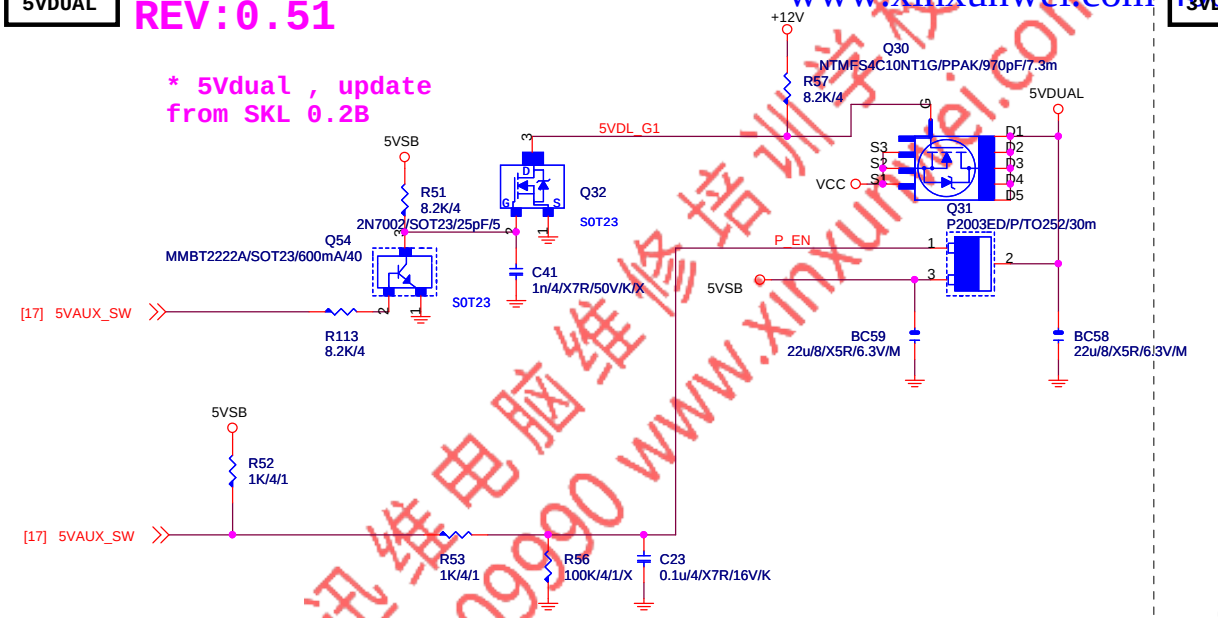
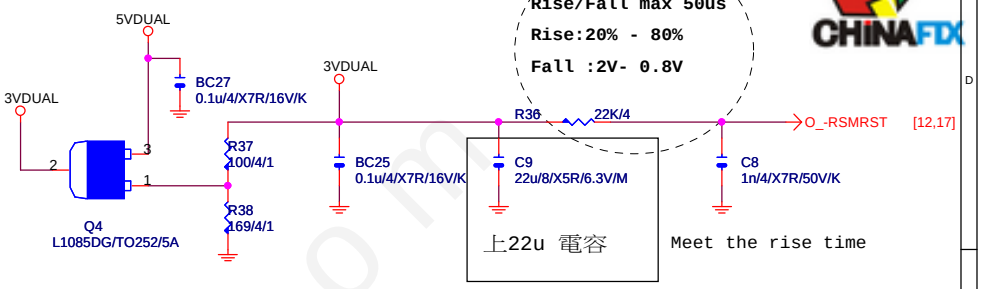
5VDUAL

REV:0.51

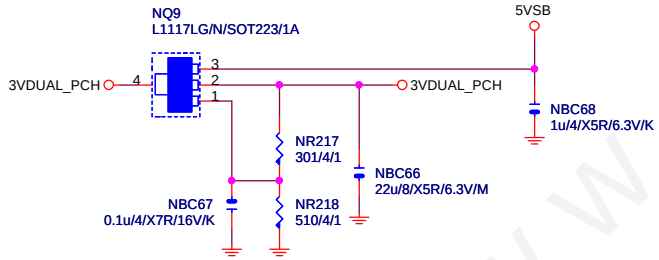
* 5Vdual , update from SKL 0.2B



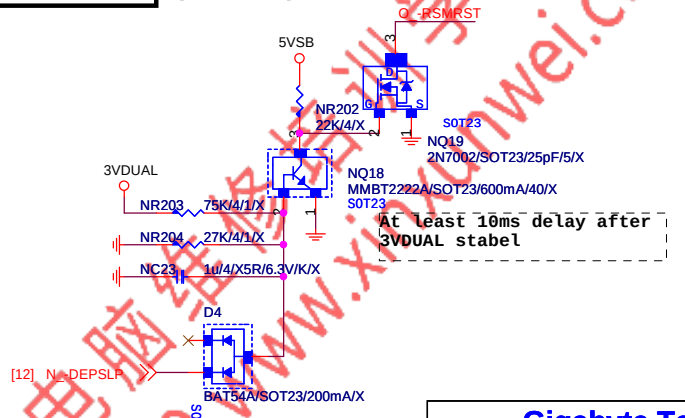
+3VDUAL



3VDUAL_PCH



O_-RSMRST （不上件）



Gigabyte Technology

Title: DISCRETE POWER

Size	Document Number	Rev
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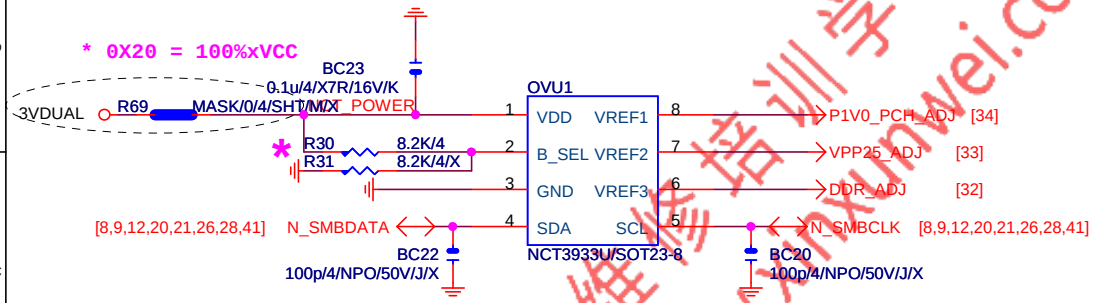
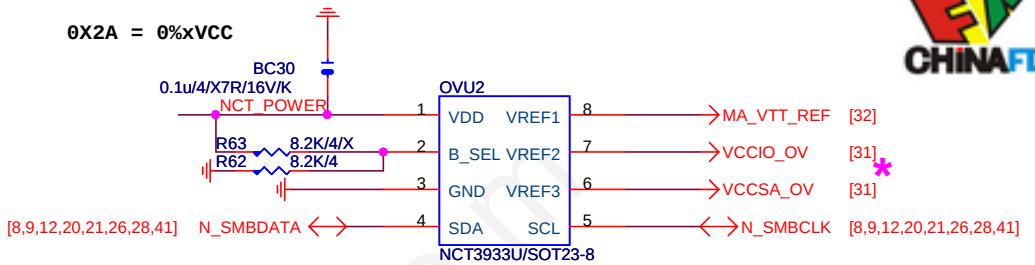
OVER VOLTAGE





0X22 = 75%xVCC

* 删除 OVU3

NCT3933	0X20	0X2A
VREF1	VCC1_0_PCH	DDRVTT
VREF2	VPP_25V	VCCIO
VREF3	VDDQ	VCCSA

Gigabyte Technology

Title: CPU CORE VR-2

Size: Custom | Document Number: GA-H270M-Gaming 3 | Rev: 1.0

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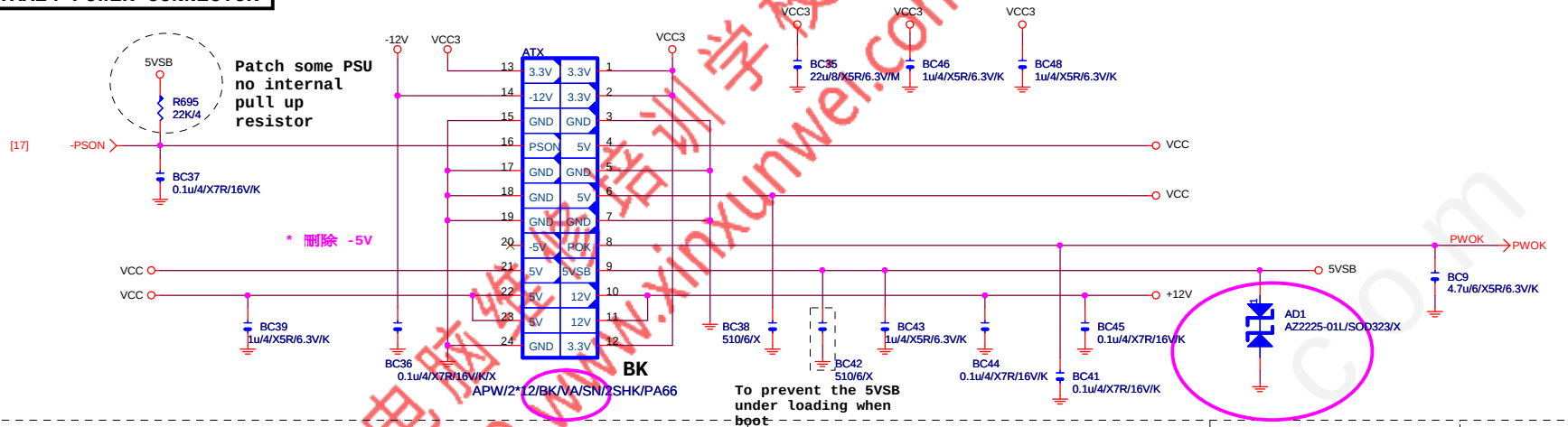
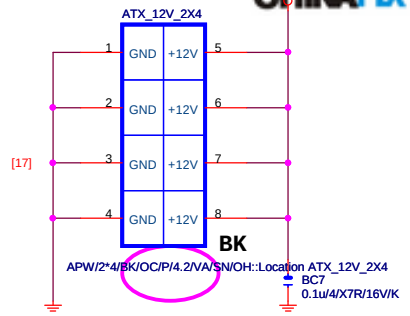
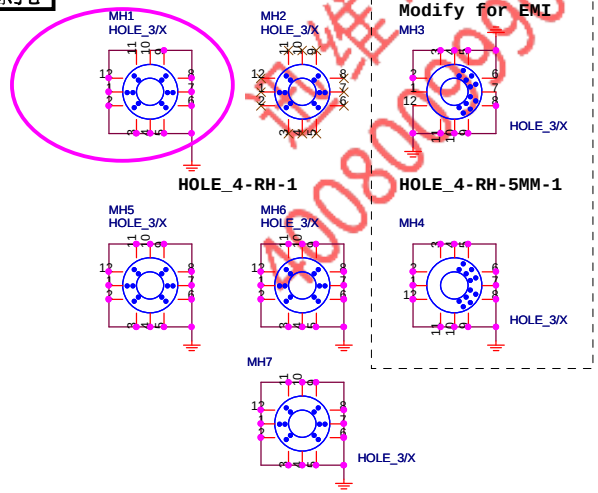
ATXX24 POWER CONNECTOR



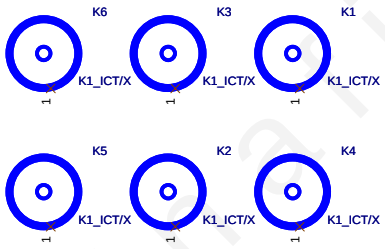
ATXX4 POWER CONNECTOR

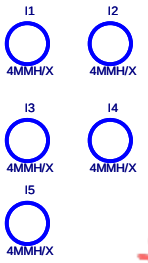


螺絲孔

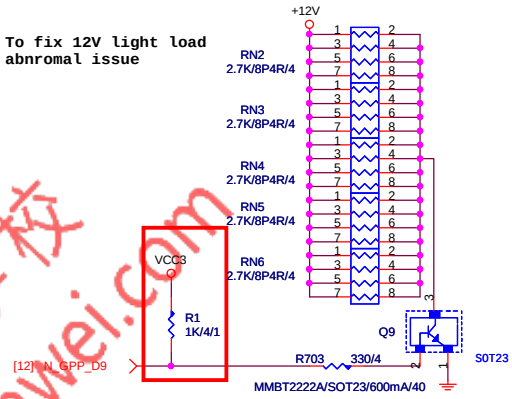


固定孔/光學點



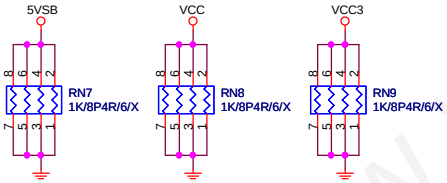


+12V DUMMY LOAD

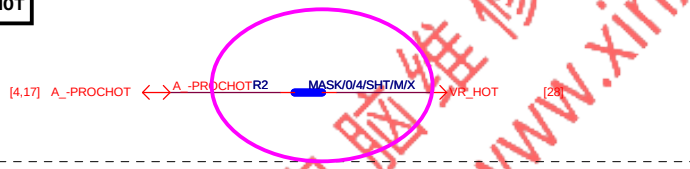


【技術通報R&D技術通報153】

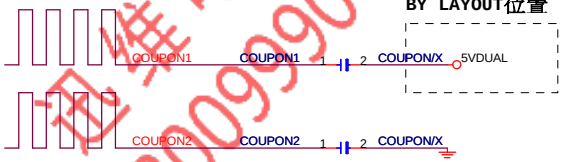
DUMMY LOAD



-PROHOT



COUPON



Gigabyte Technology		
Title: ATX POWER CONNECTOR		
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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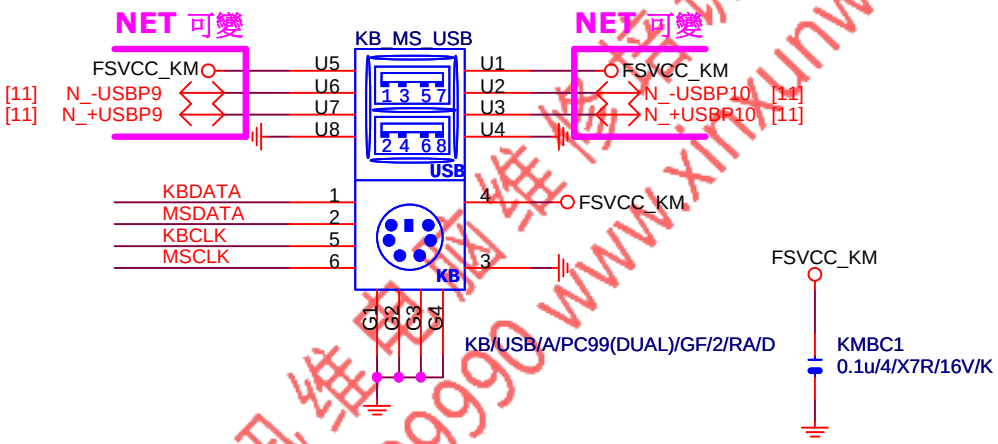
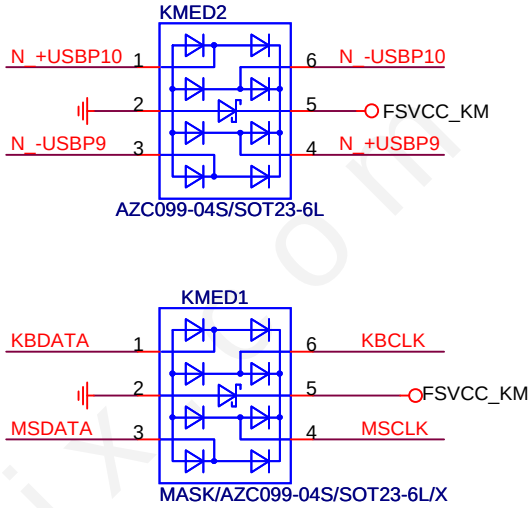
KB_MS_USB

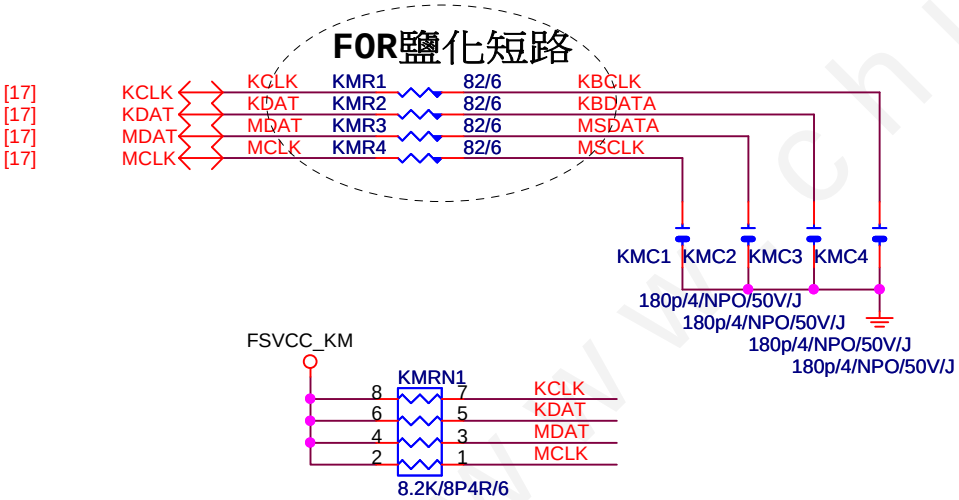
Rev: 0.7



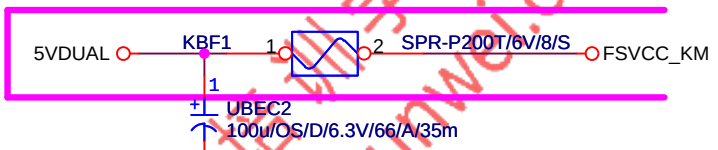
ESD



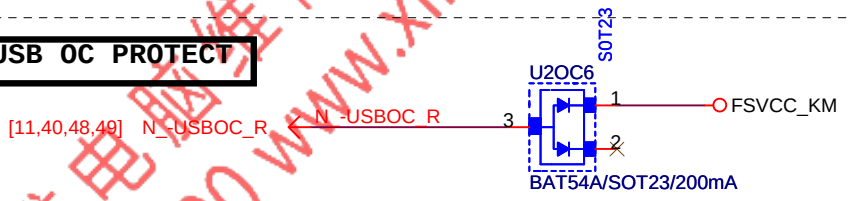
KB_MS_USB DAMPING/PU



KB_MS_USB PWR



USB OC PROTECT



Gigabyte Technology

Title	KB_MS_USB		
Size A	Document Number	GA-H270M-Gaming 3	Rev 1.0
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DVI

Rev: 0.81

DVI:20/4/6/4/20
Impedance=85 +- 17.5%

NET 可變

[4] DVI_TXC
[4] DVI_TXC-
VBC1 0.1u/4/X7R/16V/K
VBC2 0.1u/4/X7R/16V/K
DVITXC+ VR1 680/4/1
DVITXC- VR2 680/4/1

[4] DVI_TX0
[4] DVI_TX0-
VBC3 0.1u/4/X7R/16V/K
VBC4 0.1u/4/X7R/16V/K
DVITX0+ VR3 680/4/1
DVITX0- VR4 680/4/1

[4] DVI_TX1
[4] DVI_TX1-
VBC5 0.1u/4/X7R/16V/K
VBC7 0.1u/4/X7R/16V/K
DVITX1+ VR7 680/4/1
DVITX1- VR8 680/4/1

[4] DVI_TX2
[4] DVI_TX2-
VBC8 0.1u/4/X7R/16V/K
VBC9 0.1u/4/X7R/16V/K
DVITX2+ VR9 680/4/1
DVITX2- VR10 680/4/1

DVI_G

VQ1 2N7002/SOT23/25pF/5 SOT23
VCC VR16 8.2K/4 VQ1_2

DVI_SCL
VQ2 2N7002/SOT23/25pF/5 SOT23
VCC VR17 1K/4/1 VQ2_2 N_DDPC_CTRLCLK
★Update 2016.06.20

DVI_SDA
VQ3 2N7002/SOT23/25pF/5 SOT23
VCC VR18 1K/4/1 VQ3_2 N_DDPC_CTRLDATA
★Update 2016.06.20

DVI PU

VCC
防漏電 ★Update 2015.05.27
VD1 BAT54A/SOT23/200mA SOT23
VR14 2.2K/4/1
VR13 2.2K/4/1
DVI_SDA
DVI_SCL

[10] N_DDPC_CTRLCLK
[10] N_DDPC_CTRLDATA
VR5 2.2K/4/1
VR6 2.2K/4/1
VCC3
VBC6 0.1u/4/X7R/16V/K/X

DVI_HP
VQ4 2N7002/SOT23/25pF/5 SOT23
VCC3
VR20 1M/4
VCC VR19 8.2K/4 VQ4_2 N_DVI_HDP_F
N_DVI_HDP_F [10]

DVI CONN

NET 可變
FSVCC_KM

DVITX0-
DVITX0+
DVITX1-
DVITX1+
DVITX2-
DVITX2+
DVI_SCL
DVI_SDA
DVITXC-
DVITXC+
DVI_HP
VR15 20K/4/1

M1 M2 M5 M6 M7 M8
DVI
COMMON
DVI-30P-4P-1

DVI-D/24P/SC/RA/D/SH
平躺式 DVI-D
11NR6-501024-31

ESD

NET 可變
FSVCC_KM
VBC10 0.1u/4/X7R/16V/K

VESD3
DVI_SDA
DVI_HP
DVI_SCL
FSVCC_KM
AZC099-04S/SOT23-6L
Close to connector

VESD2
DVITX1+
DVITX1-
DVITX2-
DVITX2+
AZ1045-04F/MSOP10
Close to connector

VESD1
* swap
DVITXC+
DVITXC-
DVITX0-
DVITX0+
AZ1045-04F/MSOP10
Close to connector

Gigabyte Technology		
Title: DVI		
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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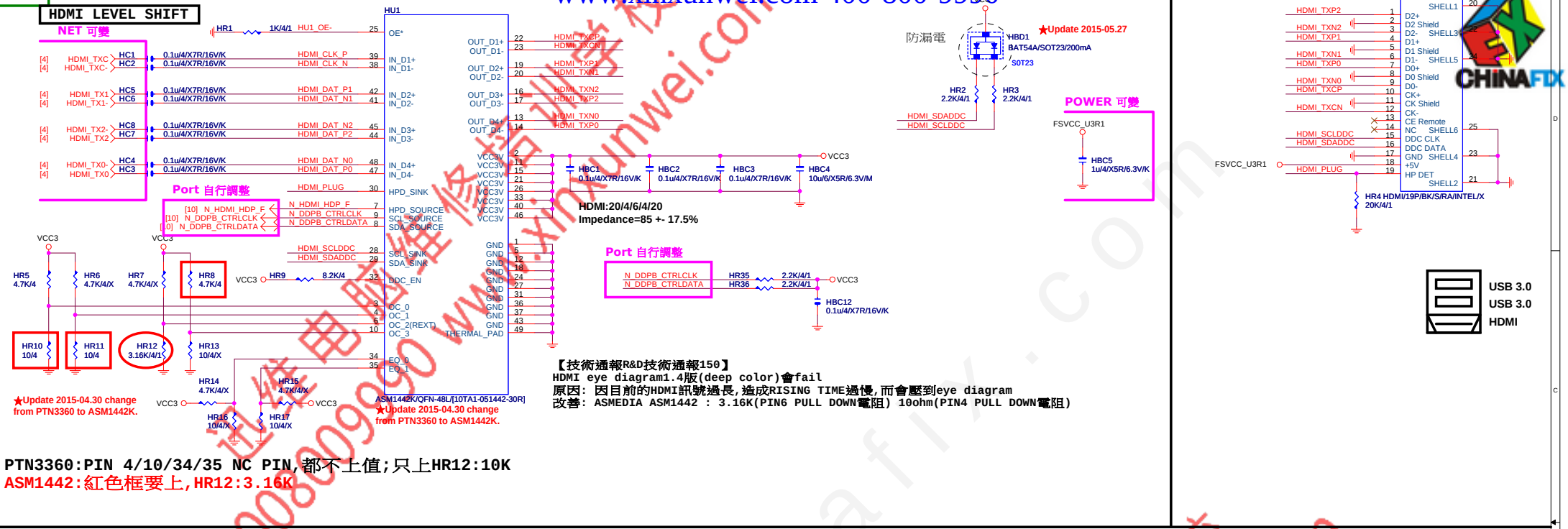
Rev: 0.81

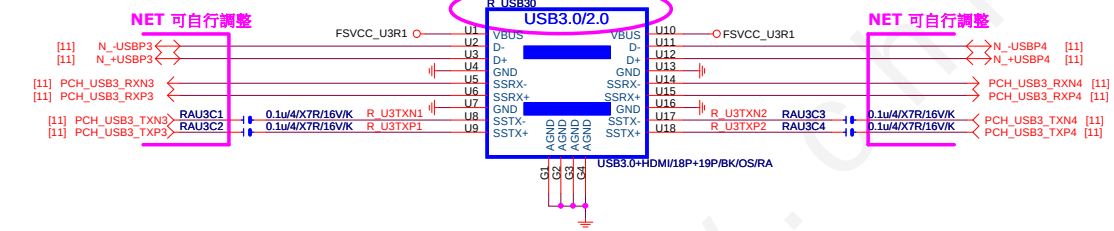
HDMI LEVEL SHIFT



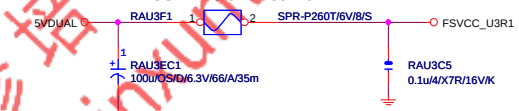
【技術通報R&D技術通報150】
HDMI eye diagram1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

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

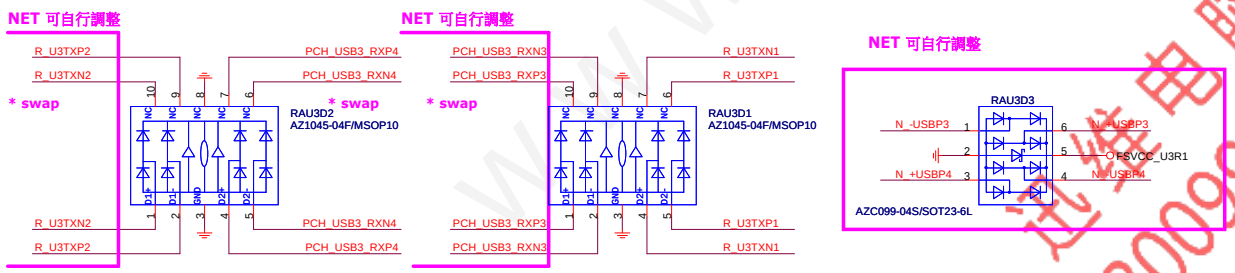
Rev: 0.81 ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可 Footprint: USB30_H-1



FUSE



ESD



GIGABYTE

Title: DP PORT

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RTD2168 R1.03

RTD2168

X'TAL EMBEDDED

DVU1

RTD2168/[10HQ5-A32168-10R]

VCC3

DVC14 0.1u/4/X7R/16V/K

DVC15 10u/6/X5R/6.3V/M/X

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

DVC12 0.1u/4/X7R/16V/K

DVC13 1u/4/X5R/6.3V/K

DVC17 0.1u/4/X7R/16V/K VGA_VCCK_V12

DVC18 0.1u/4/X7R/16V/K VGA_AUX_CH_P

DVC19 0.1u/4/X7R/16V/K VGA_AUX_CH_N

DVR12 12K/4/1 VGA_RRX

DVC20 0.1u/4/X7R/16V/K VGA_LANE0_P

DVC21 0.1u/4/X7R/16V/K VGA_LANE0_N

DVC22 0.1u/4/X7R/16V/K VGA_LANE1_P

DVC23 0.1u/4/X7R/16V/K VGA_LANE1_N

[4] VGA_AUX

[4] VGA_AUX-

[4] VGA_TXP0

[4] VGA_TXN0

[4] VGA_TXP1

[4] VGA_TXN1

Reserve Pull High

DVR14 4.7K/4/X VGA_SMB_SCL

DVR15 4.7K/4/X VGA_SMB_SDA

DVC24 4.7u/6/X5R/6.3V/K

DVC25 0.1u/4/X7R/16V/K

DVC26 0.1u/4/X7R/16V/K

[8,9,12,20,21,26,28,36] N_SMBCLK

[8,9,12,20,21,26,28,36] N_SMBDATA

DVR16 MASK/0/4/SHT/M/X

DVR17 MASK/0/4/SHT/M/X

[42] VGA_SCL

[42] VGA_SDA

[42] VGA_VSYNC

[42] VGA_HSYNC

[42] VGA_RED_P

[42] VGA_GREEN_P

[42] VGA_BLUE_P

放置PCH端

[10] N_DDPD_CTRLCLK

[10] N_DDPD_CTRLDATA

DVR19 2.2K/4/1

DVR20 2.2K/4/1

POWER

VCC3

DVC10 0/6/SHT/M/X VGA_AVCC33

DVC11 0/6/SHT/M/X VGA_VDD_DAC_33

Power on latch

VCC3

DVR8 8.2K/4/X VGA_POL1_SDA

DVR9 8.2K/4

DVR10 8.2K/4 VGA_POL2_SCL

DVR11 8.2K/4/X

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

Embedded LDO

VCC3

DVR13 8.2K/4/X VGA_LDO_EN

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

DP HPD

VGA_HPD

DVR18 100K/4/1

N_VGA_HDP_F [10]

Title	Gigabyte Technology DP-VGA RTD2168
Size: Custom	Document Number: GA-H270M-Gaming 3
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VGA SIGNAL R1.03

VCC
DVD1
BAT54A/SOT23/200mA
S0T23
VGA_SDA_F
VGA_SCL_F
DVR2
2.2K/4/1
DVR3
2.2K/4/1
[41] VGA_SDA
[41] VGA_SCL
VGA_SDA
VGA_SCL

[41] VGA_VSYNC
VGA_VSYNC
DVR1
33/4
G_VSYNC
DVC2
10p/4/NPO/50V/J/X

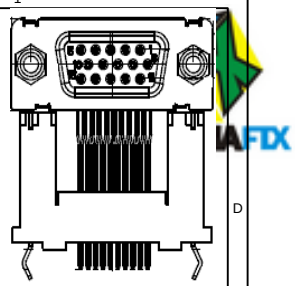
[41] VGA_HSYNC
VGA_HSYNC
DVR4
33/4
G_HSYNC
DVC3
10p/4/NPO/50V/J/X

[41] VGA_RED_P
[41] VGA_GREEN_P
[41] VGA_BLUE_P
VGA_RED_P
VGA_GREEN_P
VGA_BLUE_P
DVFB1
DVFB2
DVFB3
30/4/4A/S
30/4/4A/S
30/4/4A/S
G_VGA_R
G_VGA_G
G_VGA_B
DVR5
75/4/1
DVR7
75/4/1
DVR6
75/4/1
DVC4 DVC5 DVC6
10p/4/NPO/50V/J
10p/4/NPO/50V/J
10p/4/NPO/50V/J
DVC7 DVC9
DVC8
10p/4/NPO/50V/J
10p/4/NPO/50V/J
10p/4/NPO/50V/J

Close to Filter

FOR EMI

VGA CONN. 架高型VGA(BLACK)



FSVCC_KM
DVC1
0.1u/4/X7R/16V/K/X
VGA
G_VGA_R
G_VGA_G
G_VGA_B
VGA_SDA
G_HSYNC
G_VSYNC
VGA_SCL
VGA/BK/SC/RA/D/2/HR

VGA ESD

DVESD1
VGA_SCL
G_HSYNC
G_VSYNC
VCC
VGA_SDA
AZC099-04S/SOT23-6L

DVESD2
G_VGA_G
G_VGA_R
VCC3
G_VGA_B
AZC099-04S/SOT23-6L

Gigabyte Technology			
Title: DP-VGA RTD2168			
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LAN INTEL I219 R1.11

LAN POWER

L1+CLK REQ# 節能:
需對應LA_SRCCLK_LAN之CLKREQ#

3VDUAL_LAN1

LAR11 8.2K/4
LAREQ1 MASK/0/4/SHT/M/X
LA_LAN_CLKREQ-

[10] LA_-CLKREQ
[17,25] O_-PFMRST2

LAU1

48 CLK_REQ_N
36 PE_RST_N
44 PE_CLKP
45 PE_CLKN
38 PETP
39 PETN
41 PERP
42 PERN

PCIE

[10] LA_SRCCLK_LAN
[10] LA_-SRCCLK_LAN

[11] LA_ML_IP — LABC6 0.1u/4/X7R/16V/K — LABC8 0.1u/4/X7R/16V/K — LA_TP
[11] LA_ML_IN — LA_TN
[11] LA_ML_OP — LABC12 0.1u/4/X7R/16V/K — LABC16 0.1u/4/X7R/16V/K — LA_RP
[11] LA_ML_ON — LA_RN

MDI

MDI_PLUS_0 13 — LA_MDI0+ — LA_MDI0+ [44]
MDI_MINUS_0 14 — LA_MDI0- — LA_MDI0- [44]
MDI_PLUS_1 17 — LA_MDI1+ — LA_MDI1+ [44]
MDI_MINUS_1 18 — LA_MDI1- — LA_MDI1- [44]
MDI_PLUS_2 20 — LA_MDI2+ — LA_MDI2+ [44]
MDI_MINUS_2 21 — LA_MDI2- — LA_MDI2- [44]
MDI_PLUS_3 23 — LA_MDI3+ — LA_MDI3+ [44]
MDI_MINUS_3 24 — LA_MDI3- — LA_MDI3- [44]

PCH端:
電阻上

28 SMB_CLK
31 SMB_DATA

SMBUS

[12] N_SML0CLK
[12] N_SML0DAT

[17] N_-LAN1_WAKE — LAR16 MASK/0/4/SHT/M/X — LA_-LANWAKE — LA_-LAN_DIS

2 LANWAKE_N
3 LAN_DISABLE_N

FOR ERP WAKEUP

[44] LA_LED0 — LA_LED0 — 26 LED0
[44] LA_LED1 — LA_LED1 — 27 LED1
[44] LA_LED2 — LA_LED2 — 25 LED2

LED

3VDUAL_LAN1 — LAR6 8.2K/4/X — LA_TDI — 32 JTAG_TDI
LAR5 8.2K/4/X — LA_TMS — 33 JTAG_TDO
LAR4 8.2K/4/X — LA_TCK — 34 JTAG_TMS
35 JTAG_TCK

JTAG

LABC14 20p/4/NPO/50V/J — LA_XTALO — 9 XTAL_OUT
LAX1 25M/16p/30ppm/49US/20/D — LA_XTALI — 10 XTAL_IN
LABC13 20p/4/NPO/50V/J

LAR7 1K/4/1 — LA_TEST_EN — 30 TEST_ENABLE
LAR12 3.01K/4/1 — LA_LAN_BIAS — 12 RBIAS

SVR_EN_N 6 — LA_-SVR_EN — LAR19 MASK/0/4/SHT/M/X — LAR18 8.2K/4/X
RSVD_1/VCCP3P3 1 — LA_VCCP3 — LAR13 8.2K/4
VDD3_P3_IN 5 — 3VDUAL_LAN1
VDD3P3_OUT 4 — 3VDUAL_LAN1
VDD3P3 15, 19, 29 — LBC10 1u/4/X5R/6.3V/K — LAN_V_1P0
VDD0P9 47, 46, 37, 43, 11, 40, 22, 16, 8
CTRL_0P9 7 — LA_CTRL_1P0
VSS_EPAD 49

WGI219V/QFN48

(CLOSE PIN4)

LAL1 — LAN_V_1P0
4.7uH/3.3A/29m/S
LABC32 10u/6/X5R/6.3V/M
LABC29 10u/6/X5R/6.3V/M/X

CLOSE LAL1

FOR ERP WAKEUP

LAQ1 2N7002/SOT23/25pF/5
LAQR1 8.2K/4
3VDUAL
SOT23

3VDUAL_LAN1
LAR17 8.2K/4
[12] N_-LAN_DIS — LAR20 0/4/X — LA_-LAN_DIS
LAR14 1u/4/X5R/6.3V/K/X

O_-PFMRST2 — LABC2 18p/4/NPO/50V/J/X

For當ErP enable後，挑PSU會無法LAN Wake-up

3VDUAL_LAN1

LABC11 10u/6/X5R/6.3V/M
LABC3 0.1u/4/X7R/16V/K
LABC17 0.1u/4/X7R/16V/K
LABC21 0.1u/4/X7R/16V/K
LABC30 0.1u/4/X7R/16V/K

(CLOSE LAU1 PIN4,15,19,29)

LAN_V_1P0

LABC31 0.1u/4/X7R/16V/K
LABC15 0.1u/4/X7R/16V/K
LABC18 0.1u/4/X7R/16V/K
LABC9 0.1u/4/X7R/16V/K
LABC4 0.1u/4/X7R/16V/K

(CLOSE LAU1 PIN8,11,16,22,37,40,43,46,47)

Gigabyte Technology		
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USB_LAN CONNECTOR R1.11

RMA ESD PROTECT

note:可變更USB NAME

可變

N_+USBP1 1 6 N_-USBP1
2 5 FUSEVCC_R
N_-USBP2 3 4 N_+USBP2

LAUESD1
AZC099-04S/SOT23-6L

USB_LAN CONNECTOR [I219]

note:可變更USB NAME

LABC22 0.1u/4/X7R/16V/K
LA_CN_L1
LA_MDI0+ [43]
LA_MDI0- [43]
LA_MDI1+ [43]
LA_MDI1- [43]
LA_MDI2+ [43]
LA_MDI2- [43]
LA_MDI3+ [43]
LA_MDI3- [43]
LA_CN_L10
LABC25 MASK/0/4/SHT/M/X

USB30_LAN

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10
U1 U2 U3 U4 U5 U6 U7 U8 U9
D1 D2 D3 D4 DT DT U10 U11 U12 U13 U14 U15 U16 U17 U18
VBUS D- D+ GND SSRX- SSRX+ GND SSTX- SSTX+

USB3.0 USB3.0

FUSEVCC_R
[11] N_-USBP1
[11] N_+USBP1
[11] PCH_USB3_RXN1
[11] PCH_USB3_RXP1
[11] PCH_USB3_TXN1
[11] PCH_USB3_TXP1
LAUAC1 PCH_USB3_TXN1C
LAUAC2 PCH_USB3_TXP1C
0.1u/4/X7R/16V/K
0.1u/4/X7R/16V/K

下 Port

可變 可變

USB3+LAN/1G/GO,Y/OS/RA/D/G30

P1 P2
LA_LED_ACT_TXRX
LA_D2
LA_LED_LINK100
LA_LED_LINK1000

LAR8 MASK/0/4/SHT/M/X
LA_LED0 [43]
LAR10 330/4 LA_D2_1
LAR9 330/4 LA_LED2 [43]
LAR3 LA_LED1 [43]

3VDUAL_LAN1
LAFB2 MASK/0/4/SHT/M/X
LABC24 0.1u/4/X7R/16V/K/X

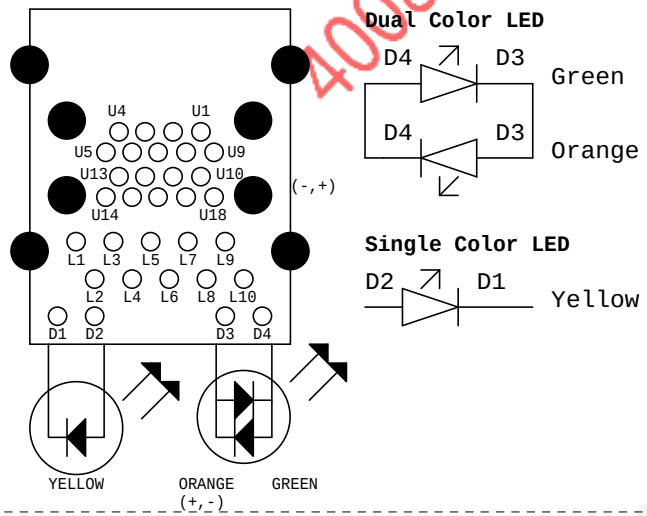
MASK/0/4/SHT/M/X LAUBC7 0.1u/4/X7R/16V/K
FUSEVCC_R
N_-USBP2 [11]
N_+USBP2 [11]
PCH_USB3_RXN2 [11]
PCH_USB3_RXP2 [11]
LAUAC3 PCH_USB3_TXP2C
LAUAC4 PCH_USB3_TXN2C
PCH_USB3_TXN2 [11]
PCH_USB3_TXP2 [11]
0.1u/4/X7R/16V/K
0.1u/4/X7R/16V/K

上 Port

可變 可變

LA_MDI-->100歐姆:[20/4/8/4/20]

USB30_LAN LAYOUT示意圖



Dual Color LED
D4 D3 Green
D4 D3 Orange

Single Color LED
D2 D1 Yellow

PCH_USB3_TXP2C
PCH_USB3_TXN2C
PCH_USB3_TXP1C
PCH_USB3_TXN1C
PCH_USB3_RXP2
PCH_USB3_RXN2
PCH_USB3_RXP1
PCH_USB3_RXN1

10 9 8 7 6
NC NC GND NC NC
11
D1 D1 GND D2 D2
1 2 3 4 5

note:可變更USB NAME
可變

LAU3ESD1
AZ1045-04F/MSOP10

LAU3ESD2
AZ1045-04F/MSOP10

USB POWER

note:可變更FUSE

可變

5VDUAL — LAUF1 — FUSEVCC_R

SPR-P260T/6V/8/S

Close to connector
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
* *

LAN_COVER

FOOT PRINT:LAN_COVER

可變 *Del USB_LAN_HS
[視SPEC需求]

Gigabyte Technology		
Title: LAN CONNECTOR-I219		
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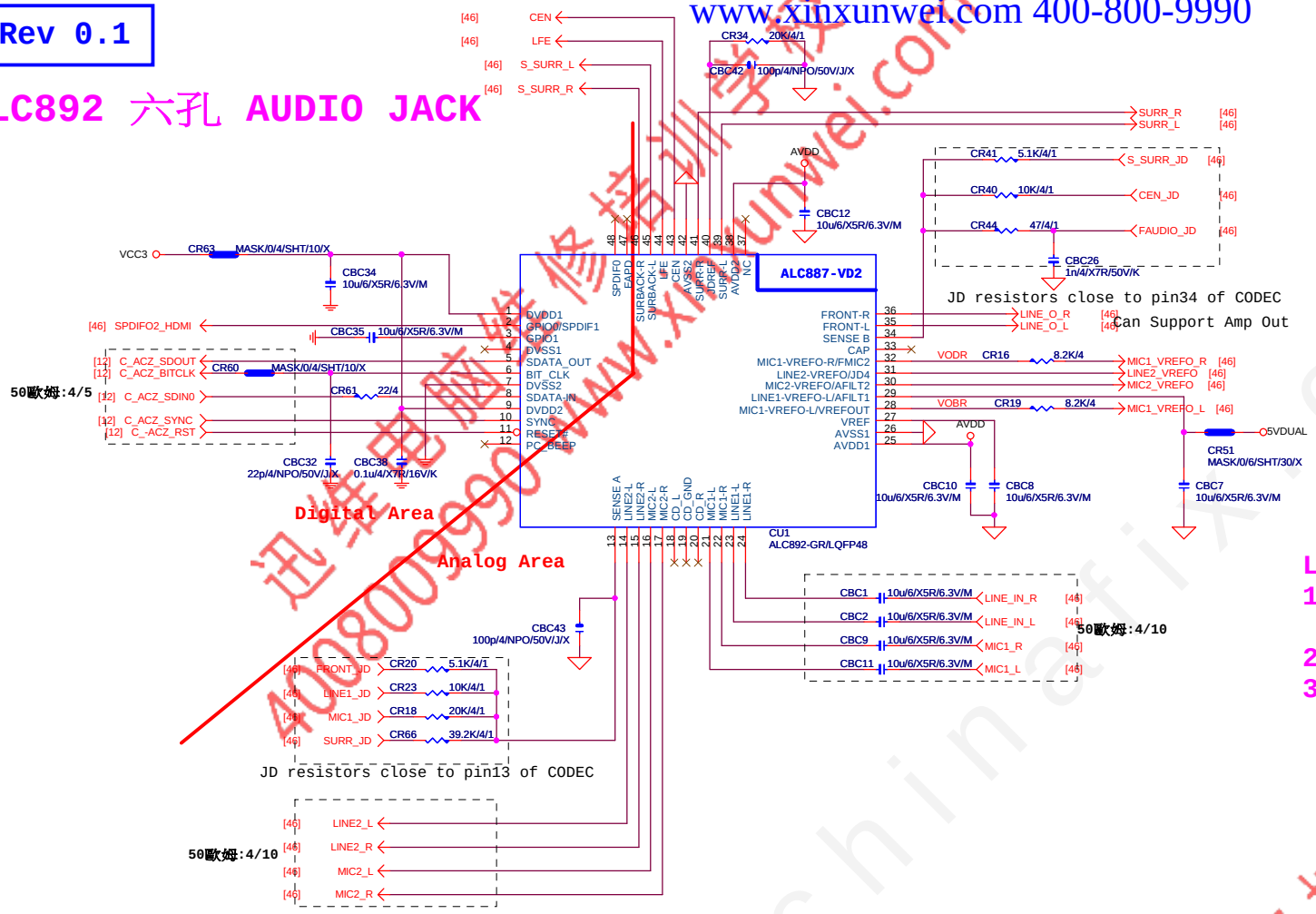
Rev 0.1

ALC892 六孔 AUDIO JACK



LAYOUT注意:螺絲孔下GND方式

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

MH1	MH2
DGND	Isolate

LAYOUT注意:要加

GND切割線

音效區域印刷

*Del AUDIO_HS

*料號後補

BOM OPTION :
1. Chemicon音效電容
2. 金屬外罩 Reserve (LAYOUT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)

Gigabyte Technology			
Title	HD AUDIO ALC892		
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Rev 0.1

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

CR50 MASK/0/6/SHT/30/X, MOATC1 0.1u/4/X7R/16V/K/X → Close Codec

CR21 2.2/6 → Audio jack <-> USB_LAN

CR24 0/6/X → Under Audio jack

*量產前,0ohm改short pad

LINE-OUT

CEC1 100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R]
[45] LINE_O_R — CR5 62/4 — AJ_B5
[45] LINE_O_L — CR8 62/4 — AJ_B2
CEC2 100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R]
CR7 22K/4, CR6 22K/4
CBC19 180p/4/NPO/50V/J, CBC24 180p/4/NPO/50V/J

LINE-IN

[45] LINE_IN_R — CR1 62/4 — AJ_A5
[45] LINE_IN_L — CR14 62/4 — AJ_A2
CBC20 180p/4/NPO/50V/J, CBC23 180p/4/NPO/50V/J

MIC-IN

[45] MIC1_R — CR17 62/4 — AJ_C5
[45] MIC1_L — CR22 62/4 — AJ_C2
[45] MIC1_VREFO_L
[45] MIC1_VREFO_R
CBC3 180p/4/NPO/50V/J, CBC4 180p/4/NPO/50V/J

SURROUND

CEC10 100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R]
[45] SURR_R — CR73 62/4 — BJ_C5
[45] SURR_L — CR74 62/4 — BJ_C2
CEC11 100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R]
CR67 22K/4, CR68 22K/4
CBC44 180p/4/NPO/50V/J, CBC45 180p/4/NPO/50V/J

CEN/LFE

[45] LFE — CBC13 10u/8/X5R/16V/K/[10CM2-011005-54R] — CR75 62/4 — BJ_B5
[45] CEN — CBC15 10u/8/X5R/16V/K/[10CM2-011005-54R] — CR76 62/4 — BJ_B2
★Update 2015-04-10
CBC13/15/16/17 10u/6 --> 10u/8
For THD+N Low frequency
CR69 22K/4, CR70 22K/4
CBC46 180p/4/NPO/50V/J, CBC47 180p/4/NPO/50V/J

SURR BACK

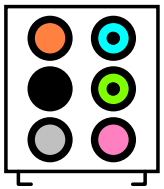
EMI
[45] S_SURR_R — CBC16 10u/8/X5R/16V/K/[10CM2-011005-54R] — CR25 62/4 — BJ_A5
[45] S_SURR_L — CBC17 10u/8/X5R/16V/K/[10CM2-011005-54R] — CR47 62/4 — BJ_A2
CR43 22K/4, CR27 22K/4
CBC33 180p/4/NPO/50V/J, CBC31 180p/4/NPO/50V/J

SPDIF_OUT

[45] SPDIFO2_HDMI — CR26 MASK/0/4/SHT/10/X — SPDIF_O
CBC14 100p/4/NPO/50V/J
PH/1*2/BK/2.54/VA/D
For HDMI SPDIF

SPDIF_IN

AZALIA JACK



AUDIOB
[45] LINE1_JD — LINE1_JD, AJ_A5, AJ_A2 — LINE-IN
[45] FRONT_JD — FRONT_JD, AJ_B5, AJ_B2 — LINE-OUT
[45] MIC1_JD — MIC1_JD, AJ_C5, AJ_C2 — MIC-IN
2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

AZALIA JACK
BLUE LINE-IN
GREEN LINE-OUT
PINK MIC-IN

AUDIOA
[45] CEN_JD, BJ_B5, BJ_B2 — REAR
[45] SURR_JD, BJ_C5, BJ_C2 — CEN
[45] S_SURR_JD, BJ_A5, BJ_A2 — SIDE
2X3RP/26P/OR,BK,GY,BU,GE,PK/RA

Orange CEN/LFE
Black SURROUND
Gray SURROUND SIDE

AZALIA FRONT PANEL

CQ4 BAT54A/SOT23/200mA — [45] LINE2_VREFO
CQ2 BAT54A/SOT23/200mA — [45] MIC2_VREFO
CRN1 8.2K/8P4R/4
[45] MIC2_L — CBC6 10u/6/X5R/6.3V/M — CR13 62/4 — M2_L
[45] MIC2_R — CBC5 10u/6/X5R/6.3V/M — CR11 62/4 — M2_R
L2_R — CR57 62/4 — L2-R
[45] FAUDIO_JD — L2_L — CR53 62/4 — L2-L
F_AUDIO
CR58 22K/4, CR54 22K/4
VCC3
CR78 8.2K/4/X
CR55 20K/4/1, CR59 39.2K/4/1
BH/2*5K8/BK/2.54/VA/AUDIO/PRT/TUR180
[45] LINE2_R — CEC9 — L2_R
[45] LINE2_L — CEC6 — L2_L
100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R]
CBC30 180p/4/NPO/50V/J/X, CBC29 180p/4/NPO/50V/J/X, CBC37 180p/4/NPO/50V/J/X, CBC36 180p/4/NPO/50V/J/X

Gigabyte Technology

Title	AUDIO JACK		
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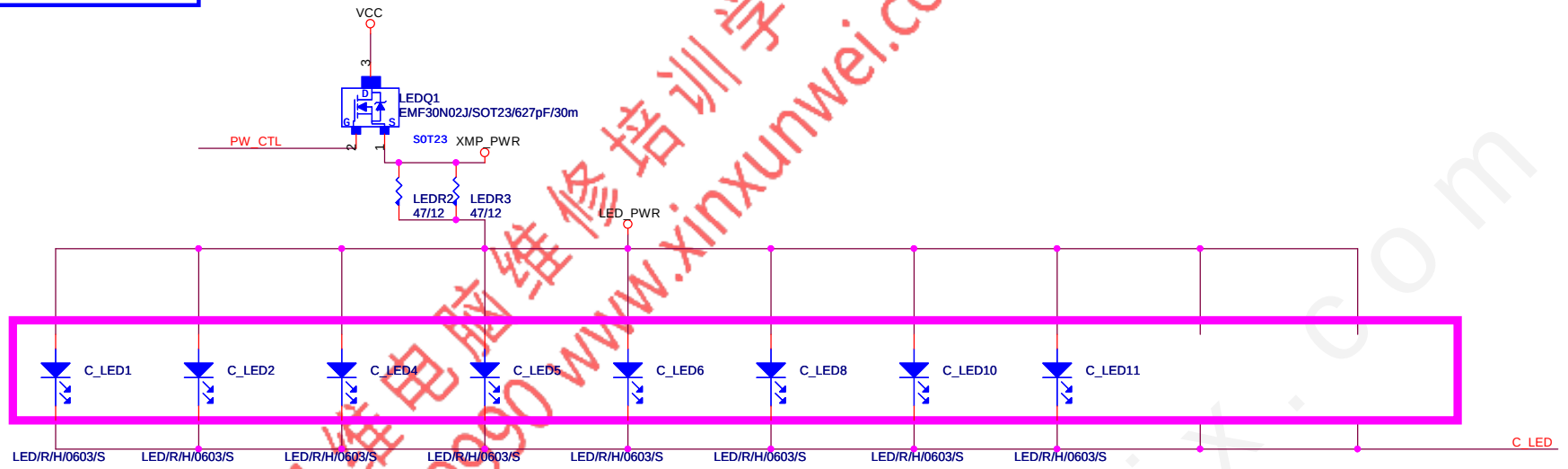
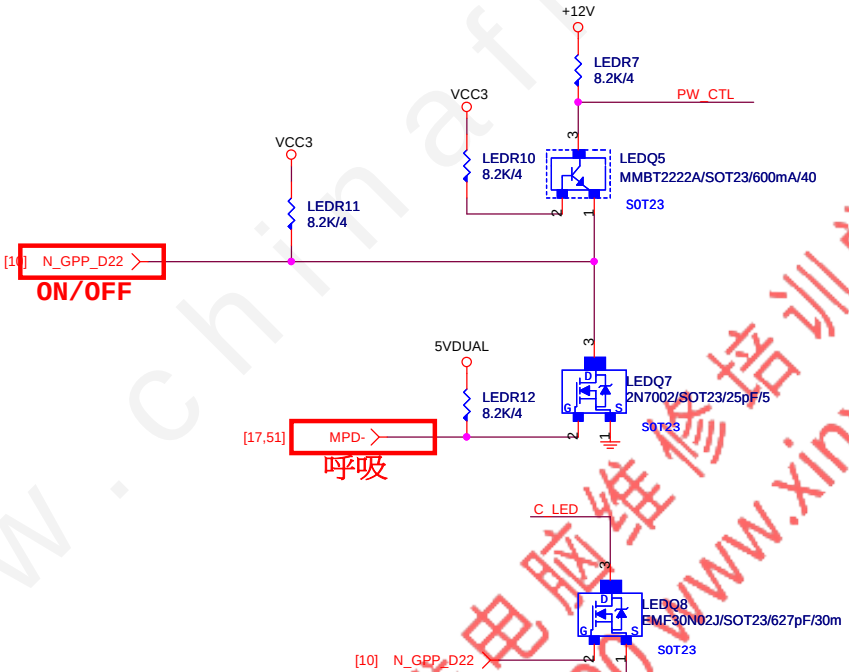
Rev 0.1



红色LED

Ambient LED Control

	N_GPP_D22	IO_GP91
Still Mode	H	L
OFF Mode	L	L
Pluse Mode	H	BREATH



Gigabyte Technology		
Title: Amient Single LED		
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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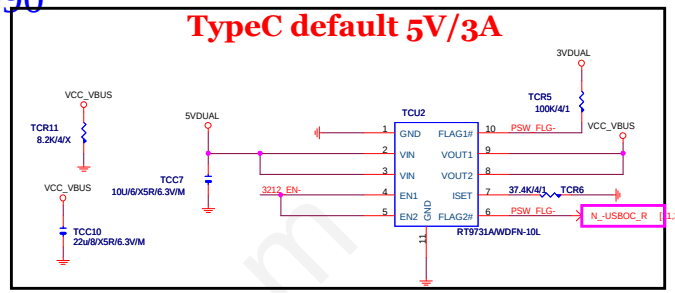
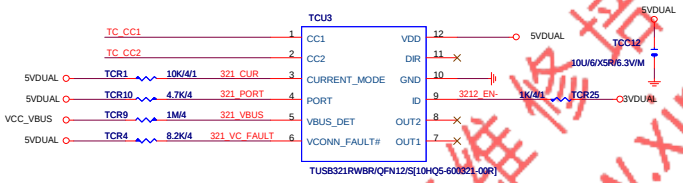
Type C U30 SW Rev. 1.02

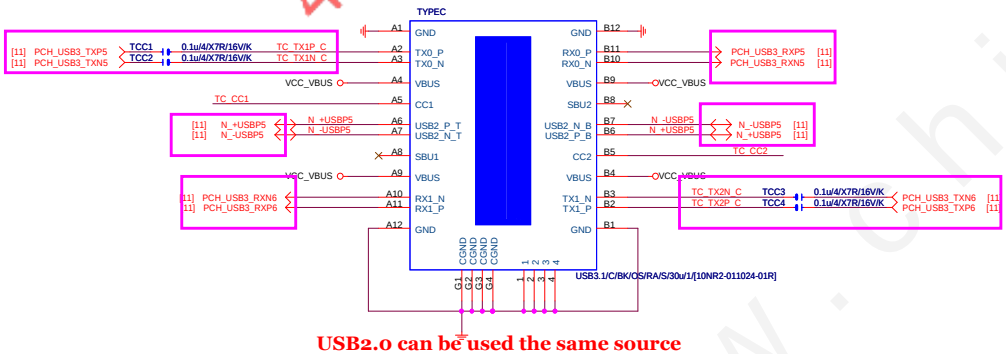
TypeC default 5V/3A



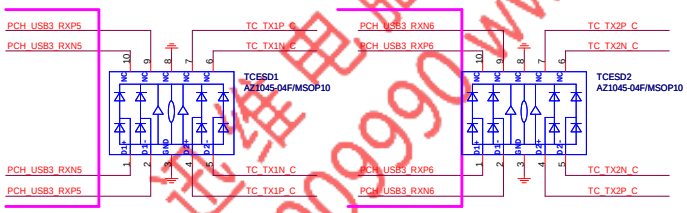


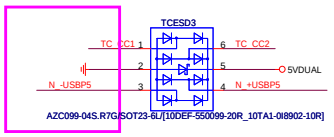
CURRENT MODE
L - Default current / Pull down to GND or NC
M - Medium (1.5A) current / Pull up to VDD 500K
H - High (3.0A) current / Pull up to VDD 10K

PORT
H - HOST
L - Device
NC - Dual Role



USB2.0 can be used the same source





Color markers can be changed by model

Gigabyte Technology		
Title: R_USB30,USB_OC		
Size: C	Document Number: GA-H270M-Gaming3	Rev: 1.0
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Rev: 0.81

Front USB3.0

F_USB30 REV=1

BH/2*10K20/BK/ON/2.0/VA/USB3.0/PRT

NET 自行調整

NET 可自行調整

F_USB30 PWR

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

FAU3D1 AZ1045-04F/MSOP10

FAU3D2 AZ1045-04F/MSOP10

FAU3D3 AZC099-04S/SOT23-6L

CLOSE F_USB30

Front USB30 P/N:11NH3-021210-B1R/B2R

Rear window

★Update 2015.10.01

Front USB30 P/N:11NH3-021210-51R/52R

-USBOC_F

POWER 可自行調整

UAR1 8.2K/4 UAR2 15K/4/1

-USBOC_R

POWER 可自行調整

UBR1 8.2K/4 UBR2 15K/4/1

* 接 PCH N_GPP_G6(SMI) & PCH_PU_3Vdual

UAD5 SOT23 BAT54A/SOT23/200mA

Gigabyte Technology		
Title: R_USB30,F_USB30, USB_OC		
Size: Custom	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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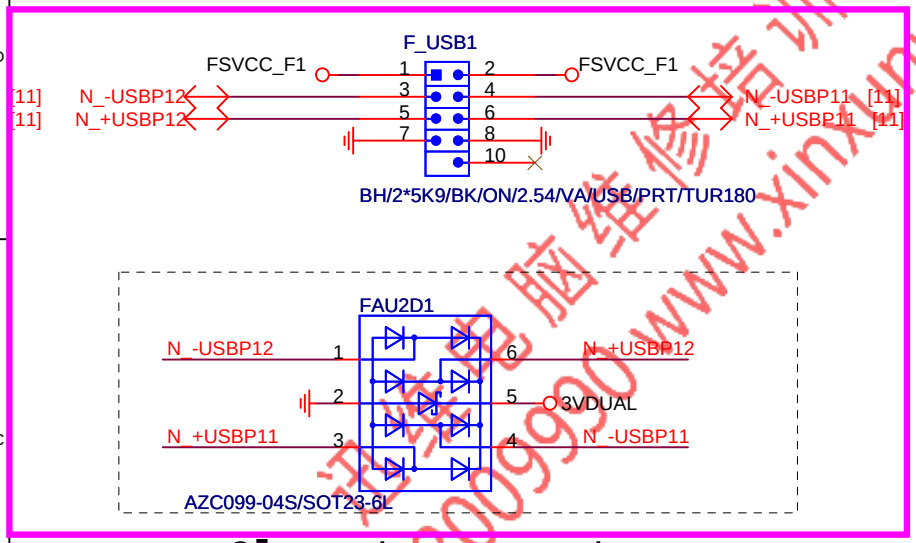
Rev: 0.81

FRONT USB1

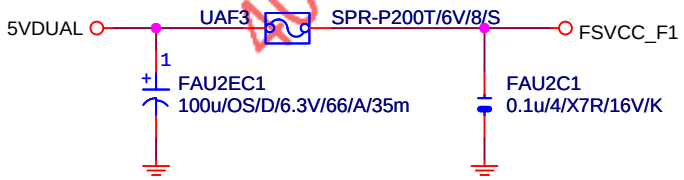
NET 可變

FUSB2X5-HS



Close to connector

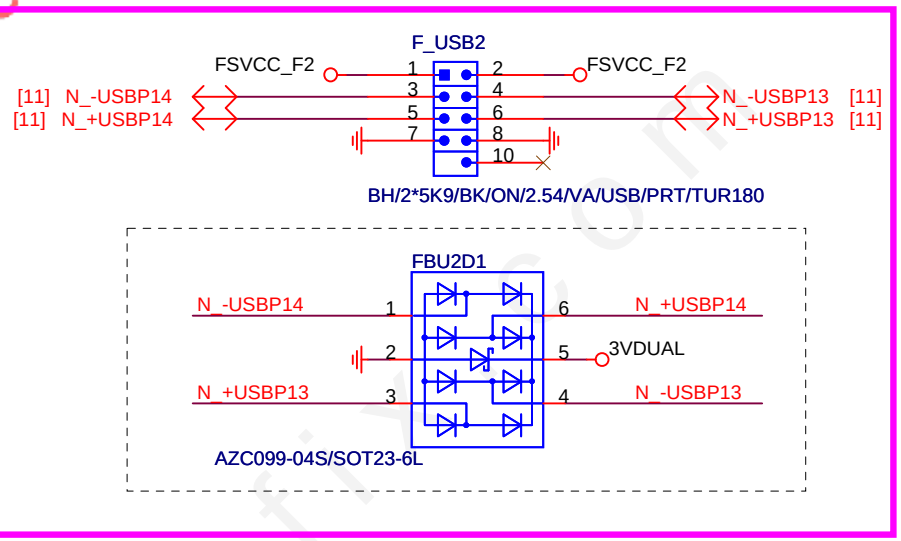
FUSE 2 Port 1 Fuse 2A



FRONT USB2

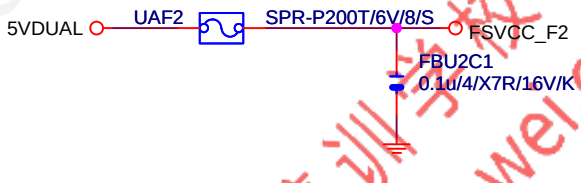
NET 可變

FUSB2X5-HS

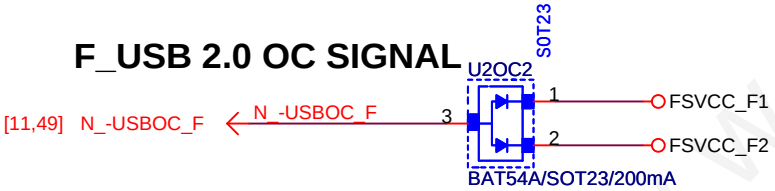


Close to connector

FUSE 2 Port 1 Fuse 2A



F_USB 2.0 OC SIGNAL



Gigabyte Technology		
Title: USB2.0		
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FRONT PANEL

Rev: 0.81

★Update 2016.06.15

VCC, VCC3, VCC

FPR22 8.2K/4/X

FPR6 330/6

FPR1 330/6/X

FPBC1 0.01u/4/X7R/25V/K/X

HD+

-HDLED

★Update 2015-02-11

F_PANEL

1	HD+	MSG/PD+	2
3	HD-	MSG/PD-	4
5	GND	PW+	6
7	RESET	PW-	8
9	CI-		
11	CI+		
14	SP+		
15	PWR+	NC	16
17	PWR-	NC	18
19	PWR-	SP-	20

MPD+, MPD-

BH/2*10K10,12.13/BK/2.54/VA/PA/FAT

Update 2015.01.08

Footprint=F_PANEL-100

* 刪FPP23 , FPP7

5VDUAL

FPR2 330/6

MPD+

3VDUAL_PCH

FPR3 8.2K/4

[17,47]

-PWRBT_1

FPR9 33/4

-PWRBTSW [17]

FPC1 0.01u/4/X7R/25V/K/X

FPBC3 0.01u/4/X7R/25V/K

[12] N_-SYS_RST

FPR5 100/4/1

-RST

FPBC2 0.01u/4/X7R/25V/K

-CASEOPEN

VCC

MPD+, MPD-

ESD

FPESD1

AZC099-04S/SOT23-6L

-PWRBT_1	1	6	-PWRBT_1
	2	5	3VDUAL_PCH
-RST	3	4	-HDLED

★Update 2015-02-11

CASE OPEN

[12,14] N_RTCVDD

FPR8 1M/4

-CASEOPEN [17]

FPBC4 0.01u/4/X7R/25V/K

SATA/M.2 LED

FPD2

[13] N_-SATALED

[23] -M2A_LED

-HDLED

BAT54A/SOT23/200mA

SOT23

Fix some M.2 cause HD_LED always on.

★Update 2016.06.15

SPKR W/O EC

VCC, VCC3

FPD1 1N4148W/SOD123/300mA

SOD123

FPQ6

SPK-

FPR13 75/4/1

FPR14 75/4/1

FPR15 8.2K/4

FPR16 1K/4/1/X

N_SPKR [12,17]

MMBT2222A/SOT23/600mA/40

FPQ5

MMBT2222A/SOT23/600mA/40

SOT23

VCC

FPR17 1K/4/1

FPR18 8.2K/4

FPQ7

2N7002/SOT23/25pF/5

SOT23

[17] BEEP

Now , inport , Pull High (IO_GP27)

,IO_GP26 ouport

For SPKR voltage issue. FPQ6=>2222, FPQ7=>7002

Gigabyte Technology			
Title: FRONT PANEL			
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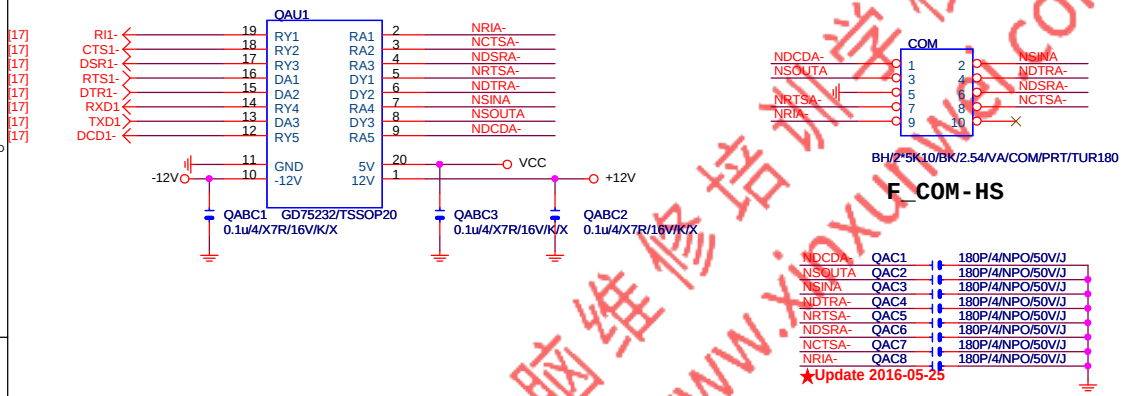
COM PORT

Rev: 0.81

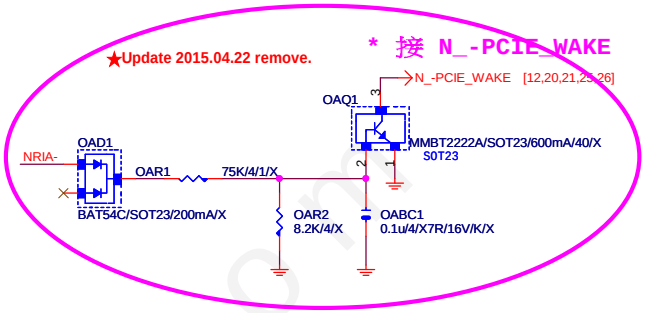


F_COM-HS

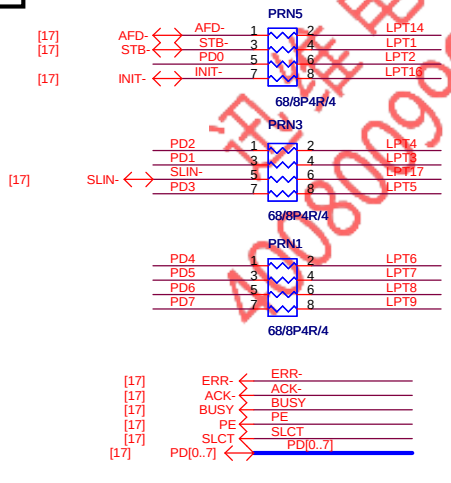
★Update 2016-05-25

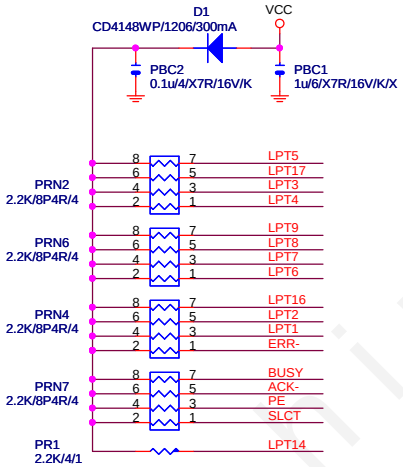
COM RI

N/A

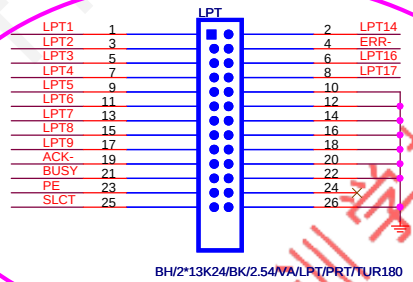


LPT PORT



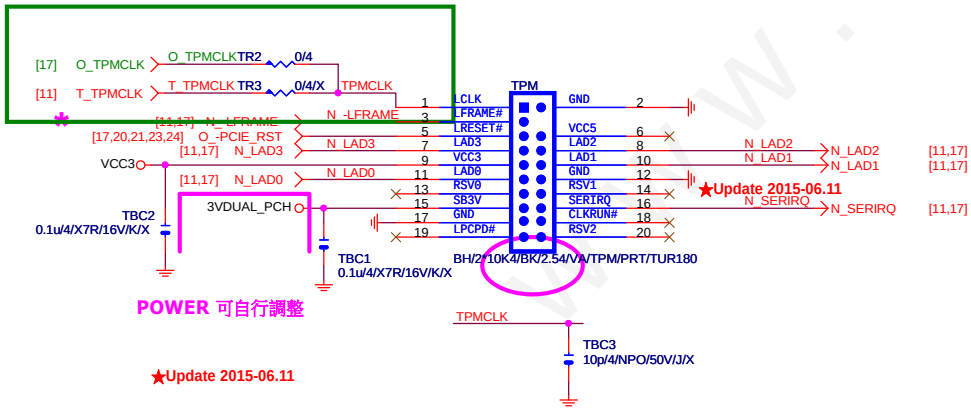


R&D技術通報151　有使用PRINT PORT的
MODEL，需使用新料號:10HP2-118728-72R 。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。 串電阻33 ohm改為68 ohm。



F_LPT-HS

TPM CONNECT



Gigabyte Technology		
Title: FP,F_USB,USB PWR,BZ		
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EMI/ESD R0.1

CLOSE SIO

EMIC1
100p/4/NPO/50V/J/X

[12,17,32] N_-SLP_S3

EMIC2
100p/4/NPO/50V/J/X

[12,17,31,33] N_-S4_S5

*Del EMIC3

CLOSE PCH

EMIC4
100p/4/NPO/50V/J/X

[4,12] N_CPUPWROK

EMIC5

VCC3

1n/4/X7R/50V/K

GIGABYTE™

Title: EMI/ESD		
Size: A	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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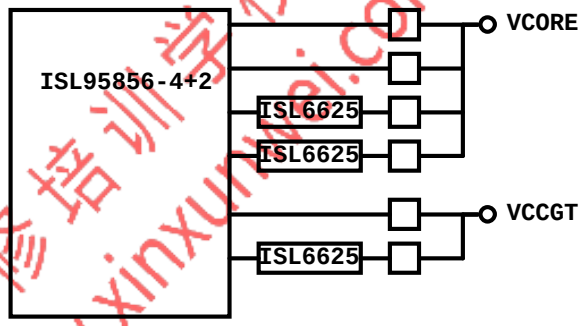
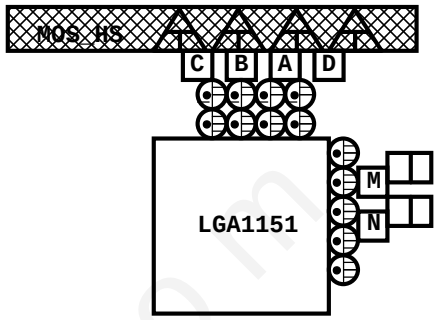
POWER BLOCK MAP

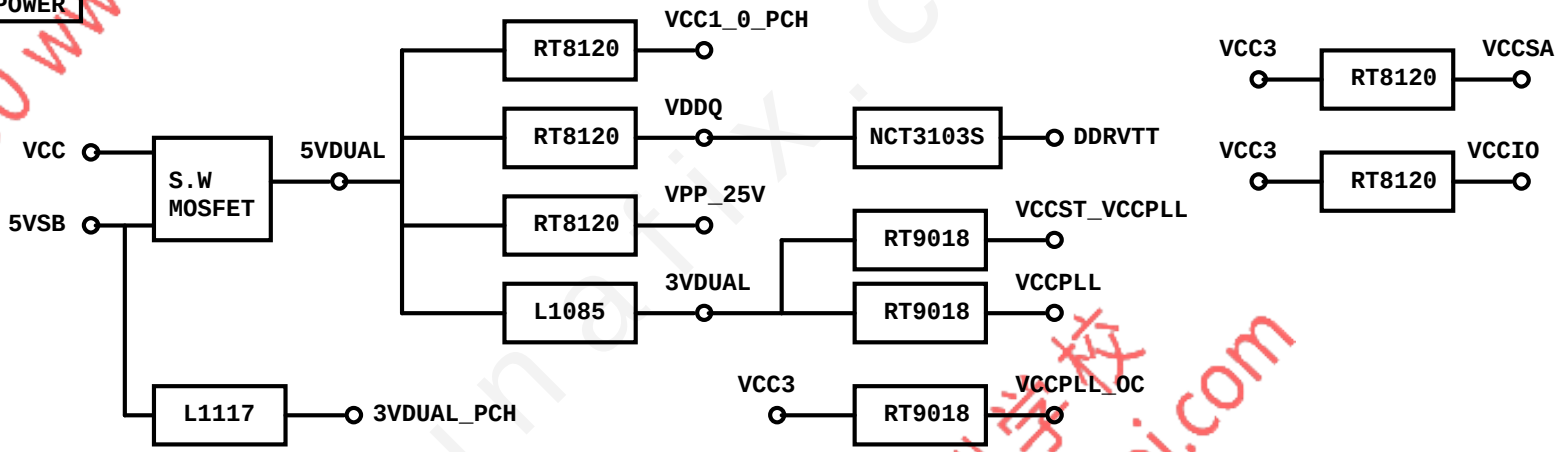
- CPU: VCORE, VCCGT, VCCSA, VCCIO, VDDQ, VCCST_VCCPLL, VCCSFUSEPRG, VCCPLL, VCCPLL_OC
- DDR4: VDDQ, DDRVTT, VPP_25V
- PCH: VCC1_0_PCH, VCCDSW_1P0, VCC10_VCCF24_1P0, VCC10_VCCAMPHYPLL, VCC10_VCCAPLL, VCC3_PCH, 3VDUAL_PCH, VCC3, N_RTCVDD
- IT8686: IT_VCCH, IT_AVCC, 2_5LEVEL
- HM: +12V, VCC, VCC3, VCORE, VCCGT, VDDQ, VCCSA

VCORE/VCCGT

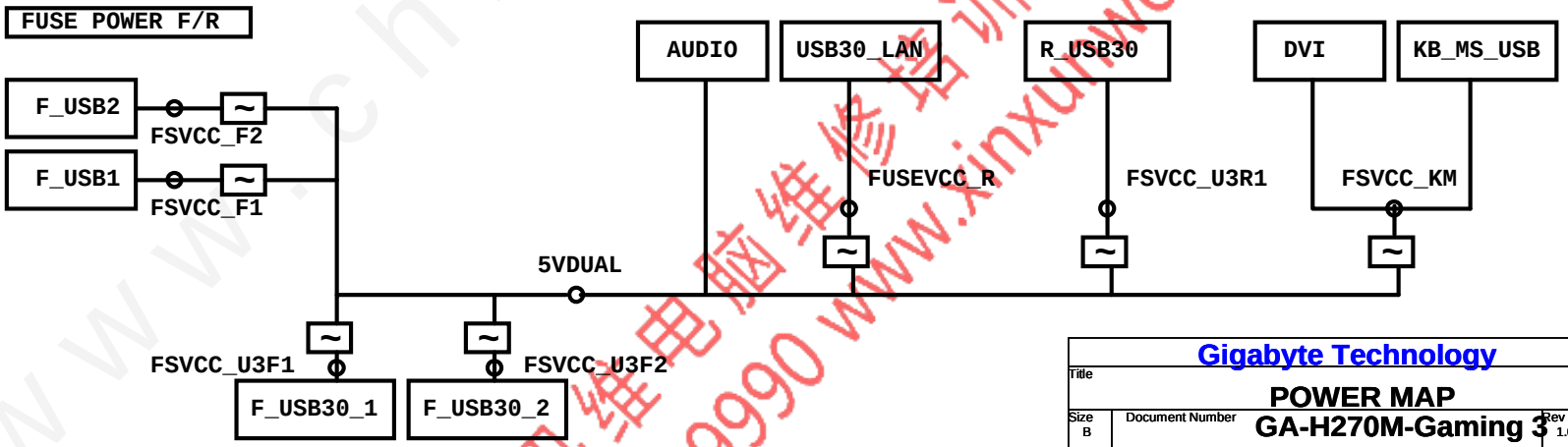




POWER



FUSE POWER F/R



Gigabyte Technology		
Title: POWER MAP		
Size: B	Document Number: GA-H270M-Gaming 3	Rev: 1.0
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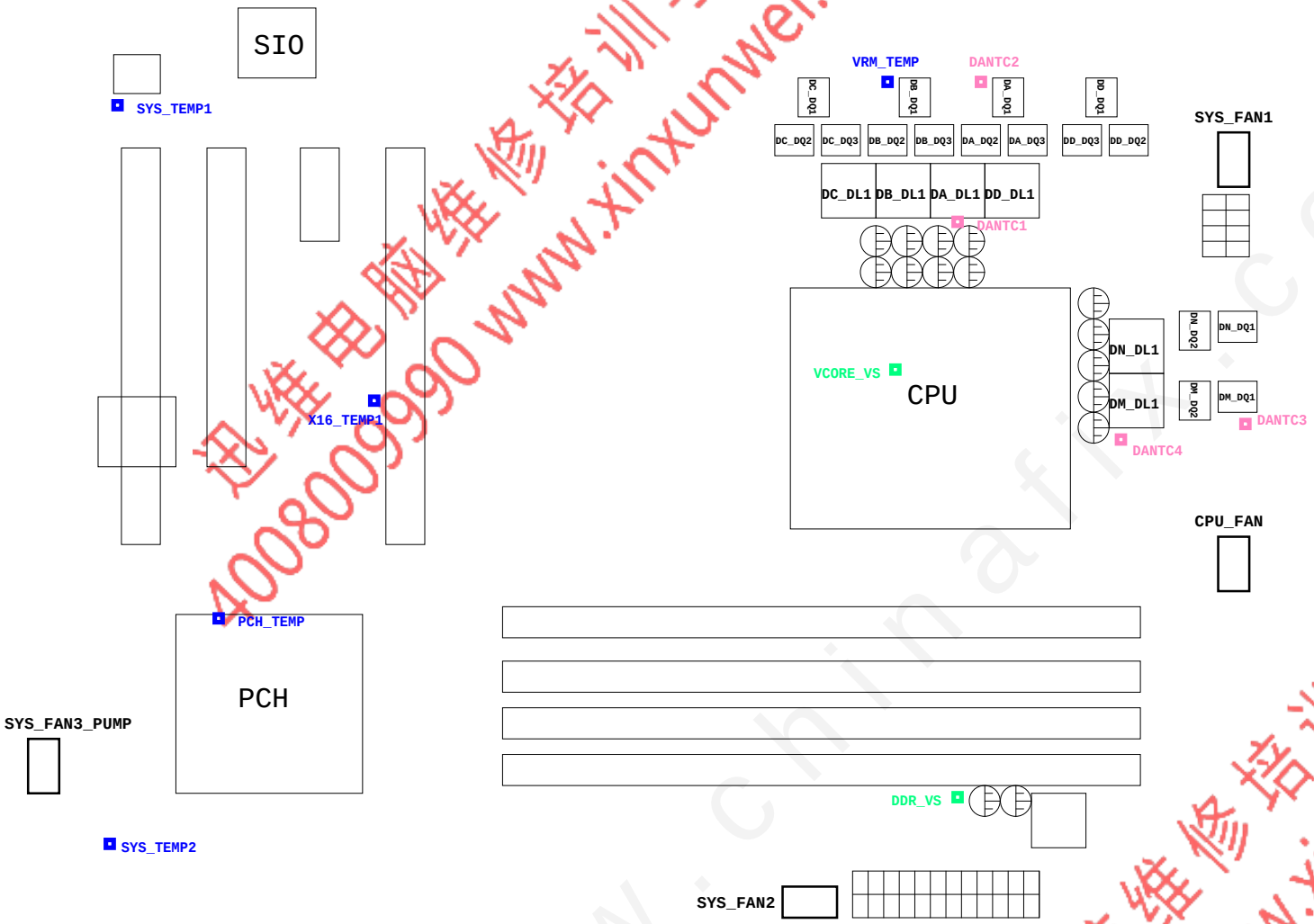

熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL1	N/A
DANTC2	DA_DQ1	Differential
DANTC3	DM_DQ2	N/A
DANTC4	DM_DL1	Differential
VCORE_TEMP	DB_DQ1	N/A
X16_TEMP1	PCIEX16	N/A
PCH_TEMP	PCH	N/A
SYS_TEMP1	CU1	N/A
SYS_TEMP2	N/A	N/A

SIO RS
SIO VIN
PWM RS
FAN

Gigabyte Technology
Title: NTC MAP
Size: Custom | Document Number: GA-H270M-Gaming 3 | Rev: 1.0
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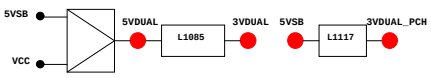
PCH GPIO LIST TABLE

PIN NAME	PWR	RTD3/PLTRST	Default	USAGE	NOTE
GPP_A0	MAIN	H-Z	RCIN#	N_-KBRST	P/U 8.2K VCC3
GPP_A1	MAIN	H-Z	LAD0	N_LAD0	N/A
GPP_A2	MAIN	H-Z	LAD1	N_LAD1	N/A
GPP_A3	MAIN	H-Z	LAD2	N_LAD2	N/A
GPP_A4	MAIN	H-Z	LAD3	N_LAD3	N/A
GPP_A5	MAIN	H-Z	LFRAME#	N_-LFRAME	N/A
GPP_A6	MAIN	H-Z	SERIRQ	N_SERIRQ	P/U 8.2K VCC3
GPP_A7	MAIN	H-Z	PIRQA#	N_-LDRQ0	P/U 8.2K VCC3
GPP_A8	MAIN	H-Z	CLKRUN#	N_GPP_A8	P/U 8.2K VCC3
GPP_A9	MAIN	H-Z	CLKOUT	T_TPMCLK/N_LPC24MA	N/A
GPP_A11	MAIN	H-Z	PME#	N_-P_PME	P/U 8.2K 3VDUAL_PCH
GPP_A12	MAIN	H-Z	GPI	N_GPP_A12	P/U 8.2K VCC3
GPP_A13	MAIN	H-Z	WANRN#	N_-S_WARN	N/A
GPP_A14	MAIN	H-Z	STAT#	N_GPP_A14	P/U 8.2K 3VDUAL
GPP_A15	MAIN	H-Z	ACK#	N_-S_ACK	N/A
GPP_B0	MAIN	H-Z	GPO	N_-DDR_V_SEL	P/U 8.2K VCC3
GPP_B2	MAIN	H-Z	GPI	N_-VRALERT	P/U 8.2K 3VDUAL
GPP_B3	MAIN	H-Z	GPI	N_GPP_B3	N/A
GPP_B4	MAIN	H-Z	GPI	N_GPP_B4	N/A
GPP_B5	MAIN	H-Z	GPI	-PCIEX16_PR	P/U 8.2K VCC3
GPP_B6	MAIN	H-Z	GPI	-PCIEX1_PR1	P/U 8.2K VCC3
GPP_B8	MAIN	H-Z	GPI	-PCIEX4_PR	P/U 8.2K VCC3
GPP_B9	MAIN	H-Z	GPI	N_GPP_B9	P/D GND
GPP_B10	MAIN	H-Z	GPI	LA_-CLKREQ	P/U 8.2K 3VDUAL_LAN1
GPP_B12	MAIN	H-Z	SLP_S0	N_-SLP_S0	N/A
GPP_B13	MAIN	H-Z	PLTRST	N_-PFMRST	N/A
GPP_B14	MAIN		GPO	N_SPKR	N/A
GPP_B15	MAIN	H-Z	GPI	N_GPP_B15	N/A
GPP_B16	MAIN	H-Z	GPI	N_GPP_B16	N/A
GPP_B22	MAIN		GPO	N_GPP_B22	P/D 1K GND
GPP_B23	MAIN	H-Z	GPO	N_-PCH_HOT	N/A
GPP_C0	MAIN	H-Z	SMBCLK	N_SMBCLK	P/U 1K 3VDUAL
GPP_C1	MAIN	H-Z	SMBDATA	N_SMBDATA	P/U 1K 3VDUAL
GPP_C2	MAIN		GPO	N_-LPCPME	N/A
GPP_C3	MAIN	H-Z	SML0CLK	N_SML0CLK	P/U 499 3VDUAL
GPP_C4	MAIN	H-Z	SML0DAT	N_SML0DAT	P/U 499 3VDUAL
GPP_C5	MAIN		GPO	N_GPP_C5	N/A
GPP_C6	MAIN	H-Z	GPI	N_SML1CLK	P/U 8.2K 3VDUAL
GPP_C7	MAIN	H-Z	GPI	N_SML1DAT	P/U 8.2K 3VDUAL
GPP_C22	MAIN	H-Z	GPI	N_GPP_C22	N/A
GPP_C23	MAIN	H-Z	GPI	N_GPP_C23	N/A
GPP_D4	MAIN	H-Z	GPI	N_GPP_D4	P/U 8.2K 3VDUAL
GPP_D7	MAIN	H-Z	GPI	N_GPP_D7	N/A
GPP_D8	MAIN	H-Z	GPI	N_GPP_D8	N/A
GPP_D9	MAIN	H-Z	GPI	N_GPP_D9	P/U 1K VCC3
GPP_D10	MAIN	H-Z	GPI	N_GPP_D10	N/A
GPP_D13	MAIN	H-Z	GPI	N_GPP_D13	N/A
GPP_D23	MAIN	H-Z	GPI	N_GPP_D23	P/U 8.2K 3VDUAL
GPP_E0	MAIN	H-Z	GPI	N_GPP_E0	P/U 8.2K 3VDUAL
GPP_E1	MAIN	H-Z	GPI	N_GPP_E1	P/U 8.2K 3VDUAL
GPP_E2	MAIN	H-Z	GPI	N_GPP_E2	P/U 8.2K 3VDUAL
GPP_E3	MAIN	H-Z	GPI	N/A	N/A
GPP_E4	MAIN	H-Z	GPI	N_DEVSLP0	N/A
GPP_E6	MAIN	H-Z	GPI	N_DEVSLP2	N/A
GPP_E8	MAIN	H-Z	GPI	N_-SATALED	N/A
GPP_E9	MAIN	H-Z	GPI	N_-USBOC_F	N/A
GPP_E10	MAIN	H-Z	GPI	N_-USBOC_R	N/A
GPP_E11	MAIN	H-Z	GPI	N_-USBOC_R	N/A
GPP_E12	MAIN	H-Z	GPI	N_-USBOC_F	N/A
GPP_F0	MAIN	H-Z	GPI	N_GPP_F0	P/U 8.2K 3VDUAL
GPP_F1	MAIN	H-Z	GPI	N_GPP_F1	P/U 8.2K 3VDUAL
GPP_F2	MAIN	H-Z	GPI	N_GPP_F2	P/U 8.2K 3VDUAL
GPP_F3	MAIN	H-Z	GPI	N_GPP_F3	P/U 8.2K 3VDUAL
GPP_F4	MAIN	H-Z	GPI	N_GPP_F4	P/U 8.2K 3VDUAL
GPP_F5	MAIN	H-Z	GPI	N_GPP_F5	P/U 8.2K VCC3
GPP_F6	MAIN	H-Z	GPI	N_DEVSLP4	N/A
GPP_F10	MAIN	H-Z	GPI	N_GPP_F10	P/U 8.2K VCC3
GPP_F11	MAIN	H-Z	GPI	N_GPP_F11	P/U 8.2K VCC3
GPP_F12	MAIN	H-Z	GPI	N_GPP_F12	P/U 8.2K VCC3
GPP_F13	MAIN	H-Z	GPI	N_GPP_F13	P/U 8.2K VCC3
GPP_F14	MAIN	H-Z	GPI	A_-SKTOCC	P/U 8.2K VCC3
GPP_F15	MAIN	H-Z	GPI	N_-USBOC_F	N/A
GPP_F16	MAIN	H-Z	GPI	N_-USBOC_F	N/A
GPP_F17	MAIN	H-Z	GPI	N_-USBOC_7	P/U 8.2K 3VDUAL
GPP_F18	MAIN	H-Z	GPI	N_-USBOC_7	P/U 8.2K 3VDUAL
GPP_F22	MAIN	H-Z	GPI	N_GPP_F22	P/U 8.2K VCC3
GPP_F23	MAIN	H-Z	GPI	N_GPP_F23	P/U 8.2K VCC3
GPP_G11	MAIN	H-Z	FANPWM2	N/A	N/A
GPP_G12	MAIN	H-Z	GPI	N_GPP_G12	N/A
GPP_G13	MAIN	H-Z	GPI	N_CPU_S1	N/A
GPP_G14	MAIN	H-Z	GPI	N_GT_S	N/A
GPP_G15	MAIN	H-Z	GPI	N_CPU_S	N/A
GPP_G18	MAIN	H-Z	GPI	N_GPP_G18	P/U 8.2K VCC3
GPP_G19	MAIN	H-Z	GPI	N_GPP_G19	P/U 8.2K VCC3
GPP_G20	MAIN	H-Z	GPI	N_GPP_G20	P/U 8.2K VCC3
GPP_G21	MAIN	H-Z	GPI	N_GPP_G21	P/U 8.2K VCC3
GPP_G22	MAIN	H-Z	GPI	N_GPP_G22	P/U 8.2K VCC3
GPP_H0	MAIN	H-Z	GPI	M2A_-CLKREQ	P/U 8.2K VCC3
GPP_H12	MAIN		GPO	N_GPP_H12	N/A
GPP_H19	MAIN	H-Z	GPI	N_GPP_H19	P/U 8.2K 3VDUAL
GPP_H20	MAIN	H-Z	GPI	N_GPP_H20	P/U 8.2K 3VDUAL
GPP_H21	MAIN	H-Z	GPI	N_GPP_H21	P/U 8.2K 3VDUAL
GPP_H22	MAIN	H-Z	GPI	N_GPP_H22	P/U 8.2K 3VDUAL
GPP_I0	MAIN	H-Z	GPI	N_DP_HDP	N/A
GPP_I1	MAIN	H-Z	GPI	N_DP2_HDP	N/A
GPP_I2	MAIN	H-Z	GPI	N_DVI_HDP_F	N/A

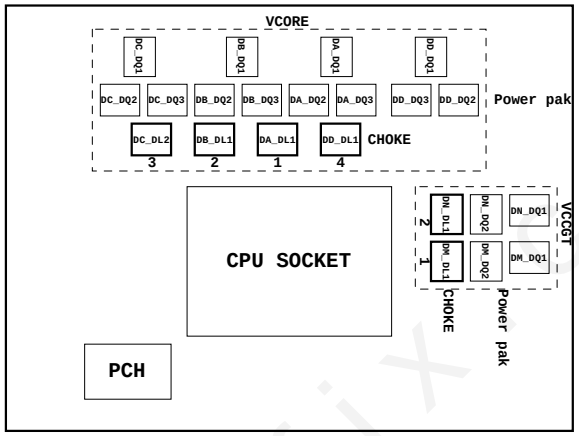
PIN NAME	PWR	RTD3/PLTRST	Default	USAGE	NOTE
GPP_I3	MAIN	H-Z	GPI	N_GPP_I3	P/U 8.2K VCC3
GPP_I4	MAIN	H-Z	GPI	N_GPP_I4	P/D 100K GND
GPP_I5	MAIN	H-Z	GPI	N_DDPB_CTRLCLK	P/U 2.2K VCC3
GPP_I6	MAIN		GPO	N_DDPB_CTRLDATA	P/U 2.2K VCC3
GPP_I7	MAIN	H-Z	GPI	N_DDPC_CTRLCLK	P/U 2.2K VCC3
GPP_I8	MAIN		GPO	N_DDPC_CTRLDATA	P/U 2.2K VCC3
GPP_I9	MAIN	H-Z	GPI	N_DDPD_CTRLCLK	P/U 2.2K VCC3
GPP_I10	MAIN		GPO	N_DDPD_CTRLDATA	P/U 2.2K VCC3
GPD0	STBY		BATLOW	N_-BATLOW	P/U 8.2K 3VDUAL_PCH
GPD1	STBY		ACPRESENT	N_GP_D1	P/U 8.2K 3VDUAL_PCH
GPD2	STBY		LAN_WAKE	N_-LAN_WAKE	P/U 8.2K 3VDUAL_PCH
GPD3	STBY		PWRBTN	O_PWRBTSW	P/U 8.2K 3VDUAL_PCH
GPD4	STBY		SLP_S3	N_-SLP_S3	N/A
GPD5	STBY		SLP_S4	N_-S4_S5	N/A
GPD6	STBY		SLP_A	N_-SLP_A	N/A
GPD8	STBY		SUSCLK	N_SUSCLK	P/D 1.5K GND
GPD10	STBY		SLP_S5	N_-SLP_S5	N/A
GPD11	STBY		LANPHYPC	N_-LAN_DIS	N/A

Super I/O ITE8686 GPIO Table

PIN NAME	USAGE	NOTE
PCIRST3#/GP10/VDIMM_STR_EN	N/A	
PCIRST2#/GP11	O_-PCIE_RST	
PCIRST1#/GP12	O_-PFMRST2	
SVC/PECI_ROI/GP14	N_-THRMTRIP	
SLP_SUS#/PCIRSTIN#/CIRTX2/GP15	-PCIRSTIN	
PSI_L/FAN_CLT5/CIRRX2/GP16	空 PIN	
RI2#/GP17	IO_GP17	
THR_PWM_CTS2#/GP20	空 PIN	
IO_SMI#DCD2#/GP21	空 PIN	
SPI_SI/GP22	BEEP-	
DPWROK/CPU_PG/GP23	N_PCH_DPWROK	
FAN_TAC5/RTS2#/GP24	FANIO5	
FAN_TAC4/DSR2#/GP25	空 PIN	
INV_OUT1_SOUT2/GP26	G_PLED	
INV_IN1/SIN2/GP27	INV_IN1	
ATXPG/GP30	PWOK	
CTS1/GP31	CTS1-	
OCWDT3/RI1#/GP32	RI1-	
OCWDT2/DCD1#/GP33	DCD1-	
VTT_PWRGD/GP34	VTT_PWRGD	
VCC18_EN/GP35	VCCIO_EN	
FAN_CTL3/GP36	FANPWM3	
FAN_TAC3/GP37	FANIO3	
3VSBSW#/GP40	空 PIN	
OCWDT1/SIN1/GP41	RXD1	
GP42/SCK/FAN_CTL4	FANPWM4	
PANSWH#/GP43	-PWRBTSW	
PWRON#/GP44	O_PWRBTSW	
OCWDT0/DSR1#/GP45	DSR1-	
CE2_N/GP47/JP6	CEB_N	
GP50/JP1	O_TPMCLK	
FAN_CTL2/GP51	FANPWM2	
FAN_TAC2/GP52	FANIO2	
SUSC#/GP53	N_-S4_S5	
PME#/GP54	N_-LPCPME	
RSMRST#/CIRRX1/GP55	O_-RSMRST	
MCLK/FAN_TAC6/GP56	MCLK	
MDAT/FAN_CTL6/GP57	MDAT	
KCLK/GP60	KCLK	
KDAT/GP61	KDAT	
KRST#/GP62	N_-KBRST	
HOLD_B#/GP63	空 PIN	
HOLD_B#/GP64	-SPI_HOLD_M	
VLDT_EN/PCH_D0/GP65	MB_ID2	
VCC1_05_EN/GP66	VCC1_0_EN	
GP67	N_-RTCRST	
USB_FS1/PD0/GP70	空 PIN	
USB_FS2/PD1/GP71	空 PIN	
USB_FS3/PD2/GP72	空 PIN	
USB_FS3/PD3/GP73	空 PIN	
USB_FS5/PD4/GP74	空 PIN	
USB_FS6/PD5/GP75	空 PIN	
USB_FS7/PD7/GP76	空 PIN	
USB_FS8/PD8/GP77	空 PIN	
LS-IN1/SLCT/GP80	VDDQ	
LS_OUT1/PE/GP81	空 PIN	
LS_IN2/BUSY/GP82	VCCIO	
LS_OUT2/ACK#/GP83	空 PIN	
IPHONE_CHARGE#/SLIN#/GP84	空 PIN	
OC_IN/INIT#/GP85	空 PIN	
OC_OUT/AFD#/GP86	空 PIN	
USB_OC2/STB#/GP87	空 PIN	
DDR_EN/GP90	MA_EN	
PWRLED/GP91	MPD-	
HOLD_OUT/GP92	空 PIN	
HDLED_IN/GP93	GP93	
PROCHOT#/GP94	A_-PROCHOT	
CPUPWRGD/GP95	空 PIN	
PCH_VRMPWRGD/GP96	N_PCH_VRMPWRGD	
VR_RDY/GP97	VR_RDY	



PWM各相位的擺法如下:



BIOS超電壓對應表:

線路圖名稱	BIOS選項
Vcore	CPU Vcore
VCCGT	CPU Graphic Voltage
VCCSA	CPU System Agent Voltage
VCCIO	CPU I/O Voltage
VCC1_0_PCH	PCH core
VDDQ	DRAM voltage
VPP_25V	DRAM VPP voltage
DDRVTT	DRAM Terminatio
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

散熱模組料號:

Z270M-D3P-WG :
PCH : 12SP2-S04907-01R/02R/03R
MOS : 12SP2-S09325-31R/32R/33R

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	VCC	FANIO1	IT8686
	FANC_VOUT	N/A	N/A	NCT3947
SYS FAN1	FANPWM2	VCC	FANIO2	IT8686
	FAN1_VOUT	N/A	N/A	NCT3947
SYS FAN2	FANPWM3	VCC	FANIO3	IT8686
	FAN2_VOUT	N/A	N/A	NCT3947
SYS_FAN3_PUMP	FANPWM4	VCC	FANIO4	IT8686
	FAN3_VOUT	N/A	N/A	NCT3947

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Title: TABLE LIST

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