Model Name: GA-H270M-D3H

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	
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11	PCH_DMI,USB,PCIE	
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13	PCH SATA,PCIE,SATA_EXPRESS	
14	PCH_PWR	
15	PCH_GND	
16	Single BIOS	(REV0.3)
17	ITE 8686 LPC IO	(REV0.3)
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	

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Title: Cover Sheet

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

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Model Name: GA-H270M-D3H

rev 1.0

Component value change history

2016/11/17

Data	Change Item	Reason
2016/11/17	0ohm -> Short Wire	

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	

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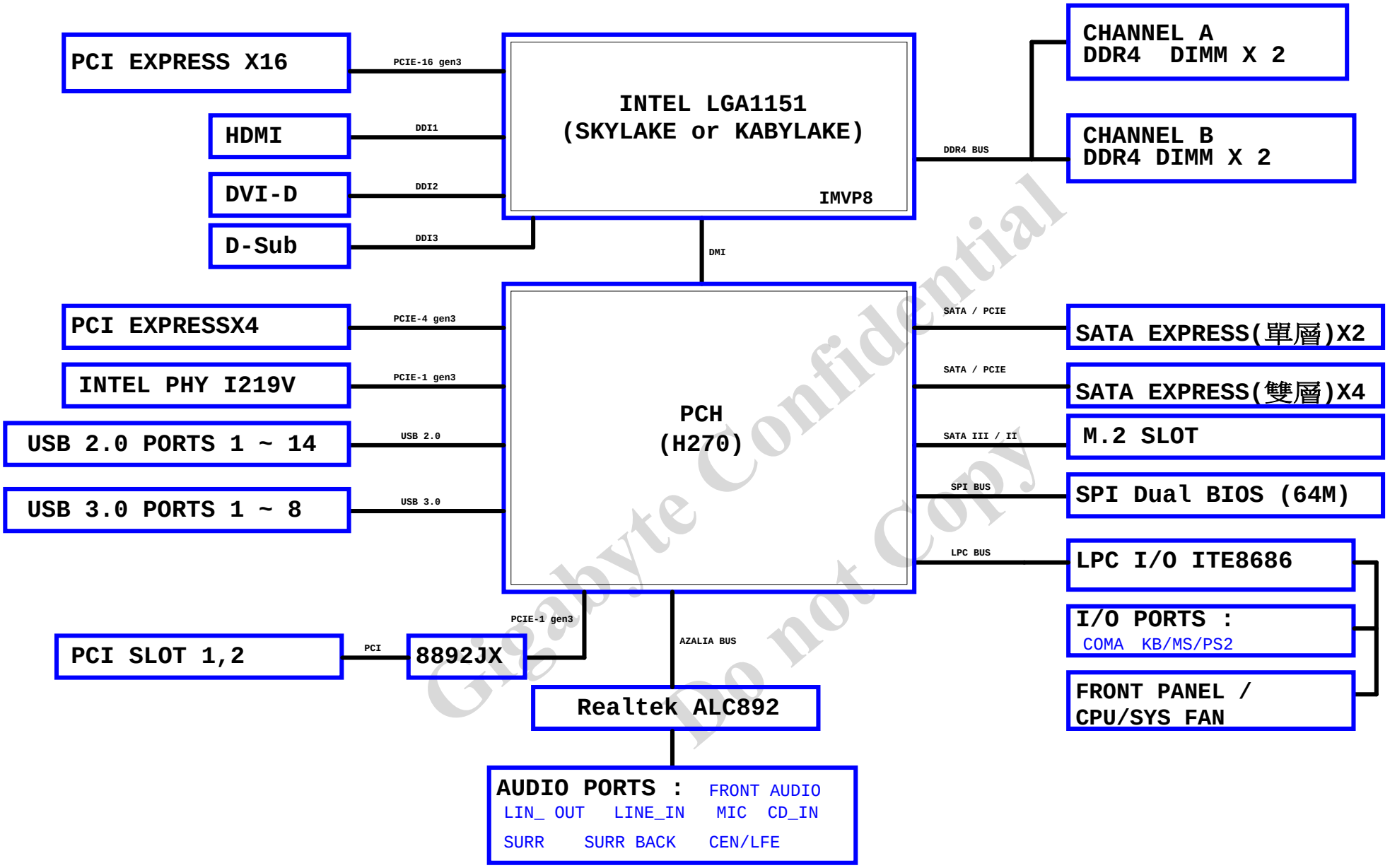
Title: BOM & PCB MODIFY HISTORY

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

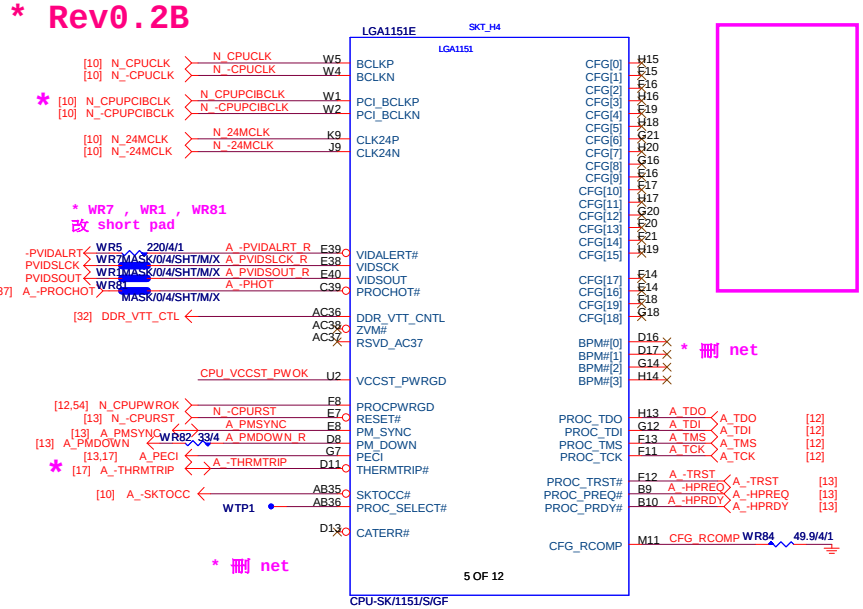
Date: Friday, November 18, 2016 | Sheet 2 of 57

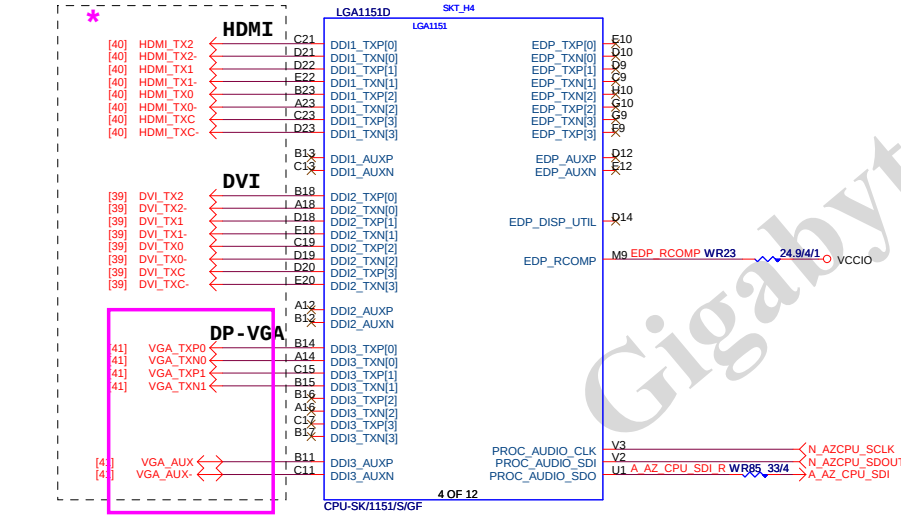
BLOCK DIAGRAM

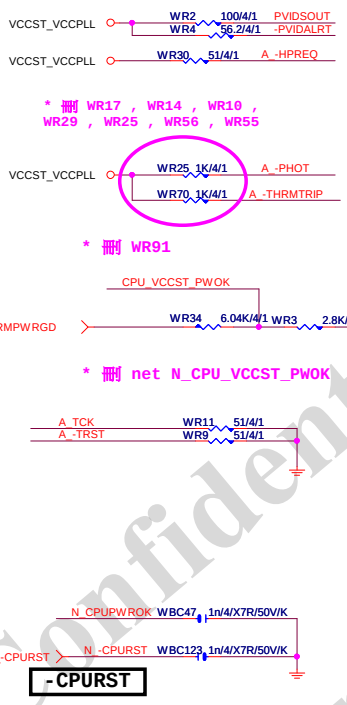


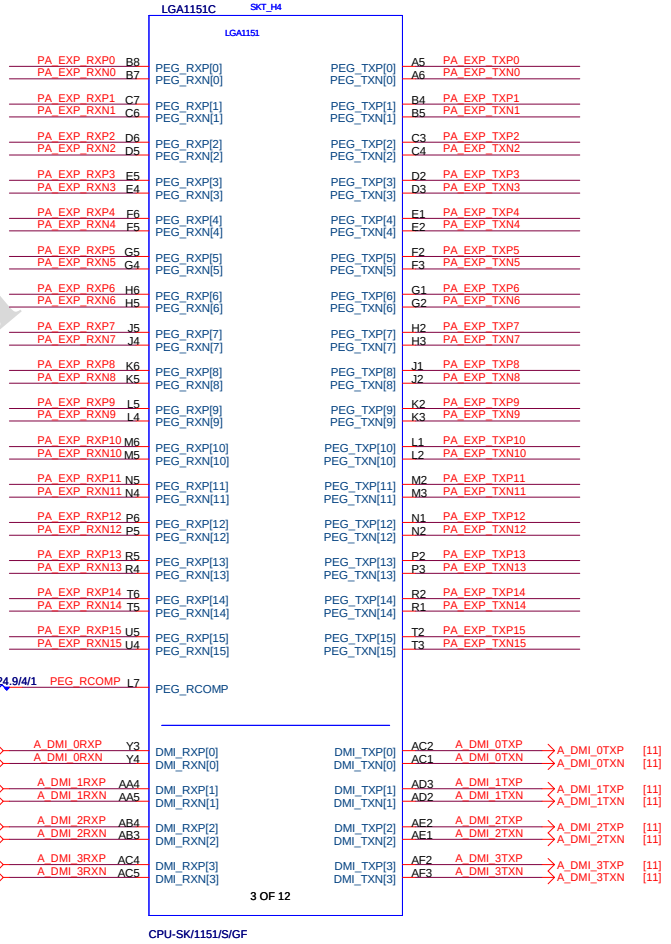
Gigabyte Technology		
Title: BLOCK DIAGRAM		
Size: C	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Thursday, November 17, 2016	Sheet 3 of 57	

* Rev0.2B









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

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

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Title	CPU LGA1151-A	
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* 改DDR4 net

LGA1151A

SKT_H4

LGA1151

DDR CHANNEL A

1 OF12

CPU-SK/1151/S/GF

LGA1151B

SKT_H4

LGA1151

DDR CHANNEL B

2 OF 12

CPU-SK/1151/S/GF

LGA1151

ILM_BP_CR/115X/NORMAL NI

Need check the new CPU ME

[8] MODT_A[0..3] <> MODT_A[0..3]

[9] MODT_B[0..3] <> MODT_B[0..3]

[8] MDA[0..63] <> MDA[0..63]

[9] MDB[0..63] <> MDB[0..63]

[8] M_DQSA[0..7] <> M_DQSA[0..7]

[8] M_-DQSA[0..7] <> M_-DQSA[0..7]

[8] MAAA[0..16] <> MAAA[0..16]

[9] MAAB[0..16] <> MAAB[0..16]

[9] M_DQSB[0..7] <> M_DQSB[0..7]

[9] M_-DQSB[0..7] <> M_-DQSB[0..7]

Title	CPU LGA1151-B
Size: Custom	Document Number: GA-H270M-D3H
Rev	1.0
Date: Friday, November 18, 2016	Sheet 5 of 57

Gigabyte Technology

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]

10 OF 12

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 AT21 AU13 AU15 AU19 AU23 AV11 AV17 AV21 AW10 AW14 AW25 AY12 AY16 AY18 AY23 — AT18 AT21 AU13 AU15 AU19 AU23 AV11 AV17 AV21 AW10 AW14 AW25 AY12 AY16 AY18 AY23

VCCPLL_OC AJ9 VCCPLL_S WR86 VDDQ

CPU POWER

0/4/SHT/20/M/X

* 刪 VCCPLL_OC

VCCIO

AK11 AK14 AK24 AJ23 M8 P8 T8 U8 W8 — VCCIO

VCCOPC_AJ30 AJ27 AJ28 AJ29 AK27 — AJ30 AJ27 AJ28 AJ29 AK27

VCCOPC_AK27

WR60 0/4/X

VCCEOPIO AJ25 AJ26

WR61 0/4/X

VCCST_VCCPLL
VCCSFUSEPRG
VCCST_VCCPLL

V5 V6 V4

VCCST_V5 VCCST_V6 VCCPLL

VCC_OPC_1P8_AB37 AB37 VCC_OPC_1P8_AB38 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

J8 J7 L8 K8 — RSVD_TP_J8 RSVD_TP_J7 RSVD_TP_L8 RSVD_TP_K8

AV1 AW2 — RSVD_TP_AV1 RSVD_TP_AW2

H8 K10 L10 J17 B39 J19 C40 — RSVD_H8 RSVD_K10 RSVD_L10 RSVD_J17 RSVD_B39 RSVD_J19 RSVD_C40

G8 AY3 — RSVD_G8 RSVD_AY3

D1 B3 — PROC_TRIGIN PROC_TRIGOUT

L12 K12 — RSVD_L12 RSVD_K12

RSVD_TP_H11 H11 RSVD_TP_H12 H12

RSVD_TP_AW38 AW38 RSVD_TP_AV39 AV39

RSVD_AU39 AU39 RSVD_AU40 AU40

VSS_AT15 AT15 VSS_AR23 AR23 VSS_AR22 AR22

RSVD_J15 J15 RSVD_J14 J14

RSVD_AU9 AU9 RSVD_AU10 AU10

RSVD_J13 J13 RSVD_K13 K13 RSVD_J11 J11

WR89 560/4/1

RSVD_D15 D15 RSVD_K11 K11

[13] N_PCH_CPU_TI
[13] A_CPU_PCH_TO

WR88 33/4 A_CPU_PCH_TO_R

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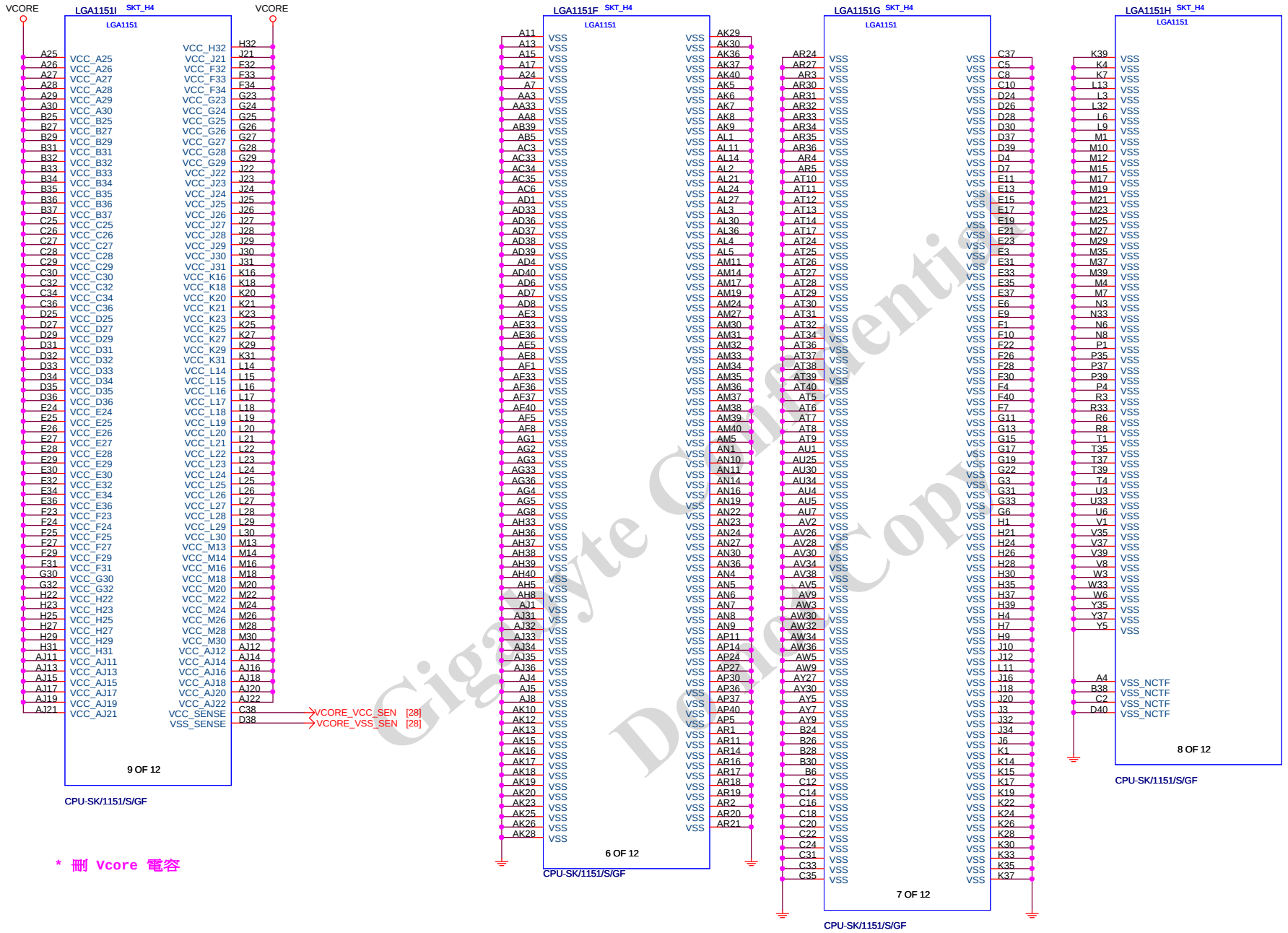
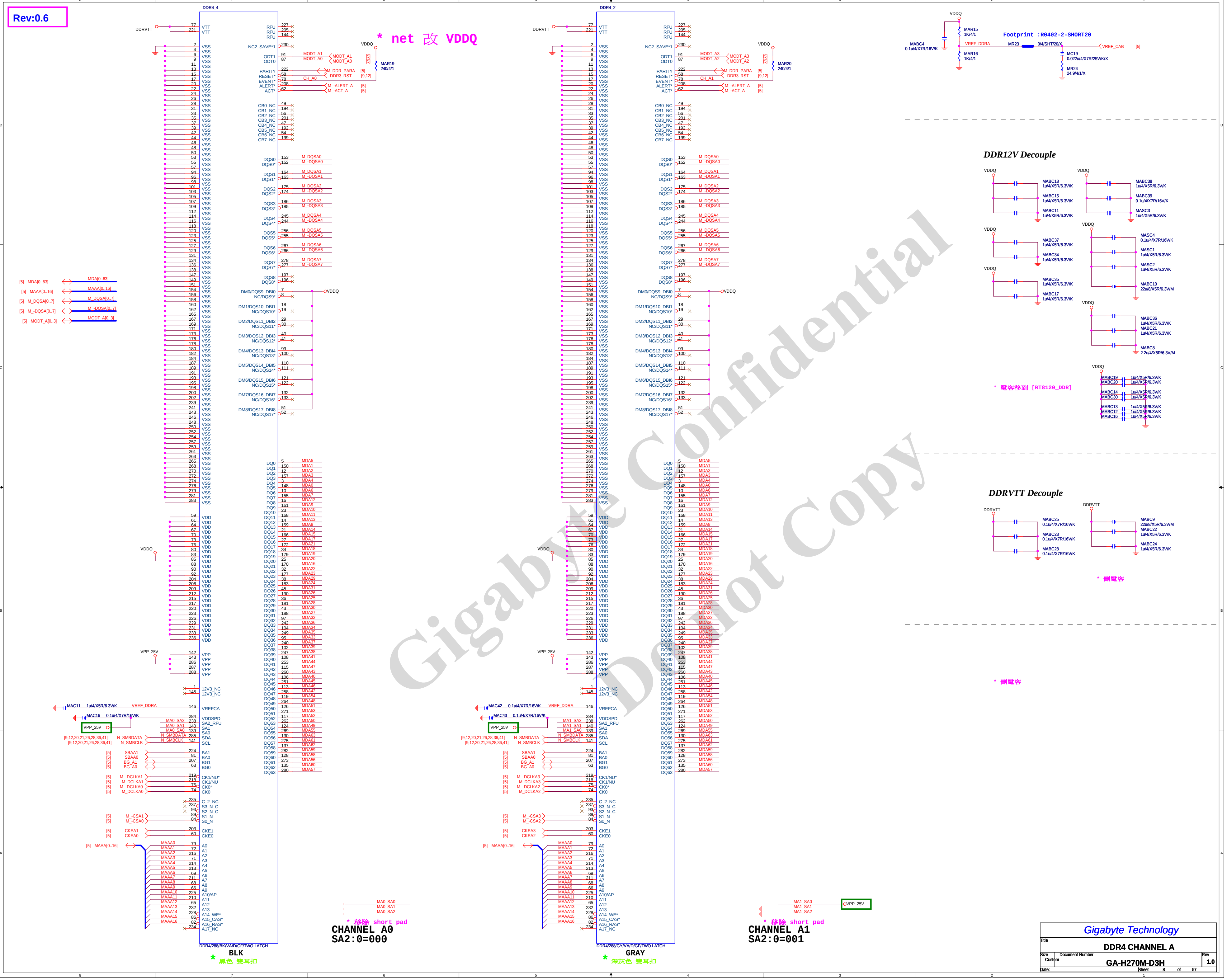
CPU-SK/1151/S/GF

Gigabyte Technology		
Title: CPU LGA1151-C		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 6 of 57	



Gigabyte Technology		
Title: CPU LGA1151-C		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 7 of 57	


Rev:0.6
DDR4_4
DDR4_2
* net 改 VDDQ
Footprint :R0402-2-SHORT20
DDR12V Decouple
DDRVTT Decouple
* 電容移到 [RT8120_DDR]
* 刪電容
* 刪電容
DDRVTT
VDDQ
VPP_25V
VREF_DDRA
VREF_CAB
[5] MDA[0..63]
[5] MAAA[0..16]
[5] M_DQSA[0..7]
[5] M_-DQSA[0..7]
[5] MODT_A[0..3]
* 移除 short pad
CHANNEL A0
SA2:0=000
* 移除 short pad
CHANNEL A1
SA2:0=001
DDR4/288/BK/VA/D/GF/TWO LATCH
* BLK
黑色 雙耳扣
DDR4/288/GY/VA/D/GF/TWO LATCH
* GRAY
深灰色 雙耳扣
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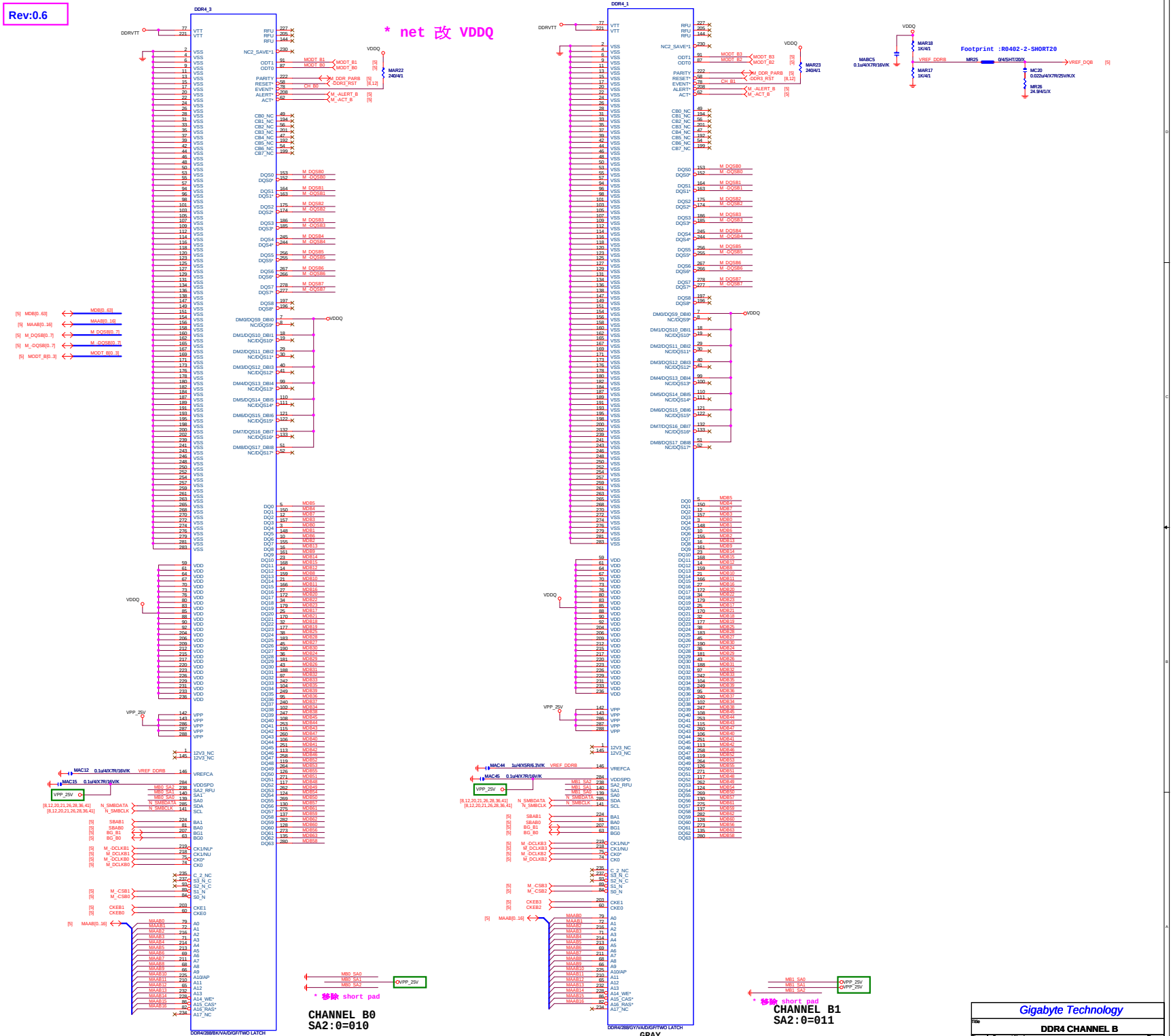
Title: DDR4 CHANNEL A

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

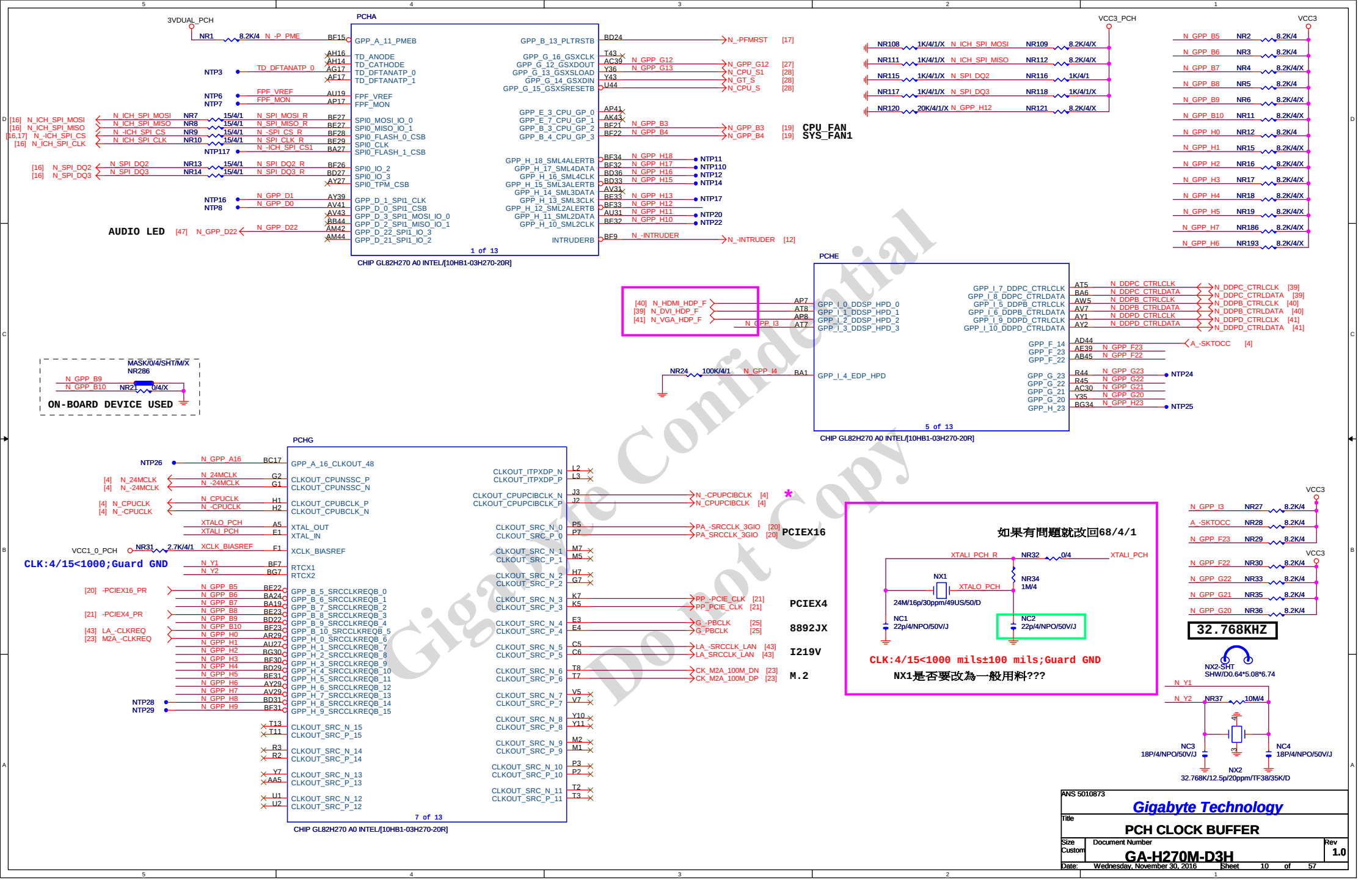
Date: | Sheet 8 of 57

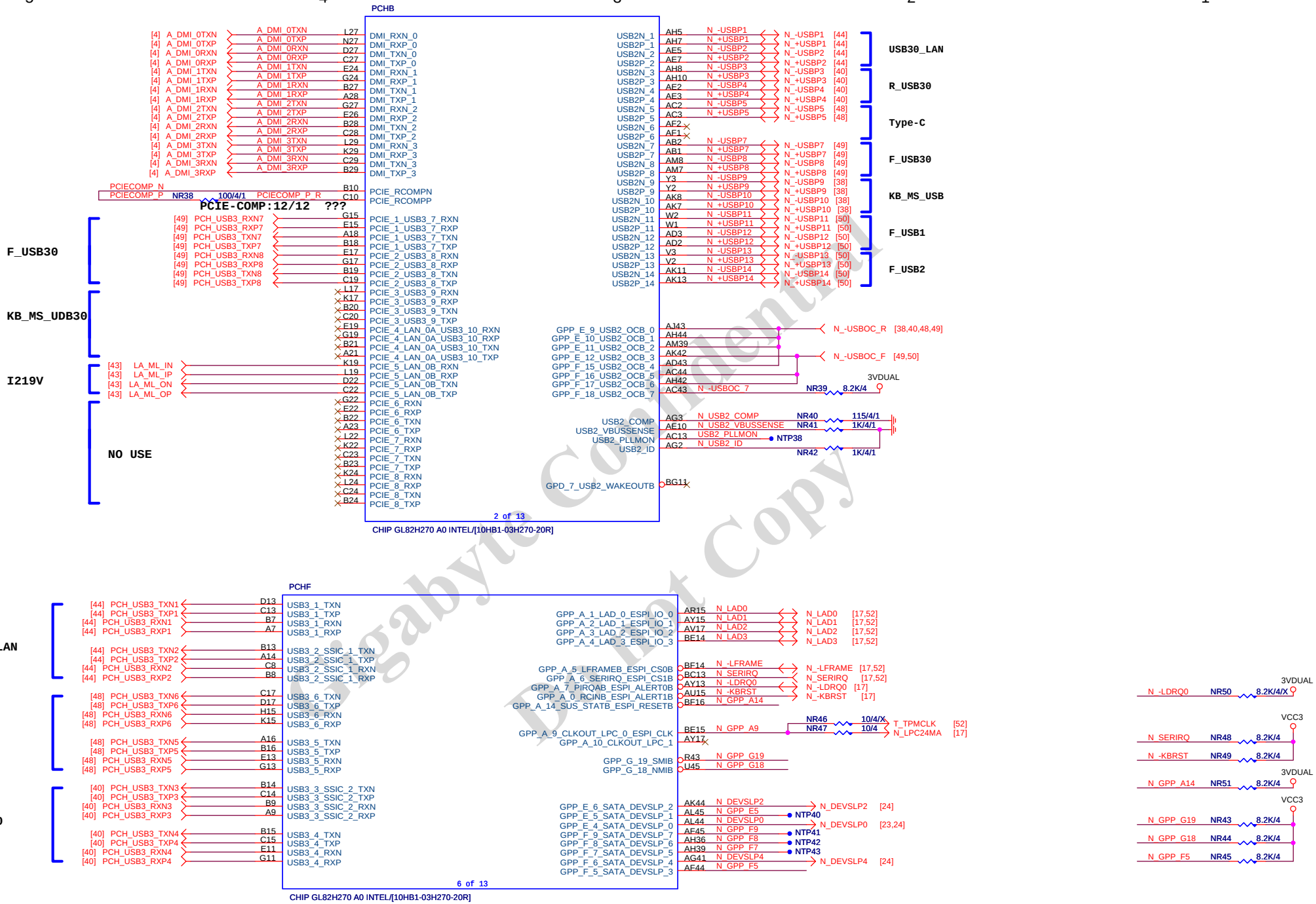
Rev:0.6

* net 改 VDDQ



Gigabyte Technology	
Title	DDR4 CHANNEL B
Size: Custom	Document Number: GA-H270M-D3H
Rev	1.0
Date:	Sheet 9 of 57


3VDUAL_PCH
PCHA
VCC3_PCH
VCC3
AUDIO LED
CPU_FAN
SYS_FAN1
CHIP GL82H270 A0 INTEL/[10HB1-03H270-20R]
PCHE
5 of 13
ON-BOARD DEVICE USED
PCHG
7 of 13
PCIEX16
PCIEX4
8892JX
I219V
M.2
CLK:4/15<1000;Guard GND
如果有問題就改回68/4/1
CLK:4/15<1000 mils±100 mils;Guard GND
NX1是否要改為一般用料???
32.768KHZ
Gigabyte Technology
PCH CLOCK BUFFER
GA-H270M-D3H
Wednesday, November 30, 2016



ANS 5010873	
Gigabyte Technology	
Title	PCH DMI,USB,PCIE
Size: Custom	Document Number: GA-H270M-D3H
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Date:	Wednesday, November 30, 2016
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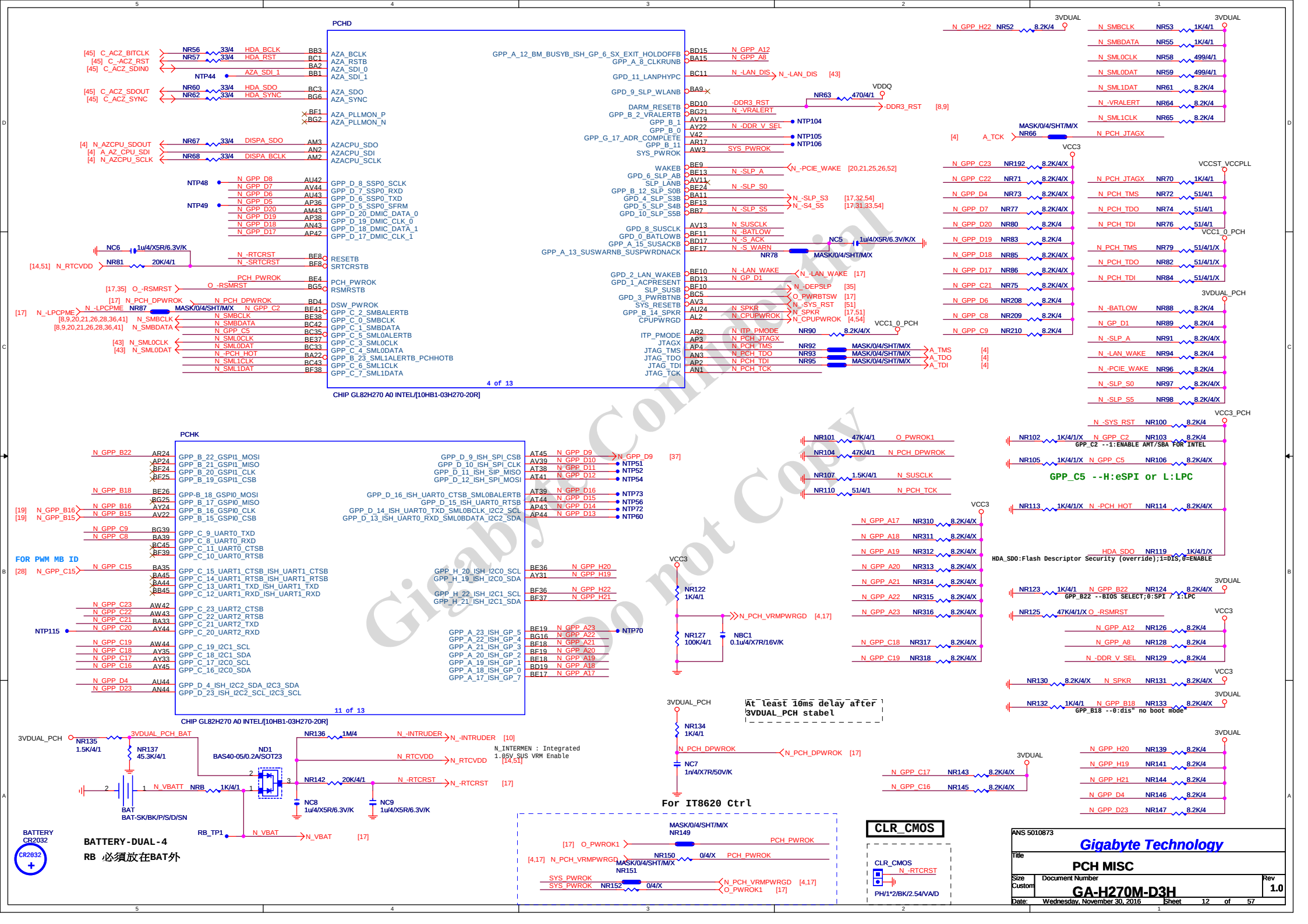
PCHD
AZA_BCLK
AZA_RSTB
AZA_SDI_0
AZA_SDI_1
AZA_SDO
AZA_SYNC
AZA_PLLMON_P
AZA_PLLMON_N
AZACPU_SDO
AZACPU_SDI
AZACPU_SCLK
GPD_D_8_SSP0_SCLK
GPD_D_7_SSP0_RXD
GPD_D_6_SSP0_TXD
GPD_D_5_SSP0_SFRM
GPD_D_20_DMIC_DATA_0
GPD_D_19_DMIC_CLK_0
GPD_D_18_DMIC_DATA_1
GPD_D_17_DMIC_CLK_1
RESETB
SRTCRSTB
PCH_PWROK
RSMRSTB
DSW_PWROK
GPD_C_2_SMBALERTB
GPD_C_0_SMBCLK
GPD_C_1_SMBDATA
GPD_C_5_SML0ALERTB
GPD_C_3_SML0CLK
GPD_C_4_SML0DATA
GPD_B_23_SML1ALERTB_PCHHOTB
GPD_C_6_SML1CLK
GPD_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
11 of 13
CHIP GL82H270 A0 INTEL/[10HB1-03H270-20R]
FOR PWM MB ID
3VDUAL_PCH
3VDUAL_PCH_BAT
BAT
BAT-SK/BK/P/S/D/SN
BATTERY
CR2032
BATTERY-DUAL-4
RB 必須放在BAT外
ND1
BAS40-05/0.2A/SOT23
N_INTERMEN : Integrated 1.05V SUS VRM Enable
3VDUAL_PCH
At least 10ms delay after 3VDUAL_PCH stabel
For IT8620 Ctrl
CLR_CMOS
PH/1*2/BK/2.54/VA/D
3VDUAL
VDDQ
VCC3
VCCST_VCCPLL
VCC1_0_PCH
VCC3_PCH
GPP_C2 --1:ENABLE AMT/SBA FOR INTEL
GPP_C5 --H:eSPI or L:LPC
HDA_SDO:Flash Descriptor Security (override);1=DIS,0=ENABLE
GPP_B22 --BIOS SELECT;0:SPI / 1:LPC
GPP_B18 --0:dis" no boot mode"
MASK/0/4/SHT/M/X
ANS 5010873
Gigabyte Technology
Title
PCH MISC
Size Custom
Document Number
GA-H270M-D3H
Rev 1.0
Date: Wednesday, November 30, 2016
Sheet 12 of 57
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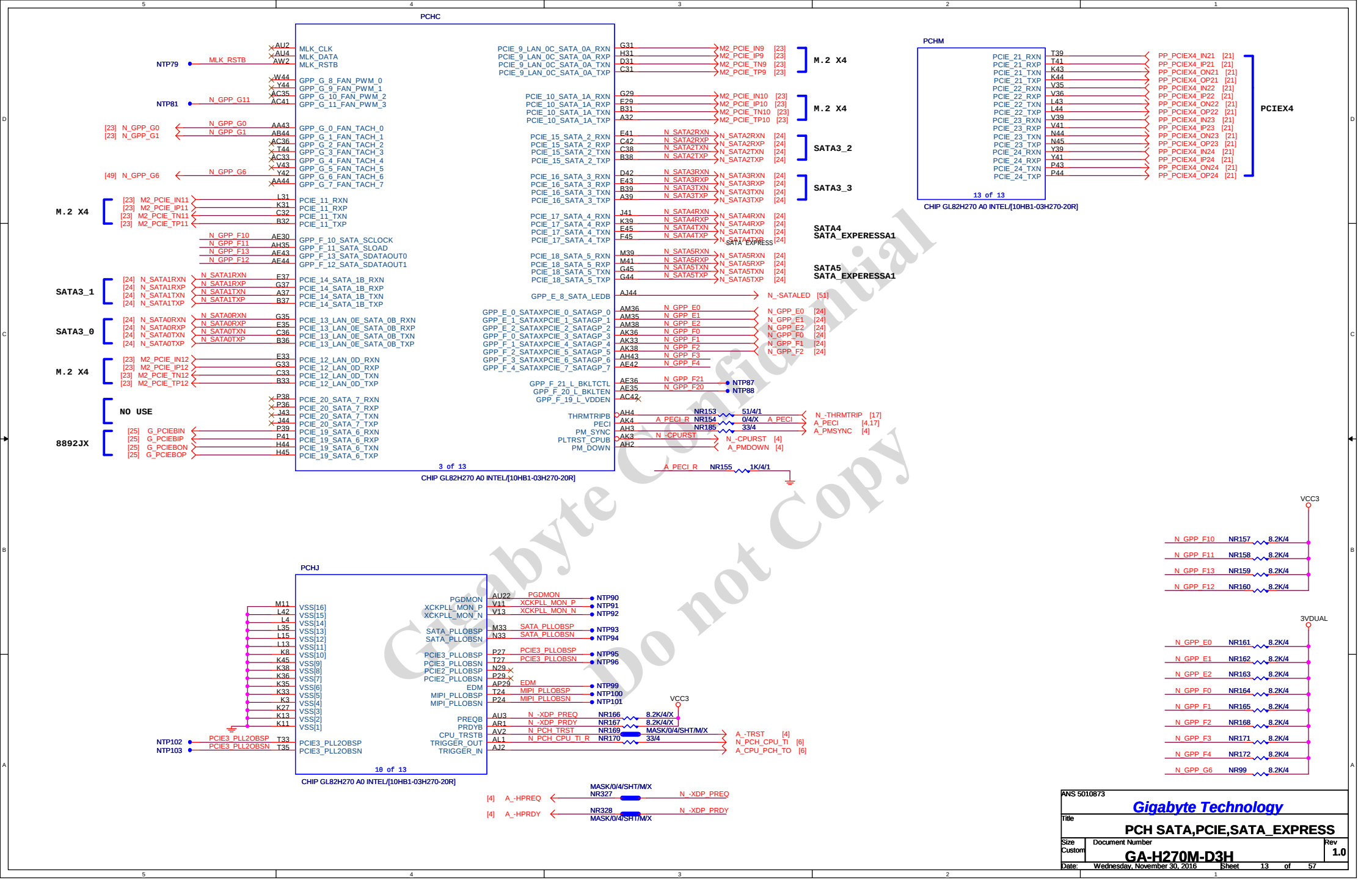
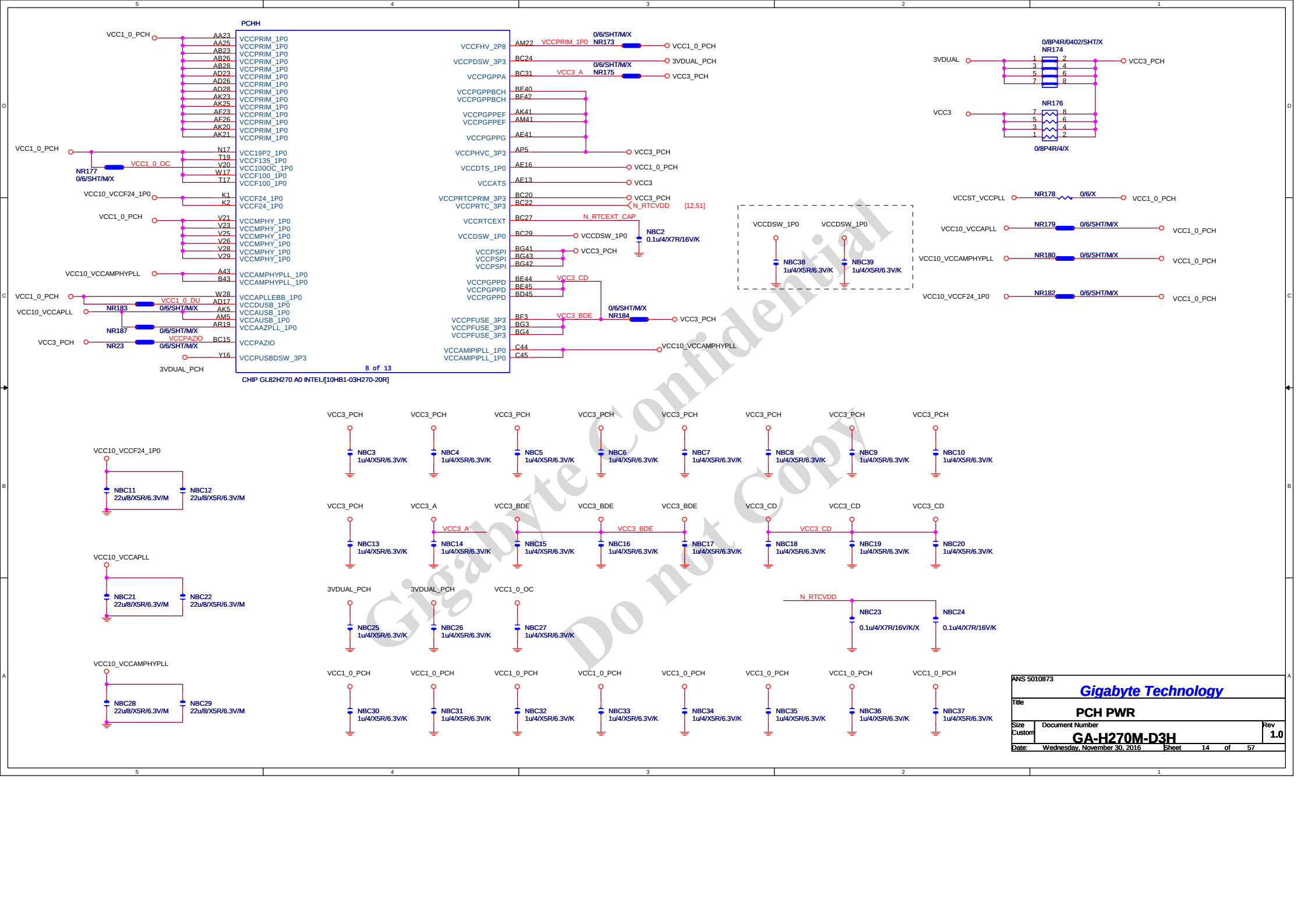
Do not Copy




PCHH
VCC1_0_PCH
AA23 AA25 AB23 AB26 AB28 AD23 AD26 AD28 AK23 AK25 AF23 AF26 AK20 AK21
VCCPRIM_1P0
N17 T19 V20 W17 T17
VCC19P2_1P0 VCCF135_1P0 VCC100OC_1P0 VCCF100_1P0 VCCF100_1P0
VCC1_0_OC
NR177
0/6/SHT/M/X
VCC10_VCCF24_1P0
K1 K2
VCCF24_1P0 VCCF24_1P0
V21 V23 V25 V26 V28 V29
VCCMPHY_1P0
VCC10_VCCAMPHYPLL
A43 B43
VCCAMPHYPLL_1P0 VCCAMPHYPLL_1P0
W28 AD17 AK5 AM5 AR19
VCCAPLLEBB_1P0 VCCDUSB_1P0 VCCAUSB_1P0 VCCAUSB_1P0 VCCAAZPLL_1P0
VCC1_0_DU
NR183
NR187
VCCPAZIO
NR23
BC15
VCCPAZIO
Y16
VCCPUSBDSW_3P3
3VDUAL_PCH
8 of 13
CHIP GL82H270 A0 INTEL/[10HB1-03H270-20R]
VCCFHV_2P8
AM22
VCCPRIM_1P0
0/6/SHT/M/X
NR173
VCC1_0_PCH
VCCPDSW_3P3
BC24
3VDUAL_PCH
VCCPGPPA
BC31
VCC3_A
NR175
VCC3_PCH
VCCPGPPBCH
BF40 BF42
VCCPGPPEF
AK41 AM41
VCCPGPPG
AE41
VCCPHVC_3P3
AP5
VCCDTS_1P0
AE16
VCCATS
AE13
VCCPRTCPRIM_3P3
VCCPRTC_3P3
BC20 BC22
N_RTCVDD
[12,51]
VCCRTCEXT
BC27
N_RTCEXT_CAP
VCCDSW_1P0
BC29
NBC2
0.1u/4/X7R/16V/K
VCCPSPI
BG41 BG43 BG42
VCCPGPPD
BE44 BE45 BD45
VCC3_CD
VCCPFUSE_3P3
BF3 BG3 BG4
VCC3_BDE
NR184
VCCAMIPIPLL_1P0
C44 C45
VCC10_VCCAMPHYPLL
3VDUAL
VCC3
0/8P4R/0402/SHT/X
NR174
NR176
0/8P4R/4/X
VCCDSW_1P0
NBC38
1u/4/X5R/6.3V/K
NBC39
1u/4/X5R/6.3V/K
VCCST_VCCPLL
NR178
0/6/X
VCC10_VCCAPLL
NR179
0/6/SHT/M/X
VCC10_VCCAMPHYPLL
NR180
VCC10_VCCF24_1P0
NR182
NBC11 22u/8/X5R/6.3V/M
NBC12 22u/8/X5R/6.3V/M
NBC21 22u/8/X5R/6.3V/M
NBC22 22u/8/X5R/6.3V/M
NBC28 22u/8/X5R/6.3V/M
NBC29 22u/8/X5R/6.3V/M
NBC3 1u/4/X5R/6.3V/K
NBC4 1u/4/X5R/6.3V/K
NBC5 1u/4/X5R/6.3V/K
NBC6 1u/4/X5R/6.3V/K
NBC7 1u/4/X5R/6.3V/K
NBC8 1u/4/X5R/6.3V/K
NBC9 1u/4/X5R/6.3V/K
NBC10 1u/4/X5R/6.3V/K
NBC13 1u/4/X5R/6.3V/K
NBC14 1u/4/X5R/6.3V/K
NBC15 1u/4/X5R/6.3V/K
NBC16 1u/4/X5R/6.3V/K
NBC17 1u/4/X5R/6.3V/K
NBC18 1u/4/X5R/6.3V/K
NBC19 1u/4/X5R/6.3V/K
NBC20 1u/4/X5R/6.3V/K
NBC25 1u/4/X5R/6.3V/K
NBC26 1u/4/X5R/6.3V/K
NBC27 1u/4/X5R/6.3V/K
NBC23 0.1u/4/X7R/16V/K/X
NBC24 0.1u/4/X7R/16V/K
NBC30 1u/4/X5R/6.3V/K
NBC31 1u/4/X5R/6.3V/K
NBC32 1u/4/X5R/6.3V/K
NBC33 1u/4/X5R/6.3V/K
NBC34 1u/4/X5R/6.3V/K
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Gigabyte Technology
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PCH PWR
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Document Number
GA-H270M-D3H
Rev
1.0
Date:
Wednesday, November 30, 2016
Sheet
14
of
57

PCHI

A25	VSS	A42	VSS	A42	
A30	VSS	D45	VSS	D45	
P22	VSS	BG44	VSS	BG44	
AV38	VSS	BF44	VSS	BF44	
AV45	VSS	BF45	VSS	BF45	
AV8	VSS	BF2	VSS	BF2	
AY11	VSS	W29	VSS	W29	
AY19	VSS	A35	VSS	A35	
AY37	VSS	A40	VSS	A40	
AY4	VSS	A41	VSS	A41	
AY42	VSS	AA17	VSS	AA17	
AY8	VSS	AA18	VSS	AA18	
B25	VSS	AA20	VSS	AA20	
B3	VSS	AA21	VSS	AA21	
B30	VSS	AA26	VSS	AA26	
B35	VSS	AA28	VSS	AA28	
B4	VSS	AA29	VSS	AA29	
BA1	VSS	AB17	VSS	AB17	
BA13	VSS	AC32	VSS	AC32	
BA17	VSS	AE4	VSS	AE4	
BA29	VSS	AE8	VSS	AE8	
BA31	VSS	AF18	VSS	AF18	
BA37	VSS	AF20	VSS	AF20	
BA4	VSS	AF21	VSS	AF21	
BA42	VSS	AF25	VSS	AF25	
BB40	VSS	AF28	VSS	AF28	
BC38	VSS	AF29	VSS	AF29	
BC40	VSS	AF4	VSS	AF4	
BC9	VSS	AF42	VSS	AF42	
BD11	VSS	AG18	VSS	AG18	
BD16	VSS	AG20	VSS	AG20	
BD2	VSS	AG21	VSS	AG21	
BD21	VSS	AG23	VSS	AG23	
BD25	VSS	AG25	VSS	AG25	
F2	VSS	AG26	VSS	AG26	
E31	VSS	AG28	VSS	AG28	
E6	VSS	AG29	VSS	AG29	
E8	VSS	AH11	VSS	AH11	
F39	VSS	AH13	VSS	AH13	
F43	VSS	AH30	VSS	AH30	
G4	VSS	AH32	VSS	AH32	
G40	VSS	AH33	VSS	AH33	
G42	VSS	AH38	VSS	AH38	
F6	VSS	AJ1	VSS	AJ1	
G9	VSS	AJ17	VSS	AJ17	
H11	VSS	AJ18	VSS	AJ18	
H13	VSS	AJ20	VSS	AJ20	
H17	VSS	AJ21	VSS	AJ21	
H19	VSS	AJ23	VSS	AJ23	
H22	VSS	AJ25	VSS	AJ25	
H24	VSS	AJ26	VSS	AJ26	
H27	VSS	AJ28	VSS	AJ28	
H29	VSS	AJ29	VSS	AJ29	
H33	VSS	AJ45	VSS	AJ45	
H35	VSS	AK10	VSS	AK10	
H38	VSS	AK14	VSS	AK14	
H4	VSS	AK16	VSS	AK16	
H42	VSS	AK17	VSS	AK17	
H9	VSS	AK18	VSS	AK18	
J4	VSS	AK26	VSS	AK26	
M36	VSS	AK28	VSS	AK28	
M38	VSS	AM14	VSS	AM14	
M4	VSS	AN14	VSS	AN14	
M8	VSS	AP19	VSS	AP19	
M9	VSS	AR22	VSS	AR22	
N13	VSS	AR27	VSS	AR27	
N15	VSS	AU29	VSS	AU29	
N19	VSS	AU33	VSS	AU33	
N22	VSS	AV1	VSS	AV1	
N24	VSS	AV10	VSS	AV10	
N31	VSS	AV15	VSS	AV15	
N42	VSS	AV24	VSS	AV24	
P10	VSS	AV27	VSS	AV27	
P12	VSS	AV33	VSS	AV33	
AV35	VSS				

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

PCHL

BD34	VSS[70]	AB18	VSS[1]	AB18	
BD39	VSS[71]	AB20	VSS[2]	AB20	
BD7	VSS[72]	AB21	VSS[3]	AB21	
BE2	VSS[73]	AB25	VSS[4]	AB25	
BF43	VSS[74]	AB29	VSS[5]	AB29	
BF5	VSS[75]	AB4	VSS[6]	AB4	
BG18	VSS[76]	AB42	VSS[7]	AB42	
BG23	VSS[77]	AC10	VSS[8]	AC10	
BG28	VSS[78]	AC11	VSS[9]	AC11	
BG32	VSS[79]	AC14	VSS[10]	AC14	
BG37	VSS[80]	AC16	VSS[11]	AC16	
BG40	VSS[81]	AC38	VSS[12]	AC38	
BG9	VSS[83]	AC4	VSS[13]	AC4	
C1	VSS[84]	AC5	VSS[14]	AC5	
A12	VSS[85]	AC7	VSS[15]	AC7	
C2	VSS[86]	AC8	VSS[16]	AC8	
C37	VSS[87]	AD1	VSS[17]	AD1	
A6	VSS[88]	AD18	VSS[18]	AD18	
C9	VSS[89]	AD20	VSS[19]	AD20	
D1	VSS[90]	AD21	VSS[20]	AD21	
D10	VSS[91]	AD25	VSS[21]	AD25	
D12	VSS[92]	AD29	VSS[22]	AD29	
D15	VSS[93]	AD45	VSS[23]	AD45	
D16	VSS[94]	AE11	VSS[24]	AE11	
B12	VSS[95]	AE14	VSS[25]	AE14	
D19	VSS[96]	AE32	VSS[26]	AE32	
D21	VSS[97]	AE33	VSS[27]	AE33	
D24	VSS[98]	AE38	VSS[28]	AE38	
D25	VSS[99]	AK29	VSS[29]	AK29	
D29	VSS[100]	AK30	VSS[30]	AK30	
D30	VSS[101]	AK32	VSS[31]	AK32	
D33	VSS[102]	AK35	VSS[32]	AK35	
D35	VSS[103]	AK39	VSS[33]	AK39	
D36	VSS[104]	AL4	VSS[34]	AL4	
D39	VSS[105]	AL42	VSS[35]	AL42	
D44	VSS[106]	AM10	VSS[36]	AM10	
D7	VSS[107]	AM11	VSS[37]	AM11	
P13	VSS[108]	AM13	VSS[38]	AM13	
P15	VSS[109]	AM17	VSS[39]	AM17	
P17	VSS[110]	AM19	VSS[40]	AM19	
P19	VSS[111]	AM24	VSS[41]	AM24	
P31	VSS[112]	AM27	VSS[42]	AM27	
P33	VSS[113]	AM29	VSS[43]	AM29	
P35	VSS[114]	AM32	VSS[44]	AM32	
P4	VSS[115]	AM33	VSS[45]	AM33	
P42	VSS[116]	AM4	VSS[46]	AM4	
P8	VSS[117]	AN45	VSS[47]	AN45	
R1	VSS[118]	AP10	VSS[48]	AP10	
R32	VSS[119]	AP11	VSS[49]	AP11	
T10	VSS[120]	AP13	VSS[50]	AP13	
T14	VSS[121]	AP15	VSS[51]	AP15	
T22	VSS[122]	AP22	VSS[52]	AP22	
T29	VSS[123]	AP27	VSS[53]	AP27	
T32	VSS[124]	AP31	VSS[54]	AP31	
T36	VSS[125]	AP33	VSS[55]	AP33	
T38	VSS[126]	AP34	VSS[56]	AP34	
Y38	VSS[151]	AP39	VSS[57]	AP39	
Y4	VSS[152]	T4	VSS[127]	T4	
Y8	VSS[153]	W26	VSS[143]	W26	
T42	VSS[154]	V16	VSS[128]	V16	
T5	VSS[155]	V17	VSS[129]	V17	
U4	VSS[156]	V18	VSS[130]	V18	
U42	VSS[157]	V30	VSS[131]	V30	
V10	VSS[158]	V32	VSS[132]	V32	
V14	VSS[159]	V33	VSS[133]	V33	
W3	VSS[144]	V38	VSS[134]	V38	
AF13	VSS[58]	V4	VSS[135]	V4	
AR31	VSS[59]	V8	VSS[136]	V8	
AR33	VSS[60]				
AR4	VSS[61]	W18	VSS[138]	W18	
AT10	VSS[62]	W20	VSS[139]	W20	
AT13	VSS[63]	W21	VSS[140]	W21	
AT35	VSS[64]	W23	VSS[141]	W23	
AT37	VSS[65]	W25	VSS[142]	W25	
AT42	VSS[66]				
AU11	VSS[67]	A44	VSS_1	A44	
AU17	VSS[68]	BE1	VSS_10	BE1	
BD30	VSS[69]	BD1	VSS_11	BD1	
W45	VSS[145]	B1	VSS_14	B1	
Y13	VSS[146]	A2	VSS_15	A2	
Y14	VSS[147]	B2	VSS_16	B2	
Y30	VSS[148]	A3	VSS_17	A3	
Y32	VSS[149]	A4	VSS_18	A4	
Y33	VSS[150]	B44	VSS_2	B44	
BG14	VSS_BG14	B45	VSS_3	B45	

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

HEATSINK

PCH_HS

1

2

Footprint :BGAHSINK-Z170M-D3H

Z170M-D3H SERIES PCH_HS/[12SP2-S04407-01R_12SP2-S04407-02R_12SP2-S04407-03R]

MOS_HS1

1

2

Footprint :
MOSHSINK-Z1704-HD3

HEAT SINK/[12SP2-S09425-B1R_12SP2-S09425-B2R_12SP2-S09425-B3R]

ANS 5010873

GIGABYTE

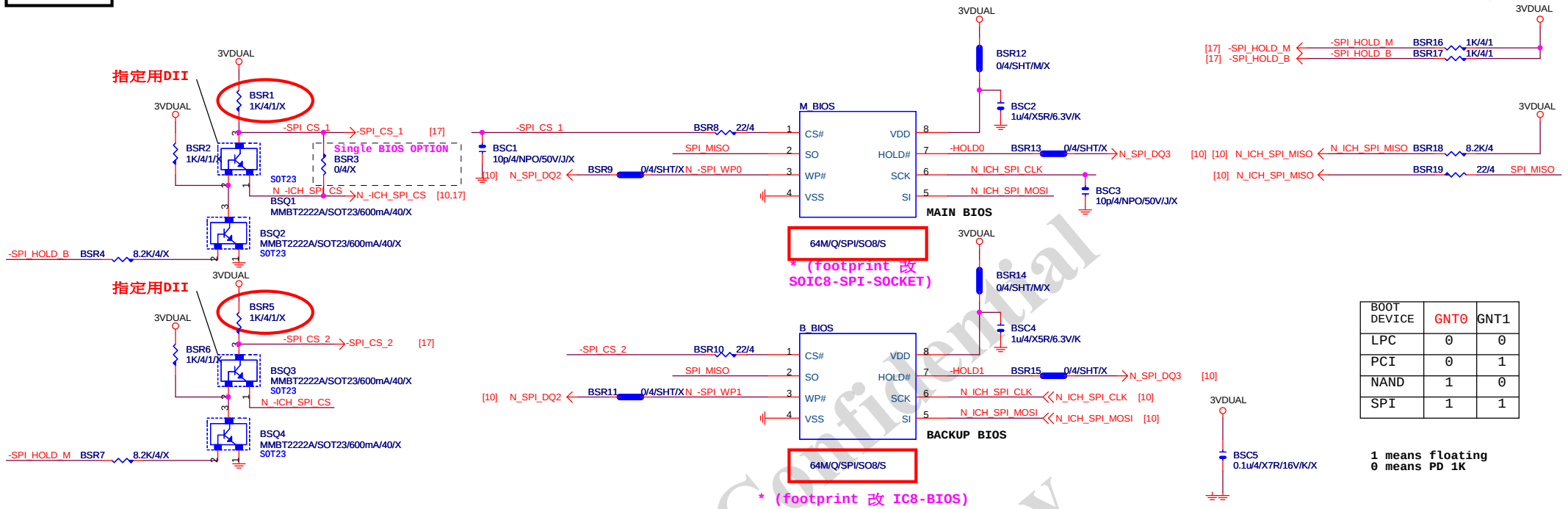
Title: PCH GND

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

Date: Wednesday, November 30, 2016 | Sheet 15 of 57

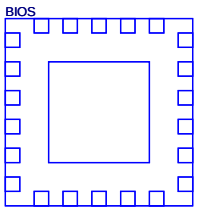
DUAL BIOS

MOSI For DMI RX Termination Voltage



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

1 means floating
0 means PD 1K



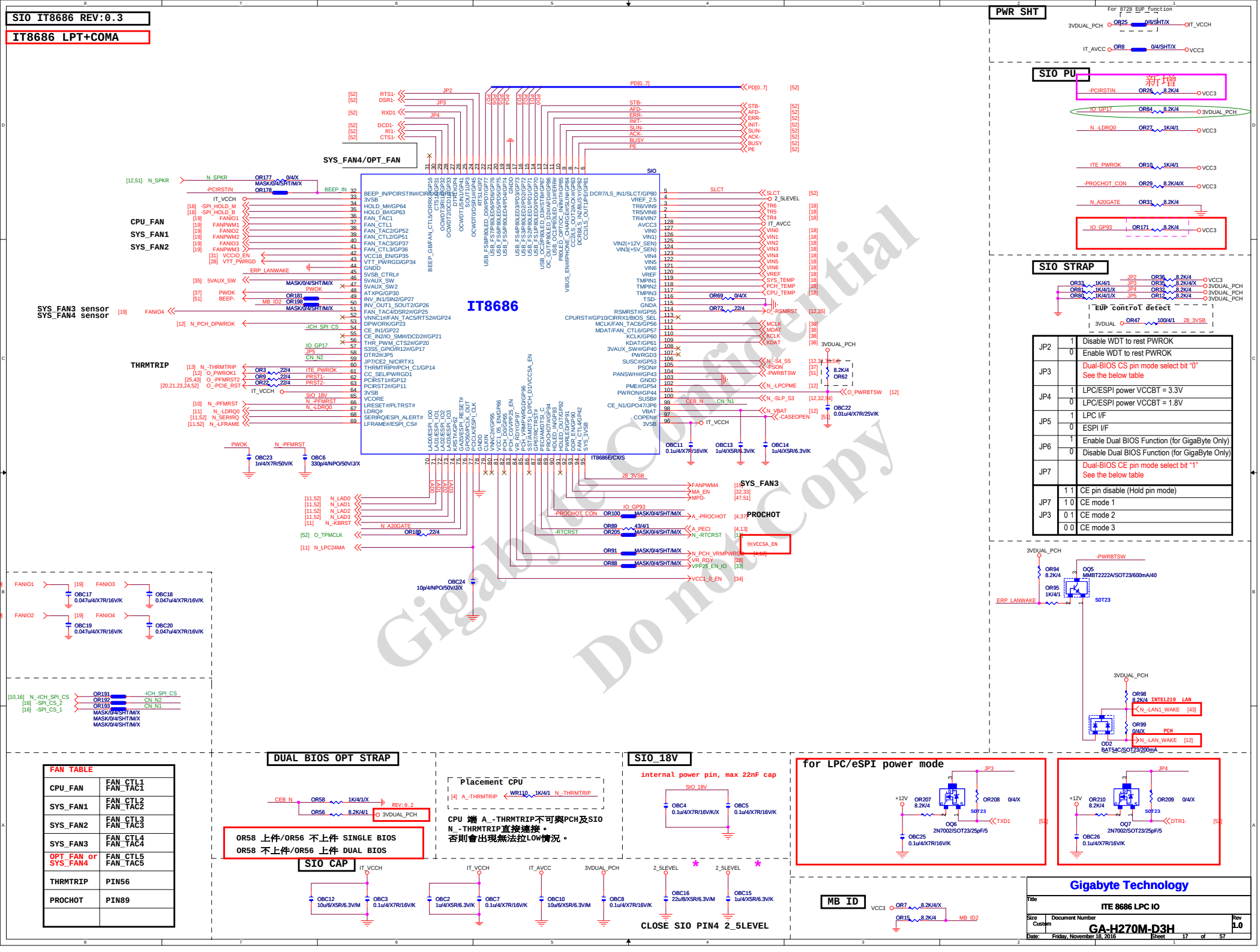
LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]/X

* 試產先上 , PVT 移除

Gigabyte Technology			
Title: BIOS			
Size: Custom	Document Number: GA-H270M-D3H		Rev: 1.0
Date: Friday, November 18, 2016	Sheet 16 of 57		

SIO IT8686 REV:0.3

IT8686 LPT+COMA



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

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

Gigabyte Technology

Title: ITE 8686 LPC IO

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

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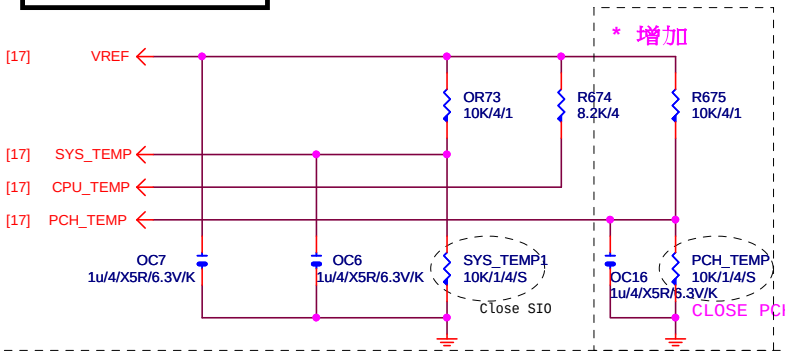
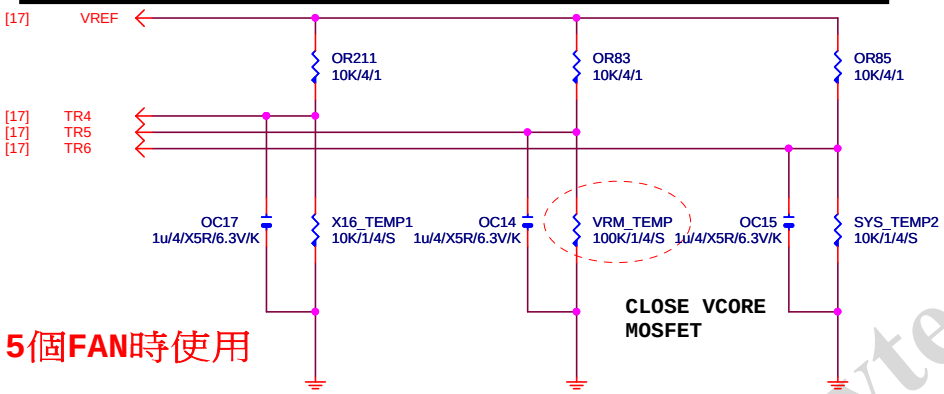
TEMP H/W MONITOR



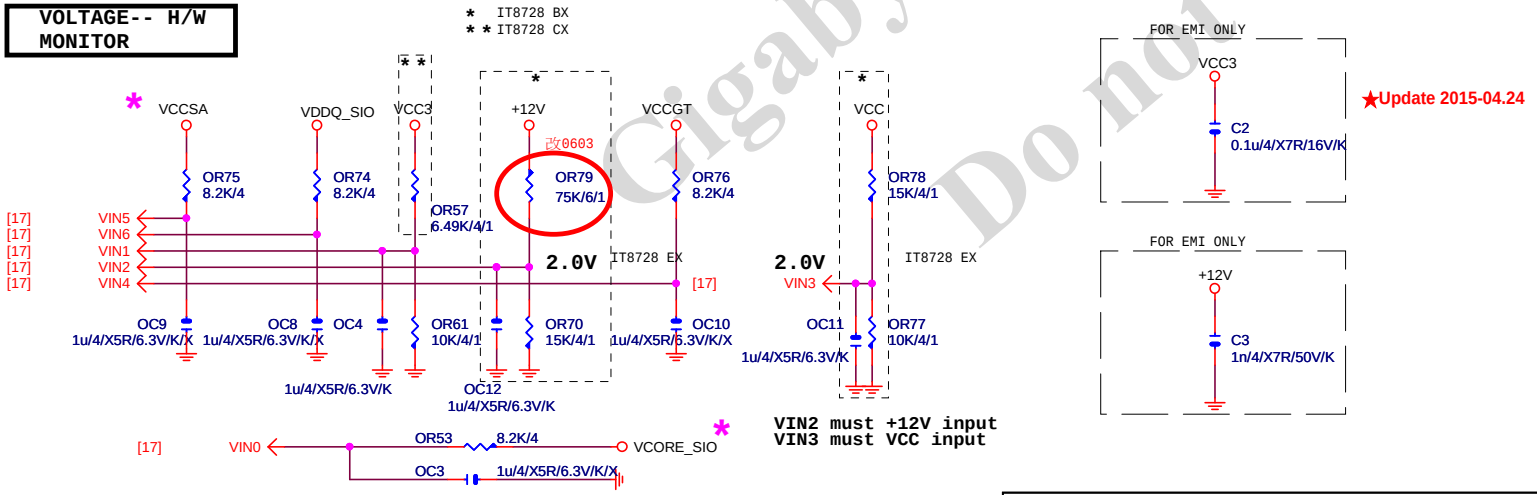
RS_VCORE、RS_VCCGT CLOSE CPU VCORE & VCCGT MOSFET

-PROCHOT:有mos heartsink不用prochot function



5個FAN時使用

VOLTAGE-- H/W MONITOR



★Update 2015-04.24

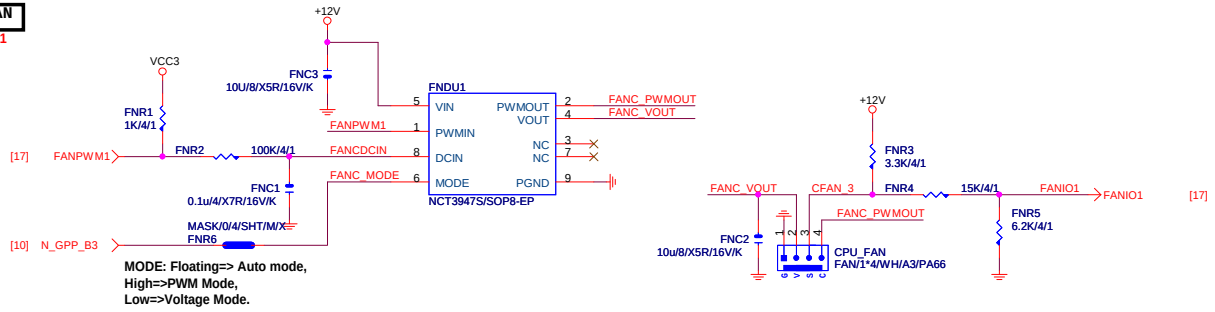
The division voltage of VIN2 & VIN3 must be around 2.9V

Gigabyte Technology		
Title: HWM,KB/MS, FAN CTRL		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 18 of 57	

Rev: 0.81

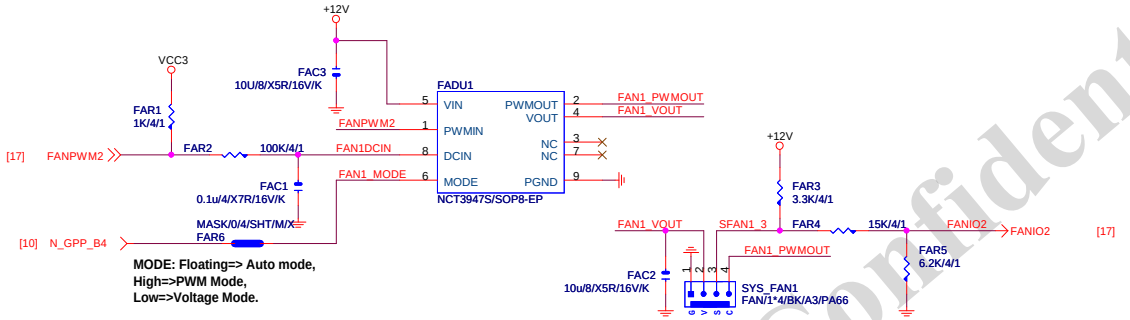
CPU SMART FAN

★Update 2016.06.01



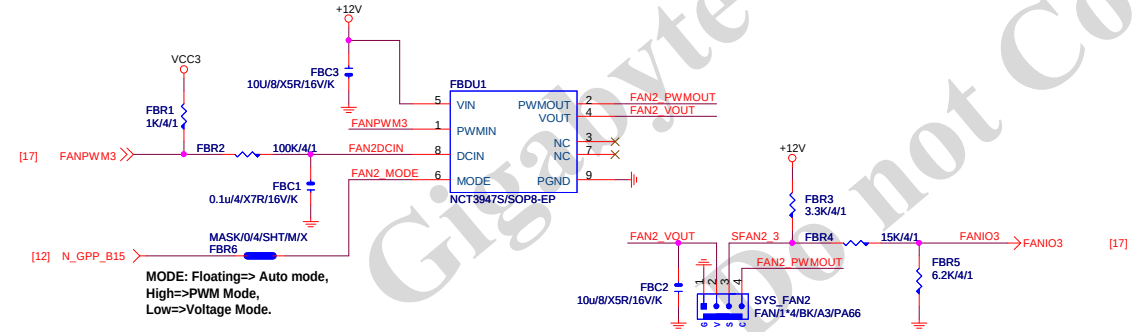
SYSTEM FAN1

A.



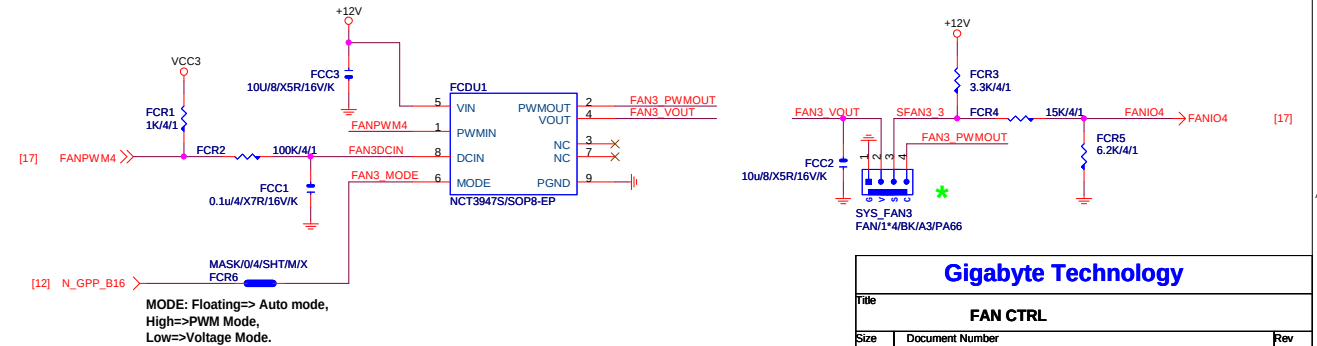
SYSTEM FAN2

B.



SYSTEM FAN3

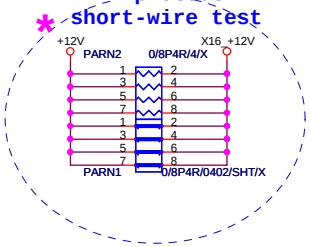
C.



Gigabyte Technology		
Title: FAN CTRL		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 19 of 57	

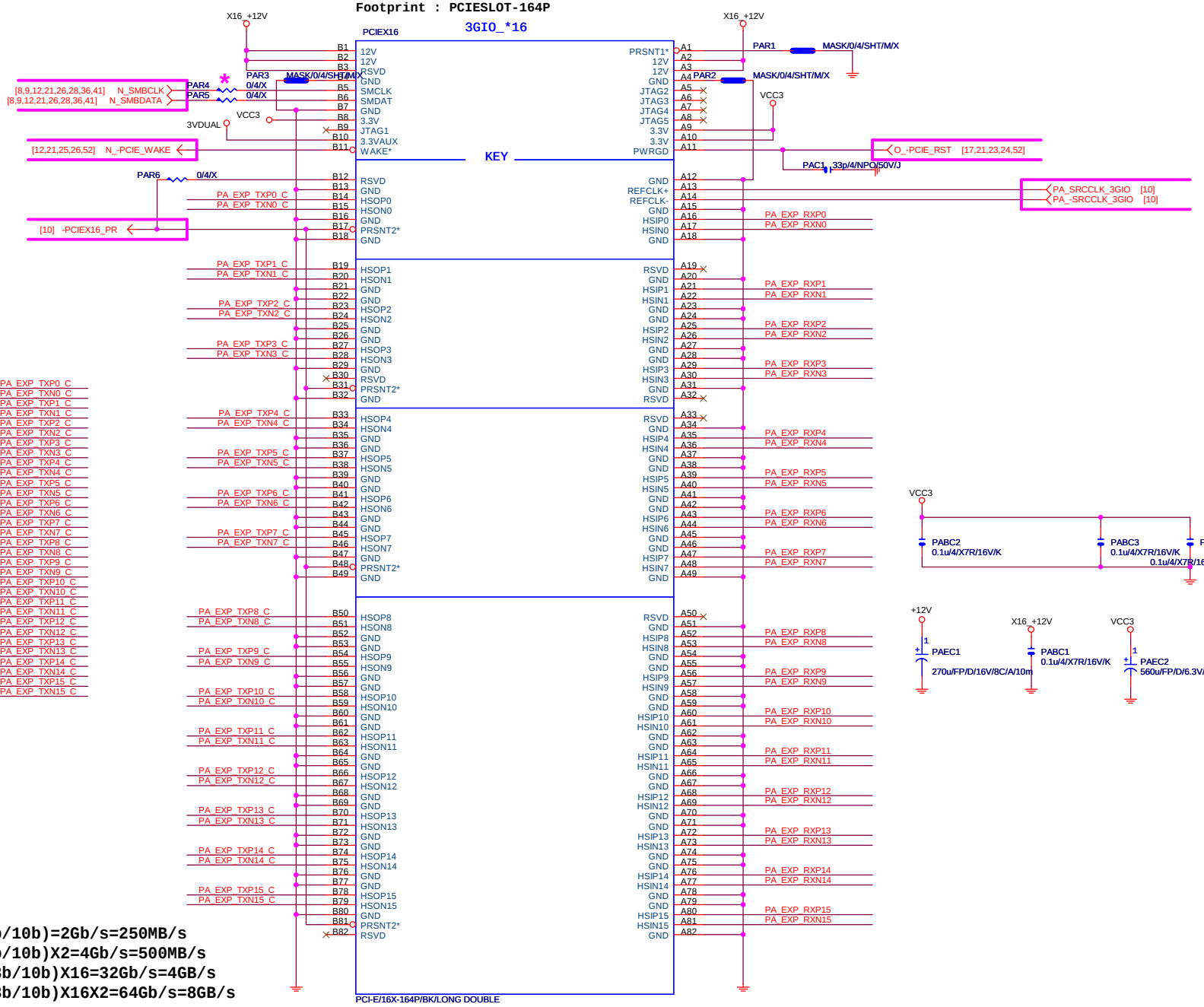
Rev 0.2

+12 protect short-wire test



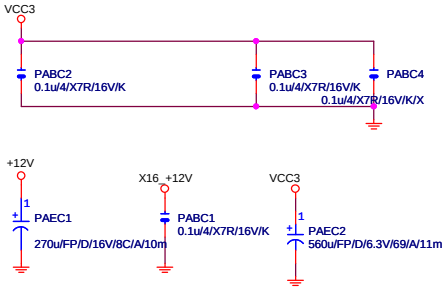
Footprint : PCIESLOT-164P

3GIO_*16



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

黑色SLOT

Gigabyte Technology

Title: **PCI EXPRESS * 16**

Size	Document Number	Rev
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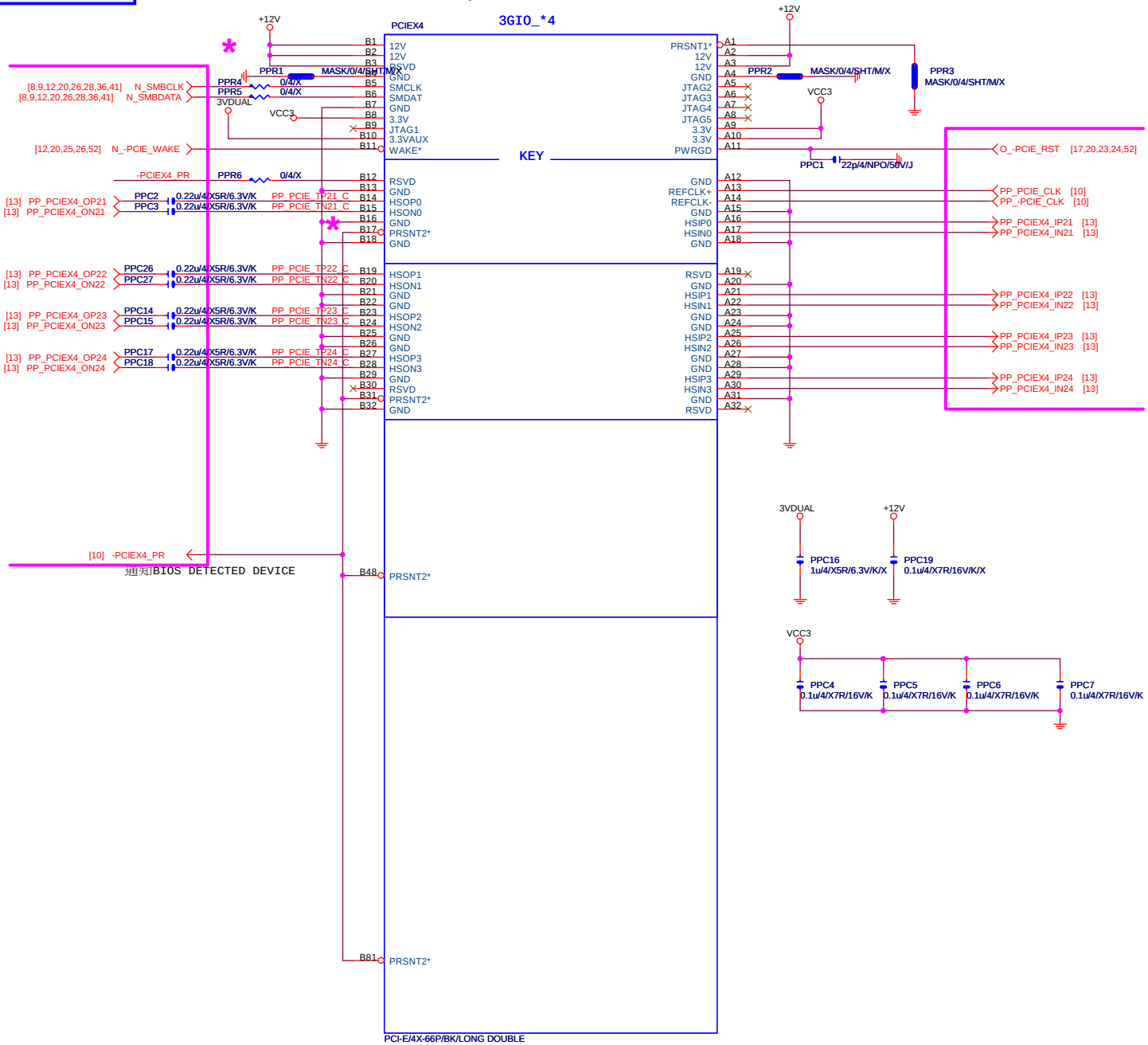
Rev 0.51

PCIE*4

Footprint : PCIESLOT-64P-1



黑色

Gigabyte Technology		
Title: PCIE_X4		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
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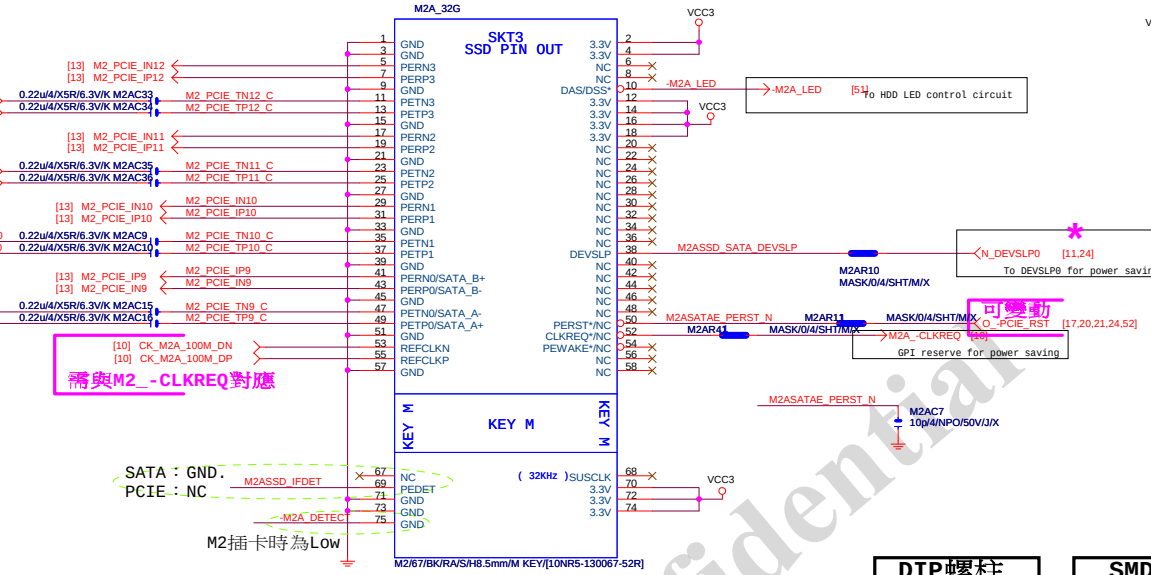
Rev 0.6

M.2 Lane4 from PCH port18

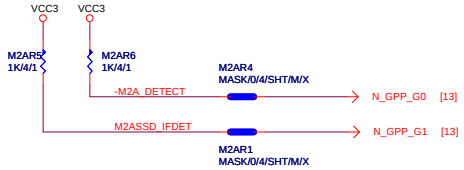
M.2 Lane3 from PCH port17

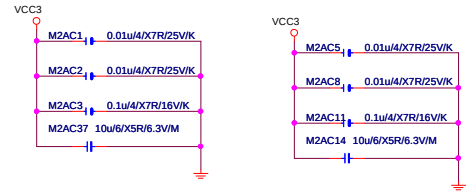
M.2 Lane2 from PCH port16

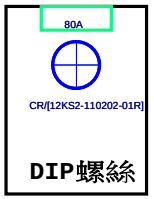
M.2 Lane1 from PCH port15



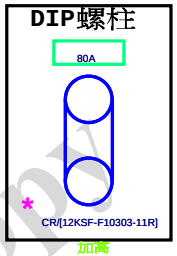
支援SATA and M.2 function

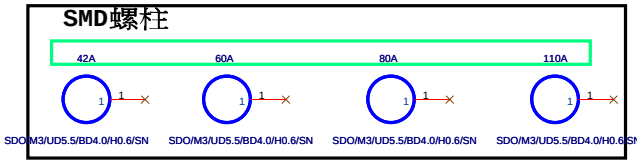






* Footprint : NGFF-M-75P-11CM-3-SMD





* Footprint : HOLE_C236D165-A

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

SATA_EXPRESS2

SATA EXPRESS/32P/BK/H/RA/D/GF/2::Location SATA_EXPRESSA2

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

可變動

可變動

1: SATA (STandard)
0: SATA EXPRESS

1: SATA (STandard)
0: SATA EXPRESS

SATA EXPRESS 單層 To SATA3 port2/3

SATA_EXPRESSA1

SATA EXPRESS/18P/BK/H/RA/D/GF/1[11NR6-C10118-31R]::Location SATA_EXPRESSA1

可變動

1: SATA (STandard)
0: SATA EXPRESS

黑色

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: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

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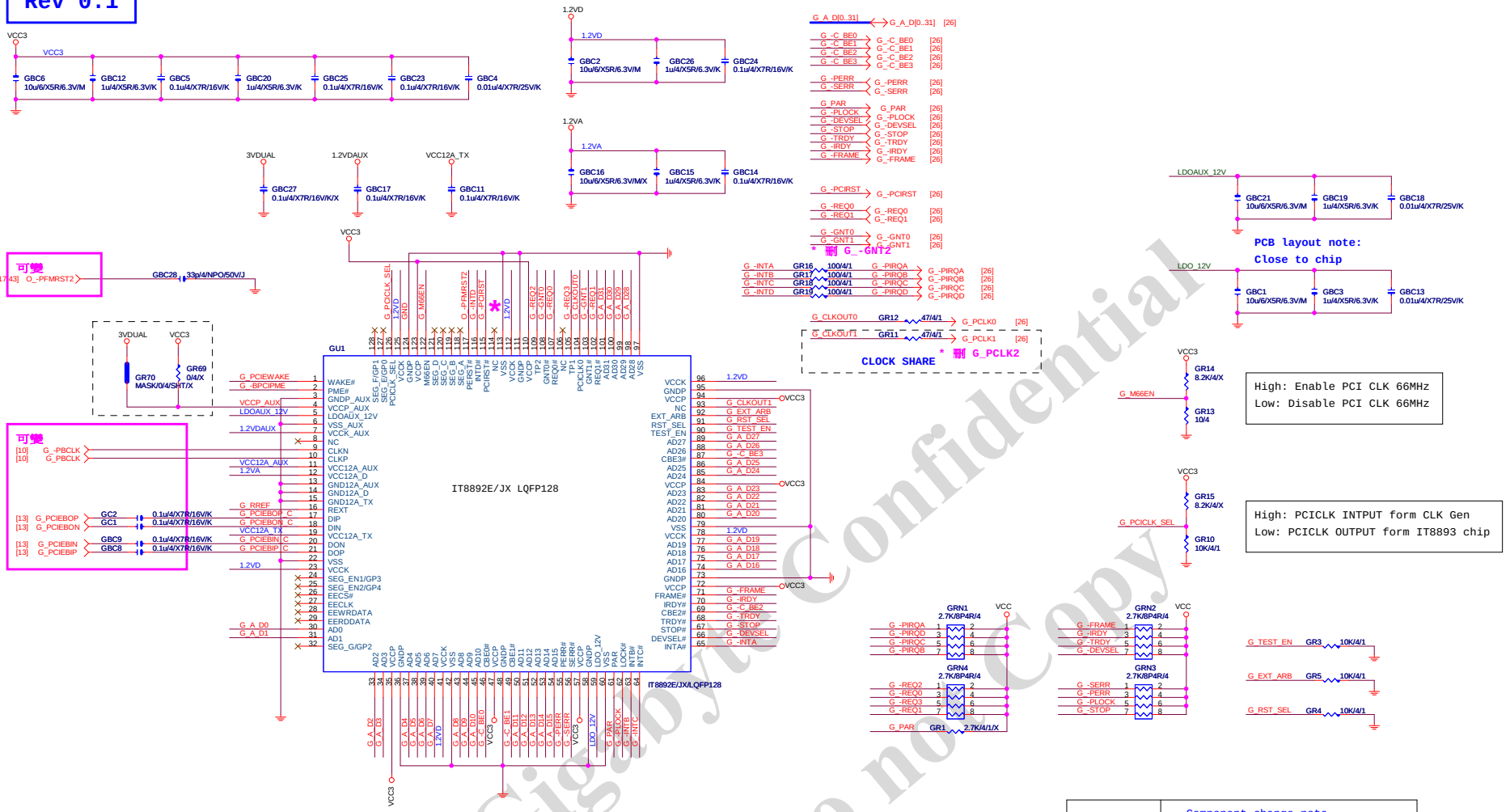
Rev 0.1



	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

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

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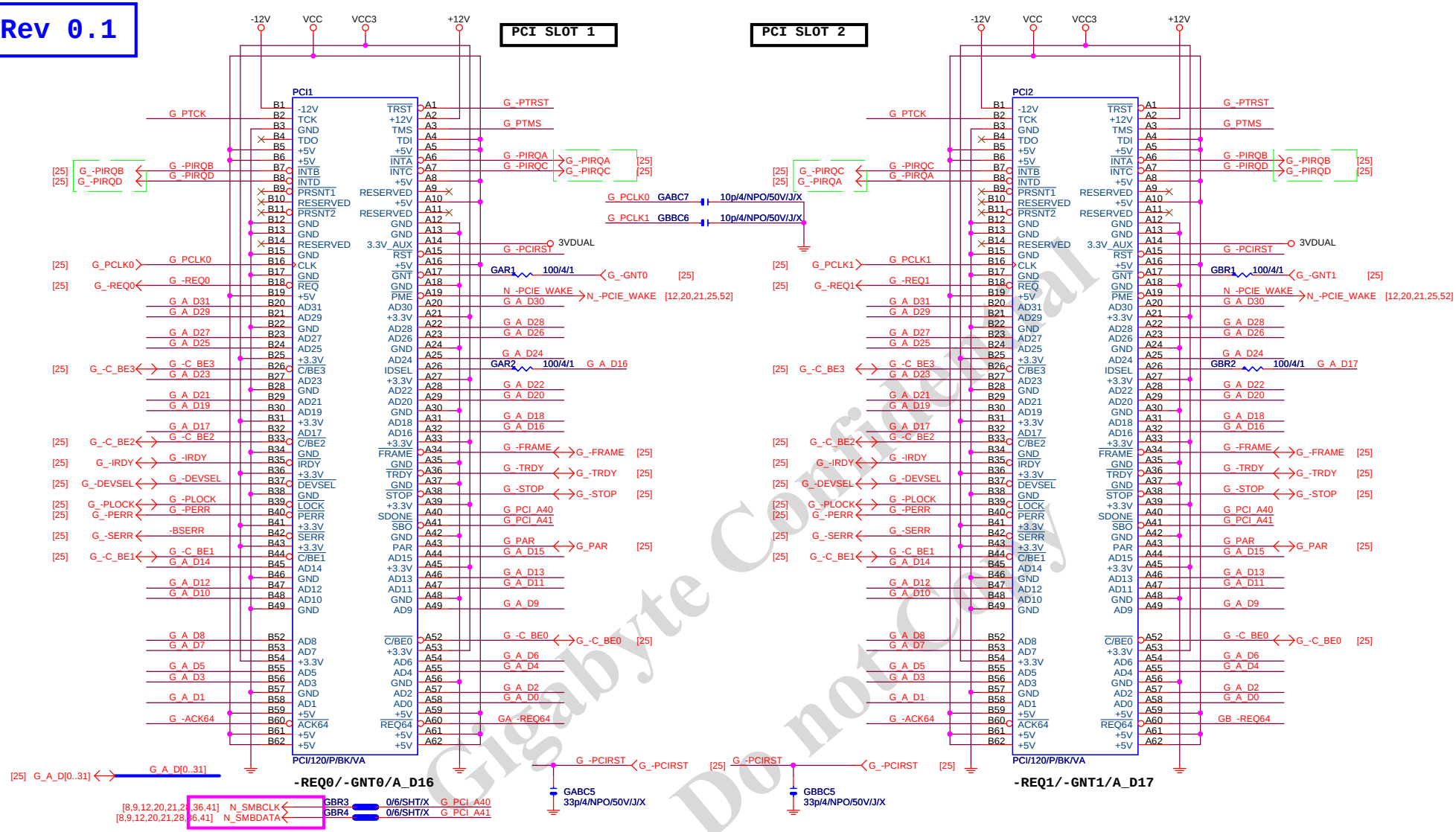
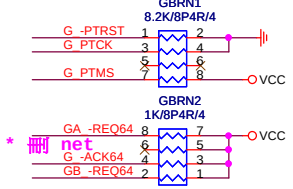
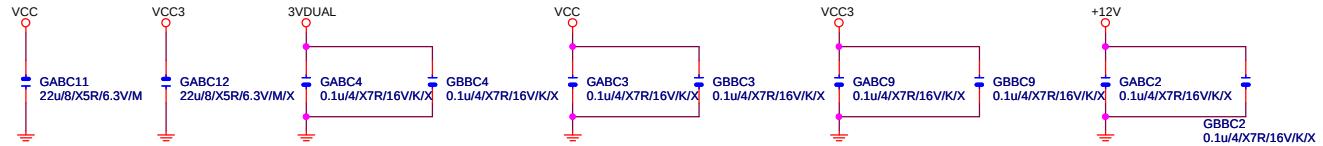
Rev 0.1



PCI PU



PCI CAP



GIGABYTE			
Title: PCI SLOT 1&2			
Size: Custom	Document Number: GA-H270M-D3H		Rev: 1.0
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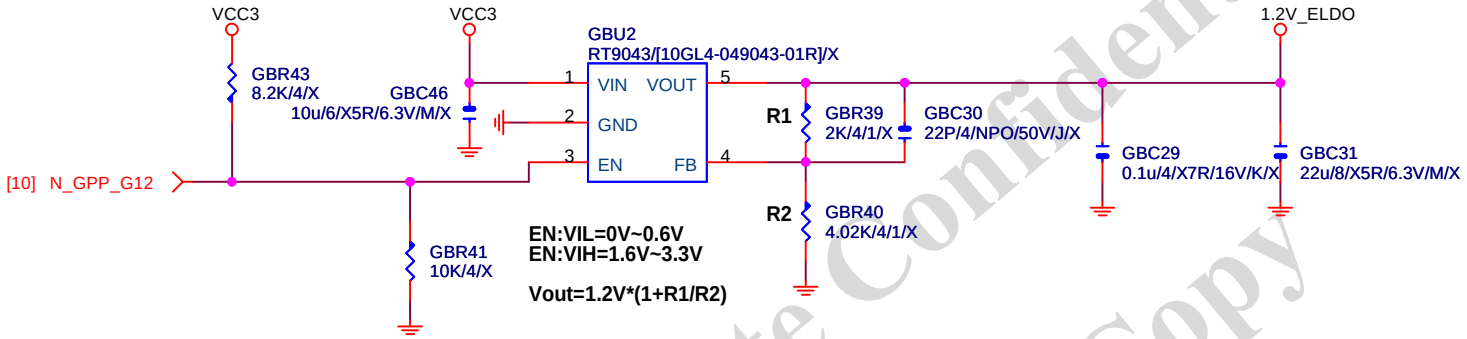
Rev 0.1

*** 全部不上件**



Gigabyte Technology		
Title: **LDO POWER**		
Size: Custom	Document Number: **GA-H270M-D3H**	Rev: **1.0**
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REV:0.2

VCORE_SIO — VCORE_VS — VCORE
MASK/0/4/SHT/M/X
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/4X
close to PCH

VCCST_VCCPLL — DAC40 1u/4/X5R/6.3V/K — DAR12 100/4/1 — DAR13 100/4/1/X — DAR14 45.3/4/1 — DAR17 2K/4/1/X 不上件 — DAR18 2K/4/1 — VCC3 — VIN — DAR19 10K/4/1 — DAR23 3.3K/4/1
DAC2 1u/4/X5R/6.3V/K — DAR7 2.2/6/X — DAR8 2.2/6/X — DAR9 2.2/6 — DAC3 1u/6/X7R/16V/K
DAU1 ISL95856HRZ-T/QFN52 — VDD — VDDP — 95856_A — 95856_VDDP
DAC41 0.22u/6/X7R/16V/K — ISL95856_VIN

MASK/0/4/SHT/M/X
DAR136
[17] VTT_PWRGD — [17] VR_RDY — [37] VR_HOT — VR_ENABLE — VR_READY — VR_HOT#
[4] PVIDSLCK — [4] -PVIDALRT — [4] PVIDSOUT — DAR76 49.9/4/1 PVIDSLCK_R — DAR77 MASK/0/4/SHT/M/10X -PVIDALRT_R — DAR78 10/4 PVIDSOUT_R — SCLK — ALERT# — SDA
[8,9,12,20,21,26,36,41] N_SMBDATA — [8,9,12,20,21,26,36,41] N_SMBCLK — I2DATA — I2CLK
PSYS

DC-LL --> 2.1mohm
DAR34 8.2K/4 — DAC10 1.5n/4/X7R/50V/K — DAR137 0/4 — DAR33 205K/4/1/X — DAR37 3.74K/4/1 — DAR35 3.3K/4/1 — DAC8 4.7n/4/X7R/25V/K — DAC11 47p/4/NPO/50V/J
VCORE — DAR40 1K/4/1 — DAR138 0/4/X — DAC14 330p/4/NPO/50V/J — COMP_A — FB_CPU — FB_A
DAR39 100/4/1 — DAR41 5.49K/4/1
[7] VCORE_VCC_SEN — DAC15 0.022u/4/X7R/25V/K/X — DAR79 100/4/1/X — FB2_A — FB2_A
[7] VCORE_VSS_SEN — DAC38 330p/4/NPO/50V/J — RTN_A
DAR46 100/4/1 — DAC17 330p/4/NPO/50V/J — DAC18 4.7n/4/X7R/25V/K — DAR139 205K/4/1
VCORE — DAR129 100/4/1 — close PWM — VCCGT — DAR130 100/4/1

DC-LL --> 3.1mohm
DAR140 0/4 — DAR51 63.4K/4/1/X — DAC23 1.2n/4/X7R/50V/K — DAR57 2.2K/4/1 — DAC22 4.7n/4/X7R/25V/K — DAR55 6.04K/4/1 — DAC24 47p/4/NPO/50V/J
VCCGT — DAC26 330p/4/NPO/50V/J — DAR61 1K/4/1 — DAR141 0/4/X — COMP_B — FB_GT — FB_B
DAR60 100/4/1 — DAR63 3.83K/4/1
[6] VCCGT_SENSE — DAC27 0.01u/4/X7R/25V/K/X — DAR80 100/4/1/X — FB2_B — FB2_B
[6] VSSGT_SENSE — DAC39 330p/4/NPO/50V/J — RTN_B
DAR66 100/4/1 — DAC29 330p/4/NPO/50V/J — DAC30 4.7n/4/X7R/25V/K — DAR142 63.4K/4/1

PROG_R — DAR70 2.87K/4/1 — PROG — GND_PAD — 8 VIA Connect GND lay

VIN — ISL95856_VIN
BOOT1_A — UGATE1_A — PHASE1_A — LGATE1_A — DAR26 2.2/6 — DAC5 0.22u/6/X7R/16V/K — PHASE1_A [29]
BOOT2_A — UGATE2_A — PHASE2_A — LGATE2_A — DAR31 2.2/6 — DAC7 0.22u/6/X7R/16V/K — PHASE2_A [29]
PWM3_A — PWM4_A — NC/PWM4_A — ISEN1_A — ISEN2_A — ISEN3_A — NC/ISEN4_A — ISUMP_A — ISUMN_A — NTC_A — IMON_A
DAR49 MASK/0/4/SHT/M/10/X — DAC21 330p/4/NPO/50V/J — DAR52 60.6K/4/1 — DAR53 18K/4/1 — DANTC2 470K/1/4/S/X
BOOT1_B — UGATE1_B — PHASE1_B — LGATE1_B — DAR58 2.2/6 — DAC25 0.22u/6/X7R/16V/K — PHASE1_B [30]
PWM2_B — NC/PWM3_B — ISEN1_B — ISEN2_B — NC/ISEN3_B — ISUMP_B — ISUMN_B — NTC_B — IMON_B
DAR92 2.2/4 — V_95856
for ISL95856 DISABLE PH3

VSUMA+ — DAR36 1K/4/1 — DAC12 0.33u/4/X5R/6.3V/K — DAC13 0.47u/4/X5R/6.3V/K — DAR38 33K/4/1 — DANTC1 10K/1/4/S — VSUMA-
DAC16 2.2n/4/X7R/50V/K — DAR42 1K/4/1 — DAC43 0.1u/4/X7R/16V/K
DAR44 604/4/1
DAR47 15K/4/1
DAC19 0.1u/4/X7R/16V/K
CLOSE DA_DL1 DC SIDE
DAR44-->604 ohm
OCP-->160A
CLOSE ?

VSUMB+ — DAR68 2.61K/4/1 — DAC31 2.2n/4/X7R/50V/K — DAC32 0.22u/4/X5R/6.3V/K — DAC34 0.22u/4/X5R/6.3V/K — DAR74 11K/4/1 — DANTC4 10K/1/4/S — VSUMB-
DAR67 15K/4/1
DAR69 MASK/0/4/SHT/M/10/X — DAC33 330p/4/NPO/50V/J — DAR72 73.2K/4/1 — DAR73 18K/4/1 — DANTC3 470K/1/4/S
DAR71 499/4/1 — DAR75 1K/4/1 — DAC44 0.022u/4/X7R/25V/K — DAC35 0.1u/4/X7R/16V/K
CLOSE DE_DL1 DC SIDE
DAR71-->499 ohm
OCP-->74A
CLOSE ?

VSUMA+ DAR1 3.65K/4/1 — ISEN1_A DAR2 100K/4/1 — CSP1_A [29]
DAC1 0.022u/4/X7R/25V/K — DAR5 200K/4/1/X — DAR3 100K/4/1 V2N_A — DAR4 100K/4/1 V3N_A — DAR81 100K/4/1 V4N_A — DAR6 10/4 V1N_A — VSUMA-
VSUMA+ DAR10 3.65K/4/1 — ISEN2_A DAR11 100K/4/1 — CSP2_A [29]
DAC4 0.022u/4/X7R/25V/K — DAR22 200K/4/1/X — DAR20 100K/4/1 V1N_A — DAR21 100K/4/1 V3N_A — DAR82 100K/4/1 V4N_A — DAR24 10/4 V2N_A — VSUMA-
VSUMA+ DAR25 3.65K/4/1 — ISEN3_A DAR27 100K/4/1 — CSP3_A [29]
DAC6 0.022u/4/X7R/25V/K — DAR30 200K/4/1/X — DAR28 100K/4/1 V1N_A — DAR29 100K/4/1 V2N_A — DAR83 100K/4/1 V4N_A — DAR32 10/4 V3N_A — VSUMA-
VSUMA+ DAR84 3.65K/4/1 — ISEN4_A DAR85 100K/4/1 — CSP4_A [29]
DAC42 0.022u/4/X7R/25V/K — DAR89 200K/4/1/X — DAR86 100K/4/1 V1N_A — DAR87 100K/4/1 V2N_A — DAR90 100K/4/1 V3N_A — DAR91 10/4 V4N_A — VSUMA-
V1N_A — V2N_A — V3N_A — V4N_A — CSN1_A [29] — CSN2_A [29] — CSN3_A [29] — CSN4_A [29]
CLOSE PWM

VSUMB+ DAR43 3.65K/4/1 — ISEN1_B DAR45 100K/4/1 — CSP1_B [30]
DAC20 0.022u/4/X7R/25V/K — DAR50 200K/4/1/X — DAR48 100K/4/1 V2N_B — DAR54 10/4 V1N_B — VSUMB-
VSUMB+ DAR56 3.65K/4/1 — ISEN2_B DAR59 100K/4/1 — CSP2_B [30]
DAC28 0.022u/4/X7R/25V/K — DAR64 200K/4/1/X — DAR62 100K/4/1 V1N_B — DAR65 10/4 V2N_B — VSUMB-
V1N_B — V2N_B — CSN1_B [30] — CSN2_B [30]
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

+12V — DAR125 8.2K/4/1 — DAQ4 2N7002/SOT23/25pF/5 — DAR127 2.26K/4/1 FB_GT
VCC3 — 不上件 — DAR123 1K/4/1/X — DAR124 8.2K/4 — DAQ3 MMBT2222A/SOT23/600mA/40 — SOT23 — VCCGT_SENSE
[10] N_GT_S
連接至PCH:GPP_G14

+12V — DAR122 8.2K/4/1 — DAQ2 2N7002/SOT23/25pF/5 — DAR126 3.48K/4/1 FB_CPU
VCC3 — 不上件 — DAR120 1K/4/1/X — DAR121 8.2K/4 — DAQ1 MMBT2222A/SOT23/600mA/40 — SOT23 — VCORE_VCC_SEN
[10] N_CPU_S
連接至PCH:GPP_G15

DAR131 for DC-LL change to 0.4m ohm
+12V — DAR132 8.2K/4/X — DAQ6 2N7002/SOT23/25pF/5/X — DAR131 1.74K/4/1/X FB_CPU
VCC3 — 不上件 — DAR133 1K/4/1/X — DAR134 8.2K/4/X — DAQ7 MMBT2222A/SOT23/600mA/40/X — SOT23 — VCORE_VCC_SEN
[10] N_CPU_S1
Z系列才需要留
連接至PCH GPP_G13

GIGABYTE™
Title: ISL95866_PWM
Size: Custom — Document Number: GA-H270M-D3H — Rev: 1.0
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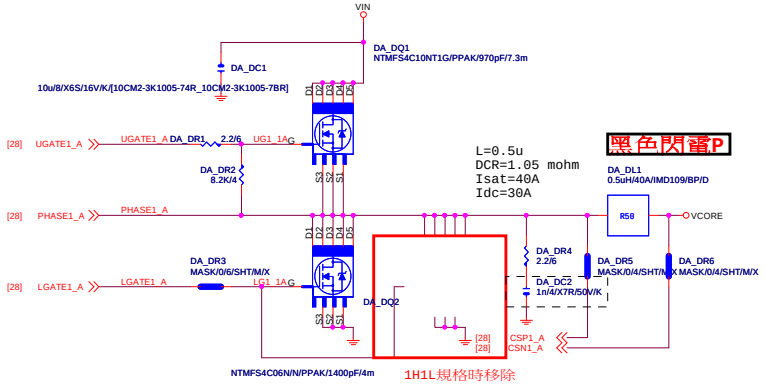
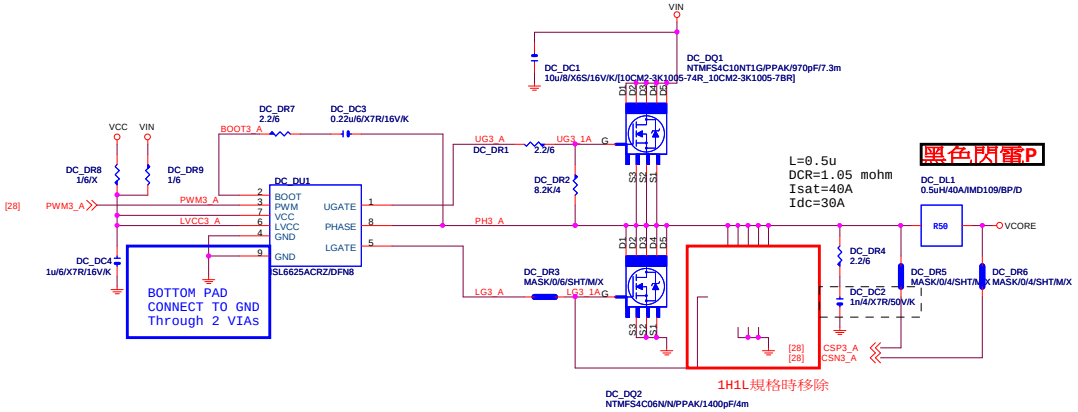
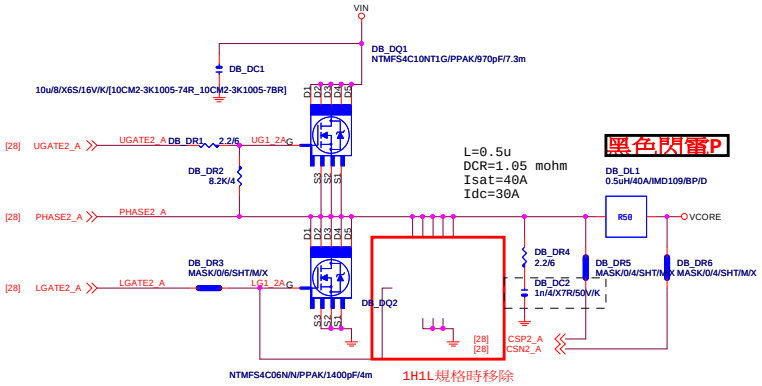
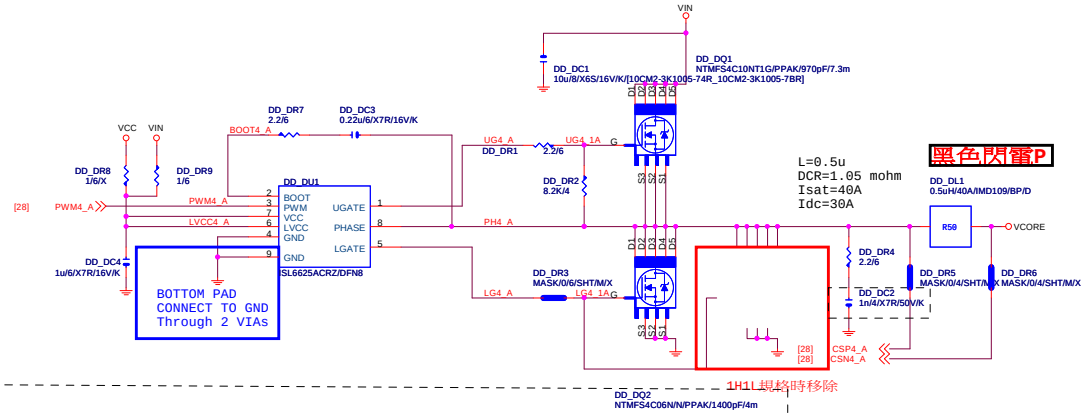
0.11 (IRON CHOKE)

VCORE





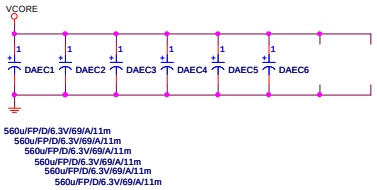


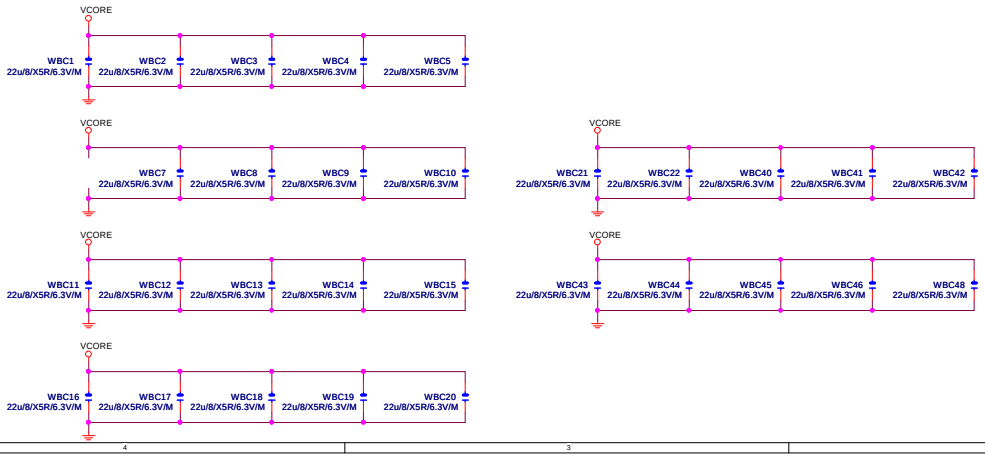


VCORE CAP

* 客戶指定，不拿掉

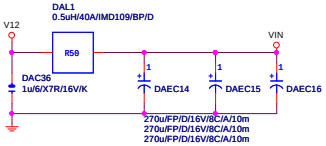
560u*8PCS
22u*29PCS





VIN CAP 270u*3PCS

黑色閃電P



GIGABYTE™

Title	ISL95866_MOS_VCORE	
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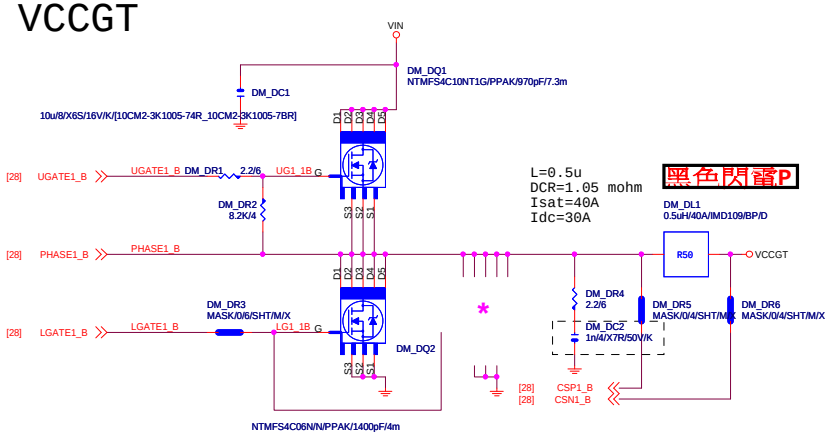
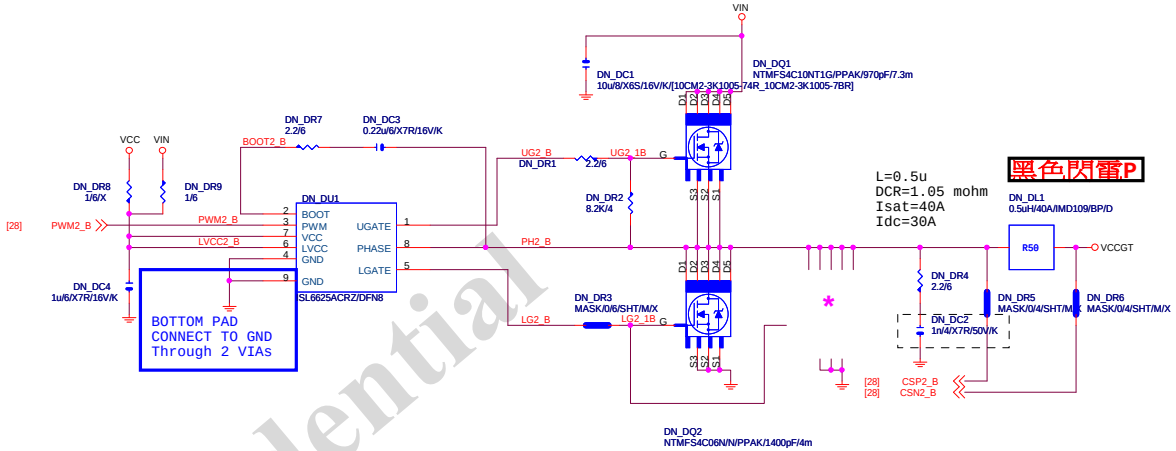
REV::0.11

VCCGT

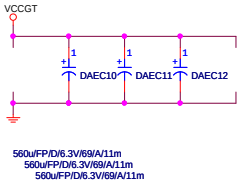


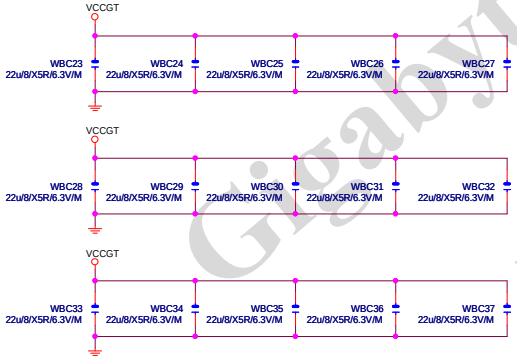


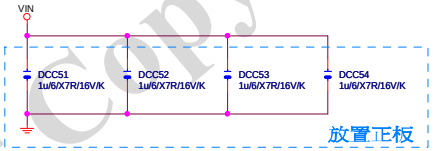
VCCGT CAP

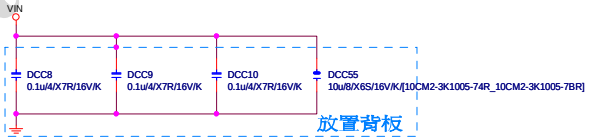
* 客戶指定，不拿掉

560u*5PCS
22u*15PCS









GIGABYTE™

Title	ISL95858_MOS_VCCGT	
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
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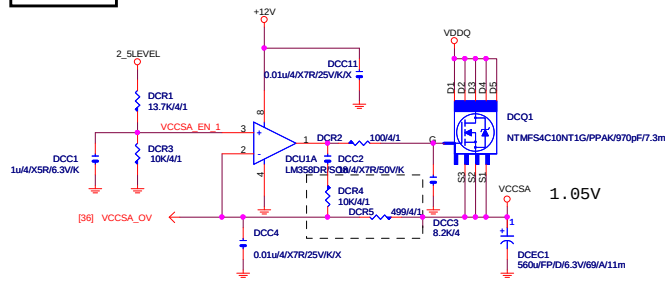
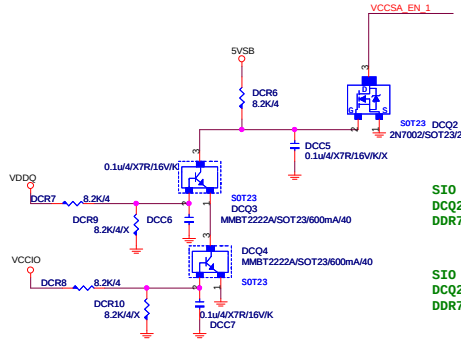
REV:0.21

VCCSA

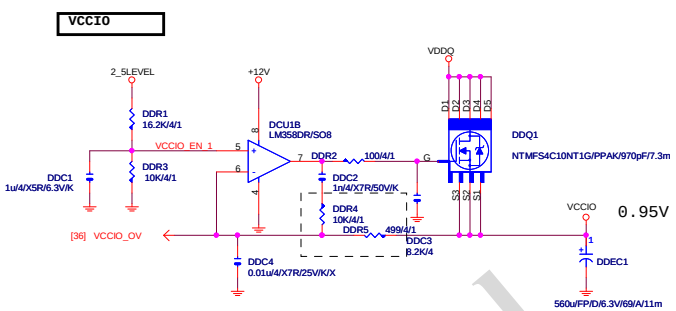


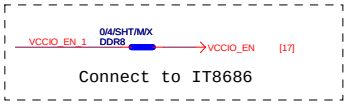


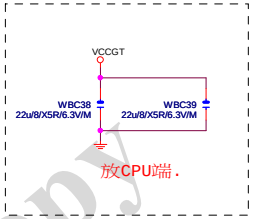
SIO PIN5 . PIN7 用在其他function時
DCQ2 上件
DDR7 不需要預留

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

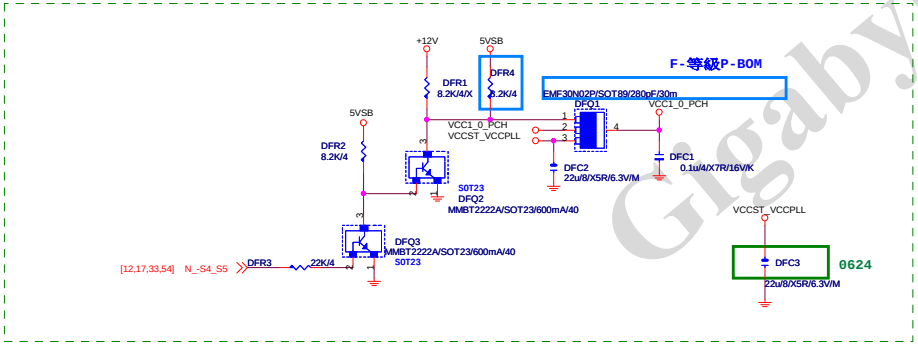
VCCIO







VCCST_VCCPLL



GIGABYTE™

Title	VCCSA_VCCIO	
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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

黑色閃電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

RT8120DGS/SOP8
MAU2

OCP=40A

放靠近IC pin4

FREQ=300KHZ

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

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]

Remote sense請從最重的負載端點拉回

PWR SEQ

For power sequence require

* Del MAR112
Connect to IT8686

DDRVTT

NCT3103S/SOP8/2A
MAU1

1.1A MAX

DDR CAP

560u*4PCS * 大電容 x4

22u*2PCS

DDRVTT CAP

* 大電容 x0

MAU1上NCT3103S時上件

GIGABYTE™

Title: RT8120_DDR POWER
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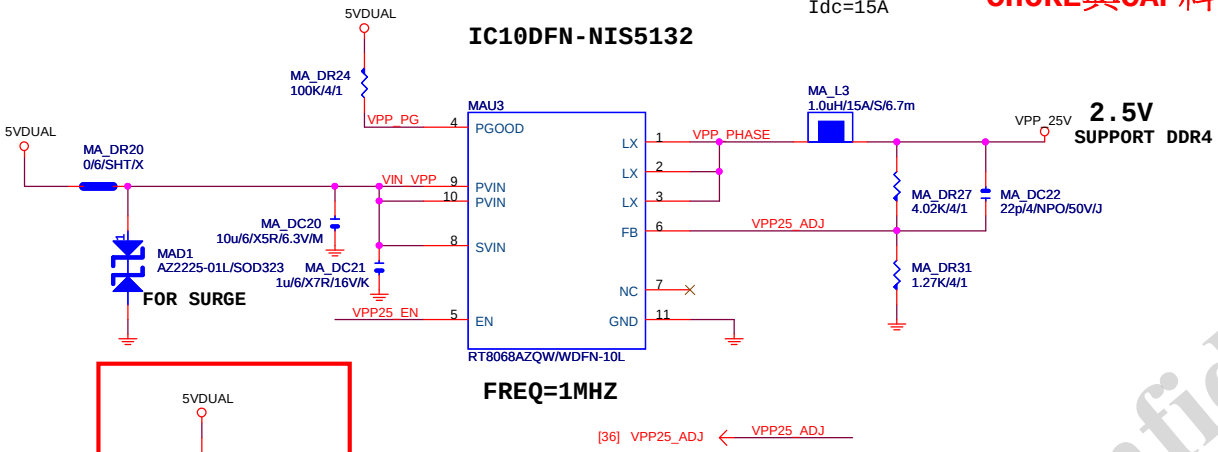
VPP_25V

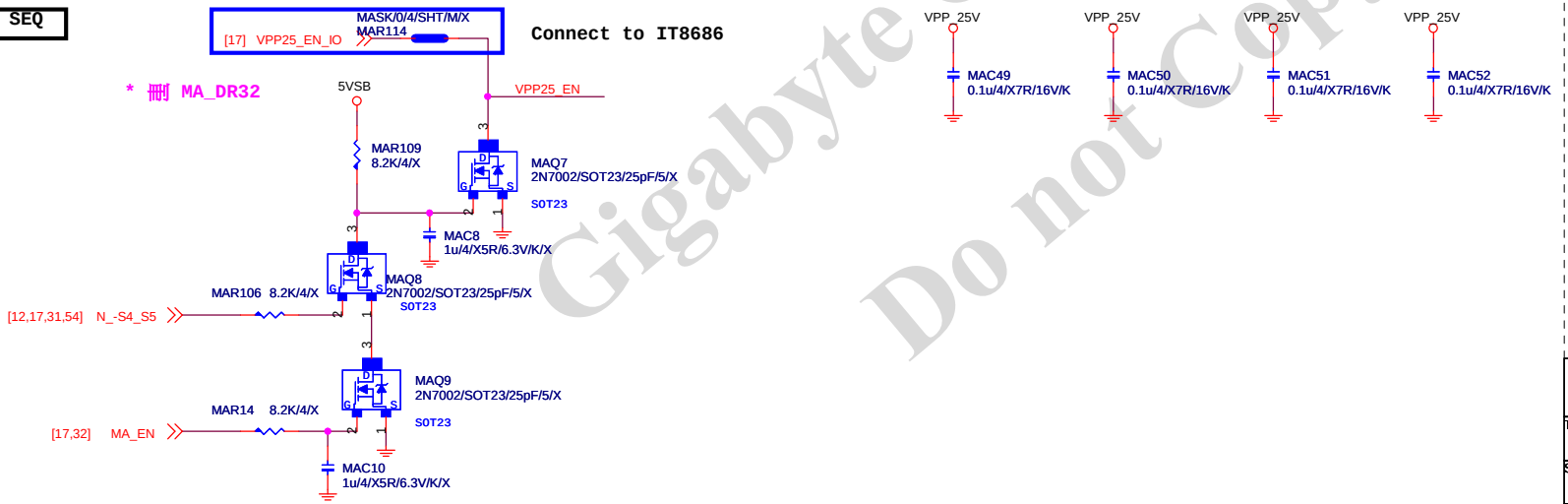
REV:0.1 (IRON CHOKE)

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

CHOKE與CAP料號可變



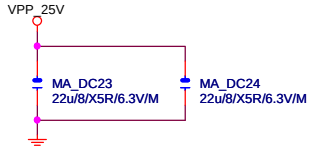
PWR SEQ



VPP CAP

22u*1PCS

* 大電容 x0



GIGABYTE™

Title	RT8068A_VPP25 POWER	
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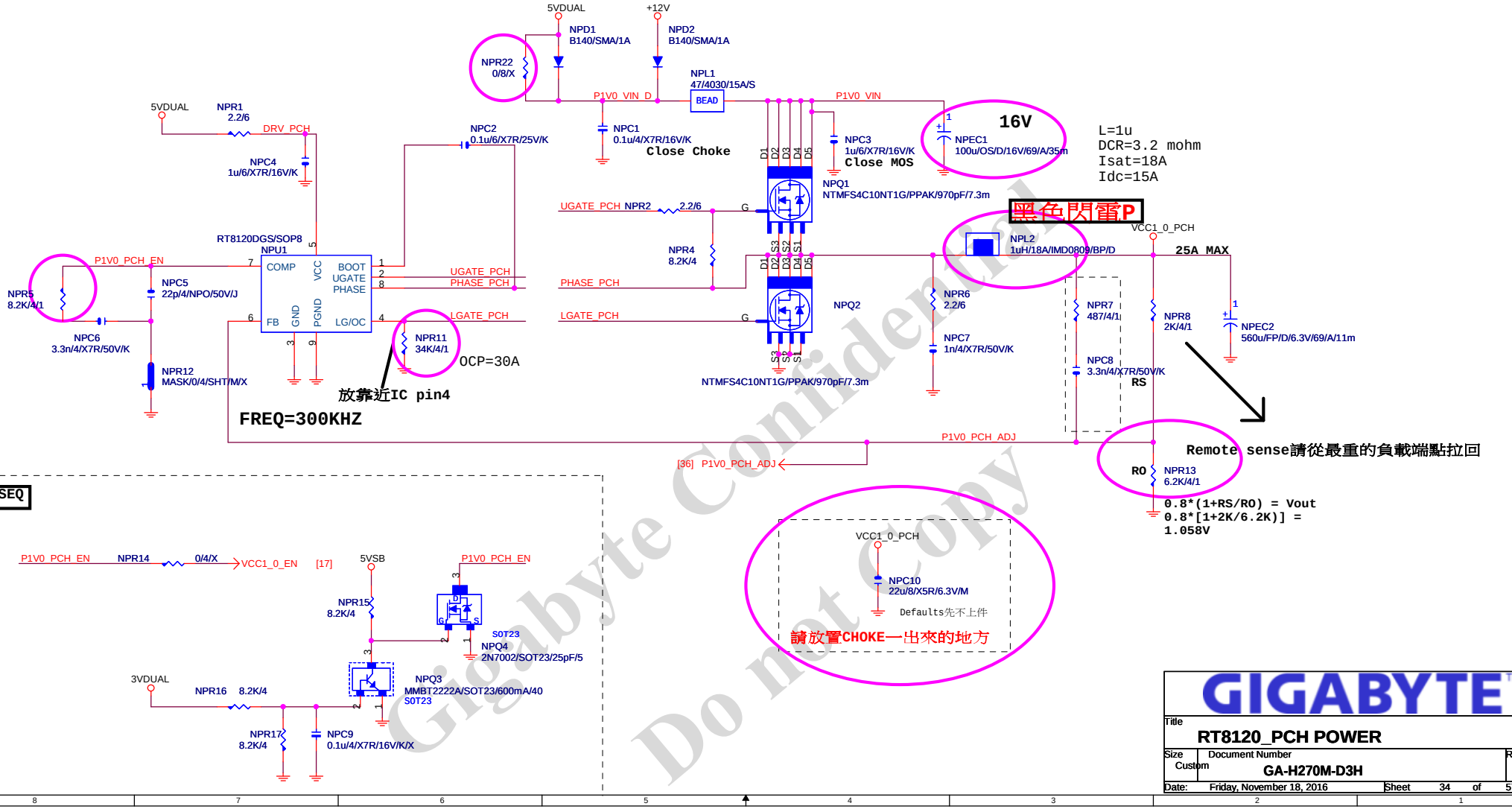
VCC1_0_PCH

REV:0.1(IRON CHOKE)



PWR SEQ

GIGABYTE™

Title: RT8120_PCH POWER

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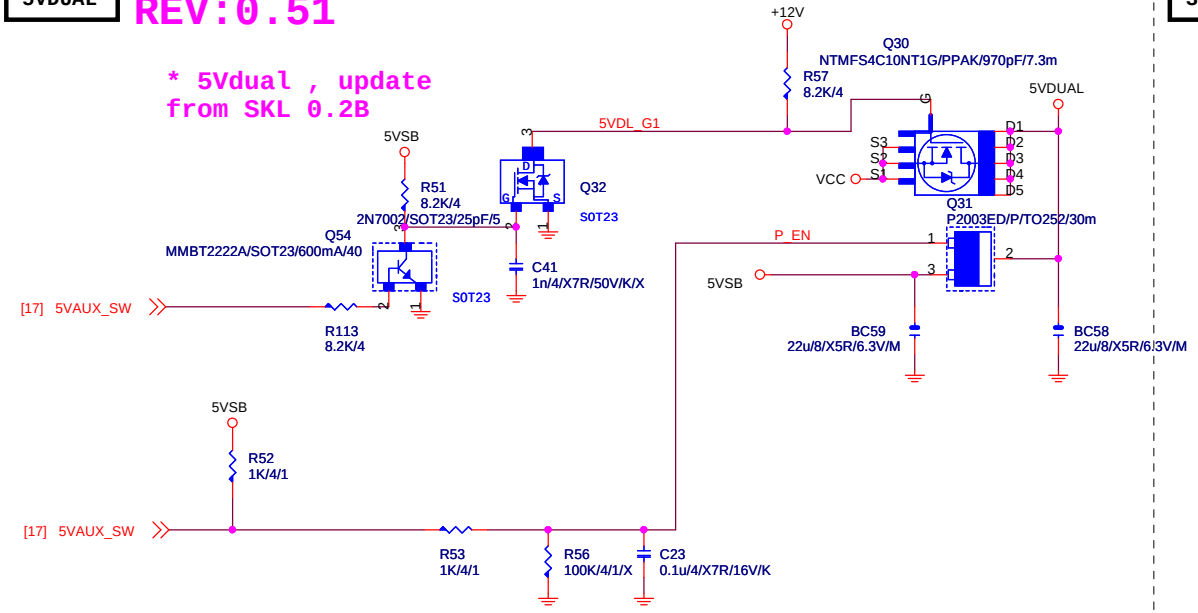
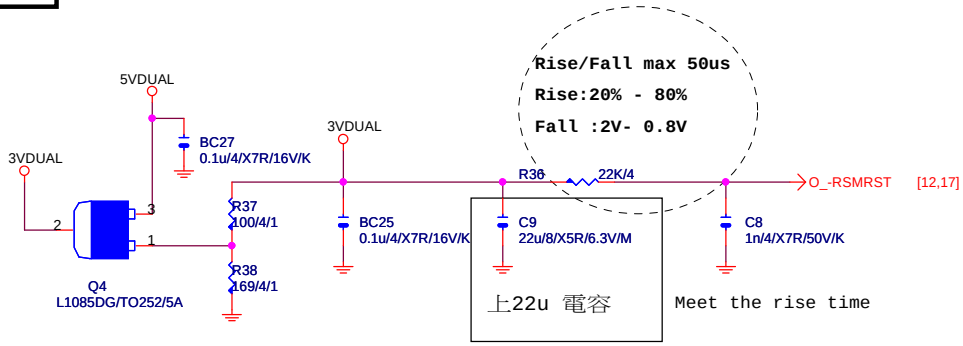
5VDUAL

REV:0.51

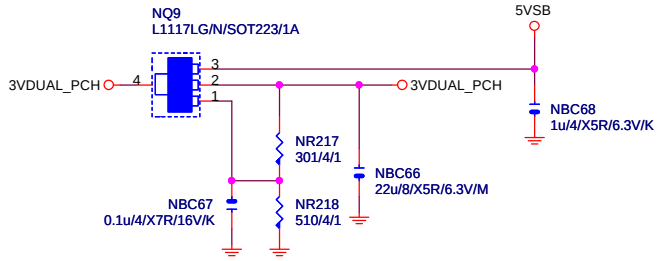
* 5Vdual , update from SKL 0.2B



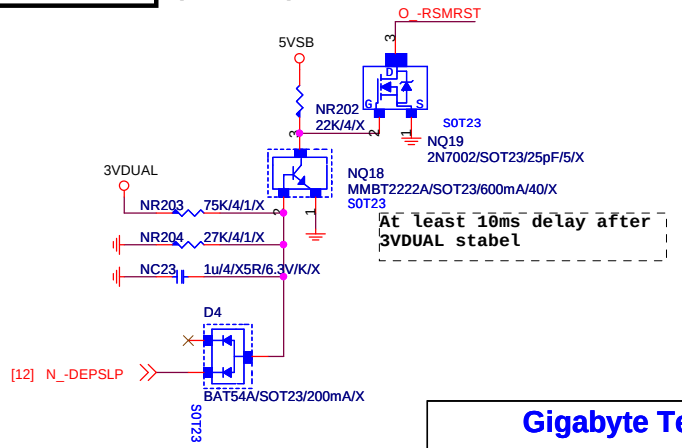
3VDUAL



3VDUAL_PCH



O_-RSMRST (不上件)



Gigabyte Technology

Title	DISCRETE POWER	
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
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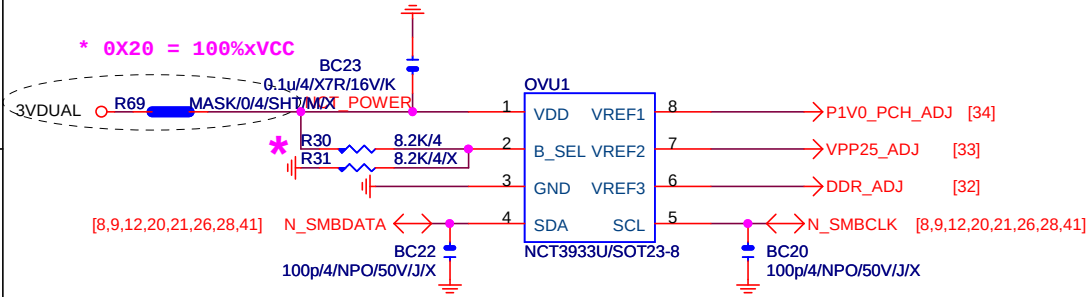
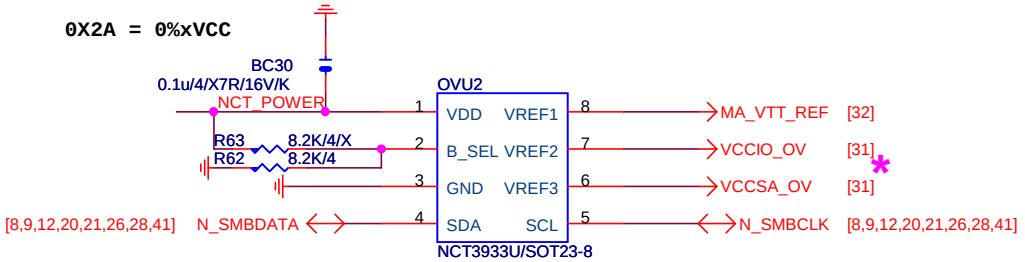
OVER VOLTAGE





0X22 = 75%xVCC

* 刪除 OVU3

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

Gigabyte Technology

Title: CPU CORE VR-2

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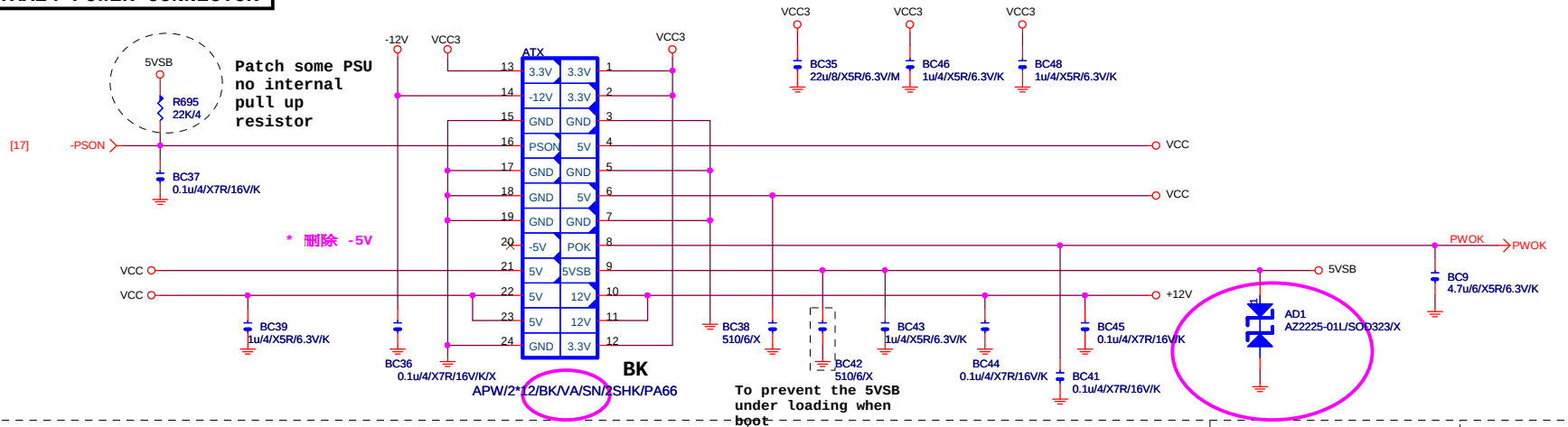
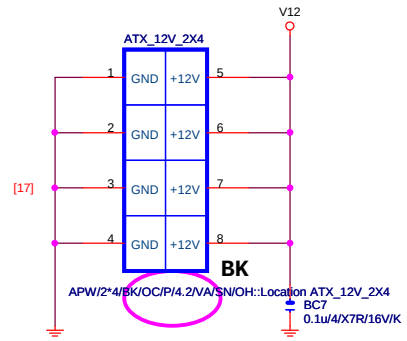
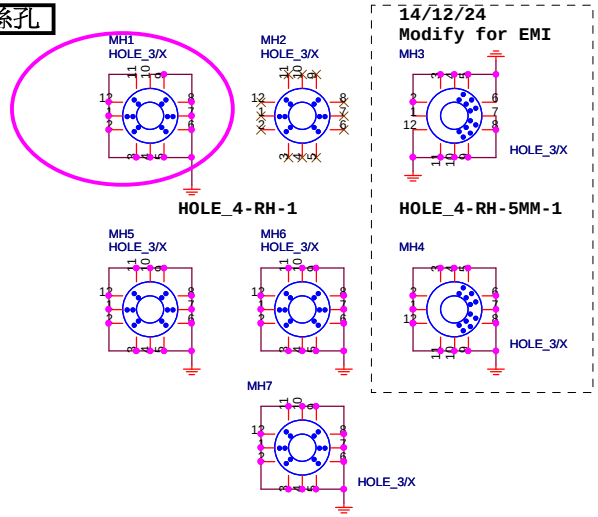
ATXX24 POWER CONNECTOR



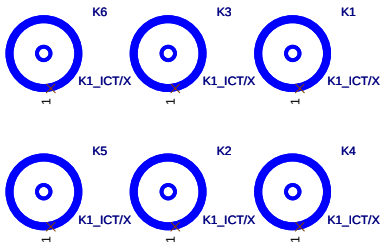
ATXX4 POWER CONNECTOR

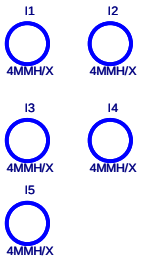


螺絲孔

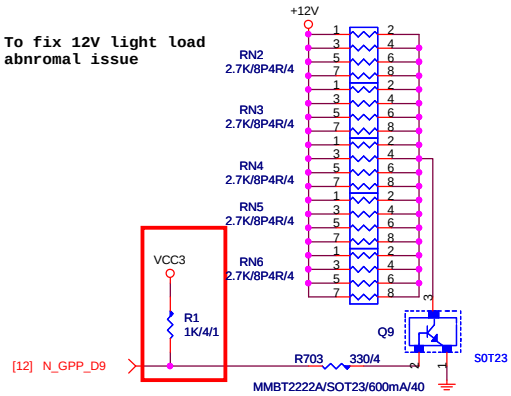


固定孔/光學點



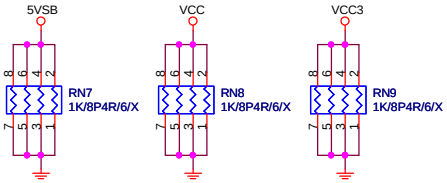


+12V DUMMY LOAD

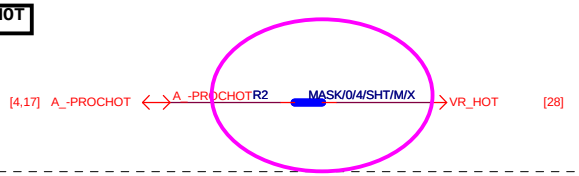


【技術通報R&D技術通報153】

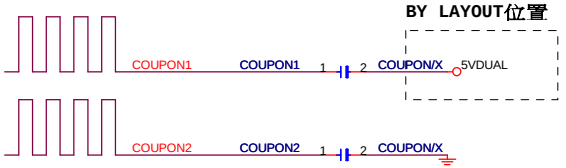
DUMMY LOAD



-PROHOT



COUPON



Gigabyte Technology		
Title: ATX POWER CONNECTOR		
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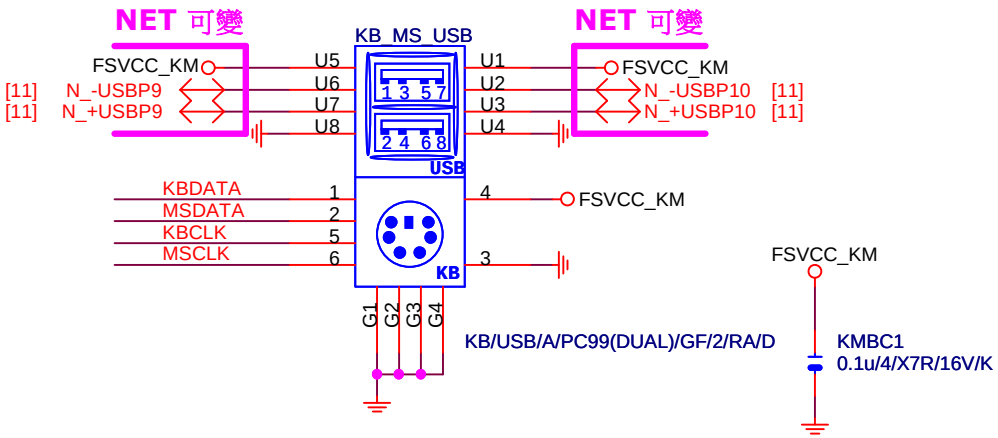
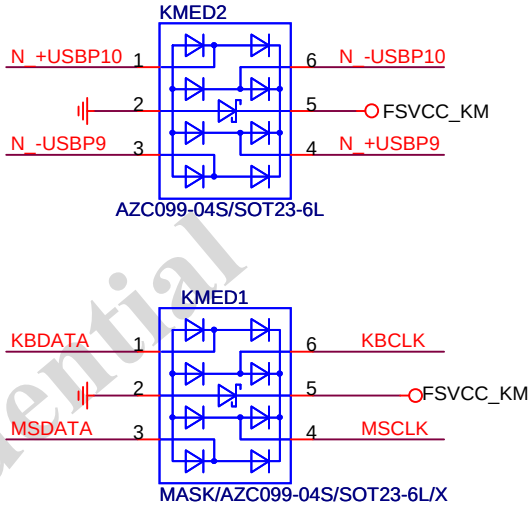
KB_MS_USB

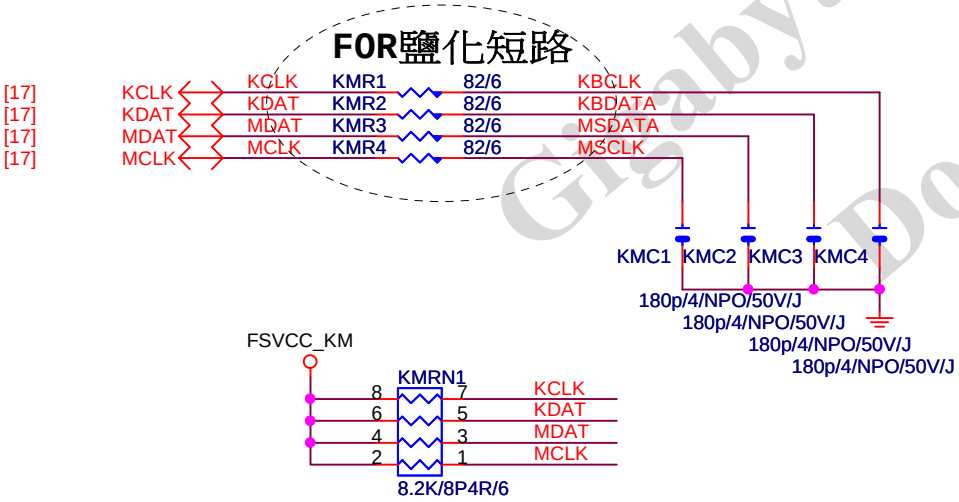
Rev: 0.7



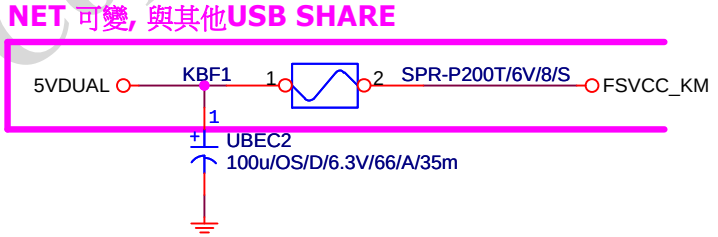
ESD



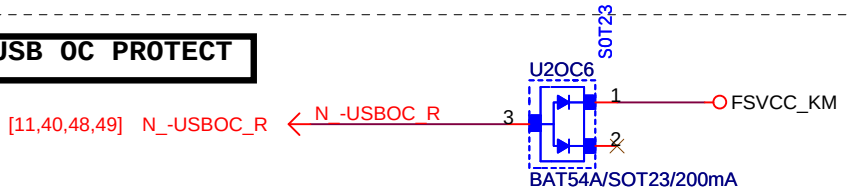
KB_MS_USB DAMPING/PU



KB_MS_USB PWR



USB OC PROTECT



Gigabyte Technology			
Title: KB_MS_USB			
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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 DVITXC+ VR1 680/4/1
VBC2 0.1u/4/X7R/16V/K DVITXC- VR2 680/4/1

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

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

[4] DVI_TX2
[4] DVI_TX2-
VBC8 0.1u/4/X7R/16V/K DVITX2+ VR9 680/4/1
VBC9 0.1u/4/X7R/16V/K 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
AZC099-04S/SOT23-6L

DVI_SDA
DVI_HP
DVI_SCL

NET 可變

FSVCC_KM

Close to connector

VESD2
AZ1045-04F/MSOP10

DVITX1+
DVITX1-
DVITX2-
DVITX2+

Close to connector

VESD1
AZ1045-04F/MSOP10

DVITXC+
DVITXC-
DVITX0-
DVITX0+

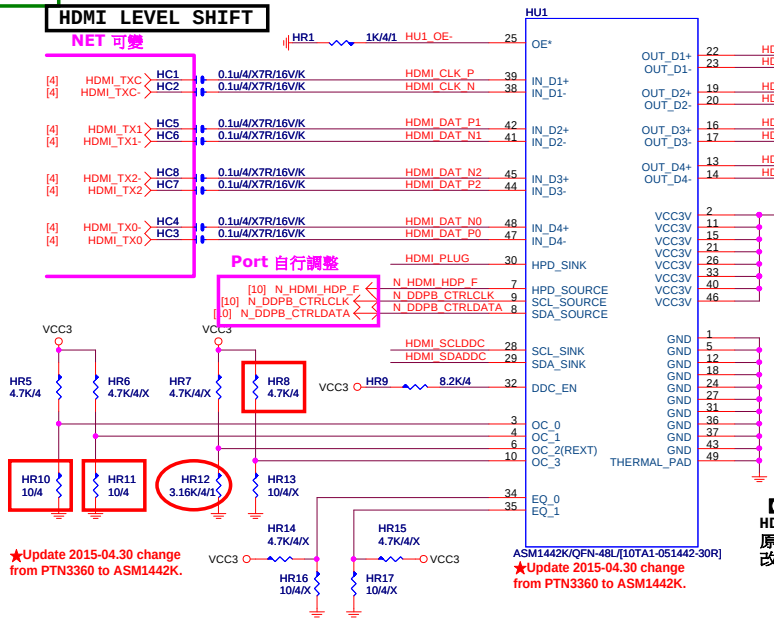
* swap

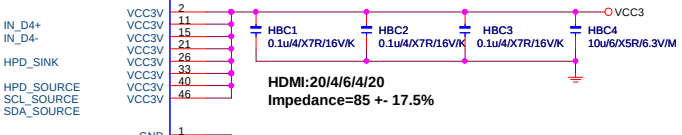
Close to connector

Gigabyte Technology			
Title: DVI			
Size: Custom	Document Number: GA-H270M-D3H		Rev: 1.0
Date: Friday, November 18, 2016	Sheet 39 of 57		

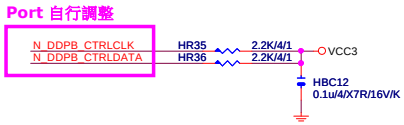
Rev: 0.81

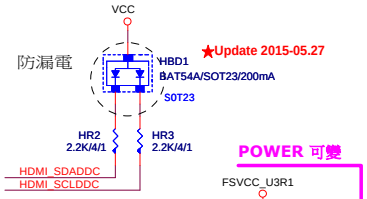
HDMI LEVEL SHIFT

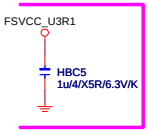


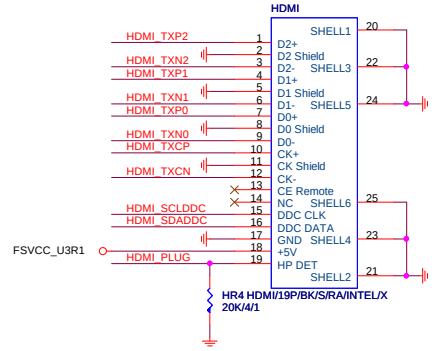


HDMI:20/4/6/4/20
Impedance=85 +- 17.5%







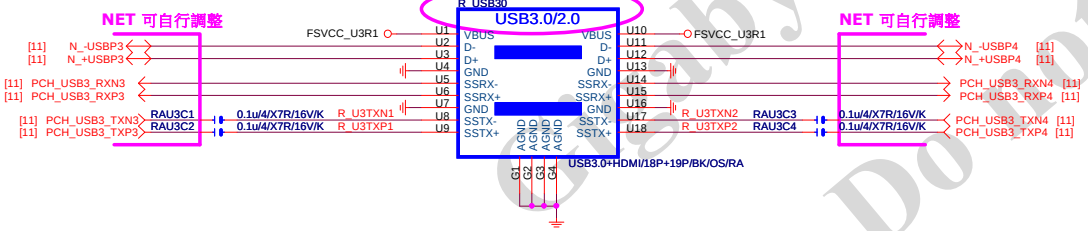


【技術通報R&D技術通報150】
HDMI eye diagram1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

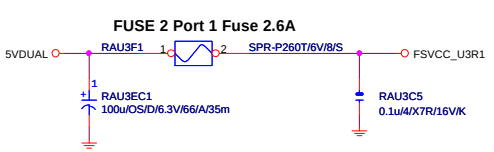
PTN3360:PIN 4/10/34/35 NC PIN,都不上值;只上HR12:10K
ASM1442:紅色框要上,HR12:3.16K

Rev: 0.81 ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可

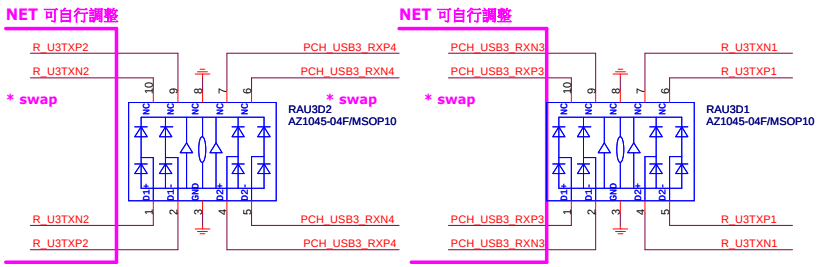
Footprint: USB30_H-1

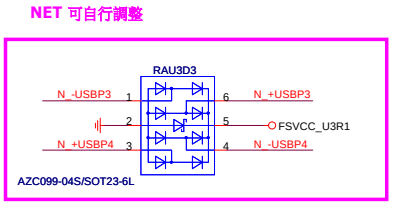


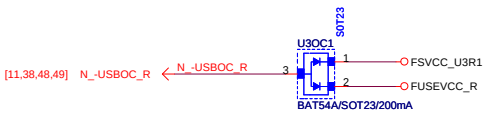
FUSE



ESD







GIGABYTE

Title: DP PORT

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

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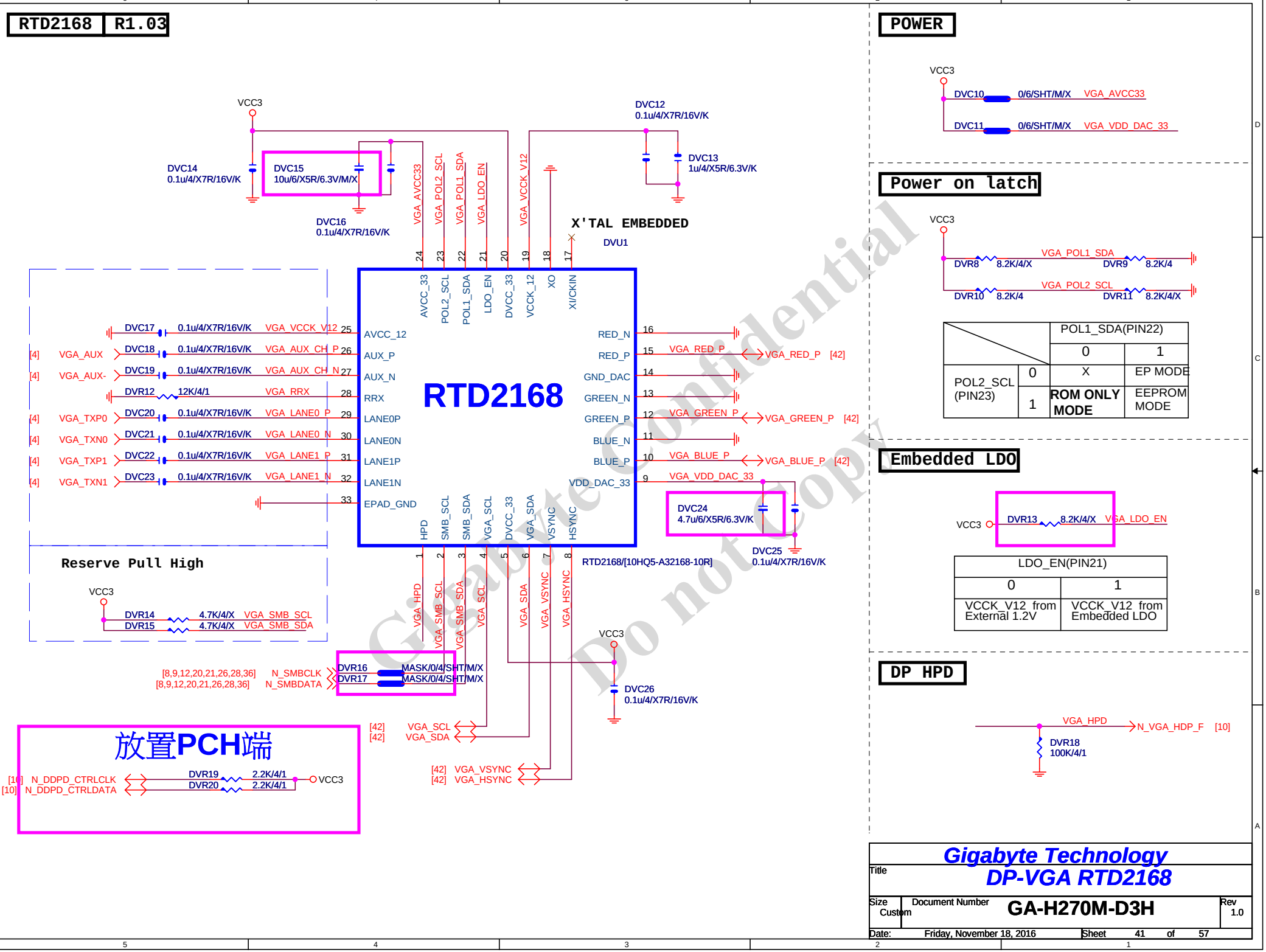
RTD2168 R1.03



POWER

Power on latch

POL2_SCL (PIN23) \ POL1_SDA(PIN22)	0	1
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			
Size: Custom	Document Number: GA-H270M-D3H		Rev: 1.0
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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

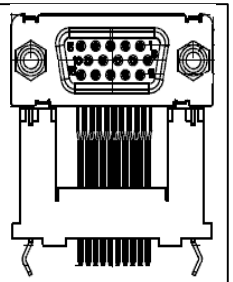
[41] VGA_VSYNC
VGA_VSYNC
DVR1
33/4
G_VSYNC
DVC2
10p/4/NPO/50V/J/X
[41] VGA_HSYNC
VGA_HSYNC
DVR4
33/4
G_HSYNC
DVC3
10p/4/NPO/50V/J/X

[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			
Size: Custom	Document Number: GA-H270M-D3H		Rev: 1.0
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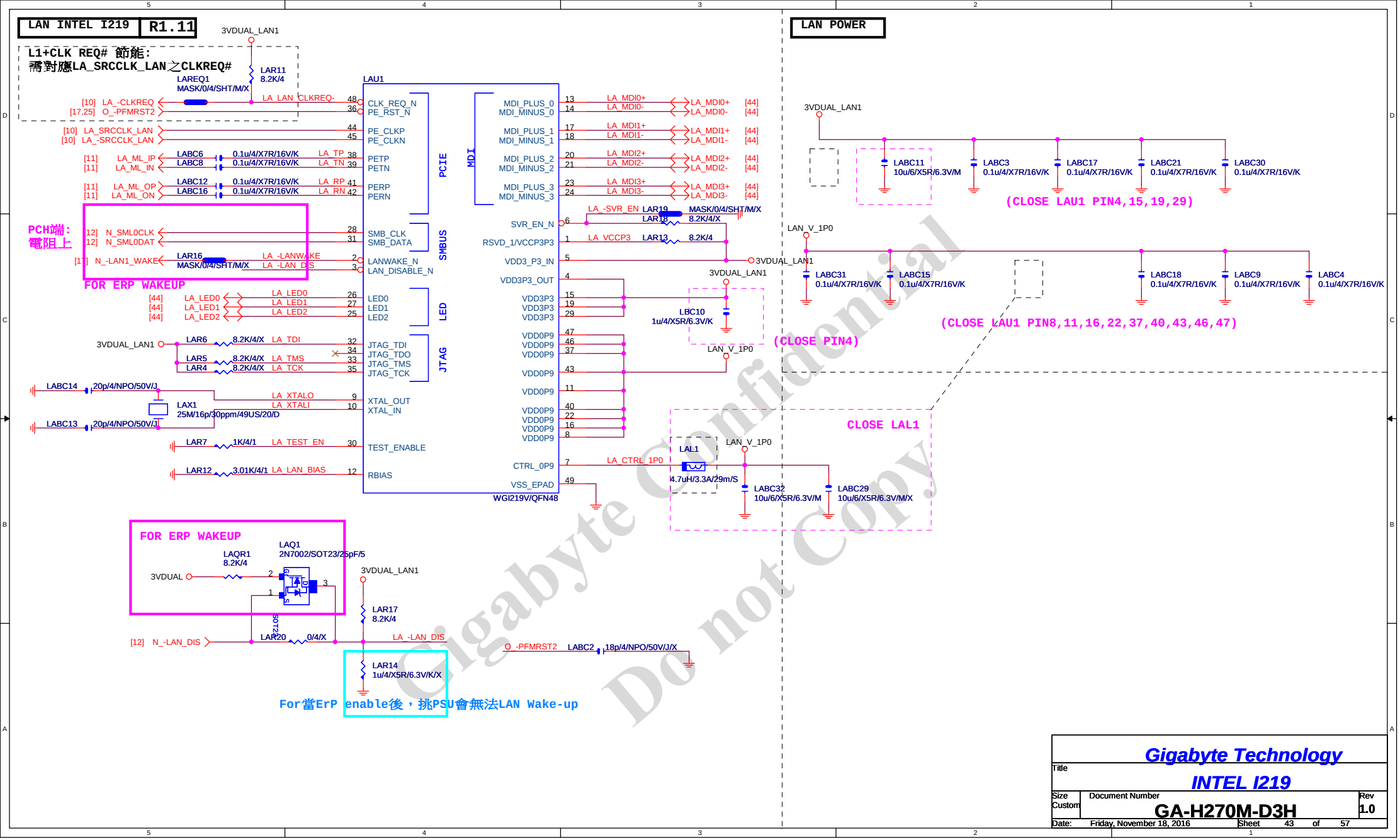
LAN INTEL I219 R1.11
L1+CLK REQ# 節能:
需對應LA_SRCCLK_LAN之CLKREQ#
3VDUAL_LAN1
LAR11 8.2K/4
LAREQ1 MASK/0/4/SHT/M/X
LA_LAN_CLKREQ-
[10] LA_-CLKREQ
[17,25] O_-PFMRST2
LAU1
CLK_REQ_N
PE_RST_N
PE_CLKP
PE_CLKN
PETP
PETN
PERP
PERN
PCIE
MDI
[10] LA_SRCCLK_LAN
[10] LA_-SRCCLK_LAN
[11] LA_ML_IP
[11] LA_ML_IN
[11] LA_ML_OP
[11] LA_ML_ON
LABC6 0.1u/4/X7R/16V/K
LABC8 0.1u/4/X7R/16V/K
LABC12 0.1u/4/X7R/16V/K
LABC16 0.1u/4/X7R/16V/K
LA_TP
LA_TN
LA_RP
LA_RN
MDI_PLUS_0
MDI_MINUS_0
MDI_PLUS_1
MDI_MINUS_1
MDI_PLUS_2
MDI_MINUS_2
MDI_PLUS_3
MDI_MINUS_3
LA_MDI0+
LA_MDI0-
LA_MDI1+
LA_MDI1-
LA_MDI2+
LA_MDI2-
LA_MDI3+
LA_MDI3-
[44]
PCH端:
電阻上
SMB_CLK
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
LANWAKE_N
LAN_DISABLE_N
FOR ERP WAKEUP
LED
[44] LA_LED0
[44] LA_LED1
[44] LA_LED2
LA_LED0
LA_LED1
LA_LED2
LED0
LED1
LED2
JTAG
3VDUAL_LAN1
LAR6 8.2K/4/X LA_TDI
LAR5 8.2K/4/X LA_TMS
LAR4 8.2K/4/X LA_TCK
JTAG_TDI
JTAG_TDO
JTAG_TMS
JTAG_TCK
LABC14 20p/4/NPO/50V/J
LABC13 20p/4/NPO/50V/J
LAX1 25M/16p/30ppm/49US/20/D
LA_XTALO
LA_XTALI
XTAL_OUT
XTAL_IN
LAR7 1K/4/1 LA_TEST_EN
TEST_ENABLE
LAR12 3.01K/4/1 LA_LAN_BIAS
RBIAS
SVR_EN_N
RSVD_1/VCCP3P3
VDD3_P3_IN
VDD3P3_OUT
VDD3P3
VDD0P9
CTRL_0P9
VSS_EPAD
WGI219V/QFN48
LA_-SVR_EN
LAR19 MASK/0/4/SHT/M/X
LAR18 8.2K/4/X
LA_VCCP3
LAR13 8.2K/4
LBC10 1u/4/X5R/6.3V/K
LAN_V_1P0
(CLOSE PIN4)
LA_CTRL_1P0
LAL1 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
LAR17 8.2K/4
LAR20 0/4/X
[12] N_-LAN_DIS
LA_-LAN_DIS
O_-PFMRST2
LABC2 18p/4/NPO/50V/J/X
LAR14 1u/4/X5R/6.3V/K/X
For當ErP enable後，挑PSU會無法LAN Wake-up
LAN POWER
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)
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 Confidential
Do not Copy
Gigabyte Technology
Title
INTEL I219
Size Custom
Document Number
GA-H270M-D3H
Rev 1.0
Date: Friday, November 18, 2016
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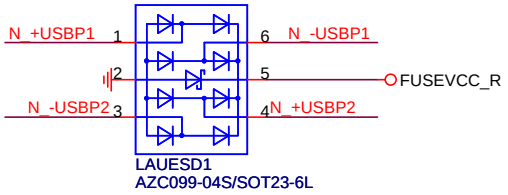
USB_LAN CONNECTOR R1.11

RMA ESD PROTECT

note:可變更USB NAME

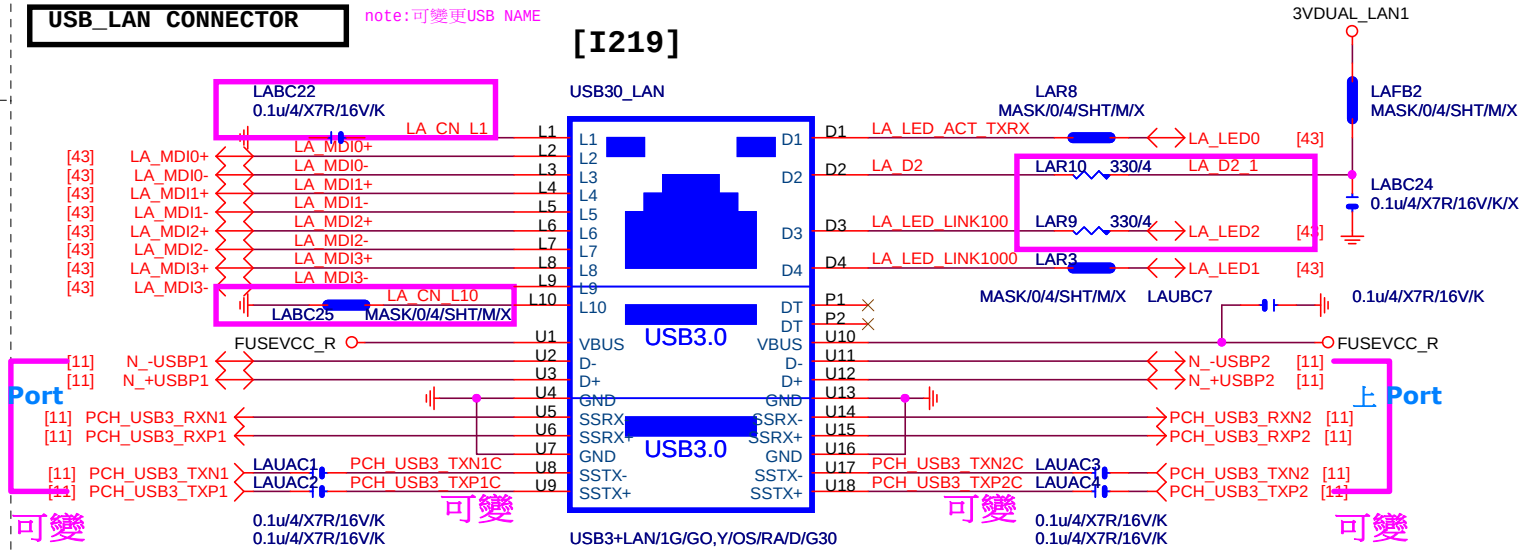
可變



USB_LAN CONNECTOR

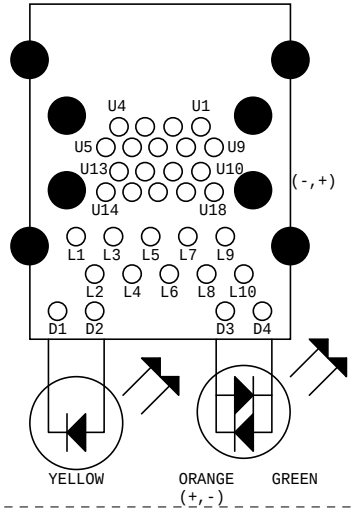
note:可變更USB NAME

[I219]

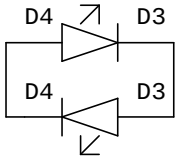


LA_MDI-->100歐姆:[20/4/8/4/20]

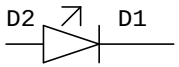
USB30_LAN LAYOUT示意圖

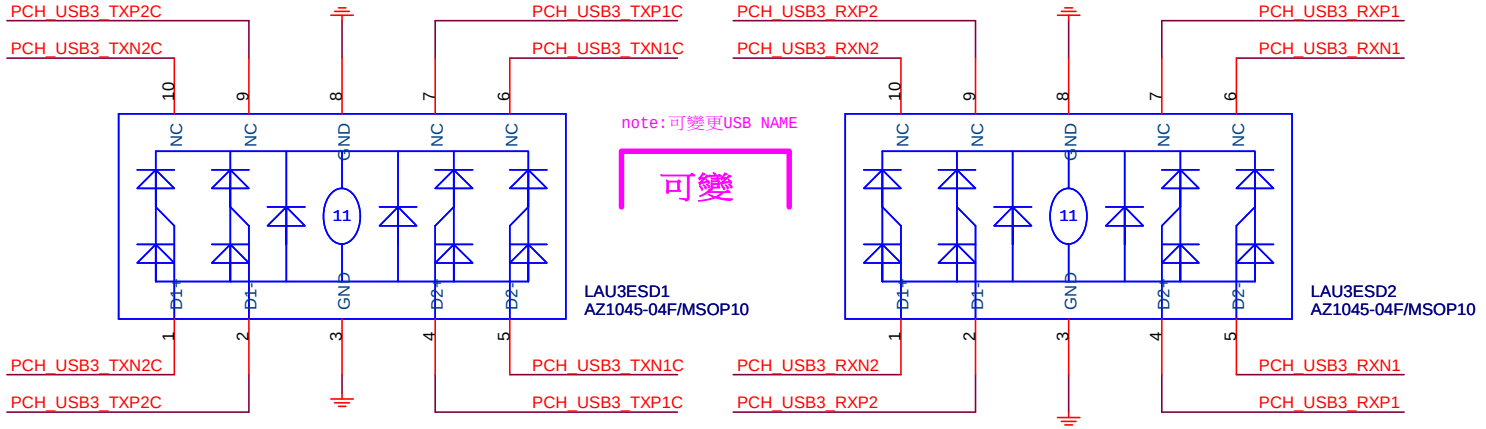


Dual Color LED



Single Color LED





LAN_COVER

FOOT PRINT:LAN_COVER

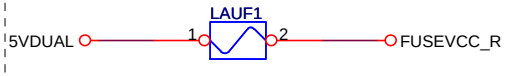
可變 *Del USB_LAN_HS

[視SPEC需求]

USB POWER

note:可變更FUSE

可變



SPR-P260T/6V/8/S

Close to connector

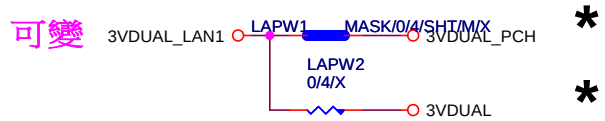
FUSE-0805

EMI SHORT PAD

PS:視EMI需求

LAN POWER

note: lan power連接及電流



Gigabyte Technology

Title: **LAN CONNECTOR-I219**

Size	Document Number	Rev
Custom	GA-H270M-D3H	1.0

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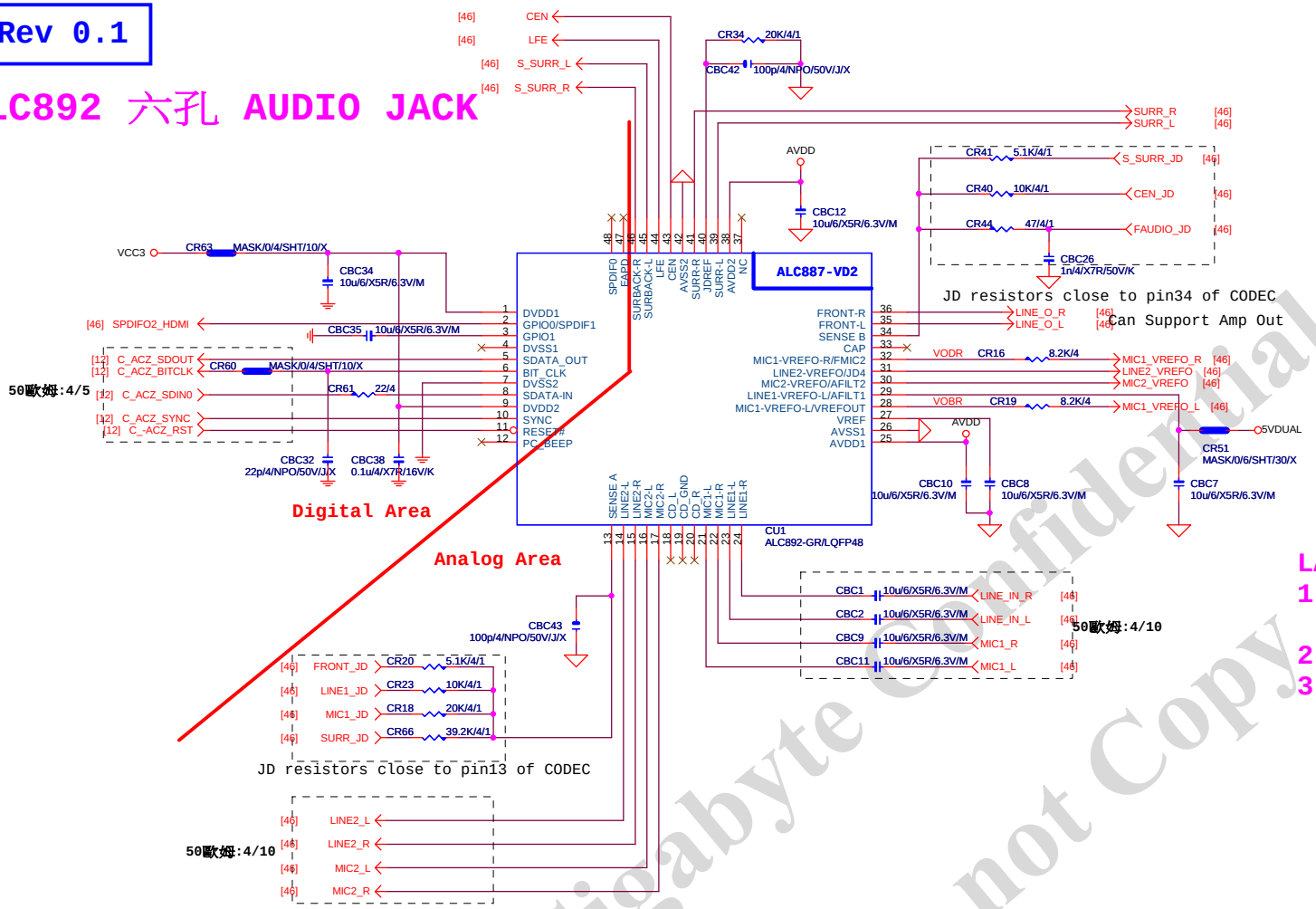
Rev 0.1

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		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
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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/6/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

SPDIF_OUT

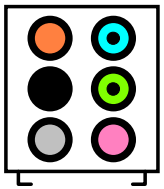
[45] SPDIFO2_HDMI — CR26 MASK/0/4/SHT/10/X — SPDIF_O — PH/1*2/BK/2.54/VA/D

CBC14 100p/4/NPO/50V/J

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 — CEN_JD, BJ_B5, BJ_B2 — REAR

[45] SURR_JD — SURR_JD, BJ_C5, BJ_C2 — CEN

[45] S_SURR_JD — 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

LINE-OUT

[45] LINE_O_R — CEC1 100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R] — CR5 62/4 — CR7 22K/4 — AJ_B5

[45] LINE_O_L — CEC2 100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R] — CR8 62/4 — CR6 22K/4 — AJ_B2

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

[45] SURR_R — CEC10 100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R] — CR73 62/4 — CR67 22K/4 — CR68 22K/4 — BJ_C5

[45] SURR_L — CR74 62/4 — BJ_C2

CEC11 100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R]

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 — CR69 22K/4 — CR70 22K/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

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 — CR43 22K/4 — CR27 22K/4 — BJ_A5

[45] S_SURR_L — CBC17 10u/8/X5R/16V/K/[10CM2-011005-54R] — CR47 62/4 — BJ_A2

CBC33 180p/4/NPO/50V/J, CBC31 180p/4/NPO/50V/J

AZALIA FRONT PANEL

CQ4 BAT54A/SOT23/200mA — [45] LINE2_VREFO

CQ2 BAT54A/SOT23/200mA — [45] MIC2_VREFO

SOT23

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

VCC3

CR58 22K/4, CR54 22K/4, CR78 8.2K/4/X

F_AUDIO

CR55 20K/4/1, CR59 39.2K/4/1

BH/2*5K8/BK/2.54/VA/AUDIO/PRT/TUR180

100uF/D/10V/6*5/[11CE2-651000-05R_11CE2-651000-12R]

[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

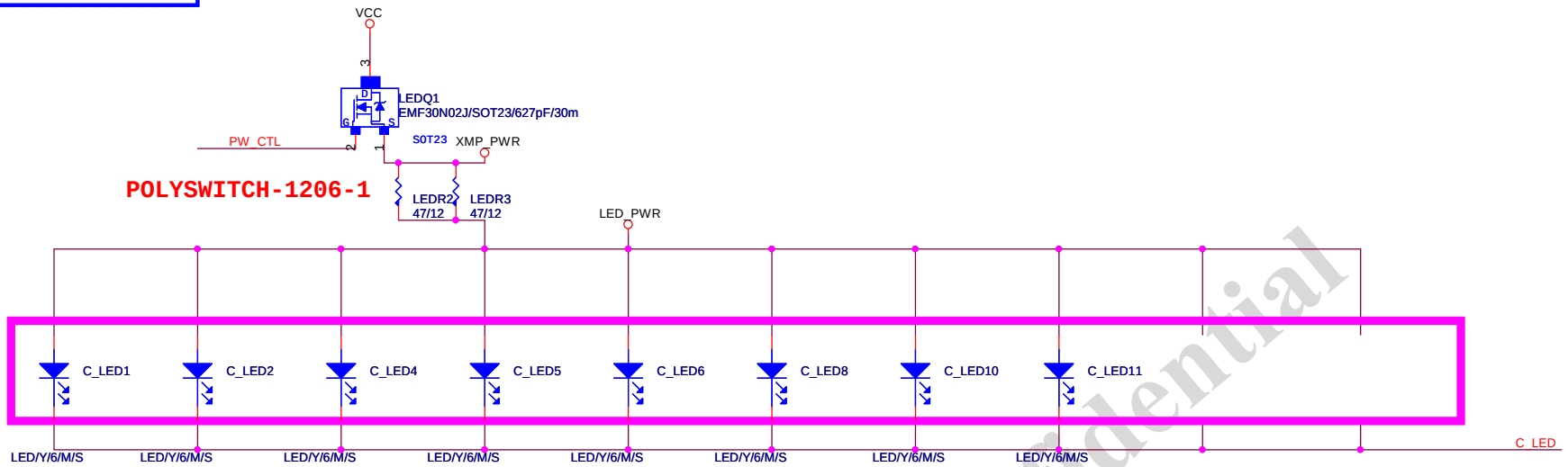
Gigabyte Technology

Title: AUDIO JACK

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

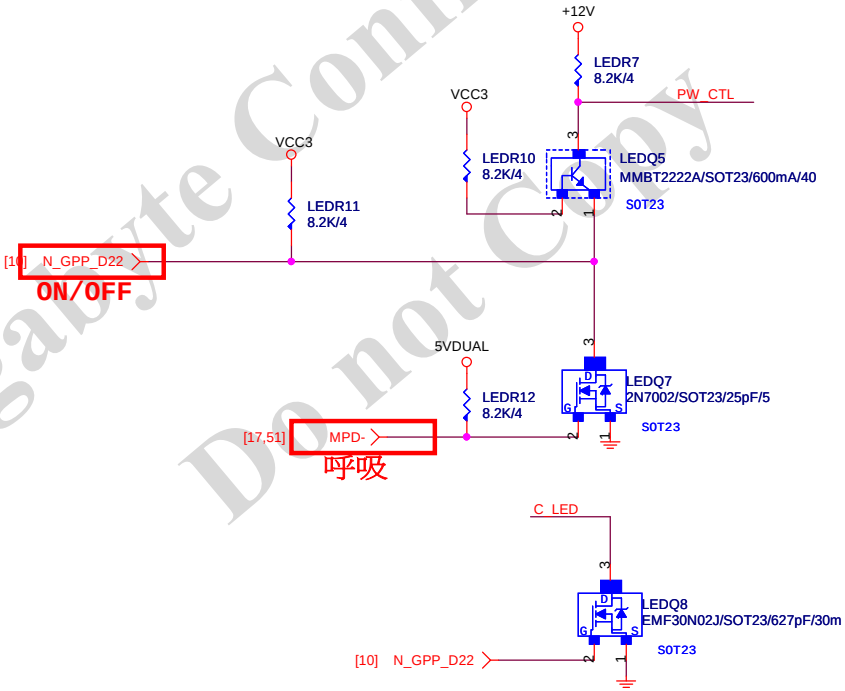
Date: Friday, November 18, 2016 | Sheet 46 of 57

Rev 0.1



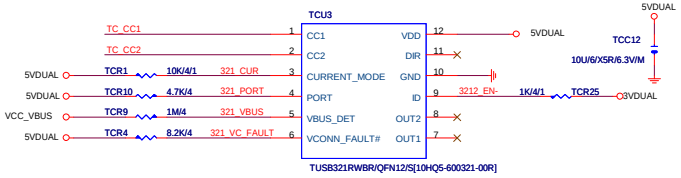
Ambient LED Control

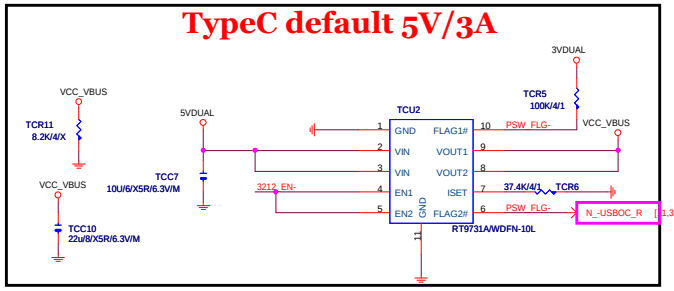
	N_GPP_D22	IO_GP91
Still Mode	H	L
OFF Mode	L	L
Pluse Mode	H	BREATH



Gigabyte Technology		
Title: Amient Single LED		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 47 of 57	

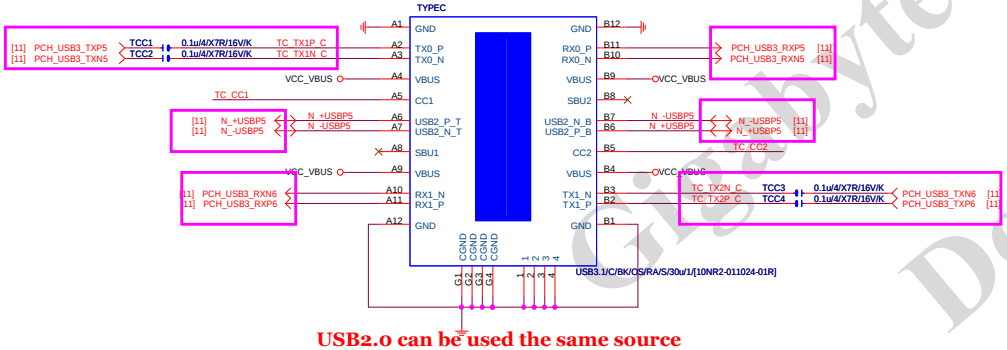
Type C U30 SW Rev. 1.02



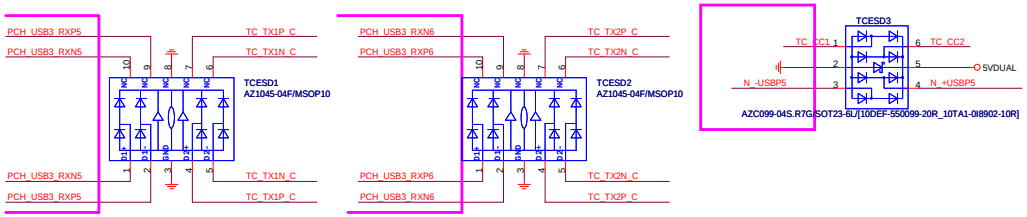


CURRENT MODE
L - Default current / Pull down to GND or NC
M - Medium (1.5A) current / Pull up to VDD 500K
H - High (3.0A) current / Pull up to VDD 10K

PORT
H - HOST
L - Device
NC - Dual Role

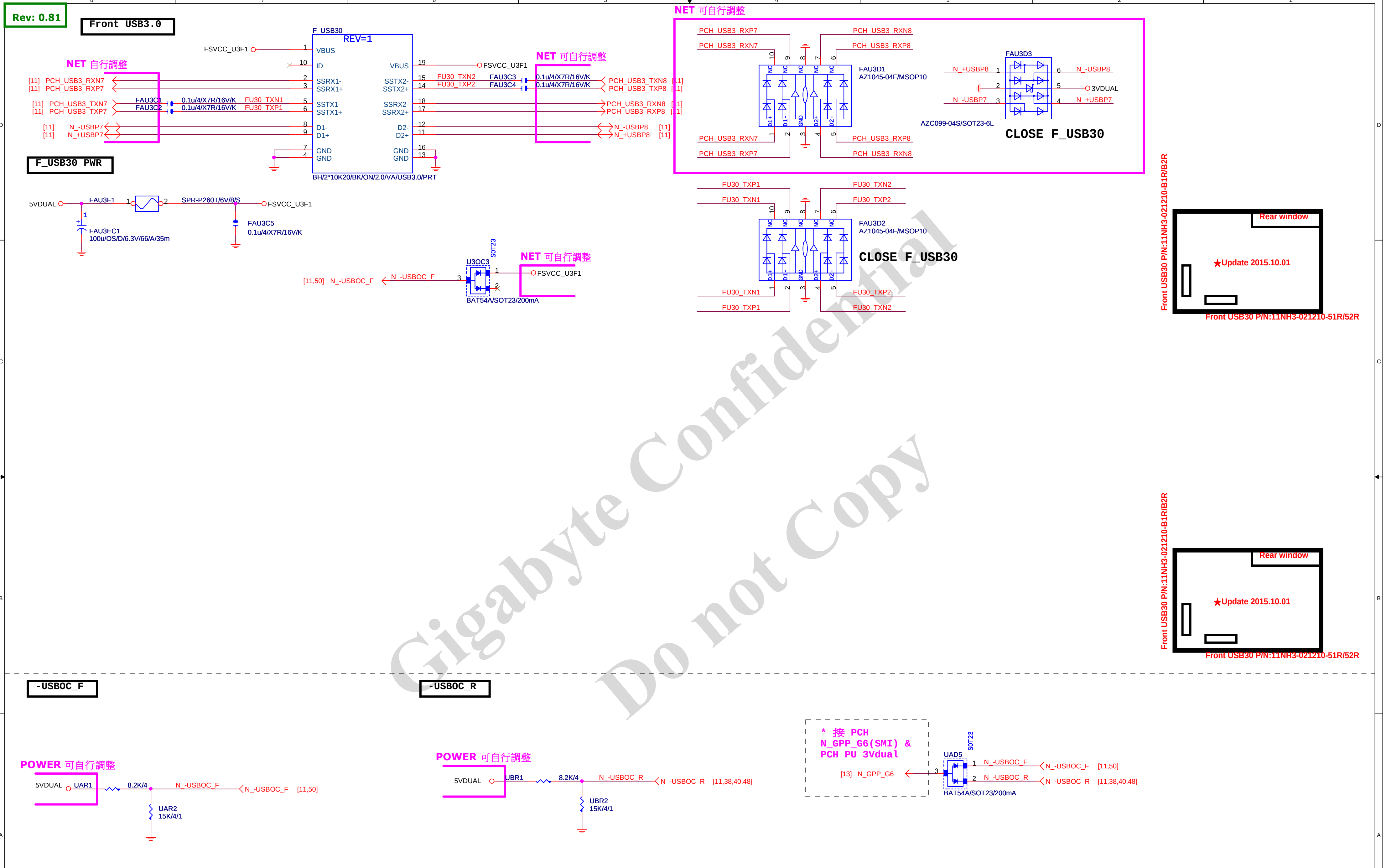


USB2.0 can be used the same source



Color markers can be changed by model

Gigabyte Technology		
Title: R_USB30,USB_OC		
Size: C	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 48 of 57	


Rev: 0.81
Front USB3.0
F_USB30 PWR
F_USB30
REV=1
BH/2*10K20/BK/ON/2.0/VA/USB3.0/PRT
VBUS
ID
SSRX1-
SSRX1+
SSTX1-
SSTX1+
D1-
D1+
GND
SSTX2-
SSTX2+
SSRX2-
SSRX2+
D2-
D2+
FSVCC_U3F1
NET 自行調整
NET 可自行調整
[11] PCH_USB3_RXN7
[11] PCH_USB3_RXP7
[11] PCH_USB3_TXN7
[11] PCH_USB3_TXP7
[11] N_-USBP7
[11] N_+USBP7
FAU3C1
FAU3C2
0.1u/4/X7R/16V/K
FU30_TXN1
FU30_TXP1
FU30_TXN2
FU30_TXP2
FAU3C3
FAU3C4
PCH_USB3_TXN8 [11]
PCH_USB3_TXP8 [11]
PCH_USB3_RXN8 [11]
PCH_USB3_RXP8 [11]
N_-USBP8 [11]
N_+USBP8 [11]
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
[11,50] N_-USBOC_F
FAU3D1
AZ1045-04F/MSOP10
FAU3D2
AZ1045-04F/MSOP10
FAU3D3
AZC099-04S/SOT23-6L
3VDUAL
CLOSE F_USB30
Rear window
★Update 2015.10.01
Front USB30 P/N:11NH3-021210-B1R/B2R
Front USB30 P/N:11NH3-021210-51R/52R
-USBOC_F
-USBOC_R
POWER 可自行調整
UAR1
8.2K/4
UAR2
15K/4/1
N_-USBOC_F [11,50]
UBR1
UBR2
15K/4/1
N_-USBOC_R [11,38,40,48]
* 接 PCH
N_GPP_G6(SMI) &
PCH PU 3Vdual
[13] N_GPP_G6
UAD5
BAT54A/SOT23/200mA

Gigabyte Technology

Title: R_USB30,F_USB30, USB_OC

Size: Custom | Document Number: GA-H270M-D3H | Rev: 1.0

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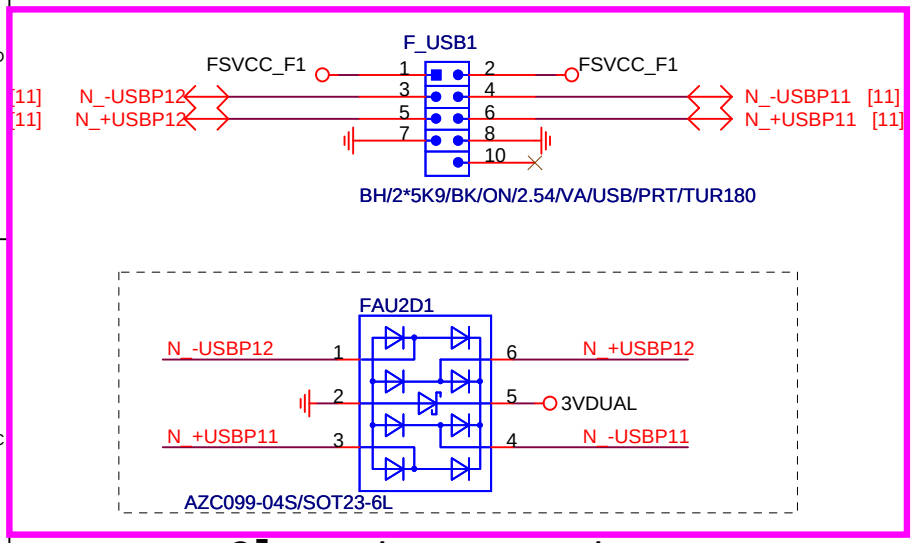
Rev: 0.81

FRONT USB1

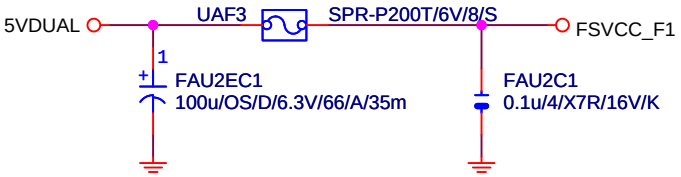
NET 可變

FUSB2X5-HS



Close to connector

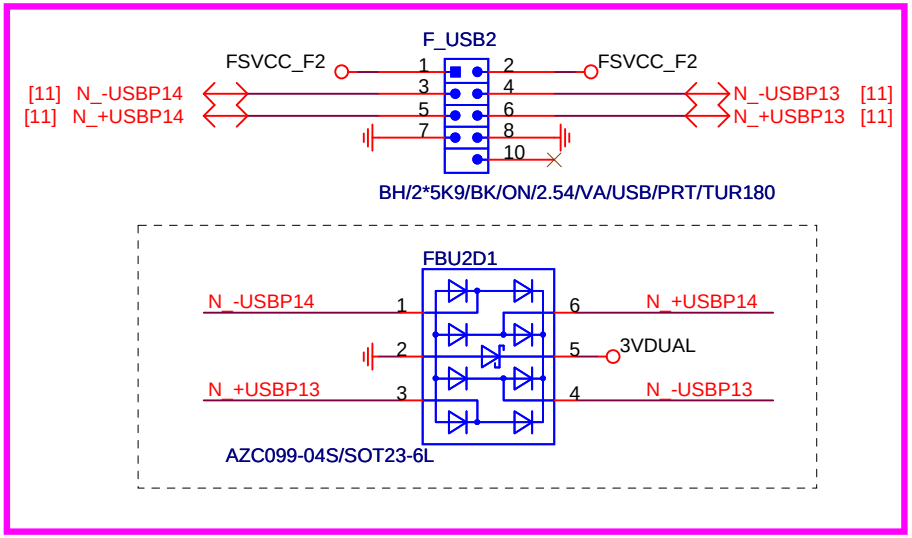
FUSE 2 Port 1 Fuse 2A



FRONT USB2

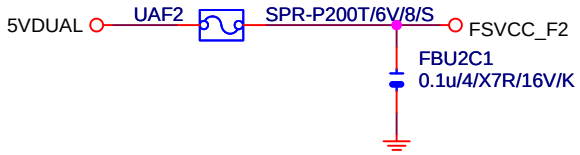
NET 可變

FUSB2X5-HS

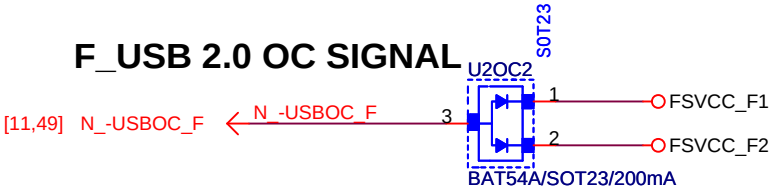


Close to connector

FUSE 2 Port 1 Fuse 2A



F_USB 2.0 OC SIGNAL

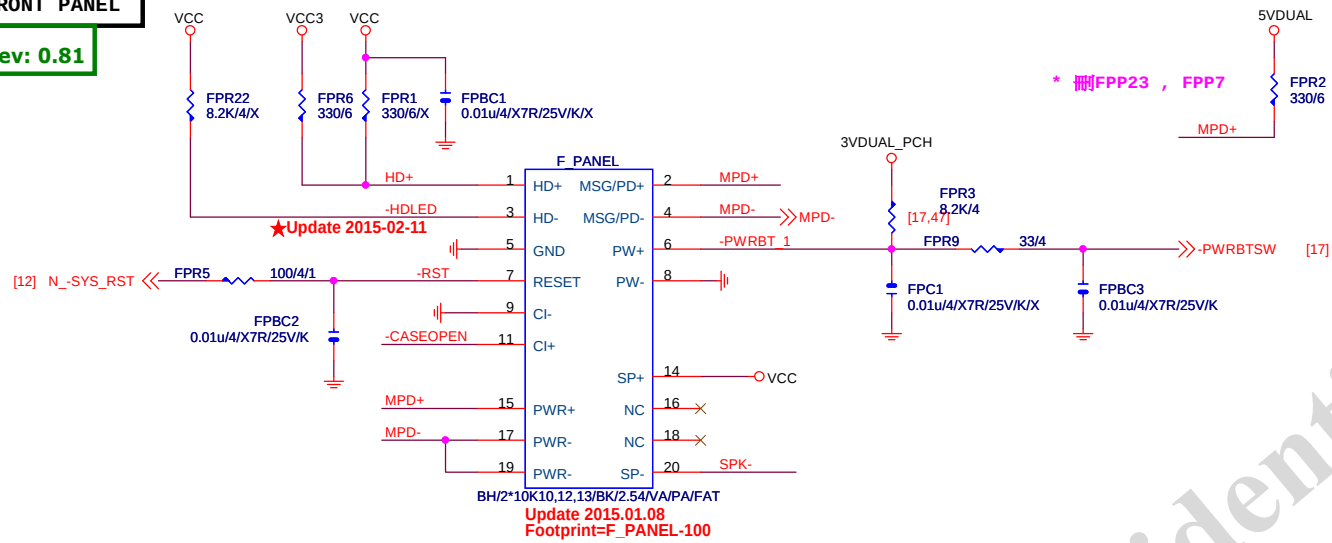


Gigabyte Technology		
Title: USB2.0		
Size: A	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 50 of 57	

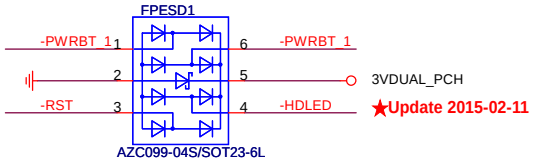
FRONT PANEL

Rev: 0.81

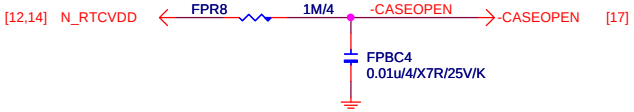
★Update 2016.06.15



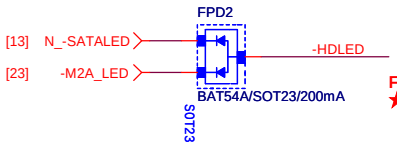
ESD



CASE OPEN

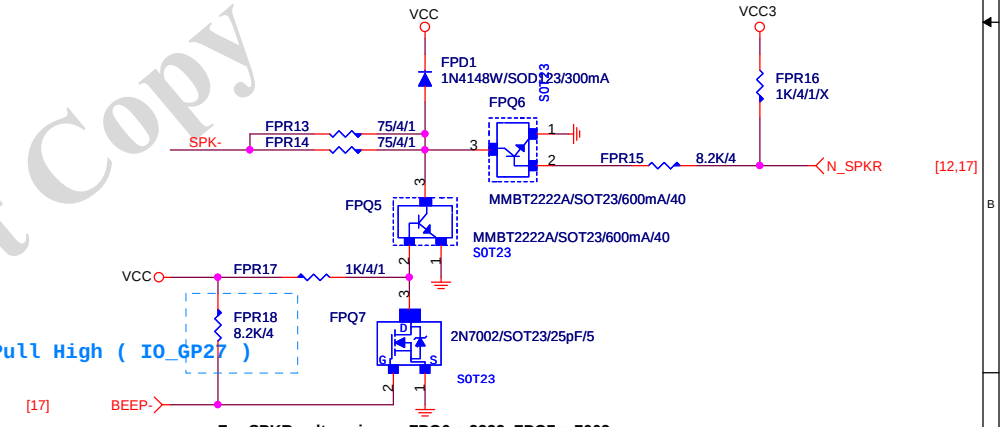


SATA/M.2 LED



Fix some M.2 cause HD_LED always on.
★Update 2016.06.15

SPKR W/O EC



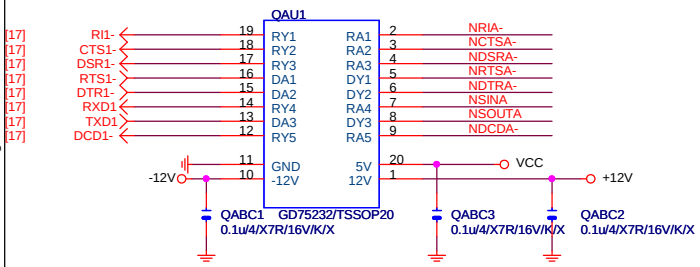
Now , inport , Pull High (IO_GP27)
,IO_GP26 ouport

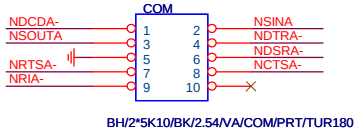
For SPKR voltage issue. FPQ6=>2222, FPQ7=>7002

Gigabyte Technology		
Title: FRONT PANEL		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 51 of 57	

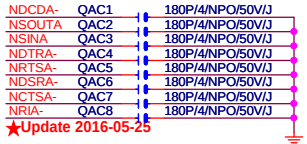
COM PORT

Rev: 0.81





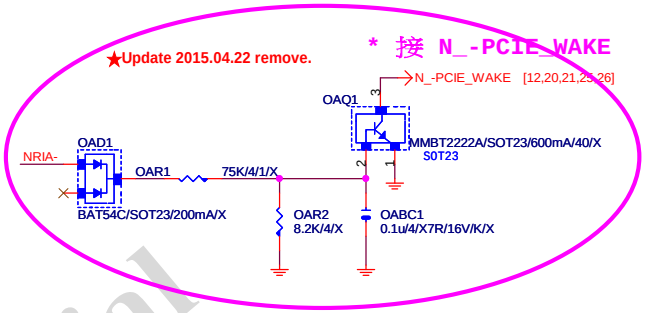
F_COM-HS



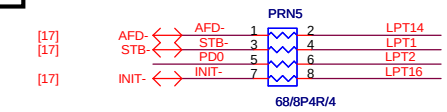
★Update 2016-05-25

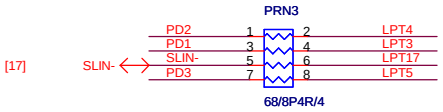
COM RI

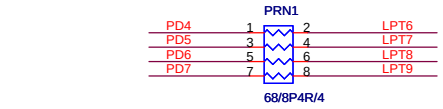
N/A

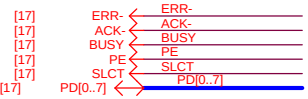


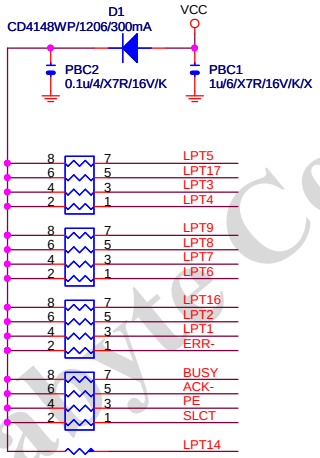
LPT PORT



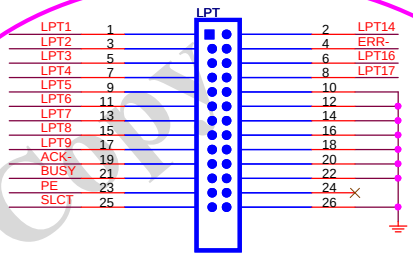






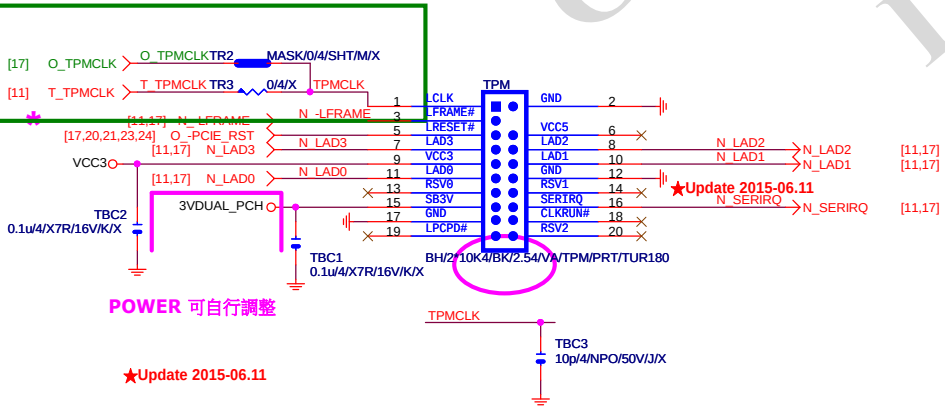


R&D技術通報151　有使用PRINT PORT的
MODEL，需使用新料號:10HP2-118728-72R 。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。 串電阻33 ohm改為68 ohm。



F_LPT-HS

TPM CONNECT



Gigabyte Technology		
Title: FP,F_USB,USB PWR,BZ		
Size: Custom	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Friday, November 18, 2016	Sheet 52 of 57	

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

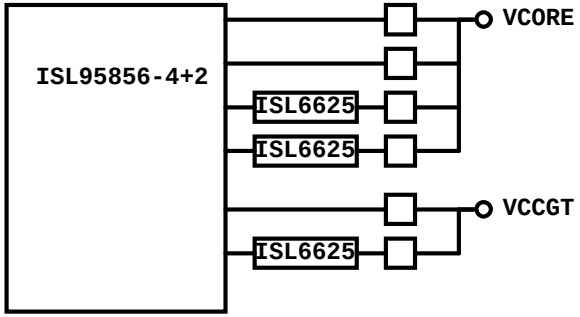
GIGABYTE™

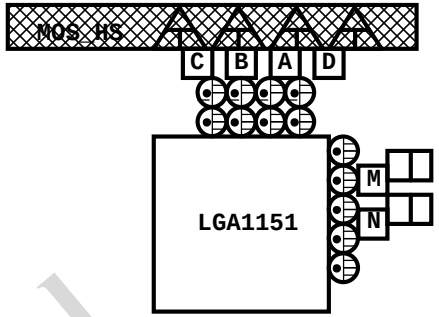
Title	EMI/ESD	
Size A	Document Number GA-H270M-D3H	Rev 1.0
Date: Friday, November 18, 2016	Sheet 54 of 57	

POWER BLOCK MAP

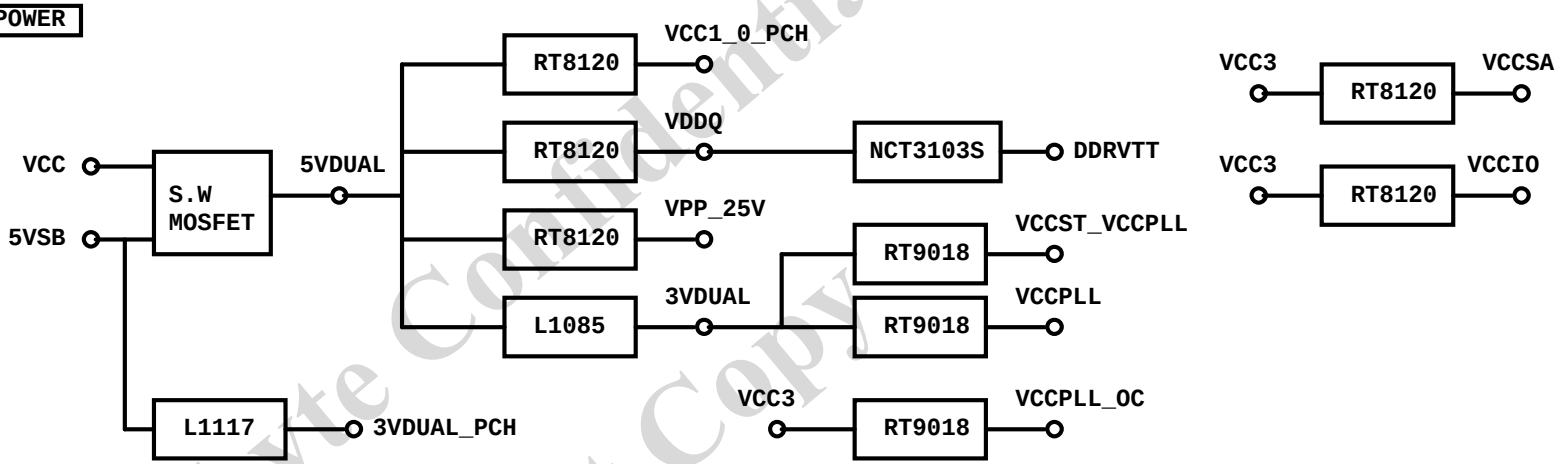
- CPU: VCORE, VCCGT, VCCSA, VCCIO, VDDQ, VCCST_VCCPLL, VCCSFUSEPRG, VCCPLL, VCCPLL_OC
- DDR4: VDDQ, DDRVTT, VPP_25V
- PCH: VCC1_0_PCH, VCCDSW_1P0, VCC10_VCCF24_1P0, VCC10_VCCAMPHYPLL, VCC10_VCCAPLL, VCC3_PCH, 3VDUAL_PCH, VCC3, N_RTCVDD
- IT8686: IT_VCCH, IT_AVCC, 2_5LEVEL
- HM: +12V, VCC, VCC3, VCORE,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

VCORE/VCCGT

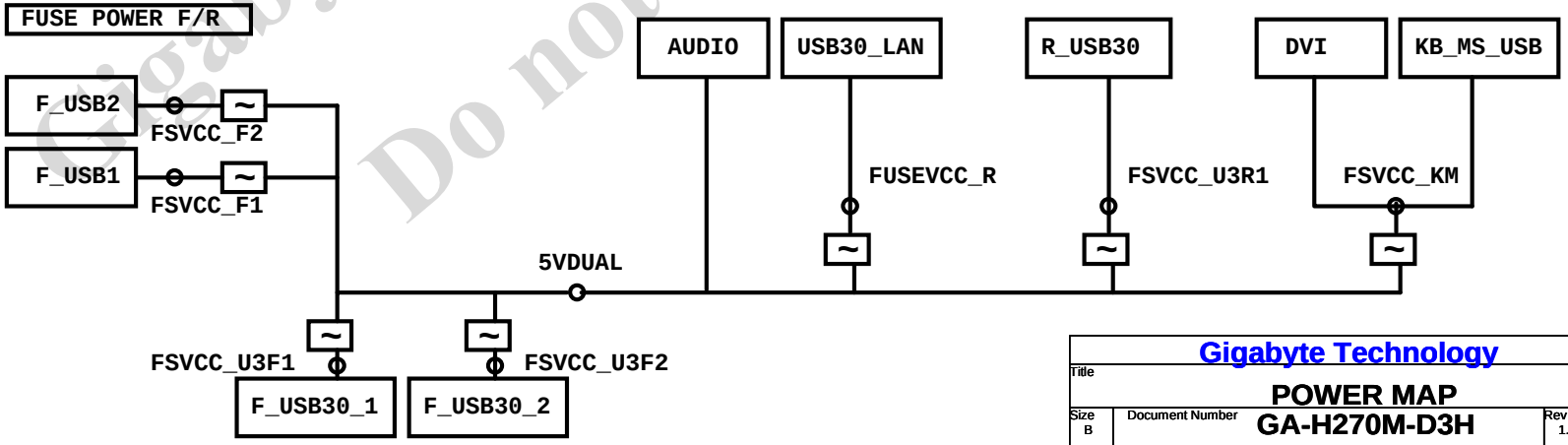




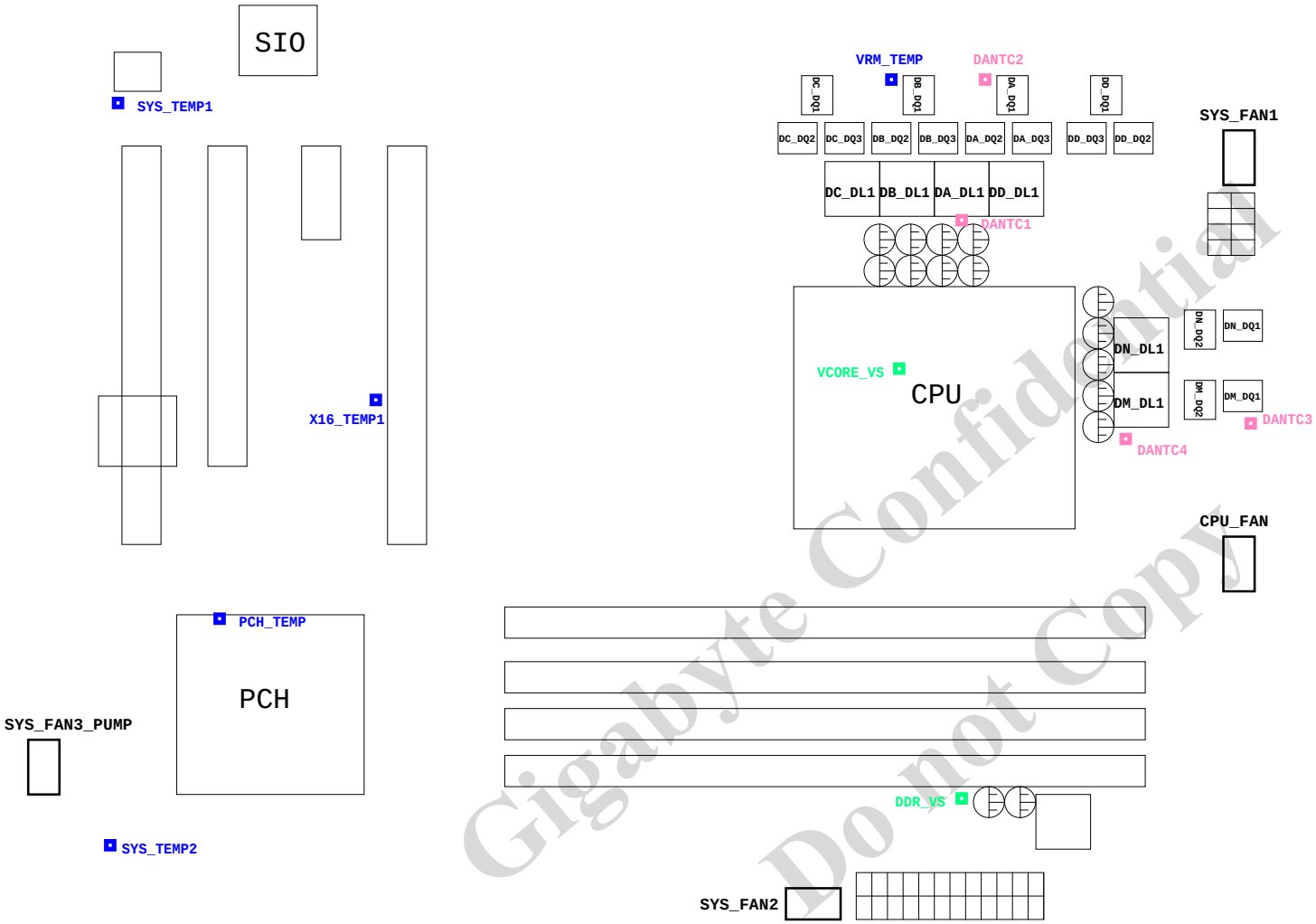
POWER



FUSE POWER F/R



Gigabyte Technology		
Title: POWER MAP		
Size: B	Document Number: GA-H270M-D3H	Rev: 1.0
Date: Thursday, November 17, 2016	Sheet 55 of 57	



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-D3H | Rev: 1.0
Date: Thursday, November 17, 2016 | Sheet 56 of 57

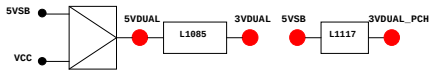
PCH GPIO LIST TABLE

PIN NAME	PWR	RP1ER/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

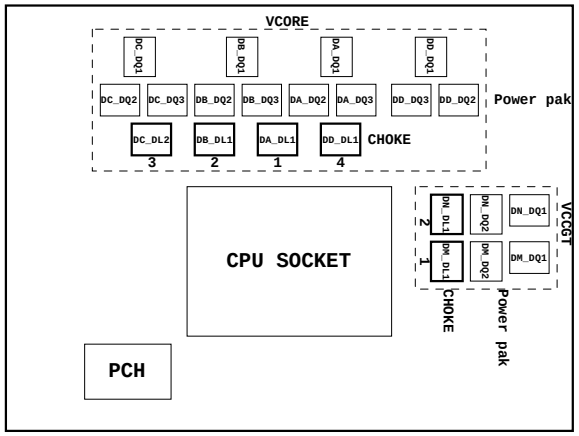
PIN NAME	PWR	RP1ER/PLTRST	Default	USAGE	NOTE
GPP_I3	MAIN	H-Z	GPI	N_GPP_I3	P/U 8.2K VCC3
GPP_I4	MAIN	H-Z	GPI	N_GPP_I4	P/D 100K GND
GPP_I5	MAIN	H-Z	GPI	N_DDPB_CTRLCLK	P/U 2.2K VCC3
GPP_I6	MAIN		GPO	N_DDPB_CTRLDATA	P/U 2.2K VCC3
GPP_I7	MAIN	H-Z	GPI	N_DDPC_CTRLCLK	P/U 2.2K VCC3
GPP_I8	MAIN		GPO	N_DDPC_CTRLDATA	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_RQT/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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