

Model Name: GA-B250M-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
07	CPU_LGA1150-D
08	DDR4 CHANNEL A
09	DDR4 CHANNEL B
10	PCH_CLK BUFFER
11	PCH_DMI,USB,PCIE
12	PCH_MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH PWR
15	PCH GND
16	ITE 8686 LPC IO
17	HWM
18	FAN CTRL--SIO
19	PCI EXPRESS*16 SLOT
20	PCI EXPRESS*4 SLOT
21	
22	DUAL BIOS
23	SATA EXPRESS
24	IT8892E/JX
25	PCI SLOT 1&2
26	IT8892 LDO POWER
27	ISL95858 PWM-IRON
28	ISL95858 VCORE-IRON

SHEET

TITLE


29	ISL95858 VCCGT-IRON
30	VCCSA_VCCIO_VCCPLL
31	RT8237_DDR_BEAD
32	RT8068A_VPP
33	RT8237_PCH-BEAD
34	DISCRETE POWER
35	NCT3933
36	ATX POWER , A_-PROCHOT
37	KB_MS_USB
38	DVI CONN
39	RTD2168 - DP to VGA - IC
40	RTD2168 - DP to VGA - Conn
41	HDMI / DP CONN
42	INTEL I219
43	USB30_LAN CONNECTOR-I219
44	Realtek ALC892
45	REAR AUDIO JACK
46	ADUIO LED
47	F_USB30
48	F_USB
49	R_USB30
50	F_PANEL
51	M.2 X4 (Q)
52	M.2X4_S5 SWITCH
53	COM, LPT, TPM, THB
54	EMI-ESD
55	POWER MAP
56	NTC MAP

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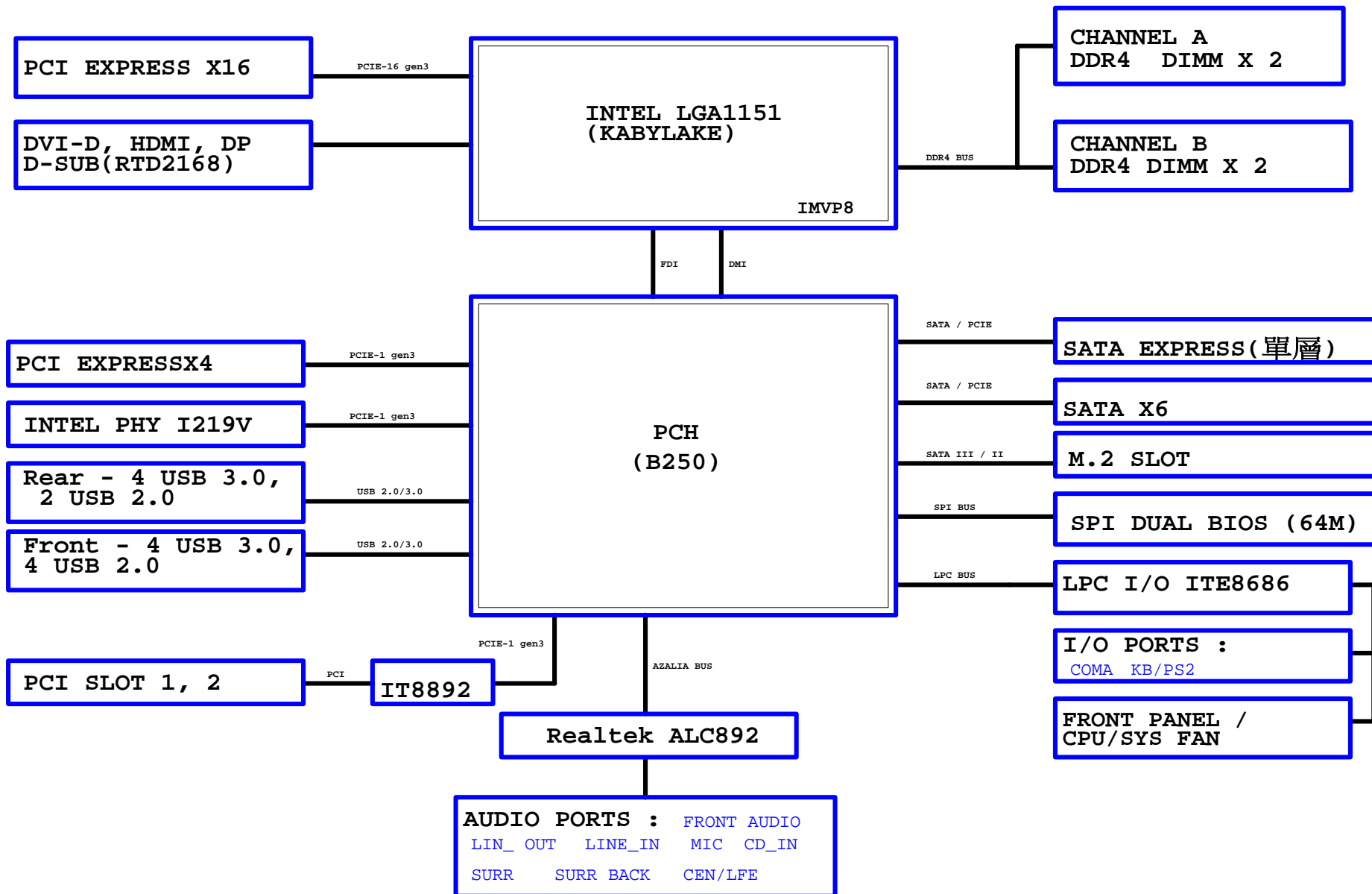
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Size	Document Number	GA-B250M-D3H	
Custom			Rev 1.0
Date:	Monday, December 12, 2016	Sheet 1 of 56	

## Circuit or PCB layout change

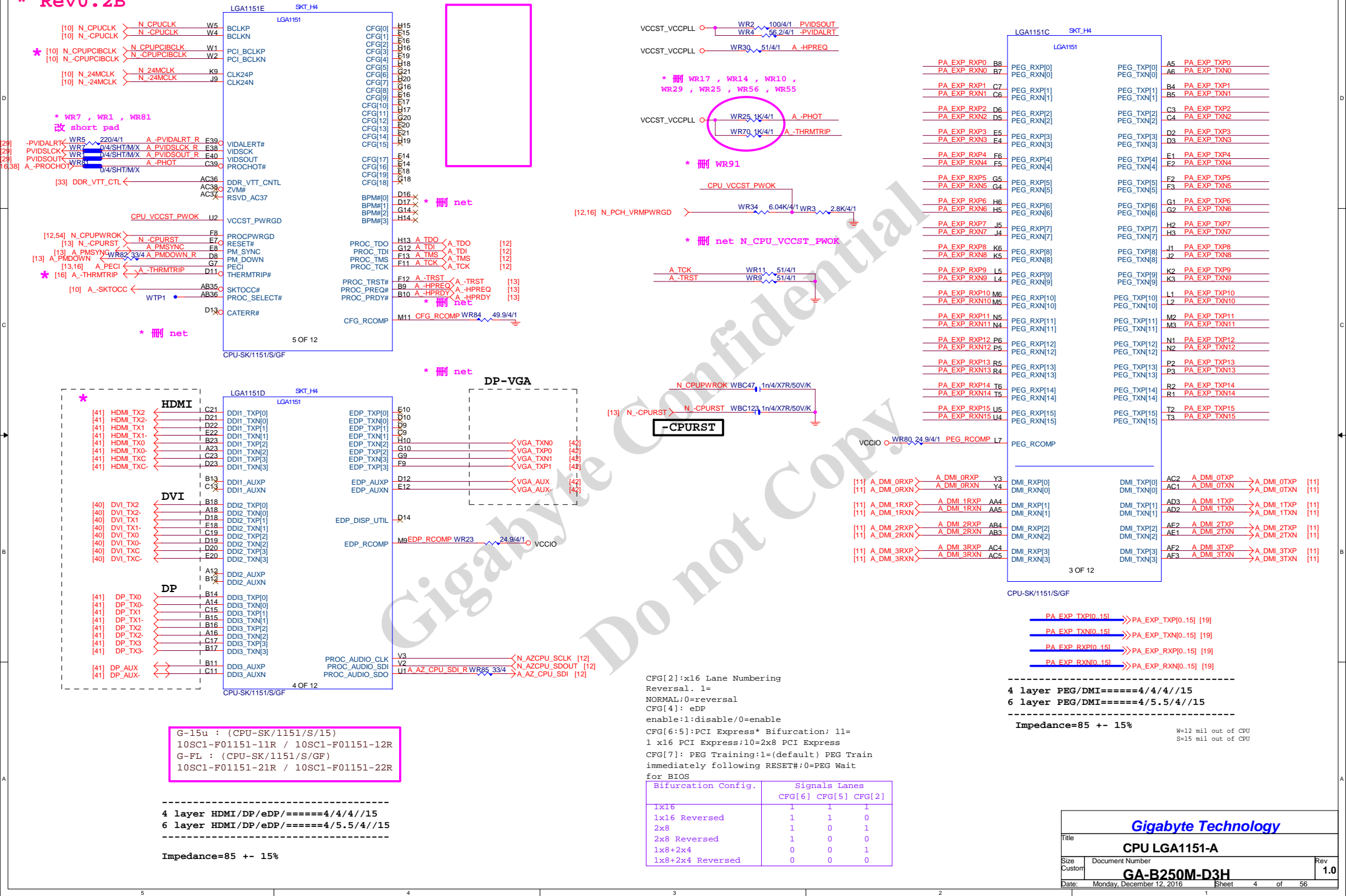
## 2016/10/24

			
Title			
BOM & PCB MODIFY HISTORY			
Size	Document Number		Rev
Custom	GA-B250M-D3H		1.0
Date:	Monday, December 12, 2016	Sheet	2 of 56

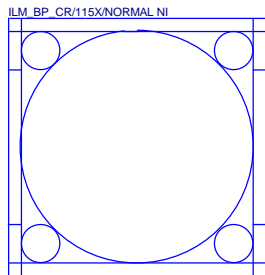
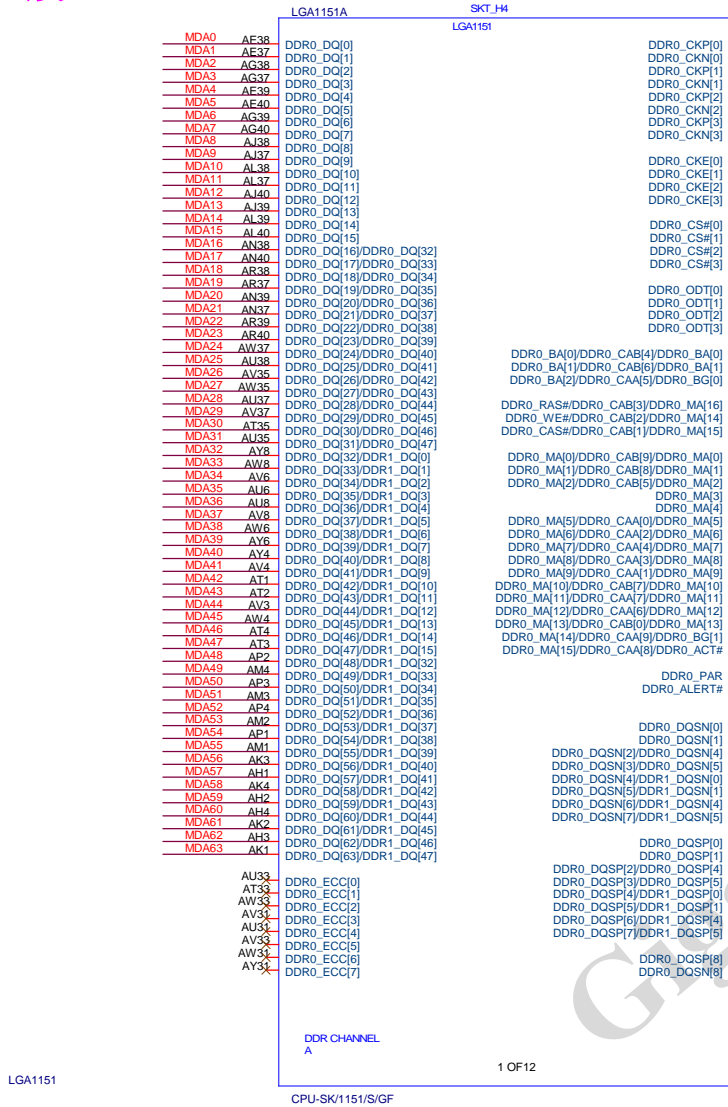
# BLOCK DIAGRAM



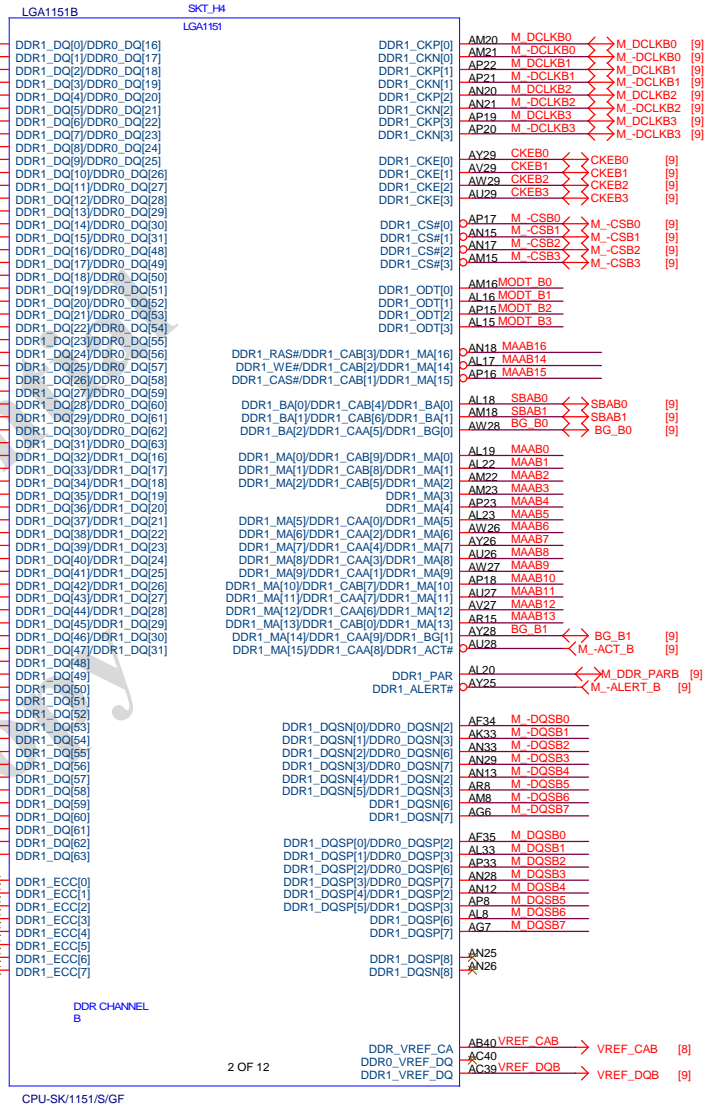
\* Rev0.2B



# \* 改DDR4 net



Need check the new CPU MB



[8] MODT\_A[0..3] <=> MODT\_A10..31

[9] MODT\_B[0..3] <=> MODT\_B10..31

[8] MDA[0..63] <=> MDA10..631

[9] MDB[0..63] <=> MDB10..631

[8] M\_DQSA[0..7] <=> M\_DQSA10..71

[8] M\_-DQSA[0..7] <=> M\_-DQSA10..71

[8] MAAA[0..16] <=> MAAA10..161

[9] MAAB[0..16] <=> MAAB10..161

[9] M\_DQSB[0..7] <=> M\_DQSB10..71

[9] M\_-DQSB[0..7] <=> M\_-DQSB10..71

**Gigabyte Technology**

Title: **CPU LGA1151-B**

Size: Custom

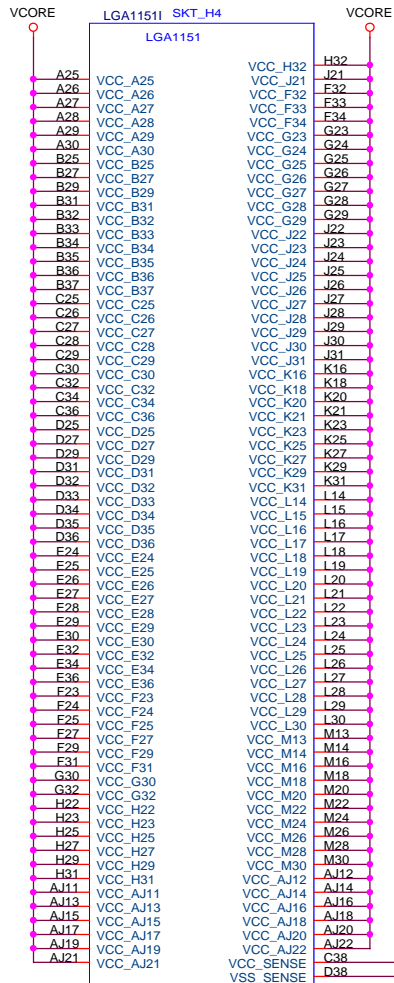
Document Number: **GA-B250M-D3H**

Date: Monday, December 12, 2016

Rev: **1.0**

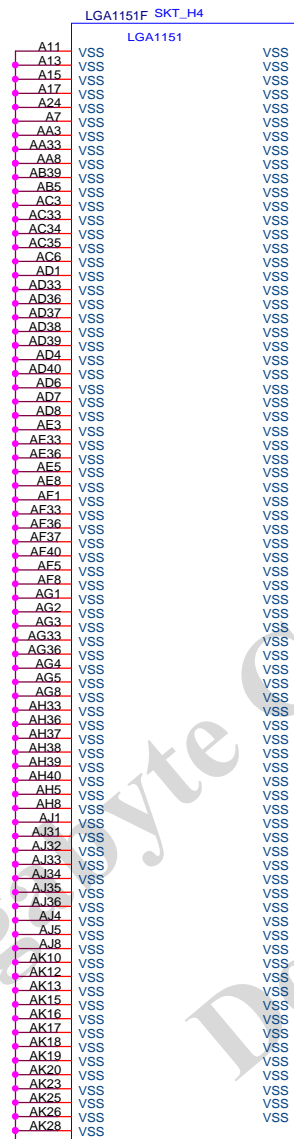
Sheet 5 of 56



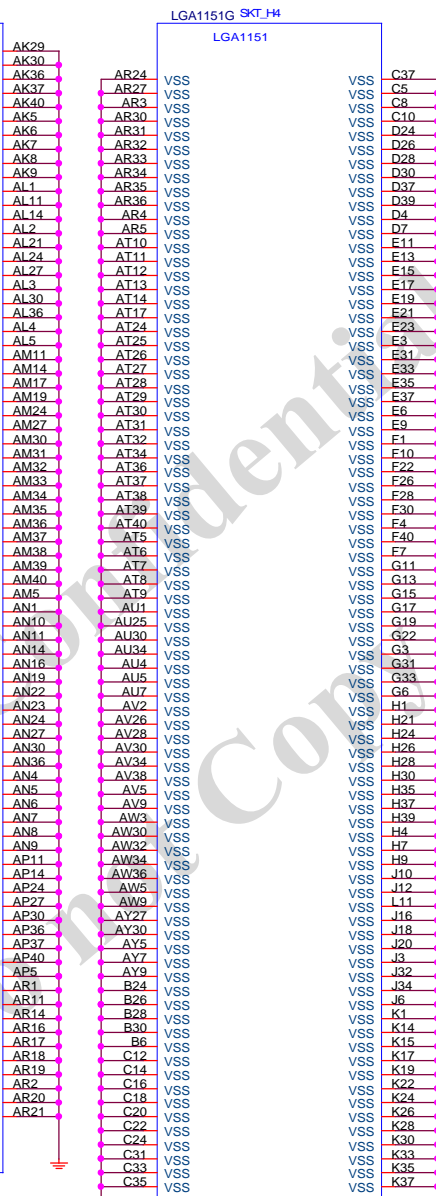


CPU-SK/1151/S/GF

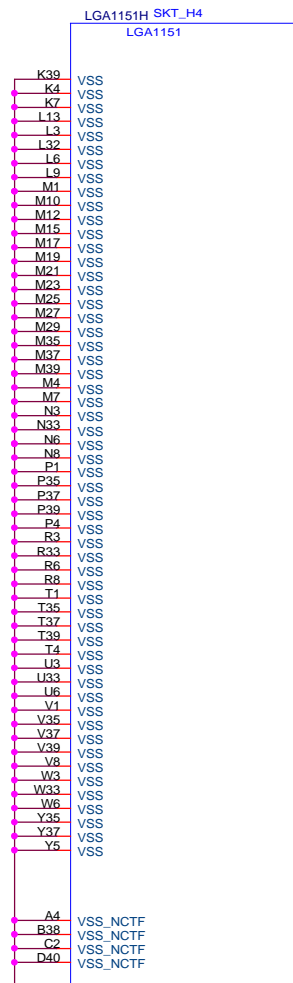
\* 刪 Vcore 電容



CPU-SK/1151/S/GF



CPU-SK/1151/S/GF

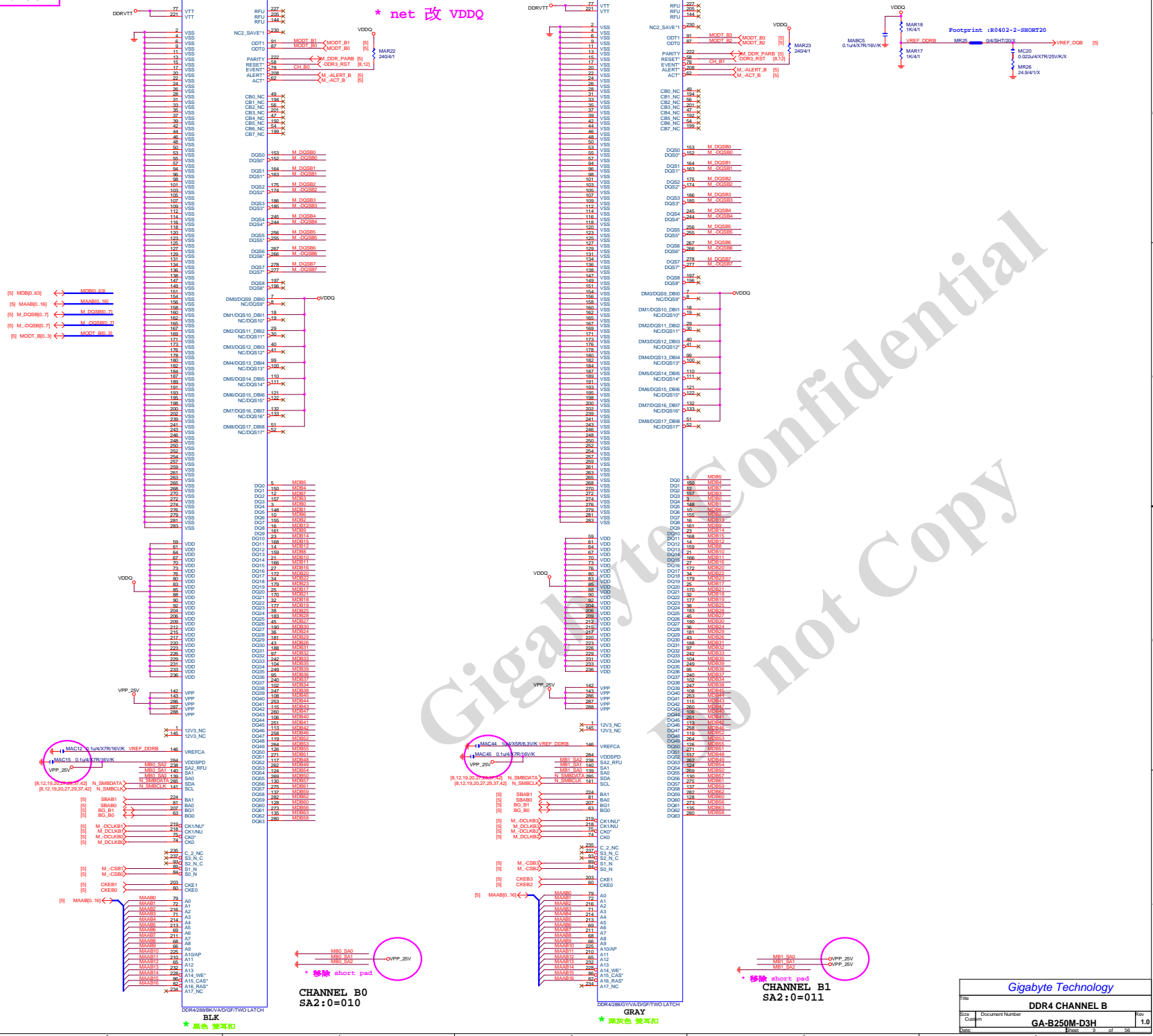


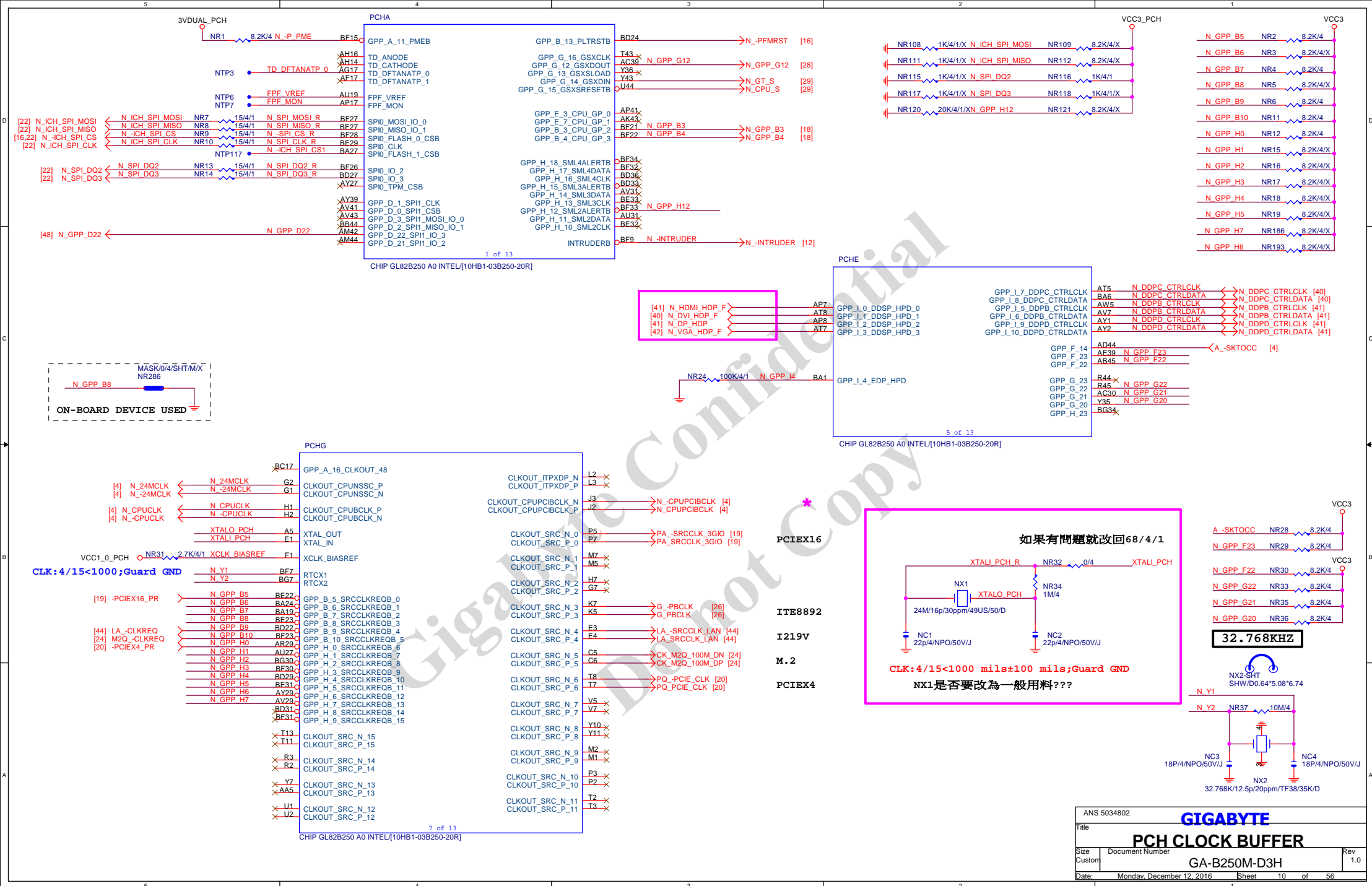
CPU-SK/1151/S/GF

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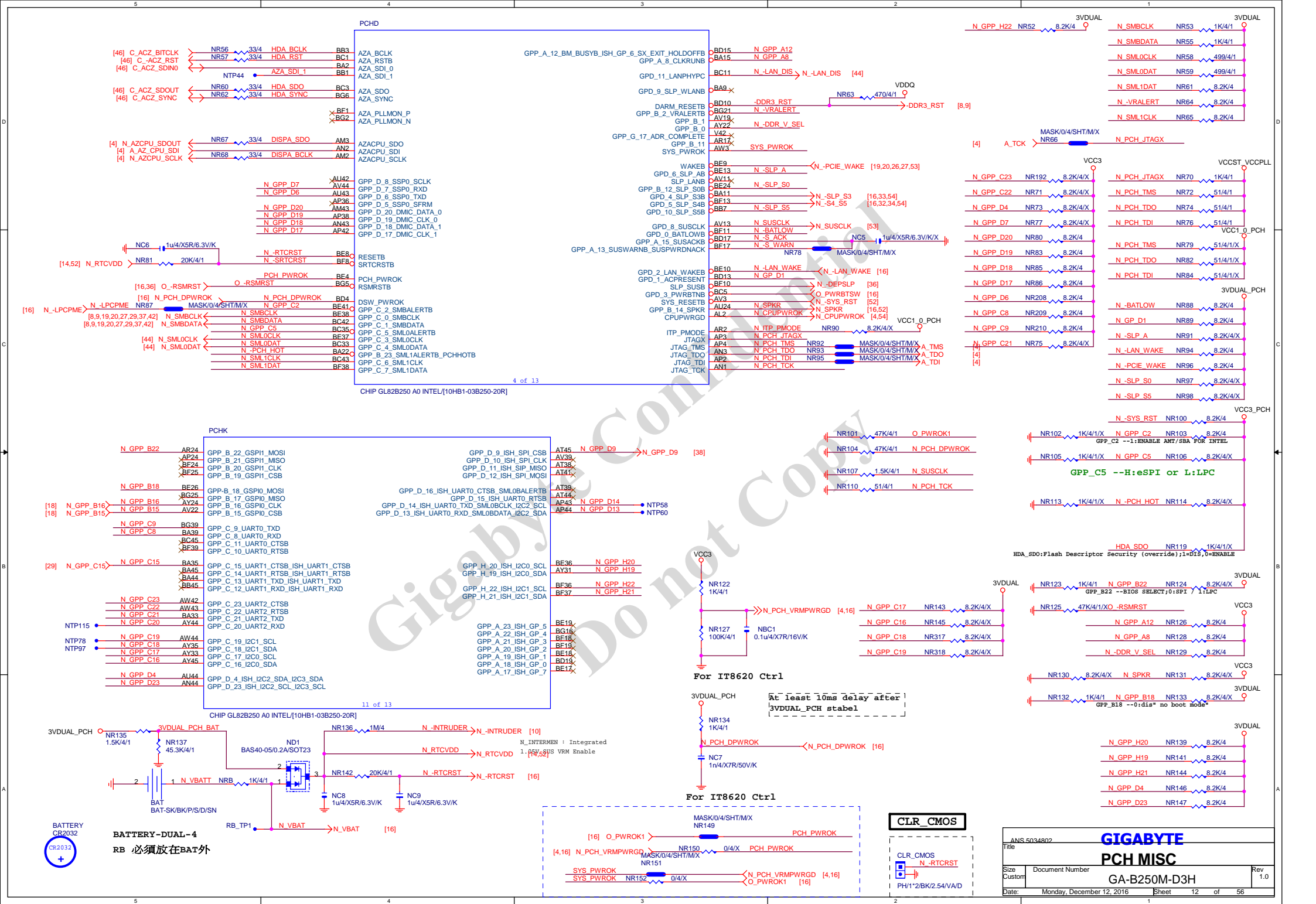
Title			CPU LGA1151-C
Size	Document Number	Rev	1.0
Custom	GA-B250M-D3H		
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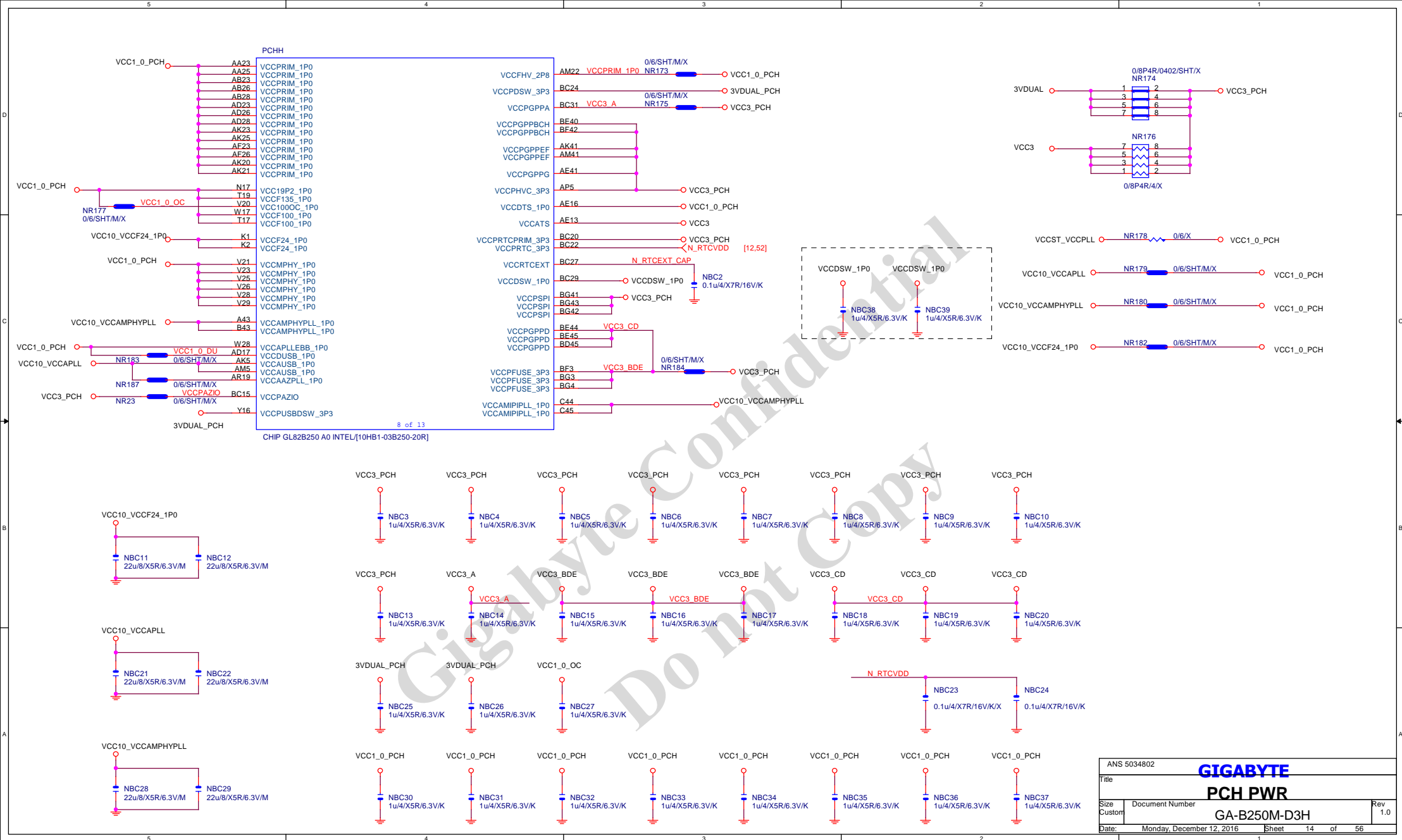












A25	VSS	A42	VSS
A30	VSS	D45	VSS
P22	VSS	BG44	VSS
AV38	VSS	BE44	VSS
AV45	VSS	BF45	VSS
AV8	VSS	BF2	VSS
AY11	VSS	W29	VSS
AY19	VSS	A35	VSS
AT37	VSS	A40	VSS
AY4	VSS	AA1	VSS
AY42	VSS	AA17	VSS
AY8	VSS	AA18	VSS
B25	VSS	AA20	VSS
B3	VSS	AA21	VSS
B30	VSS	AA26	VSS
B35	VSS	AA28	VSS
B4	VSS	AA29	VSS
B41	VSS	AB17	VSS
BA13	VSS	AC32	VSS
BA17	VSS	AE4	VSS
BA37	VSS	AE8	VSS
BA29	VSS	AF18	VSS
BA31	VSS	AF20	VSS
BA37	VSS	AF21	VSS
BA4	VSS	AF25	VSS
BA42	VSS	AF28	VSS
BA40	VSS	AF29	VSS
BC38	VSS	AF4	VSS
BC40	VSS	AF42	VSS
BC9	VSS	AG18	VSS
BD11	VSS	AG20	VSS
BD16	VSS	AG21	VSS
BD2	VSS	AG23	VSS
BD21	VSS	AG25	VSS
BD25	VSS	AG26	VSS
F2	VSS	AG28	VSS
F31	VSS	AG28	VSS
E6	VSS	AH11	VSS
E8	VSS	AH13	VSS
F39	VSS	AH30	VSS
F43	VSS	AH32	VSS
G4	VSS	AH33	VSS
G40	VSS	AH38	VSS
G42	VSS	AJ1	VSS
F6	VSS	AJ17	VSS
G9	VSS	AJ18	VSS
H11	VSS	AJ20	VSS
H13	VSS	AJ21	VSS
H17	VSS	AJ23	VSS
H19	VSS	AJ26	VSS
H22	VSS	AJ26	VSS
H24	VSS	AJ28	VSS
H27	VSS	AJ29	VSS
H29	VSS	AJ45	VSS
H33	VSS	AK10	VSS
H35	VSS	AK14	VSS
H38	VSS	AK16	VSS
H4	VSS	AK17	VSS
H42	VSS	AK18	VSS
H9	VSS	AK26	VSS
J4	VSS	AK28	VSS
M36	VSS	AM14	VSS
M38	VSS	AN14	VSS
M4	VSS	AP19	VSS
M8	VSS	AR22	VSS
M9	VSS	AR27	VSS
N13	VSS	AU29	VSS
N15	VSS	AU33	VSS
N19	VSS	AV1	VSS
N22	VSS	AV10	VSS
N24	VSS	AV15	VSS
N31	VSS	AV24	VSS
N42	VSS	AV27	VSS
P10	VSS	AV33	VSS
P12	VSS		
AV35	VSS		

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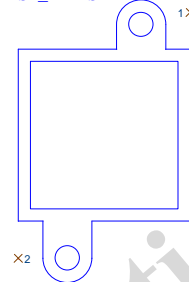
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BD34	VSS[70]	AB18	VSS[1]
BD39	VSS[71]	AB20	VSS[2]
BD7	VSS[72]	AB21	VSS[3]
BE2	VSS[73]	AB25	VSS[4]
BF43	VSS[74]	AB29	VSS[5]
BF5	VSS[75]	AB4	VSS[6]
BG18	VSS[76]	AB42	VSS[7]
BG23	VSS[77]	AC10	VSS[8]
BG28	VSS[78]	AC16	VSS[9]
BG32	VSS[79]	AC14	VSS[10]
BG37	VSS[80]	AC38	VSS[11]
BG40	VSS[81]	AC4	VSS[12]
BG9	VSS[83]	AC5	VSS[13]
C1	VSS[84]	AC7	VSS[14]
A12	VSS[85]	AC8	VSS[15]
C2	VSS[86]	AD1	VSS[16]
C37	VSS[87]	AD18	VSS[17]
A6	VSS[88]	AD20	VSS[18]
C9	VSS[89]	AD21	VSS[19]
D1	VSS[90]	AD25	VSS[20]
D10	VSS[91]	AD29	VSS[21]
D12	VSS[92]	AD45	VSS[22]
D15	VSS[93]	AE11	VSS[23]
D16	VSS[94]	AE14	VSS[24]
B12	VSS[95]	AE32	VSS[25]
D19	VSS[96]	AE33	VSS[26]
D21	VSS[97]	AK29	VSS[27]
D24	VSS[98]	AK30	VSS[28]
D25	VSS[99]	AK32	VSS[29]
D29	VSS[100]	AK39	VSS[30]
AG20	VSS[101]	AL4	VSS[31]
D33	VSS[102]	AL42	VSS[32]
D35	VSS[103]	AM10	VSS[33]
D36	VSS[104]	AM11	VSS[34]
D39	VSS[105]	AM13	VSS[35]
D44	VSS[106]	AM17	VSS[36]
D7	VSS[107]	AM19	VSS[37]
P13	VSS[108]	AM24	VSS[38]
P15	VSS[109]	AM27	VSS[39]
P17	VSS[110]	AM29	VSS[40]
P19	VSS[111]	AM32	VSS[41]
P31	VSS[112]	AM33	VSS[42]
P33	VSS[113]	AM4	VSS[43]
P35	VSS[114]	AN45	VSS[44]
AJ17	VSS[115]	AP10	VSS[45]
P4	VSS[116]	AP11	VSS[46]
P42	VSS[117]	AP13	VSS[47]
P8	VSS[118]	AP15	VSS[48]
R1	VSS[119]	AP22	VSS[49]
R32	VSS[120]	AP27	VSS[50]
T10	VSS[121]	AP31	VSS[51]
T14	VSS[122]	AP33	VSS[52]
T22	VSS[123]	AP34	VSS[53]
T29	VSS[124]	AP39	VSS[54]
AJ45	VSS[125]	T4	VSS[55]
T36	VSS[126]	W26	VSS[56]
T38	VSS[127]	V16	VSS[57]
Y38	VSS[128]	V17	VSS[58]
Y4	VSS[129]	V18	VSS[59]
Y8	VSS[130]	V30	VSS[60]
T42	VSS[131]	V32	VSS[61]
T5	VSS[132]	V33	VSS[62]
U4	VSS[133]	V38	VSS[63]
AM14	VSS[134]	V4	VSS[64]
AN14	VSS[135]	V8	VSS[65]
AP19	VSS[136]	W18	VSS[66]
AR22	VSS[137]	W20	VSS[67]
AR27	VSS[138]	W21	VSS[68]
AU29	VSS[139]	W23	VSS[69]
AU33	VSS[140]	W25	VSS[70]
AV1	VSS[141]	A44	VSS[71]
AV10	VSS[142]	BE1	VSS[72]
AV15	VSS[143]	BD1	VSS[73]
AV24	VSS[144]	B1	VSS[74]
AV27	VSS[145]	A2	VSS[75]
AV33	VSS[146]	B2	VSS[76]
	VSS[147]	A3	VSS[77]
	VSS[148]	A4	VSS[78]
	VSS[149]	B44	VSS[79]
	VSS[150]	B45	VSS[80]
BG14	VSS_BG14		

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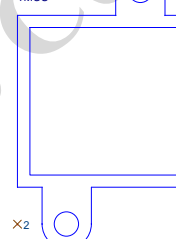
CHIP GL82B250 A0 INTEL[10HB1-03B250-20R]

SB\_HEATSIN



PCH\_HS  
PCH HS/BLACK/UD LOGO/KG/[12SP2-S04207-81R\_12SP2-S04207-82R\_12SP2-S04207-83R]

TMOS



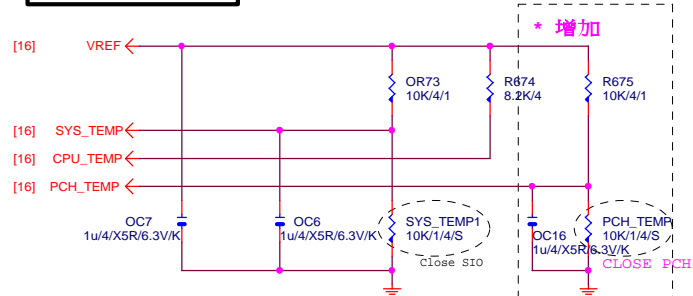
Footprint :  
MOSHSINK-Z1704-HD3

TMOS HS/BLACK/GBT LOGO/KG/[12SP2-S09425-91R\_12SP2-S09425-92R\_12SP2-S09425-93R]

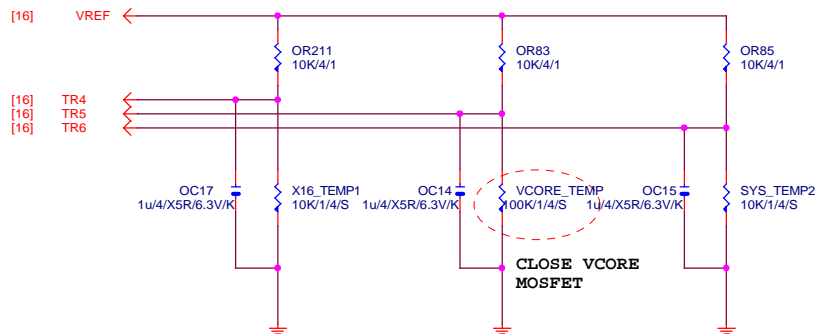
ANS 5034802			
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Size		<b>PCH GND</b>	
Custom		GA-B250M-D3H	
Date:		Monday, December 12, 2016	Sheet 15 of 56
Rev		1.0	

Title			
IT8686			
Size	Document Number		Rev
C	GA-B250M-D3H		1.0
Date:	Monday, December 12, 2016	Sheet	16 of 56

# TEMP H/W MONITOR

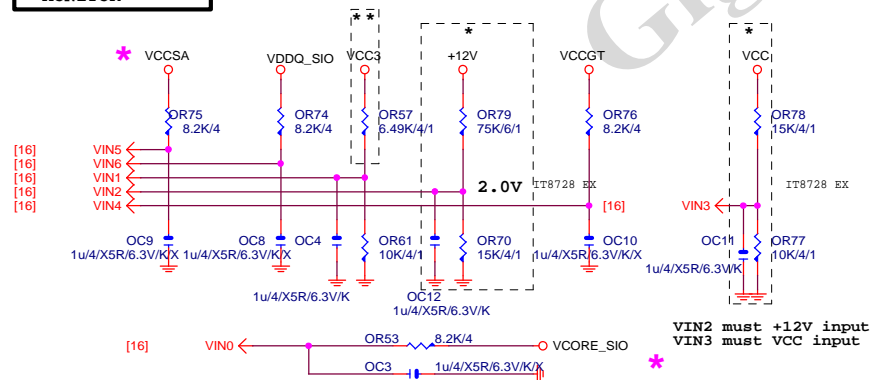


## 5個FAN時使用

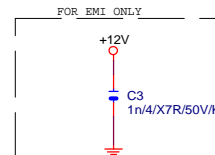
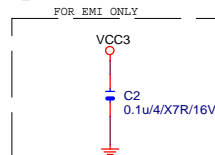


# VOLTAGE-- H/W MONITOR

\* IT8728 BX  
\*\* IT8728 CX



★Update 2015-04.24

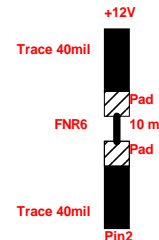
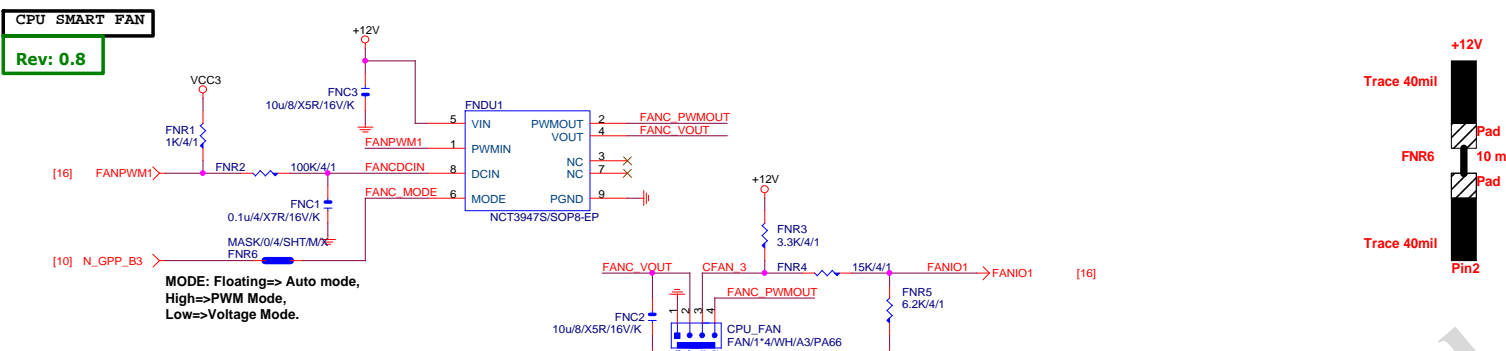


## Gigabyte Technology

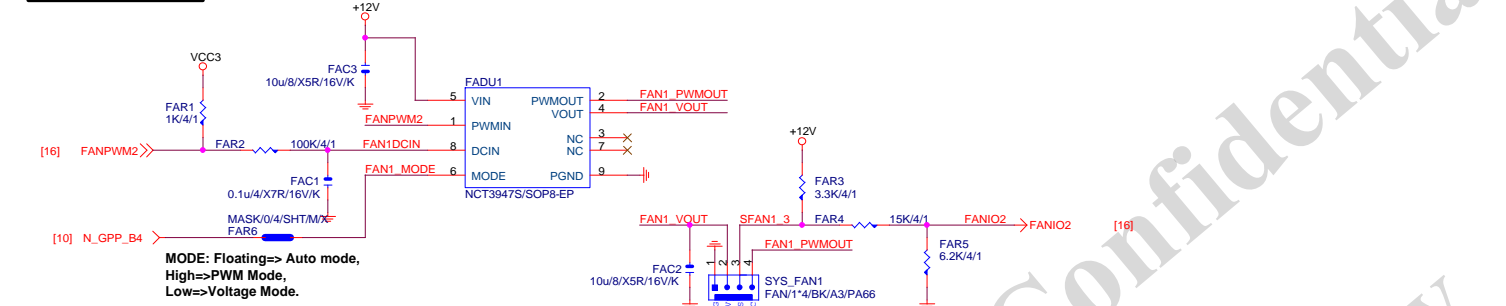
Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	GA-B250M-D3H	1.0	
Date:	Monday, December 12, 2016	Sheet	17 of 56

# CPU SMART FAN

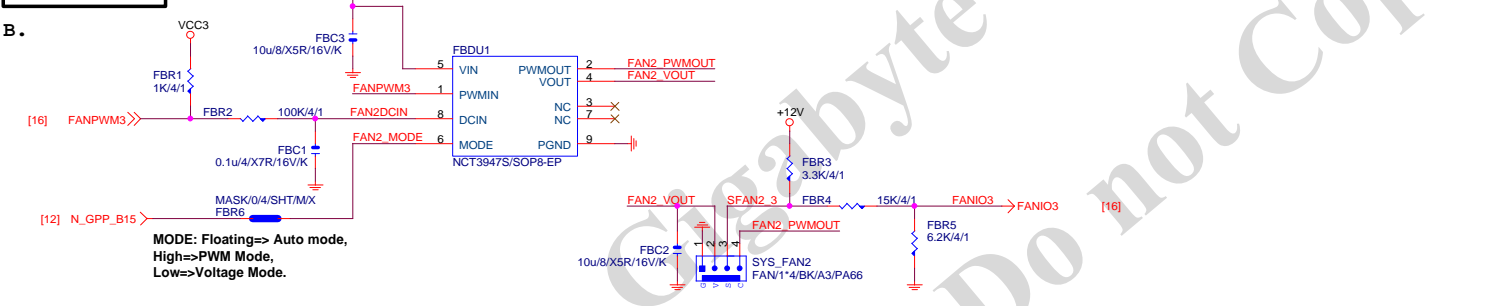
Rev: 0.8



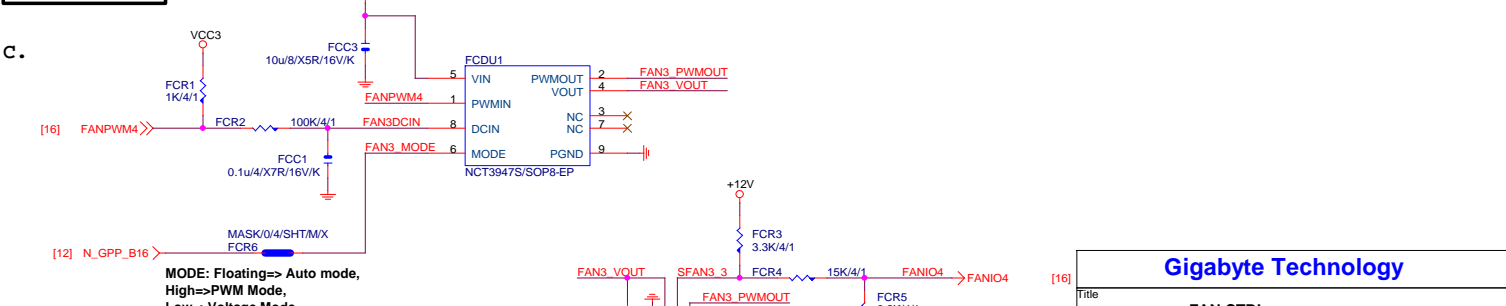
## A. SYSTEM FAN1



## SYSTEM FAN2

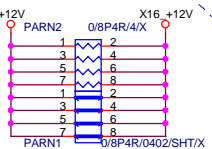


## SYSTEM FAN3



Gigabyte Technology		
Title	FAN CTRL	
Size	Document Number	Rev
Custom	GA-B250M-D3H	1.0
Date:	Monday, December 12, 2016	Sheet 18 of 56

+12V\_protect  
short-wire test



PA\_EXP\_RXP0\_15] >> PA\_EXP\_RXP0[0..15] [4]  
PA\_EXP\_RXN0\_15] >> PA\_EXP\_RXN0[0..15] [4]  
PA\_EXP\_TXP0\_15] >> PA\_EXP\_TXP0[0..15] [4]  
PA\_EXP\_TXN0\_15] >> PA\_EXP\_TXN0[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

PCIE16:16/5/5/5/16

PCI-E REV:1.1--&gt; 2.5GHZ

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

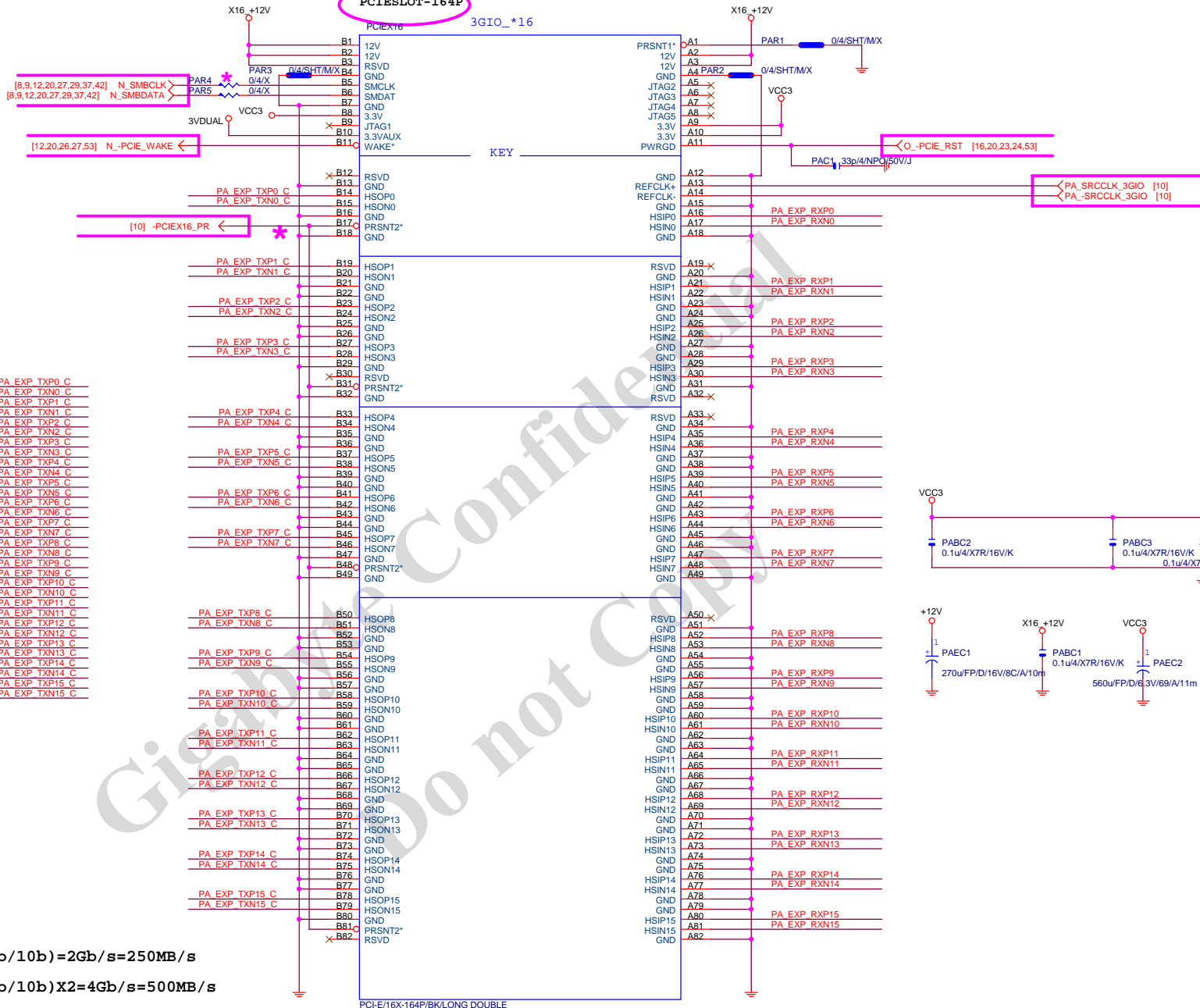
PCE-E X1(雙向) BANDWIDTH=2.5GHz\*(8b/10b)X2=4Gb/s=500MB/s

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

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

PCI-E REV:2.0--&gt; 5GHZ

PCIESLOT-164P

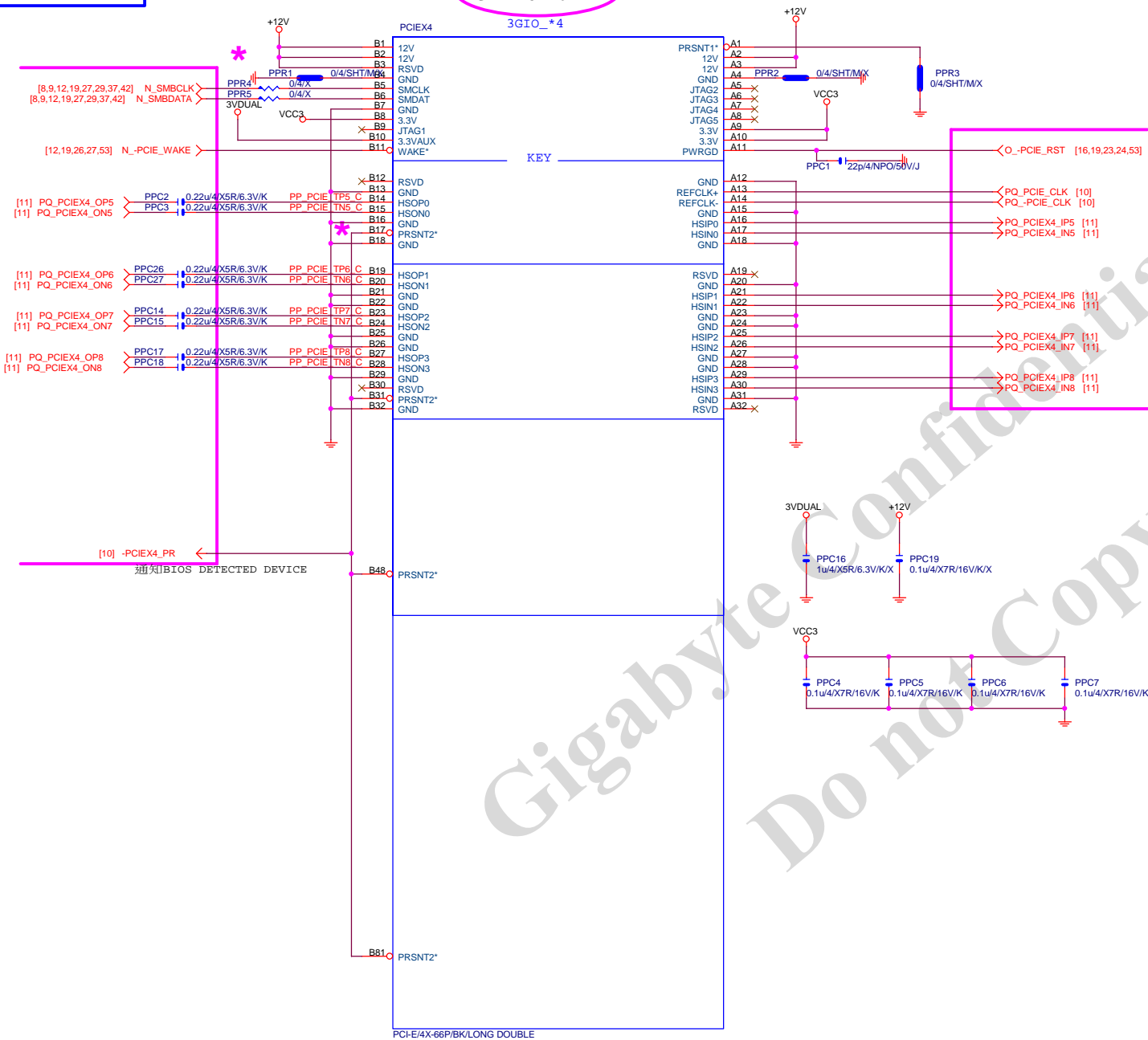


PCI-E/16X-164P/BK/LONG DOUBLE

黑色SLOT

Gigabyte Technology

Title			PCI EXPRESS * 16	
Size	Document Number	Rev		1.0
Custom	GA-B250M-D3H			
Date:	Monday, December 12, 2016	Sheet	19	of 56

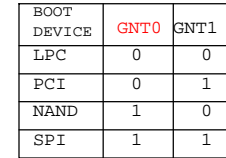


黑色

Gigabyte Technology

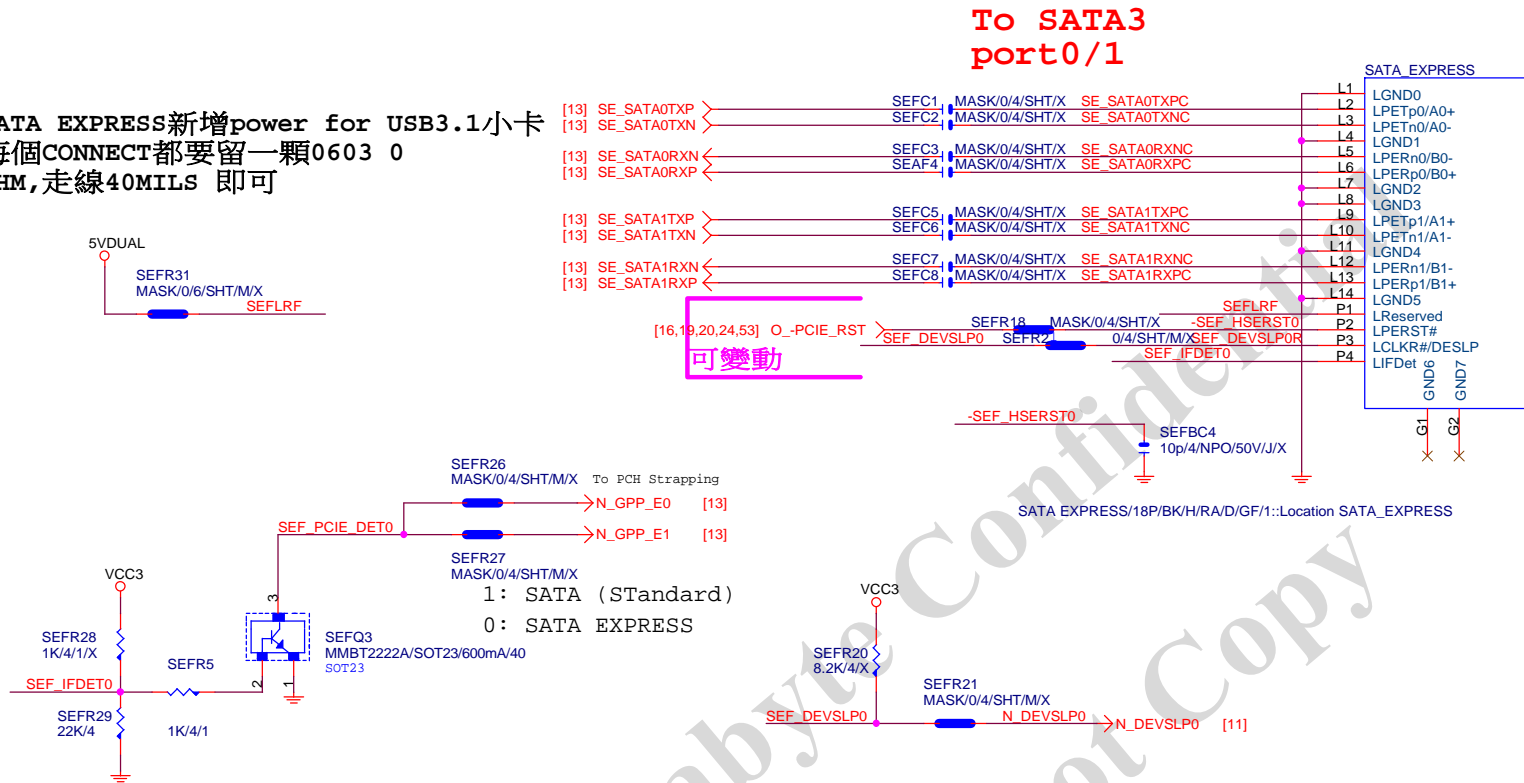
Title			PCIE_X4
Size			Custom
Date:			Monday, December 12, 2016
Sheet			20 of 56
Rev			1.0

## MOSI For DMI RX Termination Voltage



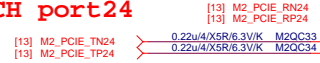
\* 試產先上，PVT 移除

SATA EXPRESS新增power for USB3.1小卡  
每個CONNECT都要留一顆0603 0  
OHM,走線40MILS 即可

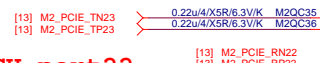


Rev 0.1

M.2 Lane4 from PCH port24



M.2 Lane3 from PCH port23



M.2 Lane2 from PCH port22

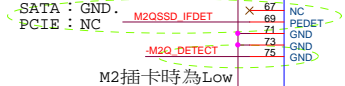
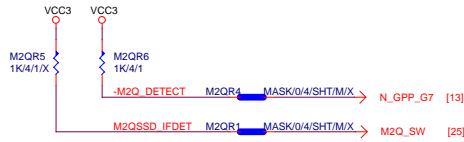


M.2 Lane2 from PCH port21



需與M2\_-CLKREQ對應

支援SATA and M.2 function



架高

M2/67/BK/RA/S/H8.5mm/M KEY

( 32KHz ) SUSCLK

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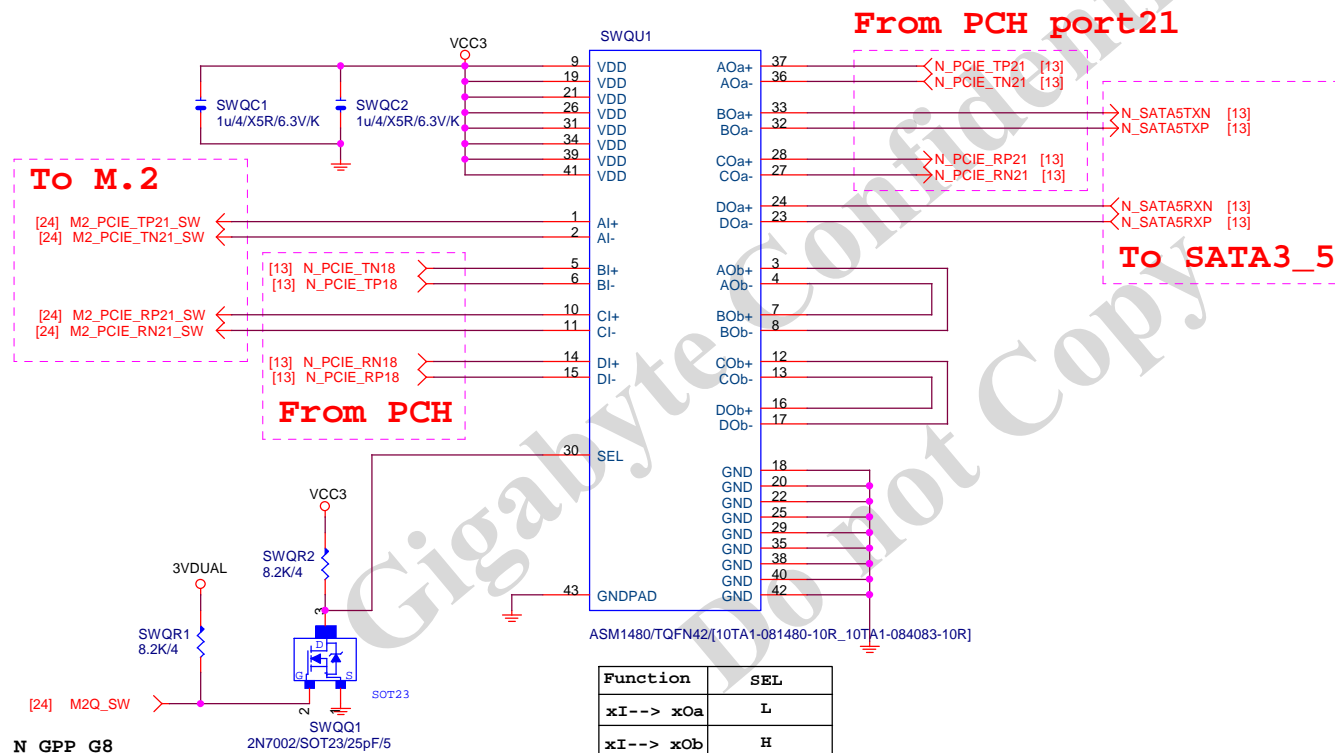
GND

GND

Rev 0.1

(Q)TYPE

舊的Switch,價格低



N\_GPP\_G8

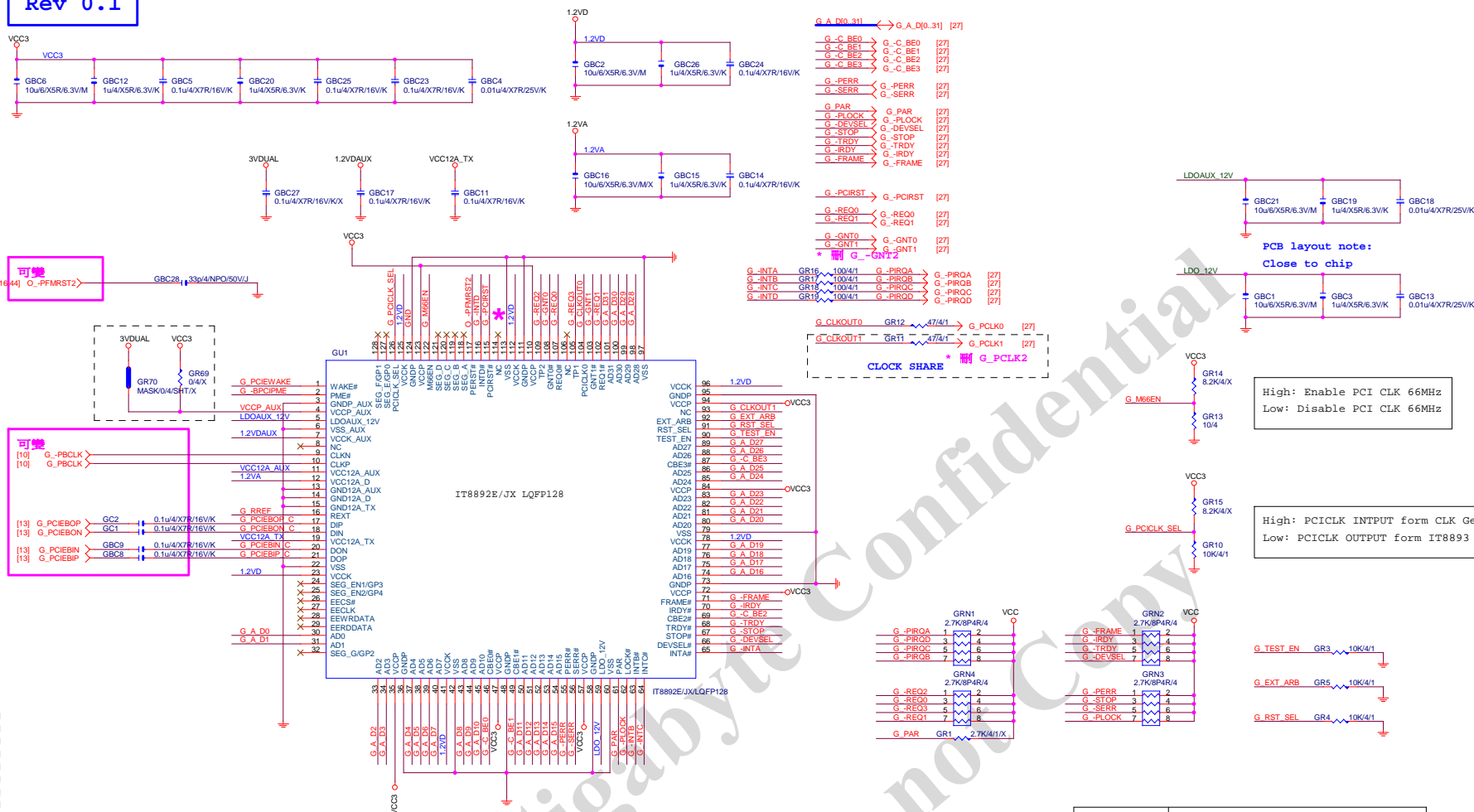
High : M2X4 + SATA 5 OK

Low : M2(SATA) + SATA 5 NA

Gigabyte Technology

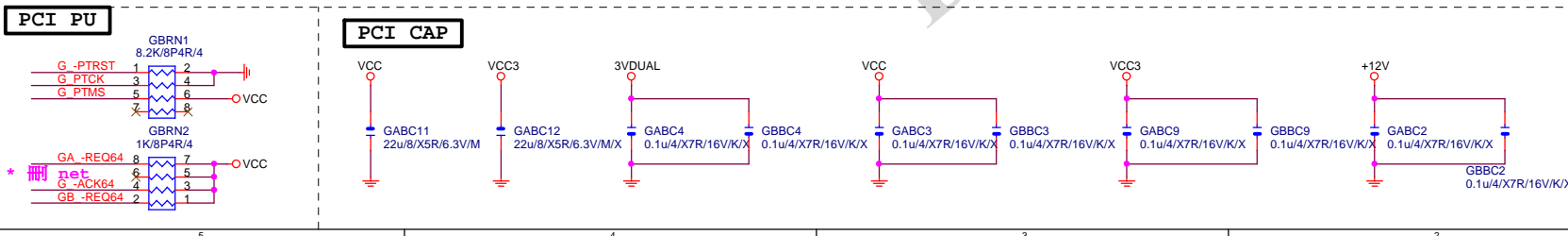
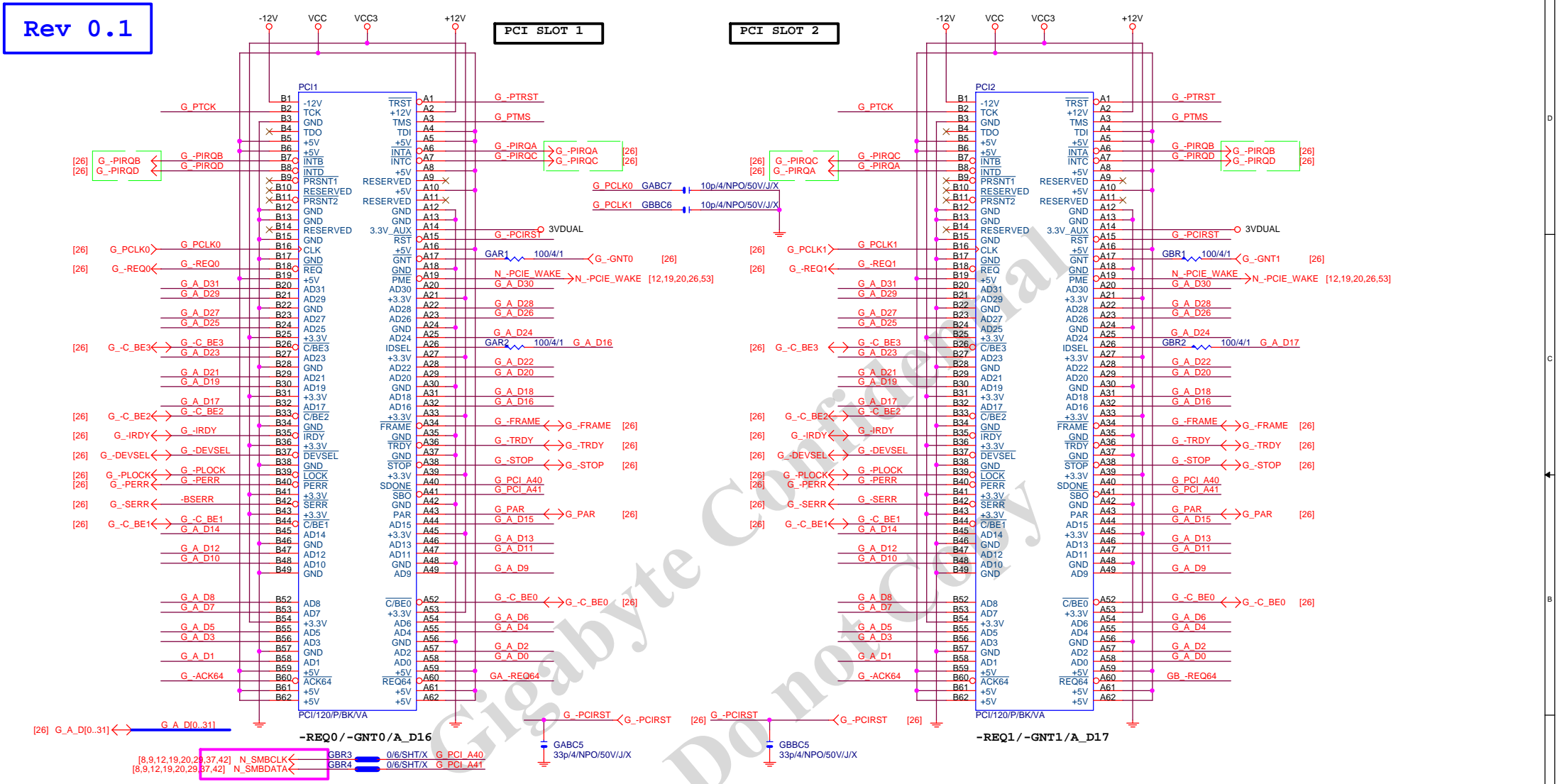
M.2X4\_S4~S5 SWITCH


Title		
Size	Document Number	Rev
Custom	GA-B250M-D3H	1.0
Date:	Monday, December 12, 2016	Sheet 25 of 56



	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

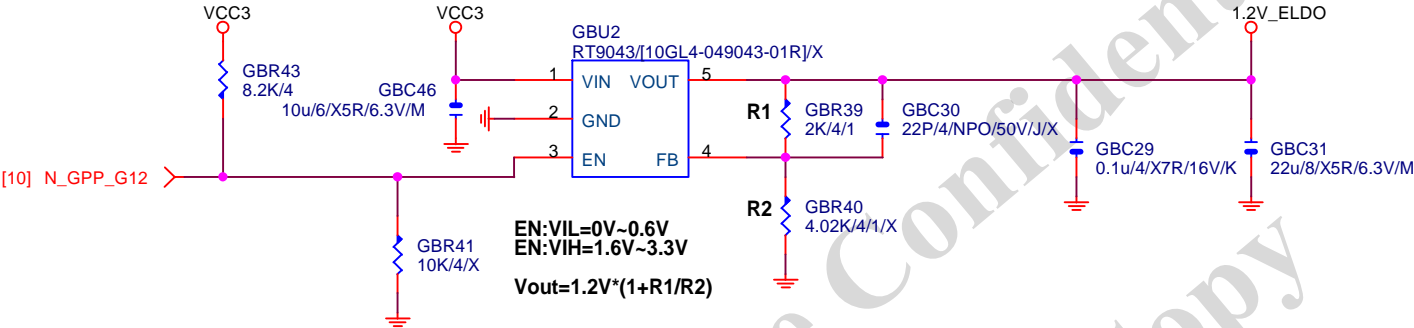
Rev 0.1



			
Title <b>PCI SLOT 1&amp;2</b>			
Size Custom	Document Number <b>GA-B250M-D3H</b>		Rev <b>1.0</b>
Date:	Monday, December 12, 2016	Sheet	27 of 56

Title			
<b>PCI SLOT 1&amp;2</b>			
Size	Document Number	Rev	
Custom	<b>GA-B250M-D3H</b>	<b>1.0</b>	
Date:	Monday, December 12, 2016	Sheet	27 of 56

Rev 0.1



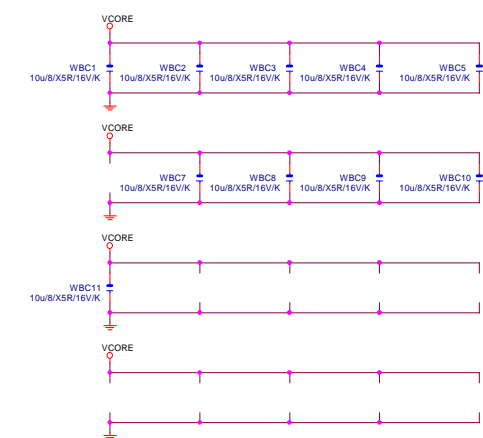
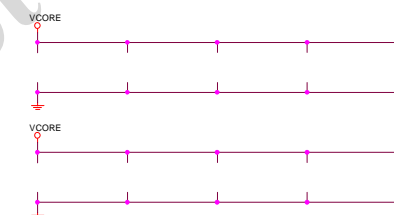
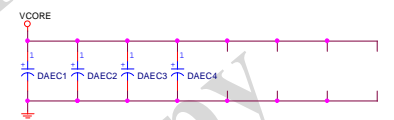
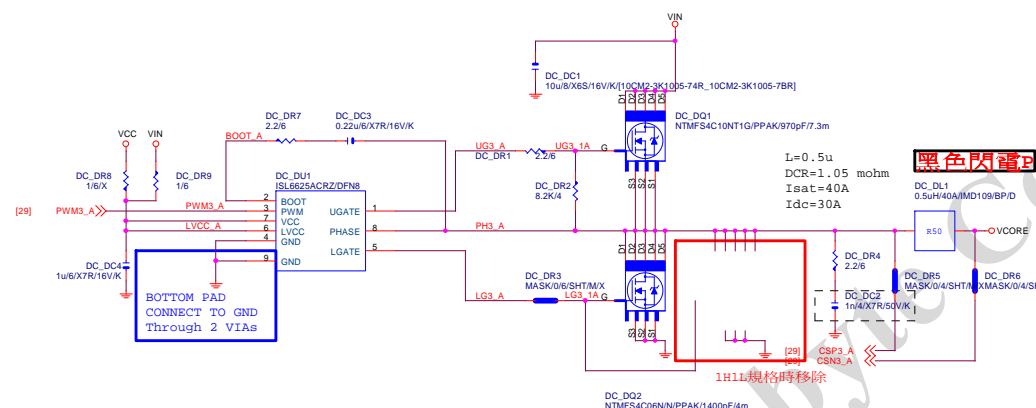
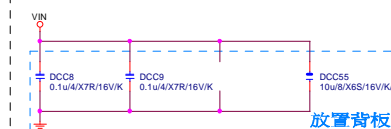
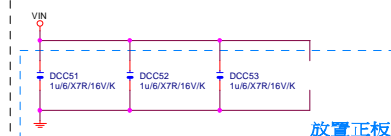
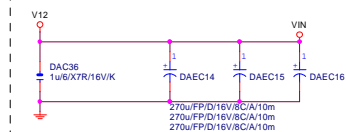
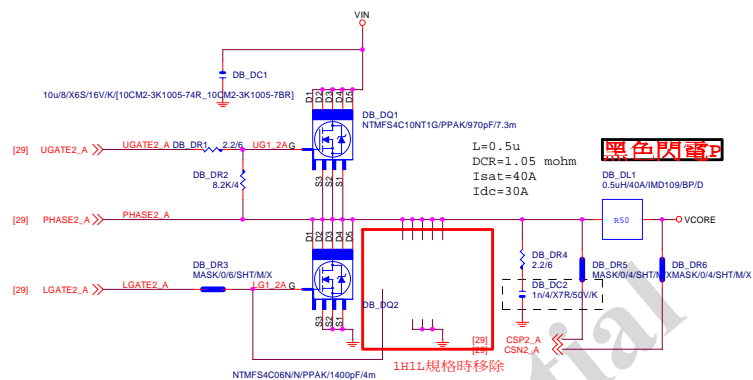
Gigabyte Technology

Title			
ASM1085 POWER			
Size	Document Number		Rev
Custom	GA-B250M-D3H		1.0
Date:	Monday, December 12, 2016	Sheet	28 of 56

[10] N\_CPU\_S  $\gg$   8.2K/4 DAR121 90T23

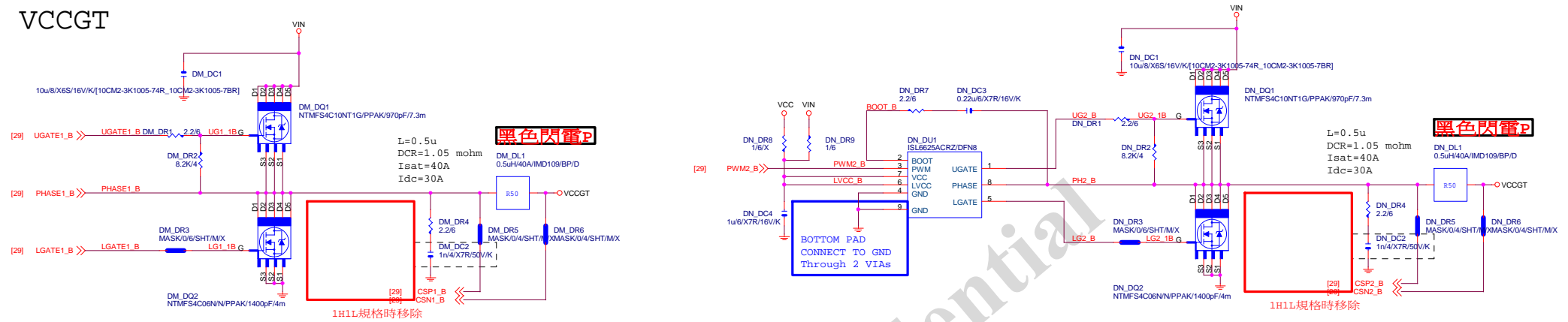
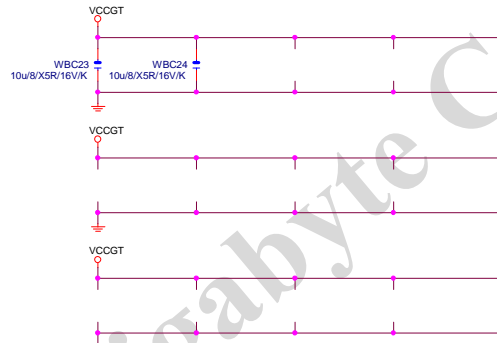
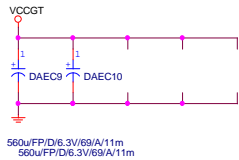
連接至PCH:GPP\_G15

VCORE

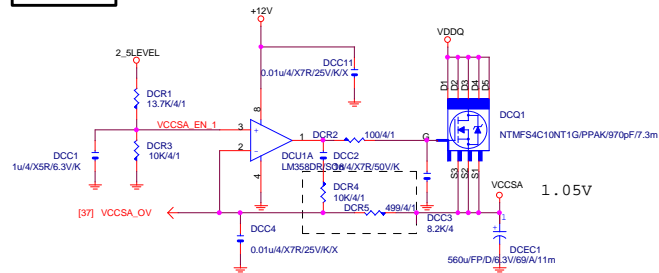
**GIGABYTE™**

Title			
ISL95868_MOS			
Size	Document Number	Rev	
Custom	GA-B250M-D3H	1.0	
Date:	Monday, December 12, 2016	Sheet	30 of 56

## VCCGT

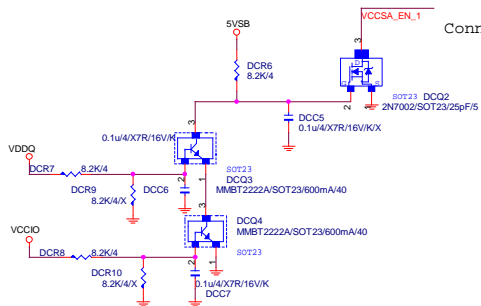
VCCGT CAP 560u\*2PCS  
10u\*2PCS

# VCCSA

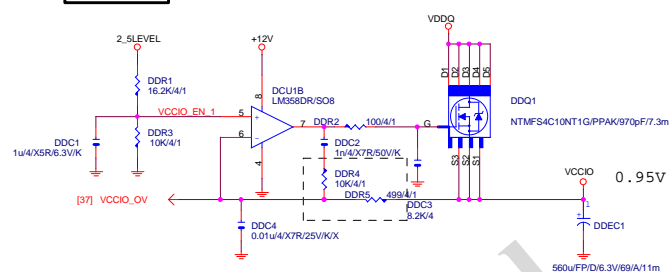


Connect to IT8793

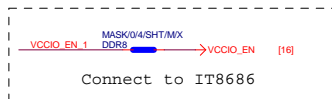
Connect to IT8686



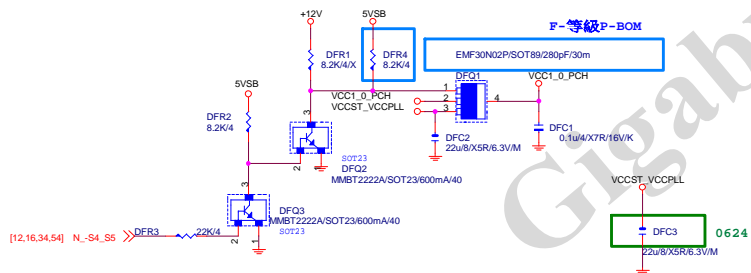
# VCCIO



Connect to IT8686



# VCCST\_VCCPLL



**GIGABYTE**

Title		VCCSA_VCCIO_no 44E
Size	Document Number	GA-B250M-D3H
Customer	Rev	1.0
Date	Monday, December 12, 2016	Sheet 32 of 56

REV:0.1

DDR4

CHOKES與CAP料號可變

DDR VIN CAP  
560u\*2PCS

SUPPORT DDR4 1.2V

25A MAX

L=1u  
DCR=2.5 mohm  
Isat=35A  
Idc=28A請放置CHOKES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

上件

MA\_DR38.MA\_DC15

VPP\_25V使用8120.8068A.RT8237時上件

PWR SEQ

CLOSE TO DDR POWER PLANE

For power sequence require

VPP\_25V使用8120時上件

MAU1上RT9045時上件(不可MASK)  
MA\_VTT\_REF

DDRVTT

DDRVTT CAP

[4] DDR\_VTT\_CTL MAR110  
[2,16,54] N\_SLP\_S3 MAR111

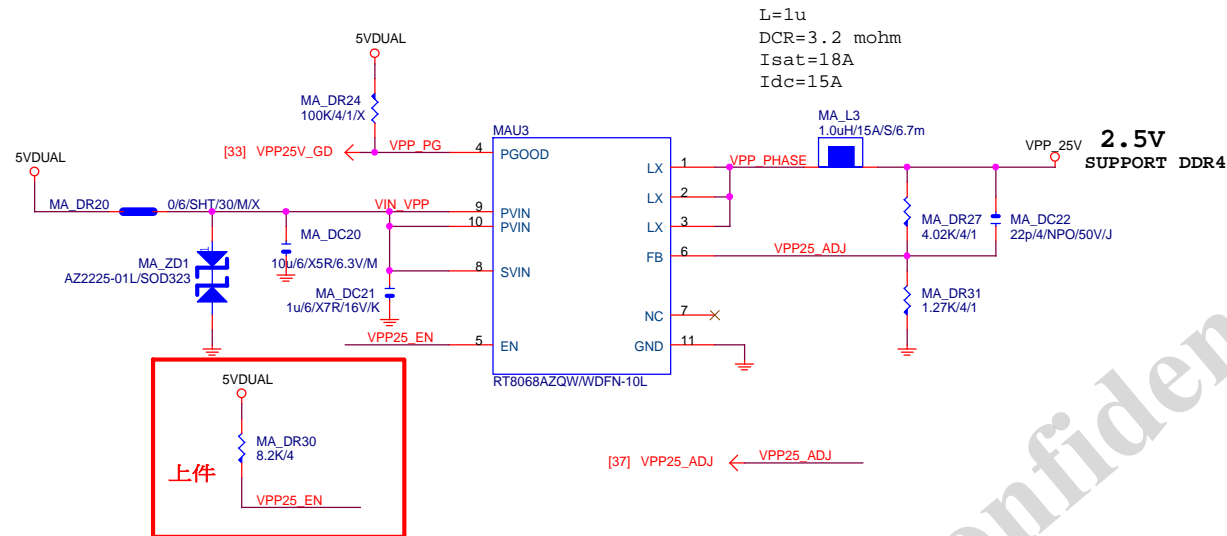
GIGABYTE™

RT8237_DDR4 POWER		
Size	Document Number	Rev
Custom	GA-B250M-D3H	1.0
Date:	Monday, December 12, 2016	Sheet 33 of 56

REV:0.1

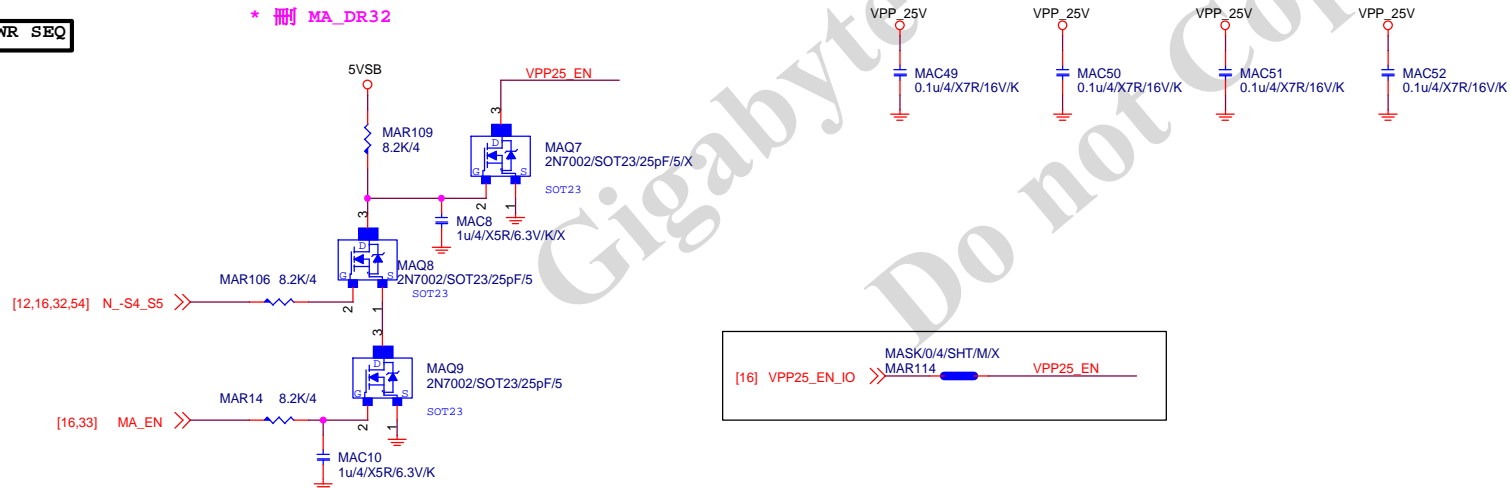
VPP\_25V

CHOKE與CAP料號可變



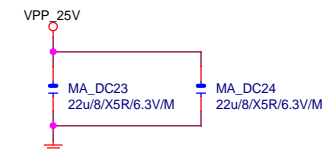
PWR\_SEQ

\* 刪 MA\_DR32



VPP CAP 22u\*1PCS

\* 大電容 x0

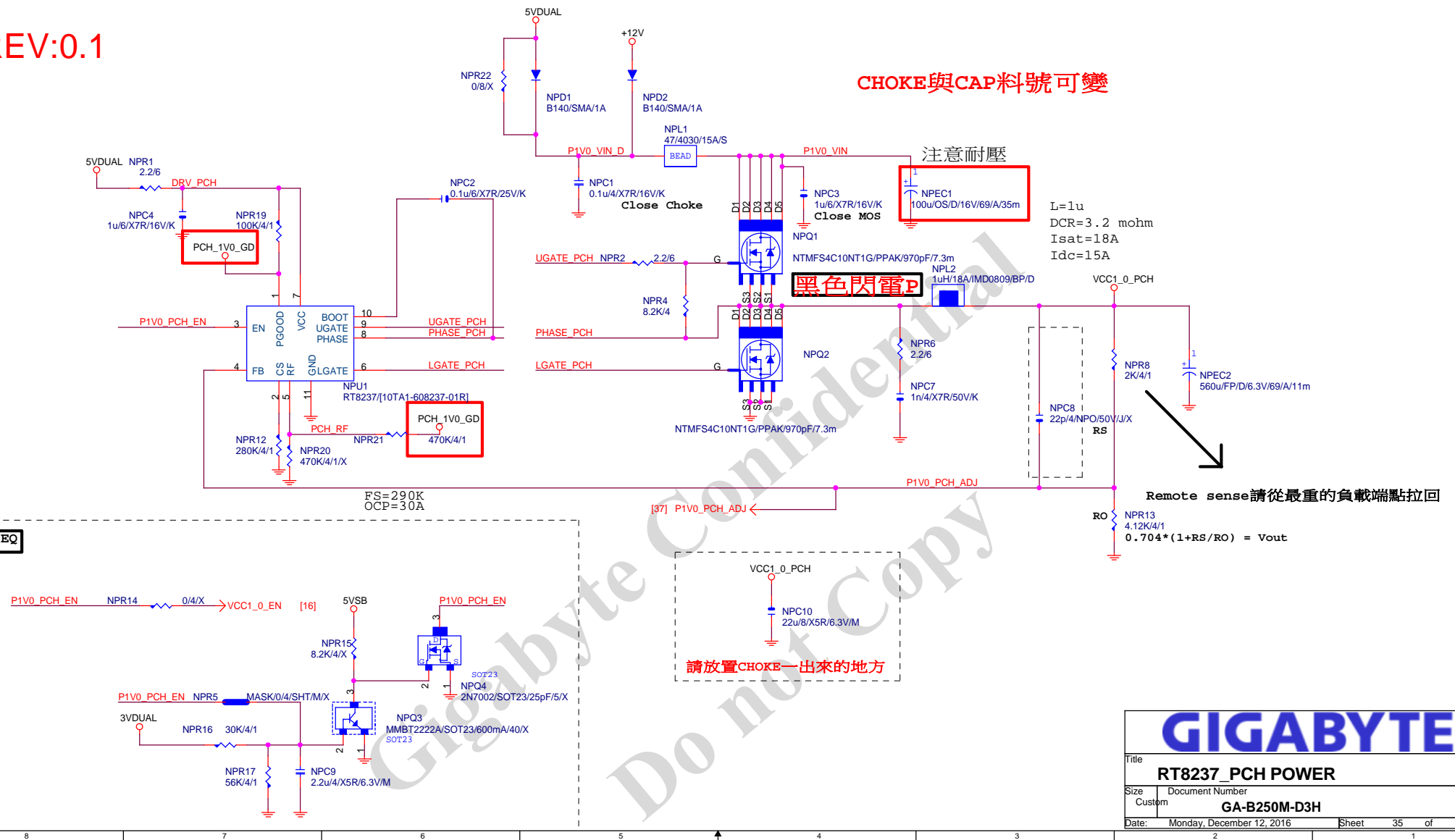


GIGABYTE™

Title RT8068A_VPP25 POWER		
Size Custom	Document Number GA-B250M-D3H	Rev 1.0
Date: Monday, December 12, 2016	Sheet 34	of 56

REV:0.1

CHOKE與CAP料號可變

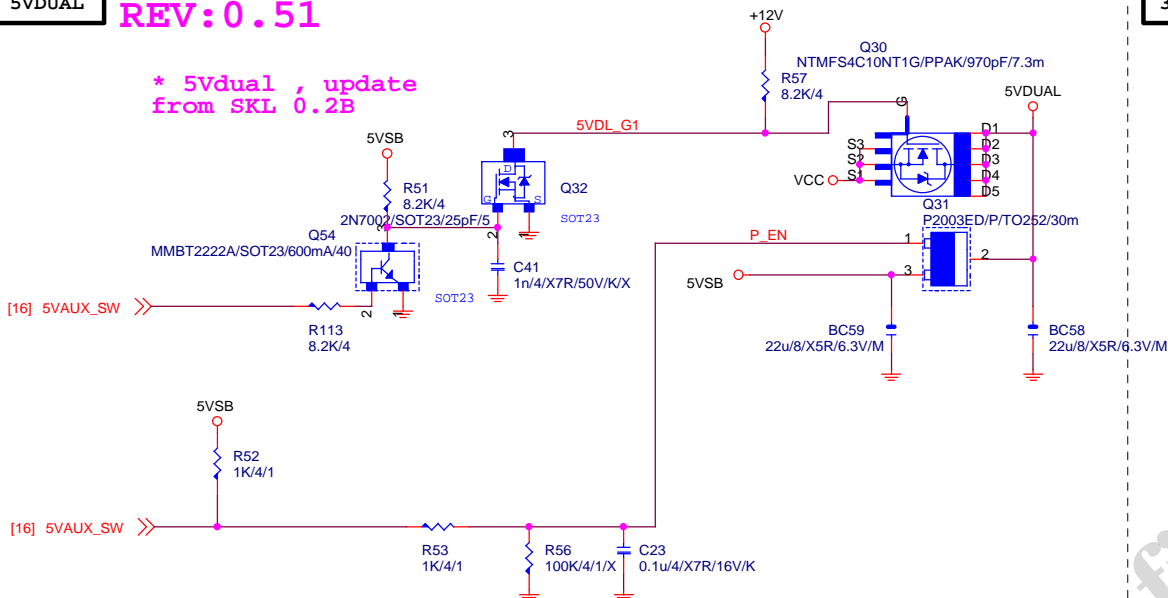


GIGABYTE™

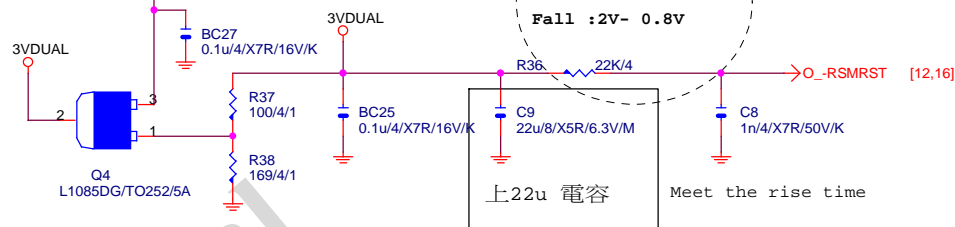
Title				
RT8237_PCH POWER				
Size	Document Number			Rev
Custom	GA-B250M-D3H			1.0
Date:	Monday, December 12, 2016	Sheet	35	of 56

## REV: 0.51

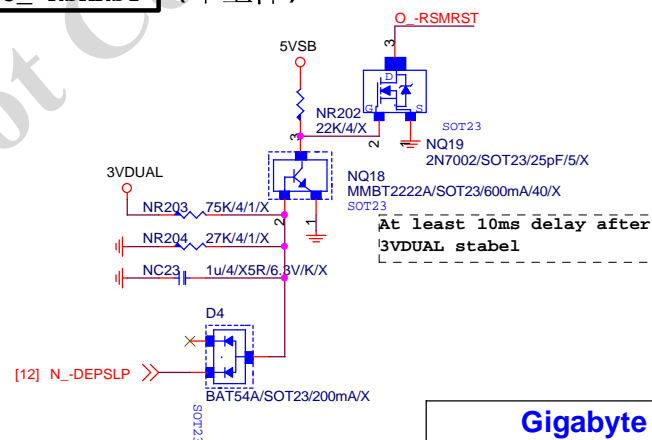
[16] 5VAUX\_SW >>



3VDUAL

[illegible]

**O\_-RSMRST** (不上件)

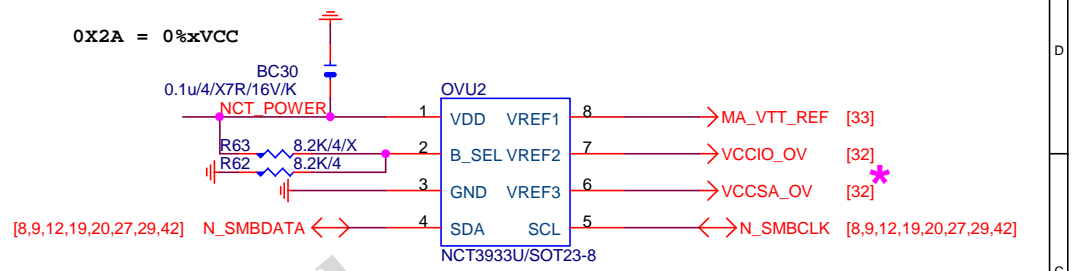
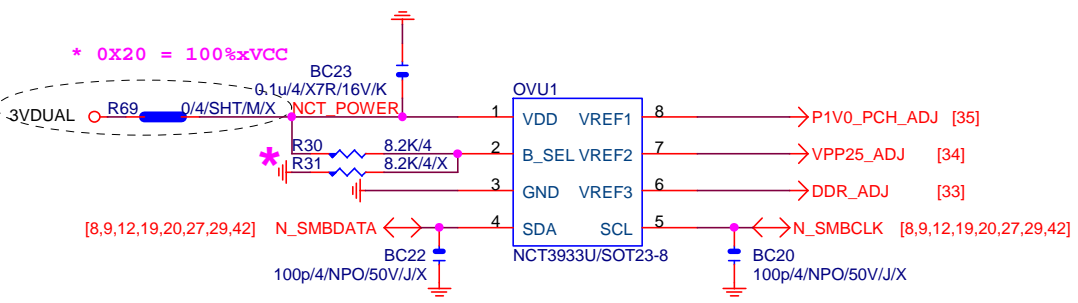


[12] N\_-DEP

## Gigabyte Technology

Title			
<b>DISCRETE POWER</b>			
Size	Document Number		Rev
Custom	<b>GA-B250M-D3H</b>		<b>1.0</b>
Date:	Monday, December 12, 2016	Sheet	36 of 56

OVER VOLTAGE



0X22 = 75%xVCC

\* 删除 OVU3

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

**Gigabyte Technology**

TitleCPU CORE VR-2

Size Custom

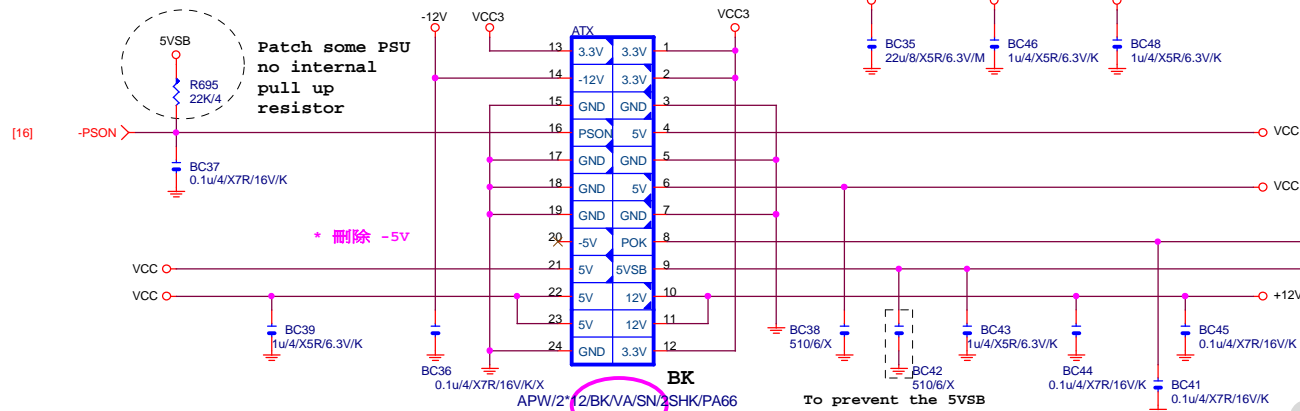
Document Number

Rev1.0

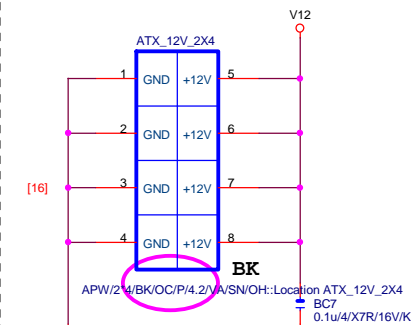
Date: Monday, December 12, 2016

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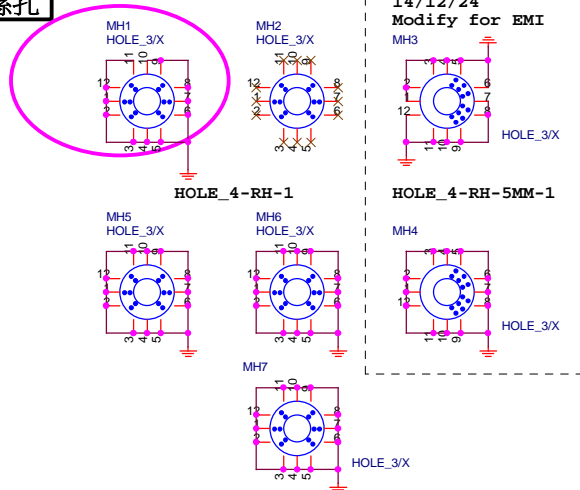
## ATXX24 POWER CONNECTOR



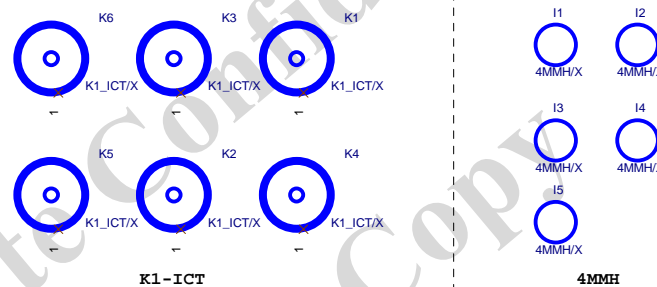
## ATXX4 POWER CONNECTOR



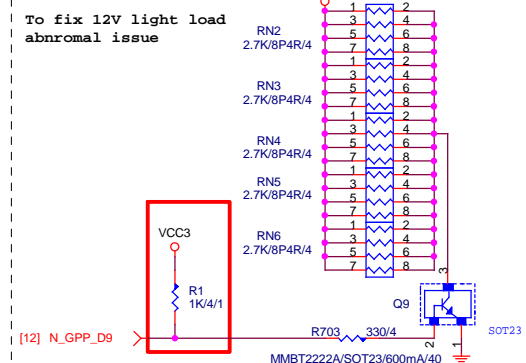
## 螺絲孔



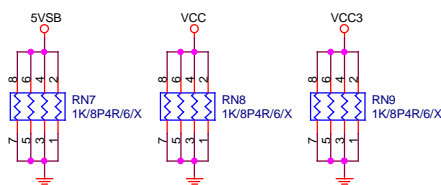
## 固定孔/光學點



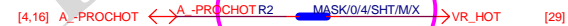
## +12V DUMMY LOAD



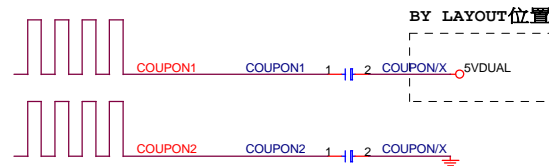
## DUMMY LOAD



## -PROHOT



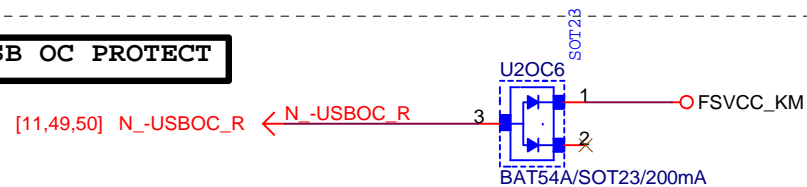
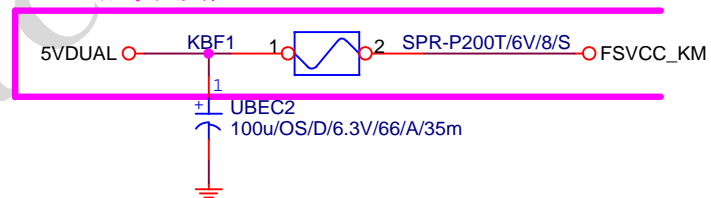
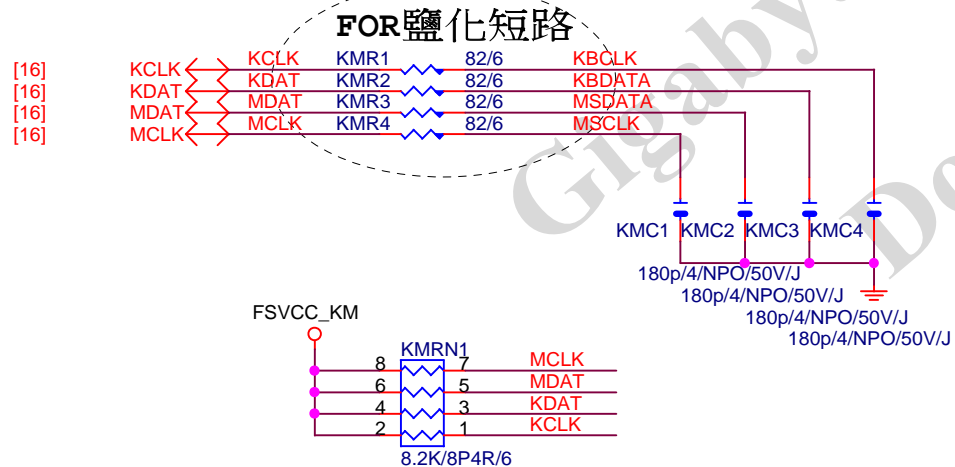
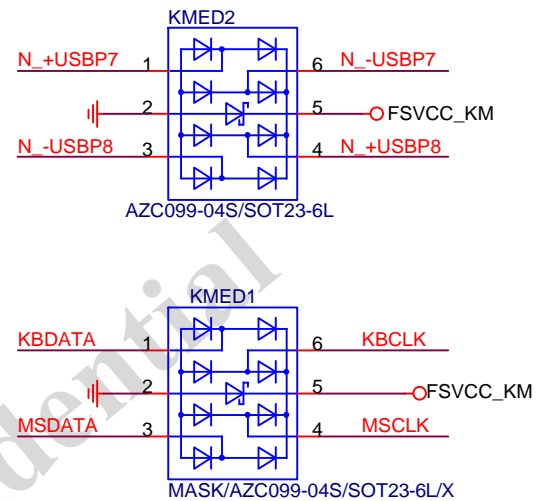
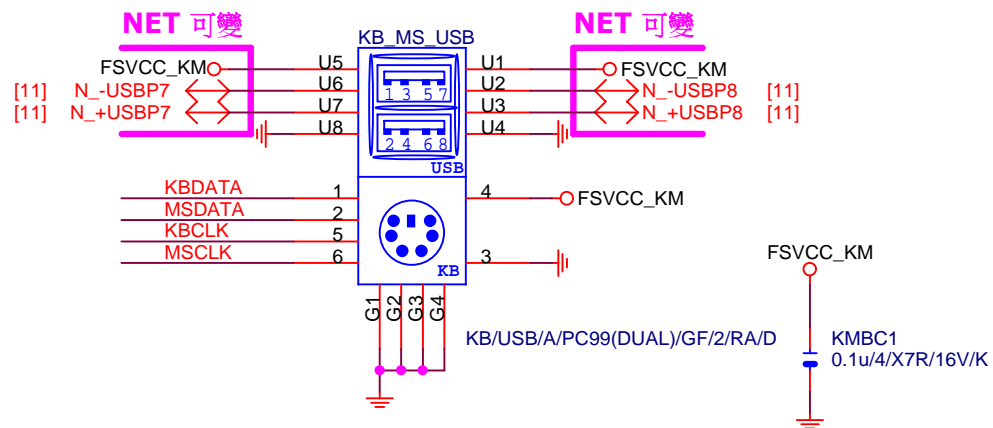
## COUPON



【技術通報R&D技術通報153】

Gigabyte Technology

Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-B250M-D3H	1.0
Date:	Monday, December 12, 2016	Sheet 38 of 56

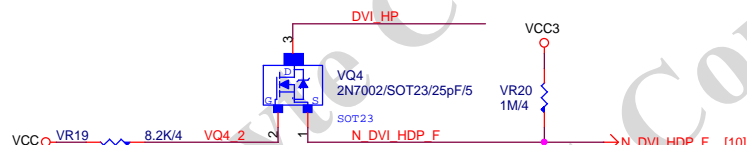
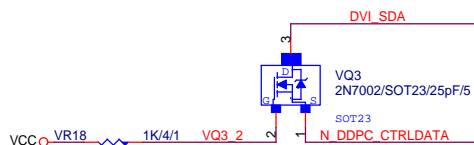
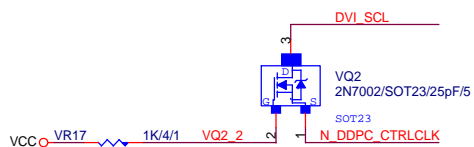
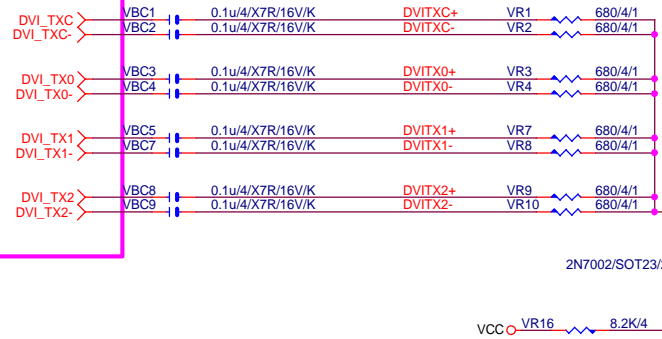


DVI

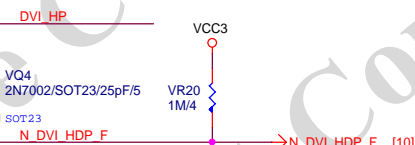
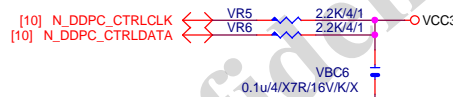
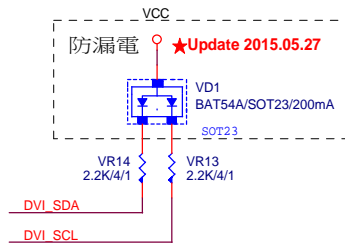
Rev: 0.8

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

NET 可變



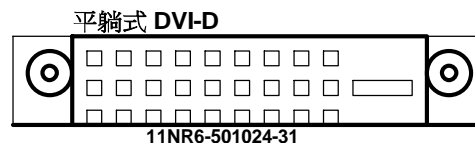
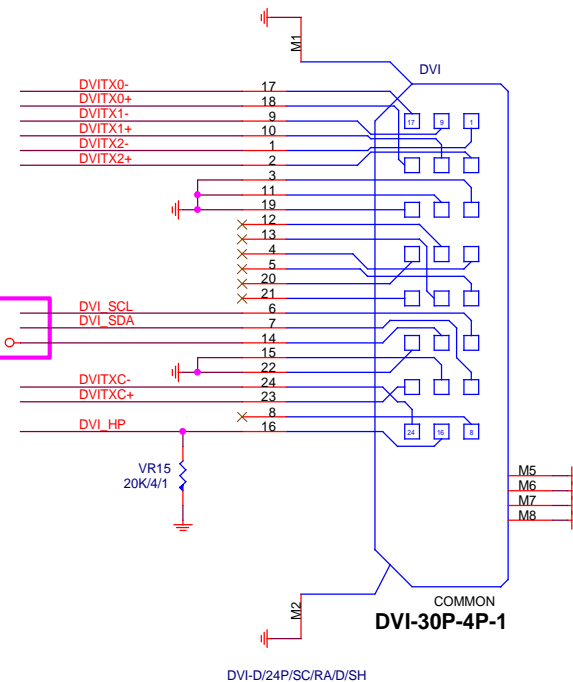
DVI PU



DVI CONN

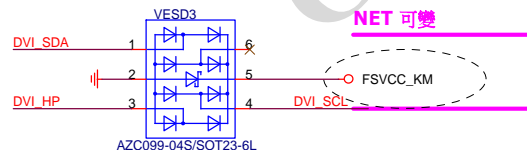
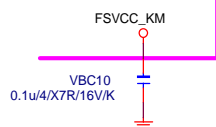
NET 可變

\* FSVCC\_KM

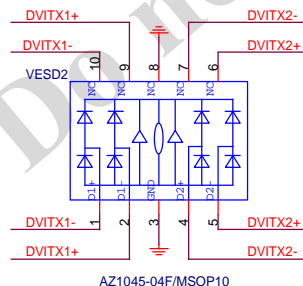


ESD

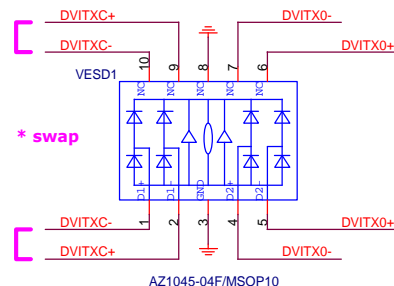
NET 可變



Close to connector



Close to connector

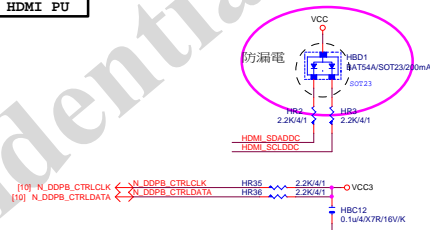
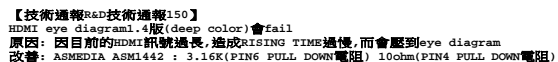


Close to connector

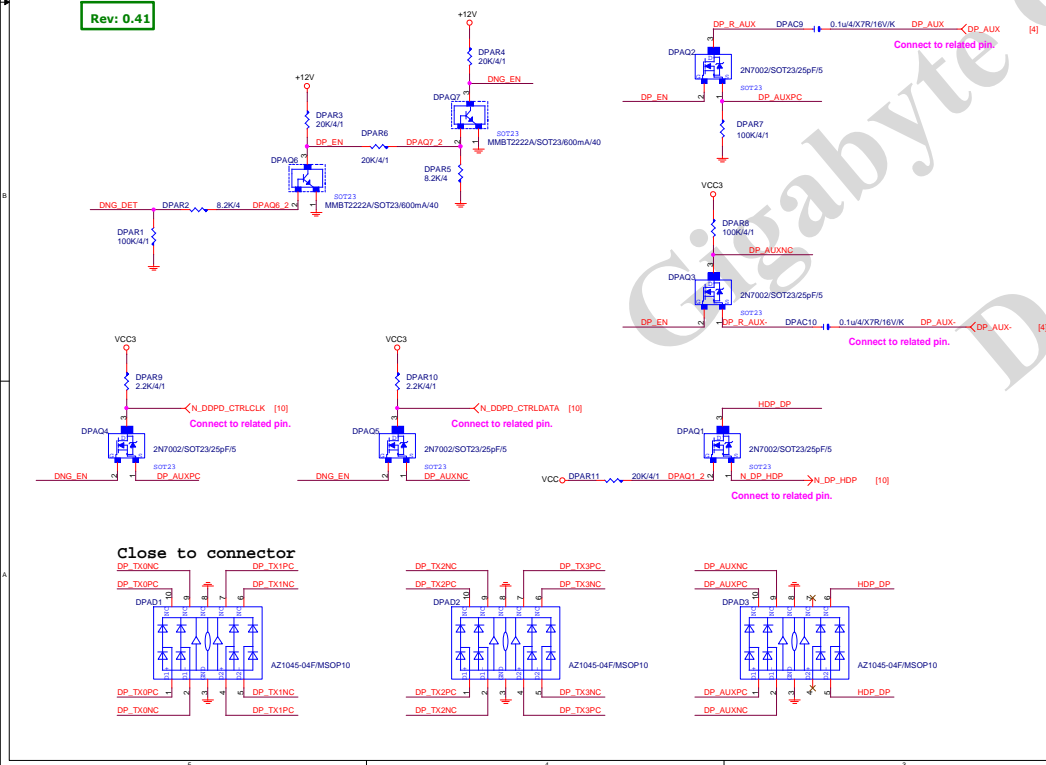
Gigabyte Technology

Title			DVI
Size	Document Number		GA-B250M-D3H
Custom			Rev 1.0
Date:	Monday, December 12, 2016	Sheet	40 of 56

**Rev: 0.7**



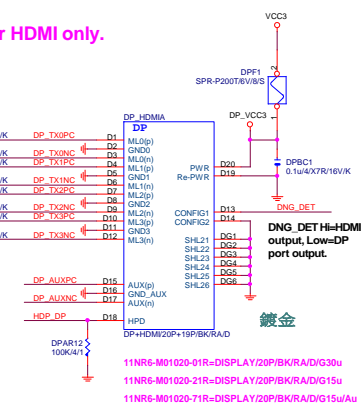
## Rev: 0.41

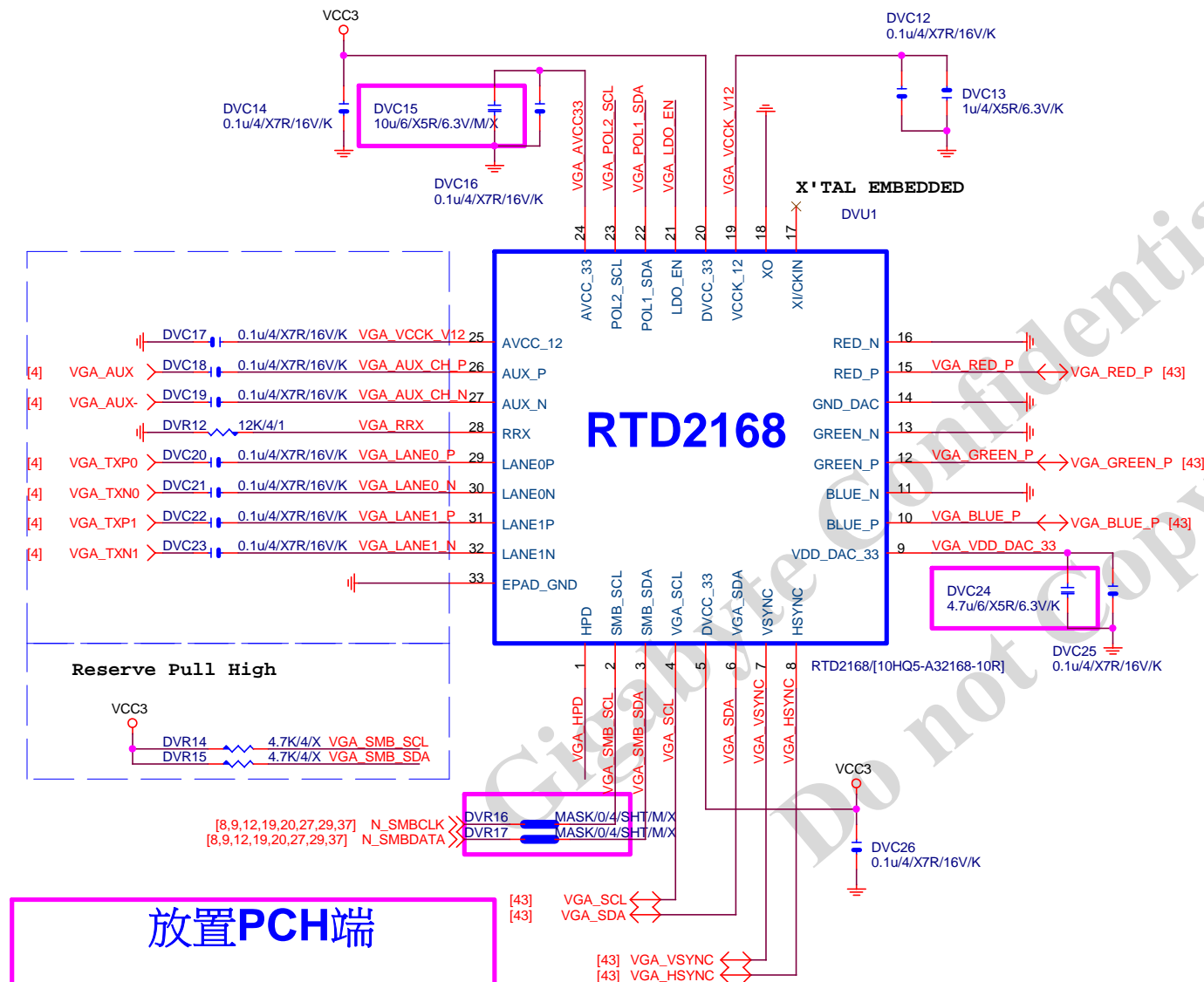


**SINGLE Display Port**

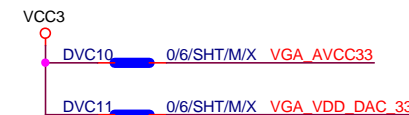
**Display Port with HDMI, or HDMI only.**

## NET FROM CPU 可變

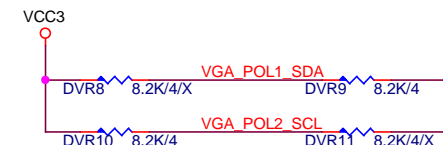




## POWER

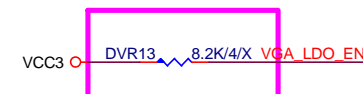


Power on latch



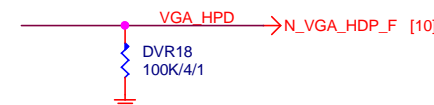
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	<b>ROM ONLY MODE</b>	EEPROM MODE

## Embedded LDO

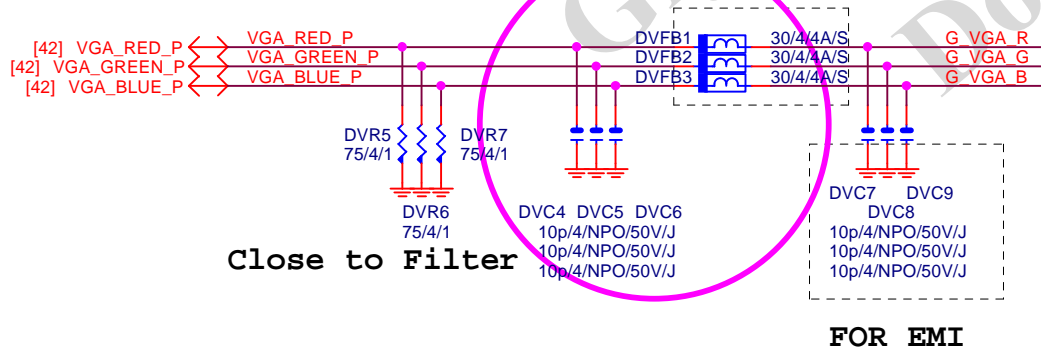
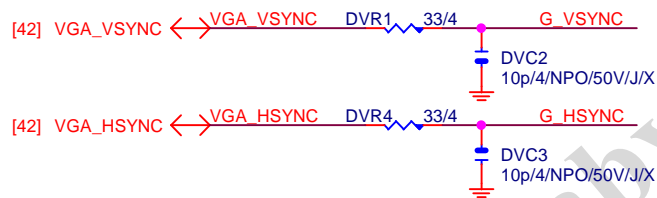
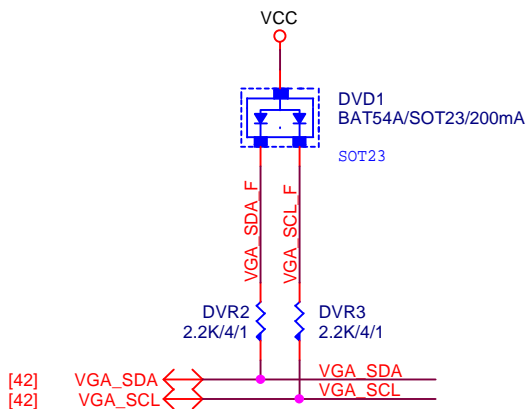


LDO_EN(PIN21)	
0	1
VCCK_V12 from External 1.2V	VCCK_V12 from Embedded LDO

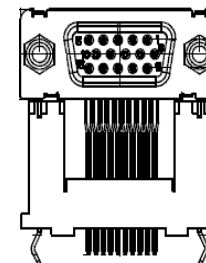
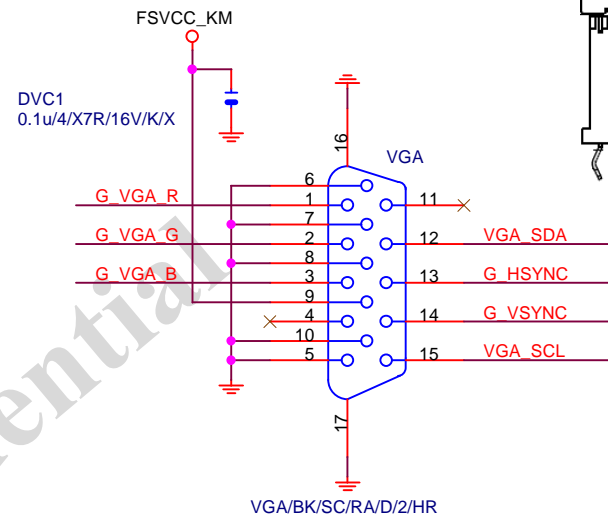
DP HPD



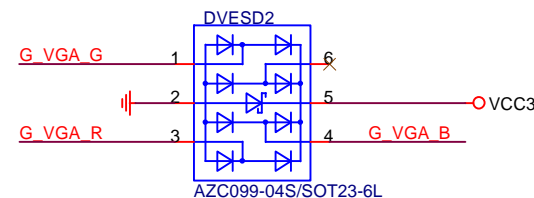
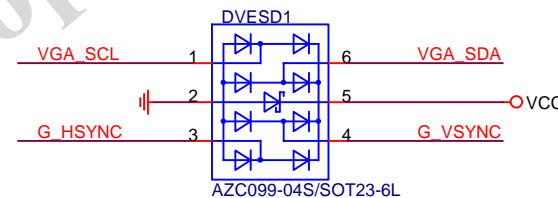
# VGA SIGNAL R1.03



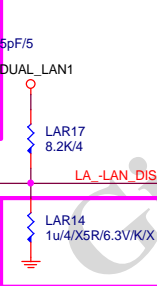
# VGA CONN. 架高型VGA (BLACK)



# VGA ESD

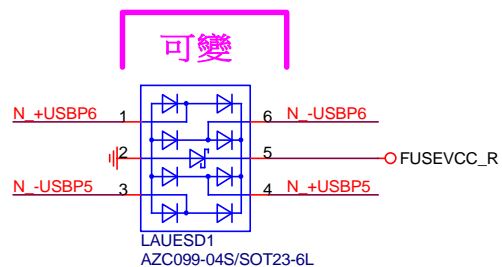


Gigabyte Technology		
DP-VGA RTD2168		
Title	Document Number	Rev
Size	Custom	GA-B250M-D3H
Date:	Monday, December 12, 2016	Sheet 43 of 56

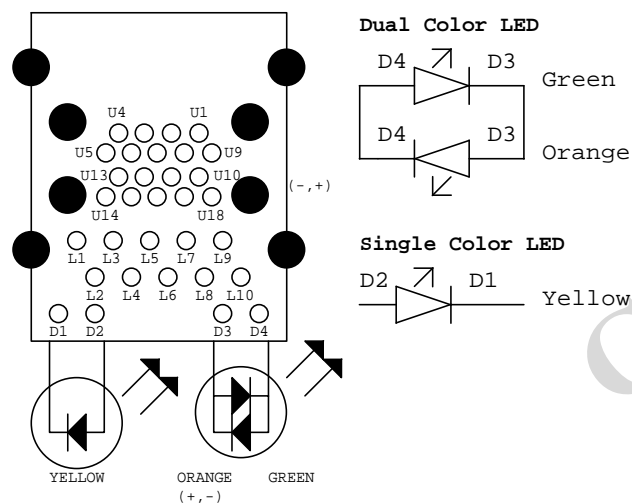


## R1.1

note:可變更USB NAME



## Dual Color LED



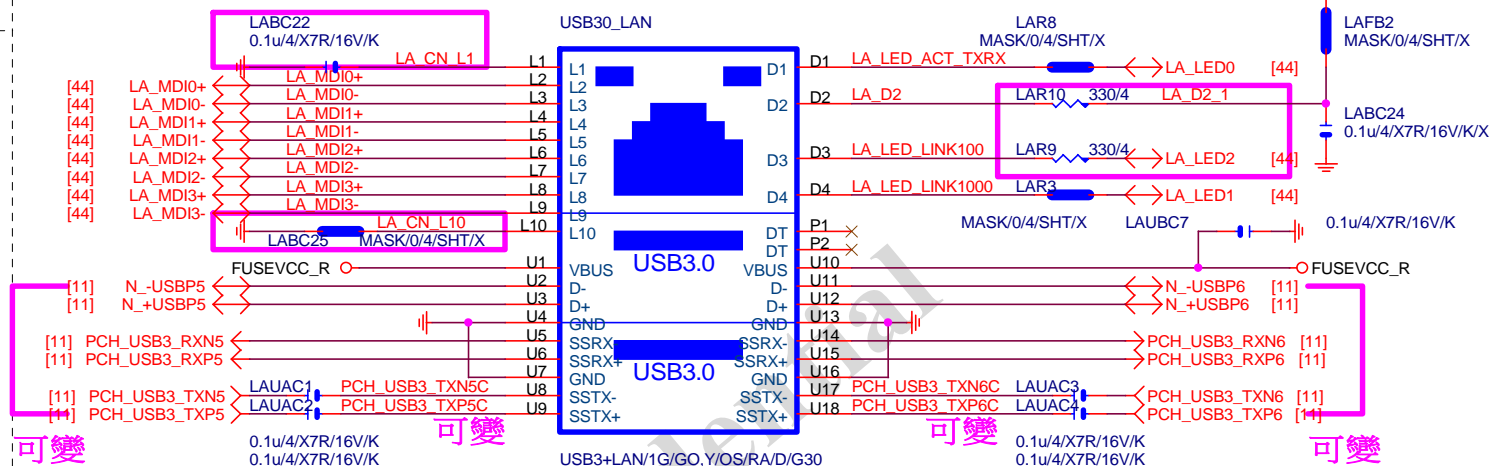
FOOT PRINT:LAN COVER

## 可變 [視SPEC需求]

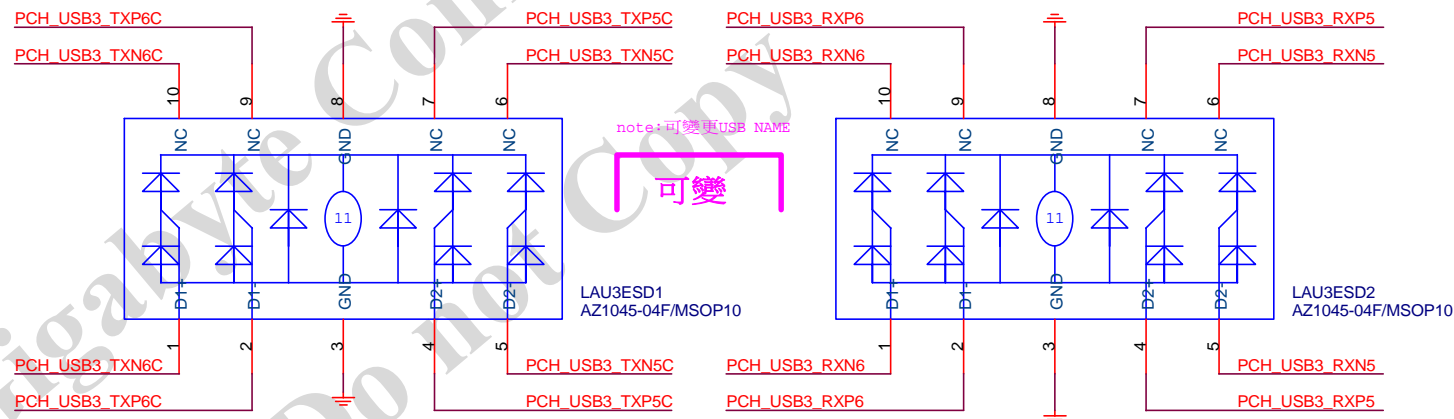
[-D3H不加蓋]

note:可變更USB NAME

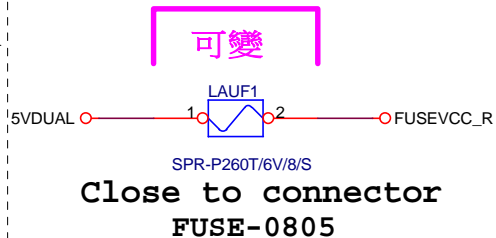
[ I219 ]



LA\_MDI-->100歐姆:[20/4/8/4/20]



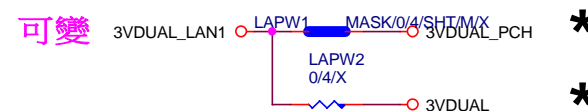
note:可變更FUSE



PS:視EMI需求

LAR24 MASK/0/4/SHT/X

note: lan power連接及電流



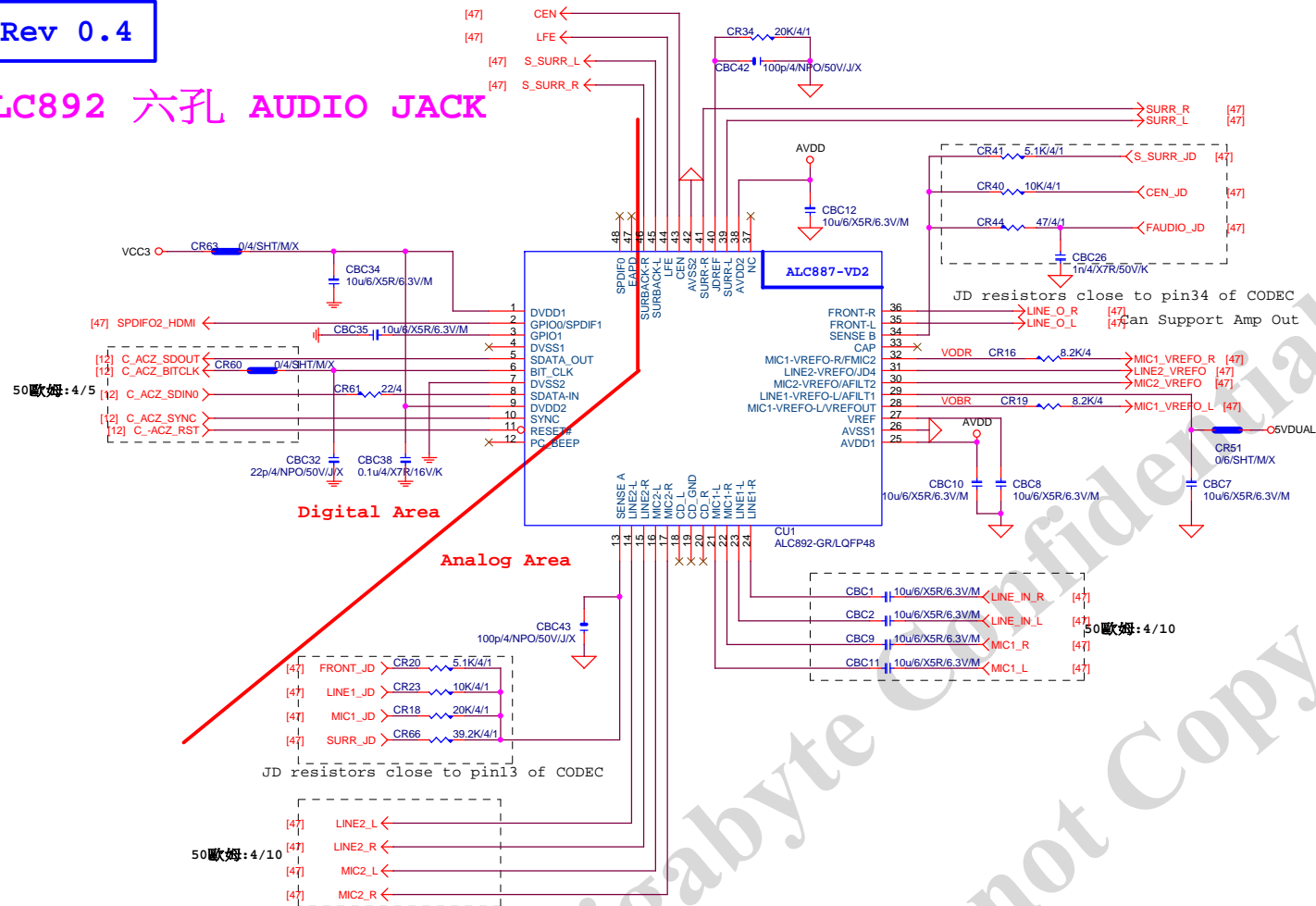
## ***Gigabyte Technology***

## LAN CONNECTOR-I219

Size	Document Number	Rev
Custom	<b>CA-B250M-D2H</b>	1.0

Date: Monday, December 12, 2016 Sheet 45 of 56

## ALC892 六孔 AUDIO JACK



**LAYOUT注意:螺絲孔下GND方式**

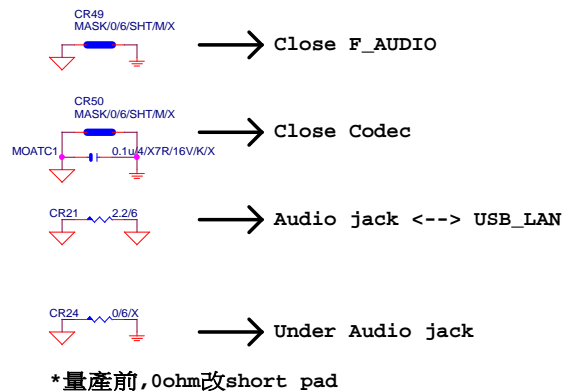
1. MH1空間夠,下DGND  
空間不夠,改為Isolate
2. MH2一律改為Isolate

☐ MH1      MH2 ☐   
 DGND      Isolate

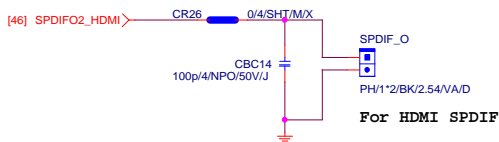
LAYOUT注意:要加  
GND切割線

## 音效區域印刷

\*料號後補

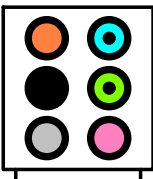


## SPDIF\_OUT

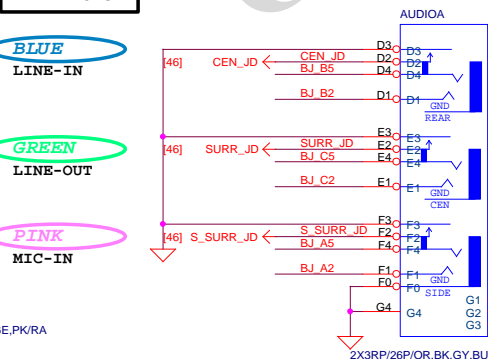
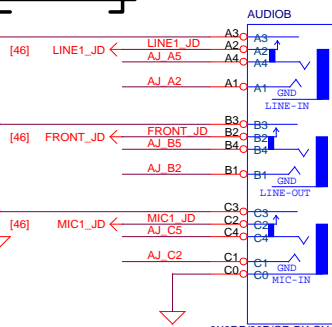


## SPDIF\_IN

## AZALIA JACK



## AZALIA JACK

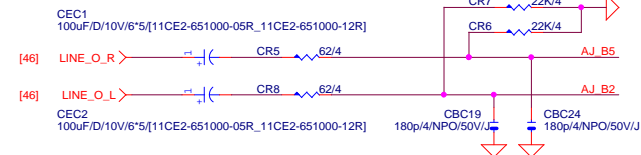
BLUE  
LINE-INGREEN  
LINE-OUTPINK  
MIC-IN

Orange  
CEN/LFE

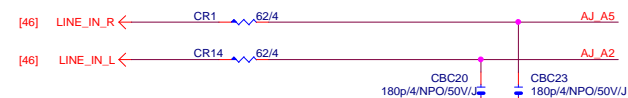
Black  
SURROUND

Gray  
SURROUND SIDE

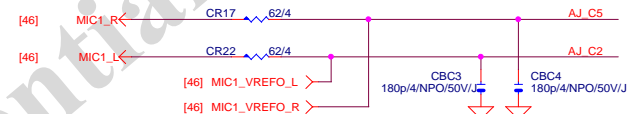
## LINE-OUT



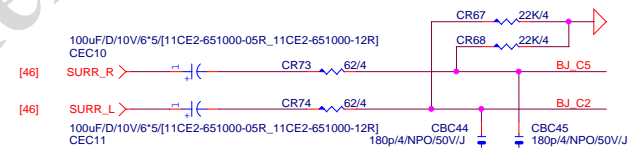
## LINE-IN



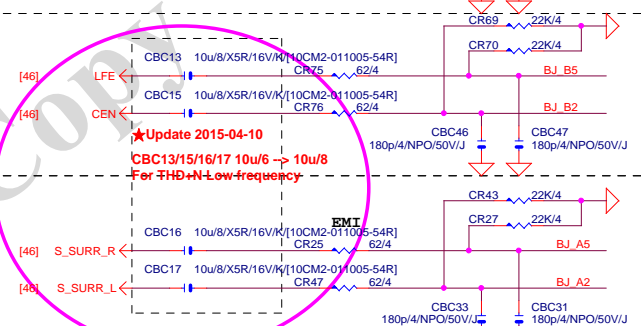
## MIC-IN



## SURROUND

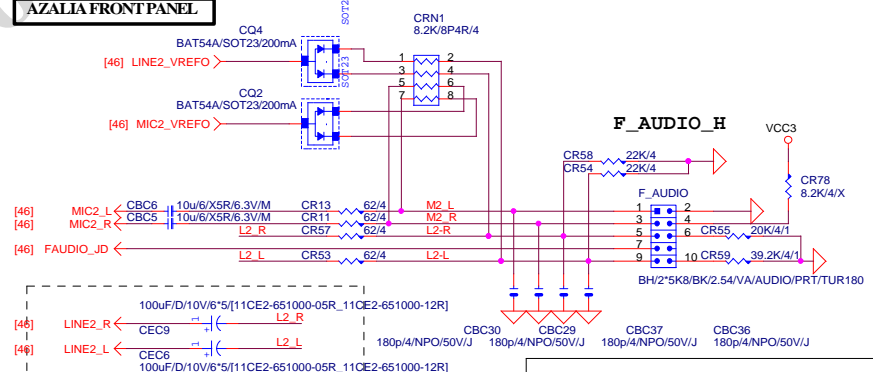


## CEN/LFE



## SURRBACK

## AZALIA FRONT PANEL



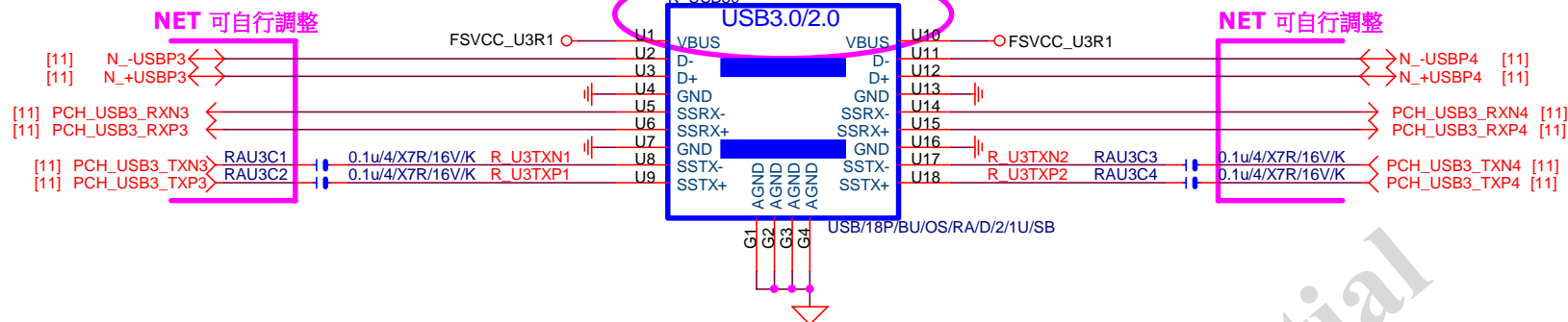
Gigabyte Technology

Title			
AUDIO JACK			
Size	Document Number	Rev	
Custom	GA-B250M-D3H	1.0	
Date:	Monday, December 12, 2016	Sheet	47 of 56



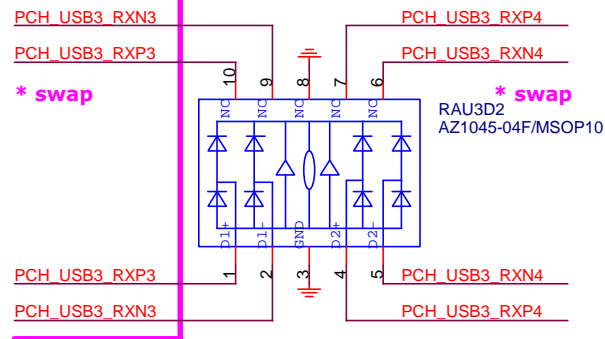
Rev: 0.7

ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可

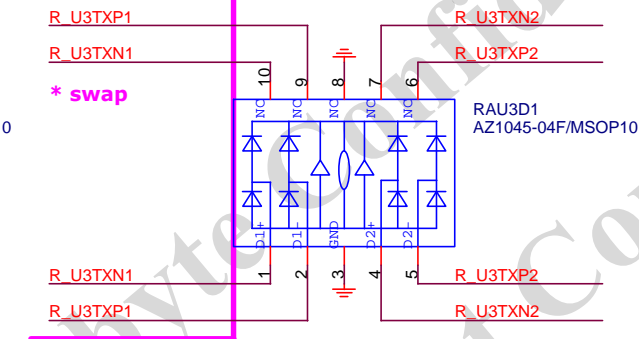


ESD

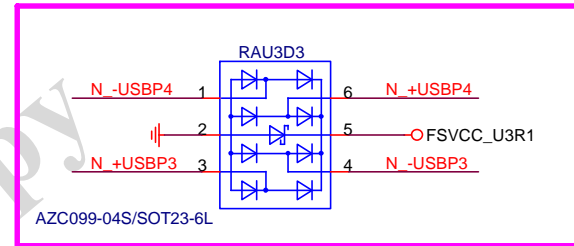
**NET 可自行調整**



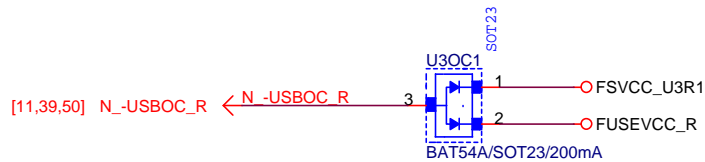
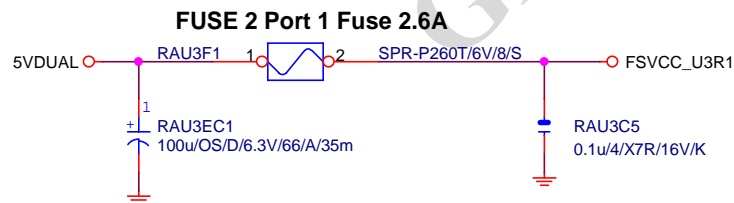
**NET 可自行調整**



**NET 可自行調整**

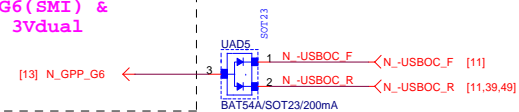
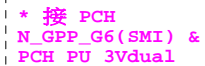


FUSE



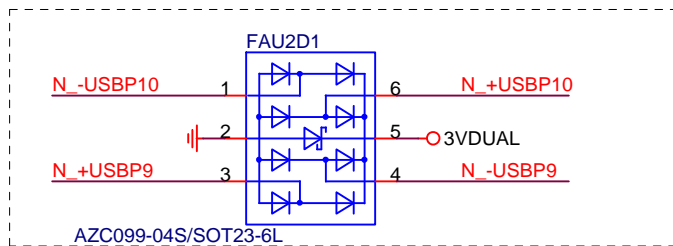
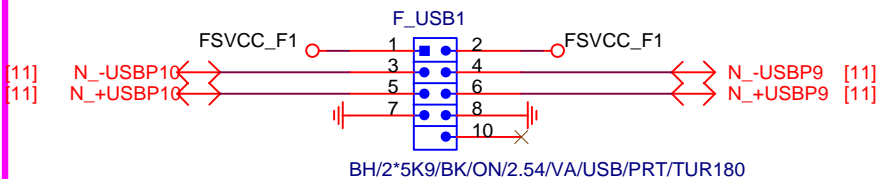
Gigabyte Technology

Title			R_USB30,USB_OC
Size	Document Number	GA-B250M-D3H	
Custom			Rev 1.0
Date:	Monday, December 12, 2016	Sheet	49 of 56



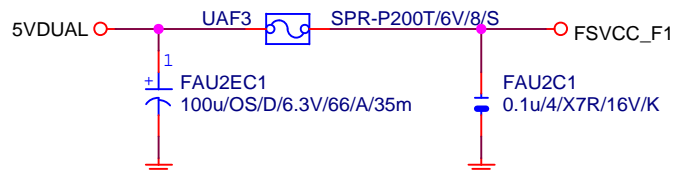
NET 可變

## FUSB2X5-HS



Close to connector

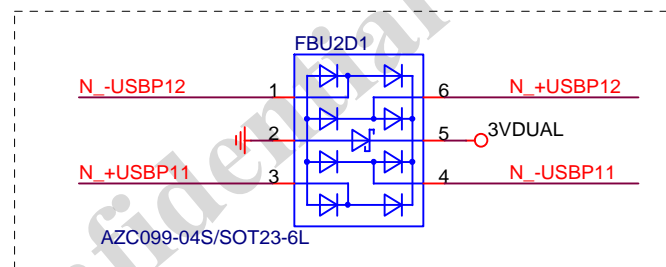
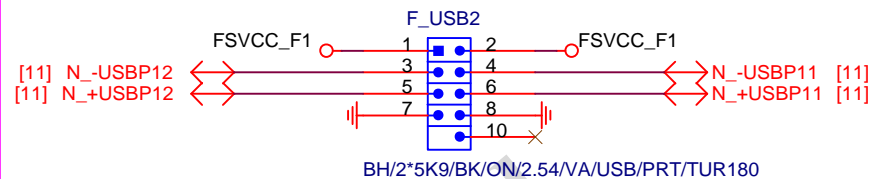
FUSE 2 Port 1 Fuse 2A



F\_USB 2.0 OC SIGNAL

NET 可變

## FUSB2X5-HS



Close to connector

FUSE 2 Port 1 Fuse 2A

Gigabyte Technology

Title

USB2.0

Size  
A

Document Number

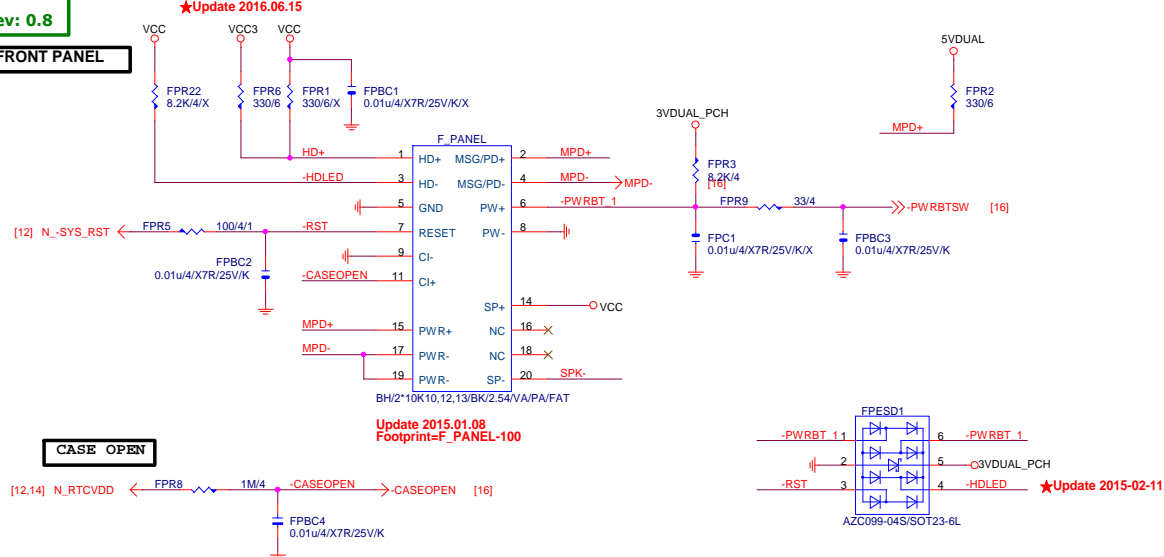
GA-B250M-D3H

Rev  
1.0

Date: Monday, December 12, 2016

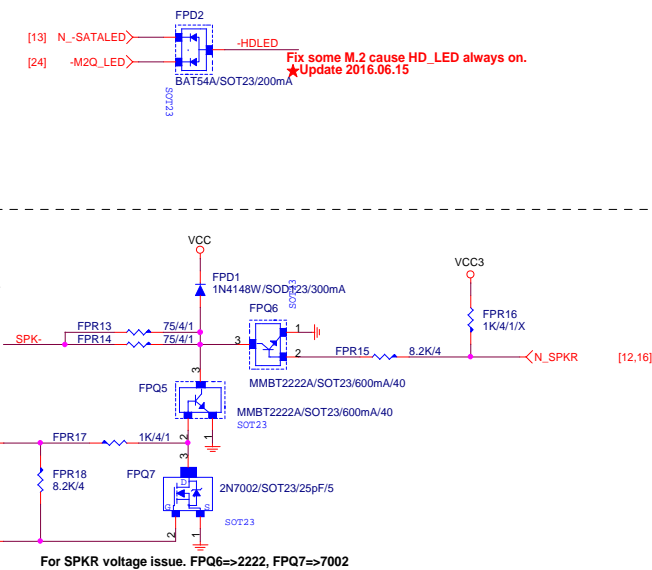
Sheet 51 of 56

## FRONT PANEL

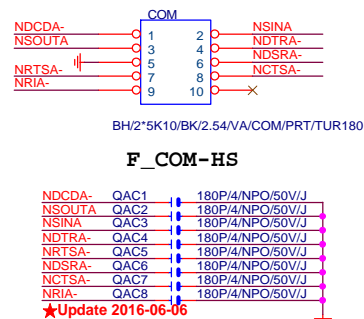


## FRONT PANEL SHORT

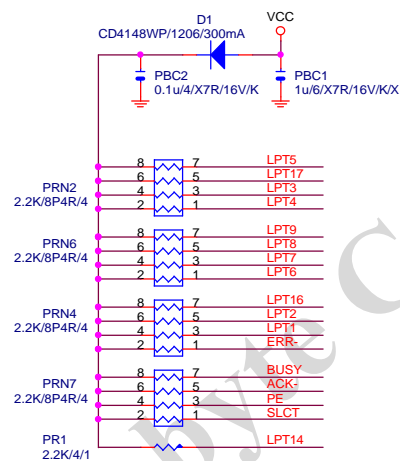
SATA/M.2 LED
--------------



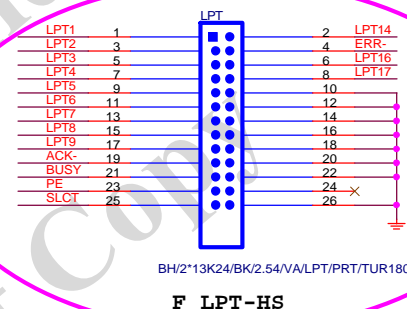
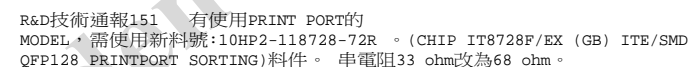
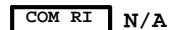
## Rev: 0.7



## LPT PORT



## TPM CONNECT



CLOSE SIO



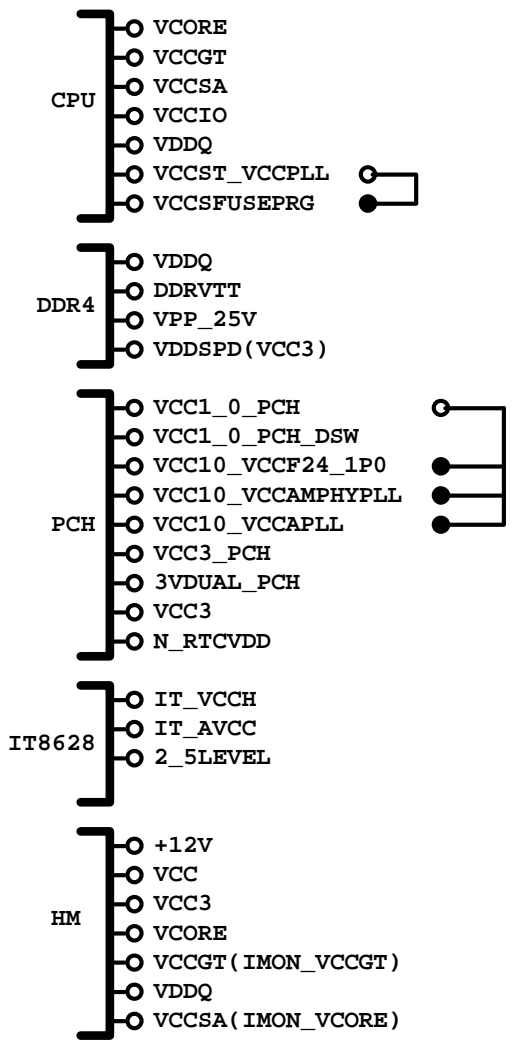
CLOSE PCH



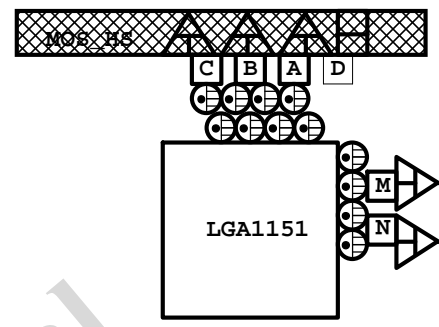
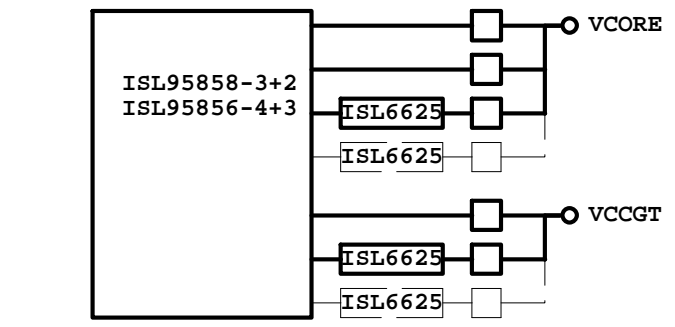
**GIGABYTE™**

Title		
EM/ESD		
Size A	Document Number GA-B250M-D3H	Rev 1.0
Date:	Monday, December 12, 2016	Sheet 54 of 56

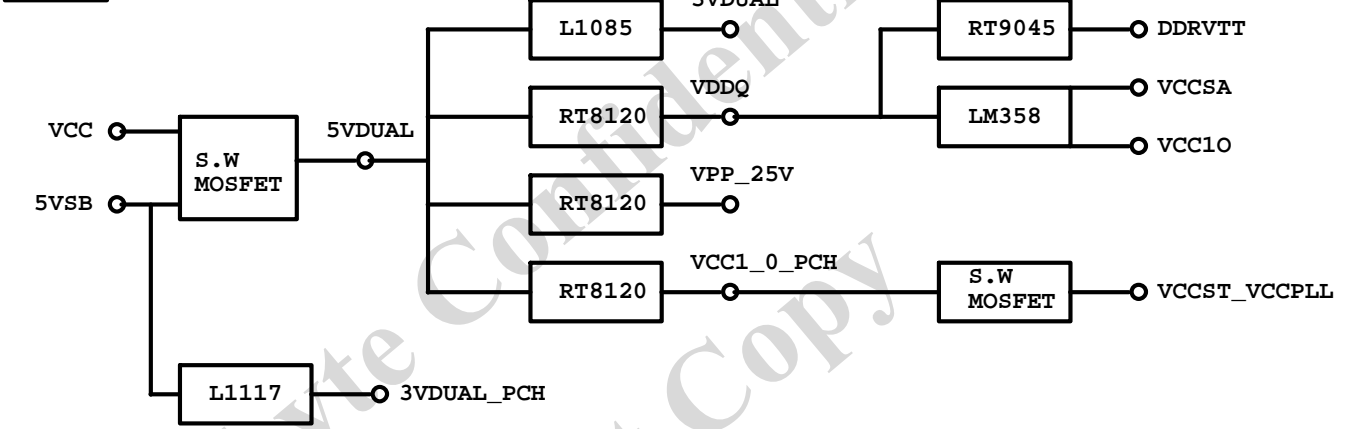
POWER BLOCK MAP



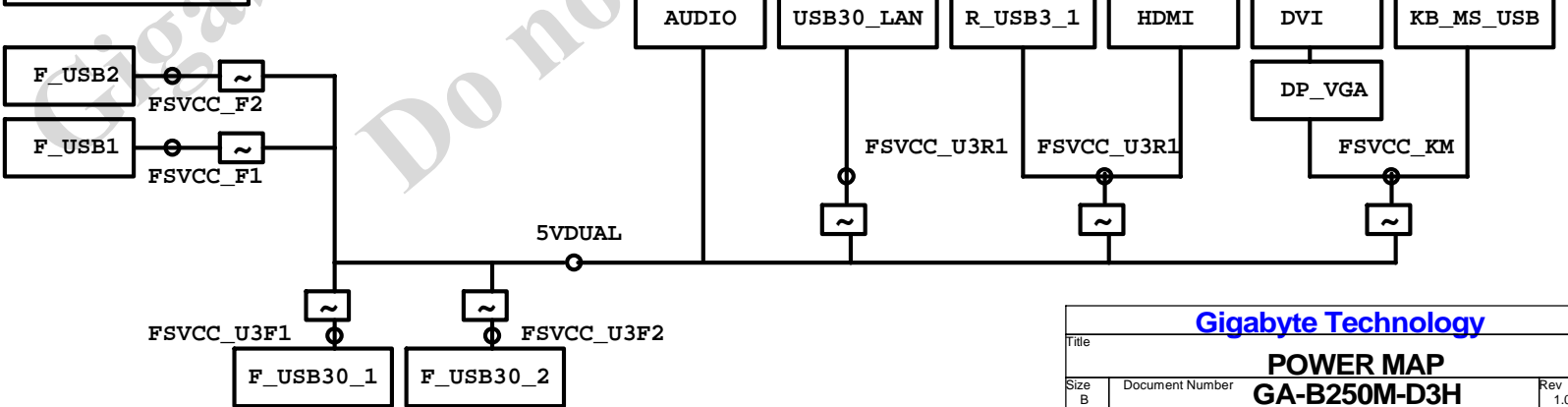
VCORE/VCCGT

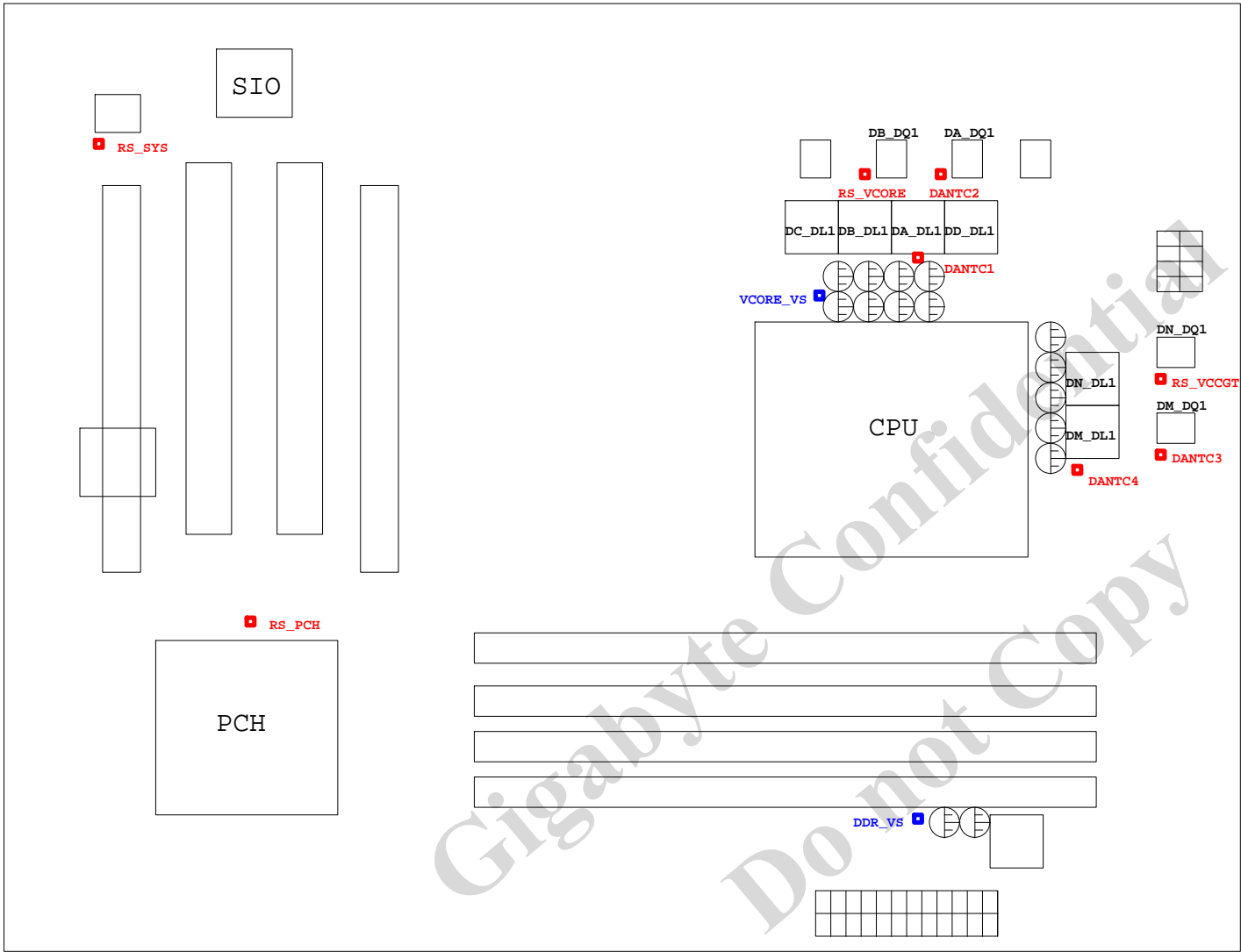


POWER



FUSE POWER F/R





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_DQ1	N/A
DANTC4	DM_DL1	Differential
RS_VCORE	DB_DQ1	N/A
RS_VCCGT	DN_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A