

Model Name: GA-B250-HD3P

rev 1.0

ISL95858 VCORE-IRON

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 EXPRESSX4 _1 sheare SE
21	PCIEX4 1 share SE SWITCH
22	SATA EXPRESS
23	PCI EXPRESS X1 SLOTS
24	PCI EXPRESSX4 _2 sheare M2
25	PCIEX4 2 share M2(S) SWITCH
26	M.2 X4 (S)
27	IT8892
28	PCI SLOT 1
29	IT8892 LDO POWER
30	DUAL BIOS

SHEET

TITLE

31	ISL95866 PWM-I-1H1L
32	ISL95866 MOS_VCORE-I-1H1L
33	ISL95866 MOS_VCCGT-I-1H1L
34	VCCSA_VCCIO_VCCPLL-B.H系列
35	RT8237_DDR_CHOKE-IRON-2L
36	RT8068A_VPP-合金
37	RT8237_PCH-CHOKE-IRON
38	DISCRETE POWER
39	NCT3933
40	ATX POWER , A_-PROCHOT
41	KB_MS_USB
42	DVI CONN
43	HDMI
44	RTD2168 - DP to VGA - IC
45	RTD2168 - DP to VGA - Conn
46	INTEL I219
47	USB30 LAN CONNECTOR-I219
48	Realtek ALC892
49	REAR AUDIO JACK
50	Audio / DEBUG / XMP LED
51	R_USB30
52	F_USB30
53	F_USB
54	F_PANEL
55	COM, LPT, TPM, THB
56	IDT9FGP310_CLK
57	ASM2142 USB31A
58	EMI-ESD
59	TI HD3SS3212&Etron EJ179 B
60	U3.1 PORT A
61	NTC MAP
62	POWER MAP
63	OC BUTTON

Gigabyte Technology

Title		Cover Sheet	
Size	Document Number	GA-B250-HD3P	Rev
Custom			1.0
Date:	Tuesday, November 15, 2016	Sheet	1 of 63

GIGABYTE

*rev1.0*

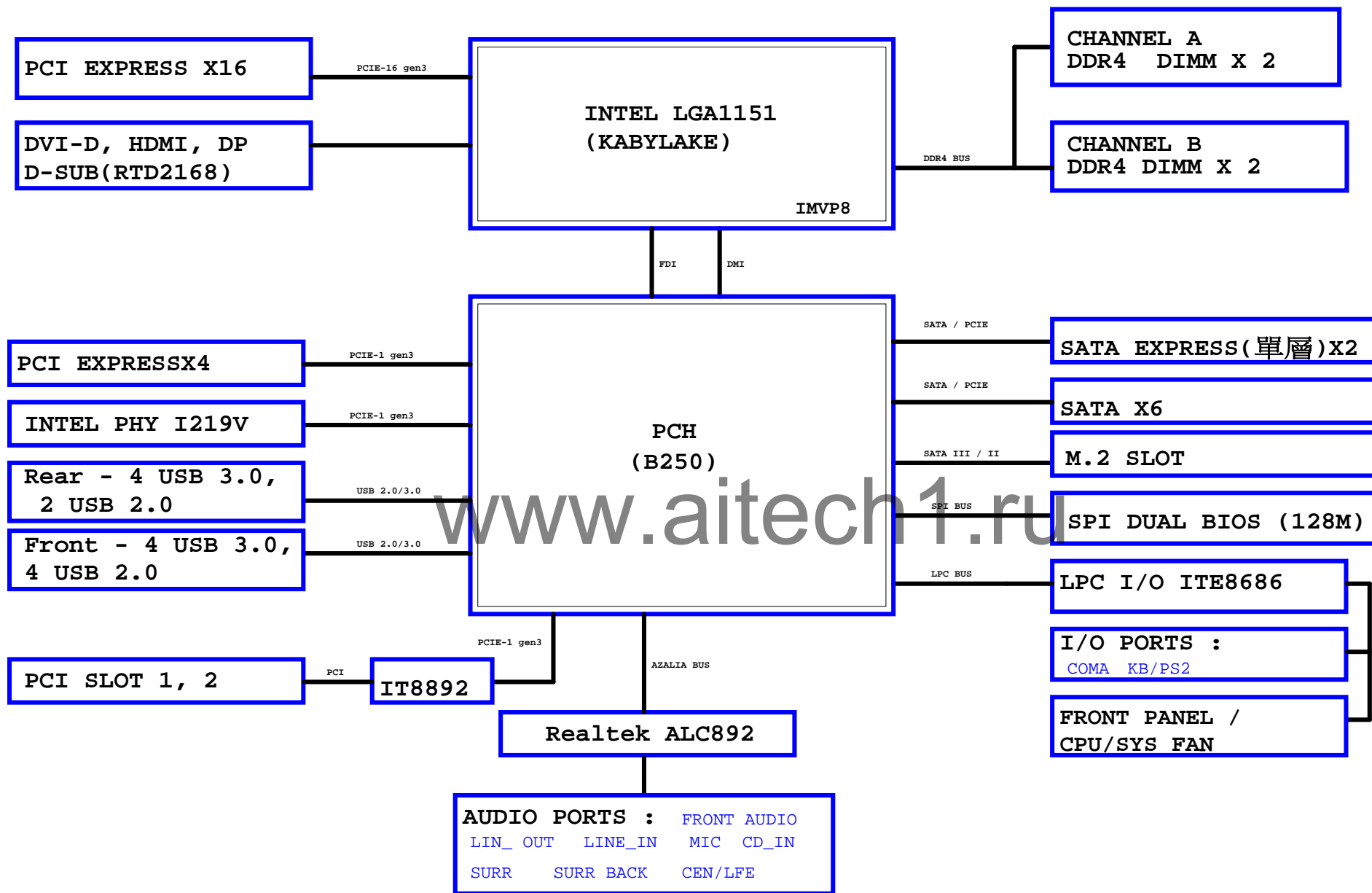
## Circuit or PCB layout change

### Component value change history

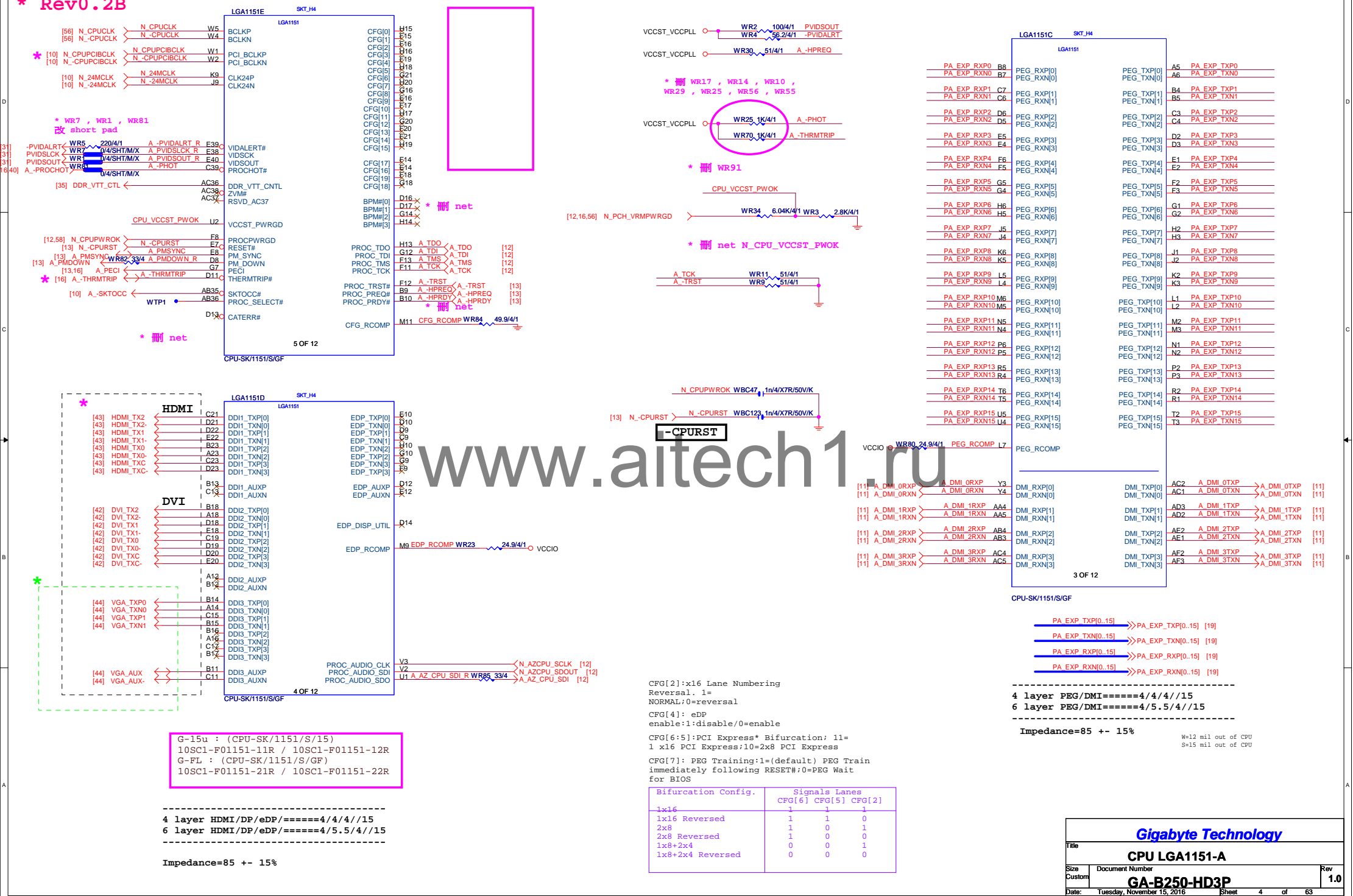
2016/07/19

[illegible][illegible]

# BLOCK DIAGRAM

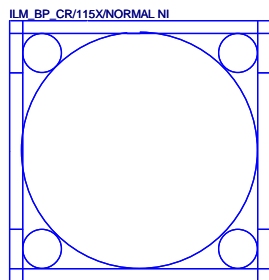


**\* Rev0.2B**





\* 改DDR4 net

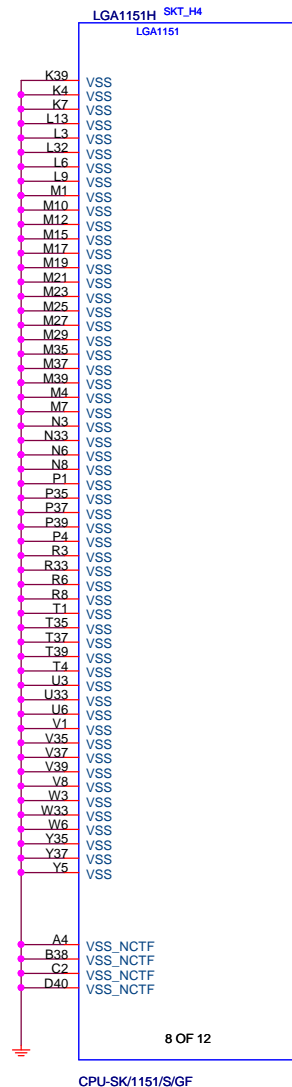
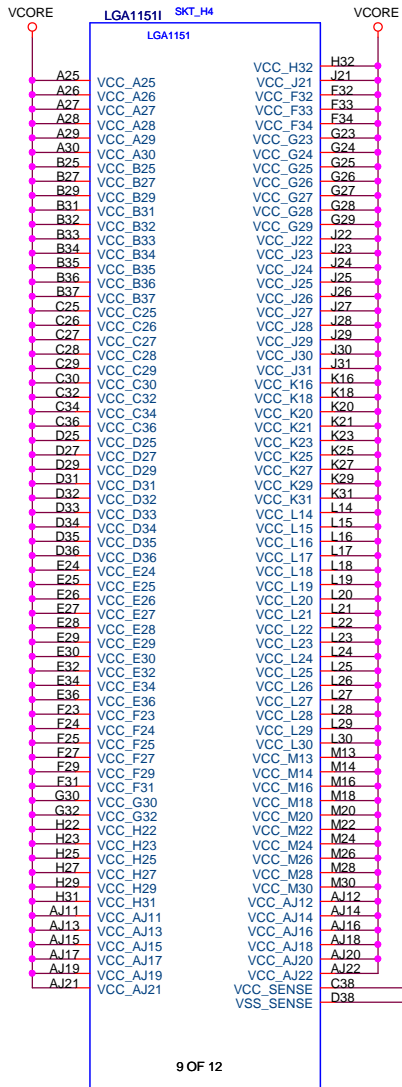


Need check the new CPU ME

Index	Codebook Entry	Bit Sequence
[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]

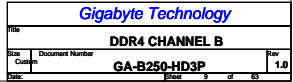
<b><i>Gigabyte Technology</i></b>			
Title			
<b>CPU LGA1151-B</b>			
Size Custom	Document Number		Rev
	<b>GA-B250-HD3P</b>		<b>1.0</b>
Date:	Tuesday, November 15, 2016	Sheet	5 of 63





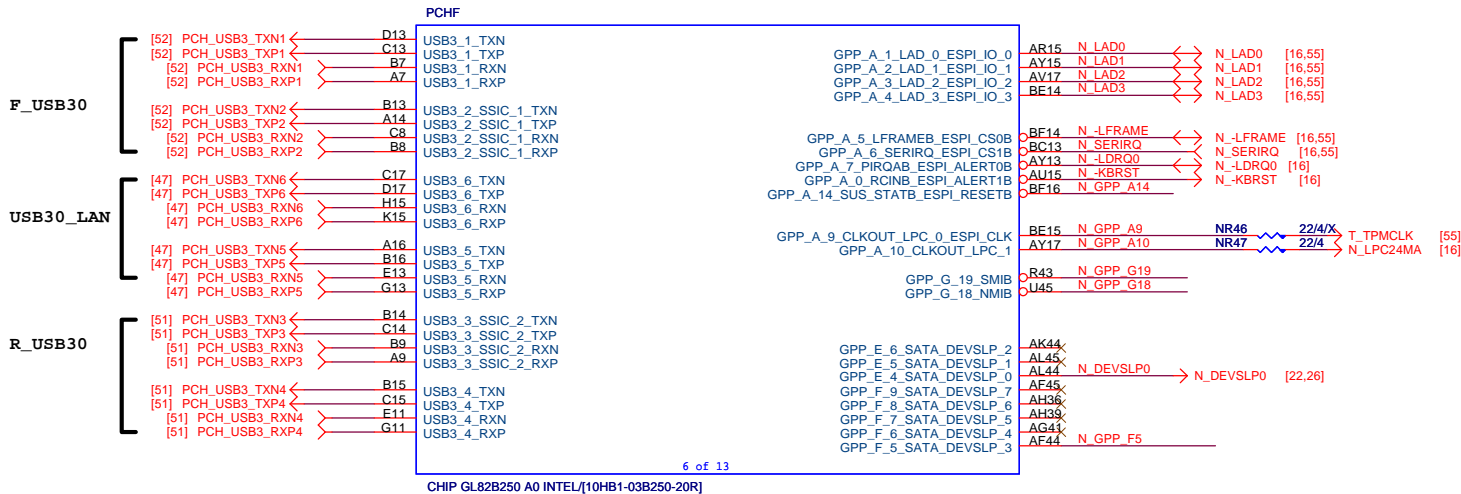
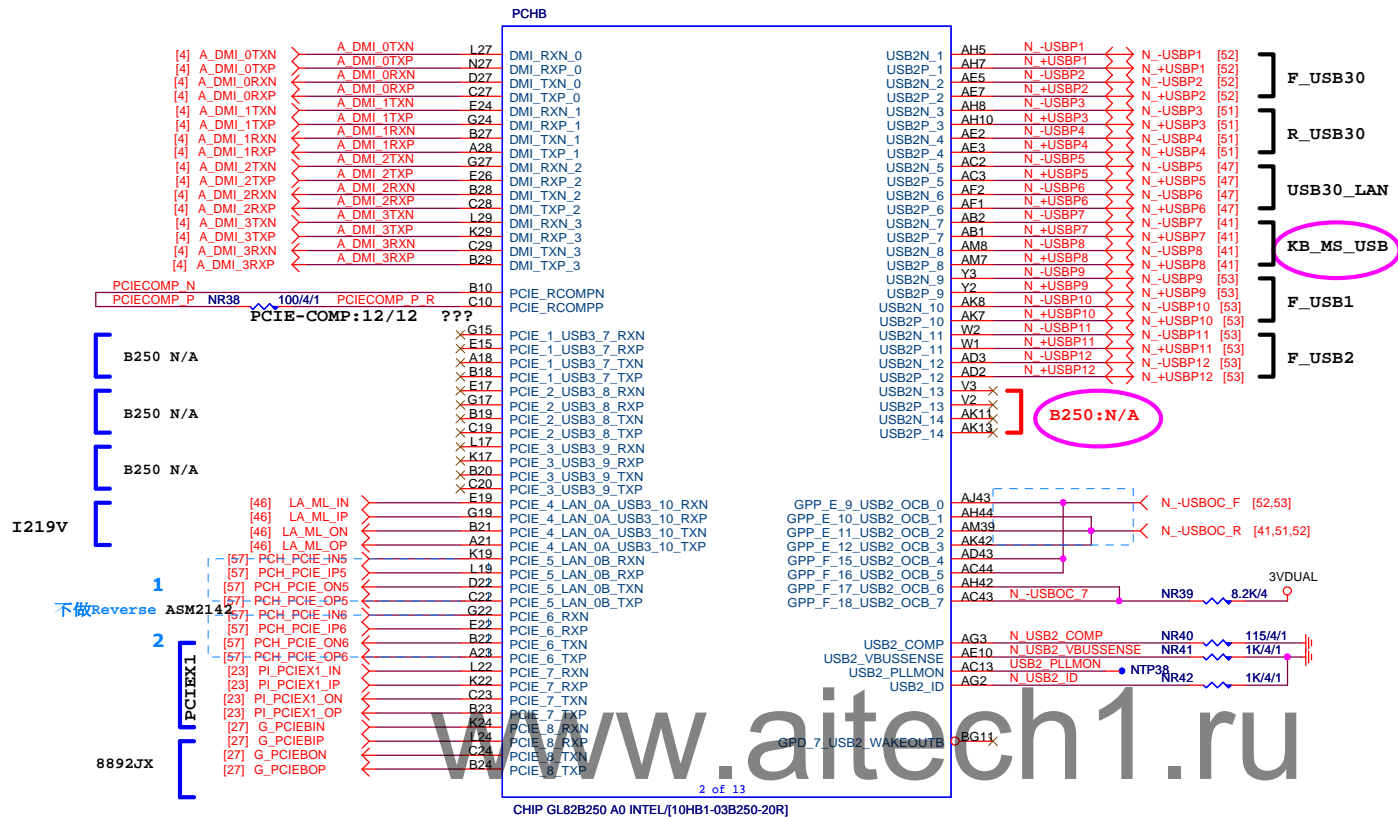
\* 刪 Vcore 電容

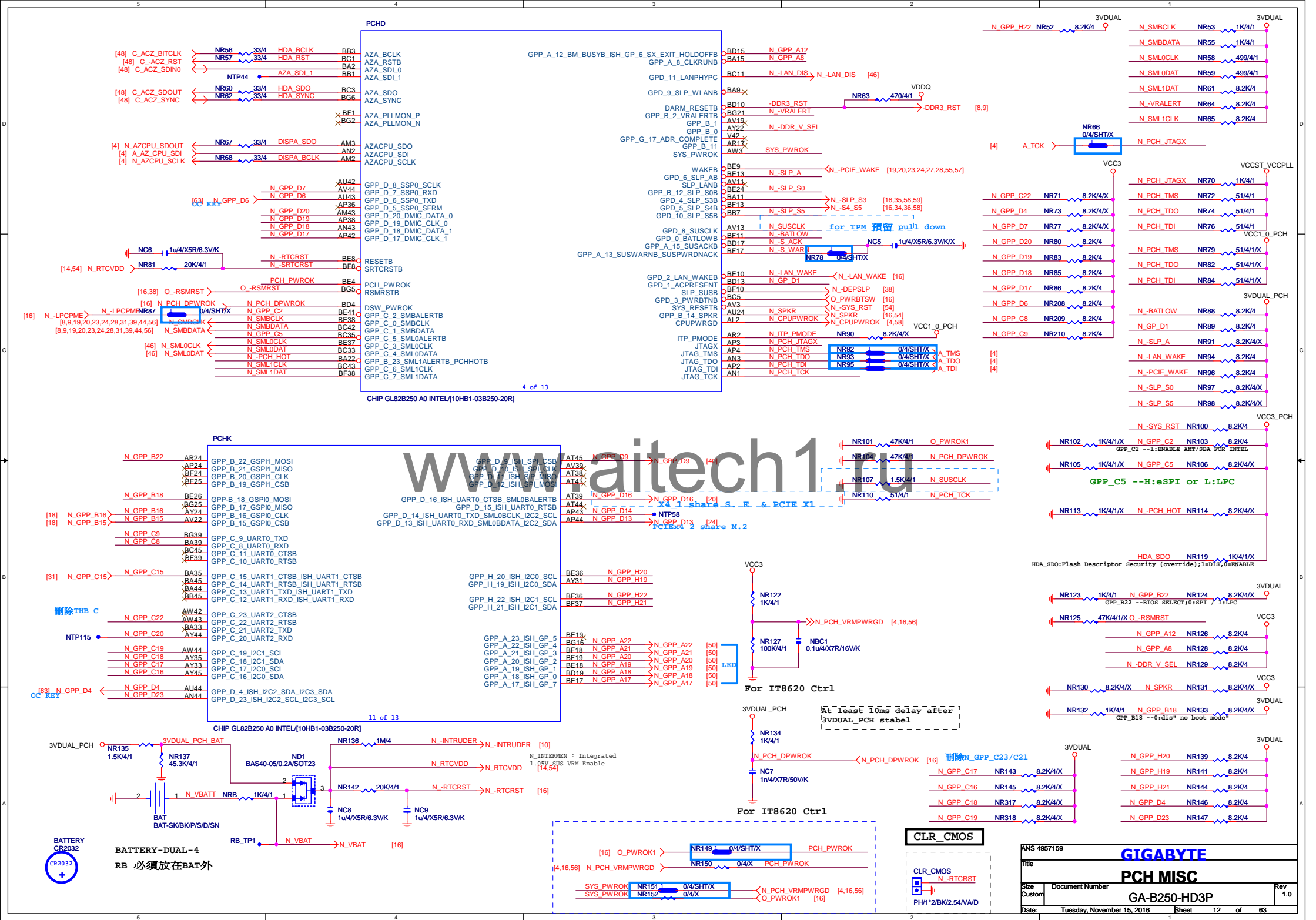




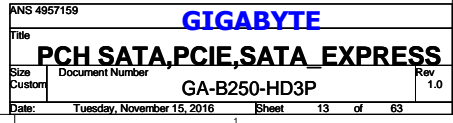


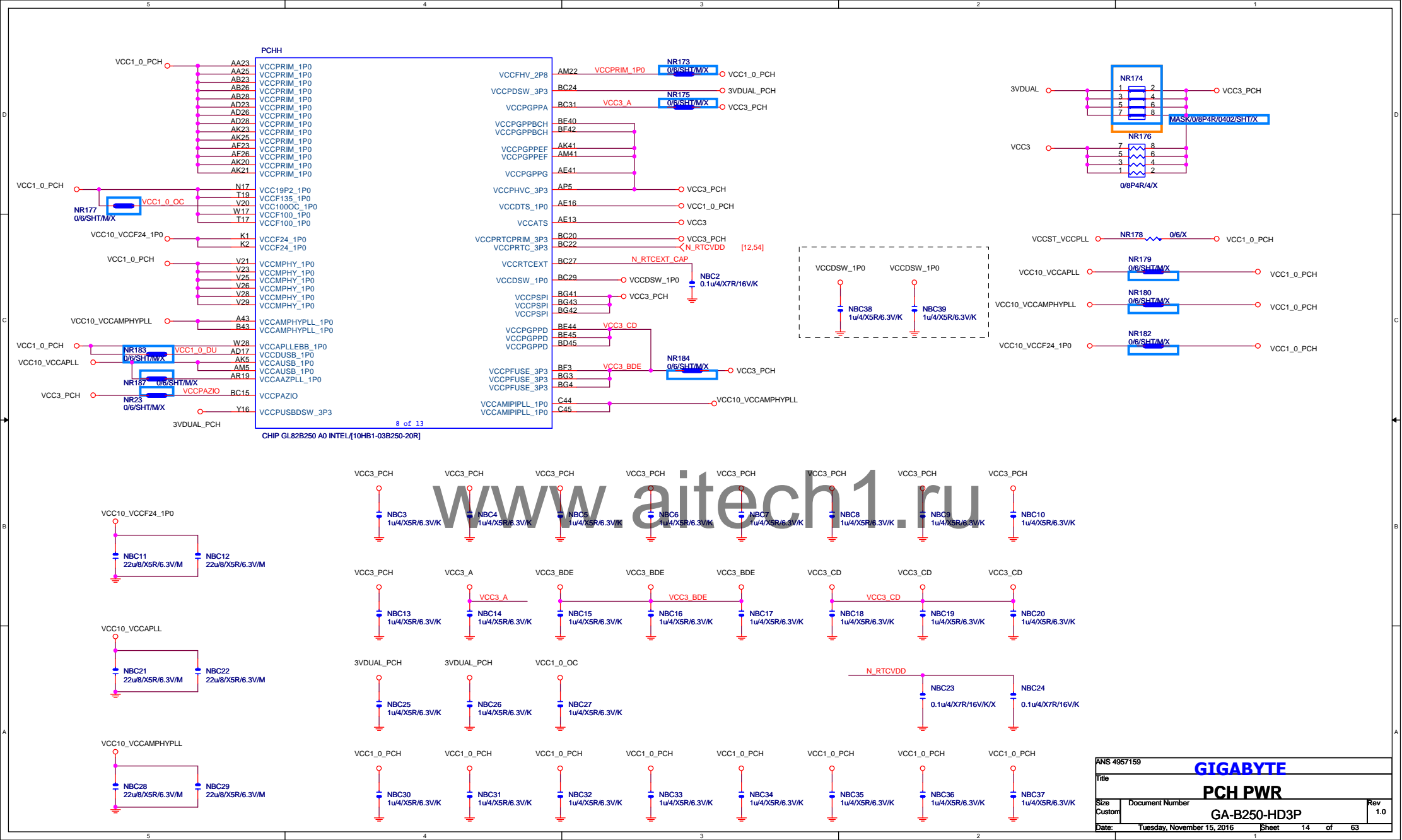












ANS 4957159		GIGABYTE	
Title		PCH PWR	
Size	Document Number	GA-B250-HD3P	
Custom		Rev 1.0	
Date:	Tuesday, November 15, 2016	Sheet	14 of 63

PCHI		
A25	VSS	A42
A30	VSS	D45
P22	VSS	BG44
AV38	VSS	BE44
AV45	VSS	BF43
AV8	VSS	BF2
AY11	VSS	W29
AY19	VSS	A35
AY37	VSS	AG23
AY4	VSS	A40
AY42	VSS	AA1
AY8	VSS	AA17
B25	VSS	AA18
B3	VSS	AA20
B30	VSS	C1
B35	VSS	AA26
B4	VSS	AA28
B41	VSS	AA29
BA13	VSS	AC32
BA17	VSS	AE4
BA37	VSS	AE8
BA429	VSS	AF18
BA431	VSS	AF20
BA437	VSS	AF21
BA4	VSS	AF25
BA42	VSS	AF28
BA40	VSS	AF29
BC38	VSS	AF4
BC40	VSS	AF42
BC9	VSS	AG18
BD11	VSS	AG20
BD16	VSS	AG21
BD2	VSS	AG23
BD21	VSS	AG25
BD25	VSS	AG26
F2	VSS	AG28
F31	VSS	AG28
E6	VSS	AH11
E8	VSS	AH13
F39	VSS	AH30
F43	VSS	AH32
G4	VSS	AH33
G40	VSS	AH38
G42	VSS	AJ1
F6	VSS	AJ17
G9	VSS	AJ18
H11	VSS	AJ20
H13	VSS	AJ21
H17	VSS	AJ23
H19	VSS	AJ26
H22	VSS	AJ26
H24	VSS	AJ28
H27	VSS	AJ29
H29	VSS	AJ45
H33	VSS	AK10
H35	VSS	AK14
H38	VSS	AK16
H4	VSS	AK17
H42	VSS	AK18
H9	VSS	AK26
J4	VSS	AK28
M36	VSS	AM14
M38	VSS	AM14
M4	VSS	AN14
M8	VSS	AP19
M9	VSS	AR22
N13	VSS	AR27
N15	VSS	AU29
N19	VSS	AU33
N22	VSS	AV1
N24	VSS	AV10
N31	VSS	AV15
N42	VSS	AV24
P10	VSS	AV27
P12	VSS	AV33
AV35	VSS	

9 of 13

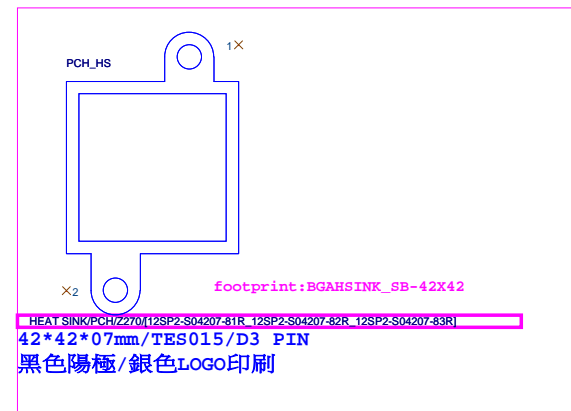
CHIP GL82B250 A0 INTEL[10HB1-03B250-20R]

PCHL		
BD34	VSS[70]	AB18
BD39	VSS[71]	AB20
BD7	VSS[72]	AB21
BE2	VSS[73]	AB25
BF43	VSS[74]	AB29
BF2	VSS[75]	AB4
BG18	VSS[76]	AB42
BG23	VSS[77]	AC10
BG28	VSS[78]	AC14
BG32	VSS[79]	AC16
BG37	VSS[80]	AC38
BG40	VSS[81]	AC4
BG9	VSS[83]	AC5
C1	VSS[84]	AC7
A12	VSS[85]	AC8
C2	VSS[86]	AD1
C37	VSS[87]	AD18
A6	VSS[88]	AD20
C9	VSS[89]	AD21
D1	VSS[90]	AD25
D10	VSS[91]	AD29
D12	VSS[92]	AD45
D15	VSS[93]	AE11
D16	VSS[94]	AE14
B12	VSS[95]	AE32
D19	VSS[96]	AE33
D21	VSS[97]	AE38
D24	VSS[98]	AK29
D25	VSS[99]	AK30
D29	VSS[100]	AK32
D30	VSS[101]	AK35
D33	VSS[102]	AK39
D35	VSS[103]	AL4
D36	VSS[104]	AL42
D39	VSS[105]	AM10
D44	VSS[106]	AM11
D7	VSS[107]	AM13
P13	VSS[108]	AM17
P15	VSS[109]	AM19
P17	VSS[110]	AM24
P19	VSS[111]	AM27
P31	VSS[112]	AM29
P33	VSS[113]	AM32
P35	VSS[114]	AM33
AJ17	VSS[115]	AM4
P4	VSS[116]	AN45
P42	VSS[117]	AP10
P8	VSS[118]	AP11
R1	VSS[119]	AP15
R32	VSS[120]	AP22
T10	VSS[121]	AP27
T14	VSS[122]	AP31
T22	VSS[123]	AP33
T29	VSS[124]	AP34
T32	VSS[125]	AP39
T36	VSS[126]	
T38	VSS[127]	
Y38	VSS[128]	
Y4	VSS[129]	
Y8	VSS[130]	
T42	VSS[131]	
T5	VSS[132]	
U4	VSS[133]	
U42	VSS[134]	
V10	VSS[135]	
V14	VSS[136]	
W3	VSS[137]	
AR13	VSS[138]	
AR31	VSS[139]	
AR33	VSS[140]	
AR4	VSS[141]	
AT10	VSS[142]	
AT13		
AT35		
AT37		
AT42		
AU11		
AU17		
BD30		
W45		
Y13		
Y14		
Y30		
Y32		
Y33		
VSS_2		
VSS_BG14		

12 of 13

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

Z270-HD3P//H270-HD3P//B250-HD3P///B250-HD3 相同PCH Footprint

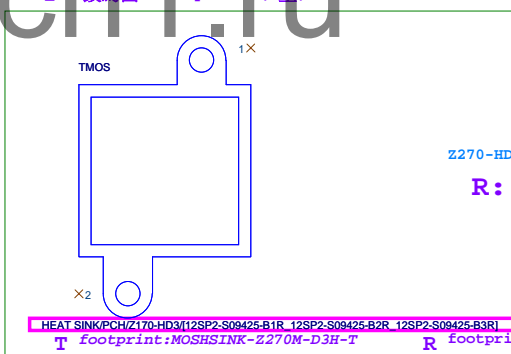


HEAT SINK/PCH/Z270/H270/B250-HD3P/12SP2-S04207-B1R 12SP2-S04207-B2R 12SP2-S04207-B3R  
42\*42\*0.7mm/TES015/D3 PIN  
黑色陽極/銀色LOGO印刷

B85M-D3H Series PCH  
Heatsink

H270-HD3P//B250-HD3P///B250-HD3 相同(T)MOS Footprint

MOS\_HS 改為由Gl.Sniper B8 (L型)



HEAT SINK/PCH/Z170-HD3/12SP2-S09425-B1R 12SP2-S09425-B2R 12SP2-S09425-B3R

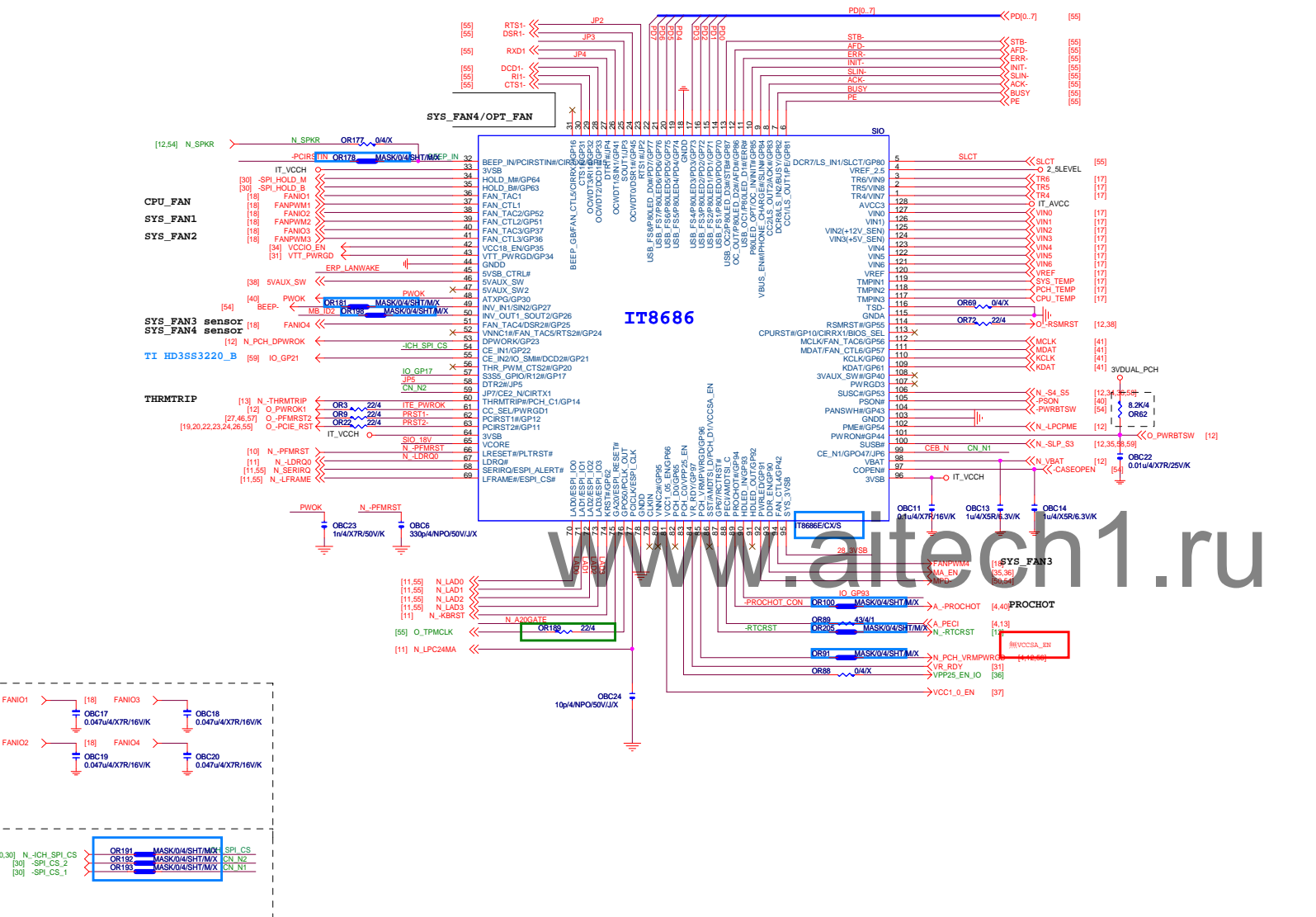
T footprint: MOSHSINK-Z270M-D3H-T R footprint: MOSHSINK-SNIPERB8-R

TMOS HS/BLACK/GBT MK/D4 PIN/KG  
28\*94\*2.5mm/GAP PAD/L CUT  
黑色陽極/銀色LOGO印刷/PUSHPIN

Z270-HD3P (R) MOS Footprint

R: 刪除

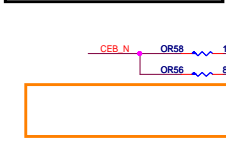
ANS 4957159		GIGABYTE	
Title		PCH GND	
Size	Document Number	GA-B250-HD3P	
Custom		Rev 1.0	
Date:	Tuesday, November 15, 2016	Sheet	15 of 63



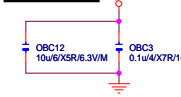
FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL4 FAN_TAC4
OPT_FAN or SYS_FAN4	FAN_CTL5 FAN_TAC5

THRMTRIP	PIN56
PROCHOT	PIN89

DUAL BIOS OPT STRAP

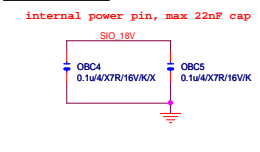


SIO CAP



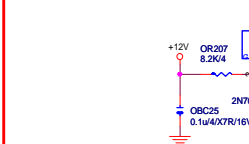
Placement CPU  
[4] A\_-THRMTRIP <WR10\_1K/41 N\_-THRMTRIP  
CPU 端 A\_-THRMTRIP不可與PCH及SIO  
N\_-THRMTRIP直接連接，  
否則會出現無法拉LOW情況。

SIO\_18V



internal power pin, max 22nF cap  
CLOSE SIO PIN4 2\_5LEVEL

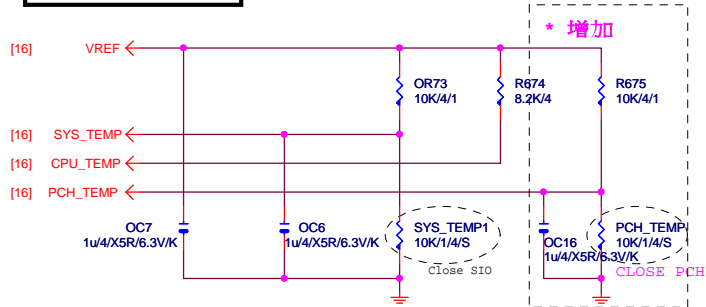
for LPC/eSPI power mode



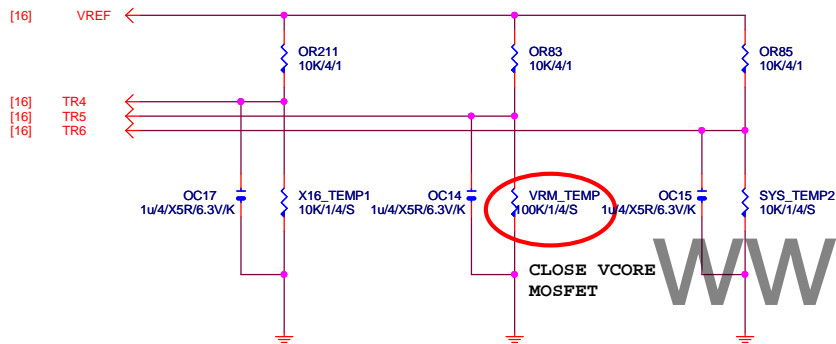
Gigabyte Technology

File		IT8686
Size		Document Number
C		GA-B250-HD3P
Date:	Tuesday, November 15, 2016	Sheet 16 of 63

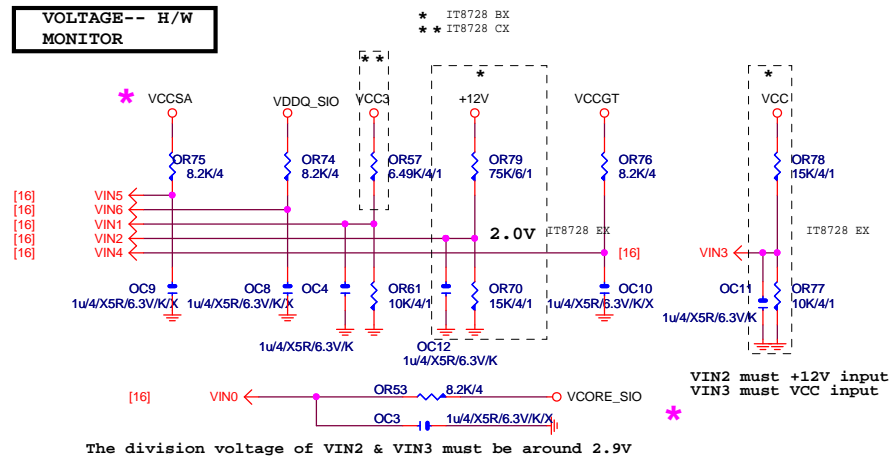
# TEMP H/W MONITOR



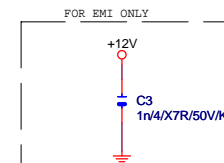
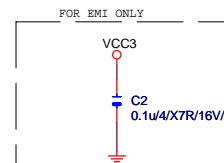
## 5個FAN時使用



# VOLTAGE-- H/W MONITOR

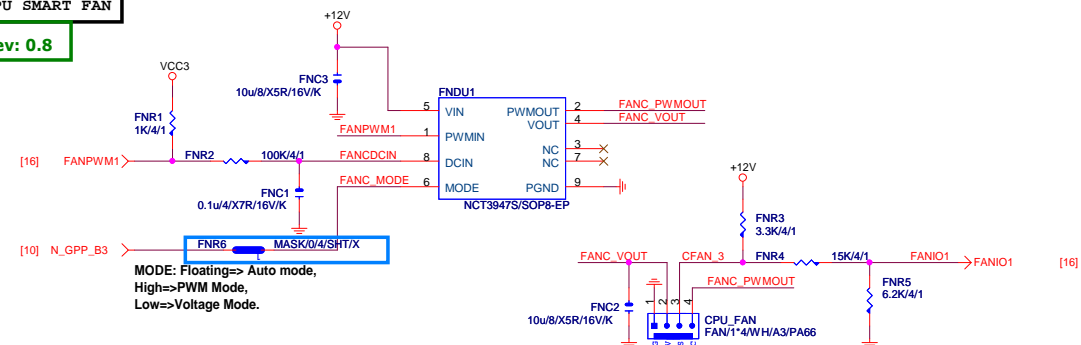


★Update 2015-04.24

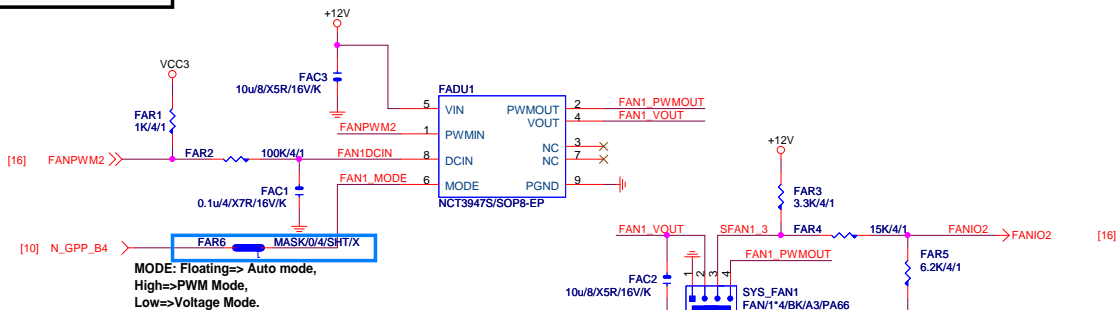


Gigabyte Technology

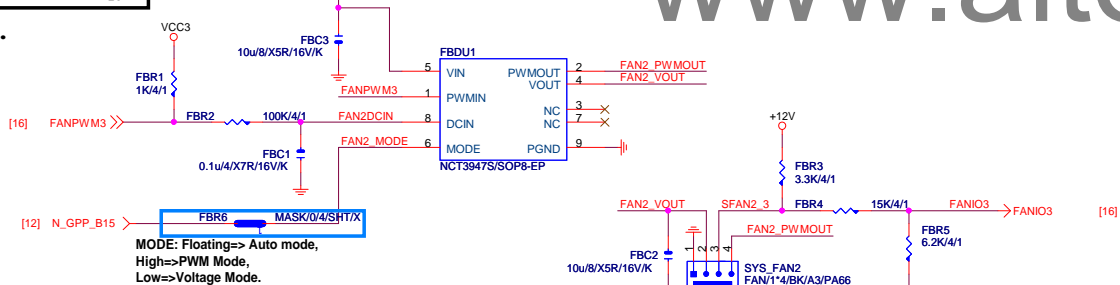
Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	17 of 63



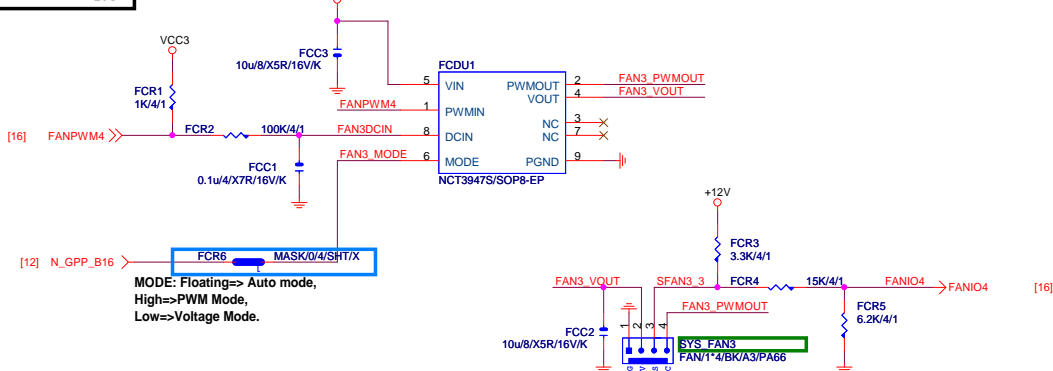
A. SYSTEM FAN1



## SYSTEM FAN2



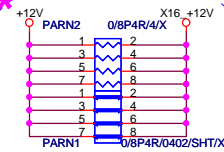
## SYSTEM FAN3



## Gigabyte Technology

Title			
FAN CTRL			
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	18 of 63

Rev 0.2

+12V protect  
short-wire test

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--&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

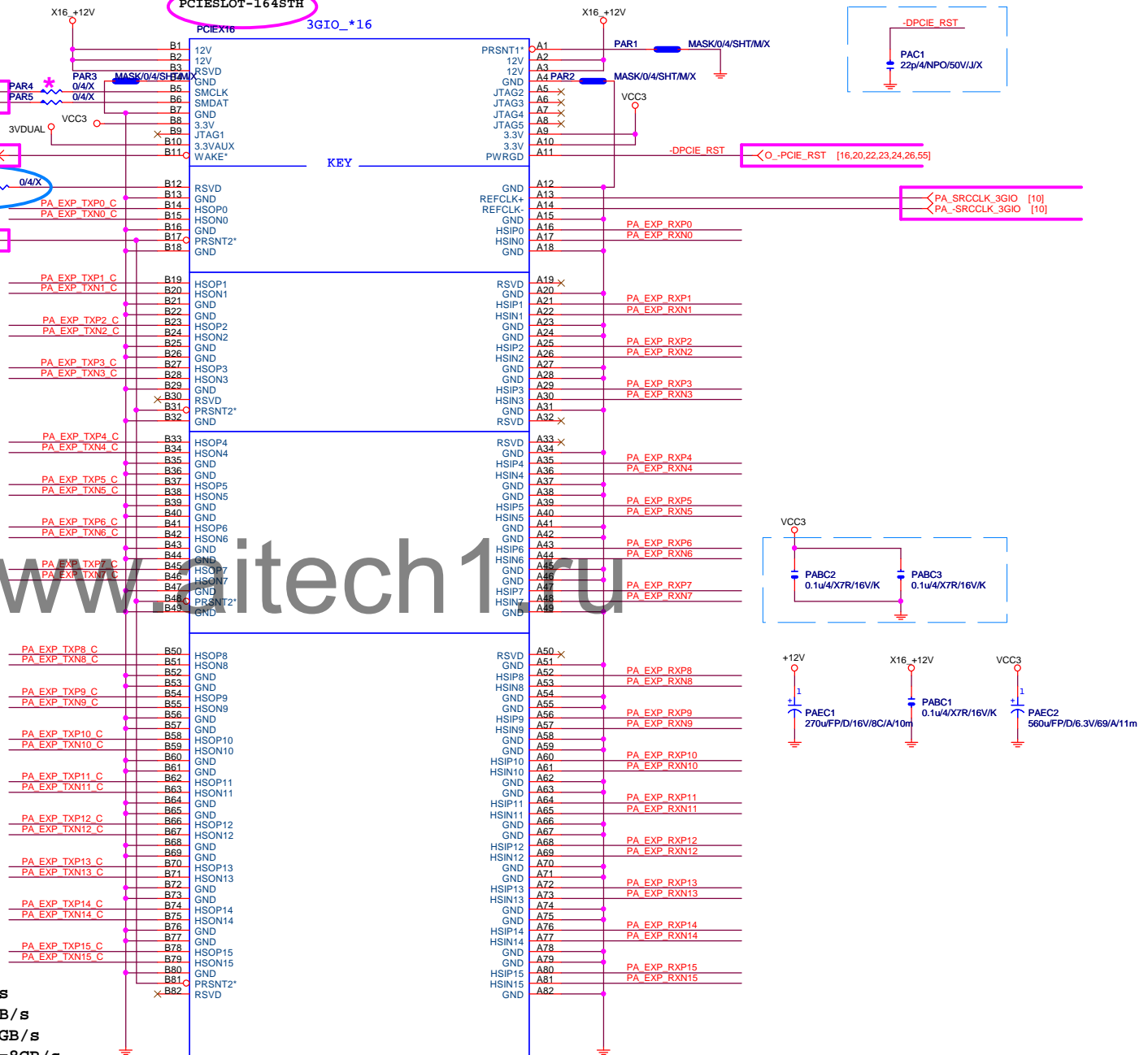
PCE-E X1(單向) BANDWIDTH=5GHz\*(8b/10b)=4Gb/s=500MB/s

PCI-E REV:3.0--&gt; 8GHZ

PCE-E X1(單向) BANDWIDTH=8GHz\*(128b/130b)=8Gb/s=1GB/s

PCIESLOT-1648TH

3GIO\_\*16



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

黑色(預留金屬加強,不上)

Gigabyte Technology

Title			PCI EXPRESS * 16
Size	Document Number	GA-B250-HD3P	
Custom		Rev 1.0	
Date:	Tuesday, November 15, 2016	Sheet	19 of 63



Rev 0.3

PCIE9~12  
SLOT5

Footprint "PCIESLOT-64STH-1"

PCIE\*4

PCIE4\_1 3GIO\_\*4

PP

[8,9,12,19,23,24,28,31,39,44,56] N\_SMBCLK  
[8,9,12,19,23,24,28,31,39,44,56] N\_SMBDATA

[12,19,23,24,27,28,55,57] N\_-PCIE\_WAKE

[13] PP\_PCIE4\_OP12  
[13] PP\_PCIE4\_ON12

to SWMU2

[21] PP\_PCIE4\_OP10\_SW

to SWMU1

[21] PP\_PCIE4\_OP9\_SW  
[21] PP\_PCIE4\_ON9\_SW

PCIE Lane Reverse

PCIE Lane Reverse

[10] -PCIE4\_1\_PR

[12] N\_GPP\_D16  
for x4\_2 & S.E & X1\_2 SW

PCIE4X-66P/BK/LONG DOUBLE

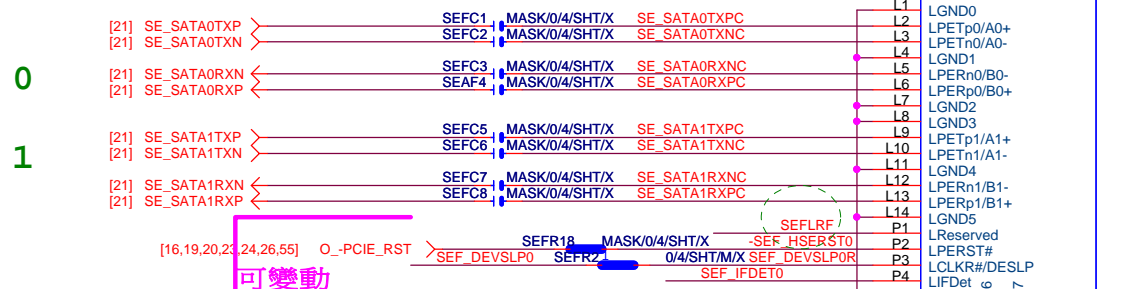
"PCIESLOT-64STH-1"加強版

黑色(預留金屬加強,不上)

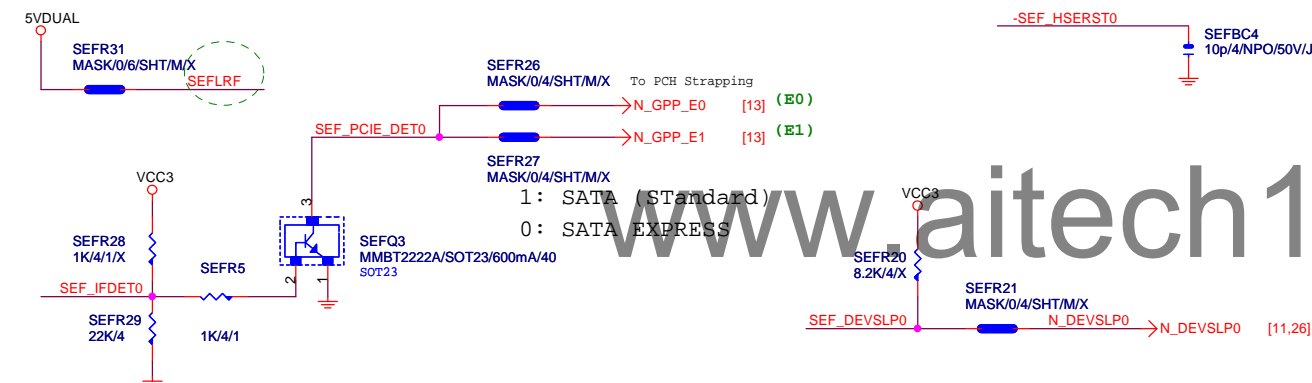
Gigabyte Technology			
Title	PCIE_X4		
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	20 of 63





To SATA3  
port0/1

可變動



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

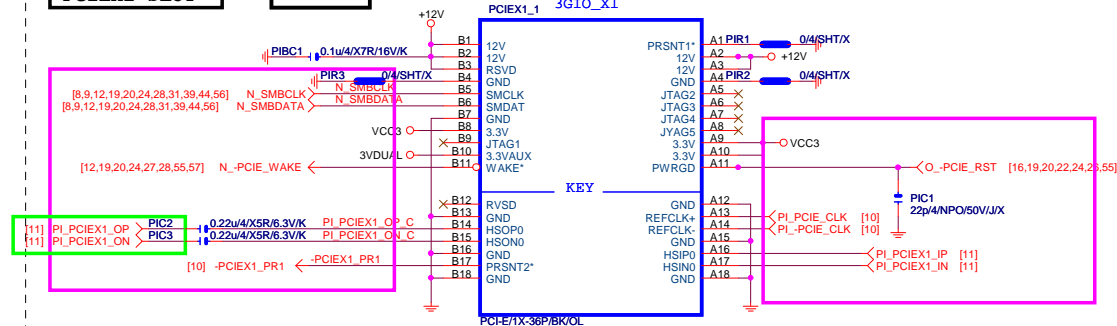
Gigabyte Technology

Title		
SATA EXPRESS		
Size	Document Number	Rev
Custom	GA-B250-HD3P	1.0
Date:	Tuesday, November 15, 2016	Sheet 22 of 63

\*  
删PCIEX1\_3

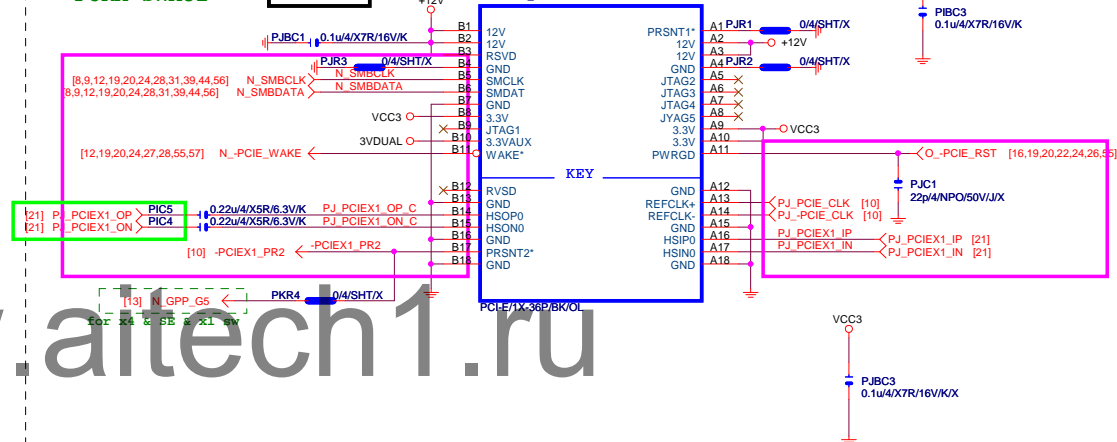
## PCIEX1 SLOT

## PCIEX1\_1



## FORM SWMU2

## PCIEX1\_2



## PCIEX4/X1 SWITCH

Title			
<Title>			
Size	Document Number	1.0	Rev
Customer	GA-B250-HD3P		
Date:	Tuesday, November 15, 2016	Sheet	23 of 63

Rev 0.1

PQ

Type [M2S\_32G(G1.SNIPERB8)\_R01\_20160715B]

PCIE21~24 SLOT7

Footprint "PCIESLOT-64P-1"

PCIE4\_2

3GIO\_\*4

[8,9,12,19,20,23,28,31,39,44,56]  
[8,9,12,19,20,23,28,31,39,44,56]

N\_SMBCLK  
N\_SMBDATA

[12,19,20,23,27,28,55,57] N\_-PCIE\_WAKE

[25] PQ\_PCIE4\_OP21\_SW  
[25] PQ\_PCIE4\_ON21\_SW

PQC9 0.22u4/X5R/6.3V/K  
PQC10 0.22u4/X5R/6.3V/K

PQ\_PCIE4\_OP21C  
PQ\_PCIE4\_ON21C

[25] PQ\_PCIE4\_OP22\_SW  
[25] PQ\_PCIE4\_ON22\_SW

PQC11 0.22u4/X5R/6.3V/K  
PQC12 0.22u4/X5R/6.3V/K

PQ\_PCIE4\_OP22C  
PQ\_PCIE4\_ON22C

[25] PQ\_PCIE4\_OP23\_SW  
[25] PQ\_PCIE4\_ON23\_SW

PQC13 0.22u4/X5R/6.3V/K  
PQC14 0.22u4/X5R/6.3V/K

PQ\_PCIE4\_OP23C  
PQ\_PCIE4\_ON23C

[25] PQ\_PCIE4\_OP24\_SW  
[25] PQ\_PCIE4\_ON24\_SW

PQC15 0.22u4/X5R/6.3V/K  
PQC16 0.22u4/X5R/6.3V/K

PQ\_PCIE4\_OP24C  
PQ\_PCIE4\_ON24C

PCIE4\_2 share M.2

[10] -PCIE4\_2\_PR

[12] N\_GPP\_D13

VCC3

for x4\_1 & M.2 sw

PCI-E/4X-66P/BK/LONG DOUBLE

PCIE4\_2 用一般

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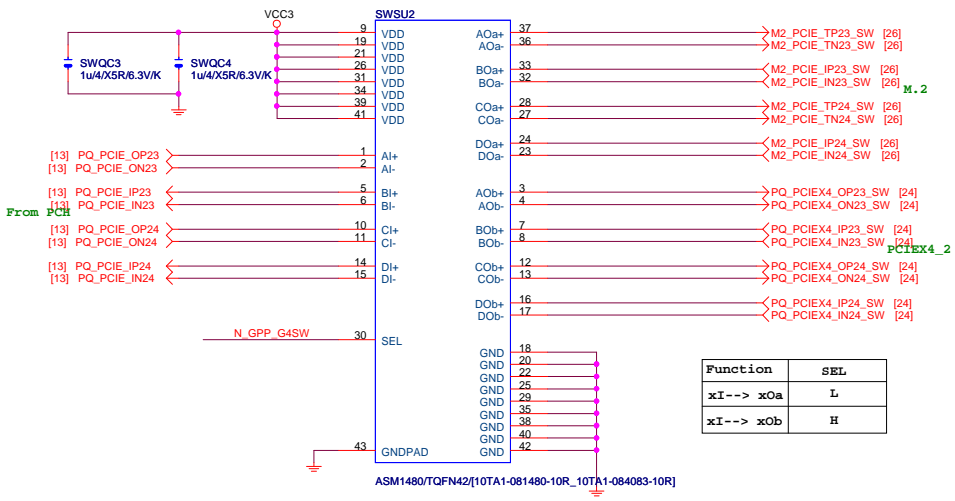
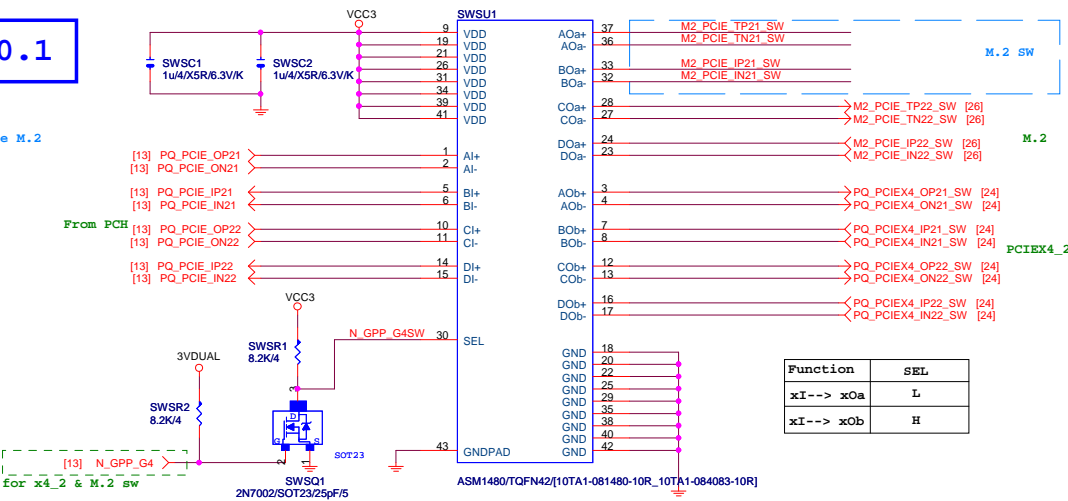
Title			PCIE_X4
Size	Document Number	Rev	1.0
Custom			
Date: Tuesday, November 15, 2016			Sheet 24 of 63

(S)TYPE

Rev 0.1

X4 & M.2

PCIEx4\_2 share M.2



Rev 0.1

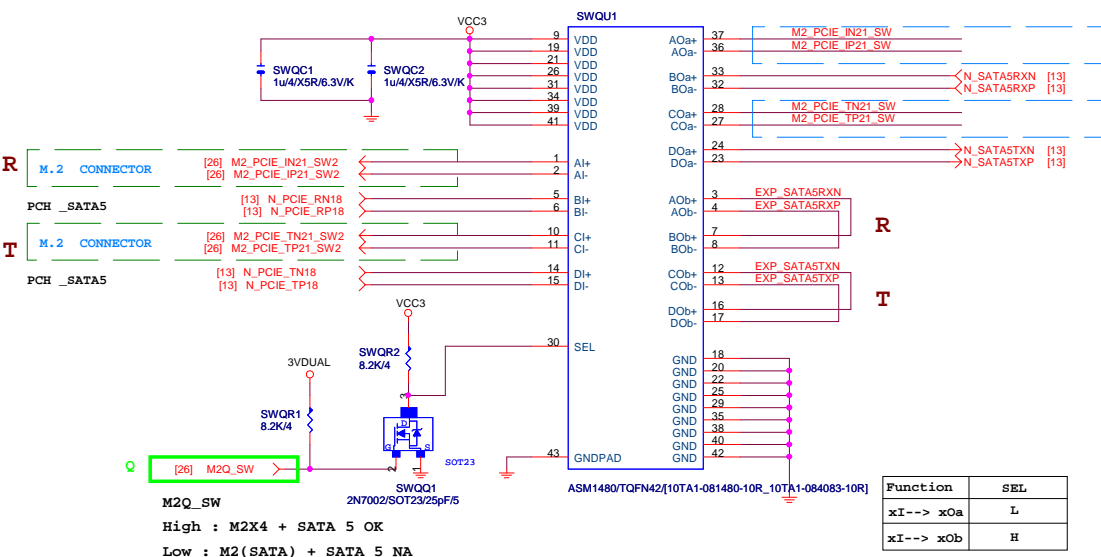
(Q)TYPE

舊的Switch,價格低

P & N SWAP

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SATA5 & M.2 SW



M2x4 / PCIEx4	GPI		GPO				M.E. Config			
	N_GPP_G7		N_GPP_D13	N_GPP_G4			P24	P23	P22	P21
M.2x4	0		1	1						PCIEx4
M.2(SATA)	0		X	1						PCIEx4
PCIEx4 Only	1		0	0						PCIEx4
M2x4(優先)與PEx4同時插	0		0	1						PCIEx4
Remark : (X=Don't Care)	#M2_Det	#M2(S)Det	#PEx4_Det							

Title		<Title>
Size	Document Number	Rev
Customer	GA-B250-HD3P	1.0
Date:	Tuesday, November 15, 2016	Sheet 25 of 63

Rev 0.1

Type S

M.2 Lane4 from PCH IO24

M.2 Lane3 from PCH IO23

M.2 Lane2 from PCH IO22

M.2 Lane1 from PCH IO21

支援SATA and M.2 function

需與M2\_-CLKREQ對應

Footprint : NGFF-M-75P-11CM-3-SMD  
 10NR5-130067-52R

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DIP螺柱

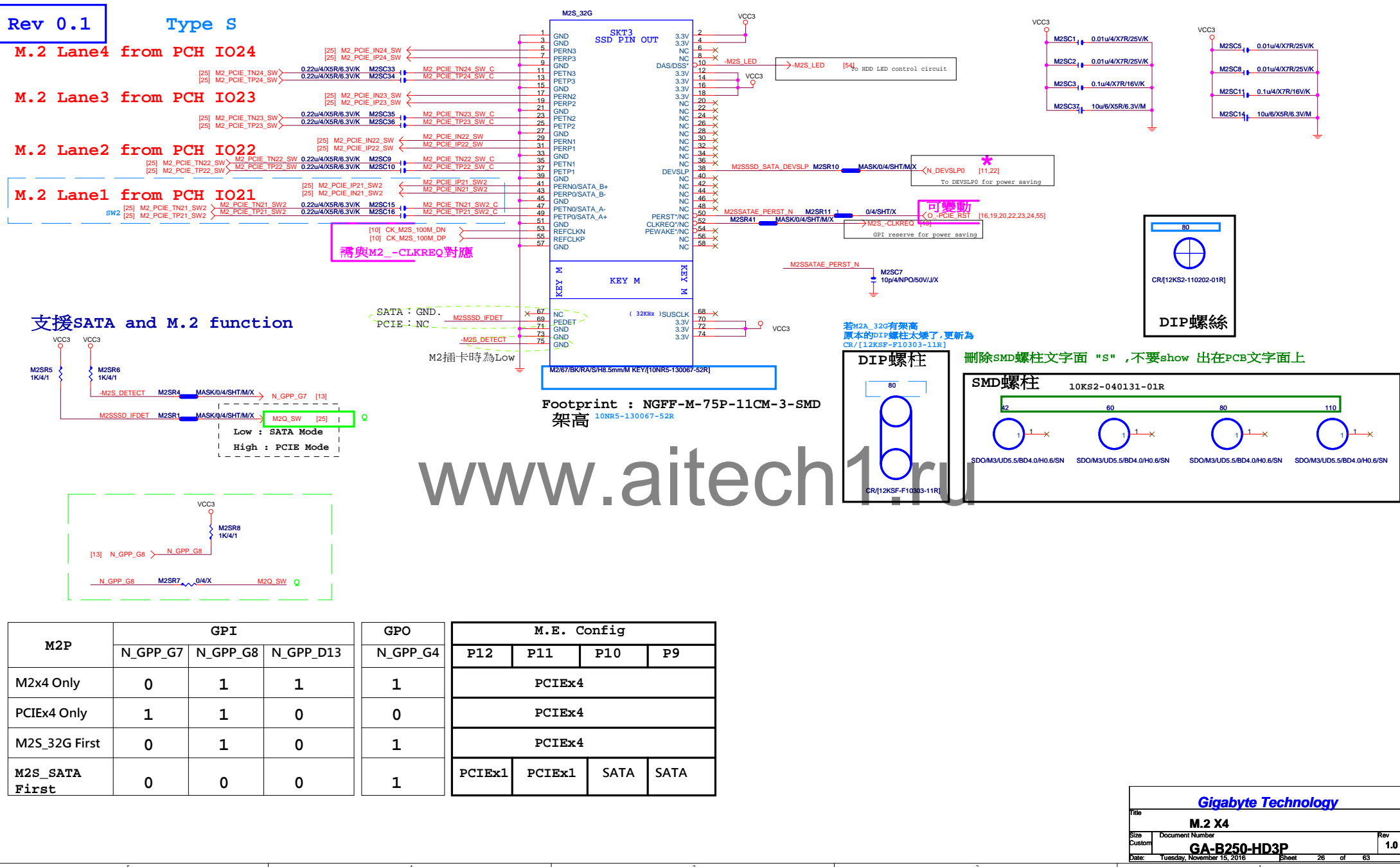
刪除SMD螺柱文字面 "S" , 不要show 出在PCB文字面上

SMD螺柱

10KS2-040131-01R

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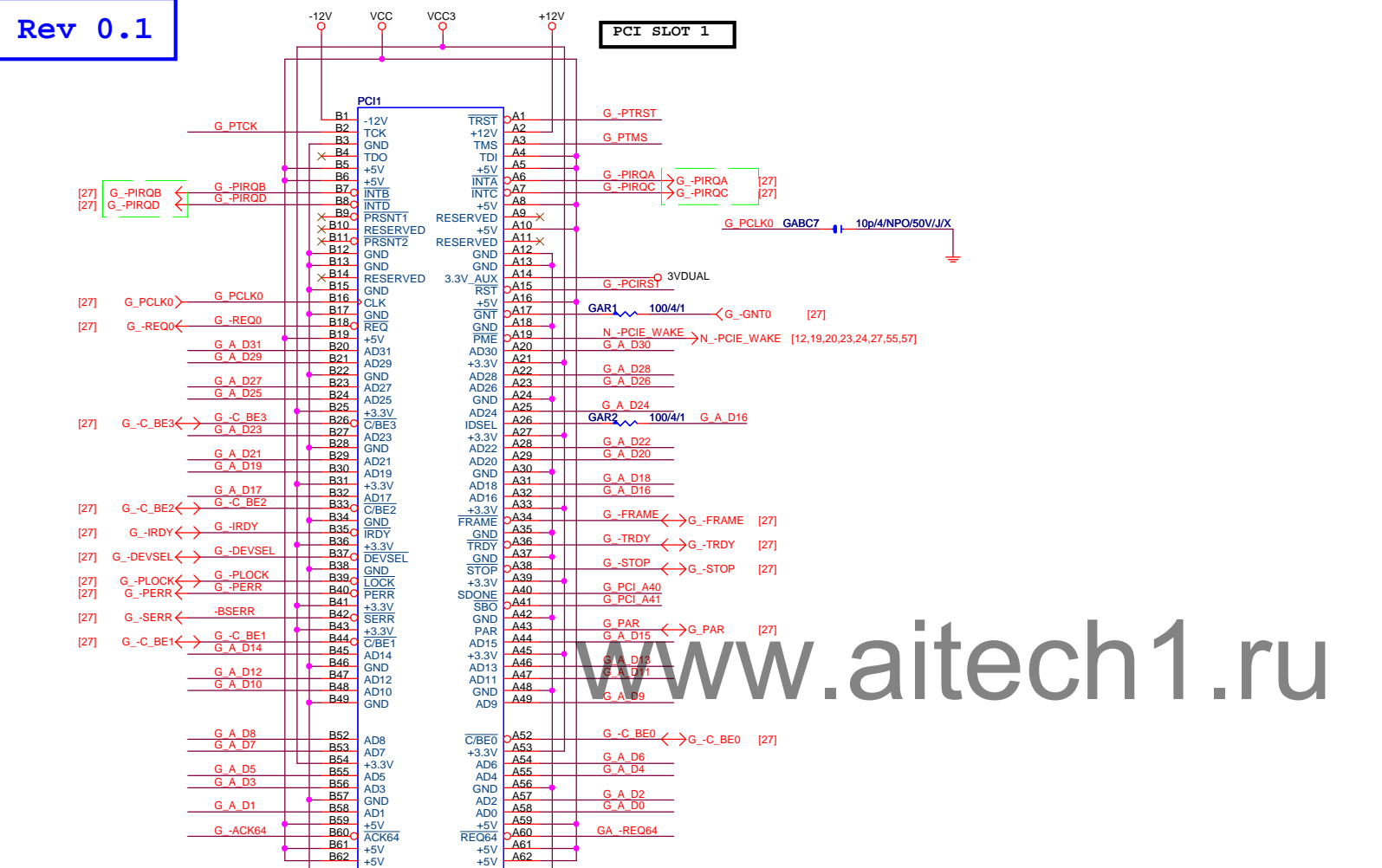
Title			M.2 X4	
Size	Document Number			Rev
Custom	GA-B250-HD3P			1.0
Date:	Tuesday, November 15, 2016	Sheet	26	of 63





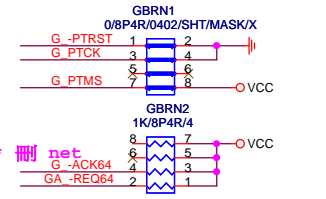
Rev 0.1

PCI SLOT 1

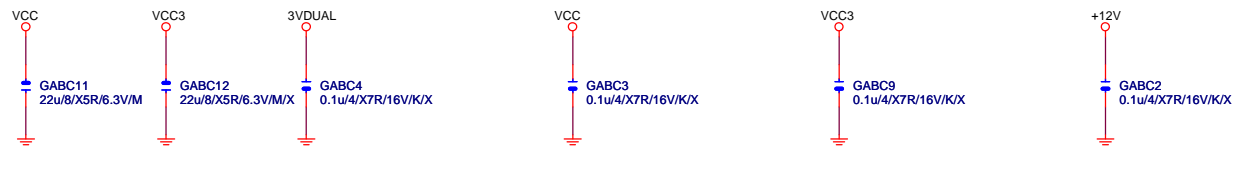


PCI PU

footprint 改為 R8P4R-0402-SHORT-MASK



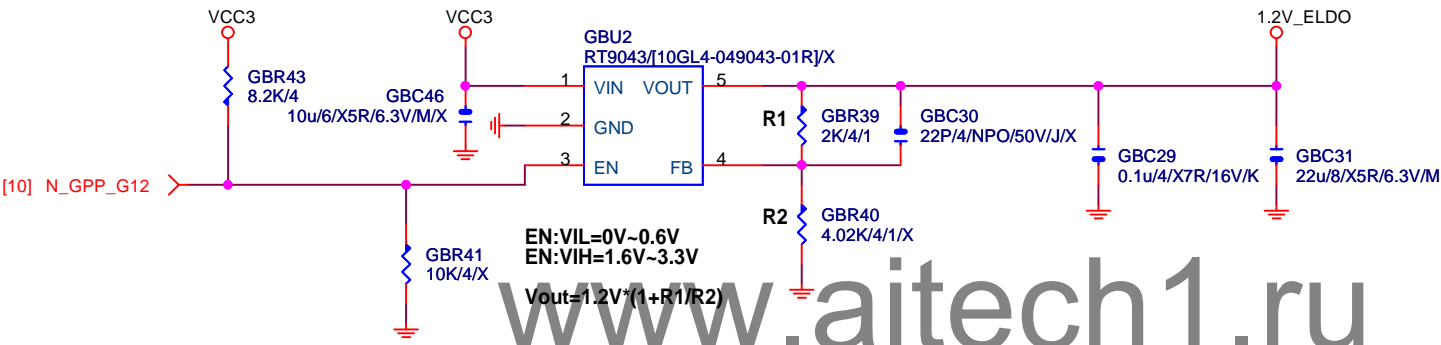
PCI CAP



<b>GIGABYTE™</b>		
Title <b>PCI SLOT 1&amp;2</b>		
Size Custom	Document Number <b>GA-B250-HD3P</b>	Rev <b>1.0</b>
Date: Tuesday, November 15, 2016	Sheet 28	of 63



Rev 0.1



Gigabyte Technology

Title

ASM1085 POWER

Size  
Custom

Document Number

GA-B250-HD3P

Rev

1.0

Date:

Tuesday, November 15, 2016

Sheet

29

of

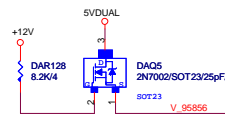
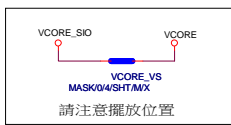
63

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M\_BIOS :SMD SPI SOCKET 8P 200MIL LOTES

\* 試産先上 , PVT 移除

Gigabyte Technology			
Title		BIOS	
Size	Document Number	GA-B250-HD3P	
Custom			Rev 1.0
Date:	Tuesday, November 15, 2016	Sheet	30 of 63

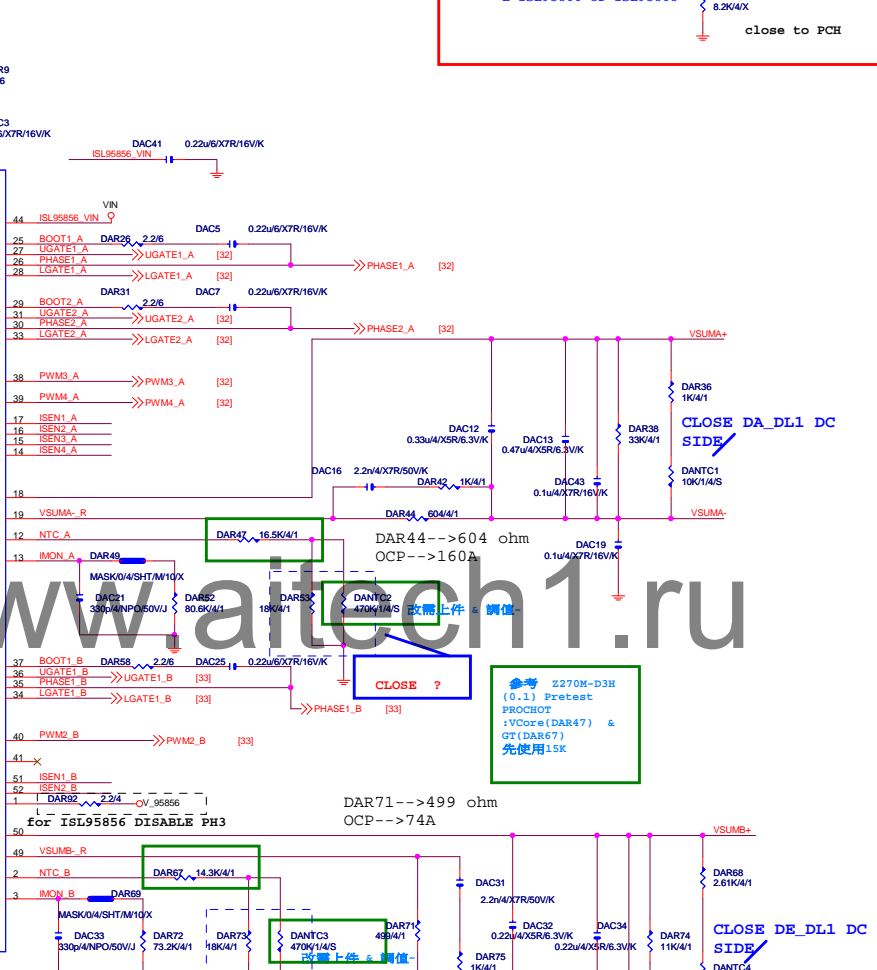
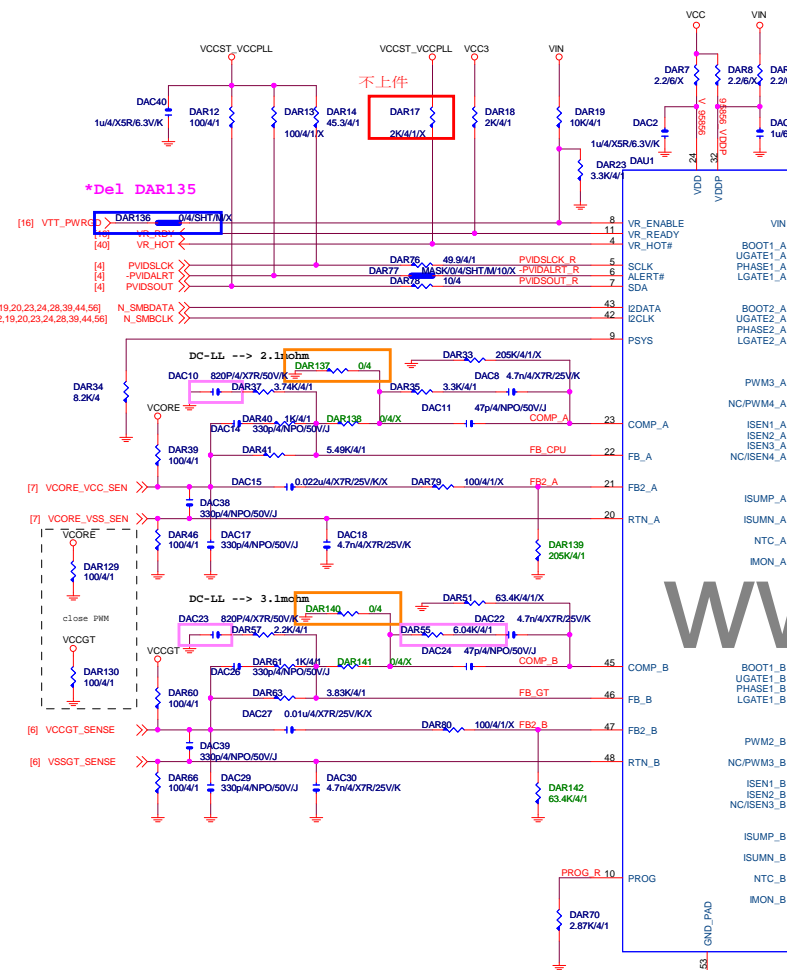
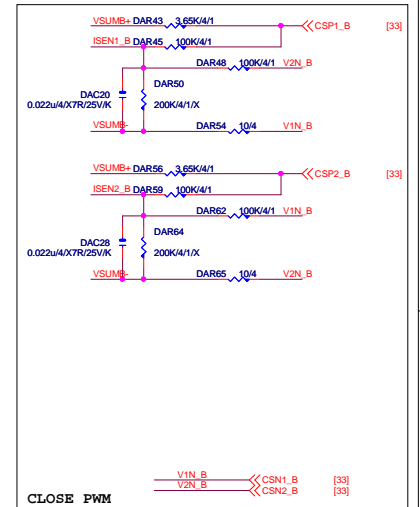
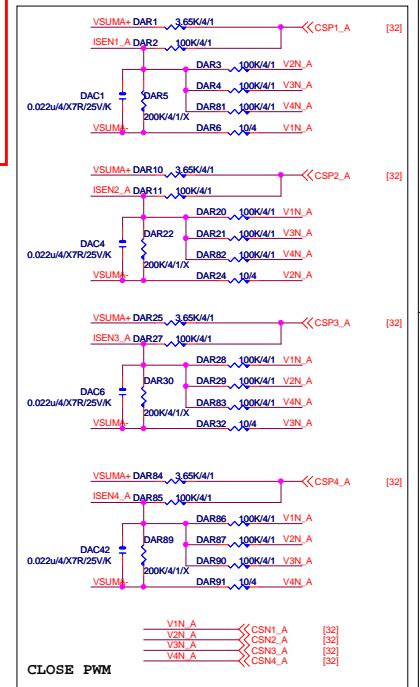


H:ISL95856 or ISL95858

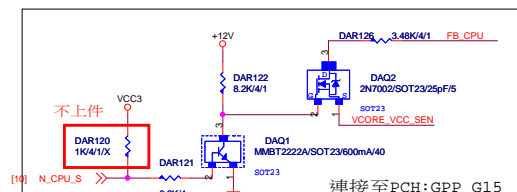
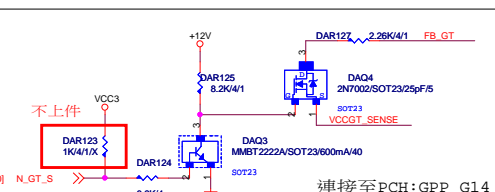
L:ISL95866 or ISL95868

N\_GPP\_C15 [12]

close to PCH

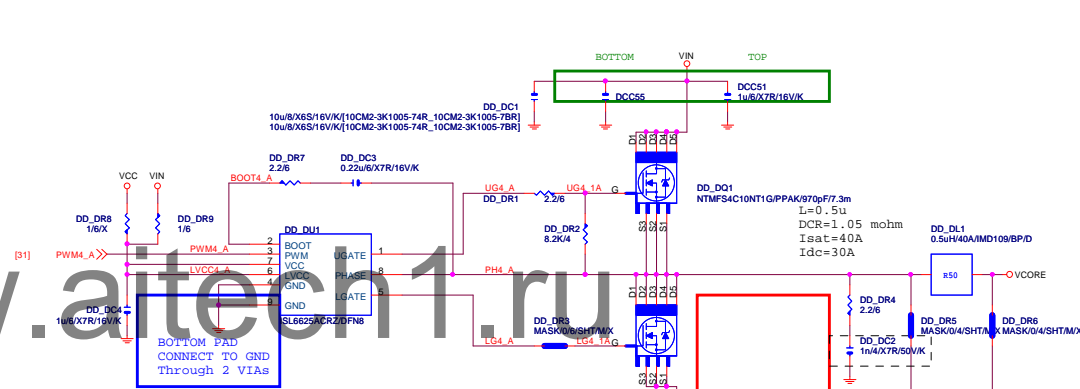
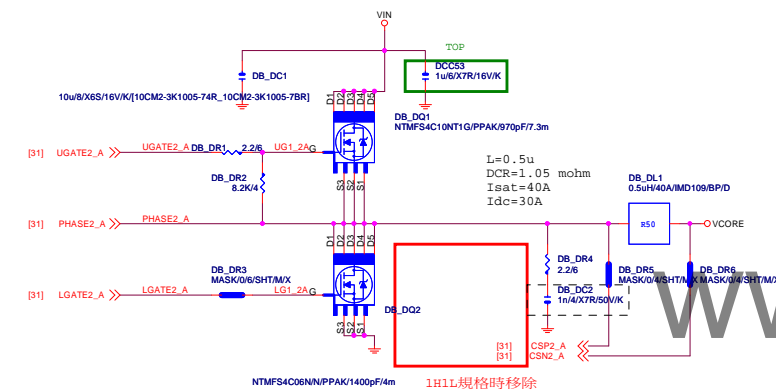
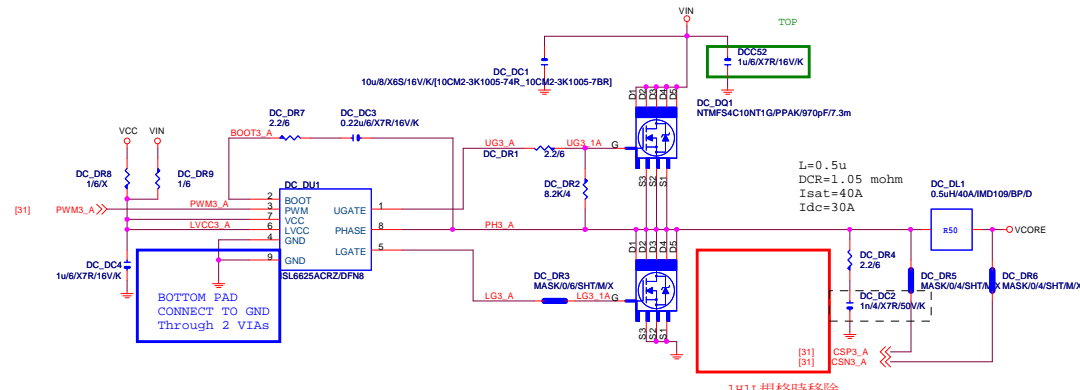
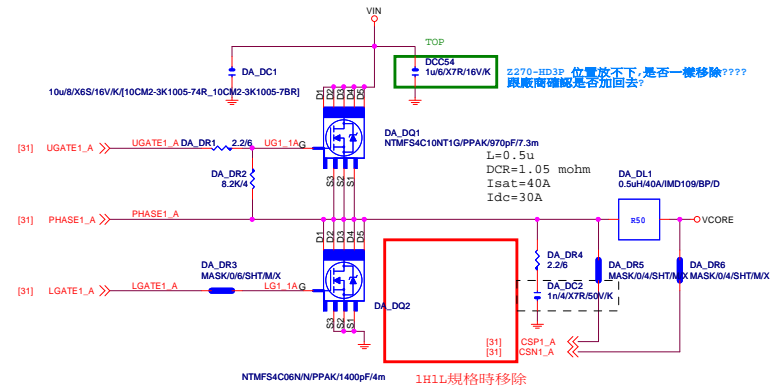


Vcore	ISL95856	ISL95866	VCCGT	ISL95856	ISL95866
DAR137	X	V	DAR140	X	V
DAR138	V	X	DAR141	V	X
DAR139	X	V	DAR142	X	V
DAC15	V	X	DAC27	V	X
DAR79	V	X	DAR80	V	X
DAR33	V	X	DAR51	V	X

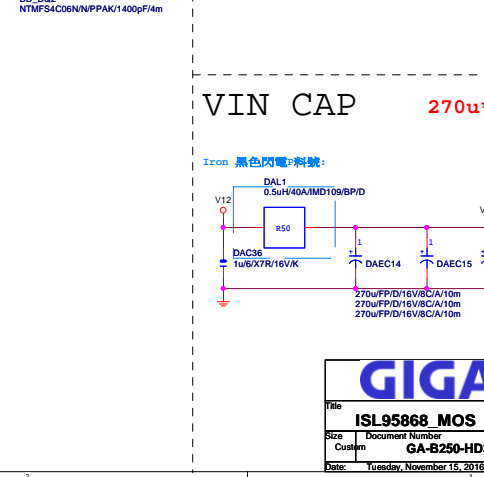
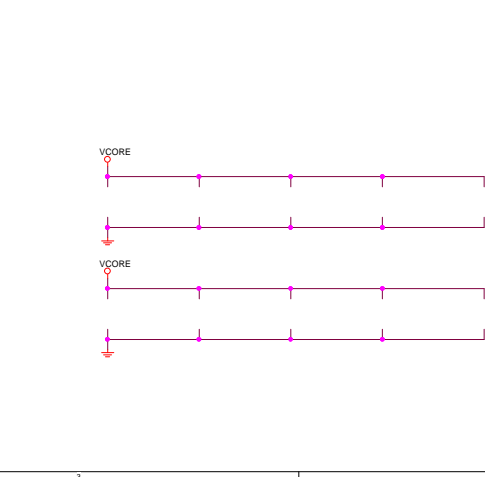
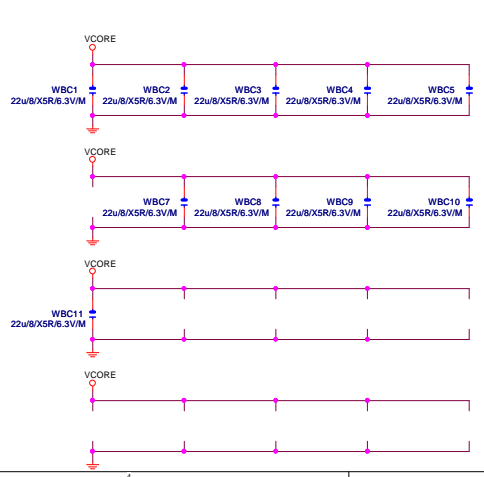
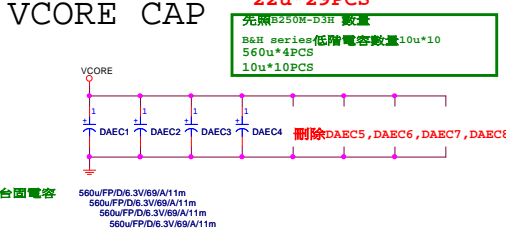
Z系列才需要留  
連接至PCH GPP\_G13

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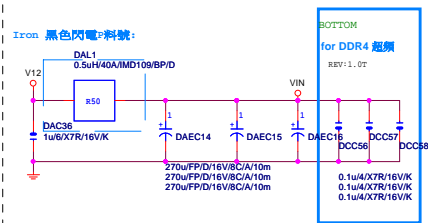
VCORE



VCORE CAP

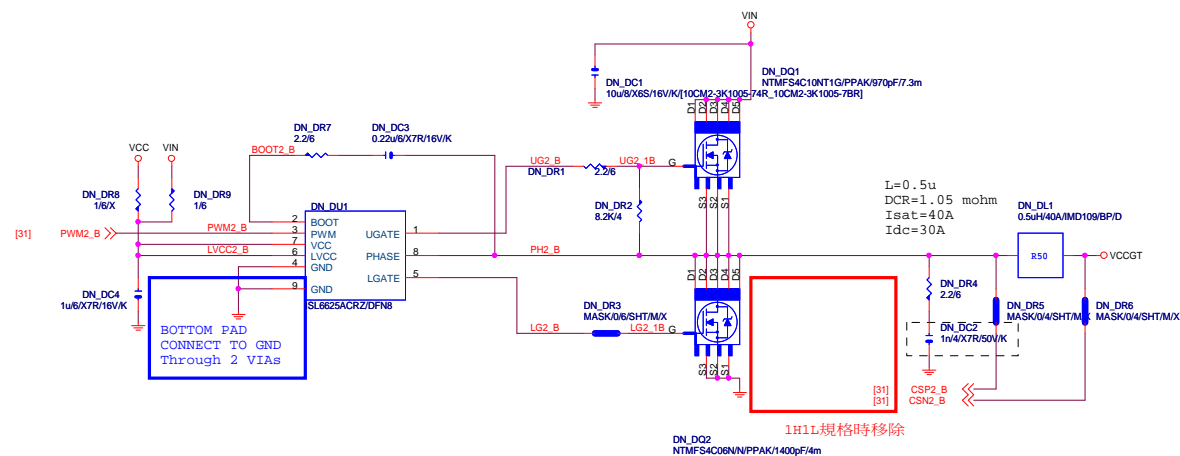


VIN CAP



GIGABYTE

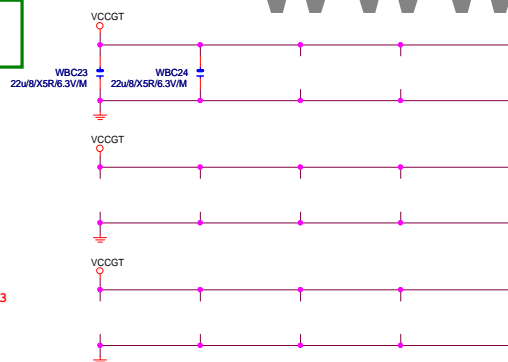
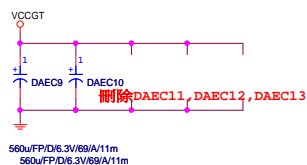
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Size	Document Number	Rev	1.0
Custom	GA-B250-HD3P	Rev	1.0
Date	Yuesday, November 15, 2016	Sheet	32 of 63

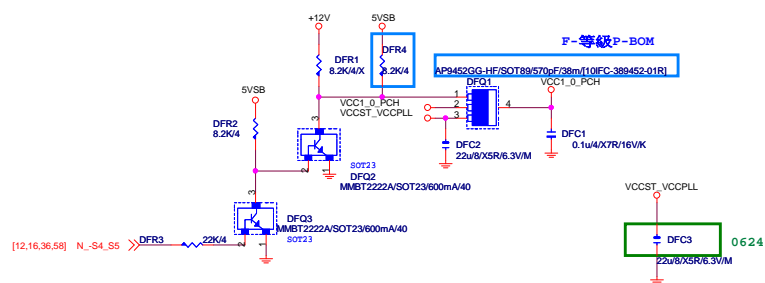
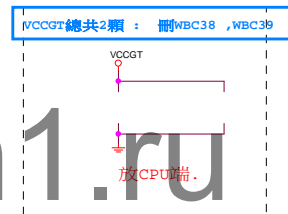
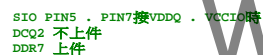
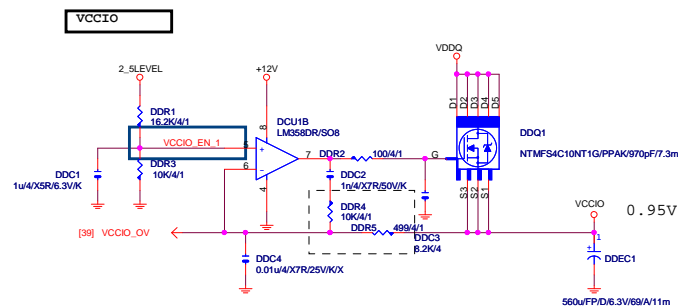


先照B250M-D3H 數量  
B&H series 低階電容數量 10u\*10  
560u\*2PCS  
10u\*2PCS

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VCCGT	CAP
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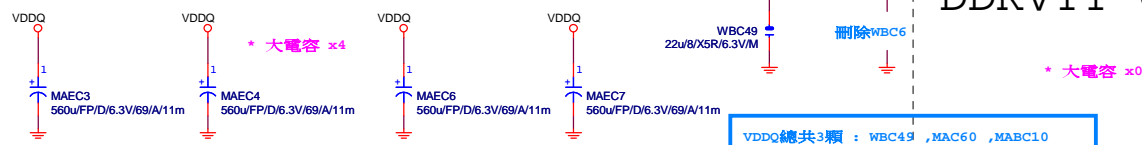


**DDR4**

For power sequence require

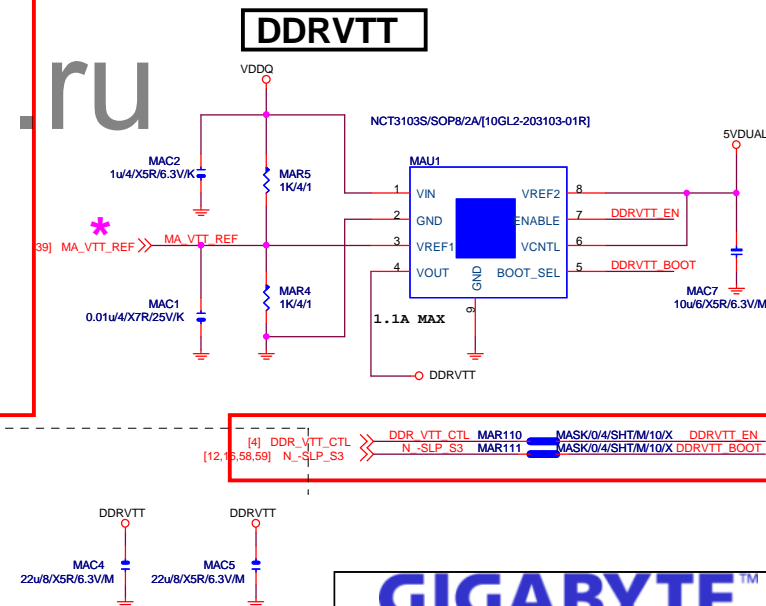
VPP\_25V使用8120時上件


DDR CAP 560u\*4PCS 22u\*2PCS



DDRVTT CAP

\* 大電容 x0



			
Title			
RT8237_DDR4 POWER			
Size	Document Number		Rev
Custom	GA-B250-HD3P		1.0
Date:	Tuesday, November 15, 2016	Sheet 35 of 63	

**VPP\_25V**

## CHOKES與CAP料號可變

[illegible]

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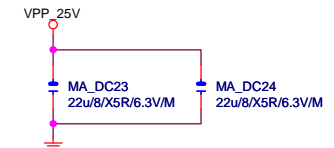
\* 例 MA\_DR32

Schematic diagram of the MA\_DR32 module, showing three MOSFETs (MAQ7, MAQ8, MAQ9) and their associated components:

- MAQ7**: 2N7002/SOT23/25pF/5, SOT23 package.
- MAQ8**: 2N7002/SOT23/25pF/5, SOT23 package.
- MAQ9**: 2N7002/SOT23/25pF/5, SOT23 package.
- Resistors**: MAR109 (8.2K/4), MAR106 (8.2K/4), MAR14 (8.2K/4).
- Capacitors**: MAC8 (1u4/X5R/6.3V/K/X), MAC9 (1u4/X5R/6.3V/K/X), MAC10 (1u4/X5R/6.3V/K/X).
- Inputs**: 5VSB, VPP25\_EN, N\_S4\_S5, MA\_EN.

[16] VPP25\_EN\_IO >> MAR114\_0/4/X VPP25\_EN

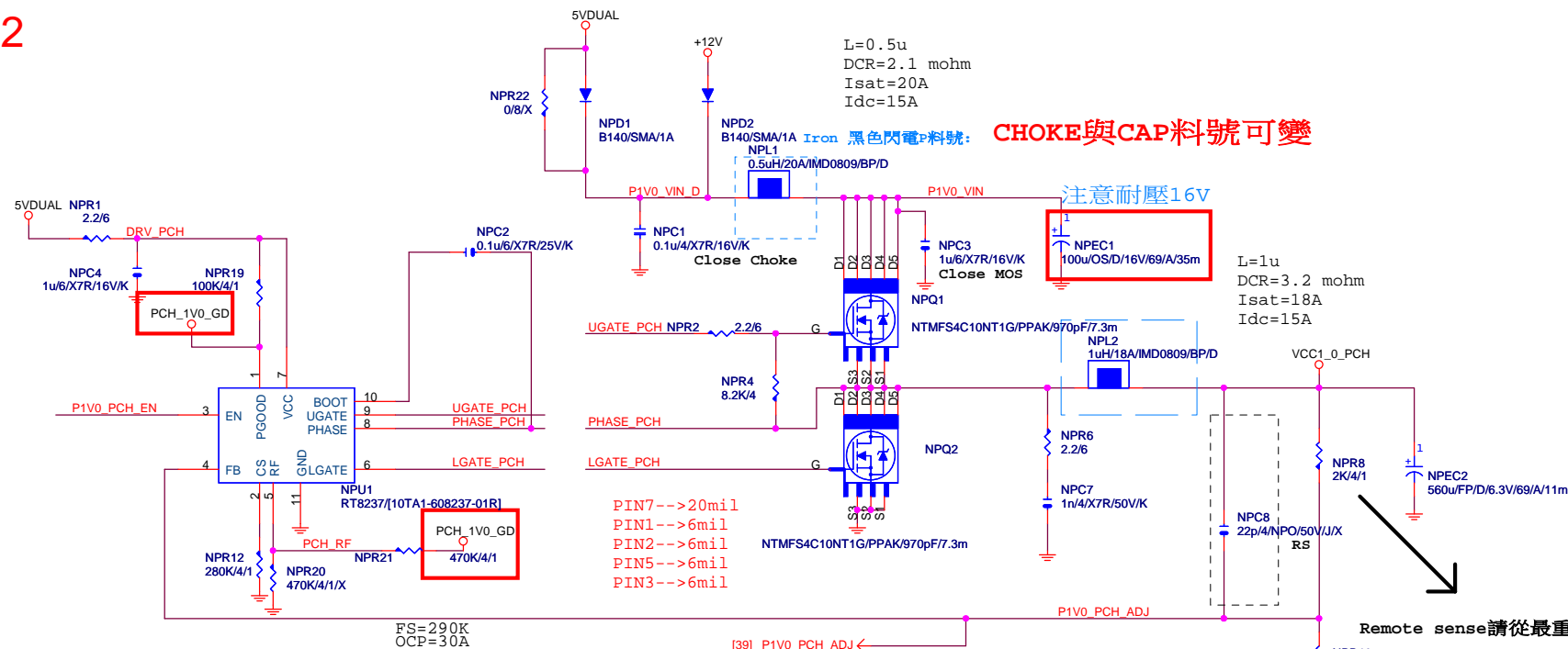
\* 大電容 x0

**GIGABYTE™**

Title			
RT8068A_VPP25 POWER			
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	36 of 63

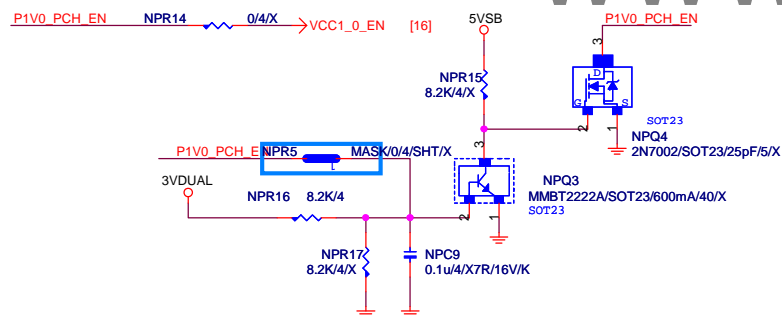


REV:0.2



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PWR SEQ



請放置CHOKE一出來的地方

GIGABYTE™			
Title			
RT8237_PCH POWER			
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	37 of 63

## REV: 0.51

[16] 5VAUX\_SW



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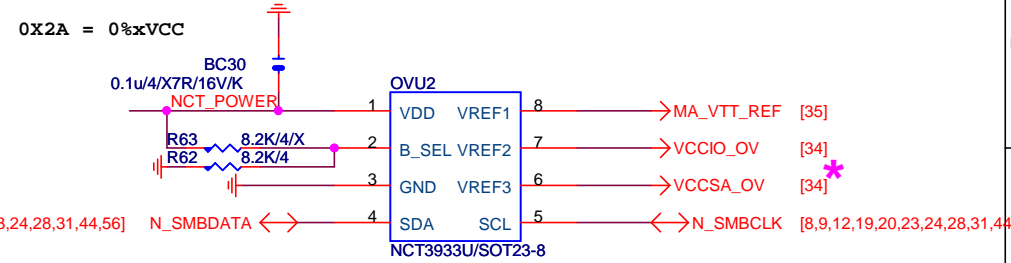
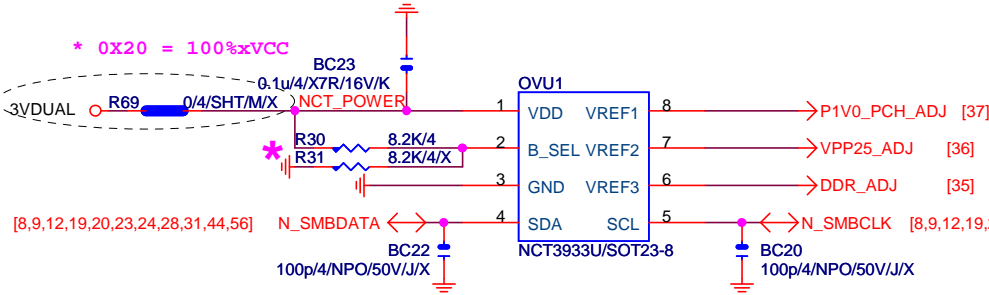


-RSMRST (不上件)



Date: Tuesday, November 15, 2016 Sheet 38 of 63

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

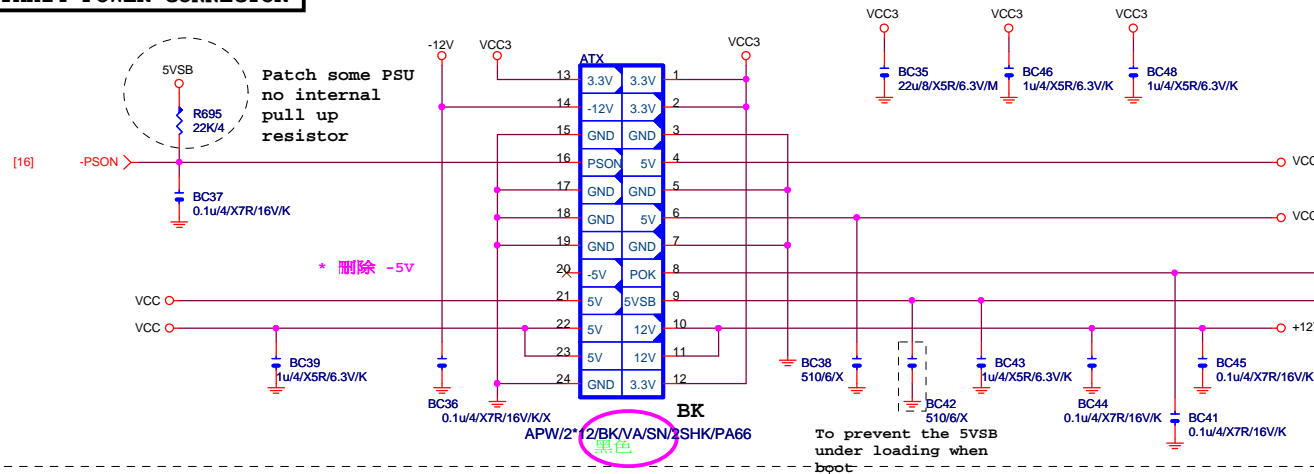
**Gigabyte Technology**

Title CPU CORE VR-2

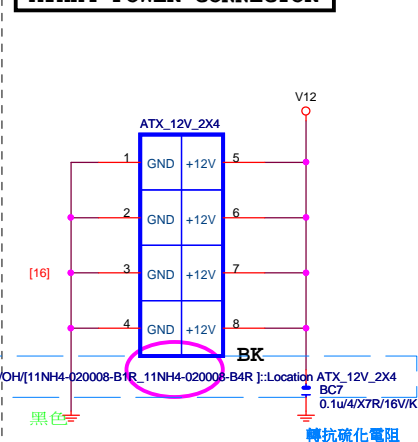
Size Custom	Document Number	GA-B250-HD3P	Rev 1.0
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Date: Tuesday, November 15, 2016 Sheet 39 of 63

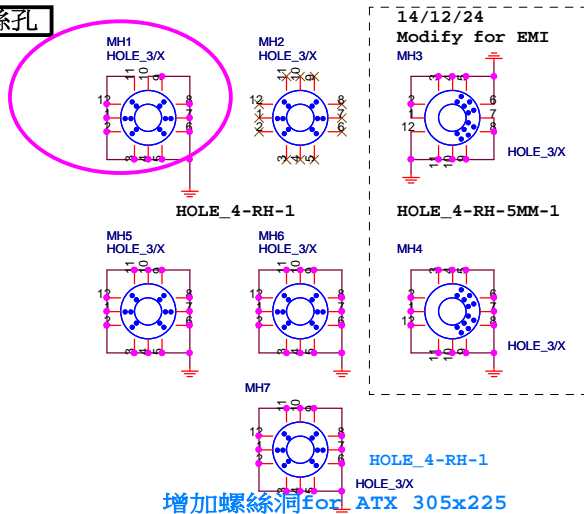
## ATXX24 POWER CONNECTOR



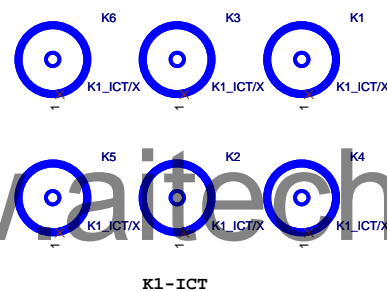
## ATXX4 POWER CONNECTOR



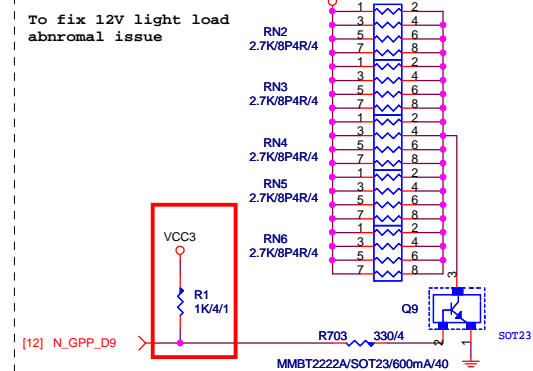
## 螺絲孔



## 固定孔/光學點

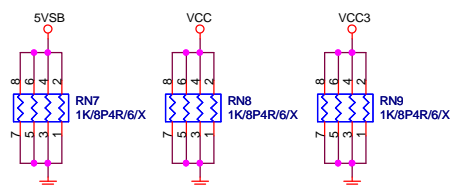


## +12V DUMMY LOAD



【技術通報R&D技術通報153】

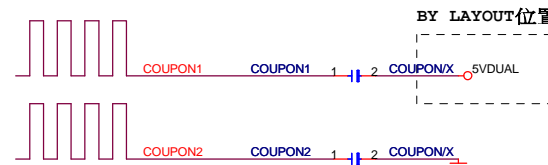
## DUMMY LOAD



## -PROHOT



## COUPON



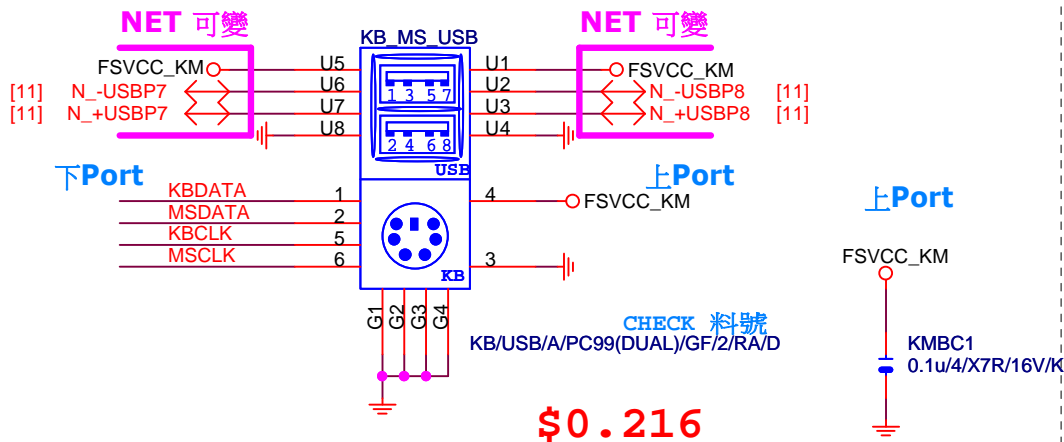
Gigabyte Technology

Title			ATX POWER CONNECTOR
Size	Document Number	GA-B250-HD3P	
Custom			Rev 1.0
Date:	Tuesday, November 15, 2016	Sheet	40 of 63

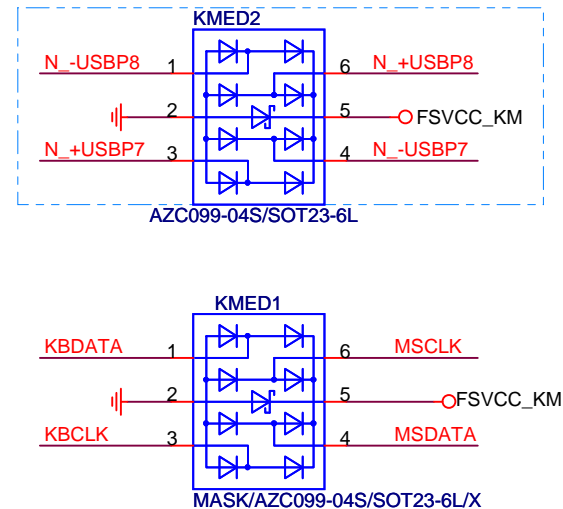
## KB\_MS\_USB

Rev: 0.81

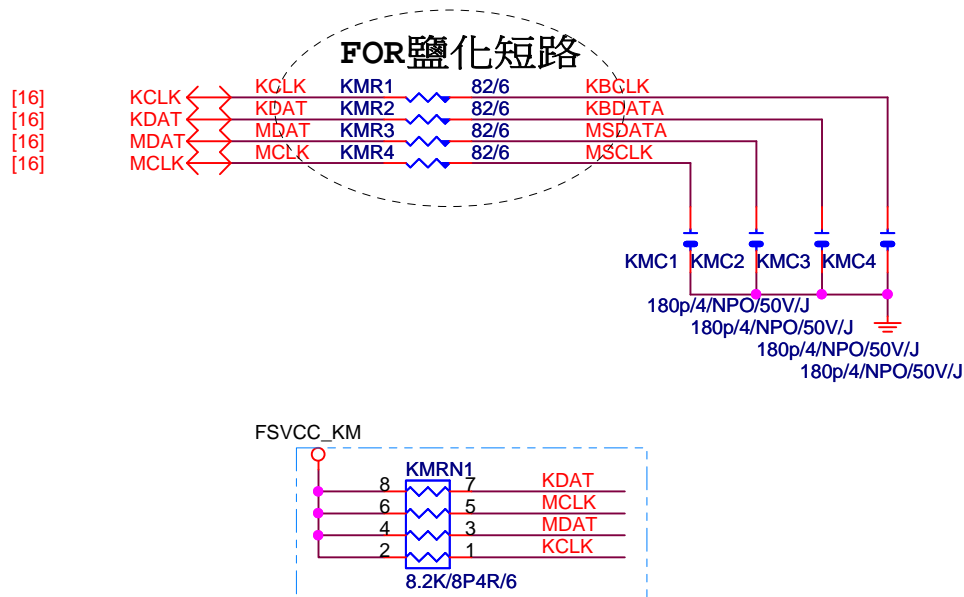
新connector : PS2(在上)+USB2.0\*2(在下) 因為比較會與旁邊connector有干涉 且深度較長較佔空間  
所以不使用  
所有200 series 請下一版改回原本用料: PS2(在下)+USB2.0\*2(在上)



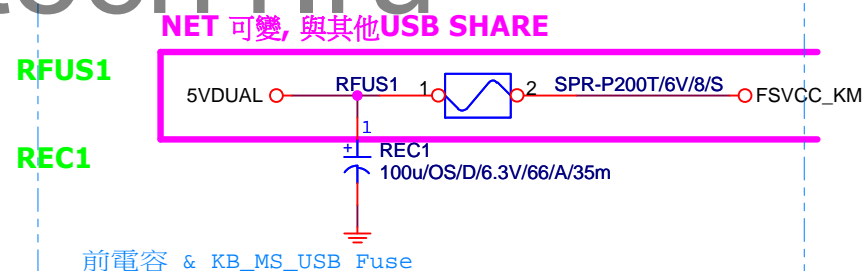
## ESD



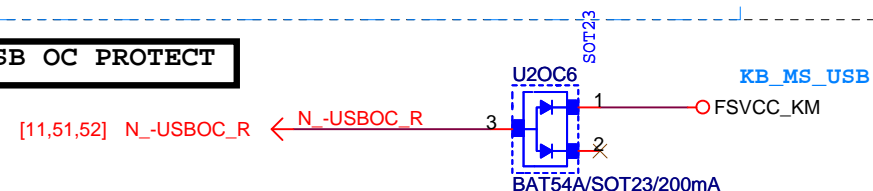
## KB\_MS\_USB DAMPING/PU



## KB\_MS\_USB PWR



## USB OC PROTECT



Gigabyte Technology

Title

KB\_MS\_USB

Size

Document Number

GA-B250-HD3P

Rev

1.0

Date:

Tuesday, November 15, 2016

Sheet

41

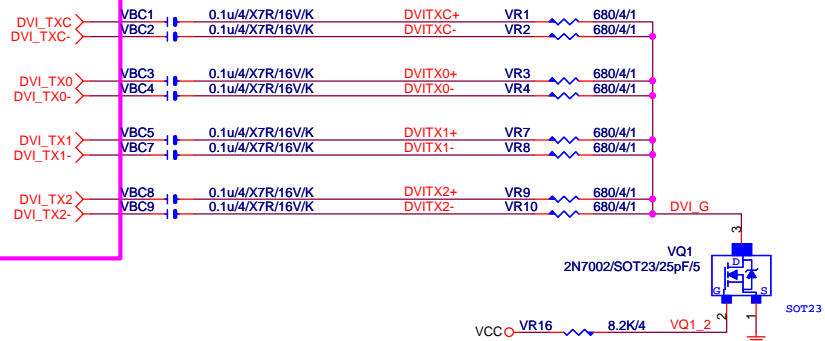
of

63

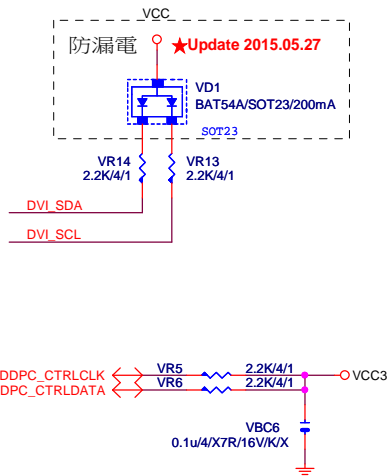
DVI

Rev: 0.8

NET 可變

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

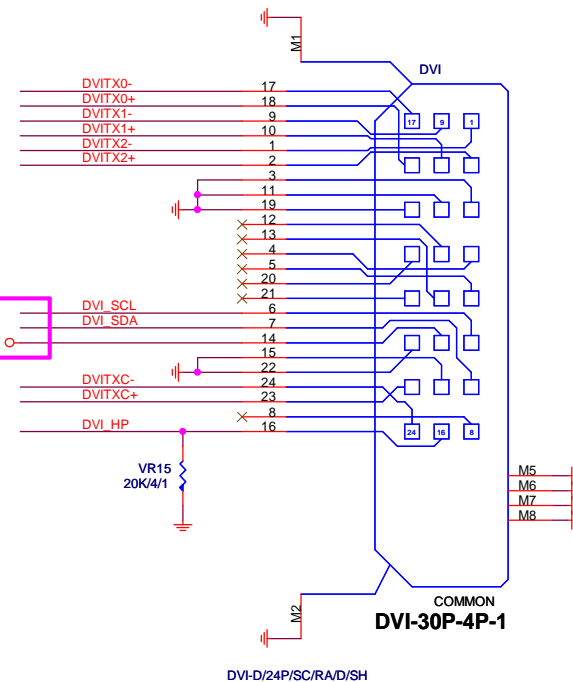
DVI PU



DVI CONN

NET 可變

\* FSVCC\_KM

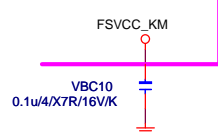


平躺式 DVI-D

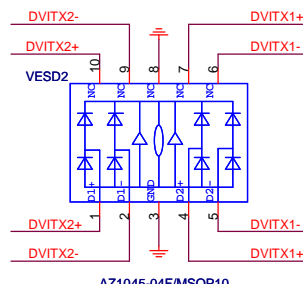
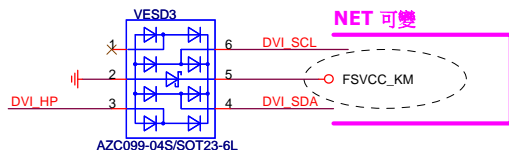
11NR6-501024-31

ESD

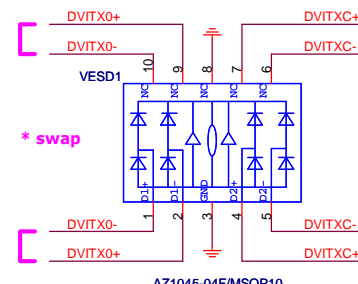
NET 可變



Close to connector



Close to connector

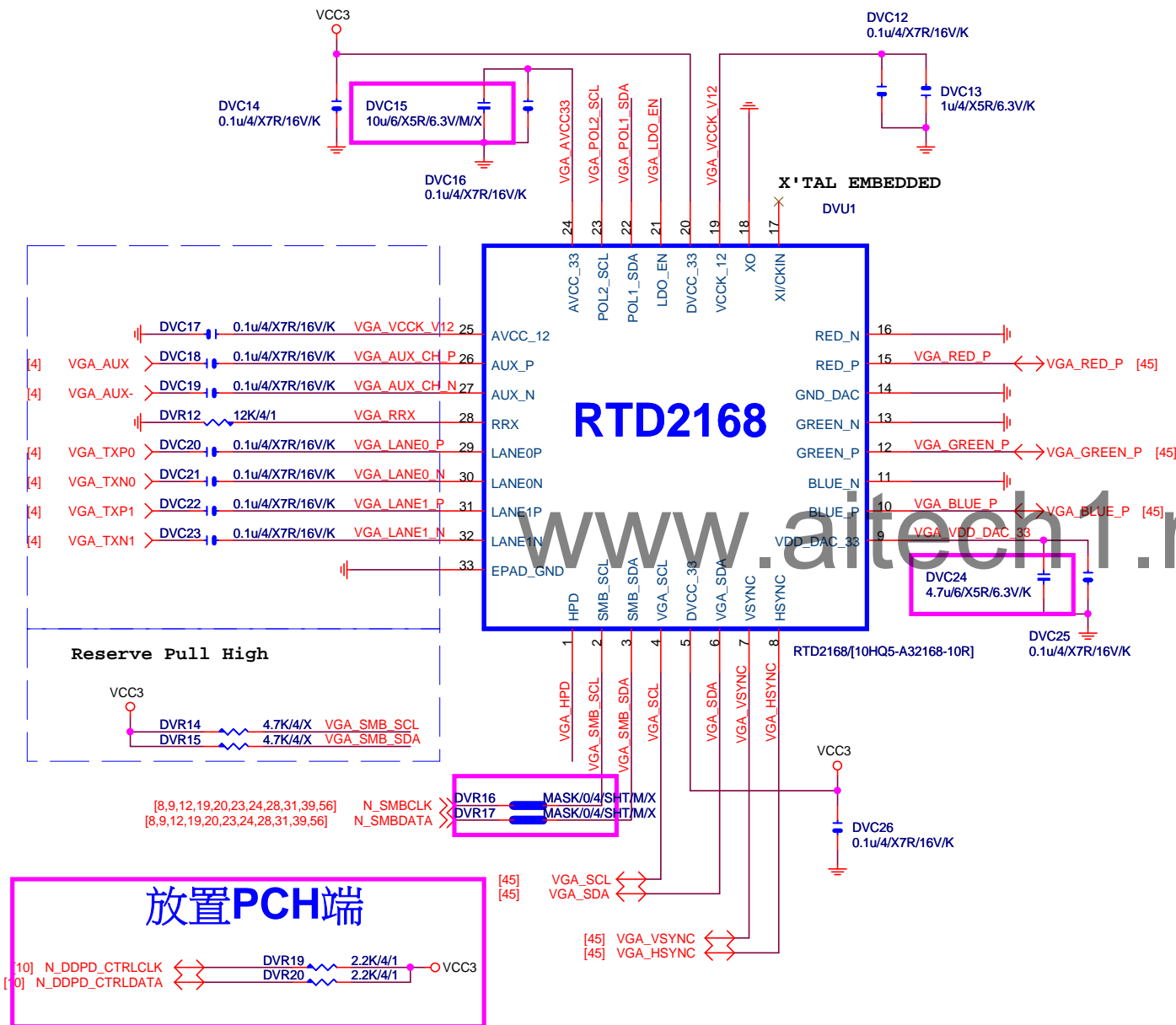


Close to connector

Gigabyte Technology

Title			
DVI			
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	42 of 63

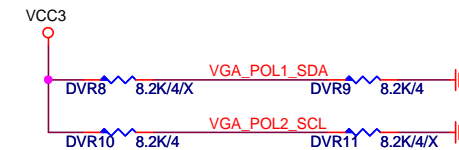




## POWER

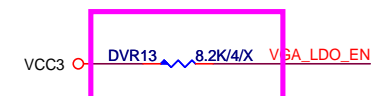


## Power on latch



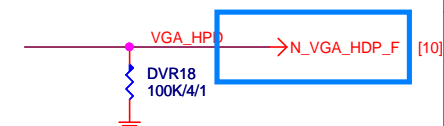
		POL1_SDA (PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

## Embedded LDO



		LDO_EN (PIN21)	
		0	1
VCC3		VCC3_V12 from External 1.2V	VCC3_V12 from Embedded LDO

## DP HPD

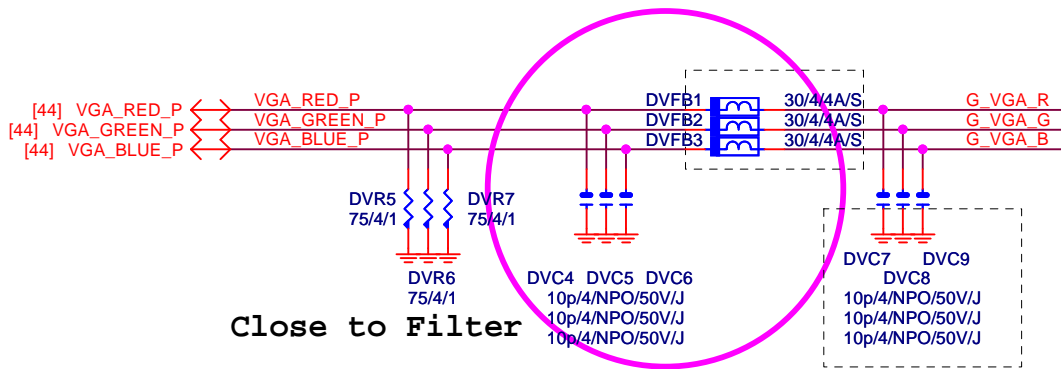
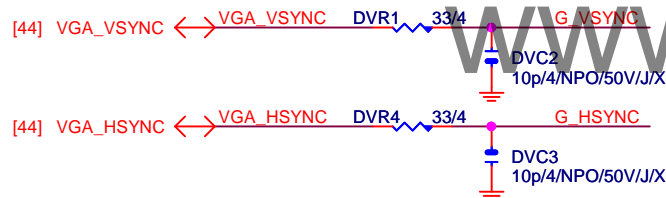
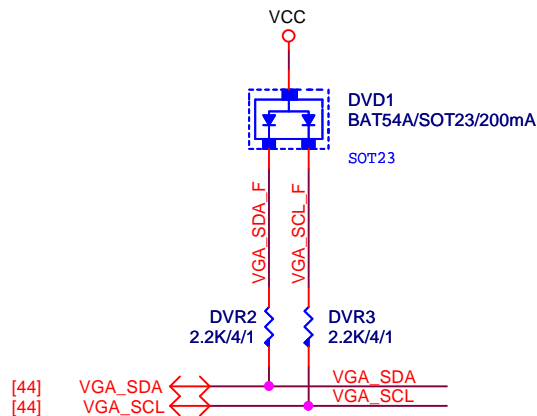


**Gigabyte Technology**  
**NXP-PTN3356**

Title			
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	44 of 63



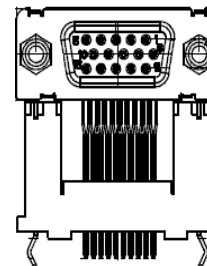
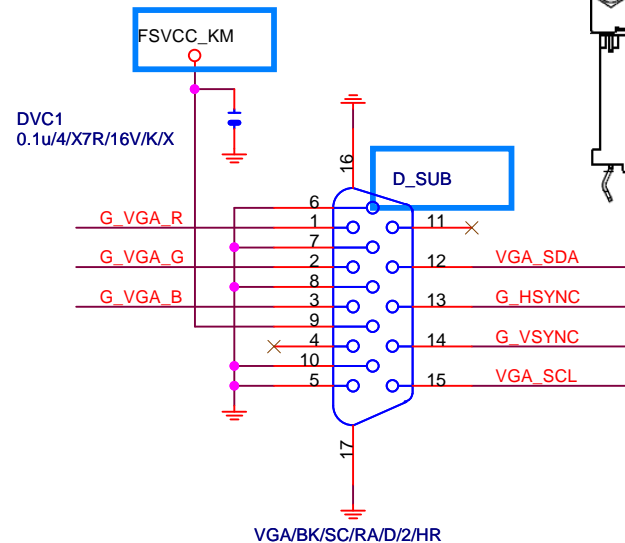
# VGA SIGNAL R1.03



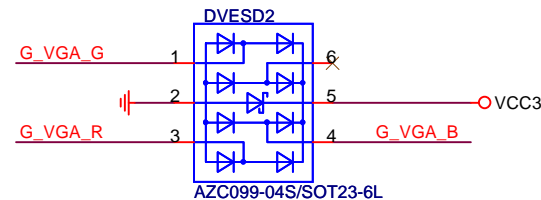
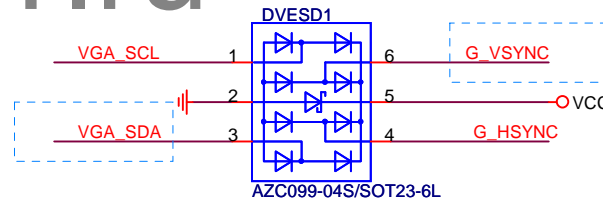
Close to Filter

FOR EMI

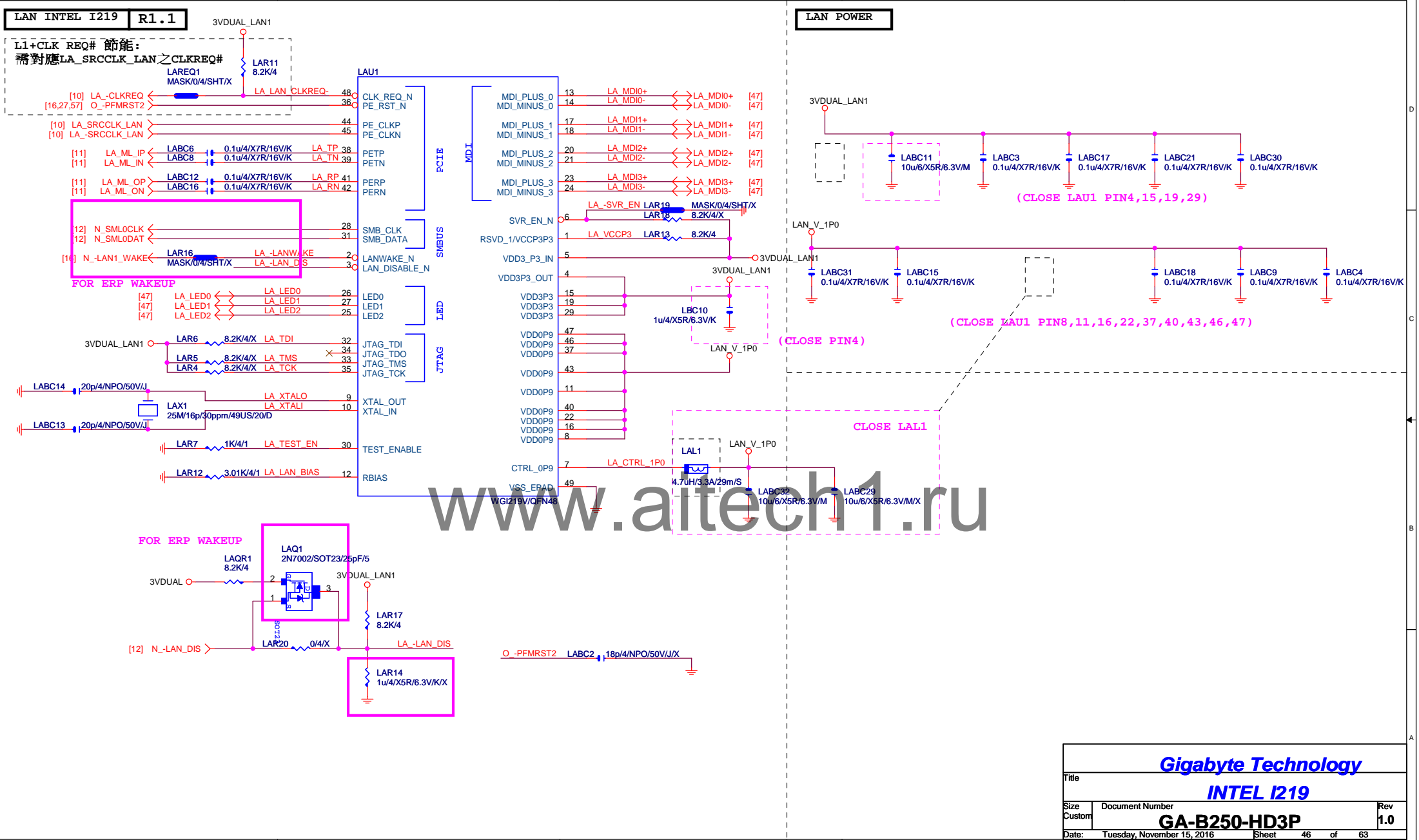
# VGA CONN. 架高型VGA (BLACK)



# VGA ESD



Gigabyte Technology			
Title DP-VGA RTD2168			
Size Custom	Document Number	GA-B250-HD3P	
Date:	Tuesday, November 15, 2016	Sheet	45 of 63
		Rev	1.0



## R1.1

note:可變更USB NAME



note:可變更USB NAME

[illegible]

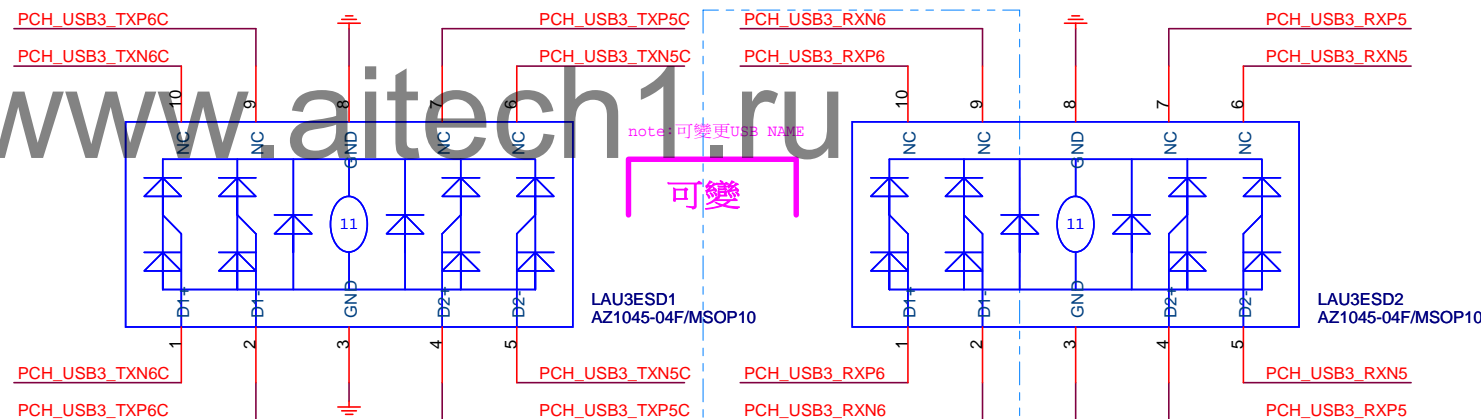
LA MDI-->100歐姆:[20/4/8/4/20]

D2 71 D1 Yellow

FOOT PRINT:LAN COVER

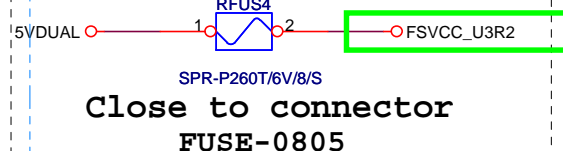
LAN  
COVER

## 可變 [視SPEC需求]



note:可變更FUSE

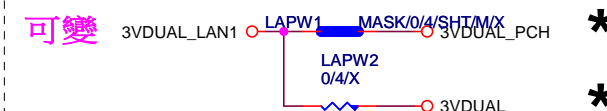
## 可變



PS:視EMI需求



note: lan power連接及電流



## Gigabyte Technology

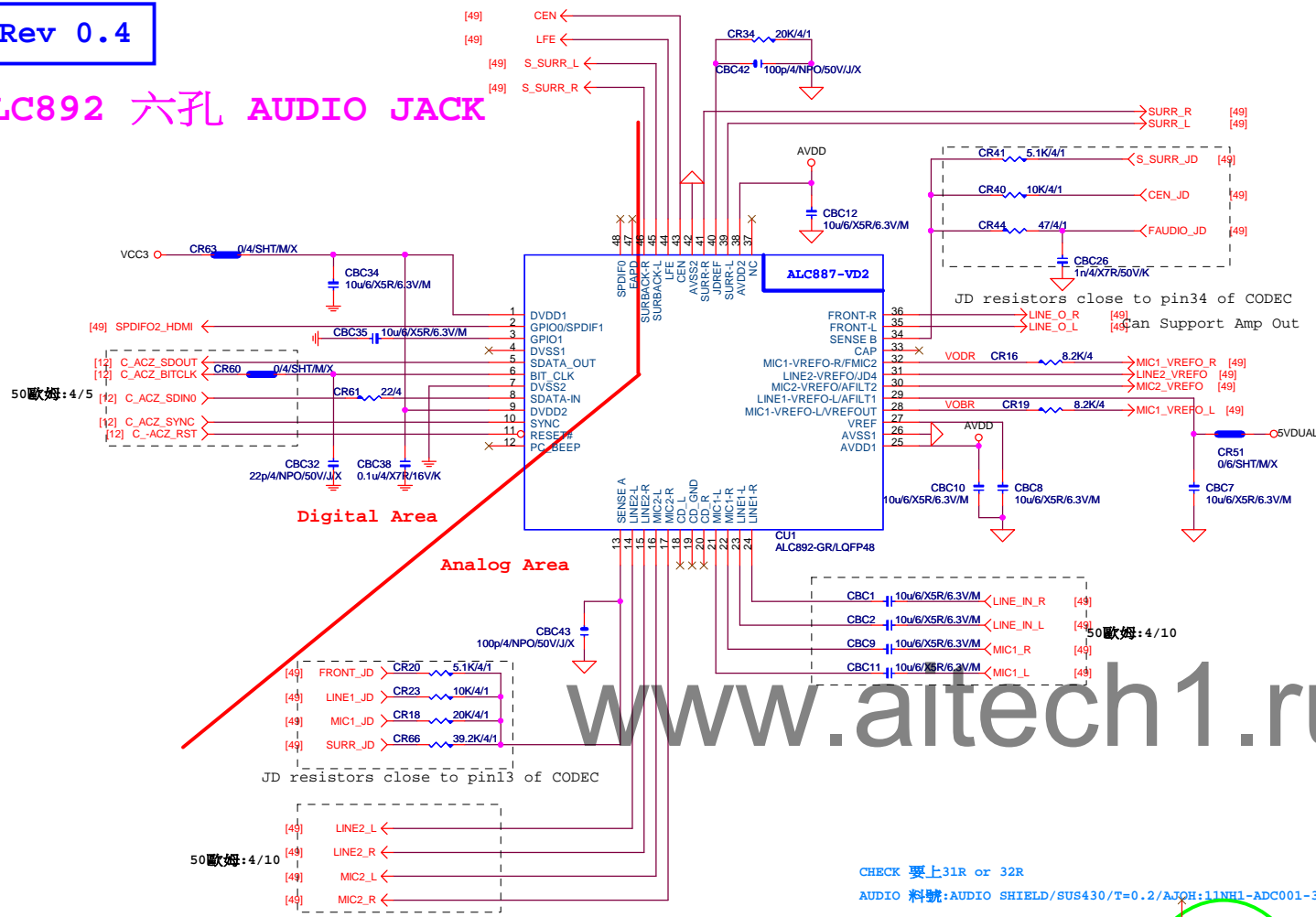
## LAN CONNECTOR-I219

**GA-B250-HD3P**

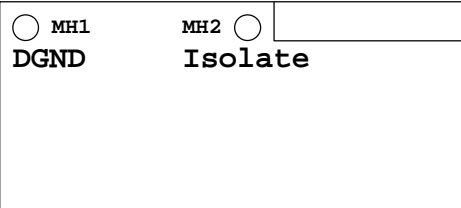
Title			
LAN CONNECTOR-I219			
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	47 of 63

Rev 0.4

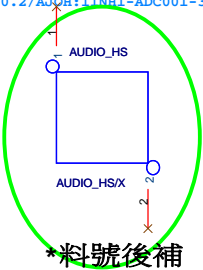
# ALC892 六孔 AUDIO JACK



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

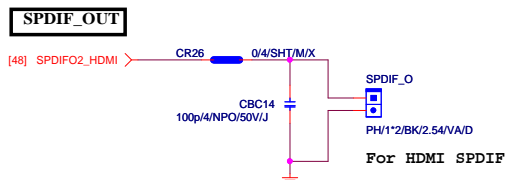
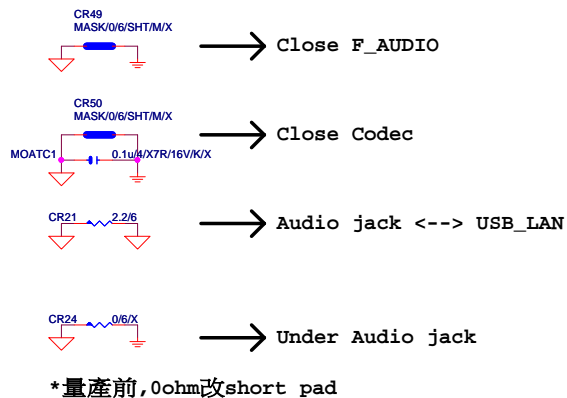


LAYOUT注意:要加  
 GND切割線  
 音效區域印刷



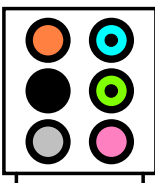
CHECK 要上31R or 32R  
 AUDIO 料號: AUDIO SHIELD/SUS430/T=0.2/AJQH:11NH1-ADC001-31R

Rev 0.4



SPDIF\_IN

AZALIA JACK

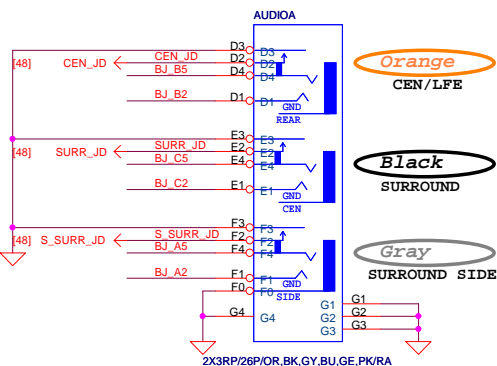
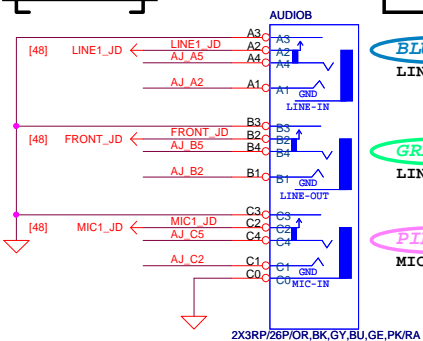


AZALIA JACK

BLUE LINE-IN

GREEN LINE-OUT

PINK MIC-IN

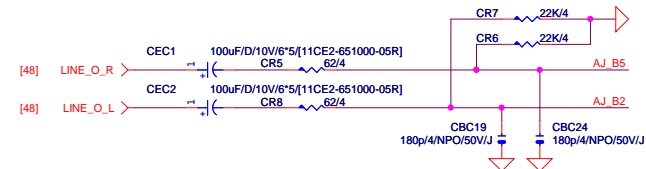


Orange CEN/LFE

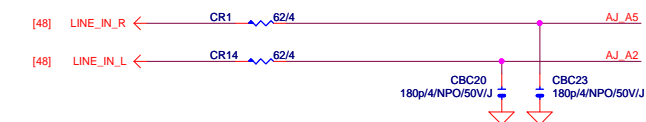
Black SURROUND

Gray SURROUND SIDE

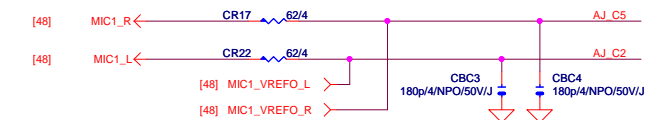
LINE-OUT



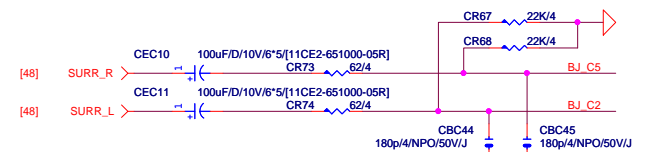
LINE-IN



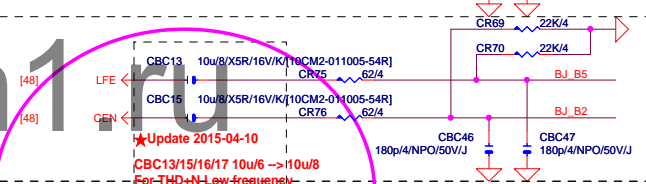
MIC-IN



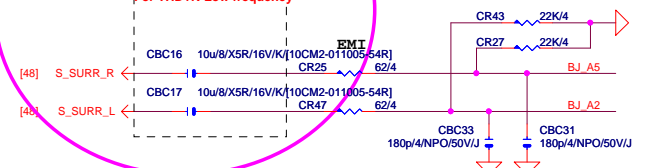
SURROUND



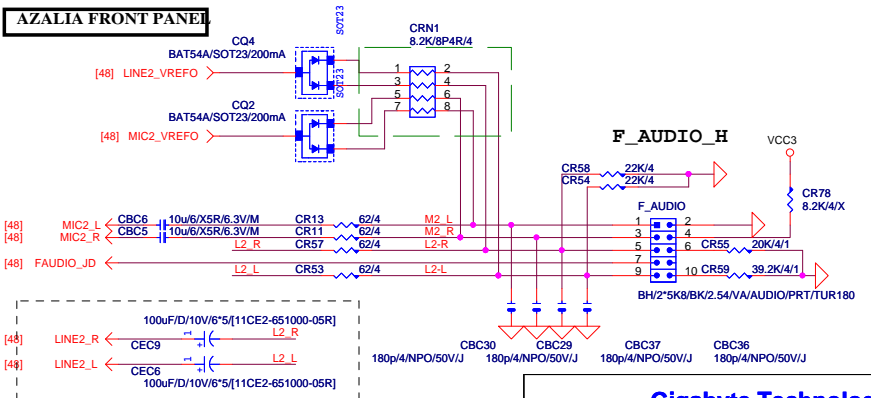
CEN/LFE



SURR BACK



AZALIA FRONT PANEL



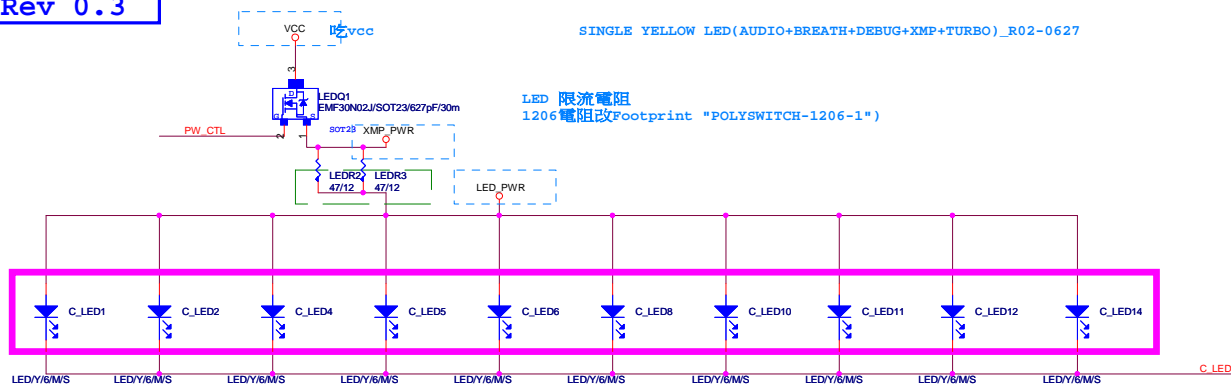
Gigabyte Technology

AUDIO JACK

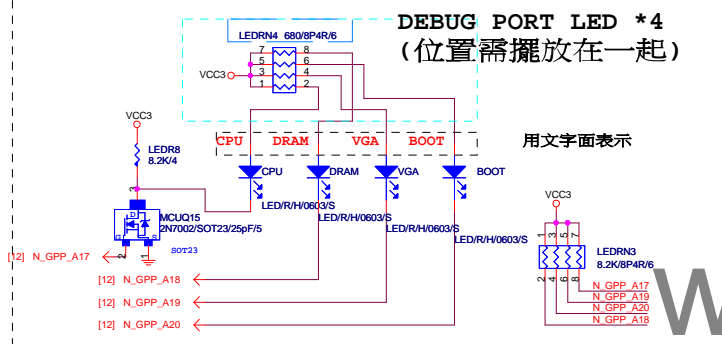
GA-B250-HD3P

Rev 1.0

Date: Tuesday, November 15, 2016 Sheet 49 of 63



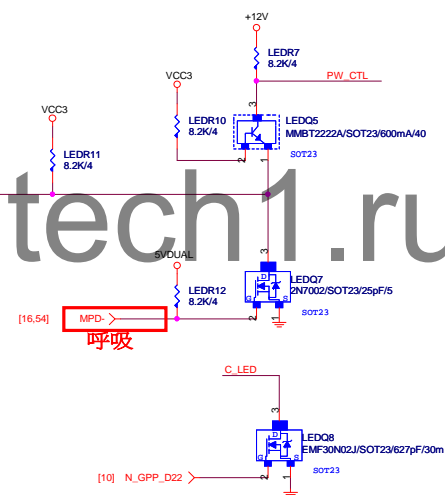
### DEBUG PORT LED \*4 (位置需擺放在一起)



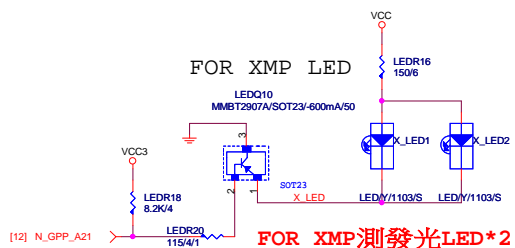
### Ambient LED Control

	N_GPP_D22	IO GP91
Still Mode	H	L
OFF Mode	L	L
Pluse Mode	H	BREATH

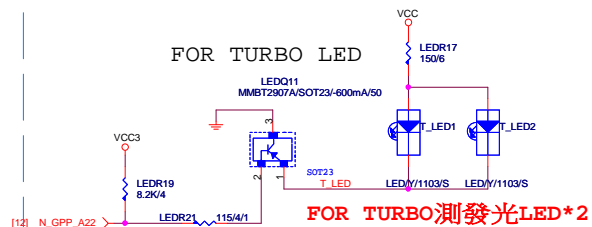
ON/OFF  
(PCH\_GPP\_D22)



### FOR XMP LED

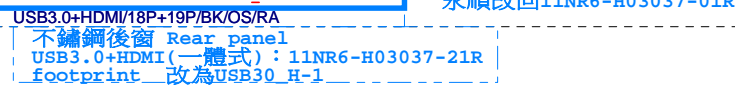


### FOR TURBO LED

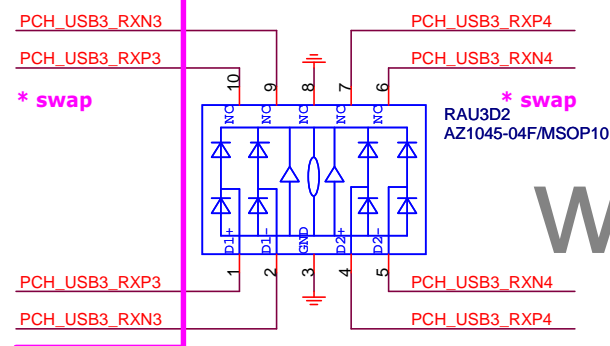


# GIGABYTE™

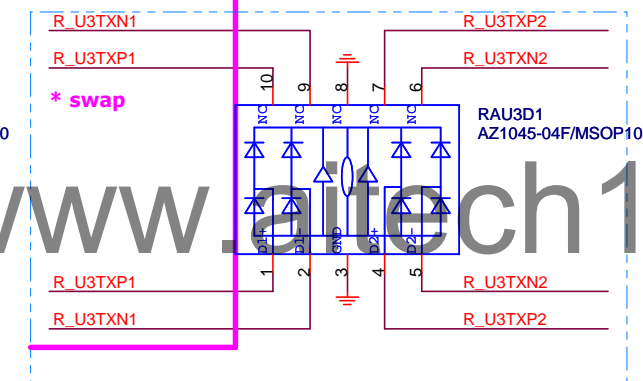
Title			Ambient Single LED
Size	Document Number	Rev	1.0
Custom	GA-B250-HD3P		
Date	Tuesday, November 15, 2016	Sheet	50 of 63



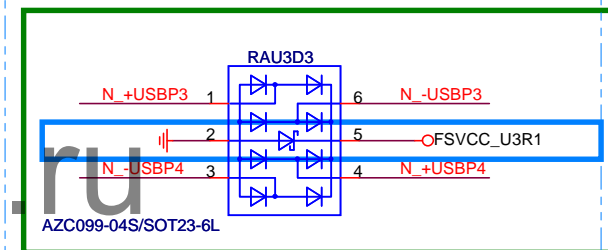
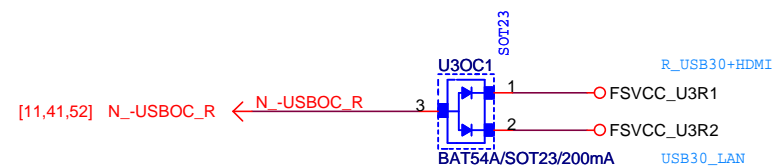
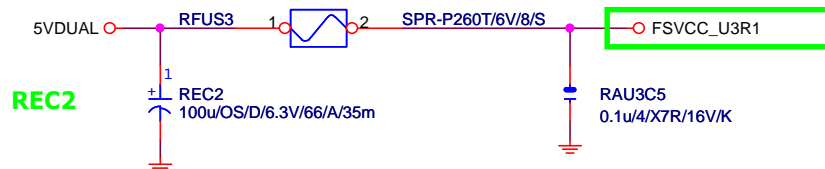
## NET 可自行調整



## NET 可自行調整

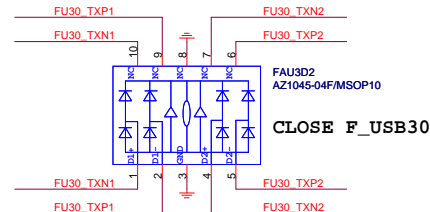


## NET 可自行調整

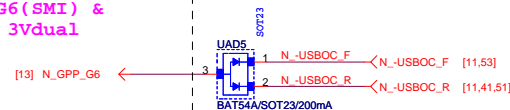
**RFUS3 FUSE 2 Port 1 Fuse 2.6A**

## Gigabyte Technology

Title			
R_USB30,USB_OC			
Size	Document Number	Rev	
Custom	GA-B250-HD3P	1.0	
Date:	Tuesday, November 15, 2016	Sheet	51 of 63



[www.aitech1.ru](http://www.aitech1.ru)



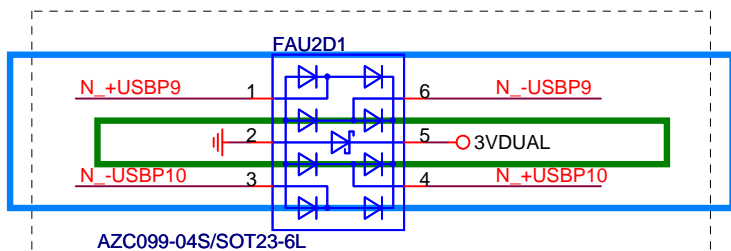
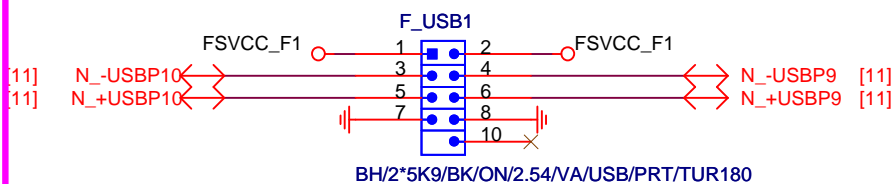


Rev: 0.7

FRONT USB1

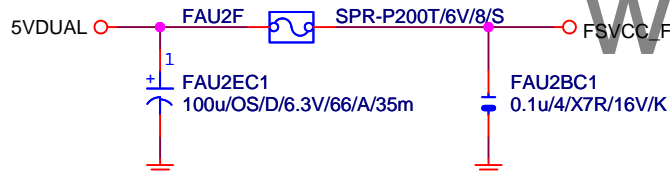
NET 可變

FUSB2X5-HS



Close to connector

FUSE 2 Port 1 Fuse 2A

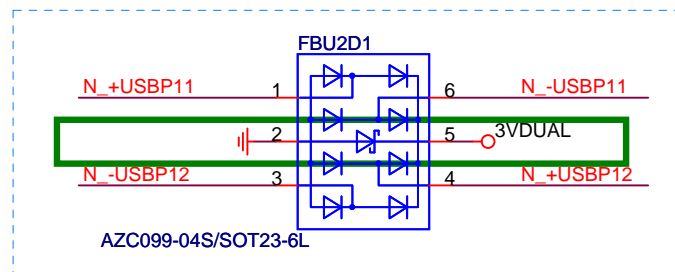
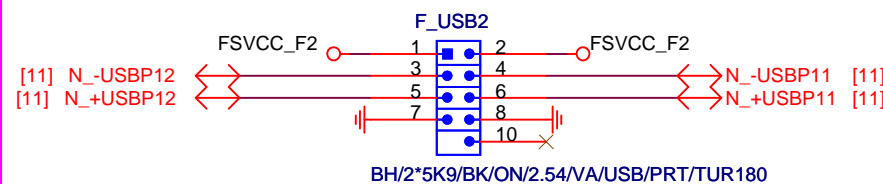


F\_USB 2.0 OC SIGNAL

FRONT USB2

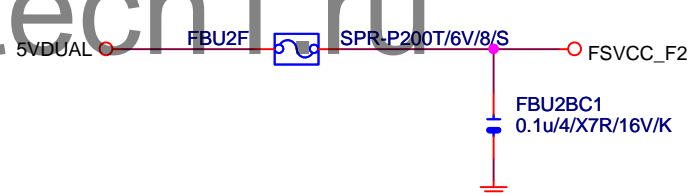
NET 可變

FUSB2X5-HS

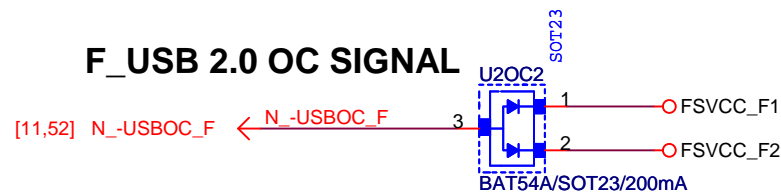


Close to connector

FUSE 2 Port 1 Fuse 2A



F\_USB 2.0 OC SIGNAL



Gigabyte Technology

Title

USB2.0

Size  
A

Document Number

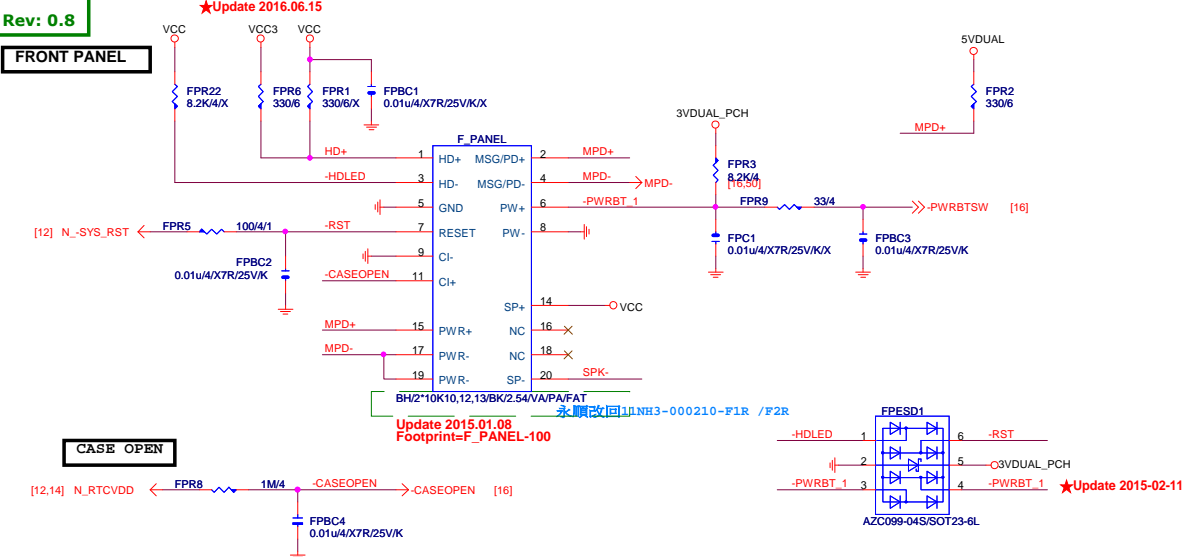
GA-B250-HD3P

Rev  
1.0

Date: Tuesday, November 15, 2016

Sheet 53 of 63

FRONT PANEL

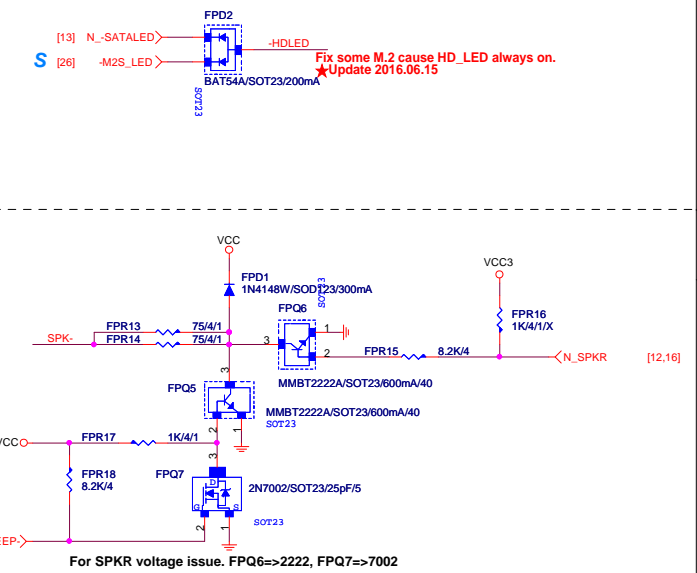


CASE OPEN

FRONT PANEL SHORT

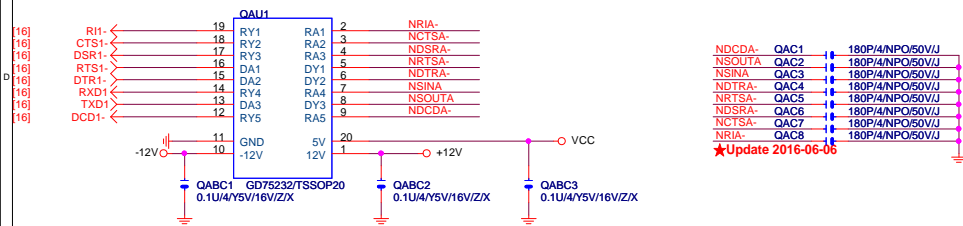
SATA/M.2 LED

SPKR



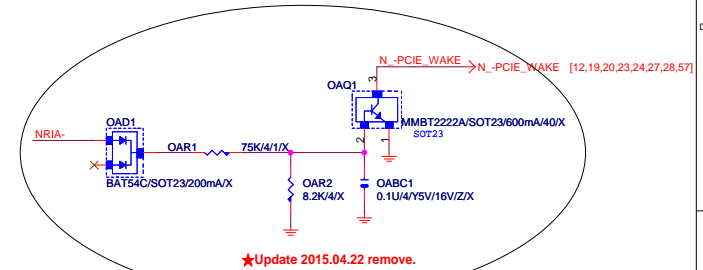
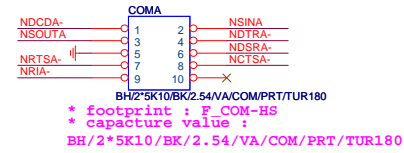
www.aitech1.ru

COM PORT Rev: 0.81

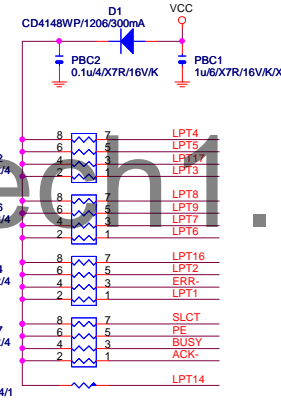
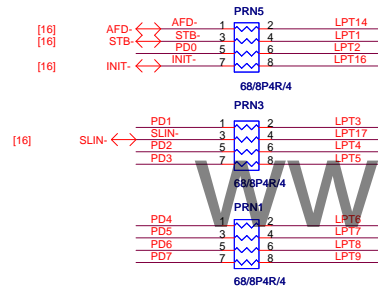


COM RI N/A

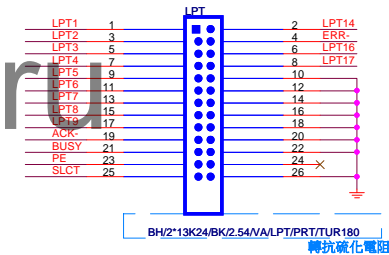
COMA



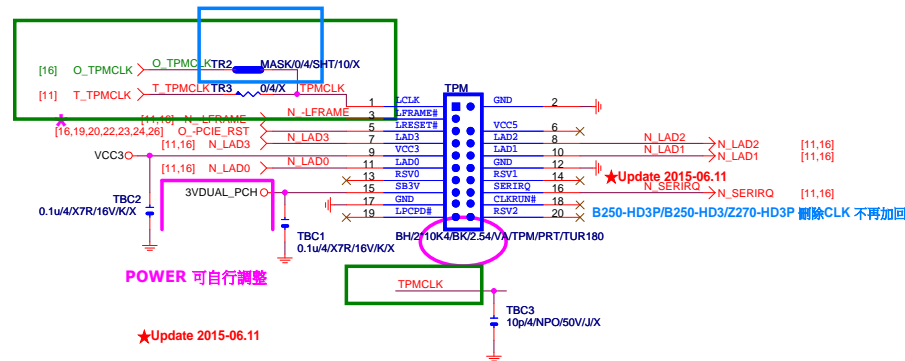
LPT PORT



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。



TPM CONNECT



Thunderbolt

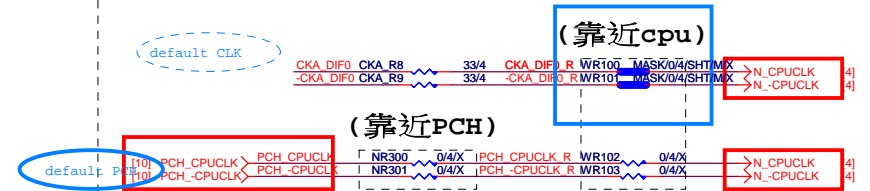
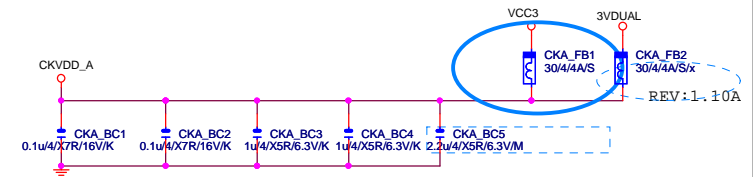
★Update 2015-12-29

Thunderbolt 3 pin header移除

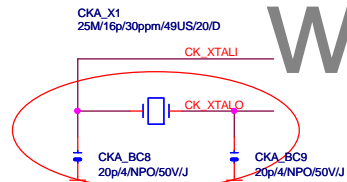
Gigabyte Technology

Title			FP,F_USB,USB PWR,BZ
Size			GA-B250-HD3P
Date			Tuesday, November 15, 2016
Sheet			55 of 63
Rev			1.0

IDT9FGP310



```
OPTION .
For PCH:NR300,NR301,WR102,WR103.
For CLK:CKA_R8,CKA_R9,WR100,WR101,CKA_D1,CKA_FB2,CKA_FB4
```

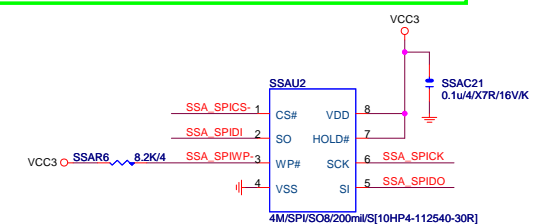
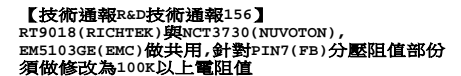
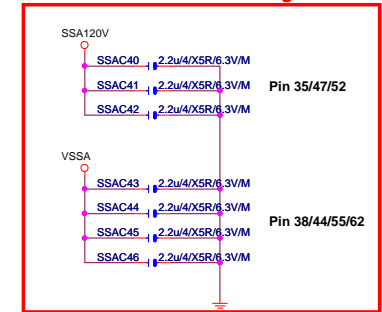
[illegible][illegible]**GIGABYTE™**

Title			
<b>9FGP320AKILFT CLK BUFFER</b>			
Size	Document Number	Rev	
Custom	<b>GA-B250-HD3P</b>	<b>1.0</b>	
Date:	Tuesday, November 15, 2016	Sheet	56 of 63

**ASM2142 USB3.1**

**Change to 0402**

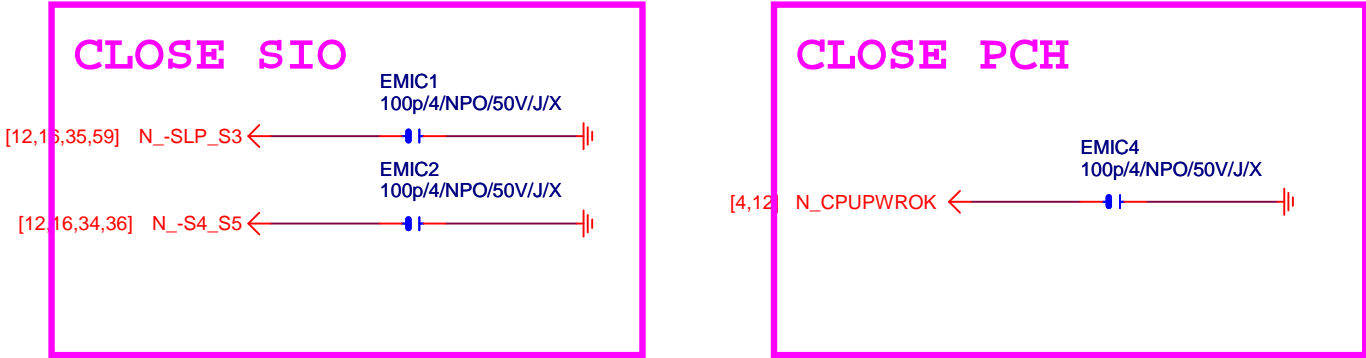
不做Reve



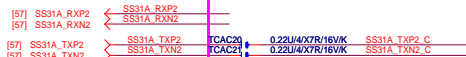
**GIGABYTE™**

1.0

Date: Tuesday, November 15, 2016 Sheet 57 of 63



## USB 3.x SuperSpeed

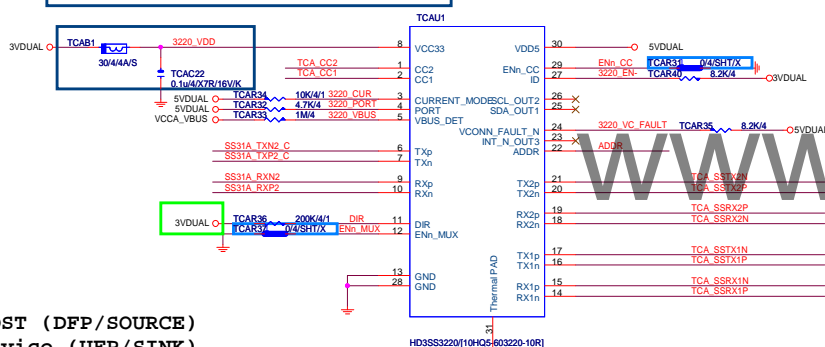


For VBUS current limit at 900mA on S3



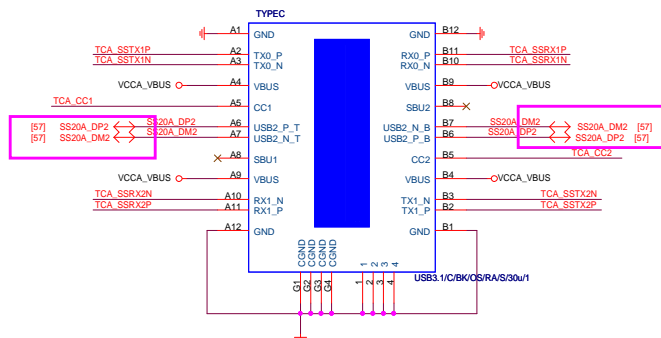
\* 0902 for rev0.2 實驗, if PVT 模組沒改, 還是加回去  
TCAB1:FB 改 0ohm & TCAC22:0.1u 不上件

1025 for rev1.0 實驗,PVT模組沒改,還是加回去

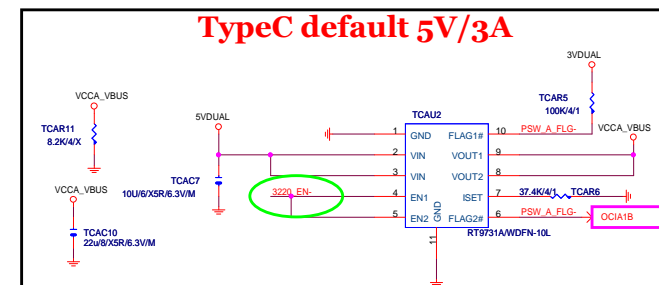


H - HOST (DFP/SOURCE)  
L - Device (UFP/SINK)  
NC - Dual Role (DRP)

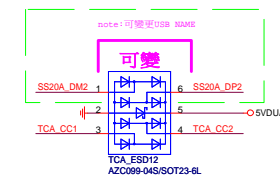
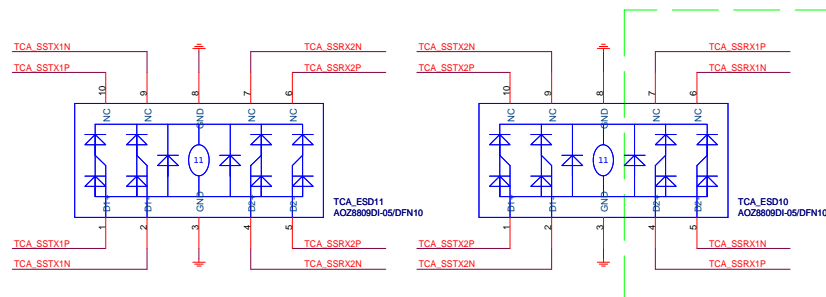
L - Default (900mA) / Pull down to GND or NC  
M - Medium (1.5A) / Pull up to VDD 500K  
H - High (3.0A) / Pull up to VDD 10K



## USB2.0 can be used the same source



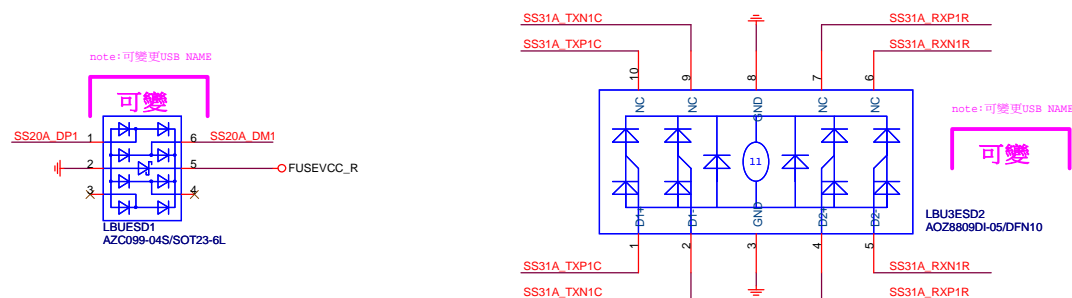
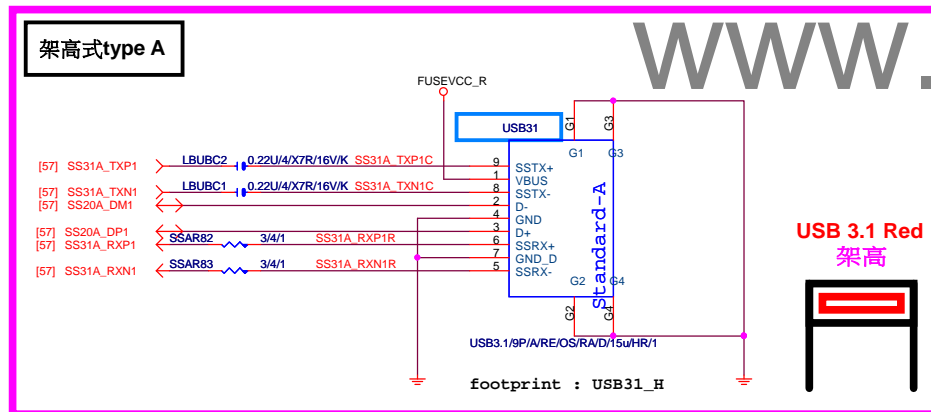
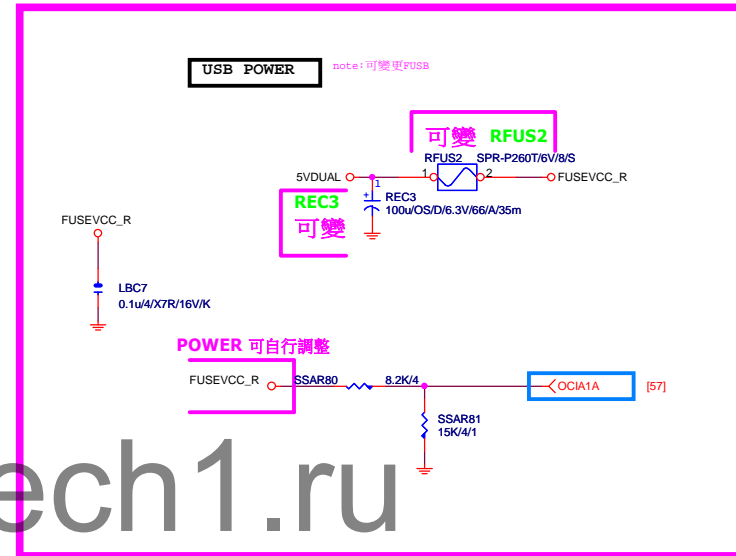
## Color markers can be changed by model



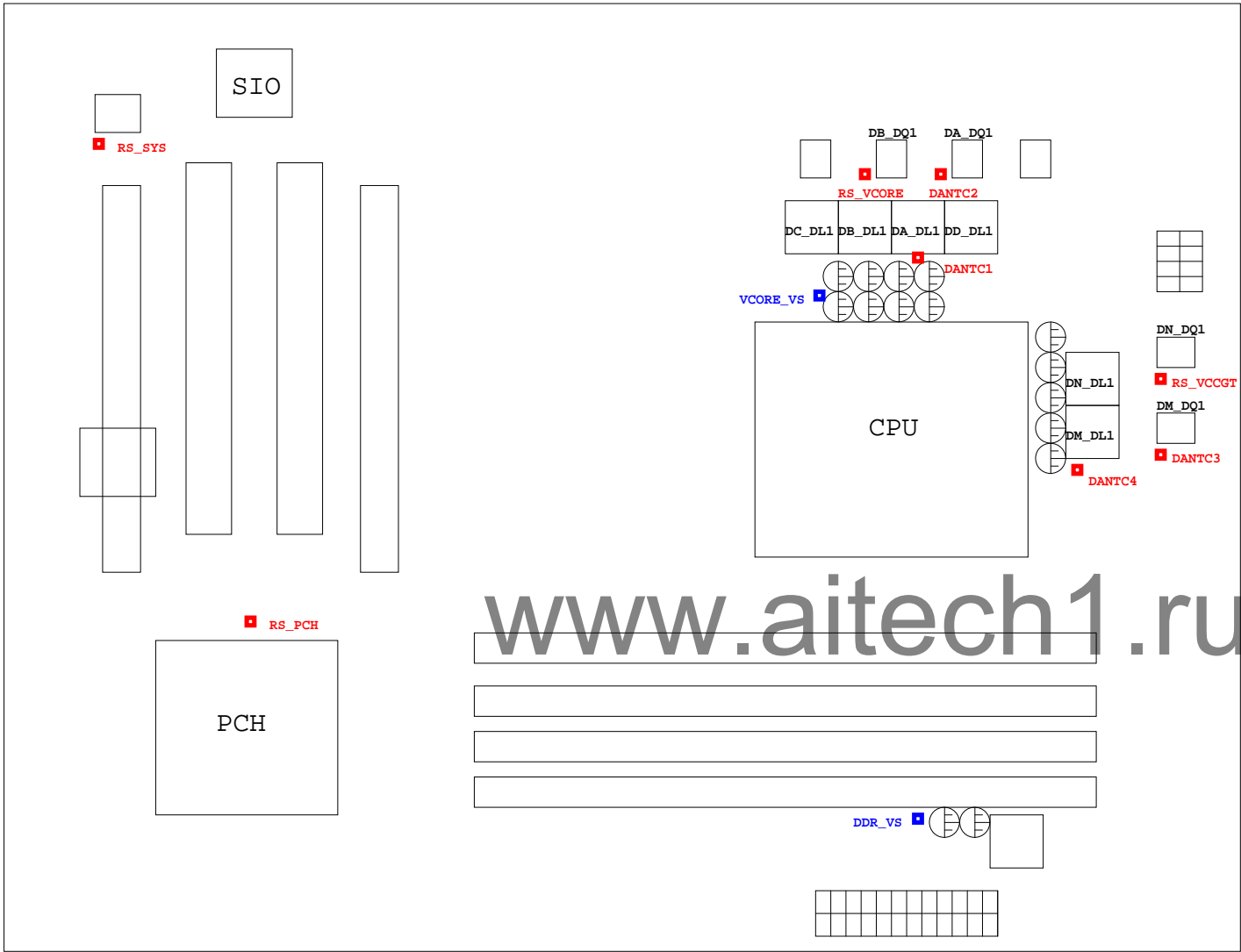
# ASM2142 USB31 Host Rev0.1

後窗Rule：（後窗由左至右）  
DIP電容：REC1, REC3, REC2  
FUSE：RFUS1, RFUS2, RFUS3, RFUS4...

USB31 TYPE A Connector which chooses for project demand

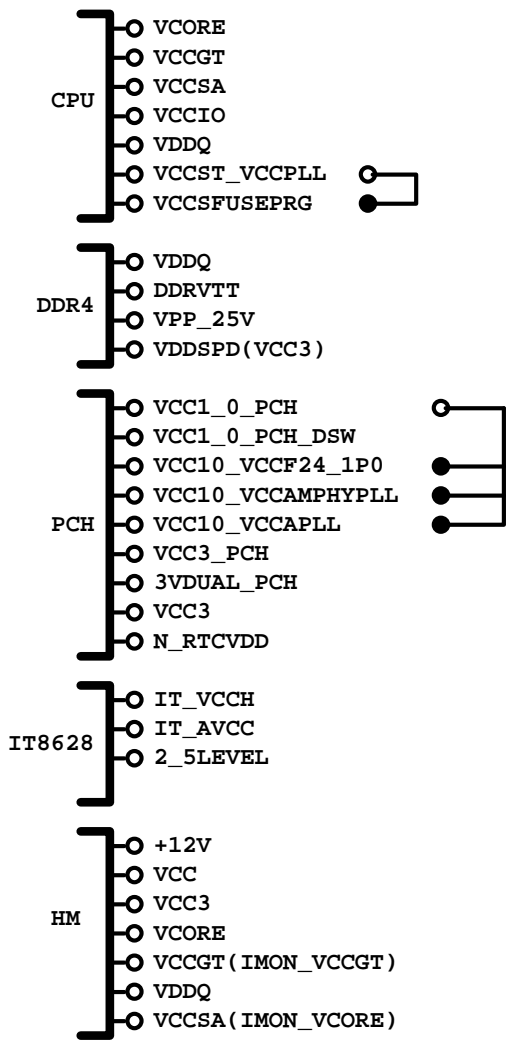




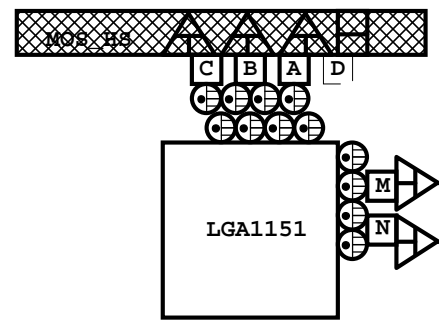
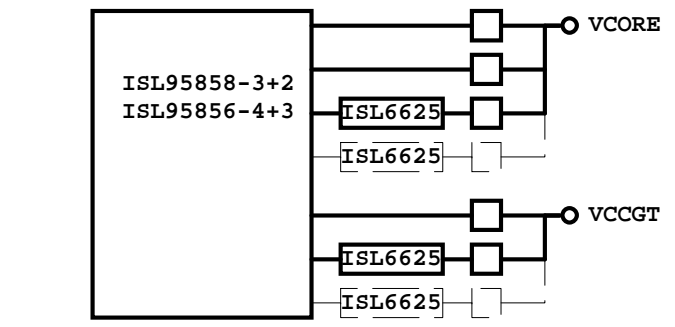


熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL1	N/A
DANTC2	DA_DQ1	Differential
DANTC3	DM_DQ1	N/A
DANTC4	DM_DL1	Differential
RS_VCORE	DB_DQ1	N/A
RS_VCCGT	DN_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A

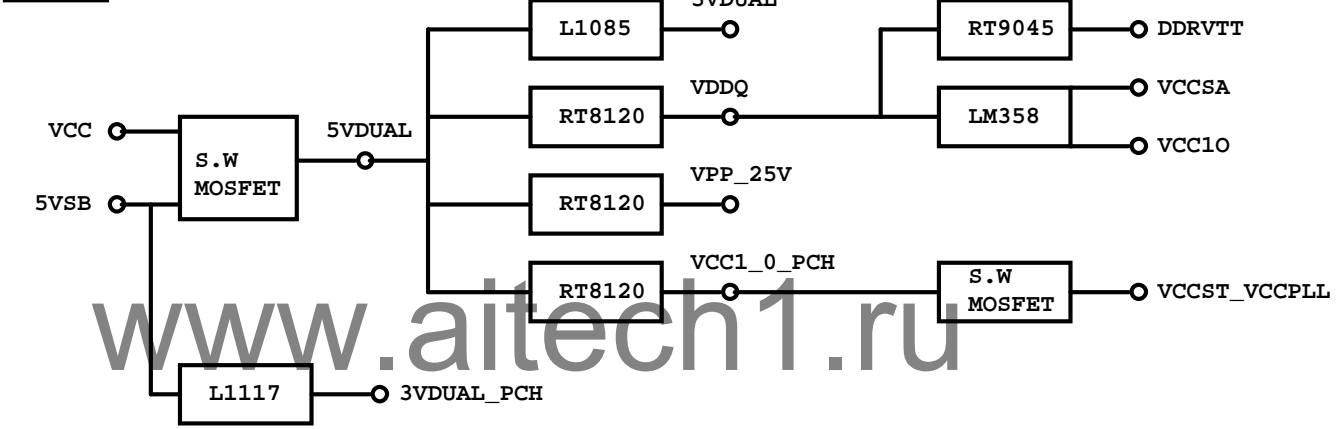
# POWER BLOCK MAP



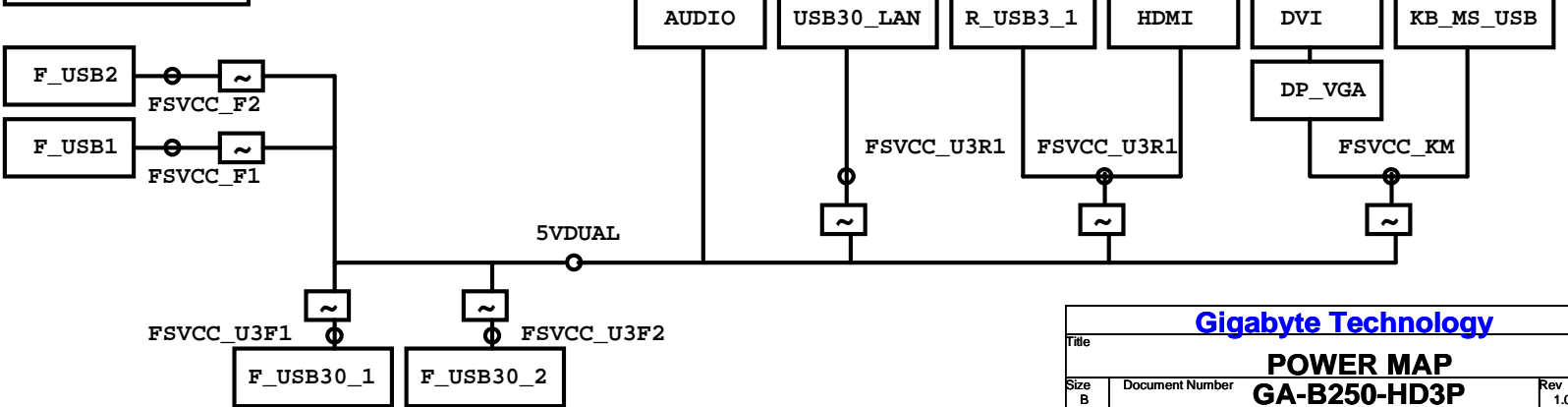
# VCORE/VCCGT



# POWER

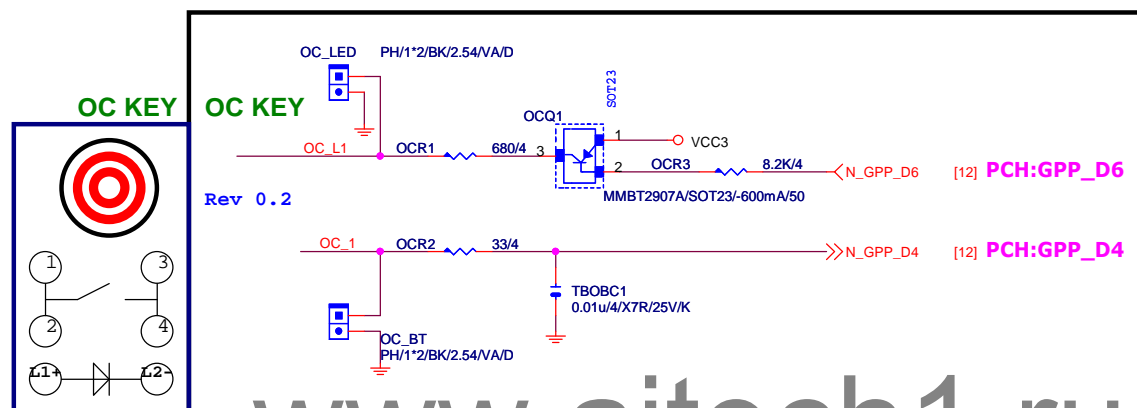


# FUSE POWER F/R



Gigabyte Technology			
Title			
POWER MAP			
Size B	Document Number	GA-B250-HD3P	
Date:	Tuesday, November 15, 2016	Sheet	62 of 63

Rev: 0.8



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Title **OC BOTTOM**

Size Custom Document Number **GA-B250-HD3P**

Rev **1.0**

Date: Tuesday, November 15, 2016 Sheet 63 of 63