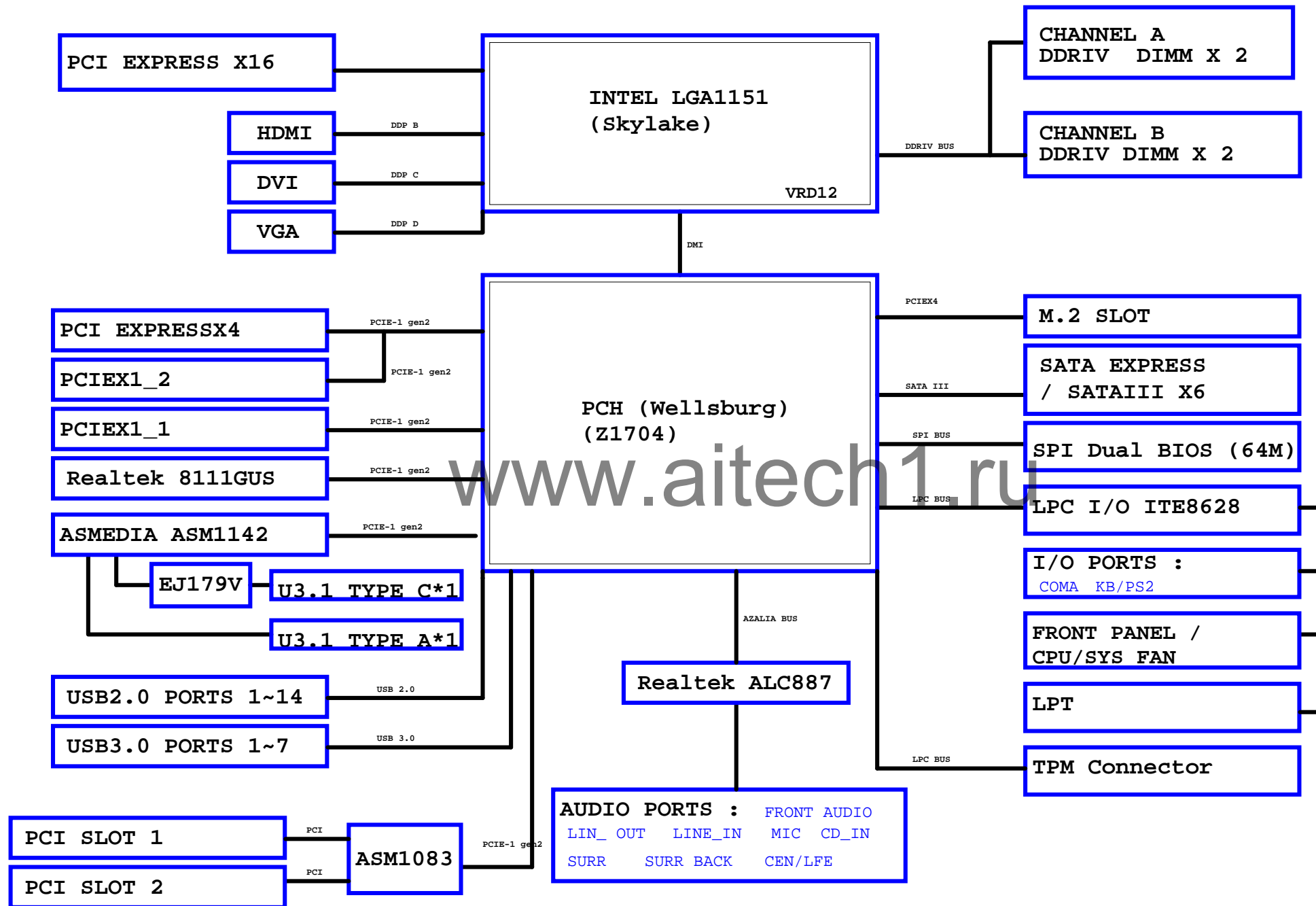


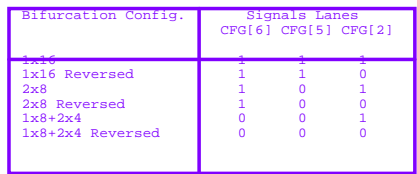
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1151-D
08	DDR 4 CHANNEL A (REV0.5)
09	DDR 4 CHANNEL B
10	PCH CLOCK BUFFER (REV0.7)
11	PCH DMI,USB,PCIE (REV0.7)
12	PCH MISC (REV0.7)
13	PCH SATA,PCIE,SATA_EXPRESS (REV0.7)
14	PCH_PWR (REV0.7)
15	PCH_GND (REV0.1)
16	Dual BIOS (REV0.2)
17	I/O ITE8686 (REV0.2)
18	HWM (REV0.2)
19	FAN CTRL-KBL_SIO_879X (REV0.81)
20	PCIEX16 SLOT (REV0.3)
21	PCIEX4 SLOT (REV0.51)
22	PCIEX1*2 SLOT (REV0.6)
23	M.2 x4 (REV0.6)
24	SATA EXPRESS (REV0.1)
25	ISL95866 PWM-IRON_1H2L (REV0.2)
26	ISL95866 MOS_VCORE-IRON-1H2 (REV0.2)
27	ISL95866 MOS_VCCGT-IRON-1H1 (REV0.2)
28	VCCSA_VCCIO-IRON-Z系列 (REV0.22)
29	RT8120_DDR_CHOKE-IRON-2L (REV0.2)
30	RT8120_VPP_CHOKE-IRON (REV0.2)
31	RT8120_PCH-CHOKE-IRON (REV0.2)
32	DISCRETE POWER (REV0.51)
33	CPU POWER-Z系列 (REV0.2)
34	NCP3933 OVER VOLTAGE
35	ATX POWER , -PROCHOT
36	KB_MS_USB (REV0.81)

37	DVI CONN (REV0.81)
38	RTD2168 - DP to VGA - IC (REV1.03)
39	RTD2168 - DP to VGA - Conn (REV1.03)
40	R_USB30 (REV0.81)
41	INTEL I219 (REV1.11)
42	USB_LAN CONNECTOR-I219 (REV1.11)
43	Realtek ALC887 (REV0.1)
44	REAR AUDIO JACK (REV0.1)
45	F_USB30 (REV0.81)
46	R_USB20 /F_USB20 (REV0.81)
47	COM , LPT , TPM , THB (REV0.81)
48	F_PANEL (REV0.81)
49	IT8892E/JX (REV0.1)
50	PCI SLOT 1&2 (REV0.1)
51	LDO POWER (REV0.1)
52	EMI-ESD (REV0.1)
53	TABLE LIST
54	ASM2142 USB31A
55	U3.1_PORT A
56	TI HD3SS3220_B
57	HDMI (REV0.81)
58	IDT6V41630_CLK BUFFER (REV0.1)
59	OC BUTTON
60	Audio / DEBUG / XMP LED (REV0.81)
61	Flex IO (REV0.2)
62	POWER MAP (REV0.1)
63	

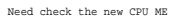
[illegible][illegible][illegible][illegible][illegible]

BLOCK DIAGRAM





LGA1151A		LGA1151	
MDA0	AE38	DDR0_DQ[0]	DDR0_CK[P0]
MDA1	AE37	DDR0_DQ[1]	DDR0_CKN[0]
MDA2	AG38	DDR0_DQ[2]	DDR0_CK[P1]
MDA3	AG37	DDR0_DQ[3]	DDR0_CKN[1]
MDA4	AE39	DDR0_DQ[4]	DDR0_CK[P2]
MDA5	AE40	DDR0_DQ[5]	DDR0_CKN[2]
MDA6	AG39	DDR0_DQ[6]	DDR0_CK[P3]
MDA7	AG40	DDR0_DQ[7]	DDR0_CKN[3]
MDA8	AJ38	DDR0_DQ[8]	
MDA9	AJ37	DDR0_DQ[9]	DDR0_CKE[0]
MDA10	AL38	DDR0_DQ[10]	DDR0_CKE[1]
MDA11	AL37	DDR0_DQ[11]	DDR0_CKE[2]
MDA12	AJ40	DDR0_DQ[12]	DDR0_CKE[3]
MDA13	AJ39	DDR0_DQ[13]	
MDA14	AL39	DDR0_DQ[14]	DDR0_CS#0]
MDA15	AL40	DDR0_DQ[15]	DDR0_CS#1]
MDA16	AN38	DDR0_DQ[16]/DDR0_DQ[32]	DDR0_CS#2]
MDA17	AN40	DDR0_DQ[17]/DDR0_DQ[33]	DDR0_CS#3]
MDA18	AR38	DDR0_DQ[18]/DDR0_DQ[34]	
MDA19	AR37	DDR0_DQ[19]/DDR0_DQ[35]	DDR0_ODT[0]
MDA20	AN39	DDR0_DQ[20]/DDR0_DQ[36]	DDR0_ODT[1]
MDA21	AN37	DDR0_DQ[21]/DDR0_DQ[37]	DDR0_ODT[2]
MDA22	AR39	DDR0_DQ[22]/DDR0_DQ[38]	DDR0_ODT[3]
MDA23	AR40	DDR0_DQ[24]/DDR0_DQ[39]	
MDA24	AW37	DDR0_DQ[25]/DDR0_DQ[40]	DDR0_BA[0]/DDR0_CAB[4]/DDR0_BA[0]
MDA25	AU38	DDR0_DQ[26]/DDR0_DQ[41]	DDR0_BA[1]/DDR0_CAB[6]/DDR0_BA[0]
MDA26	AV35	DDR0_DQ[27]/DDR0_DQ[42]	DDR0_BA[2]/DDR0_CAA[5]/DDR0_BG[0]
MDA27	AW35	DDR0_DQ[28]/DDR0_DQ[43]	
MDA28	AU37	DDR0_DQ[29]/DDR0_DQ[44]	DDR0_RAS#/DDR0_CAB[3]/DDR0_MA[16]
MDA29	AV37	DDR0_DQ[30]/DDR0_DQ[45]	DDR0_WE#/DDR0_CAB[2]/DDR0_MA[14]
MDA30	AT35	DDR0_DQ[31]/DDR0_DQ[46]	DDR0_CAS#/DDR0_CAB[1]/DDR0_MA[15]
MDA31	AU35	DDR0_DQ[32]/DDR1_DQ[0]	
MDA32	AY8	DDR0_DQ[33]/DDR1_DQ[1]	DDR0_MA[0]/DDR0_CAB[9]/DDR0_MA[0]
MDA33	AW8	DDR0_DQ[34]/DDR1_DQ[2]	DDR0_MA[1]/DDR0_CAB[8]/DDR0_MA[1]
MDA34	AV6	DDR0_DQ[35]/DDR1_DQ[3]	DDR0_MA[2]/DDR0_CAB[5]/DDR0_MA[2]
MDA35	AU6	DDR0_DQ[36]/DDR1_DQ[4]	DDR0_MA[3]
MDA36	AU8	DDR0_DQ[37]/DDR1_DQ[5]	DDR0_MA[4]
MDA37	AV8	DDR0_DQ[38]/DDR1_DQ[6]	DDR0_MA[5]/DDR0_CAA[0]/DDR0_MA[5]
MDA38	AV6	DDR0_DQ[39]/DDR1_DQ[7]	DDR0_MA[6]/DDR0_CAA[2]/DDR0_MA[6]
MDA40	AT4	DDR0_DQ[40]/DDR1_DQ[8]	DDR0_MA[7]/DDR0_CAA[4]/DDR0_MA[7]
MDA41	AV4	DDR0_DQ[41]/DDR1_DQ[9]	DDR0_MA[8]/DDR0_CAA[3]/DDR0_MA[8]
MDA42	AT1	DDR0_DQ[42]/DDR1_DQ[10]	DDR0_MA[9]/DDR0_CAA[1]/DDR0_MA[9]
MDA43	AT2	DDR0_DQ[43]/DDR1_DQ[11]	DDR0_MA[10]/DDR0_CAB[7]/DDR0_MA[10]
MDA44	AV3	DDR0_DQ[44]/DDR1_DQ[12]	DDR0_MA[11]/DDR0_CAA[6]/DDR0_MA[11]
MDA45	AW4	DDR0_DQ[45]/DDR1_DQ[13]	DDR0_MA[12]/DDR0_CAA[5]/DDR0_MA[12]
MDA46	AT4	DDR0_DQ[46]/DDR1_DQ[14]	DDR0_MA[13]/DDR0_CAB[0]/DDR0_MA[13]
MDA47	AT3	DDR0_DQ[47]/DDR1_DQ[15]	DDR0_MA[14]/DDR0_CAA[9]/DDR0_BG[1]
MDA48	AP2	DDR0_DQ[48]/DDR1_DQ[32]	DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT#
MDA49	AM4		
MDA50	AP3	DDR0_DQ[49]/DDR1_DQ[33]	DDR0_PAR
MDA51	AM3	DDR0_DQ[50]/DDR1_DQ[34]	DDR0_ALERT#
MDA52	AP4	DDR0_DQ[51]/DDR1_DQ[35]	
MDA53	AM2	DDR0_DQ[52]/DDR1_DQ[36]	DDR0_DQSN[0]
MDA54	AP1	DDR0_DQ[53]/DDR1_DQ[37]	DDR0_DQSN[1]
MDA55	AM1	DDR0_DQ[54]/DDR1_DQ[38]	DDR0_DQSN[2]
MDA56	AK3	DDR0_DQ[55]/DDR1_DQ[39]	DDR0_DQSN[3]
MDA57	AH1	DDR0_DQ[56]/DDR1_DQ[40]	DDR0_DQSN[4]
MDA58	AK4	DDR0_DQ[57]/DDR1_DQ[41]	DDR



Signal	Direction	Source	Destination
DDR0_PAR	Input	AY15	MDB49 AM10
DDR0_ALERT	Input	CA123	MDB50 AL10
	Input		MDB51 AMF
	Input		MDB52 AL7
DDR0_DQSN[0]	Output	AF39 M-DQSN0	MDB53 AM9
DDR0_DQSN[1]	Output	AX39 M-DQSN1	MDB33 AL9
DDR0_DQSN[2]	Output	AP39 M-DQSN2	MDB54 AM6
DDR0_DQSN[4]	Output	AU36 M-DQSN4	MDB55 AL6
	Output		MDB56 AJ6
	Output		DDR1_DQ[48]
	Output		DDR1_DQ[49]
	Output		DDR1_DQ[50]
	Output		DDR1_DQ[51]
	Output		DDR1_DQ[52]
	Output		DDR1_DQ[53]
	Output		DDR1_DQ[54]
	Output		DDR1_DQ[55]

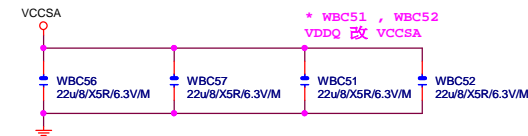
DDR CHANNEL 1

2000年1月1日

<i>Gigabyte Technology</i>			
Title			
CPU LGA1151-B			
Size Custom	Document Number		Rev 1.0
GA-Z270-HD3P			
Date:	Monday, November 14, 2016		Sheet 5 of 61

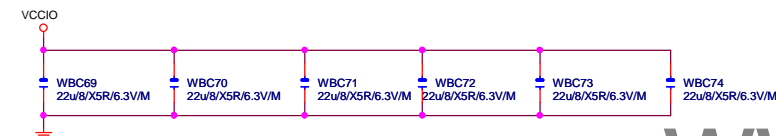
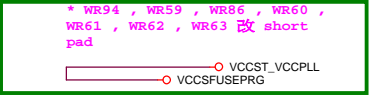
* WBC49 移到 RT8120_DDR

* 刪 WBC50 電容

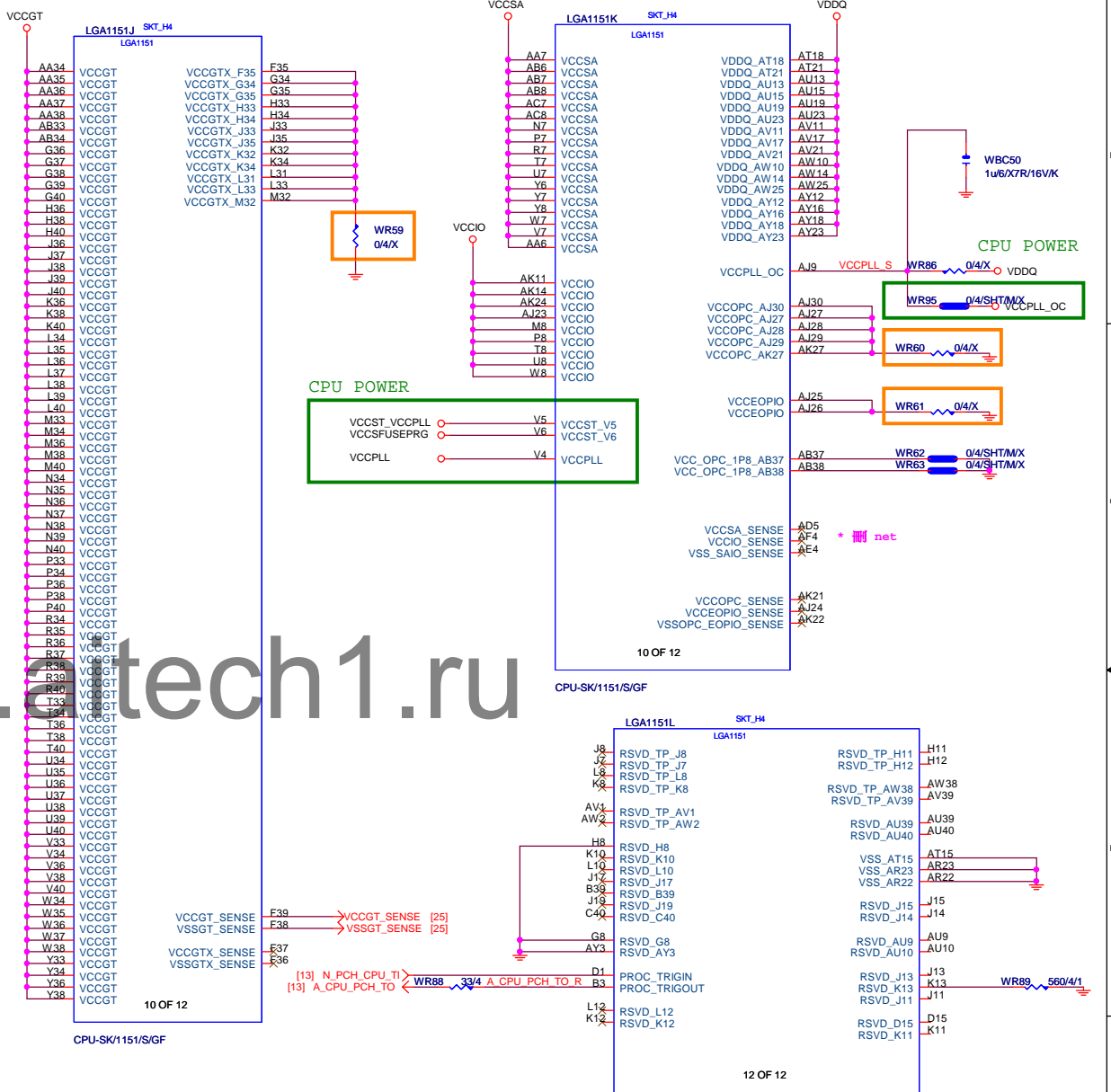


CPU POWER

* 刪 WBC124 , WBC125 , WBC126 , WBC127 電容



* 刪 VCCGT 電容



[R] MD40_03 <-- MD40_03
[R] MAA0_17 <-- MAA0_17
[R] M_D0A0_7 <-- M_D0A0_7
[R] M_D0A0_7 <-- M_D0A0_7

前脚22 6VDDSP SHORT PROTECT

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DDR4-288P-STH 加脚版
DDR4-288P-STH 加脚版
DDR4-288P-STH 加脚版

BLK CHANNEL A0
SA2:0=000

GRAY CHANNEL A1
SA2:0=001

DDR4-288P-STH 加脚版
DDR4-288P-STH 加脚版
DDR4-288P-STH 加脚版

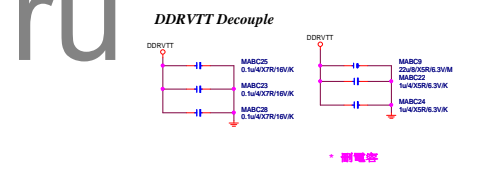
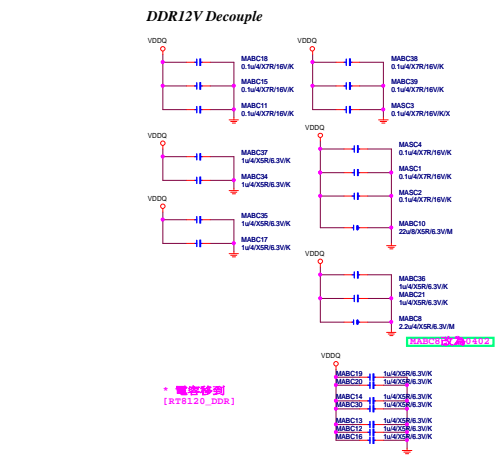
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SA2:0=000

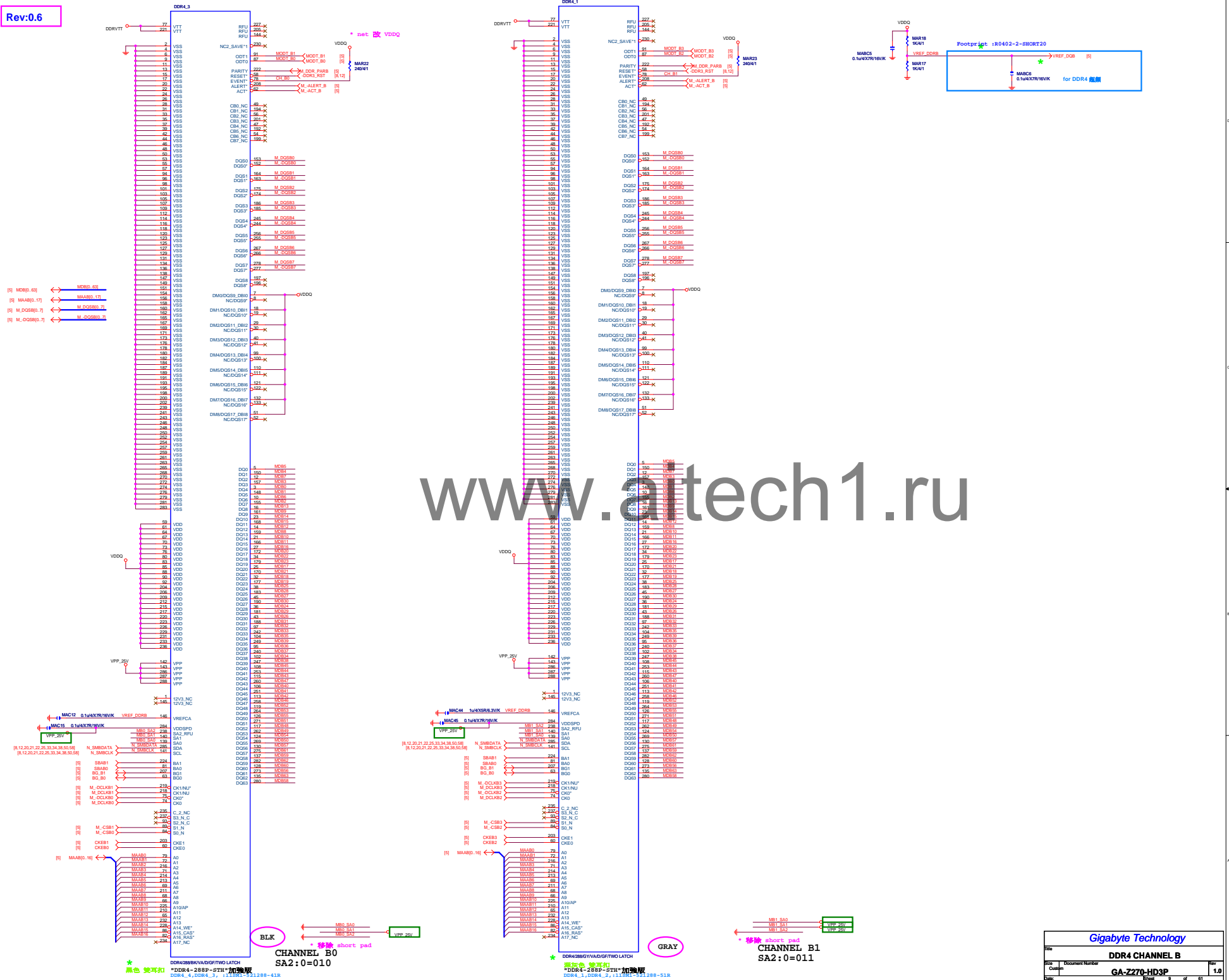
GRAY CHANNEL A1
SA2:0=001

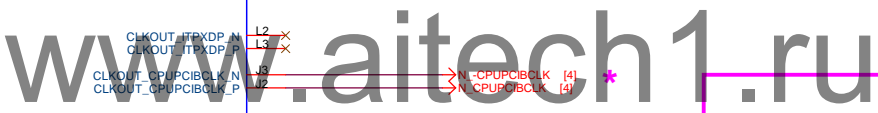
DDR4-288P-STH 加脚版
DDR4-288P-STH 加脚版
DDR4-288P-STH 加脚版

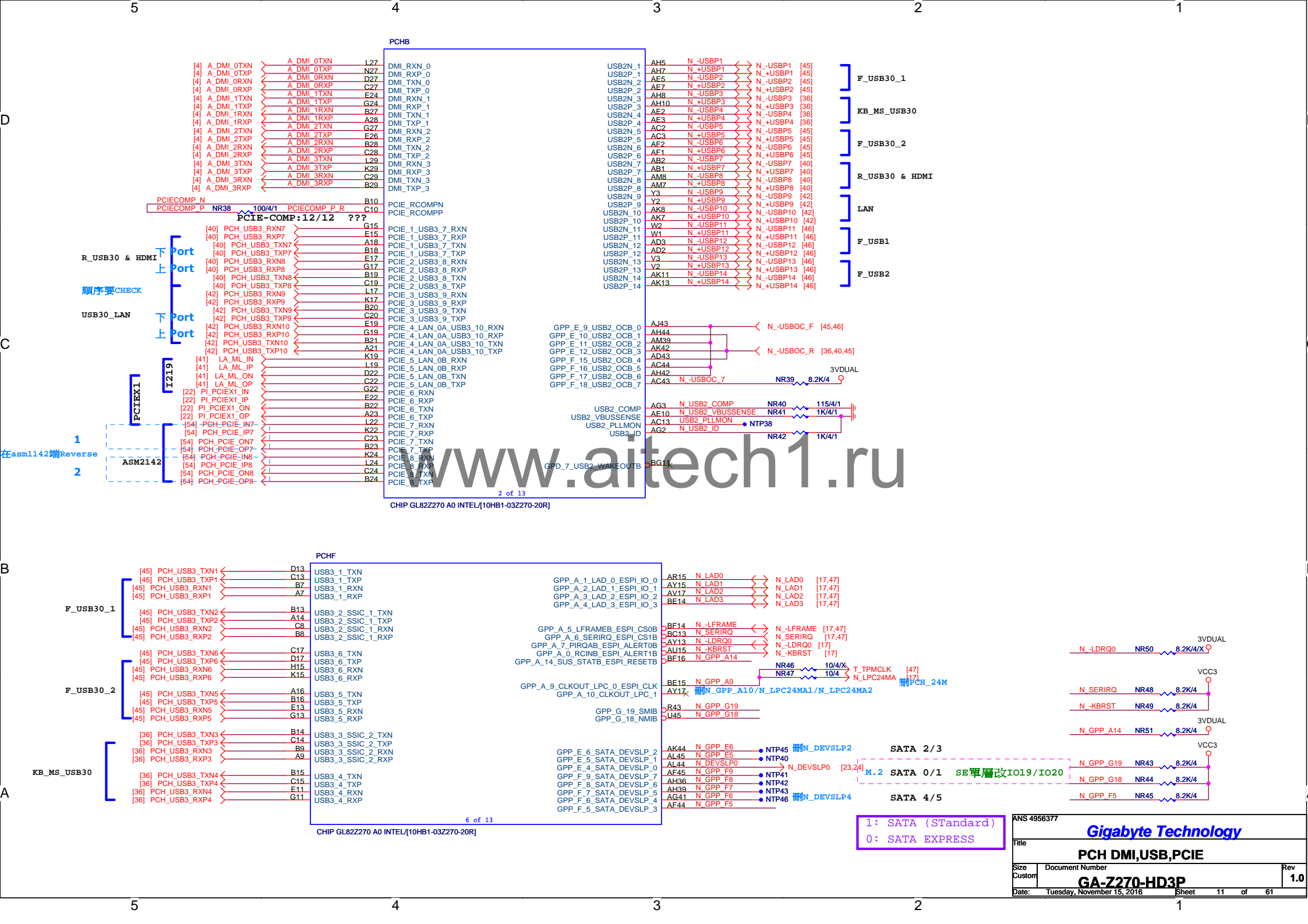
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SA2:0=000

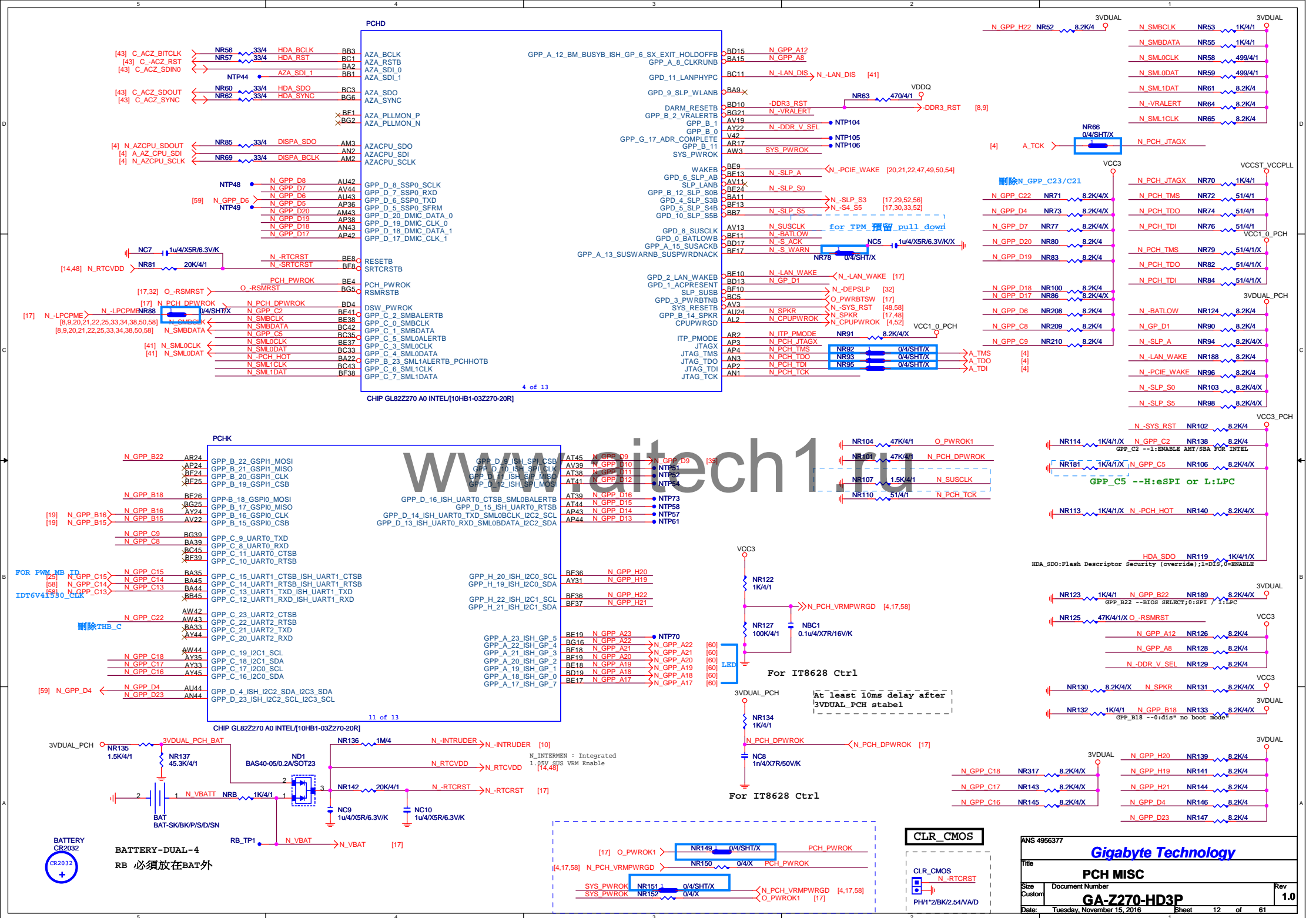
GRAY CHANNEL A1
SA2:0=001

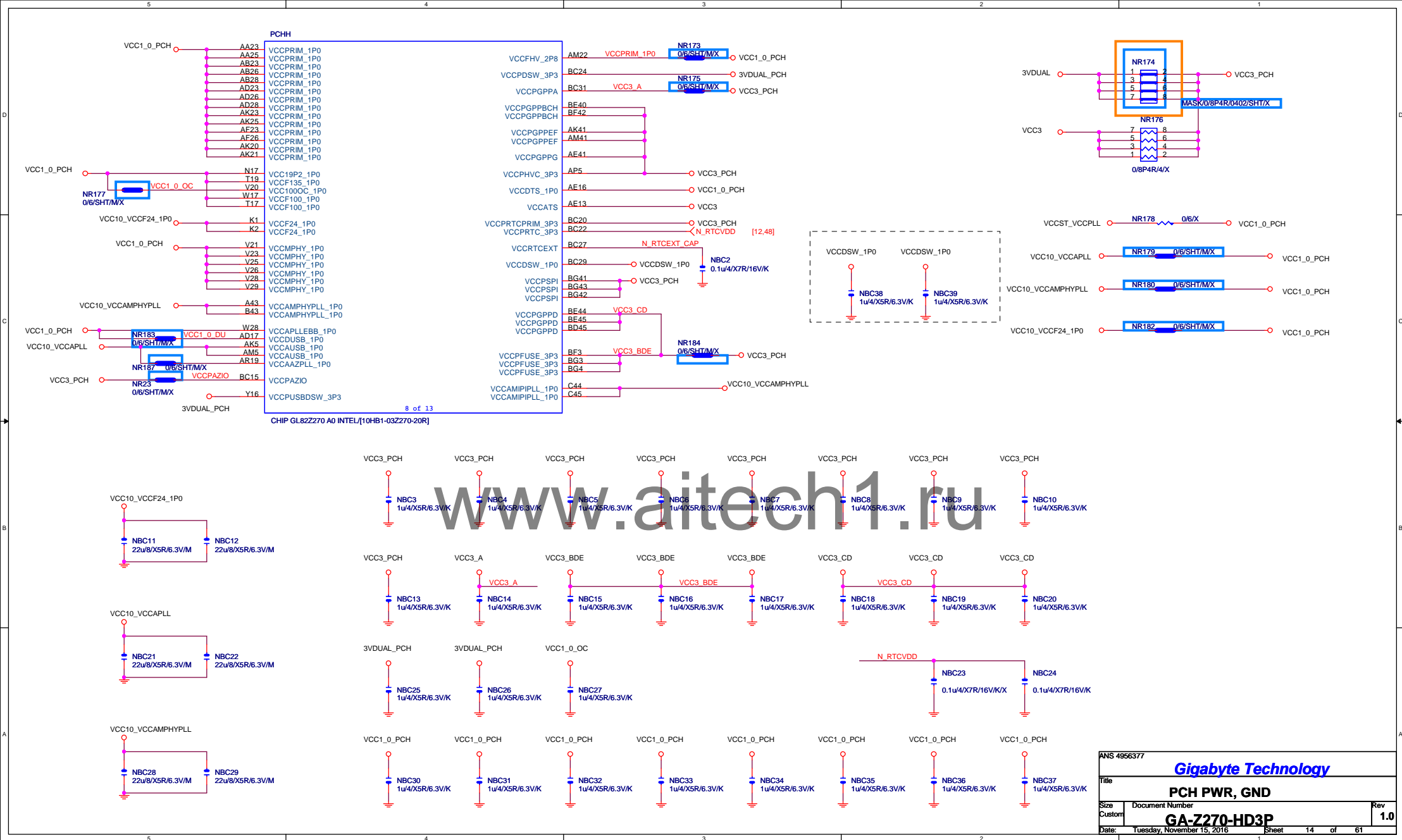












裝甲HEATSINK 分成四大部份

PCHL		
A25	VSS	A42
A30	VSS	A42
P22	VSS	BG44
AV38	VSS	BF44
AV45	VSS	BF45
AV8	VSS	BF2
AV11	VSS	W29
AV19	VSS	A35
AV37	VSS	A40
AV4	VSS	A41
AY42	VSS	AA17
AY8	VSS	AA18
B25	VSS	AA20
B3	VSS	AA21
B30	VSS	AA26
B35	VSS	AA28
B4	VSS	AA29
B41	VSS	AB17
BA13	VSS	AC32
BA17	VSS	AE4
BA29	VSS	AE8
BA31	VSS	AE18
BA37	VSS	AF20
BA4	VSS	AF21
BA42	VSS	AF25
BB40	VSS	AF28
BC38	VSS	AF29
BC40	VSS	AF4
BC9	VSS	AF42
BD11	VSS	AG18
BD16	VSS	AG20
BD2	VSS	AG21
BD21	VSS	AG23
BD25	VSS	AG25
F2	VSS	AG26
F31	VSS	AG28
E6	VSS	AG29
E8	VSS	AH11
F38	VSS	AH13
F43	VSS	AH30
G4	VSS	AH32
G42	VSS	AH33
G9	VSS	AH38
H11	VSS	AJ1
H13	VSS	AJ17
H17	VSS	AJ18
H19	VSS	AJ20
H22	VSS	AJ21
H24	VSS	AJ23
H27	VSS	AJ25
H29	VSS	AJ26
H33	VSS	AJ28
H35	VSS	AJ29
H38	VSS	AJ45
H4	VSS	AK10
H42	VSS	AK14
H9	VSS	AK16
J4	VSS	AK17
M36	VSS	AK18
M38	VSS	AK26
M4	VSS	AK28
M8	VSS	AM14
M9	VSS	AN14
N13	VSS	AP19
N15	VSS	AR22
N19	VSS	AR27
N22	VSS	AU29
N24	VSS	AU33
N31	VSS	AV10
N42	VSS	AV15
P10	VSS	AV24
P12	VSS	AV27
AV35	VSS	AV33

9 of 13

CHIP GL82270 A0 INTEL[10HB1-032270-20R]

PCHL		
BD34	VSS[70]	AB18
BD39	VSS[71]	AB20
BD7	VSS[72]	AB21
BE2	VSS[73]	AB22
BF45	VSS[74]	AB29
BF5	VSS[75]	AB4
BG18	VSS[76]	AB42
BG23	VSS[77]	AC10
BG28	VSS[78]	AC11
BG32	VSS[79]	AC14
BG37	VSS[80]	AC16
BG40	VSS[81]	AC38
AG9	VSS[82]	AC4
C1	VSS[83]	AC5
A12	VSS[84]	AC7
C2	VSS[85]	AC8
C37	VSS[86]	AD1
A6	VSS[87]	AD18
C9	VSS[88]	AD20
D1	VSS[89]	AD21
D10	VSS[90]	AD25
D12	VSS[91]	AD29
D15	VSS[92]	AD45
D16	VSS[93]	AE11
B12	VSS[94]	AE14
D19	VSS[95]	AE32
D21	VSS[96]	AE38
D24	VSS[97]	AK29
D25	VSS[98]	AK30
D29	VSS[99]	AK32
AG20	VSS[100]	AK35
D33	VSS[101]	AK39
D35	VSS[102]	AL4
D36	VSS[103]	AL42
D32	VSS[104]	AM10
D44	VSS[105]	AM11
D7	VSS[106]	AM13
P13	VSS[107]	AM17
P15	VSS[108]	AM19
P17	VSS[109]	AM24
P19	VSS[110]	AM27
VSS[111]	VSS[111]	AM29
P31	VSS[112]	AM32
P33	VSS[113]	AM33
P35	VSS[114]	AM4
P4	VSS[115]	AN45
P42	VSS[116]	AP10
P8	VSS[117]	AP13
R1	VSS[118]	AP15
R32	VSS[119]	AP22
T10	VSS[120]	AP27
T14	VSS[121]	AP31
T22	VSS[122]	AP33
T29	VSS[123]	AP38
T32	VSS[124]	AP39
T36	VSS[125]	T4
T38	VSS[126]	W26
Y38	VSS[127]	V16
Y4	VSS[128]	V17
Y8	VSS[129]	V18
T42	VSS[130]	V30
T5	VSS[131]	V32
U4	VSS[132]	V33
U42	VSS[133]	V38
V10	VSS[134]	V4
V14	VSS[135]	V8
W3	VSS[136]	W18
AR13	VSS[137]	W20
AR31	VSS[138]	W21
AR33	VSS[139]	W23
AT42	VSS[140]	W25
AT43	VSS[141]	
AT44	VSS[142]	
AU11	VSS[143]	
AU17	VSS[144]	
BD30	VSS[145]	
W45	VSS[146]	
Y13	VSS[147]	
Y14	VSS[148]	
Y15	VSS[149]	
Y30	VSS[150]	
Y32	VSS[151]	
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Y143	VSS[262]	
Y144	VSS[263]	
Y145	VSS[264]	
Y146	VSS[265]	
Y147	VSS[266]	
Y148	VSS[267]	
Y149	VSS[268]	
Y150	VSS[269]	
Y151	VSS[270]	
Y152	VSS[271]	
Y153	VSS[272]	
Y154	VSS[273]	
Y155	VSS[274]	
Y156	VSS[275]	
Y157	VSS[276]	
Y158	VSS[277]	
Y159	VSS[278]	
Y160	VSS[279]	
Y161	VSS[280]	
Y162	VSS[281]	
Y163	VSS[282]	
Y164	VSS[283]	
Y165	VSS[284]	
Y166	VSS[285]	
Y167	VSS[286]	
Y168	VSS[287]	
Y169	VSS[288]	
Y170	VSS[289]	
Y171	VSS[290]	
Y172	VSS[291]	
Y173	VSS[292]	
Y174	VSS[293]	
Y175	VSS[294]	
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Y186	VSS[305]	
Y187	VSS[306]	
Y188	VSS[307]	
Y189	VSS[308]	
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Y191	VSS[310]	
Y192	VSS[311]	
Y193	VSS[312]	
Y194	VSS[313]	
Y195	VSS[314]	
Y196	VSS[315]	
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Y199	VSS[318]	
Y200	VSS[319]	
Y201	VSS[320]	
Y202	VSS[321]	
Y203	VSS[322]	
Y204	VSS[323]	
Y205	VSS[324]	
Y206	VSS[325]	
Y207	VSS[326]	
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Y290	VSS[409]	
Y291	VSS[410]	
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Y295	VSS[414]	
Y296	VSS[415]	
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Y304	VSS[423]	
Y305	VSS[424]	
Y306	VSS[425]	
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Y312	VSS[431]	
Y313	VSS[432]	
Y314	VSS[433]	
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Y318	VSS[437]	
Y319	VSS[438]	
Y320	VSS[439]	
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Y322	VSS[441]	
Y323	VSS[442]	
Y324	VSS[443]	
Y325	VSS[444]	
Y326	VSS[445]	
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Y328	VSS[447]	
Y329	VSS[448]	
Y330	VSS[449]	
Y3		

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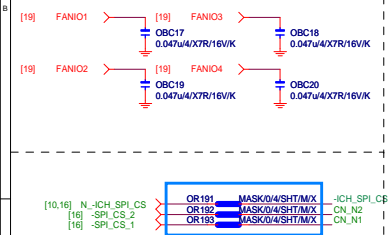
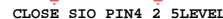
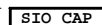
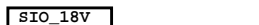
删除BIOS_SW

M_BIOS :SMD SPI SOCKET 8P 200MIL LOTES

* 試産先上 , PVT 移除

1104///M_BIOS sock 移除

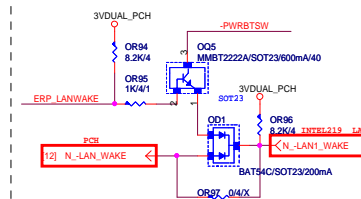
Gigabyte Technology			
Title		BIOS	
Size Custom	Document Number		Rev
	GA-Z270-HD3P		1.0
Date:	Monday, November 14, 2016	Sheet	16 of 61

DUAL BIOS OPT STRAP

Title			
ITE 8686 LPC IO			
Size C	Document Number		
	GA-Z270-HD3P		
Date:	Monday, November 14, 2016	Sheet	17 of 61

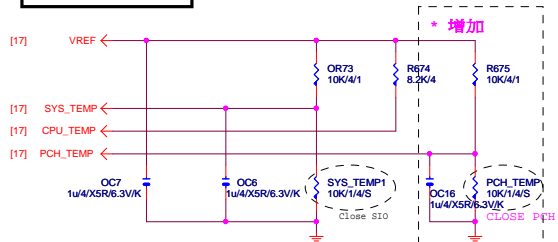
JP2	1	Disable WDT to rest PWROK
	0	Enable WDT to rest PWROK
JP3	1	Dual-BIOS CS pin mode select bit "0" See the below table
	0	
JP4	1	LPC/ESPI power VCCBT = 3.3V
	0	LPC/ESPI power VCCBT = 1.8V
JP5	1	LPC I/F
	0	ESPI I/F
JP6	1	Enable Dual BIOS Function (for GigaByte On)
	0	Disable Dual BIOS Function (for GigaByte On)
JP7	1	Dual-BIOS CE pin mode select bit "1" See the below table
	0	
JP3	1 1	CE pin disable (Hold pin mode)
	1 0	CE mode 1
	0 1	CE mode 2
	0 0	CE mode 3

(組態二) Intel LAN

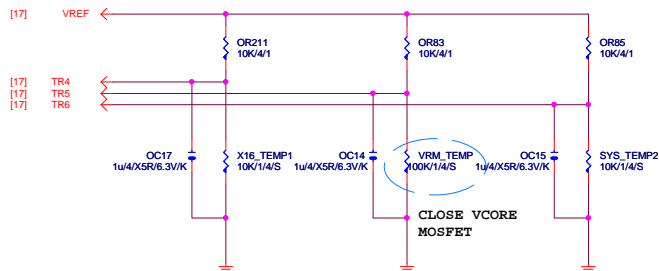


ERP Wake on LAN		
Single LAN	Realtek	組態一
	Atheros	
	Intel 219	組態二
Dual LAN	Atheros+Atheros	組態一
	Intel 219+Atheros	組態三
	Intel 219+Intel 210	
No Support ERP	BOM不上	N/A

TEMP H/W MONITOR

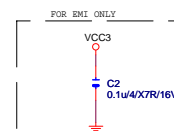
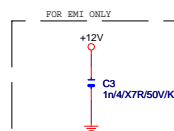
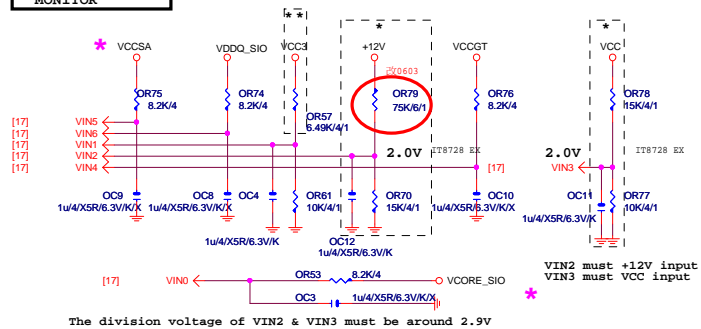


5個FAN時使用



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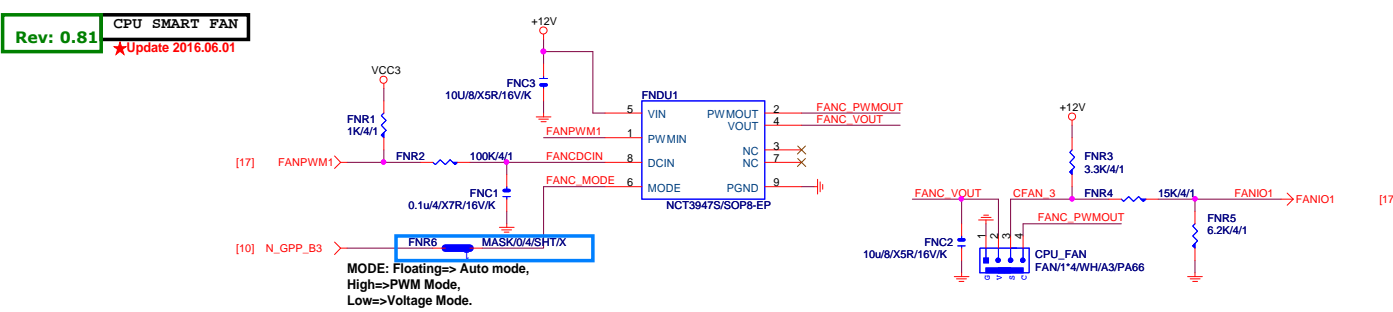
VOLTAGE-- H/W MONITOR



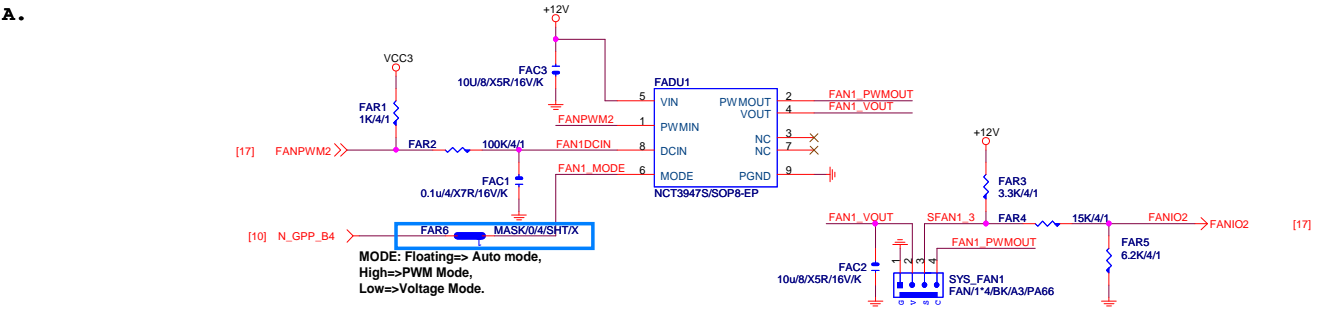
★Update 2015-04.24

Gigabyte Technology

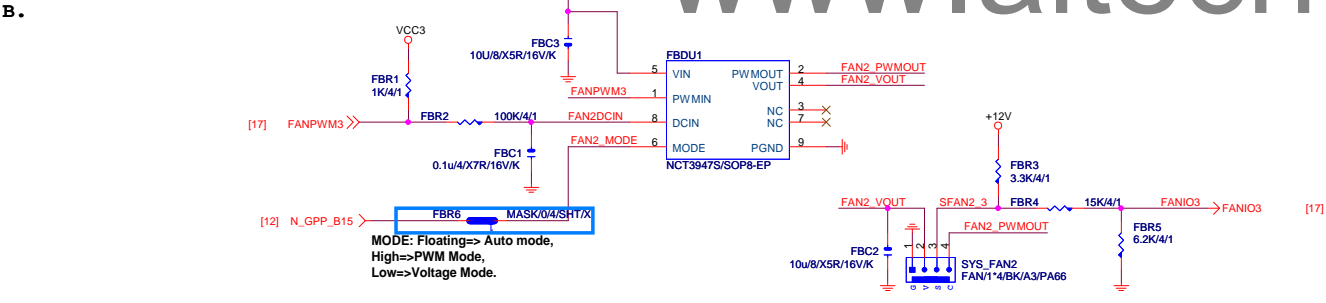
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Size	Document Number	Rev	
Custom	GA-Z270-HD3P	1.0	
Date	Monday, November 14, 2016	Sheet	18 of 61



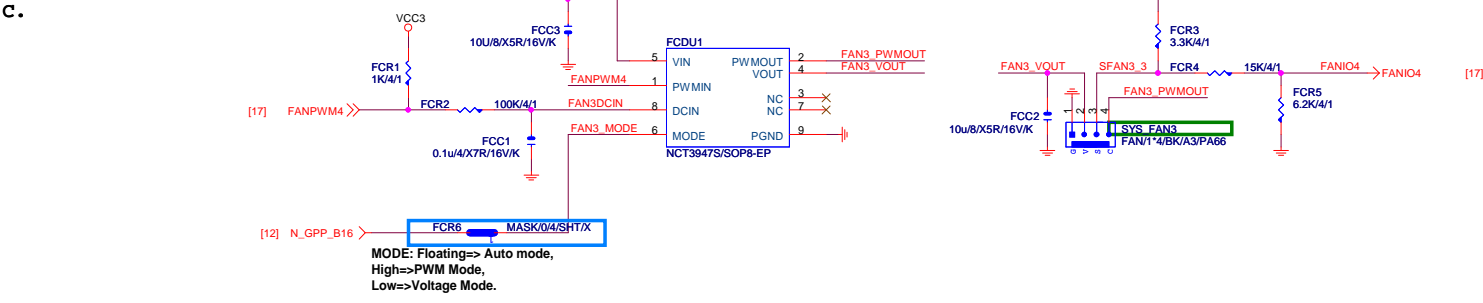
SYSTEM FAN1



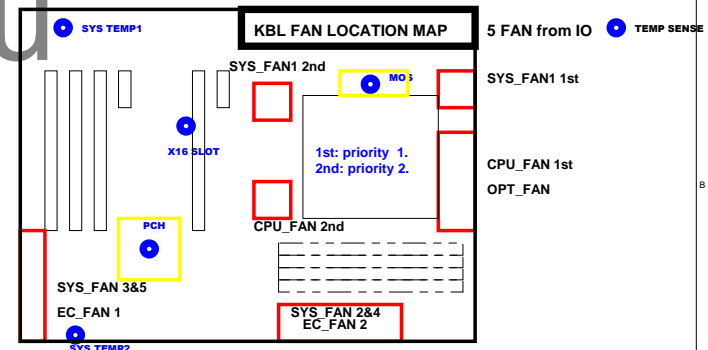
SYSTEM FAN2



SYSTEM FAN3

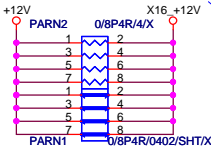


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Rev 0.2

+12 - protect
short-wire test



PCIESLOT-1648TH

3GIO_*16

[8,9,12,21,22,25,33,34,38,50,58] N_SMBCLK
[8,9,12,21,22,25,33,34,38,50,58] N_SMBDATA

[12,21,22,47,49,50,54] N_-PCIE_WAKE

[10] -PCIE16_PR

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	PAC20	0.22u/4/X5R/6.3V/K	PA_EXP_TXP8 C
PA_EXP_TXN8	PAC21	0.22u/4/X5R/6.3V/K	PA_EXP_TXN8 C
PA_EXP_TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA_EXP_TXP9 C
PA_EXP_TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA_EXP_TXN9 C
PA_EXP_TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA_EXP_TXP10 C
PA_EXP_TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA_EXP_TXN10 C
PA_EXP_TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA_EXP_TXP11 C
PA_EXP_TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA_EXP_TXN11 C
PA_EXP_TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA_EXP_TXP12 C
PA_EXP_TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA_EXP_TXN12 C
PA_EXP_TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA_EXP_TXP13 C
PA_EXP_TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA_EXP_TXN13 C
PA_EXP_TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA_EXP_TXP14 C
PA_EXP_TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA_EXP_TXN14 C
PA_EXP_TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA_EXP_TXP15 C
PA_EXP_TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA_EXP_TXN15 C

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--> 2.5GHZ

PCE-E X1(單向) 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--> 5GHZ

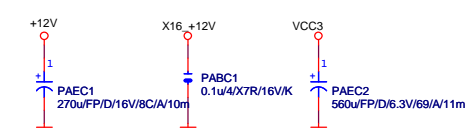
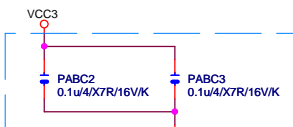
PCE-E X1(單向) BANDWIDTH=5GHz*(8b/10b)=4Gb/s=500MB/s

PCI-E REV:3.0--> 8GHZ

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

PCI-E16X164P/BK/LONG DOUBLE

黑色(預留金屬加強,不上)

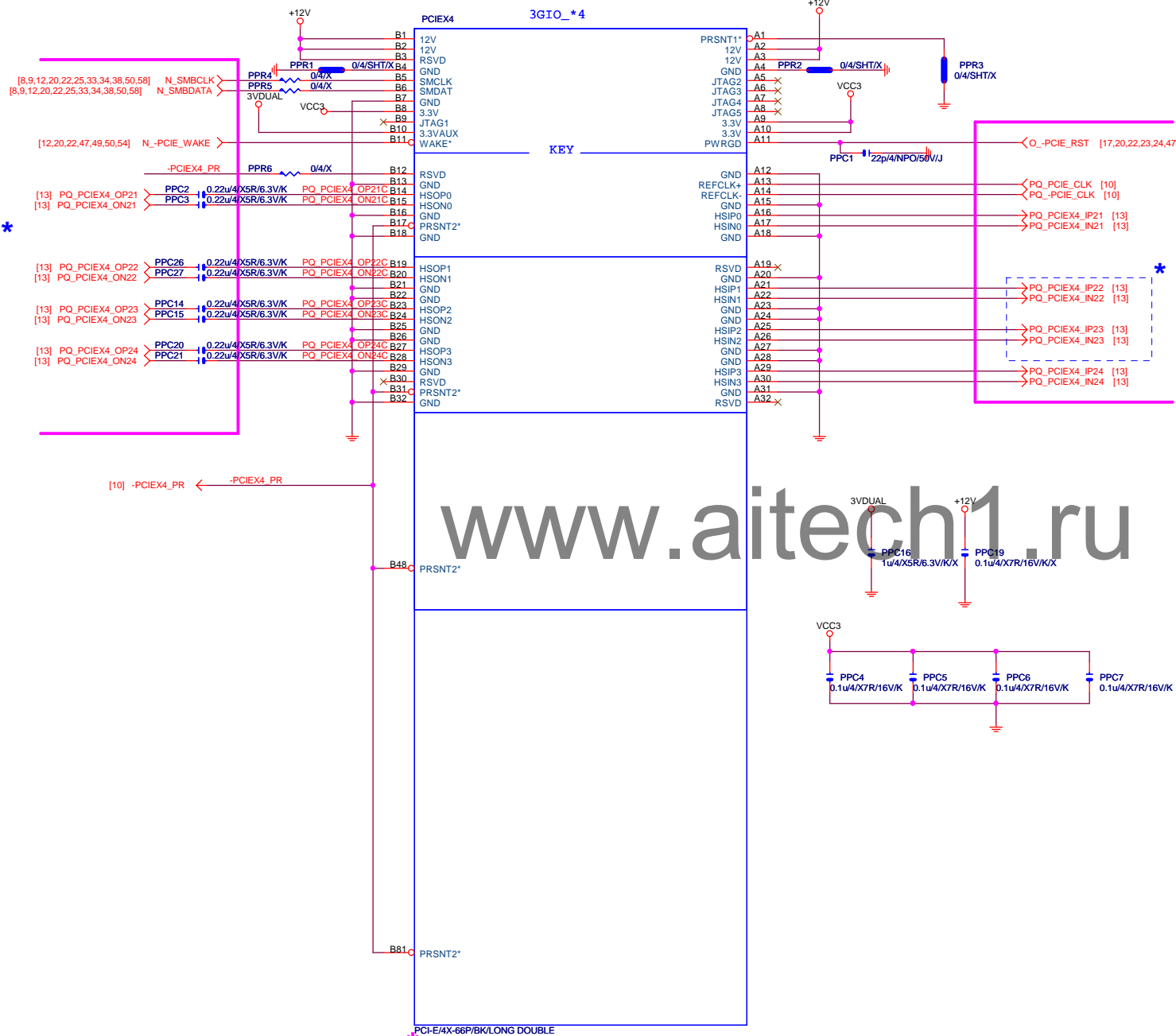


Gigabyte Technology			
PCI EXPRESS * 16			
Title	Document Number		
Size	GA-Z270-HD3P		Rev 1.0
Custom			
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Rev 0.51

PCIe*4

Footprint "PCIESLOT-64STH-1"



黑色(預留金屬加強,不上)

Gigabyte Technology			
Title	PCIe_X4		
Size	Document Number	Rev	
Custom	GA-Z270-HD3P	1.0	
Date:	Monday, November 14, 2016	Sheet	21 of 61

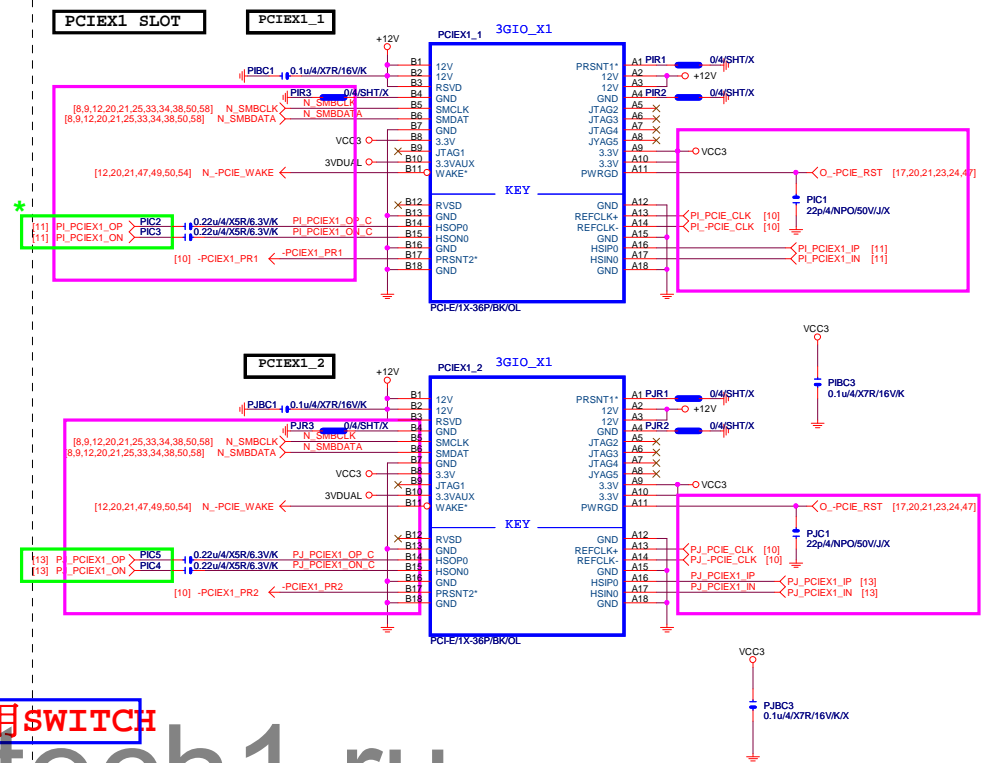
PCIEX1_3

PPD2

PPU2

2各x1 ,不用SWITCH

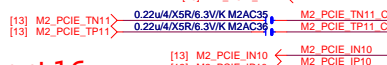
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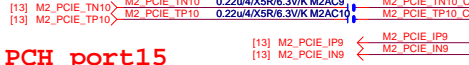
M.2 Lane4 from PCH port18



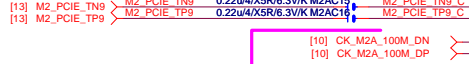
M.2 Lane3 from PCH port17



M.2 Lane2 from PCH port16

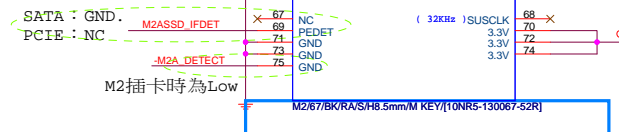
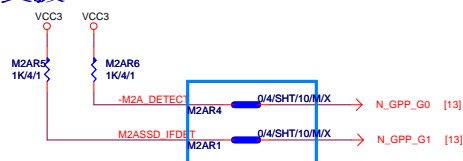


M.2 Lane2 from PCH port15



需與M2_-CLKREQ對應

支援SATA and M.2 function



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

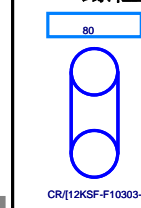
10NR5-130067-52R

M.2 有插卡 /沒插卡 GPP_G0	M.2插何種卡? GPP_G1	SATA Express 插何種硬碟? GPP_E0/E2/F1	IO15 (S0)	IO16 (S1)	IO17	IO18	IO19 (S0)	IO20 (S1)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	PCIE x1	SATA
		SATA Express (Low)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	SATA Express	
	PCIE Mode (Hi)	SATA (Hi)		PCIE x4 (For M.2)			SATA	SATA
		SATA Express (Low)		PCIE x4 (For M.2)			SATA Express	
沒插卡 (Hi)	Don't Care (Hi)	SATA (Hi)		PCIE x4			SATA	SATA
		SATA Express (Low)		PCIE x4			SATA Express	

(32KHz) SUSCLK

M2ASATAE_PERST_N

DIP螺柱

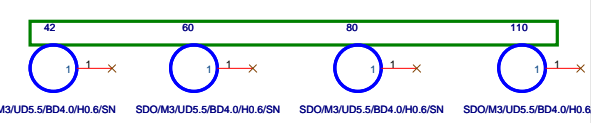


CR[12KSF-F10303-11R]

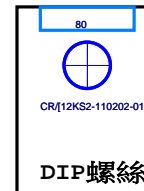
刪除SMD螺柱文字面 "A" ,不要show 出在PCB文字面上

SMD螺柱

10KS2-040131-01R



* Footprint : HOLE_C236D165-A



DIP螺絲

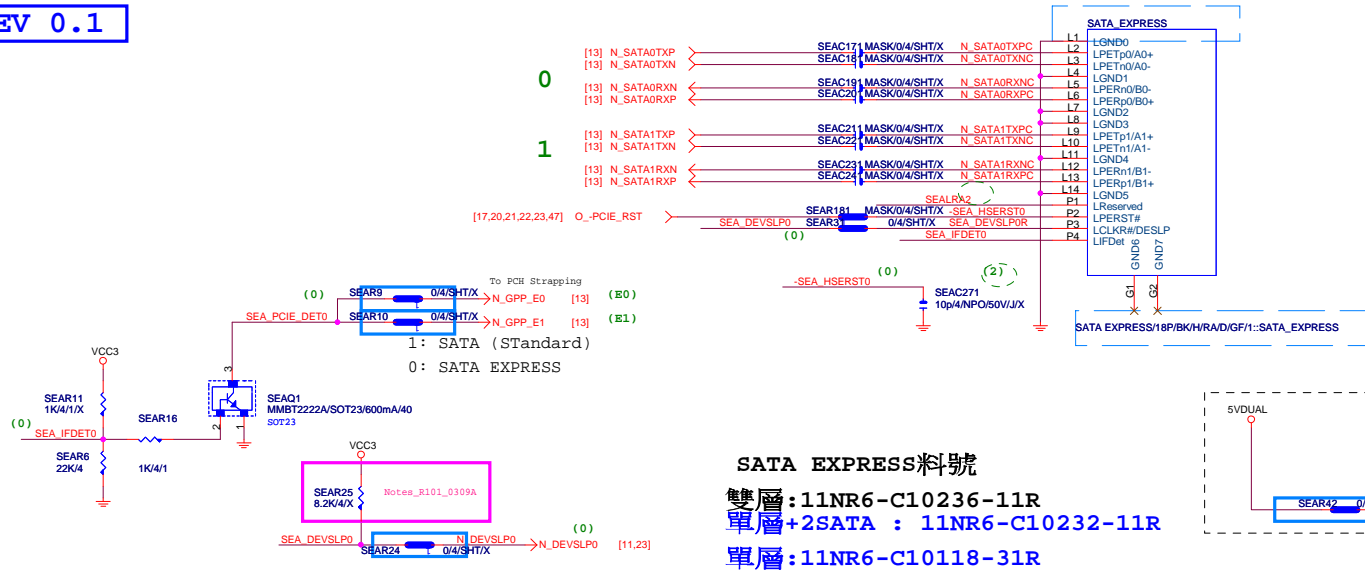
Gigabyte Technology

Title	M.2 X4	
Size	Document Number	Rev
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Date:	Monday, November 14, 2016	Sheet 23 of 61

(A)TYPE
由H170-Designare 的(O)TYPE 直接貼過來
&刪除 for x4 & sata & x1 sw 的N_GPP_B15

REV 0.1

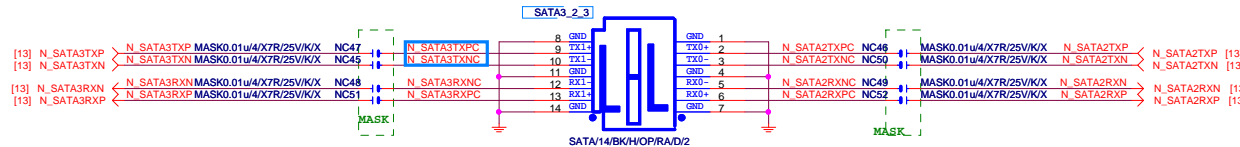
改成單層 IO19/IO20 To SATA3 port0/1



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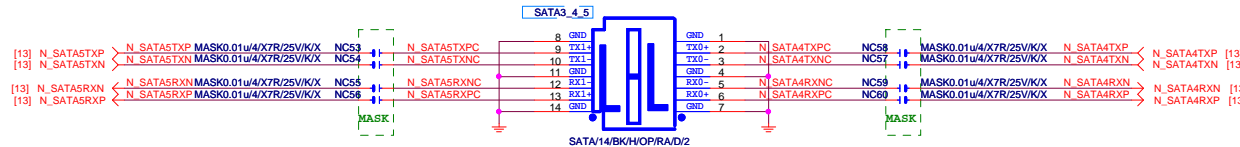
IO21/IO22 To SATA3 port2/3

上 Port (8-14) 下 Port (1-7)

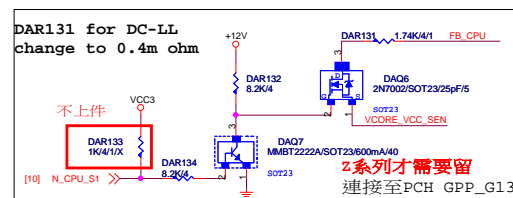
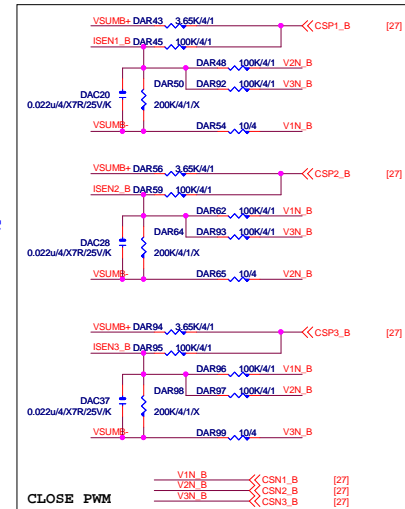


IO23/IO24 To SATA3 port4/5

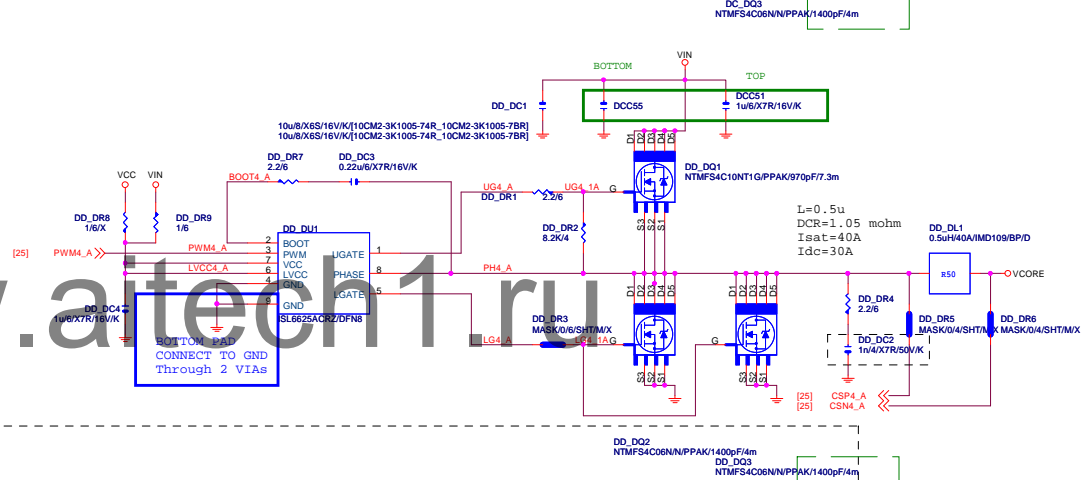
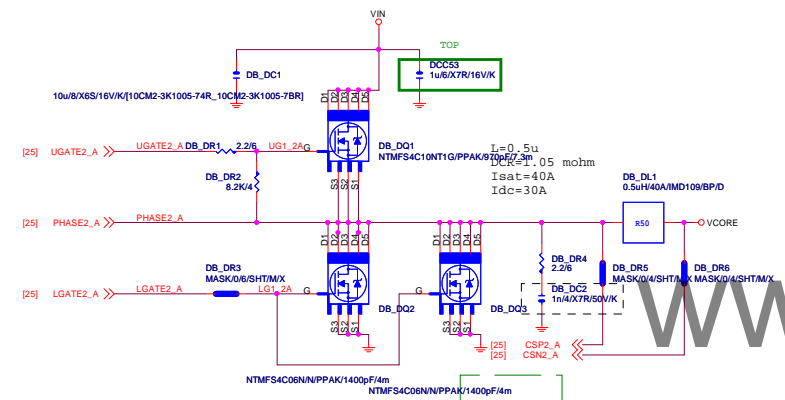
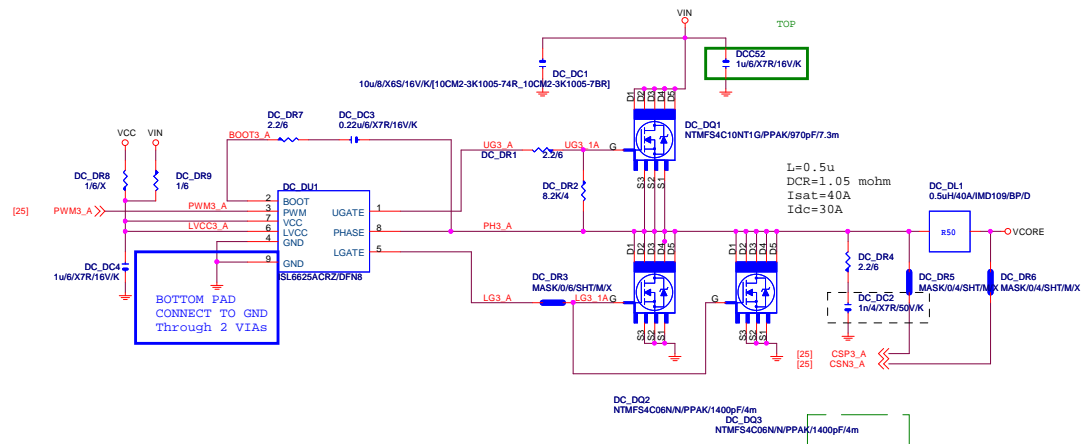
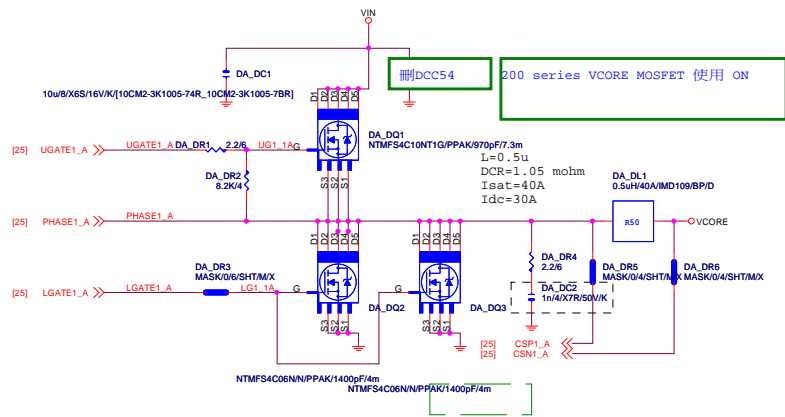
上 Port (8-14) 下 Port (1-7)



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

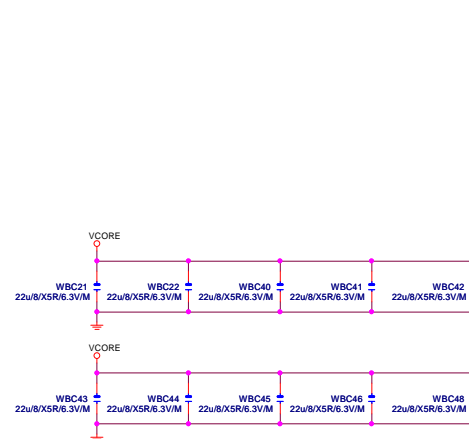
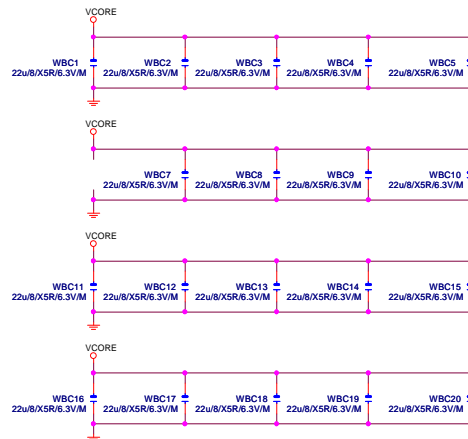
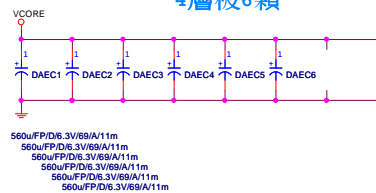


VCORE



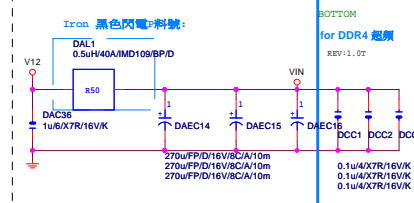
VCORE CAP

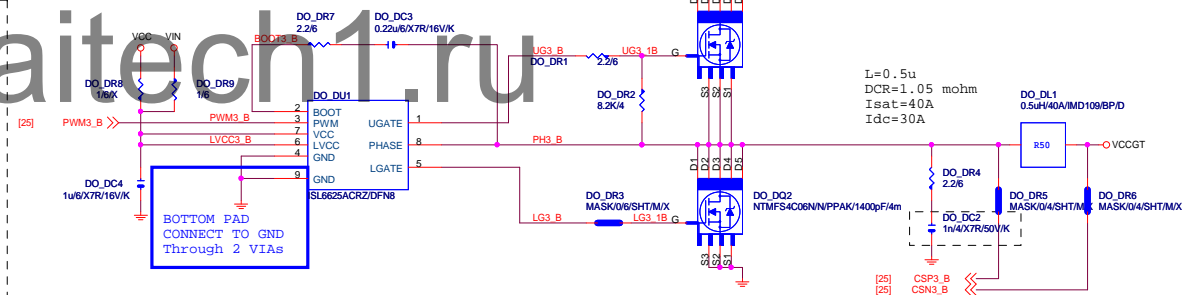
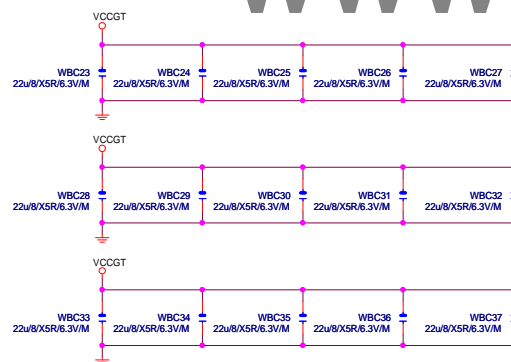
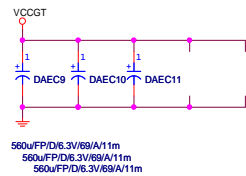
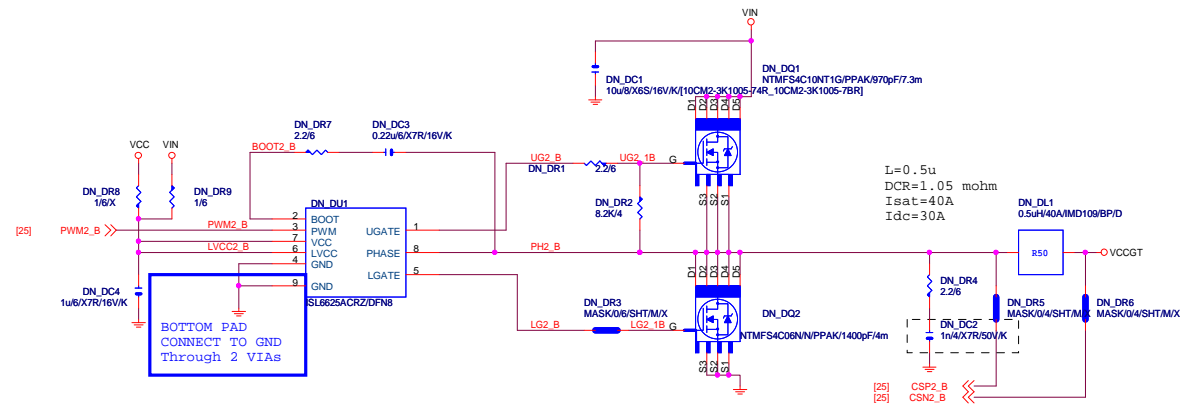
560u*8PCS
22u*29PCS
4層板6顆



VIN CAP

270u*3PCS





VCCIO

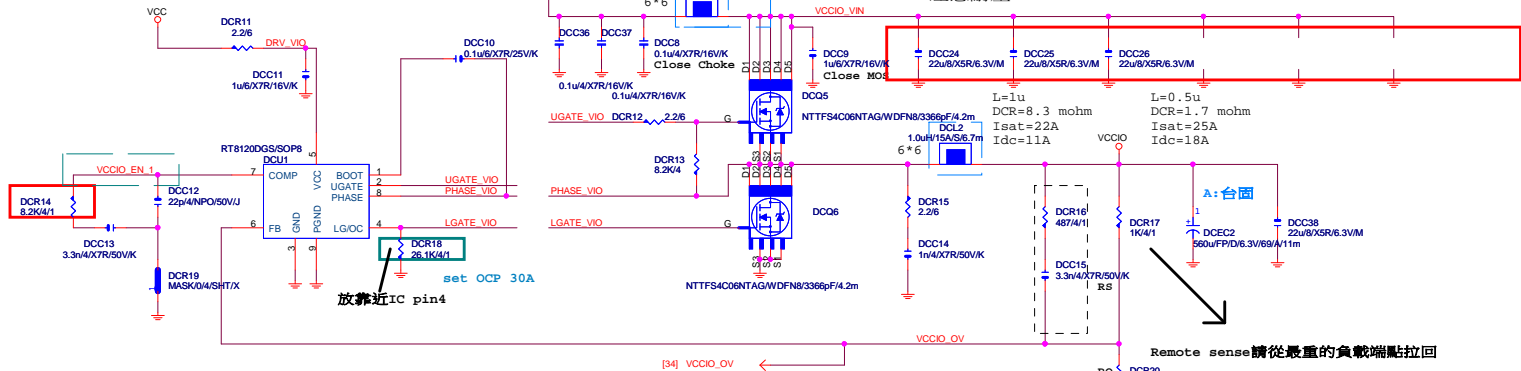
REV:0.21

SMD Molding(合金)
10LC4-15100B-01R CORE 1.0uH 15A
TAI-TECH SMD TMDA0603S-1R0MM-D
DCR=6.7m

CHOKE-合金
L=1u
DCR=8.3 mohm
Isat=22A
Idc=11A

CHOKE與CAP料號可變

注意耐壓



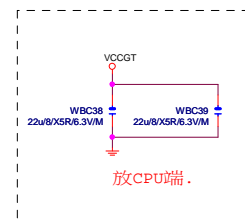
Connect to IT8793

Connect to IT8686

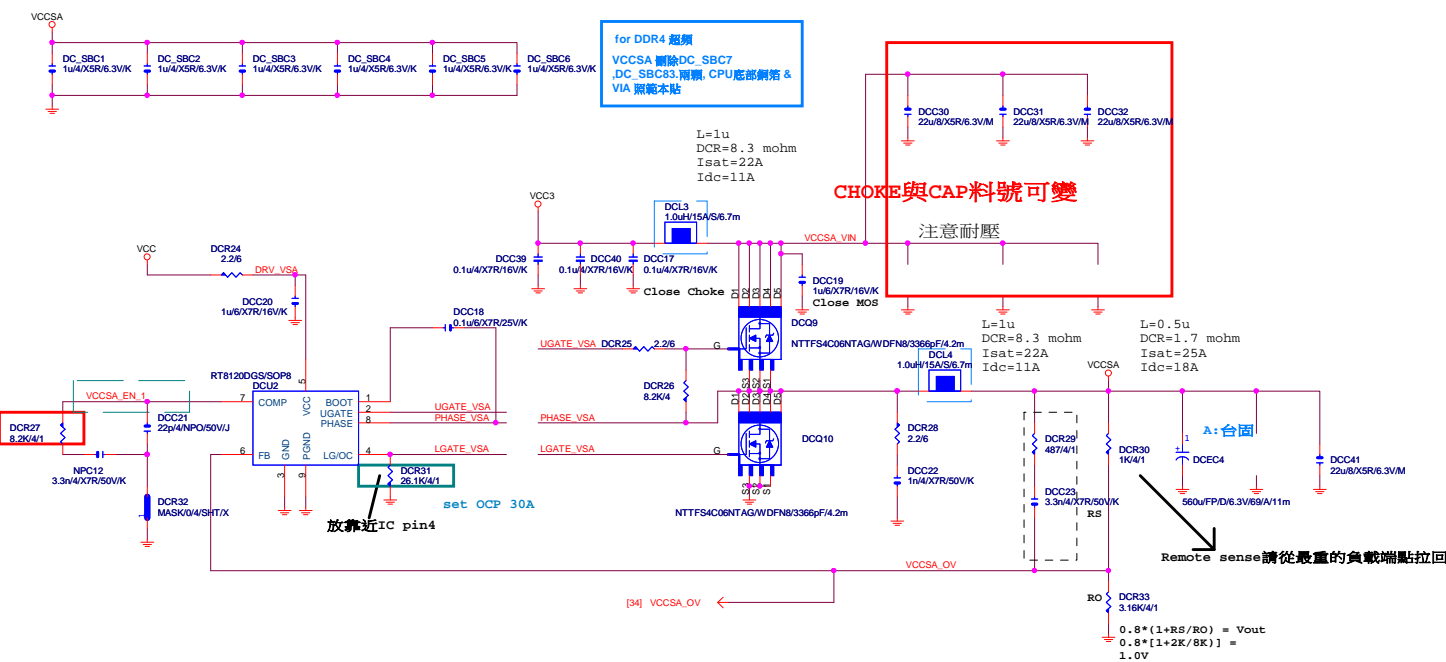
有使用CPU POWER
時DCR22不上件

CHOKE
FOOTPRINT:CHOKE6X6mm_SMD-1
1.0uH/22A/S/10m
DCL1,DCL2,DCL3,DCL4

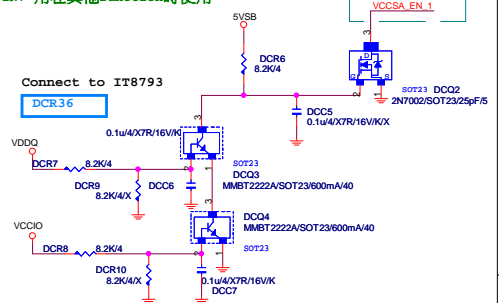
電容 A:台固
560u/FP/D/6.3V/69A/11m
DCEC2,DCEC4



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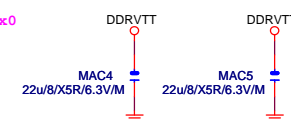
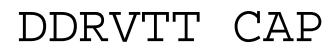
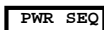
SIO PIN5 . PIN7 用在其他function時使用




GIGABYTE™

File	VCCSA_VCCIO_no 44E		
Size	Document Number	Rev	
Customer	GA-Z770-HD3P	1.0	
Date	Monday, November 14, 2016	Sheet	28 of 61

DDR4



[4] DDR_VTT_CTL >> DDR_VTT_CTL MAR110 DDRVTT_EN
 2,17, [2,56] N_SLP_S3 >> N_SLP_S3 MAR111 DDRVTT_BOOT
 0/4/SHT/M/X
 MAU1上NCT3103S時上件

			
Title			
RT8120_DDR4 POWER			
Size	Document Number		Rev
Custom	GA-Z270-HD3P		1.0
Date:	Monday, November 14, 2016	Sheet 29 of	61

REV:0.2

SMD Molding(合金)
10LC4-15100B-01R CORE 1.0uH 15A
TAI-TECH SMD TMPA0603S-1R0MN-D
DCR=6.7m

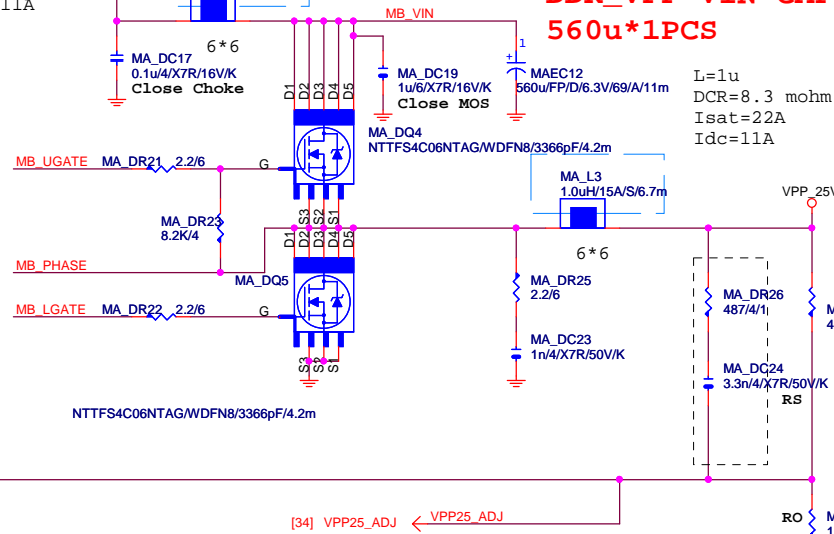
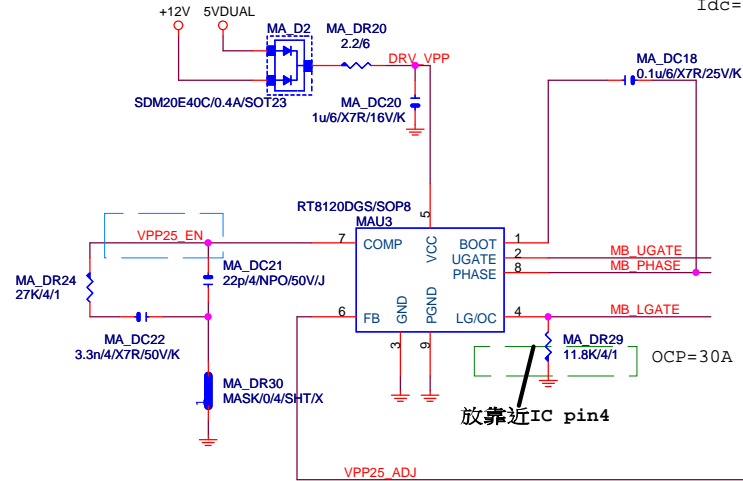
CHOKE-合金

4. VPP_25V CHOKE footprint 改CHOKE6X6mm_SMD-1

CHOKE與CAP料號可變

VPP_25V

L=1u
DCR=8.3 mohm
Isat=22A
Idc=11A



$V_{(BR)DSS}$	$R_{DS(on) MAX}$	$I_D MAX$
30 V	4.2 mΩ @ 10 V	67 A
	6.1 mΩ @ 4.5 V	

DDR_VPP VIN CAP
560u*1PCS

L=1u
DCR=8.3 mohm
Isat=22A
Idc=11A

SUPPORT DDR4 2.5V

VPP_25V 25A MAX

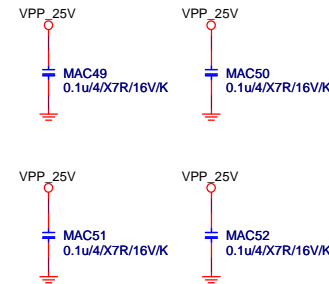
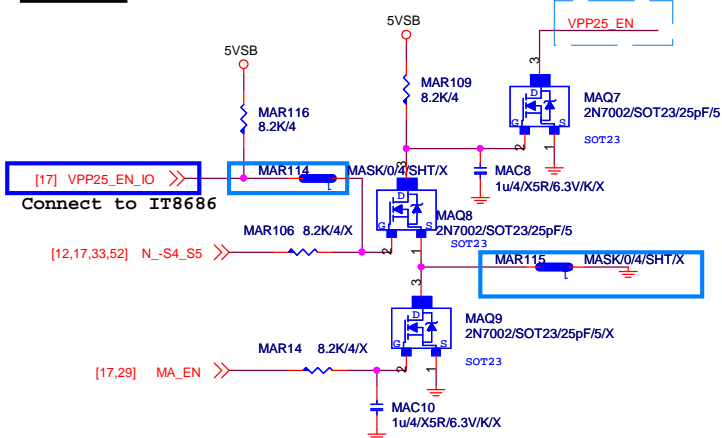
請放置CHOKE一出來位置. 先預留.
請自行確認ripple後再決定是否上件

Remote sense請從最重的負載端點拉回

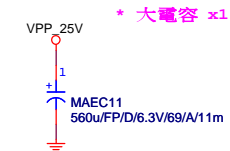
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PWR_SEQ

* 刪 MA_DR32

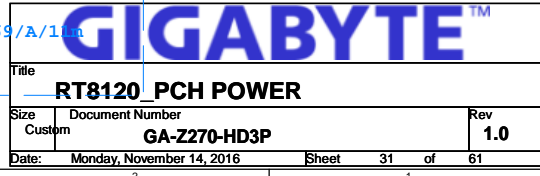


VPP CAP 560u*1PCS



GIGABYTE™			
Title	RT8120_VPP25 POWER		
Size	Document Number	Rev	
Custom	GA-Z270-HD3P	1.0	
Date:	Monday, November 14, 2016	Sheet	30 of 61

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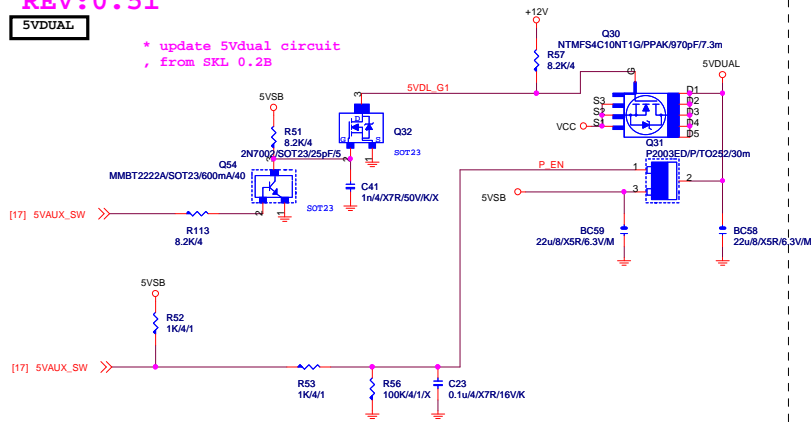
VCC1_0_PCH sequence issue ,有ERP issue ,先還原

請放置CHOKE一出來的地方

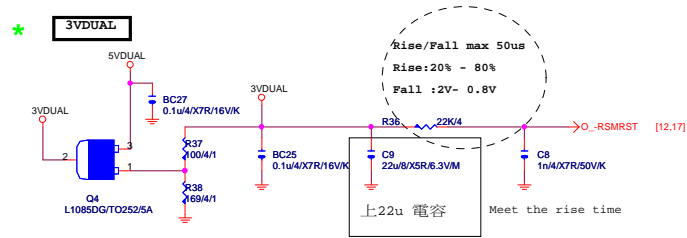
REV:0.51

5VDUAL

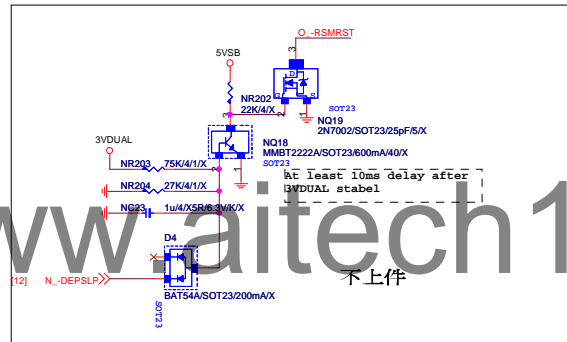
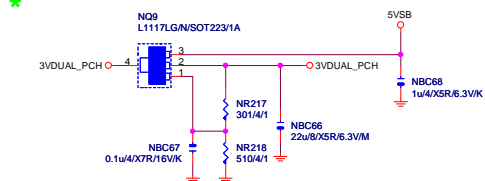
* update 5Vdual circuit
from SKL 0.2B



3VDUAL



3VDUAL_PCH

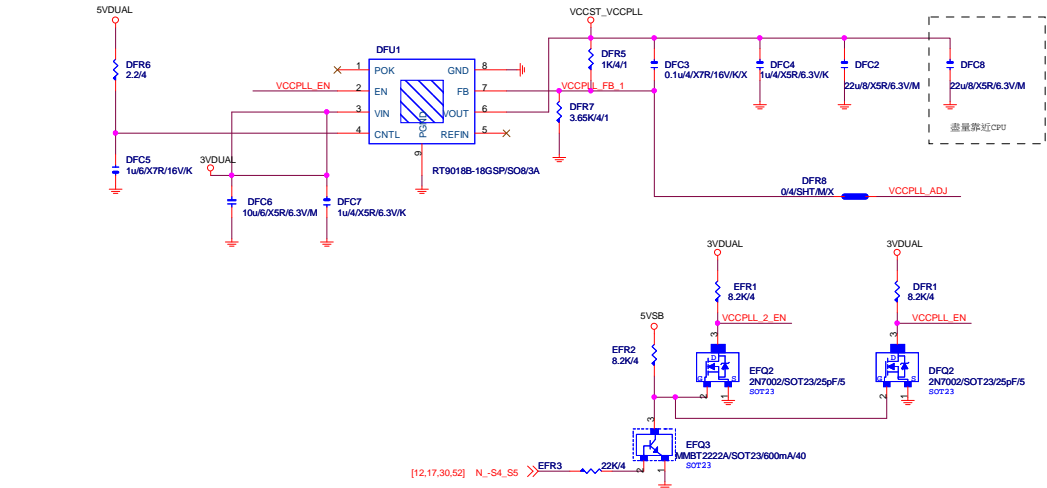


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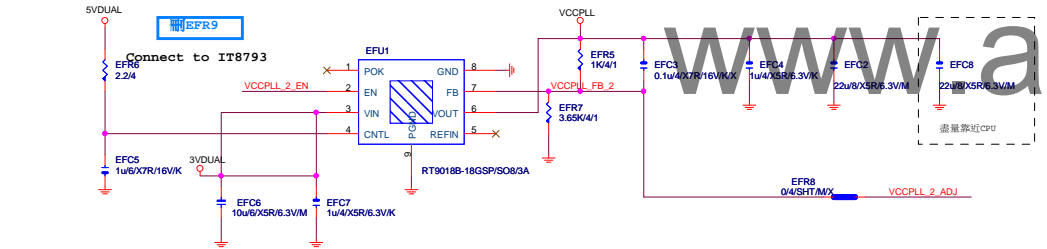
Gigabyte Technology

Title			DISCRETE POWER
Size	Custom	Document Number	GA-Z270-HD3P
Date	Monday, November 14, 2016	Sheet	32 of 61
Rev	1.0		

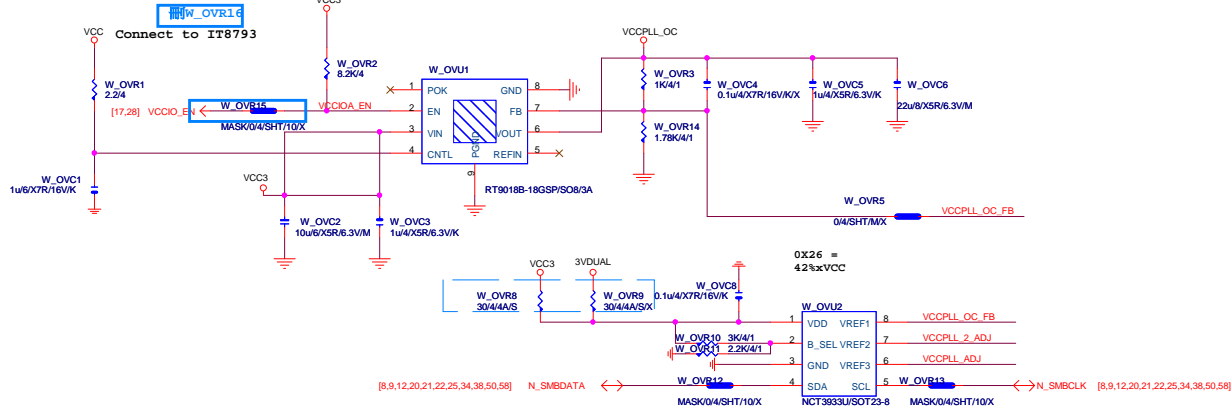
VCCST_VCCPLL 替換原先MOS開關線路



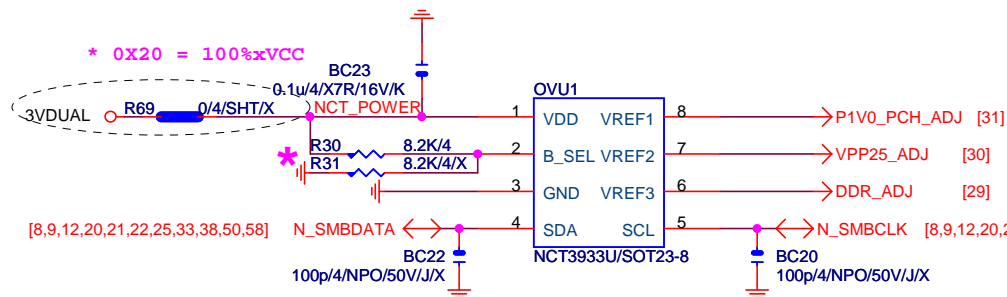
VCCPLL



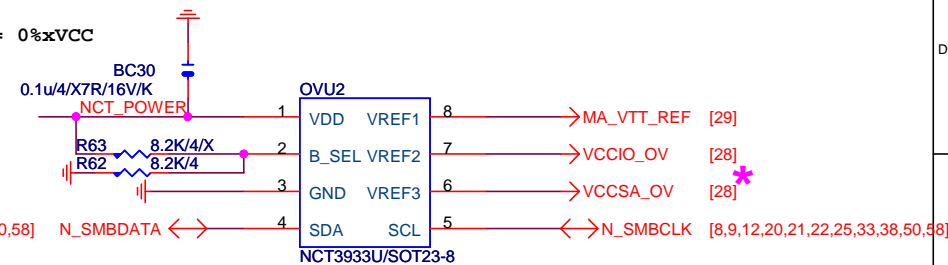
VCCPLL_OC



OVER VOLTAGE



0X2A = 0%xVCC



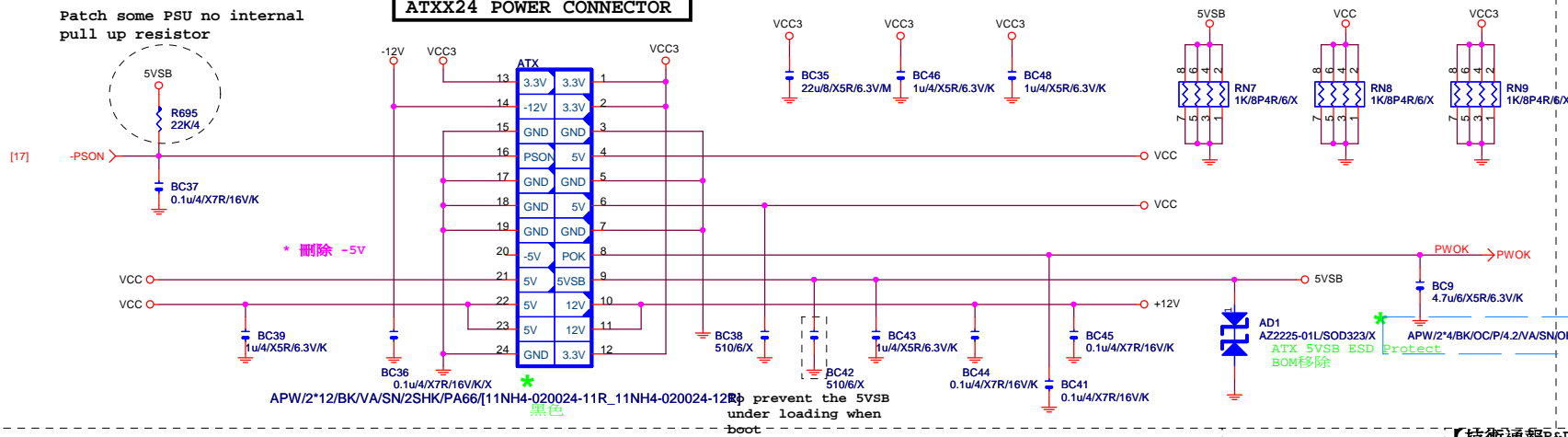
0X22 = 75%xVCC

* 删除 OVU3

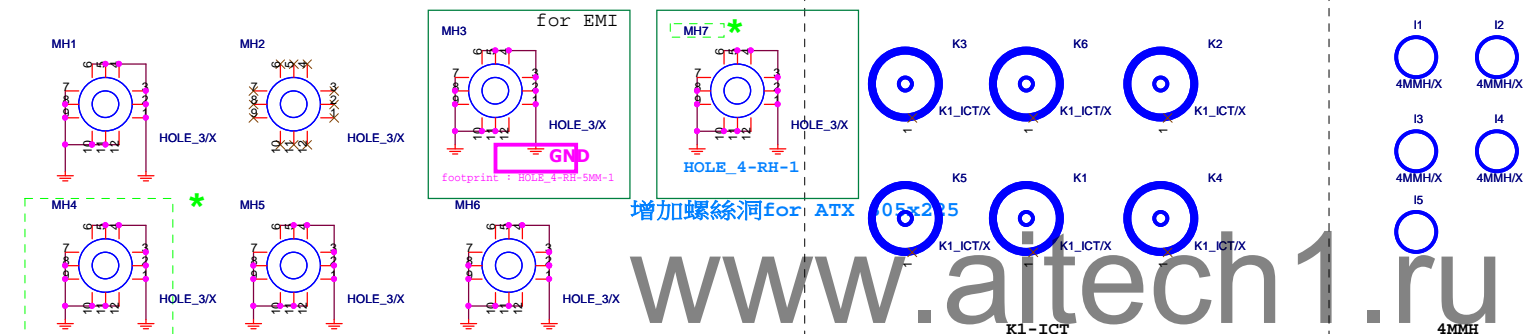
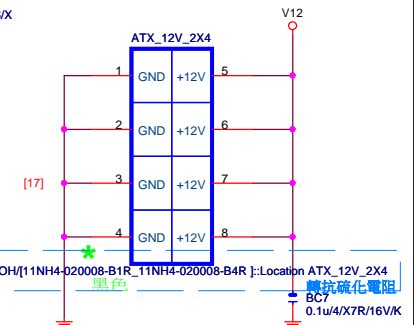
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology		
CPU CORE VR-2		
Title	Document Number	Rev
	GA-Z270-HD3P	1.0
Date:	Monday, November 14, 2016	Sheet 34 of 61

ATXX24 POWER CONNECTOR

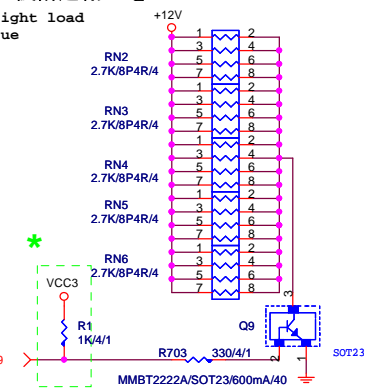


ATXX4 POWER CONNECTOR



【技術通報R&D技術通報153】

To fix 12V light load abnormal issue



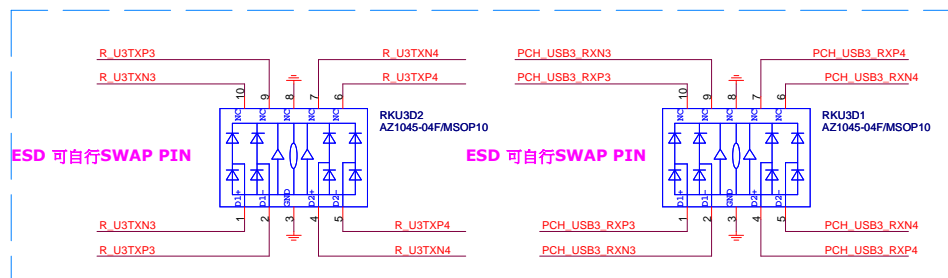
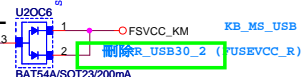
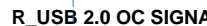
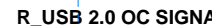
有TYPE-C螺絲洞改半圈, footprint : HOLE_4-RH-5MM-1

螺絲洞 check ~~~

-PROHOT

COUPON





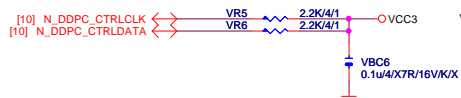
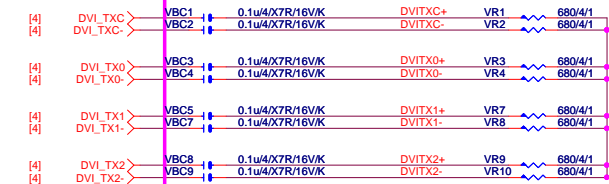
Rev: 0.81

DVI CONN

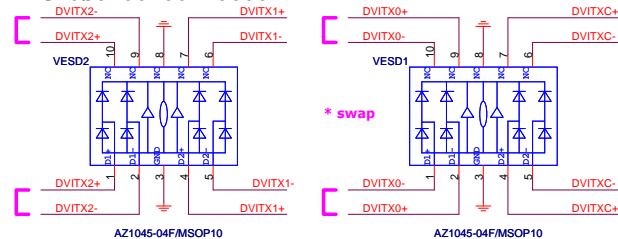
DVI:20/4/6/4/20

Impedance=85 +- 17.5%

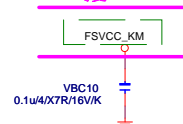
NET 可變



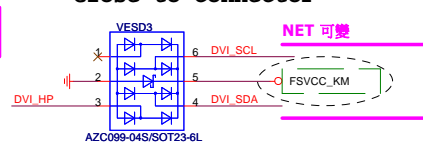
Close to connector



NET 可變



Close to connector

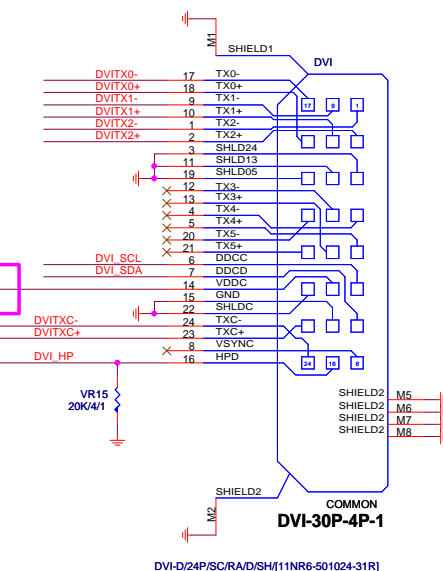


★Update 2015.05.27

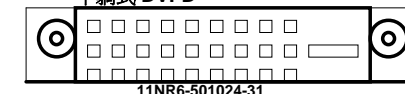
★Update 2016.06.20

★Update 2016.06.20

NET 可變



平躺式 DVI-D

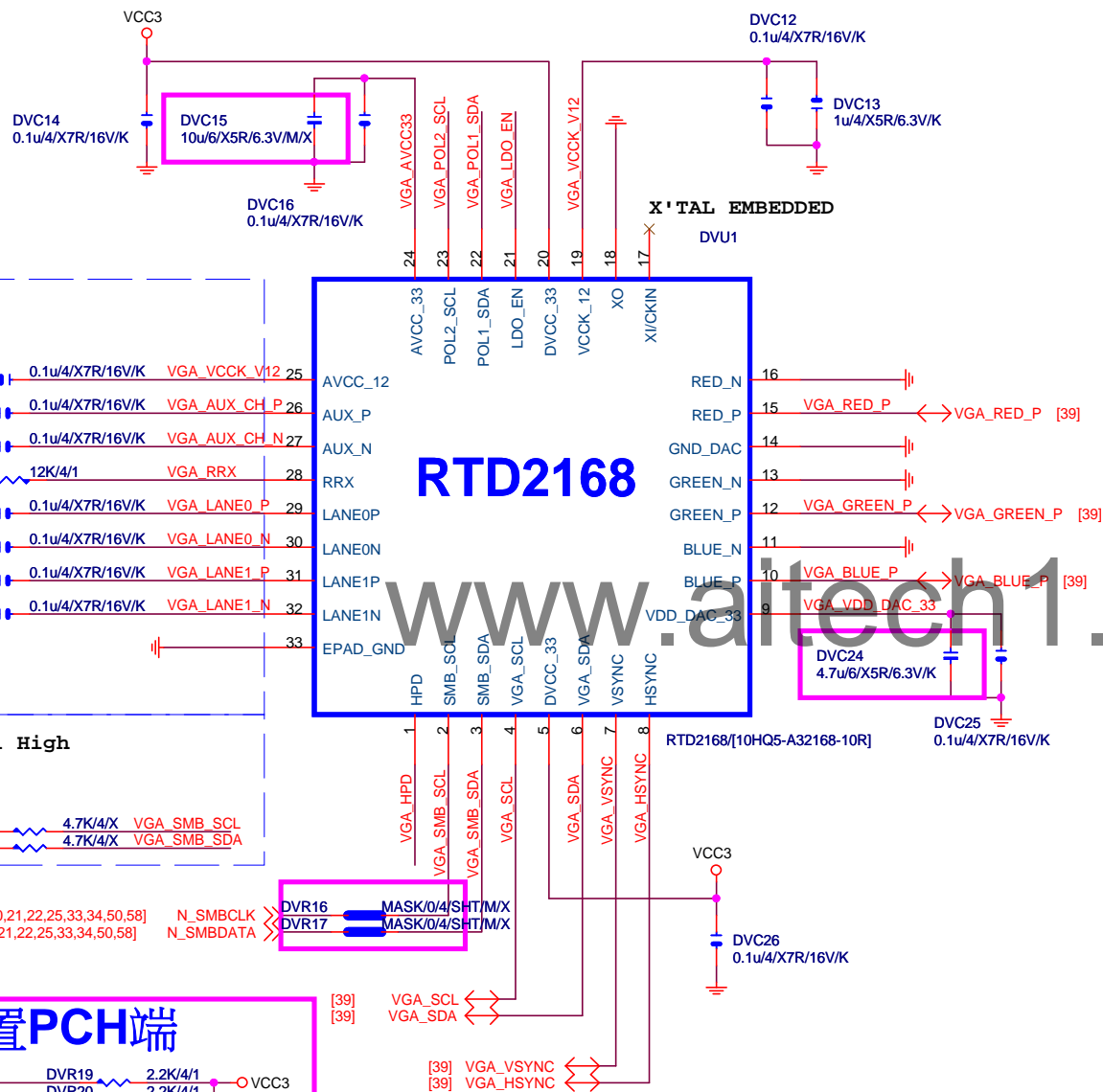


11NR6-501024-31

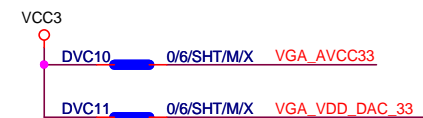
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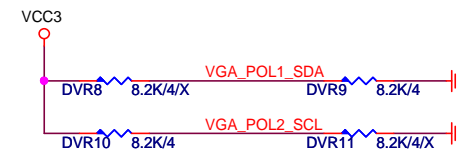
Title			DVI
Size	Document Number	GA-Z270-HD3P	
Custom	Date	Monday, November 14, 2016	Sheet 37 of 61
Rev			1.0



POWER

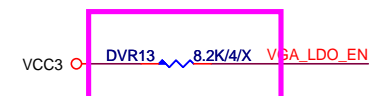


Power on latch



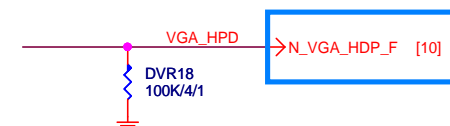
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

Embedded LDO



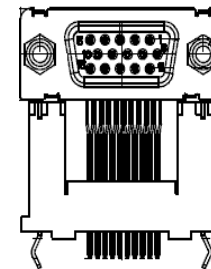
LDO_EN(PIN21)	
0	1
VCKK_V12 from External 1.2V	VCKK_V12 from Embedded LDO

DP HPD



Gigabyte Technology
DP-VGA RTD2168

Size Custom	Document Number GA-Z270-HD3P	Rev 1.0
Date: Monday, November 14, 2016	Sheet 38 of 61	

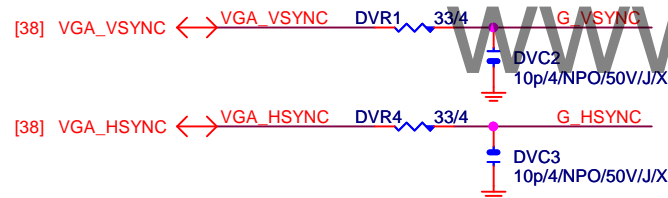
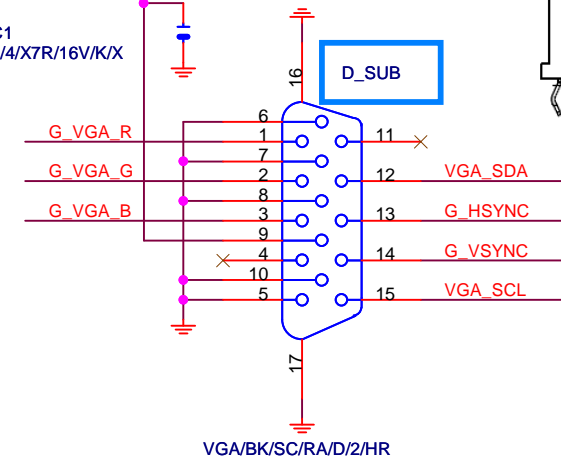
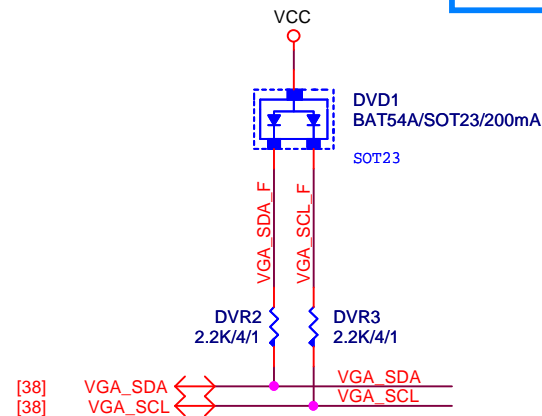


Fuse: (PS2+U3x2+DVI+D-SUB)=RFUS1[2.6A]

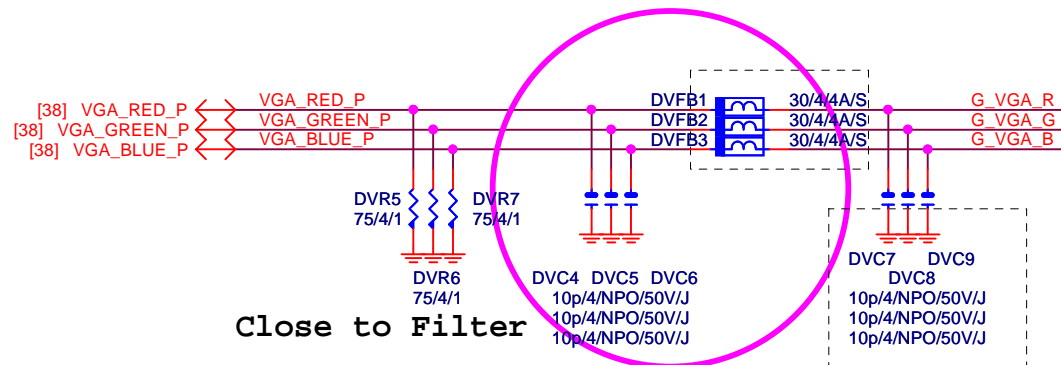
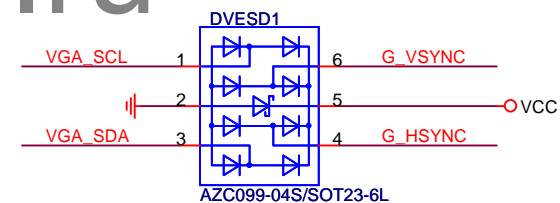
FSVCC_KM

DVC1
0.1u/4/X7R/16V/K/X

D_SUB

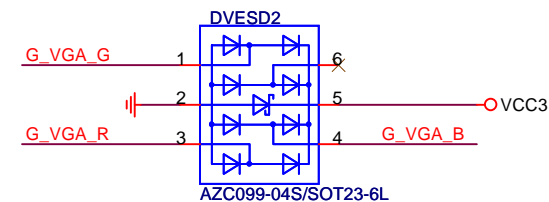


VGA ESD



Close to Filter

FOR EMI



Gigabyte Technology

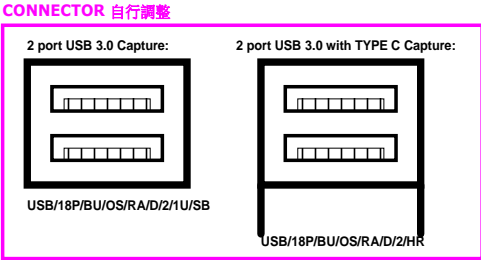
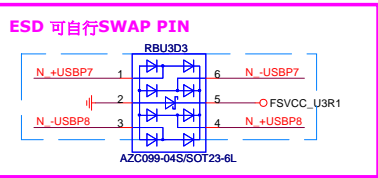
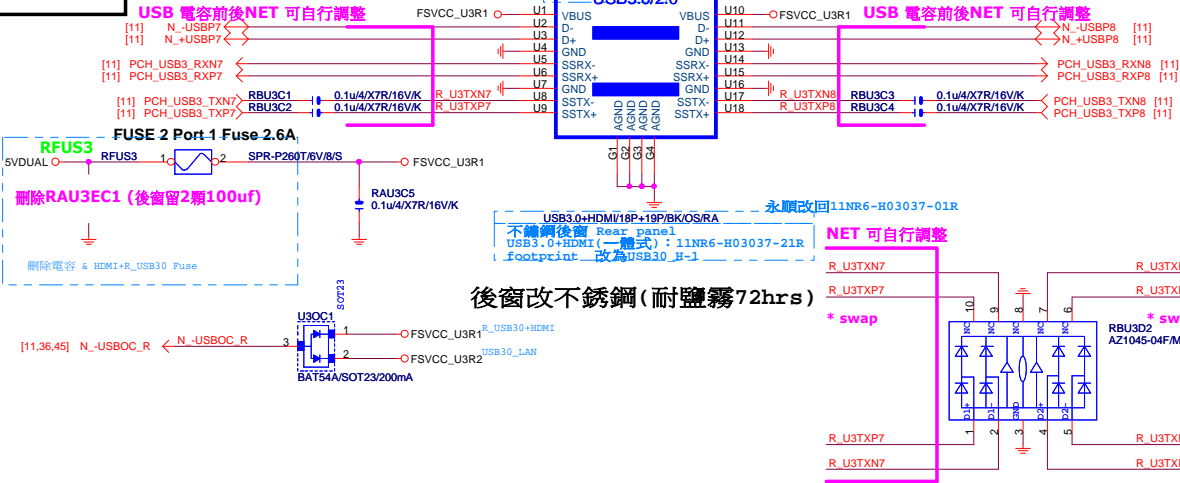
Title DP-VGA RTD2168

Size Custom Document Number GA-Z270-HD3P

Rev 1.0

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R_USB30



R_USB30_2

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KB_MS_USB3

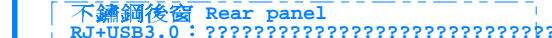
R1.11

note:可變更USB NAME



note:可變更USB NAME

from usb3_9/10 for Flex IO 不可改



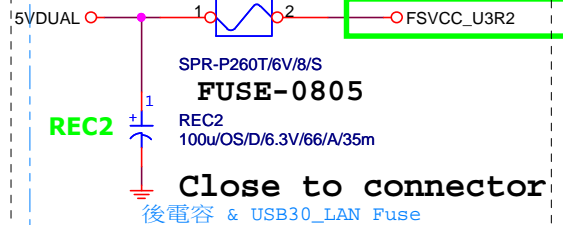
USB30_LAN LAYOUT示意圖



FOOT PRINT:LAN COVER



note:可變更FUSE



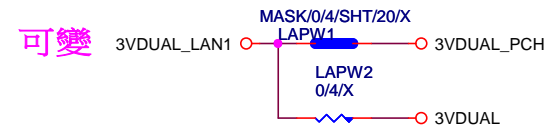
EMI SHORT PAD

PS:視EMI需求



note: lan power連接及電流

For PVT :LAPW1 改 R0402-2-SHORT20



LAN CONNECTOR-INTEL I219

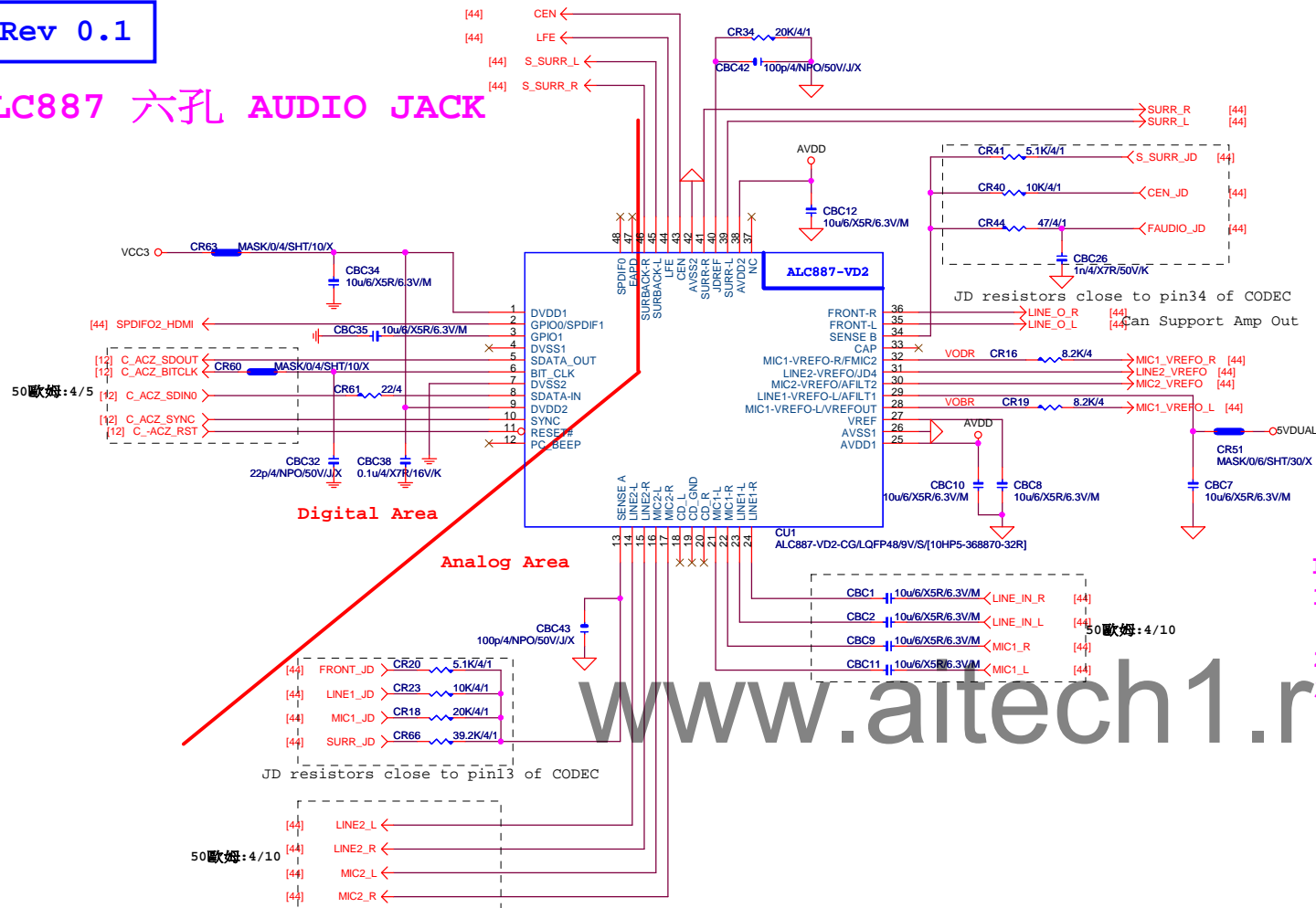
GA-Z270-HD3P

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Rev	1.0
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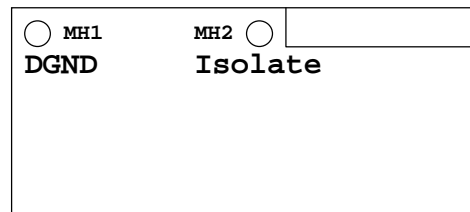
Rev 0.1

ALC887 六孔 AUDIO JACK



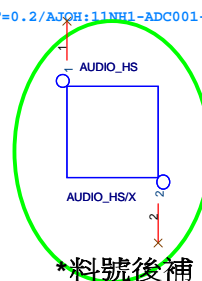
LAYOUT注意: 螺絲孔下GND方式

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



CHECK 要上31R or 32R

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



*料號後補

LAYOUT注意: 要加

GND切割線

音效區域印刷



BOM OPTION : 1. Chemicon音效電容

2. 金屬外罩 Reserve (LAYOUT上件與否, 依照各Model spec)

3. LED Reserve (上件與否和LED顏色, 依照各Model spec)

Gigabyte Technology			
HD AUDIO ALC887			
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Rev 0.1

CR49 MASK/0/6/SHT/20/X → Close F_AUDIO

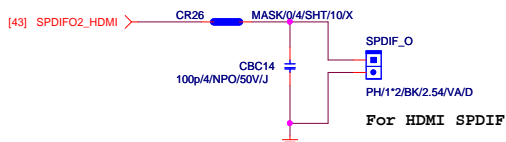
CR50 MASK/0/6/SHT/20/X → Close Codec
MOATC1 0.1uF/X7R/16V/K/X

CR21 2.2/6 → Audio jack <--> USB_LAN

CR24 0/6/X → Under Audio jack

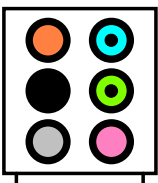
*量産前,0ohm改short pad

SPDIF_OUT



SPDIF_IN

AZALIA JACK

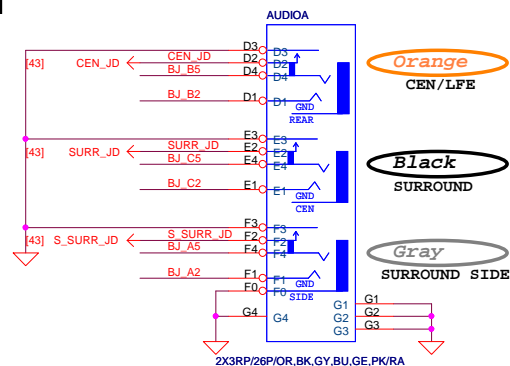
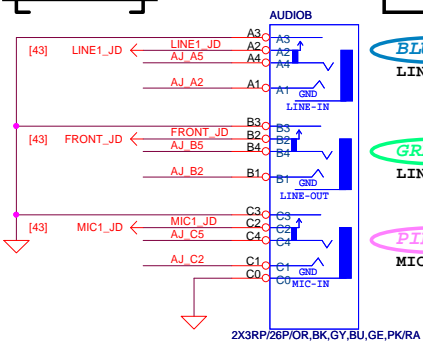


AZALIA JACK

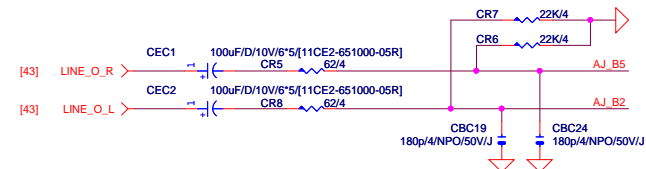
BLUE
LINE-IN

GREEN
LINE-OUT

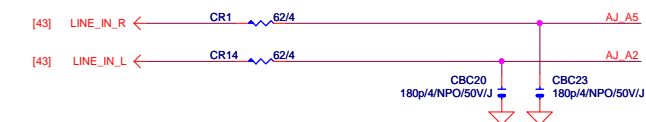
PINK
MIC-IN



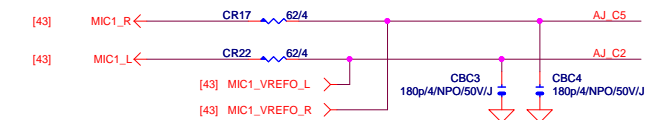
LINE-OUT



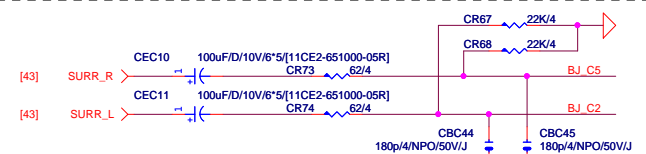
LINE-IN



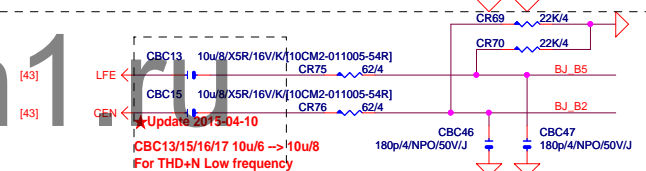
MIC-IN



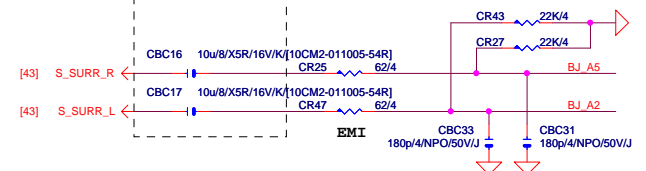
SURROUND



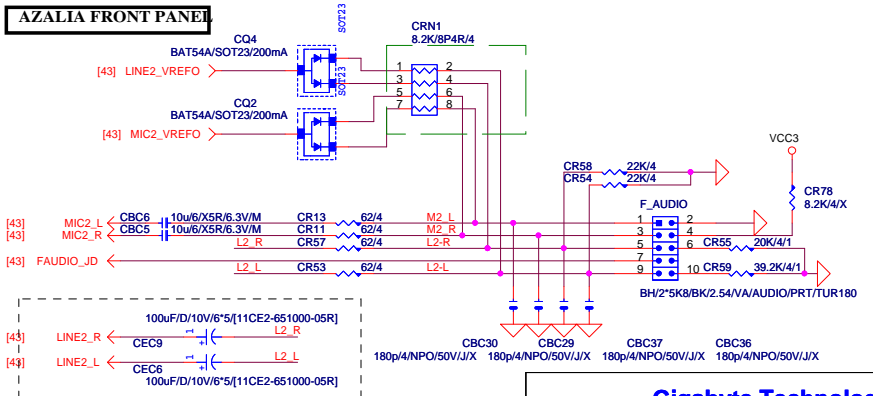
CEN/LFE



SURR BACK



AZALIA FRONT PANEL



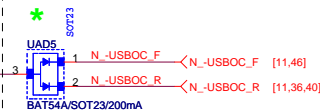
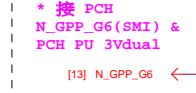
Gigabyte Technology

AUDIO JACK

GA-Z270-HD3P

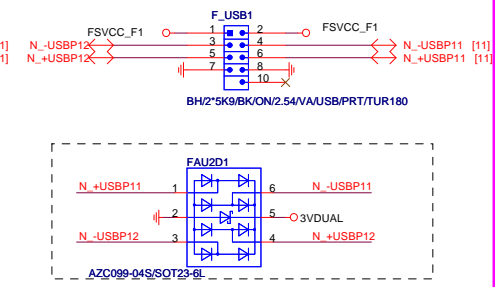
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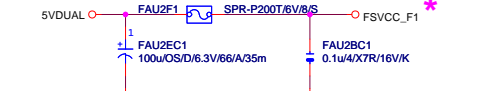


FRONT USB1

NET 可變

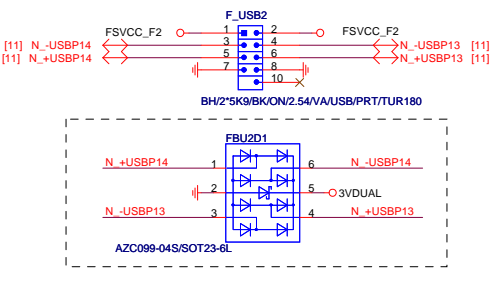


Close to connector
FUSE 2 Port 1 Fuse 2A

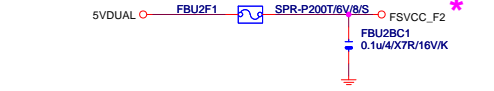


FRONT USB2

NET 可變



Close to connector
FUSE 2 Port 1 Fuse 2A



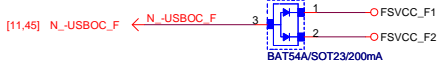
FRONT USB3

FRONT USB4

REAR USB1

REAR USB2

F_USB 2.0 OC SIGNAL



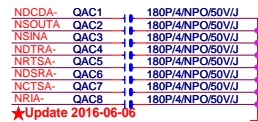
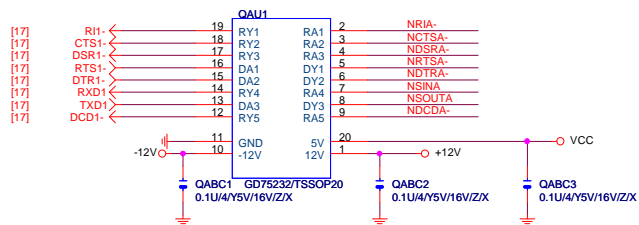
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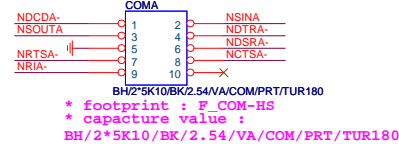
Rev: 0.81

COM PORT

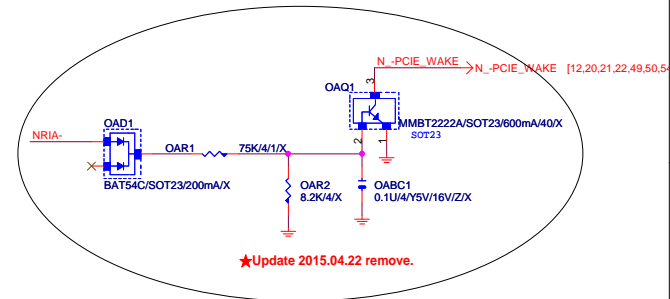


COM RI N/A

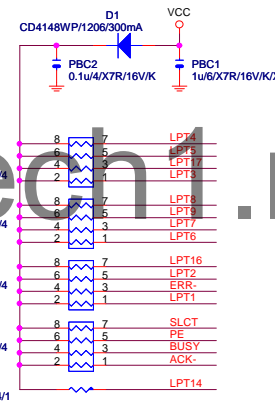
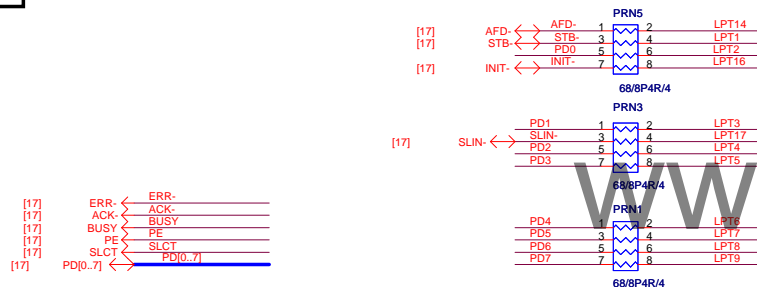
COMA



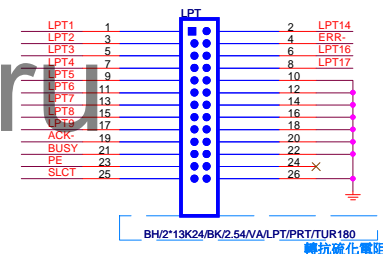
BOX HEADER



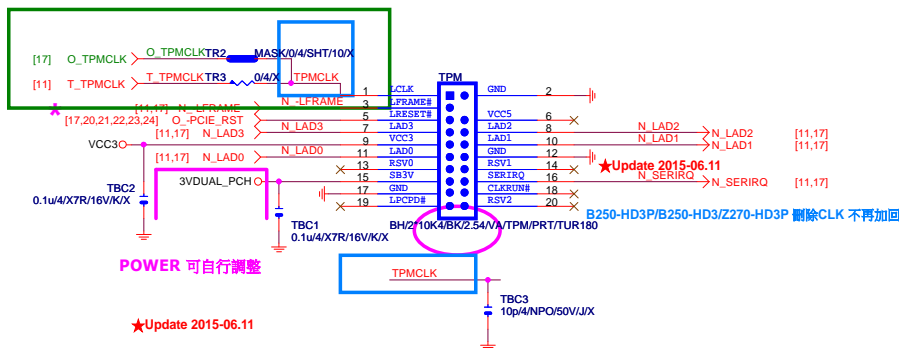
LPT PORT



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

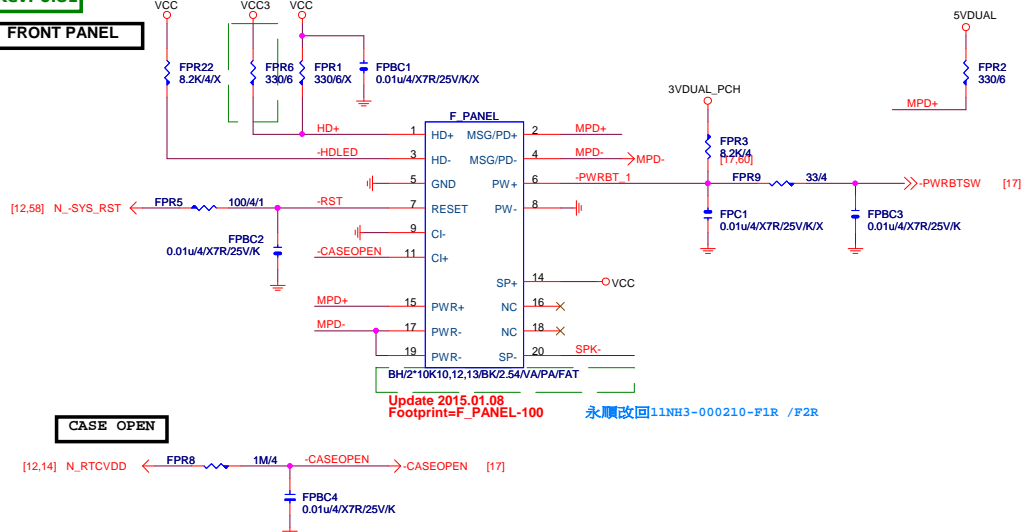
Gigabyte Technology

Title			FF,F_USB,USB PWR,BZ
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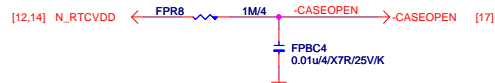
Rev: 0.81

★Update 2016.06.15

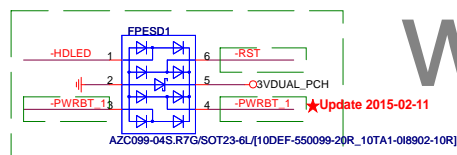
FRONT PANEL



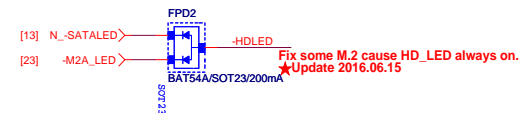
CASE OPEN



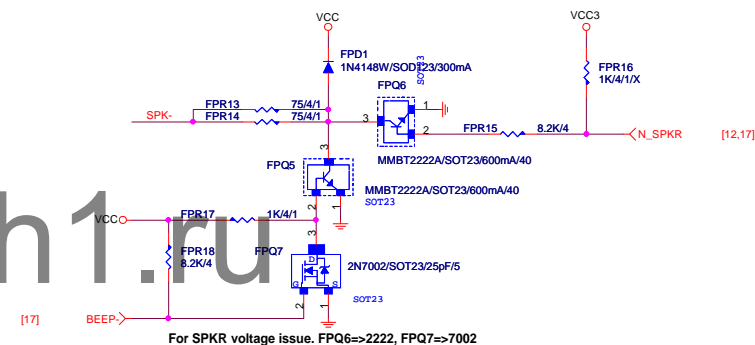
ESD



SATA LED

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

SPKR W/O EC

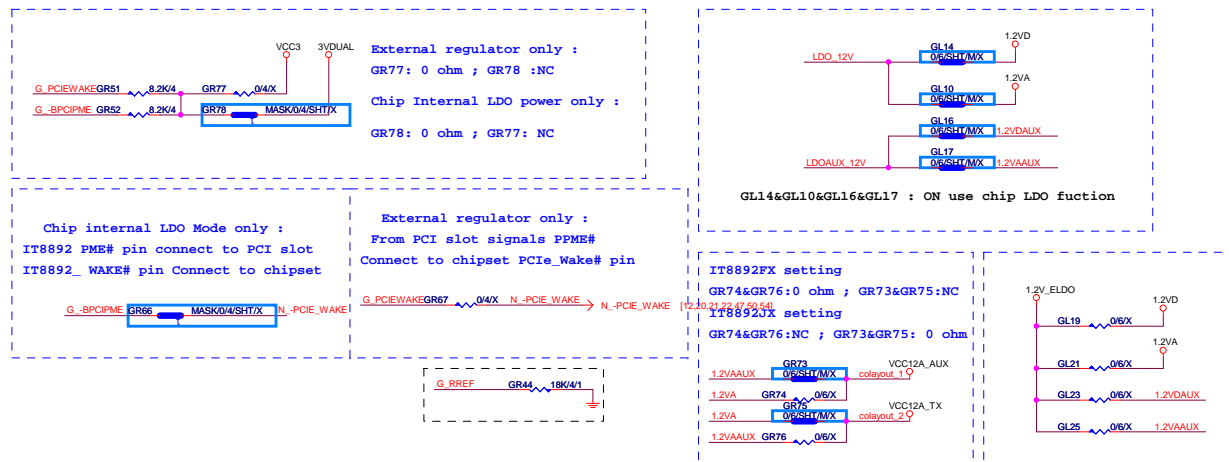
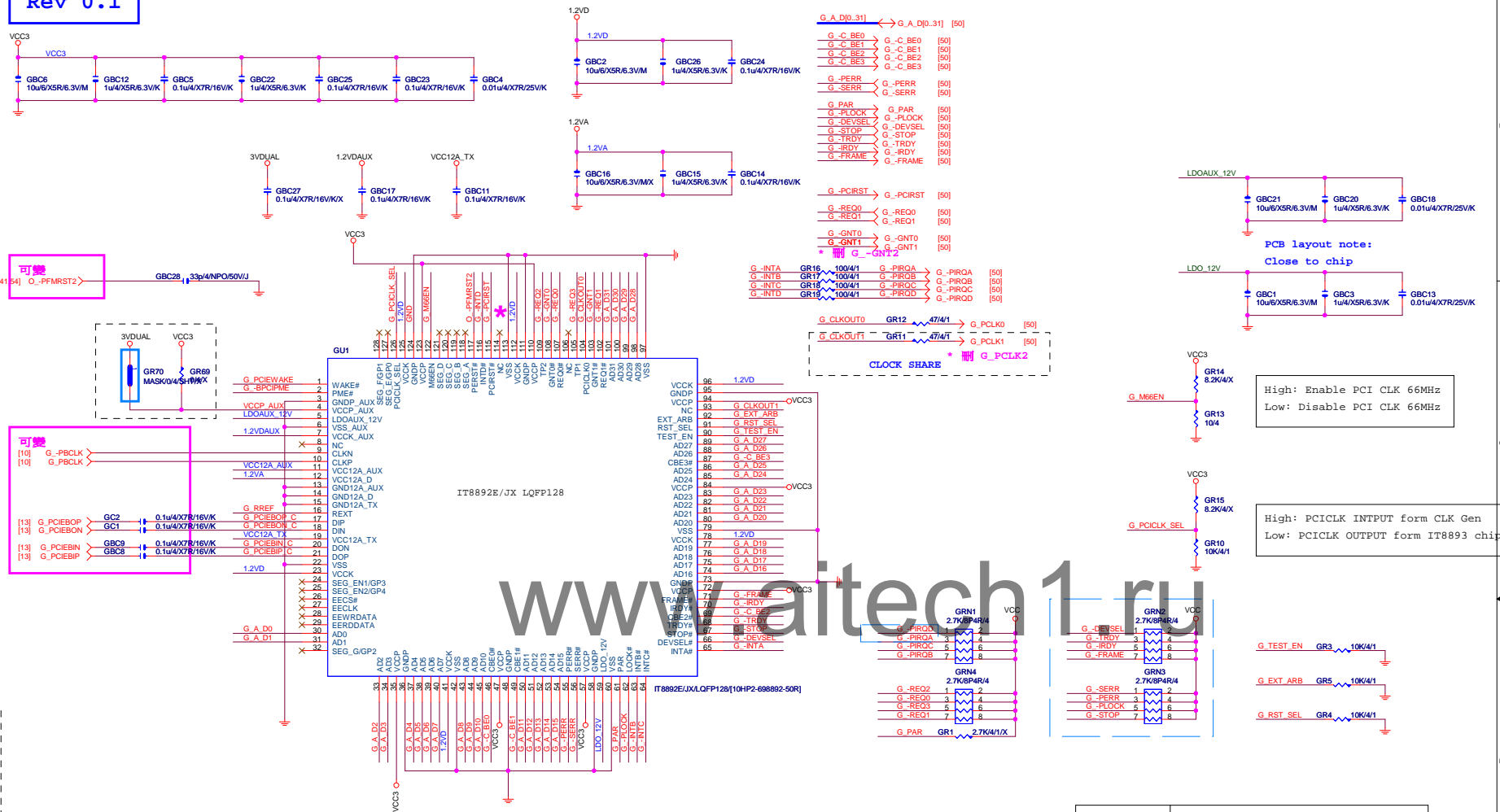


For SPKR voltage issue. FPQ6=>2222, FPQ7=>7002

Gigabyte Technology

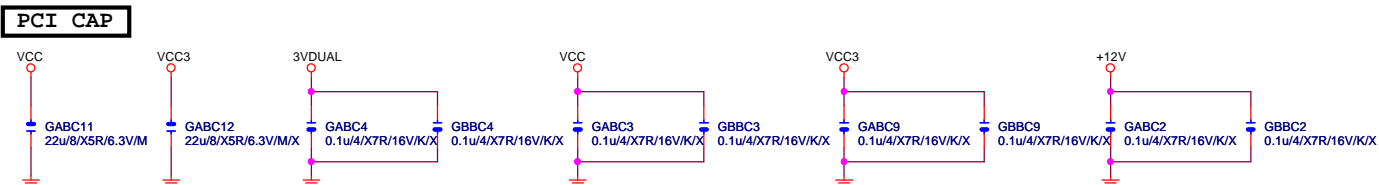
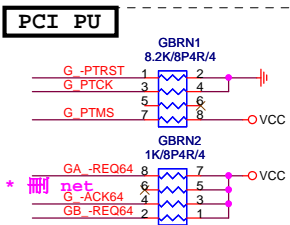
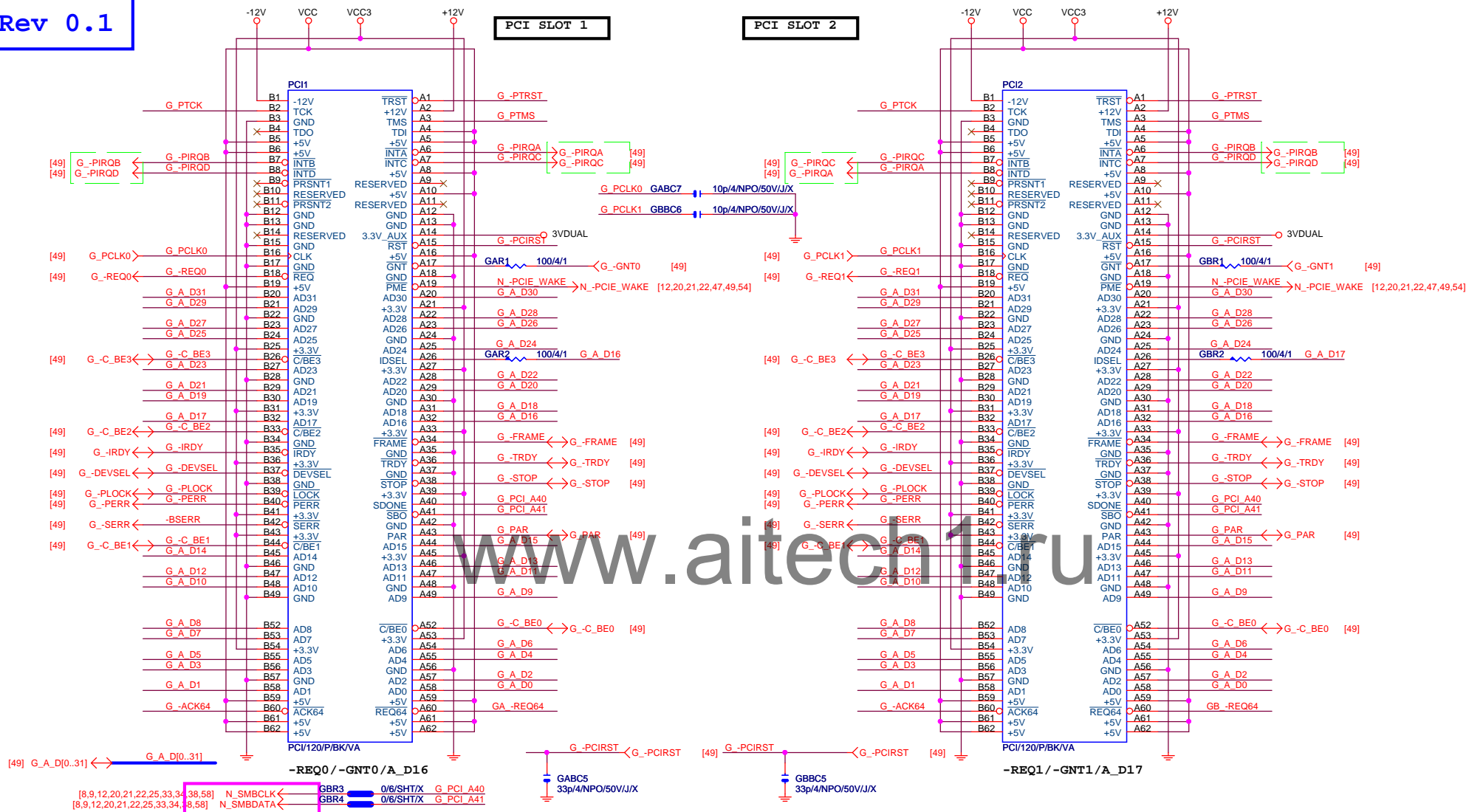
Title			FRONT PANEL
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	Component change note
IT8892FX	GR70,GR74,GR76,GR78,GR66 : ON GR69,GR73,GR75,GR77,GR67 : NC GR44 resistor is 12k ohm GL14, GL10, GL16, GL17 : ON GL19, GL21, GL23, GL25: NC
IT8892JX	GR70,GR73,GR75,GR78,GR66 : ON GR69,GR74,GR76,GR77,GR67 : 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

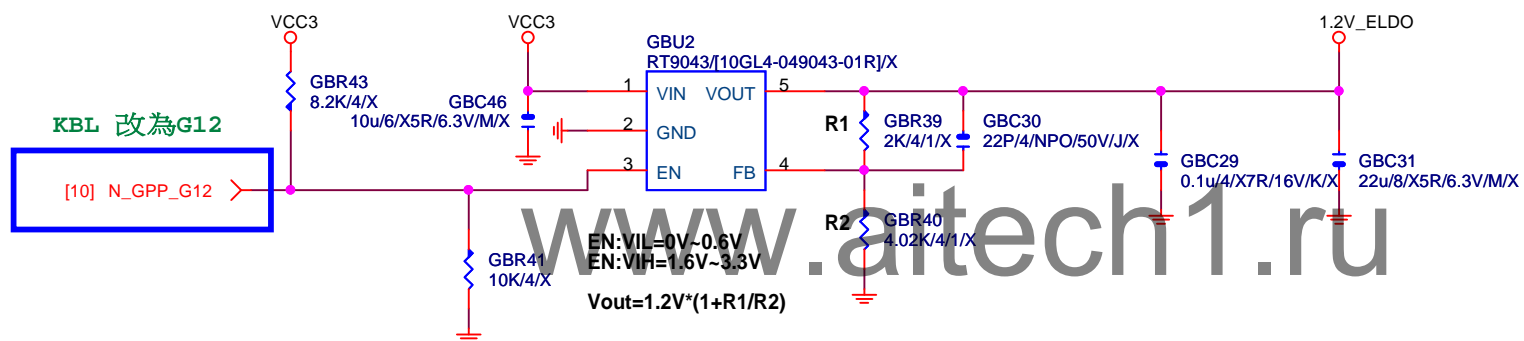
Rev 0.1



GIGABYTE™					
Title PCI SLOT 1					
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Rev 0.1

* 全部不上件



Gigabyte Technology

Title

ASM1085 POWER

Size
Custom

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CLOSE SIO

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

[12,17,29,56] N_SLP_S3 ←

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

[12,17,30,33] N_S4_S5 ←

*Del EMIC3

CLOSE PCH

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

[4,12] N_CPUPWROK ←

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Title

EMI/ESDSize
A

Document Number

GA-Z270-HD3P

Rev

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Sheet

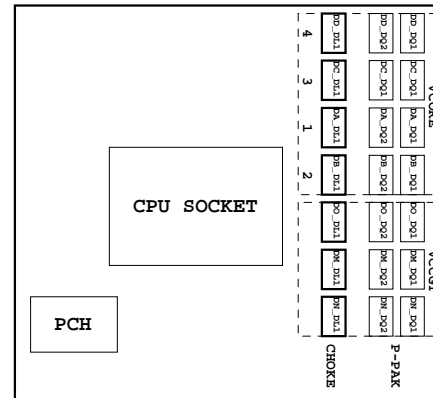
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61

PIN NAME	PNR	FUNCTION	Default	USAGE	NOTE
GPP_A0	MAIN	NATIVE	N_KERRST		P/U 8.2K VCC3
GPP_A1	MAIN	NATIVE	N_LADO		N/A
GPP_A2	MAIN	NATIVE	N_LAD1		N/A
GPP_A3	MAIN	NATIVE	N_LAD2		N/A
GPP_A4	MAIN	NATIVE	N_LAD3		N/A
GPP_A5	MAIN	NATIVE	N_LFRAME		N/A
GPP_A6	MAIN	NATIVE	N_SERIRQ		P/U 8.2K VCC3
GPP_A7	MAIN	NATIVE	N_LDROQ		P/U 8.2K 3VDUAL
GPP_A8	MAIN	NATIVE	N_GPP_A8		P/U 8.2K VCC3
GPP_A9	MAIN	NATIVE	N_LPC24B		N/A
GPP_A10	MAIN	NATIVE	N_LPC24A		N/A
GPP_A11	MAIN	NATIVE	N_-P_PME	P/U	8.2K 3VDUAL_FCH
GPP_A12	MAIN	GPI	N_GPP_A12		P/U 8.2K VCC3
GPP_A13	MAIN	NATIVE	N_-WARN		N/A
GPP_A14	MAIN	NATIVE	N_GPP_A14		P/U 8.2K 3VDUAL
GPP_A15	MAIN	NATIVE	N_-ACK		N/A
GPP_B0	MAIN	CORE_VID0	N_-DDR_V_SEL		P/U 8.2K VCC3
GPP_B1	MAIN	CORE_VID1	N/A		N/A
GPP_B2	MAIN	GPI	N_-VRALERT	P/U	8.2K 3VDUAL
GPP_B5	MAIN	GPI	N_-PCIEK1_PR		P/U 8.2K VCC3
GPP_B6	MAIN	GPI	N_-PCIEK1_PR1		P/U 8.2K VCC3
GPP_B7	MAIN	GPI	N_-PCIEK1_PR2		P/U 8.2K VCC3
GPP_B8	MAIN	GPI	N_-PCIEK4_PR		P/U 8.2K VCC3
GPP_B9	MAIN	GPI	N/A		N/A
GPP_B10	MAIN	GPI	N/A		N/A
GPP_B11	MAIN	GPO	N/A		N/A
GPP_B12	MAIN	SLP_S0	N_SLP_S0		N/A
GPP_B13	MAIN	FLTRST	N_-PPFRST		N/A
GPP_B14	MAIN	N-Z	GPO	N_SFPR	N/A
GPP_B18	MAIN	N-Z	GPO	N_GPP_B18	P/D 1K GND
GPP_B20	MAIN	GPI	N_GPP_B20		P/U 8.2K 3VDUAL
GPP_B22	MAIN	GPI	N_GPP_B22		P/D 1K GND
GPP_C0	MAIN	SMBCLK	N/A		N/A
GPP_C1	MAIN	SMBDATA	N/A		N/A
GPP_C2	MAIN	N-Z	GPO	N_-LPCFME	N/A
GPP_C3	MAIN	SMIOCLK	N_SMIOCLK		P/U 499 3VDUAL
GPP_C4	MAIN	SMIODAT	N_SMIODAT		P/U 499 3VDUAL
GPP_C5	MAIN	N-Z	GPO	N_GPP_C5	N/A
GPP_C6	MAIN	GPI	N_SMILCLK		P/U 8.2K 3VDUAL
GPP_C7	MAIN	GPI	N_SMLIDAT		P/U 8.2K 3VDUAL
GPP_D4	MAIN	GPI	N_GPP_D4		P/U 8.2K 3VDUAL
GPP_D7	MAIN	GPI	N_GPP_D7		N/A
GPP_D9	MAIN	GPI	N_GPP_D9		N/A
GPP_D17	MAIN	GPI	N_GPP_D17		P/U 8.2K VCC3
GPP_D18	MAIN	GPI	N_GPP_D18		P/U 8.2K VCC3
GPP_D19	MAIN	GPI	N_GPP_D19		P/U 8.2K VCC3
GPP_D20	MAIN	GPI	N_GPP_D20		P/U 8.2K VCC3
GPP_D23	MAIN	GPI	N_GPP_D23		P/U 8.2K 3VDUAL
GPP_E0	MAIN	NATIVE	N_GPP_E0		P/U 8.2K VCC3
GPP_E1	MAIN	NATIVE	N_GPP_E1		P/U 8.2K VCC3
GPP_E2	MAIN	NATIVE	N_GPP_E2		P/U 8.2K VCC3
GPP_E3	MAIN	GPI	N_CPU_S		P/U 8.2K VCC3
GPP_E4	MAIN	GPI	N_DEVSLP0		P/U 8.2K VCC3
GPP_E6	MAIN	GPI	N_DEVSLP2		P/U 8.2K VCC3
GPP_E7	MAIN	GPI	N_OT_S		P/U 8.2K VCC3
GPP_E8	MAIN	GPI	N_-SATALED		N/A
GPP_E9	MAIN	N-Z	GPI	N_-USB0C_F	N/A
GPP_E10	MAIN	N-Z	GPI	N_-USB0C_R	N/A
GPP_E11	MAIN	N-Z	GPI	N_-USB0C_R	N/A
GPP_E12	MAIN	N-Z	GPI	N_-USB0C_F	N/A
GPP_F0	MAIN	NATIVE	N_GPP_F0		P/U 8.2K VCC3
GPP_F1	MAIN	NATIVE	N_GPP_F1		P/U 8.2K VCC3
GPP_F2	MAIN	NATIVE	N_GPP_F2		P/U 8.2K VCC3
GPP_F3	MAIN	GPI	N_GPP_F3		P/U 8.2K VCC3
GPP_F4	MAIN	GPI	N_GPP_F4		P/U 8.2K VCC3
GPP_F5	MAIN	GPI	N_GPP_F5		P/U 8.2K VCC3
GPP_F6	MAIN	GPI	N_DEVSLP4		P/U 8.2K VCC3
GPP_F10	MAIN	GPI	N_GPP_F10		P/U 8.2K VCC3
GPP_F11	MAIN	GPI	N_GPP_F11		P/U 8.2K VCC3
GPP_F12	MAIN	GPI	N_GPP_F12		P/U 8.2K VCC3
GPP_F13	MAIN	GPI	N_GPP_F13		P/U 8.2K VCC3
GPP_F14	MAIN	GPI	A_-STKOOT		P/U 8.2K VCC3
GPP_F15	MAIN	GPI	N_-USB0C_F		N/A
GPP_F16	MAIN	GPI	N_-USB0C_F		N/A
GPP_F17	MAIN	GPI	N_-USB0C_R		N/A
GPP_F18	MAIN	GPI	N_-USB0C_R		P/U 8.2K 3VDUAL
GPP_F22	MAIN	GPI	N_GPP_F22		P/U 8.2K VCC3
GPP_F23	MAIN	GPI	N_GPP_F23		P/U 8.2K VCC3
GPP_G0	MAIN	GPI	N_GPP_G0		P/U 1K VCC3
GPP_G1	MAIN	GPI	N_GPP_G1		P/U 1K VCC3
GPP_G12	MAIN	GPI	N_GPP_G12		P/U 3.3K VCC3

PIN NAME	USAGE	NOTE
PCIRST38/GP10/VDIMM_STR_EN	N/A	
PCIRST28/GP11	O_-PCIR_RST	
PCIRST18/GP12	O_-PPHRRST2	
SVC/PECT_RQT/GP14	TPM_GP14	
SLP_SUS8/PCIRST18H/CIRXT2/GP15	PCIRST18	
PE1_L/FAN_CTL5/CIRXT2/GP16	N_-THERMTRIP	
R128/GP17	MB_ID2	
THR_PWM_CTL28/GP20	N_-THERMTRIP	
IO_SMI#DCD28/GP21	❌ PIN	
SPI_S1/GP22	BEEP-	
DPWROK/CFU_PO/GP23	N_PCH_DPWROK	
FAN_TAC5/RTS28/GP24	❌ PIN	
FAN_TAC4/DSB28/GP25	FANTIO4	
INV_OUT1_SOUT2/GP26	G_PLED	
INV_IN1/SIN2/GP27	INV_IN1	
ATXPG/GP30	PWOK	
CT81/GP31	CT81-	
OCMDT3/R118/GP32	R11-	
OCMDT2/DCD18/GP33	DCD1-	
VTT_FWRGD/GP34	VTT_FWRGD	
VCC18_EN/GP35	VCCIO_EN	
FAN_CTL3/GP36	FANPWM3	
FAN_TAC3/GP37	FANTIO3	
3VSBSW#/GP40	❌ PIN	
OCMDT1/SIN1/GP41	RXD1	
GP42/CLK/FAN_CTL4	❌ PIN	
PANSON8/GP43	0_PANST8	
PWON8H/GP44	DSBL-	
OCMDT0/DSR18/GP45	DSBL-	
CEB_N/GP47/JP6	CEB_N	
GP50/JP1	❌ PIN	
FAN_CTL2/GP51	FANPWM2	
FAN_TAC2/GP52	FANTIO2	
SUSW#/GP53	N_-S4_S5	
PME#G/P54	N_-LPCPME	
RSMRST8/CIRKX1/GP55	O_-RSMRST	
MCLK/FAN_TAC6/GP56	MCLK	
MDAT/FAN_CTL6/GP57	MDAT	
CLKK/GP60	CLKK	
KDAT/GP61	KDAT	
KRST#G/P62	N_-KBRST	
HOLD_B#/GP63	-SFI_HOLD_B	
HOLD_B#/GP64	-SFI_HOLD_N	
VLDT_EN/PCN_D0/GP65	❌ PIN	
VCC1_G5_EN/GP66	VCC1_G_EN	
GP67	❌ PIN	
USB_F81/PD6/GP70	PD6-	
USB_F82/PD1/GP71	PD1-	
USB_F83/PD2/GP72	PD2-	
USB_F83/PD3/GP73	PD3-	
USB_F85/PD4/GP74	PD4-	
USB_F86/PD5/GP75	PD5-	
USB_F87/PD7/GP76	PD7-	
USB_F88/PD8/GP77	PD6	
LS_IN1/SLCT/GP80	SLCT	
LS_OUT1/PE/GP81	PE	
LS_IN2/BUSY/GP82	BUSY	
LS_OUT2/ACK#/GP83	ACK-	
IPHONE_CHARGER/SLIN#G/GP84	SLIN-	
OC_IN/INIT#G/GP85	INIT-	
OC_OUT/AFD#G/GP86	AFD-	
USB_OC2/STB#G/GP87	STB-	
DDR_EN/GP90	MA_EN	
PWLED/GP91	MPD-	
HOLD_OUT/GP92	❌ PIN	
HDLDE_IN/GP93	❌ PIN	
PROCHOT#G/GP94	-PROCHOT_CON	
CPUPWRGD/GP95	❌ N_PCH_PWRPWROK	
PCH_VMPMPWRGD/GP96	N_PCH_VMPMPWRGD	
VR_RDY/GP97	VR_RDY	



線路圖名稱	BIOS選項
Vcore	CPU Vcore
VCCGT	CPU Graphic Voltage
VCCSA	CPU System Agent Voltage
VCCIO	CPU I/O Voltage
VCC1.0 PCH	PCH core
VDDQ	DRAM voltage
VPP_25V	DRAM VPP voltage
DDRVT	DRAM Termination
VREF_Q0/VREF_QD_Q8	DRAM Data Ref

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	+12V	FANPWM1	FANIO1	IT8628
SYS FAN1	FANPWM2	VCC	FANIO2	IT8628
	FAN1_VOUT	N/A	N/A	NCT3941
SYS FAN2	FANPWM3	VCC	FANIO3	IT8628
	FAN2_VOUT	N/A	N/A	NCT3941
SYS FAN3	+12V	N/A	FANIO4	IT8628

ASM2142 USB3 Host Rev0.1 PCIe Gen3 X2

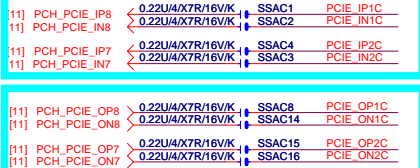
Color markers can be changed by model

ASM2142 USB3.1

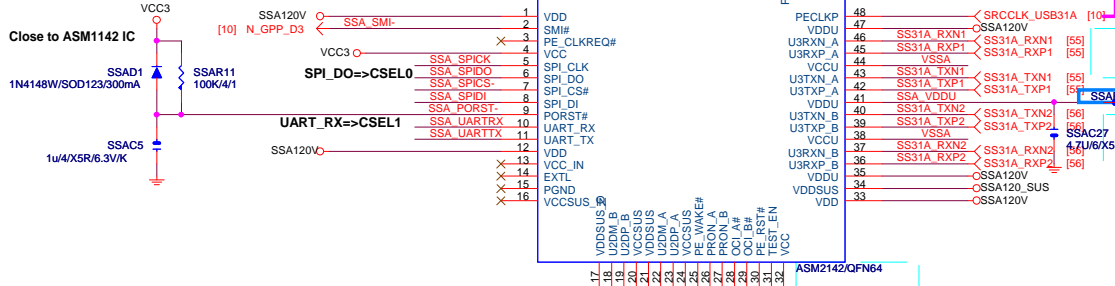
Base on ASM2142 0.1 Reference SCH

Change to 0402

PCH PCIe* Controller Lane Reversal / base on spec
To PCIe host.



From PCIe host.



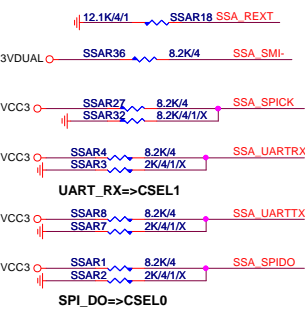
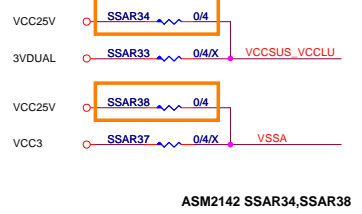
From PCIe CLK

A為 Port1:USB3.1

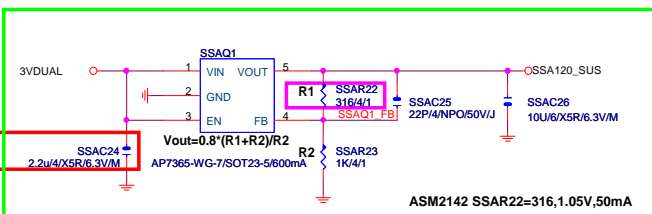
To USB Conn

B為 Port2 :TypeC

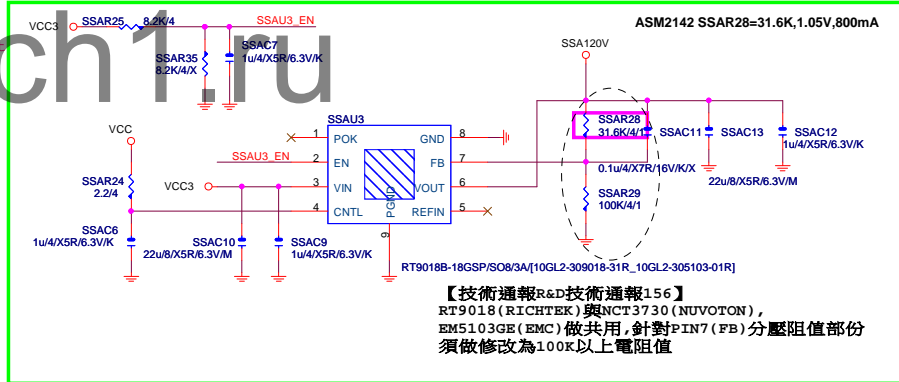
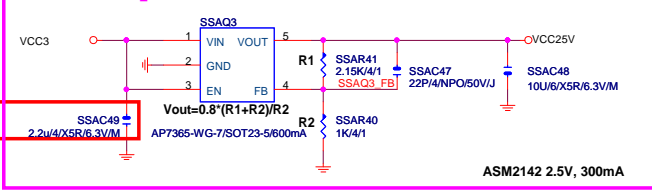
ASM 2142 Option



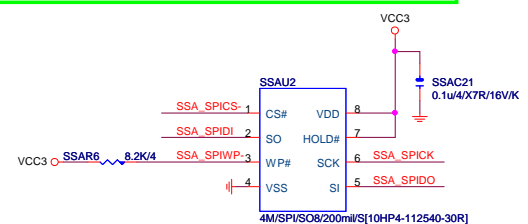
CSEL1	CSEL0	
1	1	External 20MHz Crystal (Asynchronous)
0	1	48MHz clock input (Synchronous)
X	0	Reserved for Test



ASM2142 Option



【技術通報R&D技術通報156】
RT9018 (RICHTEK) 與 NCT3730 (NUVOTON),
EM5103GE (EMC) 做共用, 針對PIN7 (FB) 分壓阻值部份
須做修改為100K以上電阻值

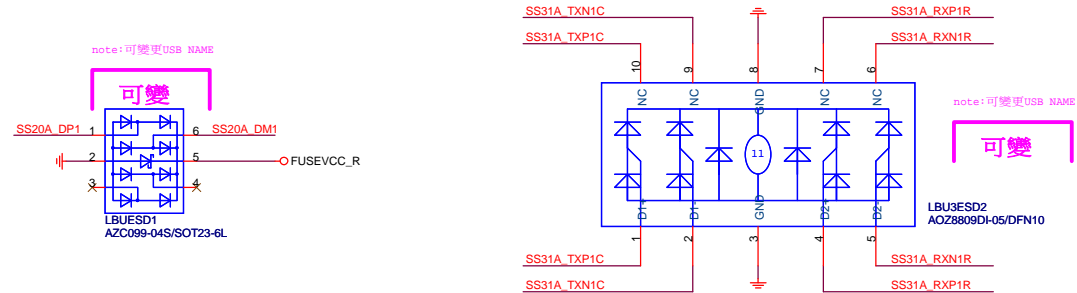
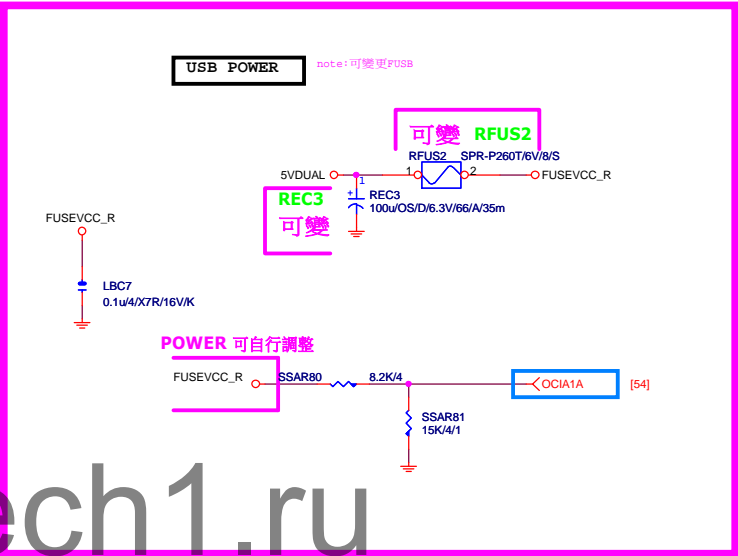
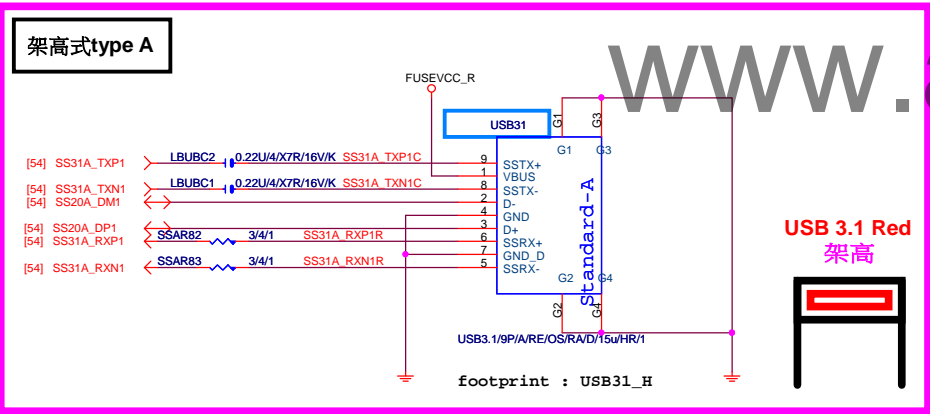


GIGABYTE

Title		
ASM1142 & ASM2142 co-lay		
Size	Document Number	Rev
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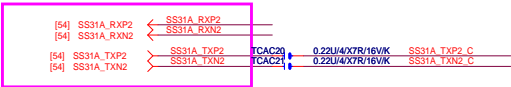
後窗Rule : (後窗由左至右)
DIP電容 : REC1, REC3, REC2
FUSE : RFUS1, RFUS2, RFUS3, RFUS4...

USB31 TYPE A Connector which chooses for project demand

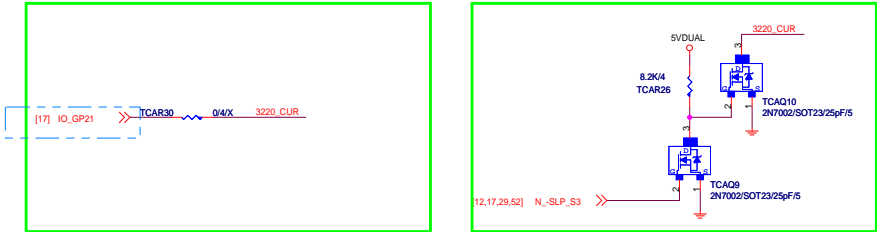


ASM2142 USB31 Host Rev0.1

USB 3.x SuperSpeed



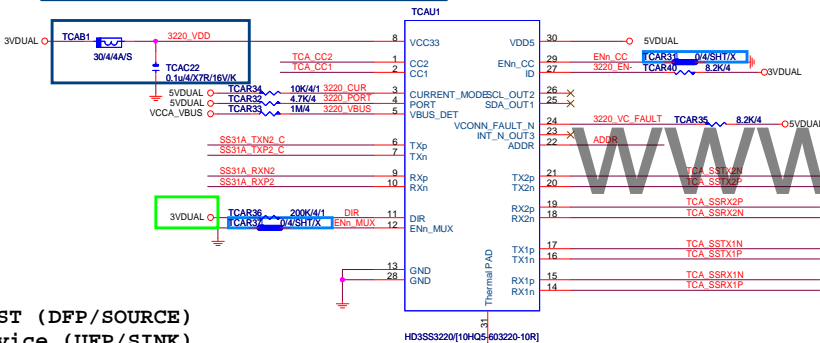
For VBUS current limit at 900mA on S3



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



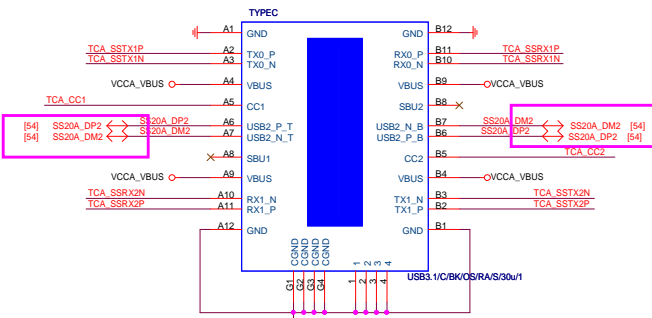
PORT

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

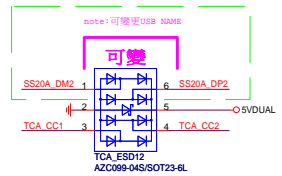
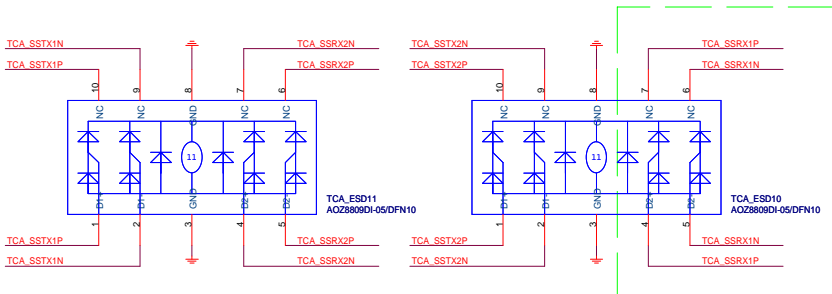
CURRENT MODE

- 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

Color markers can be changed by model

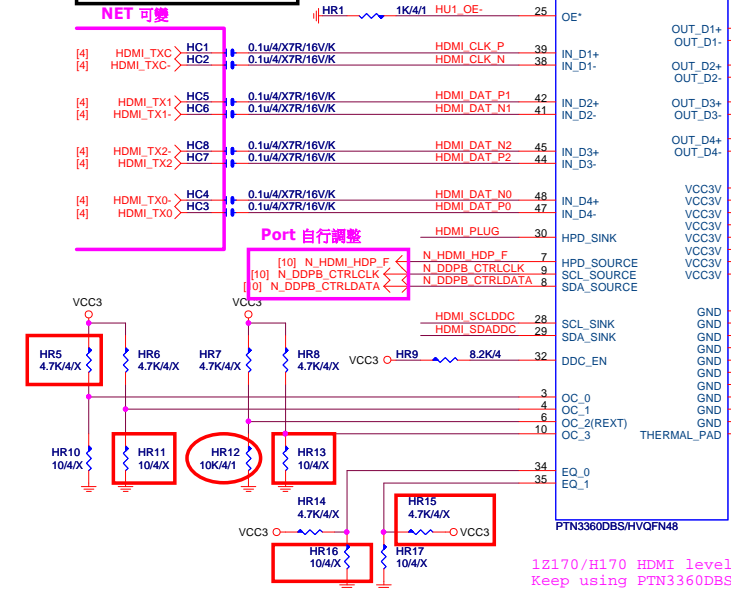


USB2.0 can be used the same source



GIGABYTE™			
TI HD3SS3212&Etron EJ179D			
Size	Document Number	Rev	
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HDMI LEVEL SHIFT



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

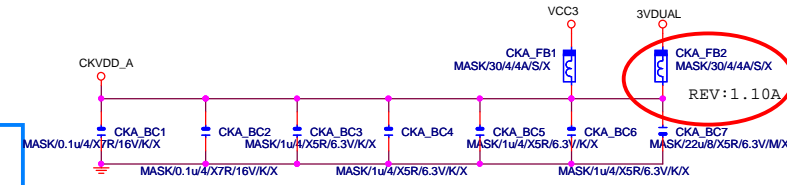
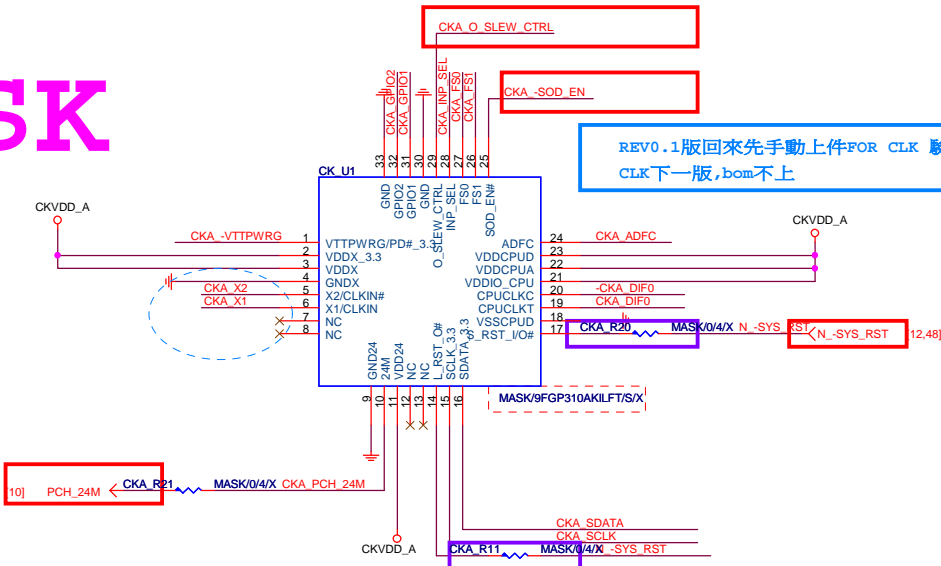
【技術通報R&D技術通報150】
HDMI eye diagram 1.4版(deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)
12170/H170 HDMI level shift "NO NEED TO CHANGE".
Keep using PTN3360DBS/HVQFN48

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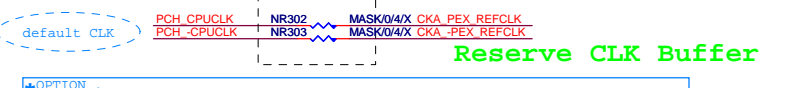
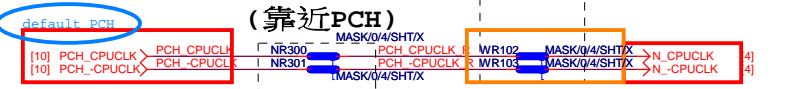
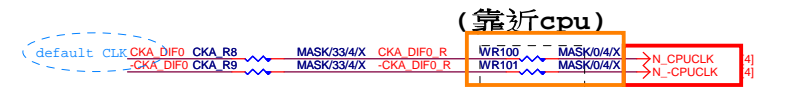
REV:0.1

IDT6V41630

MASK

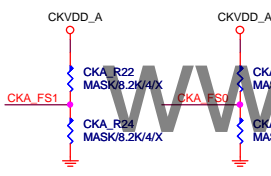
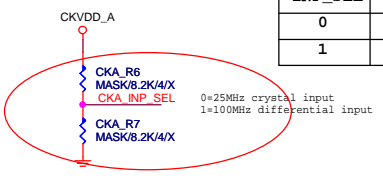


0 ohm先不要改為0 ohm short pad : Clock Buffer CKA_R18 & CKA_R19 & WR100 & WR101 & NR302 & NR303

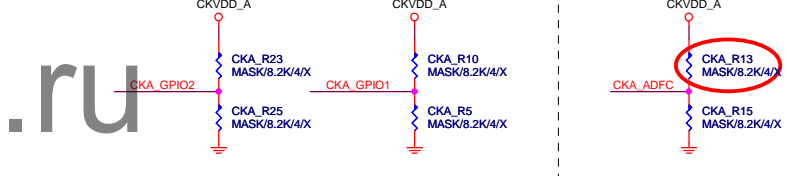


*OPTION :
For PCH:NR300,NR301,WR102,WR103.
For CLK:NR302,NR303,CKA_R8,CKA_R9,WR100,WR101,
CKA_R20,CKA_R11,CKA_R21,CKA_D1,CKA_FB2

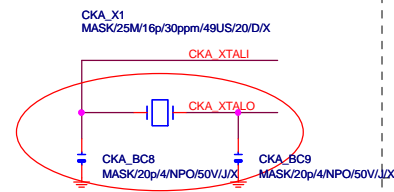
INP_SEL	Input
0	Crystal
1	CLK_INP/N



CPU Frequency Selection and output Divider Table						
B53b1(FS1)	B53b0(FS0)	VCO (MHz)	CPU Divider	CPU (MHz)	Typ SS%	Typ SS ON/OFF
0	0	200.00	2.00	100.00	-	OFF
0	1	400.00	4.00	100.00	-	OFF
1	0	1000.00	10.00	100.00	-0.50%	ON
1	1	100.00	1.00	100.00	-	OFF

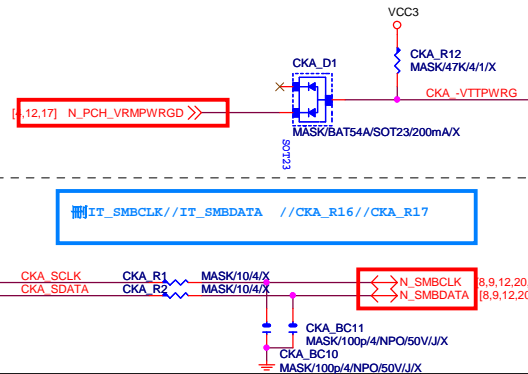


Cover remove (Ver. 1.0)



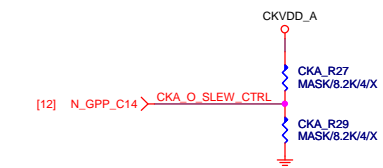
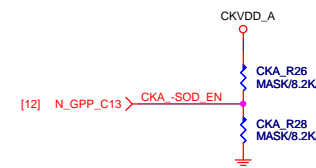
Defaults
CKX1,CKBC8,CKBC9,CKR18,CKR19上件
CKR30,CKR31不上件

SMBUS



Real time selection fuction

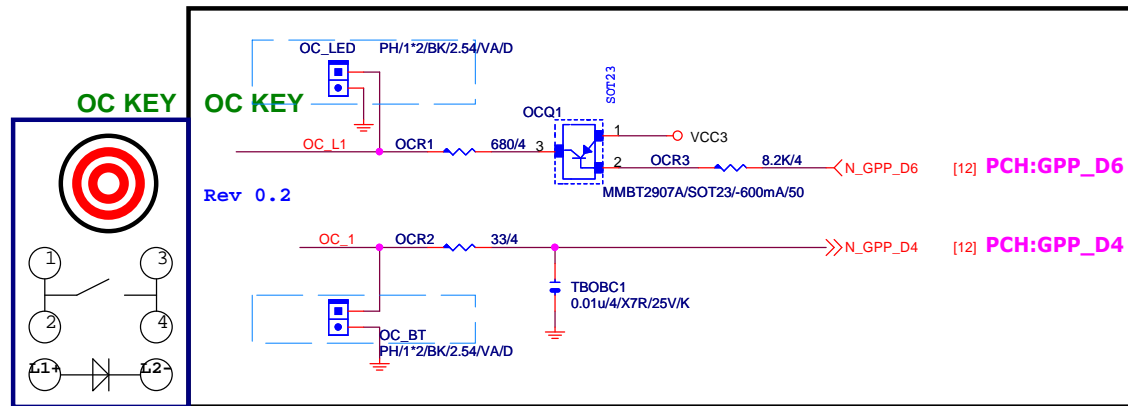
Frequency change slew rate control



GIGABYTE™			
Title IDT6V41530_CLK BUFFER			
Size Custom	Document Number GA-Z270-HD3P	Rev 1.0	
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*可變, 依需求上件不上件。

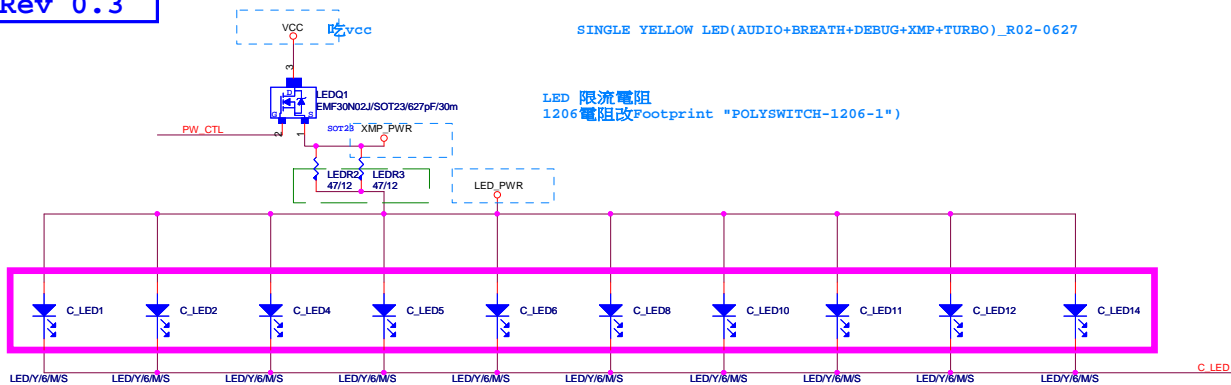
Rev: 0.81



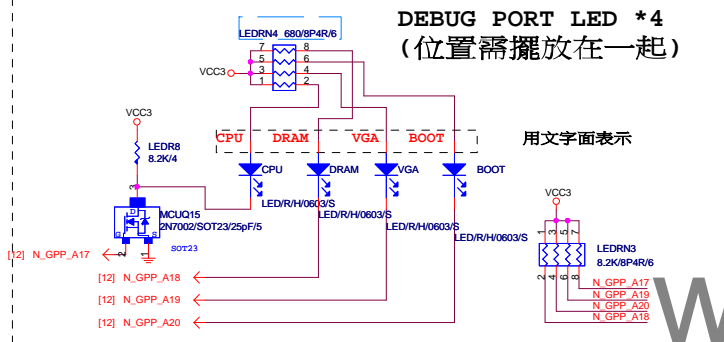
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Title			OC BOTTOM	
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DEBUG PORT LED *4 (位置需擺放在一起)



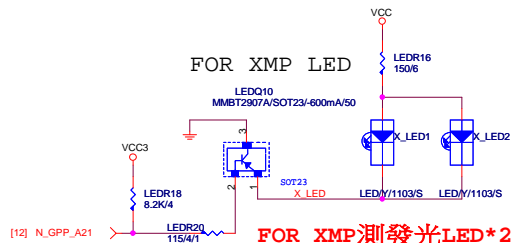
Ambient LED Control

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

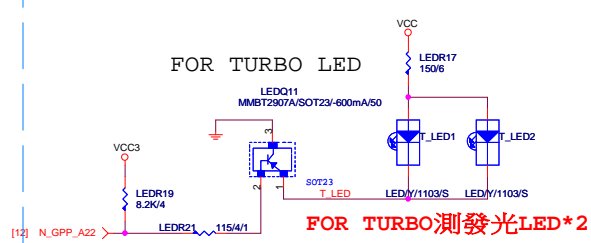
ON/OFF
(PCH_GPP_D22)

呼吸

FOR XMP LED

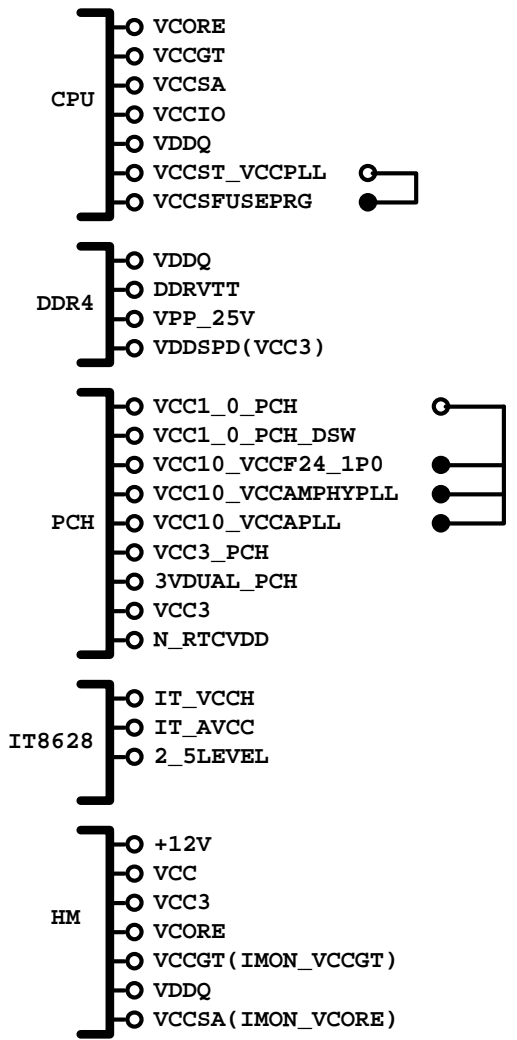


FOR TURBO LED

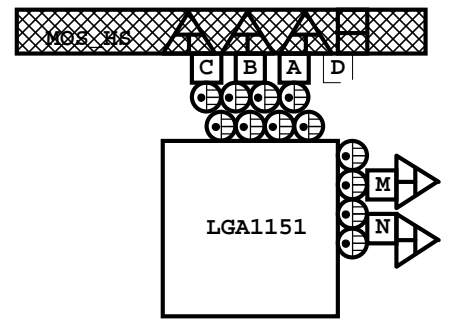
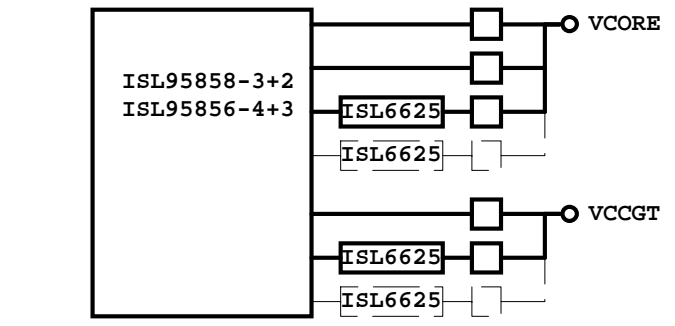


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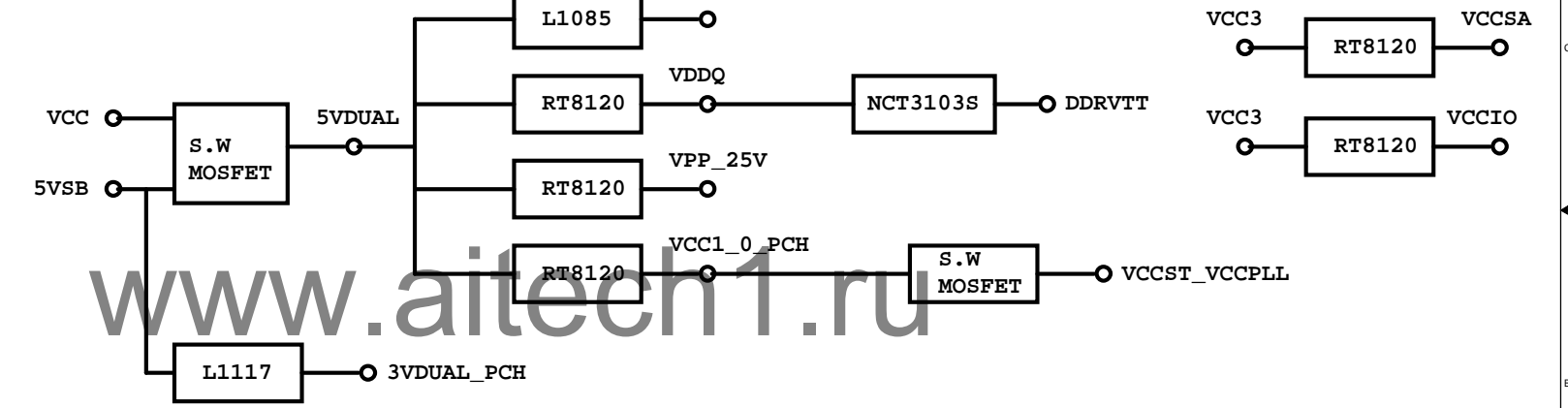
POWER BLOCK MAP



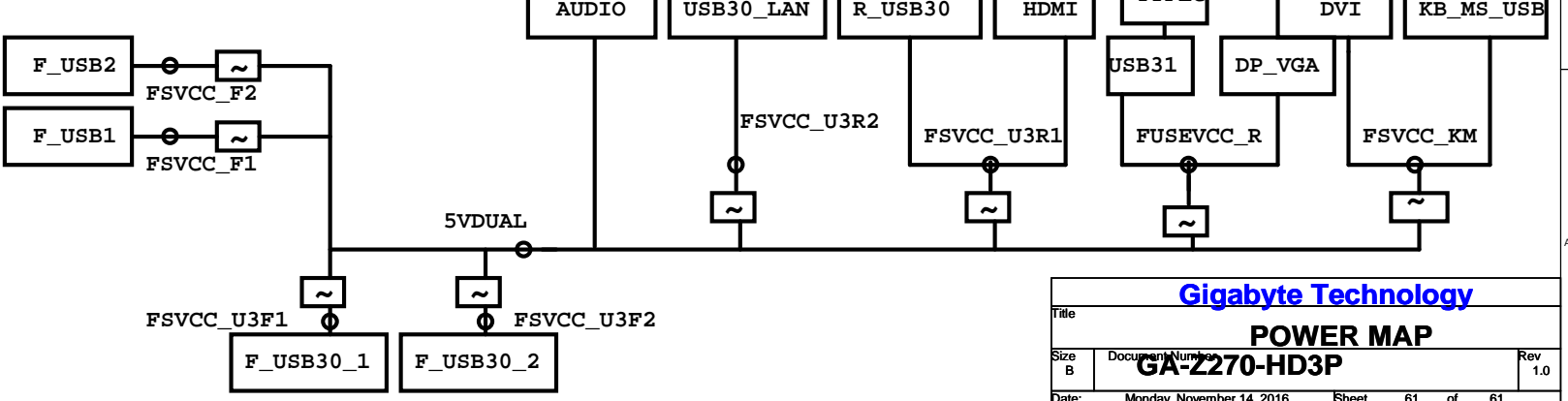
VCORE/VCCGT



POWER



FUSE POWER F/R



Gigabyte Technology		
Title		
POWER MAP		
Size B	Document Number	Rev 1.0
GA-Z270-HD3P		
Date:	Monday, November 14, 2016	Sheet 61 of 61