


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)

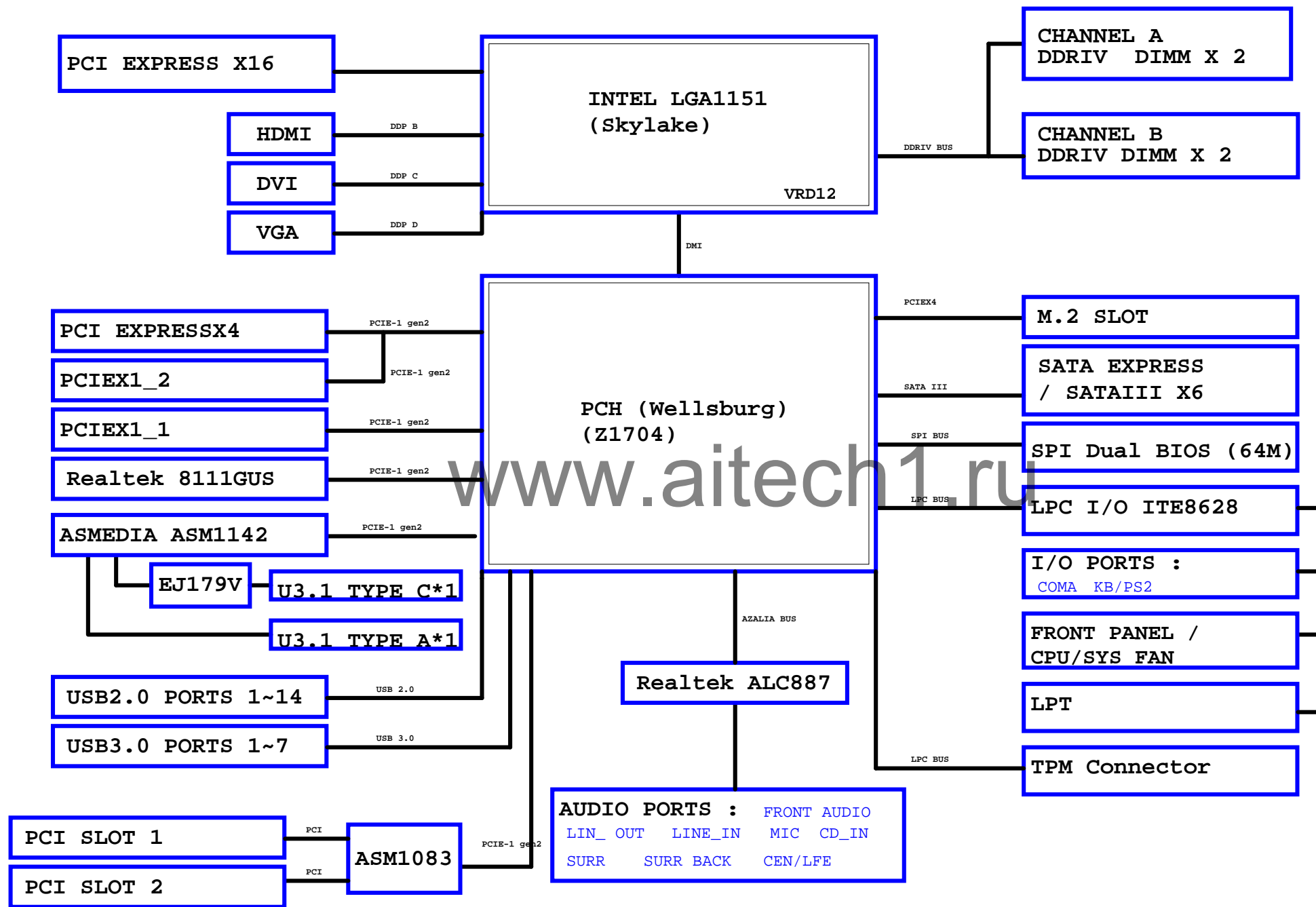
37	DVI CONN (REV0.81)
38	RTD2168 - DP to VGA - IC (REV1.03)
39	RTD2168 - DP to VGA - Conn (REV1.03)
40	R_USB30 (REV0.81)
41	INTEL I219 (REV1.11)
42	USB_LAN CONNECTOR-I219 (REV1.11)
43	Realtek ALC887 (REV0.1)
44	REAR AUDIO JACK (REV0.1)
45	F_USB30 (REV0.81)
46	R_USB20 /F_USB20 (REV0.81)
47	COM , LPT , 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	

Component value change history

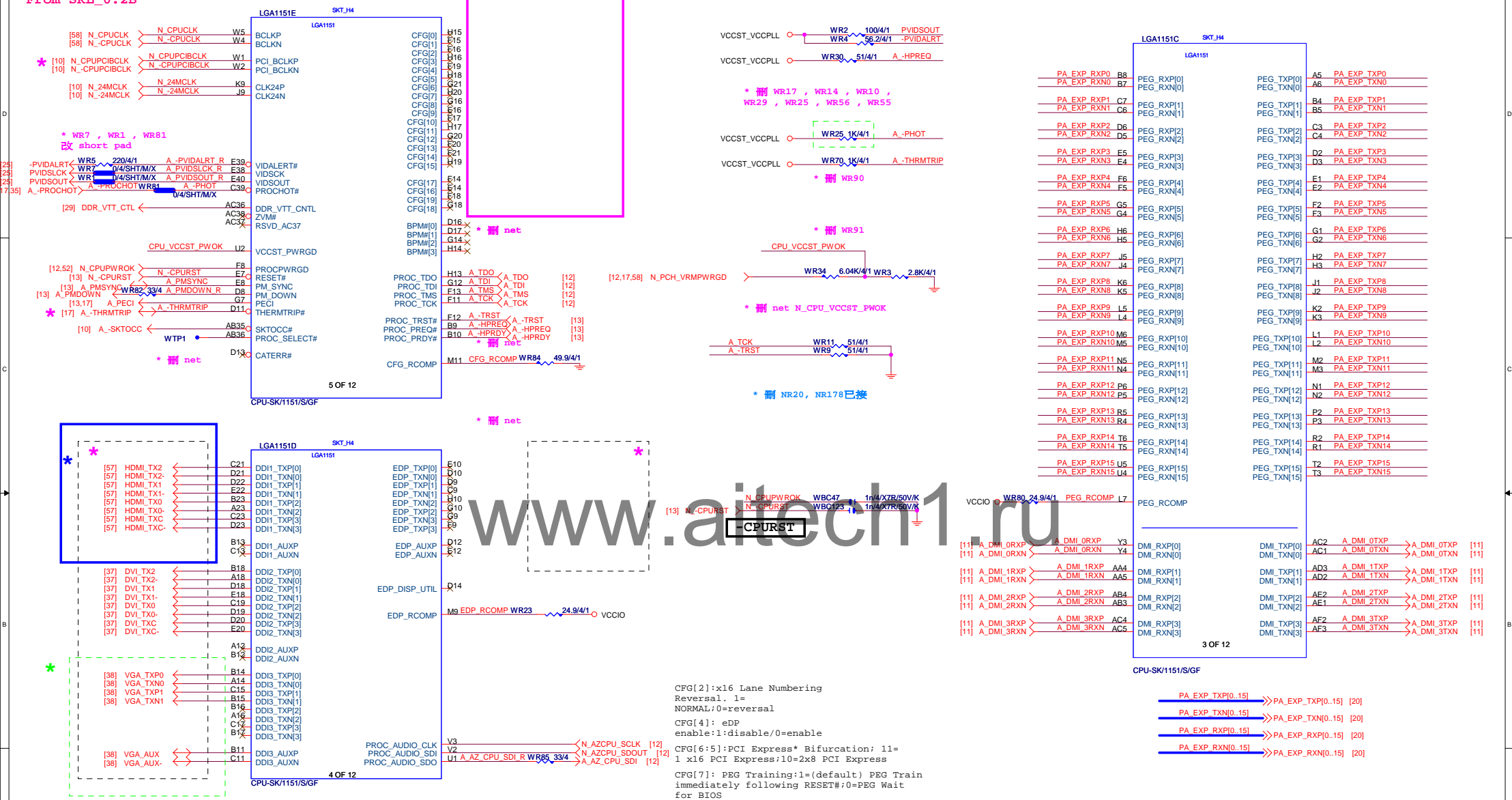
Circuit or PCB layout change

			
Title			
BOM & PCB MODIFY HISTORY			
Size	Document Number		Rev
Custom	GA-Z270-HD3P		1.01
Date:	Wednesday, December 21, 2016	Sheet 2 of	61

BLOCK DIAGRAM



From SKL_0.2B



G-15u : (CPU-SK/1151/S/15)
10SC1-F01151-11R / 10SC1-F01151-12R
G-FL : (CPU-SK/1151/S/GF)
10SC1-F01151-21R / 10SC1-F01151-22R

Bifurcation Config.	Signals Lanes CFG[6] CFG[5] CFG[2]		
1x16	1	1	1
1x16 Reversed	1	1	0
2x8	1	0	1
2x8 Reversed	1	0	0
1x8+2x4	0	0	1
1x8+2x4 Reversed	0	0	0

* 改DDR4 net

LGA1151A	SKT_H4
LGA1151	LGA1151
MDA0 AE38	DDR0_DQ[0]
MDA1 AE37	DDR0_DQ[1]
MDA2 AG38	DDR0_DQ[2]
MDA3 AG37	DDR0_DQ[3]
MDA4 AE39	DDR0_DQ[4]
MDA5 AE40	DDR0_DQ[5]
MDA6 AG39	DDR0_DQ[6]
MDA7 AG40	DDR0_DQ[7]
MDA8 AJ38	DDR0_DQ[8]
MDA9 AJ37	DDR0_DQ[9]
MDA10 AL38	DDR0_DQ[10]
MDA11 AL37	DDR0_DQ[11]
MDA12 AJ40	DDR0_DQ[12]
MDA13 AJ39	DDR0_DQ[13]
MDA14 AL39	DDR0_DQ[14]
MDA15 AL40	DDR0_DQ[15]
MDA16 AN38	DDR0_DQ[16]/DDR0_DQ[32]
MDA17 AN40	DDR0_DQ[17]/DDR0_DQ[33]
MDA18 AR38	DDR0_DQ[18]/DDR0_DQ[34]
MDA19 AR37	DDR0_DQ[19]/DDR0_DQ[35]
MDA20 AN39	DDR0_DQ[20]/DDR0_DQ[36]
MDA21 AN37	DDR0_DQ[21]/DDR0_DQ[37]
MDA22 AR40	DDR0_DQ[22]/DDR0_DQ[38]
MDA23 AR40	DDR0_DQ[23]/DDR0_DQ[39]
MDA24 AW37	DDR0_DQ[24]/DDR0_DQ[40]
MDA25 AW38	DDR0_DQ[25]/DDR0_DQ[41]
MDA26 AV35	DDR0_DQ[26]/DDR0_DQ[42]
MDA27 AW35	DDR0_DQ[27]/DDR0_DQ[43]
MDA28 AU37	DDR0_DQ[28]/DDR0_DQ[44]
MDA29 AV37	DDR0_DQ[29]/DDR0_DQ[45]
MDA30 AU36	DDR0_DQ[30]/DDR0_DQ[46]
MDA31 AU35	DDR0_DQ[31]/DDR0_DQ[47]
MDA32 AY8	DDR0_DQ[32]/DDR1_DQ[0]
MDA33 AW8	DDR0_DQ[33]/DDR1_DQ[1]
MDA34 AV6	DDR0_DQ[34]/DDR1_DQ[2]
MDA35 AU6	DDR0_DQ[35]/DDR1_DQ[3]
MDA36 AU8	DDR0_DQ[36]/DDR1_DQ[4]
MDA37 AV8	DDR0_DQ[37]/DDR1_DQ[5]
MDA38 AW6	DDR0_DQ[38]/DDR1_DQ[6]
MDA39 AV6	DDR0_DQ[39]/DDR1_DQ[7]
MDA40 AY4	DDR0_DQ[40]/DDR1_DQ[8]
MDA41 AV4	DDR0_DQ[41]/DDR1_DQ[9]
MDA42 AT1	DDR0_DQ[42]/DDR1_DQ[10]
MDA43 AT2	DDR0_DQ[43]/DDR1_DQ[11]
MDA44 AV3	DDR0_DQ[44]/DDR1_DQ[12]
MDA45 AW4	DDR0_DQ[45]/DDR1_DQ[13]
MDA46 AK4	DDR0_DQ[46]/DDR1_DQ[14]
MDA47 AT3	DDR0_DQ[47]/DDR1_DQ[15]
MDA48 AP2	DDR0_DQ[48]/DDR1_DQ[16]
MDA49 AM4	DDR0_DQ[49]/DDR1_DQ[17]
MDA50 AP3	DDR0_DQ[50]/DDR1_DQ[18]
MDA51 AM3	DDR0_DQ[51]/DDR1_DQ[19]
MDA52 AP4	DDR0_DQ[52]/DDR1_DQ[20]
MDA53 AM2	DDR0_DQ[53]/DDR1_DQ[21]
MDA54 AP1	DDR0_DQ[54]/DDR1_DQ[22]
MDA55 AM1	DDR0_DQ[55]/DDR1_DQ[23]
MDA56 AK3	DDR0_DQ[56]/DDR1_DQ[24]
MDA57 AK4	DDR0_DQ[57]/DDR1_DQ[25]
MDA58 AH2	DDR0_DQ[58]/DDR1_DQ[26]
MDA60 AH4	DDR0_DQ[59]/DDR1_DQ[27]
MDA61 AK2	DDR0_DQ[60]/DDR1_DQ[28]
MDA62 AH3	DDR0_DQ[61]/DDR1_DQ[29]
MDA63 AK1	DDR0_DQ[62]/DDR1_DQ[30]
AU33	DDR0_ECC[0]
AT33	DDR0_ECC[1]
AW33	DDR0_ECC[2]
AV33	DDR0_ECC[3]
AU34	DDR0_ECC[4]
AV33	DDR0_ECC[5]
AW33	DDR0_ECC[6]
AY33	DDR0_ECC[7]

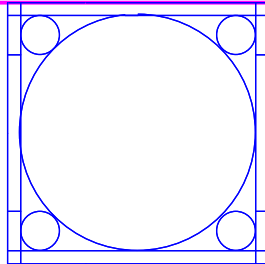
DDR CHANNEL A

1 OF 12

CPU-SK1151/S/GF

LGA1151

ILM_BP_CR115X/NORMAL NI[12KRC-0F0001-52R]



Need check the new CPU ME

LGA1151	SKT_H4
LGA1151	LGA1151
DDR0_CK[0]	AW18 M_DCLKA0
DDR0_CK[1]	AW18 M_DCLKA0
DDR0_CK[2]	AW17 M_DCLKA1
DDR0_CK[3]	AW17 M_DCLKA1
DDR0_CK[4]	AW16 M_DCLKA2
DDR0_CK[5]	AW16 M_DCLKA2
DDR0_CK[6]	AW16 M_DCLKA3
DDR0_CK[7]	AW16 M_DCLKA3
DDR0_CKE[0]	AY24 CKEA0
DDR0_CKE[1]	AY24 CKEA1
DDR0_CKE[2]	AY24 CKEA2
DDR0_CKE[3]	AY25 CKEA3
DDR0_CS[0]	AW12 M_CSA0
DDR0_CS[1]	AW11 M_CSA1
DDR0_CS[2]	AW13 M_CSA2
DDR0_CS[3]	AW10 M_CSA3
DDR0_ODT[0]	AW11 MODT_A0
DDR0_ODT[1]	AW14 MODT_A1
DDR0_ODT[2]	AW12 MODT_A2
DDR0_ODT[3]	AW10 MODT_A3
DDR0_BA[0]/DDR0_CAB[4]/DDR0_BA[0]	AY13 SBAA0
DDR0_BA[1]/DDR0_CAB[6]/DDR0_BA[1]	AY15 SBAA1
DDR0_BA[2]/DDR0_CAA[5]/DDR0_BG[0]	AW23 BG_A0
DDR0_RAS#/DDR0_CAB[3]/DDR0_MA[16]	AW13 MAA16
DDR0_WE#/DDR0_CAB[2]/DDR0_MA[14]	AW14 MAA14
DDR0_CAS#/DDR0_CAB[1]/DDR0_MA[15]	AW11 MAA15
DDR0_MA[0]/DDR0_CAB[9]/DDR0_MA[0]	AW15 MAAA0
DDR0_MA[1]/DDR0_CAB[8]/DDR0_MA[1]	AW18 MAAA1
DDR0_MA[2]/DDR0_CAB[5]/DDR0_MA[2]	AW17 MAAA2
DDR0_MA[3]	AW19 MAAA3
DDR0_MA[4]	AW20 MAAA4
DDR0_MA[5]/DDR0_CAA[0]/DDR0_MA[5]	AW21 MAAA5
DDR0_MA[6]/DDR0_CAA[2]/DDR0_MA[6]	AW22 MAAA6
DDR0_MA[7]/DDR0_CAA[4]/DDR0_MA[7]	AW23 MAAA7
DDR0_MA[8]/DDR0_CAA[3]/DDR0_MA[8]	AW22 MAAA8
DDR0_MA[9]/DDR0_CAA[1]/DDR0_MA[9]	AW22 MAAA9
DDR0_MA[10]/DDR0_CAB[7]/DDR0_MA[10]	AW22 MAAA10
DDR0_MA[11]/DDR0_CAA[7]/DDR0_MA[11]	AW22 MAAA11
DDR0_MA[12]/DDR0_CAA[6]/DDR0_MA[12]	AW22 MAAA12
DDR0_MA[13]/DDR0_CAB[0]/DDR0_MA[13]	AW22 MAAA13
DDR0_MA[14]/DDR0_CAA[9]/DDR0_BG[1]	AW23 BG_A1
DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT#	AW24 M_ACT_A
DDR0_PAR	AY15 M_DDR_PARA
DDR0_ALERT#	AT23 M_ALERT_A
DDR0_DQS[0]	AF38 M_DQSA0
DDR0_DQS[1]	AK38 M_DQSA1
DDR0_DQS[2]	AP38 M_DQSA2
DDR0_DQS[3]	AV36 M_DQSA3
DDR0_DQS[4]	AV7 M_DQSA4
DDR0_DQS[5]	AU2 M_DQSA5
DDR0_DQS[6]	AN2 M_DQSA6
DDR0_DQS[7]	AJ2 M_DQSA7
DDR0_DQSP[0]	AF38 M_DQSA0
DDR0_DQSP[1]	AK38 M_DQSA1
DDR0_DQSP[2]	AP38 M_DQSA2
DDR0_DQSP[3]	AV36 M_DQSA3
DDR0_DQSP[4]	AV7 M_DQSA4
DDR0_DQSP[5]	AU2 M_DQSA5
DDR0_DQSP[6]	AN2 M_DQSA6
DDR0_DQSP[7]	AJ2 M_DQSA7
DDR0_DQSP[8]	AV32 M_DQSB0
DDR0_DQSP[9]	AV32 M_DQSB1

LGA1151B	SKT_H4
LGA1151	LGA1151
DDR1_DQ[0]/DDR0_DQ[16]	MD80 AD34
DDR1_DQ[1]/DDR0_DQ[17]	MD81 AD35
DDR1_DQ[2]/DDR0_DQ[18]	MD82 AG35
DDR1_DQ[3]/DDR0_DQ[19]	MD83 AH35
DDR1_DQ[4]/DDR0_DQ[20]	MD84 AE35
DDR1_DQ[5]/DDR0_DQ[21]	MD85 AE34
DDR1_DQ[6]/DDR0_DQ[22]	MD86 AH34
DDR1_DQ[7]/DDR0_DQ[23]	MD87 AK35
DDR1_DQ[8]/DDR0_DQ[24]	MD88 AK35
DDR1_DQ[9]/DDR0_DQ[25]	MD89 AL35
DDR1_DQ[10]/DDR0_DQ[26]	MD90 AL32
DDR1_DQ[11]/DDR0_DQ[27]	MD91 AL32
DDR1_DQ[12]/DDR0_DQ[28]	MD92 AK34
DDR1_DQ[13]/DDR0_DQ[29]	MD93 AL34
DDR1_DQ[14]/DDR0_DQ[30]	MD94 AK31
DDR1_DQ[15]/DDR0_DQ[31]	MD95 AL31
DDR1_DQ[16]/DDR0_DQ[32]	MD96 AP35
DDR1_DQ[17]/DDR0_DQ[33]	MD97 AP35
DDR1_DQ[18]/DDR0_DQ[34]	MD98 AK32
DDR1_DQ[19]/DDR0_DQ[35]	MD99 AN32
DDR1_DQ[20]/DDR0_DQ[36]	MD100 AN34
DDR1_DQ[21]/DDR0_DQ[37]	MD101 AP34
DDR1_DQ[22]/DDR0_DQ[38]	MD102 AN31
DDR1_DQ[23]/DDR0_DQ[39]	MD103 AP31
DDR1_DQ[24]/DDR0_DQ[40]	MD104 AL29
DDR1_DQ[25]/DDR0_DQ[41]	MD105 AM29
DDR1_DQ[26]/DDR0_DQ[42]	MD106 AP29
DDR1_DQ[27]/DDR0_DQ[43]	MD107 AR29
DDR1_DQ[28]/DDR0_DQ[44]	MD108 AM28
DDR1_DQ[29]/DDR0_DQ[45]	MD109 AL28
DDR1_DQ[30]/DDR0_DQ[46]	MD110 AR28
DDR1_DQ[31]/DDR0_DQ[47]	MD111 AP28
DDR1_DQ[32]/DDR1_DQ[16]	MD112 AR12
DDR1_DQ[33]/DDR1_DQ[17]	MD113 AP12
DDR1_DQ[34]/DDR1_DQ[18]	MD114 AM13
DDR1_DQ[35]/DDR1_DQ[19]	MD115 AR13
DDR1_DQ[36]/DDR1_DQ[20]	MD116 AP13
DDR1_DQ[37]/DDR1_DQ[21]	MD117 AM12
DDR1_DQ[38]/DDR1_DQ[22]	MD118 AP10
DDR1_DQ[39]/DDR1_DQ[23]	MD119 AR10
DDR1_DQ[40]/DDR1_DQ[24]	MD120 AR7
DDR1_DQ[41]/DDR1_DQ[25]	MD121 AP7
DDR1_DQ[42]/DDR1_DQ[26]	MD122 AR9
DDR1_DQ[43]/DDR1_DQ[27]	MD123 AP9
DDR1_DQ[44]/DDR1_DQ[28]	MD124 AR6
DDR1_DQ[45]/DDR1_DQ[29]	MD125 AP6
DDR1_DQ[46]/DDR1_DQ[30]	MD126 AM10
DDR1_DQ[47]/DDR1_DQ[31]	MD127 AM7
DDR1_DQ[48]	MD128 AR7
DDR1_DQ[49]	MD129 AM9
DDR1_DQ[50]	MD130 AL9
DDR1_DQ[51]	MD131 AM6
DDR1_DQ[52]	MD132 AL6
DDR1_DQ[53]	MD133 AJ6
DDR1_DQ[54]	MD134 AI7
DDR1_DQ[55]	MD135 AE6
DDR1_DQ[56]	MD136 AE7
DDR1_DQ[57]	MD137 AH7
DDR1_DQ[58]	MD138 AH6
DDR1_DQ[59]	MD139 AE7
DDR1_DQ[60]	MD140 AF6
DDR1_DQ[61]	AR25
DDR1_DQ[62]	AR26
DDR1_DQ[63]	AR26
DDR1_ECC[0]	AR25
DDR1_ECC[1]	AM26
DDR1_ECC[2]	AM26
DDR1_ECC[3]	AP26
DDR1_ECC[4]	AL26
DDR1_ECC[5]	AL26
DDR1_ECC[6]	AL26
DDR1_ECC[7]	AL26
DDR1_CK[0]	AM20 M_DCLKB0
DDR1_CK[1]	AM21 M_DCLKB0
DDR1_CK[2]	AP22 M_DCLKB1
DDR1_CK[3]	AP21 M_DCLKB1
DDR1_CK[4]	AN20 M_DCLKB2
DDR1_CK[5]	AN21 M_DCLKB2
DDR1_CK[6]	AP19 M_DCLKB3
DDR1_CK[7]	AP20 M_DCLKB3
DDR1_CKE[0]	AY28 CKEB0
DDR1_CKE[1]	AY29 CKEB1
DDR1_CKE[2]	AW29 CKEB2
DDR1_CKE[3]	AU29 CKEB3
DDR1_CS[0]	AP17 M_CSB0
DDR1_CS[1]	AN15 M_CSB1
DDR1_CS[2]	AN17 M_CSB2
DDR1_CS[3]	AM15 M_CSB3
DDR1_ODT[0]	AM16 MODT_B0
DDR1_ODT[1]	AL16 MODT_B1
DDR1_ODT[2]	AP15 MODT_B2
DDR1_ODT[3]	AL15 MODT_B3
DDR1_RAS#/DDR1_CAB[3]/DDR1_MA[16]	AN18 MAAB16
DDR1_WE#/DDR1_CAB[2]/DDR1_MA[14]	AM18 SAB1
DDR1_CAS#/DDR1_CAB[1]/DDR1_MA[15]	AP16 MAAB15
DDR1_BA[0]/DDR1_CAB[4]/DDR1_BA[0]	AL18 SBAB0
DDR1_BA[1]/DDR1_CAB[6]/DDR1_BA[1]	AM18 SAB1
DDR1_BA[2]/DDR1_CAA[5]/DDR1_BG[0]	AW28 BG_B0
DDR1_MA[0]/DDR1_CAB[9]/DDR1_MA[0]	AL19 MAAB0
DDR1_MA[1]/DDR1_CAB[8]/DDR1_MA[1]	AL22 MAAB1
DDR1_MA[2]/DDR1_CAB[5]/DDR1_MA[2]	AL22 MAAB2
DDR1_MA[3]	AP23 MAAB3
DDR1_MA[4]	AP23 MAAB4
DDR1_MA[5]/DDR1_CAA[0]/DDR1_MA[5]	AW26 MAAB6
DDR1_MA[6]/DDR1_CAA[2]/DDR1_MA[6]	AY26 MAAB7
DDR1_MA[7]/DDR1_CAA[4]/DDR1_MA[7]	AY26 MAAB8
DDR1_MA[8]/DDR1_CAA[3]/DDR1_MA[8]	AW27 MAAB9
DDR1_MA[9]/DDR1_CAA[1]/DDR1_MA[9]	AP18 MAAB10
DDR1_MA[10]/DDR1_CAB[7]/DDR1_MA[10]	AL27 MAAB11
DDR1_MA[11]/DDR1_CAA[7]/DDR1_MA[11]	AY27 MAAB12
DDR1_MA[12]/DDR1_CAA[6]/DDR1_MA[12]	AL15 MAAB13
DDR1_MA[13]/DDR1_CAB[0]/DDR1_MA[13]	AY28 BG_B1
DDR1_MA[14]/DDR1_CAA[9]/DDR1_BG[1]	AL28 M_ACT_B
DDR1_MA[15]/DDR1_CAA[8]/DDR1_ACT#	AL20 M_DDR_PARB
DDR1_PAR	AY25 M_ALERT_B
DDR1_ALERT#	AF34 M_DQSB0
DDR1_DQS[0]	AK33 M_DQSB1
DDR1_DQS[1]	AN33 M_DQSB2
DDR1_DQS[2]	AN29 M_DQSB3
DDR1_DQS[3]	AN33 M_DQSB4
DDR1_DQS[4]	AR8 M_DQSB5
DDR1_DQS[5]	AM8 M_DQSB6
DDR1_DQS[6]	AG6 M_DQSB7
DDR1_DQS[7]	AF35 M_DQSB0
DDR1_DQS[8]	AL33 M_DQSB1
DDR1_DQS[9]	AP33 M_DQSB2
DDR1_DQS[10]	AN12 M_DQSB3
DDR1_DQS[11]	AP8 M_DQSB4
DDR1_DQS[12]	AL8 M_DQSB5
DDR1_DQS[13]	AG7 M_DQSB7
DDR1_DQSP[0]	AN25
DDR1_DQSP[1]	AN26

DDR CHANNEL B

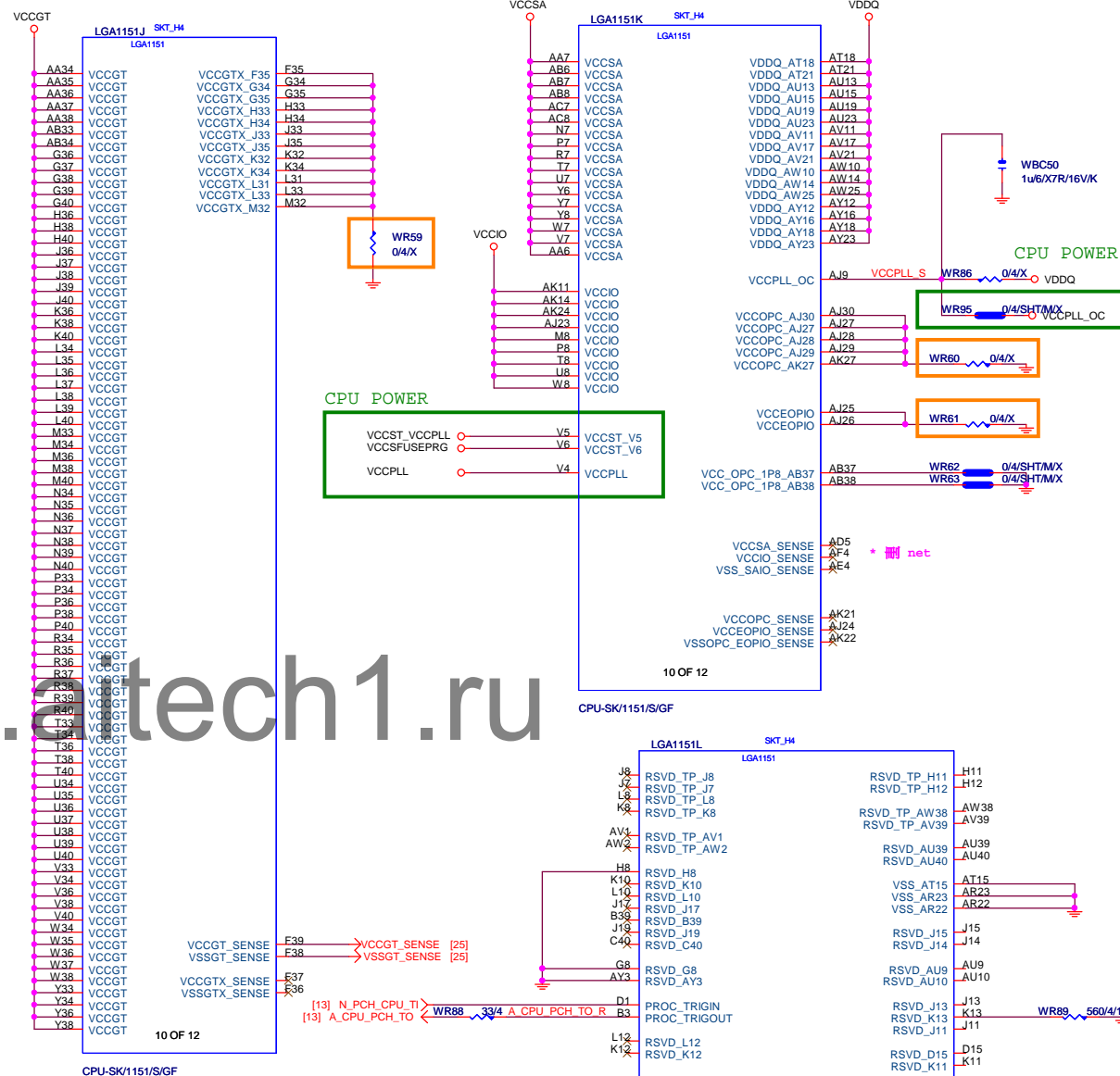
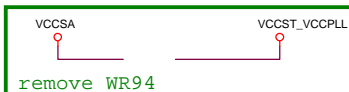
2 OF 12

[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] MAA[0..16]	MAA[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]

Gigabyte Technology			
CPU LGA1151-B			
Size	Document Number	Rev	1.01
Custom	GA-Z270-HD3P		
Date:	Wednesday, December 21, 2016	Sheet	5 of 61



* 刪 WBC124 , WBC125 , WBC126 , WBC127 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

解除22 6VDDSP SHORT PROTECT

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DDR4-288P-STH 加鎖版
DDR4-288P-STH 加鎖版
DDR4-288P-STH 加鎖版

BLK CHANNEL A0
SA2:0=000

解除22 6VDDSP SHORT PROTECT

解除22 6VDDSP SHORT PROTECT

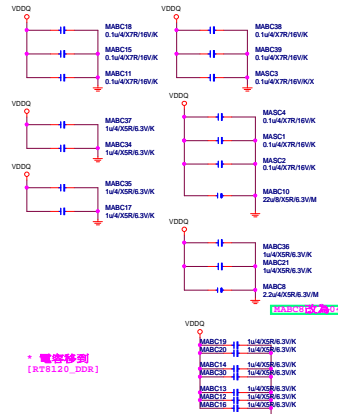
解除22 6VDDSP SHORT PROTECT

解除22 6VDDSP SHORT PROTECT

解除22 6VDDSP SHORT PROTECT

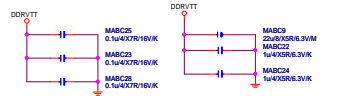
解除22 6VDDSP SHORT PROTECT

DDR12V Decouple



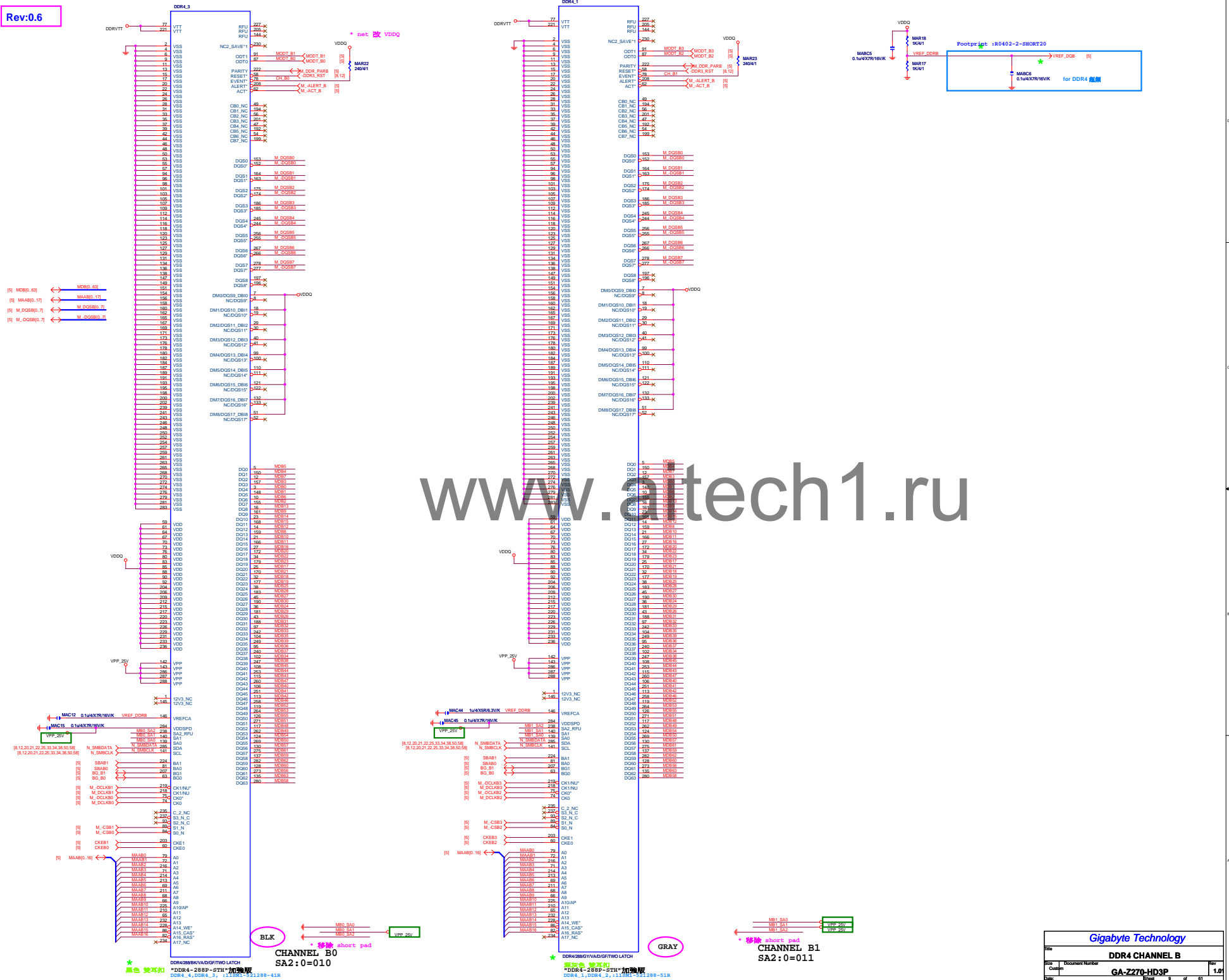
* 電容移到 [RT9120_DDR]

DDRVT Decouple

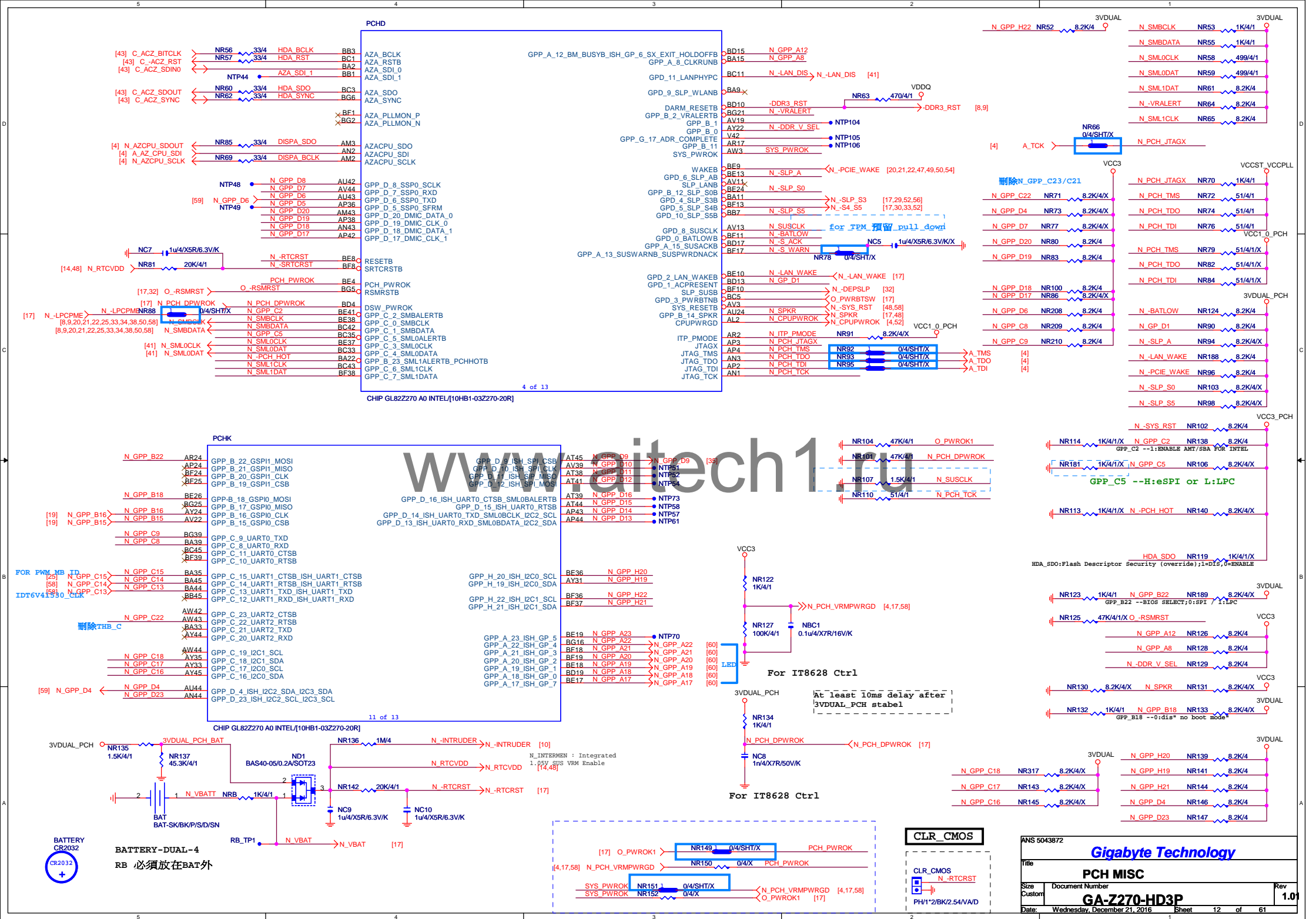


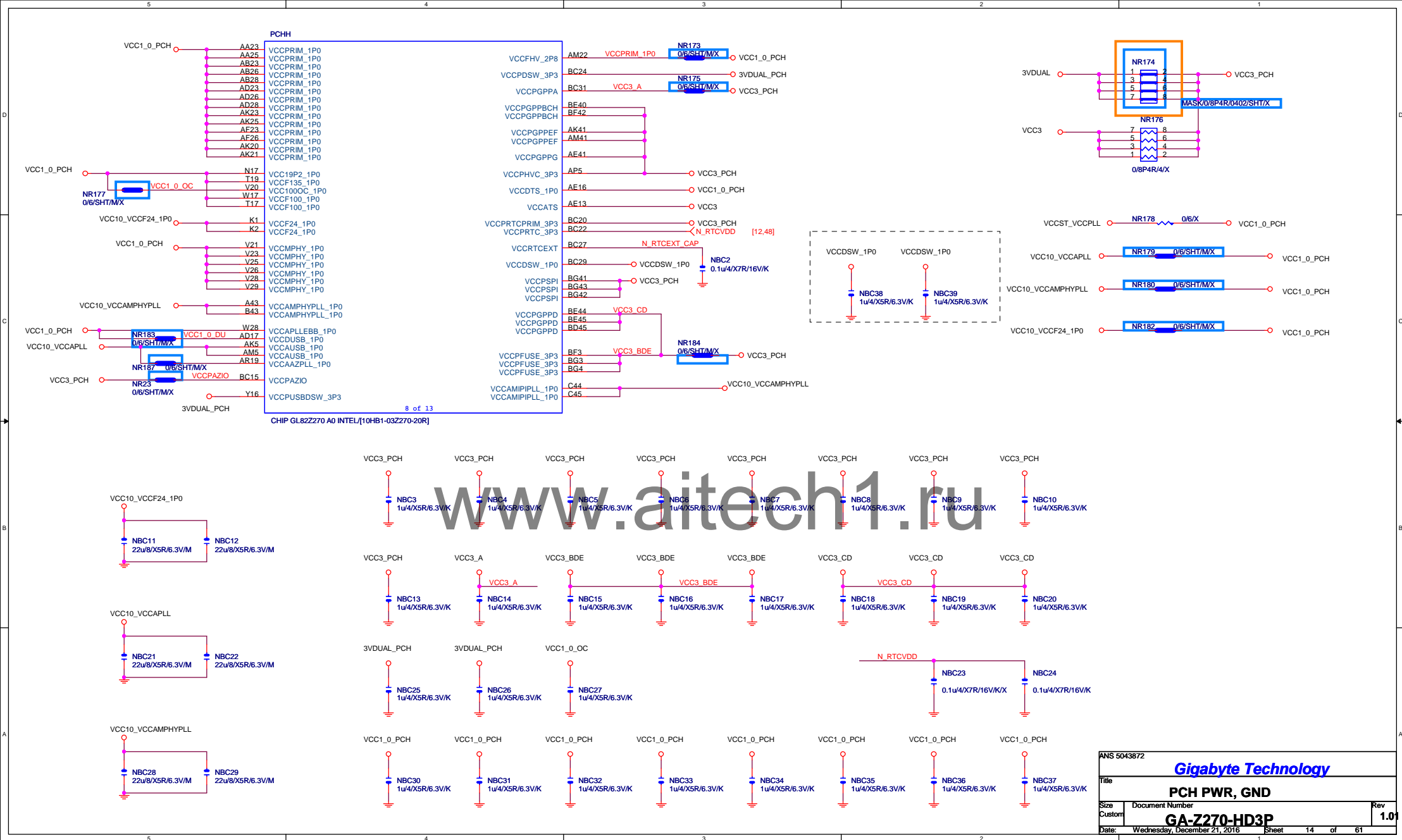
* 解電容

* 解電容



ANS 5043872





裝甲HEATSINK 分成四大部份

PCHL		
A25	VSS	A42
A30	VSS	B44
P22	VSS	BF44
AV38	VSS	BF45
AV45	VSS	BF2
AV8	VSS	W29
AV11	VSS	A35
AV19	VSS	A40
AV37	VSS	A41
AY4	VSS	AA17
AY42	VSS	AA18
AY8	VSS	AA20
B25	VSS	AA21
B3	VSS	AA26
B30	VSS	AA28
B35	VSS	AA29
B4	VSS	AB17
BA13	VSS	AC32
BA17	VSS	AE18
BA29	VSS	AE8
BA31	VSS	AF18
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
E31	VSS	AG28
E6	VSS	AG29
E8	VSS	AH11
F38	VSS	AH13
F43	VSS	AH30
G4	VSS	AH32
G40	VSS	AH33
G42	VSS	AH38
G9	VSS	AJ1
H11	VSS	AJ17
H13	VSS	AJ18
H17	VSS	AJ20
H19	VSS	AJ21
H22	VSS	AJ23
H24	VSS	AJ25
H27	VSS	AJ26
H29	VSS	AJ28
H33	VSS	AJ29
H35	VSS	AJ45
H38	VSS	AK10
H4	VSS	AK14
H42	VSS	AK16
H9	VSS	AK17
J4	VSS	AK18
M36	VSS	AK26
M38	VSS	AK28
M4	VSS	AM14
M8	VSS	AN14
M9	VSS	AP19
N13	VSS	AR22
N15	VSS	AR27
N19	VSS	AU29
N22	VSS	AU33
N24	VSS	AV10
N31	VSS	AV15
N42	VSS	AV24
P10	VSS	AV27
P12	VSS	AV33
AV35	VSS	

9 of 13

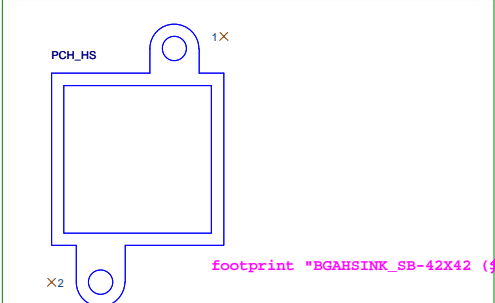
CHIP GL82270 A0 INTEL[10HB1-032270-20R]

PCHL		
BD34	VSS[70]	AB18
BD39	VSS[71]	AB20
BD7	VSS[72]	AB21
BE2	VSS[73]	AB25
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
D6	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]	AE38
D21	VSS[97]	AK29
D24	VSS[98]	AK30
D25	VSS[99]	AK32
D29	VSS[100]	AK35
AG20	VSS[101]	AK39
D33	VSS[102]	AL4
D35	VSS[103]	AL42
D36	VSS[104]	AM10
D32	VSS[105]	AM11
D44	VSS[106]	AM13
D7	VSS[107]	AM17
P13	VSS[108]	AM19
P15	VSS[109]	AM24
P17	VSS[110]	AM27
P19	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]	W26
T38	VSS[126]	W28
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]	
AT45	VSS[142]	
AU11	VSS[143]	A44
AU17	VSS[144]	BE1
BD30	VSS[145]	BD1
W45	VSS[146]	B1
Y13	VSS[147]	B2
Y14	VSS[148]	A3
Y30	VSS[149]	A4
Y32	VSS[150]	B44
Y33	VSS[151]	B45
BG14	VSS[152]	

12 of 13

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

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



footprint "BGAHSINK_SB-42X42 (無文字框)"

HEAT SINK PCH/Z270/12SP2-S04207-21R 12SP2-S04207-22R 12SP2-S04207-23R
42*42*07mm/TES015/D3 PIN

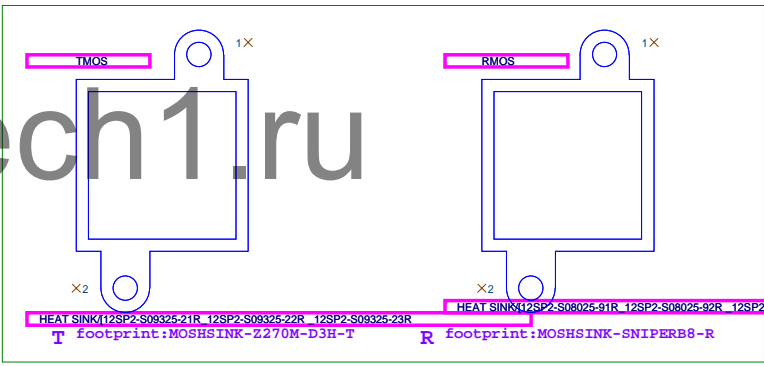
重新確認

* 料號: ???

* 圖騰: ???

B85M-D3H Series PCH
Heatsink

Z270-HD3P//Z270-HD3//保留(R)MOS Footprint
H270-HD3P//B250-HD3P//B250-HD3 相同(T)MOS Footprint
MOS_HS 改為由G1.Sniper B8 (L型)



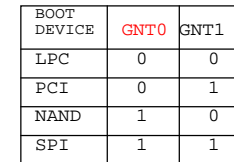
HEAT SINK/TMOS/Z170-D3H/KG
28*93*25mm/BLACK/W CUT/D4 PIN
T footprint:MOSHSINK-Z270M-D3H-T

HEAT SINK/RMOS/Z170-D3H/KG
28*80*25mm/GAP PAD/D4 PIN
R footprint:MOSHSINK-SNIPERB8-R

限制區不同而已 ,MOSHSINK-Z270M-D3H-T限制區比較大一點

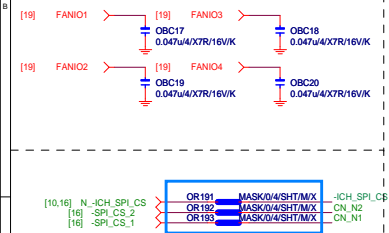
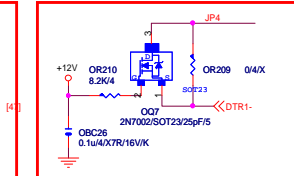
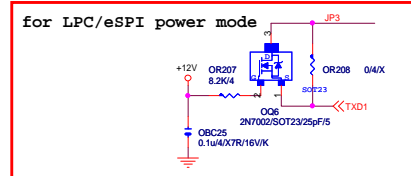
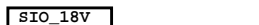
ANS 5043872			
Gigabyte Technology			
Title			
PCH PWR, GND			
Size	Document Number	Rev	
Custom	GA-Z270-HD3P	1.01	
Date:	Wednesday, December 21, 2016	Sheet	15 of 61

指定用DII



* (footprint 改 IC8-BIOS)

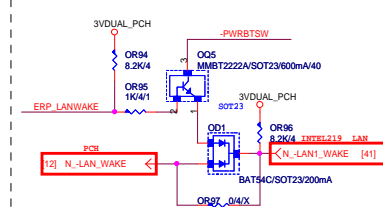
1104///M_BIOS sock 移除

DUAL BIOS OPT STRAP

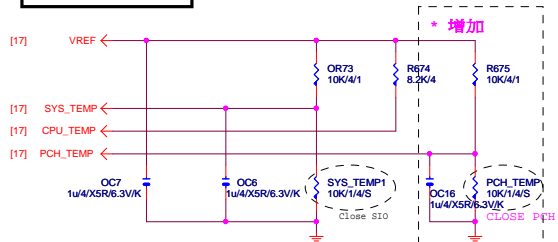
ANS 5043872		Gigabyte Technology	
Title			
ITE 8686 LPC IO			
Size	Document Number		Rev
C	GA-Z270-HD3P		1.0
Date:	Wednesday, December 21, 2016	Sheet	17 of 61

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 Only)
	0	Disable Dual BIOS Function (for GigaByte Only)
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
JP3	0 1	CE mode 2
	0 0	CE mode 3

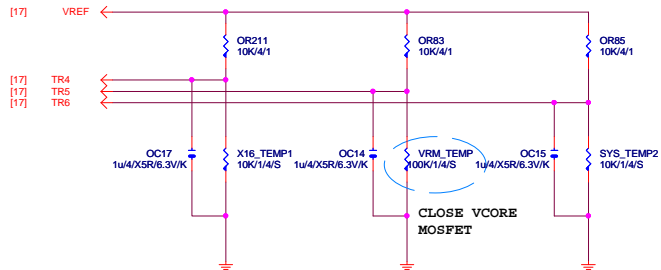
(組態二) Intel LAN



TEMP H/W MONITOR

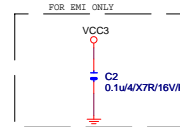
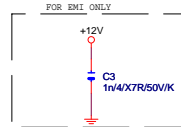
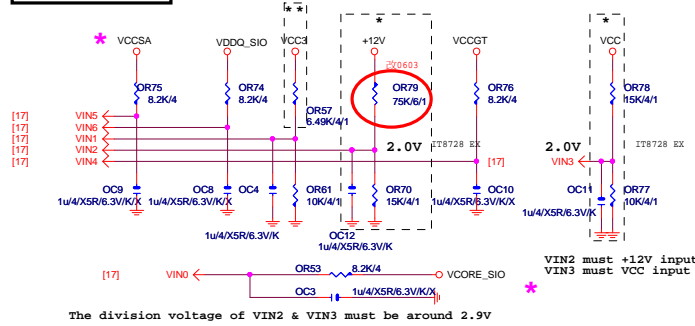


5個FAN時使用



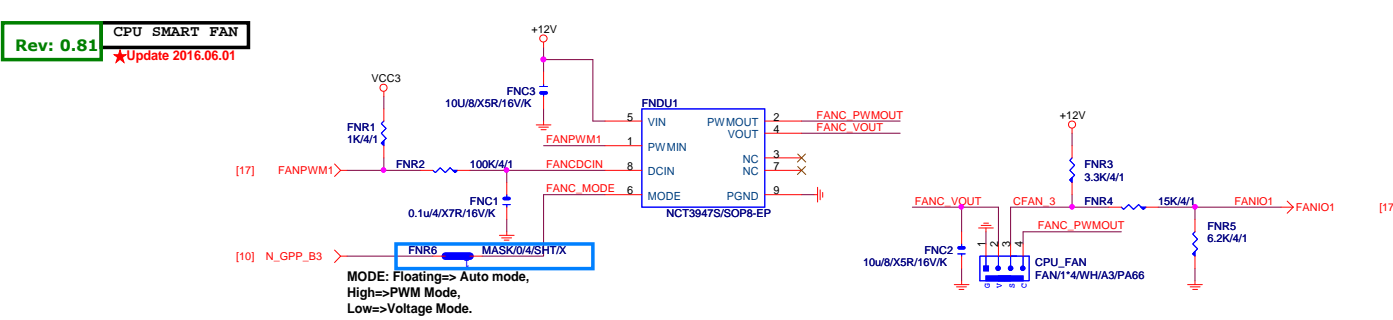
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VOLTAGE-- H/W MONITOR

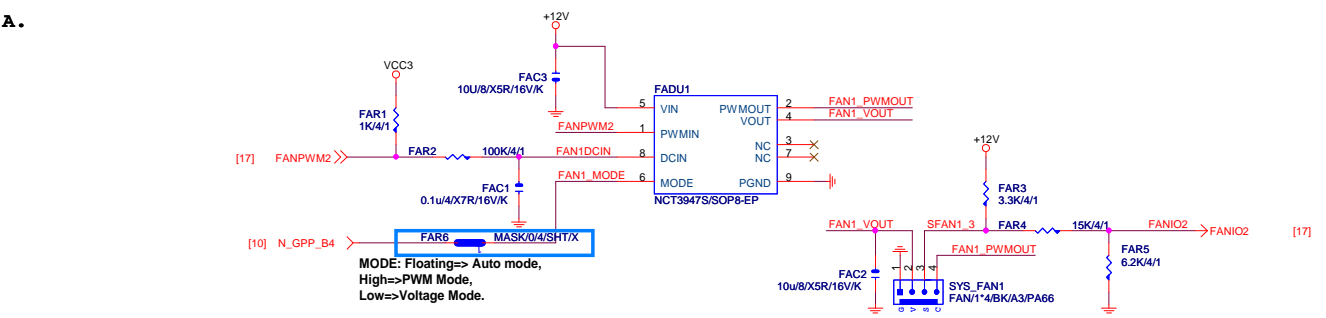


★Update 2015-04.24

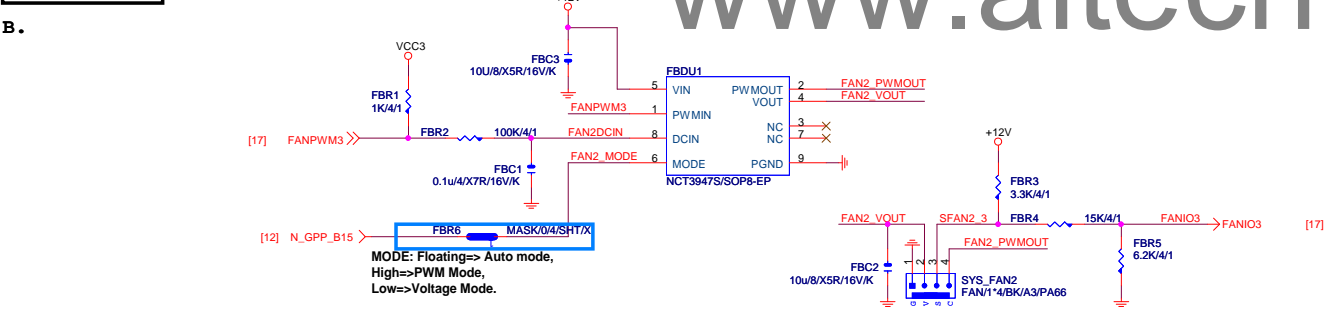
ANS 5043872		Gigabyte Technology	
Title			
HWM,KB/MS, FAN CTRL			
Size	Document Number	Rev	
Custom	GA-Z270-HD3P	1.01	
Date:	Wednesday, December 21, 2016	Sheet	18 of 61



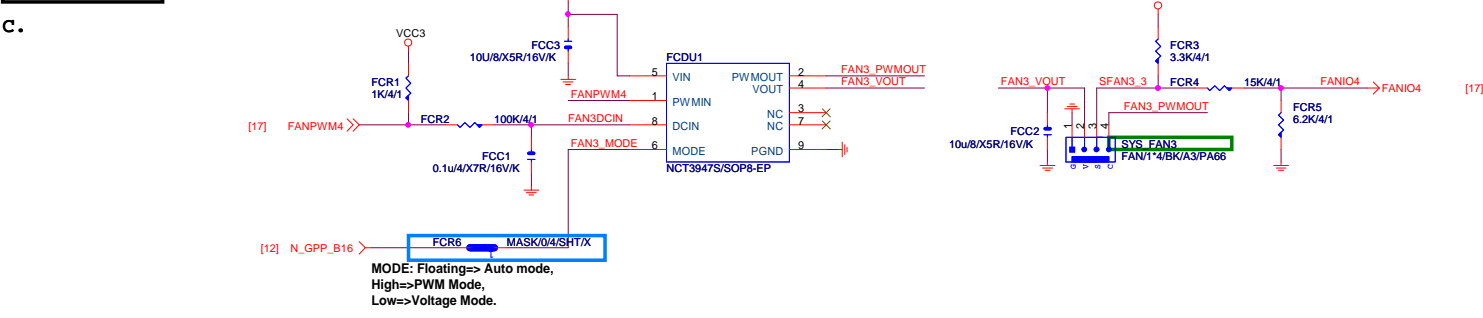
SYSTEM FAN1



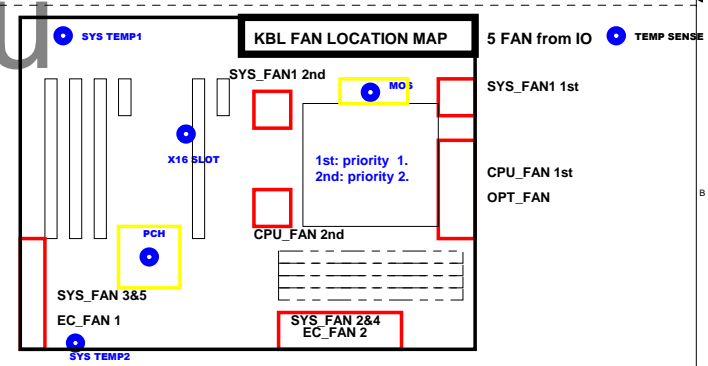
SYSTEM FAN2



SYSTEM FAN3

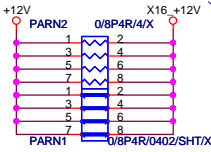


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Rev 0.2

+12 - protect
short-wire test



[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

PCIESLOT-1648TH

3GIO_*16

KEY

PCI-E16x164P/BK/LONG DOUBLE

黑色(預留金屬加強,不上)

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

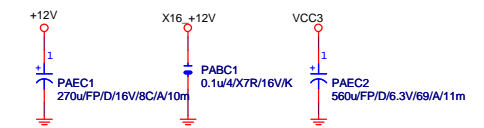
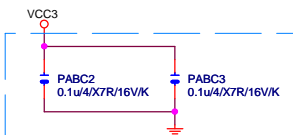
PCE-E X16(雙向) BANDWIDTH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

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

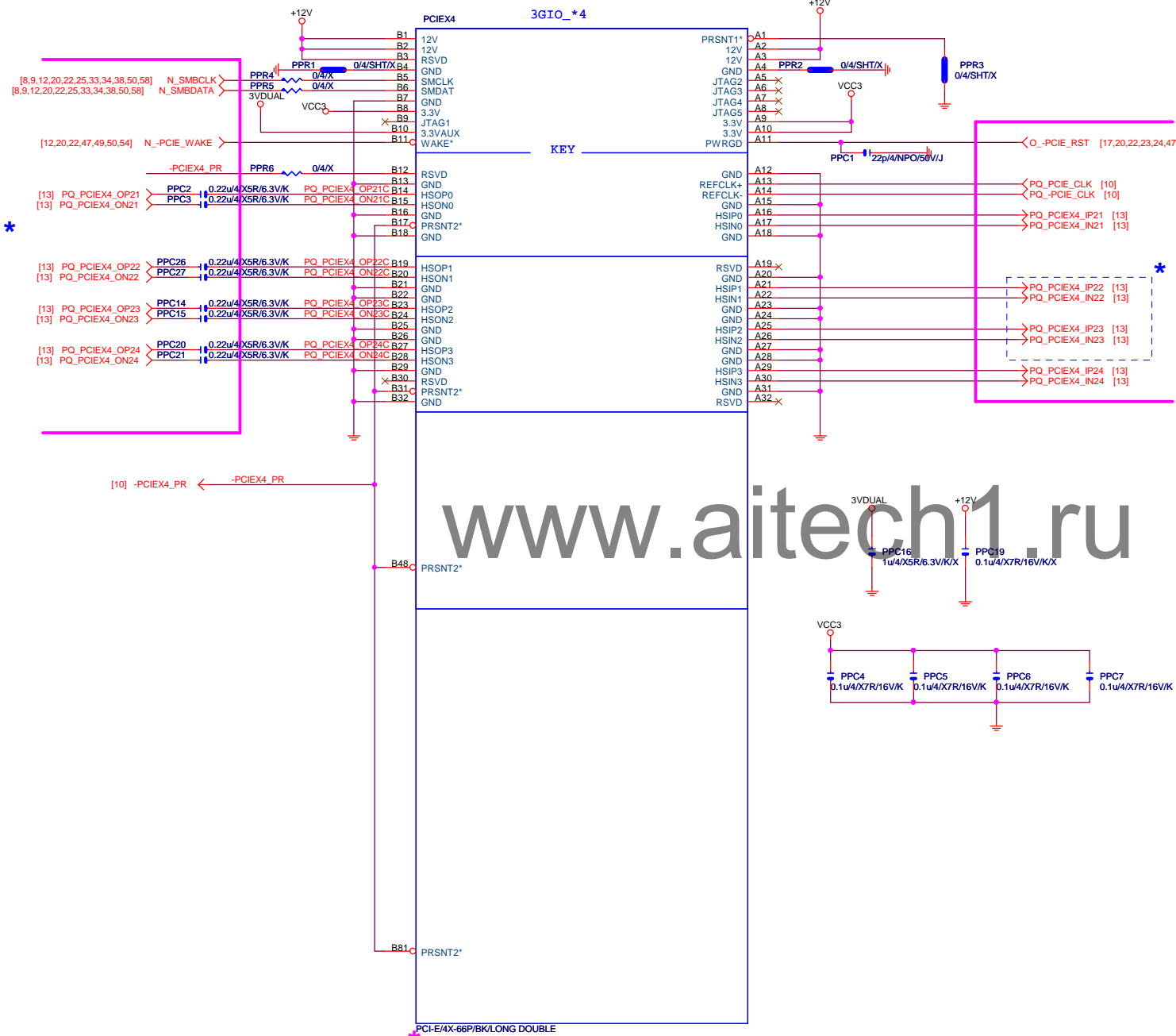


Gigabyte Technology		
PCI EXPRESS * 16		
Title	Document Number	Rev
Size	GA-Z270-HD3P	1.01
Custom		
Date:	Wednesday, December 21, 2016	Sheet 20 of 61

Rev 0.51

PCIEX*4

Footprint "PCIESLOT-64STH-1"



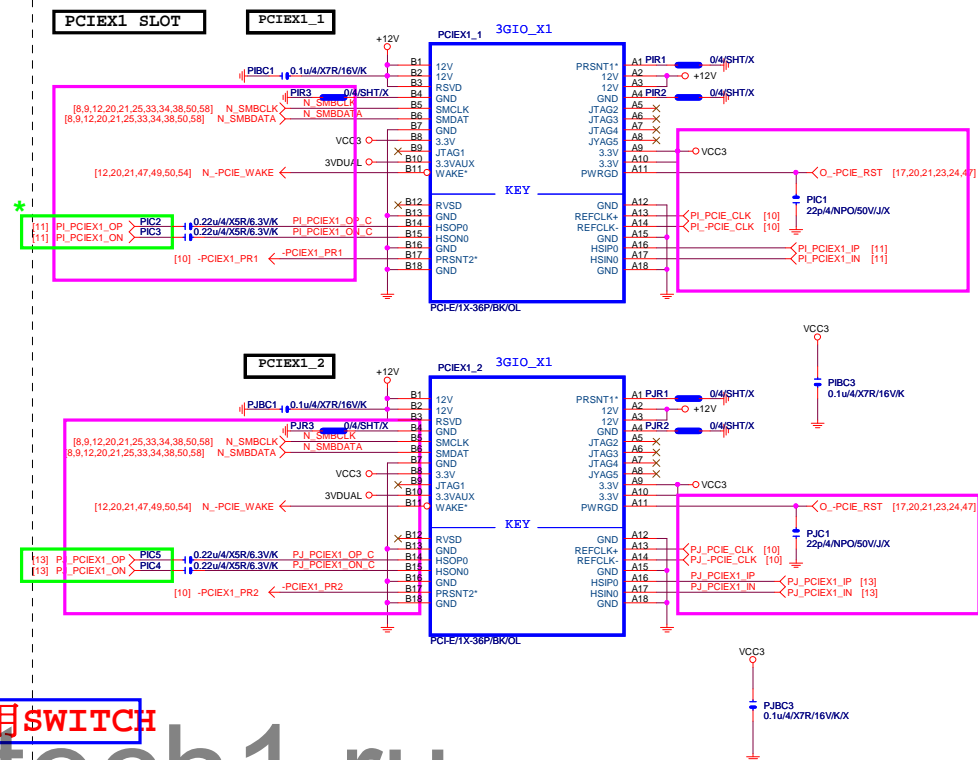
黑色(預留金屬加強,不上)

Gigabyte Technology			
Title	PCIEX*4		
Size	Document Number	Rev	
Custom	GA-Z270-HD3P	1.01	
Date:	Wednesday, December 21, 2016	Sheet	21 of 61

~~PCIEX1_3~~

删除PPD2

删除PPU2



2各x1 ,不用SWITCH

2个x1,不用SWITCH

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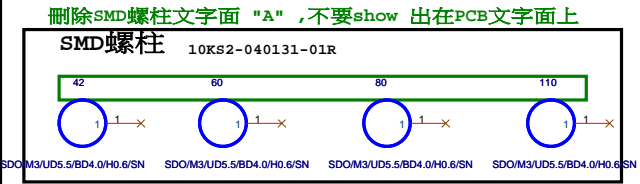
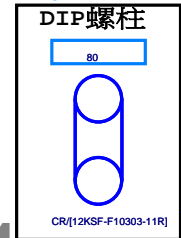
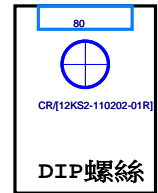
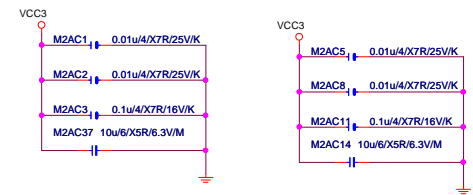
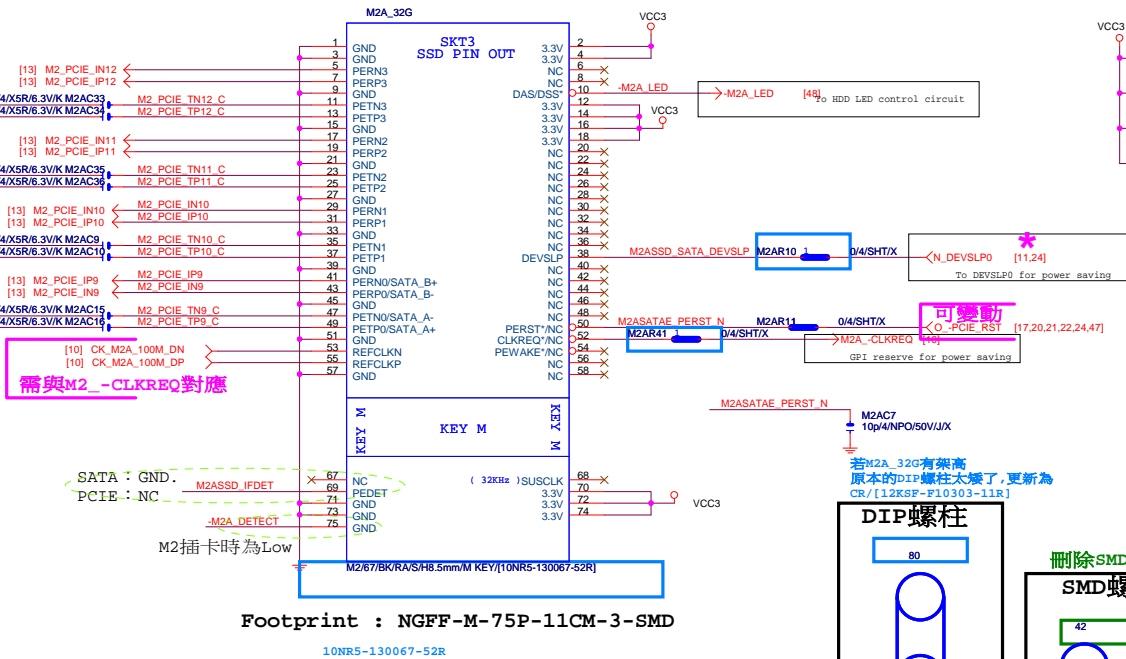
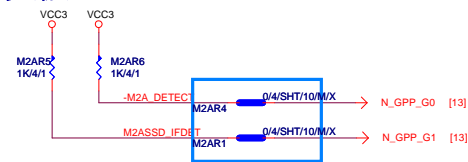
M.2 Lane4 from PCH port18

M.2 Lane3 from PCH port17

M.2 Lane2 from PCH port16

M.2 Lane2 from PCH port15

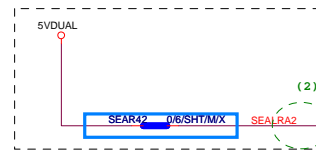
支援SATA and M.2 function



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	I015 (S0)	I016 (S1)	I017	I018	I019 (S0)	I020 (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	

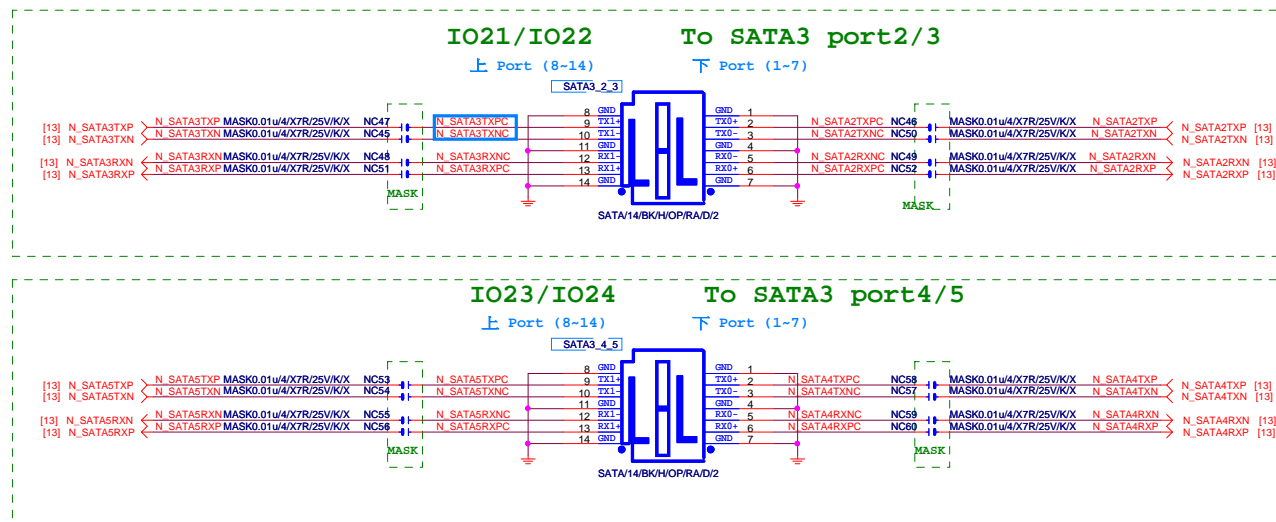
由H170-Designare 的(O)TYPE 直接貼過來
&刪除for x4 & sata & x1 sw 的N GPP B15

改成單層 IO19/IO20 To SATA3 port0/1

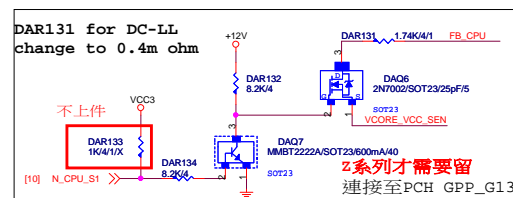
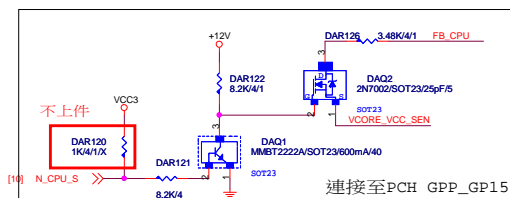
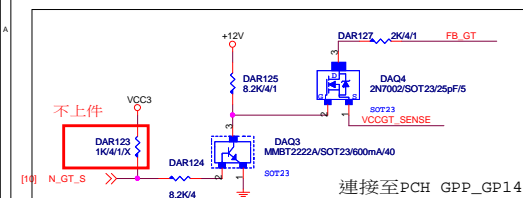
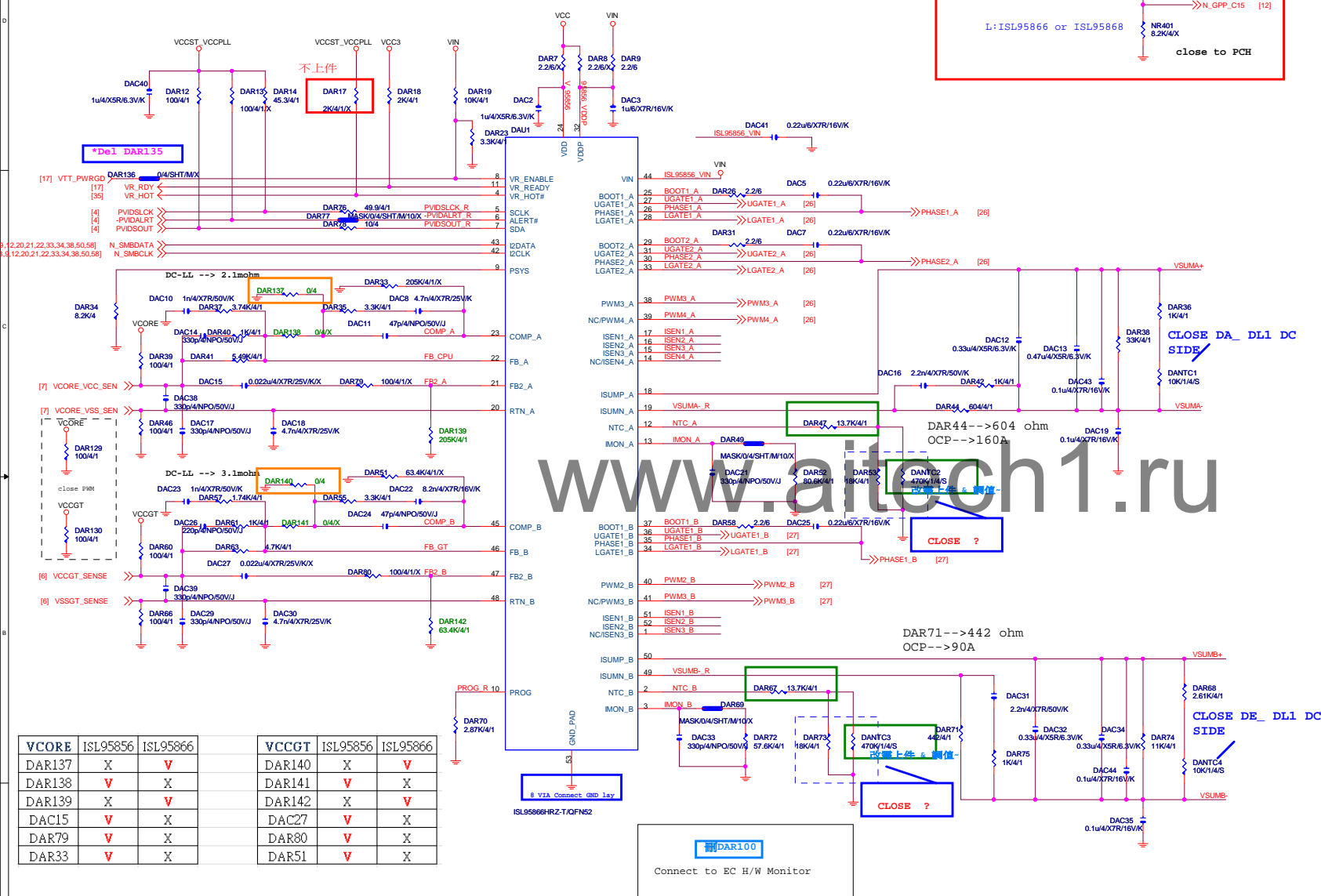
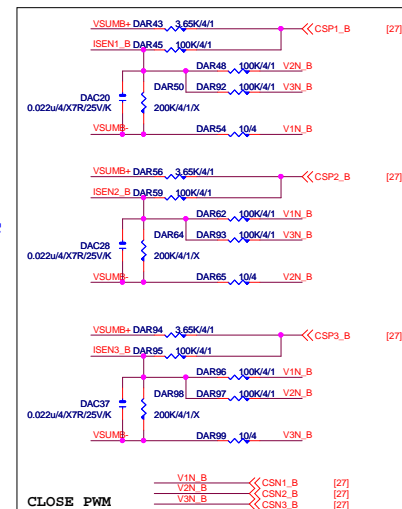
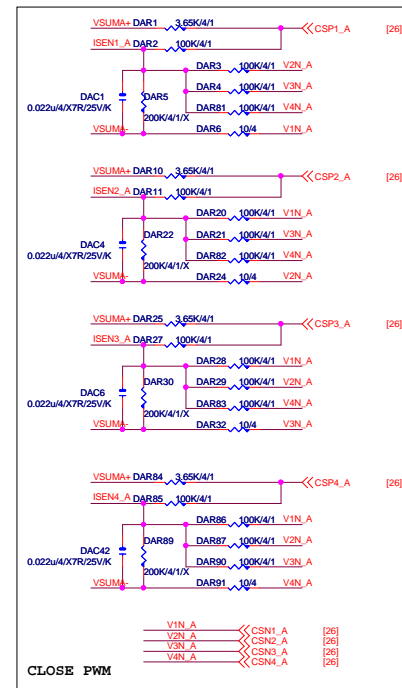
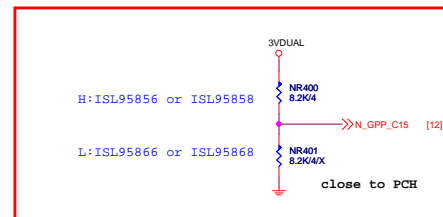
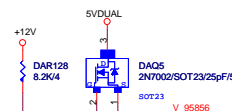


單層:11NR6-C10118-31R

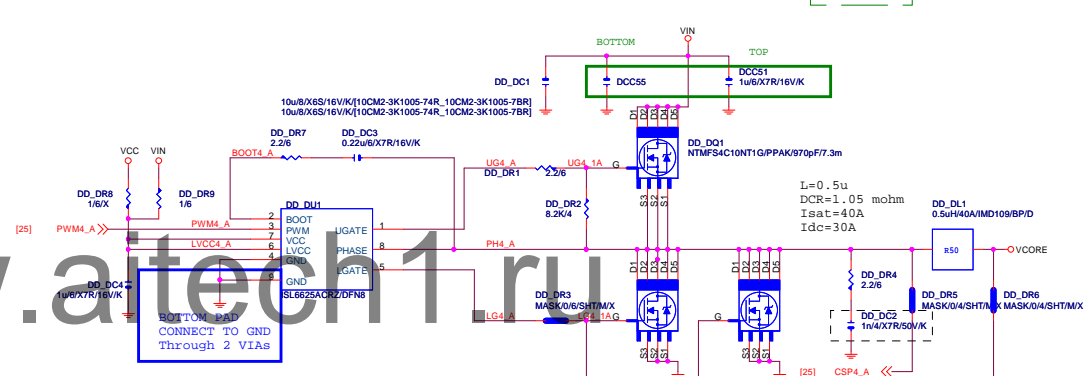
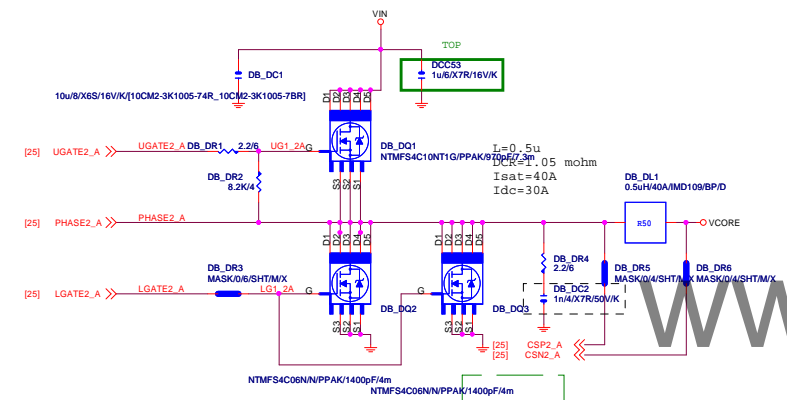
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SATA 5	(文字面寫SATA 1)
SATA 4	(文字面寫SATA 0)
SATA 3	
SATA 2	
SATA 1	(文字面寫SATA 5)
SATA 0	(文字面寫SATA 4)

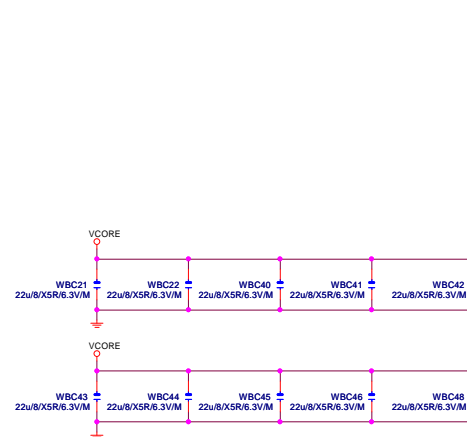


VCORE



VCORE CAP

The diagram shows a 6-stage pipeline. A top rail is connected to VCORE. Six DAEs (DAEC1 to DAEC6) are connected in series between the top rail and a bottom rail. Each DAE is represented by a capacitor symbol with a '1' inside. Below the bottom rail, there are six labels: 560uF/D6.3V/68A/11m, 560uF/D6.3V/68A/11m, 560uF/D6.3V/68A/11m, 560uF/D6.3V/68A/11m, 560uF/D6.3V/68A/11m, and 560uF/D6.3V/68A/11m. A red arrow points to the bottom rail.



VIN CAP

Iron 黑色閃電>料表:

for DDR4 記憶體

REV: 1.0T

V12

DAL1
0.5uH/40A/IMD108/P/D

R50

DAC36
1u6X7R/16V/K

1

270uF/P/D/16V/8C/A/10m

270uF/P/D/16V/8C/A/10m

270uF/P/D/16V/8C/A/10m

VIN

1

DAEC14

1

DAEC15

1

DAEC18

1

DOC1

DOC2

DOC3

0.1u4/X7R/16V/K

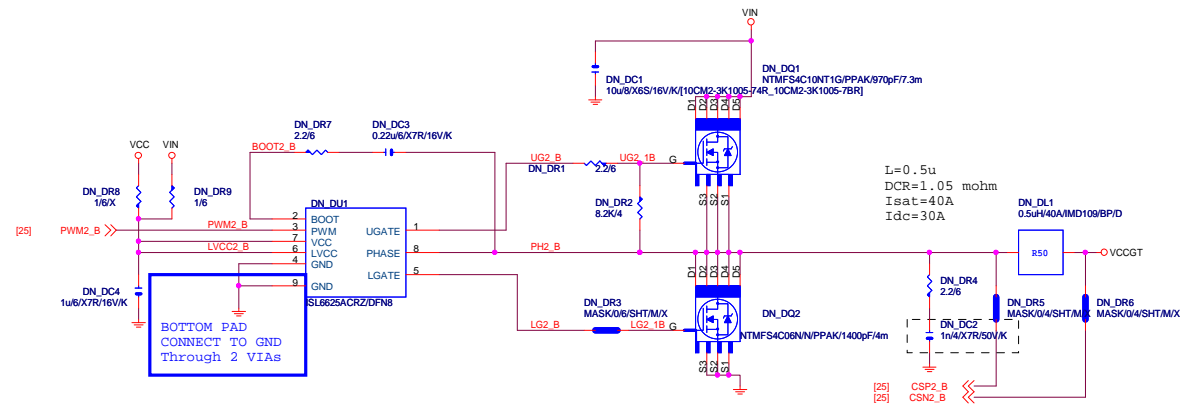
0.1u4/X7R/16V/K

0.1u4/X7R/16V/K

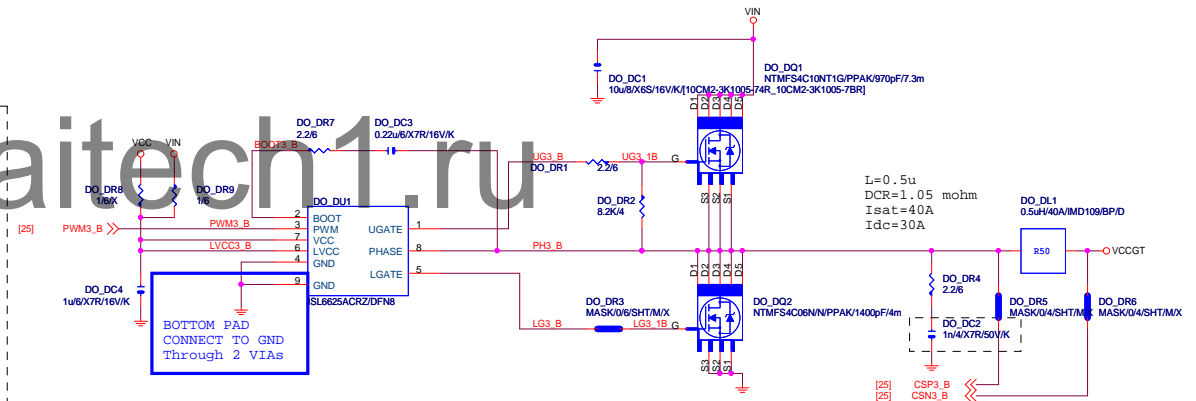
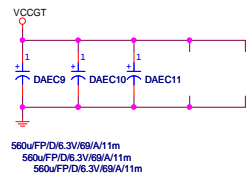
BOTTOM

GIGABYTE

Title			
ISL95856 MOS			
Size	Document Number	Rev	
Custom	GA-ZZ70-HD3P	1.01	
Date:	Wednesday, December 21, 2016	Sheet	26 of 61

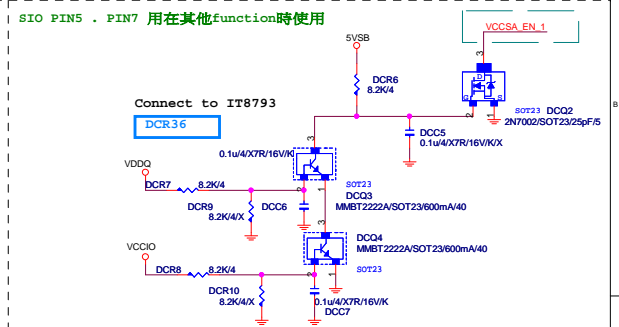
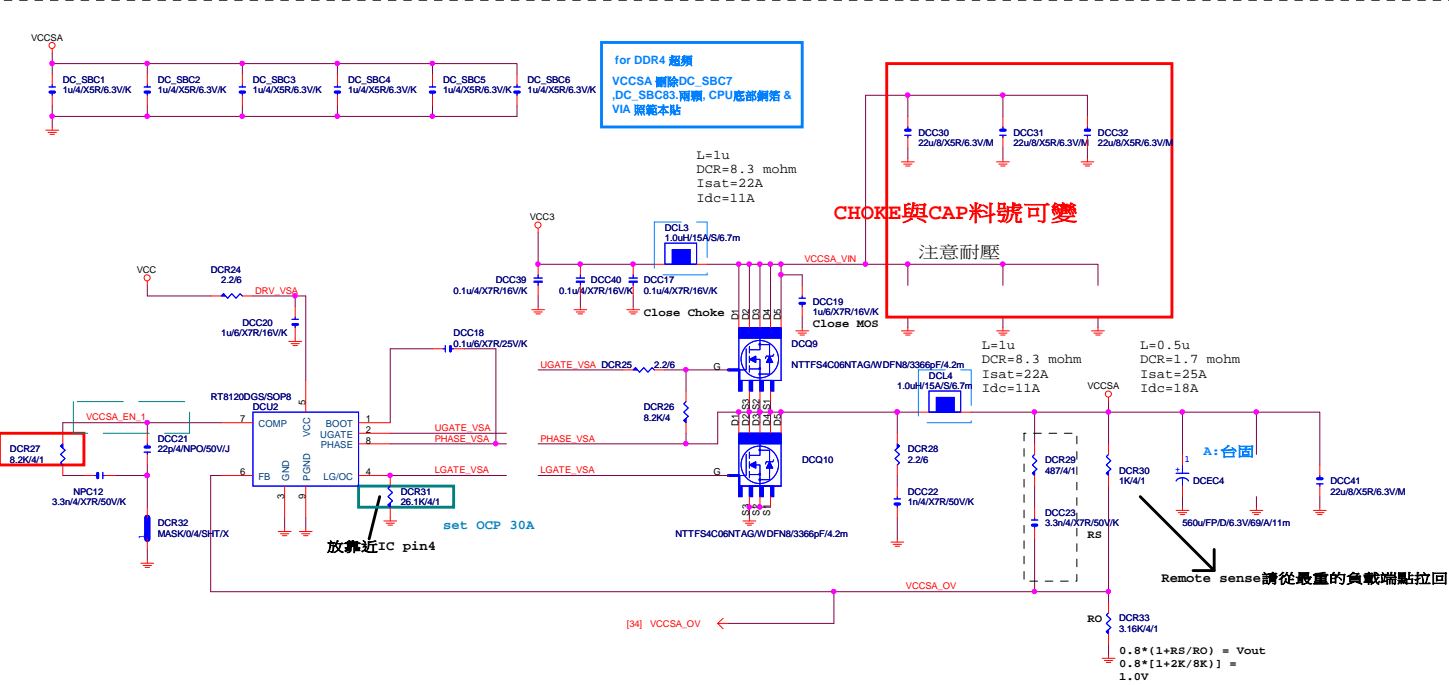
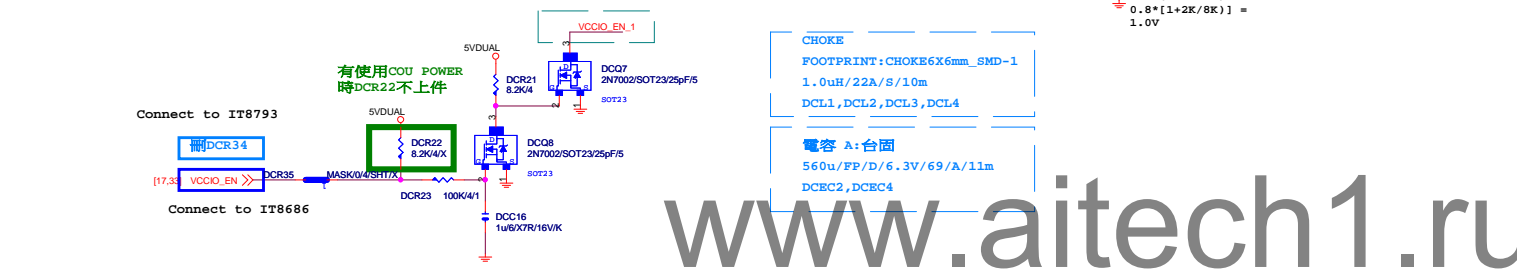
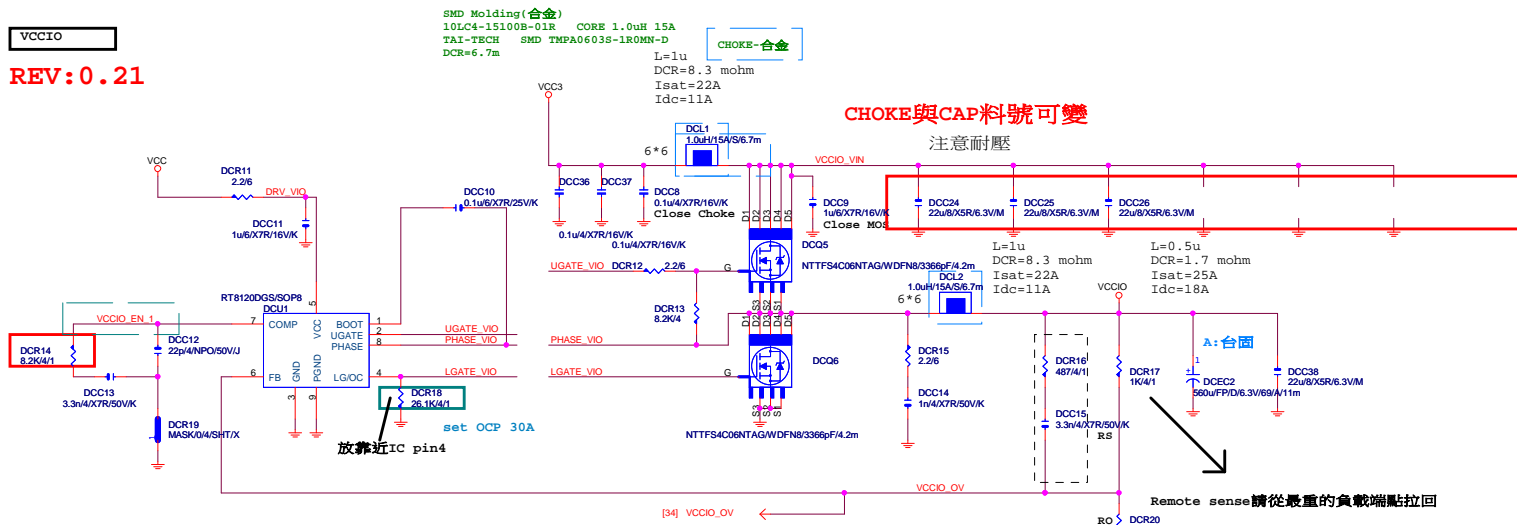


VCCGT CAP 560u*5PCS
22u*15PCS



VCCIO

REV:0.21



REV:0.2

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

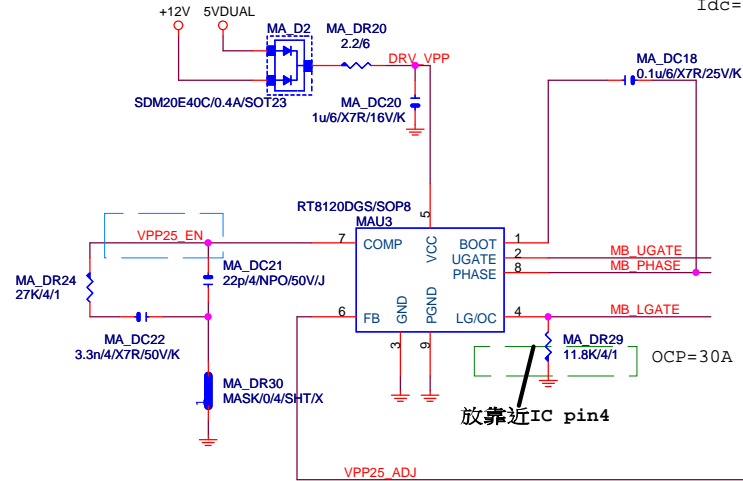
CHOKE-合金

4. VPP_25V CHOKE footprint 改CHOKE6X6mm_SMD-1

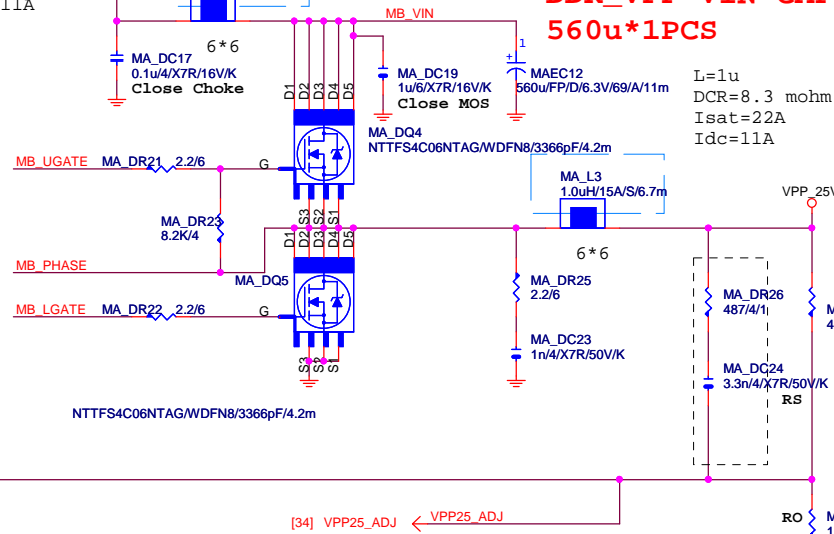
CHOKE與CAP料號可變

VPP_25V

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



放靠近IC pin4



DDR_VPP VIN CAP
560u*1PCS

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	

SUPPORT DDR4 2.5V

25A MAX

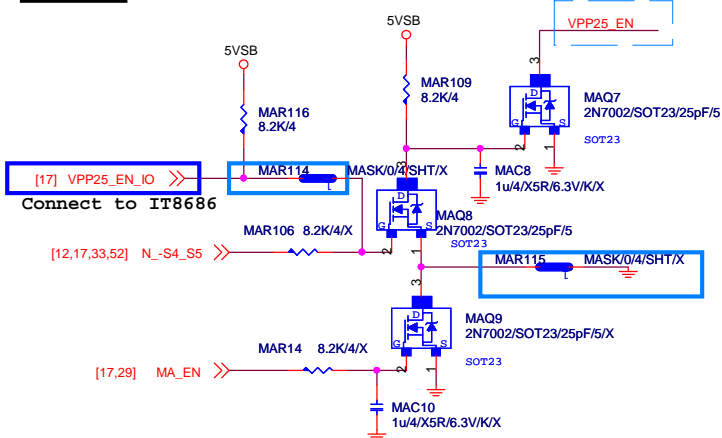
請放置CHOKE一出來位置. 先預留.
請自行確認ripple後再決定是否上件

Remote sense請從最重的負載端點拉回

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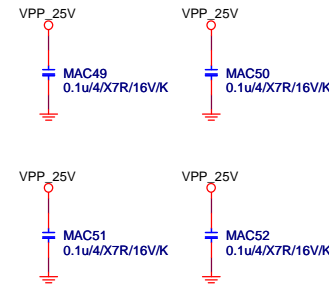
PWR_SEQ

* 刪 MA_DR32



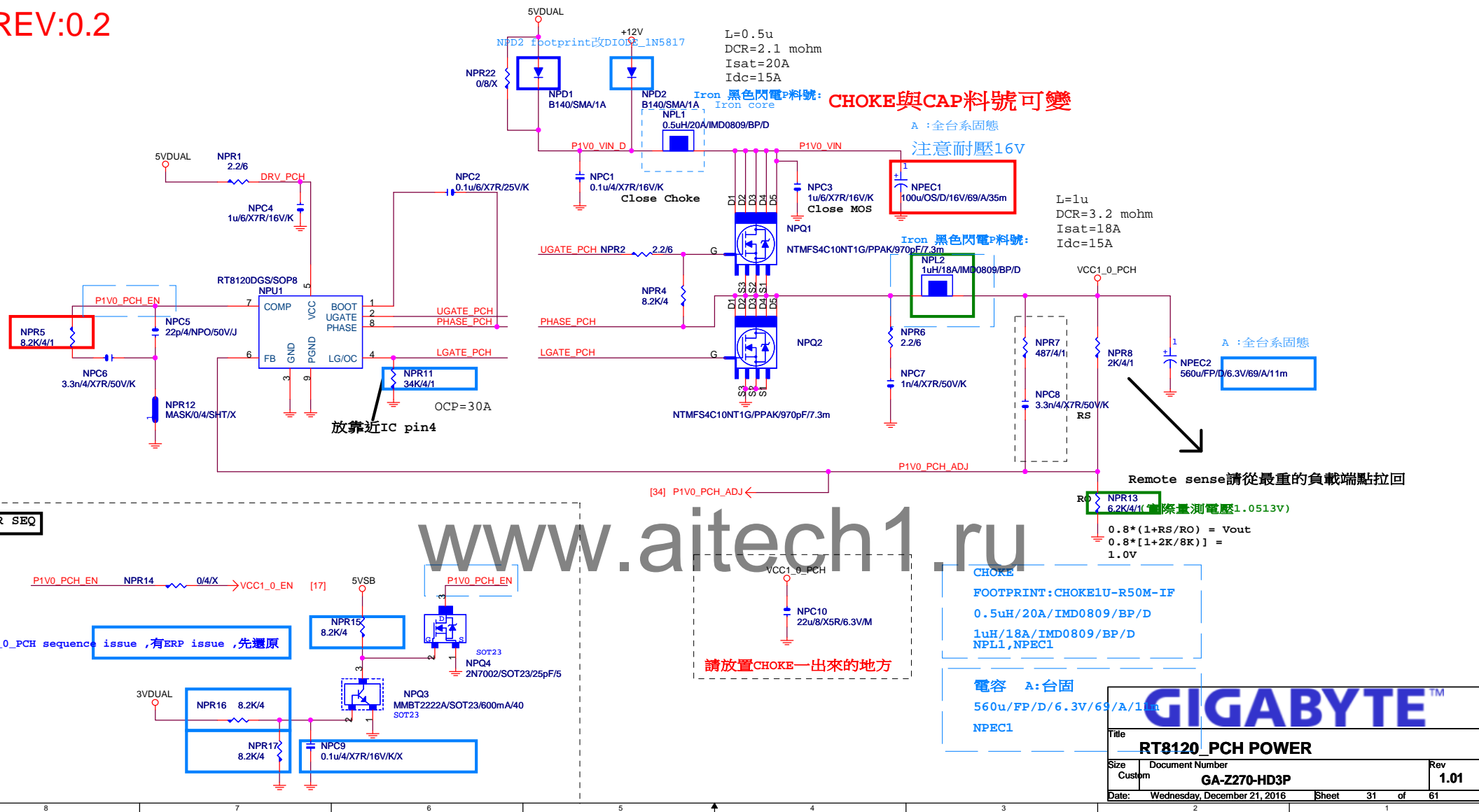
VPP CAP 560u*1PCS

* 大電容 x1



GIGABYTE™			
Title RT8120_VPP25 POWER			
Size Custom	Document Number GA-Z270-HD3P	Rev 1.01	
Date:	Wednesday, December 21, 2016	Sheet	30 of 61

REV:0.2

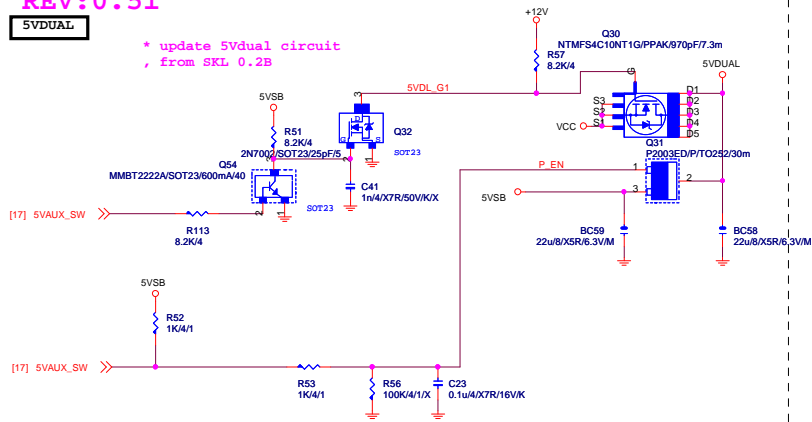


GIGABYTE™			
Title			
RT8120_PCH POWER			
Size	Document Number		Rev
Custom	GA-Z270-HD3P		1.01
Date:	Wednesday, December 21, 2016	Sheet	31 of 61

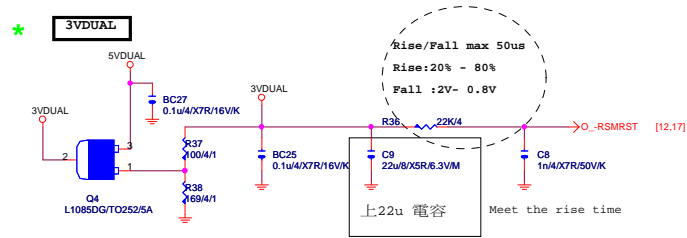
REV:0.51

5VDUAL

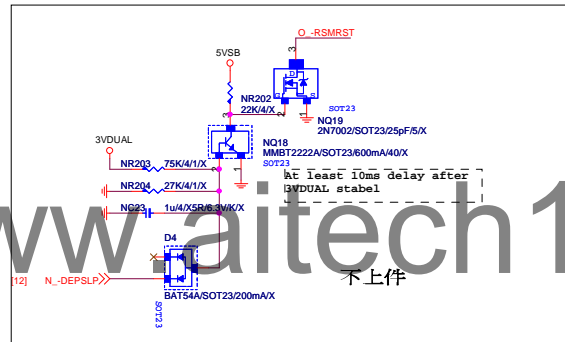
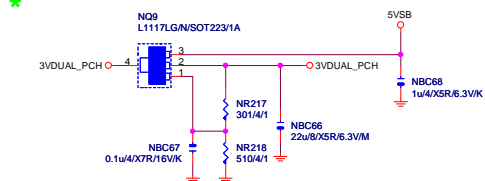
* update 5Vdual circuit
from SKL 0.2B



3VDUAL



3VDUAL_PCH

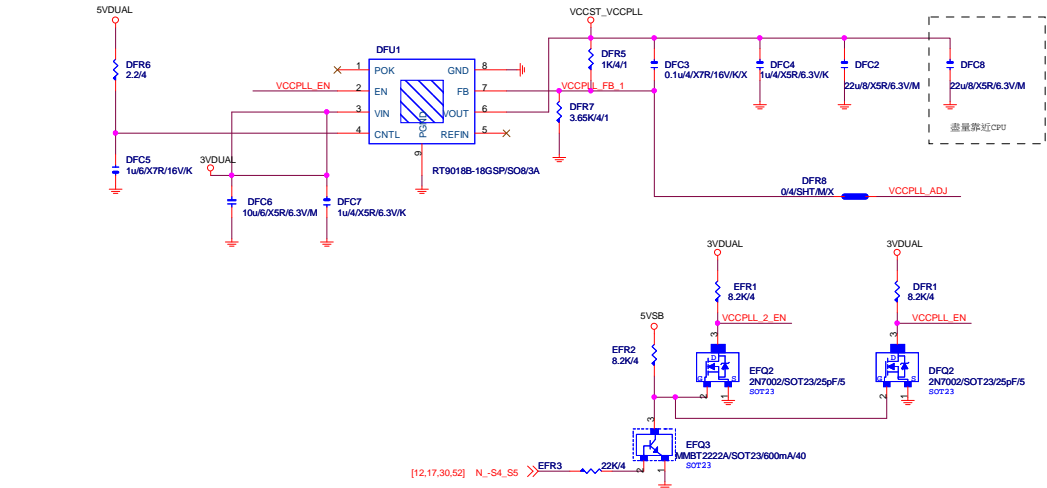


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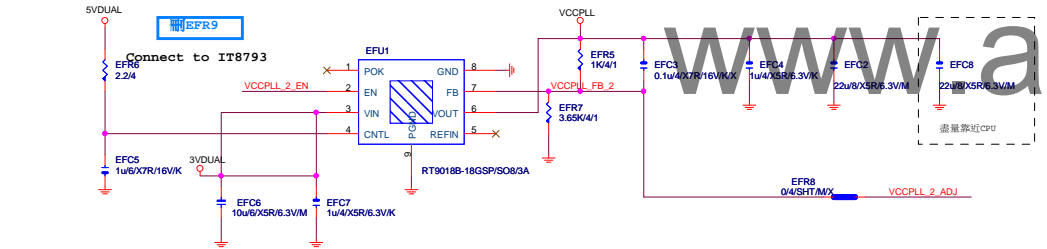
Gigabyte Technology

Title			DISCRETE POWER
Size	Custom	Document Number	GA-Z270-HD3P
Date	Wednesday, December 21, 2016	Sheet	32 of 61
Rev	1.01		

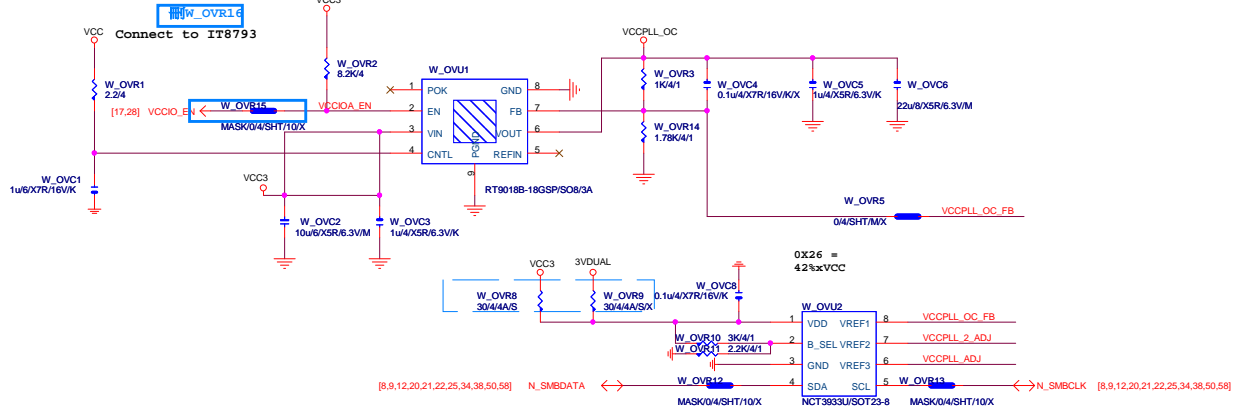
VCCST_VCCPLL 替換原先MOS開關線路



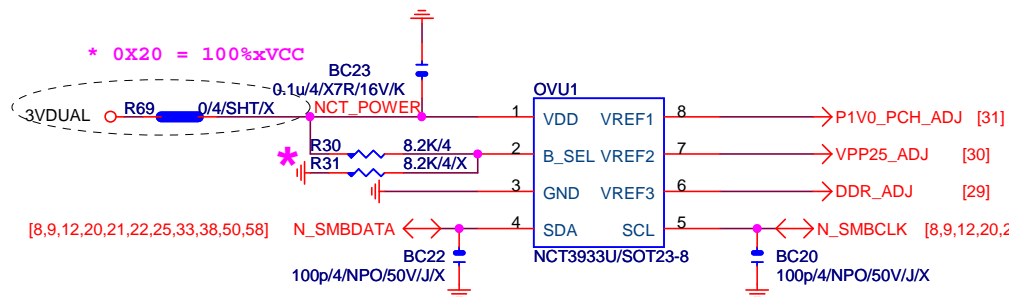
VCCPLL



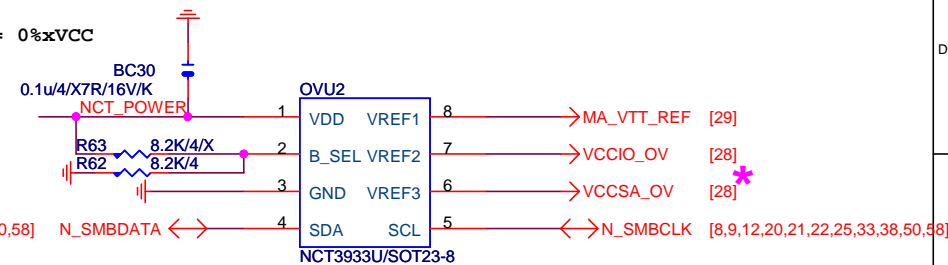
VCCPLL_OC



OVER VOLTAGE



0X2A = 0%xVCC



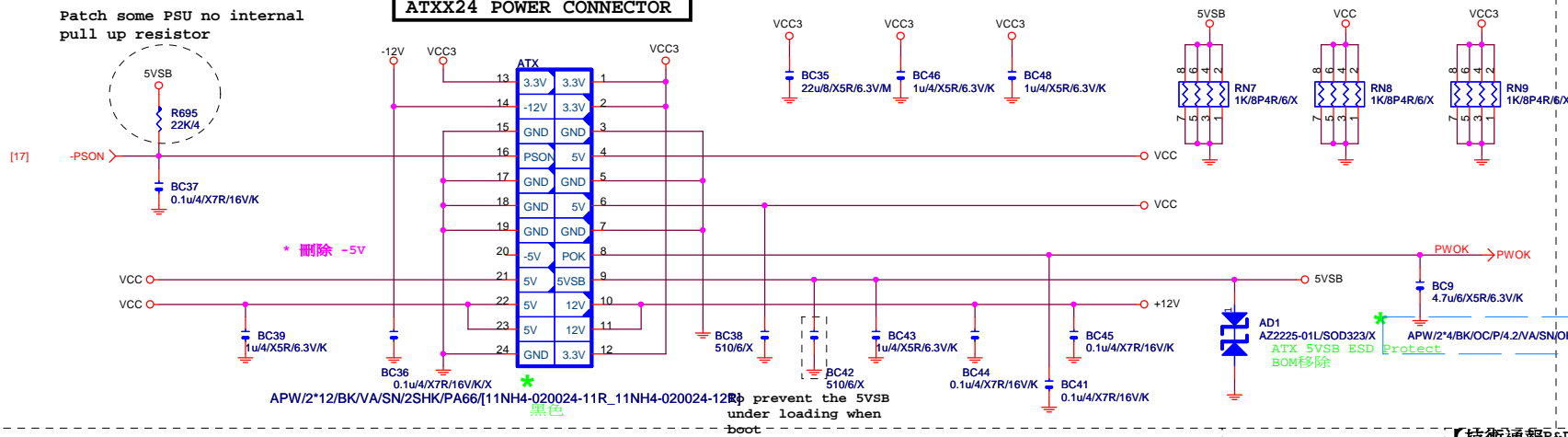
0X22 = 75%xVCC

* 删除 OVU3

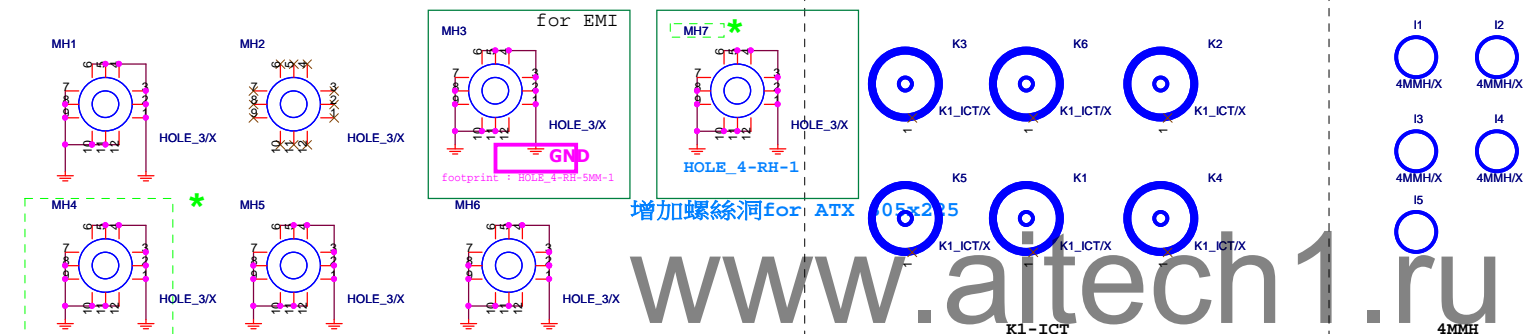
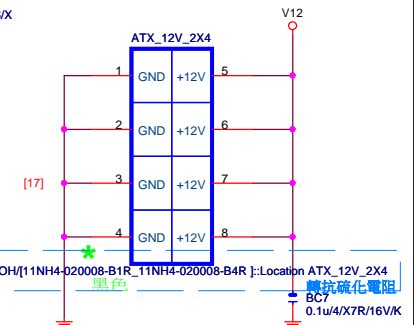
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology		
CPU CORE VR-2		
Size Custom	Document Number	Rev
GA-Z270-HD3P		1.01
Date:	Wednesday, December 21, 2016	Sheet 34 of 61

ATXX24 POWER CONNECTOR

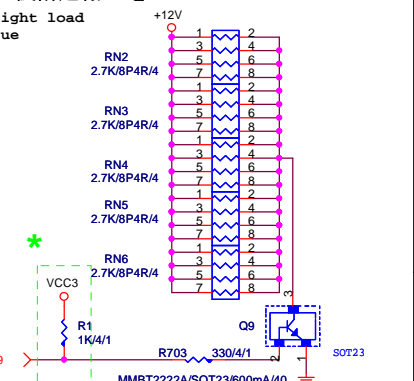


ATXX4 POWER CONNECTOR



【技術通報R&D技術通報153】

To fix 12V light load abnormal issue

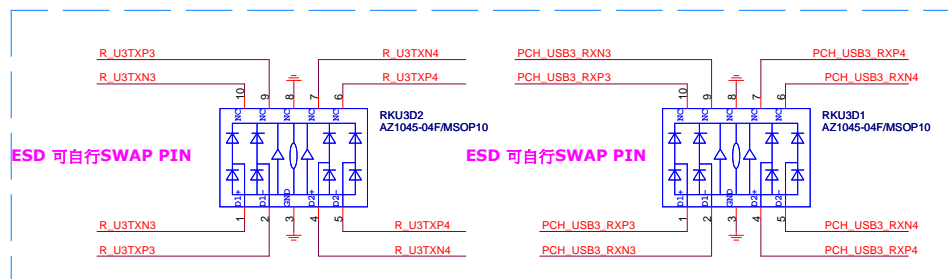
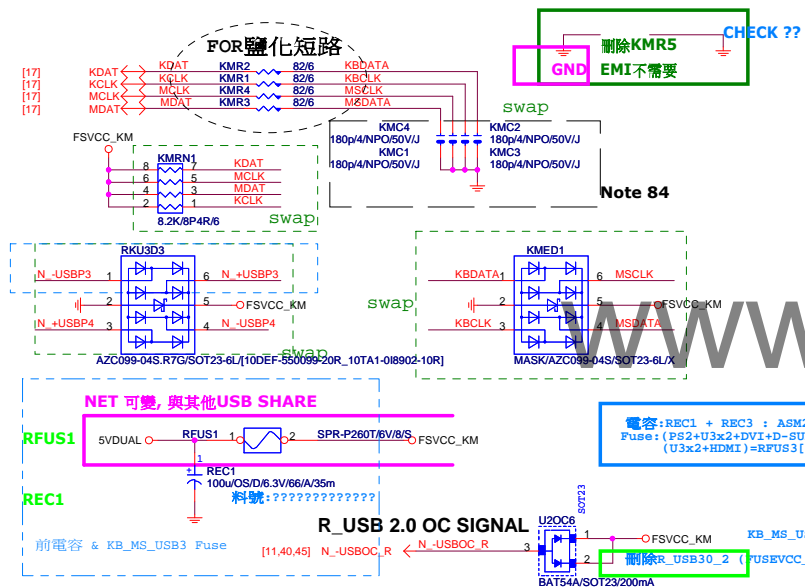
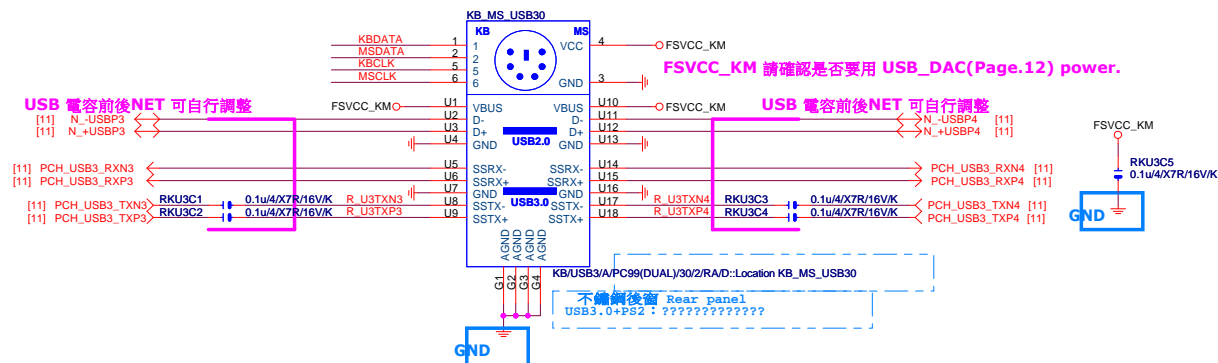


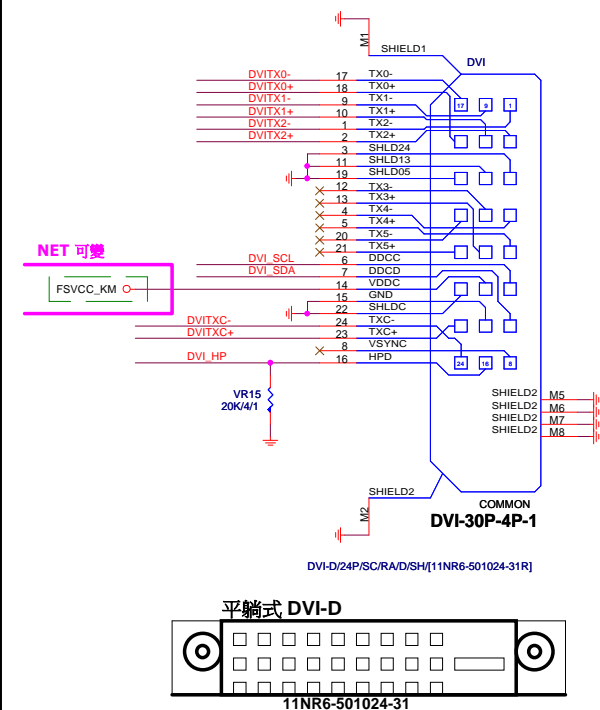
有TYPE-C螺絲洞改半圈, footprint : HOLE_4-RH-5MM-1
螺絲洞 check ~~~

-PROHOT

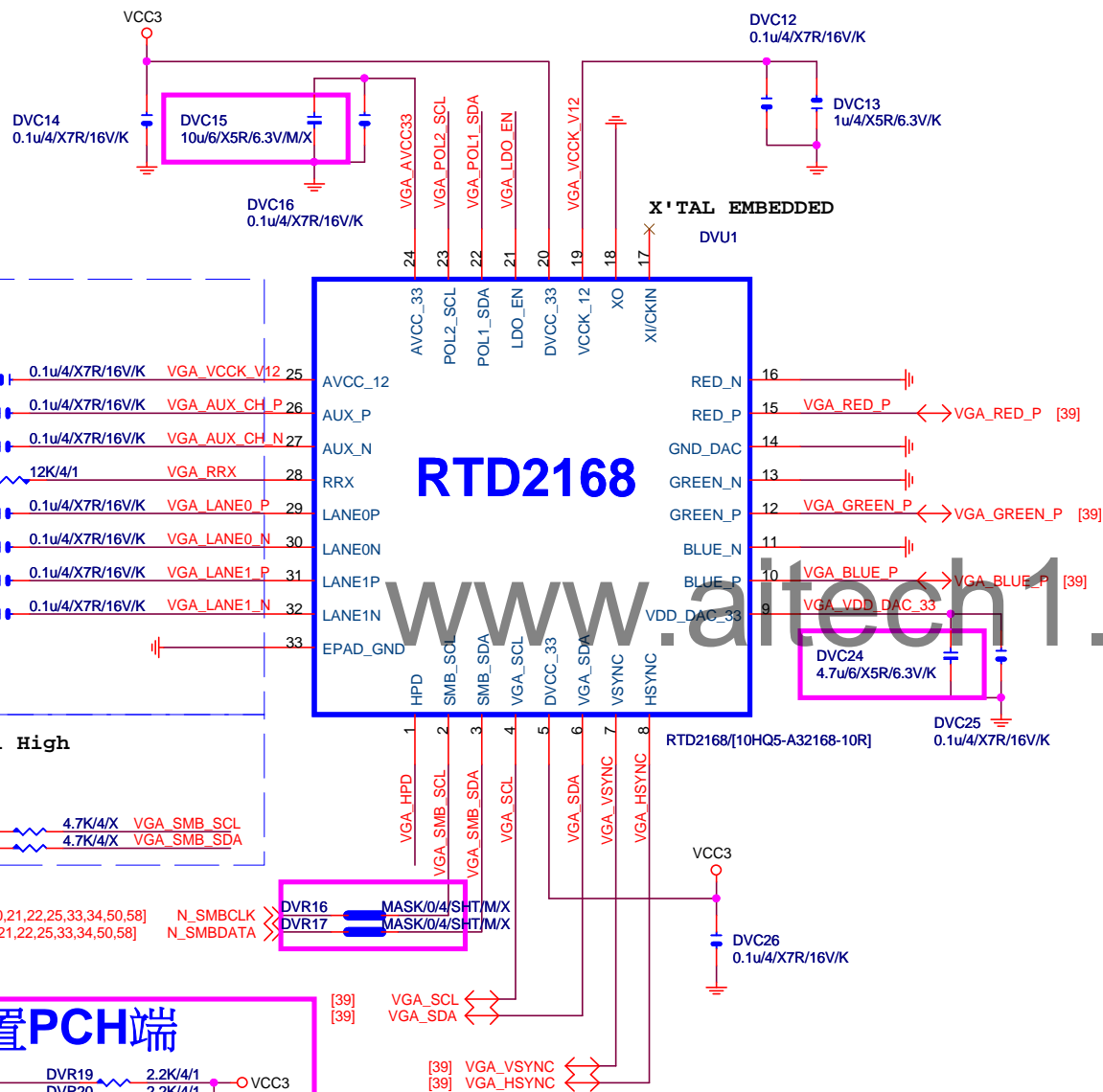
COUPON



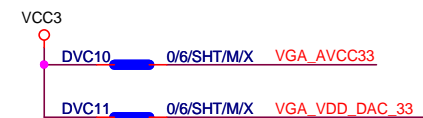




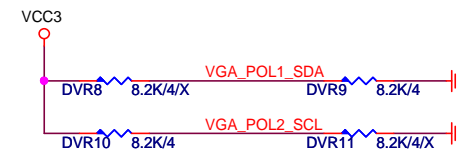
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POWER

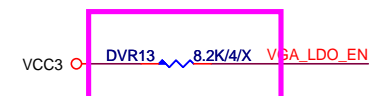


Power on latch



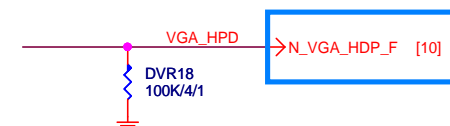
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	ROM ONLY MODE	EEPROM MODE

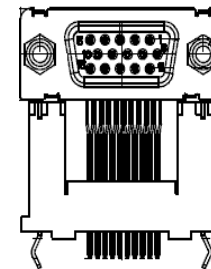
Embedded LDO



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

DP HPD



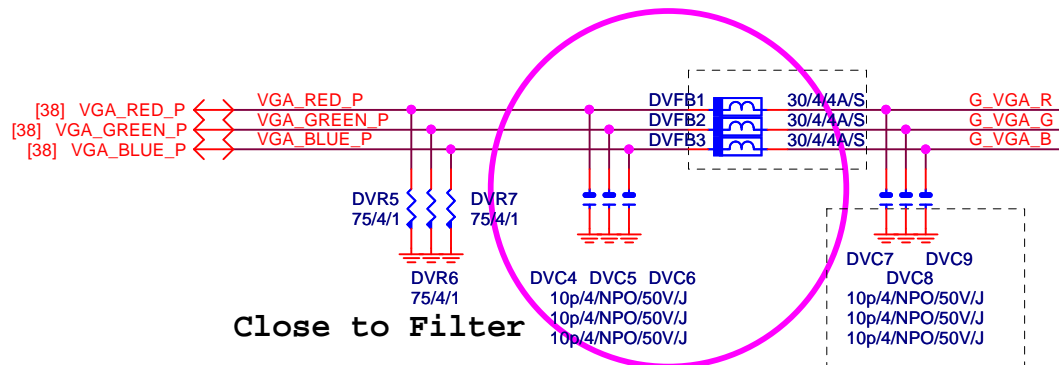
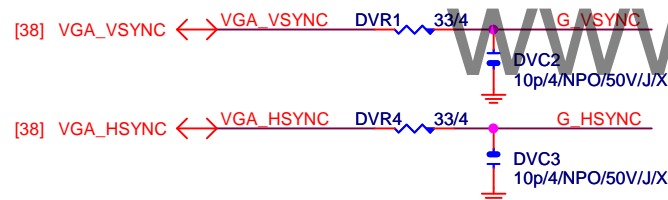
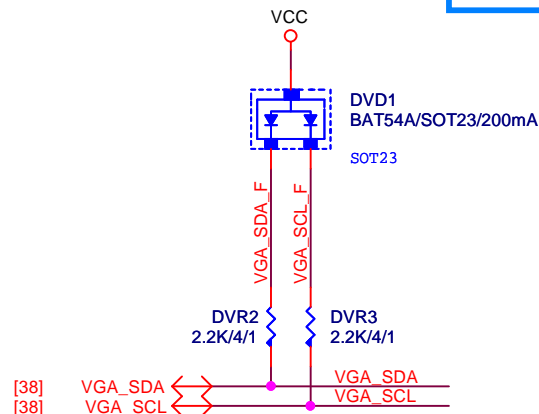
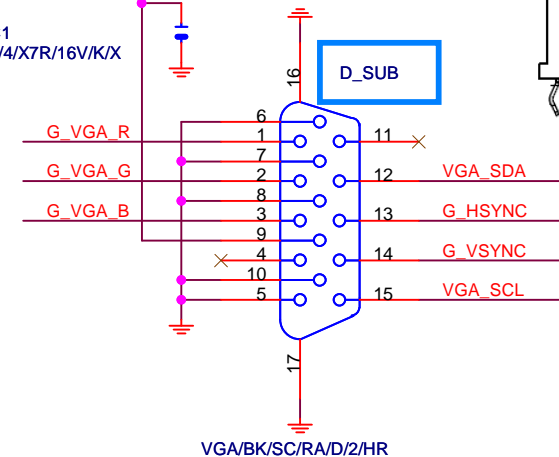


Fuse: (PS2+U3x2+DVI+D-SUB)=RFUS1[2.6A]

FSVCC_KM

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

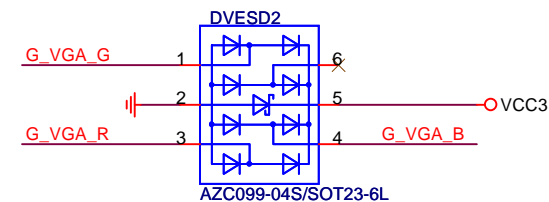
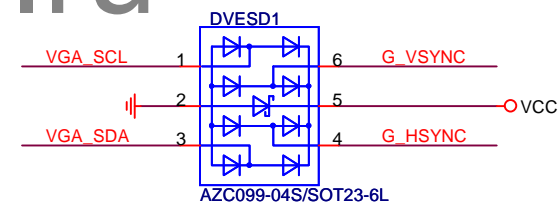
D_SUB



Close to Filter

FOR EMI

VGA ESD



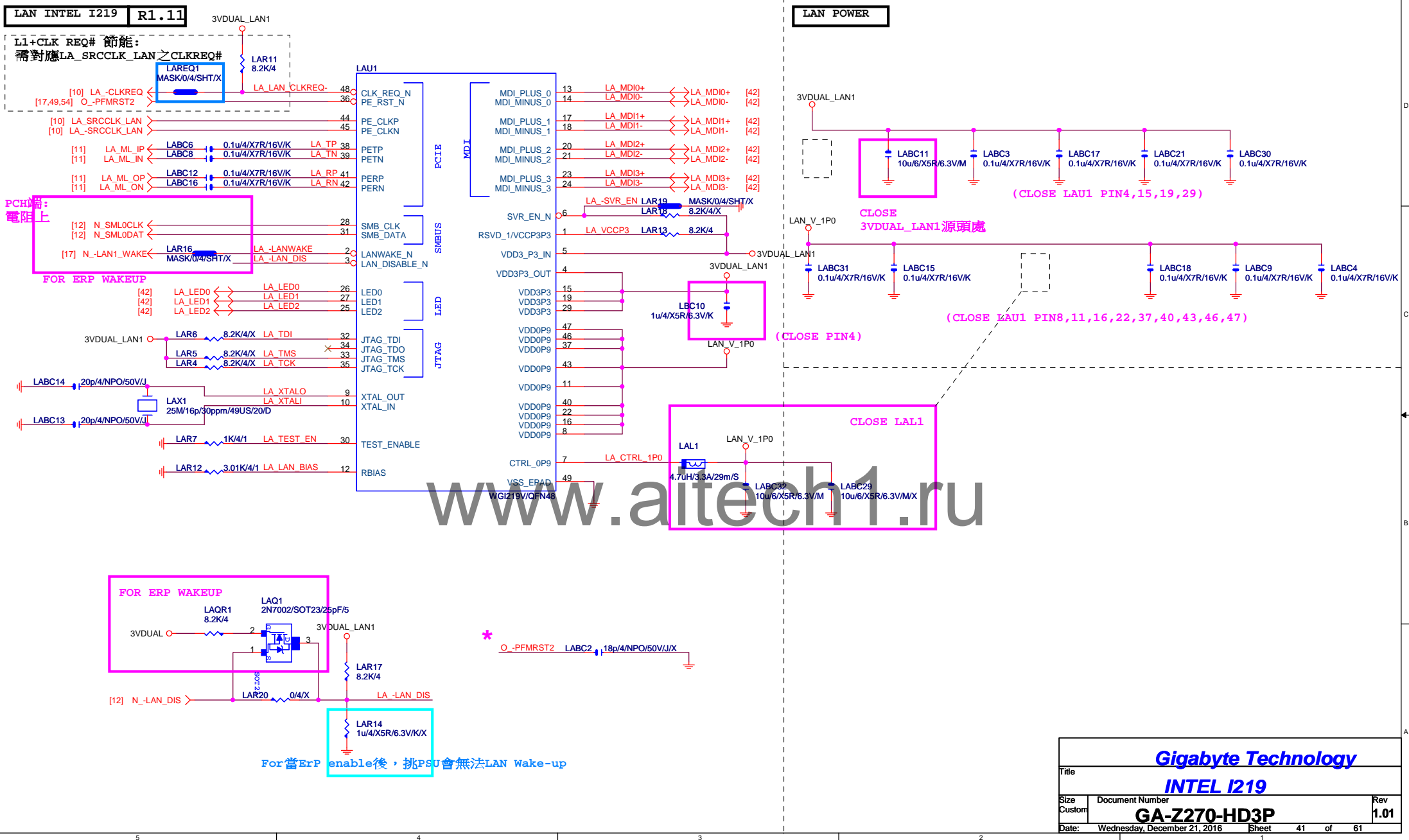
Gigabyte Technology

Title DP-VGA RTD2168

Size Custom Document Number GA-Z270-HD3P

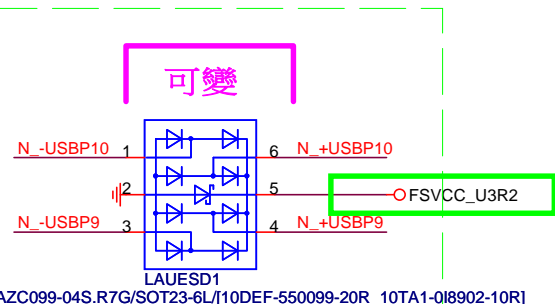
Rev 1.01

Date: Wednesday, December 21, 2016 Sheet 39 of 61



R1.11

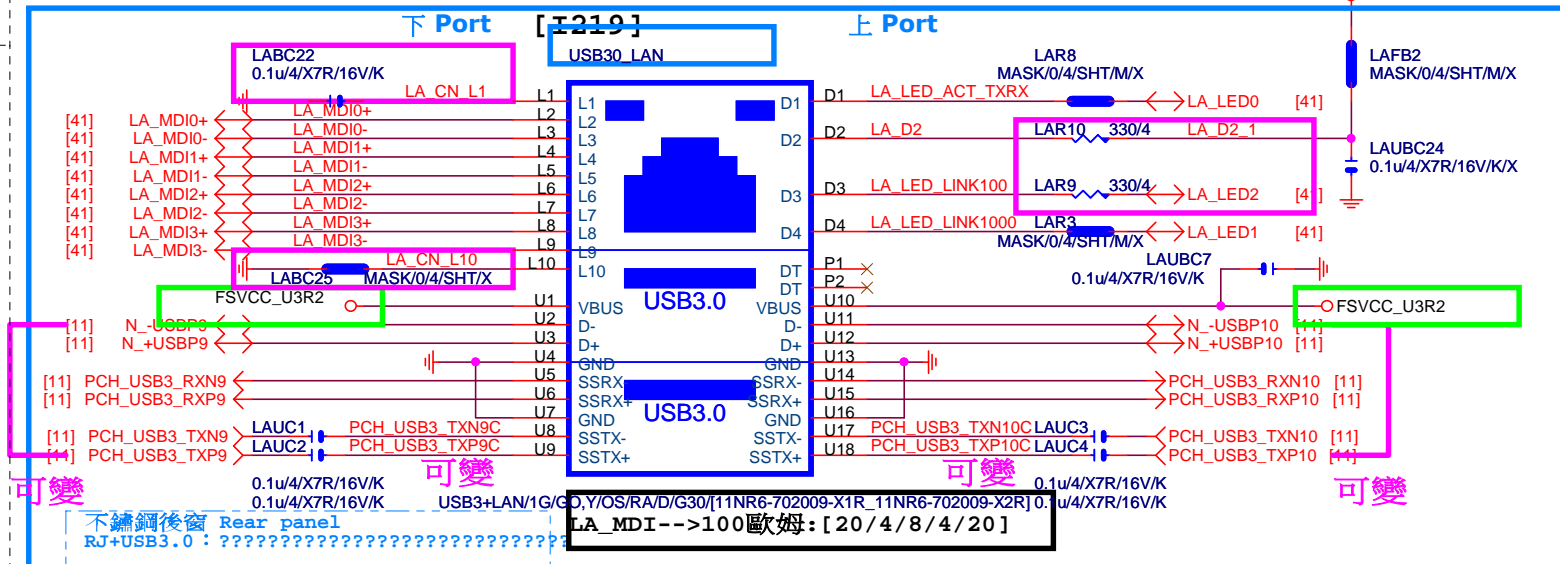
note:可變更USB NAME



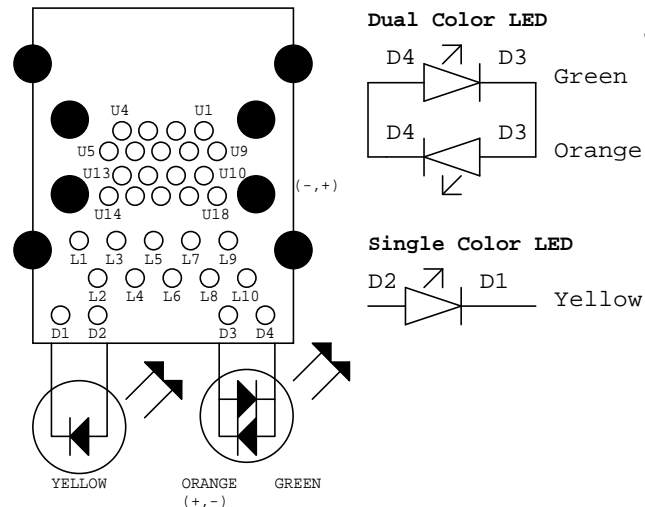
AZC099-04S.R7G/SOT23-6L/[10DEF-550099-20R_10TA1-0I8902-10R]

note:可變更USB NAME

from usb3_9/10 for Flex IO 不可改

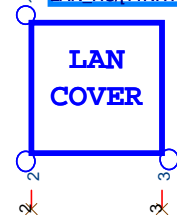


Dual Color LED



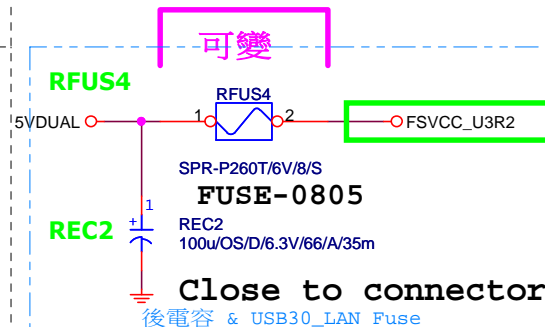
FOOT PRINT:LAN COVER

USB_LAN_HS
LAN_HS/11NH1-LNC001-11R/VX



可變
[視SPEC需求]

note:可變更FUSE



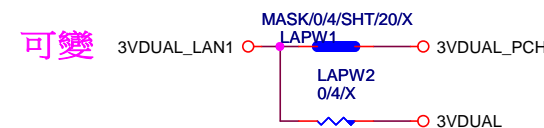
PS:視EMI需求



note: lan power連接及電流

For PVT :LAPW1 改 R0402-2-SHORT20

MASK/0/4/SHT/20/X



Gigabyte Technology

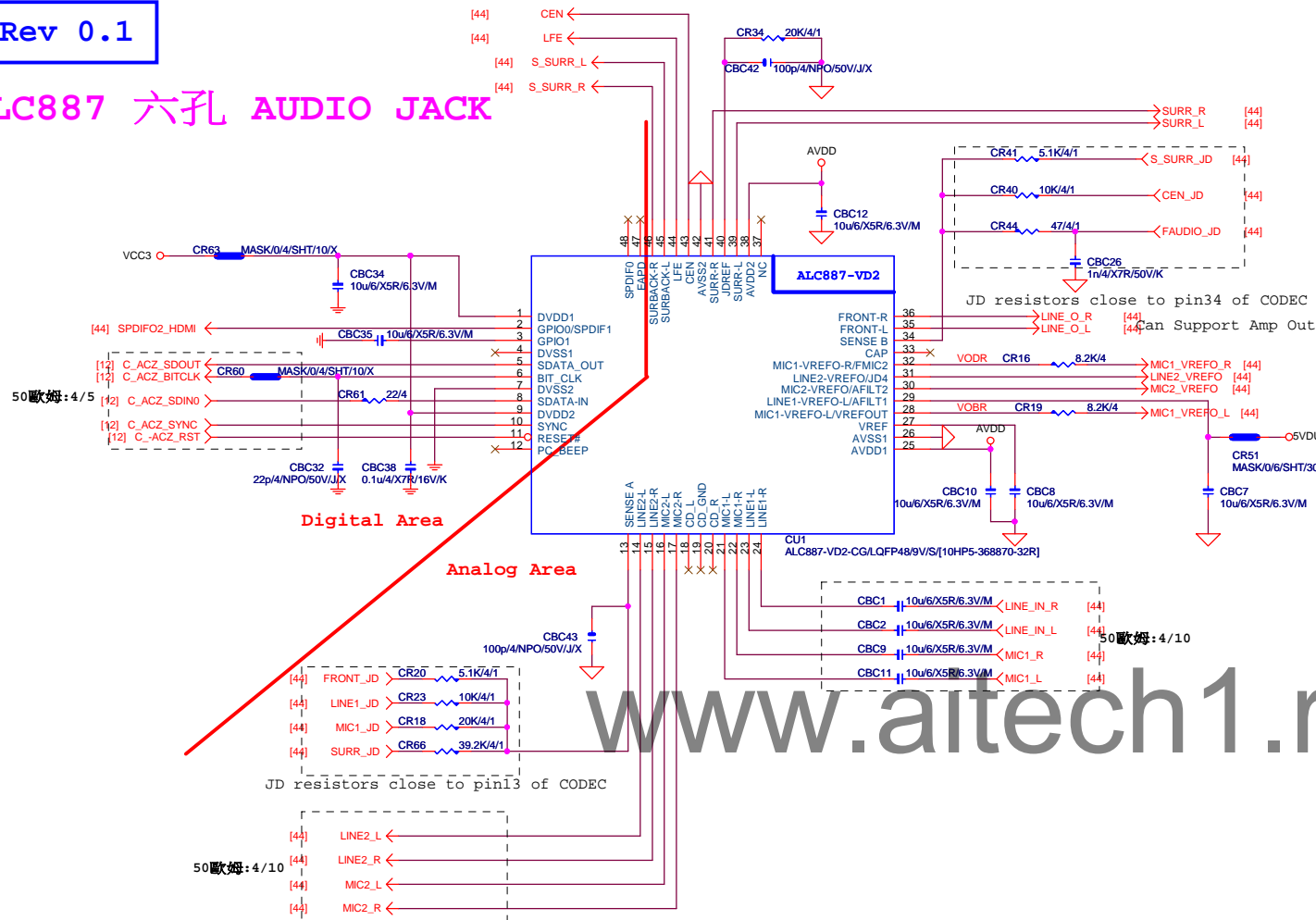
LAN CONNECTOR-INTEL I219

GA-Z270-HD3P

Title			
LAN CONNECTOR-INTEL I219			
Size	Document Number		Rev
Custom	GA-Z270-HD3P		1.01
Date:	Wednesday, December 21, 2016	Sheet	42 of 61

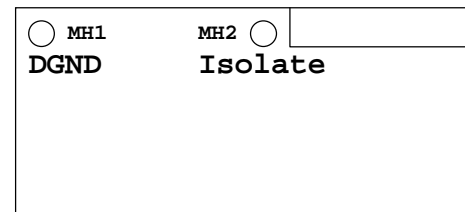
Rev 0.1

ALC887 六孔 AUDIO JACK



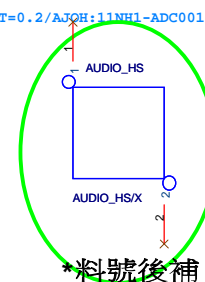
LAYOUT注意: 螺絲孔下GND方式

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)

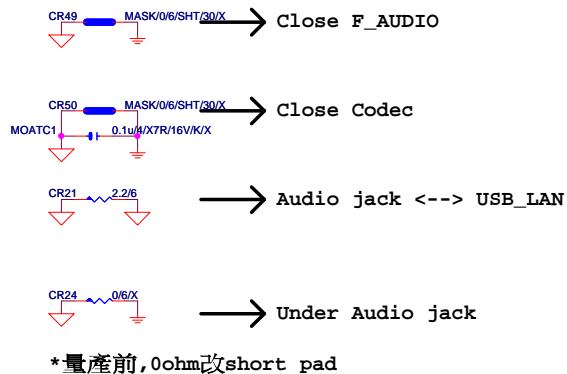
3. LED Reserve (上件與否和LED顏色, 依照各Model spec)

Gigabyte Technology

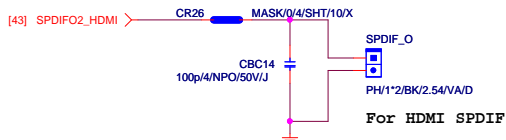
HD AUDIO ALC887

Title	HD AUDIO ALC887
Size	Document Number
Custom	GA-Z270-HD3P
Date	Wednesday, December 21, 2016
Sheet	43 of 61
Rev	1.01

Rev 0.1

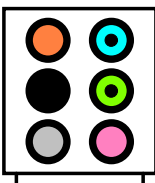


SPDIF_OUT



SPDIF_IN

AZALIA JACK

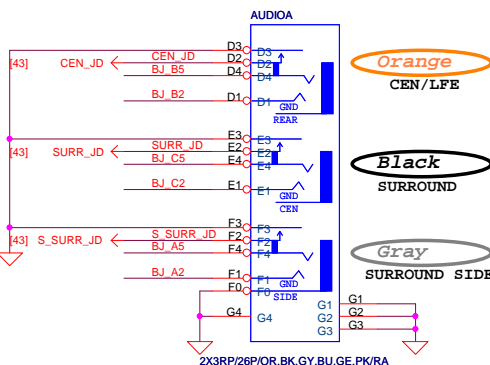
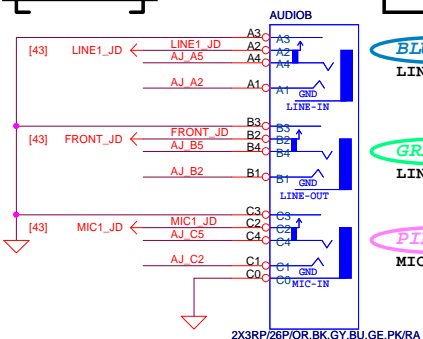


AZALIA JACK

BLUE
LINE-IN

GREEN
LINE-OUT

PINK
MIC-IN

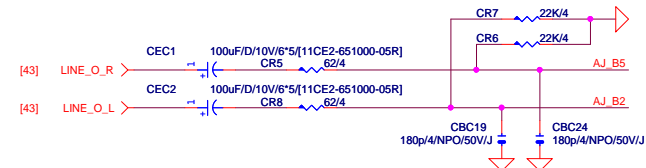


Orange
CEN/LFE

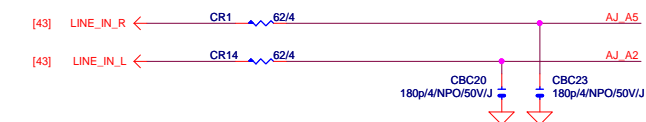
Black
SURROUND

Gray
SURROUND SIDE

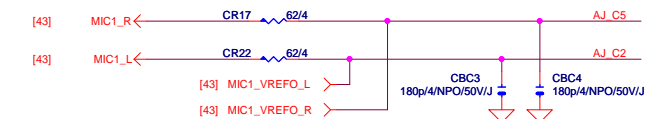
LINE-OUT



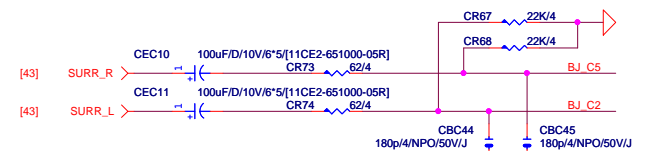
LINE-IN



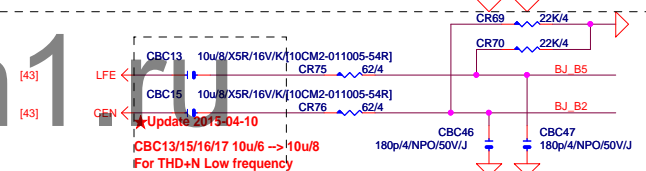
MIC-IN



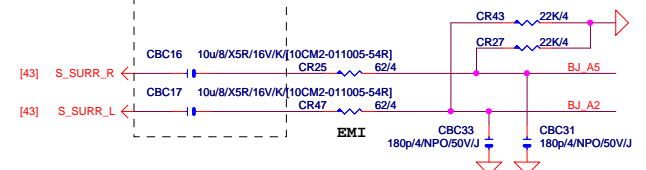
SURROUND



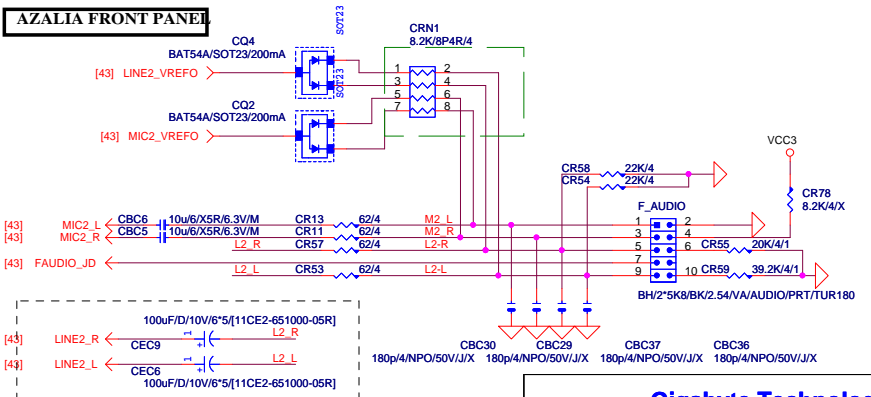
CEN/LFE



SURR BACK



AZALIA FRONT PANEL



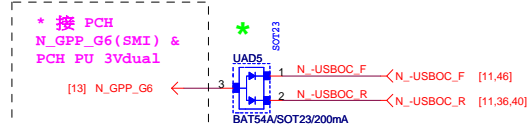
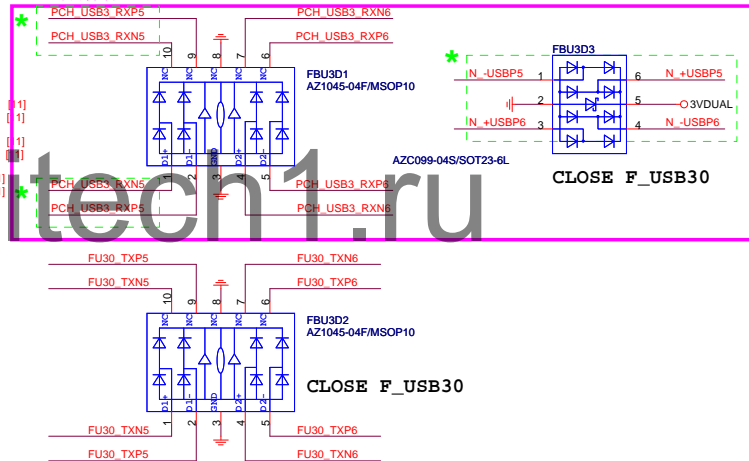
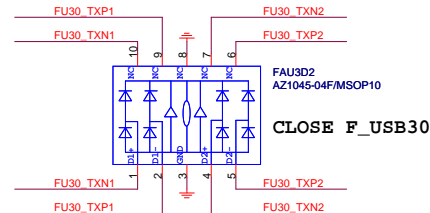
Gigabyte Technology

AUDIO JACK

GA-Z270-HD3P

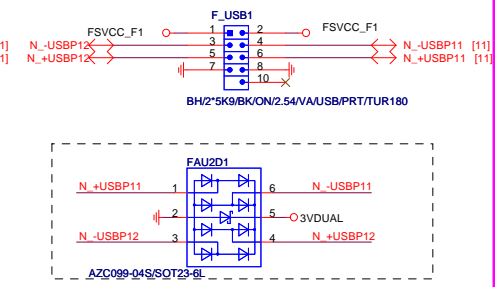
Rev 1.01

Date: Wednesday, December 21, 2016 Sheet 44 of 61

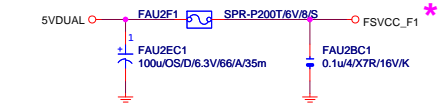


FRONT USB1

NET 可變

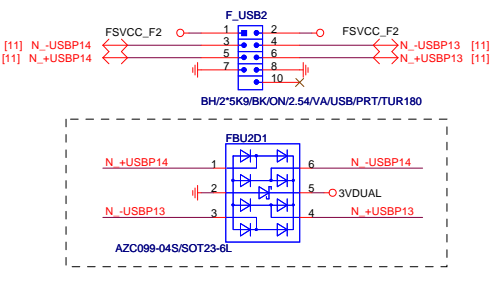


Close to connector
FUSE 2 Port 1 Fuse 2A

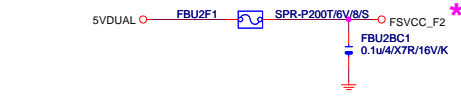


FRONT USB2

NET 可變



Close to connector
FUSE 2 Port 1 Fuse 2A



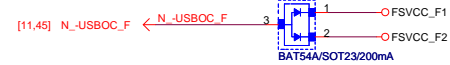
FRONT USB3

FRONT USB4

REAR USB1

REAR USB2

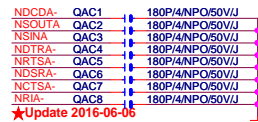
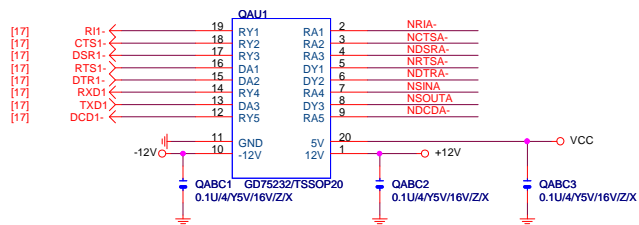
F_USB 2.0 OC SIGNAL



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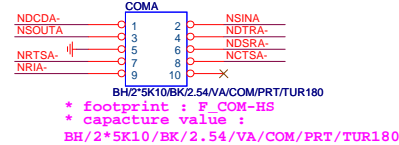
Rev: 0.81

COM PORT

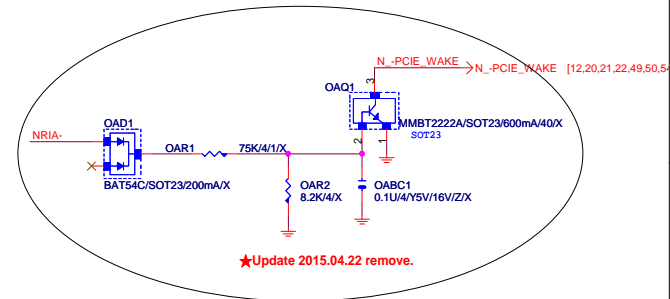


COM RI N/A

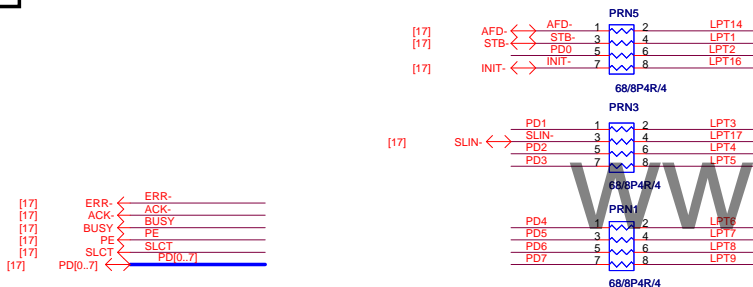
COMA



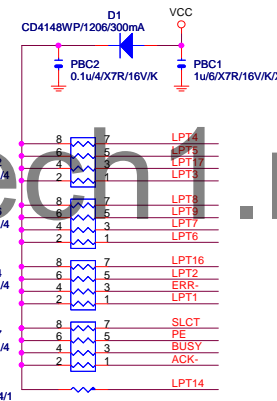
BOX HEADER



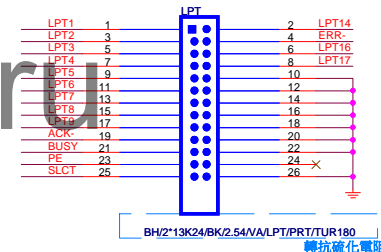
LPT PORT



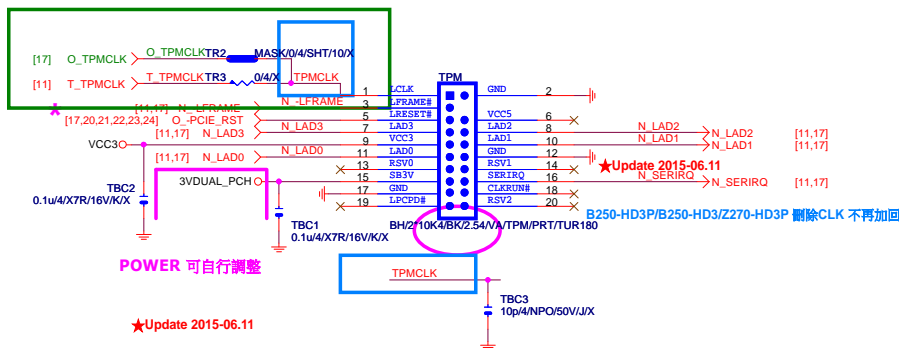
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R&D技術通報151 有使用PRINT PORT的
MODEL, 需使用新料號:10HP2-118728-72R。(CHIP IT8728F/EX (GB) ITE/SMD
QFP128 PRINTPORT SORTING)料件。串電阻33 ohm改為68 ohm。



TPM CONNECT

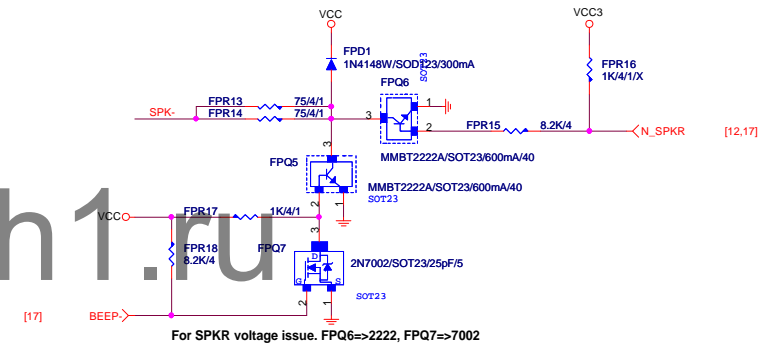
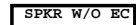
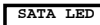
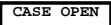


Thunderbolt

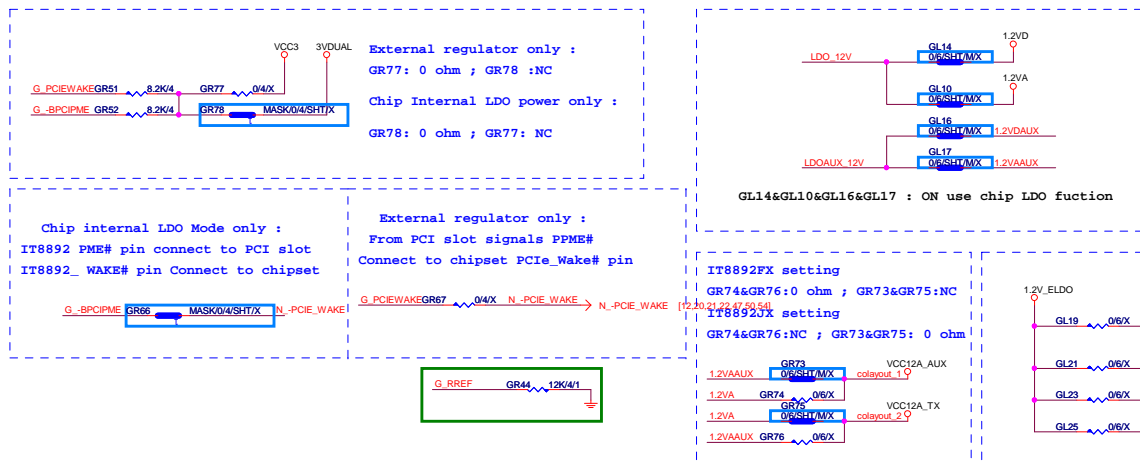
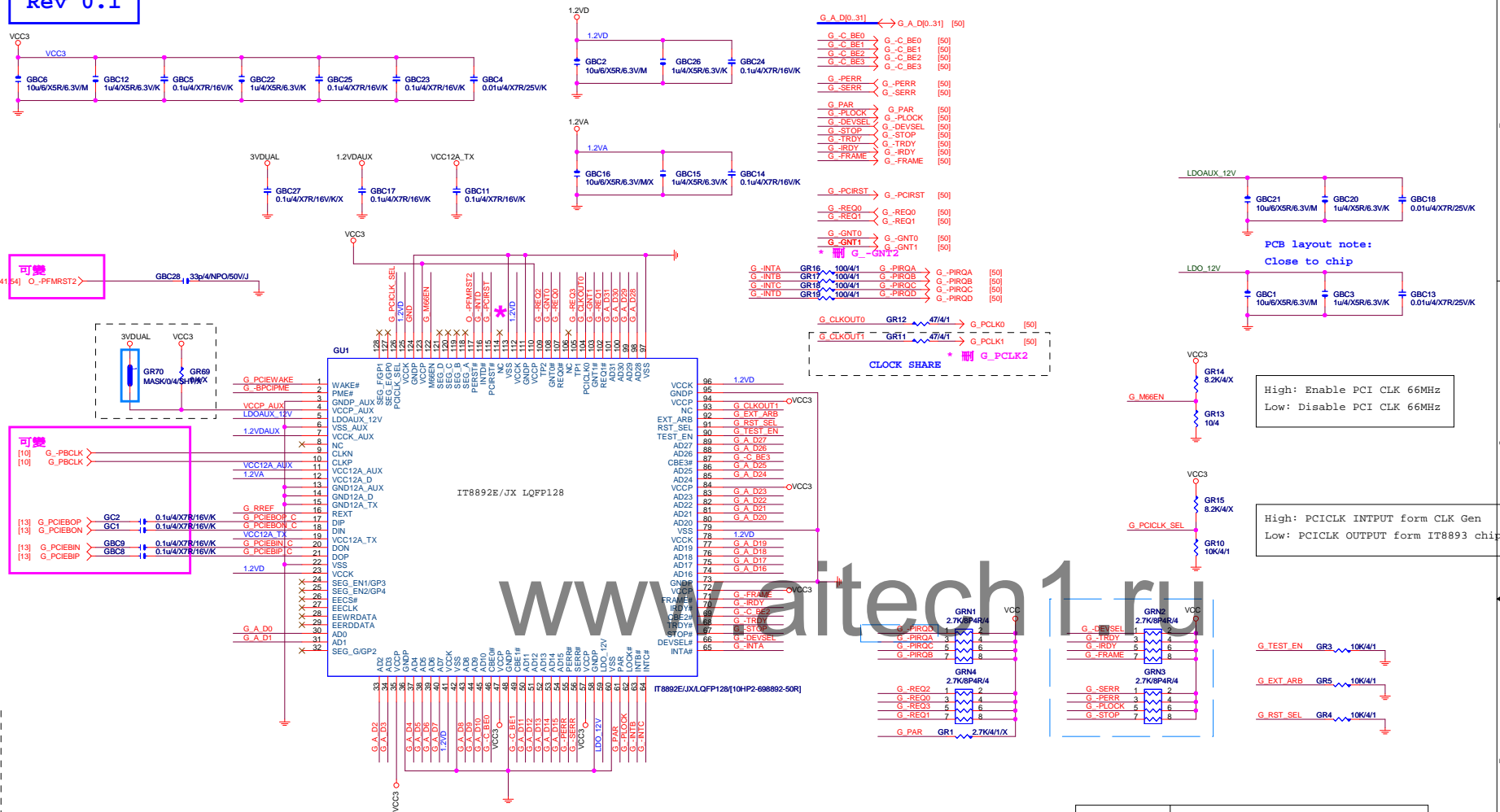
★Update 2015-12-29

Thunderbolt 3 pin header 移除

FRONT PANEL



Rev 0.1

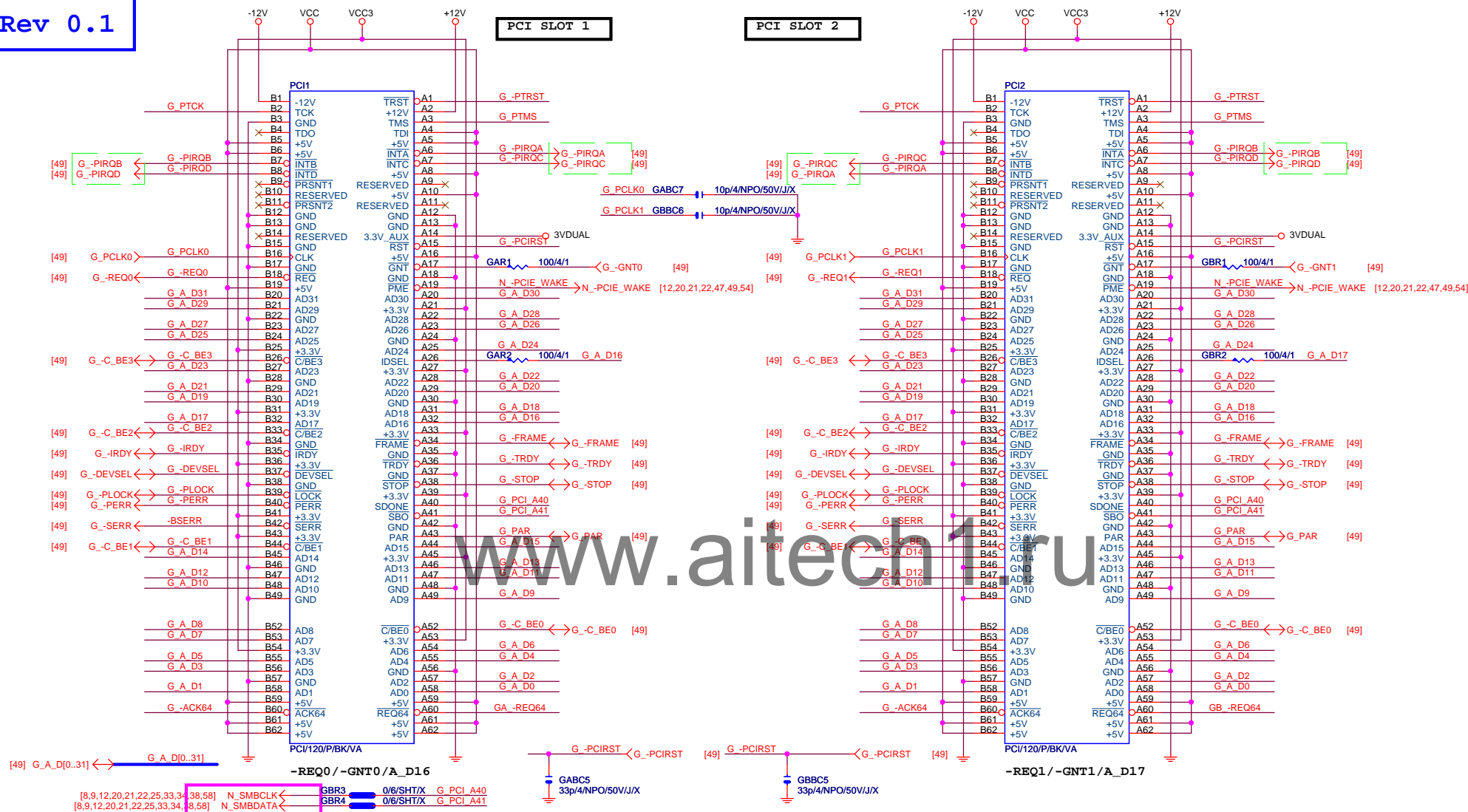


	Component change note
IT8892FX	GR70,GR74,GR76,GR78,GR66 : ON GR69,GR73,GR75,GR77,GR67 : NC GR44 resistor is 12k ohm GL14,GL10,GL16,GL17 : ON GL19,GL21,GL23,GL25: NC
IT8892JX	GR70,GR73,GR75,GR78,GR66 : ON GR69,GR74,GR76,GR77,GR67 : NC GR44 resistor is 18k ohm GL14,GL10,GL16,GL17 : ON GL19,GL21,GL23,GL25: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

Rev 0.1

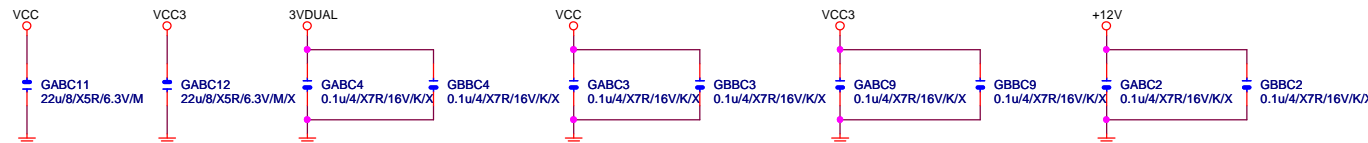
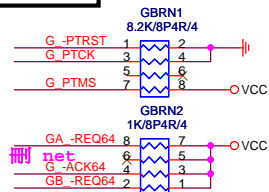
PCI SLOT 1

PCI SLOT 2



PCI PU

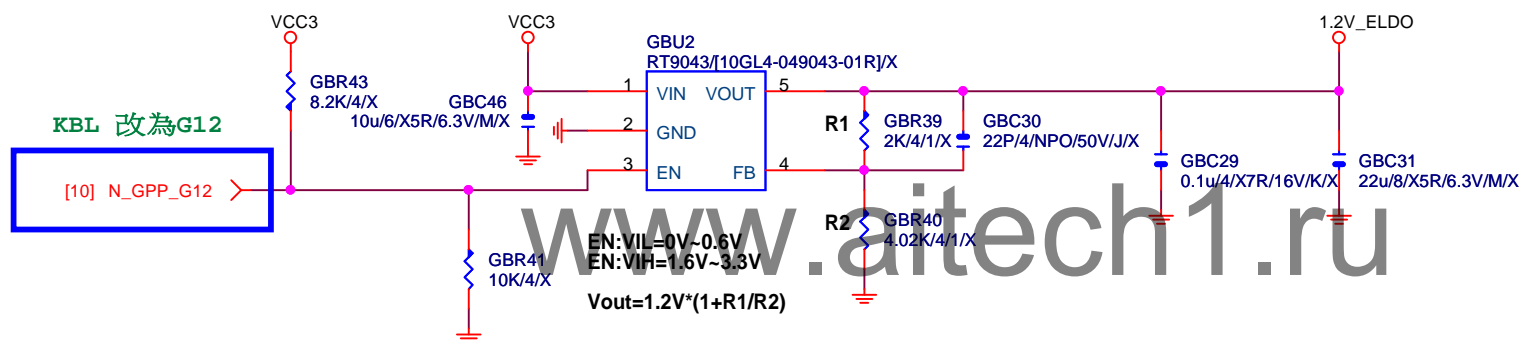
PCI CAP



GIGABYTE™			
Title			
PCI SLOT 1			
Size	Document Number	Rev	
Custom	GA-Z270M-D3P-WG	1.01	
Date:	Wednesday, December 21, 2016	Sheet	50 of 61

Rev 0.1

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Gigabyte Technology

Title

ASM1085 POWER

Size
Custom

Document Number

GA-Z270-HD3P

Rev
1.01

Date: Wednesday, December 21, 2016

Sheet 51 of 61

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
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Document Number

GA-Z270-HD3P

Rev

1.01

Date:

Wednesday, December 21, 2016

Sheet

52

of

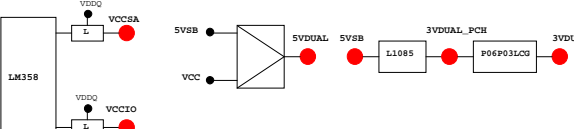
61

IN NAME	PWR	POWER STATE	Default	USAGE	NOTE
GPP_A0	MAIN	NATIVE	N_KBRST		P/U 6.2K VCC3
GPP_A1	MAIN	NATIVE	N_LAD0		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_SRRIRQ		P/U 6.2K VCC3
GPP_A7	MAIN	NATIVE	N_LDRQ		P/U 6.2K 3VDDAL
GPP_A8	MAIN	NATIVE	N_GPP_A8		P/U 6.2K VCC3
GPP_A9	MAIN	NATIVE	N_LPC24MB		N/A
GPP_A10	MAIN	NATIVE	N_LPC24MA		N/A
GPP_A11	MAIN	NATIVE	N_P_PWM	P/U	8.2K 3VDDAL PCH
GPP_A12	MAIN	NATIVE	N_GPP_A12		P/U 6.2K VCC3
GPP_A13	MAIN	NATIVE	N_G_WARN		N/A
GPP_A14	MAIN	NATIVE	N_GPP_A14		P/U 8.2K 3VDDAL
GPP_A15	MAIN	NATIVE	N_G_ACK		N/A
GPP_B0	MAIN	CORE_V10	N_DDR_V_SEL		P/U 6.2K VCC
GPP_B1	MAIN	CORE_V11	N/A		N/A
GPP_B2	MAIN	GPI	N_VRALEST		P/U 8.2K 3VDDAL
GPP_B5	MAIN	GPI	N_PCTIE16_PR		P/U 6.2K VCC3
GPP_B6	MAIN	GPI	N_PCTIE1_PR1		P/U 6.2K VCC3
GPP_B7	MAIN	GPI	N_PCTIE1_PR2		P/U 6.2K VCC3
GPP_B8	MAIN	GPI	N_PCTIE4_PR		P/U 6.2K 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	FLPSTR	N_FPMRST		N/A
GPP_B14	MAIN	N-H-Z	GPO	N_SPKR	N/A
GPP_B18	MAIN	N-H-Z	GPO	N_GPP_B18	P/D 1K GND
GPP_B20	MAIN	GPI	N_GPP_B20		P/U 8.2K 3VDDAL
GPP_B22	MAIN	GPI	N_GPP_B22		P/D 1K GND
GPP_C0	MAIN	SMCLK	N/A		N/A
GPP_C1	MAIN	SMCDATA	N/A		N/A
GPP_C2	MAIN	N-H-Z	GPO	N_LPCFMR	N/A
GPP_C3	MAIN	SMCLK	N_SMCLK		P/U 499 3VDDAL
GPP_C4	MAIN	SMCLDAT	N_SMCLDAT		P/U 499 3VDDAL
GPP_C5	MAIN	N-H-Z	GPO	N_GPP_C5	N/A
GPP_C6	MAIN	GPI	N_SMCLK		P/U 6.2K 3VDDAL
GPP_C7	MAIN	GPI	N_SMCLDAT		P/U 6.2K 3VDDAL
GPP_D4	MAIN	GPI	N_GPP_D4		P/U 6.2K 3VDDAL
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 6.2K VCC3
GPP_D18	MAIN	GPI	N_GPP_D18		P/U 6.2K VCC3
GPP_D19	MAIN	GPI	N_GPP_D19		P/U 6.2K VCC3
GPP_D20	MAIN	GPI	N_GPP_D20		P/U 6.2K VCC3
GPP_D23	MAIN	GPI	N_GPP_D23		P/U 6.2K 3VDDAL
GPP_E0	MAIN	NATIVE	N_GPP_E0		P/U 6.2K VCC3
GPP_E1	MAIN	NATIVE	N_GPP_E1		P/U 6.2K VCC3
GPP_E2	MAIN	NATIVE	N_GPP_E2		P/U 6.2K VCC3
GPP_E3	MAIN	GPI	N_CPU_5		P/U 6.2K VCC3
GPP_E4	MAIN	GPI	N_DEVSUP0		P/U 6.2K VCC3
GPP_E6	MAIN	GPI	N_DEVSUP2		P/U 6.2K VCC3
GPP_E7	MAIN	GPI	N_GT_5		P/U 6.2K VCC3
GPP_E8	MAIN	GPI	N_NOTALED		N/A
GPP_E9	MAIN	N-H-Z	GPI	N_USBOC_F	N/A
GPP_E10	MAIN	N-H-Z	GPI	N_USBOC_R	N/A
GPP_E11	MAIN	N-H-Z	GPI	N_USBOC_R	N/A
GPP_E12	MAIN	N-H-Z	GPI	N_USBOC_F	N/A
GPP_F0	MAIN	NATIVE	N_GPP_F0		P/U 6.2K VCC3
GPP_F1	MAIN	NATIVE	N_GPP_F1		P/U 6.2K VCC3
GPP_F2	MAIN	NATIVE	N_GPP_F2		P/U 6.2K VCC3
GPP_F3	MAIN	GPI	N_GPP_F3		P/U 6.2K VCC3
GPP_F4	MAIN	GPI	N_GPP_F4		P/U 6.2K VCC3
GPP_F5	MAIN	GPI	N_GPP_F5		P/U 6.2K VCC3
GPP_F6	MAIN	GPI	N_DEVSUP5		P/U 6.2K VCC3
GPP_F10	MAIN	GPI	N_GPP_F10		P/U 6.2K VCC3
GPP_F11	MAIN	GPI	N_GPP_F11		P/U 6.2K VCC3
GPP_F12	MAIN	GPI	N_GPP_F12		P/U 6.2K VCC3
GPP_F13	MAIN	GPI	N_GPP_F13		P/U 6.2K VCC3
GPP_F14	MAIN	GPI	A_SKTQCC		P/U 6.2K VCC3
GPP_F15	MAIN	GPI	N_USBOC_F		N/A
GPP_F16	MAIN	GPI	N_USBOC_F		N/A
GPP_F17	MAIN	GPI	N_USBOC_R		N/A
GPP_F18	MAIN	GPI	N_USBOC_7		P/U 6.2K 3VDDAL
GPP_F22	MAIN	GPI	N_GPP_F22		P/U 6.2K VCC3
GPP_F23	MAIN	GPI	N_GPP_F23		P/U 6.2K VCC3
GPP_G0	MAIN	GPO	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
GPP_G16	MAIN	GPI	N_GPP_G16		N/A
GPP_G18	MAIN	GPI	N_GPP_G18		P/U 6.2K VCC3
GPP_G19	MAIN	GPI	N_GPP_G19		P/U 6.2K VCC3
GPP_G20	MAIN	GPI	N_GPP_G20		P/U 6.2K VCC3
GPP_G21	MAIN	GPI	N_GPP_G21		P/U 6.2K VCC3
GPP_G22	MAIN	GPI	N_GPP_G22		P/U 6.2K VCC3
GPP_H0	MAIN	GPI	M2_CLKREQ		P/U 6.2K VCC3
GPP_H12	MAIN	GPO	N_GPP_H12		P/U 6.2K VCC3
GPP_H19	MAIN	GPI	N_GPP_H19		P/U 6.2K 3VDDAL
GPP_H20	MAIN	GPI	N_GPP_H20		P/U 6.2K 3VDDAL
GPP_H21	MAIN	GPI	N_GPP_H21		P/U 6.2K 3VDDAL
GPP_H22	MAIN	GPI	N_GPP_H22		P/U 6.2K 3VDDAL
GPP_I0	MAIN	GPI	N_HDMI_HDP_F		N/A
GPP_I1	MAIN	GPI	N_DVI_HDP_F		P/U 1M VCC3

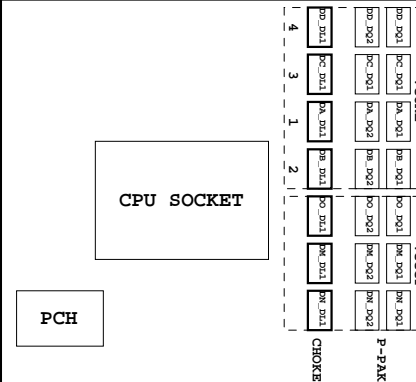
PIN NAME	PMR	OTHER FUNCTION	DEFAULT	USAGE	NOTE
GPP_13	MAIN		GPI	N_GPP_13	P/U 8.2K VCC3
GPP_14	MAIN		GPI	N_GPP_14	P/D 100K GND
GPP_15	MAIN		GPI	N_DDPB_CTLRLCK	P/U 2.2K VCC3
GPP_16	MAIN		GPO	N_DDPB_CTLRLDATA	P/U 2.2K VCC3
GPP_17	MAIN		GPI	N_DDPFC_CTLRLCK	P/U 2.2K VCC3
GPP_18	MAIN		GPI	N_DDPFC_CTLRLDATA	P/U 2.2K VCC3
GPP_19	MAIN		GPI	N_DDPD_CTLRLCK	P/U 2.2K VCC3
GPP_110	MAIN		GPI	N_DDPD_CTLRLDATA	P/U 2.2K VCC3
GPD0	STBY	BATLOW	N-BATLOW		8.2K 3V3DUAL
GPD1	STBY	ACPRESENT	N_GP_D1	P/U	8.2K 3V3DUAL
GPD2	STBY	LAN_WAKE	N-LAN_WAKE		N/A
GPD3	STBY	PMWRSTN	O-PMWRSTN	P/U	8.2K 3V3DUAL
GPD4	STBY	SLP_S3	N-SLP_S3		N/A
GPD5	STBY	SLP_S4	N-SLP_S4		N/A
GPD6	STBY	SLP_A	N-SLP_A		P/U 8.2K 3V3DUAL
GPD7	STBY	NATIVE	N-S_ACK		N/A
GPD8	STBY	SUSCLK	N-SUSCLK		N/A

Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
PCIRST38/GP10/VDIMM_STR_EN	N/A	
PCIRST28/GP11	O -PCIE_RST	
PCIRST18/GP12	O -PPWRBST2	
SVC/PECI_RQT/GP14	TPM_GP14	
SLP_SUS0/PCIRST10N/CIRXT2/GP15	-PCIRST1N	
PSI_L/FAN_CTL5/CIRRX2/GP16	N -THERMTRIP	
K12H/GP17	MB_ID2	
THR_PWM_CTL28/GP20	N -THERMTRIP	
IO_SM#DCD28/GP21	PIN	
SPI_S1/GP22	BEEP-	
DPMWOK/CPU_PG/GP23	N_PCH_DPMWOK	
FAN_TAC5/RTS28/GP24	PIN	
FAN_TAC4/DSR28/GP25	FANIO4	
INV_OUT1_SOUT2/GP26	G_PLED	
INV_IN1/SIN2/GP27	INV_IN1	
ATXPG/GP30	PMOK	
CT81/GP31	CT81-	
OCWD073/K118/GP32	R11-	
OCWD072/DCD18/GP33	DCD1-	
VTT_PWRGD/GP34	VTT_PWRGD	
VCC18_EN/GP35	VCCIO_EN	
FAN_CTL3/GP36	FANPWM3	
FAN_TAC3/GP37	FANIO3	
3VSBSSW/GP40	PIN	
OCWD071/SIN1/GP41	RXDI-	
GP42/SCK/FAN_CTL4	PIN	
FANSSW8/GP43	CPUPWRSM	
PMRONH/GP44	O_PMBSTAN	
OCWD070/DSR18/GP45	DSR8-	
CE2_N/GP47/JP6	CEB_N	
GP50/JP1	PIN	
FAN_CTL2/GP51	FANPWM2	
FAN_TAC2/GP52	FANIO2	
SUSOCN/GP53	N -G4_S5	
PRM8/GP54	N -LPCMBE	
KMRST8/CIRKX1/GP55	O -KMRBST	
MCLK/FAN_TAC6/GP56	MCLK	
MDAT/FAN_CTL6/GP57	MDAT	
KCLK/GP60	KCLK	
KDAT/GP61	KDAT	
KRST8/GP62	N -KRST	
HOLD_B8/GP63	-SFI_HOLD_B	
HOLD_B8/GP64	-SFI_HOLD_M	
VLDPT_EN/PCH_D0/GP65	PIN	
VCC1_05_EN/GP66	VCC1_0_EN	
GP67	PIN	
USB_F51/PD0/GP70	PD0	
USB_F52/PD1/GP71	PD1	
USB_F53/PD2/GP72	PD2	
USB_F53/PD3/GP73	PD3	
USB_F55/PD4/GP74	PD4	
USB_F56/PD5/GP75	PD5	
USB_F57/PD7/GP76	PD6	
USB_F58/PD8/GP77	PD7	
LS-IN1/SLCT/GP80	SLCT	
LS_OUT1/PE/GP81	PE	
LS_IN2/BUSY/GP82	BUSY	
LS_OUT2/ACK8/GP83	ACK-	
IPHONE_CHARGE8/SLIN8/GP84	SLIN-	
OC_IN/INIT8/GP85	INIT-	
OC_OUT/APW8/GP86	APD-	
USB_OC2/STB8/GP87	STB-	
DDR_EN/GP90	MA_EN	
PWRLED/GP91	MPD-	
HOLD_OUT/GP92	PIN	
HOLD_IN/GP93	PIN	
PROCHOT7/GP94	-PROCHOT_CON	
CPUPWRGD/GP95	PIN N_PCH_CPUPWRGD	
PCH_VRMWPGD/GP96	N_PCH_VRMWPGD	



PWM各相位的擺法如下：



BIOS超電壓對應表:

散熱模組料號:

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
DRDVRT	DRAM Termination
VBES 0_0 /VBES 0_0_R	DRAM Data Ref

```
Z1704-HD3 :
PCH :
MOSFET :
```

	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	NC T3941
SYS FAN2	FANPWM3	VCC	FANIO3	IT8628
	FAN2_VOUT	N/A	N/A	NC T3941
SYS FAN3	+12V/	N/A	FANIO4	IT8628

Color markers can be changed by model

Base on ASM2142 0.1 Reference SCH

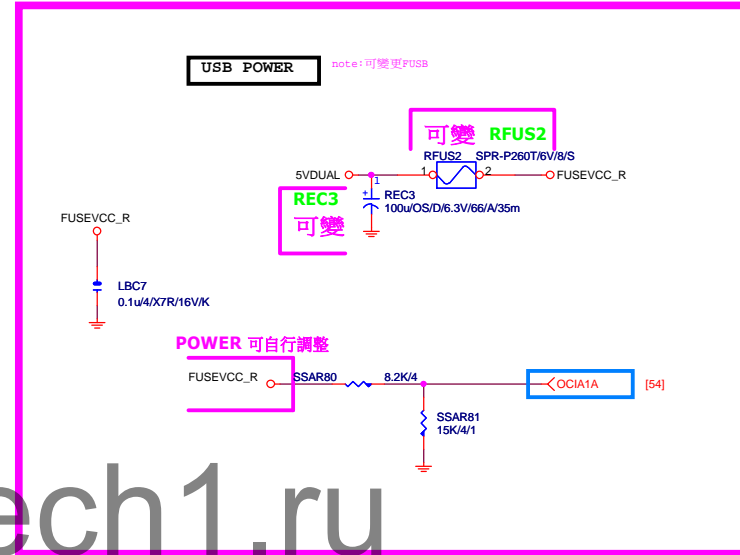
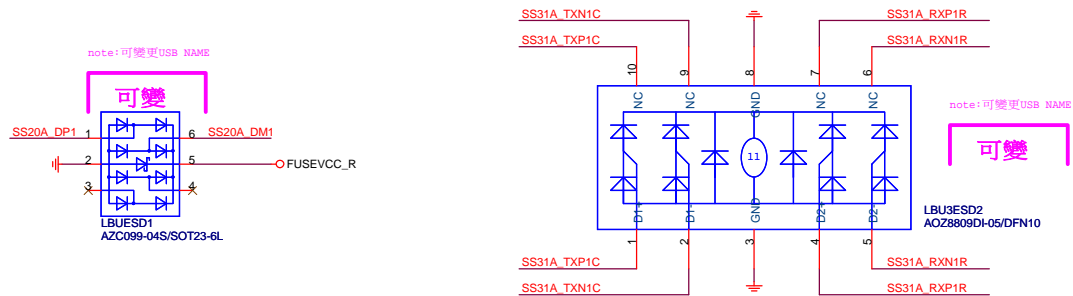
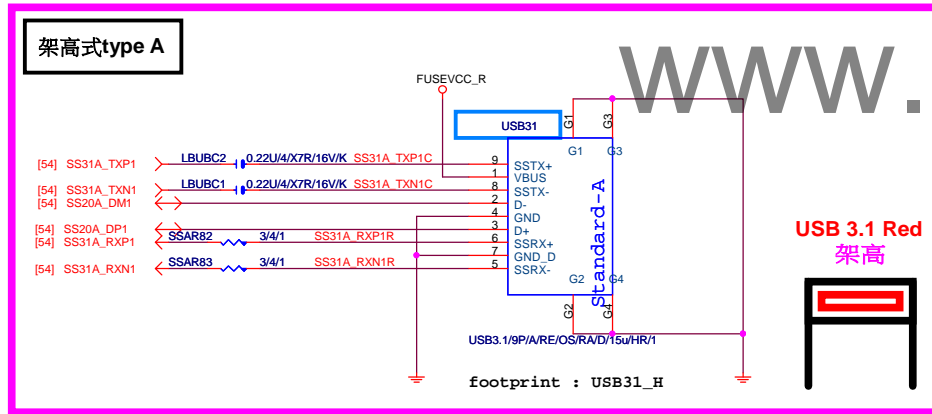
ASM2142 USB31 Host Rev0.1

後窗Rule：（後窗由左至右）

DIP電容 : REC1, REC3, REC2

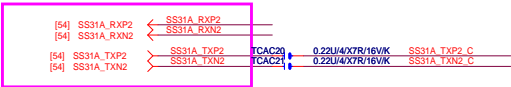
FUSE : RFUS1, RFUS2, RFUS3, RFUS4...

USB31 TYPE A Connector which chooses for project demand



ASM2142 USB31 Host Rev0.1

USB 3.x SuperSpeed



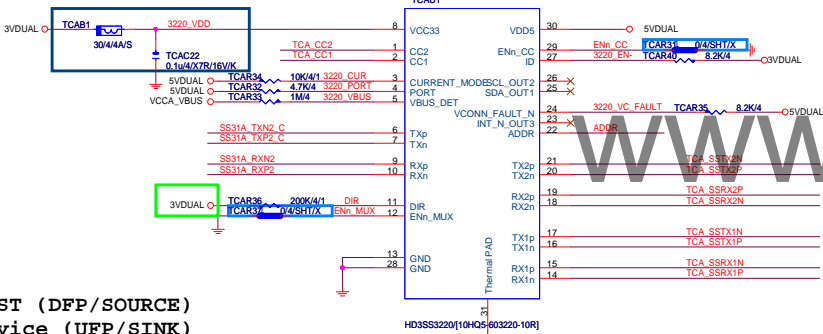
For VBUS current limit at 900mA on S3



* 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

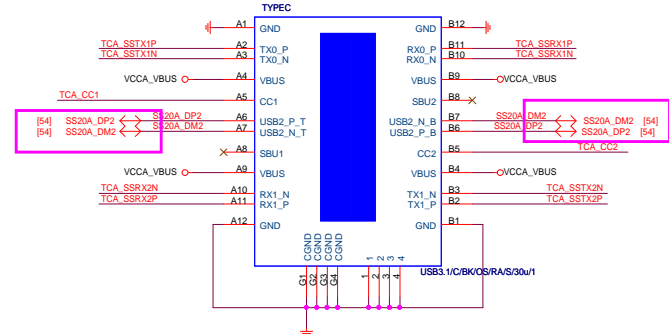


PORT

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

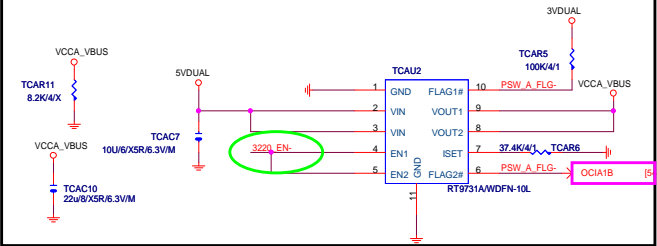
CURRENT MODE

- 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



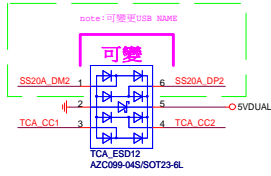
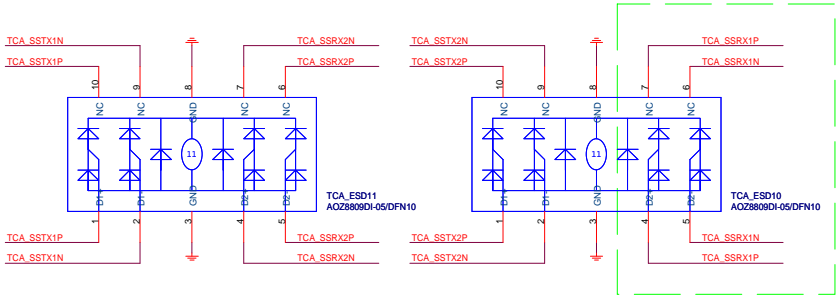
USB2.0 can be used the same source

TypeC default 5V/3A



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Color markers can be changed by model



IDT6V41630

MASK



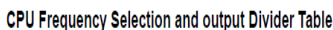
0 ohm先不要改為0 ohm short pad : Clock Buffer CKA_R18 & CKA_R19 & WR100 & WR101 & NR302 & NR303



Reserve CLK Buffer

```
*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
```

0=25MHz crystal input
1=100MHz differential input



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)



*可變，依需求上件不上件。

SMBUS



Real time selection function

Frequency change slew rate control



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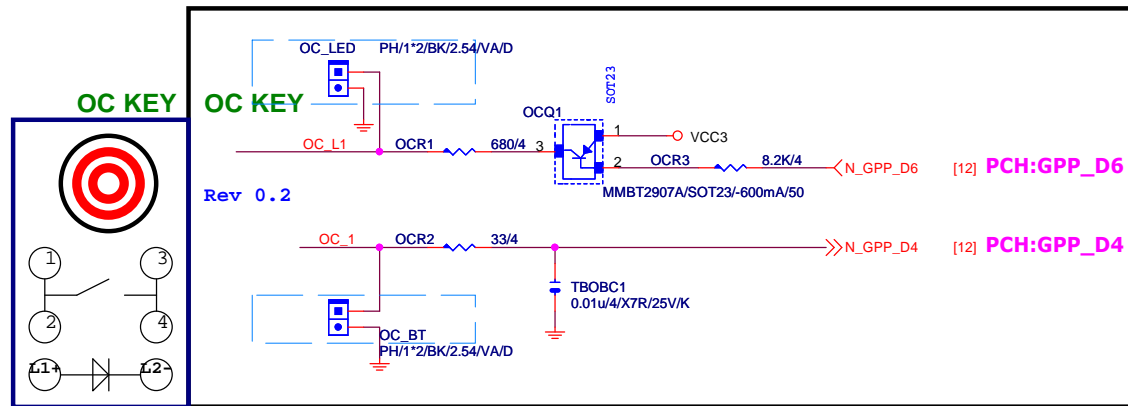
Title	IDT6V41530_CLK BUFFER
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Size	Document Number
Custom	GA-Z270-HD3P

1.01

Date: Wednesday, December 21, 2016 Sheet 58 of 61

Rev: 0.81

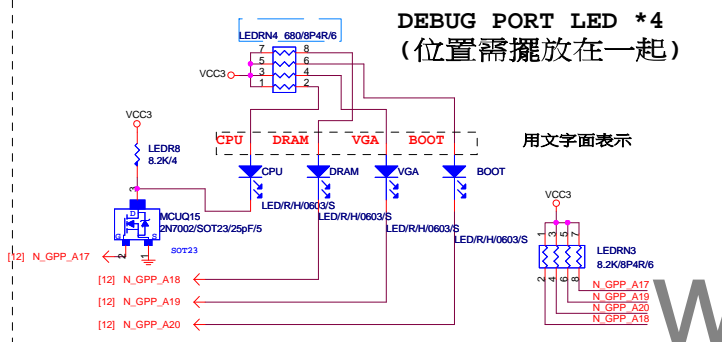
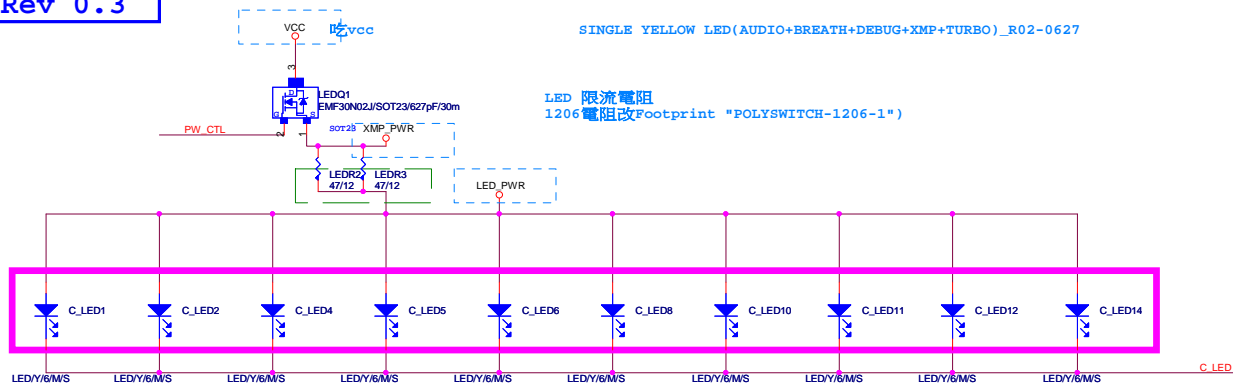


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Title			OC BOTTOM	
Size	Document Number	GA-Z270-HD3P		Rev
Custom				1.01
Date:	Wednesday, December 21, 2016	Sheet	59 of 61	

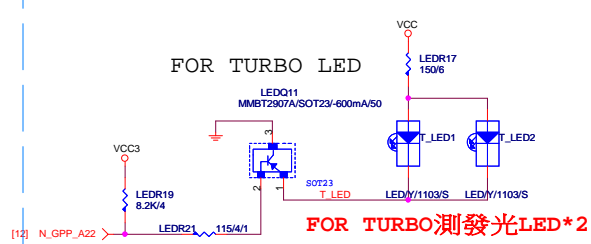
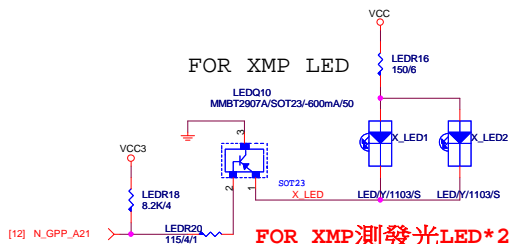
LED 限流電阻
1206電阻改Footprint "POLYSWITCH-1206-1")



10] N_GPP_D22 >
ON/OFF
(PCH GPP D22)

呼吸

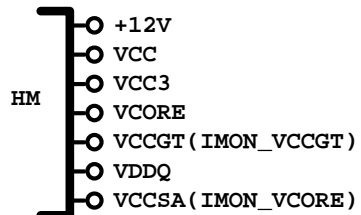
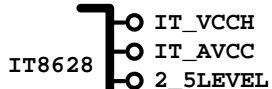
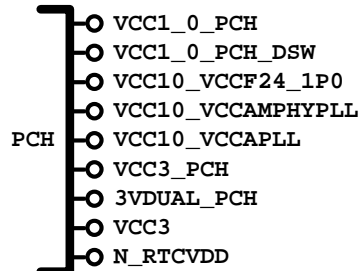
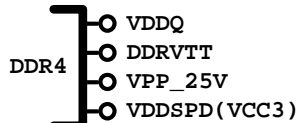
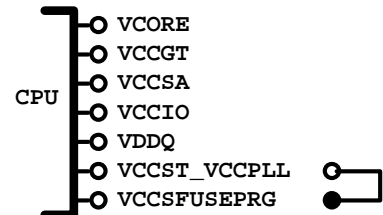
	N_GPP_D22	IO_GP91
Still Mode	H	L
OFF Mode	L	L
Pluse Mode	H	BREATH



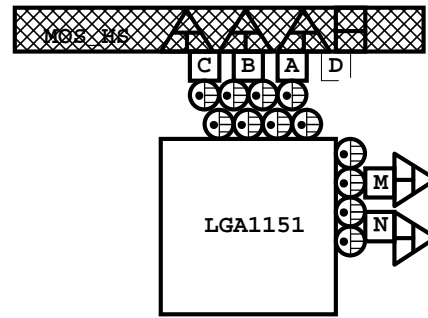
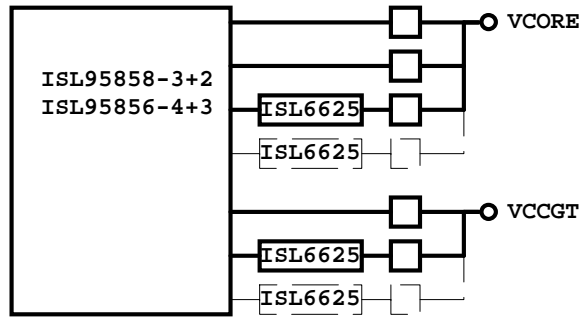
GIGABYTE™

Title			
Audio / DEBUG LED			
Size	Document Number	Rev	
Custom	GA-Z270-HD3P	1.01	
Date:	Wednesday, December 21, 2016	Sheet	60 of 61

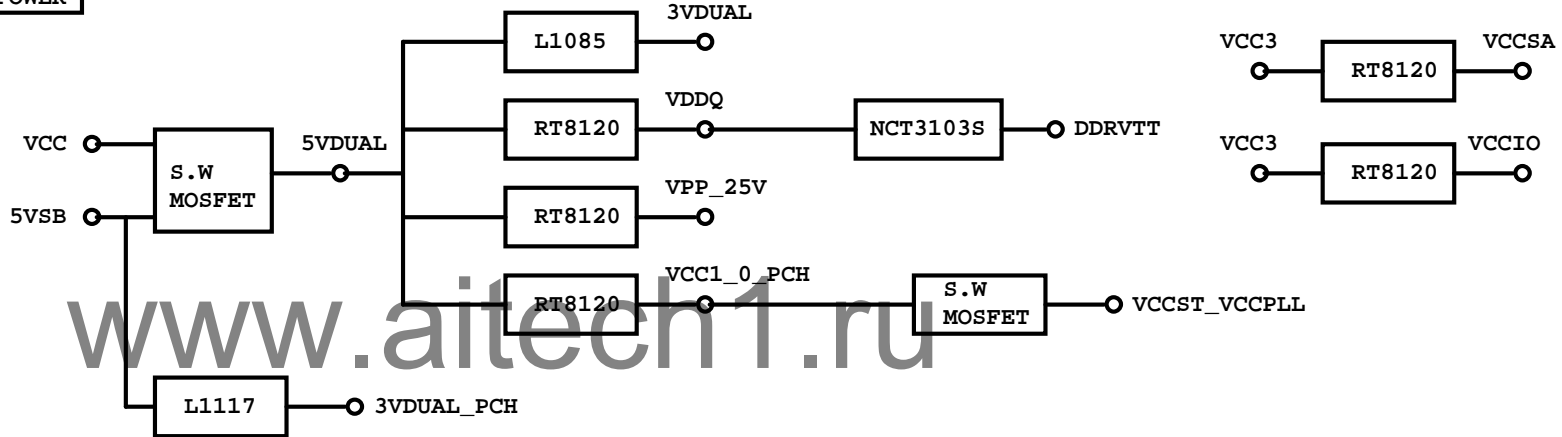
POWER BLOCK MAP



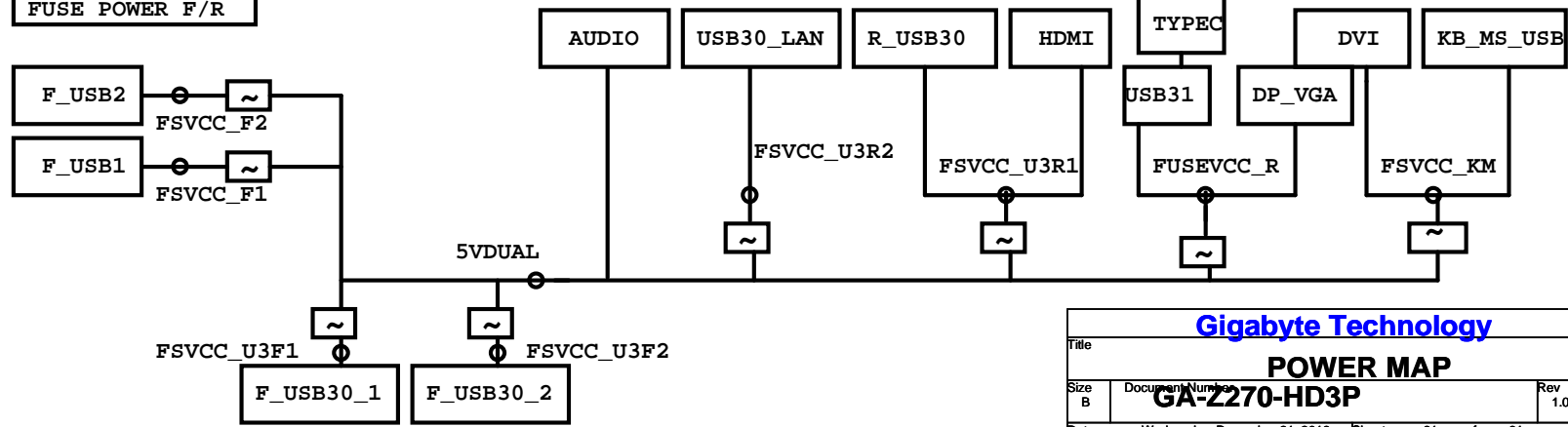
VCORE/VCCGT



POWER



FUSE POWER F/R



Gigabyte Technology

Title		
POWER MAP		
Size	Document Number	Rev
B	GA-Z270-HD3P	1.01
Date:	Wednesday, December 21, 2016	Sheet 61 of 61