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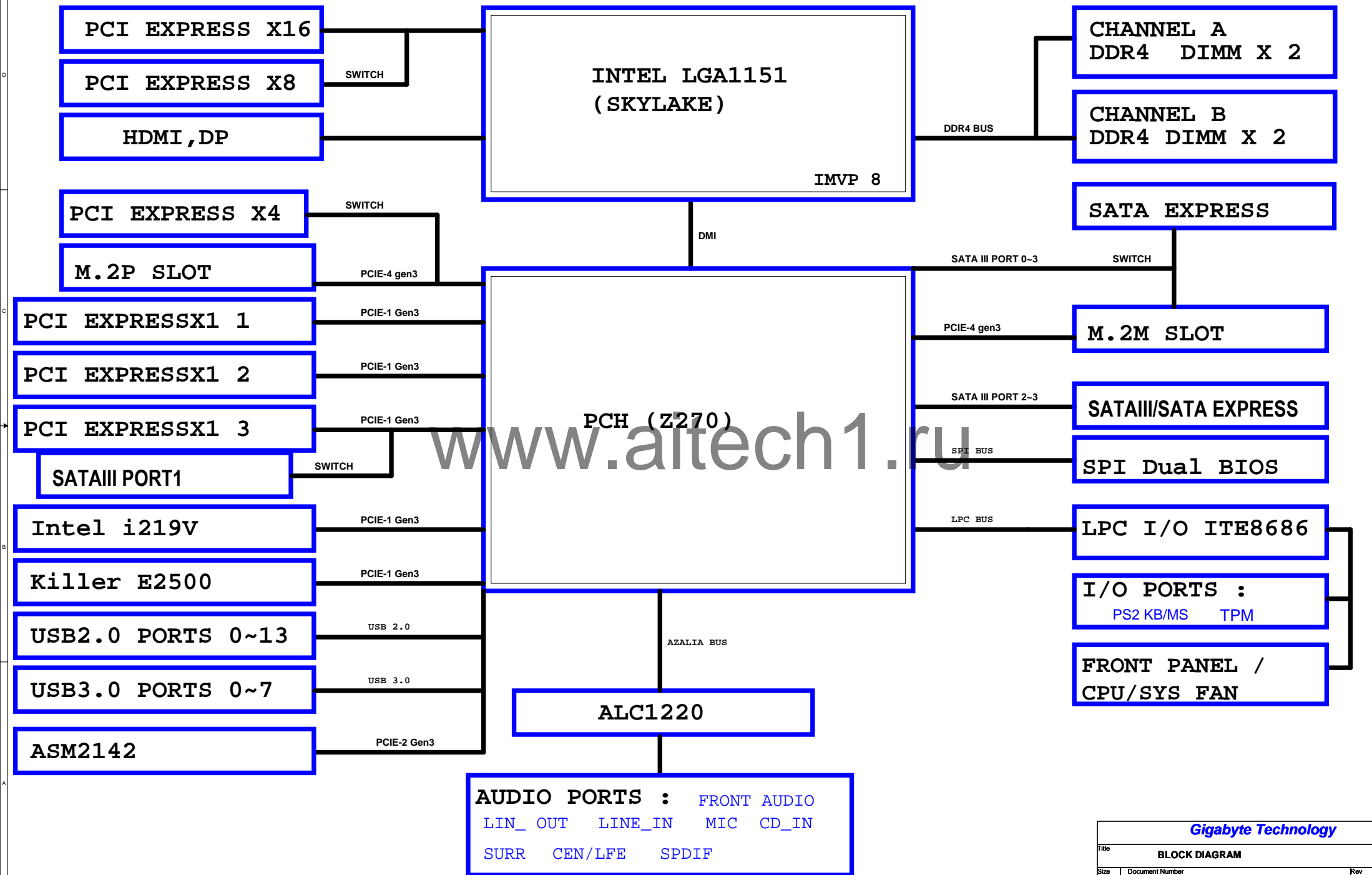
Component value change history

[illegible]

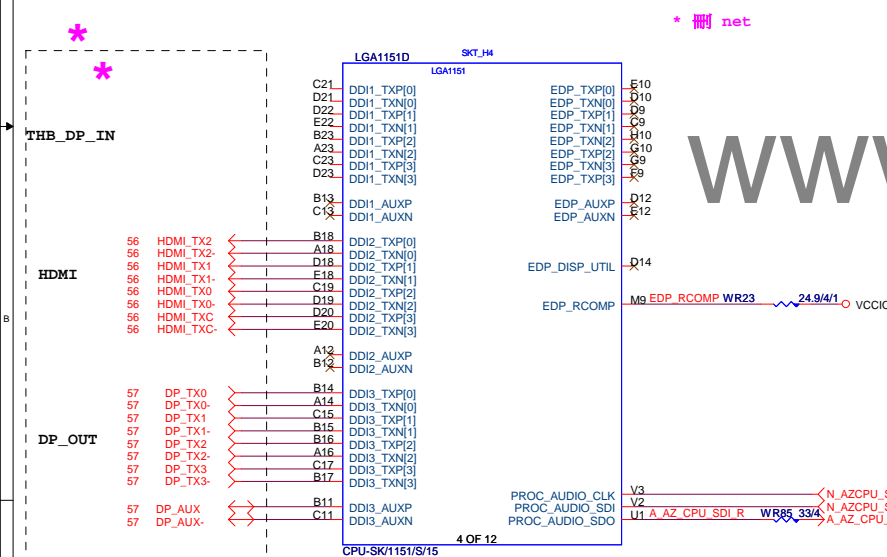
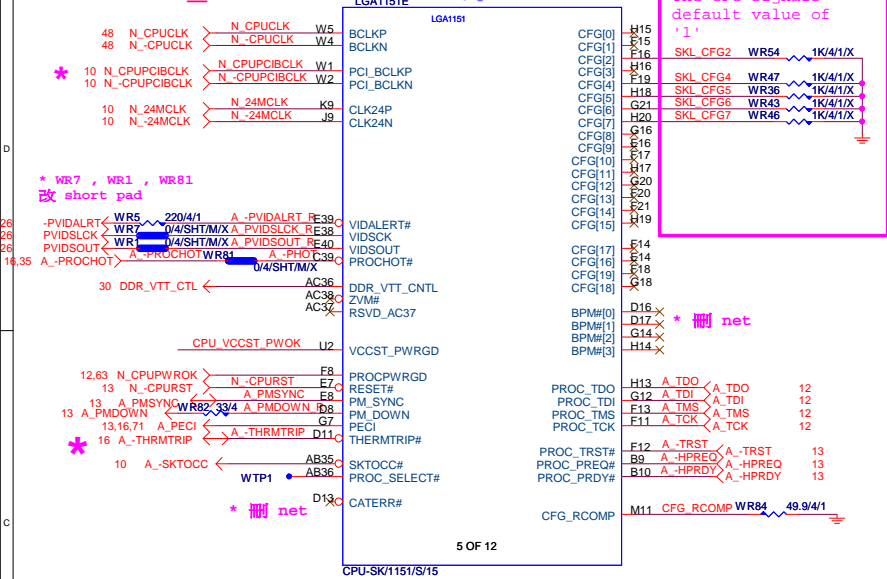
Circuit or PCB layout change

[illegible]

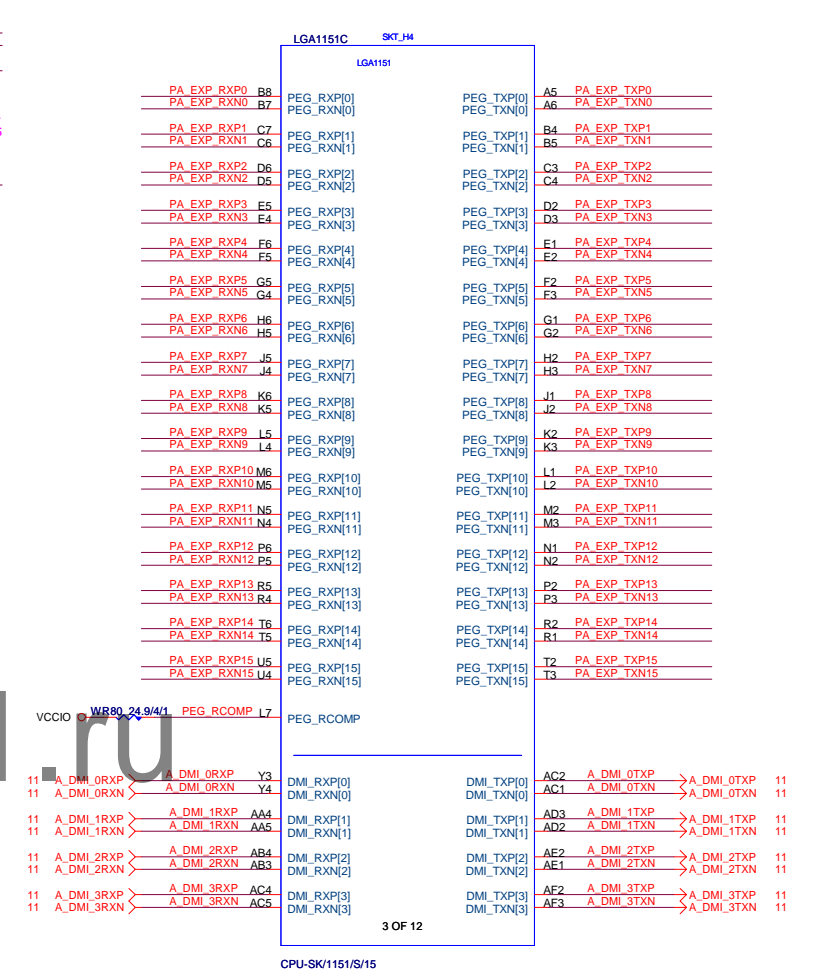
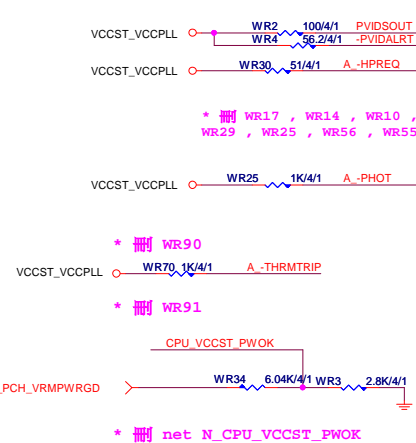
BLOCK DIAGRAM



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
```



```
CFG[2]:x16 Lane Numbering
Reversal_1=
NORMAL;0=reversal

CFG[4]: eDP
enable:1:disable/0=enable

CFG[6:5]:PCI Express* Bifurcation; 1l=
1 x16 PCI Express;10=2x8 PCI Express

CFG[7]: PEG Training;1=(default) PEG Train
immediately following RESET#;0=PEG Wait
for BIOS
```

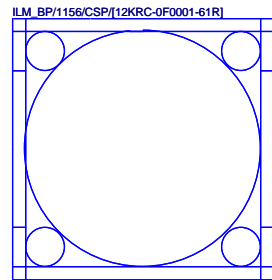
20 -8X_EN ← WR37 MASK/0/4/SHT/X SKL_CFG5

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

W=12 mil out of CPU
S=15 mil out of CPU

* 改DDR4 net

LGA1151A		SKT_H4	
LGA1151		LGA1151	
MDA0 AE38	DDR0_DQ[0]	DDR0_CKP[0]	AW18 M_DCLKA0 <=> M_DCLKA0 8
MDA1 AE37	DDR0_DQ[1]	DDR0_CKN[0]	AW18 M_DCLKA0 <=> M_DCLKA0 8
MDA2 AG38	DDR0_DQ[2]	DDR0_CKP[1]	AW17 M_DCLKA1 <=> M_DCLKA1 8
MDA3 AG37	DDR0_DQ[3]	DDR0_CKN[1]	AW17 M_DCLKA1 <=> M_DCLKA1 8
MDA4 AE39	DDR0_DQ[4]	DDR0_CKP[2]	AW16 M_DCLKA2 <=> M_DCLKA2 8
MDA5 AE40	DDR0_DQ[5]	DDR0_CKN[2]	AW16 M_DCLKA2 <=> M_DCLKA2 8
MDA6 AG39	DDR0_DQ[6]	DDR0_CKP[3]	AW16 M_DCLKA3 <=> M_DCLKA3 8
MDA7 AG38	DDR0_DQ[7]	DDR0_CKN[3]	AW16 M_DCLKA3 <=> M_DCLKA3 8
MDA8 AJ38	DDR0_DQ[8]		
MDA9 AJ37	DDR0_DQ[9]		
MDA10 AL38	DDR0_DQ[10]	DDR0_CKE[0]	AY24 CKEA0 <=> CKEA0 8
MDA11 AL37	DDR0_DQ[11]	DDR0_CKE[1]	AY24 CKEA1 <=> CKEA1 8
MDA12 AJ40	DDR0_DQ[12]	DDR0_CKE[2]	AY24 CKEA2 <=> CKEA2 8
MDA13 AJ39	DDR0_DQ[13]	DDR0_CKE[3]	AY25 CKEA3 <=> CKEA3 8
MDA14 AL39	DDR0_DQ[14]		
MDA15 AL40	DDR0_DQ[15]	DDR0_CS#0	AW12 M_CSA0 <=> M_CSA0 8
MDA16 AN38	DDR0_DQ[16]	DDR0_CS#1	AW11 M_CSA1 <=> M_CSA1 8
MDA17 AN40	DDR0_DQ[17]	DDR0_CS#2	AW13 M_CSA2 <=> M_CSA2 8
MDA18 AR38	DDR0_DQ[18]	DDR0_CS#3	AW10 M_CSA3 <=> M_CSA3 8
MDA19 AR37	DDR0_DQ[19]		
MDA20 AN39	DDR0_DQ[20]	DDR0_ODT[0]	AW11 MODT_A0
MDA21 AN37	DDR0_DQ[21]	DDR0_ODT[1]	AW14 MODT_A1
MDA22 AR40	DDR0_DQ[22]	DDR0_ODT[2]	AW12 MODT_A2
MDA23 AR40	DDR0_DQ[23]	DDR0_ODT[3]	AW10 MODT_A3
MDA24 AW37	DDR0_DQ[24]		
MDA25 AW38	DDR0_DQ[25]	DDR0_BA[0]DDR0_CAB[4]DDR0_BA[0]	AY13 SBA0A0 <=> SBA0A0 8
MDA26 AV35	DDR0_DQ[26]	DDR0_BA[1]DDR0_CAB[6]DDR0_BA[1]	AY15 SBA1A1 <=> SBA1A1 8
MDA27 AW35	DDR0_DQ[27]	DDR0_BA[2]DDR0_CAA[5]DDR0_BG[0]	AW23 BG_A0 <=> BG_A0 8
MDA28 AJ37	DDR0_DQ[28]		
MDA29 AJ37	DDR0_DQ[29]	DDR0_RAS#/DDR0_CAB[3]DDR0_MA[16]	AW13 MAA1A6
MDA30 AT35	DDR0_DQ[30]	DDR0_WE#/DDR0_CAB[2]DDR0_MA[14]	AW14 MAA1A4
MDA31 AU35	DDR0_DQ[31]	DDR0_CAS#/DDR0_CAB[1]DDR0_MA[15]	AW11 MAA1A5
MDA32 AY8	DDR0_DQ[32]		
MDA33 AW8	DDR0_DQ[33]	DDR0_MA[0]DDR0_CAB[9]DDR0_MA[0]	AW15 MAAA0
MDA34 AV6	DDR0_DQ[34]	DDR0_MA[1]DDR0_CAB[8]DDR0_MA[1]	AU18 MAAA1
MDA35 AU6	DDR0_DQ[35]	DDR0_MA[2]DDR0_CAB[5]DDR0_MA[2]	AU17 MAAA2
MDA36 AU8	DDR0_DQ[36]	DDR0_MA[3]	AU19 MAAA3
MDA37 AV8	DDR0_DQ[37]	DDR0_MA[4]	AU20 MAAA4
MDA38 AW6	DDR0_DQ[38]	DDR0_MA[5]DDR0_CAA[0]DDR0_MA[5]	AU20 MAAA5
MDA39 AY6	DDR0_DQ[39]	DDR0_MA[6]DDR0_CAA[2]DDR0_MA[6]	AU21 MAAA6
MDA40 AY4	DDR0_DQ[40]	DDR0_MA[7]DDR0_CAA[4]DDR0_MA[7]	AT20 MAAA7
MDA41 AV4	DDR0_DQ[41]	DDR0_MA[8]DDR0_CAA[3]DDR0_MA[8]	AT22 MAAA9
MDA42 AT1	DDR0_DQ[42]	DDR0_MA[9]DDR0_CAA[1]DDR0_MA[9]	AU14 MAAA10
MDA43 AT2	DDR0_DQ[43]	DDR0_MA[10]DDR0_CAB[7]DDR0_MA[10]	AU22 MAAA11
MDA44 AV3	DDR0_DQ[44]	DDR0_MA[11]DDR0_CAA[7]DDR0_MA[11]	AV22 MAAA12
MDA45 AW4	DDR0_DQ[45]	DDR0_MA[12]DDR0_CAA[6]DDR0_MA[12]	AV12 MAAA13
MDA46 AK4	DDR0_DQ[46]	DDR0_MA[13]DDR0_CAB[0]DDR0_MA[13]	AV23 BG_A1 <=> BG_A1 8
MDA47 AT3	DDR0_DQ[47]	DDR0_MA[14]DDR0_CAA[9]DDR0_BG[1]	AU24 M_ACT_A <=> M_ACT_A 8
MDA48 AP2	DDR0_DQ[48]	DDR0_MA[15]DDR0_CAA[8]DDR0_ACT#	
MDA49 AM4	DDR0_DQ[49]		
MDA50 AP3	DDR0_DQ[50]	DDR0_PAR	AY15 M_DDR_PARA <=> M_DDR_PARA 8
MDA51 AM3	DDR0_DQ[51]	DDR0_ALERT#	AT23 M_ALERT_A <=> M_ALERT_A 8
MDA52 AP4	DDR0_DQ[52]		
MDA53 AM2	DDR0_DQ[53]	DDR0_DQSN[0]	AF33 M_DQS8A0
MDA54 AP1	DDR0_DQ[54]	DDR0_DQSN[1]	AK33 M_DQS8A1
MDA55 AM1	DDR0_DQ[55]	DDR0_DQSN[2]DDR0_DQSN[4]	AP33 M_DQS8A2
MDA56 AK3	DDR0_DQ[56]	DDR0_DQSN[3]DDR0_DQSN[5]	AU36 M_DQS8A3
MDA57 AK4	DDR0_DQ[57]	DDR0_DQSN[4]DDR1_DQSN[0]	AW7 M_DQS8A4
MDA58 AH2	DDR0_DQ[58]	DDR0_DQSN[5]DDR1_DQSN[1]	AU3 M_DQS8A5
MDA60 AH4	DDR0_DQ[59]	DDR0_DQSN[6]DDR1_DQSN[4]	AN3 M_DQS8A6
MDA61 AK2	DDR0_DQ[60]	DDR0_DQSN[7]DDR1_DQSN[5]	AJ3 M_DQS8A7
MDA62 AH3	DDR0_DQ[61]		
MDA63 AK1	DDR0_DQ[62]	DDR0_DQSP[0]	AF38 M_DQSA0
	DDR0_DQ[63]	DDR0_DQSP[1]	AK38 M_DQSA1
		DDR0_DQSP[2]DDR0_DQSP[4]	AP38 M_DQSA2
		DDR0_DQSP[3]DDR0_DQSP[6]	AV7 M_DQSA4
		DDR0_DQSP[4]DDR1_DQSP[0]	AU2 M_DQSA5
		DDR0_DQSP[5]DDR1_DQSP[1]	AN2 M_DQSA6
		DDR0_DQSP[6]DDR1_DQSP[4]	AJ2 M_DQSA7
		DDR0_DQSP[7]DDR1_DQSP[5]	
		DDR0_DQSP[8]	AV32 M_DQSA8 <=> M_DQSA8 8
		DDR0_DQSN[8]	AU32 M_DQSA8 <=> M_DQSA8 8



Need check the new CPU ME

LGA1151B		SKT_H4	
LGA1151		LGA1151	
MDB0 AD34	DDR1_DQ[0]DDR0_DQ[16]	DDR1_CKP[0]	AM20 M_DCLKB0 <=> M_DCLKB0 9
MDB1 AD35	DDR1_DQ[1]DDR0_DQ[17]	DDR1_CKN[0]	AM21 M_DCLKB0 <=> M_DCLKB0 9
MDB2 AG35	DDR1_DQ[2]DDR0_DQ[18]	DDR1_CKP[1]	AP22 M_DCLKB1 <=> M_DCLKB1 9
MDB3 AH35	DDR1_DQ[3]DDR0_DQ[19]	DDR1_CKN[1]	AP21 M_DCLKB1 <=> M_DCLKB1 9
MDB4 AE35	DDR1_DQ[4]DDR0_DQ[20]	DDR1_CKP[2]	AN20 M_DCLKB2 <=> M_DCLKB2 9
MDB5 AE34	DDR1_DQ[5]DDR0_DQ[21]	DDR1_CKN[2]	AN21 M_DCLKB2 <=> M_DCLKB2 9
MDB6 AH34	DDR1_DQ[6]DDR0_DQ[22]	DDR1_CKP[3]	AP23 M_DCLKB3 <=> M_DCLKB3 9
MDB7 AH34	DDR1_DQ[7]DDR0_DQ[23]	DDR1_CKN[3]	AP20 M_DCLKB3 <=> M_DCLKB3 9
MDB8 AK35	DDR1_DQ[8]DDR0_DQ[24]		
MDB9 AL35	DDR1_DQ[9]DDR0_DQ[25]	DDR1_CKE[0]	AY29 CKEB0 <=> CKEB0 9
MDB10 AK32	DDR1_DQ[10]DDR0_DQ[26]	DDR1_CKE[1]	AY29 CKEB1 <=> CKEB1 9
MDB11 AL32	DDR1_DQ[11]DDR0_DQ[27]	DDR1_CKE[2]	AY29 CKEB2 <=> CKEB2 9
MDB12 AK34	DDR1_DQ[12]DDR0_DQ[28]	DDR1_CKE[3]	AY29 CKEB3 <=> CKEB3 9
MDB13 AL34	DDR1_DQ[13]DDR0_DQ[29]		
MDB14 AK31	DDR1_DQ[14]DDR0_DQ[30]	DDR1_CS#0	AP17 M_CSB0 <=> M_CSB0 9
MDB15 AL31	DDR1_DQ[15]DDR0_DQ[31]	DDR1_CS#1	AN15 M_CSB1 <=> M_CSB1 9
MDB16 AP35	DDR1_DQ[16]DDR0_DQ[32]	DDR1_CS#2	AN17 M_CSB2 <=> M_CSB2 9
MDB17 AN35	DDR1_DQ[17]DDR0_DQ[33]	DDR1_CS#3	AN15 M_CSB2 <=> M_CSB3 9
MDB18 AN32	DDR1_DQ[18]DDR0_DQ[34]		
MDB19 AP32	DDR1_DQ[19]DDR0_DQ[35]	DDR1_ODT[0]	AM16 MODT_B0
MDB20 AN34	DDR1_DQ[20]DDR0_DQ[36]	DDR1_ODT[1]	AL16 MODT_B1
MDB21 AP34	DDR1_DQ[21]DDR0_DQ[37]	DDR1_ODT[2]	AP15 MODT_B2
MDB22 AN31	DDR1_DQ[22]DDR0_DQ[38]	DDR1_ODT[3]	AL15 MODT_B3
MDB23 AP31	DDR1_DQ[23]DDR0_DQ[39]		
MDB24 AL29	DDR1_DQ[24]DDR0_DQ[40]	DDR1_RAS#/DDR1_CAB[3]DDR1_MA[16]	AN18 MAAB16
MDB25 AM29	DDR1_DQ[25]DDR0_DQ[41]	DDR1_WE#/DDR1_CAB[2]DDR1_MA[14]	AL17 MAAB14
MDB26 AP29	DDR1_DQ[26]DDR0_DQ[42]	DDR1_CAS#/DDR1_CAB[1]DDR1_MA[15]	AP16 MAAB15
MDB27 AR29	DDR1_DQ[27]DDR0_DQ[43]		
MDB28 AM28	DDR1_DQ[28]DDR0_DQ[44]	DDR1_BA[0]DDR1_CAB[4]DDR1_BA[0]	AL18 SBA0 <=> SBA0 9
MDB29 AL28	DDR1_DQ[29]DDR0_DQ[45]	DDR1_BA[1]DDR1_CAB[6]DDR1_BA[1]	AM18 SBA1 <=> SBA1 9
MDB30 AR28	DDR1_DQ[30]DDR0_DQ[46]	DDR1_BA[2]DDR1_CAA[5]DDR1_BG[0]	BG_B0 <=> BG_B0 9
MDB31 AP28	DDR1_DQ[31]DDR0_DQ[47]		
MDB32 AR12	DDR1_DQ[32]DDR1_DQ[16]	DDR1_MA[0]DDR1_CAB[9]DDR1_MA[0]	AL19 MAAB0
MDB33 AP12	DDR1_DQ[33]DDR1_DQ[17]	DDR1_MA[1]DDR1_CAB[8]DDR1_MA[1]	AL22 MAAB1
MDB34 AM13	DDR1_DQ[34]DDR1_DQ[18]	DDR1_MA[2]DDR1_CAB[5]DDR1_MA[2]	AL22 MAAB2
MDB35 AL13	DDR1_DQ[35]DDR1_DQ[19]	DDR1_MA[3]	AP23 MAAB3
MDB37 AP13	DDR1_DQ[36]DDR1_DQ[20]	DDR1_MA[4]	AP23 MAAB4
MDB38 AM12	DDR1_DQ[37]DDR1_DQ[21]	DDR1_MA[5]DDR1_CAA[0]DDR1_MA[5]	AL23 MAAB5
MDB39 AP10	DDR1_DQ[38]DDR1_DQ[22]	DDR1_MA[6]DDR1_CAA[2]DDR1_MA[6]	AW26 MAAB6
MDB40 AR10	DDR1_DQ[39]DDR1_DQ[23]	DDR1_MA[7]DDR1_CAA[4]DDR1_MA[7]	AY26 MAAB7
MDB41 AR10	DDR1_DQ[40]DDR1_DQ[24]	DDR1_MA[8]DDR1_CAA[3]DDR1_MA[8]	AY27 MAAB8
MDB42 AR7	DDR1_DQ[41]DDR1_DQ[25]	DDR1_MA[9]DDR1_CAA[1]DDR1_MA[9]	AP18 MAAB9
MDB43 AP7	DDR1_DQ[42]DDR1_DQ[26]	DDR1_MA[10]DDR1_CAB[7]DDR1_MA[10]	AL27 MAAB11
MDB44 AR9	DDR1_DQ[43]DDR1_DQ[27]	DDR1_MA[11]DDR1_CAA[7]DDR1_MA[11]	AY27 MAAB12
MDB45 AP9	DDR1_DQ[44]DDR1_DQ[28]	DDR1_MA[12]DDR1_CAA[6]DDR1_MA[12]	AL15 MAAB13
MDB46 AR6	DDR1_DQ[45]DDR1_DQ[29]	DDR1_MA[13]DDR1_CAB[0]DDR1_MA[13]	AY28 BG_B1 <=> BG_B1 9
MDB47 AP6	DDR1_DQ[46]DDR1_DQ[30]	DDR1_MA[14]DDR1_CAA[9]DDR1_BG[1]	AY28 M_ACT_B <=> M_ACT_B 9
MDB48 AM10	DDR1_DQ[47]DDR1_DQ[31]	DDR1_MA[15]DDR1_CAA[8]DDR1_ACT#	
MDB49 AL10	DDR1_DQ[48]		
MDB50 AM7	DDR1_DQ[49]	DDR1_PAR	AL20 M_DDR_PARB <=> M_DDR_PARB 9
MDB51 AL7	DDR1_DQ[50]	DDR1_ALERT#	AY25 M_ALERT_B <=> M_ALERT_B 9
MDB52 AM9	DDR1_DQ[51]		
MDB53 AL9	DDR1_DQ[52]		
MDB54 AM6	DDR1_DQ[53]	DDR1_DQSN[0]DDR0_DQSN[2]	AF34 M_DQS80
MDB55 AL6	DDR1_DQ[54]	DDR1_DQSN[1]DDR0_DQSN[3]	AK33 M_DQS81
MDB56 AJ6	DDR1_DQ[55]	DDR1_DQSN[2]DDR0_DQSN[6]	AN33 M_DQS82
MDB57 AJ7	DDR1_DQ[56]	DDR1_DQSN[3]DDR0_DQSN[9]	AN29 M_DQS83
MDB58 AE6	DDR1_DQ[57]	DDR1_DQSN[4]DDR1_DQSN[2]	AL13 M_DQS84
MDB59 AE7	DDR1_DQ[58]	DDR1_DQSN[5]DDR1_DQSN[3]	AR8 M_DQS85
MDB60 AH7	DDR1_DQ[59]	DDR1_DQSN[6]DDR1_DQSN[6]	AM8 M_DQS86
MDB61 AH6	DDR1_DQ[60]	DDR1_DQSN[7]	AG6 M_DQS87
MDB62 AE7	DDR1_DQ[61]		
MDB63 AF6	DDR1_DQ[62]	DDR1_DQSP[0]DDR0_DQSP[2]	AF35 M_DQS80
	DDR1_DQ[63]	DDR1_DQSP[1]DDR0_DQSP[3]	AL33 M_DQS81
		DDR1_DQSP[2]DDR0_DQSP[6]	AP33 M_DQS82
		DDR1_DQSP[3]DDR0_DQSP[9]	AN28 M_DQS83
		DDR1_DQSP[4]DDR1_DQSP[2]	AN12 M_DQS84
		DDR1_DQSP[5]DDR1_DQSP[3]	AP8 M_DQS85
		DDR1_DQSP[6]	AL8 M_DQS86
		DDR1_DQSP[7]	AG7 M_DQS87
		DDR1_DQSP[8]	AN25 M_DQS88 <=> M_DQS88 9
		DDR1_DQSN[8]	AN26 M_DQS88 <=> M_DQS88 9

DDR CHANNEL B

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_DQSB[0..7]	<=>	M_DQSB[0..7]
8	MAAA[0..16]	<=>	MAAA[0..16]
9	MAAB[0..16]	<=>	MAAB[0..16]
9	M_DQSB[0..7]	<=>	M_DQSB[0..7]
9	M_DQSB[0..7]	<=>	M_DQSB[0..7]

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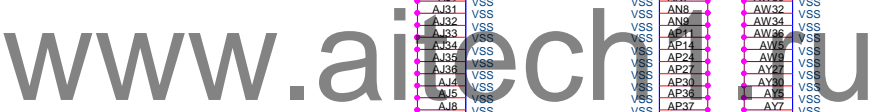
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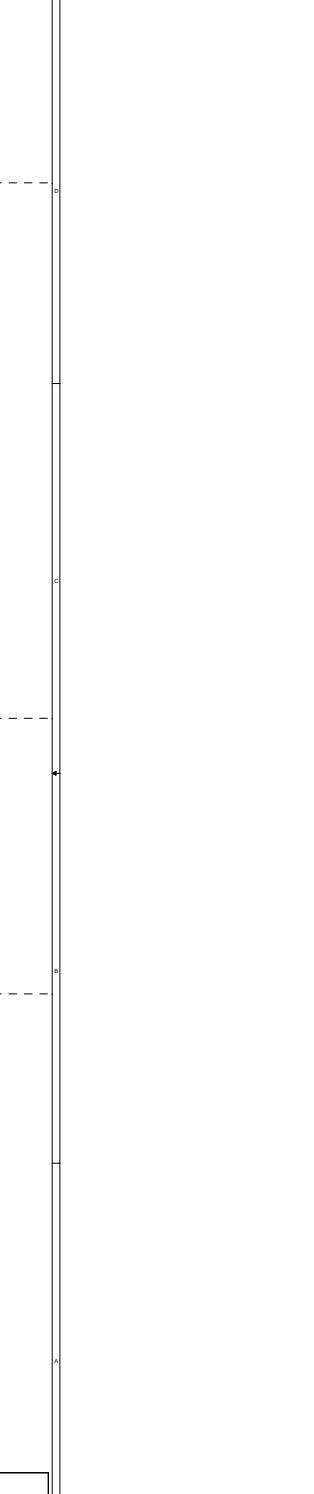
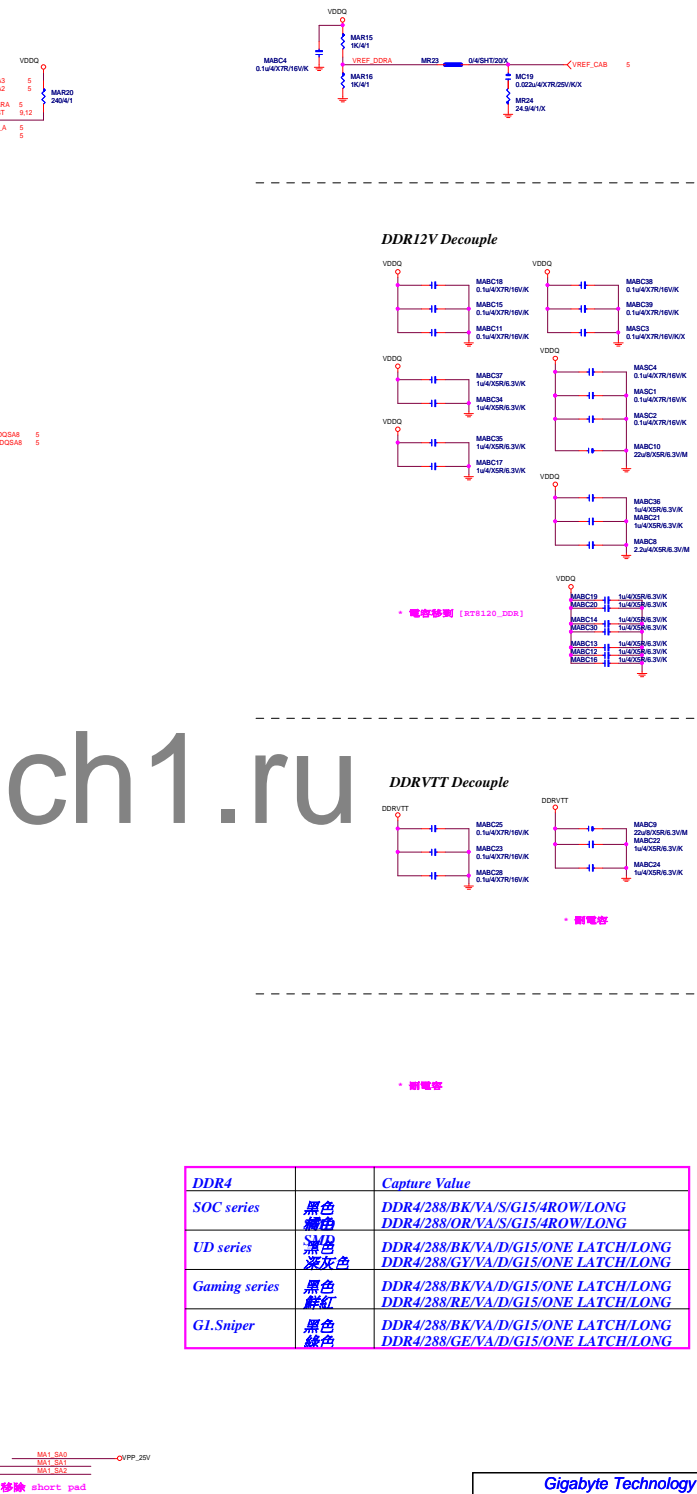
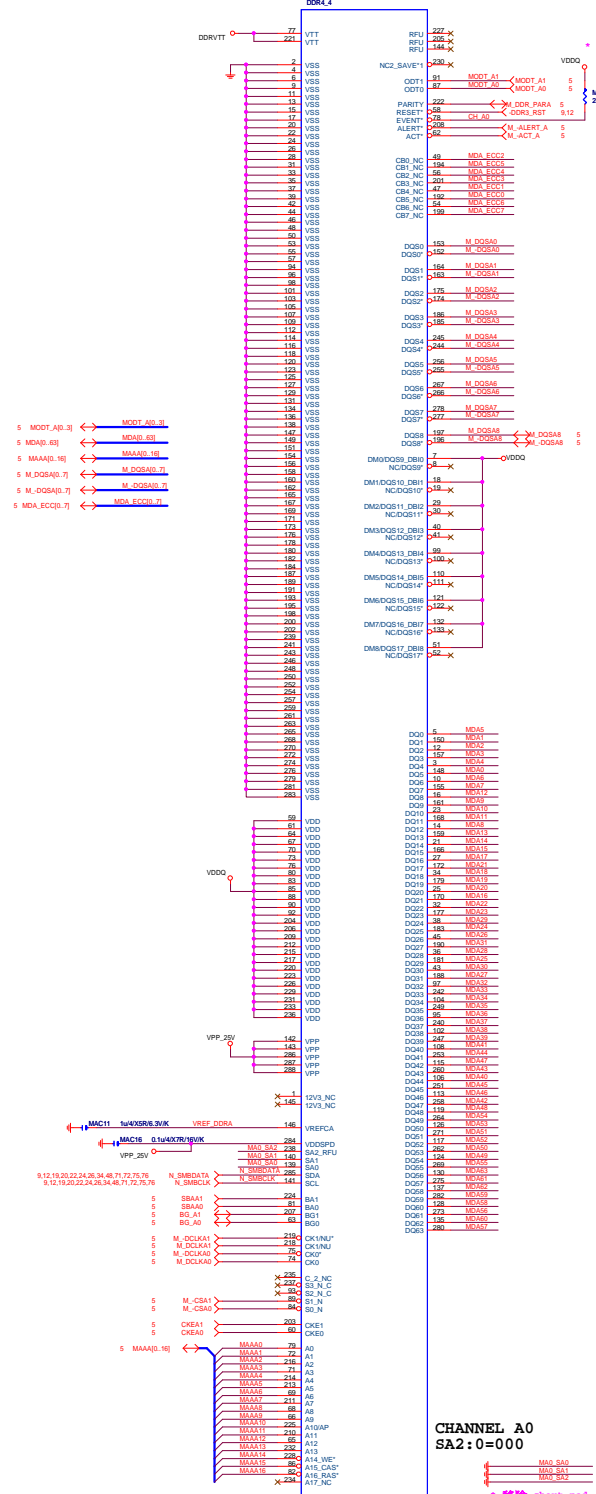
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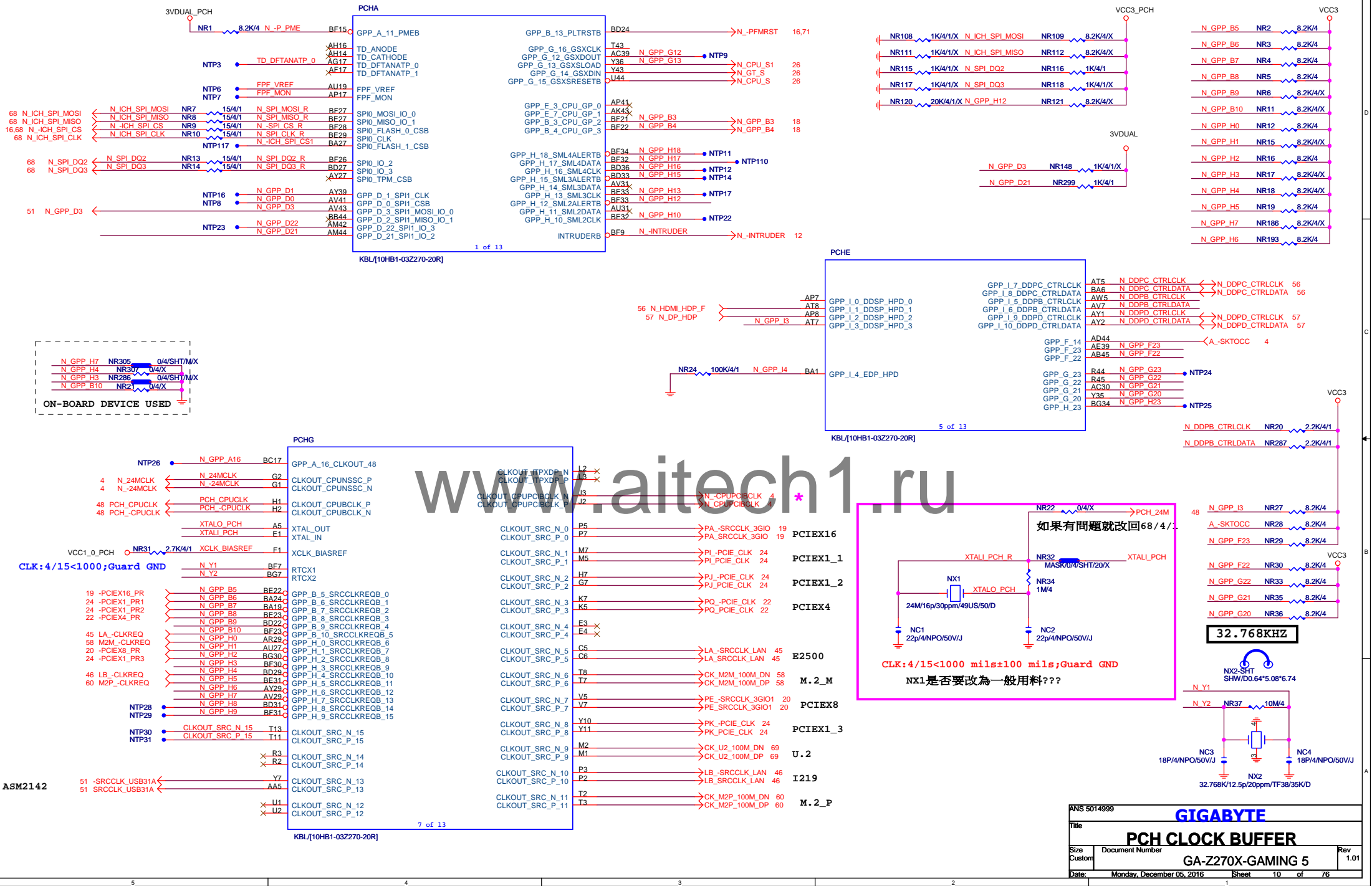
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76

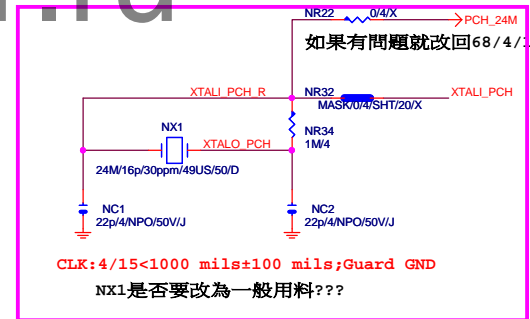


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CPU LGA1151-C			
Size Custom	Document Number		Rev
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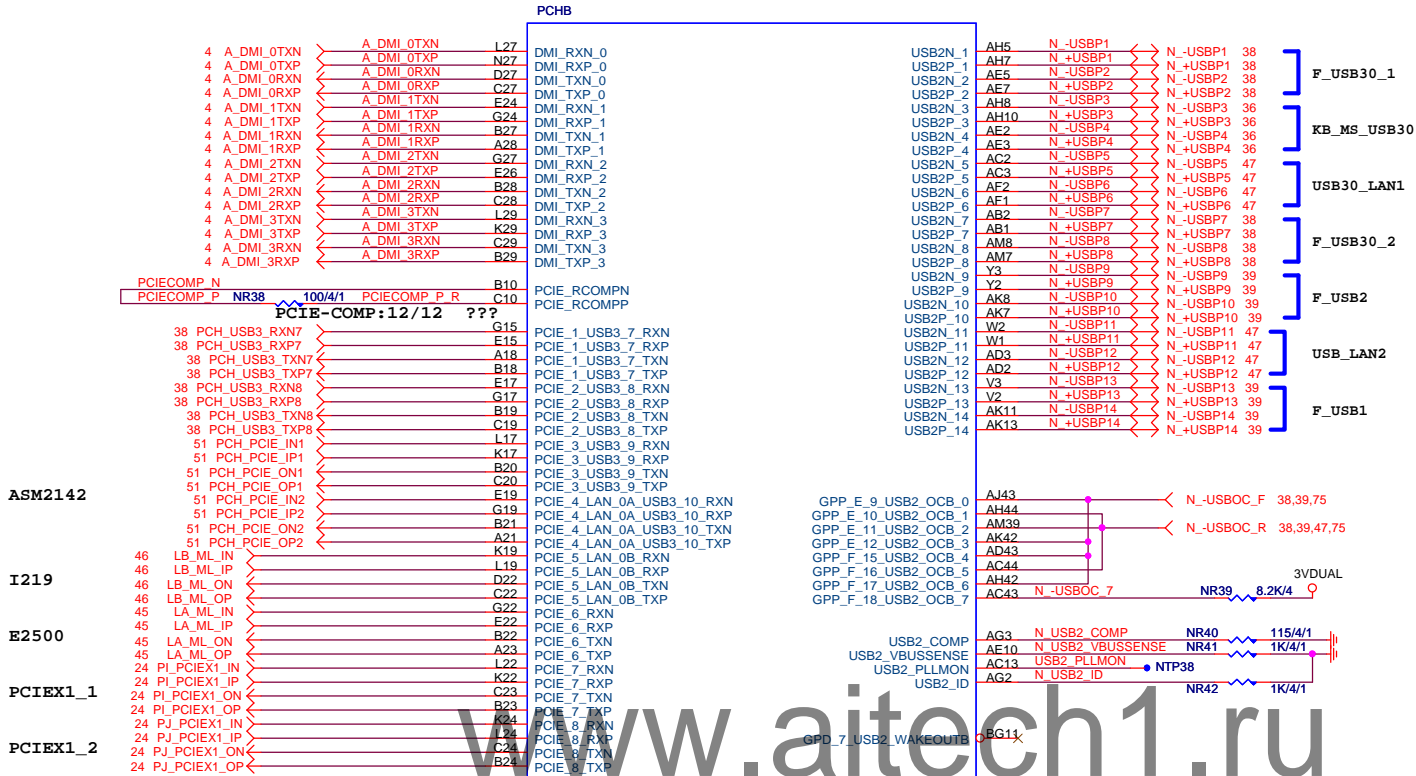


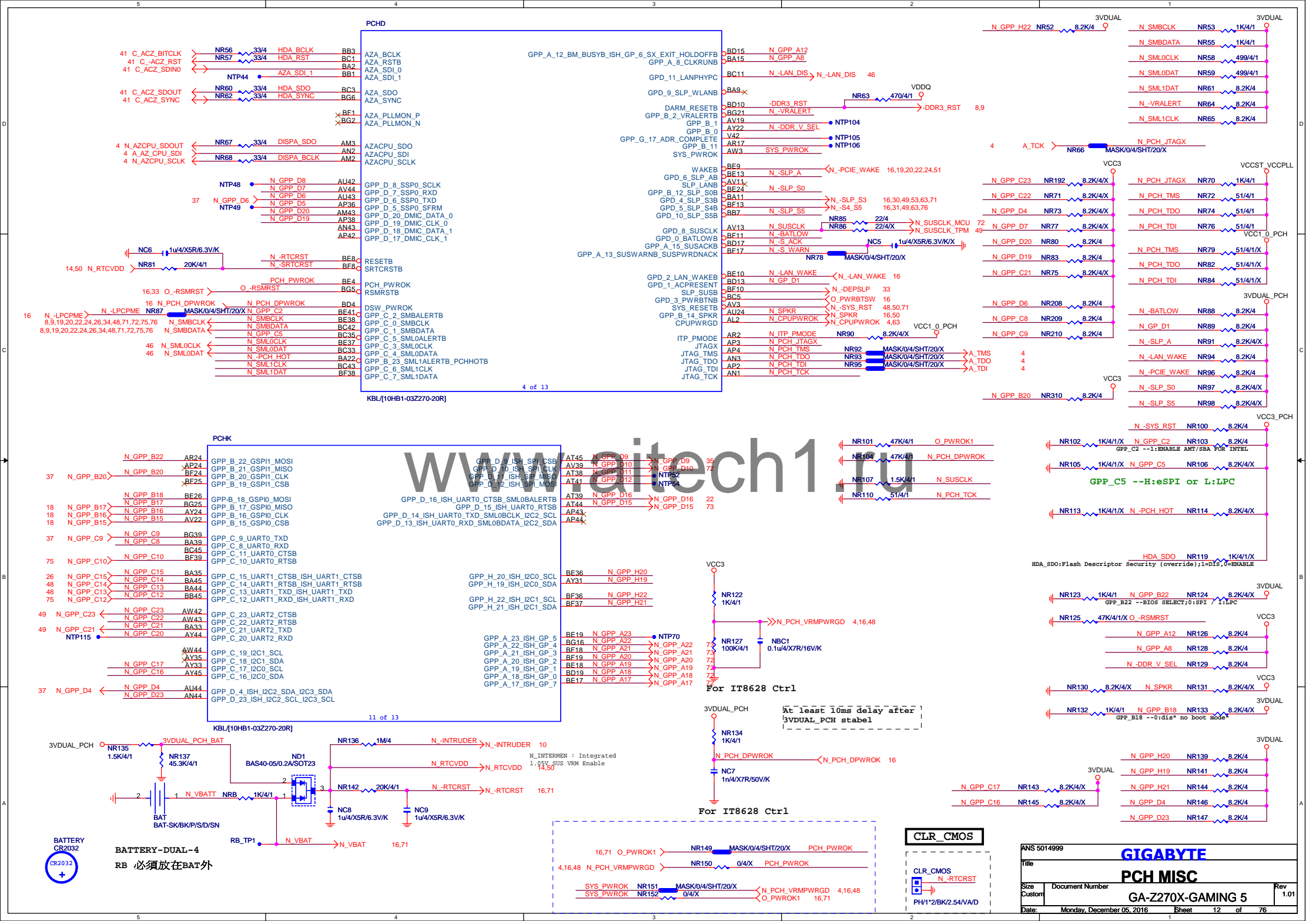


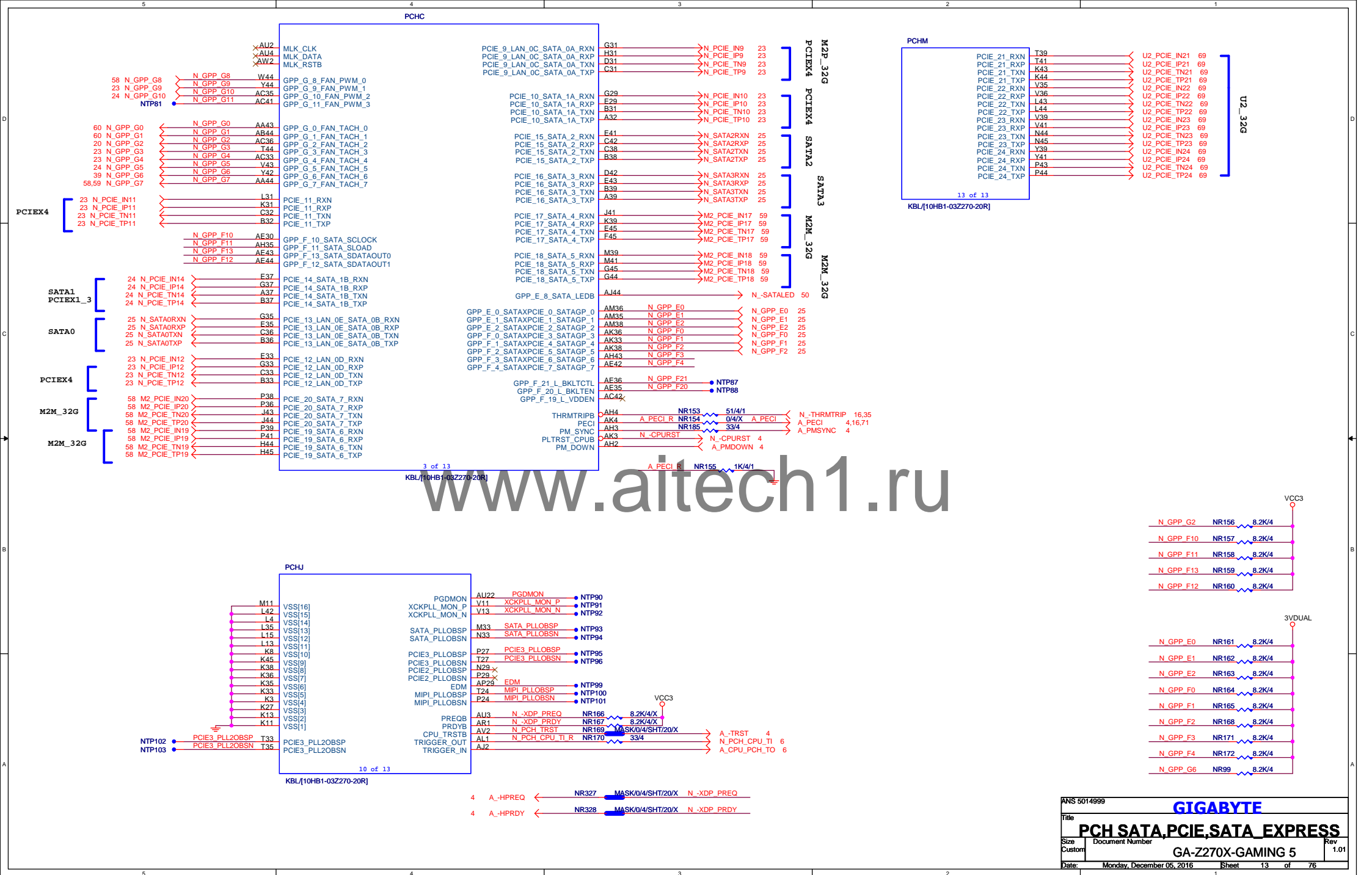
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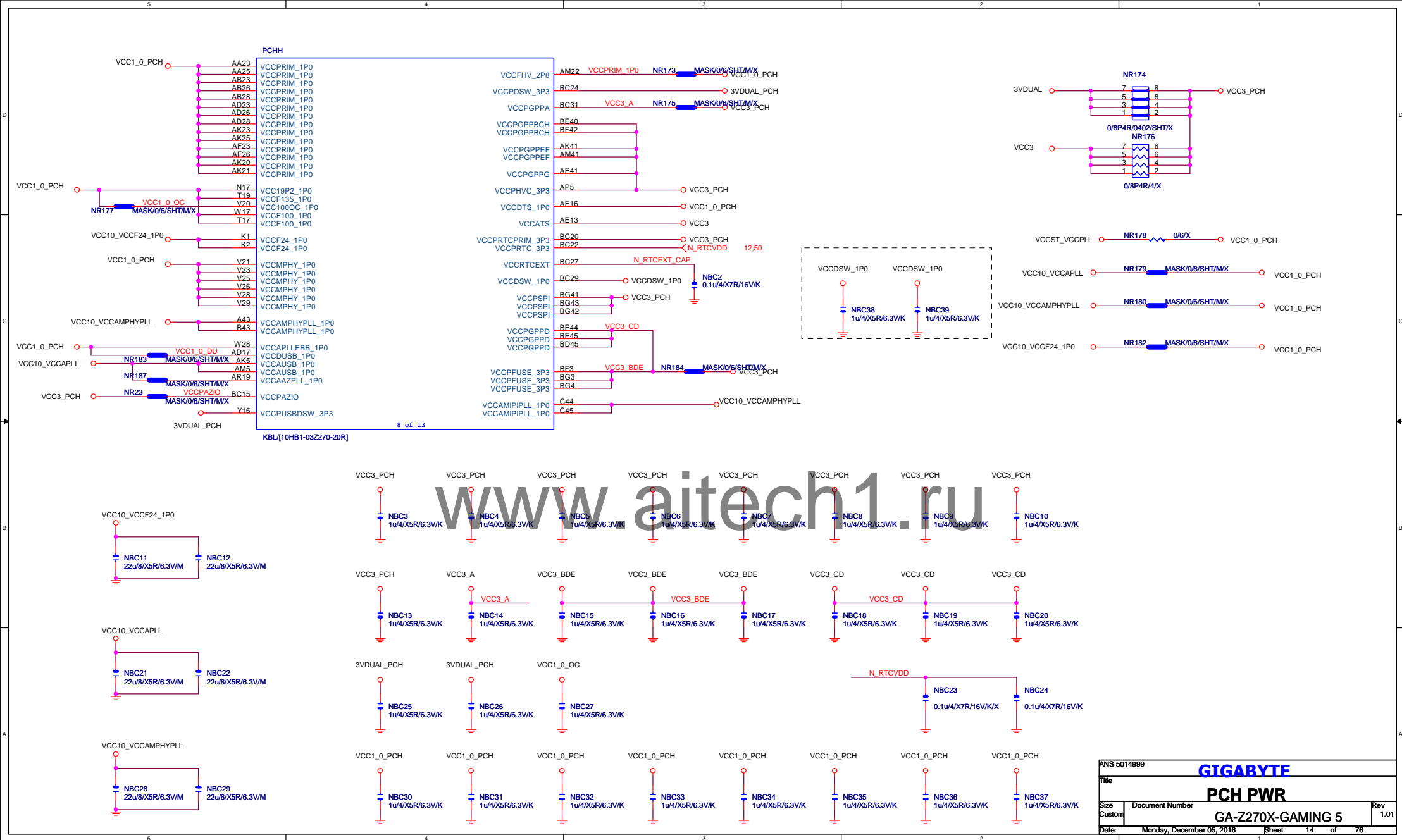
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GIGABYTE			
Title			
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Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5	1.01	
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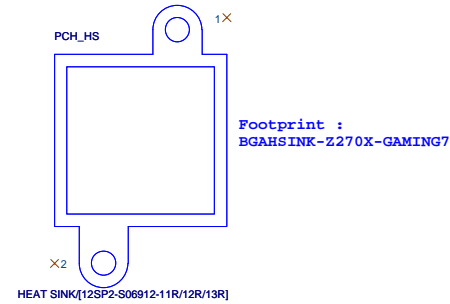
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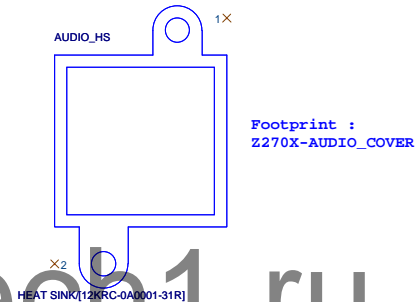
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A30	VSS	D45
P22	VSS	BG44
AV38	VSS	BE44
AV45	VSS	BF43
AV8	VSS	BF2
AY11	VSS	W29
AY19	VSS	A35
AY37	VSS	BG23
AY4	VSS	A40
AY42	VSS	AA1
AY8	VSS	AA17
B25	VSS	AA18
B3	VSS	C1
B30	VSS	AA26
B35	VSS	AA28
B4	VSS	AA29
B41	VSS	AB17
BA13	VSS	AC32
BA17	VSS	AE4
BA29	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
F31	VSS	AG28
E6	VSS	AG28
E8	VSS	AH11
F39	VSS	AH13
F43	VSS	AH30
G4	VSS	AH32
G40	VSS	AH33
G42	VSS	AH38
F6	VSS	AJ1
G9	VSS	AJ17
H11	VSS	AJ18
H13	VSS	AJ20
H17	VSS	AJ21
H19	VSS	AJ23
H22	VSS	AJ26
H24	VSS	AJ26
H27	VSS	AJ28
H29	VSS	AJ29
H33	VSS	AJ45
H35	VSS	AK10
H38	VSS	AK14
H4	VSS	AK16
H42	VSS	AK17
H9	VSS	AK18
J4	VSS	AK26
M36	VSS	AK28
M38	VSS	AM14
M4	VSS	AN14
M8	VSS	AP19
M9	VSS	AR22
N13	VSS	AR27
N15	VSS	AU29
N19	VSS	AU33
N22	VSS	AV1
N24	VSS	AV10
N31	VSS	AV15
N42	VSS	AV24
P10	VSS	AV27
P12	VSS	AV33
AV35	VSS	

PCHL		
BD34	VSS[70]	AB18
BD39	VSS[71]	AB20
BD7	VSS[72]	AB21
BE2	VSS[73]	AB25
BF43	VSS[74]	AB29
BF2	VSS[75]	AB4
BG18	VSS[76]	AB42
BG23	VSS[77]	AC10
BG28	VSS[78]	AC14
BG32	VSS[79]	AC16
BG37	VSS[80]	AC38
BG40	VSS[81]	AC4
BG9	VSS[83]	AC5
C1	VSS[84]	AC7
A12	VSS[85]	AC8
C2	VSS[86]	AD1
C37	VSS[87]	AD18
A6	VSS[88]	AD20
C9	VSS[89]	AD21
D1	VSS[90]	AD25
D10	VSS[91]	AD29
D12	VSS[92]	AD45
D15	VSS[93]	AE11
D16	VSS[94]	AE14
B12	VSS[95]	AE32
D19	VSS[96]	AE33
D21	VSS[97]	AE38
D24	VSS[98]	AK29
D25	VSS[99]	AK30
D29	VSS[100]	AK32
AG20	VSS[101]	AK35
D33	VSS[102]	AK39
D35	VSS[103]	AL4
D36	VSS[104]	AL42
D39	VSS[105]	AM10
D44	VSS[106]	AM11
D7	VSS[107]	AM13
P13	VSS[108]	AM17
P15	VSS[109]	AM19
P17	VSS[110]	AM24
P19	VSS[111]	AM27
P31	VSS[112]	AM29
P33	VSS[113]	AM32
P35	VSS[114]	AM33
AJ17	VSS[115]	AM4
P4	VSS[116]	AN45
P42	VSS[117]	AP10
P8	VSS[118]	AP11
R1	VSS[119]	AP13
R32	VSS[120]	AP15
T10	VSS[121]	AP22
T14	VSS[122]	AP27
T22	VSS[123]	AP31
T29	VSS[124]	AP33
T32	VSS[125]	AP34
T36	VSS[126]	AP39
T38	VSS[127]	W18
Y38	VSS[128]	W20
Y4	VSS[129]	W21
Y8	VSS[130]	W23
T42	VSS[131]	W25
T5	VSS[132]	
U4	VSS[133]	
U42	VSS[134]	
V10	VSS[135]	
V14	VSS[136]	
V15	VSS[137]	
V17	VSS[138]	
V3	VSS[139]	
W3	VSS[140]	
AR13	VSS[141]	
AR31	VSS[142]	
AR33	VSS[143]	
AR4	VSS[144]	
AT10	VSS[145]	
AT13	VSS[146]	
AT35	VSS[147]	
AT37	VSS[148]	
AT42	VSS[149]	
AU11	VSS[150]	
AU17	VSS[151]	
BD30	VSS[152]	
W45	VSS[153]	
Y13	VSS[154]	
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Y30	VSS[156]	
Y32	VSS[157]	
Y33	VSS[158]	
VSS_BG14	VSS[159]	

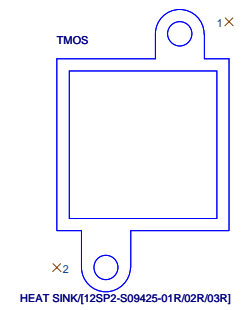
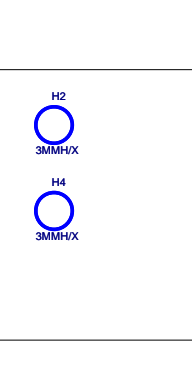
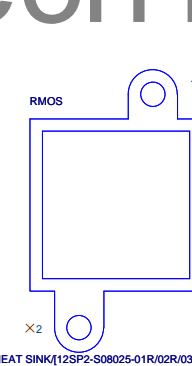
裝甲HEATSINK 分成四大部份



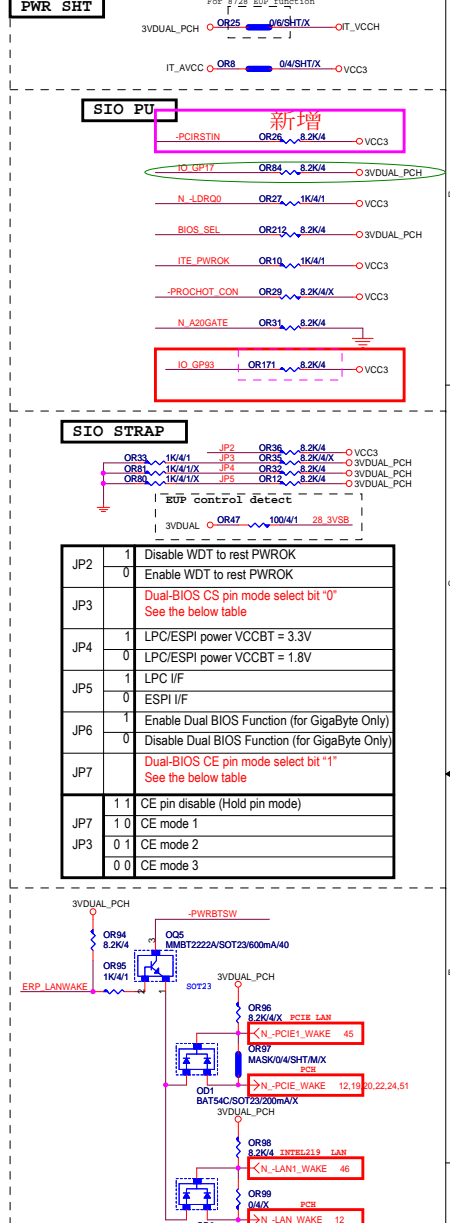
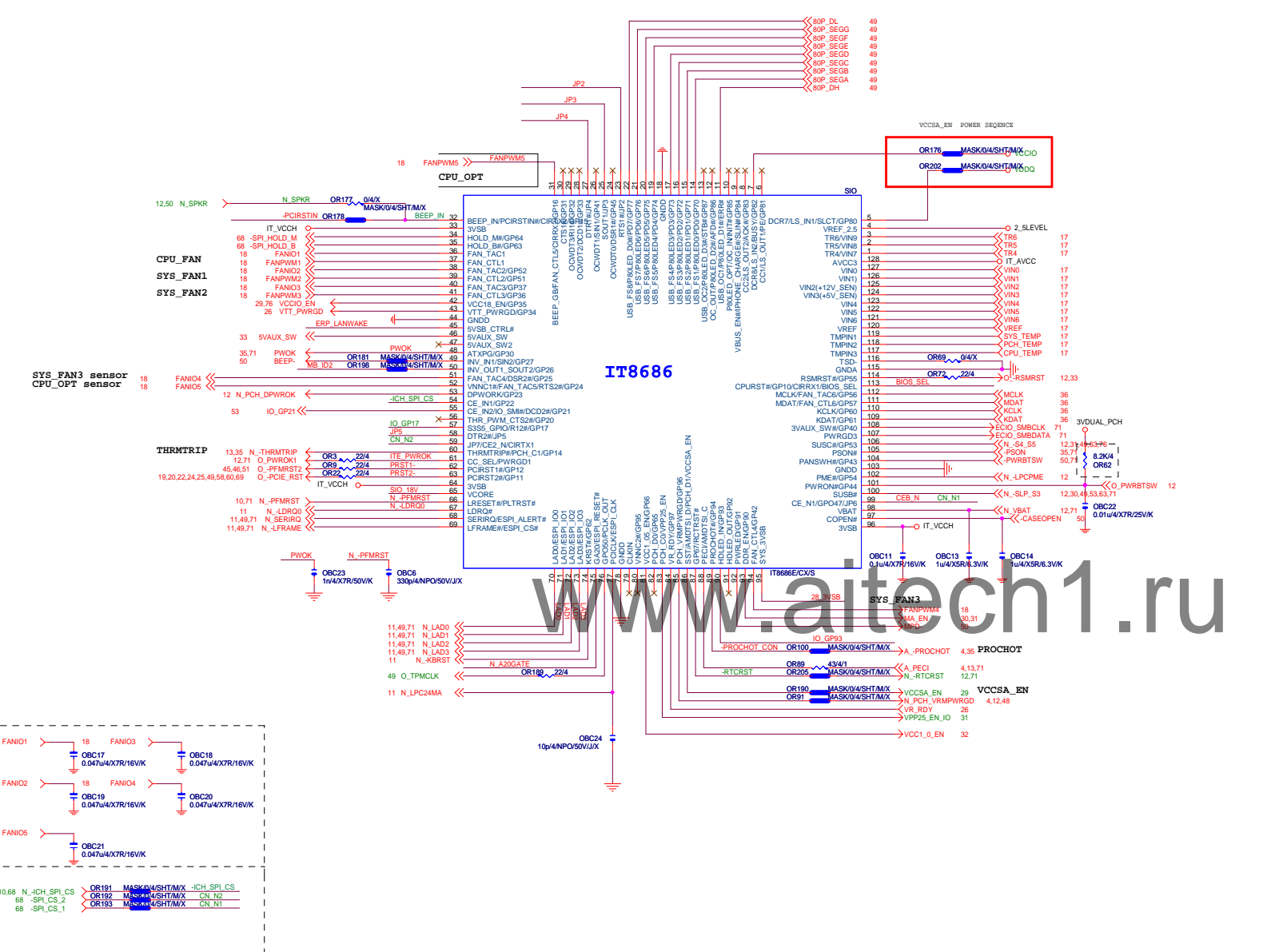
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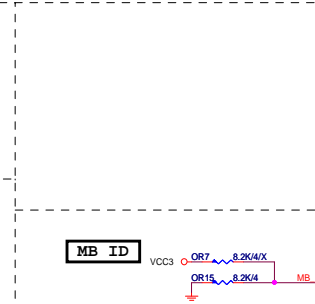
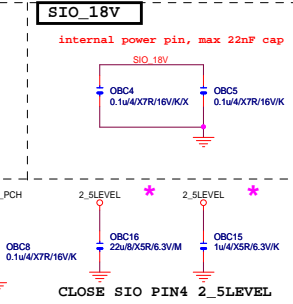
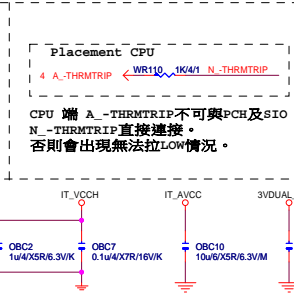
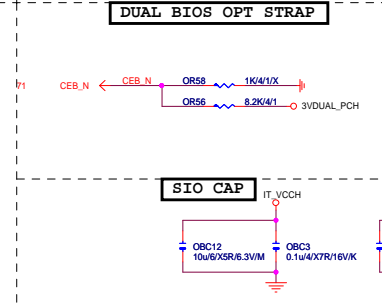
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塑膠/鐵件裝甲



ANS 5014999			
GIGABYTE			
Title			
PCH GND			
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FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL4 FAN_TAC4
OPT_FAN or SYS_FAN4	FAN_CTL5 FAN_TAC5
THRMTrip	PIN56
PROCHOT	PIN89



Gigabyte Technology

File: IT8686

Size: C

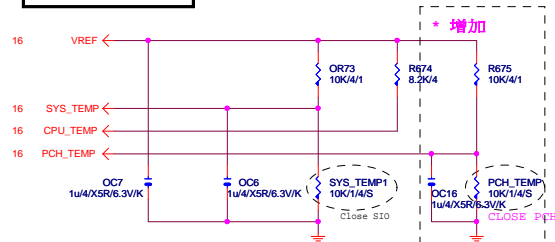
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Date: Tuesday, November 15, 2016

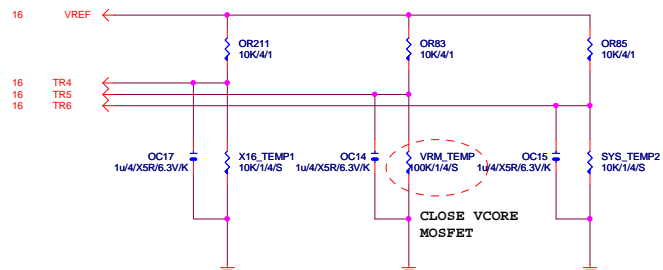
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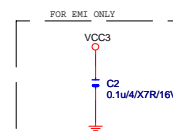
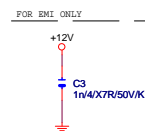
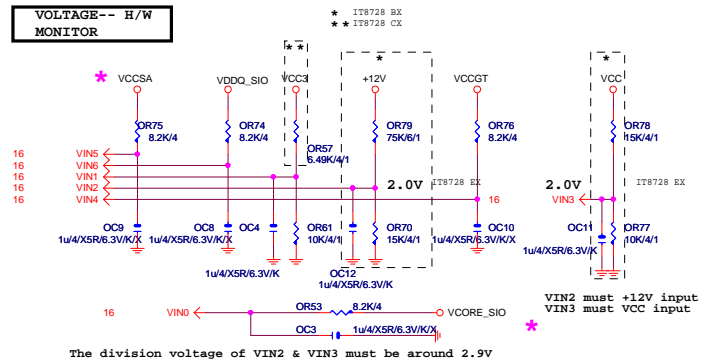
TEMP H/W MONITOR



5個FAN時使用



VOLTAGE-- H/W
MONITOR



★Update 2015-04.24

Gigabyte Technology

Title				HWM,KB/MS, FAN CTRL			
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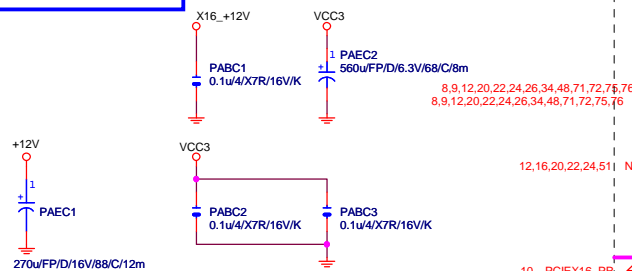
Rev 0.3

PCIEX16 CAP

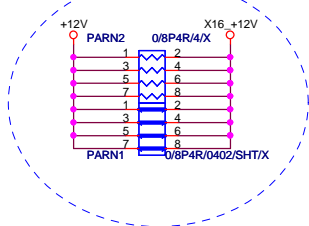
PCIEX16 SLOT

PCIESLOT-1645TH

3GIO_*16



PCIEX16 PROTECT SHT

+12 protect
short-wire test

PCIEX16 AC CAP

PA EXP TXP0	PAC5	0.22u/4X5R/6.3V/K	PA EXP TXP0 C
PA EXP TXN0	PAC4	0.22u/4X5R/6.3V/K	PA EXP TXN0 C
PA EXP TXP1	PAC6	0.22u/4X5R/6.3V/K	PA EXP TXP1 C
PA EXP TXN1	PAC7	0.22u/4X5R/6.3V/K	PA EXP TXN1 C
PA EXP TXP2	PAC8	0.22u/4X5R/6.3V/K	PA EXP TXP2 C
PA EXP TXN2	PAC9	0.22u/4X5R/6.3V/K	PA EXP TXN2 C
PA EXP TXP3	PAC10	0.22u/4X5R/6.3V/K	PA EXP TXP3 C
PA EXP TXN3	PAC11	0.22u/4X5R/6.3V/K	PA EXP TXN3 C
PA EXP TXP4	PAC12	0.22u/4X5R/6.3V/K	PA EXP TXP4 C
PA EXP TXN4	PAC13	0.22u/4X5R/6.3V/K	PA EXP TXN4 C
PA EXP TXP5	PAC14	0.22u/4X5R/6.3V/K	PA EXP TXP5 C
PA EXP TXN5	PAC15	0.22u/4X5R/6.3V/K	PA EXP TXN5 C
PA EXP TXP6	PAC16	0.22u/4X5R/6.3V/K	PA EXP TXP6 C
PA EXP TXN6	PAC17	0.22u/4X5R/6.3V/K	PA EXP TXN6 C
PA EXP TXP7	PAC18	0.22u/4X5R/6.3V/K	PA EXP TXP7 C
PA EXP TXN7	PAC19	0.22u/4X5R/6.3V/K	PA EXP TXN7 C
PA EXP SW TXP8	PAC21	0.22u/4X5R/6.3V/K	PA EXP SW TXP8 C
PA EXP SW TXN8	PAC20	0.22u/4X5R/6.3V/K	PA EXP SW TXN8 C
PA EXP SW TXP9	PAC22	0.22u/4X5R/6.3V/K	PA EXP SW TXP9 C
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PA EXP SW TXP12	PAC28	0.22u/4X5R/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXN12	PAC29	0.22u/4X5R/6.3V/K	PA EXP SW TXN12 C
PA EXP SW TXP13	PAC30	0.22u/4X5R/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXN13	PAC31	0.22u/4X5R/6.3V/K	PA EXP SW TXN13 C
PA EXP SW TXP14	PAC32	0.22u/4X5R/6.3V/K	PA EXP SW TXP14 C
PA EXP SW TXN14	PAC33	0.22u/4X5R/6.3V/K	PA EXP SW TXN14 C
PA EXP SW TXP15	PAC34	0.22u/4X5R/6.3V/K	PA EXP SW TXP15 C
PA EXP SW TXN15	PAC35	0.22u/4X5R/6.3V/K	PA EXP SW TXN15 C

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

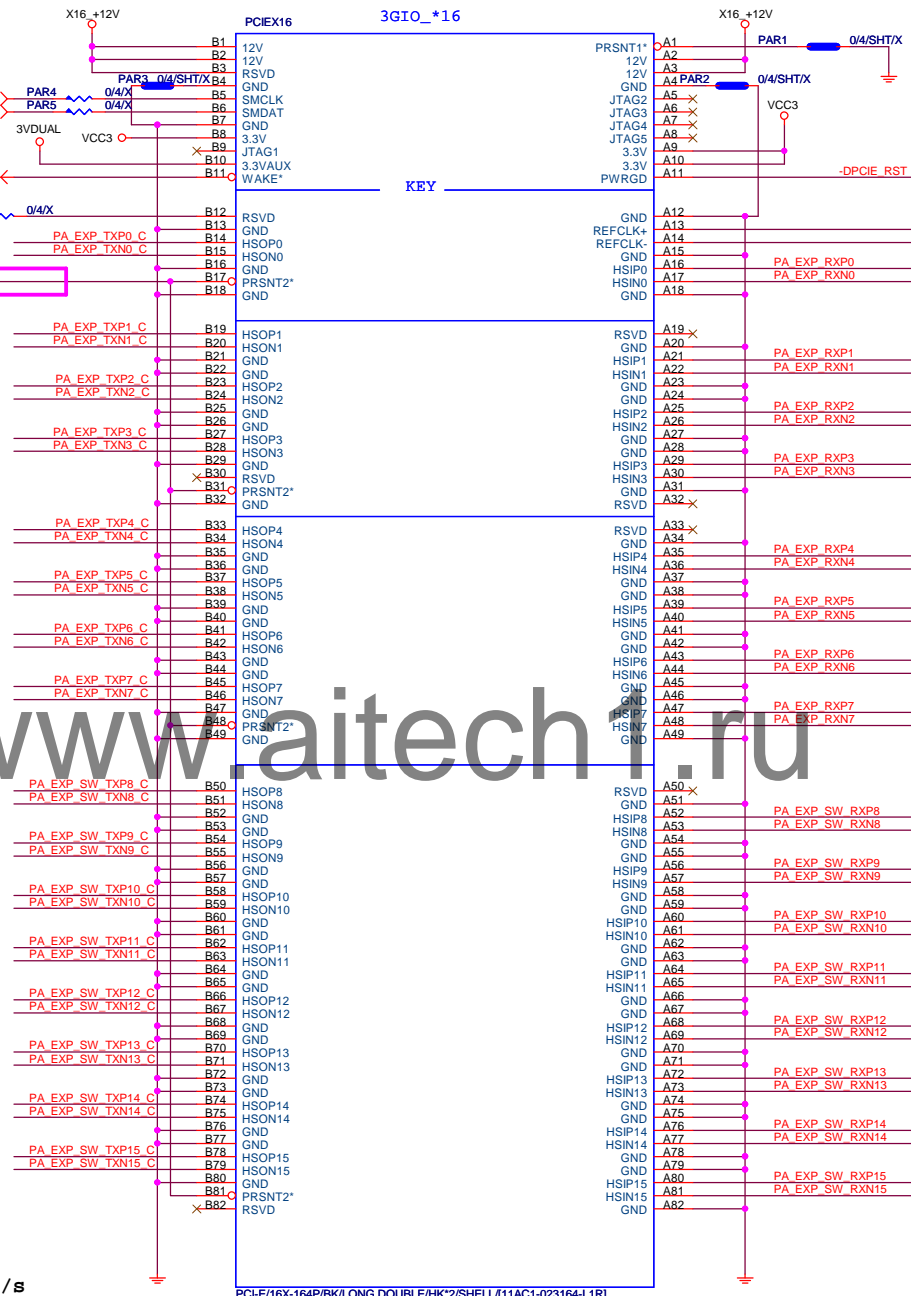
PCE-E X1(單向) BANDWIDTH=5GHz*(8b/10b)=4Gb/s=500MB/s

PCI-E REV:3.0--> 8GHZ

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

12,16,20,22,24,51

10 -PCIEX16_PR



PCI-E/16X-164P/BK/LONG DOUBLE/HK*2/SHELL(11AC1-023164-L1R)

黑色金屬加強

PCIEX16:16/5/5/5/16

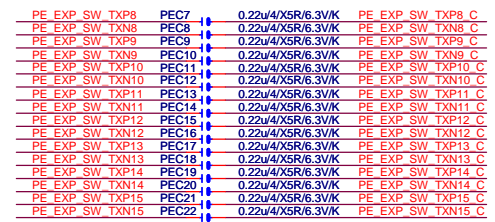
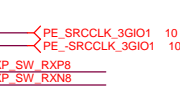
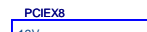
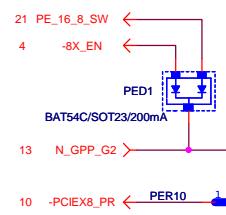
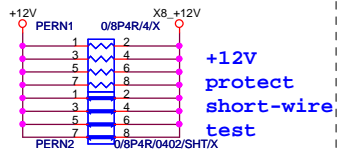
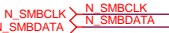
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PA EXP RXN[0..15]	>>PA_EXP_RXN[0..15]	4,21
PA EXP TXP[0..15]	>>PA_EXP_TXP[0..15]	4,21
PA EXP TXN[0..15]	>>PA_EXP_TXN[0..15]	4,21
PA EXP SW RXP[8..15]	>>PA_EXP_SW_RXP[8..15]	21
PA EXP SW RXN[8..15]	>>PA_EXP_SW_RXN[8..15]	21
PA EXP SW TXP[8..15]	>>PA_EXP_SW_TXP[8..15]	21
PA EXP SW TXN[8..15]	>>PA_EXP_SW_TXN[8..15]	21

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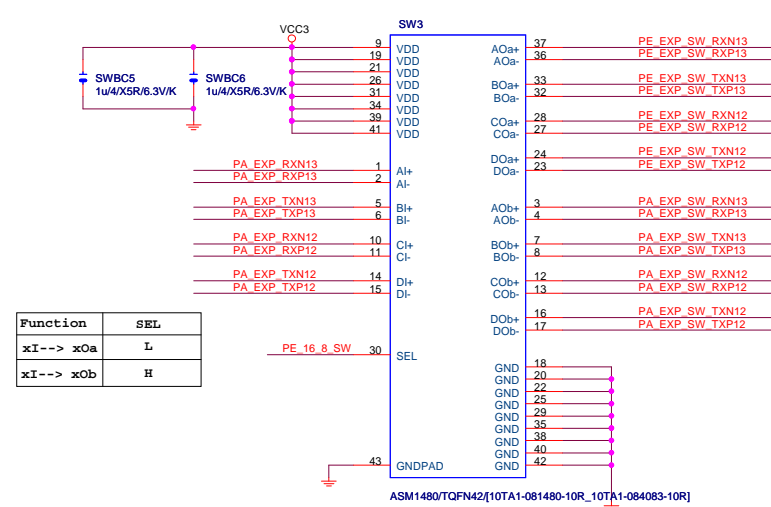
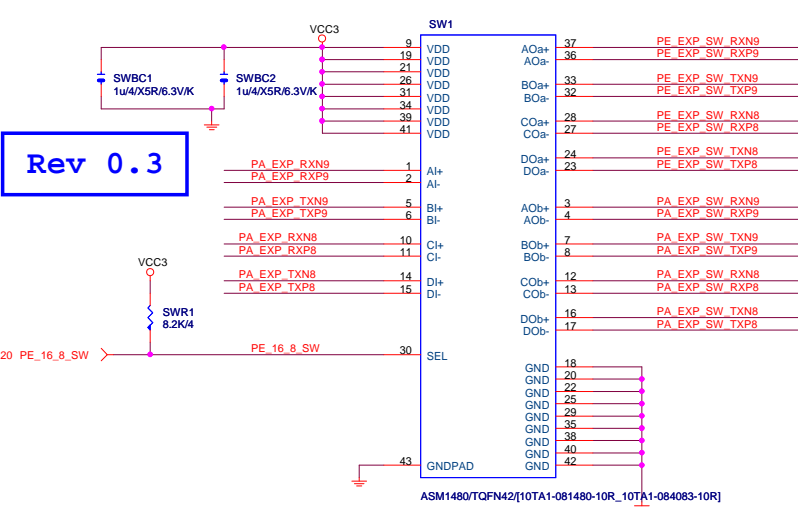


Pinout diagram for the R5000000 module. The diagram shows connections for four signal lines: PE EXP SW TXP14 C, PE EXP SW TXN14 C, PE EXP SW TXP15 C, and PE EXP SW TXN15 C. The pins are labeled B39 through B47 on the left and A39 through A47 on the right. The central text 'aitech.ru' is a watermark.

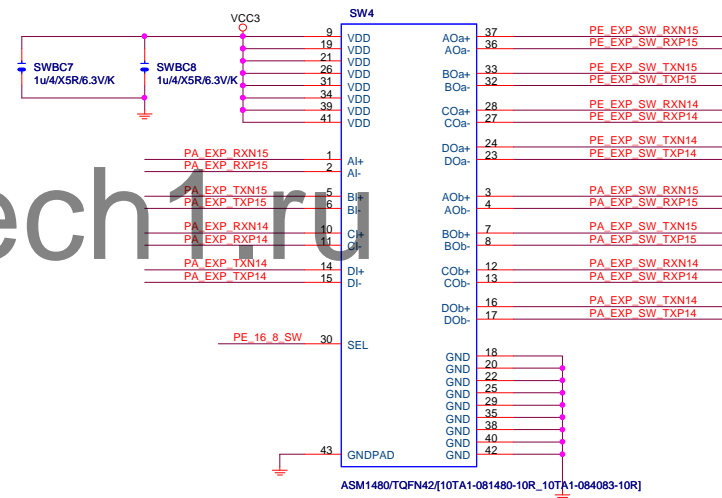
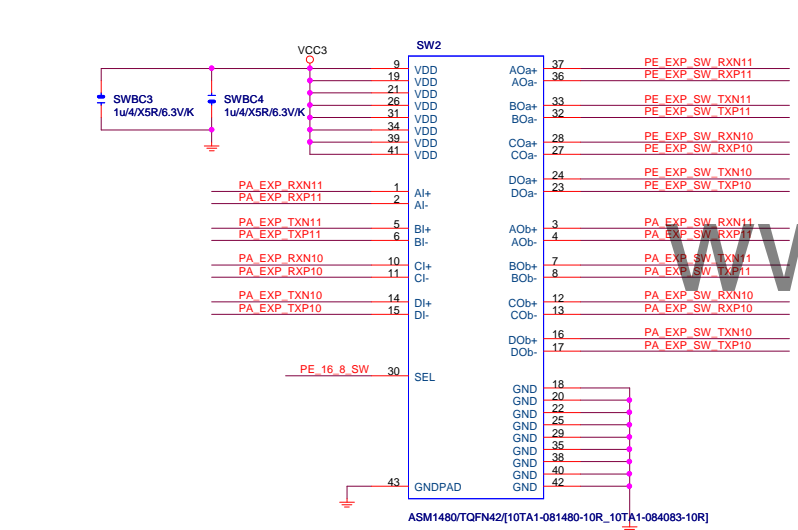
Signal	Pin	Label
PE EXP SW TXP14 C	B39	HS0N5
PE EXP SW TXN14 C	B40	GND
PE EXP SW TXP15 C	B41	GND
PE EXP SW TXN15 C	B42	HS0P6
	B43	HS0N6
	B44	GND
	B45	GND
	B46	HS0P7
	B47	HS0N7
	A39	GND
	A40	HS1P5
	A41	HS1N5
	A42	GND
	A43	HS1P6
	A44	HS1N6
	A45	GND
	A46	GND
	A47	GND

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Rev 0.3



Function	SEL
xI--> x0a	L
xI--> x0b	H

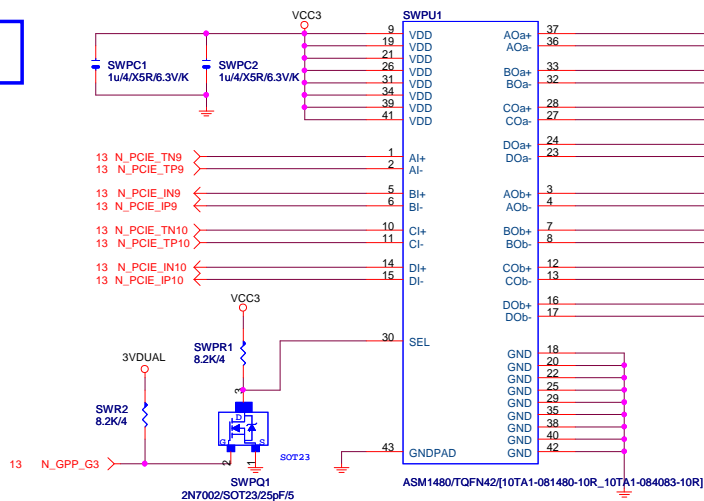




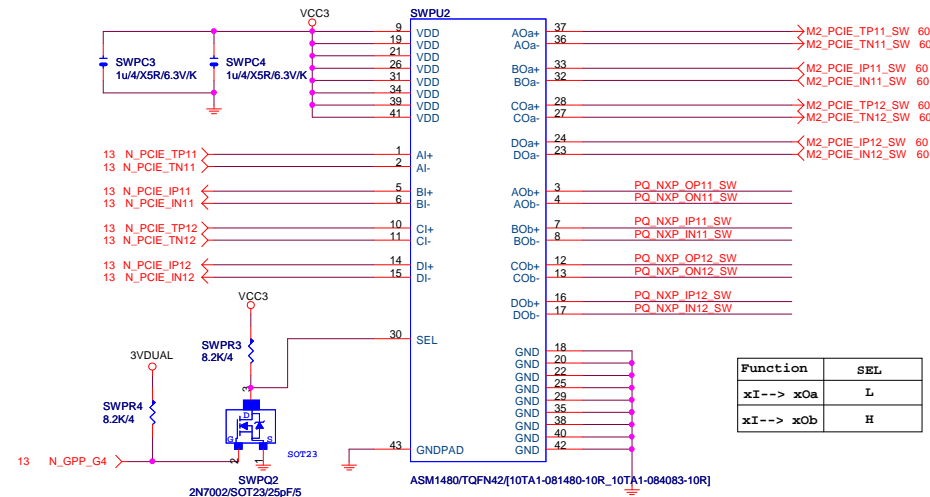
Gigabyte Technology

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Custom	GA-Z270X-GAMING 5		1.01
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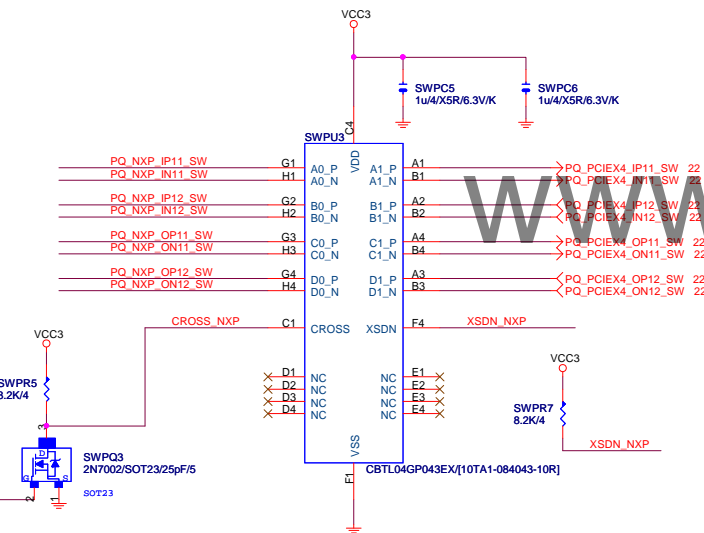
Rev 0.1



Function	SEL
xI--> xOa	L
xI--> xOb	H



Function	SEL
xI--> xOa	L
xI--> xOb	H

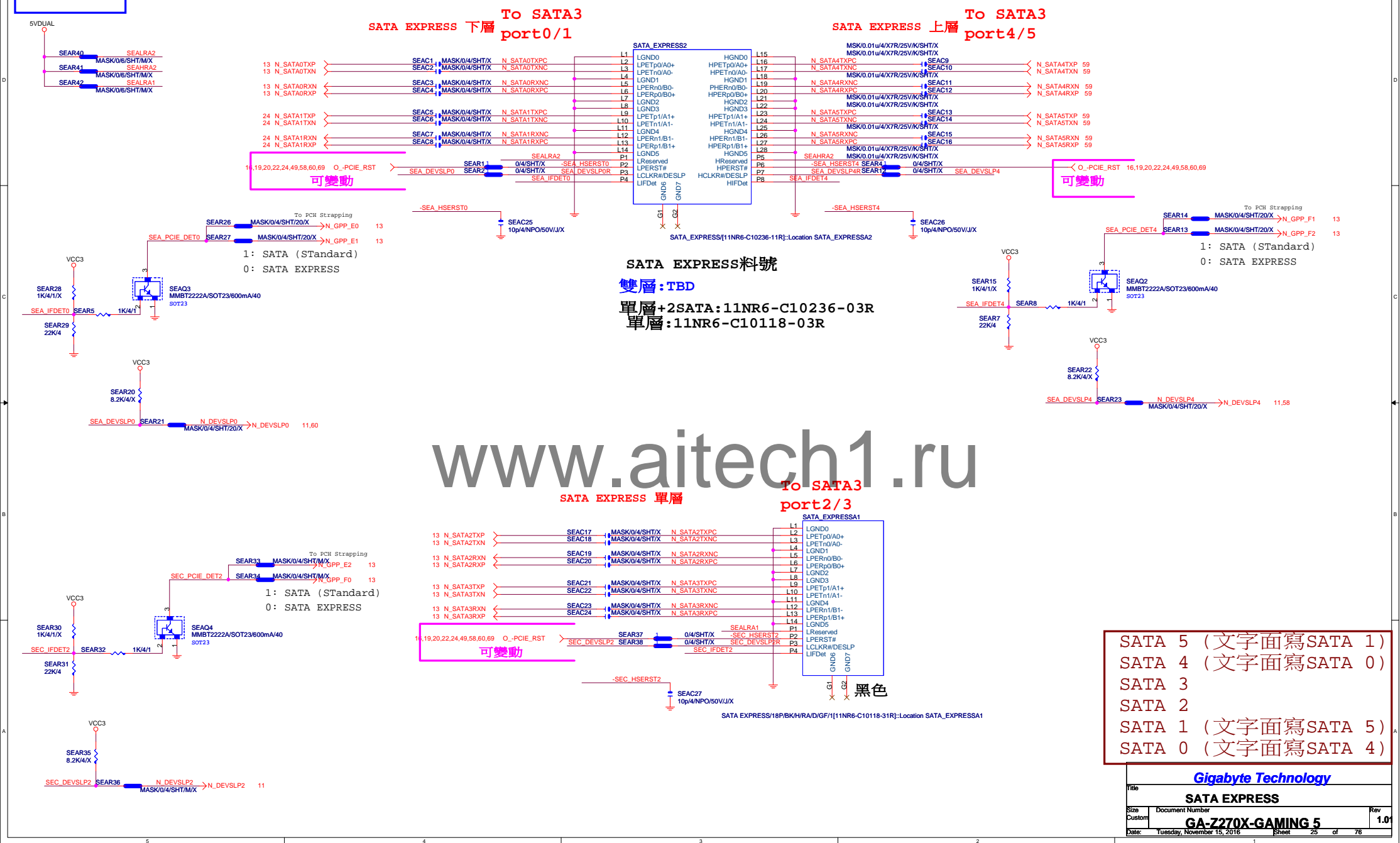


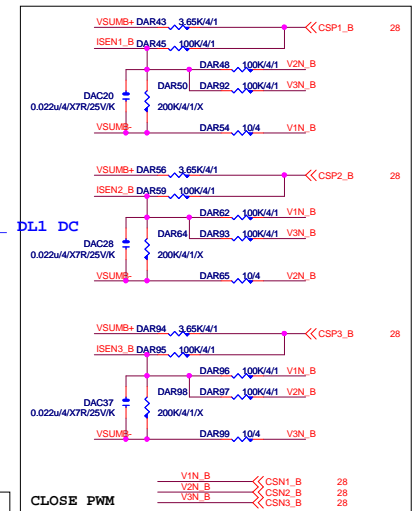
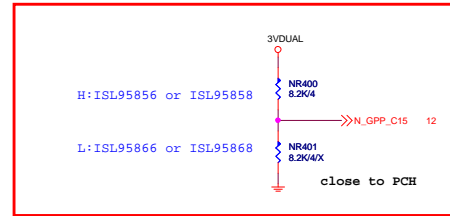
When CROSS = HIGH, selects cross function
When CROSS = LOW, selects pass-through function.

Flex IO priority	N_GPP_G0 (PCH GPP_G0)	N_GPP_D16 (PCH GPP_D16)
M2P_32G Only	L	H
PCIEX4 Only (PCIe Reverse)	H	L
M2P_32G + PCIEX4 (M2P_32Gx2 + PCIEX4_x2)	L	L

N_GPP_G3 (PCH GPP_G3)	N_GPP_G4 (PCH GPP_G4)	N_GPP_G9 (PCH GPP_G9)
H	H	H
L	L	H
H	L	L

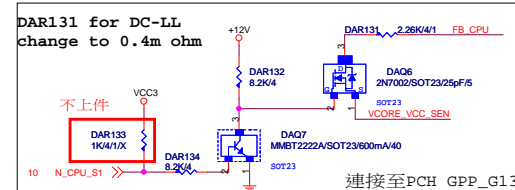
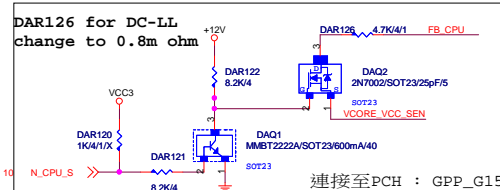
Gigabyte Technology SWITCH			
Title	GA-Z270X-GAMING 5		
Size	Document Number	Rev	1.01
Custom			
Date:	Tuesday, November 15, 2016	Sheet	23 of 76



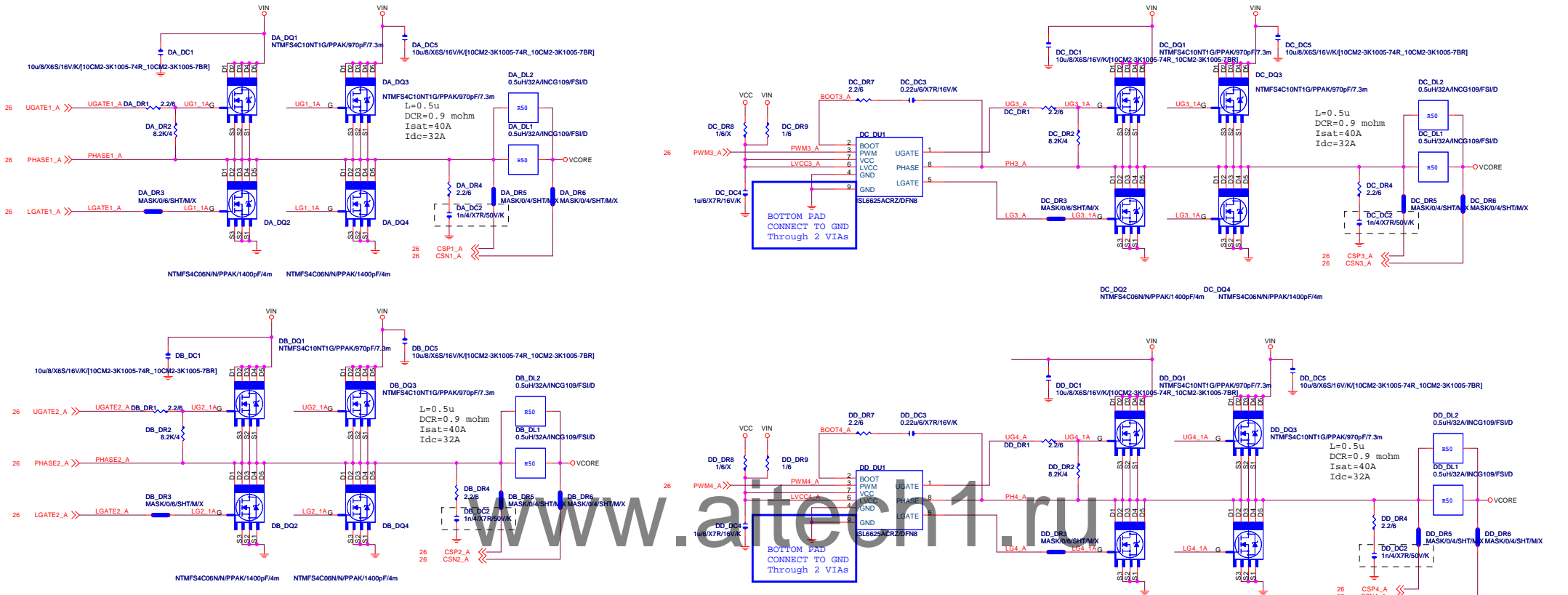


DAR127 for DC-LL change to 1.1m ohm

Diagram illustrating the circuit for DC-LL modification. The circuit includes a MOSFET (DAQ3) and a sense resistor (DAR124). The MOSFET is connected to a +12V supply through a resistor (DAR125). The MOSFET's gate is driven by a MOSFET (DAQ4) through a resistor (DAR127). The MOSFET's source is connected to a sense resistor (DAR124) and then to GND. The MOSFET's drain is connected to a load resistor (DAR123) and then to VCC3. A sense resistor (DAR126) is connected between the MOSFET's drain and the sense input (VCCGT_SENSE). The sense input is also connected to GND. The diagram is labeled "連接至PCH : GPP_G14".

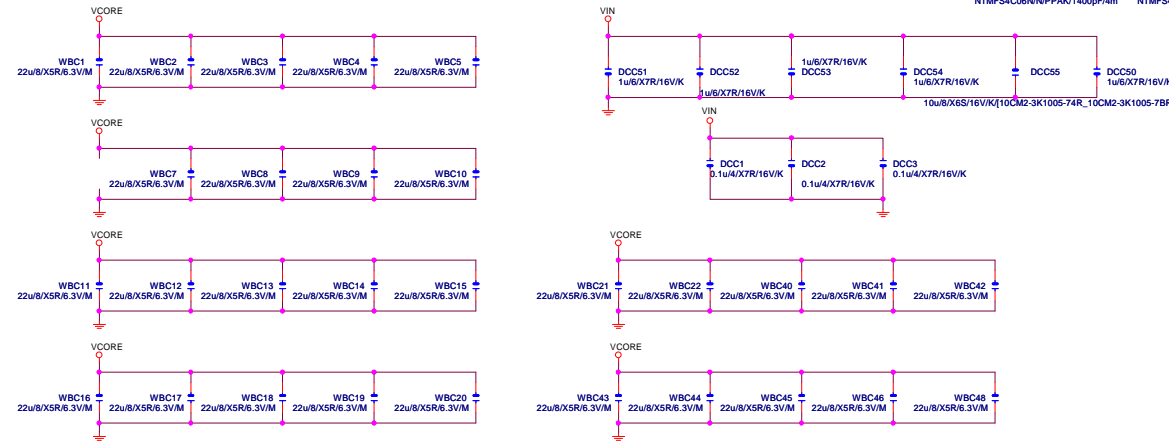
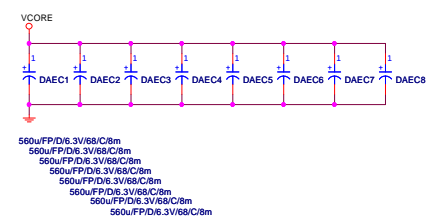


VCORE

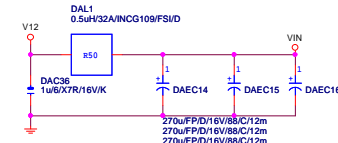


VCORE CAP

560u*8PCS
22u*29PCS

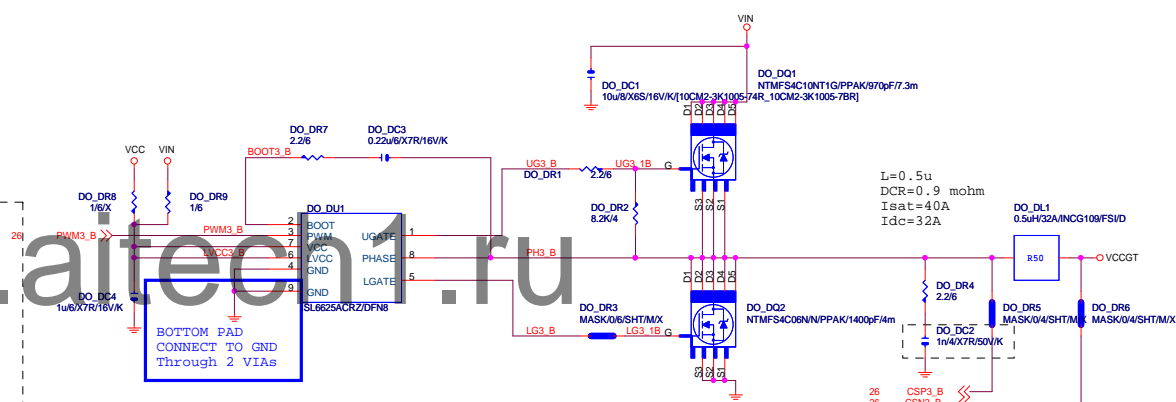
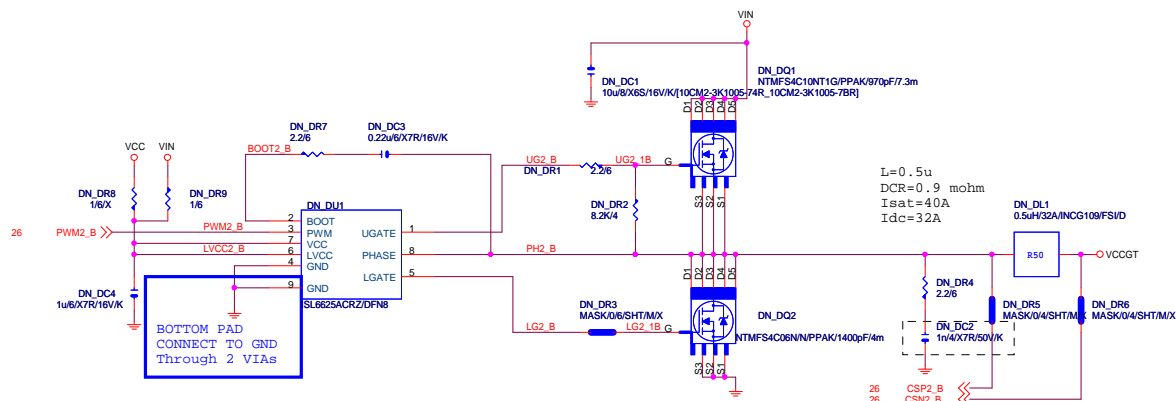



VIN CAP 270u*3PCS



GIGABYTE

ISL95856 MOS		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.01
Date: Tuesday, November 15, 2016		Sheet 27 of 76

[illegible]

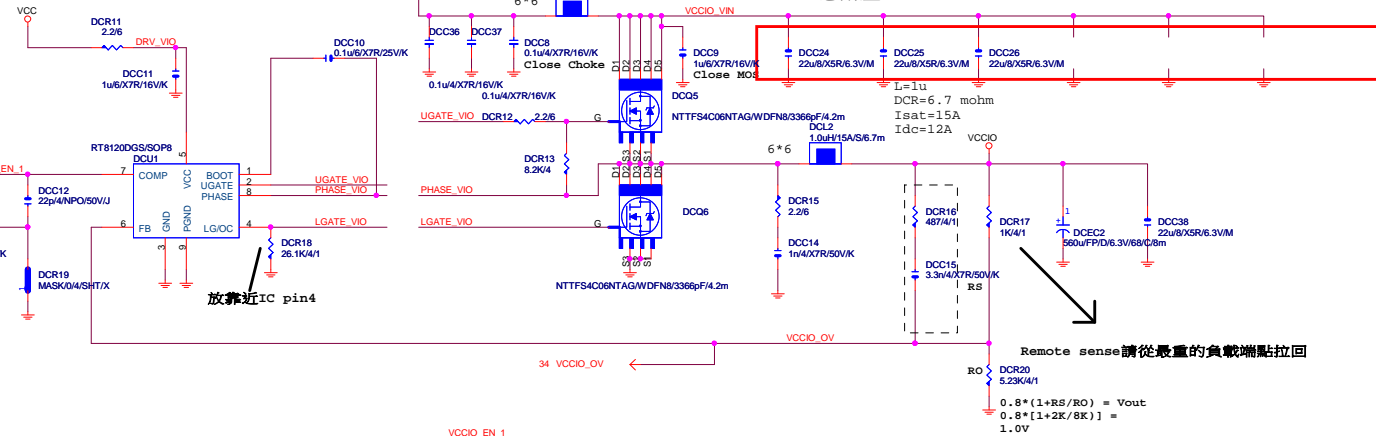
				
Title				
ISL95856_MOS				
Size	Document Number			Rev
Custom	GA-Z270X-GAMING 5			1.01
Date:	Tuesday, November 15, 2016	Sheet	28 of	76

REV:0.22

$L=1\mu$
 $DCR=6.7\text{ mohm}$
 $Isat=15A$
 $Idc=12A$

CHOKE與CAP料號可變

注意耐壓



Connect to IT8793

71 VCCIO_EC_EN >> DCR34 0.4K/X

16.7 VCCIO_EN >> DCR35 10K/SHT/MX

Connect to IT8686

DCR22 100K/4/1

DCR16 1u6/X7R/16V/K

DCR21 8.2K/4

DCR23 2N7002/SOT23/25pF/5

DCR24 1u6/X7R/16V/K

DCR25 2.2/6

DCR26 8.2K/4

DCR27 3.3n4/X7R/50V/K

DCR28 1u6/X7R/16V/K

DCR29 2.2/6

DCR30 1u6/X7R/16V/K

DCR31 1u6/X7R/16V/K

DCR32 1u6/X7R/16V/K

DCR33 1u6/X7R/16V/K

DCR34 1u6/X7R/16V/K

DCR35 1u6/X7R/16V/K

DCR36 1u6/X7R/16V/K

DCR37 1u6/X7R/16V/K

DCR38 1u6/X7R/16V/K

DCR39 1u6/X7R/16V/K

DCR40 1u6/X7R/16V/K

DCR41 1u6/X7R/16V/K

DCR42 1u6/X7R/16V/K

DCR43 1u6/X7R/16V/K

DCR44 1u6/X7R/16V/K

DCR45 1u6/X7R/16V/K

DCR46 1u6/X7R/16V/K

DCR47 1u6/X7R/16V/K

DCR48 1u6/X7R/16V/K

DCR49 1u6/X7R/16V/K

DCR50 1u6/X7R/16V/K

DCR51 1u6/X7R/16V/K

DCR52 1u6/X7R/16V/K

DCR53 1u6/X7R/16V/K

DCR54 1u6/X7R/16V/K

DCR55 1u6/X7R/16V/K

DCR56 1u6/X7R/16V/K

DCR57 1u6/X7R/16V/K

DCR58 1u6/X7R/16V/K

DCR59 1u6/X7R/16V/K

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DCR62 1u6/X7R/16V/K

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DCR64 1u6/X7R/16V/K

DCR65 1u6/X7R/16V/K

DCR66 1u6/X7R/16V/K

DCR67 1u6/X7R/16V/K

DCR68 1u6/X7R/16V/K

DCR69 1u6/X7R/16V/K

DCR70 1u6/X7R/16V/K

DCR71 1u6/X7R/16V/K

DCR72 1u6/X7R/16V/K

DCR73 1u6/X7R/16V/K

DCR74 1u6/X7R/16V/K

DCR75 1u6/X7R/16V/K

DCR76 1u6/X7R/16V/K

DCR77 1u6/X7R/16V/K

DCR78 1u6/X7R/16V/K

DCR79 1u6/X7R/16V/K

DCR80 1u6/X7R/16V/K

DCR81 1u6/X7R/16V/K

DCR82 1u6/X7R/16V/K

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DCR84 1u6/X7R/16V/K

DCR85 1u6/X7R/16V/K

DCR86 1u6/X7R/16V/K

DCR87 1u6/X7R/16V/K

DCR88 1u6/X7R/16V/K

DCR89 1u6/X7R/16V/K

DCR90 1u6/X7R/16V/K

DCR91 1u6/X7R/16V/K

DCR92 1u6/X7R/16V/K

DCR93 1u6/X7R/16V/K

DCR94 1u6/X7R/16V/K

DCR95 1u6/X7R/16V/K

DCR96 1u6/X7R/16V/K

DCR97 1u6/X7R/16V/K

DCR98 1u6/X7R/16V/K

DCR99 1u6/X7R/16V/K

DCR100 1u6/X7R/16V/K

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SIO PIN5 . PIN7 用在其他function時使用

SIO PIN5接VDDQ . PIN7接VCCIO .時使用

Connect to IT8793

71 VCCSA_EC_EN >> DCR36 0.4K/X

16 VCCSA_EN >> DCR37 10K/SHT/MX

Connect to IT8686

DCR22 100K/4/1

DCR16 1u6/X7R/16V/K

DCR21 8.2K/4

DCR23 2N7002/SOT23/25pF/5

DCR24 1u6/X7R/16V/K

DCR25 2.2/6

DCR26 8.2K/4

DCR27 3.3n4/X7R/50V/K

DCR28 1u6/X7R/16V/K

DCR29 2.2/6

DCR30 1u6/X7R/16V/K

DCR31 1u6/X7R/16V/K

DCR32 1u6/X7R/16V/K

DCR33 1u6/X7R/16V/K

DCR34 1u6/X7R/16V/K

DCR35 1u6/X7R/16V/K

DCR36 1u6/X7R/16V/K

DCR37 1u6/X7R/16V/K

DCR38 1u6/X7R/16V/K

DCR39 1u6/X7R/16V/K

DCR40 1u6/X7R/16V/K

DCR41 1u6/X7R/16V/K

DCR42 1u6/X7R/16V/K

DCR43 1u6/X7R/16V/K

DCR44 1u6/X7R/16V/K

DCR45 1u6/X7R/16V/K

DCR46 1u6/X7R/16V/K

DCR47 1u6/X7R/16V/K

DCR48 1u6/X7R/16V/K

DCR49 1u6/X7R/16V/K

DCR50 1u6/X7R/16V/K

DCR51 1u6/X7R/16V/K

DCR52 1u6/X7R/16V/K

DCR53 1u6/X7R/16V/K

DCR54 1u6/X7R/16V/K

DCR55 1u6/X7R/16V/K

DCR56 1u6/X7R/16V/K

DCR57 1u6/X7R/16V/K

DCR58 1u6/X7R/16V/K

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DCR67 1u6/X7R/16V/K

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DCR69 1u6/X7R/16V/K

DCR70 1u6/X7R/16V/K

DCR71 1u6/X7R/16V/K

DCR72 1u6/X7R/16V/K

DCR73 1u6/X7R/16V/K

DCR74 1u6/X7R/16V/K

DCR75 1u6/X7R/16V/K

DCR76 1u6/X7R/16V/K

DCR77 1u6/X7R/16V/K

DCR78 1u6/X7R/16V/K

DCR79 1u6/X7R/16V/K

DCR80 1u6/X7R/16V/K

DCR81 1u6/X7R/16V/K

DCR82 1u6/X7R/16V/K

DCR83 1u6/X7R/16V/K

DCR84 1u6/X7R/16V/K

DCR85 1u6/X7R/16V/K

DCR86 1u6/X7R/16V/K

DCR87 1u6/X7R/16V/K

DCR88 1u6/X7R/16V/K

DCR89 1u6/X7R/16V/K

DCR90 1u6/X7R/16V/K

DCR91 1u6/X7R/16V/K

DCR92 1u6/X7R/16V/K

DCR93 1u6/X7R/16V/K

DCR94 1u6/X7R/16V/K

DCR95 1u6/X7R/16V/K

DCR96 1u6/X7R/16V/K

DCR97 1u6/X7R/16V/K

DCR98 1u6/X7R/16V/K

DCR99 1u6/X7R/16V/K

DCR100 1u6/X7R/16V/K

GIGABYTE™

VCCIO_VCCSA

Size Document Number

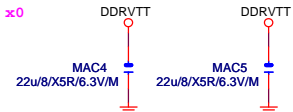
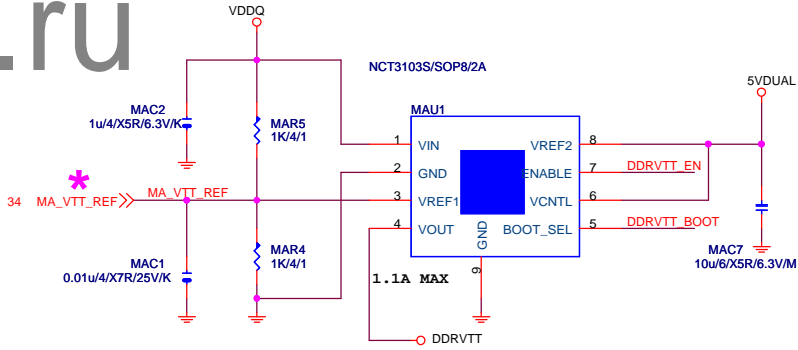
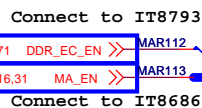
GA-Z270X-GAMING 5

Date: Tuesday, November 15, 2016

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Rev 1.01

DDR4

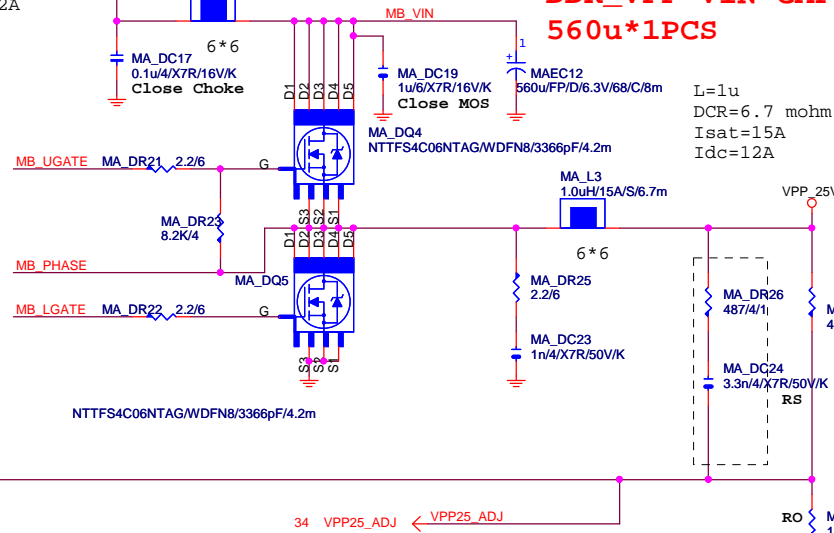
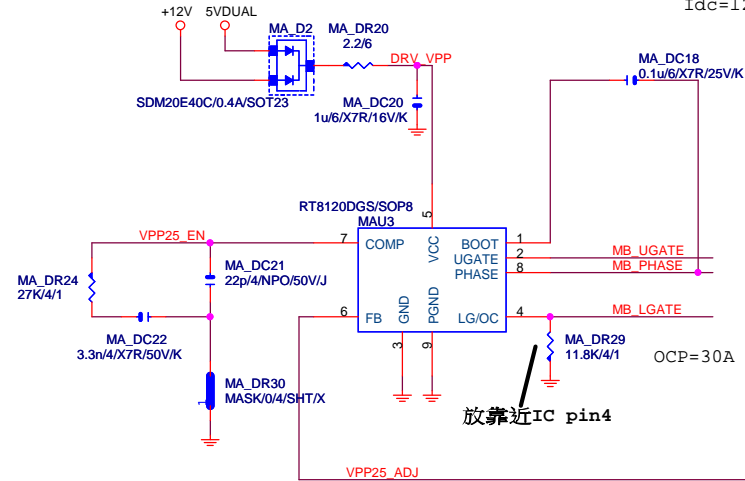


GIGABYTE™			
Title RT8120_DDR4 POWER			
Size Custom	Document Number GA-Z270X-GAMING 5		Rev 1.01
Date:	Tuesday, November 15, 2016	Sheet 30 of 76	

REV:0.2

VPP_25V

L=1u
DCR=6.7 mohm
Isat=15A
Idc=12A



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

DDR_VPP VIN CAP
560u*1PCS

L=1u
DCR=6.7 mohm
Isat=15A
Idc=12A

SUPPORT DDR4 2.5V

25A MAX

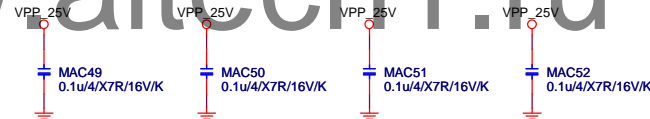
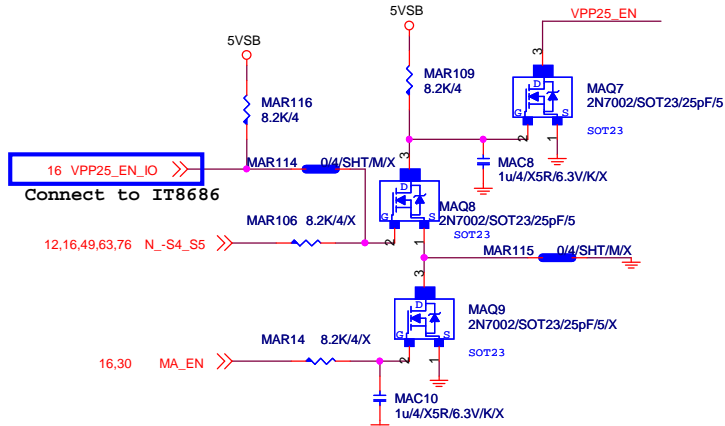
請放置CHOKe一出來位置.先預留.
請自行確認ripple後再決定是否上件

Remote sense請從最重的負載端點拉回

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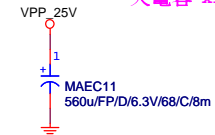
PWR_SEQ

* 刪 MA_DR32



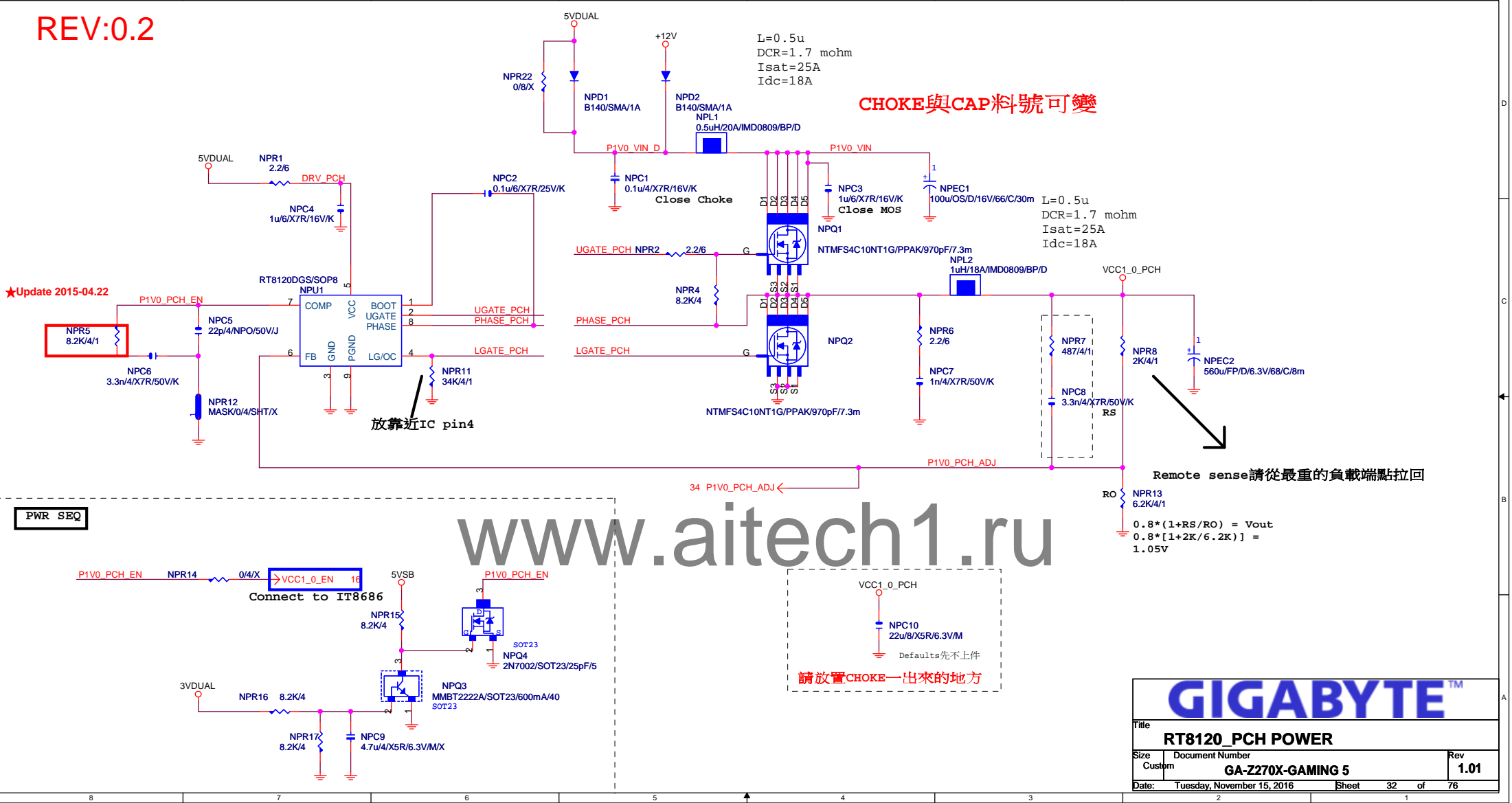
VPP CAP 560u*1PCS

* 大電容 x1



GIGABYTE™			
Title RT8120_VPP25 POWER			
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.01	
Date: Tuesday, November 15, 2016	Sheet 31	of 76	

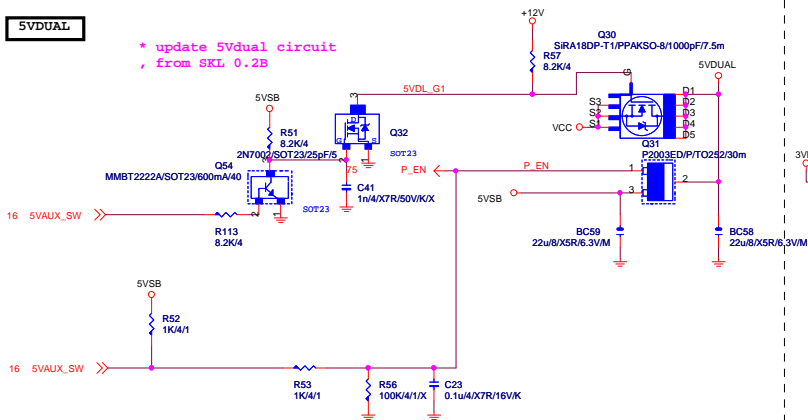
REV:0.2



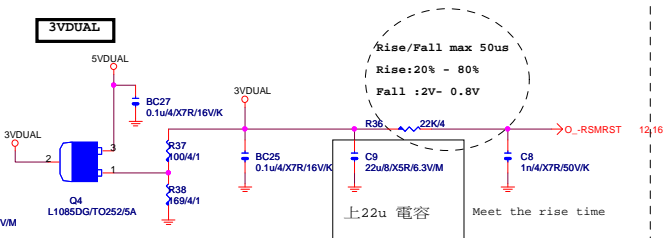
GIGABYTE™			
Title			
RT8120_PCH POWER			
Size	Document Number	Rev	
Custom	GA-Z270X-GAMING 5	1.01	
Date:	Tuesday, November 15, 2016	Sheet	32 of 76

5VDUAL

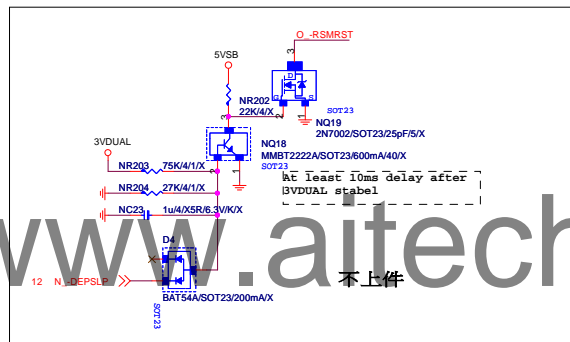
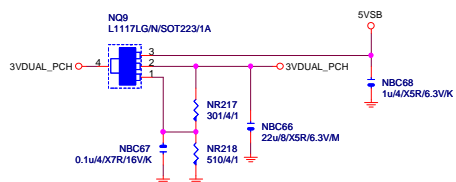
* update 5Vdual circuit
, from SKL 0.2B



3VDUAL



3VDUAL_PCH

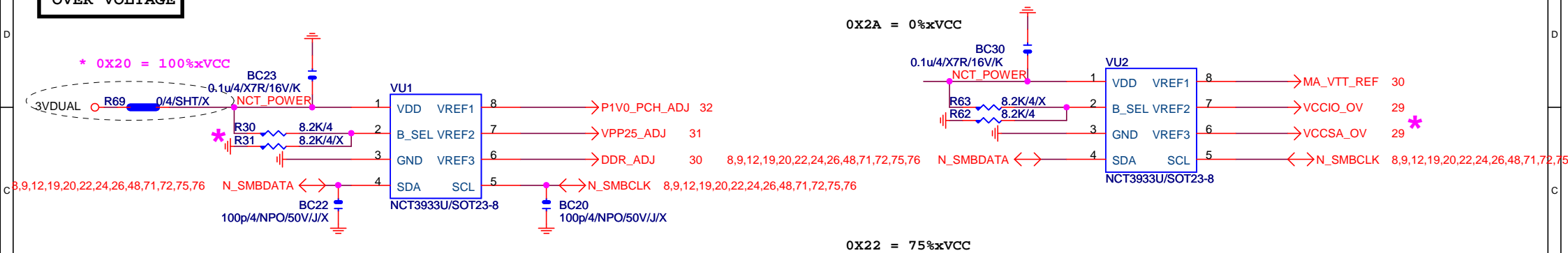


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Gigabyte Technology

Title		
DISCRETE POWER		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.01
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OVER VOLTAGE

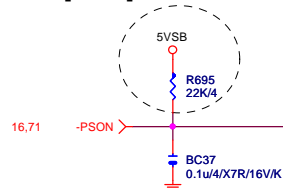


NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

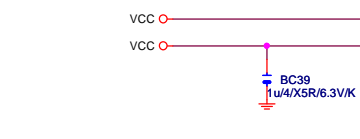
Gigabyte Technology		
CPU CORE VR-2		
Title	Document Number	Rev
	GA-Z270X-GAMING 5	1.01
Date:	Tuesday, November 15, 2016	Sheet 34 of 76

ATXX24 POWER CONNECTOR

Patch some PSU no internal pull up resistor



* 删除 -5V



APW/2*12/BK/VA/SN/2SHK/PA66/[11NH4-020024-11R]

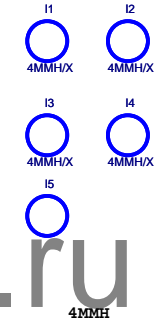
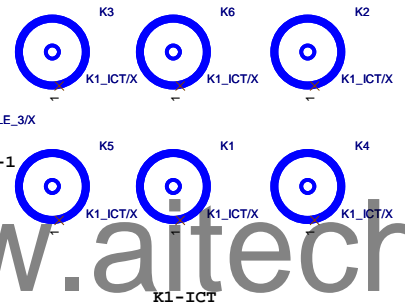
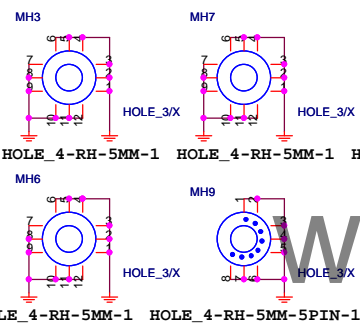
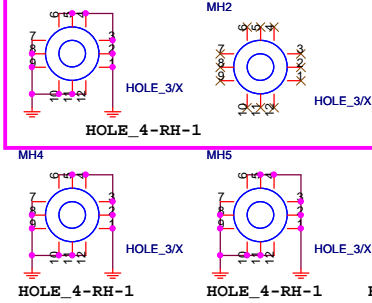
To prevent the 5VSB under loading when boot

ATXX4 POWER CONNECTOR

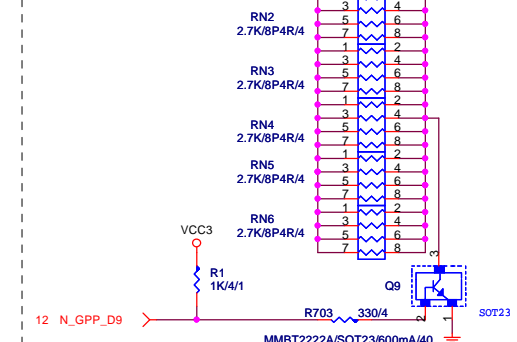
APW/2*4/BK/QC/PI/4.2/VA/SN/OH/[11NH4-020008-B1R]:Location ATX_12V_2X4

黑色

FOR AUDIO 切割

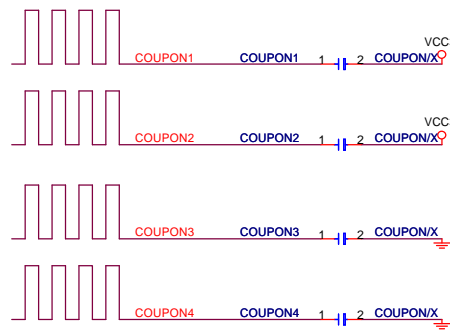


【技術通報R&D技術通報153】
To fix 12V light load abnormal issue



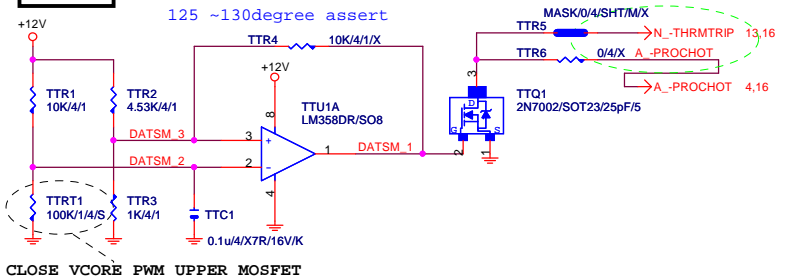
-PROHOT * 保留 ?

4.16 A_PROCHOT <-> A_PROCHOT R2 0/4/SHT/X >-> VR_HOT 26



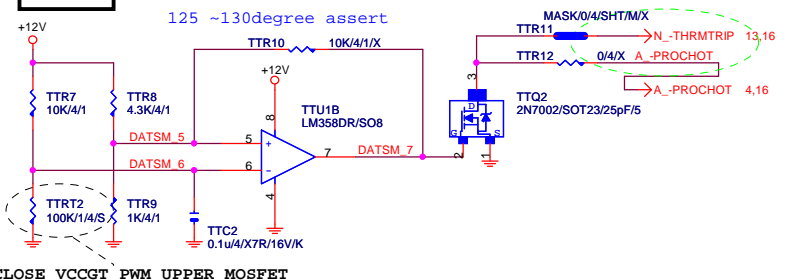
-PROHOT

OTP:130度 / PCB THERMAL TRIP:128 度



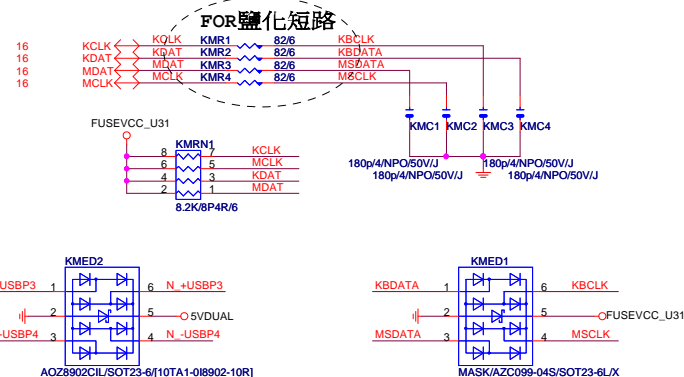
-PROHOT

OTP:130度 / PCB THERMAL TRIP:129 度

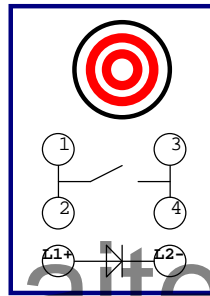


Gigabyte Technology

Title		
ATX POWER CONNECTOR		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.01
Date:	Tuesday, November 15, 2016	Sheet 35 of 76

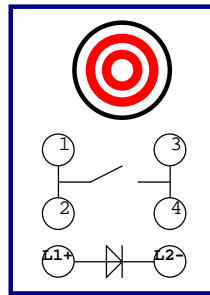
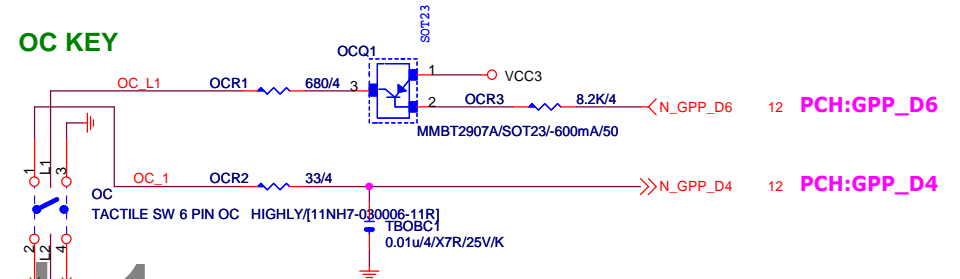


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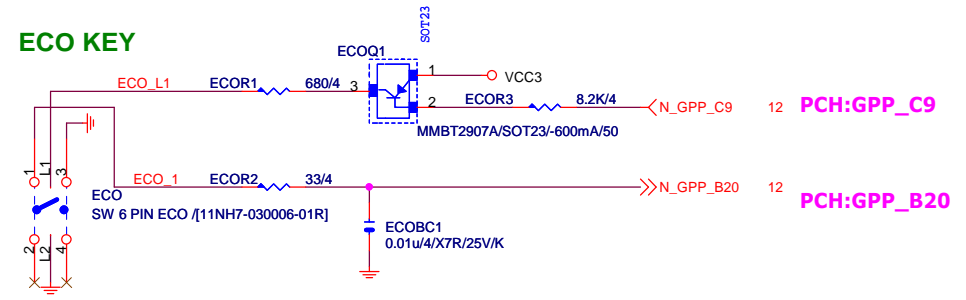
"OC_LED" 1X2pin only for Z270X-GAMING 7

OC KEY



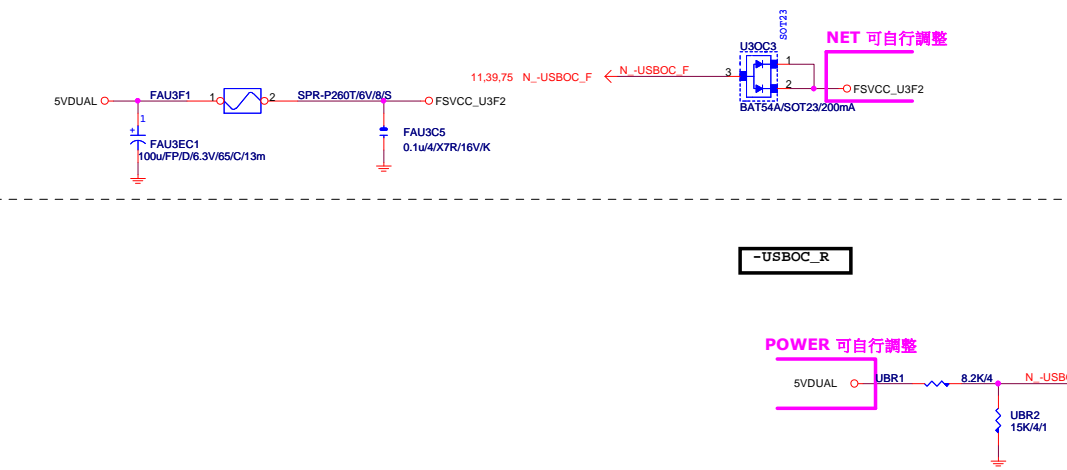
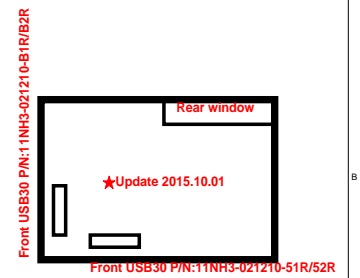
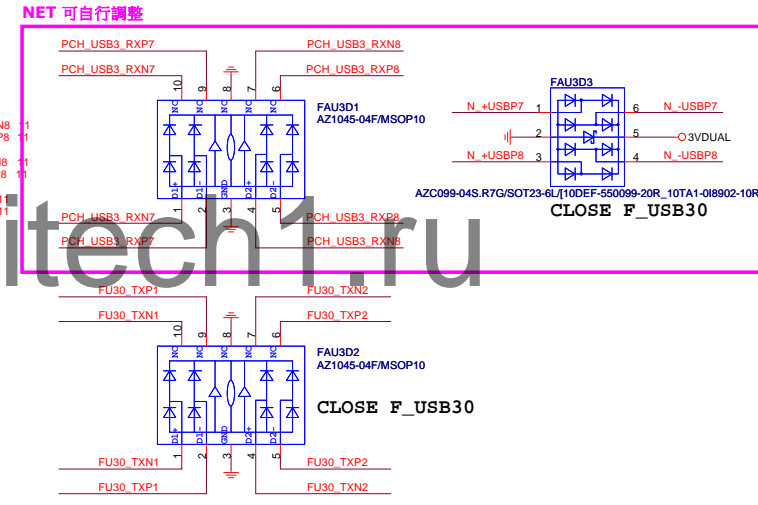
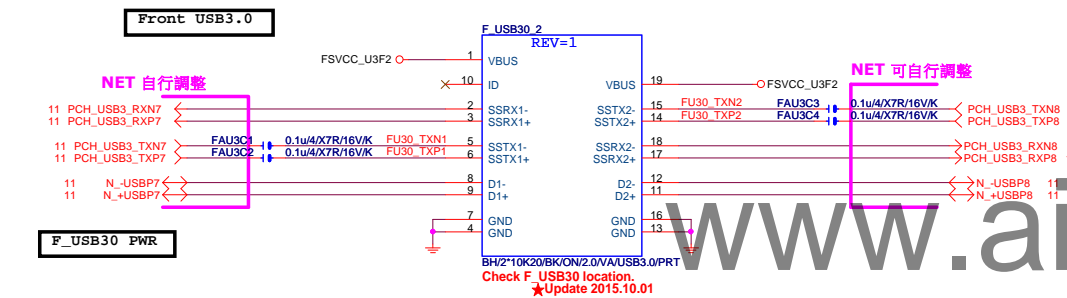
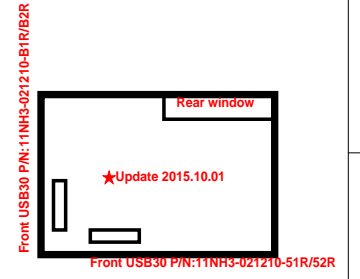
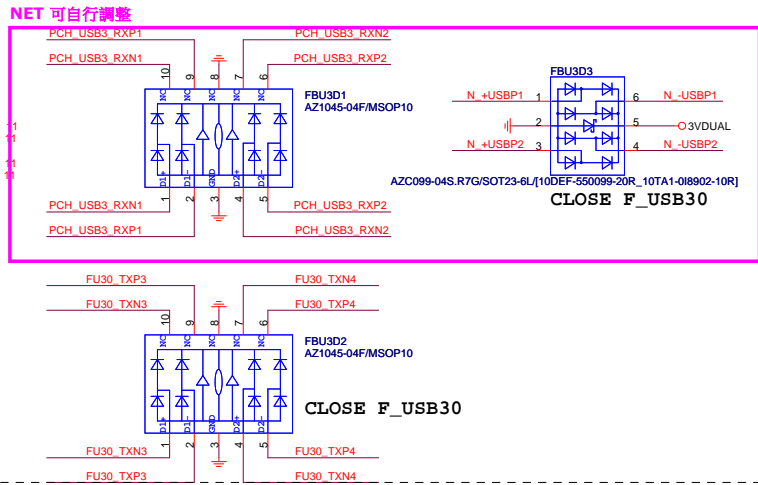
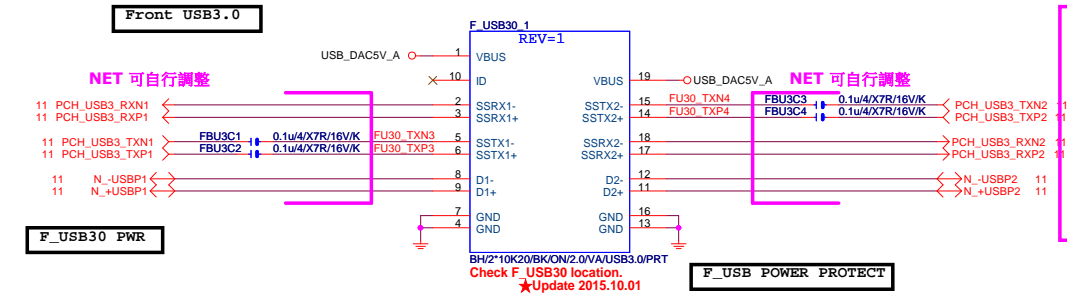
"ECO_BUTTON" 1X2pin only for Z270X-GAMING 7

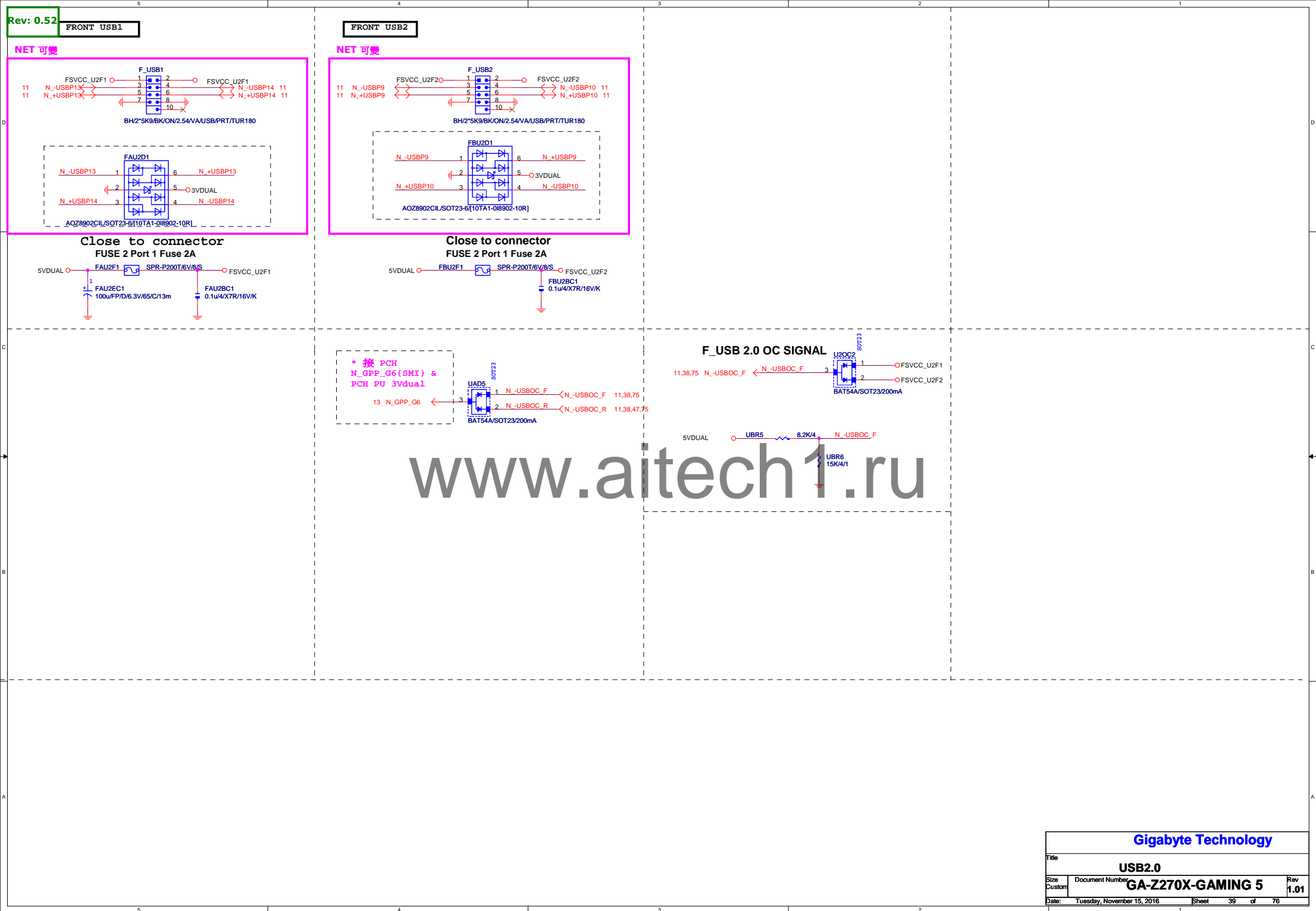
ECO KEY



Gigabyte Technology

Title		
OC BUTTON		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.01
Date:	Tuesday, November 15, 2016	Sheet 37 of 76





Gigabyte Technology

Title			USB2.0
Size	Document Number	GA-Z270X-GAMING 5	
Custom	Date	Tuesday, November 15, 2016	Rev 1.01
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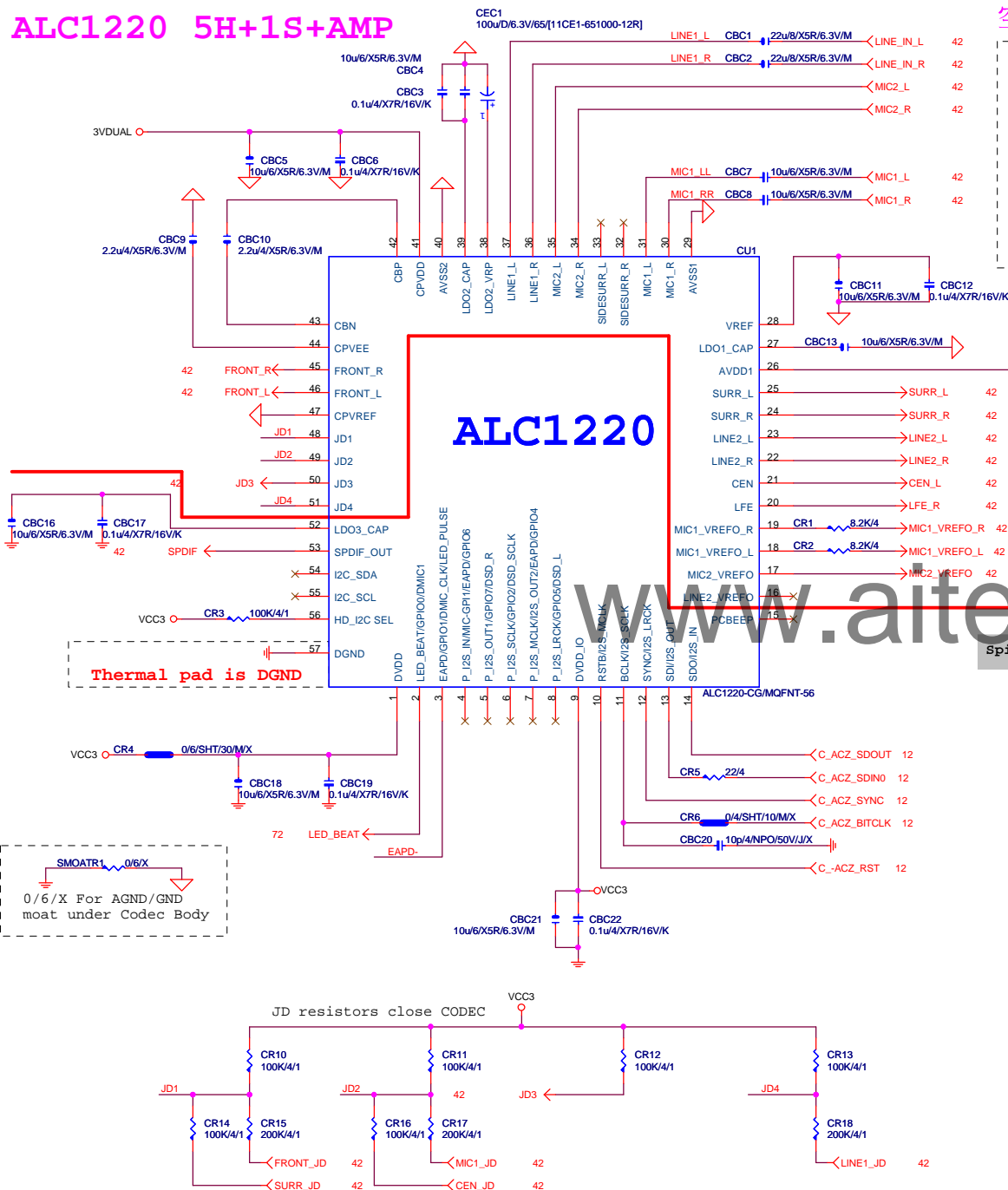
Rev: 0.52

Gigabyte Technology		
Title		
KB_MS_USB3, R_USB30		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.01
Date:	Friday, November 11, 2016	Sheet 40 of 76

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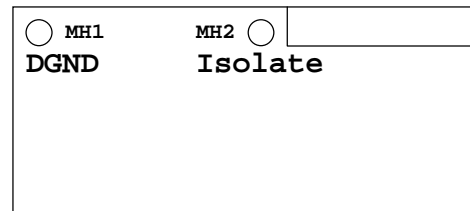
Rev 0.52

ALC1220 5H+1S+AMP



Default不上,如因layout
空間問題,可移除

LAYOUT注意:螺絲孔下GND方式
1. MH1下DGND
2. MH2一律改為Isolate



LAYOUT注意:是否要加?
AGND切割線

音效區域印刷



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Analog
Digital
Spilt by DGND

BOM OPTION :

1. AUDIO CONNECT

不銹鋼料號:11NR6-403025-A2R

鍍金料號:11NR6-403025-92R

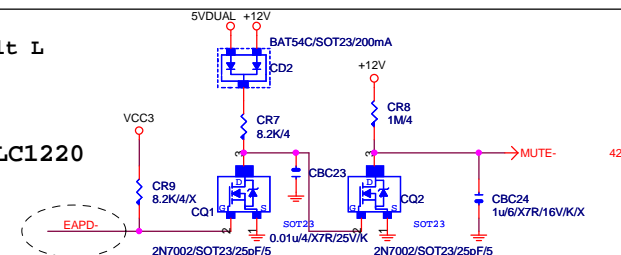
2. AUDIO CAP

Nichicon MW音效電容 : 11CE1-651000-12R

Chemicon音效電容 : 11CE2-651000-05R

EAPD: Default L
H : ON
L : OFF

Close to ALC1220

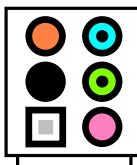


Gigabyte Technology

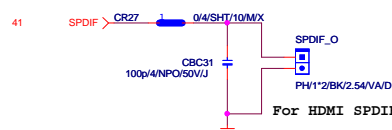
Title			ALC1220
Size	Document Number		
Custom			
GA-Z270X-GAMING 5			Rev 1.01
Date:	Tuesday, November 15, 2016	Sheet 41	of 76

Rev 0.52

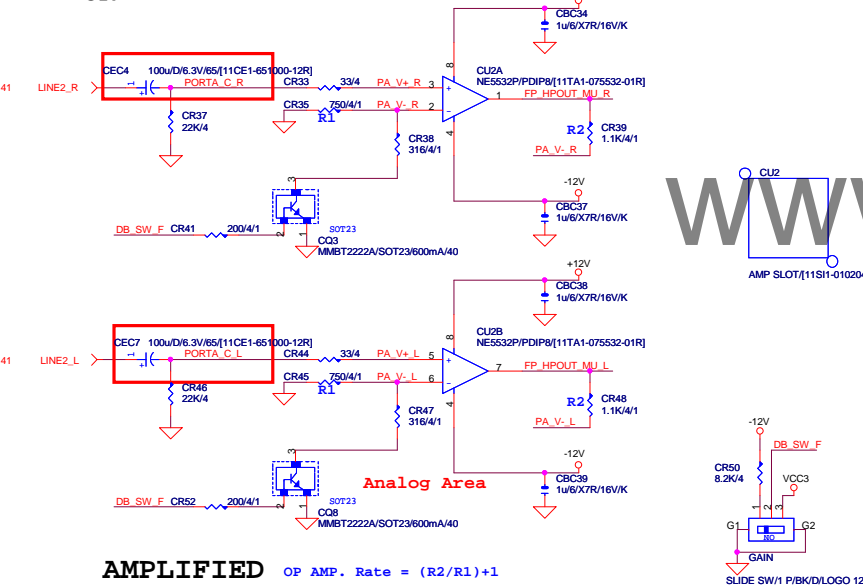
AZALIA JACK



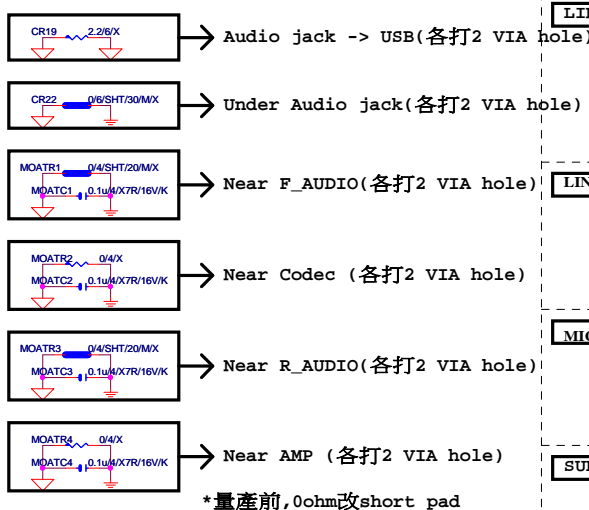
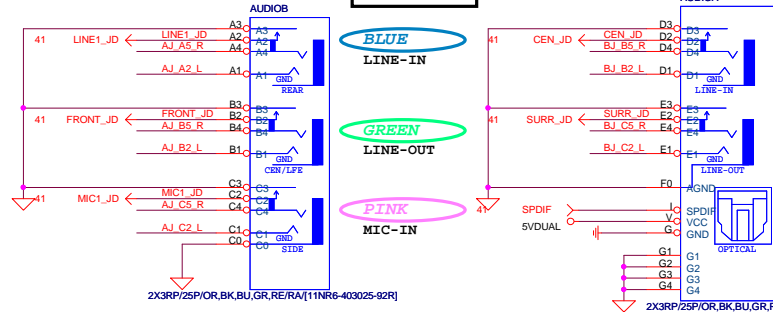
SPDIF_OUT



FRONT HP



AZALIA JACK



LINE-OUT

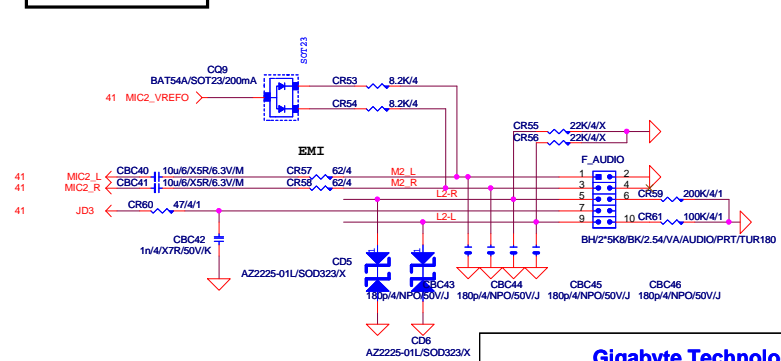
LINE-IN

MIC-IN

SURROUND

CEN/LFE

AZALIA FRONT PANE



Gigabyte Technology

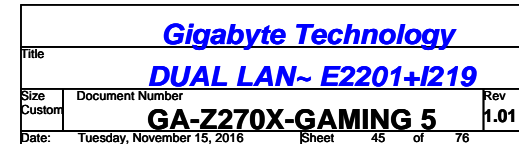
File		
AUDIO JACK		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.01
Date:	Tuesday, November 15, 2016	Sheet 42 of 76

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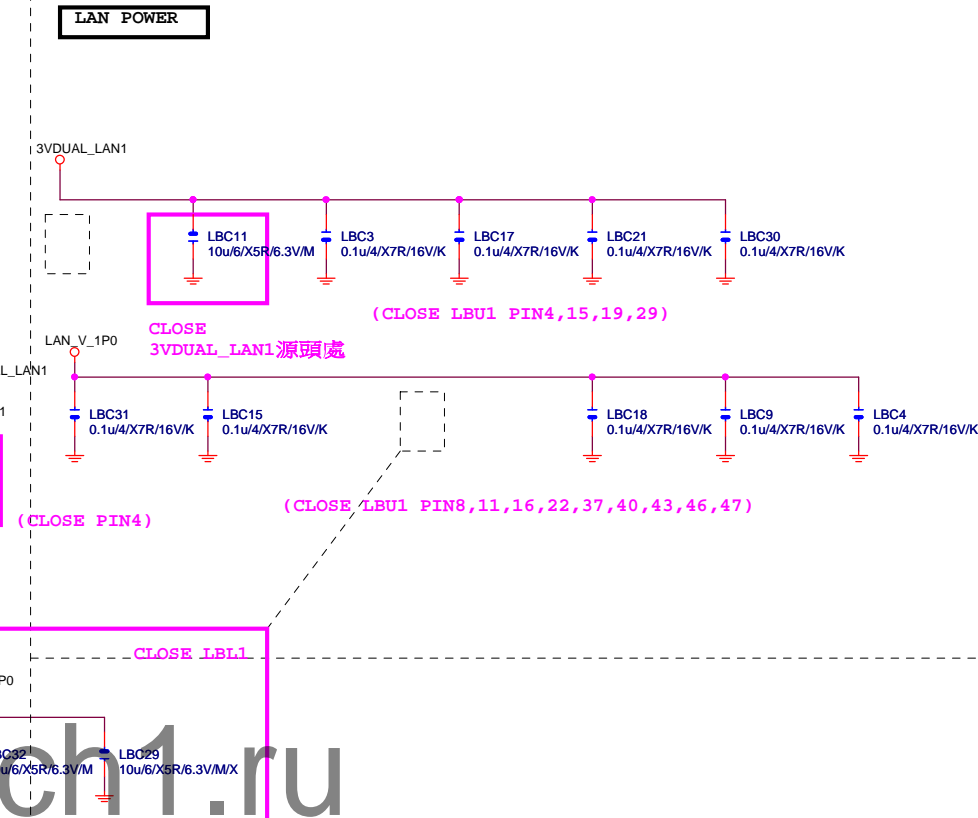
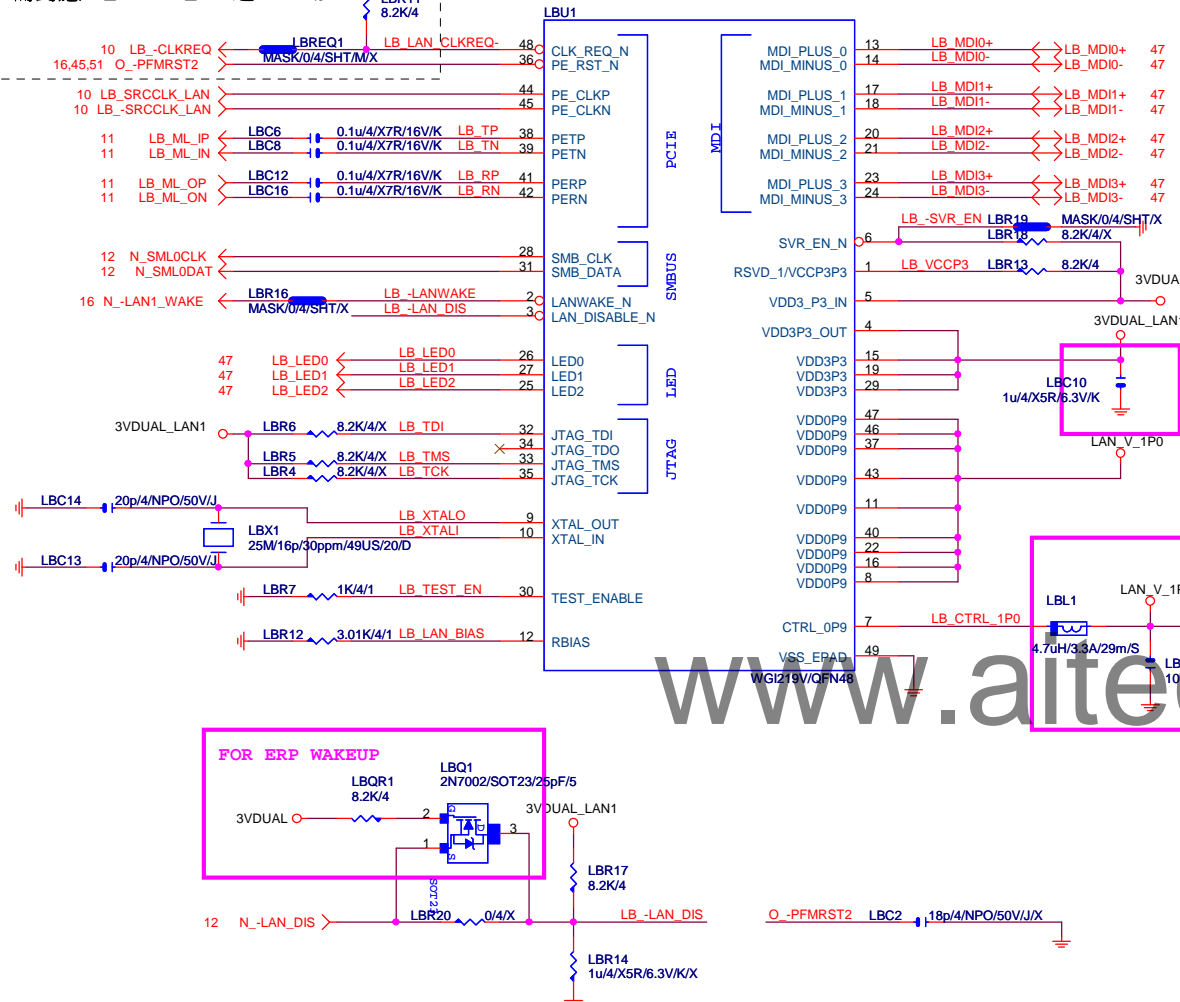
GIGABYTE™			
Title Renesas uPD720210_1			
Size Custom	Document Number GA-Z270X-GAMING 5		Rev 1.01
Date: Friday, November 11, 2016	Sheet 1	43 of	76

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GIGABYTE™		
Title Renesas uPD720210_1		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.01
Date: Friday, November 11, 2016	Sheet 44 of 76	1

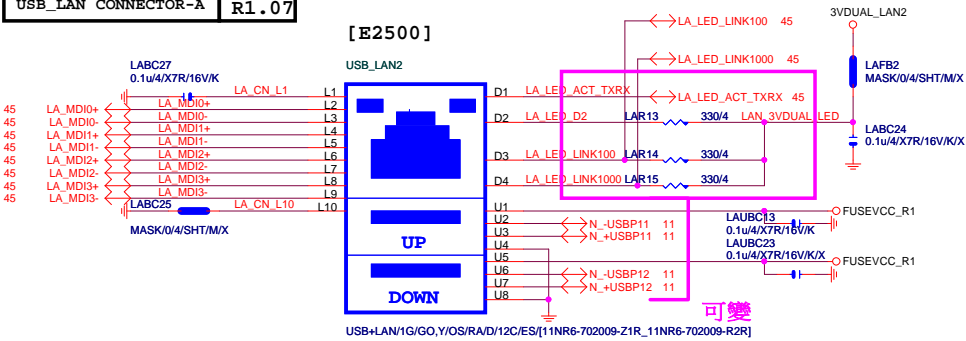


L1+CLK REQ# 節能:
需對應LA_SRCCLK_LAN之CLKREQ#



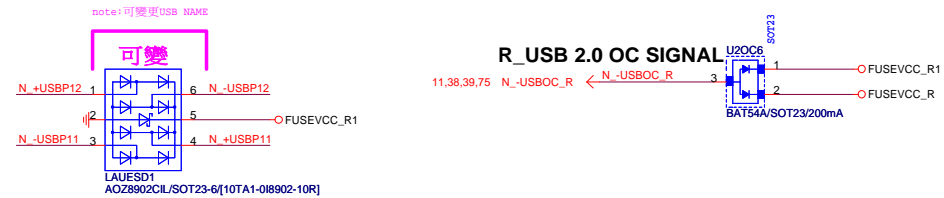
USB_LAN CONNECTOR-A R1.07

[E2500]



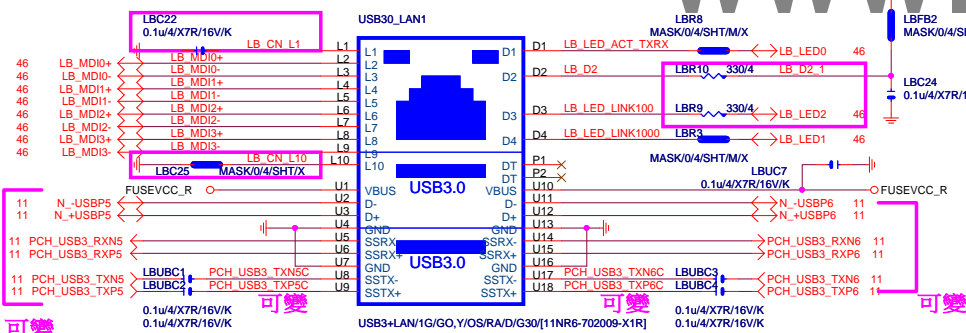
LA_MDI-->100歐姆:[20/4/8/4/20]

RMA ESD PROTECT



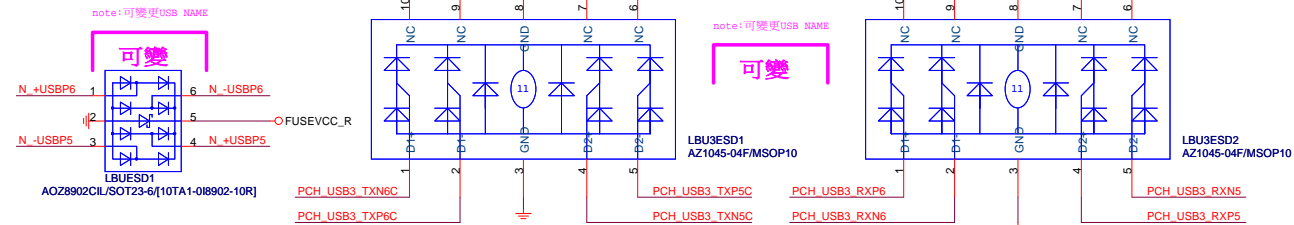
USB_LAN CONNECTOR-B

[I219]

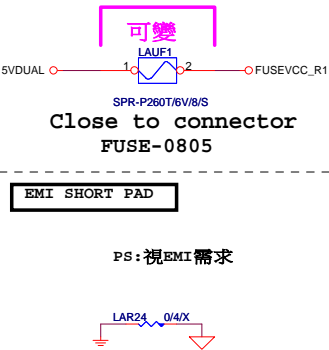


LA_MDI-->100歐姆:[20/4/8/4/20]

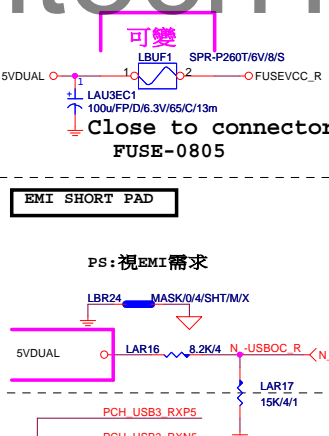
RMA ESD PROTECT



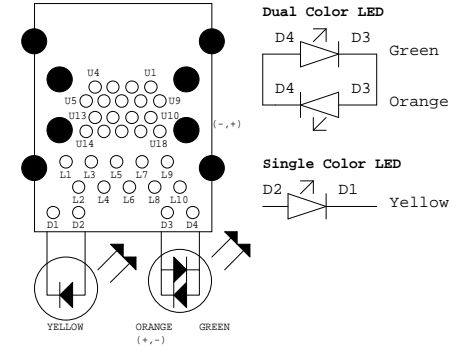
USB POWER



USB POWER



USB30_LAN LAYOUT示意图



LAN COVER

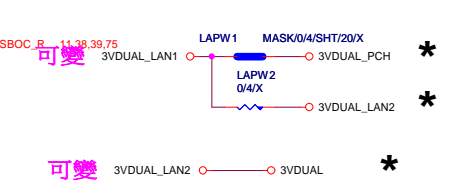
INTEL KILLER

FOOT PRINT:LAN COVER

NOTE:

- 3VDUAL_LAN1, 3VDUAL_LAN2 對接POWER供應電流 [目前暫接3VDUAL]
- USB2.0/3.0對應USB PORT [目前暫接USB 0,1,2,3 PORT]
- USB DROOP/DROP E-CAP
- USB OC線路

LAN POWER



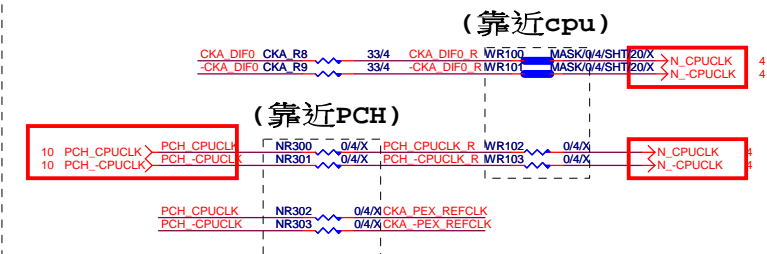
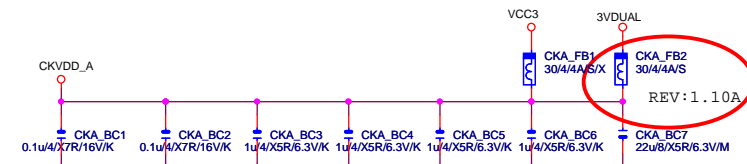
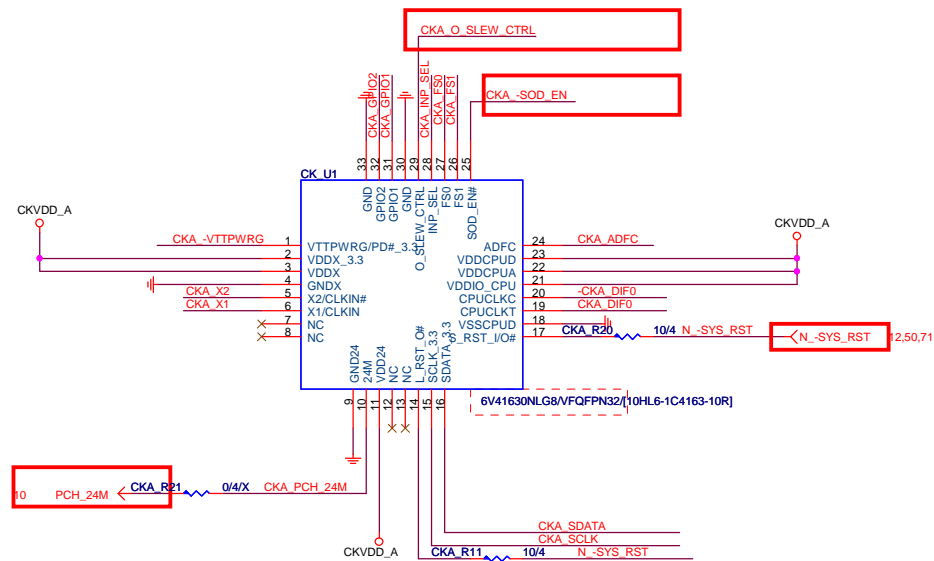
~USB30_LAN1設定在ERP可LAN WAKEUP

~USB30_LAN2由獨立LAN POWER L1117供給

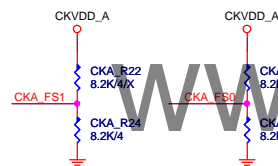
Gigabyte Technology			
Title	LAN CONNECTOR-E2201+I219		
Size	Document Number	Rev	
Custom			
Date:	Tuesday, November 15, 2016	Sheet	47 of 76

REV:0.1

IDT6V41630

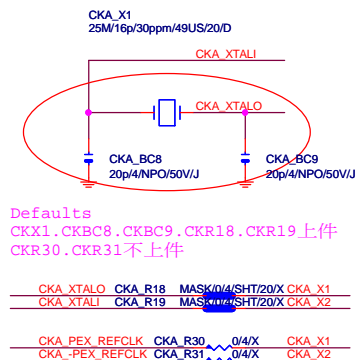
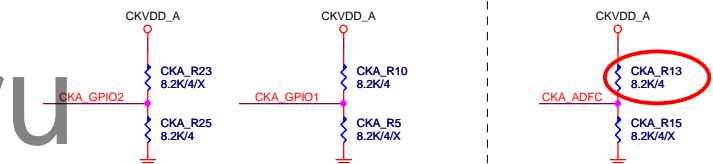


INP_SEL	Input
0	Crystal
1	CLK_INP/N

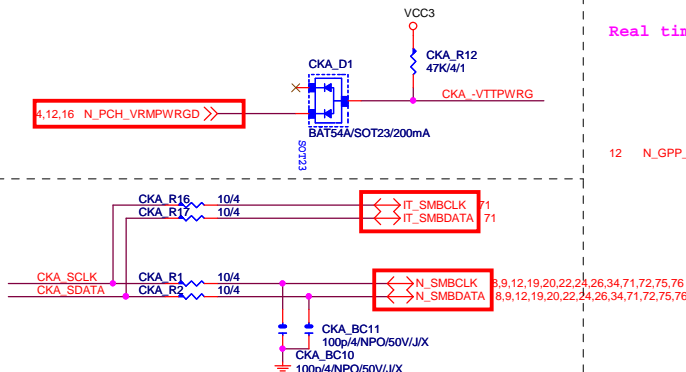


CPU Frequency Selection and output Divider Table

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

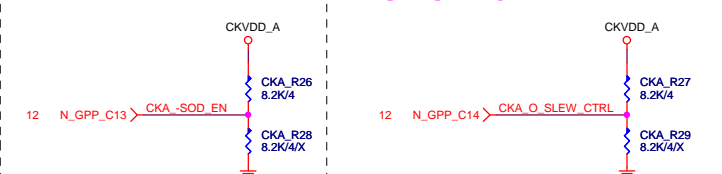


SMBUS



Real time selection function

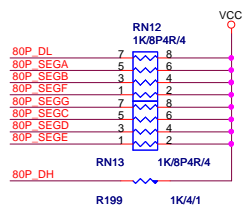
Frequency change slew rate control



GIGABYTE™		
Title IDT6V41530_CLK BUFFER		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.01
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*可變，依需求上件不上件。

80 PORT



16 80P_DL >>-----1

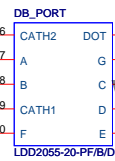
16 80P_SEGA >>-----1

16 80P_SEGB >>-----1

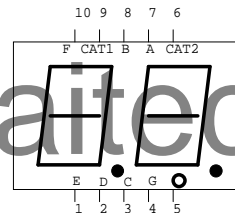
16 80P_DH >>-----1

16 80P_SEGF >>-----1

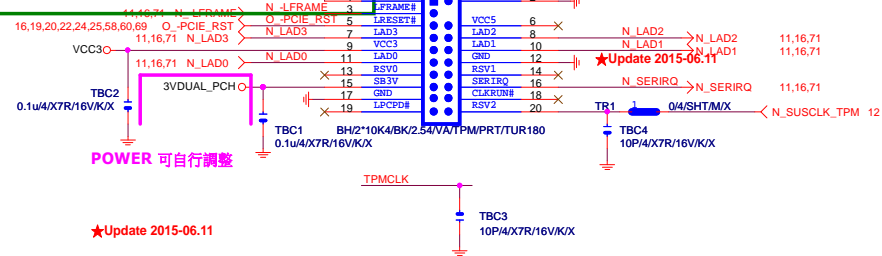
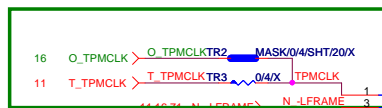
COMMON CATHODE



Physical Package
(TOP VIEW)

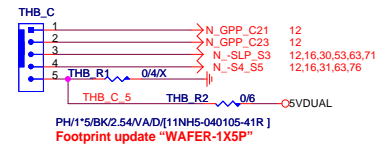


TPM CONNECT



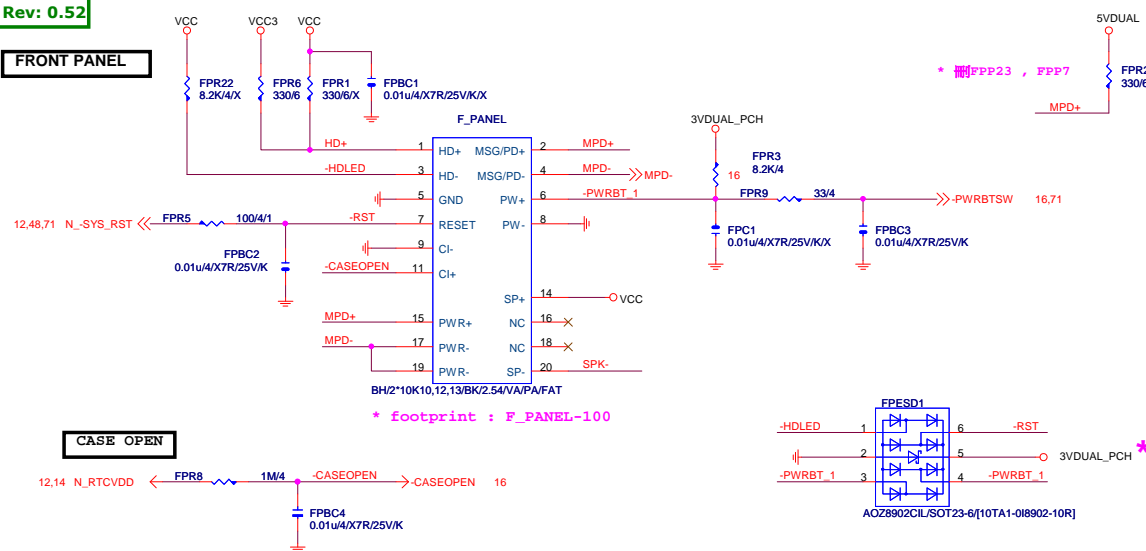
Thunderbolt

★Update 2015-12-29

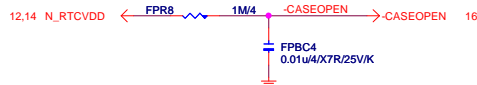


Rev: 0.52

FRONT PANEL

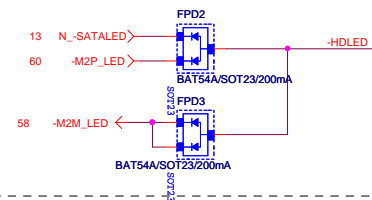


CASE OPEN



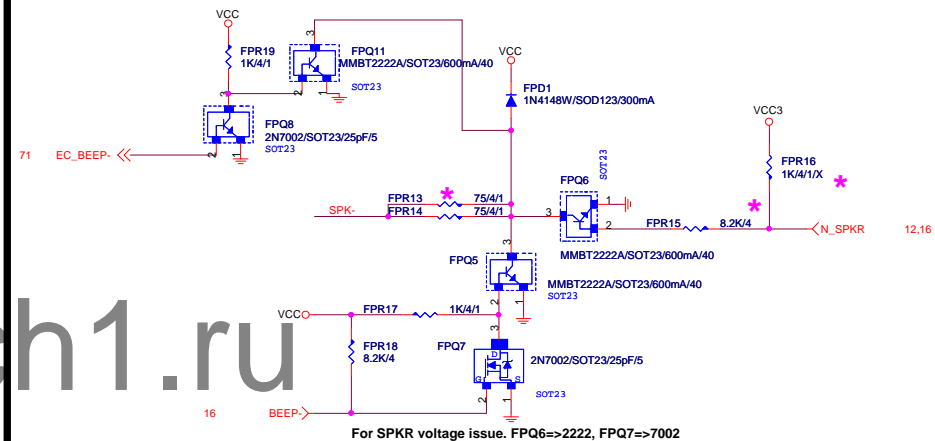
SATA LEI

SATA LED SATALED# signal open-collector,pull-up (8.2 kΩ to 10 kΩ) to Vcc3 3



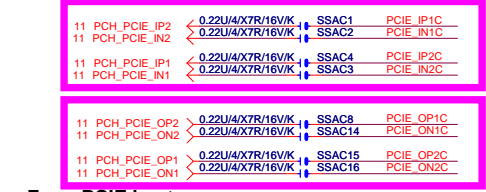
SPEAKER

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

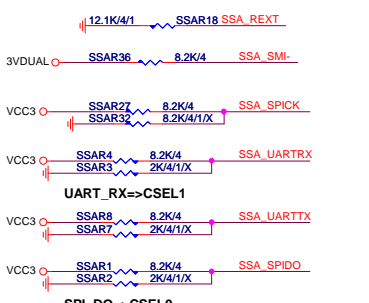
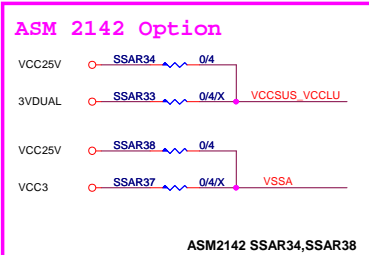
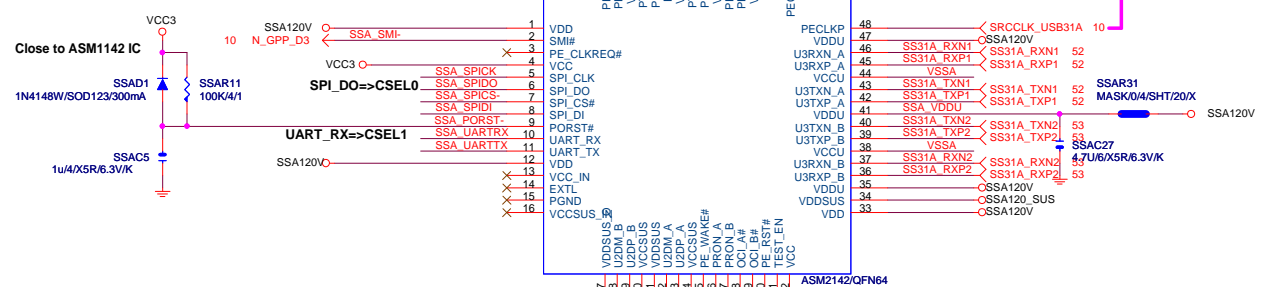


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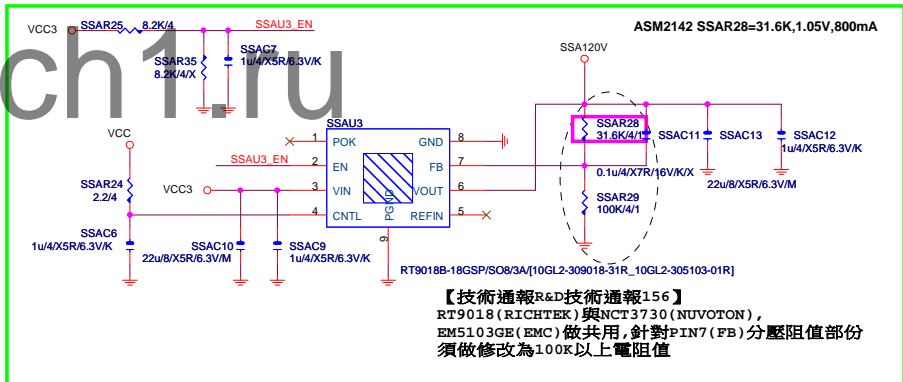
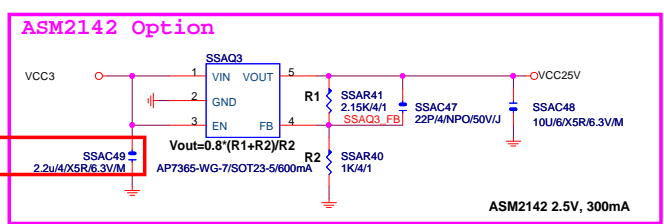
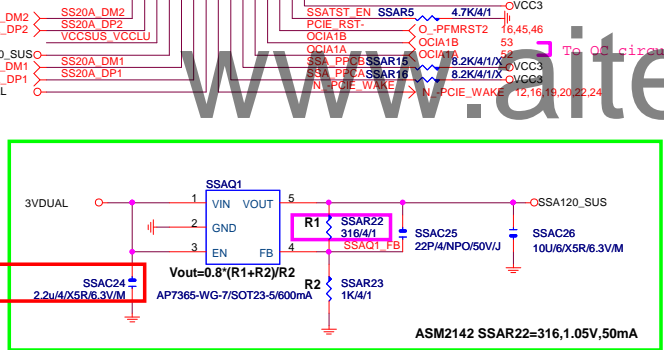
PCH PCIe* Controller Lane Reversal / base on spec
To PCIe host.



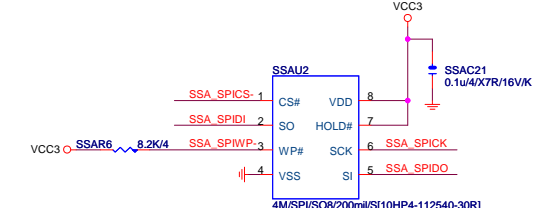
From PCIe host.



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



【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



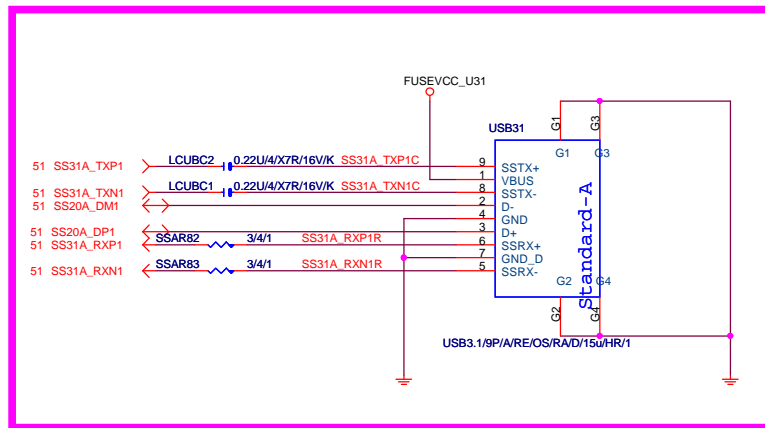
GIGABYTE™

Title: **ASM2142**

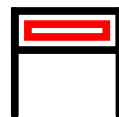
Size: Custom Document Number: **GA-Z270X-GAMING 5** Rev: **1.01**

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ASM2142 USB31 Host Rev0.2



USB 3.1 Red
架高



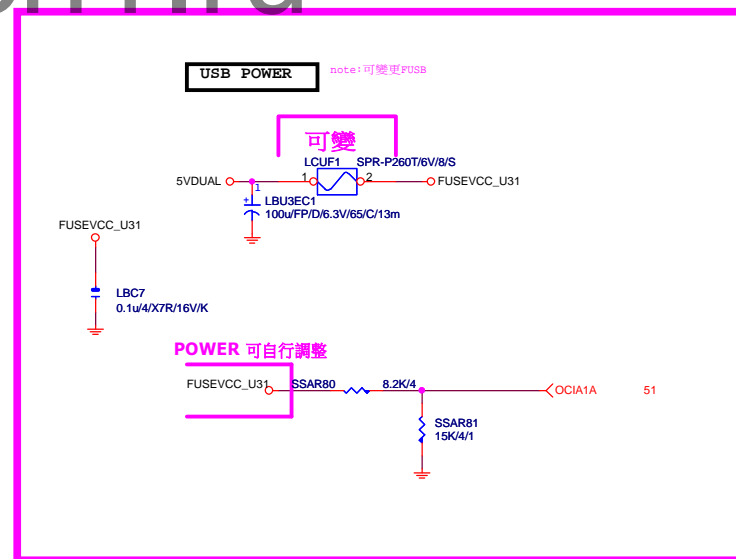
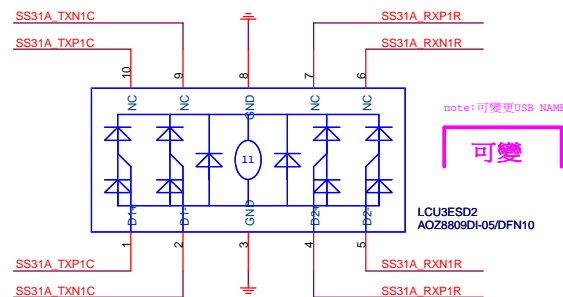
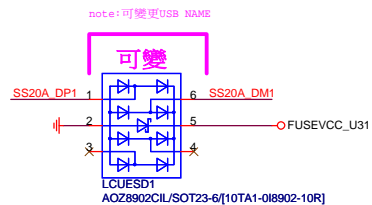
USB31 TYPE A Connector which chooses for project demand

後窗Rule : (後窗由左至右)

DIP電容 : REC1, REC3, REC2

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

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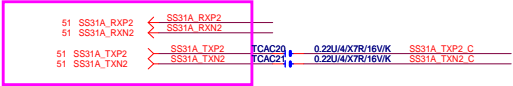


GIGABYTE™

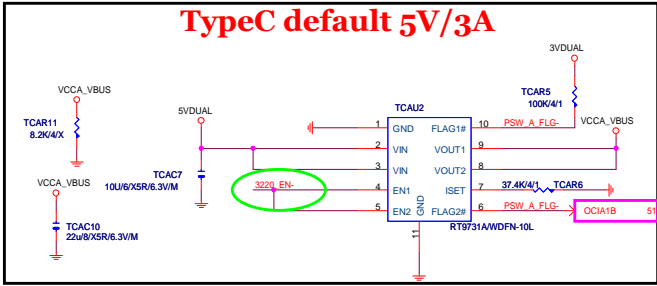
Title TI Type C port A		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.01
Date: Tuesday, November 15, 2016	Sheet 52	of 76

ASM2142 USB31 Host Rev0.2

USB 3.x SuperSpeed

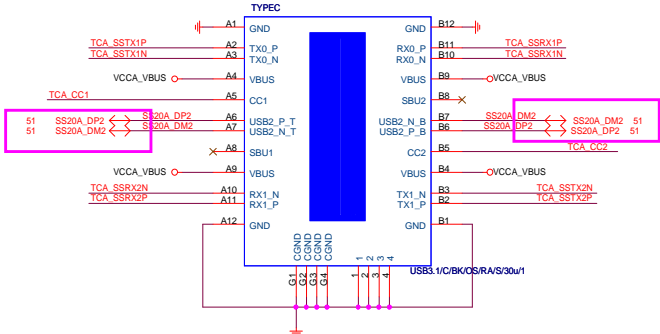


For VBUS current limit at 900mA on S3

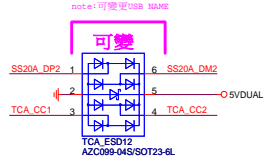
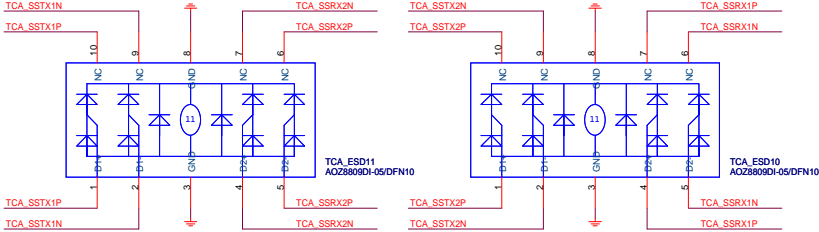


PORT
H - HOST (DFP/SOURCE)
L - Device (UFP/SINK)
NC - Dual Role (DRP)

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

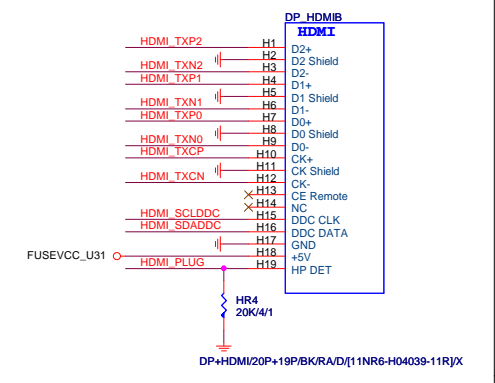


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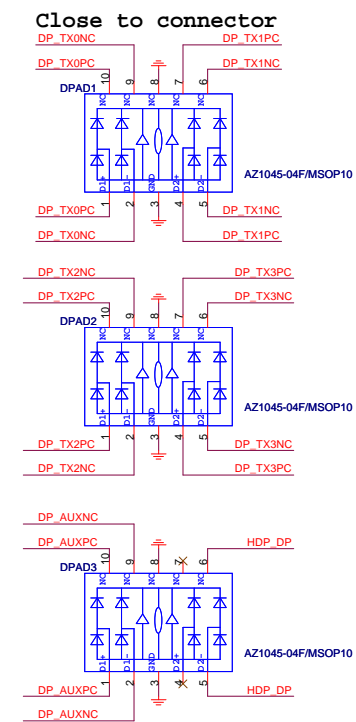
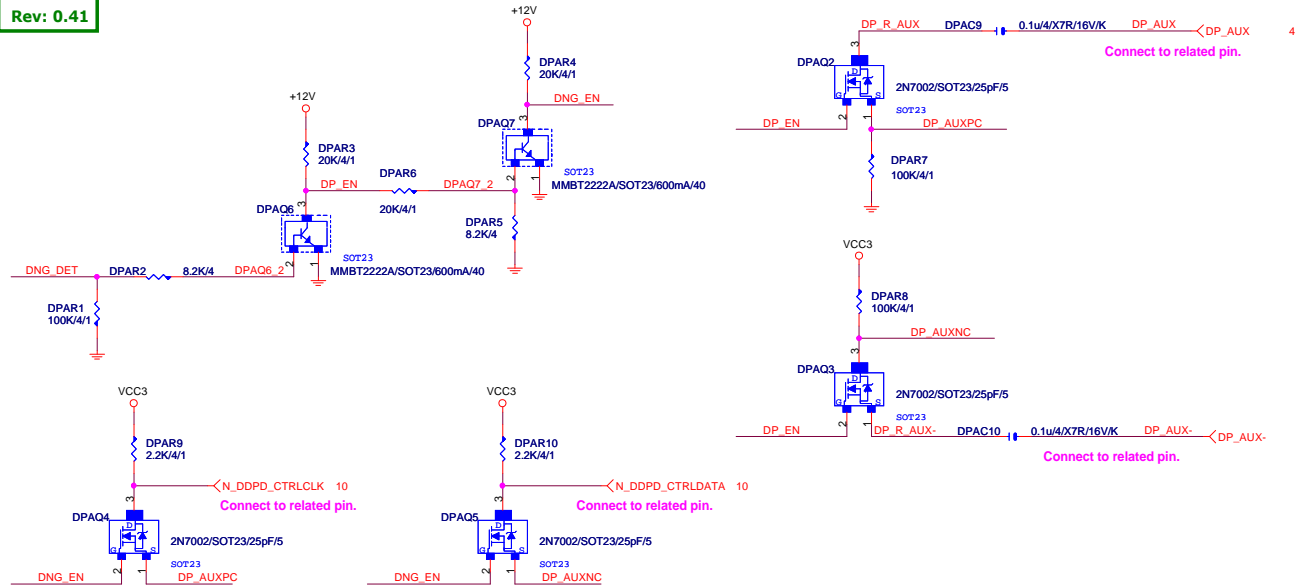
GIGABYTE™		
Title Renesas uPD720210_1		
Size Custom	Document Number GA-Z270X-GAMING 5	Rev 1.01
Date: Friday, November 11, 2016	Sheet 54 of 76	1

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GIGABYTE™			
Title Renesas uPD720210_1			
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Date: Friday, November 11, 2016	Sheet 1	55 of	76



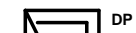
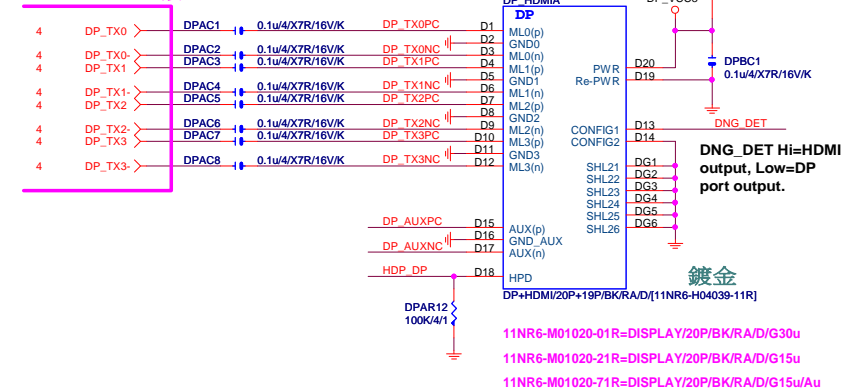
【技術通報R&D技術通報150】
HDMI eye diagram 1.4b (deep color)會fail
原因: 因目前的HDMI訊號過長,造成RISING TIME過慢,而會壓到eye diagram
改善: ASMDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)



SINGLE Display Port

Display Port with HDMI, or HDMI only.

NET FROM CPU 可變



DP

Gigabyte Technology

DP PORT

Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.01

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Rev 0.1

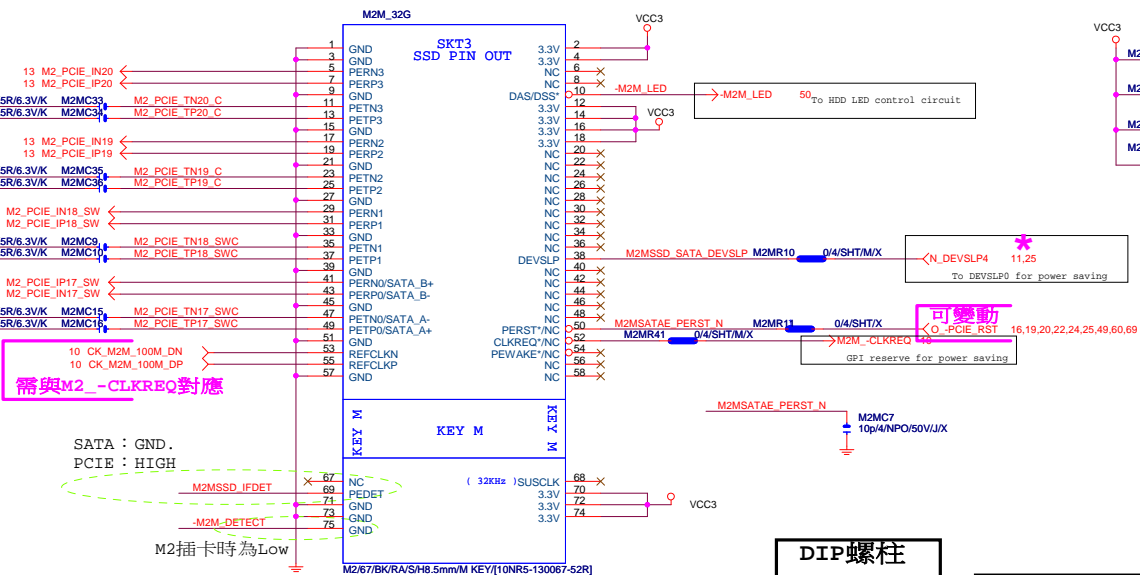
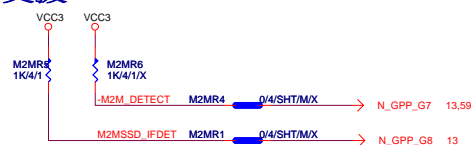
M.2 Lane4 from PCH port26

M.2 Lane3 from PCH port25

M.2 Lane2 from PCH port24

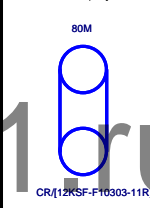
M.2 Lane2 from PCH port23

支援SATA and M.2 function

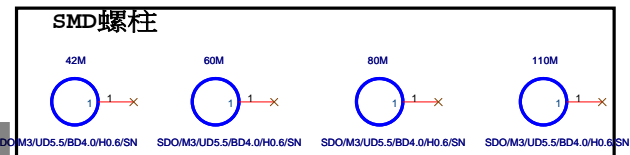


架高


DIP螺柱



SMD螺柱



80M

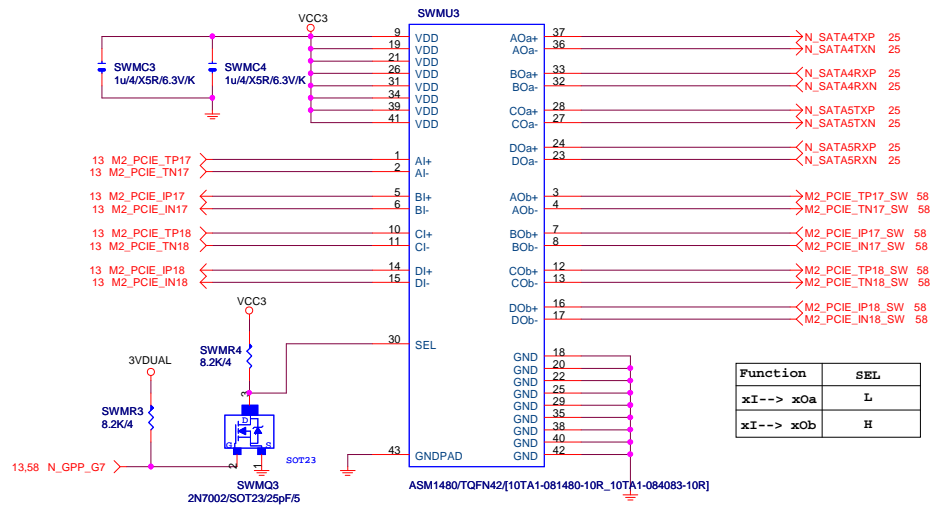


CR/[12KS2-110202-01R]

DIP螺絲

Rev 0.1

(M) TYPE



M.2 Detect N_GPP_G7	M.2 MODE N_GPP_G8	PCIE17	PCIE18	PCIE19	PCIE20
HIGH	X	切回 SATA4	切回 SATA5	N\A	N\A
LOW	HIGH(PCIE)	PCIEX4 FOR M.2(最優先)			
LOW	LOW(SATA)	SATA FOR M.2	N\A	N\A	N\A

Gigabyte Technology			
M.2X4_S4~S5 SWITCH			
Title	Document Number	GA-Z270X-GAMING 5	Rev 1.01
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GIGABYTE™			
Title REALTEK RTS5411			
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GIGABYTE™		
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CLOSE SIO

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

12,16,30,49,53,71 N_SLP_S3 ←

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

12,16,31,49,76 N_S4_S5 ←

EMIC3
100p/4/NPO/50V/J/X

4,12 N_CPUPWROK ←

CLOSE PCH

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

4,12 N_CPUPWROK ←

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Title

EMI/ESDSize
A

Document Number

GA-Z270X-GAMING 5

Rev

1.01

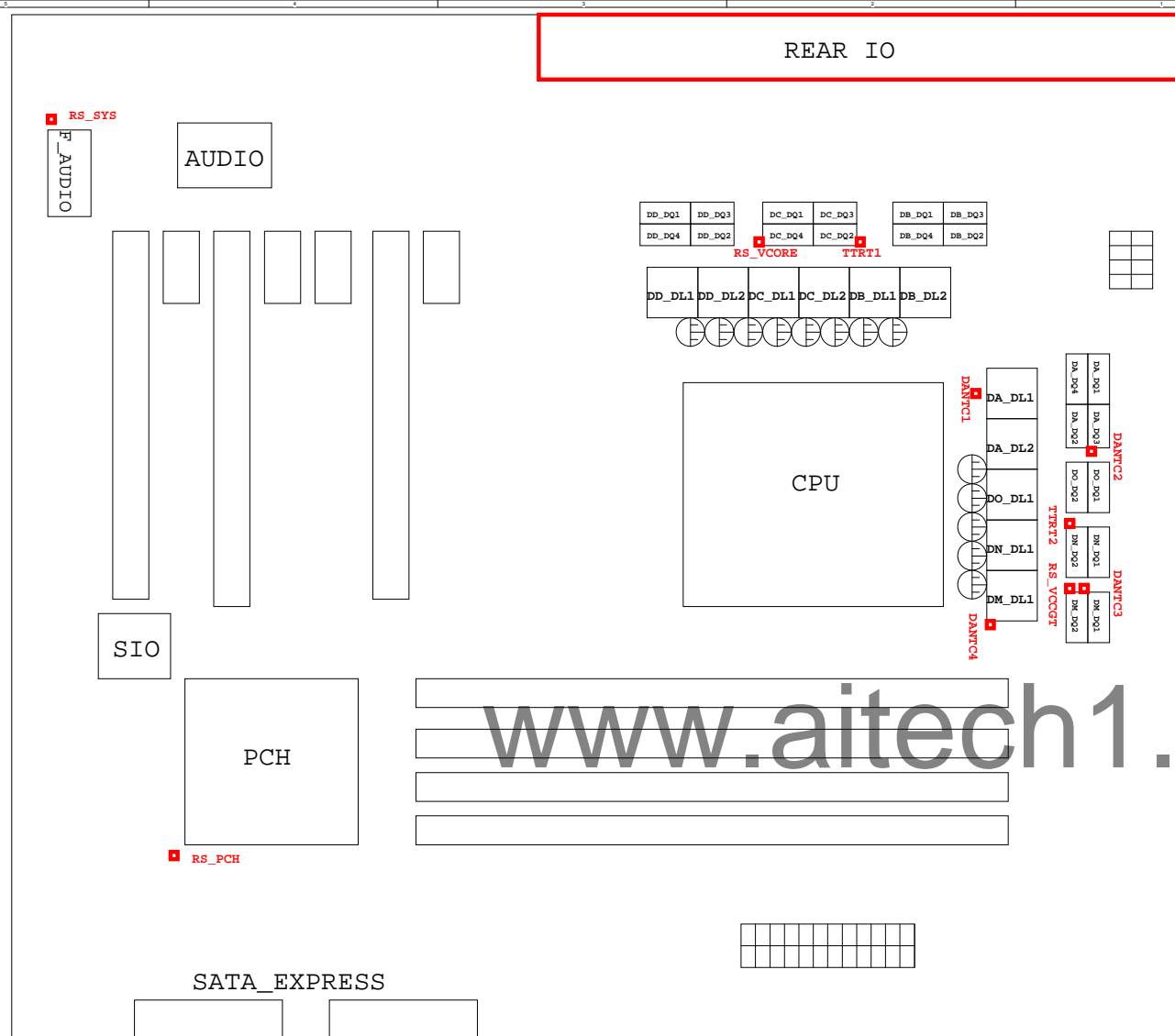
Date: Tuesday, November 15, 2016

Sheet

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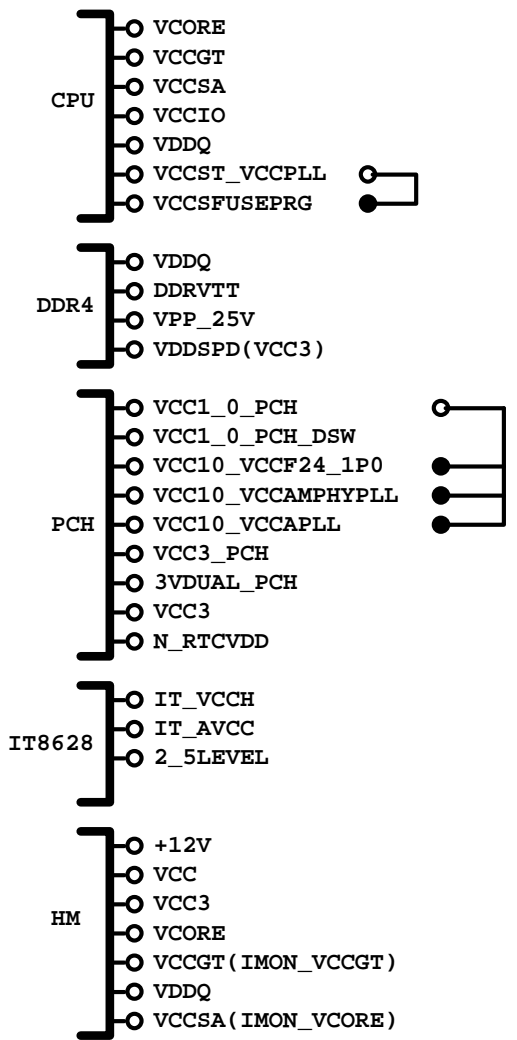
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76

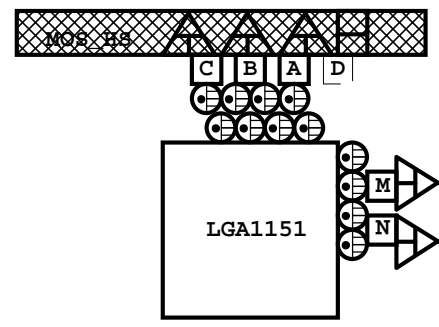
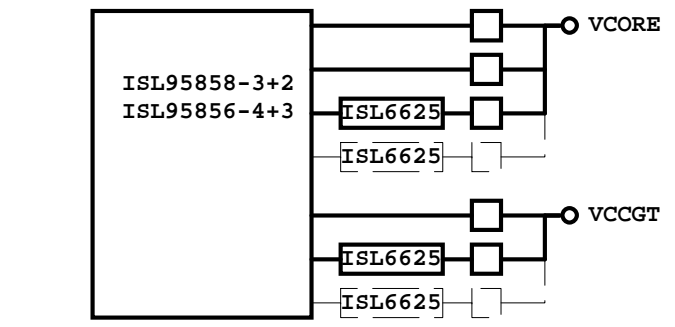


熱敏電阻	擺放靠近位置	走線方式
DANTC1	DA_DL2	Differential
DANTC2	DA_DQ3	Differential
DANTC3	DM_DQ2	Differential
DANTC4	DM_DL1	Differential
RS_VCORE	DC_DQ4	N/A
RS_VCCGT	DM_DQ2	N/A
TTRT1	DC_DQ2	N/A
TTRT2	DN_DQ2	N/A
RS_PCH	PCH	N/A
RS_SYS	F_AUDIO	N/A

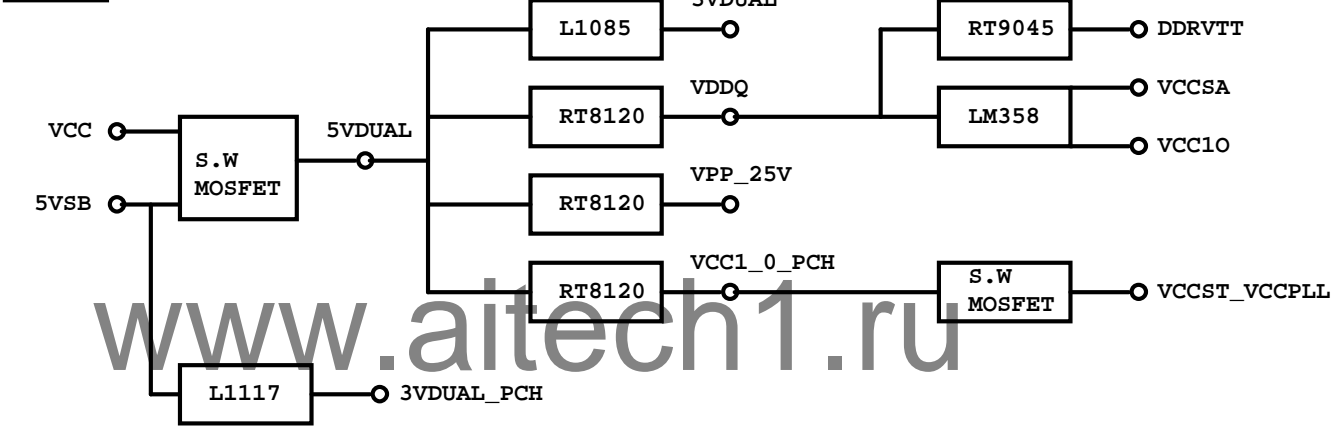
POWER BLOCK MAP



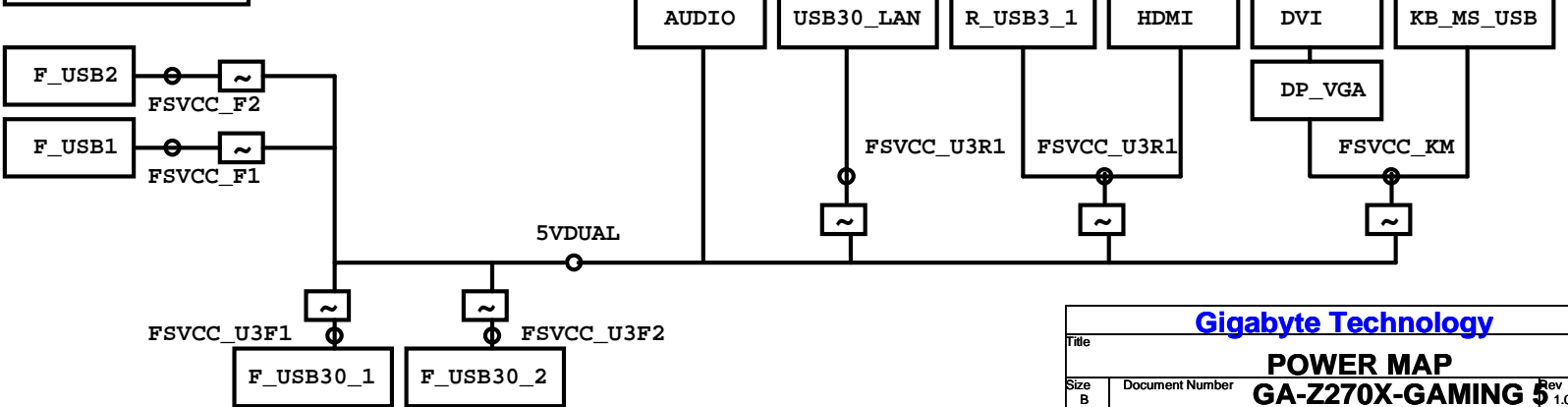
VCORE/VCCGT



POWER



FUSE POWER F/R



固態電容料號.請自行修改

日系黑色固態	Capture Value
11C02-C85600-01R	560u/FP/D/6.3V/68/C/8m
11C05-C82700-01R	270u/FP/D/16V/88/C/12m
11C05-C61000-01R	100u/OS/D/16V/66/C/30m
11C02-C51000-01R	100u/FP/D/6.3V/65/C/13m

日系一般固態	Capture Value
11C02-685600-01R	560u/FP/D/6.3V/68/8m
11C05-882700-01R	270u/FP/D/16V/88/12m
11C05-661000-03R	100u/OS/D/16V/66/30m
11C02-651000-02R	100u/OS/D/6.3V/66/30m

台系固態	Capture Value
11C02-661000-09R	100u/OS/D/6.3V/66/A/35m
11C05-691000-09R	100u/OS/D/16V/69/A/35m
11C05-8C2700-09R	270u/FP/D/16V/8C/A/10m
11C02-695600-09R	560u/FP/D/6.3V/69/A/11m

IRON CHOKE

	料號	Capture Value	SIZE	Footprint	
DIP	11LC5-M4500C-01R	0.5uH/40A/IMD109/M/D	10*10	CHOKE05U-40A-1PQ-3	閃電P
DIP	11LC5-M4500C-11R	0.5uH/40A/IMD109/M/NP/D	10*10	CHOKE05U-40A-1PQ-3	無閃電P
DIP	11LC5-M2500C-01R	0.5uH/20A/IMD0809/M/D	8*8	CHOKE1U-R50M-IF	

Skylake Iron Choke閃電P導入機種如下:
[1] Z170/H170 機種全部導入
[2] B150/H110Gaming機種導入, 其餘不導入

Ferrite

	料號	Capture Value	SIZE	Footprint
DIP	11LC5-F3500C-11R	0.5uH/32A/INCG109/FSI/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-F2500C-11R	0.5uH/25A/INC0809/F/D	8*8	CHOKE1U-R50M-IF
SMD	10LC5-F4300C-01R	0.3uH/40A/SIUC/FR/S	10*7	CHOKE11X8MM-SMD

BEAD

	料號	Capture Value	SIZE	Footprint
DIP	10LFB-15470A-01R	47/4030/15A/S	4*3	BEADC8B-BPH_SMD

PWM料號

		料號	Capture Value	Footprint
PWM	ISL95856	10TA1-695856-01R		IC52QFN-6x6-G
PWM	ISL95858	10TA1-695858-01R		IC52QFN-6x6-G
PWM	IR35201	10TA1-635201-00R		IC56QFN-9VRS4339
PWM	IR3570	10TA1-603570-00R		IC40MLFP-ISL95835
PWM	RT8237C/D	10TA1-608237-01R		IC10DFN-NIS5132

REGULATOR

		料號	Capture Value	Footprint
	NCT3103S	10GL2-203103-01R	NCT3103S/SOP8/2A	IC8-EPSOIC

GIGABYTE™			
Title RT8120_DDR4 POWER			
Size	Document Number		Rev
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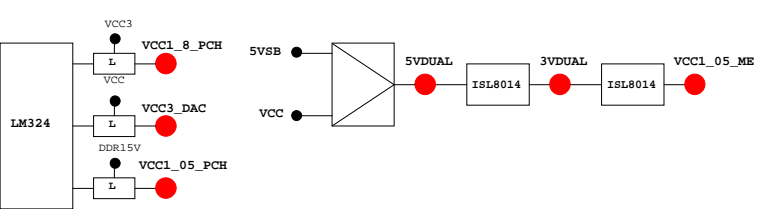
PCB GPIO LIST TABLE

PIN NAME	PWR	Default	USAGE	NOTE
GP0	MAIN	H-Z	GPIO0	N/A
GP1/TACH1	MAIN	GPI	GPIO1	N/A
GP2/PIRQE#	MAIN	GPI	~PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN	GPI	~PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN	GPI	~PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN	GPI	~PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN	GPI	PCIEX1 Detect	P/U 8.2K VCC3
GP7/TACH3	MAIN	MAIN	GPIO7	P/U 8.2K VCC3
GP8	STBY	H	GPIO8	N/A
GP9/OC5#	STBY	NATIVE	USB OC5#	N/A
GP10/OC6#	STBY	NATIVE	USB OC6#	N/A
GP11/SMBALERT#	STBY	NATIVE	USB PWR protect	P/U 8.2K 3VDUAL
GP12	STBY	L	GPIO12	N/A
GP13	STBY	L	LPCPME#	P/U 8.2K 3VDUAL
GP14/OC7#	STBY	NATIVE	USB OC7#	N/A
GP15	STBY	L	GPIO15(TLS Enable)	P/U 8.2K 3VDUAL
GP16	MAIN	GPI	GPIO16	P/U 8.2K VCC3
GP17/TACH0	MAIN	GPI	GPIO17	P/U 8.2K VCC3
GP18	MAIN	GPI	Mobile Only	N/A
GP19	MAIN	GPI	GPIO19	P/U 8.2K VCC3
GP20	MAIN	GPI	GPIO20	P/U 8.2K VCC3
GP21	MAIN	GPI	GPIO21	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPIO22	P/U 8.2K VCC3
GP23	MAIN	GPI	GPIO23	N/A
GP24	STBY	L	SKTOCC#	N/A
GP25	STBY		Mobile Only	N/A
GP26	STBY		Mobile Only	N/A
GP27	STBY	H	GPO	GPIO27
GP28	STBY	H	GPO	PWR LED
GP29	STBY	L	GPI	GPIO29
GP30	STBY	H-Z	GPI	Mobile Only
GP31	STBY	H-Z	GPI	Mobile Only
GP32	MAIN	H	GPO	N/A
GP33	MAIN	H	GPO	N/A
GP34	MAIN	H-Z	GPI	~PCI_STOP
GP35	MAIN	L	GPO	~ACZ_DET
GP36	MAIN	GPI	N/A	N/A
GP37	MAIN	GPI	N/A	N/A
GP38	MAIN	H-Z	GPI	PCIEX4 Detect
GP39	MAIN	H-Z	GPI	GPIO39
GP40	STBY	NATIVE	USB OC1#	N/A
GP41	STBY	NATIVE	USB OC2#	N/A
GP42	STBY	NATIVE	USB OC3#	N/A
GP43	STBY	NATIVE	USB OC4#	N/A
GP44	STBY	L	NATIVE	GPIO44
GP45	STBY	NATIVE	GPIO45	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	GPIO46
GP47	STBY		Mobile Only	N/A
GP48	MAIN	H-Z	IN	GPIO48
GP49	MAIN	H-Z	IN	GPIO49
GP50	MAIN	NATIVE	~REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	~GNT1
GP52	MAIN	NATIVE	~REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	~GNT2
GP54	MAIN	NATIVE	~REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	~GNT3
GP56	STBY	NATIVE	Mobile Only	N/A
GP57	STBY	H-Z	IN	VCORE_OV1
GP58	STBY	H-Z	NATIVE	F_USB_OC
GP59	STBY	NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)
GP61	STBY	L	NATIVE	~SUSTAT
GP62	STBY	L	NATIVE	SUSCLK
GP63	STBY	L	NATIVE	GPIO63
GP64	MAIN	L	NATIVE	CLKOUTFLEX0
GP65	MAIN	L	NATIVE	CLKOUTFLEX1
GP66	MAIN	L	NATIVE	CLKOUTFLEX2
GP67	MAIN	L	NATIVE	CLKOUTFLEX3
GP72	STBY	H-Z	NATIVE	VCORE_OV4
GP73	STBY		Mobile Only	N/A
GP74	STBY	H-Z	NATIVE	1_05V_OV2
GP75	STBY	H-Z	NATIVE	N/A(Reverse)

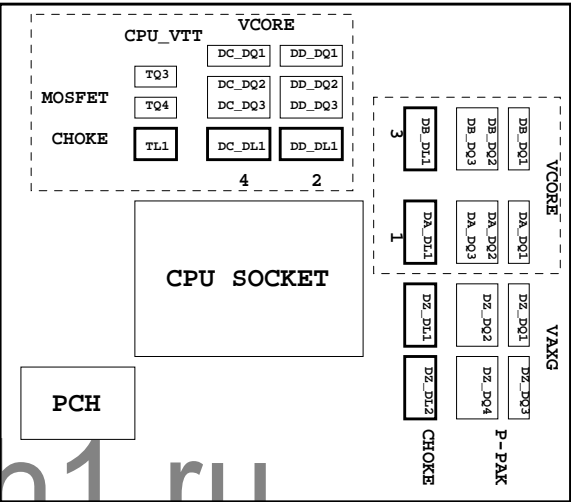
Super I/O ITE8720 GPIO Table

PIN NAME	USAGE	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAGE	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSS11	SB_LED1_C	
PD4/GP74/BUSS12	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSS10	NB_LED3_C	
GP22/SOK	LOW_PWR_1	
VIDO5/GP27/SIN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSCH#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CSISBSL	
VIDO0/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMBC_R	SE PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VIDO1/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#/GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT5/CIRRX2/GP16	-THERM	
VIDO4/GP26/SOUT2	DDR18V_PH2_EN	
VIDO2/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VIDO6/GP17/RI2#	1_1V_PH_EN	
VIDO7/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Termination
VREF_CA_A/VREF_CA_B	DRAM Address Ref
VREF_DQ_A/VREF_DQ_B	DRAM Data Ref

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH

散熱模組料號：

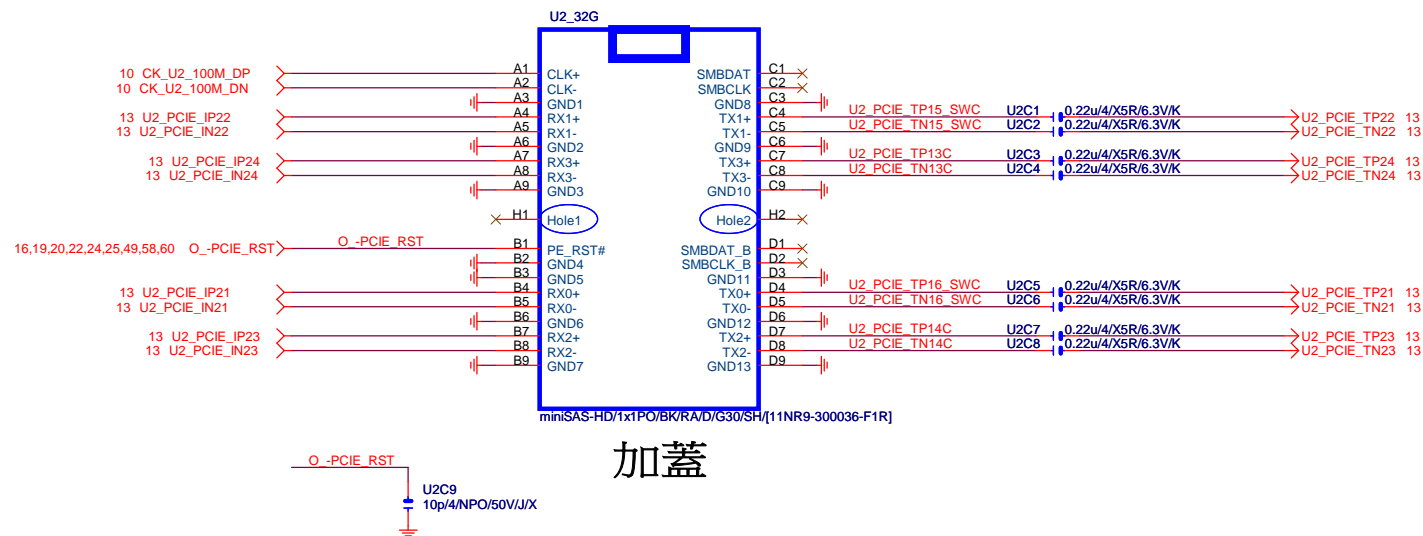
Z77-D3H :
PCH :
12SP2-S05511-01R/02R/03R
MOSFET :
12SP2-S08924-01R/02R/03R

Gigabyte Technology			
TABLE LIST			
Size C	Document Number	Rev	
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* 試產先上，PVT 移除

Rev 0.3



加蓋

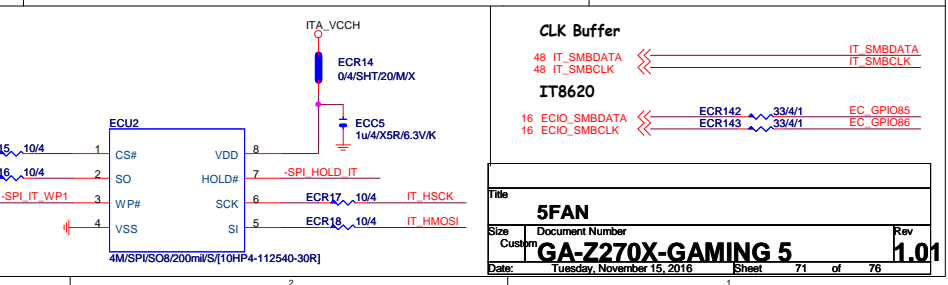
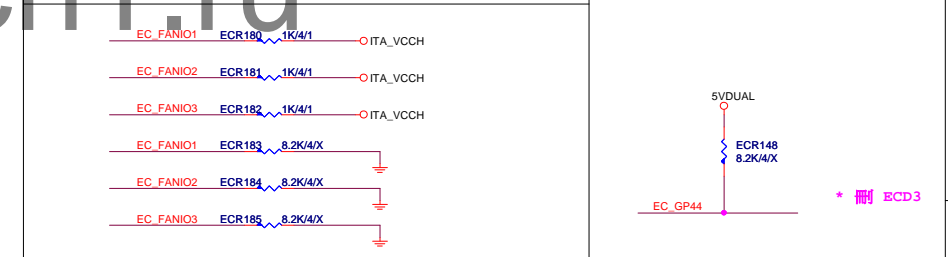
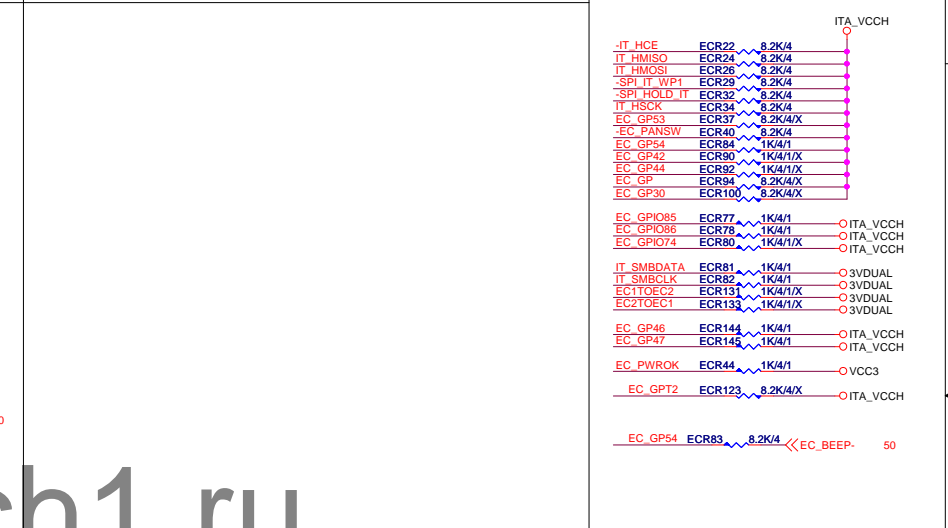
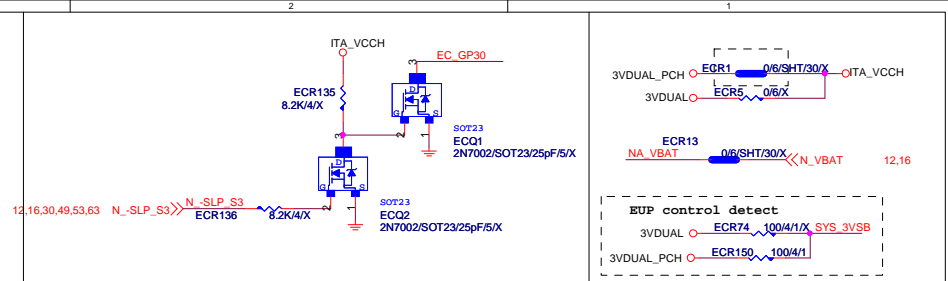
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Title		
M.2 to MINISAS		
Size	Document Number	Rev
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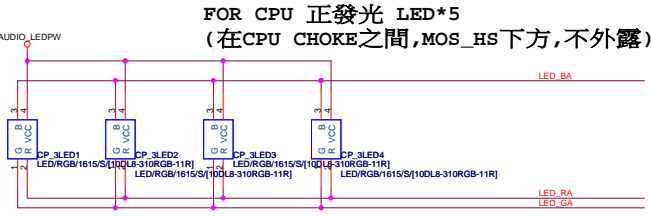
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GIGABYTE			
Title			
PCH PWR-VCC18_PCH			
Size	Document Number		Rev
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第一區 LED

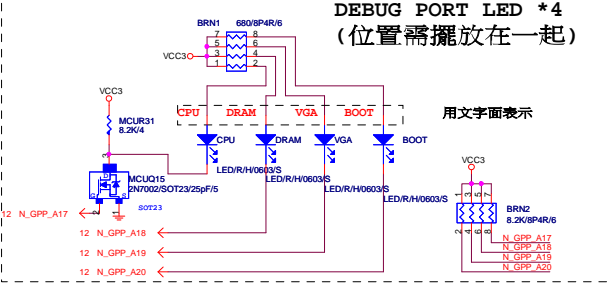
Rev 0.63



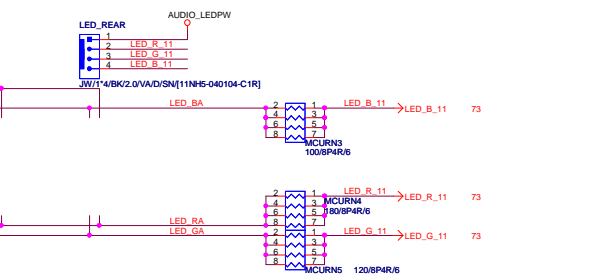
LED GPIO PIN DEFINE

N_GPP_A17	CPU DEBUG
N_GPP_A18	DDR DEBUG
N_GPP_A19	VGA DEBUG
N_GPP_A20	BOOT DEBUG
N_GPP_A21	XMP LED SWITCH
N_GPP_A22	TURBO LED SWITCH
N_GPP_D15	LED_C LED SWITCH
N_GPP_D17	PCIEX16 LED SWITCH
N_GPP_D18	PCIEX8 LED SWITCH

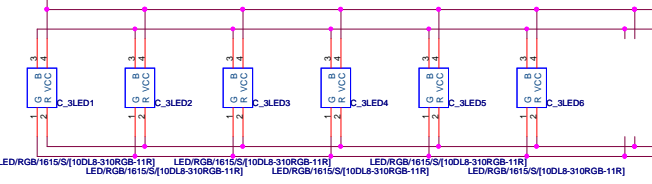
DEBUG PORT LED *4
(位置需擺放在一起)



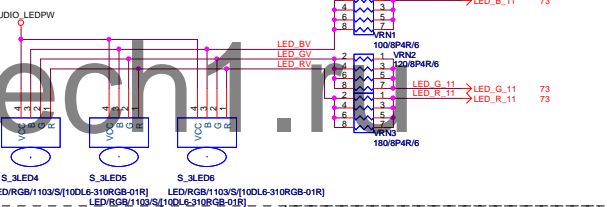
REAR 裝甲LED
(位置在後窗裝甲內)



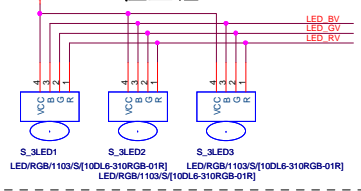
FOR AUDIO 正發光 LED*6
(位置在AUDIO切割線)



FOR PCIEX8 側發光 LED*3
(位置在PCIEX8 SLOT)

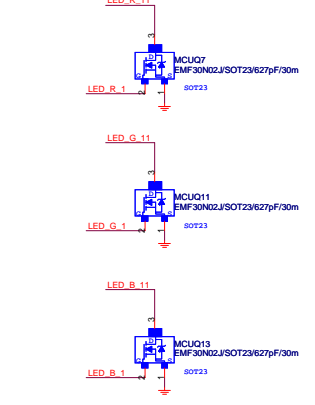


FOR PCIEX16 側發光 LED*3
(位置在PCIEX16 SLOT)

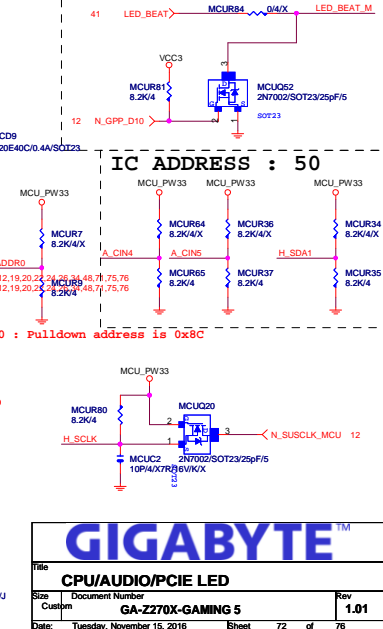
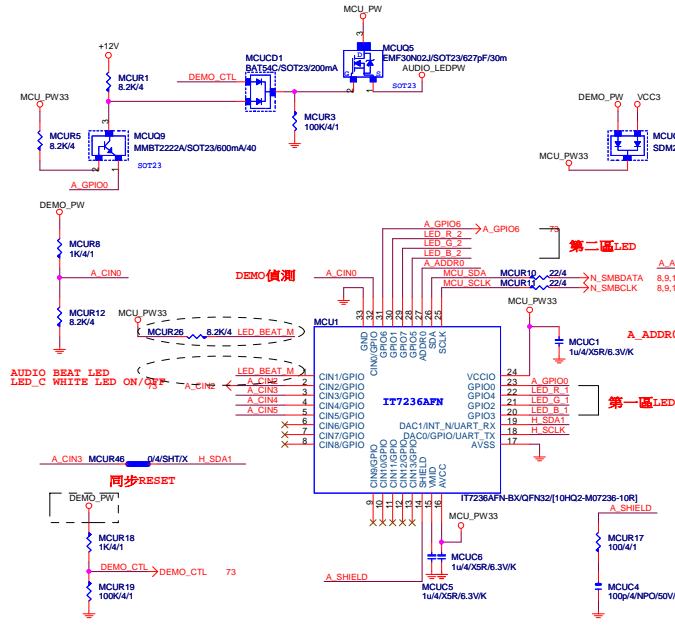
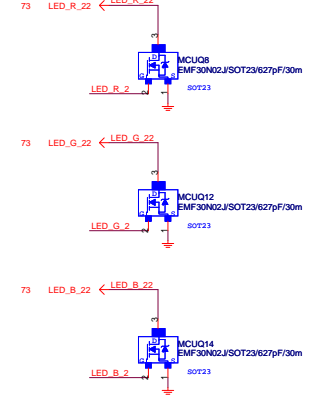


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第一區 LED CONTROL



第二區 LED CONTROL



GIGABYTE

File: CPU/AUDIO/PCIE LED

Size: 100K/4NPO/50V/U

Custom: GA-Z770X-GAMING 5

Date: Tuesday, November 15, 2016

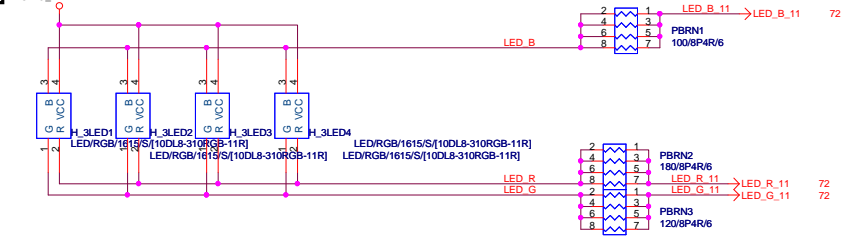
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第一區

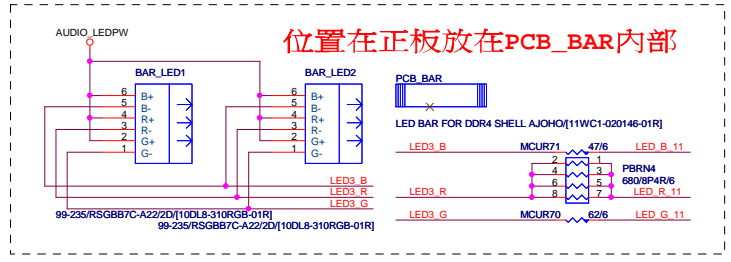
Rev 0.63

FOR PCH 正發光 LED*4 (位置在正板,依據PCH_HS設計擺放)

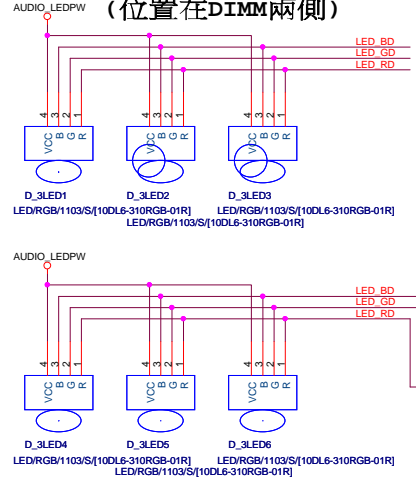


SC1/M2/4.0mm/M1/0.5/3.5D[11KRH-010001-01R] SC1/M2/4.0mm/M1/0.5/3.5D[11KRH-010001-01R]

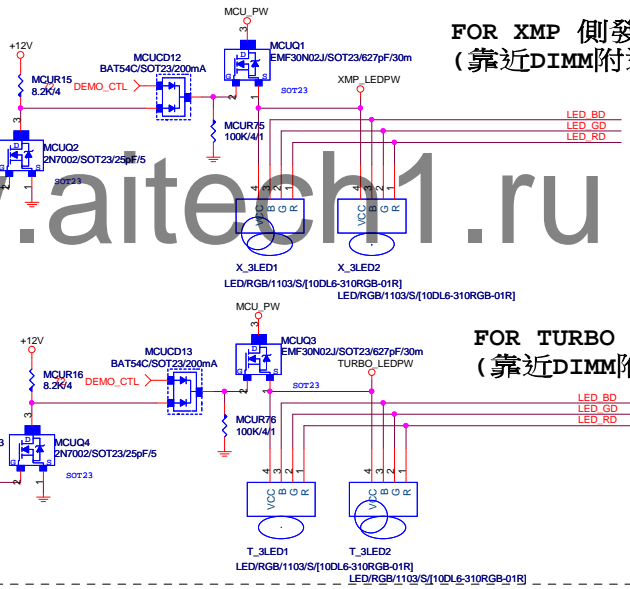
位置在正板放在PCB_BAR內部



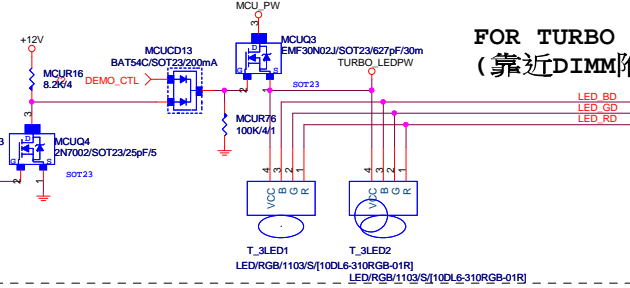
FOR DIMM 側發光 LED*6 (位置在DIMM兩側)



FOR XMP 側發光 LED*2 (靠近DIMM附近放背板鏤空)

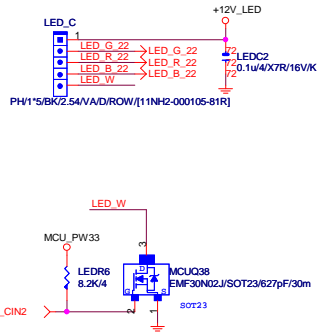
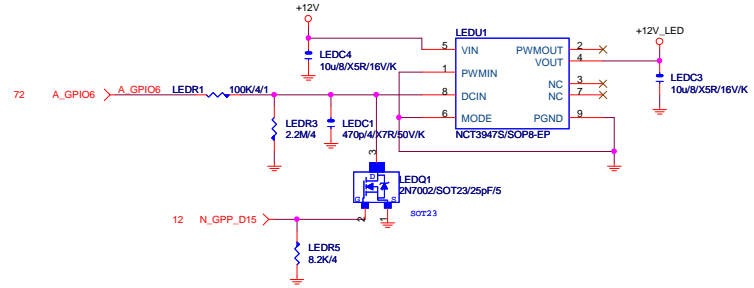


FOR TURBO 側發光 LED*2 (靠近DIMM附近背板鏤空)



第二區

FOR 燈條 LED (LED_C放在PCB左邊板邊位置)



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RGB LED LAYOUT 注意事項：

1. Debug LED 文字面表示如右所示 (LED請擺在一起)
2. 背板 RGB LED 方向整板請統一如下
(整板正極可統一朝下或朝上)
3. 正板 RGB LED 統一方向即可
4. LED RGB 10PCS 以上走20mils
LED RGB 10PCS 以下空間問題可以走10mils
LED電源一律走20mils
5. MCU LED 出pin的走線4mils,如:LED_R_1,LED_G_1,LED_B_1
過晶體的走線20mils,包含過排組到LED的走線如:LED_R_11,LED_G_11,LED_B_11..
6. XMP/TURBO/G1.GAMING 側發光 LED 位置如下

Debug LED 文字面 (單色LED)

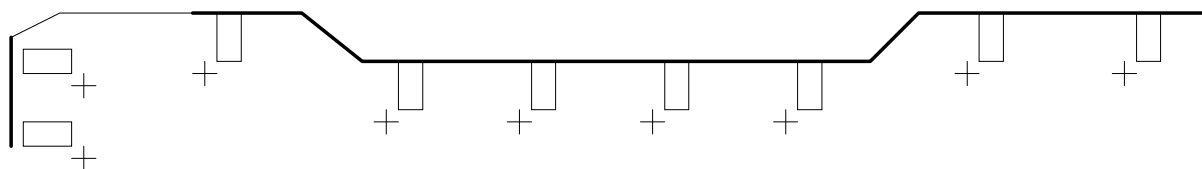
VGA CPU

BOOT DRAM

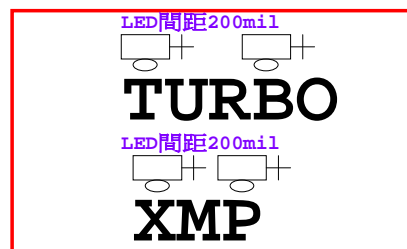
PCB板邊透光model name鏤空+背面 RGB LED



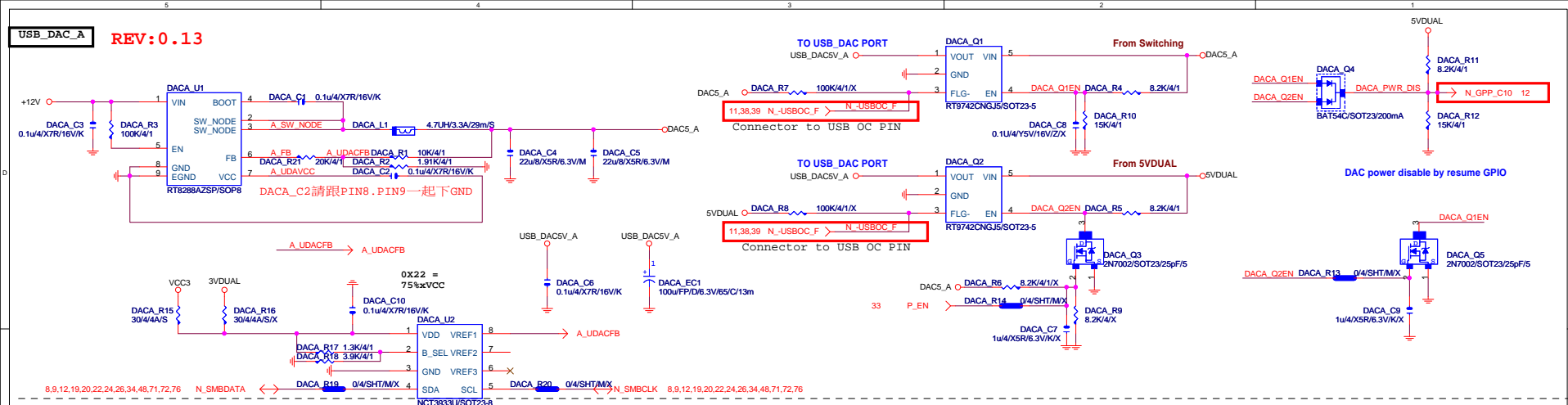
Audio Ground切割線+背面 RGB LED



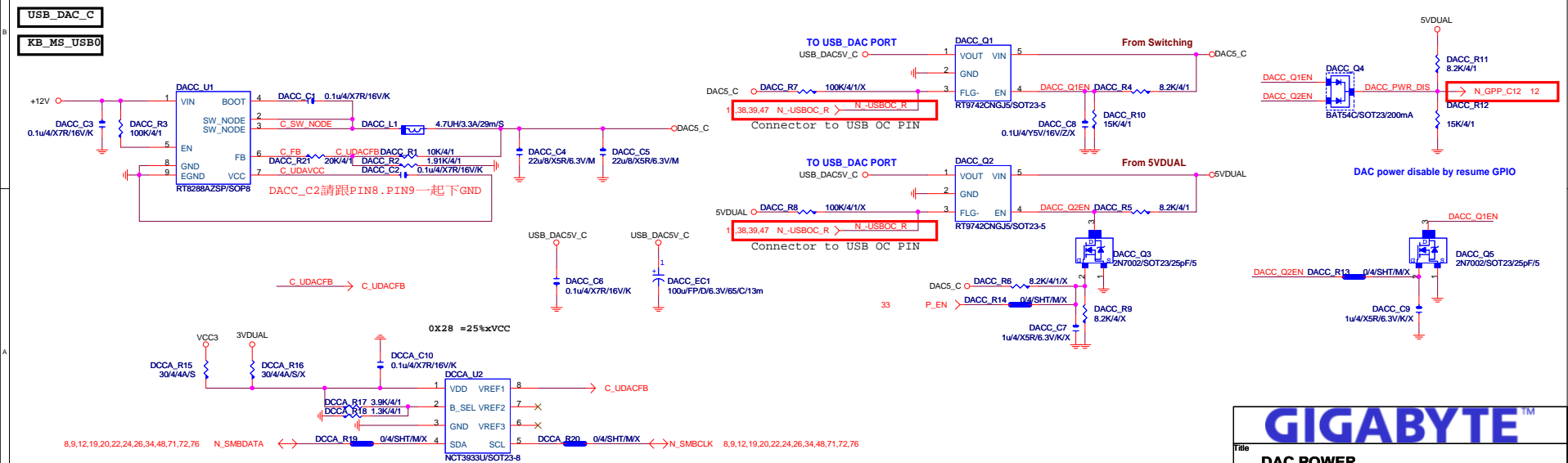
"Turbo", "XMP"字樣(分開控制) 鏤空+背面 RGB側發光 LED



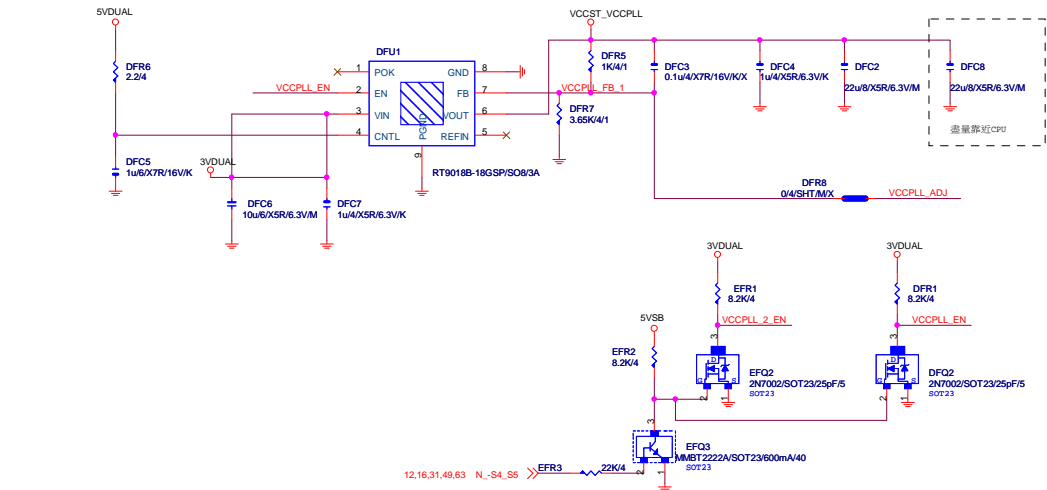
GIGABYTE™		
Title		
MODEL/PCB LED		
Size	Document Number	Rev
Custom	GA-Z270X-GAMING 5	1.01
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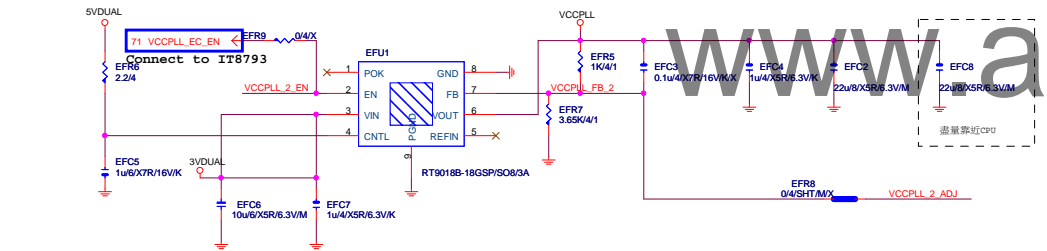
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VCCPLL



VCCPLL_OC

