

SHEET

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SHEET

TITLE


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52	DUAL_LAN-C-I211
53	DUAL USB30_LAN-I219-I211
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55	REAR AUDIO JACK
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58	F_USB20 BOX Header
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63	ARPINE RIDGE TypeC
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Gigabyte Technology

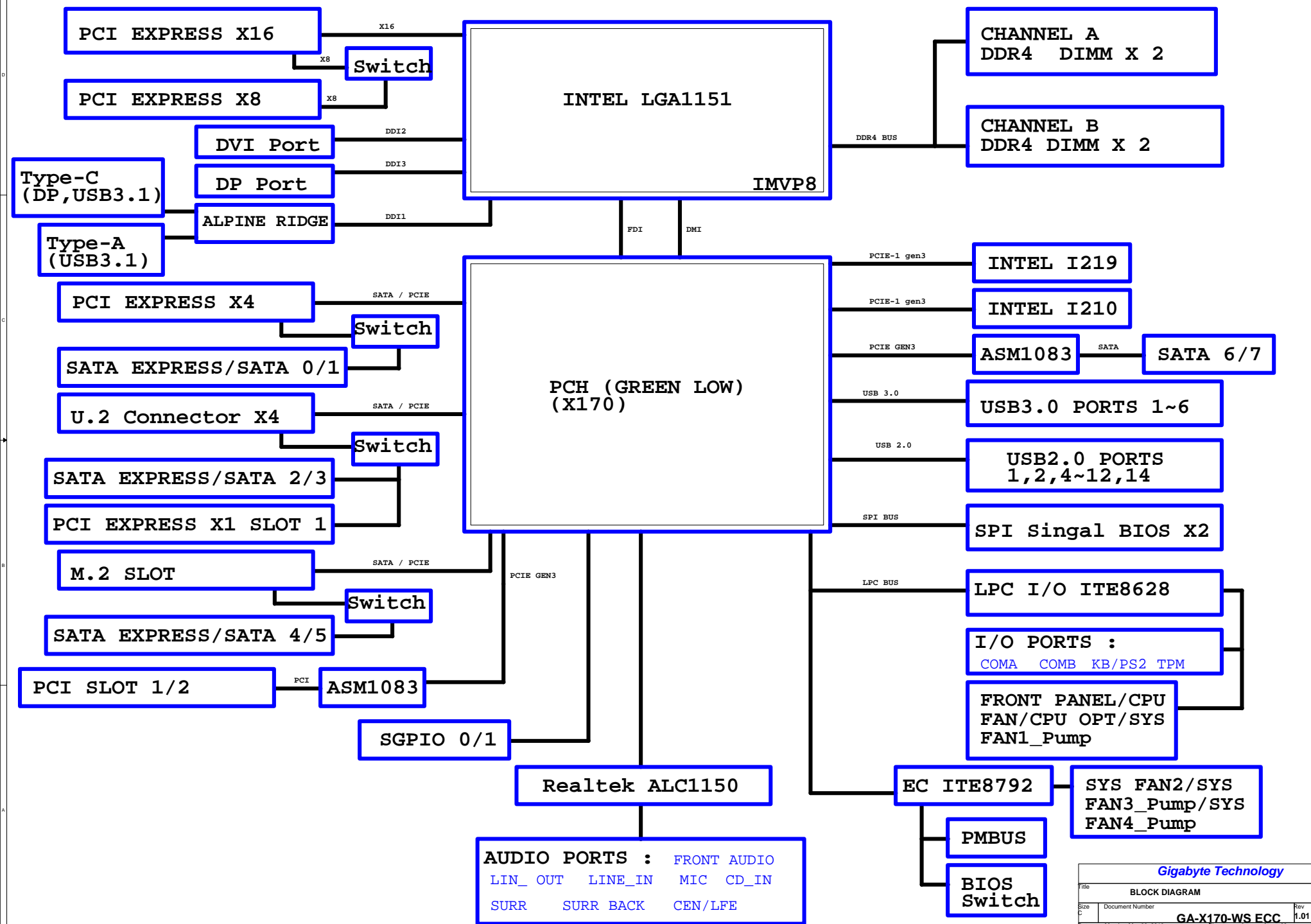
Title			Cover Sheet
Size	Document Number	GA-X170-WS ECC	Rev
Custom			1.01
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## Component value change history

[illegible][illegible]

			
Title			
<b>BOM &amp; PCB MODIFY HISTORY</b>			
Size	Document Number		Rev
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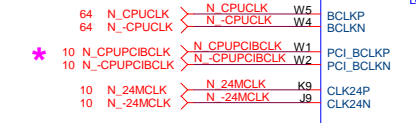
# BLOCK DIAGRAM



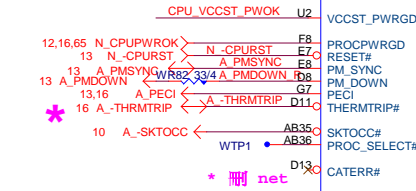
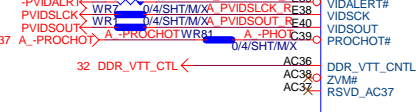
Gigabyte Technology

File	BLOCK DIAGRAM		
Size	Document Number	GA-X170-WS ECC	Rev 1.01
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From SKL\_0.2B



\* WR7, WR1, WR81  
改 short pad



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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

檢查組態調整線路  
The CFG signals  
default value of '1'

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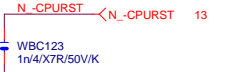
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-CPURST

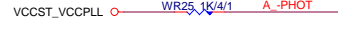


CFG[2]:x16 Lane Numbering  
Reversal. 1=  
NORMAL;0=reversal  
CFG[4]: eDP  
enable:1:disable/0=enable  
CFG[6.5]:PCI Express\* Bifurcation; 11=  
1 x16 PCI Express;10=2x8 PCI Express  
CFG[7]: PEG Training:1=(default) PEG Train  
immediately following RESET#;0=PEG Wait  
for BIOS

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



\* 刪 WR17, WR14, WR10, WR29, WR25, WR56, WR55



\* 刪 WR90

\* 刪 WR91



\* 刪 net N\_CPU\_VCCST\_PWOK



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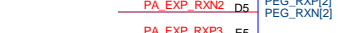
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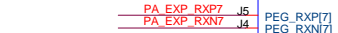


\* 刪 WR17, WR14, WR10, WR29, WR25, WR56, WR55

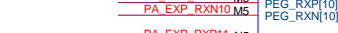


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\* 刪 net N\_CPU\_VCCST\_PWOK



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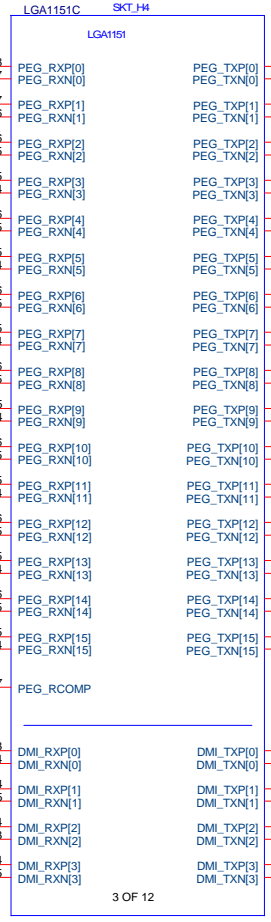
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CPU-SK/1151/S/15

CPU-SK/1151/S/15

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CPU-SK/1151/S/15

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CPU-SK/1151/S/15

CPU-SK/1151/S/15

CPU-SK/1151/S/15

CPU-SK/1151/S/15

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

Intel CRB		
CPU LGA1151-A		
Size Custom	Document Number	Rev 1.01
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# \* 改DDR4 net

LGA1151A SKT\_H4

MDA0 AE38	DDR0_DQ[0]	DDR0_CK[0]	AW18 M_DCLKA0	M_DCLKA0 8
MDA1 AE37	DDR0_DQ[1]	DDR0_CK[1]	AV18 M_DCLKA1	M_DCLKA1 8
MDA2 AG38	DDR0_DQ[2]	DDR0_CK[2]	AW17 M_DCLKA1	M_DCLKA1 8
MDA3 AG37	DDR0_DQ[3]	DDR0_CK[3]	AY17 M_DCLKA1	M_DCLKA1 8
MDA4 AE38	DDR0_DQ[4]	DDR0_CK[2]	AW16 M_DCLKA2	M_DCLKA2 8
MDA5 AE40	DDR0_DQ[5]	DDR0_CK[2]	AV16 M_DCLKA2	M_DCLKA2 8
MDA6 AG38	DDR0_DQ[6]	DDR0_CK[3]	AT16 M_DCLKA3	M_DCLKA3 8
MDA7 AG40	DDR0_DQ[7]	DDR0_CK[3]	AU16 M_DCLKA3	M_DCLKA3 8
MDA8 AJ38	DDR0_DQ[8]			
MDA9 AJ37	DDR0_DQ[9]	DDR0_CKE[0]	AY24 CKEA0	CKEA0 8
MDA10 AL38	DDR0_DQ[10]	DDR0_CKE[1]	AV24 CKEA1	CKEA1 8
MDA11 AL37	DDR0_DQ[11]	DDR0_CKE[2]	AV23 CKEA2	CKEA2 8
MDA12 AL40	DDR0_DQ[12]	DDR0_CKE[3]	AV25 CKEA3	CKEA3 8
MDA13 AJ38	DDR0_DQ[13]			
MDA14 AL38	DDR0_DQ[14]	DDR0_CS[0]	AW12 M_CSA0	M_CSA0 8
MDA15 AL40	DDR0_DQ[15]	DDR0_CS[1]	AU11 M_CSA1	M_CSA1 8
MDA16 AJ38	DDR0_DQ[16]	DDR0_CS[2]	AV13 M_CSA2	M_CSA2 8
MDA17 AN40	DDR0_DQ[17]	DDR0_CS[3]	AX10 M_CSA3	M_CSA3 8
MDA18 AR38	DDR0_DQ[18]			
MDA19 AR37	DDR0_DQ[19]	DDR0_ODT[0]	AW11 M_ODT_A0	
MDA20 AN39	DDR0_DQ[20]	DDR0_ODT[1]	AU14 M_ODT_A1	
MDA21 AN37	DDR0_DQ[21]	DDR0_ODT[2]	AU12 M_ODT_A2	
MDA22 AR39	DDR0_DQ[22]	DDR0_ODT[3]	AY10 M_ODT_A3	
MDA23 AR40	DDR0_DQ[23]			
MDA24 AW37	DDR0_DQ[24]	DDR0_BA[0]DDR0_CAB[4]DDR0_BA[0]	AY13 SBAA0	SBAA0 8
MDA25 AL38	DDR0_DQ[25]	DDR0_BA[1]DDR0_CAB[5]DDR0_BA[1]	AV15 SBAA1	SBAA1 8
MDA26 AV35	DDR0_DQ[26]	DDR0_BA[2]DDR0_CAB[6]DDR0_BA[2]	AW23 BG_A0	BG_A0 8
MDA27 AW36	DDR0_DQ[27]			
MDA28 AJ37	DDR0_DQ[28]	DDR0_RAS#DDR0_CAB[3]DDR0_MA[16]	AW13 MAAA16	
MDA29 AV37	DDR0_DQ[29]	DDR0_WE#DDR0_CAB[2]DDR0_MA[14]	AV14 MAAA14	
MDA30 AT35	DDR0_DQ[30]	DDR0_CAS#DDR0_CAB[1]DDR0_MA[15]	AY11 MAAA15	
MDA31 AU35	DDR0_DQ[31]			
MDA32 AY38	DDR0_DQ[32]	DDR0_MA[0]DDR0_CAB[9]DDR0_MA[0]	AW15 MAAA0	
MDA33 AW38	DDR0_DQ[33]	DDR0_MA[1]DDR0_CAB[8]DDR0_MA[1]	AU18 MAAA1	
MDA34 AV6	DDR0_DQ[34]	DDR0_MA[2]DDR0_CAB[5]DDR0_MA[2]	AW17 MAAA2	
MDA35 AV6	DDR0_DQ[35]	DDR0_MA[3]DDR0_MA[4]	AU19 MAAA3	
MDA36 AV8	DDR0_DQ[36]	DDR0_MA[5]DDR0_CAA[0]DDR0_MA[5]	AT19 MAAA4	
MDA37 AV8	DDR0_DQ[37]	DDR0_MA[6]DDR0_CAA[1]DDR0_MA[6]	AU20 MAAA5	
MDA38 AV6	DDR0_DQ[38]	DDR0_MA[7]DDR0_CAA[2]DDR0_MA[7]	AU21 MAAA6	
MDA39 AV6	DDR0_DQ[39]	DDR0_MA[8]DDR0_CAA[3]DDR0_MA[8]	AT20 MAAA7	
MDA40 AY4	DDR0_DQ[40]	DDR0_MA[9]DDR0_CAA[4]DDR0_MA[9]	AT22 MAAA9	
MDA41 AV4	DDR0_DQ[41]	DDR0_MA[10]DDR0_CAB[7]DDR0_MA[10]	AU22 MAAA11	
MDA42 AT2	DDR0_DQ[42]	DDR0_MA[11]DDR0_CAA[7]DDR0_MA[11]	AV22 MAAA12	
MDA43 AT2	DDR0_DQ[43]	DDR0_MA[12]DDR0_CAA[6]DDR0_MA[12]	AV12 MAAA13	
MDA44 AV3	DDR0_DQ[44]	DDR0_MA[13]DDR0_CAB[0]DDR0_MA[13]	AV23 BG_A1	BG_A1 8
MDA45 AW4	DDR0_DQ[45]	DDR0_MA[14]DDR0_CAA[9]DDR0_BG[1]	AU24	M_ACT_A 8
MDA46 AT4	DDR0_DQ[46]	DDR0_MA[15]DDR0_CAA[8]DDR0_ACT#		
MDA47 AT3	DDR0_DQ[47]			
MDA48 AP2	DDR0_DQ[48]	DDR0_PAR	AY15	M_DDR_PARA 8
MDA49 AM4	DDR0_DQ[49]	DDR0_ALERT#	AT23	M_ALERT_A 8
MDA50 AP3	DDR0_DQ[50]			
MDA51 AM3	DDR0_DQ[51]	DDR0_DQS[0]	AF39 M_DQSA0	
MDA52 AP4	DDR0_DQ[52]	DDR0_DQS[1]	AK39 M_DQSA1	
MDA53 AM2	DDR0_DQ[53]	DDR0_DQS[2]	AP39 M_DQSA2	
MDA54 AP1	DDR0_DQ[54]	DDR0_DQS[3]	AW36 M_DQSA3	
MDA55 AM1	DDR0_DQ[55]	DDR0_DQS[4]	UW7 M_DQSA4	
MDA56 AK3	DDR0_DQ[56]	DDR0_DQS[5]	AU3 M_DQSA5	
MDA57 AH1	DDR0_DQ[57]	DDR0_DQS[6]	AN3 M_DQSA6	
MDA58 AK4	DDR0_DQ[58]	DDR0_DQS[7]	AJ3 M_DQSA7	
MDA59 AH2	DDR0_DQ[59]	DDR0_DQSP[0]	AF38 M_DQSA0	
MDA60 AH4	DDR0_DQ[60]	DDR0_DQSP[1]	AK38 M_DQSA1	
MDA61 AK2	DDR0_DQ[61]	DDR0_DQSP[2]	AP38 M_DQSA2	
MDA62 AH3	DDR0_DQ[62]	DDR0_DQSP[3]	AV36 M_DQSA3	
MDA63 AK1	DDR0_DQ[63]	DDR0_DQSP[4]	UJ7 M_DQSA4	
		DDR0_DQSP[5]	AJ2 M_DQSA5	
		DDR0_DQSP[6]	AN2 M_DQSA6	
		DDR0_DQSP[7]	AJ2 M_DQSA7	
		DDR0_DQSP[8]	AV32 M_DQSA8	M_DQSA8 8
		DDR0_DQSP[9]	AU32 M_DQSA8	M_DQSA8 8

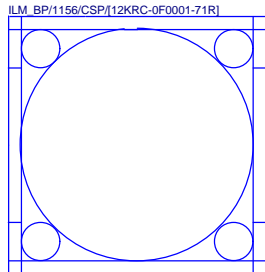
8 MDA\_ECC[0..7] <=> MDA\_ECC[0..7]

DDR CHANNEL A

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LGA1151

CPU-SK/1151/S/15



Need check the new CPU MB

Rev1.0 Change 115X ILM+BP Server Type

LGA1151B SKT\_H4

MD80 AD34	DDR1_DQ[0]DDR0_DQ[16]	DDR1_CK[0]	AM20 M_DCLKB0	M_DCLKB0 9
MD81 AD35	DDR1_DQ[1]DDR0_DQ[17]	DDR1_CK[1]	AM21 M_DCLKB0	M_DCLKB0 9
MD82 AG35	DDR1_DQ[2]DDR0_DQ[18]	DDR1_CK[2]	AP22 M_DCLKB1	M_DCLKB1 9
MD83 AH35	DDR1_DQ[3]DDR0_DQ[19]	DDR1_CK[3]	AP21 M_DCLKB1	M_DCLKB1 9
MD84 AE35	DDR1_DQ[4]DDR0_DQ[20]	DDR1_CK[2]	AN20 M_DCLKB2	M_DCLKB2 9
MD85 AE34	DDR1_DQ[5]DDR0_DQ[21]	DDR1_CK[2]	AN21 M_DCLKB2	M_DCLKB2 9
MD86 AG34	DDR1_DQ[6]DDR0_DQ[22]	DDR1_CK[3]	AP19 M_DCLKB3	M_DCLKB3 9
MD87 AH34	DDR1_DQ[7]DDR0_DQ[23]	DDR1_CK[3]	AP20 M_DCLKB3	M_DCLKB3 9
MD88 AK35	DDR1_DQ[8]DDR0_DQ[24]			
MD89 AL35	DDR1_DQ[9]DDR0_DQ[25]	DDR1_CKE[0]	AY29 CKEB0	CKEB0 9
MD90 AL32	DDR1_DQ[10]DDR0_DQ[26]	DDR1_CKE[1]	AY29 CKEB1	CKEB1 9
MD91 AL32	DDR1_DQ[11]DDR0_DQ[27]	DDR1_CKE[2]	AY29 CKEB2	CKEB2 9
MD92 AK34	DDR1_DQ[12]DDR0_DQ[28]	DDR1_CKE[3]	AY29 CKEB3	CKEB3 9
MD93 AL34	DDR1_DQ[13]DDR0_DQ[29]			
MD94 AK31	DDR1_DQ[14]DDR0_DQ[30]	DDR1_CS[0]	AP17 M_CSB0	M_CSB0 9
MD95 AL31	DDR1_DQ[15]DDR0_DQ[31]	DDR1_CS[1]	AN15 M_CSB1	M_CSB1 9
MD96 AP35	DDR1_DQ[16]DDR0_DQ[32]	DDR1_CS[2]	AN15 M_CSB2	M_CSB2 9
MD97 AN35	DDR1_DQ[17]DDR0_DQ[33]	DDR1_CS[3]	AM15 M_CSB3	M_CSB3 9
MD98 AN32	DDR1_DQ[18]DDR0_DQ[34]			
MD99 AP32	DDR1_DQ[19]DDR0_DQ[35]	DDR1_ODT[0]	AM16 M_ODT_B0	
MD100 AN34	DDR1_DQ[20]DDR0_DQ[36]	DDR1_ODT[1]	AL16 M_ODT_B1	
MD101 AP34	DDR1_DQ[21]DDR0_DQ[37]	DDR1_ODT[2]	AL17 M_ODT_B2	
MD102 AN31	DDR1_DQ[22]DDR0_DQ[38]	DDR1_ODT[3]	AL15 M_ODT_B3	
MD103 AP31	DDR1_DQ[23]DDR0_DQ[39]			
MD104 AL29	DDR1_DQ[24]DDR0_DQ[40]	DDR1_RAS#DDR1_CAB[3]DDR1_MA[16]	AN18 MAA16	
MD105 AM29	DDR1_DQ[25]DDR0_DQ[41]	DDR1_WE#DDR1_CAB[2]DDR1_MA[14]	AL17 MAA14	
MD106 AP29	DDR1_DQ[26]DDR0_DQ[42]	DDR1_CAS#DDR1_CAB[1]DDR1_MA[15]	AP16 MAA15	
MD107 AR29	DDR1_DQ[27]DDR0_DQ[43]			
MD108 AM28	DDR1_DQ[28]DDR0_DQ[44]	DDR1_BA[0]DDR1_CAB[4]DDR1_BA[0]	AL18 SBA80	SBA80 9
MD109 AL28	DDR1_DQ[29]DDR0_DQ[45]	DDR1_BA[1]DDR1_CAB[5]DDR1_BA[1]	AM18 SBA81	SBA81 9
MD110 AR28	DDR1_DQ[30]DDR0_DQ[46]	DDR1_BA[2]DDR1_CAB[6]DDR1_BA[2]	WG28 BG_B0	BG_B0 9
MD111 AP28	DDR1_DQ[31]DDR0_DQ[47]			
MD112 AR12	DDR1_DQ[32]DDR0_DQ[48]			
MD113 AP12	DDR1_DQ[33]DDR0_DQ[49]	DDR1_MA[0]DDR1_CAB[9]DDR1_MA[0]	AL19 MAA80	
MD114 AM13	DDR1_DQ[34]DDR0_DQ[50]	DDR1_MA[1]DDR1_CAB[8]DDR1_MA[1]	AL22 MAA81	
MD115 AL13	DDR1_DQ[35]DDR0_DQ[51]	DDR1_MA[2]DDR1_CAB[5]DDR1_MA[2]	AM22 MAA82	
MD116 AR13	DDR1_DQ[36]DDR0_DQ[52]			
MD117 AP13	DDR1_DQ[37]DDR0_DQ[53]	DDR1_MA[3]DDR1_MA[4]	AM23 MAA83	
MD118 AM12	DDR1_DQ[38]DDR0_DQ[54]	DDR1_MA[5]DDR1_CAA[0]DDR1_MA[5]	AP23 MAA84	
MD119 AL12	DDR1_DQ[39]DDR0_DQ[55]	DDR1_MA[6]DDR1_CAA[1]DDR1_MA[6]	AL23 MAA85	
MD120 AP10	DDR1_DQ[40]DDR0_DQ[56]	DDR1_MA[7]DDR1_CAA[2]DDR1_MA[7]	AW26 MAA87	
MD121 AR10	DDR1_DQ[41]DDR0_DQ[57]	DDR1_MA[8]DDR1_CAA[3]DDR1_MA[8]	AW26 MAA88	
MD122 AR7	DDR1_DQ[42]DDR0_DQ[58]	DDR1_MA[9]DDR1_CAA[4]DDR1_MA[9]	AW27 MAA89	
MD123 AF7	DDR1_DQ[43]DDR0_DQ[59]	DDR1_MA[10]DDR1_CAB[7]DDR1_MA[10]	AP18 MAA810	
MD124 AR9	DDR1_DQ[44]DDR0_DQ[60]	DDR1_MA[11]DDR1_CAA[7]DDR1_MA[11]	AU27 MAA811	
MD125 AP9	DDR1_DQ[45]DDR0_DQ[61]	DDR1_MA[12]DDR1_CAA[6]DDR1_MA[12]	AW27 MAA812	
MD126 AR6	DDR1_DQ[46]DDR0_DQ[62]	DDR1_MA[13]DDR1_CAB[0]DDR1_MA[13]	AL15 MAA813	
MD127 AP6	DDR1_DQ[47]DDR0_DQ[63]	DDR1_MA[14]DDR1_CAA[9]DDR1_BG[1]	AY28 BG_B1	BG_B1 9
MD128 AM10	DDR1_DQ[48]	DDR1_MA[15]DDR1_CAA[8]DDR1_ACT#	AU28	M_ACT_B 9
MD129 AL10	DDR1_DQ[49]			
MD130 AM7	DDR1_DQ[50]	DDR1_PAR	AL20	M_DDR_PARB 9
MD131 AL7	DDR1_DQ[51]	DDR1_ALERT#	AY25	M_ALERT_B 9
MD132 AM9	DDR1_DQ[52]			
MD133 AL9	DDR1_DQ[53]	DDR1_DQS[0]DDR0_DQS[2]	AF34 M_DQSB0	
MD134 AL6	DDR1_DQ[54]	DDR1_DQS[1]DDR0_DQS[3]	AK33 M_DQSB1	
MD135 AL6	DDR1_DQ[55]	DDR1_DQS[2]DDR0_DQS[6]	AN33 M_DQSB2	
MD136 AJ7	DDR1_DQ[56]	DDR1_DQS[3]DDR0_DQS[7]	AN29 M_DQSB3	
MD137 AE7	DDR1_DQ[57]	DDR1_DQS[4]DDR0_DQS[8]	AN13 M_DQSB4	
MD138 AE7	DDR1_DQ[58]	DDR1_DQS[5]DDR0_DQS[9]	AK6 M_DQSB5	
MD139 AH7	DDR1_DQ[59]	DDR1_DQS[6]DDR0_DQS[10]	AM6 M_DQSB6	
MD140 AH6	DDR1_DQ[60]	DDR1_DQS[7]	AG6 M_DQSB7	
MD141 AE7	DDR1_DQ[61]			
MD142 AE7	DDR1_DQ[62]	DDR1_DQSP[0]DDR0_DQSP[2]	AF35 M_DQSB0	
MD143 AE6	DDR1_DQ[63]	DDR1_DQSP[1]DDR0_DQSP[3]	AL33 M_DQSB1	
MD144 AR25	DDR1_DQSP[2]DDR0_DQSP[6]	DDR1_DQSP[2]DDR0_DQSP[6]	AN28 M_DQSB2	
MD145 AR26	DDR1_DQSP[3]DDR0_DQSP[7]	DDR1_DQSP[3]DDR0_DQSP[7]	AP23 M_DQSB3	
MD146 AM25	DDR1_DQSP[4]DDR0_DQSP[2]	DDR1_DQSP[4]DDR0_DQSP[2]	AN12 M_DQSB4	
MD147 AP26	DDR1_DQSP[5]DDR0_DQSP[3]	DDR1_DQSP[5]DDR0_DQSP[3]	AP8 M_DQSB5	
MD148 AP25	DDR1_DQSP[6]	DDR1_DQSP[6]	AL8 M_DQSB6	
MD149 AL25	DDR1_DQSP[7]	DDR1_DQSP[7]	AG7 M_DQSB7	
MD150 AL25	DDR1_DQSP[8]			
MD151 EC7	DDR1_DQSP[9]	DDR1_DQSP[8]	AN25 M_DQSB8	M_DQSB8 9
		DDR1_DQSP[9]	AN26 M_DQSB8	M_DQSB8 9

9 MDB\_ECC[0..7] <=> MDB\_ECC[0..7]

DDR CHANNEL B

2 OF 12

CPU-SK/1151/S/15

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 MAA[0..16] <=> MAA[0..16]

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

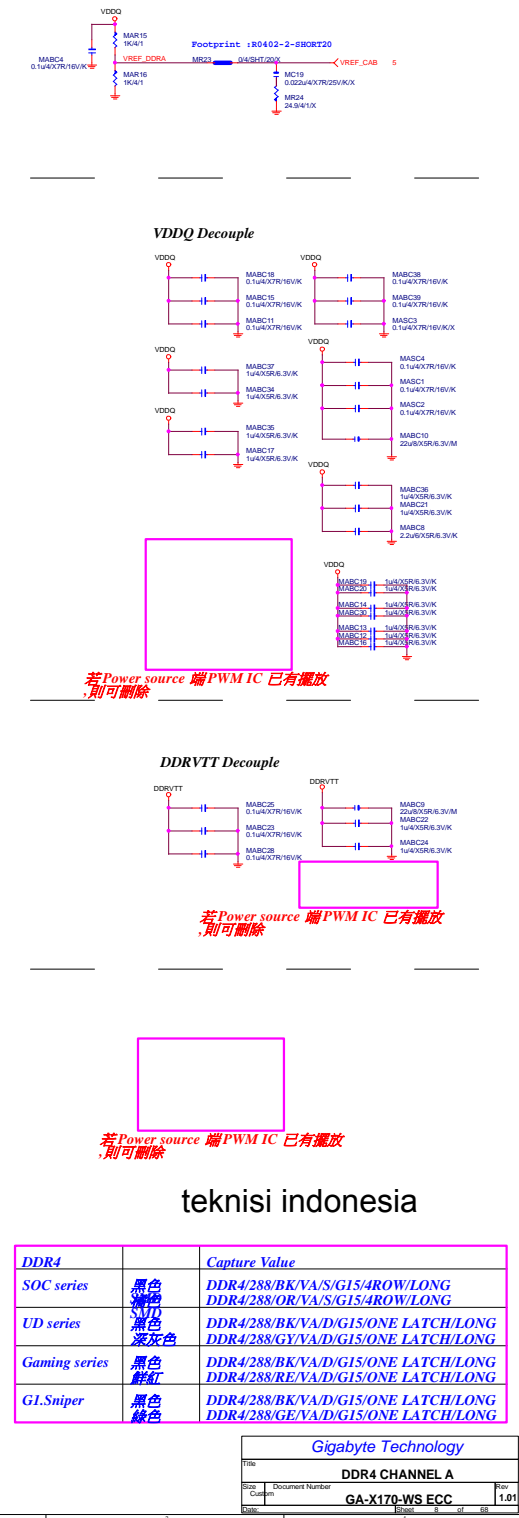
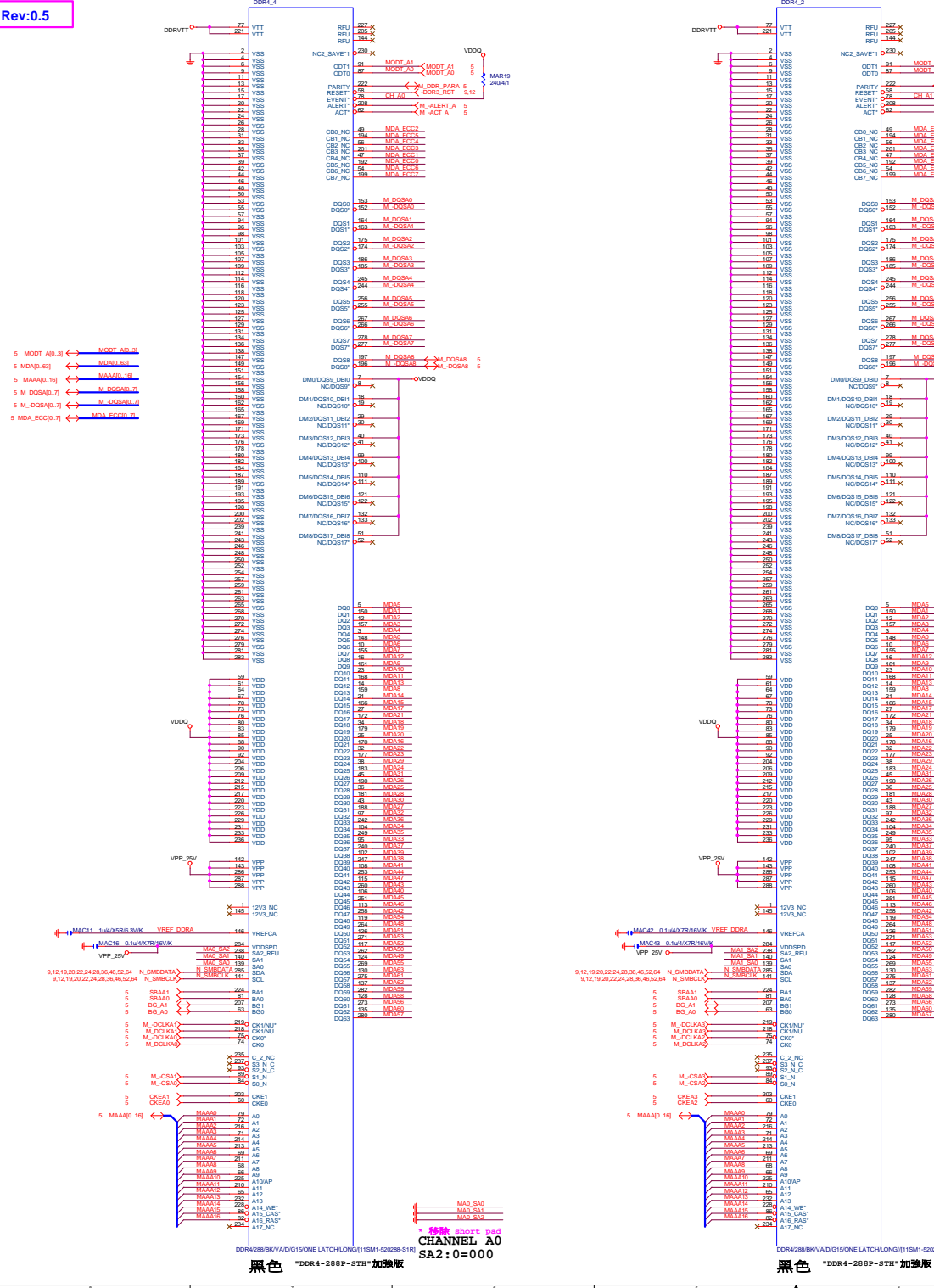
9 M\_DQSB[0..7] <=> M\_DQSB[0..7]

Intel CRB		
Title CPU LGA1151-B		
Size Custom	Document Number GA-X170-WS ECC	Rev 1.01
Date: Monday, May 30, 2016	Sheet 5	of 68

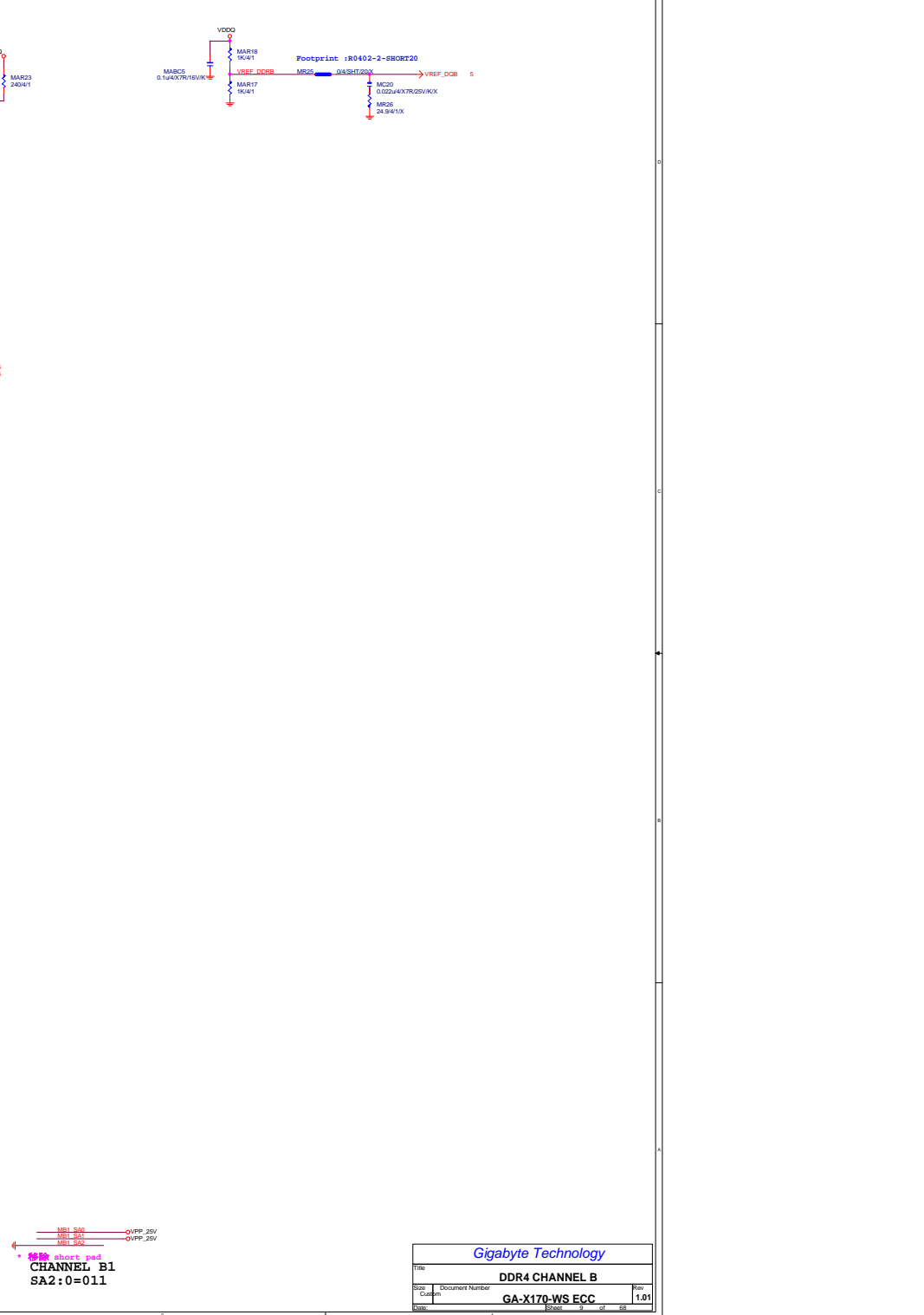
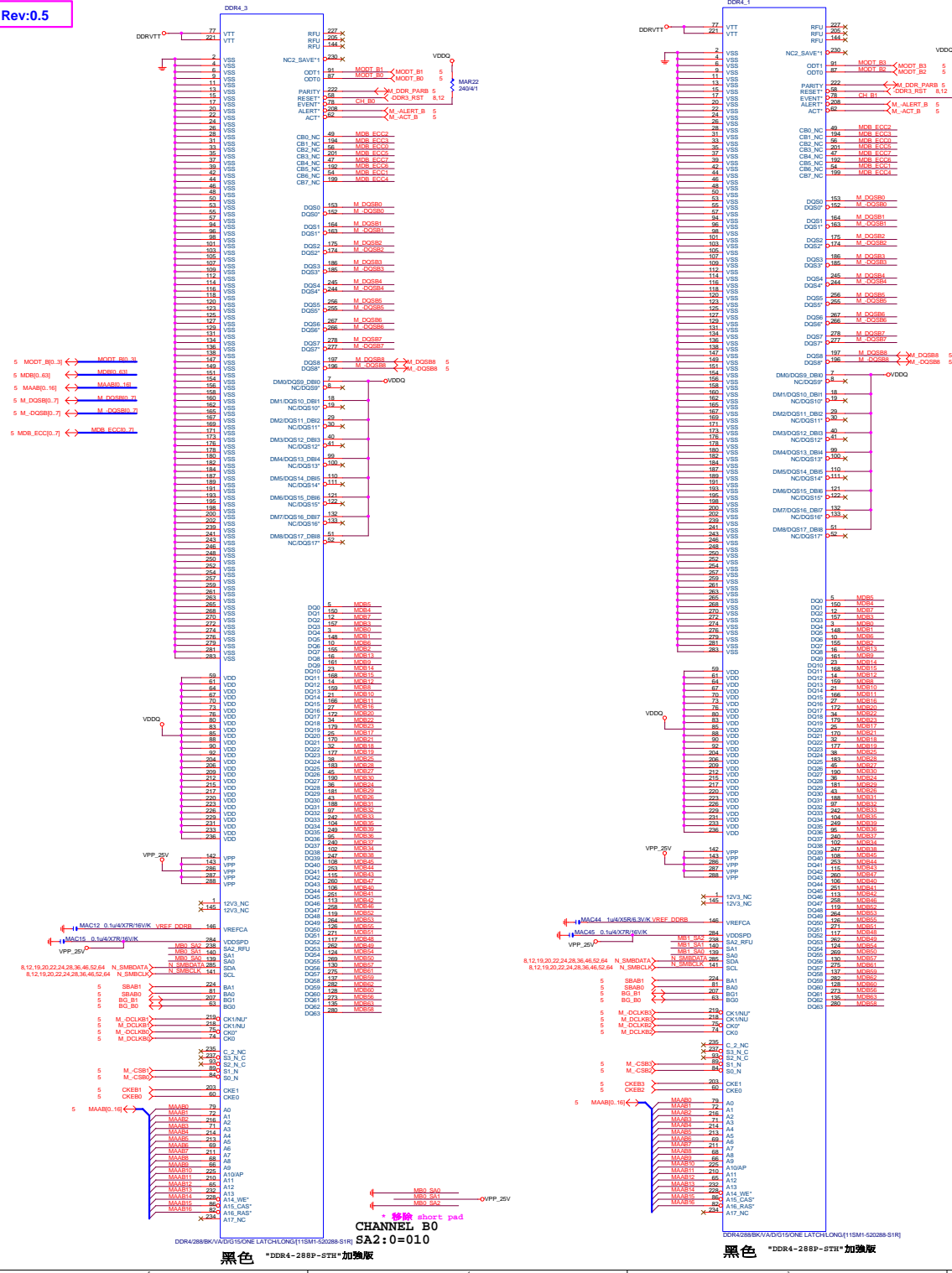








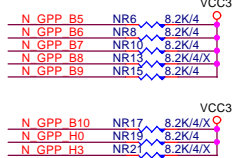
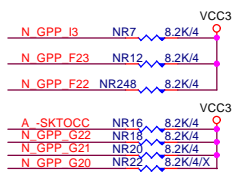
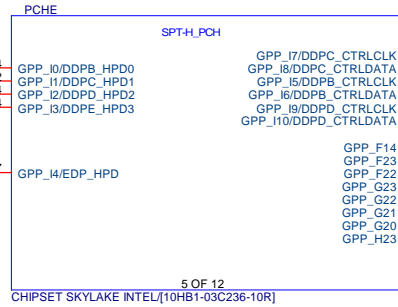




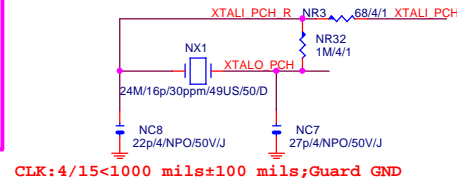
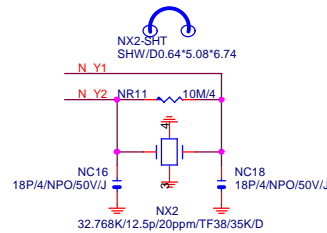
Rev 0.7

## 放置PCH端

N\_DDPB\_CTRLCLK NR23 2.2K/4/1  
N\_DDPB\_CTRLDATA NR24 2.2K/4/1



32.768KHZ



VCC1\_0\_PCH NR5 2.7K/4/1 XCLK\_BIASREF E1

CLK:4/15&lt;1000;Guard GND

N GPP B7 NR308 0/4

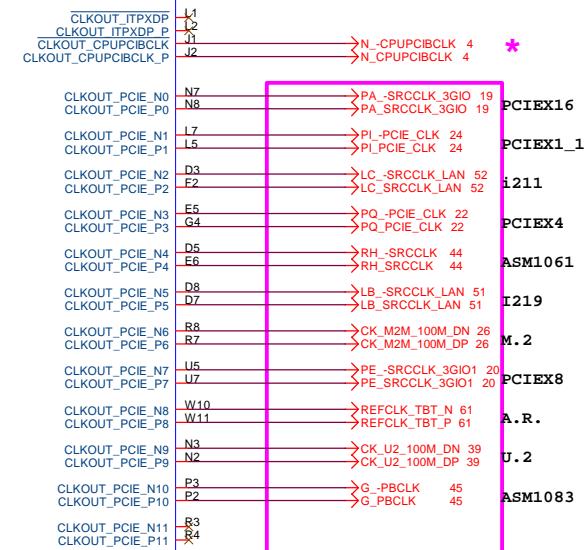
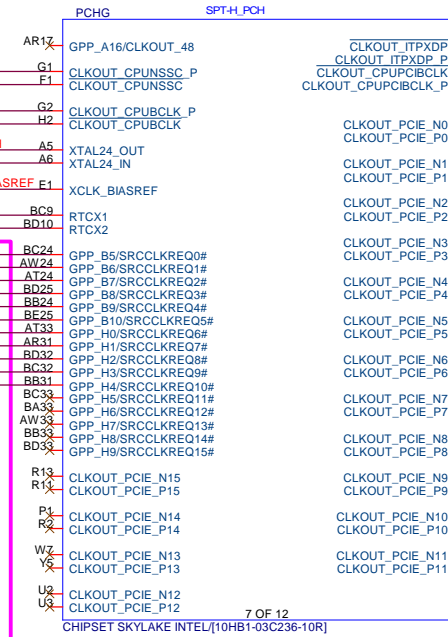
N GPP B9 NR309 0/4

N GPP H2 NR307 0/4

N GPP H3 NR296 0/4

N GPP H4 NR228 0/4

ON-BOARD DEVICE USED



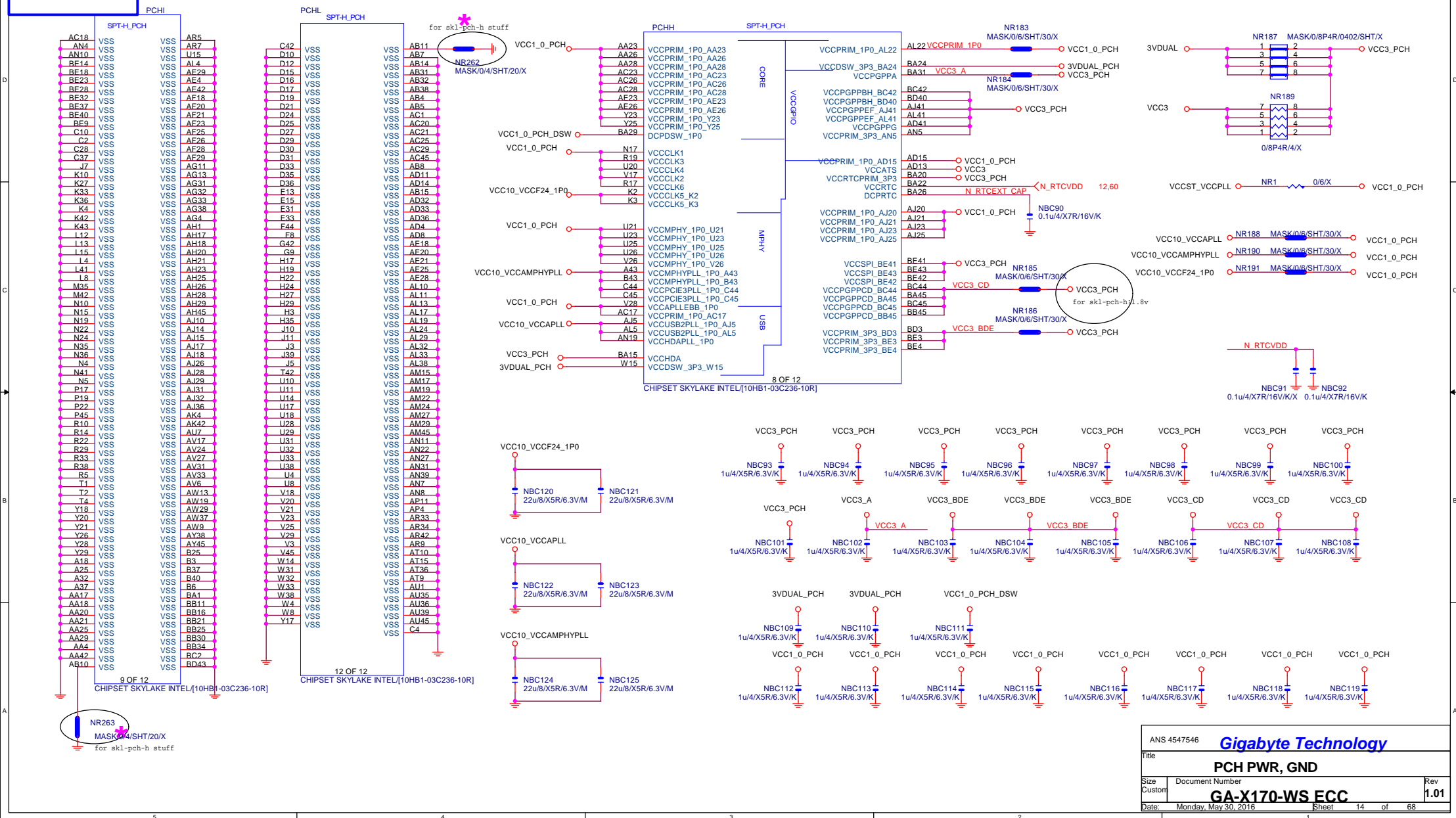
CLOCK 4/4/4//15

ANS 4547546		Gigabyte Technology	
Title		PCH CLOCK BUFFER	
Size	Document Number	GA-X170-WS ECC	
Custom		Rev 1.01	
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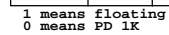








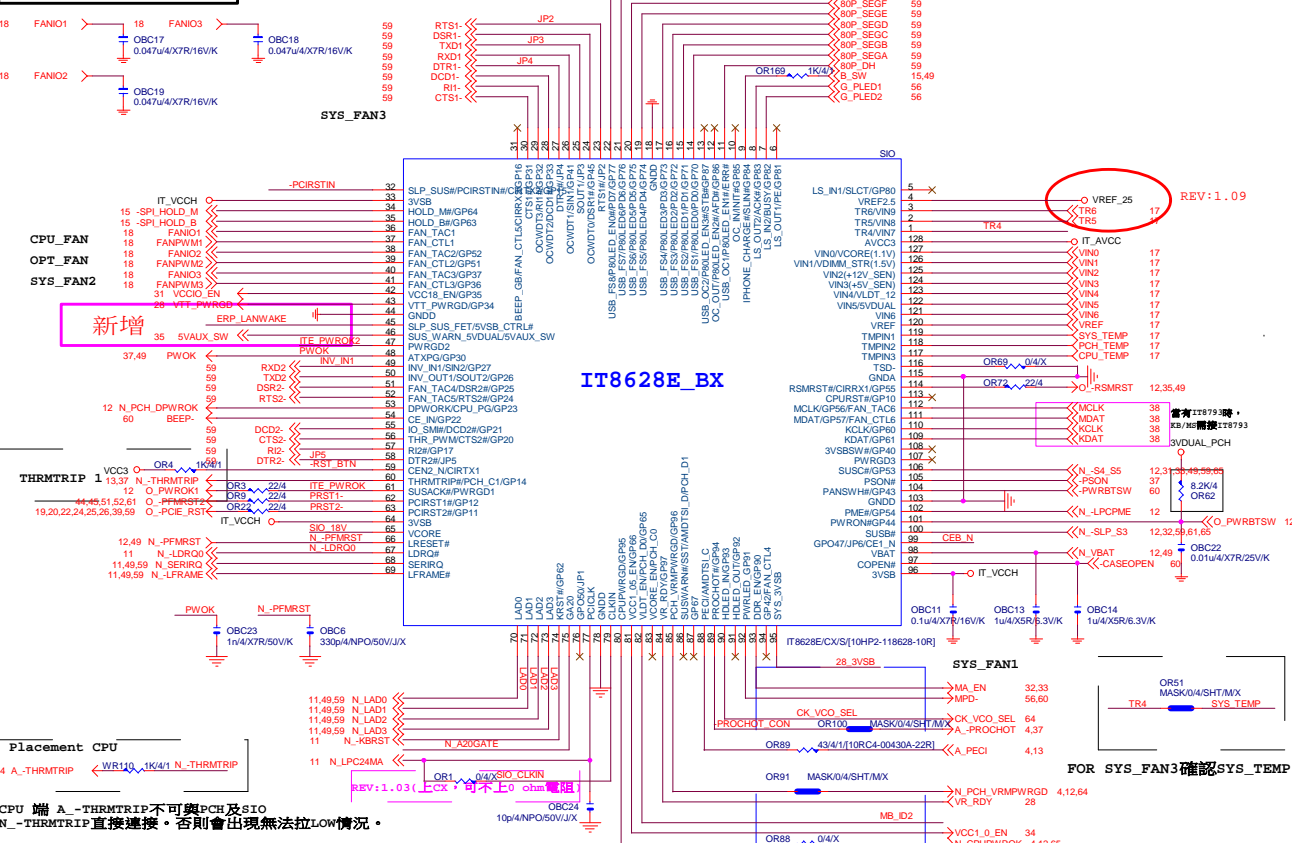




<b>Gigabyte Technology</b>			
<b>Title Dual BIOS</b>			
<b>Size</b>	<b>Document Number</b>		<b>Rev</b>
Custor	<b>GA-X170-WS ECC</b>		<b>1.01</b>
<b>Date:</b>	Monday, May 30, 2016	Sheet 15 of 68	



SIO IT8628CX REV:1.09



FAN TABLE

CPU_FAN	FAN_CTL1	FAN_TAC1
SYS_FAN1	FAN_CTL4	FAN_TAC4
SYS_FAN2	FAN_CTL3	FAN_TAC3
SYS_FAN3	FAN_CTL5	FAN_TAC5
OPT_FAN	FAN_CTL2	FAN_TAC2
THRMTrip1	YES	PIN60

IT8620E GPIO問題匯整

PIN	說明
50	GP25-第一次上POWER時會拉LO
90/91	DEFAULT為HIDLED FUNCTION, GP93 BYPASS TO GP92 高溫時 GP92 會被拉LO (ITE BUG)
108	GP40--- POWER ON 時會拉LO
111/112	MOUSE 跟 FAN6 FUNCTION 綁在一起, 不允許互相干擾
22	PIN22, 需高於3V, 若低於此部分, 高壓時, P22及L11/112 線路器會異常動作。

DUAL BIOS OPT STRAP

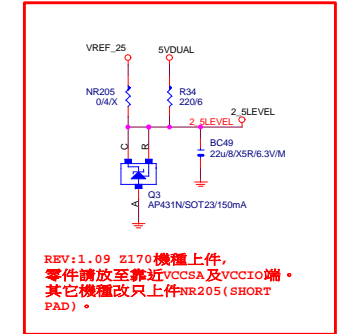
Power Leakage

SIO\_18V

MB ID

SIO CAP

CLOSE SIO PIN4 2.5LEVEL



REV:1.09 Z170機種不上件, 改上AP431。其它機種需上件。

REV:1.09 Z170機種上件, 零件請放至靠近VCCSA及VCCIO端。其它機種改只上件NR205 (SHORT PAD)。

PWR SHT

SIO PU

SIO STRAP

JP2	1	Disable WDT
	0	Enable WDT to rest PWROK
JP3	1	Dual BIOS CS PIN Disable
	0	Dual BIOS CS PIN Enable
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP5	1	anti-surge Disable
	0	anti-surge Enable

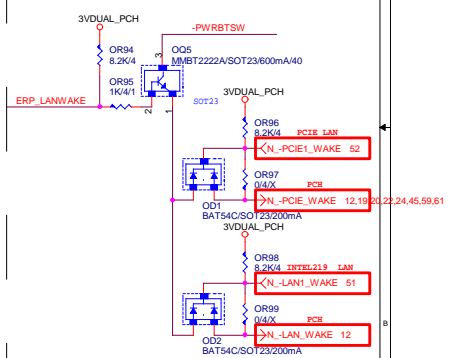
JP3	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh
JP5	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

ERP WAKE on LAN

(組態一) Realtek/ATHEROS LAN

(組態二) Intel LAN

(組態三) Dual LAN



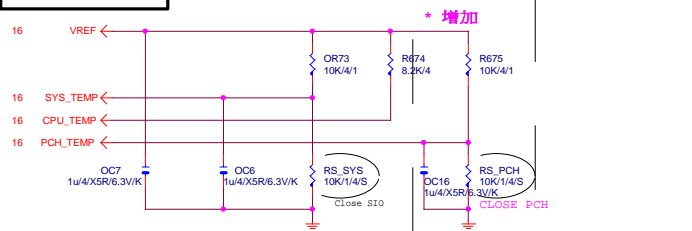
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ERP Wake on LAN		
Single LAN	Realtek	組態一
	Atheros	
	Intel 219	組態二
Dual LAN	Atheros+Atheros	組態一
	Intel 219+Atheros	
	Intel 219+Intel 210	組態三
No Support ERP	BOM不上	N/A

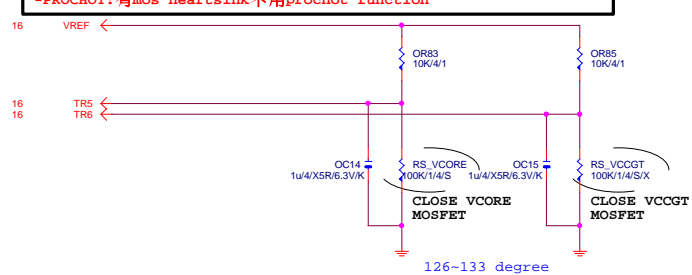
Gigabyte Technology

File	ITE 8628 LPC IO	
Size	Document Number	Rev
Custom	GA-X170-WS ECC	1.01
Date:	Monday, May 30, 2016	Sheet 16 of 68

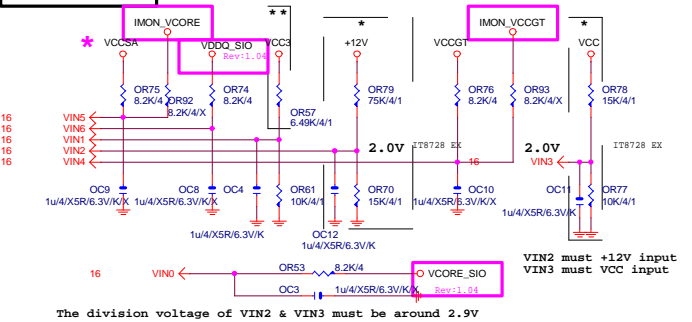
## TEMP H/W MONITOR



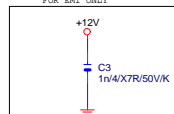
## RS\_VCORE、RS\_VCCGT、CLOSE CPU\_VCORE &amp; VCCGT MOSFET



## VOLTAGE-- H/W MONITOR



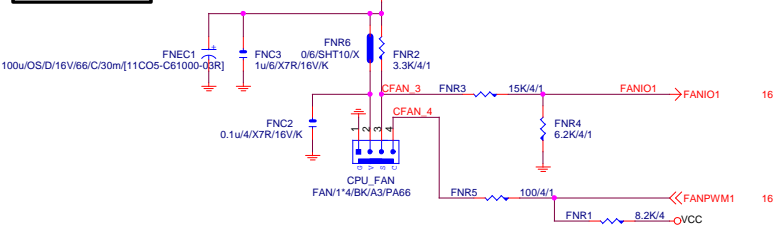
FOR RMI ONLY



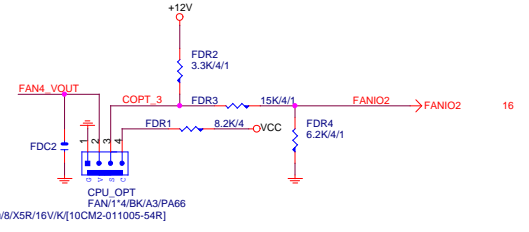
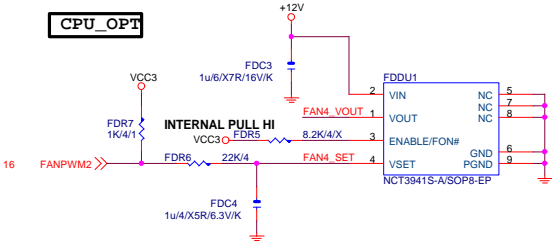
Gigabyte Technology

Title			HWM,KB/MS, FAN CTRL
Size	Document Number	Rev	
Custom		GA-X170-WS ECC	
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CPU SMART FAN



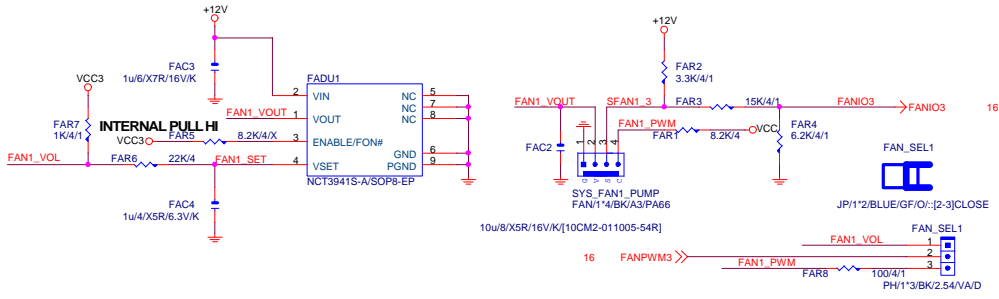
CPU\_OPT



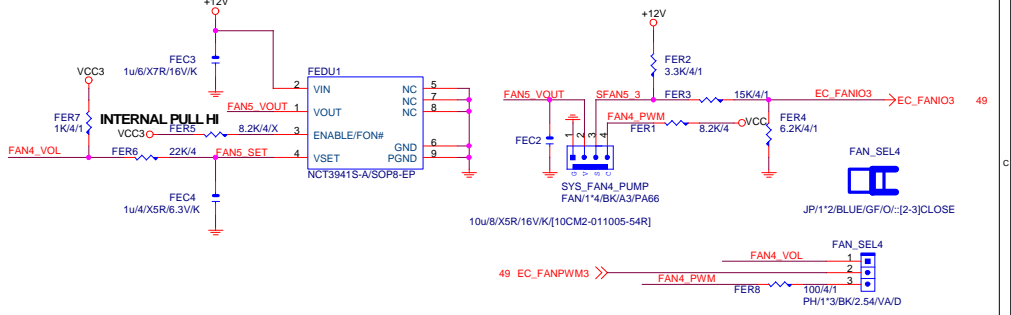
SYSTEM FAN1

Linear SYS\_FAN

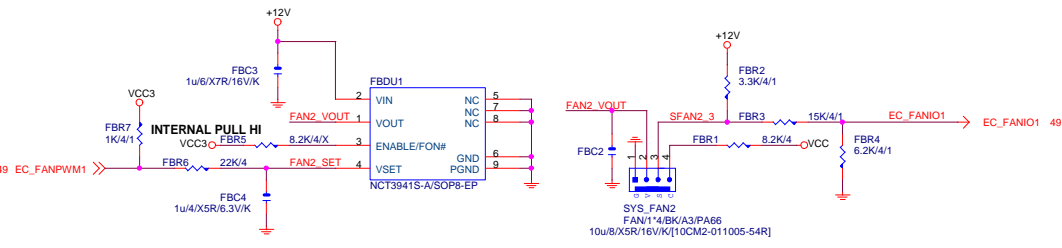
Enable Function (NCT3941S)  
Full Turn On Function (NCT3941S-A)



SYSTEM FAN4



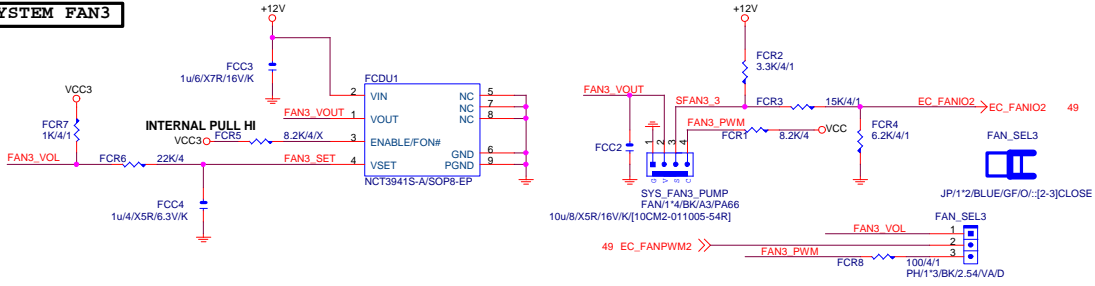
SYSTEM FAN2



SYSTEM FAN5



SYSTEM FAN3



FAN_SELx	
1-2	Voltage
2-3	PWM

GIGABYTE		
Title HWM,KB/MS, FAN CTRL		
Size Custom	Document Number GA-X170-WS ECC	Rev 1.01
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Rev 0.3

PCIEX16 CAP

PCIEX16 SLOT

PCIESLOT-1645TH

3GIO\_\*16

PCIEX16

KEY

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

黑色金屬加強

PCIEX16 PROTECT SHT

+12 protect  
short-wire test

PCIEX16 AC CAP

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 SW TXP8	PAC20	0.22u/4/X5R/6.3V/K	PA EXP SW TXP8 C
PA EXP SW TXN8	PAC21	0.22u/4/X5R/6.3V/K	PA EXP SW TXN8 C
PA EXP SW TXP9	PAC22	0.22u/4/X5R/6.3V/K	PA EXP SW TXP9 C
PA EXP SW TXN9	PAC23	0.22u/4/X5R/6.3V/K	PA EXP SW TXN9 C
PA EXP SW TXP10	PAC24	0.22u/4/X5R/6.3V/K	PA EXP SW TXP10 C
PA EXP SW TXN10	PAC25	0.22u/4/X5R/6.3V/K	PA EXP SW TXN10 C
PA EXP SW TXP11	PAC26	0.22u/4/X5R/6.3V/K	PA EXP SW TXP11 C
PA EXP SW TXN11	PAC27	0.22u/4/X5R/6.3V/K	PA EXP SW TXN11 C
PA EXP SW TXP12	PAC28	0.22u/4/X5R/6.3V/K	PA EXP SW TXP12 C
PA EXP SW TXN12	PAC29	0.22u/4/X5R/6.3V/K	PA EXP SW TXN12 C
PA EXP SW TXP13	PAC30	0.22u/4/X5R/6.3V/K	PA EXP SW TXP13 C
PA EXP SW TXN13	PAC31	0.22u/4/X5R/6.3V/K	PA EXP SW TXN13 C
PA EXP SW TXP14	PAC32	0.22u/4/X5R/6.3V/K	PA EXP SW TXP14 C
PA EXP SW TXN14	PAC33	0.22u/4/X5R/6.3V/K	PA EXP SW TXN14 C
PA EXP SW TXP15	PAC34	0.22u/4/X5R/6.3V/K	PA EXP SW TXP15 C
PA EXP SW TXN15	PAC35	0.22u/4/X5R/6.3V/K	PA EXP SW TXN15 C

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

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

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

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

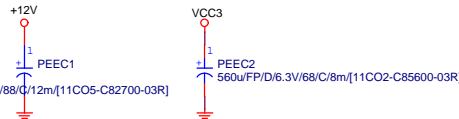
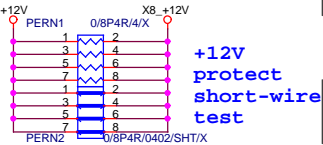
PCE-E X16(雙向) BANDWITH=2.5GHz\*(8b/10b)X16X2=64Gb/s=8GB/s

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

Gigabyte Technology			
PCI EXPRESS * 16			
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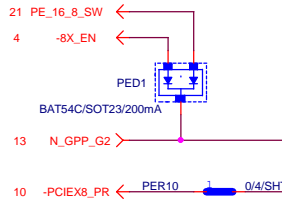
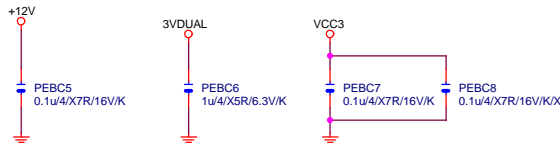
Rev 0.3

PCIEX8 PROTECT SHT



8,9,12,19,22,24,28,36,46,52,64 N\_SMBCLK N\_SMBCLK PER8 0/4/X  
8,9,12,19,22,24,28,36,46,52,64 N\_SMBDATA N\_SMBDATA PER9 0/4/X

12,16,19,22,24,45,59,61 N\_-PCIE\_WAKE



PCIESLOT-98STH

3GIO\_\*8

KEY

PCI-E/8X-99P/BK/LONG DOUBLE/HK\*2/SHELL[11AC1-023099-F1R]

黑色金屬加強

2016/2/24 EMI ADD

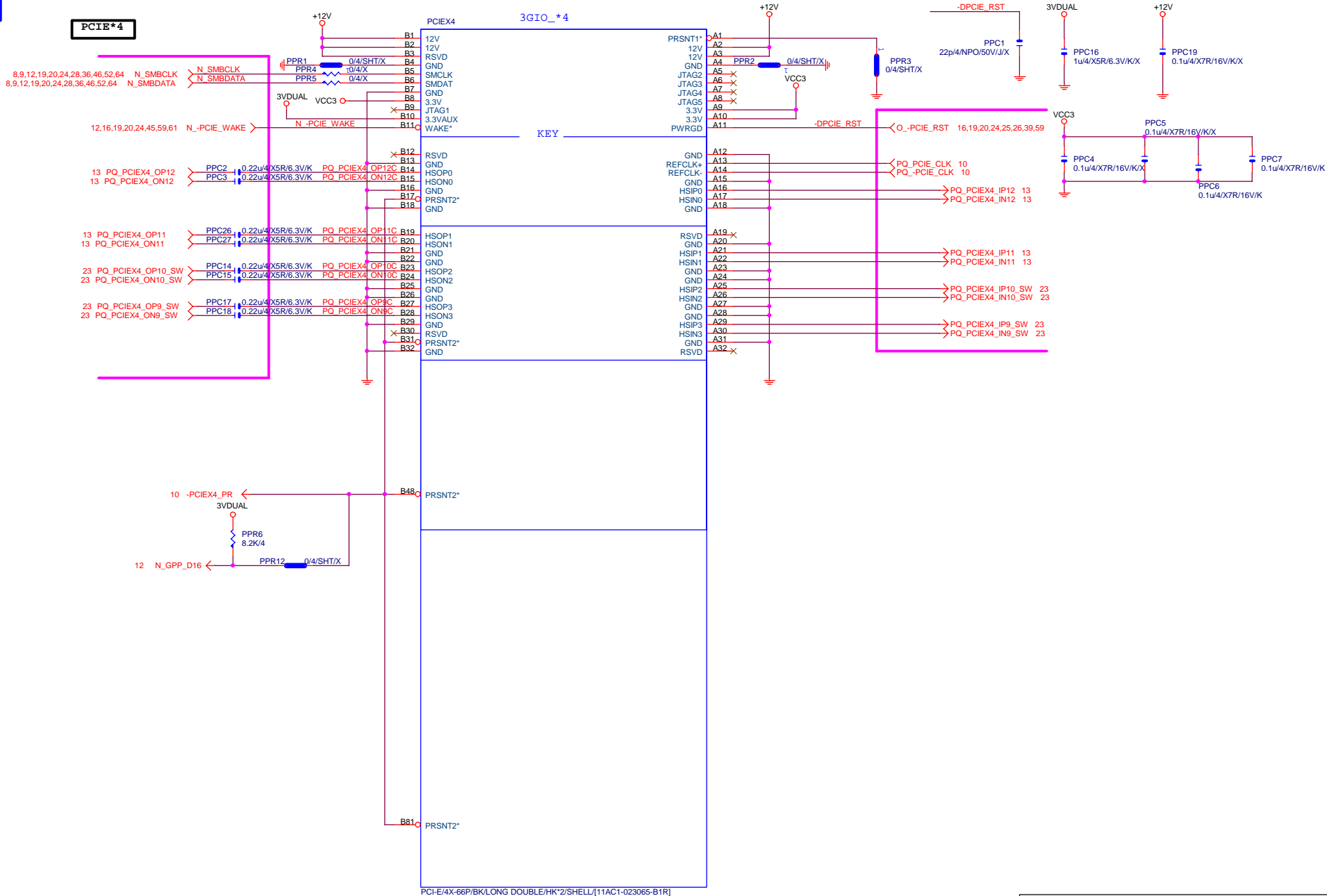
Gigabyte Technology

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Rev 0.2

Footprint "PCIESLOT-64STH-1"



PCI-E/4X-66P/BK/LONG DOUBLE/HK\*2/SHELL/I11AC1-023065-B1R1

## 黑色金屬加強

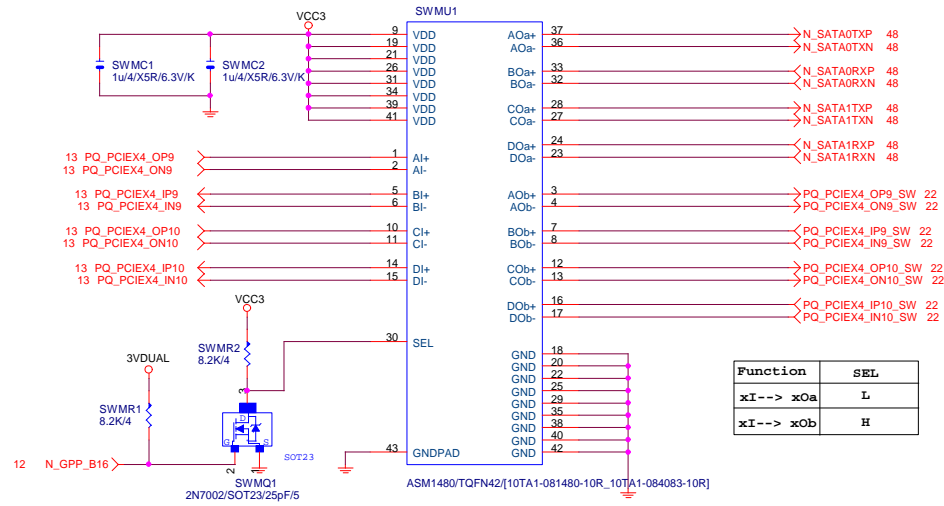
**GIGABYTE**

Title			
PCIE_X4			
Size Custom	Document Number		Rev
	GA-X170-WS ECC		1.01
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Rev 0.2

(M) TYPE



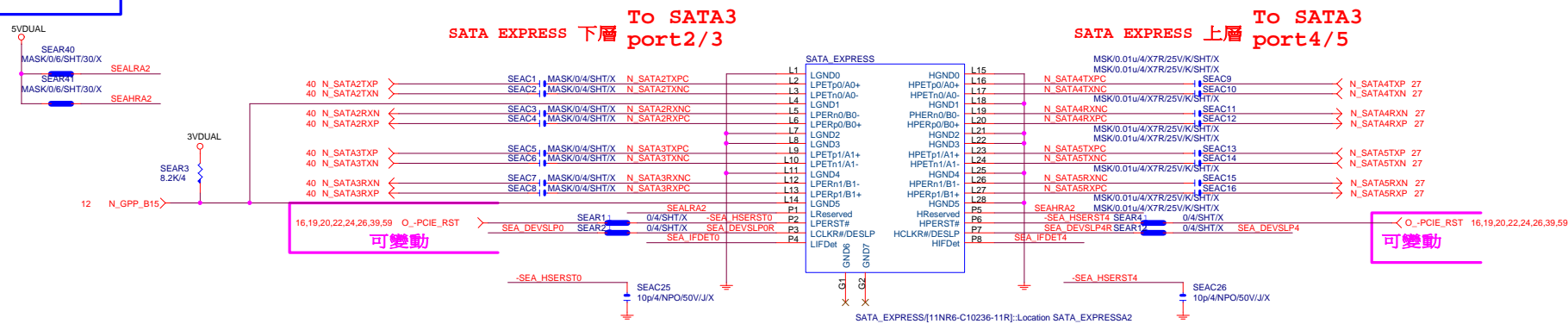
N_GPP_D16	N_GPP_C8	N_GPP_B16	P9	P10	P11	P12
H	L	H	S0	S1	PCIE X2	
L	H	L	PCIE X4			

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Gigabyte Technology SWITCH			
Title			
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Rev 0.5



SATA EXPRESS料號

雙層:TBD

單層+2SATA:11NR6-C10236-03R

單層:11NR6-C10118-03R

To SATA3  
port2/3

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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)

GIGABYTE Technology			
SATA EXPRESS			
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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

需與M2\_-CLKREQ對應

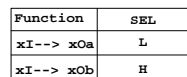
DIP螺柱

SMD螺柱

DIP螺絲

GIGABYTE Technology			
Title			
M.2 X4			
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Custom	GA-X170-WS ECC		1.01
Date:	Monday, May 30, 2016	Sheet	26 of 68

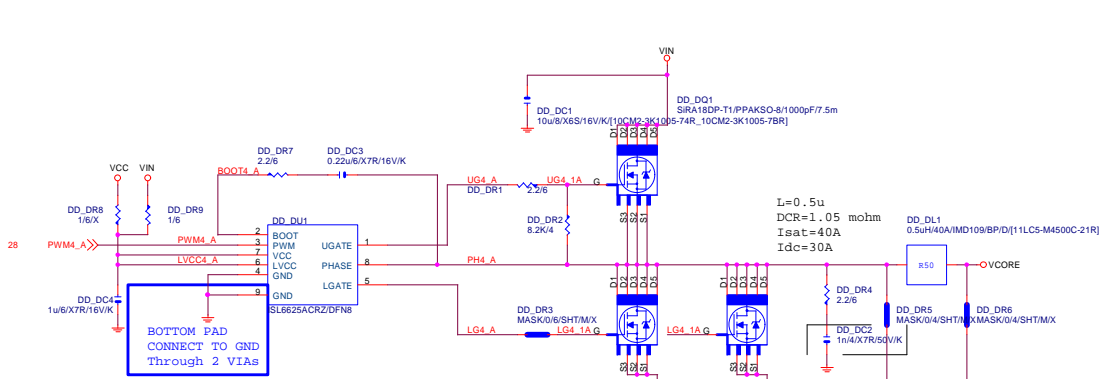
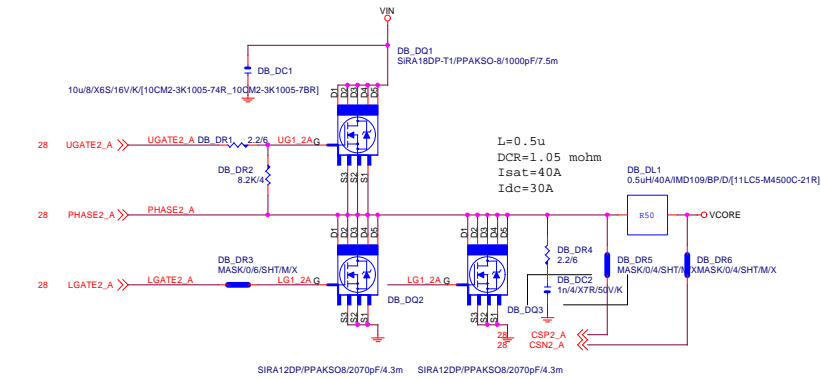
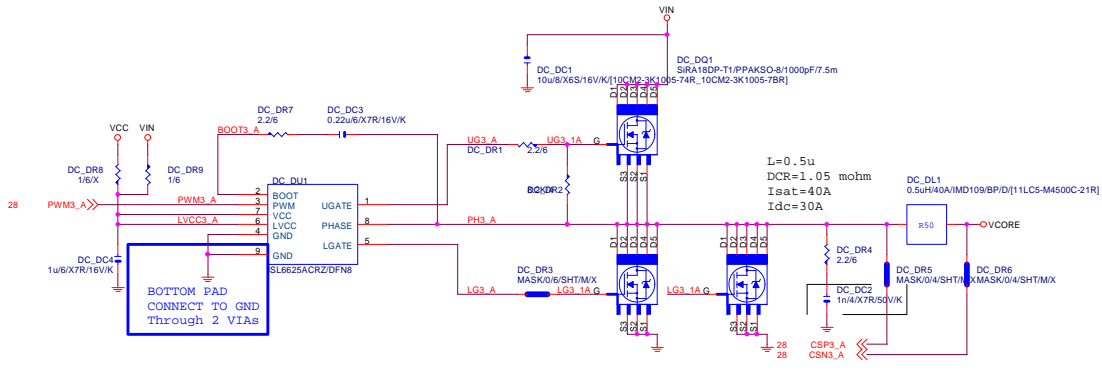
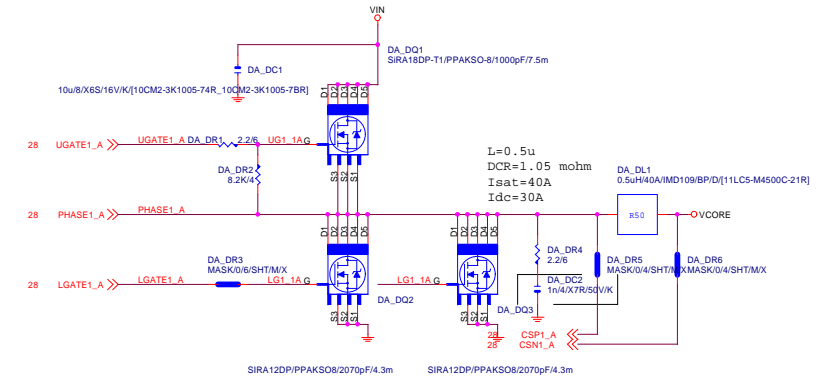
(M) TYPE



N_GPP_G7	P17	P18	P19	P20
H	S4	S5	M.2 X2	
L	M.2 X4			

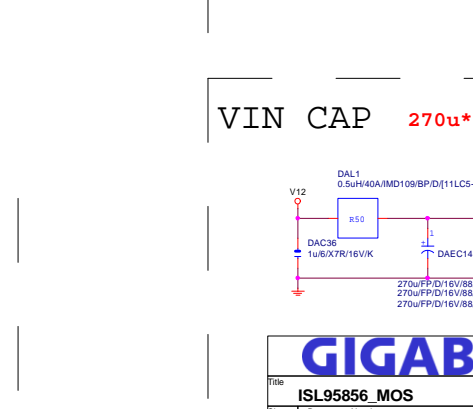
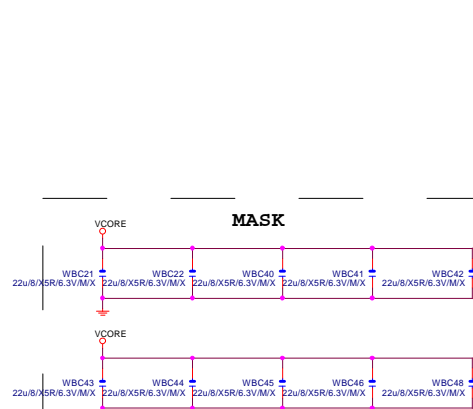
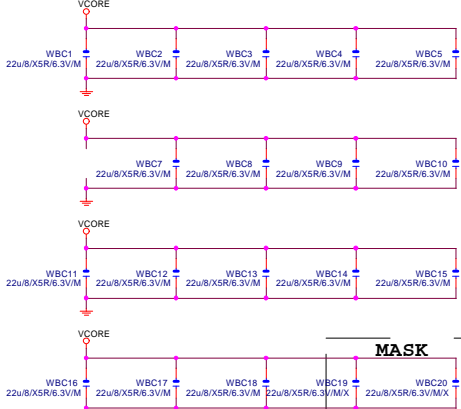
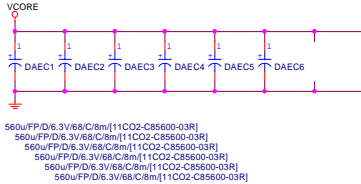


VCORE

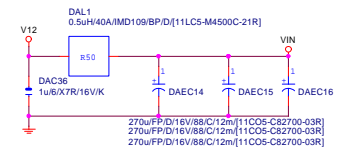


VCORE CAP

560u\*8PCS  
22u\*29PCS

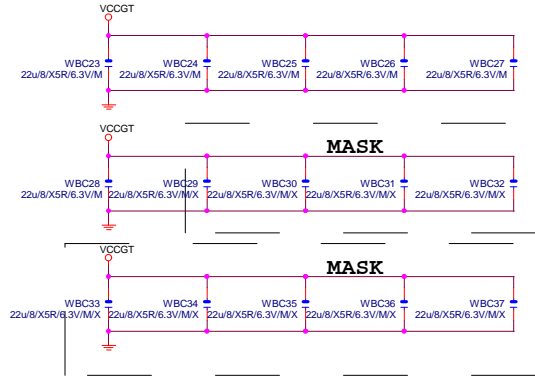
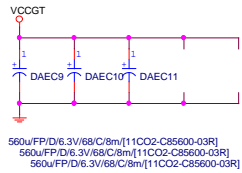
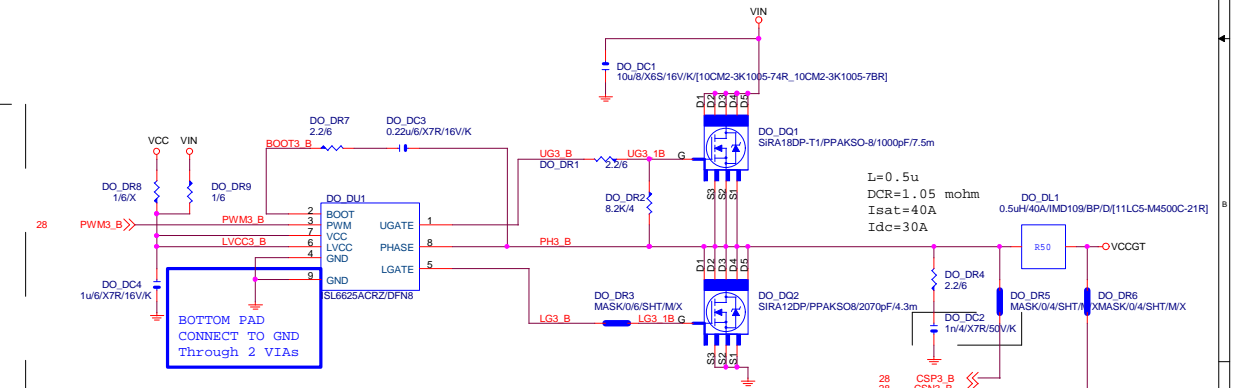
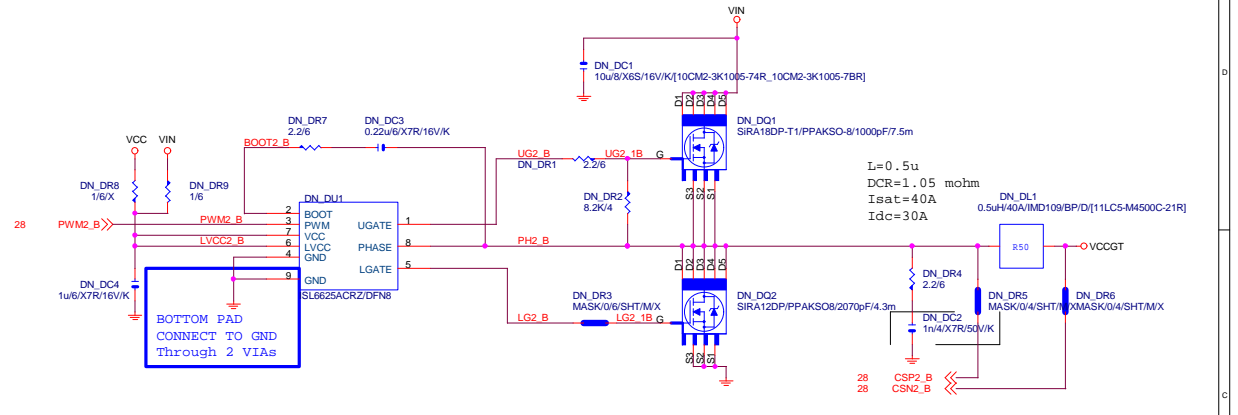


VIN CAP 270u\*3PCS

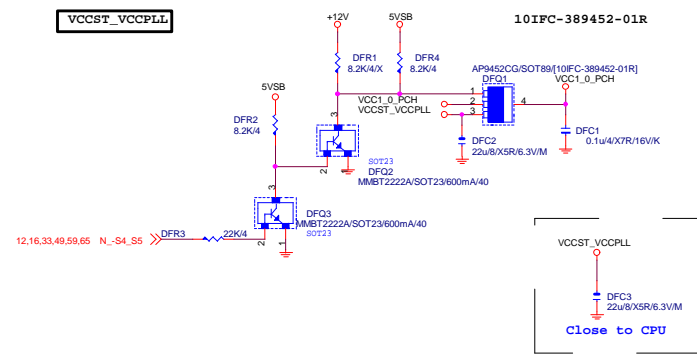
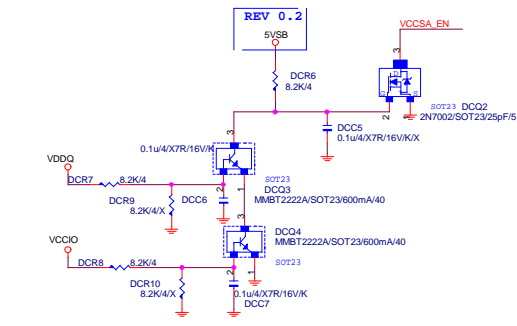
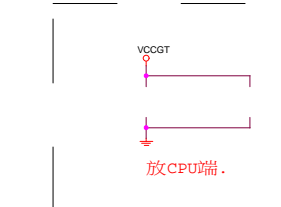
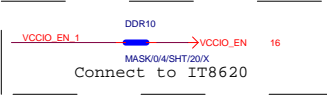
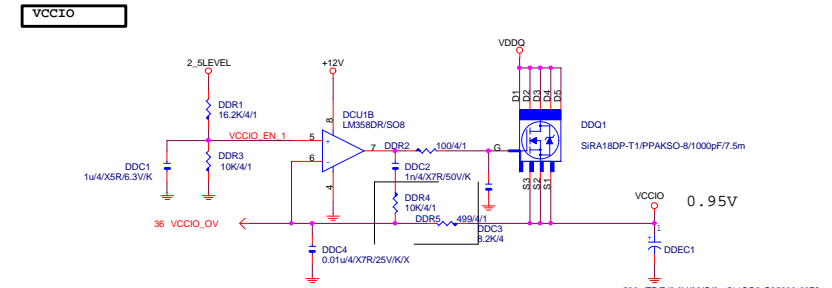
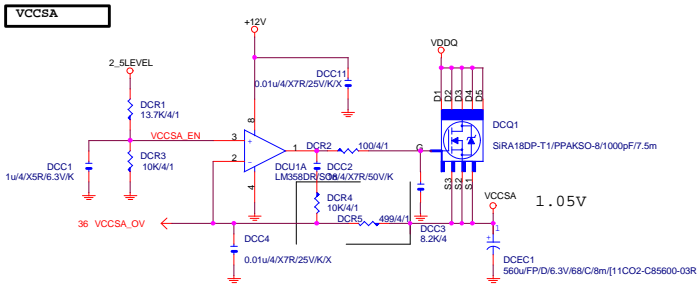


Title		ISL95856_MOS	
Size	Document Number	Rev	
Custom	GA-X170-WS ECC	1.01	
Date:	Monday, May 30, 2016	Sheet	29 of 68



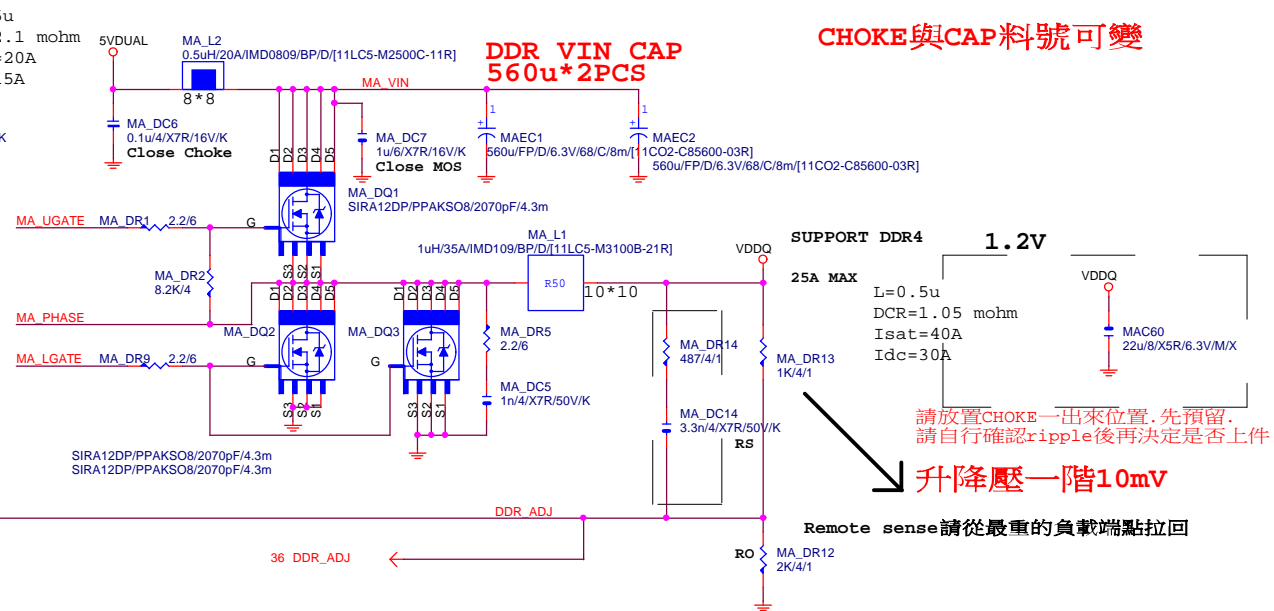
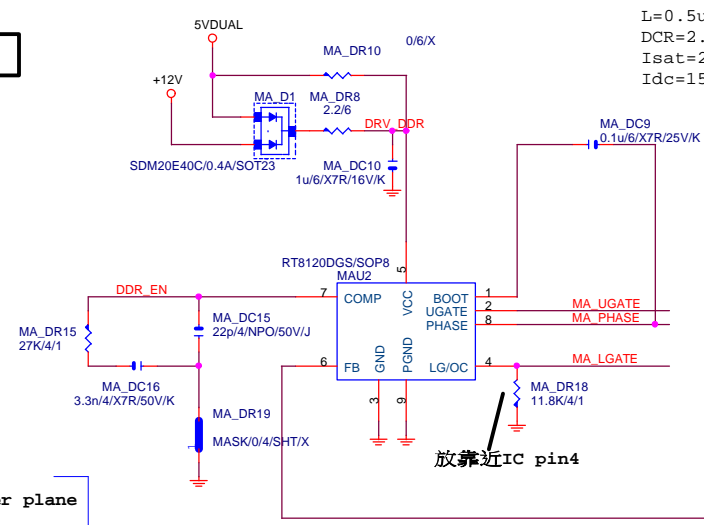


REV:0.4



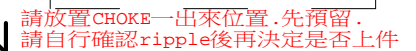
REV:0.9

DDR4



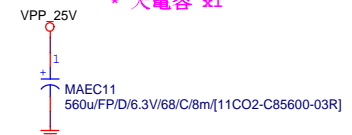
VPP\_25V

## CHOKES與CAP料號可變

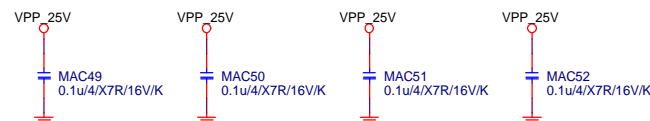
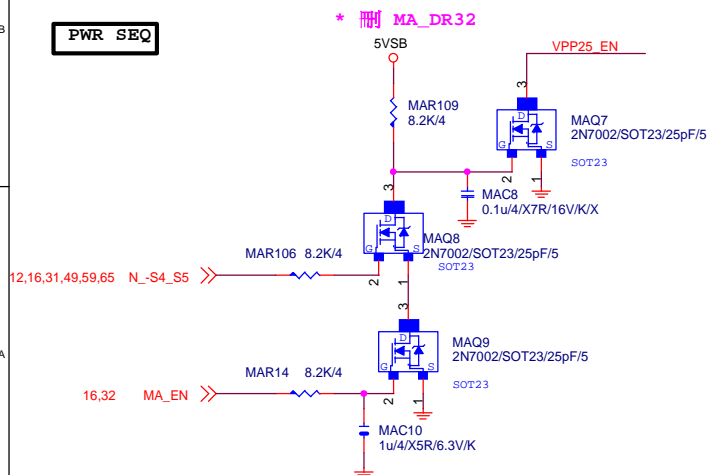



VPP CAP 560u\*1PCS

\* 大電容 x1

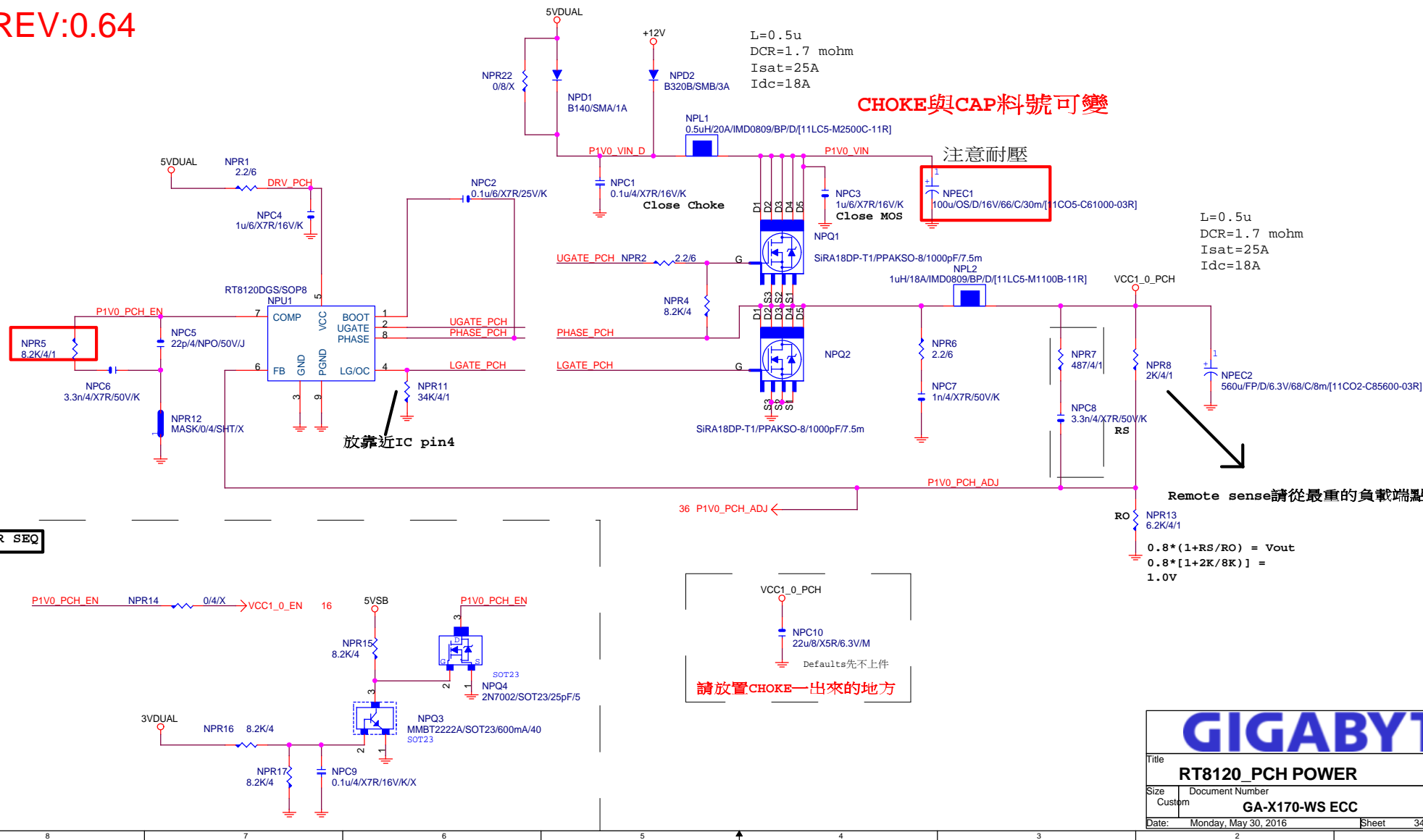


PWR	SEQ
-----	-----



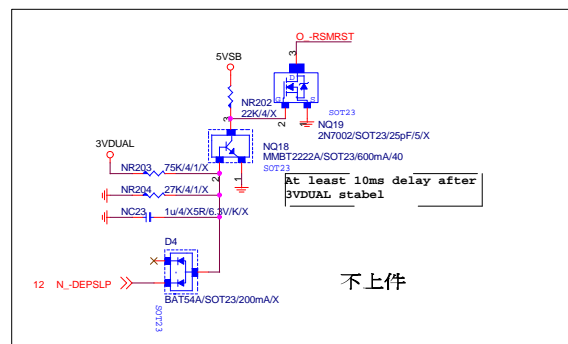
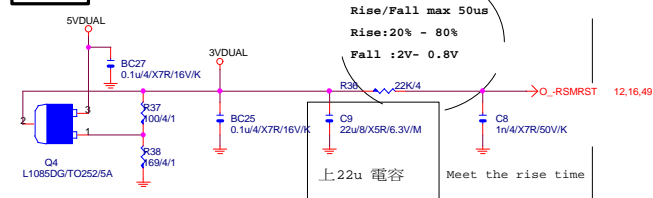
			
Title			
RT8120_VPP25 POWER			
Size	Document Number		Rev
Custom	GA-X170-WS ECC		1.01
Date:	Monday, May 30, 2016	Sheet	33 of 68

REV:0.64

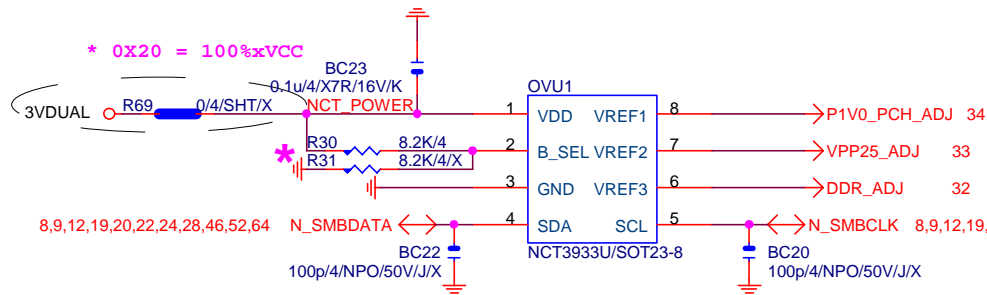


GIGABYTE™			
Title			
RT8120_PCH POWER			
Size	Document Number	Rev	
Custom	GA-X170-WS ECC	1.01	
Date:	Monday, May 30, 2016	Sheet	34 of 68

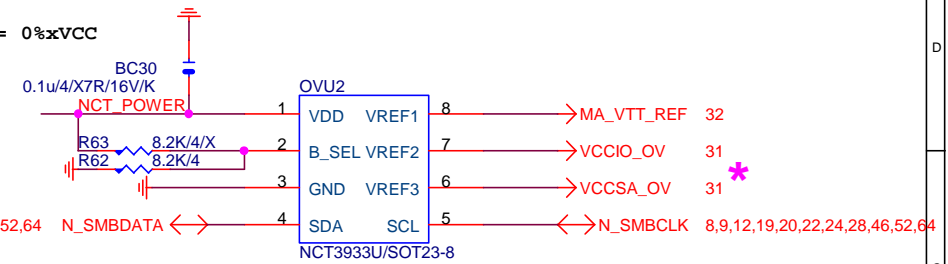
```
* update 5Vdual circuit
, from SKL 0.2B
```



OVER VOLTAGE



0X2A = 0%xVCC



0X22 = 75%xVCC

\* 删除 OVU3

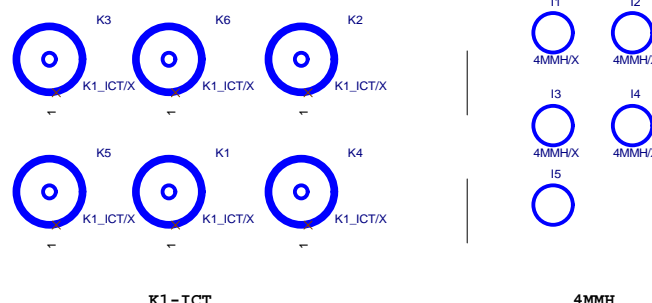
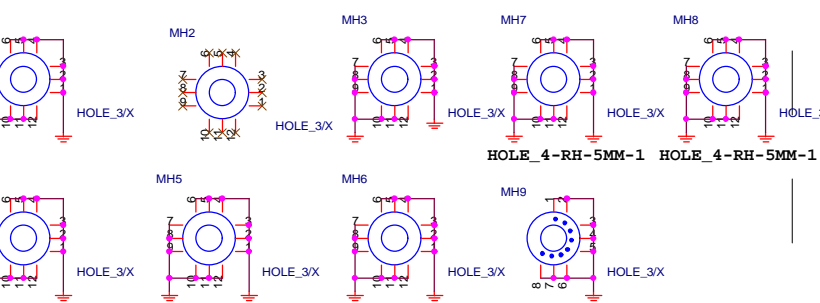
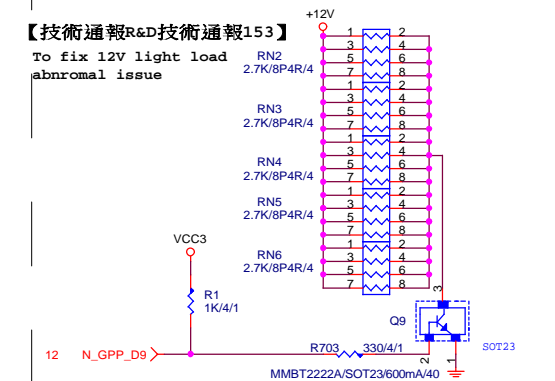
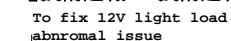
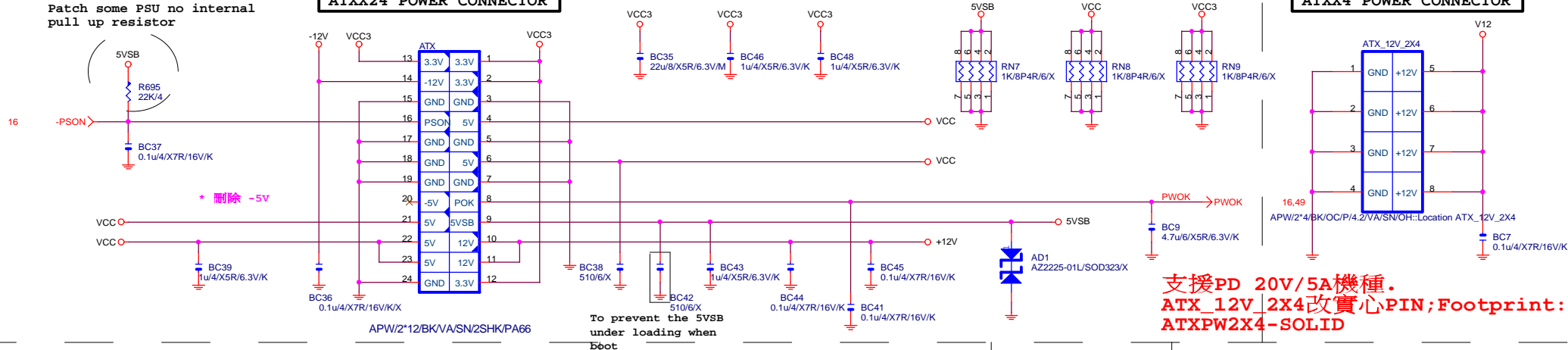
NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology		
Title CPU CORE VR-2		
Size Custom	Document Number	Rev 1.01
Date: Monday, May 30, 2016	Sheet 36 of 68	

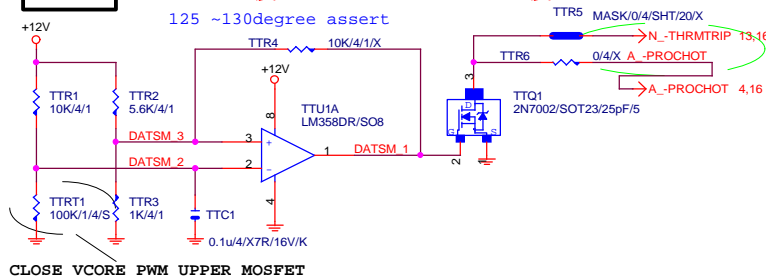


## ATXX4 POWER CONNECTOR

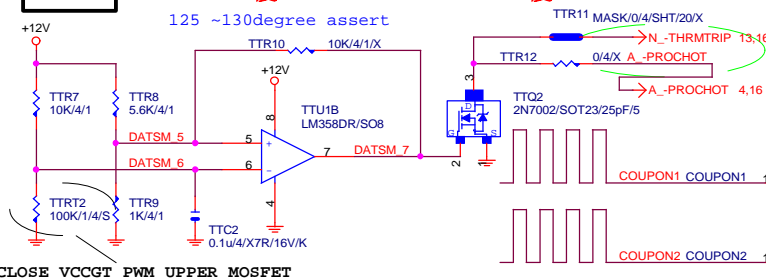
支援PD 20V/5A機種.  
ATX\_12V\_2X4改實心PIN;Footprint:  
ATXPW2X4-SOLID



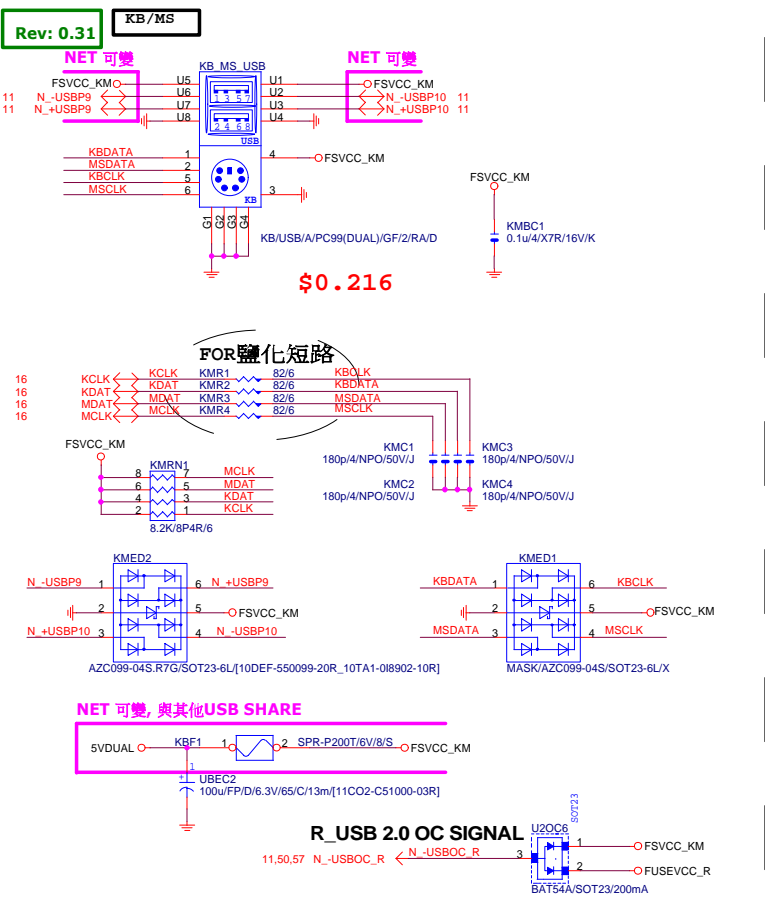
OTP:132度 / PCB THERMAL TRIP:122 度  
125 ~130degree assert

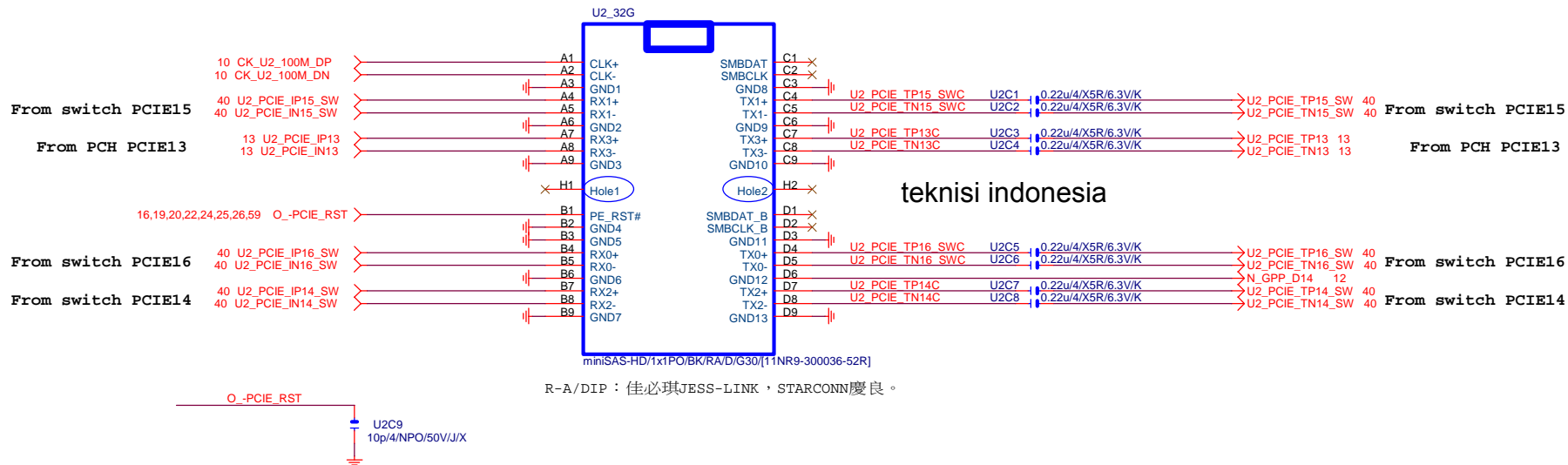


OTP:132度 / PCB THERMAL TRIP:122 度  
125 ~130degree assert



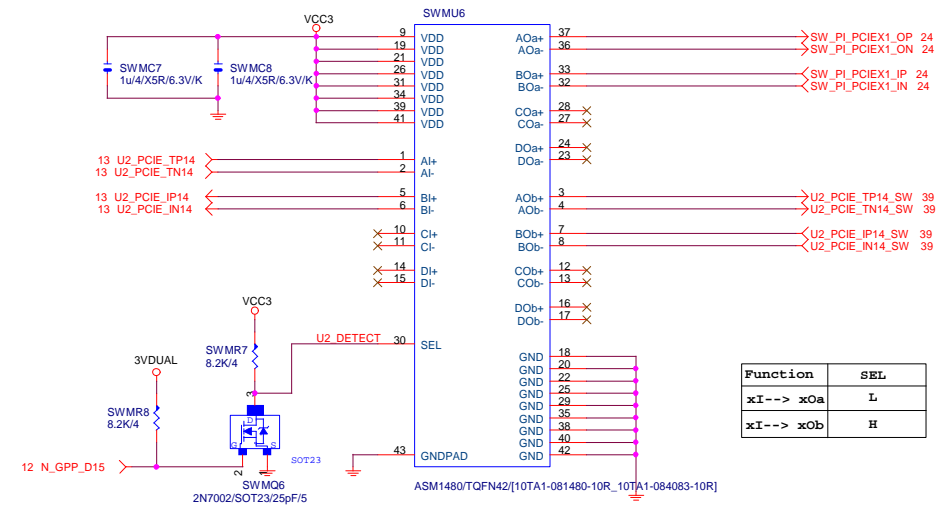
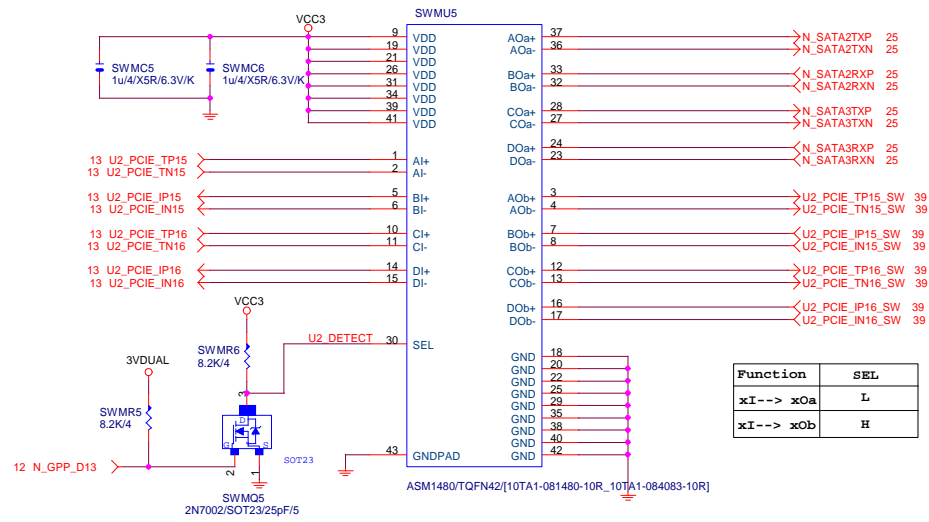
1-2	Defaults
2-3	150度





Rev 0.1

(M)TYPE



N_GPP_D14	N_GPP_D15	P13	P14	P15	P16
H	H	U.2 X1	PCIEX1	S2	S3
H	L	U.2 X2		S2	S3
L	L	U.2 X4			

Gigabyte Technology			
U2_S0~S3 SWITCH			
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HDMI LEVEL SHIFT

VCC

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

\*

直立式

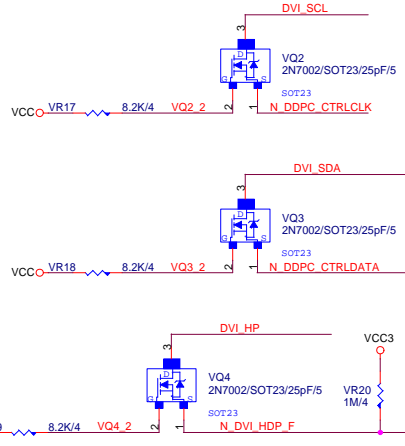
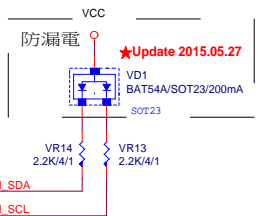
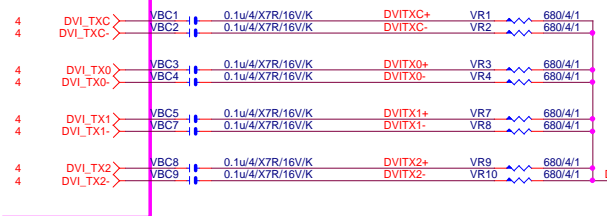
P/N:11NR6-H01019-K1R

GIGABYTE

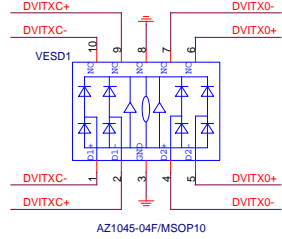
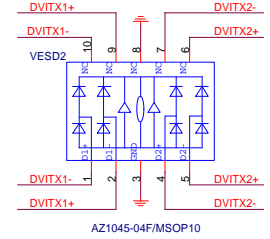
Title			
FP,F_USB,USB PWR,BZ			
Size	Document Number	Rev	
Custom	GA-X170-WS ECC	1.01	
Date:	Monday, May 30, 2016	Sheet	41 of 68

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

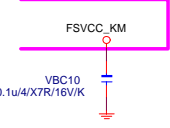
NET 可變



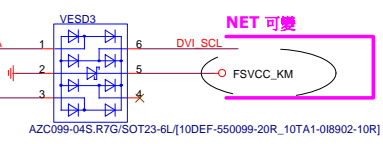
Close to connector



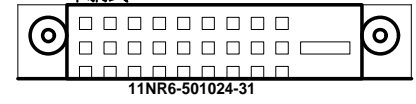
NET 可變



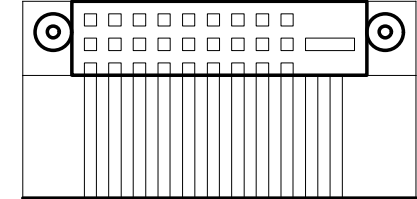
Close to connector



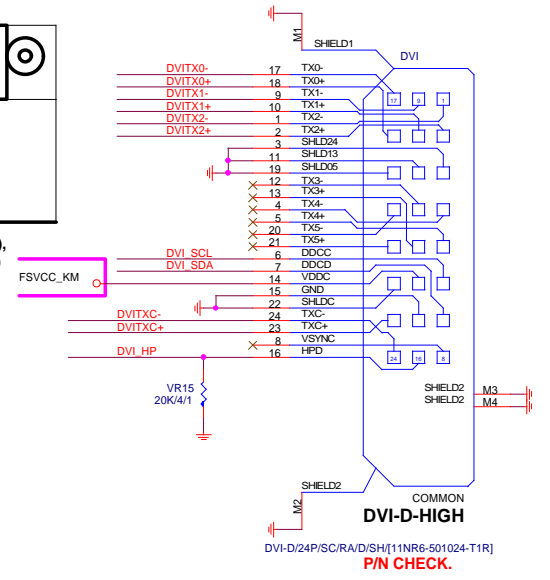
平躺式 DVI-D



架高式 DVI-D



★Update 2015-03.24 11NR6-501024-R1R(Golden), 11NR6-501024-T1R(Normal)



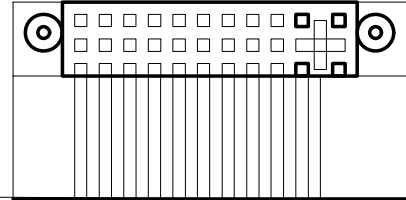
★Update 12-11

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P/N CHECK.

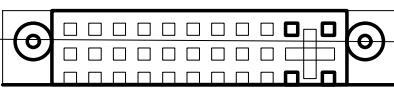
R, G, B, HSYNC, VSHYC connect to VGA signal from DP to VGA IC.

架高式 DVI-I



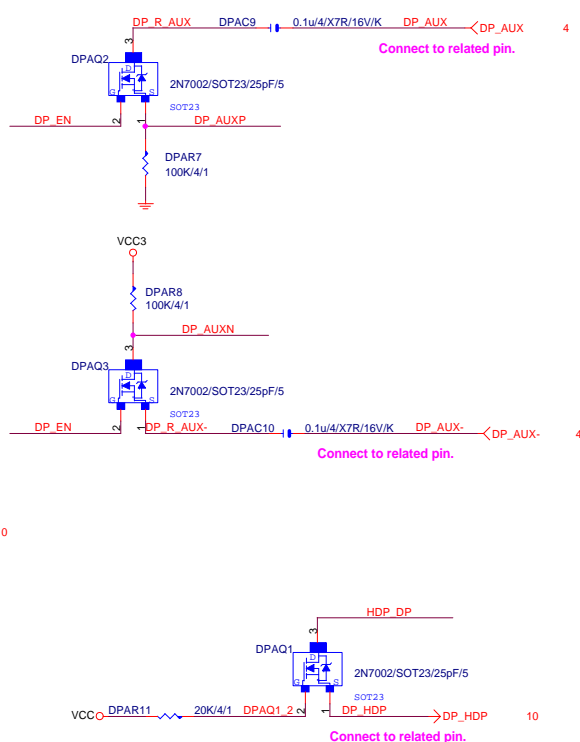
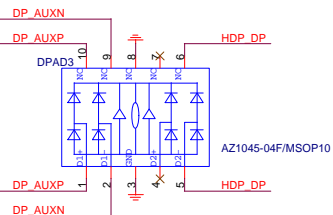
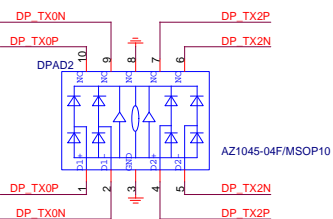
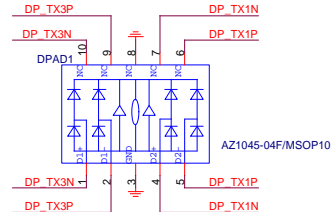
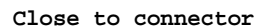
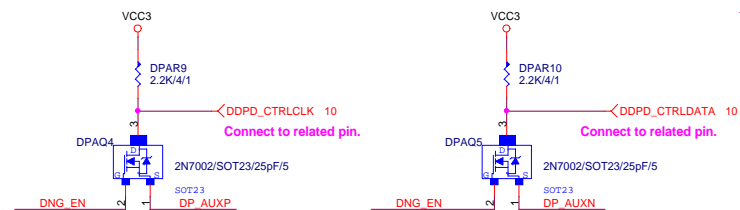
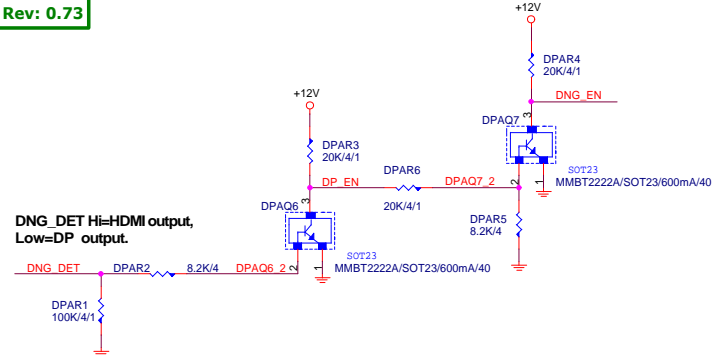
★Update 2015-03.24 11NR6-501024-N1R(Golden), 11NR6-501024-L2R(Normal)

平躺式 DVI-I

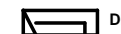
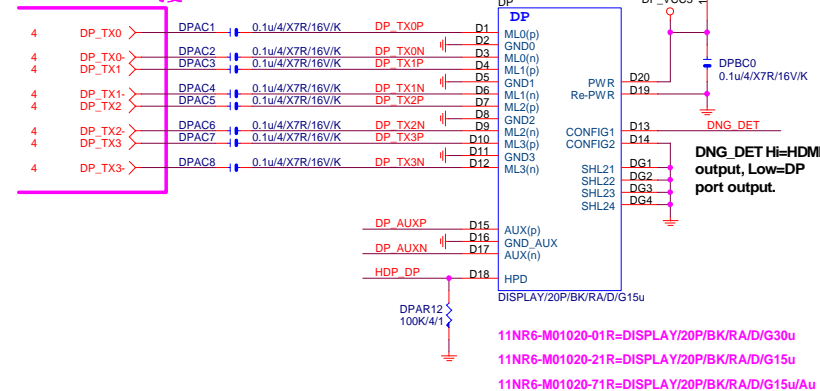


GIGABYTE

Title			DVI
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## SINGLE Display Port



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



Footprint:DP\_HDMI-4,  
P/N:11NR6-H04039-02R  
Golden:11NR6-H04039-11R  
★Update 2015-04-22.

OR



Footprint:DP\_HDMI-4, Capture Value:HDMI/19P/BK/S/RA/INTEL  
★Update 2015-04-22.

<b>GIGABYTE</b>			
Title			
<b>DP PORT</b>			
Size	Document Number		Rev
Custom	<b>GA-X170-WS ECC</b>		<b>1.0</b>
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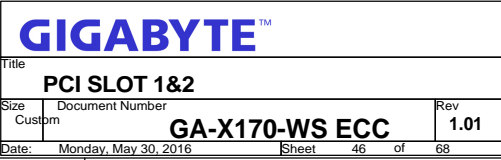






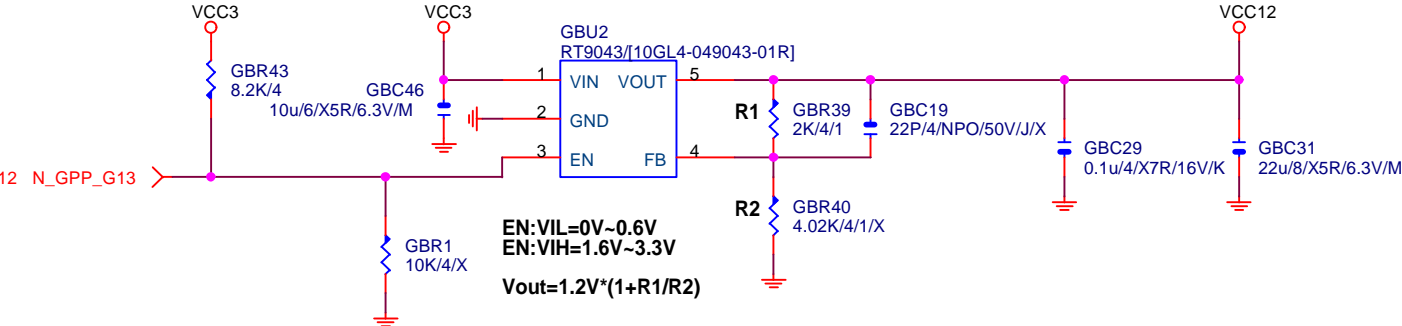
PCI SLOT 1

PCI SLOT 2



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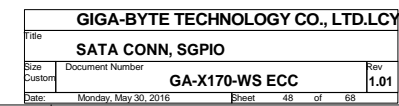
Rev 0.9

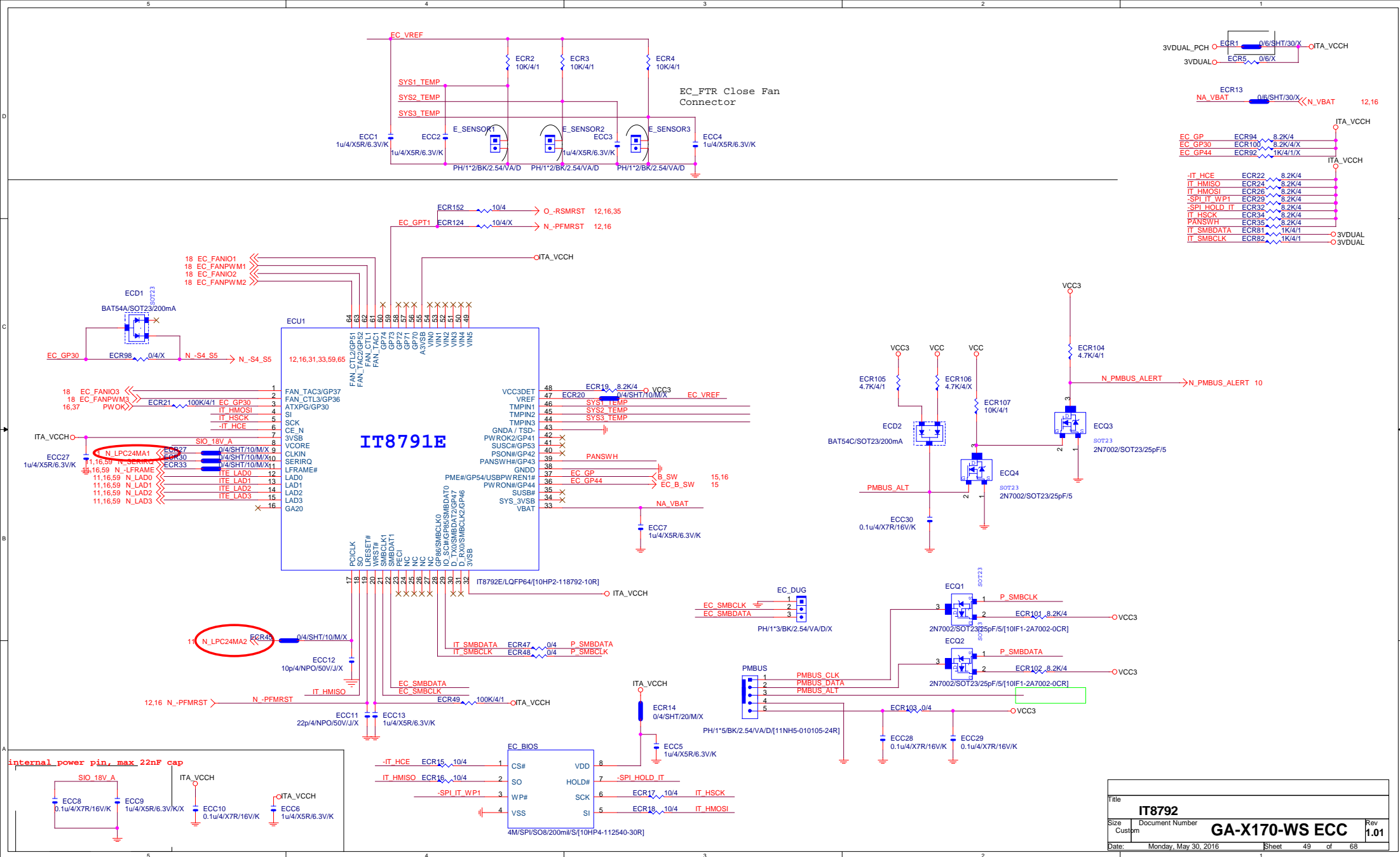


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Gigabyte Technology

Title			
ASM1085 POWER			
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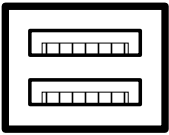


R\_USB30\_1

ESD 可自行SWAP PIN

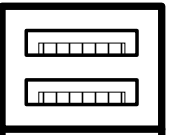
CONNECTOR 自行調整

2 port USB 3.0 Capture:

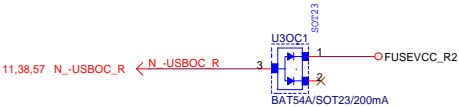


USB/18P/BU/OS/RA/D/2/1U/SB

2 port USB 3.0 with TYPE C Capture:



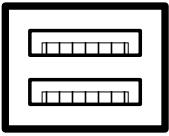
USB/18P/BU/OS/RA/D/2HR



R\_USB30\_1

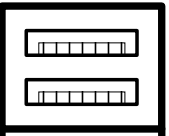
CONNECTOR 自行調整

2 port USB 3.0 Capture:



USB/18P/BU/OS/RA/D/2/1U/SB

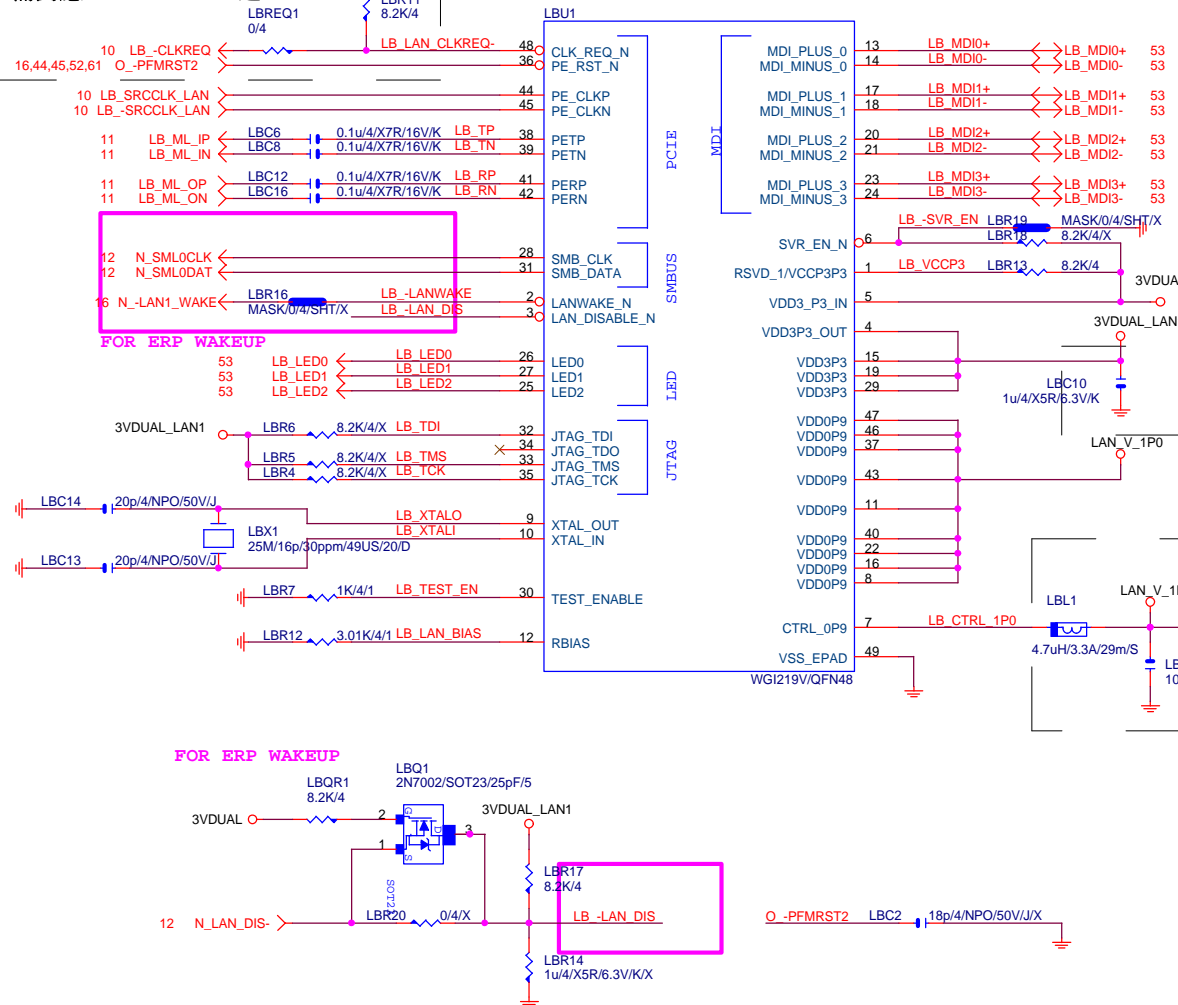
2 port USB 3.0 with TYPE C Capture:



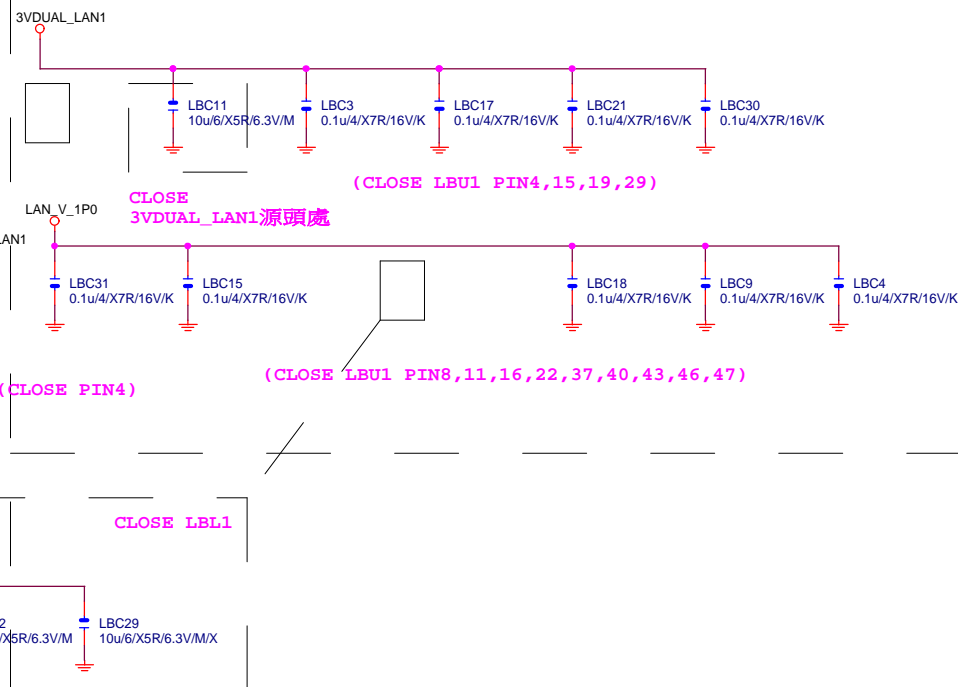
USB/18P/BU/OS/RA/D/2HR

## R1.11

L1+CLK REQ# 節能：  
需對應LA\_SRCCLK\_LAN之CLKREQ#



## LAN POWER



## Gigabyte Technology

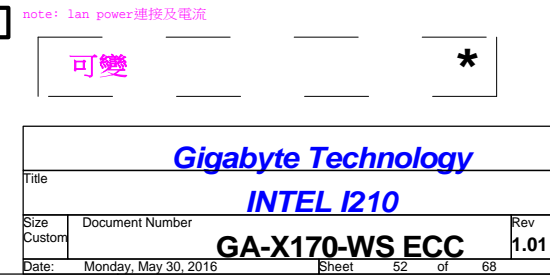
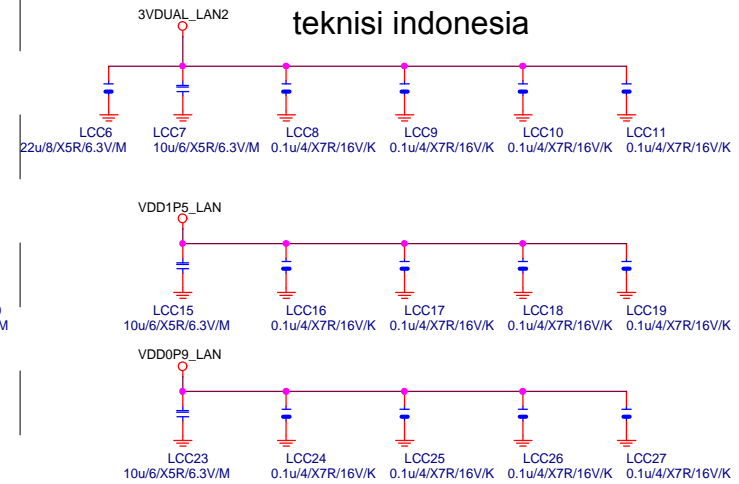
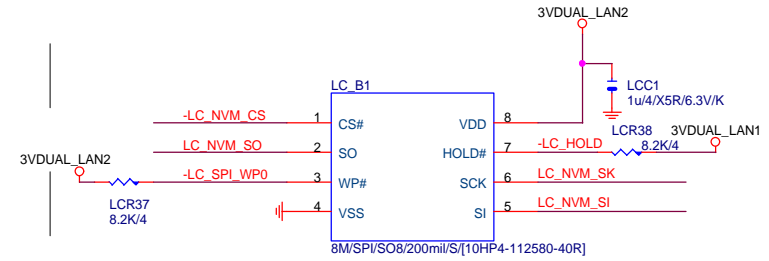
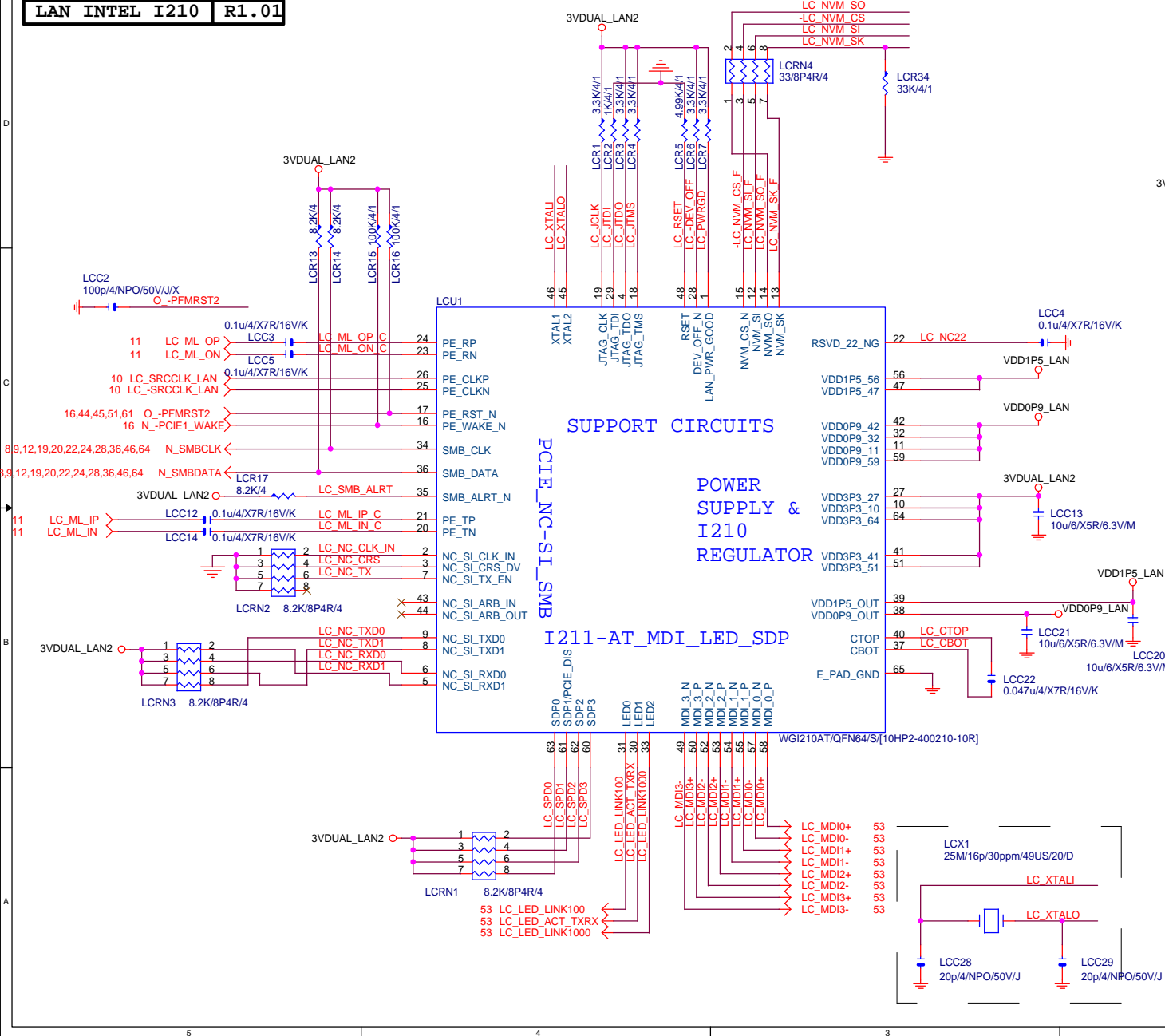
## ***DUAL LAN~ I219***

Size Custom	Document Number <b>GA-X170-WS ECC</b>	Rev <b>1.01</b>
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**GA-X170-WS ECC**

1.01

Date:	Monday, May 30, 2016	Sheet	51	of	68
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Gigabyte Technology

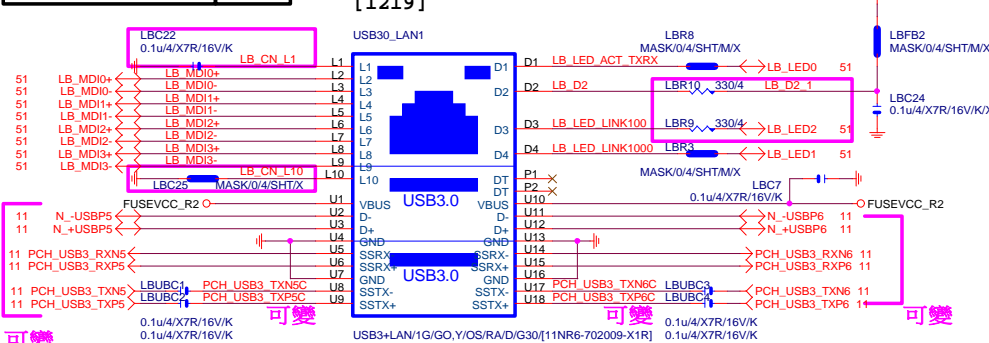
INTEL I210

GA-X170-WS ECC

Title		Rev	
Size		Document Number	
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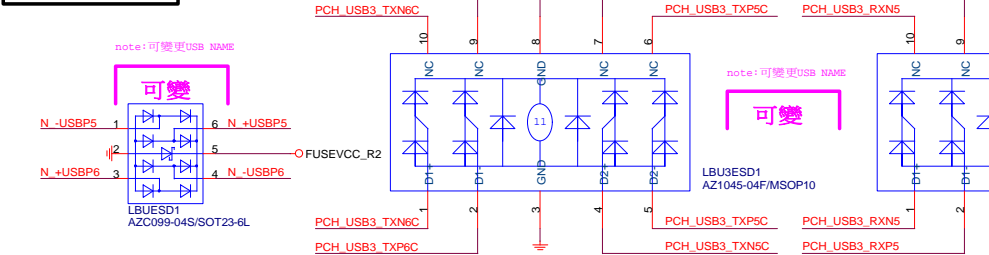


# USB LAN CONNECTOR-B R1.11

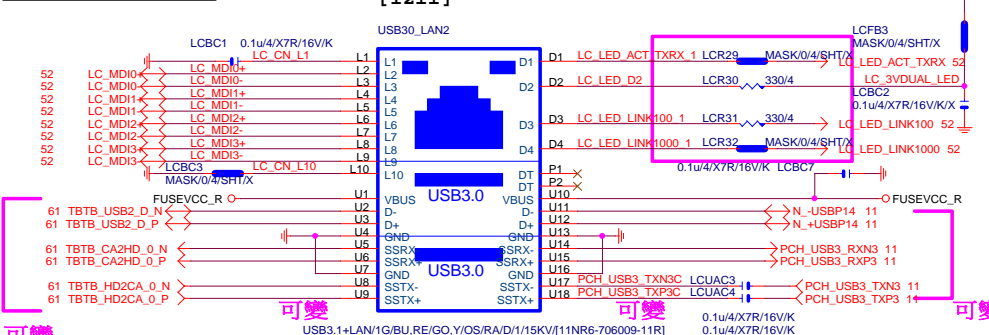


LA\_MDI-->100歐姆:[20/4/8/4/20]

## RMA ESD PROTECT

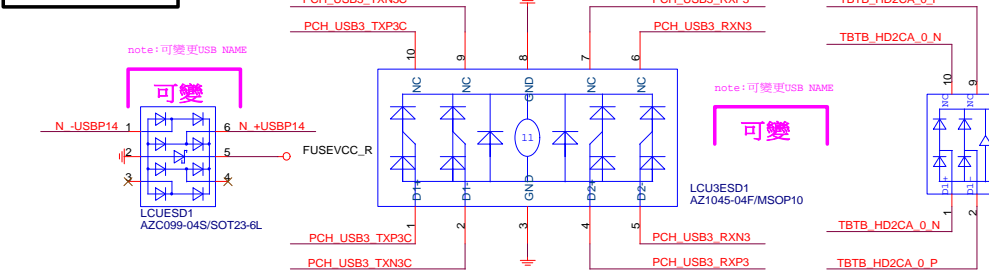


# USB LAN CONNECTOR-C

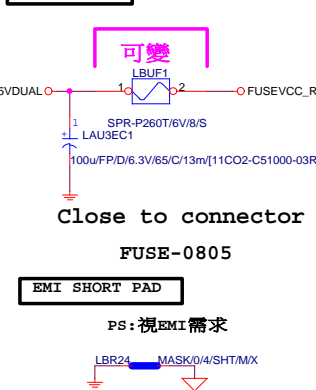


LA\_MDI-->100歐姆:[20/4/8/4/20]

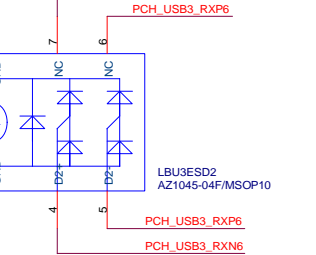
## RMA ESD PROTECT



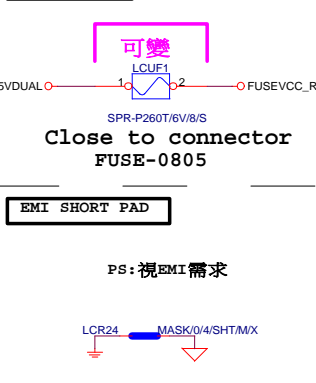
# USB POWER



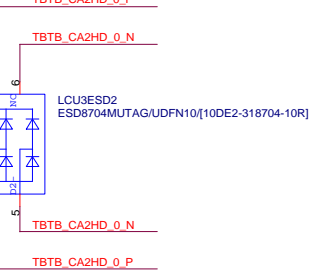
PS:視EMI需求



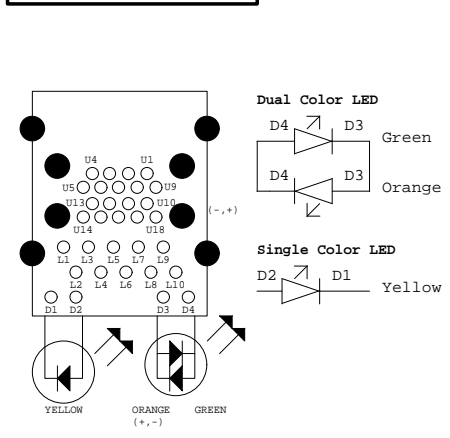
# USB POWER



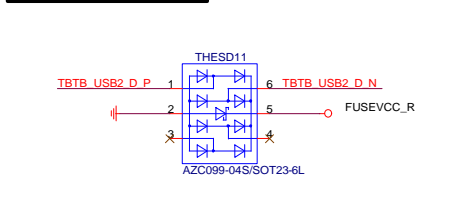
PS:視EMI需求



# USB30 LAN LAYOUT示意图



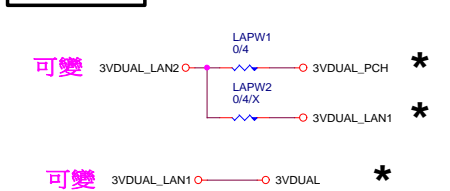
## TBT USB TypeA ESD



## 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

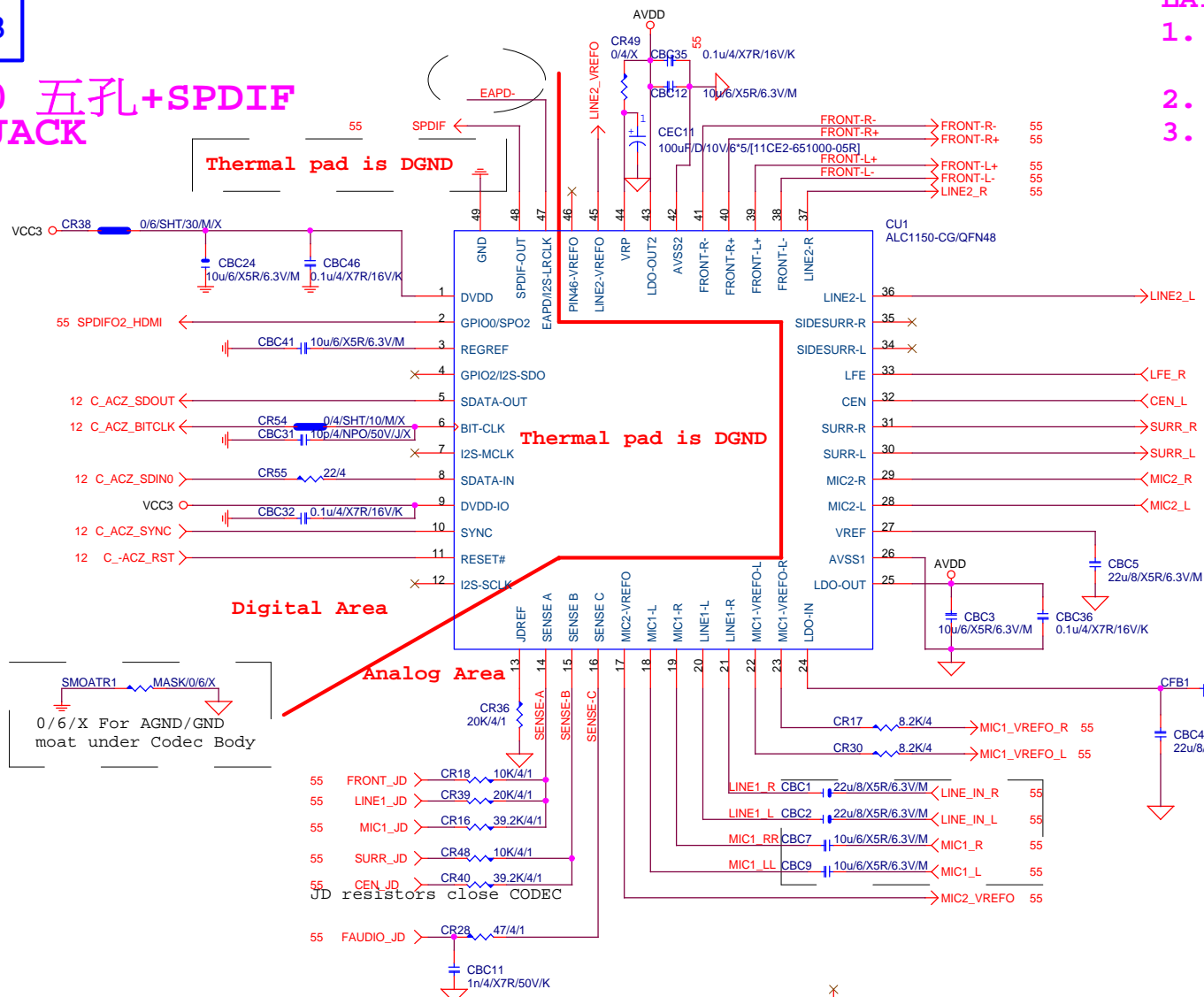
## LAN POWER



~USB30\_LAN1設定在ERP可LAN WAKEUP  
~USB30\_LAN2由獨立LAN POWER L1117供給

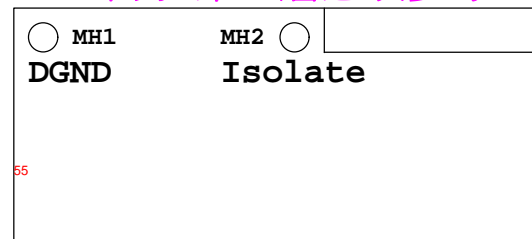
Rev 0.93

# ALC1150 五孔+SPDIF 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

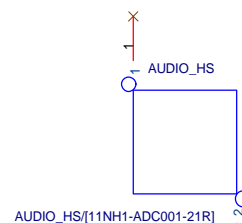
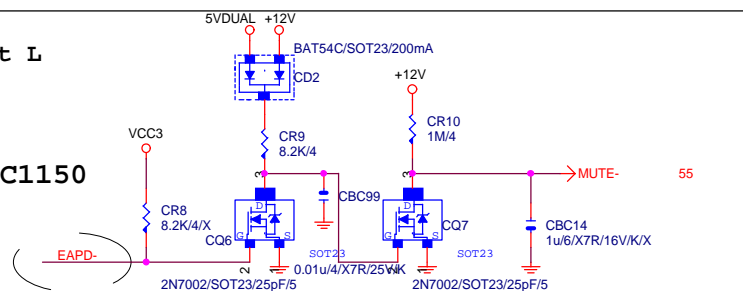


LAYOUT注意:要加  
GND切割線



EAPD: Default L  
H : ON  
L : OFF

Close to ALC1150

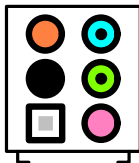


★Update 2015-03-06  
更新AUDIO\_HS料號:11NH1-ADC001-21R

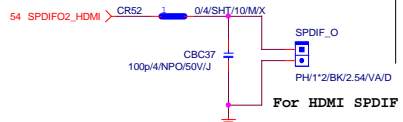
Gigabyte Technology

Title				
ALC1150				
Size	Document Number			Rev
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**AZALIA JACK**



SPDIF\_OUT



For HDMI SPDIF

\*量產前, 0ohm改short pad

LINE-OUT

➔ Audio jack -> USB(各打2 VIA hole)

## LINE-IN

► Under Audio jack(各打2 VIA hole)

MIC-IN

➤ Near F\_AUDIO(各打2 VIA hole)

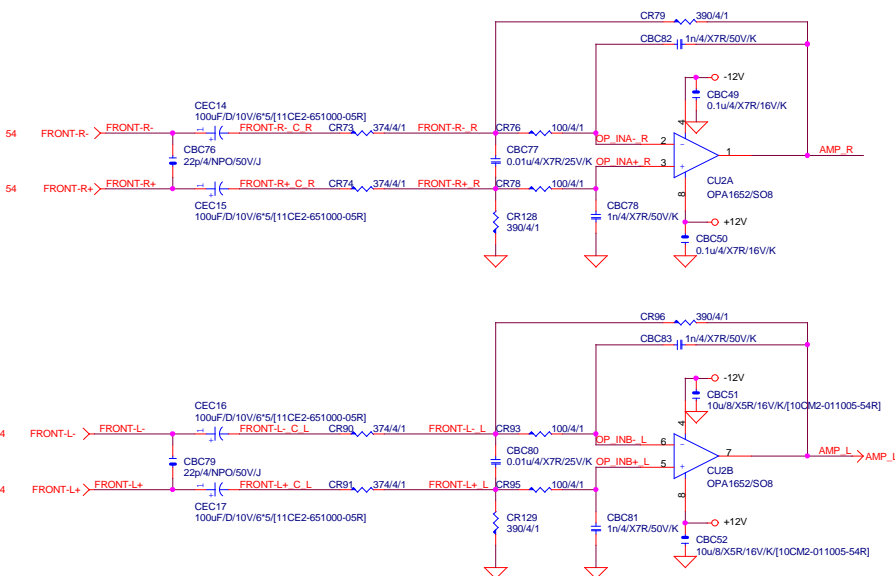
**SURROUND**

➤ Near R\_AUDIO(各打2 VIA hole)

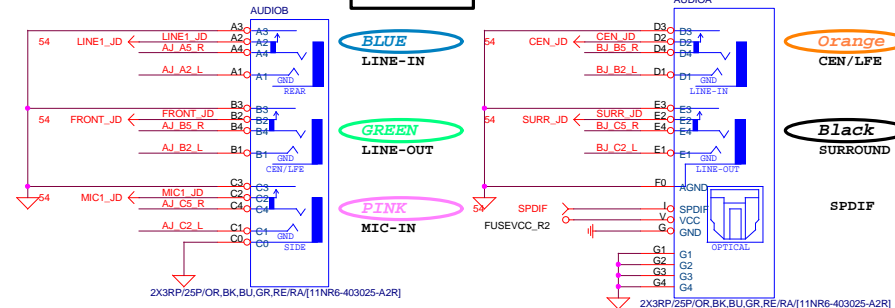
CEN/LEF

➤ Near AMP (各打2 VIA hole)

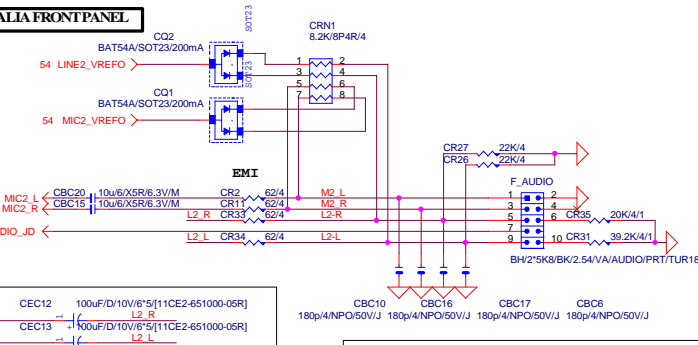
## Differential to Single-End AMPLIFIED



**AZALIA JACK**



## ALIA FRONT PANEL



## Gigabyte Technology

## AUDIO JACK

GA-X170-WS ECC

Rev	
1.01	

Title
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Size

Date \_\_\_\_\_

Monday, May 30, 2011

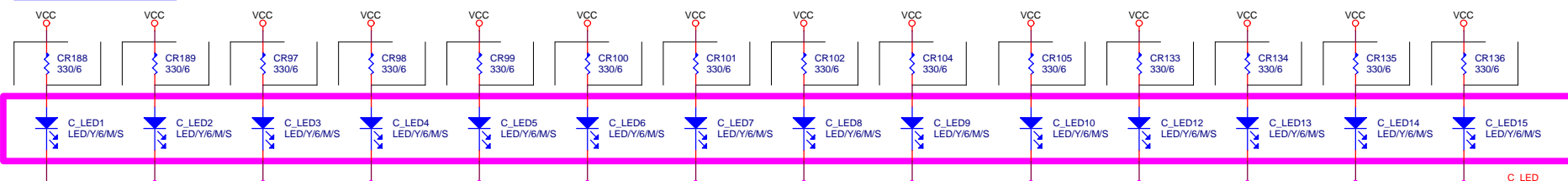
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55

9

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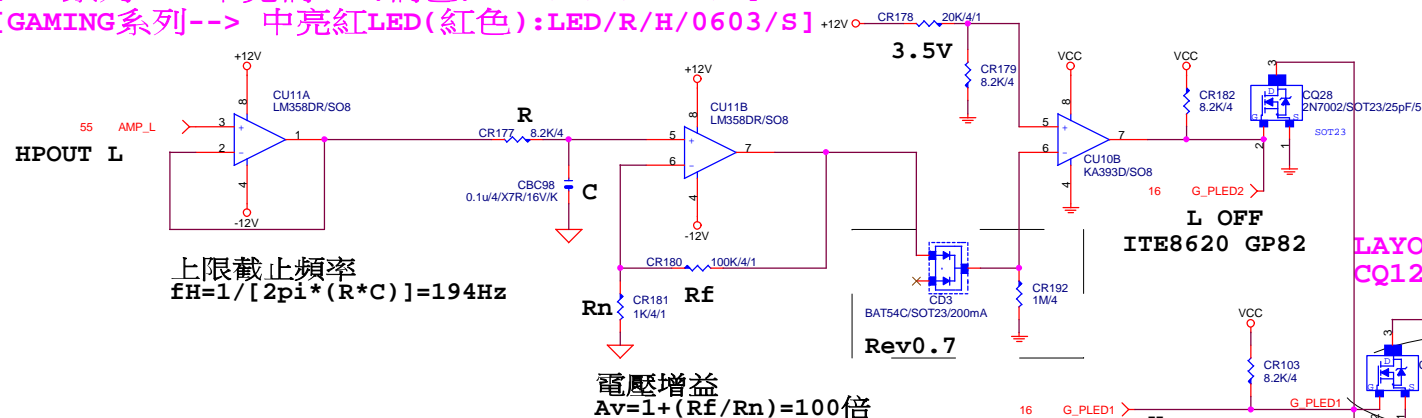


VALUE可變,LED顏色請自行修改

[UD系列--> 中亮黃LED(黃色):LED/Y/6/M/S]

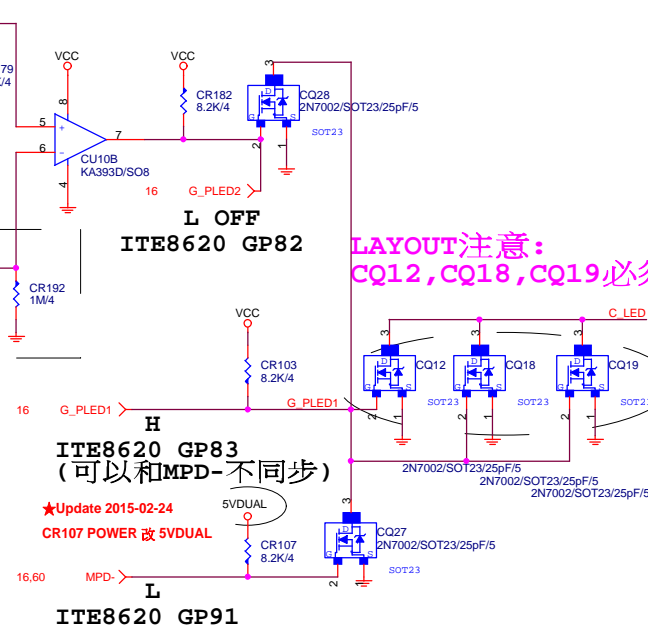
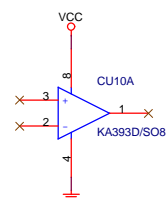
[SOC系列--> 中亮橘LED(橘色):LED/O/M/0603/S]

[GAMING系列--> 中亮紅LED(紅色):LED/R/H/0603/S]



## Rear Panel LED ON/OFF

	IO_GP80
REAR LED ON	H
REAR LED OFF	L



## AUDIO LED Control (沒有LPT model)

	IO_GP82	IO_GP83	IO_GP91
LED ON	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L

## AUDIO LED Control (有LPT model)

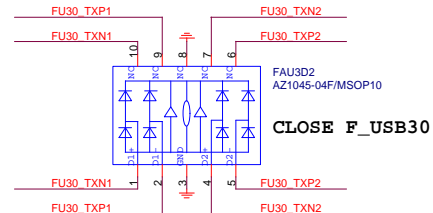
	IO_GP92	IO_GP17	IO_GP91
LED ON	L	H	L
OFF Mode	L	L	L
Pluse Mode	L	H	BREATH
Beat Mode	OD	H	L

LAYOUT OPTION : SOC/UD7系列要LAYOUT,  
 其餘UD系列機種不留LAYOUT

# GIGABYTE™

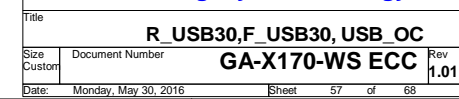
Title			AUDIO LED
Size	Document Number	Rev	1.01
Custom	GA-X170-WS ECC		
Date:	Monday, May 30, 2016	Sheet	56 of 68

Front USB3.0



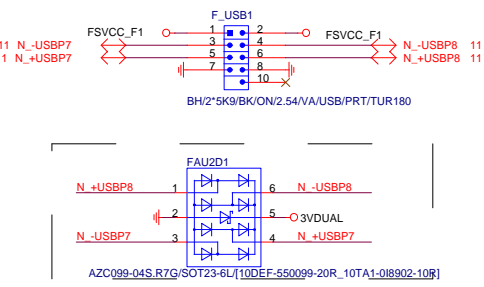
-USB0C\_F

-USB0C\_R

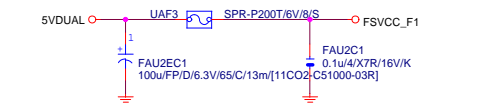


FRONT USB1

NET 可變

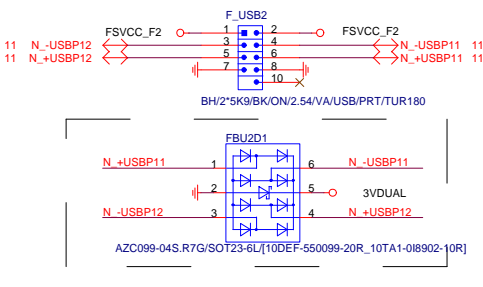


Close to connector  
FUSE 2 Port 1 Fuse 2A

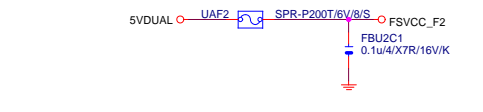


FRONT USB2

NET 可變

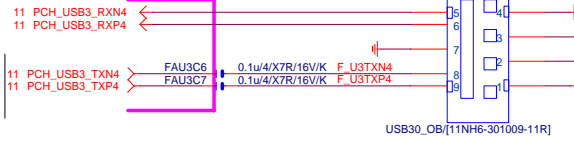


Close to connector  
FUSE 2 Port 1 Fuse 2A

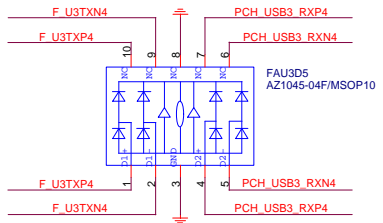
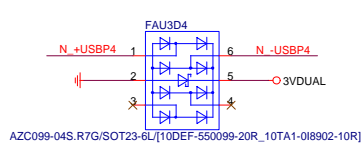
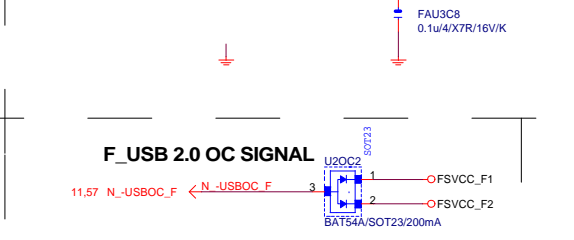


Onboard USB3.0

NET 自行調整



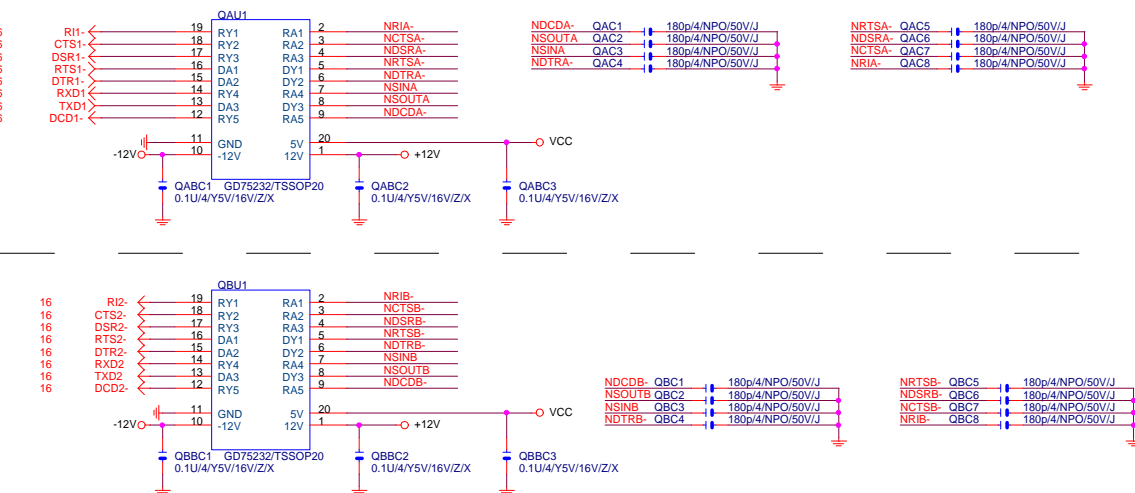
F\_USB 2.0 OC SIGNAL



Gigabyte Technology

Title			
USB2.0			
Size	Document Number	GA-X170-WS ECC	Rev
Custom			1.01
Date:	Monday, May 30, 2016	Sheet	58 of 68

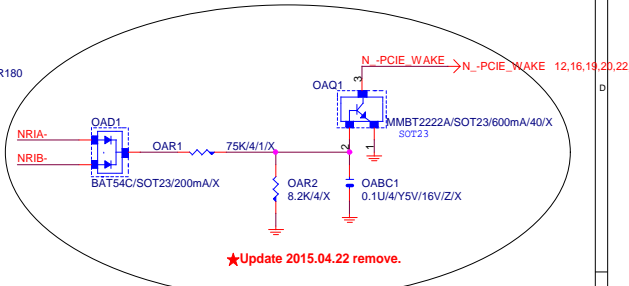
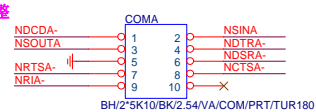
COM PORT



COMA

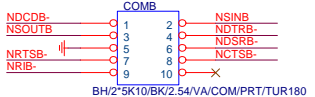
COMA 自行調整

OR

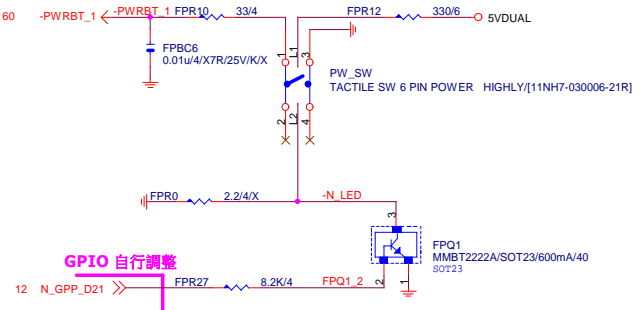


★Update 2015.04.22 remove.

COMB

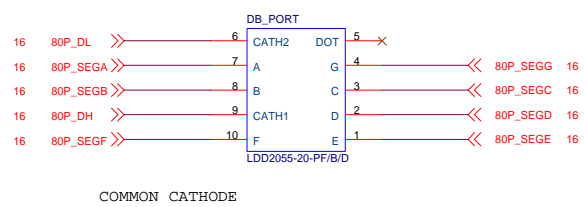
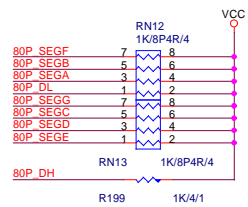


POWER

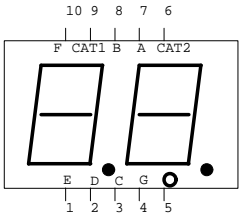


GPIO 自行調整

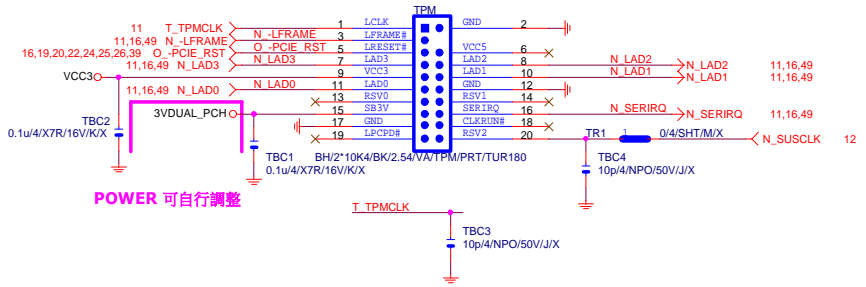
80 PORT



Physical Package (TOP VIEW)

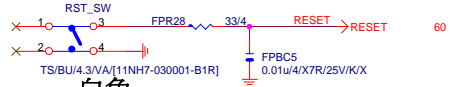


TPM CONNECT



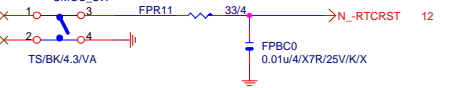
POWER 可自行調整

Reset



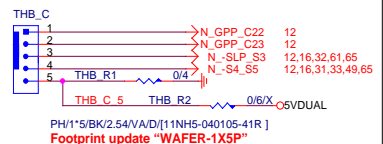
白色

Clear CMOS



Thunderbolt

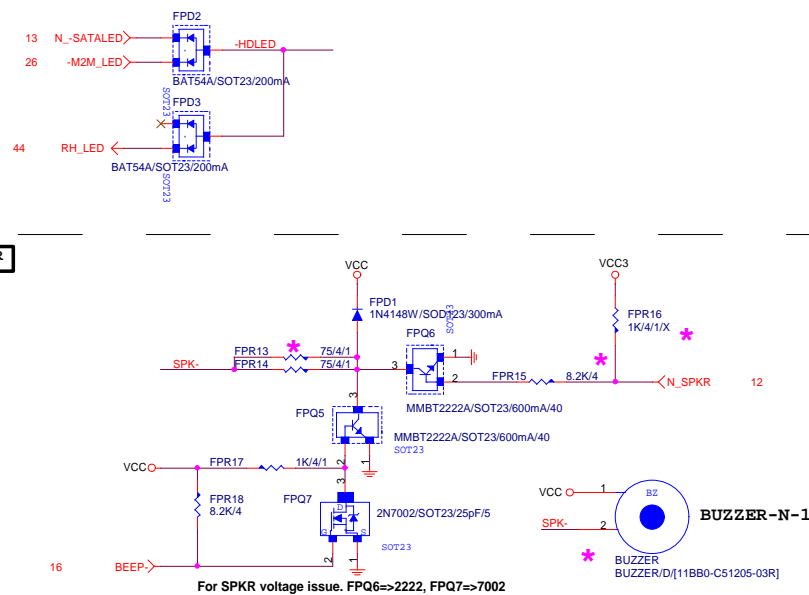
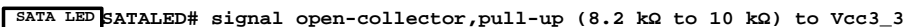
★Update 2015-12-29



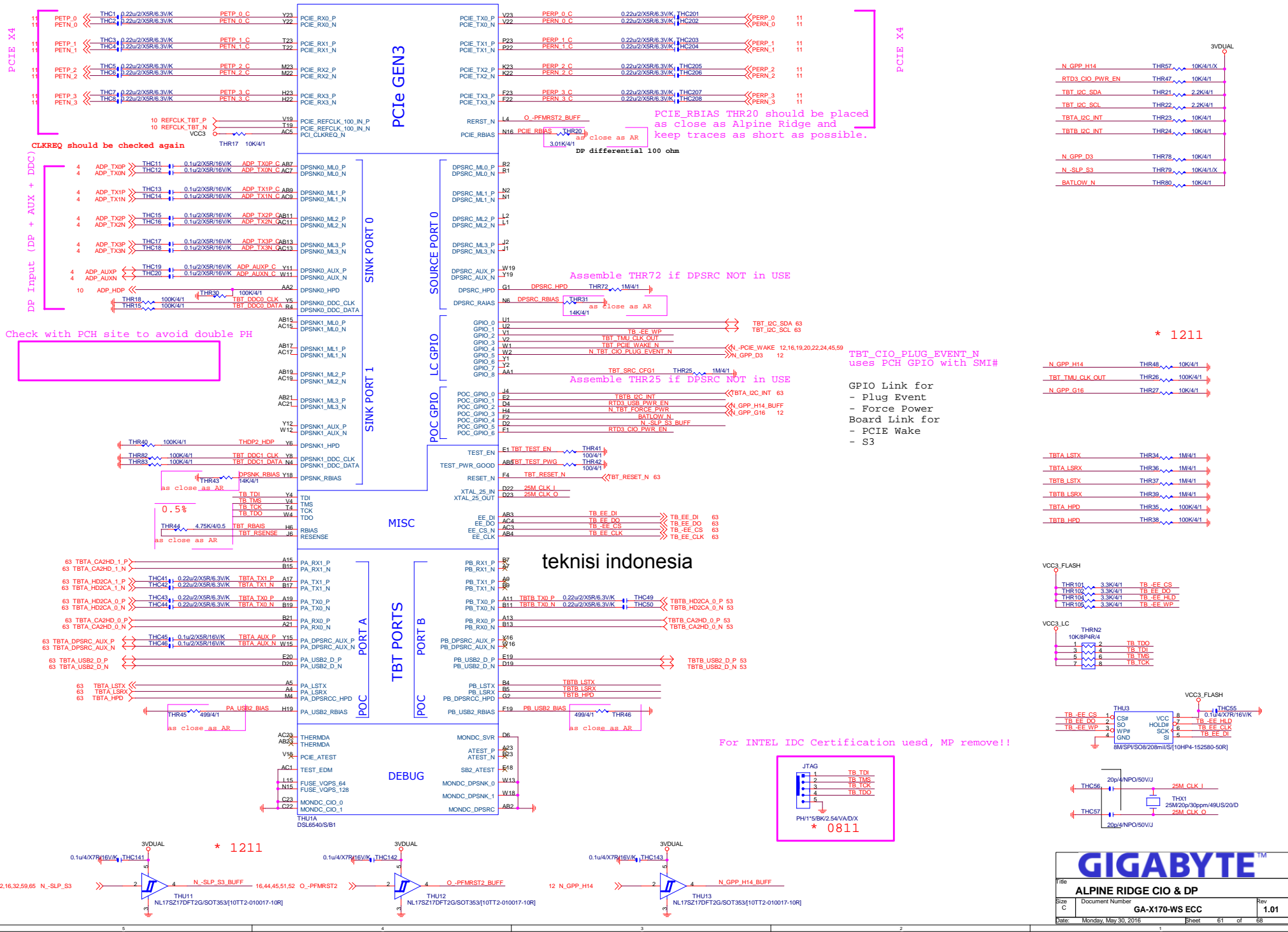
Gigabyte Technology

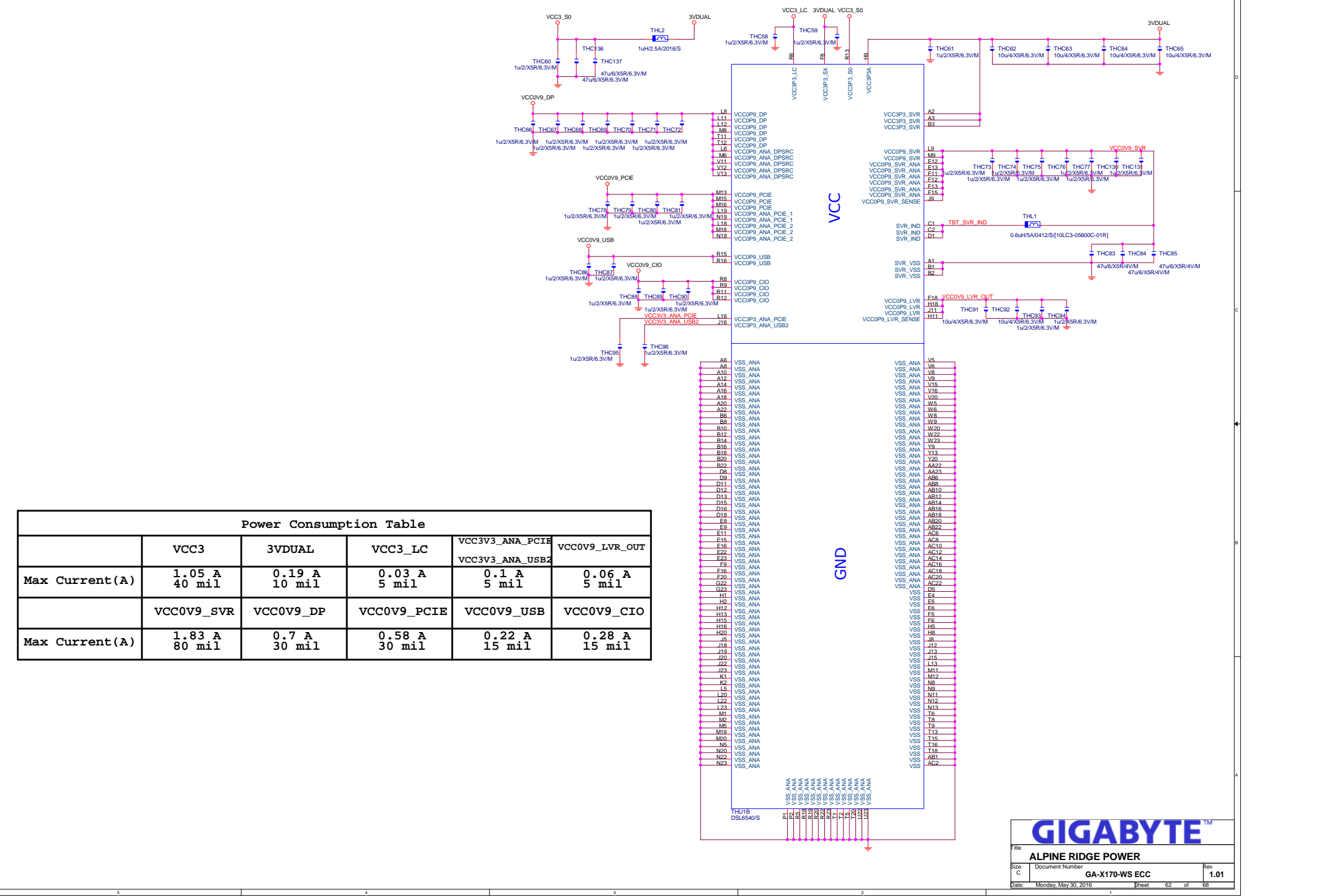
Title			FF,F_USB,USB PWR,BZ		
Size			GA-X170-WS ECC		
Date			Monday, May 30, 2016		
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## FRONT PANEL



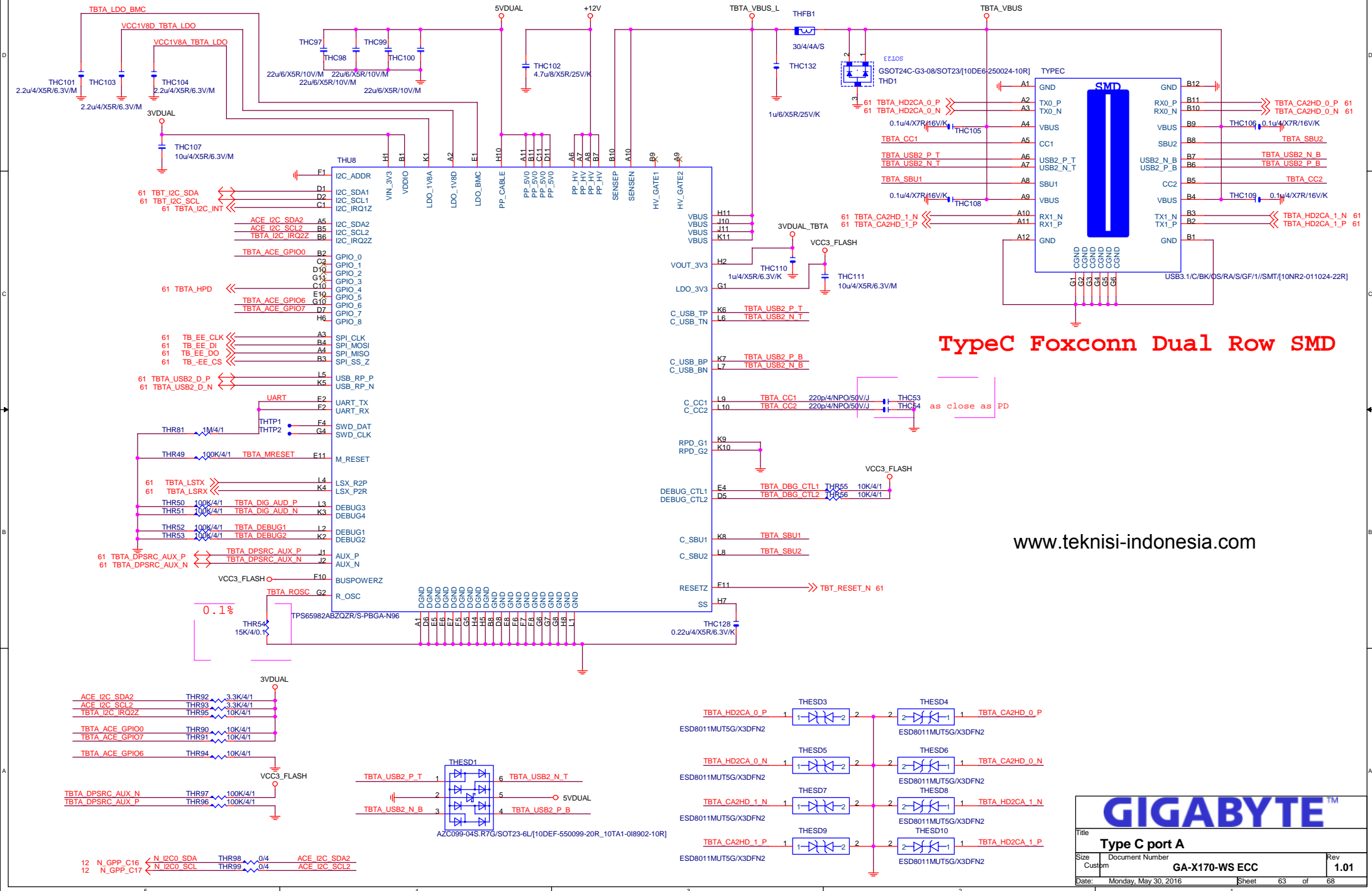






Power Consumption Table					
	VCC3	3VDUAL	VCC3_LC	VCC3V3_ANA_PCIE VCC3V3_ANA_USB2	VCC0V9_LVR_OUT
Max Current(A)	1.05 A 40 mil	0.19 A 10 mil	0.03 A 5 mil	0.1 A 5 mil	0.06 A 5 mil
	VCC0V9_SVR	VCC0V9_DP	VCC0V9_PCIE	VCC0V9_USB	VCC0V9_CIO
Max Current(A)	1.83 A 80 mil	0.7 A 30 mil	0.58 A 30 mil	0.22 A 15 mil	0.28 A 15 mil

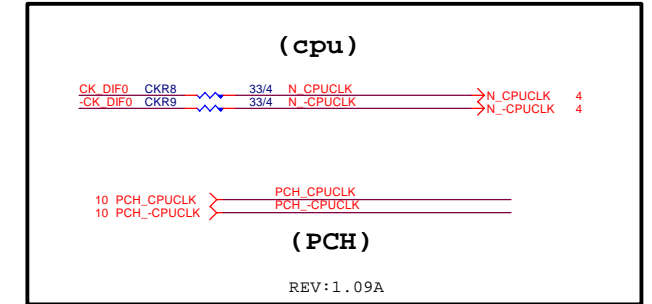
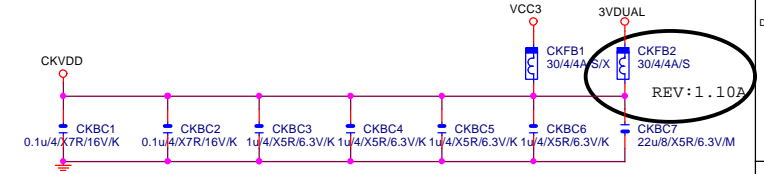
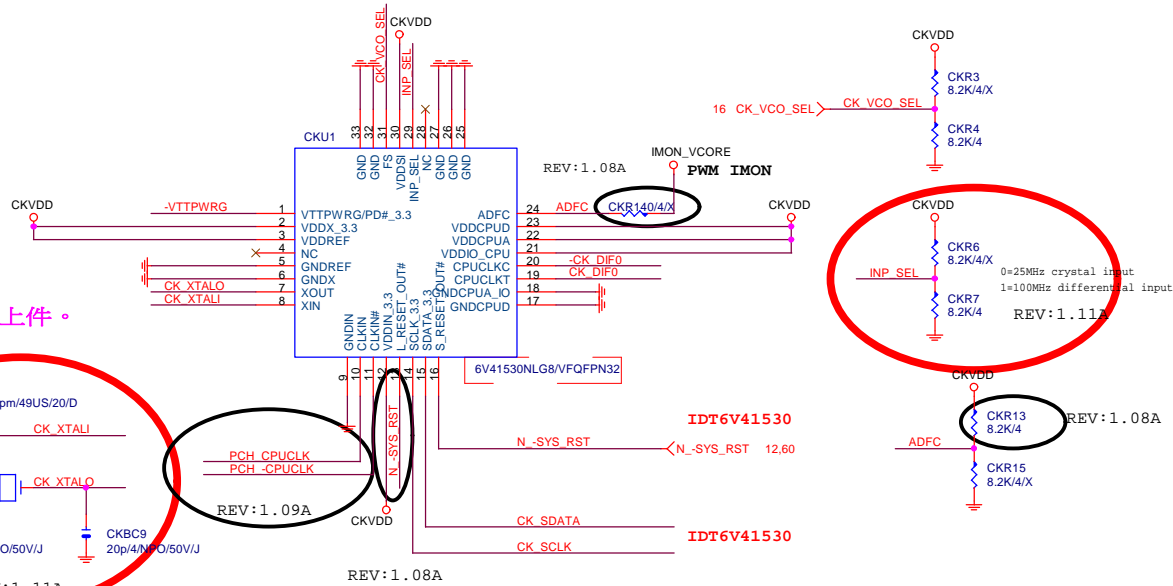
Base on INTEL AR reference SCH 1.4 (2015/11/25)



REV:1.11A

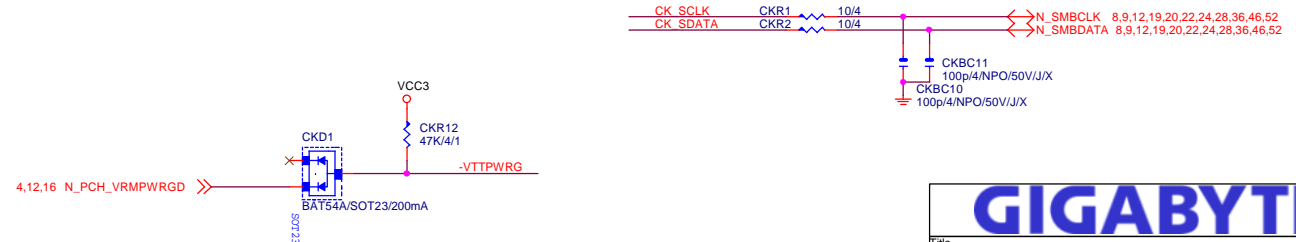
IDT6V41530

\*可變, 依需求上件不上件。



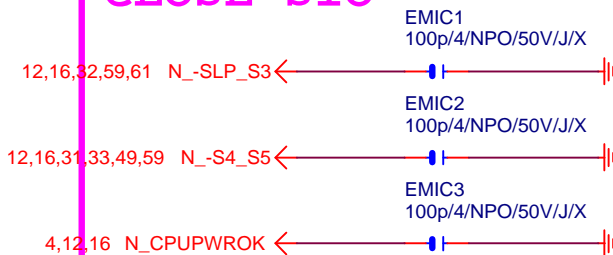
INP_SEL	Intput
0	Crystal
1	CLK_INP/N

CK_VCO_SEL	VCO
0	400M
1	1200M



<b>GIGABYTE™</b>			
Title IDT6V41530_CLK BUFFER			
Size Custom	Document Number GA-X170-WS ECC	Rev 1.01	
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## CLOSE SIO



## CLOSE PCH



## CLOSE AUDIO



# GIGABYTE™

Title

EMI/ESD

Size  
A

Document Number

GA-X170-WS ECC

Rev

1.01

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77

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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
DIP	11LC5-M2500C-01R	0.5uH/20A/IMD0809/M/D	8*8	CHOKE1U-R50M-IF

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	未建(SIUC1007-R30M-JJ1W)		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

GIGABYTE™

Title

RT8120\_DDR4 POWER

Size Custom

Document Number

GA-X170-WS ECC

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Rev

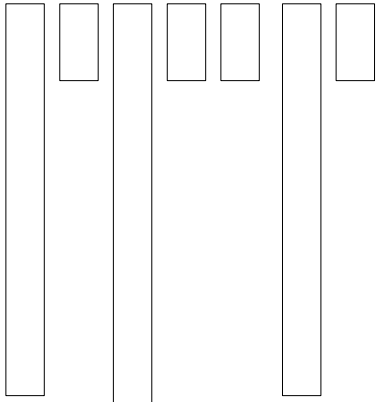
1.01

REAR IO

RS\_SYS

F\_AUDIO

AUDIO



SIO

PCH

RS\_PCH

SATA\_EXPRESS

DD\_DQ2 DD\_DQ1 DC\_DQ2 DC\_DQ1 DB\_DQ2 DB\_DQ1

RS\_VCORE

TTRT1

DD\_DL1 DC\_DL1 DB\_DL1

CPU

DA\_DL1  
DO\_DL1  
DN\_DL1  
DM\_DL1

DANTC1

DANTC4

DA\_DQ1 DA\_DQ2  
DO\_DQ1 DO\_DQ2  
DN\_DQ1 DN\_DQ2  
DM\_DQ1 DM\_DQ2

DANTC2

DANTC3

RS\_VCCGT TTRT2



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