

Model Name: GA-H81N-D2H

Revision 1.0

SHEET

TITLE

| | |
|----|----------------------------|
| 01 | COVER SHEET |
| 02 | BOM & PCB MODIFY HISTORY |
| 03 | BLOCK DIAGRAM |
| 04 | CPU_LGA1150-A |
| 05 | CPU_LGA1150-B |
| 06 | CPU_LGA1150-C |
| 07 | DDR III CHANNEL A |
| 08 | DDR III CHANNEL B |
| 09 | PCH_FDI,DMI,USB,PCIE,NVRAM |
| 10 | PCH_DP,CLK BUFFER |
| 11 | PCH_HOST,SATA,PCI |
| 12 | PCH_GPIO,CTRL,AUDIO |
| 13 | PCH_PWR,GND |
| 14 | ITE8892 |
| 15 | PCI SOLT |
| 16 | ITE 8620 LPC IO |
| 17 | COM,KB_MS_USB |
| 18 | HWM,FAN CTRL,OV,-PROCHOT |
| 19 | DUAL BIOS |
| 20 | FP,FUSB,SPK,SATALED |
| 21 | Realtek ALC887 |
| 22 | REAR AUDIO JACK |
| 23 | USB3.0, LPT |
| 24 | RTL8111F GbE |
| 25 | DISCRETE POWER |
| 26 | ATX POWER |
| 27 | RT8120_DDR POWER |

SHEET

TITLE

| | |
|----|------------------|
| 28 | VCORE ISL95812_1 |
| 29 | VCORE ISL95812_2 |
| 30 | DVI-D |
| 31 | HDMI |

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Gigabyte Technology

Cover Sheet

| | | |
|-------------------------------|---------------------------------------|-------------------|
| Size Custom | Document Number GA-H81N-D2H | Rev 1.0 |
| Date: Tuesday, April 29, 2014 | Sheet 1 of 31 | |

Revision 1.0

Component value change history

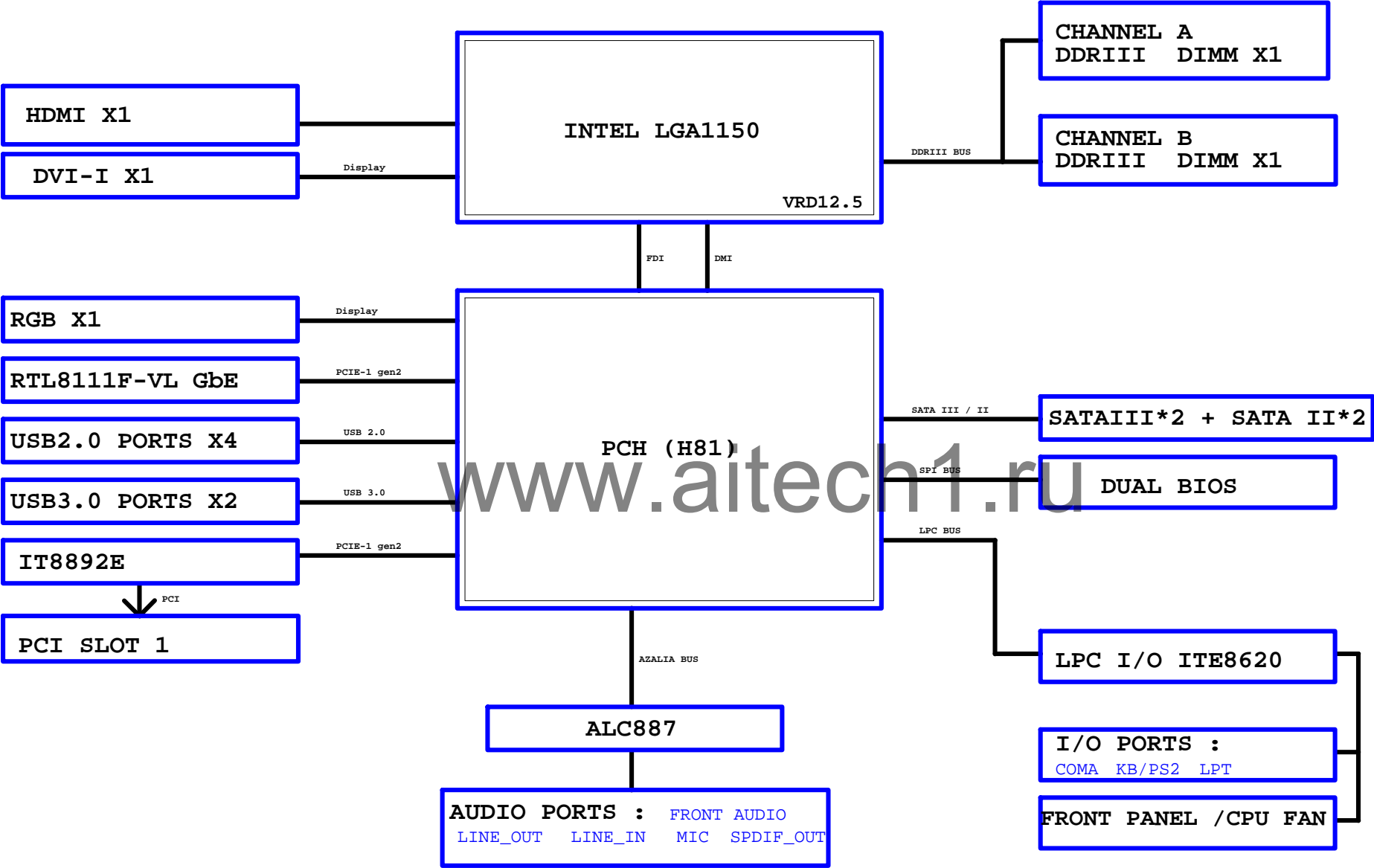
2013/07/02

[illegible]

Circuit or PCB layout change

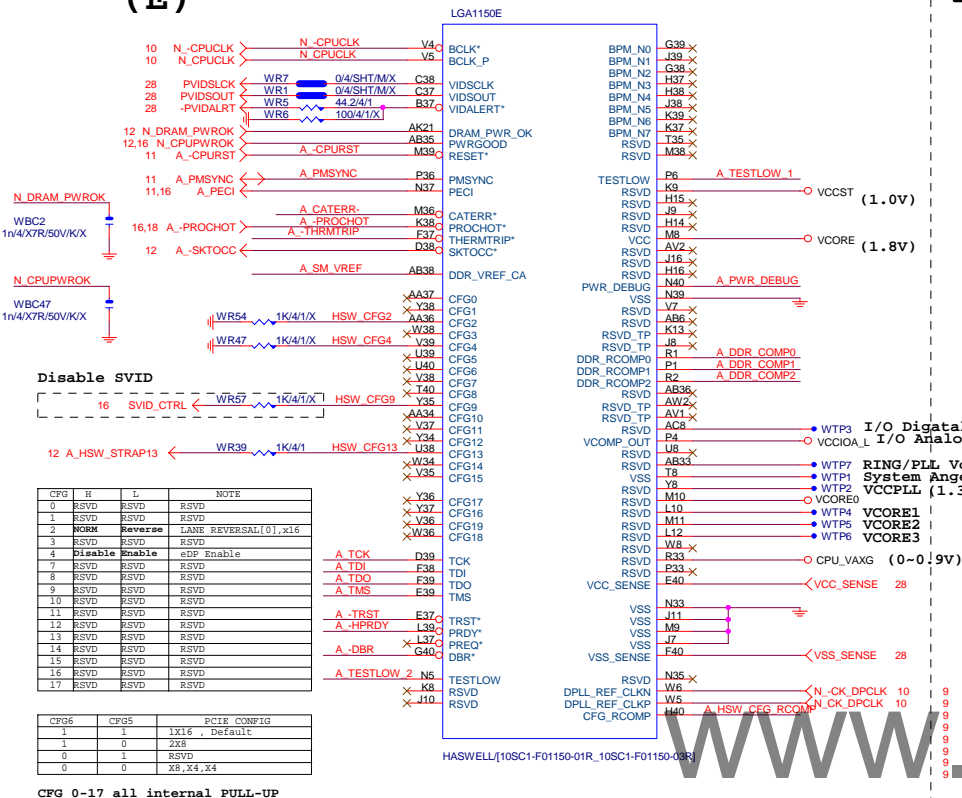
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BLOCK DIAGRAM



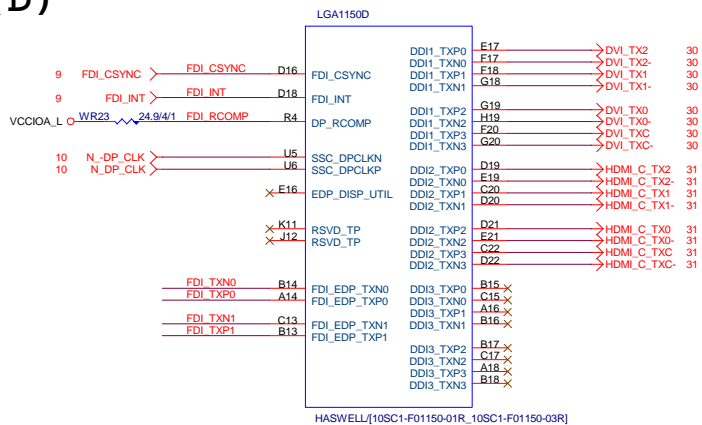
LGA1150

(E)



LGA1150

(D)



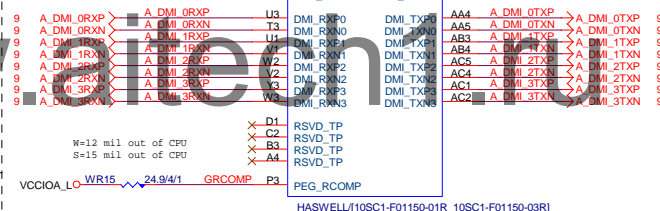
FDI:12/4/5/4/12(breakout min 6/4/4/4/6)
Impedance=85 +- 17.5%

FDI_TXP0_11 → FDI_TXP[0..1] 9
FDI_TXN0_11 → FDI_TXN[0..1] 9

LGA1155

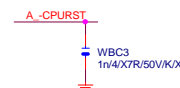
(C)

PCIEX16:16/5/5/5/16(breakout min 10/4/4/4/10)
Impedance=80 +- 17.5%



DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

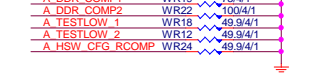
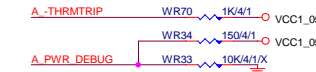
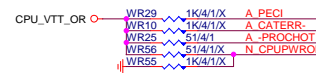
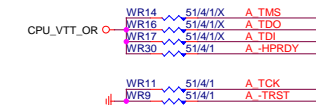
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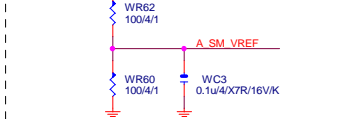
CPU SVID



CPU PU/PD



SM REF



THRMTRIP



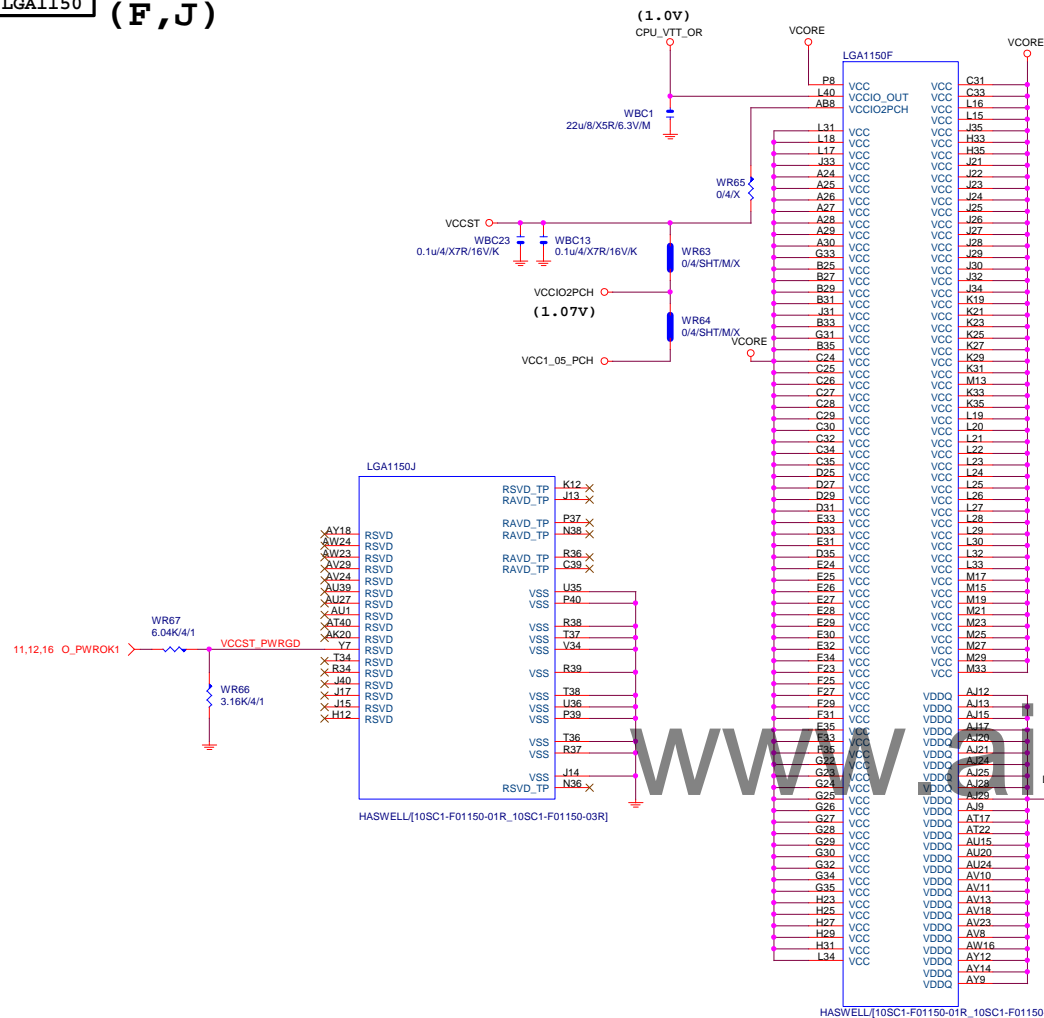
Gigabyte Technology

| | | | | |
|--------|-------------------------|-------------|---------------|-------|
| Title | | | CPU LGA1150-A | |
| Size | Document Number | GA-H81N-D2H | | Rev |
| Custom | | | | 1.0 |
| Date: | Tuesday, April 29, 2014 | Sheet | 4 | of 31 |

LGA1150A

| | | | | | |
|---------|------|-------------|-------------|------|--------|
| MAAA0 | AU13 | DDR0_M0 | DDR0_D00 | AD38 | MDA0 |
| MAAA1 | AV16 | DDR0_M1 | DDR0_D01 | AD39 | MDA1 |
| MAAA2 | AU16 | DDR0_M2 | DDR0_D02 | AF38 | MDA2 |
| MAAA3 | AW17 | DDR0_M3 | DDR0_D03 | AF39 | MDA3 |
| MAAA4 | AU17 | DDR0_M4 | DDR0_D04 | AD37 | MDA4 |
| MAAA5 | AW18 | DDR0_M5 | DDR0_D05 | AD40 | MDA5 |
| MAAA6 | AV17 | DDR0_M6 | DDR0_D06 | AF37 | MDA6 |
| MAAA7 | AT18 | DDR0_M7 | DDR0_D07 | AF40 | MDA7 |
| MAAA8 | AU18 | DDR0_M8 | DDR0_D08 | AH40 | MDA8 |
| MAAA9 | AT19 | DDR0_M9 | DDR0_D09 | AH39 | MDA9 |
| MAAA10 | AW11 | DDR0_M10 | DDR0_D10 | AH38 | MDA10 |
| MAAA11 | AV19 | DDR0_M11 | DDR0_D11 | AH37 | MDA11 |
| MAAA12 | AU19 | DDR0_M12 | DDR0_D12 | AH36 | MDA12 |
| MAAA13 | AY10 | DDR0_M13 | DDR0_D13 | AH35 | MDA13 |
| MAAA14 | AT20 | DDR0_M14 | DDR0_D14 | AH34 | MDA14 |
| MAAA15 | AU21 | DDR0_M15 | DDR0_D15 | AH33 | MDA15 |
| MODT_A0 | AW10 | DDR0_ODT0 | DDR0_ODT0 | AM39 | MDA21 |
| MODT_A1 | AY8 | DDR0_ODT1 | DDR0_ODT1 | AM38 | MDA18 |
| AW9 | AW9 | DDR0_ODT2 | DDR0_ODT2 | AM37 | MDA19 |
| AW8 | AW8 | DDR0_ODT3 | DDR0_ODT3 | AM36 | MDA16 |
| AW33 | AW33 | DDR0_ECC0 | DDR0_ECC0 | AM35 | MDA22 |
| AW32 | AW32 | DDR0_ECC1 | DDR0_ECC1 | AM34 | MDA23 |
| AW31 | AW31 | DDR0_ECC2 | DDR0_ECC2 | AM33 | MDA25 |
| AW30 | AW30 | DDR0_ECC3 | DDR0_ECC3 | AM32 | MDA29 |
| AW29 | AW29 | DDR0_ECC4 | DDR0_ECC4 | AM31 | MDA26 |
| AW28 | AW28 | DDR0_ECC5 | DDR0_ECC5 | AM30 | MDA27 |
| AW27 | AW27 | DDR0_ECC6 | DDR0_ECC6 | AM29 | MDA28 |
| AW26 | AW26 | DDR0_ECC7 | DDR0_ECC7 | AM28 | MDA30 |
| AW25 | AW25 | DDR0_ECC8 | DDR0_ECC8 | AM27 | MDA35 |
| AW24 | AW24 | DDR0_ECC9 | DDR0_ECC9 | AM26 | MDA36 |
| AW23 | AW23 | DDR0_ECC10 | DDR0_ECC10 | AM25 | MDA37 |
| AW22 | AW22 | DDR0_ECC11 | DDR0_ECC11 | AM24 | MDA38 |
| AW21 | AW21 | DDR0_ECC12 | DDR0_ECC12 | AM23 | MDA39 |
| AW20 | AW20 | DDR0_ECC13 | DDR0_ECC13 | AM22 | MDA40 |
| AW19 | AW19 | DDR0_ECC14 | DDR0_ECC14 | AM21 | MDA41 |
| AW18 | AW18 | DDR0_ECC15 | DDR0_ECC15 | AM20 | MDA42 |
| AW17 | AW17 | DDR0_ECC16 | DDR0_ECC16 | AM19 | MDA43 |
| AW16 | AW16 | DDR0_ECC17 | DDR0_ECC17 | AM18 | MDA44 |
| AW15 | AW15 | DDR0_ECC18 | DDR0_ECC18 | AM17 | MDA45 |
| AW14 | AW14 | DDR0_ECC19 | DDR0_ECC19 | AM16 | MDA46 |
| AW13 | AW13 | DDR0_ECC20 | DDR0_ECC20 | AM15 | MDA47 |
| AW12 | AW12 | DDR0_ECC21 | DDR0_ECC21 | AM14 | MDA48 |
| AW11 | AW11 | DDR0_ECC22 | DDR0_ECC22 | AM13 | MDA49 |
| AW10 | AW10 | DDR0_ECC23 | DDR0_ECC23 | AM12 | MDA50 |
| AW9 | AW9 | DDR0_ECC24 | DDR0_ECC24 | AM11 | MDA51 |
| AW8 | AW8 | DDR0_ECC25 | DDR0_ECC25 | AM10 | MDA52 |
| AW7 | AW7 | DDR0_ECC26 | DDR0_ECC26 | AM9 | MDA53 |
| AW6 | AW6 | DDR0_ECC27 | DDR0_ECC27 | AM8 | MDA54 |
| AW5 | AW5 | DDR0_ECC28 | DDR0_ECC28 | AM7 | MDA55 |
| AW4 | AW4 | DDR0_ECC29 | DDR0_ECC29 | AM6 | MDA56 |
| AW3 | AW3 | DDR0_ECC30 | DDR0_ECC30 | AM5 | MDA57 |
| AW2 | AW2 | DDR0_ECC31 | DDR0_ECC31 | AM4 | MDA58 |
| AW1 | AW1 | DDR0_ECC32 | DDR0_ECC32 | AM3 | MDA59 |
| AW0 | AW0 | DDR0_ECC33 | DDR0_ECC33 | AM2 | MDA60 |
| AW33 | AW33 | DDR0_ECC34 | DDR0_ECC34 | AM1 | MDA61 |
| AW32 | AW32 | DDR0_ECC35 | DDR0_ECC35 | AM0 | MDA62 |
| AW31 | AW31 | DDR0_ECC36 | DDR0_ECC36 | AM39 | MDA63 |
| AW30 | AW30 | DDR0_ECC37 | DDR0_ECC37 | AM38 | MDA64 |
| AW29 | AW29 | DDR0_ECC38 | DDR0_ECC38 | AM37 | MDA65 |
| AW28 | AW28 | DDR0_ECC39 | DDR0_ECC39 | AM36 | MDA66 |
| AW27 | AW27 | DDR0_ECC40 | DDR0_ECC40 | AM35 | MDA67 |
| AW26 | AW26 | DDR0_ECC41 | DDR0_ECC41 | AM34 | MDA68 |
| AW25 | AW25 | DDR0_ECC42 | DDR0_ECC42 | AM33 | MDA69 |
| AW24 | AW24 | DDR0_ECC43 | DDR0_ECC43 | AM32 | MDA70 |
| AW23 | AW23 | DDR0_ECC44 | DDR0_ECC44 | AM31 | MDA71 |
| AW22 | AW22 | DDR0_ECC45 | DDR0_ECC45 | AM30 | MDA72 |
| AW21 | AW21 | DDR0_ECC46 | DDR0_ECC46 | AM29 | MDA73 |
| AW20 | AW20 | DDR0_ECC47 | DDR0_ECC47 | AM28 | MDA74 |
| AW19 | AW19 | DDR0_ECC48 | DDR0_ECC48 | AM27 | MDA75 |
| AW18 | AW18 | DDR0_ECC49 | DDR0_ECC49 | AM26 | MDA76 |
| AW17 | AW17 | DDR0_ECC50 | DDR0_ECC50 | AM25 | MDA77 |
| AW16 | AW16 | DDR0_ECC51 | DDR0_ECC51 | AM24 | MDA78 |
| AW15 | AW15 | DDR0_ECC52 | DDR0_ECC52 | AM23 | MDA79 |
| AW14 | AW14 | DDR0_ECC53 | DDR0_ECC53 | AM22 | MDA80 |
| AW13 | AW13 | DDR0_ECC54 | DDR0_ECC54 | AM21 | MDA81 |
| AW12 | AW12 | DDR0_ECC55 | DDR0_ECC55 | AM20 | MDA82 |
| AW11 | AW11 | DDR0_ECC56 | DDR0_ECC56 | AM19 | MDA83 |
| AW10 | AW10 | DDR0_ECC57 | DDR0_ECC57 | AM18 | MDA84 |
| AW9 | AW9 | DDR0_ECC58 | DDR0_ECC58 | AM17 | MDA85 |
| AW8 | AW8 | DDR0_ECC59 | DDR0_ECC59 | AM16 | MDA86 |
| AW7 | AW7 | DDR0_ECC60 | DDR0_ECC60 | AM15 | MDA87 |
| AW6 | AW6 | DDR0_ECC61 | DDR0_ECC61 | AM14 | MDA88 |
| AW5 | AW5 | DDR0_ECC62 | DDR0_ECC62 | AM13 | MDA89 |
| AW4 | AW4 | DDR0_ECC63 | DDR0_ECC63 | AM12 | MDA90 |
| AW3 | AW3 | DDR0_ECC64 | DDR0_ECC64 | AM11 | MDA91 |
| AW2 | AW2 | DDR0_ECC65 | DDR0_ECC65 | AM10 | MDA92 |
| AW1 | AW1 | DDR0_ECC66 | DDR0_ECC66 | AM9 | MDA93 |
| AW0 | AW0 | DDR0_ECC67 | DDR0_ECC67 | AM8 | MDA94 |
| AW33 | AW33 | DDR0_ECC68 | DDR0_ECC68 | AM7 | MDA95 |
| AW32 | AW32 | DDR0_ECC69 | DDR0_ECC69 | AM6 | MDA96 |
| AW31 | AW31 | DDR0_ECC70 | DDR0_ECC70 | AM5 | MDA97 |
| AW30 | AW30 | DDR0_ECC71 | DDR0_ECC71 | AM4 | MDA98 |
| AW29 | AW29 | DDR0_ECC72 | DDR0_ECC72 | AM3 | MDA99 |
| AW28 | AW28 | DDR0_ECC73 | DDR0_ECC73 | AM2 | MDA100 |
| AW27 | AW27 | DDR0_ECC74 | DDR0_ECC74 | AM1 | MDA101 |
| AW26 | AW26 | DDR0_ECC75 | DDR0_ECC75 | AM0 | MDA102 |
| AW25 | AW25 | DDR0_ECC76 | DDR0_ECC76 | AM39 | MDA103 |
| AW24 | AW24 | DDR0_ECC77 | DDR0_ECC77 | AM38 | MDA104 |
| AW23 | AW23 | DDR0_ECC78 | DDR0_ECC78 | AM37 | MDA105 |
| AW22 | AW22 | DDR0_ECC79 | DDR0_ECC79 | AM36 | MDA106 |
| AW21 | AW21 | DDR0_ECC80 | DDR0_ECC80 | AM35 | MDA107 |
| AW20 | AW20 | DDR0_ECC81 | DDR0_ECC81 | AM34 | MDA108 |
| AW19 | AW19 | DDR0_ECC82 | DDR0_ECC82 | AM33 | MDA109 |
| AW18 | AW18 | DDR0_ECC83 | DDR0_ECC83 | AM32 | MDA110 |
| AW17 | AW17 | DDR0_ECC84 | DDR0_ECC84 | AM31 | MDA111 |
| AW16 | AW16 | DDR0_ECC85 | DDR0_ECC85 | AM30 | MDA112 |
| AW15 | AW15 | DDR0_ECC86 | DDR0_ECC86 | AM29 | MDA113 |
| AW14 | AW14 | DDR0_ECC87 | DDR0_ECC87 | AM28 | MDA114 |
| AW13 | AW13 | DDR0_ECC88 | DDR0_ECC88 | AM27 | MDA115 |
| AW12 | AW12 | DDR0_ECC89 | DDR0_ECC89 | AM26 | MDA116 |
| AW11 | AW11 | DDR0_ECC90 | DDR0_ECC90 | AM25 | MDA117 |
| AW10 | AW10 | DDR0_ECC91 | DDR0_ECC91 | AM24 | MDA118 |
| AW9 | AW9 | DDR0_ECC92 | DDR0_ECC92 | AM23 | MDA119 |
| AW8 | AW8 | DDR0_ECC93 | DDR0_ECC93 | AM22 | MDA120 |
| AW7 | AW7 | DDR0_ECC94 | DDR0_ECC94 | AM21 | MDA121 |
| AW6 | AW6 | DDR0_ECC95 | DDR0_ECC95 | AM20 | MDA122 |
| AW5 | AW5 | DDR0_ECC96 | DDR0_ECC96 | AM19 | MDA123 |
| AW4 | AW4 | DDR0_ECC97 | DDR0_ECC97 | AM18 | MDA124 |
| AW3 | AW3 | DDR0_ECC98 | DDR0_ECC98 | AM17 | MDA125 |
| AW2 | AW2 | DDR0_ECC99 | DDR0_ECC99 | AM16 | MDA126 |
| AW1 | AW1 | DDR0_ECC100 | DDR0_ECC100 | AM15 | MDA127 |
| AW0 | AW0 | DDR0_ECC101 | DDR0_ECC101 | AM14 | MDA128 |
| AW33 | AW33 | DDR0_ECC102 | DDR0_ECC102 | AM13 | MDA129 |
| AW32 | AW32 | DDR0_ECC103 | DDR0_ECC103 | AM12 | MDA130 |
| AW31 | AW31 | DDR0_ECC104 | DDR0_ECC104 | AM11 | MDA131 |
| AW30 | AW30 | DDR0_ECC105 | DDR0_ECC105 | AM10 | MDA132 |
| AW29 | AW29 | DDR0_ECC106 | DDR0_ECC106 | AM9 | MDA133 |
| AW28 | AW28 | DDR0_ECC107 | DDR0_ECC107 | AM8 | MDA134 |
| AW27 | AW27 | DDR0_ECC108 | DDR0_ECC108 | AM7 | MDA135 |
| AW26 | AW26 | DDR0_ECC109 | DDR0_ECC109 | AM6 | MDA136 |
| AW25 | AW25 | DDR0_ECC110 | DDR0_ECC110 | AM5 | MDA137 |
| AW24 | AW24 | DDR0_ECC111 | DDR0_ECC111 | AM4 | MDA138 |
| AW23 | AW23 | DDR0_ECC112 | DDR0_ECC112 | AM3 | MDA139 |
| AW22 | AW22 | DDR0_ECC113 | DDR0_ECC113 | AM2 | MDA140 |
| AW21 | AW21 | DDR0_ECC114 | DDR0_ECC114 | AM1 | MDA141 |
| AW20 | AW20 | DDR0_ECC115 | DDR0_ECC115 | AM0 | MDA142 |
| AW19 | AW19 | DDR0_ECC116 | DDR0_ECC116 | AM39 | MDA143 |
| AW18 | AW18 | DDR0_ECC117 | DDR0_ECC117 | AM38 | MDA144 |
| AW17 | AW17 | DDR0_ECC118 | DDR0_ECC118 | AM37 | MDA145 |
| AW16 | AW16 | DDR0_ECC119 | DDR0_ECC119 | AM36 | MDA146 |
| AW15 | AW15 | DDR0_ECC120 | DDR0_ECC120 | AM35 | MDA147 |
| AW14 | AW14 | DDR0_ECC121 | DDR0_ECC121 | AM34 | MDA148 |
| AW13 | AW13 | DDR0_ECC122 | DDR0_ECC122 | AM33 | MDA149 |
| AW12 | AW12 | DDR0_ECC123 | DDR0_ECC123 | AM32 | MDA150 |
| AW11 | AW11 | DDR0_ECC124 | DDR0_ECC124 | AM31 | MDA151 |
| AW10 | AW10 | DDR0_ECC125 | DDR0_ECC125 | AM30 | MDA152 |
| AW9 | AW9 | DDR0_ECC126 | DDR0_ECC126 | AM29 | MDA153 |
| AW8 | AW8 | DDR0_ECC127 | DDR0_ECC127 | AM28 | MDA154 |
| AW7 | AW7 | DDR0_ECC128 | DDR0_ECC128 | AM27 | MDA155 |
| AW6 | AW6 | DDR0_ECC129 | DDR0_ECC129 | AM26 | MDA156 |
| AW5 | AW5 | DDR0_ECC130 | DDR0_ECC130 | AM25 | MDA157 |
| AW4 | AW4 | DDR0_ECC131 | DDR0_ECC131 | AM24 | MDA158 |
| AW3 | AW3 | DDR0_ECC132 | DDR0_ECC132 | AM23 | MDA159 |
| AW2 | AW2 | DDR0_ECC133 | DDR0_ECC133 | AM22 | MDA160 |
| AW1 | AW1 | DDR0_ECC134 | DDR0_ECC134 | AM21 | MDA161 |
| AW0 | AW0 | DDR0_ECC135 | DDR0_ECC135 | AM20 | MDA162 |
| AW33 | AW33 | DDR0_ECC136 | DDR0_ECC136 | AM19 | MDA163 |
| AW32 | AW32 | DDR0_ECC137 | DDR0_ECC137 | AM18 | MDA164 |
| AW31 | AW31 | DDR0_ECC138 | DDR0_ECC138 | AM17 | MDA165 |
| AW30 | AW30 | DDR0_ECC139 | DDR0_ECC139 | AM16 | MDA166 |
| AW29 | AW29 | DDR0_ECC140 | DDR0_ECC140 | AM15 | MDA167 |
| AW28 | AW28 | DDR0_ECC141 | DDR0_ECC141 | AM14 | MDA168 |
| AW27 | AW27 | DDR0_ECC142 | DDR0_ECC142 | AM13 | MDA169 |
| AW26 | AW26 | DDR0_ECC143 | DDR0_ECC143 | AM12 | MDA170 |
| AW25 | AW25 | DDR0_ECC144 | DDR0_ECC144 | AM11 | MDA171 |
| AW24 | AW24 | DDR0_ECC145 | DDR0_ECC145 | AM10 | MDA172 |
| AW23 | AW23 | DDR0_ECC146 | DDR0_ECC146 | AM9 | MDA173 |
| AW22 | AW22 | DDR0_ECC147 | DDR0_ECC147 | AM8 | MDA174 |
| AW21 | AW21 | DDR0_ECC148 | DDR0_ECC148 | AM7 | MDA175 |
| AW20 | AW20 | DDR0_ECC149 | DDR0_ECC149 | AM6 | MDA176 |
| AW19 | AW19 | DDR0_ECC150 | DDR0_ECC150 | AM5 | MDA177 |
| AW18 | AW18 | DDR0_ECC151 | DDR0_ECC151 | AM4 | MDA178 |
| AW17 | AW17 | DDR0_ECC152 | DDR0_ECC152 | AM3 | MDA179 |
| AW16 | AW16 | DDR0_ECC153 | DDR0_ECC153 | AM2 | MDA180 |
| AW15 | AW15 | DDR0_ECC154 | DDR0_ECC154 | AM1 | MDA181 |
| AW14 | AW14 | DDR0_ECC155 | DDR0_ECC155 | AM0 | MDA182 |
| AW13 | AW13 | DDR0_ECC156 | DDR0_ECC156 | AM39 | MDA183 |
| AW12 | AW12 | DDR0_ECC157 | DDR0_ECC157 | AM38 | MDA184 |
| AW11 | AW11 | DDR0_ECC158 | DDR0_ECC158 | AM37 | MDA185 |
| AW10 | AW10 | DDR0_ECC159 | DDR0_ECC159 | AM36 | MDA186 |
| AW9 | AW9 | DDR0_ECC160 | DDR0_ECC160 | AM35 | MDA187 |
| AW8 | AW8 | DDR0_ECC161 | DDR0_ECC161 | AM34 | MDA188 |
| AW7 | AW7 | DDR0_ECC162 | DDR0_ECC162 | AM33 | MDA189 |
| AW6 | AW6 | DDR0_ECC163 | DDR0_ECC163 | AM32 | MDA190 |
| AW5 | AW5 | DDR0_ECC164 | DDR0_ECC164 | AM31 | MDA191 |
| AW4 | AW4 | DDR0_ECC165 | DDR0_ECC165 | AM30 | MDA192 |
| AW3 | AW3 | DDR0_ECC166 | DDR0_ECC166 | AM29 | MDA193 |
| AW2 | AW2 | DDR0_ECC167 | DDR0_ECC167 | AM28 | MDA194 |
| AW1 | AW1 | DDR0_ECC168 | DDR0_ECC168 | AM27 | MDA195 |
| AW0 | AW0 | DDR0_ECC169 | DDR0_ECC169 | AM26 | MDA196 |
| AW33 | AW33 | DDR0_ECC170 | DDR0_ECC170 | AM25 | MDA197 |
| AW32 | AW32 | DDR0_ECC171 | DDR0_ECC171 | AM24 | MDA198 |
| AW31 | AW31 | DDR0_ECC172 | DDR0_ECC172 | AM23 | MDA199 |
| AW30 | AW30 | DDR0_ECC173 | DDR0_ECC173 | AM22 | MDA200 |
| AW29 | AW29 | DDR0_ECC174 | DDR0_ECC174 | AM21 | MDA201 |
| AW28 | AW28 | DDR0_ECC175 | DDR0_ECC175 | AM20 | MDA202 |
| AW27 | AW27 | DDR0_ECC176 | DDR0_ECC176 | AM19 | MDA203 |
| AW26 | AW26 | DDR0_ECC177 | DDR0_ECC177 | AM18 | MDA204 |
| AW25 | AW25 | DDR0_ECC178 | DDR0_ECC178 | AM17 | MDA205 |
| AW24 | AW24 | DDR0_ECC179 | DDR0_ECC179 | AM16 | MDA206 |
| AW23 | AW23 | DDR0_ECC180 | DDR0_ECC180 | AM15 | MDA207 |
| AW22</ | | | | | |

LGA1150 (F,J)

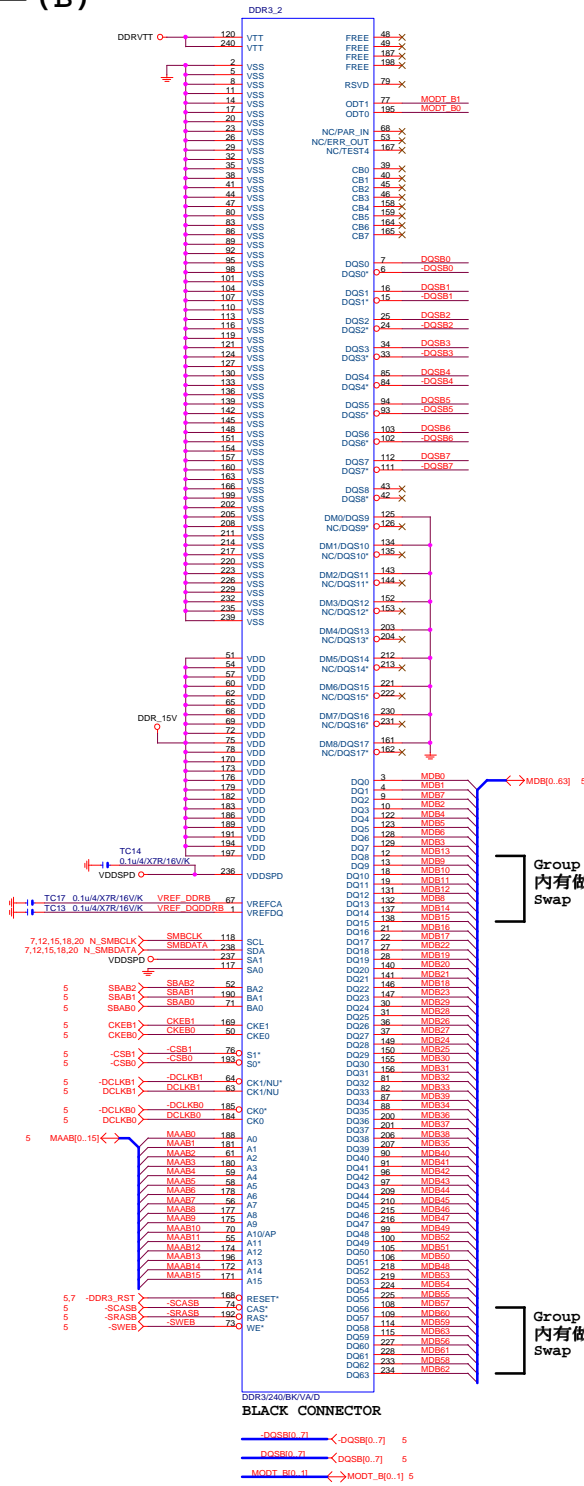


LGA1155 (G,H,I)

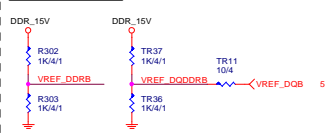


DDR3

(B)



DDR3 VREF



COUPON





CPU

DIMM1 CHA
DIMM2 CHB

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DMI:12/4/4/4/12(breakout min 8/4/4/4/8)
Impedance=85 +- 17.5%

VCC1_5_PCH 


| | |
|------------|-------------|
| <u>L14</u> | PCIE_PERN_1 |
| <u>K14</u> | PCIE_PERP_1 |
| <u>B12</u> | PCIE_PETN_1 |
| <u>B11</u> | PCIE_PETP_1 |
| <u>F14</u> | PCIE_PERN_2 |
| <u>G14</u> | PCIE_PERP_2 |
| <u>D11</u> | PCIE_PETN_2 |
| <u>C11</u> | PCIE_PETP_2 |

| 8052 Pin | Signal | PCIE Pin | Signal |
|----------|-----------|----------|-------------|
| 24 | LA_ML_IN | H11 | PCIE_PERN_3 |
| 24 | LA_ML_IP | B9 | PCIE_PERP_3 |
| 24 | LA_ML_ON | A9 | PCIE_PETN_3 |
| 24 | LA_ML_OP | J11 | PCIE_PETP_3 |
| 14 | G_PCIEBIP | L11 | PCIE_PERN_4 |
| 14 | G_PCIEBON | B8 | PCIE_PERP_4 |
| 14 | G_PCIEBOP | C8 | PCIE_PETN_4 |
| | | G9 | PCIE_PETP_4 |
| | | F9 | PCIE_PERP_5 |
| | | B7 | PCIE_PERP_6 |
| | | A7 | PCIE_PETN_5 |
| | | | PCIE_PETP_5 |

放靠近 Device & PCI-E Slot
Impedance=80 +- 17.5%

PCIEX1:16/5/5/5/16 (breakout min 8/4/4/4/8)

| | PCHJ |
|------|----------|
| AT1 | VSS_NCTF |
| AT41 | VSS_NCTF |
| AU1 | VSS_NCTF |
| AV1 | VSS_NCTF |
| AV2 | VSS_NCTF |
| AV40 | VSS_NCTF |
| AV41 | VSS_NCTF |
| AW2 | VSS_NCTF |
| AW40 | VSS_NCTF |
| B40 | VSS_NCTF |
| B41 | VSS_NCTF |
| C41 | VSS_NCTF |
| D1 | VSS_NCTF |
| D41 | VSS_NCTF |

Figure 1: Schematic diagram of the experimental setup. A subject is seated at a table, viewing a screen. A camera is positioned above the screen. A red arrow points to the screen, and a blue arrow points to the camera. The screen displays a visual feedback system with a red dot and a blue dot. The camera is labeled 'HR1/S'.

USB2.0 : 12/4.5/7.5/4.5/12 (breakout min 8/4/4/4/8)
Impedance=90 +- 17.5%

PCHB

B85: Port 6/7 N/A

H81: Port 6/7/12/13 N/A

| DMMI | | USB | | N/A | | N/A | | N/A | |
|-----------|--|---------|------|----------|--|----------|----|-----|--|
| DMI_RXN_0 | | USBN_0 | AV10 | N -USBP0 | | N_-USBP0 | 23 | | |
| DMI_RXP_0 | | USBP_0 | AU10 | N +USBP0 | | N_+USBP0 | 23 | | |
| DMI_TXN_0 | | USBN_1 | AW11 | N -USBP1 | | N_-USBP1 | 23 | | |
| DMI_TXP_0 | | USBP_1 | AW11 | N +USBP1 | | N_+USBP1 | 23 | | |
| DMI_RXN_1 | | USBN_2 | AN14 | N -USBP2 | | N_-USBP2 | 24 | | |
| DMI_RXP_1 | | USBP_2 | AP14 | N +USBP2 | | N_+USBP2 | 24 | | |
| DMI_TXN_1 | | USBN_3 | AJ16 | N -USBP3 | | N_-USBP3 | 24 | | |
| DMI_TXP_1 | | USBP_3 | AK16 | N +USBP3 | | N_+USBP3 | 24 | | |
| DMI_RXN_2 | | USBN_4 | AU15 | | | | | | |
| DMI_RXP_2 | | USBP_4 | AW15 | | | | | | |
| DMI_TXN_2 | | USBN_5 | AT12 | | | | | | |
| DMI_TXP_2 | | USBP_5 | AV14 | | | | | | |
| DMI_RXN_3 | | USBN_6 | AW14 | N/A | | | | | |
| DMI_RXP_3 | | USBP_6 | AU17 | | | | | | |
| DMI_TXN_3 | | USBN_7 | AT17 | N/A | | | | | |
| DMI_TXP_3 | | USBP_7 | AW16 | N -USBP8 | | N_-USBP8 | 20 | | |
| | | USBN_8 | AV16 | N +USBP8 | | N_+USBP8 | 20 | | |
| | | USBP_8 | AN16 | N -USBP9 | | N_-USBP9 | 20 | | |
| | | USBP_9 | AP16 | N +USBP9 | | N_+USBP9 | 20 | | |
| | | USBN_10 | AJ18 | | | | | | |
| | | USBP_10 | AK18 | | | | | | |
| | | USBN_11 | AN18 | | | | | | |
| | | USBP_11 | AW18 | | | | | | |
| | | USBN_12 | AT18 | N/A | | | | | |
| | | USBP_12 | AW18 | | | | | | |
| | | USBN_13 | AP20 | N/A | | | | | |
| | | USBP_13 | AN20 | | | | | | |

| | | | |
|------------------------|-----------|------|---------------------------------|
| PCIE_PERP_2_USB3_RXP_3 | OC0B_GP59 | AE40 | N_USBOC_R 23 |
| PCIE_PETN_2_USB3_TYN_3 | OC1B_GP40 | AE37 | |
| PCIE_PETP_2_USB3_TXP_3 | OC2B_GP40 | AD39 | N_USBOC_F 20,2 |
| PCIE_PERN_3 | OC3B_GP42 | AD40 | |
| PCIE_PERP_3 | OC4B_GP43 | AF39 | N_GPIO14 |
| PCIE_PETN_3 | OC5B_GP9 | AC41 | |
| PCIE_PETP_3 | OC6B_GP10 | AF40 | W4 mil out of S45 mil out of |
| PCIE_PERN_4 | OC7B_GP14 | AG40 | |

| | | | | | |
|-------------|--------------|------|------------|------|---------|
| PCIE_PETN_4 | USBRIASB | AV20 | N USBRIASB | NR47 | 22.6/41 |
| PCIE_PETP_4 | USBRIASB | AU20 | | | |
| PCIE_PERN_5 | | | | | |
| PCIE_PERP_5 | | | | | |
| PCIE_PETN_5 | CLKIN_DOT96N | AP11 | CK -DOTCLK | | |
| PCIE_PETP_5 | CLKIN_DOT96P | AM11 | CK_DOTCLK | | |

PCIE_PERN_6
PCIE_PERP_6
PCIE_PETN_6
PCIE_PETP_6
PCIE_PERN_7
PCIE_PERP_7
PCIE_PETN_7
PCIE_PETP_7
PCIE_PERN_8
PCIE_PERP_8
PCIE_PETN_8
PCIE_PETP_8

www.a

NR130
8.2K/4
O3VDUAL

N_GPIOD14

N_USBOC_F

NBC82
0.1u/4/X7R/16V/K

N_USBOC_R

NBC83
0.1u/4/X7R/16V/K

H81/S

4/4/4/8)

| | | PCHF | |
|----|---------------|------|------------|
| | | USB3 | FDLINK |
| 23 | PCH_USB3_RXN0 | F20 | USB3_RXN_0 |
| 23 | PCH_USB3_RXP0 | G20 | FDI_RXN_0 |
| | | B18 | FDI_RXP_0 |
| 23 | PCH_USB3_TXN0 | | USB3_RXN_0 |
| 23 | PCH_USB3_TXP0 | C18 | FDI_RXP_1 |
| | | | USB3_TXP_0 |

| Signal | Pin | Function |
|------------------|-----|-------------|
| 23 PCH_USB3_RXN1 | G18 | USB3_RXN_1 |
| 23 PCH_USB3_RXN1 | H18 | USB3_RXP_1 |
| 23 PCH_USB3_TXN1 | B15 | USB3_TXN_1 |
| 23 PCH_USB3_TXP1 | B16 | USB3_TXP_1 |
| | | FDI_CS[0] |
| | | FDI_INT |
| | | FDI_RST |
| | | FDI_TXP_0 |
| | | FDI_TXP_1 |
| | | FDI_TXP_2 |
| | | FDI_TXP_3 |
| | | FDI_TXP_4 |
| | | FDI_TXP_5 |
| | | FDI_TXP_6 |
| | | FDI_TXP_7 |
| | | FDI_TXP_8 |
| | | FDI_TXP_9 |
| | | FDI_TXP_10 |
| | | FDI_TXP_11 |
| | | FDI_TXP_12 |
| | | FDI_TXP_13 |
| | | FDI_TXP_14 |
| | | FDI_TXP_15 |
| | | FDI_TXP_16 |
| | | FDI_TXP_17 |
| | | FDI_TXP_18 |
| | | FDI_TXP_19 |
| | | FDI_TXP_20 |
| | | FDI_TXP_21 |
| | | FDI_TXP_22 |
| | | FDI_TXP_23 |
| | | FDI_TXP_24 |
| | | FDI_TXP_25 |
| | | FDI_TXP_26 |
| | | FDI_TXP_27 |
| | | FDI_TXP_28 |
| | | FDI_TXP_29 |
| | | FDI_TXP_30 |
| | | FDI_TXP_31 |
| | | FDI_TXP_32 |
| | | FDI_TXP_33 |
| | | FDI_TXP_34 |
| | | FDI_TXP_35 |
| | | FDI_TXP_36 |
| | | FDI_TXP_37 |
| | | FDI_TXP_38 |
| | | FDI_TXP_39 |
| | | FDI_TXP_40 |
| | | FDI_TXP_41 |
| | | FDI_TXP_42 |
| | | FDI_TXP_43 |
| | | FDI_TXP_44 |
| | | FDI_TXP_45 |
| | | FDI_TXP_46 |
| | | FDI_TXP_47 |
| | | FDI_TXP_48 |
| | | FDI_TXP_49 |
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| | | FDI_TXP_56 |
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| | | FDI_TXP_67 |
| | | FDI_TXP_68 |
| | | FDI_TXP_69 |
| | | FDI_TXP_70 |
| | | FDI_TXP_71 |
| | | FDI_TXP_72 |
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| | | FDI_TXP_81 |
| | | FDI_TXP_82 |
| | | FDI_TXP_83 |
| | | FDI_TXP_84 |
| | | FDI_TXP_85 |
| | | FDI_TXP_86 |
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| | | FDI_TXP_89 |
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| | | FDI_TXP_101 |
| | | FDI_TXP_102 |
| | | FDI_TXP_103 |
| | | FDI_TXP_104 |
| | | FDI_TXP_105 |
| | | FDI_TXP_106 |
| | | FDI_TXP_107 |
| | | FDI_TXP_108 |
| | | FDI_TXP_109 |
| | | FDI_TXP_110 |
| | | FDI_TXP_111 |
| | | FDI_TXP_112 |
| | | FDI_TXP_113 |
| | | FDI_TXP_114 |
| | | FDI_TXP_115 |
| | | FDI_TXP_116 |
| | | FDI_TXP_117 |
| | | FDI_TXP_118 |
| | | FDI_TXP_119 |
| | | FDI_TXP_120 |
| | | FDI_TXP_121 |
| | | FDI_TXP_122 |
| | | FDI_TXP_123 |
| | | FDI_TXP_124 |
| | | FDI_TXP_125 |
| | | |

VCC3

NR62 8.2K/4 AK28 TACH6_GP70

NR63 8.2K/4 AT34 TACH7_GP71

H81/S

FDI_TXPI[0..1] >> F

FDI_TXNI[0..1] >> F

USB3.0:20/5/7/5/
8/4/4/4/8) ; ONL
Impedance=85 +-
Back Panel < 100
Front Panel < 60

CK_SRCCLK_PCH NR89 8.2K/4
CK_SRCCLK_PCH NR88 8.2K/4

Mount for integrated clock Generation

NR25 short to GND in non

[illegible]

```
H77 HEATSINK | OC[3:0]# f  
|  
| OC[7:4]# f
```


| USB Connector Pinout | |
|----------------------|--|
| OC0# | |
| OC1# | |
| OC2# | |
| OC3# | |
| OC4# | |
| OC5# | |
| OC6# | |
| OC7# | |

| | |
|---------|-----|
| GRAY HS | Gig |
| Title | PCH |

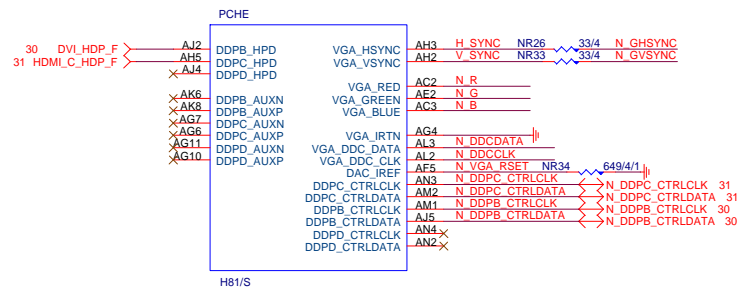
| | |
|--------|------------------|
| Size | Document Number |
| Custom | |
| Date: | Tuesday, April 2 |

```
OC[3:0]# for Device 29 (ports 0-7)
OC[7:4]# for Device 26 (ports 8-13)
```

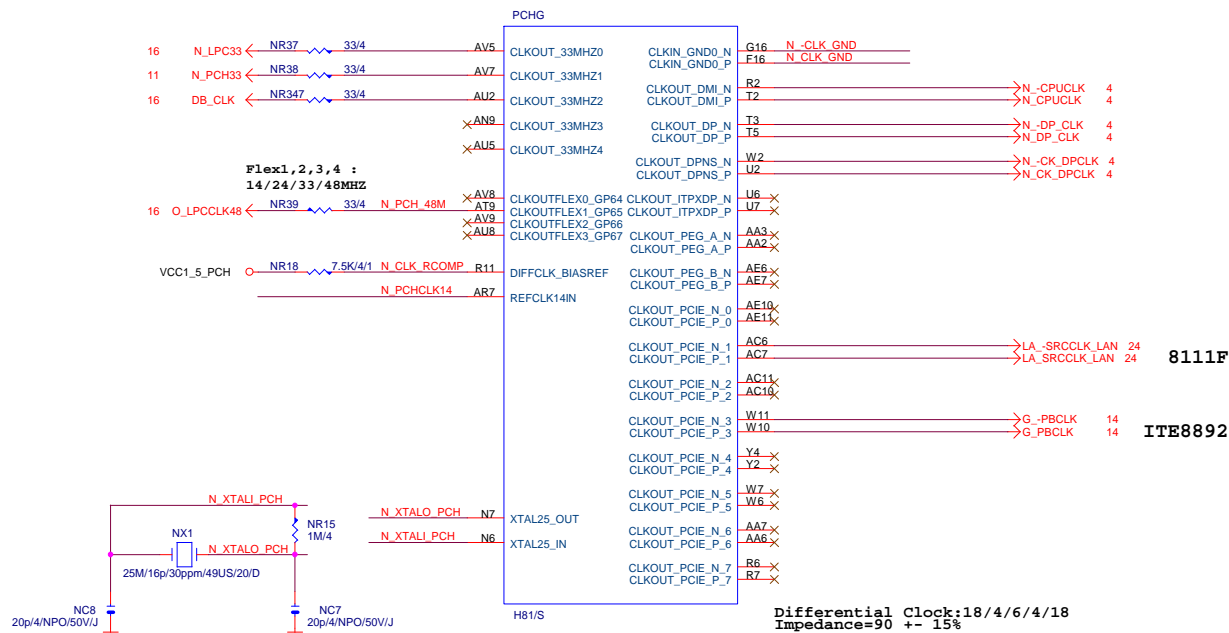
| USB OC# Configure | |
|-------------------|-----------|
| OC0# | USB30_LAN |
| OC1# | KB_MS_USB |
| OC2# | USB_DAC |
| OC3# | N/A |
| OC4# | F_USB |
| OC5# | USB_HDMI |
| OC6# | N/A |
| OC7# | Not Use |

| | | | | |
|---|---------------------------------------|-------|---------|------------|
|  | | | | |
| PCH FDI,DMI,USB ,PCIE,NVRAM | | | | |
| Size Custom | Document Number GA-H81N-D2H | | | Rev 1.0 |
| Date: | Tuesday, April 29, 2014 | Sheet | 9 of 31 | |

PCH (E)



PCH (G)



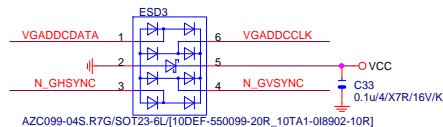
PCH CLK PD



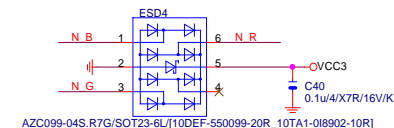
Mount for integrated clock Generation
Mode



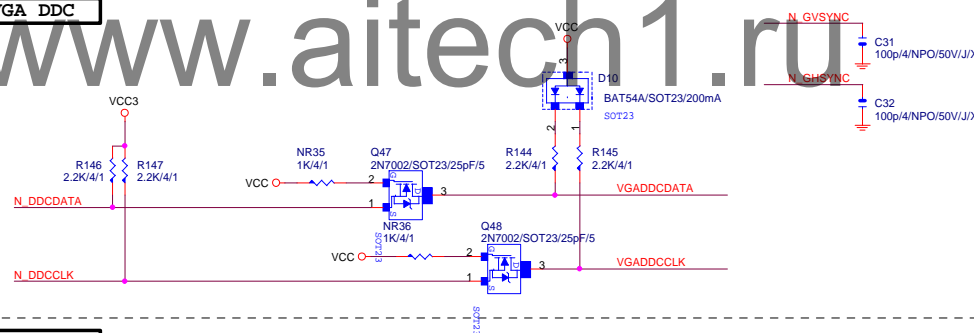
VGA ESD



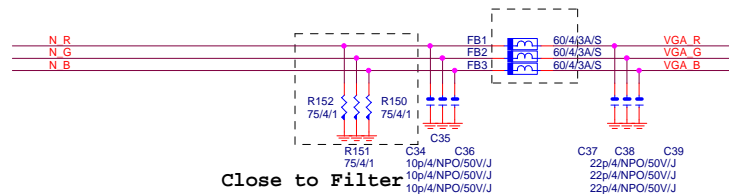
SSOP6 ESD



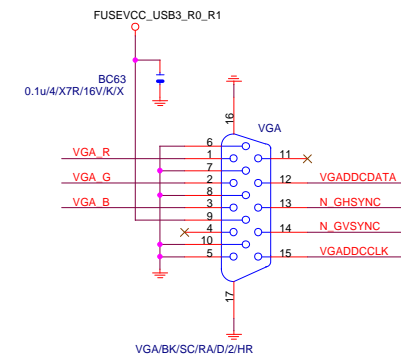
VGA DDC



VGA DDC



VGA CONNECTOR



BLACK CONNECTOR

Gigabyte Technology

PCH DISPLAY ,CLK BUFFER

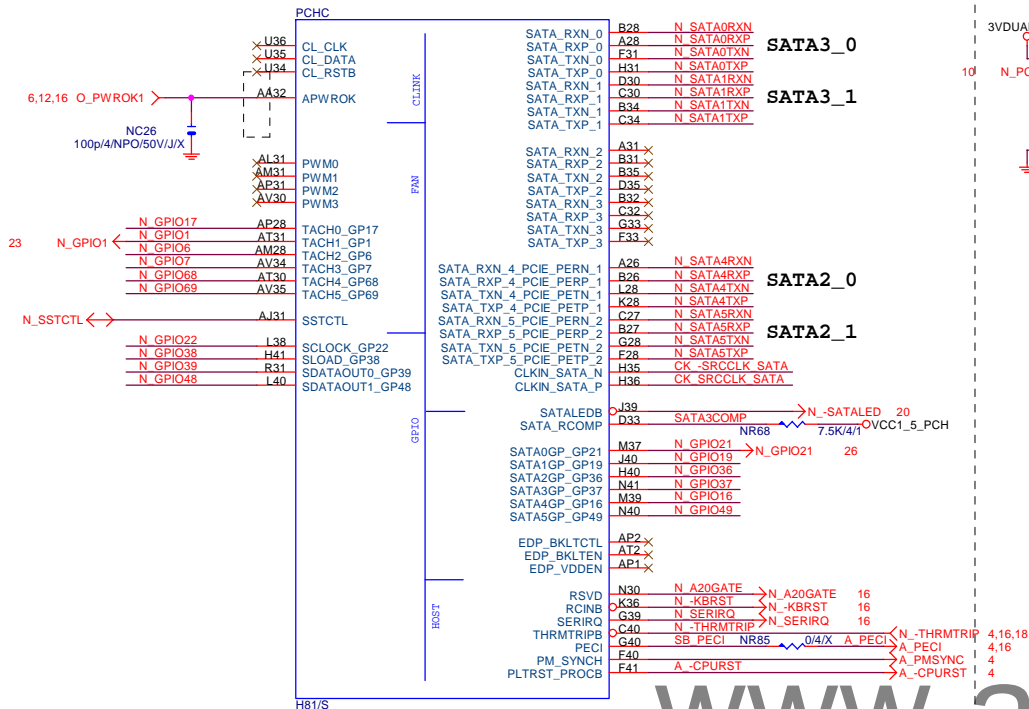
GA-H81N-D2H

| | | | | | |
|-------|-------------------------|-------|----|----|----|
| Date: | Tuesday, April 29, 2014 | Sheet | 10 | of | 31 |
|-------|-------------------------|-------|----|----|----|

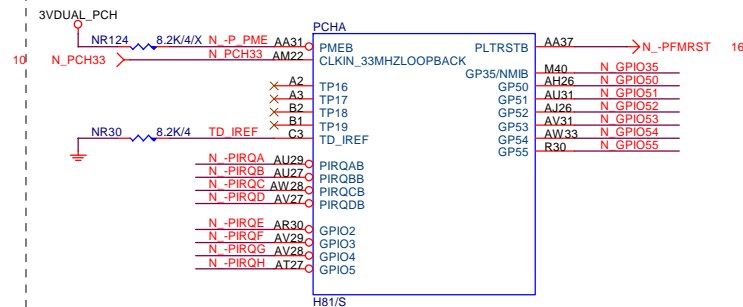
| | |
|--|---|
| | 1 |
|--|---|

PCH (C)

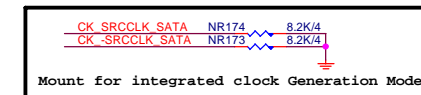
SATA3 : 20/7.5/4.5/7.5/20 (breakout min 8/4/4/4/8)
 Impedance=90 +- 17.5%
 SATA2 : 15/7.5/4.5/7.5/15 (breakout min 8/4/4/4/8)
 Impedance=90 +- 17.5%



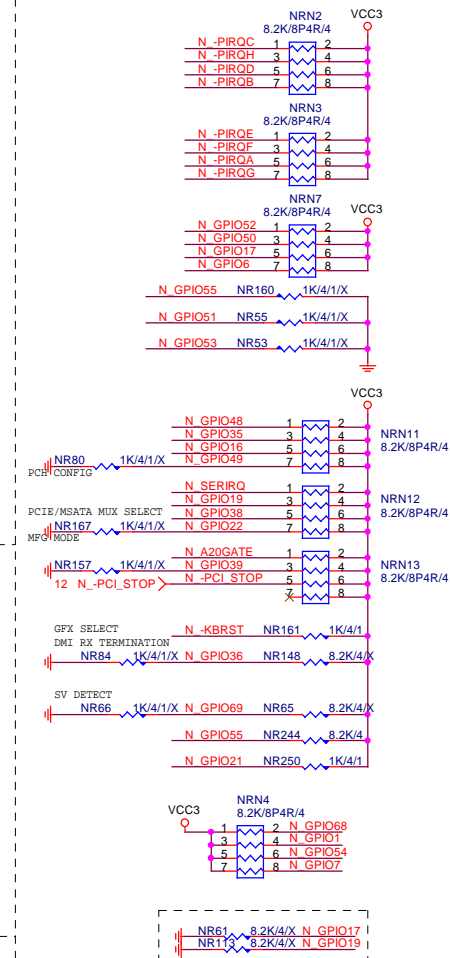
PCH (A)



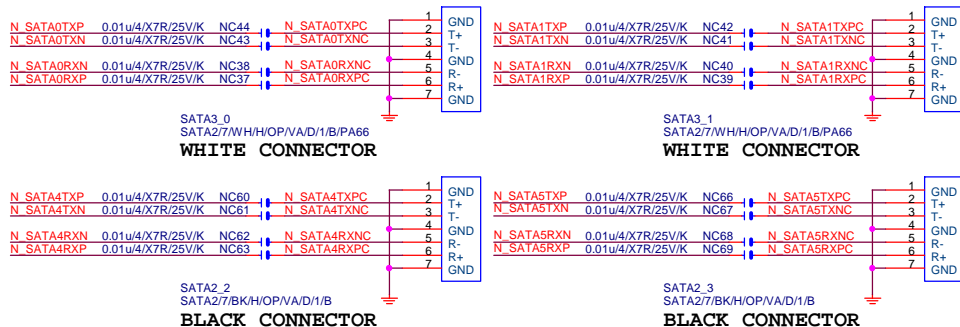
PCH CLK PD



PCH PU/PD



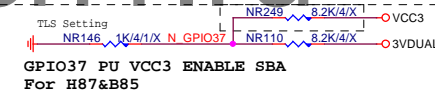
SATA CONNECTOR



ME PWROK

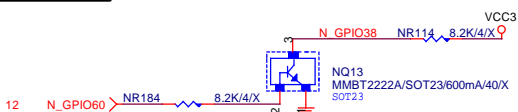
Z87 N/A

Z87+I217V



Remove M3 Power

GPIO38 Ctrl



** Z87/H87 Port 4&5 SATA3.0

** B85 Port 4&5 SATA2.0

N/A

H81 Port 2/3 N/A

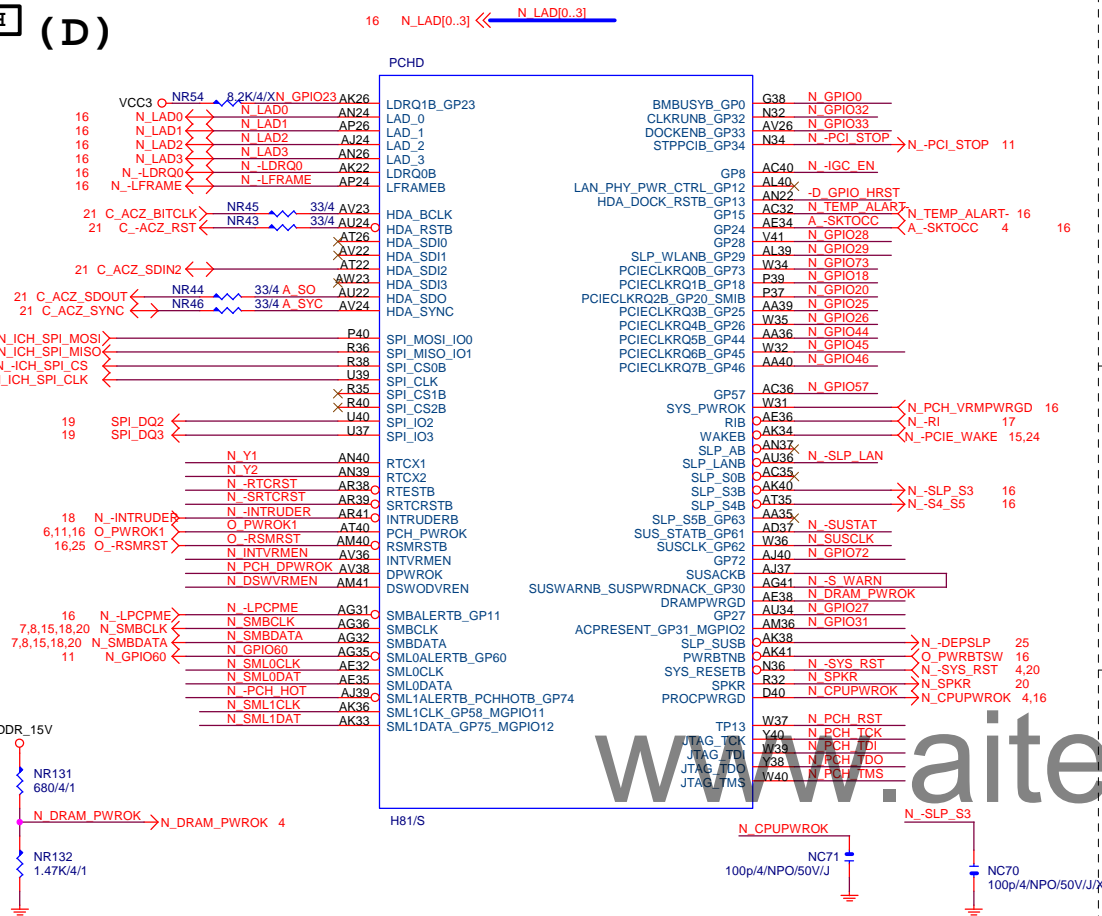
Gigabyte Technology

PCH HOST , SATA, PCI

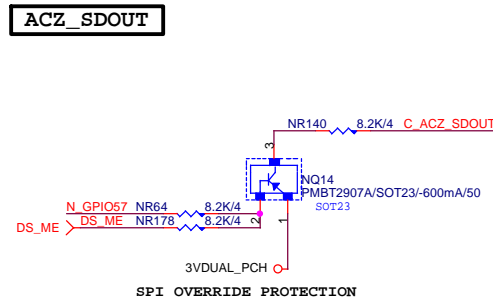
GA-H81N-D2H

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|-------|-------------------------|----------------|
| Title | Document Number | Rev |
| Size | Custpm | 1.0 |
| Date | Tuesday, April 29, 2014 | Sheet 11 of 31 |

(D)

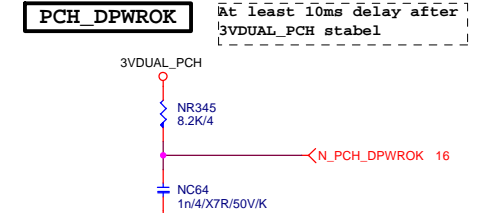


ACZ_SDOUT

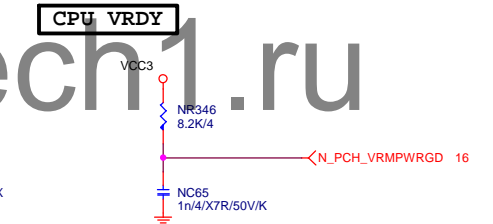


PCH_DPWROK

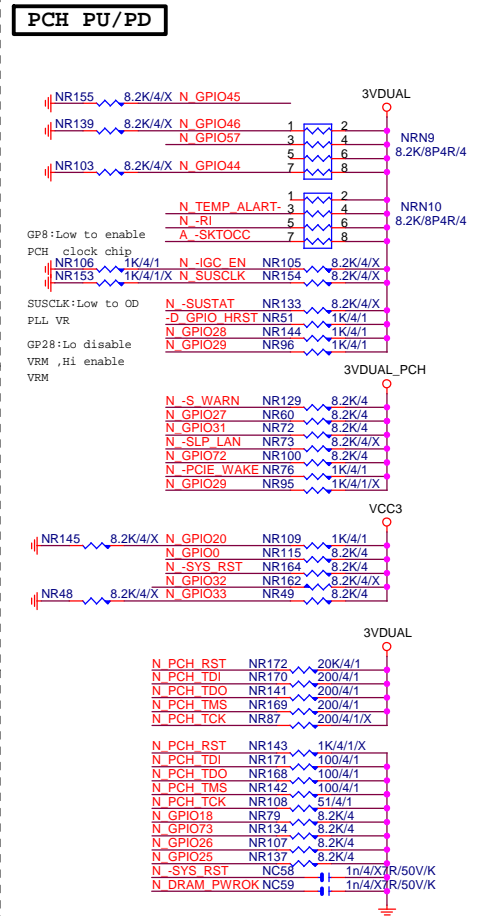
```
At least 10ms delay after
3VDUAL_PCH stabel
```



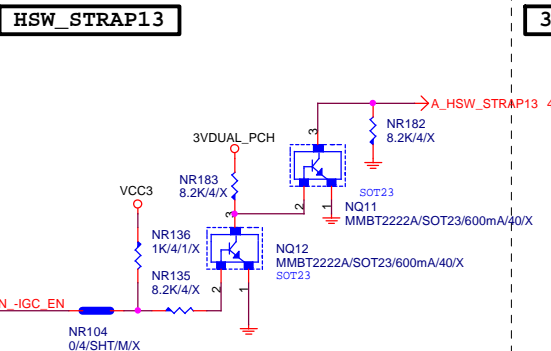
CPU VRDY



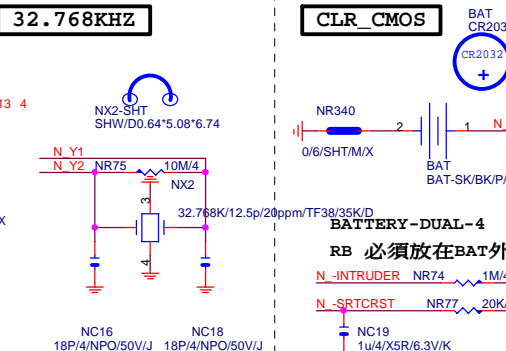
| PCH | PU/PD |
|-----|-------|
|-----|-------|



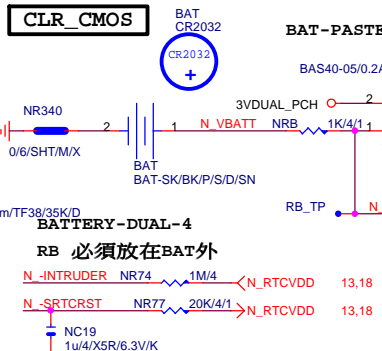
HSW_STRAP13



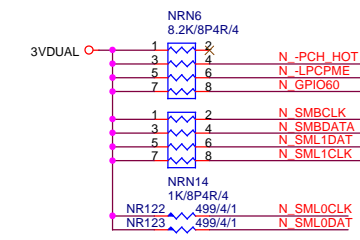
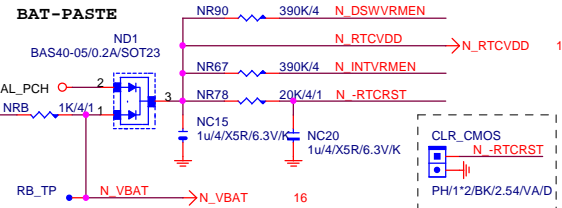
32.768KHZ



| |
|----------|
| CLR_CMOS |
|----------|



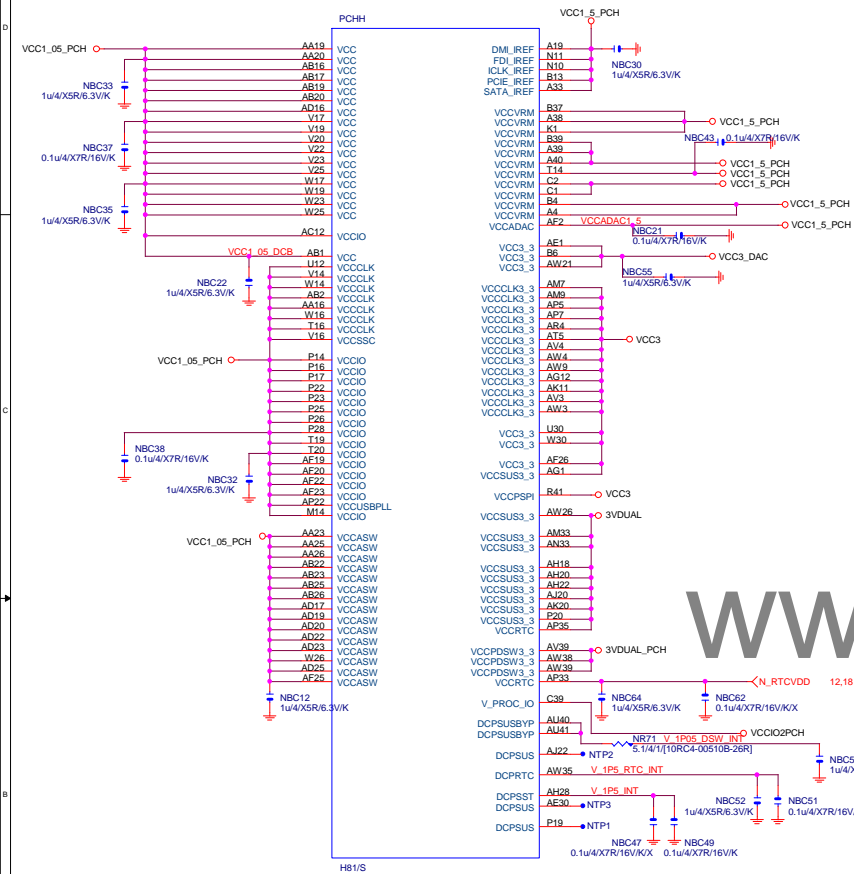
BAT-PASTE



Gigabyte Technology

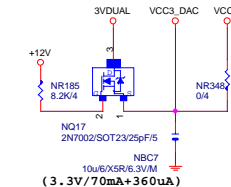
| | | | |
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| Gigabyte Technology | | | |
| Title PCH GPIO , CTRL , AUDIO | | | |
| Size Custom | Document Number GA-H81N-D2H | Rev 1.0 | |
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PCH (H)

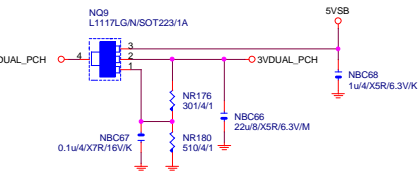


VCC3_DAC

CLOSE北橋(注意震盪水波紋)



3VDUAL_PCH



SHT_PWR

M3 POWER

CAP

(3.3V) (X6)

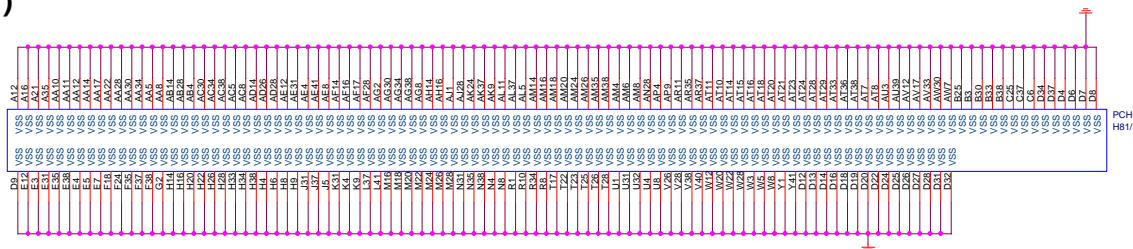
(1.05V) (X5)

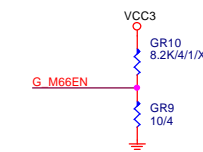
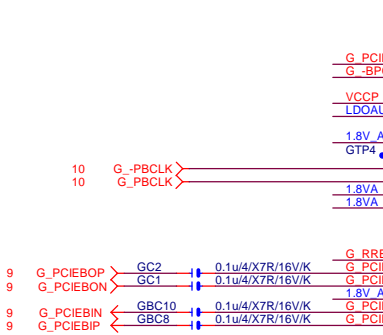
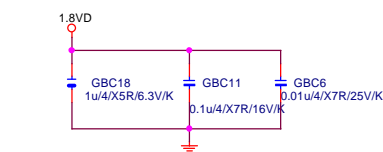
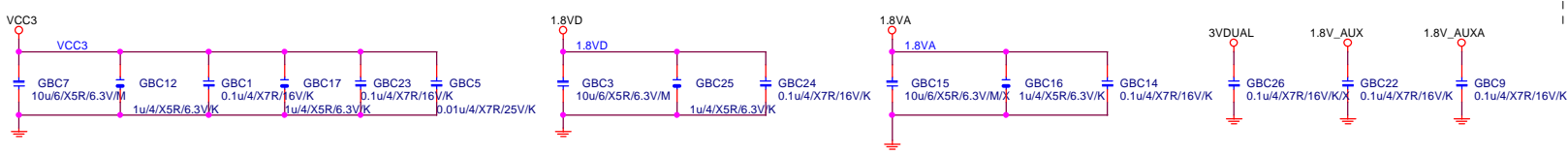
(1.05V) (X6)

(1.05V) (X2) (3.3V) (X2)

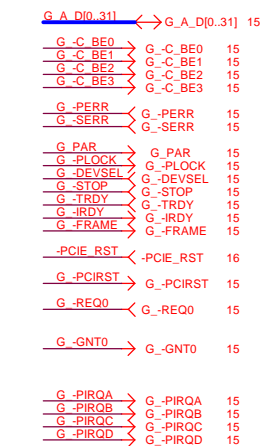
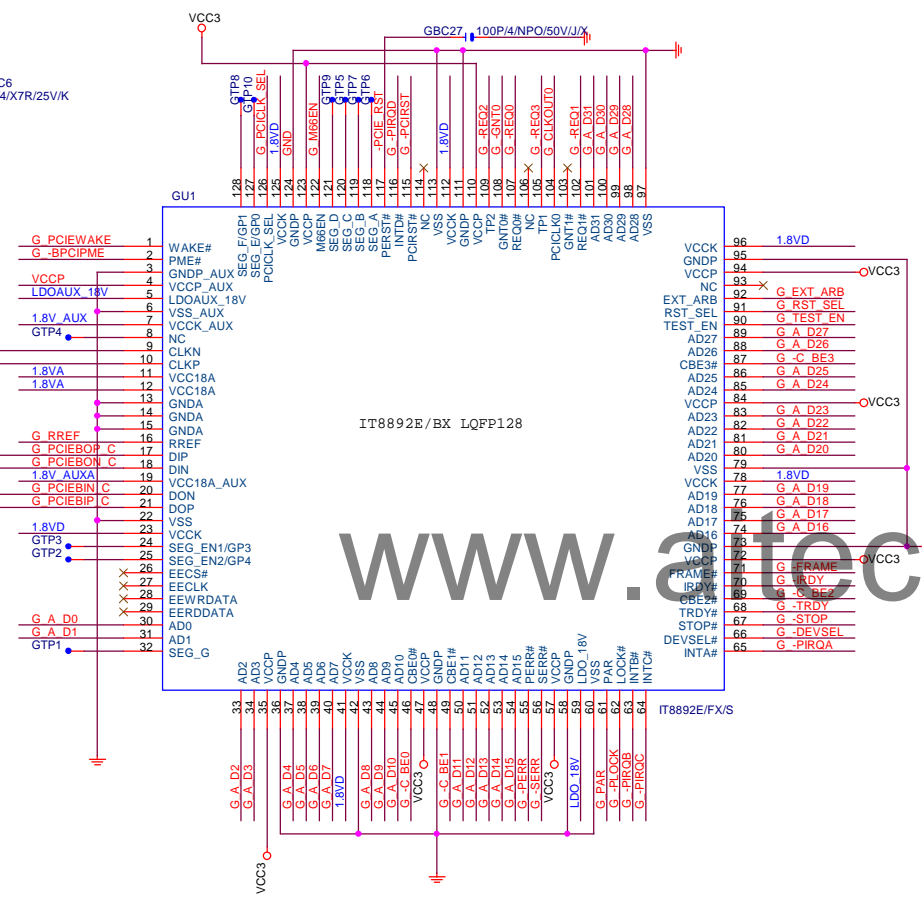
(1.05V) (X10)

PCH (I)

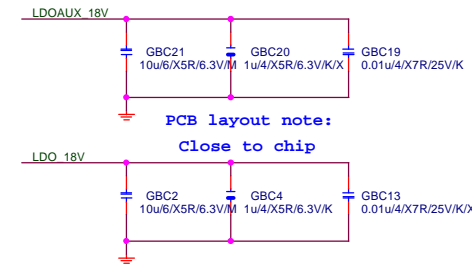
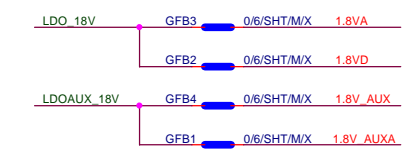




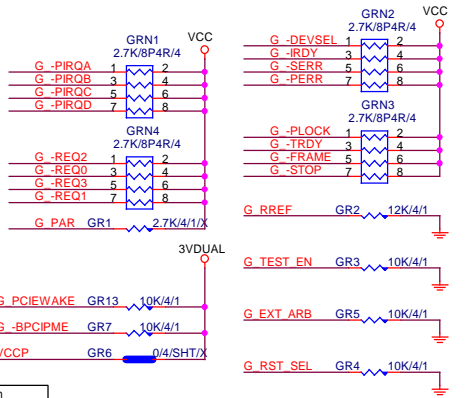
High: Enable PCI CLK 66MHz
Low: Disable PCI CLK 66MHz



High: PCICLK INPUT form CLK Gen
Low: PCICLK OUTPUT form IT8893 chip

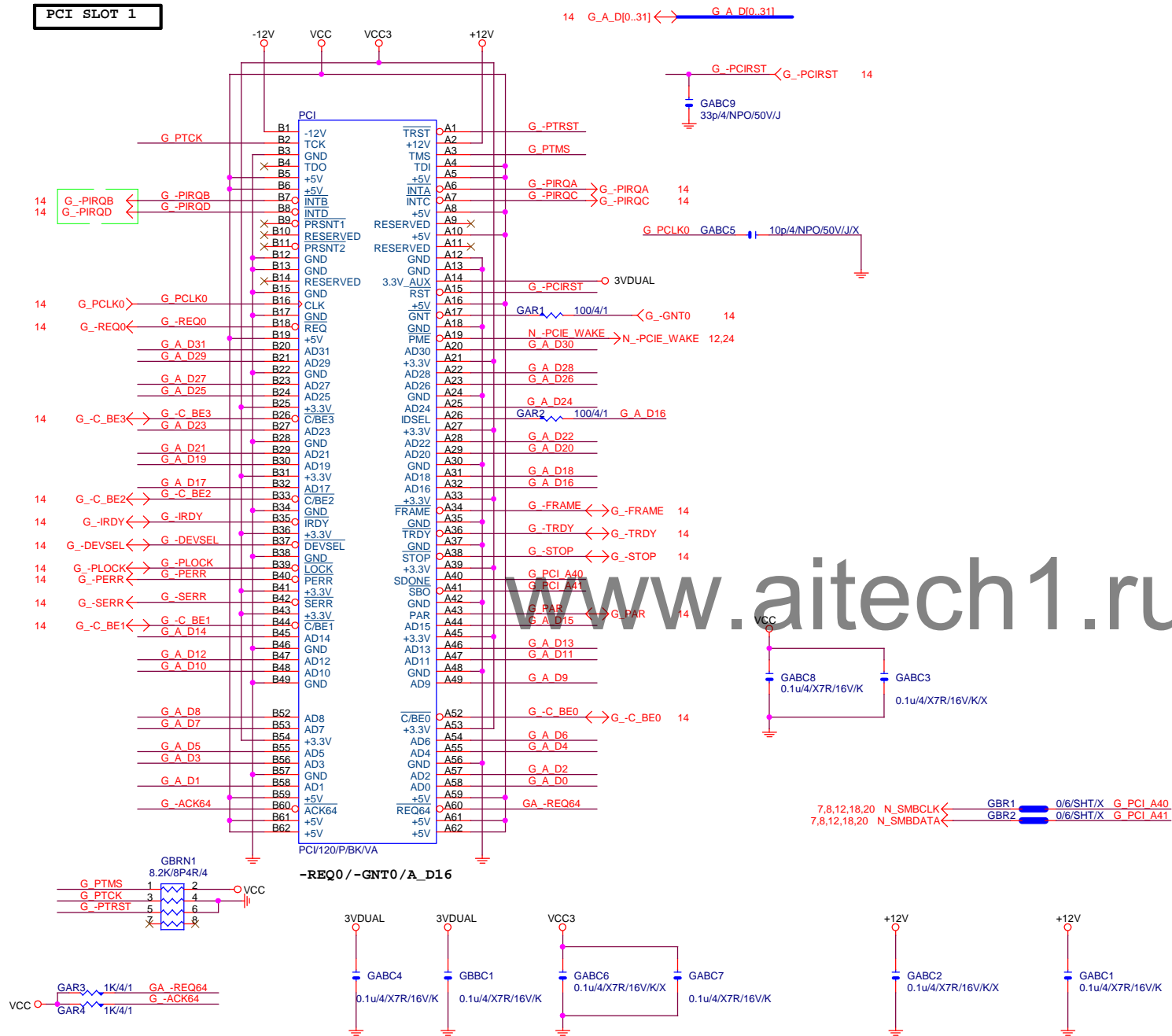


PCB layout note:
Close to chip



| Gigabyte Technology | | | |
|---------------------|-------------------------|-------|----------|
| Title | | | |
| IT8892E | | | |
| Size | Document Number | Rev | |
| Custom | GA-H81N-D2H | 1.0 | |
| Date: | Tuesday, April 29, 2014 | Sheet | 14 of 31 |

PCI SLOT 1



GIGABYTE™

Title
PCI SLOT

Size B Document Number

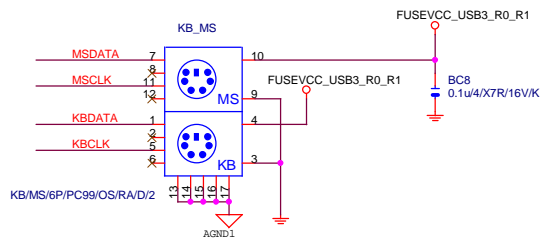
GA-H81N-D2H

Rev
1.0

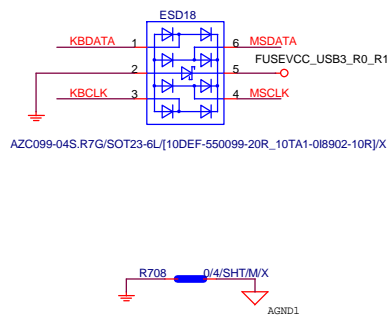
Date: Tuesday, April 29, 2014

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KB/MS



KB_MS ESD

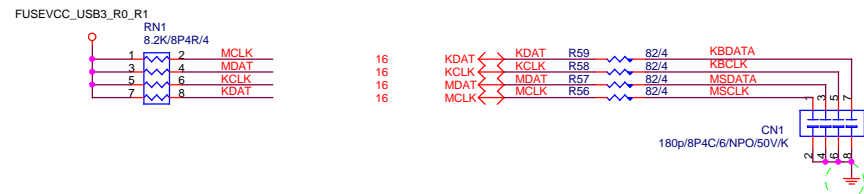


USB2.0 PWR

USB2.0 ESD

FOR鹽化短路

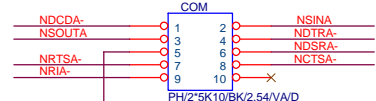
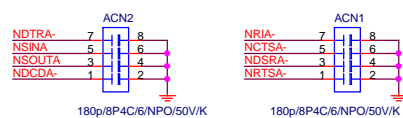
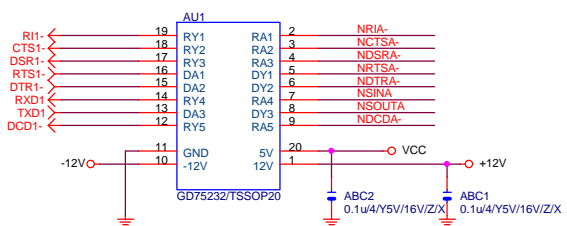
KB_MS



USB2.0 Short Power Protection

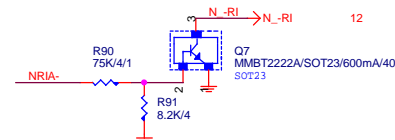
USB2.0 Signal & power short protection
 USB2.0 Signal > 4.85V
 Enable --> 3VDUAL = 3.75V

COM



PIN2X5-CUT10-COM

COM RI

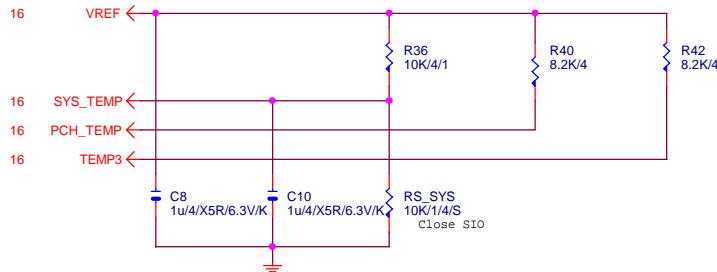


Gigabyte Technology

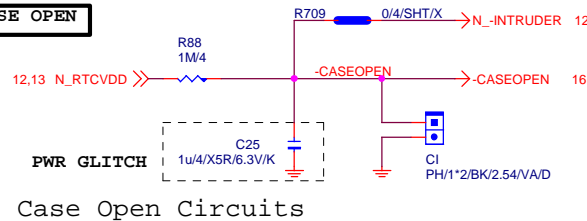
| | | |
|---------------------|-------------------------|----------------|
| Title | | |
| COM,-RI,KB,-PROCHOT | | |
| Size | Document Number | Rev |
| Custom | GA-H81N-D2H | 1.0 |
| Date: | Tuesday, April 29, 2014 | Sheet 17 of 31 |

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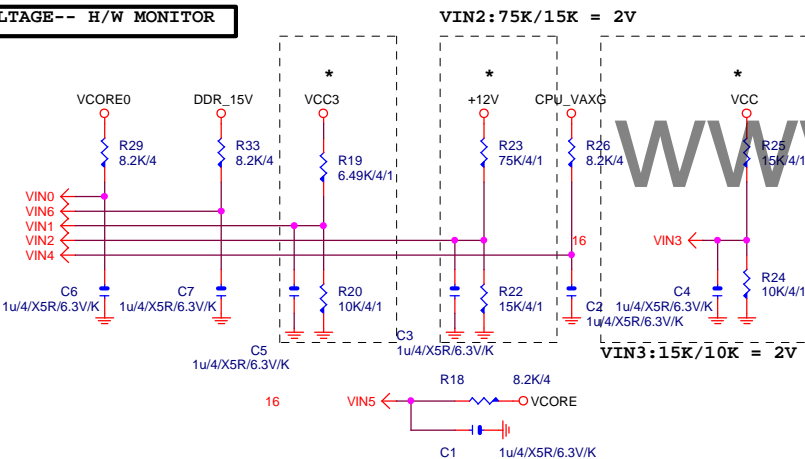
TEMP H/W MONITOR



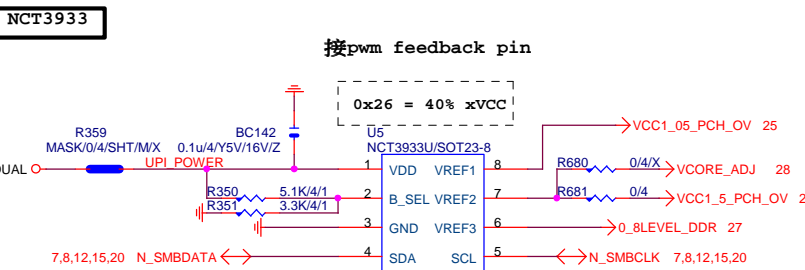
CASE OPEN



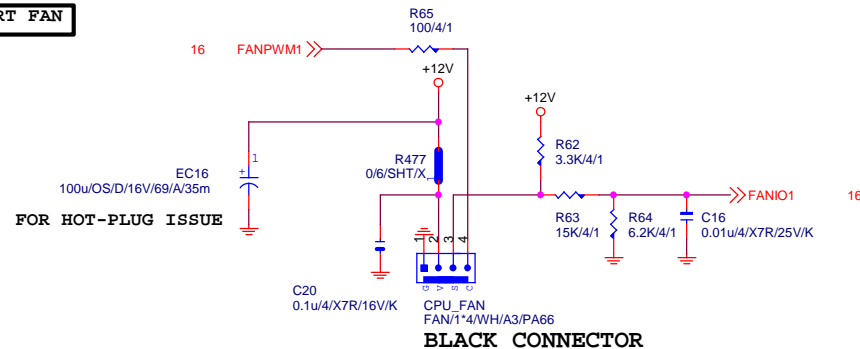
VOLTAGE-- H/W MONITOR



OV NCT3933

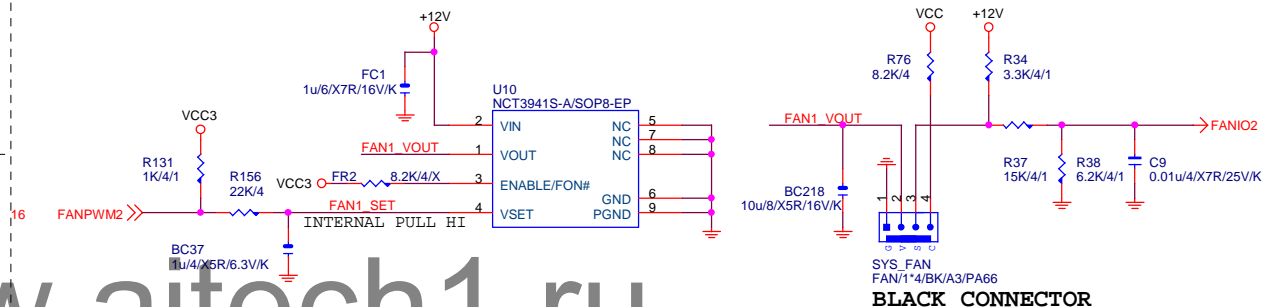


CPU SMART FAN

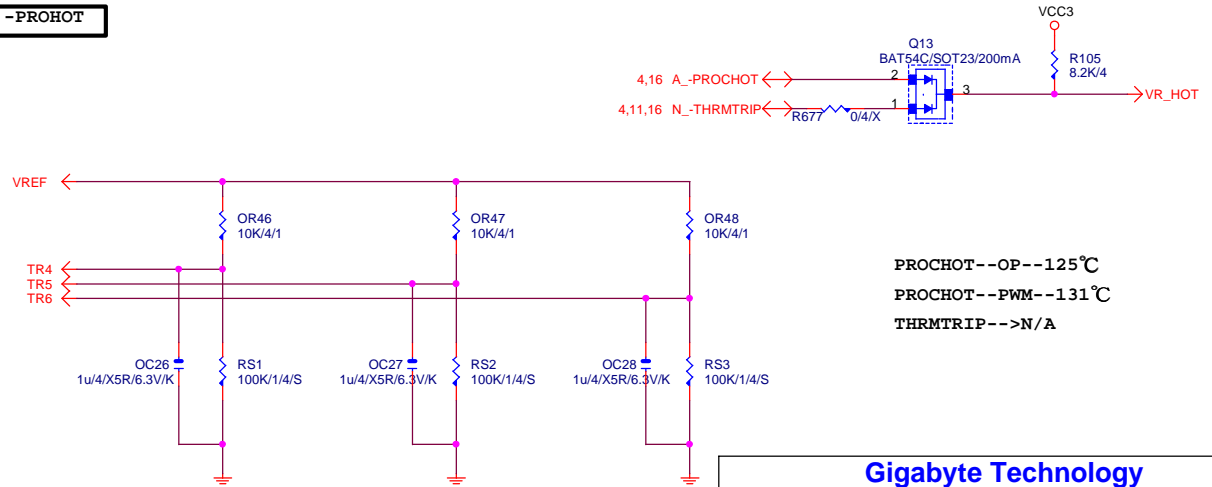


SYS SMART FAN

Linear SYS_FAN



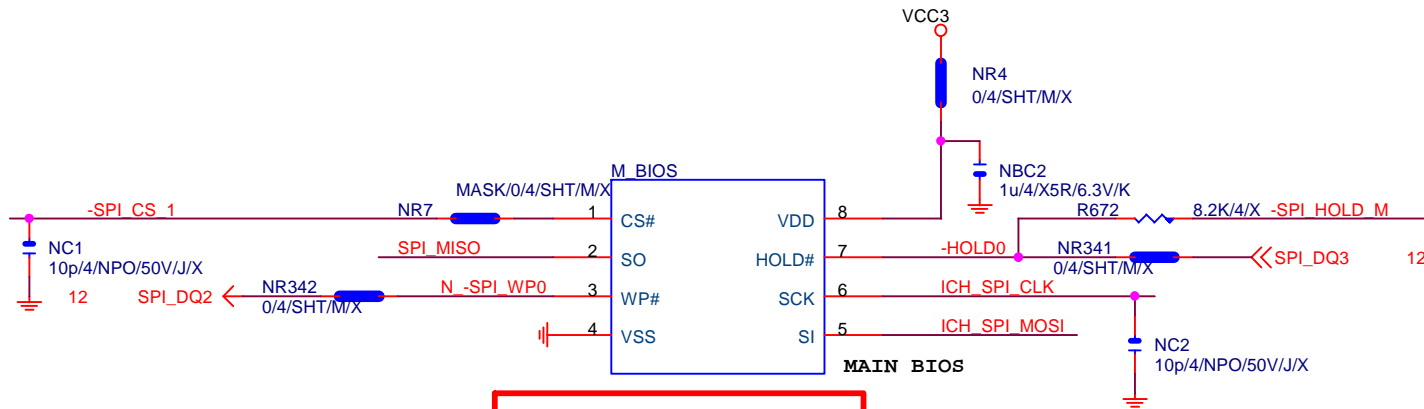
-PROHOT



RS1、RS2、RS3 CLOSE CPU
VR MOSFET

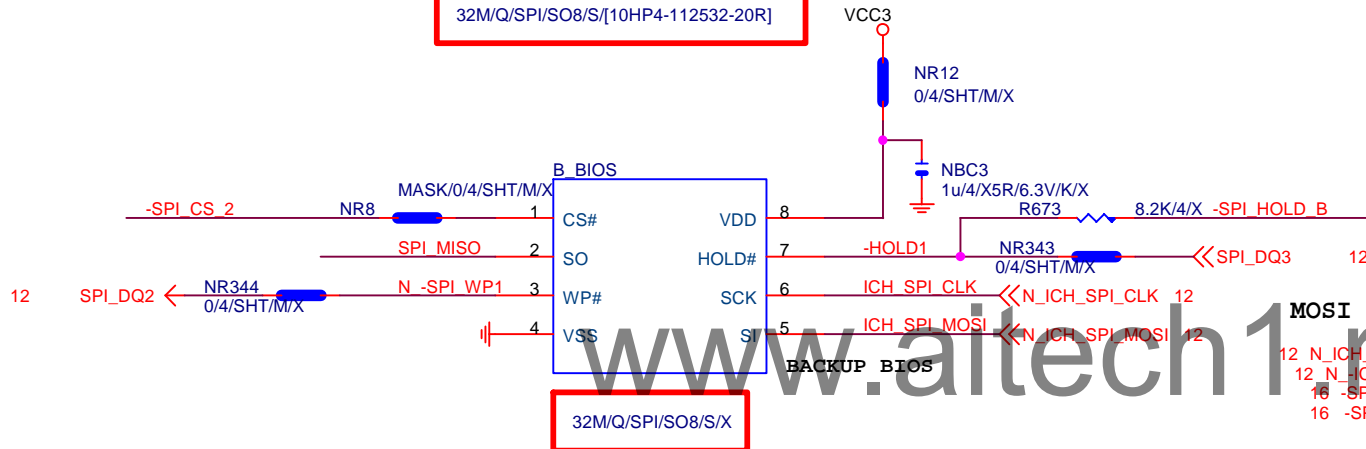
Gigabyte Technology

| | | | |
|--------|-------------------------|-------------|-----------------|
| Title | | | HWM,FAN CTRL,OV |
| Size | Document Number | GA-H81N-D2H | |
| Custom | | Rev 1.0 | |
| Date: | Tuesday, April 29, 2014 | Sheet | 18 of 31 |

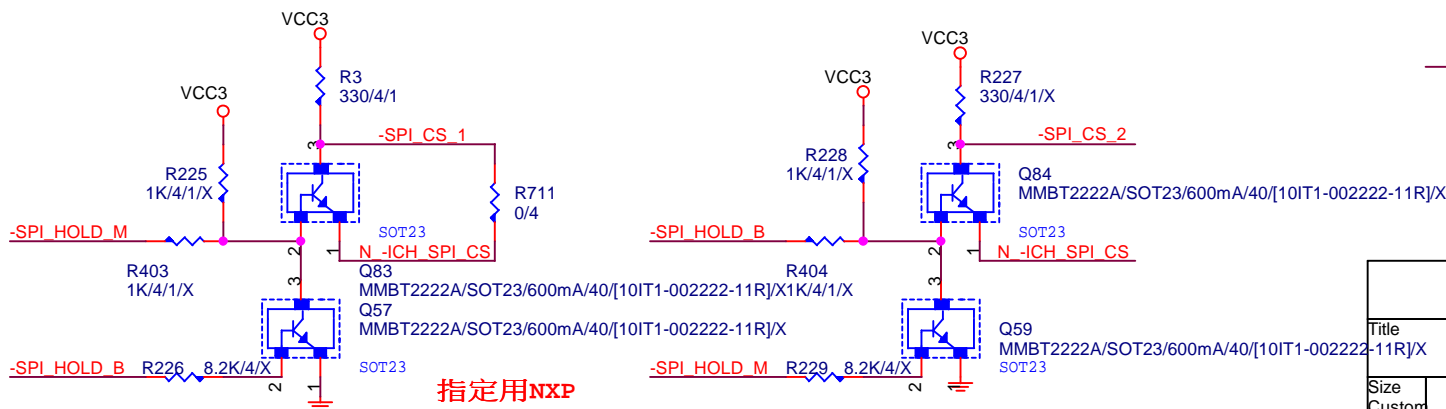
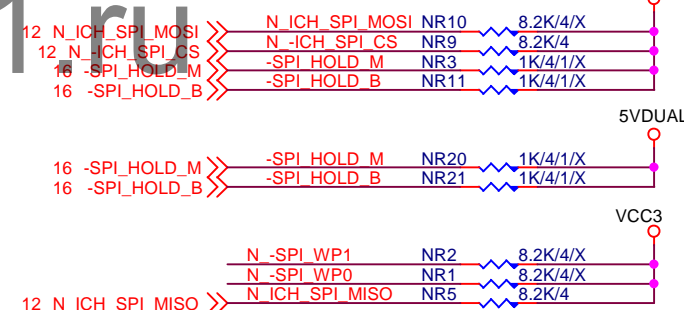


| BOOT DEVICE | GNT0 | GNT1 |
|-------------|------|------|
| LPC | 0 | 0 |
| PCI | 0 | 1 |
| NAND | 1 | 0 |
| SPI | 1 | 1 |

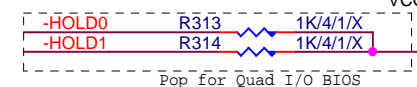
1 means floating
0 means PD 1K



MOSI For DMI RX Termination Voltage



CHECK



Gigabyte Technology

DUAL BIOS

GA-H81N-D2H

| | | |
|-------------------------------|-----------------|-----|
| Title | Document Number | Rev |
| Size Custom | GA-H81N-D2H | 1.0 |
| Date: Tuesday, April 29, 2014 | Sheet 19 of 31 | |

F_USB30

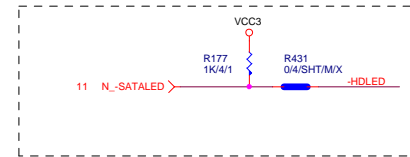
Remove F_USB30

F_USB30 PWR

Polyswitch-1206

Remove F_USB30

SATA LED



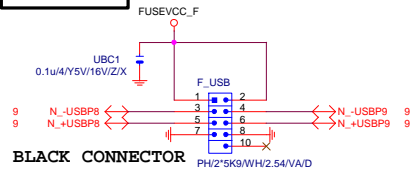
F_USB30 ESD PROTECT

Remove F_USB30

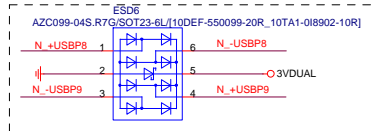
SPKR



FRONT USB1

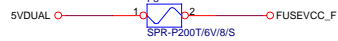


BLACK CONNECTOR



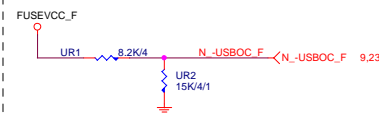
Close to connector

FUSEVCC_F

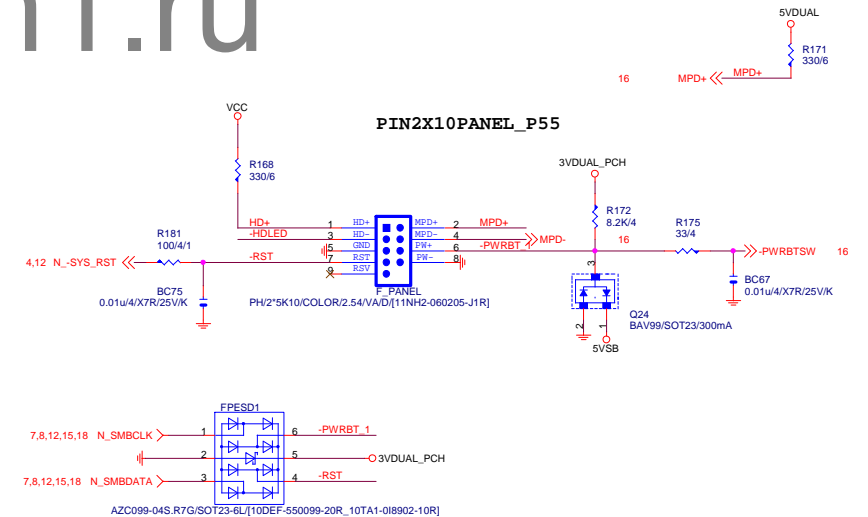


-USBOC_F

F_USB1



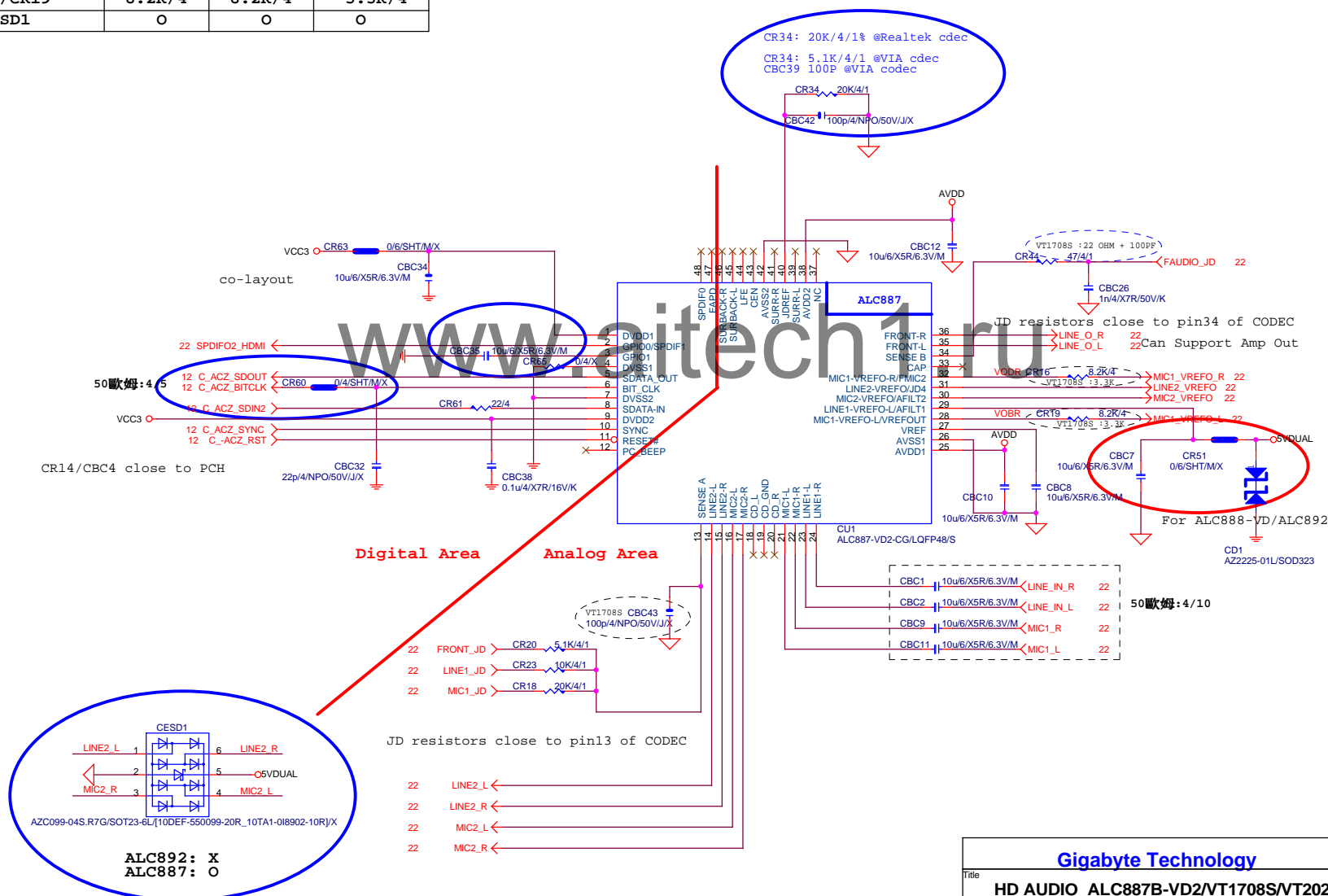
INTEL FRONT PANEL



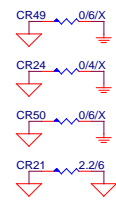
Gigabyte Technology

| Title | | | |
|--------------------------------|-------------------------|-------|----------|
| FP,F_USB,USB PWR,SPKR,SATA LED | | | |
| Size | Document Number | Rev | |
| Custom | GA-H81N-D2H | 1.0 | |
| Date: | Tuesday, April 29, 2014 | Sheet | 20 of 31 |

| | | | |
|--|-----------|------------|------------|
| | ALC892 | ALC887-VD2 | VT1708S-CE |
| CR44/CBC26 | 47ohm+1nF | 47ohm+1nF | 22ohm+100P |
| CBC42/CBC43 | X | X | 100P/4 |
| CR6/CR7/CR58/CR54/ CR67/CR68/CR69/CR70/ CR2/CR4 | 22K/4 | 22K/4 | 10K/4/1 |
| CR5/CR8/CR1/CR14/ CR17/CR22/CR73/CR74/ CR13/CR11/CR57/CR53/ CR75/CR76/CR27/CR29 | 62 ohm | 62 ohm | 75 ohm |
| CR16/CR19 | 8.2K/4 | 8.2K/4 | 3.3K/4 |
| CESD1 | O | O | O |

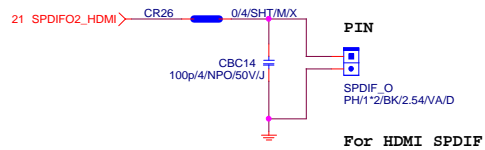


CODEC POWER/EMI PAD

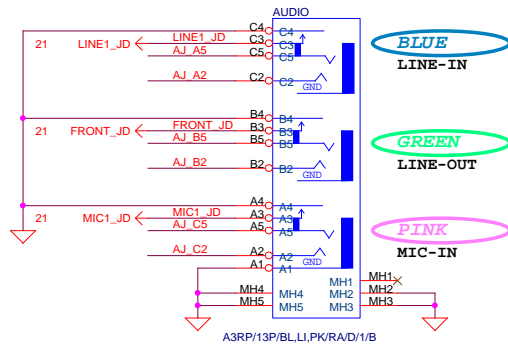


ADD CD2 For ESD PROTECT DIODE

SPDIF_OUT

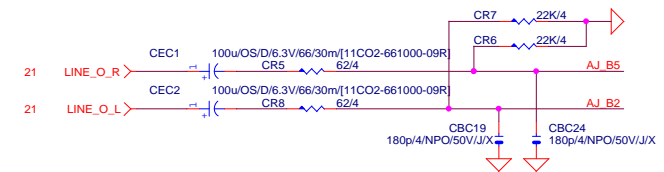


AZALIA JACK



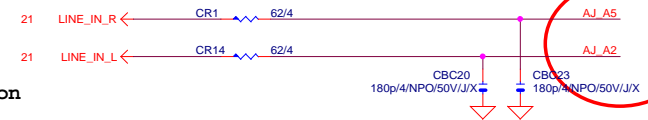
A3RP/13P/BL,LI,PK/RA/D/1/B

LINE-OUT



Only reserved for ALC888

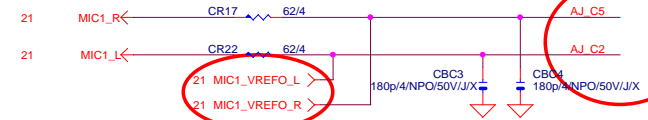
LINE-IN



Verify MIC function in LINE-in

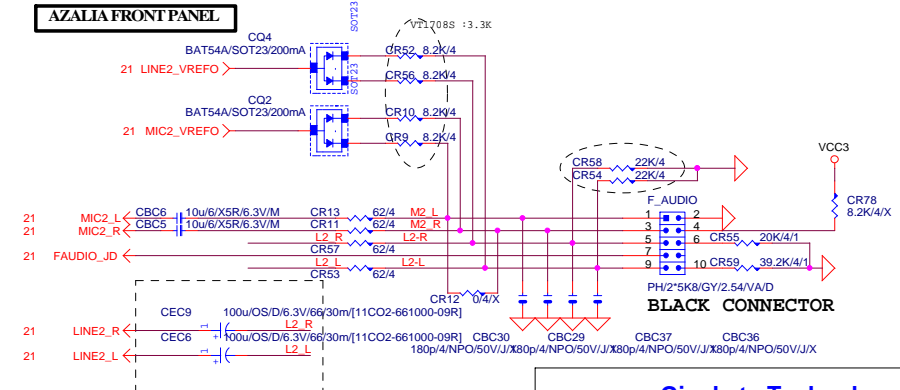
For 889A/888

MIC-IN



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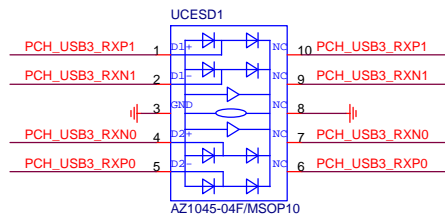
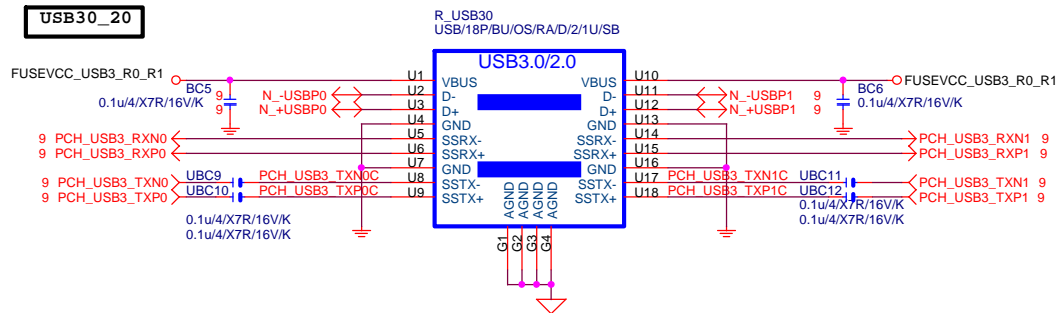
AZALIA FRONT PANEL



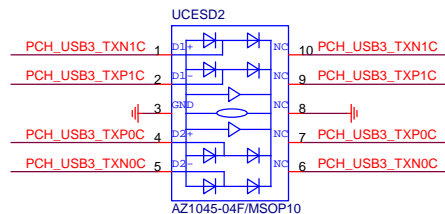
Gigabyte Technology

| Title | | |
|------------|-------------------------|----------------|
| AUDIO JACK | | |
| Size | Document Number | Rev |
| Custom | GA-H81N-D2H | 1.0 |
| Date: | Tuesday, April 29, 2014 | Sheet 22 of 31 |

USB30_20

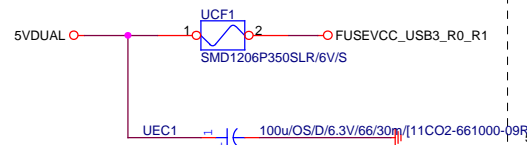


Close to connector

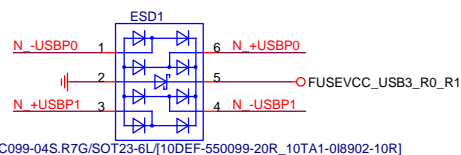


Close to connector

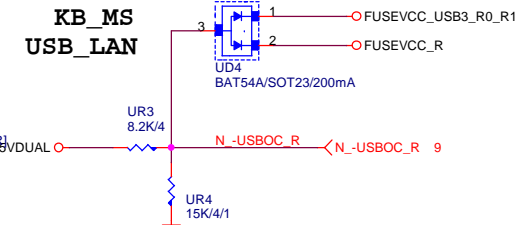
Polyswitch-1206



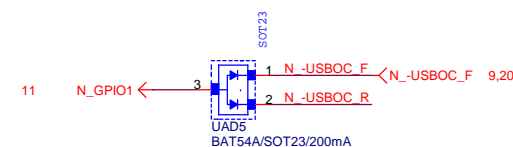
USB3.0 2Port - 1Fuse



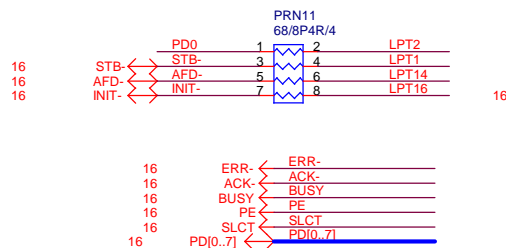
-USBOC_R



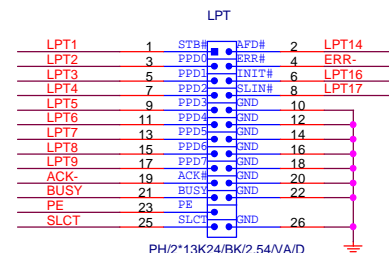
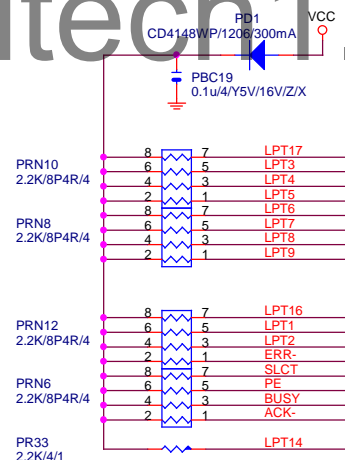
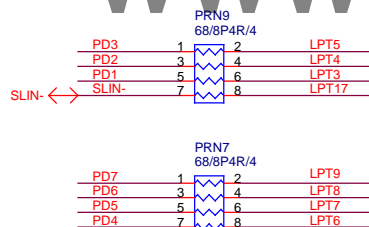
USB POWER PROTECT



LPT PORT

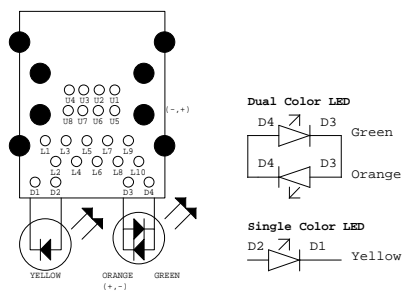
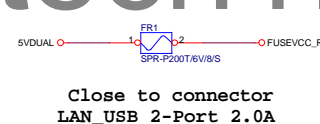
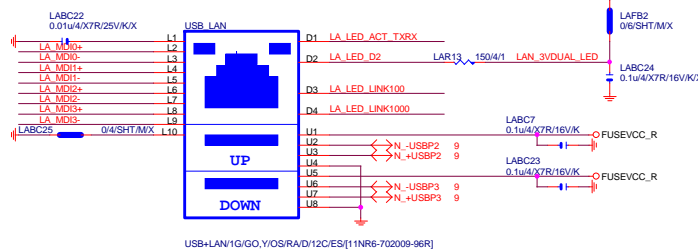
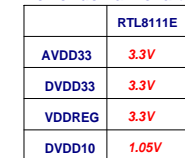
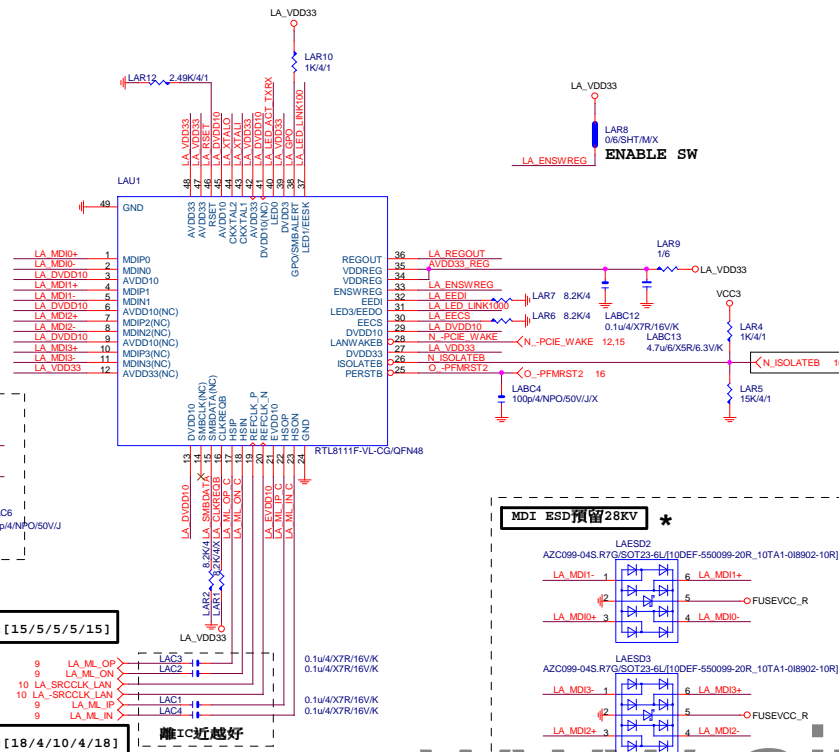


【技術通報R&D技術通報151】
33ohm Change to 68ohm



Gigabyte Technology

| Title | | |
|--------------|-------------------------|----------------|
| USB3.0 , LPT | | |
| Size | Document Number | Rev |
| B | GA-H81N-D2H | 1.0 |
| Date: | Tuesday, April 29, 2014 | Sheet 23 of 31 |

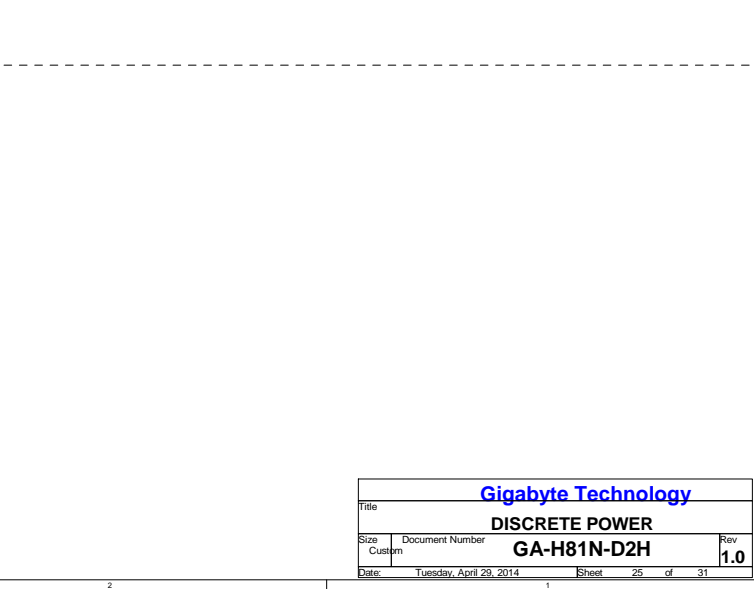
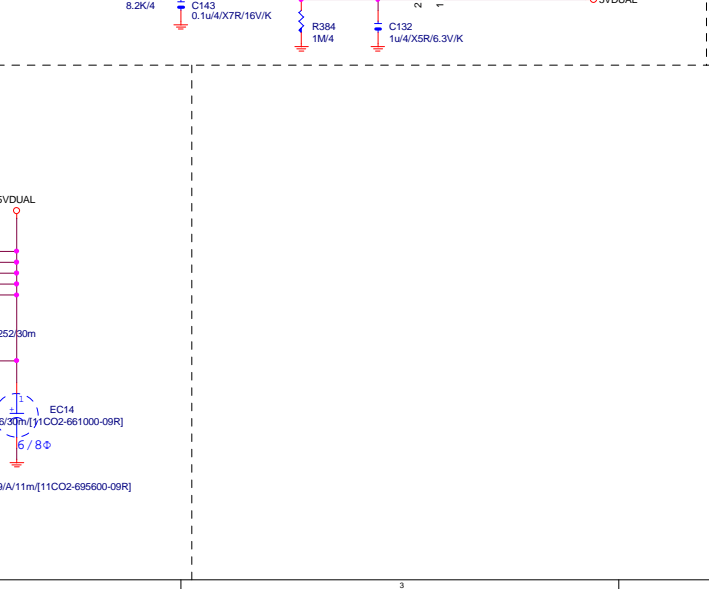
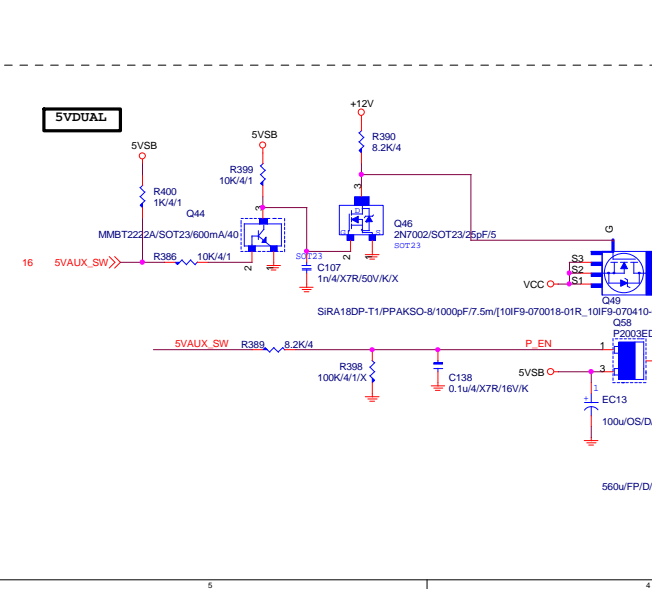
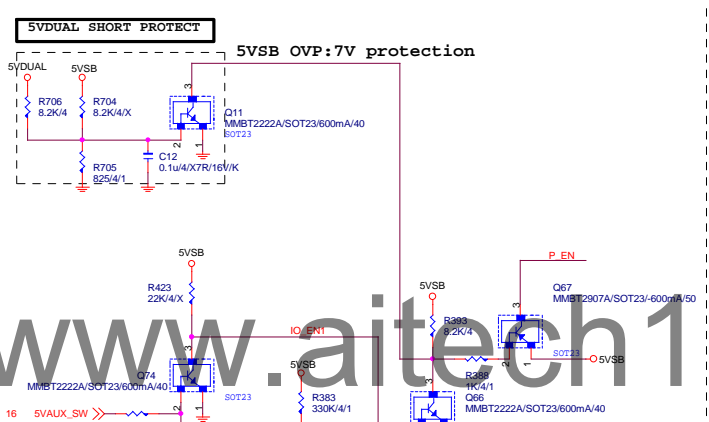
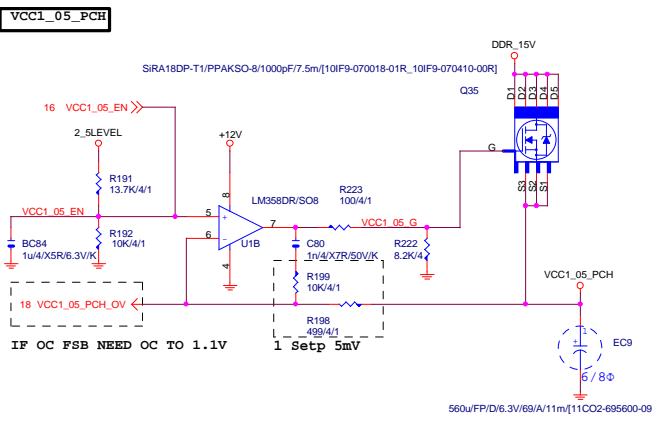
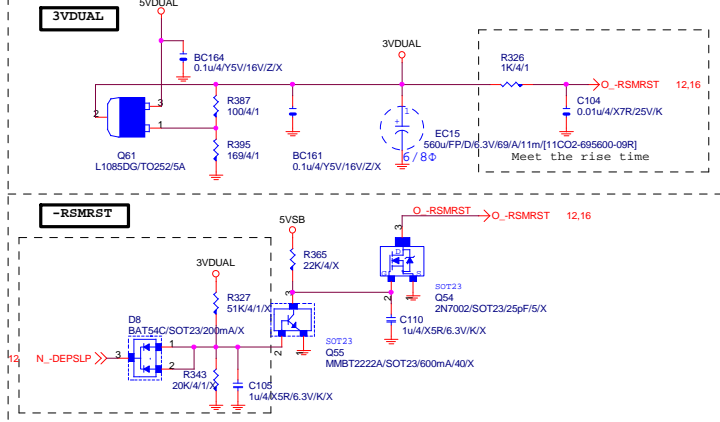
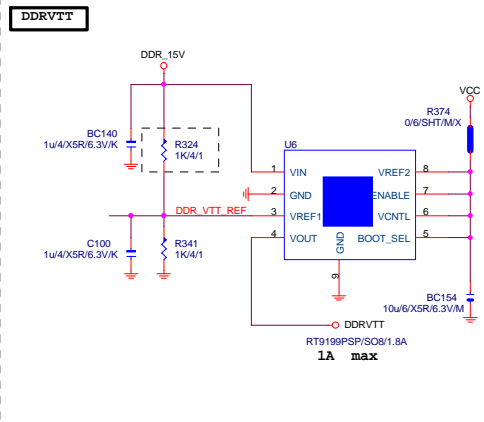
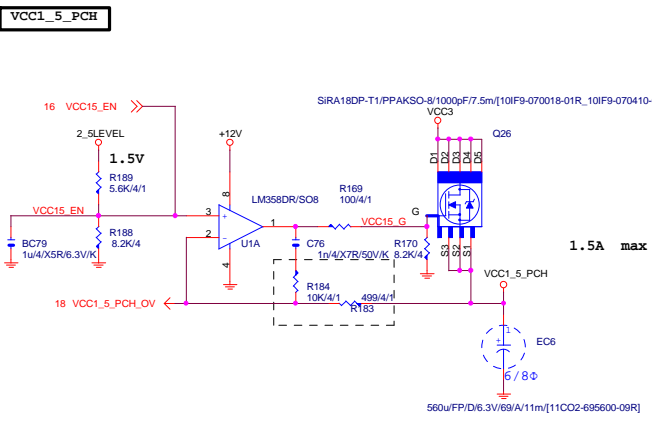


注意:USB PORT(目前:暫代6,7PORT)
USB-->90歐姆:[15/4.5/7.5/4.5/15]

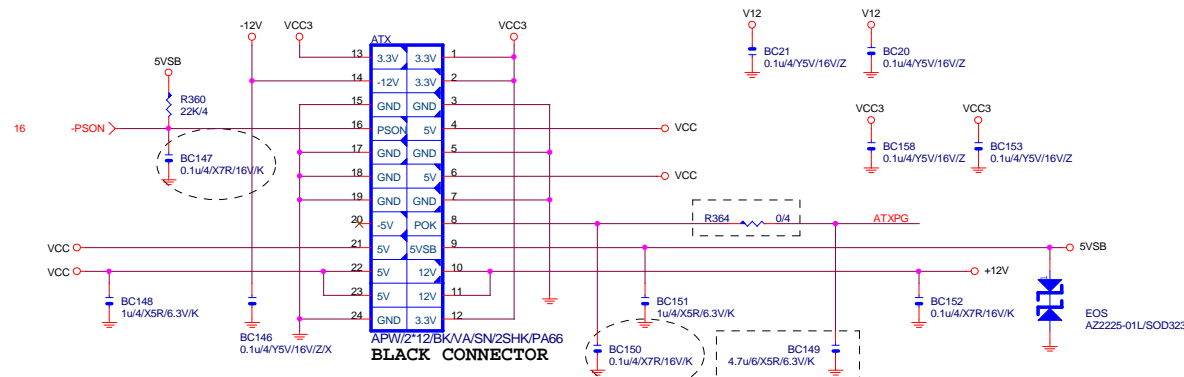
BOM NOTICE *

| 料號 | 規格 | 廠商 |
|--------------------------------|-----------------|---------------|
| 11NR6-702009-96R | 1G LAN (12core) | UDE(RU9 ESD+) |
| [LED獨立走線,可省略外加AZC099料件-LAESD1] | | |

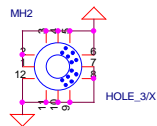
1. 9KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
2. 28KV ESD BOM:
USB_LAN (RU9):11NR6-702009-96R
LAESD2, LAESD3: 上件:AZC398-04S



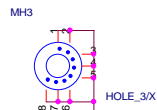
ATXX24 POWER CONNECTOR



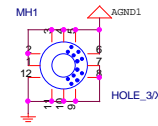
MB LOCATION



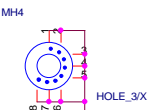
HOLE_4-RH-5MM-1



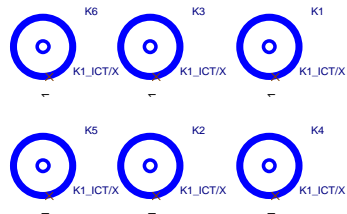
HOLE_4-RH-5MM-5PIN-1



HOLE_4-RH-5MM-1

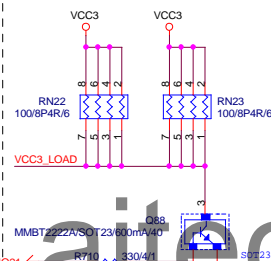


HOLE_4-RH-5MM-5PIN-1

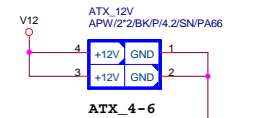


To prevent the 5VSB under loading when boot

FIX PWR MINMUN LOAD



ATXX4 POWER CONNECTOR

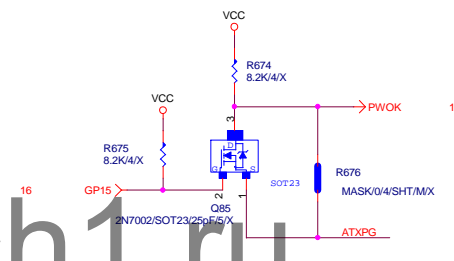


ATX_4-6

BLACK CONNECTOR

PWOK PATCH

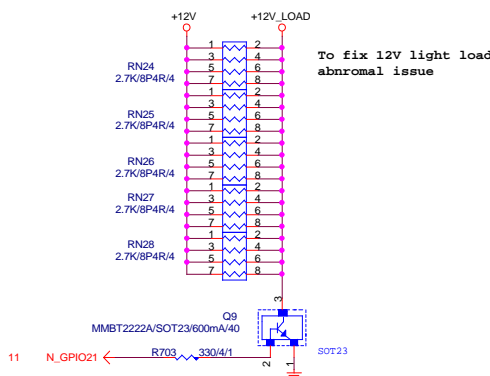
【技術通報R&D技術通報154】



CLK GEN

N/A

【技術通報R&D技術通報153】



To fix 12V light load abnormal issue

Gigabyte Technology

ATX CONNECTOR

GA-H81N-D2H

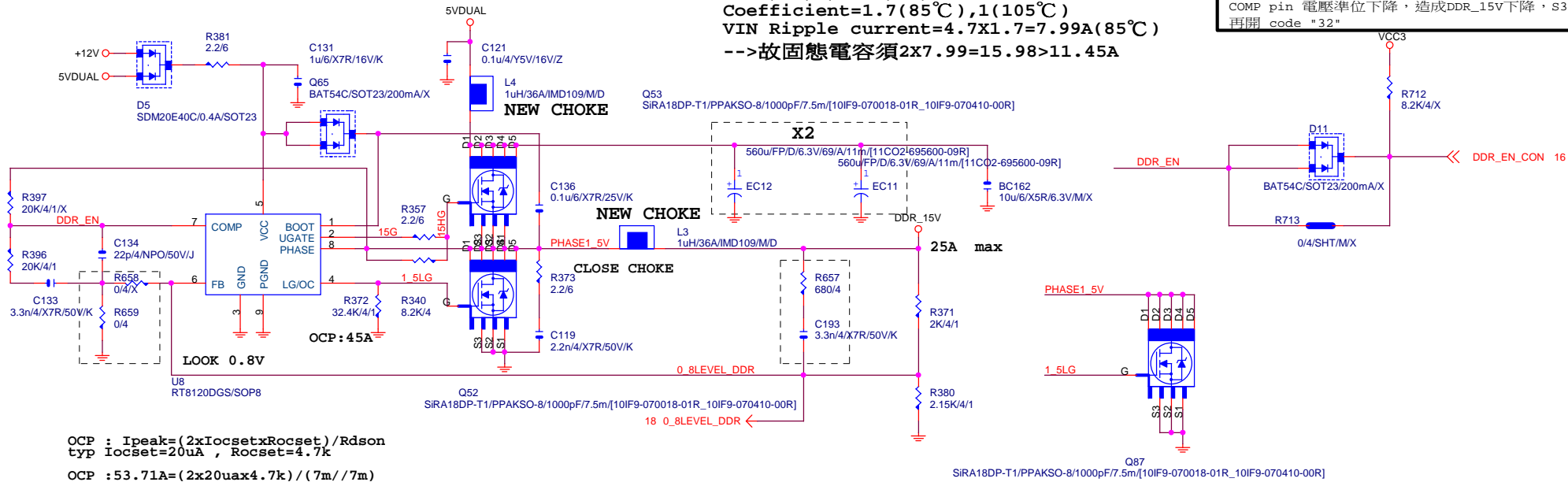
Rev 1.0

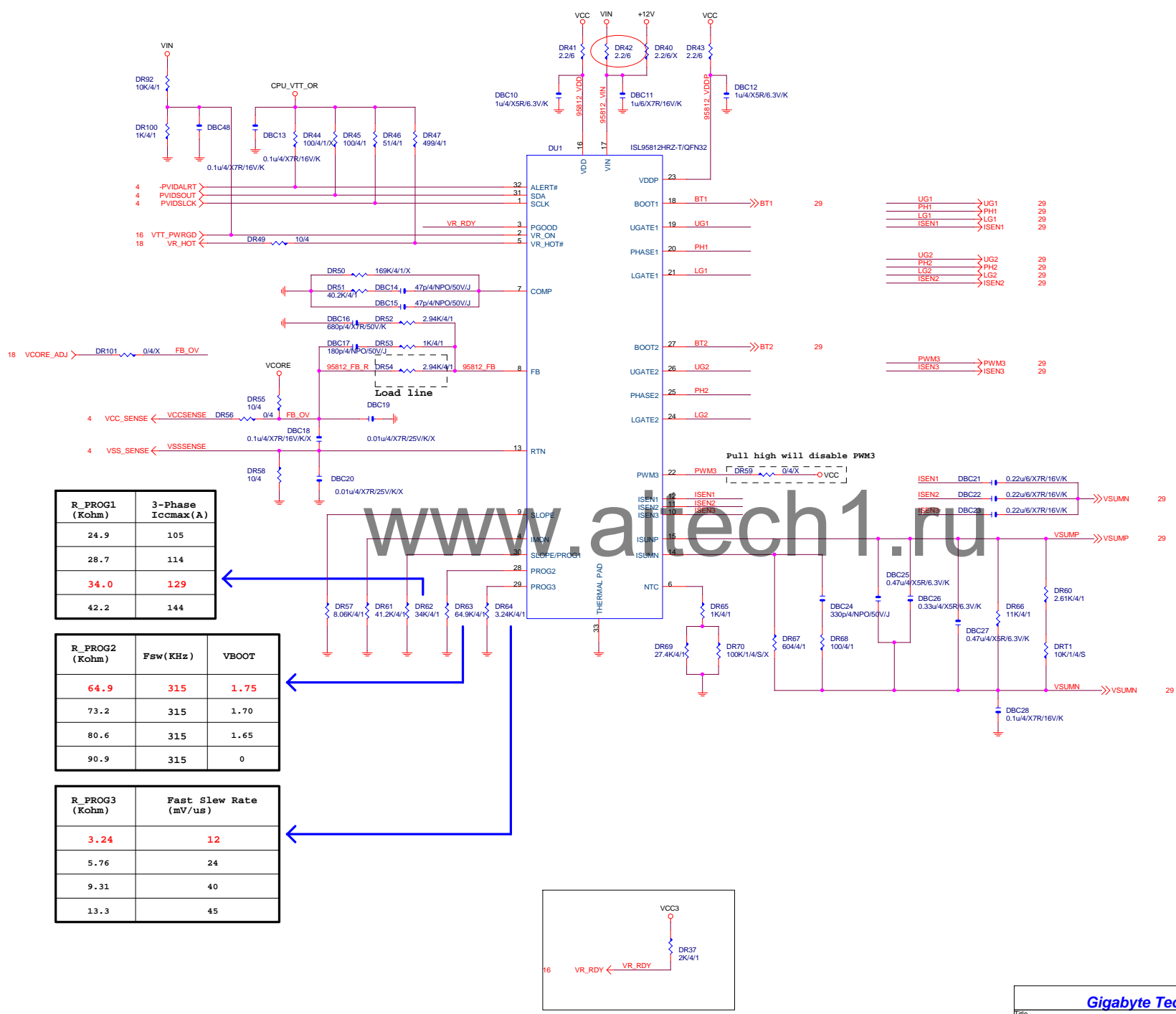
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DDR15V

VIN=5V, VOUT=1.5V, IOUT=25A, PHASE=1
 IRMS=11.45A
 560u/FP/D/6.3V/68/8m RIPPLE CURRENT=4.7A
 Coefficient=1.7(85°C), 1(105°C)
 VIN Ripple current=4.7X1.7=7.99A(85°C)
 -->故固態電容須 $2 \times 7.99 = 15.98 > 11.45A$

下次改版時，需將VCC3改接3VDUAL，以防S3時漏電到VCC3，RT8120
 COMP pin 電壓準位下降，造成DDR_15V下降，S3回來會shut down
 再開 code "32"

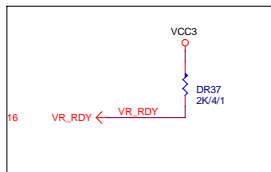




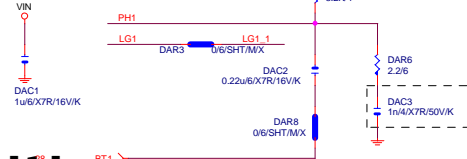
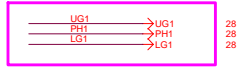
| R_PROG1 (Kohm) | 3-Phase Iccmax(A) |
|-------------------|----------------------|
| 24.9 | 105 |
| 28.7 | 114 |
| 34.0 | 129 |
| 42.2 | 144 |

| R_PROG2 (Kohm) | Fsw(KHz) | VBOOT |
|-------------------|------------|-------------|
| 64.9 | 315 | 1.75 |
| 73.2 | 315 | 1.70 |
| 80.6 | 315 | 1.65 |
| 90.9 | 315 | 0 |

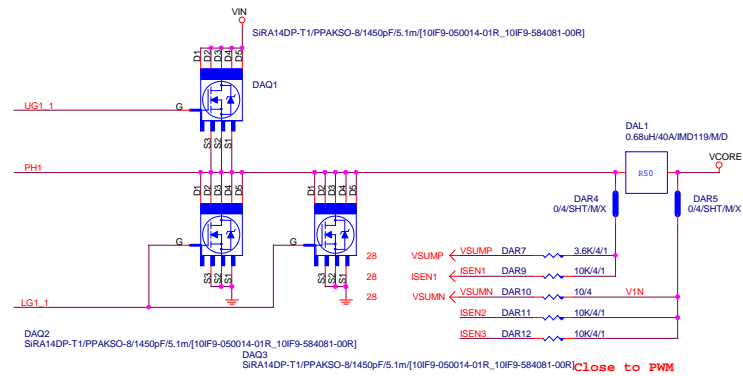
| R_PROG3 (Kohm) | Fast Slew Rate (mV/us) |
|-------------------|---------------------------|
| 3.24 | 12 |
| 5.76 | 24 |
| 9.31 | 40 |
| 13.3 | 45 |



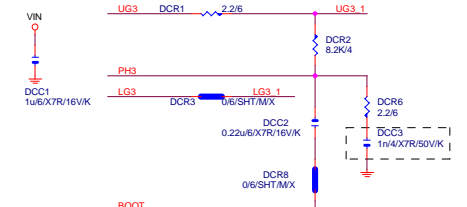
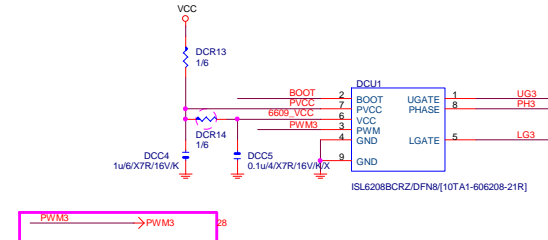
PHASE 1



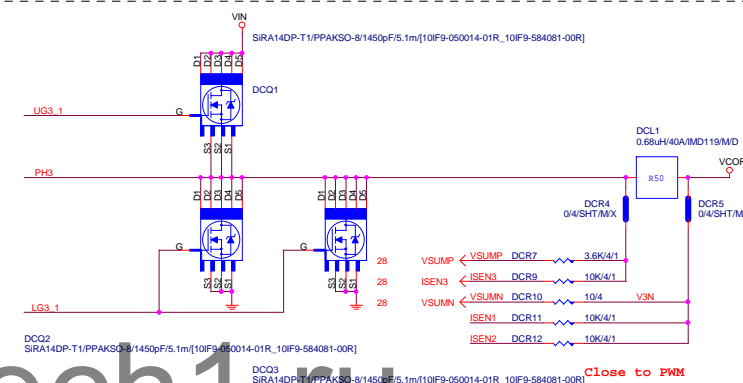
[1]



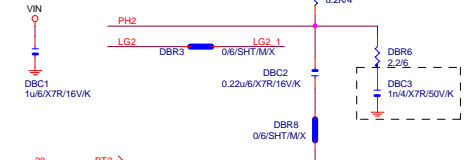
PHASE 3



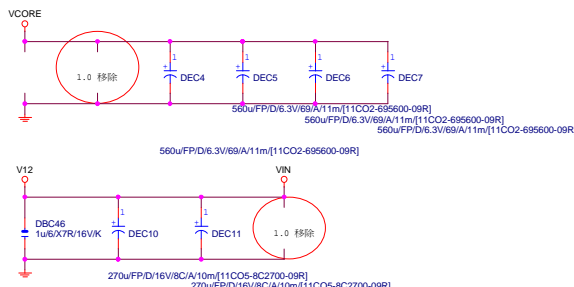
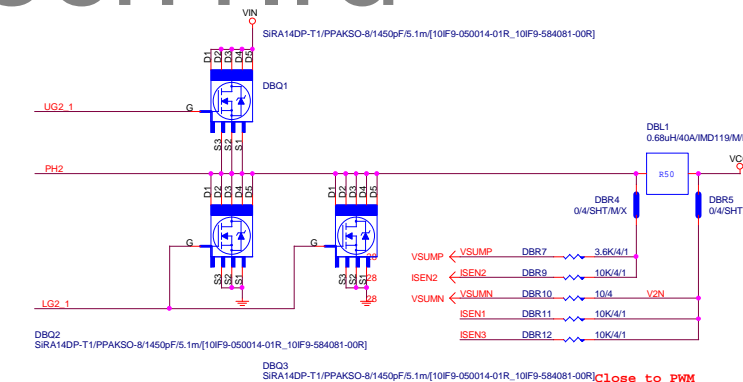
[3]



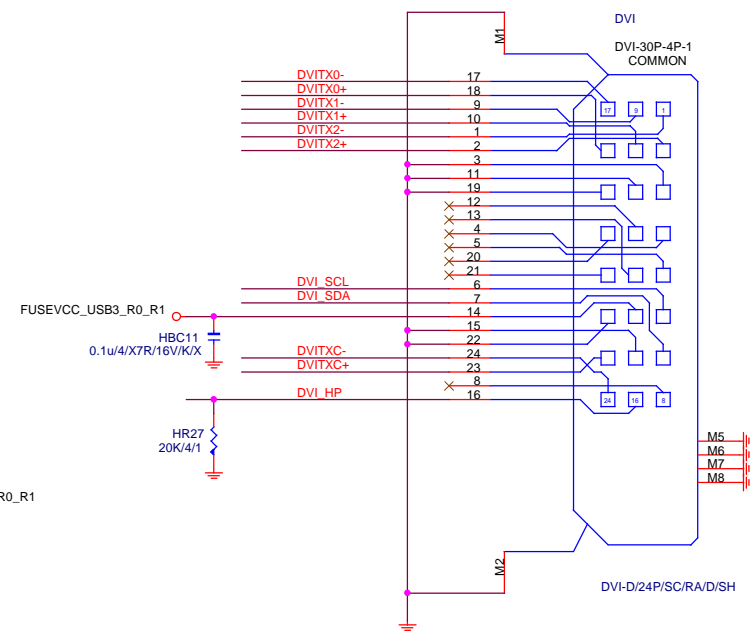
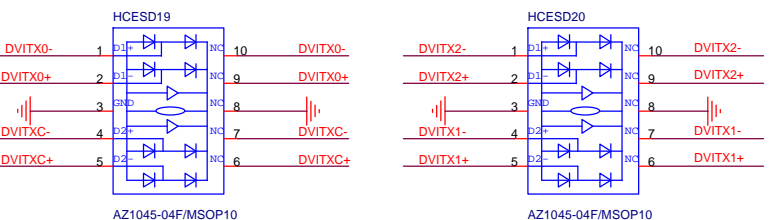
PHASE 2



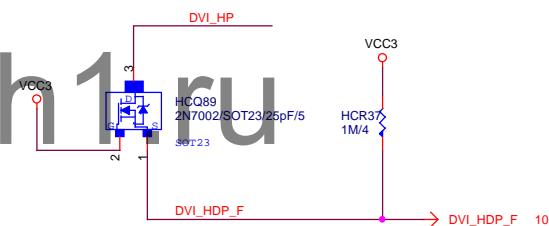
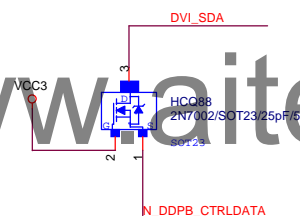
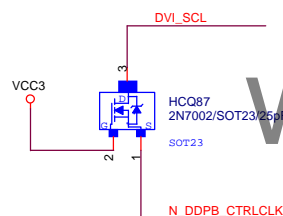
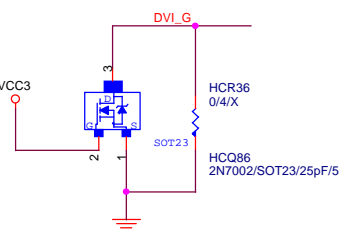
[2]



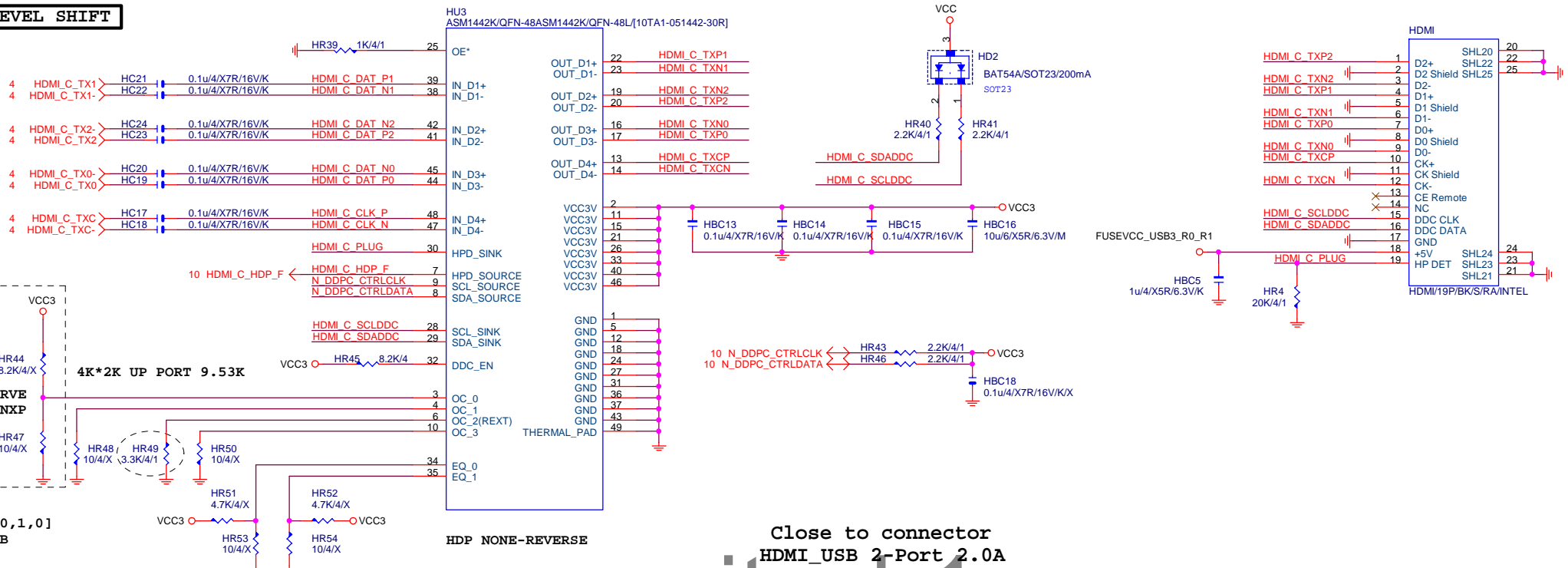
| Gigabyte Technology | | | |
|---------------------|--|-------------------------|--|
| Title | | CPU CORE VR-2 | |
| Size | | GA-H81N-D2H | |
| Custom | | Rev 1.0 | |
| Date | | Tuesday, April 29, 2014 | |
| | | Sheet 29 of 31 | |



Close to connector



HDMI LEVEL SHIFT



ASM1442
Default [0,1,0]
450mv,-3dB

ASM1442 Default [0,0] 3dB
[0,1]6dB

ASM1442:紅色框要上,HR49需上3.16K

www.aitech1.ru

| Gigabyte Technology | | | |
|---------------------|-------------------------|-------------|----------|
| Title | | HDMI | |
| Size B | Document Number | GA-H81N-D2H | |
| Date: | Tuesday, April 29, 2014 | Sheet | 31 of 31 |
| | | Rev | 1.0 |