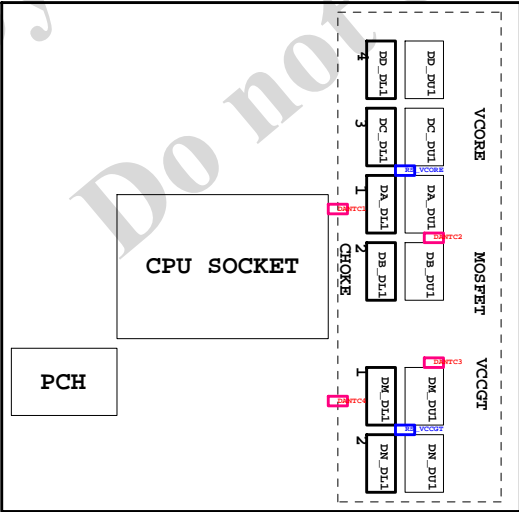


|    |                                     |
|----|-------------------------------------|
| 01 | COVER SHEET                         |
| 02 | BOM & PCB MODIFY HISTORY            |
| 03 | BLOCK DIAGRAM                       |
| 04 | CPU_LGA1151-A                       |
| 05 | CPU_LGA1151-B-DDR4                  |
| 06 | CPU_LGA1151-C                       |
| 07 | CPU_LGA1151-D                       |
| 08 | DDR 4 CHANNEL A (REV0.5)            |
| 09 | DDR 4 CHANNEL B                     |
| 10 | PCH CLOCK BUFFER (REV0.7)           |
| 11 | PCH DMI,USB,PCIE (REV0.7)           |
| 12 | PCH MISC (REV0.7)                   |
| 13 | PCH SATA,PCIE,SATA_EXPRESS (REV0.7) |
| 14 | PCH_PWR,GND (REV0.7)                |
| 15 | Dual BIOS (REV0.1)                  |
| 16 | I/O ITE8628 (REV1.08)               |
| 17 | HWM (REV1.08)                       |
| 18 | FAN CTRL-SIO (REV0.7)               |
| 19 | PCIEX16 SLOT                        |
| 20 | PCIEX4 SLOT (REV0.51)               |
| 21 | PCIEX1*2 SLOT (REV0.51)             |
| 22 | M.2 x4 (REV0.6)                     |
| 23 | SATA EXPRESS (REV0.6)               |
| 24 | VCORE_ ISL95856(PWM) (REV1.0)       |
| 25 | VCORE_ ISL95856(Vcore) (REV1.0)     |
| 26 | VCORE_ ISL95856(VccGT) (REV1.0)     |
| 27 | VCCSA_VCCIO_VCCPLL (REV0.4)         |
| 28 | RT8120_DDR (REV0.88)                |
| 29 | RT8120_VPP (REV0.88)                |
| 30 | RT8120_PCH (REV0.67)                |
| 31 | DISCRETE POWER (REV0.51)            |
| 32 | NCP3933 OVER VOLTAGE                |
| 33 | ATX POWER , -PROCHOT                |
| 34 | KB_MS_USB (REV0.7)                  |

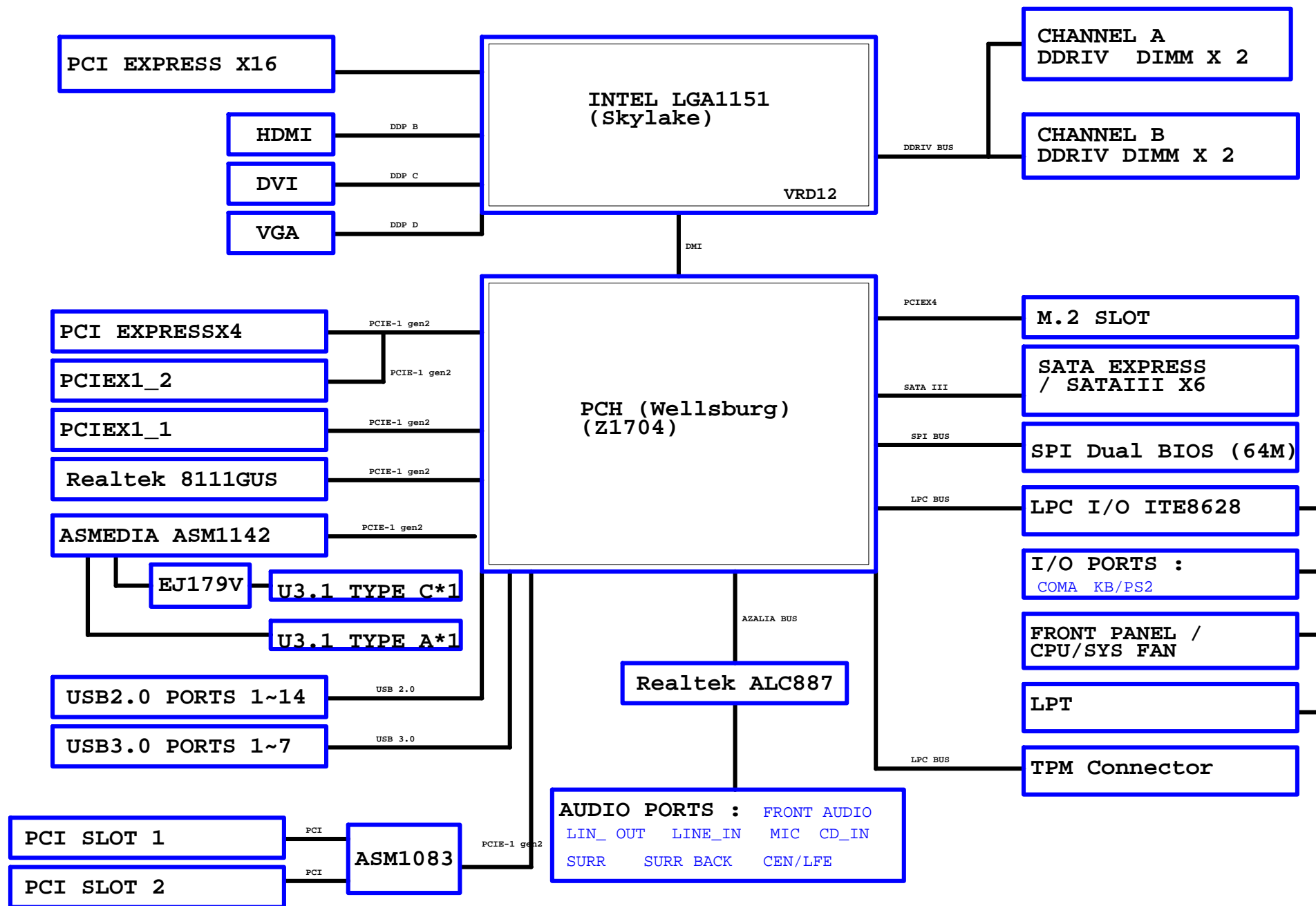
|       |   |
|-------|---|
| SHEET | TITLE                                   |
| 35    | DVI (REV0.7)                            |
| 36    | NXP-PTN3356 - DP to VGA - IC (REV1.08)  |
| 37    | NXP-PTN3356 - DP to VGA - Con (REV1.08) |
| 38    | R_USB30 (REV0.7)                        |
| 39    | Realtek 8111HS (REV1.06)                |
| 40    | USB30_LAN CONNECTOR-8111HS (REV1.06)    |
| 41    | ALC887-VD2 CODEC (REV0.7)               |
| 42    | REAR AUDIO JACK (REV0.7)                |
| 43    | F_USB30 (REV0.7)                        |
| 44    | F_USB20 (REV0.7)                        |
| 45    | COM , LPT , TPM , THB (REV0.7)          |
| 46    | F_PANEL (REV0.7)                        |
| 47    | ASM1083 (REV0.9)                        |
| 48    | PCI SLOT 1&2 (REV0.9)                   |
| 49    | ASM1083 POWER (REV0.9)                  |
| 50    | EMI-ESD (REV0.1)                        |
| 51    | TABLE LIST                              |
| 52    | ASM1142 USB31A (REV0.63)                |
| 53    | HD3SS3212&TUSB321_A (REV0.63)           |
| 54    | HDMI (REV0.7)                           |



### Component value change history

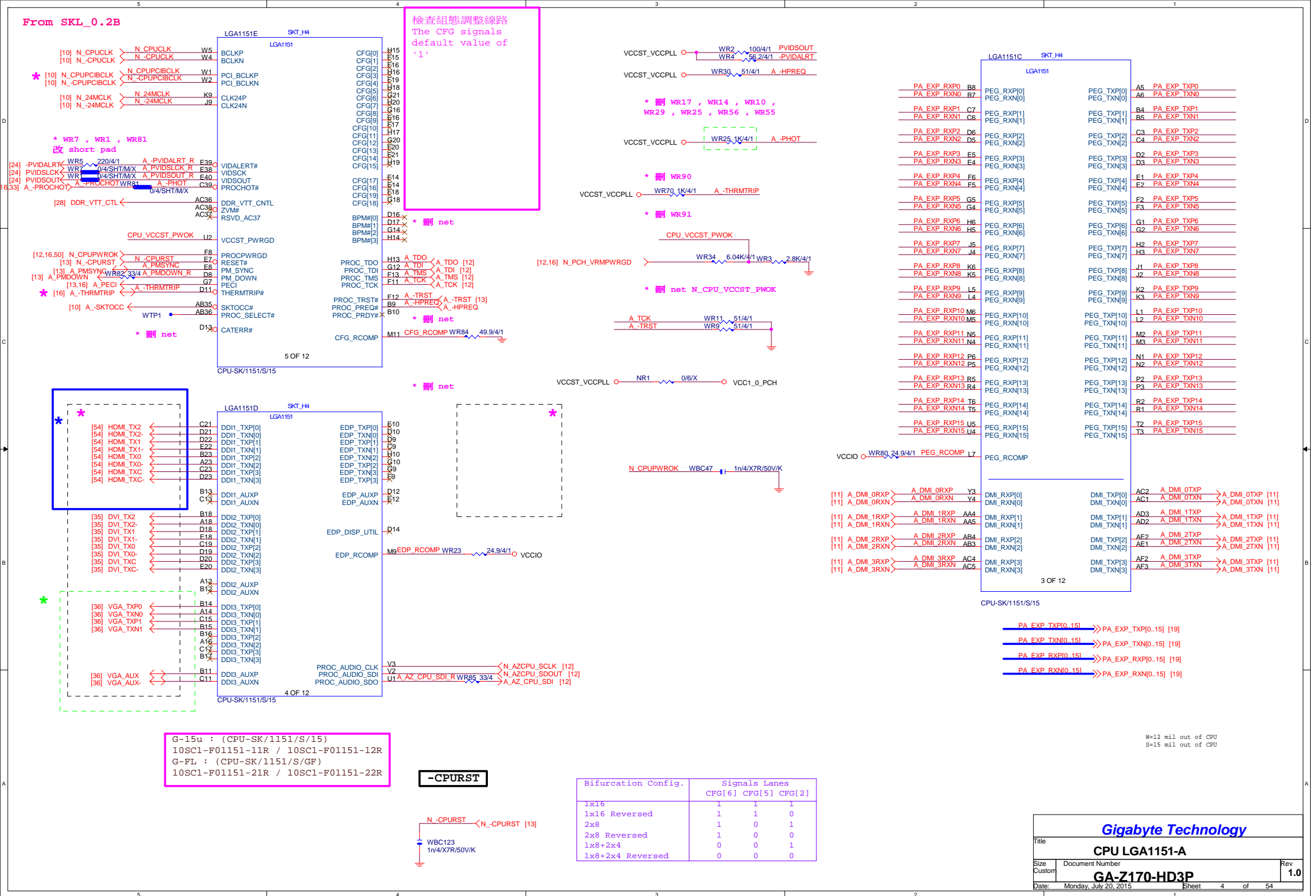
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# BLOCK DIAGRAM



[www.vinafix.com](http://www.vinafix.com)

|                             |                 |              |         |
|-----------------------------|-----------------|--------------|---------|
| Gigabyte Technology         |                 |              |         |
| BLOCK DIAGRAM               |                 |              |         |
| Size C                      | Document Number | GA-Z170-HD3P | Rev 1.0 |
| Date: Monday, July 20, 2015 | Sheet           | 3            | of 54   |



# \* 改DDR4 net

| LGA1151A SKT_H4 |             |              |
|-----------------|-------------|--------------|
| LGA1151         |             |              |
| MDA0 AE38       | DDR0_DQ[0]  | DDR0_CKP[0]  |
| MDA1 AE37       | DDR0_DQ[1]  | DDR0_CKP[1]  |
| MDA2 AG38       | DDR0_DQ[2]  | DDR0_CKP[2]  |
| MDA3 AG37       | DDR0_DQ[3]  | DDR0_CKP[3]  |
| MDA4 AE38       | DDR0_DQ[4]  | DDR0_CKP[4]  |
| MDA5 AE40       | DDR0_DQ[5]  | DDR0_CKP[5]  |
| MDA6 AG38       | DDR0_DQ[6]  | DDR0_CKP[6]  |
| MDA7 AG40       | DDR0_DQ[7]  | DDR0_CKP[7]  |
| MDA8 AJ38       | DDR0_DQ[8]  | DDR0_CKP[8]  |
| MDA9 AJ37       | DDR0_DQ[9]  | DDR0_CKP[9]  |
| MDA10 AL38      | DDR0_DQ[10] | DDR0_CKE[0]  |
| MDA11 AL37      | DDR0_DQ[11] | DDR0_CKE[1]  |
| MDA12 AL40      | DDR0_DQ[12] | DDR0_CKE[2]  |
| MDA13 AL39      | DDR0_DQ[13] | DDR0_CKE[3]  |
| MDA14 AL39      | DDR0_DQ[14] | DDR0_CS#0[0] |
| MDA15 AL40      | DDR0_DQ[15] | DDR0_CS#1[0] |
| MDA16 AX38      | DDR0_DQ[16] | DDR0_CS#2[0] |
| MDA17 AX40      | DDR0_DQ[17] | DDR0_CS#3[0] |
| MDA18 AR38      | DDR0_DQ[18] | DDR0_ODT[0]  |
| MDA19 AR37      | DDR0_DQ[19] | DDR0_ODT[1]  |
| MDA20 AN39      | DDR0_DQ[20] | DDR0_ODT[2]  |
| MDA21 AN37      | DDR0_DQ[21] | DDR0_ODT[3]  |
| MDA22 AR39      | DDR0_DQ[22] | DDR0_ODT[4]  |
| MDA23 AR40      | DDR0_DQ[23] | DDR0_ODT[5]  |
| MDA24 AW37      | DDR0_DQ[24] | DDR0_ODT[6]  |
| MDA25 AL38      | DDR0_DQ[25] | DDR0_ODT[7]  |
| MDA26 AV38      | DDR0_DQ[26] | DDR0_ODT[8]  |
| MDA27 AW36      | DDR0_DQ[27] | DDR0_ODT[9]  |
| MDA28 AU37      | DDR0_DQ[28] | DDR0_ODT[10] |
| MDA29 AV37      | DDR0_DQ[29] | DDR0_ODT[11] |
| MDA30 AT36      | DDR0_DQ[30] | DDR0_ODT[12] |
| MDA31 AU38      | DDR0_DQ[31] | DDR0_ODT[13] |
| MDA32 AY38      | DDR0_DQ[32] | DDR0_ODT[14] |
| MDA33 AW8       | DDR0_DQ[33] | DDR0_ODT[15] |
| MDA34 AV6       | DDR0_DQ[34] | DDR0_ODT[16] |
| MDA35 AU6       | DDR0_DQ[35] | DDR0_ODT[17] |
| MDA36 AU8       | DDR0_DQ[36] | DDR0_ODT[18] |
| MDA37 AV8       | DDR0_DQ[37] | DDR0_ODT[19] |
| MDA38 AW8       | DDR0_DQ[38] | DDR0_ODT[20] |
| MDA39 AV6       | DDR0_DQ[39] | DDR0_ODT[21] |
| MDA40 AY4       | DDR0_DQ[40] | DDR0_ODT[22] |
| MDA41 AV4       | DDR0_DQ[41] | DDR0_ODT[23] |
| MDA42 AT4       | DDR0_DQ[42] | DDR0_ODT[24] |
| MDA43 AT2       | DDR0_DQ[43] | DDR0_ODT[25] |
| MDA44 AV3       | DDR0_DQ[44] | DDR0_ODT[26] |
| MDA45 AW4       | DDR0_DQ[45] | DDR0_ODT[27] |
| MDA46 AT4       | DDR0_DQ[46] | DDR0_ODT[28] |
| MDA47 AT3       | DDR0_DQ[47] | DDR0_ODT[29] |
| MDA48 AP2       | DDR0_DQ[48] | DDR0_ODT[30] |
| MDA49 AM4       | DDR0_DQ[49] | DDR0_ODT[31] |
| MDA50 AP3       | DDR0_DQ[50] | DDR0_ODT[32] |
| MDA51 AM3       | DDR0_DQ[51] | DDR0_ODT[33] |
| MDA52 AP4       | DDR0_DQ[52] | DDR0_ODT[34] |
| MDA53 AM2       | DDR0_DQ[53] | DDR0_ODT[35] |
| MDA54 AP1       | DDR0_DQ[54] | DDR0_ODT[36] |
| MDA55 AM1       | DDR0_DQ[55] | DDR0_ODT[37] |
| MDA56 AK3       | DDR0_DQ[56] | DDR0_ODT[38] |
| MDA57 AH1       | DDR0_DQ[57] | DDR0_ODT[39] |
| MDA58 AK4       | DDR0_DQ[58] | DDR0_ODT[40] |
| MDA59 AH2       | DDR0_DQ[59] | DDR0_ODT[41] |
| MDA60 AH4       | DDR0_DQ[60] | DDR0_ODT[42] |
| MDA61 AK2       | DDR0_DQ[61] | DDR0_ODT[43] |
| MDA62 AH3       | DDR0_DQ[62] | DDR0_ODT[44] |
| MDA63 AK1       | DDR0_DQ[63] | DDR0_ODT[45] |
| AU33            | DDR0_ECC[0] | DDR0_ECC[0]  |
| AT33            | DDR0_ECC[1] | DDR0_ECC[1]  |
| AW33            | DDR0_ECC[2] | DDR0_ECC[2]  |
| AV32            | DDR0_ECC[3] | DDR0_ECC[3]  |
| AU31            | DDR0_ECC[4] | DDR0_ECC[4]  |
| AV33            | DDR0_ECC[5] | DDR0_ECC[5]  |
| AW31            | DDR0_ECC[6] | DDR0_ECC[6]  |
| AV31            | DDR0_ECC[7] | DDR0_ECC[7]  |

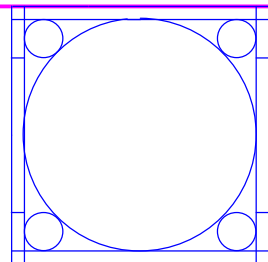
DDR CHANNEL  
A

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LGA1151

ILM\_BP\_CR/115X/NORMAL NI[12KRC-0F0001-52R]

CPU-SK/1151/S/15



Need check the new CPU MB

| LGA1151B SKT_H4 |             |              |
|-----------------|-------------|--------------|
| LGA1151B        |             |              |
| MDA0 AE38       | DDR1_DQ[0]  | DDR1_CKP[0]  |
| MDA1 AE37       | DDR1_DQ[1]  | DDR1_CKP[1]  |
| MDA2 AG38       | DDR1_DQ[2]  | DDR1_CKP[2]  |
| MDA3 AG37       | DDR1_DQ[3]  | DDR1_CKP[3]  |
| MDA4 AE38       | DDR1_DQ[4]  | DDR1_CKP[4]  |
| MDA5 AE40       | DDR1_DQ[5]  | DDR1_CKP[5]  |
| MDA6 AG38       | DDR1_DQ[6]  | DDR1_CKP[6]  |
| MDA7 AG40       | DDR1_DQ[7]  | DDR1_CKP[7]  |
| MDA8 AJ38       | DDR1_DQ[8]  | DDR1_CKP[8]  |
| MDA9 AJ37       | DDR1_DQ[9]  | DDR1_CKP[9]  |
| MDA10 AL38      | DDR1_DQ[10] | DDR1_CKE[0]  |
| MDA11 AL37      | DDR1_DQ[11] | DDR1_CKE[1]  |
| MDA12 AL40      | DDR1_DQ[12] | DDR1_CKE[2]  |
| MDA13 AL39      | DDR1_DQ[13] | DDR1_CKE[3]  |
| MDA14 AL39      | DDR1_DQ[14] | DDR1_CS#0[0] |
| MDA15 AL40      | DDR1_DQ[15] | DDR1_CS#1[0] |
| MDA16 AX38      | DDR1_DQ[16] | DDR1_CS#2[0] |
| MDA17 AX40      | DDR1_DQ[17] | DDR1_CS#3[0] |
| MDA18 AR38      | DDR1_DQ[18] | DDR1_ODT[0]  |
| MDA19 AR37      | DDR1_DQ[19] | DDR1_ODT[1]  |
| MDA20 AN39      | DDR1_DQ[20] | DDR1_ODT[2]  |
| MDA21 AN37      | DDR1_DQ[21] | DDR1_ODT[3]  |
| MDA22 AR39      | DDR1_DQ[22] | DDR1_ODT[4]  |
| MDA23 AR40      | DDR1_DQ[23] | DDR1_ODT[5]  |
| MDA24 AW37      | DDR1_DQ[24] | DDR1_ODT[6]  |
| MDA25 AL38      | DDR1_DQ[25] | DDR1_ODT[7]  |
| MDA26 AV38      | DDR1_DQ[26] | DDR1_ODT[8]  |
| MDA27 AW36      | DDR1_DQ[27] | DDR1_ODT[9]  |
| MDA28 AU37      | DDR1_DQ[28] | DDR1_ODT[10] |
| MDA29 AV37      | DDR1_DQ[29] | DDR1_ODT[11] |
| MDA30 AT36      | DDR1_DQ[30] | DDR1_ODT[12] |
| MDA31 AU38      | DDR1_DQ[31] | DDR1_ODT[13] |
| MDA32 AY38      | DDR1_DQ[32] | DDR1_ODT[14] |
| MDA33 AW8       | DDR1_DQ[33] | DDR1_ODT[15] |
| MDA34 AV6       | DDR1_DQ[34] | DDR1_ODT[16] |
| MDA35 AU6       | DDR1_DQ[35] | DDR1_ODT[17] |
| MDA36 AU8       | DDR1_DQ[36] | DDR1_ODT[18] |
| MDA37 AV8       | DDR1_DQ[37] | DDR1_ODT[19] |
| MDA38 AW8       | DDR1_DQ[38] | DDR1_ODT[20] |
| MDA39 AV6       | DDR1_DQ[39] | DDR1_ODT[21] |
| MDA40 AY4       | DDR1_DQ[40] | DDR1_ODT[22] |
| MDA41 AV4       | DDR1_DQ[41] | DDR1_ODT[23] |
| MDA42 AT4       | DDR1_DQ[42] | DDR1_ODT[24] |
| MDA43 AT2       | DDR1_DQ[43] | DDR1_ODT[25] |
| MDA44 AV3       | DDR1_DQ[44] | DDR1_ODT[26] |
| MDA45 AW4       | DDR1_DQ[45] | DDR1_ODT[27] |
| MDA46 AT4       | DDR1_DQ[46] | DDR1_ODT[28] |
| MDA47 AT3       | DDR1_DQ[47] | DDR1_ODT[29] |
| MDA48 AP2       | DDR1_DQ[48] | DDR1_ODT[30] |
| MDA49 AM4       | DDR1_DQ[49] | DDR1_ODT[31] |
| MDA50 AP3       | DDR1_DQ[50] | DDR1_ODT[32] |
| MDA51 AM3       | DDR1_DQ[51] | DDR1_ODT[33] |
| MDA52 AP4       | DDR1_DQ[52] | DDR1_ODT[34] |
| MDA53 AM2       | DDR1_DQ[53] | DDR1_ODT[35] |
| MDA54 AP1       | DDR1_DQ[54] | DDR1_ODT[36] |
| MDA55 AM1       | DDR1_DQ[55] | DDR1_ODT[37] |
| MDA56 AK3       | DDR1_DQ[56] | DDR1_ODT[38] |
| MDA57 AH1       | DDR1_DQ[57] | DDR1_ODT[39] |
| MDA58 AK4       | DDR1_DQ[58] | DDR1_ODT[40] |
| MDA59 AH2       | DDR1_DQ[59] | DDR1_ODT[41] |
| MDA60 AH4       | DDR1_DQ[60] | DDR1_ODT[42] |
| MDA61 AK2       | DDR1_DQ[61] | DDR1_ODT[43] |
| MDA62 AH3       | DDR1_DQ[62] | DDR1_ODT[44] |
| MDA63 AK1       | DDR1_DQ[63] | DDR1_ODT[45] |
| AU33            | DDR1_ECC[0] | DDR1_ECC[0]  |
| AT33            | DDR1_ECC[1] | DDR1_ECC[1]  |
| AW33            | DDR1_ECC[2] | DDR1_ECC[2]  |
| AV32            | DDR1_ECC[3] | DDR1_ECC[3]  |
| AU31            | DDR1_ECC[4] | DDR1_ECC[4]  |
| AV33            | DDR1_ECC[5] | DDR1_ECC[5]  |
| AW31            | DDR1_ECC[6] | DDR1_ECC[6]  |
| AV31            | DDR1_ECC[7] | DDR1_ECC[7]  |

DDR CHANNEL  
B

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CPU-SK/1151/S/15

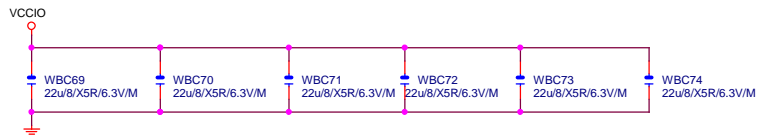
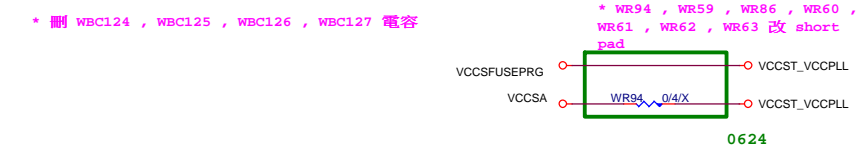
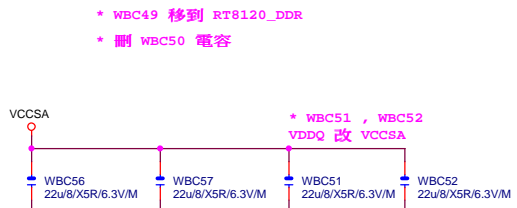
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| [9] MODT_B[0..3]  | MODT_B0..3  |
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| [9] MDB[0..63]    | MDB0..63    |
| [8] M_DQSA[0..7]  | M_DQSA0..7  |
| [8] M_-DQSA[0..7] | M_-DQSA0..7 |
| [8] MAAA[0..16]   | MAAA0..16   |
| [9] MAAB[0..16]   | MAAB0..16   |
| [9] M_DQSB[0..7]  | M_DQSB0..7  |
| [9] M_-DQSB[0..7] | M_-DQSB0..7 |

| LGA1151B SKT_H4 |             |              |
|-----------------|-------------|--------------|
| LGA1151B        |             |              |
| MDA0 AE38       | DDR1_DQ[0]  | DDR1_CKP[0]  |
| MDA1 AE37       | DDR1_DQ[1]  | DDR1_CKP[1]  |
| MDA2 AG38       | DDR1_DQ[2]  | DDR1_CKP[2]  |
| MDA3 AG37       | DDR1_DQ[3]  | DDR1_CKP[3]  |
| MDA4 AE38       | DDR1_DQ[4]  | DDR1_CKP[4]  |
| MDA5 AE40       | DDR1_DQ[5]  | DDR1_CKP[5]  |
| MDA6 AG38       | DDR1_DQ[6]  | DDR1_CKP[6]  |
| MDA7 AG40       | DDR1_DQ[7]  | DDR1_CKP[7]  |
| MDA8 AJ38       | DDR1_DQ[8]  | DDR1_CKP[8]  |
| MDA9 AJ37       | DDR1_DQ[9]  | DDR1_CKP[9]  |
| MDA10 AL38      | DDR1_DQ[10] | DDR1_CKE[0]  |
| MDA11 AL37      | DDR1_DQ[11] | DDR1_CKE[1]  |
| MDA12 AL40      | DDR1_DQ[12] | DDR1_CKE[2]  |
| MDA13 AL39      | DDR1_DQ[13] | DDR1_CKE[3]  |
| MDA14 AL39      | DDR1_DQ[14] | DDR1_CS#0[0] |
| MDA15 AL40      | DDR1_DQ[15] | DDR1_CS#1[0] |
| MDA16 AX38      | DDR1_DQ[16] | DDR1_CS#2[0] |
| MDA17 AX40      | DDR1_DQ[17] | DDR1_CS#3[0] |
| MDA18 AR38      | DDR1_DQ[18] | DDR1_ODT[0]  |
| MDA19 AR37      | DDR1_DQ[19] | DDR1_ODT[1]  |
| MDA20 AN39      | DDR1_DQ[20] | DDR1_ODT[2]  |
| MDA21 AN37      | DDR1_DQ[21] | DDR1_ODT[3]  |
| MDA22 AR39      | DDR1_DQ[22] | DDR1_ODT[4]  |
| MDA23 AR40      | DDR1_DQ[23] | DDR1_ODT[5]  |
| MDA24 AW37      | DDR1_DQ[24] | DDR1_ODT[6]  |
| MDA25 AL38      | DDR1_DQ[25] | DDR1_ODT[7]  |
| MDA26 AV38      | DDR1_DQ[26] | DDR1_ODT[8]  |
| MDA27 AW36      | DDR1_DQ[27] | DDR1_ODT[9]  |
| MDA28 AU37      | DDR1_DQ[28] | DDR1_ODT[10] |
| MDA29 AV37      | DDR1_DQ[29] | DDR1_ODT[11] |
| MDA30 AT36      | DDR1_DQ[30] | DDR1_ODT[12] |
| MDA31 AU38      | DDR1_DQ[31] | DDR1_ODT[13] |
| MDA32 AY38      | DDR1_DQ[32] | DDR1_ODT[14] |
| MDA33 AW8       | DDR1_DQ[33] | DDR1_ODT[15] |
| MDA34 AV6       | DDR1_DQ[34] | DDR1_ODT[16] |
| MDA35 AU6       | DDR1_DQ[35] | DDR1_ODT[17] |
| MDA36 AU8       | DDR1_DQ[36] | DDR1_ODT[18] |
| MDA37 AV8       | DDR1_DQ[37] | DDR1_ODT[19] |
| MDA38 AW8       | DDR1_DQ[38] | DDR1_ODT[20] |
| MDA39 AV6       | DDR1_DQ[39] | DDR1_ODT[21] |
| MDA40 AY4       | DDR1_DQ[40] | DDR1_ODT[22] |
| MDA41 AV4       | DDR1_DQ[41] | DDR1_ODT[23] |
| MDA42 AT4       | DDR1_DQ[42] | DDR1_ODT[24] |
| MDA43 AT2       | DDR1_DQ[43] | DDR1_ODT[25] |
| MDA44 AV3       | DDR1_DQ[44] | DDR1_ODT[26] |
| MDA45 AW4       | DDR1_DQ[45] | DDR1_ODT[27] |
| MDA46 AT4       | DDR1_DQ[46] | DDR1_ODT[28] |
| MDA47 AT3       | DDR1_DQ[47] | DDR1_ODT[29] |
| MDA48 AP2       | DDR1_DQ[48] | DDR1_ODT[30] |
| MDA49 AM4       | DDR1_DQ[49] | DDR1_ODT[31] |
| MDA50 AP3       | DDR1_DQ[50] | DDR1_ODT[32] |
| MDA51 AM3       | DDR1_DQ[51] | DDR1_ODT[33] |
| MDA52 AP4       | DDR1_DQ[52] | DDR1_ODT[34] |
| MDA53 AM2       | DDR1_DQ[53] | DDR1_ODT[35] |
| MDA54 AP1       | DDR1_DQ[54] | DDR1_ODT[36] |
| MDA55 AM1       | DDR1_DQ[55] | DDR1_ODT[37] |
| MDA56 AK3       | DDR1_DQ[56] | DDR1_ODT[38] |
| MDA57 AH1       | DDR1_DQ[57] | DDR1_ODT[39] |
| MDA58 AK4       | DDR1_DQ[58] | DDR1_ODT[40] |
| MDA59 AH2       | DDR1_DQ[59] | DDR1_ODT[41] |
| MDA60 AH4       | DDR1_DQ[60] | DDR1_ODT[42] |
| MDA61 AK2       | DDR1_DQ[61] | DDR1_ODT[43] |
| MDA62 AH3       | DDR1_DQ[62] | DDR1_ODT[44] |
| MDA63 AK1       | DDR1_DQ[63] | DDR1_ODT[45] |
| AU33            | DDR1_ECC[0] | DDR1_ECC[0]  |
| AT33            | DDR1_ECC[1] | DDR1_ECC[1]  |
| AW33            | DDR1_ECC[2] | DDR1_ECC[2]  |
| AV32            | DDR1_ECC[3] | DDR1_ECC[3]  |
| AU31            | DDR1_ECC[4] | DDR1_ECC[4]  |
| AV33            | DDR1_ECC[5] | DDR1_ECC[5]  |
| AW31            | DDR1_ECC[6] | DDR1_ECC[6]  |
| AV31            | DDR1_ECC[7] | DDR1_ECC[7]  |

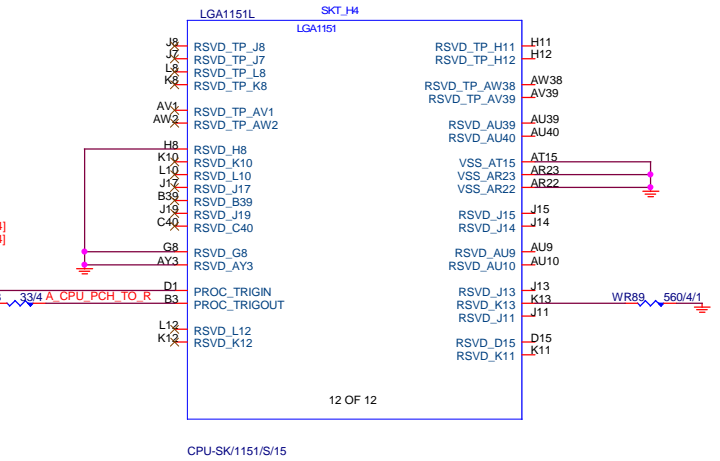
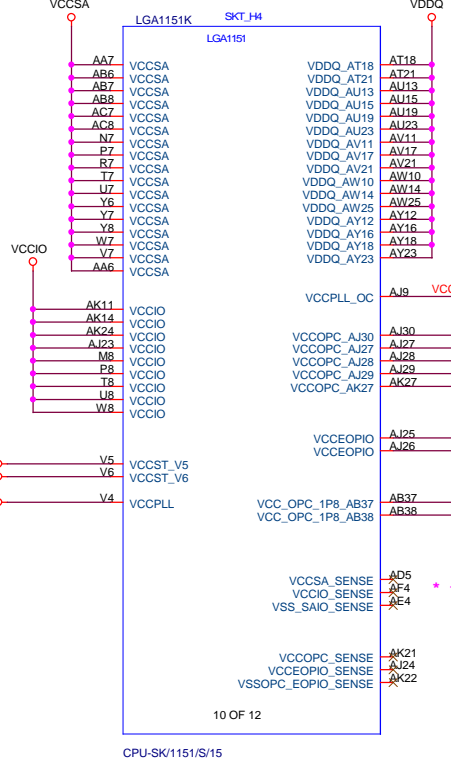
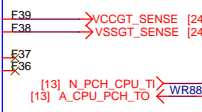
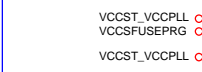
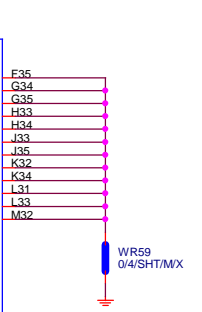
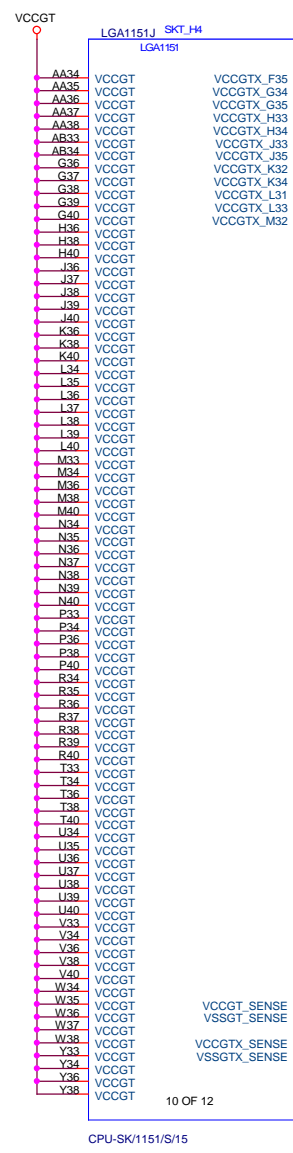
DDR VREF\_CA  
DDR0\_VREF\_DQ  
DDR1\_VREF\_DQ

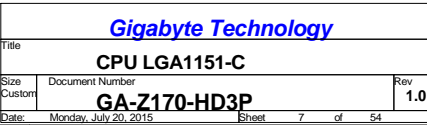
Gigabyte Technology

|               |                       |               |
|---------------|-----------------------|---------------|
| Title         |                       |               |
| CPU LGA1151-B |                       |               |
| Size          | Document Number       | Rev           |
| Custom        | GA-Z170-HD3P          | 1.0           |
| Date:         | Monday, July 20, 2015 | Sheet 5 of 54 |



\* 刪 VCCGT 電容





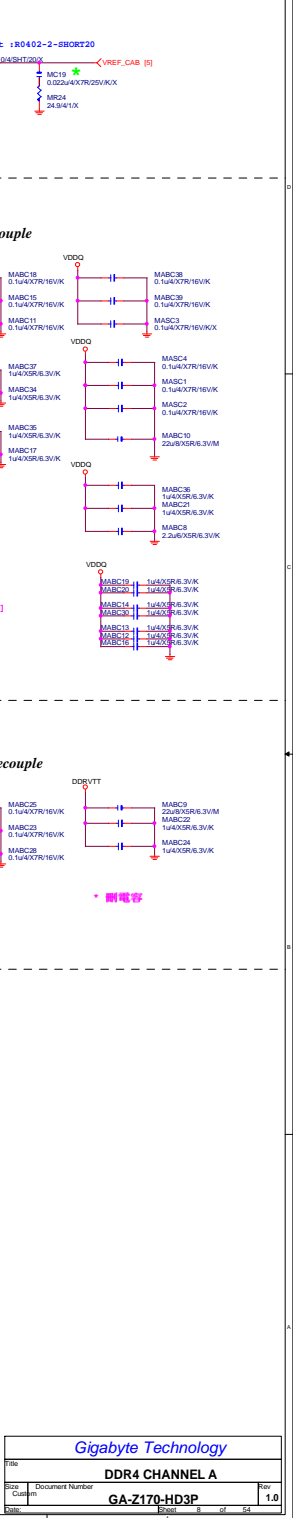
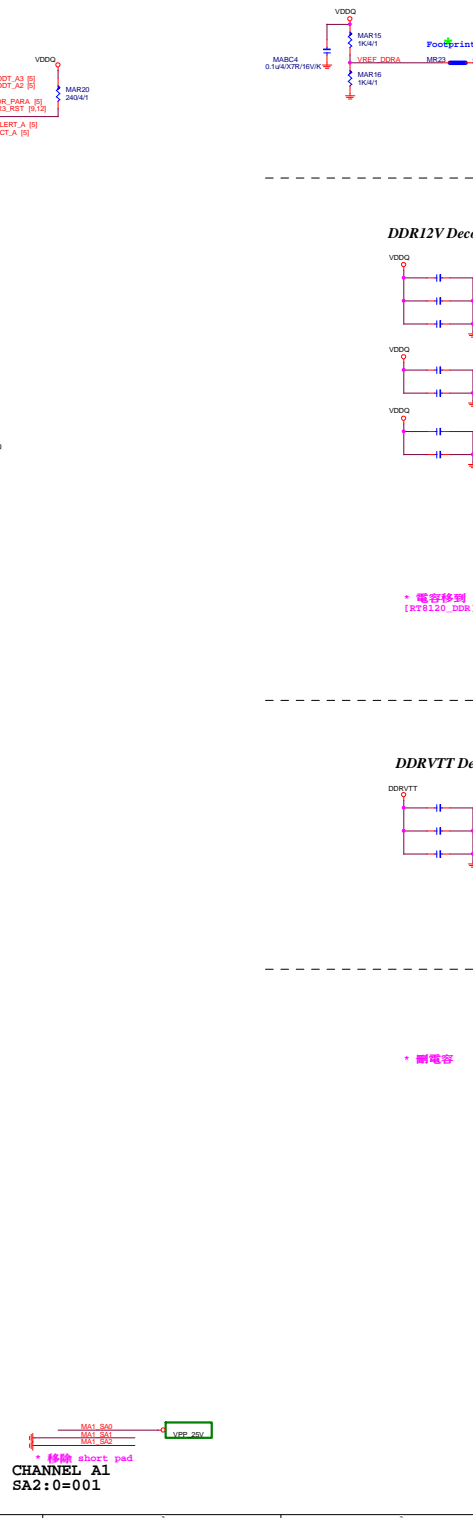
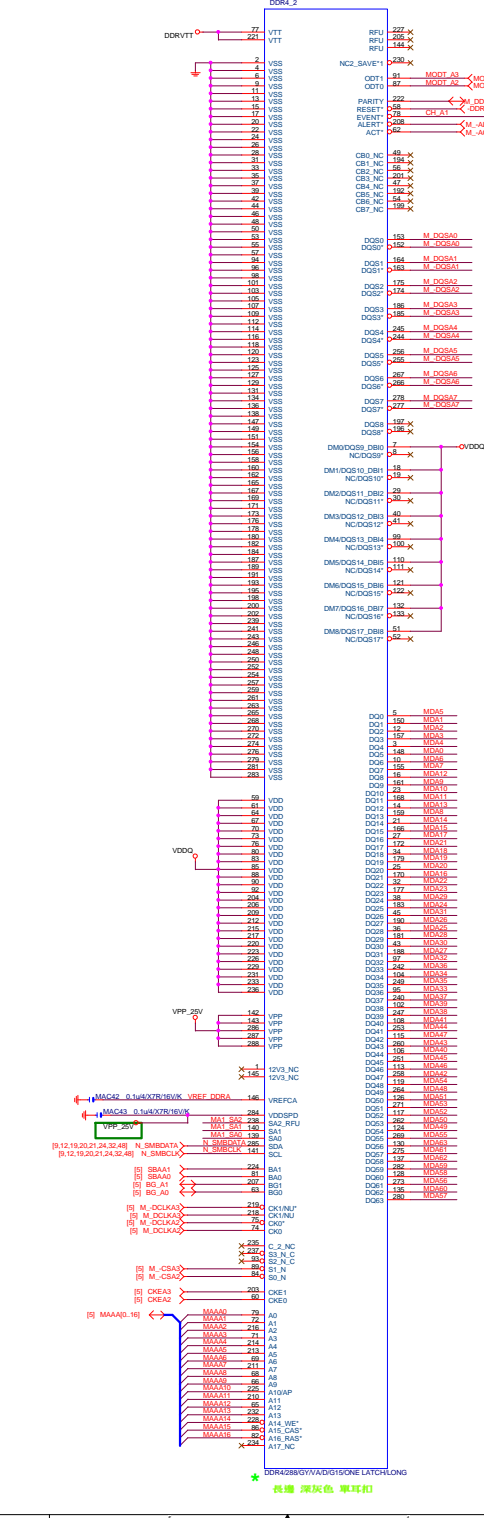
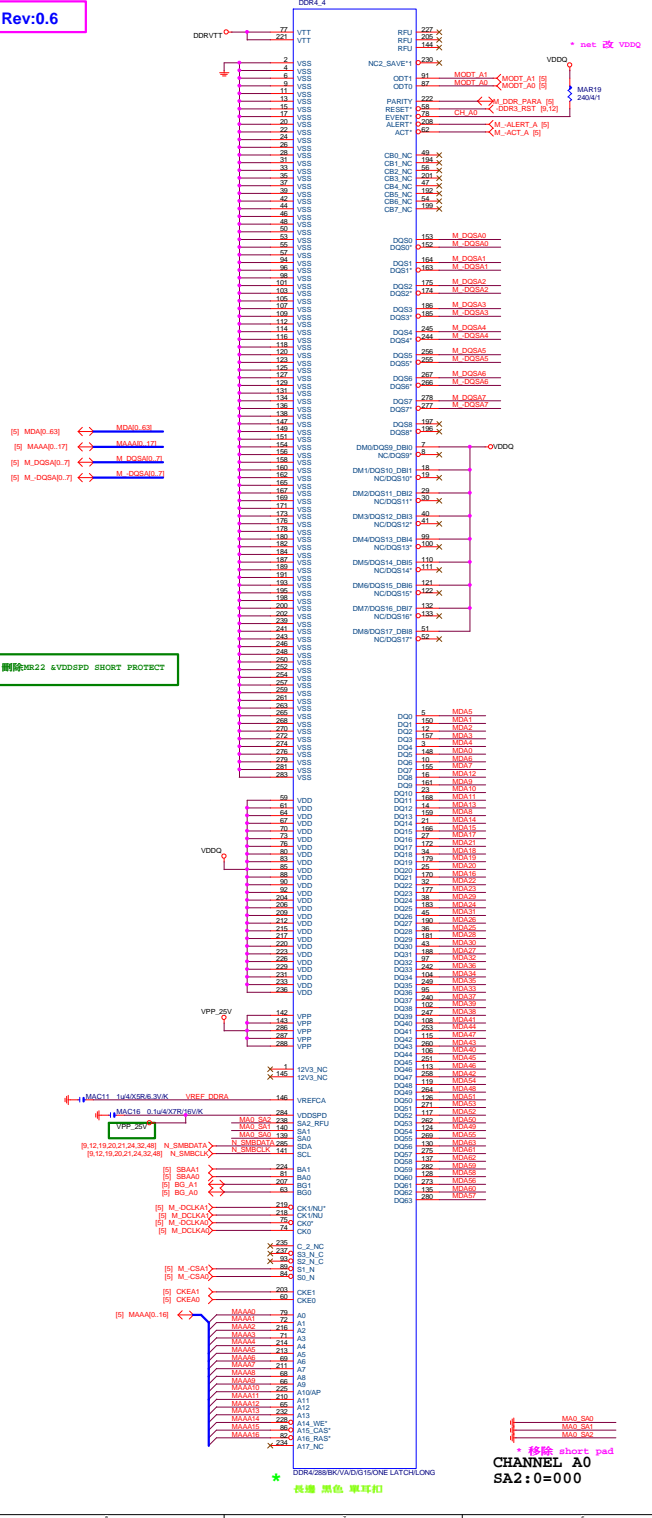
刪除MR22 &VDDSPD SHORT PROTECT

DDR4288BKV/VADG15ONE LATCH LONG  
\* 長槽 黑色 車耳扣

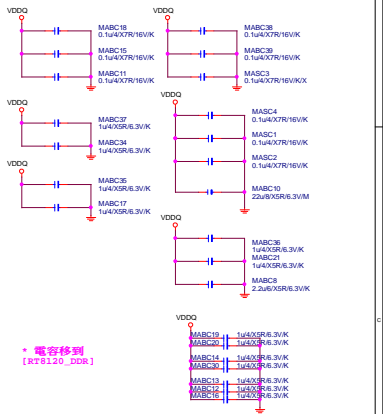
刪除 short pad  
CHANNEL A0  
SA2:0=000

DDR4288BKV/VADG15ONE LATCH LONG  
\* 長槽 深灰色 車耳扣

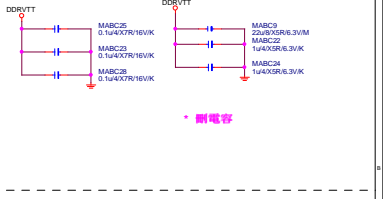
\* 刪除 short pad  
CHANNEL A1  
SA2:0=001

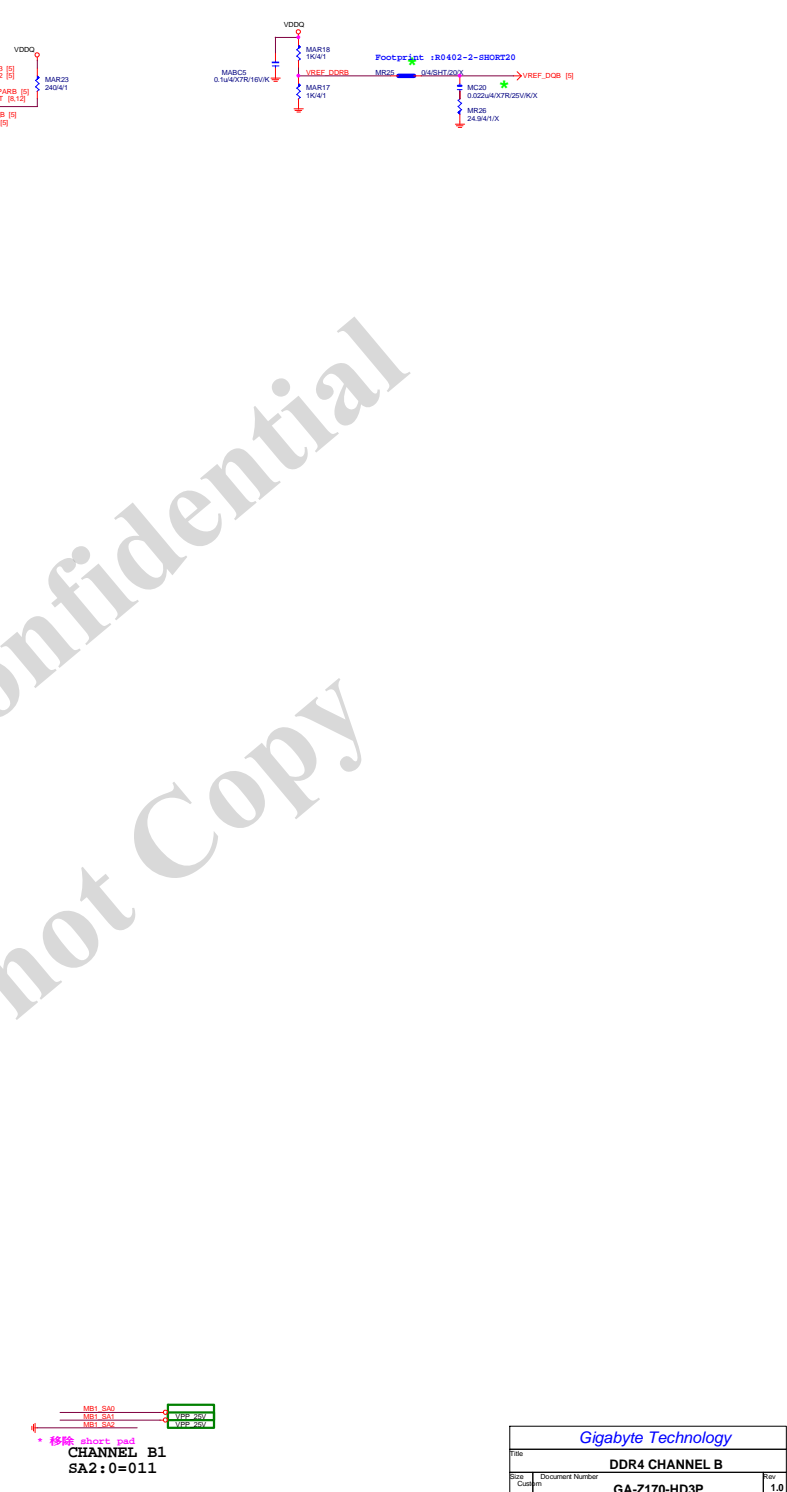
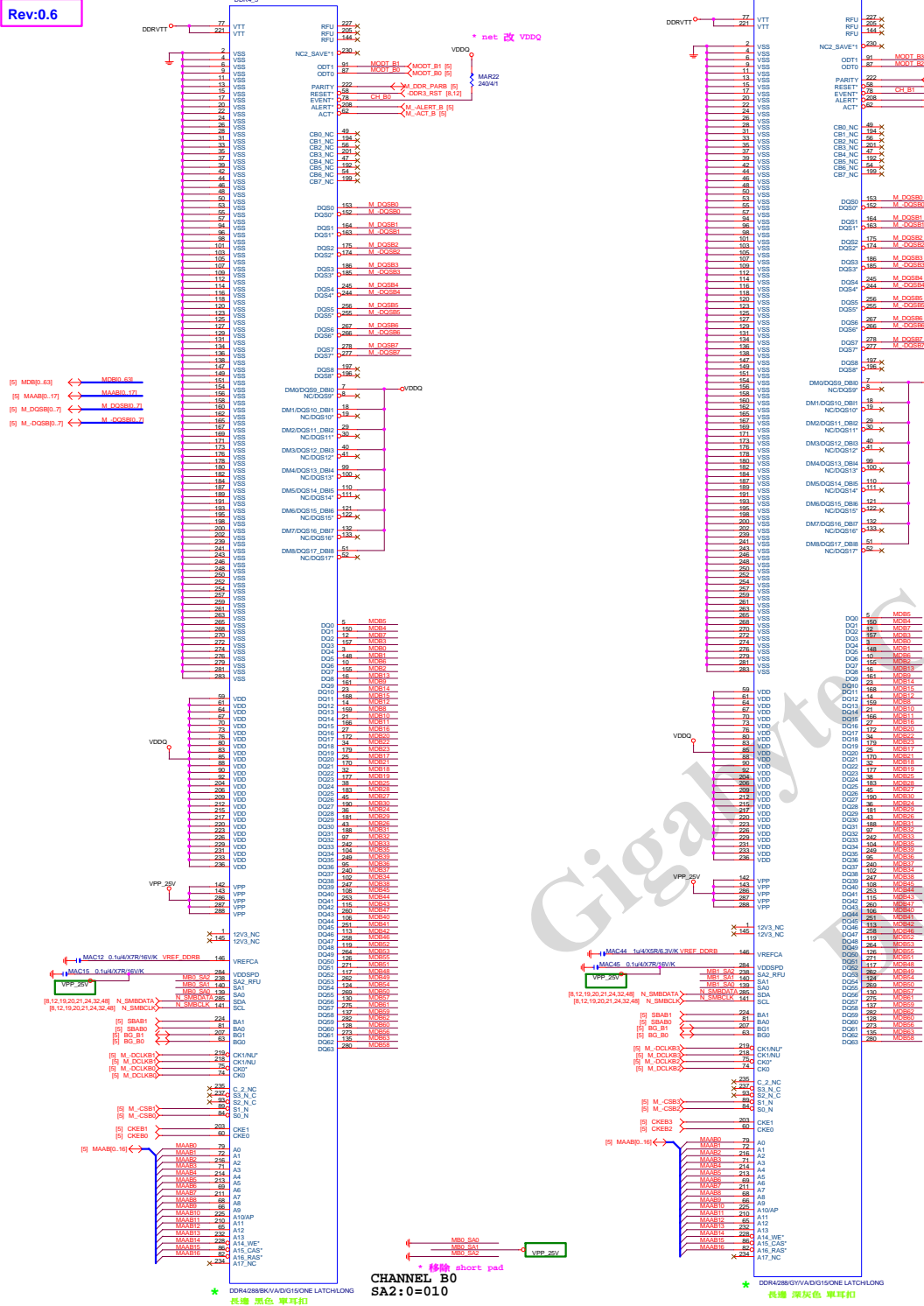


DDR12V Decouple

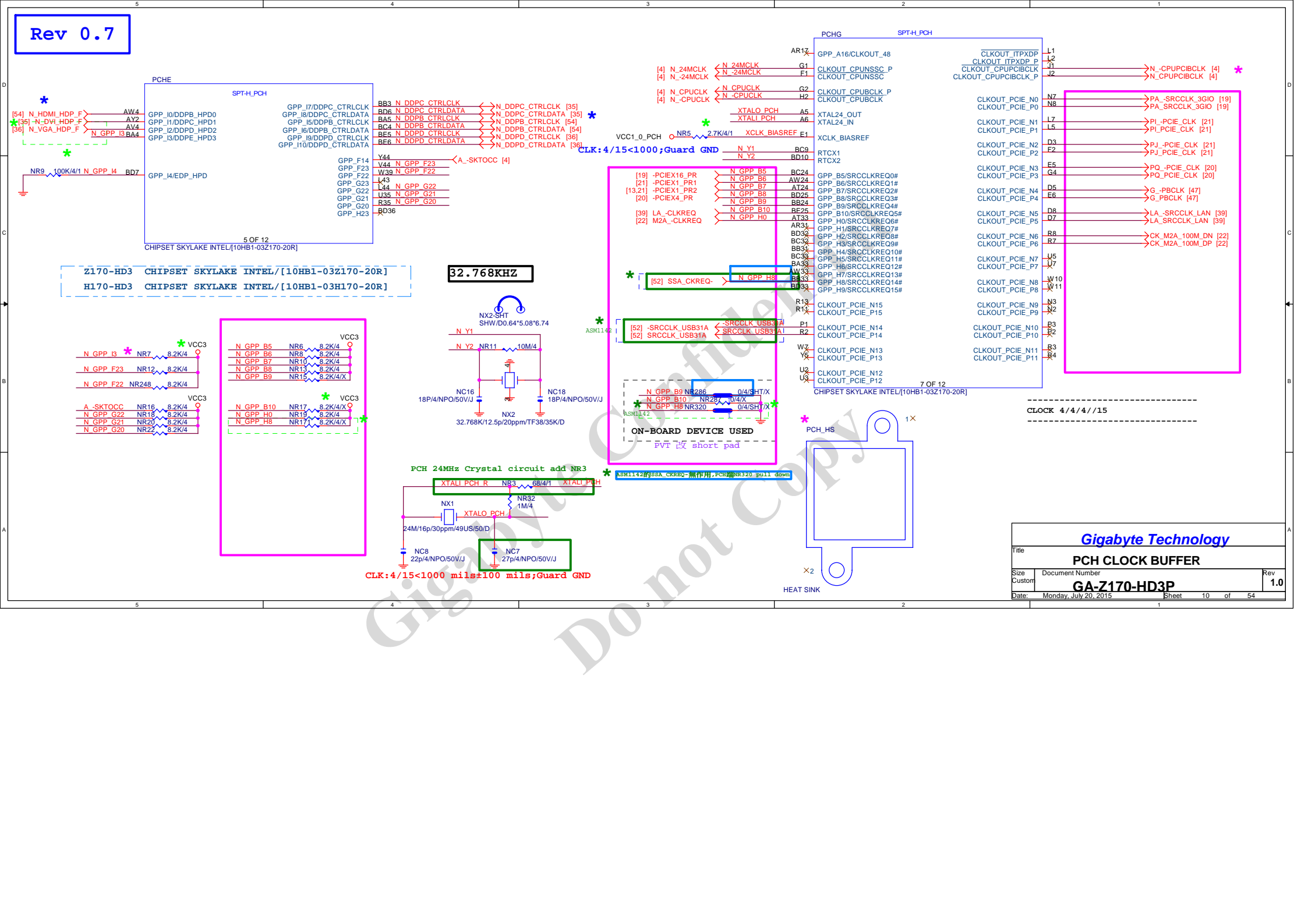


DDRVTT Decouple

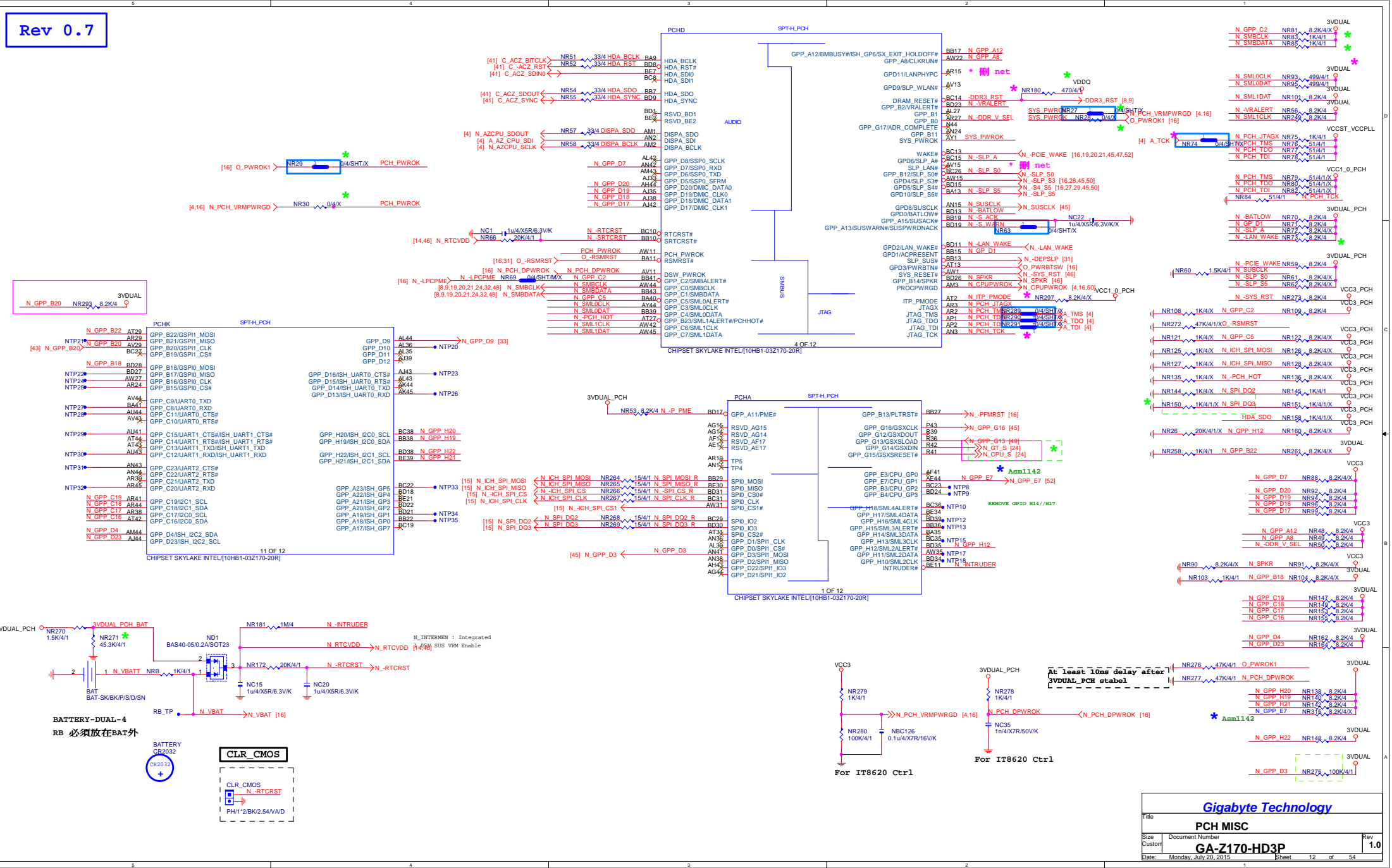




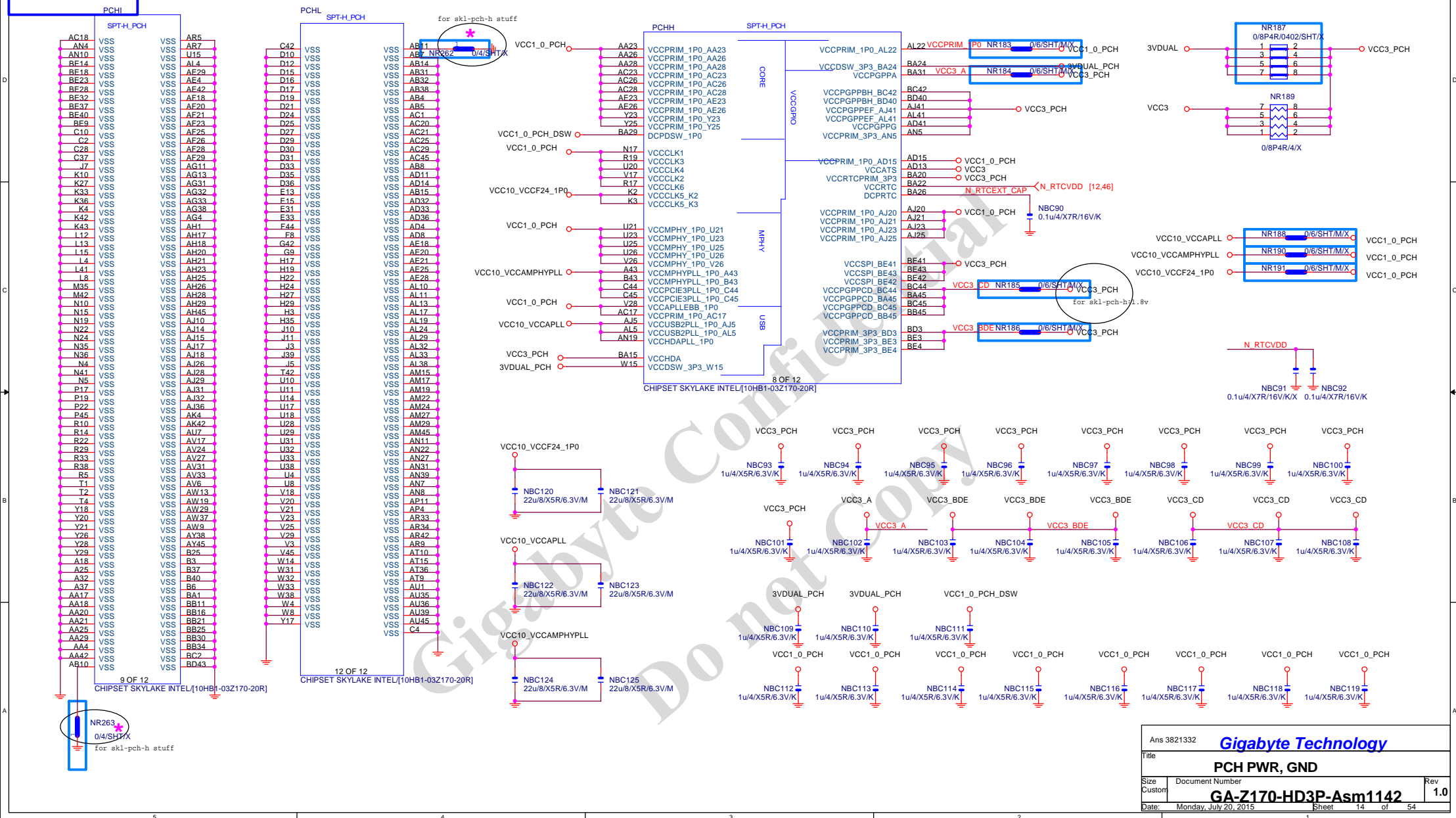
Rev 0.7







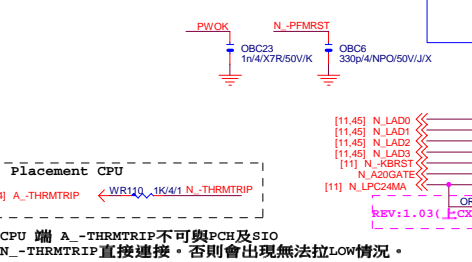
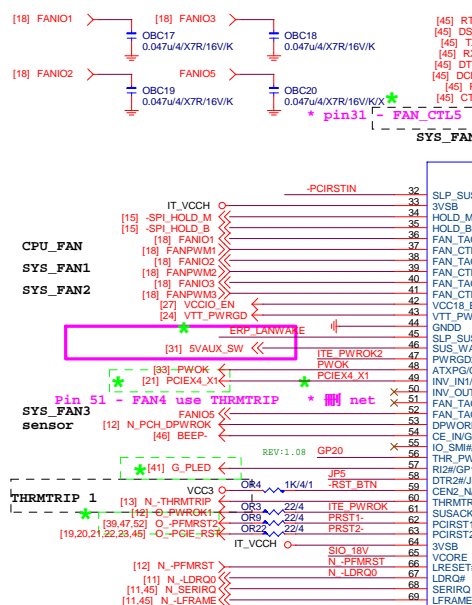
[illegible]



Gigabyte Confidential  
Do not Copy

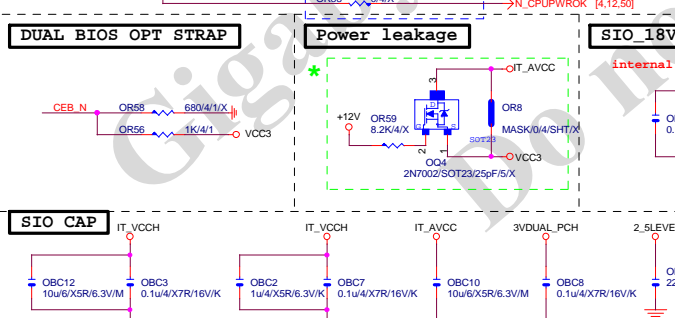
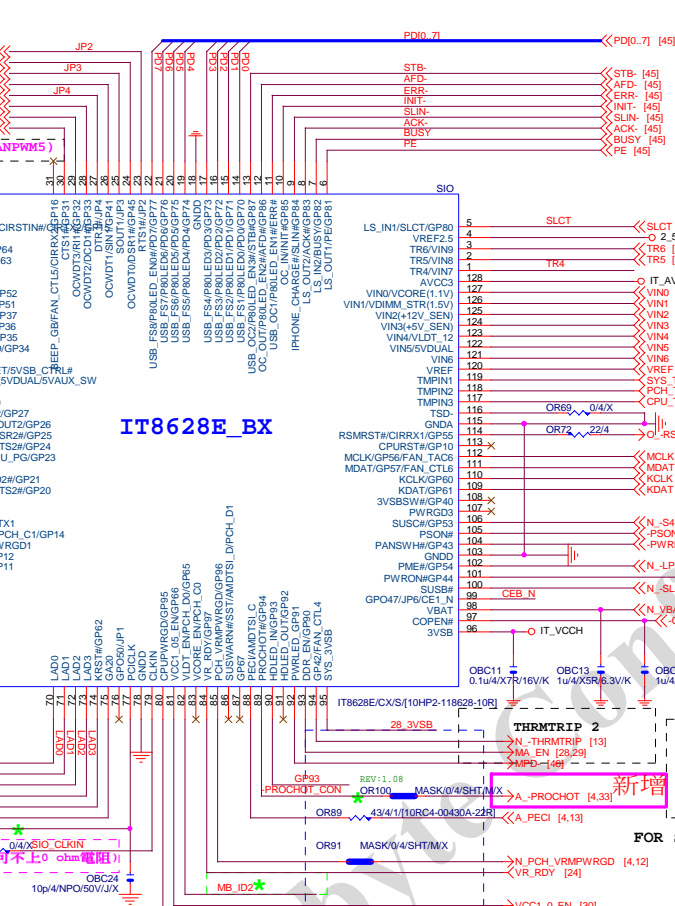
|                     |                       |              |          |
|---------------------|-----------------------|--------------|----------|
| Gigabyte Technology |                       |              |          |
| Title               |                       | BIOS         |          |
| Size                | Document Number       | GA-Z170-HD3P | Rev      |
| Custom              |                       |              | 1.0      |
| Date:               | Monday, July 20, 2015 | Sheet        | 15 of 54 |
|                     | 2                     |              | 1        |

SIO IT8628CX REV:1.08



| FAN TABLE              |                      |
|------------------------|----------------------|
| CPU_FAN                | FAN_CTL1<br>FAN_TAC1 |
| SYS_FAN1               | FAN_CTL2<br>FAN_TAC2 |
| SYS_FAN2               | FAN_CTL3<br>FAN_TAC3 |
| SYS_FAN3               | FAN_CTL5<br>FAN_TAC5 |
| OPT_FAN or<br>SYS_FAN4 | N/A                  |
| THRMTrip1              | YES PIN60            |
| THRMTrip2              | YES PIN94            |

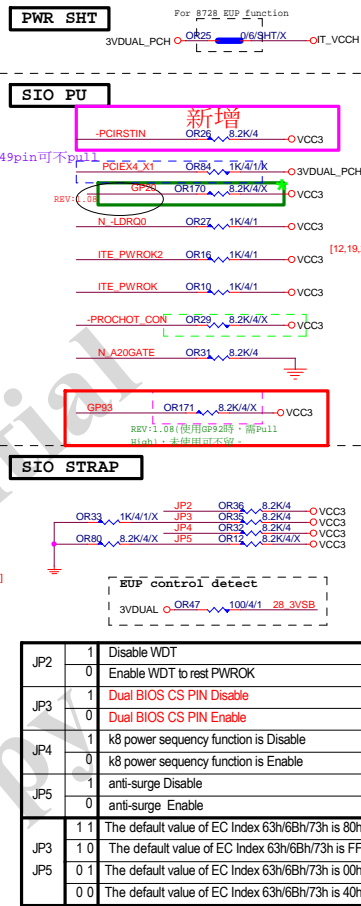
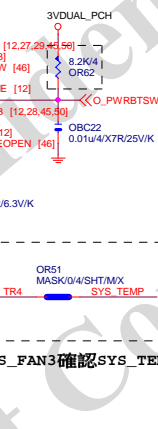
| IT8628CX GPIO問題匯整 |   |
|-------------------|---|
| PIN 50            | GP26-第一次接上POWER時會拉LO  |
| PIN 90/91         | DEFAULT為HDLed FUNCTION, GP93 BYPASS TO GP92 高濃時 GP92 會被拉LO(ITE BUG) |
| PIN 108           | GP40--- POWER ON 時會拉 LO   |
| PIN 111/112       | MOUSE 跟FAN6 FUNCTION 擇一使用, 不然會互相干擾                                  |
| PIN 22            | PIN23, 需高於3V, 若低於 該部分COM PORT及LPT裝置 蜂鳴器會異常動作。                       |



CLOSE SIO PIN4 2\_5LEVEL

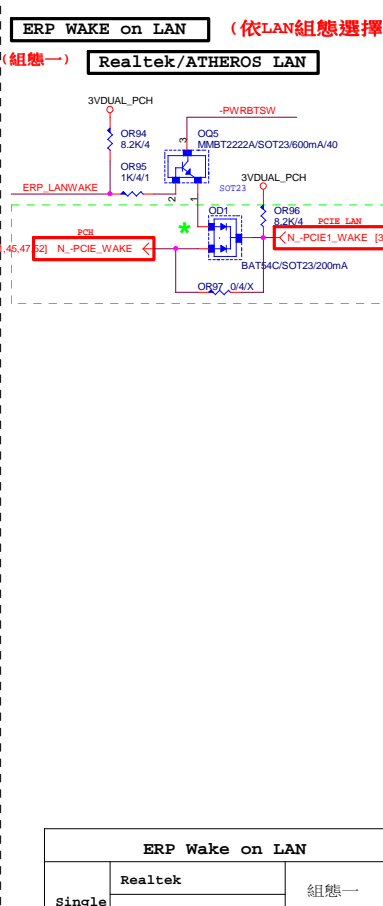
\*50pin沒用到,所以49pin可不pull high

IT8628E\_BX



| FOR SYS_FAN3確認SYS_TEMP |   |
|------------------------|---|
| JP2                    | 1 Disable WDT<br>0 Enable WDT to rest PWROK                                       |
| JP3                    | 1 Dual BIOS CS PIN Disable<br>0 Dual BIOS CS PIN Enable                           |
| JP4                    | 1 k8 power sequency function is Disable<br>0 k8 power sequency function is Enable |
| JP5                    | 1 anti-surge Disable<br>0 anti-surge Enable                                       |

| MB ID |  |
|-------|--|
| JP3   | 1 1 The default value of EC Index 63h/6Bh/73h is 80h.<br>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.<br>0 0 The default value of EC Index 63h/6Bh/73h is 40h. |

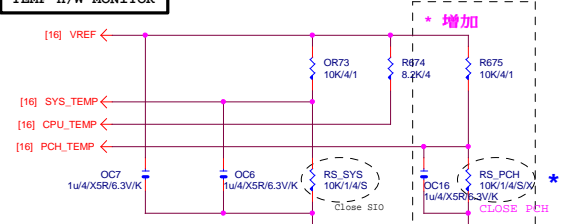


| ERP Wake on LAN |                   |     |
|-----------------|-------------------|-----|
| Single LAN      | Realtek           | 組態一 |
|                 | Atheros           | 組態二 |
| Dual LAN        | Intel 219         | 組態一 |
|                 | Intel 219+Atheros | 組態三 |
| No Support ERP  | BOM不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

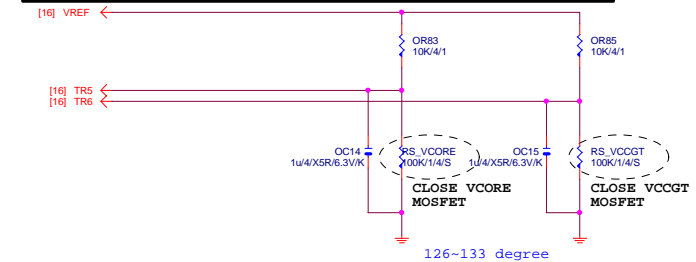
Gigabyte Technology

| Gigabyte Technology         |                 |          |
|-----------------------------|-----------------|----------|
| ITE 8628 LPC IO             |                 |          |
| Size Custom                 | Document Number | Rev 1.0  |
| GA-Z170-HD3P                |                 |          |
| Date: Monday, July 20, 2015 | Sheet           | 16 of 54 |

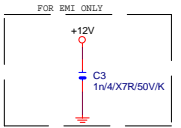
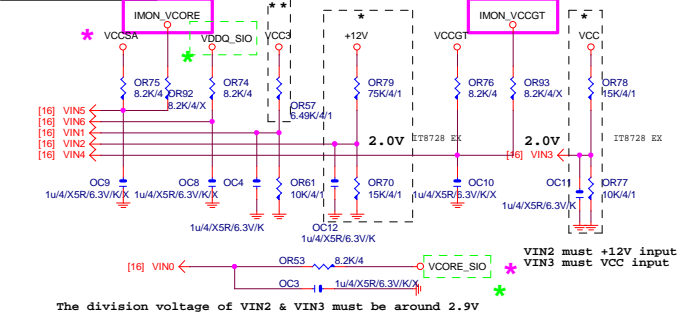
TEMP H/W MONITOR



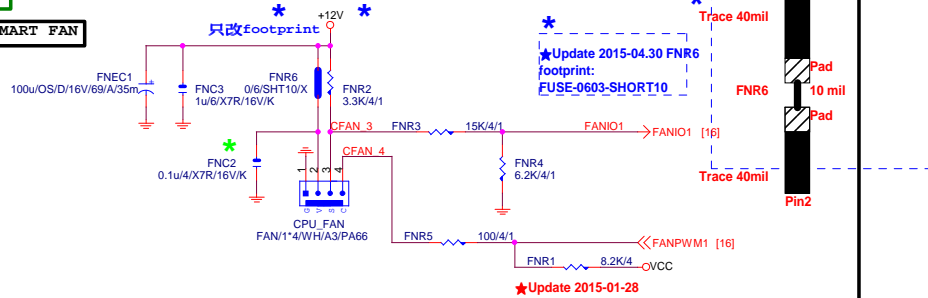
RS\_VCORE、RS\_VCCGT、CLOSE CPU\_VCORE & VCCGT MOSFET



VOLTAGE-- H/W MONITOR



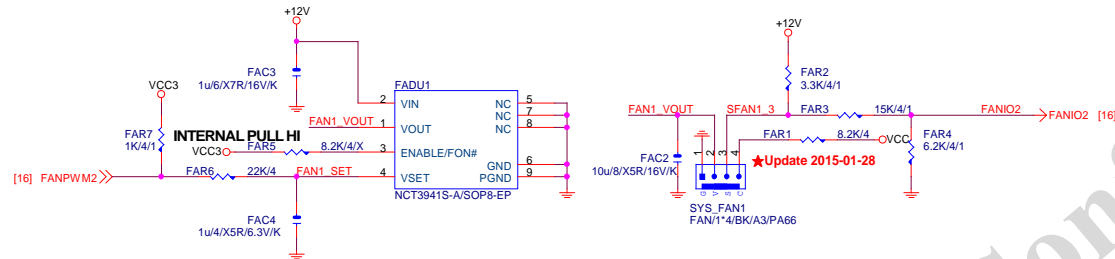
CPU SMART FAN



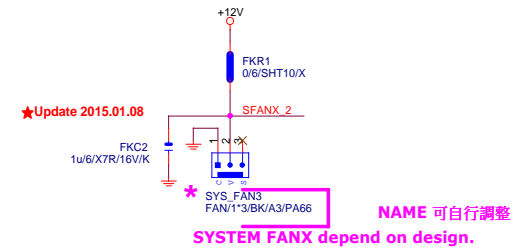
SYSTEM FAN1

Linear SYS\_FAN

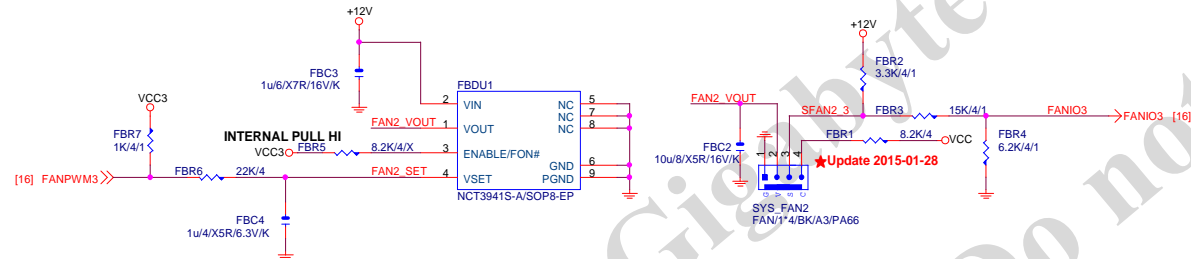
Enable Function (NCT3941S)  
Full Turn On Function (NCT3941S-A)



SYSTEM FANX

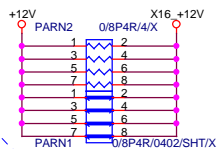


SYSTEM FAN2



GIGABYTE

|       |                       |                 |                     |     |    |
|-------|-----------------------|-----------------|---------------------|-----|----|
| Title |                       |                 | HWM,KB/MS, FAN CTRL |     |    |
| Size  | Custom                | Document Number | GA-Z170-HD3P        |     |    |
| Date: | Monday, July 20, 2015 | Sheet           | 18                  | of  | 54 |
|       |                       |                 | Rev                 | 1.0 |    |

\* +12 protect  
short-wire test[8,9,12,20,21,24,32,48] N\_SMBCLK  
[8,9,12,20,21,24,32,48] N\_SMBDATA

[12,16,20,21,45,47,52] N\_-PCIE\_WAKE

[10] -PCIE16\_PR

PA\_EXP\_RXP0\_15] >> PA\_EXP\_RXP[0..15] [4]  
PA\_EXP\_RXN0\_15] >> PA\_EXP\_RXN[0..15] [4]  
PA\_EXP\_TXP0\_15] >> PA\_EXP\_TXP[0..15] [4]  
PA\_EXP\_TXN0\_15] >> PA\_EXP\_TXN[0..15] [4]

|              |       |                    |                |
|--------------|-------|--------------------|----------------|
| PA_EXP_TXP0  | PAC5  | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP0 C  |
| PA_EXP_TXN0  | PAC4  | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN0 C  |
| PA_EXP_TXP1  | PAC6  | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP1 C  |
| PA_EXP_TXN1  | PAC7  | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN1 C  |
| PA_EXP_TXP2  | PAC8  | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP2 C  |
| PA_EXP_TXN2  | PAC9  | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN2 C  |
| PA_EXP_TXP3  | PAC10 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP3 C  |
| PA_EXP_TXN3  | PAC11 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN3 C  |
| PA_EXP_TXP4  | PAC12 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP4 C  |
| PA_EXP_TXN4  | PAC13 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN4 C  |
| PA_EXP_TXP5  | PAC14 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP5 C  |
| PA_EXP_TXN5  | PAC15 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN5 C  |
| PA_EXP_TXP6  | PAC16 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP6 C  |
| PA_EXP_TXN6  | PAC17 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN6 C  |
| PA_EXP_TXP7  | PAC18 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP7 C  |
| PA_EXP_TXN7  | PAC19 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN7 C  |
| PA_EXP_TXP8  | PAC21 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP8 C  |
| PA_EXP_TXN8  | PAC20 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN8 C  |
| PA_EXP_TXP9  | PAC22 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP9 C  |
| PA_EXP_TXN9  | PAC23 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN9 C  |
| PA_EXP_TXP10 | PAC24 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP10 C |
| PA_EXP_TXN10 | PAC25 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN10 C |
| PA_EXP_TXP11 | PAC26 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP11 C |
| PA_EXP_TXN11 | PAC27 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN11 C |
| PA_EXP_TXP12 | PAC28 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP12 C |
| PA_EXP_TXN12 | PAC29 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN12 C |
| PA_EXP_TXP13 | PAC30 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP13 C |
| PA_EXP_TXN13 | PAC31 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN13 C |
| PA_EXP_TXP14 | PAC32 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP14 C |
| PA_EXP_TXN14 | PAC33 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN14 C |
| PA_EXP_TXP15 | PAC34 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXP15 C |
| PA_EXP_TXN15 | PAC35 | 0.22u/4/X5R/6.3V/K | PA_EXP_TXN15 C |

PCIEX16:16/5/5/5/16

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

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

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

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

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

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

\* PCI-E/16X-164P/GYL/ONG DOUBLE/HK'2

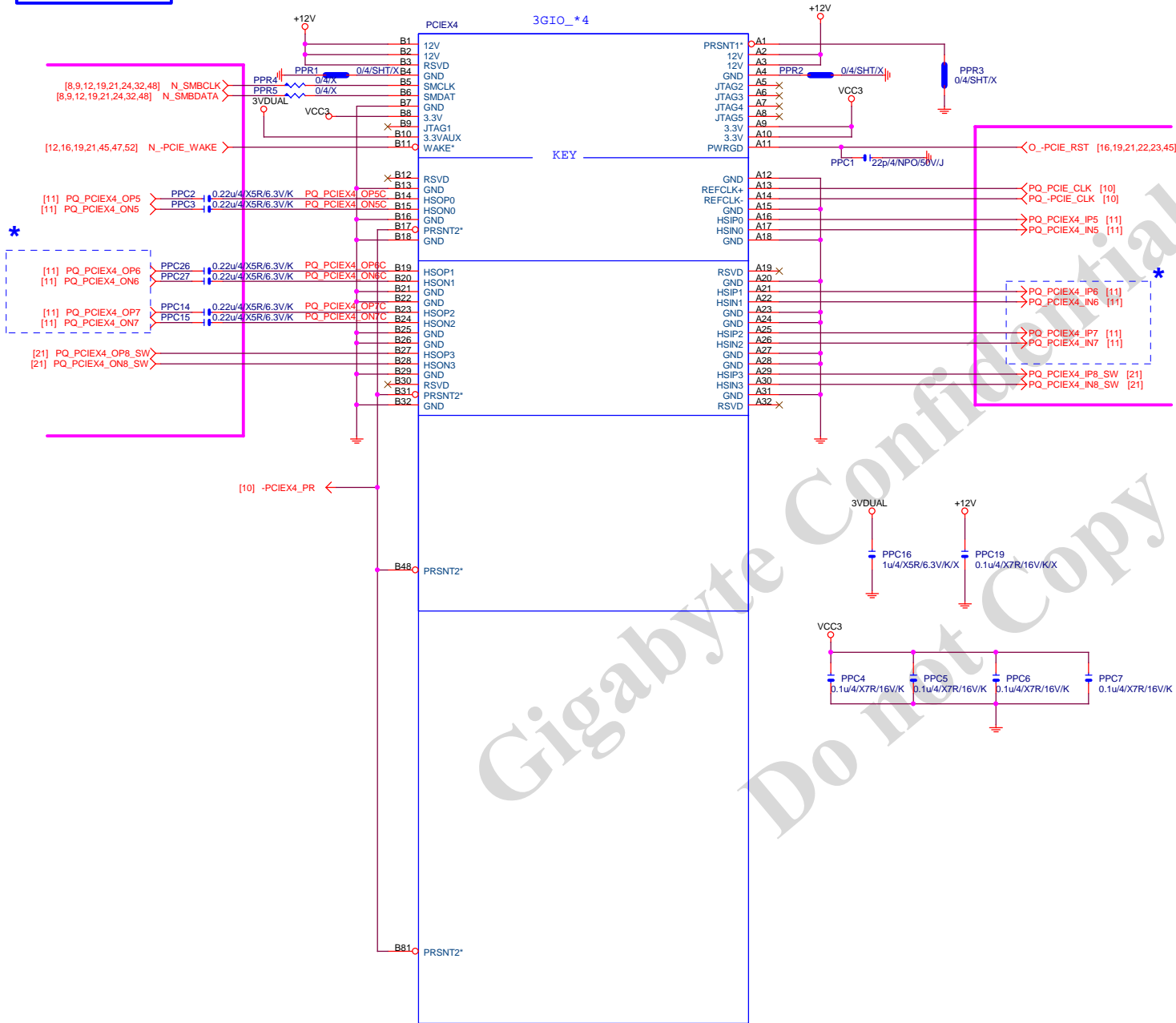
PCIEX16需更新無強化孔的Footprint

一般Footprint :PCIESLOT-164P

|                     |                       |                |
|---------------------|-----------------------|----------------|
| Gigabyte Technology |                       |                |
| Title               |                       |                |
| PCI EXPRESS * 16    |                       |                |
| Size                | Document Number       | Rev            |
| Custom              | GA-Z170-HD3P          | 1.0            |
| Date:               | Monday, July 20, 2015 | Sheet 19 of 54 |

Rev 0.51

PCIE\*4



\* PCI-E/4X-65P/BK/LONG DOUBLE/[11AC1-023065-51R]

要改66PIN

Gigabyte Technology

|                 |  |  |                       |
|-----------------|--|--|-----------------------|
| Title           |  |  | PCIE_X4               |
| Size            |  |  | Custom                |
| Date:           |  |  | Monday, July 20, 2015 |
| Document Number |  |  | GA-Z170-HD3P          |
| Rev             |  |  | 1.0                   |
| Sheet           |  |  | 20 of 54              |

PCIEX1\_3

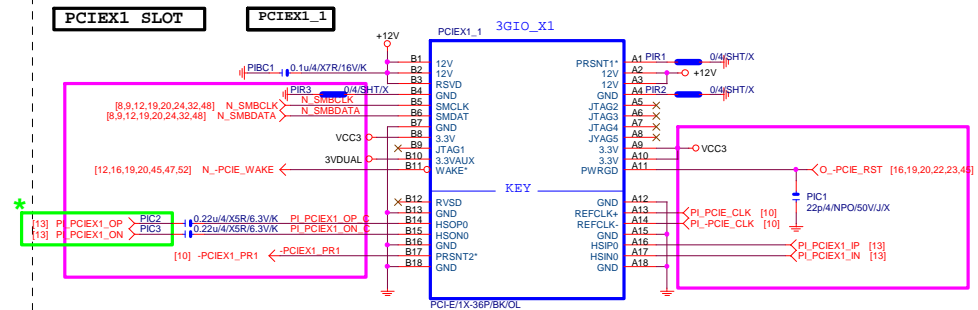
PPR11 PU VCC3, PCH端的-PCIEX1\_PR2已經預留NR10  
[10,13] N\_GPP\_G3

PPD2

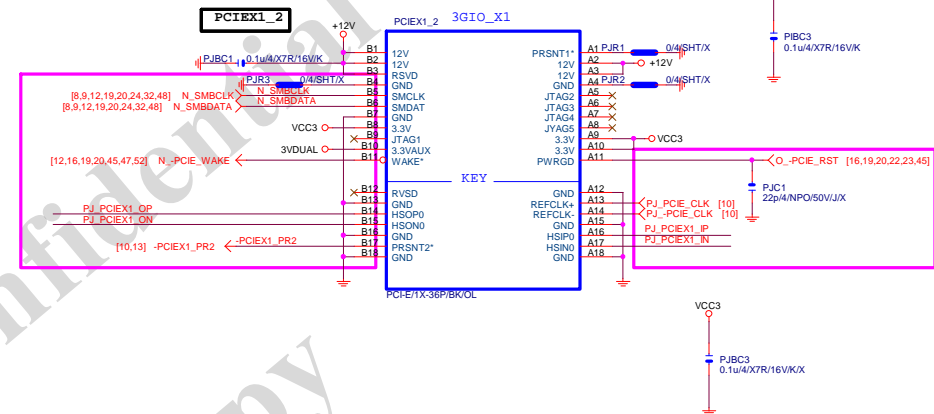
PPU2

|  | N_GPP_G3<br>(PCH GPP_G3) | PCIEX4 X1<br>(SIO_GPIO27) |
|--|--------------------------|---------------------------|
| PCIEX4 -> X4<br>M2_WIFI -> N/A<br>PCIEX1 -> N/A<br>(Default) | H                        | H                         |
| PCIEX4 -> X1<br>M2_WIFI -> X1<br>PCIEX1 -> X1                | L                        | L                         |

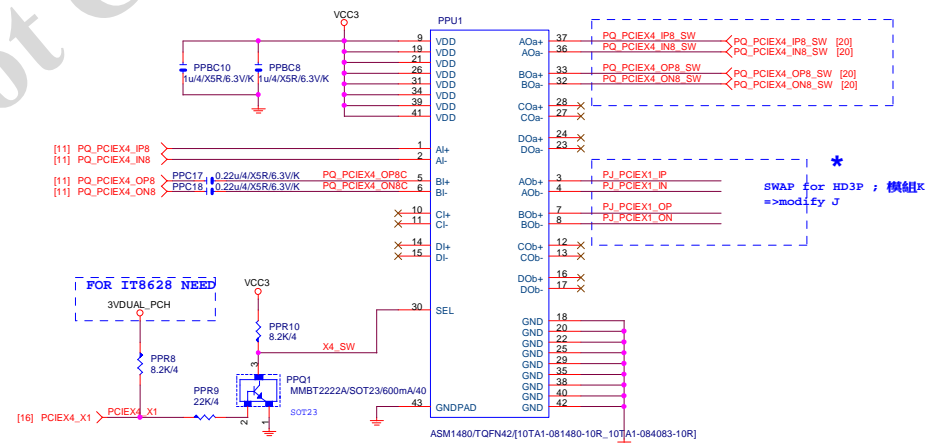
## PCIEX1 SLOT



## PCIEX1\_2



## PCIEX4/X1 SWITCH



| Function  | SEL                |
|-----------|--------------------|
| X1--> x0h | L;PCIEX4 SLOT-->X1 |
| X1--> x0h | H;PCIEX4 SLOT-->X1 |

M.2 Lane4 from PCH port18

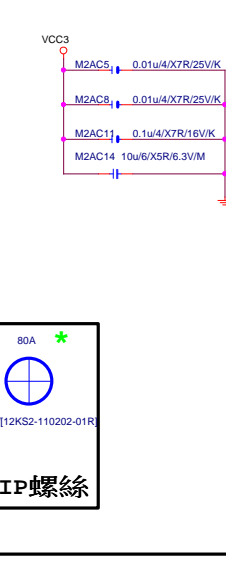
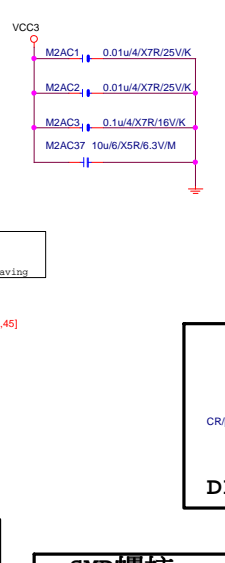
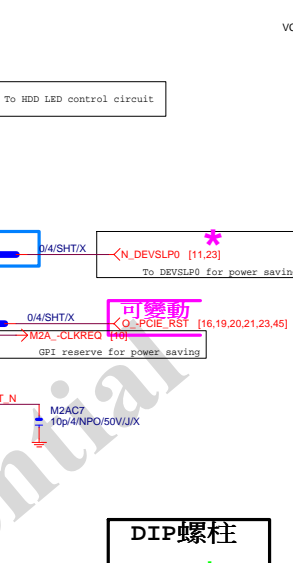
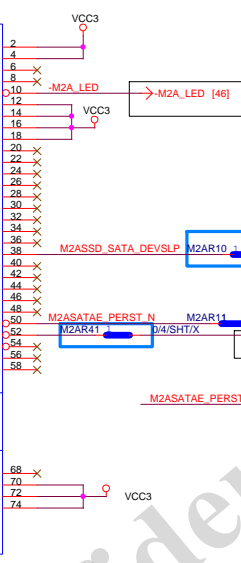
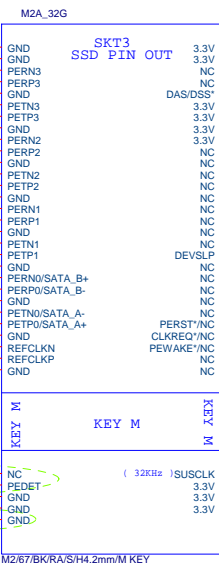
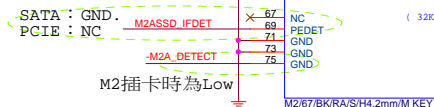
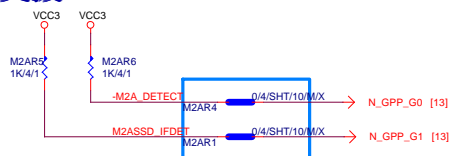
M.2 Lane3 from PCH port17

M.2 Lane2 from PCH port16

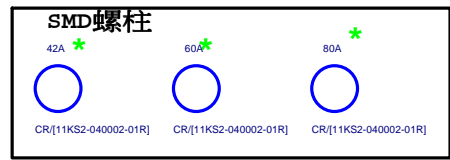
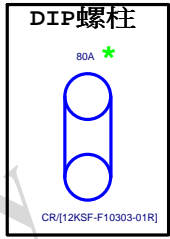
M.2 Lane2 from PCH port15

需與M2\_-CLKREQ對應

支援SATA and M.2 function

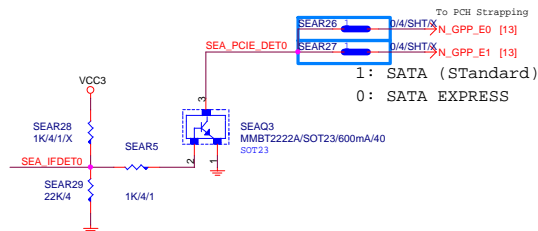
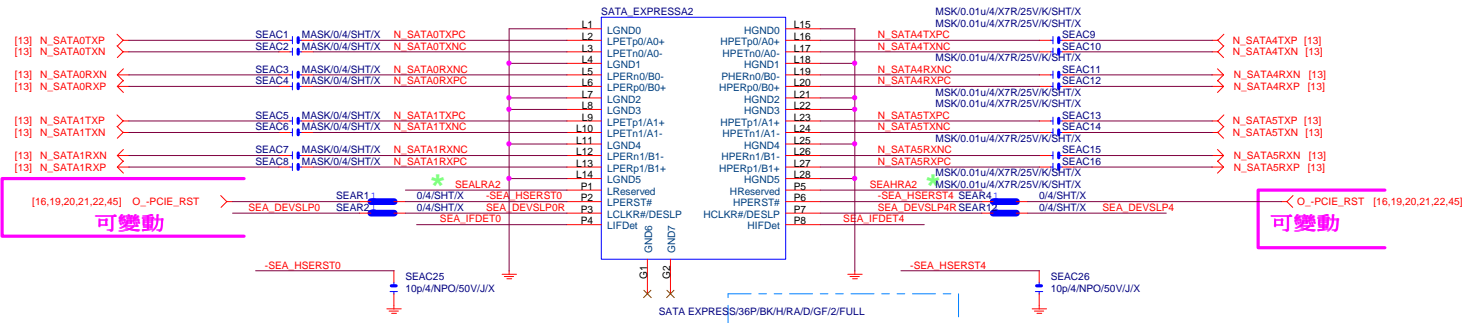
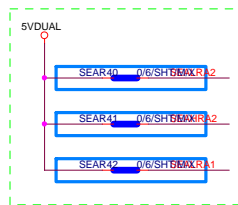


| M.2<br>有插卡<br>/沒插卡<br>GPP_G0 | M.2插何種卡?<br>GPP_G1 | SATA Express<br>插何種硬碟?<br>GPP_E0/E2/F1 | IO15<br>(S0)  | IO16<br>(S1)         | IO17       | IO18       | IO19<br>(S0) | IP20<br>(S1) |
|------------------------------|--------------------|--|---------------|----------------------|------------|------------|--------------|--------------|
| 有插卡<br>(Low)                 | SATA Mode<br>(Low) | SATA<br>(Hi)                           | SATA<br>(M.2) | PCIE<br>x1           | PCIE<br>x1 | PCIE<br>x1 | PCIE<br>x1   | SATA         |
|                              |                    | SATA Express<br>(Low)                  | SATA<br>(M.2) | PCIE<br>x1           | PCIE<br>x1 | PCIE<br>x1 | SATA Express |              |
|                              | PCIE Mode<br>(Hi)  | SATA<br>(Hi)                           |               | PCIE x4<br>(For M.2) |            |            | SATA         | SATA         |
|                              |                    | SATA Express<br>(Low)                  |               | PCIE x4<br>(For M.2) |            |            | SATA Express |              |
| 沒插卡<br>(Hi)                  | Don't Care<br>(Hi) | SATA<br>(Hi)                           |               | PCIE x4              |            |            | SATA         | SATA         |
|                              |                    | SATA Express<br>(Low)                  |               | PCIE x4              |            |            | SATA Express |              |



SATA EXPRESS 下層 To SATA3 port0/1

SATA EXPRESS 上層 To SATA3 port4/5



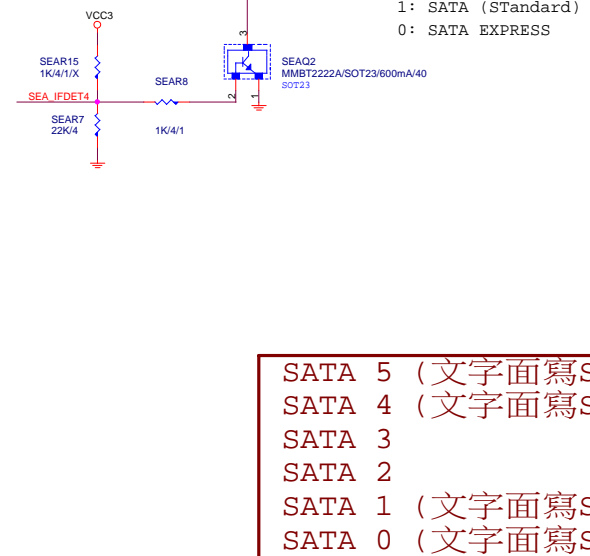
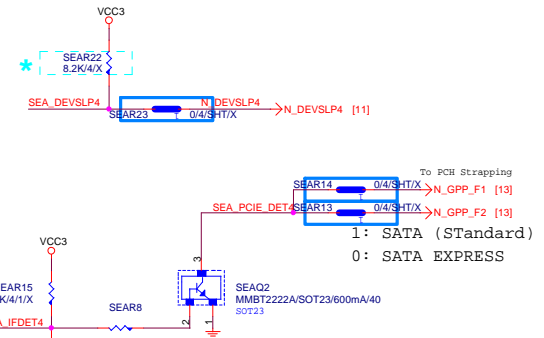
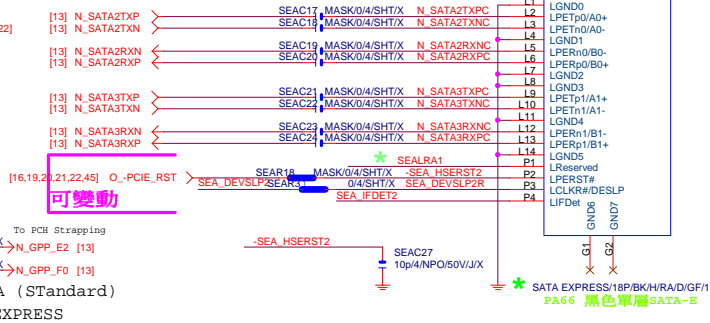
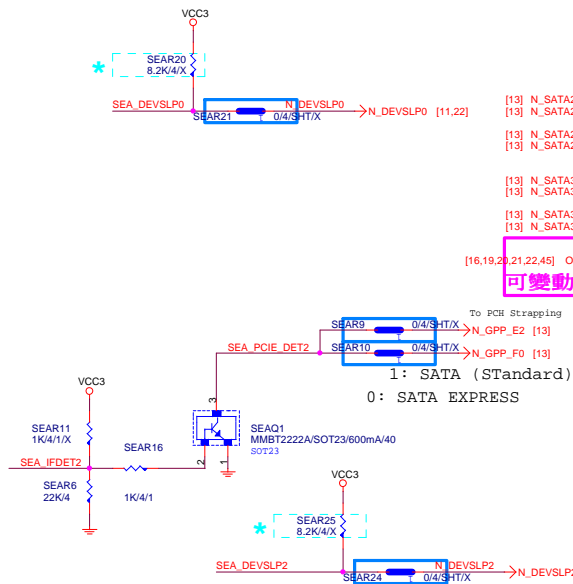
SATA EXPRESS料號

雙層:11NR6-C10236-11R

單層+2SATA : 11NR6-C10232-11R

單層:11NR6-C10118-31R

To SATA3 port2/3



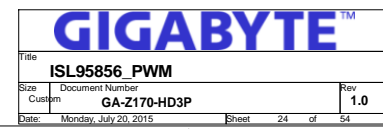
SATA 5 (文字面寫SATA 1)  
SATA 4 (文字面寫SATA 0)  
SATA 3  
SATA 2  
SATA 1 (文字面寫SATA 5)  
SATA 0 (文字面寫SATA 4)

Gigabyte Technology

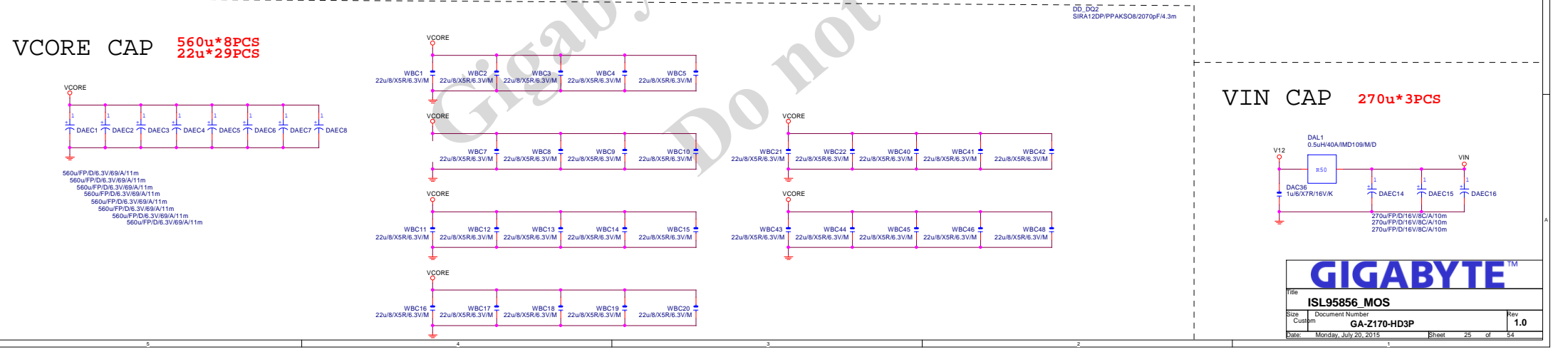
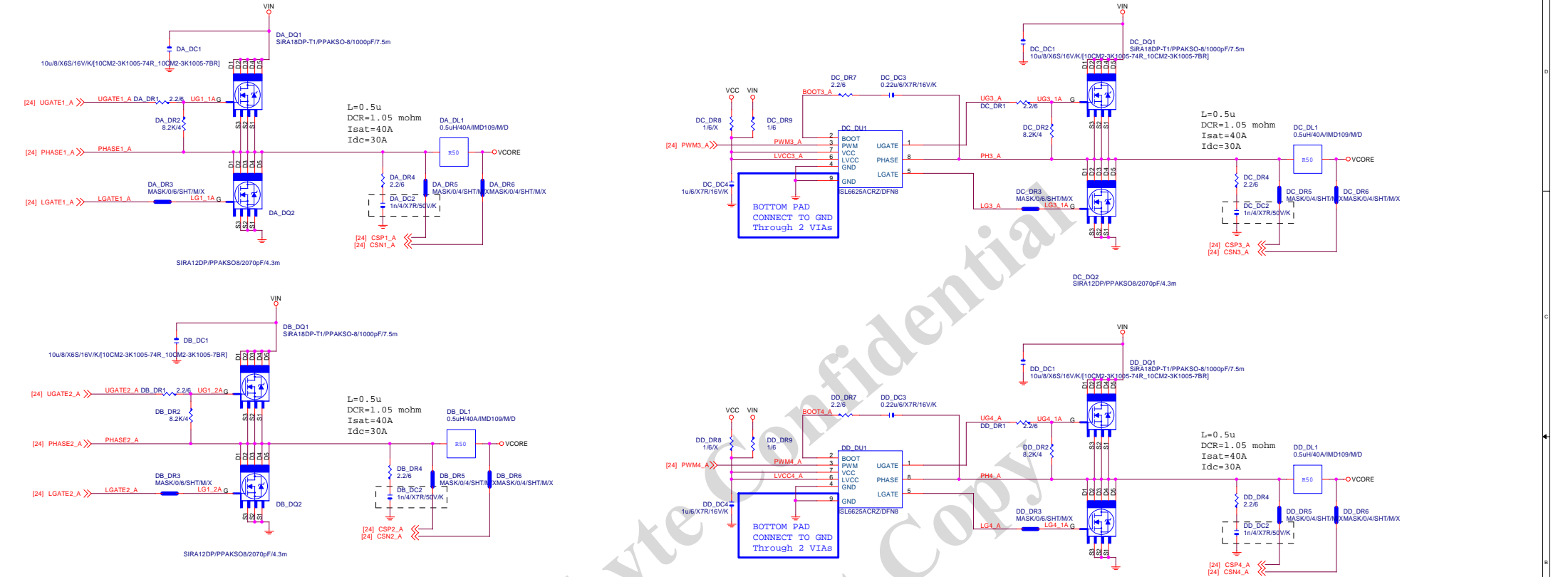
SATA EXPRESS

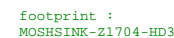
Size Document Number  
Custom GA-Z170-HD3P Rev 1.0

Date: Monday, July 20, 2015 Sheet 23 of 54



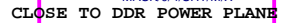
VCORE



[illegible]



## DDR4



L=0.5u  
DCR=1.05 mohm  
Isat=40A  
Idc=30A

Remote sense請從最重的負載端點拉回

MOSFET請依MOSFET使用規則,自行選擇  
ON-->10IF9-040406-10R[NTMFS4C06N/N/PPAK/1400pF/4m]  
VISHAY-->10IF9-040012-10R[SIRA12DP/PPAKS08/2070pF/4.3m]

|     |     |
|-----|-----|
| PWR | SEQ |
|-----|-----|

**DDRVTT**

For PVT : for chang Mode=> MAR110/MAR111不能改short pad

|             |        |     |             |
|-------------|--------|-----|-------------|
| DDR_VTT_CTL | MAR110 | 0/4 | DDRVTT_EN   |
| N -SLP_S3   | MAR111 | 0/4 | DDRVTT_BOOT |

MAU1上NCT3103S時上件

**GIGABYTE™**

## RT8120\_DDR4 POWER

|                             |  |                   |
|-----------------------------|--|-------------------|
| Size<br>Custom              | Document Number<br><b>GA-Z170-HD3P</b> | Rev<br><b>1.0</b> |
| Date: Monday, July 20, 2015 | Sheet 28 of 54                         |                   |

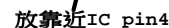
DDRVTT CAP

\* 大電容 x0

560u\*4PCS    22u\*2PCS

\* 大電容 x4

**VPP 25V**

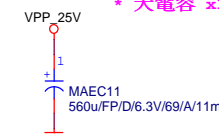


## CHOKES與CAP料號可變

L=0.5u  
DCR=2.1 mohm  
Isat=20A  
Idc=15A

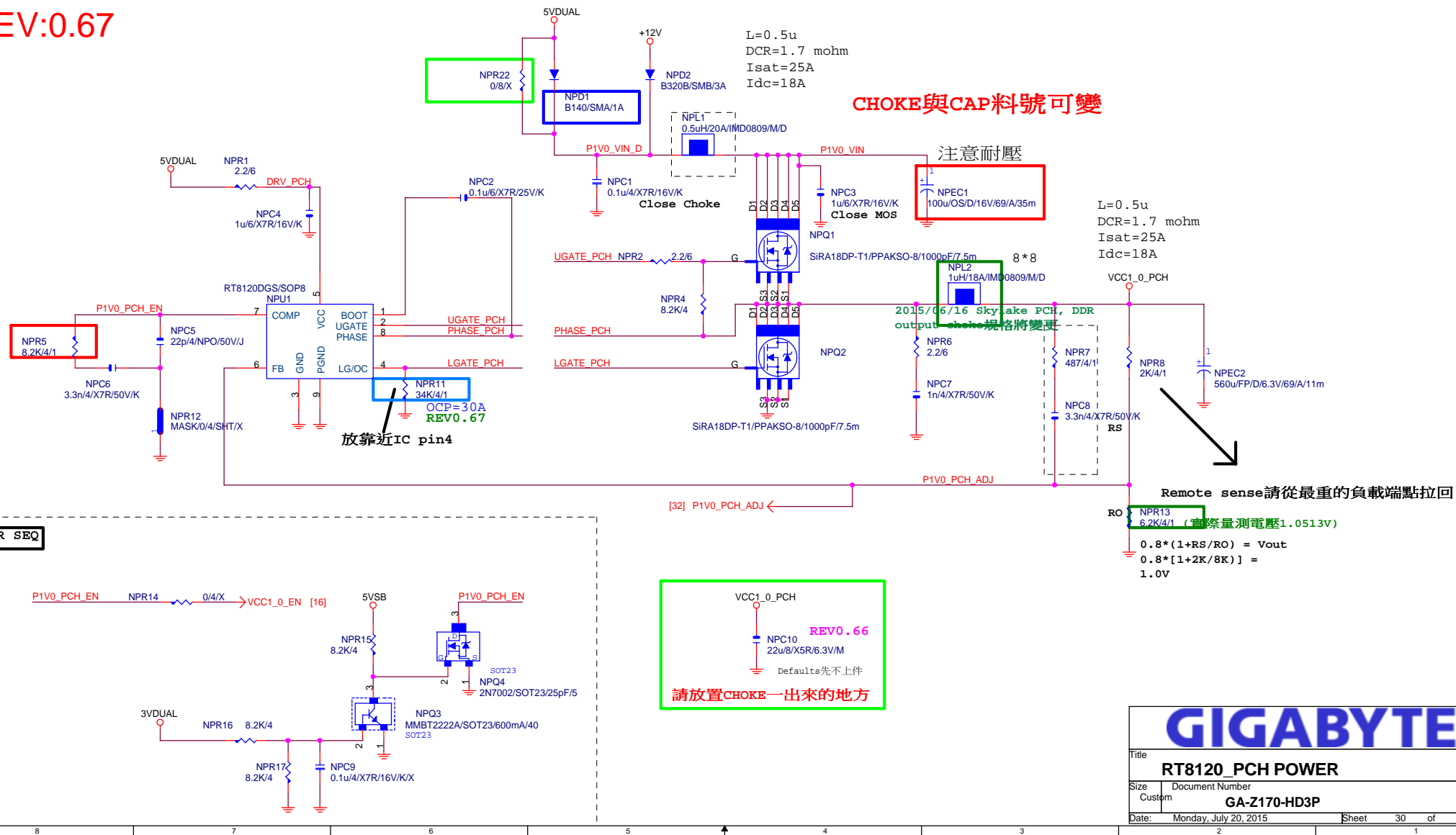
25A MAX

Remote sense請從最重的負載端點拉回



|                    |                       |       |          |
|--------------------|-----------------------|-------|----------|
| Title              |                       |       |          |
| RT8120_VPP25 POWER |                       |       |          |
| Size               | Document Number       | Rev   |          |
| Custom             | GA-Z170-HD3P          | 1.0   |          |
| Date:              | Monday, July 20, 2015 | Sheet | 29 of 54 |

REV:0.67

**GIGABYTE™**

RT8120\_PCH POWER

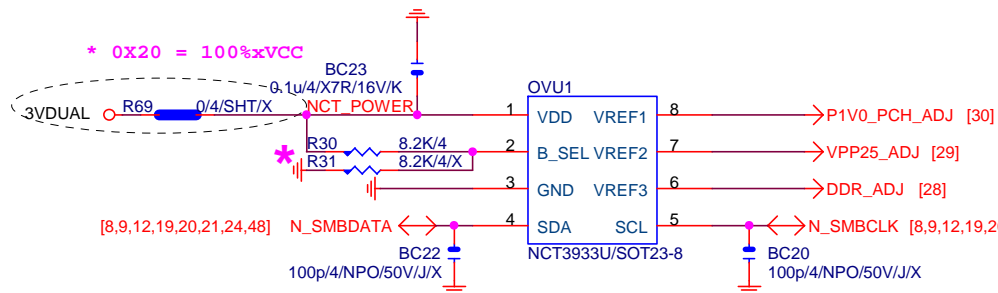
|                |  |                   |
|----------------|--|-------------------|
| Size<br>Custom | Document Number<br><b>GA-Z170-HD3P</b> | Rev<br><b>1.0</b> |
| Date:          | Monday, July 20, 2015                  | Sheet 30 of 54    |

|                             |                |
|-----------------------------|----------------|
| Date: Monday, July 20, 2015 | Sheet 30 of 54 |
|-----------------------------|----------------|

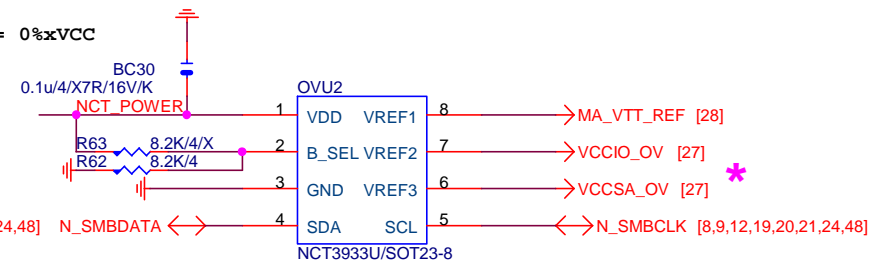
Gigabyte Confidential  
Do not Copy

|                     |                       |                |     |
|---------------------|-----------------------|----------------|-----|
| Gigabyte Technology |                       |                |     |
| Title               |                       |                |     |
| DISCRETE POWER      |                       |                |     |
| Size                | Document Number       |                | Rev |
| Custom              | GA-Z170-HD3P          |                | 1.0 |
| Date:               | Monday, July 20, 2015 | Sheet 31 of 54 |     |

OVER VOLTAGE



0X2A = 0%xVCC



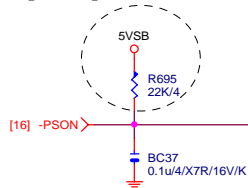
0X22 = 75%xVCC

\* 删除 OVU3

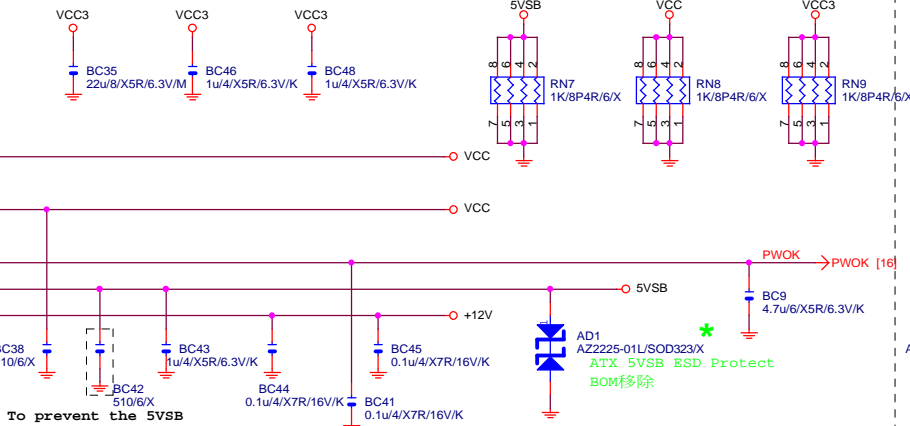
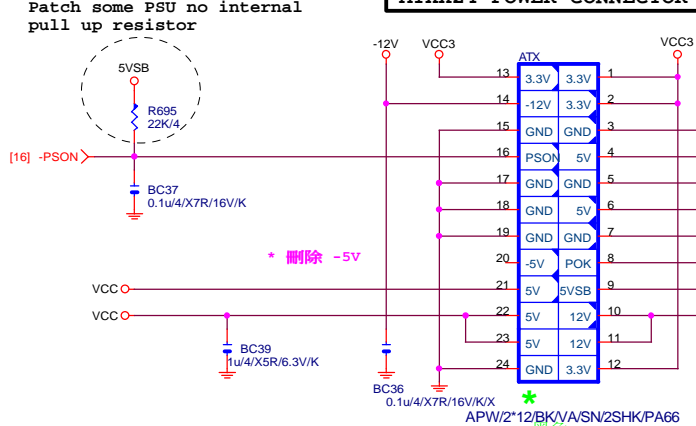
| NCT3933 | 0X2A         | 0X20         | 0X22       |
|---------|--------------|--------------|------------|
| VREF1   | DDRVTT       | VREF_DDRA_DQ | PCH Core   |
| VREF2   | VREF_DDRA_CA | N/A          | VCC1_5_PCH |
| VREF3   | VREF_DDRA_CA | VREF_DDRB_DQ | SMREF      |

|                     |                       |                |
|---------------------|-----------------------|----------------|
| Gigabyte Technology |                       |                |
| Title               |                       |                |
| CPU CORE VR-2       |                       |                |
| Size                | Document Number       | Rev            |
| Custom              | GA-Z170-HD3P          | 1.0            |
| Date:               | Monday, July 20, 2015 | Sheet 32 of 54 |

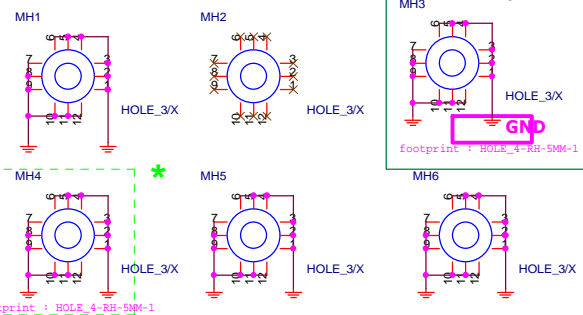
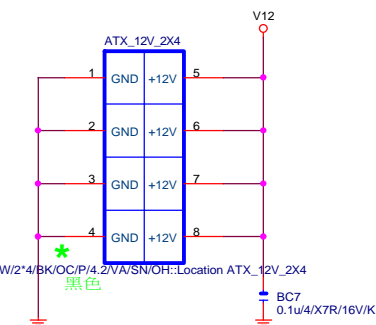
Patch some PSU no internal pull up resistor



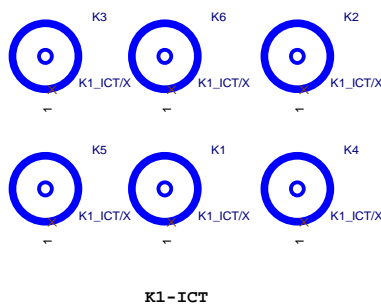
## ATXX24 POWER CONNECTOR



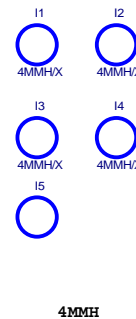
## ATXX4 POWER CONNECTOR



有TYPE-C螺絲洞改半圈, footprint :HOLE\_4-RH-5MM-1



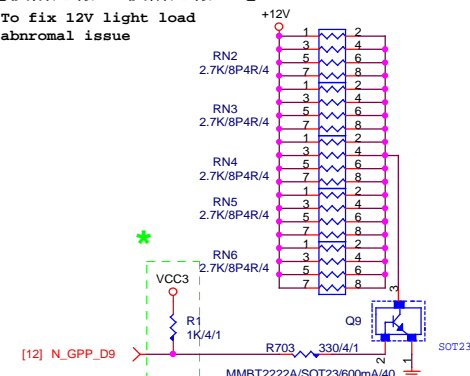
K1-ICT



4MMH

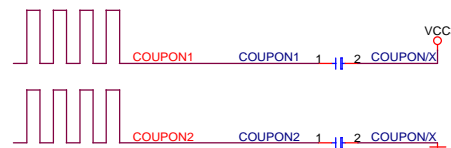
## 【技術通報R&D技術通報153】

To fix 12V light load abnormal issue



-PROHOT

## COUPON

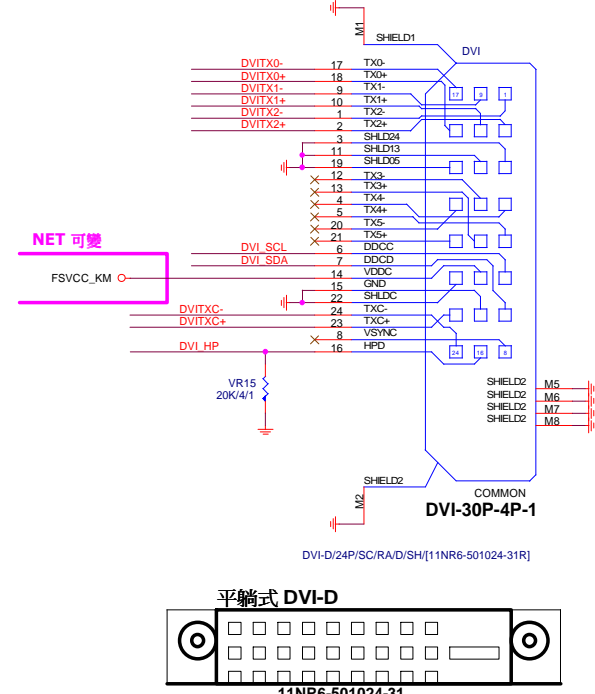


Gigabyte Technology

|                     |                       |  |                |     |
|---------------------|-----------------------|--|----------------|-----|
| Title               |                       |  |                |     |
| ATX POWER CONNECTOR |                       |  |                |     |
| Size Custom         | Document Number       |  |                | Rev |
|                     | GA-Z170-HD3P          |  |                | 1.0 |
| Date:               | Monday, July 20, 2015 |  | Sheet 33 of 54 |     |



## NET 可變

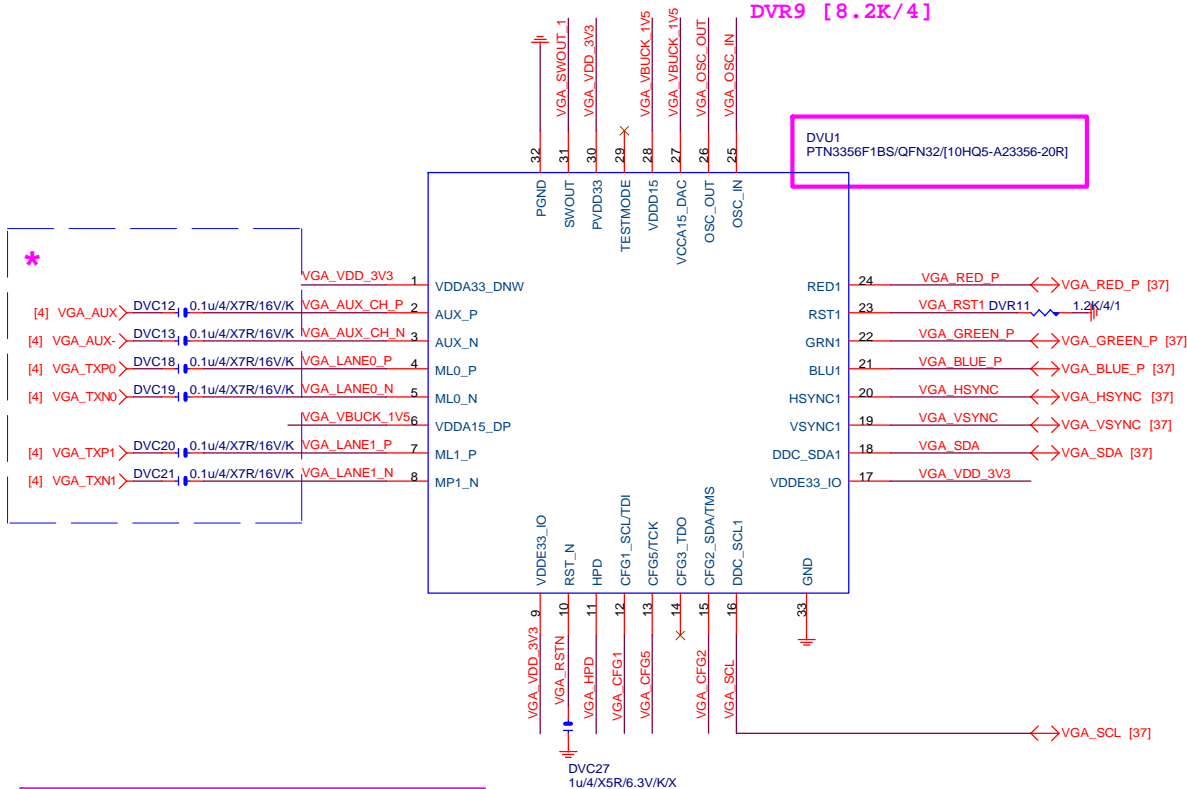


PTN3356 R1.08

ROM PART: PTN3356R1BS/[10HQ5-A23356-10R]  
FLASH PART:  
PTN3356F1BS/[10HQ5-A23356-20R]

省X'TAL COST DOWN:

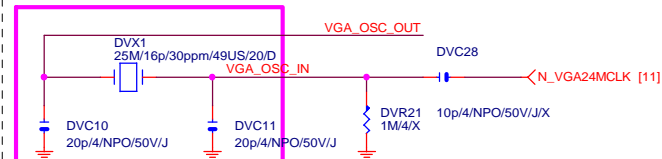
1. 上件:  
DVC28 [10p/4/NPO/50V/J]  
DVC11 [10p/4/NPO/50V/J]~修改值  
DVR10 [8.2K/4]  
2. 删除:  
DVX1 [25M/16p/30ppm/49US/20/D]  
DVC10 [20p/4/NPO/50V/J]  
DVR9 [8.2K/4]



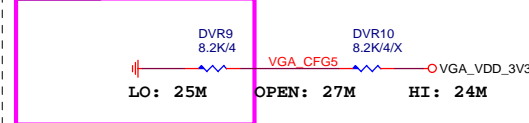
放置PCH端

[10] N\_DDPD\_CTRLCLK ↔ DVR19 2.2K/4/1 → VCC3  
[10] N\_DDPD\_CTRLDATA ↔ DVR20 2.2K/4/1 → VCC3

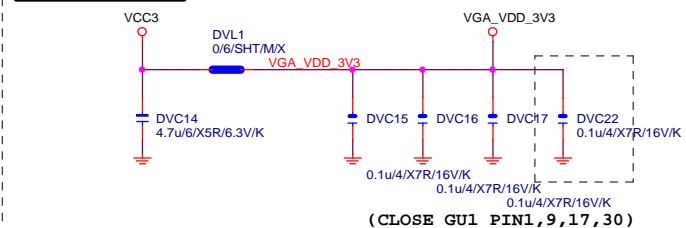
25M Crystal FROM PCH 24MHZ ISSUE



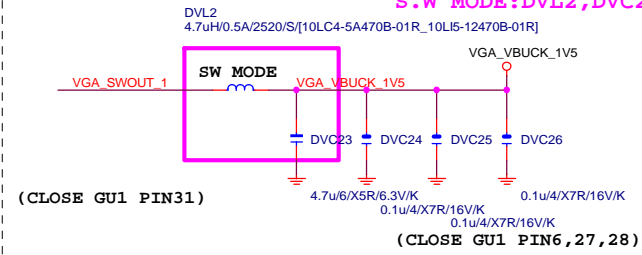
CFG5 For Crystal Less



ADAPTER POWER

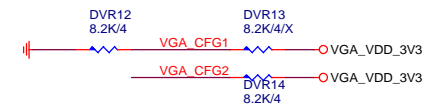


LDO MODE: DVL2, DVC23-->X  
S.W MODE: DVL2, DVC23-->O

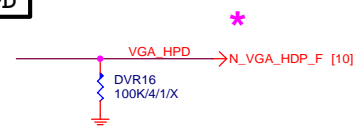


CFG1&2

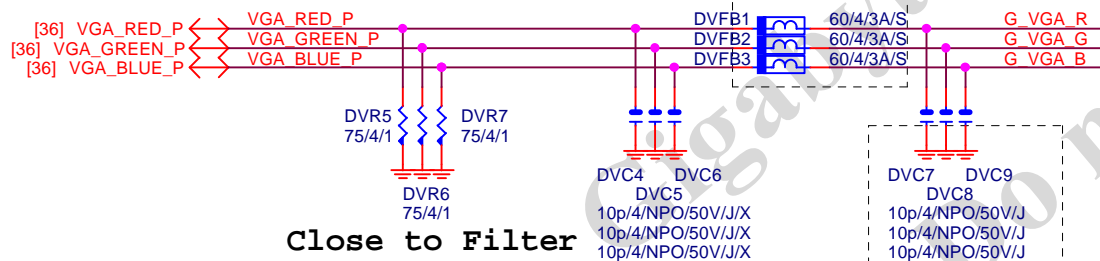
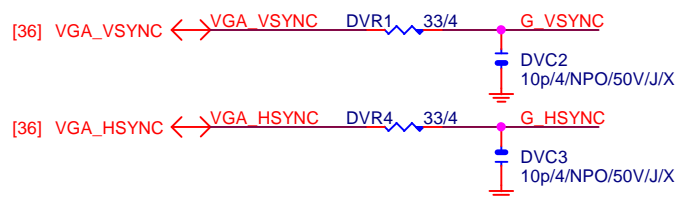
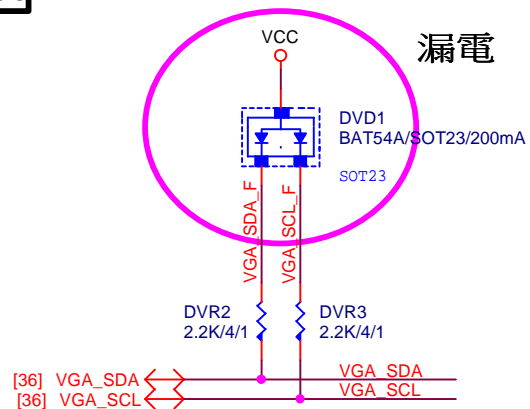
Non-Compliant



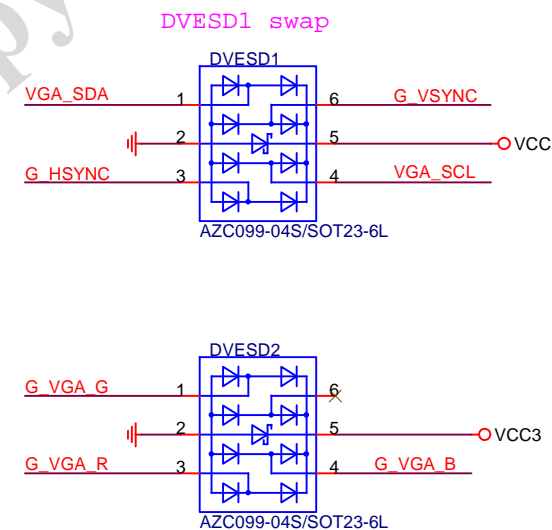
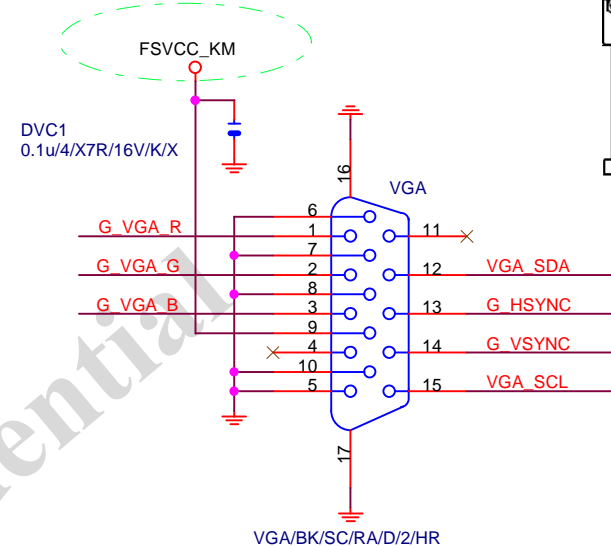
HPD



|                     |                       |                |   |
|---------------------|-----------------------|----------------|---|
| Gigabyte Technology |                       |                |   |
| NXP-PTN3356         |                       |                |   |
| Title               | GA-Z170-HD3P          |                |   |
| Size Custom         | Document Number       | Rev 1.0        |   |
| Date:               | Monday, July 20, 2015 | Sheet 36 of 54 | 1 |



FOR EMI



Gigabyte Technology  
NXP-PTN3356

Size Custom Document Number GA-Z170-HD3P

Rev 1.0

Date: Monday, July 20, 2015 Sheet 37 of 54

Rev: 0.7

\* USB 電容前後NET 可自行調整

ASM1142

USB3.0/2.0

USB 電容前後NET 可自行調整

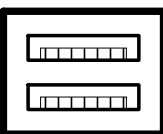
ESD 可自行SWAP PIN

\* ASM1142

CONNECTOR 自行調整

2 port USB 3.0 Capture:

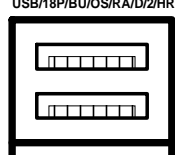
USB/18P/BU/OS/RA/D/2/1U/SB



Footprint:USB30\_20

2 port USB 3.0 with TYPE C Capture:

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

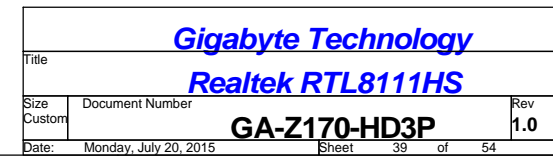


Footprint:USB30\_H

R\_USB30\_2

KB\_MS\_USB3

ASM1142 USB31 Host Rev0.62



LAESD3  
AZC099-04S/SOT23-6L/X

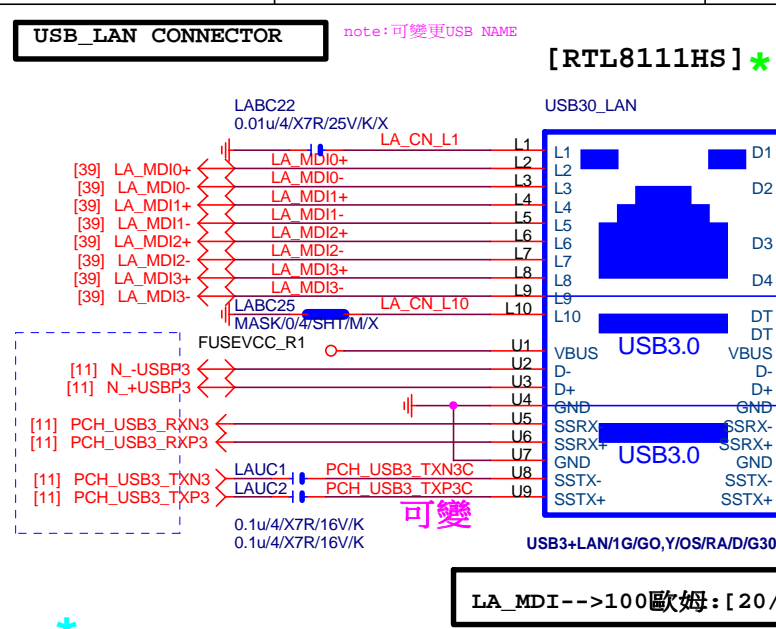
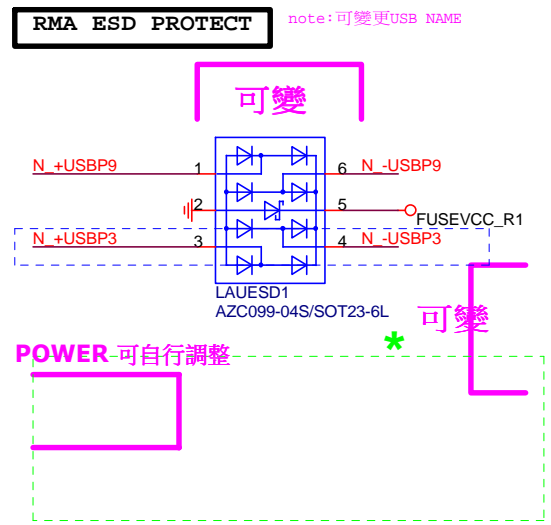
LA MDI1- 1 6 LA MDI1+  
2 5  
LA MDI0+ 3 4 LA MDI0-

5V DUAL

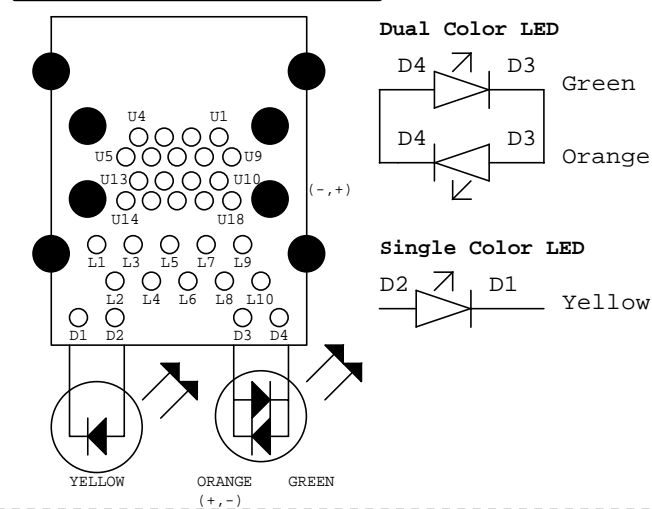
LAESD3  
AZC099-04S/SOT23-6L/X

LA MDI3- 1 6 LA MDI3+  
2 5  
LA MDI2- 3 4 LA MDI2-

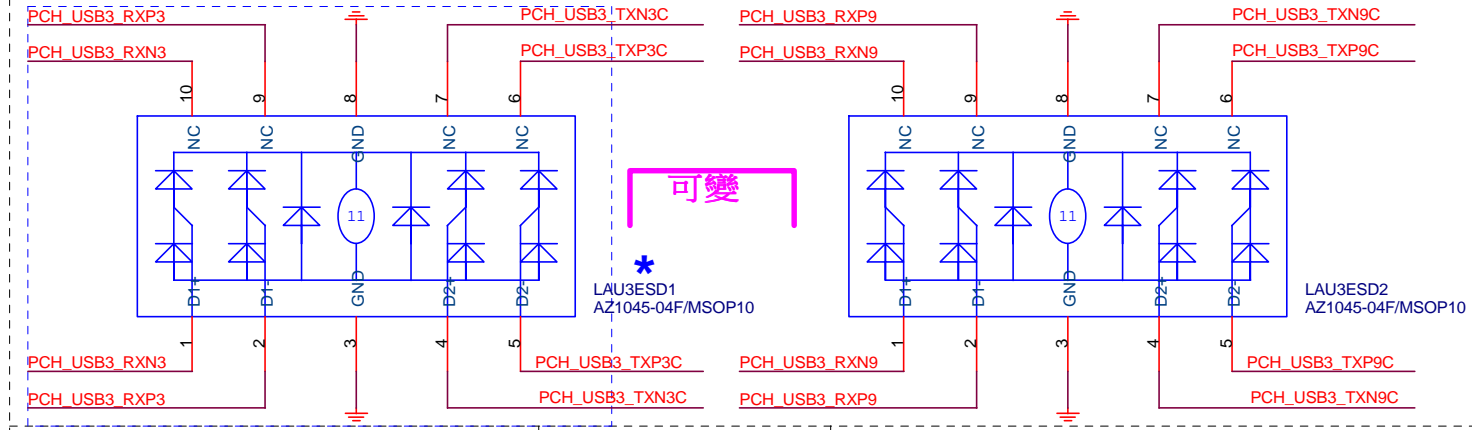
USB\_LAN CONNECTOR R1.06



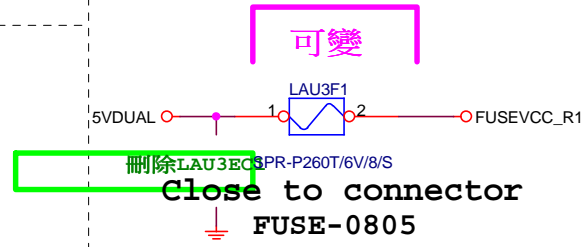
USB30 LAN LAYOUT示意圖



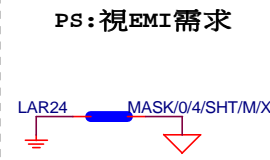
RMA ESD PROTECT



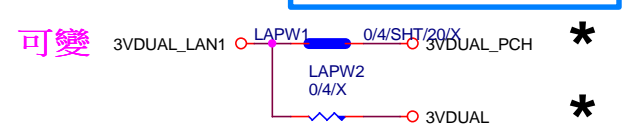
USB POWER



EMI SHORT PAD



LAN POWER



|                         |                       |              |          |
|-------------------------|-----------------------|--------------|----------|
| Gigabyte Technology     |                       |              |          |
| LAN CONNECTOR-RTL8111HS |                       |              |          |
| Title                   | Document Number       | Rev          |          |
| Size                    | Custom                | GA-Z170-HD3P |          |
| Date:                   | Monday, July 20, 2015 | Sheet        | 40 of 54 |



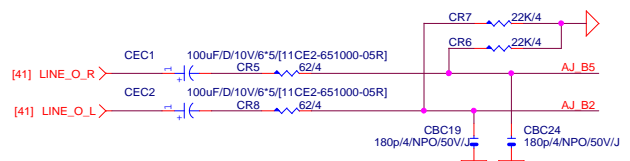
CR49 MASK 0/6/SHT/30/X → Close F\_AUDIO

CR50 MASK 0/6/SHT/30/X → Close Codec  
MOATC1 0.1u/4/X7R/16V/K/X

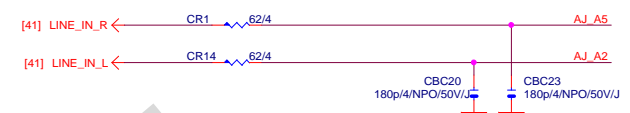
CR21 2.2/6 → Audio jack <--> USB\_LAN

CR24 0.6/X → Under Audio jack  
\*量産前,0ohm改short pad

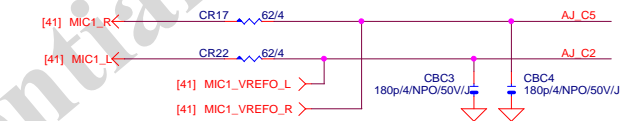
LINE-OUT



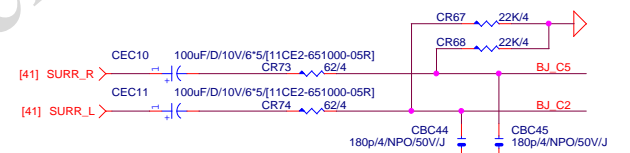
LINE-IN



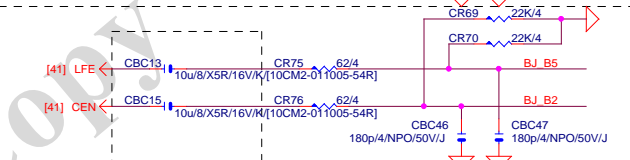
MIC-IN



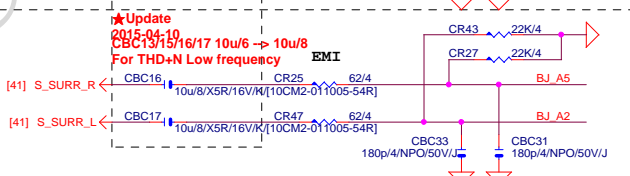
SURROUND



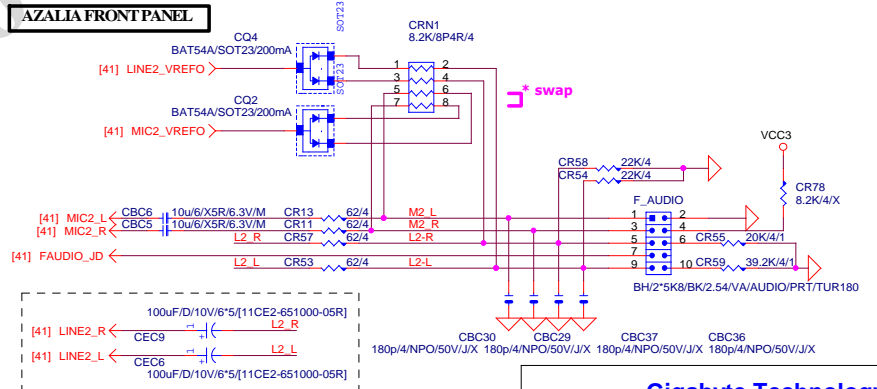
CEN/LFE



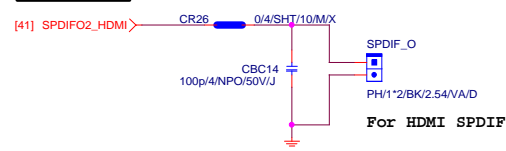
SURRBACK



AZALIA FRONT PANEL

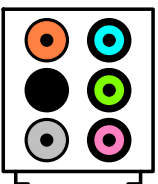


SPDIF\_OUT

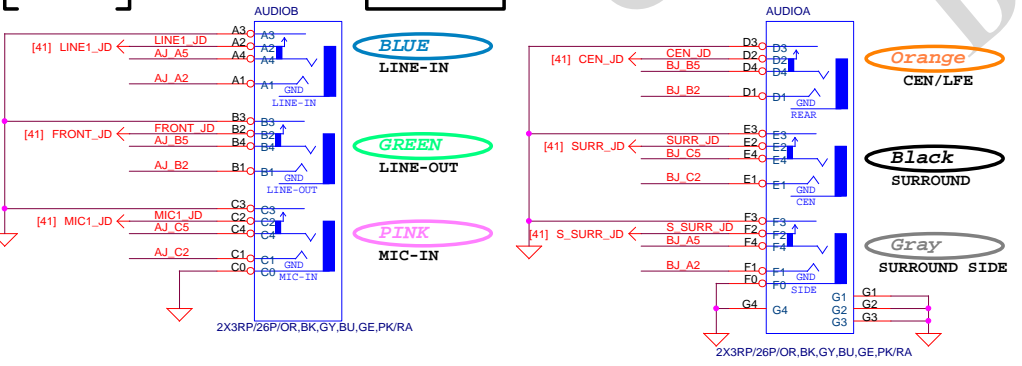


SPDIF\_IN

AZALIA JACK



AZALIA JACK

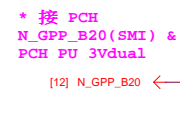
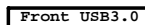


Gigabyte Technology

AUDIO JACK

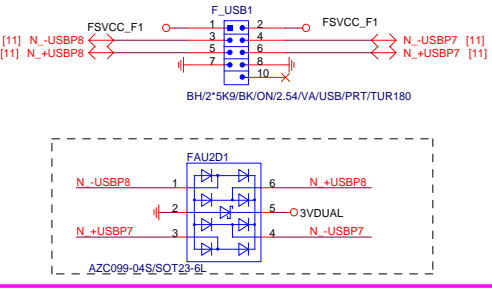
GA-Z170-HD3P

|                             |                 |     |
|-----------------------------|-----------------|-----|
| Title                       | Document Number | Rev |
|                             | GA-Z170-HD3P    | 1.0 |
| Size Custom                 |                 |     |
| Date: Monday, July 20, 2015 | Sheet 42 of 54  |     |

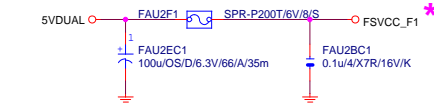


FRONT USB1

NET 可變

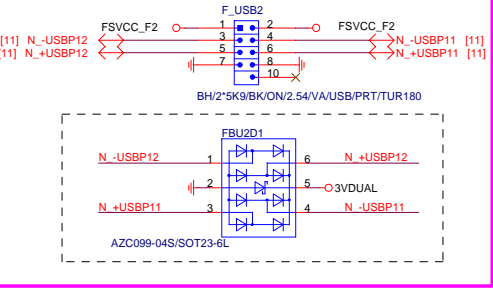


Close to connector  
FUSE 2 Port 1 Fuse 2A

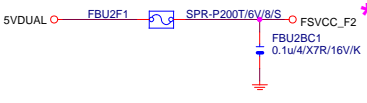


FRONT USB2

NET 可變



Close to connector  
FUSE 2 Port 1 Fuse 2A



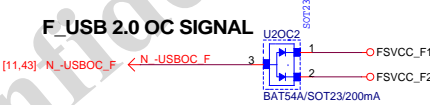
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FRONT USB4

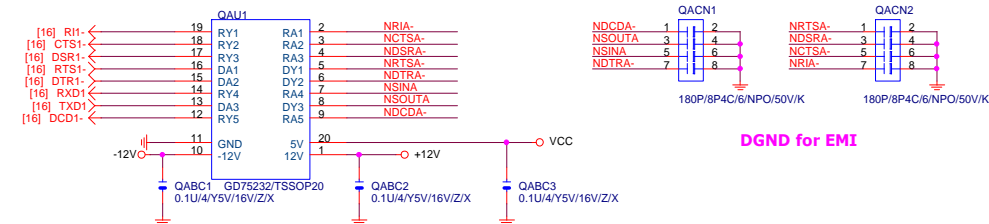
REAR USB1

REAR USB2

F\_USB 2.0 OC SIGNAL



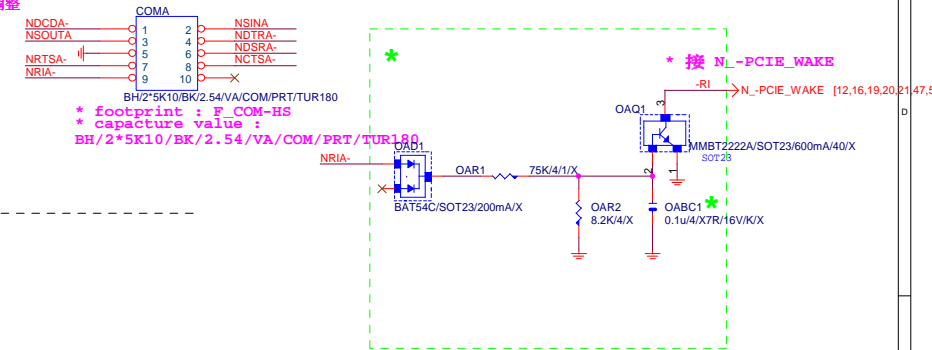
COM PORT



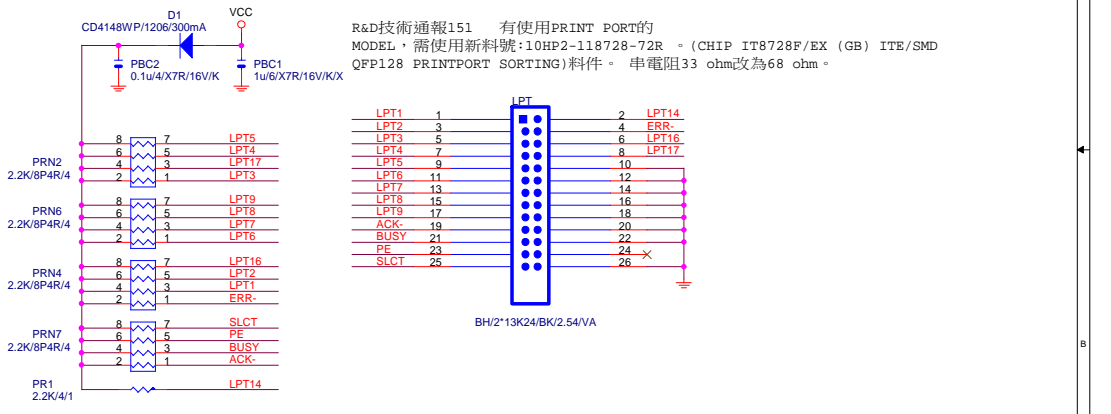
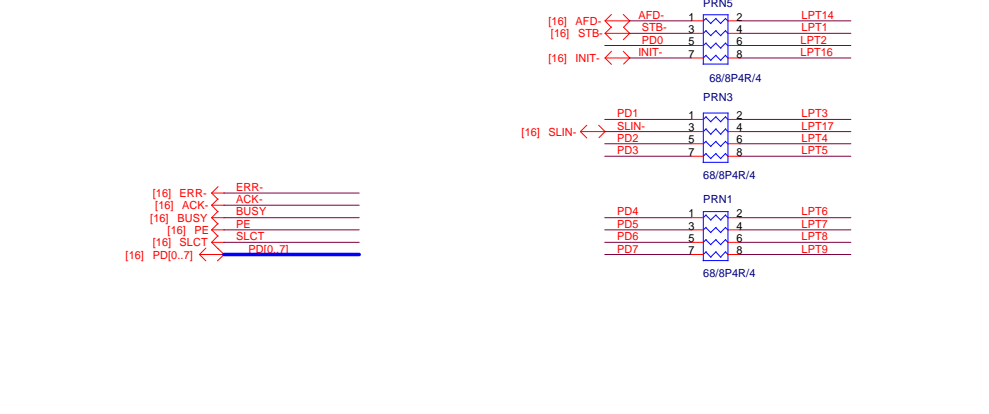
COMA

COMA 自行調整

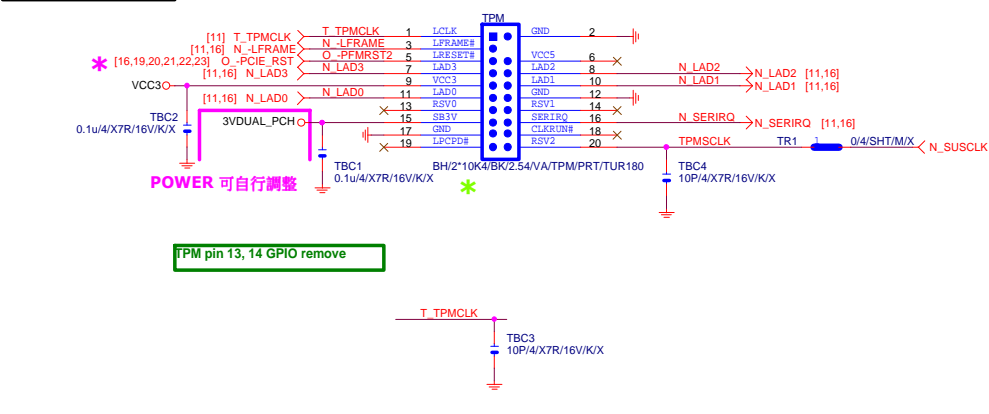
OR



LPT PORT



TPM CONNECTOR

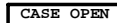


Thunderbolt



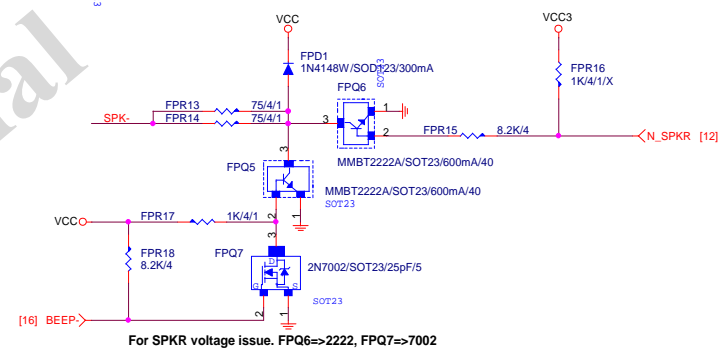
Gigabyte Technology

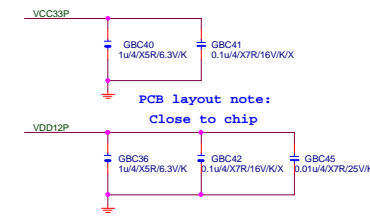
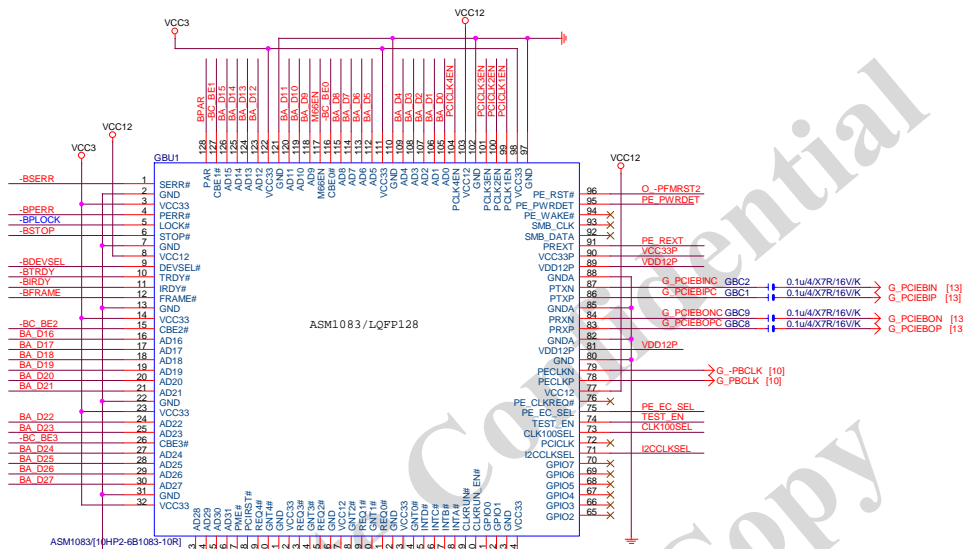
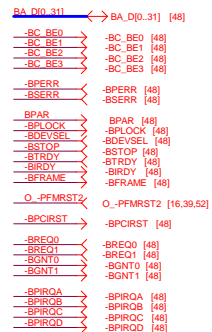
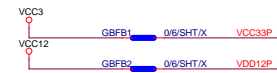
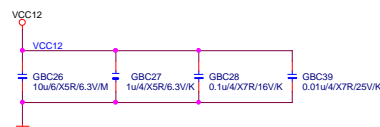
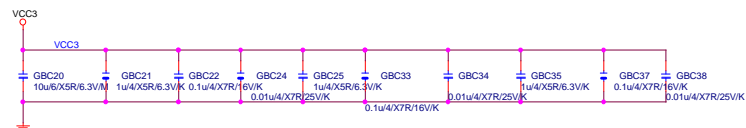
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|--------|-----------------------|--------------|---------------------|
| Title  |                       |              | FP,F_USB,USB PWR,BZ |
| Size   | Document Number       | GA-Z170-HD3P |                     |
| Custom |                       |              | Rev 1.0             |
| Date:  | Monday, July 20, 2015 | Sheet        | 45 of 54            |



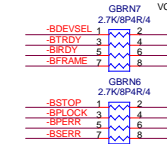
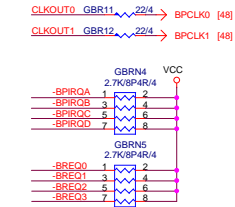
**FRONT PANEL SHORT**

## SPKR





PCB layout note:  
Close to chip



GBRN4 &amp; GBRN6 sw

## CLK100SEL Strapping Set

|           |            |            |
|-----------|------------|------------|
| CLK100SEL | H          | L          |
| PCIE CLK  | 100M +/-N% | 100M +/-N% |
| PCICLK_IN | X          | 33M        |
| PCICLK_O  | 33M +/-N%  | 33M        |

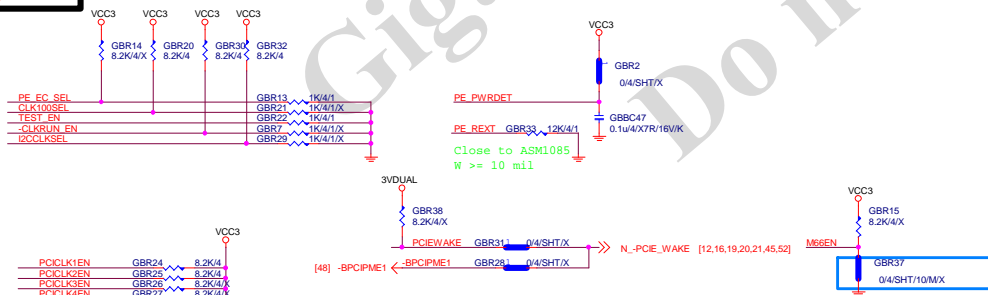
PE\_EC\_SEL-  
 "H" for Express Card mode  
 "L" for PCIe Riser Card mode

CLK100SEL-  
 "H" for PECLK input only  
 "L" for PECLK & PCCLK input

TEST\_EN-  
 "H" for Test Mode Enable  
 "L" for Test Mode Disable

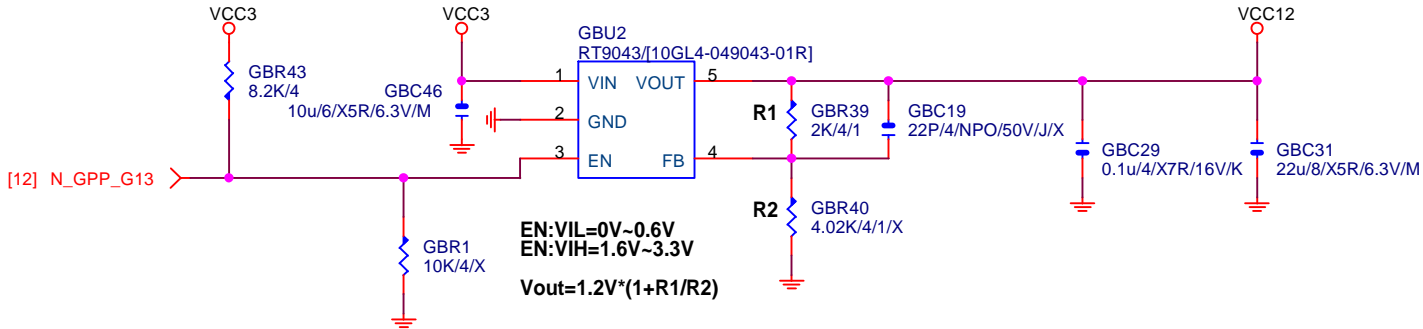
```
-CLKRUN_EN-
"H" for CLKRUN Mode Disable
"L" for CLKRUN Mode Enable
```

I2CCLKSEL-  
 "H" is 135KHz I2CCLK  
 "L" is 67.5KHz I2CCLK



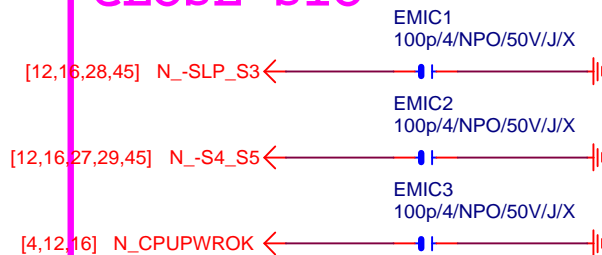


Rev 0.9



|                     |                       |  |                |
|---------------------|-----------------------|--|----------------|
| Gigabyte Technology |                       |  |                |
| Title               |                       |  |                |
| ASM1085 POWER       |                       |  |                |
| Size                | Document Number       |  | Rev            |
| Custom              | GA-Z170-HD3P          |  | 1.0            |
| Date:               | Monday, July 20, 2015 |  | Sheet 49 of 54 |

## CLOSE SIO



## CLOSE PCH



**GIGABYTE™**

Title

**EMI/ESD**

Size  
A

Document Number

**GA-Z170-HD3P**

Rev  
**1.0**

Date: Monday, July 20, 2015

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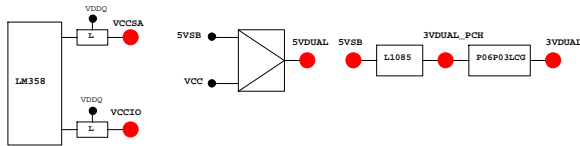
PCH GPIO LIST TABLE

| PIN NAME | PWR  | Default   | USAGE        | NOTE                |            |
|----------|------|-----------|--------------|---------------------|------------|
| GPP_A0   | MAIN | NATIVE    | N_KBRST      | P/U 8.2K VCC3       |            |
| GPP_A1   | MAIN | NATIVE    | N_LAD0       | N/A                 |            |
| GPP_A2   | MAIN | NATIVE    | N_LAD1       | N/A                 |            |
| GPP_A3   | MAIN | NATIVE    | N_LAD2       | N/A                 |            |
| GPP_A4   | MAIN | NATIVE    | N_LAD3       | N/A                 |            |
| GPP_A5   | MAIN | NATIVE    | N_LFRAME     | N/A                 |            |
| GPP_A6   | MAIN | NATIVE    | N_SBR1RQ     | P/U 8.2K VCC3       |            |
| GPP_A7   | MAIN | NATIVE    | N_LDRQ0      | P/U 8.2K 3VDUAL     |            |
| GPP_A8   | MAIN | NATIVE    | N_GPP_A8     | P/U 8.2K VCC3       |            |
| GPP_A9   | MAIN | NATIVE    | N_LPC24MB    | N/A                 |            |
| GPP_A10  | MAIN | NATIVE    | N_LPC24MA    | N/A                 |            |
| GPP_A11  | MAIN | NATIVE    | N_P_FMR      | P/U 8.2K 3VDUAL_PCH |            |
| GPP_A12  | MAIN | GPIO      | N_GPP_A12    | P/U 8.2K VCC3       |            |
| GPP_A13  | MAIN | NATIVE    | N_S_WARN     | N/A                 |            |
| GPP_A14  | MAIN | NATIVE    | N_GPP_A14    | P/U 8.2K 3VDUAL     |            |
| GPP_A15  | MAIN | NATIVE    | N_S_ACK      | N/A                 |            |
| GPP_B0   | MAIN | CORE_V1D0 | N_DDR_V_SEL  | P/U 8.2K VCC3       |            |
| GPP_B1   | MAIN | CORE_V1D1 | N/A          | N/A                 |            |
| GPP_B2   | MAIN | GPIO      | N_VREALRT    | P/U 8.2K 3VDUAL     |            |
| GPP_B5   | MAIN | GPIO      | -PCIEEX1_FR  | P/U 8.2K VCC3       |            |
| GPP_B6   | MAIN | GPIO      | -PCIEEX1_FR1 | P/U 8.2K VCC3       |            |
| GPP_B7   | MAIN | GPIO      | -PCIEEX1_FR2 | P/U 8.2K VCC3       |            |
| GPP_B8   | MAIN | GPIO      | -PCIEEX4_FR  | P/U 8.2K VCC3       |            |
| GPP_B9   | MAIN | GPIO      | N/A          | N/A                 |            |
| GPP_B10  | MAIN | GPIO      | N/A          | N/A                 |            |
| GPP_B11  | MAIN | GPO       | N/A          | N/A                 |            |
| GPP_B12  | MAIN | SLP_S0    | N_SLP_S0     | N/A                 |            |
| GPP_B13  | MAIN | PLTRST    | N_PFRMST     | N/A                 |            |
| GPP_B14  | MAIN | N-Z       | GPO          | N_SFRR              | N/A        |
| GPP_B18  | MAIN | N-Z       | GPO          | N_GPP_B18           | P/D 1K GND |
| GPP_B20  | MAIN | GPIO      | N_GPP_B20    | P/U 8.2K 3VDUAL     |            |
| GPP_B22  | MAIN | GPIO      | N_GPP_B22    | P/D 1K GND          |            |
| GPP_C0   | MAIN | SMCLK     | N/A          | N/A                 |            |
| GPP_C1   | MAIN | SMDATA    | N/A          | N/A                 |            |
| GPP_C2   | MAIN | N-Z       | GPO          | N_LPCFMR            | N/A        |
| GPP_C3   | MAIN | SMCLK     | N_SMLCLK     | P/U 499 3VDUAL      |            |
| GPP_C4   | MAIN | SMCLK     | N_SMLDATA    | P/U 499 3VDUAL      |            |
| GPP_C5   | MAIN | N-Z       | GPO          | N_GPP_C5            | N/A        |
| GPP_C6   | MAIN | GPIO      | N_SMLCLK     | P/U 8.2K 3VDUAL     |            |
| GPP_C7   | MAIN | GPIO      | N_SMLDATA    | P/U 8.2K 3VDUAL     |            |
| GPP_D4   | MAIN | GPIO      | N_GPP_D4     | P/U 8.2K 3VDUAL     |            |
| GPP_D7   | MAIN | GPIO      | N_GPP_D7     | N/A                 |            |
| GPP_D9   | MAIN | GPIO      | N_GPP_D9     | N/A                 |            |
| GPP_D17  | MAIN | GPIO      | N_GPP_D17    | P/U 8.2K VCC3       |            |
| GPP_D18  | MAIN | GPIO      | N_GPP_D18    | P/U 8.2K VCC3       |            |
| GPP_D19  | MAIN | GPIO      | N_GPP_D19    | P/U 8.2K VCC3       |            |
| GPP_D20  | MAIN | GPIO      | N_GPP_D20    | P/U 8.2K VCC3       |            |
| GPP_D23  | MAIN | GPIO      | N_GPP_D23    | P/U 8.2K 3VDUAL     |            |
| GPP_E0   | MAIN | NATIVE    | N_GPP_E0     | P/U 8.2K VCC3       |            |
| GPP_E1   | MAIN | NATIVE    | N_GPP_E1     | P/U 8.2K VCC3       |            |
| GPP_E2   | MAIN | NATIVE    | N_GPP_E2     | P/U 8.2K VCC3       |            |
| GPP_E3   | MAIN | GPIO      | N_CPU_S      | P/U 8.2K VCC3       |            |
| GPP_E4   | MAIN | GPIO      | N_DEVSLP0    | P/U 8.2K VCC3       |            |
| GPP_E6   | MAIN | GPIO      | N_DEVSLP2    | P/U 8.2K VCC3       |            |
| GPP_E7   | MAIN | GPIO      | N_GT_S       | P/U 8.2K VCC3       |            |
| GPP_E8   | MAIN | GPIO      | N_SATALED    | N/A                 |            |
| GPP_E9   | MAIN | N-Z       | GPIO         | N_USB0C_F           | N/A        |
| GPP_E10  | MAIN | N-Z       | GPIO         | N_USB0C_R           | N/A        |
| GPP_E11  | MAIN | N-Z       | GPIO         | N_USB0C_R           | N/A        |
| GPP_E12  | MAIN | N-Z       | GPIO         | N_USB0C_F           | N/A        |
| GPP_F0   | MAIN | NATIVE    | N_GPP_F0     | P/U 8.2K VCC3       |            |
| GPP_F1   | MAIN | NATIVE    | N_GPP_F1     | P/U 8.2K VCC3       |            |
| GPP_F2   | MAIN | NATIVE    | N_GPP_F2     | P/U 8.2K VCC3       |            |
| GPP_F3   | MAIN | GPIO      | N_GPP_F3     | P/U 8.2K VCC3       |            |
| GPP_F4   | MAIN | GPIO      | N_GPP_F4     | P/U 8.2K VCC3       |            |
| GPP_F5   | MAIN | GPIO      | N_GPP_F5     | P/U 8.2K VCC3       |            |
| GPP_F6   | MAIN | GPIO      | N_DEVSLP4    | P/U 8.2K VCC3       |            |
| GPP_F10  | MAIN | GPIO      | N_GPP_F10    | P/U 8.2K VCC3       |            |
| GPP_F11  | MAIN | GPIO      | N_GPP_F11    | P/U 8.2K VCC3       |            |
| GPP_F12  | MAIN | GPIO      | N_GPP_F12    | P/U 8.2K VCC3       |            |
| GPP_F13  | MAIN | GPIO      | N_GPP_F13    | P/U 8.2K VCC3       |            |
| GPP_F14  | MAIN | GPIO      | A_SKTOCC     | P/U 8.2K VCC3       |            |
| GPP_F15  | MAIN | GPIO      | N_USB0C_F    | N/A                 |            |
| GPP_F16  | MAIN | GPIO      | N_USB0C_F    | N/A                 |            |
| GPP_F17  | MAIN | GPIO      | N_USB0C_R    | N/A                 |            |
| GPP_F18  | MAIN | GPIO      | N_USB0C_F    | P/U 8.2K 3VDUAL     |            |
| GPP_F22  | MAIN | GPIO      | N_GPP_F22    | P/U 8.2K VCC3       |            |
| GPP_F23  | MAIN | GPIO      | N_GPP_F23    | P/U 8.2K VCC3       |            |
| GPP_G0   | MAIN | GPIO      | N_GPP_G0     | P/U 1K VCC3         |            |
| GPP_G1   | MAIN | GPIO      | N_GPP_G1     | P/U 1K VCC3         |            |
| GPP_G12  | MAIN | GPIO      | N_GPP_G12    | P/U 3.3K VCC3       |            |
| GPP_G16  | MAIN | GPIO      | N_GPP_G16    | N/A                 |            |
| GPP_G18  | MAIN | GPIO      | N_GPP_G18    | P/U 8.2K VCC3       |            |
| GPP_G19  | MAIN | GPIO      | N_GPP_G19    | P/U 8.2K VCC3       |            |
| GPP_G20  | MAIN | GPIO      | N_GPP_G20    | P/U 8.2K VCC3       |            |
| GPP_G21  | MAIN | GPIO      | N_GPP_G21    | P/U 8.2K VCC3       |            |
| GPP_G22  | MAIN | GPIO      | N_GPP_G22    | P/U 8.2K VCC3       |            |
| GPP_H0   | MAIN | GPIO      | M2_CLKREQ    | P/U 8.2K VCC3       |            |
| GPP_H12  | MAIN | GPIO      | N_GPP_H12    | P/U 8.2K VCC3       |            |
| GPP_H19  | MAIN | GPIO      | N_GPP_H19    | P/U 8.2K 3VDUAL     |            |
| GPP_H20  | MAIN | GPIO      | N_GPP_H20    | P/U 8.2K 3VDUAL     |            |
| GPP_H21  | MAIN | GPIO      | N_GPP_H21    | P/U 8.2K 3VDUAL     |            |
| GPP_H22  | MAIN | GPIO      | N_GPP_H22    | P/U 8.2K 3VDUAL     |            |
| GPP_I0   | MAIN | GPIO      | N_HDMI_HDP_F | N/A                 |            |
| GPP_I1   | MAIN | GPIO      | N_DVI_HDP_F  | P/U 1M VCC3         |            |
| GPP_I2   | MAIN | GPIO      | N_VGA_HDP_F  | N/A                 |            |

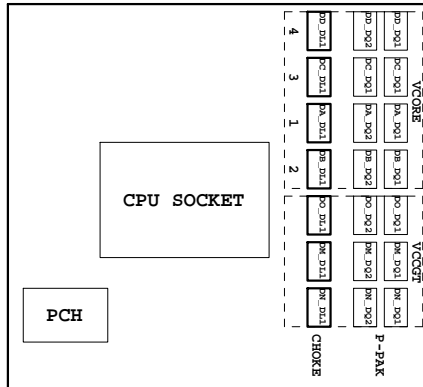
| PIN NAME | PWR  | Default   | USAGE          | NOTE                |
|----------|------|-----------|----------------|---------------------|
| GPP_I3   | MAIN | GPIO      | N_GPP_I3       | P/U 8.2K VCC3       |
| GPP_I4   | MAIN | GPIO      | N_GPP_I4       | P/D 100K GND        |
| GPP_I5   | MAIN | GPIO      | N_DDPB_CTRLCLK | P/U 2.2K VCC3       |
| GPP_I6   | MAIN | GPO       | N_DDPB_CTRLCLK | P/U 2.2K VCC3       |
| GPP_I7   | MAIN | GPIO      | N_DDPB_CTRLCLK | P/U 2.2K VCC3       |
| GPP_I8   | MAIN | GPIO      | N_DDPB_CTRLCLK | P/U 2.2K VCC3       |
| GPP_I9   | MAIN | GPIO      | N_DDPB_CTRLCLK | P/U 2.2K VCC3       |
| GPP_I10  | MAIN | GPIO      | N_DDPB_CTRLCLK | P/U 2.2K VCC3       |
| GPD0     | STBY | BATLOW    | N_-BATLOW      | P/U 8.2K 3VDUAL_PCH |
| GPD1     | STBY | ACPRESENT | N_GP_D1        | P/U 8.2K 3VDUAL_PCH |
| GPD2     | STBY | LAM_MAKE  | N_-LAM_MAKE    | N/A                 |
| GPD3     | STBY | PWRBTN    | O_PWRBTSW      | P/U 8.2K 3VDUAL_PCH |
| GPD4     | STBY | SLP_S3    | N_-SLP_S3      | N/A                 |
| GPD5     | STBY | SLP_S4    | N_-SLP_S4      | N/A                 |
| GPD6     | STBY | SLP_A     | N_-SLP_A       | P/U 8.2K 3VDUAL     |
| GPD7     | STBY | NATIVE    | N_-S_ACK       | N/A                 |
| GPD8     | STBY | SUSCLK    | N_SUSCLK       | N/A                 |
| GPD10    | STBY | SLP_S5    | N_-SLP_S5      | N/A                 |

Super I/O ITE8720 GPIO Table

| PIN NAME                      | USAGE                           | NOTE |
|-------------------------------|---------------------------------|------|
| PCIRSTF3#/GP10/VDIMM_STR_EN   | N/A                             |      |
| PCIRSTF2#/GP11                | O_-PCIE_RST                     |      |
| PCIRSTF1#/GP12                | O_-PFRMST2                      |      |
| SVC/FRC1_RQ7/GP14             | TPM_GP14                        |      |
| SLP_SUS#/PCIRSTF1#/CIEX2/GP15 | -PCIRSTF1                       |      |
| PSI_L/FAN_CLT5/CIEX2/GP16     | N_-THERMTRIP                    |      |
| R12#/GP17                     | MB_ID2                          |      |
| THR_PWM_CTS2#/GP20            | N_-THERMTRIP                    |      |
| IO_SMI#DCD2#/GP21             | <a href="#">紫 PIN</a>           |      |
| SPI_S1/GP22                   | BEEP-                           |      |
| DPWRKOK/CPU_RQ/GP23           | N_PCH_DPWRKOK                   |      |
| FAN_TACS/RTS2#/GP24           | <a href="#">紫 PIN</a>           |      |
| FAN_TAC4/DSR2#/GP25           | FANIO4                          |      |
| INV_OUT1_SOUT2/GP26           | Q_PLED                          |      |
| INV_IN1/SIN2/GP27             | INV_IN1                         |      |
| ATXPG/GP30                    | FWOK                            |      |
| CTS1/GP31                     | CTS1-                           |      |
| OCWD13/R11#/GP32              | R11-                            |      |
| OCWD12/DCD1#/GP33             | DCD1-                           |      |
| VTT_PWRGD/GP34                | VTT_PWRGD                       |      |
| VCC18_EN/GP35                 | VCCIO_EN                        |      |
| FAN_CTL3/GP36                 | FANPWM3                         |      |
| FAN_TAC3/GP37                 | FANIO3                          |      |
| 3VSSB#/GP40                   | <a href="#">紫 PIN</a>           |      |
| OCWD11/SIN1/GP41              | RXD1                            |      |
| GP42/SCK/FAN_CTL4             | <a href="#">紫 PIN</a>           |      |
| PANSW#/GP43                   | -PWRBTSW                        |      |
| PWRON#/GP44                   | O_PWRBTSW                       |      |
| OCWD10/DSR1#/GP45             | DSR1-                           |      |
| CE2_N/GP47/JP6                | CEB_N                           |      |
| GP50/GP1                      | <a href="#">紫 PIN</a>           |      |
| FAN_CTL4/GP51                 | FANPWM2                         |      |
| FAN_TAC5/GP52                 | FANIO2                          |      |
| SUSOC/GP53                    | N_-S4_S5                        |      |
| PWR#/GP54                     | N_-LPCVME                       |      |
| RSMBST#/CIEX1/GP55            | O_-RSMBST                       |      |
| MCLK/FAN_TAC5/GP56            | MCLK                            |      |
| MDAT/FAN_CTL6/GP57            | MDAT                            |      |
| KCLK/GP60                     | KCLK                            |      |
| KDAT/GP61                     | KDAT                            |      |
| KRST#/GP62                    | N_-KRST                         |      |
| HOLD_B#/GP63                  | -SPI_HOLD_B                     |      |
| HOLD_B#/GP64                  | -SPI_HOLD_M                     |      |
| VLD1T_EN/PCH_D0/GP65          | <a href="#">紫 PIN</a>           |      |
| VCC1_05_EN/GP66               | VCC1_0_EN                       |      |
| GP67                          | <a href="#">紫 PIN</a>           |      |
| USB_FS1/PD0/GP70              | PD0                             |      |
| USB_FS2/PD1/GP71              | PD1                             |      |
| USB_FS3/PD2/GP72              | PD2                             |      |
| USB_FS3/PD3/GP73              | PD3                             |      |
| USB_FS5/PD4/GP74              | PD4                             |      |
| USB_FS6/PD5/GP75              | PD5                             |      |
| USB_FS7/PD7/GP76              | PD6                             |      |
| USB_FS8/PD8/GP77              | PD7                             |      |
| LS_IN1/SLCT/GP80              | SLCT                            |      |
| LS_OUT1/PE/GP81               | PE                              |      |
| LS_IN2/BUSY/GP82              | BUSY                            |      |
| LS_OUT2/ACK#/GP83             | ACK-                            |      |
| IPHONE_CHARGE#/SLIN#/GP84     | SLIN-                           |      |
| OC_IN/INIT#/GP85              | INIT-                           |      |
| OC_OUT/AFD#/GP86              | AFD-                            |      |
| USB_OC4/STB#/GP87             | STB-                            |      |
| DOX_EN/GP90                   | NA_EN                           |      |
| PWRLD/GP91                    | HPD-                            |      |
| HOLD_OUT/GP92                 | <a href="#">紫 PIN</a>           |      |
| HDLED_IN/GP93                 | <a href="#">紫 PIN</a>           |      |
| PROCHOT#/GP94                 | -PROCHOT_CON                    |      |
| CPUPWRGD/GP95                 | <a href="#">紫 PIN</a> CPUPWRKOK |      |
| PCH_VRMPWRGD/GP96             | N_PCH_VRMPWRGD                  |      |
| VR_RDY/GP97                   | VR_RDY                          |      |



PWM各相位的擺法如下:



BIOS超電壓對應表:

散熱模組料號:

Z1704-HD3 :

PCH :

MOSFET :

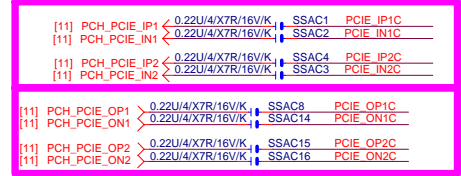
| 線路圖名稱              | BIOS選項                   |
|--------------------|--------------------------|
| Vcore              | CPU Vcore                |
| VCCGT              | CPU Graphic Voltage      |
| VCCSA              | CPU System Agent Voltage |
| VCCIO              | CPU I/O Voltage          |
| VCC1_0_PCH         | PCH core                 |
| VDDQ               | DRAM voltage             |
| VPP_25V            | DRAM VPP voltage         |
| DDRVTT             | DRAM Terminatio          |
| VREF_DQ_AVREF_DQ_B | DRAM Data Ref            |

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

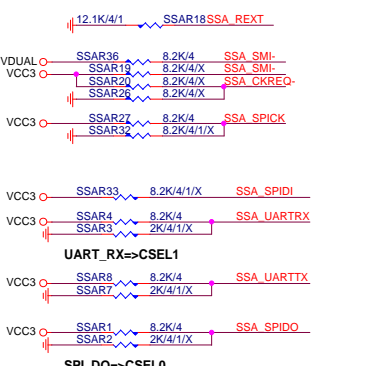
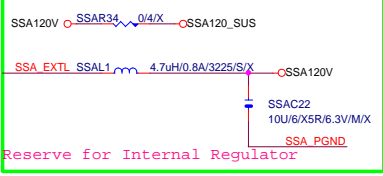
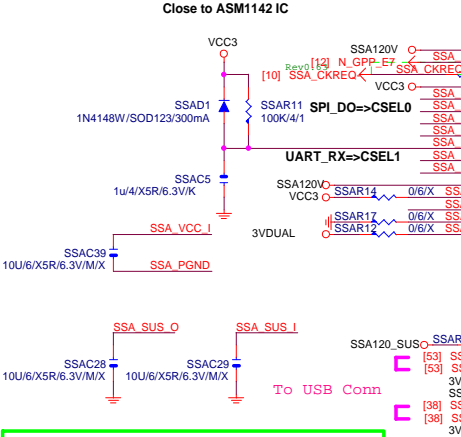
Gigabyte Technology

| TABLE LIST |                         |      |          |
|------------|-------------------------|------|----------|
| File       | Document Number         | Rev  |          |
|            | GA-Z170-HD3P            | 1.0  |          |
| Date       | Modified: July 26, 2017 | Page | 11 of 18 |

PCIE Gen3 X1 or PCIE Gen2 X2  
To PCIE host.



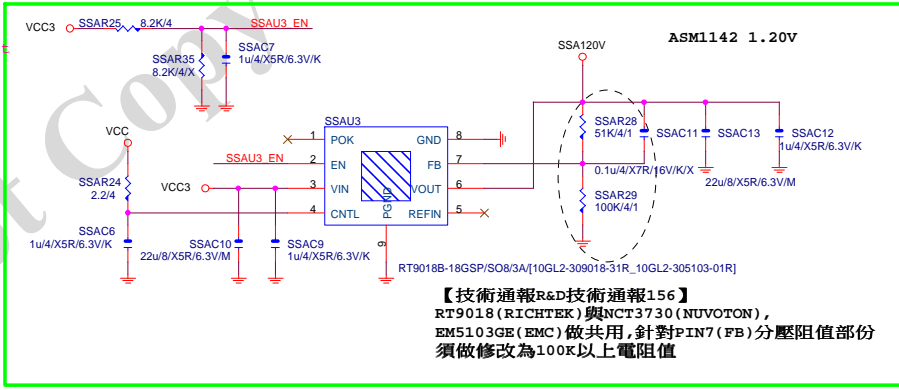
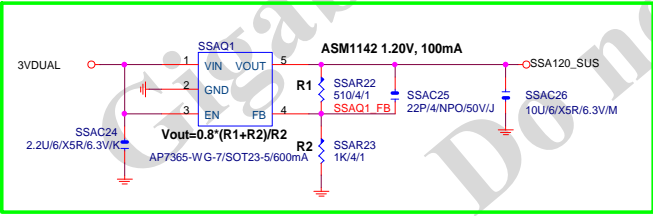
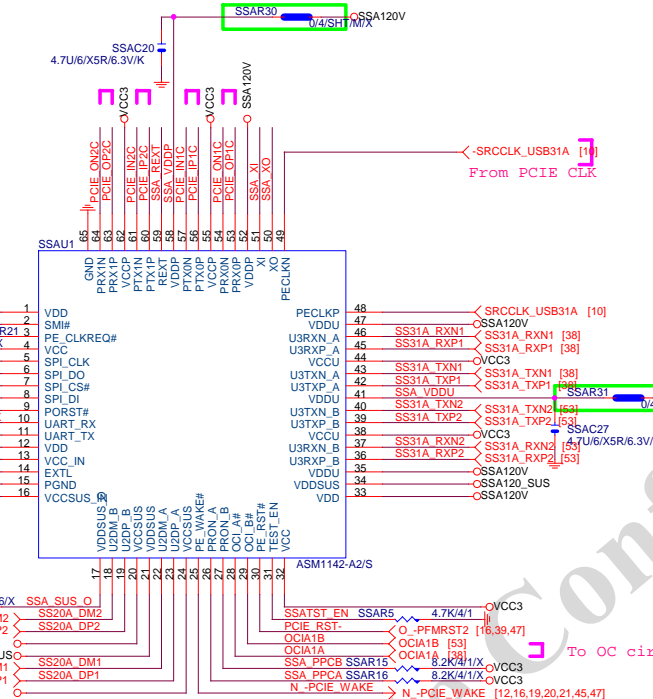
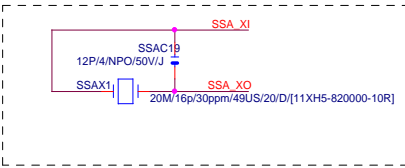
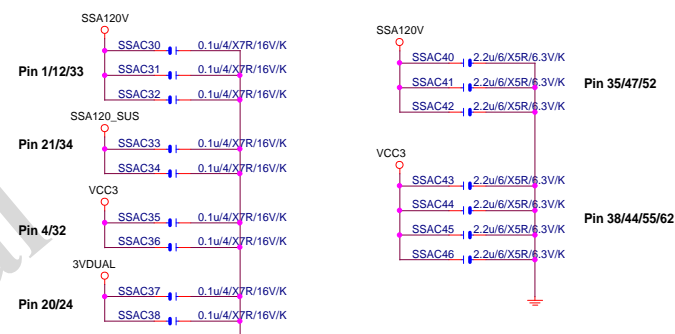
From PCIE host.



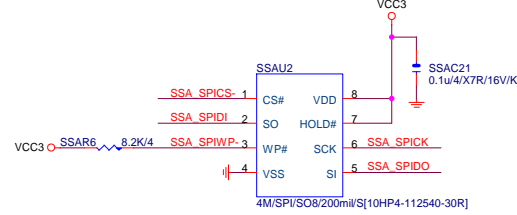
| CSEL1 | CSEL0 |                                       |
|-------|-------|---------------------------------------|
| 1     | 1     | External 20MHz Crystal (Asynchronous) |
| 0     | 1     | 48MHz clock input (Synchronous)       |
| X     | 0     | Reserved for Test                     |

Color markers can be changed by model

Base on ASM1142 0.3 Reference SCH



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



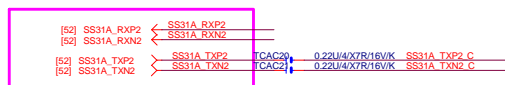
GIGABYTE<sup>TM</sup>

ALPINE RIDGE CIO & DP

GA-Z170-HD3P

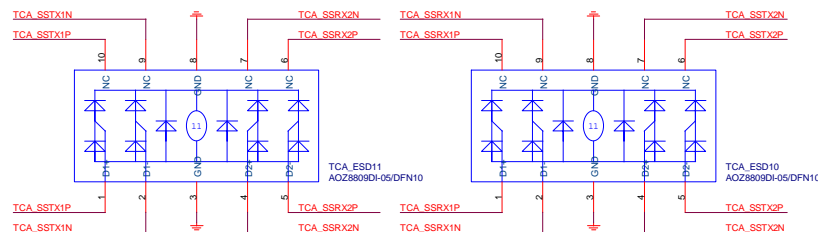
1.0

```
SEL
L - Port A to Port B
H - Port A to Port C
```



L - Default current / Pull down to GND or NC  
M - Medium (1.5A) current / Pull up to VDD 500K  
H - High (3.0A) current / Pull up to VDD 10K

## Color markers can be changed by model



note:可變更USB\_NAME

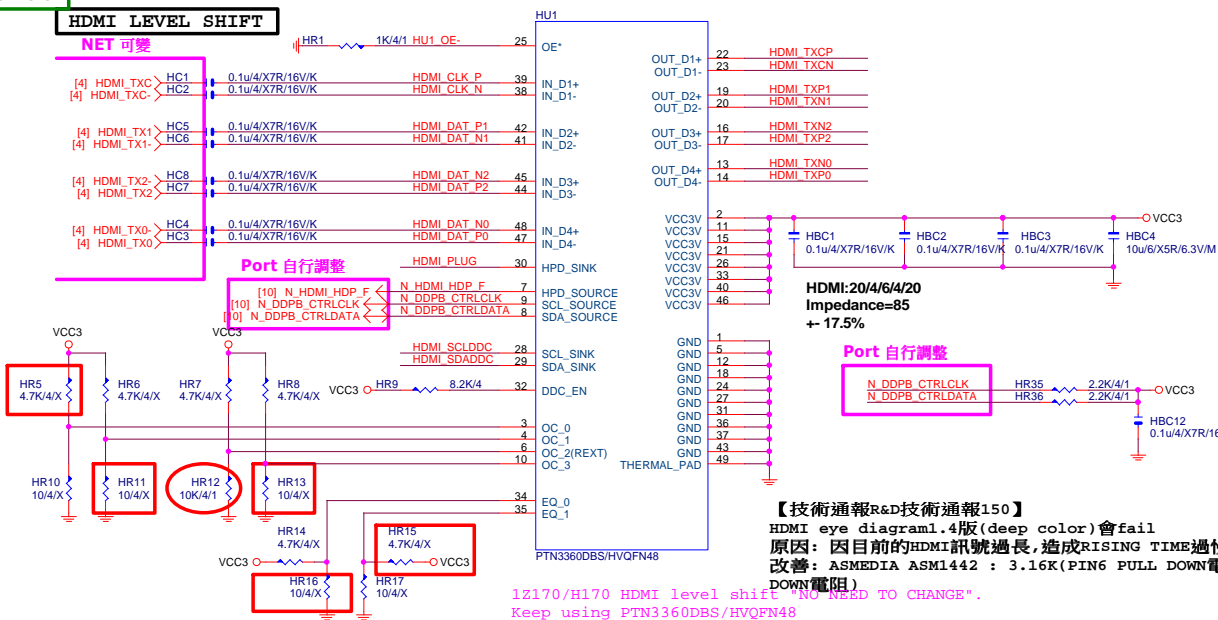
可變

SS20A\_DM2 1 6 SS20A\_DP2

2 5 5V

TCA\_CC1 3 4 TCA\_CC2

TCA\_ESD12  
AZC098-04S/SOT23-FL



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

