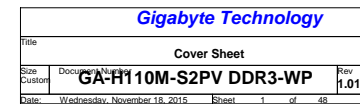


SHEET TITLE Rev 1.01

| SHEET | TITLE |
|-------|-------|
|-------|-------|

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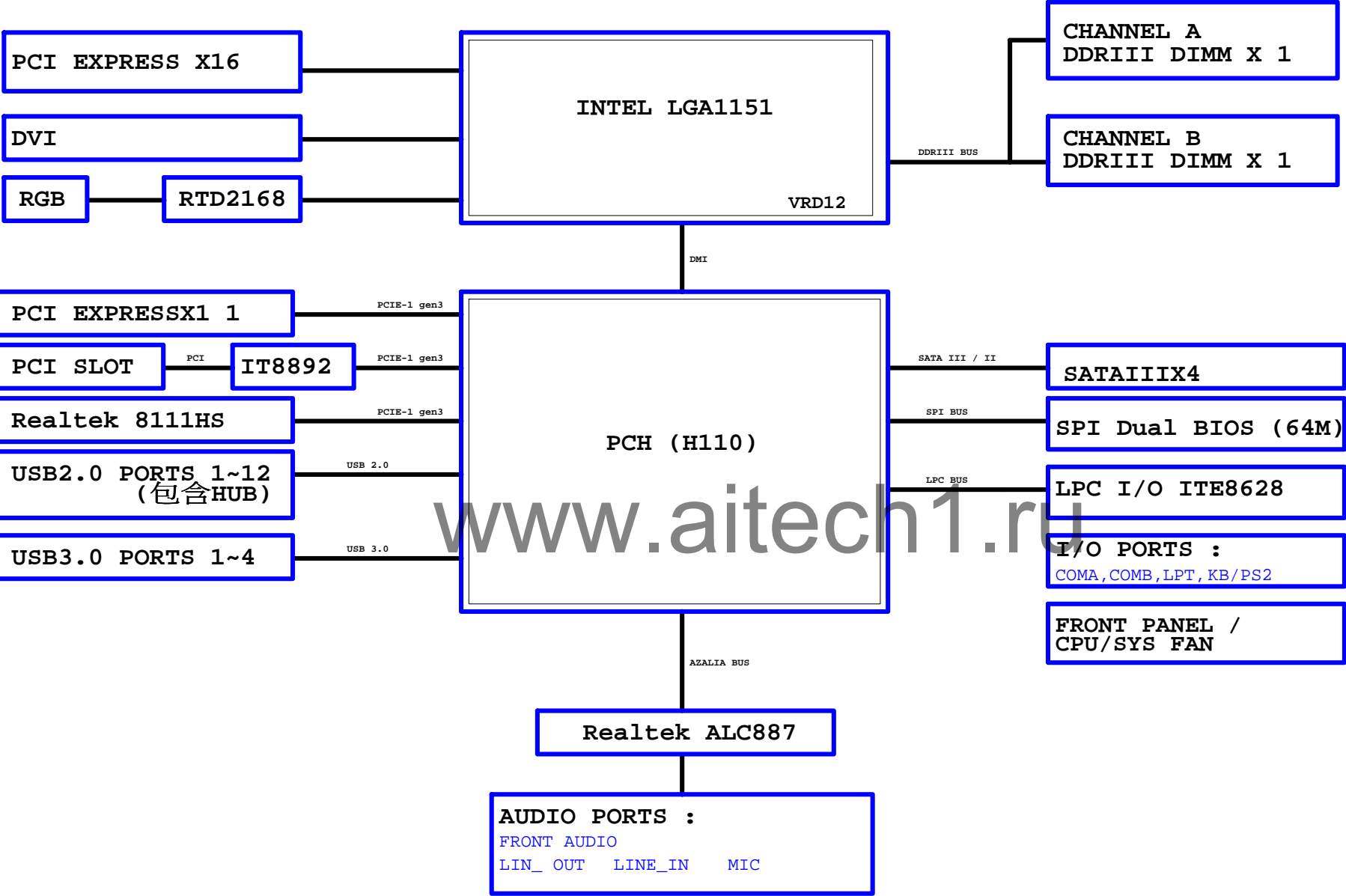
Circuit or PCB layout change

2015/10/08

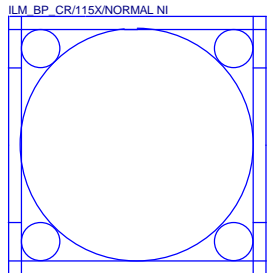
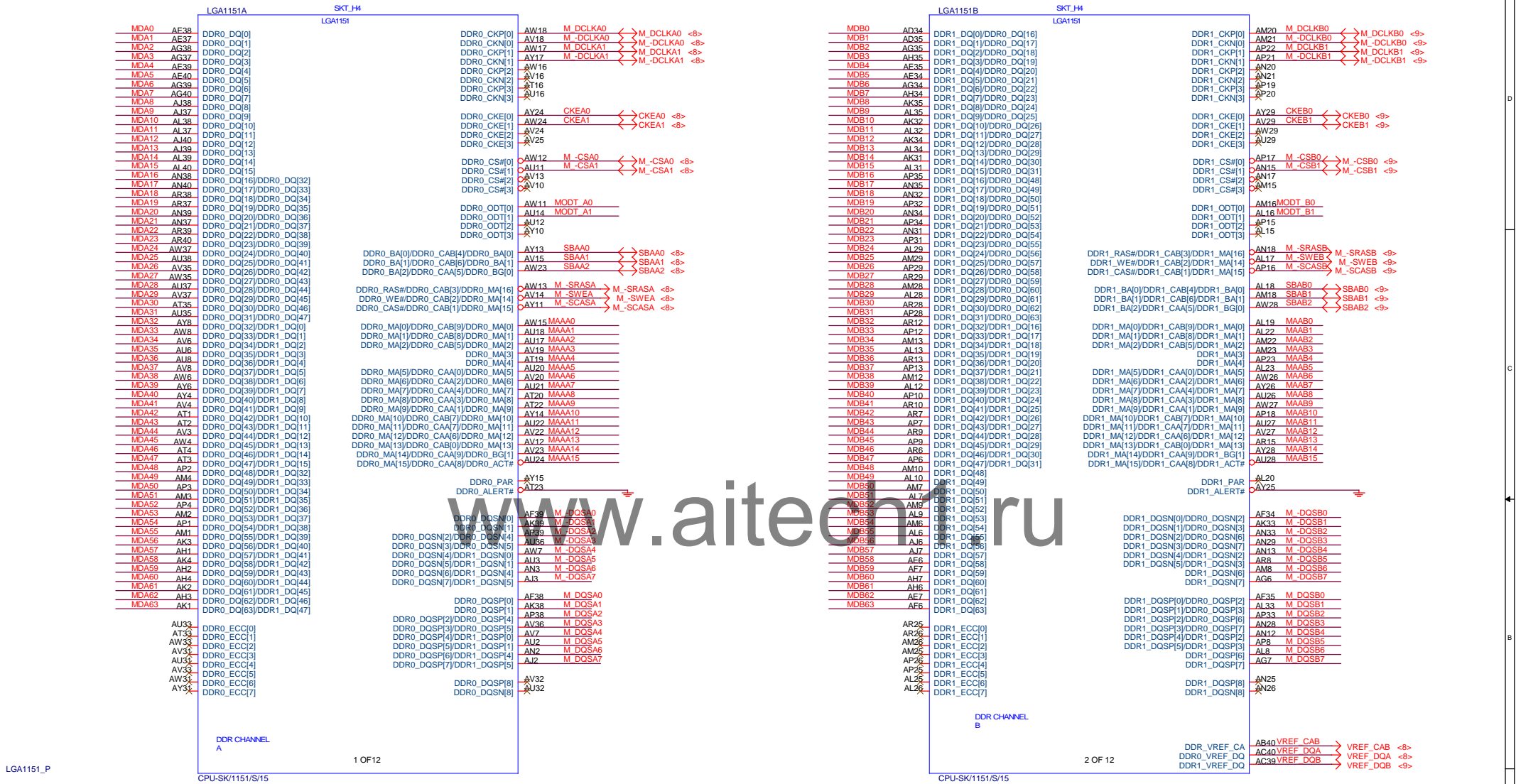
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| BOM & PCB MODIFY HISTORY | | | |
| Size | Document Number | Rev | |
| Custom | GA-H110M-S2VP DDR3-WP | 1.01 | |
| Date: | Wednesday, November 18, 2015 | Sheet | 2 of 48 |

BLOCK DIAGRAM

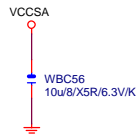


* DDR3 net

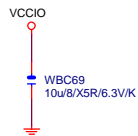
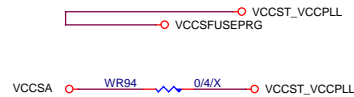


Need check the new CPU ME

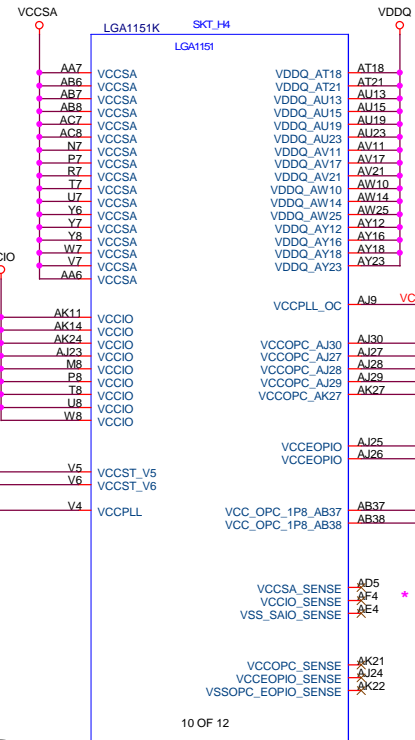
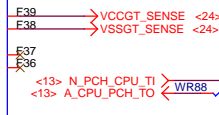
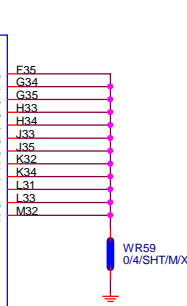
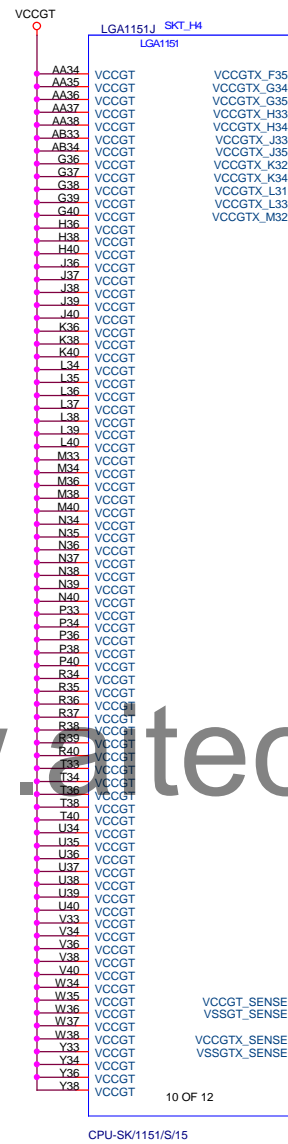
| Gigabyte Technology | | |
|---------------------|------------------------------|---------------|
| Title | | |
| CPU LGA1151-B | | |
| Size | Document Number | Rev |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet 5 of 48 |



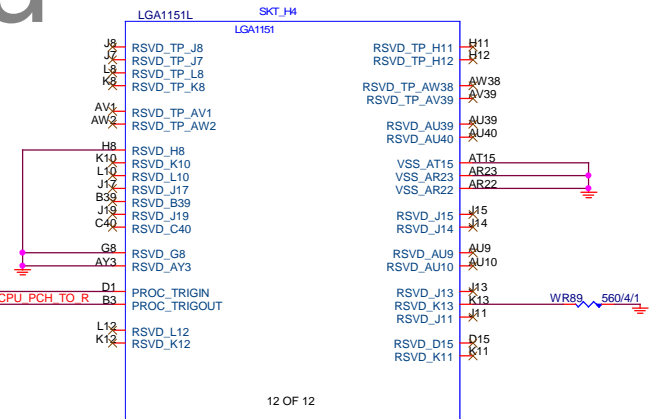
* 刪 WBC124 , WBC125 , WBC126 , WBC127 電容



* 刪 VCCGT 電容

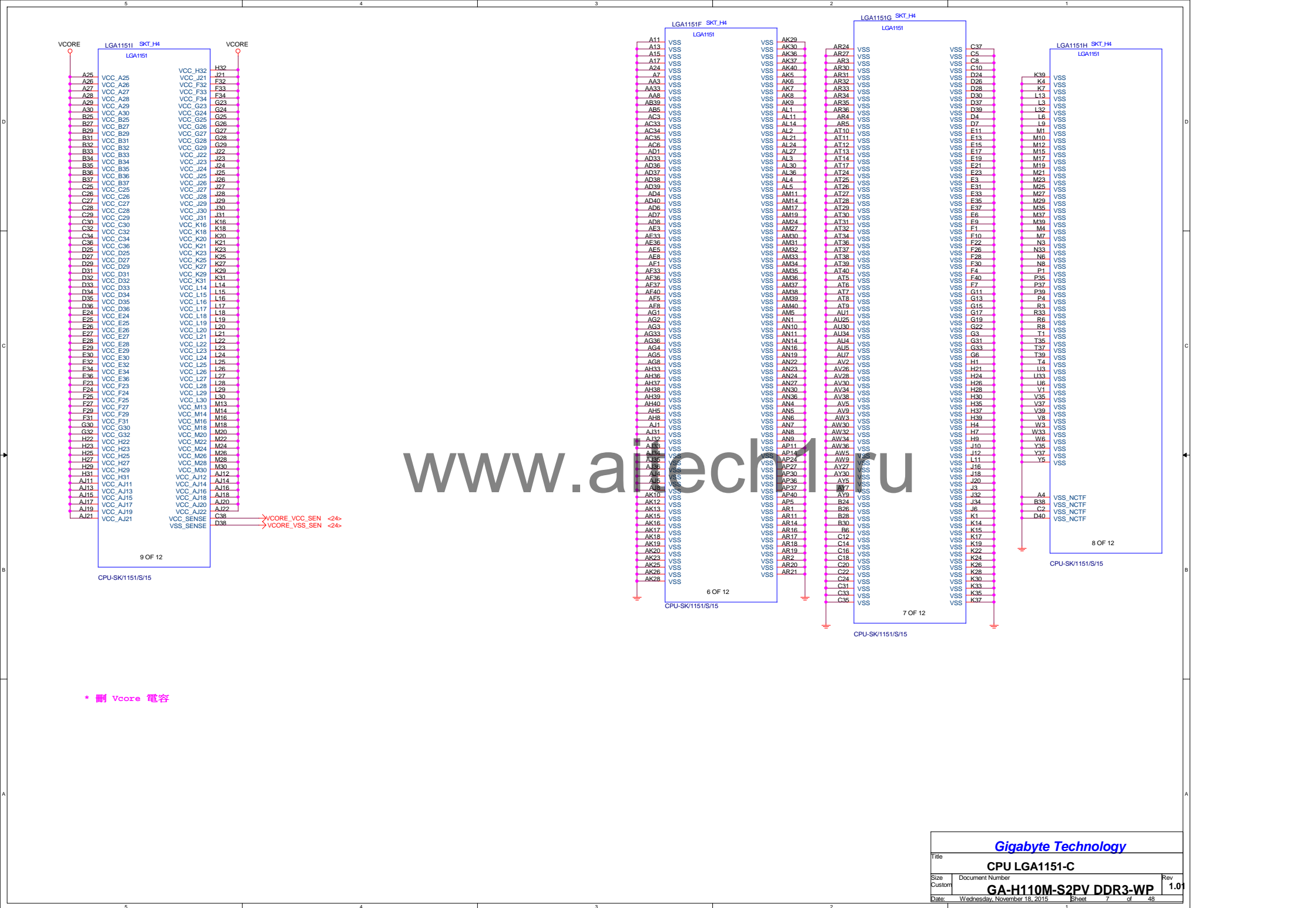


CPU-SK/1151/S/15



CPU-SK/1151/S/15

| | | | |
|---------------------|------------------------------|-------|---------|
| Gigabyte Technology | | | |
| Title | | | |
| CPU LGA1151-C | | | |
| Size | Document Number | Rev | |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 | |
| Date: | Wednesday, November 18, 2015 | Sheet | 6 of 48 |



Rev:0.2

MODT_A0[0..1] <-> MODT_A0[0..1] <->
M_DQSA0[0..7] <-> M_DQSA0[0..7] <->
M_DQSA0[0..7] <-> M_DQSA0[0..7] <->

MR22 Footprint:
FUSE-0805-SHORT10

VCC3
MR22
R0805-SHORT10X
VDDSPD

MC5 0.1u/4/X7R/16V/K VREF_DDRA 67 VREFCA
MC1 0.1u/4/X7R/16V/K VREF_DQDDBA 1 VREFDQ

<0,12,19,20,23,24,34> N_SMBCLK 118 SCL
<0,12,19,20,23,24,34> N_SMBDATA 238 SDA
SA1 117 SA0

<S> SBA02 62 BA2
<S> SBA01 190 BA1
<S> SBA00 71 BA0

<S> CKEA1 169 CKE1
<S> CKEA0 50 CKE0

<S> M_CSA1 76 S1*
<S> M_CSA0 190 S0*

<S> M_DCLKA1 64 CK1/NU*
<S> M_DCLKA0 63 CK1/NU

<S> M_DCLKA0 185 CK0*
<S> M_DCLKA0 184 CK0

<S> MAAA[0..15] <-> MAAA[0..15] <->

<0,12> -DDR3_RST 168 RST*
<S> M_SCAS0 74 CAS*
<S> M_SRAS0 192 RAS*
<S> M_SWEA 74 WE*

DDR3_1

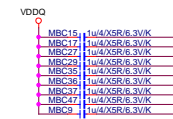
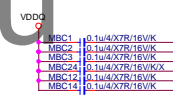
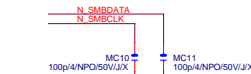
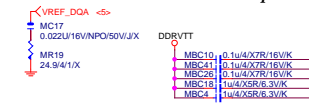
DDR3_240/8K/VAD

黑色

DDR TERMINATION CHANNEL A/B

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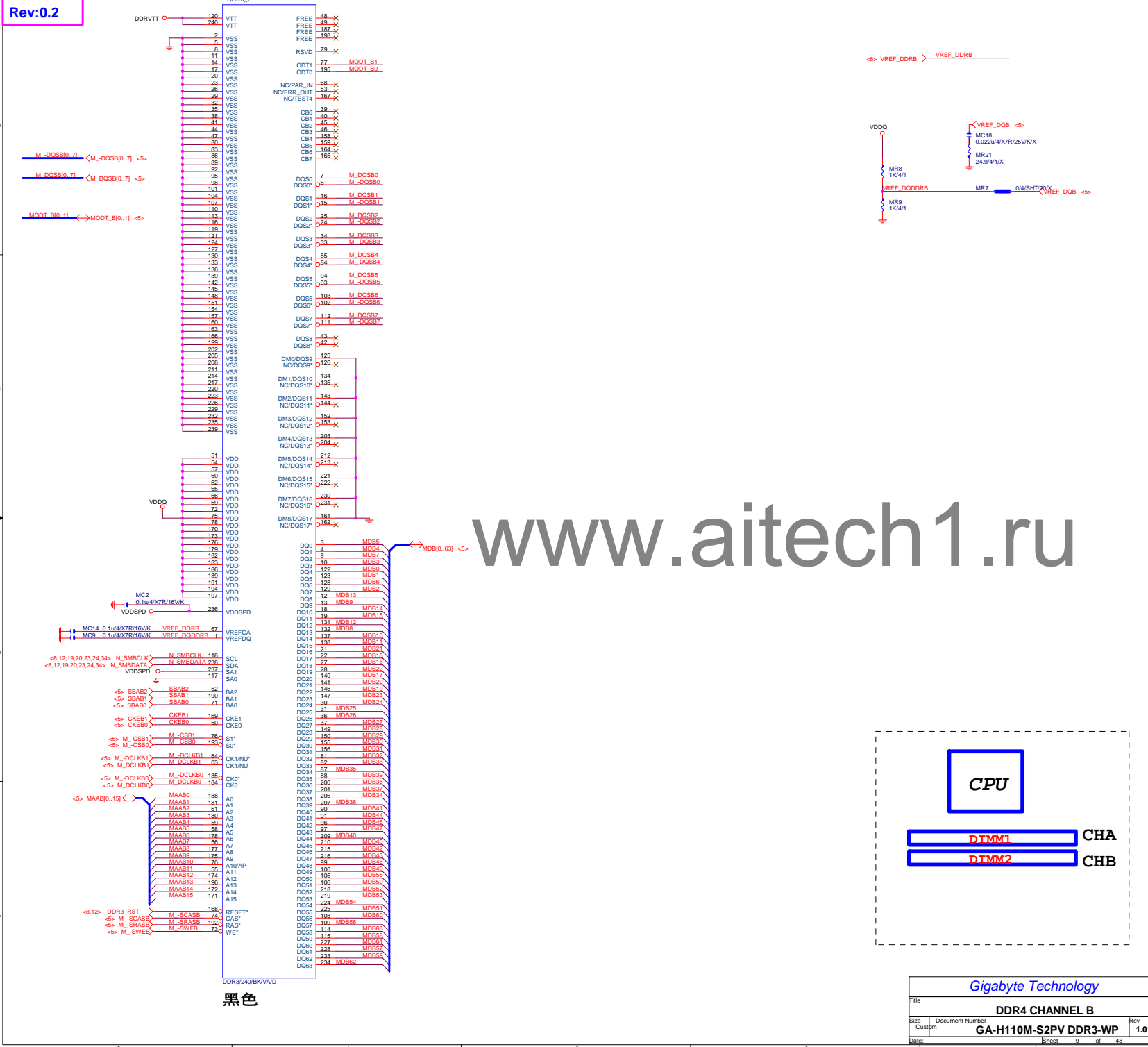
DDRVT Decouple



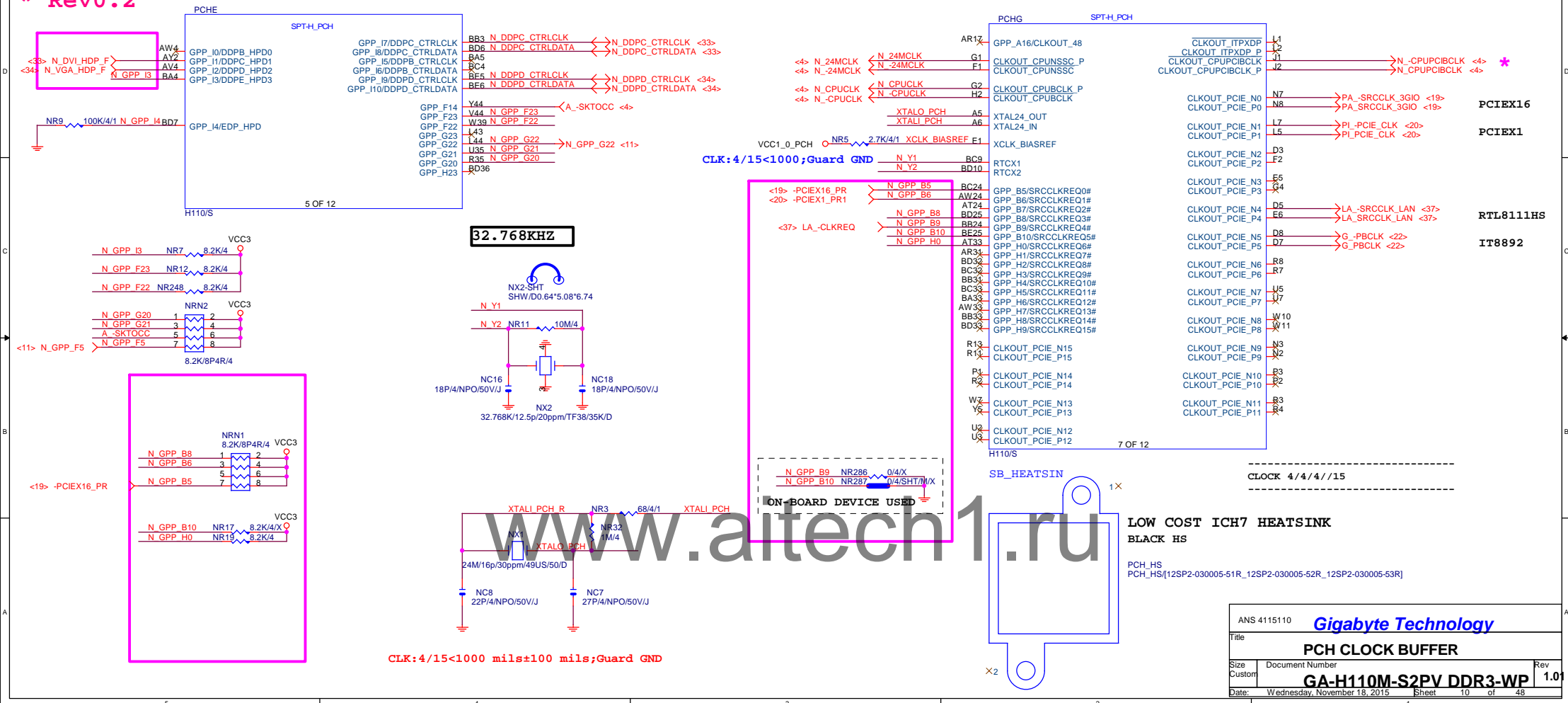
Gigabyte Technology

| | |
|-----------------|-----------------------|
| Title | DDR4 CHANNEL A |
| Size | Custom |
| Document Number | GA-H110M-S2PV-DDR3-WP |
| Date | Rev 1.0 |

Sheet 8 of 48



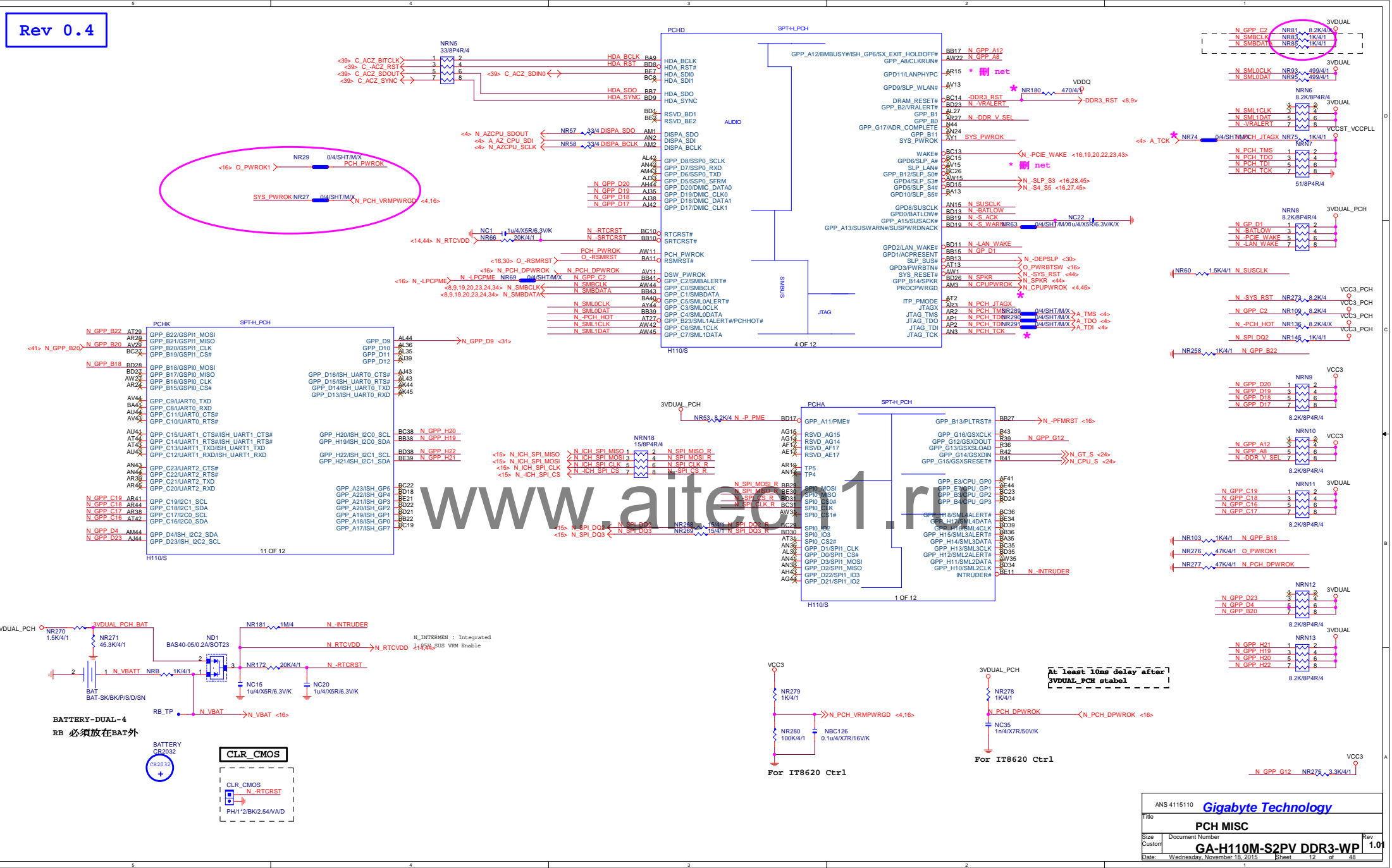
* Rev0.2

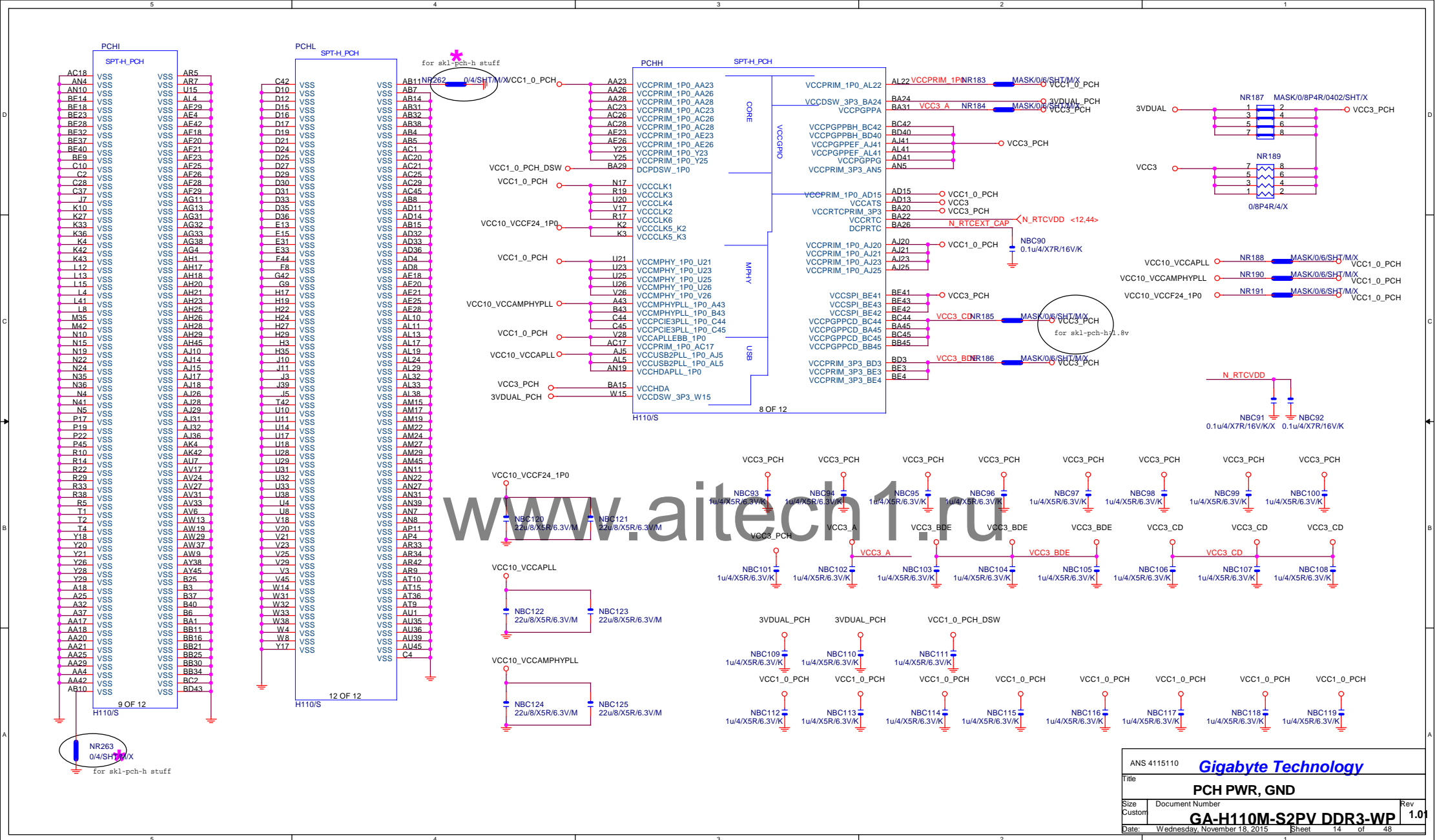


LOW COST ICH7 HEATSINK
BLACK HS

PCH_HS
PCH_HS[12SP2-030005-51R_12SP2-030005-52R_12SP2-030005-53R]

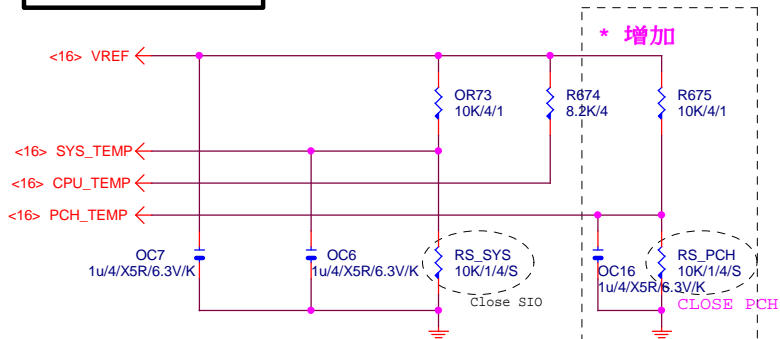
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|------------------------------|------------------------------|----------------------------|----------|---|
| ANS 4115110 | | Gigabyte Technology | | A |
| Title | | | | |
| PCH CLOCK BUFFER | | | | |
| Size Custom | Document Number | Rev | | |
| GA-H110M-S2PV DDR3-WP | | 1.01 | | |
| Date: | Wednesday, November 18, 2015 | Sheet | 10 of 48 | |



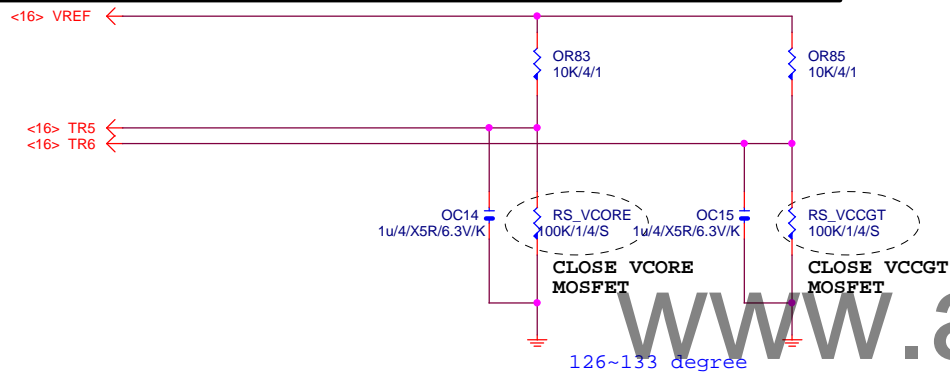


TEMP H/W MONITOR

REV 1.04



RS_VCORE, RS_VCCGT, CLOSE CPU_VCORE & VCCGT MOSFET

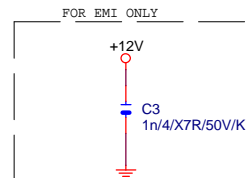
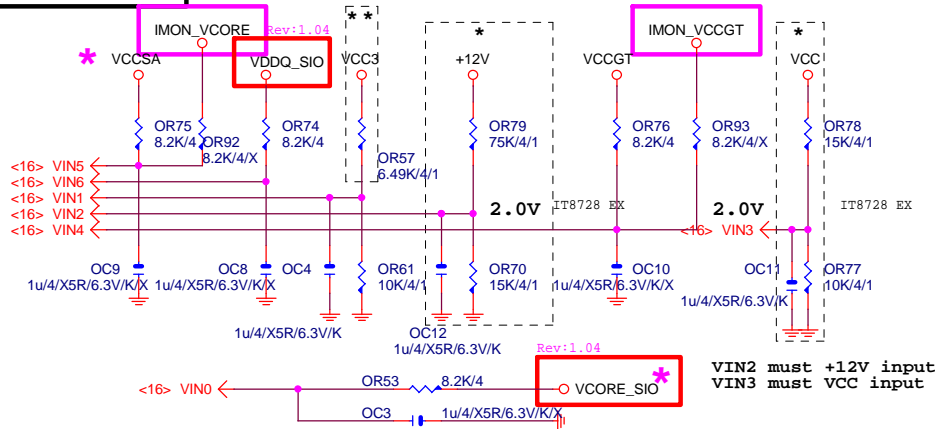
~~PROCHOT: 有mos heartsink不用prochot function~~

VOLTAGE-- H/W MONITOR

Connect to PWM

* IT8728 BX
** IT8728 CX

Connect to PWM

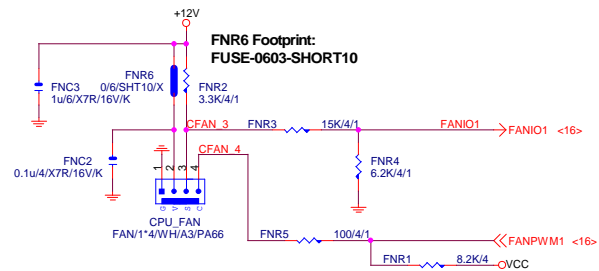


Gigabyte Technology

| | | | | | | | | | | |
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| Title | | | | | HWM,KB/MS, FAN CTRL | | | | | |
| Size | | Document Number | | | GA-H110M-S2PV DDR3-WP | | | Rev | | |
| Custom | | | | | | | | 1.01 | | |
| Date: | | Wednesday, November 18, 2015 | | | Sheet | | 17 | | of 48 | |

CPU SMART FAN

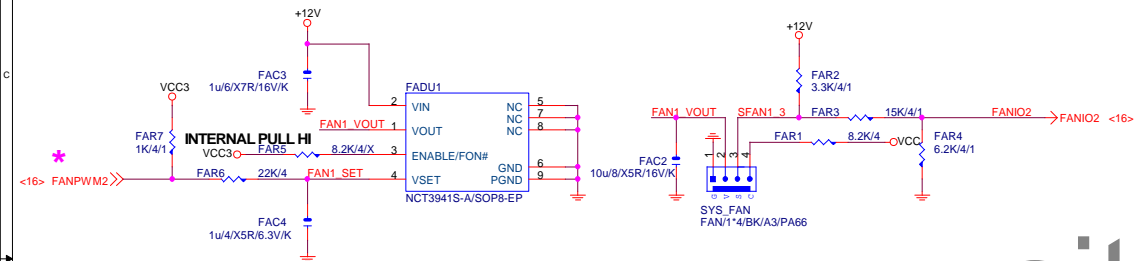
Rev: 0.53



SYSTEM FAN1

Linear SYS_FAN

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



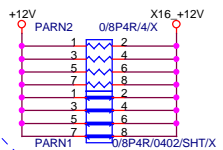
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Gigabyte Technology

| | | | | |
|--------|------------------------------|-------|---------------------|-------|
| Title | | | HWM,KB/MS, FAN CTRL | |
| Size | Document Number | | | Rev |
| Custom | GA-H110M-S2PV DDR3-WP | | | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet | 18 | of 48 |

Rev 0.2

```
/* +12 protect
short-wire test
```



PA_EXP_RXP[0..15] >>> PA_EXP_RXP[0..15] <4>
PA_EXP_RXN[0..15] >>> PA_EXP_RXN[0..15] <4>
PA_EXP_TXP[0..15] >>> PA_EXP_TXP[0..15] <4>
PA_EXP_TXN[0..15] >>> PA_EXP_TXN[0..15] <4>

| | | | |
|--------------|-------|-------------------|----------------|
| PA EXP TXP0 | PAC5 | 0.22u4/X5R6.3V/3K | PA EXP TXP0 C |
| PA EXP TXP1 | PAC4 | 0.22u4/X5R6.3V/3K | PA EXP TXP0 C |
| PA EXP TXP2 | PAC6 | 0.22u4/X5R6.3V/3K | PA EXP TXP1 C |
| PA EXP TXN1 | PAC7 | 0.22u4/X5R6.3V/3K | PA EXP TXN1 C |
| PA EXP TXP2 | PAC8 | 0.22u4/X5R6.3V/3K | PA EXP TXP2 C |
| PA EXP TXN2 | PAC9 | 0.22u4/X5R6.3V/3K | PA EXP TXN2 C |
| PA EXP TXP3 | PAC10 | 0.22u4/X5R6.3V/3K | PA EXP TXP3 C |
| PA EXP TXN3 | PAC11 | 0.22u4/X5R6.3V/3K | PA EXP TXN3 C |
| PA EXP TXP4 | PAC12 | 0.22u4/X5R6.3V/3K | PA EXP TXP4 C |
| PA EXP TXN4 | PAC13 | 0.22u4/X5R6.3V/3K | PA EXP TXN4 C |
| PA EXP TXP5 | PAC14 | 0.22u4/X5R6.3V/3K | PA EXP TXP5 C |
| PA EXP TXN5 | PAC15 | 0.22u4/X5R6.3V/3K | PA EXP TXN5 C |
| PA EXP TXP6 | PAC16 | 0.22u4/X5R6.3V/3K | PA EXP TXP6 C |
| PA EXP TXN6 | PAC17 | 0.22u4/X5R6.3V/3K | PA EXP TXN6 C |
| PA EXP TXP7 | PAC18 | 0.22u4/X5R6.3V/3K | PA EXP TXP7 C |
| PA EXP TXN7 | PAC19 | 0.22u4/X5R6.3V/3K | PA EXP TXN7 C |
| PA EXP TXP8 | PAC21 | 0.22u4/X5R6.3V/3K | PA EXP TXP8 C |
| PA EXP TXN8 | PAC20 | 0.22u4/X5R6.3V/3K | PA EXP TXN8 C |
| PA EXP TXP9 | PAC22 | 0.22u4/X5R6.3V/3K | PA EXP TXP9 C |
| PA EXP TXN9 | PAC23 | 0.22u4/X5R6.3V/3K | PA EXP TXN9 C |
| PA EXP TXP10 | PAC24 | 0.22u4/X5R6.3V/3K | PA EXP TXP10 C |
| PA EXP TXN10 | PAC25 | 0.22u4/X5R6.3V/3K | PA EXP TXN10 C |
| PA EXP TXP11 | PAC26 | 0.22u4/X5R6.3V/3K | PA EXP TXP11 C |
| PA EXP TXN11 | PAC27 | 0.22u4/X5R6.3V/3K | PA EXP TXN11 C |
| PA EXP TXP12 | PAC28 | 0.22u4/X5R6.3V/3K | PA EXP TXP12 C |
| PA EXP TXN12 | PAC29 | 0.22u4/X5R6.3V/3K | PA EXP TXN12 C |
| PA EXP TXP13 | PAC30 | 0.22u4/X5R6.3V/3K | PA EXP TXP13 C |
| PA EXP TXN13 | PAC31 | 0.22u4/X5R6.3V/3K | PA EXP TXN13 C |
| PA EXP TXP14 | PAC32 | 0.22u4/X5R6.3V/3K | PA EXP TXP14 C |
| PA EXP TXN14 | PAC33 | 0.22u4/X5R6.3V/3K | PA EXP TXN14 C |
| PA EXP TXP15 | PAC34 | 0.22u4/X5R6.3V/3K | PA EXP TXP15 C |
| PA EXP TXN15 | PAC35 | 0.22u4/X5R6.3V/3K | PA EXP TXN15 C |

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--> 2.5GHZ

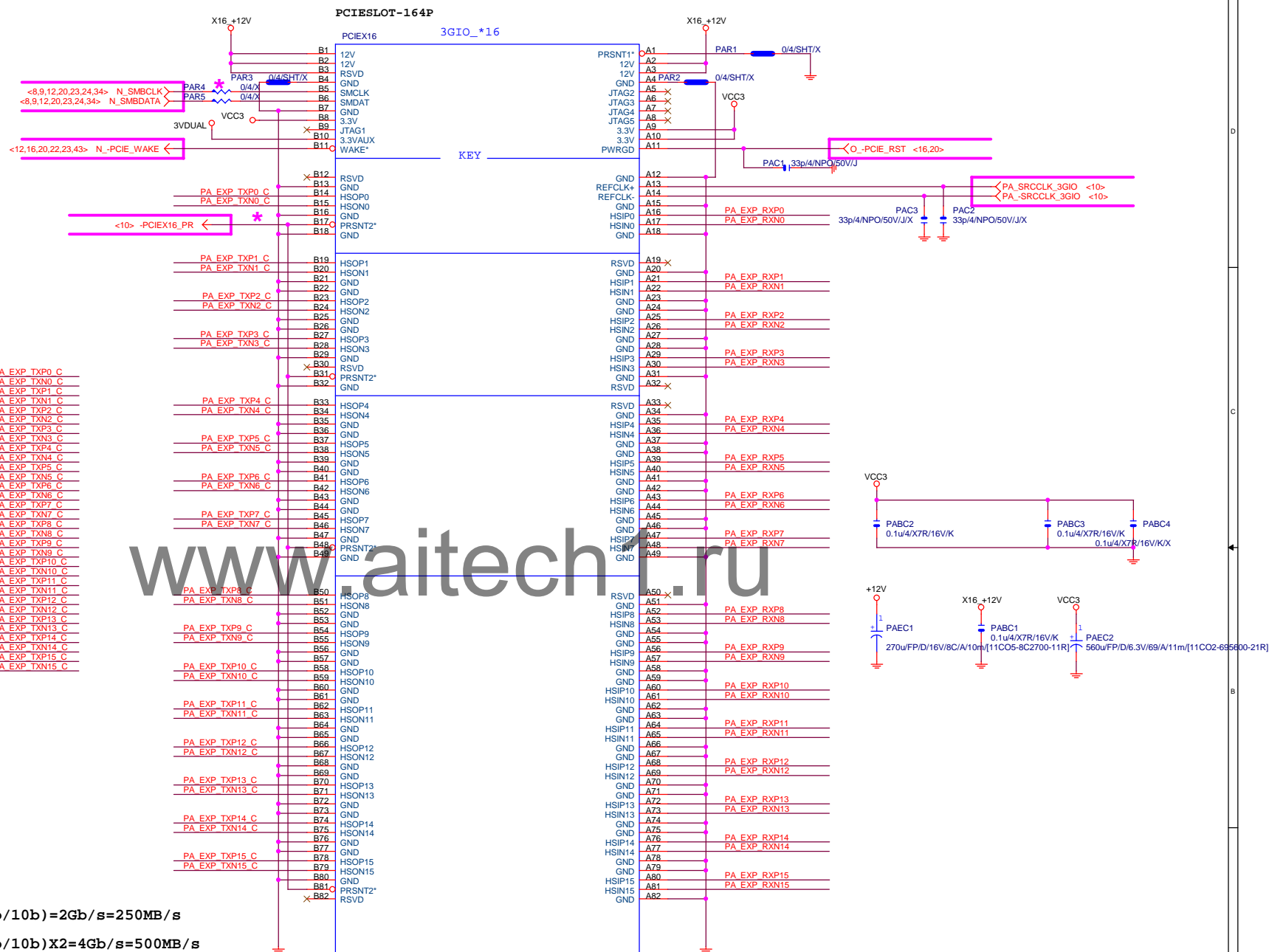
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PCE-E X1(雙向) BANDWIDTH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

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

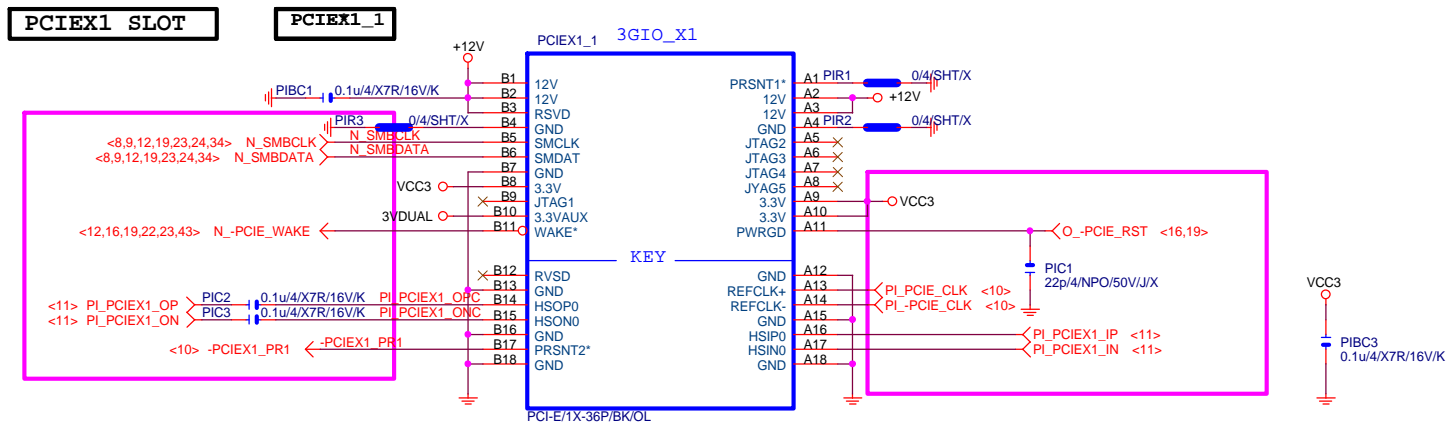
PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ



PCI-E/16X-164P/BK/LONG DOUBLE/[11AC1-023164-D1R]

R01A

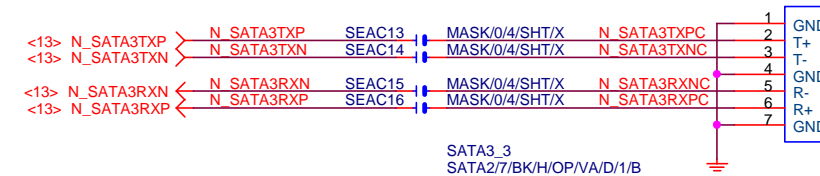
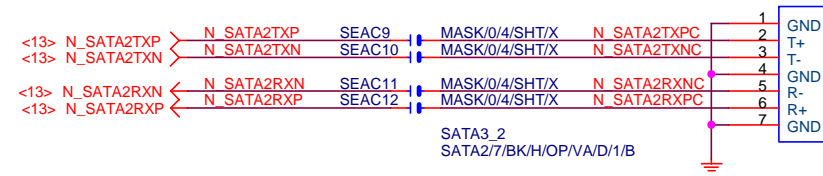
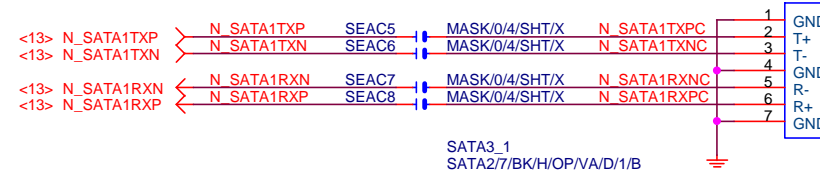
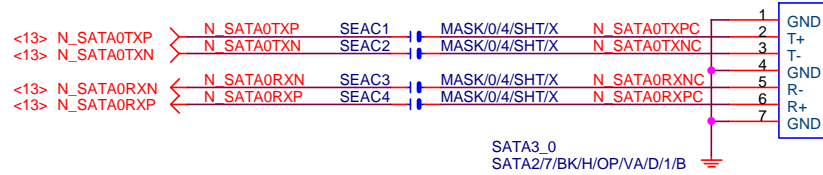


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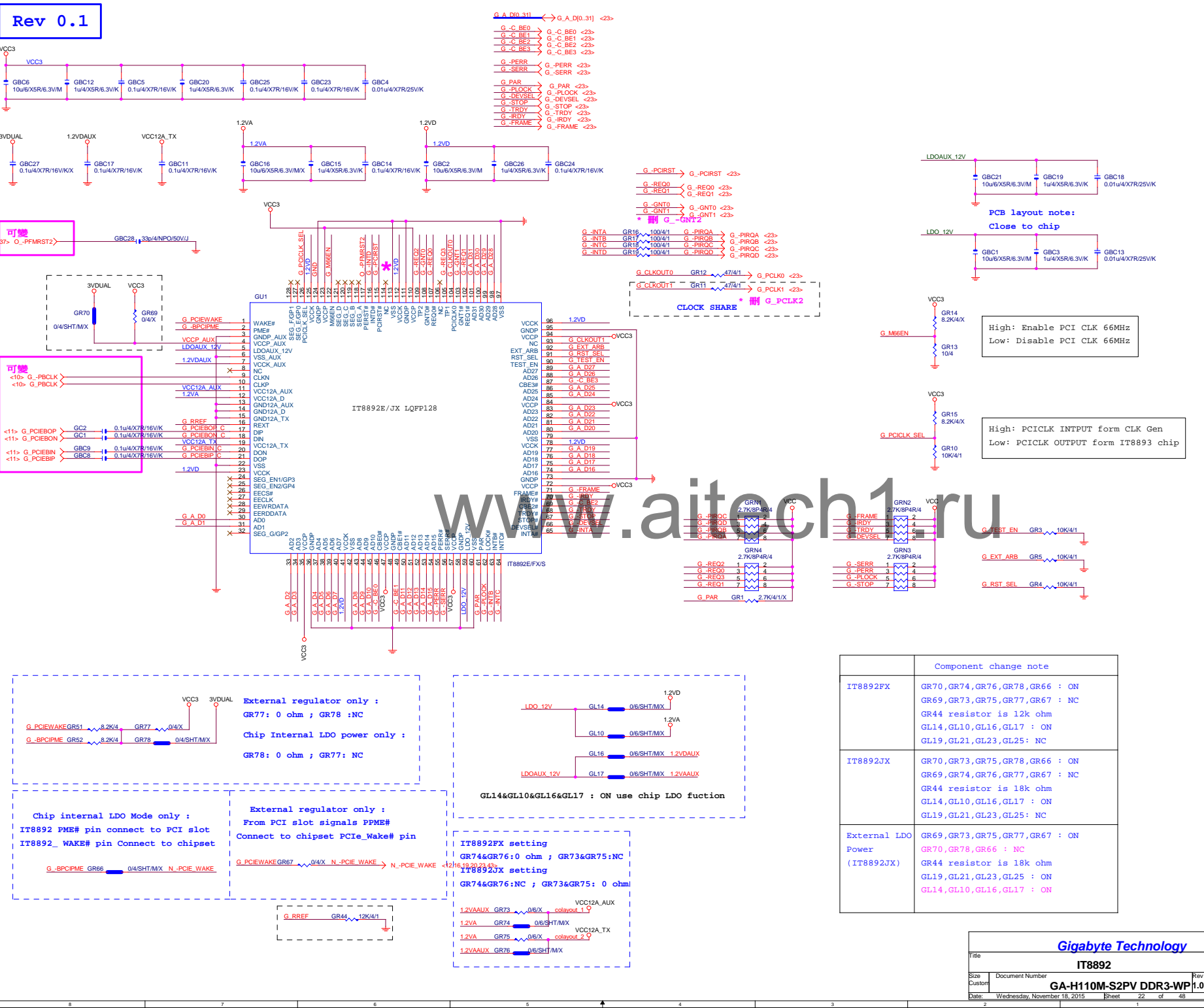
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| Size | Document Number | Rev | |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 | |
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Rev 0.5a

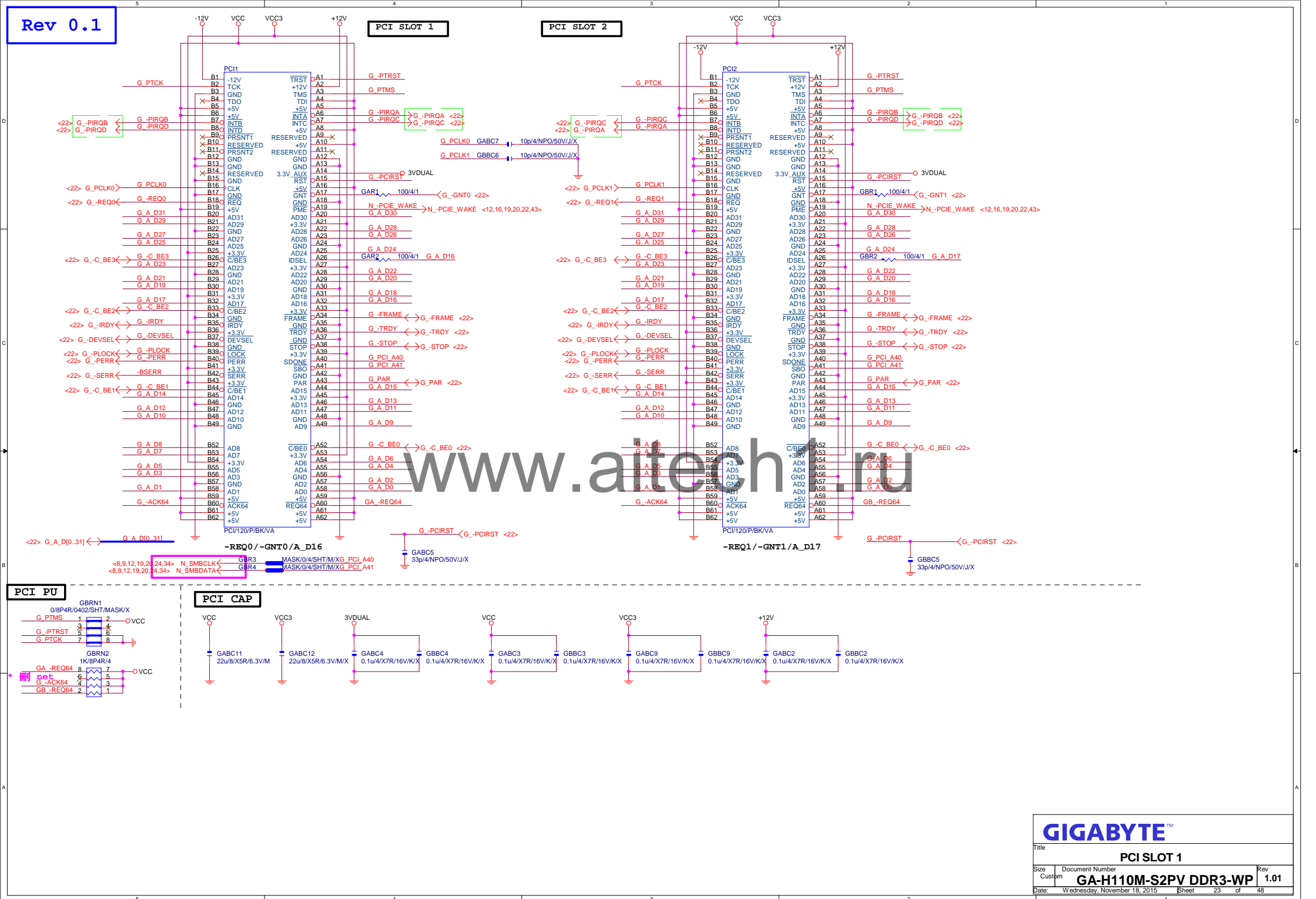


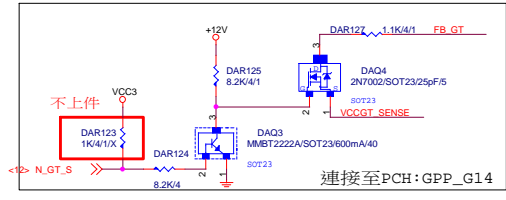
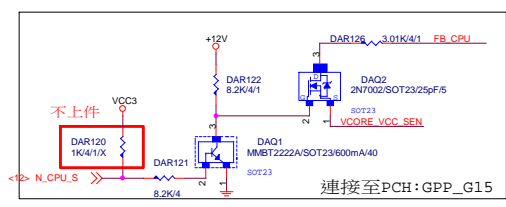
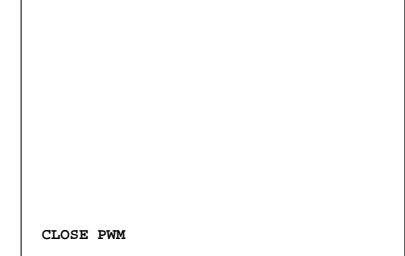
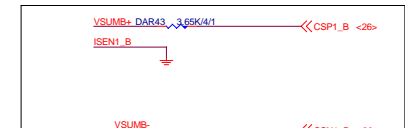
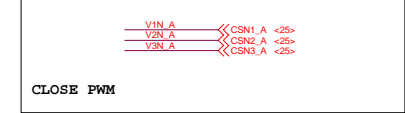
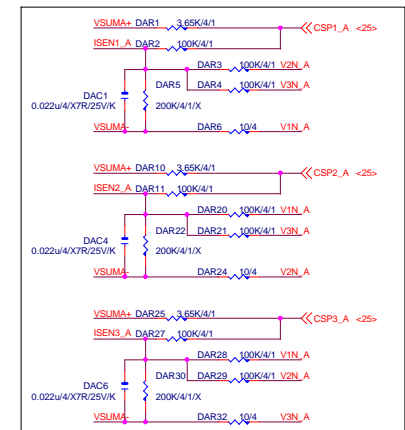
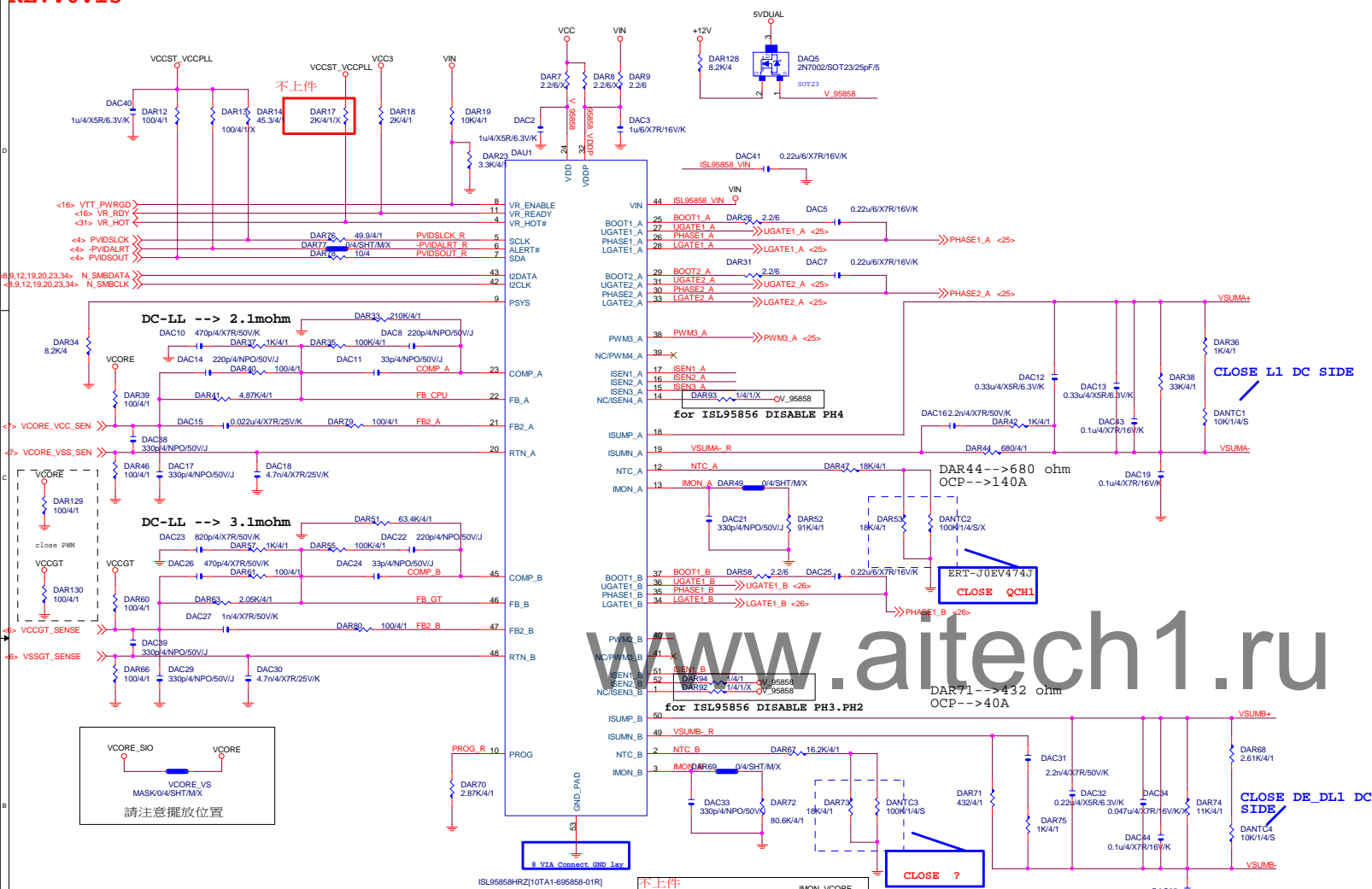
www.aitech1.ru

| | | | |
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| Gigabyte Technology | | | |
| Title | | | |
| SATA EXPRESS | | | |
| Size | Document Number | Rev | |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 | |
| Date: | Wednesday, November 18, 2015 | Sheet | 21 of 48 |

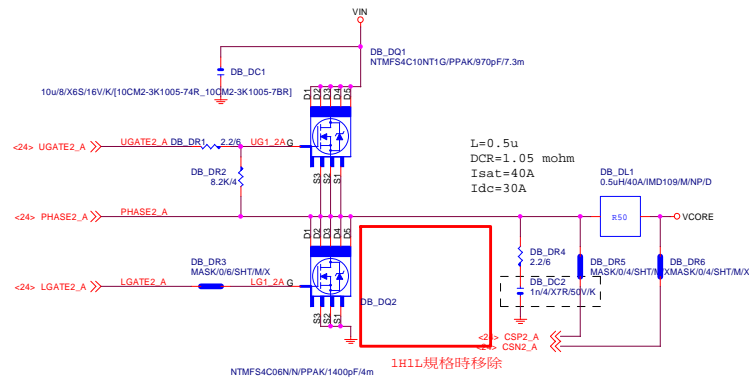
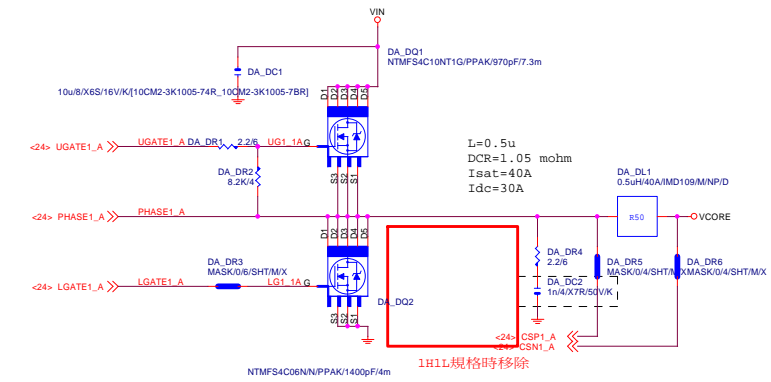


| | Component change note |
|-------------------------------------|---|
| IT8892FX | GR70, GR74, GR76, GR78, GR66 : ON GR69, GR73, GR75, GR77, GR67 : NC GR44 resistor is 12k ohm GL14, GL10, GL16, GL17 : ON GL19, GL21, GL23, GL25: NC |
| IT8892JX | GR70, GR73, GR75, GR78, GR66 : ON GR69, GR74, GR76, GR77,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

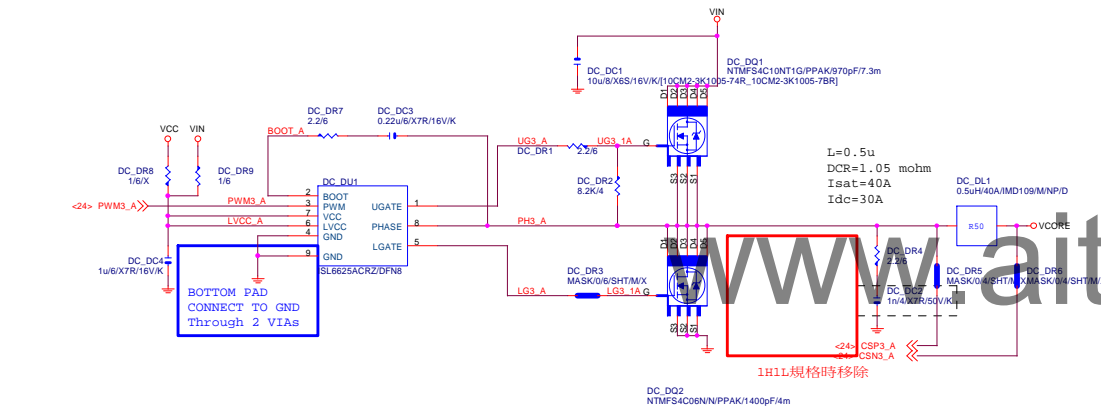
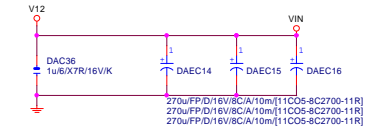




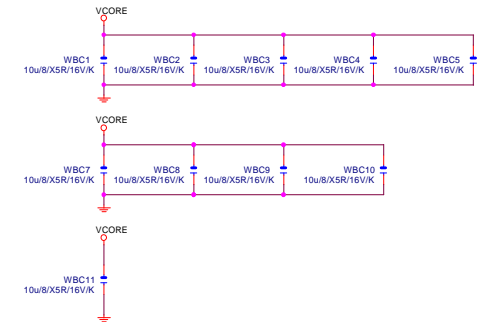
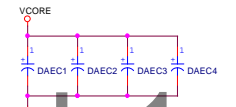
VCORE



VIN CAP 270u*3PCS



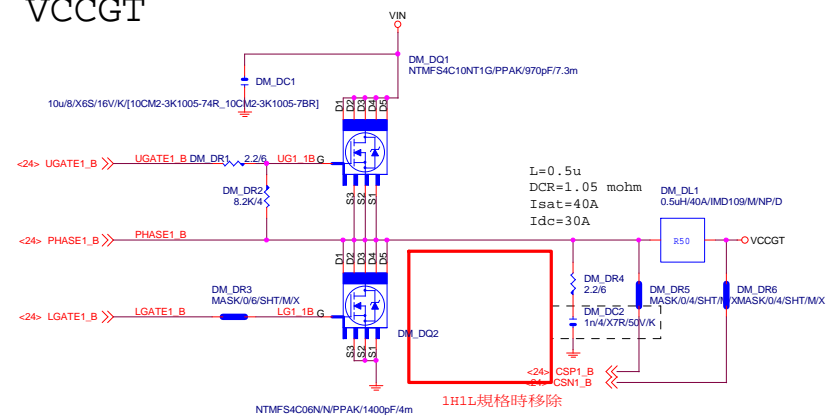
VCORE CAP 560u*4PCS
10u*10PCS



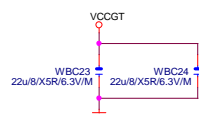
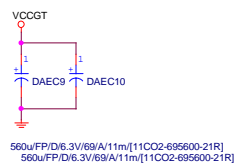
GIGABYTE™

| Title | | | |
|--------------|------------------------------|-------|----------|
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| Size | Document Number | Rev | |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 | |
| Date: | Wednesday, November 18, 2015 | Sheet | 25 of 48 |

VCCGT



VCCGT CAP 560u*2PCS
22u*2PCS



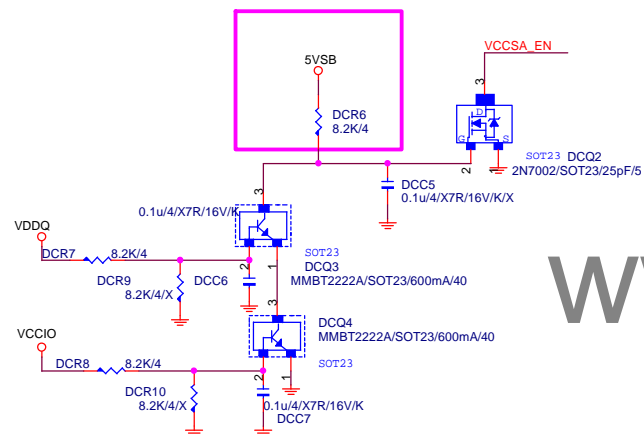
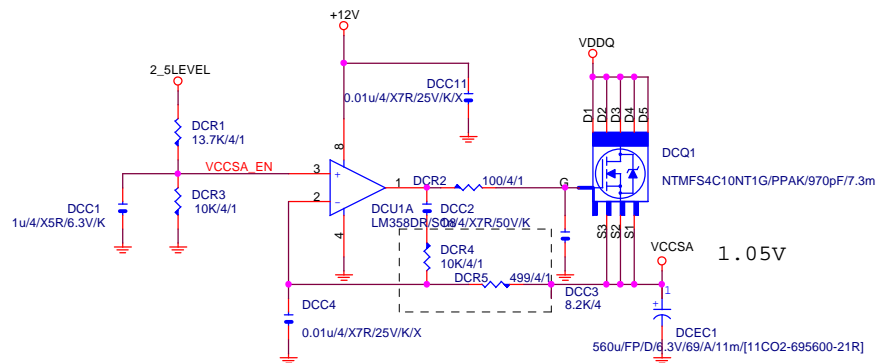
www.aitech1.ru

GIGABYTE™

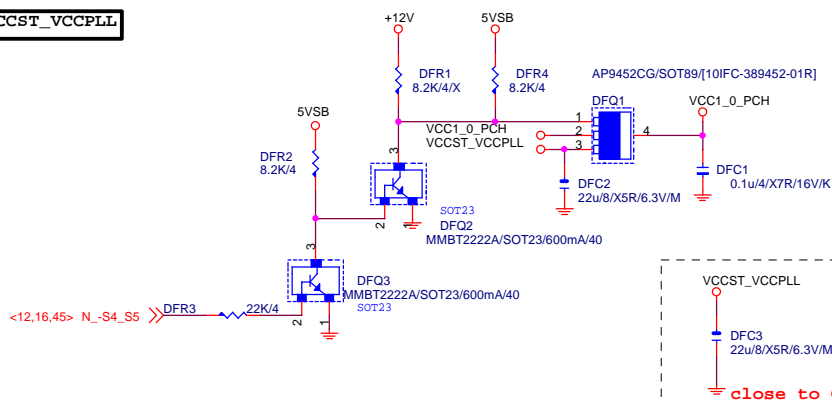
Title
ISL95858_MOS

| | | |
|--------|------------------------------|----------------|
| Size | Document Number | Rev |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet 26 of 48 |

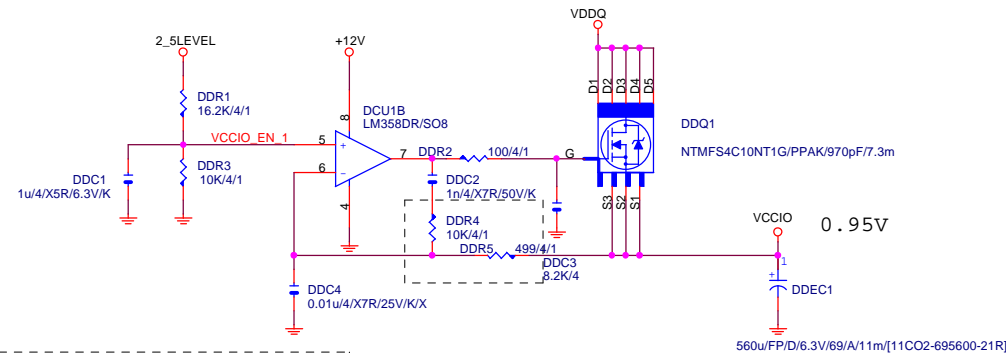
VCCSA REV:0.4



VCCST_VCCPLL



VCCIO

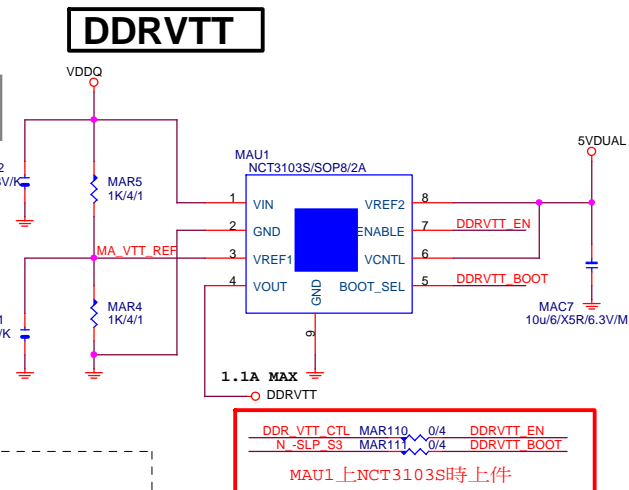
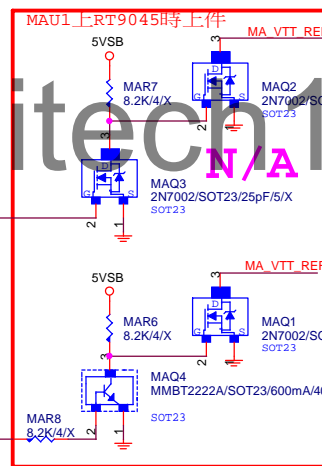


VCCIO_EN 1 DDR10 0/4/SHT/M/X VCCIO_EN <16>
Connect to IT8620

www.aitech1.ru

| GIGABYTE™ | | | |
|------------------------------------|---------------------------------------|----------|--|
| Title VCCSA_VCCIO | | | |
| Size Custom | Document Number GA-H110M-S2PV DDR3-WP | Rev 1.01 | |
| Date: Wednesday, November 18, 2015 | Sheet 27 | of 48 | |

DDR3



DDR CAP 560u*2PCS

22u*1PCS

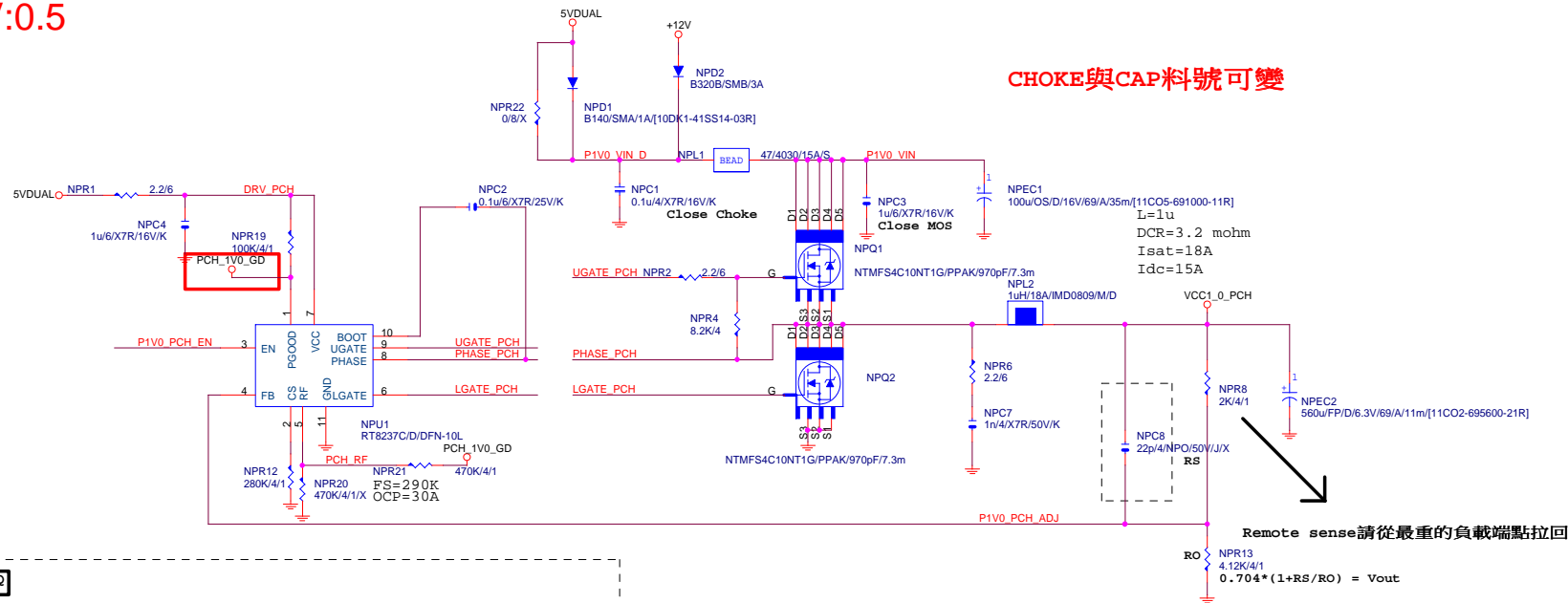
DDRVTT CAP

GIGABYTE™

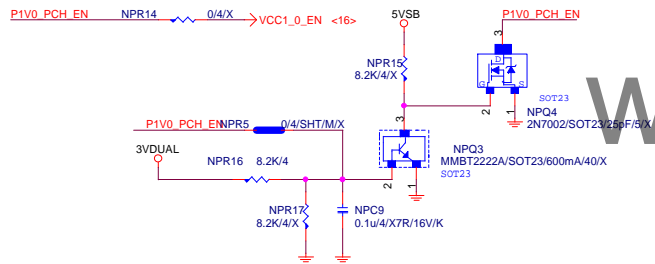
RT8120 DDR POWER

| | | |
|--------|------------------------------|----------------|
| Size | Document Number | Rev |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet 28 of 48 |

REV:0.5



PWR SEQ



請放置CHOKES—出來的地方

GIGABYTE™

| | | | |
|--------|------------------------------|-----------------------|----------|
| Title | | RT8237_PCH POWER | |
| Size | Document Number | GA-H110M-S2PV DDR3-WP | |
| Custom | | Rev 1.01 | |
| Date: | Wednesday, November 18, 2015 | Sheet | 29 of 48 |

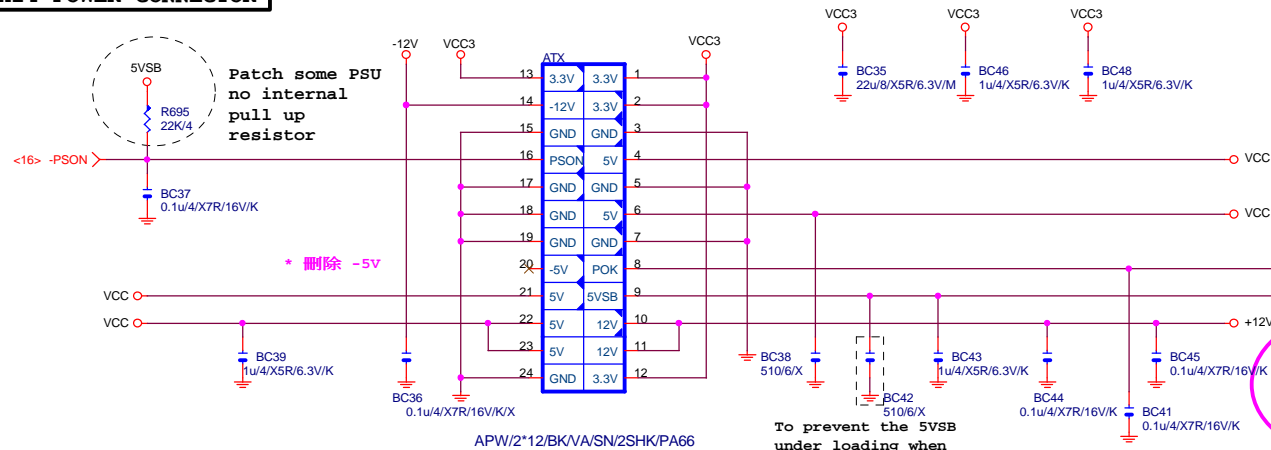
REV:0.51

<16> 5VAUX_SW >>

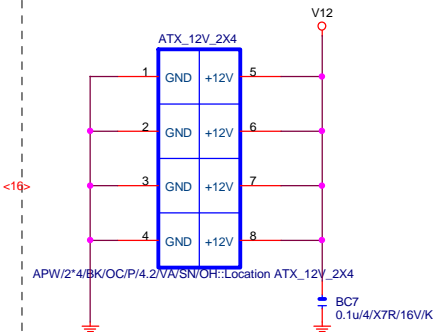


| | | | |
|-----------------------|------------------------------|-------|-------------|
| Title | | | |
| DISCRETE POWER | | | |
| Size | Document Number | | Rev |
| Custom | GA-H110M-S2PV DDR3-WP | | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet | 30 of 48 |

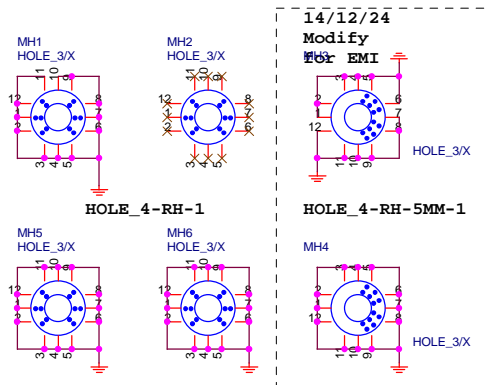
ATXX24 POWER CONNECTOR



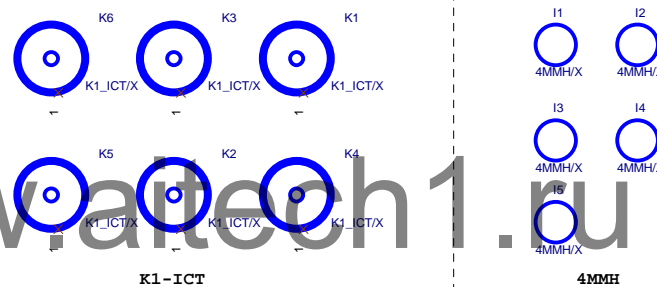
ATXX4 POWER CONNECTOR



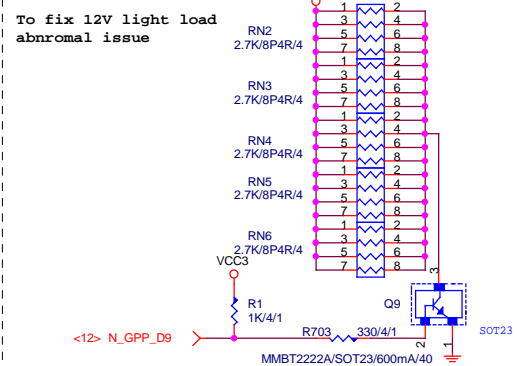
螺絲孔



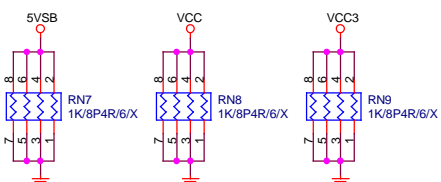
固定孔/光學點



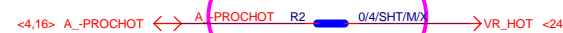
+12V DUMMY LOAD



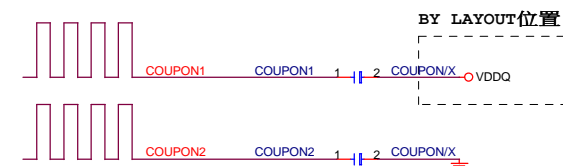
DUMMY LOAD



-PROHOT * 保留 ?

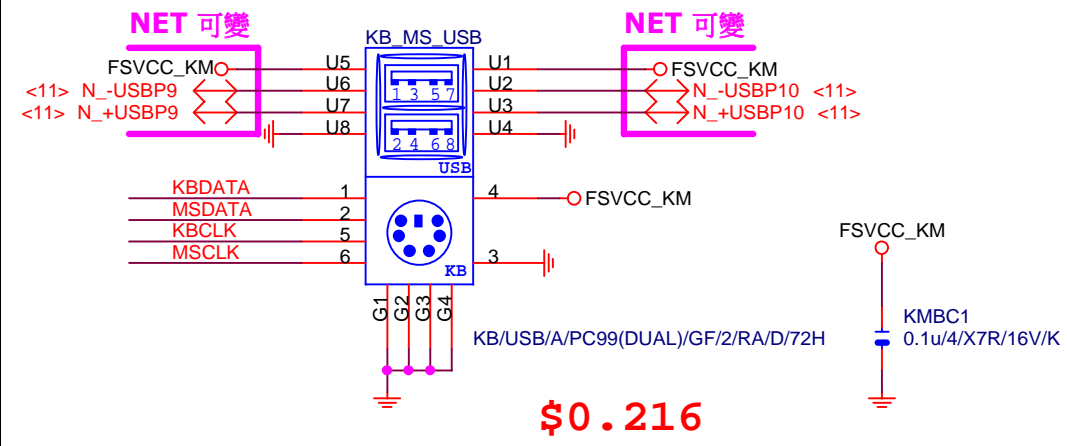


COUPON

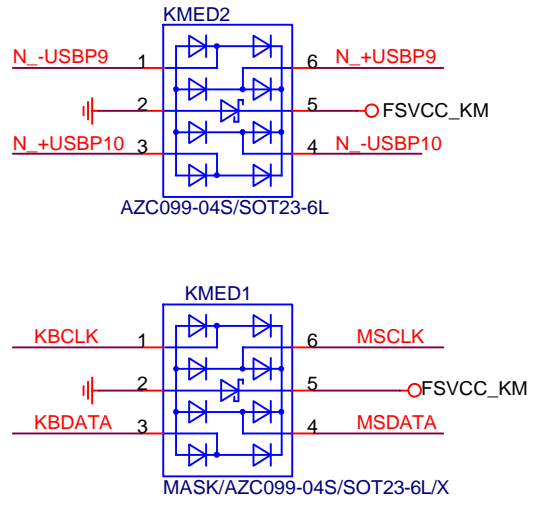


Gigabyte Technology

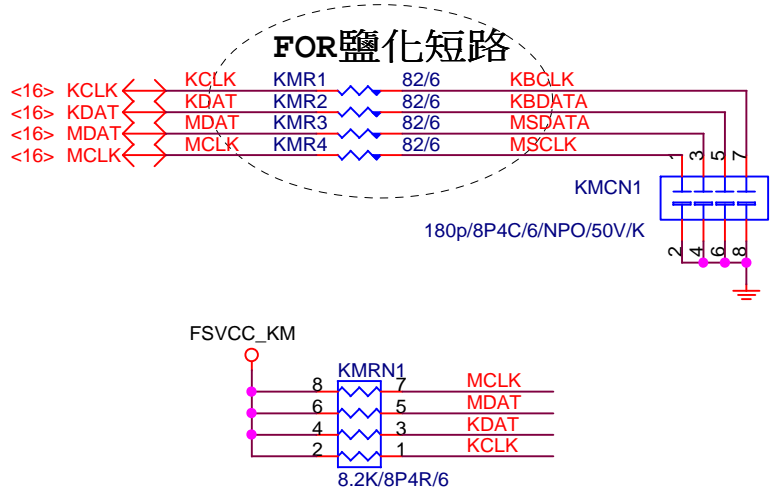
| | | | |
|---------------------|------------------------------|-------|----------|
| Title | | | |
| ATX POWER CONNECTOR | | | |
| Size | Document Number | | Rev |
| Custom | GA-H110M-S2PV DDR3-WP | | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet | 31 of 48 |



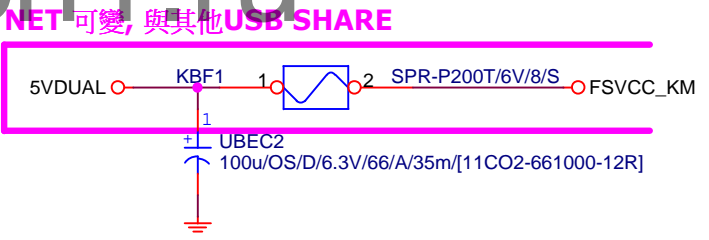
ESD



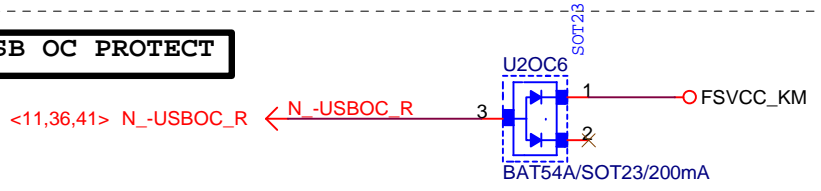
KB_MS_USB DAMPING/PU

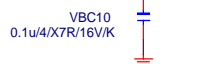
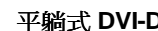
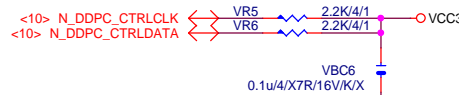
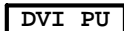
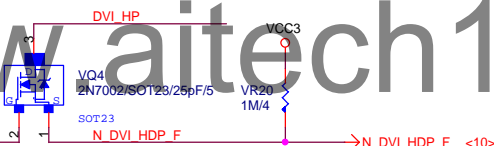


KB_MS_USB PWR



USB OC PROTECT





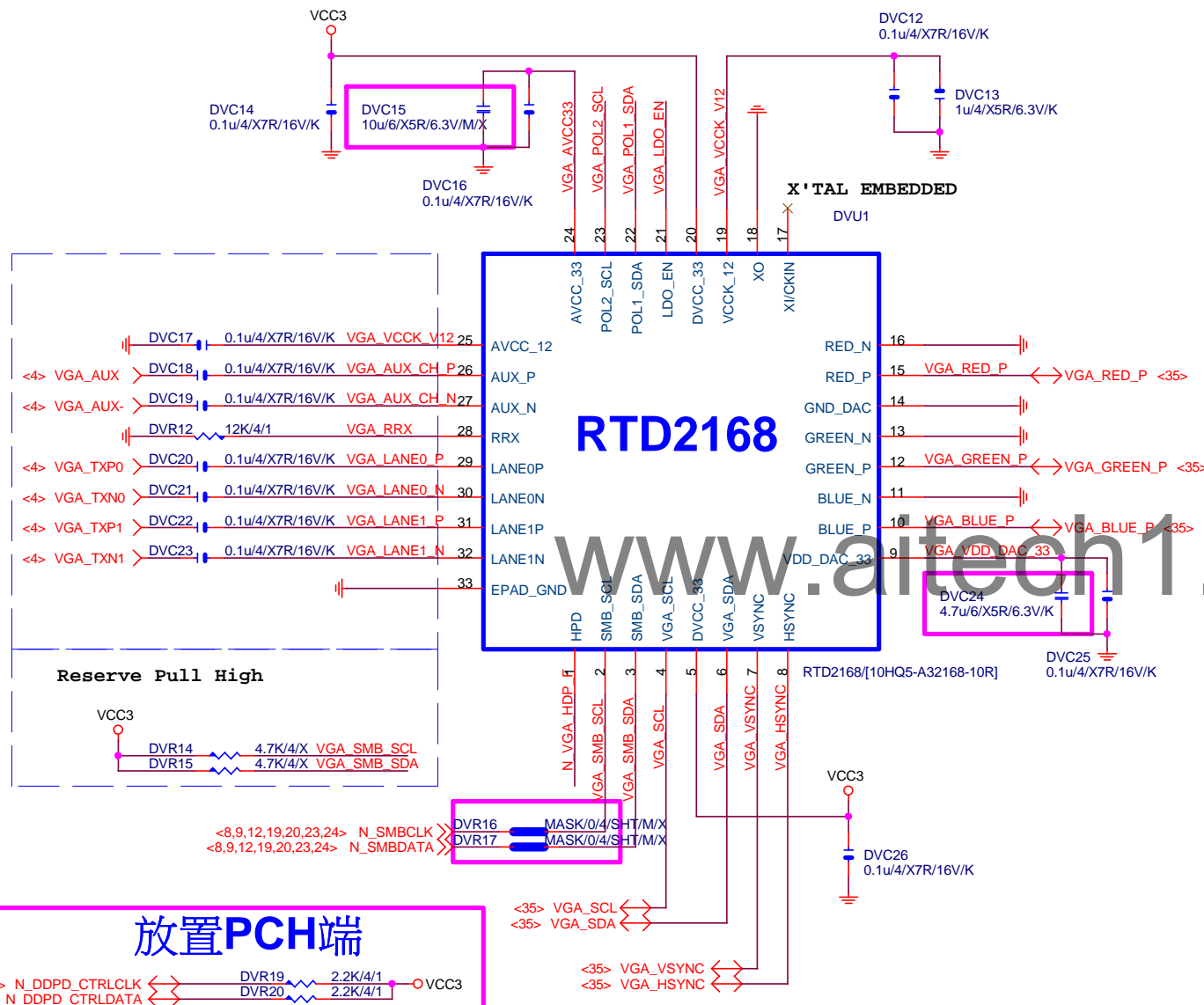
Close to connector



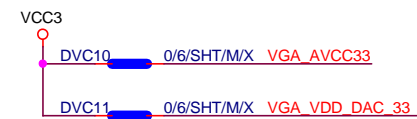
Close to connector



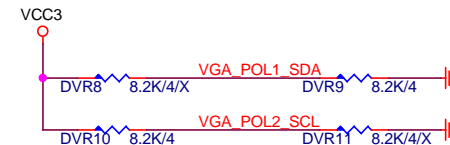
Close to connector



POWER

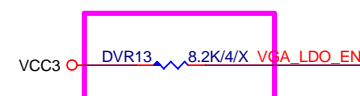


Power on latch



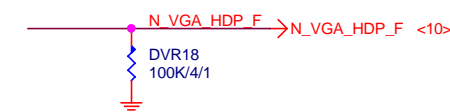
| | | POL1_SDA(PIN22) | |
|---------------------|---|--------------------------|----------------|
| | | 0 | 1 |
| POL2_SCL (PIN23) | 0 | X | EP MODE |
| | 1 | ROM ONLY MODE | EEPROM MODE |

Embedded LDO

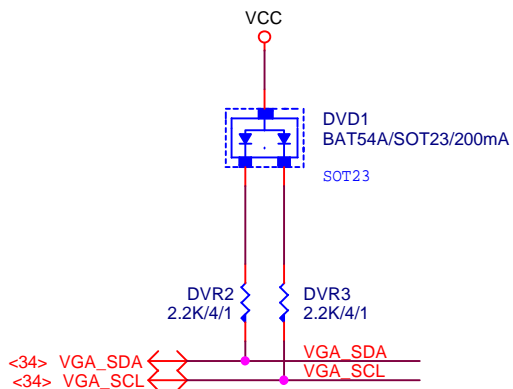


| LDO_EN(PIN21) | |
|-----------------------------|----------------------------|
| 0 | 1 |
| VCCK_V12 from External 1.2V | VCCK_V12 from Embedded LDO |

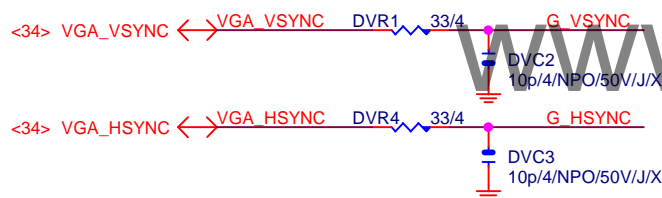
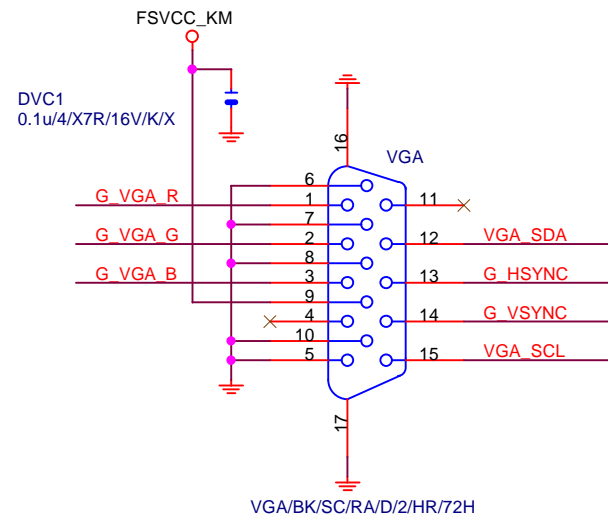
DP HPD



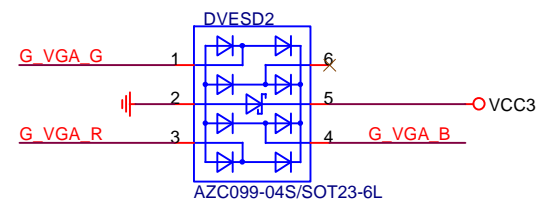
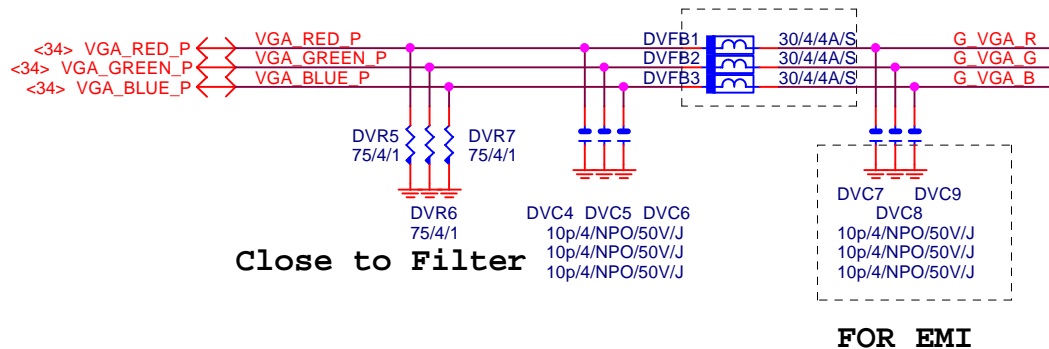
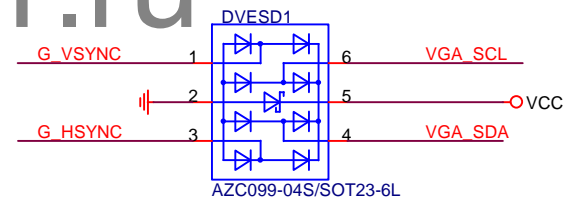
VGA SIGNAL R1.03



VGA CONN.



VGA ESD



| | | | |
|---------------------|------------------------------|-------|----------|
| Gigabyte Technology | | | |
| DP-VGA RTD2168 | | | |
| Title | | | |
| Size | Document Number | Rev | |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 | |
| Date: | Wednesday, November 18, 2015 | Sheet | 35 of 48 |

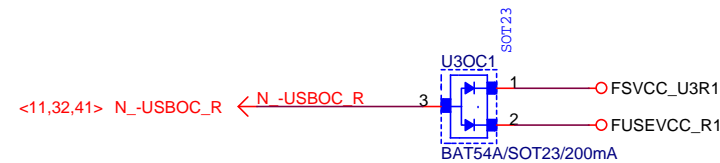
NET 可自行調整



NET 可自行調整



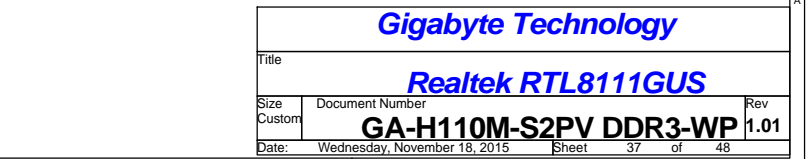
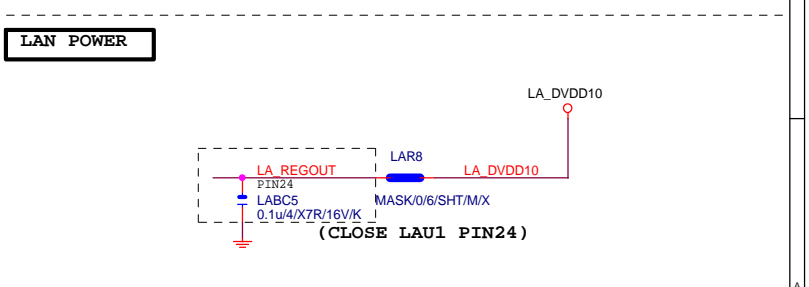
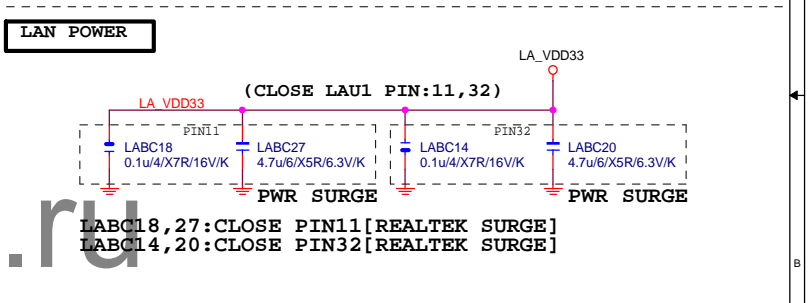
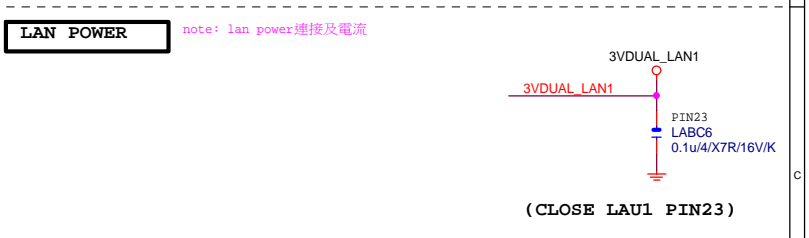
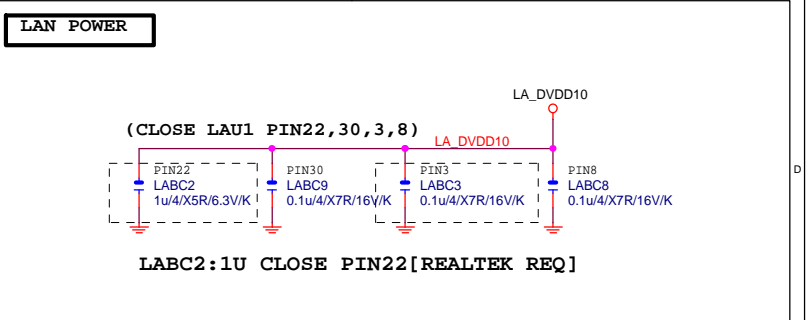
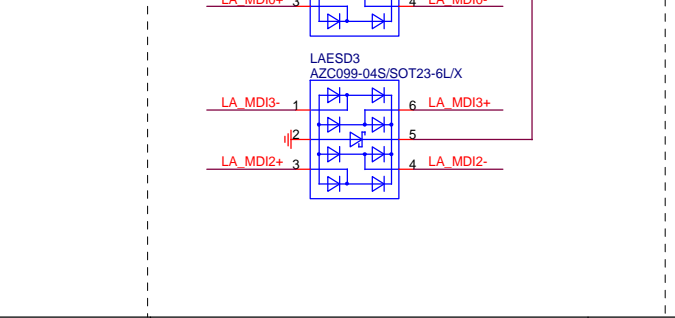
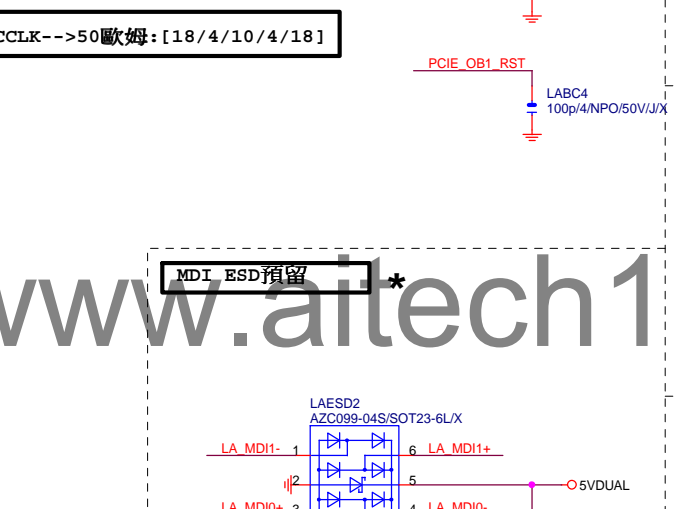
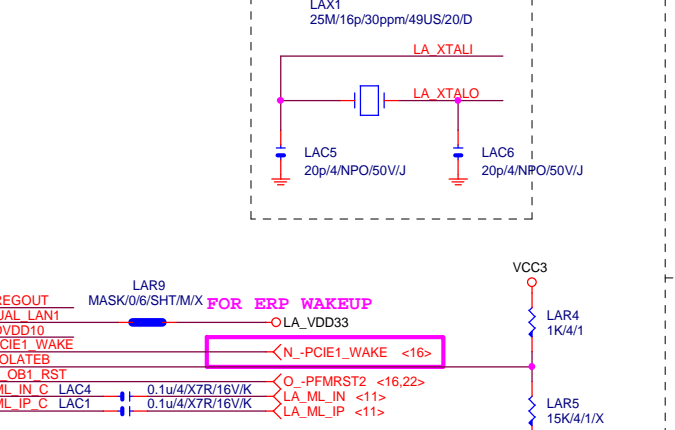
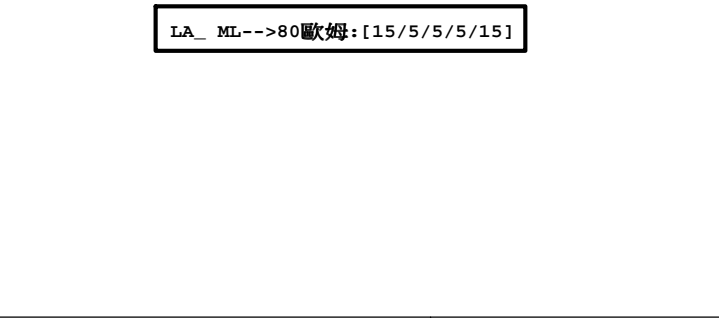
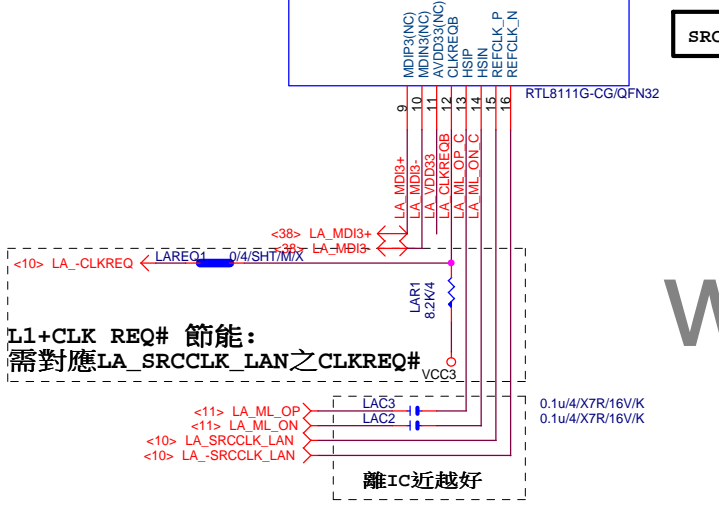
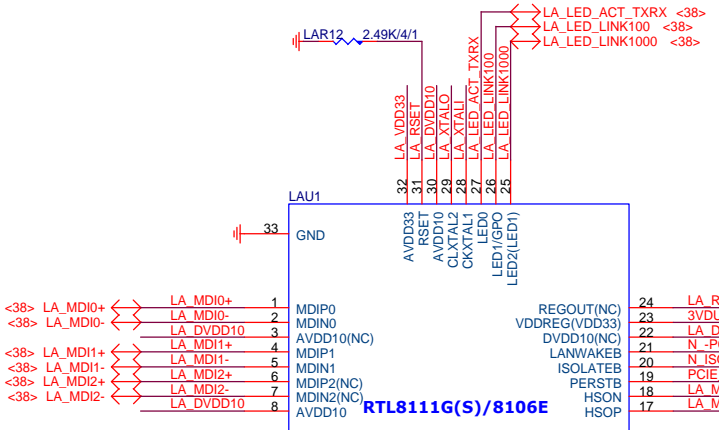
FUSE 2 Port 1 Fuse 2.6A



Gigabyte Technology

| | |
|-------|-------------------------|
| Title | R_USB30,F_USB30, USB_OC |
|-------|-------------------------|

| | | |
|-------------|------------------------------|----------------|
| Size Custom | Document Number | Rev |
| | GA-H110M-S2PV DDR3-WP | 1.0 |
| Date: | Wednesday, November 18, 2015 | Sheet 36 of 48 |

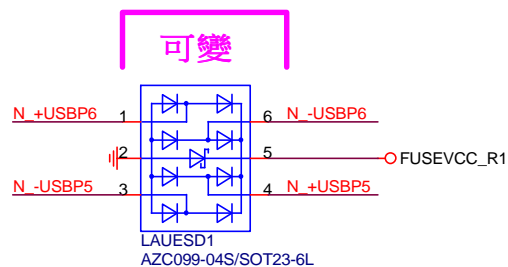


| Gigabyte Technology | | | |
|---------------------|------------------------------|-------|----------|
| Title | | | |
| Realtek RTL8111GUS | | | |
| Size | Document Number | Rev | |
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 | |
| Date: | Wednesday, November 18, 2015 | Sheet | 37 of 48 |

R1.06

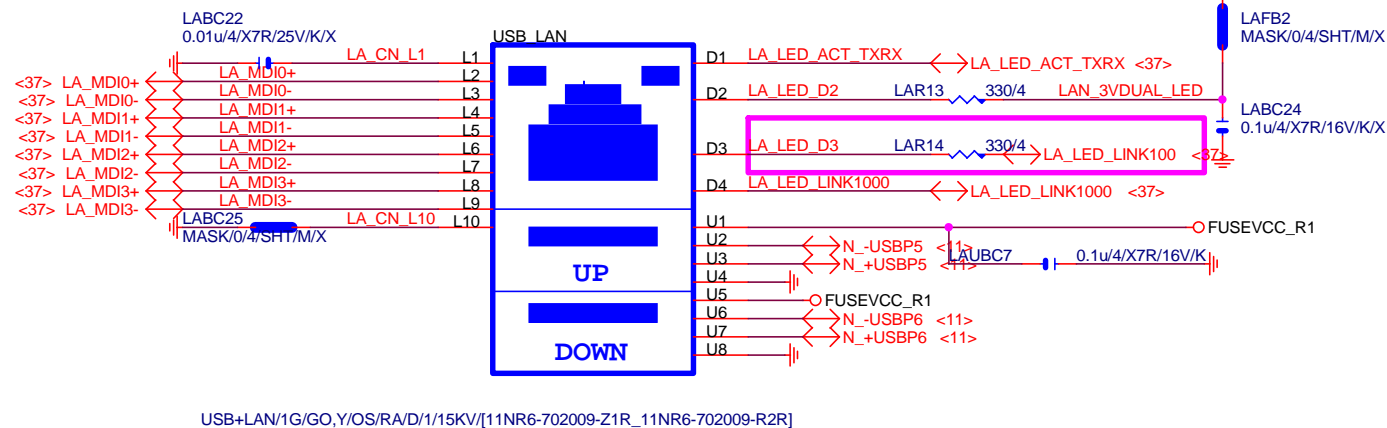
note:可變更USB NAME

RMA ESD PROTECT



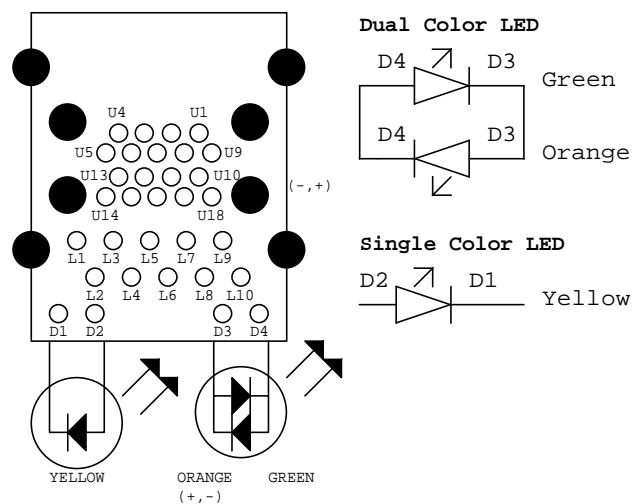
note:可變更USB NAME

[RTL8111G]



LA_MDI-->100歐姆:[20/4/8/4/20]

USB30_LAN LAYOUT示意圖



USB POWER

note:可變更FUSE



Close to connector
FUSE-0805

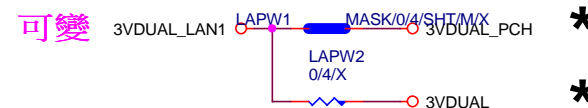
EMI SHORT PAD

PS:視EMI需求



LAN POWER

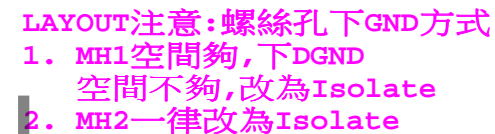
note: lan power連接及電流



Gigabyte Technology

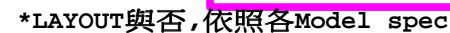
LAN CONNECTOR-RTL8111G

| | | |
|------------------------------------|---|-------------|
| Size Custom | Document Number GA-H110M-S2PV DDR3-WP | Rev 1.01 |
| Date: Wednesday, November 18, 2015 | Sheet 38 of 48 | |



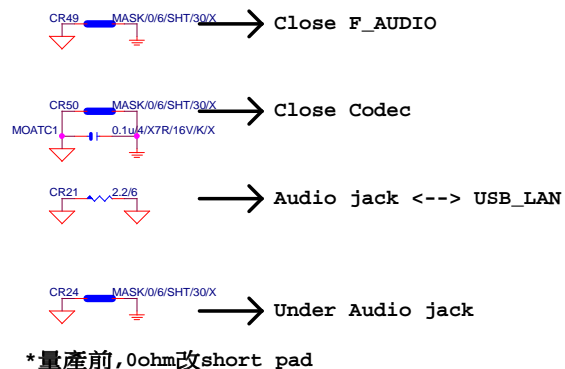
| | | |
|---------------------------|---------------------------|--|
| <input type="radio"/> MH1 | <input type="radio"/> MH2 | |
| DGND | Isolate | |

LAYOUT注意:要加
GND切割線

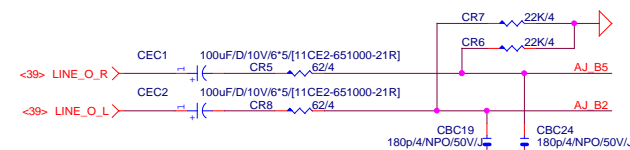


| | | | |
|----------------------------|------------------------------|-------|------------|
| Gigabyte Technology | | | |
| Title | | | |
| HD AUDIO ALC887 | | | |
| Size | Document Number | | Rev |
| Custom | GA-H110M-S2PV DDR3-WP | | 1.0 |
| Date: | Wednesday, November 18, 2015 | Sheet | 39 of 48 |

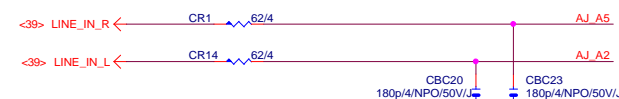
Rev 0.4



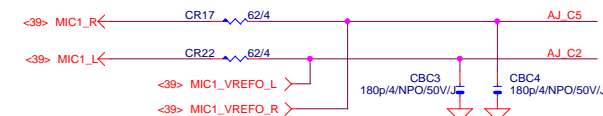
LINE-OUT



LINE-IN



MIC-IN

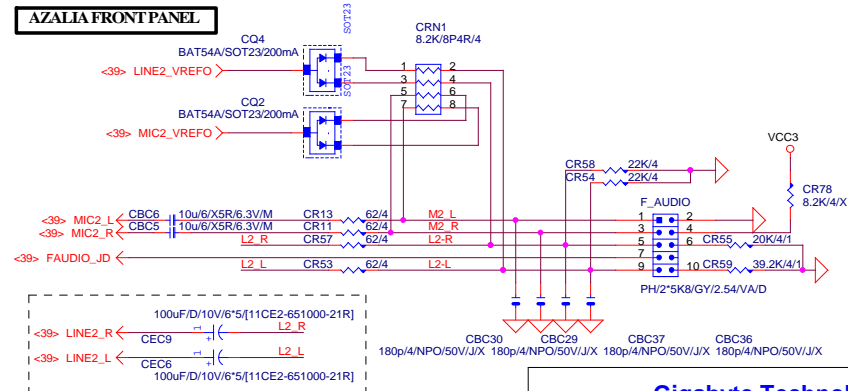


SURROUND

CEN/LFE

SURRBACK

AZALIA FRONT PANEL

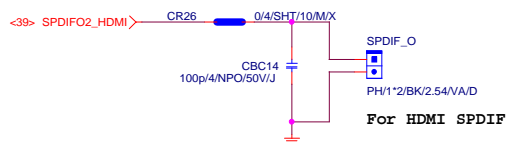


Gigabyte Technology

AUDIO JACK

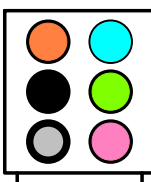
| Size | Document Number | Rev |
|--------|------------------------------|----------------|
| Custom | GA-H110M-S2PV DDR3-WP | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet 40 of 48 |

SPDIF_OUT



SPDIF_IN

AZALIA JACK

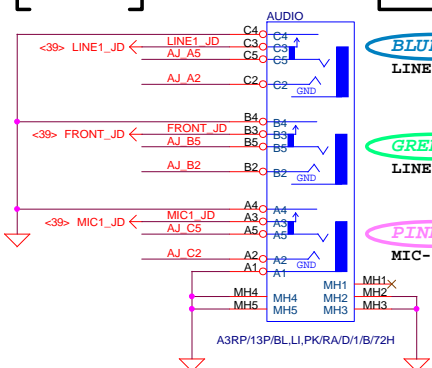


AZALIA JACK

BLUE
LINE-IN

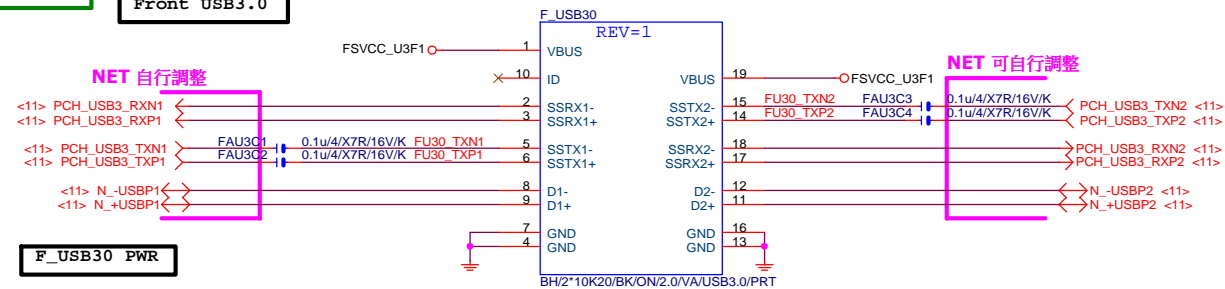
GREEN
LINE-OUT

PINK
MIC-IN

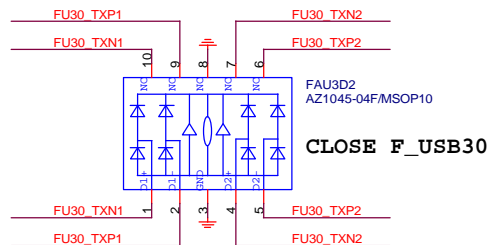
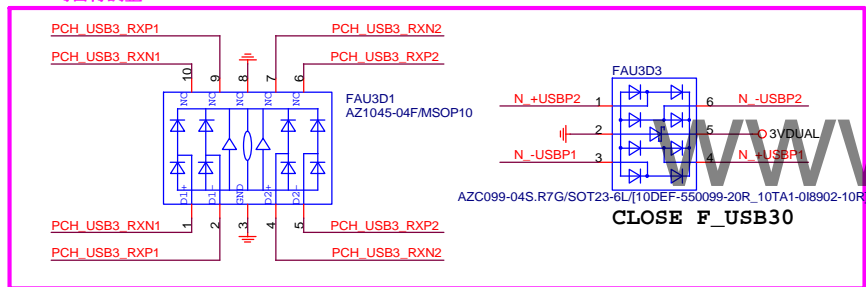


Rev: 0.53

Front USB3.0

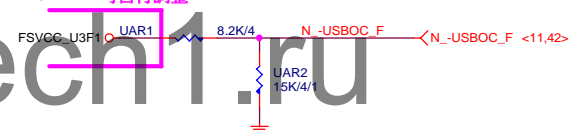


NET 可自行調整



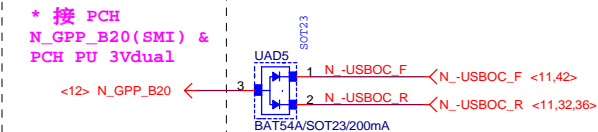
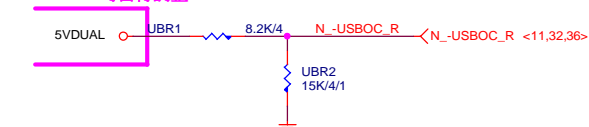
-USBOC_F

POWER 可自行調整



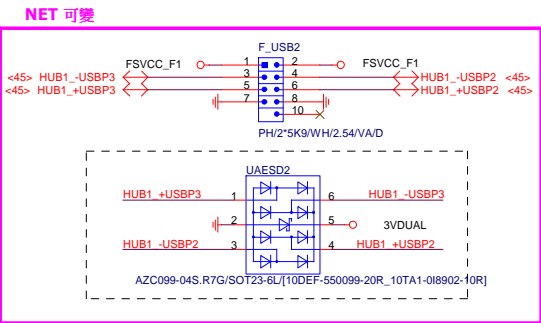
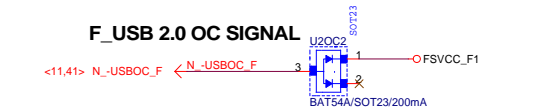
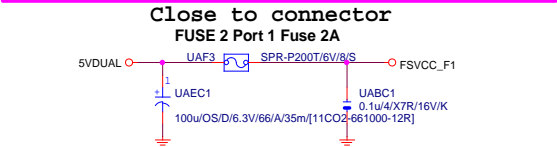
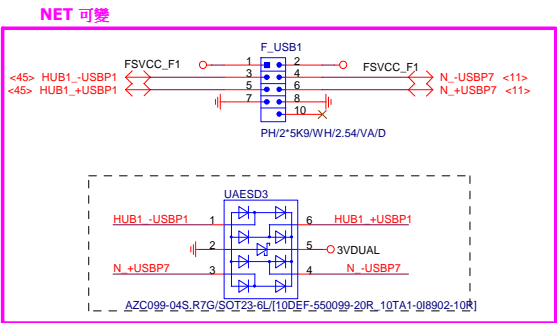
-USBOC_R

POWER 可自行調整

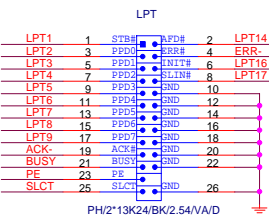
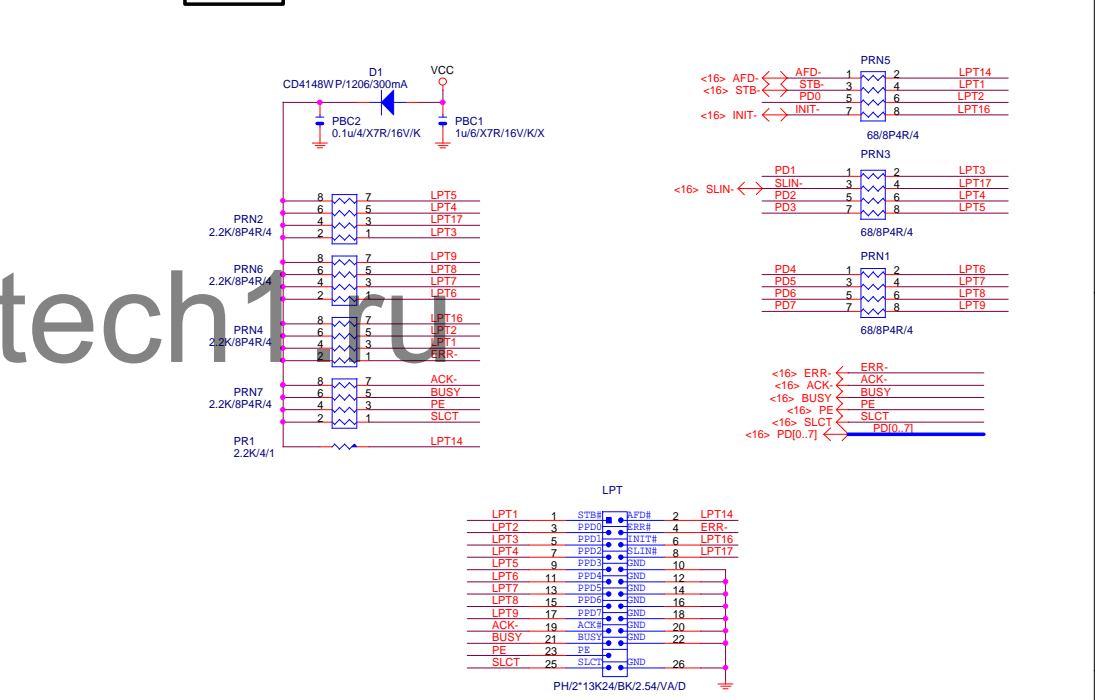
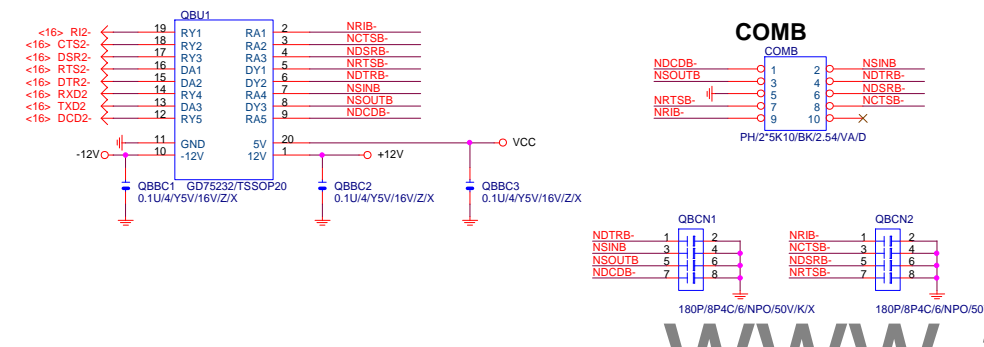
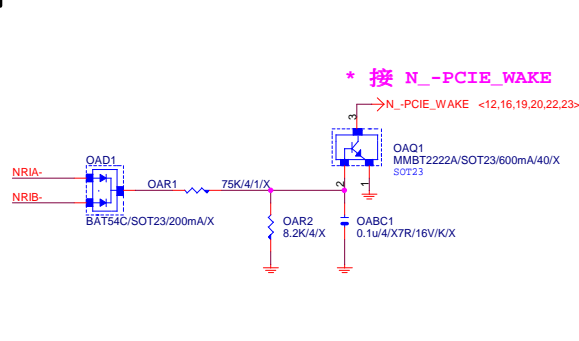
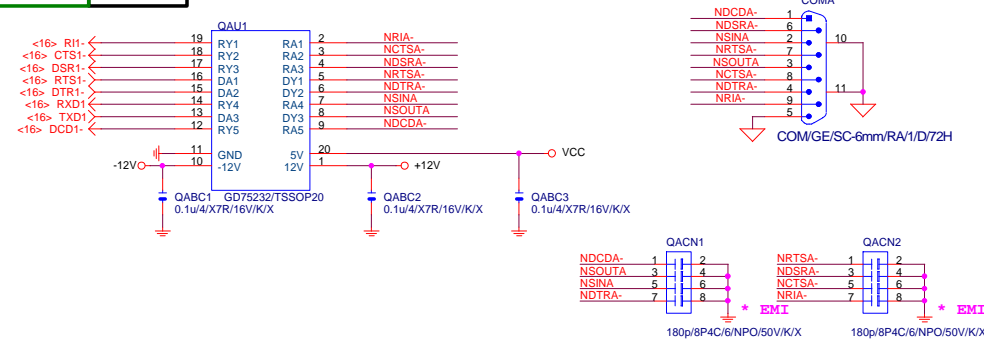


Gigabyte Technology

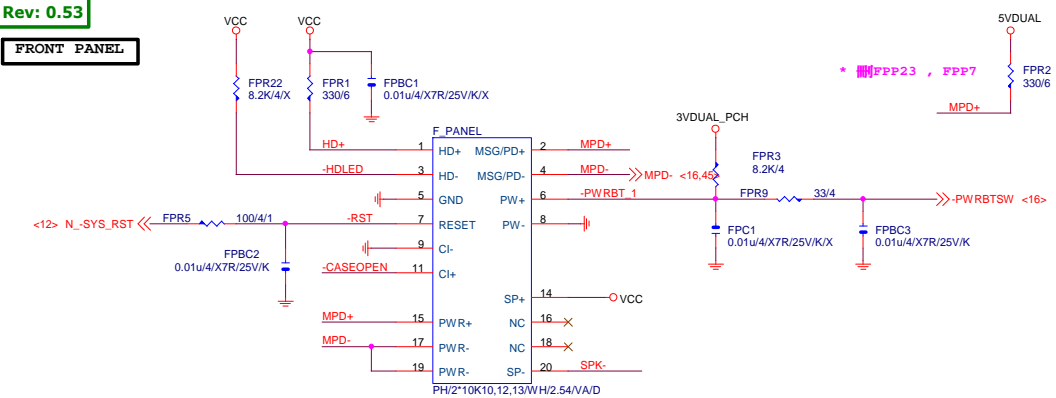
| | | | | |
|-------------------------|------------------------------|-------|----|-------|
| Title | | | | |
| R_USB30,F_USB30, USB_OC | | | | |
| Size | Document Number | | | Rev |
| Custom | GA-H110M-S2PV DDR3-WP | | | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet | 41 | of 48 |



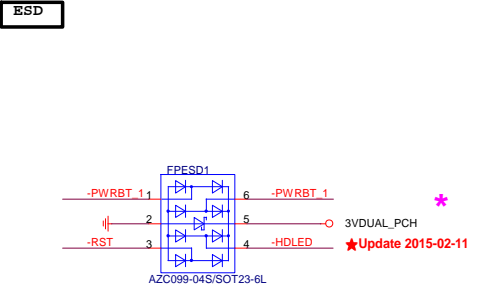
www.aitech1.ru



FRONT PANEL



ESD

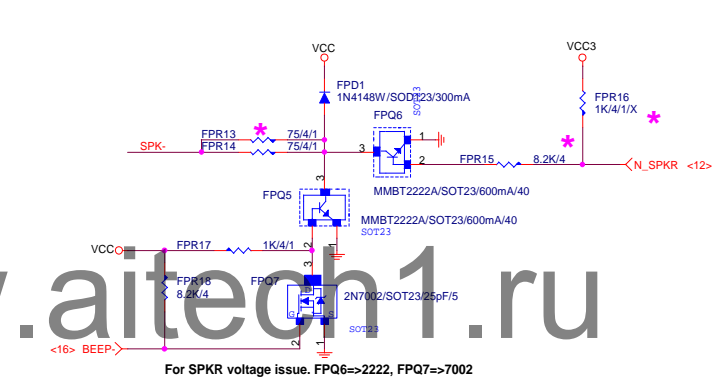


FOOTPRINT: PIN2X10PANEL-NEW

CASE OPEN



SPKR

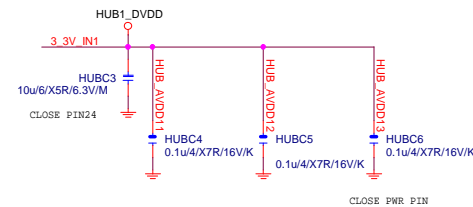


SATA LED

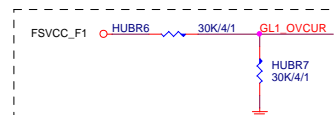
SATALED# signal open-collector, pull-up (8.2 kΩ to 10 kΩ) to Vcc3_3



www.aitech1.ru

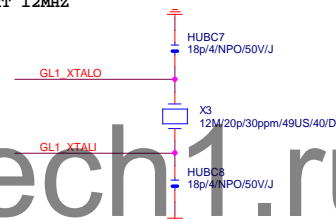


HUB OVER CURRENT SENSE

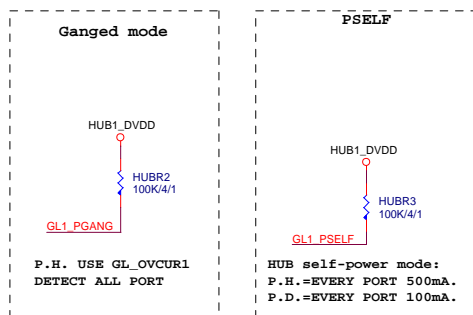


HUB CRYSTAL

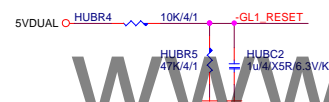
ONLY SUPPORT 12MHZ



HUB MODE



HUB RESET



CLOSE SIO



close to SIO (PIN92)MPD-



CLOSE PCH



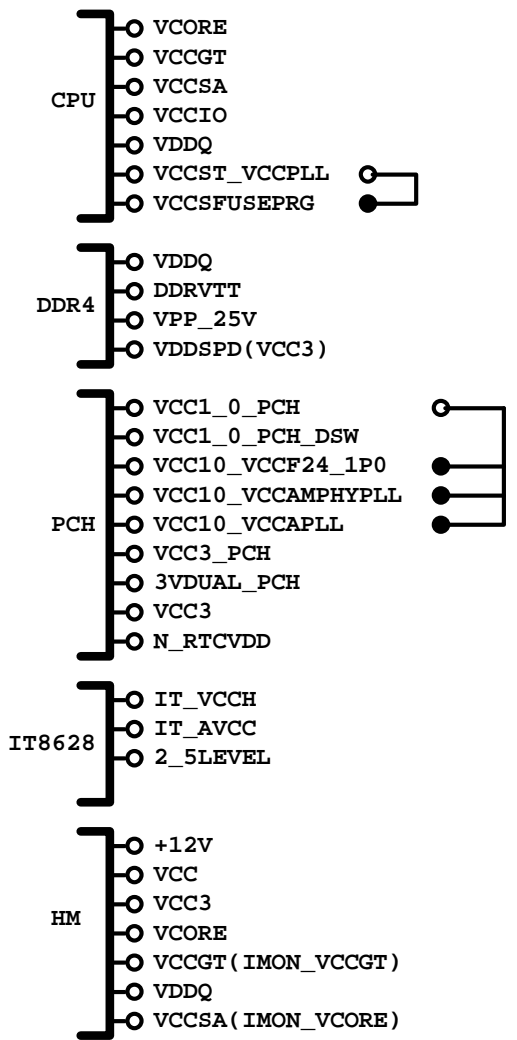
For H1703M-HD3 USB



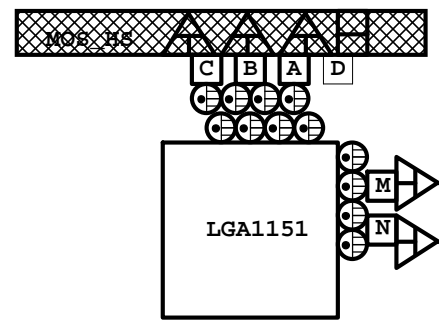
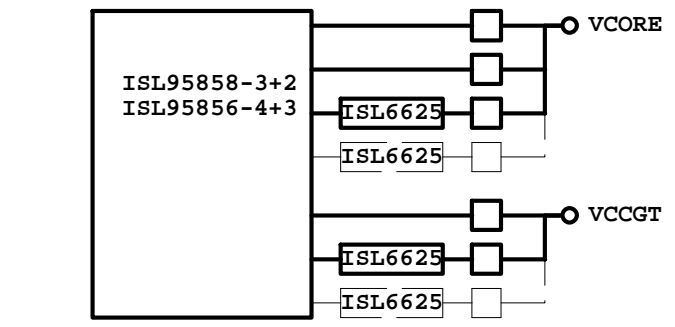
GIGABYTE™

| | | | | |
|--------|------------------------------|-----------------------|---------|-------|
| Title | | | EMI/ESD | |
| Size | Document Number | GA-H110M-S2PV DDR3-WP | | Rev |
| Custom | | | | 1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet | 45 | of 48 |

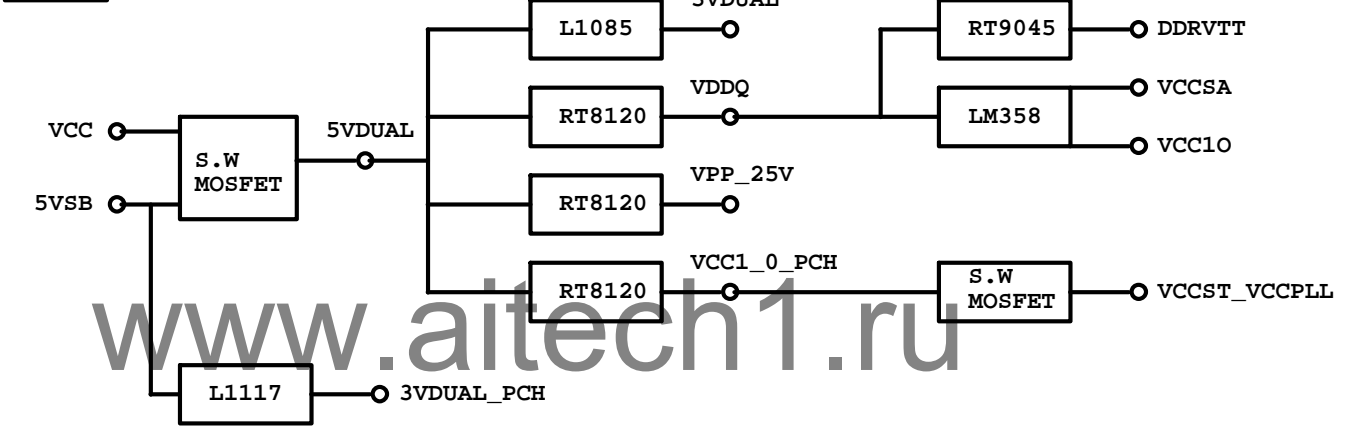
POWER BLOCK MAP



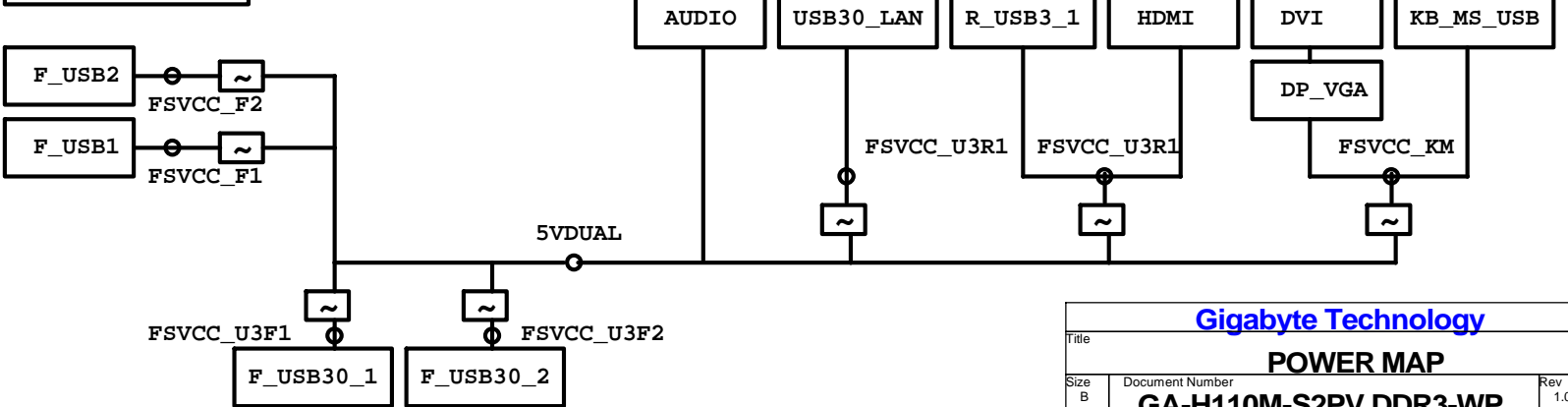
VCORE/VCCGT



POWER



FUSE POWER F/R



固態電容料號.請自行修改

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

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

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

IRON CHOKE

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

Ferrite

| | 料號 | Capture Value | SIZE | Footprint |
|-----|------------------------|-------------------------|-------|--------------------|
| DIP | 11LC5-F3500C-11R | 0.5uH/32A/INCG109/FSI/D | 10*10 | CHOKE05U-40A-1PQ-3 |
| DIP | 11LC5-F2500C-11R | 0.5uH/25A/INC0809/F/D | 8*8 | CHOKE1U-R50M-IF |
| SMD | 未建(SIUC1007-R30M-JJ1W) | | 10*7 | CHOKE11X8MM-SMD |

BEAD

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

PWM料號

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

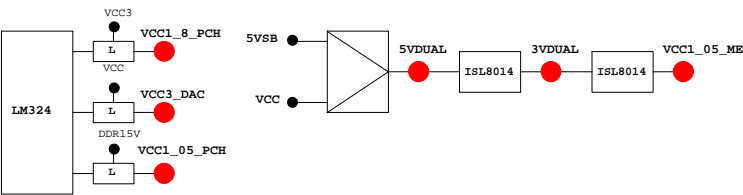
| | | | |
|-----------------|--------------------------------------|---------------|---------|
| GIGABYTE™ | | | |
| TitlePOWER零件使用表 | | | |
| SizeCustom | Document NumberGA-H110M-S2PV DDR3-WP | | Rev1.01 |
| Date: | Wednesday, November 18, 2015 | Sheet47 of 48 | |

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

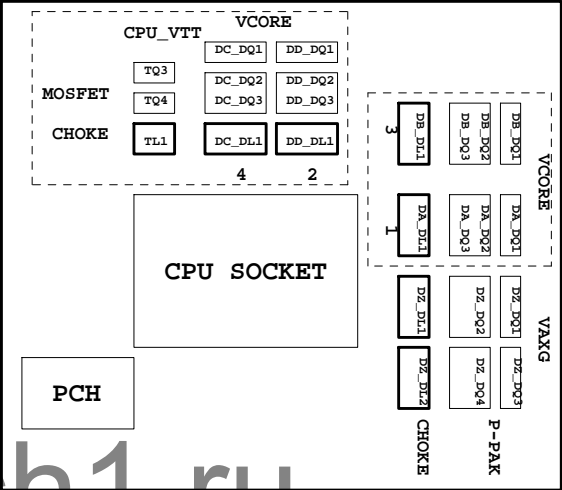
Super I/O ITE8720 GPIO Table

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

| PIN NAME | USAGE | NOTE |
|----------------------------|-------------------|------------------|
| FAN_TAC2/GP52 | FANIO2 | |
| FAN_TAC3/GP37 | FANIO3 | |
| VIDO3/FAN_TAC4/GP25/DSR2# | FANIO4 | |
| FAN_CTL2/GP51 | FANPWM2 | |
| FAN_CTL3/GP36 | FANPWM3 | |
| VID4/GP34 | BEEP- | |
| VID3/GP33 | TURBO1 | |
| VID2/GP32 | TURBO0 | |
| VCORE_GOOD/VID6/GP63 | CPUT_LED1_C | |
| VID5/GP35 | CPUT_LED2_C | |
| VID1/GP31 | CPUT_LED3_C | |
| VID0/GP30 | -LAN1_DSM | NBT_LED1_C |
| SLCT/GP80 | CPU_LED1_C | |
| PE/GP81 | CPU_LED2_C | |
| BUSY/GP82 | CPU_LED3_C | |
| PD3/GP73/BUSSI1 | SB_LED1_C | |
| PD4/GP74/BUSSI2 | SB_LED2_C | |
| VCORE_EN/VID7/GP64 | IT_GP64 | SB_LED3_C |
| PD0/GP70 | NB_LED1_C | |
| PD1/GP71 | NB_LED2_C | |
| PD2/GP72/BUSSI0 | NB_LED3_C | |
| GP22/SCK | LOW_PWR_1 | |
| VID05/GP27/SIN2 | LOW_PWR_2 | |
| PCIRST2#/GP11 | -PWRST1 | |
| PCIRST1#/GP12 | -PWRST2 | |
| 3VBSBW#/GP40 | CSI_F0 | BSEL166_1 |
| SUSC#/GP53 | CSI_F1 | BSEL166_2 |
| GP23/SI | BSEL166_3/CSISBSL | |
| VID00/GP20/CTS2# | CPUT_LED1_C | BSEL166_4 |
| GP65/VDDA_EN/GB_01 | MB_ID2 | |
| PD6/GP76/BUSS01 | MB_ID3 | |
| PD7/GP77/BUSS02 | MB_ID4 | |
| AFD#/GP86/SMBC_R | SEC_PIN | FST_2X8 |
| INIT#/GP85/SMBD_M | SEC_2x8 | GTLREF_AD2 |
| ACK#/GP83 | DDR_LED1_C | |
| VID01/GP21/DCD2# | DDR_LED2_C | |
| STB#/GP87/SMBC_M | DDR_LED3_C | |
| PWRON#/GP44 | VCORE_OV1 | |
| PANSWH#/GP43 | PWRBTSW | |
| KDAT/GP61 | -PWRBTSW | |
| KCLK/GP60 | KDAT | |
| MDAT/GP57 | KCLK | |
| MACL/GP56 | MDAT | |
| GP66/VLDT_EN/GB_02 | NBT_LED1_C | MCLK |
| SVD/PCIRSTIN#/CIRTX/GP15 | PWM2_CR | |
| KDAT/GP61 | PWM2_CR | |
| GP67/CPU_PG/GB_03 | EN_LOADLINE | IT_GP67/-EN_PWM2 |
| SLIN#/GP84/SMBD_R | -EN_PWM2 | |
| PSI_L/FAN_CLT5/CIRRXL/GP16 | -THERM | |
| VID04/GP26/SOUT2 | DDR18V_PH2_EN | |
| VID02/FAN_TAC5/GP24/DSR2# | DDR18V_LED | |
| VID06/GP17/RI2# | 1_1V_PH_EN | |
| VID07/JP6/DTR2# | JP6 | |
| PD5/GP75/BUSS00 | SB_LED3_C | |



PWM各相位的擺法如下：



BIOS超電壓對應表：

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

散熱模組料號：

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

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