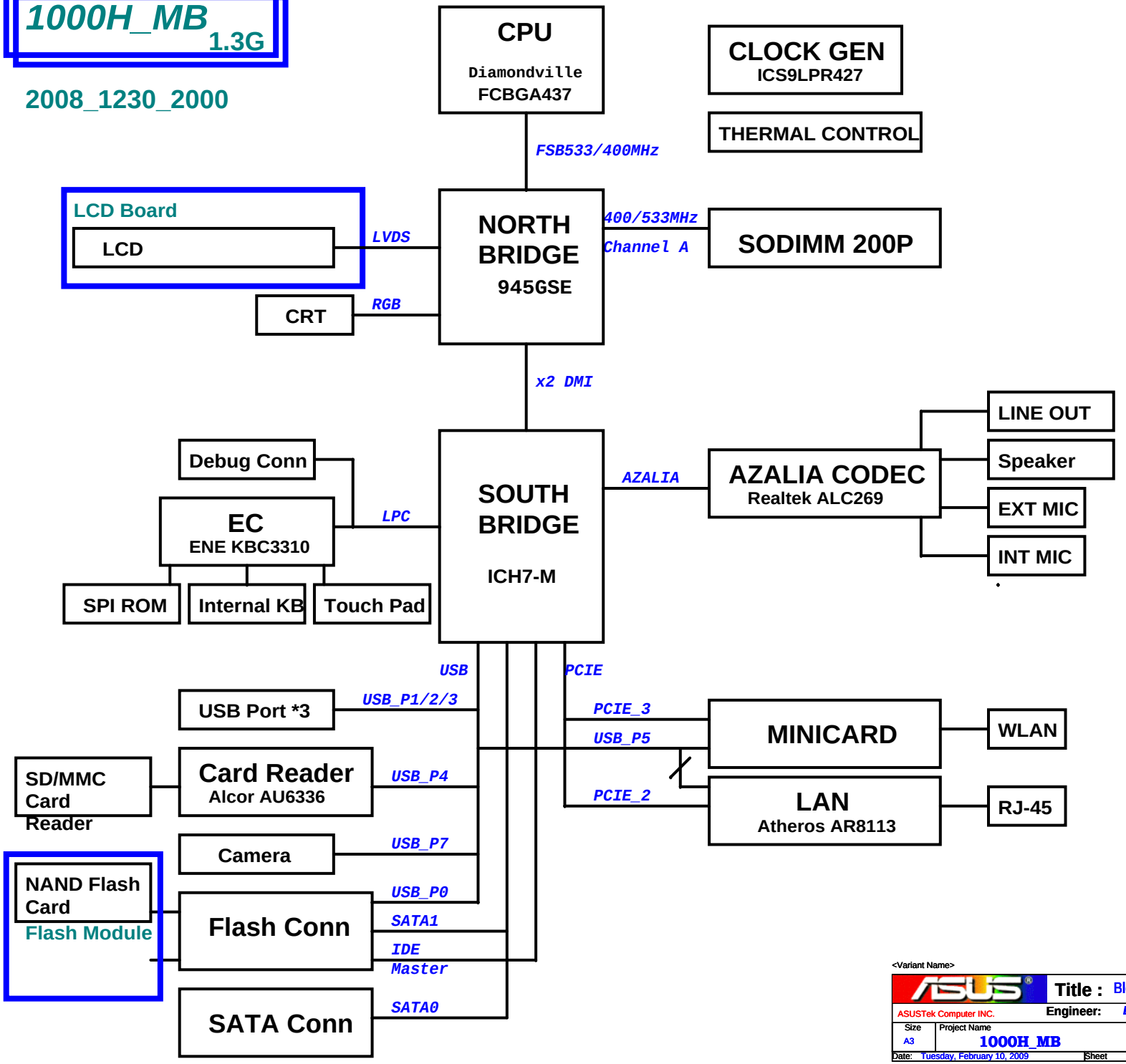
# 1000H_MB 1.3G

2008_1230_2000




<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : Block Diagram | |
| | Engineer: Echo_Huang | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 1 of 47 | |

<Variant Name>

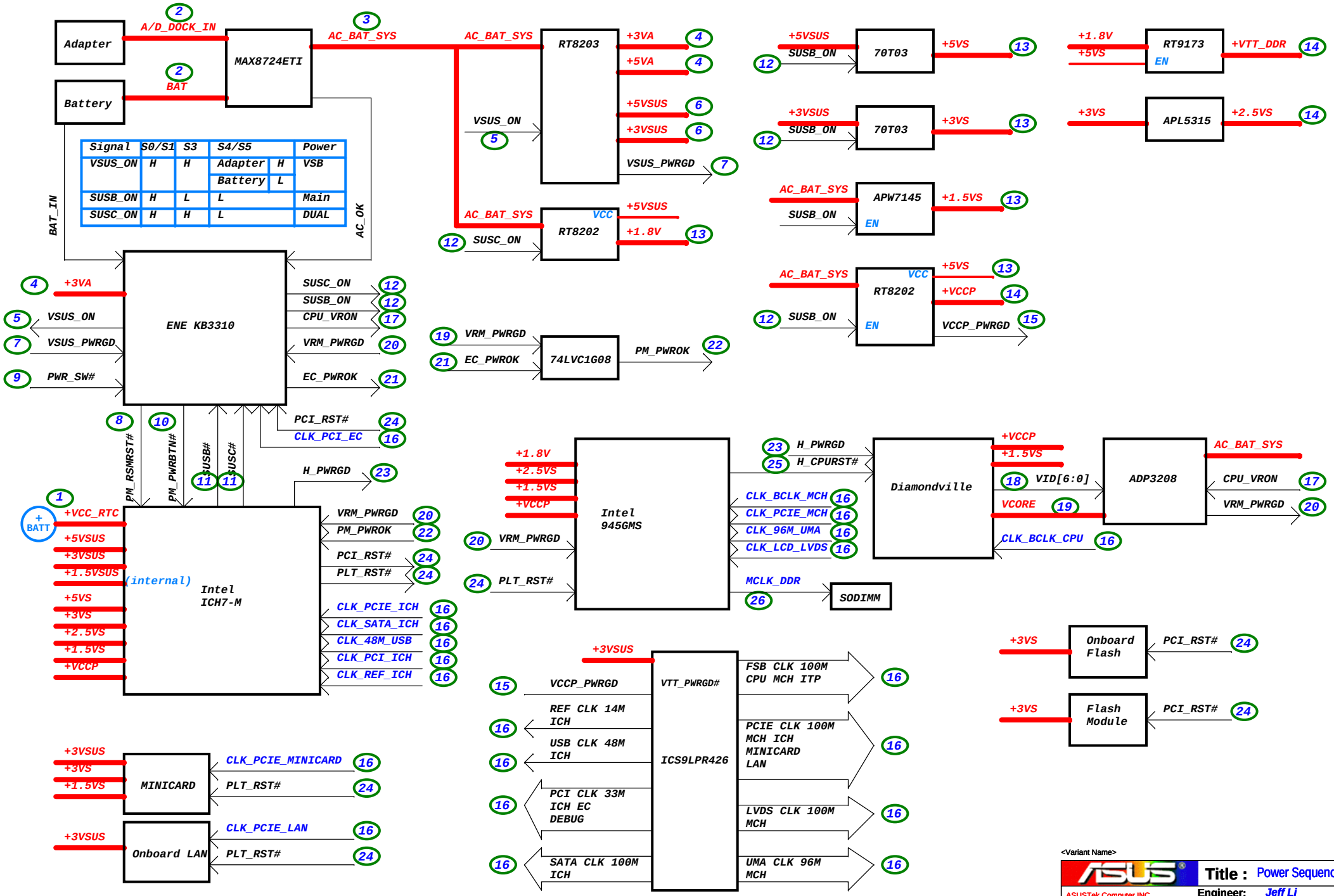
Title : History

ASUSTek Computer INC.

Engineer: KingCa_Jin

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.0G |

Date: Tuesday, February 10, 2009 Sheet 2 of 47




<Variant Name>

ASUSTek Computer INC.

Title : Power Sequence

Engineer: Jeff Li

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

Date: Tuesday, February 10, 2009 Sheet 3 of 47

## EC KB3310 GPIO SETTING

| Pin | Pin Name | Signal Name | Type | Note |
|---|---|---|---|---|
| 1 | GPIO00/GA20 | A20GATE | O | |
| 2 | GPIO01/KBRST# | RC_IN# | O | |
| 6 | GPIO04 | EMAIL_SW# | I | Internal pull high |
| 13 | GPIO05/PCIRST# | PCI_RST# | I | |
| 14 | GPIO07 | BAT_OTP | I | Battery over temperature |
| 15 | GPIO08 | EXTSMI# | OD | 10K pull high to +3VSB |
| 16 | GPIO0A | LID_EC# | I | Internal pull high |
| 17 | GPIO0B/ESB_CLK | NC | O | |
| 18 | GPIO0C/ESB_DAT | NC | O | |
| 19 | GPIO0D | DISTP_SW# | I | Internal pull high |
| 20 | GPIO0E/SCI# | EXT_SCI# | O | 10K pull high to +3VSB |
| 21 | GPIO0F/PWM0 | BL_PWM_DA | O | |
| 23 | GPIO10/PWM1 | BAT_CRITICAL | I | Battery critical capacity |
| 25 | GPIO11/PWM2 | PM_PWRBTN# | OD | Internal pull high in ICH |
| 26 | GPIO12/FANPWM1 | FAN0_PWM | O | CPU Fan |
| 27 | GPIO13/FANPWM2 | FAN1_PWM | O | VGA Fan |
| 28 | GPIO14/FANFB1 | FAN0_TACH | I | CPU FanTach |
| 29 | GPIO15/FANFB2 | FAN1_TACH | I | VGA FanTach |
| 30 | GPIO16/E51_TX | E51_TX | O | RS232 debug port |
| 31 | GPIO17/E51_RX | E51_RX | I | RS232 debug port |
| 32 | GPIO18 | PWR_SW# | I | Internal pull high |
| 34 | GPIO19/PWM3 | MAIL_LED# | O | |
| 36 | GPIO1A/NUMLED | NUM_LED# | O | |
| 38 | GPIO1D/CLKRUN# | NC | O | |
| 39 | GPIO20/KSO0/TP_TEST | KSO0 | O | |
| 40 | GPIO21/KSO1/TP_PLL | KSO1 | O | |
| 41 | GPIO22/KSO2 | KSO2 | O | |
| 42 | GPIO23/KSO3 | KSO3 | O | |
| 43 | GPIO24/KSO4 | KSO4 | O | |
| 44 | GPIO25/KSO5 | KSO5 | O | |
| 45 | GPIO26/KSO6 | KSO6 | O | |
| 46 | GPIO27/KSO7 | KSO7 | O | |
| 47 | GPIO28/KSO8 | KSO8 | O | |
| 48 | GPIO29/KSO9 | KSO9 | O | |
| 49 | GPIO2A/KSO10 | KSO10 | O | |
| 50 | GPIO2B/KSO11 | KSO11 | O | |
| 51 | GPIO2C/KSO12 | KSO12 | O | |
| 52 | GPIO2D/KSO13 | KSO13 | O | |
| 53 | GPIO2E/KSO14 | KSO14 | O | |
| 54 | GPIO2F/KSO15 | KSO15 | O | |
| 55 | GPIO30/KSI0 | KSI0 | I | Internal pull high |
| 56 | GPIO31/KSI1 | KSI1 | I | Internal pull high |
| 57 | GPIO32/KSI2 | KSI2 | I | Internal pull high |
| 58 | GPIO33/KSI3 | KSI3 | I | Internal pull high |
| 59 | GPIO34/KSI4 | KSI4 | I | Internal pull high |
| 60 | GPIO35/KSI5 | KSI5 | I | Internal pull high |
| 61 | GPIO36/KSI6 | KSI6 | I | Internal pull high |
| 62 | GPIO37/KSI7 | KSI7 | I | Internal pull high |
| 63 | GPI38/AD0 | BAT_ICHG | I | |
| 64 | GPI39/AD1 | BAT_CONFIG | I | Battery configureation |
| 65 | GPIO3A/AD2 | BAT_SENSE | I | Battery Voltage Sensor |
| 66 | GPIO3B/AD3 | BAT_TS | I | Battery Thermal Sensor |
| 68 | GPO3C/DA0 | DOC | O | Trigger Clock Gen |

| Pin | Pin Name | Signal Name | Type | Note |
|---|---|---|---|---|
| 70 | GPO3D/DA1 | LCD_BACKOFF# | O | |
| 71 | GPO3E/DA2 | CLK_PWRSAVE# | O | |
| 72 | GPO3F/DA3 | BAT_LL# | O | Battery Low Low |
| 73 | GPIO40 | AC_OK | I | AC Adaptor Plug in |
| 74 | GPIO41 | PM_RSMRST# | O | 10K pull down to GND |
| 75 | GPI42 | BAT_IN | I | |
| 76 | GPI43 | CLRTC_EC | I | |
| 77 | GPIO44/SCL1 | SMB0_CLK | I/OD | 4.7K pull high to +3VA_EC |
| 78 | GPIO45/SDA1 | SMB0_DAT | I/OD | 4.7K pull high to +3VA_EC |
| 79 | GPIO46/SCL2 | SMB1_CLK | I/OD | 10K pull high to +3V |
| 80 | GPIO47/SDA2 | SMB1_DAT | I/OD | 10K pull high to +3V |
| 81 | GPIO48/KSO16 | KB pin 28 | I | for KB type detection |
| 82 | GPIO49/KSO17 | KB pin 27 | I | for KB type detection |
| 83 | GPIO4A/PSCLK1 | AUO_SCL | O | for AUO, default H at S0 |
| 84 | GPIO4B/PSDAT1 | AUO_SDA | O | for AUO, default L at S0 |
| 85 | GPIO4C/PSCLK2 | AUO_CSB | O | for AUO, default H at S0 |
| 86 | GPIO4D/PSDAT2 | LVDD_EN | I | for AUO 7" Panel |
| 87 | GPIO4E/PSCLK3 | TP_CLK | I/OD | 10K pull high to +3V |
| 88 | GPIO4F/PSDAT3 | TP_DAT | I/OD | 10K pull high to +3V |
| 89 | GPIO50/SELIO# | BATSEL_3S | O | Battery series, H:3S, L:4S |
| 90 | GPIO52/E51_CS# | CHG_LED_UP# | O | |
| 91 | GPIO53/CAPLED | CAP_LED# | O | |
| 92 | GPIO54 | PWR_LED_UP | O | |
| 93 | GPIO55/SCRLED | SCRL_LED# | O | |
| 95 | GPIO56 | PWR4G_SW# | I | Internal pull high |
| 97 | GPXOA00/SDICS# | SPI_MODE# | O | 4.7K pull down to GND |
| 98 | GPXOA01/SDICLK | SUSC_ON | O | |
| 99 | GPXOA02/SDIDO | VSUS_ON | O | |
| 100 | GPXOA03 | CPU_VRON | O | |
| 101 | GPXOA04 | SUSB_ON | O | |
| 102 | GPXOA05 | ICH_PWROK | O | |
| 103 | GPXOA06 | VOLT_CTRL | O | |
| 104 | GPXOA07 | CHG_EN# | O | Battery charging enabled |
| 105 | GPXOA08 | PRECHG | O | |
| 106 | GPXOA09 | SPI_WP# | O | |
| 107 | GPX0A10 | OP_SD# | O | Audio OP |
| 108 | GPXOA11 | BAT_LEARN | O | |
| 109 | GPXID0/SDIDI | BATSEL_2P# | O | Battery parallel, H:1P, L:2P~3P |
| 110 | GPXID1 | NC | O | |
| 112 | GPXID2 | THRO_CPU | O | Active if CPU temperature over spec |
| 114 | GPXID3 | SUSB# | I | 100K pull down to GND |
| 115 | GPXID4 | SUSC# | I | 100K pull down to GND |
| 116 | GPXID5 | CPUPWR_GD | I | Pull high to +3V |
| 117 | GPXID6 | VSUS_GD | I | |
| 118 | GPXID7 | NC | O | |
| 121 | GPIO57 | INTERNET# | I | Internal pull high |
| 126 | GPIO57/SPICLK | SPI_CLK | O | |
| 127 | GPIO59/TEST_CLK | NC | O | |

## EC KB3310 Other Pin SETTING

| Pin | Pin Name | Signal Name | Type | Note |
|---|---|---|---|---|
| 3 | SERIRQ | INT_SERIRQ | I/OD | 10K pull high to +3V |
| 4 | LFRAME# | LPC_FRAME# | I | |
| 5 | LAD3 | LPC_AD3 | I/O | |
| 7 | LAD2 | LPC_AD2 | I/O | |
| 8 | LAD1 | LPC_AD1 | I/O | |
| 9 | VCC | +3VA_EC | P | |
| 10 | LAD0 | LPC_AD0 | I/O | |
| 11 | GND | GND | P | |
| 12 | PCICLK | CLK_PCI_EC | I | |
| 22 | VCC | +3VA_EC | P | |
| 24 | GND | GND | P | |
| 33 | VCC | +3VA_EC | P | |
| 35 | GND | GND | P | |
| 37 | ECRST# | EC_RST# | I | 100K pull high to +3VA_EC |
| 67 | AVCC | +3VACC | P | |
| 69 | AGND | AGND | P | |
| 94 | GND | GND | P | |
| 96 | VCC | +3VA_EC | P | |
| 111 | VCC | +3VA_EC | P | |
| 113 | GND | GND | P | |
| 119 | RD#/SPIDI | SPI_SO | I | |
| 120 | WR#/SPIDO | SPI_SI | O | |
| 112 | XCLKI | 32KXCLKI | I | |
| 123 | XCLKO | 32KXCLKO | O | |
| 124 | V18R | V18R | P | Reserved 1uF to GND |
| 125 | VCC | +3VA_EC | P | |
| 128 | SPICS#/SELMEM# | SPI_CE# | O | |

<Variant Name>

ASUSTek Computer INC.

Title : EC Pin Define

Engineer: Jeff Li

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

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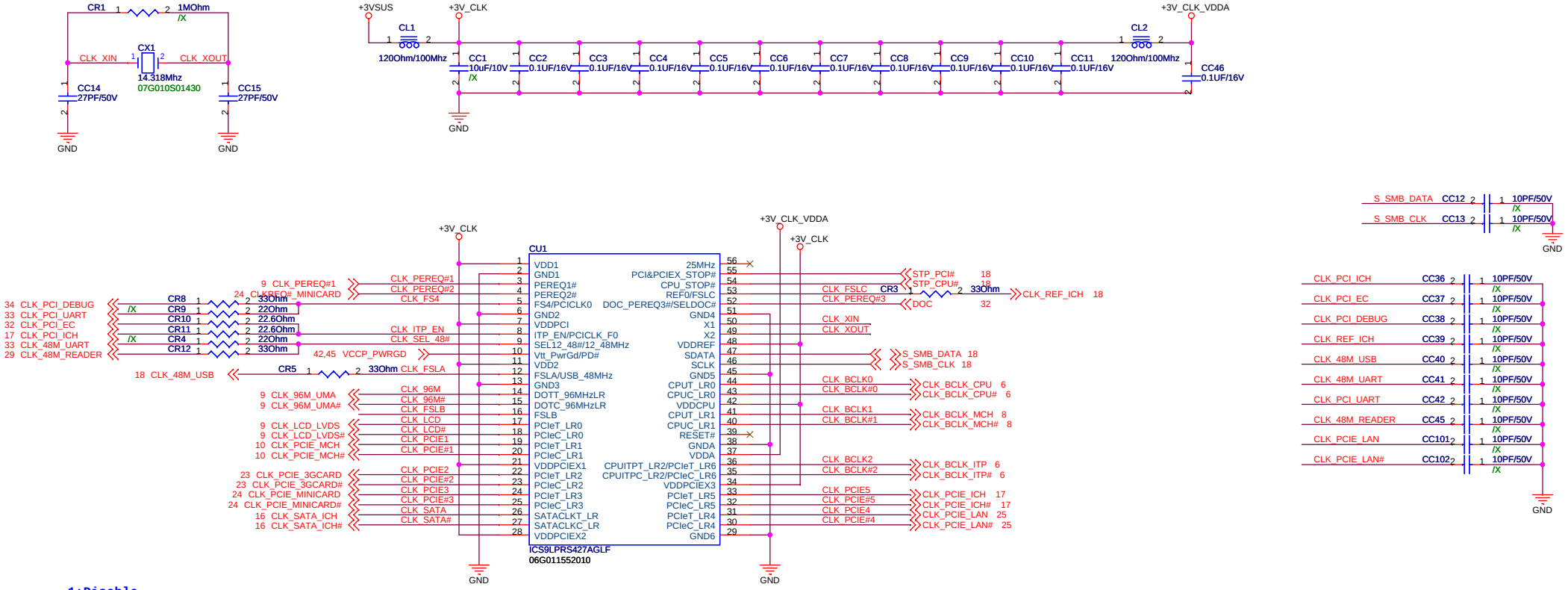


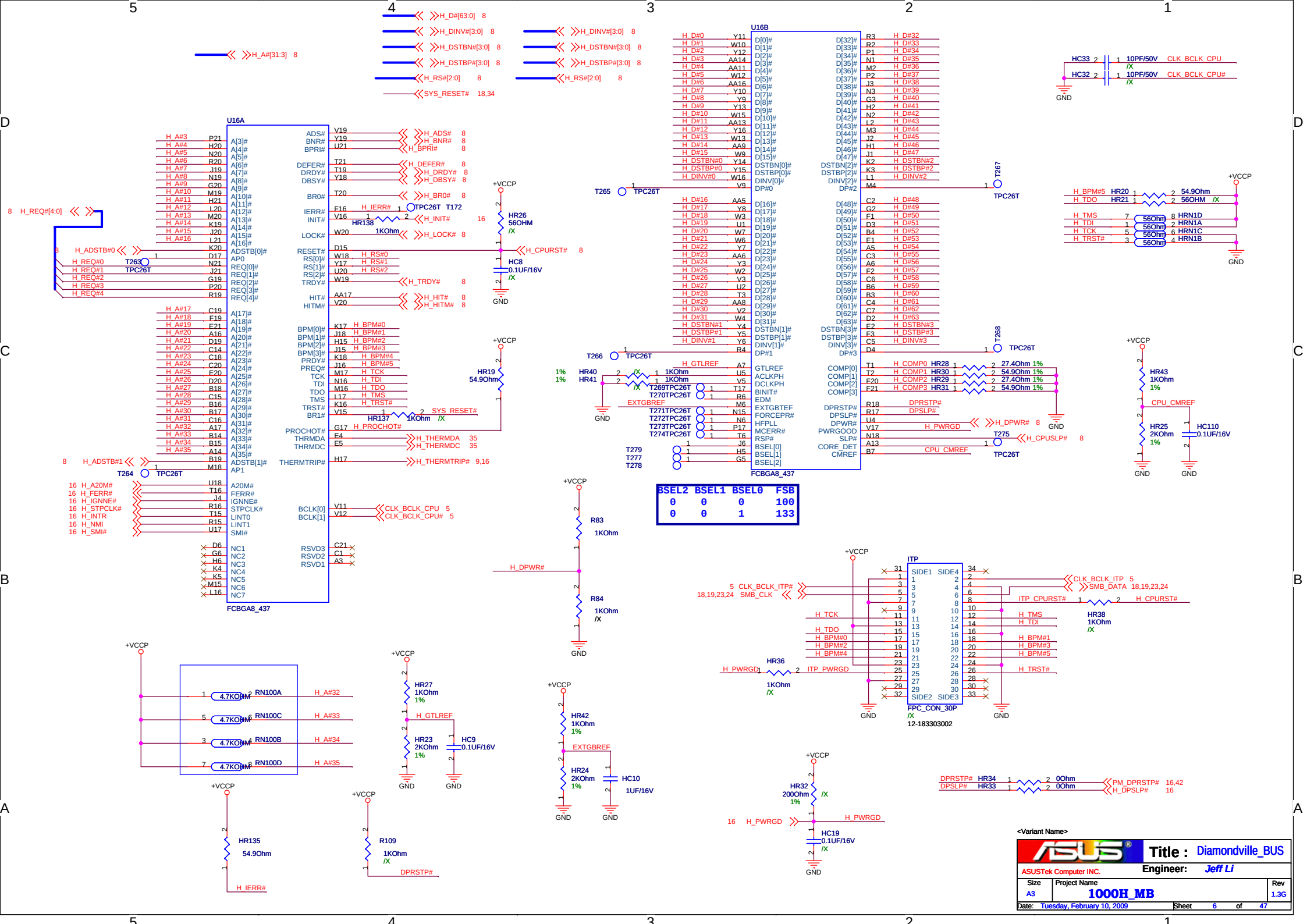

**1:Disable**
**0:Enable**

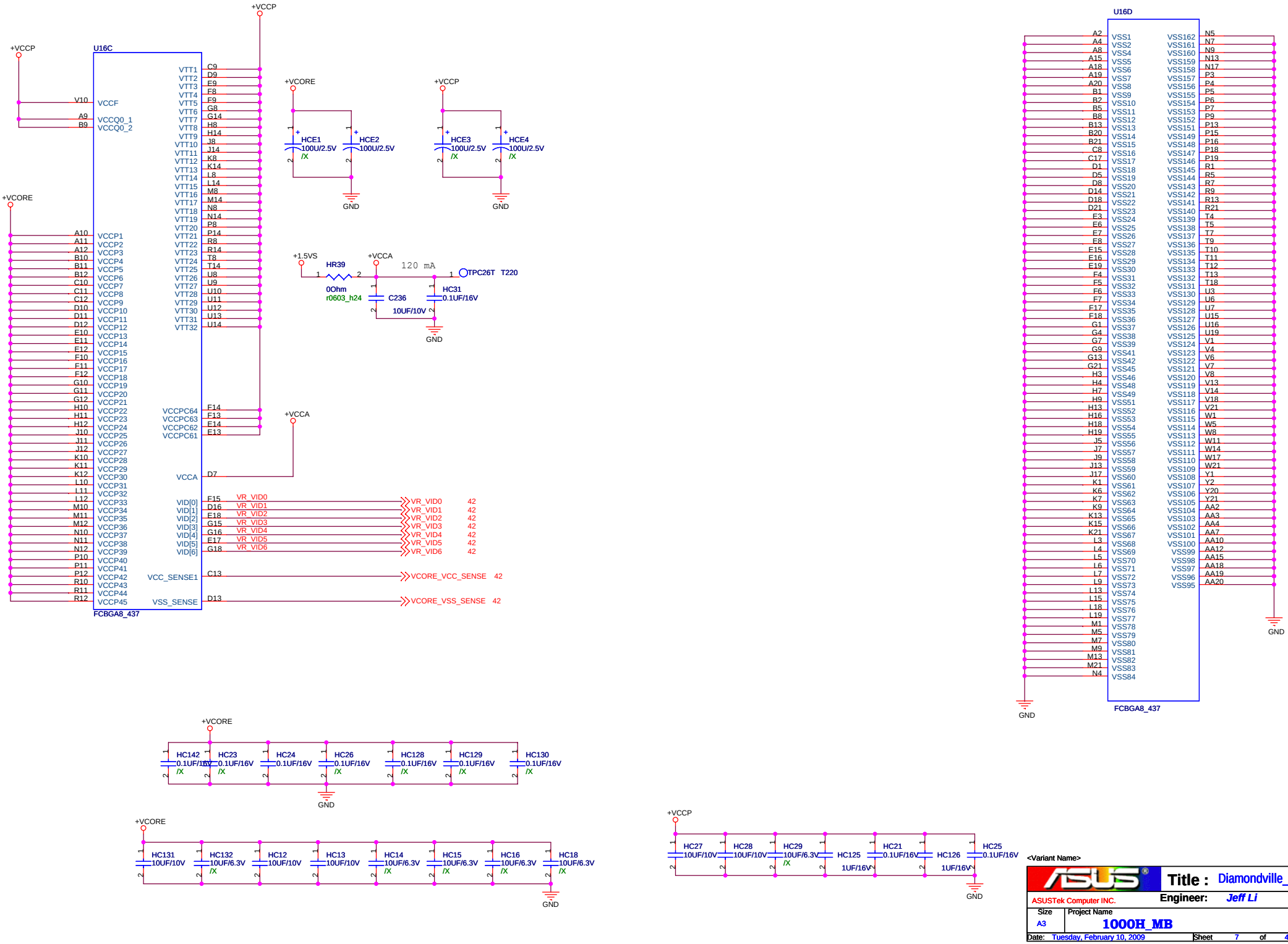
**PEREQ1:PCIEx0 & PCIEx1**
**PEREQ2:PCIEx2 & PCIEx3 & SATA**
**PEREQ3:PCIEx4 & PCIEx5 & PCIEx6**

| FSC | FSB | FSA | CPU | PCIE | SATA |
|---|---|---|---|---|---|
| 0 | 1 | 1 | 166 | 100 | 100 |
| 0 | 0 | 1 | 133 | 100 | 100 |
| 1 | 0 | 1 | 100 | 100 | 100 |

<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : Clock Gen_ICS9LPRS427 | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 5 of 47 | |


U16A
FCBGA8_437
U16B
FCBGA8_437
ITP
FPC_CON_30P
12-183303002
BSEL2 BSEL1 BSEL0 FSB
0 0 0 100
0 0 1 133
<Variant Name>
Title : Diamondville_BUS
ASUSTek Computer INC.
Engineer: Jeff Li
Size A3
Project Name 1000H_MB
Rev 1.3G
Date: Tuesday, February 10, 2009
Sheet 6 of 47




<variant_name>

ASUSTek Computer INC.

Title : Diamondville_PWR

Engineer: Jeff Li

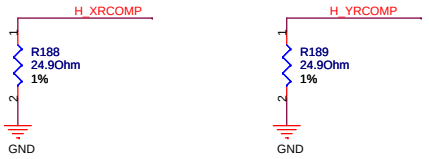
| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

Date: Tuesday, February 10, 2009 Sheet 7 of 47

**Power :**
**+VCCP**

## RCOMP

*For Calibrating the FSB I/O Buffer*

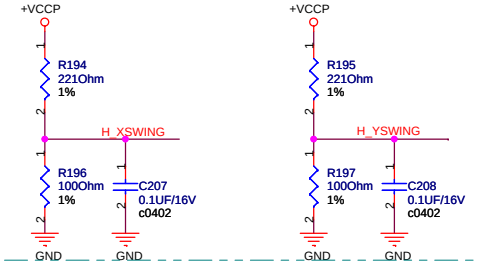



## SCOMP

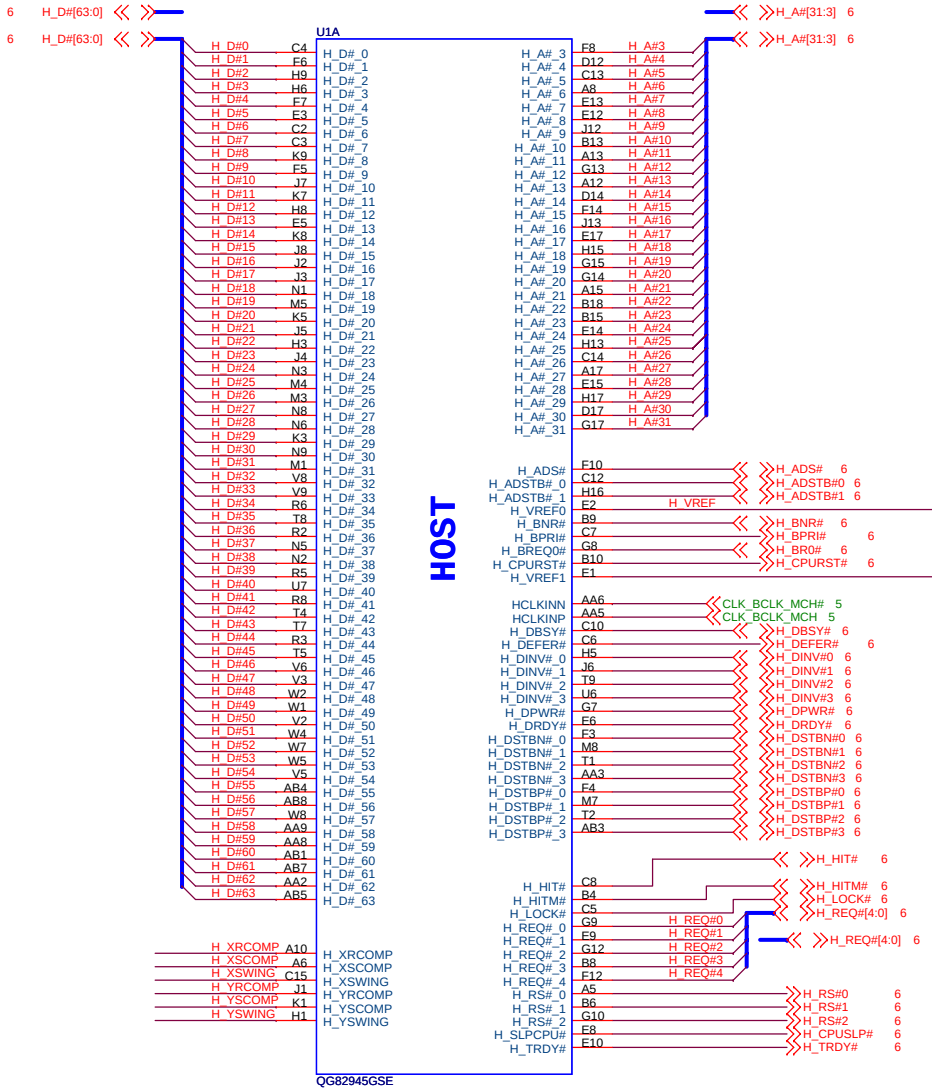
*For Slew Rate Compenssation on the FSB*


## Voltage Swing

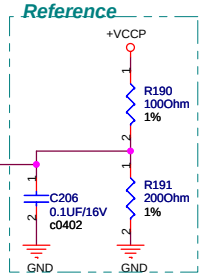
*For Providing a Reference Voltage to The FSB RCOMP circuits*




Signal voltage level =
0.3125*VCCP
Trace should be 10 mil wide
with 20 mil spacing



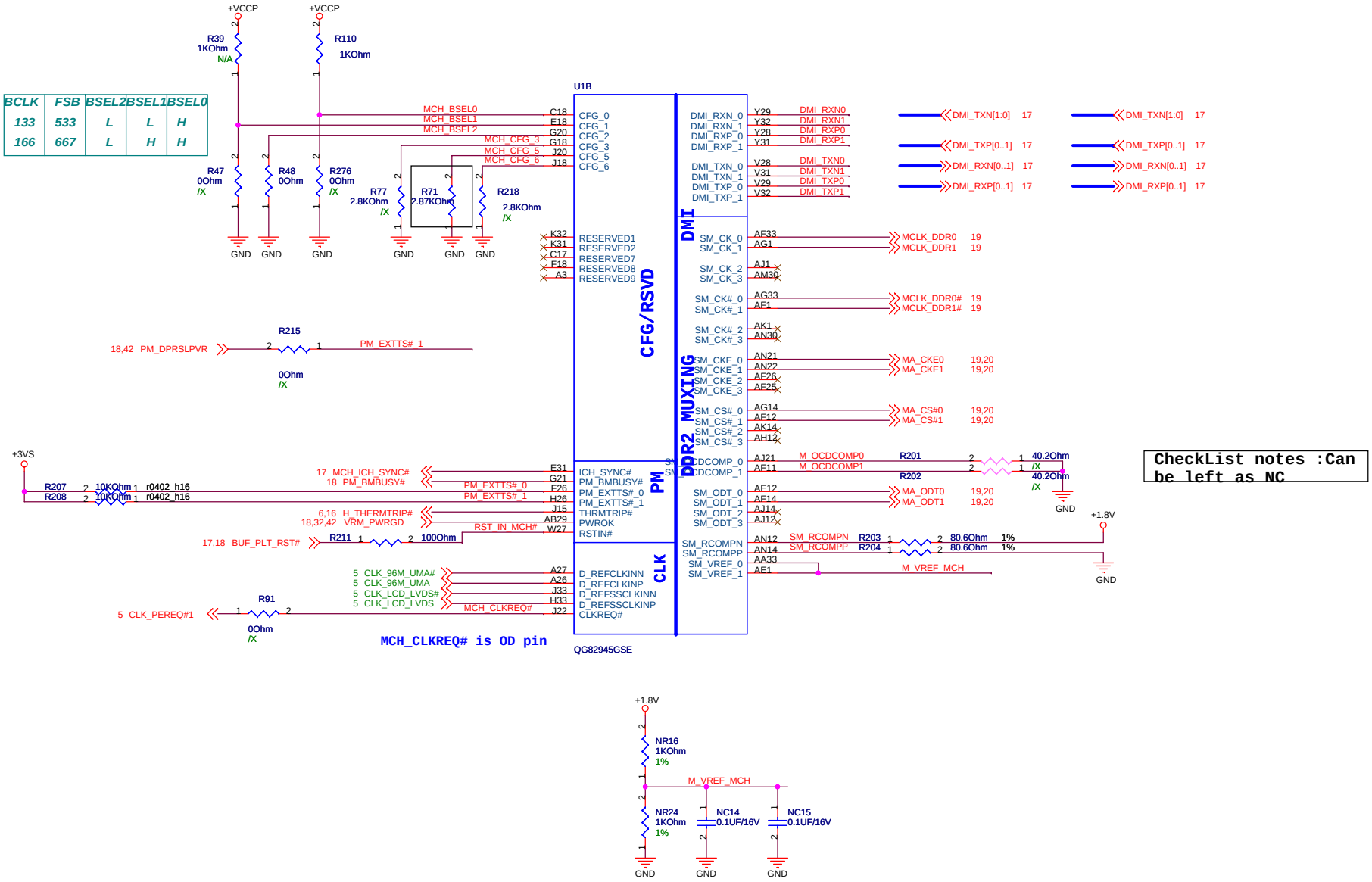

## AGTL+ I/O Voltage Reference




*Layout Note:*
*0.1uF should be placed 100mils or less from GMCH pin.*

<Variant Name>

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. | Title : NB-945GMS(HOST) | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 8 of 47 | |




<variant_name>

| | | | |
|---|---|---|---|
| Title : | NB-945GMS(DMI & CFG) | | |
| ASUSTeK COMPUTER INC. | Engineer: | Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 9 of 47 | | |

Clocse to GMCH
R103,R114,R115

VC10 10PF/50V
R103 150Ohm 1%
VC11 10PF/50V
R114 150Ohm 1%
VC12 10PF/50V
R115 150Ohm 1%

IF USE NB READ EDID.
MUST CONNECT
L_DDC_CLK&DATA

+3VS
RN85C 10KOHM
RN85D 10KOHM
RN85B 10KOHM
RN85A 10KOHM

R216 1.5KOhm 1%

R85 100KOhm
R121 100KOhm
R221 255Ohm 1%

U1F

MISC
- H27 SDVO_CTRLDATA
- J27 SDVO_CTRLCLK
- Y26 G_CLKINN
- AA26 G_CLKINP

VGA
- H20 CRT_DDC_CLK
- H22 CRT_DDC_DATA
- A24 CRT_BLUE
- A23 CRT_BLUE#
- E25 CRT_GREEN
- F25 CRT_GREEN#
- C25 CRT_RED
- D25 CRT_RED#
- F27 CRT_VSYNC
- D27 CRT_HSYNC
- H25 CRT_IREF

SDVO
- H30 L_BKLTCTL
- G29 L_BKLTEN
- F28 L_CLKCTLA
- E28 L_CTLBDATA
- G28 L_DDC_CLK
- H28 L_DDC_DATA
- K30 L_VDDEN
- K27 L_IBG
- J29 L_VBG
- J30 L_VREFH
- K29 L_VREFL

LVDS
- D30 LA_CLKN
- C30 LA_CLKP
- A30 LB_CLKN
- A29 LB_CLKP
- G31 LA_DATAN_0
- F32 LA_DATAN_1
- D31 LA_DATAN_2
- H31 LA_DATAP_0
- G32 LA_DATAP_1
- C31 LA_DATAP_2
- F33 LB_DATAN_0
- D33 LB_DATAN_1
- F30 LB_DATAN_2
- E33 LB_DATAP_0
- D32 LB_DATAP_1
- F29 LB_DATAP_2

SDVO
- R28 EXP_A_COMPI
- M28 EXP_A_ICOMPO
- N30 SDVO_TVCLKIN#
- R30 SDVOB_INT#
- T29 SDVO_FLDSTALL#
- M30 SDVO_TVCLKIN
- P30 SDVO_INT
- T30 SDVO_FLDSTALL
- P28 SDVO_RED#
- N32 SDVO_GREEN#
- P32 SDVO_BLUE#
- T32 SDVO_CLKN
- N28 SDVO_RED
- M32 SDVO_GREEN
- P33 SDVO_BLUE
- R32 SDVO_CLKP

TV
- A21 TV_DACA_OUT
- C20 TV_DACB_OUT
- E20 TV_DACC_OUT
- G23 TV_IREF
- B21 TV_IRTNA
- C21 TV_IRTNB
- D21 TV_IRTNC
- G26 TV_DCONSEL0
- J26 TV_DCONSEL1

QG82945GSE

+1.5VS_PCIE
R217 N_EXP_COMP 24.9Ohm 1%

+1.5VS
R222 0Ohm

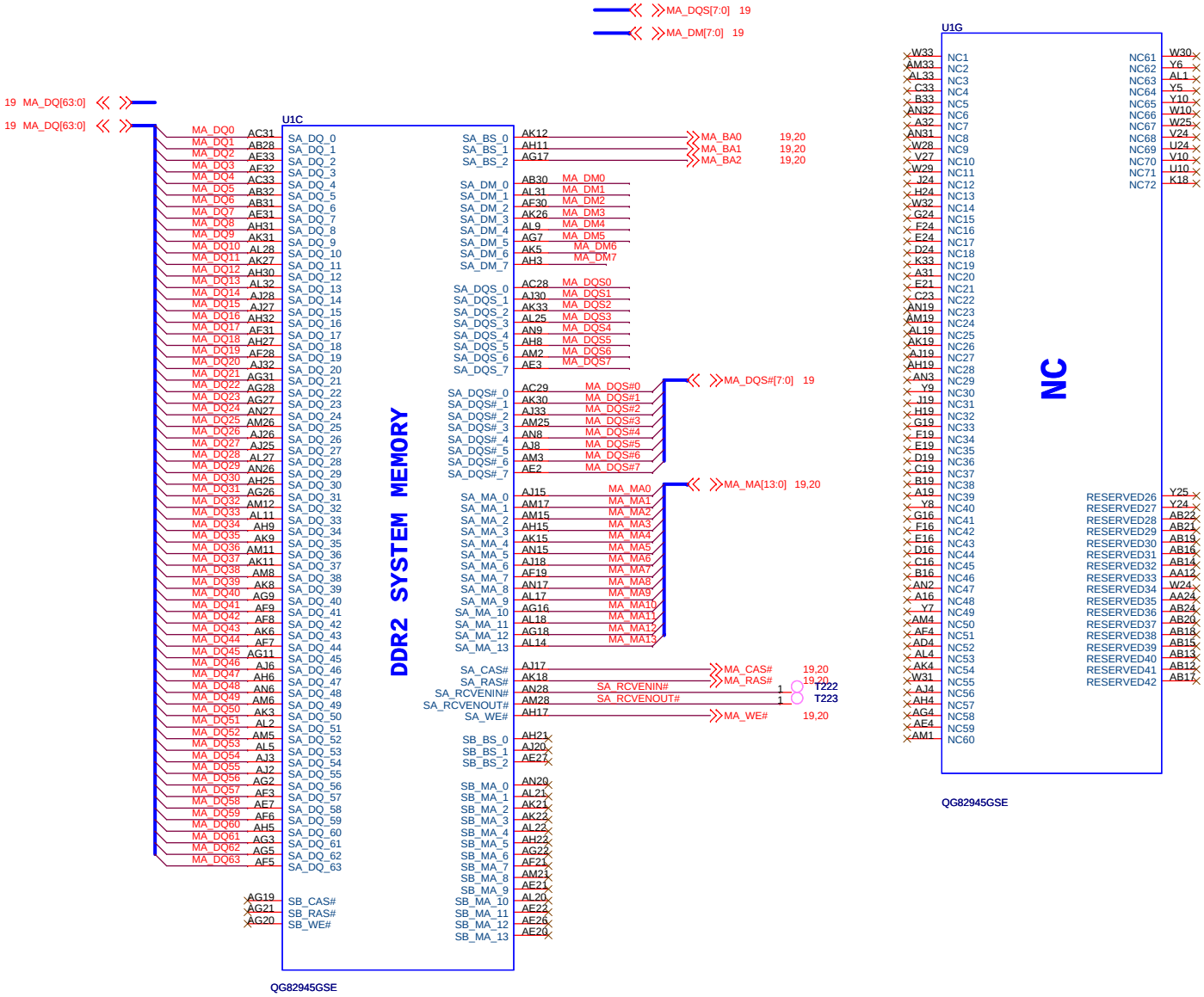
T255 T259

21 CRT_HSYNC
21 CRT_VSYNC
R220 22.6Ohm
R219 22.6Ohm

Clocse to GMCH

<Variant Name>

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. | Title : NB-945GMS(GRAPHIC) | |
| | Engineer: Jeff Li | |
| Size: A4 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 10 of 47 | |




<Variant Name>

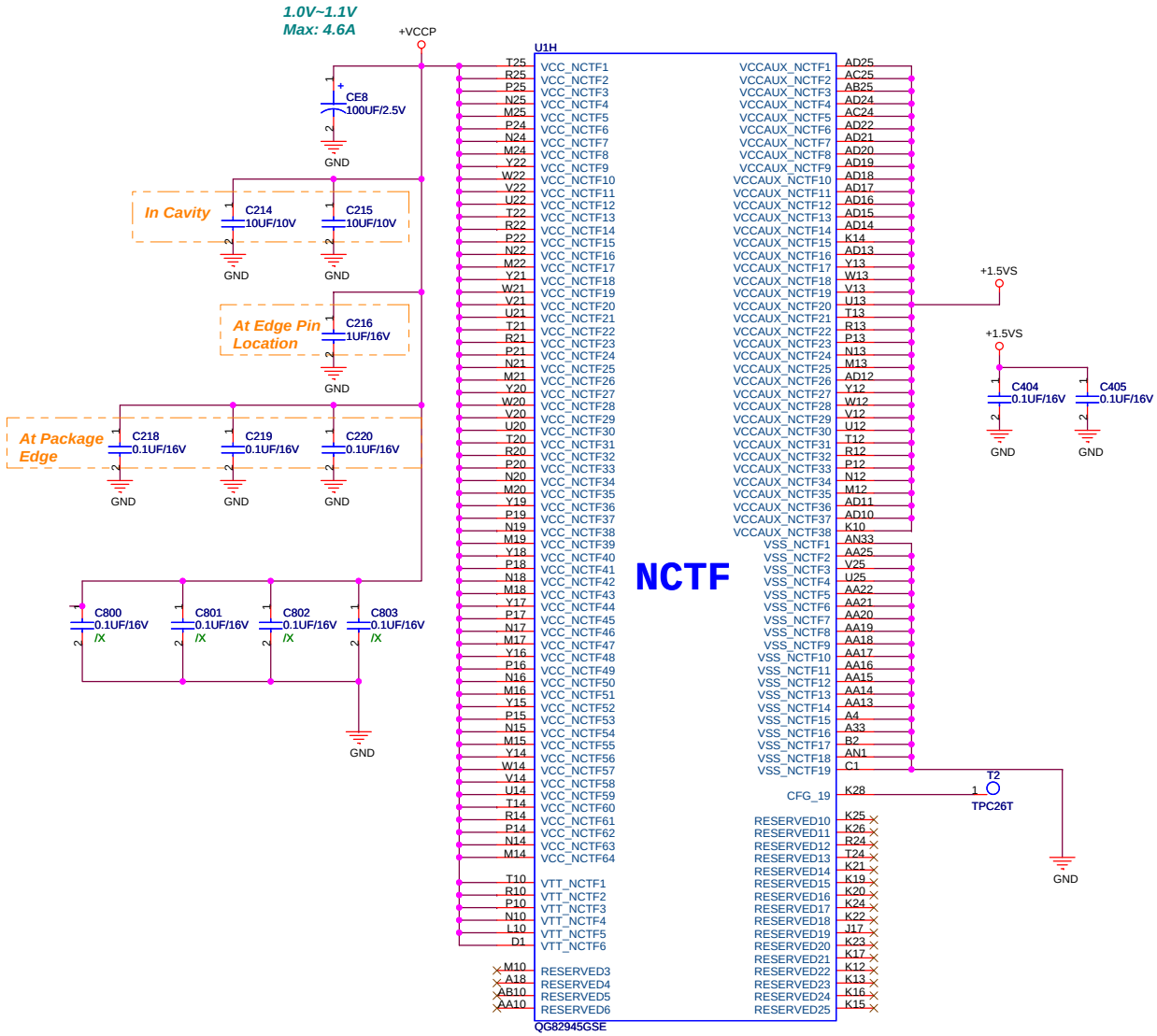
ASUSTeK COMPUTER INC.

Title : NB-945GMS(DDR2)

Engineer: Jeff Li

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

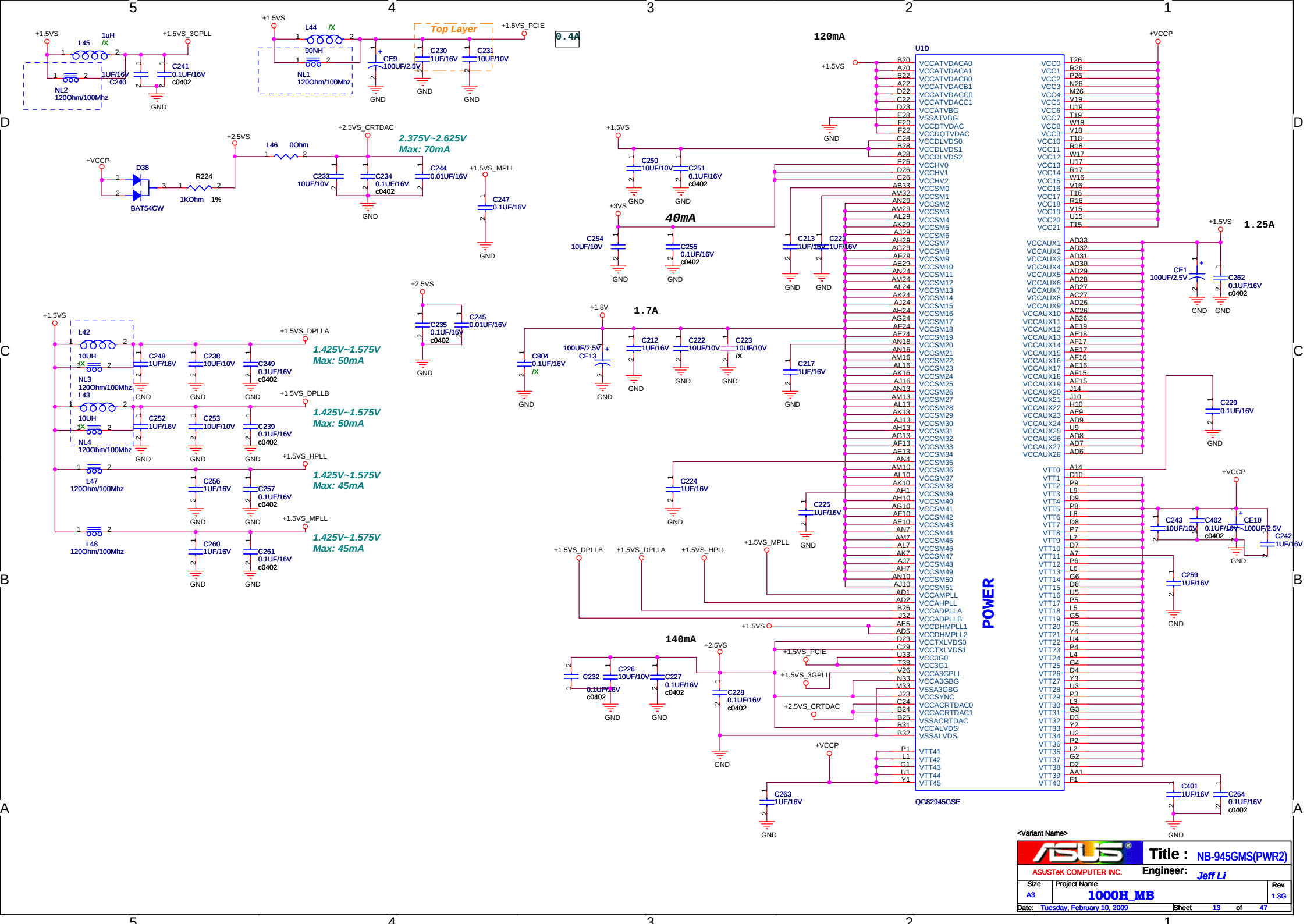
Date: Tuesday, February 10, 2009 Sheet 11 of 47

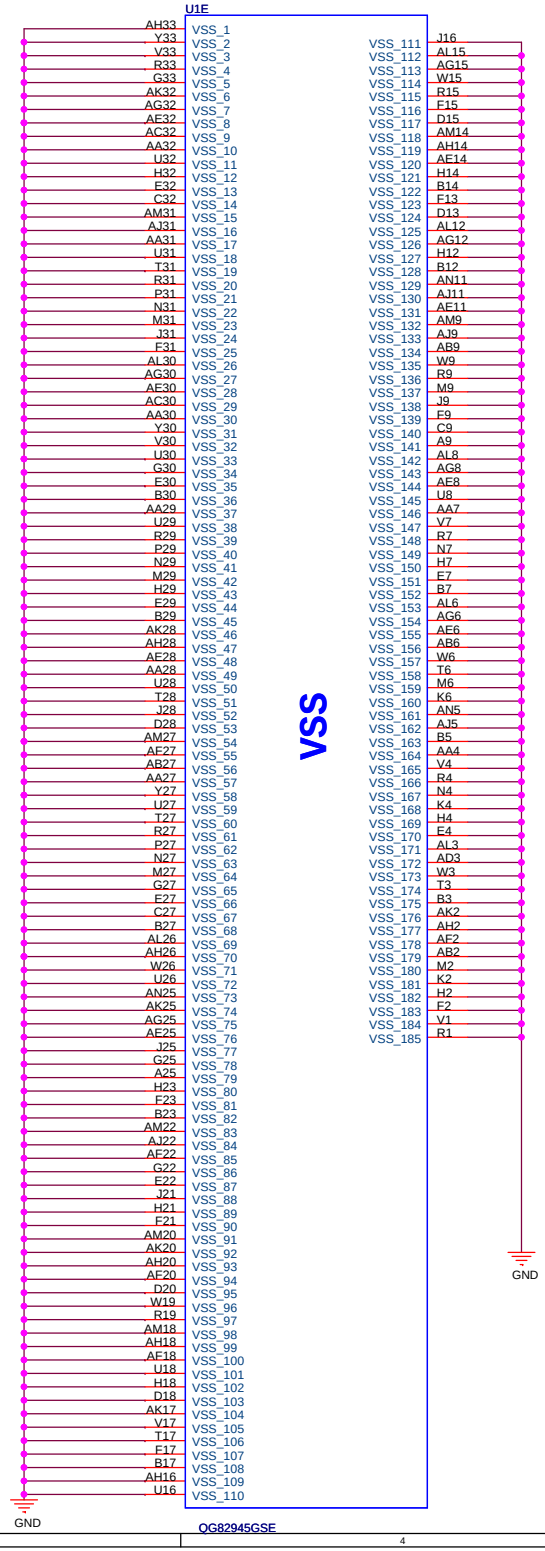



```
CFG_19(K28) Strapping :
DMI LANE Reversal:
0:Normal Operation (Default)
1.:Reversal Lanes, 3->0,2->1..etc
Note:945GMS doesn't support DMI Lane
Reversal
```

<Variant Name>

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. | Title : NB-945GMs(PWR) | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 12 of 47 | |


+1.5VS
L45 1uH /X
+1.5VS_3GPLL
C241 0.1UF/16V c0402
1UF/16V C240
NL2 120Ohm/100Mhz
GND
+1.5VS
L44 /X
90NH
NL1 120Ohm/100Mhz
Top Layer
+1.5VS_PCIE
0.4A
CE9 100UF/2.5V
C230 1UF/16V
C231 10UF/10V
+2.5VS
L46 0Ohm
+2.5VS_CRTDAC
2.375V~2.625V
Max: 70mA
+VCCP
D38
BAT54CW
R224
1KOhm 1%
C233 10UF/10V
C234 0.1UF/16V c0402
C244 0.01UF/16V
+1.5VS_MPLL
C247 0.1UF/16V
+2.5VS
C245 0.01UF/16V
C235 0.1UF/16V c0402
+1.5VS
L42 10UH /X
NL3 120Ohm/100Mhz
+1.5VS_DPLLA
1.425V~1.575V
Max: 50mA
C248 1UF/16V
C238 10UF/10V
C249 0.1UF/16V c0402
L43 10UH /X
NL4 120Ohm/100Mhz
+1.5VS_DPLLB
1.425V~1.575V
Max: 50mA
C252 1UF/16V
C253 10UF/10V
C239 0.1UF/16V c0402
L47 120Ohm/100Mhz
+1.5VS_HPLL
1.425V~1.575V
Max: 45mA
C256 1UF/16V
C257 0.1UF/16V c0402
L48 120Ohm/100Mhz
+1.5VS_MPLL
1.425V~1.575V
Max: 45mA
C260 1UF/16V
C261 0.1UF/16V c0402
120mA
U1D
+1.5VS
C250 10UF/10V
C251 0.1UF/16V c0402
+3VS
40mA
C254 10UF/10V
C255 0.1UF/16V c0402
C213 1UF/16V
C221 1UF/16V
+1.8V
1.7A
C804 0.1UF/16V /X
100UF/2.5V CE13
C212 1UF/16V
C222 10UF/10V
C223 10UF/10V /X
C217 1UF/16V
C224 1UF/16V
C225 1UF/16V
+1.5VS_DPLLB
+1.5VS_DPLLA
+1.5VS_HPLL
+1.5VS_MPLL
+1.5VS
140mA
+2.5VS
C232 0.1UF/16V c0402
C226 10UF/10V
C227 0.1UF/16V c0402
C228 0.1UF/16V c0402
+1.5VS_PCIE
+1.5VS_3GPLL
+2.5VS_CRTDAC
+VCCP
C263 1UF/16V
VCCATVDACA0
VCCATVDACA1
VCCATVDACB0
VCCATVDACB1
VCCATVDACC0
VCCATVDACC1
VCCATVBG
VSSATVBG
VCCDTVDAC
VCCDQTVDAC
VCCDLVDS0
VCCDLVDS1
VCCDLVDS2
VCCHV0
VCCHV1
VCCHV2
VCCSM0
VCCSM1
VCCSM2
VCCSM3
VCCSM4
VCCSM5
VCCSM6
VCCSM7
VCCSM8
VCCSM9
VCCSM10
VCCSM11
VCCSM12
VCCSM13
VCCSM14
VCCSM15
VCCSM16
VCCSM17
VCCSM18
VCCSM19
VCCSM20
VCCSM21
VCCSM22
VCCSM23
VCCSM24
VCCSM25
VCCSM26
VCCSM27
VCCSM28
VCCSM29
VCCSM30
VCCSM31
VCCSM32
VCCSM33
VCCSM34
VCCSM35
VCCSM36
VCCSM37
VCCSM38
VCCSM39
VCCSM40
VCCSM41
VCCSM42
VCCSM43
VCCSM44
VCCSM45
VCCSM46
VCCSM47
VCCSM48
VCCSM49
VCCSM50
VCCSM51
VCCAMPLL
VCCAHPLL
VCCADPLLA
VCCADPLLB
VCCDHMPLL1
VCCDHMPLL2
VCCTXLVDS0
VCCTXLVDS1
VCC3G0
VCC3G1
VCCA3GPLL
VCCA3GBG
VSSA3GBG
VCCSYNC
VCCACRTDAC0
VCCACRTDAC1
VSSACRTDAC
VCCALVDS
VSSALVDS
VTT41
VTT42
VTT43
VTT44
VTT45
QG82945GSE
POWER
VCC0
VCC1
VCC2
VCC3
VCC4
VCC5
VCC6
VCC7
VCC8
VCC9
VCC10
VCC11
VCC12
VCC13
VCC14
VCC15
VCC16
VCC17
VCC18
VCC19
VCC20
VCC21
VCCAUX1
VCCAUX2
VCCAUX3
VCCAUX4
VCCAUX5
VCCAUX6
VCCAUX7
VCCAUX8
VCCAUX9
VCCAUX10
VCCAUX11
VCCAUX12
VCCAUX13
VCCAUX14
VCCAUX15
VCCAUX16
VCCAUX17
VCCAUX18
VCCAUX19
VCCAUX20
VCCAUX21
VCCAUX22
VCCAUX23
VCCAUX24
VCCAUX25
VCCAUX26
VCCAUX27
VCCAUX28
VTT0
VTT1
VTT2
VTT3
VTT4
VTT5
VTT6
VTT7
VTT8
VTT9
VTT10
VTT11
VTT12
VTT13
VTT14
VTT15
VTT16
VTT17
VTT18
VTT19
VTT20
VTT21
VTT22
VTT23
VTT24
VTT25
VTT26
VTT27
VTT28
VTT29
VTT30
VTT31
VTT32
VTT33
VTT34
VTT36
VTT35
VTT37
VTT38
VTT39
VTT40
+VCCP
1.25A
CE1 100UF/2.5V
C262 0.1UF/16V c0402
C229 0.1UF/16V
C243 10UF/10V
C402 0.1UF/16V c0402
CE10 100UF/2.5V
C242 1UF/16V
C259 1UF/16V
C401 1UF/16V
C264 0.1UF/16V c0402
GND
<Variant Name>
Title : NB-945GMS(PWR2)
ASUSTeK COMPUTER INC.
Engineer: Jeff Li
Size A3
Project Name 1000H_MB
Rev 1.3G
Date: Tuesday, February 10, 2009
Sheet 13 of 47






<Variant Name>

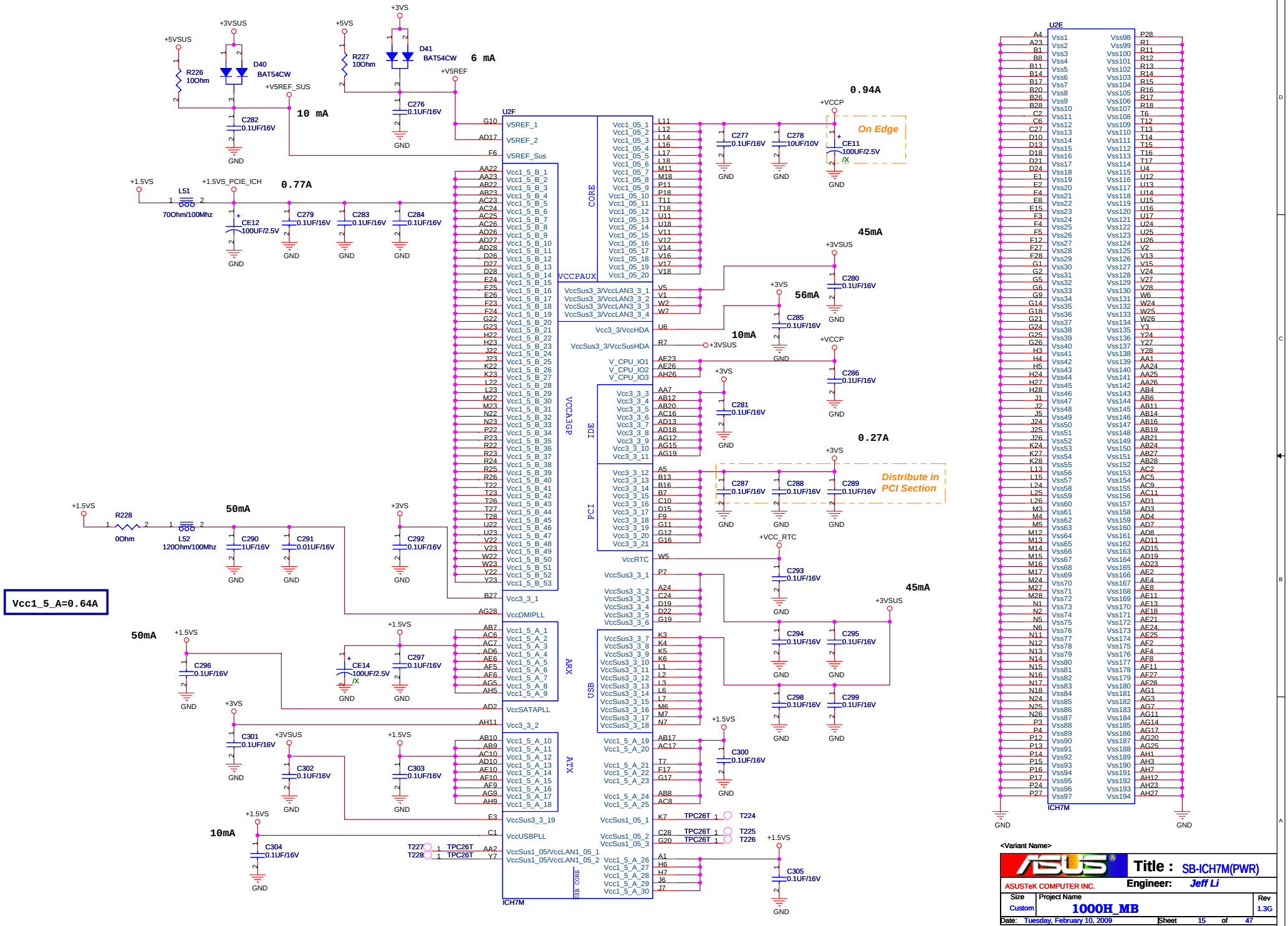
ASUSTeK COMPUTER INC.

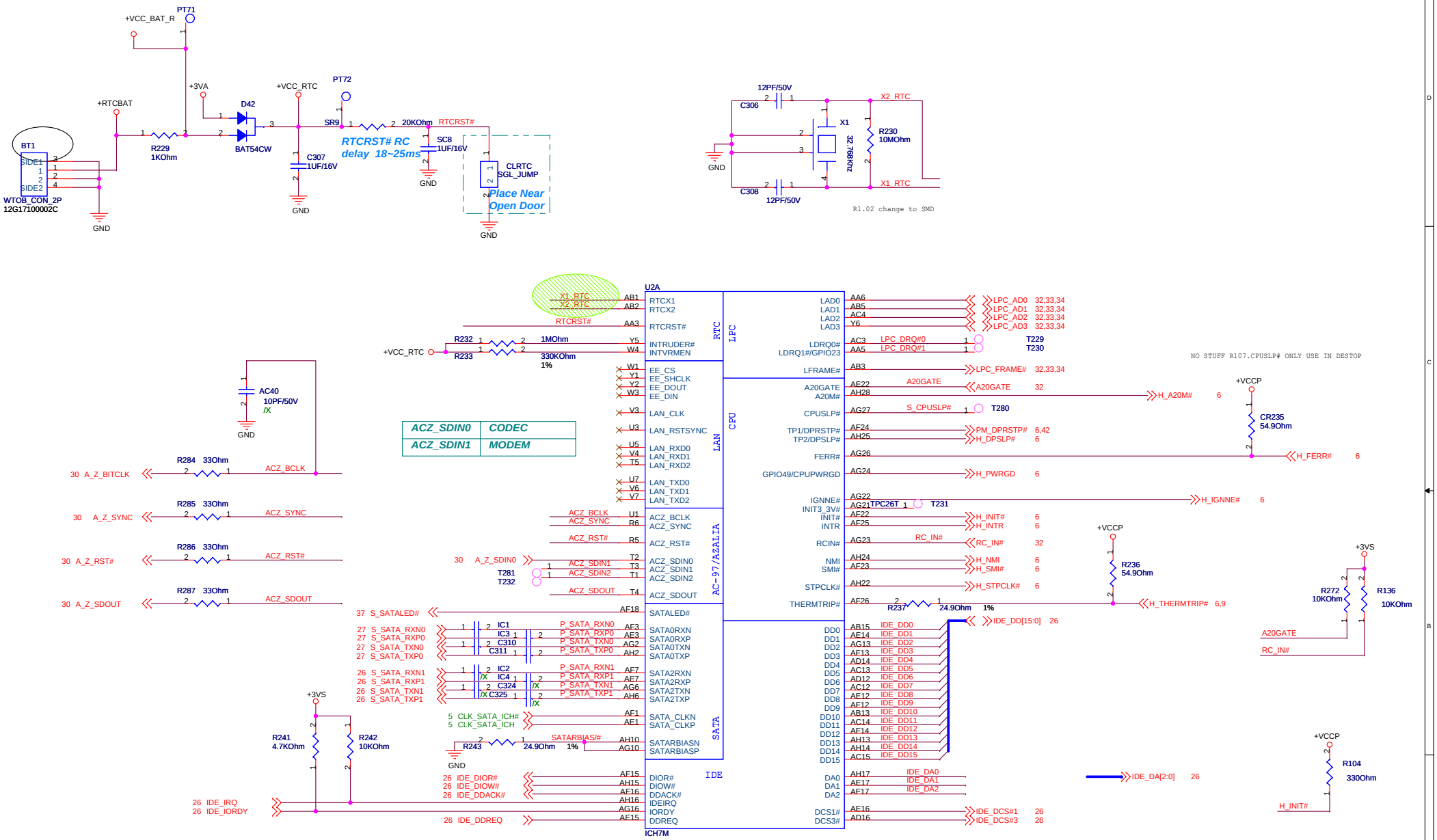
Title : NB-945GMS(GND)

Engineer: Jeff Li

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

Date: Tuesday, February 10, 2009 Sheet 14 of 47


+3VS
+5VSUS
+3VSUS
+5VS
R226
10Ohm
D40
BAT54CW
R227
10Ohm
D41
BAT54CW
6 mA
+V5REF
+V5REF_SUS
10 mA
C282
0.1UF/16V
C276
0.1UF/16V
GND
U2F
V5REF_1
V5REF_2
V5REF_Sus
+1.5VS
+1.5VS_PCIE_ICH
0.77A
L51
70Ohm/100Mhz
CE12
100UF/2.5V
C279
0.1UF/16V
C283
0.1UF/16V
C284
0.1UF/16V
CORE
VCCPAUX
VCCA3GP
IDE
PCI
USB
ARX
ATX
VccSus3_3/VccLAN3_3_1
VccSus3_3/VccLAN3_3_2
VccSus3_3/VccLAN3_3_3
VccSus3_3/VccLAN3_3_4
Vcc3_3/VccHDA
VccSus3_3/VccSusHDA
V_CPU_IO1
V_CPU_IO2
V_CPU_IO3
VccRTC
VccDMIPLL
VccSATAPLL
VccUSBPLL
Vcc3_3_1
Vcc3_3_2
VccSus3_3_19
VccSus1_05/VccLAN1_05_1
VccSus1_05/VccLAN1_05_2
VccSus1_05_1
VccSus1_05_2
VccSus1_05_3
ICH7M
0.94A
On Edge
CE11
100UF/2.5V
C277
0.1UF/16V
C278
10UF/10V
+VCCP
45mA
+3VSUS
C280
0.1UF/16V
56mA
C285
0.1UF/16V
10mA
R7
C281
0.1UF/16V
C286
0.1UF/16V
0.27A
Distribute in PCI Section
C287
0.1UF/16V
C288
0.1UF/16V
C289
0.1UF/16V
+VCC_RTC
C293
0.1UF/16V
C294
0.1UF/16V
C295
0.1UF/16V
C298
0.1UF/16V
C299
0.1UF/16V
C300
0.1UF/16V
C305
0.1UF/16V
TPC26T
T224
T225
T226
T227
T228
R228
0Ohm
L52
120Ohm/100Mhz
50mA
C290
1UF/16V
C291
0.01UF/16V
C292
0.1UF/16V
Vcc1_5_A=0.64A
C296
0.1UF/16V
CE14
100UF/2.5V
C297
0.1UF/16V
C301
0.1UF/16V
C302
0.1UF/16V
C303
0.1UF/16V
10mA
C304
0.1UF/16V
U2E
ICH7M
<Variant Name>
Title : SB-ICH7M(PWR)
ASUSTeK COMPUTER INC.
Engineer: Jeff Li
Size: Custom
Project Name: 1000H_MB
Rev: 1.3G
Date: Tuesday, February 10, 2009
Sheet 15 of 47




<Variant Name>

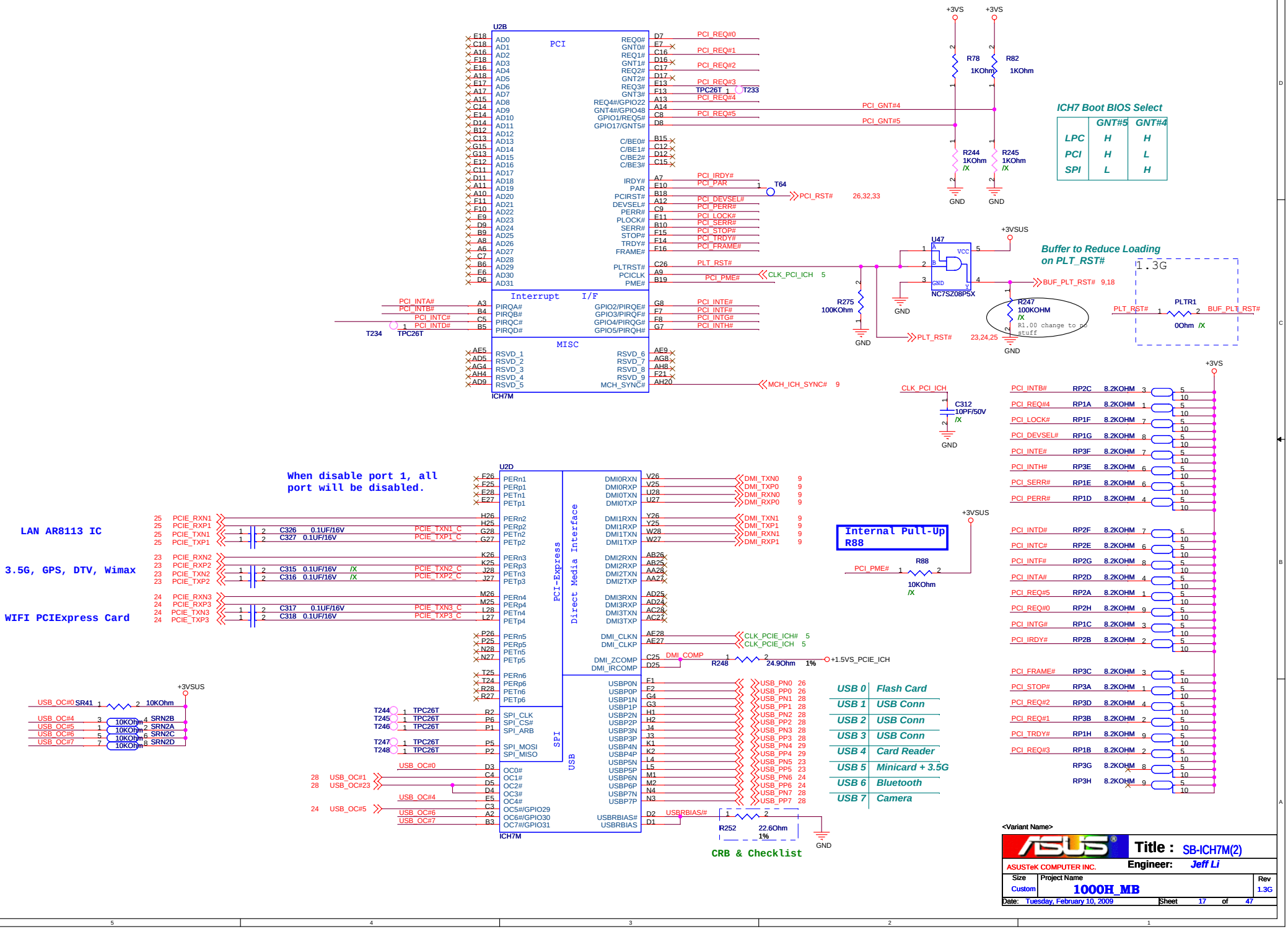
Title : SB-ICH7-M(1)

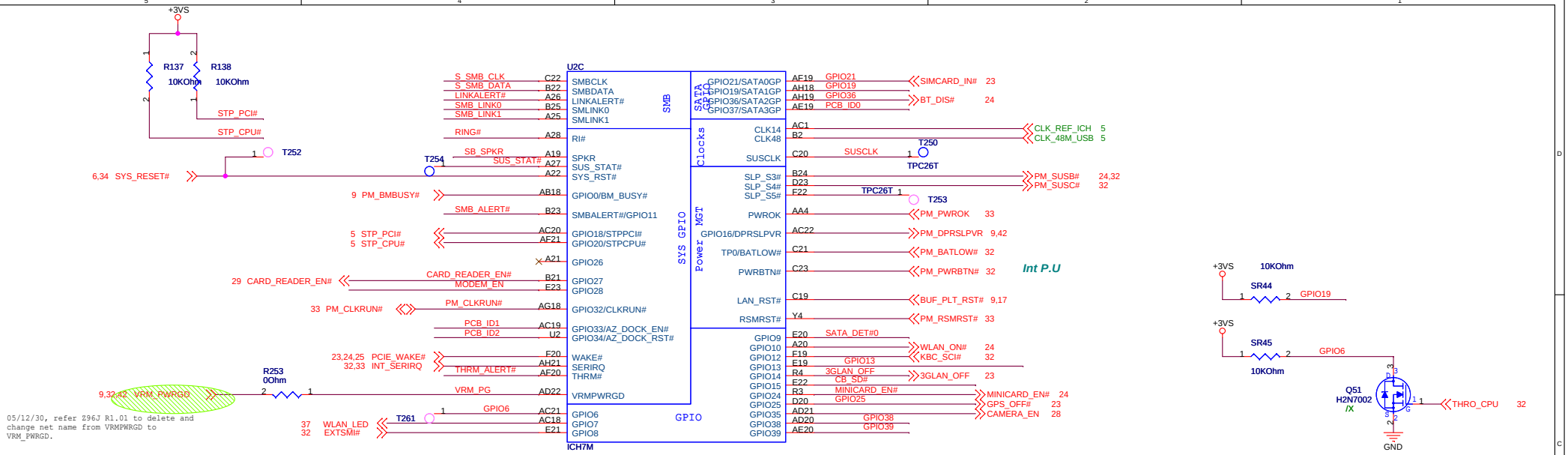
ASUSTeK COMPUTER INC.

Engineer: Jeff Li

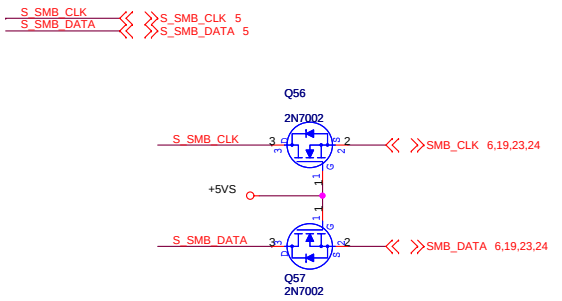
| Size | Project Name | Rev |
|---|---|---|
| Custom | 1000H_MB | 1.3G |

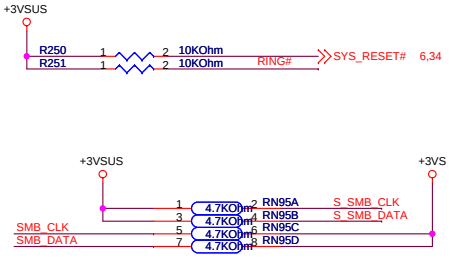
Date: Tuesday, February 10, 2009 Sheet 16 of 47

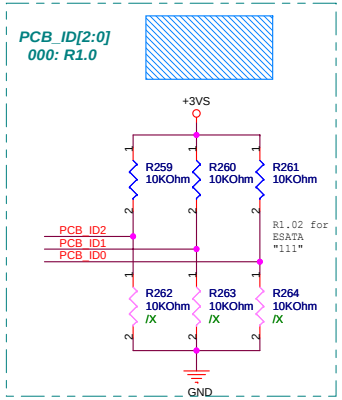

U2B
PCI
Interrupt I/F
MISC
ICH7M
PCI_REQ#0
PCI_REQ#1
PCI_REQ#2
PCI_REQ#3
PCI_REQ#4
PCI_REQ#5
PCI_GNT#4
PCI_GNT#5
PCI_IRDY#
PCI_PAR
PCI_RST#
PCI_DEVSEL#
PCI_PERR#
PCI_LOCK#
PCI_SERR#
PCI_STOP#
PCI_TRDY#
PCI_FRAME#
PLT_RST#
CLK_PCI_ICH
PCI_PME#
PCI_INTA#
PCI_INTB#
PCI_INTC#
PCI_INTD#
PCI_INTE#
PCI_INTF#
PCI_INTG#
PCI_INTH#
MCH_ICH_SYNC#
R78 1KOhm
R82 1KOhm
R244 1KOhm /X
R245 1KOhm /X
ICH7 Boot BIOS Select
LPC H H
PCI H L
SPI L H
U47
NC7SZ08P5X
Buffer to Reduce Loading on PLT_RST#
BUF_PLT_RST# 9,18
R275 100KOhm
R247 100KOHM /X
R1.00 change to no stuff
PLTR1 0Ohm /X
When disable port 1, all port will be disabled.
LAN AR8113 IC
3.5G, GPS, DTV, Wimax
WIFI PCIExpress Card
PCIE_RXN1
PCIE_RXP1
PCIE_TXN1
PCIE_TXP1
PCIE_RXN2
PCIE_RXP2
PCIE_TXN2
PCIE_TXP2
PCIE_RXN3
PCIE_RXP3
PCIE_TXN3
PCIE_TXP3
C326 0.1UF/16V
C327 0.1UF/16V
C315 0.1UF/16V /X
C316 0.1UF/16V /X
C317 0.1UF/16V
C318 0.1UF/16V
U2D
PCI-Express
Direct Media Interface
SPI
USB
DMI_TXN0
DMI_TXP0
DMI_RXN0
DMI_RXP0
DMI_TXN1
DMI_TXP1
DMI_RXN1
DMI_RXP1
Internal Pull-Up R88
DMI_COMP
R248 24.9Ohm 1%
+1.5VS_PCIE_ICH
CLK_PCIE_ICH#
CLK_PCIE_ICH
USB_OC#0 SR41 10KOhm
SRN2B
SRN2A
SRN2C
SRN2D
SPI_CLK
SPI_CS#
SPI_ARB
SPI_MOSI
SPI_MISO
USB_OC#0
USB_OC#1
USB_OC#23
USB_OC#4
USB_OC#5
USB_OC#6
USB_OC#7
USB_PN0
USB_PP0
USB_PN1
USB_PP1
USB_PN2
USB_PP2
USB_PN3
USB_PP3
USB_PN4
USB_PP4
USB_PN5
USB_PP5
USB_PN6
USB_PP6
USB_PN7
USB_PP7
USBRBIAS#
R252 22.6Ohm 1%
USB 0 Flash Card
USB 1 USB Conn
USB 2 USB Conn
USB 3 USB Conn
USB 4 Card Reader
USB 5 Minicard + 3.5G
USB 6 Bluetooth
USB 7 Camera
C312 10PF/50V /X
PCI_INTB# RP2C 8.2KOHM
PCI_REQ#4 RP1A 8.2KOHM
PCI_LOCK# RP1F 8.2KOHM
PCI_DEVSEL# RP1G 8.2KOHM
PCI_INTE# RP3F 8.2KOHM
PCI_INTH# RP3E 8.2KOHM
PCI_SERR# RP1E 8.2KOHM
PCI_PERR# RP1D 8.2KOHM
PCI_INTD# RP2F 8.2KOHM
PCI_INTC# RP2E 8.2KOHM
PCI_INTF# RP2G 8.2KOHM
PCI_INTA# RP2D 8.2KOHM
PCI_REQ#5 RP2A 8.2KOHM
PCI_REQ#0 RP2H 8.2KOHM
PCI_INTG# RP1C 8.2KOHM
PCI_IRDY# RP2B 8.2KOHM
PCI_FRAME# RP3C 8.2KOHM
PCI_STOP# RP3A 8.2KOHM
PCI_REQ#2 RP3D 8.2KOHM
PCI_REQ#1 RP3B 8.2KOHM
PCI_TRDY# RP1H 8.2KOHM
PCI_REQ#3 RP1B 8.2KOHM
RP3G 8.2KOHM
RP3H 8.2KOHM
CRB & Checklist
<Variant Name>
Title : SB-ICH7M(2)
ASUSTeK COMPUTER INC.
Engineer: Jeff Li
Size Custom
Project Name 1000H_MB
Rev 1.3G
Date: Tuesday, February 10, 2009
Sheet 17 of 47



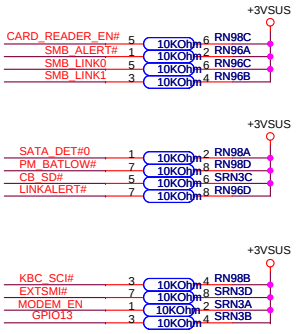

| WLAN_LED | WLAN | BT |
|---|---|---|
| High | v | v |
| High | v | x |
| High | x | v |
| Low | x | x |

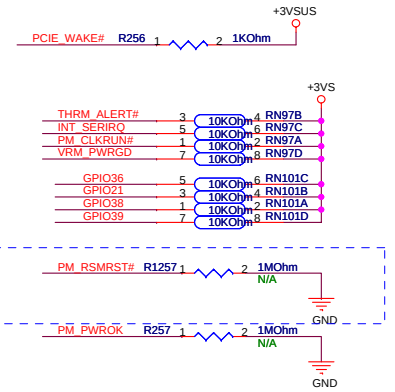



| SKU | PCB_ID2 SB_GPIO_34 | PCB_ID1 SB_GPIO_33 | PCB_ID0 SB_GPIO_37 |
|---|---|---|---|
| BASIC | 1 | 1 | 1 |
| 3G | 1 | 1 | 0 |
| DTV | 1 | 0 | 1 |
| GPS | 1 | 0 | 0 |
| N280/BASIC | 0 | 1 | 1 |
| N280/3G | 0 | 1 | 0 |
| N280/DTV | 0 | 0 | 1 |
| N280/GPS | 0 | 0 | 0 |




PCB_VID3 : PROJECT CODE

<Variant Name>

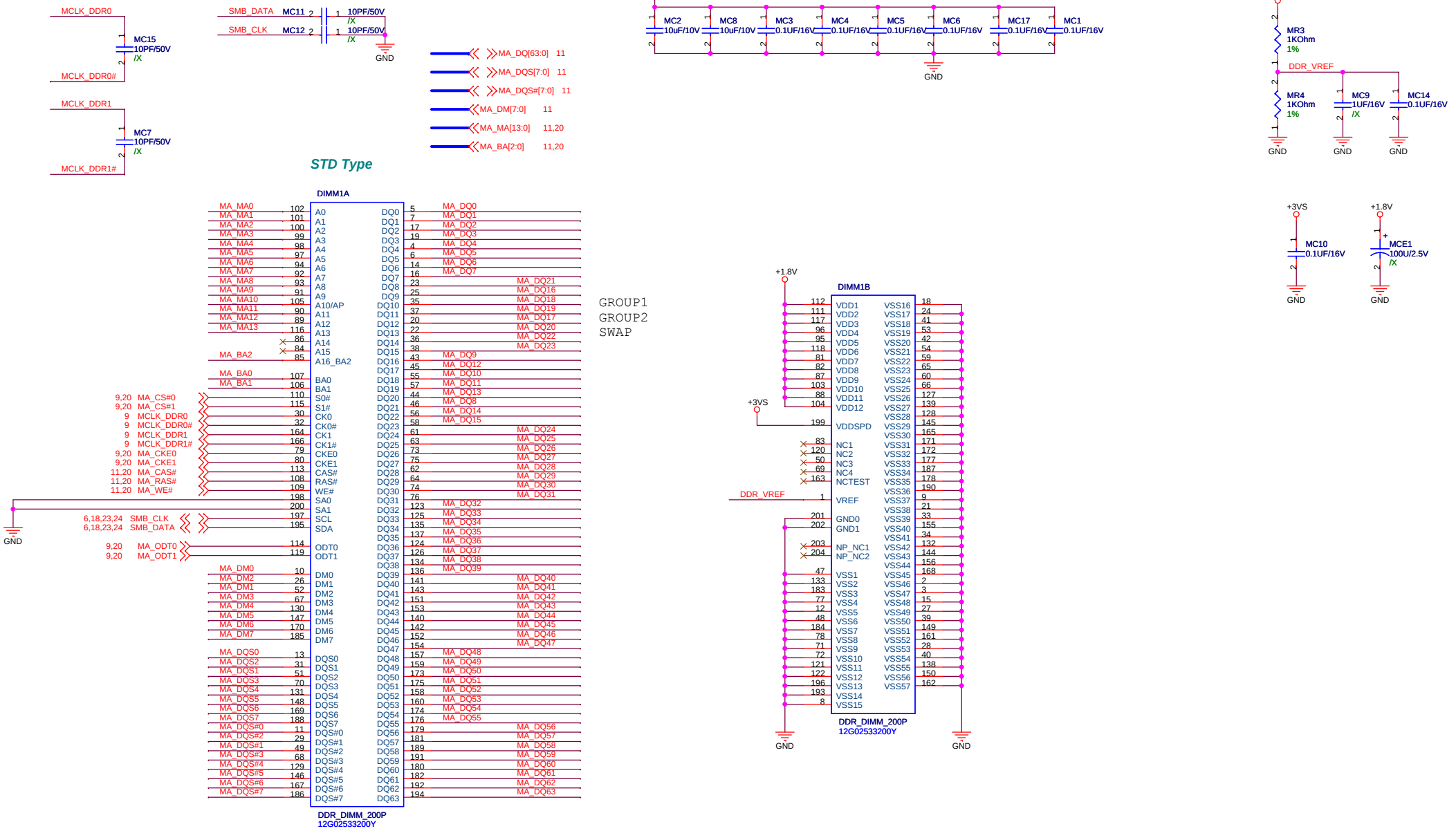
Title : SB-ICH7M(3)

ASUSTeK COMPUTER INC

Engineer: Jeff Li

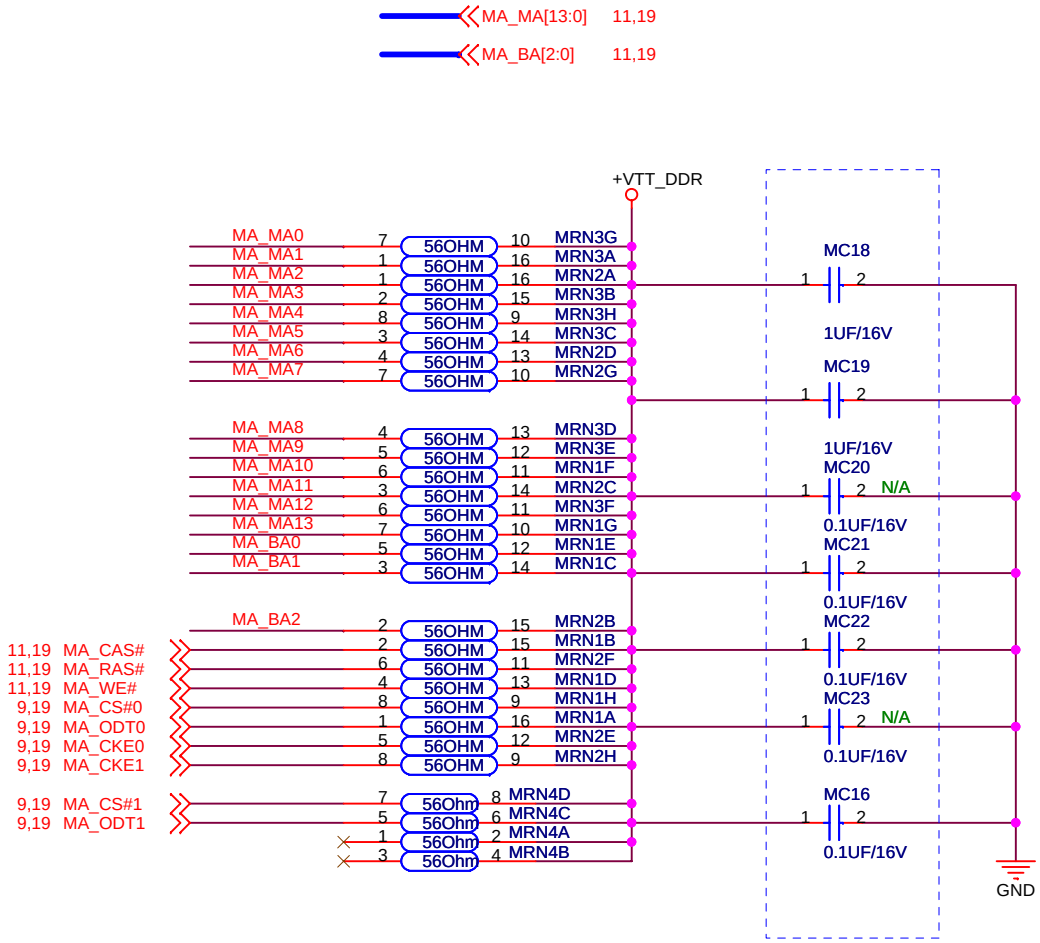
| Size | Project Name | Rev |
|---|---|---|
| Custom | 1000H_MB | 1.3G |

Date: Tuesday, February 10, 2009 Sheet 18 of 47



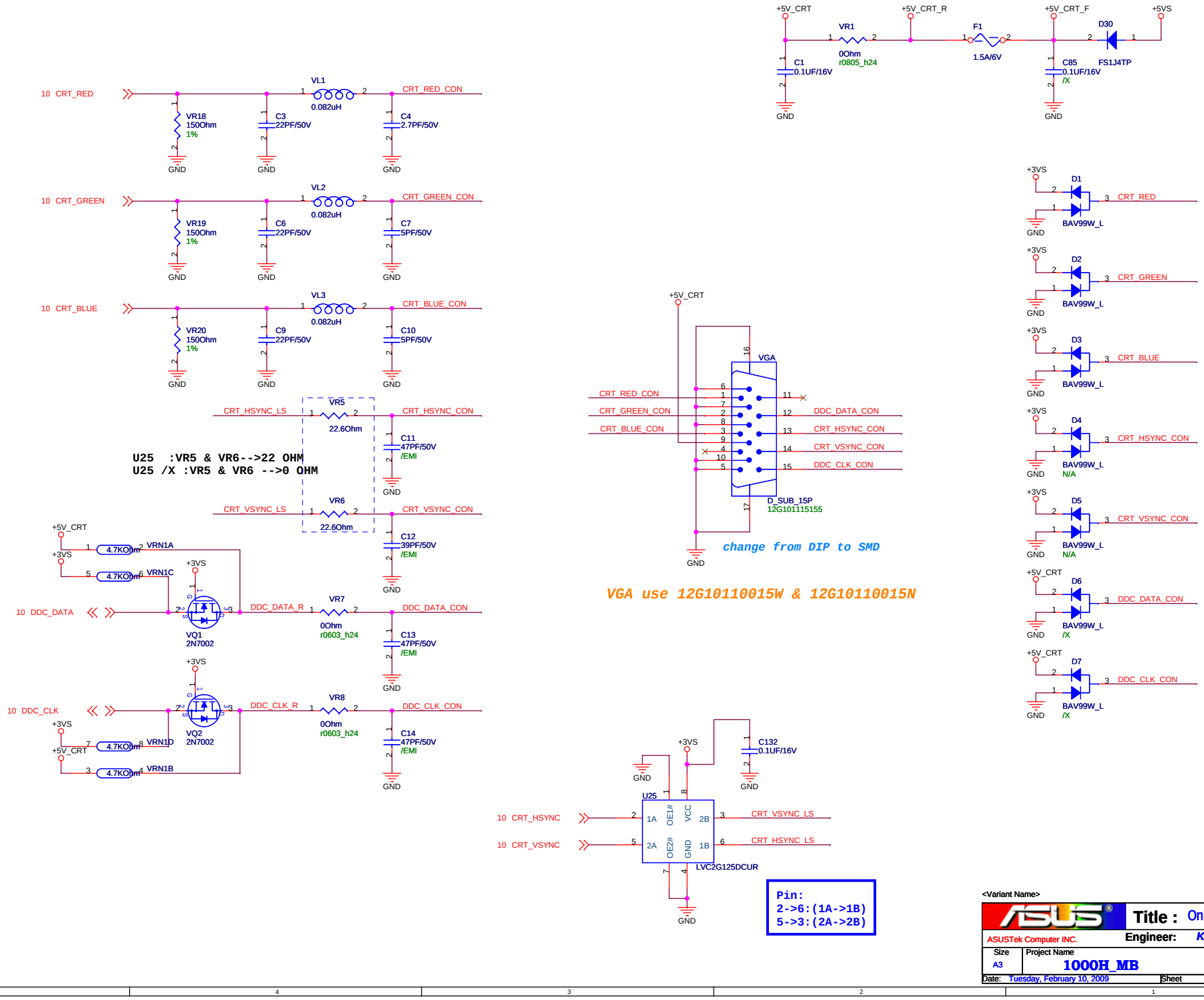

<Variant Name>

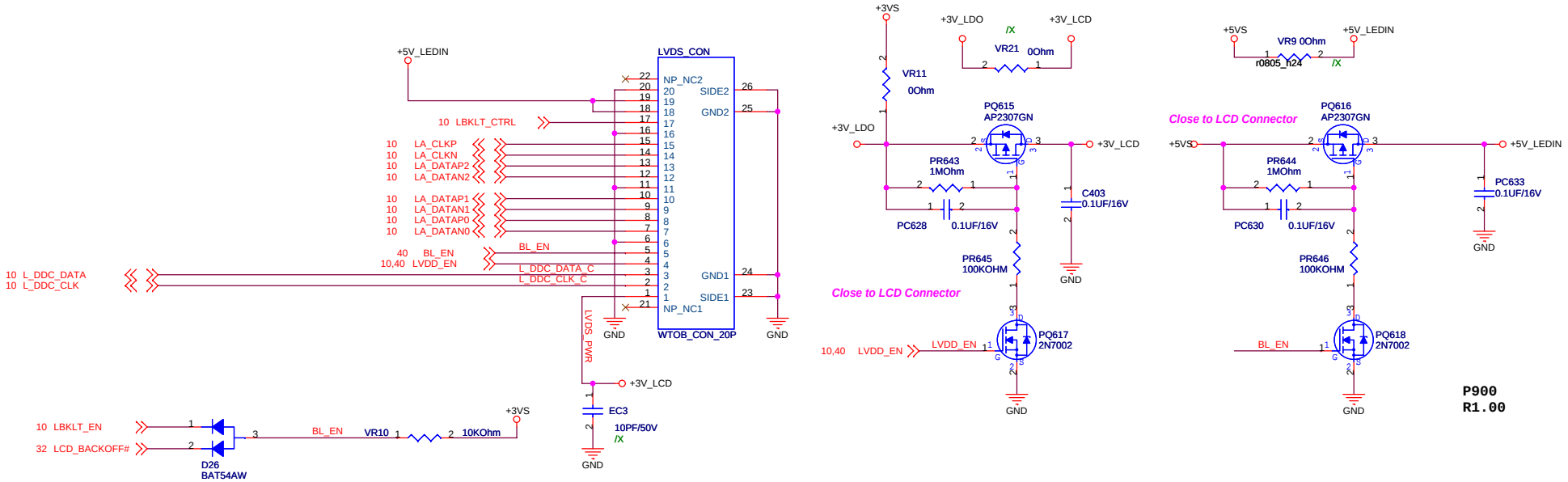
| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : DDR2 SODIMM | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 19 of 52 | |

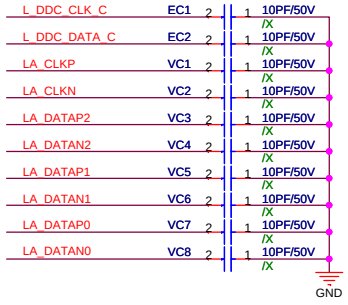


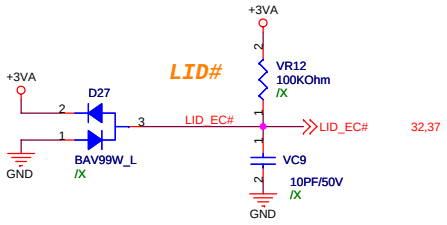

<Variant Name>

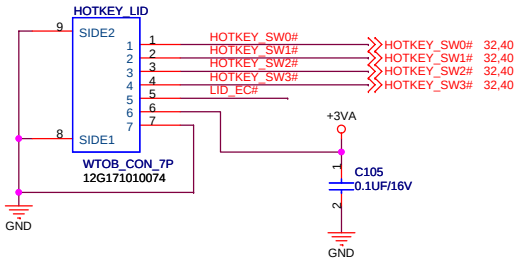
| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : DDR2_Termination | |
| | Engineer: Jeff Li | |
| Size: A4 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 20 of 52 | |

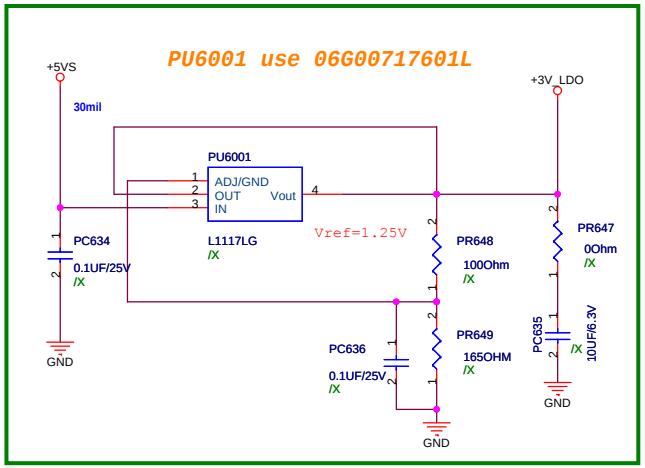

10 CRT_RED
VL1
0.082uH
CRT_RED_CON
VR18
150Ohm
1%
C3
22PF/50V
C4
2.7PF/50V
10 CRT_GREEN
VL2
0.082uH
CRT_GREEN_CON
VR19
150Ohm
1%
C6
22PF/50V
C7
5PF/50V
10 CRT_BLUE
VL3
0.082uH
CRT_BLUE_CON
VR20
150Ohm
1%
C9
22PF/50V
C10
5PF/50V
GND
CRT_HSYNC_LS
VR5
22.6Ohm
CRT_HSYNC_CON
C11
47PF/50V
/EMI
CRT_VSYNC_LS
VR6
22.6Ohm
CRT_VSYNC_CON
C12
39PF/50V
/EMI
U25 :VR5 & VR6-->22 OHM
U25 /X :VR5 & VR6 -->0 OHM
+5V_CRT
+3VS
VRN1A
4.7KOhm
VRN1C
10 DDC_DATA
DDC_DATA_R
VR7
0Ohm
r0603_h24
DDC_DATA_CON
C13
47PF/50V
/EMI
VQ1
2N7002
10 DDC_CLK
DDC_CLK_R
VR8
0Ohm
r0603_h24
DDC_CLK_CON
C14
47PF/50V
/EMI
VQ2
2N7002
VRN1D
VRN1B
+5V_CRT
+5V_CRT_R
+5V_CRT_F
+5VS
VR1
0Ohm
r0805_h24
F1
1.5A/6V
D30
FS1J4TP
C1
0.1UF/16V
C85
0.1UF/16V
/X
VGA
CRT_RED_CON
CRT_GREEN_CON
CRT_BLUE_CON
DDC_DATA_CON
CRT_HSYNC_CON
CRT_VSYNC_CON
DDC_CLK_CON
D_SUB_15P
12G1101115155
change from DIP to SMD
VGA use 12G10110015W & 12G10110015N
D1
D2
D3
D4
D5
D6
D7
BAV99W_L
N/A
/X
U25
10 CRT_HSYNC
10 CRT_VSYNC
1A
2A
OE1#
OE2#
VCC
GND
2B
1B
CRT_VSYNC_LS
CRT_HSYNC_LS
LVC2G125DCUR
C132
0.1UF/16V
Pin:
2->6:(1A->1B)
5->3:(2A->2B)
<Variant Name>
Title : Onboard VGA
ASUSTek Computer INC.
Engineer: Kell_Huang
Size A3
Project Name 1000H_MB
Rev 1.3G
Date: Tuesday, February 10, 2009
Sheet 21 of 50



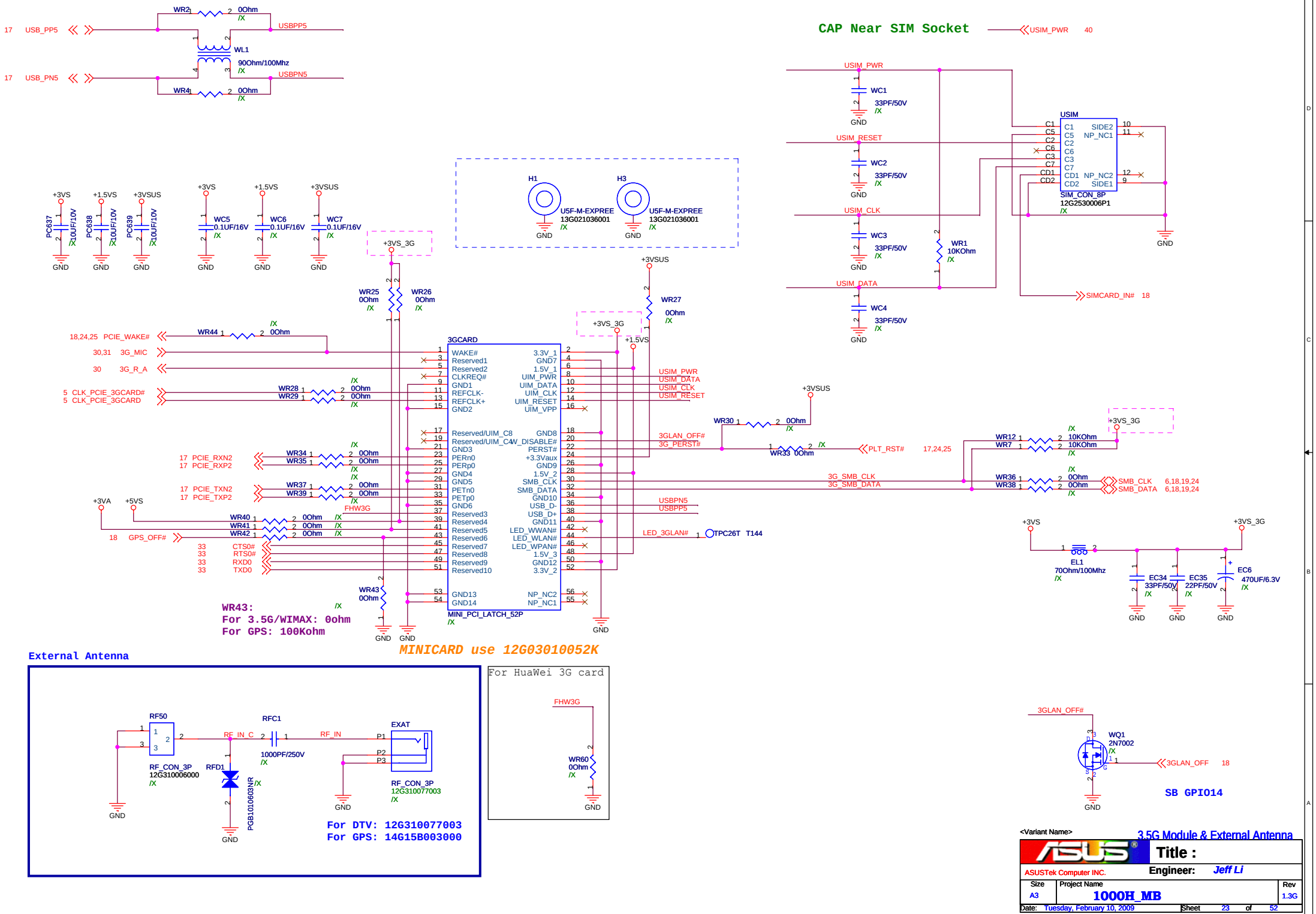




<variant_name>

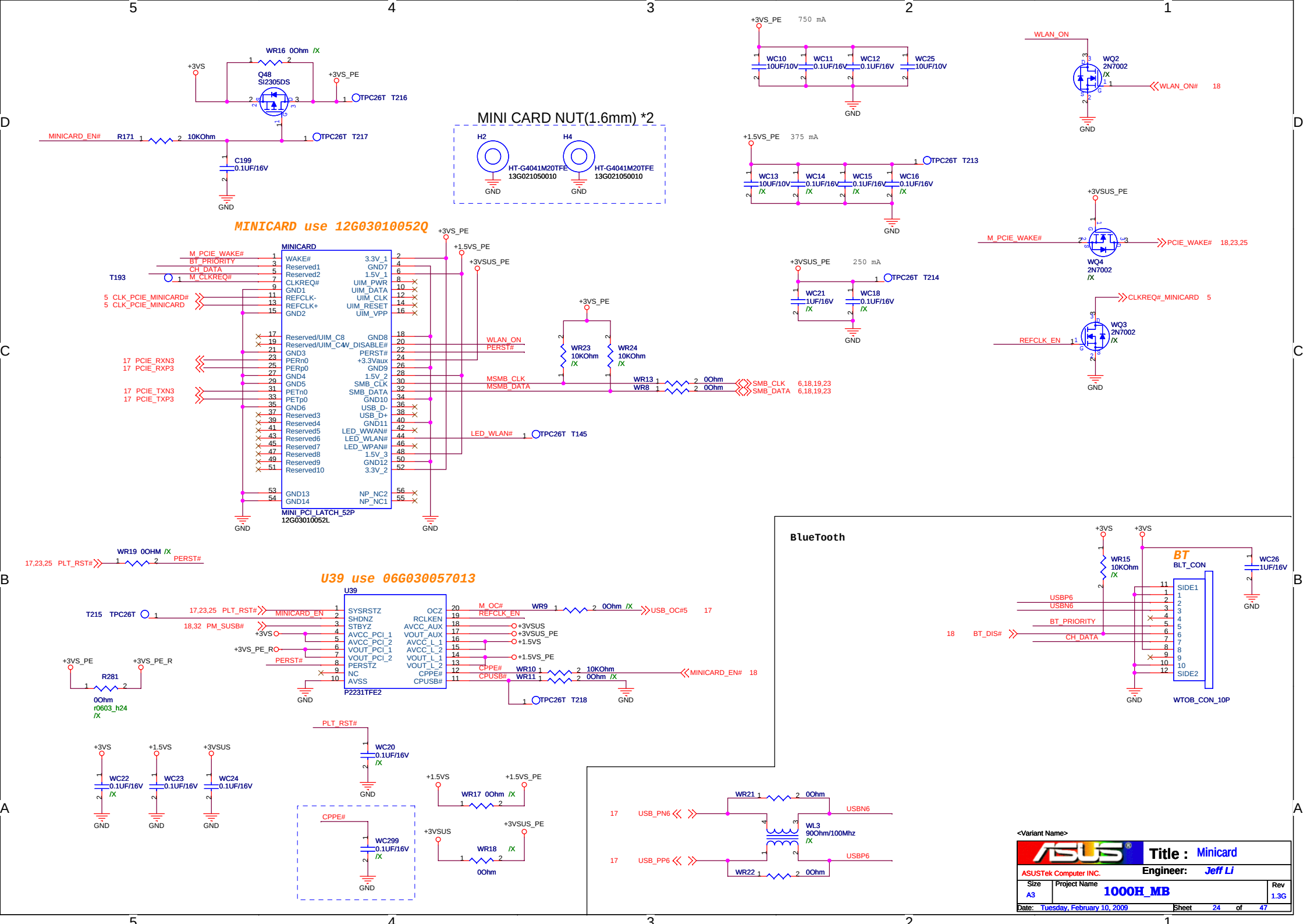
| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : LVDS Conn_LID | |
| | Engineer: Kell_Huang | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.1G |
| Date: Tuesday, February 10, 2009 | Sheet 22 of 50 | |



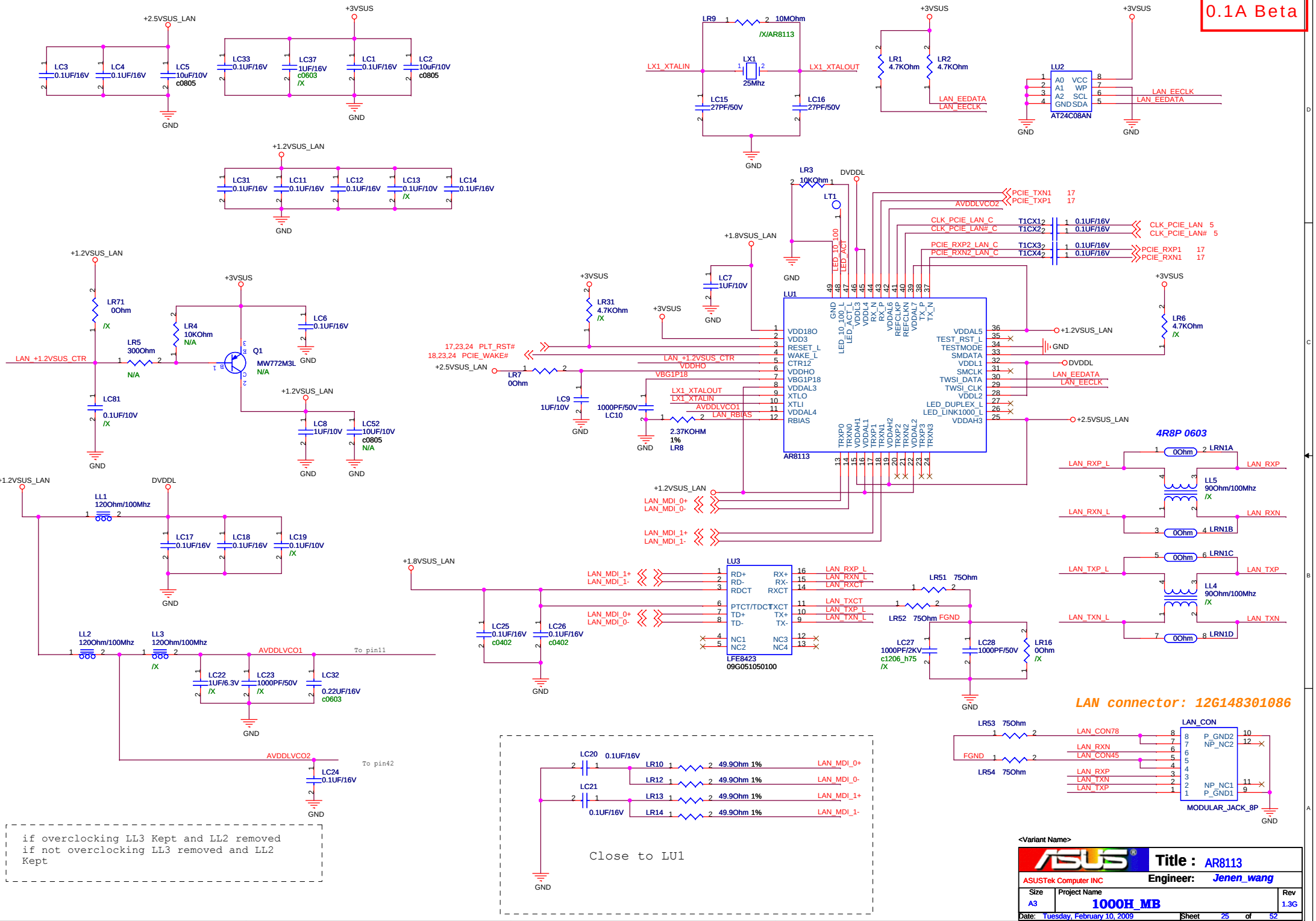

<Variant Name>

3.5G Module & External Antenna

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 23 of 52 | |


MINICARD use 12G030010052Q
U39 use 06G030057013
BlueTooth
MINI CARD NUT(1.6mm) *2
MINICARD
MINI_PCI_LATCH_52P
12G03010052L
U39
P2231TFE2
WR16 0Ohm /X
Q48 SI2305DS
MINICARD_EN# R171 10KOhm
C199 0.1UF/16V
H2 HT-G4041M20TFE 13G021050010
H4 HT-G4041M20TFE 13G021050010
+3VS_PE 750 mA
WC10 10UF/10V
WC11 0.1UF/16V
WC12 0.1UF/16V
WC25 10UF/10V
+1.5VS_PE 375 mA
WC13 10UF/10V /X
WC14 0.1UF/16V /X
WC15 0.1UF/16V /X
WC16 0.1UF/16V /X
+3VSUS_PE 250 mA
WC21 1UF/16V /X
WC18 0.1UF/16V /X
WLAN_ON
WQ2 2N7002 /X
WLAN_ON# 18
M_PCIE_WAKE#
WQ4 2N7002 /X
PCIE_WAKE# 18,23,25
CLKREQ#_MINICARD 5
REFCLK_EN
WQ3 2N7002 /X
WR19 0OHM /X
17,23,25 PLT_RST#
PERST#
WR23 10KOhm /X
WR24 10KOhm /X
WR13 0Ohm
WR8 0Ohm
SMB_CLK 6,18,19,23
SMB_DATA 6,18,19,23
LED_WLAN# T145
T193 M_CLKREQ#
5 CLK_PCIE_MINICARD#
5 CLK_PCIE_MINICARD
17 PCIE_RXN3
17 PCIE_RXP3
17 PCIE_TXN3
17 PCIE_TXP3
T215 TPC26T
18,32 PM_SUSB#
+3VS_PE_R
R281 0Ohm r0603_h24 /X
WR9 0Ohm /X
USB_OC#5 17
WR10 10KOhm
WR11 0Ohm /X
MINICARD_EN# 18
T218 TPC26T
WC20 0.1UF/16V /X
WC22 0.1UF/16V /X
WC23 0.1UF/16V
WC24 0.1UF/16V /X
WC299 0.1UF/16V /X
WR17 0Ohm /X
WR18 /X 0Ohm
BT
BLT_CON
WR15 10KOhm /X
WC26 1UF/16V
USBP6
USBN6
BT_PRIORITY
CH_DATA
18 BT_DIS#
WTOB_CON_10P
WR21 0Ohm
WR22 0Ohm
WL3 90Ohm/100Mhz /X
17 USB_PN6
17 USB_PP6
<Variant Name>
Title : Minicard
ASUSTek Computer INC.
Engineer: Jeff Li
Size A3
Project Name 1000H_MB
Rev 1.3G
Date: Tuesday, February 10, 2009
Sheet 24 of 47

0.1A Beta




<Variant Name>

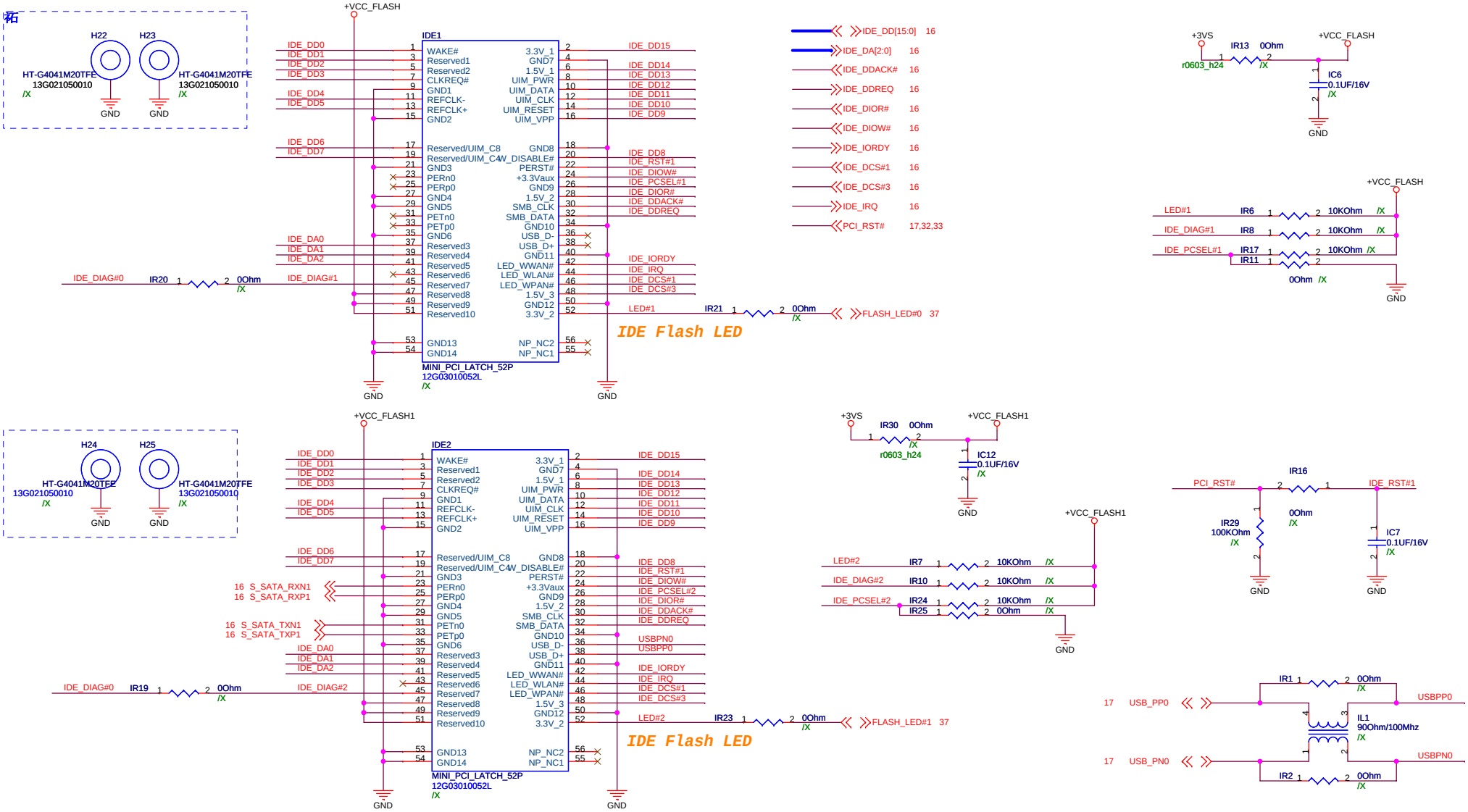
ASUSTek Computer INC

Title : AR8113

Engineer: Jenen_wang

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

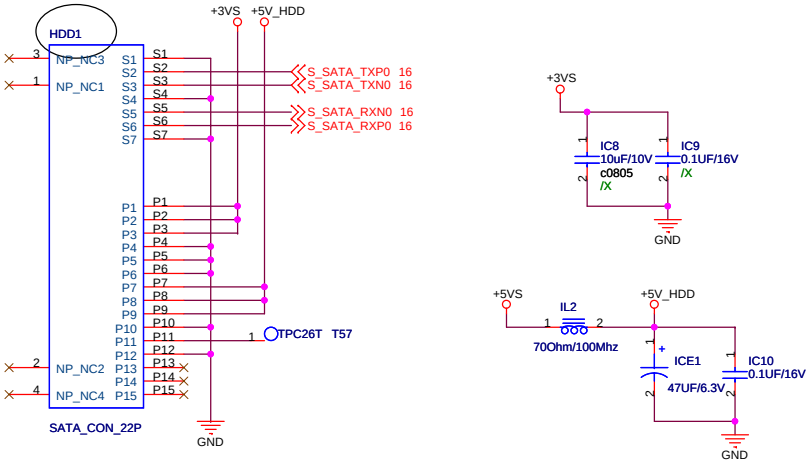
Date: Tuesday, February 10, 2009 Sheet 25 of 52




<Variant Name>

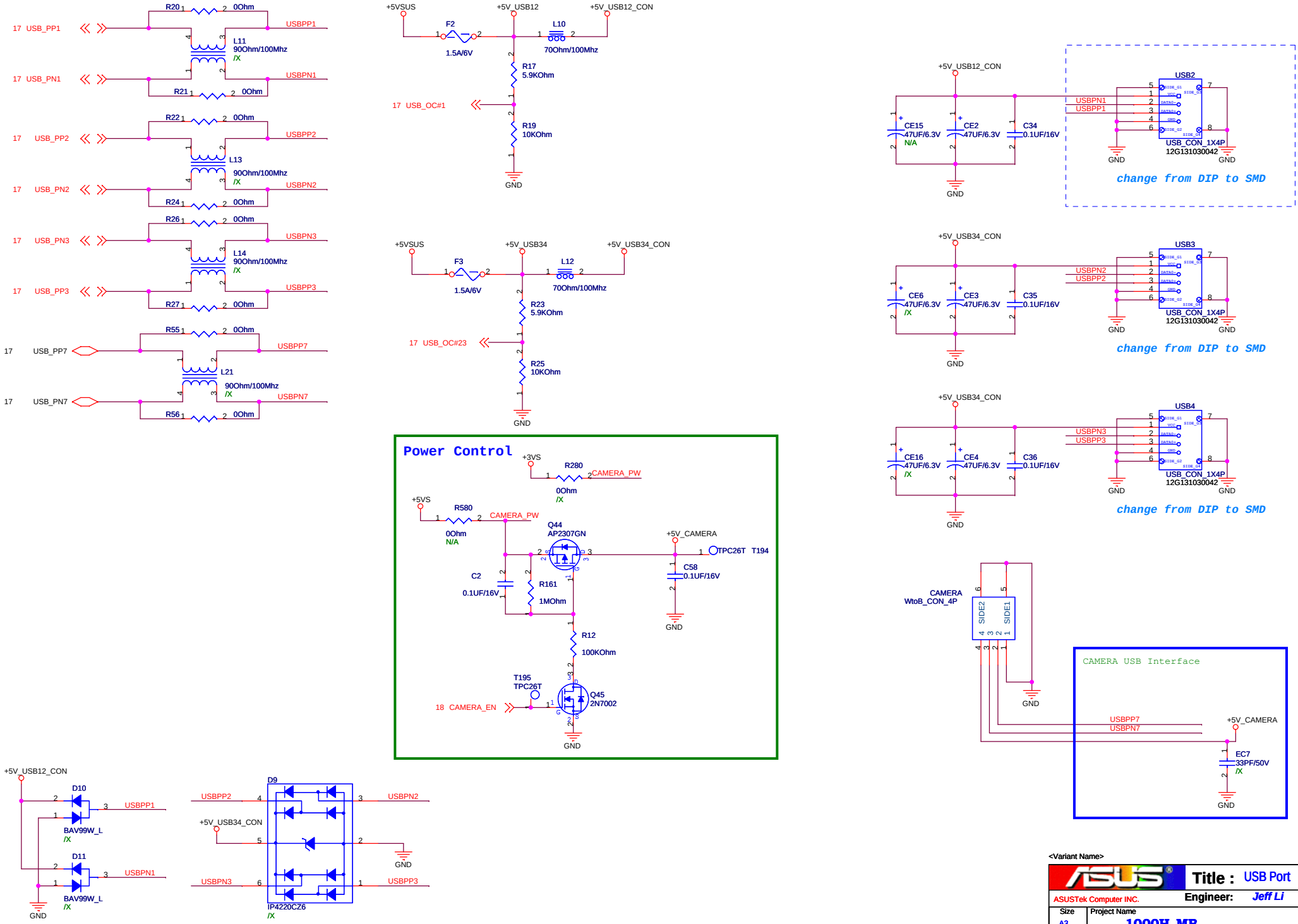
| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : HD + Flash Conn | |
| | Engineer: Kell_Huang | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 26 of 50 | |

# SATA HDD Connector




<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : HDD | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 27 of 47 | |




<Variant Name>

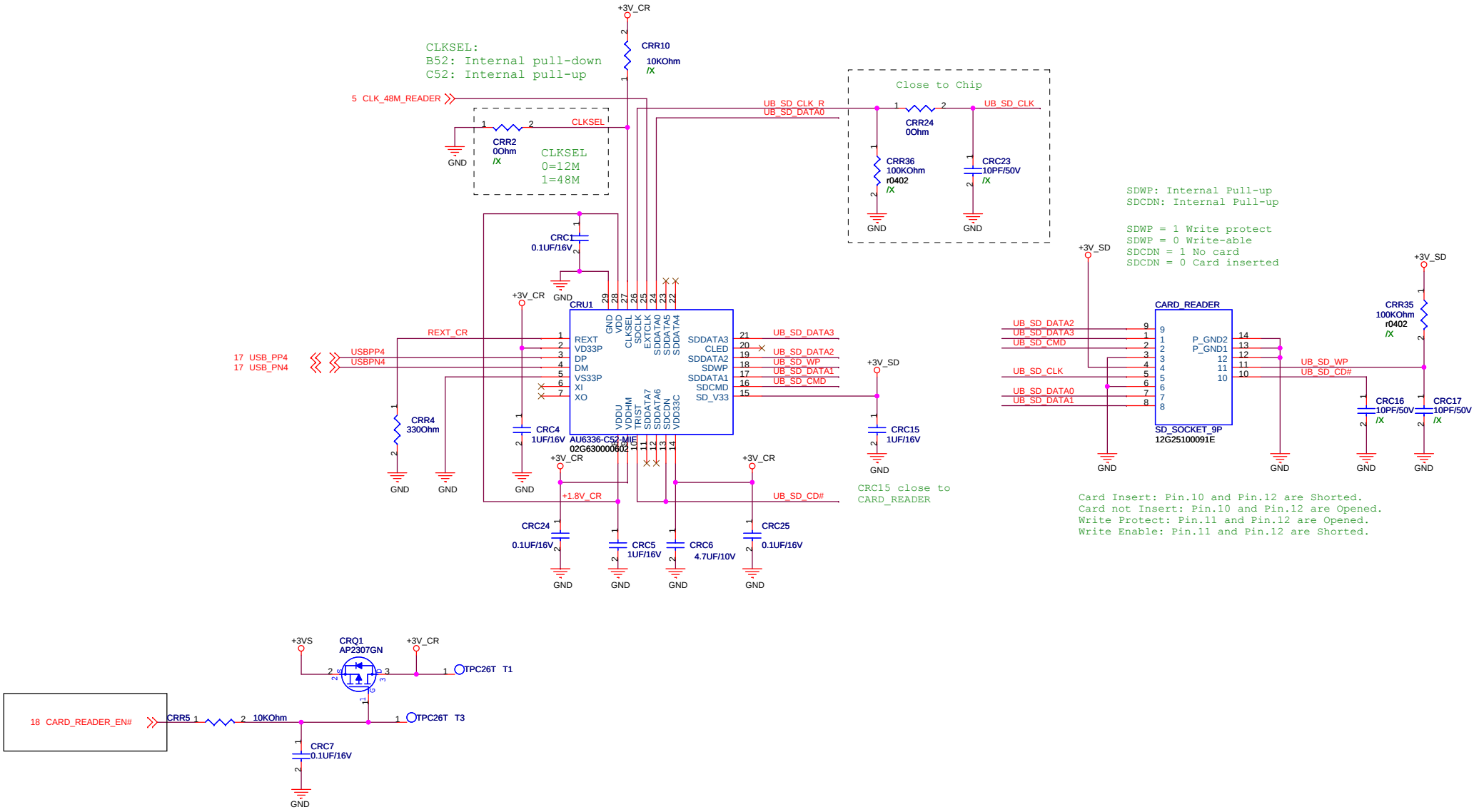
ASUSTek Computer INC.

Title : USB Port

Engineer: Jeff Li

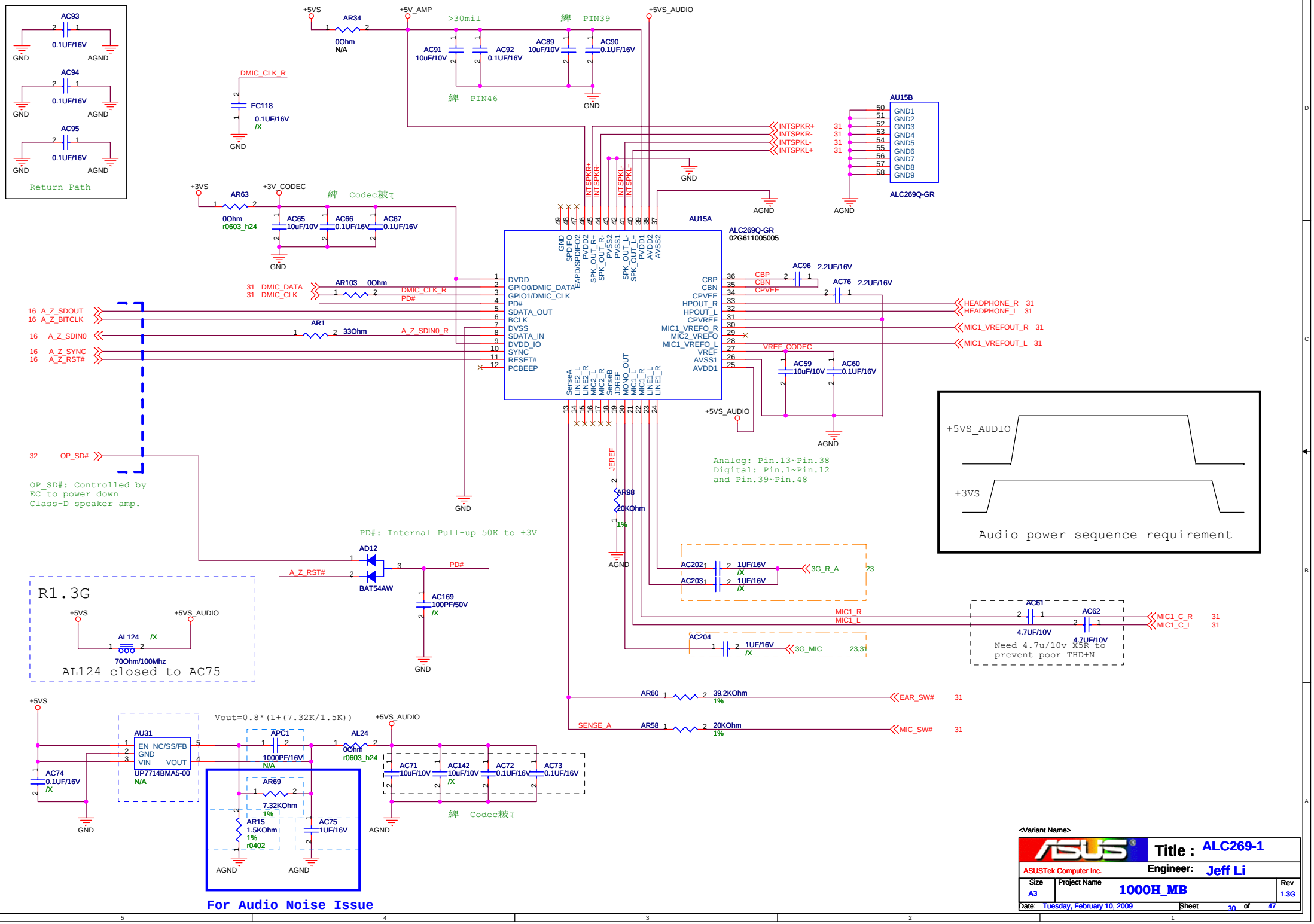
| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

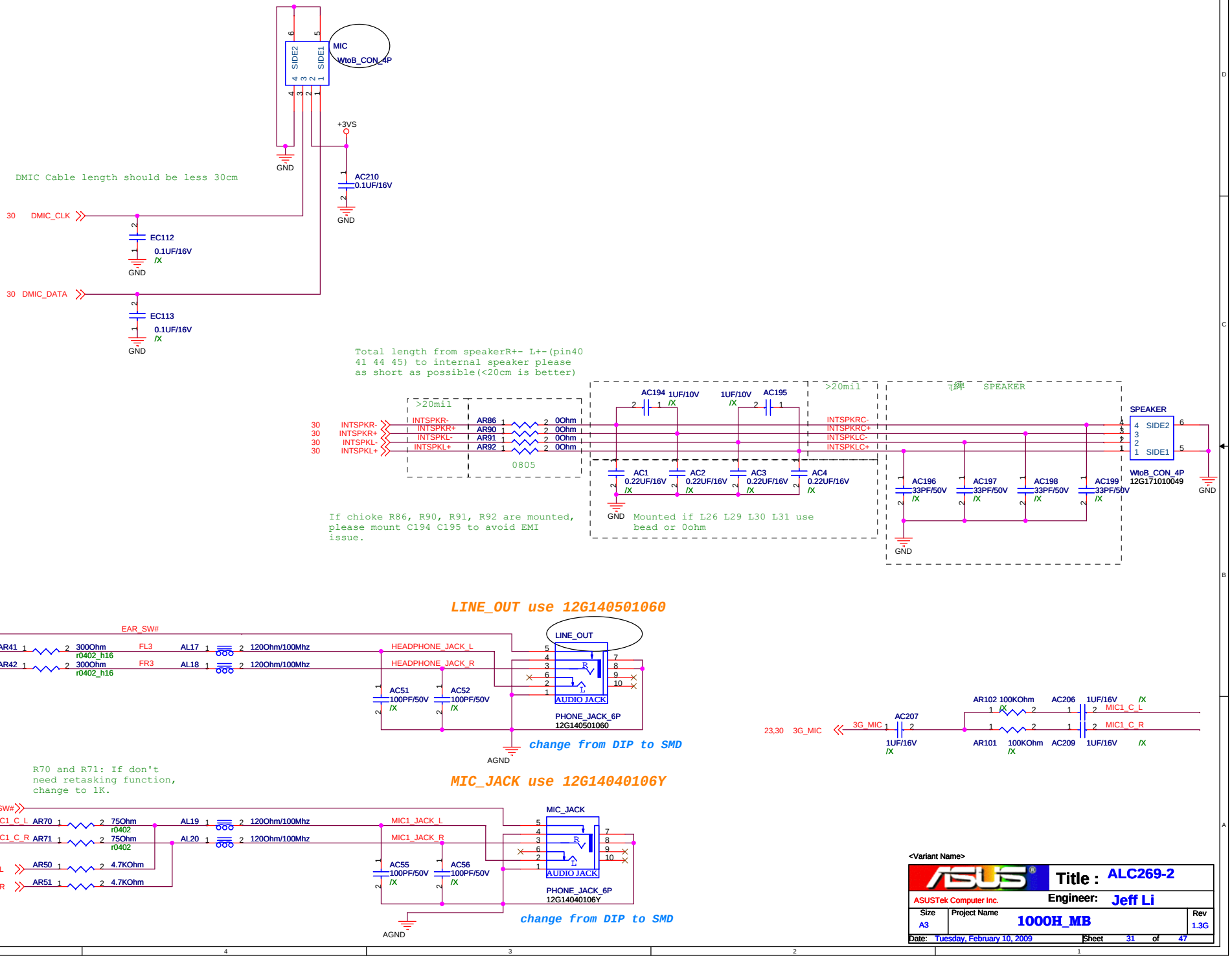
Date: Tuesday, February 10, 2009 Sheet 28 of 52




<variant_name>

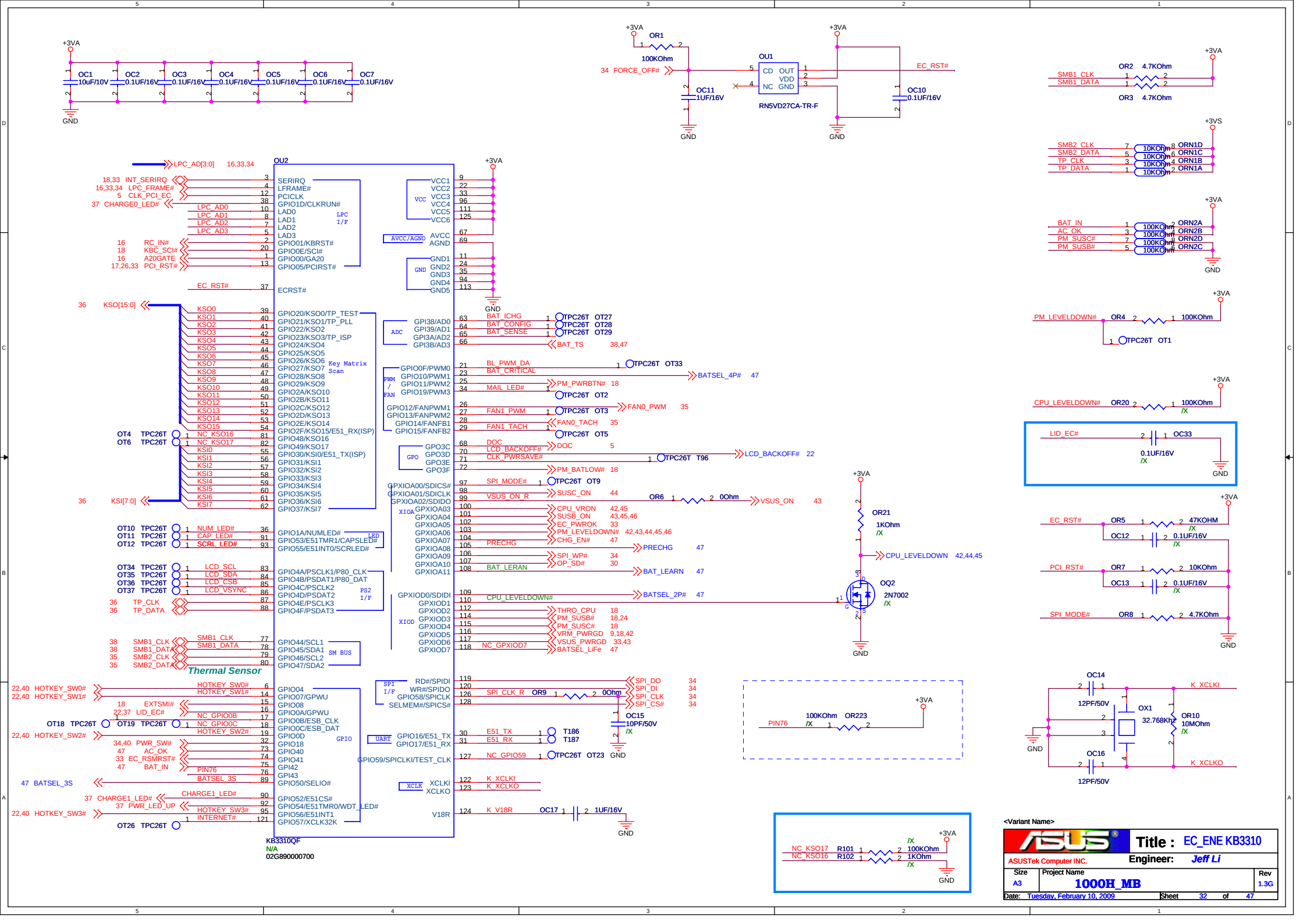
| | | |
|---|---|---|
| ASUSTek Computer Inc. | Title : AU6336-C52 | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 29 of 47 | |

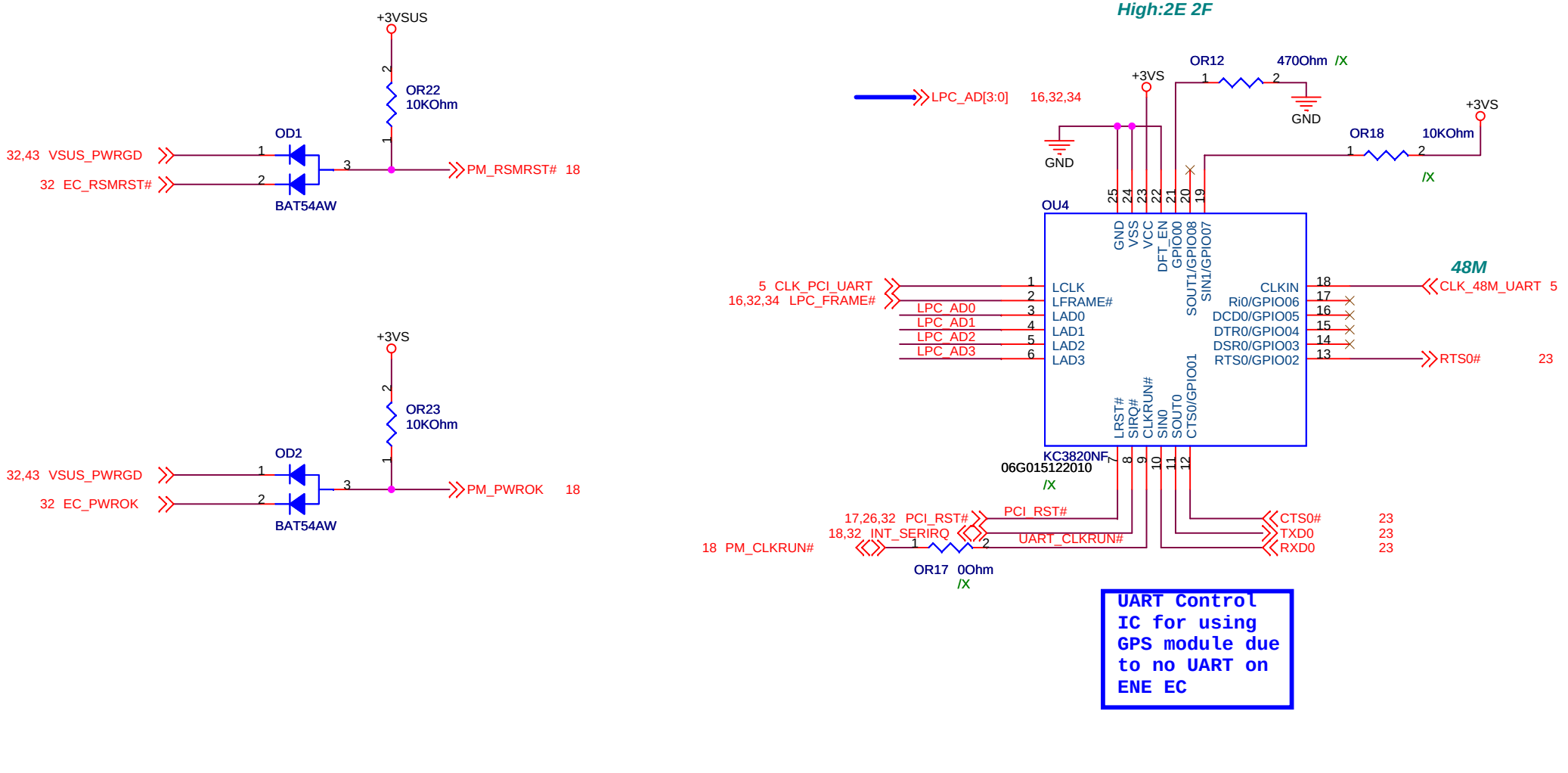

AC93 0.1UF/16V GND AGND
AC94 0.1UF/16V GND AGND
AC95 0.1UF/16V GND AGND
Return Path
+5VS AR34 0Ohm N/A +5V_AMP >30mil 綁 PIN39 +5VS_AUDIO
AC91 10uF/10V AC92 0.1UF/16V AC89 10uF/10V AC90 0.1UF/16V
綁 PIN46
DMIC_CLK_R EC118 0.1UF/16V /X
AU15B ALC269Q-GR
GND1 GND2 GND3 GND4 GND5 GND6 GND7 GND8 GND9
INTSPKR+ INTSPKR- INTSPKL- INTSPKL+
+3VS AR63 0Ohm r0603_h24 +3V_CODEC 綁 Codec被ㄎ
AC65 10uF/10V AC66 0.1UF/16V AC67 0.1UF/16V
AU15A ALC269Q-GR 02G611005505
GND SPDIFO EAPD/SPDIFO2 PVDD2 SPK_OUT_R+ SPK_OUT_R- PVSS2 PVSS1 SPK_OUT_L- SPK_OUT_L+ PVDD1 AVDD2 AVSS2
DVDD GPIO0/DMIC_DATA GPIO1/DMIC_CLK PD# SDATA_OUT BCLK DVSS SDATA_IN DVDD_IO SYNC RESET# PCBEEP
CBP CBN CPVEE HPOUT_R HPOUT_L CPVREF MIC1_VREFO_R MIC2_VREFO MIC1_VREFO_L VREF AVSS1 AVDD1
AC96 2.2UF/16V AC76 2.2UF/16V
HEADPHONE_R HEADPHONE_L MIC1_VREFOUT_R MIC1_VREFOUT_L
VREF_CODEC AC59 10uF/10V AC60 0.1UF/16V
SenseA LINE2_L LINE2_R MIC2_L MIC2_R SenseB JDREF MONO_OUT MIC1_L MIC1_R LINE1_L LINE1_R
JEREF AR98 20KOhm 1%
31 DMIC_DATA 31 DMIC_CLK AR103 0Ohm DMIC_CLK_R PD#
16 A_Z_SDOUT 16 A_Z_BITCLK 16 A_Z_SDIN0 16 A_Z_SYNC 16 A_Z_RST#
AR1 33Ohm A_Z_SDIN0_R
32 OP_SD#
OP_SD#: Controlled by EC to power down Class-D speaker amp.
Analog: Pin.13~Pin.38
Digital: Pin.1~Pin.12
and Pin.39~Pin.48
+5VS_AUDIO +3VS
Audio power sequence requirement
PD#: Internal Pull-up 50K to +3V
AD12 BAT54AW A_Z_RST# PD# AC169 100PF/50V /X
AC202 AC203 1UF/16V /X 3G_R_A 23
MIC1_R MIC1_L
AC61 AC62 4.7UF/10V 4.7UF/10V MIC1_C_R MIC1_C_L
Need 4.7u/10v X5R to prevent poor THD+N
AC204 1UF/16V /X 3G_MIC 23,31
R1.3G
+5VS +5VS_AUDIO AL124 /X 70Ohm/100Mhz
AL124 closed to AC75
AR60 39.2KOhm 1% EAR_SW# 31
SENSE_A AR58 20KOhm 1% MIC_SW# 31
+5VS AU31 UP7714BMA5-00 N/A EN NC/SS/FB GND VIN VOUT
Vout=0.8*(1+(7.32K/1.5K))
APC1 1000PF/16V N/A AL24 0Ohm r0603_h24 +5VS_AUDIO
AC74 0.1UF/16V /X
AC71 10uF/10V AC142 10uF/10V /X AC72 0.1UF/16V AC73 0.1UF/16V
綁 Codec被ㄎ
AR69 7.32KOhm 1% AR15 1.5KOhm 1% r0402 AC75 1UF/16V
For Audio Noise Issue
<Variant Name>
Title : ALC269-1
ASUSTek Computer Inc. Engineer: Jeff Li
Size A3 Project Name 1000H_MB Rev 1.3G
Date: Tuesday, February 10, 2009 Sheet 30 of 47




<Variant Name>

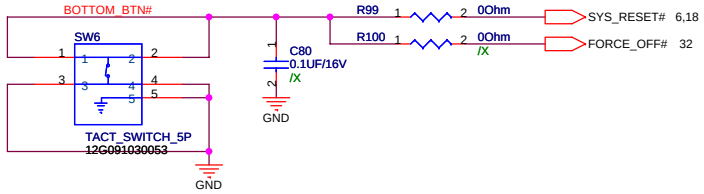
| | | |
|---|---|---|
| ASUSTek Computer Inc. | Title : ALC269-2 | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 31 of 47 | |

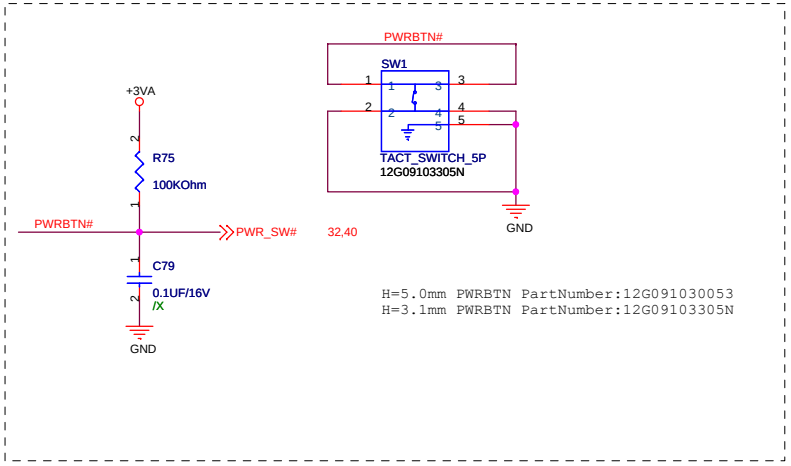

OU2
KB3310QF
N/A
02G890000700
Thermal Sensor
RN5VD27CA-TR-F
Key Matrix Scan
LPC I/F
PS2 I/F
SM BUS
LED
ADC
PWM / FAN
GPO
SPI I/F
UART
XCLK
XIOA
XIOD
Title : EC_ENE KB3310
ASUSTek Computer INC.
Engineer: Jeff Li
Size A3
Project Name 1000H_MB
Rev 1.3G
Date: Tuesday, February 10, 2009
Sheet 32 of 47

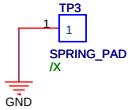



<Variant Name>

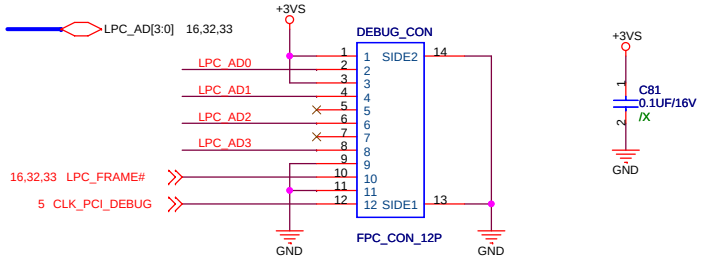
| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : EC_UART_KC3820 | |
| | Engineer: Jeff Li | |
| Size: A4 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 33 of 47 | |



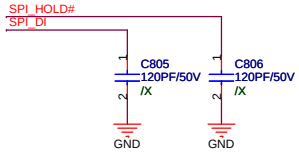

## For Debug

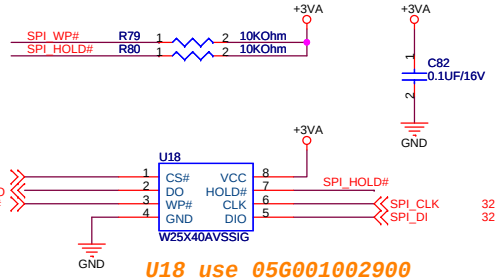






**Debug Card cable use Z96 Touch Pad cable, P/N: 14G124110126, 14G124110120, 14G124110121 14G124110124, 14G124110125**

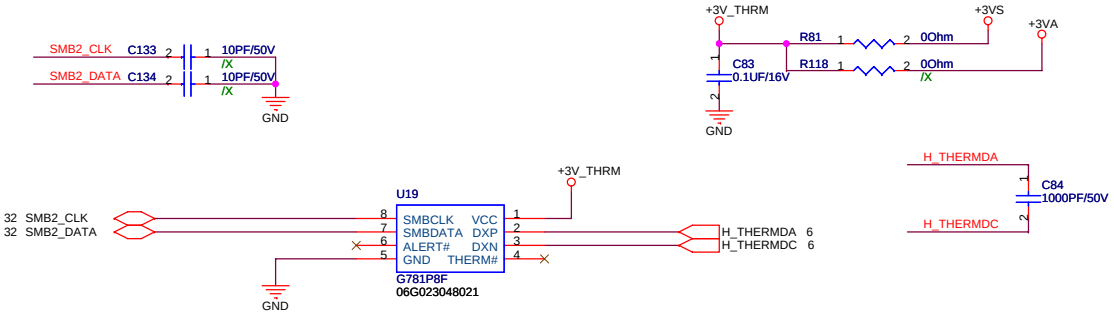


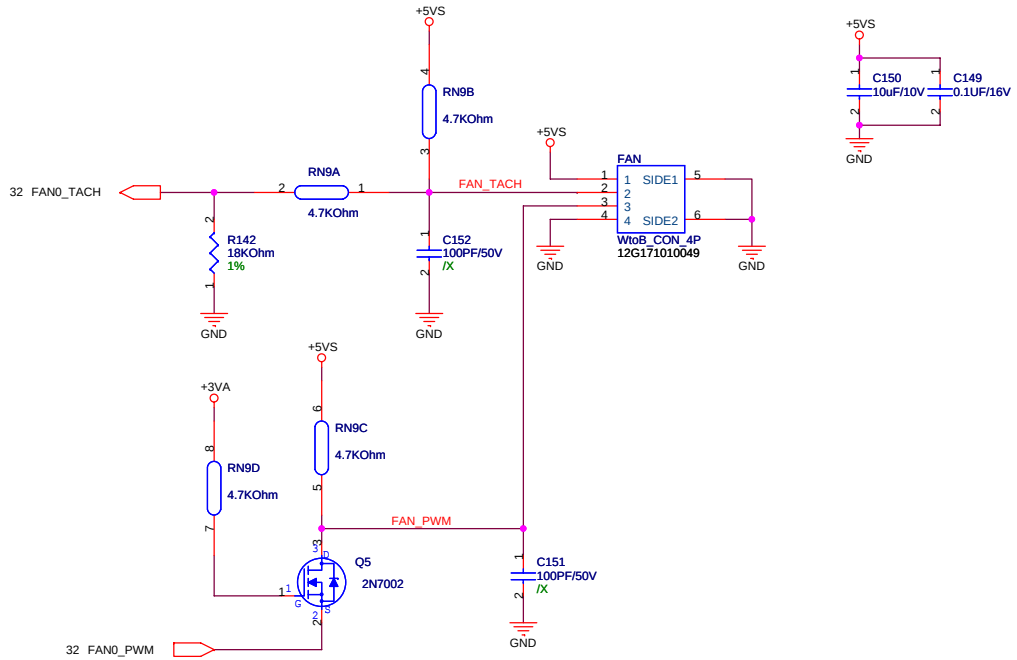

**U18 use 05G001002900 & 05G00100F130**

<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : Switch_SPI ROM_Debug | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 34 of 52 | |




**U19 use 06G023048021**

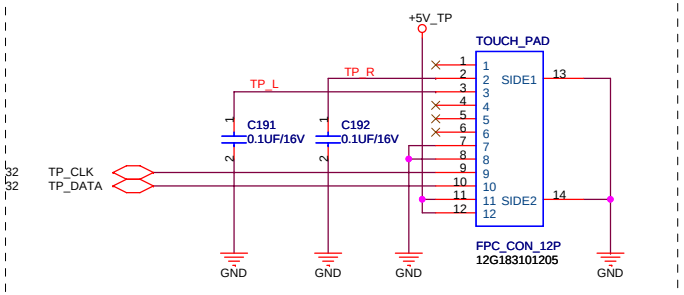



<Variant Name>

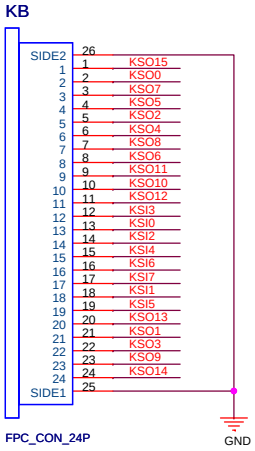
| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : Thermal Sensor_FAN | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 35 of 52 | |

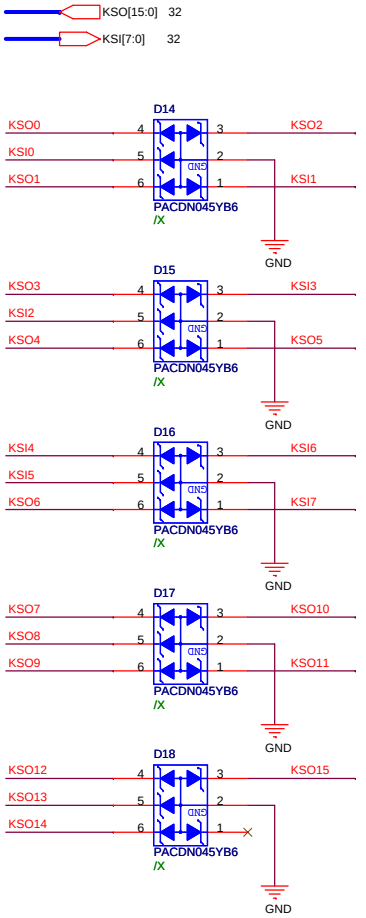
## For Touch-Pad

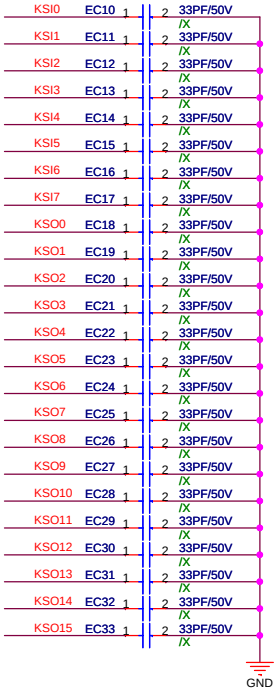
P900 R1.0G



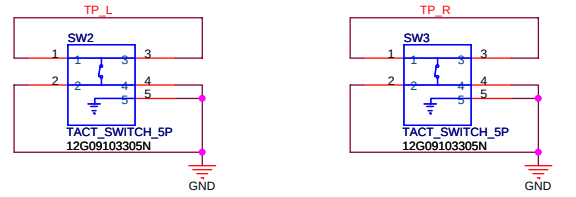

## For Keyboard Connector

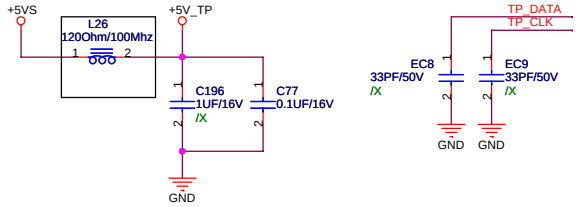


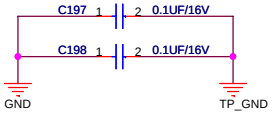

## SW2, SW3 use 12G09103305N

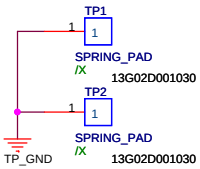






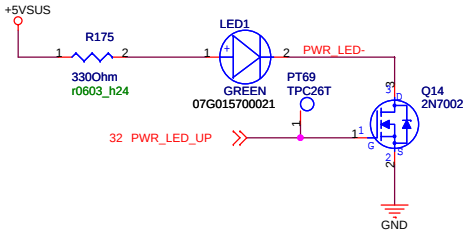


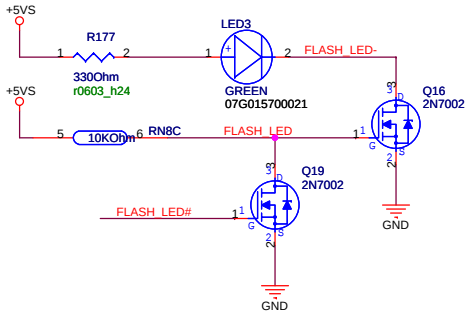

<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : KB_Touch Pad | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 36 of 52 | |

## for POWER LED

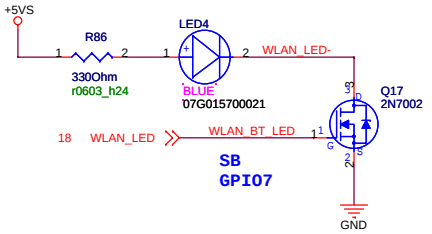



## for FLASH LED

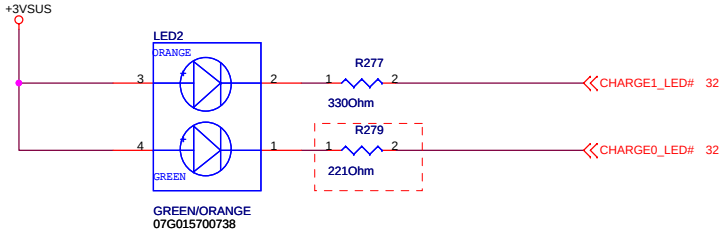


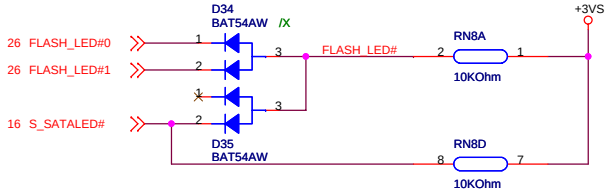

## for WLAN/BlueTooth LED

R86 use 4.7K OHm 10G213472003030

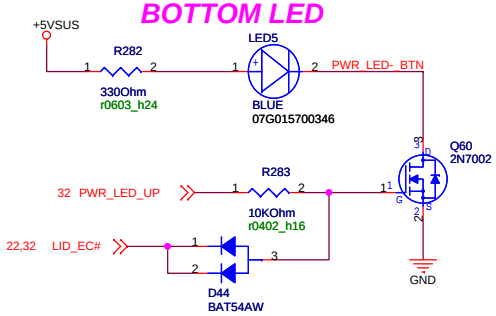



## for CHARGE LED



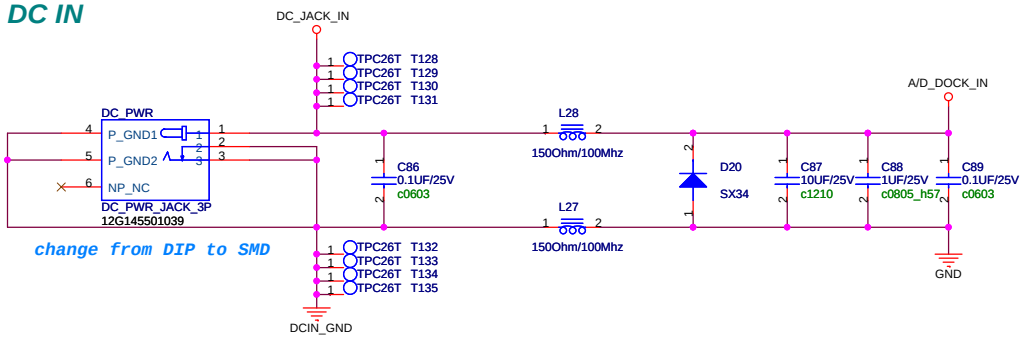

## for POWER BOTTOM LED



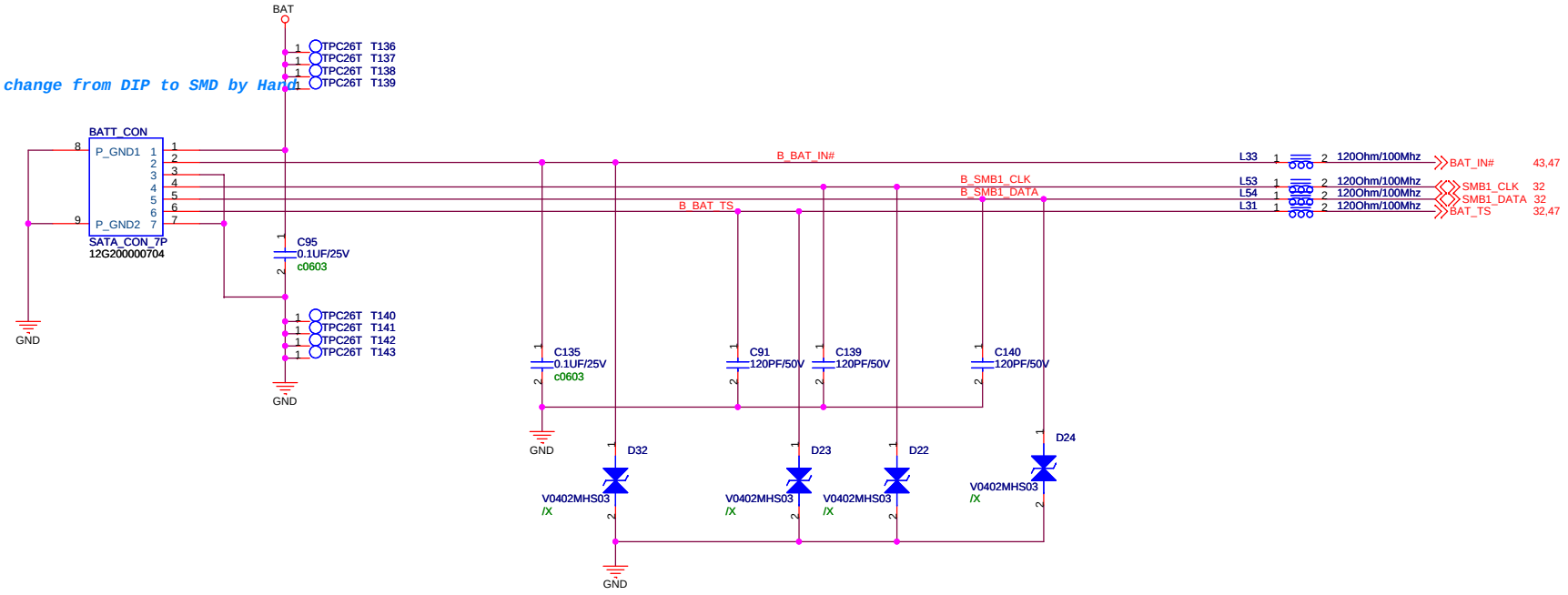

<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : LED | |
| | Engineer: Kell_Huang | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 37 of 47 | |

## DC IN

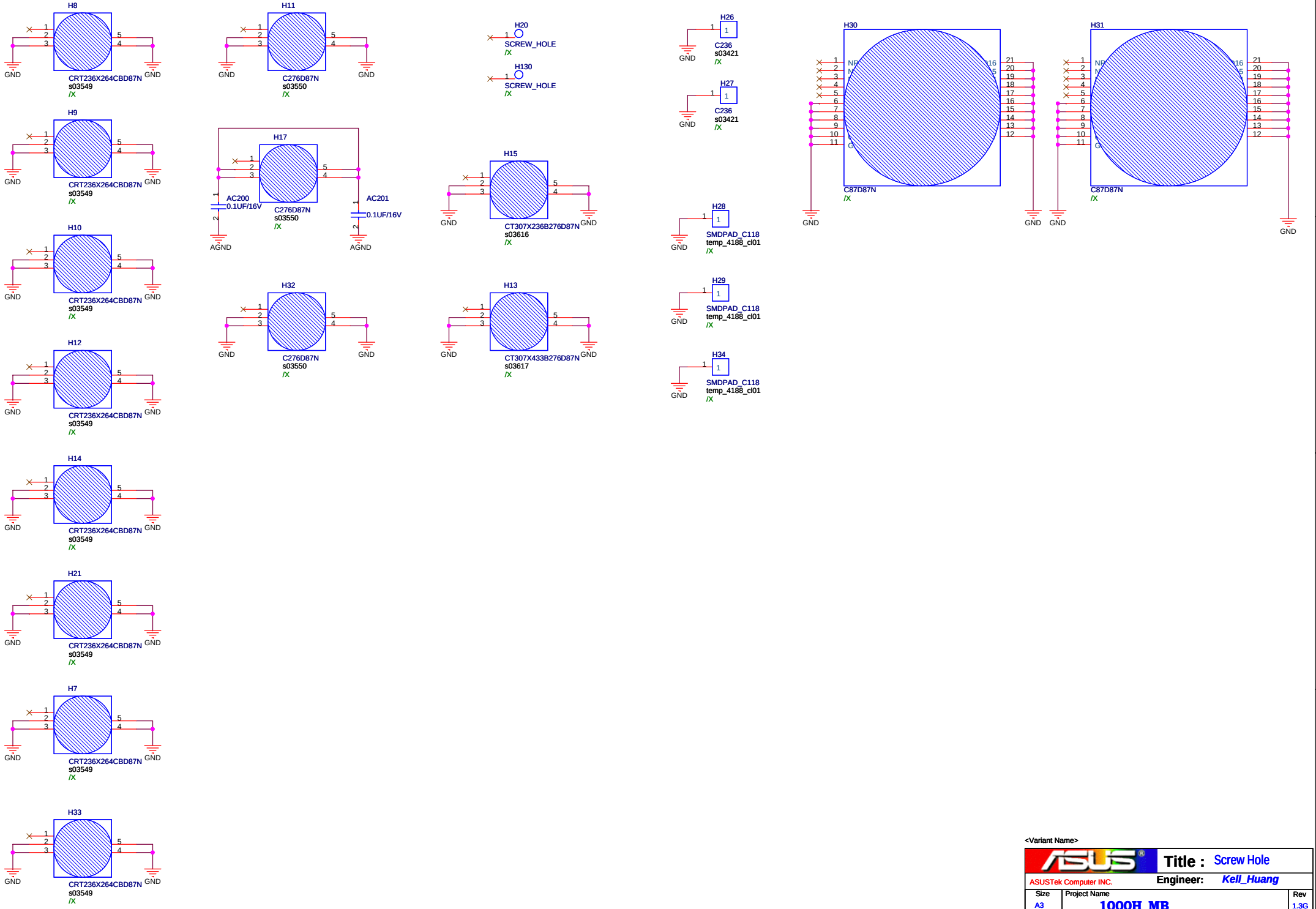



## BAT IN




<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : PWR Jack | |
| | Engineer: Jeff Li | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 38 of 52 | |




<Variant Name>

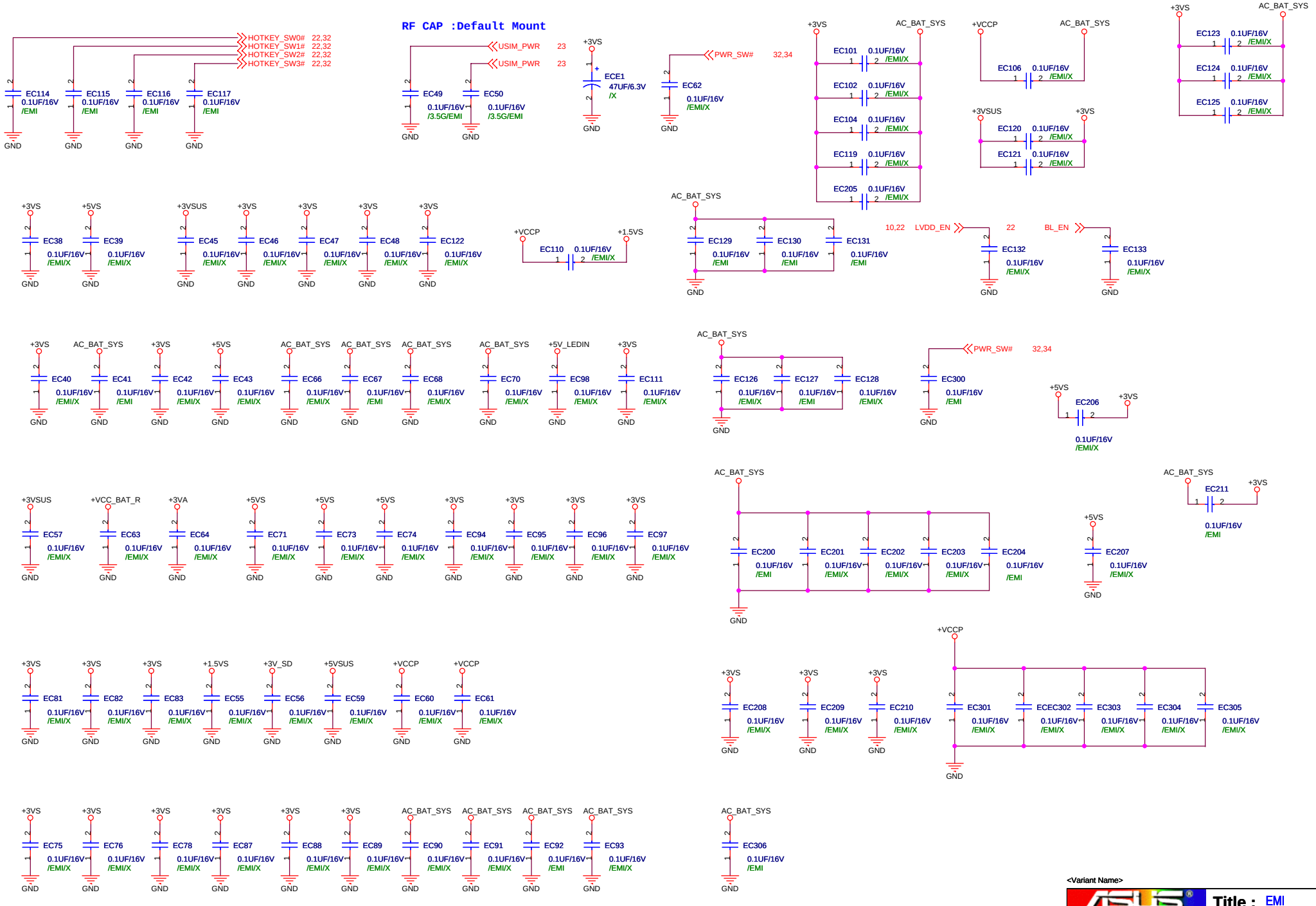
ASUSTek Computer INC.

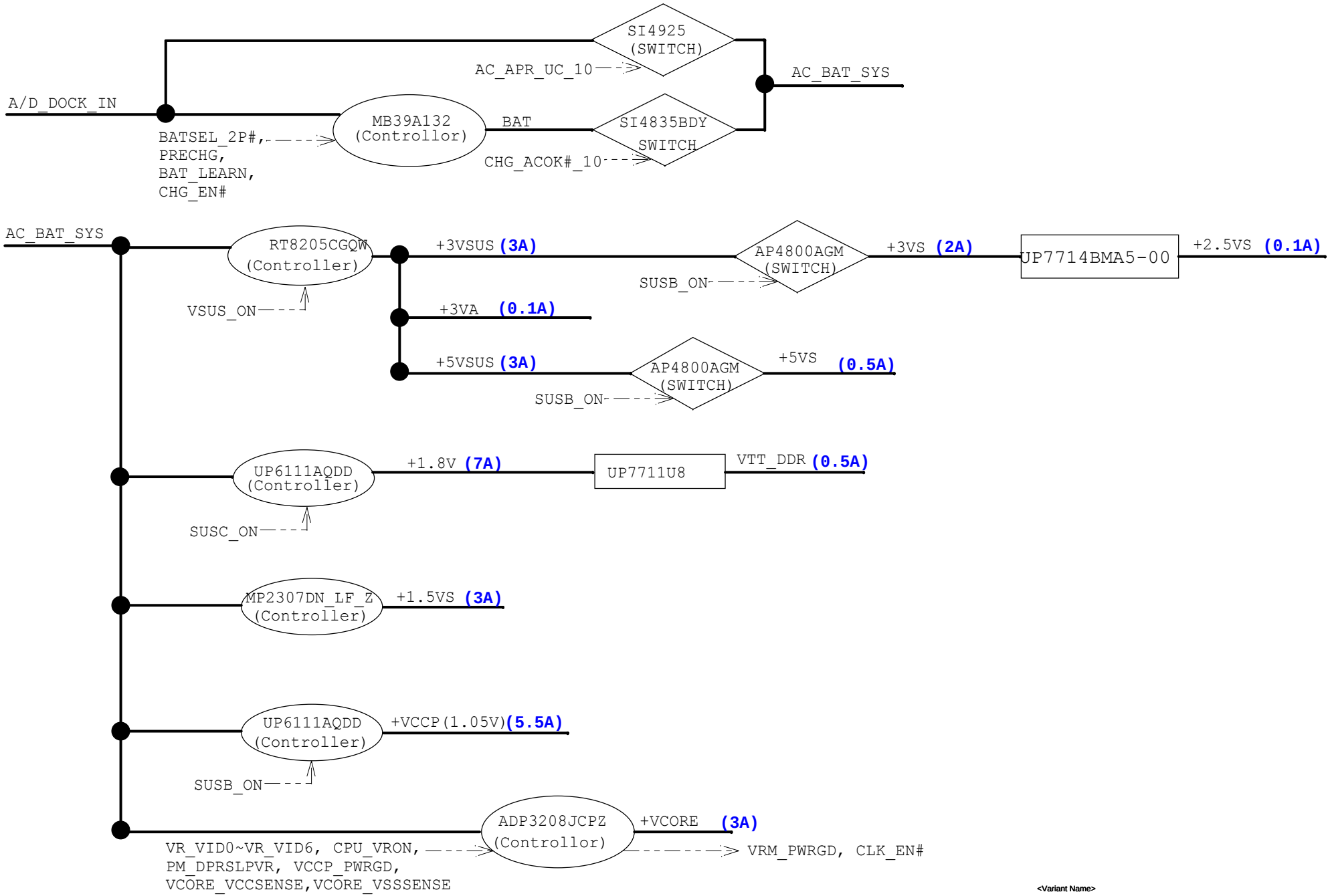
Title : Screw Hole

Engineer: Kell_Huang

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

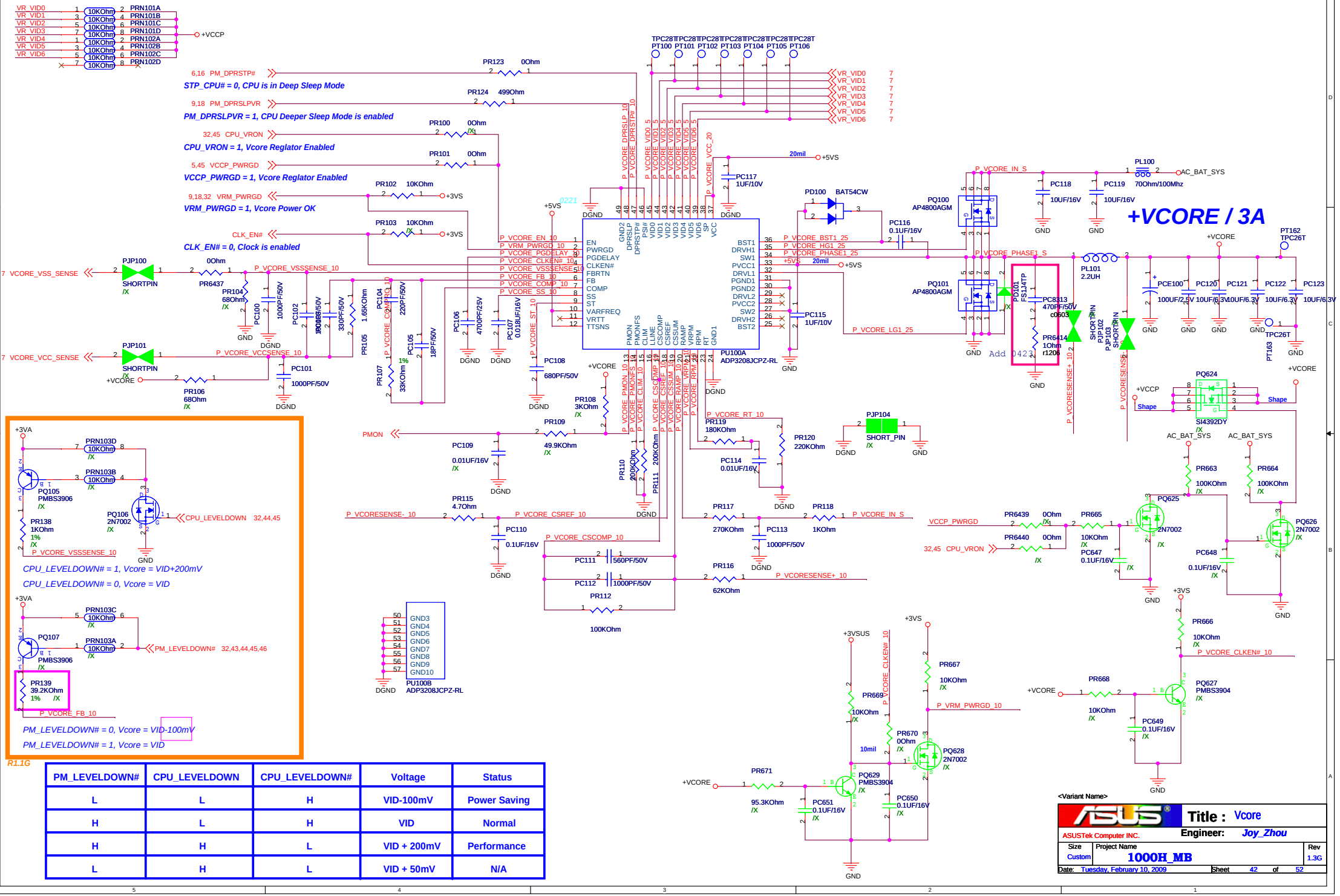
Date: Tuesday, February 10, 2009 Sheet 39 of 47


RF CAP :Default Mount
HOTKEY_SW0# 22,32
HOTKEY_SW1# 22,32
HOTKEY_SW2# 22,32
HOTKEY_SW3# 22,32
EC114 0.1UF/16V /EMI
EC115 0.1UF/16V /EMI
EC116 0.1UF/16V /EMI
EC117 0.1UF/16V /EMI
USIM_PWR 23
USIM_PWR 23
EC49 0.1UF/16V /3.5G/EMI
EC50 0.1UF/16V /3.5G/EMI
+3VS
ECE1 47UF/6.3V /X
PWR_SW# 32,34
EC62 0.1UF/16V /EMI/X
EC101 0.1UF/16V /EMI/X
EC102 0.1UF/16V /EMI/X
EC104 0.1UF/16V /EMI/X
EC119 0.1UF/16V /EMI/X
EC205 0.1UF/16V /EMI/X
+VCCP
EC106 0.1UF/16V /EMI/X
+3VSUS
EC120 0.1UF/16V /EMI/X
EC121 0.1UF/16V /EMI/X
EC123 0.1UF/16V /EMI/X
EC124 0.1UF/16V /EMI/X
EC125 0.1UF/16V /EMI/X
+5VS
EC38 0.1UF/16V /EMI/X
EC39 0.1UF/16V /EMI/X
EC45 0.1UF/16V /EMI/X
EC46 0.1UF/16V /EMI/X
EC47 0.1UF/16V /EMI/X
EC48 0.1UF/16V /EMI/X
EC122 0.1UF/16V /EMI/X
+1.5VS
EC110 0.1UF/16V /EMI/X
EC129 0.1UF/16V /EMI
EC130 0.1UF/16V /EMI
EC131 0.1UF/16V /EMI
10,22 LVDD_EN
22 BL_EN
EC132 0.1UF/16V /EMI/X
EC133 0.1UF/16V /EMI/X
AC_BAT_SYS
EC40 0.1UF/16V /EMI/X
EC41 0.1UF/16V /EMI
EC42 0.1UF/16V /EMI/X
EC43 0.1UF/16V /EMI/X
EC66 0.1UF/16V /EMI/X
EC67 0.1UF/16V /EMI
EC68 0.1UF/16V /EMI/X
EC70 0.1UF/16V /EMI/X
+5V_LEDIN
EC98 0.1UF/16V /EMI/X
EC111 0.1UF/16V /EMI/X
EC126 0.1UF/16V /EMI/X
EC127 0.1UF/16V /EMI
EC128 0.1UF/16V /EMI/X
EC300 0.1UF/16V /EMI
EC206 0.1UF/16V /EMI/X
+VCC_BAT_R
+3VA
EC57 0.1UF/16V /EMI/X
EC63 0.1UF/16V /EMI/X
EC64 0.1UF/16V /EMI/X
EC71 0.1UF/16V /EMI/X
EC73 0.1UF/16V /EMI/X
EC74 0.1UF/16V /EMI/X
EC94 0.1UF/16V /EMI/X
EC95 0.1UF/16V /EMI/X
EC96 0.1UF/16V /EMI/X
EC97 0.1UF/16V /EMI/X
EC200 0.1UF/16V /EMI
EC201 0.1UF/16V /EMI/X
EC202 0.1UF/16V /EMI/X
EC203 0.1UF/16V /EMI/X
EC204 0.1UF/16V /EMI
EC211 0.1UF/16V /EMI
EC207 0.1UF/16V /EMI/X
+1.5VS
+3V_SD
+5VSUS
+VCCP
EC81 0.1UF/16V /EMI/X
EC82 0.1UF/16V /EMI/X
EC83 0.1UF/16V /EMI/X
EC55 0.1UF/16V /EMI/X
EC56 0.1UF/16V /EMI/X
EC59 0.1UF/16V /EMI/X
EC60 0.1UF/16V /EMI/X
EC61 0.1UF/16V /EMI/X
EC208 0.1UF/16V /EMI/X
EC209 0.1UF/16V /EMI/X
EC210 0.1UF/16V /EMI/X
EC301 0.1UF/16V /EMI/X
ECEC302 0.1UF/16V /EMI/X
EC303 0.1UF/16V /EMI/X
EC304 0.1UF/16V /EMI/X
EC305 0.1UF/16V /EMI/X
EC75 0.1UF/16V /EMI/X
EC76 0.1UF/16V /EMI/X
EC78 0.1UF/16V /EMI/X
EC87 0.1UF/16V /EMI/X
EC88 0.1UF/16V /EMI/X
EC89 0.1UF/16V /EMI/X
EC90 0.1UF/16V /EMI/X
EC91 0.1UF/16V /EMI/X
EC92 0.1UF/16V /EMI
EC93 0.1UF/16V /EMI/X
EC306 0.1UF/16V /EMI
GND
<Variant Name>
Title : EMI
ASUSTek Computer INC.
Engineer: Kell_Huang
Size A3
Project Name 1000H_MB
Rev 1.3G
Date: Tuesday, February 10, 2009
Sheet 40 of 50

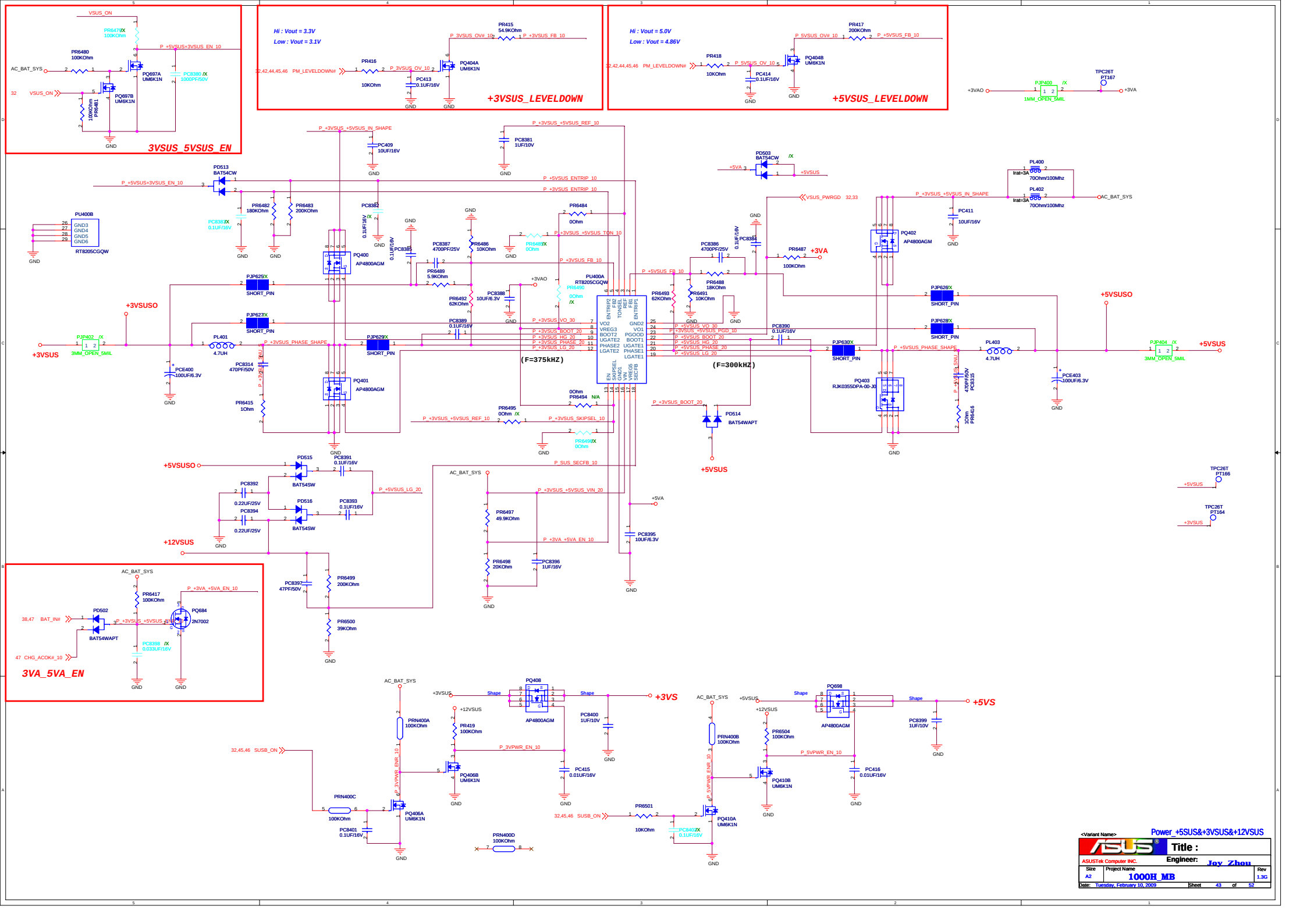


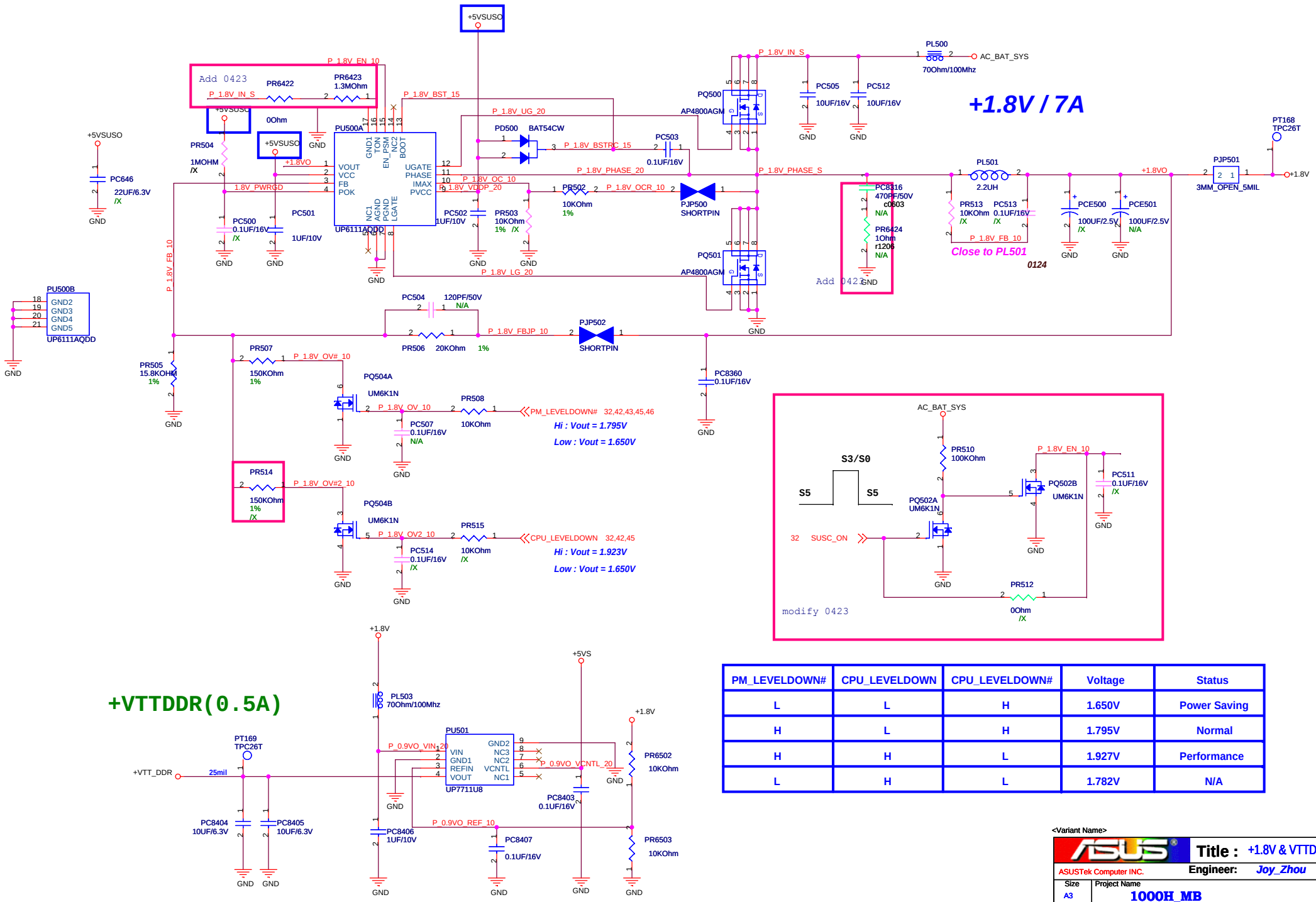

<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : Power Flow | |
| | Engineer: Joy_Zhou | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 41 of 52 | |




| PM_LEVELDOWN# | CPU_LEVELDOWN | CPU_LEVELDOWN# | Voltage | Status |
|---|---|---|---|---|
| L | L | H | VID-100mV | Power Saving |
| H | L | H | VID | Normal |
| H | H | L | VID + 200mV | Performance |
| L | H | L | VID + 50mV | N/A |


3VSUS_5VSUS_EN
Hi : Vout = 3.3V
Low : Vout = 3.1V
+3VSUS_LEVELDOWN
Hi : Vout = 5.0V
Low : Vout = 4.86V
+5VSUS_LEVELDOWN
(F=375kHz)
(F=300kHz)
3VA_5VA_EN
Power_+5SUS&+3VSUS&+12VSUS
Title :
ASUSTek Computer INC.
Engineer: Joy_Zhou
1000H_MB
Tuesday, February 10, 2009




| PM_LEVELDOWN# | CPU_LEVELDOWN | CPU_LEVELDOWN# | Voltage | Status |
|---|---|---|---|---|
| L | L | H | 1.650V | Power Saving |
| H | L | H | 1.795V | Normal |
| H | H | L | 1.927V | Performance |
| L | H | L | 1.782V | N/A |

<Variant Name>

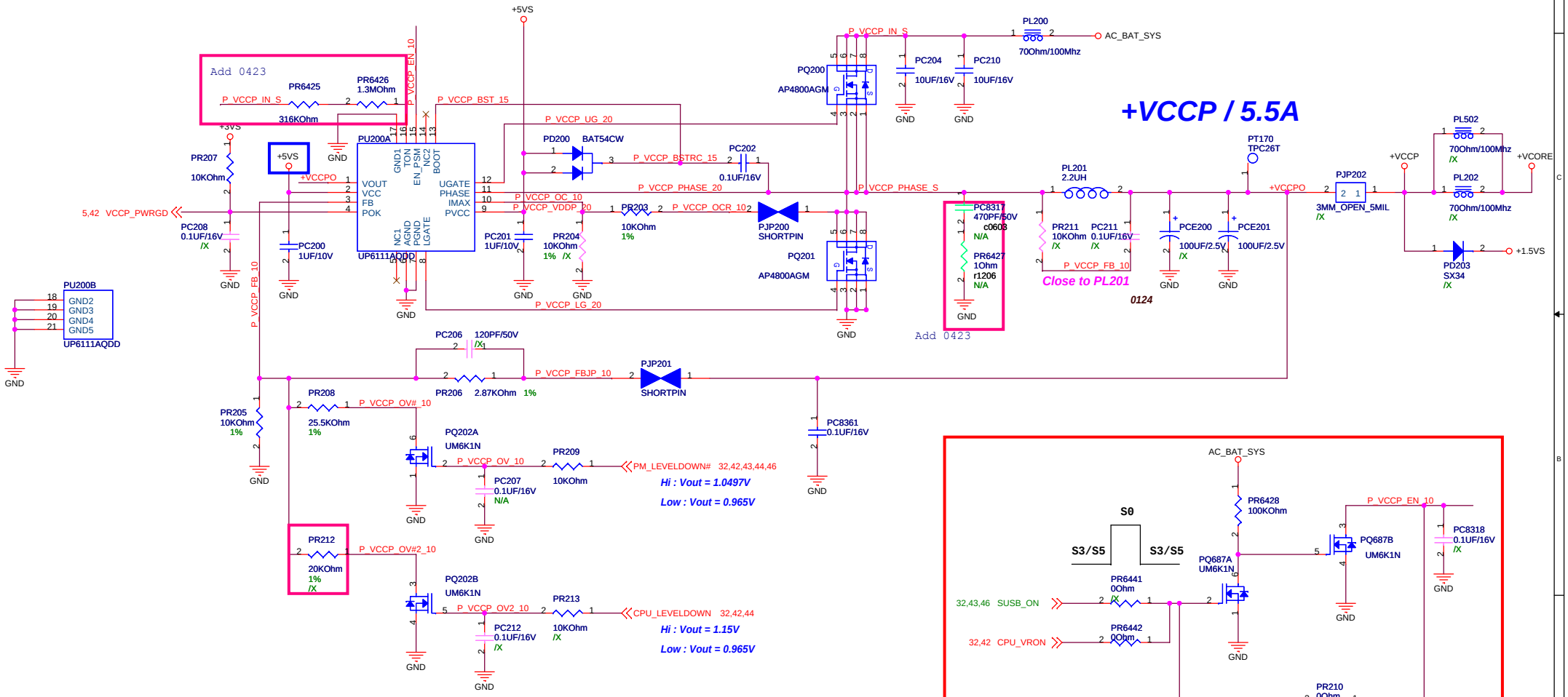
ASUSTek Computer INC.

Title : +1.8V & VTTDDR

Engineer: Joy_Zhou

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

Date: Tuesday, February 10, 2009 Sheet 44 of 52




| PM_LEVELDOWN# | CPU_LEVELDOWN | CPU_LEVELDOWN# | Voltage | Status |
|---|---|---|---|---|
| L | L | H | 0.965V | Power Saving |
| H | L | H | 1.048V | Normal |
| H | H | L | 1.157V | Performance |
| L | H | L | N/A | |

<Variant Name>

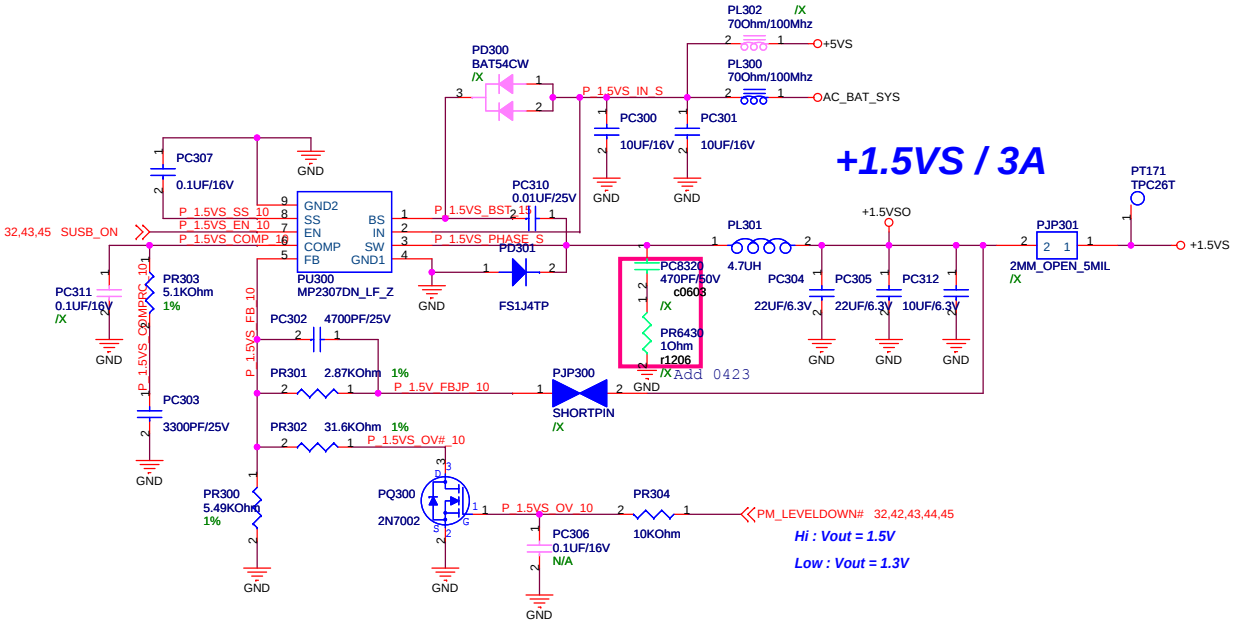
ASUSTek Computer INC.

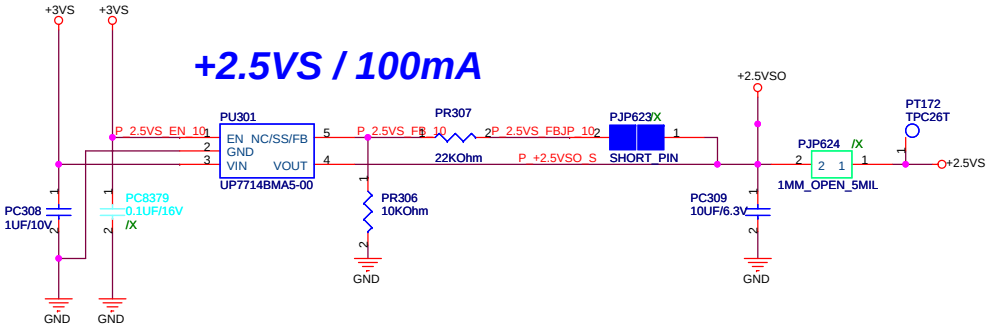
Title : VCCP

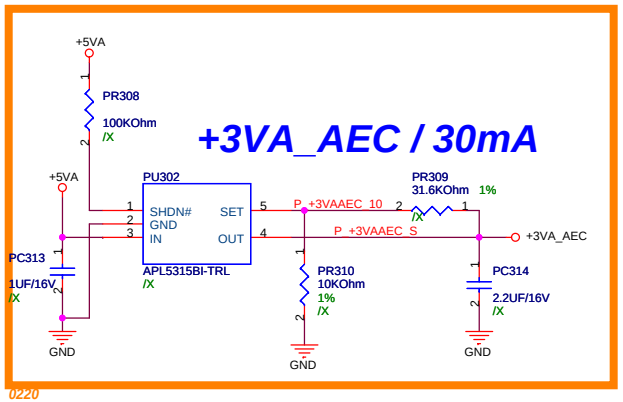
Engineer: Joy_Zhou

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

Date: Tuesday, February 10, 2009 Sheet 45 of 52

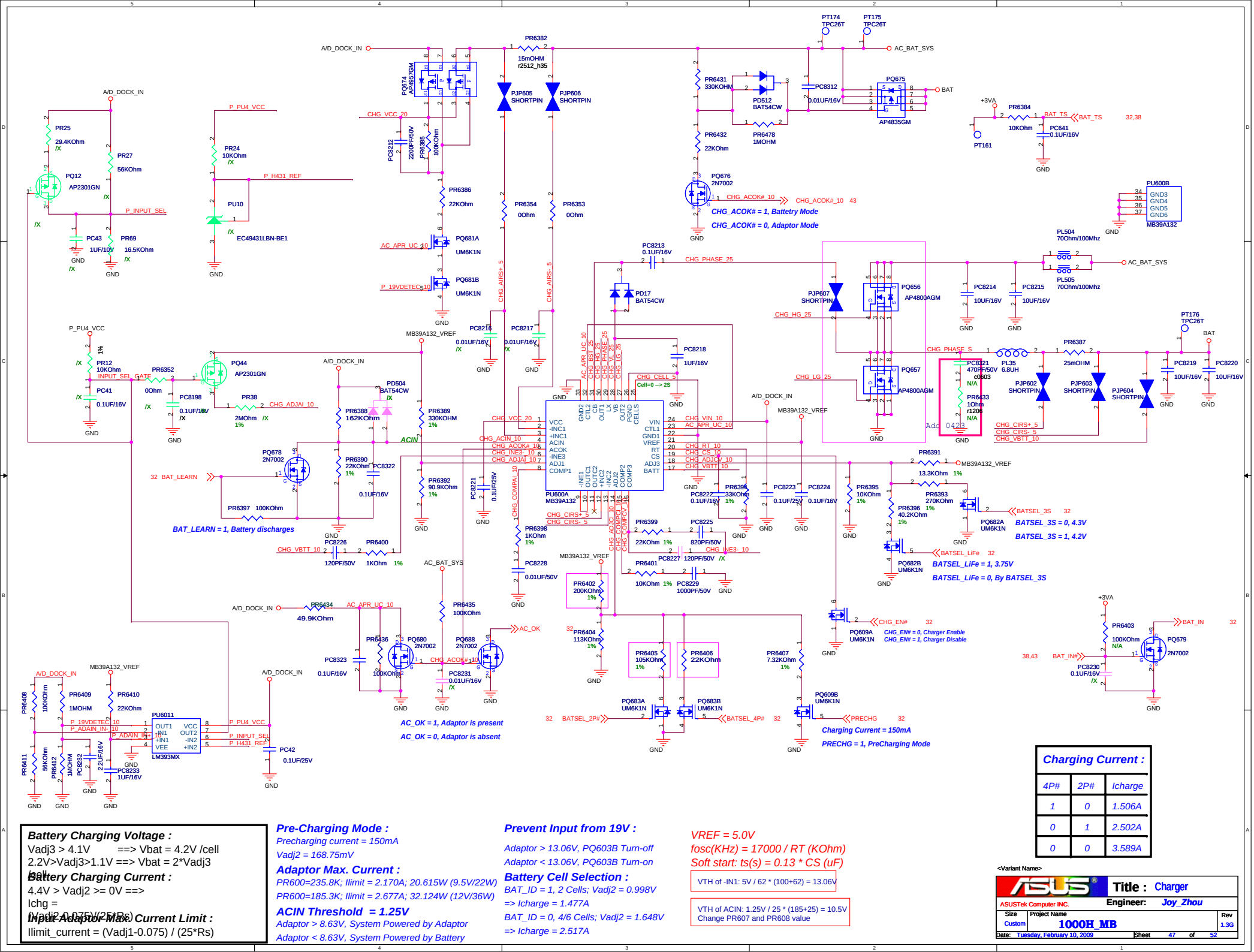



<variant_name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : +1.5VS & +2.5VS | |
| | Engineer: Joy_Zhou | |
| Size: A3 | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 46 of 52 | |




| Charging Current : | | |
|---|---|---|
| 4P# | 2P# | Icharge |
| 1 | 0 | 1.506A |
| 0 | 1 | 2.502A |
| 0 | 0 | 3.589A |

**Battery Charging Voltage :**
Vadj3 > 4.1V ==> Vbat = 4.2V /cell
2.2V>Vadj3>1.1V ==> Vbat = 2*Vadj3 /cell

**Battery Charging Current :**
4.4V > Vadj2 >= 0V ==>
Ichg =
(Vadj2-0.075V)/(25*Rs)

**Input Adaptor Max. Current Limit :**
Ilimit_current = (Vadj1-0.075) / (25*Rs)

**Pre-Charging Mode :**
Precharging current = 150mA
Vadj2 = 168.75mV

**Adaptor Max. Current :**
PR600=235.8K; Ilimit = 2.170A; 20.615W (9.5V/22W)
PR600=185.3K; Ilimit = 2.677A; 32.124W (12V/36W)

**ACIN Threshold = 1.25V**
Adaptor > 8.63V, System Powered by Adaptor
Adaptor < 8.63V, System Powered by Battery

**Prevent Input from 19V :**
Adaptor > 13.06V, PQ603B Turn-off
Adaptor < 13.06V, PQ603B Turn-on

**Battery Cell Selection :**
BAT_ID = 1, 2 Cells; Vadj2 = 0.998V
=> Icharge = 1.477A
BAT_ID = 0, 4/6 Cells; Vadj2 = 1.648V
=> Icharge = 2.517A

VREF = 5.0V
fosc(KHz) = 17000 / RT (KOhm)
Soft start: ts(s) = 0.13 * CS (uF)

VTH of -IN1: 5V / 62 * (100+62) = 13.06V

VTH of ACIN: 1.25V / 25 * (185+25) = 10.5V
Change PR607 and PR608 value

<Variant Name>

| | | |
|---|---|---|
| ASUSTek Computer INC. | Title : Charger | |
| | Engineer: Joy_Zhou | |
| Size: Custom | Project Name: 1000H_MB | Rev: 1.3G |
| Date: Tuesday, February 10, 2009 | Sheet 47 of 52 | |

## EC KB3310 GPIO SETTING

| Pin | Pin Name | Signal Name | Type | Note |
|---|---|---|---|---|
| 1 | GPIO00/GA20 | A20GATE | O | |
| 2 | GPIO01/KBRST# | RC_IN# | O | |
| 6 | GPIO04 | EMAIL_SW# | I | Internal pull high |
| 13 | GPIO05/PCIRST# | PCI_RST# | I | |
| 14 | GPIO07 | BAT_OTP | I | Battery over temperature |
| 15 | GPIO08 | EXTSMI# | OD | 10K pull high to +3VSB |
| 16 | GPIO0A | LID_EC# | I | Internal pull high |
| 17 | GPIO0B/ESB_CLK | NC | O | |
| 18 | GPIO0C/ESB_DAT | NC | O | |
| 19 | GPIO0D | DISTP_SW# | I | Internal pull high |
| 20 | GPIO0E/SCI# | EXT_SCI# | O | 10K pull high to +3VSB |
| 21 | GPIO0F/PWM0 | BL_PWM_DA | O | |
| 23 | GPIO10/PWM1 | BAT_CRITICAL | I | Battery critical capacity |
| 25 | GPIO11/PWM2 | PM_PWRBTN# | OD | Internal pull high in ICH |
| 26 | GPIO12/FANPWM1 | FAN0_PWM | O | CPU Fan |
| 27 | GPIO13/FANPWM2 | FAN1_PWM | O | VGA Fan |
| 28 | GPIO14/FANFB1 | FAN0_TACH | I | CPU FanTach |
| 29 | GPIO15/FANFB2 | FAN1_TACH | I | VGA FanTach |
| 30 | GPIO16/E51_TX | E51_TX | O | RS232 debug port |
| 31 | GPIO17/E51_RX | E51_RX | I | RS232 debug port |
| 32 | GPIO18 | PWR_SW# | I | Internal pull high |
| 34 | GPIO19/PWM3 | MAIL_LED# | O | |
| 36 | GPIO1A/NUMLED | NUM_LED# | O | |
| 38 | GPIO1D/CLKRUN# | NC | O | |
| 39 | GPIO20/KSO0/TP_TEST | KSO0 | O | |
| 40 | GPIO21/KSO1/TP_PLL | KSO1 | O | |
| 41 | GPIO22/KSO2 | KSO2 | O | |
| 42 | GPIO23/KSO3 | KSO3 | O | |
| 43 | GPIO24/KSO4 | KSO4 | O | |
| 44 | GPIO25/KSO5 | KSO5 | O | |
| 45 | GPIO26/KSO6 | KSO6 | O | |
| 46 | GPIO27/KSO7 | KSO7 | O | |
| 47 | GPIO28/KSO8 | KSO8 | O | |
| 48 | GPIO29/KSO9 | KSO9 | O | |
| 49 | GPIO2A/KSO10 | KSO10 | O | |
| 50 | GPIO2B/KSO11 | KSO11 | O | |
| 51 | GPIO2C/KSO12 | KSO12 | O | |
| 52 | GPIO2D/KSO13 | KSO13 | O | |
| 53 | GPIO2E/KSO14 | KSO14 | O | |
| 54 | GPIO2F/KSO15 | KSO15 | O | |
| 55 | GPIO30/KSI0 | KSI0 | I | Internal pull high |
| 56 | GPIO31/KSI1 | KSI1 | I | Internal pull high |
| 57 | GPIO32/KSI2 | KSI2 | I | Internal pull high |
| 58 | GPIO33/KSI3 | KSI3 | I | Internal pull high |
| 59 | GPIO34/KSI4 | KSI4 | I | Internal pull high |
| 60 | GPIO35/KSI5 | KSI5 | I | Internal pull high |
| 61 | GPIO36/KSI6 | KSI6 | I | Internal pull high |
| 62 | GPIO37/KSI7 | KSI7 | I | Internal pull high |
| 63 | GPI38/AD0 | BAT_ICHG | I | |
| 64 | GPI39/AD1 | BAT_CONFIG | I | Battery configureation |
| 65 | GPIO3A/AD2 | BAT_SENSE | I | Battery Voltage Sensor |
| 66 | GPIO3B/AD3 | BAT_TS | I | Battery Thermal Sensor |
| 68 | GPO3C/DA0 | DOC | O | Trigger Clock Gen |

| Pin | Pin Name | Signal Name | Type | Note |
|---|---|---|---|---|
| 70 | GPO3D/DA1 | LCD_BACKOFF# | O | |
| 71 | GPO3E/DA2 | CLK_PWRSAVE# | O | |
| 72 | GPO3F/DA3 | BAT_LL# | O | Battery Low Low |
| 73 | GPIO40 | AC_OK | I | AC Adaptor Plug in |
| 74 | GPIO41 | PM_RSMRST# | O | 10K pull down to GND |
| 75 | GPI42 | BAT_IN | I | |
| 76 | GPI43 | CLRTC_EC | I | |
| 77 | GPIO44/SCL1 | SMB0_CLK | I/OD | 4.7K pull high to +3VA_EC |
| 78 | GPIO45/SDA1 | SMB0_DAT | I/OD | 4.7K pull high to +3VA_EC |
| 79 | GPIO46/SCL2 | SMB1_CLK | I/OD | 10K pull high to +3V |
| 80 | GPIO47/SDA2 | SMB1_DAT | I/OD | 10K pull high to +3V |
| 81 | GPIO48/KSO16 | KB pin 28 | I | for KB type detection |
| 82 | GPIO49/KSO17 | KB pin 27 | I | for KB type detection |
| 83 | GPIO4A/PSCLK1 | AUO_SCL | O | for AUO, default H at S0 |
| 84 | GPIO4B/PSDAT1 | AUO_SDA | O | for AUO, default L at S0 |
| 85 | GPIO4C/PSCLK2 | AUO_CSB | O | for AUO, default H at S0 |
| 86 | GPIO4D/PSDAT2 | LVDD_EN | I | for AUO 7" Panel |
| 87 | GPIO4E/PSCLK3 | TP_CLK | I/OD | 10K pull high to +3V |
| 88 | GPIO4F/PSDAT3 | TP_DAT | I/OD | 10K pull high to +3V |
| 89 | GPIO50/SELIO# | BATSEL_3S | O | Battery series, H:3S, L:4S |
| 90 | GPIO52/E51_CS# | CHG_LED_UP# | O | |
| 91 | GPIO53/CAPLED | CAP_LED# | O | |
| 92 | GPIO54 | PWR_LED_UP | O | |
| 93 | GPIO55/SCRLED | SCRL_LED# | O | |
| 95 | GPIO56 | PWR4G_SW# | I | Internal pull high |
| 97 | GPXOA00/SDICS# | SPI_MODE# | O | 4.7K pull down to GND |
| 98 | GPXOA01/SDICLK | SUSC_ON | O | |
| 99 | GPXOA02/SDIDO | VSUS_ON | O | |
| 100 | GPXOA03 | CPU_VRON | O | |
| 101 | GPXOA04 | SUSB_ON | O | |
| 102 | GPXOA05 | ICH_PWROK | O | |
| 103 | GPXOA06 | VOLT_CTRL | O | |
| 104 | GPXOA07 | CHG_EN# | O | Battery charging enabled |
| 105 | GPXOA08 | PRECHG | O | |
| 106 | GPXOA09 | SPI_WP# | O | |
| 107 | GPX0A10 | OP_SD# | O | Audio OP |
| 108 | GPXOA11 | BAT_LEARN | O | |
| 109 | GPXID0/SDIDI | BATSEL_2P# | O | Battery parallel, H:1P, L:2P~3P |
| 110 | GPXID1 | NC | O | |
| 112 | GPXID2 | THRO_CPU | O | Active if CPU temperature over spec |
| 114 | GPXID3 | SUSB# | I | 100K pull down to GND |
| 115 | GPXID4 | SUSC# | I | 100K pull down to GND |
| 116 | GPXID5 | CPUPWR_GD | I | Pull high to +3V |
| 117 | GPXID6 | VSUS_GD | I | |
| 118 | GPXID7 | NC | O | |
| 121 | GPIO57 | INTERNET# | I | Internal pull high |
| 126 | GPIO57/SPICLK | SPI_CLK | O | |
| 127 | GPIO59/TEST_CLK | NC | O | |

## EC KB3310 Other Pin SETTING

| Pin | Pin Name | Signal Name | Type | Note |
|---|---|---|---|---|
| 3 | SERIRQ | INT_SERIRQ | I/OD | 10K pull high to +3V |
| 4 | LFRAME# | LPC_FRAME# | I | |
| 5 | LAD3 | LPC_AD3 | I/O | |
| 7 | LAD2 | LPC_AD2 | I/O | |
| 8 | LAD1 | LPC_AD1 | I/O | |
| 9 | VCC | +3VA_EC | P | |
| 10 | LAD0 | LPC_AD0 | I/O | |
| 11 | GND | GND | P | |
| 12 | PCICLK | CLK_PCI_EC | I | |
| 22 | VCC | +3VA_EC | P | |
| 24 | GND | GND | P | |
| 33 | VCC | +3VA_EC | P | |
| 35 | GND | GND | P | |
| 37 | ECRST# | EC_RST# | I | 100K pull high to +3VA_EC |
| 67 | AVCC | +3VACC | P | |
| 69 | AGND | AGND | P | |
| 94 | GND | GND | P | |
| 96 | VCC | +3VA_EC | P | |
| 111 | VCC | +3VA_EC | P | |
| 113 | GND | GND | P | |
| 119 | RD#/SPIDI | SPI_SO | I | |
| 120 | WR#/SPIDO | SPI_SI | O | |
| 112 | XCLKI | 32KXCLKI | I | |
| 123 | XCLKO | 32KXCLKO | O | |
| 124 | V18R | V18R | P | Reserved 1uF to GND |
| 125 | VCC | +3VA_EC | P | |
| 128 | SPICS#/SELMEM# | SPI_CE# | O | |

<Variant Name>

ASUSTek Computer INC.

Title : EC Pin Define

Engineer: Satan He

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.1G |

Date: Tuesday, February 10, 2009 Sheet 50 of 52

<Variant Name>

Title : History

ASUSTek Computer INC.

Engineer: KingCa_Jin

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

Date: Tuesday, February 10, 2009 Sheet 51 of 52

D C B A

5 4 3 2 1

<Variant Name>

Title : History

ASUSTek Computer INC.

Engineer: KingCa_Jin

| Size | Project Name | Rev |
|---|---|---|
| A3 | 1000H_MB | 1.3G |

Date: Tuesday, February 10, 2009 Sheet 52 of 52