# UX31A2 SCHEMATIC Revision R2.0

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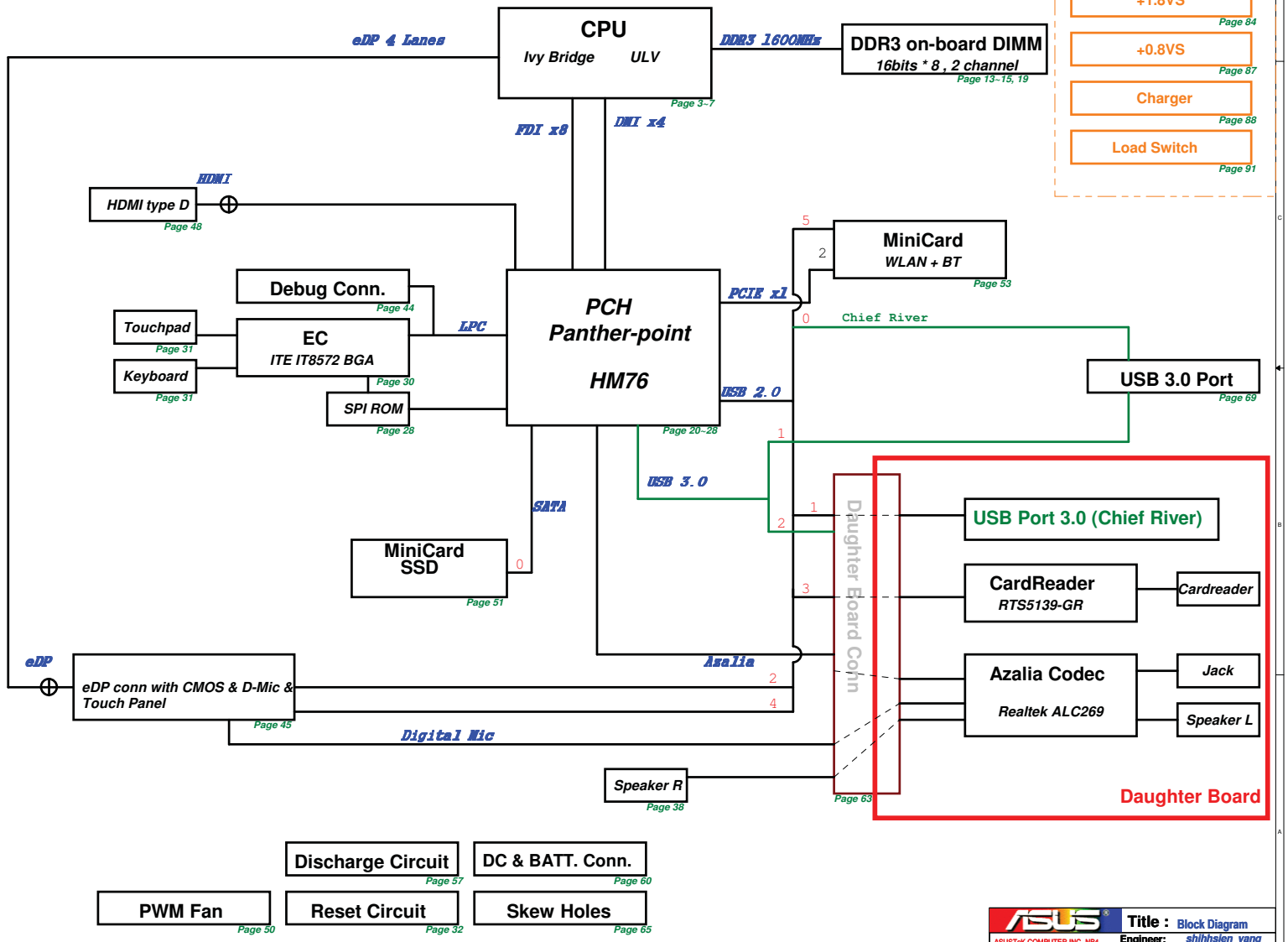
*87_PW_+0.8VS(RT8015B)*
*88_PW_CHARGER(BQ24725)*
*91. PWR_LOAD SWITCH*

## BLOCK DIAGRAM




| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : Block Diagram | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 1 of 98 | | |

## PCH_CPT GPIO

| PCH_IBEX GPIO | Use As | Signal Name | Int.& Ext Pull up / down | Power |
|---|---|---|---|---|
| GPIO 00 | Native | NC_TP | EXT PU 1K | +3VS |
| GPIO 01 | GPI | EXT_SMI# | INT PU 20K, EXT PU 10K | +3VS |
| GPIO 02 | Native | NC_TP | EXT PU 10K | +3VS |
| GPIO 03 | GPI | SATA_ODD_DA# | EXT PU 10K | +5VS |
| GPIO 04 | GPI | PCB_ID0 | EXT PD 10K | |
| GPIO 05 | GPI | PCB_ID1 | EXT PD 10K | |
| GPIO 06 | Native | TMDS_HDMI_HPD | INT PU 20K, EXT PU 10K | +3VS |
| GPIO 07 | GPI | USB3_SMI# | INT PU 20K, EXT PU 10K | +3VS |
| GPIO 08 | Straping | ICC_EN# | | |
| GPIO 09 | Native | EXT_SCI# | EXT PU 10K | +3VSUS |
| GPIO 10 | Native | OC#6 | EXT PU 10K | +3VSUS |
| GPIO 11 | GPI | EXT_SCI# | EXT PU 10K | +3VSUS |
| GPIO 12 | GPO | | | |
| GPIO 13 | Native | HDA_DOCK_RST# | | |
| GPIO 14 | Native | OC#7 | EXT PU 10K | +3VSUS |
| GPIO 15 | GPO | BT_LED | INT PD 20K, EXT PU 1K | +3VSUS |
| GPIO 16 | Native | SATA_DET#4 | EXT PU 10K | +3VS |
| GPIO 17 | GPI | | INT PU 20K, EXT PD 10K | |
| GPIO 18 | Native | CLK_REQ1# | EXT PU 10K | +3VS |
| GPIO 19 | Native | SATA1GP | INT PU 20K, EXT PU 10K | +3VS |
| GPIO 20 | Native | CLK_REQ2# | EXT PU 10K | +3VS |
| GPIO 21 | Native | SATA0GP | EXT PU 10K | +3VS |
| GPIO 22 | GPO | WLAN_LED | EXT PU 10K | +3VS |
| GPIO 23 | Native | LPC_DRQ#1 | INT PU 20K | |
| GPIO 24 | GPO | | EXT PU 10K | +3VSUS |
| GPIO 25 | Native | CLKREQ_USB3# | EXT PU 10K | +3VSUS |
| GPIO 26 | Native | CLK_REQ4# | EXT PU 10K | +3VSUS |
| GPIO 27 | Native | DSW_WAKE# | INT PU 20K | |
| GPIO 28 | Straping | WLAN_ON# | INT PU 20K | +3VSUS |
| GPIO 29 | Native | SLP_LAN# | EXT PU 10K | +3VSUS |
| GPIO 30 | Native | ME_SusPwrDnAck | EXT PU 10K | +3VSUS |
| GPIO 31 | Native | ME_AC_PRESENT_PCH | INT PD 20K,EXT PU 10K | +VCCPDSW |
| GPIO 32 | Native | PM_CLKRUN# | EXT PU 10K | +3VS |
| GPIO 33 | Native | HDA_DOCK_EN# | | |
| GPIO 34 | Native | STP_PCI# | EXT PU 10K | +3VS |
| GPIO 35 | GPO | GPIO35_PCH | | |
| GPIO 36 | Native | DMI_OVRVLTG | INT PD 20K, EXT PU 200K | +3VS |
| GPIO 37 | Native | FDI_OVRVLTG | INT PD 20K, EXT PD 100K | |
| GPIO 38 | Native | MFG_MODE | EXT PU 10K | +3VS |
| GPIO 39 | Native | GFX_CRB_DET | EXT PU 10K | +3VS |
| GPIO 40 | Native | OC#1 | EXT PU 10K | +3VSUS |
| GPIO 41 | Native | DIMM_SEL0 | EXT PU 10K | +3VSUS |
| GPIO 42 | Native | DIMM_SEL1 | EXT PU 10K | +3VSUS |
| GPIO 43 | Native | DIMM_SEL2 | EXT PU 10K | +3VSUS |
| GPIO 44 | Native | CLKREQ_GLAN# | INT PU 20K, EXT PU 10K | +3VSUS |
| GPIO 45 | Native | CLK_REQ6# | EXT PU 10K | +3VSUS |
| GPIO 46 | Native | CLK_REQ7# | INT PU 20K, EXT PU 10K | +3VSUS |
| GPIO 47 | Native | CLK_PEGA_REQ# | EXT PU 1K | +3VSUS |
| GPIO 48 | GPIO | TEST_SET_UP | EXT PU 10K | +3VS |
| GPIO 49 | GPI | SATA_DET#5 | EXT PU 10K | +3VS |
| GPIO 50 | GPO | GPU_RST# | EXT PD 10K | |
| GPIO 51 | Straping | PCI_GNT1# | INT PU 20K, EXT PU 10K | +3VS |
| GPIO 52 | Native | PCI_REQ#2 | EXT PU 10K | +3VS |
| GPIO 53 | Native | DGPU_PWM_SELECT# | INT PU 20K | |
| GPIO 54 | GPO | DGPU_PWR_EN# | EXT PD 1K | |
| GPIO 55 | Straping | STP_A16OVR | INT PU 20K, EXT PD 1K | |
| GPIO 56 | Native | CLK_PEGB_REQ# | EXT PU 10K | +3VSUS |
| GPIO 57 | GPO | BT_ON | EXT PD 100K | |
| GPIO 58 | Native | SML1_CLK | EXT PU 2.2K | +3VSUS |
| GPIO 59 | Native | OC#0 | EXT PU 10K | +3VSUS |
| GPIO 60 | GPO | DRAMRST_PCH | EXT PU 2.2K | +3VSUS |
| GPIO 61 | Native | PM_SUS_STAT# | | |
| GPIO 62 | Native | SUS_CLK# | | |
| GPIO 63 | Native | SLP_S5# | | |
| GPIO[66:64] | Native | CLK_OUT[2:0] | INT PD 20K | |
| GPIO 67 | Native | | INT PD 20K | |
| GPIO 68 | GPO | NC_TP | INT PU 20K | |
| GPIO 69 | GPI | NC_TP | INT PU 20K, EXT PD 1K | |
| GPIO[71:70] | Native | NC_TP | INT PU 20K, EXT PU 1K | +3VS |
| GPIO 72 | Native | PM_BATLOW# | INT PU 20K, EXT PU 10K | +3VSUS |
| GPIO 73 | Native | CLK_REQ0# | EXT PU 10K | +3VSUS |
| GPIO 74 | Native | PCHHOT# | EXT PU 10K | +3VSUS |
| GPIO 75 | Native | SML1_DATA | EXT PU 2.2K | +3VSUS |

## EC IT8572 GPIO

| EC GPIO | Use As | Signal Name |
|---|---|---|
| GPA0 | O | PWR_LED# |
| GPA1 | O | |
| GPA2 | O | CHG_FULL_LED# |
| GPA3 | O | |
| GPA4 | O | |
| GPA5 | O | FAN_PWM |
| GPA6 | | - |
| GPA7 | O | KB_LED_PWM |
| GPB0 | O | ME_AC_PRESENT |
| GPB1 | O | |
| GPB2 | O | +3VA_ON |
| GPB3 | IO | SMB0_CLK |
| GPB4 | IO | SMB0_DAT |
| GPB5 | O | A20GATE |
| GPB6 | O | RCIN# |
| GPB7 | O | PM_RSMRST# |
| GPC0 | | |
| GPC1 | IO | SMB1_CLK |
| GPC2 | IO | SMB1_DAT |
| GPC3 | O | PM_PWRBTN# |
| GPC4 | I | AC_IN_OC# |
| GPC5 | | |
| GPC6 | I | BAT1_IN_OC# |
| GPC7 | | |
| GPD0 | I | PWRLIMIT#_EC |
| GPD1 | O | CAP_LED# |
| GPD2 | I | BUF_PLT_RST# |
| GPD3 | O | EXT_SCI# |
| GPD4 | O | EXT_SMI# |
| GPD5 | O | OP_SD# |
| GPD6 | I | FAN0_TACH |
| GPD7 | | - |
| GPE0 | O | SUSC_EC# |
| GPE1 | | |
| GPE2 | O | 1.5V_ON |
| GPE3 | O | BIOS_WP# |
| GPE4 | I | PWR_SW# |
| GPE5 | I | PM_SUSC# |
| GPE6 | I | LID_SW_EC# |
| GPE7 | | |
| GPF0 | O | PM_SYSPWROK |
| GPF1 | O | 3VSUS_ON |
| GPF2 | | - |
| GPF3 | O | USB_CHARGE_ON# |
| GPF4 | IO | TP_CLK |
| GPF5 | IO | TP_DAT |
| GPF6 | I | PECI_EC |
| GPF7 | O | PCH_SPI_OV |
| GPG0 | I | ME_SusPwrDnAck |
| GPG1 | I | PM_SUSB# |
| GPG2 | | |
| GPG6 | | - |
| GPH0 | IO | PM_CLKRUN# |
| GPH1 | O | THRO_CPU# |
| GPH2 | O | LCD_BACKOFF# |
| GPH3 | O | SUSB_EC# |
| GPH4 | O | USB_CHARGE_VBUS_EC |
| GPH5 | | |
| GPH6 | I | 5VSUS_PWRGD |
| GPI0 | I | Light_Sensor_AD |
| GPI1 | I | SUS_PWRGD |
| GPI2 | I | ALL_SYSTEM_PWRGD |
| GPI3 | I | CORE_PWRGD |
| GPI4 | | - |
| GPI5 | | - |
| GPI6 | | - |
| GPI7 | I | Adaptor_Sense |
| GPJ0 | O | |
| GPJ1 | O | PM_PWROK |
| GPJ2 | O | |
| GPJ3 | O | |
| GPJ4 | O | 5VSUS_PWRON |
| GPJ5 | O | DRAMRST_EC |

## Design IP Source: N53S

### SM_BUS ADDRESS :

| PCH Master | | |
|---|---|---|
| **SM-Bus Device** | **SM-Bus Address** | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| **EC Master (SMB1)** | **SM-Bus Address** | |
| **SM-Bus Device** | | |
| DIMM TEMP. | 9Ah | |
| CPU Thermal Sensor | 90h | |

### PCI Express

| | |
|---|---|
| PCIE 1 | |
| PCIE 2 | Minicard WLAN |
| PCIE 3 | |
| PCIE 4 | USB 3.0 |
| PCIE 5 | |
| PCIE 6 | |
| PCIE 7 | |
| PCIE 8 | |

### USB Port

| | |
|---|---|
| USB 0 | USB 3.0 Port |
| USB 1 | USB Port 1 |
| USB 2 | Touch Panel |
| USB 3 | Card Reader |
| USB 4 | CMOS Camera |
| USB 5 | Bluetooth |
| USB 6 | |
| USB 7 | |
| USB 8 | |
| USB 9 | |
| USB 10 | |
| USB 11 | |
| USB 12 | |
| USB 13 | |

### SATA Port

| | |
|---|---|
| SATA 0 | SATA SSD |
| SATA1 | |
| SATA2 | |
| SATA4 | |

### Device Identification

| CPU Thermal Senser | | |
|---|---|---|
| 1st | 06G023123010 | NCT7717U |
| 2nd | | |

| Memory Thermal Senser | | |
|---|---|---|
| 1st | 06G023048020 | G781-1 |
| 2nd | | |

ASUSTeK COMPUTER INC. NB3

Title : System Setting

Engineer: shihhsien_yang

Size: C | Project Name: UX31A2 | Rev: R2.0

Date: Tuesday, March 27, 2012 | Sheet 2 of 99

**FDI disable: (For discrete graphic)**

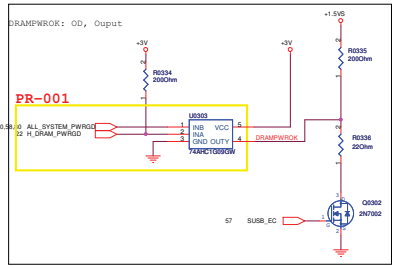
1. NC:
   FDI_TX#[0:7],FDI_TX[0:7],VCC_AXGSENSE,VSS_AXGSENSE
2. Pull-down to GND via 1KΩ ± 5% resistor:
   FDI_FSYNC[0:1],FDI_LSYNC[0:1],FDI_INT,GFX_IMON ~15mW power saving
3. Connected to GND:
   VCCAXG
4. Can be connected to GND directly:
   DPLL_REF_CLK,DPLL_REF_CLK#
5. Connect to +V1.05S rail:
   VCCFDIPLL

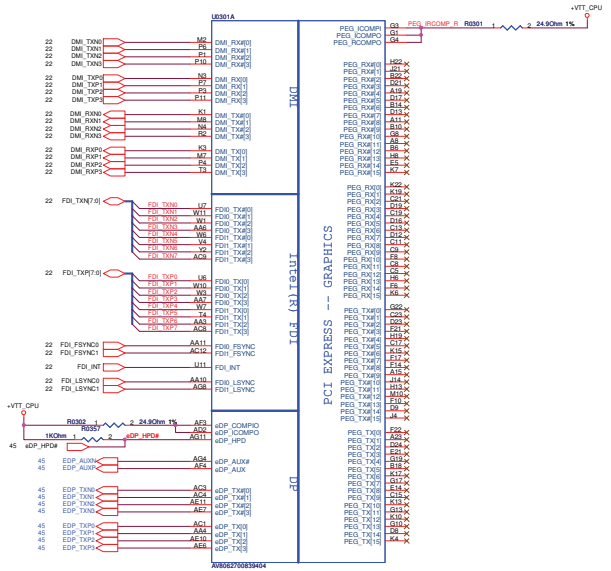
**eDP disable/Enable**

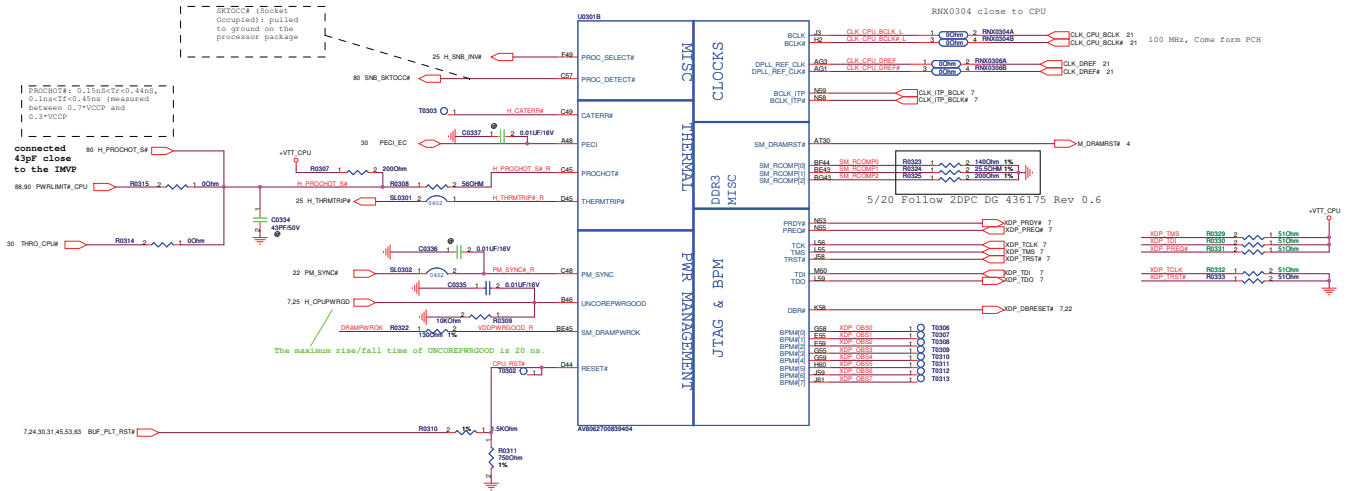
CFG[4]:
Enable: Mount R0503, R0303=1K
Disable: un-mount R0503, R0303=10Kohm

Huron River PCIE support 2.5 GT/s, 5 GT/s and 8 GT/s

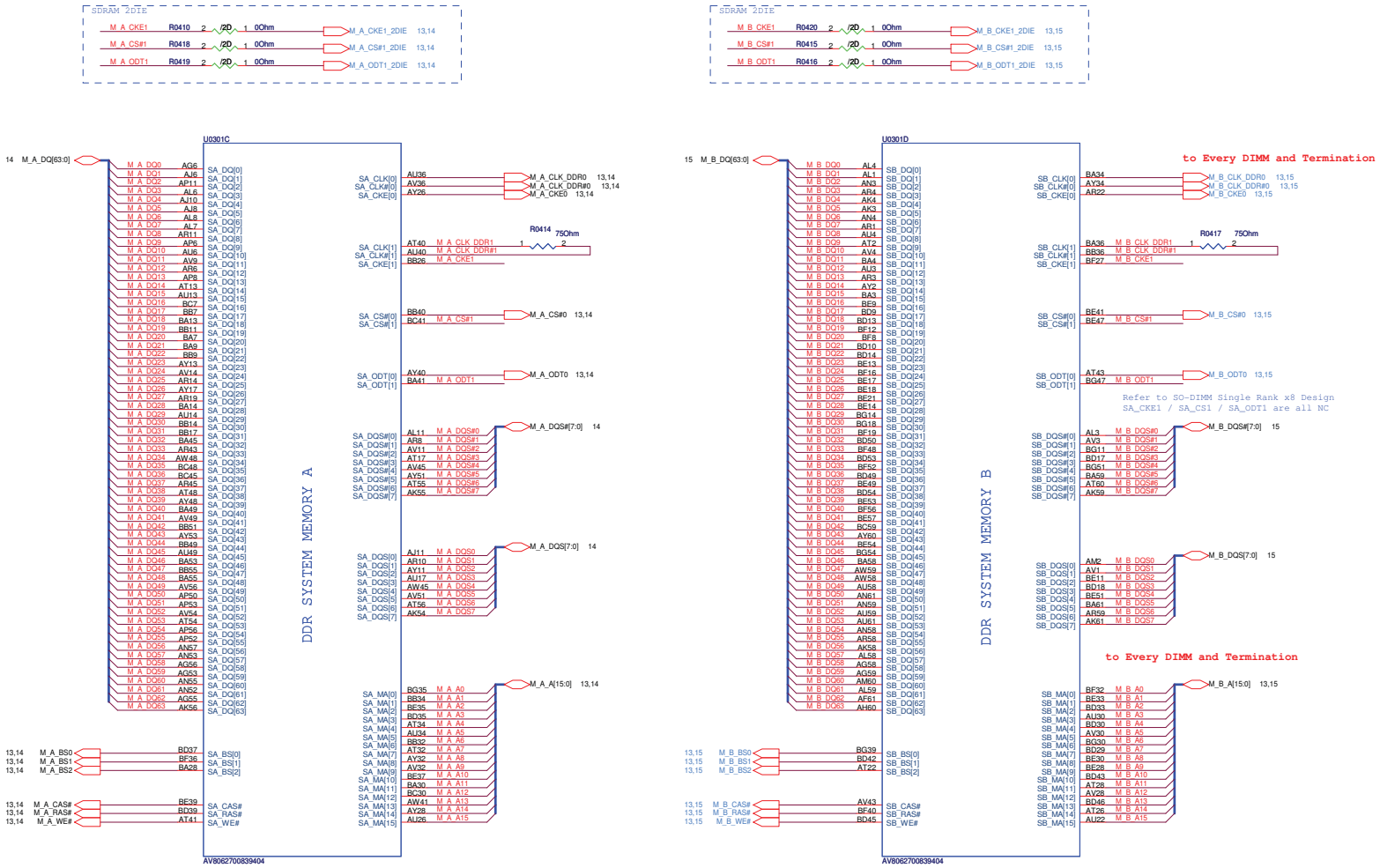
PCIE AC Coupling Capacitors:
1. 436735 PDG Page 39, 75nF~200nF
2. 431433 EMERALD LAKE Schematic 220nF
3. 436735 PDG Page 41, 180nF~265nF



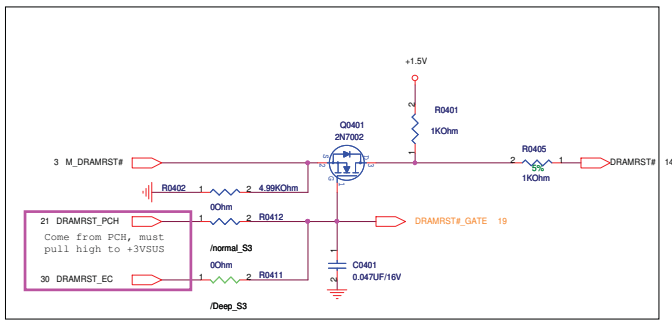



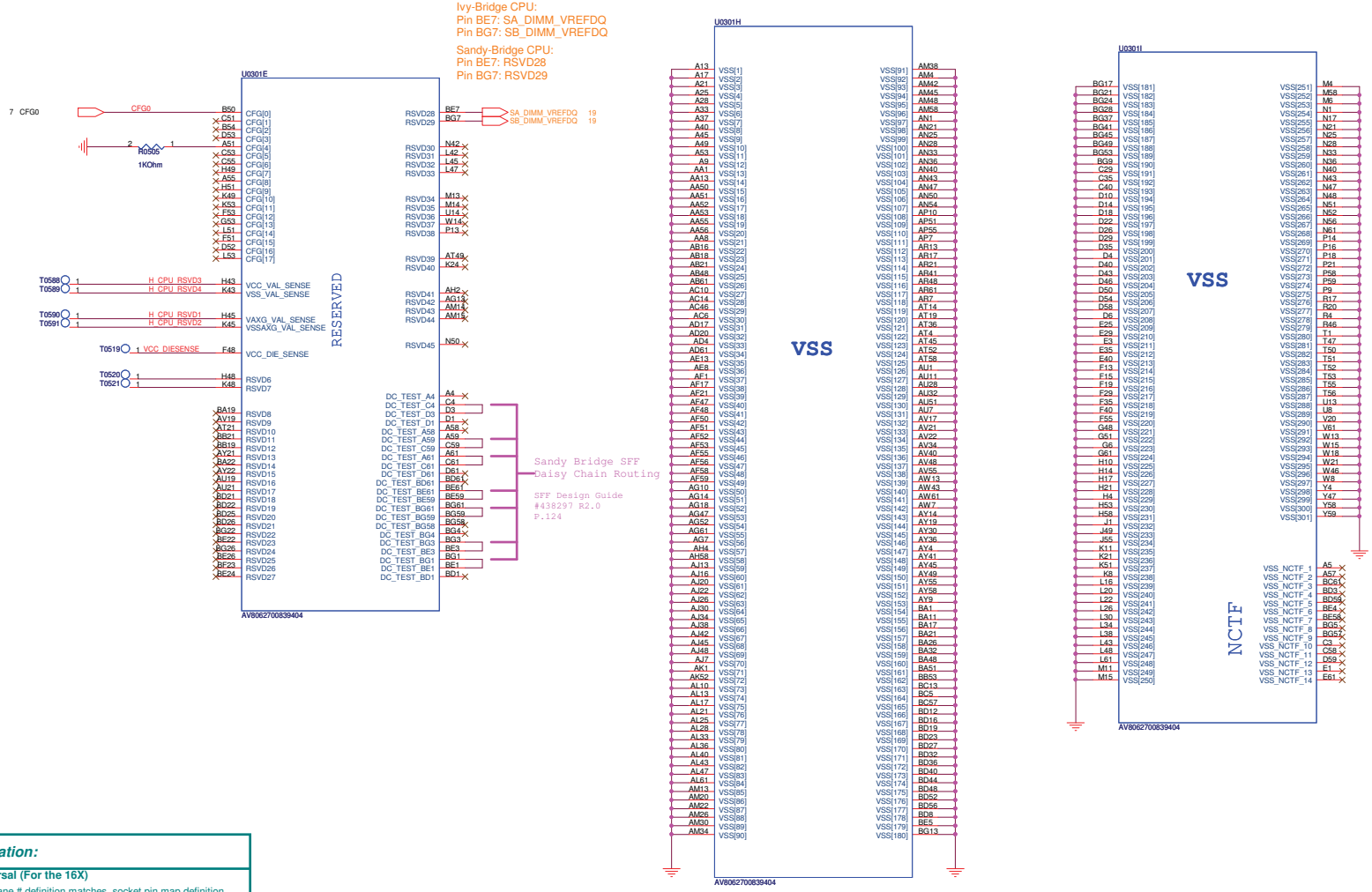

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : CPU_DMI,PEG,FDI,CLK,MISC | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Wednesday, April 11, 2012 | Sheet 3 of 99 | Engineer: shihhsien_yang |




DRAM RESET




| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : CPU_DDR3 | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 4 of 98 | | |




## CFG strapping information:

**CFG[2]: PEG Static Lane Reversal (For the 16X)**

- 1: (Default) Normal Operation; Lane # definition matches socket pin map definition
- 0: Lane Reversed

**CFG[4]: Display Port Presence Strap**

- 1 : (Default) Disable; No Physical Display Port attached to Embedded Display Port
- 0 : Enable; An external Display Port device is connected to the Embeded Display port

**CFG[6:5]: PCIE Port Bifurcation Straps**

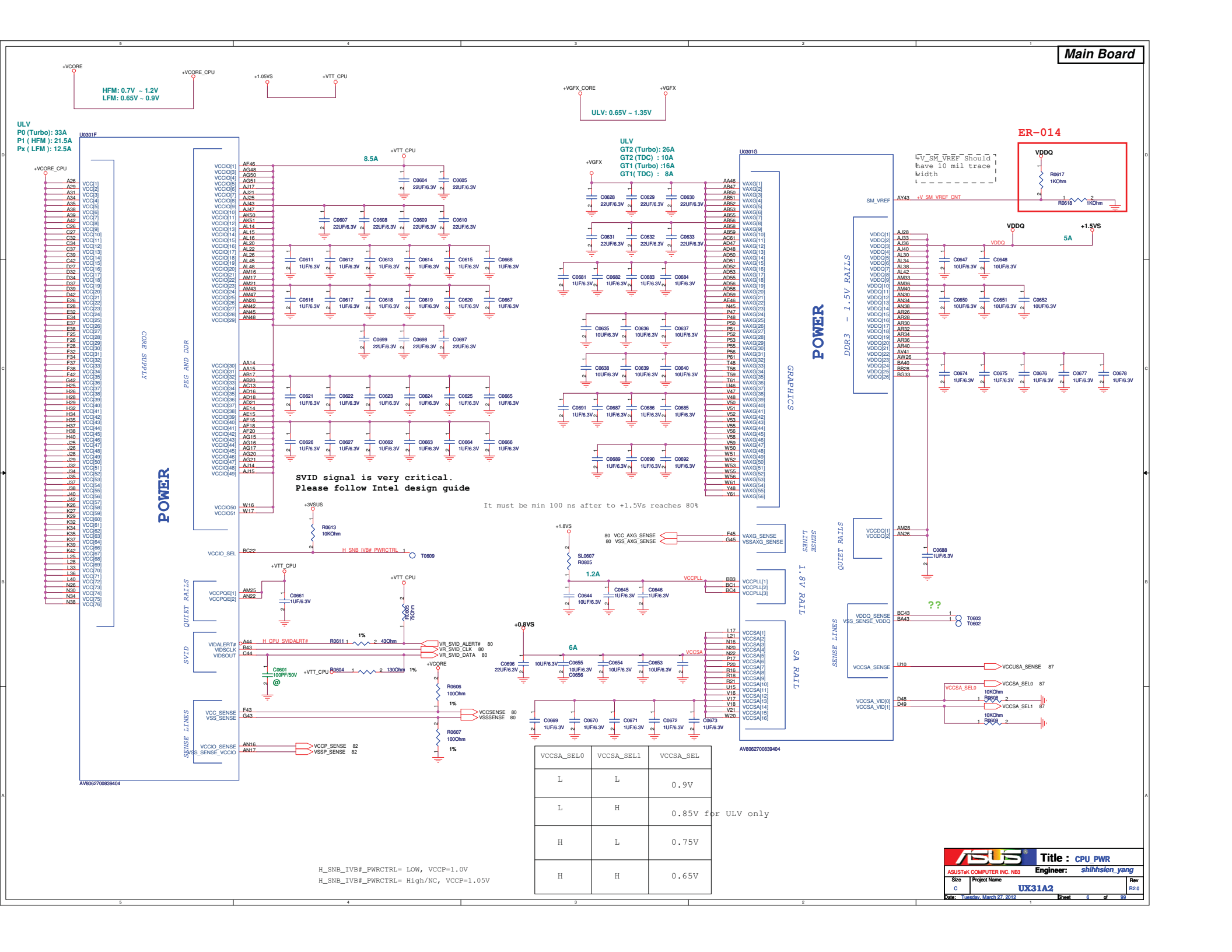
- 11 : (Default) X16 - Device 1 functions 1 and 2 disable
- 10 : X8, X8 - Device 1 function 1 enabled; Function 2 disable
- 01 : Reserved - (Device 1 Function 1 disable ; Function 2 enable
- 00 : X8, X4 X4 - Device 1 function 1 and 2 enabled

**CFG[7]: Defer Training**

-1: (Default) PEG Train immediately following xxRESETB de assertion

-0: PEG Wait for BIOS for training

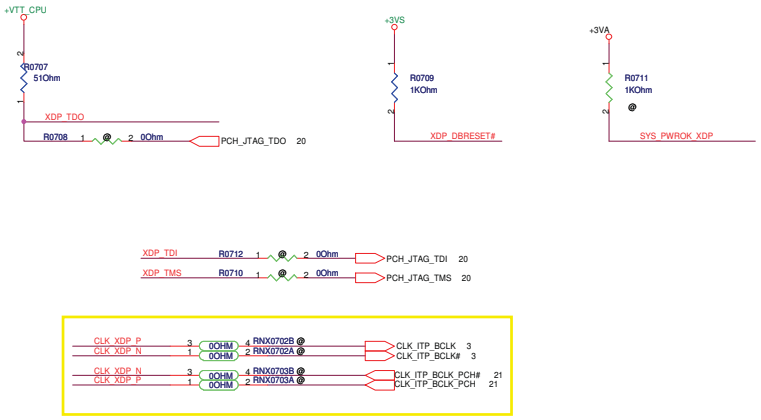
| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : CPU_CFG,RSVD,GND | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 5 of 98 | |

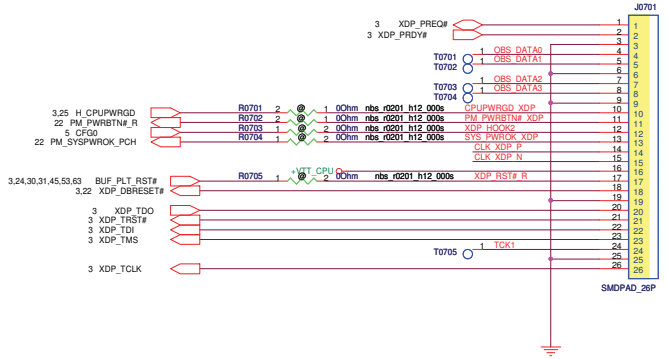



| VCCSA_SEL0 | VCCSA_SEL1 | VCCSA_SEL |
|---|---|---|
| L | L | 0.9V |
| L | H | 0.85V for ULV only |
| H | L | 0.75V |
| H | H | 0.65V |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : CPU_PWR | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 6 of 98 | | |

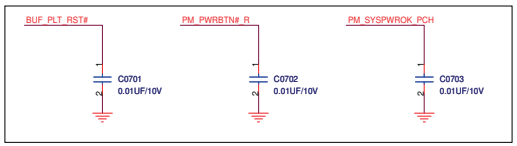
# 此頁全放TOP side




Please mount J0701,
R0701~R0705 and RNX0702
for debug on SR and ER

Place near J0701




| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : CPU_XDP | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 7 of 98 | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : NB_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: Custom | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 8 of 99 | | |

**Main Board**

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : NB_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: Custom | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 9 of 99 | | |

Main Board

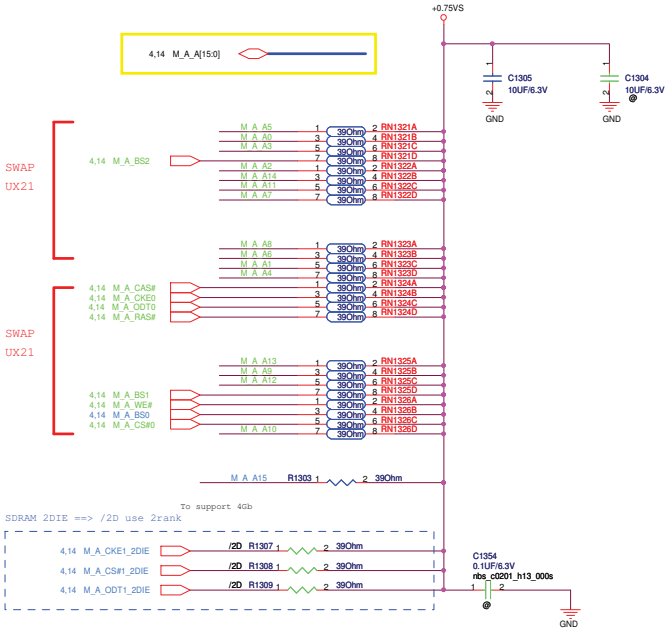
| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : NB_**** | |
| | Engineer: shihhsien_yang | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 10 of 99 | |

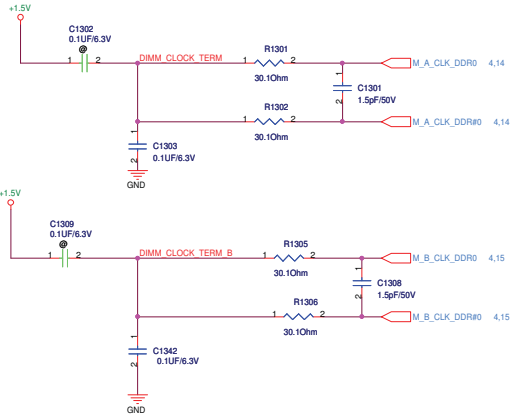
**Main Board**

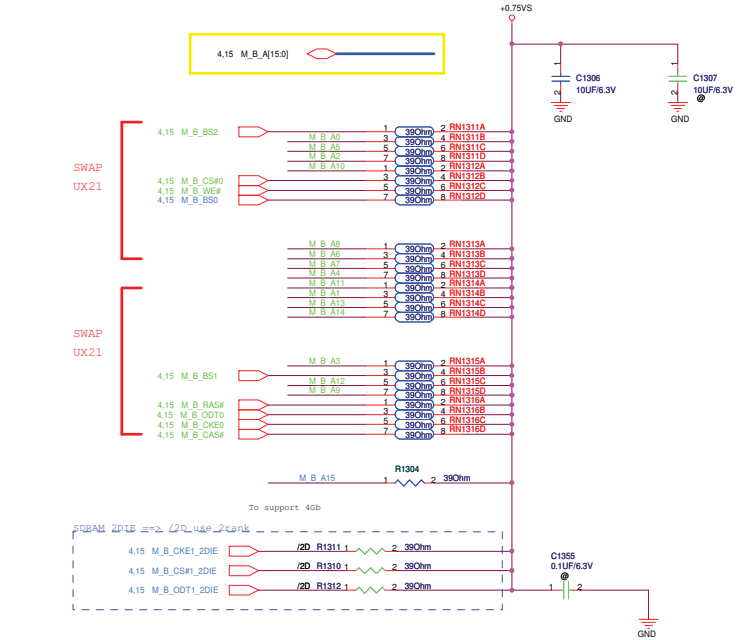
| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : NB_**** | |
| | Engineer: shihhsien_yang | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 11 of 99 | |

Main Board

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : NB_**** | |
| | Engineer: shihhsien_yang | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 12 of 99 | |

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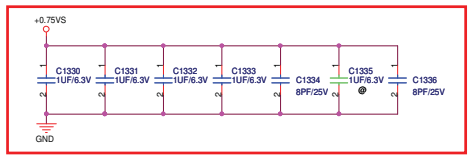


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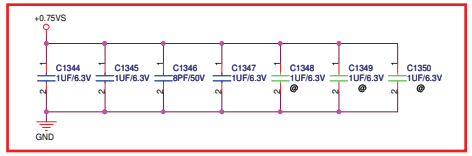
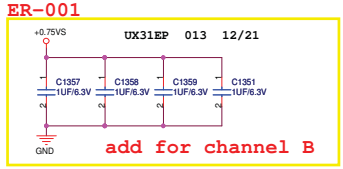
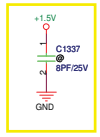


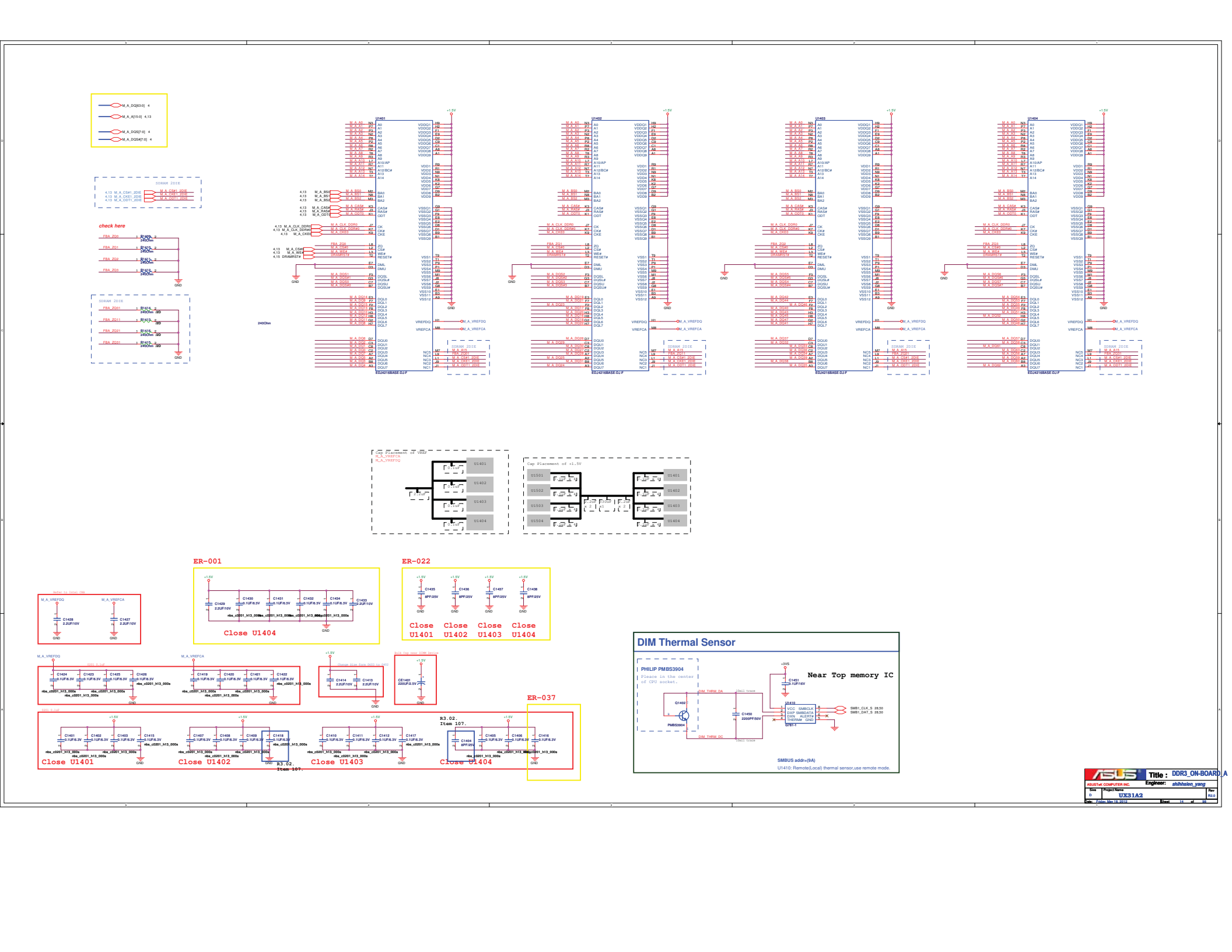

ER-001

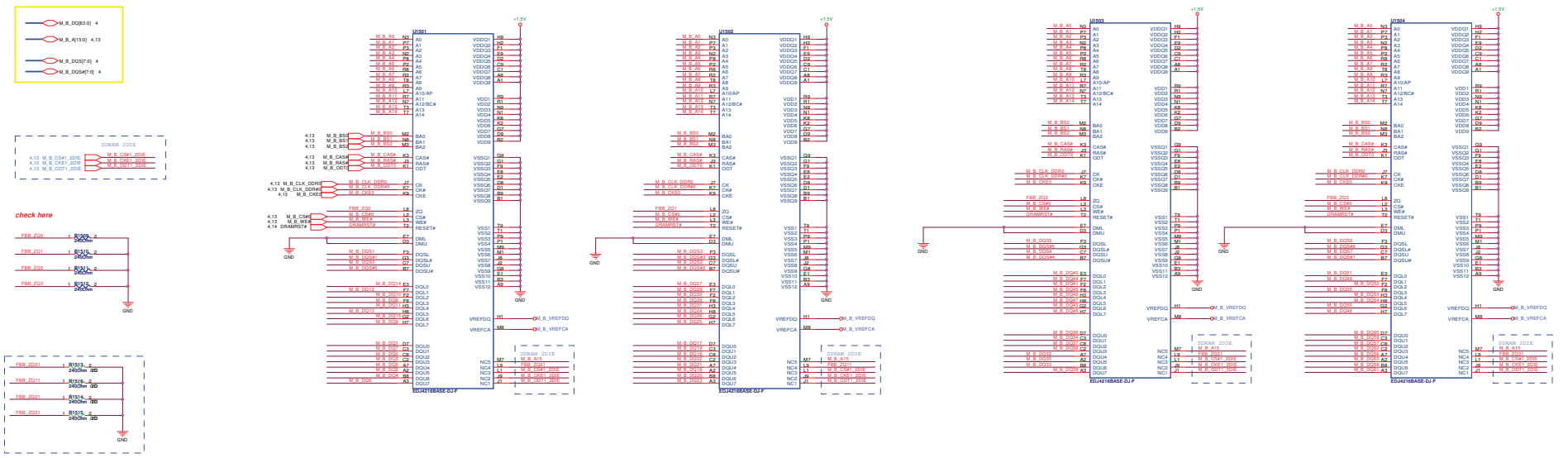


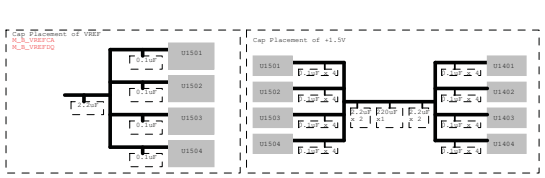



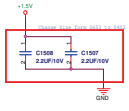

ER-022

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. | Title : DDR3_TERMINATION | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Friday, May 18, 2012 | Sheet 13 of 98 | |

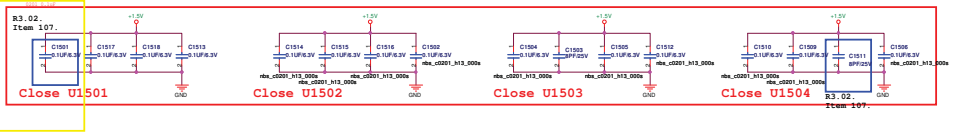

M_A_DQ[63:0] 4
M_A_A[15:0] 4,13
M_A_DQS[7:0] 4
M_A_DQS#[7:0] 4
SDRAM 2DIE
check here
U1401
U1402
U1403
U1404
EDJ4216BASE-DJ-F
+1.5V
GND
240Ohm
M_A_VREFDQ
M_A_VREFCA
Cap Placement of VREF
Cap Placement of +1.5V
ER-001
Close U1404
ER-022
Close U1401
Close U1402
Close U1403
Close U1404
ER-037
Close U1401
Close U1402
Close U1403
Close U1404
R3.02.
Item 107.
DIM Thermal Sensor
PHILIP PMBS3904
Please in the center of CPU socket.
Near Top memory IC
PMBS3904
U1410
SMBUS addr=(9A)
U1410: Remote(Local) thermal sensor,use remote mode.
SMS1_CLK_S 28,50
SMS1_DAT_S 28,50
ASUSTeK COMPUTER INC.
Title : DDR3_ON-BOARD_A
Engineer: shihhsien_yang
Size: D
Project Name
UX31A2
Rev: R2.0
Date: Friday, May 18, 2012
Sheet 14 of 58



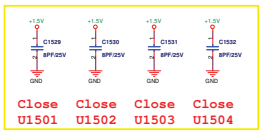



ER-037




ER-022




| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. | Title : DDR3_ON-BOARD_B | | |
| | Engineer: shihhsien_yang | | |
| Size: D | Project Name: UX31A2 | Rev: R2.0 | |
| Date: Friday, May 18, 2012 | Sheet 15 of 58 | | |

Title : DDR3_TERMINATION_B

ASUSTeK COMPUTER INC.

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 16 of 99

Title : DDR3_ON-BOARD_B_L32

ASUSTeK COMPUTER INC.

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 17 of 98

Title : DDR3_ON-BOARD_B_H32

ASUSTeK COMPUTER INC.

Engineer: shihhsien_yang

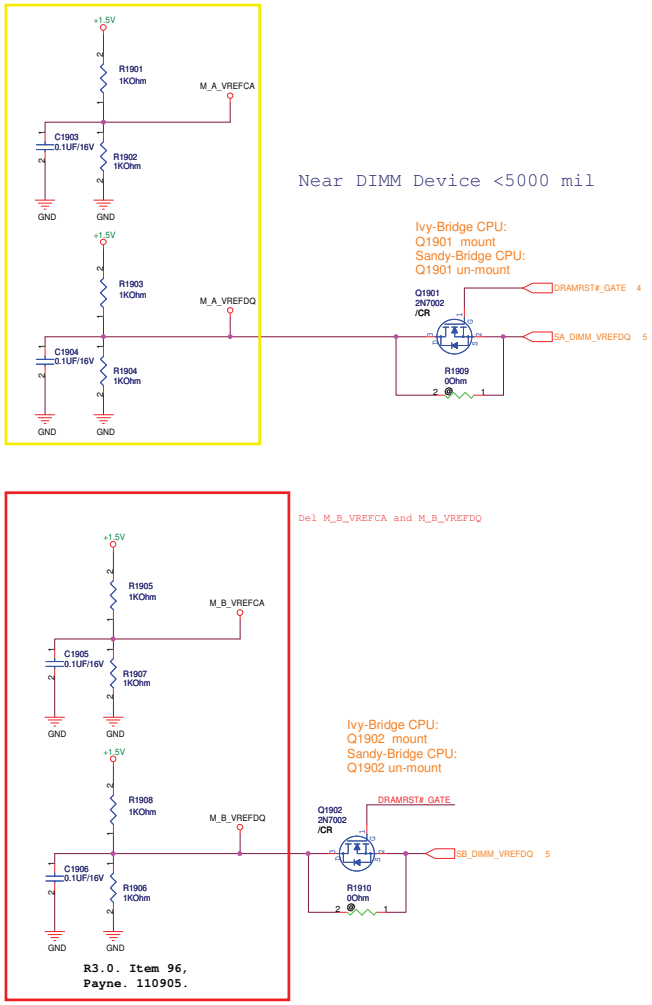
| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 18 of 99

Calpella Clarksfield DDR3 SO-DIMM VREFDQ
Platform Design Guide Change Details

# DDR3 Vref

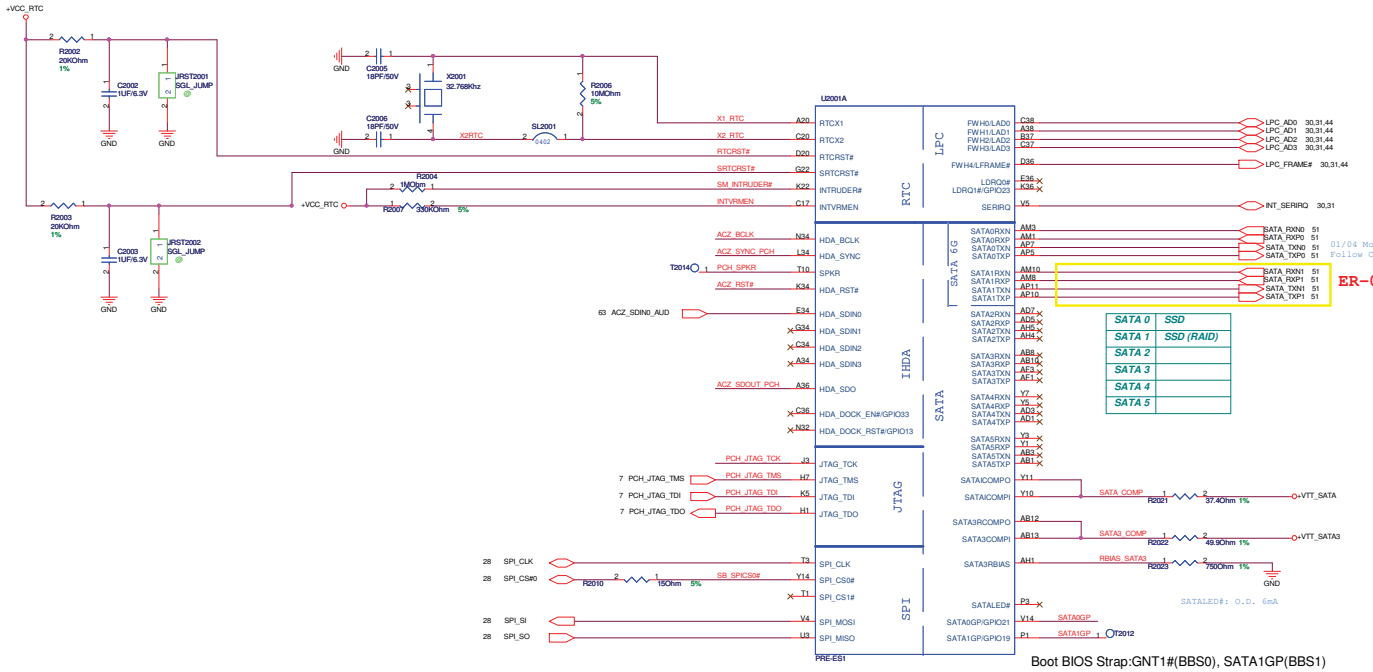
**Intel Document Number: 400755**



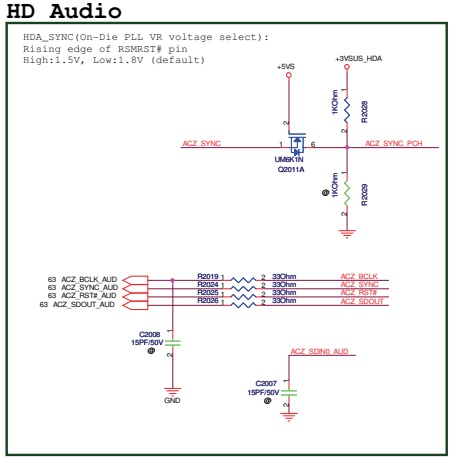

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB6 | Title DDR3 CA_DQ VOLTAGE | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 19 of 98 | |

| CMOS Settings | JRST2001 |
|---|---|
| Clear CMOS | Shunt |
| Keep CMOS | Open (Default) |

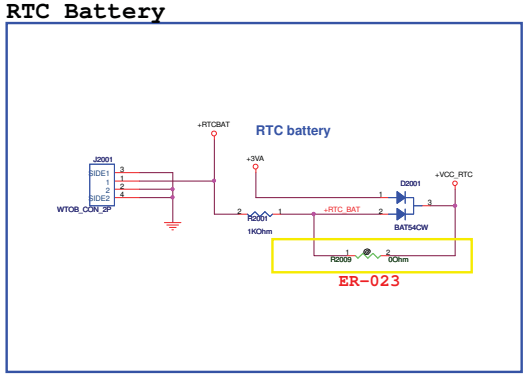
| TPM Settings | JRST2002 |
|---|---|
| Clear ME RTC Registers | Shunt |
| Keep ME RTC Registers | Open (Default) |

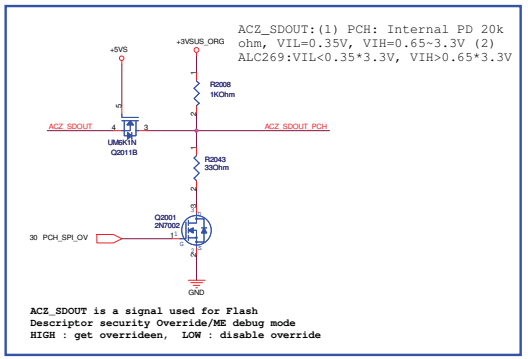



## HD Audio




## RTC Battery

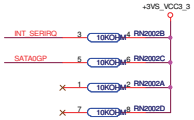


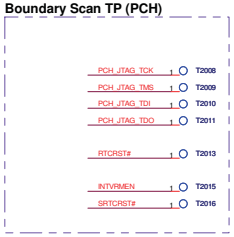

## JTAG

U37 001

## For PU/PD




## Boundary Scan TP (PCH)



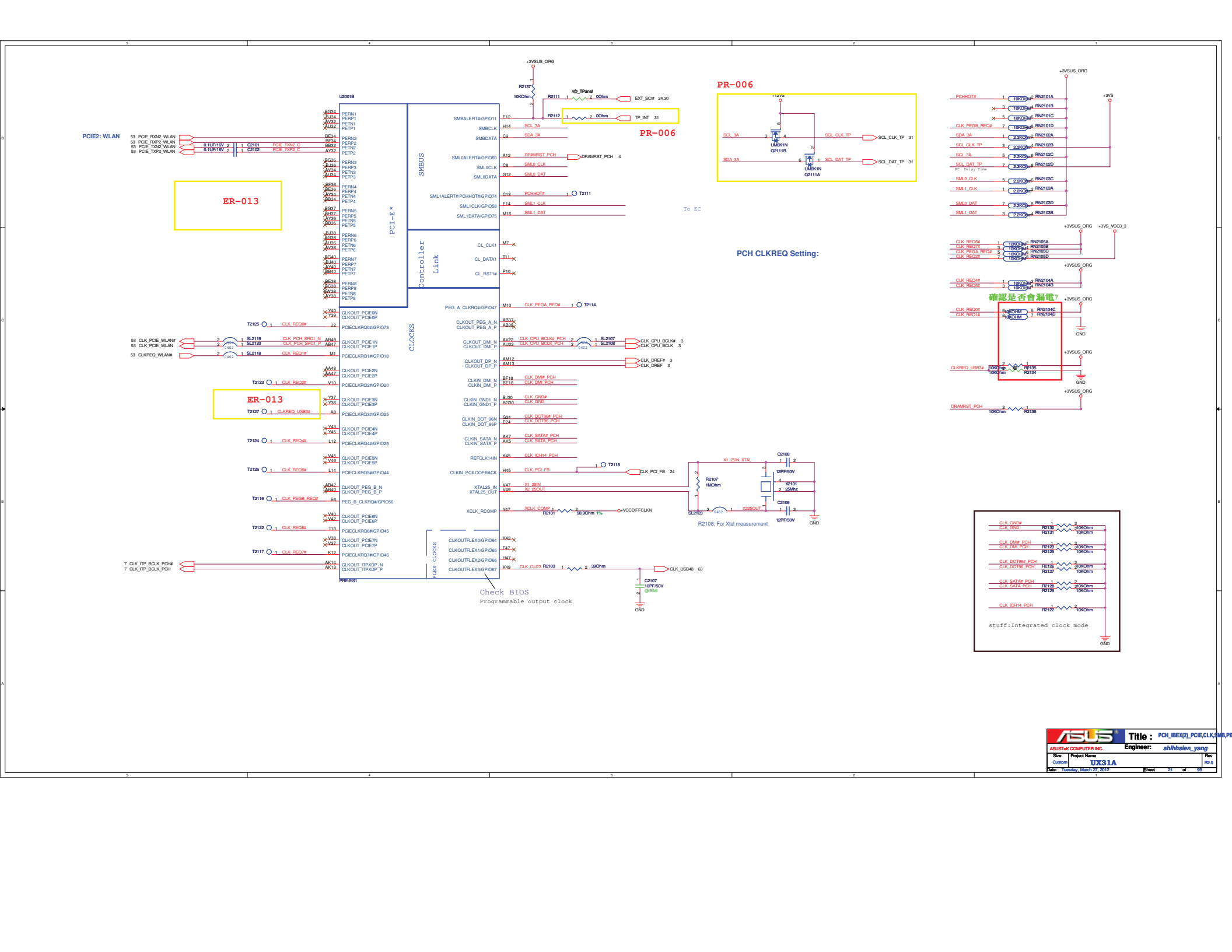

ASUSTeK COMPUTER INC.

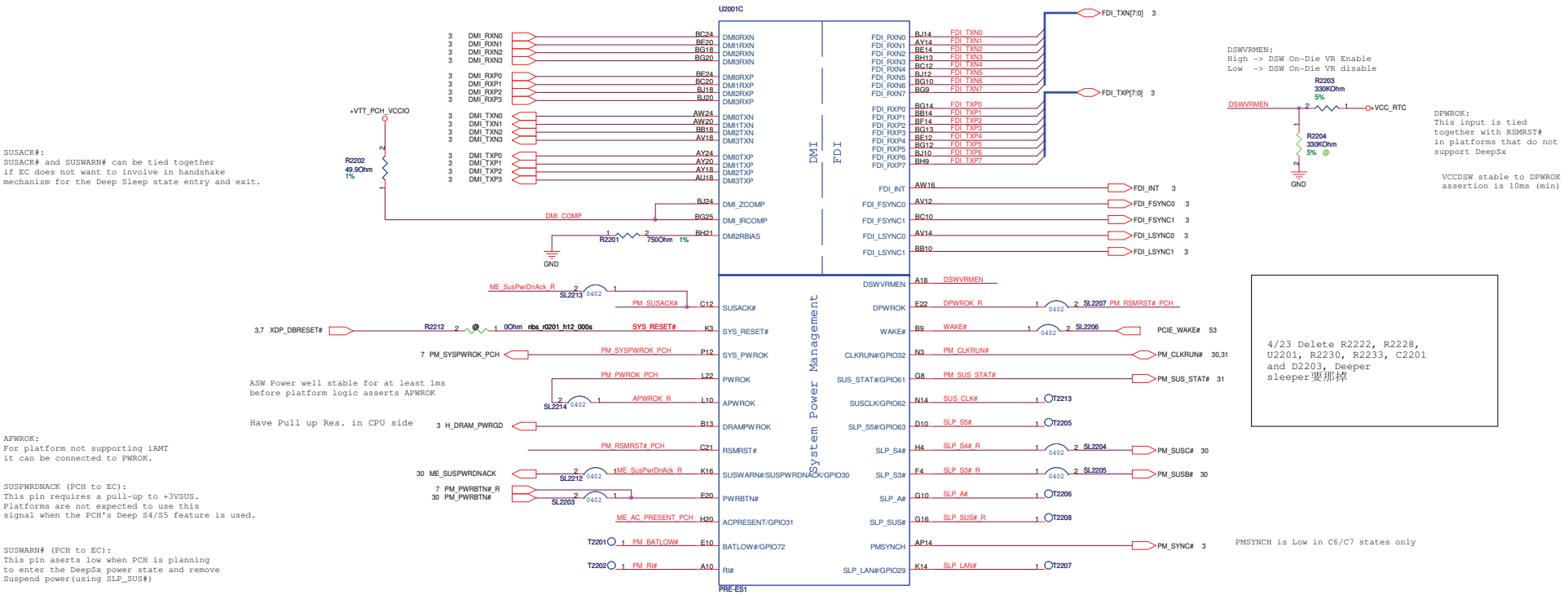
Title: CB_IBEX(1)SATA,IHDA,RTC,LPC

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| Custom | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 20 of 99

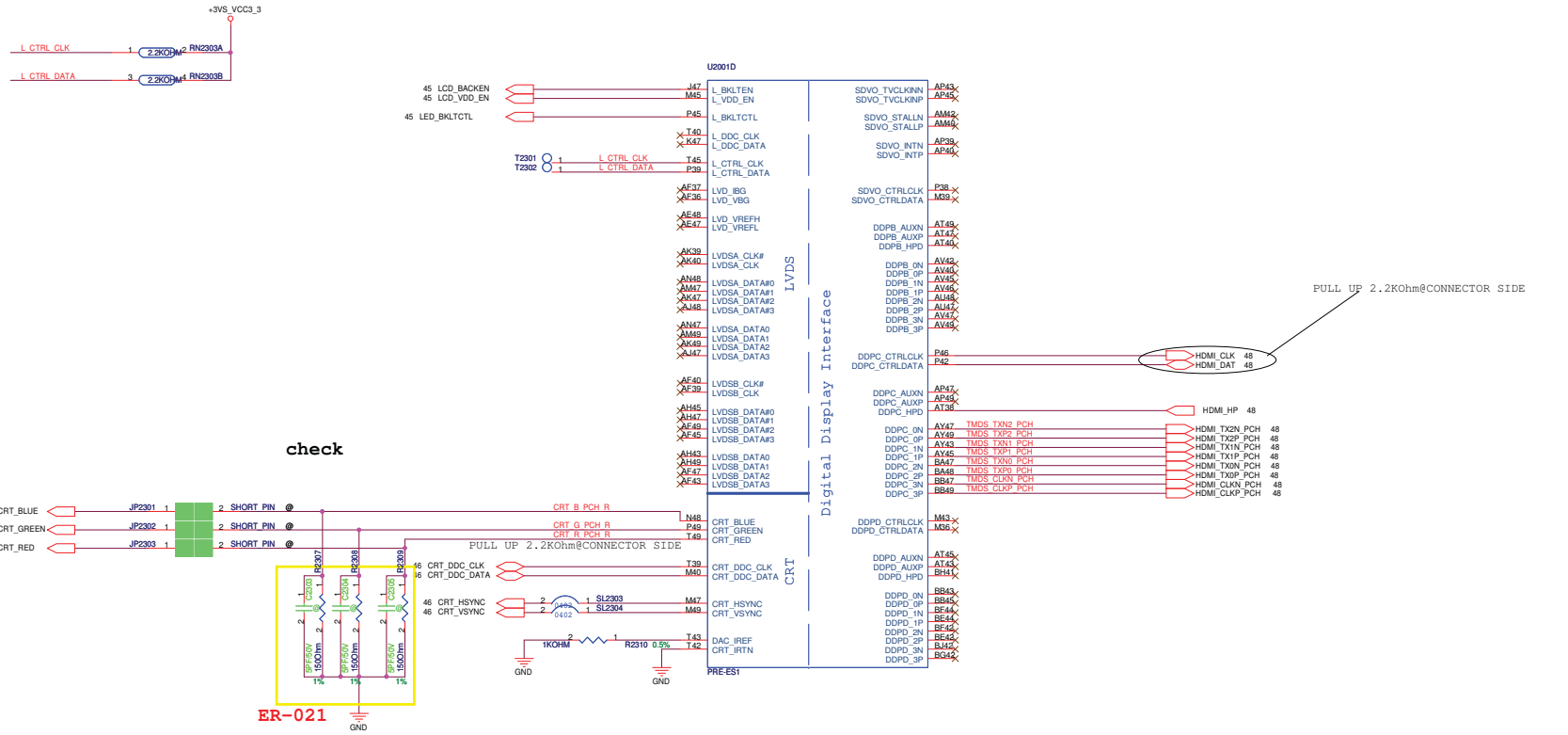

PCIE2: WLAN
ER-013
ER-013
PR-006
PR-006
PCH CLKREQ Setting:
U2001B
PCI-E*
SMBUS
Controller Link
CLOCKS
FLEX CLOCKS
PRE-ES1
To EC
Check BIOS
Programmable output clock
R2108: For Xtal measurement
stuff:Integrated clock mode
確認是否會漏電?
Title : PCH_IBEX(2)_PCIE,CLK,SMB,PE
ASUSTeK COMPUTER INC.
Engineer: shihhsien_yang
UX31A
Tuesday, March 27, 2012




| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. | Title : PCH_IBEX(3)_FDI,DMI,SYS PWR | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 22 of 98 | |

| PORT | STRAP | ENABLE PORT | DISABLE PORT |
|---|---|---|---|
| LVDS | L_DDC_DATA | Pull up to 3.3(V) with 2.2k Ohm | NC |
| PORT B | SDVO_CTRLDATA | | |
| PORT C | DDPC_CTRLDATA | | |
| PORT D | DDPD_CTRLDATA | | |

DG P.105,168





ASUSTeK COMPUTER INC.
Engineer: shihhsien_yang


Title : PCH_IBEX(4)_DP,LVDS,CRT

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 23 of 98

Tacoma Pass(NVRAM) Disabling and termination guidelines(DG R0.7 p.322)
If the tacoma Pass interface is not used,
the interface signals, inculding NV_RCOMP,
can be left as No connects with few exceptions.
VccpNAND, NV_ALE, NV_CLE

| DMI & FDI Termination Voltage | |
|---|---|
| NV_CLE | LOW : Set to Vss |
| | HIGH : Set to Vcc |

CRB

ER-018

ER-031

ER-030

| USB2.0 | |
|---|---|
| 0 | USB 3.0 Port |
| 1 | USB 2.0 Port (Debug) |
| 2 | |
| 3 | |
| 4 | Camera |
| 5 | WiFi/ WiMax/Blue Tooth |
| 6 | |
| 7 | |
| 8 | Touch Panel |
| 9 | Card Reader |
| 10 | |
| 11 | |
| 12 | |
| 13 | |

| USB 3.0 | |
|---|---|
| 1 | USB 3.0 Port |
| 2 | USB 3.0 Port |
| 3 | |
| 4 | |

PU / PD

DIMM_SEL

PCB_ID

| PCB_ID1 | PCB_ID0 | On Board Memory |
|---|---|---|
| 0 | 0 | 4GB(DDR3_1600、DDR3_L_1333、DDR3_L_1600) |
| 0 | 1 | N/A |
| 1 | 0 | 4GB(DDR3_1333) |
| 1 | 1 | 8GB(DDR3_1600) |

PCBID:10 2GB (DDR3_1333)

| DDR3_1333 | Samsung | Hynix | ELPIDA | Micron |
|---|---|---|---|---|
| DIMM_SEL0 | L | H | L | H |
| DIMM_SEL1 | L | L | H | H |
| DIMM_SEL2 | L | L | L | L |

PCBID:10 4GB (DDR3_1333)

| DDR3_1333 | Samsung | ASINT | ELPIDA | Micron |
|---|---|---|---|---|
| DIMM_SEL0 | L | H | L | H |
| DIMM_SEL1 | L | L | H | H |
| DIMM_SEL2 | H | H | H | H |

PCBID:00 4GB (DDR3_L_1333、DDR3L_1600、DDR3_1600)

| DDR3_L_1333 | | Hynix | ELPIDA | |
|---|---|---|---|---|
| DIMM_SEL0 | | H | L | |
| DIMM_SEL1 | | L | H | |
| DIMM_SEL2 | | L | L | |

| DDR3L_1600 | Micro | | | ELPIDA |
|---|---|---|---|---|
| DIMM_SEL0 | L | | | H |
| DIMM_SEL1 | L | | | H |
| DIMM_SEL2 | H | | | H |

| DDR3_1600 | | Hynix | ELPIDA | |
|---|---|---|---|---|
| DIMM_SEL0 | | H | L | |
| DIMM_SEL1 | | L | H | |
| DIMM_SEL2 | | H | H | |

PCBID:11 8GB (DDR3_1600)

| DDR3_1600 | | Hynix | ELPIDA | |
|---|---|---|---|---|
| DIMM_SEL0 | | H | L | |
| DIMM_SEL1 | | L | H | |
| DIMM_SEL2 | | H | H | |

**Boot BIOS Strap : GNT1#, SATA1GP**

| Boot BIOS Strap | | |
|---|---|---|
| GNT1#(BBS1) | SATA1GP(BBS0) | Boot BIOS Location |
| 0 | 1 | Reserved |
| 1 | 0 | PCI |
| 1 | 1 | SPI (PCH) |
| 0 | 0 | LPC |

Sampled on rising edge of PWROK.

Default
PU 20K
OHM

**GNT3#: A16 swap override Strap/ Top-Block swap override jumper**

| |
|---|
| Low=Enabled A16 swap override/ Top-Block swap override |
| High=Default |

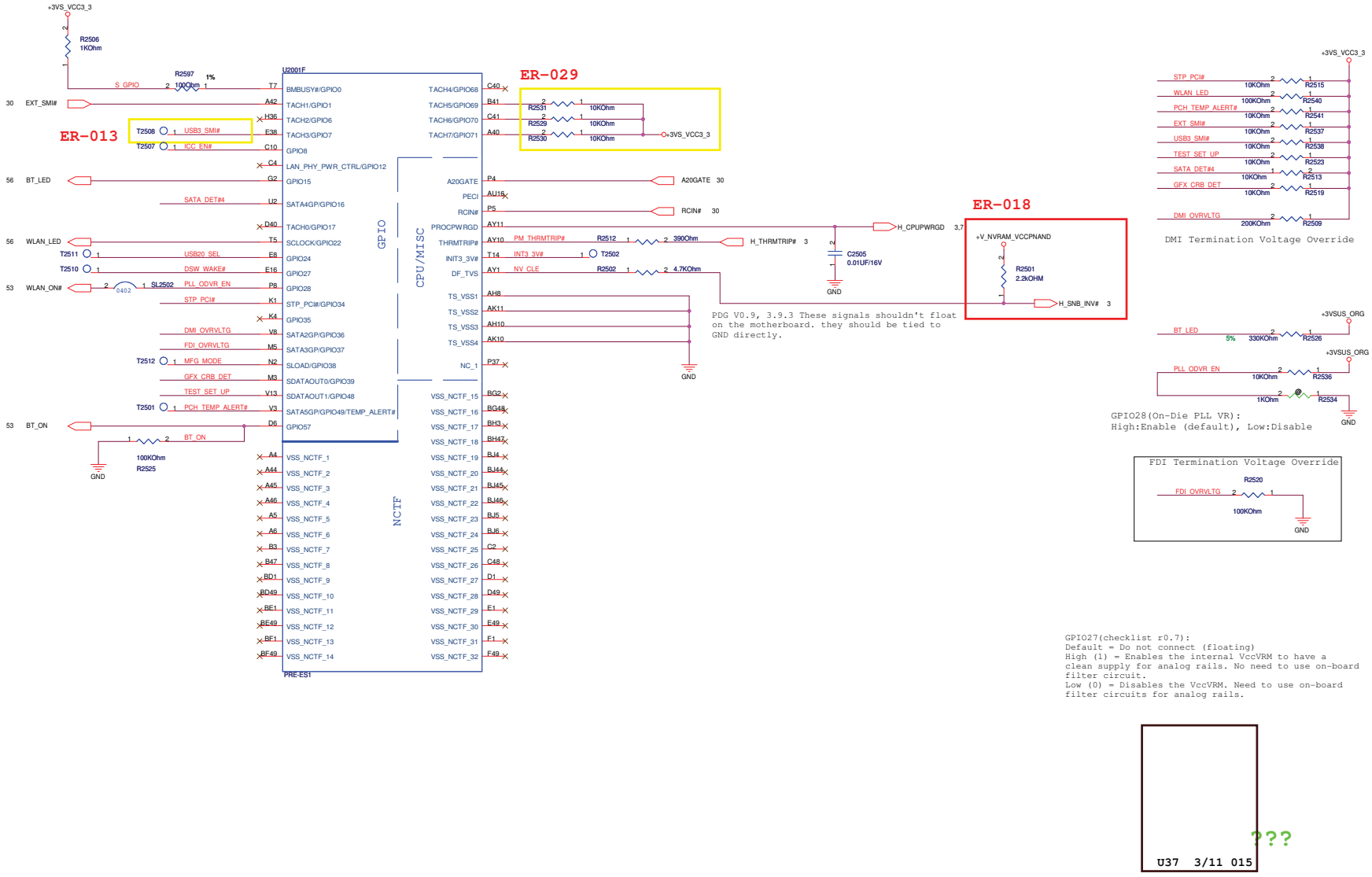
ASUSTeK COMPUTER INC.

Title : PCH_IBEX(5)_PCI,NVRAM,USB

Engineer: shihhsien_yang

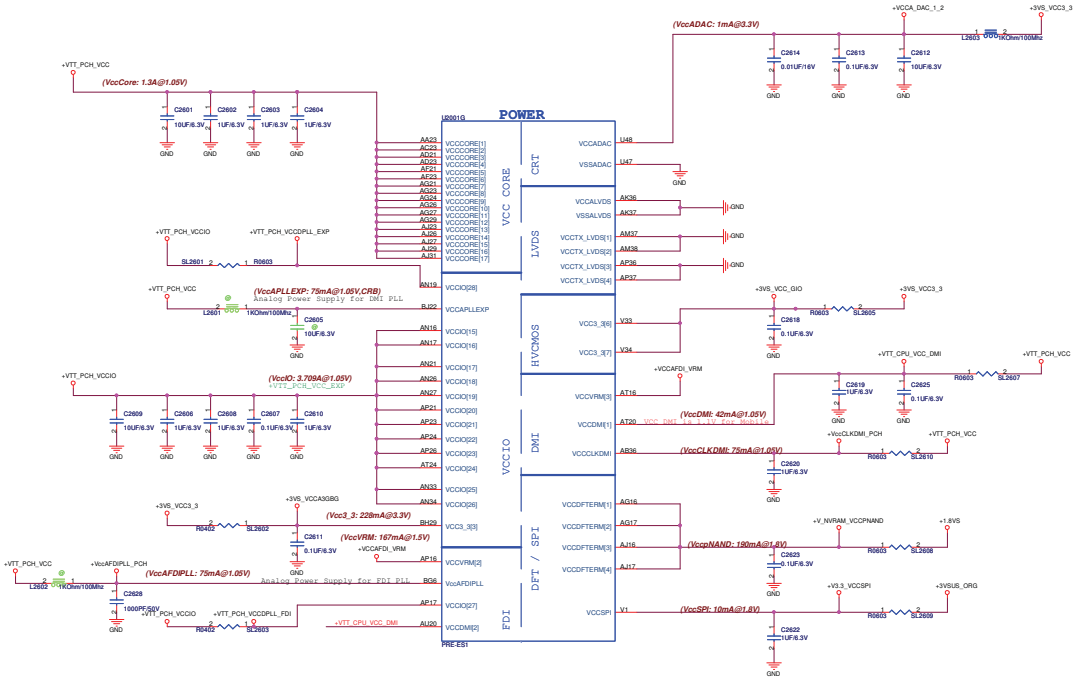
Size: Custom | Project Name: UX31A2 | Rev: R2.0

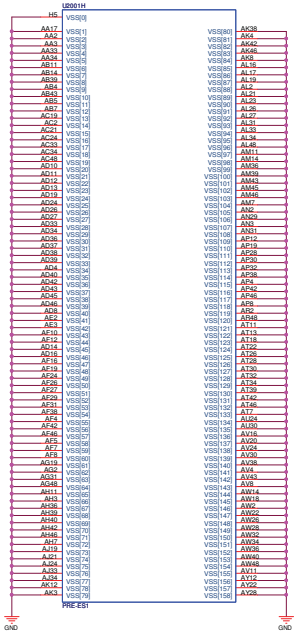
Date: Wednesday, April 11, 2012 | Sheet 24 of 99

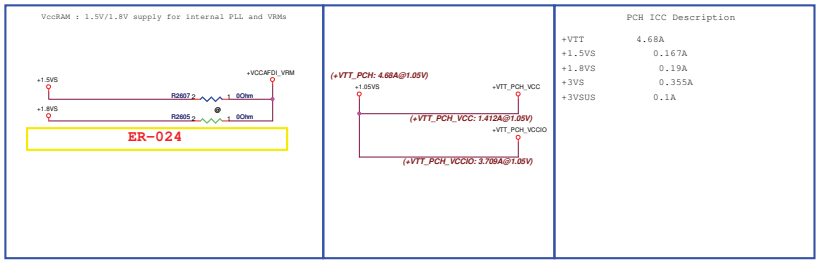


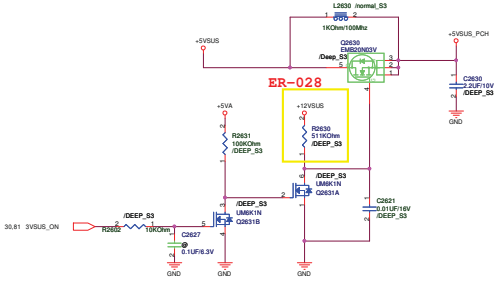

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. | Title : PCH_IBEX(6)CPU,GPIO,MISC | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 25 of 98 | |

All Beads : 0603 !!

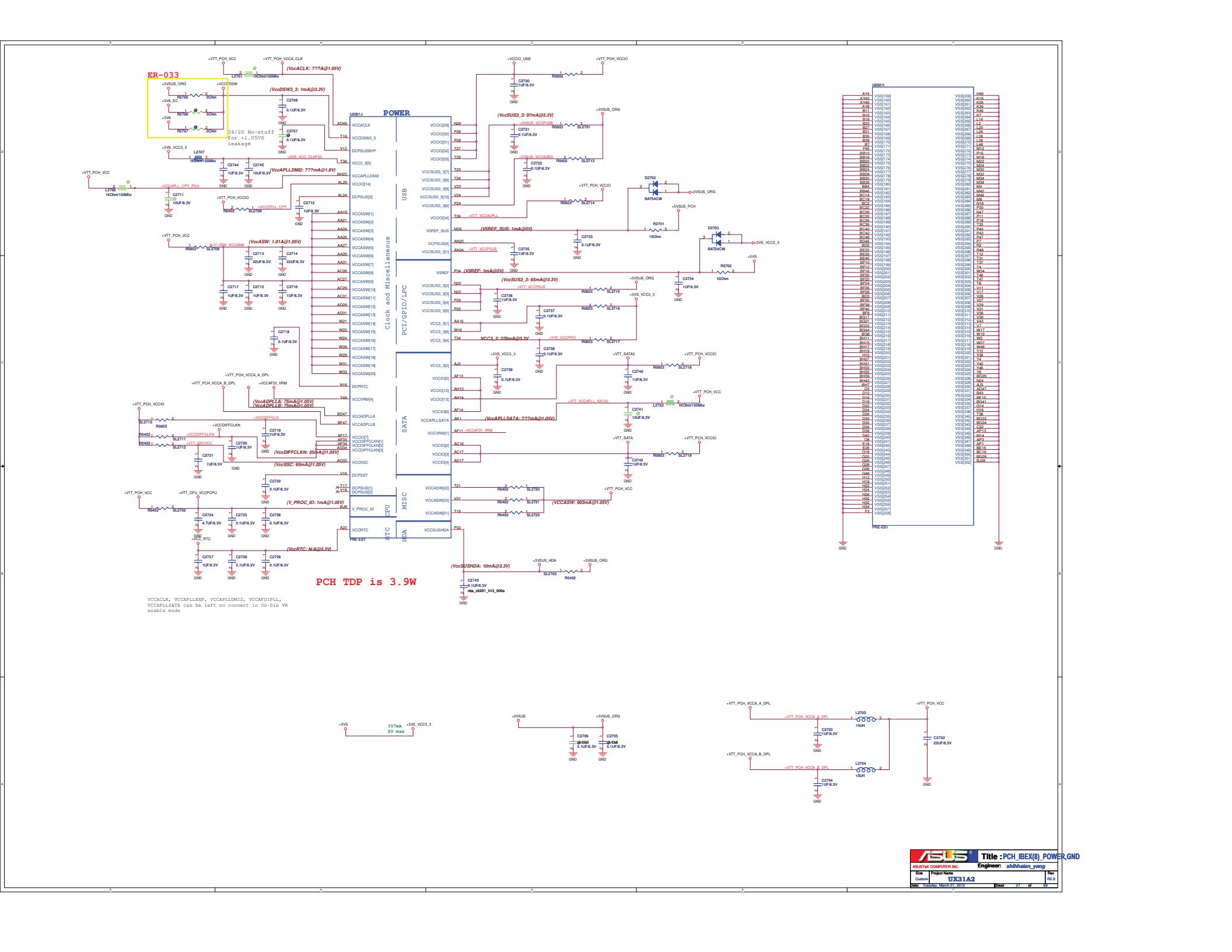



| | | |
|---|---|---|
| Title : | PCH_IBEX(7)_POWER,GND | |
| ASUSTeK COMPUTER INC. | Engineer: | shihhsien_yang |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 28 of 59 | |

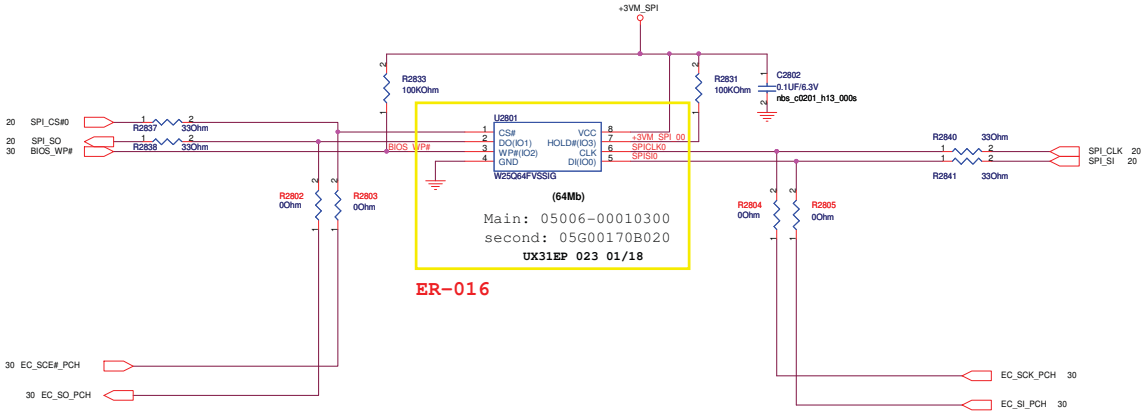

ER-033
04/20 No-stuff for +1.05VS leakage
POWER
PCH TDP is 3.9W
VCCACLK, VCCAPLLEXP, VCCAPLLDMI2, VCCAFDIPLL, VCCAPLLSATA can be left no connect in On-Die VR enable mode
Title : PCH_IBEX(8)_POWER,GND
Engineer: shihhsien_yang
ASUSTeK COMPUTER INC.
UX31A2

# PCH SPI ROM

05/12 delete +3VA

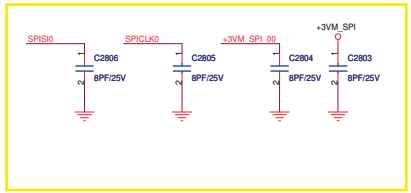
+3VSUS_ORG — +3VM_SPI

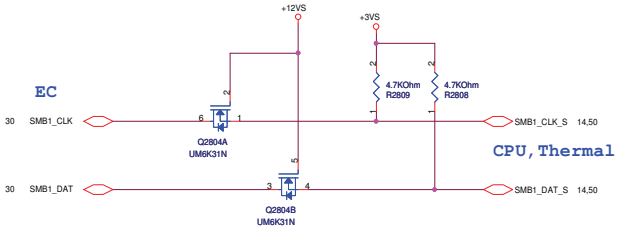
## Remove SPI FLASH TOOL CON




ER-016

ER-025

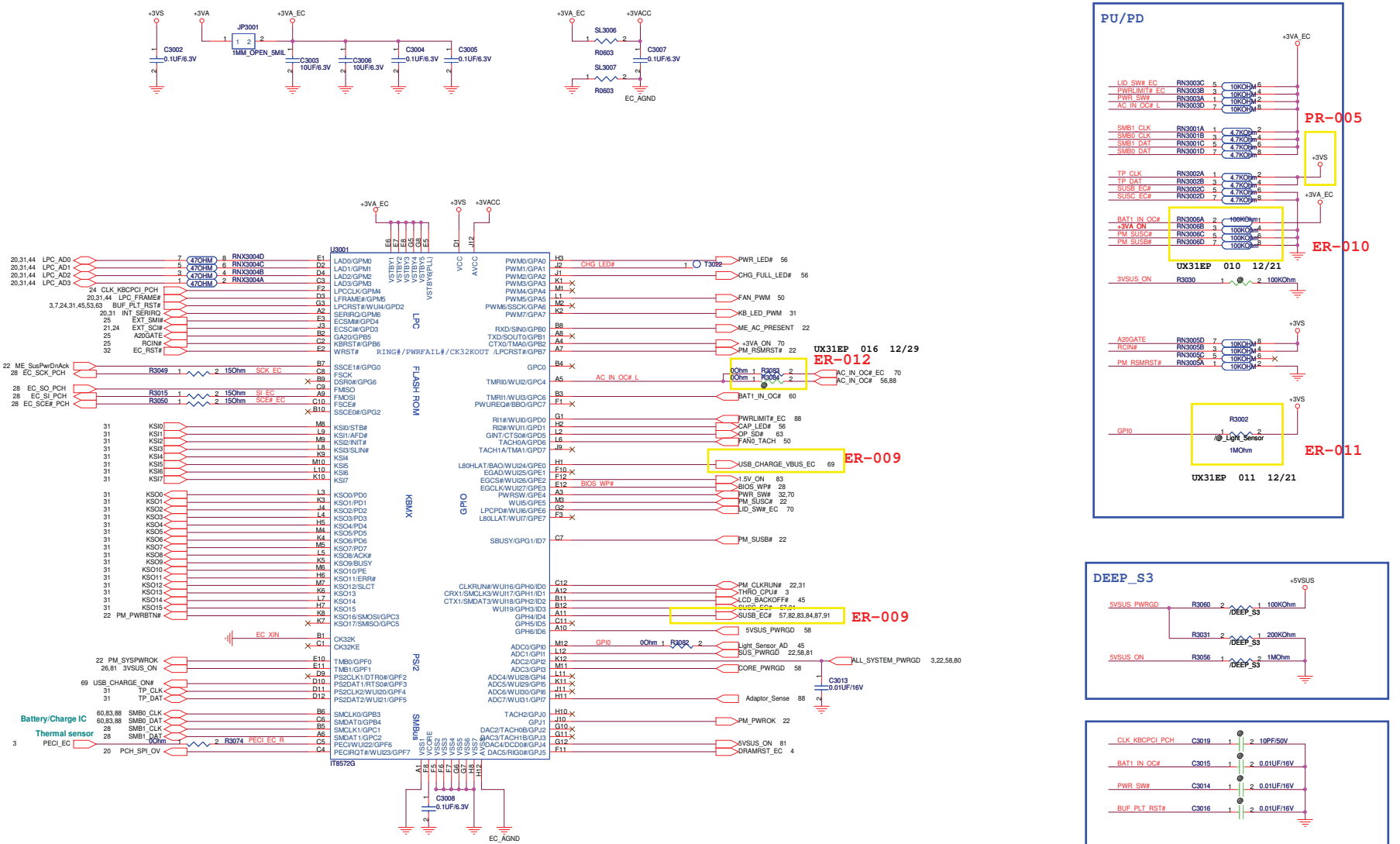



| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. | Title : PCH_SPI ROM,OTH | |
| | Engineer: Susi_Hong | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 28 of 99 | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : CLK_ICS9LRS3161 | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 29 of 98 | | |

**Main Board**




## PU/PD



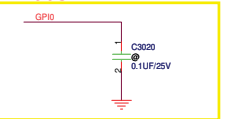

## DEEP_S3







## PR-005



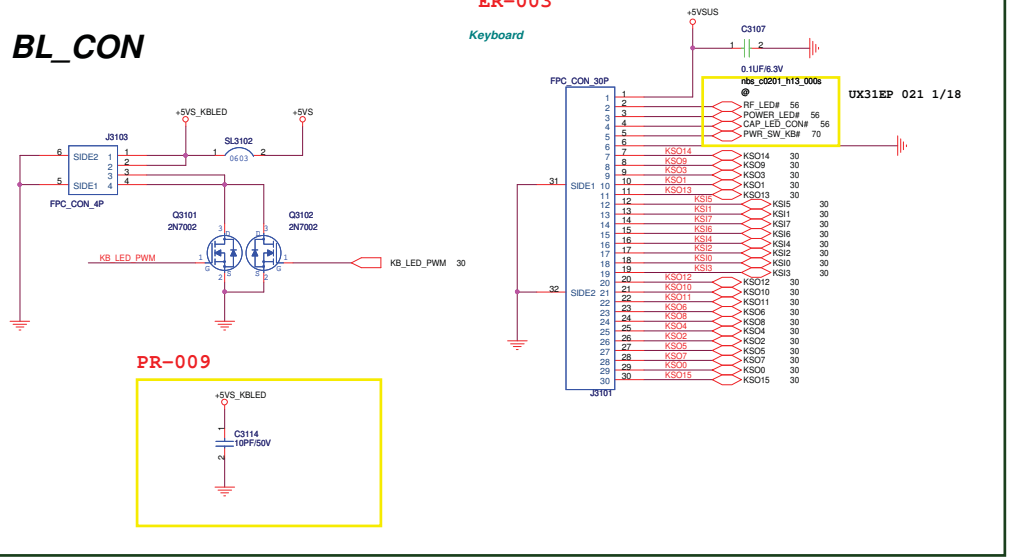

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : KBC_IT8570E_BGA | |
| | Engineer: Susi_Hong | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 30 of 98 | |

# Keyboard

## BL_CON

ER-003

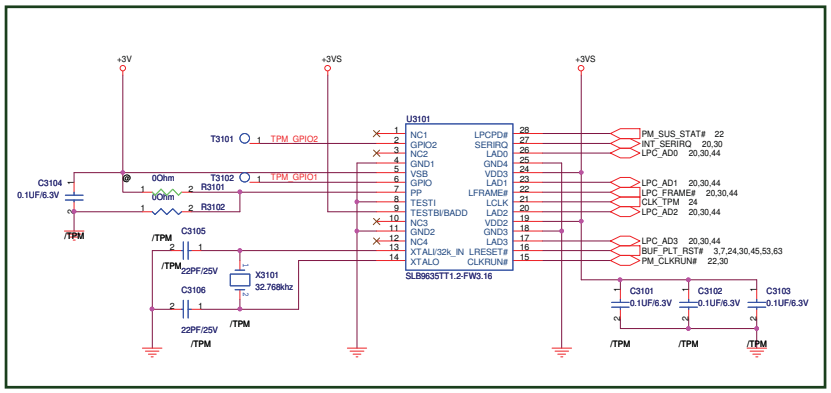
Keyboard




PR-009




# TPM




# ClickPad Schematic

**BOM_Note**

Normal TP option -> /PS2TP

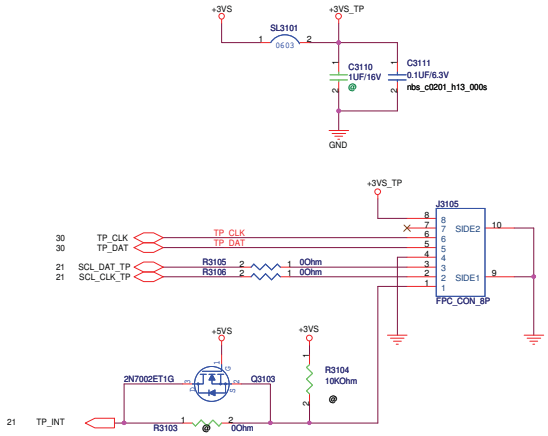
ELAN SMBUS TP option

Synaptics SMBUS TP option

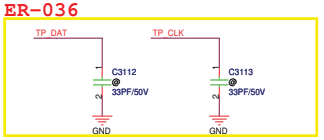
**click pad option is for win8 requirement Function**

PR-005

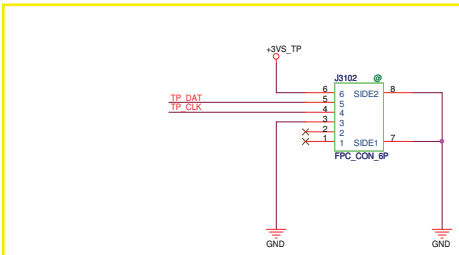
## T/P




ER-036

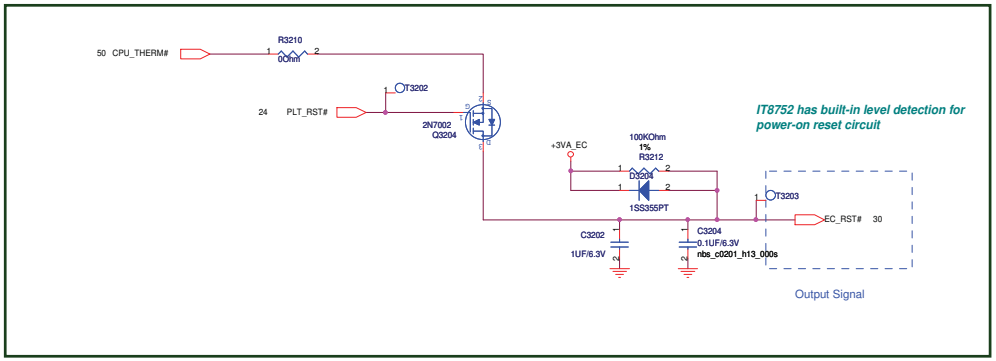



PR-010

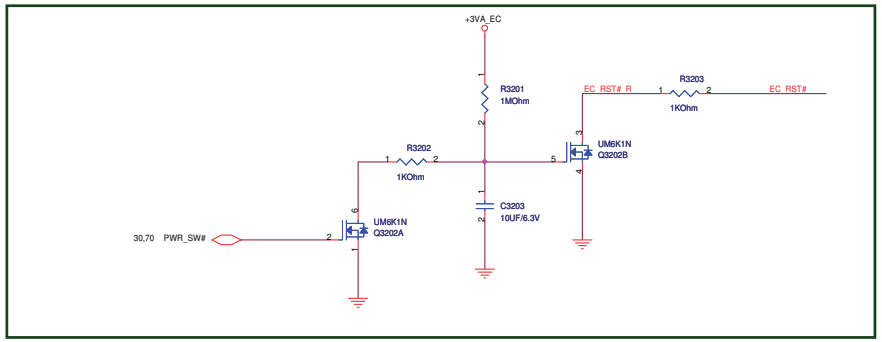



| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : EC_KB_TP_TPM | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 31 of 99 | |

## Thermal Policy




## battery embedded (press pwr_sw 10sec, then reset ec )




| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : RST_Reset Circuit | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 32 of 99 | |

Title : LAN-***

ASUSTeK COMPUTER INC. NB3

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 33 of 99

Title : LAN-***

ASUSTeK COMPUTER INC. NB3

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

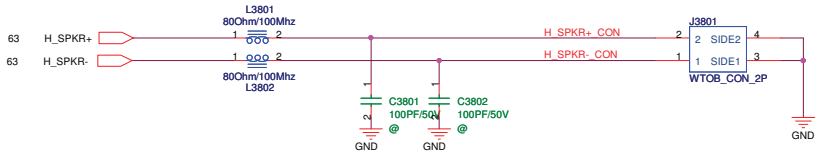
Date: Tuesday, March 27, 2012 Sheet 34 of 99

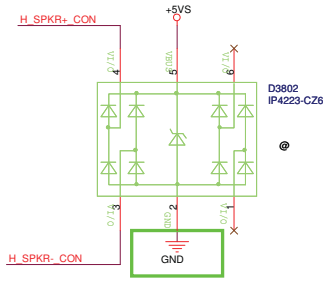
| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : **** | | |
| | Engineer: shihhsien_yang | | |
| Size: Custom | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 35 of 99 | | |

<Variant Name>

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC | Title : AUD-**** | |
| | Engineer: shihhsien_yang | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 36 of 99 | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC | Title : AUD-**** | | |
| | Engineer: shihhsien_yang | | |
| Size: Custom | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 37 of 99 | | |




<Variant Name>

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC | Title : AUD SPK-R CONN | |
| | Engineer: shihhsien_yang | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 38 of 99 | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : AUD-**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 39 of 98 | | |

| | |
|---|---|
| Title : | CB-**** |
| ASUSTeK COMPUTER INC. NB6 | Engineer: shihhsien_yang |
| Size: A | Project Name: UX31A2 |
| Rev: R2.0 | |
| Date: Tuesday, March 27, 2012 | Sheet 40 of 99 |

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB6 | Title : CB-**** | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 41 of 99 | |

<Variant Name>

Title : CB-****

ASUSTeK COMPUTER INC.

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 42 of 99

<Variant Name>

Title : CB-****

ASUSTeK COMPUTER INC.

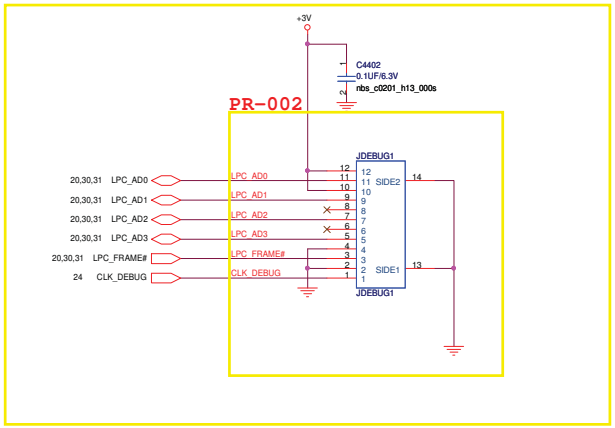
Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

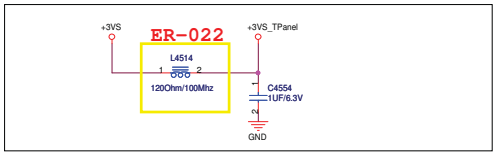
Date: Tuesday, March 27, 2012 Sheet 43 of 99

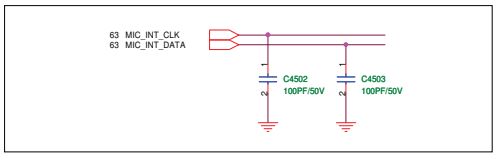
## LPC Debug Port

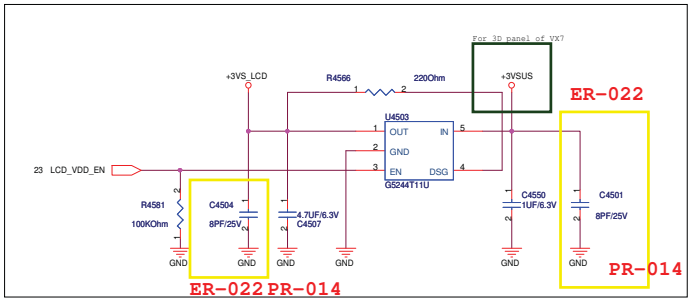
PR-013

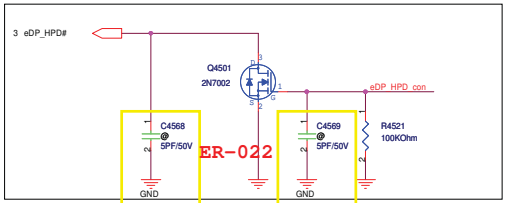


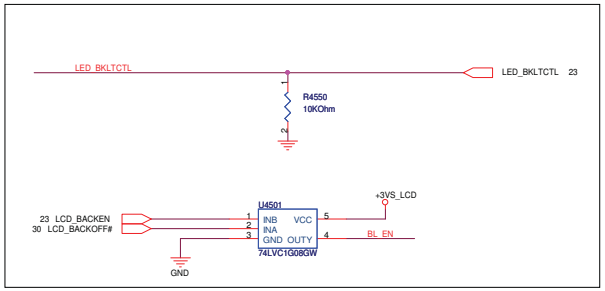

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : BUG_Debug | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 44 of 99 | |

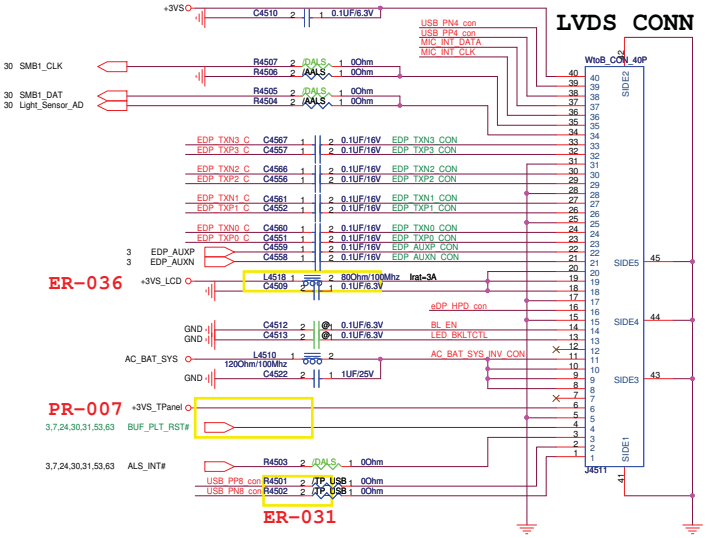


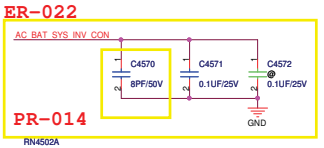



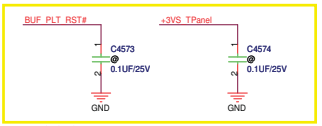



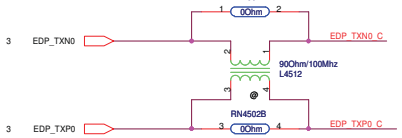



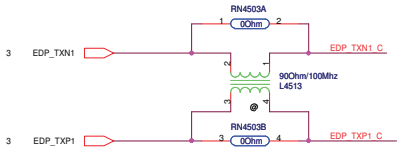



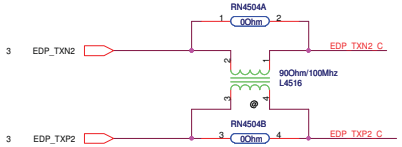



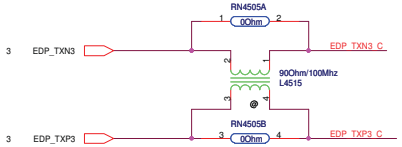



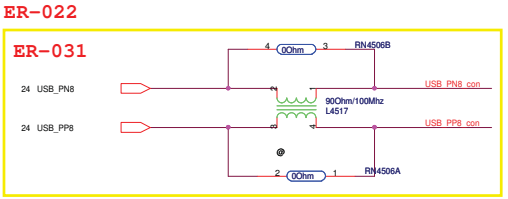



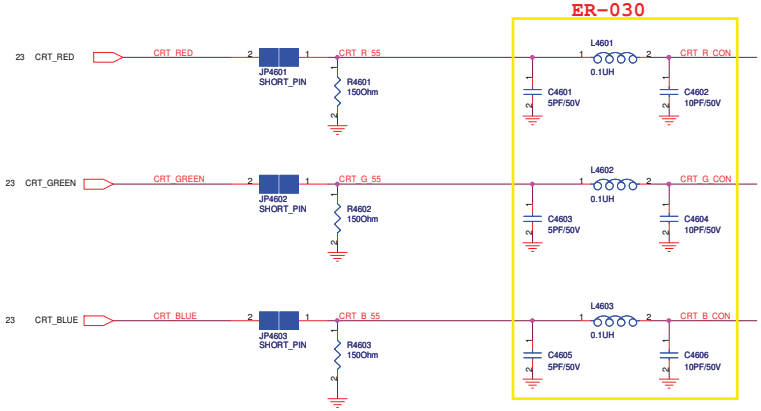



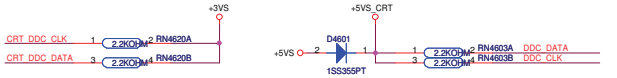



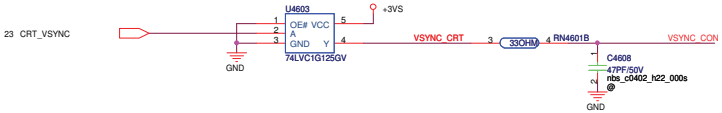

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : LCD Panel_CMOS_DMIC | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Friday, May 18, 2012 | Sheet 45 of 99 | | |

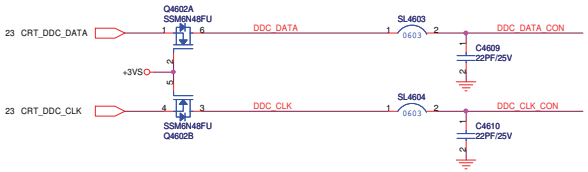
**Main Board**

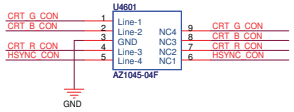
ER-030

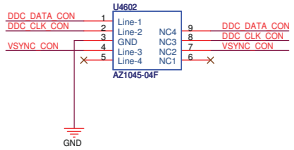


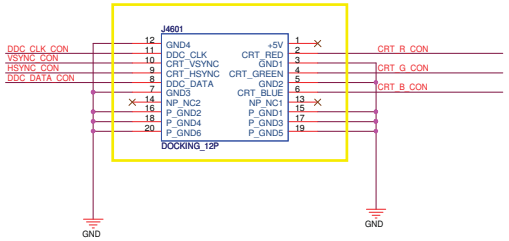




ER-004

UX31EP 004 12/21




| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | | Title : CRT_D-Sub | |
| | | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | | Sheet 46 of 98 | |

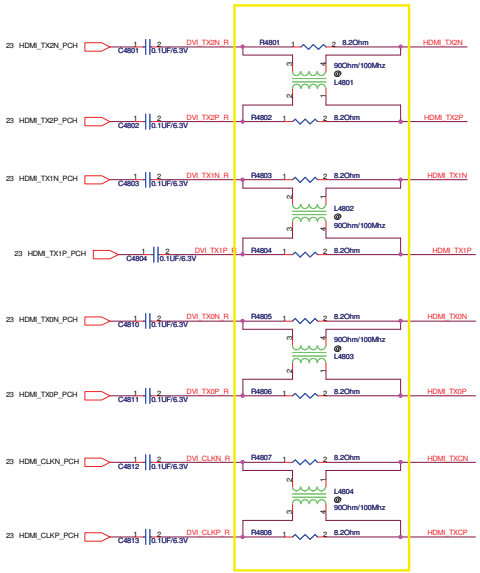
Main Board

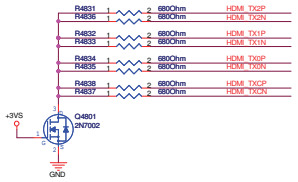
| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : Display Port | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 47 of 98 | | |

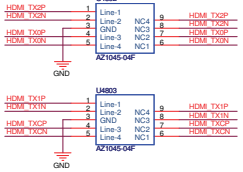
**Close to CONNECTOR**

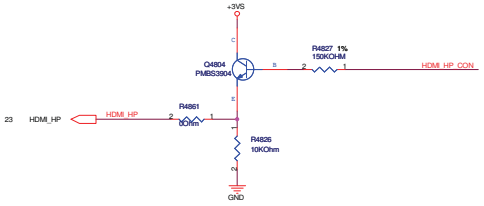
Near CON J4801

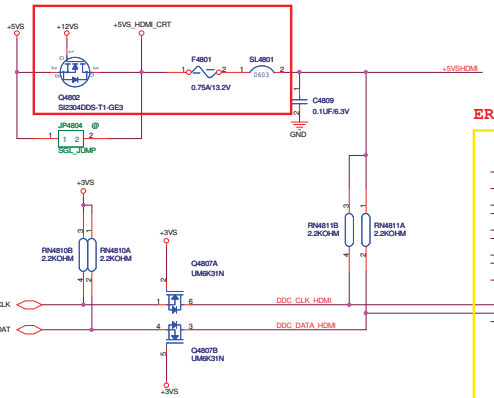
**ER-022**



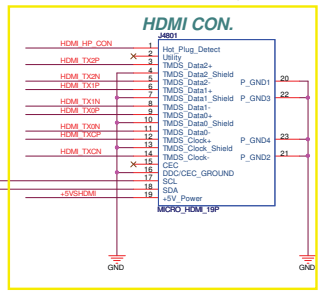




**ER-005**

UX31EP 005 12/21

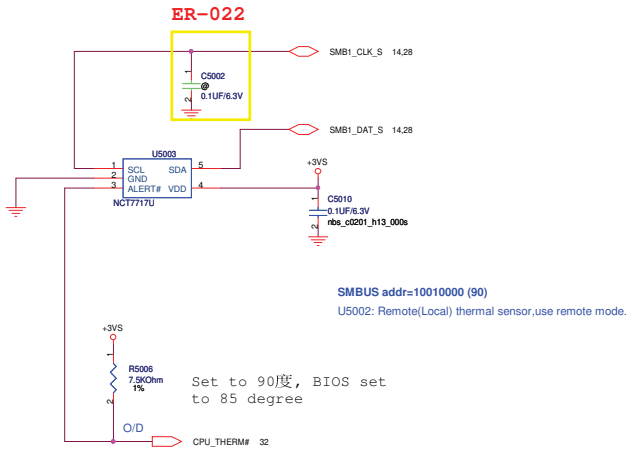



| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC | | Title : | HDMI-type D |
| | | Engineer: | shihhsien_yang |
| Size: Custom | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | | Sheet 48 of 99 | |

**Main Board**

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : TV_**** | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 49 of 98 | |

## CPU Thermal Sensor

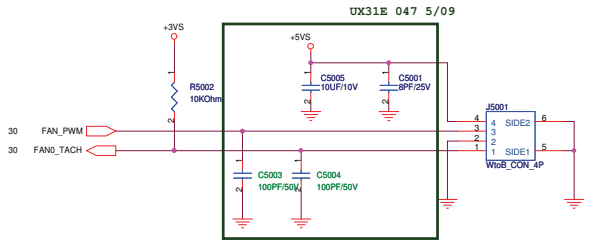



Route CPU_THRM_DA , CPU_THRM_DC and on the same layer

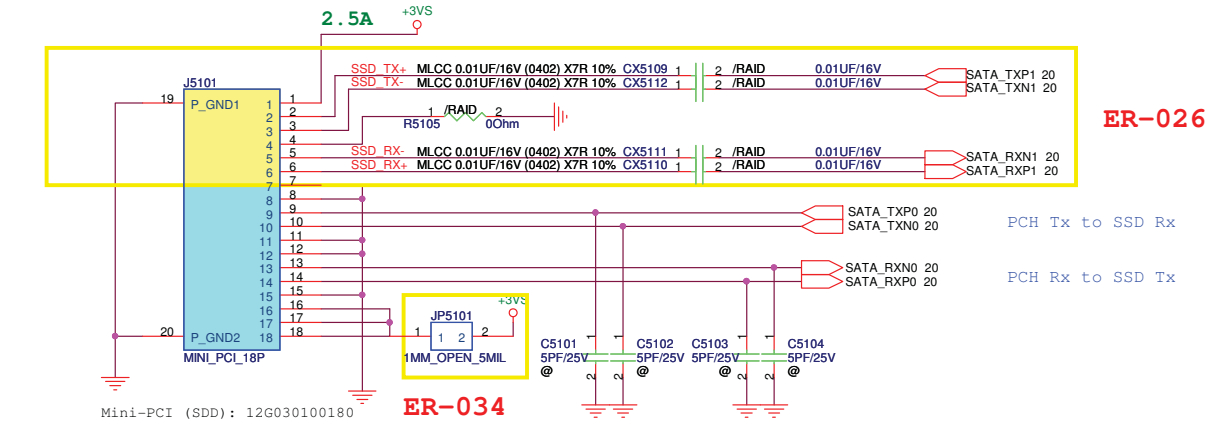
----------OTHER SIGNALS
10 mils
==========GND
10 mils
==========H_THERMDA(10 mils)
10 mils
==========H_THERMDC(10 mils)
10 mils
==========GND
10 mils
----------OTHER SIGNALS

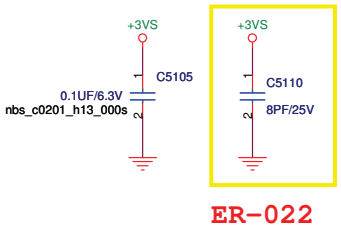
Avoid FSB,Power

## DC FAN Control




| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : FAN_Thermal Sensor | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Friday, May 18, 2012 | Sheet 50 of 98 | | |

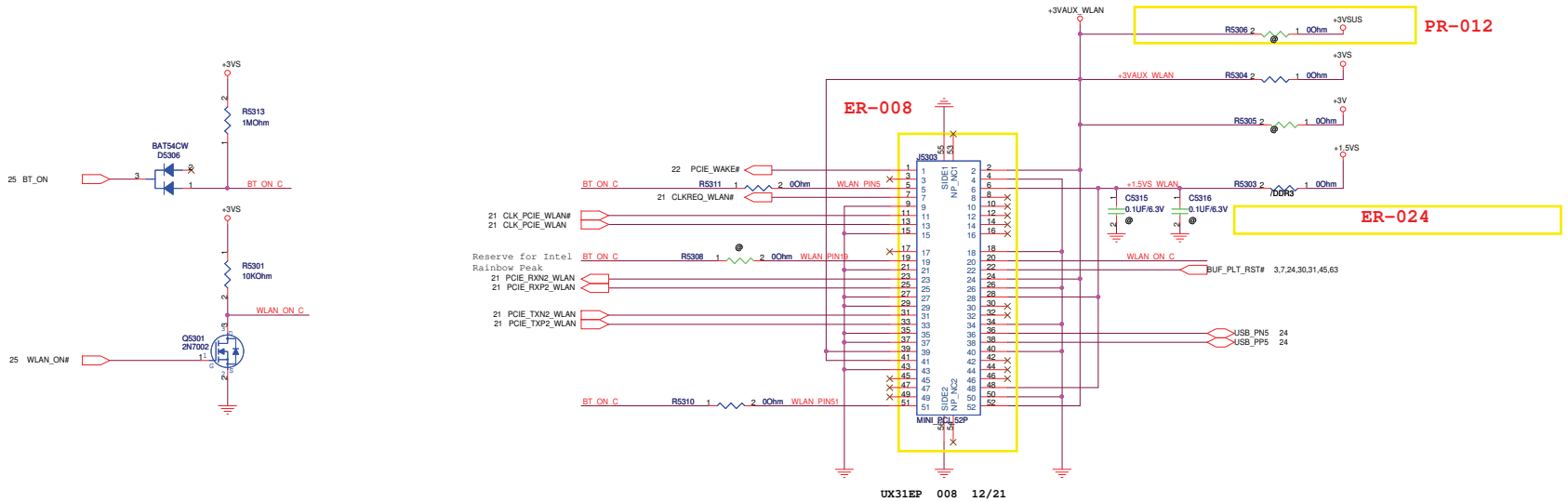



| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : MiniCard_SSD | |
| | Engineer: shihhsien_yang | |
| Size: B | Project Name: UX31A2 | Rev: R2.0 |
| Date: Friday, May 18, 2012 | Sheet 51 of 99 | |

Main Board

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : USB_USB Port *3 | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 52 of 98 | | |

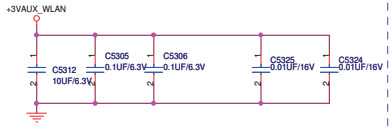



UX31EP 008 12/21

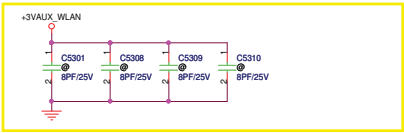
**WLAN +3VAUX bypass capactor:**

Place 0.1UF near pin 2,24,52,39 41.

Place 10UF near +3VAUX_WLAN source side.








ER-022

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB6 | Title : MINICARD_Wlan & BT | |
| | Engineer: Susi_Hong | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 53 of 99 | |

Main Board

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : BAR_**** | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 54 of 98 | |

**Main Board**

ASUSTeK COMPUTER INC. NB4

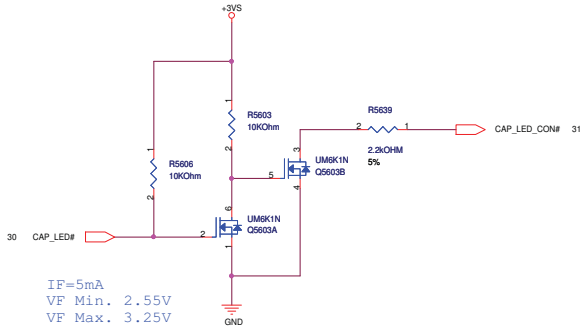
Title : SIO_****

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

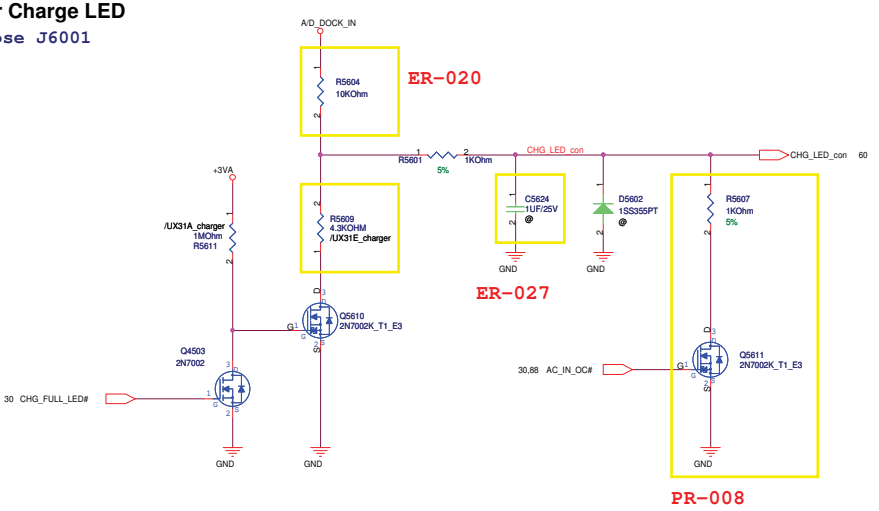
Date: Tuesday, March 27, 2012 Sheet 55 of 99

## CAPS_LOCK LED

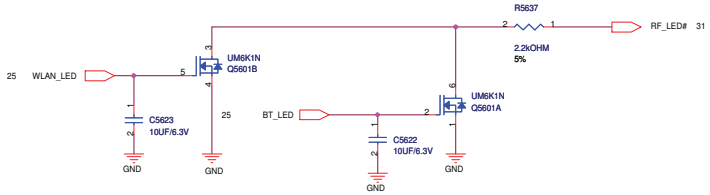



## For Charge LED

Close J6001

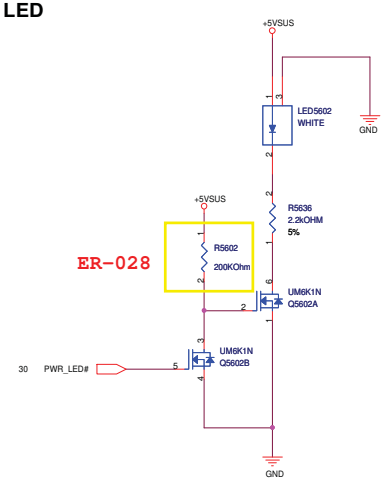


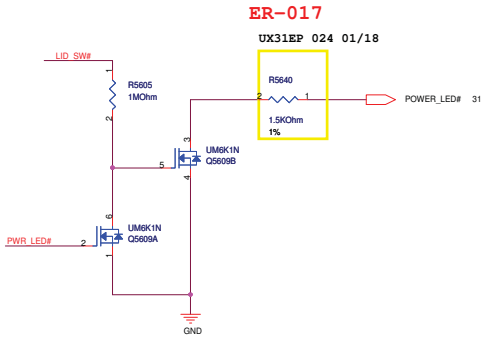

## WireLess/BT LED




WirelessLAN & Bluetooth Status LED

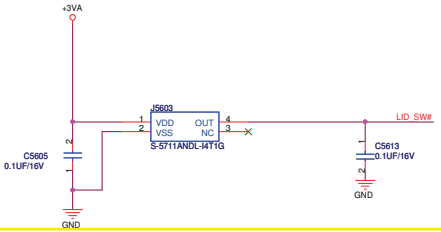
## PWR LED



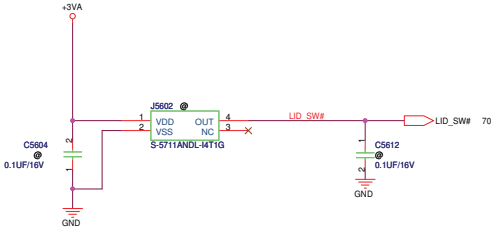




## PR-003

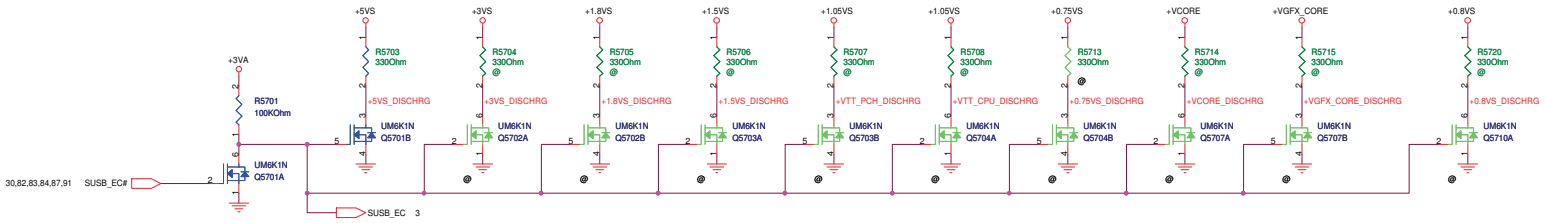
### LID SW (no TouchPanel)



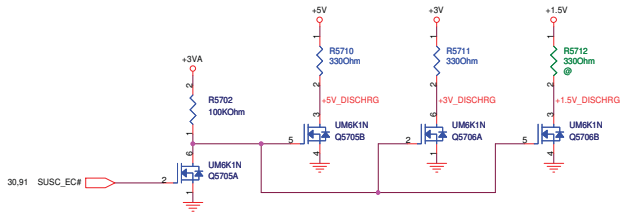

### LID SW (for TouchPanel)



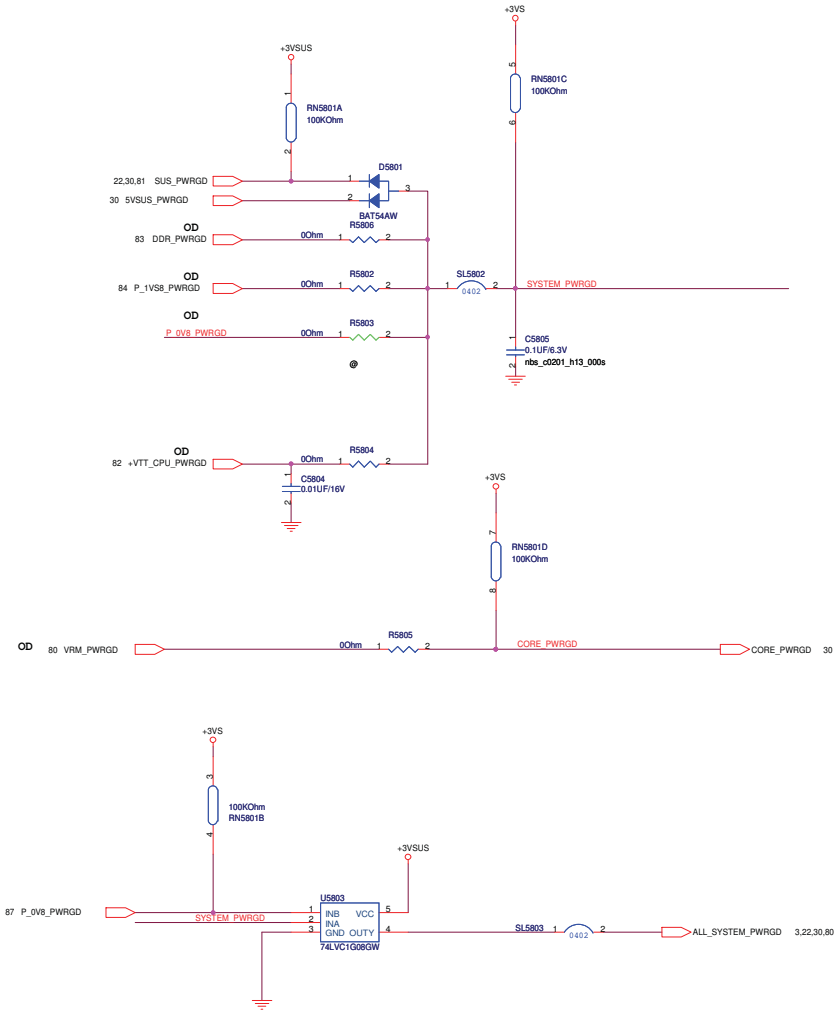

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : LED_Indicator | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 56 of 99 | |




4/20 Stuff R5710 and R5711




| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : DSG_Discharge | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 57 of 98 | |





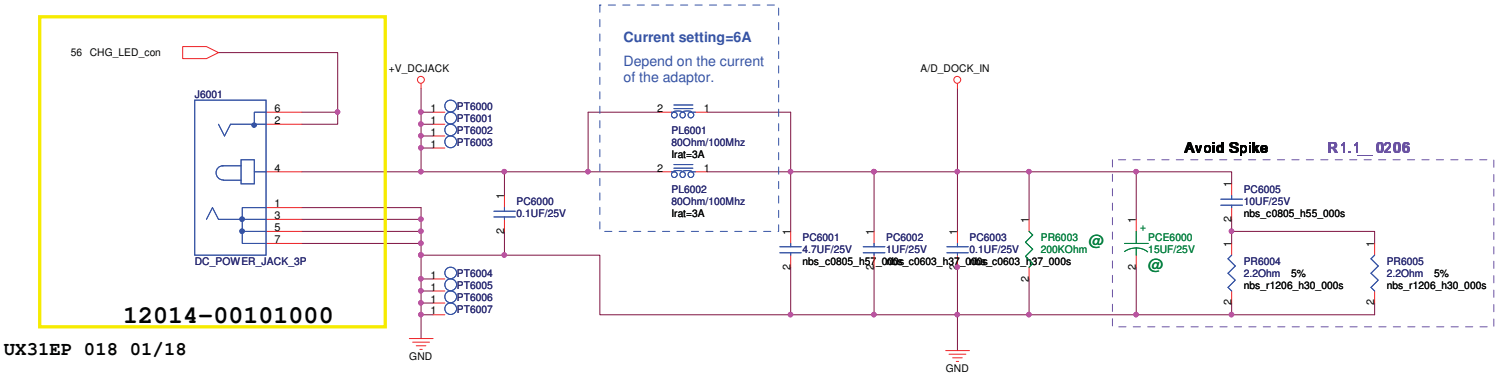


| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : PRO_Protect | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 58 of 98 | |

**Main Board**

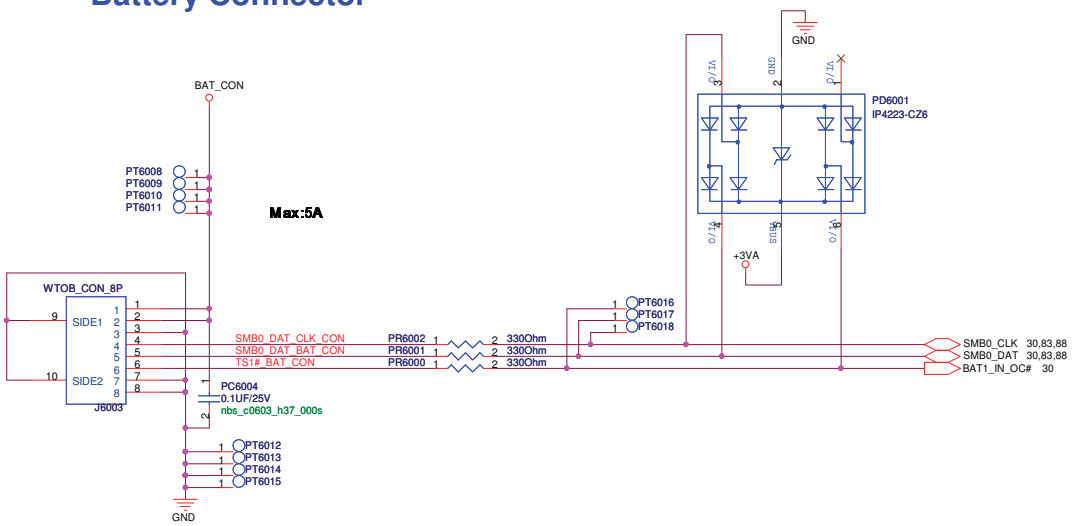
| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : DJ_**** | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 59 of 98 | |

ER-015




UX31EP 018 01/18

## Battery Connector




| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. | Title : DC_DC & BATIN | |
| | Engineer: Power | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 60 of 99 | |

Title : BT

ASUSTeK COMPUTER INC. NB1

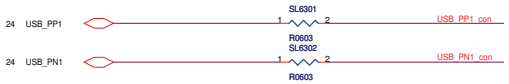
Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| Custom | UX31A2 | R2.0 |

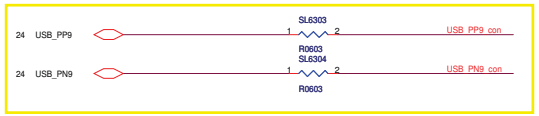
Date: Tuesday, March 27, 2012 Sheet 61 of 99

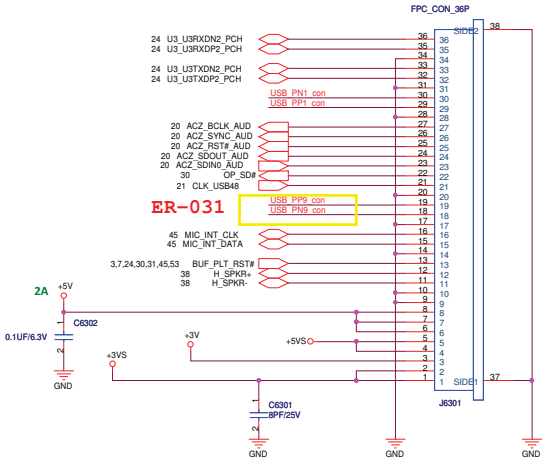
**Main Board**

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : **** | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 62 of 99 | |



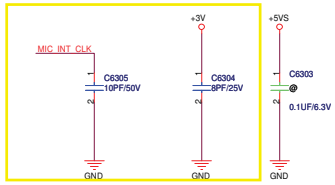

ER-031



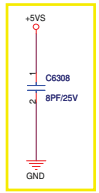




ER-031

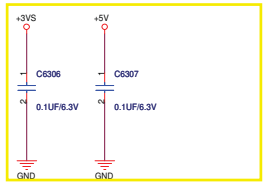
ER-022




PR-011




ER-035




| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : B TO B CONN | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Friday, May 18, 2012 | Sheet 63 of 99 | |

Main Board

ASUSTeK COMPUTER INC. NB4

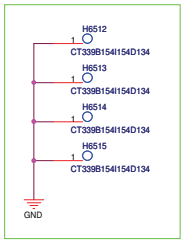
Title : TUN_TV Tuner

Engineer: shihhsien_yang

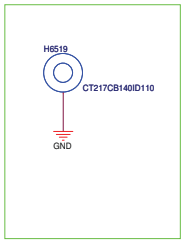
| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 64 of 99

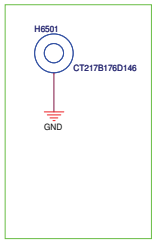
## CPU Bracket



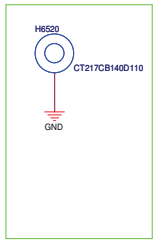

## UX31A WLAN NUT



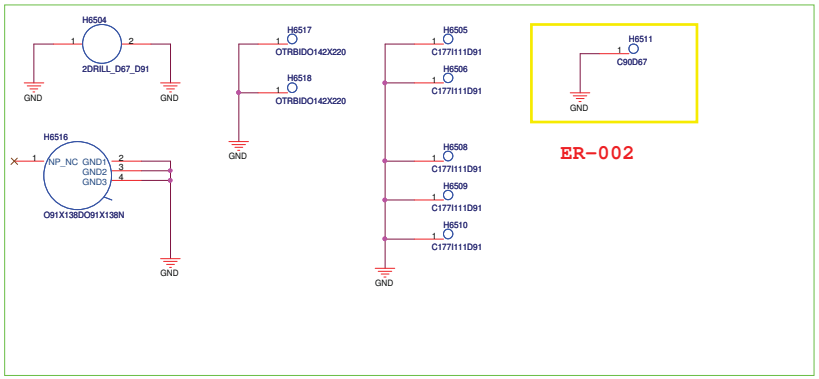

## PCH NUT

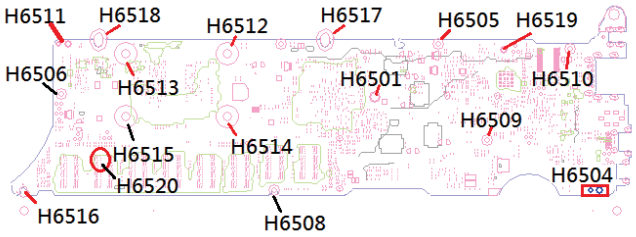



## SSD NUT

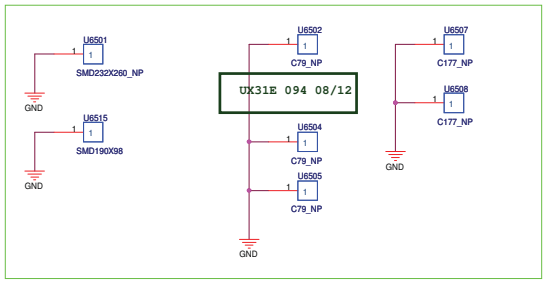



## Screw hole

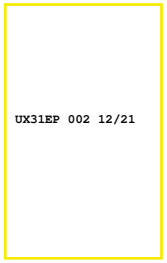



## Bottom Pad




## EMI Shrapnel




ER-002

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : ME_Conn & Skew Hole | |
| | Engineer: Susi_Hong | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 65 of 99 | |

Main Board

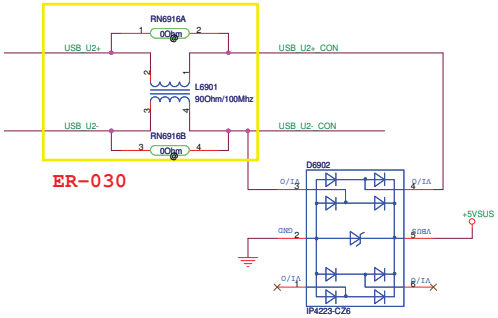
| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : ESA_ESATA | |
| | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 66 of 99 | |

| | |
|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : PCH_XDP, ONFI |
| | Engineer: shihsien_yang |
| Size: C | Project Name: UX31A2 |
| | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 67 of 99 |

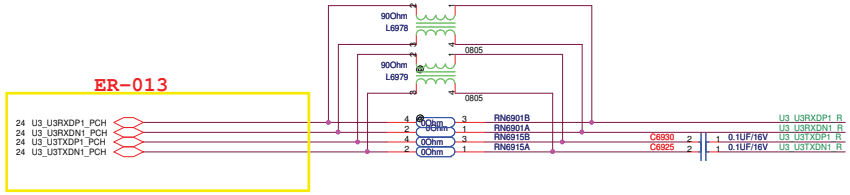
ER-013

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB3 | Title : **** | |
| | Engineer: Susi_Hong | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 68 of 99 | |

## USB2.0 EMI-Protection & ESD-Protection

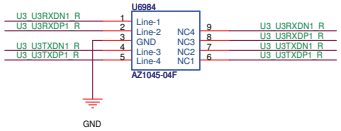



## USB3.0 EMI-Protection




## USB3.0 ESD-Protection

1st : 07G028076030
ESD PROTECTION AZ1045-04F
2nd : 07G028153010
ESD PROTECTION IP4284CZ10-TB

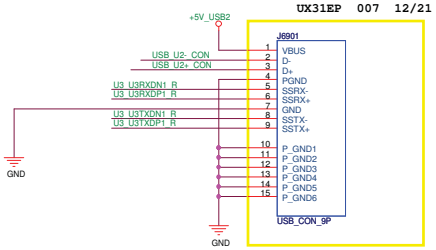



## USB30 CONN

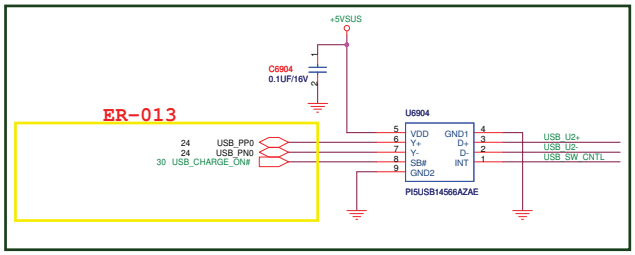
### USB30 CONN

UX21 CON 12013-00011600

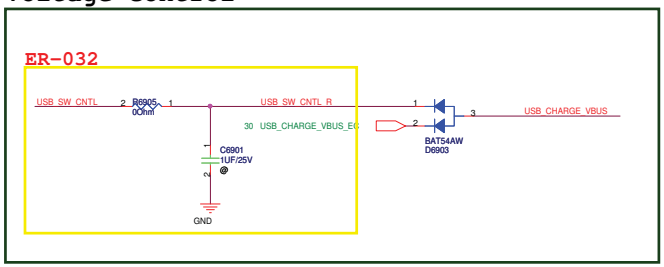
UX31EP 007 12/21



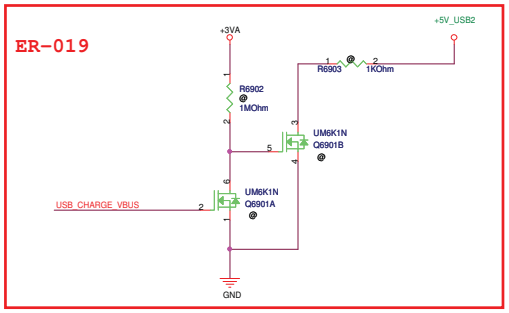

## USB Charger




## Charger_pwr_control & DC mode low voltage control

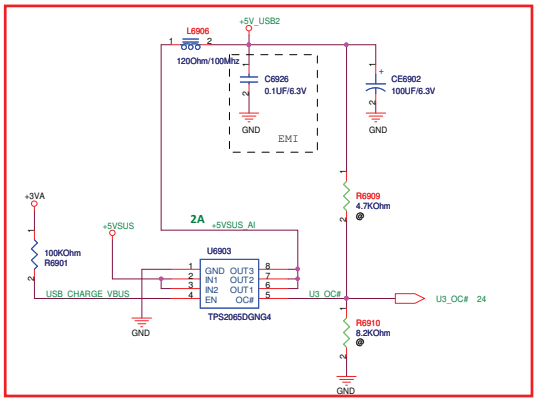



## VBUS_discharger



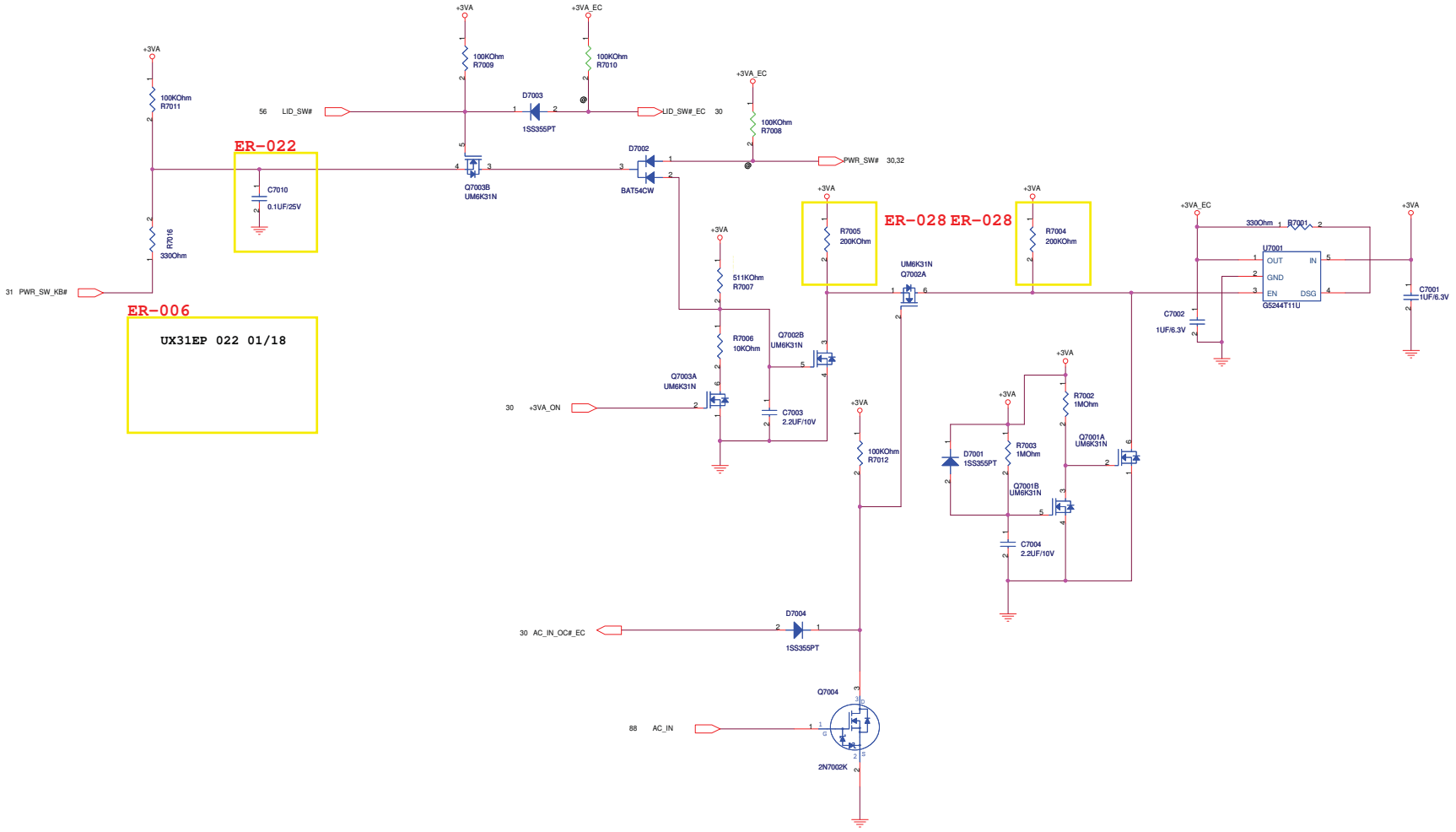

Using TI IC, then the iphone4S can't charger in S4&S3 mode.

## USB_SW VBUS Contorl Circuit




| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : USB3.0_one Port | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 69 of 98 | | |

# Place close to EC




| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : EC_PWR_SW | |
| | Engineer: Susi_Hong | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 70 of 98 | |

Title : VGA_****

ASUSTeK COMPUTER INC. NB4

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| C | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 71 of 99

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : VGA_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 72 of 98 | | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : VGA_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 73 of 98 | | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : VGA_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 74 of 98 | | |

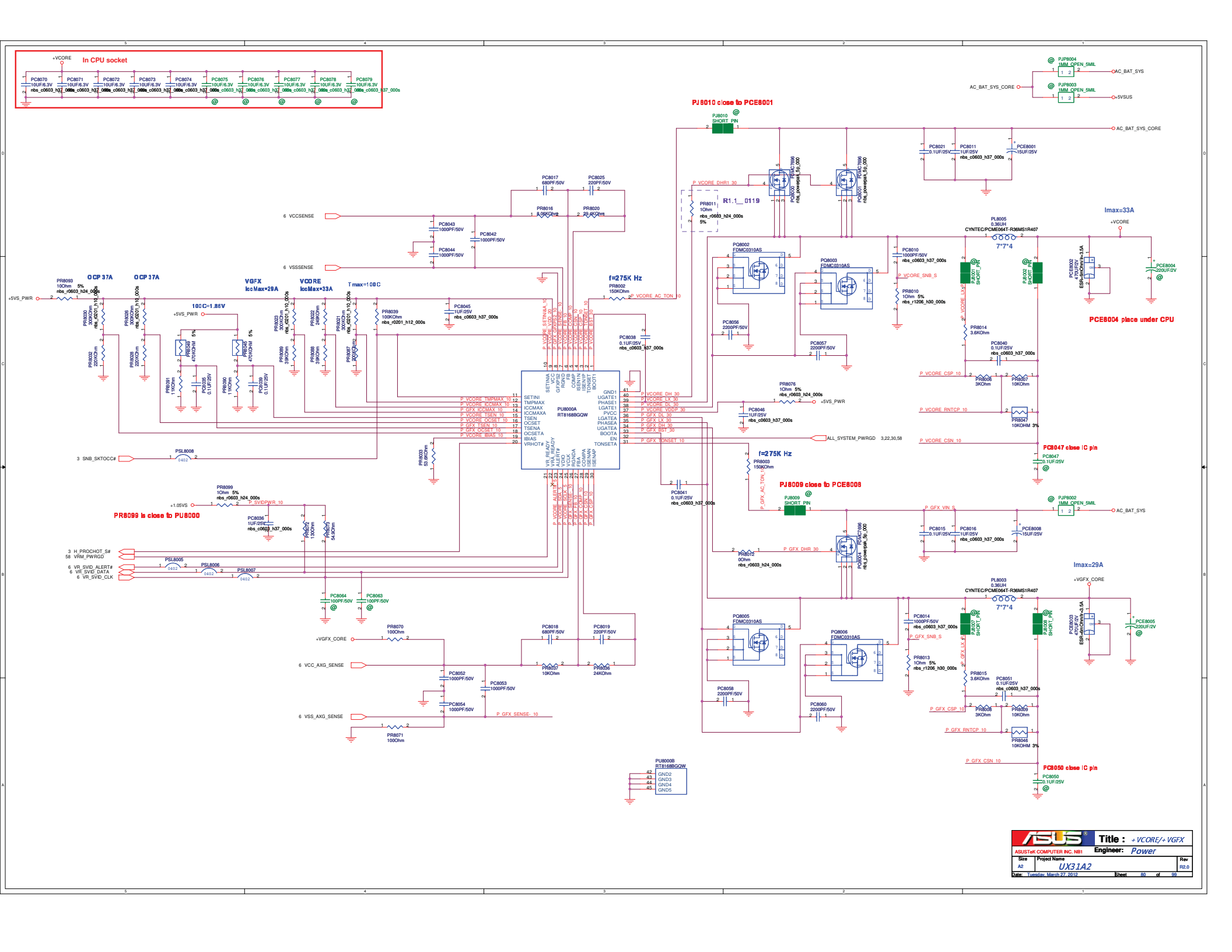
| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : VGA_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 75 of 98 | | |

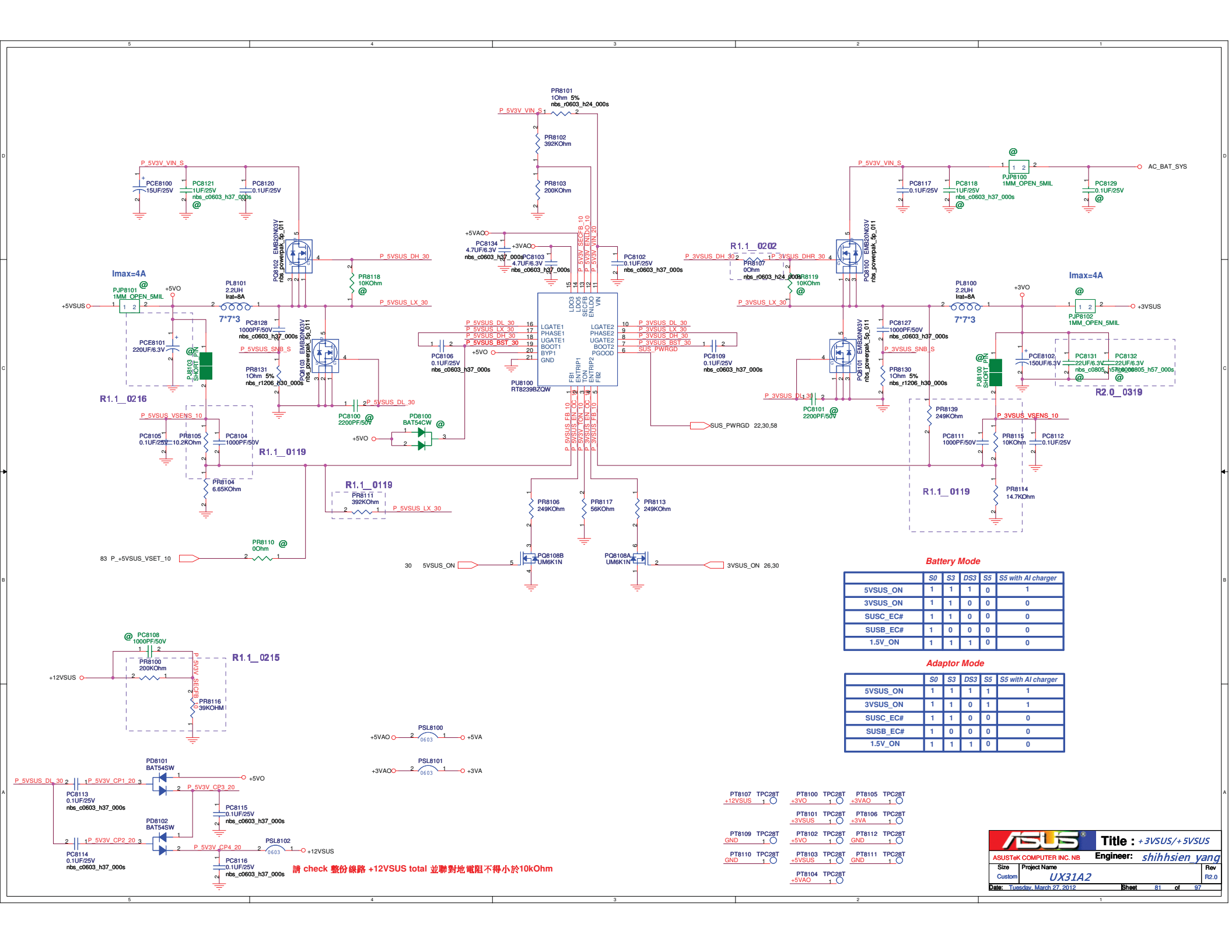
| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : VGA_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 76 of 99 | | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : VGA_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 77 of 98 | | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : VGA_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 78 of 98 | | |

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB4 | Title : VGA_**** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 79 of 98 | | |


In CPU socket
PJ8010 close to PCE8001
PJ8009 close to PCE8008
PR8099 is close to PU8000
PCE8004 place under CPU
PC8047 close IC pin
PC8050 close IC pin
OCP 37A
OCP 37A
VGFX
IccMax=29A
VCORE
IccMax=33A
Tmax=100C
100C=1.86V
f=275K Hz
f=275K Hz
Imax=33A
Imax=29A
PU8000A
RT8168BGQW
PU8000B
RT8168BGQW
Title : +VCORE/+VGFX
ASUSTeK COMPUTER INC. NB1
Engineer: Power
Project Name
UX31A2
Size
A2
Rev
R2.0
Date: Tuesday, March 27, 2012
Sheet 80 of 99










請 check 整份線路 +12VSUS total 並聯對地電阻不得小於10kOhm




**Battery Mode**

| | S0 | S3 | DS3 | S5 | S5 with AI charger |
|---|---|---|---|---|---|
| 5VSUS_ON | 1 | 1 | 1 | 0 | 1 |
| 3VSUS_ON | 1 | 1 | 0 | 0 | 0 |
| SUSC_EC# | 1 | 1 | 0 | 0 | 0 |
| SUSB_EC# | 1 | 0 | 0 | 0 | 0 |
| 1.5V_ON | 1 | 1 | 1 | 0 | 0 |

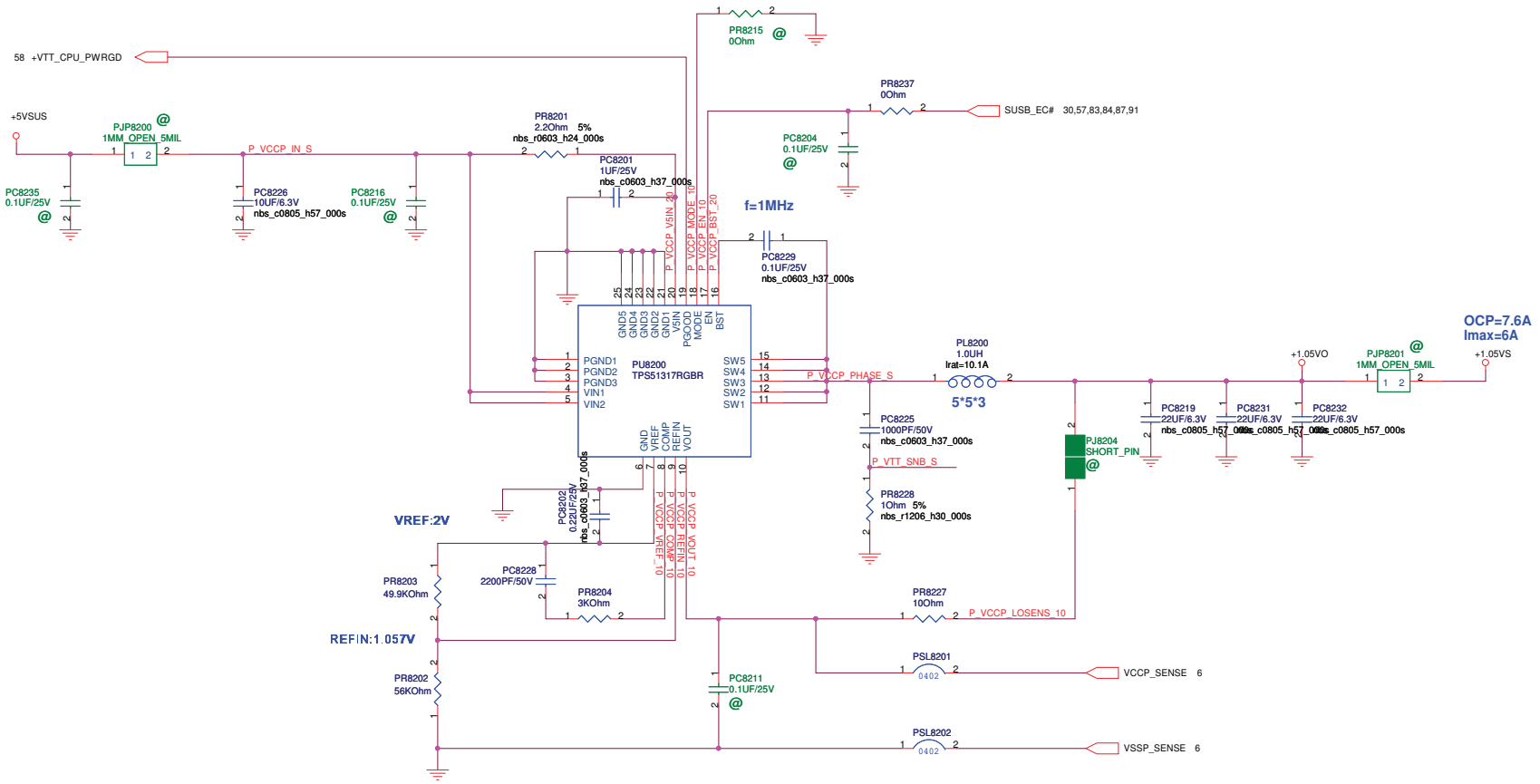
**Adaptor Mode**

| | S0 | S3 | DS3 | S5 | S5 with AI charger |
|---|---|---|---|---|---|
| 5VSUS_ON | 1 | 1 | 1 | 1 | 1 |
| 3VSUS_ON | 1 | 1 | 0 | 1 | 1 |
| SUSC_EC# | 1 | 1 | 0 | 0 | 0 |
| SUSB_EC# | 1 | 0 | 0 | 0 | 0 |
| 1.5V_ON | 1 | 1 | 1 | 0 | 0 |

PT8107 TPC28T +12VSUS
PT8100 TPC28T +3VO
PT8105 TPC28T +3VAO
PT8101 TPC28T +3VSUS
PT8106 TPC28T +3VA
PT8109 TPC28T GND
PT8102 TPC28T +5VO
PT8112 TPC28T GND
PT8110 TPC28T GND
PT8103 TPC28T +5VSUS
PT8111 TPC28T GND
PT8104 TPC28T +5VAO

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB | Title : +3VSUS/+5VSUS | | |
| | Engineer: shihhsien_yang | | |
| Size: Custom | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 81 of 97 | | |

# +VTT_CPU & +VTT_PCH & +1.05VS POWER SUPPLY



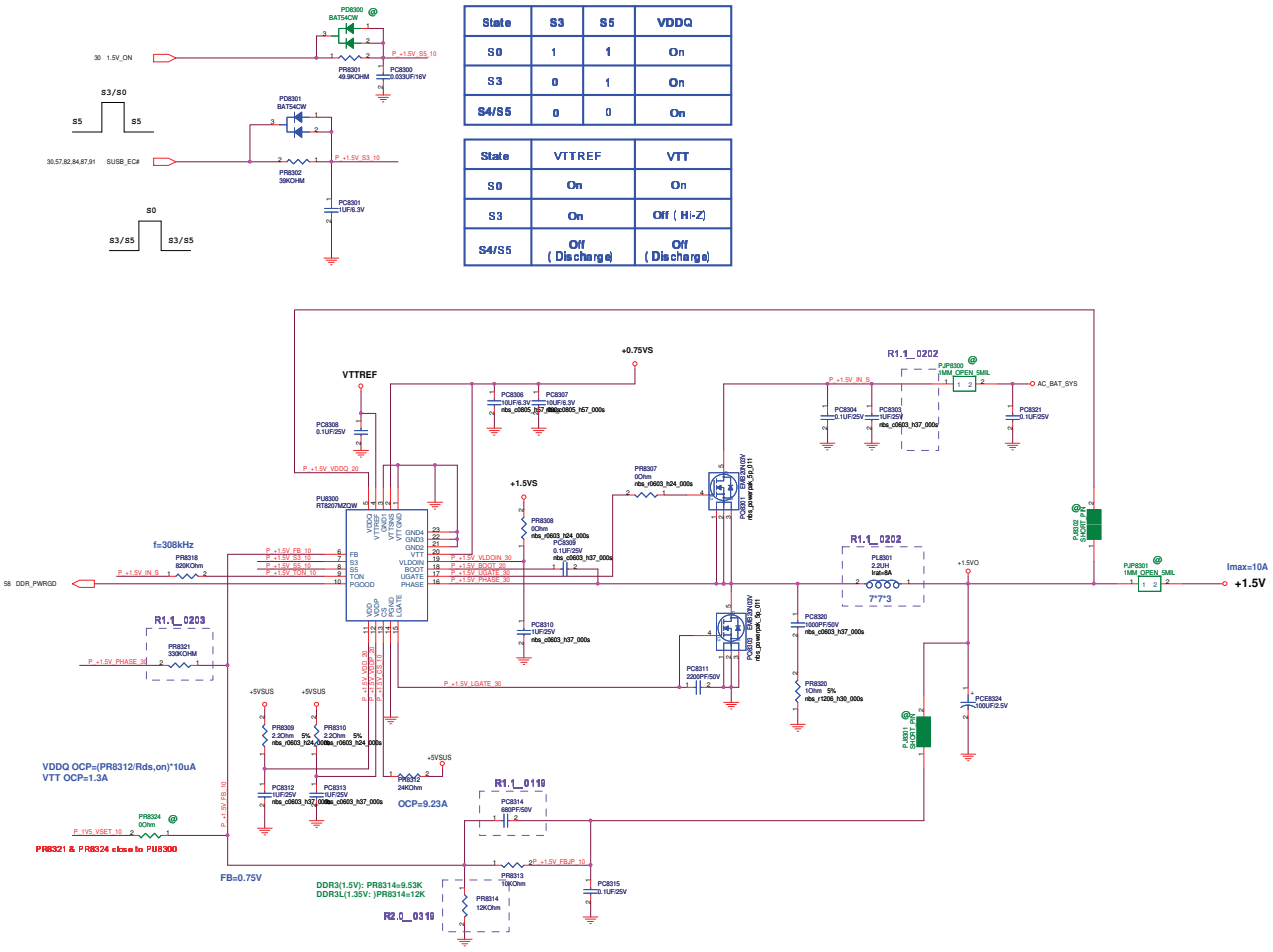

<Variant Name>

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB | Title : +1.05VS | |
| | Engineer: shihhsien_yang | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 82 of 99 | |

S3 And S5 Truth Table

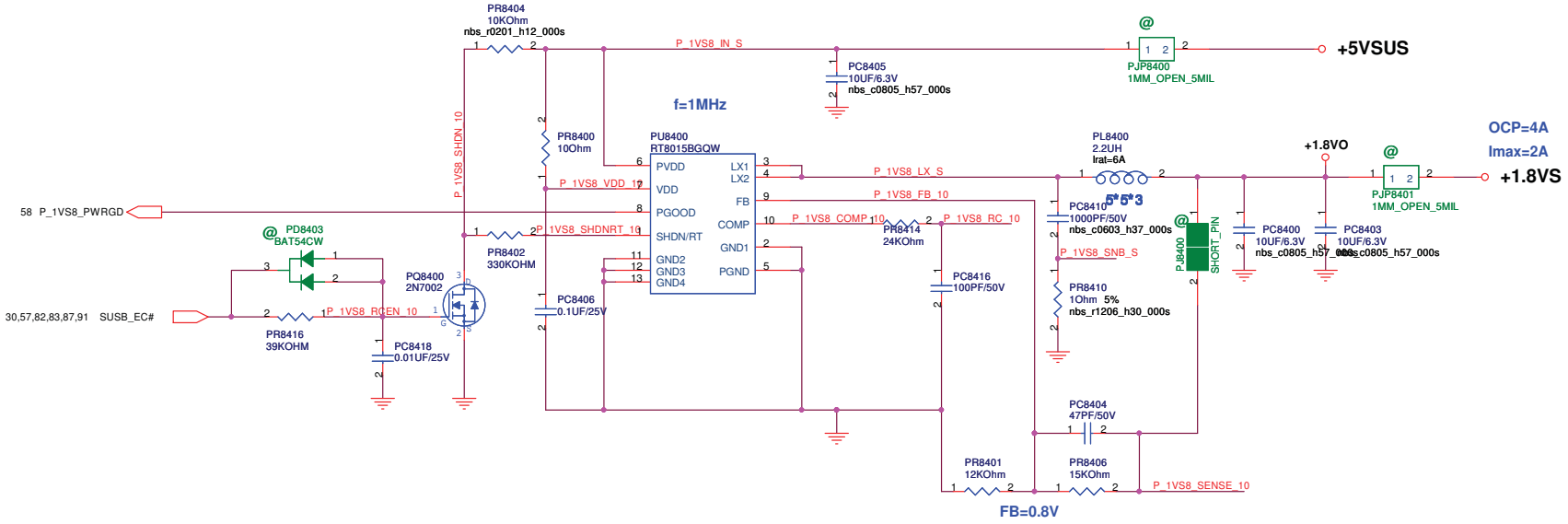
| State | S3 | S5 | VDDQ |
|---|---|---|---|
| S0 | 1 | 1 | On |
| S3 | 0 | 1 | On |
| S4/S5 | 0 | 0 | On |

| State | VTTREF | VTT |
|---|---|---|
| S0 | On | On |
| S3 | On | Off ( Hi-Z) |
| S4/S5 | Off ( Discharge) | Off ( Discharge) |




| | | | |
|---|---|---|---|
| ASUSTek Computer INC. | Title : +1.5V/+0.75VS | | |
| | Engineer: shihhsien_yang | | |
| Size: Custom | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 83 of 99 | | |

# +1.8VS POWER SUPPLY




| | | |
|---|---|---|
| PT8401 | TPC28T | +1.8VS 1 |
| PT8402 | TPC28T | GND 1 |
| PT8403 | TPC28T | GND 1 |

| | | |
|---|---|---|
| Title : | +1.8VS | |
| ASUSTeK COMPUTER INC. | Engineer: | shihhsien_yang |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 84 of 99 | |

<Variant Name>

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : POWER_I/O_NVDD | |
| | Engineer: shihhsien_yang | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 85 of 99 | |

<Variant Name>

Title : POWER_+VGFX_CORE

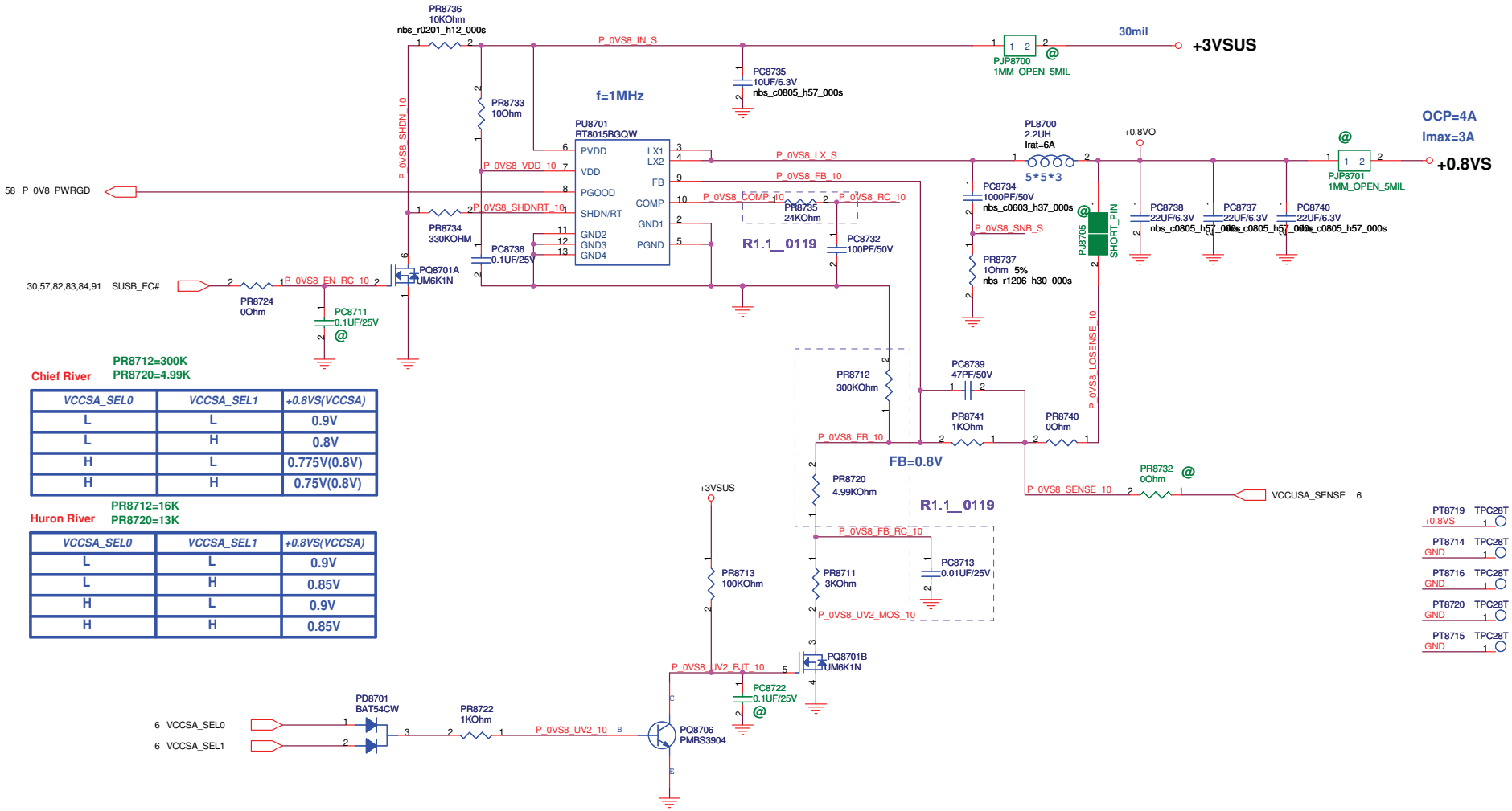
ASUSTeK COMPUTER INC.

Engineer: shihhslen_yang

| Size | Project Name | Rev |
|---|---|---|
| Custom | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 86 of 99

# +0.8VS POWER SUPPLY




**Chief River**

PR8712=300K
PR8720=4.99K

| VCCSA_SEL0 | VCCSA_SEL1 | +0.8VS(VCCSA) |
|---|---|---|
| L | L | 0.9V |
| L | H | 0.8V |
| H | L | 0.775V(0.8V) |
| H | H | 0.75V(0.8V) |

**Huron River**

PR8712=16K
PR8720=13K

| VCCSA_SEL0 | VCCSA_SEL1 | +0.8VS(VCCSA) |
|---|---|---|
| L | L | 0.9V |
| L | H | 0.85V |
| H | L | 0.9V |
| H | H | 0.85V |

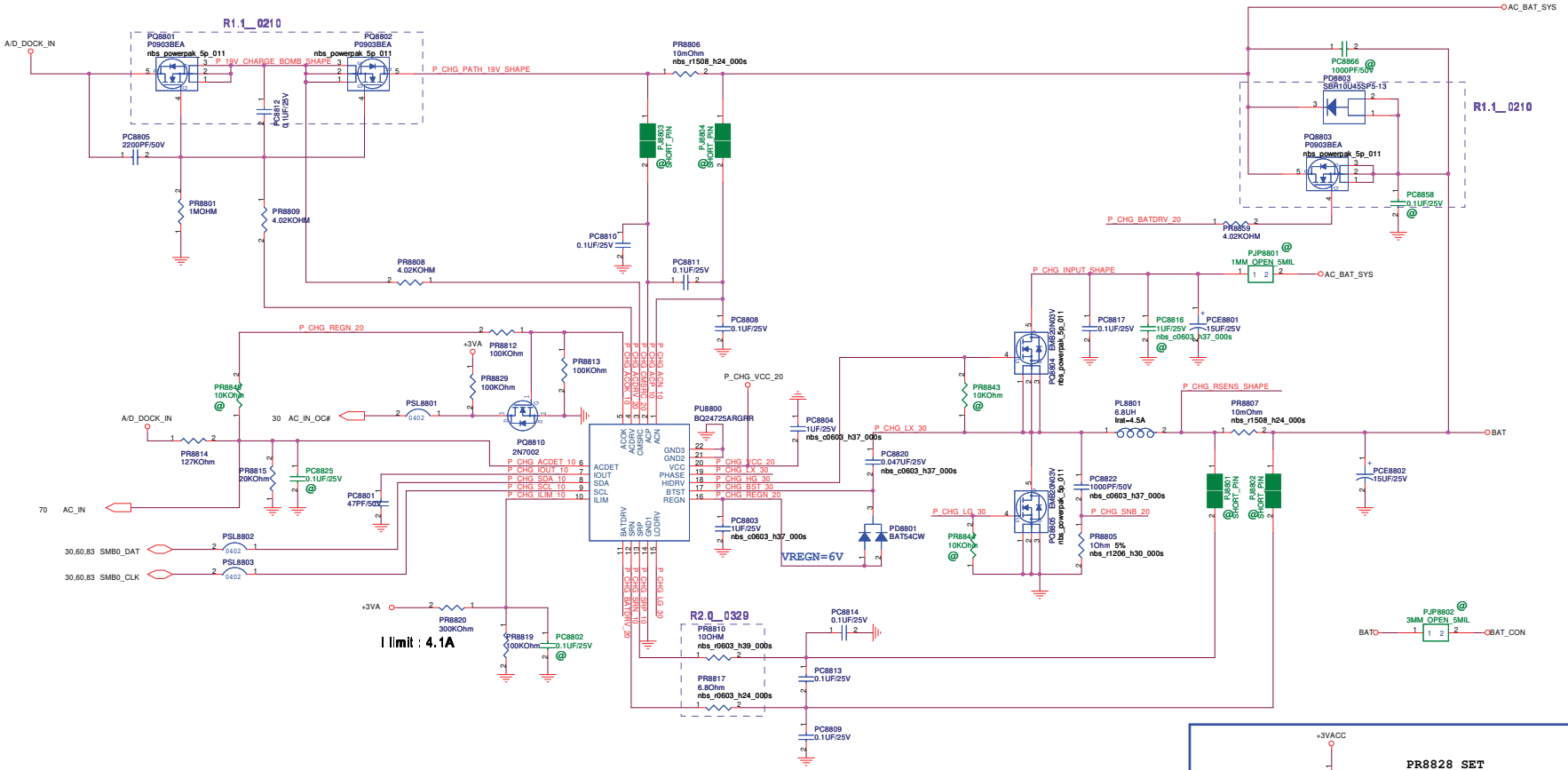
ASUSTeK COMPUTER INC.

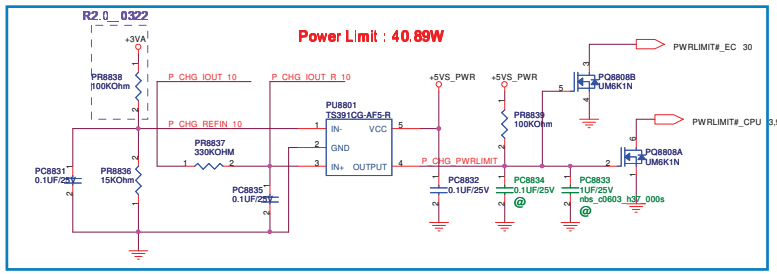
Title : +0.8VS

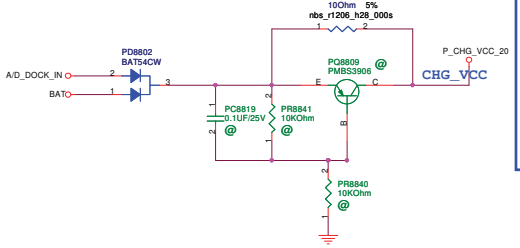
Engineer: shihhsien_yang

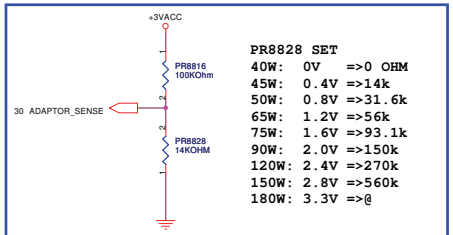
| Size | Project Name | Rev |
|---|---|---|
| Custom | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 87 of 99




ASUSTeK COMPUTER INC. NB3

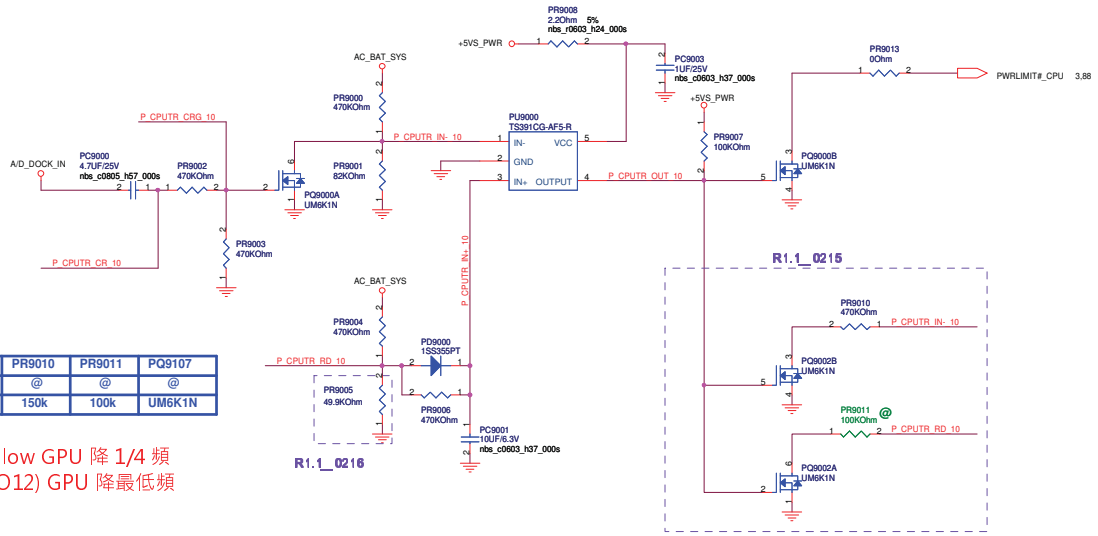
Title : Charger

Engineer: POWER

| Size | Project Name | Rev |
|---|---|---|
| Custom | UX Series | 1.0 |

Date: Wednesday, April 11, 2012 Sheet 88 of 97

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : PW **** | | |
| | Engineer: shihhsien_yang | | |
| Size: C | Project Name: UX31A2 | | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 89 of 98 | | |



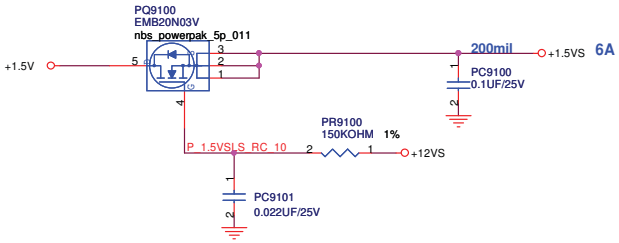

請遠離熱源！

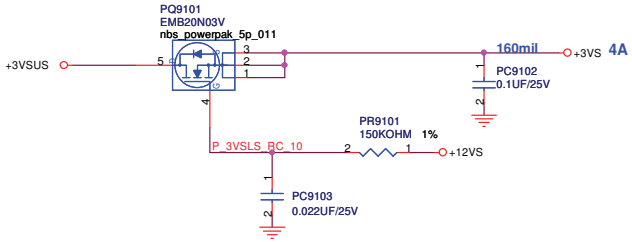
| | PR9005 | PR9010 | PR9011 | PQ9107 |
|---|---|---|---|---|
| UX series 2S BAT | 62k | @ | @ | @ |
| Other series 3S/4S BAT | 75k | 150k | 100k | UM6K1N |

VGA_Alert (GPIO9) pull low GPU 降 1/4 頻
dGPU_PD pull low (GPIO12) GPU 降最低頻

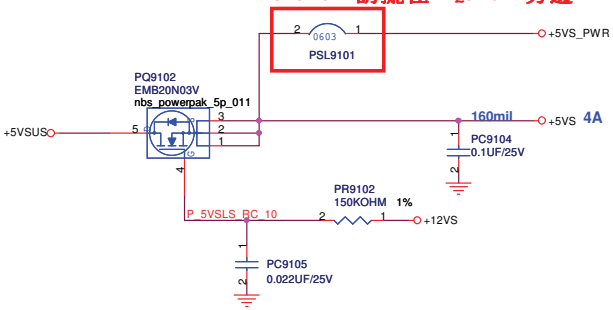
| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB1 | Title : HW_Throttle | |
| | Engineer: Power | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 90 of 98 | |

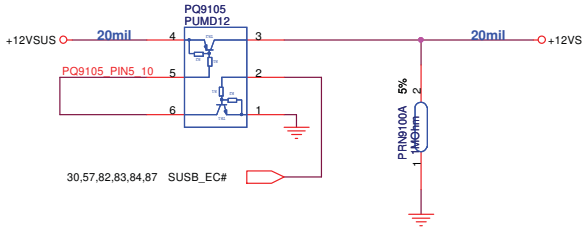
## SUSB#_PWR POWER



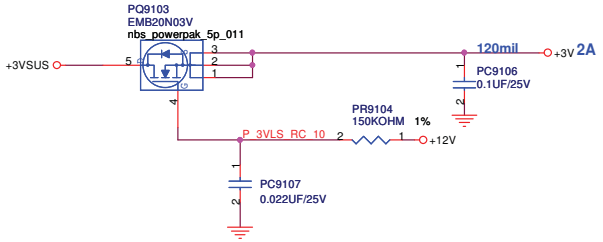



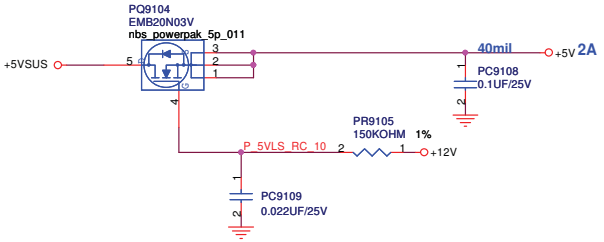

**PSL9101 請擺在 PQ9102 旁邊**

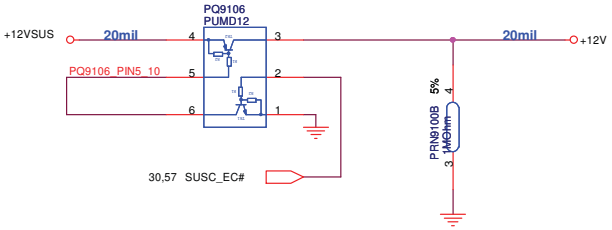


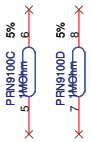




## SUSC#_PWR POWER



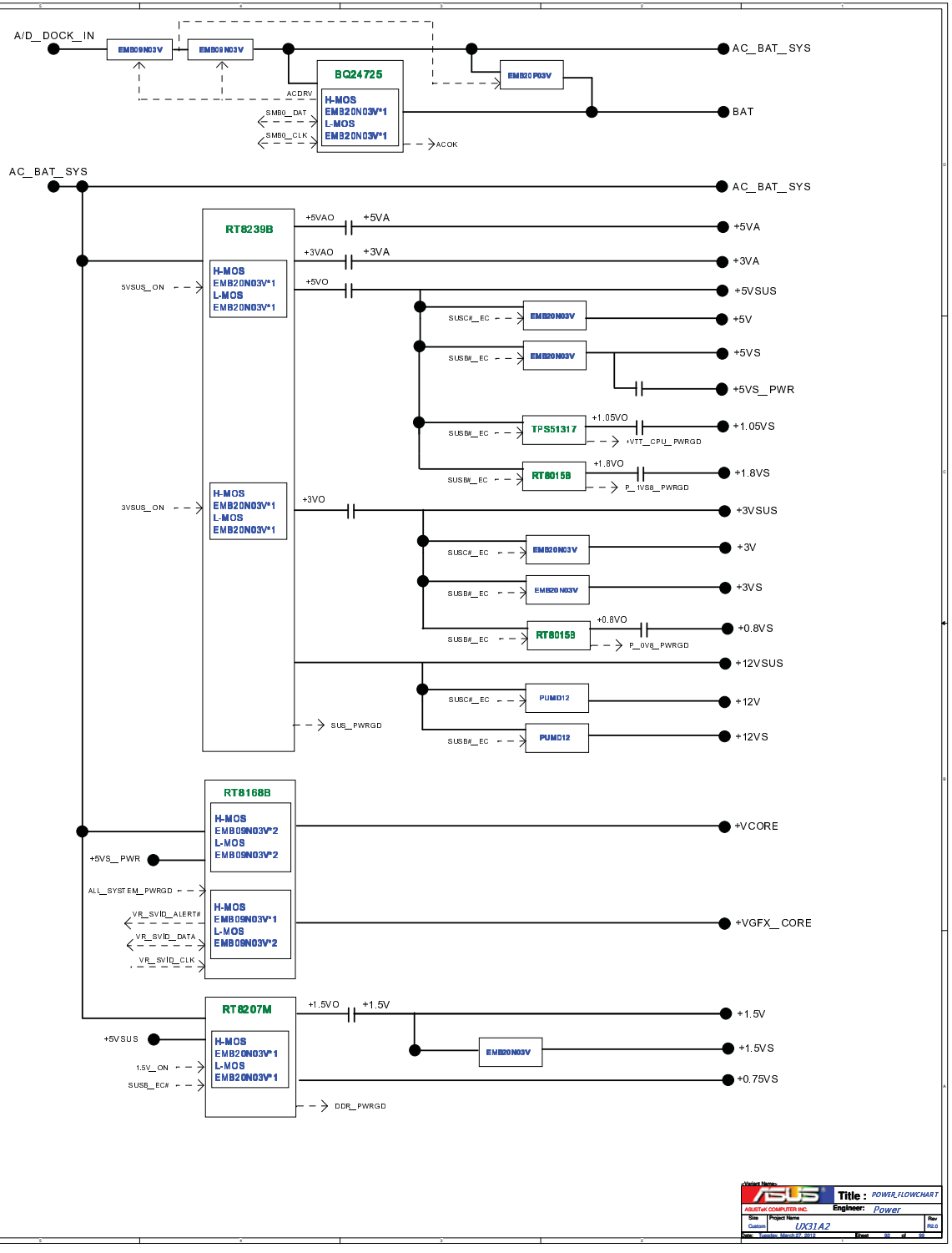




<Variant Name>

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB | Title : Load Switch | |
| | Engineer: shihhsien_yang | |
| Size: Custom | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 91 of 98 | |


A/D_DOCK_IN
EMB09N03V
EMB09N03V
BQ24725
H-MOS
EMB20N03V*1
L-MOS
EMB20N03V*1
ACDRV
SMB0_DAT
SMB0_CLK
ACOK
EMB20P03V
AC_BAT_SYS
BAT
AC_BAT_SYS
AC_BAT_SYS
RT8239B
+5VAO
+5VA
+5VA
+3VAO
+3VA
+3VA
5VSUS_ON
+5VO
+5VSUS
H-MOS
EMB20N03V*1
L-MOS
EMB20N03V*1
SUSC#_EC
EMB20N03V
+5V
SUSB#_EC
EMB20N03V
+5VS
+5VS_PWR
SUSB#_EC
TPS51317
+1.05VO
+1.05VS
+VTT_CPU_PWRGD
SUSB#_EC
RT8015B
+1.8VO
+1.8VS
P_1VS8_PWRGD
3VSUS_ON
+3VO
+3VSUS
H-MOS
EMB20N03V*1
L-MOS
EMB20N03V*1
SUSC#_EC
EMB20N03V
+3V
SUSB#_EC
EMB20N03V
+3VS
SUSB#_EC
RT8015B
+0.8VO
+0.8VS
P_0V8_PWRGD
+12VSUS
SUSC#_EC
PUMD12
+12V
SUSB#_EC
PUMD12
+12VS
SUS_PWRGD
RT8168B
H-MOS
EMB09N03V*2
L-MOS
EMB09N03V*2
+VCORE
+5VS_PWR
ALL_SYSTEM_PWRGD
H-MOS
EMB09N03V*1
L-MOS
EMB09N03V*2
VR_SVID_ALERT#
VR_SVID_DATA
VR_SVID_CLK
+VGFX_CORE
RT8207M
+1.5VO
+1.5V
+1.5V
+5VSUS
H-MOS
EMB20N03V*1
L-MOS
EMB20N03V*1
EMB20N03V
+1.5VS
1.5V_ON
SUSB_EC#
+0.75VS
DDR_PWRGD
Title : POWER_FLOWCHART
ASUSTeK COMPUTER INC.
Engineer: Power
Size
Custom
Project Name
UX31A2
Rev
R2.0
Date: Tuesday, March 27, 2012
Sheet 66 of 66

| | | |
|---|---|---|
| AC_BAT_SYS | AC_BAT_SYS | 45,80,81,83,88,90 |
| BAT | BAT | 88 |
| +3VAO | +3VAO | 81 |
| +5VA | +5VA | 26,81 |
| +3VA | +3VA | 7,20,27,30,56,57,60,69,70,81,88 |
| +5VAO | +5VAO | 81 |
| +5VSUS_PCH | +5VSUS_PCH | 26,27 |
| +5VSUS | +5VSUS | 26,30,31,56,69,80,81,82,83,84,91 |
| +5V | +5V | 57,63,91 |
| +5VS | +5VS | 20,27,31,38,46,48,50,57,63,91 |
| +3VSUS | +3VSUS | 6,20,21,22,24,25,26,27,28,45,53,58,81,87,91 |
| +3V | +3V | 3,24,31,44,53,57,63,91 |
| +3VS | +3VS | 7,14,20,21,22,23,24,25,26,27,28,30,31,45,46,48,50,51,53,56,57,58,63,91 |
| +12VSUS | +12VSUS | 26,81,91 |
| +12V | +12V | 91 |
| +12VS | +12VS | 21,28,48,91 |
| +1.8VS | +1.8VS | 6,26,57,84 |
| +0.75VS | +0.75VS | 13,57,83 |
| +1.5V | +1.5V | 4,13,14,15,19,57,83,91 |
| +1.5VS | +1.5VS | 3,6,26,53,57,83,91 |
| +VGFX_CORE | +VGFX_CORE | 6,57,80 |
| +VCORE | +VCORE | 6,57,80 |
| +1.05VS | +1.05VS | 3,6,7,22,26,27,57,80,82 |
| A/D_DOCK_IN | A/D_DOCK_IN | 56,60,88,90 |

<Variant Name>

Title : POWER_SIGNAL

ASUSTeK COMPUTER INC. NB

Engineer: shihhsien_yang

| Size | Project Name | Rev |
|---|---|---|
| Custom | UX31A2 | R2.0 |

Date: Tuesday, March 27, 2012 Sheet 93 of 99

## [U36SD] R1.1

1. Change source of PQ9102 and PQ9104 from +5VSUS to +5VSYS p91
2. transform pin1,4,7,10 trace to +1.7v_lan p34
3. WLAN clk_req1 follow u36jc pull low p21
4. ALC269 pin9 trace to +3vsus for leakage current p36
5. EC PIN3 is NC p30
6. Add ESD protect part for HDMI p48
7. Add capacitance for EMI request on H_CPUPWRGD p25
8. Change C3404 trace from GND_LAN to GND p34
9. Follow U36JC CRT solution p46

| | | |
|---|---|---|
| ASUSTeK COMPUTER INC. NB | Title : System History | |
| | Engineer: | |
| Size: C | Project Name: UX31A2 | Rev |
| Date: Tuesday, March 27, 2012 | Sheet 95 of 98 | |

## [M61JA] R1.0 => R1.1

1. Follow E.E RC delay
   +5v  R9107  100K change to 68K
   +3v  R9106  200K change to 121K
   +1.5v  R8306  49.9K change to 68K
   +5VS  R9104  200K change to 68K
   +3VS  R9103  200K change to 121K
   +1.8VS  R8401  33.2K change to 121K
   +1.5VS  R9102  470K change to 390K
   +1.05VS  R8252  39K change to 200K
   +0.75VS  R8312  0 change to 2.49K  C8310  0.1U change to 2.2U

2.VR_VID0~2 pull high 1K VR_VID6 pull low 1K.

3.U8401 RT8015A change to RT8015B

4.Reserve GVR_VID0~VID6 pull high and low resistor R8627~R8633

5.Reserve R8517~R5720 pull high & pull low risistor for MCP_CORE_VID

6.page86  component option change to ARD (CFD no stuff)

7.R8004 option change to CFD & R8049 change to ARD(For IMON)

8.Change  RN8801A RN8801B(layout request)

9.R8517 R8519 change to stuff

10.R8406 13K change to 12K

11.CE8005 no stuff , CE8007 stuff

12.C8403 C8406 size 0603 change to 0805

13.R8213 R8305 ohm change to 2.2 ohm

14.R8621~R8633 stuff 1K ohm

15.R8512 change form 200K to 33K ohm

16.VTT_PCH component option change to CFD

17.Delete U8502 & GPU_PWRON signal change to GPU_PWRON_1.8VSG_&_3.3VSG

18.L8601 1uH => 0.56uH , C8608 0.01uF/50 => 0.01uF/16V , R8621 43K => 36K , C8617 =>0.1uF/16V 1uF/10V ,
   C8607 68pF/50V => 33pF/50V , R8625 10K => 18.7K , R8613 3.6K => 4.02K

19.R8057 change form 10K to 2.05K

20.Add Q8007 & Q8008 form thermal issue

| | | | |
|---|---|---|---|
| ASUSTeK COMPUTER INC. NB | Title : System History | | |
| | Engineer: | | |
| Size: Custom | Project Name: UX31A2 | | Rev |
| Date: Tuesday, March 27, 2012 | Sheet 96 of 99 | | |

ER
001 Page 13 & 14 : add +0.75VS de-coupling capacitors for channel B by samsung simulation recommand , and add +1.5V de-coupling capacitors around U1404 by samsung simulation recommand
002 Page 65 : remove U6511~14, U6516
003 Page 31 : change J3101 to 12G183000403 and add PWR_SW 、PWR_LED function on Keyboard
004 Page 46 : change J4601 to 12019-00020000
005 Page 48 : change J4801 to 12022-00013700
006 Page 70 : remove SW7001
007 Page 69 : change J6901 to 12013-00011600
008 Page 53 : change J5303 to 12003-00020700
009 Page 30 : swap EC GPE0 and GPH4 for EC request
010 Page 30 : +3VA_ON pull low
011 Page 30 : add R3002 for without Light_sensor system
012 Page 30 : unmount R3084, mount R3083 for S4/S5 EC power down
013 Page 21,68,69 : remove about FL1009 circuit
014 Page 06 : modify R0617,R0618 to 1K follow intel DG
015 Page 60 : change J6001 to 12014-00101000 for MP
016 Page 28 : change U2801 to 05006-00010300 (64M)
017 Page 56 : add R5640 for PWR_LED# current limit
018 Page 24,25 : change (H_SNB_INV#) AV10 to AY1 for following VC circuit.
019 Page 69 : add +5V_USB2 discharge for AI-charger function fail on iPhone 4S
020 Page 56 : Change R5604 size from 0201 to 0402.
021 Page 23 : Reserve 5pF cap. of RGB signals for EMI suggestion.
022 Page 45 : Reserved 8pF cap. to +3VS_LCD & +3VSUS for RF suggestion.
Page 45 : Reserved 5pF cap. to G & D sides of Q4501 for RF suggestion.
Page 45 : Reserved 5pF cap. to G & D sides of Q4501 for RF suggestion.
Page 45 : Reserved 0.1pF cap. to AC_BAT_SYS_INV_CON for RF suggestion.
Page 45 : Changed R4503 to L4514 for RF suggestion.
Page 45 : Colay USB_PP2 0 ohm & choke for RF suggestion.
Page 13 : Add cap. to +1.5V for RF suggestion.
Page 14 : Add cap. to +1.5V for RF suggestion.
Page 15 : Add cap. to +1.5V for RF suggestion.
Page 48 : Colay HDMI ohm & choke for RF suggestion.
Page 50 : Reserved cap. to SMB1_CLK_S for RF suggestion.
Page 51 : Reserved cap. to +3VS for RF suggestion.
Page 53 : Reserved cap. to +3VAUX_WLAN for RF suggestion.
Page 70 : Reserved cap. to pin 4 of Q7003 for RF suggestion.
Page 70 : Reserved cap. to pin 4 of Q7003 for RF suggestion.
Page 63 : Reserved cap. to +3V for RF suggestion.
Page 63 : Reserved cap. to net of for RF suggestion.
023 Page 20 : Reserved R2009 for RTC battery change type.
024 Page 26 : Deleting R2606 for DDR3L power change path.
Page 53 : Deleting R5302 for DDR3L power change path.
025 Page 28 : Add cap. to pin 5~8 of SPI ROM for RF suggestion.
026 Page 20 & 51 : Add SATA_TX1 net to SSD for SSD support RAID .
027 Page 56 : Change R5609 and reserve C5624 for DC jack change size.
028 Page 26 : Change resistor value of R2630 to 511K ohm and change size from 0201 to 0402 for reducing power consumption.
Page 70 : Change resistor value of R7004、R7005 to 200K ohm for reducing power consumption.
Page 56 : Change resistor value of R5602 to 200K ohm for reducing power consumption.
029 Page 25 : Change R2529、R2530、R2531 for following sedding schematic design.
030 Page 46 : Change C4602、C4604、C4606 cap. value to 10PF and L4601、L4602、L4603 for EMI suggestion & EA measure pass.
Page 24 : Change R2428 resistor value to 39 ohm for EA measure pass.
Page 69 : Delete RN6916 and add L6901 for EMI suggestion.
031 Page 24 & 45 & 63 : Change USB port2 & port3 to port 8 & port 9 for BIOS suggestion.
032 Page 69 : Add R6905 & C6901 for USB problem.
033 Page 27 : Change power plane of VCCDSW3_3 for supporting hybrid sleep mode.
034 Page 51 : Add JP5101 for measurement.
035 Page 63 : Add 0.1UF cap. to +3VS & +5V for RF suggestion.
036 Page 45 : Reserve 0.1UF cap. to BUF_PLT_RST# & TPanel_INT#_C for EMI suggestion.
Page 31 : Reserve 0.1UF cap. to TP_DAT & TP_CLK for EMI suggestion.
Page 45 : Add L4518 to +3VS_LCD for EMI suggestion.
037 Page 14 & 15 : Change C1416 & C1501 cap. value from 8PF to 0.1UF for RF suggestion.

PWR modify
Page 88 : Updating CHG IC to BQ24725A
Page 88 : Add shut down sche.
Page 90 : Add HW_throttle sche.
Page 90 : Add PR8107 for WLAN noise.
Page 83 : Delete PCE8301 for WLAN noise.
Page 83 : Change PL8300 to 2.2uH for WLAN noise.
Page 83 : Add PC8326、PC8327 for RF suggestion.
Page 83 : Add PR8321 to 330k
Page 83 : Change PR8314 to 9.53k
Page 60 & 90 : Change BOM
Page 81 & 90 : Change BOM & sche. for power design ip sche change.
Page 81 & 90 : Change BOM PCE8101 to 220uF, and PR9005 to 49.9k ohm

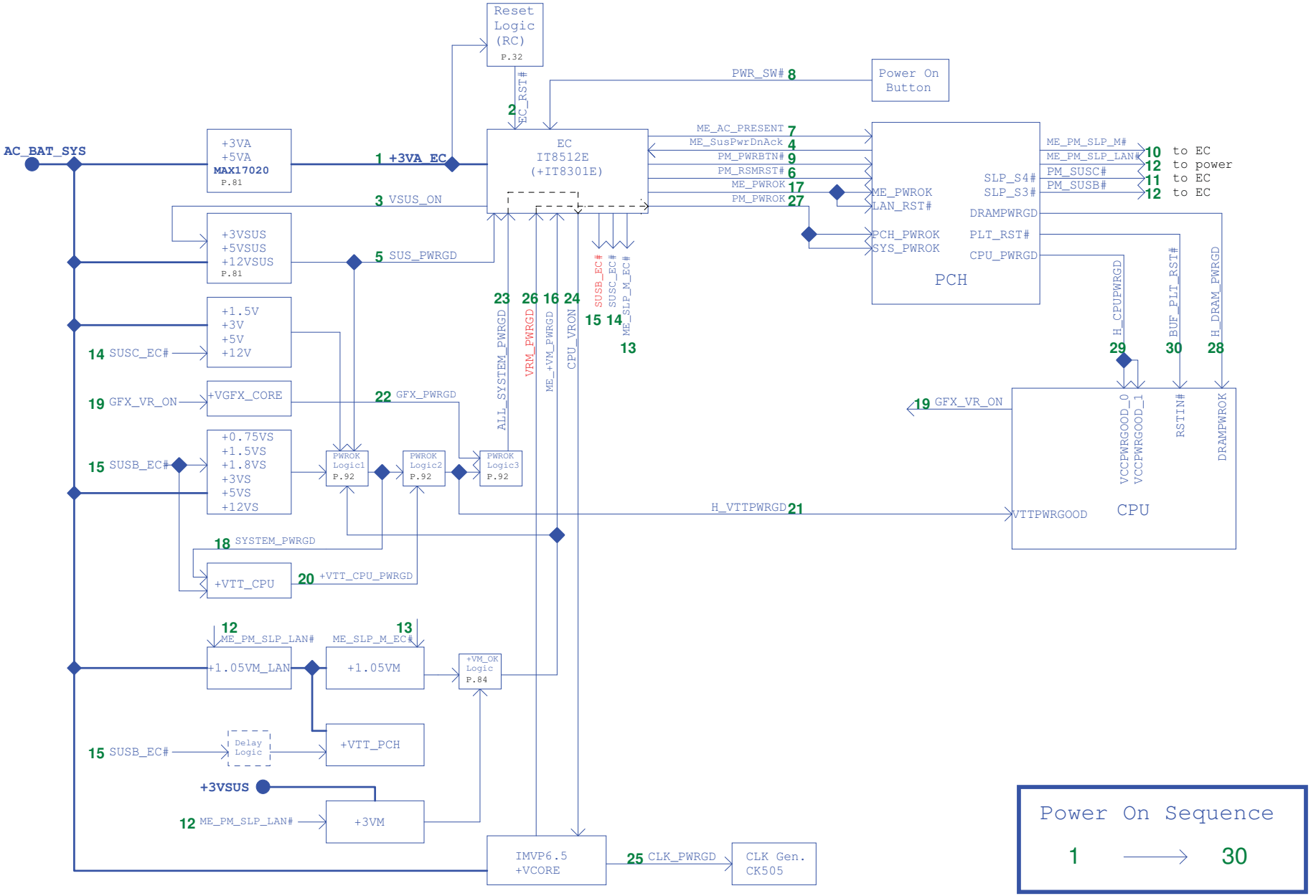
PR
001 Page 03 : Change U0303 to 06G004753010 for CR sche.
002 Page 44 : Change JDEBUG1 to 12G18340120R
003 Page 56 : Add a new lid sw for touchpanel using. (Panel PCB length change)
004 Page 30 : Reserved 0.1UF to light_sensor.
005 Page 31 : Change 6 pin to 8 pin for TP changing.
006 Page 21 : Change SMBus and INT for TP using.
007 Page 45 : Change Touch Panel pin define.
008 Page 56 : Change control method of charger led.
009 Page 31 : Add C3114 for RF suggestion.
010 Page 31 : Add and reserve the old 6 pins con and delete +5VS_TP.
011 Page 63 : Add 8PF cap. to +5VS for RF suggestion.
012 Page 53 : Add R5306 and Pull high to +3VSUS for intel smart card function using.
013 Page 44 : Change pin define for footprint vs datasheet aren't the same.
014 Page 45 : Add C4570、C4501、C4504 Cap. for RF suggestion.

PWR modify
Page 81 : Add PC8131, PC8132
Page 83 : Add PC8317 / P8316 / PR8305 / PC8305
Page 83 : Change PR8314=>12k
Page 88 : Update Adaptor voltage table
Page 84 : Change PL8400 BOM
Page 87 : Change PL8700 BOM
Page 83 : PR8304 & PR8305 pull high to +3VA_EC
Page 88 : PR8810 & PR8817 change 10ohm/0603 to 0ohm/0603.
Page 88 : PR8838 change 95.3kohm/0402 to 100kohm/0402.

ASUSTeK COMPUTER INC. NB
Title : System History
Engineer:
Size: Custom | Project Name: UX31A2 | Rev:
Date: Wednesday, October 31, 2012 | Sheet of

AC-IN Mode

# M52J Power On Sequence Diagram Rev. 0.31




Power On Sequence

1 → 30

ASUSTeK COMPUTER INC

Title : POWER SEQUENCE

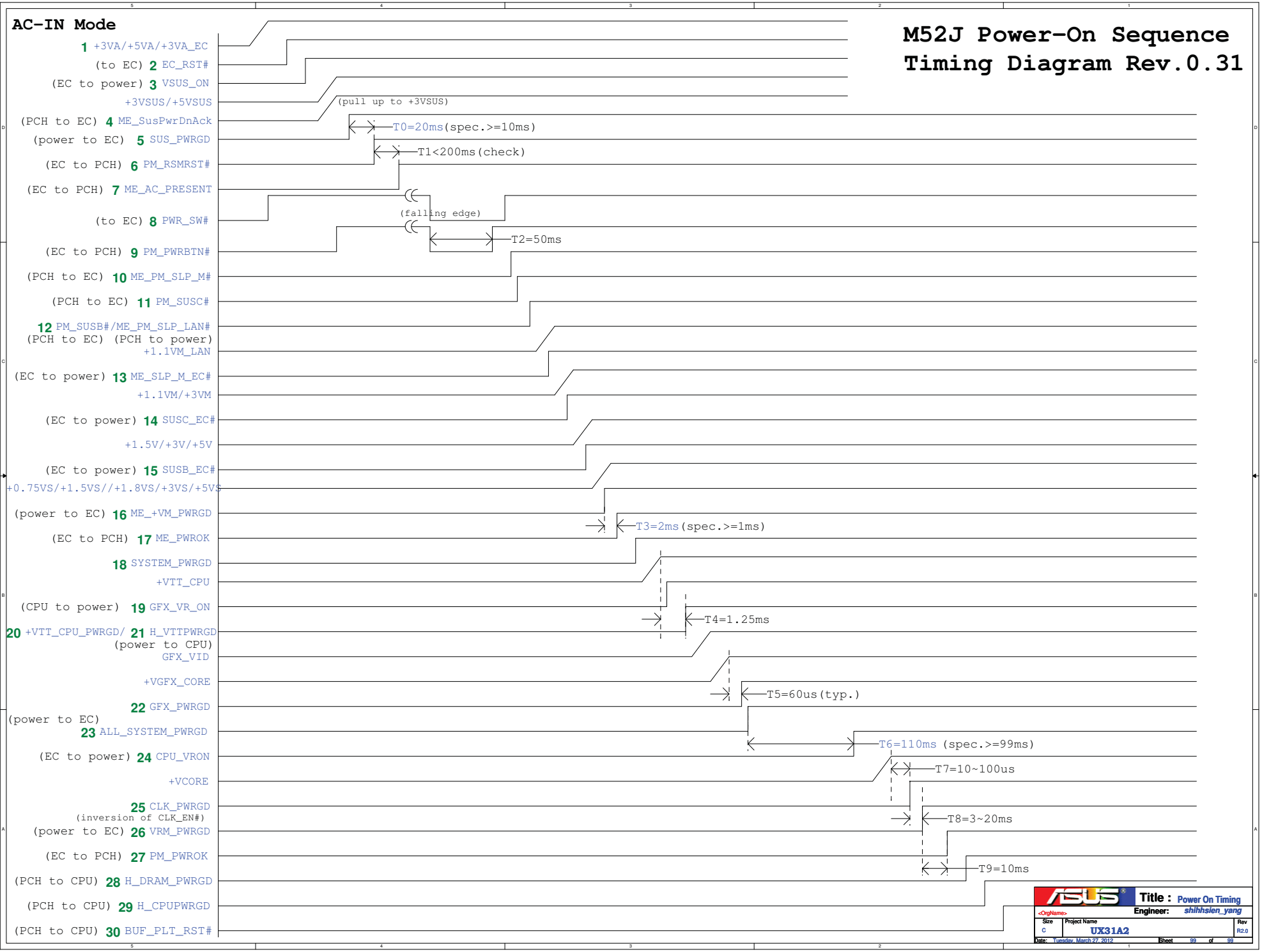
Engineer: shihhsien_yang

Size: C | Project Name: UX31A2 | Rev: R2.0

Date: Tuesday, March 27, 2012 | Sheet 98 of 99

# M52J Power-On Sequence Timing Diagram Rev.0.31

## AC-IN Mode




| | | |
|---|---|---|
| Title : Power On Timing | | |
| <OrgName> | Engineer: shihhsien_yang | |
| Size: C | Project Name: UX31A2 | Rev: R2.0 |
| Date: Tuesday, March 27, 2012 | Sheet 99 of 99 | |

## UX31A R2.0 SKU table

| BOM | CPU | Memory | TPM | SSD | PANEL |
|---|---|---|---|---|---|
| Option | /CPU | /MEM | /TPM | | |
| 60-NIOMB160*-B0* | I7-3517U | Elpida 4G DDR3LRS-1600 | /TPM | A-DATA/XM11-256GB-V2 | CMO/N133HSE-EA1 |
| 60-NIOMB1C0*-A0* | I7-3517U | Elpida 4G DDR3LRS-1600 | N/A | | |
| 60-NIOMB1A0*-B0* | I5-3317U | Elpida 4G DDR3LRS-1600 | /TPM | | |
| 60-NIOMB180*-B0* | I5-3317U | Elpida 4G DDR3LRS-1600 | N/A | A-DATA/XM11-128GB-V2 | CMO/N133HSE-EA1 |
| 60-NIOMB1B0*-A0* | I7-3667U | Micron 4G DDR3LRS-1600 | /TPM | | |
| 60-NIOMB1D0*-A0* | I7-3517U | Elpida 4G DDR3-1600 | N/A | SANDISK/SDSA5JK-128G | CPT/CLAA133UA03 CW |

1. CPU:
   INT I7-3667U 2G/4M : 01001-00173400 (MP)
   INT I7-3517U 1.9G/4M : 01001-00172300 (MP)
   INT I5-3317U 1.7G/3M : 01001-00172400 (MP)

2. PCH:
   INT PANTHERPOINT HM76 : 02001-00051100 (MP)

3. MEM: Differential memory DIMM & Vendor have the differential DIMM_SEL[2:0] defined on board memory.
   Elpida 4G DDR3LRS 1600 256M*16 : 03006-00051300
   Elpida 4G DDR3 1600 256M*16 : 03006-00050800
   Micron 4G DDR3LRS 1600 256M*16 : 03006-00051100

| DDR3L_1600 | Micro | | | ELPIDA |
|---|---|---|---|---|
| DIMM_SEL0 | L | | | H |
| DIMM_SEL1 | L | | | H |
| DIMM_SEL2 | H | | | H |

| DDR3_1600 | | Hynix | ELPIDA | |
|---|---|---|---|---|
| DIMM_SEL0 | | H | L | |
| DIMM_SEL1 | | L | H | |
| DIMM_SEL2 | | H | H | |

ASUSTeK COMPUTER INC.
Title : SKU Table R1.2
Engineer: zhihhsien_yang
Size: Custom | Project Name: UX31A2 | Rev: 02.0
Date: Wednesday, April 11, 2012 | Sheet of