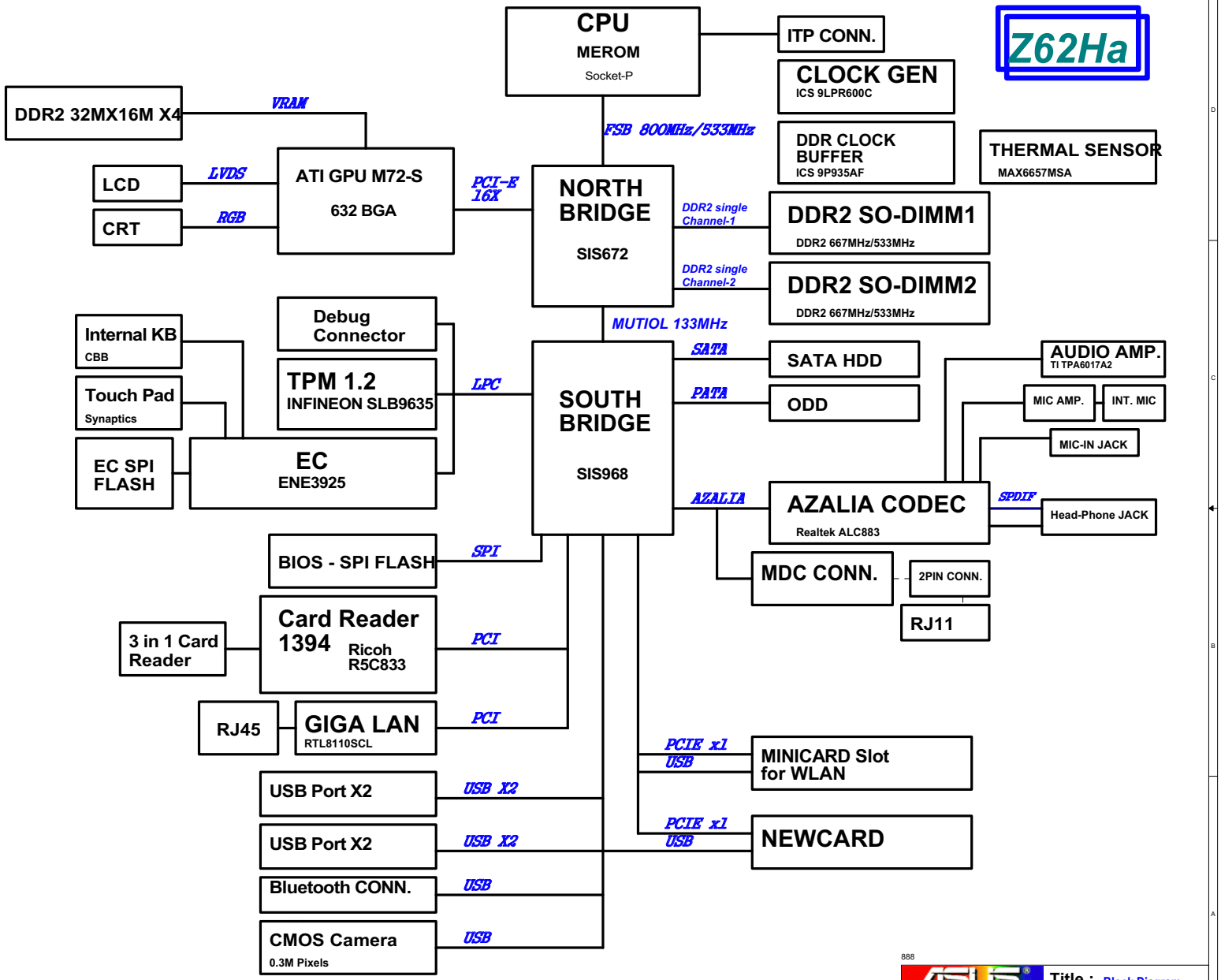


888

ASUSTek Computer INC.

Title : Block Diagram

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 1 of 70

EC GPIO SETTING

Pin	Pin Name	Signal Name	Type
32	PWM0/GPA0	BL_PWM_DA	O
33	PWM1/GPA1	FAN_PWM	O
36	PWM2/GPA2	CLK_PWRSAVE#	O
37	PWM3/GPA3	/	
38	PWM4/GPA4	CHG_LED_UP#	O
39	PWM5/GPA5	PWR_LED_UP#	O
40	PWM6/GPA6	/	
43	PWM7/GPA7	LCD_BACKOFF#	O
153	RXD/GPB0	NUM_LED	O
154	TXD/GPB1	CAP_LED	O
162	GPB2	SCRL_LED	O
163	SMCLK0/GPB3	SMB0_CLK	I/0
164	SMDAT0GPB4	SMB0_DAT	I/0
5	GA20/GPB5	A20GATE	O
6	KBRST#/GPB6	RC_IN#	O
165	GPB7	/	
47	CLKOUT/GPC0	/	
169	SMCLK1/GPC1	SMB1_CLK	I/0
170	SMDAT1/GPC2	SMB1_DAT	I/0
171	GPC3	Mail_LED	O
172	TMRI0/WUI2/GPC4	AC_OK#	I
175	GPC5	OP_SD#	O
176	TMRI1/WUI3/GPC6	BAT_IN_OC#	I
1	CK32KOUT/GPC7	/	
26	RI1#/WUI0/GPD0	SUSB#	I
29	RI2#/WUI1/GPD1	SUSC#	I
30	LPCRST#/WUI4//GPD2	PLT_RST#	I
31	ECSCI#/GPD3	EXT_SCI#	O
41	GPD4	/	
42	GINT/GPD5	/	
62	TACH0/GPD6	FAN0_TACH	I
63	TACH1/GPD7	/	
87	ADC4/GPE0	EMAIL_SW#	I
88	ADC5/GPE1	INTERNET#	I
89	ADC6/GPE2	PWR4G_SW#	I
90	ADC7/GPE3	DISTP_SW#	I
2	PWRSW/GPE4	PWR_SW#	I
44	WUI5/GPE5	/	
24	LPCPD#/WUI6/GPE6	LID_EC#	I
25	CLKRUN#/WUI7/GPE7	/	
110	PS2CLK0/GPF0	/	
111	PS2DAT0/GPF1	/	
114	PS2CLK1/GPF2	/	I
115	PS2DAT1/GPF3	/	I
116	PS2CLK2/GPF4	TP_CLK	I/0
117	PS2DAT2/GPF5	TP_DAT	I/0
118	PS2CLK3/GPF6	/	
119	PS2DAT3/GPF7	/	
113	FA16/GPG0	FA16	O
112	FA17/GPG1	FA17	O
104	FA18/GPG2	FA18	O
103	FA19/GPG3	/	
3	FA20/GPG4	THRM_CPU#	I
4	FA21/GPG5	/	
27	LPC80HL/GPG6	PMTHERM#	O
28	LPC80LL/GPG7	AC_APR_UC#	I

Pin	Pin Name	Signal Name	Type
48	GPH0	VSUS_ON	O
54	GPH1	VSUS_GD#	I
55	GPH2	CPUPWR_GD#	I
69	GPH3	PM_PWRBTN#	O
70	GPH4	SUSC_ON	O
75	GPH5	SUSB_ON	O
76	GPH6	CPU_VRON	O
105	GPH7	PM_RSMRST#	O
148	GPI0	ICH7_PWROK	O
149	GPI1	/	
152	GPI2	MCHOK	I
155	GPI3	CHG_EN#	O
156	GPI4	PRECHG	O
168	GPI5	BAT_LL#	O
174	GPI6	BAT_LEARN	O

ICH7-M GPIO SETTING

Pin	Pin Name	Signal Name	Type	Power_Well	Default
AB18	GPIO00/BM_BUSY#	PM_BMBUSY#	I	Core(To:3.3V)	GPI
C8	GPIO01/REQ5#	PCI_REQ#5	I/O	Core(To:5V)	GPI
G8	GPIO02/PIRQE#	PCI_INTE#	I(OD)	Core(To:5V)	GPI
F7	GPIO03/PIRQF#	PCI_INTF#	I(OD)	Core(To:5V)	GPI
F8	GPIO04/PIRQG#	PCI_INTG#	I(OD)	Core(To:5V)	GPI
G7	GPIO05/PIRQH#	PCI_INTH#	I(OD)	Core(To:5V)	GPI
AC21	GPIO06	NC	I/O	Core(To:3.3V)	GPI
AC18	GPIO07	WLAN_BT_LED_EN#	I	Core(To:3.3V)	GPI
E21	GPIO08	EXTSMI#	I	SUS(To:3.3V)	GPI
E20	GPIO09	SATA_DET#0	I/O	SUS(To:3.3V)	GPI
A20	GPIO10	WLAN_ON#	O	SUS(To:3.3V)	GPI
B23	SMBALERT#/GPIO11	SMB_ALERT#	I/O	SUS(To:3.3V)	Native
F19	GPIO12	KBC_SCI#	I	SUS(To:3.3V)	GPI
E19	GPIO13	TP	I/O	SUS(To:3.3V)	GPI
R4	GPIO14	NC	I/O	SUS(To:3.3V)	GPI
E22	GPIO15	CB_SD#	I/O	SUS(To:3.3V)	GPI
AC22	GPIO16	PM_DPRSLPVR	O	Core(To:3.3V)	Native
D8	GPIO17/GNT5#	PCI_GNT#5	I/O	Core(To:3.3V)	GPO
AC20	GPIO18/STP_PCI#	STP_PCI#	O	Core(To:3.3V)	GPO
AH18	GPIO19/SATA1GP	NC	O	Core(To:3.3V)	GPI
AF21	GPIO20/STP_CPU#	STP_CPU#	O	Core(To:3.3V)	GPO
AE19	GPIO21/SATA0GP	NC	I/O	Core(To:3.3V)	GPI
A13	GPIO22/REQ4#	PCI_REQ#4	I/O	Core(To:3.3V)	Native
AA5	LDRQ1#/GPIO23	TP	I/O	Core(To:3.3V)	Native
R3	GPIO24	NC	I/O	SUS(To:3.3V)	GPO
D20	GPIO25	NC	I/O	SUS(To:3.3V)	GPO
A21	GPIO26/EL_RSVD	NC	I/O	SUS(To:3.3V)	GPO
B21	GPIO27/EL_STATE0	PD_DET#	I/O	SUS(To:3.3V)	GPO
E23	GPIO28/EL_STATE1	NC	I/O	SUS(To:3.3V)	GPO
C3	GPIO29/OC#5	USB_OC#5	I/O	SUS(To:3.3V)	Native
A2	GPIO30/OC#6	NEWCARD_OC#	I	SUS(To:3.3V)	Native
B3	GPIO31/OC#7	USB_OC#7	I/O	SUS(To:3.3V)	Native
AG18	GPIO32/CLKRUN#	PM_CLKRUN#	O	Core(To:3.3V)	GPO
AC19	GPIO33/AZ_DOCK_EN#	BT_ON#	O	Core(To:3.3V)	GPO
U2	GPIO34/AZ_DOCK_RST#	NC	I/O	Core(To:3.3V)	GPO
AD21	GPIO35	NC	I/O	Core(To:3.3V)	GPO
AH19	GPIO36/SATA2GP	NC	I/O	Core(To:3.3V)	GPI
AE19	GPIO37/SATA3GP	PCB_ID0	I	Core(To:3.3V)	GPI
AD20	GPIO38	PCB_ID1	I	Core(To:3.3V)	GPI
AE20	GPIO39	PCB_ID2	I	Core(To:3.3V)	GPI
A14	GNT4#/GPIO48	PCI_GNT#4	I/O	Core(To:3.3V)	Native
AG24	GPIO49/CPUPWRGD	H_PWRGD	I	V_CPU_IO	Native

PCI Device	IDSEL#	REQ/GNT#	Interrupts
CARD READER	AD22	0	INTB-->INTB
1394	AD22	0	INTA-->INTA
LAN	AD24	REQ#2/GNT#2	INTA-->INTC

SM-Bus Device	SM-Bus Address
Clock Generator	1101001x (D2)
SO-DIMM 0	1010000x (A0)
SO-DIMM 1	1010001x (A2)
Thermal Sensor	0101110x (5C)

888

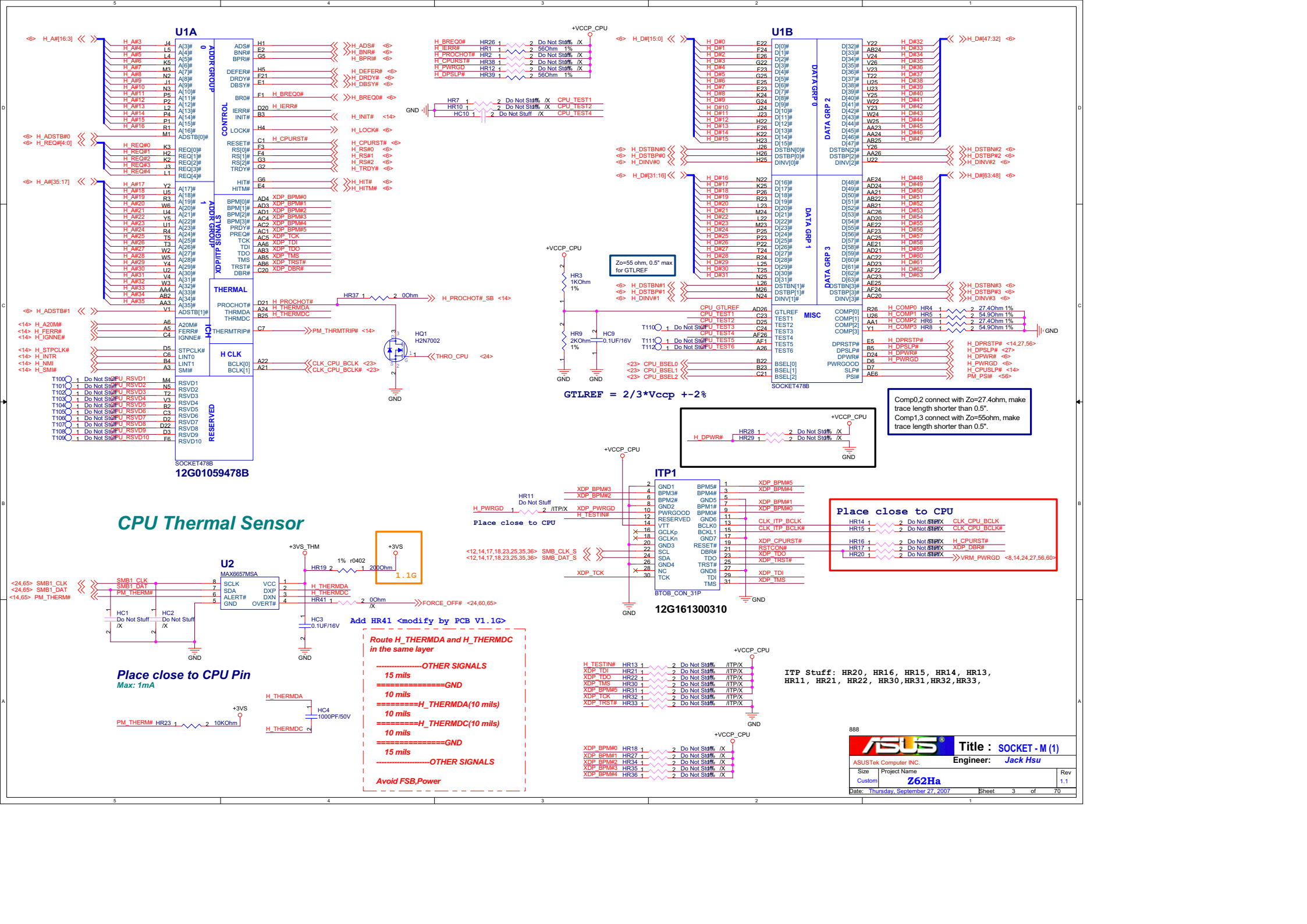
ASUSTek Computer INC.

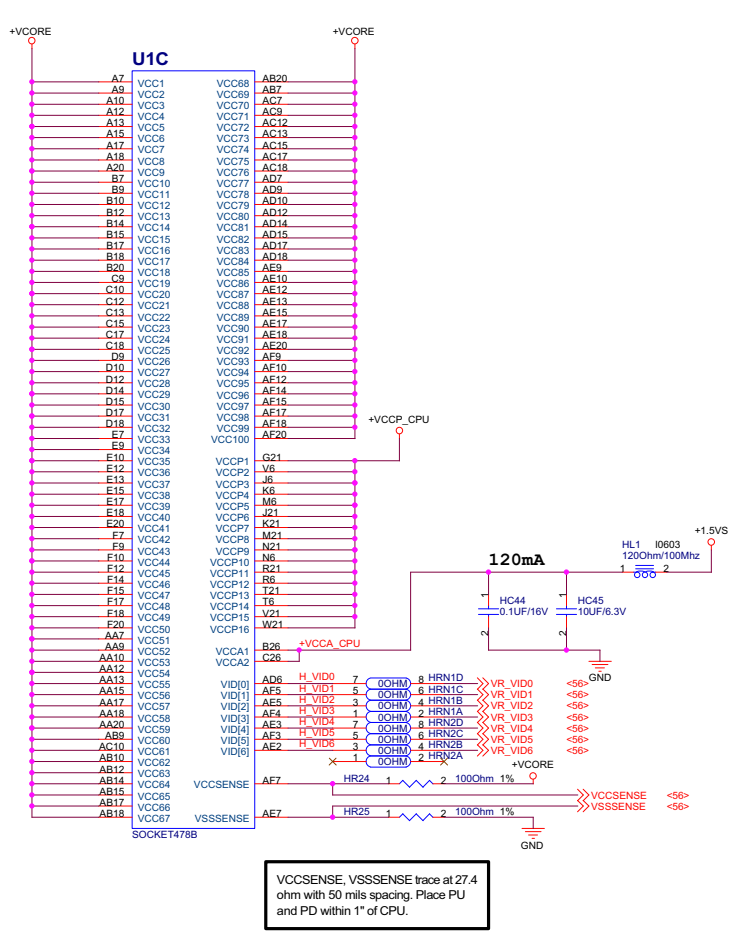
Title : System Setting

Engineer: Jack Hsu

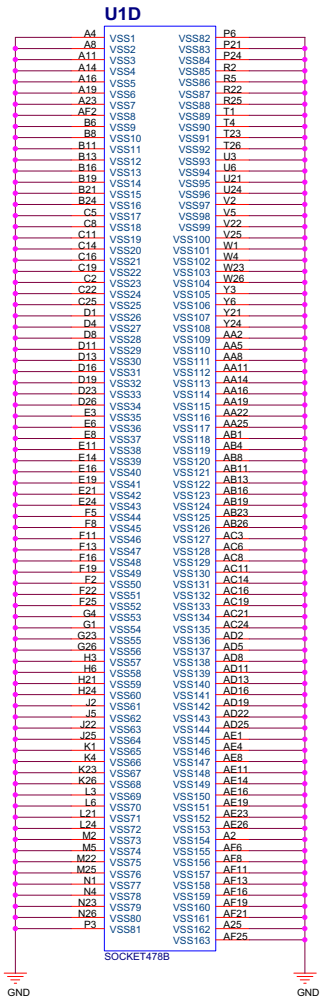
Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 2 of 70


U1A
U1B
SOCKET478B
12G01059478B
GTLREF = 2/3*Vccp +-2%
Comp0,2 connect with Zo=27.4ohm, make trace length shorter than 0.5".
Comp1,3 connect with Zo=55ohm, make trace length shorter than 0.5".
Zo=55 ohm, 0.5" max for GTLREF
CPU Thermal Sensor
U2
MAX6657MSA
ITP1
12G161300310
Place close to CPU
Place close to CPU Pin
Max: 1mA
Add HR41 <modify by PCB V1.1G>
Route H_THERMDA and H_THERMDC in the same layer
----------OTHER SIGNALS
15 mils
==========GND
10 mils
==========H_THERMDA(10 mils)
10 mils
==========H_THERMDC(10 mils)
10 mils
==========GND
15 mils
----------OTHER SIGNALS
Avoid FSB,Power
ITP Stuff: HR20, HR16, HR15, HR14, HR13, HR11, HR21, HR22, HR30,HR31,HR32,HR33,
Title : SOCKET - M (1)
ASUSTek Computer INC.
Engineer: Jack Hsu
Project Name Z62Ha
Rev 1.1
Date: Thursday, September 27, 2007
Sheet 3 of 70



VCCSENSE, VSSSENSE trace at 27.4 ohm with 50 mils spacing. Place PU and PD within 1" of CPU.



888

ASUSTek Computer INC.

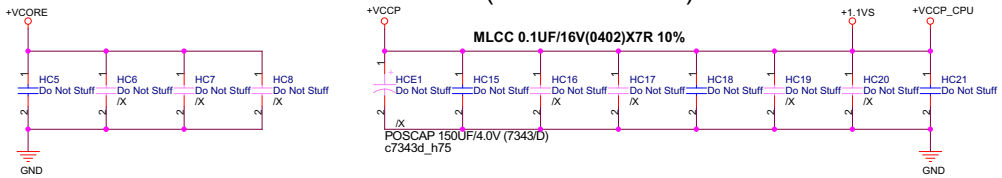
Title : SOCKET - M (2)

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 4 of 70

+VCCP Decoupling Capacitor (Place near CPU)

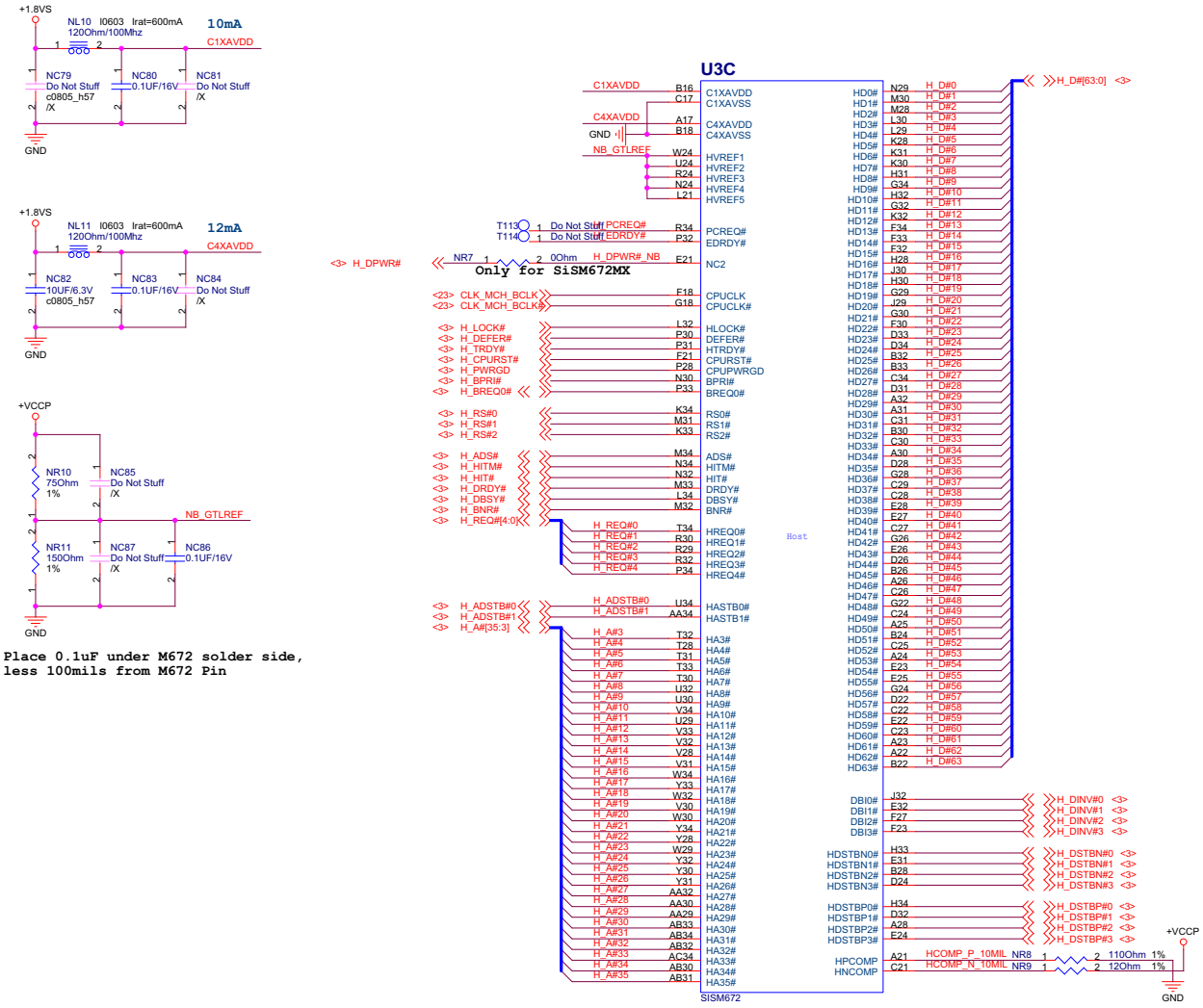


Decoupling guide from INTEL
44A for Merom

```
VCORE 22uF/10V * 32pcs, 330uF/2V * 6pcs
VCCP 0.1uF * 6pcs, 150uF * 1pcs
```

888

ASUSTek Computer INC.	Title : CPU CAP	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 5 of 70	



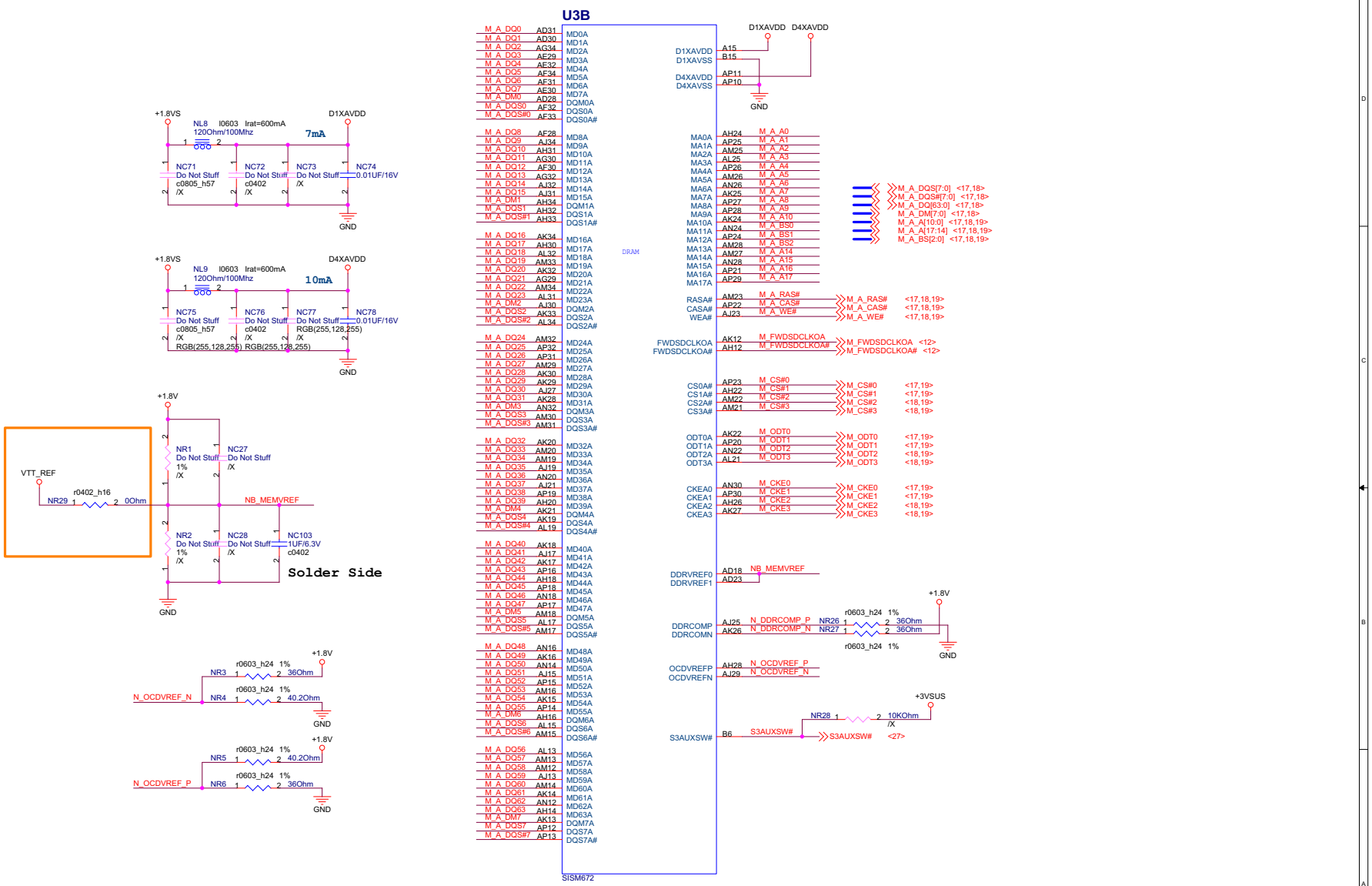
888

Title : SiSM672 - HOST(1)

ASUSTek Computer INC. Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 6 of 70



888

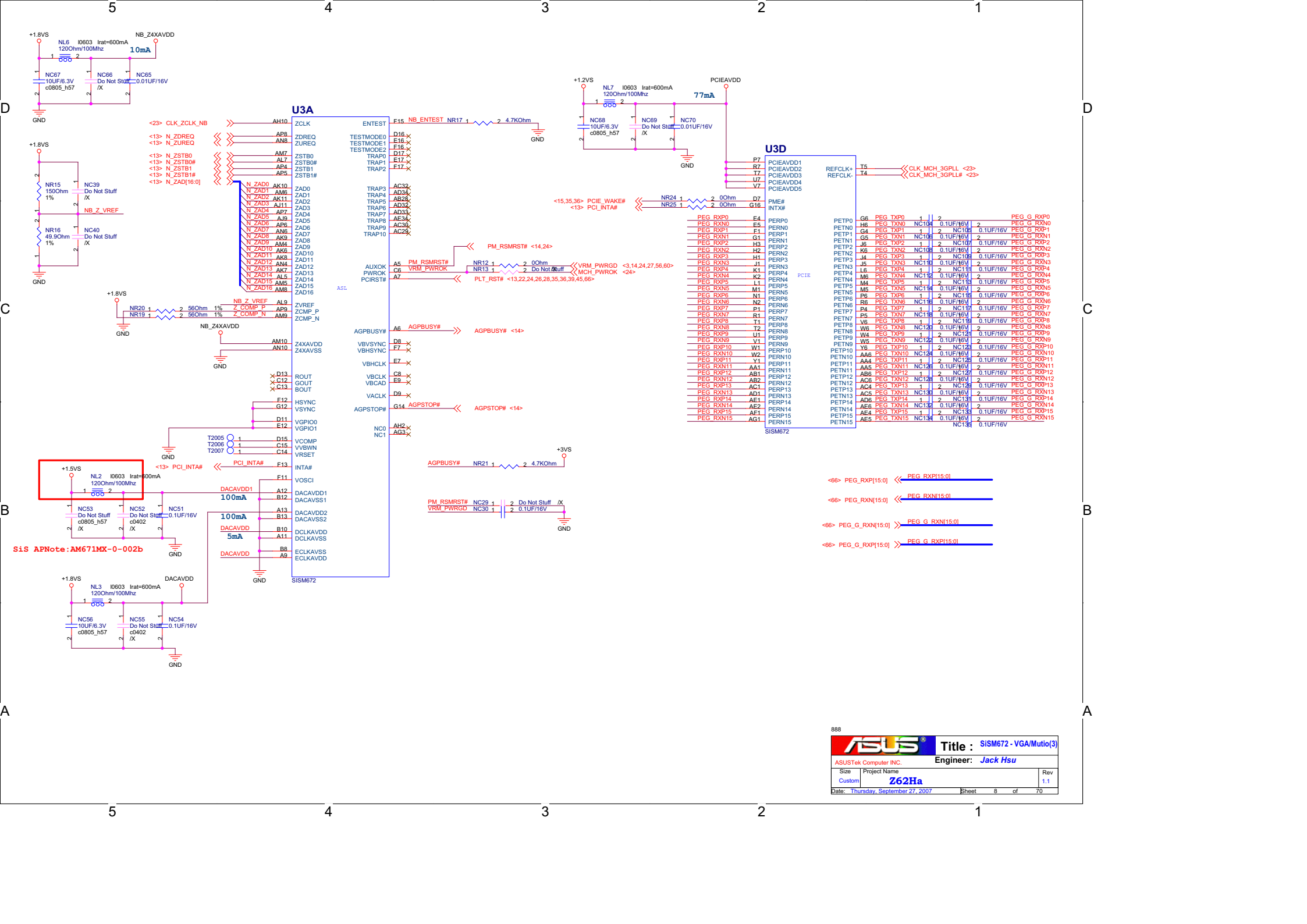
ASUSTek Computer INC.

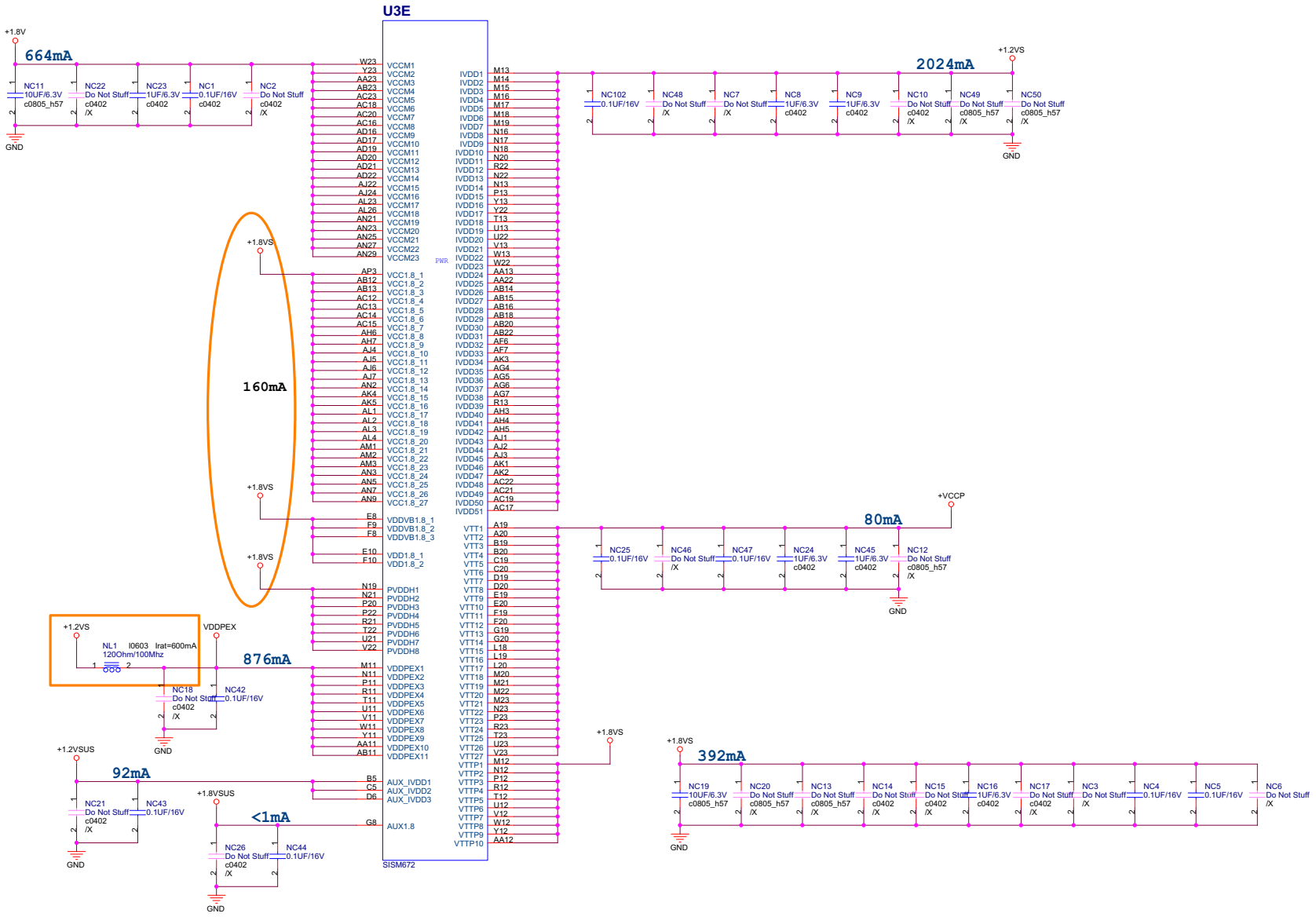
Title : SiSM672 - DDR2(2)

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 7 of 70


U3A
SISM672
U3D
SISM672
PCIE
ASL
SiS APNote:AM671MX-0-002b
Title : SiSM672 - VGA/Mutio(3)
ASUSTek Computer INC.
Engineer: Jack Hsu
Size Custom
Project Name Z62Ha
Rev 1.1
Date: Thursday, September 27, 2007
Sheet 8 of 70



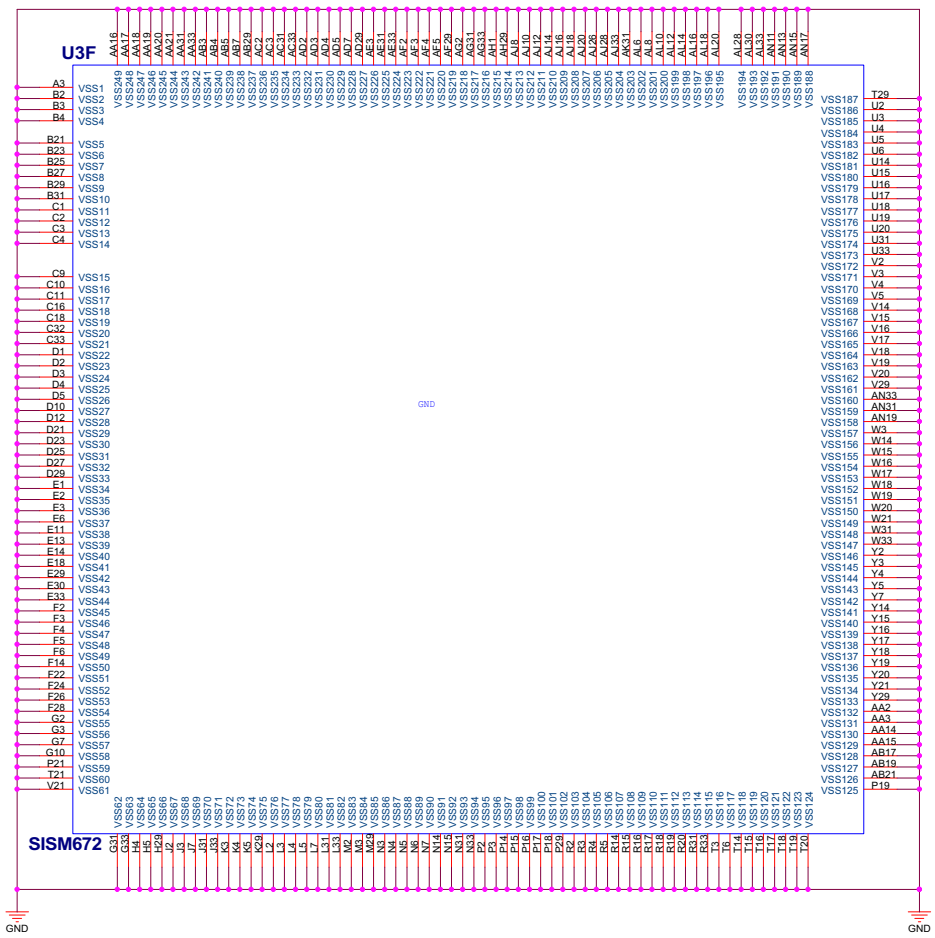
888

Title : SiSM672 - POWER(4)

ASUSTek Computer INC. Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 9 of 70



888

ASUSTek Computer INC.	Title : SiSM672 - GND(5)	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 10 of 70	

888

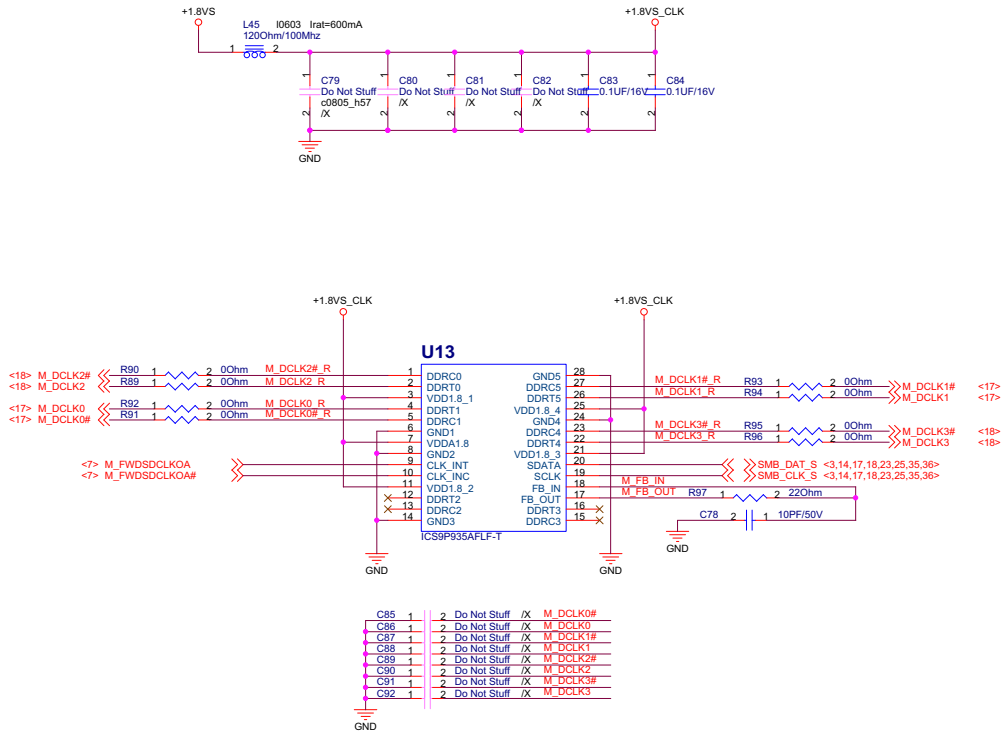
Title : BLANK

ASUSTek Computer INC.

Engineer: Jack Hsu

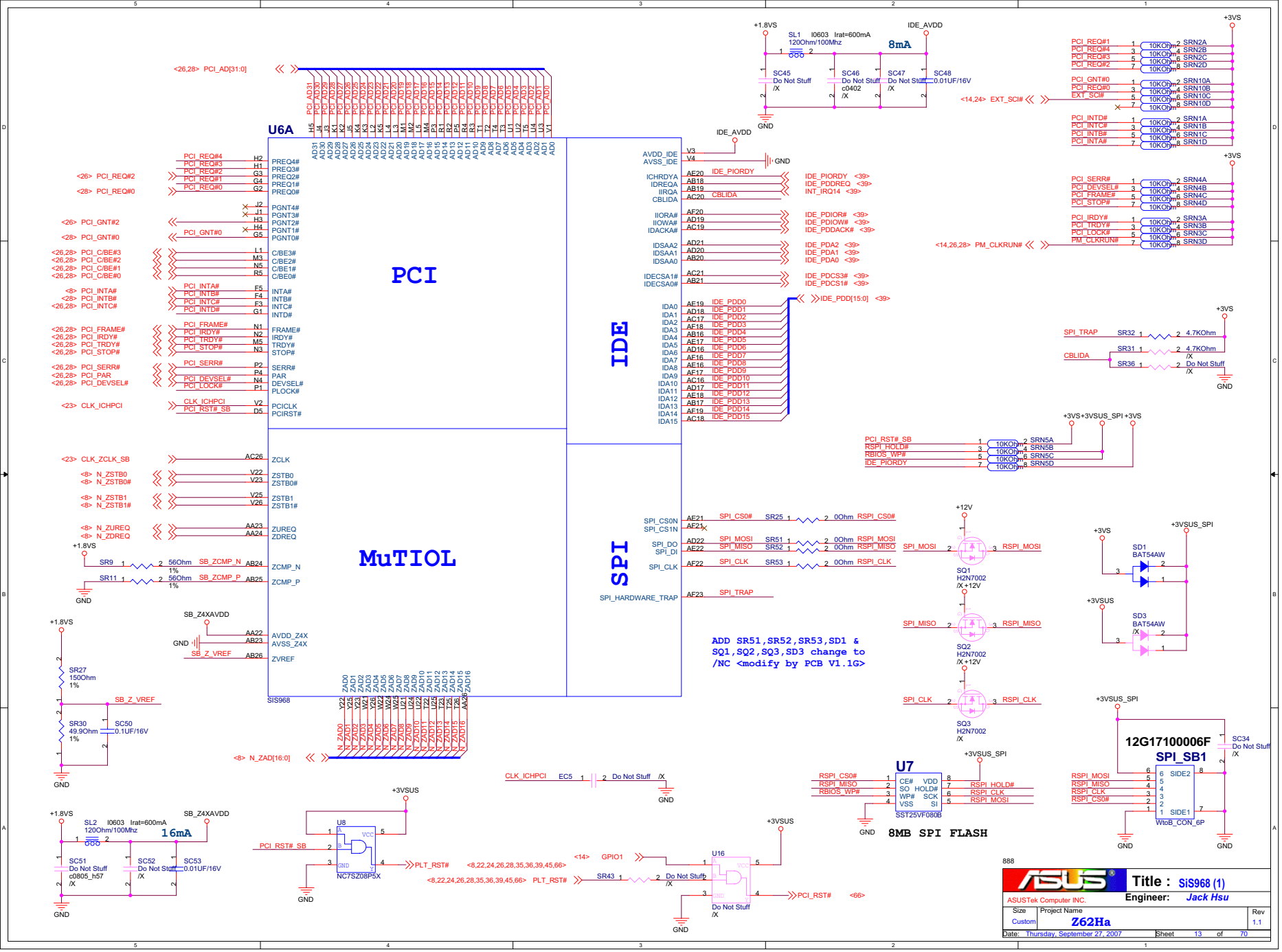
Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 11 of 70



888

ASUSTek Computer INC.	Title : DDR2 CLOCK BUFFER	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 12 of 70	


U6A
PCI
IDE
MuTIOL
SPI
SIS968
<26,28> PCI_AD[31:0]
PCI_REQ#4
PCI_REQ#3
<26> PCI_REQ#2
PCI_REQ#1
<28> PCI_REQ#0
<26> PCI_GNT#2
<28> PCI_GNT#0
PCI_GNT#0
<26,28> PCI_C/BE#3
<26,28> PCI_C/BE#2
<26,28> PCI_C/BE#1
<26,28> PCI_C/BE#0
<8> PCI_INTA#
<28> PCI_INTB#
<26,28> PCI_INTC#
PCI_INTA#
PCI_INTB#
PCI_INTC#
PCI_INTD#
<26,28> PCI_FRAME#
<26,28> PCI_IRDY#
<26,28> PCI_TRDY#
<26,28> PCI_STOP#
PCI_FRAME#
PCI_IRDY#
PCI_TRDY#
PCI_STOP#
<26,28> PCI_SERR#
<26,28> PCI_PAR
<26,28> PCI_DEVSEL#
PCI_SERR#
PCI_DEVSEL#
PCI_LOCK#
<23> CLK_ICHPCI
CLK_ICHPCI
PCI_RST#_SB
<23> CLK_ZCLK_SB
<8> N_ZSTB0
<8> N_ZSTB0#
<8> N_ZSTB1
<8> N_ZSTB1#
<8> N_ZUREQ
<8> N_ZDREQ
+1.8VS
SR9 56Ohm 1%
SR11 56Ohm 1%
SB_ZCMP_N
SB_ZCMP_P
GND
SB_Z4XAVDD
SB_Z_VREF
SR27 150Ohm 1%
SR30 49.9Ohm 1%
SC50 0.1UF/16V
<8> N_ZAD[16:0]
IDE_AVDD
AVDD_IDE
AVSS_IDE
IDE_PIORDY
ICHRDYA
IDREQA
IIRQA
CBLIDA
IIORA#
IIOWA#
IDACKA#
IDSAA2
IDSAA1
IDSAA0
IDECSA1#
IDECSA0#
IDE_PDD[15:0]
IDA0
IDA1
IDA2
IDA3
IDA4
IDA5
IDA6
IDA7
IDA8
IDA9
IDA10
IDA11
IDA12
IDA13
IDA14
IDA15
SPI_CS0N
SPI_CS1N
SPI_DO
SPI_DI
SPI_CLK
SPI_HARDWARE_TRAP
SPI_CS0#
SPI_MOSI
SPI_MISO
SPI_TRAP
ADD SR51,SR52,SR53,SD1 &
SQ1,SQ2,SQ3,SD3 change to
/NC <modify by PCB V1.1G>
SL1 I0603 Irat=600mA
120Ohm/100Mhz
8mA
SC45 Do Not Stuff /X
SC46 Do Not Stuff c0402 /X
SC47 Do Not Stuff 0.01UF/16V /X
SC48
<14,24> EXT_SCI#
PCI_REQ#1
PCI_REQ#4
PCI_REQ#3
PCI_REQ#2
PCI_GNT#0
PCI_REQ#0
EXT_SCI#
PCI_INTD#
PCI_INTC#
PCI_INTB#
PCI_INTA#
SRN2A
SRN2B
SRN2C
SRN2D
SRN10A
SRN10B
SRN10C
SRN10D
SRN1A
SRN1B
SRN1C
SRN1D
PCI_SERR#
PCI_DEVSEL#
PCI_FRAME#
PCI_STOP#
PCI_IRDY#
PCI_TRDY#
PCI_LOCK#
PM_CLKRUN#
<14,26,28> PM_CLKRUN#
SRN4A
SRN4B
SRN4C
SRN4D
SRN3A
SRN3B
SRN3C
SRN3D
SPI_TRAP
CBLIDA
SR32 4.7KOhm
SR31 4.7KOhm /X
SR36 Do Not Stuff /X
PCI_RST#_SB
RSPI_HOLD#
RBIOS_WP#
IDE_PIORDY
SRN5A
SRN5B
SRN5C
SRN5D
+3VS+3VSUS_SPI
+12V
SQ1 H2N7002 /X
SQ2 H2N7002 /X
SQ3 H2N7002 /X
SD1 BAT54AW
SD3 BAT54AW /X
RSPI_CS0#
RSPI_MISO
RSPI_MOSI
RSPI_CLK
RSPI_HOLD#
RBIOS_WP#
U7
SST25VF080B
8MB SPI FLASH
12G17100006F
SPI_SB1
WtoB_CON_6P
SC34 Do Not Stuff /X
SL2 I0603 Irat=600mA
120Ohm/100Mhz
16mA
SC51 Do Not Stuff c0805_h57 /X
SC52 Do Not Stuff /X
SC53 0.01UF/16V
U8
NC7SZ08P5X
PCI_RST#_SB
PLT_RST#
CLK_ICHPCI
EC5 Do Not Stuff /X
<14> GPIO1
U16
SR43 Do Not Stuff /X
<8,22,24,26,28,35,36,39,45,66>
<66>
888
Title : SiS968 (1)
ASUSTek Computer INC.
Engineer: Jack Hsu
Size Custom
Project Name Z62Ha
Rev 1.1
Date: Thursday, September 27, 2007
Sheet 13 of 70

RTC BATTERY

12G17100002C

RTC1

+3VA +VCC_RTC +RTCBAT SR22 1KOhm SD4 BAT54C SC30 Do Not Stuff /X SC31 1UF/16V SIDE1 SIDE2 WTOB_CON_2P GND GND GND

SC32 12PF/50V SB_RTC_XI SX1 32.768Mhz +/-20ppm/12.5PF SR26 10MOhm SC33 12PF/50V SB_RTC_XO GND

+VCC_RTC SR19 1% 20KOhm

RTC CMOS CLEAR

SC29 1UF/16V c0603 **JRST1** Do Not Stuff /X GND

Place on the Door Area

U6B

CPU_S

<3> H_INIT# → INIT# AC23
<3> H_A20M# → A20M# AE26
<3> H_SMI# → SMI# AD23
<3> H_INTR → INTR AC22
<3> H_NMI → NMI AE25
<3> H_IGNNE# → IGNNE# AE24
<3> H_FERR# → FERR# AF24
<3> H_STPCLK# → STPCLK# AE25
<3> H_CPUSLP# → CPUSLP#/CPUSTOP# AD24

<8> AGPBUSY# → BMBUSY# AE23

APIC

<3> H_PROCHOT#_SB / PM_THRMTRIP# → PROCHOT# / THERMTRIP# AC24 / AD25

LPC

<24,44,45> LPC_AD0 → LAD0 Y5
<24,44,45> LPC_AD1 → LAD1 AA4
<24,44,45> LPC_AD2 → LAD2 AB2
<24,44,45> LPC_AD3 → LAD3 AB3

<24,44,45> LPC_FRAME# → LFRAME# AB1
LPC_LDRQ# → LDRQ# AB4
<24,28,45> INT_SERIRQ → SIRQ AA5

RTC

SB_RTC_XO → OSC32KHO E2
SB_RTC_XI → OSC32KHI E1

RTCRST# → BATOK F1
<27> SB_PWROK / <3,8,24,27,56,60> VRM_PWRGD → SR15 Do Not Stuff → PWROK E4

+VCC_RTC → RTCVDD D1
GND → RTCVSS D2

SMBUS

SMB_DAT → GPIO20 W5
SMB_CLK → GPIO19 Y4

HD Audio

<31> ACZ_SDIN0 / <40> ACZ_SDIN1 → HDA_SDIN0 / HDA_SDIN1 E5 / C4

ACZ_SDOUT → HDA_SDOUT Y3
ACZ_SYNC → HDA_SYNC Y2

ACZ_RST# → HDA_RESET# B3
ACZ_BCLK → HDA_BIT_CLK Y1

ACPI/Others

<23> CLK_SB14 → OSCI AA2
GND SR20 0Ohm SB_ENTEST → ENTEST F2
<31> SB_SPKR → SPK AA1

<24> PM_PWRBTN# → PWRBTN# E6
<26> PCI_PME# → PME# A6
<27> SB_PSON# → PSON# E7

<8,24> PM_RSMRST# → AUXOK C3
ACPILED A5

GPIO

<27,56> PM_DPRSLPVR → GPIO13 D3
<8> AGPSTOP# → GPIO14 B5
<24,27> SUSB# → SLP_S3# C7
<3,27,56> H_DPRSTP# → GPIO16 B7
<24> HA20GATE → GPIO17 D7
<24> RC_IN# → GPIO18 B4

SIS968

GMAC

AVSS_GMACCMP18 / AVDD_GMACCMP18 → C8 / D9
OSC25MHO / OSC25MHI → B8 / A8
GTXCLK / EXTCLK → A12 / F14
TXCLK → B11
TXEN / TXER → C12 / C11
TXD0 / TXD1 / TXD2 / TXD3 → D12 / A13 / B13 / C13
RGMCMP_N / RGMCMP_P / RGMVREF → A14 / B14 / C14
RXCLK → A11 R38 4.7KOhm GND
RXDV / RXER → C10 / E12
RXD0 / RXD1 / RXD2 / RXD3 → A10 / C9 / B9 / A9
COL / CRS / MDC / MDIO → E10 / E11 / E14 / E13
GPIO21 / GPIO22 / GPIO23 / GPIO24 → D8 / F8 / E8 / A7

+1.8VSUS GND

PCI Express

PRX0+ / PRX0- / PTX0+ / PTX0- / PRX1+ / PRX1- / PTX1+ / PTX1- → M26 / M25 / N24 / N23 / K26 / K25 / L24 / L23

PCIE_TXP0_SB SC41 0.1UF/10V PCIE_TXN0_SB SC42 0.1UF/10V
PCIE_TXP1_SB SC43 0.1UF/10V PCIE_TXN1_SB SC44 0.1UF/10V

PCIE_RXP0_NEWCARD <35>
PCIE_RXN0_NEWCARD <35>
PCIE_TXP0_NEWCARD <35>
PCIE_TXN0_NEWCARD <35>
PCIE_RXP1_MINICARD <36>
PCIE_RXN1_MINICARD <36>
PCIE_TXP1_MINICARD <36>
PCIE_TXN1_MINICARD <36>

NC11 / NC10 / NC9 / NC8 / NC7 / NC6 / NC5 / NC4 → F26 / F25 / G24 / G23 / H26 / H25 / J24 / J23

PCLK100P / PCLK100N → P26 / P25 → CLK_PCIE_ICH <23> / CLK_PCIE_ICH# <23>
AVDD_PEXTRX → R25 AVDD_PEXTRX
AVSS_PEXTRX → R26
RSET0 → P22 SB_PERSET0 SR33 499Ohm 1%
RSET1 → P21 SB_PERSET1 SR35 124Ohm 1% GND

PCIEPRSNT1 / PCIEPRSNT0 → R21 / R23 PCIEPRSNT1 SR38 0Ohm PCIEPRSNT1 <35> GND

+1.8VS SL4 l0603 Irat=600mA 120Ohm/100Mhz AVDD_PEXTRX 30mA SC3 Do Not Stuff c0402 /X SC4 0.1UF/16V GND

GPIO0 / GPIO1 / GPIO2 / GPIO3 / GPIO4 / GPIO5 / GPIO6 / GPIO7 / GPIO8 / GPIO9 / SLP_S5# / GPIO11 / GPIO12 → U5 / AB5 / V5 / W4 / W3 / W2 / W1 / D6 / A4 / C6 / C2 / F6 / D4

GPIO1 → WLAN_LED <49>
GPIO1 <13>
PM_THERM# <3,65>
EXT_SMI# <24>
PM_CLKRUN# <13,26,28>
SR18 Do Not Stuff → GPIO_INT# <25>
BT_OFF# <43>
WLAN_OFF# <36>
BT_LED <49>
EXT_SCI# <13,24>
SLP_S5# SR13 0Ohm → SUSC# <24,27>
STP_PCI# <23>
STP_CPU# <23,27,56>

PM_THERM# : Pull-UP on Thermal Sensor

SMBus

SR28 0Ohm SQ4A Do Not Stuff SMB_CLK → SMB_CLK_S <3,12,17,18,23,25,35,36>
SR29 0Ohm SQ4B Do Not Stuff SMB_DAT → SMB_DAT_S <3,12,17,18,23,25,35,36>
+5VS

SMB_CLK_S SR39 Do Not Stuff
SMB_DAT_S SR40 Do Not Stuff
SMB_CLK SR41 10KOhm /X
SMB_DAT SR42 10KOhm /X
+3VS +3VSUS

SMB_CLK,SMB_DAT from pull +3VSUS change to +3VS <modify by PCB V1.1G>

CLK_SB14 EC6 Do Not Stuff /X GND

+VCCP

H_CPUSLP# H_STPCLK# H_IGNNE# H_FERR# → SRN6A SRN6B SRN6C SRN6D
PM_THRMTRIP# H_A20M# H_INIT# H_NMI → SRN7A SRN7B SRN7C SRN7D
H_PROCHOT#_SB H_INTR H_SMI# → SRN8A SRN8B SRN8C SRN8D
56Ohm

+3VS

LPC_LDRQ# INT_SERIRQ EXT_SMI# → SRN13A SRN13B SRN13C SRN13D 10KOhm
LPC_FRAME# ACZ_RST# BT_OFF# STP_PCI# → SR7 SR8 SR16 SR24 Do Not Stuff

+3VSUS

PM_PWRBTN# SB_PSON# → SRN14A SRN14B SRN14C SRN14D 10KOhm
WLAN_OFF# AGPSTOP# PCI_PME# → SR17 SR37 SR10 Do Not Stuff / 10KOhm

888

ASUSTek Computer INC.

Title : SiS968 (1)

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 14 of 70

USB 0	USB Conn.
USB 1	USB Conn.
USB 2	USB Conn.
USB 3	USB Conn.
USB 4	USB NEWCARD
USB 5	USB MINICARD
USB 6	CMOS Camera
USB 7	Bluetooth

U6C

USB

<42> USB_PP0 — D26 UV0+
<42> USB_PN0 — D25 UV0-
<42> USB_PP1 — E24 UV1+
<42> USB_PN1 — E23 UV1-
<42> USB_PP2 — A20 UV2+
<42> USB_PN2 — B20 UV2-
<42> USB_PP3 — C19 UV3+
<42> USB_PN3 — D19 UV3-
<35> USB_PP4 — A18 UV4+
<35> USB_PN4 — B18 UV4-
<36> USB_PP5 — C17 UV5+
<36> USB_PN5 — D17 UV5-
<22> USB_PP6 — A16 UV6+
<22> USB_PN6 — B16 UV6-
<43> USB_PP7 — C15 UV7+
<43> USB_PN7 — D15 UV7-

<42> USB_OC#01 — A23 OC0#
F21 OC1#
<42> USB_OC#23 — A24 OC2#
B24 OC3#
<35> NEWCARD_OC#4 — C23 OC4#
USB_OC#5 — C24 OC5#
USB_OC#6 — A25 OC6#
USB_OC#7 — B23 OC7#

UVDD18 — E16 UVDD18_1, E18 UVDD18_2, F15 UVDD18_3, F16 UVDD18_4, J19 UVDD18_10, H18 UVDD18_8, H17 UVDD18_7, H16 UVDD18_6, H15 UVDD18_5, J15 UVDD18_9

UVDD33 — F22 UVDD33_1, E19 UVDD33_2, F17 UVDD33_3

OSC12MHI — A22 CLK_USB12 — CLK_USB12 <23>
OSC12MHO — B22 T56 1 — Do Not Stuff
USBREF — F20 USBREF — SR34 1 — 2 130Ohm — GND

SR34 from 127ohm 0402 change to 130ohm 0603 for USB rise/fall issue <modify by PCB V1.1G>

AVDD_USBPLL18 — B26 USBPVDD18
AVSS_USBPLL18 — B25
AVDD_USBCMP18 — E21 USBCMPAVDD18
AVSS_USBCMP18 — E20
AVDD_USBCMP33 — D21 USBCMPAVDD33
AVSS_USBCMP33 — C21
GND

SATA

STX0+ — AC13 SATA_TXP0_ICH — SC38 2 — 1 0.01UF/16V — SATA_TXP0 <39>
STX0- — AD13 SATA_TXN0_ICH — SC37 2 — 1 0.01UF/16V — SATA_TXN0 <39>
SRX0+ — AE12 SATA_RXP0_ICH — SC36 2 — 1 0.01UF/16V — SATA_RXP0 <39>
SRX0- — AE12 SATA_RXN0_ICH — SC35 2 — 1 0.01UF/16V — SATA_RXN0 <39>
STX1+ — AC6
STX1- — AD6
SRX1+ — AE5
SRX1- — AE5

XIN — AE8 SATA_XIN — SR1 1 — 2 0Ohm — GND
XOUT — AF8 T57 1 — Do Not Stuff
OD, Low Active
HDACT — AA3 — SATA_LED# <37>

ISWITCHOPEN1 — AC1 ISW1 — SR2 1 — 2 1KOhm
ISWITCHOPEN0 — AD1 ISW0 — SR3 1 — 2 1KOhm — GND

+3VSUS

PCIE_WAKE# — 1 — 10KOhm — 2 SRN9A
USB_OC#7 — 3 — 10KOhm — 4 SRN9B
USB_OC#5 — 5 — 10KOhm — 6 SRN9C
USB_OC#6 — 7 — 10KOhm — 8 SRN9D

CLK_USB12 — EC7 1 — 2 Do Not Stuff /X — GND

AVDD_SATARX — AF14 AVDD_SATARX, AF15 AVSS_SATARX
AVDD_SATAPLL33 — AC9 AVDD_SATAPLL33_1, AD9 AVDD_SATAPLL33_2
AC8 AVSS_SATAPLL33_1, AD8 AVSS_SATAPLL33_2

SR6 1 — 2 12KOhm — GND
GND — SC5 2 — 1 22PF/50V — SATA_REXT — AF7 REXT

<23> CLK_SATA_ICH — AE15 CLK100P
<23> CLK_SATA_ICH# — AD15 CLK100N

IPB_OUT0 — D22
IPB_OUT1 — C22
TRAP0 — E22 — SR5 1 — 2 Do Not Stuff/X — +3VSUS
ATRAP — D10 ATRAP — SR4 1 — 2 1KOhm — GND
PCIEWAKE — E9 — PCIE_WAKE# — PCIE_WAKE# <8,35,36>

SIS968

+1.8VSUS — SL5 l0603 Irat=600mA 120Ohm/100Mhz — USBPVDD18 — **7mA**
SC54 Do Not Stuff /X — SC55 Do Not Stuff /X — SC56 0.01UF/16V
GND

+3VSUS — SL6 l0603 Irat=600mA 120Ohm/100Mhz — USBCMPAVDD33 — **8mA**
SC57 Do Not Stuff /X — SC58 Do Not Stuff c0402 /X — SC59 Do Not Stuff /X — SC60 0.01UF/16V
GND

+3VSUS — SL7 l0603 Irat=600mA 120Ohm/100Mhz — UVDD33 — **8mA**
SC61 Do Not Stuff /X — SC62 Do Not Stuff /X — SC63 0.01UF/16V
GND

+1.8VS — SL8 l0603 Irat=600mA 120Ohm/100Mhz — AVDD_SATARX — **6mA**
SC64 Do Not Stuff /X — SC65 Do Not Stuff c0402 /X — SC66 Do Not Stuff /X — SC67 0.01UF/16V
GND

+1.8VSUS — SL9 l0603 Irat=600mA 120Ohm/100Mhz — USBCMPAVDD18 — **9mA**
SC68 Do Not Stuff c0402 /X — SC69 Do Not Stuff /X — SC70 0.01UF/16V
GND

+1.8VSUS — SL10 l0603 Irat=600mA 120Ohm/100Mhz — UVDD18 — **284mA**
SC71 1UF/6.3V c0402 — SC72 Do Not Stuff /X — SC73 Do Not Stuff /X — SC74 0.01UF/16V
GND

+3VS — SL11 l0603 Irat=600mA 120Ohm/100Mhz — AVDD_SATAPLL33 — **41mA**
SC75 Do Not Stuff /X — SC76 1UF/6.3V c0402 — SC77 Do Not Stuff /X — SC78 Do Not Stuff /X — SC79 0.01UF/16V
GND

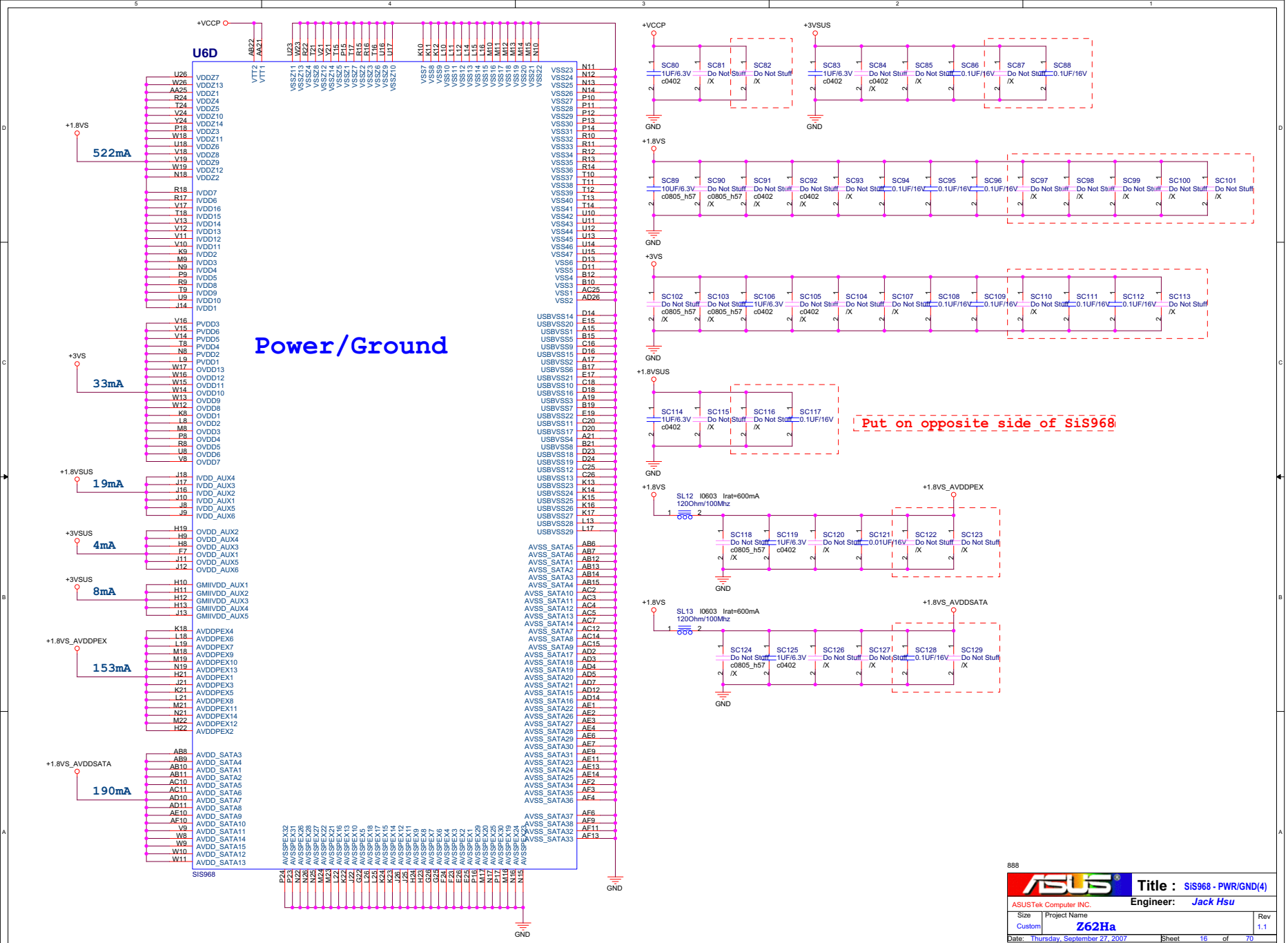
888

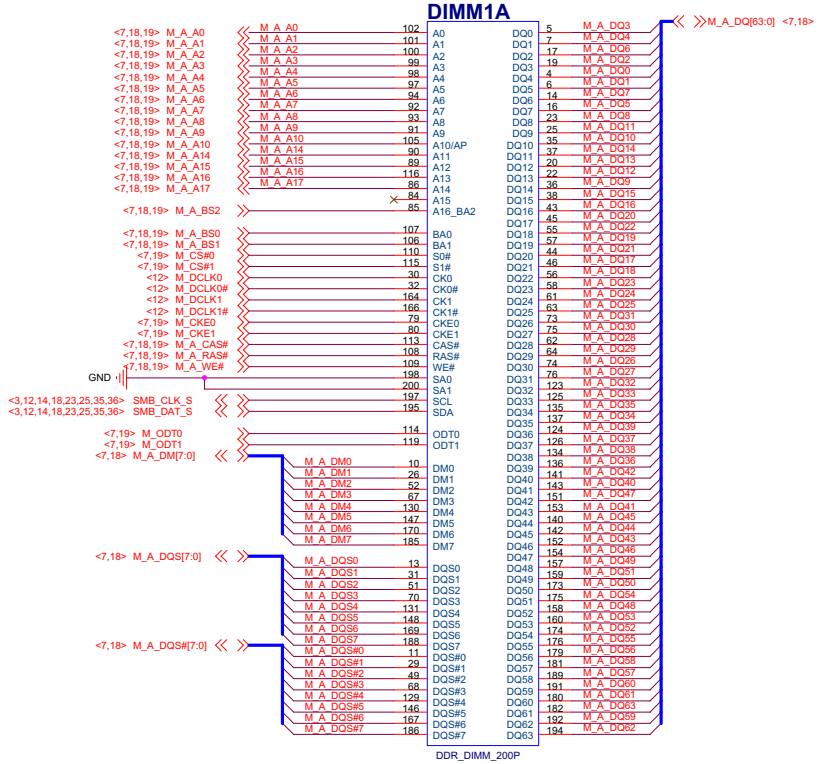
ASUSTek Computer INC.

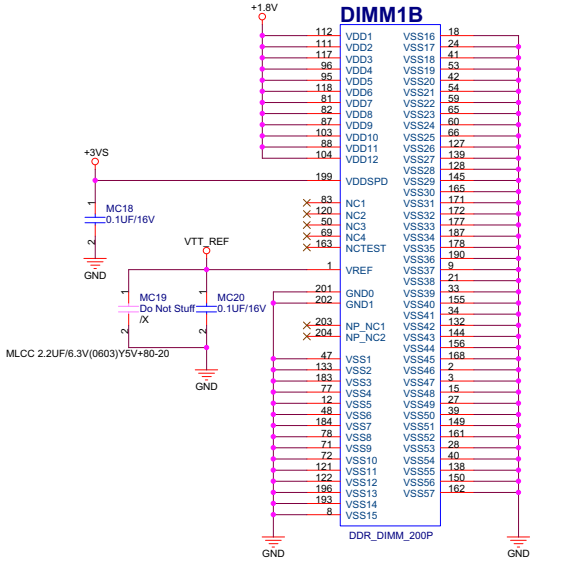
Title : SiS968 (3)
Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 15 of 70


U6D
SIS968
Power/Ground
+VCCP
+1.8VS
522mA
+3VS
33mA
+1.8VSUS
19mA
+3VSUS
4mA
8mA
+1.8VS_AVDDPEX
153mA
+1.8VS_AVDDSATA
190mA
GND
+3VSUS
SC80 1UF/6.3V c0402
SC81 Do Not Stuff /X
SC82 Do Not Stuff /X
SC83 1UF/6.3V c0402
SC84 Do Not Stuff c0402 /X
SC85 Do Not Stuff /X
SC86 0.1UF/16V
SC87 Do Not Stuff /X
SC88 0.1UF/16V /X
SC89 10UF/6.3V c0805_h57
SC90 Do Not Stuff c0805_h57 /X
SC91 Do Not Stuff c0402 /X
SC92 Do Not Stuff c0402 /X
SC93 Do Not Stuff /X
SC94 0.1UF/16V /X
SC95 0.1UF/16V /X
SC96 0.1UF/16V /X
SC97 Do Not Stuff /X
SC98 Do Not Stuff /X
SC99 Do Not Stuff /X
SC100 Do Not Stuff /X
SC101 Do Not Stuff /X
SC102 Do Not Stuff c0805_h57 /X
SC103 Do Not Stuff c0805_h57 /X
SC106 1UF/6.3V c0402
SC105 Do Not Stuff c0402 /X
SC104 Do Not Stuff /X
SC107 Do Not Stuff /X
SC108 0.1UF/16V /X
SC109 0.1UF/16V /X
SC110 Do Not Stuff /X
SC111 0.1UF/16V /X
SC112 0.1UF/16V /X
SC113 Do Not Stuff /X
SC114 1UF/6.3V c0402
SC115 Do Not Stuff /X
SC116 Do Not Stuff /X
SC117 0.1UF/16V
Put on opposite side of SiS968
SL12 I0603 Irat=600mA 120Ohm/100Mhz
+1.8VS_AVDDPEX
SC118 Do Not Stuff c0805_h57 /X
SC119 1UF/6.3V c0402
SC120 Do Not Stuff /X
SC121 0.01UF/16V
SC122 Do Not Stuff /X
SC123 Do Not Stuff /X
SL13 I0603 Irat=600mA 120Ohm/100Mhz
+1.8VS_AVDDSATA
SC124 Do Not Stuff c0805_h57 /X
SC125 1UF/6.3V c0402
SC126 Do Not Stuff /X
SC127 Do Not Stuff /X
SC128 0.1UF/16V
SC129 Do Not Stuff /X
888
Title : SiS968 - PWR/GND(4)
ASUSTek Computer INC.
Engineer: Jack Hsu
Size Custom
Project Name Z62Ha
Rev 1.1
Date: Thursday, September 27, 2007
Sheet 16 of 70





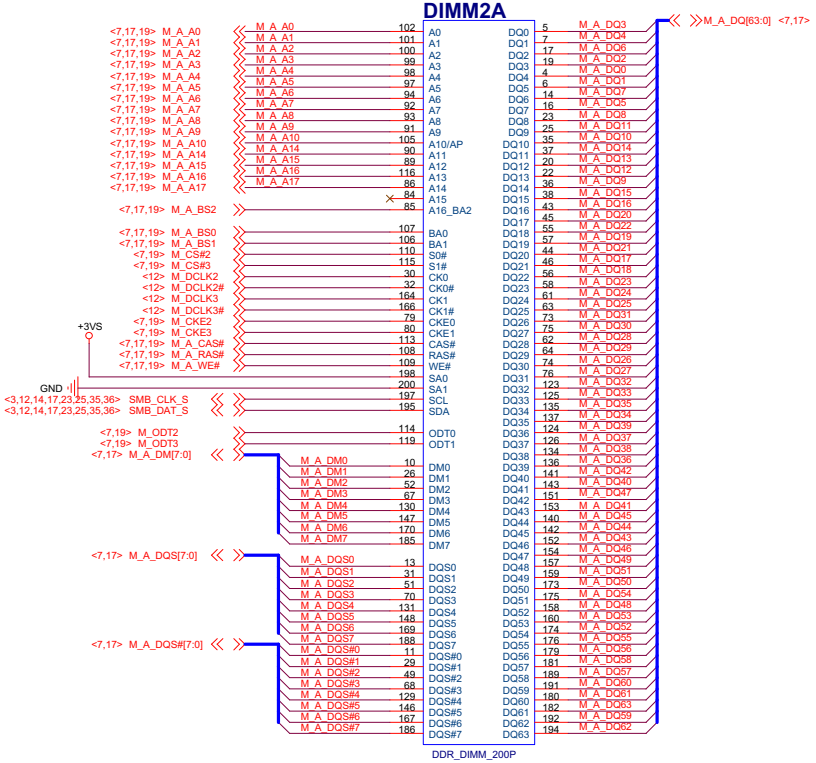
Layout Note: Place these Caps near SO-DIMM0

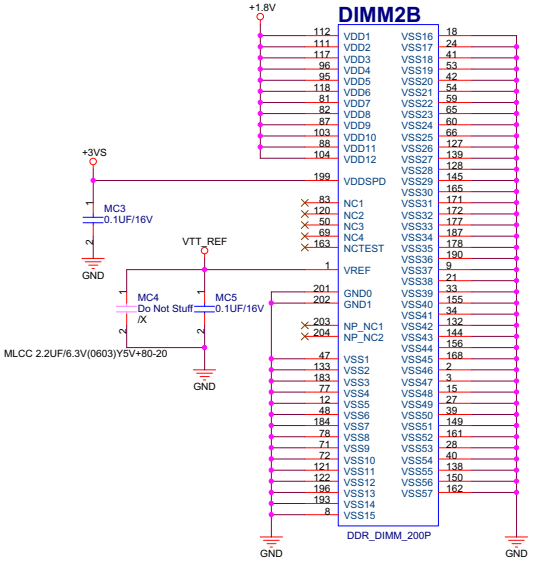
H=9.2mm Standard Type, 12G025C22000

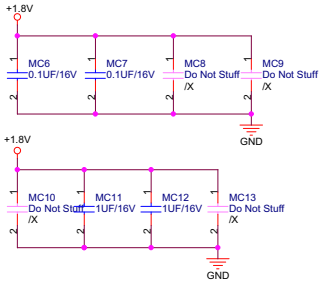
Channel A, DIMM 0

888

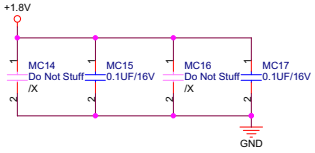
ASUSTek Computer INC.	Title : DDR SO-DIMM0	
	Engineer: *Jack Hsu*	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 17 of 70	







Layout Note: Place these Caps near SO-DIMM1



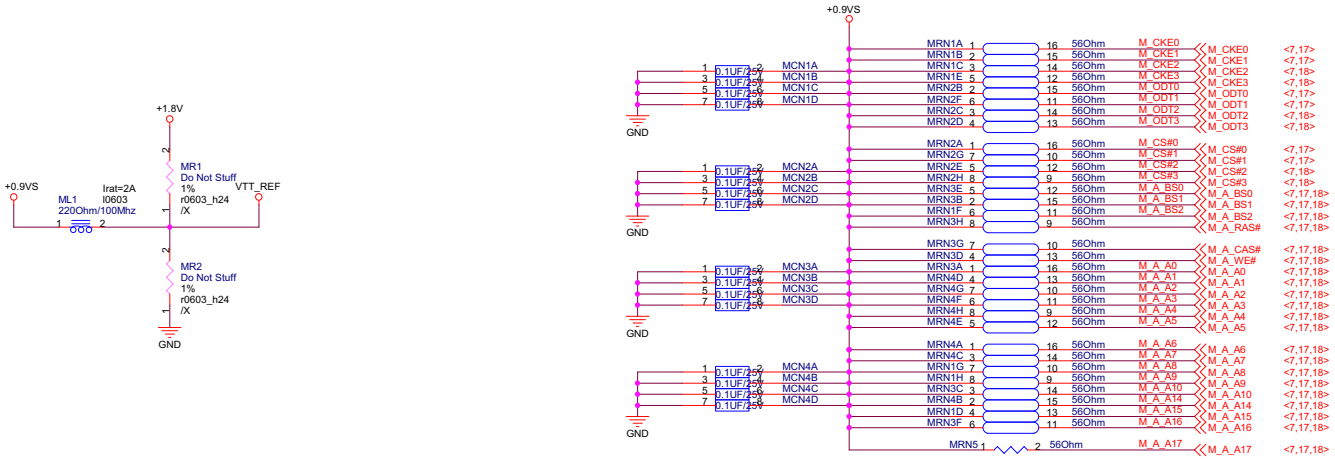
Layout Note: Place these High-Freq decoupling Caps near the GMCH

H=5.2mm Standard Type, 12G025122007

Channel A, DIMM 1

888

ASUSTek Computer INC.	Title : DDR SO-DIMM1	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 18 of 70	



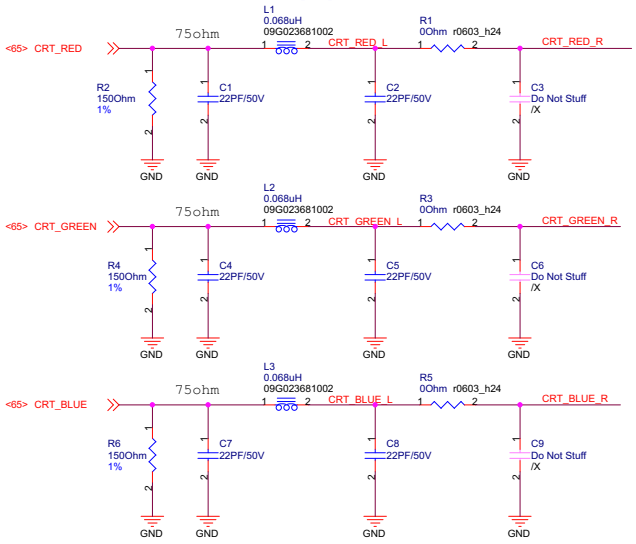
DDR2: Command, Control Signal need termination

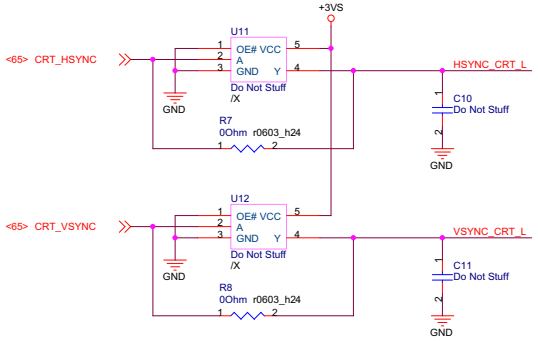
Layout note: Place one cap close to every 2 pull-up resistors terminated to +0.9V

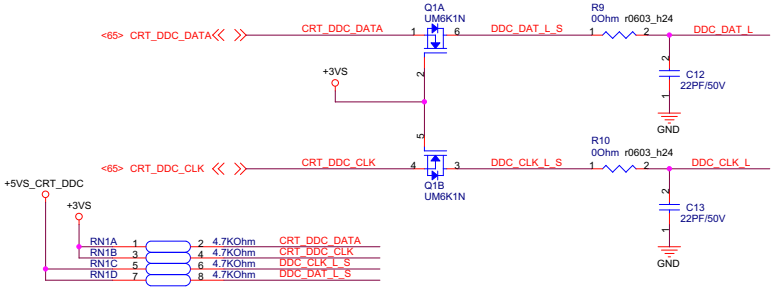
888

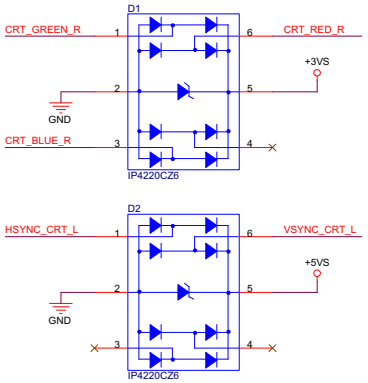
ASUSTek Computer INC.	Title : DDR2 Termination	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 19 of 70	

L1,L2,L3 from 27nH change to 0.068uH for VGA measure <modify by PCB V1.1G>



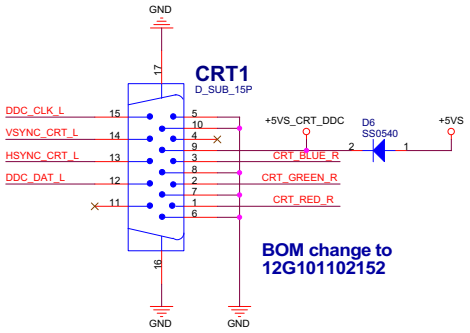






ESD Diodes

Place ESD Diodes near CRT Connector



CRT Connector

888

ASUSTek Computer INC.

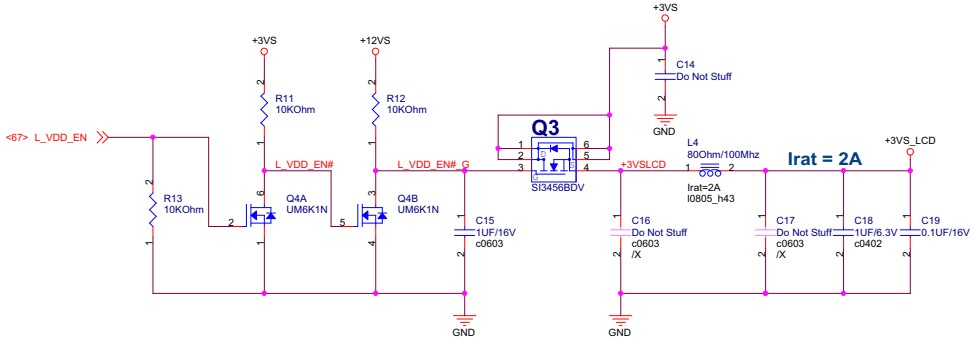
Title : CRT Connector

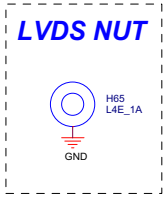
Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

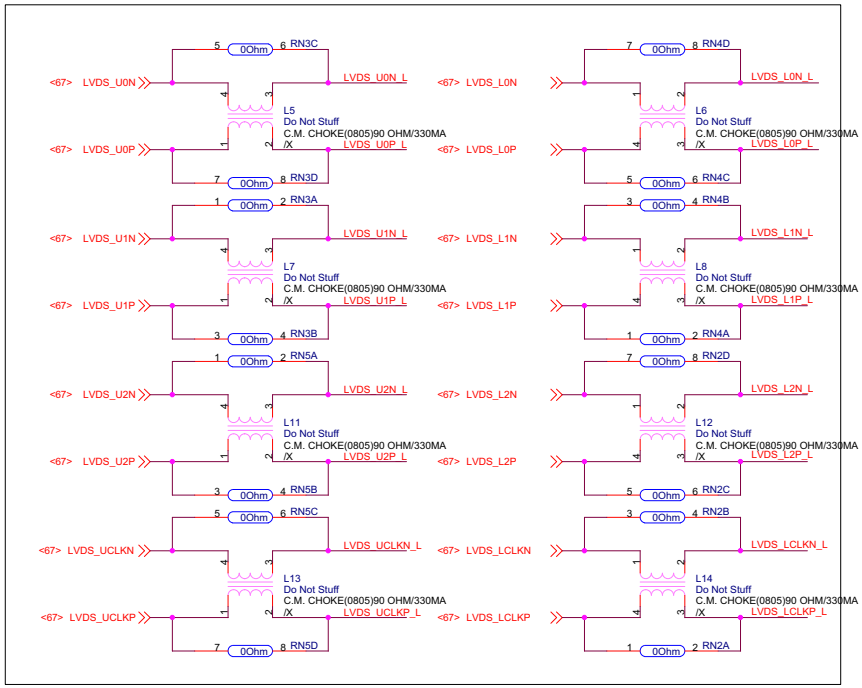
Date: Thursday, September 27, 2007 Sheet 20 of 70

LCD Power Switch



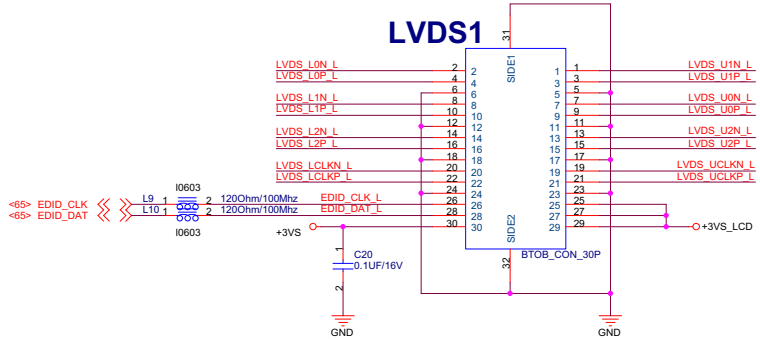


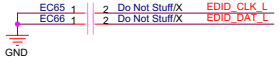
C14,C20 for EMI solution
<modify by PCB V1.1G>



LVDS Connector

12G17001030B





Cable Requirement:
Impedence: 100 ohm +/- 10%
Length Mismatch <= 10 mils
Twisted Pair(Not Ribbon)
Maximum Length <= 16"

888

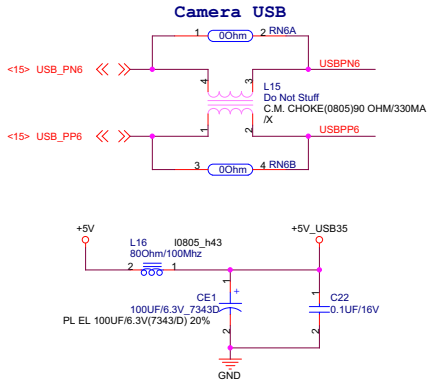
ASUSTek Computer INC.	Title : LVDS Connector	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 21 of 70	

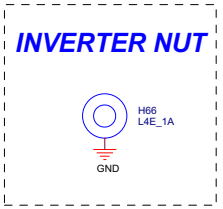
INVERTER Interface

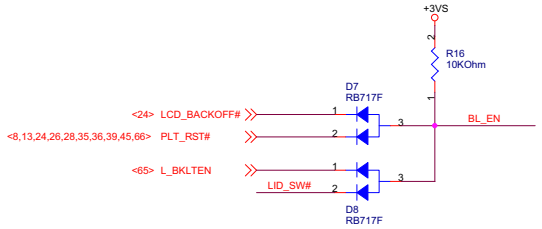
BIOS
LCD_BACKOFF#:When user push "Fn+F7" button, BIOS active this pin to turn off back light.

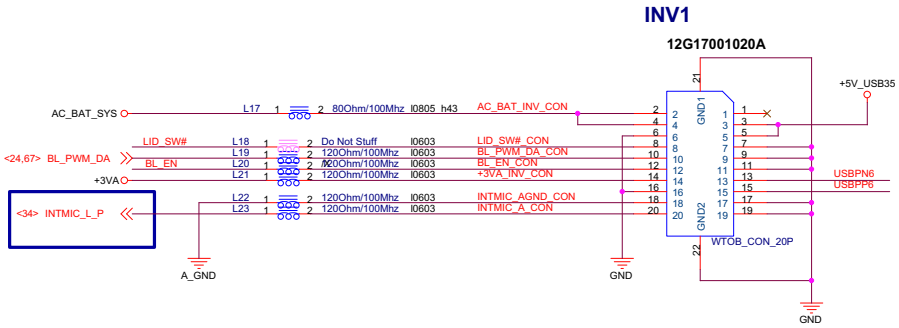
BIOS
BACK_ADJ: KBC output PWM signal (adjust pulse width) to adjust Back light.

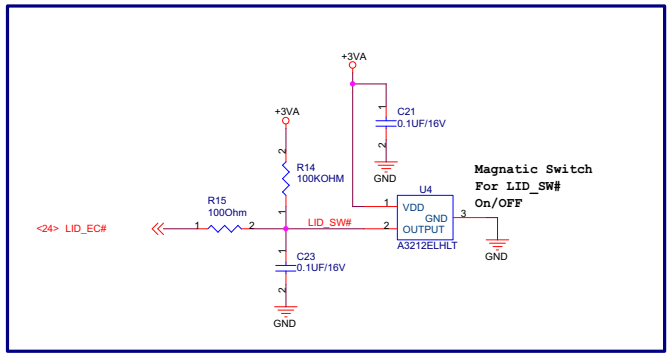
Inverter Board built in 14.1W LCD Panel

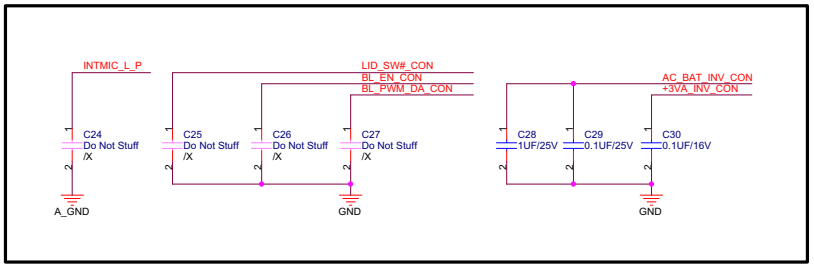












888

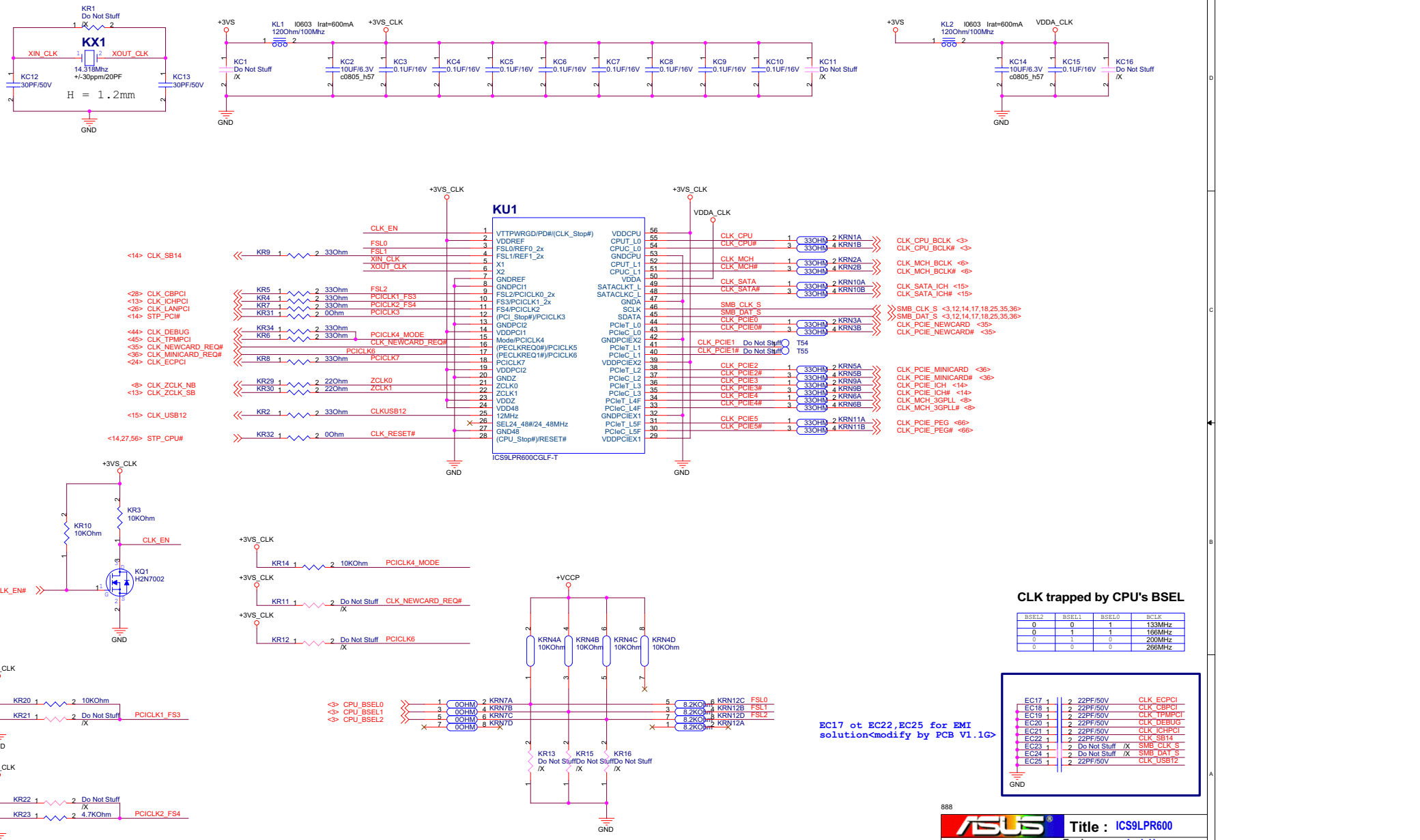
ASUSTek Computer INC.

Title : Inverter

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 22 of 70



CLK trapped by CPU's BSEL

BSEL2	BSEL1	BSEL0	BCLK
0	0	1	133MHz
0	1	1	166MHz
0	1	0	200MHz
0	0	0	266MHz

888

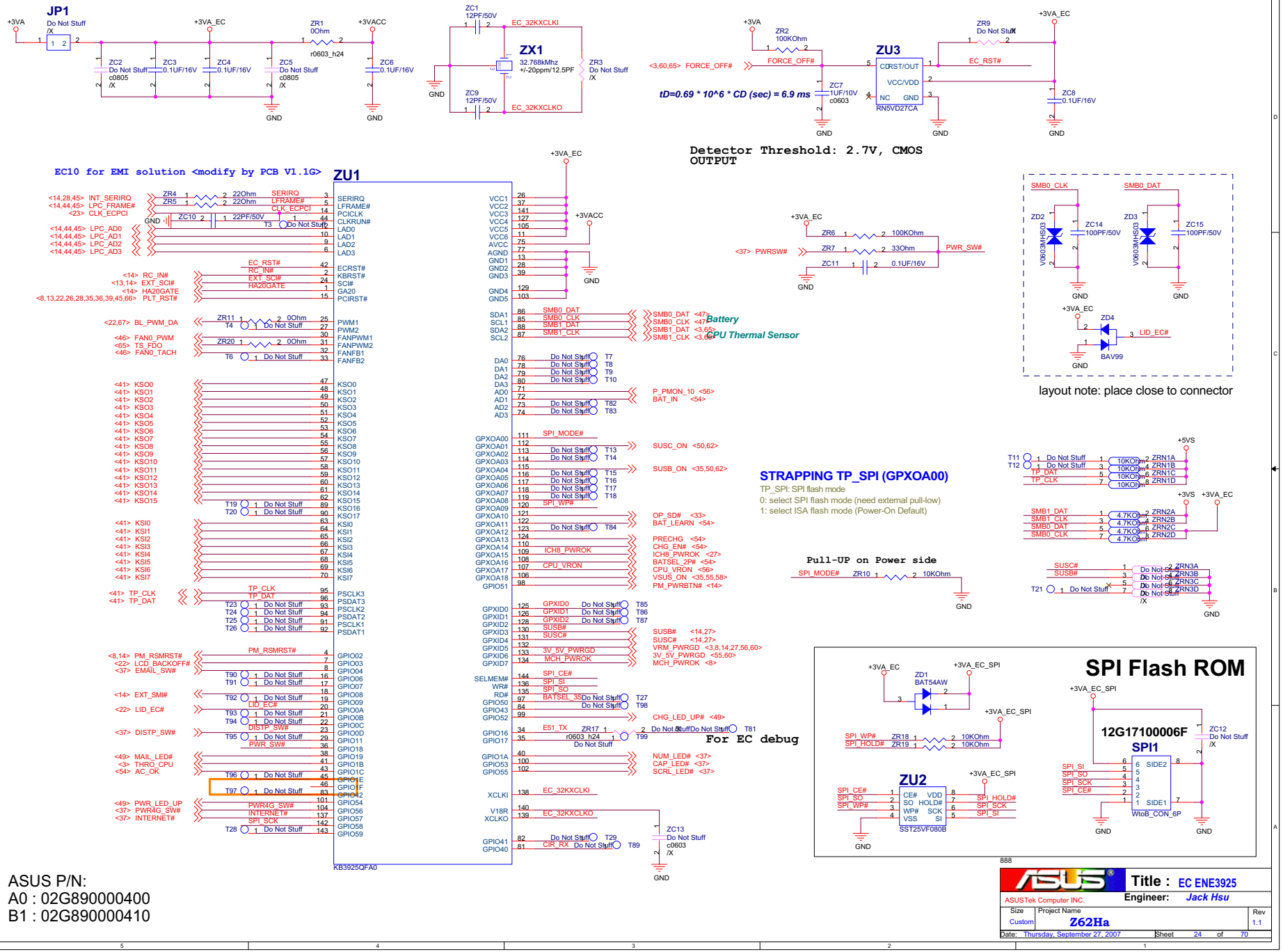
ASUSTek Computer INC.

Title : ICS9LPR600

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

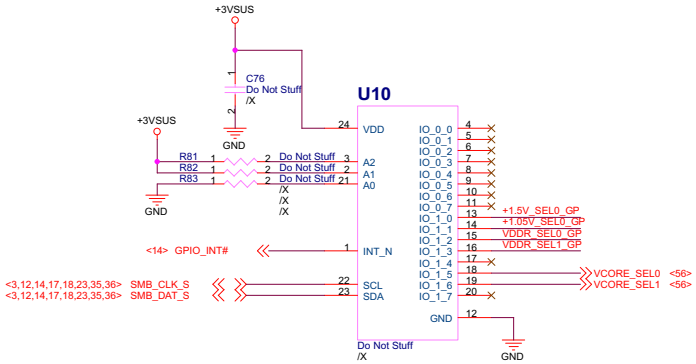
Date: Thursday, September 27, 2007 Sheet 23 of 70

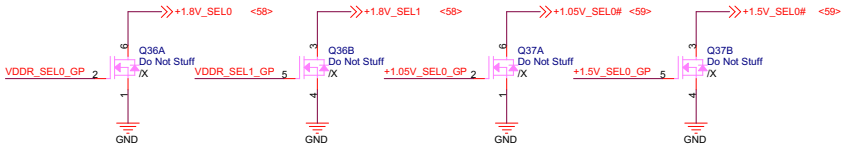


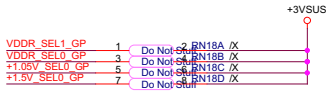
ASUS P/N:
A0 : 02G890000400
B1 : 02G890000410

888

ASUSTek Computer INC.	Title : EC ENE3925	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 24 of 70	







888

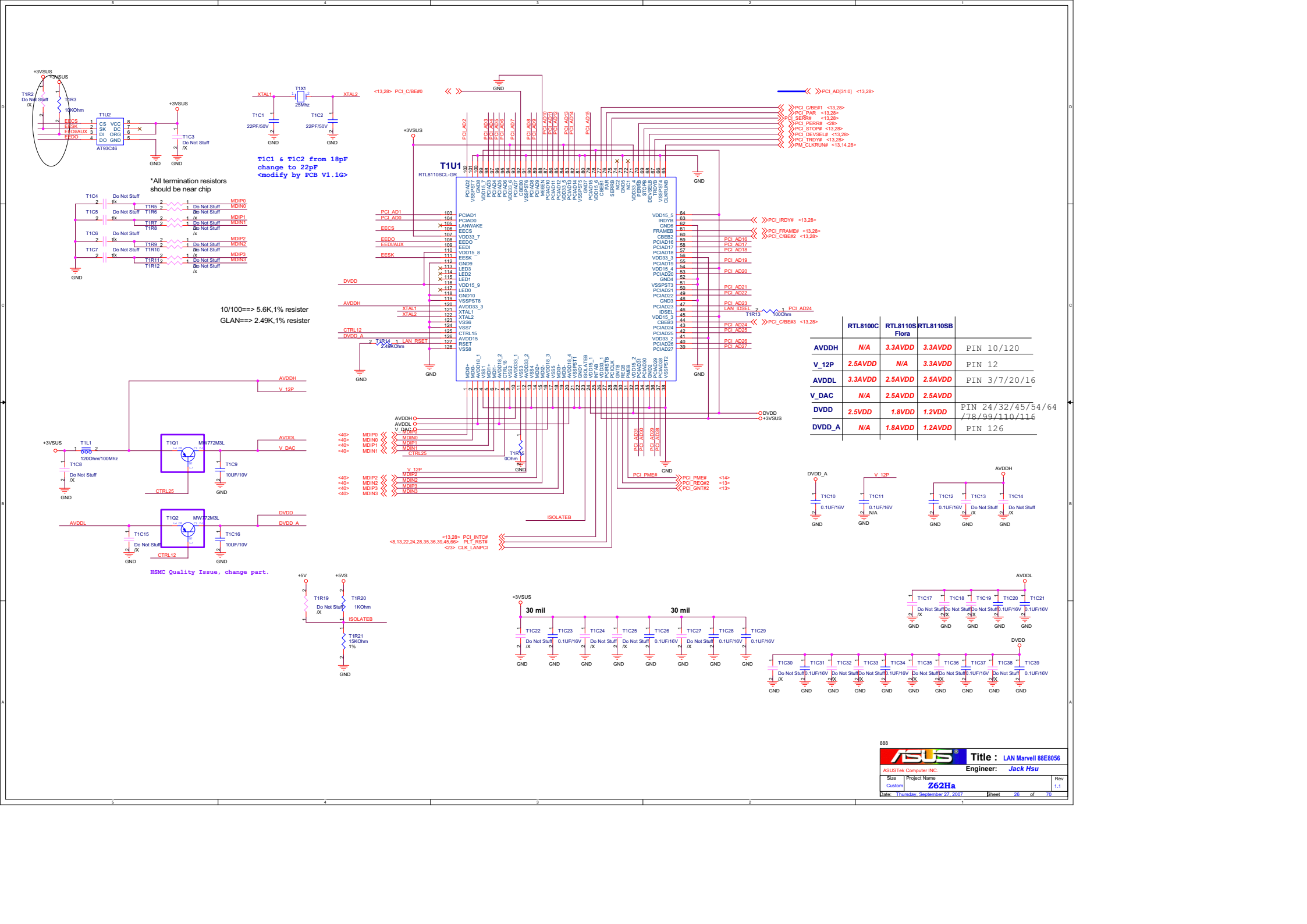
ASUSTek Computer INC.

Title : GPIO EXP.

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

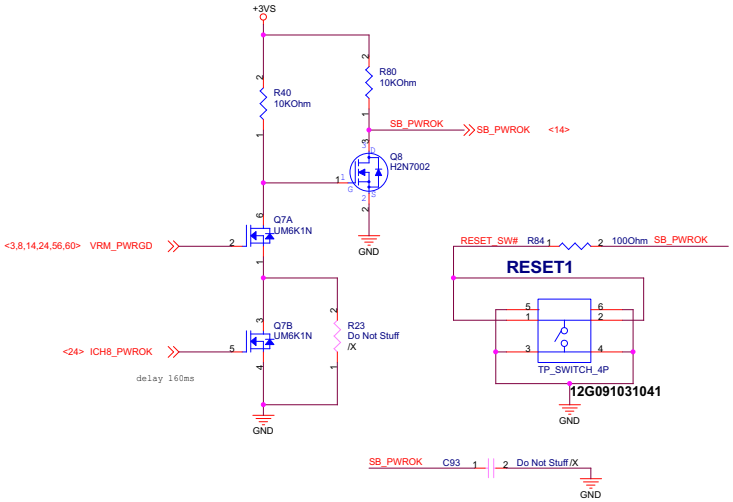
Date: Thursday, September 27, 2007 Sheet 25 of 70

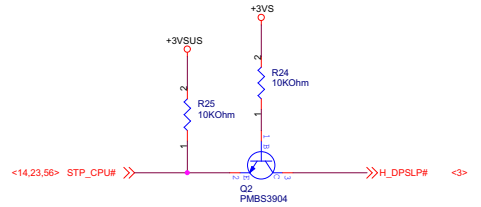


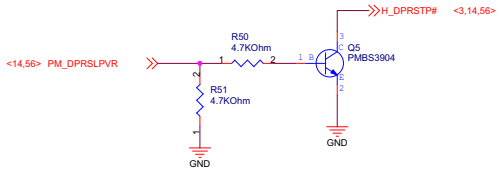
	RTL8100C	RTL8110S Flora	RTL8110SB	
AVDDH	N/A	3.3AVDD	3.3AVDD	PIN 10/120
V_12P	2.5AVDD	N/A	3.3AVDD	PIN 12
AVDDL	3.3AVDD	2.5AVDD	2.5AVDD	PIN 3/7/20/16
V_DAC	N/A	2.5AVDD	2.5AVDD	
DVDD	2.5VDD	1.8VDD	1.2VDD	PIN 24/32/45/54/64 /78/99/110/116
DVDD_A	N/A	1.8AVDD	1.2AVDD	PIN 126

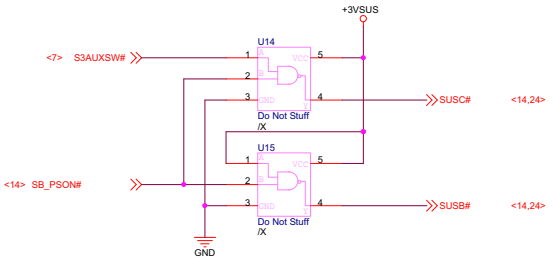
888

ASUSTek Computer INC.	Title : LAN Marvell 88E8056	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 26 of 70	









Sleep & Wake up

	S0		S3		S0
S3AUXSW#	1	0	0	0	1
SB_PSON#	0	0	1	0	0
SUSC#(S4)	1	1	1	1	1
SUSB#(S3)	1	1	0	1	1
Power Status	Main	Main	System, S4	Main	Main

Power ON & OFF:

	S5 → S0 → S5		
S3AUXSW#	1	1	1
SB_PSON#	1	0	1
SUSC#(S4)	0	1	0
SUSB#(S3)	0	1	0
Power Status	System	Main	System

888

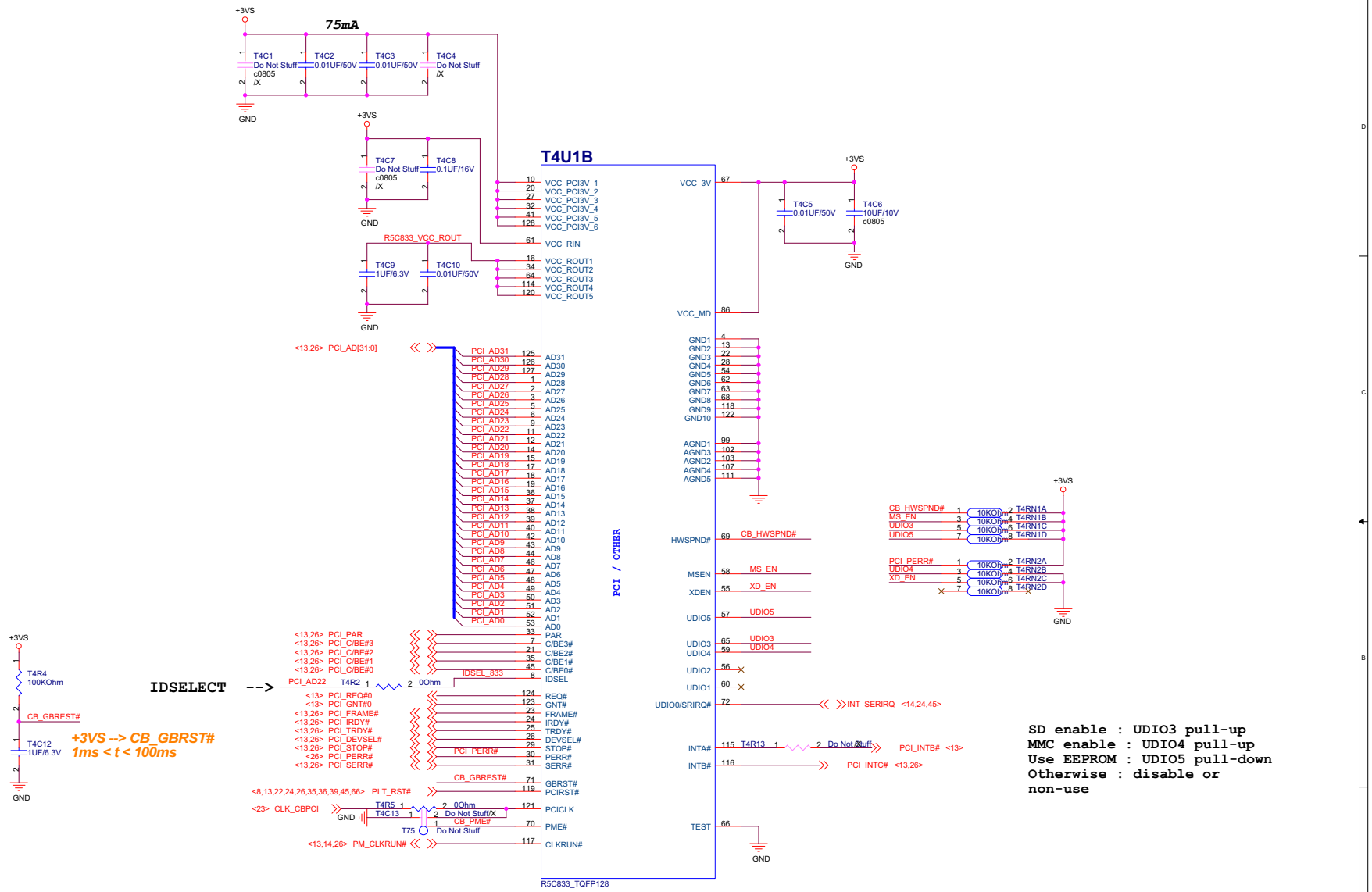
ASUSTek Computer INC.

Title : Other

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 27 of 70



888

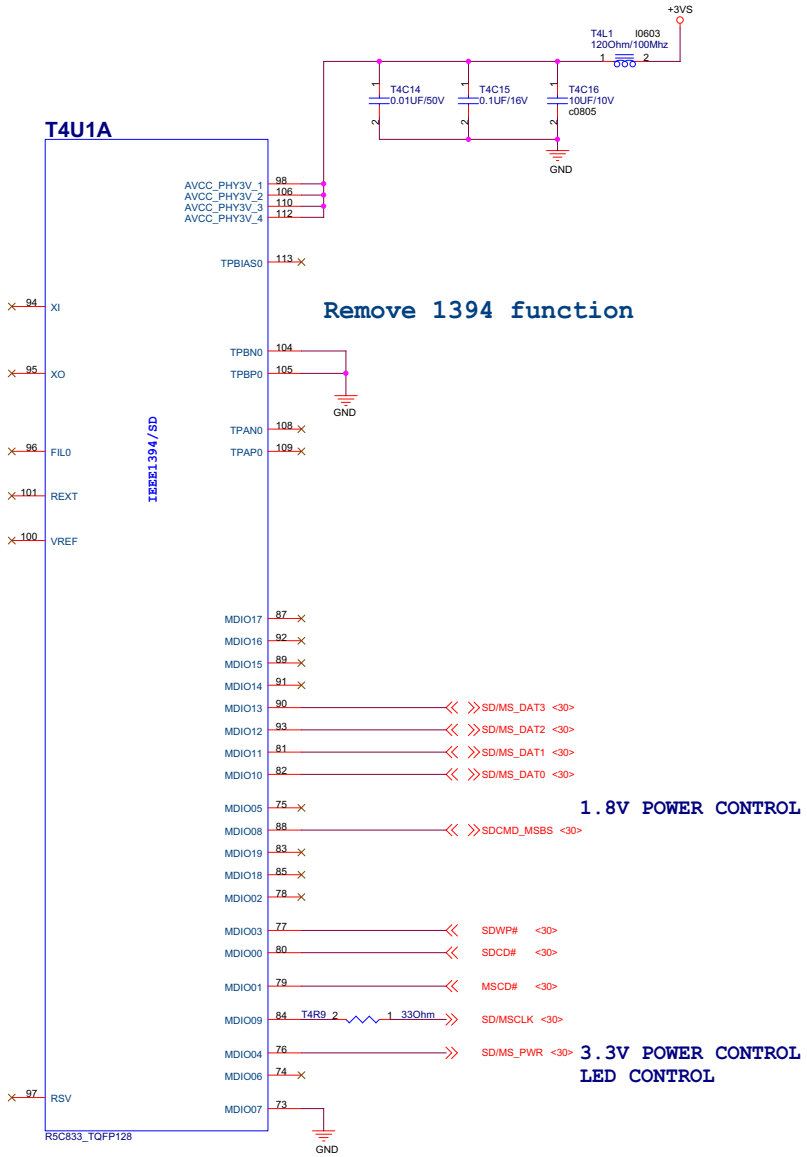
ASUSTek Computer INC.

Title : R5C833_PCI

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 28 of 70



888

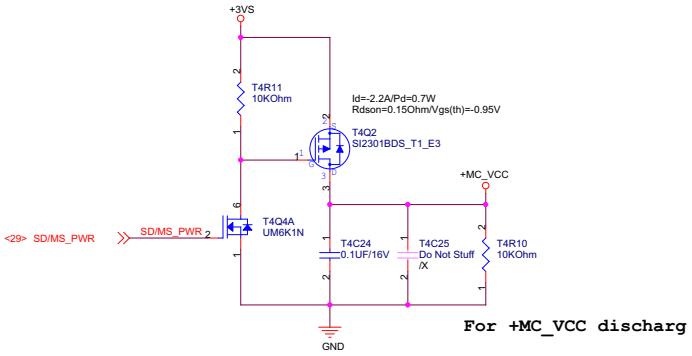
ASUSTek Computer INC.

Title : R5C833_1394/SD

Engineer: Jack Hsu

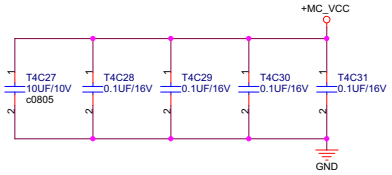
Size	Project Name	Rev
Custom	Z62Ha	1.1

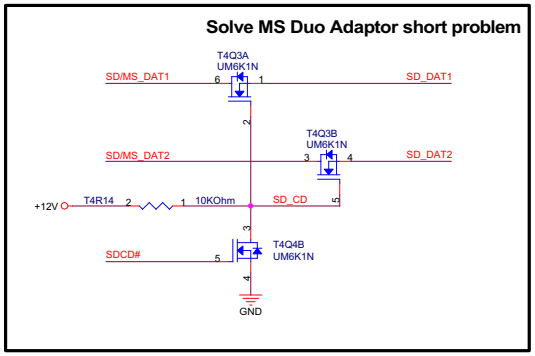
Date: Thursday, September 27, 2007 Sheet 29 of 70

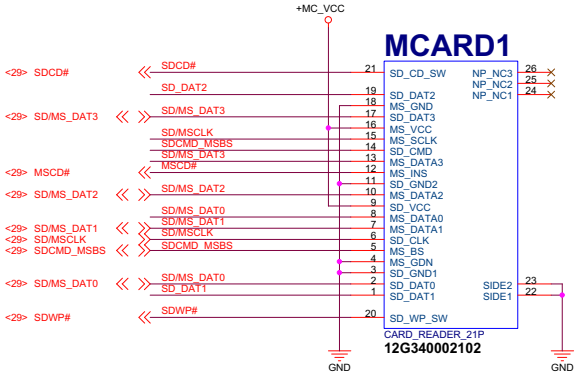


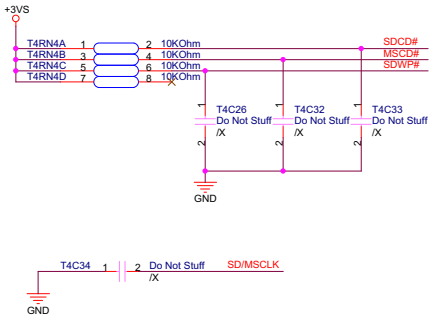
For +MC_VCC discharg

Card Reader Power Switcher









3 in 1 Card Reader

888

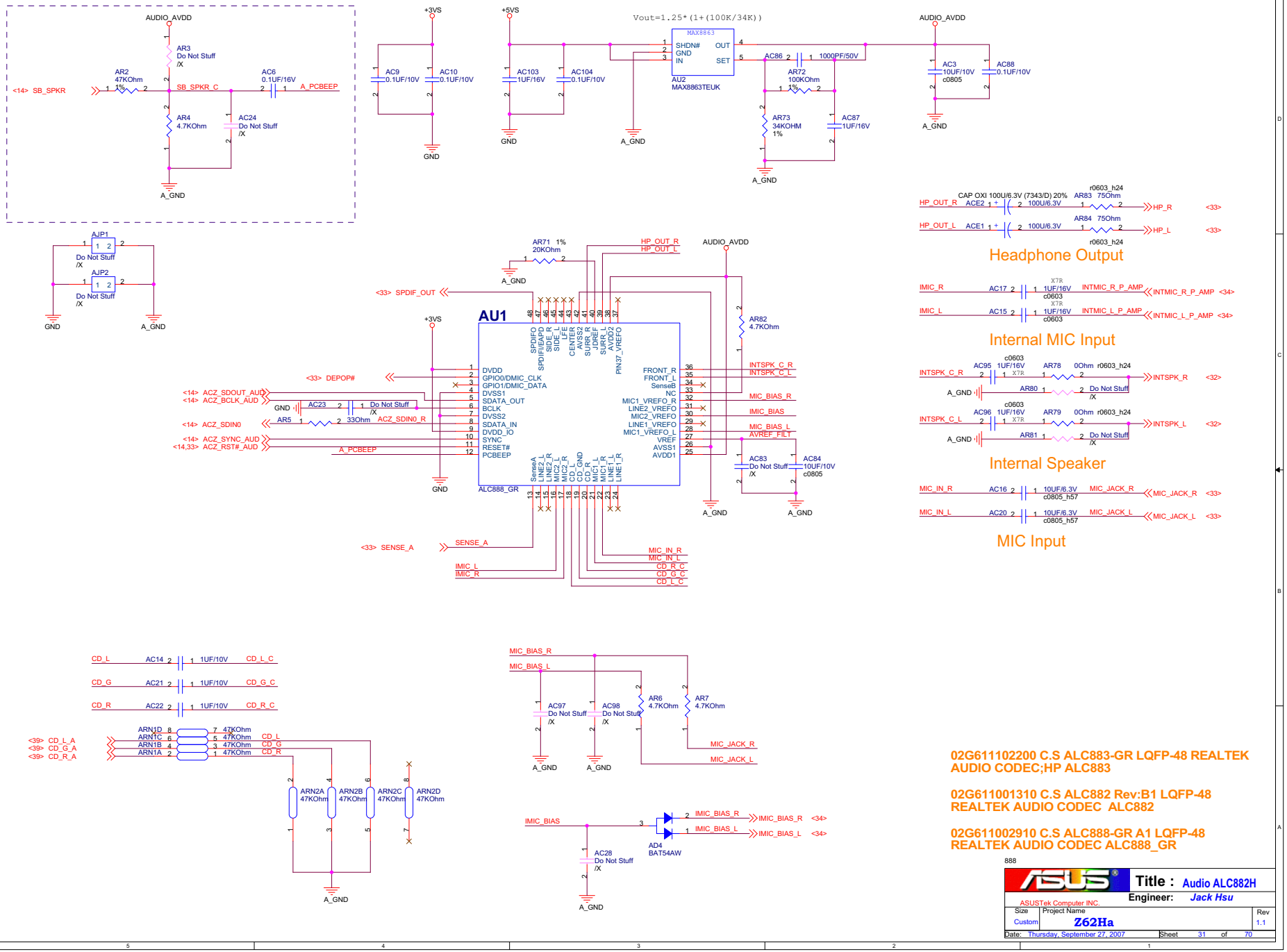
ASUSTek Computer INC.

Title 3 in 1 Card Reader

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 30 of 70



02G611102200 C.S ALC883-GR LQFP-48 REALTEK AUDIO CODEC;HP ALC883

02G611001310 C.S ALC882 Rev:B1 LQFP-48 REALTEK AUDIO CODEC ALC882

02G611002910 C.S ALC888-GR A1 LQFP-48 REALTEK AUDIO CODEC ALC888_GR

888

ASUSTek Computer INC.

Title : Audio ALC882H

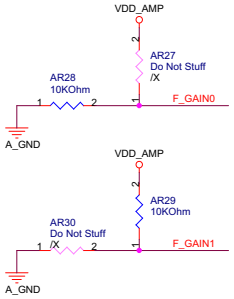
Engineer: Jack Hsu

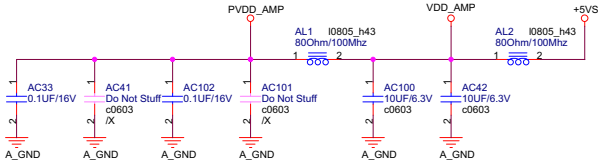
Size	Project Name	Rev
Custom	Z62Ha	1.1

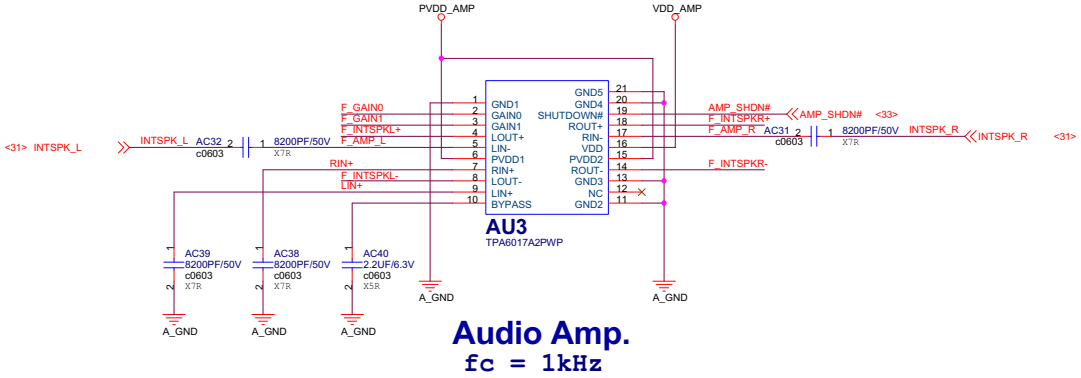
Date: Thursday, September 27, 2007 Sheet 31 of 70

GAIN Control

GAIN0	GAIN1	
0	0	6db
0	1	10db
1	0	15.6db
1	1	21.6db

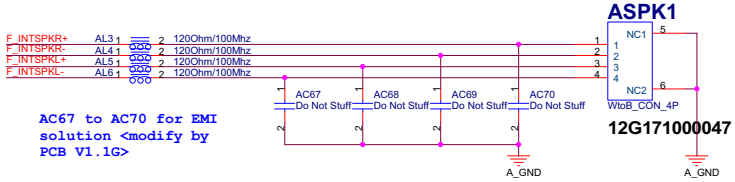






Audio Amp.
fc = 1kHz

12G171000047
Internal Speaker Connector

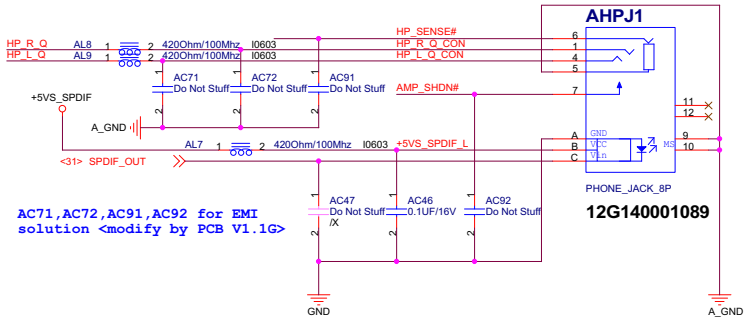


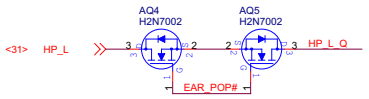
AC67 to AC70 for EMI solution <modify by PCB V1.1G>

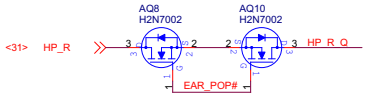
888

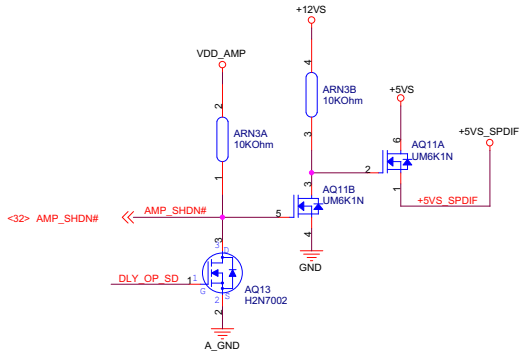
ASUSTek Computer INC.	Title : Audio Amp. & Conn.	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 32 of 70	

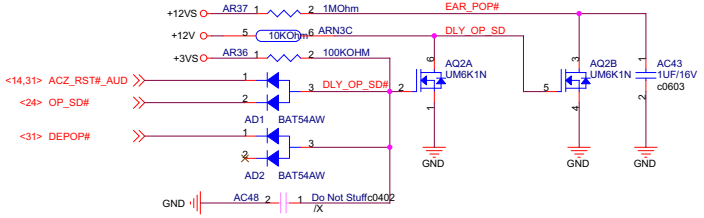
Headphone & S/PDIF Jack



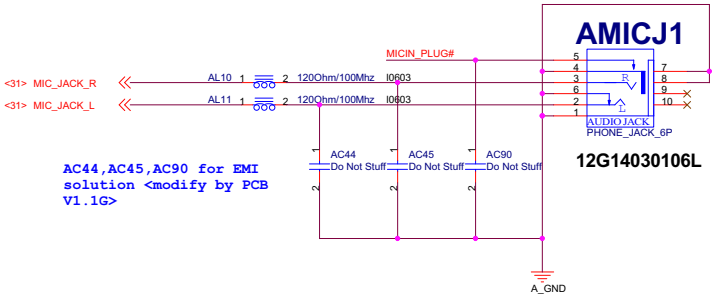


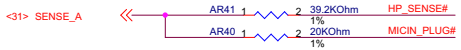






Microphone-In Jack

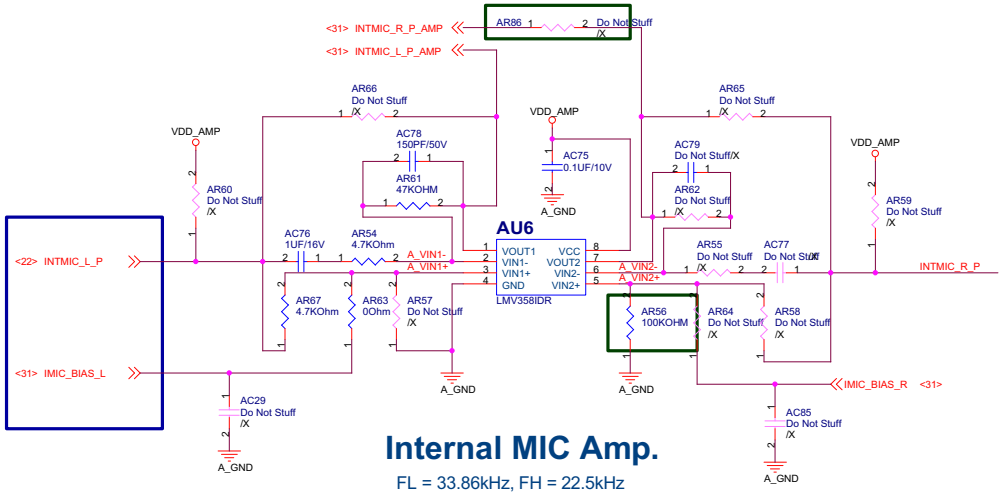




Jack Plug-in Detection

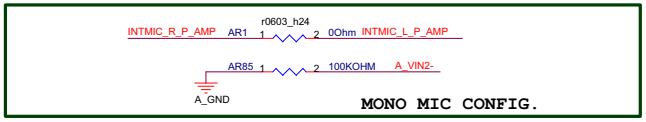
888

ASUSTek Computer INC.	Title : Audio JACK	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 33 of 70	



Internal MIC Amp.

FL = 33.86kHz, FH = 22.5kHz



888

ASUSTek Computer INC.

Title : MIC PreAmp.

Engineer: Jack Hsu

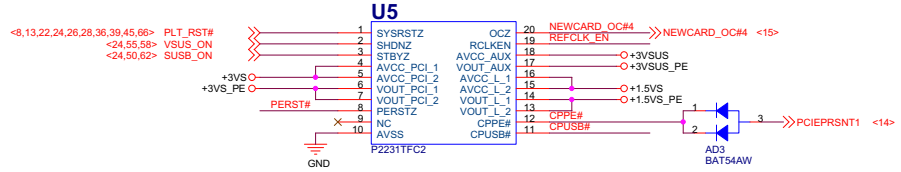
Size	Project Name	Rev
Custom	Z62Ha	1.1

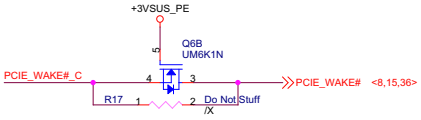
Date: Thursday, September 27, 2007 Sheet 34 of 70

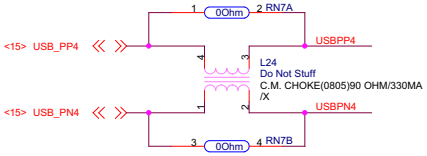
06G030057011 POWER SW. P2231TFC1 TSSOP-20 ENE P2231TFC1

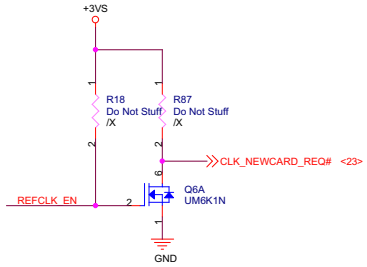
06G030057012 POWER SW. P2231TFC2 TSSOP-20 ENE P2231TFC2

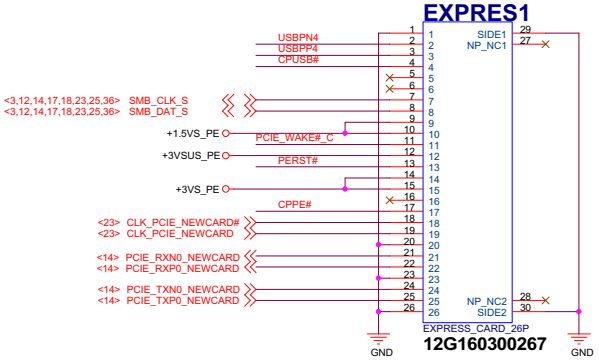
NewCard Header





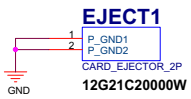


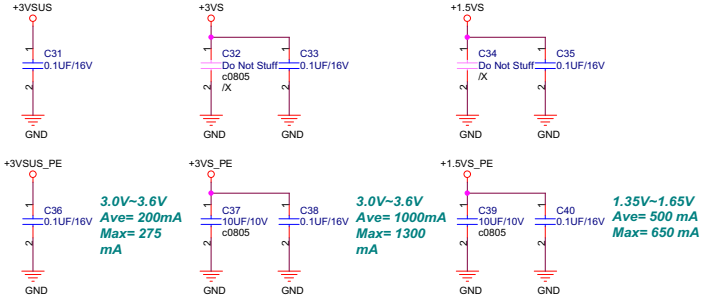




ExpressCard Standard 1.0:
Change Pin7 from RESERVED to SMBCLK
Change Pin8 from SMBCLK to SMBDATA
Change Pin9 from SMBDATA to +1.5V

NewCard Ejector





888

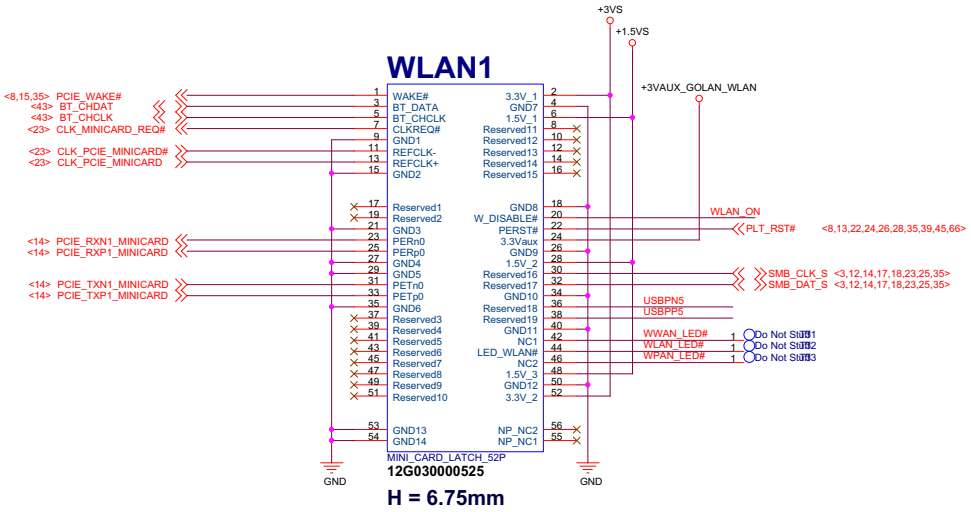
ASUSTek Computer INC.

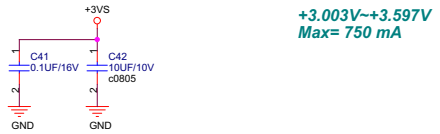
Title : NEWCARD

Engineer: Jack Hsu

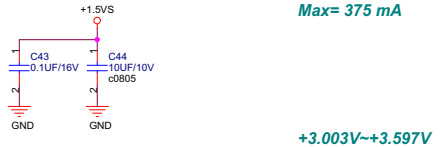
Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 35 of 70

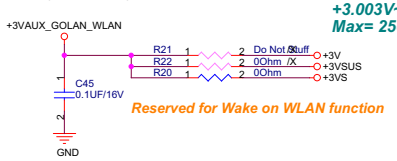




+3.003V~+3.597V
Max= 750 mA

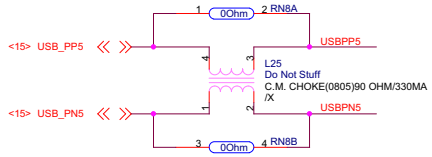


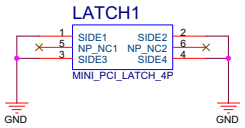
+1.425V~+1.575V
Max= 375 mA



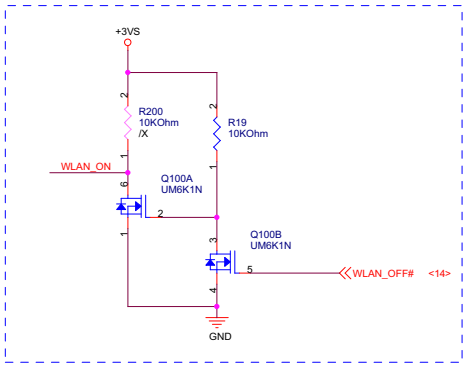
+3.003V~+3.597V
Max= 250 mA

Reserved for Wake on WLAN function





Add WLAN switch circuit <modify by PCB V1.1G>



888

ASUSTek Computer INC.

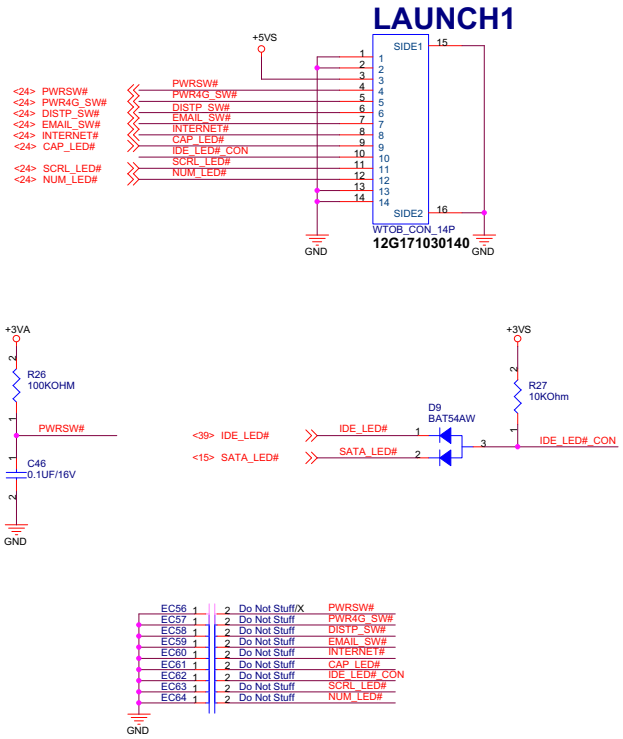
Title : MINICARD - WLAN

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 36 of 70

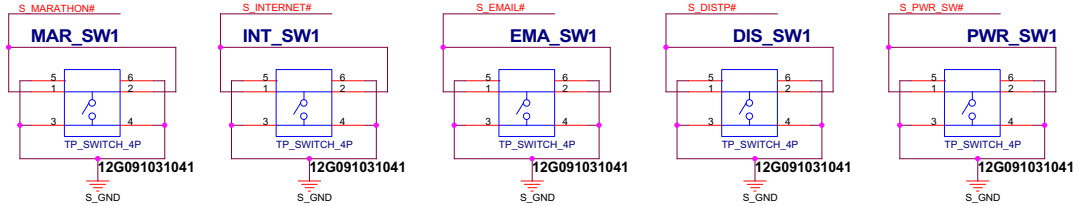
LAUNCH BOARD Connector

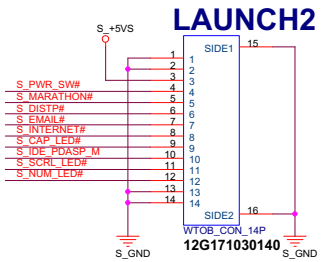


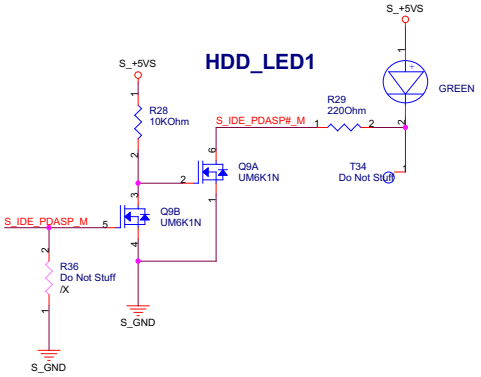
EC57 to EC64 for EMI solution
<modify by PCB V1.1G>

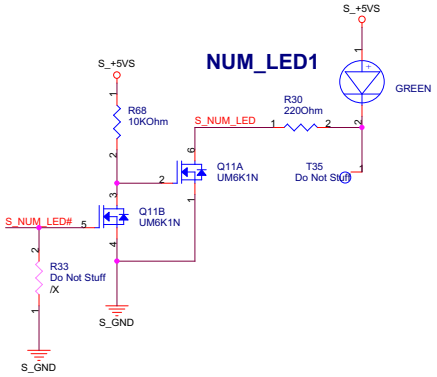
888

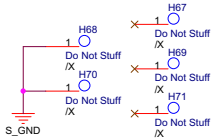
ASUSTek Computer INC.	Title :LAUNCH_B Conn.	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 37 of 70	

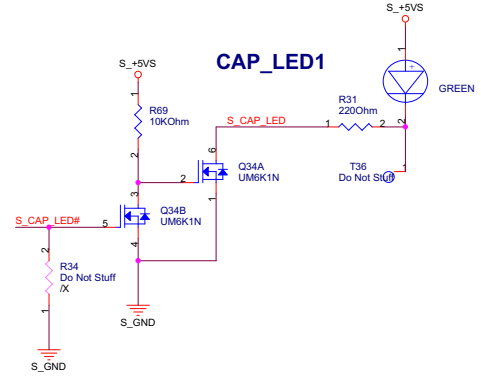


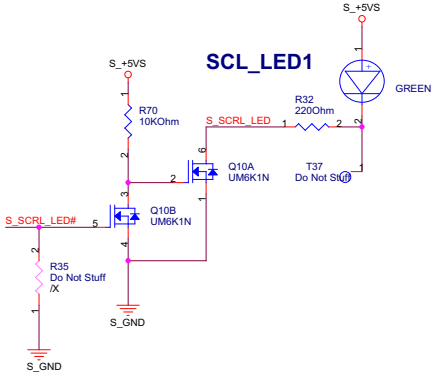












888

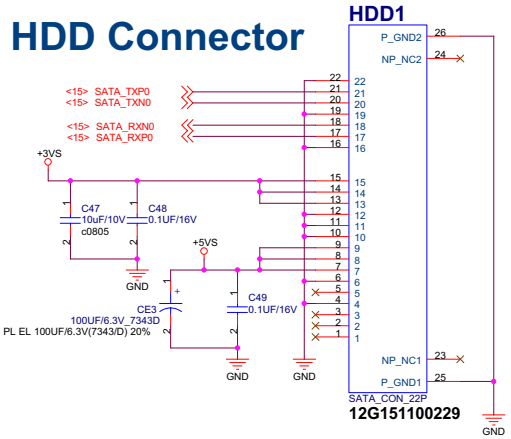
Title :LAUNCH BOARD

ASUSTek Computer INC. Engineer: Jack Hsu

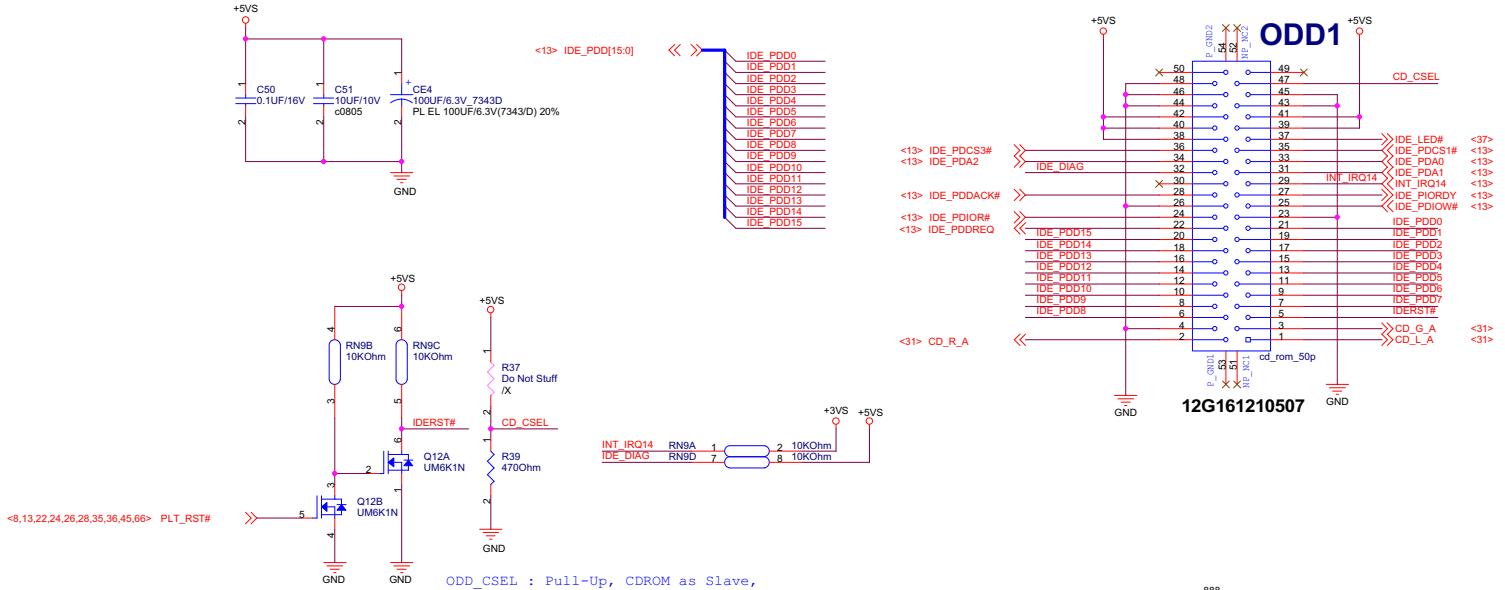
Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 38 of 70

SATA HDD Connector



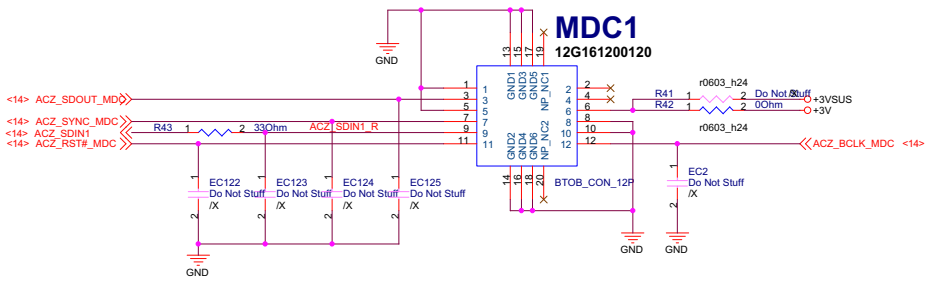
ODD Connector

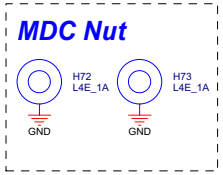


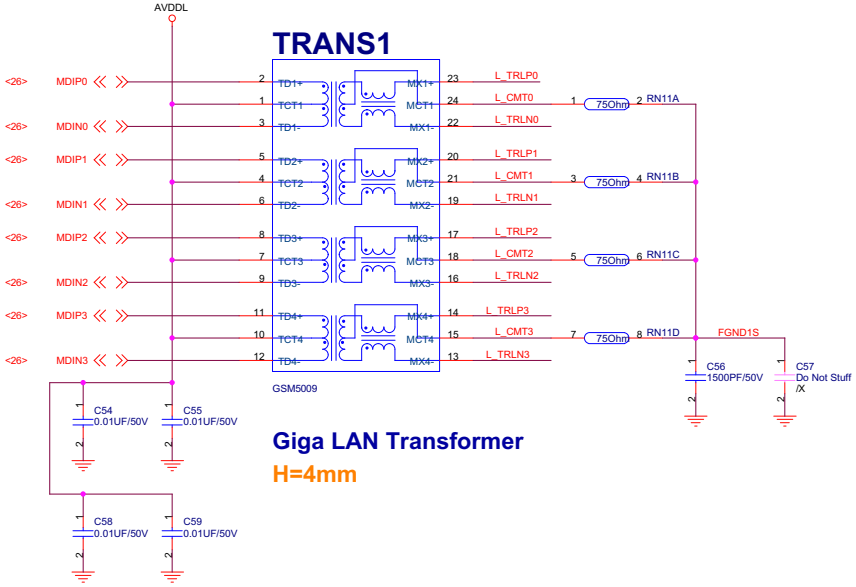
888

ASUSTek Computer INC.	Title : HDD & ODD	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 39 of 70	

MDC Connector

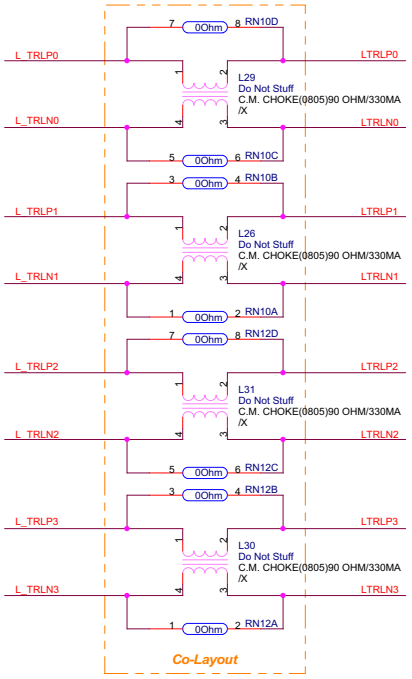


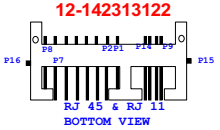


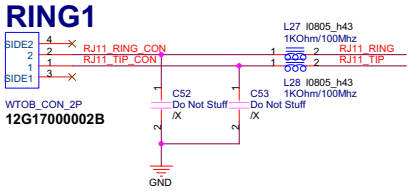


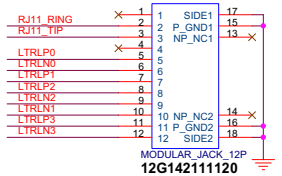
Giga LAN Transformer

H=4mm





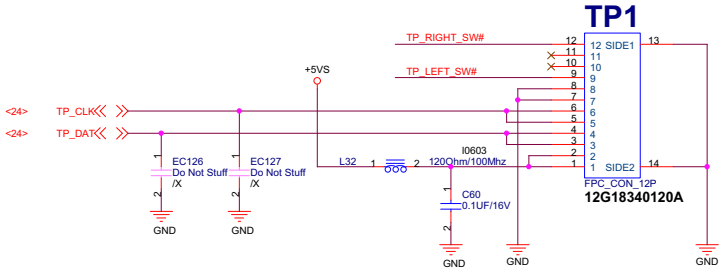




888

ASUSTek Computer INC.	Title : MDC_RJ45_RJ11	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 40 of 70	

TouchPad Connector

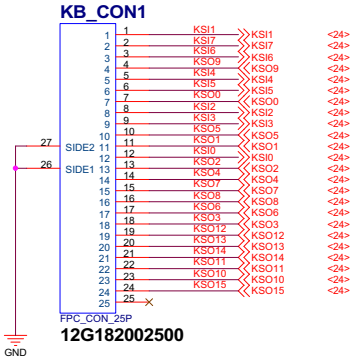


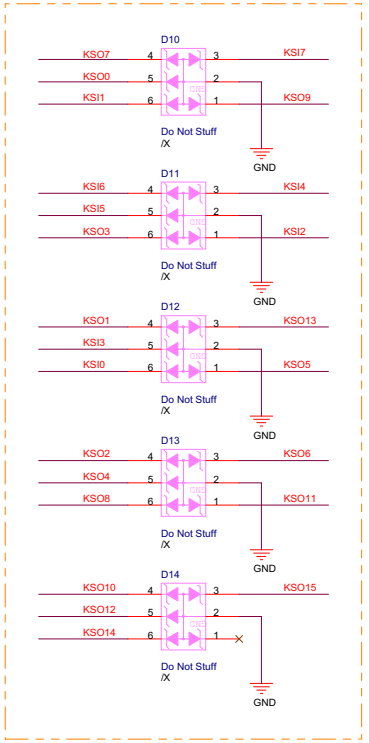
Touch pad Definition

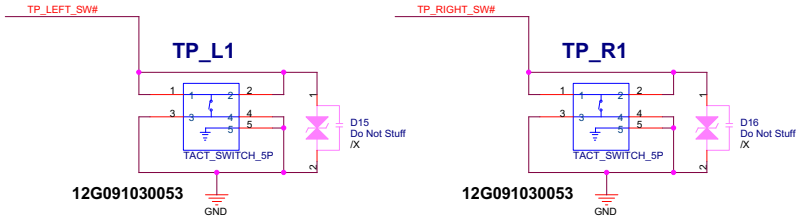
1	2	3	4	5	6	7	8	9	10	11	12
R	x	x	L	GND	GND	CLK	CLK	DAT	DAT	VDD	VDD

Z62F: pin1 reversal

Keyboard Connector







TOUCH PAD SWITCH

888

ASUSTek Computer INC.

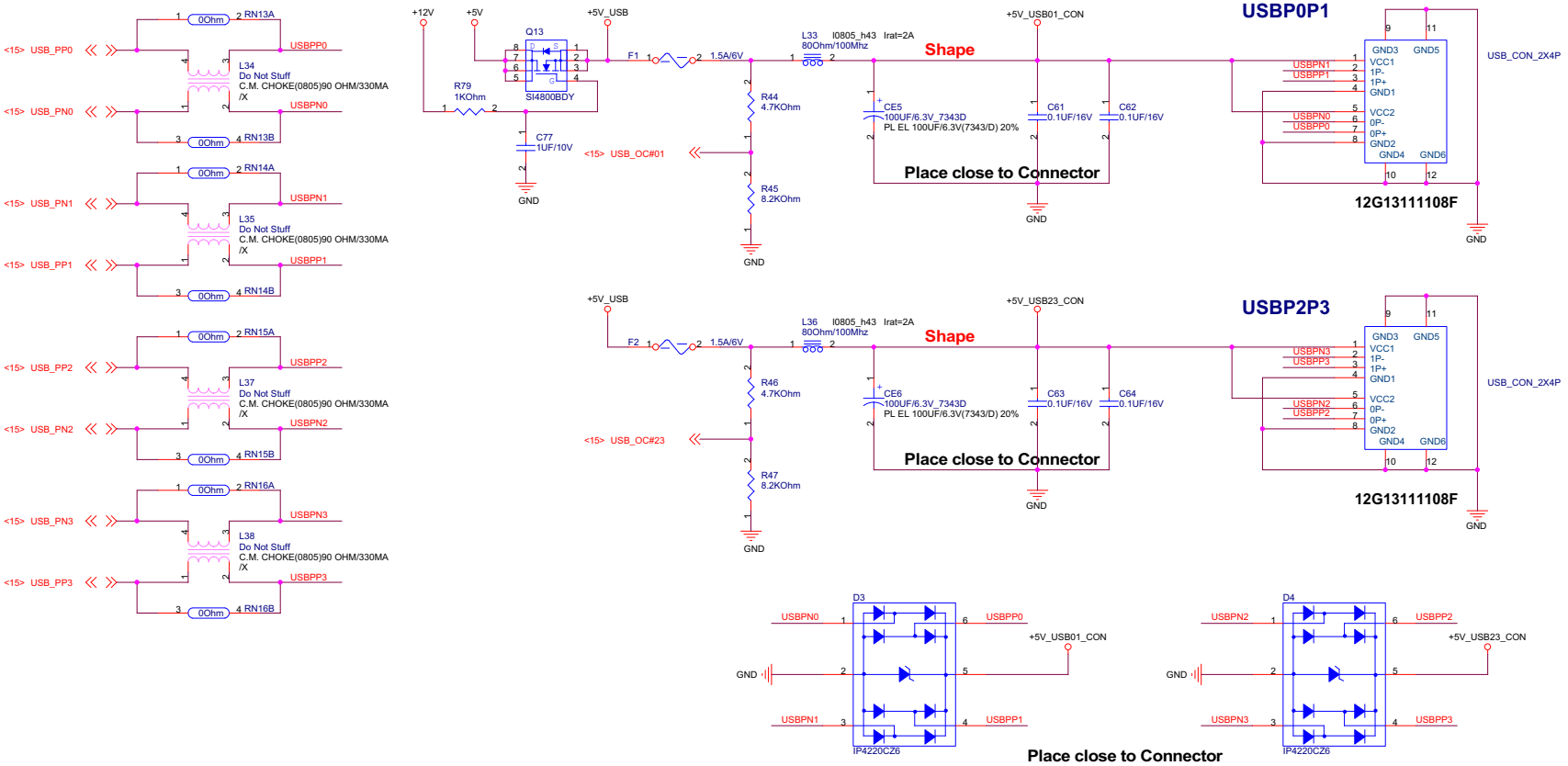
Title : TP / KB Conn.

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 41 of 70

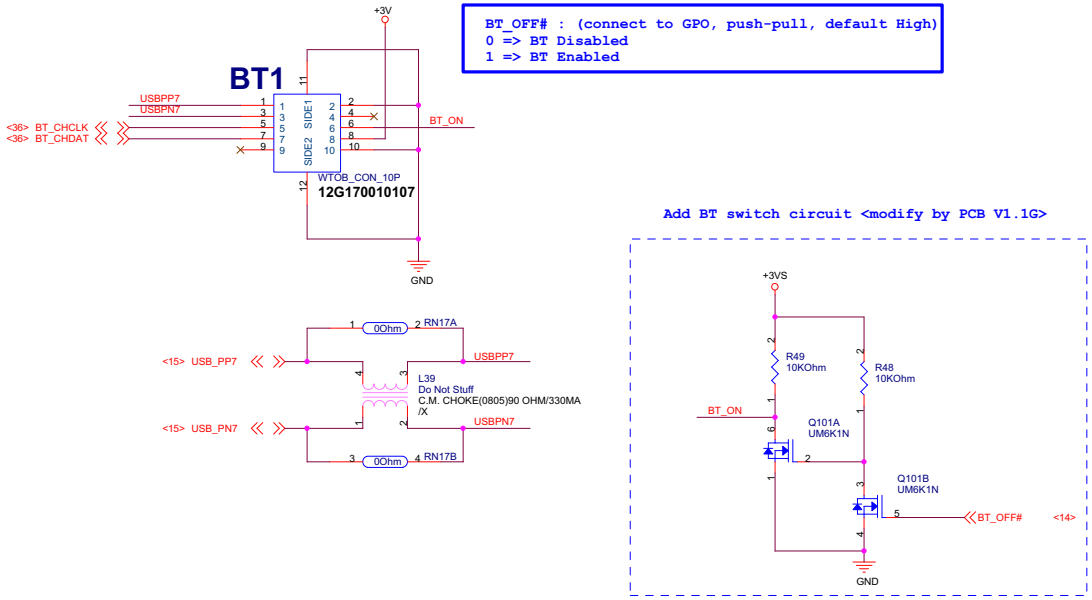
USB Power & OC Alert



888

ASUSTek Computer INC.	Title : USB Connector	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 42 of 70	

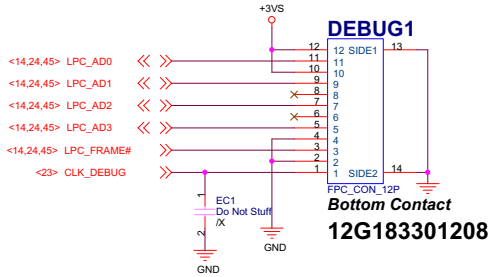
Bluetooth Connector



888

ASUSTek Computer INC.	Title : Bluetooth Conn.	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 43 of 70	

Debug Connector



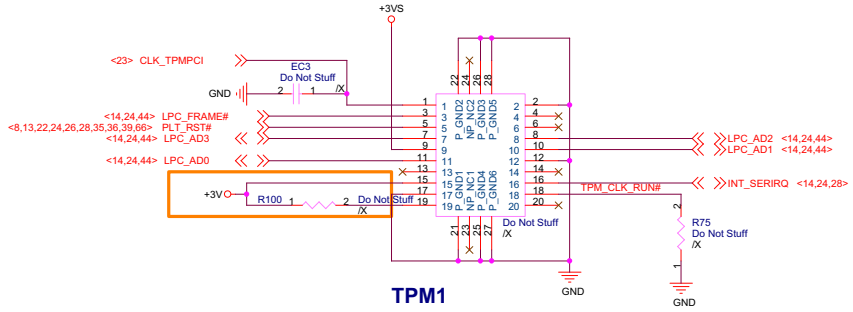
Bottom Contact

12G183301208

888

ASUSTek Computer INC.	Title : Debug Port	
	Engineer: *Jack Hsu*	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 44 of 70	

TPM Connector

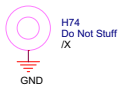


TPM1

12G16080020J

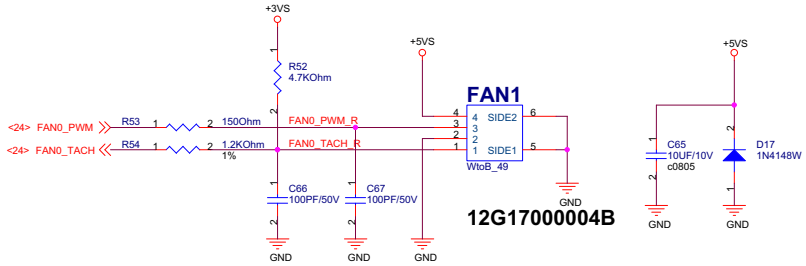
Pin 6: +3VA
Pin 13: SMB_CLK
Pin 14: SMB_DAT
Removed!!

TPM Nut



888

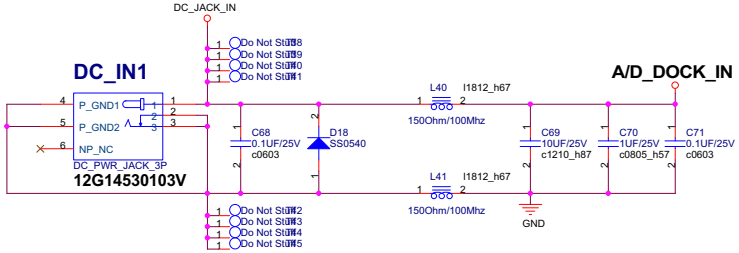
ASUSTek Computer INC.	Title : TPM Connector	
	Engineer: *Jack Hsu*	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 45 of 70	

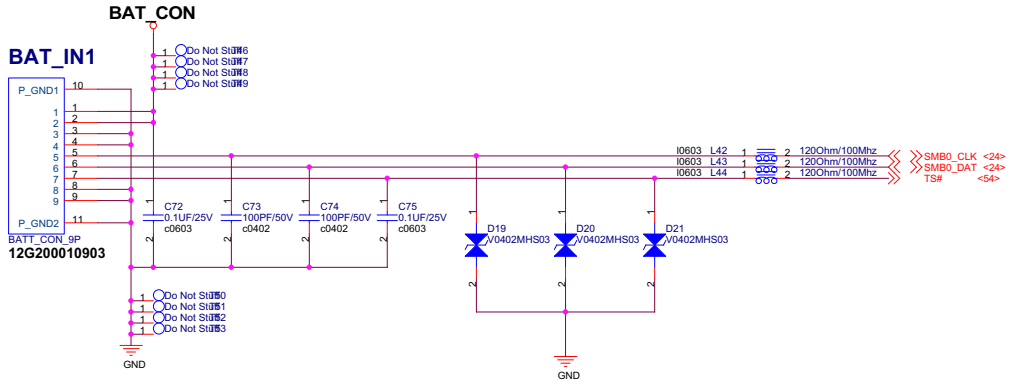


SYSTEM Fan Connector

888

ASUSTek Computer INC.	Title : Fan Connector	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 46 of 70	





888

ASUSTek Computer INC.	Title : DC-IN & BAT-IN	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 47 of 70	

888

Title : BLANK

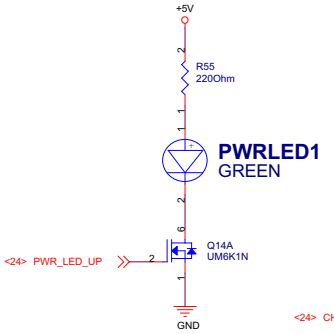
ASUSTek Computer INC.

Engineer: Jack Hsu

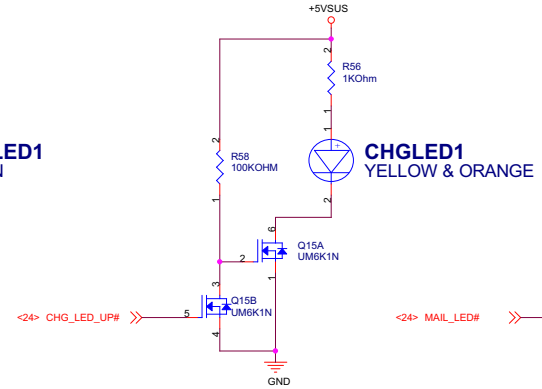
Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 48 of 70

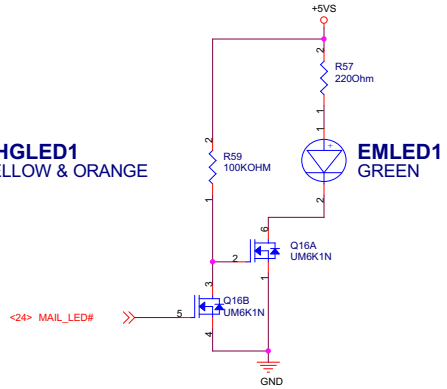
POWER LED



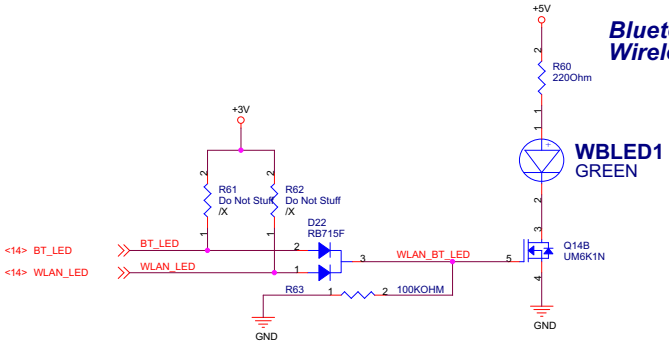
Battery Charge LED



Email LED

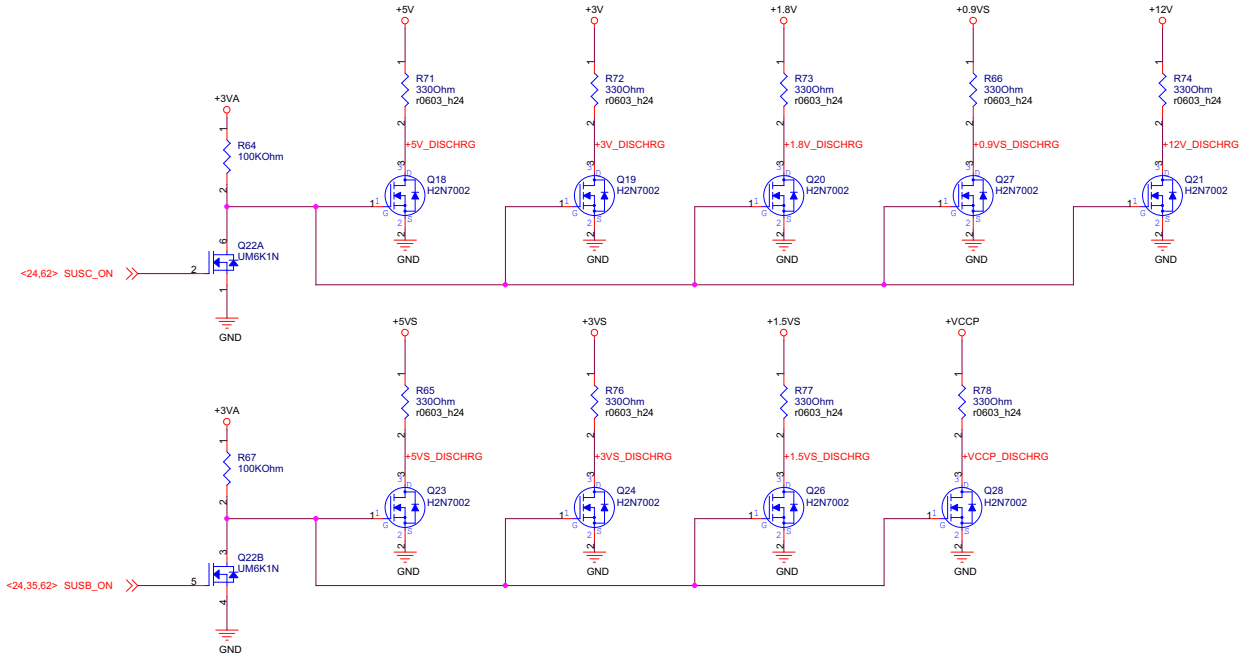


Bluetooth LED
Wireless LED



888

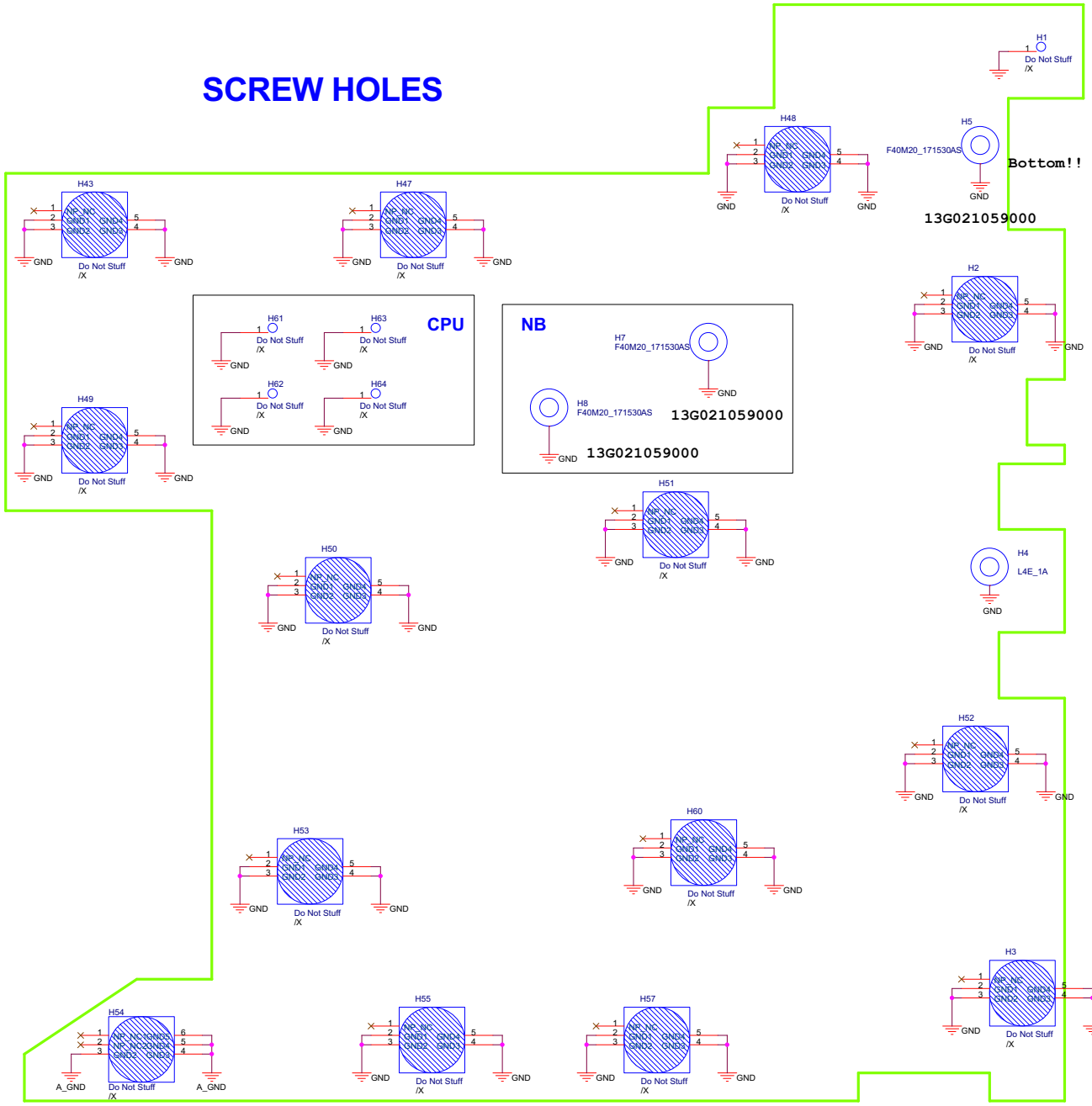
ASUSTek Computer INC.	Title : LED	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 49 of 70	



888

ASUSTek Computer INC.	Title : Discharger	
	Engineer: Jack Hsu	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 50 of 70	

SCREW HOLES



888

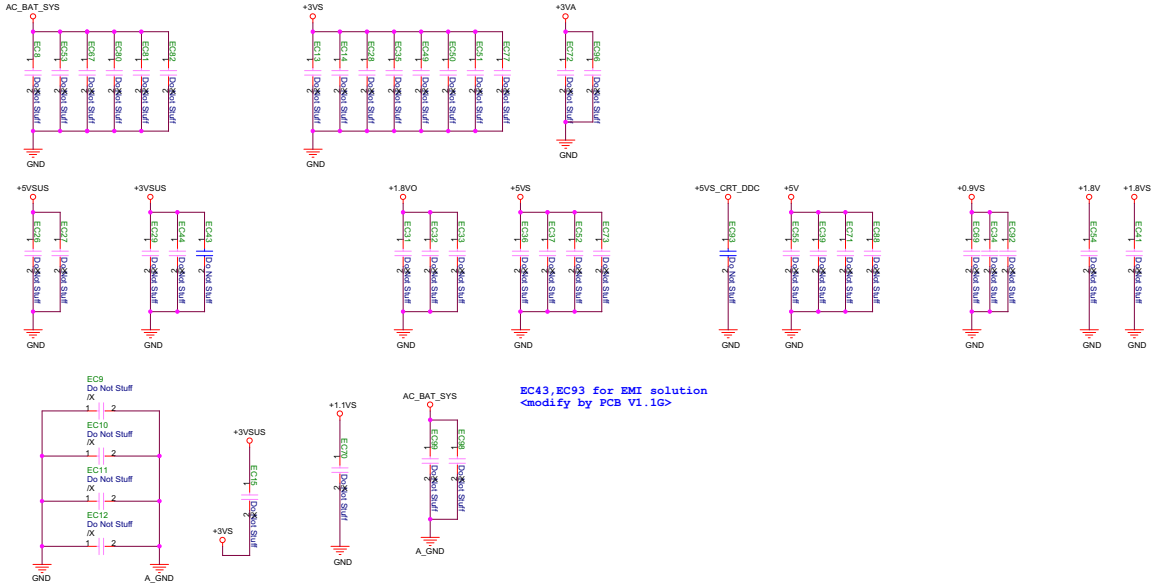
ASUSTek Computer INC.

Title : Screw Hole

Engineer: Jack Hsu

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 51 of 70



Spring For EMI

13G021034020

EPAD1 Do Not Stuff /X

EPAD2 Do Not Stuff /X

EPAD3 Do Not Stuff /X

EPAD4 Do Not Stuff /X

EPAD10 Do Not Stuff /X

13G021034030

EPAD5 EMI_SPRING_PAD

EPAD6 EMI_SPRING_PAD

EPAD7 EMI_SPRING_PAD

EPAD8 EMI_SPRING_PAD

EPAD9 EMI_SPRING_PAD

888

Title : EMI CAP

ASUSTek Computer INC.

Engineer: Jack Hsu

Size	Project Name	Rev
C	Z62Ha	1.1

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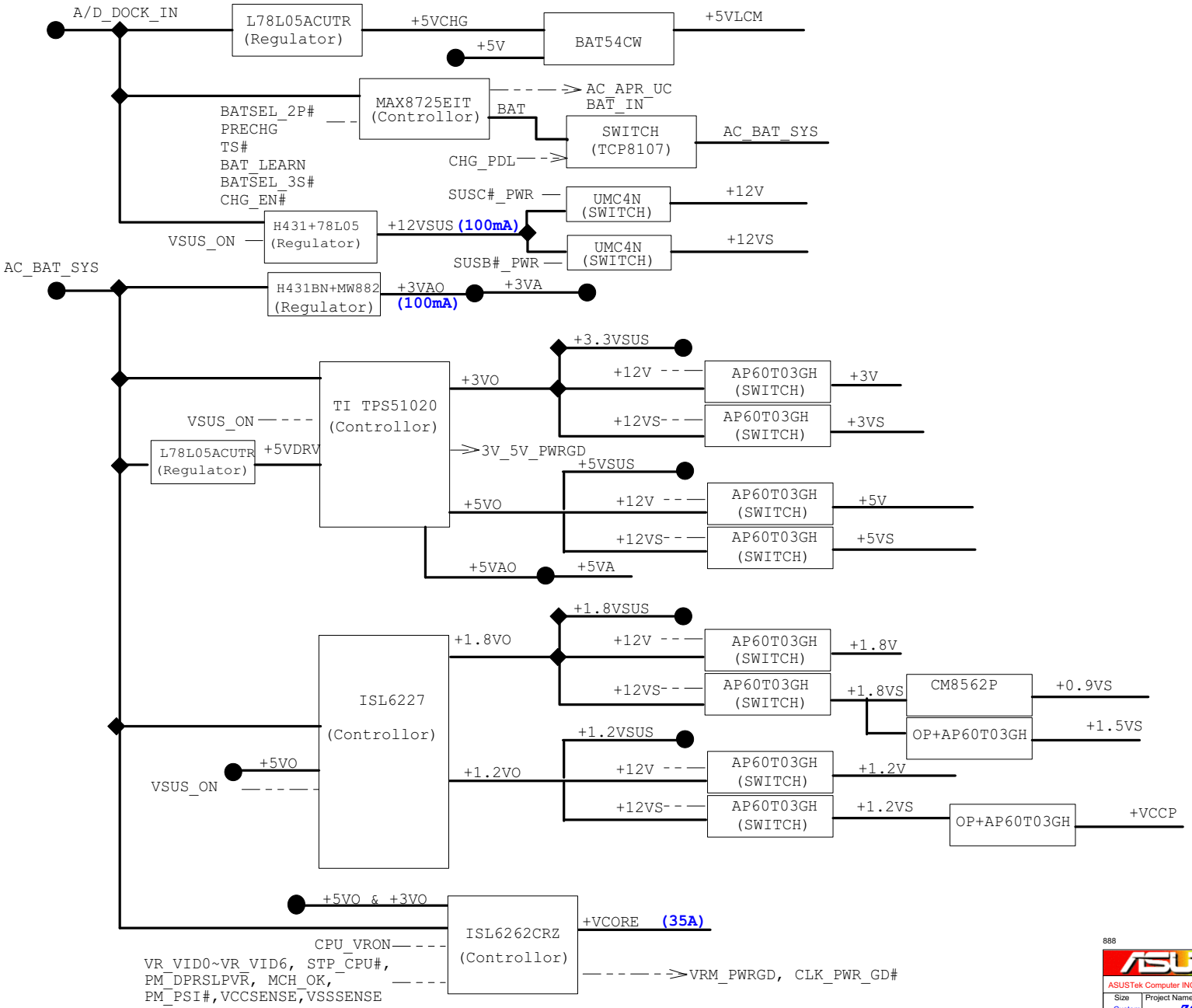


888

ASUSTek Computer INC.

Title : POWER_FLOWCHART

Engineer:

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 53 of 70

AC_IN Threshold 2.048Vmax A/D_DOCK_IN > 17.44V active

Setting the Adapter Input Current Limit

Adapter Iin(max) = [0.075V/Rsense(ADin)]*[VCLS/VREF]

VCLS= 2.865V

Adaptor Max. Current :

PR5708=20K PR5714 = 178K; Ilimit = 4.5A; 81W

PR5708=27K PR5714 = 47K; Ilimit = 3.175A; 60W

Setting the Charge Voltage

Vbatt = Cell * { Vref +[(VCTL- 1.8V) / 9.52] }

VCTL= 1.588V => Vbatt = 4.2V

Setting the Charge Current

Charge Current Ichg = [0.075V/Rsense(CHG)]*[VICTL/3.6V]

Rsense(CHG)= 15m Ohm

Pre-Charging Mode :

Precharging current = 148 ~ 152mA

Victl = 0.107V ~ 0.109V

Battery Cell Selection :

BATSEL_2P# = 1, 3 Cells; Victl = 2.084V

=> Icharge = 1.6933A

BATSEL_2P# = 0, 6 or 9 Cells; Victl = 2.111V

=> Icharge = 2.9329A

PR5709=120K PR5715 = 120K; Icharge = 2.9329A

Mode pin : Vmode > 2.8V (trie to LDO pin) ----> 4 Cells

2.0 > Vmode > 1.6V (floating) ----> 3 Cells

0.8 > Vmode (trie to GND) ----> Learning mode

VICTL< 0.8V or DCIN < 7V -->Charger Disable

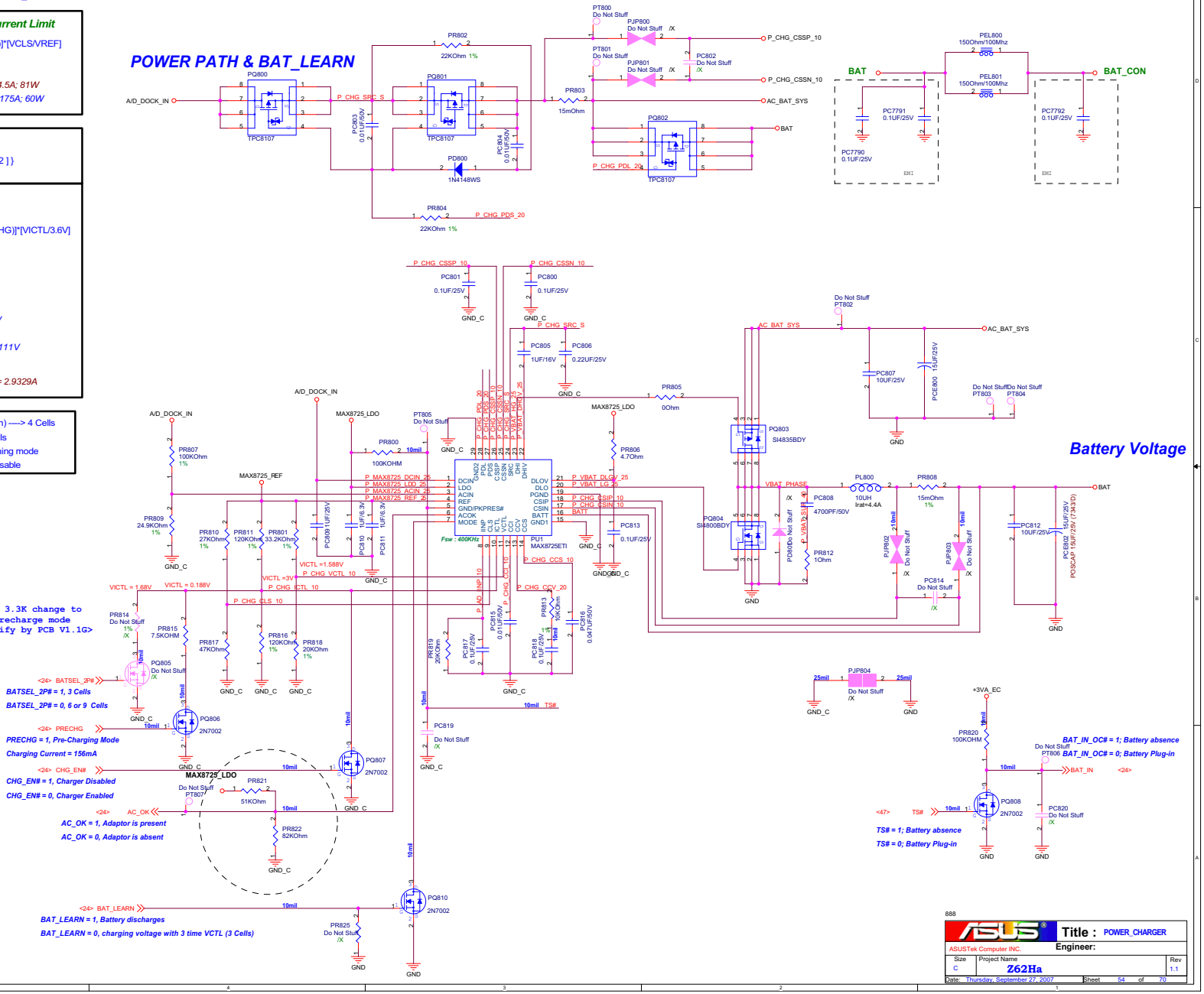
MAX8725_REF : 4.2235V

MAX8725_LDO : 5.4V

PR815 from 3.3K change to 7.5K for Precharge mode issue <modify by PCB V1.1G>

POWER PATH & BAT_LEARN

Battery Voltage



888

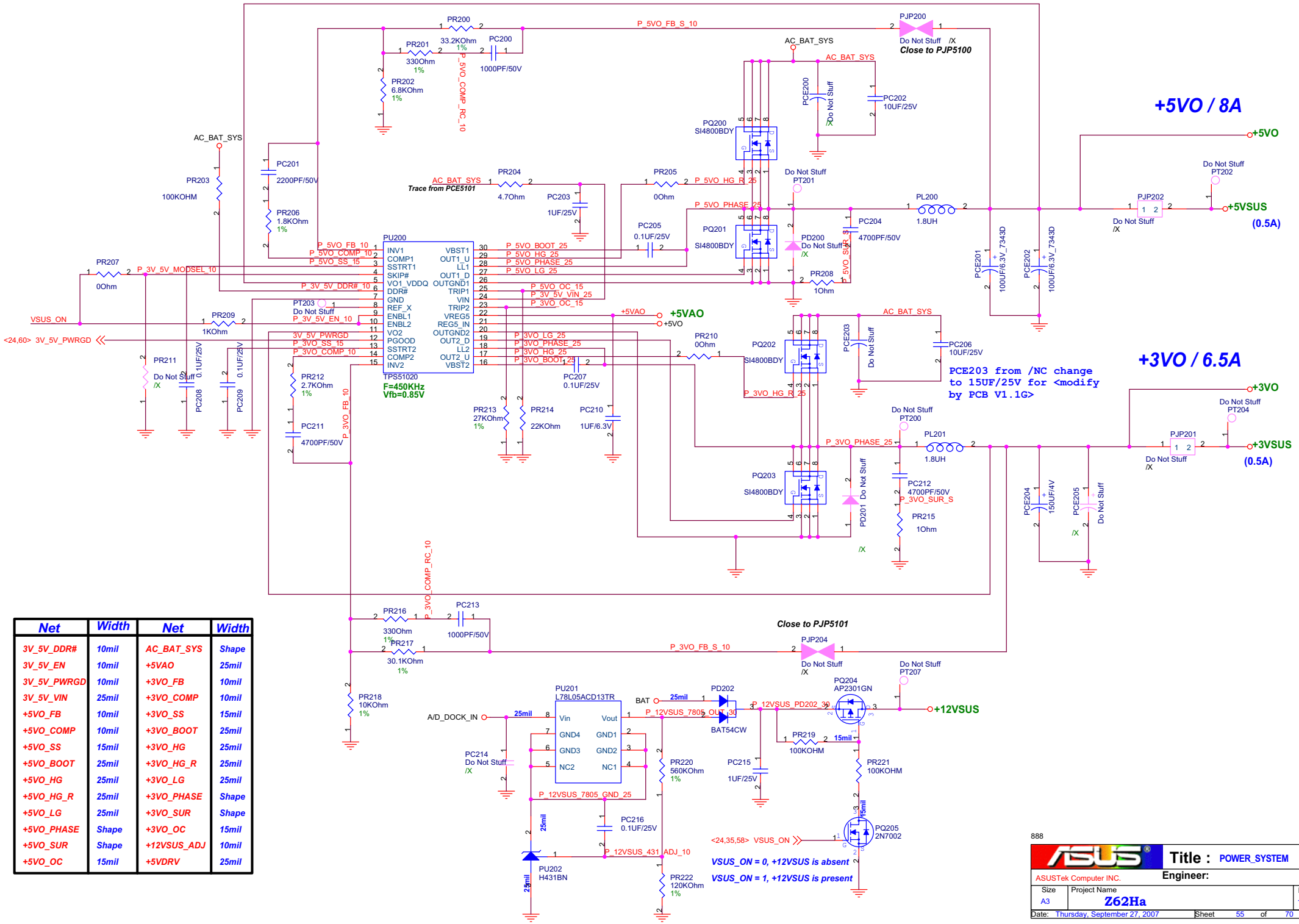
ASUSTek Computer INC.

Title : POWER_CHARGER

Engineer:

Size: C | Project Name: Z62Ha | Rev: 1.1

Date: Thursday, September 27, 2007 | Sheet 54 of 70



Net	Width	Net	Width
3V_5V_DDR#	10mil	AC_BAT_SYS	Shape
3V_5V_EN	10mil	+5VAO	25mil
3V_5V_PWRGD	10mil	+3VO_FB	10mil
3V_5V_VIN	25mil	+3VO_COMP	10mil
+5VO_FB	10mil	+3VO_SS	15mil
+5VO_COMP	10mil	+3VO_BOOT	25mil
+5VO_SS	15mil	+3VO_HG	25mil
+5VO_BOOT	25mil	+3VO_HG_R	25mil
+5VO_HG	25mil	+3VO_LG	25mil
+5VO_HG_R	25mil	+3VO_PHASE	Shape
+5VO_LG	25mil	+3VO_SUR	Shape
+5VO_PHASE	Shape	+3VO_OC	15mil
+5VO_SUR	Shape	+12VSUS_ADJ	10mil
+5VO_OC	15mil	+5VDRV	25mil

888

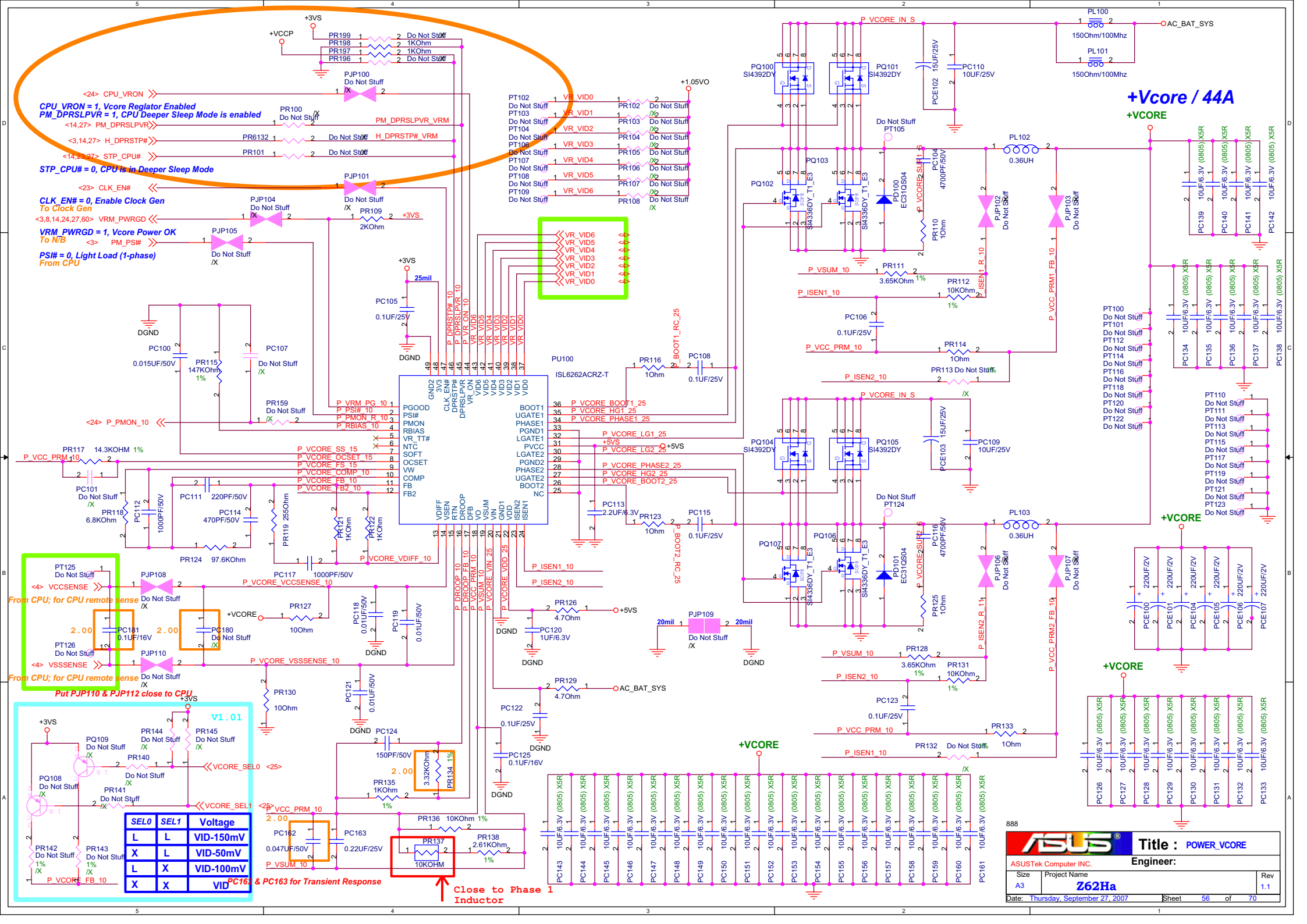
ASUSTek Computer INC.

Title : POWER_SYSTEM

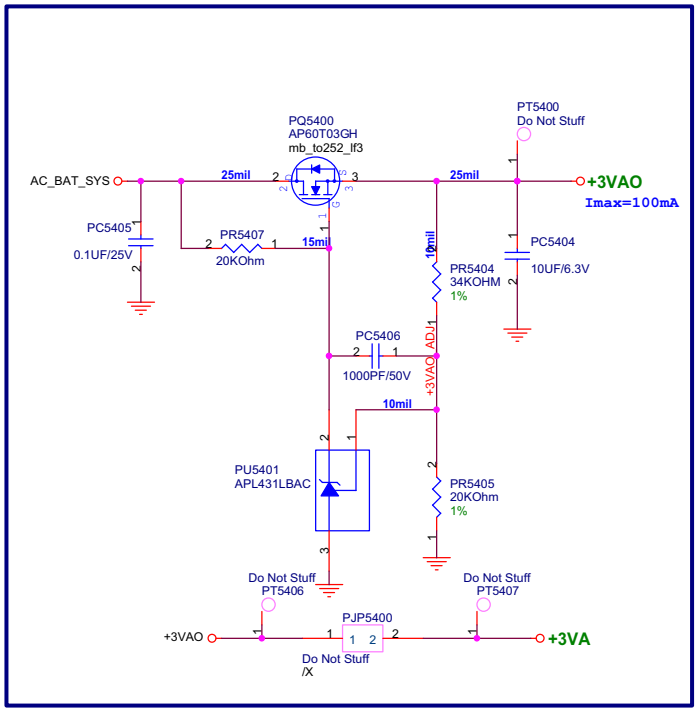
Engineer:

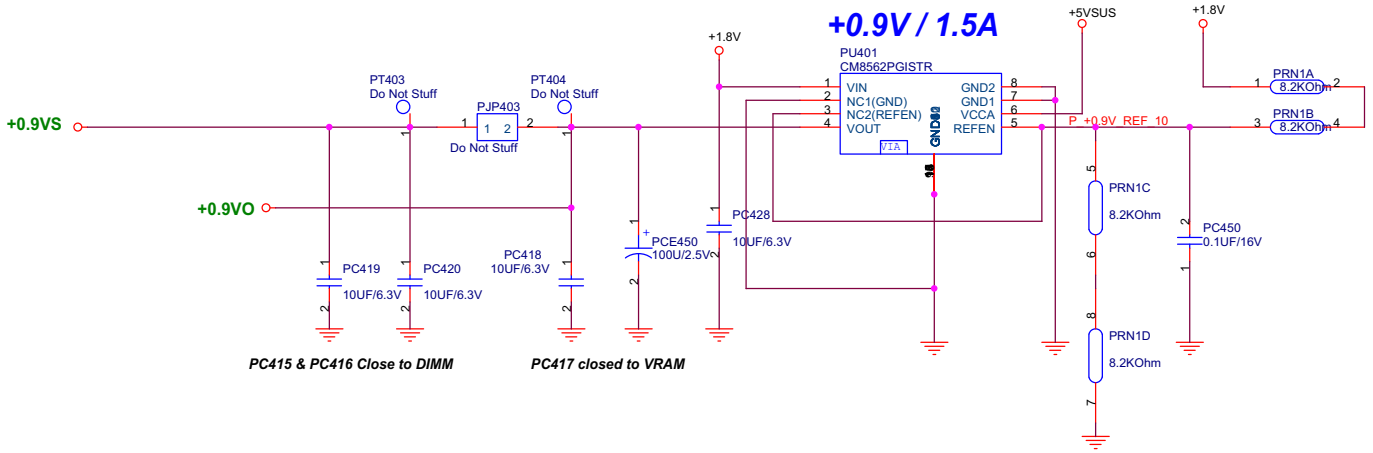
Size	Project Name	Rev
A3	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 55 of 70



SEL0	SEL1	Voltage
L	L	VID-150mV
X	L	VID-50mV
L	X	VID-100mV
X	X	VID





DDR Power Rev:1.00

888

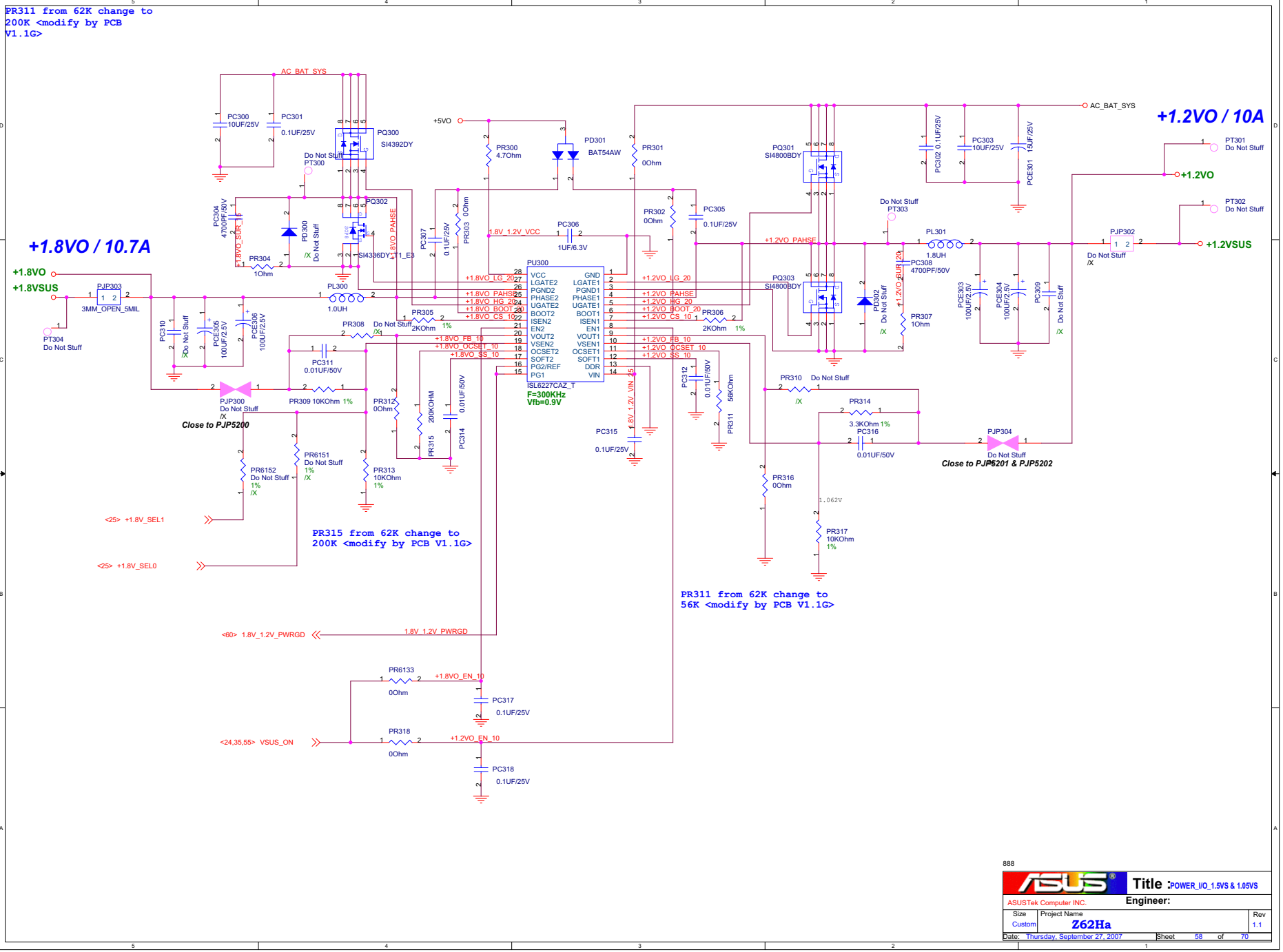
ASUSTek Computer INC.

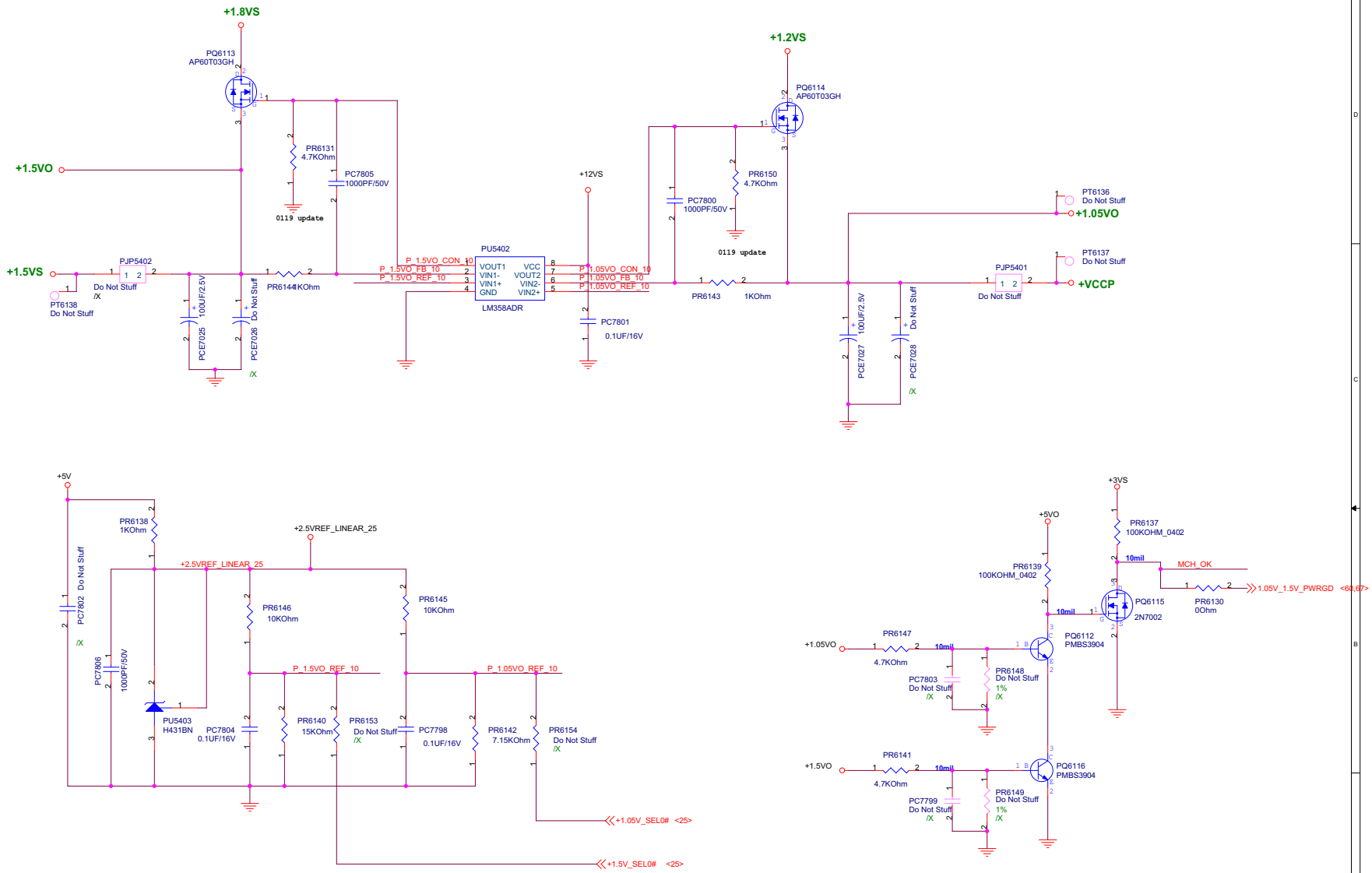
Title :

Engineer:

Size	Project Name	Rev
A3		1.1

Date: Thursday, September 27, 2007 Sheet 57 of 70

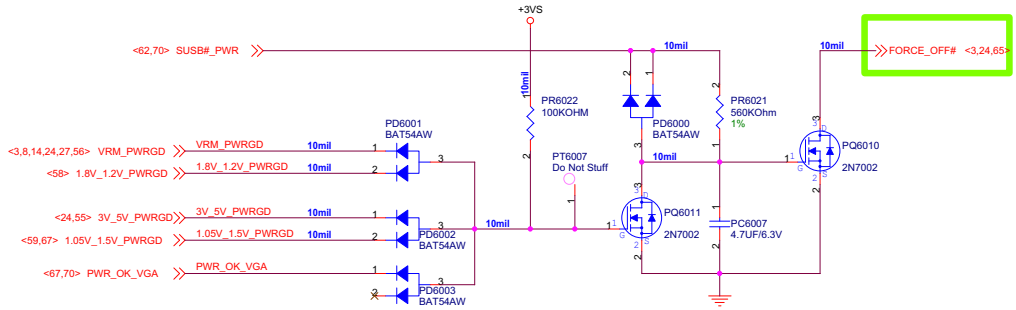

PR311 from 62K change to 200K <modify by PCB V1.1G>
+1.8VO / 10.7A
+1.2VO / 10A
AC_BAT_SYS
+5VO
+1.8VO
+1.8VSUS
+1.2VO
+1.2VSUS
PU300
ISL6227CAZ_T
F=300KHz
Vfb=0.9V
PQ300 SI4392DY
PQ301 SI4800BDY
PQ302 SI4336DY_T1_E3
PQ303 SI4800BDY
PD301 BAT54AW
PJP300 Close to PJP5200
PJP304 Close to PJP5201 & PJP5202
PR315 from 62K change to 200K <modify by PCB V1.1G>
PR311 from 62K change to 56K <modify by PCB V1.1G>
<25> +1.8V_SEL1
<25> +1.8V_SEL0
<60> 1.8V_1.2V_PWRGD
<24,35,55> VSUS_ON
888
ASUSTek Computer INC.
Title :POWER_I/O_1.5VS & 1.05VS
Engineer:
Size Custom
Project Name Z62Ha
Rev 1.1
Date: Thursday, September 27, 2007
Sheet 58 of 70

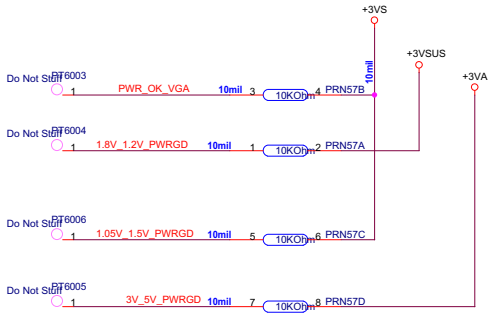


888

ASUSTek Computer INC.	Title : POWER_I/O_+3VA & +2.5V	
	Engineer:	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 59 of 70	

Power Good Detecter





888

ASUSTek Computer INC.

Title : POWER_PROTECT

Engineer:

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 60 of 70

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Title : POWER_BLANK

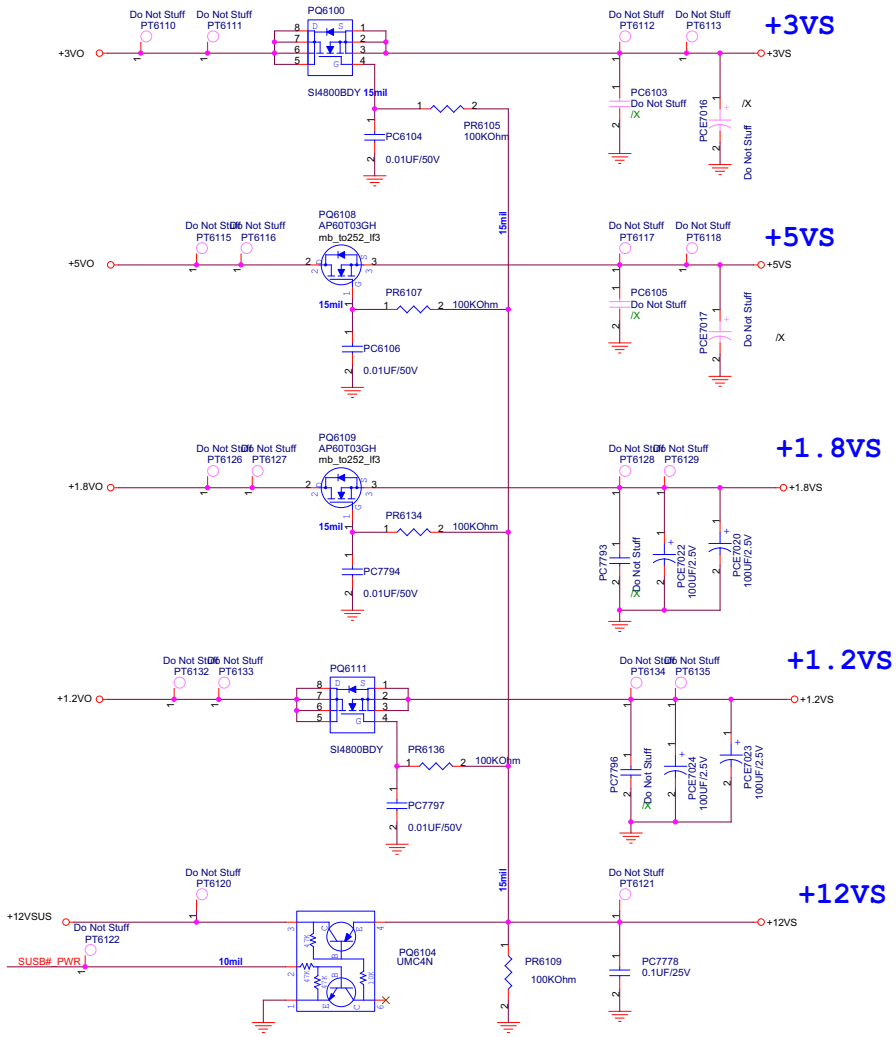
ASUSTek Computer INC.

Engineer:

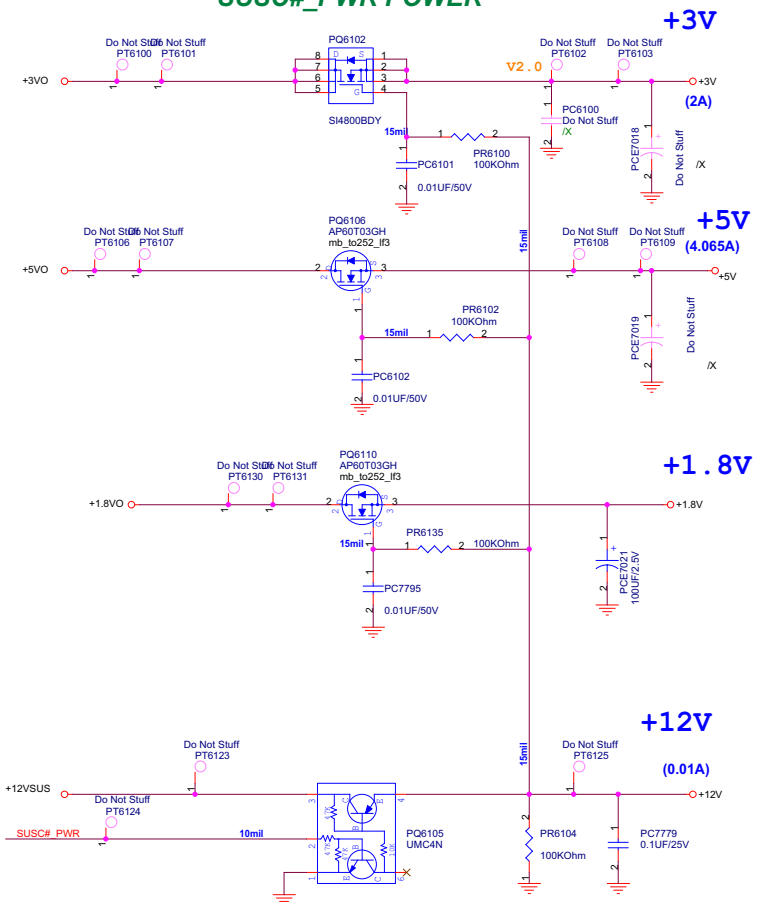
Size	Project Name	Rev
Custom	Z62Ha	1.1

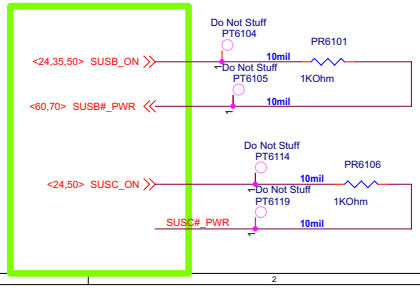
Date: Thursday, September 27, 2007 Sheet 61 of 70

SUSB#_PWR POWER



SUSC#_PWR POWER





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ASUSTek Computer INC.

Title : POWER_LOAD SWITCH

Engineer:

Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 62 of 70

Rev	Date	Description
1.0	2007/02/14	1. Initial release.
1.1	2007/05/29	1. Change to SiSM672, SiS968, SiS307

Rev	Date	Description

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ASUSTek Computer INC.

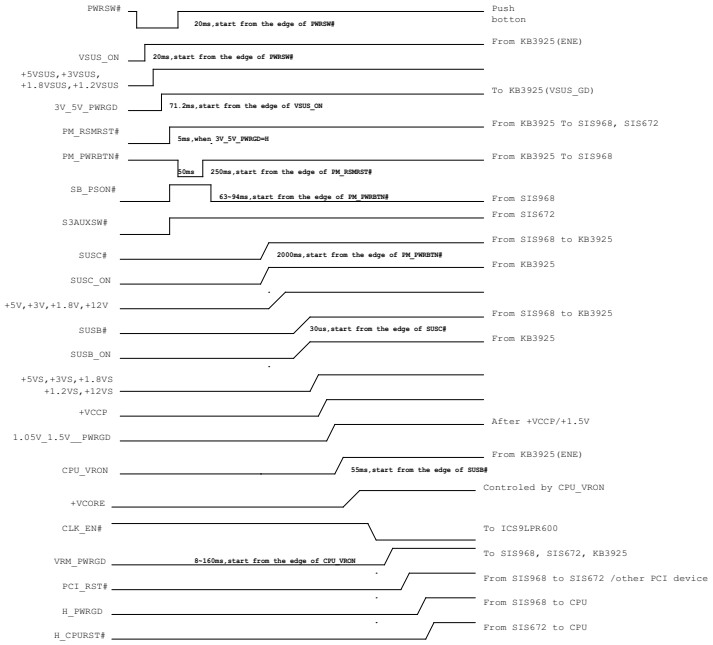
Title : History

Engineer: Chihwan

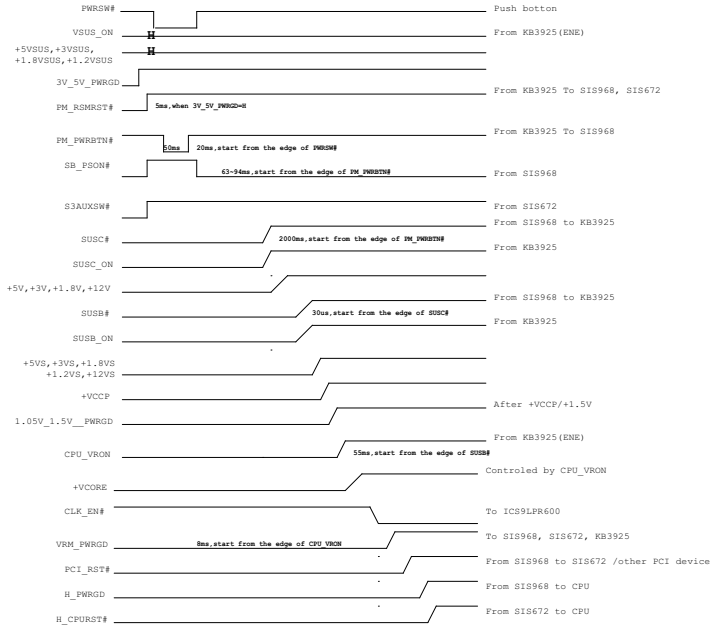
Size	Project Name	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 63 of 70

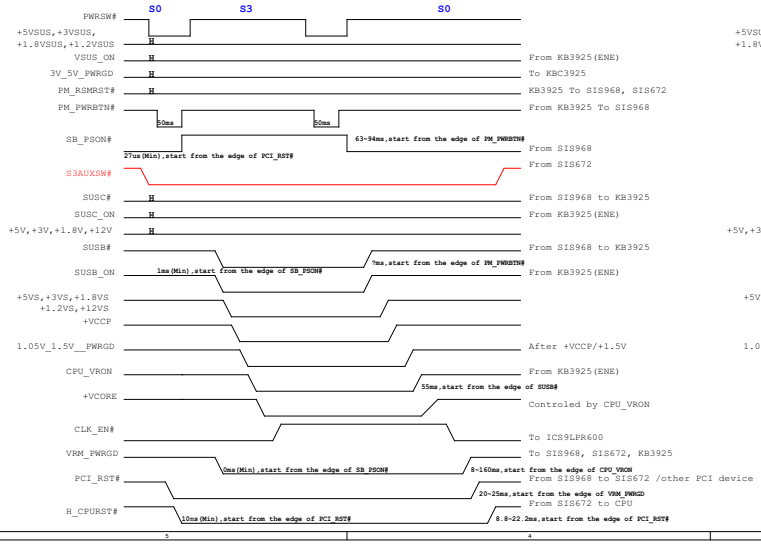
BATTERY ONLY POWER ON TIMING



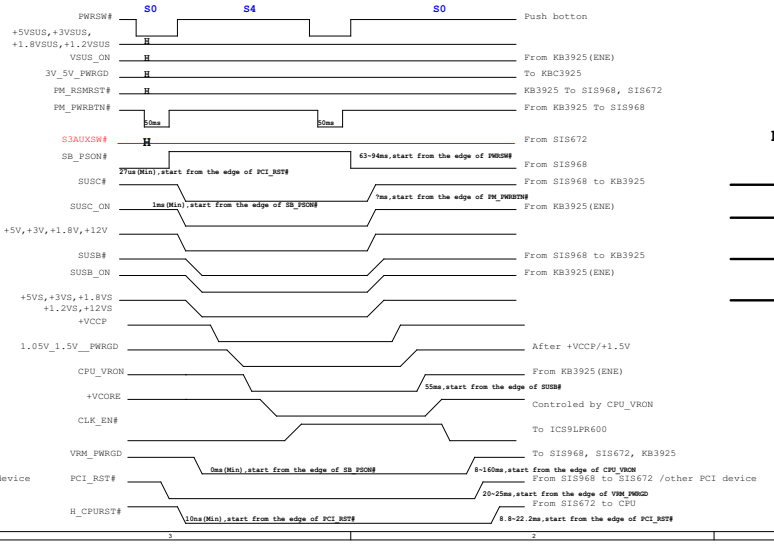
First time DCIN power on sequence(Adaptor)

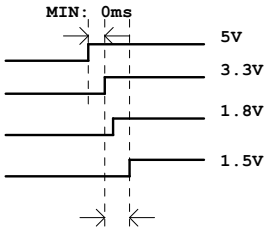


Z62H S3 SUSPEND AND RESUME TIMING



Z62H S4 SUSPEND AND RESUME TIMING





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Title	<Title>	
Size: CustomZ62Ha	Document Number	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 64 of 70	

-----SRS :	0	/ 1 /	NC.
P1819B :	-1.25	-1.75	x.
MK1726 :	-1.8	-2.5	-0.6.

ADD GR26 10Mohm for 27HHz Un-Oscillate <modify by PCB V1.1G>

GC120 & GC121 from 22pF change to 18pF <modify by PCB V1.1G>

OPTIONAL SPREAD SPECTRUM

P/N: 06G011267001

VRAM setting
MEM_ID1, MEM_ID0
0 0 --> INFINION(Qimonda)
0 1 --> Hynix

GPIO[0]: Tx Power Savings Enable
0: 50% Tx output swing
1: full Tx output swing (recommended)
(default 0, internal pull-down)

GPIO[1]: Tx De-emphasis Enable
0: Tx de-emphasis disbale
1: Tx de-emphasis enable
(default 0, internal pull-down)

Pin	Description	M66M,M71M	M72M,M76M
VID1	MESSAGE SIGNAL INTERRUPT ENABLED	NA	0
VID3	ENABLE HD AUDIO	X	X
VID5	64 BIT BARS DISABLED	NA	0
GPIO0	PCIE PWR Saving Mode	1	1
GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED	1	1
GPIO4	DEBUG SIGNALS NOT MUXED OUT	0	0
GPIO6	(M66/71)BIAS CURRENT FOR PCIE PHY PLL MSBIT (M72/76)RSVD	0	0
GPIO5	(M66/71)BIAS CURRENT FOR PCIE PHY PLL LSBIT (M72/76)RSVD	1	1
GPIO0_22	ENABLE EXTERNAL BIOS ROM	1	1
GPIO[13:11,9]	SERIAL ROM TYPE OR MEMORY APERATURE SIZE SELECT	X	X
VSYNC	IGNORE VIP DEVICE STRAPS	X	X
PSYNC	VGA ENABLED	NA	0

R1.1 Item 35

RECOMMENDED SETTINGS
0= DO NOT INSTALL RESISTOR
1 = INSTALL 10K RESISTOR
X = DESIGN DEPENDANT
NA = NOT APPLICABLE

GR27 from 499 change to 390 for RGB measure <modify by V1.1G> close chipset

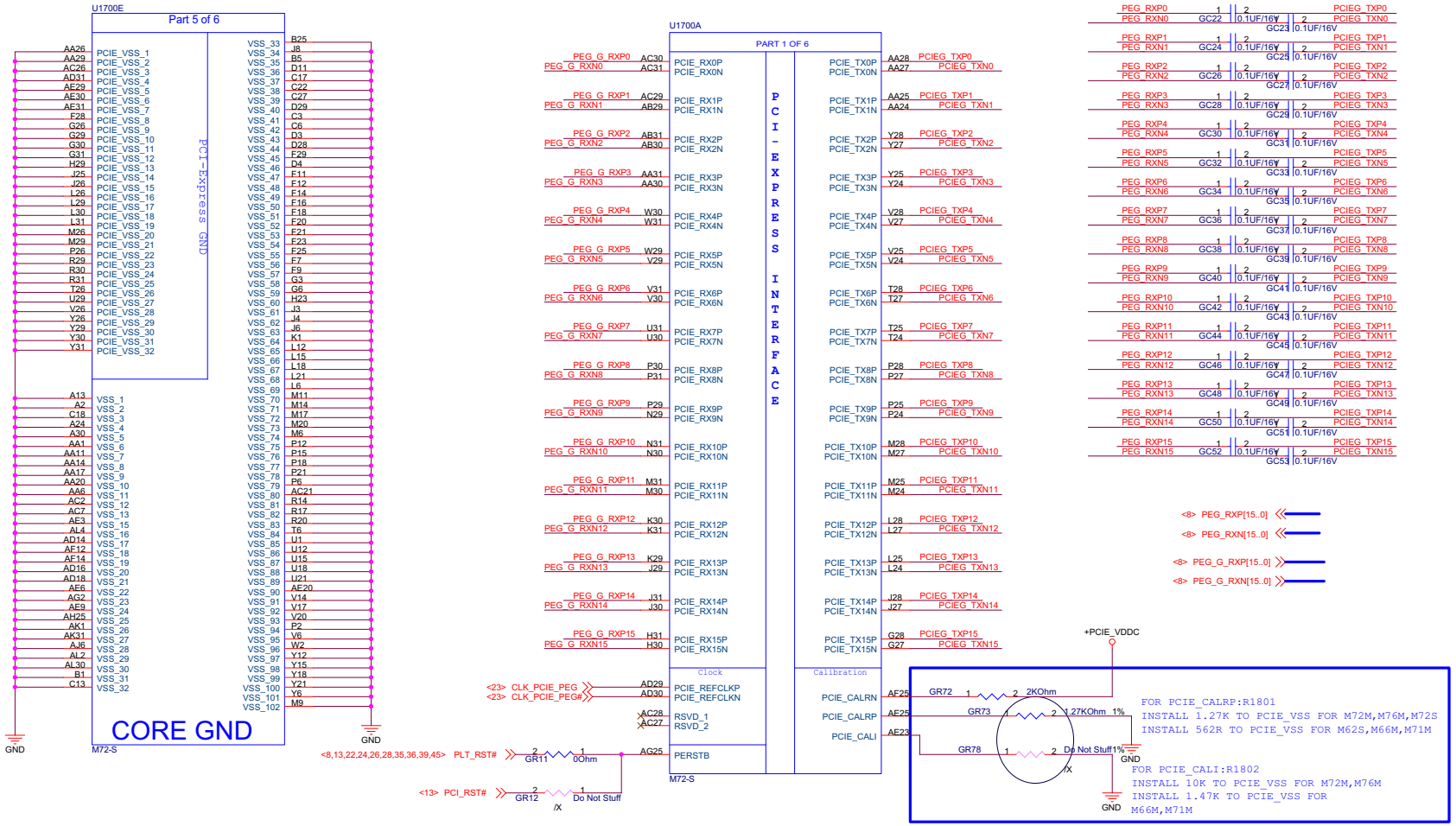
GR47 close chipset

Add GR56 <modify by PCB V1.1G>

Slave Address:9A
Max: 1mA

Close to GPU

Title :	M7x-M--main(1)		
ASUSTeK COMPUTER INC	Engineer:	Alan Chen	
Size: Custom	Project Name: Z62Ha		Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 65 of 70		



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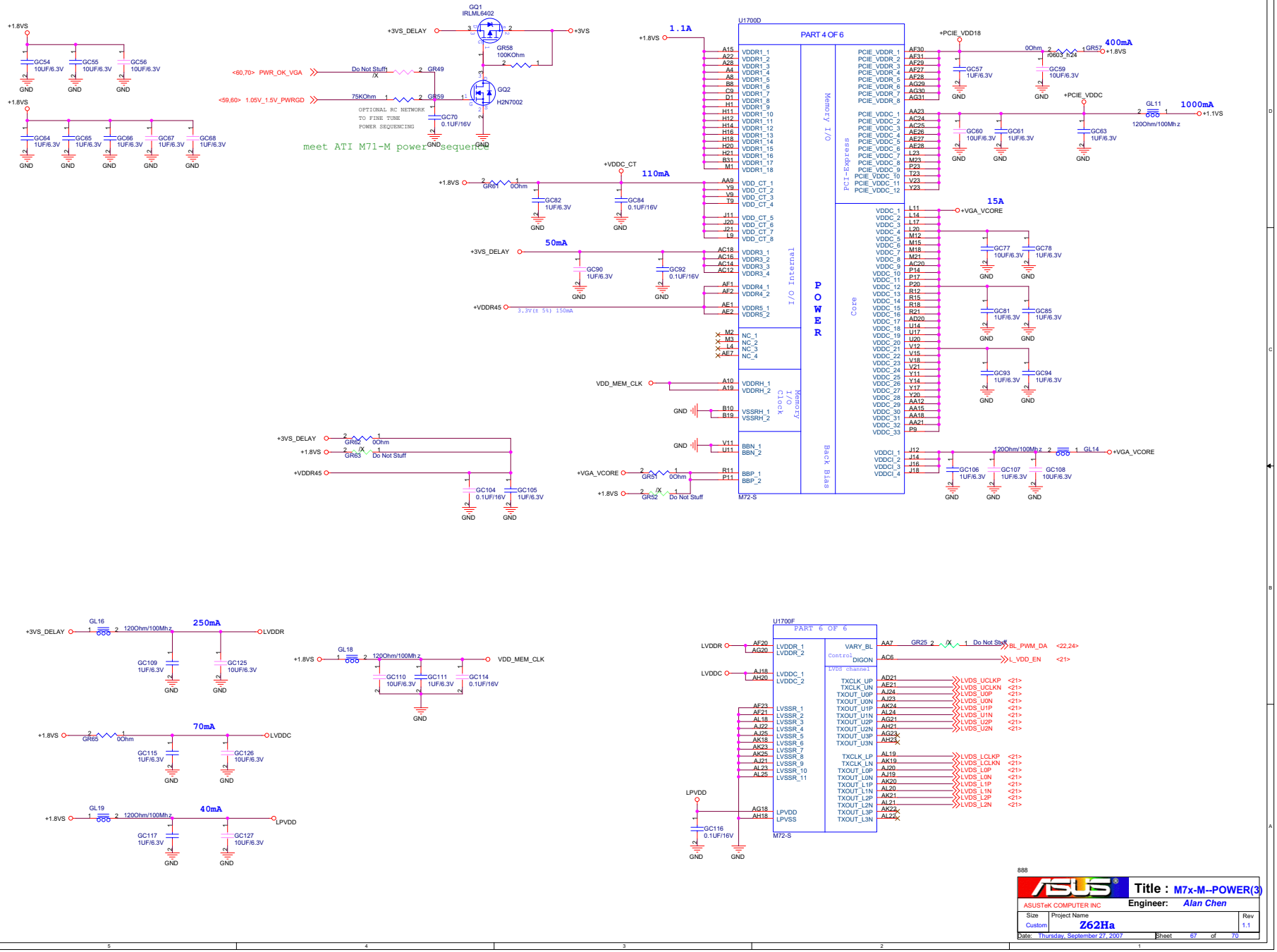
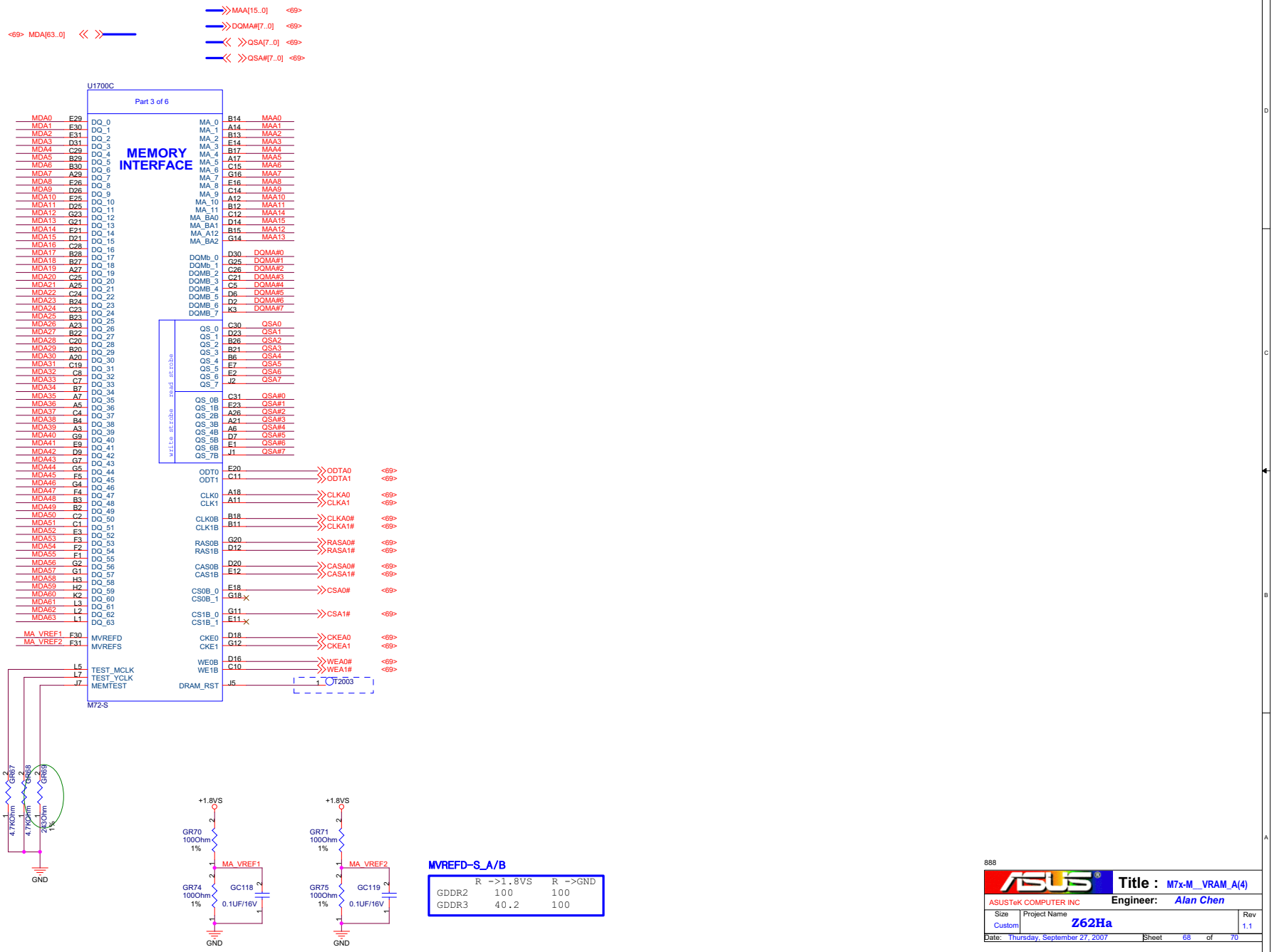
ASUSTeK COMPUTER INC	Title : M7x-M--PCIE(2)		
	Engineer: Alan Chen		
Size: Custom	Project Name: Z62Ha		Rev: 1.1
Date: Thursday, September 27, 2007		Sheet 66 of 70	



ASUSTeK COMPUTER INC	Title : M7x-M--POWER(3)		
	Engineer: Alan Chen		
Size: Custom	Project Name: Z62Ha		Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 67 of 70		

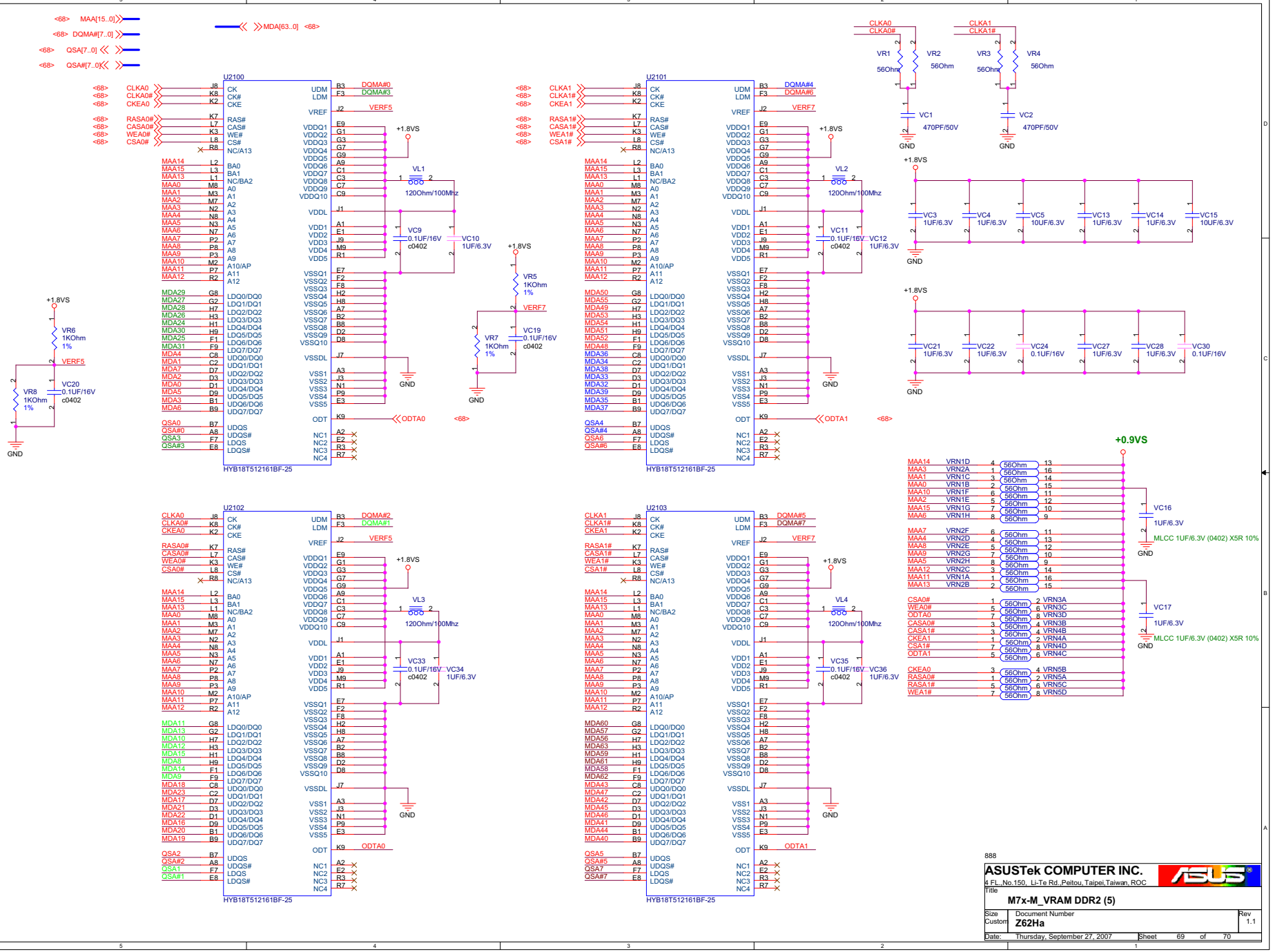


MVREFD-S_A/B

	R ->1.8VS	R ->GND
GDDR2	100	100
GDDR3	40.2	100

888

ASUSTeK COMPUTER INC	Title : M7x-M__VRAM_A(4)	
	Engineer: Alan Chen	
Size: Custom	Project Name: Z62Ha	Rev: 1.1
Date: Thursday, September 27, 2007	Sheet 68 of 70	



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ASUSTek COMPUTER INC.

4 FL.,No.150, Li-Te Rd.,Peitou, Taipei,Taiwan, ROC

Title: **M7x-M_VRAM DDR2 (5)**

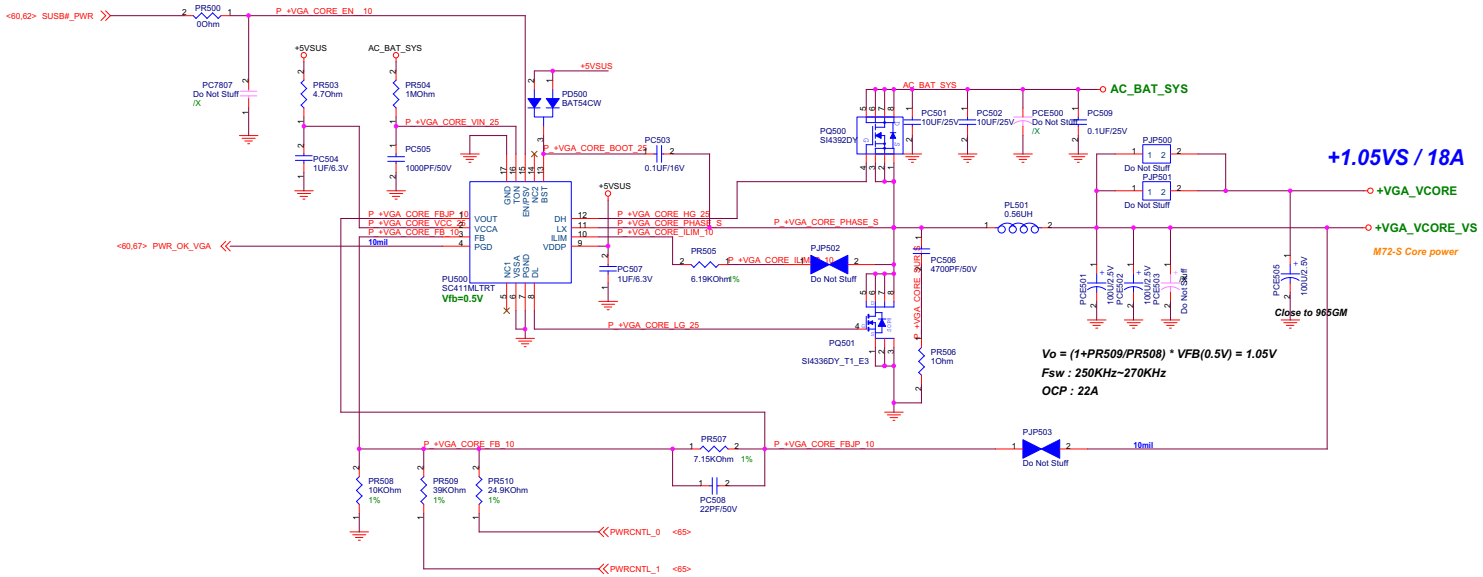
Size	Document Number	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 69 of 70

Enable Signal :

Implemet Intel 965GM --> PR502

Implemet M72-S Chipset --> PR500



+1.05VS

VGMCH_SEL0	VGMCH_SEL1	Voltage
L	L	1.093V
X	L	1.001V
L	X	0.949V
X	X	0.857V

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ASUSTek COMPUTER INC.

4 FL, No.150, Li-Te Rd.,Peitou, Taipei,Taiwan, ROC

Title: VGA_VCORD

Size	Document Number	Rev
Custom	Z62Ha	1.1

Date: Thursday, September 27, 2007 Sheet 70 of 70